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18-Feb-26

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Subject: SUBTEL, Chile (Resolution 737) Certification Compliance 2026
Commercial Name: Forerunner 970

| | Información (Information) |
|---|---|
| Tipo de equipo (Equipment type) | Portable Digital Transceiver |
| Marca (Brand) | Garmin  |
| Modelo (Model) | A04907 |
| Tecnología o modulación (Technology or modulation) | ASK for NFC / GFSK for ANT / GFSK for BTBR / $\pi/4$ -DQPSK, 8DPSK for BTEDR / GFSK for BLE / DSSS for 802.11b / OFDM for 802.11g/n |
| Frecuencias (Frequencies) | 13.56 MHz / 2402-2480 MHz / 2402-2480 MHz / 2402-2480 MHz / 2402-2480 MHz / 2412-2462 MHz |
| Ganancia de antena (dBi) (Antenna gain (dBi)) | ANT -0.2 dBi / BT -0.2 dBi / BT -0.2 dBi / BLE -0.2 dBi / 802.11b/g/n -0.2 dBi |
| P.i.r.e. (E.I R P.) | -36.22 dBm, 0.00 mW / 4.51 dBm, 2.82 mW / 9.62 dBm, 9.16 mW / 11.20 dBm, 13.18 mW / 4.55 dBm, 2.85 mW / 21.11 dBm, 129.12 mW |
| Módulos (Modules) | NFC, ANT, BTBR, BTEDR, BLE, WiFi |

As all measurements for NFC are made in radiated mode to comply with the field strength limits, gain information is not required to be noted in the reports or any additional documentation.
Declaration of Conformity Statement: the equipment previously identified complies with the provisions established in the Technical Standard for Small Range Equipment, approved by Exempt Resolution No.1,985 of 2017, of the Undersecretary of Telecommunications.

Declaración de conformidad: El equipo anteriormente identificado cumple con las disposiciones establecidas en la Norma Técnica para Equipos de Corto Alcance, aprobada mediante la Resolución Exenta N° 1.985 de 2017, de la Subsecretaría de Telecomunicaciones.

TEST REPORT

Report Number: R15607127-E1

Applicant : Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

Model : A04907

FCC ID : IPH-04907

IC : 1792A-04907

EUT Description : Extremity Worn Digital Transceiver

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C: 2025
RSS-210 ISSUE 11: 2024
RSS-GEN ISSUE 5 + A1 + A2: 2021

Date Of Issue:
2025-03-25

Prepared by:
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REPORT REVISION HISTORY

| Rev. | Issue Date | Revisions | Revised By |
|------|------------|-------------------------------------|------------------|
| v1 | 2025-02-13 | Initial Issue | Manish Baral |
| V2 | 2025-03-19 | Minor Editorial Revisions | Chandler Stanley |
| V3 | 2025-03-25 | Added Additional Investigation Type | Chandler Stanley |

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

EUT DESCRIPTION: Extremity Worn Digital Transceiver

MODEL: A04907

SERIAL NUMBER: 3497652467, 3497995201, 497652378, 497652376

SAMPLE RECEIPT DATE: 2024-12-17

DATE TESTED: 2024-12-27 to 2025-03-25

| APPLICABLE STANDARDS | |
|--------------------------------------|--------------------|
| STANDARD | TEST RESULTS |
| FCC PART 15 SUBPART C: 2025 | |
| ISED RSS-210 Issue 11: 2024 | Refer to Section 3 |
| ISED RSS-GEN Issue 5 + A1 + A2: 2021 | |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released
For UL LLC By:

Prepared By:



Brian Kiewra
Project Engineer
Consumer, Medical and IT Segment
UL LLC

Manish Baral
Engineer
Consumer, Medical and IT Segment
UL LLC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:

- ANSI C63.10-2020
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15C
- RSS-GEN Issue 5 + A1 + A2: 2021
- RSS-210 Issue 11:2024

3. SUMMARY OF TEST RESULTS

| Requirement Description | Requirement Clause Number | Result | Remarks |
|-----------------------------------|---|-----------|---------|
| Occupied Bandwidth | FCC §15.215 (c) RSS-Gen 6.7 | Compliant | None |
| Fundamental Measurements. | FCC §15.225 (a-d) FCC §15.209 (d) | | |
| Tx Spurious Emissions | IC RSS-210, Annex B.6 IC RSS-GEN, Section 8.9 (Transmitter) | | |
| Frequency Stability | FCC §15.225 (e) RSS-210, Annex B.6 | | |
| AC Mains Line Conducted Emissions | FCC §15.207 IC RSS-GEN, Section 8.8 | | |

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, Certificate Number #0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

| | Address | ISED CABID | ISED Company Number | FCC Registration |
|-------------------------------------|--|------------|---------------------|------------------|
| <input type="checkbox"/> | Building: 12 Laboratory Dr RTP, NC 27709, U.S.A | US0067 | 2180C | 825374 |
| <input checked="" type="checkbox"/> | Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A | | 27265 | |

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER | U _{Lab} |
|--|-----------------------------|
| Radio Frequency (Spectrum Analyzer) | 141.16 Hz |
| Occupied Channel Bandwidth | 1.22% |
| RF output power, conducted | 1.3 dB (PK) 0.45 dB (AV) |
| Power Spectral Density, conducted | 2.47 dB |
| Unwanted Emissions, conducted | 1.94 dB |
| All emissions, radiated | 6.01 dB |
| Conducted Emissions (0.150-30MHz) - LISN | 3.40 dB |
| Temperature | 0.57°C |
| Humidity | 3.39% |
| DC Supply voltages | 1.70% |

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.

$$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$$

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The EUT is an extremity worn digital transceiver with BT, BLE, ANT+, 802.11b/g/n 2.4GHz WLAN, NFC, and Global Navigation Satellite System (GNSS) receiver. This report covers the full testing of the NFC radio.

6.2. MAXIMUM ELECTRIC FIELD STRENGTH

The transmitter has a maximum peak radiated electric field strength at 30m as follows:

| Fundamental Frequency (MHz) | E-Field (dBuV/m) |
|-----------------------------|------------------|
| 13.56 | 29.01 |

6.3. SOFTWARE AND FIRMWARE

The software version installed during testing was 3.51.

6.4. WORST-CASE CONFIGURATION AND MODE

The fundamental of the EUT was investigated under three orthogonal orientations X, Y, and Z. The Z orientation was determined to be the worst-case orientation. Therefore, all final radiated testing was performed with the EUT in the Z orientation.

In addition, Type A, B, AB, AF, and F with and without a tag were investigated to determine the worst case based on the highest power and spurious emissions. Type AF with a tag was determined to be the worst case and therefore selected for all final tests.

The distance between the EUT and NFC reader was also investigated, and the worst-case condition occurs when the NFC reader and EUT are separated by 3cm; therefore, all final radiated testing was performed with the EUT and NFC reader separated by 3cm.

6.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

| Support Equipment List | | | | |
|------------------------|-----------------------|---------------------|----------------|--------|
| Description | Manufacturer | Model | Serial Number | FCC ID |
| NFC Reader | Synnix Technology Co. | CL-2100R | NFCREAD#1 | NA |
| Laptop | Lenovo | T14 | PF4FKVY8 | NA |
| Laptop Charger | Lenovo | ADLX65YCC2D | NA | NA |
| AC Adaptor | Sony | XQZ-UC11-010-236-21 | 32223W09205418 | NA |

I/O CABLES

| I/O Cable List | | | | | | |
|----------------|-------------|----------------------|-------------------|------------|------------------|------------------------|
| Cable No. | Port | # of Identical Ports | Connector Type | Cable Type | Cable Length (m) | Remarks |
| 1 | Proprietary | 1 | 4 pin Proprietary | Shielded | <3m | Used for charging only |

SETUP DIAGRAM

Please refer to R15607127-EP2 for setup diagrams

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

| Equip. ID | Description | Manufacturer/Brand | Model Number | Last Cal. | Next Cal. |
|----------------------------------|-------------------------------|----------------------|---------------------------|------------|------------|
| 0.009-30MHz | | | | | |
| 135144 | Active Loop Antenna | ETS-Lindgren | 6502 | 2024-10-02 | 2025-10-02 |
| 30-1000 MHz | | | | | |
| 90628 | Hybrid Broadband Antenna | Sunol Sciences Corp. | JB3 | 2024-01-02 | 2026-01-02 |
| Gain-Loss Chains | | | | | |
| 207638 | Gain-loss string: 0.009-30MHz | Various | Various | 2024-05-22 | 2025-05-22 |
| 207639 | Gain-loss string: 25-1000MHz | Various | Various | 2024-05-22 | 2025-05-22 |
| Receiver & Software | | | | | |
| 197955 | Spectrum Analyzer | Rohde & Schwarz | ESW44 | 2024-04-16 | 2025-04-16 |
| SOFTEMI | EMI Software | UL | Version 9.5 (18 Oct 2021) | | |
| Additional Equipment used | | | | | |
| 241204 | Environmental Meter | Fisher Scientific | 15-077-963 | 2023-09-05 | 2025-09-05 |

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

| Equipment ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|----------------------------------|---|---------------------|---------------------------|------------|------------|
| CBL087 | Coax cable, RG223, N-male to BNC-male, 20-ft. | Pasternack | PE3W06143-240 | 2024-04-04 | 2025-04-04 |
| 179892 | Environmental Meter | Fisher Scientific | 15-077-963 | 2024-08-12 | 2025-08-12 |
| 80391 | LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A | Fischer Custom Com. | FCC-LISN-50/250-25-2-01 | 2024-08-01 | 2025-08-01 |
| 70374 | EMI Test Receiver 9kHz-7GHz | Rohde & Schwarz | ESCI 7 | 2024-7-30 | 2025-7-30 |
| 52859 | Transient Limiter, 0.009-100MHz | Electro-Metrics | EM-7600 | 2024-04-04 | 2025-04-04 |
| PS216 | AC Power Source | Elgar | CW2501M | NA | NA |
| SOFTEMI | EMI Software | UL | Version 9.5 (18 Oct 2021) | | |
| Miscellaneous (if needed) | | | | | |
| 84681 | ANSI C63.4 1m extension cable. | UL | Per Annex B of ANSI C63.4 | 2024-04-04 | 2025-04-04 |

Test Equipment Used - Wireless Conducted Measurement Equipment

| Equipment ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|-------------------------|-----------------------|-----------------------|-------------------|------------|------------|
| Common Equipment | | | | | |
| Conducted Room 2 | | | | | |
| 90410 | Spectrum Analyzer | Keysight Technologies | N9030A | 2024-06-14 | 2025-06-14 |
| 76023 | Temp/Humid Chamber | Cincinnati Sub-Zero | ZPH-8-3.5-SCT/AC | 2024-01-12 | 2025-01-12 |
| 248881 | Environmental Meter | Control Company | 06-662-4 | 2024-04-10 | 2026-04-10 |
| SOFTEMI | Antenna Port Software | UL | Version 2024.4.23 | NA | NA |

8. 20dB and 99% BANDWIDTH

LIMITS

§15.215 (c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

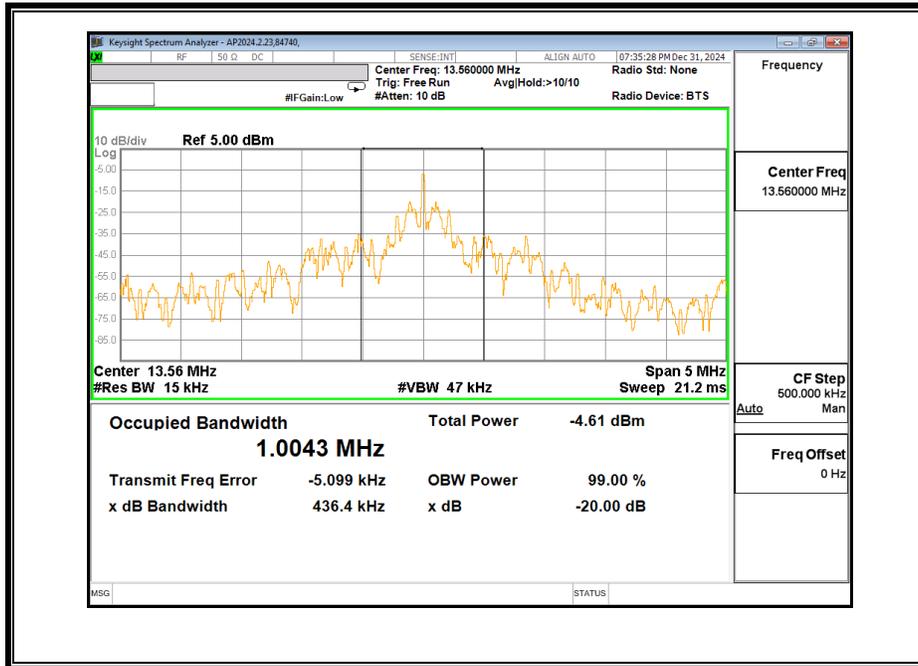
TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1-5% of the 20dB bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

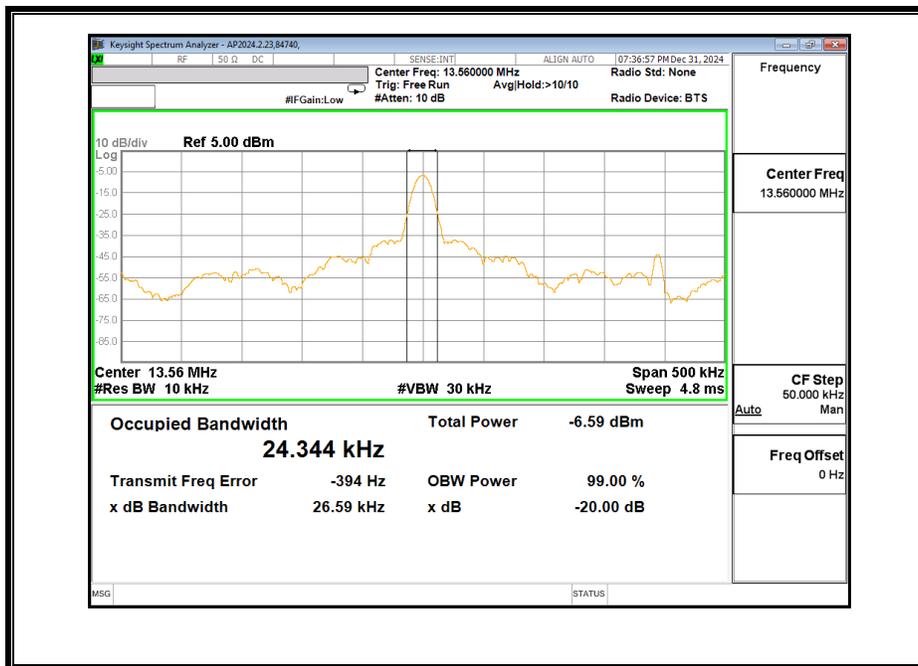
RESULTS – TAG ON

| Mode | Frequency (MHz) | 20dB Bandwidth (kHz) | 99% Bandwidth (MHz) |
|---------|-----------------|----------------------|---------------------|
| Type A | 13.56 | 436.4 | 1.0043 |
| Type B | 13.56 | 26.59 | 0.024344 |
| Type AB | 13.56 | 360.3 | 0.43511 |
| Type F | 13.56 | 446.5 | 1.0926 |
| Type AF | 13.56 | 446.4 | 1.0511 |

8.1. Type A (CE Mode)

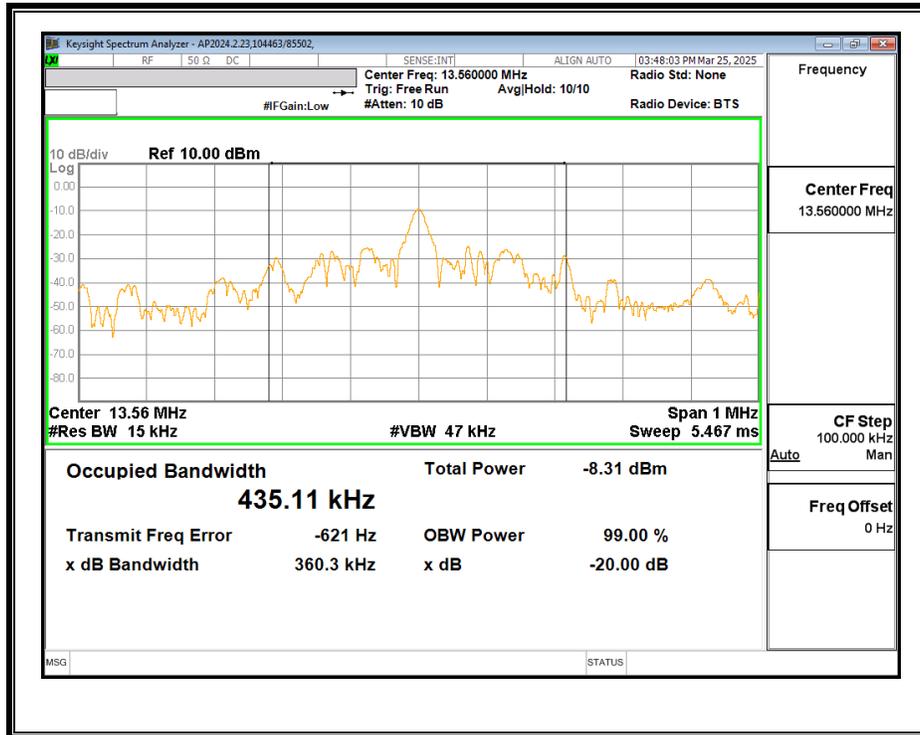


8.2. Type B (CE Mode)



Note: Because the measured signal is CW or CW-like, adjusting the RBW per C63.10 would not be practical since the measured bandwidth will always follow the RBW.

8.3. Type AB (CE Mode)



8.4. Type F (CE Mode)



8.5. Type AF (CE Mode)



9. RADIATED EMISSION TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMIT

FCC §15.225
 IC RSS-210, Annex B.6
 IC RSS-GEN, Section 8.9 (Transmitter)

- (a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/ meter at 30 meters.
- (b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- (c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- (d) The field strength of any emissions appearing outside of the 13.110– 14.010 MHz and shall not exceed the general radiated emission limits in § 15.209 as follows:
 §15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Limits for radiated disturbance of an intentional radiator | | |
|--|-----------------|--------------------------|
| Frequency range (MHz) | Limits (µV/m) | Measurement Distance (m) |
| 0.009 – 0.490 | 2400 / F (kHz) | 300 |
| 0.490 – 1.705 | 24000 / F (kHz) | 30 |
| 1.705 – 30.0 | 30 | 30 |
| 30 – 88 | 100** | 3 |
| 88 - 216 | 150** | 3 |
| 216 – 960 | 200** | 3 |
| Above 960 | 500 | 3 |

RSS-GEN, Section 8.9 and 8.10.

| Frequency Range (MHz) | Field Strength Limit (uA/m) at 3 m | Field Strength Limit (dBuA/m) at 3 m |
|-----------------------|------------------------------------|--------------------------------------|
| 0.009-0.490 | 6.37/F(kHz) @ 300 m | - |
| 0.490-1.705 | 63.7/F(kHz) @ 30 m | - |
| 1.705 - 30 | 0.08 @ 30m | - |
| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz

or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

Formula for converting the filed strength from uV/m to dBuV/m is:

Limit (dBuV/m) = 20 log limit (uV/m)

In addition:

§15.209 (d) The emission limits shown the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

§15.209 (d) The provisions in §§ 15.225, measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

TEST PROCEDURE

ANSI C63.10 - 2020

The EUT is an intentional radiator that incorporates a digital device, the highest fundamental frequency generated or used in the device is 13.56 MHz; therefore, the frequency range was investigated from 9kHz to the 10th harmonic of the highest fundamental frequency, or 1000 MHz, whichever is greater.

Note: For all Below 30MHz test data, all measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were $40 \cdot \log(\text{test distance} / \text{specification distance})$.

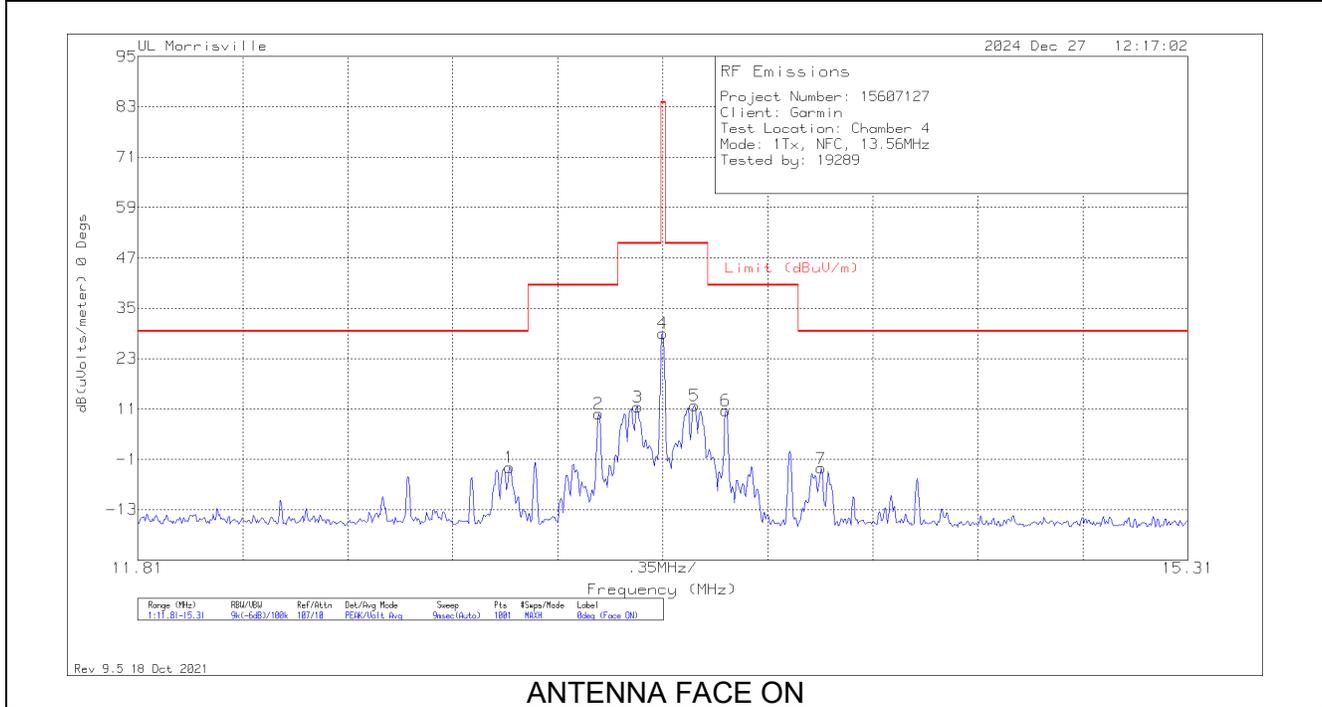
Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open area test site. Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

RESULTS

9.2. FUNDAMENTAL AND SPURIOUS EMISSIONS (<30MHz)

9.2.1. TYPE AF, TAG ON

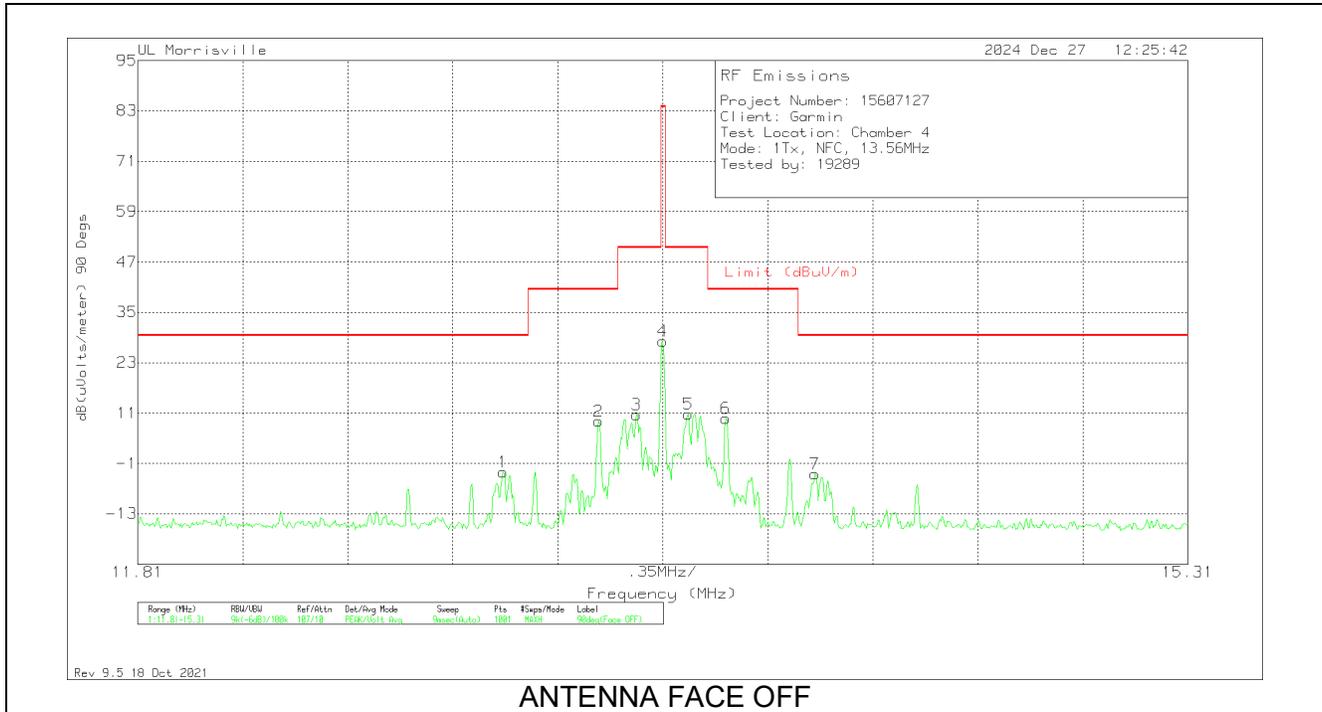
FUNDAMENTAL



ANTENNA FACE ON

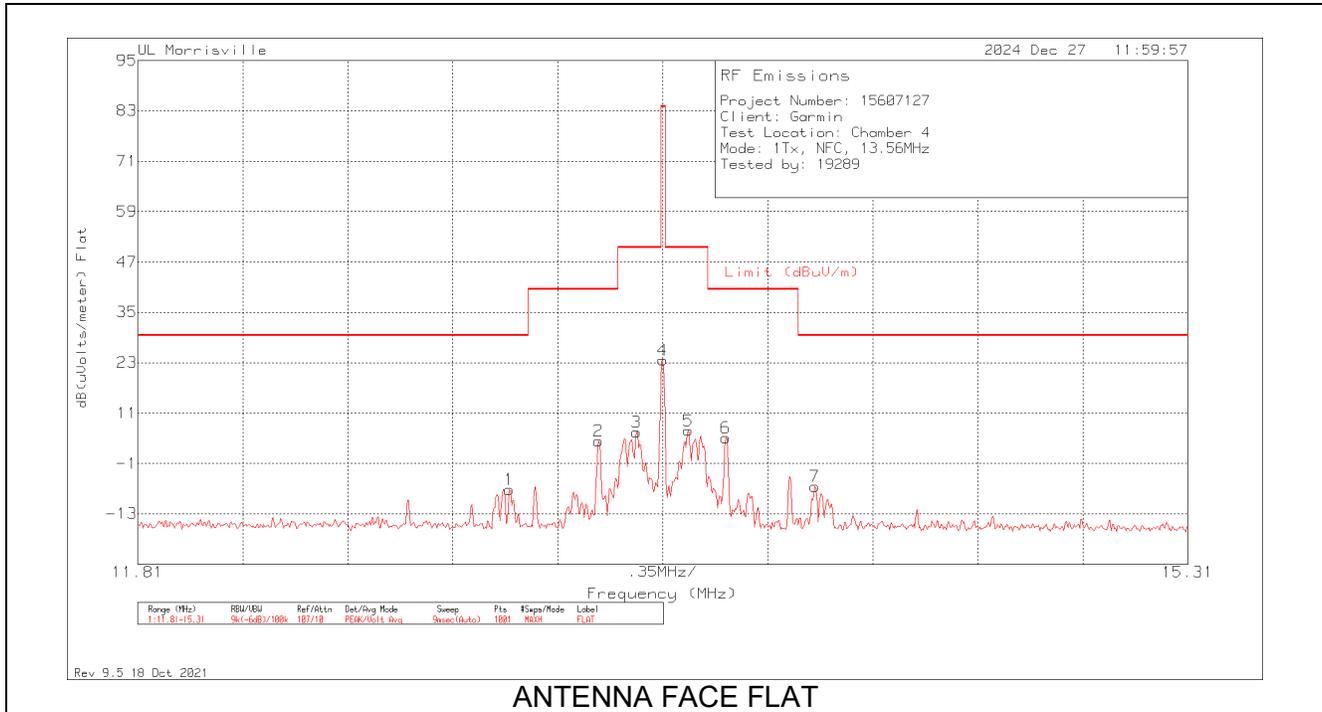
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uVolts/meter) | Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|------------------------------------|----------------|-------------|----------------|-------------|------------|
| 1 | 13.049 | 26.84 | Pk | 9.8 | .5 | -40 | -2.86 | 29.5 | -32.36 | 0 | 100 | 0 degs |
| 2 | 13.3465 | 39.58 | Pk | 9.8 | .5 | -40 | 9.88 | 40.5 | -30.62 | 0 | 100 | 0 degs |
| 3 | 13.476 | 41.14 | Pk | 9.8 | .5 | -40 | 11.44 | 50.5 | -39.06 | 0 | 100 | 0 degs |
| 4 | 13.56 | 58.71 | Pk | 9.8 | .5 | -40 | 29.01 | 84 | -54.99 | 0 | 100 | 0 degs |
| 5 | 13.665 | 41.48 | Pk | 9.8 | .5 | -40 | 11.78 | 50.5 | -38.72 | 0 | 100 | 0 degs |
| 6 | 13.77 | 40.39 | Pk | 9.7 | .5 | -40 | 10.59 | 40.5 | -29.91 | 0 | 100 | 0 degs |
| 7 | 14.0885 | 26.67 | Pk | 9.7 | .5 | -40 | -3.13 | 29.5 | -32.63 | 0 | 100 | 0 degs |

Pk - Peak detector



| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uVolts/meter) | Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|------------------------------------|----------------|-------------|----------------|-------------|------------|
| 1 | 13.028 | 26.6 | Pk | 9.8 | .5 | -40 | -3.1 | 29.5 | -32.6 | 89 | 100 | 90 degs |
| 2 | 13.3465 | 38.76 | Pk | 9.8 | .5 | -40 | 9.06 | 40.5 | -31.44 | 89 | 100 | 90 degs |
| 3 | 13.4725 | 40.3 | Pk | 9.8 | .5 | -40 | 10.6 | 50.5 | -39.9 | 89 | 100 | 90 degs |
| 4 | 13.56 | 57.81 | Pk | 9.8 | .5 | -40 | 28.11 | 84 | -55.89 | 89 | 100 | 90 degs |
| 5 | 13.644 | 40.44 | Pk | 9.8 | .5 | -40 | 10.74 | 50.5 | -39.76 | 89 | 100 | 90 degs |
| 6 | 13.77 | 39.48 | Pk | 9.7 | .5 | -40 | 9.68 | 40.5 | -30.82 | 89 | 100 | 90 degs |
| 7 | 14.0675 | 26.3 | Pk | 9.7 | .5 | -40 | -3.5 | 29.5 | -33 | 89 | 100 | 90 degs |

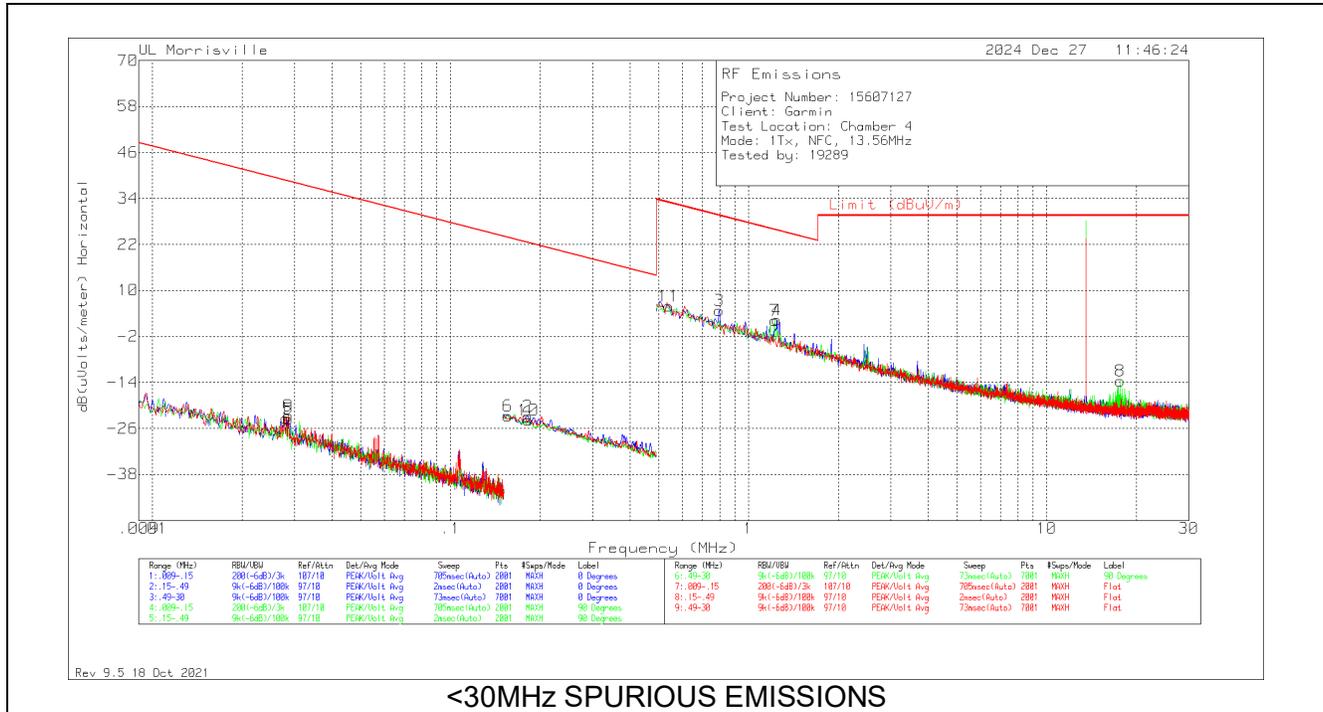
Pk - Peak detector



| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uVolts/meter) | Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|------------------------------------|----------------|-------------|----------------|-------------|------------|
| 1 | 13.049 | 22.49 | Pk | 9.8 | .5 | -40 | -7.21 | 29.5 | -36.71 | 3 | 100 | Flat |
| 2 | 13.3465 | 34.09 | Pk | 9.8 | .5 | -40 | 4.39 | 40.5 | -36.11 | 3 | 100 | Flat |
| 3 | 13.4725 | 36.12 | Pk | 9.8 | .5 | -40 | 6.42 | 50.5 | -44.08 | 3 | 100 | Flat |
| 4 | 13.56 | 53.31 | Pk | 9.8 | .5 | -40 | 23.61 | 84 | -60.39 | 3 | 100 | Flat |
| 5 | 13.644 | 36.52 | Pk | 9.8 | .5 | -40 | 6.82 | 50.5 | -43.68 | 3 | 100 | Flat |
| 6 | 13.77 | 34.97 | Pk | 9.7 | .5 | -40 | 5.17 | 40.5 | -35.33 | 3 | 100 | Flat |
| 7 | 14.0675 | 23.27 | Pk | 9.7 | .5 | -40 | -6.53 | 29.5 | -36.03 | 3 | 100 | Flat |

Pk - Peak detector

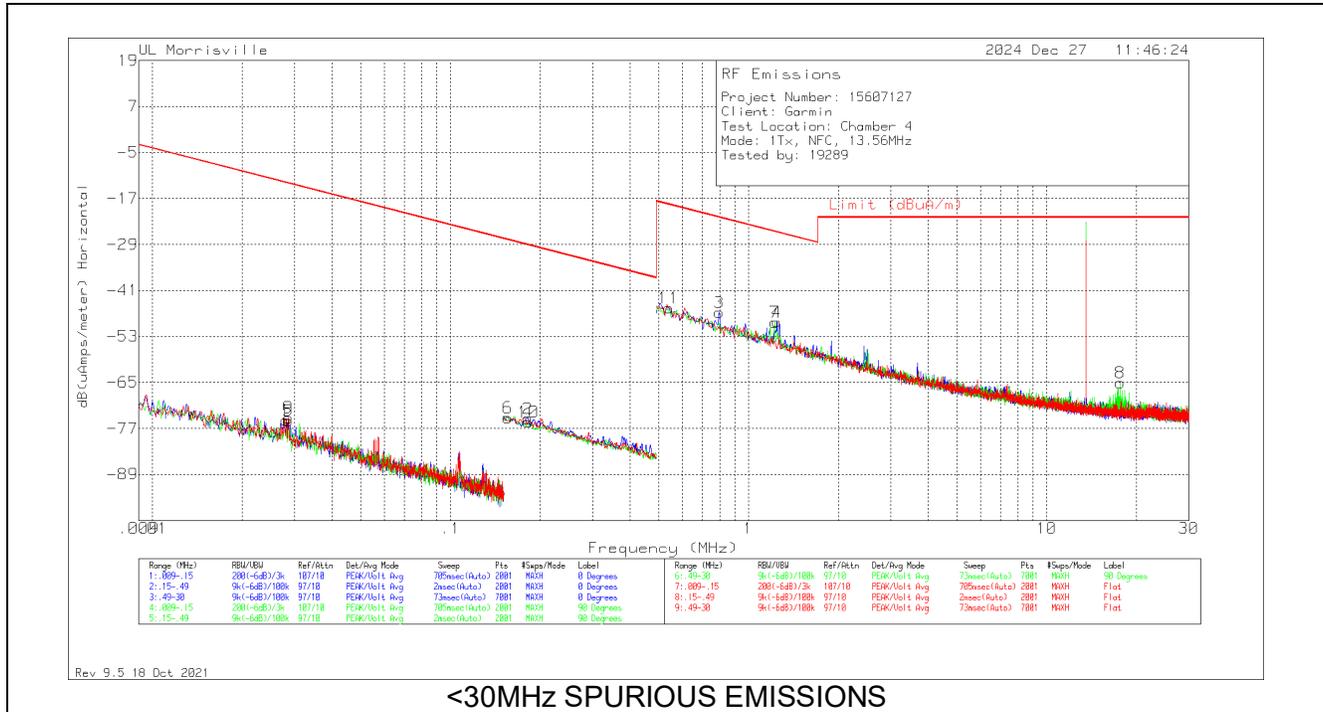
SPURIOUS EMISSION – E FIELD



| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uVolts/meter) | QP/AV Limit (dBuV/m) | PK Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|------------------------------------|----------------------|-------------------|-------------|----------------|------------|
| 1 | .02803 | 43.24 | Pk | 13.3 | .1 | -80 | -23.36 | 38.65 | 58.65 | -62.01 | 0-360 | 0 degs |
| 5 | .0286 | 43.12 | Pk | 13.2 | .1 | -80 | -23.58 | 38.48 | 58.48 | -62.06 | 0-360 | 90 degs |
| 9 | .0286 | 44.06 | Pk | 13.2 | .1 | -80 | -22.64 | 38.48 | 58.48 | -61.12 | 0-360 | Flat |
| 6 | .15544 | 46.22 | Pk | 11 | .1 | -80 | -22.68 | 23.77 | 43.77 | -46.45 | 0-360 | 90 degs |
| 2 | .18179 | 45.96 | Pk | 11 | .1 | -80 | -22.94 | 22.41 | 42.41 | -45.35 | 0-360 | 0 degs |
| 10 | .18273 | 45.05 | Pk | 11 | .1 | -80 | -23.85 | 22.37 | 42.37 | -46.22 | 0-360 | Flat |
| 11 | .54059 | 34.84 | Pk | 11 | .1 | -40 | 5.94 | 32.95 | - | -27.01 | 0-360 | Flat |
| 3 | .79777 | 33.52 | Pk | 11 | .2 | -40 | 4.72 | 29.57 | - | -24.85 | 0-360 | 0 degs |
| 7 | 1.22358 | 30.99 | Pk | 11 | .2 | -40 | 2.19 | 25.85 | - | -23.66 | 0-360 | 90 degs |
| 4 | 1.24466 | 31.06 | Pk | 11 | .2 | -40 | 2.26 | 25.7 | - | -23.44 | 0-360 | 0 degs |
| 8 | 17.64912 | 16.51 | Pk | 9.3 | .6 | -40 | -13.59 | 29.54 | - | -43.13 | 0-360 | 90 degs |

Pk - Peak detector

SPURIOUS EMISSION – H FIELD



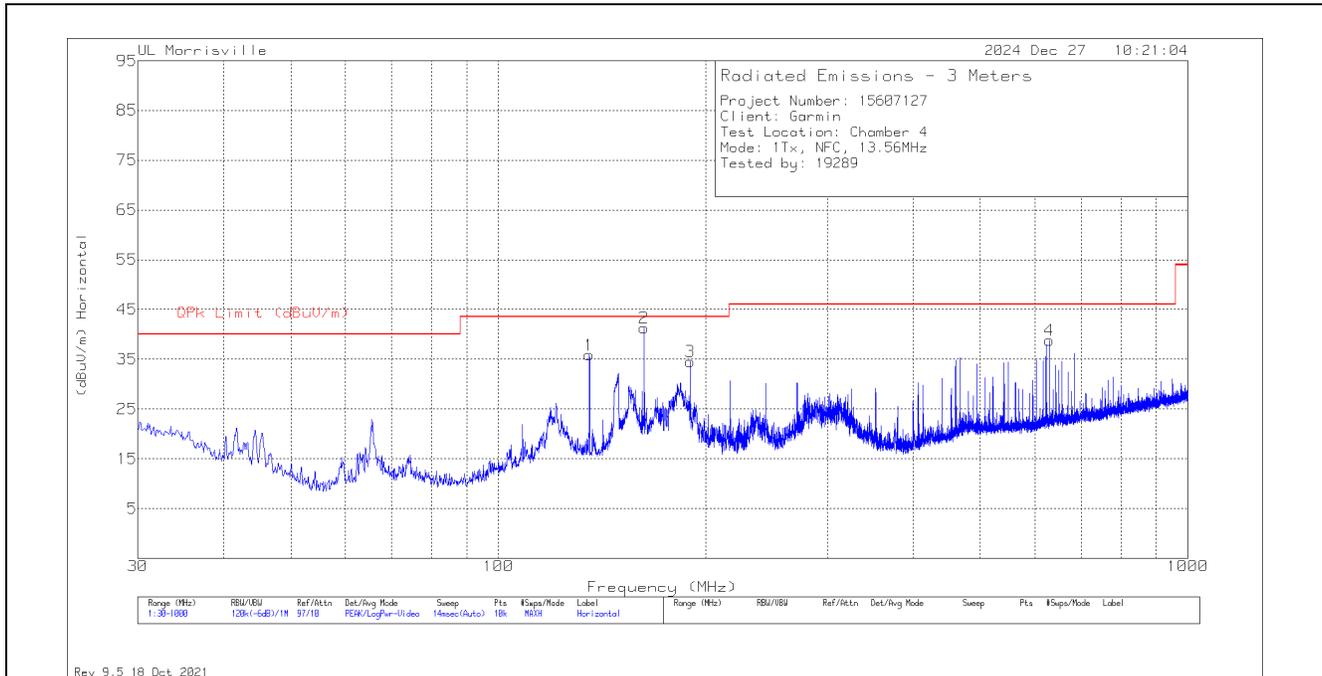
<30MHz SPURIOUS EMISSIONS

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uAmps/meter) | QP/AV Limit (dBuA/m) | PK Limit (dBuA/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|-----------------------------------|----------------------|-------------------|-------------|----------------|------------|
| 1 | .02803 | 43.24 | Pk | -38.2 | .1 | -80 | -74.86 | -12.85 | 7.15 | -62.01 | 0-360 | 0 degs |
| 5 | .0286 | 43.12 | Pk | -38.3 | .1 | -80 | -75.08 | -13.02 | 6.98 | -62.06 | 0-360 | 90 degs |
| 9 | .0286 | 44.06 | Pk | -38.3 | .1 | -80 | -74.14 | -13.02 | 6.98 | -61.12 | 0-360 | Flat |
| 6 | .15544 | 46.22 | Pk | -40.5 | .1 | -80 | -74.18 | -27.73 | -7.73 | -46.45 | 0-360 | 90 degs |
| 2 | .18179 | 45.96 | Pk | -40.5 | .1 | -80 | -74.44 | -29.09 | -9.09 | -45.35 | 0-360 | 0 degs |
| 10 | .18273 | 45.05 | Pk | -40.5 | .1 | -80 | -75.35 | -29.13 | -9.13 | -46.22 | 0-360 | Flat |
| 11 | .54059 | 34.84 | Pk | -40.5 | .1 | -40 | -45.56 | -18.55 | - | -27.01 | 0-360 | Flat |
| 3 | .79777 | 33.52 | Pk | -40.5 | .2 | -40 | -46.78 | -21.93 | - | -24.85 | 0-360 | 0 degs |
| 7 | 1.22358 | 30.99 | Pk | -40.5 | .2 | -40 | -49.31 | -25.65 | - | -23.66 | 0-360 | 90 degs |
| 4 | 1.24466 | 31.06 | Pk | -40.5 | .2 | -40 | -49.24 | -25.8 | - | -23.44 | 0-360 | 0 degs |
| 8 | 17.64912 | 16.51 | Pk | -42.2 | .6 | -40 | -65.09 | -21.96 | - | -43.13 | 0-360 | 90 degs |

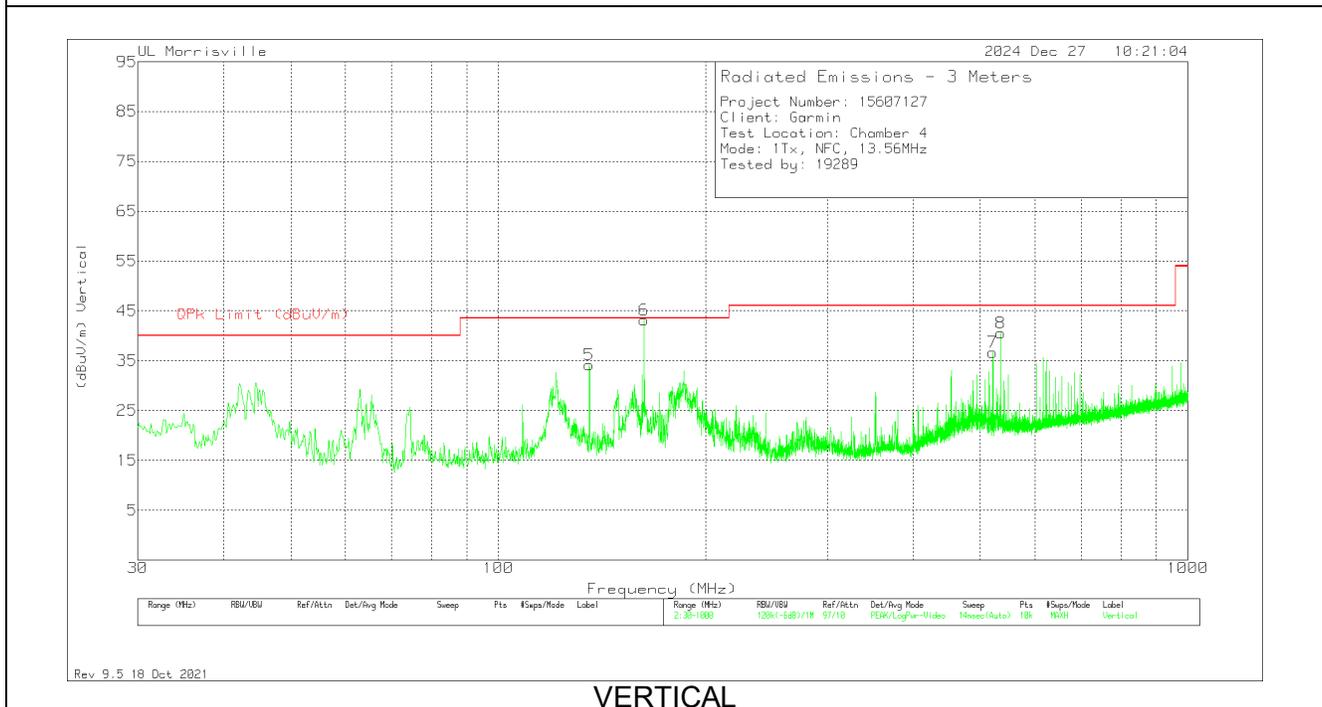
Pk - Peak detector

9.3. TX SPURIOUS EMISSION 30 TO 1000 MHz

9.3.1. TYPE AF, WITH TAG



HORIZONTAL



VERTICAL

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 90628 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|--------------|----------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1 | 135.536 | 47.46 | Pk | 19.6 | -31.2 | 35.86 | 43.52 | -7.66 | 0-360 | 100 | H |
| 5 | 135.536 | 45.73 | Pk | 19.6 | -31.2 | 34.13 | 43.52 | -9.39 | 0-360 | 200 | V |
| 2 | 162.71614 | 49.2 | Qp | 18.4 | -31.1 | 36.5 | 43.52 | -7.02 | 123 | 170 | H |
| 6 | 162.71614 | 50.34 | Qp | 18.4 | -31.1 | 37.64 | 43.52 | -5.88 | 351 | 105 | V |
| 3 | 189.856 | 48.18 | Pk | 17.3 | -30.9 | 34.58 | 43.52 | -8.94 | 0-360 | 100 | H |
| 7 | 521.499 | 42.37 | Pk | 23.9 | -29.6 | 36.67 | 46.02 | -9.35 | 0-360 | 100 | V |
| 8 | 535.05502 | 41.64 | Qp | 24.2 | -29.3 | 36.54 | 46.02 | -9.48 | 126 | 122 | V |
| 4 | 629.945 | 42.38 | Pk | 25.6 | -29.2 | 38.78 | 46.02 | -7.24 | 0-360 | 200 | H |

Pk - Peak detector
 Qp - Quasi-Peak detector

10. FREQUENCY STABILITY

LIMIT

§15.225 (e) The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency, over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

IC RSS-210, Annex B.6

Carrier frequency stability shall be maintained to $\pm 0.01\%$ (± 100 ppm).

TEST PROCEDURE

ANSI C63.10-2020 Clause 6.8

RESULTS

No non-compliance noted.

Nominal/High Voltage: 5.5Vdc.

10.1. TYPE AF, WITH TAG

| Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz | | | | | | | | | | |
|---|-------------|---|--------------|-------------------|--------------|-------------------|--------------|-------------------|--------------|-----------------------------|
| Power Supply | Envir. Temp | Frequency Deviation Measured with Time Elapse | | | | | | | | |
| (Vdc) | (°C) | Startup (MHz) | Delta (ppm) | @ 2 mins (MHz) | Delta (ppm) | @ 5 mins (MHz) | Delta (ppm) | @ 10 mins (MHz) | Delta (ppm) | Limit (ppm) |
| 5.50 | 50 | 13.5595062 | 1.839 | 13.5595045 | 1.966 | 13.5595250 | 0.454 | 13.5595284 | 0.205 | ± 100 |
| 5.50 | 40 | 13.5595040 | 2.001 | 13.5595147 | 1.212 | 13.5595203 | 0.800 | 13.5595232 | 0.586 | ± 100 |
| 5.50 | 30 | 13.5595074 | 1.749 | 13.5595077 | 1.731 | 13.5595071 | 1.776 | 13.5595065 | 1.816 | ± 100 |
| 5.50 | 20 | 13.5595311 | 0.000 | 13.5595305 | 0.045 | 13.5595298 | 0.098 | 13.5595290 | 0.158 | ± 100 |
| 5.50 | 10 | 13.5595097 | 1.579 | 13.5595127 | 1.362 | 13.5595164 | 1.087 | 13.5595190 | 0.895 | ± 100 |
| 5.50 | 0 | 13.5595402 | -0.665 | 13.5595398 | -0.635 | 13.5595401 | -0.664 | 13.5595441 | -0.954 | ± 100 |
| 5.50 | -10 | 13.5595693 | -2.813 | 13.5595668 | -2.633 | 13.5595662 | -2.588 | 13.5595660 | -2.574 | ± 100 |
| 5.50 | -20 | 13.5595667 | -2.619 | 13.5595697 | -2.842 | 13.5595700 | -2.864 | 13.5595691 | -2.800 | ± 100 |
| 4.50 | 20 | 13.5595357 | -0.336 | 13.5595339 | -0.203 | 13.5595329 | -0.132 | 13.5595307 | 0.034 | ± 100 |

Tested by: 84740

Test date: 2024-12-31

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
RSS-Gen 8.8

| Frequency of Emission (MHz) | Conducted Limit (dBµV) | |
|-----------------------------|------------------------|------------|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56 * | 56 to 46 * |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

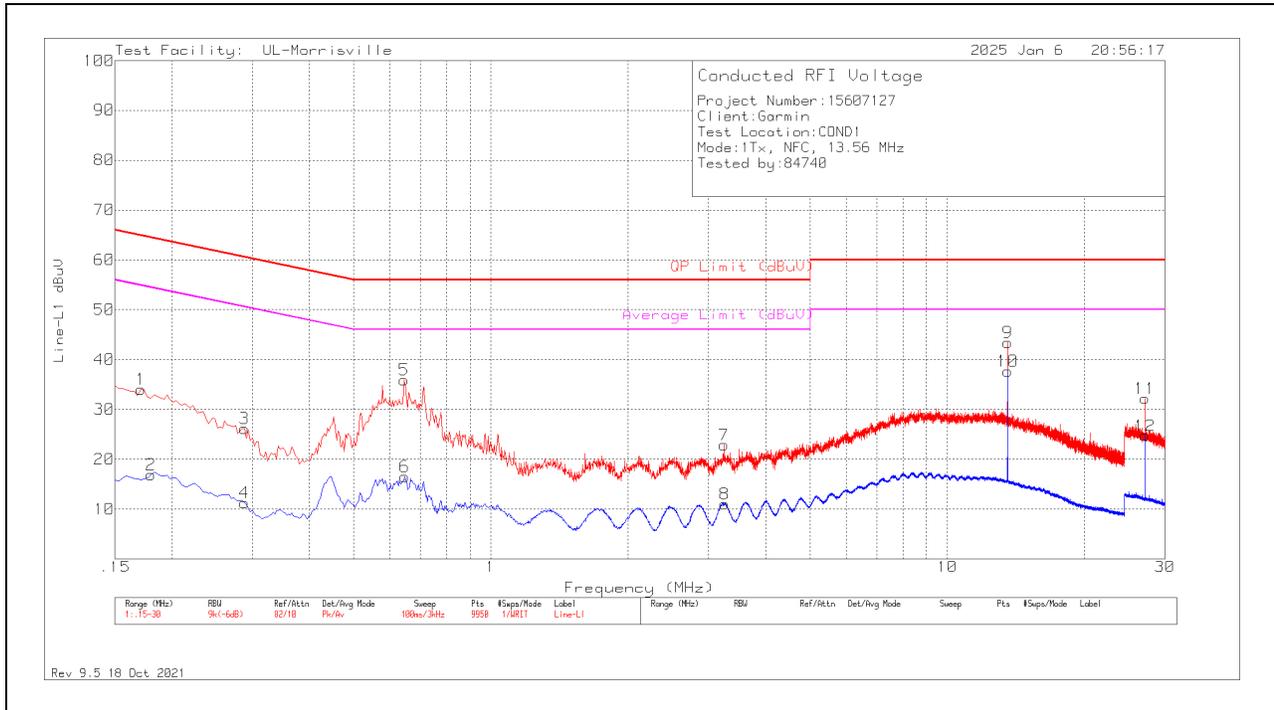
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

RESULTS

11.1. AC POWER LINE NORM

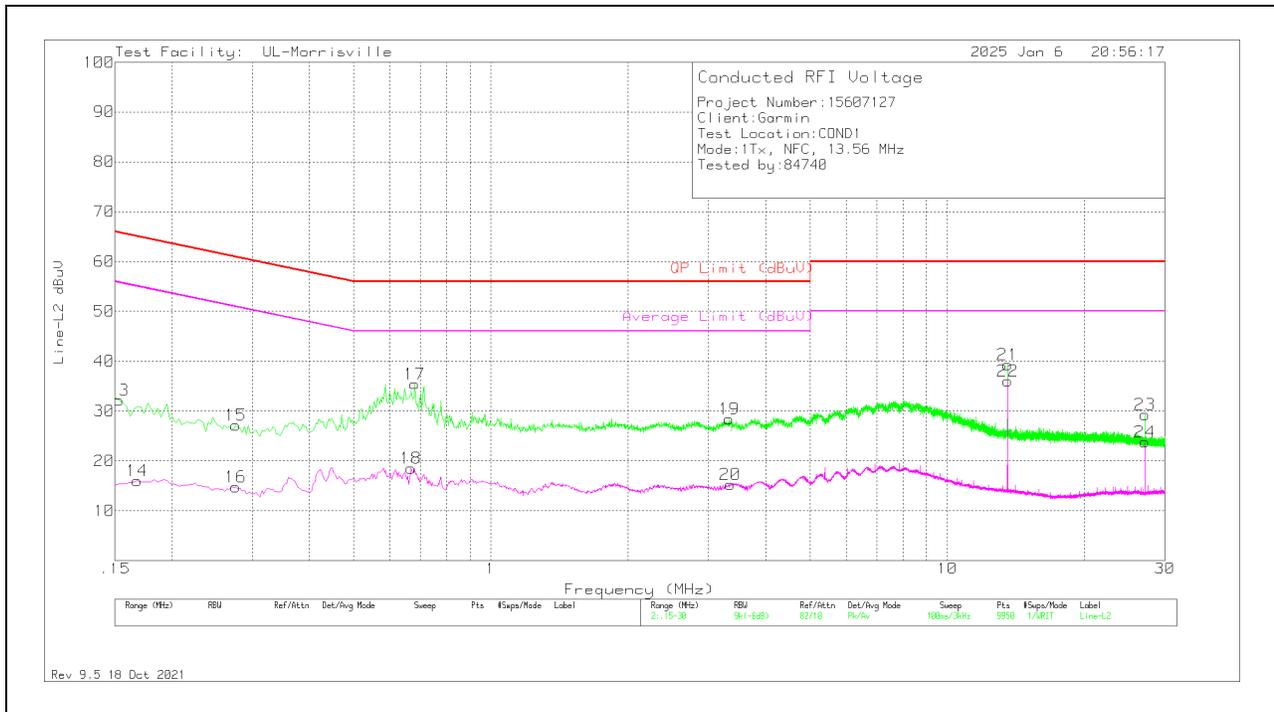
LINE 1 RESULTS



| Range 1: Line-L1 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 1 | .171 | 24.09 | Pk | .2 | 9.8 | 34.09 | 64.91 | -30.82 | - | - |
| 2 | .18 | 6.85 | Av | .2 | 9.8 | 16.85 | - | - | 54.49 | -37.64 |
| 3 | .288 | 16.26 | Pk | .1 | 9.8 | 26.16 | 60.58 | -34.42 | - | - |
| 4 | .288 | 1.34 | Av | .1 | 9.8 | 11.24 | - | - | 50.58 | -39.34 |
| 5 | .645 | 26.08 | Pk | 0 | 9.8 | 35.88 | 56 | -20.12 | - | - |
| 6 | .648 | 6.76 | Av | 0 | 9.8 | 16.56 | - | - | 46 | -29.44 |
| 7 | 3.243 | 13.04 | Pk | 0 | 9.8 | 22.84 | 56 | -33.16 | - | - |
| 8 | 3.249 | 1.23 | Av | 0 | 9.8 | 11.03 | - | - | 46 | -34.97 |
| 9 | 13.56 | 33.33 | Pk | .1 | 10 | 43.43 | 60 | -16.57 | - | - |
| 10 | 13.56 | 27.62 | Av | .1 | 10 | 37.72 | - | - | 50 | -12.28 |
| 11 | 27.123 | 21.62 | Pk | .4 | 10.2 | 32.22 | 60 | -27.78 | - | - |
| 12 | 27.12 | 14.12 | Av | .4 | 10.2 | 24.72 | - | - | 50 | -25.28 |

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS



| Range 2: Line-L2 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 13 | .153 | 22.18 | Pk | .2 | 9.8 | 32.18 | 65.84 | -33.66 | - | - |
| 14 | .168 | 5.99 | Av | .2 | 9.8 | 15.99 | - | - | 55.06 | -39.07 |
| 15 | .276 | 17.28 | Pk | .1 | 9.8 | 27.18 | 60.94 | -33.76 | - | - |
| 16 | .276 | 4.84 | Av | .1 | 9.8 | 14.74 | - | - | 50.94 | -36.2 |
| 17 | .681 | 25.67 | Pk | 0 | 9.8 | 35.47 | 56 | -20.53 | - | - |
| 18 | .669 | 8.7 | Av | 0 | 9.8 | 18.5 | - | - | 46 | -27.5 |
| 19 | 3.33 | 18.65 | Pk | 0 | 9.8 | 28.45 | 56 | -27.55 | - | - |
| 20 | 3.345 | 5.47 | Av | 0 | 9.8 | 15.27 | - | - | 46 | -30.73 |
| 21 | 13.56 | 29.15 | Pk | .1 | 10 | 39.25 | 60 | -20.75 | - | - |
| 22 | 13.56 | 25.92 | Av | .1 | 10 | 36.02 | - | - | 50 | -13.98 |
| 23 | 27.12 | 18.66 | Pk | .4 | 10.2 | 29.26 | 60 | -30.74 | - | - |
| 24 | 27.12 | 13.17 | Av | .4 | 10.2 | 23.77 | - | - | 50 | -26.23 |

Pk - Peak detector
 Av - Average detection

12. SETUP PHOTOS

Please refer to R15607127-EP2 for setup photos

END OF TEST REPORT

TEST REPORT

Report Number: R15607127-E2

Applicant : Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

Model : A04907

FCC ID : IPH-04907

IC : 1792A-04907

EUT Description : Extremity Worn Digital Transceiver

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 3
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2025-03-25

Prepared by:
UL LLC
12 Laboratory Dr.
Research Triangle Park, NC 27709 U.S.A.
TEL: (919) 549-1400



REPORT REVISION HISTORY

| Rev. | Issue Date | Revisions | Revised By |
|------|------------|------------------------------|------------------|
| v1 | 2025-02-13 | Initial Issue | Chandler Stanley |
| V2 | 2025-03-24 | Retook 6dB BW for Some Modes | Chandler Stanley |
| V3 | 2025-03-25 | Updated Power | Chandler Stanley |

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

EUT DESCRIPTION: Extremity Worn Digital Transceiver

MODEL: A04907

SERIAL NUMBER: 3497652467 / 3497995201 / 3497652312 / 3497652378 /
3497652376

SAMPLE RECEIPT DATE: 2024-12-17

DATE TESTED: 2024-12-31 to 2025-03-21

| APPLICABLE STANDARDS | |
|--------------------------------|--------------------|
| STANDARD | TEST RESULTS |
| CFR 47 Part 15 Subpart C | |
| ISED RSS-247 Issue 3 | Refer to Section 2 |
| ISED RSS-GEN Issue 5 + A1 + A2 | |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released
For UL LLC By:

Prepared By:



Michael Antola
Senior Staff Engineer
Consumer, Medical and IT Segment
UL LLC

Chandler Stanley
Engineer
Consumer, Medical and IT Segment
UL LLC

2. TEST RESULTS SUMMARY

This report contains info provided by the customer which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer.

Below is a list of the data/info provided by the customer:

- 1) Antenna gain and type (see section 6.3)
- 2) Worst-case data rates (see section 6.5)

| FCC Clause | ISED Clause | Requirement | Result | Comment |
|----------------|-------------------|------------------------------|-------------------------|--------------------------------------|
| See Comment | | Duty Cycle | Reporting purposes only | ANSI C63.10 Section 11.6. |
| - | RSS-GEN 6.7 | 99% OBW | Reporting purposes only | ANSI C63.10 Section 6.9.3. |
| 15.247 (a) (2) | RSS-247 5.2 (a) | 6dB BW | Compliant | None |
| 15.247 (b) (3) | RSS-247 5.4 (d) | Output Power | | |
| See Comment | | Average power | Reporting purposes only | Per ANSI C63.10, Section 11.9.2.3.2. |
| 15.247 (e) | RSS-247 5.2 (b) | PSD | Compliant | None |
| 15.247 (d) | RSS-247 5.5 | Conducted Spurious Emissions | | |
| 15.209, 15.205 | RSS-GEN 8.9, 8.10 | Radiated Emissions | | |
| 15.207 | RSS-Gen 8.8 | AC Mains Conducted Emissions | | |

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 15, ANSI C63.10-2020, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 3.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

| | Address | ISED CABID | ISED Company Number | FCC Registration |
|-------------------------------------|--|------------|---------------------|------------------|
| <input type="checkbox"/> | Building: 12 Laboratory Dr RTP, NC 27709, U.S.A | US0067 | 2180C | 825374 |
| <input checked="" type="checkbox"/> | Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A | | 27265 | |

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER | UNCERTAINTY |
|--|-----------------------------|
| Radio Frequency (Spectrum Analyzer) | 141.16 Hz |
| Occupied Channel Bandwidth | 1.22% |
| RF output power, conducted | 1.3 dB (PK) 0.45 dB (AV) |
| Power Spectral Density, conducted | 2.47 dB |
| Unwanted Emissions, conducted | 1.94 dB |
| All emissions, radiated | 6.01 dB |
| Conducted Emissions (0.150-30MHz) - LISN | 3.40 dB |
| Temperature | 0.57°C |
| Humidity | 3.39% |
| DC Supply voltages | 1.70% |
| Time | 3.39% |

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\text{Final Voltage (dBuV)} = \text{Measured Voltage (dBuV)} + \text{Cable Loss (dB)} + \text{Limiter Factor (dB)} + \text{LISN Insertion Loss.}$$

$$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is an extremity worn digital transceiver with BT, BLE, ANT/ANT+, 802.11b/g/n 2.4GHz WLAN, NFC, and Global Navigation Satellite System (GNSS) receiver. This report covers testing on the ANT/ANT+, BLE, and 2.4GHz WLAN radios.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

| Frequency Range (MHz) | Mode | Output Power (dBm) | Output Power (mW) |
|-----------------------|--------------|--------------------|-------------------|
| 2412 - 2472 | 802.11b | 15.14 | 32.66 |
| 2412 - 2472 | 802.11g | 21.31 | 135.21 |
| 2412 - 2472 | 802.11n HT20 | 20.19 | 104.47 |
| 2402 - 2480 | ANT/ANT+ | 4.71 | 2.96 |
| 2402 - 2480 | BLE 1Mbps | 4.73 | 2.97 |
| 2402 - 2480 | BLE 2Mbps | 4.75 | 2.99 |

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:
 The radio utilizes an antenna with the following type and maximum gain:

| Type | Frequency Range (MHz) | Maximum Gain (dBi) |
|---------------|-----------------------|--------------------|
| Bezel Antenna | 2402-2480 | -0.2 |

6.4. SOFTWARE AND FIRMWARE

Software Version: 3.95

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest PSD as worst-case scenario.

For 2.4 WLAN, PSD was taken at the mid channel power setting (highest) for all channels.

Power is not distributed equally among all channels and therefore radiated spurious emissions between 1GHz and 18GHz were performed on mid channel and the highest power low and high channels. Band edge scans were performed on all inner/outer channels up to mid channel power.

The fundamental of the EUT was investigated in three orthogonal axes, X, Y, and Z. The worst-case orientation was determined to be the Z orientation. Therefore, all testing was performed with the EUT in the Z orientation.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

| Support Equipment List | | | | |
|------------------------|----------------|-------------|---------------|--------|
| Description | Manufacturer | Model | Serial Number | FCC ID |
| AC Adaptor | Garmin/Phihong | AQ27A-59CFA | N/A | N/A |

I/O CABLES

| I/O Cable List | | | | | | |
|----------------|-------------|----------------------|-------------------|------------|------------------|--------------------|
| Cable No. | Port | # of Identical Ports | Connector Type | Cable Type | Cable Length (m) | Remarks |
| 1 | Proprietary | 1 | 4 pin Proprietary | Shielded | <3m | Program/Charge EUT |

TEST SETUP

EUT was configured using its own built-in push buttons prior to testing. For final emissions testing, the EUT was connected to AC mains.

SETUP DIAGRAMS

Please refer to R15607127-EP1 for setup diagrams

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment Used - Wireless Conducted Measurement Equipment

| Equipment ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|-------------------------|--|-----------------------|-------------------|------------|------------|
| Common Equipment | | | | | |
| Conducted Room 1 | | | | | |
| 90416 | Spectrum Analyzer | Keysight Technologies | N9030A | 2024-09-23 | 2025-09-23 |
| 179892 | Environmental Meter | Fisher Scientific | 15-077-963 | 2024-08-12 | 2025-08-12 |
| 211057 | Real-Time Peak Power Sensor 50MHz to 8GHz | Boonton | RTP5000 | 2024-08-01 | 2025-08-01 |
| SOFTEMI | Antenna Port Software | UL | Version 2024.2.23 | NA | NA |
| Attenuators | | | | | |
| 226562 | SMA Coaxial 10dB Attenuator 25MHz-18GHz | CentricRF | C18S2-10 | 2024-04-11 | 2025-04-11 |

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

| Equip. ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|----------------------------------|---|-------------------|---------------------------|------------|------------|
| 1-18 GHz | | | | | |
| 135143 | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren | 3117 | 2024-02-07 | 2026-02-07 |
| Gain-Loss Chains | | | | | |
| 91979 | Gain-loss string: 1-18GHz | Various | Various | 2024-05-08 | 2025-05-08 |
| Receiver & Software | | | | | |
| 206496 | Spectrum Analyzer | Rohde & Schwarz | ESW44 | 2024-08-29 | 2025-08-29 |
| SOFTEMI | EMI Software | UL | Version 9.5 (18 Oct 2021) | | |
| Additional Equipment used | | | | | |
| 241205 | Environmental Meter | Fisher Scientific | 15-077-963 | 2023-09-05 | 2025-09-05 |

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

| Equip. ID | Description | Manufacturer/Brand | Model Number | Last Cal. | Next Cal. |
|----------------------------------|---|----------------------|---------------------------|------------|------------|
| 0.009-30MHz | | | | | |
| 135144 | Active Loop Antenna | ETS-Lindgren | 6502 | 2024-10-02 | 2025-10-02 |
| 30-1000 MHz | | | | | |
| 90628 | Hybrid Broadband Antenna | Sunol Sciences Corp. | JB3 | 2024-01-02 | 2026-01-02 |
| 1-18 GHz | | | | | |
| 89509 | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren | 3117 | 2023-05-23 | 2025-05-23 |
| 18-26.5 GHz | | | | | |
| 204704 | Horn Antenna, 18-26.5GHz | Com-Power | AH-826 | 2023-07-20 | 2025-07-20 |
| Gain-Loss Chains | | | | | |
| 207638 | Gain-loss string: 0.009-30MHz | Various | Various | 2024-05-22 | 2025-05-22 |
| 207639 | Gain-loss string: 25-1000MHz | Various | Various | 2024-05-22 | 2025-05-22 |
| 207640 | Gain-loss string: 1-18GHz | Various | Various | 2024-05-22 | 2025-05-22 |
| 225795 | Gain-loss string: 18-40GHz | Various | Various | 2024-05-22 | 2025-05-22 |
| Receiver & Software | | | | | |
| 197955 | Spectrum Analyzer | Rohde & Schwarz | ESW44 | 2024-04-16 | 2025-04-16 |
| 81018 | Spectrum Analyzer | Agilent | E4446A | 2024-07-31 | 2025-07-31 |
| SOFTEMI | EMI Software | UL | Version 9.5 (18 Oct 2021) | | |
| Additional Equipment used | | | | | |
| 241204 | Environmental Meter | Fisher Scientific | 15-077-963 | 2023-09-05 | 2025-09-05 |

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

| Equipment ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|--------------|---|---------------------|---------------------------|------------|------------|
| CBL087 | Coax cable, RG223, N-male to BNC-male, 20-ft. | Pasternack | PE3W06143-240 | 2024-04-04 | 2025-04-04 |
| 179892 | Environmental Meter | Fisher Scientific | 15-077-963 | 2024-08-12 | 2025-08-12 |
| 80391 | LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A | Fischer Custom Com. | FCC-LISN-50/250-25-2-01 | 2024-08-01 | 2025-08-01 |
| 70374 | EMI Test Receiver 9kHz-7GHz | Rohde & Schwarz | ESCI 7 | 2024-07-30 | 2025-07-30 |
| 52859 | Transient Limiter, 0.009-100MHz | Electro-Metrics | EM-7600 | 2024-04-04 | 2025-04-04 |
| PS216 | AC Power Source | Elgar | CW2501M | NA | NA |
| SOFTEMI | EMI Software | UL | Version 9.5 (18 Oct 2021) | | |
| 84681 | ANSI C63.4 1m extension cable. | UL | Per Annex B of ANSI C63.4 | 2024-04-04 | 2025-04-04 |

8. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10-2020 Section 11.6

6 dB BW: ANSI C63.10-2020 Subclause -11.8.2

Occupied BW (99%): ANSI C63.10-2020 Section 6.9.3

Output Power: ANSI C63.10-2020 Subclause -11.9.1.2 Method PKPM1 Peak-reading power meter
ANSI C63.10-2020 Subclause -11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

PSD: ANSI C63.10-2020 Subclause -11.10.2 Method PKPSD (peak PSD)

Conducted emissions non-restricted frequency bands: ANSI C63.10-2020 Subclause -11.11 and 6.10.4

Radiated emissions restricted frequency bands: ANSI C63.10-2020 Subclause -11.12.1 and 6.10.5

General radiated emissions: ANSI C63.10 Subclause - 6.3-6.6

AC Power-line conducted emissions: ANSI C63.10-2020, Section 6.2.

9. ANTENNA PORT TEST RESULTS

Note: To reduce file size of report, only representative plots are included for some conducted test data in section 9.

9.1. ON TIME AND DUTY CYCLE

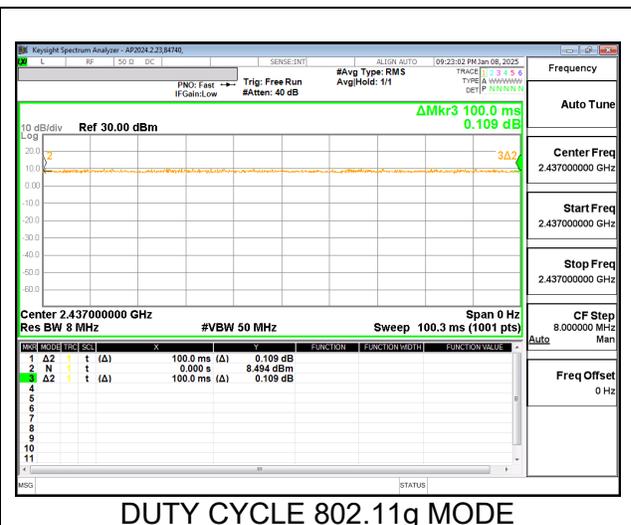
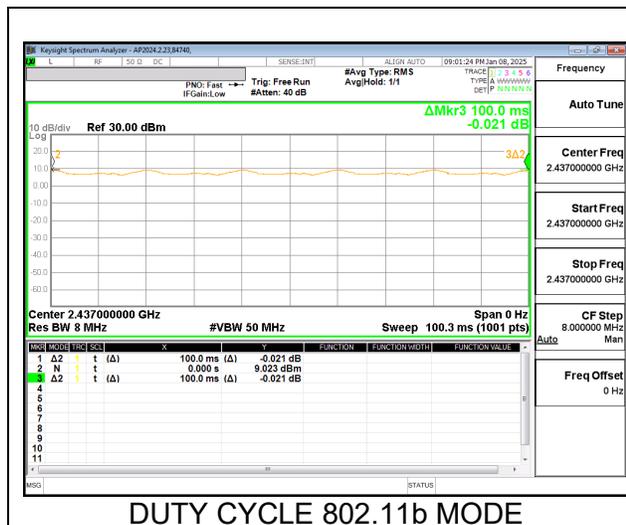
LIMITS

None; for reporting purposes only.

PROCEDURE

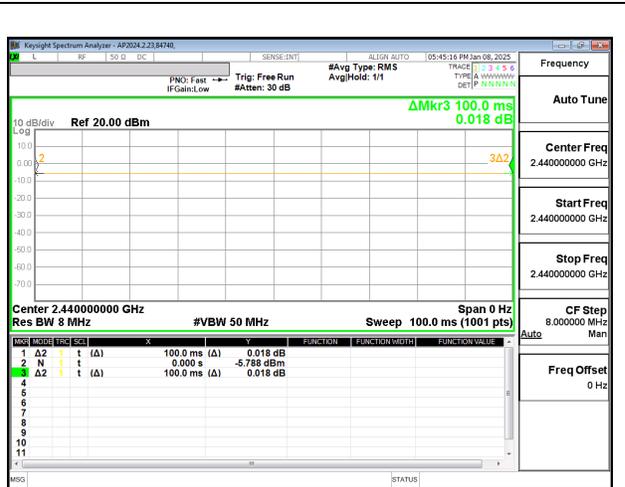
KDB 558074 Zero-Span Spectrum Analyzer Method.

| Mode | ON Time B (ms) | Period (ms) | Duty Cycle x (linear) | Duty Cycle (%) | Voltage Duty Cycle Correction Factor (dB) | RMS Duty Cycle Correction Factor (dB) |
|--------------|----------------|-------------|-----------------------|----------------|---|---------------------------------------|
| 802.11b | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.00 |
| 802.11g | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.00 |
| 802.11n HT20 | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.00 |
| ANT/ANT+ | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.00 |
| BLE 1Mbps | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.00 |
| BLE 2Mbps | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.00 |

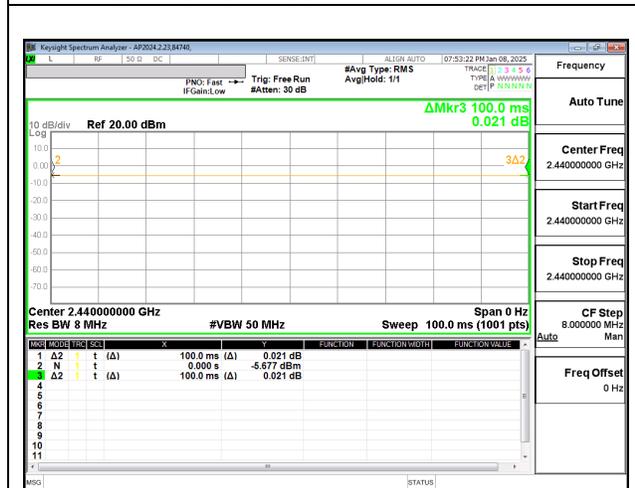




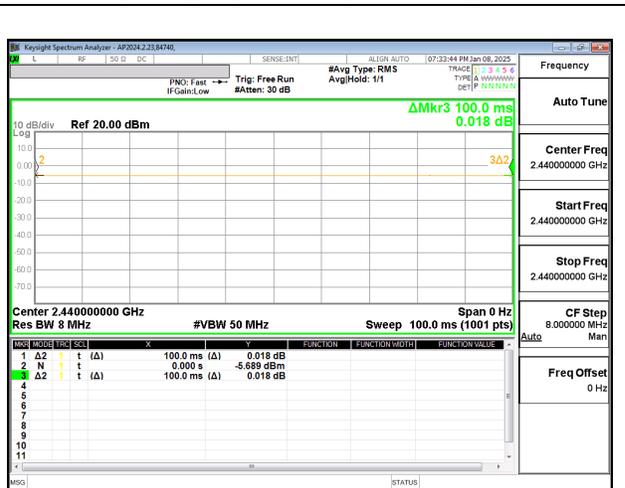
DUTY CYCLE 802.11n HT20 MODE



DUTY CYCLE ANT/ANT+ MODE



DUTY CYCLE BLE 1Mbps



DUTY CYCLE BLE 2Mbps

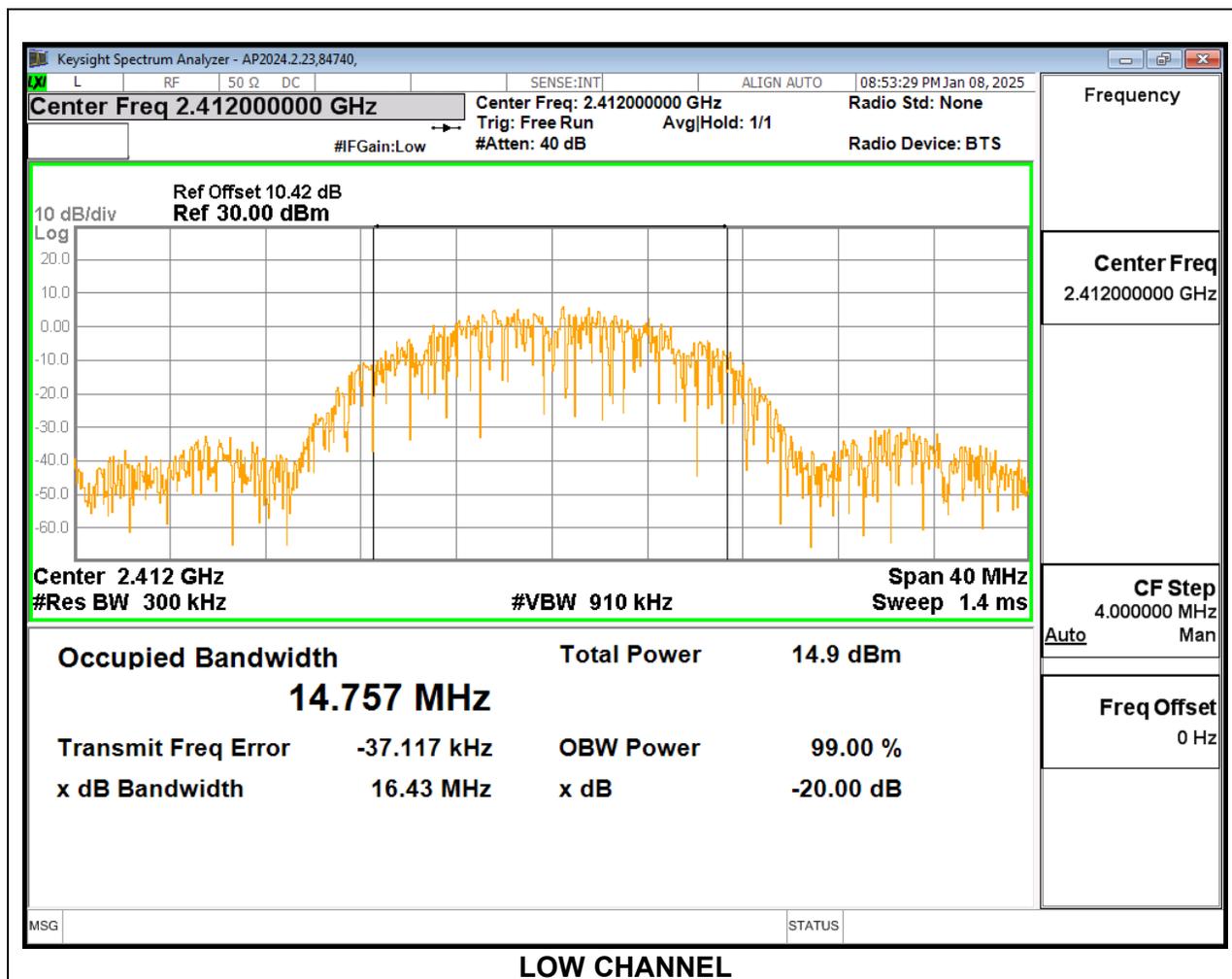
9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

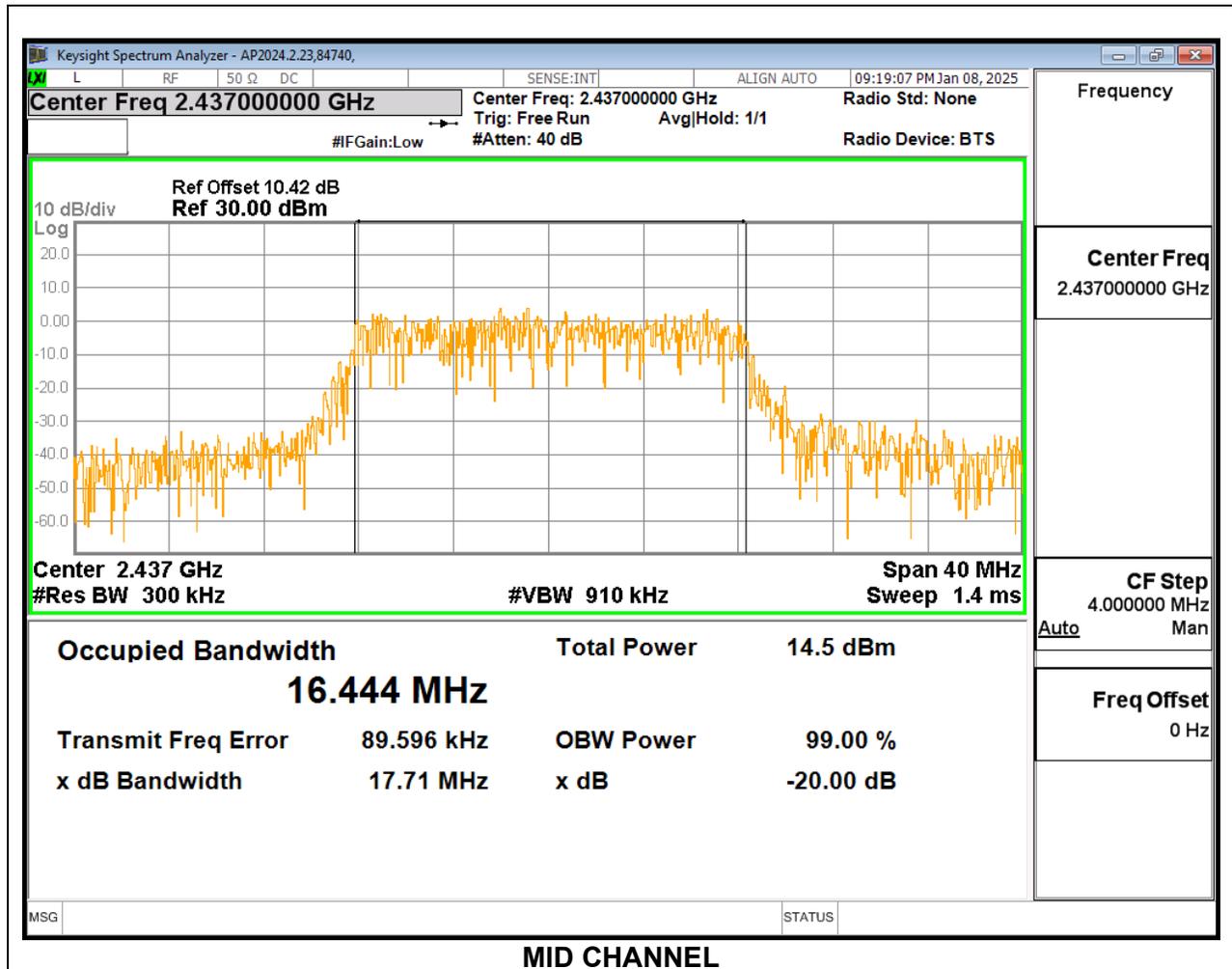
9.2.1. 802.11b MODE

| Channel | Frequency (MHz) | 99% Bandwidth Chain 0 (MHz) |
|---------|--------------------|--------------------------------------|
| Low 1 | 2412 | 14.757 |
| Mid 6 | 2437 | 14.563 |
| High 13 | 2472 | 13.976 |



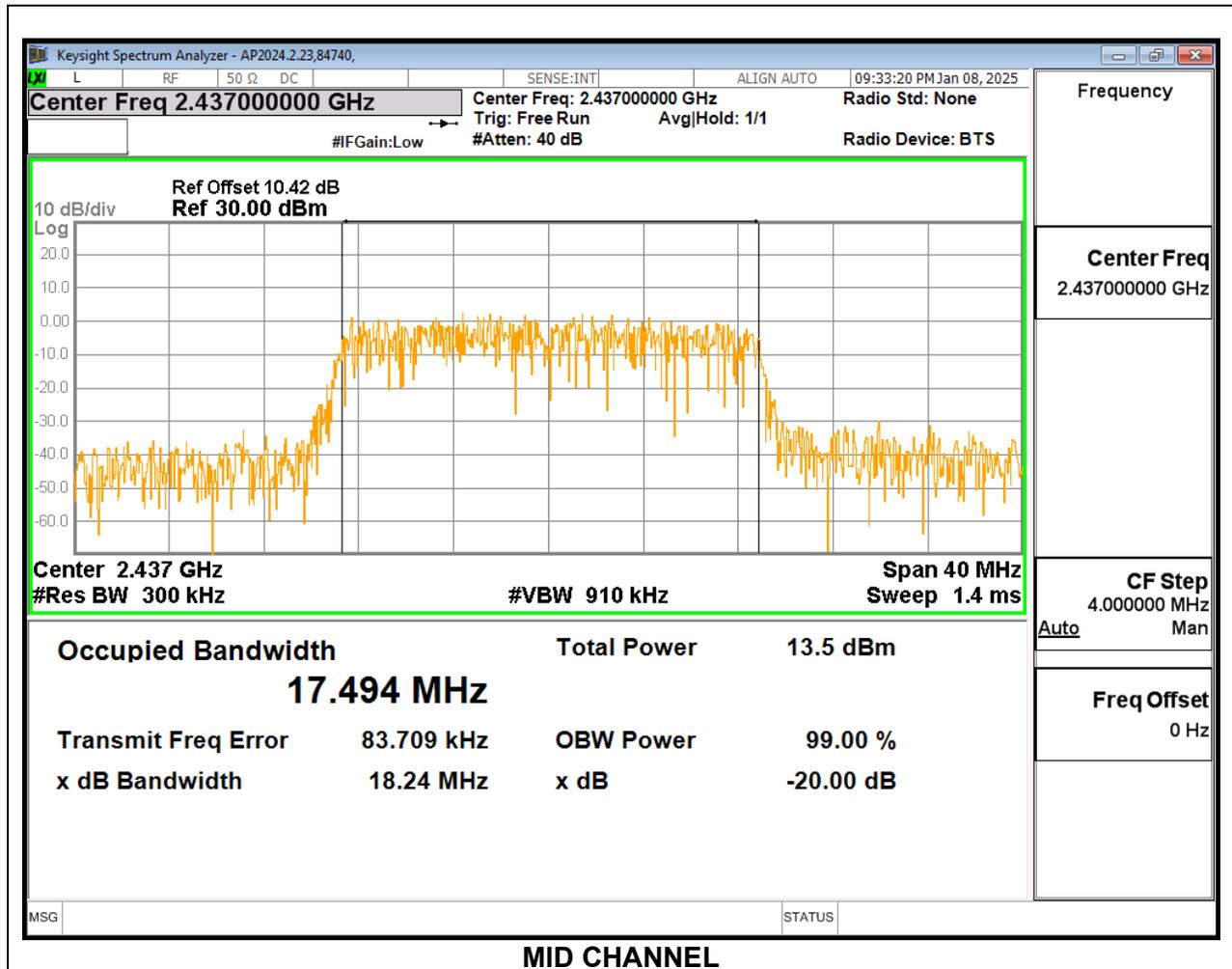
9.2.2. 802.11g MODE

| Channel | Frequency (MHz) | 99% Bandwidth Chain 0 (MHz) |
|---------|--------------------|-----------------------------------|
| Low 1 | 2412 | 16.354 |
| Mid 6 | 2437 | 16.444 |
| High 13 | 2472 | 15.952 |



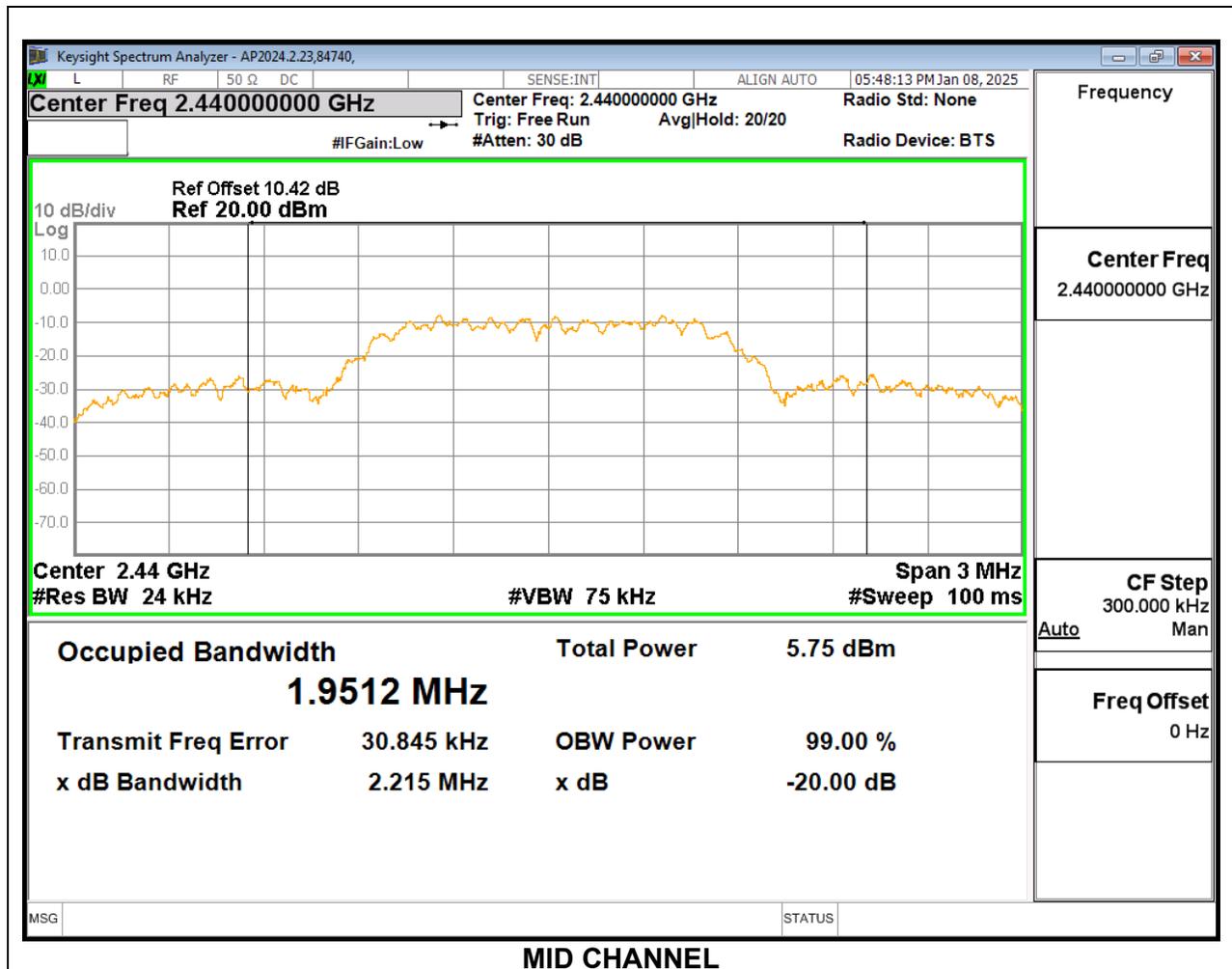
9.2.3. 802.11n HT20 MODE

| Channel | Frequency (MHz) | 99% Bandwidth Chain 0 (MHz) |
|---------|--------------------|-----------------------------------|
| Low 1 | 2412 | 17.26 |
| Mid 6 | 2437 | 17.494 |
| High 13 | 2472 | 16.729 |



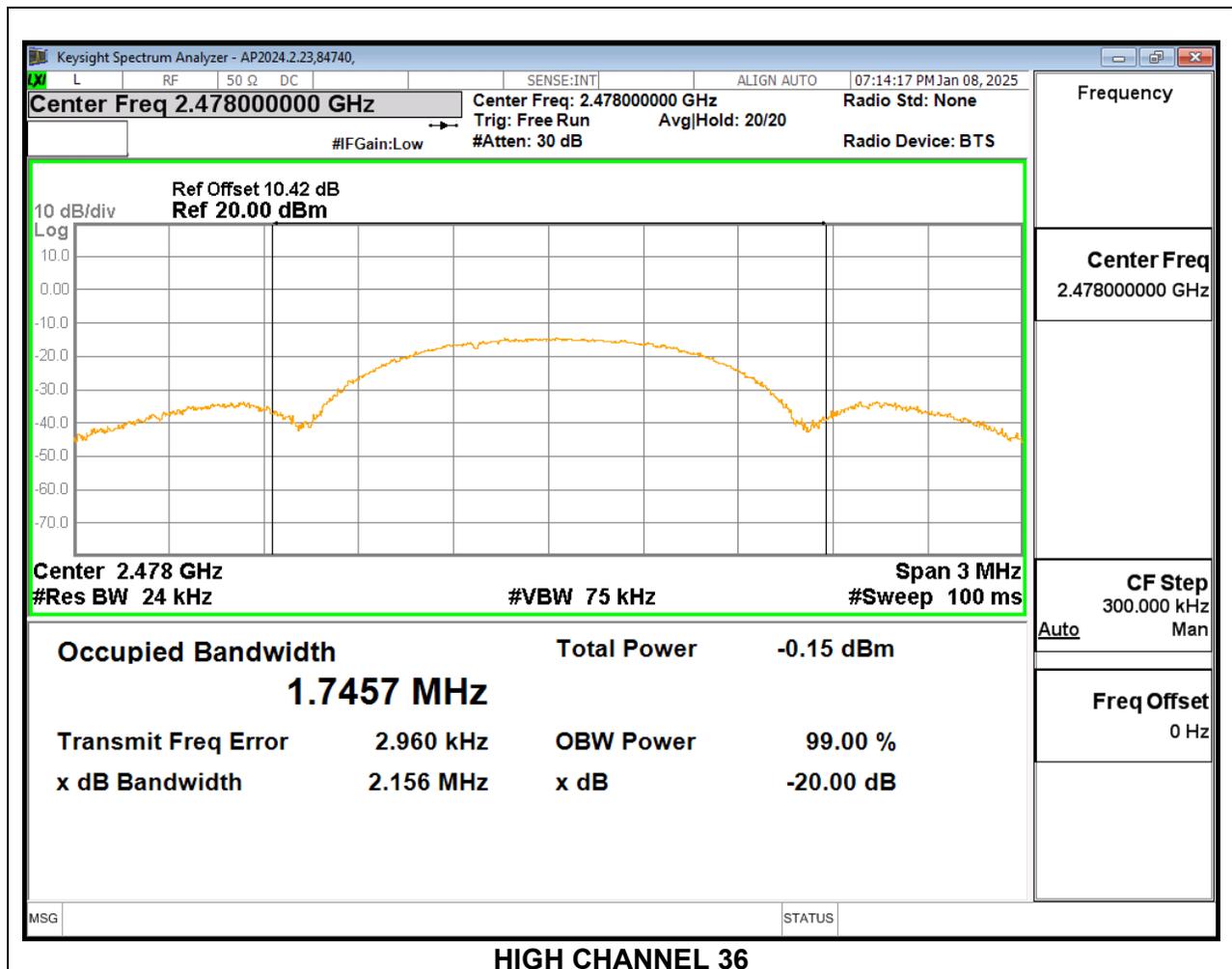
9.2.4. ANT/ANT+ MODE

| Frequency (MHz) | 99% Bandwidth Chain 0 (MHz) |
|--------------------|--------------------------------------|
| 2402 | 1.3583 |
| 2404 | 1.3037 |
| 2440 | 1.9512 |
| 2476 | 1.3729 |
| 2478 | 1.9347 |
| 2480 | 1.9023 |



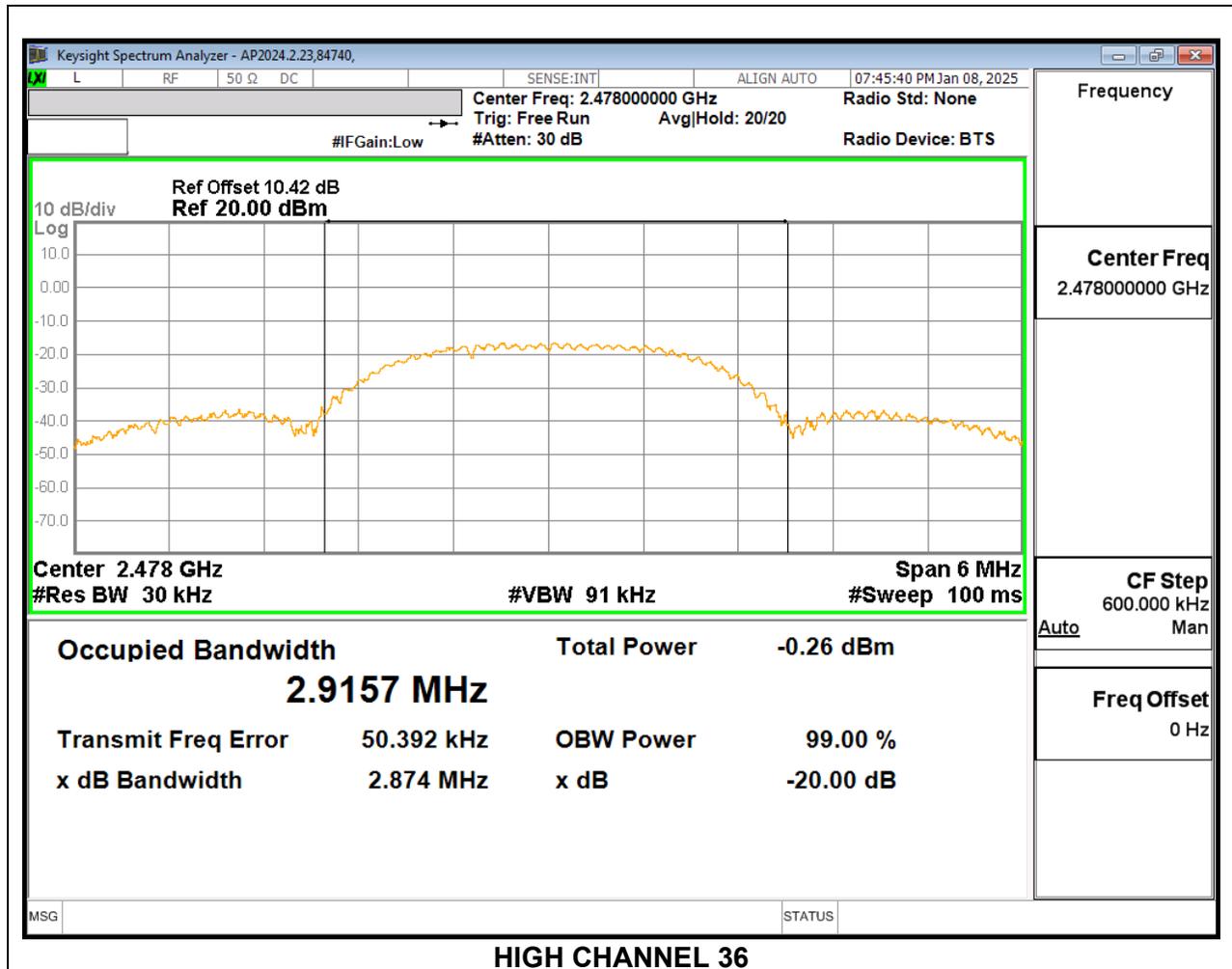
9.2.5. BLE 1Mbps MODE

| Channel | Frequency (MHz) | 99% Bandwidth Chain 0 (MHz) |
|---------|-----------------|-----------------------------|
| Low 37 | 2402 | 1.3208 |
| Low 0 | 2404 | 1.3455 |
| Mid 17 | 2440 | 1.4636 |
| High 35 | 2476 | 1.2738 |
| High 36 | 2478 | 1.7457 |
| High 39 | 2480 | 1.3046 |



9.2.6. BLE 2Mbps MODE

| Channel | Frequency (MHz) | 99% Bandwidth Chain 0 (MHz) |
|---------|--------------------|--------------------------------------|
| Low 37 | 2402 | 2.5316 |
| Low 0 | 2404 | 2.6352 |
| Mid 17 | 2440 | 2.7809 |
| High 35 | 2476 | 2.5658 |
| High 36 | 2478 | 2.9157 |
| High 39 | 2480 | 2.8239 |



9.3. 6 dB BANDWIDTH

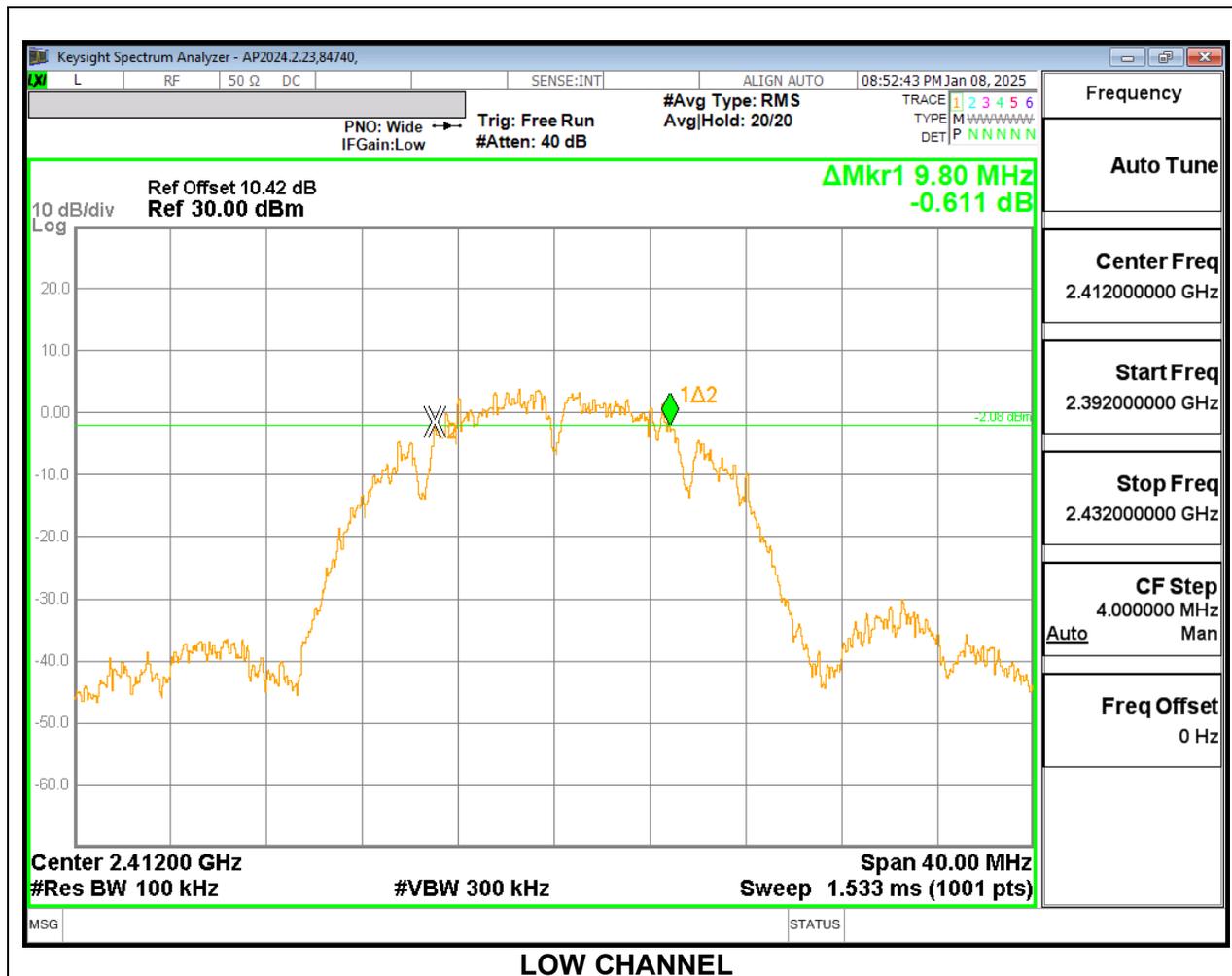
LIMITS

FCC §15.247 (a) (2)
 RSS-247 5.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

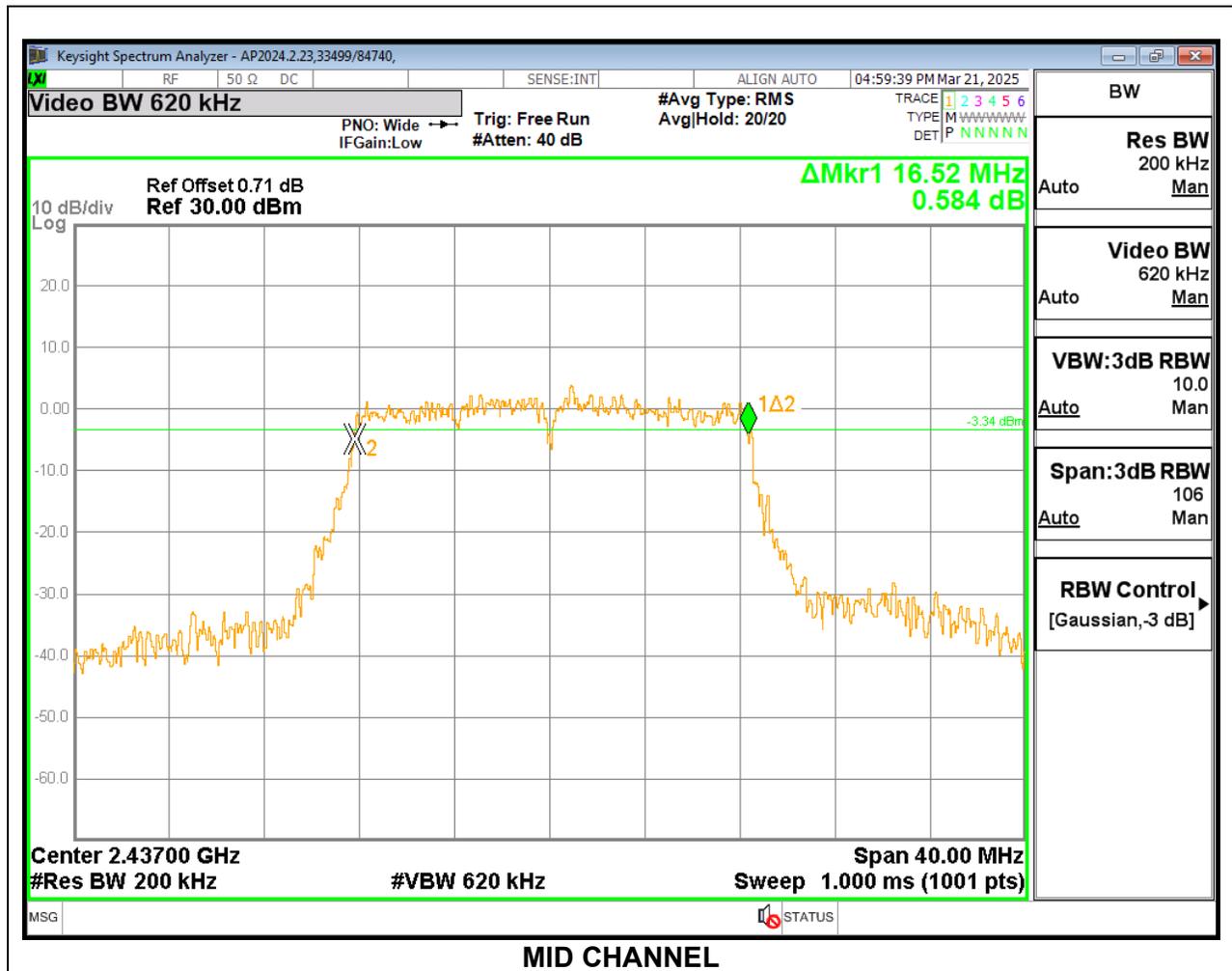
9.3.1. 802.11b MODE

| Channel | Frequency (MHz) | 6 dB BW Chain 0 (MHz) | Minimum Limit (MHz) |
|---------|-----------------|-----------------------|---------------------|
| Low 1 | 2412 | 9.8 | 0.5 |
| Mid 6 | 2437 | 8.52 | 0.5 |
| High 13 | 2472 | 9.12 | 0.5 |



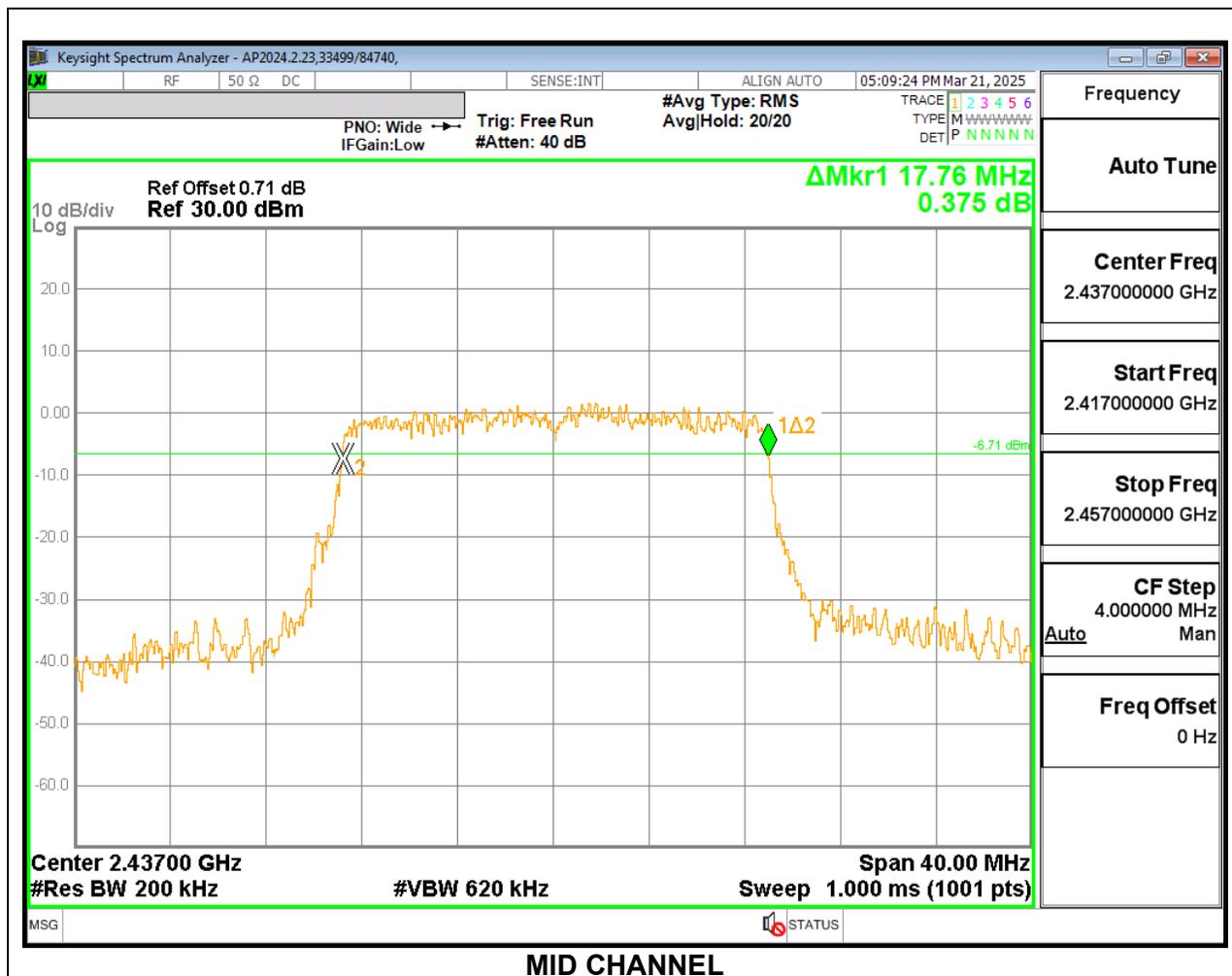
9.3.2. 802.11g MODE

| Channel | Frequency (MHz) | 6 dB BW Chain 0 (MHz) | Minimum Limit (MHz) |
|---------|--------------------|--------------------------------|---------------------------|
| Low 1 | 2412 | 16.20 | 0.5 |
| Mid 6 | 2437 | 16.52 | 0.5 |
| High 13 | 2472 | 16.04 | 0.5 |



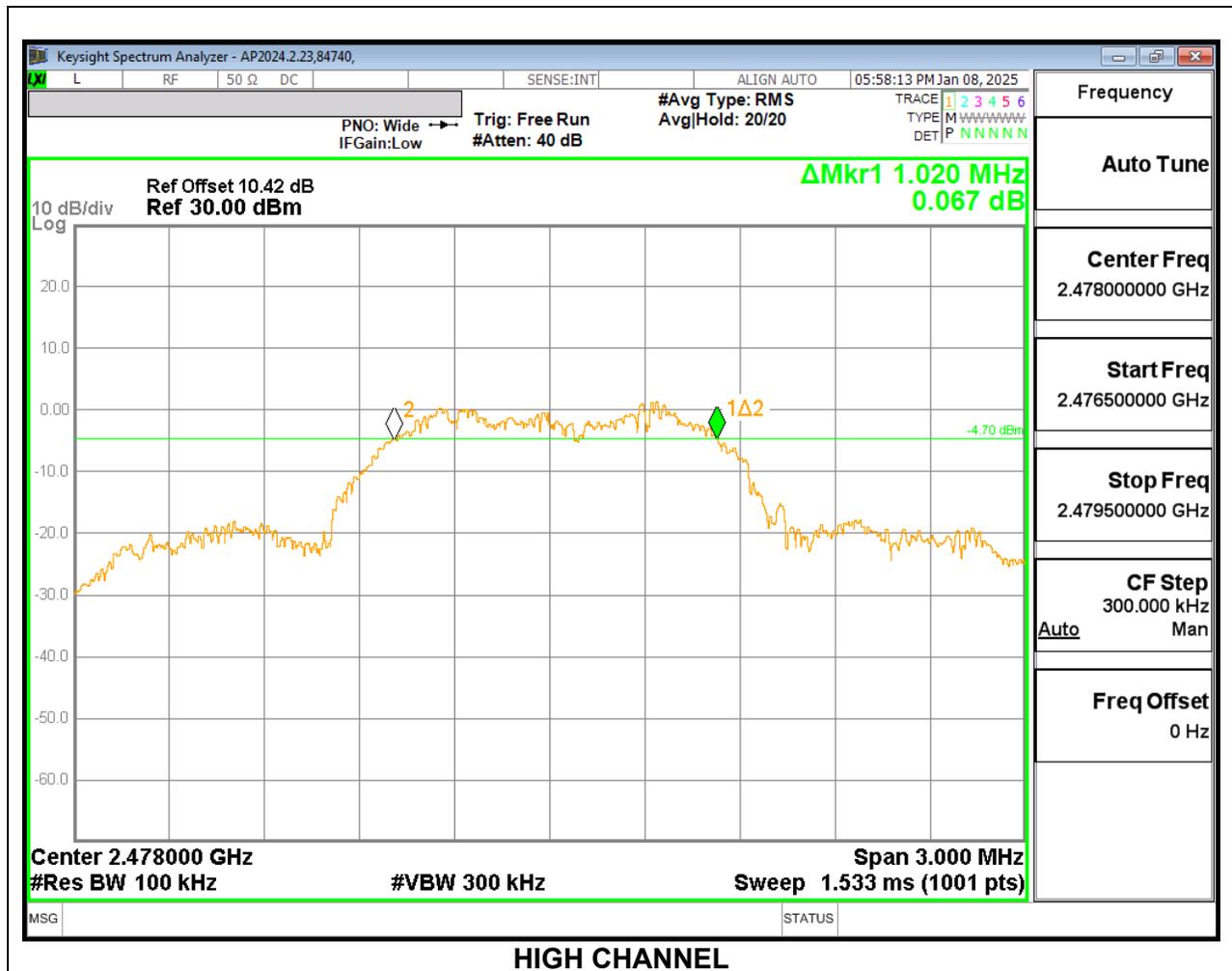
9.3.3. 802.11n HT20 MODE

| Channel | Frequency (MHz) | 6 dB BW Chain 0 (MHz) | Minimum Limit (MHz) |
|---------|-----------------|-----------------------|---------------------|
| Low 1 | 2412 | 16.84 | 0.5 |
| Mid 6 | 2437 | 17.76 | 0.5 |
| High 13 | 2472 | 16.92 | 0.5 |



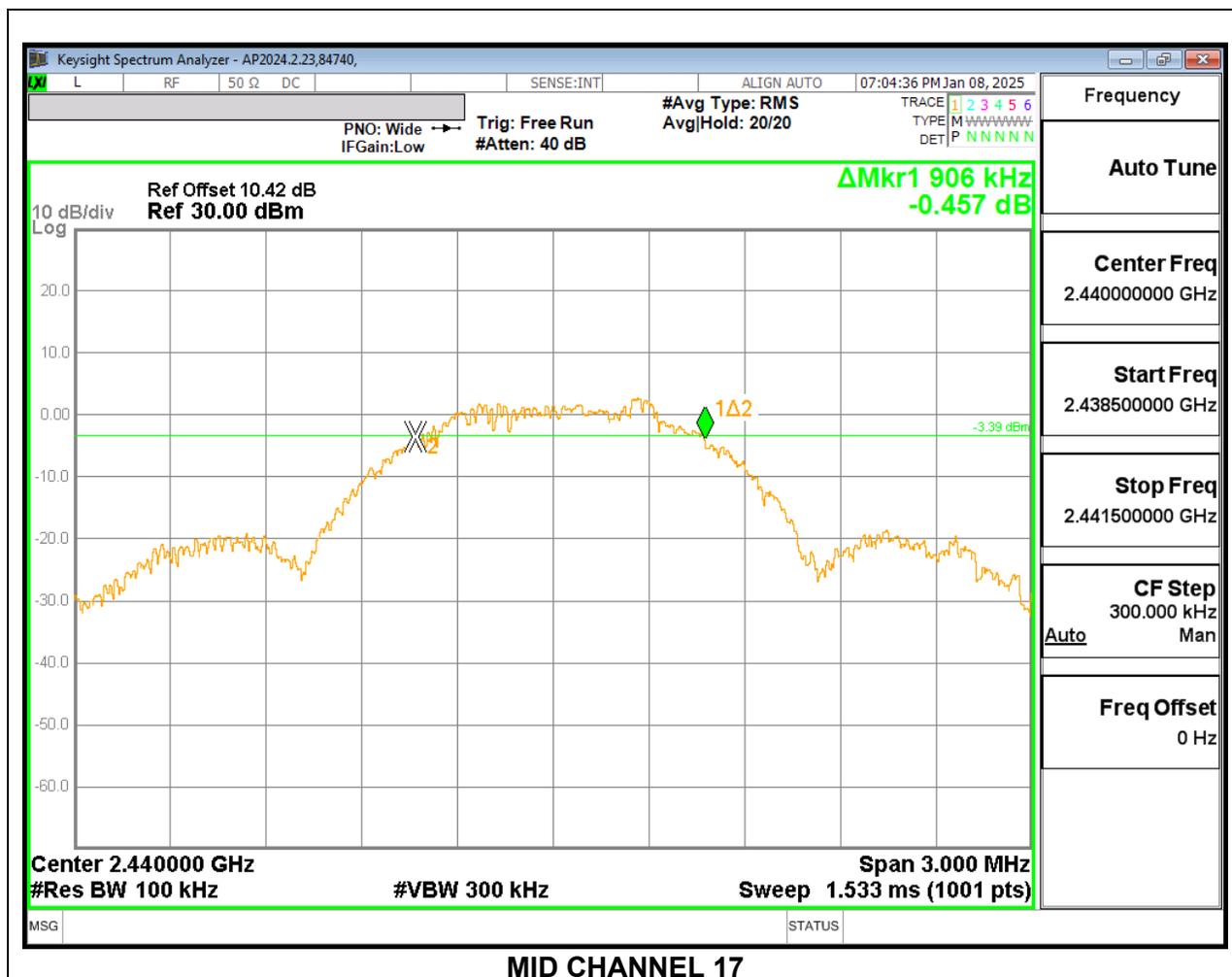
9.3.4. ANT/ANT+ MODE

| Frequency (MHz) | 6 dB Bandwidth Chain 0 (MHz) | Minimum Limit (MHz) |
|-----------------|------------------------------|---------------------|
| 2402 | 0.927 | 0.5 |
| 2404 | 0.852 | 0.5 |
| 2440 | 0.993 | 0.5 |
| 2476 | 0.939 | 0.5 |
| 2478 | 1.020 | 0.5 |
| 2480 | 0.966 | 0.5 |



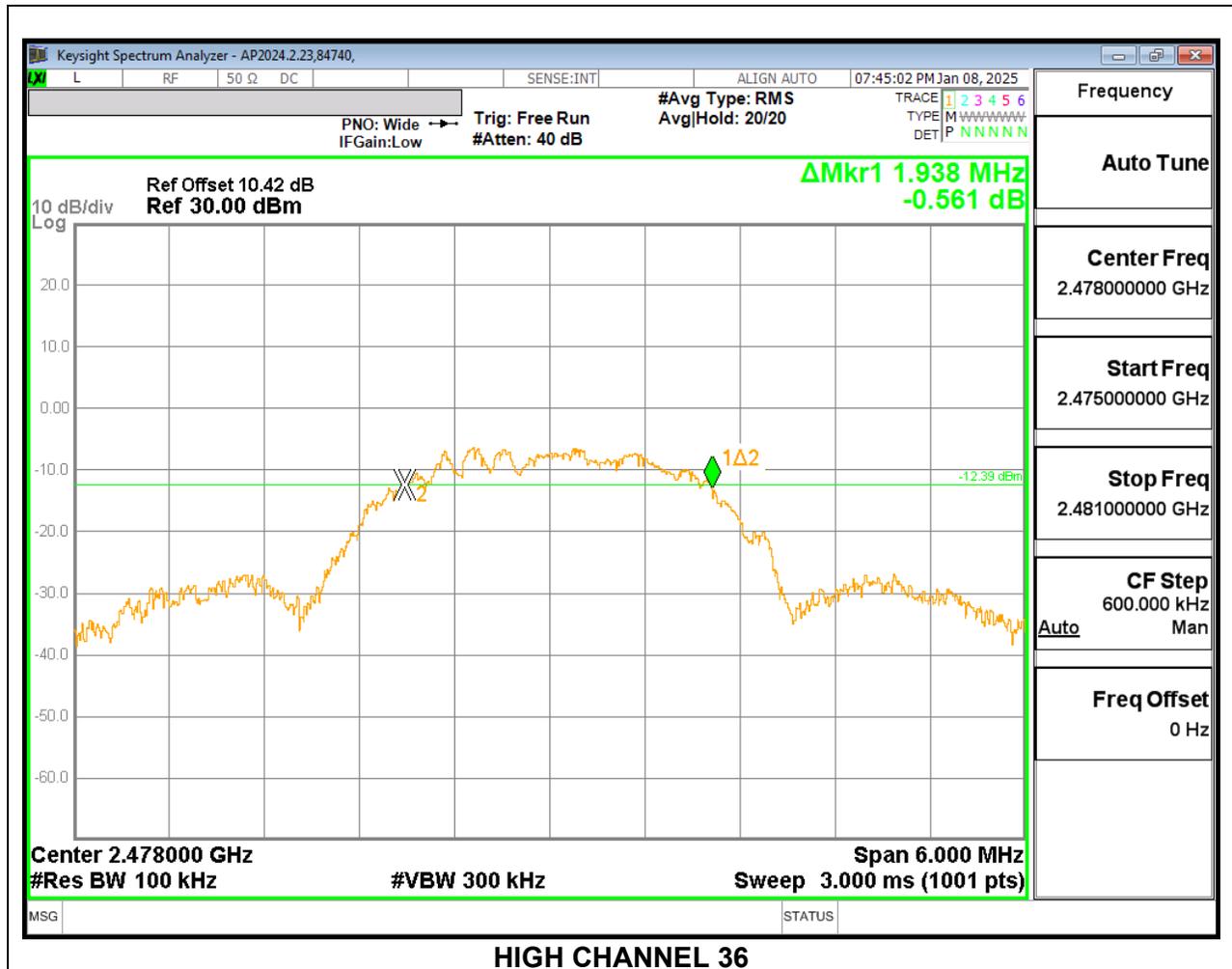
9.3.5. BLE 1Mbps MODE

| Channel | Frequency (MHz) | 6 dB Bandwidth Chain 0 (MHz) | Minimum Limit (MHz) |
|---------|-----------------|------------------------------|---------------------|
| Low 37 | 2402 | 0.786 | 0.5 |
| Low 0 | 2404 | 0.816 | 0.5 |
| Mid 17 | 2440 | 0.906 | 0.5 |
| High 35 | 2476 | 0.786 | 0.5 |
| High 36 | 2478 | 0.906 | 0.5 |
| High 39 | 2480 | 0.828 | 0.5 |



9.3.6. BLE 2Mbps MODE

| Channel | Frequency (MHz) | 6 dB Bandwidth Chain 0 (MHz) | Minimum Limit (MHz) |
|---------|-----------------|------------------------------|---------------------|
| Low 37 | 2402 | 1.440 | 0.5 |
| Low 0 | 2404 | 1.728 | 0.5 |
| Mid 17 | 2440 | 1.890 | 0.5 |
| High 35 | 2476 | 1.596 | 0.5 |
| High 36 | 2478 | 1.938 | 0.5 |
| High 39 | 2480 | 1.860 | 0.5 |



9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)
RSS-247 5.4 (d)

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of .68 dB (cable) was entered as an offset in the power meter.

The power output was measured on the EUT antenna port using SMA cable connected to a power meter via wideband power sensor. Peak output power was read directly from power meter.

RESULTS

9.4.1. 802.11b MODE

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

Results:

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Power Limit (dBm) | Margin (dB) |
|----------------|----------------------------|---|----------------------------------|------------------------|
| Low 1 | 2412 | 15.14 | 30.00 | -14.86 |
| Mid 6 | 2437 | 15.05 | 30.00 | -14.95 |
| High 13 | 2472 | 14.58 | 30.00 | -15.42 |

9.4.2. 802.11g MODE

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

Results:

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Power Limit (dBm) | Margin (dB) |
|---------|--------------------|-----------------------------------|-------------------------|----------------|
| Low 1 | 2412 | 21.01 | 30.00 | -8.99 |
| Mid 6 | 2437 | 21.31 | 30.00 | -8.69 |
| High 11 | 2462 | 20.78 | 30.00 | -9.22 |
| High 12 | 2467 | 19.20 | 30.00 | -10.80 |
| High 13 | 2472 | 16.82 | 30.00 | -13.18 |

9.4.3. 802.11n HT20 MODE

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

Results:

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Power Limit (dBm) | Margin (dB) |
|---------|--------------------|-----------------------------------|-------------------------|----------------|
| Low 1 | 2412 | 20.19 | 30.00 | -9.81 |
| Mid 6 | 2437 | 20.06 | 30.00 | -9.94 |
| High 12 | 2467 | 20.15 | 30.00 | -9.85 |
| High 13 | 2472 | 17.16 | 30.00 | -12.84 |

9.4.4. ANT/ANT+ MODE

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

| Frequency (MHz) | Chain 0 Meas Power (dBm) | Power Limit (dBm) | Margin (dB) |
|----------------------------|---|----------------------------------|------------------------|
| 2402 | -0.02 | 30.00 | -30.02 |
| 2404 | 4.08 | 30.00 | -25.92 |
| 2440 | 4.71 | 30.00 | -25.29 |
| 2478 | 3.62 | 30.00 | -26.38 |
| 2480 | -0.49 | 30.00 | -30.49 |

9.4.5. BLE 1Mbps MODE

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Power Limit (dBm) | Margin (dB) |
|----------------|----------------------------|---|----------------------------------|------------------------|
| Low 37 | 2402 | -0.10 | 30.00 | -30.10 |
| Low 0 | 2404 | 4.10 | 30.00 | -25.90 |
| Mid 17 | 2440 | 4.73 | 30.00 | -25.27 |
| High 35 | 2476 | 3.60 | 30.00 | -26.40 |
| High 36 | 2478 | -0.93 | 30.00 | -30.93 |
| High 39 | 2480 | -1.01 | 30.00 | -31.01 |

9.4.6. BLE 2Mbps MODE

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) | Power Limit (dBm) | Margin (dB) |
|----------------|----------------------------|---|----------------------------------|------------------------|
| Low 37 | 2402 | -0.43 | 30.00 | -30.43 |
| Low 0 | 2404 | 4.11 | 30.00 | -25.89 |
| Mid 17 | 2440 | 4.75 | 30.00 | -25.25 |
| High 35 | 2476 | 3.60 | 30.00 | -26.40 |
| High 36 | 2478 | -0.93 | 30.00 | -30.93 |
| High 39 | 2480 | -0.46 | 30.00 | -30.46 |

9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of .68 dB (cable) was entered as an offset in the power meter.

The power output was measured on the EUT antenna port using SMA cable with 10dB attenuator connected to a power meter via wideband power sensor. Gated average output power was read directly from power meter.

9.5.1. 2.4 WLAN Results

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

| Mode | Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) |
|--------------------|---------|--------------------|-----------------------------------|
| 802.11b | Low 1 | 2412 | 12.80 |
| | Mid 6 | 2437 | 13.50 |
| | High 13 | 2472 | 12.60 |
| 802.11g | Low 1 | 2412 | 15.00 |
| | Mid 6 | 2437 | 15.11 |
| | High 11 | 2462 | 14.80 |
| | High 12 | 2467 | 12.94 |
| | High 13 | 2472 | 10.49 |
| 802.11nHT20 | Low 1 | 2412 | 13.81 |
| | Mid 6 | 2437 | 13.71 |
| | High 12 | 2467 | 13.30 |
| | High 13 | 2472 | 10.65 |

9.5.2. ANT/ANT+

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

| Frequency (MHz) | Chain 0 Meas Power (dBm) |
|--------------------|-----------------------------------|
| 2402 | -0.28 |
| 2404 | 3.872 |
| 2440 | 4.486 |
| 2478 | 3.414 |
| 2480 | -0.749 |

9.5.3. BLE 1Mbps Mode

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) |
|---------|--------------------|-----------------------------------|
| Low 37 | 2402 | -0.74 |
| Low 0 | 2404 | 3.448 |
| Mid 17 | 2440 | 4.321 |
| High 35 | 2476 | 3.303 |
| High 36 | 2478 | -1.3 |
| High 39 | 2480 | -1.38 |

9.5.4. BLE 2Mbps Mode

| | |
|-----------------------|------------|
| Test Engineer: | 84740 |
| Test Date: | 2025-01-13 |

| Channel | Frequency (MHz) | Chain 0 Meas Power (dBm) |
|---------|--------------------|-----------------------------------|
| Low 37 | 2402 | -0.729 |
| Low 0 | 2404 | 3.521 |
| Mid 17 | 2440 | 4.15 |
| High 35 | 2476 | 3.002 |
| High 36 | 2478 | -1.45 |
| High 39 | 2480 | -0.781 |

9.6. POWER SPECTRAL DENSITY

LIMITS

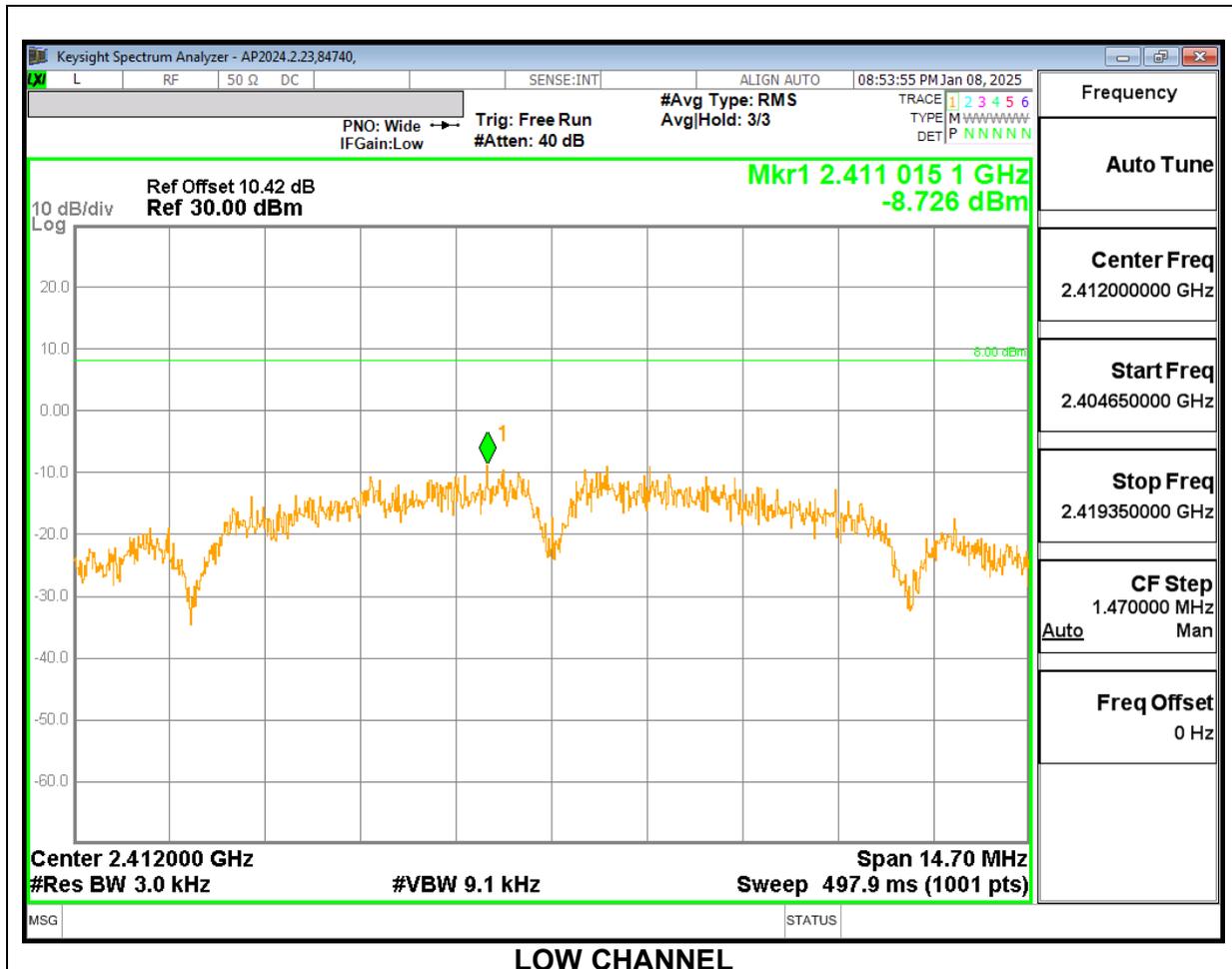
FCC §15.247 (e)
 RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

9.6.1. 802.11b MODE

PSD Results

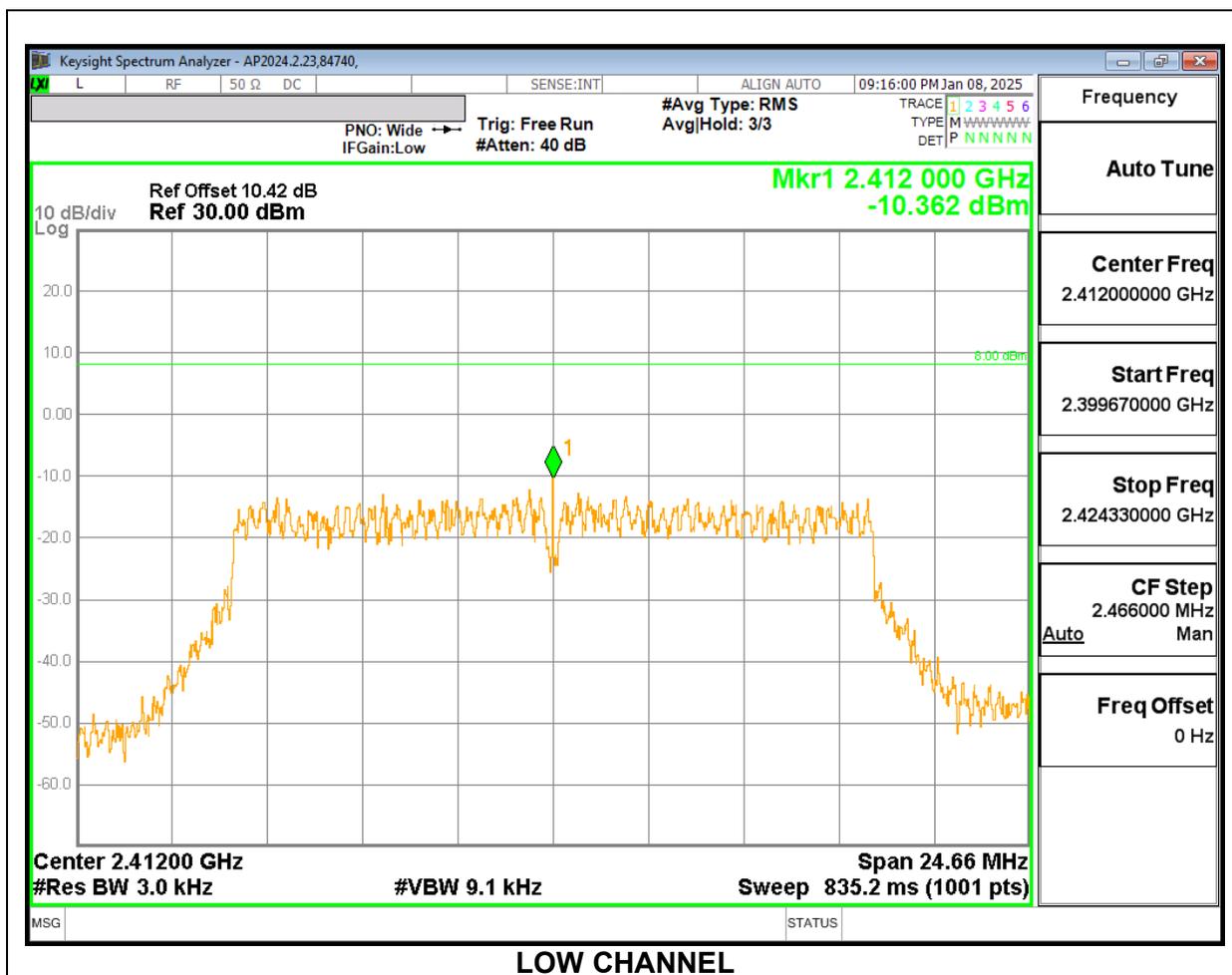
| Channel | Frequency (MHz) | Chain 0 Meas (dBm/ 3kHz) | Limit (dBm/ 3kHz) | Margin (dB) |
|---------|-----------------|--------------------------|-------------------|-------------|
| Low 1 | 2412 | -8.73 | 8.0 | -16.7 |
| Mid 6 | 2437 | -10.64 | 8.0 | -18.6 |
| High 13 | 2472 | -10.69 | 8.0 | -18.7 |



9.6.2. 802.11g MODE

PSD Results

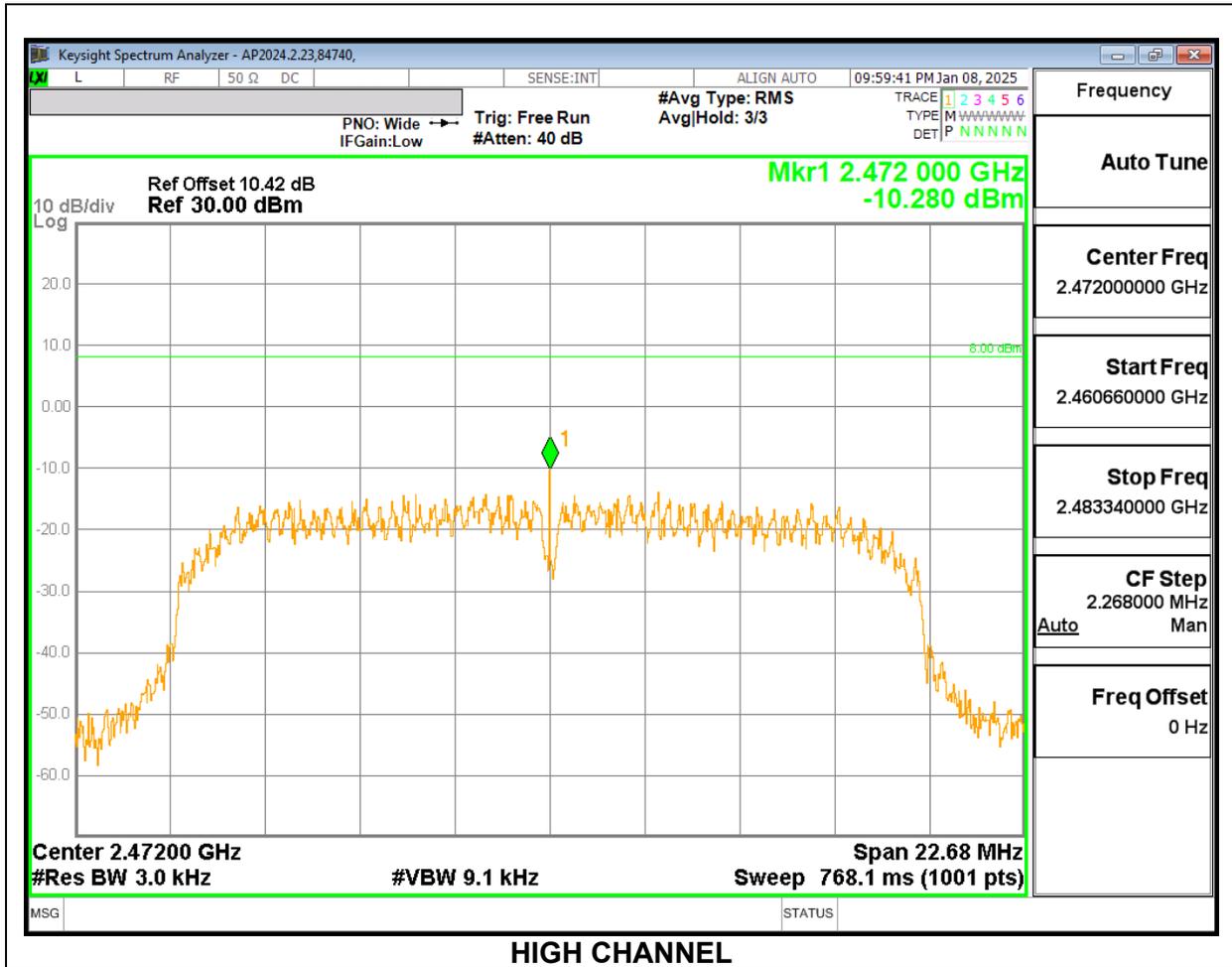
| Channel | Frequency (MHz) | Chain 0 Meas (dBm/ 3kHz) | Limit (dBm/ 3kHz) | Margin (dB) |
|---------|-----------------|--------------------------|-------------------|-------------|
| Low 1 | 2412 | -10.36 | 8.0 | -18.4 |
| Mid 6 | 2437 | -10.50 | 8.0 | -18.5 |
| High 13 | 2472 | -11.10 | 8.0 | -19.1 |



9.6.3. 802.11n HT20 MODE

PSD Results

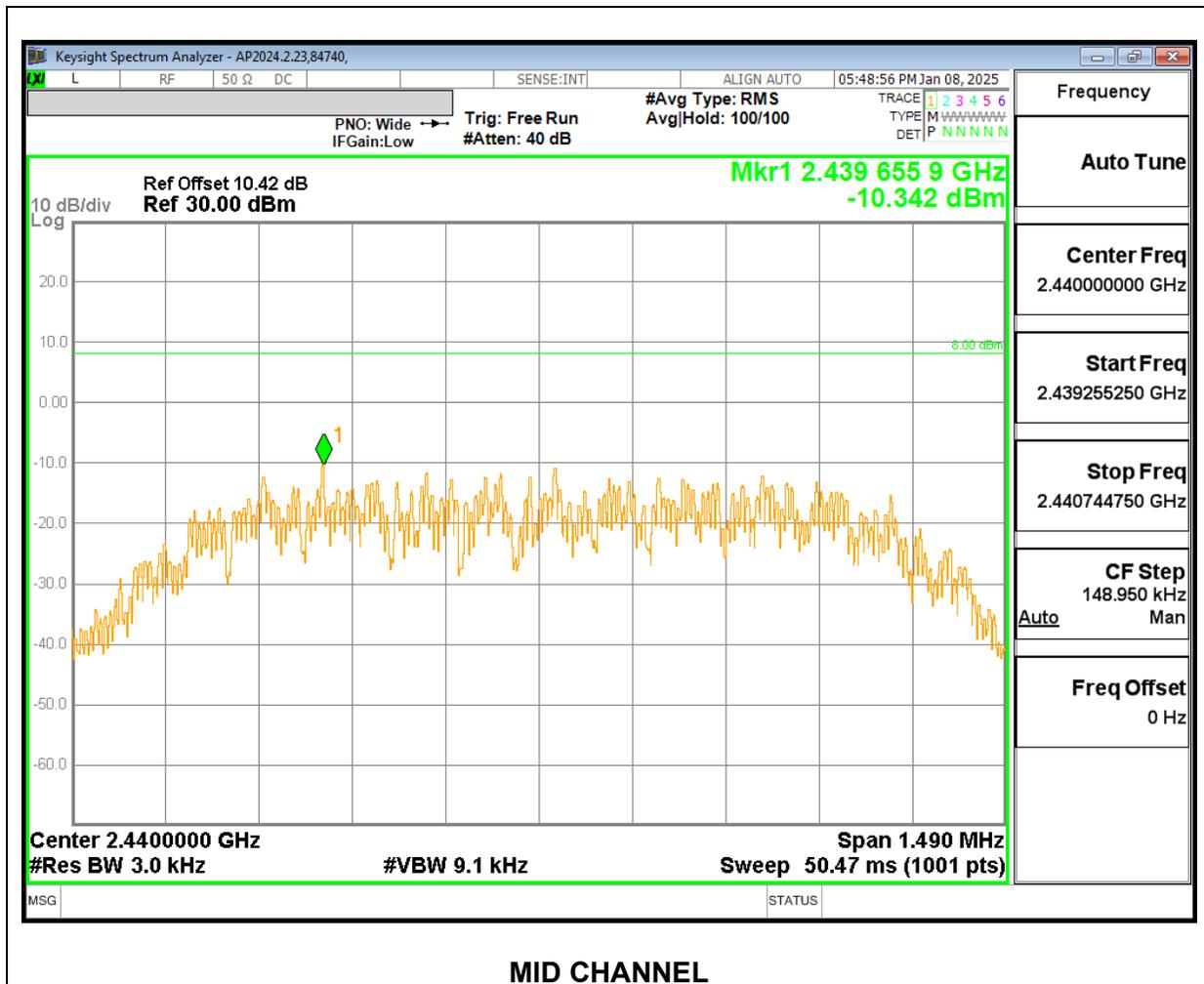
| Channel | Frequency (MHz) | Chain 0 Meas (dBm/ 3kHz) | Limit (dBm/ 3kHz) | Margin (dB) |
|---------|-----------------|--------------------------|-------------------|-------------|
| Low 1 | 2412 | -11.71 | 8.0 | -19.7 |
| Mid 6 | 2437 | -11.23 | 8.0 | -19.2 |
| High 13 | 2472 | -10.28 | 8.0 | -18.3 |



9.6.4. ANT/ANT+ MODE

PSD Results

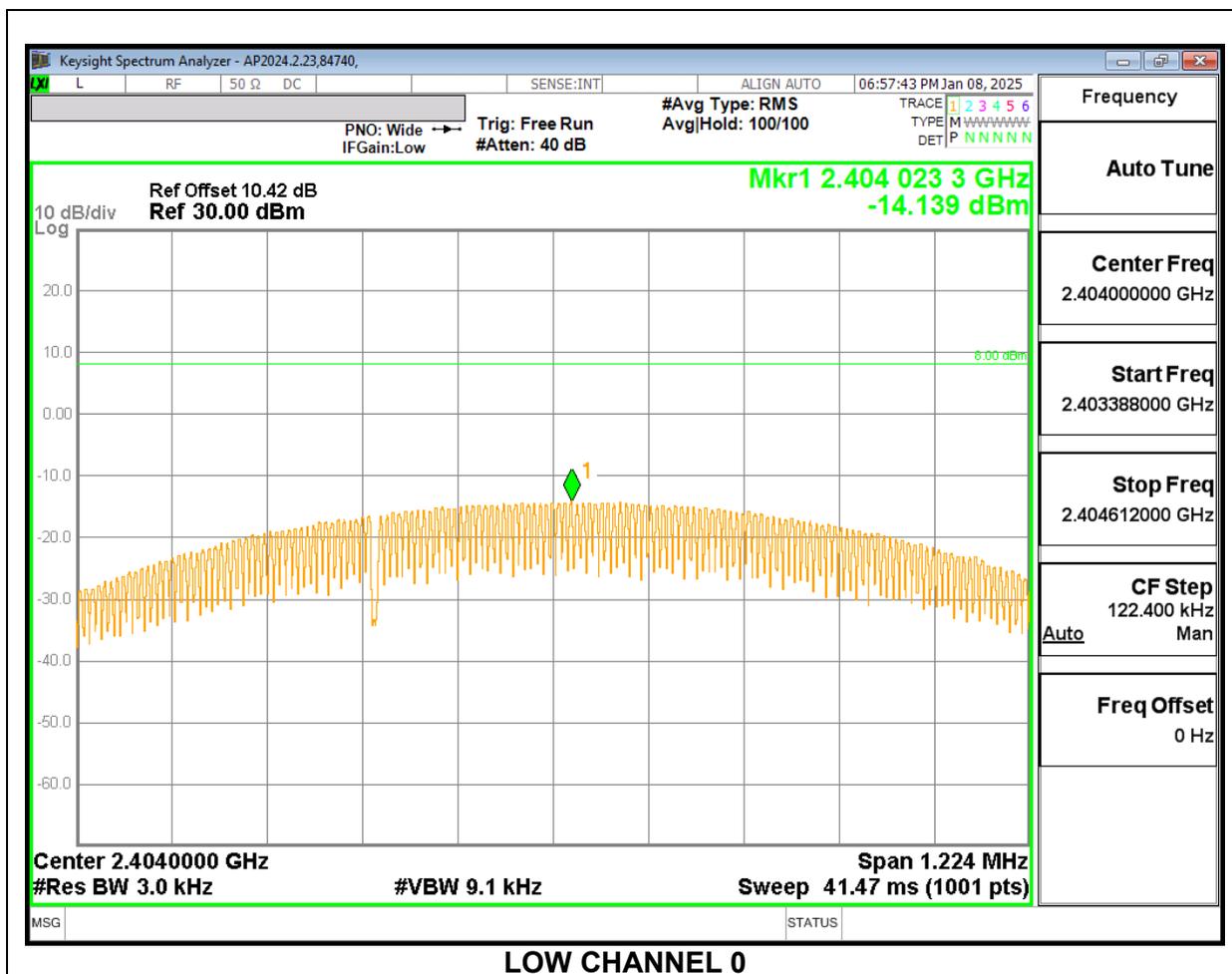
| Frequency (MHz) | Chain 0 Meas (dBm/ 3kHz) | Limit (dBm/ 3kHz) | Margin (dB) |
|-----------------|--------------------------|-------------------|-------------|
| 2402 | -17.63 | 8.0 | -25.6 |
| 2404 | -12.87 | 8.0 | -20.9 |
| 2440 | -10.34 | 8.0 | -18.3 |
| 2476 | -12.62 | 8.0 | -20.6 |
| 2478 | -11.38 | 8.0 | -19.4 |
| 2480 | -17.68 | 8.0 | -25.7 |



9.6.5. BLE 1Mbps MODE

PSD Results

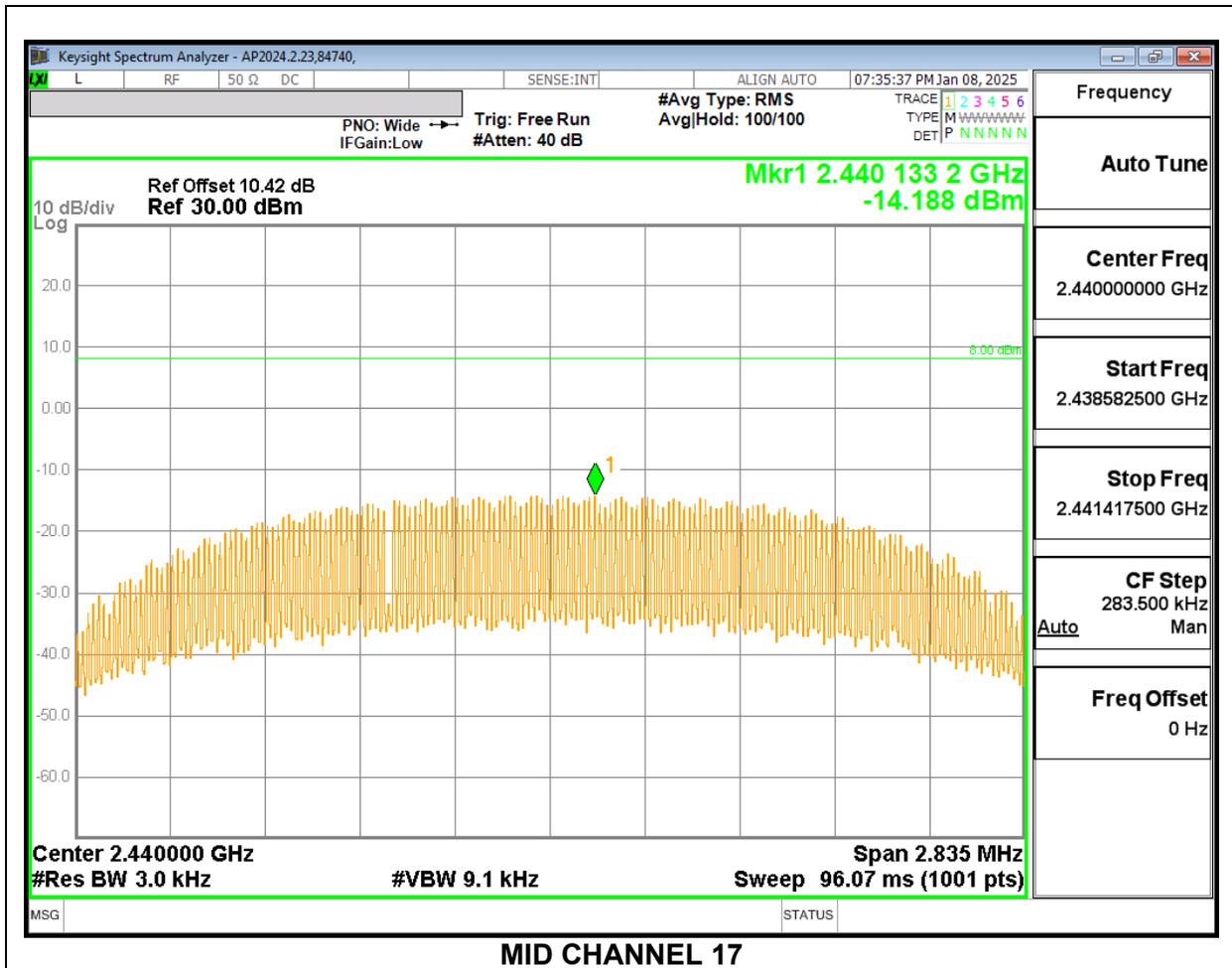
| Channel | Frequency (MHz) | Chain 0 Meas (dBm/ 3kHz) | Limit (dBm/ 3kHz) | Margin (dB) |
|---------|-----------------|--------------------------|-------------------|-------------|
| Low 37 | 2402 | -18.61 | 8.0 | -26.6 |
| Low 0 | 2404 | -14.14 | 8.0 | -22.1 |
| Mid 17 | 2440 | -14.19 | 8.0 | -22.2 |
| High 35 | 2476 | -14.28 | 8.0 | -22.3 |
| High 36 | 2478 | -20.05 | 8.0 | -28.1 |
| High 39 | 2480 | -19.21 | 8.0 | -27.2 |



9.6.6. BLE 2Mbps MODE

PSD Results

| Channel | Frequency (MHz) | Chain 0 Meas (dBm/ 3kHz) | Limit (dBm/ 3kHz) | Margin (dB) |
|---------|-----------------|--------------------------|-------------------|-------------|
| Low 37 | 2402 | -18.63 | 8.0 | -26.6 |
| Low 0 | 2404 | -14.41 | 8.0 | -22.4 |
| Mid 17 | 2440 | -14.19 | 8.0 | -22.2 |
| High 35 | 2476 | -14.82 | 8.0 | -22.8 |
| High 36 | 2478 | -19.93 | 8.0 | -27.9 |
| High 39 | 2480 | -19.76 | 8.0 | -27.8 |



9.7. CONDUCTED SPURIOUS EMISSIONS

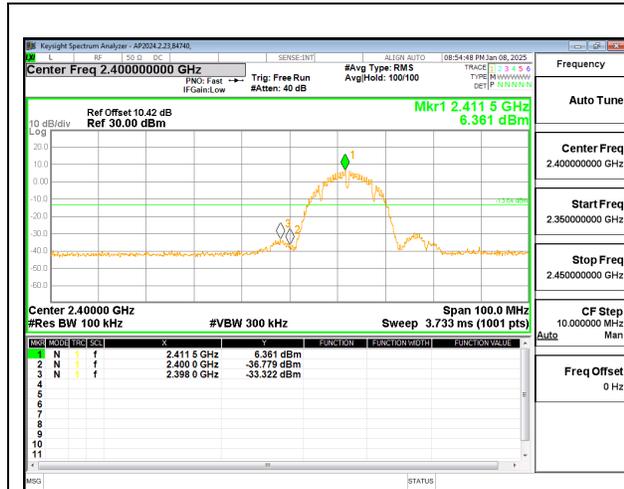
LIMITS

FCC §15.247 (d)
RSS-247 5.5

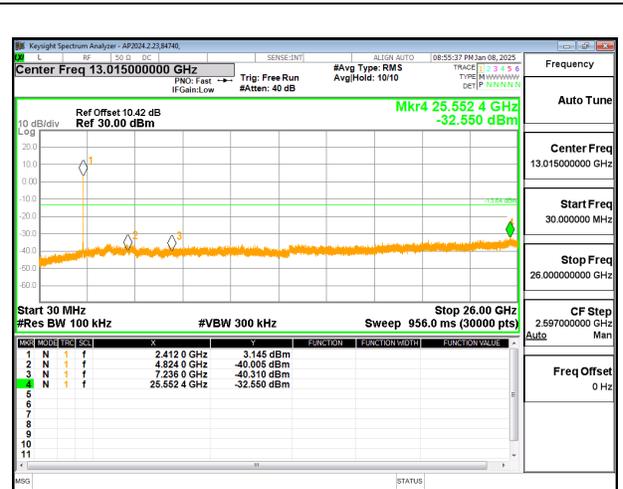
Output power was measured based on the use of peak measurement, therefore the required attenuation is -20 dBc.

RESULTS

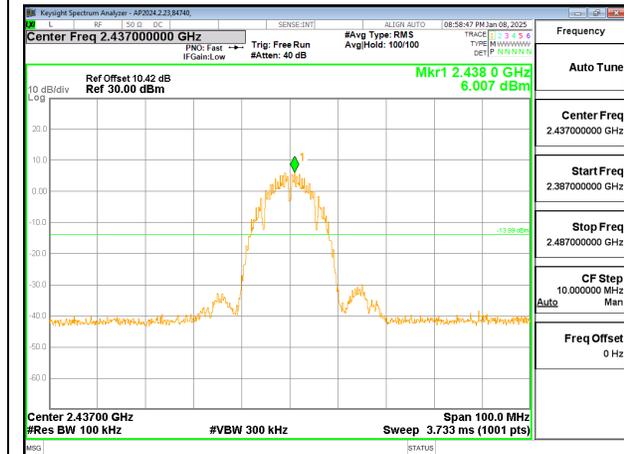
9.7.1. 802.11b MODE



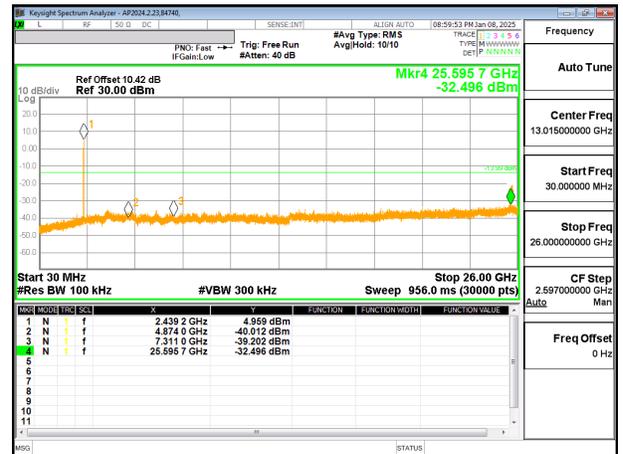
LOW CHANNEL 1



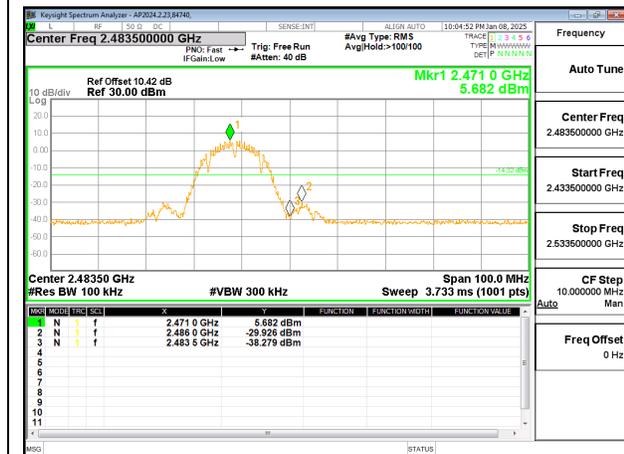
LOW CHANNEL 1



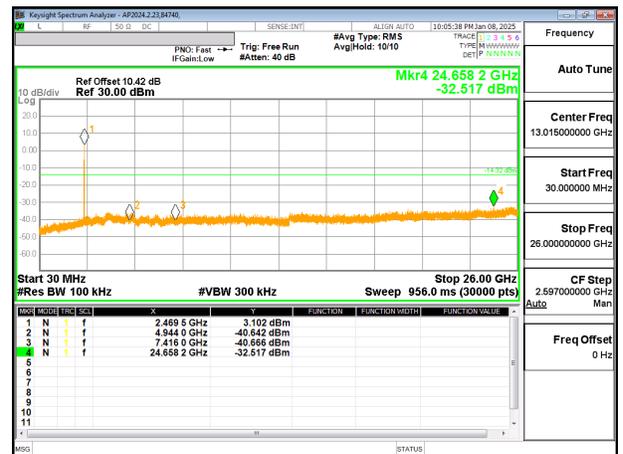
MID CHANNEL 6



MID CHANNEL 6

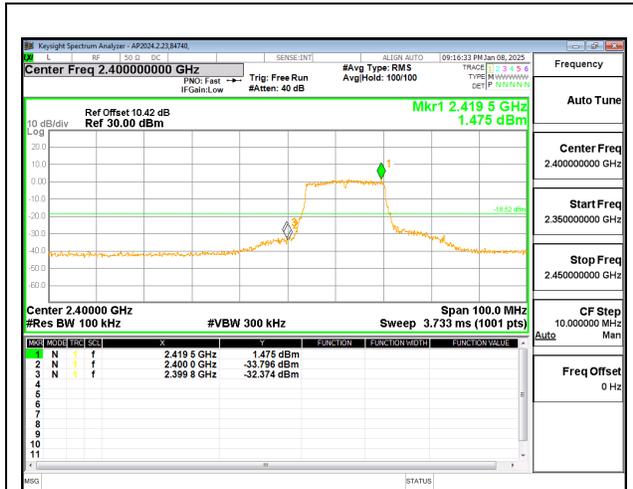


HIGH CHANNEL 13

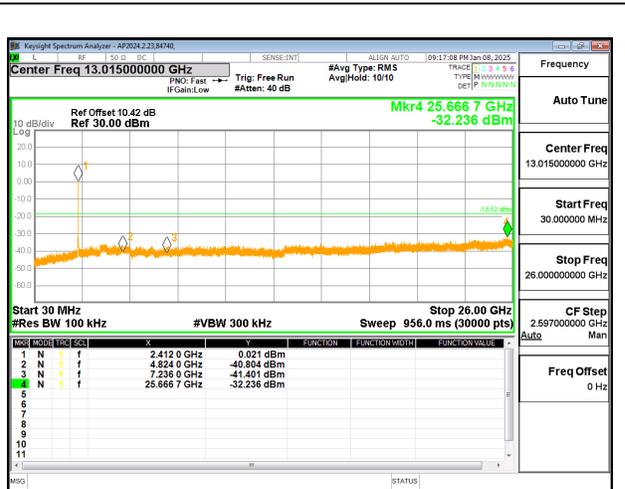


HIGH CHANNEL 13

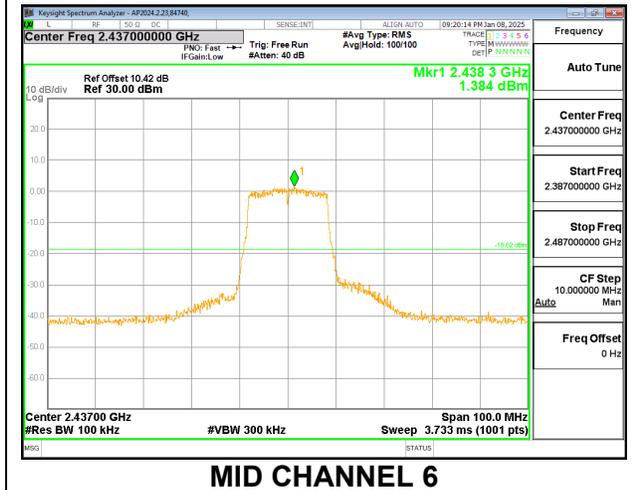
9.7.2. 802.11g MODE



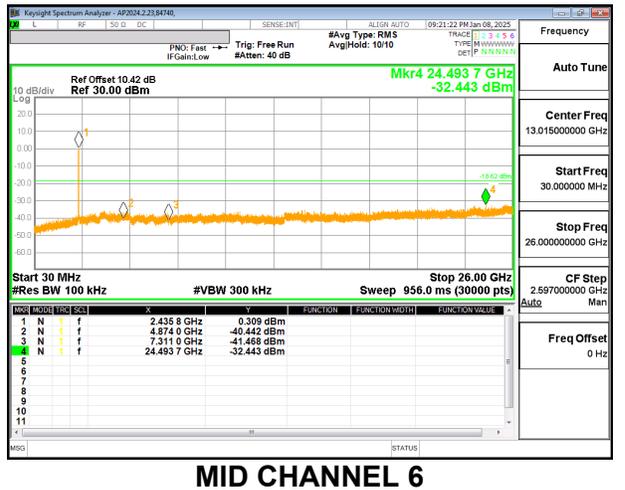
LOW CHANNEL 1



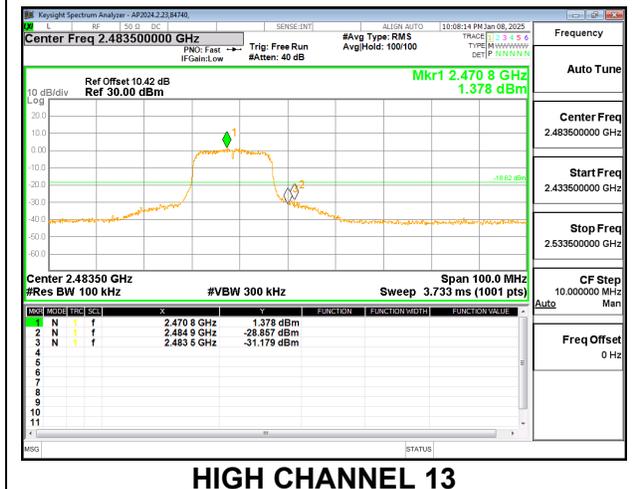
LOW CHANNEL 1



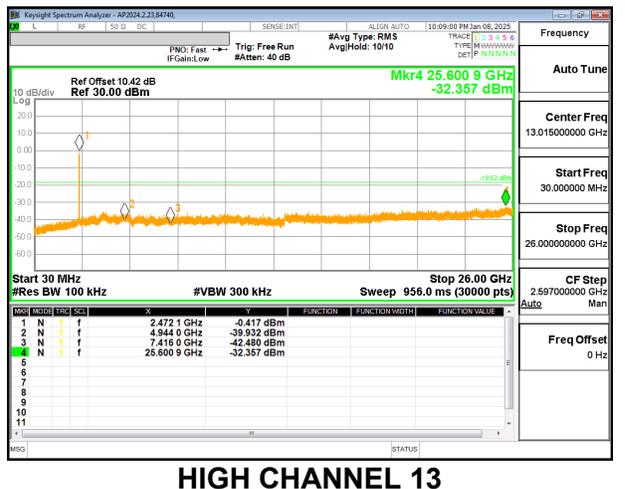
MID CHANNEL 6



MID CHANNEL 6

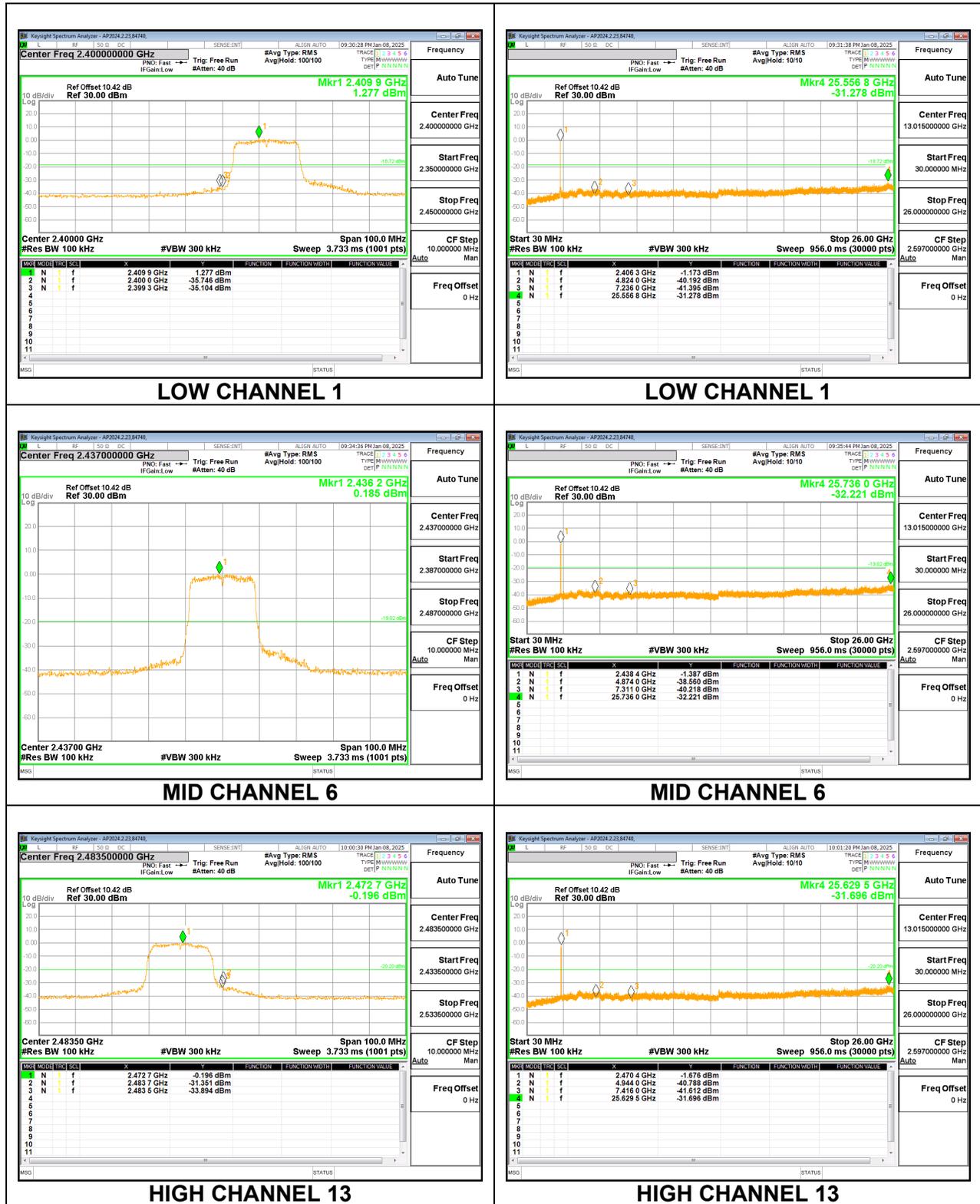


HIGH CHANNEL 13

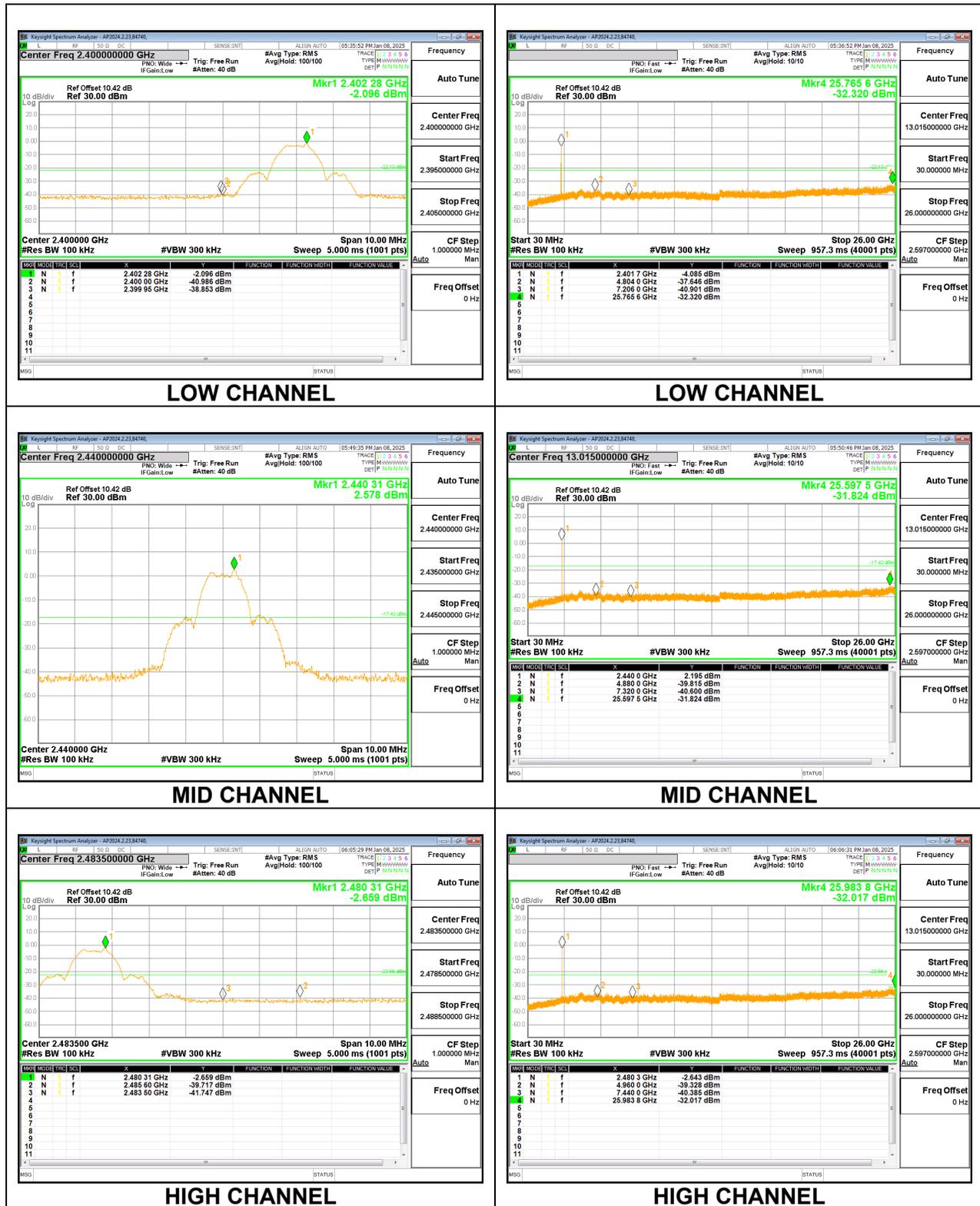


HIGH CHANNEL 13

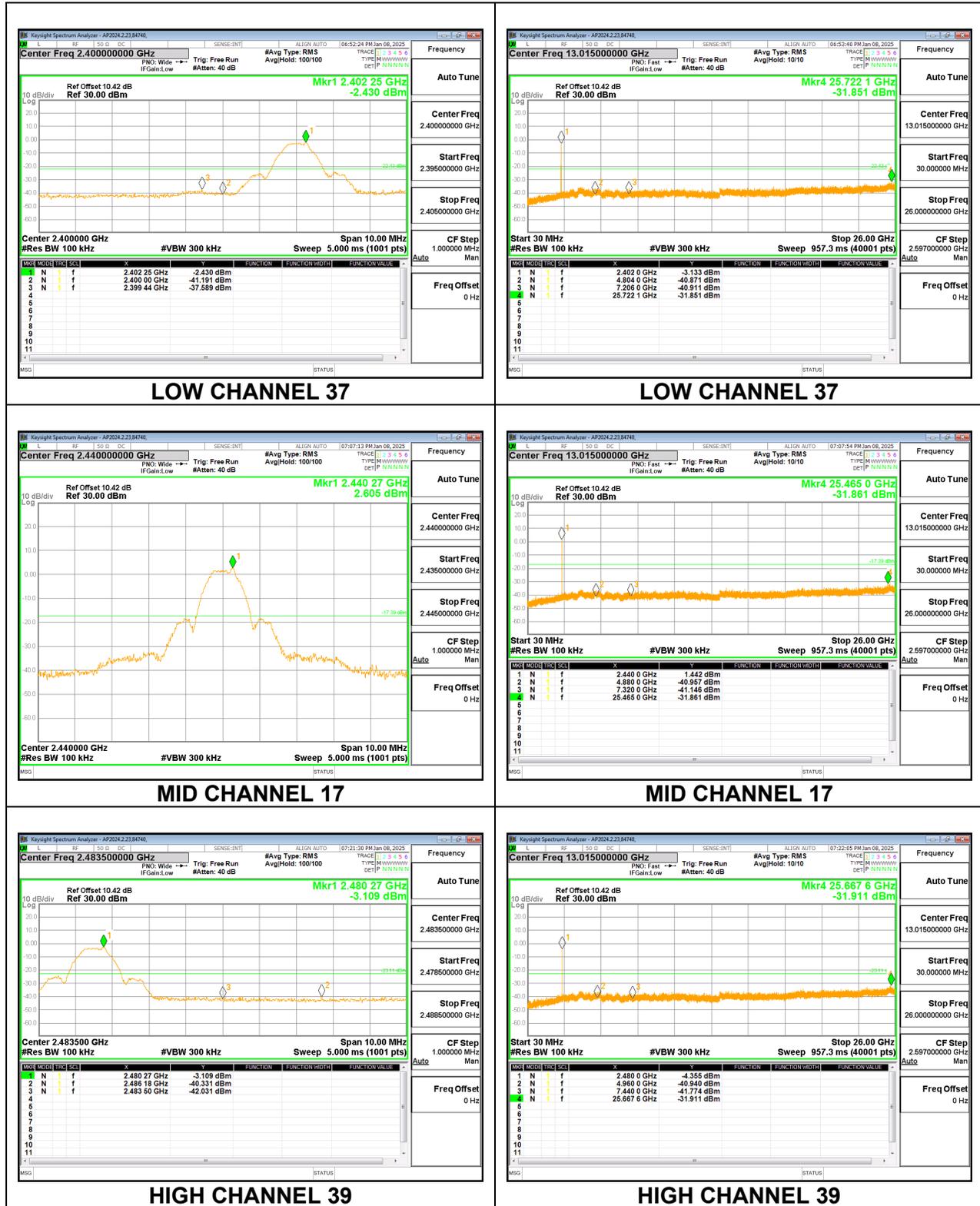
9.7.3. 802.11n HT20 MODE



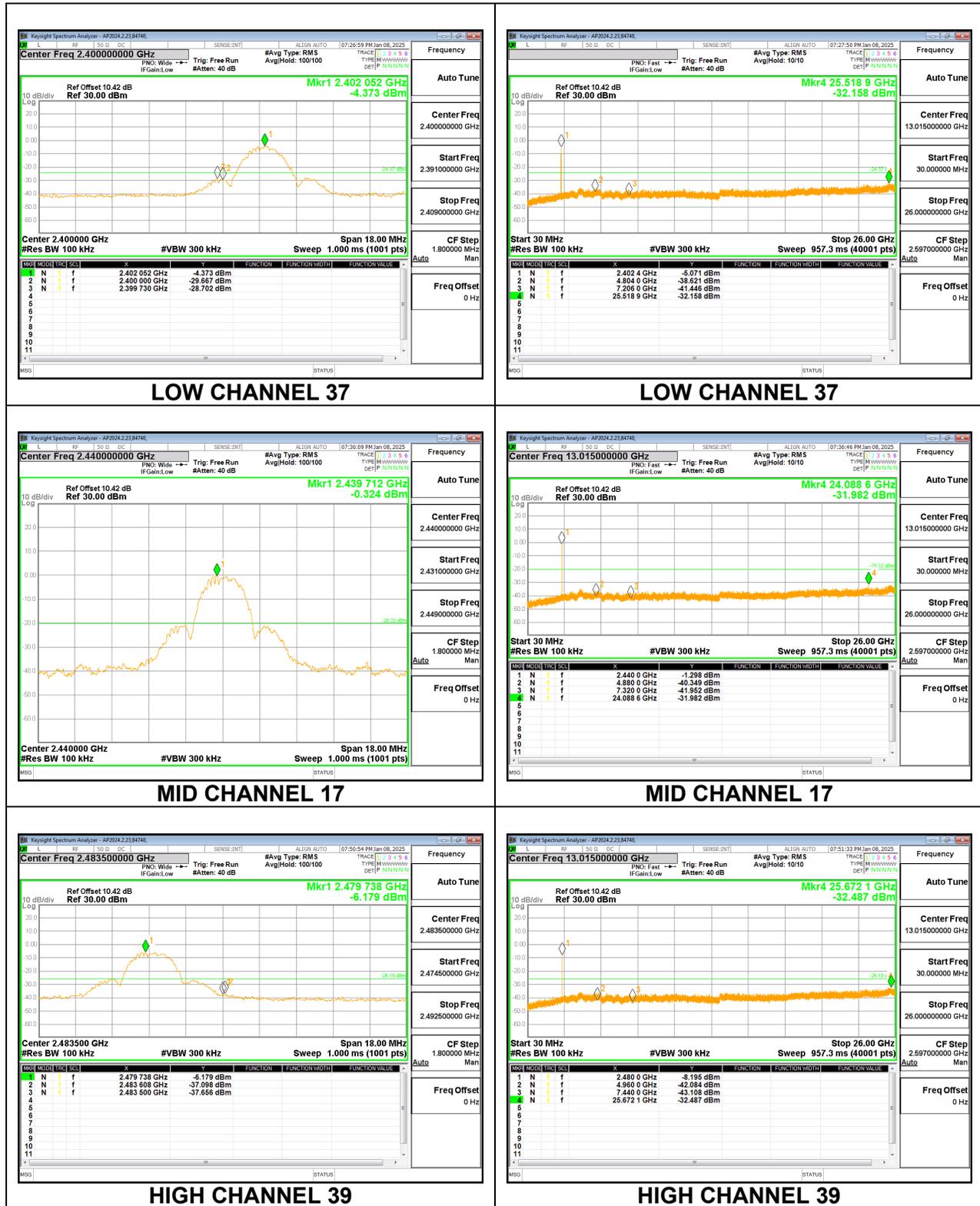
9.7.4. ANT/ANT+ MODE



9.7.5. BLE 1Mbps MODE



9.7.6. BLE 2Mbps MODE



10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
|-----------------------|------------------------------------|--------------------------------------|
| 0.009-0.490 | 2400/F(kHz) @ 300 m | - |
| 0.490-1.705 | 24000/F(kHz) @ 30 m | - |
| 1.705 - 30 | 30 @ 30m | - |
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

IC RSS-GEN Clause 8.9 and 8.10

| Frequency Range (kHz) | Field Strength Limit (uA/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
|-----------------------|------------------------------------|--------------------------------------|
| 0.009-0.490 | 6.37/F(kHz) @ 300 m | - |
| 0.490-1.705 | 63.7/F(kHz) @ 30 m | - |
| 1.705 - 30 | 0.08 @ 30m | - |
| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3MHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for linear voltage average measurements.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to low, middle, and high channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest PSD was tested.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

3D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel).

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

KDB 414788 Open Field Site (OFS) and Chamber Correlation Justification

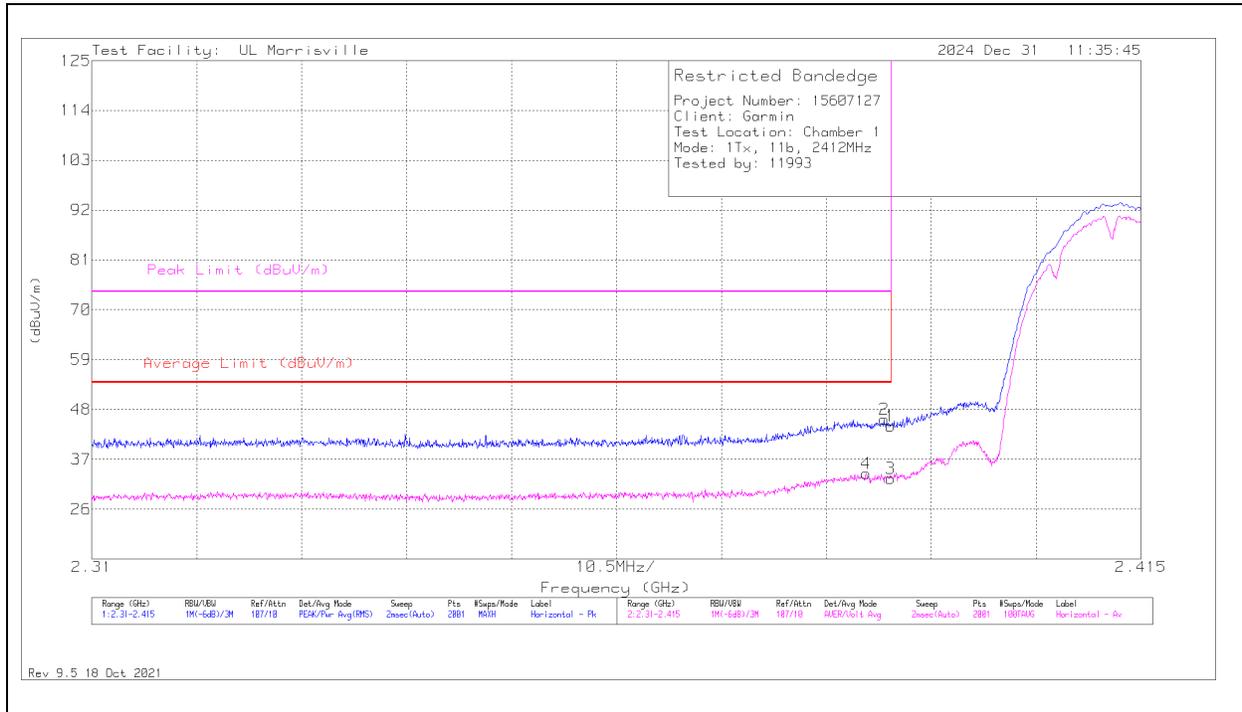
OFS and chamber correlation testing had been performed and chamber measured test result is the worst-case test result.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

BANDEDGE (LOW CHANNEL, 2412MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 36.41 | Pk | 31.9 | -24 | 44.31 | - | - | 74 | -29.69 | 308 | 115 | H |
| 2 | * ** 2.38928 | 37.94 | Pk | 31.9 | -24 | 45.84 | - | - | 74 | -28.16 | 308 | 115 | H |
| 3 | * ** 2.38996 | 24.88 | ADV | 31.9 | -24 | 32.78 | 54 | -21.22 | - | - | 308 | 115 | H |
| 4 | * ** 2.38749 | 25.82 | ADV | 31.9 | -23.9 | 33.82 | 54 | -20.18 | - | - | 308 | 115 | H |

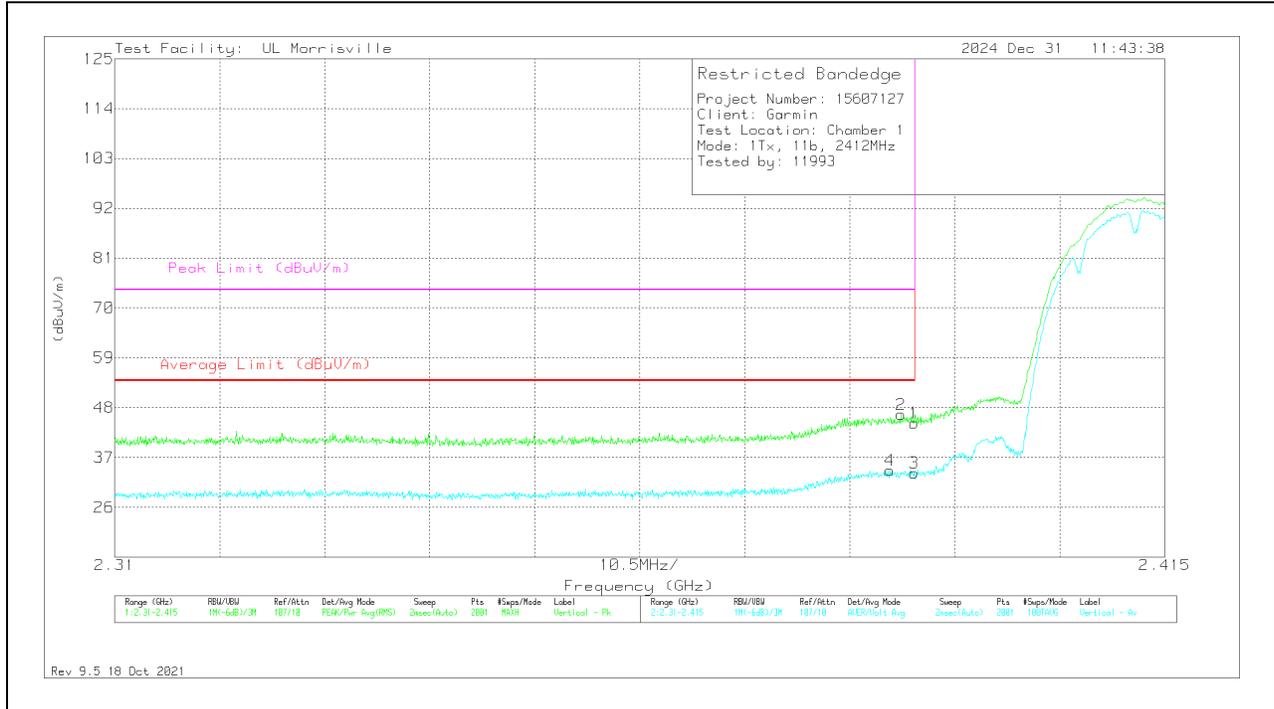
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 36.7 | Pk | 31.9 | -24 | 44.6 | - | - | 74 | -29.4 | 153 | 146 | V |
| 2 | *** 2.38865 | 38.56 | Pk | 31.9 | -24 | 46.46 | - | - | 74 | -27.54 | 153 | 146 | V |
| 3 | *** 2.38996 | 25.72 | ADV | 31.9 | -24 | 33.62 | 54 | -20.38 | - | - | 153 | 146 | V |
| 4 | *** 2.38749 | 26.1 | ADV | 31.9 | -23.9 | 34.1 | 54 | -19.9 | - | - | 153 | 146 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

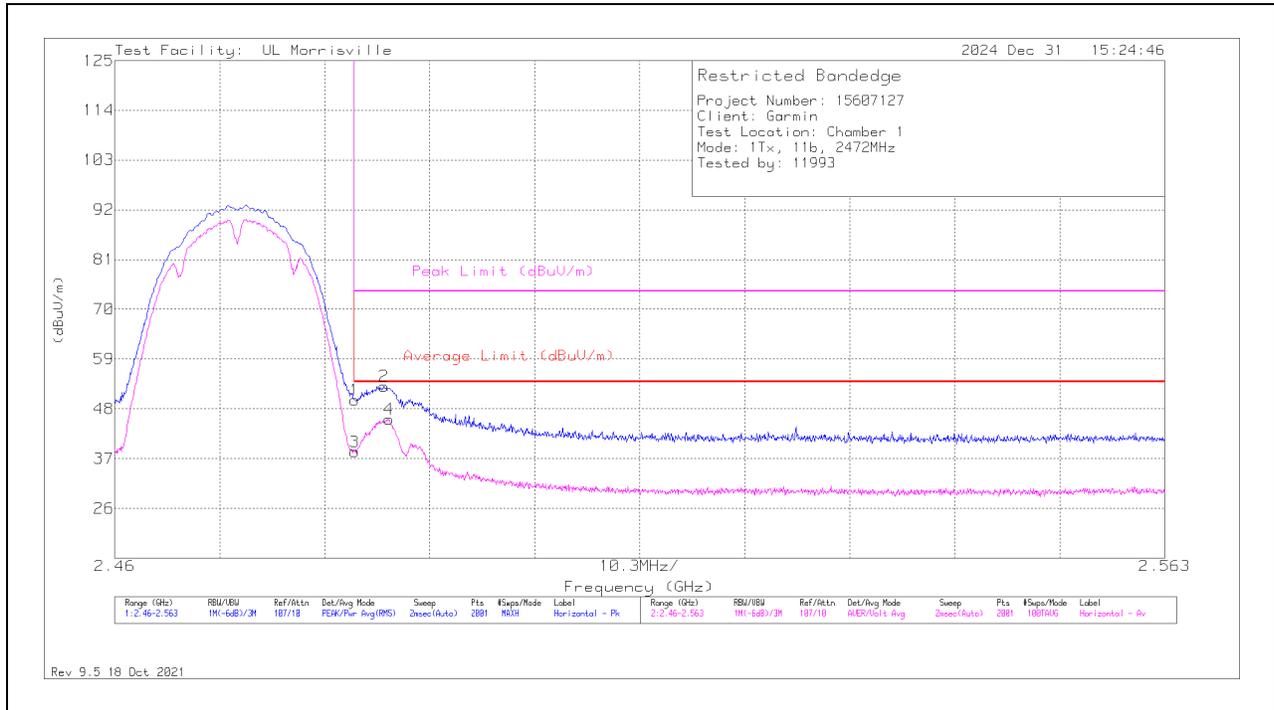
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2472MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 41.45 | Pk | 32.2 | -23.7 | 49.95 | - | - | 74 | -24.05 | 296 | 157 | H |
| 2 | * ** 2.48642 | 44.69 | Pk | 32.2 | -23.9 | 52.99 | - | - | 74 | -21.01 | 296 | 157 | H |
| 3 | * ** 2.48354 | 29.98 | ADV | 32.2 | -23.7 | 38.48 | 54 | -15.52 | - | - | 296 | 157 | H |
| 4 | * ** 2.48688 | 37.47 | ADV | 32.2 | -24 | 45.67 | 54 | -8.33 | - | - | 296 | 157 | H |

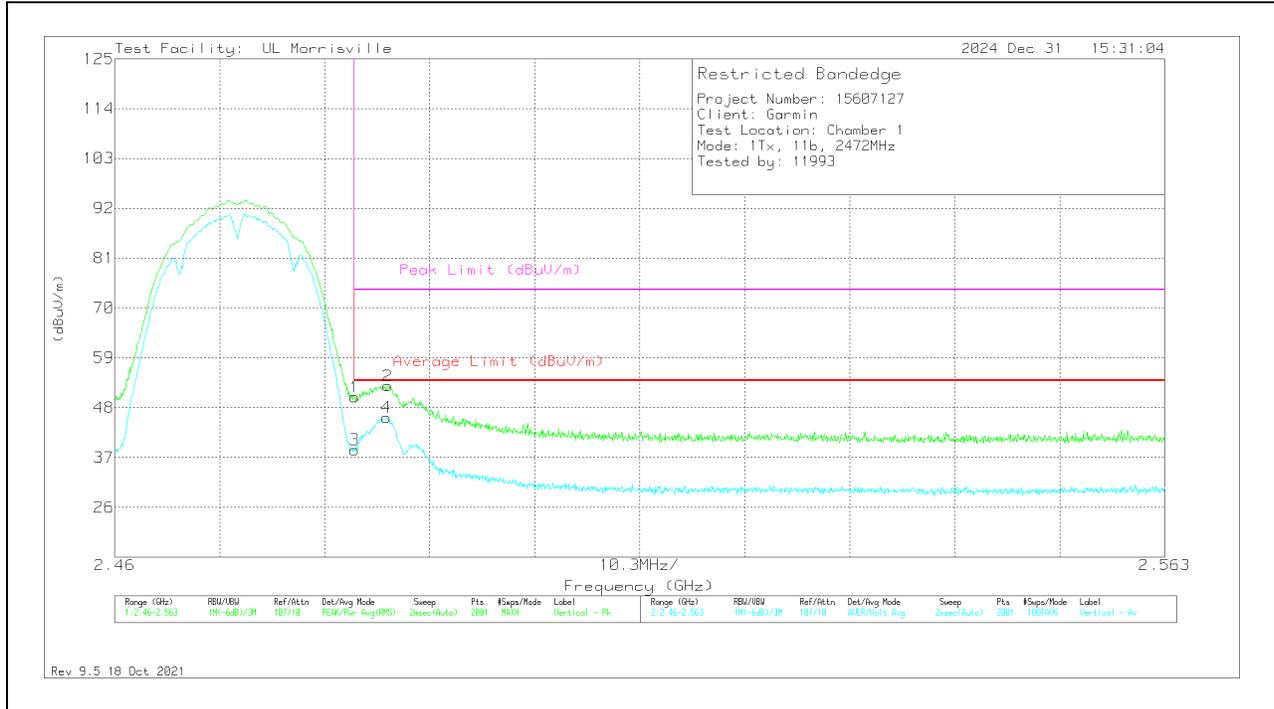
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 41.82 | Pk | 32.2 | -23.7 | 50.32 | - | - | 74 | -23.68 | 137 | 140 | V |
| 2 | *** 2.48678 | 44.49 | Pk | 32.2 | -23.9 | 52.79 | - | - | 74 | -21.21 | 137 | 140 | V |
| 3 | *** 2.48354 | 30.13 | ADV | 32.2 | -23.7 | 38.63 | 54 | -15.37 | - | - | 137 | 140 | V |
| 4 | *** 2.48668 | 37.58 | ADV | 32.2 | -23.9 | 45.88 | 54 | -8.12 | - | - | 137 | 140 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

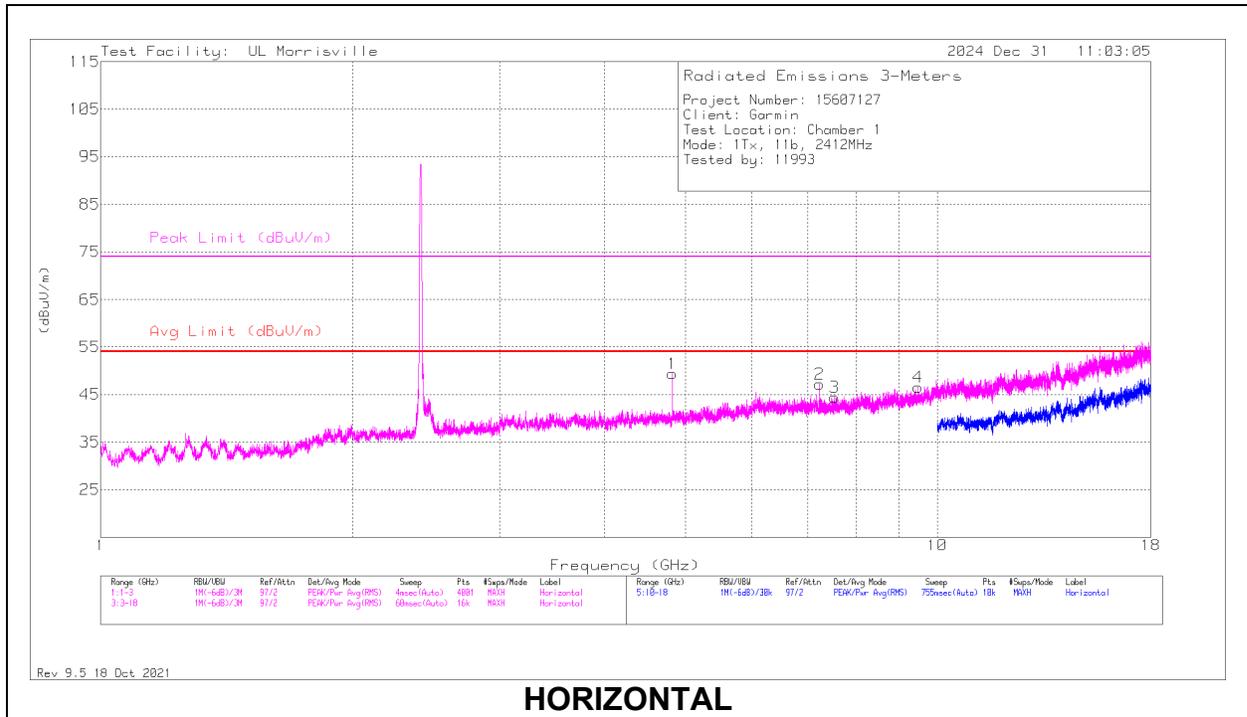
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

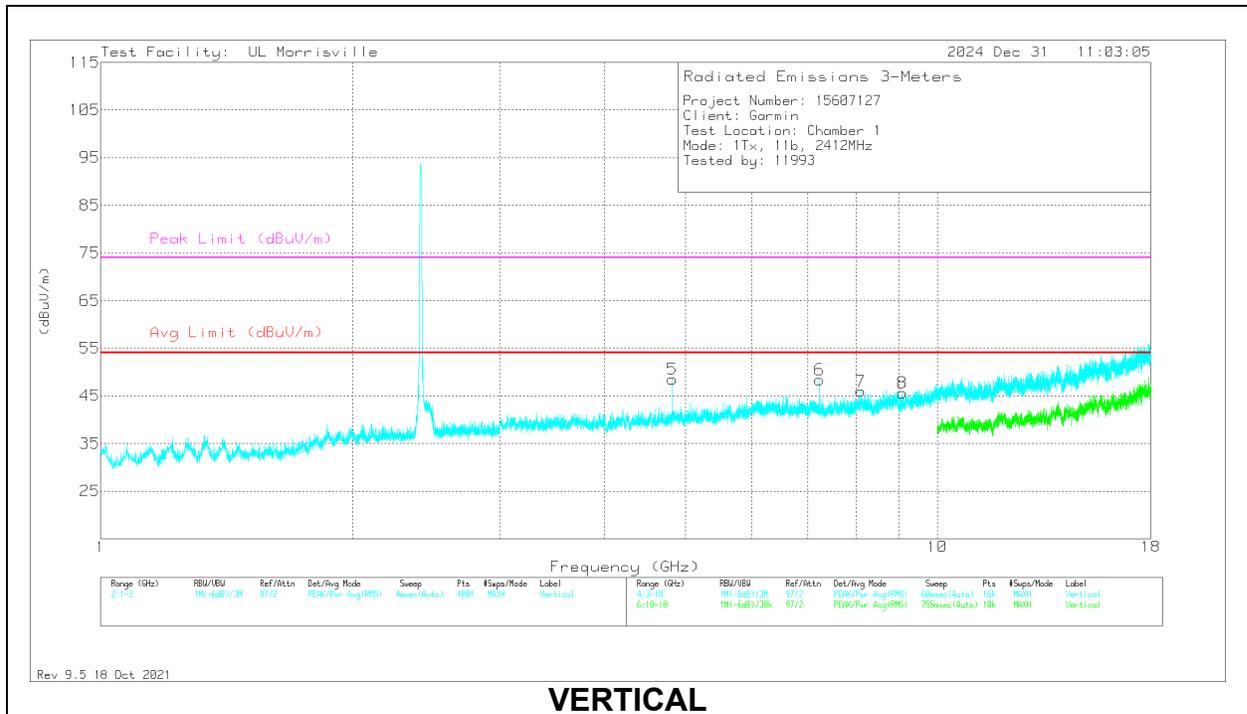
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.82399 | 63.99 | PK2 | 33.9 | -45.3 | 52.59 | - | - | 74 | -21.41 | 168 | 173 | H |
| | * ** 4.82402 | 56.7 | ADV | 33.9 | -45.3 | 45.3 | 54 | -8.7 | - | - | 168 | 173 | H |
| 3 | * ** 7.54219 | 49.64 | Pk | 35.5 | -40.7 | 44.44 | 54 | -9.56 | 74 | -29.56 | 0-360 | 101 | H |
| 4 | * ** 9.49031 | 50.52 | Pk | 36.4 | -40.4 | 46.52 | 54 | -7.48 | 74 | -27.48 | 0-360 | 101 | H |
| 5 | * ** 4.82403 | 62.36 | PK2 | 33.9 | -45.3 | 50.96 | - | - | 74 | -23.04 | 134 | 112 | V |
| | * ** 4.82397 | 58.59 | ADV | 33.9 | -45.3 | 47.19 | 54 | -6.81 | - | - | 134 | 112 | V |
| 7 | * ** 8.09813 | 51.55 | Pk | 35.9 | -41.5 | 45.95 | 54 | -8.05 | 74 | -28.05 | 0-360 | 101 | V |
| 8 | * ** 9.09469 | 49.91 | Pk | 35.9 | -40.2 | 45.61 | 54 | -8.39 | 74 | -28.39 | 0-360 | 200 | V |
| 2 | 7.23563 | 54.34 | Pk | 35.4 | -42.5 | 47.24 | - | - | - | - | 0-360 | 200 | H |
| 6 | 7.23563 | 55.49 | Pk | 35.4 | -42.5 | 48.39 | - | - | - | - | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

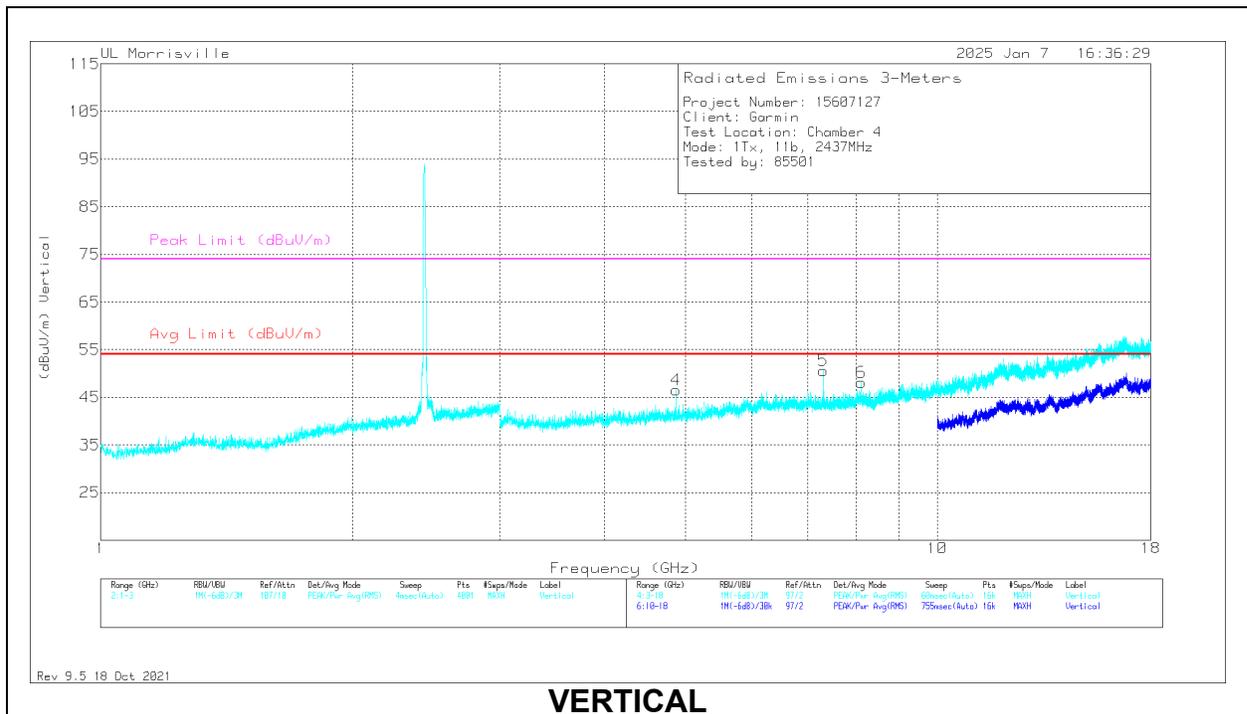
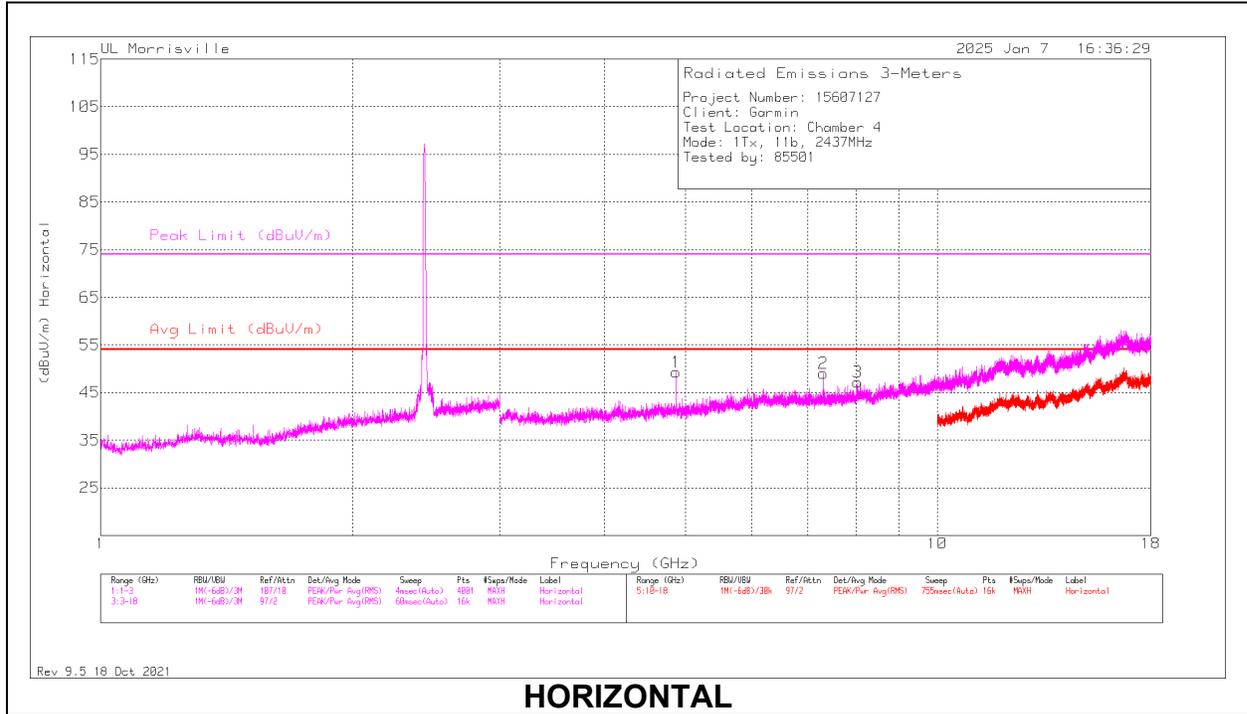
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.87397 | 49.2 | PK2 | 34.1 | -31.2 | 52.1 | - | - | 74 | -21.9 | 209 | 191 | H |
| | * ** 4.87404 | 38.54 | ADV | 34.1 | -31.2 | 41.44 | 54 | -12.56 | - | - | 209 | 191 | H |
| 2 | * ** 7.31122 | 42.18 | PK2 | 35.7 | -27.5 | 50.38 | - | - | 74 | -23.62 | 256 | 242 | H |
| | * ** 7.31012 | 33.76 | ADV | 35.7 | -27.5 | 41.96 | 54 | -12.04 | - | - | 256 | 242 | H |
| 3 | * ** 8.02875 | 38.52 | Pk | 35.8 | -27.1 | 47.22 | 54 | -6.78 | 74 | -26.78 | 0-360 | 100 | H |
| 4 | * ** 4.87406 | 43.65 | Pk | 34.1 | -31.2 | 46.55 | 54 | -7.45 | 74 | -27.45 | 0-360 | 200 | V |
| 5 | * ** 7.31162 | 46.46 | PK2 | 35.7 | -27.5 | 54.66 | - | - | 74 | -19.34 | 348 | 124 | V |
| | * ** 7.3102 | 40.51 | ADV | 35.7 | -27.5 | 48.71 | 54 | -5.29 | - | - | 348 | 124 | V |
| 6 | * ** 8.12122 | 38.59 | PK2 | 35.8 | -26.7 | 47.69 | - | - | 74 | -26.31 | 296 | 161 | V |
| | * ** 8.11848 | 26.23 | ADV | 35.8 | -26.7 | 35.33 | 54 | -18.67 | - | - | 296 | 161 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

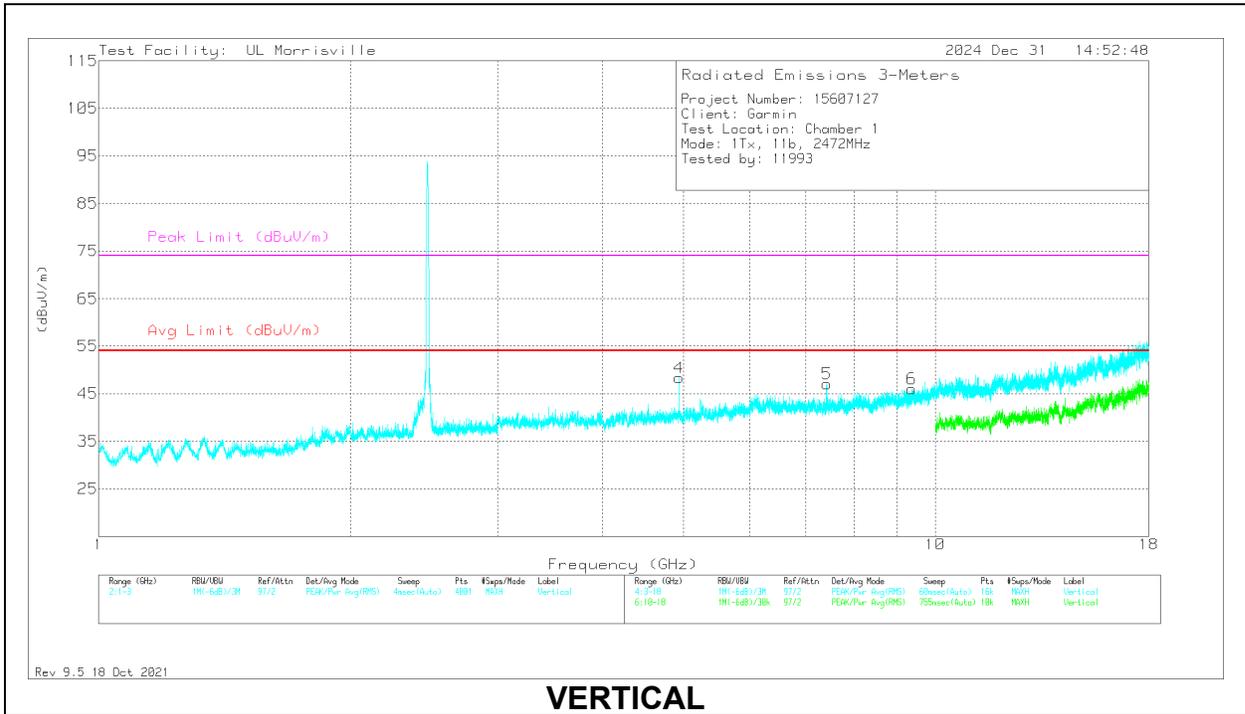
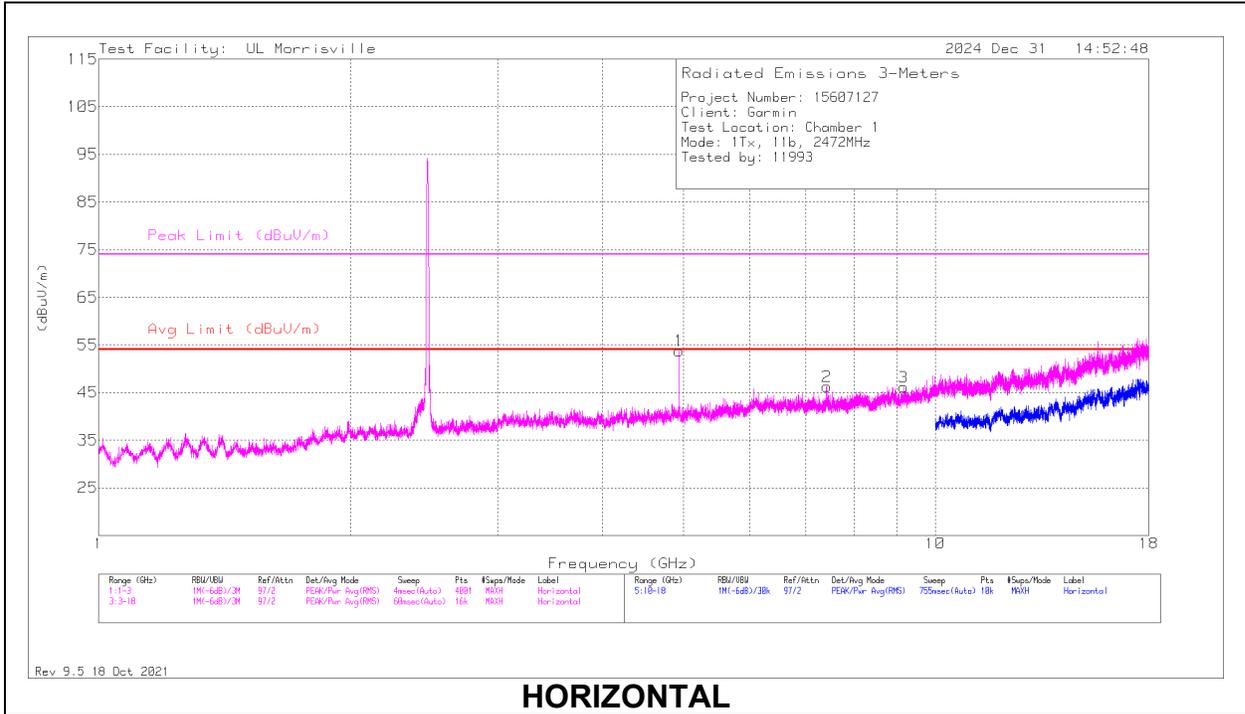
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.94398 | 65.78 | PK2 | 34.1 | -44.4 | 55.48 | - | - | 74 | -18.52 | 154 | 133 | H |
| | * ** 4.94395 | 60.51 | ADV | 34.1 | -44.4 | 50.21 | 54 | -3.79 | - | - | 154 | 133 | H |
| 2 | * ** 7.41656 | 52.02 | Pk | 35.4 | -41.2 | 46.22 | 54 | -7.78 | 74 | -27.78 | 0-360 | 200 | H |
| 3 | * ** 9.17438 | 50.19 | Pk | 36 | -40.1 | 46.09 | 54 | -7.91 | 74 | -27.91 | 0-360 | 200 | H |
| 4 | * ** 4.94397 | 60.86 | PK2 | 34.1 | -44.4 | 50.56 | - | - | 74 | -23.44 | 136 | 106 | V |
| | * ** 4.94405 | 56 | ADV | 34.1 | -44.4 | 45.7 | 54 | -8.3 | - | - | 136 | 106 | V |
| 5 | * ** 7.41656 | 52.85 | Pk | 35.4 | -41.2 | 47.05 | 54 | -6.95 | 74 | -26.95 | 0-360 | 101 | V |
| 6 | * ** 9.375 | 50.09 | Pk | 36.2 | -40.3 | 45.99 | 54 | -8.01 | 74 | -28.01 | 0-360 | 101 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

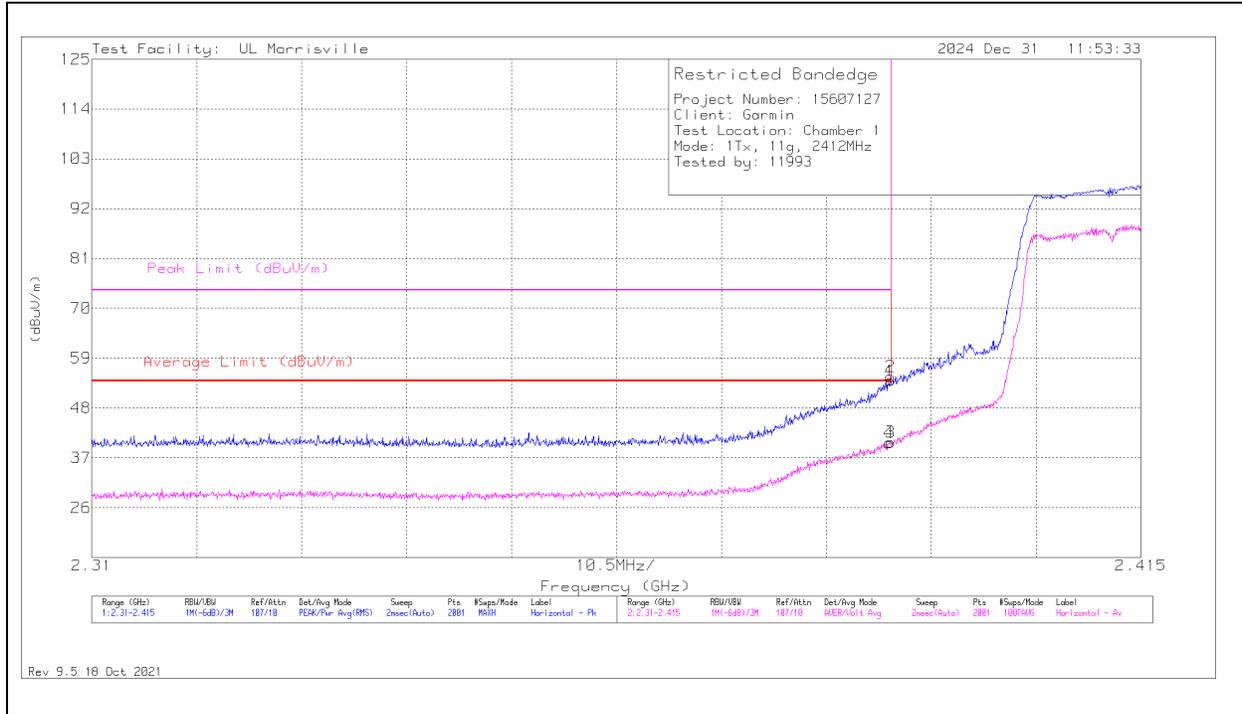
PK2 - Maximum Peak

ADV - Linear Voltage Average

10.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

BANDEDGE (LOW CHANNEL, 2412MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 46.14 | Pk | 31.9 | -24 | 54.04 | - | - | 74 | -19.96 | 264 | 167 | H |
| 2 | * ** 2.38991 | 47.07 | Pk | 31.9 | -24 | 54.97 | - | - | 74 | -19.03 | 264 | 167 | H |
| 3 | * ** 2.38996 | 32.6 | ADV | 31.9 | -24 | 40.5 | 54 | -13.5 | - | - | 264 | 167 | H |
| 4 | * ** 2.3898 | 32.46 | ADV | 31.9 | -24 | 40.36 | 54 | -13.64 | - | - | 264 | 167 | H |

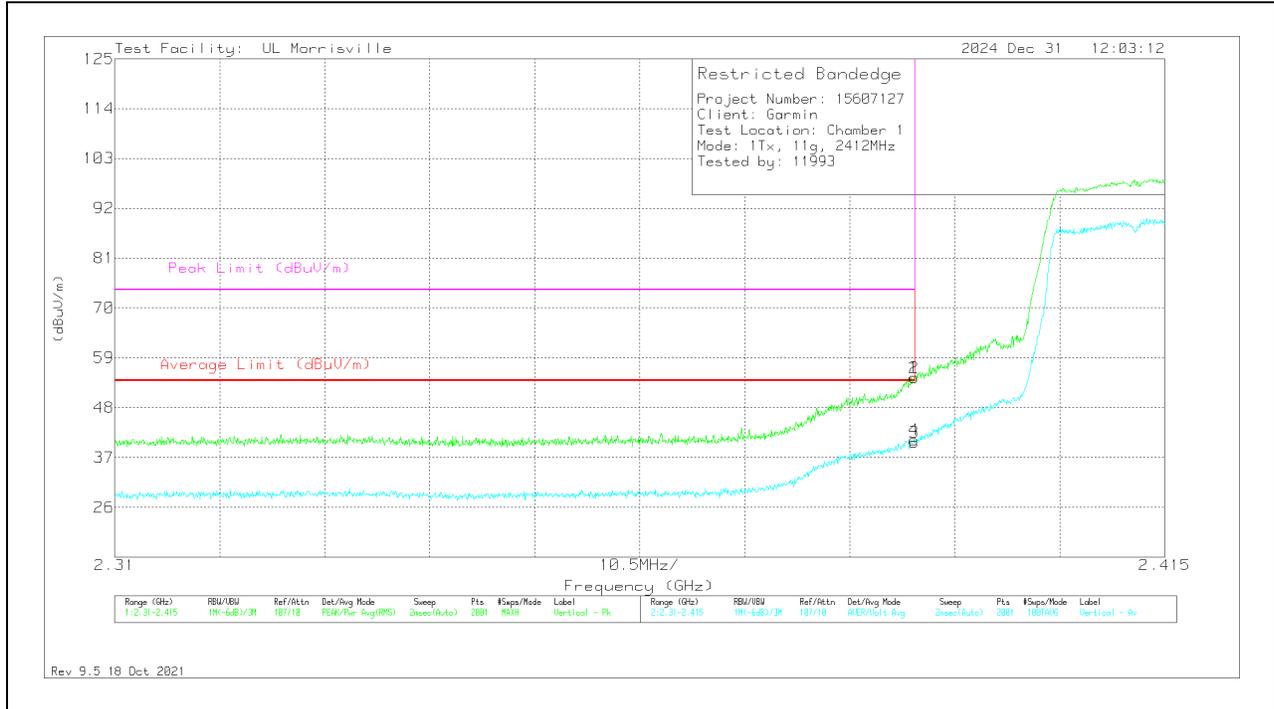
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 46.75 | Pk | 31.9 | -24 | 54.65 | - | - | 74 | -19.35 | 150 | 191 | V |
| 2 | * ** 2.38991 | 46.69 | Pk | 31.9 | -24 | 54.59 | - | - | 74 | -19.41 | 150 | 191 | V |
| 3 | * ** 2.38996 | 32.38 | ADV | 31.9 | -24 | 40.28 | 54 | -13.72 | - | - | 150 | 191 | V |
| 4 | * ** 2.38991 | 32.97 | ADV | 31.9 | -24 | 40.87 | 54 | -13.13 | - | - | 150 | 191 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

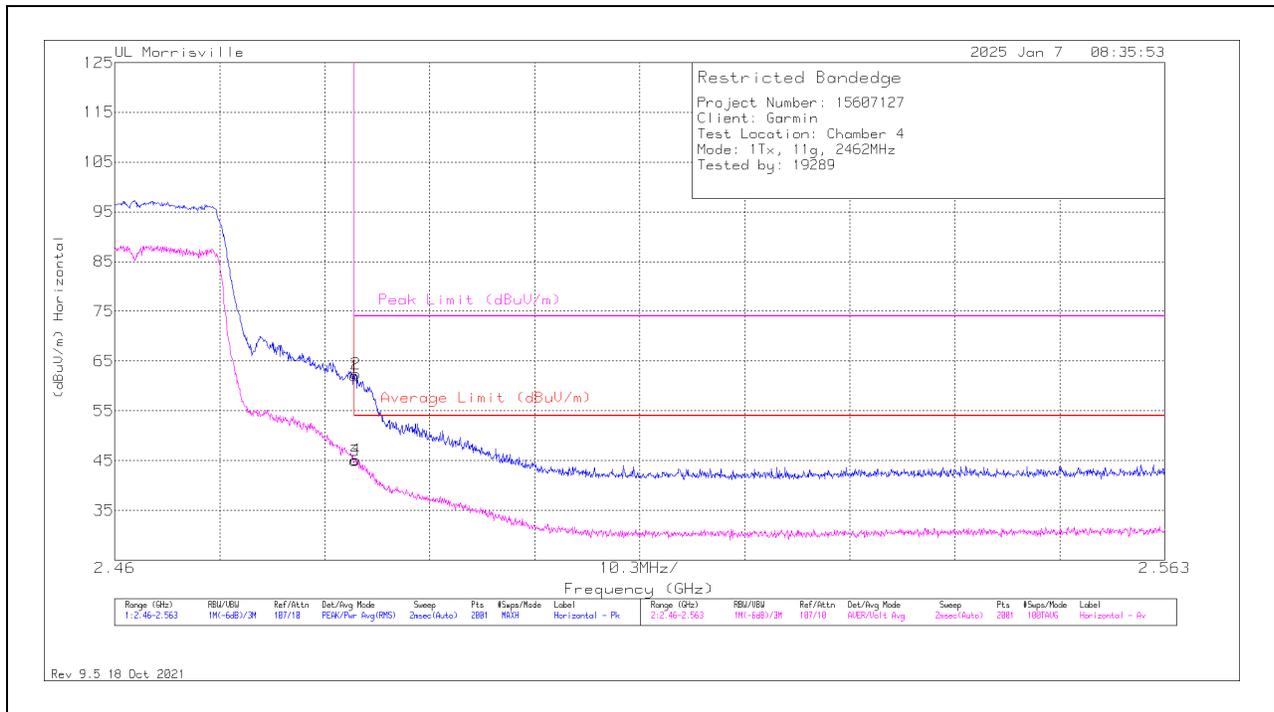
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2462MHz)

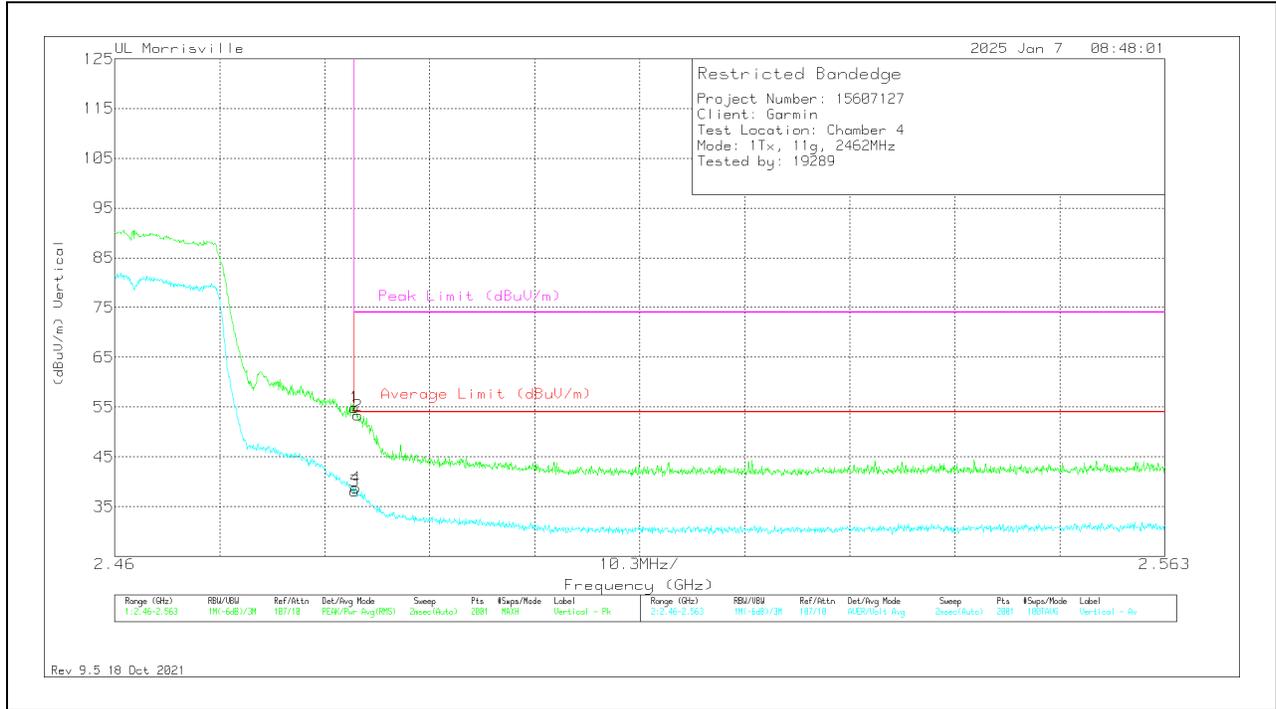
HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 52.48 | Pk | 32.3 | -22.8 | 61.98 | - | - | 74 | -12.02 | 17 | 160 | H |
| 2 | *** 2.48364 | 52.9 | Pk | 32.3 | -22.8 | 62.4 | - | - | 74 | -11.6 | 17 | 160 | H |
| 3 | *** 2.48354 | 35.47 | ADV | 32.3 | -22.8 | 44.97 | 54 | -9.03 | - | - | 17 | 160 | H |
| 4 | *** 2.48364 | 35.68 | ADV | 32.3 | -22.8 | 45.18 | 54 | -8.82 | - | - | 17 | 160 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 45.37 | Pk | 32.3 | -22.8 | 54.87 | - | - | 74 | -19.13 | 17 | 160 | V |
| 2 | *** 2.48384 | 43.84 | Pk | 32.3 | -22.8 | 53.34 | - | - | 74 | -20.66 | 17 | 160 | V |
| 3 | *** 2.48354 | 28.64 | ADV | 32.3 | -22.8 | 38.14 | 54 | -15.86 | - | - | 17 | 160 | V |
| 4 | *** 2.48364 | 29.23 | ADV | 32.3 | -22.8 | 38.73 | 54 | -15.27 | - | - | 17 | 160 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

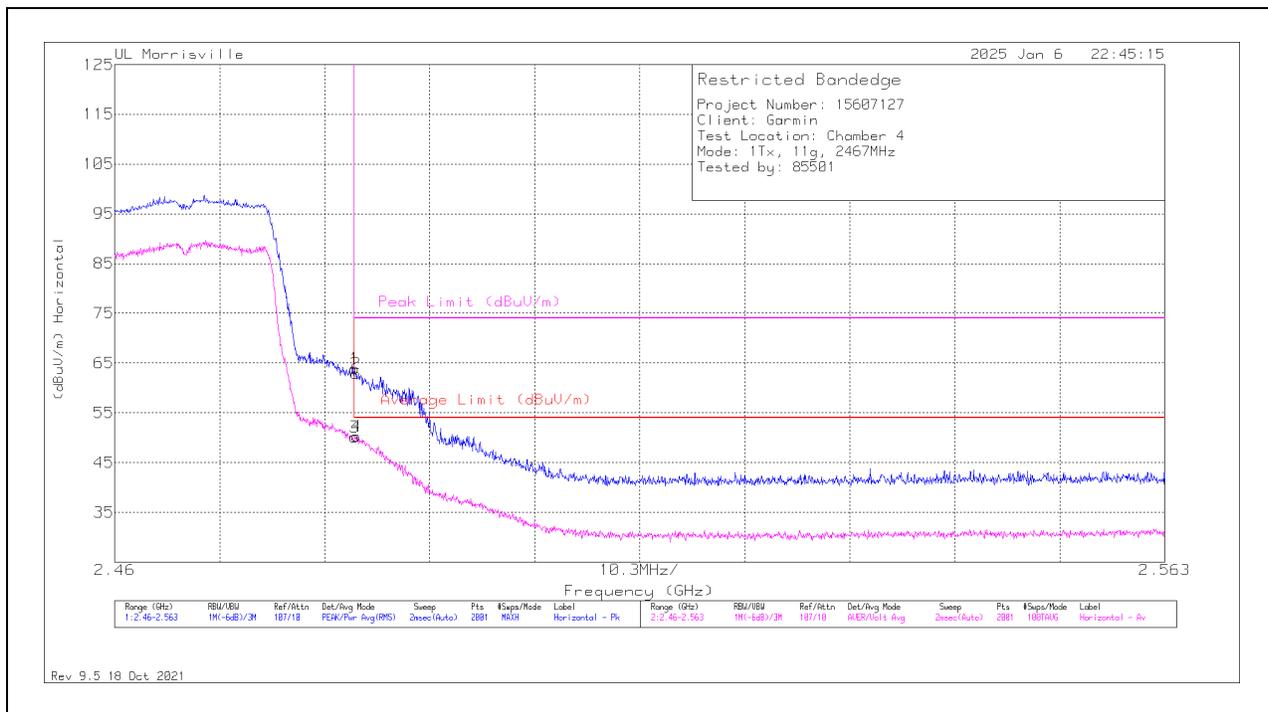
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2467MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 54.42 | Pk | 32.3 | -22.8 | 63.92 | - | - | 74 | -10.08 | 350 | 119 | H |
| 2 | * ** 2.48364 | 53.44 | Pk | 32.3 | -22.8 | 62.94 | - | - | 74 | -11.06 | 350 | 119 | H |
| 3 | * ** 2.48354 | 40.61 | ADV | 32.3 | -22.8 | 50.11 | 54 | -3.89 | - | - | 350 | 119 | H |
| 4 | * ** 2.48369 | 40.73 | ADV | 32.3 | -22.8 | 50.23 | 54 | -3.77 | - | - | 350 | 119 | H |

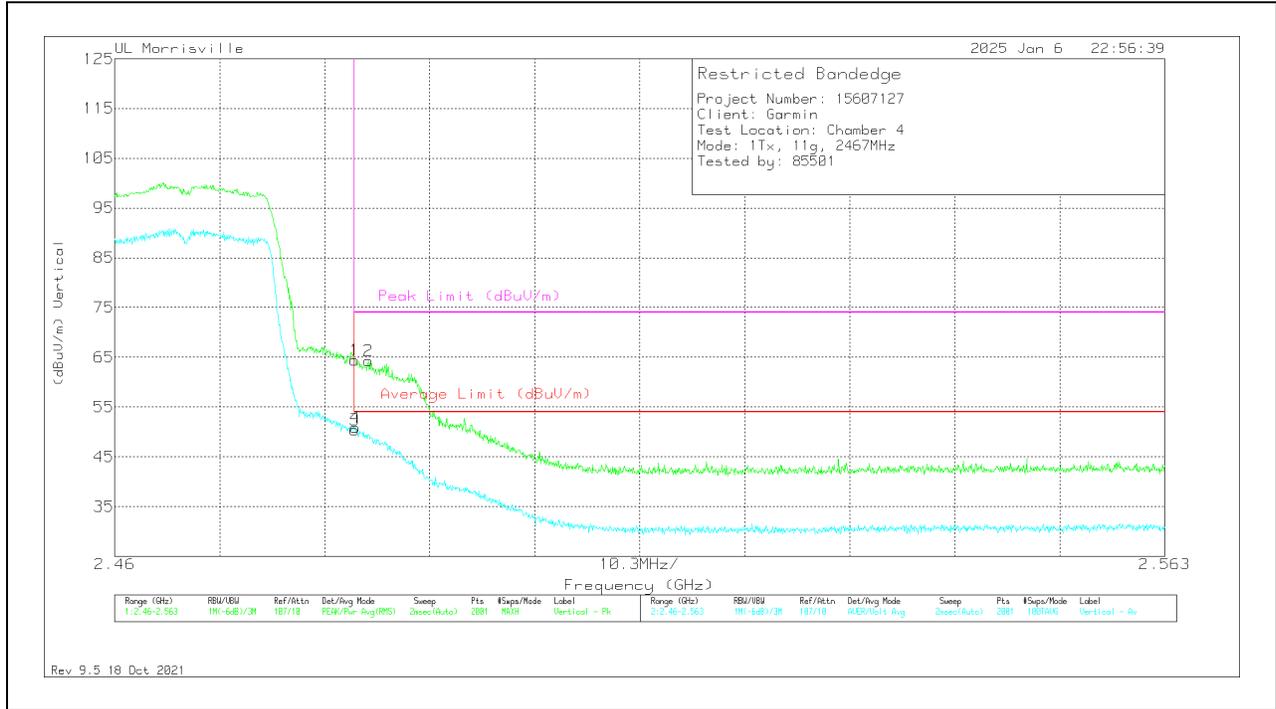
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 54.96 | Pk | 32.3 | -22.8 | 64.46 | - | - | 74 | -9.54 | 26 | 102 | V |
| 2 | *** 2.48487 | 54.81 | Pk | 32.3 | -22.8 | 64.31 | - | - | 74 | -9.69 | 26 | 102 | V |
| 3 | *** 2.48354 | 40.86 | ADV | 32.3 | -22.8 | 50.36 | 54 | -3.64 | - | - | 26 | 102 | V |
| 4 | *** 2.48359 | 41.37 | ADV | 32.3 | -22.8 | 50.87 | 54 | -3.13 | - | - | 26 | 102 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

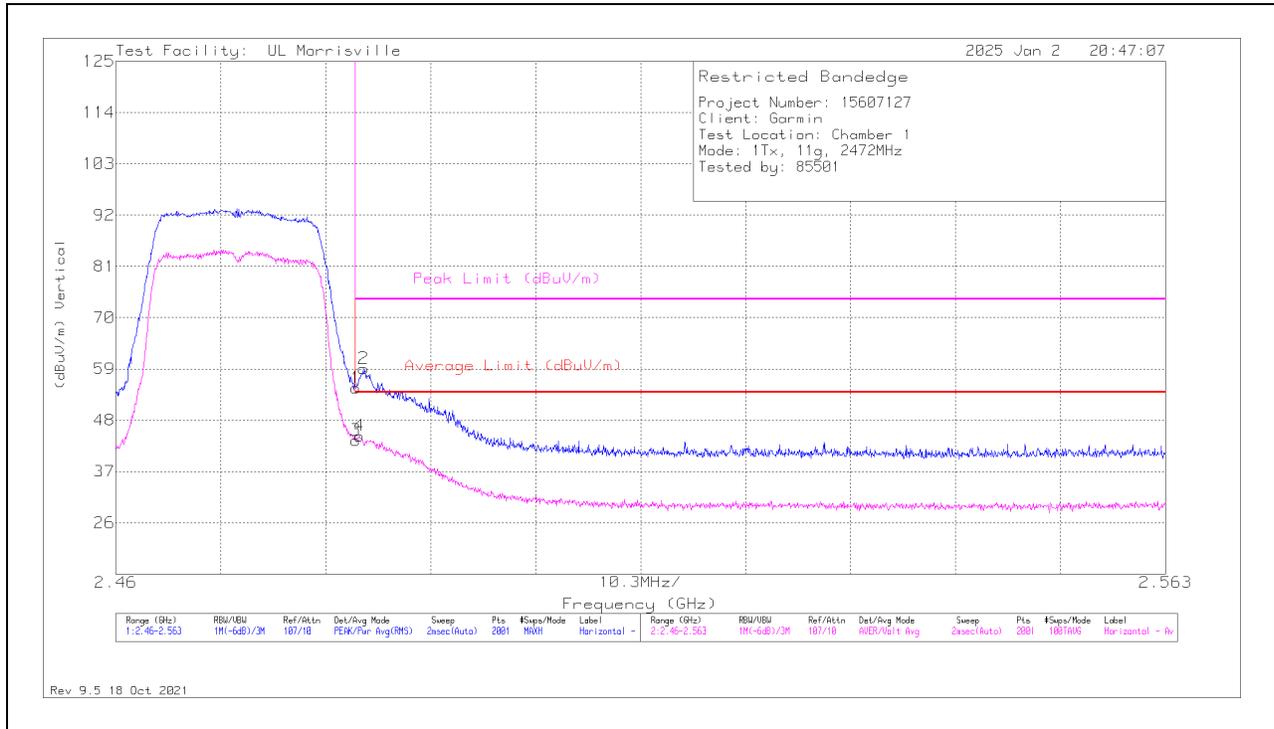
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2472MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 46.42 | Pk | 32.2 | -23.7 | 54.92 | - | - | 74 | -19.08 | 270 | 178 | H |
| 2 | *** 2.48431 | 50.7 | Pk | 32.2 | -23.8 | 59.1 | - | - | 74 | -14.9 | 270 | 178 | H |
| 3 | *** 2.48354 | 35.2 | ADV | 32.2 | -23.7 | 43.7 | 54 | -10.3 | - | - | 270 | 178 | H |
| 4 | *** 2.4839 | 36.15 | ADV | 32.2 | -23.7 | 44.65 | 54 | -9.35 | - | - | 270 | 178 | H |

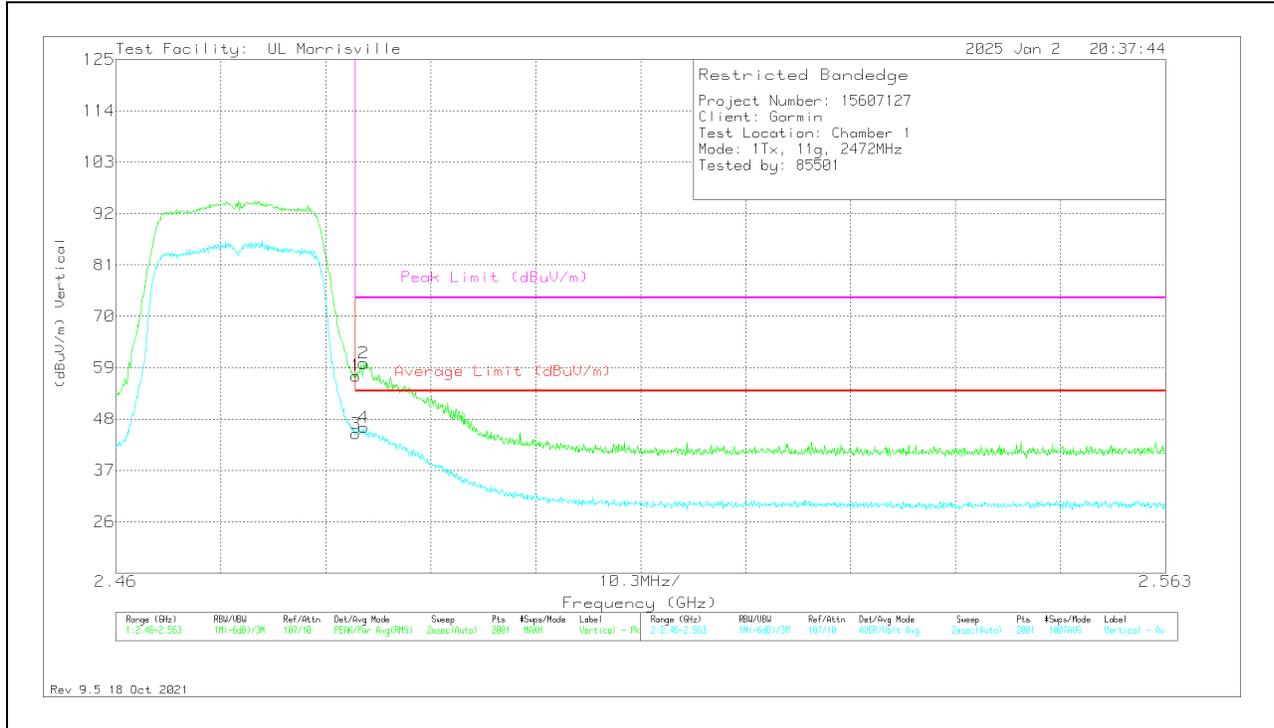
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 48.75 | Pk | 32.2 | -23.7 | 57.25 | - | - | 74 | -16.75 | 143 | 126 | V |
| 2 | *** 2.48431 | 51.55 | Pk | 32.2 | -23.8 | 59.95 | - | - | 74 | -14.05 | 143 | 126 | V |
| 3 | *** 2.48354 | 36.36 | ADV | 32.2 | -23.7 | 44.86 | 54 | -9.14 | - | - | 143 | 126 | V |
| 4 | *** 2.48436 | 37.8 | ADV | 32.2 | -23.8 | 46.2 | 54 | -7.8 | - | - | 143 | 126 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

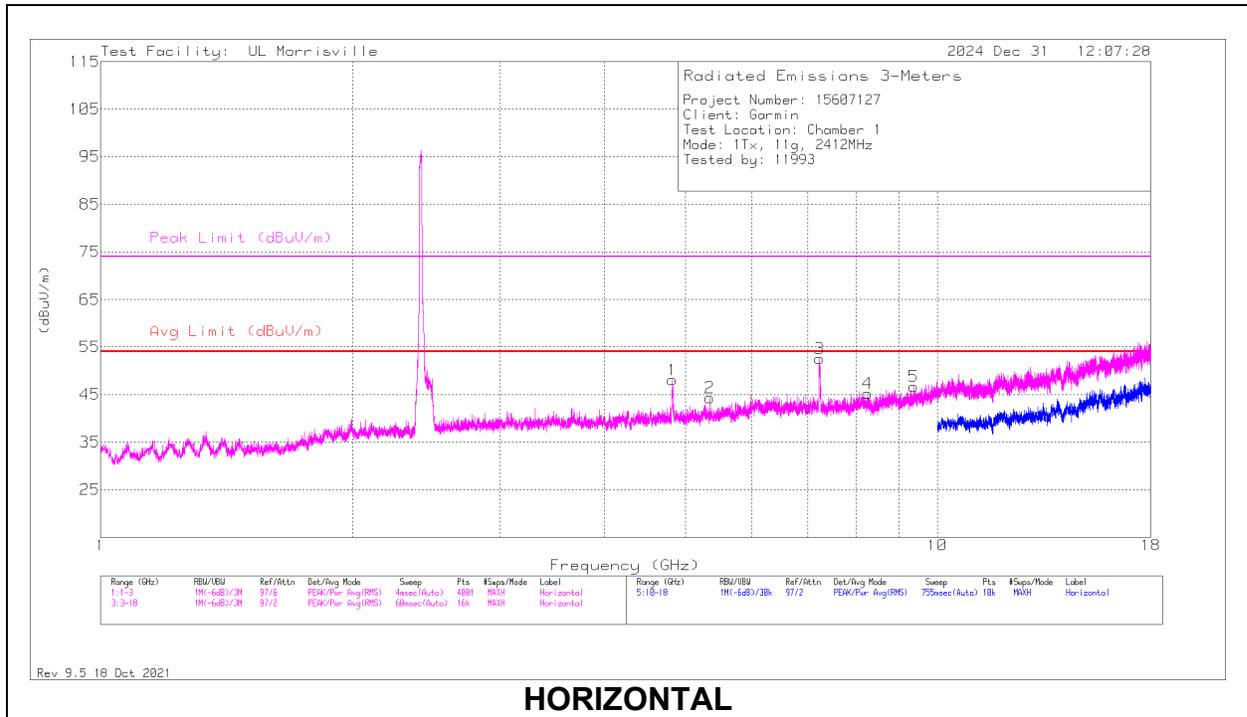
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

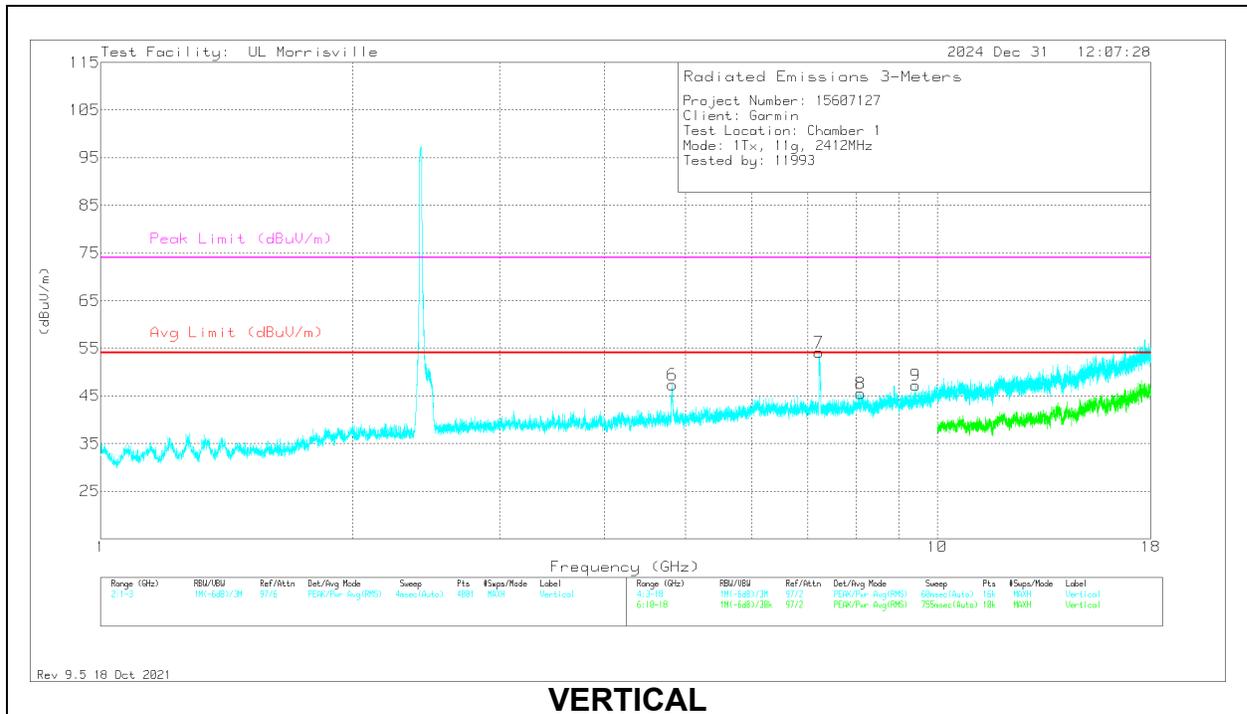
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.82459 | 63.47 | PK2 | 33.9 | -45.3 | 52.07 | - | - | 74 | -21.93 | 156 | 151 | H |
| | * ** 4.82569 | 50.07 | ADV | 33.9 | -45.3 | 38.67 | 54 | -15.33 | - | - | 156 | 151 | H |
| 4 | * ** 8.2575 | 50.1 | Pk | 35.9 | -40.8 | 45.2 | 54 | -8.8 | 74 | -28.8 | 0-360 | 101 | H |
| 5 | * ** 9.37875 | 50.82 | Pk | 36.2 | -40.3 | 46.72 | 54 | -7.28 | 74 | -27.28 | 0-360 | 101 | H |
| 6 | * ** 4.82625 | 58.6 | Pk | 33.9 | -45.2 | 47.3 | 54 | -6.7 | 74 | -26.7 | 0-360 | 200 | V |
| 8 | * ** 8.10563 | 50.45 | Pk | 35.9 | -40.9 | 45.45 | 54 | -8.55 | 74 | -28.55 | 0-360 | 101 | V |
| 9 | * ** 9.42469 | 51.3 | Pk | 36.3 | -40.4 | 47.2 | 54 | -6.8 | 74 | -26.8 | 0-360 | 200 | V |
| 2 | 5.3475 | 53.06 | Pk | 34.3 | -43 | 44.36 | - | - | - | - | 0-360 | 101 | H |
| 7 | 7.22625 | 60.75 | Pk | 35.4 | -42 | 54.15 | - | - | - | - | 0-360 | 101 | V |
| 3 | 7.23938 | 59.51 | Pk | 35.4 | -42.3 | 52.61 | - | - | - | - | 0-360 | 199 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

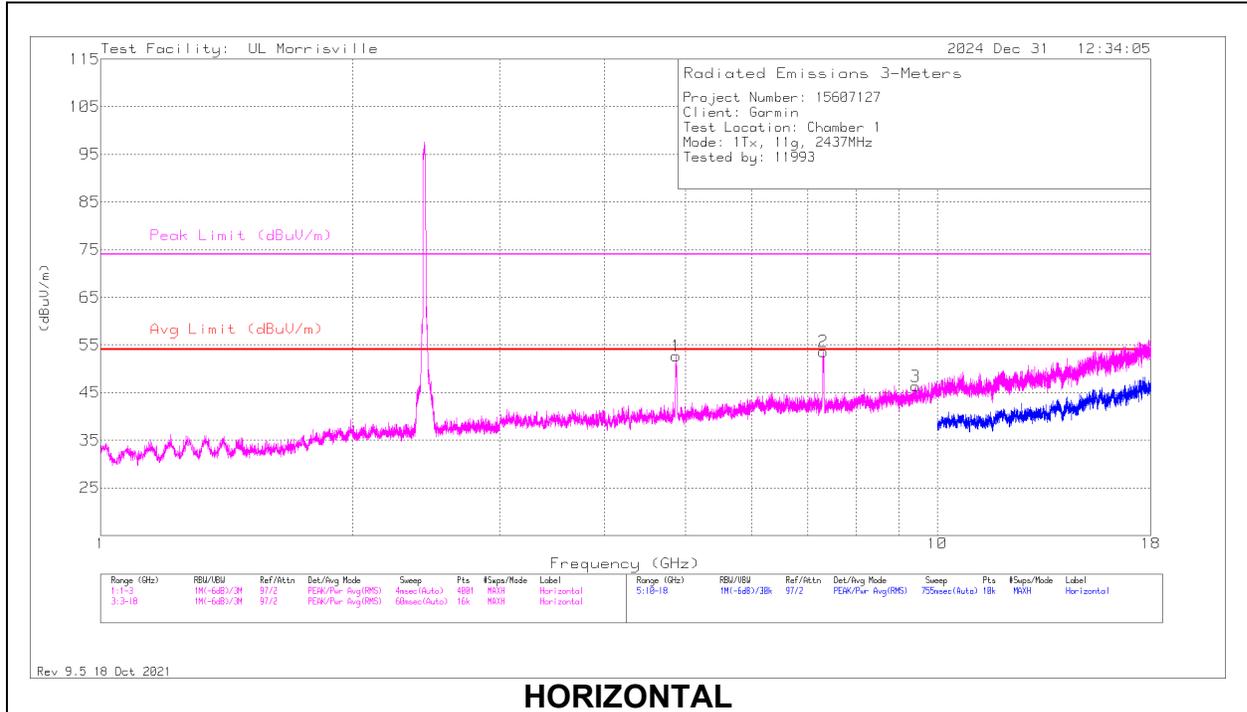
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

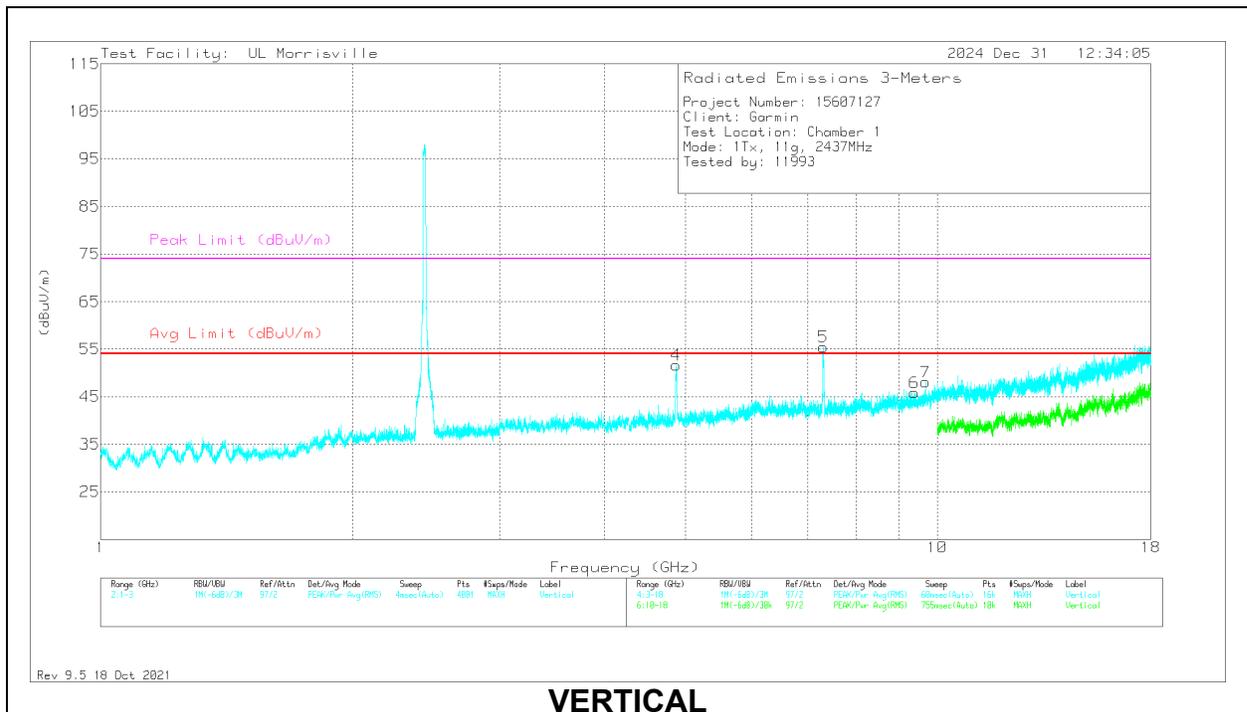
PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.87464 | 65.89 | PK2 | 34 | -44.8 | 55.09 | - | - | 74 | -18.91 | 153 | 115 | H |
| | * ** 4.87384 | 53.36 | ADV | 34 | -44.8 | 42.56 | 54 | -11.44 | - | - | 153 | 115 | H |
| 2 | * ** 7.30206 | 65.3 | PK2 | 35.4 | -41.9 | 58.8 | - | - | 74 | -15.2 | 181 | 189 | H |
| | * ** 7.3081 | 51.52 | ADV | 35.4 | -41.7 | 45.22 | 54 | -8.78 | - | - | 181 | 189 | H |
| 3 | * ** 9.41813 | 49.84 | Pk | 36.3 | -39.8 | 46.34 | 54 | -7.66 | 74 | -27.66 | 0-360 | 101 | H |
| 4 | * ** 4.87776 | 64.97 | PK2 | 34 | -44.7 | 54.27 | - | - | 74 | -19.73 | 121 | 108 | V |
| | * ** 4.87776 | 52.45 | ADV | 34 | -44.7 | 41.75 | 54 | -12.25 | - | - | 121 | 108 | V |
| 5 | * ** 7.31405 | 64.45 | PK2 | 35.4 | -41.6 | 58.25 | - | - | 74 | -15.75 | 180 | 143 | V |
| | * ** 7.31055 | 51.04 | ADV | 35.4 | -41.7 | 44.74 | 54 | -9.26 | - | - | 180 | 143 | V |
| 6 | * ** 9.39375 | 49.53 | Pk | 36.3 | -40 | 45.83 | 54 | -8.17 | 74 | -28.17 | 0-360 | 101 | V |
| 7 | 9.68156 | 50.96 | Pk | 36.8 | -39.7 | 48.06 | - | - | - | - | 0-360 | 101 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

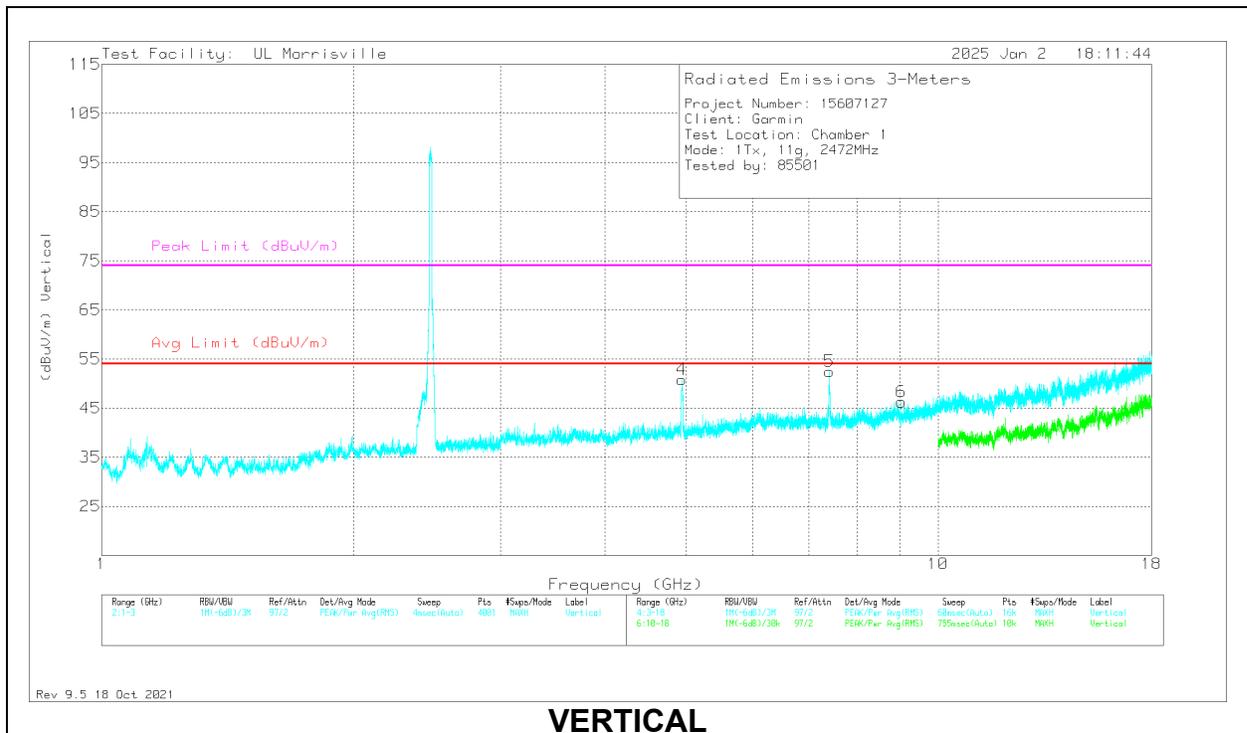
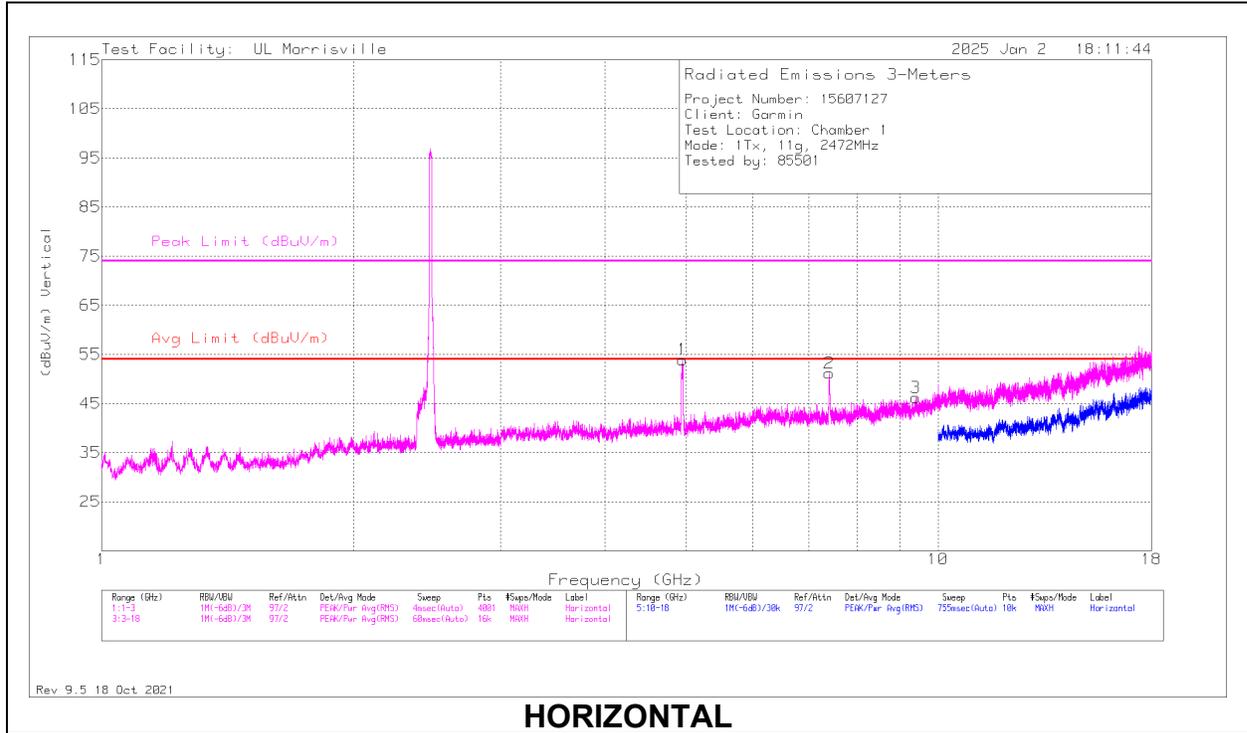
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.94789 | 66.73 | PK2 | 34.2 | -44.5 | 56.43 | - | - | 74 | -17.57 | 167 | 138 | H |
| | * ** 4.94806 | 52.37 | ADV | 34.2 | -44.5 | 42.07 | 54 | -11.93 | - | - | 167 | 138 | H |
| 2 | * ** 7.41012 | 61.31 | PK2 | 35.4 | -41.3 | 55.41 | - | - | 74 | -18.59 | 178 | 158 | H |
| | * ** 7.41127 | 47.82 | ADV | 35.4 | -41.3 | 41.92 | 54 | -12.08 | - | - | 178 | 158 | H |
| 3 | * ** 9.40125 | 50.5 | Pk | 36.3 | -40.6 | 46.2 | 54 | -7.8 | 74 | -27.8 | 0-360 | 101 | H |
| 4 | * ** 4.93825 | 64.69 | PK2 | 34.1 | -44.2 | 54.59 | - | - | 74 | -19.41 | 145 | 119 | V |
| | * ** 4.94039 | 52.25 | ADV | 34.1 | -44.3 | 42.05 | 54 | -11.95 | - | - | 145 | 119 | V |
| 5 | * ** 7.41457 | 61.89 | PK2 | 35.4 | -41.2 | 56.09 | - | - | 74 | -17.91 | 179 | 130 | V |
| | * ** 7.41282 | 48.55 | ADV | 35.4 | -41.2 | 42.75 | 54 | -11.25 | - | - | 179 | 130 | V |
| 6 | * ** 9.03469 | 49.98 | Pk | 35.8 | -39.5 | 46.28 | 54 | -7.72 | 74 | -27.72 | 0-360 | 101 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

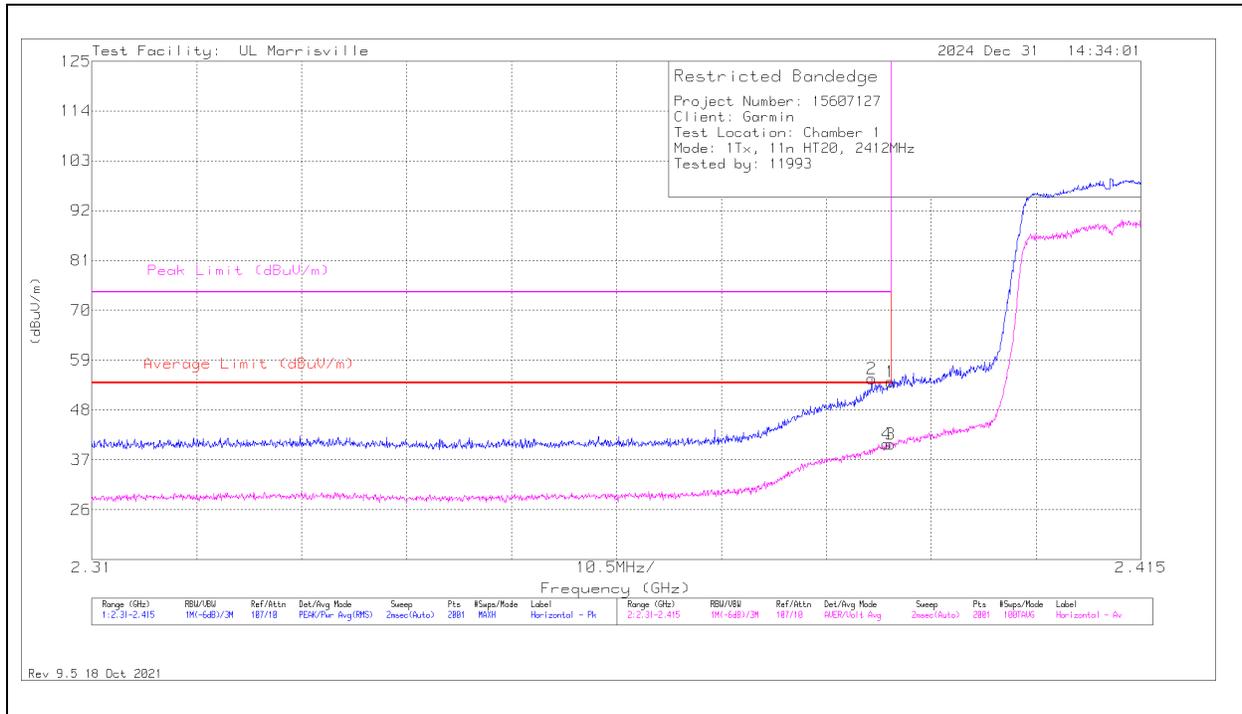
PK2 - Maximum Peak

ADV - Linear Voltage Average

10.1.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

BANDEDGE (LOW CHANNEL, 2412MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 46.33 | Pk | 31.9 | -24 | 54.23 | - | - | 74 | -19.77 | 280 | 118 | H |
| 2 | * ** 2.38807 | 46.95 | Pk | 31.9 | -23.9 | 54.95 | - | - | 74 | -19.05 | 280 | 118 | H |
| 3 | * ** 2.38996 | 32.56 | ADV | 31.9 | -24 | 40.46 | 54 | -13.54 | - | - | 280 | 118 | H |
| 4 | * ** 2.38954 | 32.58 | ADV | 31.9 | -24 | 40.48 | 54 | -13.52 | - | - | 280 | 118 | H |

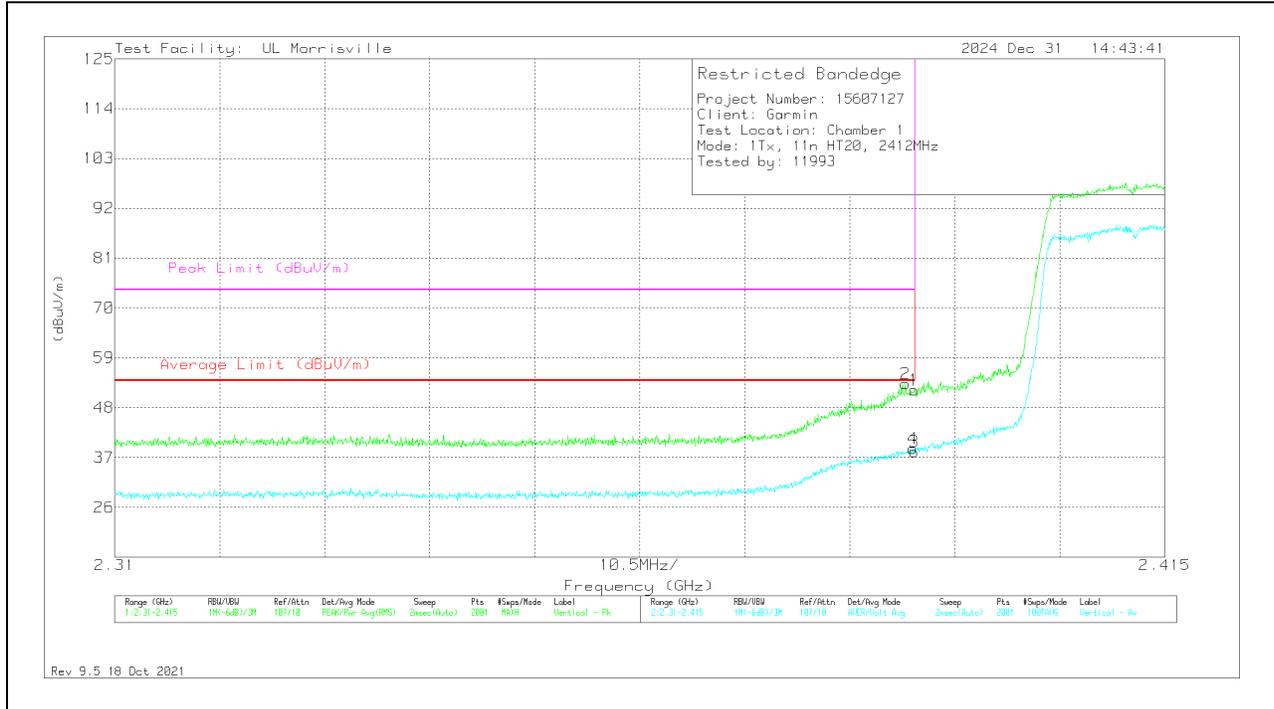
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 44 | Pk | 31.9 | -24 | 51.9 | - | - | 74 | -22.1 | 127 | 177 | V |
| 2 | *** 2.38907 | 45.32 | Pk | 31.9 | -24 | 53.22 | - | - | 74 | -20.78 | 127 | 177 | V |
| 3 | *** 2.38996 | 30.34 | ADV | 31.9 | -24 | 38.24 | 54 | -15.76 | - | - | 127 | 177 | V |
| 4 | *** 2.3898 | 31.04 | ADV | 31.9 | -24 | 38.94 | 54 | -15.06 | - | - | 127 | 177 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

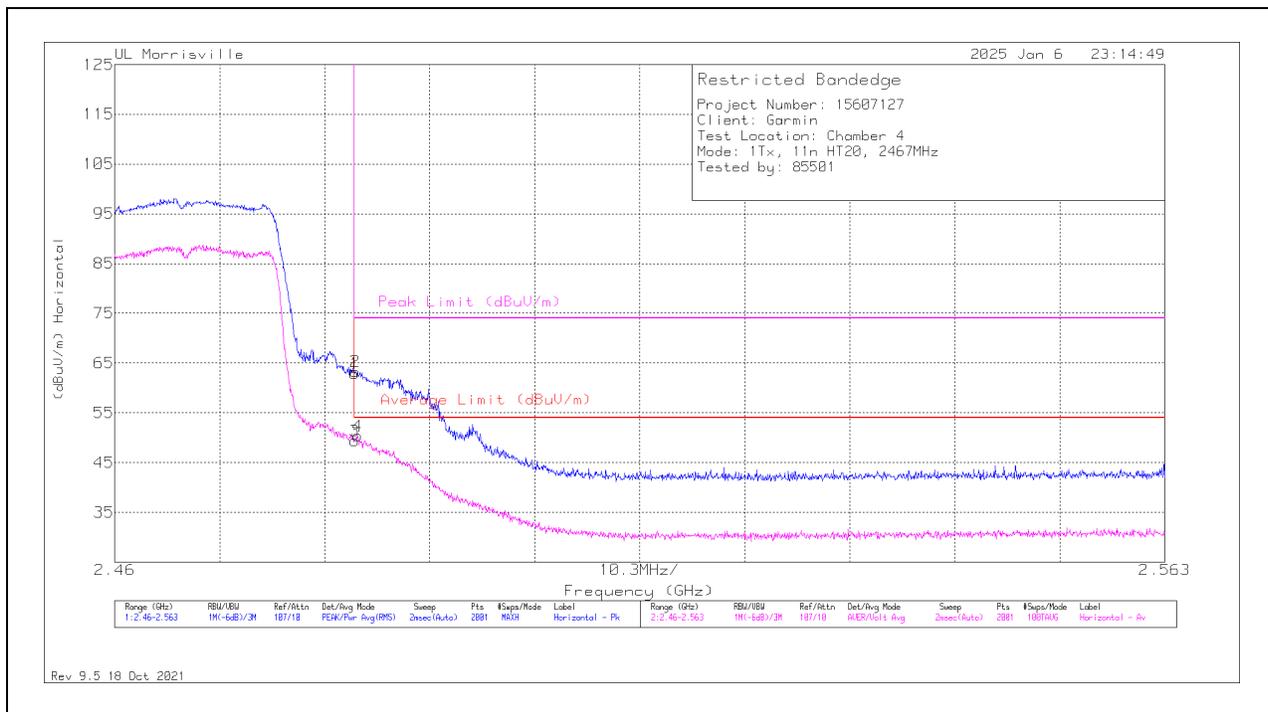
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2467MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 53.47 | Pk | 32.3 | -22.8 | 62.97 | - | - | 74 | -11.03 | 4 | 102 | H |
| 2 | *** 2.48359 | 53.77 | Pk | 32.3 | -22.8 | 63.27 | - | - | 74 | -10.73 | 4 | 102 | H |
| 3 | *** 2.48354 | 39.85 | ADV | 32.3 | -22.8 | 49.35 | 54 | -4.65 | - | - | 4 | 102 | H |
| 4 | *** 2.48384 | 40.84 | ADV | 32.3 | -22.8 | 50.34 | 54 | -3.66 | - | - | 4 | 102 | H |

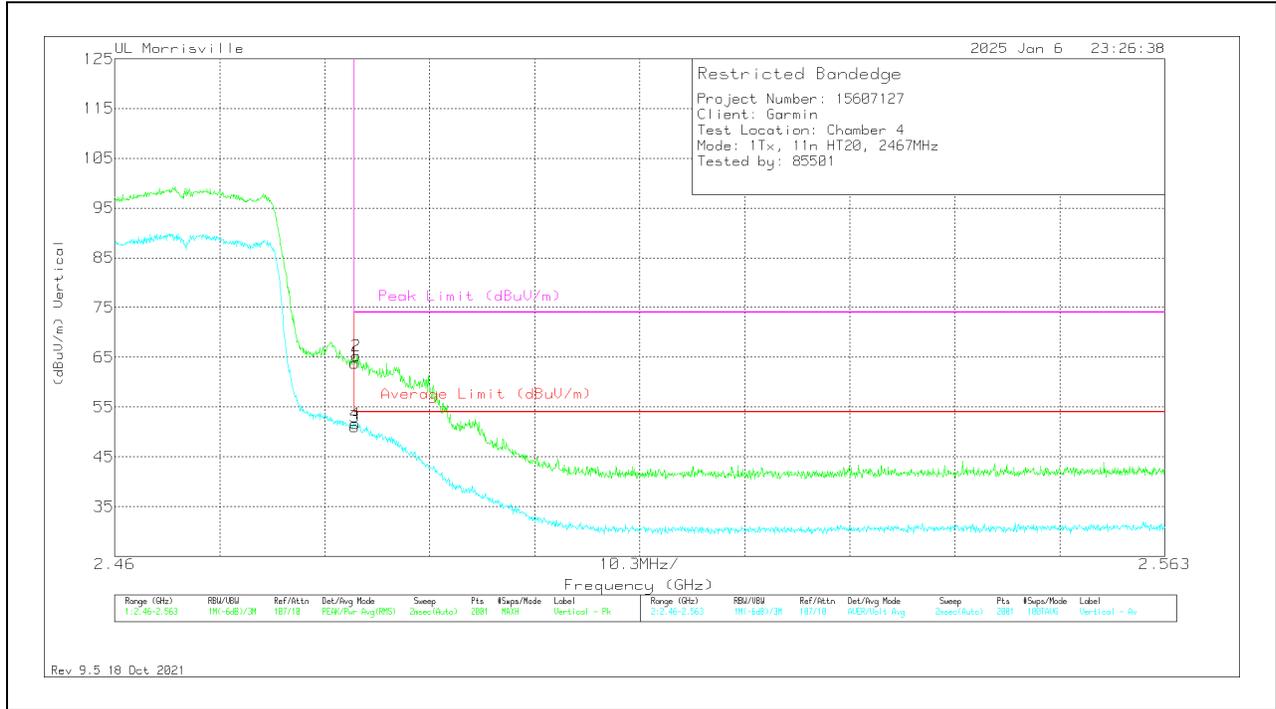
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 54.32 | Pk | 32.3 | -22.8 | 63.82 | - | - | 74 | -10.18 | 25 | 101 | V |
| 2 | *** 2.48369 | 55.84 | Pk | 32.3 | -22.8 | 65.34 | - | - | 74 | -8.66 | 25 | 101 | V |
| 3 | *** 2.48354 | 41.56 | ADV | 32.3 | -22.8 | 51.06 | 54 | -2.94 | - | - | 25 | 100 | V |
| 4 | *** 2.48359 | 42.11 | ADV | 32.3 | -22.8 | 51.61 | 54 | -2.39 | - | - | 25 | 100 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

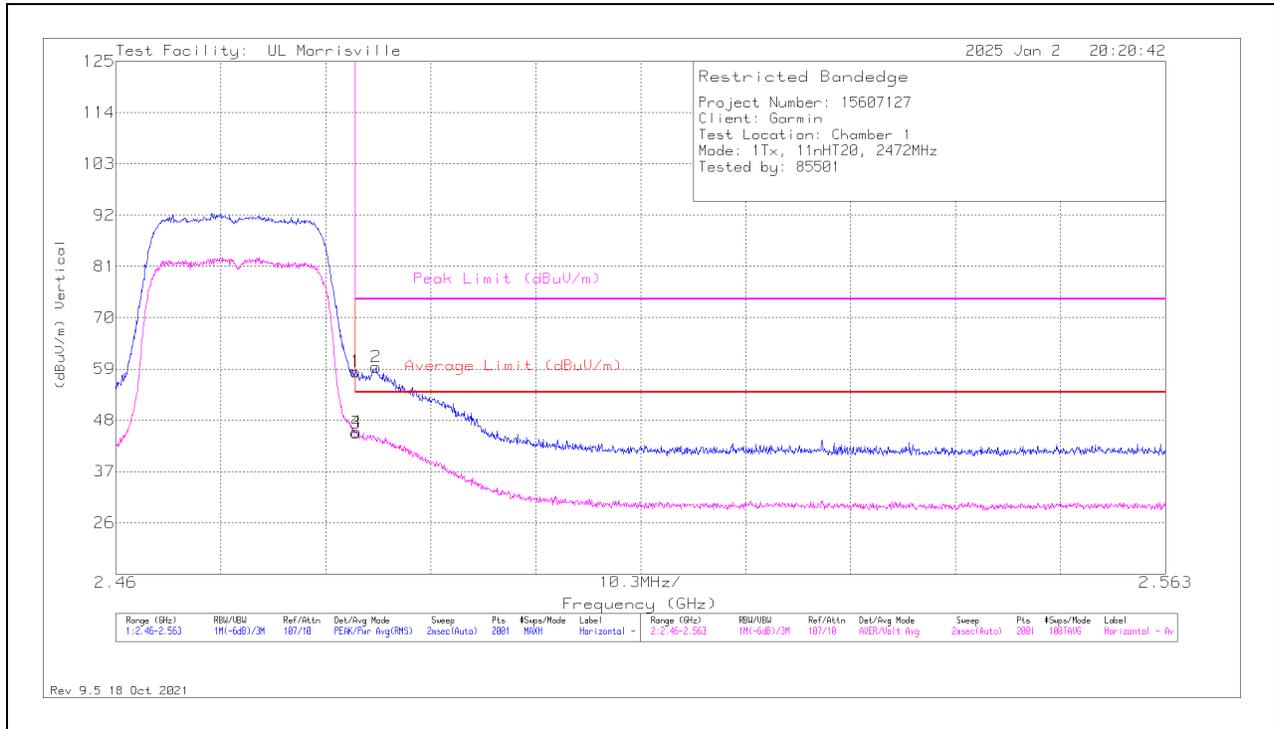
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2472MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 49.94 | Pk | 32.2 | -23.7 | 58.44 | - | - | 74 | -15.56 | 260 | 137 | H |
| 2 | *** 2.48554 | 51.11 | Pk | 32.2 | -23.9 | 59.41 | - | - | 74 | -14.59 | 260 | 137 | H |
| 3 | *** 2.48354 | 36.79 | ADV | 32.2 | -23.7 | 45.29 | 54 | -8.71 | - | - | 260 | 137 | H |
| 4 | *** 2.48359 | 37.02 | ADV | 32.2 | -23.7 | 45.52 | 54 | -8.48 | - | - | 260 | 137 | H |

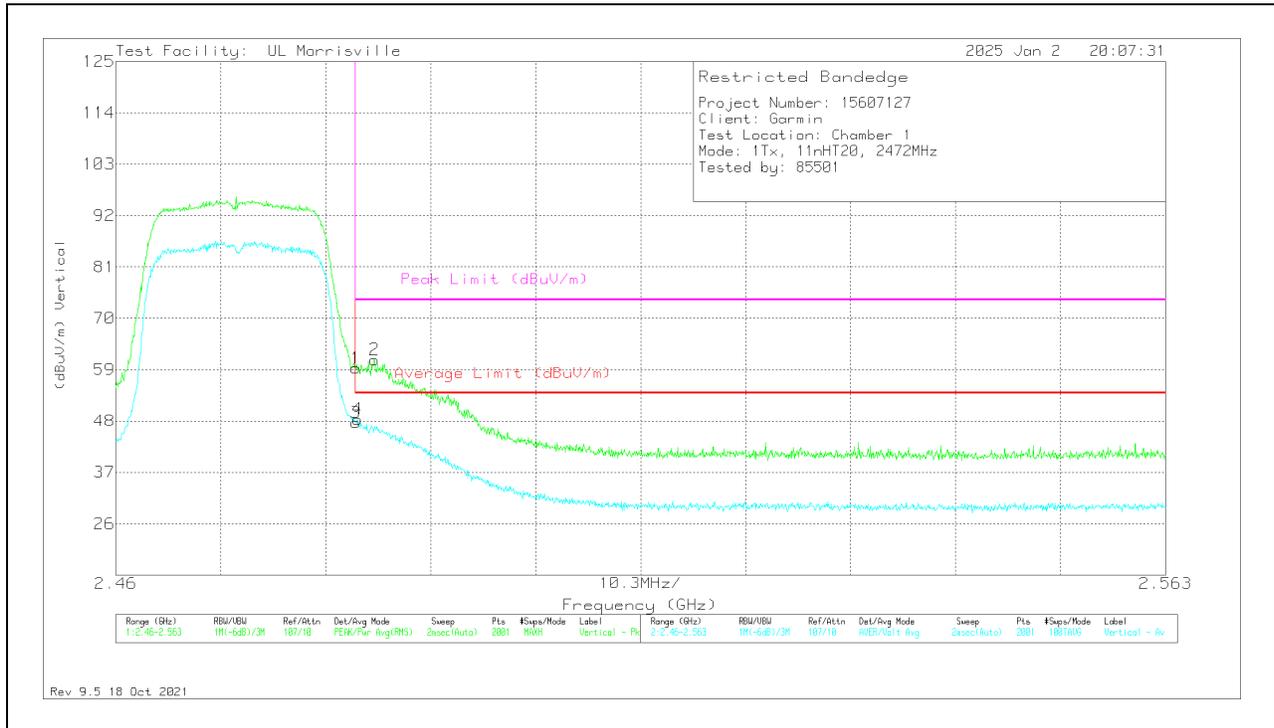
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 50.82 | Pk | 32.2 | -23.7 | 59.32 | - | - | 74 | -14.68 | 140 | 144 | V |
| 2 | * ** 2.48539 | 52.7 | Pk | 32.2 | -23.8 | 61.1 | - | - | 74 | -12.9 | 140 | 144 | V |
| 3 | * ** 2.48354 | 39.17 | ADV | 32.2 | -23.7 | 47.67 | 54 | -6.33 | - | - | 140 | 144 | V |
| 4 | * ** 2.48374 | 39.9 | ADV | 32.2 | -23.7 | 48.4 | 54 | -5.6 | - | - | 140 | 144 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

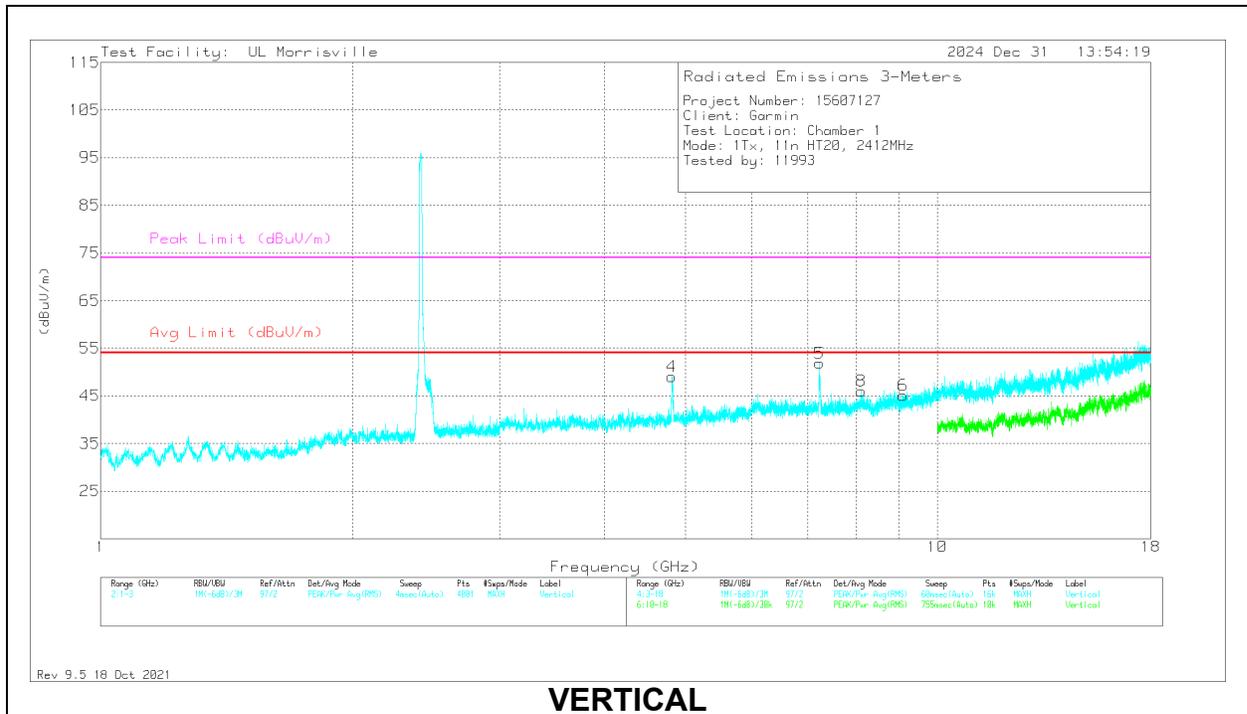
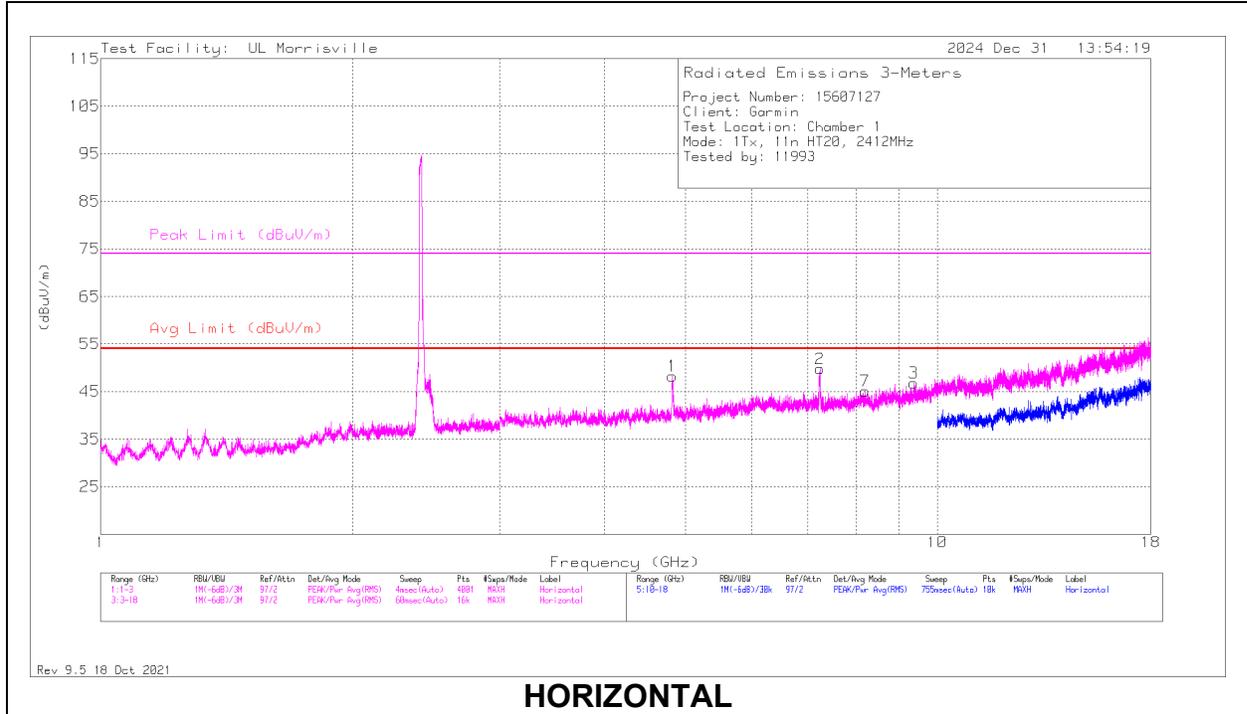
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.82668 | 66.04 | PK2 | 33.9 | -45.2 | 54.74 | - | - | 74 | -19.26 | 162 | 181 | H |
| | * ** 4.82748 | 51.32 | ADV | 33.9 | -45.2 | 40.02 | 54 | -13.98 | - | - | 162 | 181 | H |
| 3 | * ** 9.37219 | 50.95 | Pk | 36.2 | -40.3 | 46.85 | 54 | -7.15 | 74 | -27.15 | 0-360 | 199 | H |
| 7 | * ** 8.20313 | 50.22 | Pk | 35.9 | -41 | 45.12 | 54 | -8.88 | 74 | -28.88 | 0-360 | 199 | H |
| 4 | * ** 4.82653 | 64.09 | PK2 | 33.9 | -45.2 | 52.79 | - | - | 74 | -21.21 | 178 | 118 | V |
| | * ** 4.82301 | 50.95 | ADV | 33.9 | -45.4 | 39.45 | 54 | -14.55 | - | - | 178 | 118 | V |
| 6 | * ** 9.10875 | 49.42 | Pk | 35.9 | -40.2 | 45.12 | 54 | -8.88 | 74 | -28.88 | 0-360 | 101 | V |
| 8 | * ** 8.10938 | 51.15 | Pk | 35.9 | -41 | 46.05 | 54 | -7.95 | 74 | -27.95 | 0-360 | 101 | V |
| 5 | 7.23844 | 58.74 | Pk | 35.4 | -42.3 | 51.84 | - | - | - | - | 0-360 | 200 | V |
| 2 | 7.24031 | 56.56 | Pk | 35.4 | -42.2 | 49.76 | - | - | - | - | 0-360 | 199 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

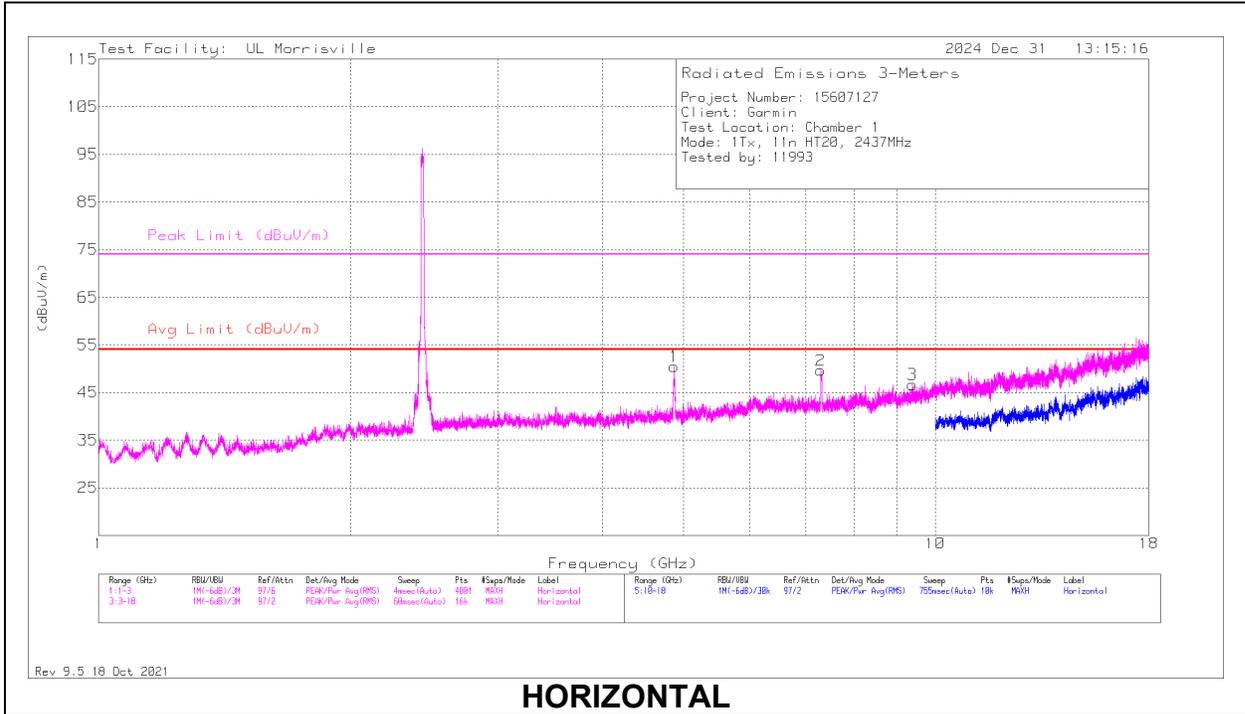
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

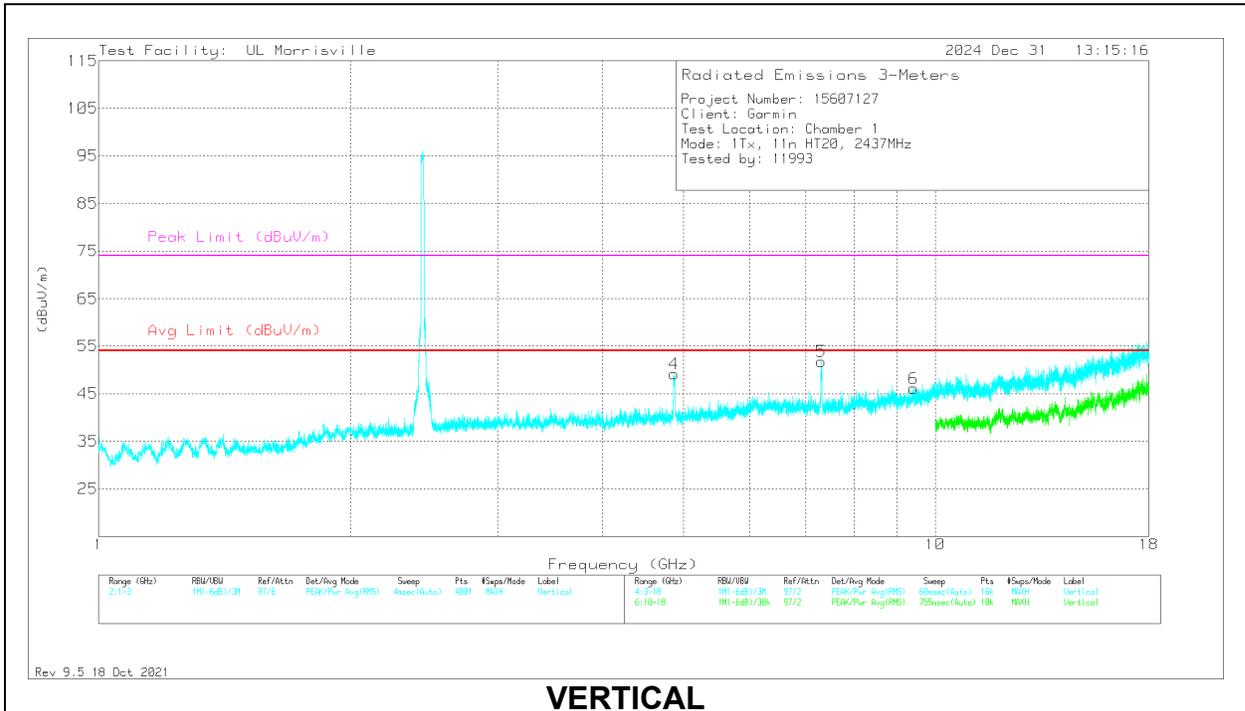
PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.87149 | 64.15 | PK2 | 34 | -44.9 | 53.25 | - | - | 74 | -20.75 | 153 | 134 | H |
| | * ** 4.87518 | 50.79 | ADV | 34 | -44.8 | 39.99 | 54 | -14.01 | - | - | 153 | 134 | H |
| 2 | * ** 7.30161 | 62.03 | PK2 | 35.4 | -41.9 | 55.53 | - | - | 74 | -18.47 | 171 | 206 | H |
| | * ** 7.30796 | 47.86 | ADV | 35.4 | -41.7 | 41.56 | 54 | -12.44 | - | - | 171 | 206 | H |
| 3 | * ** 9.39375 | 50.36 | Pk | 36.3 | -40 | 46.66 | 54 | -7.34 | 74 | -27.34 | 0-360 | 101 | H |
| 4 | * ** 4.87542 | 63.96 | PK2 | 34 | -44.8 | 53.16 | - | - | 74 | -20.84 | 152 | 146 | V |
| | * ** 4.87237 | 51.3 | ADV | 34 | -44.8 | 40.5 | 54 | -13.5 | - | - | 152 | 146 | V |
| 5 | * ** 7.30556 | 61.21 | PK2 | 35.4 | -41.8 | 54.81 | - | - | 74 | -19.19 | 284 | 134 | V |
| | * ** 7.3117 | 47.54 | ADV | 35.4 | -41.7 | 41.24 | 54 | -12.76 | - | - | 284 | 134 | V |
| 6 | * ** 9.41531 | 49.49 | Pk | 36.3 | -39.7 | 46.09 | 54 | -7.91 | 74 | -27.91 | 0-360 | 101 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

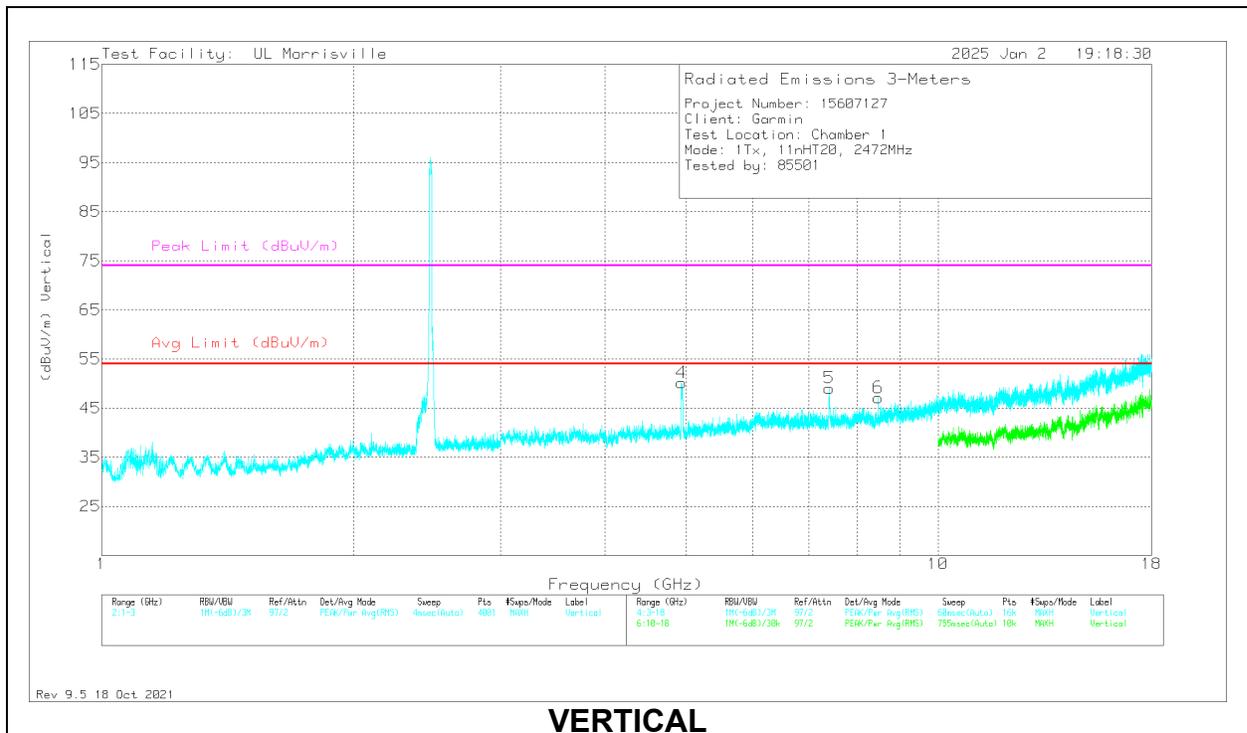
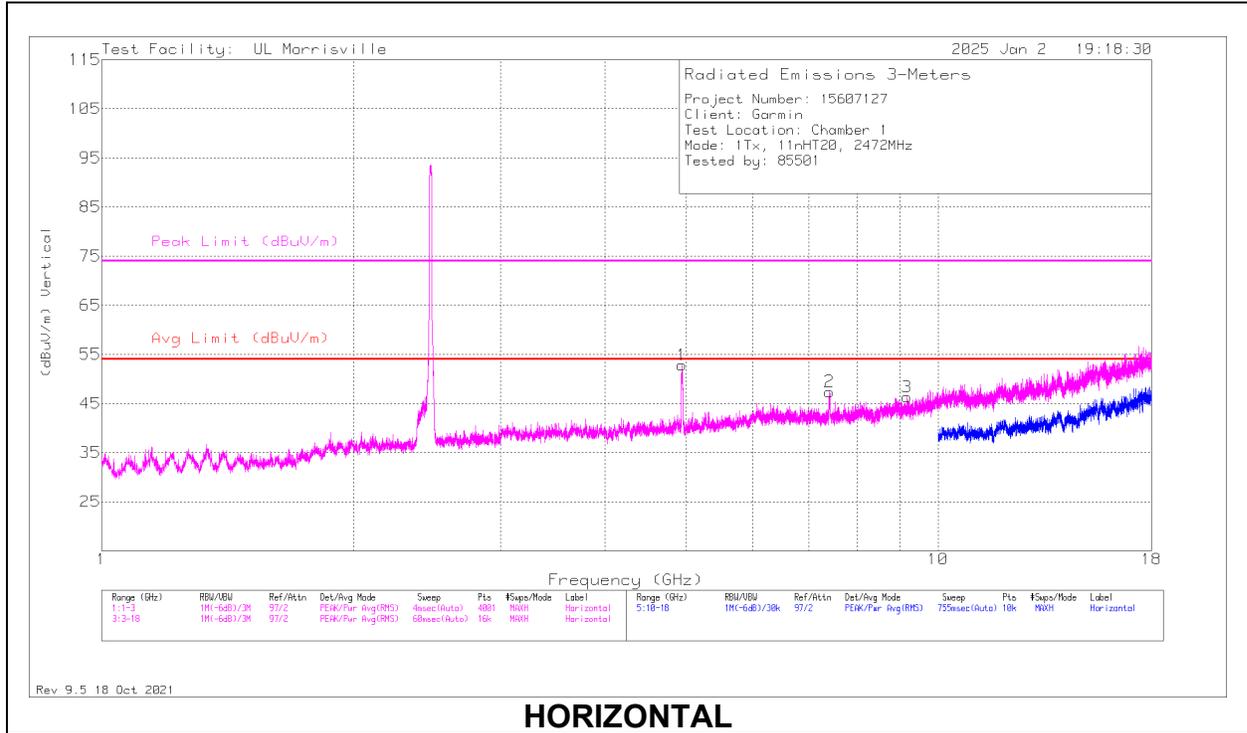
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.94198 | 68.1 | PK2 | 34.1 | -44.3 | 57.9 | - | - | 74 | -16.1 | 165 | 161 | H |
| | *** 4.94187 | 52.28 | ADV | 34.1 | -44.3 | 42.08 | 54 | -11.92 | - | - | 165 | 161 | H |
| 2 | *** 7.41844 | 53.19 | Pk | 35.4 | -41.2 | 47.39 | 54 | -6.61 | 74 | -26.61 | 0-360 | 101 | H |
| 3 | *** 9.18281 | 50.13 | Pk | 36 | -39.8 | 46.33 | 54 | -7.67 | 74 | -27.67 | 0-360 | 101 | H |
| 4 | *** 4.93627 | 62.9 | PK2 | 34.1 | -44.2 | 52.8 | - | - | 74 | -21.2 | 164 | 117 | V |
| | *** 4.93684 | 49.57 | ADV | 34.1 | -44.2 | 39.47 | 54 | -14.53 | - | - | 164 | 117 | V |
| 5 | *** 7.41088 | 58.9 | PK2 | 35.4 | -41.3 | 53 | - | - | 74 | -21 | 280 | 117 | V |
| | *** 7.41259 | 45.29 | ADV | 35.4 | -41.2 | 39.49 | 54 | -14.51 | - | - | 280 | 117 | V |
| 6 | *** 8.47969 | 52.03 | Pk | 35.8 | -40.7 | 47.13 | 54 | -6.87 | 74 | -26.87 | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

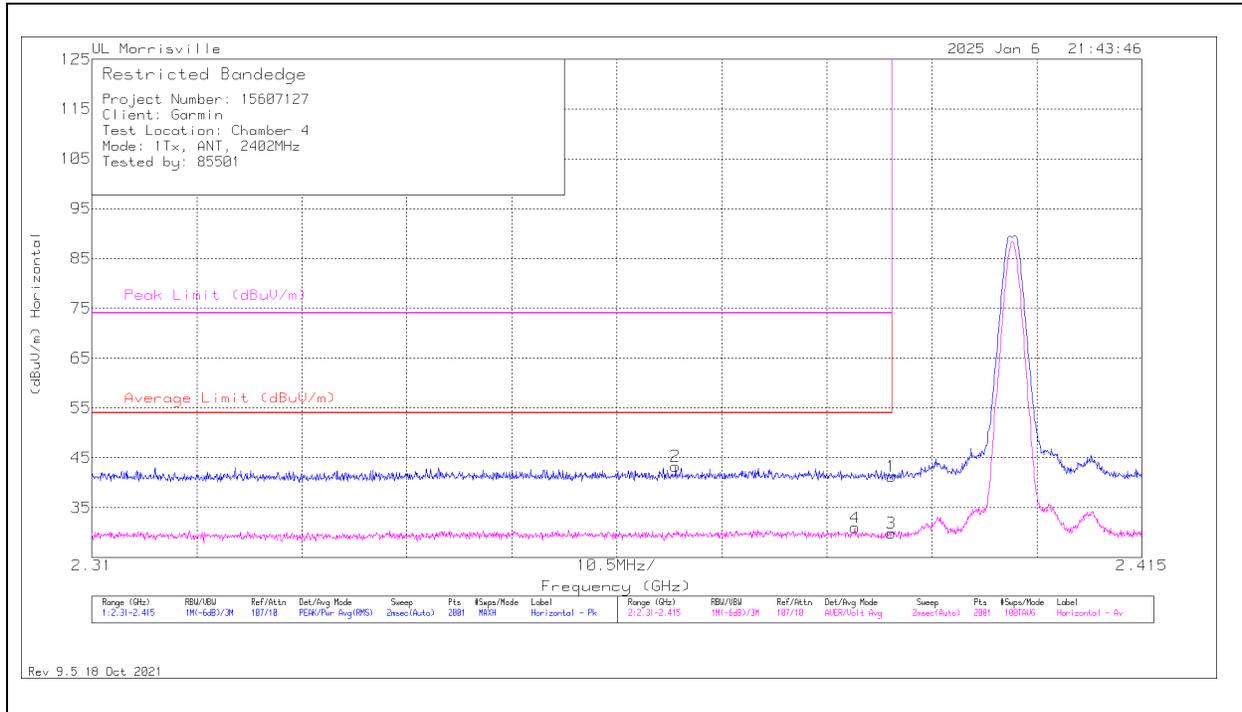
PK2 - Maximum Peak

ADV - Linear Voltage Average

10.1.4. TX ABOVE 1 GHz ANT/ANT+ MODE IN THE 2.4 GHz BAND

BANDEDGE (LOW CHANNEL, 2402MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 32.44 | Pk | 32 | -23.2 | 41.24 | - | - | 74 | -32.76 | 353 | 124 | H |
| 2 | *** 2.36838 | 34.37 | Pk | 31.9 | -23 | 43.27 | - | - | 74 | -30.73 | 353 | 124 | H |
| 3 | *** 2.38996 | 21.03 | ADV | 32 | -23.2 | 29.83 | 54 | -24.17 | - | - | 353 | 124 | H |
| 4 | *** 2.38628 | 22.25 | ADV | 32 | -23.3 | 30.95 | 54 | -23.05 | - | - | 353 | 124 | H |

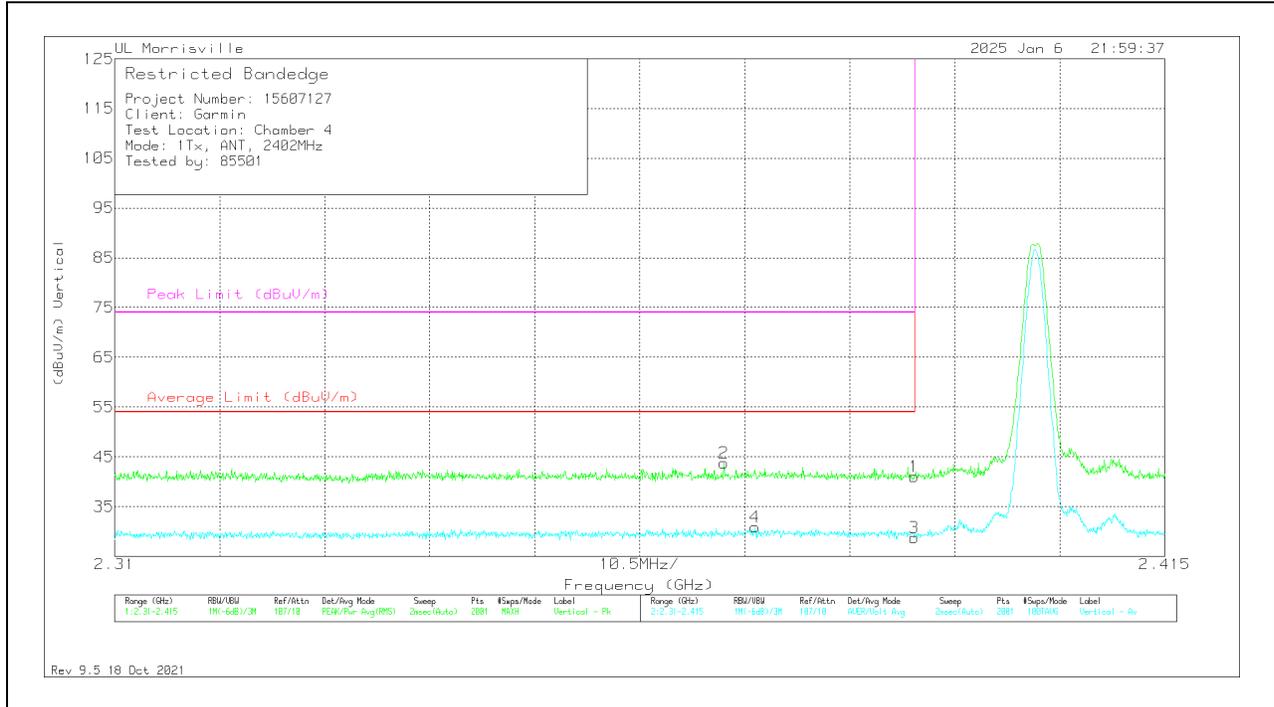
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 32.24 | Pk | 32 | -23.2 | 41.04 | - | - | 74 | -32.96 | 28 | 103 | V |
| 2 | *** 2.3709 | 34.83 | Pk | 31.9 | -23 | 43.73 | - | - | 74 | -30.27 | 28 | 103 | V |
| 3 | *** 2.38996 | 19.92 | ADV | 32 | -23.2 | 28.72 | 54 | -25.28 | - | - | 28 | 103 | V |
| 4 | *** 2.37405 | 21.84 | ADV | 31.9 | -22.9 | 30.84 | 54 | -23.16 | - | - | 28 | 103 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

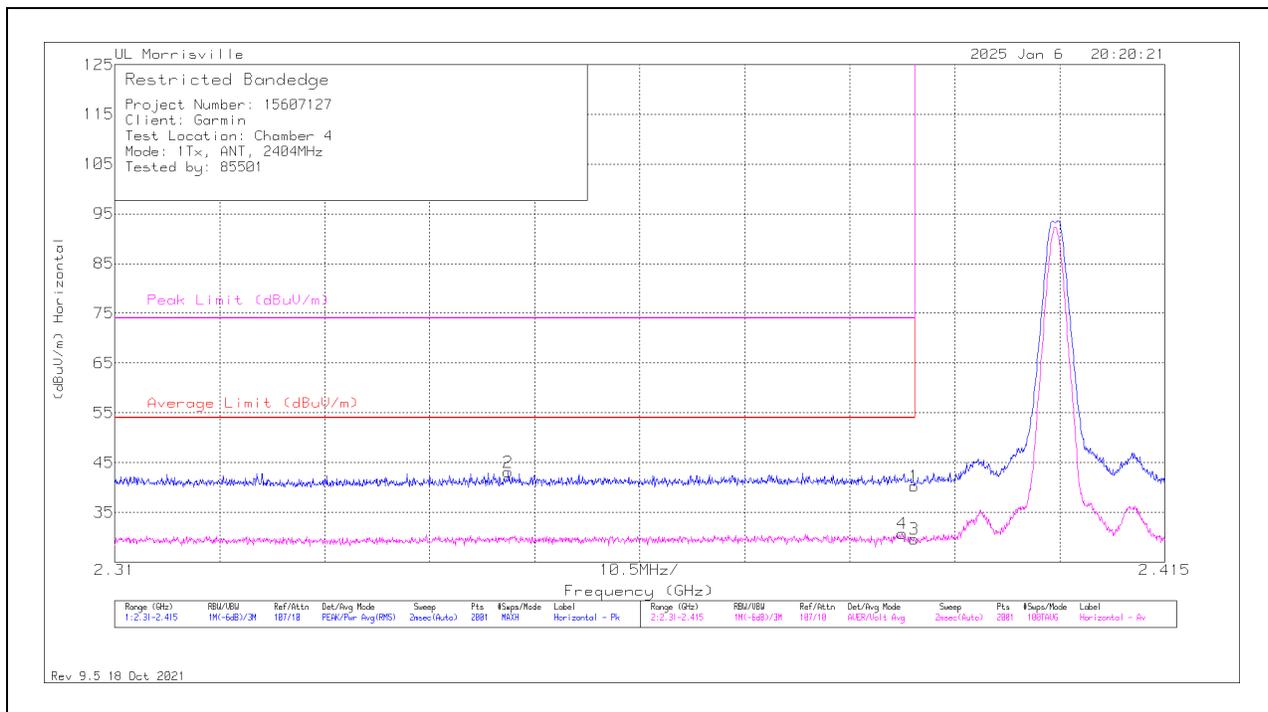
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (LOW CHANNEL, 2404MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 31.46 | Pk | 32 | -23.2 | 40.26 | - | - | 74 | -33.74 | 357 | 122 | H |
| 2 | * ** 2.34932 | 34.28 | Pk | 31.8 | -23 | 43.08 | - | - | 74 | -30.92 | 357 | 122 | H |
| 3 | * ** 2.38996 | 20.8 | ADV | 32 | -23.2 | 29.6 | 54 | -24.4 | - | - | 357 | 122 | H |
| 4 | * ** 2.38875 | 21.94 | ADV | 32 | -23.2 | 30.74 | 54 | -23.26 | - | - | 357 | 122 | H |

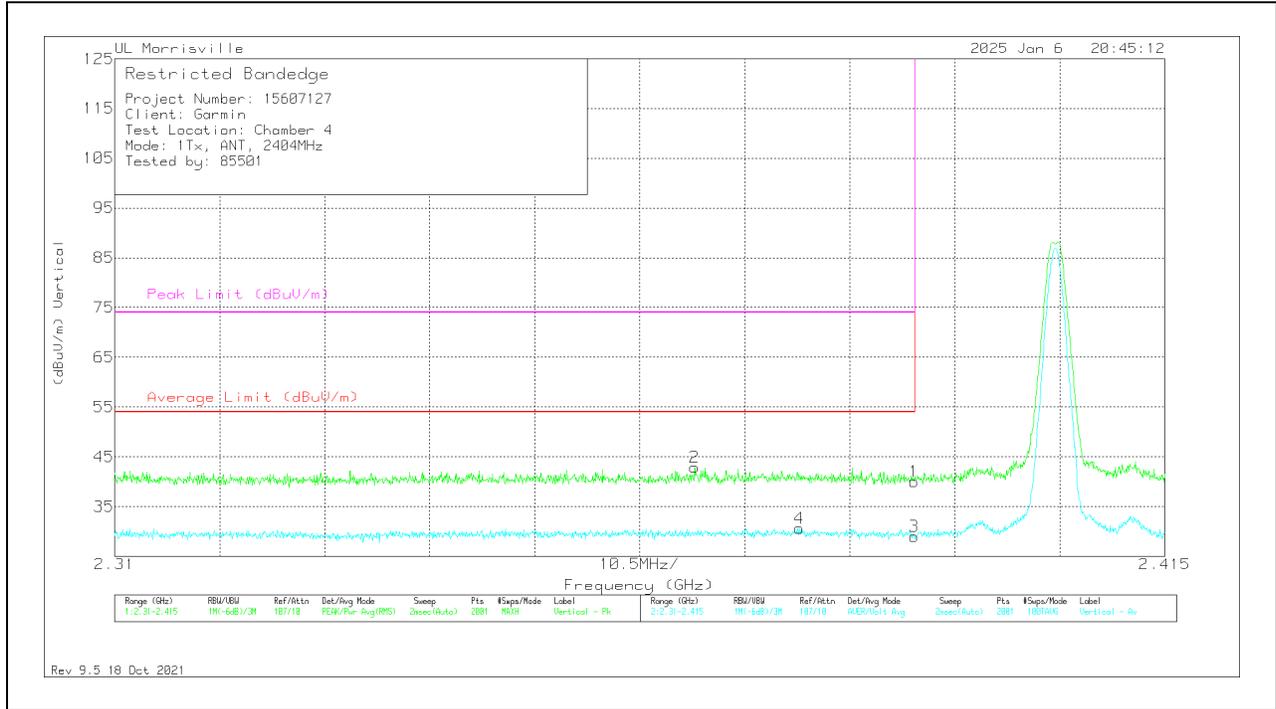
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT

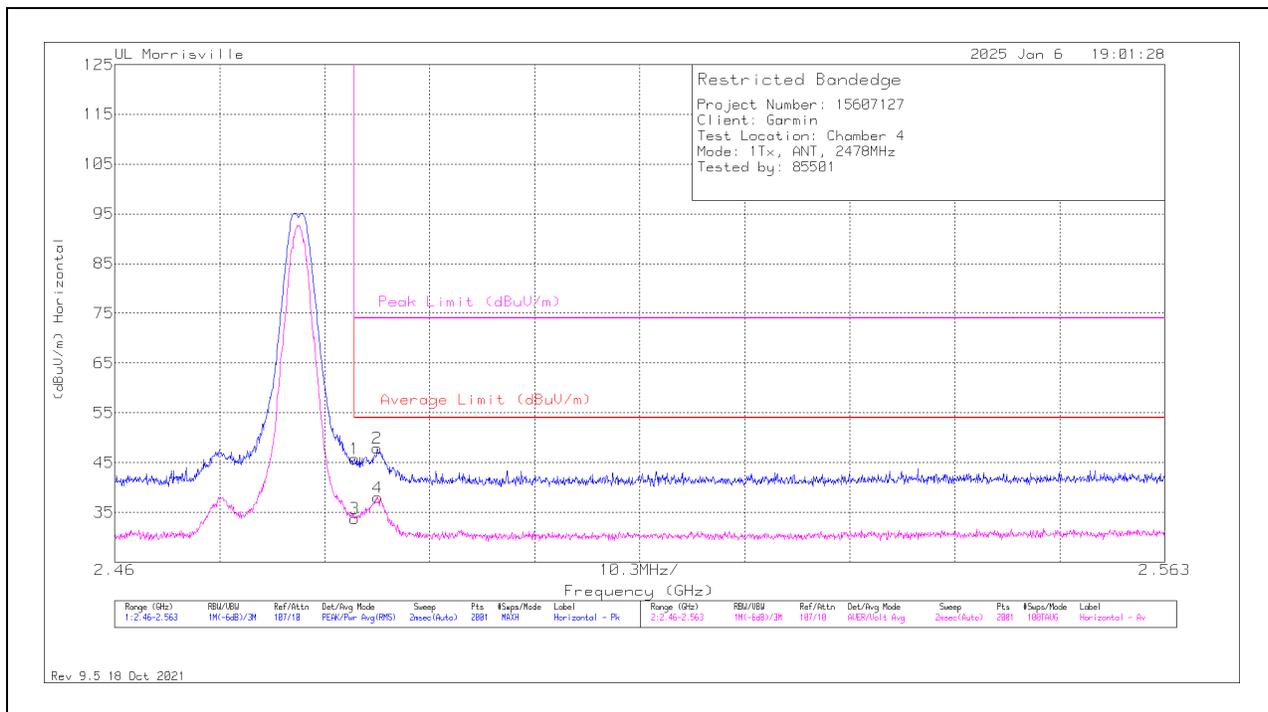


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 31.21 | Pk | 32 | -23.2 | 40.01 | - | - | 74 | -33.99 | 315 | 124 | V |
| 2 | * ** 2.36796 | 33.96 | Pk | 31.9 | -23 | 42.86 | - | - | 74 | -31.14 | 315 | 124 | V |
| 3 | * ** 2.38996 | 20.21 | ADV | 32 | -23.2 | 29.01 | 54 | -24.99 | - | - | 315 | 124 | V |
| 4 | * ** 2.37846 | 21.59 | ADV | 32 | -23 | 30.59 | 54 | -23.41 | - | - | 315 | 124 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2478MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 36.23 | Pk | 32.3 | -22.8 | 45.73 | - | - | 74 | -28.27 | 354 | 137 | H |
| 2 | * ** 2.48575 | 38.37 | Pk | 32.3 | -22.8 | 47.87 | - | - | 74 | -26.13 | 354 | 137 | H |
| 3 | * ** 2.48354 | 24.26 | ADV | 32.3 | -22.8 | 33.76 | 54 | -20.24 | - | - | 354 | 137 | H |
| 4 | * ** 2.4858 | 28.45 | ADV | 32.3 | -22.8 | 37.95 | 54 | -16.05 | - | - | 354 | 137 | H |

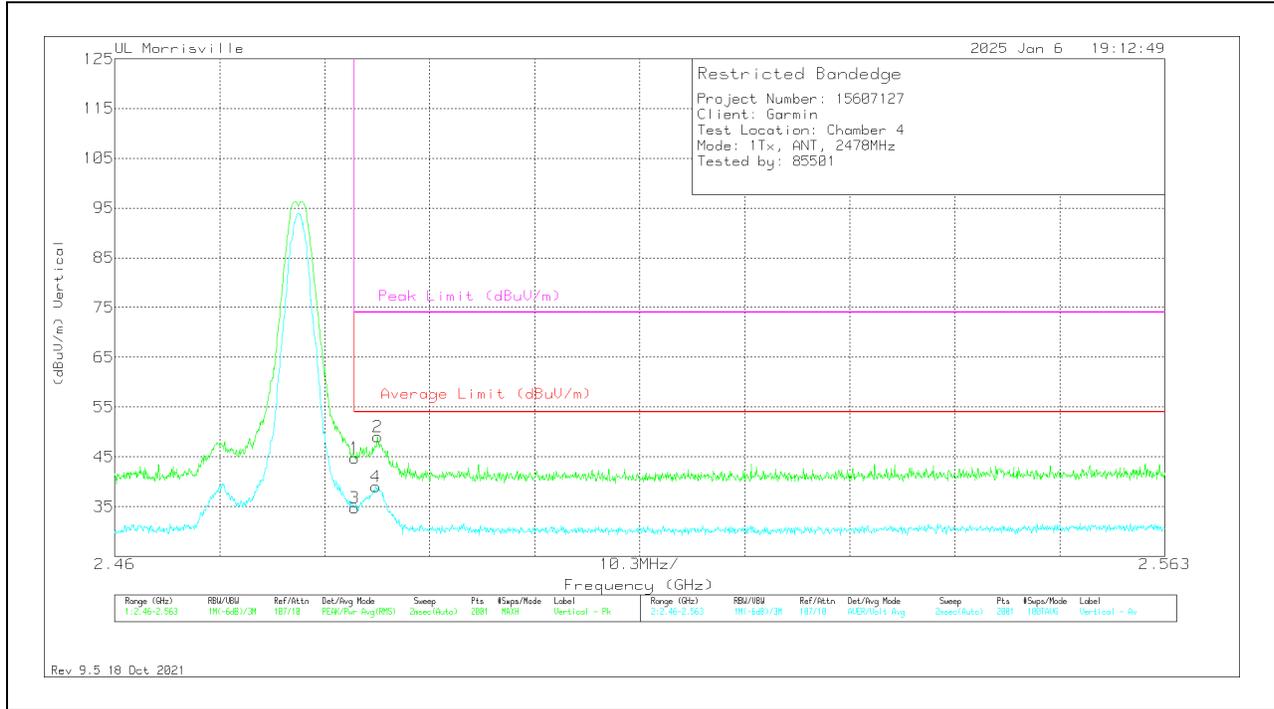
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 35.25 | Pk | 32.3 | -22.8 | 44.75 | - | - | 74 | -29.25 | 24 | 121 | V |
| 2 | * ** 2.4858 | 39.51 | Pk | 32.3 | -22.8 | 49.01 | - | - | 74 | -24.99 | 24 | 121 | V |
| 3 | * ** 2.48354 | 25.27 | ADV | 32.3 | -22.8 | 34.77 | 54 | -19.23 | - | - | 24 | 121 | V |
| 4 | * ** 2.4856 | 29.51 | ADV | 32.3 | -22.8 | 39.01 | 54 | -14.99 | - | - | 24 | 121 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

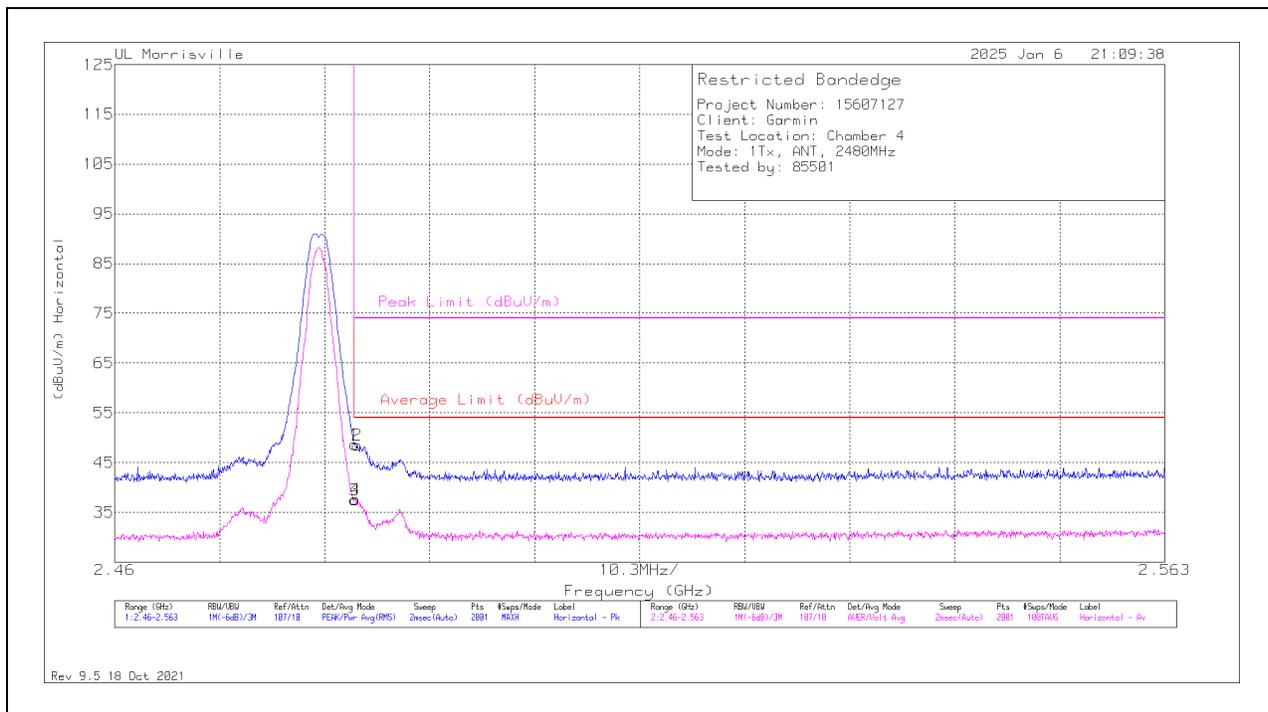
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2480MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 39.12 | Pk | 32.3 | -22.8 | 48.62 | - | - | 74 | -25.38 | 348 | 110 | H |
| 2 | * ** 2.48379 | 39.05 | Pk | 32.3 | -22.8 | 48.55 | - | - | 74 | -25.45 | 348 | 110 | H |
| 3 | * ** 2.48354 | 28.03 | ADV | 32.3 | -22.8 | 37.53 | 54 | -16.47 | - | - | 348 | 110 | H |
| 4 | * ** 2.48359 | 28.16 | ADV | 32.3 | -22.8 | 37.66 | 54 | -16.34 | - | - | 348 | 110 | H |

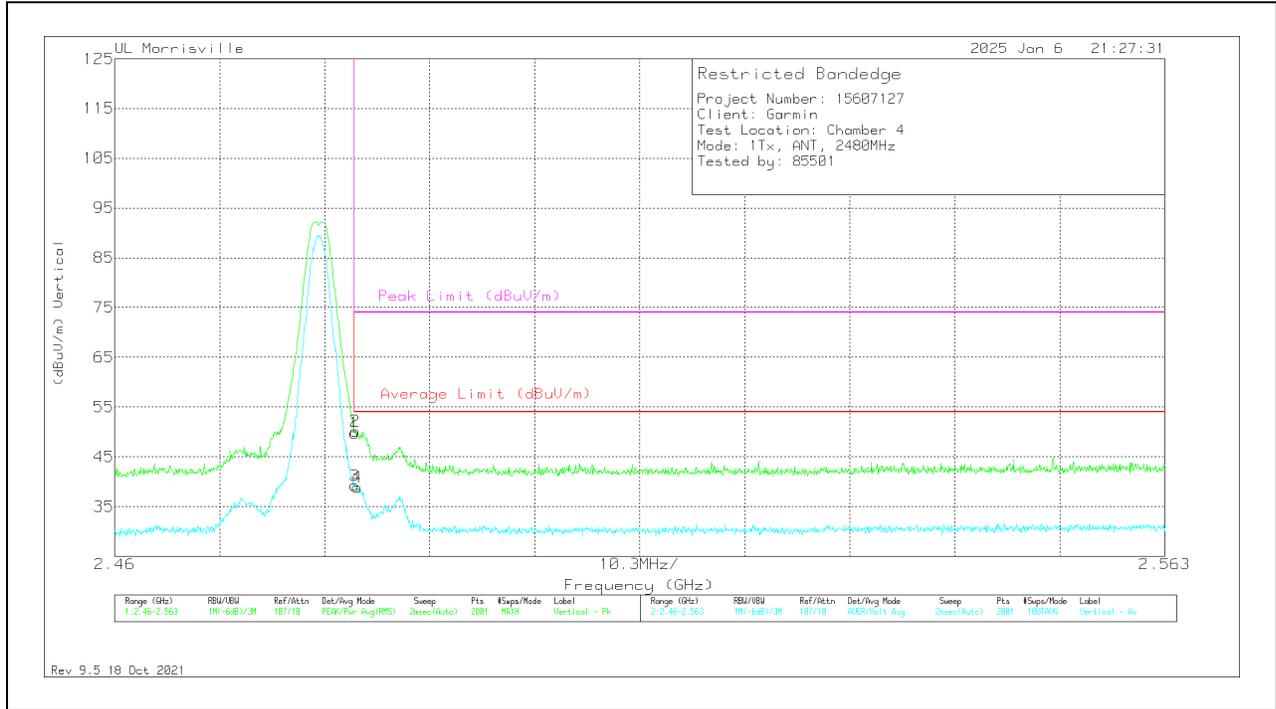
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 40.29 | Pk | 32.3 | -22.8 | 49.79 | - | - | 74 | -24.21 | 26 | 101 | V |
| 2 | *** 2.48359 | 40.62 | Pk | 32.3 | -22.8 | 50.12 | - | - | 74 | -23.88 | 26 | 101 | V |
| 3 | *** 2.48354 | 29.71 | ADV | 32.3 | -22.8 | 39.21 | 54 | -14.79 | - | - | 26 | 100 | V |
| 4 | *** 2.48379 | 29.35 | ADV | 32.3 | -22.8 | 38.85 | 54 | -15.15 | - | - | 26 | 100 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

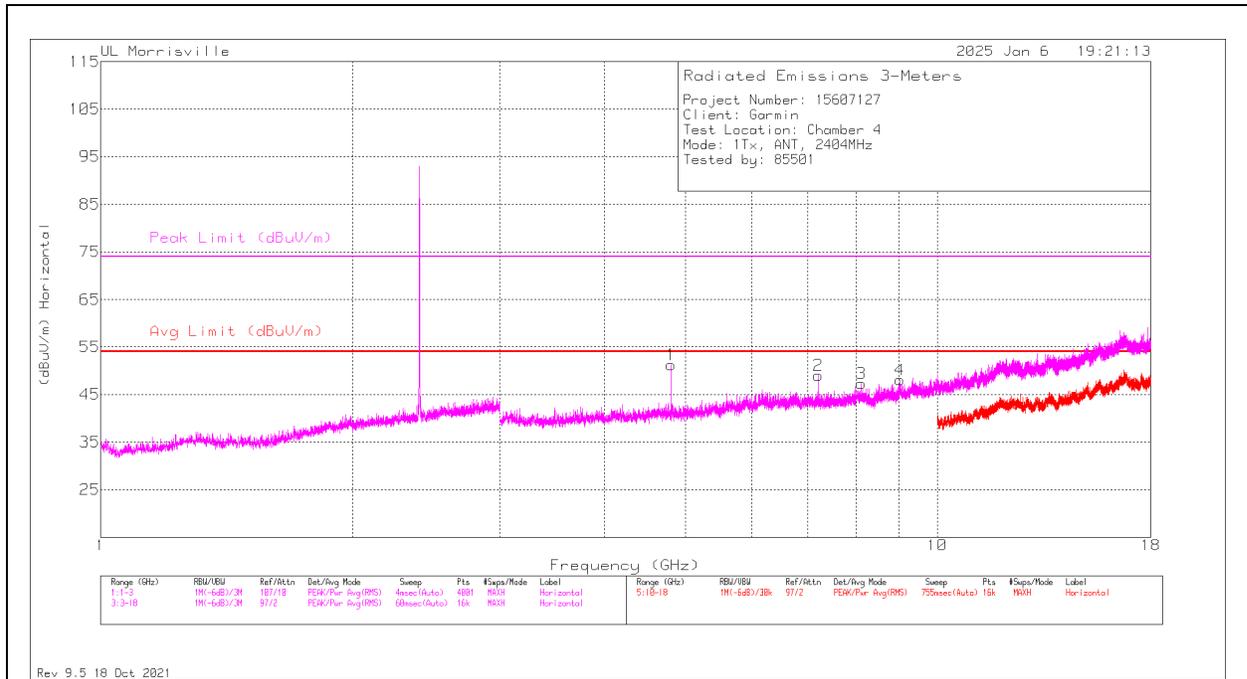
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

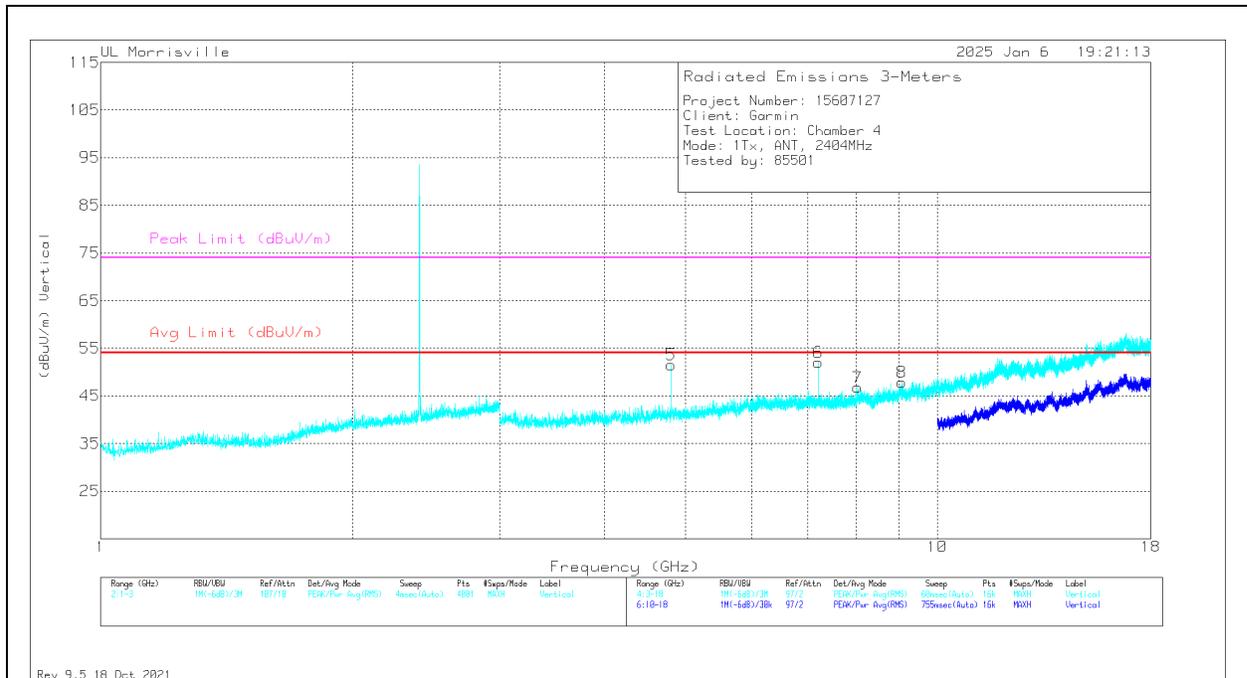
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.8085 | 50.61 | PK2 | 34.1 | -31.3 | 53.41 | - | - | 74 | -20.59 | 198 | 136 | H |
| | * ** 4.80836 | 44.26 | ADV | 34.1 | -31.3 | 47.06 | 54 | -6.94 | - | - | 198 | 136 | H |
| 3 | * ** 8.11969 | 38.18 | Pk | 35.8 | -26.7 | 47.28 | 54 | -6.72 | 74 | -26.72 | 0-360 | 100 | H |
| 4 | * ** 9.02884 | 37.1 | PK2 | 36.2 | -24.4 | 48.9 | - | - | 74 | -25.1 | 254 | 295 | H |
| | * ** 9.03091 | 24.12 | ADV | 36.2 | -24.4 | 35.92 | 54 | -18.08 | - | - | 254 | 295 | H |
| 5 | * ** 4.80847 | 51.48 | PK2 | 34.1 | -31.3 | 54.28 | - | - | 74 | -19.72 | 351 | 254 | V |
| | * ** 4.80836 | 45.3 | ADV | 34.1 | -31.3 | 48.1 | 54 | -5.9 | - | - | 351 | 254 | V |
| 7 | * ** 8.03438 | 38.15 | Pk | 35.8 | -27.2 | 46.75 | 54 | -7.25 | 74 | -27.25 | 0-360 | 200 | V |
| 8 | * ** 9.07313 | 36.03 | Pk | 36.2 | -24.4 | 47.83 | 54 | -6.17 | 74 | -26.17 | 0-360 | 200 | V |
| 2 | 7.21125 | 41.38 | Pk | 35.6 | -27.9 | 49.08 | - | - | - | - | 0-360 | 100 | H |
| 6 | 7.21125 | 44.39 | Pk | 35.6 | -27.9 | 52.09 | - | - | - | - | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

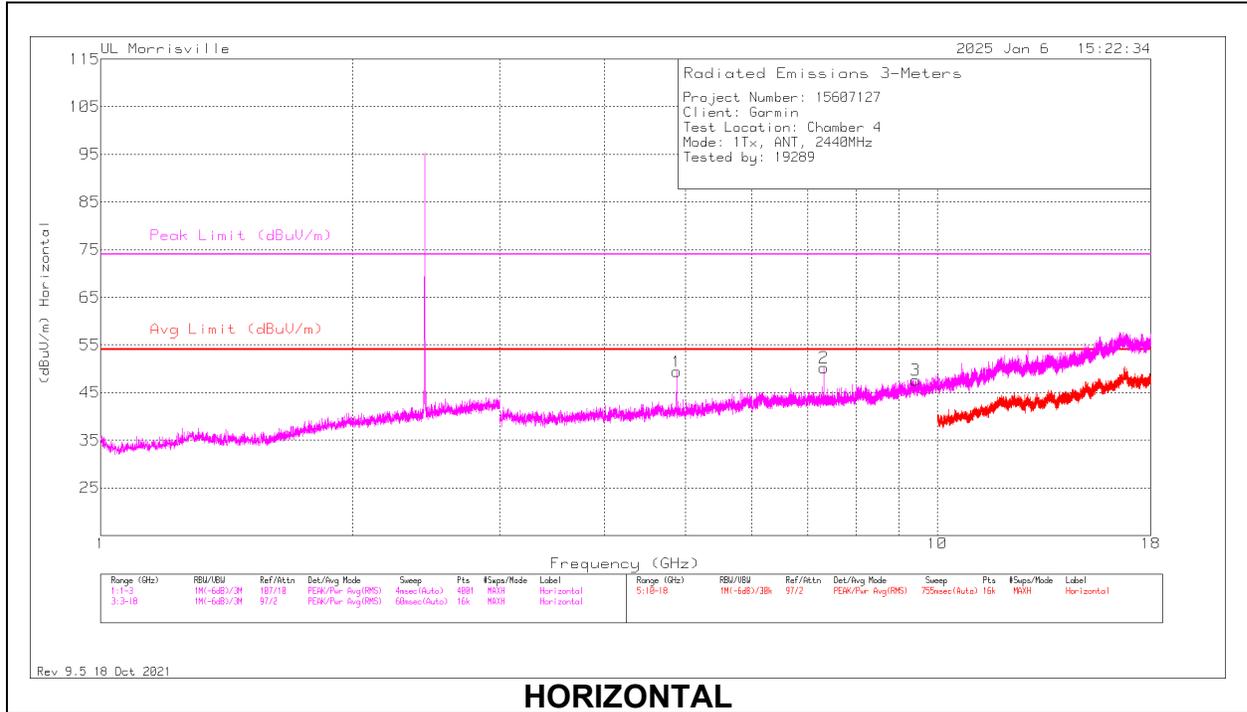
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

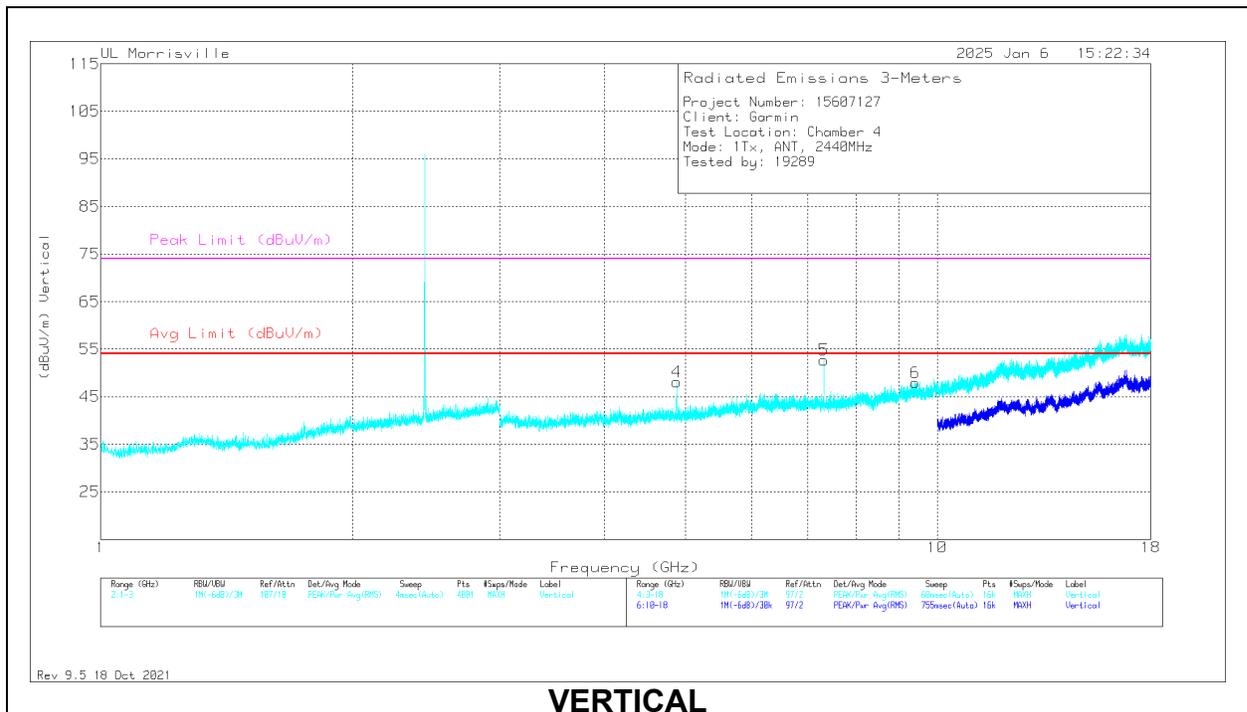
PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL



HORIZONTAL

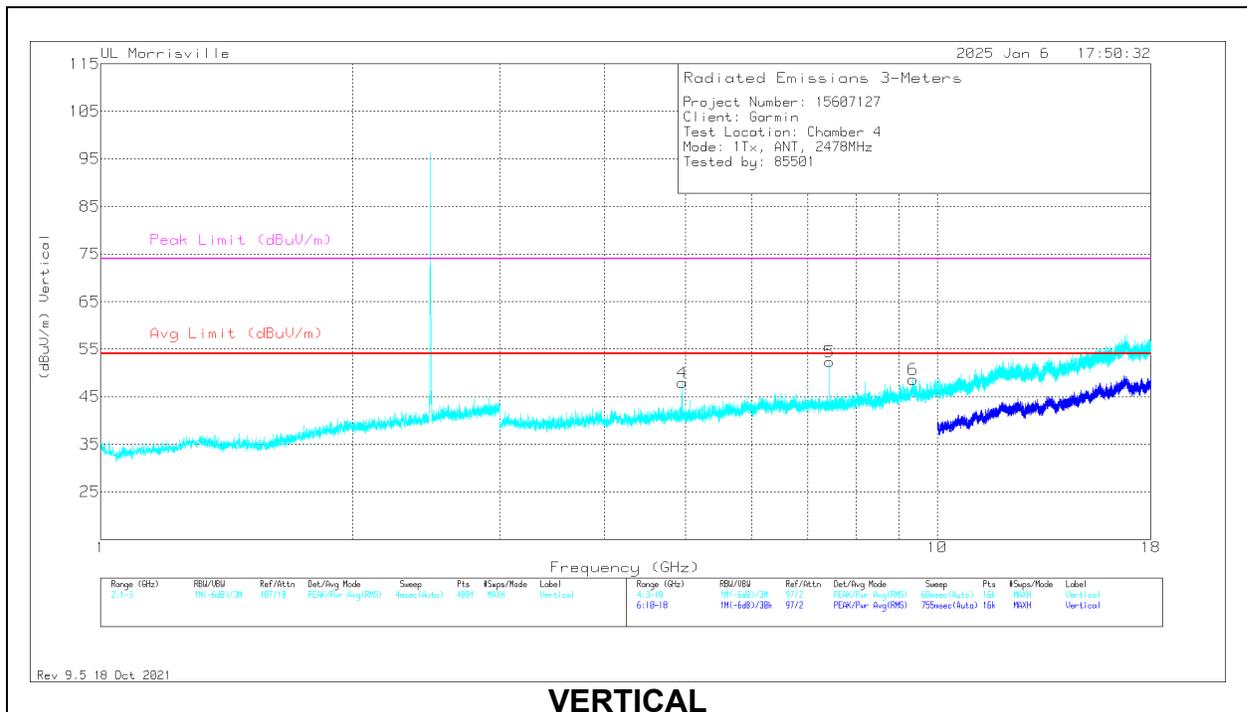
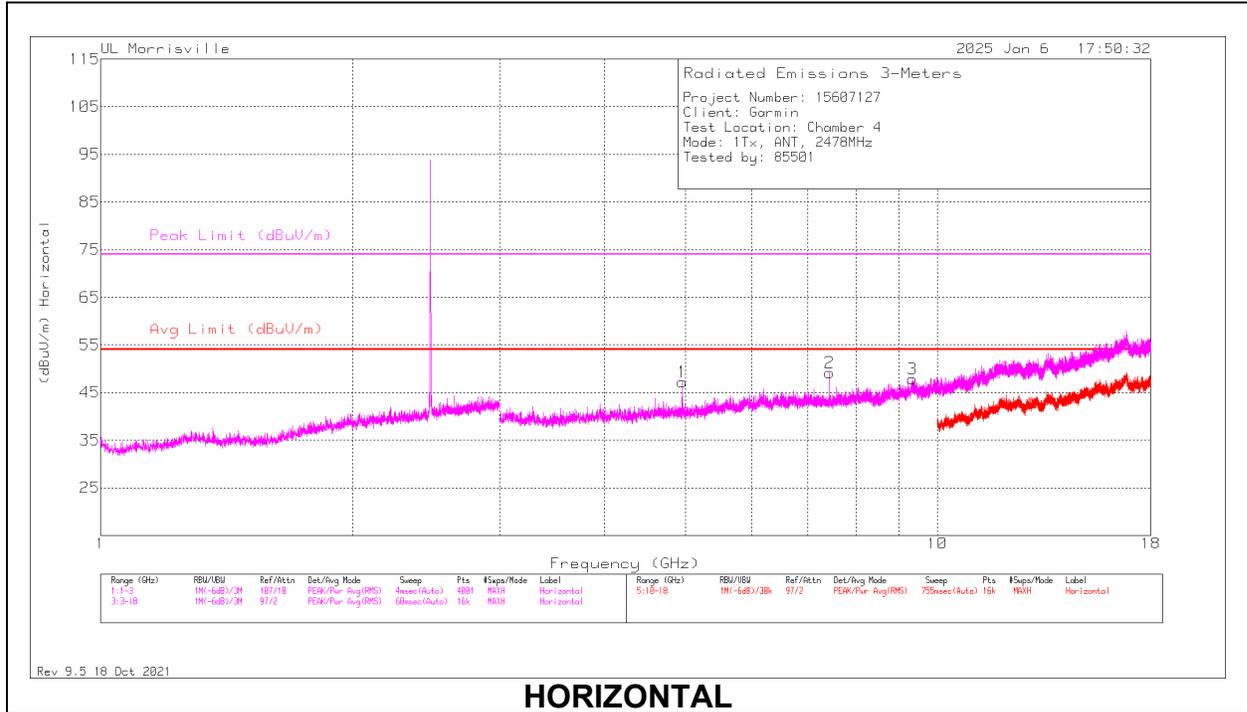


VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.88075 | 48.73 | PK2 | 34 | -31 | 51.73 | - | - | 74 | -22.27 | 199 | 140 | H |
| | *** 4.87949 | 40.5 | ADV | 34 | -31 | 43.5 | 54 | -10.5 | - | - | 199 | 140 | H |
| 2 | *** 7.32088 | 45.59 | PK2 | 35.6 | -27.7 | 53.49 | - | - | 74 | -20.51 | 53 | 125 | H |
| | *** 7.31932 | 37.48 | ADV | 35.6 | -27.7 | 45.38 | 54 | -8.62 | - | - | 53 | 125 | H |
| 3 | *** 9.41719 | 36.09 | Pk | 36.6 | -25.1 | 47.59 | 54 | -6.41 | 74 | -26.41 | 0-360 | 100 | H |
| 4 | *** 4.88047 | 48.81 | PK2 | 34 | -31 | 51.81 | - | - | 74 | -22.19 | 48 | 359 | V |
| | *** 4.87956 | 41.62 | ADV | 34 | -31 | 44.62 | 54 | -9.38 | - | - | 48 | 359 | V |
| 5 | *** 7.31904 | 46.88 | PK2 | 35.6 | -27.7 | 54.78 | - | - | 74 | -19.22 | 346 | 200 | V |
| | *** 7.31923 | 39.34 | ADV | 35.6 | -27.7 | 47.24 | 54 | -6.76 | - | - | 346 | 200 | V |
| 6 | *** 9.41438 | 36.53 | Pk | 36.6 | -25.2 | 47.93 | 54 | -6.07 | 74 | -26.07 | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 PK2 - Maximum Peak
 ADV - Linear Voltage Average

HIGH CHANNEL



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.95469 | 44.26 | Pk | 33.9 | -31 | 47.16 | 54 | -6.84 | 74 | -26.84 | 0-360 | 100 | H |
| 2 | * ** 7.43489 | 44.26 | PK2 | 35.7 | -27.9 | 52.06 | - | - | 74 | -21.94 | 208 | 149 | H |
| | * ** 7.43514 | 35.28 | ADV | 35.7 | -27.9 | 43.08 | 54 | -10.92 | - | - | 208 | 149 | H |
| 3 | * ** 9.34594 | 35.6 | Pk | 36.5 | -24.3 | 47.8 | 54 | -6.2 | 74 | -26.2 | 0-360 | 100 | H |
| 4 | * ** 4.95469 | 45.03 | Pk | 33.9 | -31 | 47.93 | 54 | -6.07 | 74 | -26.07 | 0-360 | 200 | V |
| 5 | * ** 7.43516 | 47.53 | PK2 | 35.7 | -27.9 | 55.33 | - | - | 74 | -18.67 | 25 | 202 | V |
| | * ** 7.43497 | 40.01 | ADV | 35.7 | -27.9 | 47.81 | 54 | -6.19 | - | - | 25 | 202 | V |
| 6 | * ** 9.35344 | 36.9 | PK2 | 36.5 | -24.4 | 49 | - | - | 74 | -25 | 131 | 397 | V |
| | * ** 9.35086 | 24.61 | ADV | 36.5 | -24.4 | 36.71 | 54 | -17.29 | - | - | 131 | 397 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

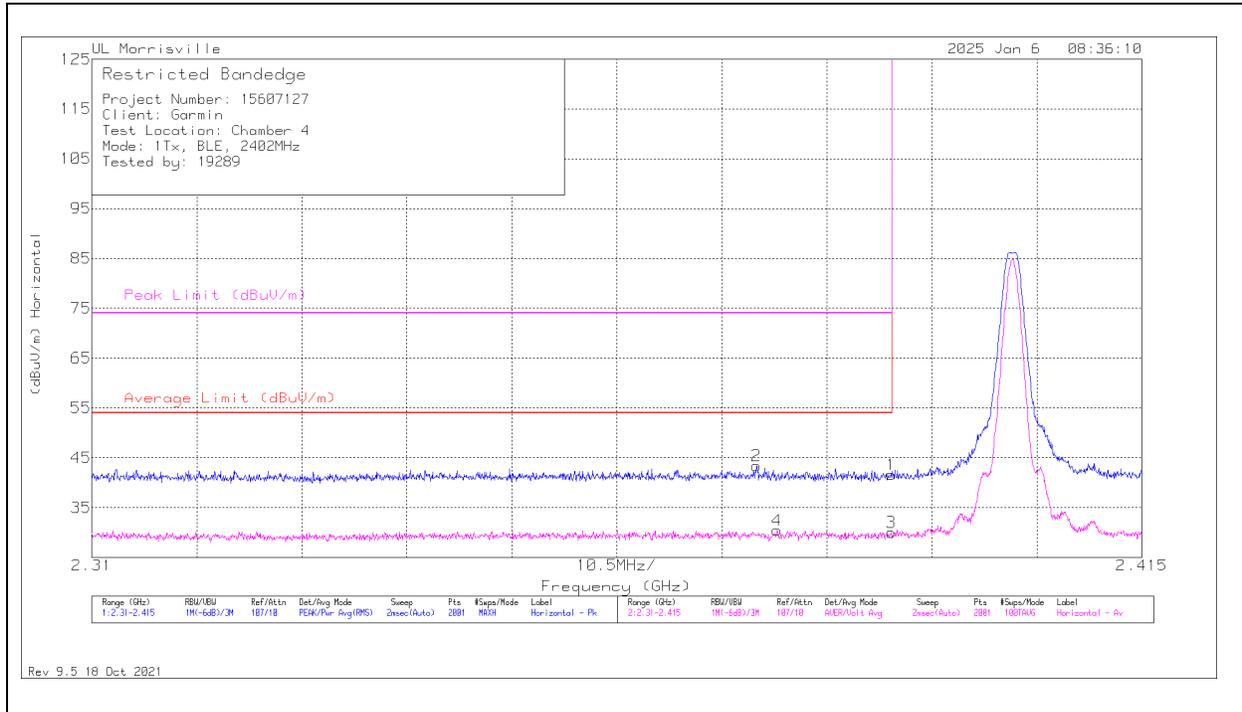
PK2 - Maximum Peak

ADV - Linear Voltage Average

10.1.5. TX ABOVE 1 GHz BLE 1Mbps MODE IN THE 2.4 GHz BAND

BANDEDGE (LOW CHANNEL, 2402MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 32.79 | Pk | 32 | -23.2 | 41.59 | - | - | 74 | -32.41 | 28 | 101 | H |
| 2 | *** 2.37647 | 34.29 | Pk | 32 | -22.9 | 43.39 | - | - | 74 | -30.61 | 28 | 101 | H |
| 3 | *** 2.38996 | 21.16 | ADV | 32 | -23.2 | 29.96 | 54 | -24.04 | - | - | 28 | 100 | H |
| 4 | *** 2.37851 | 21.44 | ADV | 32 | -23 | 30.44 | 54 | -23.56 | - | - | 28 | 100 | H |

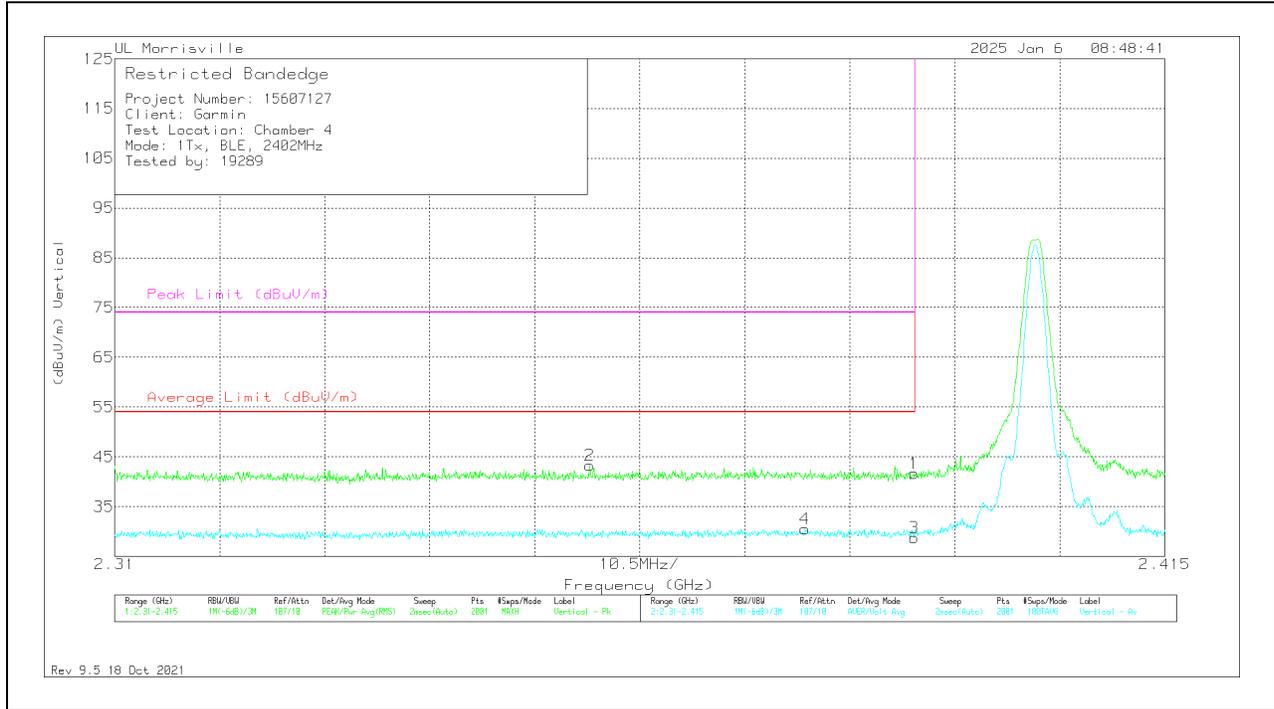
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 32.82 | Pk | 32 | -23.2 | 41.62 | - | - | 74 | -32.38 | 119 | 140 | V |
| 2 | *** 2.35751 | 34.33 | Pk | 31.9 | -23 | 43.23 | - | - | 74 | -30.77 | 119 | 140 | V |
| 3 | *** 2.38996 | 20 | ADV | 32 | -23.2 | 28.8 | 54 | -25.2 | - | - | 119 | 140 | V |
| 4 | *** 2.37904 | 21.51 | ADV | 32 | -23 | 30.51 | 54 | -23.49 | - | - | 119 | 140 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

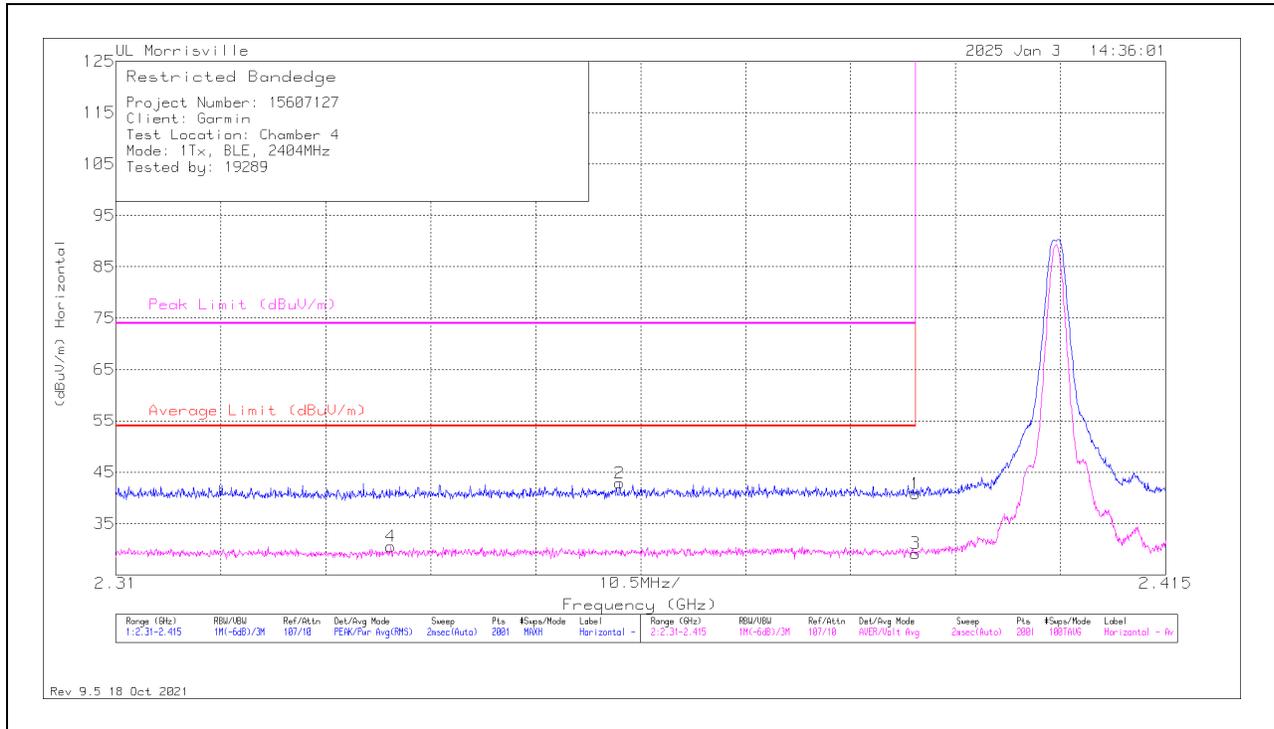
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (LOW CHANNEL, 2404MHz)

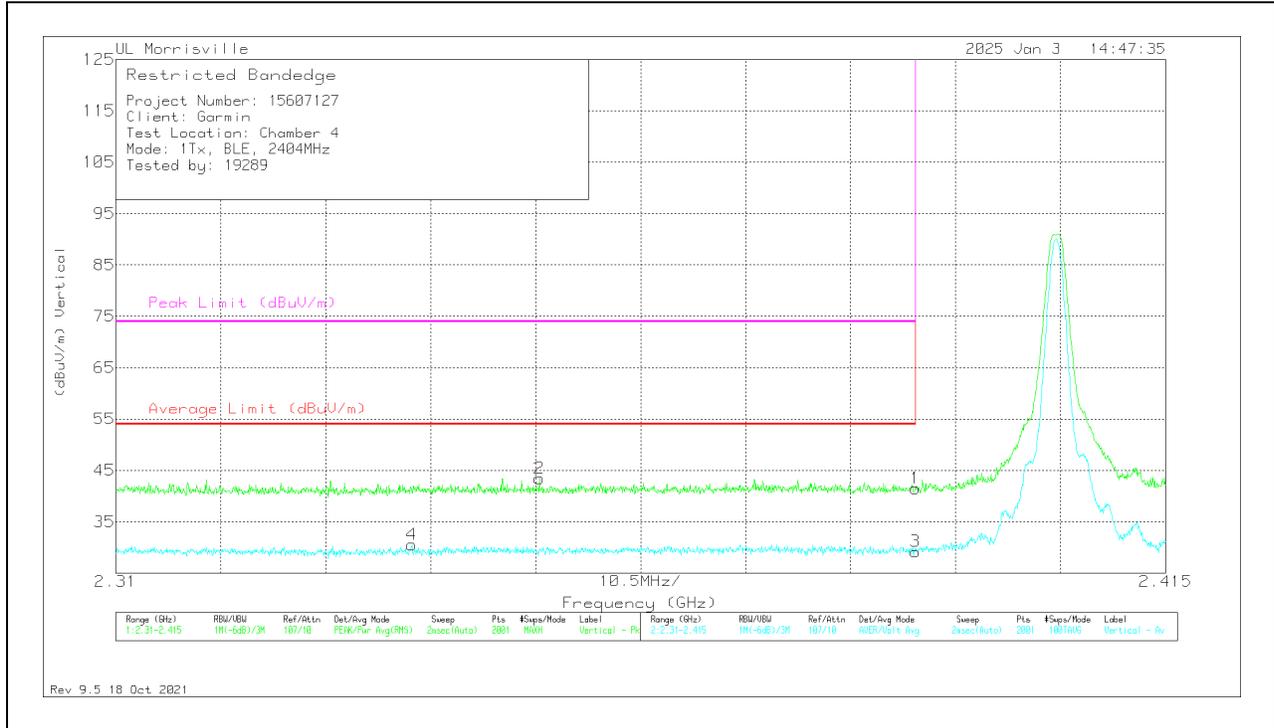
HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 32 | Pk | 32 | -23.2 | 40.8 | - | - | 74 | -33.2 | 16 | 345 | H |
| 2 | *** 2.3604 | 33.99 | Pk | 31.9 | -23 | 42.89 | - | - | 74 | -31.11 | 16 | 345 | H |
| 3 | *** 2.38996 | 20.36 | ADV | 32 | -23.2 | 29.16 | 54 | -24.84 | - | - | 16 | 345 | H |
| 4 | *** 2.33751 | 21.83 | ADV | 31.9 | -23.2 | 30.53 | 54 | -23.47 | - | - | 16 | 345 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

VERTICAL RESULT

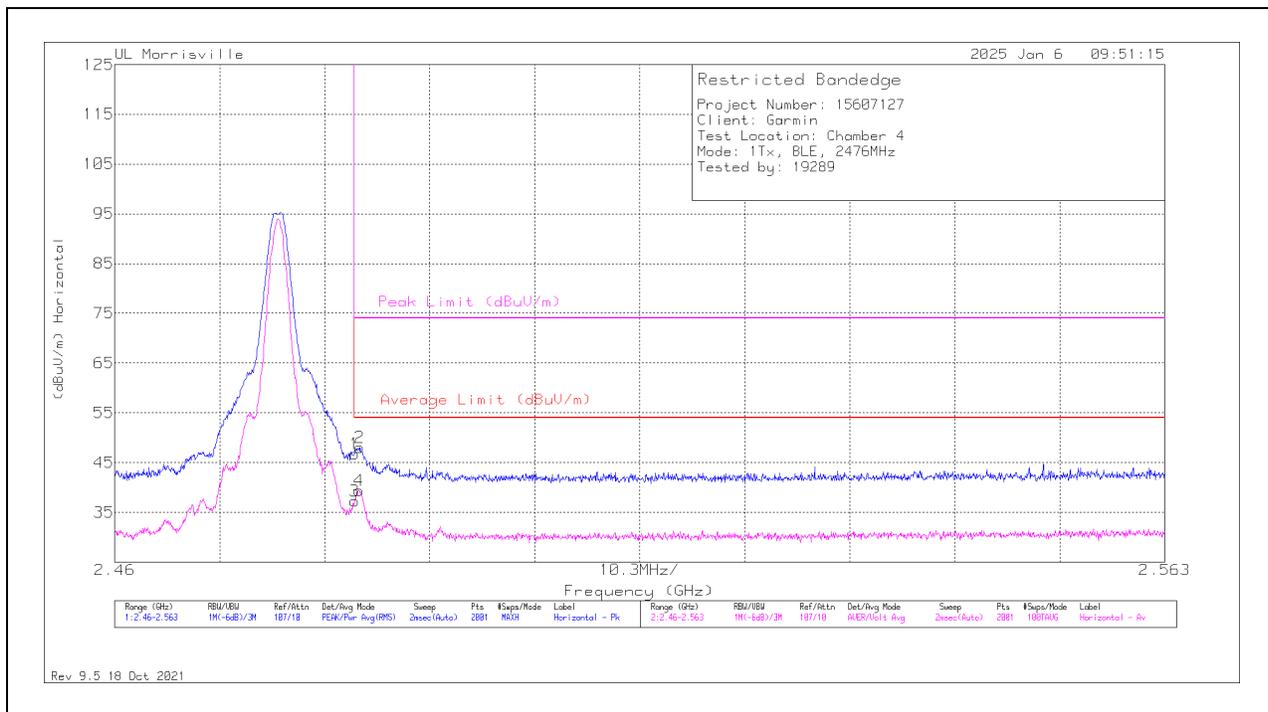


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 32.7 | Pk | 32 | -23.2 | 41.5 | - | - | 74 | -32.5 | 131 | 309 | V |
| 2 | *** 2.35237 | 34.65 | Pk | 31.8 | -23 | 43.45 | - | - | 74 | -30.55 | 131 | 309 | V |
| 3 | *** 2.38996 | 20.38 | ADV | 32 | -23.2 | 29.18 | 54 | -24.82 | - | - | 131 | 309 | V |
| 4 | *** 2.33961 | 21.73 | ADV | 31.9 | -23.1 | 30.53 | 54 | -23.47 | - | - | 131 | 309 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2476MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 37.25 | Pk | 32.3 | -22.8 | 46.75 | - | - | 74 | -27.25 | 17 | 122 | H |
| 2 | *** 2.48405 | 38.56 | Pk | 32.3 | -22.8 | 48.06 | - | - | 74 | -25.94 | 17 | 122 | H |
| 3 | *** 2.48354 | 27.78 | ADV | 32.3 | -22.8 | 37.28 | 54 | -16.72 | - | - | 17 | 122 | H |
| 4 | *** 2.48395 | 29.94 | ADV | 32.3 | -22.8 | 39.44 | 54 | -14.56 | - | - | 17 | 122 | H |

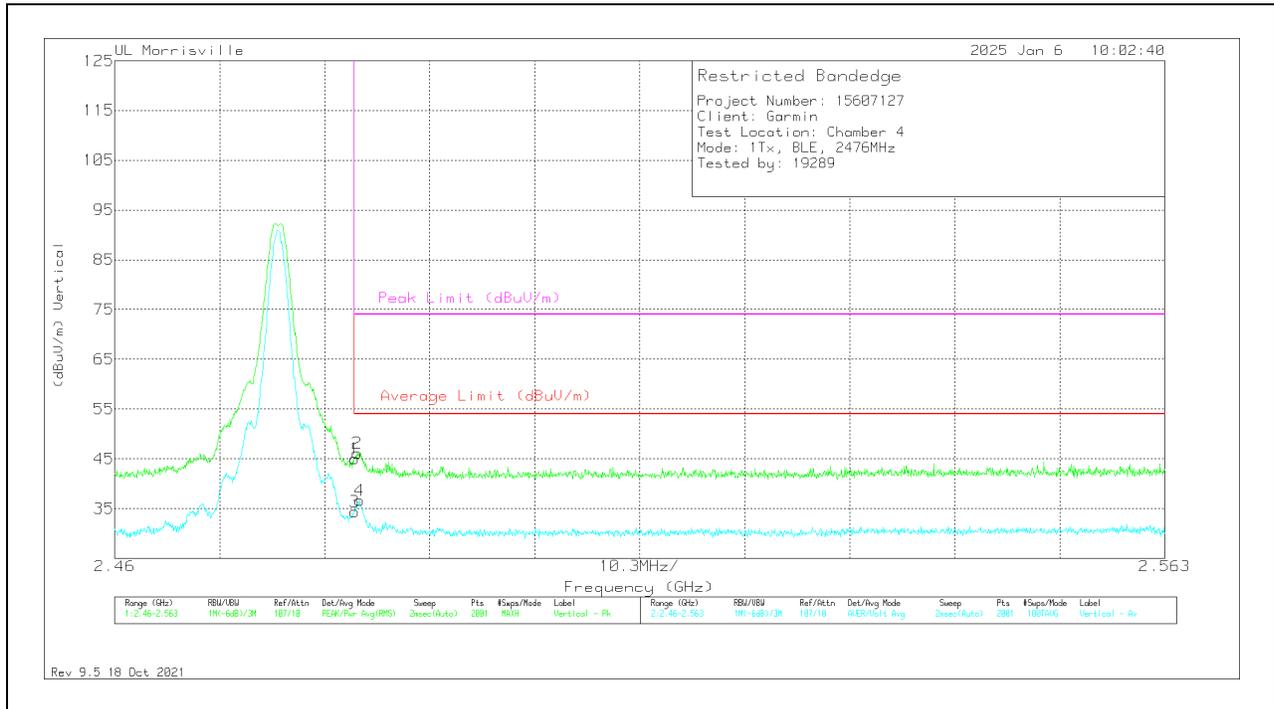
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 35.55 | Pk | 32.3 | -22.8 | 45.05 | - | - | 74 | -28.95 | 24 | 105 | V |
| 2 | *** 2.48379 | 36.6 | Pk | 32.3 | -22.8 | 46.1 | - | - | 74 | -27.9 | 24 | 105 | V |
| 3 | *** 2.48354 | 24.86 | ADV | 32.3 | -22.8 | 34.36 | 54 | -19.64 | - | - | 24 | 105 | V |
| 4 | *** 2.484 | 27.15 | ADV | 32.3 | -22.8 | 36.65 | 54 | -17.35 | - | - | 24 | 105 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

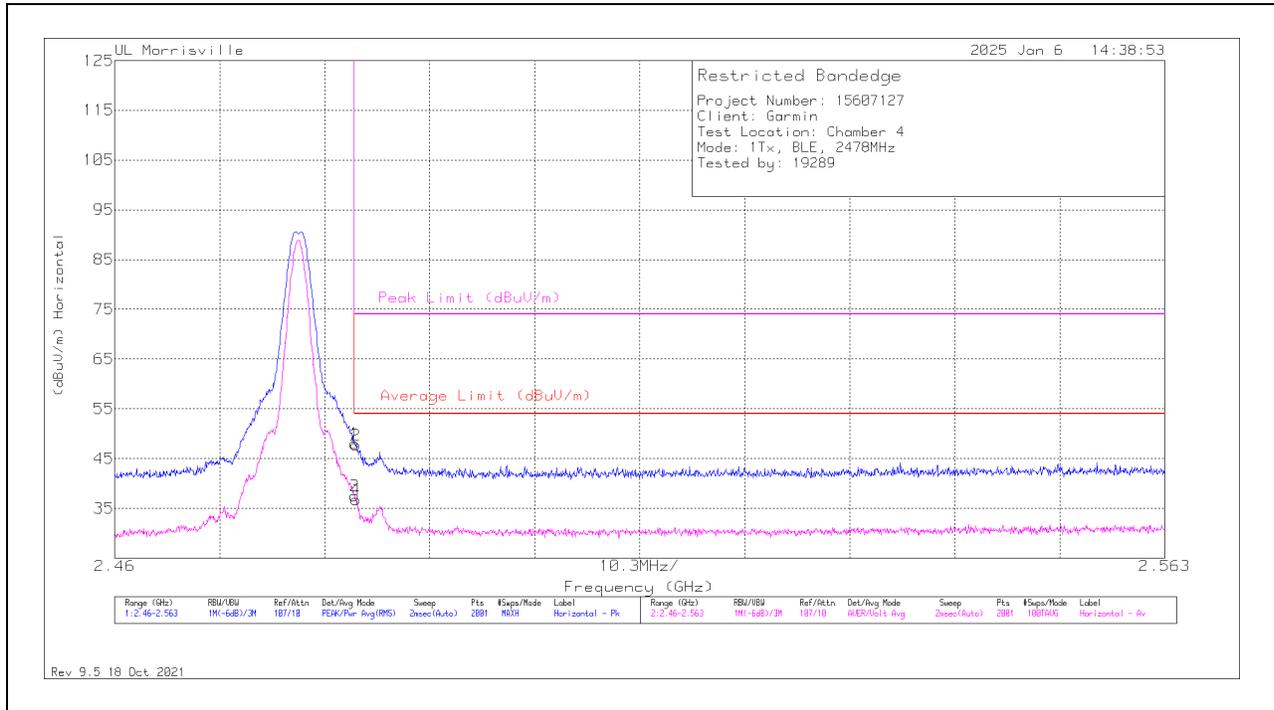
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2478MHz)

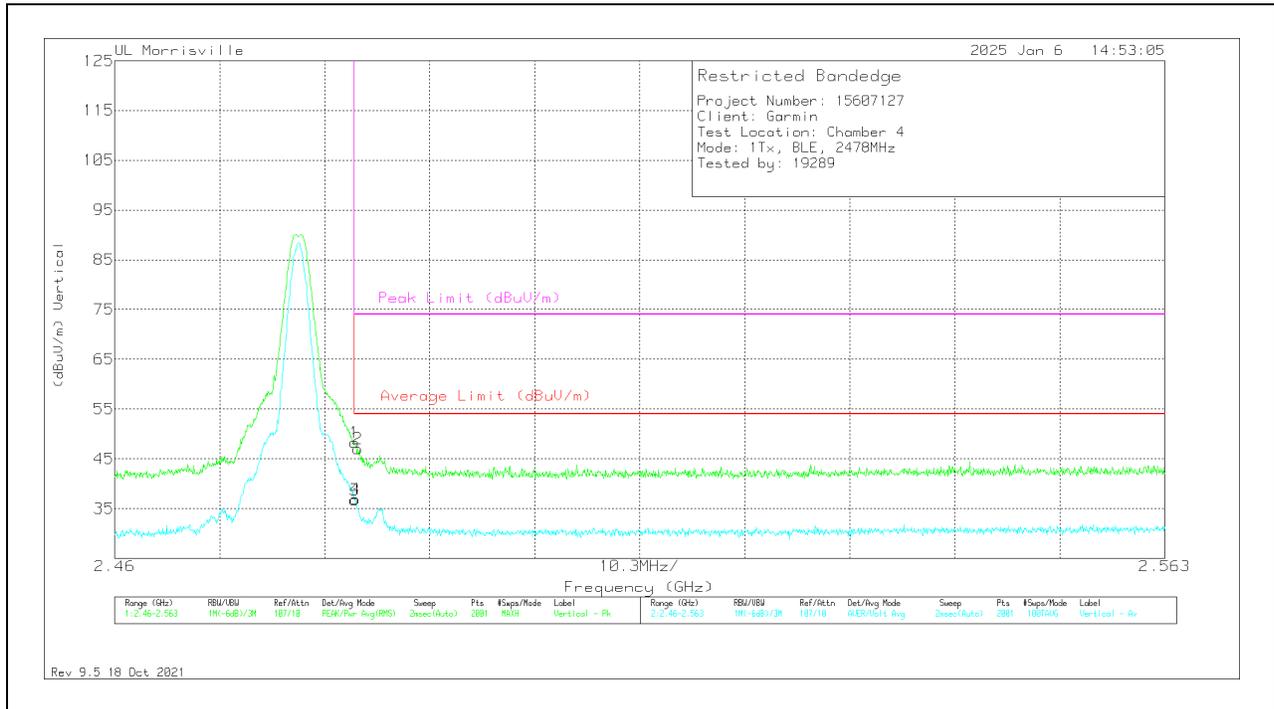
HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 38.55 | Pk | 32.3 | -22.8 | 48.05 | - | - | 74 | -25.95 | 28 | 102 | H |
| 2 | * ** 2.48364 | 38.21 | Pk | 32.3 | -22.8 | 47.71 | - | - | 74 | -26.29 | 28 | 102 | H |
| 3 | * ** 2.48354 | 28.02 | ADV | 32.3 | -22.8 | 37.52 | 54 | -16.48 | - | - | 28 | 102 | H |
| 4 | * ** 2.48364 | 27.31 | ADV | 32.3 | -22.8 | 36.81 | 54 | -17.19 | - | - | 28 | 102 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 38.81 | Pk | 32.3 | -22.8 | 48.31 | - | - | 74 | -25.69 | 127 | 144 | V |
| 2 | *** 2.48384 | 37.48 | Pk | 32.3 | -22.8 | 46.98 | - | - | 74 | -27.02 | 127 | 144 | V |
| 3 | *** 2.48354 | 27.29 | ADV | 32.3 | -22.8 | 36.79 | 54 | -17.21 | - | - | 127 | 144 | V |
| 4 | *** 2.48359 | 27.43 | ADV | 32.3 | -22.8 | 36.93 | 54 | -17.07 | - | - | 127 | 144 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

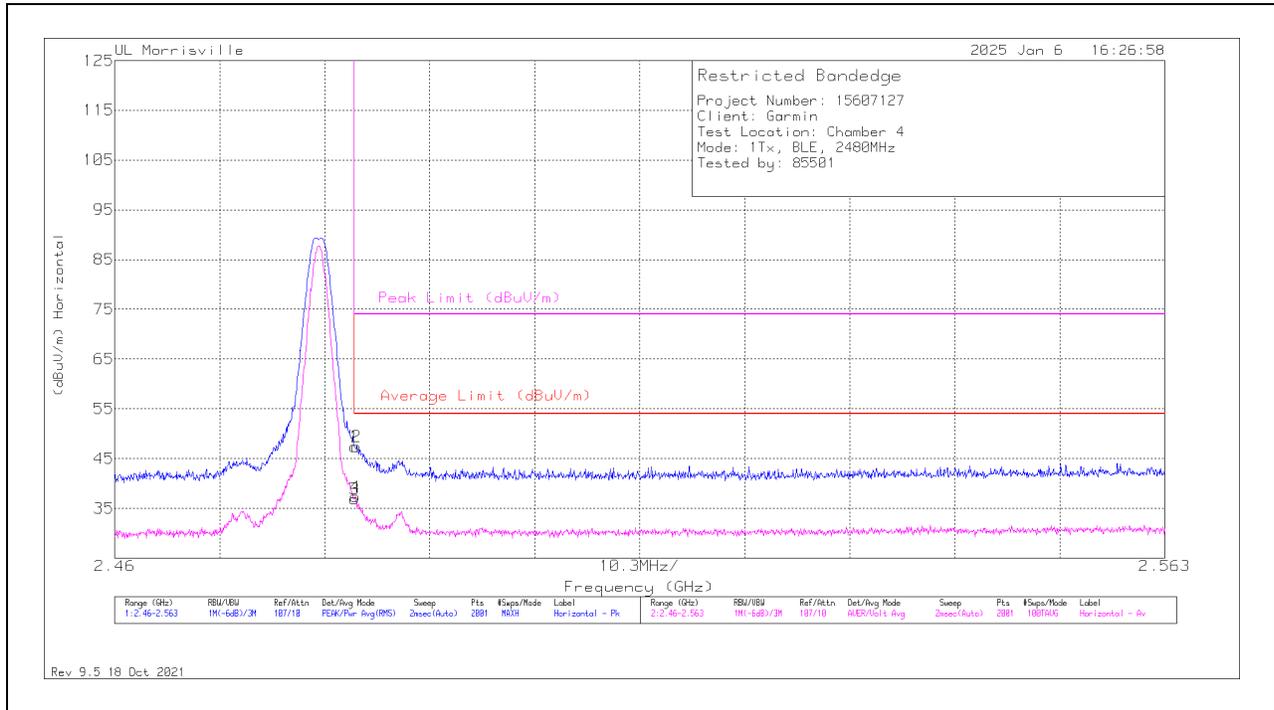
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2480MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 37.93 | Pk | 32.3 | -22.8 | 47.43 | - | - | 74 | -26.57 | 0 | 141 | H |
| 2 | * ** 2.48374 | 37.92 | Pk | 32.3 | -22.8 | 47.42 | - | - | 74 | -26.58 | 0 | 141 | H |
| 3 | * ** 2.48354 | 27.36 | ADV | 32.3 | -22.8 | 36.86 | 54 | -17.14 | - | - | 0 | 141 | H |
| 4 | * ** 2.48359 | 27.82 | ADV | 32.3 | -22.8 | 37.32 | 54 | -16.68 | - | - | 0 | 141 | H |

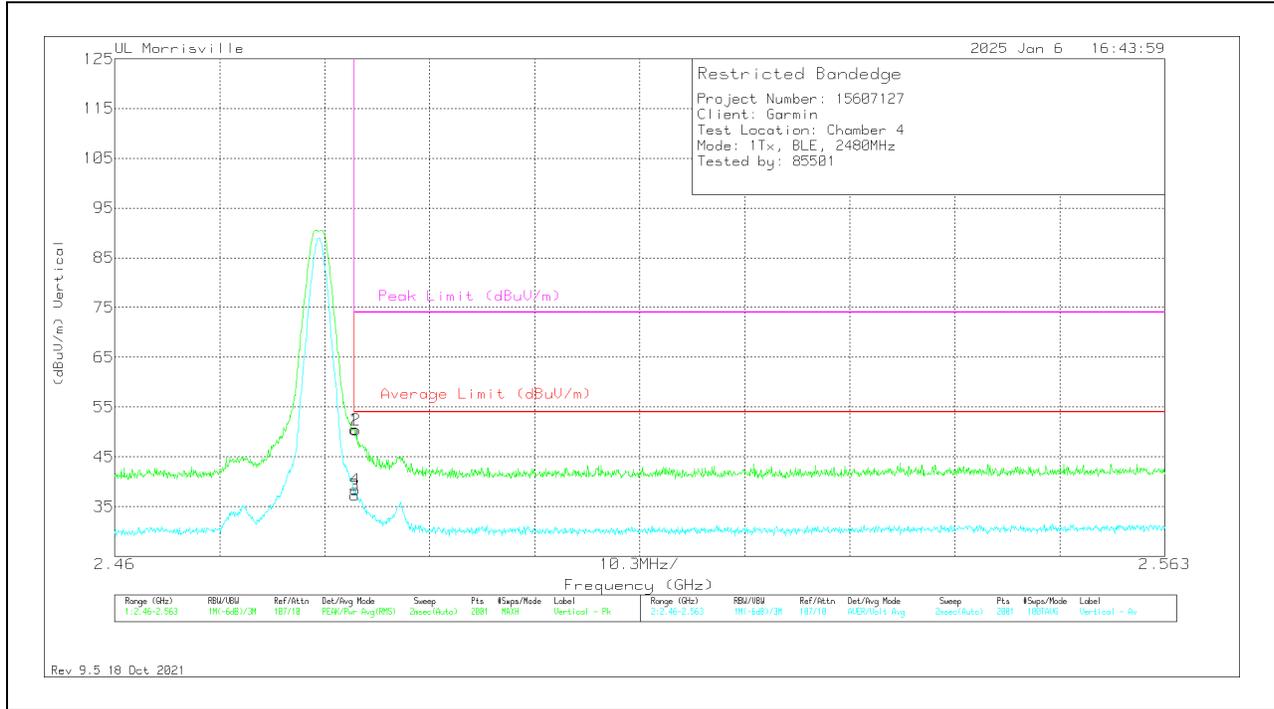
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 40.97 | Pk | 32.3 | -22.8 | 50.47 | - | - | 74 | -23.53 | 26 | 122 | V |
| 2 | *** 2.48364 | 40.92 | Pk | 32.3 | -22.8 | 50.42 | - | - | 74 | -23.58 | 26 | 122 | V |
| 3 | *** 2.48354 | 27.72 | ADV | 32.3 | -22.8 | 37.22 | 54 | -16.78 | - | - | 26 | 122 | V |
| 4 | *** 2.48359 | 28.89 | ADV | 32.3 | -22.8 | 38.39 | 54 | -15.61 | - | - | 26 | 122 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

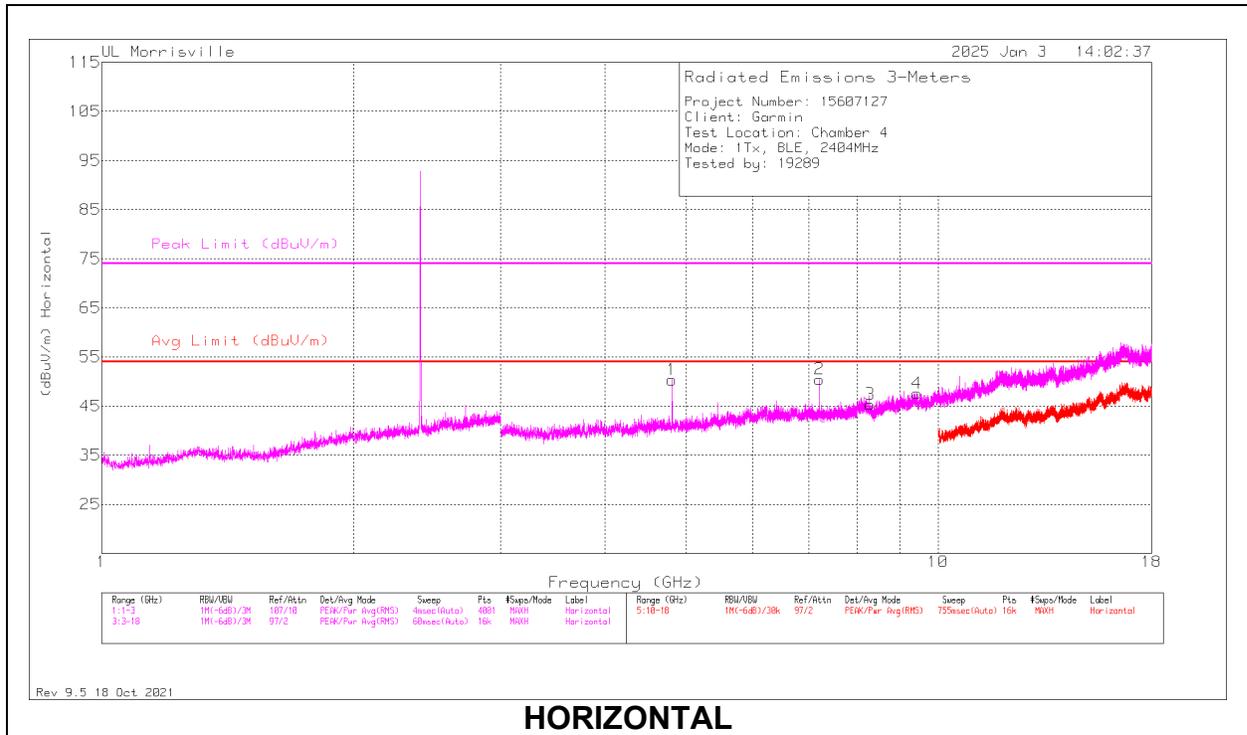
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

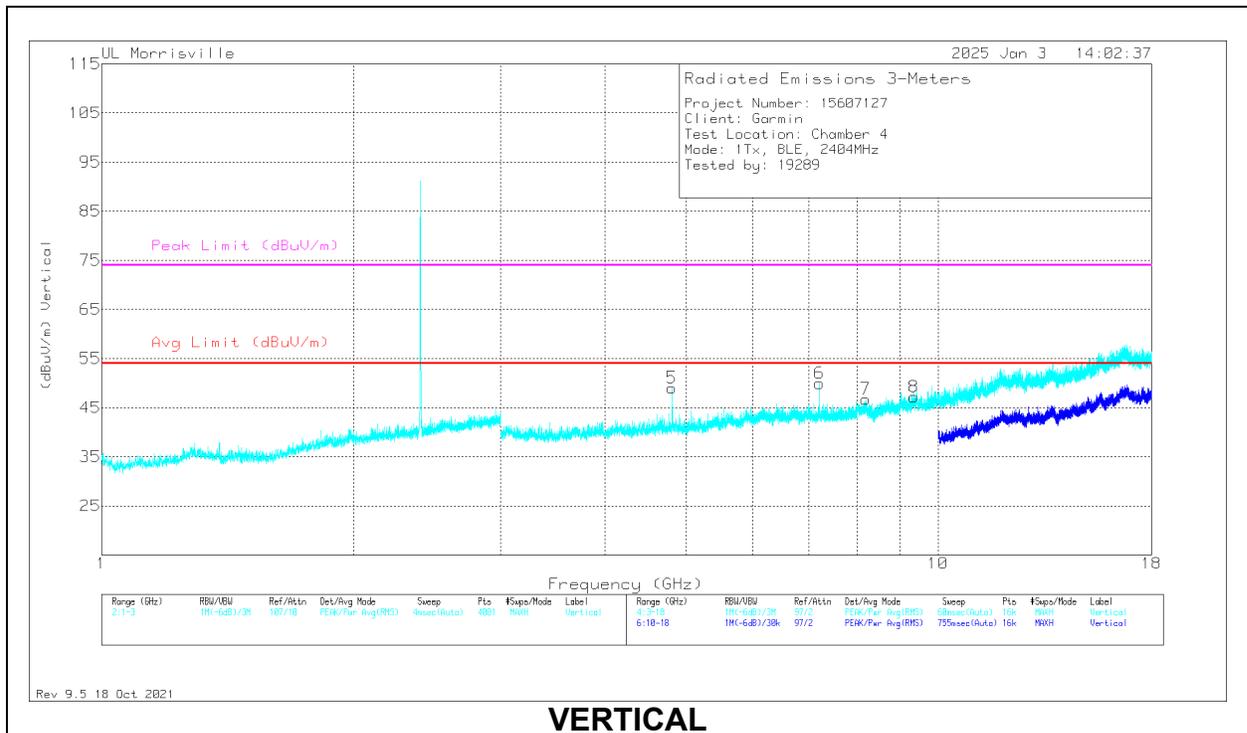
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.80842 | 50.46 | PK2 | 34.1 | -31.3 | 53.26 | - | - | 74 | -20.74 | 191 | 110 | H |
| | * ** 4.80786 | 44.51 | ADV | 34.1 | -31.3 | 47.31 | 54 | -6.69 | - | - | 191 | 110 | H |
| 3 | * ** 8.29313 | 35.83 | Pk | 35.8 | -26.3 | 45.33 | 54 | -8.67 | 74 | -28.67 | 0-360 | 100 | H |
| 4 | * ** 9.43125 | 36 | Pk | 36.7 | -25.1 | 47.6 | 54 | -6.4 | 74 | -26.4 | 0-360 | 100 | H |
| 5 | * ** 4.8085 | 50.06 | PK2 | 34.1 | -31.3 | 52.86 | - | - | 74 | -21.14 | 347 | 373 | V |
| | * ** 4.80813 | 44.13 | ADV | 34.1 | -31.3 | 46.93 | 54 | -7.07 | - | - | 347 | 373 | V |
| 7 | * ** 8.1975 | 37.34 | Pk | 35.8 | -26.4 | 46.74 | 54 | -7.26 | 74 | -27.26 | 0-360 | 200 | V |
| 8 | * ** 9.36188 | 35.21 | Pk | 36.5 | -24.5 | 47.21 | 54 | -6.79 | 74 | -26.79 | 0-360 | 200 | V |
| 6 | 7.21125 | 42.28 | Pk | 35.6 | -27.9 | 49.98 | - | - | - | - | 0-360 | 200 | V |
| 2 | 7.21219 | 42.76 | Pk | 35.6 | -27.9 | 50.46 | - | - | - | - | 0-360 | 100 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

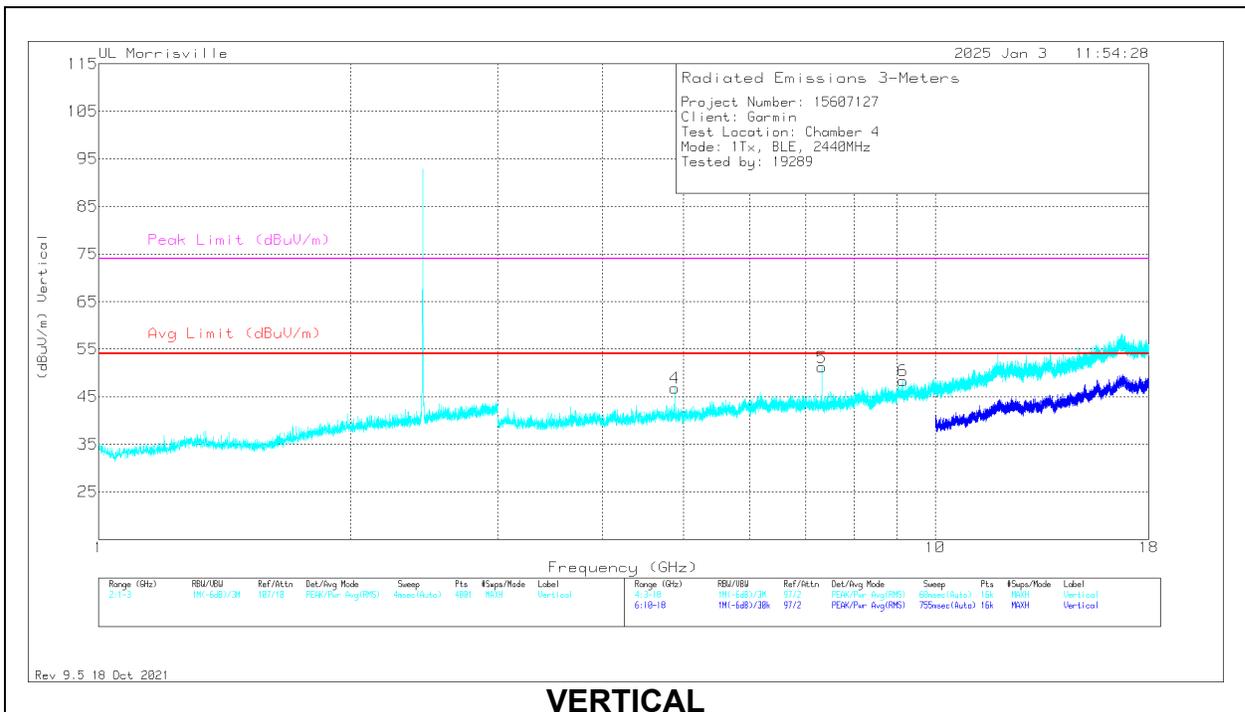
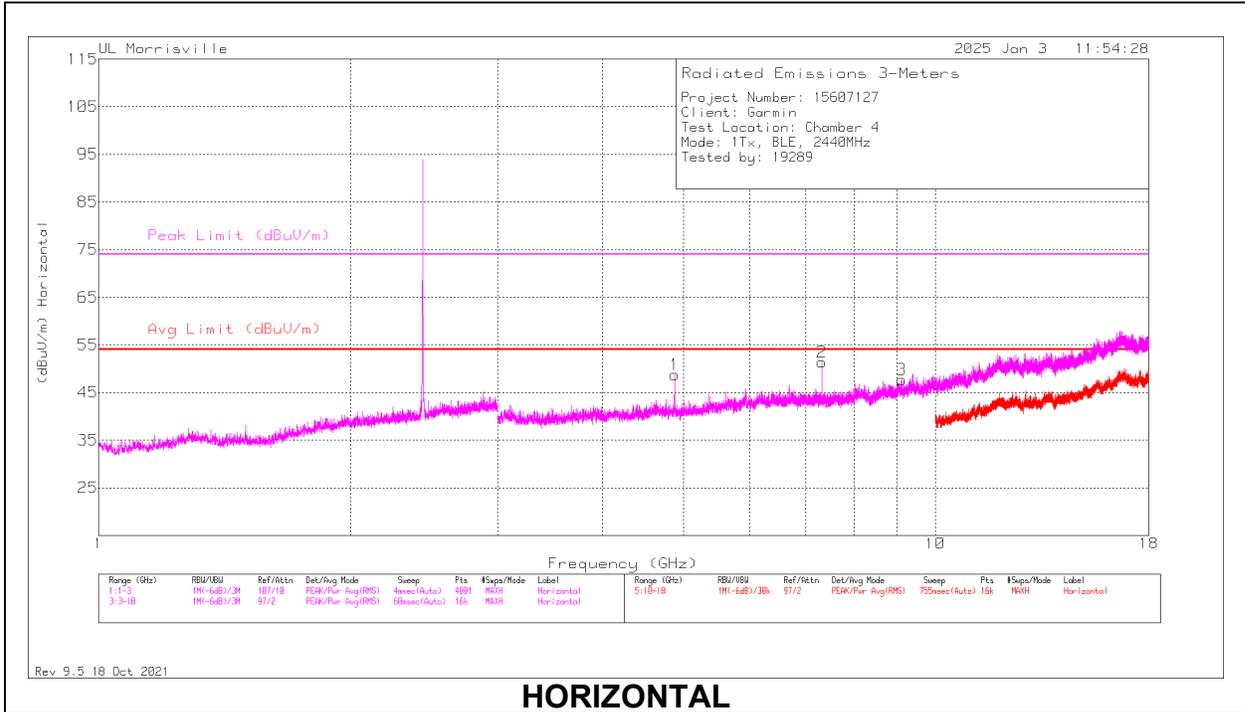
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.88049 | 49.36 | PK2 | 34 | -31 | 52.36 | - | - | 74 | -21.64 | 193 | 188 | H |
| | *** 4.8804 | 41.57 | ADV | 34 | -31 | 44.57 | 54 | -9.43 | - | - | 193 | 188 | H |
| 2 | *** 7.321 | 44.43 | PK2 | 35.6 | -27.7 | 52.33 | - | - | 74 | -21.67 | 26 | 103 | H |
| | *** 7.32083 | 35.96 | ADV | 35.6 | -27.7 | 43.86 | 54 | -10.14 | - | - | 26 | 103 | H |
| 3 | *** 9.11625 | 36.02 | Pk | 36.3 | -24.6 | 47.72 | 54 | -6.28 | 74 | -26.28 | 0-360 | 100 | H |
| 4 | *** 4.87969 | 43.81 | Pk | 34 | -31 | 46.81 | 54 | -7.19 | 74 | -27.19 | 0-360 | 200 | V |
| 5 | *** 7.32084 | 45.95 | PK2 | 35.6 | -27.7 | 53.85 | - | - | 74 | -20.15 | 356 | 197 | V |
| | *** 7.32064 | 38.1 | ADV | 35.6 | -27.7 | 46 | 54 | -8 | - | - | 356 | 197 | V |
| 6 | *** 9.15416 | 36.92 | PK2 | 36.3 | -25 | 48.22 | - | - | 74 | -25.78 | 183 | 223 | V |
| | *** 9.15532 | 24.37 | ADV | 36.3 | -25 | 35.67 | 54 | -18.33 | - | - | 183 | 223 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

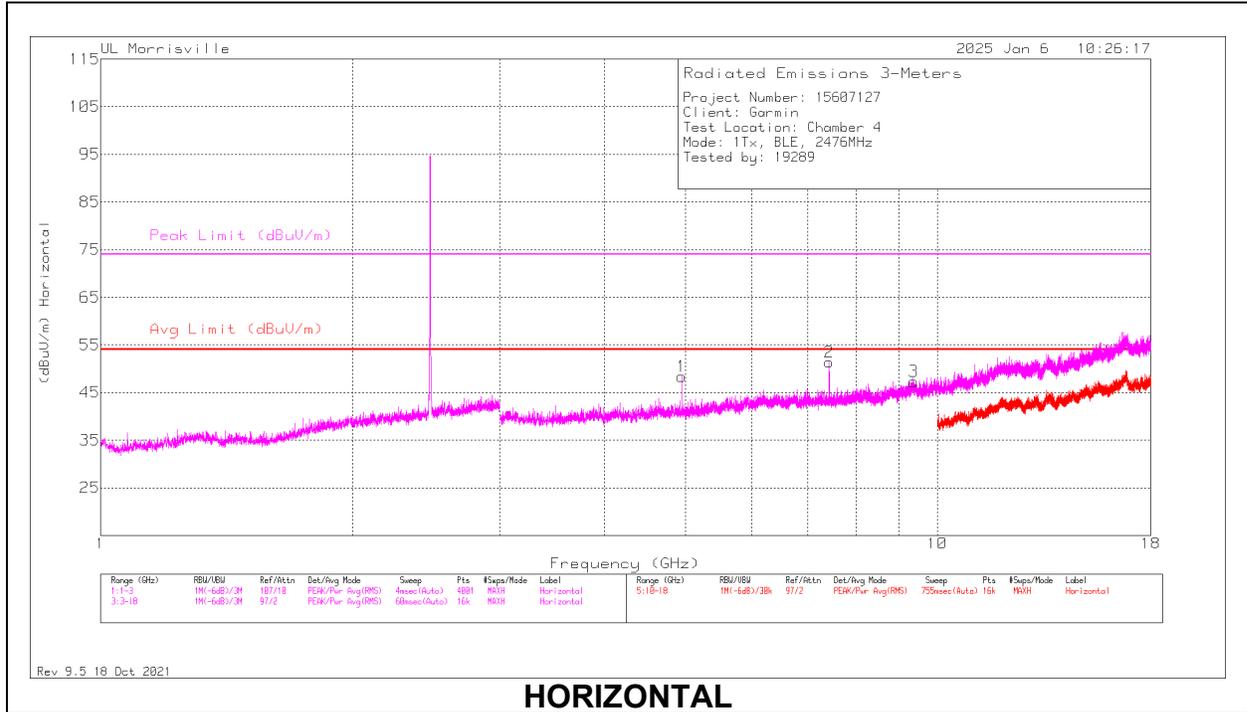
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

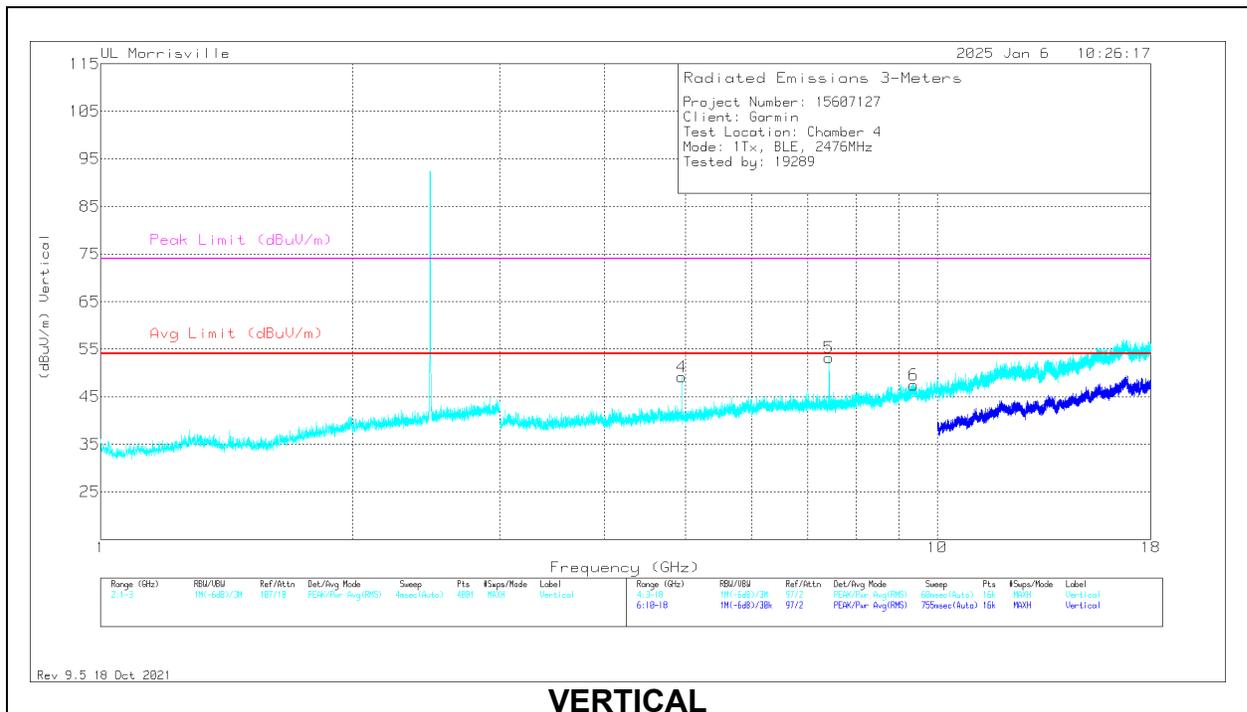
PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL



HORIZONTAL



VERTICAL

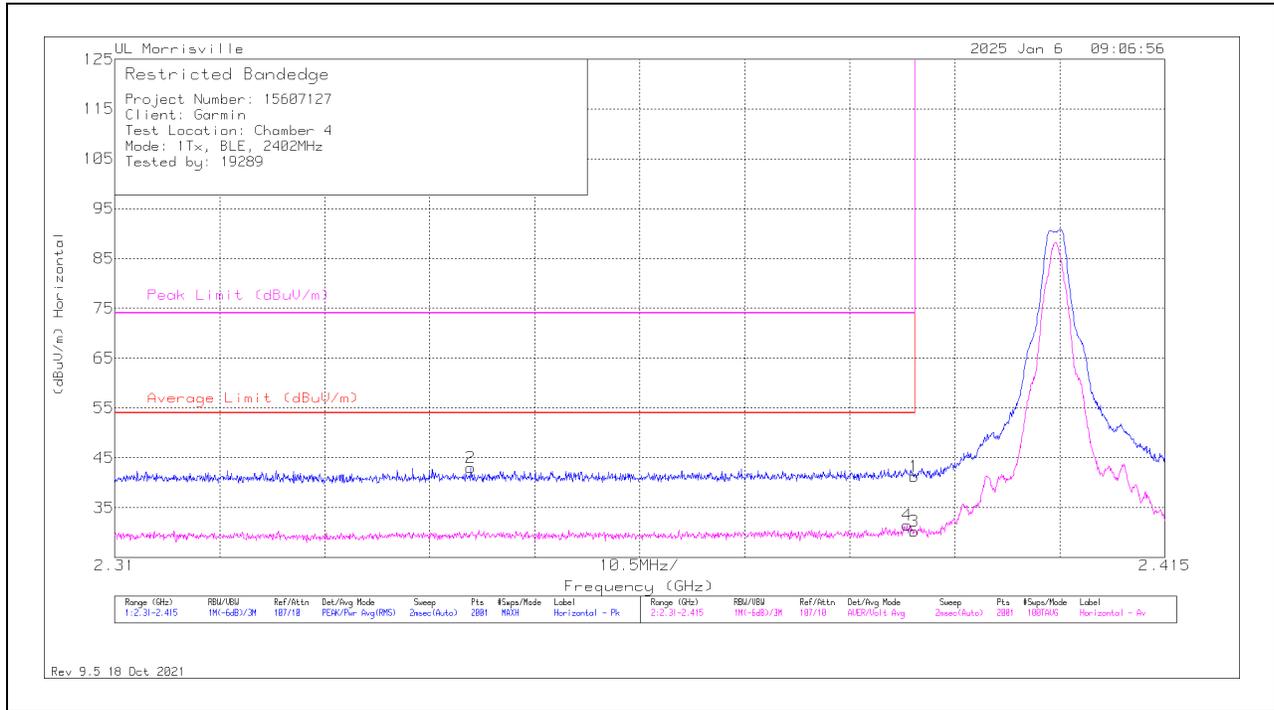
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.95255 | 47.94 | PK2 | 33.9 | -31 | 50.84 | - | - | 74 | -23.16 | 19 | 107 | H |
| | *** 4.95178 | 40.54 | ADV | 33.9 | -31 | 43.44 | 54 | -10.56 | - | - | 19 | 107 | H |
| 2 | *** 7.42737 | 45.56 | PK2 | 35.7 | -27.8 | 53.46 | - | - | 74 | -20.54 | 303 | 101 | H |
| | *** 7.42875 | 37.63 | ADV | 35.7 | -27.8 | 45.53 | 54 | -8.47 | - | - | 303 | 101 | H |
| 3 | *** 9.37875 | 35.57 | Pk | 36.6 | -24.8 | 47.37 | 54 | -6.63 | 74 | -26.63 | 0-360 | 100 | H |
| 4 | *** 4.95153 | 48.82 | PK2 | 33.9 | -31 | 51.72 | - | - | 74 | -22.28 | 55 | 220 | V |
| | *** 4.95159 | 42.31 | ADV | 33.9 | -31 | 45.21 | 54 | -8.79 | - | - | 55 | 220 | V |
| 5 | *** 7.42877 | 47.33 | PK2 | 35.7 | -27.8 | 55.23 | - | - | 74 | -18.77 | 3 | 203 | V |
| | *** 7.4287 | 40.29 | ADV | 35.7 | -27.8 | 48.19 | 54 | -5.81 | - | - | 3 | 203 | V |
| 6 | *** 9.38156 | 35.76 | Pk | 36.6 | -24.9 | 47.46 | 54 | -6.54 | 74 | -26.54 | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 PK2 - Maximum Peak
 ADV - Linear Voltage Average

10.1.6. TX ABOVE 1 GHz BLE 2Mbps MODE IN THE 2.4 GHz BAND

BANDEDGE (LOW CHANNEL, 2402MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 32.43 | Pk | 32 | -23.2 | 41.23 | - | - | 74 | -32.77 | 5 | 140 | H |
| 2 | *** 2.3456 | 34.12 | Pk | 31.8 | -22.9 | 43.02 | - | - | 74 | -30.98 | 5 | 140 | H |
| 3 | *** 2.38996 | 21.42 | ADV | 32 | -23.2 | 30.22 | 54 | -23.78 | - | - | 5 | 140 | H |
| 4 | *** 2.38922 | 22.67 | ADV | 32 | -23.2 | 31.47 | 54 | -22.53 | - | - | 5 | 140 | H |

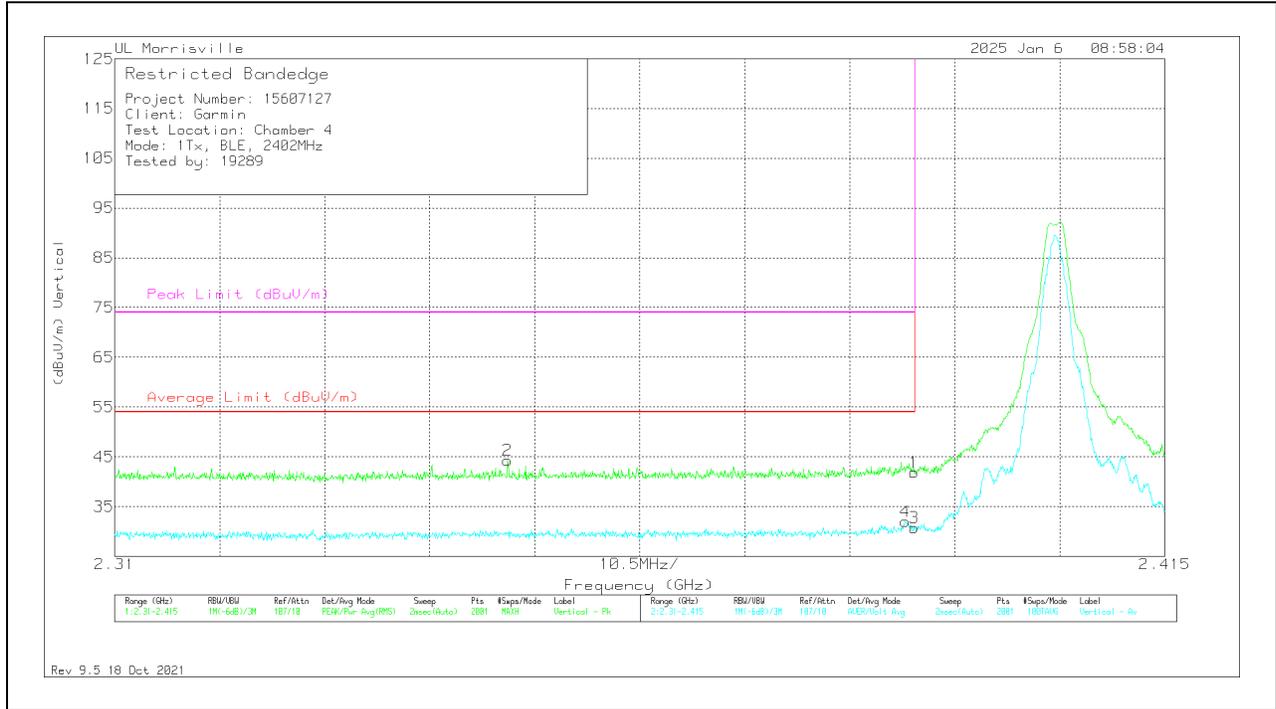
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | ** 2.38996 | 33.05 | Pk | 32 | -23.2 | 41.85 | - | - | 74 | -32.15 | 202 | 181 | V |
| 2 | ** 2.34927 | 35.5 | Pk | 31.8 | -23 | 44.3 | - | - | 74 | -29.7 | 202 | 181 | V |
| 3 | ** 2.38996 | 21.97 | ADV | 32 | -23.2 | 30.77 | 54 | -23.23 | - | - | 202 | 181 | V |
| 4 | ** 2.38907 | 23.15 | ADV | 32 | -23.2 | 31.95 | 54 | -22.05 | - | - | 202 | 181 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

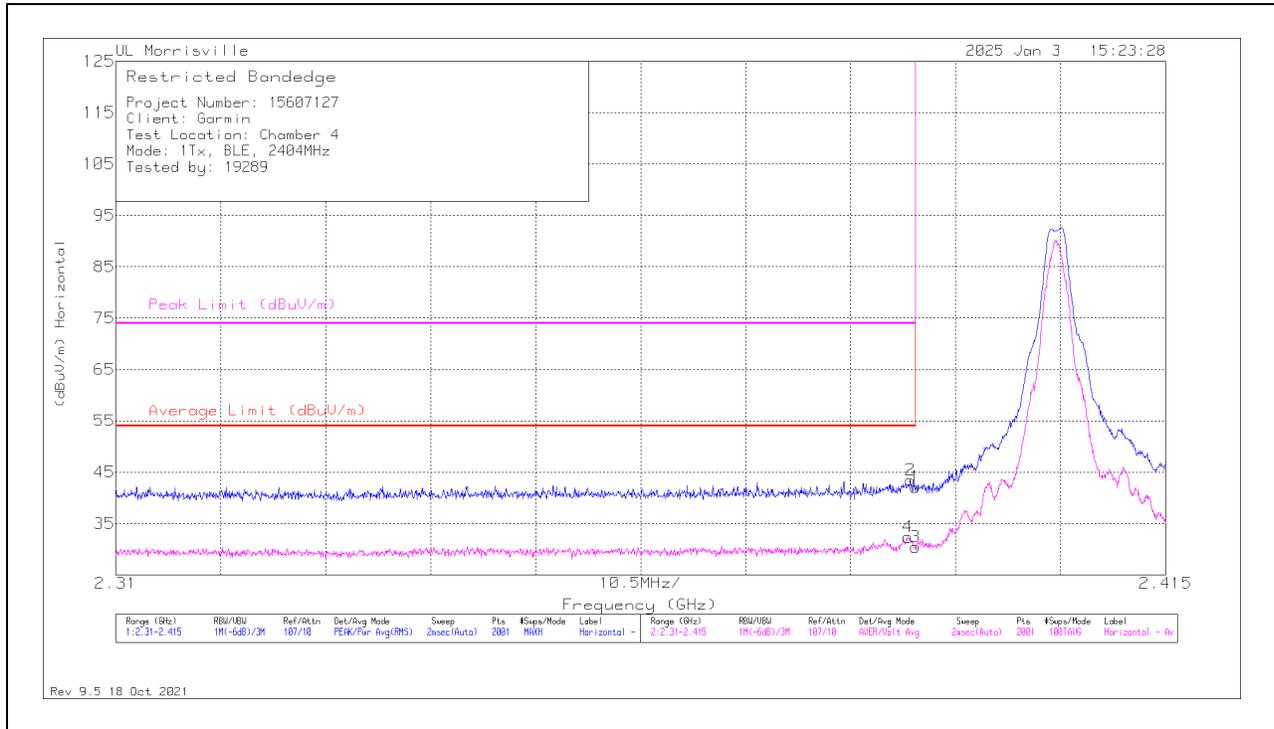
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (LOW CHANNEL, 2404MHz)

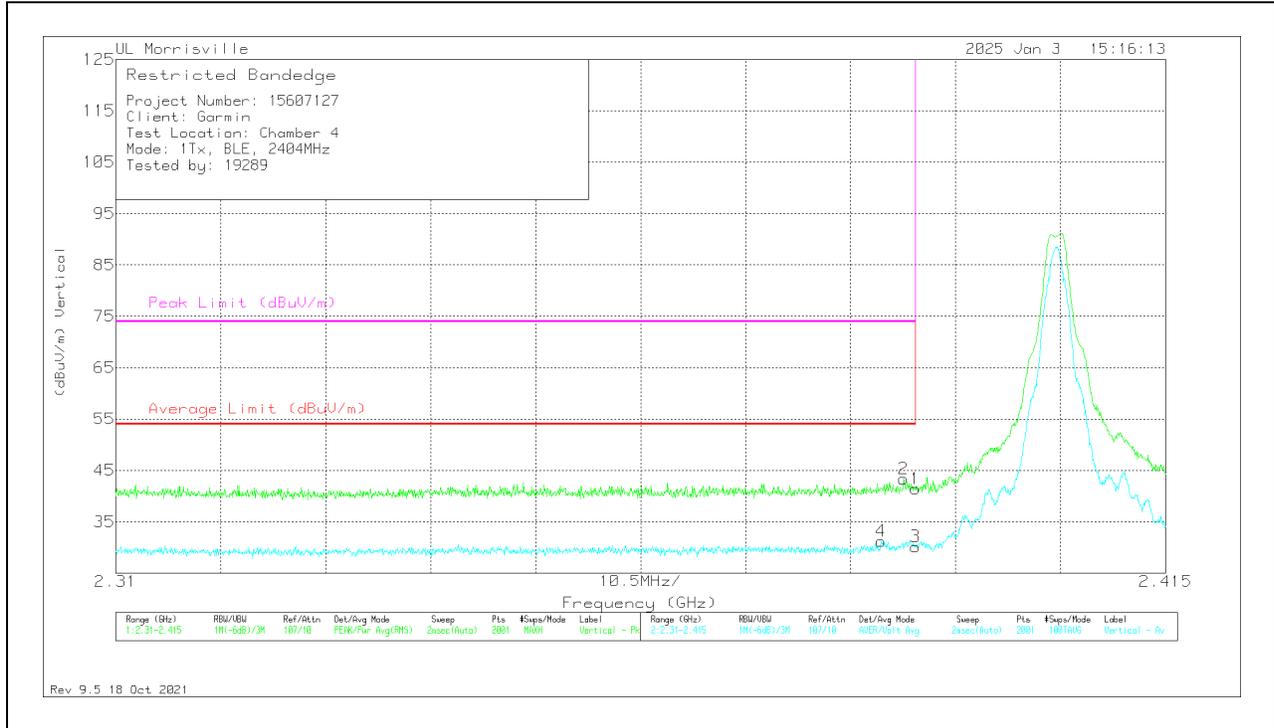
HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 33.27 | Pk | 32 | -23.2 | 42.07 | - | - | 74 | -31.93 | 339 | 139 | H |
| 2 | * ** 2.38949 | 34.69 | Pk | 32 | -23.2 | 43.49 | - | - | 74 | -30.51 | 339 | 139 | H |
| 3 | * ** 2.38996 | 21.63 | ADV | 32 | -23.2 | 30.43 | 54 | -23.57 | - | - | 339 | 139 | H |
| 4 | * ** 2.38922 | 23.57 | ADV | 32 | -23.2 | 32.37 | 54 | -21.63 | - | - | 339 | 139 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

VERTICAL RESULT

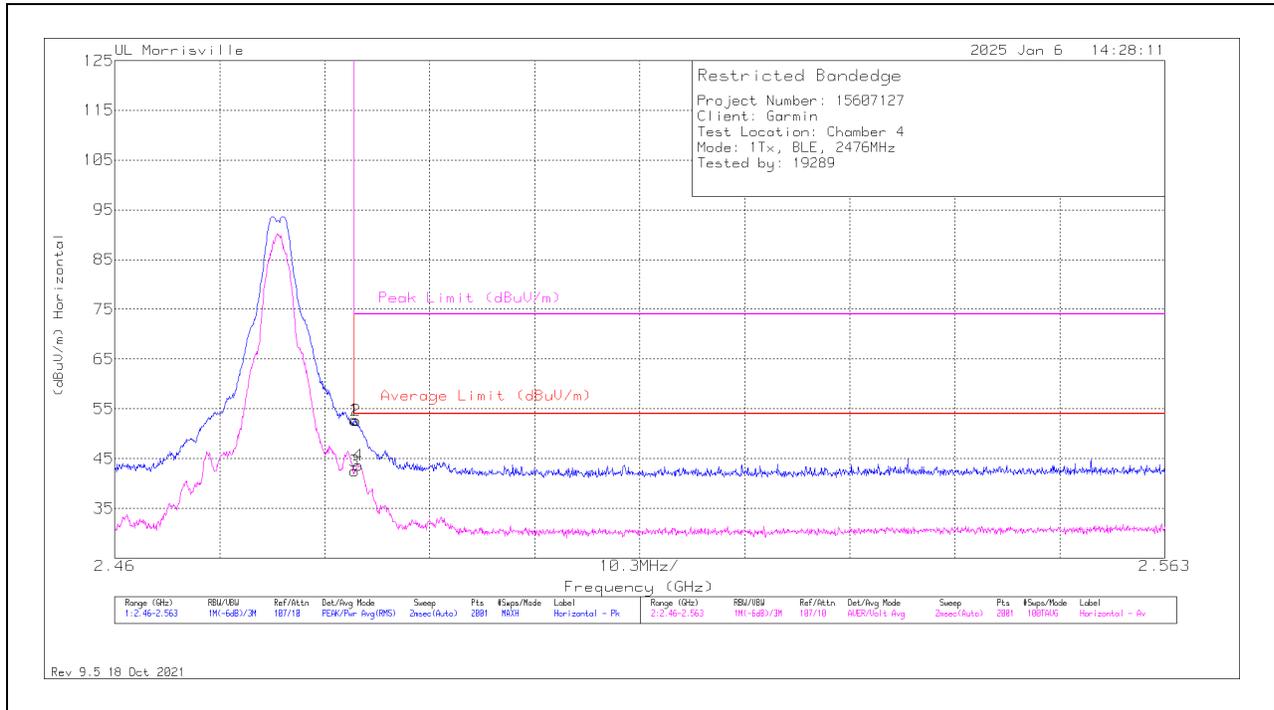


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 32.61 | Pk | 32 | -23.2 | 41.41 | - | - | 74 | -32.59 | 127 | 281 | V |
| 2 | * ** 2.3888 | 34.54 | Pk | 32 | -23.2 | 43.34 | - | - | 74 | -30.66 | 127 | 281 | V |
| 3 | * ** 2.38996 | 21.34 | ADV | 32 | -23.2 | 30.14 | 54 | -23.86 | - | - | 127 | 281 | V |
| 4 | * ** 2.38655 | 22.52 | ADV | 32 | -23.3 | 31.22 | 54 | -22.78 | - | - | 127 | 281 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2476MHz)

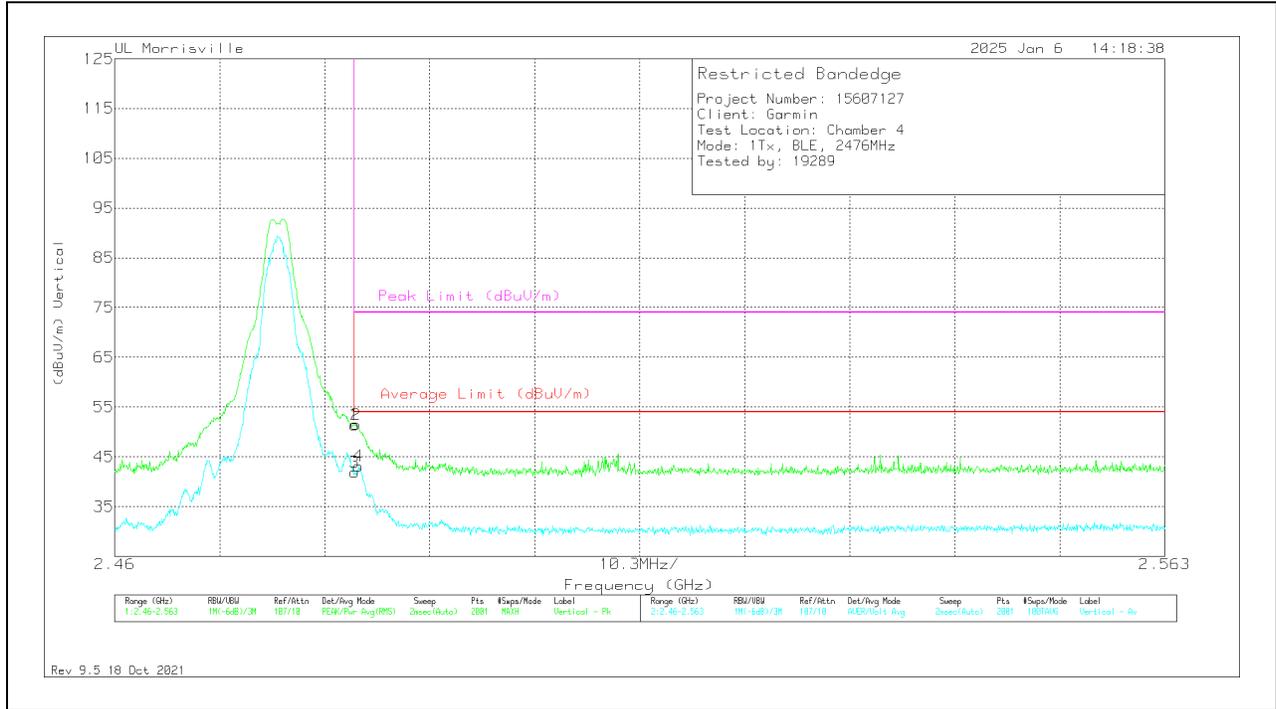
HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 43.27 | Pk | 32.3 | -22.8 | 52.77 | - | - | 74 | -21.23 | 342 | 103 | H |
| 2 | *** 2.48364 | 43.17 | Pk | 32.3 | -22.8 | 52.67 | - | - | 74 | -21.33 | 342 | 103 | H |
| 3 | *** 2.48354 | 32.97 | ADV | 32.3 | -22.8 | 42.47 | 54 | -11.53 | - | - | 342 | 103 | H |
| 4 | *** 2.4839 | 34.19 | ADV | 32.3 | -22.8 | 43.69 | 54 | -10.31 | - | - | 342 | 103 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector
 ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 41.86 | Pk | 32.3 | -22.8 | 51.36 | - | - | 74 | -22.64 | 27 | 109 | V |
| 2 | *** 2.48364 | 41.97 | Pk | 32.3 | -22.8 | 51.47 | - | - | 74 | -22.53 | 27 | 109 | V |
| 3 | *** 2.48354 | 32.43 | ADV | 32.3 | -22.8 | 41.93 | 54 | -12.07 | - | - | 27 | 109 | V |
| 4 | *** 2.4839 | 33.64 | ADV | 32.3 | -22.8 | 43.14 | 54 | -10.86 | - | - | 27 | 109 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

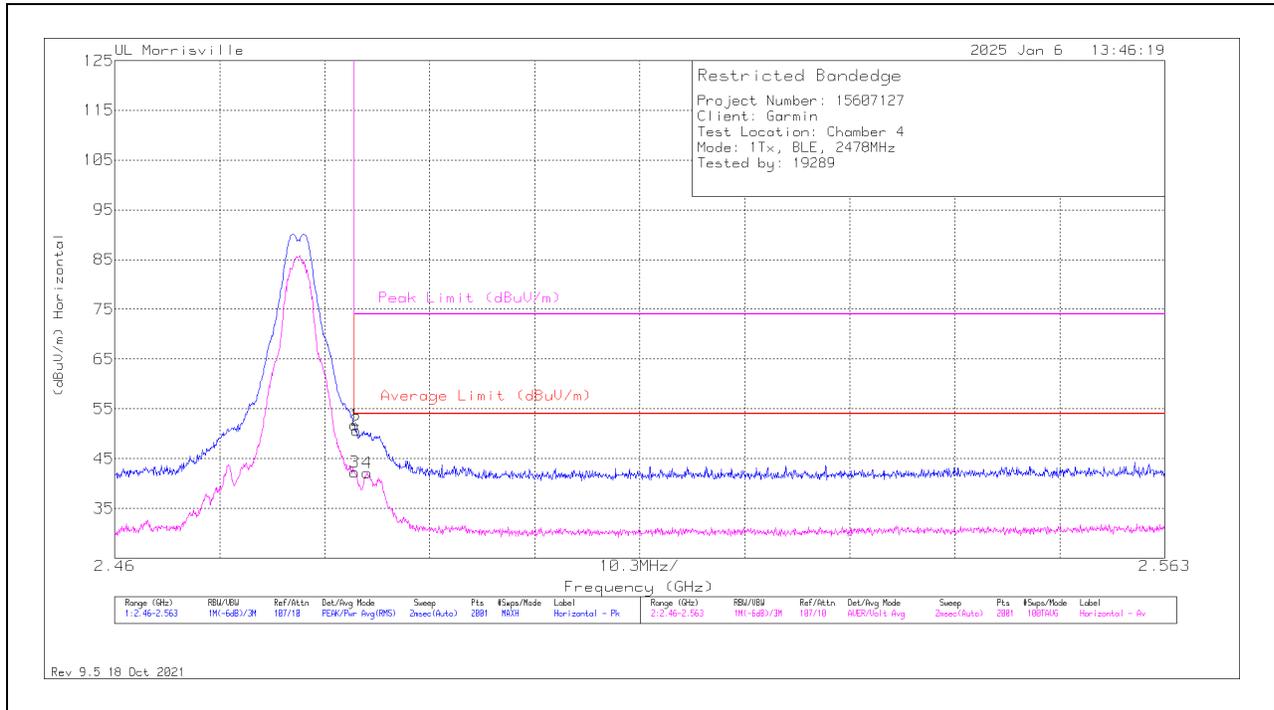
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2478MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 42.31 | Pk | 32.3 | -22.8 | 51.81 | - | - | 74 | -22.19 | 25 | 103 | H |
| 2 | *** 2.48369 | 41.11 | Pk | 32.3 | -22.8 | 50.61 | - | - | 74 | -23.39 | 25 | 103 | H |
| 3 | *** 2.48354 | 32.78 | ADV | 32.3 | -22.8 | 42.28 | 54 | -11.72 | - | - | 25 | 103 | H |
| 4 | *** 2.48477 | 32.6 | ADV | 32.3 | -22.8 | 42.1 | 54 | -11.9 | - | - | 25 | 103 | H |

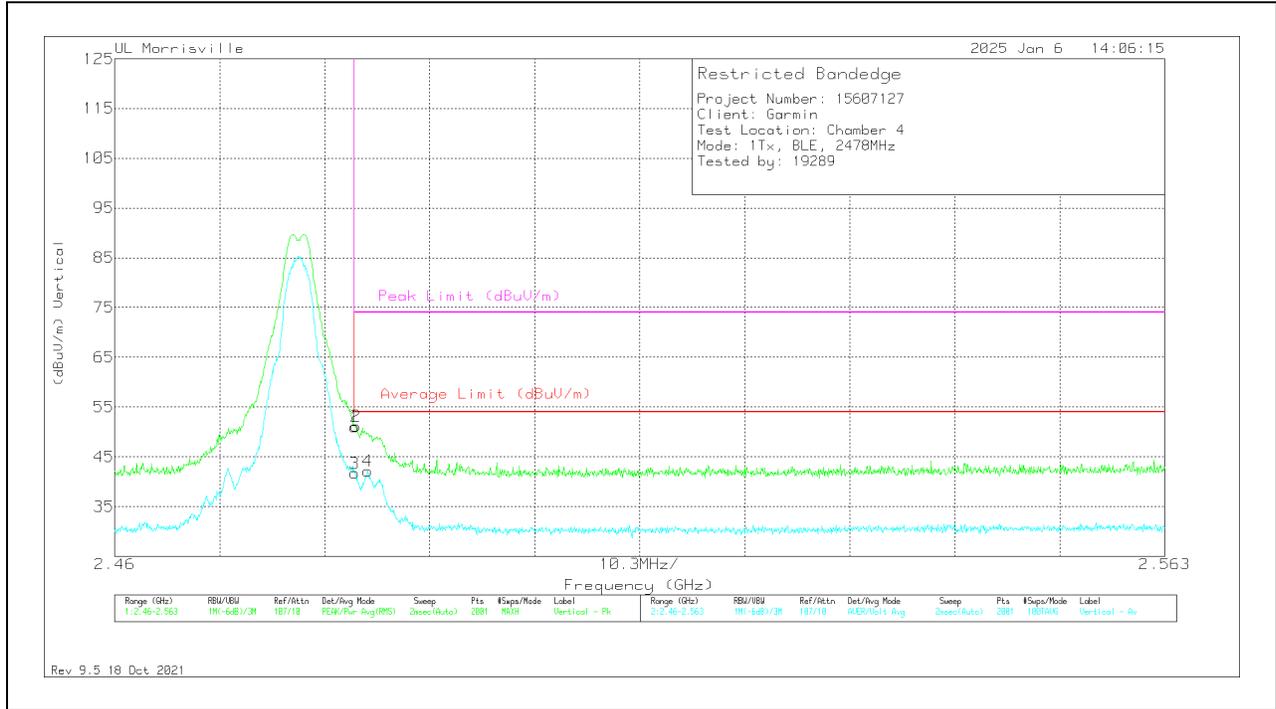
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 41.52 | Pk | 32.3 | -22.8 | 51.02 | - | - | 74 | -22.98 | 68 | 111 | V |
| 2 | *** 2.48364 | 41.63 | Pk | 32.3 | -22.8 | 51.13 | - | - | 74 | -22.87 | 68 | 111 | V |
| 3 | *** 2.48354 | 32.2 | ADV | 32.3 | -22.8 | 41.7 | 54 | -12.3 | - | - | 68 | 111 | V |
| 4 | *** 2.48482 | 32.61 | ADV | 32.3 | -22.8 | 42.11 | 54 | -11.89 | - | - | 68 | 111 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

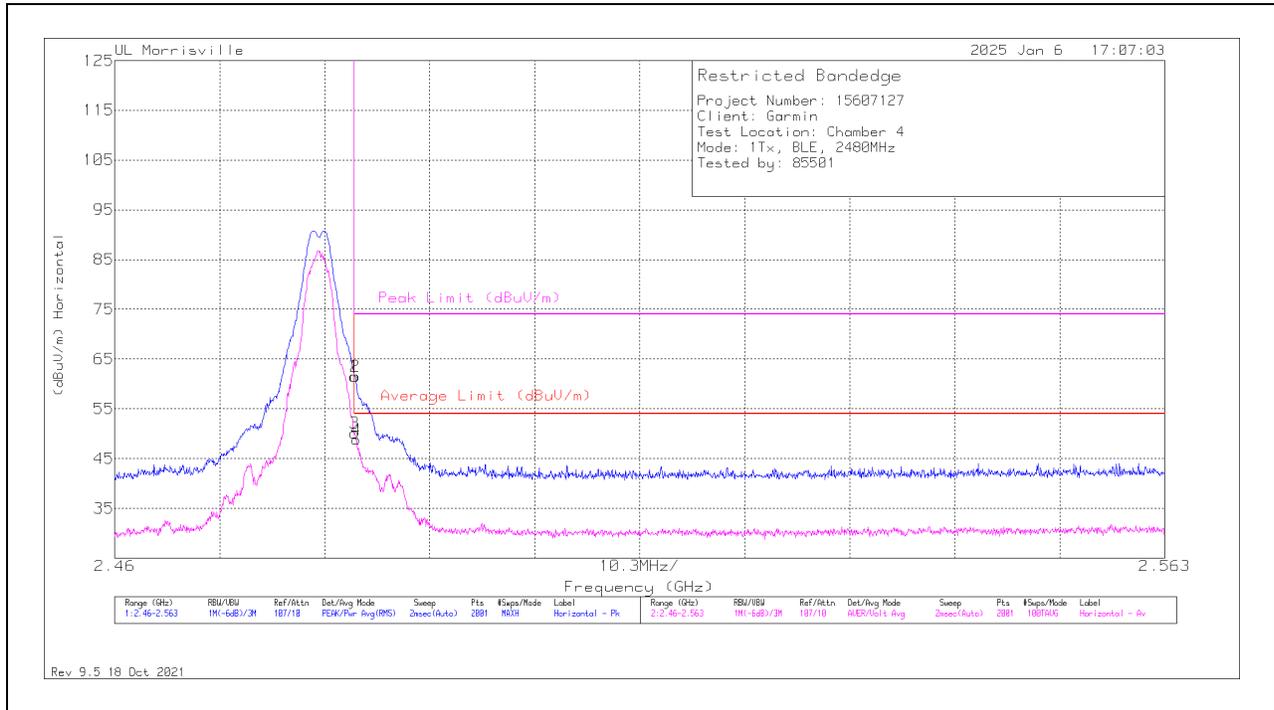
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, 2480MHz)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 52.03 | Pk | 32.3 | -22.8 | 61.53 | - | - | 74 | -12.47 | 8 | 116 | H |
| 2 | * ** 2.48359 | 52.03 | Pk | 32.3 | -22.8 | 61.53 | - | - | 74 | -12.47 | 8 | 116 | H |
| 3 | * ** 2.48354 | 40.69 | ADV | 32.3 | -22.8 | 50.19 | 54 | -3.81 | - | - | 8 | 116 | H |
| 4 | * ** 2.48369 | 39.33 | ADV | 32.3 | -22.8 | 48.83 | 54 | -5.17 | - | - | 8 | 116 | H |

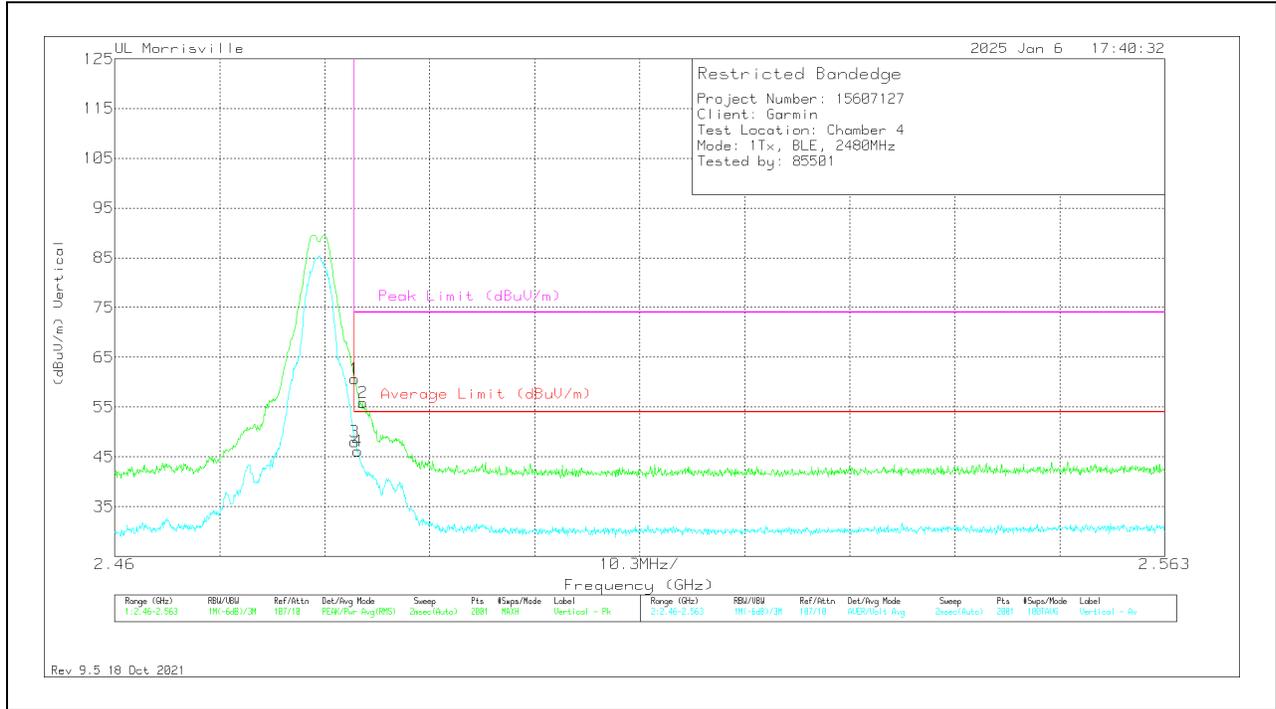
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 51.19 | Pk | 32.3 | -22.8 | 60.69 | - | - | 74 | -13.31 | 27 | 104 | V |
| 2 | *** 2.48436 | 46.45 | Pk | 32.3 | -22.8 | 55.95 | - | - | 74 | -18.05 | 27 | 104 | V |
| 3 | *** 2.48354 | 38.56 | ADV | 32.3 | -22.8 | 48.06 | 54 | -5.94 | - | - | 27 | 104 | V |
| 4 | *** 2.48384 | 36.6 | ADV | 32.3 | -22.8 | 46.1 | 54 | -7.9 | - | - | 27 | 104 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

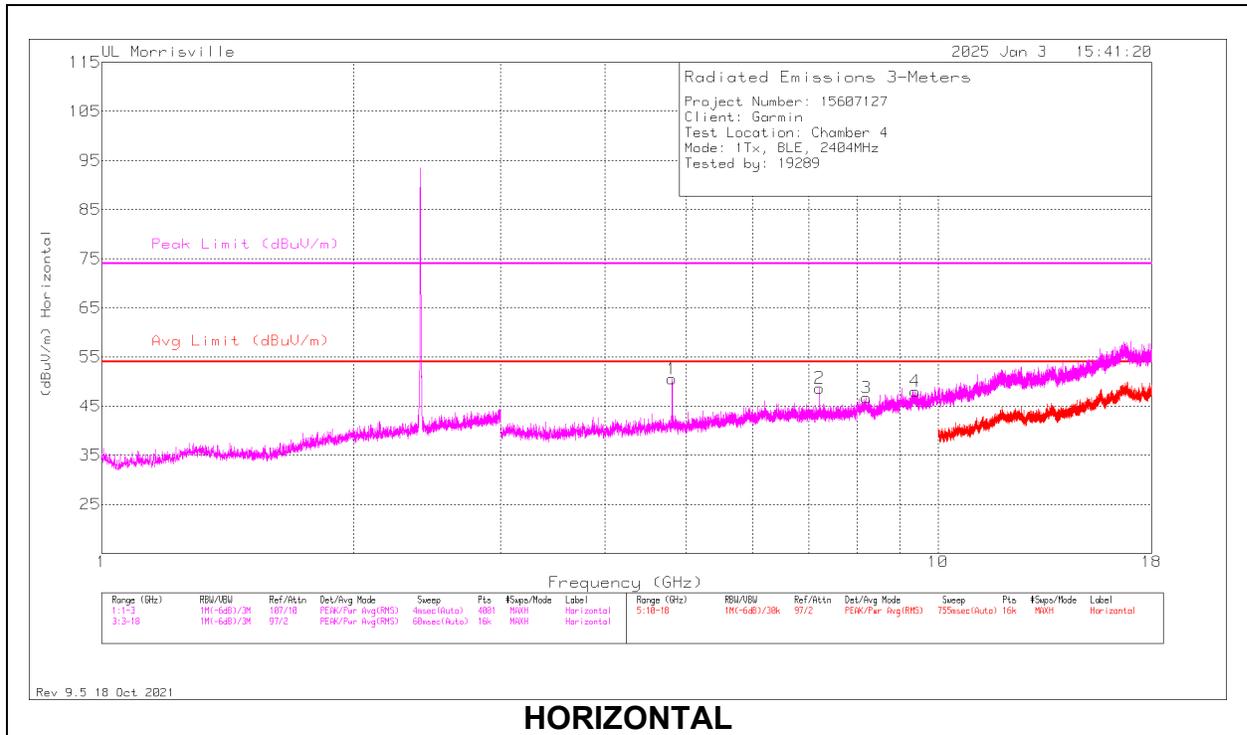
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

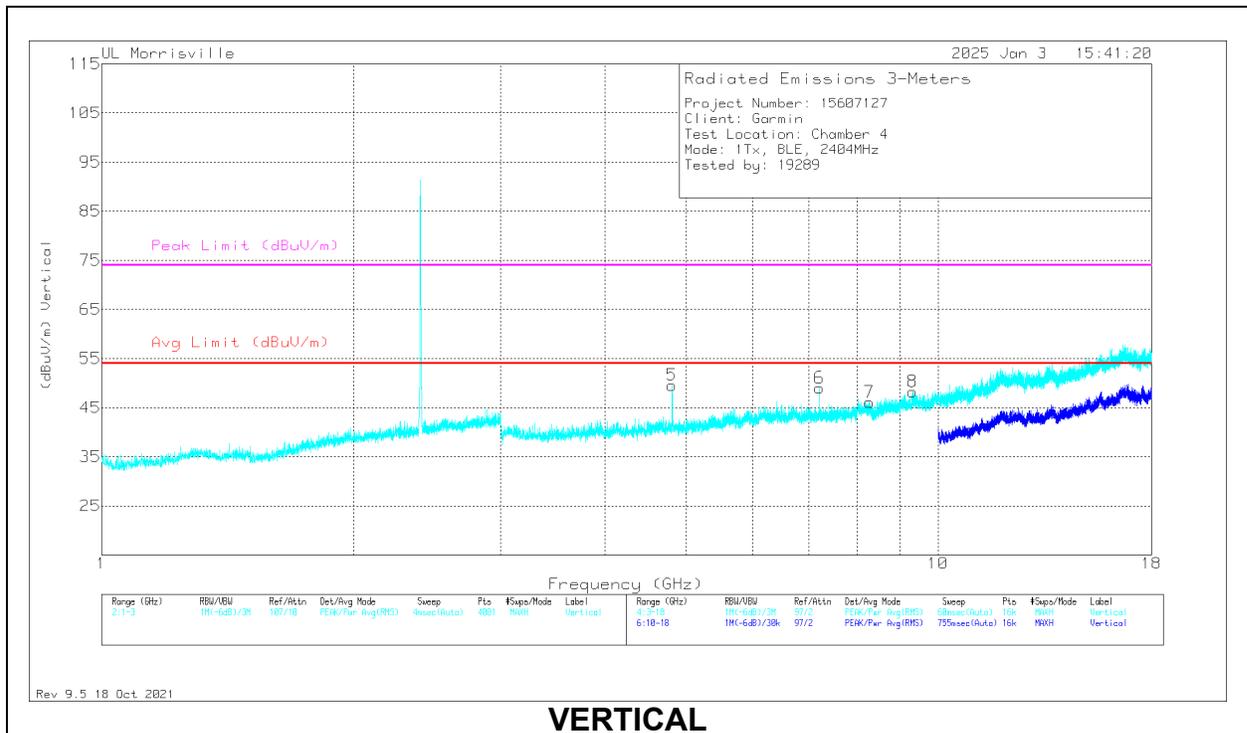
ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.80899 | 50.27 | PK2 | 34.1 | -31.3 | 53.07 | - | - | 74 | -20.93 | 197 | 196 | H |
| | *** 4.80711 | 42.61 | ADV | 34.1 | -31.3 | 45.41 | 54 | -8.59 | - | - | 197 | 196 | H |
| 3 | *** 8.20406 | 37.28 | Pk | 35.8 | -26.4 | 46.68 | 54 | -7.32 | 74 | -27.32 | 0-360 | 100 | H |
| 4 | *** 9.39281 | 36.19 | Pk | 36.6 | -24.8 | 47.99 | 54 | -6.01 | 74 | -26.01 | 0-360 | 100 | H |
| 5 | *** 4.80902 | 50.34 | PK2 | 34.1 | -31.3 | 53.14 | - | - | 74 | -20.86 | 339 | 377 | V |
| | *** 4.80898 | 43.02 | ADV | 34.1 | -31.3 | 45.82 | 54 | -8.18 | - | - | 339 | 377 | V |
| 7 | *** 8.27906 | 36.71 | Pk | 35.8 | -26.4 | 46.11 | 54 | -7.89 | 74 | -27.89 | 0-360 | 200 | V |
| 8 | *** 9.32283 | 36.8 | PK2 | 36.4 | -24.4 | 48.8 | - | - | 74 | -25.2 | 185 | 268 | V |
| | *** 9.32425 | 24.74 | ADV | 36.4 | -24.4 | 36.74 | 54 | -17.26 | - | - | 185 | 268 | V |
| 2 | 7.21031 | 40.94 | Pk | 35.6 | -27.9 | 48.64 | - | - | - | - | 0-360 | 100 | H |
| 6 | 7.21313 | 41.32 | Pk | 35.6 | -27.9 | 49.02 | - | - | - | - | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

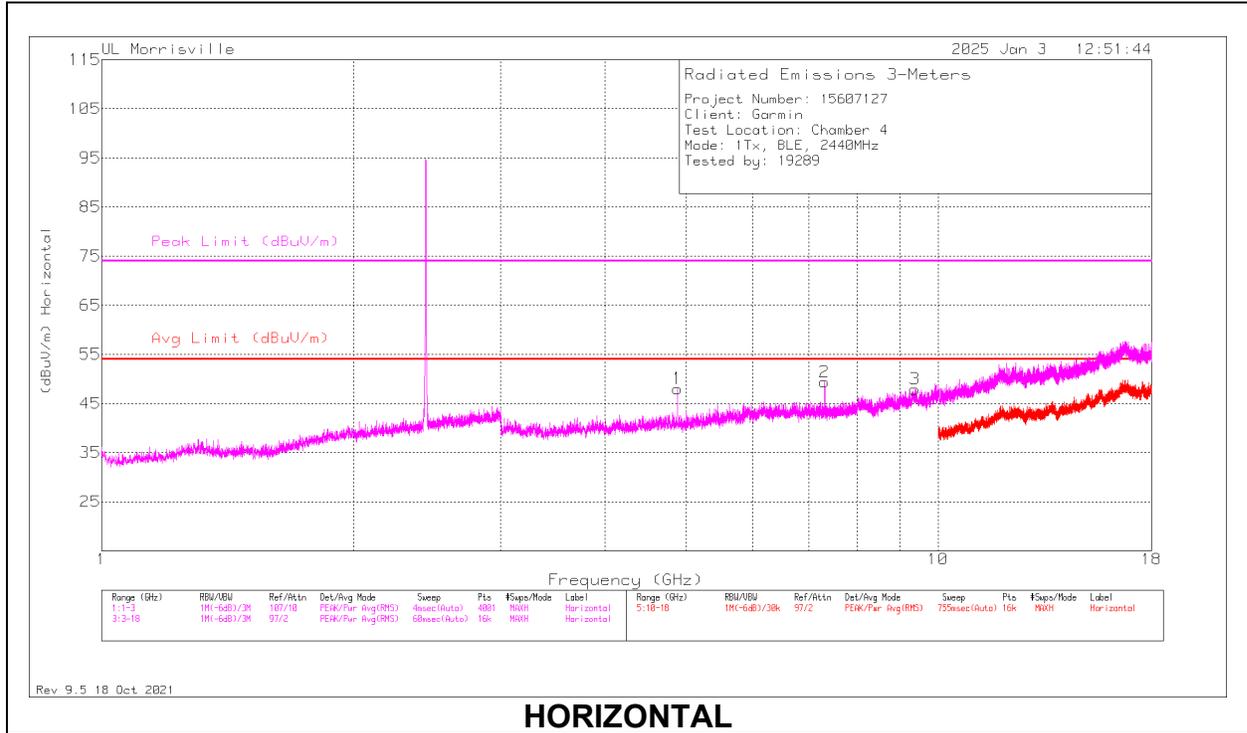
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

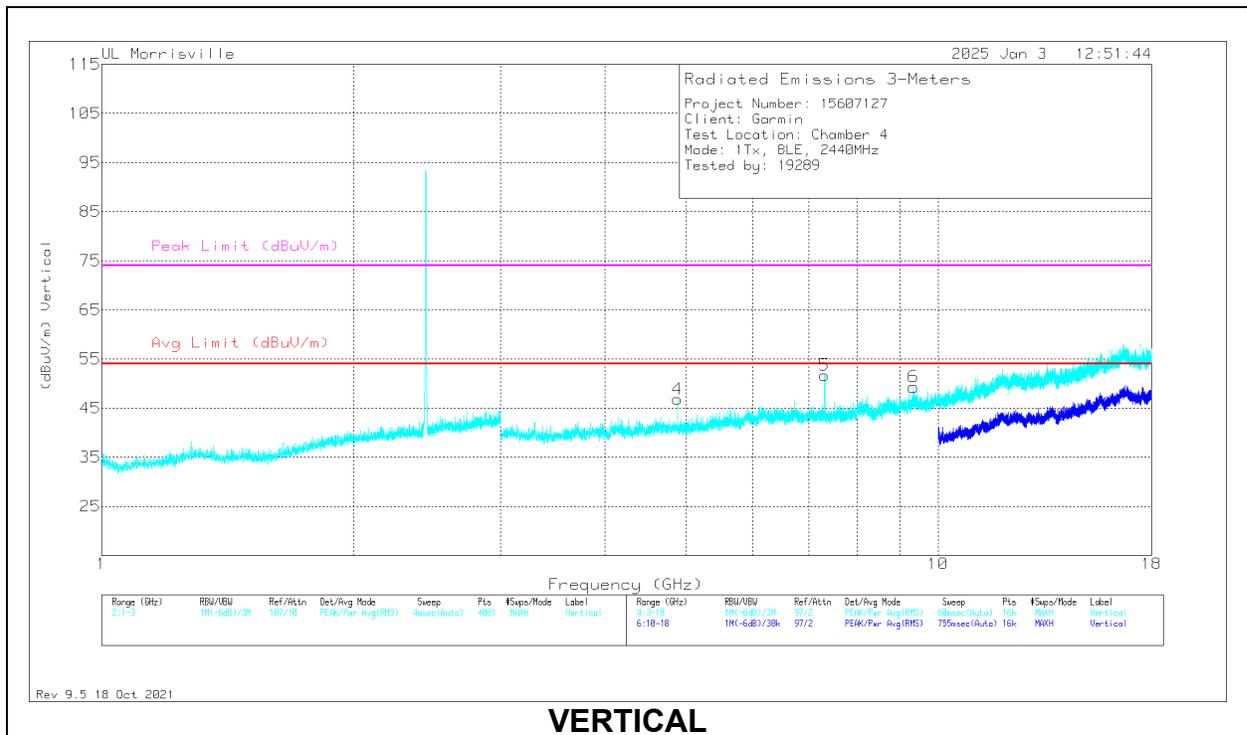
PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.87886 | 48.27 | PK2 | 34 | -31 | 51.27 | - | - | 74 | -22.73 | 196 | 133 | H |
| | *** 4.88102 | 40.28 | ADV | 34 | -31 | 43.28 | 54 | -10.72 | - | - | 196 | 133 | H |
| 2 | *** 7.31849 | 45.38 | PK2 | 35.6 | -27.7 | 53.28 | - | - | 74 | -20.72 | 53 | 116 | H |
| | *** 7.32172 | 36.12 | ADV | 35.6 | -27.7 | 44.02 | 54 | -9.98 | - | - | 53 | 116 | H |
| 3 | *** 9.38156 | 36.21 | Pk | 36.6 | -24.9 | 47.91 | 54 | -6.09 | 74 | -26.09 | 0-360 | 100 | H |
| 4 | *** 4.87875 | 43.81 | Pk | 34 | -31 | 46.81 | 54 | -7.19 | 74 | -27.19 | 0-360 | 200 | V |
| 5 | *** 7.3217 | 45.92 | PK2 | 35.6 | -27.7 | 53.82 | - | - | 74 | -20.18 | 12 | 199 | V |
| | *** 7.32144 | 37.15 | ADV | 35.6 | -27.7 | 45.05 | 54 | -8.95 | - | - | 12 | 199 | V |
| 6 | *** 9.34726 | 35.47 | PK2 | 36.5 | -24.3 | 47.67 | - | - | 74 | -26.33 | 19 | 107 | V |
| | *** 9.34887 | 23.47 | ADV | 36.5 | -24.3 | 35.67 | 54 | -18.33 | - | - | 19 | 107 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

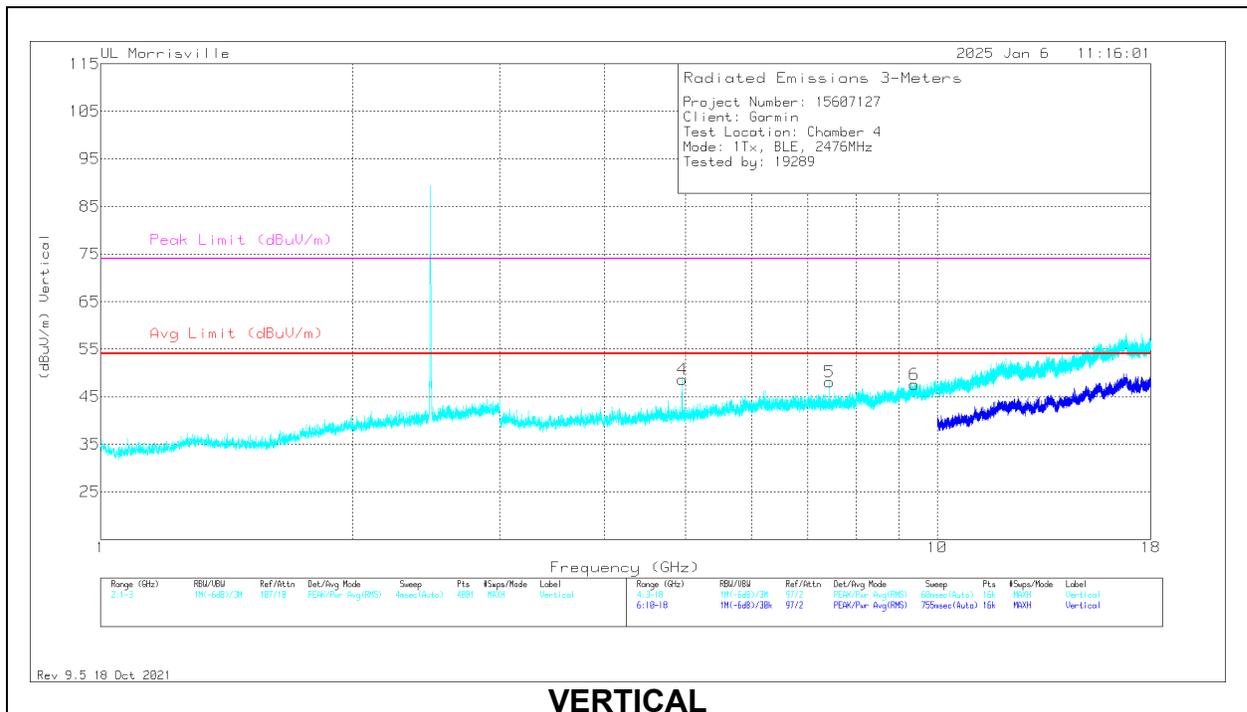
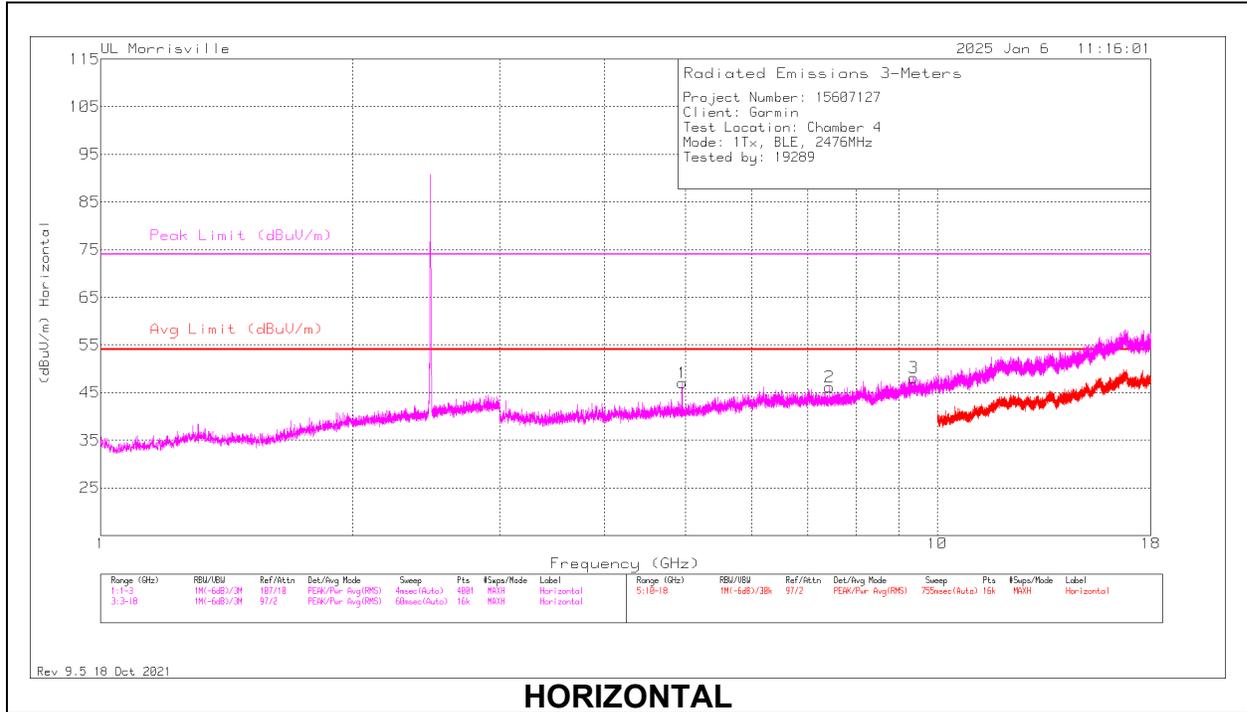
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.95469 | 44.11 | Pk | 33.9 | -31 | 47.01 | 54 | -6.99 | 74 | -26.99 | 0-360 | 100 | H |
| 2 | *** 7.43156 | 38.38 | Pk | 35.7 | -27.9 | 46.18 | 54 | -7.82 | 74 | -27.82 | 0-360 | 100 | H |
| 3 | *** 9.36994 | 37.29 | PK2 | 36.5 | -24.7 | 49.09 | - | - | 74 | -24.91 | 56 | 234 | H |
| | *** 9.37187 | 24.77 | ADV | 36.5 | -24.7 | 36.57 | 54 | -17.43 | - | - | 56 | 234 | H |
| 4 | *** 4.95689 | 47.29 | PK2 | 33.9 | -30.9 | 50.29 | - | - | 74 | -23.71 | 54 | 308 | V |
| | *** 4.95711 | 39.07 | ADV | 33.9 | -30.9 | 42.07 | 54 | -11.93 | - | - | 54 | 308 | V |
| 5 | *** 7.43216 | 43.89 | PK2 | 35.7 | -27.9 | 51.69 | - | - | 74 | -22.31 | 5 | 198 | V |
| | *** 7.43225 | 33.94 | ADV | 35.7 | -27.9 | 41.74 | 54 | -12.26 | - | - | 5 | 198 | V |
| 6 | *** 9.38719 | 35.92 | Pk | 36.6 | -24.9 | 47.62 | 54 | -6.38 | 74 | -26.38 | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

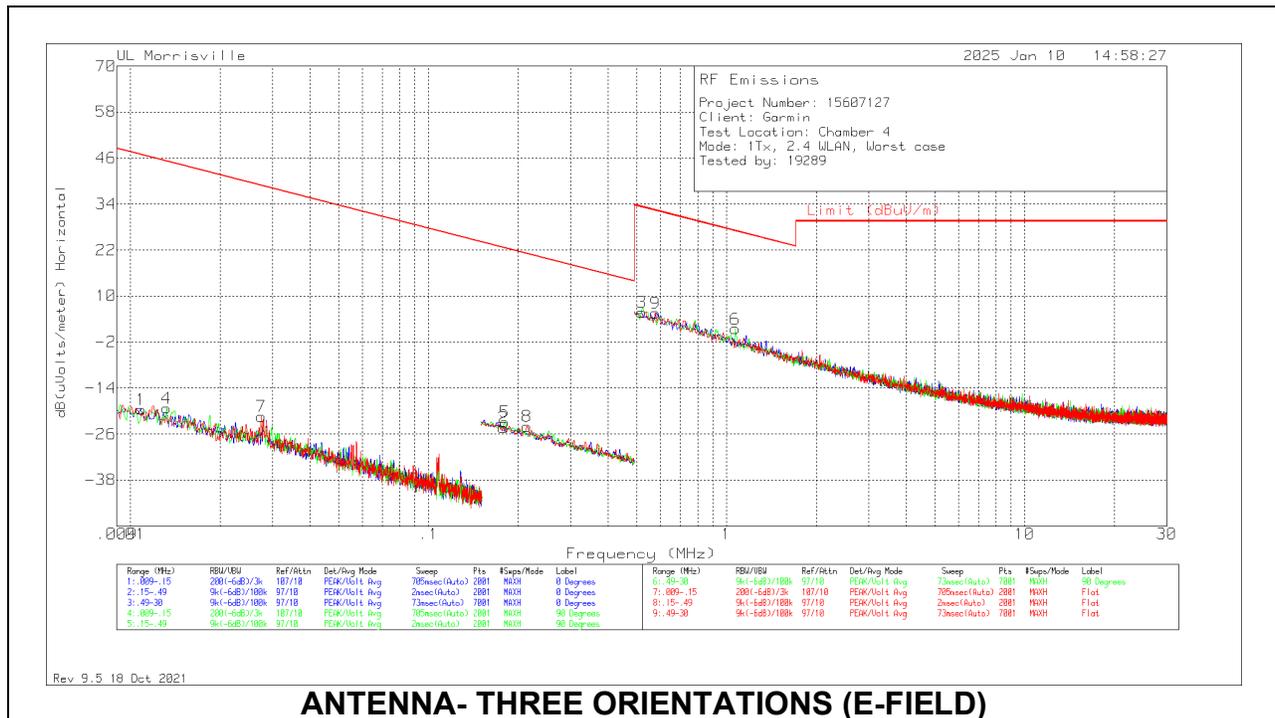
PK2 - Maximum Peak

ADV - Linear Voltage Average

10.2. WORST CASE SPURIOUS BELOW 30MHZ

Note: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).

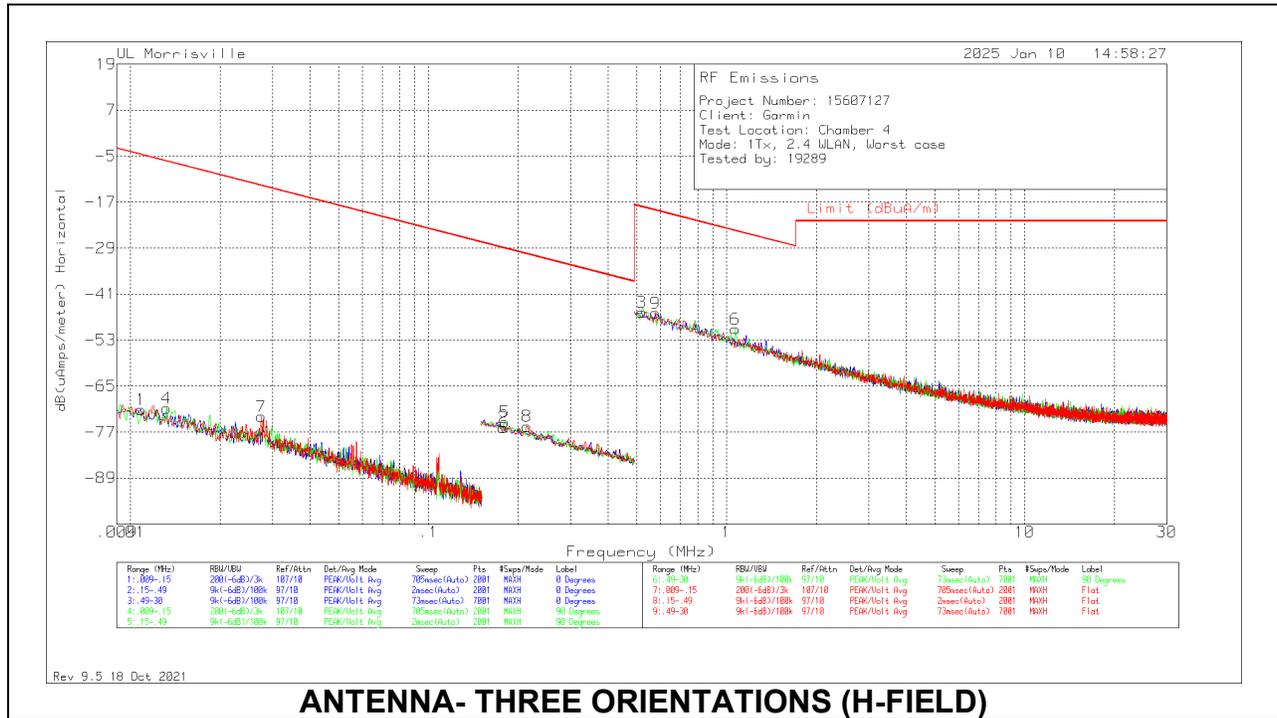
10.2.1. 2.4 WLAN



ANTENNA- THREE ORIENTATIONS (E-FIELD)

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uVolts/meter) | QP/AV Limit (dBuV/m) | PK Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|------------------------------------|----------------------|-------------------|-------------|----------------|------------|
| 1 | .01085 | 42.55 | Pk | 17.8 | .1 | -80 | -19.55 | 46.9 | 66.9 | -66.45 | 0-360 | 0 degs |
| 4 | .01319 | 43.87 | Pk | 16.8 | .1 | -80 | -19.23 | 45.2 | 65.2 | -64.43 | 0-360 | 90 degs |
| 7 | .02746 | 45.13 | Pk | 13.3 | .1 | -80 | -21.47 | 38.83 | 58.83 | -60.3 | 0-360 | Flat |
| 2 | .17822 | 44.51 | Pk | 11 | .1 | -80 | -24.39 | 22.59 | 42.59 | -46.98 | 0-360 | 0 degs |
| 5 | .18035 | 45.97 | Pk | 11 | .1 | -80 | -22.93 | 22.48 | 42.48 | -45.41 | 0-360 | 90 degs |
| 8 | .21443 | 45.01 | Pk | 10.9 | .1 | -80 | -23.99 | 20.98 | 40.98 | -44.97 | 0-360 | Flat |
| 3 | .51951 | 34.66 | Pk | 11 | .1 | -40 | 5.76 | 33.29 | - | -27.53 | 0-360 | 0 degs |
| 9 | .57854 | 34.42 | Pk | 11 | .1 | -40 | 5.52 | 32.36 | - | -26.84 | 0-360 | Flat |
| 6 | 1.07181 | 30.24 | Pk | 11 | .2 | -40 | 1.44 | 27 | - | -25.56 | 0-360 | 90 degs |

Pk - Peak detector

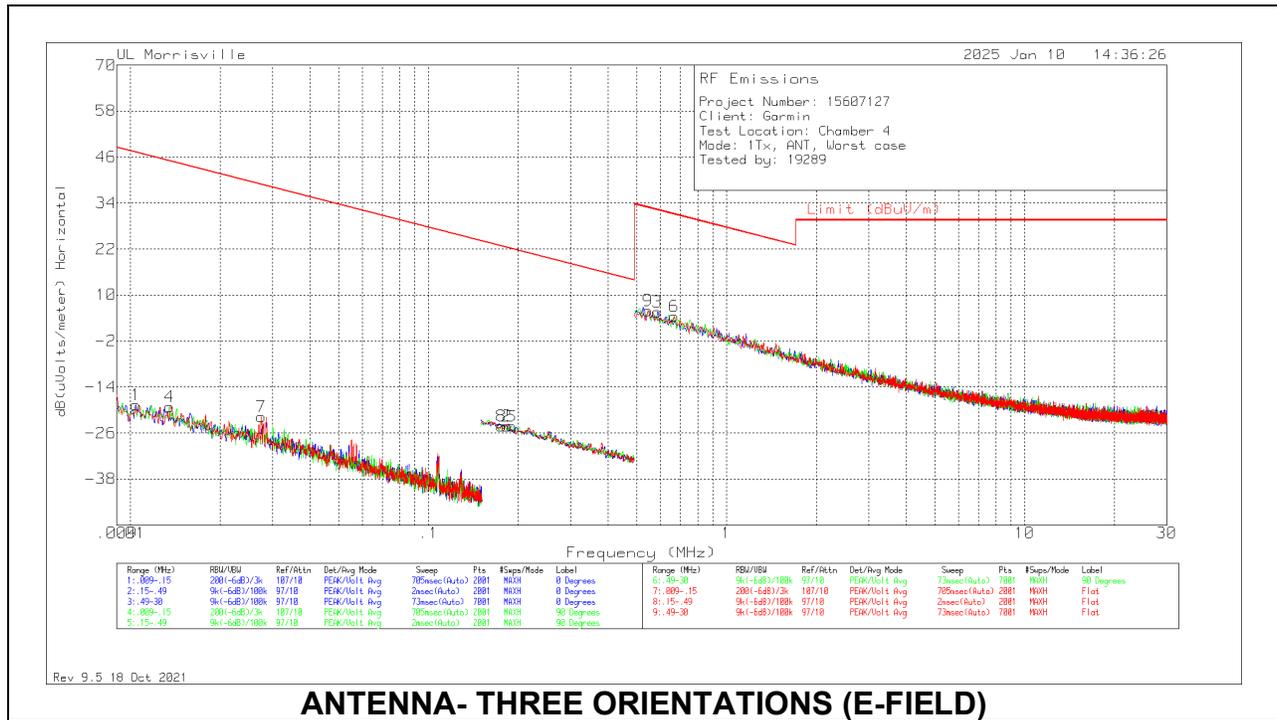


ANTENNA- THREE ORIENTATIONS (H-FIELD)

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uAmps/meter) | QP/AV Limit (dBuA/m) | PK Limit (dBuA/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|-----------------------------------|----------------------|-------------------|-------------|----------------|------------|
| 1 | .01085 | 42.55 | Pk | -33.7 | .1 | -80 | -71.05 | -4.6 | 15.4 | -66.45 | 0-360 | 0 degs |
| 4 | .01319 | 43.87 | Pk | -34.7 | .1 | -80 | -70.73 | -6.3 | 13.7 | -64.43 | 0-360 | 90 degs |
| 7 | .02746 | 45.13 | Pk | -38.2 | .1 | -80 | -72.97 | -12.67 | 7.33 | -60.3 | 0-360 | Flat |
| 2 | .17822 | 44.51 | Pk | -40.5 | .1 | -80 | -75.89 | -28.91 | -8.91 | -46.98 | 0-360 | 0 degs |
| 5 | .18035 | 45.97 | Pk | -40.5 | .1 | -80 | -74.43 | -29.02 | -9.02 | -45.41 | 0-360 | 90 degs |
| 8 | .21443 | 45.01 | Pk | -40.6 | .1 | -80 | -75.49 | -30.52 | -10.52 | -44.97 | 0-360 | Flat |
| 3 | .51951 | 34.66 | Pk | -40.5 | .1 | -40 | -45.74 | -18.21 | - | -27.53 | 0-360 | 0 degs |
| 9 | .57854 | 34.42 | Pk | -40.5 | .1 | -40 | -45.98 | -19.14 | - | -26.84 | 0-360 | Flat |
| 6 | 1.07181 | 30.24 | Pk | -40.5 | .2 | -40 | -50.06 | -24.5 | - | -25.56 | 0-360 | 90 degs |

Pk - Peak detector

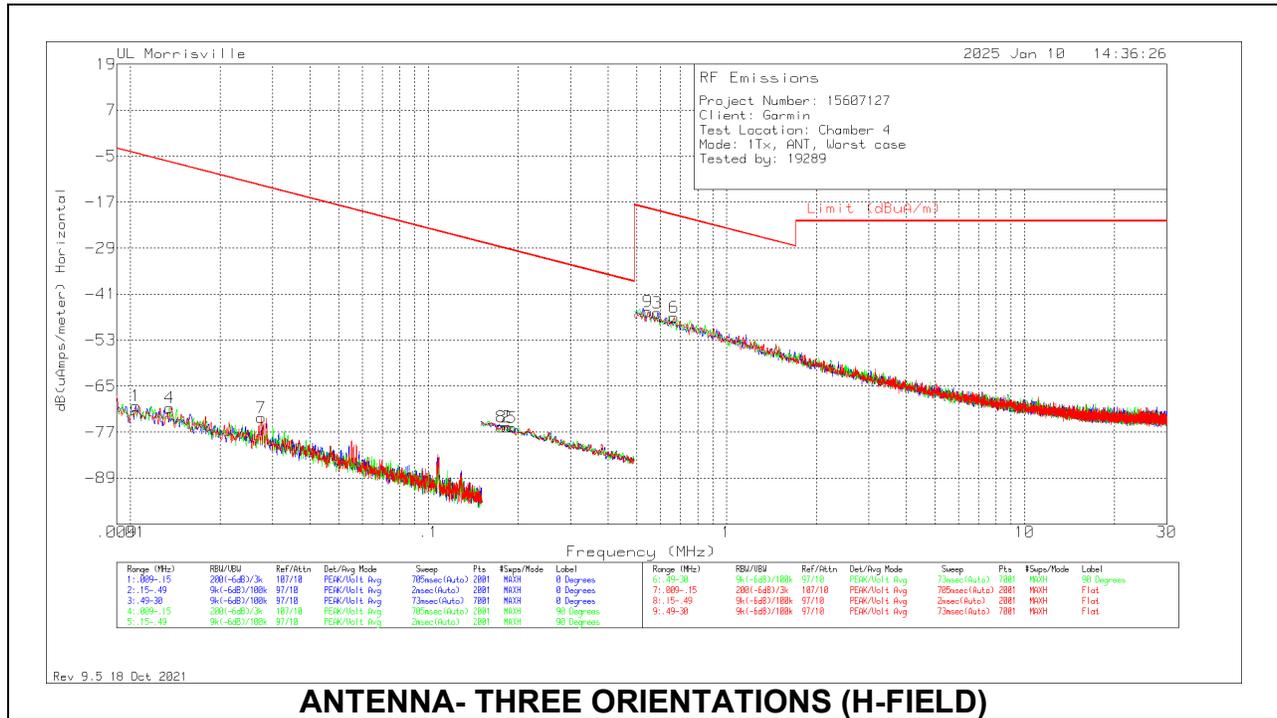
10.2.2. ANT/ANT+



ANTENNA- THREE ORIENTATIONS (E-FIELD)

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uVolts/meter) | QP/AV Limit (dBuV/m) | PK Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|------------------------------------|----------------------|-------------------|-------------|----------------|------------|
| 1 | .01042 | 43.25 | Pk | 18 | .1 | -80 | -18.65 | 47.25 | 67.25 | -65.9 | 0-360 | 0 degs |
| 4 | .01354 | 44.12 | Pk | 16.7 | .1 | -80 | -19.08 | 44.97 | 64.97 | -64.05 | 0-360 | 90 degs |
| 7 | .02746 | 44.88 | Pk | 13.3 | .1 | -80 | -21.72 | 38.83 | 58.83 | -60.55 | 0-360 | Flat |
| 8 | .17533 | 44.77 | Pk | 11 | .1 | -80 | -24.13 | 22.73 | 42.73 | -46.86 | 0-360 | Flat |
| 2 | .18366 | 44.77 | Pk | 11 | .1 | -80 | -24.13 | 22.32 | 42.32 | -46.45 | 0-360 | 0 degs |
| 5 | .19097 | 44.64 | Pk | 11 | .1 | -80 | -24.26 | 21.98 | 41.98 | -46.24 | 0-360 | 90 degs |
| 9 | .54481 | 34.79 | Pk | 11 | .1 | -40 | 5.89 | 32.88 | - | -26.99 | 0-360 | Flat |
| 3 | .58697 | 34.52 | Pk | 11 | .1 | -40 | 5.62 | 32.23 | - | -26.61 | 0-360 | 0 degs |
| 6 | .66707 | 33.24 | Pk | 11 | .2 | -40 | 4.44 | 31.12 | - | -26.68 | 0-360 | 90 degs |

Pk - Peak detector

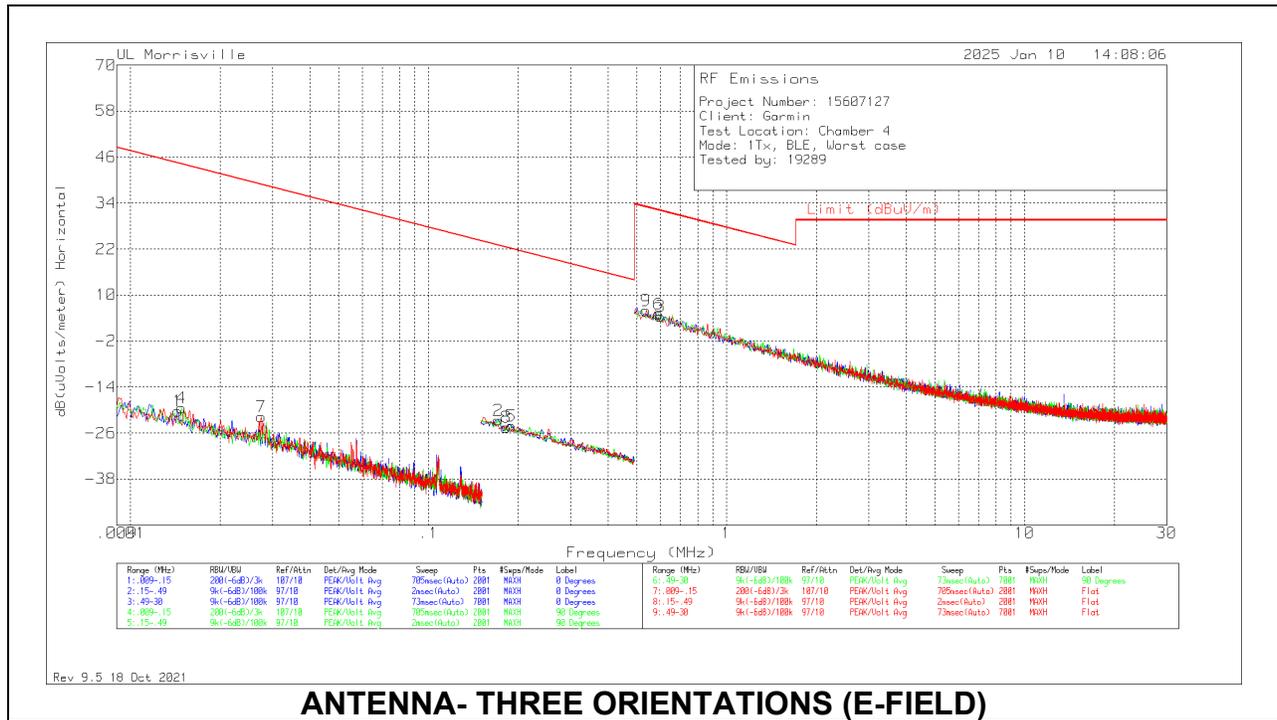


ANTENNA- THREE ORIENTATIONS (H-FIELD)

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uAmps/meter) | QP/AV Limit (dBuA/m) | PK Limit (dBuA/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|-----------------------------------|----------------------|-------------------|-------------|----------------|------------|
| 1 | .01042 | 43.25 | Pk | -33.5 | .1 | -80 | -70.15 | -4.25 | 15.75 | -65.9 | 0-360 | 0 degs |
| 4 | .01354 | 44.12 | Pk | -34.8 | .1 | -80 | -70.58 | -6.53 | 13.47 | -64.05 | 0-360 | 90 degs |
| 7 | .02746 | 44.88 | Pk | -38.2 | .1 | -80 | -73.22 | -12.67 | 7.33 | -60.55 | 0-360 | Flat |
| 8 | .17533 | 44.77 | Pk | -40.5 | .1 | -80 | -75.63 | -28.77 | -8.77 | -46.86 | 0-360 | Flat |
| 2 | .18366 | 44.77 | Pk | -40.5 | .1 | -80 | -75.63 | -29.18 | -9.18 | -46.45 | 0-360 | 0 degs |
| 5 | .19097 | 44.64 | Pk | -40.5 | .1 | -80 | -75.76 | -29.52 | -9.52 | -46.24 | 0-360 | 90 degs |
| 9 | .54481 | 34.79 | Pk | -40.5 | .1 | -40 | -45.61 | -18.62 | - | -26.99 | 0-360 | Flat |
| 3 | .58697 | 34.52 | Pk | -40.5 | .1 | -40 | -45.88 | -19.27 | - | -26.61 | 0-360 | 0 degs |
| 6 | .66707 | 33.24 | Pk | -40.5 | .2 | -40 | -47.06 | -20.38 | - | -26.68 | 0-360 | 90 degs |

Pk - Peak detector

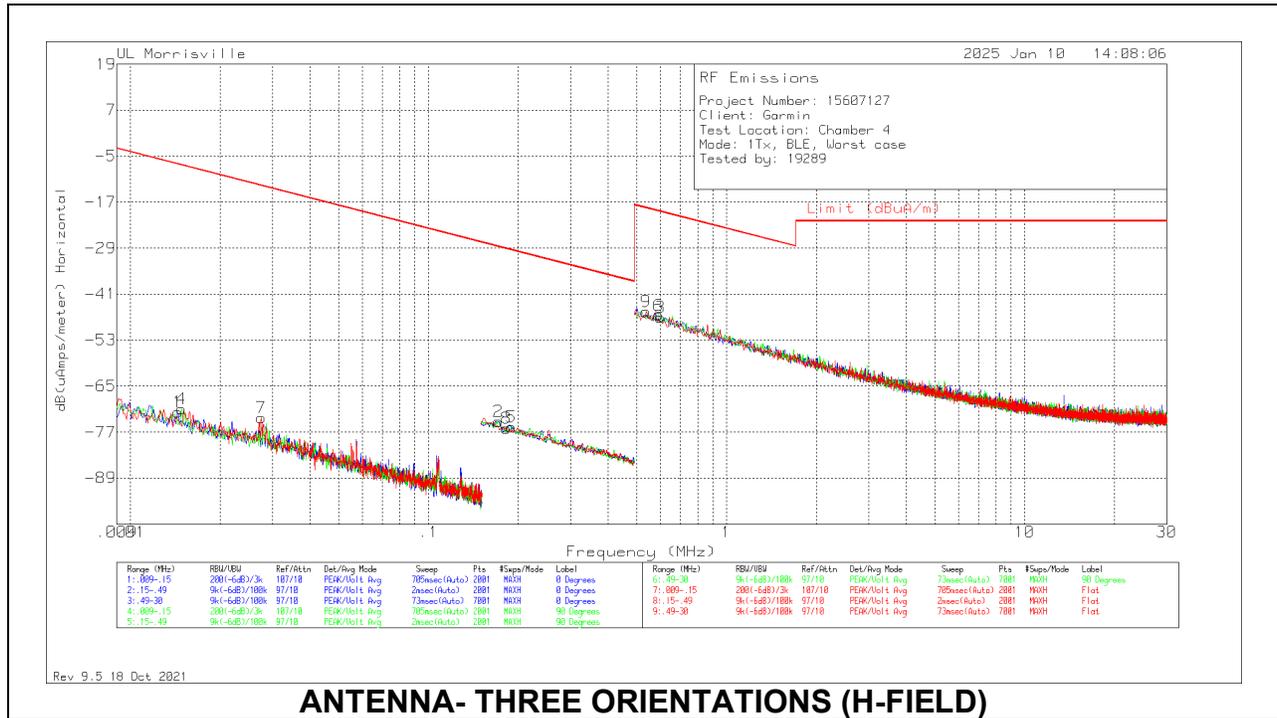
10.2.3. BLE



ANTENNA- THREE ORIENTATIONS (E-FIELD)

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uVolts/meter) | QP/AV Limit (dBuV/m) | PK Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|------------------------------------|----------------------|-------------------|-------------|----------------|------------|
| 1 | .0144 | 43.34 | Pk | 16.3 | .1 | -80 | -20.26 | 44.44 | 64.44 | -64.7 | 0-360 | 0 degs |
| 4 | .01482 | 44.36 | Pk | 16.1 | .1 | -80 | -19.44 | 44.19 | 64.19 | -63.63 | 0-360 | 90 degs |
| 7 | .02746 | 44.81 | Pk | 13.3 | .1 | -80 | -21.79 | 38.83 | 58.83 | -60.62 | 0-360 | Flat |
| 2 | .17117 | 46.26 | Pk | 11 | .1 | -80 | -22.64 | 22.94 | 42.94 | -45.58 | 0-360 | 0 degs |
| 8 | .18273 | 44.44 | Pk | 11 | .1 | -80 | -24.46 | 22.37 | 42.37 | -46.83 | 0-360 | Flat |
| 5 | .18944 | 44.7 | Pk | 11 | .1 | -80 | -24.2 | 22.05 | 42.05 | -46.25 | 0-360 | 90 degs |
| 9 | .53638 | 34.88 | Pk | 11 | .1 | -40 | 5.98 | 33.01 | - | -27.03 | 0-360 | Flat |
| 6 | .59118 | 33.93 | Pk | 11 | .1 | -40 | 5.03 | 32.17 | - | -27.14 | 0-360 | 90 degs |
| 3 | .59962 | 33.41 | Pk | 11 | .1 | -40 | 4.51 | 32.05 | - | -27.54 | 0-360 | 0 degs |

Pk - Peak detector



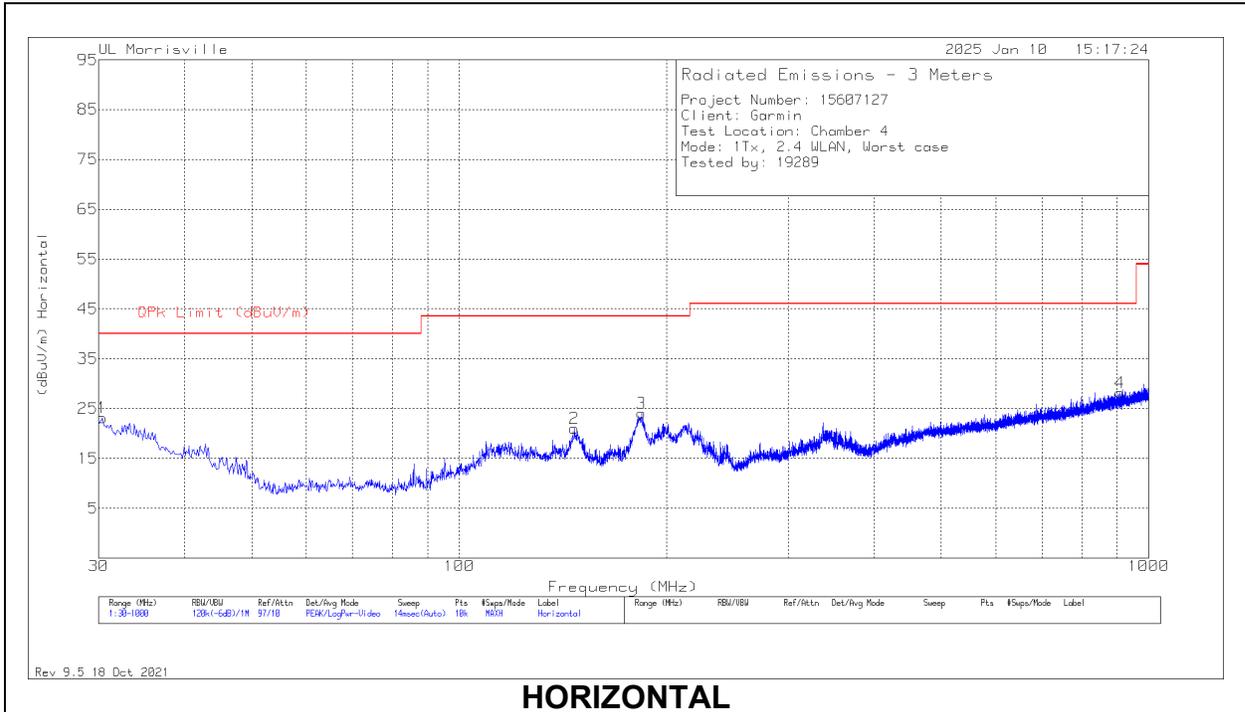
ANTENNA- THREE ORIENTATIONS (H-FIELD)

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uAmps/meter) | QP/AV Limit (dBuA/m) | PK Limit (dBuA/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|-----------------------------------|----------------------|-------------------|-------------|----------------|------------|
| 1 | .0144 | 43.34 | Pk | -35.2 | .1 | -80 | -71.76 | -7.06 | 12.94 | -64.7 | 0-360 | 0 degs |
| 4 | .01482 | 44.36 | Pk | -35.4 | .1 | -80 | -70.94 | -7.31 | 12.69 | -63.63 | 0-360 | 90 degs |
| 7 | .02746 | 44.81 | Pk | -38.2 | .1 | -80 | -73.29 | -12.67 | 7.33 | -60.62 | 0-360 | Flat |
| 2 | .17117 | 46.26 | Pk | -40.5 | .1 | -80 | -74.14 | -28.56 | -8.56 | -45.58 | 0-360 | 0 degs |
| 8 | .18273 | 44.44 | Pk | -40.5 | .1 | -80 | -75.96 | -29.13 | -9.13 | -46.83 | 0-360 | Flat |
| 5 | .18944 | 44.7 | Pk | -40.5 | .1 | -80 | -75.7 | -29.45 | -9.45 | -46.25 | 0-360 | 90 degs |
| 9 | .53638 | 34.88 | Pk | -40.5 | .1 | -40 | -45.52 | -18.49 | - | -27.03 | 0-360 | Flat |
| 6 | .59118 | 33.93 | Pk | -40.5 | .1 | -40 | -46.47 | -19.33 | - | -27.14 | 0-360 | 90 degs |
| 3 | .59962 | 33.41 | Pk | -40.5 | .1 | -40 | -46.99 | -19.45 | - | -27.54 | 0-360 | 0 degs |

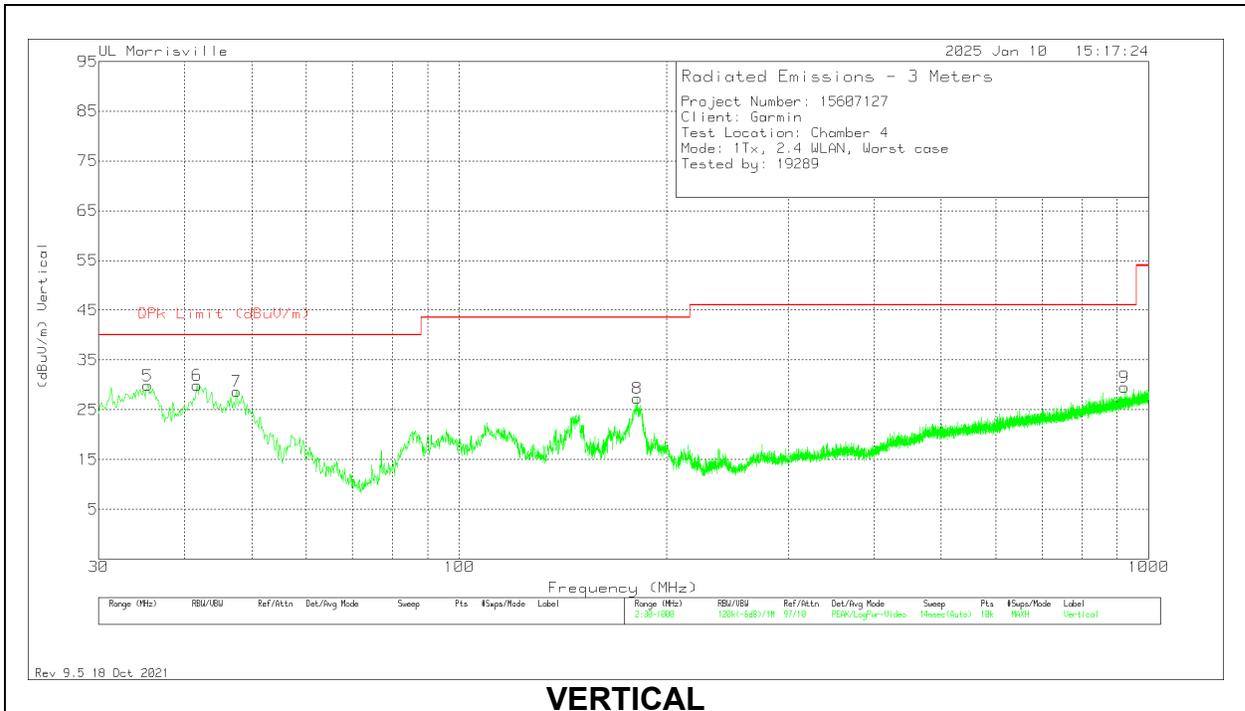
Pk - Peak detector

10.3. WORST CASE SPURIOUS BELOW 1 GHZ

10.3.1. 2.4 WLAN



HORIZONTAL

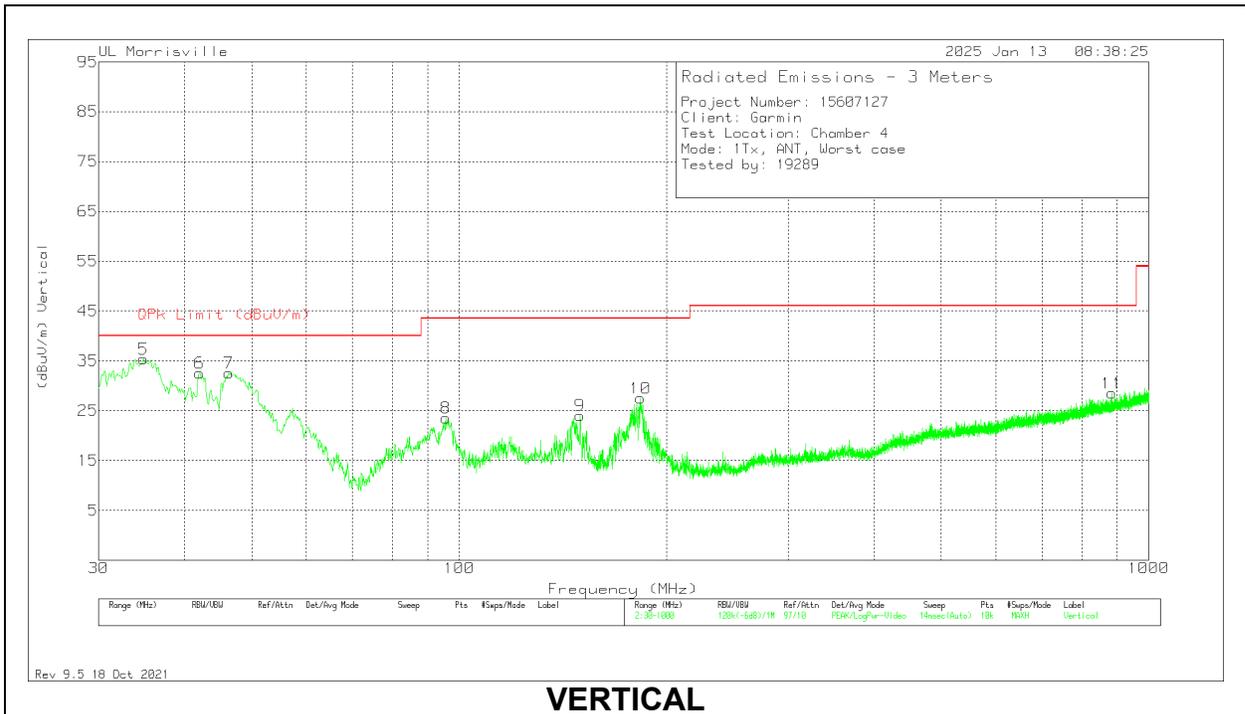
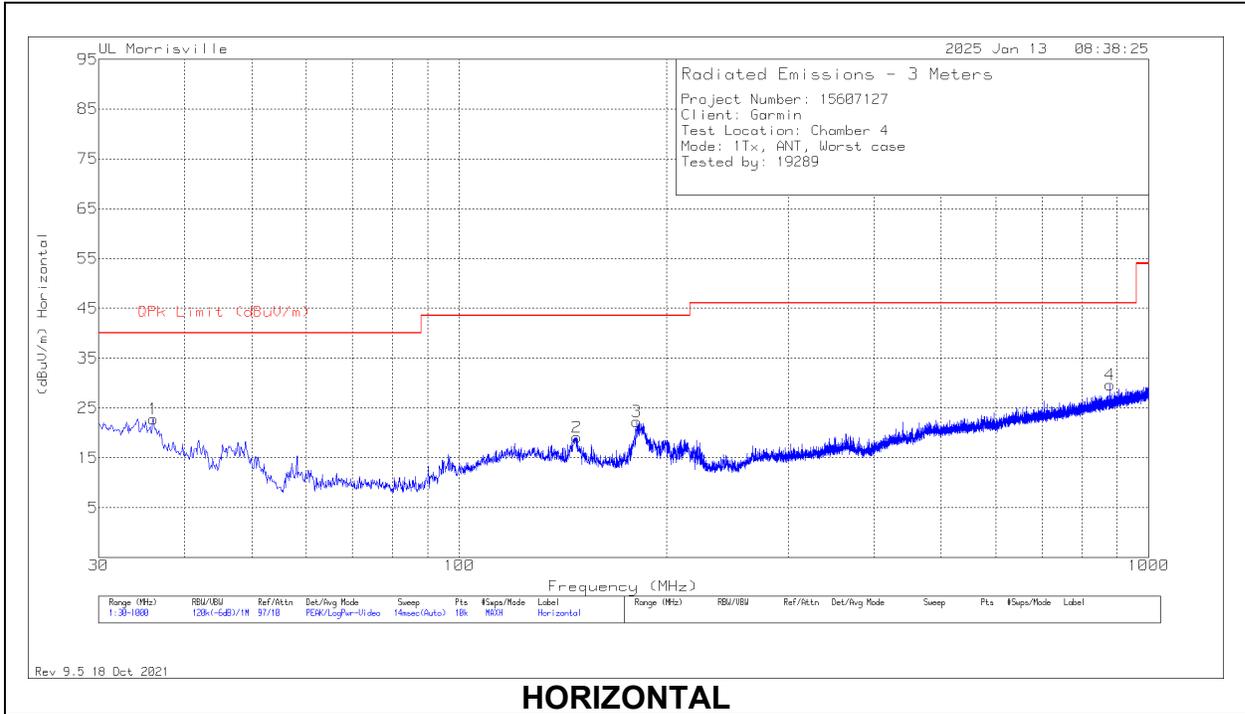


VERTICAL

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 90628 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|--------------|----------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 1 | 30.388 | 28.65 | Pk | 26.6 | -32.1 | 23.15 | 40 | -16.85 | 0-360 | 200 | H |
| 5 | 35.335 | 38.65 | Pk | 23.3 | -32.1 | 29.85 | 40 | -10.15 | 0-360 | 100 | V |
| 6 | 41.64 | 43.12 | Pk | 18.8 | -32 | 29.92 | 40 | -10.08 | 0-360 | 100 | V |
| 7 | 47.557 | 45.51 | Pk | 15.1 | -31.9 | 28.71 | 40 | -11.29 | 0-360 | 100 | V |
| 2 | 146.982 | 33.35 | Pk | 18.7 | -31 | 21.05 | 43.52 | -22.47 | 0-360 | 200 | H |
| 8 | 181.32 | 40.94 | Pk | 17.2 | -30.9 | 27.24 | 43.52 | -16.28 | 0-360 | 100 | V |
| 3 | 183.745 | 37.79 | Pk | 17.1 | -30.8 | 24.09 | 43.52 | -19.43 | 0-360 | 100 | H |
| 4 | 907.8985 | 27.12 | Pk | 28.3 | -27.2 | 28.22 | 46.02 | -17.8 | 0-360 | 300 | H |
| 9 | 921.527 | 28.16 | Pk | 28.4 | -27 | 29.56 | 46.02 | -16.46 | 0-360 | 200 | V |

Pk - Peak detector

10.3.2. ANT/ANT+

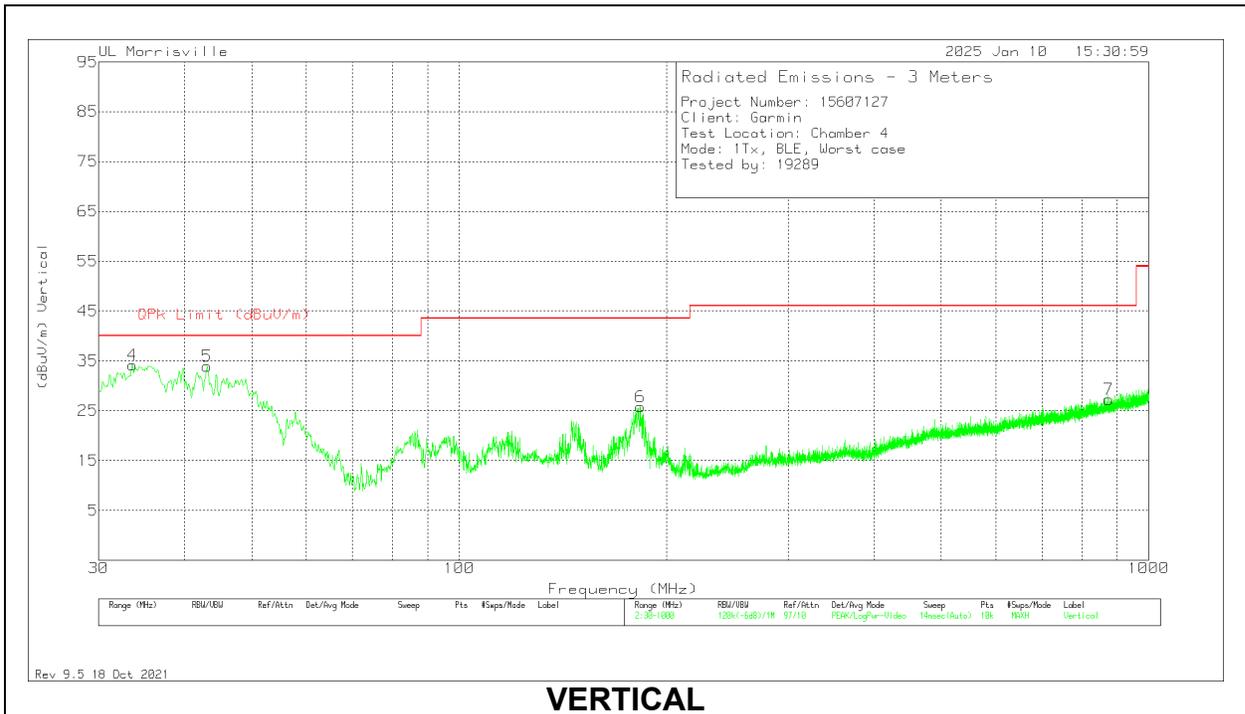
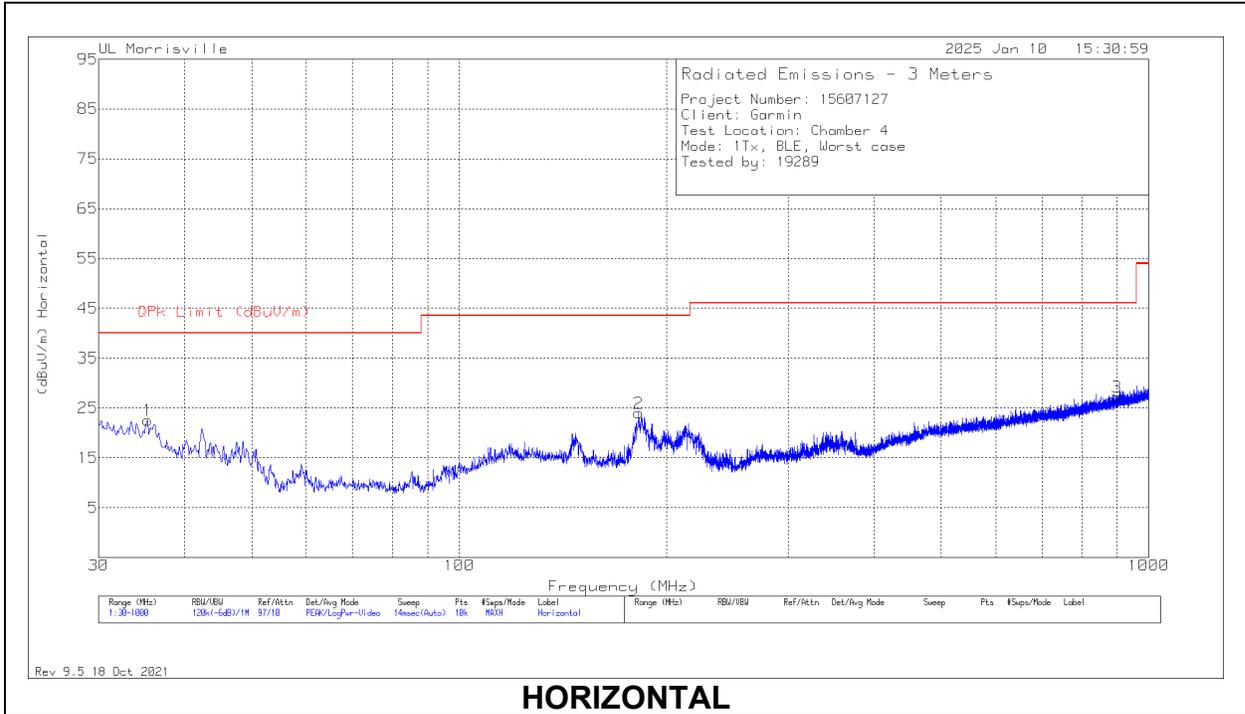


| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 90628 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|--------------|----------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 5 | 36.1452 | 41.19 | Qp | 22.8 | -32.1 | 31.89 | 40 | -8.11 | 250 | 102 | V |
| 1 | 36.014 | 32 | Pk | 22.9 | -32.1 | 22.8 | 40 | -17.2 | 0-360 | 300 | H |
| 6 | 42.028 | 45.96 | Pk | 18.5 | -31.9 | 32.56 | 40 | -7.44 | 0-360 | 100 | V |
| 7 | 46.296 | 48.78 | Pk | 15.8 | -32 | 32.58 | 40 | -7.42 | 0-360 | 100 | V |
| 8 | 95.572 | 39.6 | Pk | 15.3 | -31.4 | 23.5 | 43.52 | -20.02 | 0-360 | 100 | V |
| 2 | 148.049 | 31.4 | Pk | 18.7 | -31 | 19.1 | 43.52 | -24.42 | 0-360 | 100 | H |
| 9 | 149.698 | 36.54 | Pk | 18.6 | -31.1 | 24.04 | 43.52 | -19.48 | 0-360 | 100 | V |
| 3 | 180.835 | 35.99 | Pk | 17.2 | -30.9 | 22.29 | 43.52 | -21.23 | 0-360 | 100 | H |
| 10 | 183.066 | 41.18 | Pk | 17.1 | -30.8 | 27.48 | 43.52 | -16.04 | 0-360 | 100 | V |
| 4 | 879.429 | 29.18 | Pk | 28 | -27.5 | 29.68 | 46.02 | -16.34 | 0-360 | 100 | H |
| 11 | 884.473 | 27.88 | Pk | 28.1 | -27.5 | 28.48 | 46.02 | -17.54 | 0-360 | 100 | V |

Pk - Peak detector

Qp - Quasi-Peak detector

10.3.3. BLE



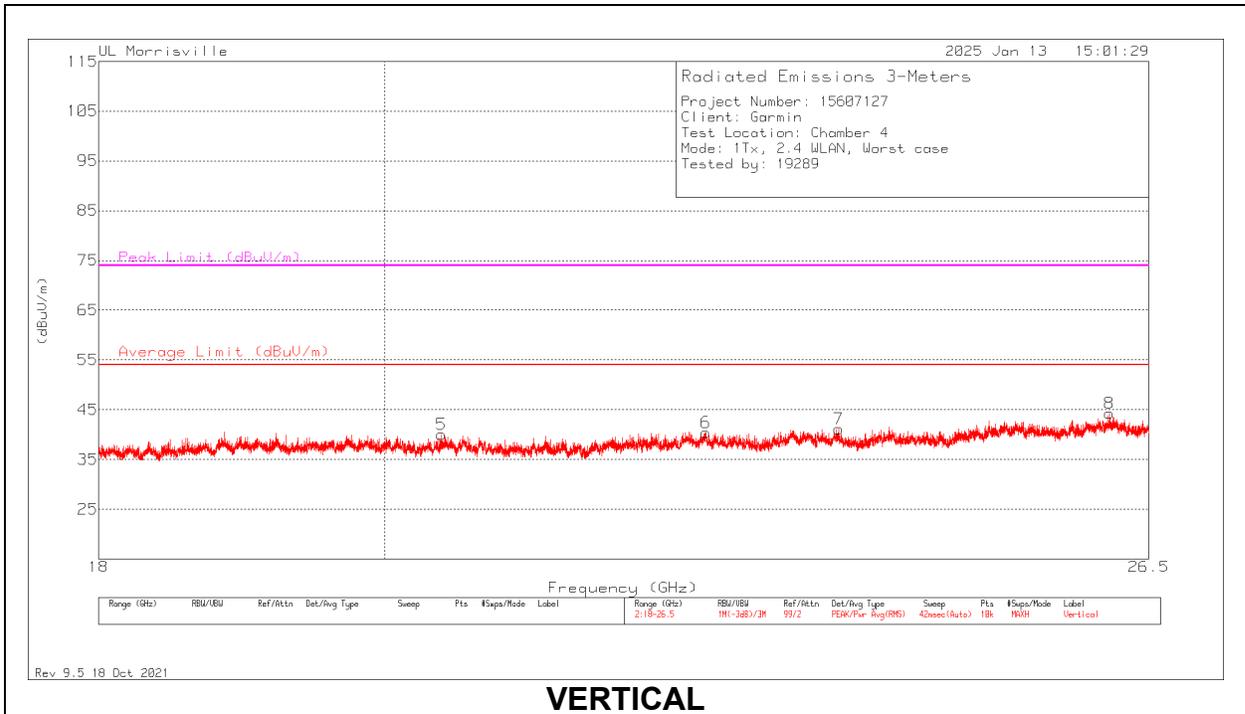
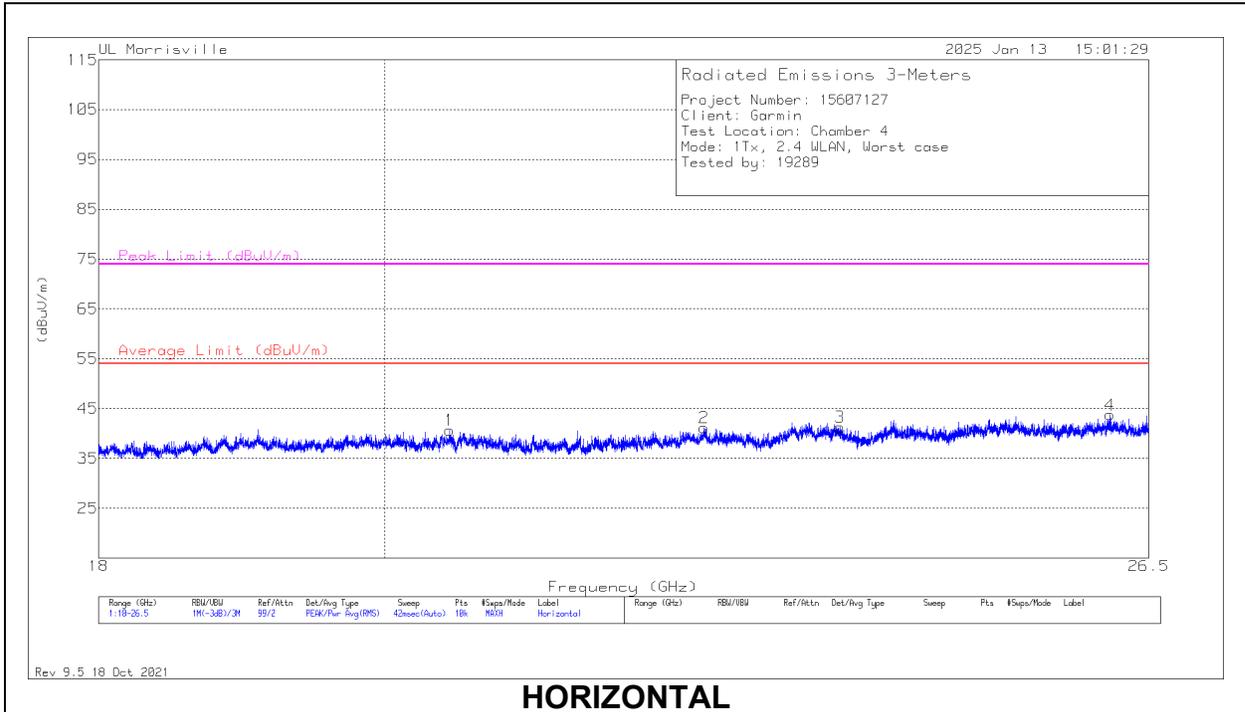
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 90628 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|--------------|----------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 4 | 33.57797 | 37.05 | Qp | 24.5 | -32.1 | 29.45 | 40 | -10.55 | 346 | 102 | V |
| 1 | 35.335 | 31.29 | Pk | 23.3 | -32.1 | 22.49 | 40 | -17.51 | 0-360 | 300 | H |
| 5 | 43.095 | 48.1 | Pk | 17.8 | -32 | 33.9 | 40 | -6.1 | 0-360 | 100 | V |
| 2 | 182.096 | 37.67 | Pk | 17.2 | -30.9 | 23.97 | 43.52 | -19.55 | 0-360 | 100 | H |
| 6 | 183.066 | 39.53 | Pk | 17.1 | -30.8 | 25.83 | 43.52 | -17.69 | 0-360 | 100 | V |
| 7 | 875.258 | 26.9 | Pk | 28 | -27.6 | 27.3 | 46.02 | -18.72 | 0-360 | 200 | V |
| 3 | 898.635 | 26.23 | Pk | 28.1 | -27.2 | 27.13 | 46.02 | -18.89 | 0-360 | 300 | H |

Pk - Peak detector

Qp - Quasi-Peak detector

10.4. WORST CASE SPURIOUS 18-26 GHZ

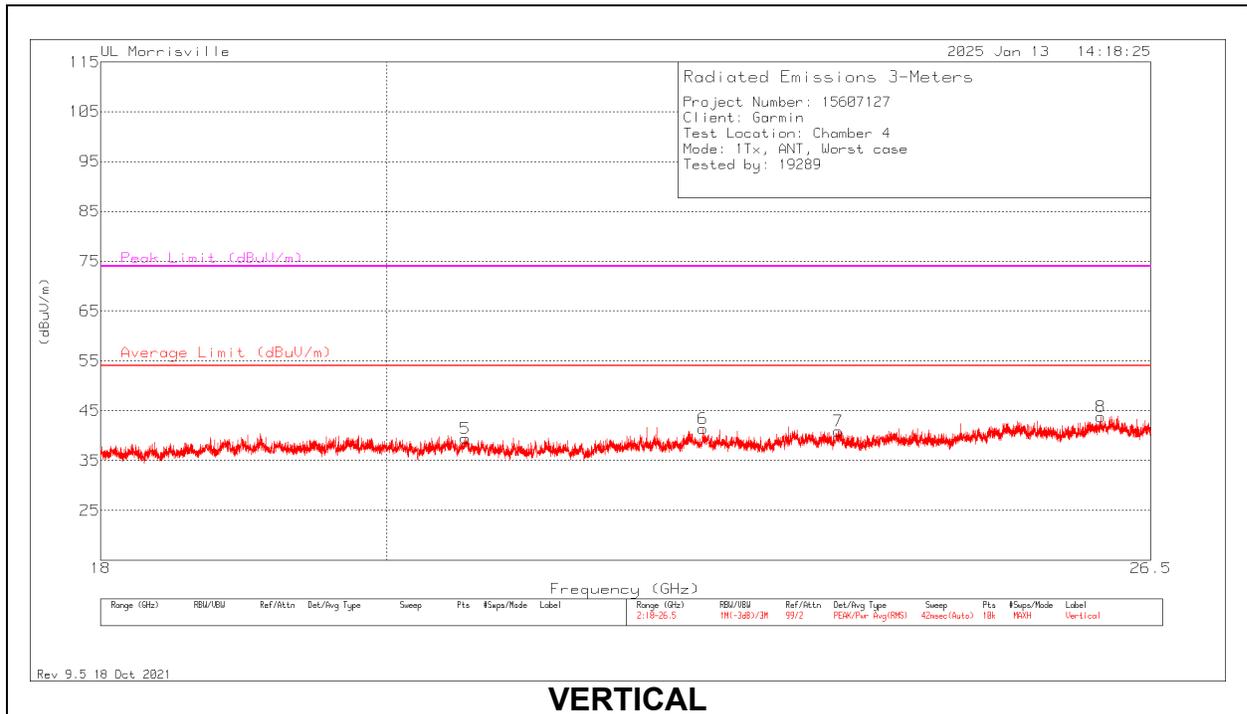
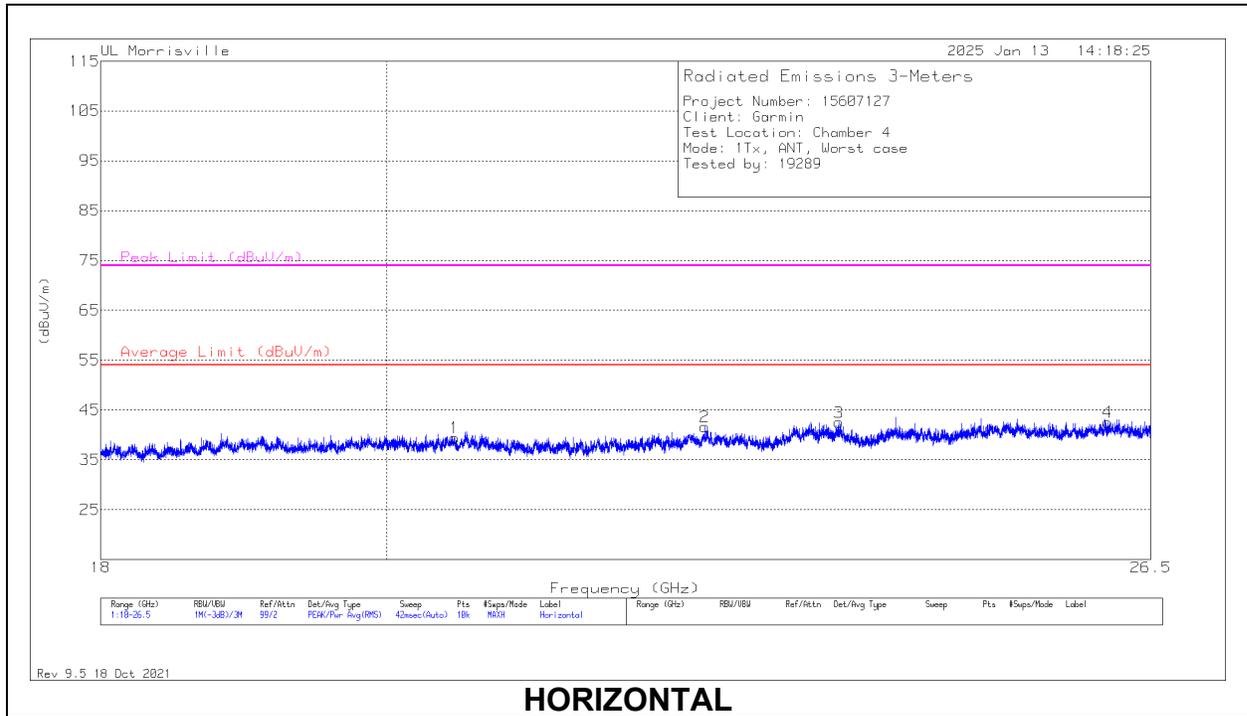
10.4.1. 2.4 WLAN



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 204704 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| 1 | * ** 20.486 | 47.78 | Pk | 33.7 | -40.8 | 40.68 | 54 | -13.32 | 74 | -33.32 | 0-360 | 100 | H |
| 2 | * ** 22.4952 | 46.78 | Pk | 34.2 | -39.8 | 41.18 | 54 | -12.82 | 74 | -32.82 | 0-360 | 100 | H |
| 3 | * ** 23.65108 | 45.45 | Pk | 34.5 | -38.7 | 41.25 | 54 | -12.75 | 74 | -32.75 | 0-360 | 100 | H |
| 5 | * ** 20.42396 | 46.85 | Pk | 33.6 | -40.4 | 40.05 | 54 | -13.95 | 74 | -33.95 | 0-360 | 150 | V |
| 6 | * ** 22.51135 | 45.63 | Pk | 34.2 | -39.4 | 40.43 | 54 | -13.57 | 74 | -33.57 | 0-360 | 150 | V |
| 7 | * ** 23.64259 | 45.17 | Pk | 34.6 | -38.6 | 41.17 | 54 | -12.83 | 74 | -32.83 | 0-360 | 300 | V |
| 8 | 26.12094 | 44.57 | Pk | 35.2 | -35.5 | 44.27 | - | - | - | - | 0-360 | 200 | V |
| 4 | 26.12264 | 43.92 | Pk | 35.2 | -35.4 | 43.72 | - | - | - | - | 0-360 | 250 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

10.4.2. ANT/ANT+



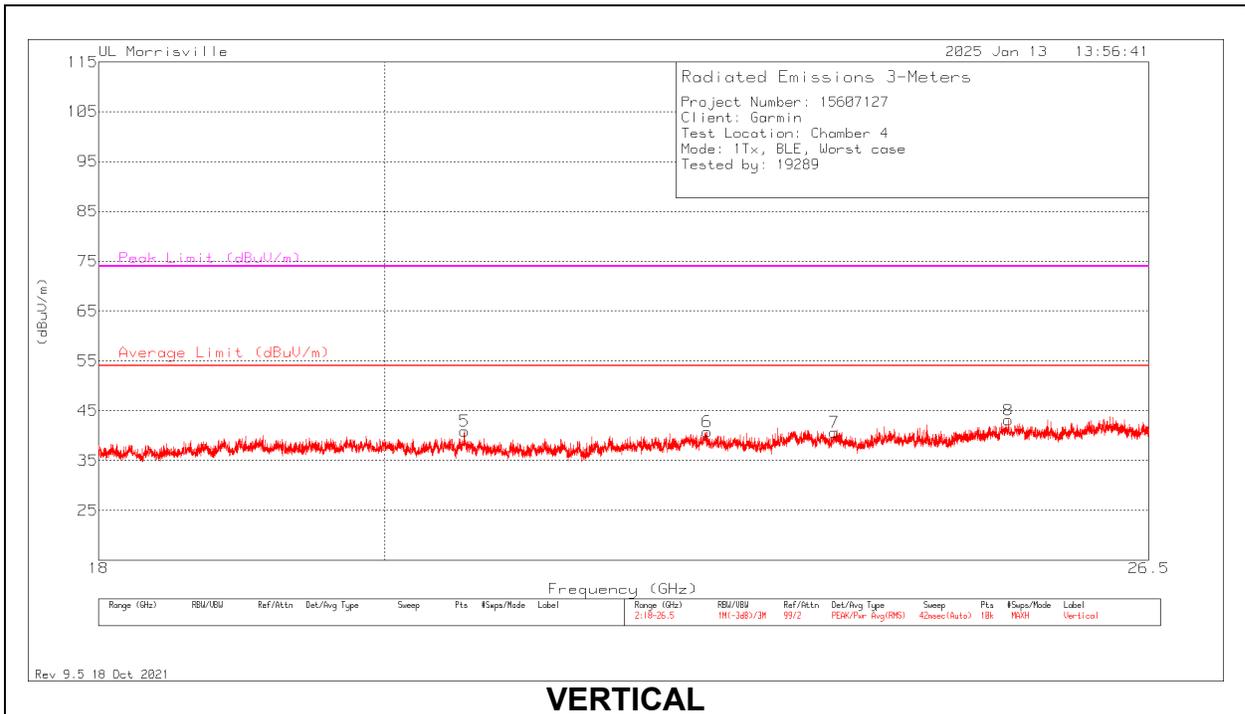
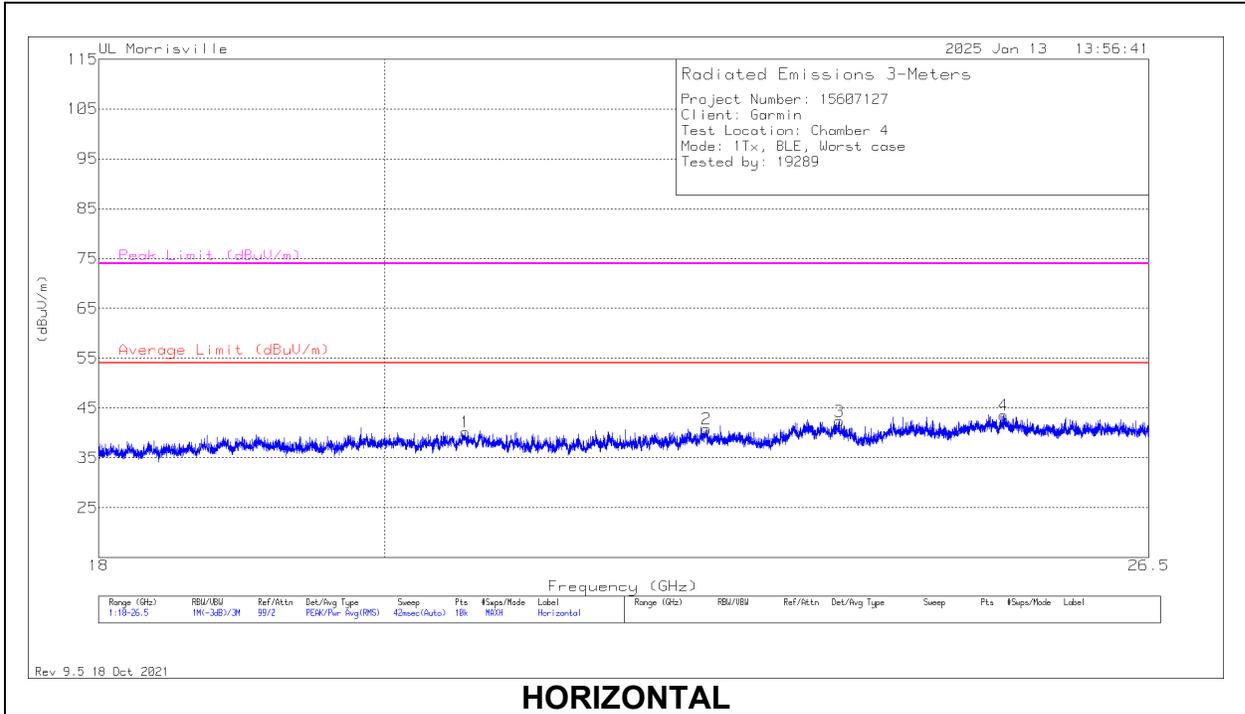
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 204704 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| 1 | *** 20.50725 | 46.29 | Pk | 33.7 | -40.6 | 39.39 | 54 | -14.61 | 74 | -34.61 | 0-360 | 100 | H |
| 2 | *** 22.48585 | 47.3 | Pk | 34.2 | -39.9 | 41.6 | 54 | -12.4 | 74 | -32.4 | 0-360 | 100 | H |
| 3 | *** 23.62219 | 46.37 | Pk | 34.6 | -38.5 | 42.47 | 54 | -11.53 | 74 | -31.53 | 0-360 | 100 | H |
| 5 | *** 20.58714 | 46.06 | Pk | 33.7 | -40.3 | 39.46 | 54 | -14.54 | 74 | -34.54 | 0-360 | 250 | V |
| 6 | *** 22.46885 | 46.69 | Pk | 34.2 | -39.5 | 41.39 | 54 | -12.61 | 74 | -32.61 | 0-360 | 250 | V |
| 7 | *** 23.62049 | 44.82 | Pk | 34.6 | -38.5 | 40.92 | 54 | -13.08 | 74 | -33.08 | 0-360 | 300 | V |
| 8 | 26.01555 | 44.01 | Pk | 35.3 | -35.5 | 43.81 | - | - | - | - | 0-360 | 150 | V |
| 4 | 26.08099 | 43.34 | Pk | 35.2 | -36 | 42.54 | - | - | - | - | 0-360 | 250 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

10.4.3. BLE



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 204704 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| 1 | * ** 20.60414 | 47.1 | Pk | 33.7 | -40.6 | 40.2 | 54 | -13.8 | 74 | -33.8 | 0-360 | 100 | H |
| 2 | * ** 22.519 | 46.61 | Pk | 34.2 | -40 | 40.81 | 54 | -13.19 | 74 | -33.19 | 0-360 | 150 | H |
| 3 | * ** 23.64769 | 46.44 | Pk | 34.6 | -38.7 | 42.34 | 54 | -11.66 | 74 | -31.66 | 0-360 | 100 | H |
| 5 | * ** 20.59564 | 47.39 | Pk | 33.7 | -40.2 | 40.89 | 54 | -13.11 | 74 | -33.11 | 0-360 | 300 | V |
| 6 | * ** 22.51985 | 46.68 | Pk | 34.2 | -40.1 | 40.78 | 54 | -13.22 | 74 | -33.22 | 0-360 | 300 | V |
| 7 | * ** 23.60179 | 44.69 | Pk | 34.6 | -38.6 | 40.69 | 54 | -13.31 | 74 | -33.31 | 0-360 | 150 | V |
| 4 | 25.12144 | 44.74 | Pk | 35.6 | -36.8 | 43.54 | - | - | - | - | 0-360 | 100 | H |
| 8 | 25.16308 | 44 | Pk | 35.6 | -36.5 | 43.1 | - | - | - | - | 0-360 | 250 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
RSS-Gen 8.8

| Frequency of Emission (MHz) | Conducted Limit (dBuV) | |
|-----------------------------|------------------------|------------|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56 * | 56 to 46 * |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

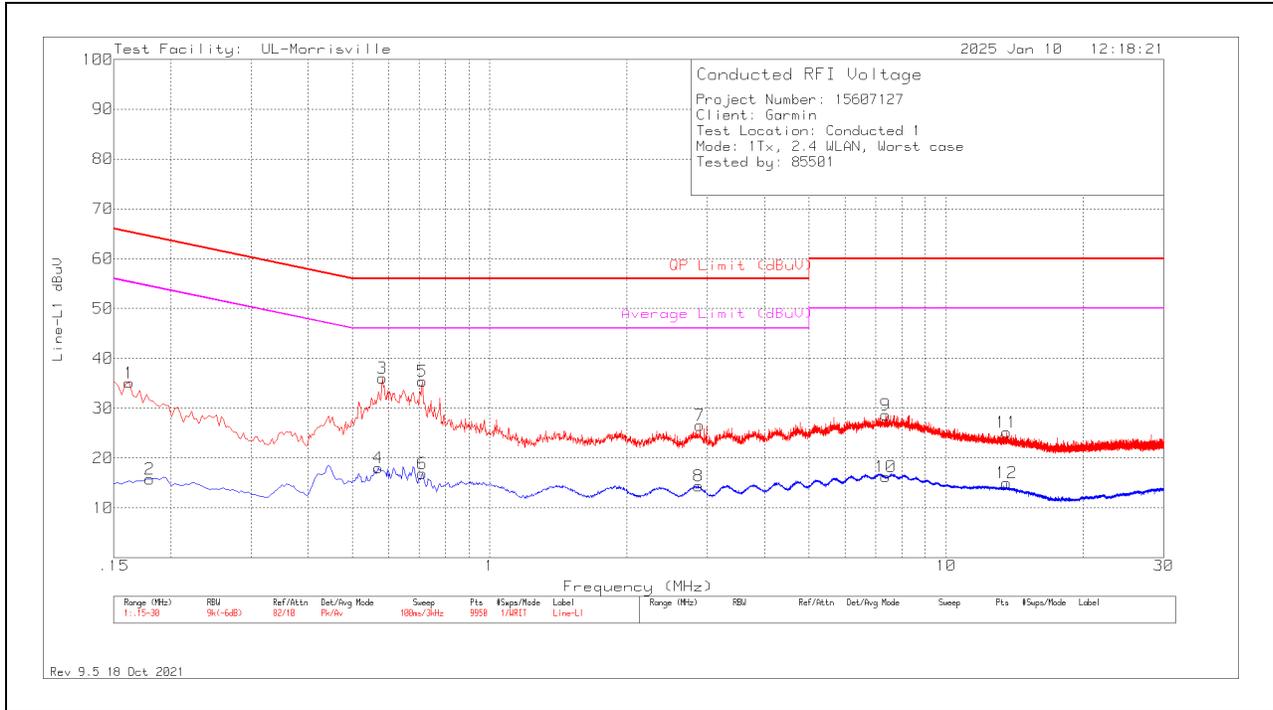
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

11.1. AC POWER LINE

11.1.1. 2.4 WLAN

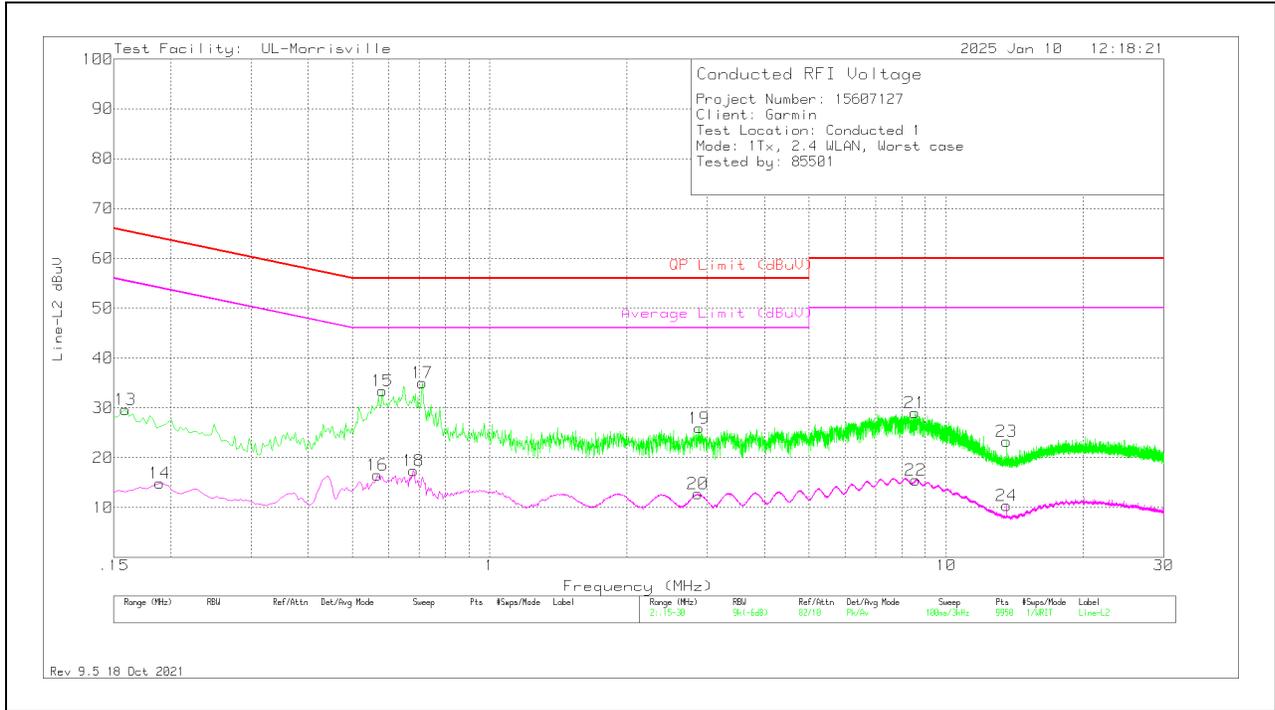
LINE 1 RESULTS



| Range 1: Line-L1 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 1 | .162 | 25.1 | Pk | .2 | 9.8 | 35.1 | 65.36 | -30.26 | - | - |
| 2 | .18 | 5.79 | Av | .2 | 9.8 | 15.79 | - | - | 54.49 | -38.7 |
| 4 | .57 | 8.18 | Av | 0 | 9.8 | 17.98 | - | - | 46 | -28.02 |
| 3 | .582 | 26.23 | Pk | 0 | 9.8 | 36.03 | 56 | -19.97 | - | - |
| 5 | .711 | 25.62 | Pk | 0 | 9.8 | 35.42 | 56 | -20.58 | - | - |
| 6 | .711 | 7.13 | Av | 0 | 9.8 | 16.93 | - | - | 46 | -29.07 |
| 8 | 2.865 | 4.54 | Av | 0 | 9.8 | 14.34 | - | - | 46 | -31.66 |
| 7 | 2.886 | 16.72 | Pk | 0 | 9.8 | 26.52 | 56 | -29.48 | - | - |
| 9 | 7.362 | 18.51 | Pk | .1 | 10 | 28.61 | 60 | -31.39 | - | - |
| 10 | 7.374 | 6.15 | Av | .1 | 10 | 16.25 | - | - | 50 | -33.75 |
| 11 | 13.563 | 15.08 | Pk | .1 | 10 | 25.18 | 60 | -34.82 | - | - |
| 12 | 13.563 | 4.95 | Av | .1 | 10 | 15.05 | - | - | 50 | -34.95 |

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS

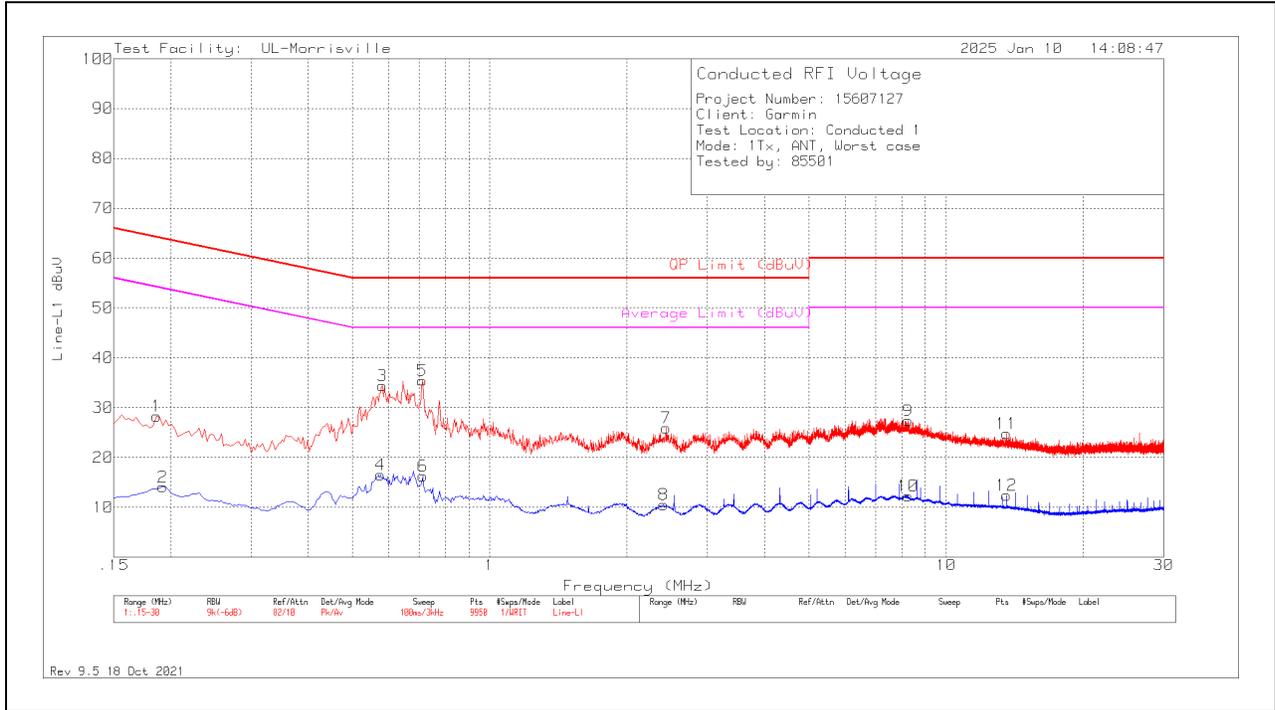


| Range 2: Line-L2 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 13 | .159 | 19.61 | Pk | .2 | 9.8 | 29.61 | 65.52 | -35.91 | - | - |
| 14 | .189 | 4.86 | Av | .2 | 9.8 | 14.86 | - | - | 54.08 | -39.22 |
| 16 | .567 | 6.7 | Av | 0 | 9.8 | 16.5 | - | - | 46 | -29.5 |
| 15 | .582 | 23.65 | Pk | 0 | 9.8 | 33.45 | 56 | -22.55 | - | - |
| 18 | .681 | 7.59 | Av | 0 | 9.8 | 17.39 | - | - | 46 | -28.61 |
| 17 | .711 | 25.27 | Pk | 0 | 9.8 | 35.07 | 56 | -20.93 | - | - |
| 20 | 2.856 | 2.92 | Av | 0 | 9.8 | 12.72 | - | - | 46 | -33.28 |
| 19 | 2.877 | 16.16 | Pk | 0 | 9.8 | 25.96 | 56 | -30.04 | - | - |
| 21 | 8.535 | 18.89 | Pk | .1 | 10 | 28.99 | 60 | -31.01 | - | - |
| 22 | 8.571 | 5.41 | Av | .1 | 10 | 15.51 | - | - | 50 | -34.49 |
| 23 | 13.56 | 13.17 | Pk | .1 | 10 | 23.27 | 60 | -36.73 | - | - |
| 24 | 13.56 | .31 | Av | .1 | 10 | 10.41 | - | - | 50 | -39.59 |

Pk - Peak detector
 Av - Average detection

11.1.2. ANT/ANT+

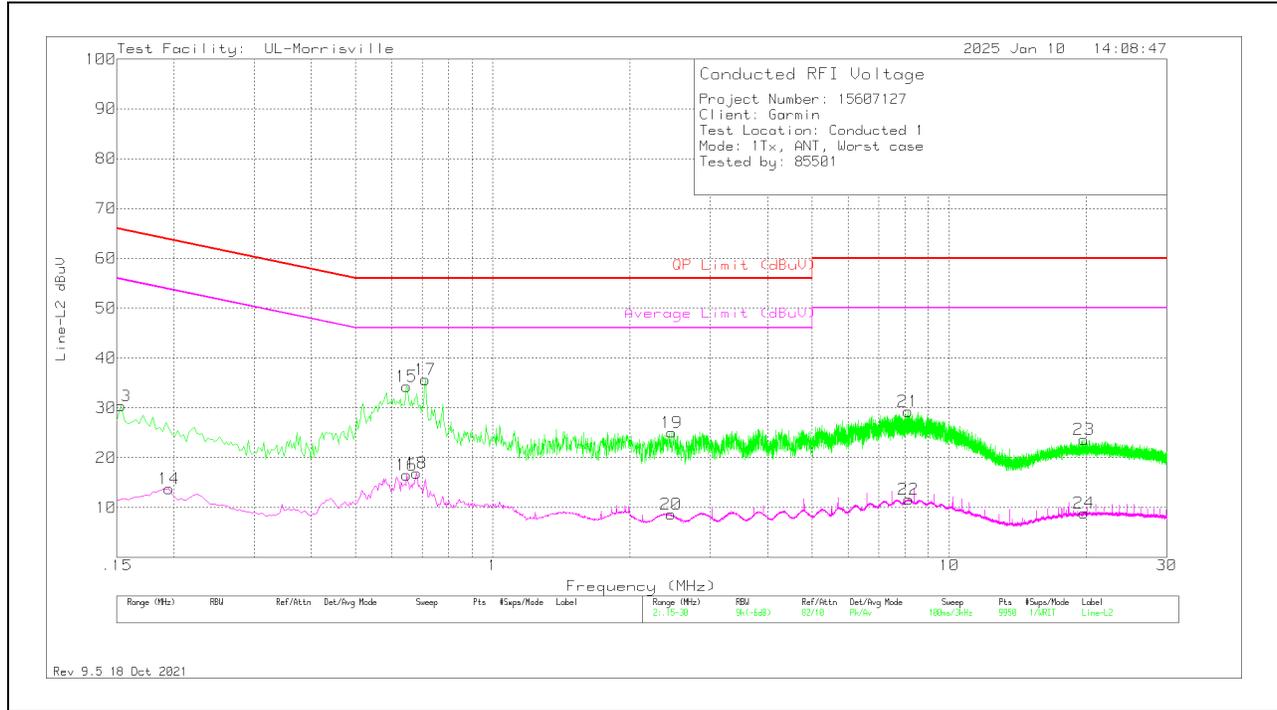
LINE 1 RESULTS



| Range 1: Line-L1 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 1 | .186 | 18.28 | Pk | .2 | 9.8 | 28.28 | 64.21 | -35.93 | - | - |
| 2 | .192 | 4.07 | Av | .2 | 9.8 | 14.07 | - | - | 53.95 | -39.88 |
| 4 | .576 | 6.69 | Av | 0 | 9.8 | 16.49 | - | - | 46 | -29.51 |
| 3 | .582 | 24.59 | Pk | 0 | 9.8 | 34.39 | 56 | -21.61 | - | - |
| 5 | .711 | 25.67 | Pk | 0 | 9.8 | 35.47 | 56 | -20.53 | - | - |
| 6 | .714 | 6.44 | Av | 0 | 9.8 | 16.24 | - | - | 46 | -29.76 |
| 8 | 2.403 | .7 | Av | 0 | 9.8 | 10.5 | - | - | 46 | -35.5 |
| 7 | 2.433 | 16.12 | Pk | 0 | 9.8 | 25.92 | 56 | -30.08 | - | - |
| 9 | 8.262 | 17.25 | Pk | .1 | 10 | 27.35 | 60 | -32.65 | - | - |
| 10 | 8.265 | 2.13 | Av | .1 | 10 | 12.23 | - | - | 50 | -37.77 |
| 11 | 13.56 | 14.65 | Pk | .1 | 10 | 24.75 | 60 | -35.25 | - | - |
| 12 | 13.56 | 2.24 | Av | .1 | 10 | 12.34 | - | - | 50 | -37.66 |

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS

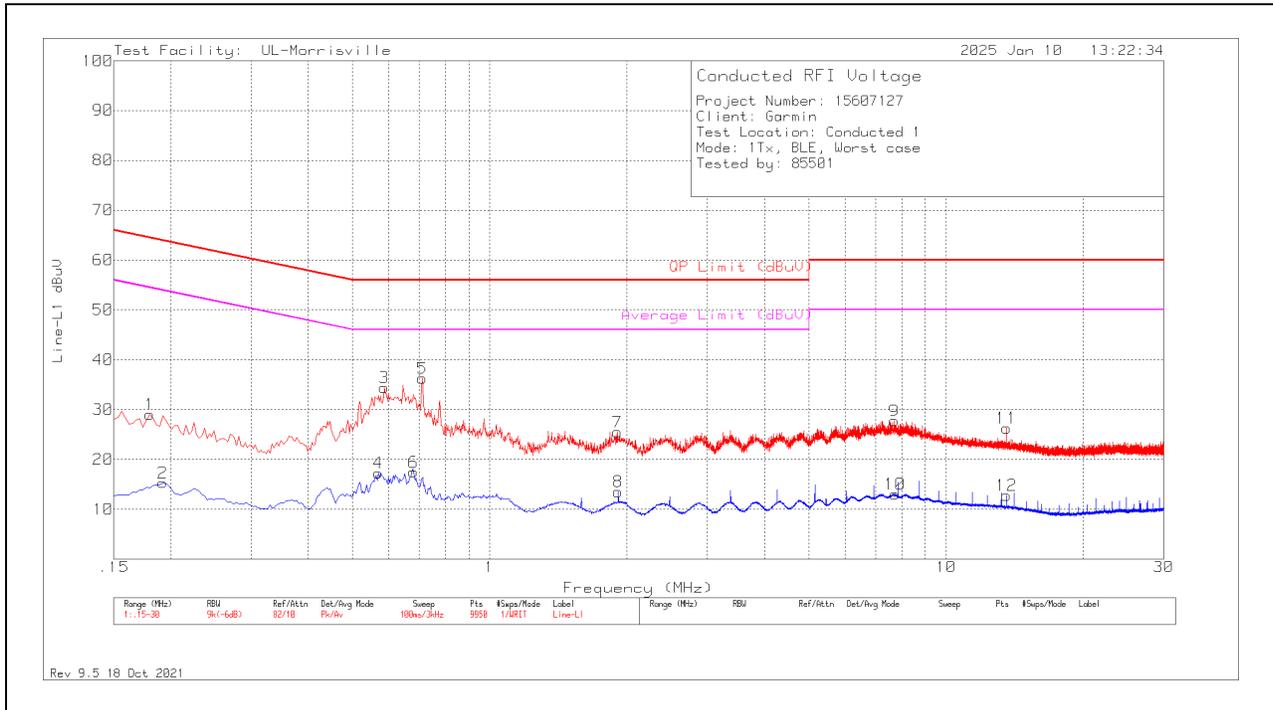


| Range 2: Line-L2 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 13 | .153 | 20.35 | Pk | .2 | 9.8 | 30.35 | 65.84 | -35.49 | - | - |
| 14 | .195 | 3.75 | Av | .2 | 9.8 | 13.75 | - | - | 53.82 | -40.07 |
| 15 | .648 | 24.53 | Pk | 0 | 9.8 | 34.33 | 56 | -21.67 | - | - |
| 16 | .648 | 6.68 | Av | 0 | 9.8 | 16.48 | - | - | 46 | -29.52 |
| 18 | .681 | 7.12 | Av | 0 | 9.8 | 16.92 | - | - | 46 | -29.08 |
| 17 | .711 | 25.89 | Pk | 0 | 9.8 | 35.69 | 56 | -20.31 | - | - |
| 20 | 2.457 | -1.13 | Av | 0 | 9.8 | 8.67 | - | - | 46 | -37.33 |
| 19 | 2.466 | 15.28 | Pk | 0 | 9.8 | 25.08 | 56 | -30.92 | - | - |
| 21 | 8.115 | 19.21 | Pk | .1 | 10 | 29.31 | 60 | -30.69 | - | - |
| 22 | 8.1405 | 1.57 | Av | .1 | 10 | 11.67 | - | - | 50 | -38.33 |
| 23 | 19.716 | 13.33 | Pk | .2 | 10.1 | 23.63 | 60 | -36.37 | - | - |
| 24 | 19.734 | -1.38 | Av | .2 | 10.1 | 8.92 | - | - | 50 | -41.08 |

Pk - Peak detector
 Av - Average detection

11.1.3. BLE

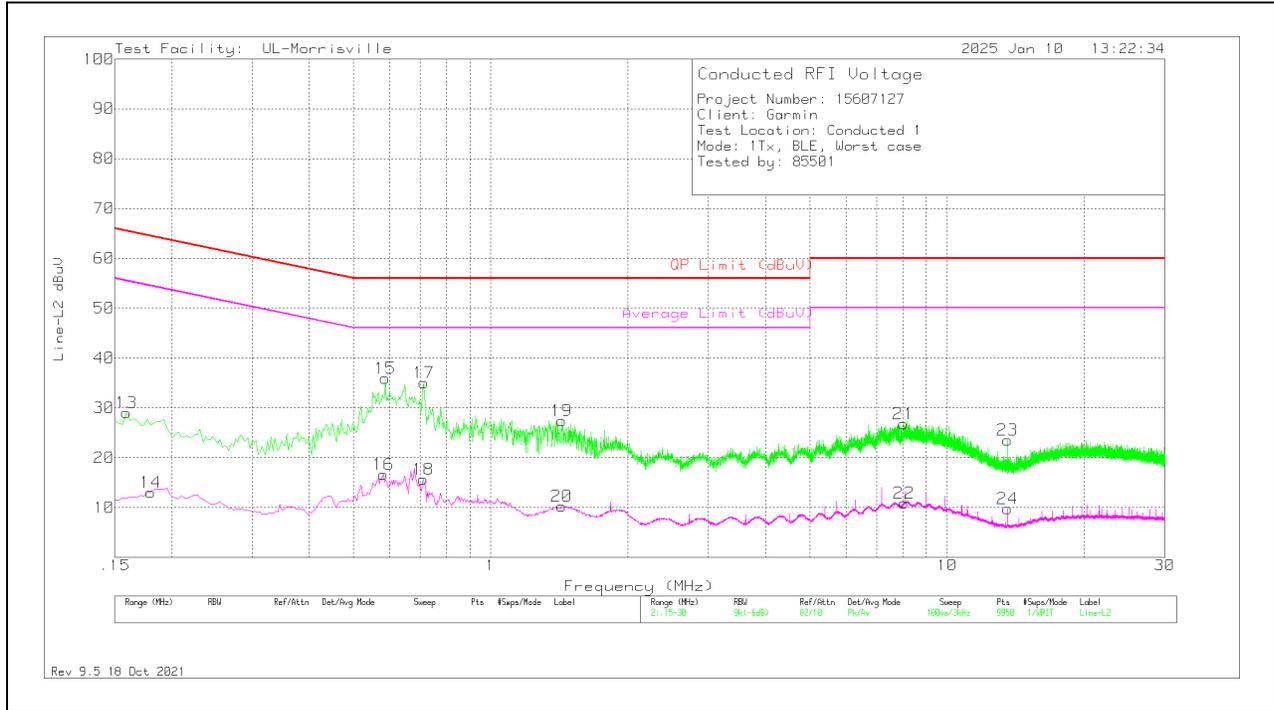
LINE 1 RESULTS



| Range 1: Line-L1 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 1 | .18 | 19.05 | Pk | .2 | 9.8 | 29.05 | 64.49 | -35.44 | - | - |
| 2 | .192 | 5.32 | Av | .2 | 9.8 | 15.32 | - | - | 53.95 | -38.63 |
| 4 | .57 | 7.49 | Av | 0 | 9.8 | 17.29 | - | - | 46 | -28.71 |
| 3 | .588 | 24.63 | Pk | 0 | 9.8 | 34.43 | 56 | -21.57 | - | - |
| 6 | .681 | 7.65 | Av | 0 | 9.8 | 17.45 | - | - | 46 | -28.55 |
| 5 | .711 | 26.44 | Pk | 0 | 9.8 | 36.24 | 56 | -19.76 | - | - |
| 7 | 1.905 | 15.67 | Pk | 0 | 9.8 | 25.47 | 56 | -30.53 | - | - |
| 8 | 1.914 | 3.75 | Av | 0 | 9.8 | 13.55 | - | - | 46 | -32.45 |
| 9 | 7.713 | 17.62 | Pk | .1 | 10 | 27.72 | 60 | -32.28 | - | - |
| 10 | 7.719 | 2.88 | Av | .1 | 10 | 12.98 | - | - | 50 | -37.02 |
| 12 | 13.56 | 2.7 | Av | .1 | 10 | 12.8 | - | - | 50 | -37.2 |
| 11 | 13.563 | 16.16 | Pk | .1 | 10 | 26.26 | 60 | -33.74 | - | - |

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS



| Range 2: Line-L2 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 13 | .159 | 19.06 | Pk | .2 | 9.8 | 29.06 | 65.52 | -36.46 | - | - |
| 14 | .18 | 3.05 | Av | .2 | 9.8 | 13.05 | - | - | 54.49 | -41.44 |
| 16 | .582 | 6.88 | Av | 0 | 9.8 | 16.68 | - | - | 46 | -29.32 |
| 15 | .588 | 26.17 | Pk | 0 | 9.8 | 35.97 | 56 | -20.03 | - | - |
| 18 | .711 | 5.84 | Av | 0 | 9.8 | 15.64 | - | - | 46 | -30.36 |
| 17 | .714 | 25.28 | Pk | 0 | 9.8 | 35.08 | 56 | -20.92 | - | - |
| 19 | 1.431 | 17.56 | Pk | 0 | 9.8 | 27.36 | 56 | -28.64 | - | - |
| 20 | 1.431 | .49 | Av | 0 | 9.8 | 10.29 | - | - | 46 | -35.71 |
| 21 | 8.031 | 16.71 | Pk | .1 | 10 | 26.81 | 60 | -33.19 | - | - |
| 22 | 8.058 | .83 | Av | .1 | 10 | 10.93 | - | - | 50 | -39.07 |
| 23 | 13.563 | 13.38 | Pk | .1 | 10 | 23.48 | 60 | -36.52 | - | - |
| 24 | 13.563 | -.3 | Av | .1 | 10 | 9.8 | - | - | 50 | -40.2 |

Pk - Peak detector
 Av - Average detection

12. SETUP PHOTOS

Please refer to R15607127-EP1 for setup photos

END OF TEST REPORT

TEST REPORT

Report Number: R15607127-E3

Applicant : Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

Model : A04907

FCC ID : IPH-04907

IC : 1792A-04907

EUT Description : Extremity Worn Digital Transceiver

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 3
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2025-03-19

Prepared by:
UL LLC
12 Laboratory Dr.
Research Triangle Park, NC 27709 U.S.A.
TEL: (919) 549-1400



REPORT REVISION HISTORY

| Rev. | Issue Date | Revisions | Revised By |
|------|------------|--|------------------|
| V1 | 2025-02-13 | Initial Issue | Manish Baral |
| V2 | 2025-03-19 | Added Radiated DQPSK Data and Updated Antenna Type | Chandler Stanley |

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

EUT DESCRIPTION: Extremity Worn Digital Transceiver

MODEL: A04907

SERIAL NUMBER: 3493239303, 3493238982

SAMPLE RECEIPT DATE: 2024-12-17

DATE TESTED: 2025-01-02 to 2025-01-15

| APPLICABLE STANDARDS | |
|--------------------------------|--------------------|
| STANDARD | TEST RESULTS |
| CFR 47 Part 15 Subpart C | |
| ISED RSS-247 Issue 3 | Refer to Section 2 |
| ISED RSS-GEN Issue 5 + A1 + A2 | |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released
For UL LLC By:

Prepared By:



Mike Antola
Sr. Staff Engineer
Consumer, Medical and IT Segment
UL LLC



Manish Baral
Engineer
Consumer, Medical and IT Segment
UL LLC

2. TEST RESULTS SUMMARY

This report contains info provided by the customer which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer.

Below is a list of the data/info provided by the customer:

- 1) Antenna gain and type (see section 6.3)
- 2) Worst-case data rates (see section 6.5)

| FCC Clause | ISED Clause | Requirement | Result | Comment |
|--------------------|-------------------|------------------------------|-------------------------|--------------------------------------|
| See Comment | | Duty Cycle | Reporting purposes only | Per ANSI C63.10, Section 11.6. |
| See Comment | RSS-GEN 6.7 | 20dB BW/99% OBW | Reporting purposes only | ANSI C63.10 Sections 6.9.2 and 6.9.3 |
| 15.247 (a)(1) | RSS-247 (5.1) (b) | Hopping Frequency Separation | Compliant | None |
| 15.247 (a)(1)(iii) | RSS-247 (5.1) (d) | Number of Hopping Channels | | |
| 15.247 (a)(1)(iii) | RSS-247 (5.1) (d) | Average Time of Occupancy | | |
| 15.247 (b)(1) | RSS-247 (5.4) (b) | Output Power | | |
| See Comment | | Average Power | Reporting purposes only | Per ANSI C63.10, Section 11.9.2.3.2. |
| 15.247 (d) | RSS-247 (5.5) | Conducted Spurious Emissions | Compliant | None |
| 15.209, 15.205 | RSS-GEN 8.9, 8.10 | Radiated Emissions | | |
| 15.207 | RSS-Gen 8.8 | AC Mains Conducted Emissions | | |

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 15, ANSI C63.10-2020, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 3.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

| | Address | ISED CABID | ISED Company Number | FCC Registration |
|-------------------------------------|--|------------|---------------------|------------------|
| <input type="checkbox"/> | Building: 12 Laboratory Dr RTP, NC 27709, U.S.A | US0067 | 2180C | 825374 |
| <input checked="" type="checkbox"/> | Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A | | 27265 | |

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER | UNCERTAINTY |
|--|-----------------------------|
| Radio Frequency (Spectrum Analyzer) | 141.2 Hz |
| Occupied Channel Bandwidth | 1.22% |
| RF output power, conducted | 1.3 dB (PK) 0.45 dB (AV) |
| Power Spectral Density, conducted | 2.47 dB |
| Unwanted Emissions, conducted | 1.94 dB |
| All emissions, radiated | 6.01 dB |
| Conducted Emissions (0.150-30MHz) - LISN | 3.40 dB |
| Temperature | 0.57°C |
| Humidity | 3.39% |
| DC Supply voltages | 1.70% |
| Time | 3.39% |

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\text{Final Voltage (dBuV)} = \text{Measured Voltage (dBuV)} + \text{Cable Loss (dB)} + \text{Limiter Factor (dB)} + \text{LISN Insertion Loss}$$

$$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is an extremity worn digital transceiver with BT, BLE, ANT/ANT+, 802.11b/g/n 2.4GHz WLAN, NFC, and Global Navigation Satellite System (GNSS) receiver. This report covers testing on the BT radio.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

| Frequency Range (MHz) | Mode | Output Power (dBm) | Output Power (mW) |
|-----------------------|----------------|--------------------|-------------------|
| 2402 - 2480 | Basic GFSK | 9.82 | 9.59 |
| 2402 - 2480 | Enhanced DQPSK | 11.40 | 13.80 |
| 2402 - 2480 | Enhanced 8PSK | 11.14 | 13.00 |

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:
The radio utilizes an antenna with the following type and maximum gain:

| Type | Frequency Range (MHz) | Maximum Gain (dBi) |
|---------------|-----------------------|--------------------|
| Bezel Antenna | 2402-2480 | -0.2 |

6.4. SOFTWARE AND FIRMWARE

The software version installed on radiated units during testing was 3.95.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel and mode with the highest average output power as worst-case scenario.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, and Z. The worst-case orientation was determined to be the Z-orientation; therefore, all testing was performed with the EUT in the Z-orientation.

Note: To reduce size of report only representative plots are included for some conducted testing.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

| Support Equipment List | | | | |
|------------------------|----------------|-------------|---------------|--------|
| Description | Manufacturer | Model | Serial Number | FCC ID |
| AC Adaptor | Garmin/Phihong | AQ27A-59CFA | N/A | N/A |

I/O CABLES

| I/O Cable List | | | | | | |
|----------------|-------------|----------------------|----------------|------------|------------------|--------------------|
| Cable No. | Port | # of Identical Ports | Connector Type | Cable Type | Cable Length (m) | Remarks |
| 1 | Proprietary | 1 | USB-C | Shielded | <3m | Program/Charge EUT |

TEST SETUP

EUT was configured using its own built-in push buttons prior to testing. For final emissions testing, the EUT was connected to AC mains.

SETUP DIAGRAMS

Please refer to R15607127-EP1 for setup diagrams

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

| Equip. ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|-----------|---|-------------------|---------------------------|------------|------------|
| | 1-18 GHz | | | | |
| 135143 | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren | 3117 | 2024-02-07 | 2026-02-07 |
| | Gain-Loss Chains | | | | |
| 91979 | Gain-loss string: 1-18GHz | Various | Various | 2024-05-08 | 2025-05-08 |
| | Receiver & Software | | | | |
| 206496 | Spectrum Analyzer | Rohde & Schwarz | ESW44 | 2024-08-29 | 2025-08-29 |
| SOFTEMI | EMI Software | UL | Version 9.5 (18 Oct 2021) | | |
| | Additional Equipment used | | | | |
| 241205 | Environmental Meter | Fisher Scientific | 15-077-963 | 2023-09-05 | 2025-09-05 |

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

| Equip. ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|-----------|---|----------------------|---------------------------|------------|------------|
| | 0.009-30MHz | | | | |
| 135144 | Active Loop Antenna | ETS-Lindgren | 6502 | 2024-10-02 | 2025-10-02 |
| | 30-1000 MHz | | | | |
| 90628 | Hybrid Broadband Antenna | Sunol Sciences Corp. | JB3 | 2024-01-02 | 2026-01-02 |
| | 1-18 GHz | | | | |
| 89509 | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren | 3117 | 2023-05-23 | 2025-05-23 |
| | 18-40 GHz | | | | |
| 204704 | Horn Antenna, 18-26.5GHz | Com-Power | AH-826 | 2023-07-20 | 2025-07-20 |
| | Gain-Loss Chains | | | | |
| 207638 | Gain-loss string: 0.009-30MHz | Various | Various | 2024-05-22 | 2025-05-22 |
| 207639 | Gain-loss string: 25-1000MHz | Various | Various | 2024-05-22 | 2025-05-22 |
| 207640 | Gain-loss string: 1-18GHz | Various | Various | 2024-05-22 | 2025-05-22 |
| 225795 | Gain-loss string: 18-40GHz | Various | Various | 2024-05-22 | 2025-05-22 |
| | Receiver & Software | | | | |
| 197955 | Spectrum Analyzer | Rohde & Schwarz | ESW44 | 2024-04-16 | 2025-04-16 |
| 81018 | Spectrum Analyzer | Agilent | E4446A | 2024-07-31 | 2025-07-31 |
| SOFTEMI | EMI Software | UL | Version 9.5 (18 Oct 2021) | | |
| | Additional Equipment used | | | | |
| 241204 | Environmental Meter | Fisher Scientific | 15-077-963 | 2023-09-05 | 2025-09-05 |

Test Equipment Used - Wireless Conducted Measurement Equipment

| Equipment ID | Description | Manuf. | Model Number | Last Cal. | Next Cal. |
|--------------|---|-----------------------|-------------------|------------|------------|
| | Common Equipment | | | | |
| | Conducted Room 1 | | | | |
| 90416 | Spectrum Analyzer | Keysight Technologies | N9030A | 2024-09-23 | 2025-09-23 |
| 179892 | Environmental Meter | Fisher Scientific | 15-077-963 | 2024-08-12 | 2025-08-12 |
| 211057 | Real-Time Peak Power Sensor 50MHz to 8GHz | Boonton | RTP5000 | 2024-08-01 | 2025-08-01 |
| SOFTEMI | Antenna Port Software | UL | Version 2022.8.16 | NA | NA |

Test Equipment Used - Wireless Conducted Attenuators, Cables, and Couplers

| Equipment ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|--------------|---|--------------|--------------|------------|------------|
| | Attenuators | | | | |
| 226562 | SMA Coaxial 10dB Attenuator 25MHz-18GHz | CentricRF | C18S2-10 | 2024-04-11 | 2025-04-11 |

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

| Equipment ID | Description | Manufacturer | Model Number | Last Cal. | Next Cal. |
|--------------|---|---------------------|---------------------------|------------|------------|
| CBL087 | Coax cable, RG223, N-male to BNC-male, 20-ft. | Pasternack | PE3W06143-240 | 2024-04-04 | 2025-04-04 |
| 179892 | Environmental Meter | Fisher Scientific | 15-077-963 | 2024-08-12 | 2025-08-12 |
| 80391 | LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A | Fischer Custom Com. | FCC-LISN-50/250-25-2-01 | 2024-08-01 | 2025-08-01 |
| 70374 | EMI Test Receiver 9kHz-7GHz | Rohde & Schwarz | ESCI 7 | 2024-07-30 | 2025-07-30 |
| 52859 | Transient Limiter, 0.009-100MHz | Electro-Metrics | EM-7600 | 2024-04-04 | 2025-04-04 |
| PS216 | AC Power Source | Elgar | CW2501M | NA | NA |
| SOFTEMI | EMI Software | UL | Version 9.5 (18 Oct 2021) | | |
| | Miscellaneous (if needed) | | | | |
| 84681 | ANSI C63.4 1m extension cable. | UL | Per Annex B of ANSI C63.4 | 2024-04-04 | 2025-04-04 |

8. MEASUREMENT METHODS

On Time and Duty Cycle: ANSI C63.10-2020 Section 11.6

Occupied BW (20dB): ANSI C63.10-2020 Section 6.9.2

Occupied BW (99%): ANSI C63.10-2020 Section 6.9.3

Carrier Frequency Separation: ANSI C63.10-2020 Section 7.8.2

Number of Hopping Frequencies: ANSI C63.10-2020 Section 7.8.3

Time of Occupancy (Dwell Time): ANSI C63.10-2020 Section 7.8.4

Output Power: ANSI C63.10-2020 Section 7.8.5

Conducted Spurious Emissions: ANSI C63.10-2020 Section 7.8.7

Conducted Band-Edge: ANSI C63.10-2020 Section 7.8.7.2 and 6.10.4

Radiated Band-edge: ANSI C63.10-2020 Section 6.10.5

Radiated Spurious Emissions: ANSI C63.10-2020 Sections 6.3 to 6.6 and 7.8.8

AC Power Line Conducted Emissions: ANSI C63.10-2020, Section 6.2.

9. ANTENNA PORT TEST RESULTS

9.1. 20 dB AND 99% BANDWIDTH

LIMITS

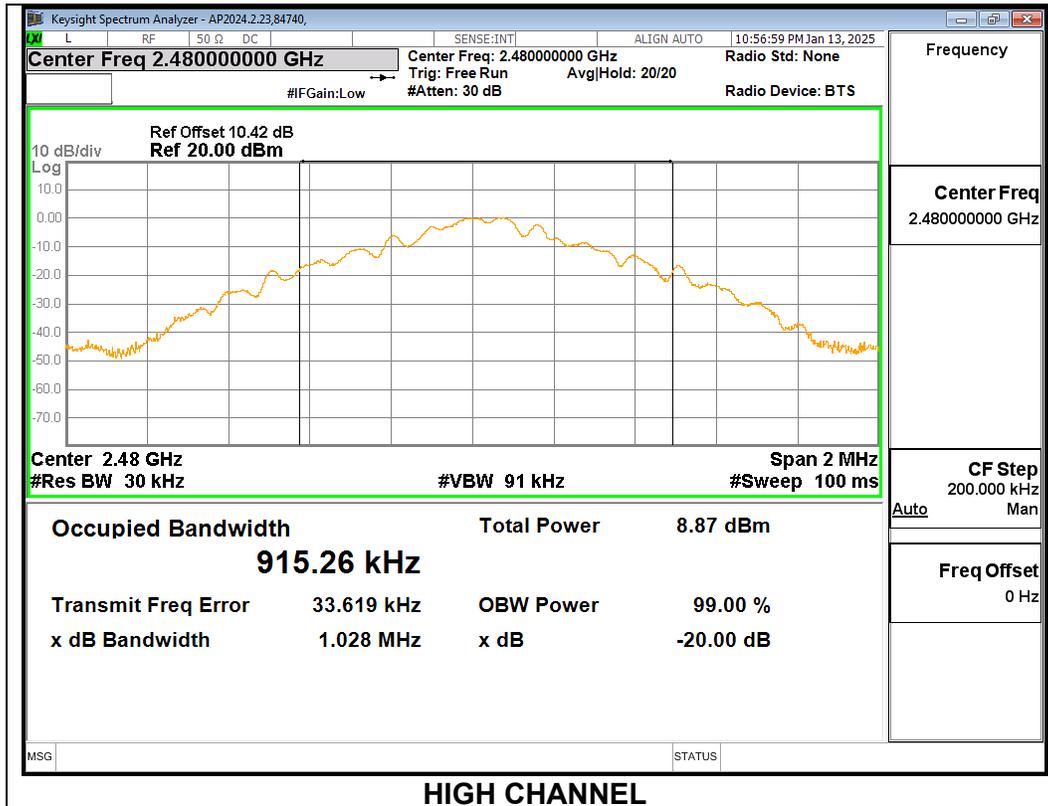
None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 1-5% of the 20 dB bandwidth. The VBW is set to \geq RBW. The sweep time is coupled.

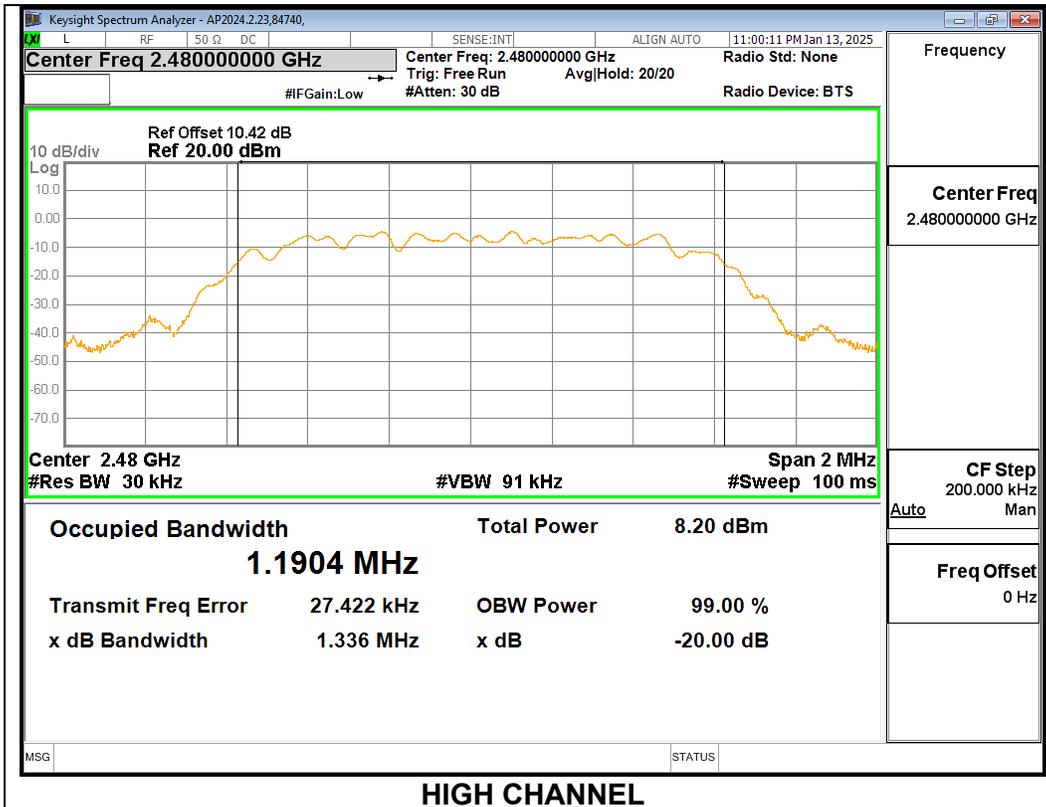
9.1.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

| Channel | Frequency (MHz) | 20dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|---------|-----------------|----------------------|---------------------|
| Low | 2402 | 1.028 | 0.916 |
| Mid | 2441 | 1.028 | 0.912 |
| High | 2480 | 1.028 | 0.915 |



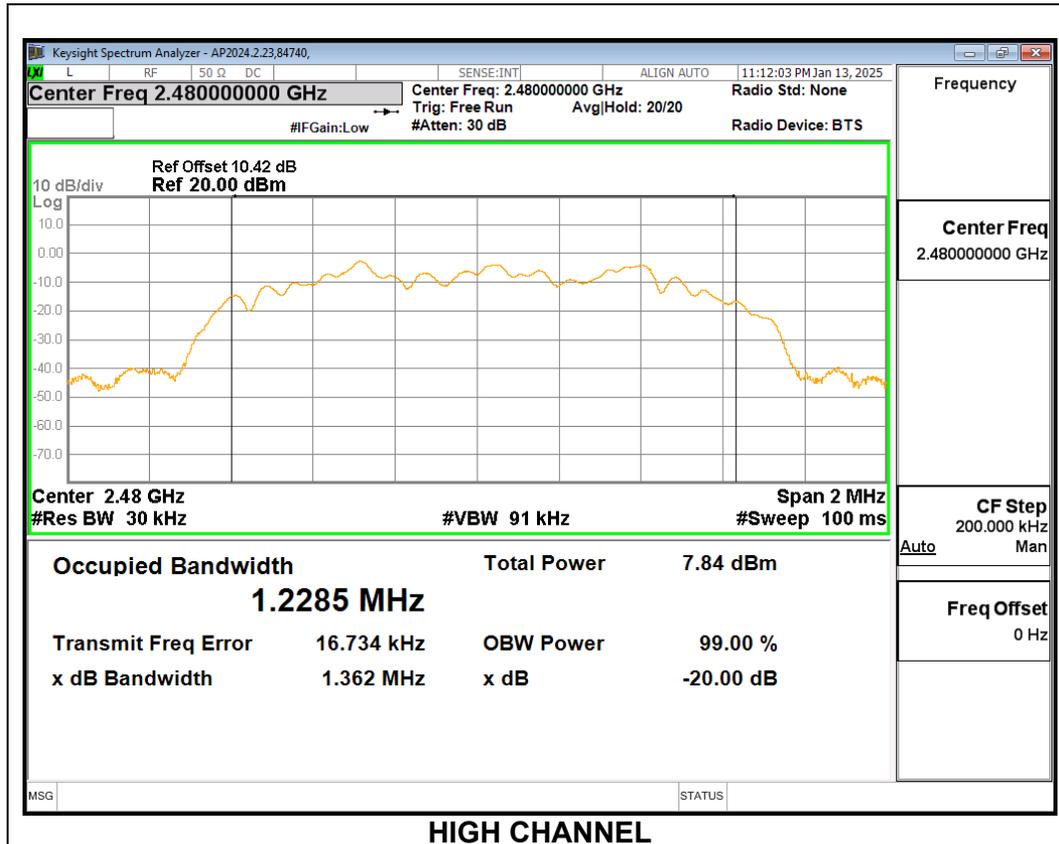
9.1.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION

| Channel | Frequency (MHz) | 20dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|---------|-----------------|----------------------|---------------------|
| Low | 2402 | 1.335 | 1.190 |
| Mid | 2441 | 1.335 | 1.190 |
| High | 2480 | 1.336 | 1.190 |



9.1.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

| Channel | Frequency (MHz) | 20dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|---------|-----------------|----------------------|---------------------|
| Low | 2402 | 1.369 | 1.2301 |
| Mid | 2441 | 1.365 | 1.2292 |
| High | 2480 | 1.362 | 1.2285 |



9.2. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

ANSI C63.10, Section 11.6: Zero-Span Spectrum Analyzer Method.

| Mode | ON Time B (ms) | Period (ms) | Duty Cycle x (lineari) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | 1/T Minimum VBW (kHz) |
|------|----------------|-------------|------------------------|----------------|-----------------------------------|-----------------------|
| GFSK | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.010 |
| QPSK | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.010 |
| 8PSK | 100.00 | 100.00 | 1.000 | 100.00 | 0.00 | 0.010 |

GFSK

QPSK

8PSK

Note: The actual DCCF used was calculated based on the worst case on-time when the device transmits DH5 packets and operates on 20 channels (5/1600 s per hop = 3.125 ms per channel). In this mode, the device will have a maximum of 2 hops on a channel in 100ms or 2x 3.125 ms = 6.25 ms on any channel. Therefore, $20 \log(6.25 / 100) = -24\text{dB}$.

9.3. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)
RSS-247 (5.1) (b)

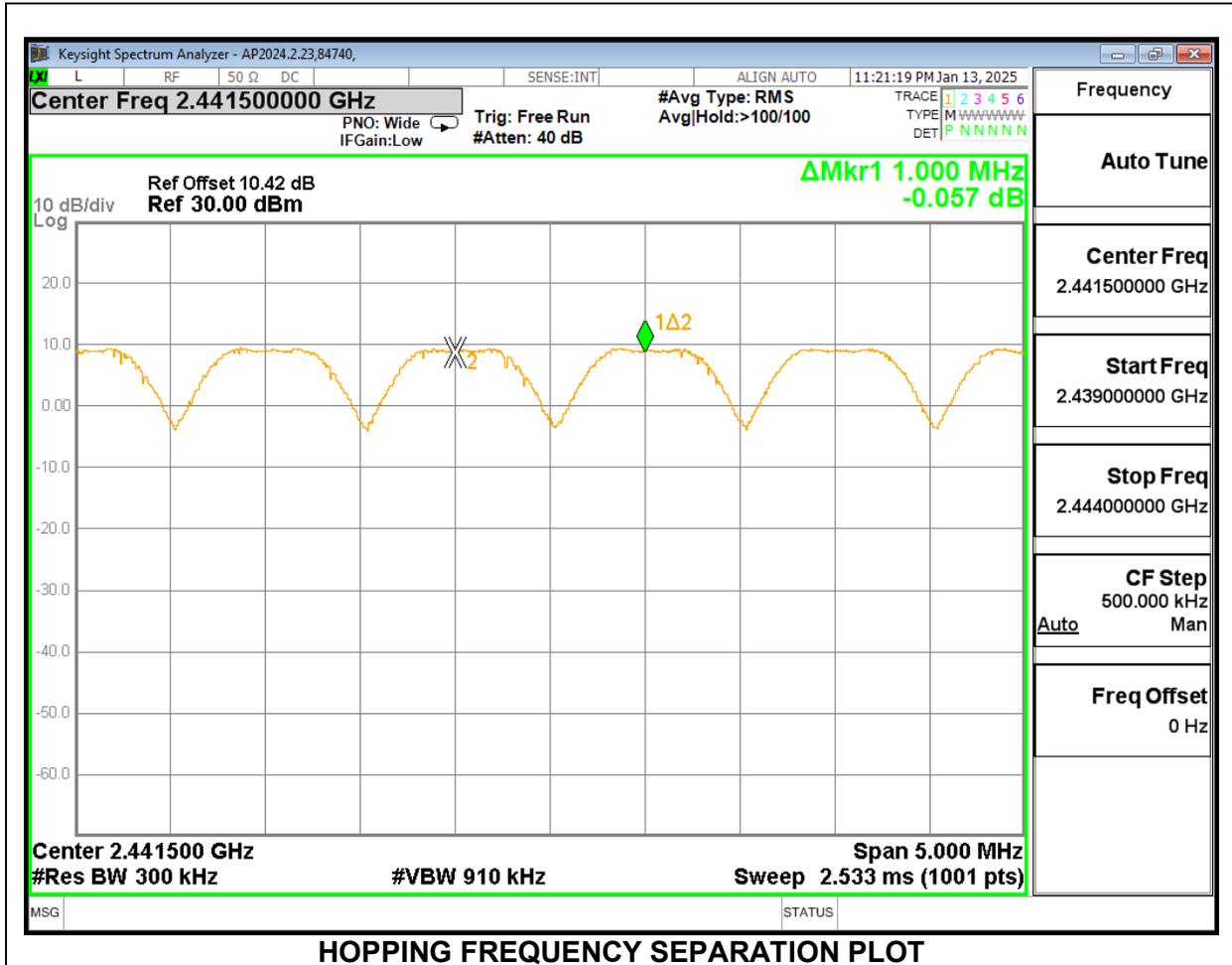
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

TEST PROCEDURE

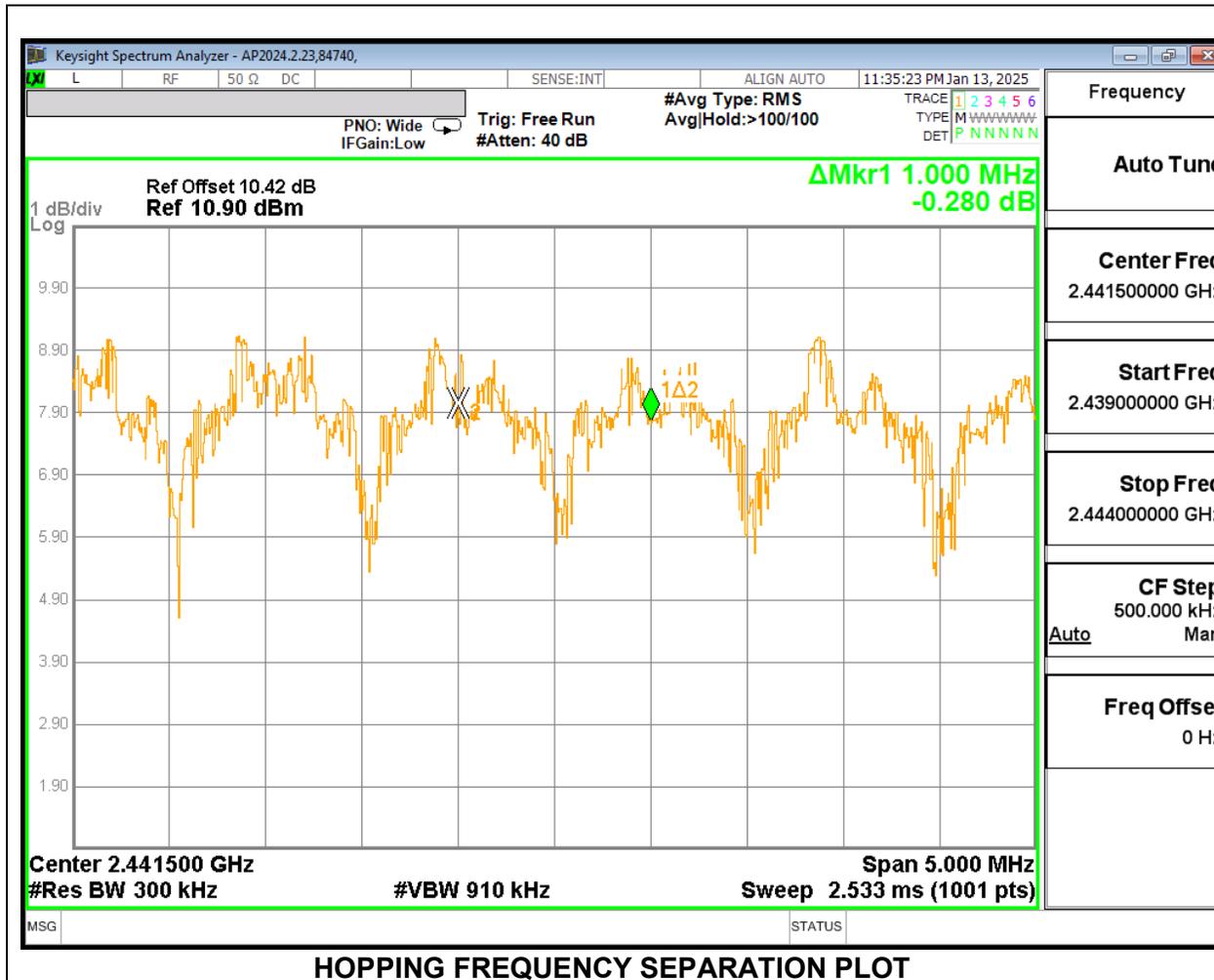
The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to $VBW \geq RBW$. The sweep time is coupled.

9.3.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION



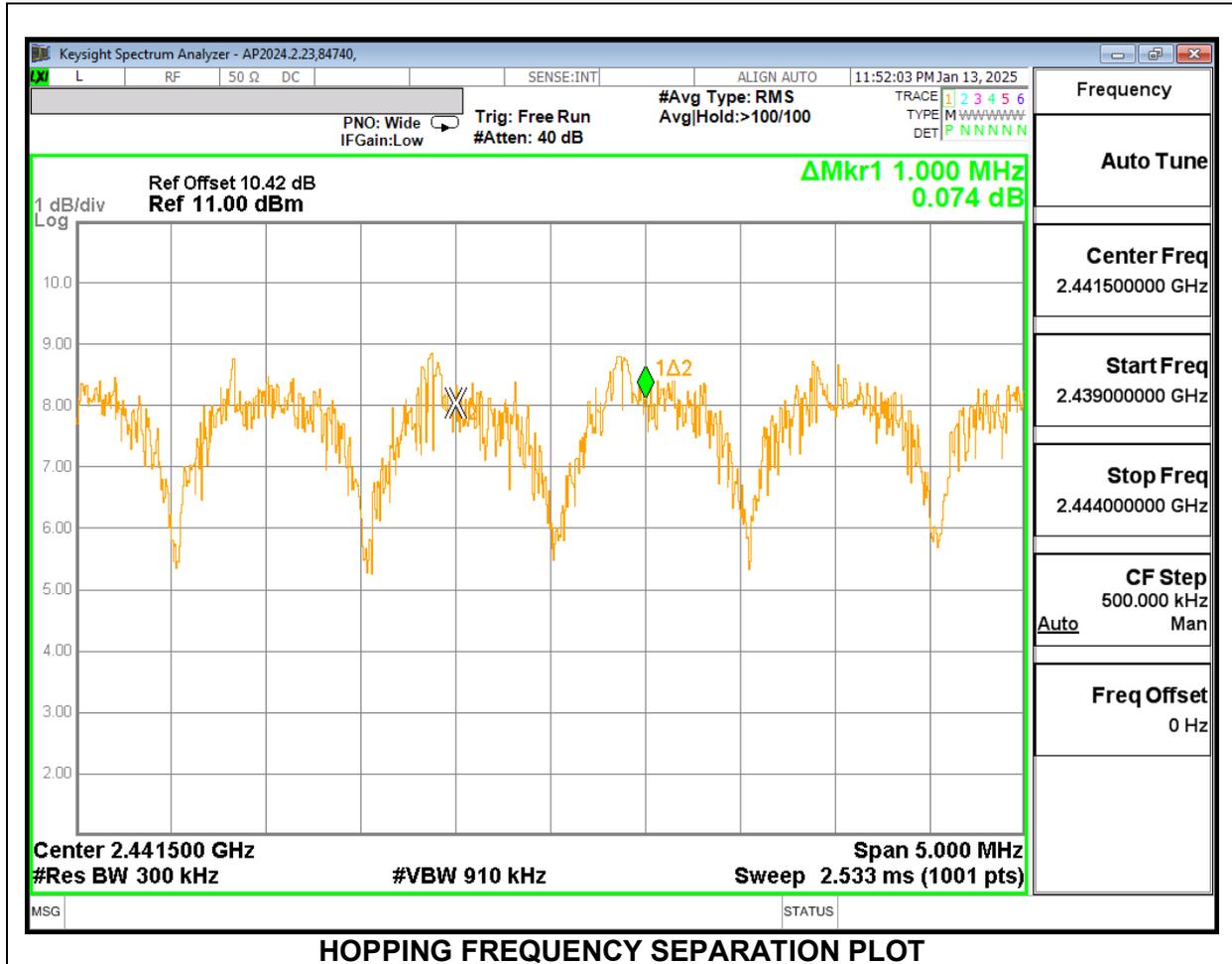
$(20\text{dB BW}) \times (2/3) = (1.028 \text{ MHz}) \times (2/3) = 0.685 \text{ MHz}$
 $0.685 \text{ MHz} < 1 \text{ MHz}$

9.3.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION



$$(20\text{dB BW}) \times (2/3) = (1.336 \text{ MHz}) \times (2/3) = 0.891 \text{ MHz}$$
$$0.891 \text{ MHz} < 1 \text{ MHz}$$

9.3.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION



$(20\text{dB BW}) \times (2/3) = (1.365 \text{ MHz}) \times (2/3) = 0.91 \text{ MHz}$
 $0.91 \text{ MHz} < 1 \text{ MHz}$

9.4. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)
RSS-247 (5.1) (d)

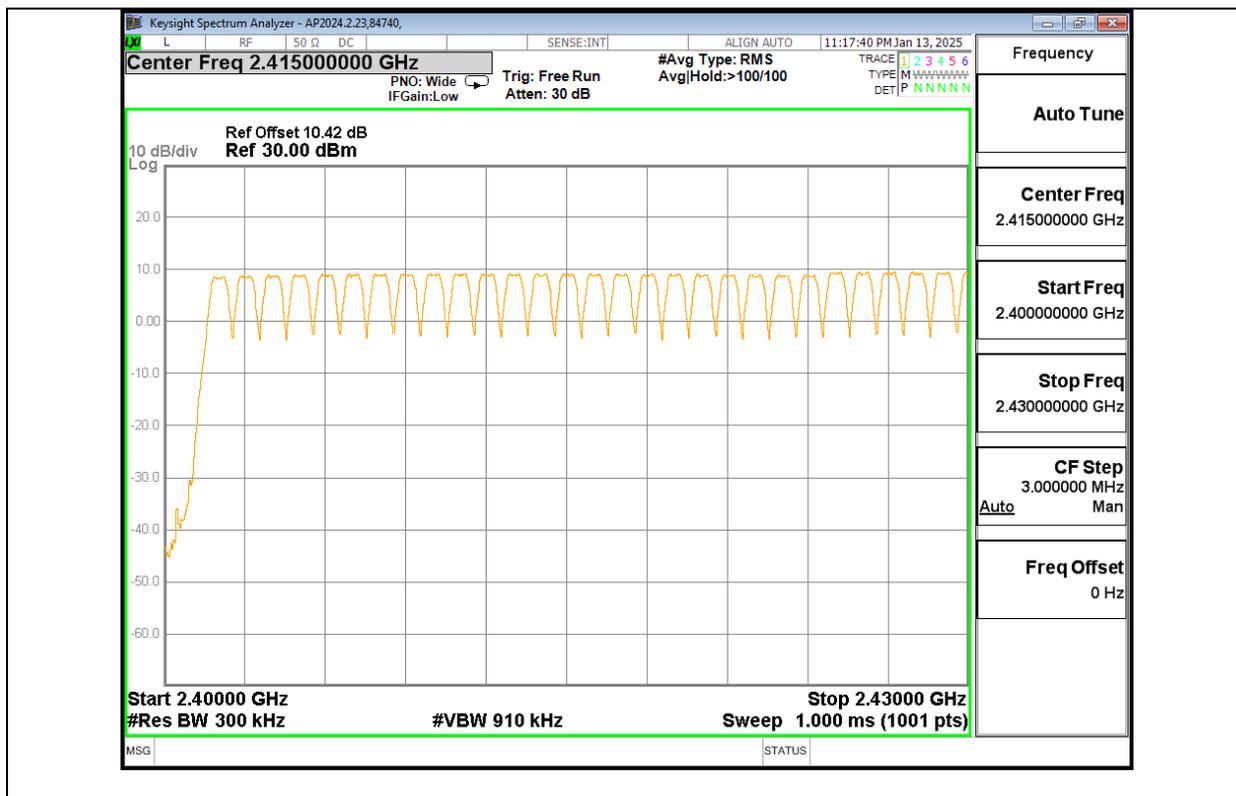
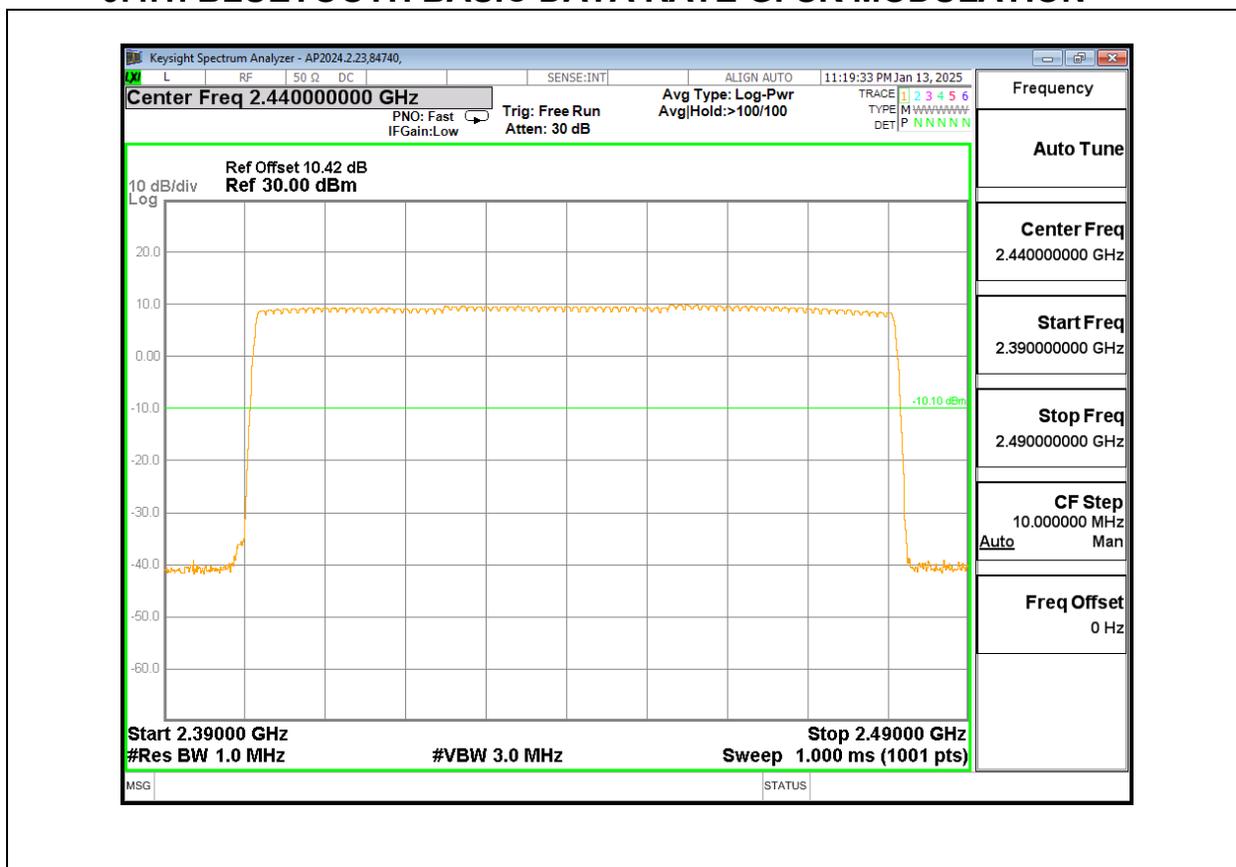
Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

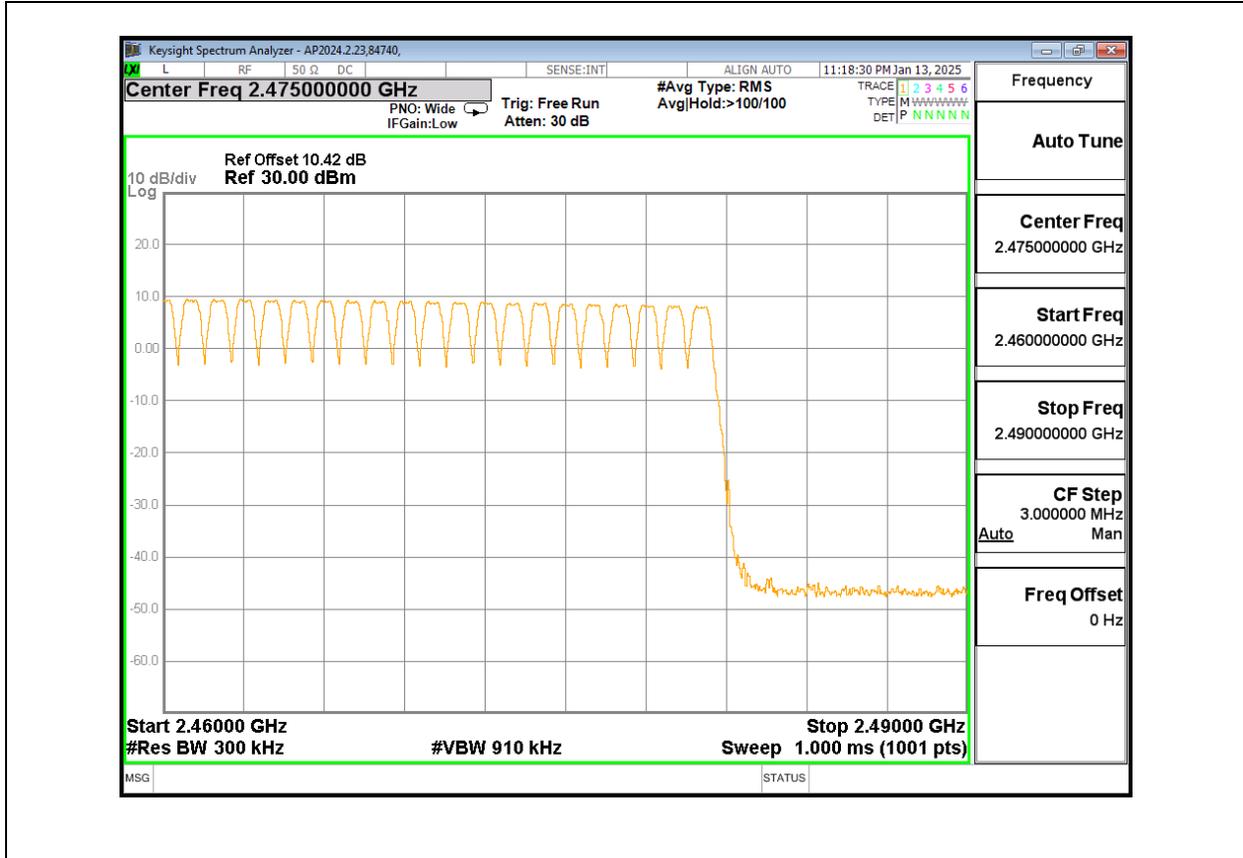
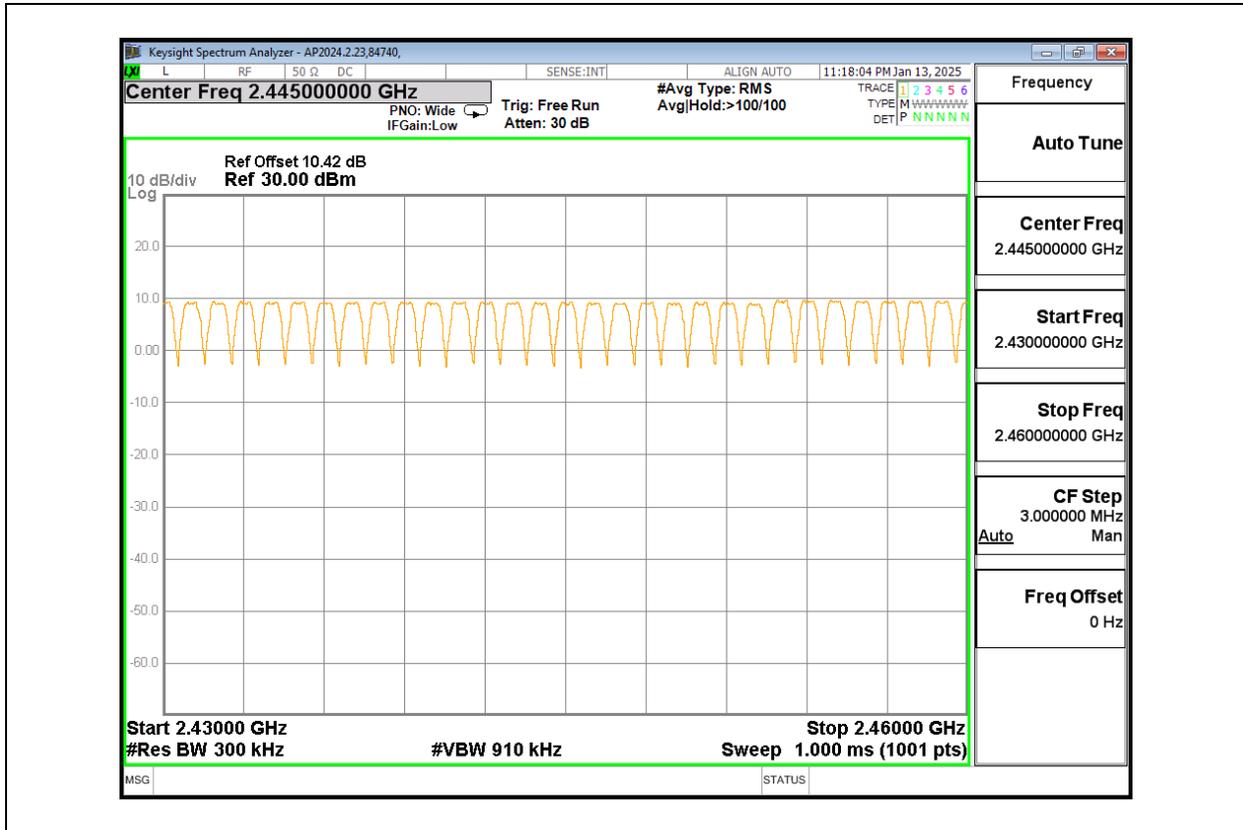
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

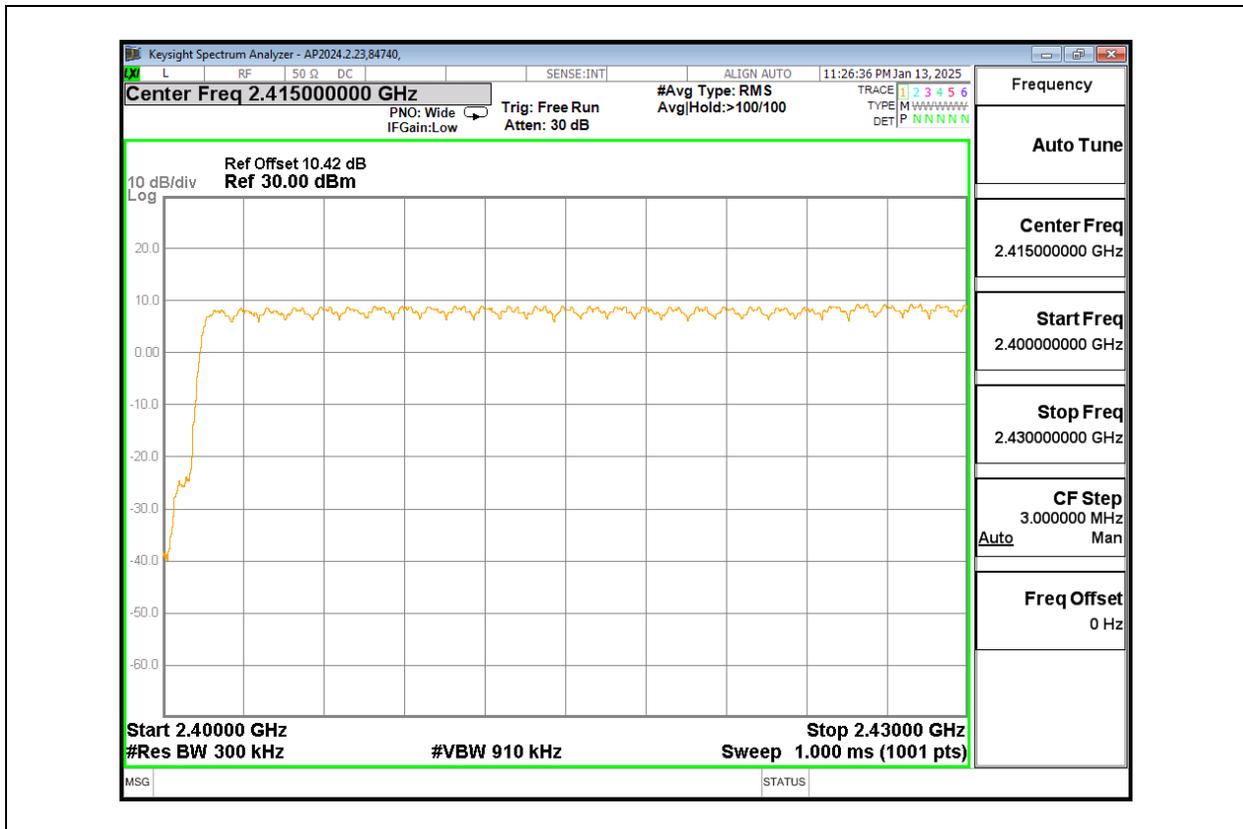
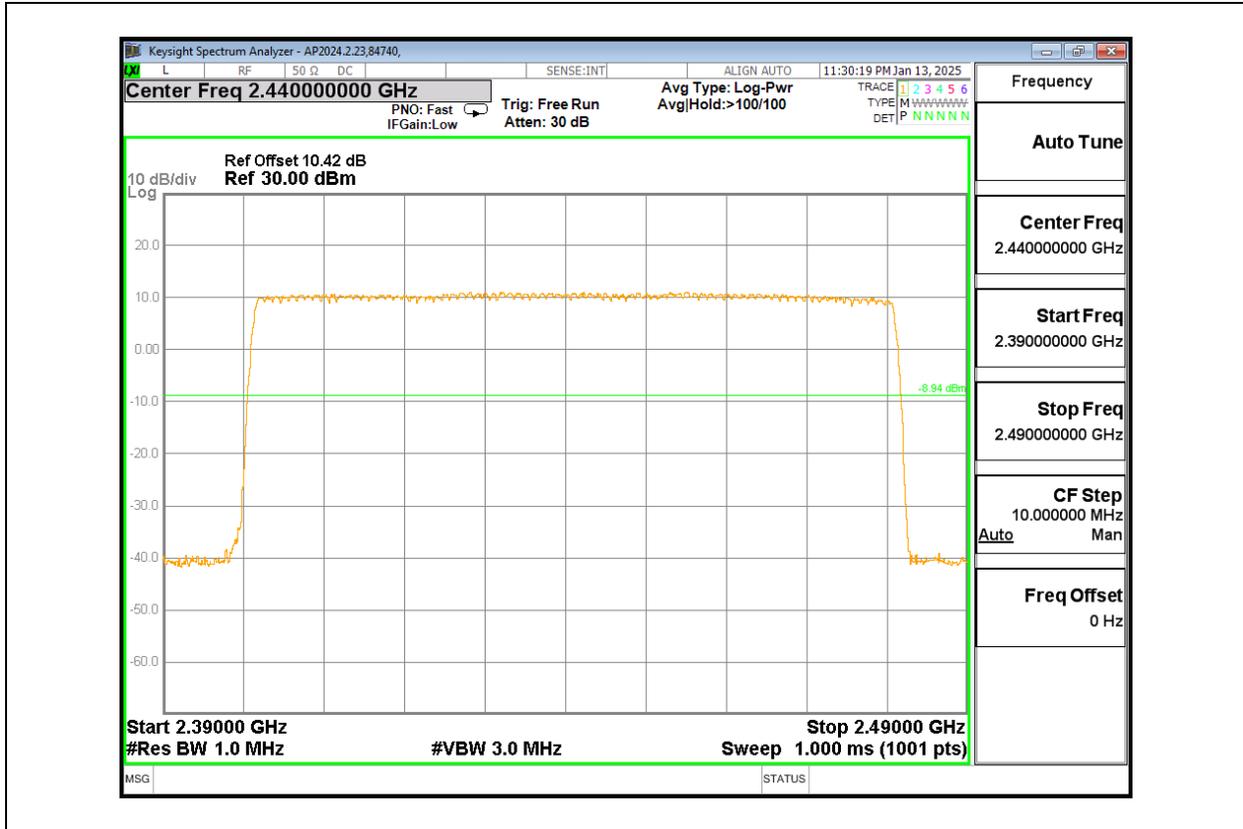
Normal Mode: 79 Channels Observed

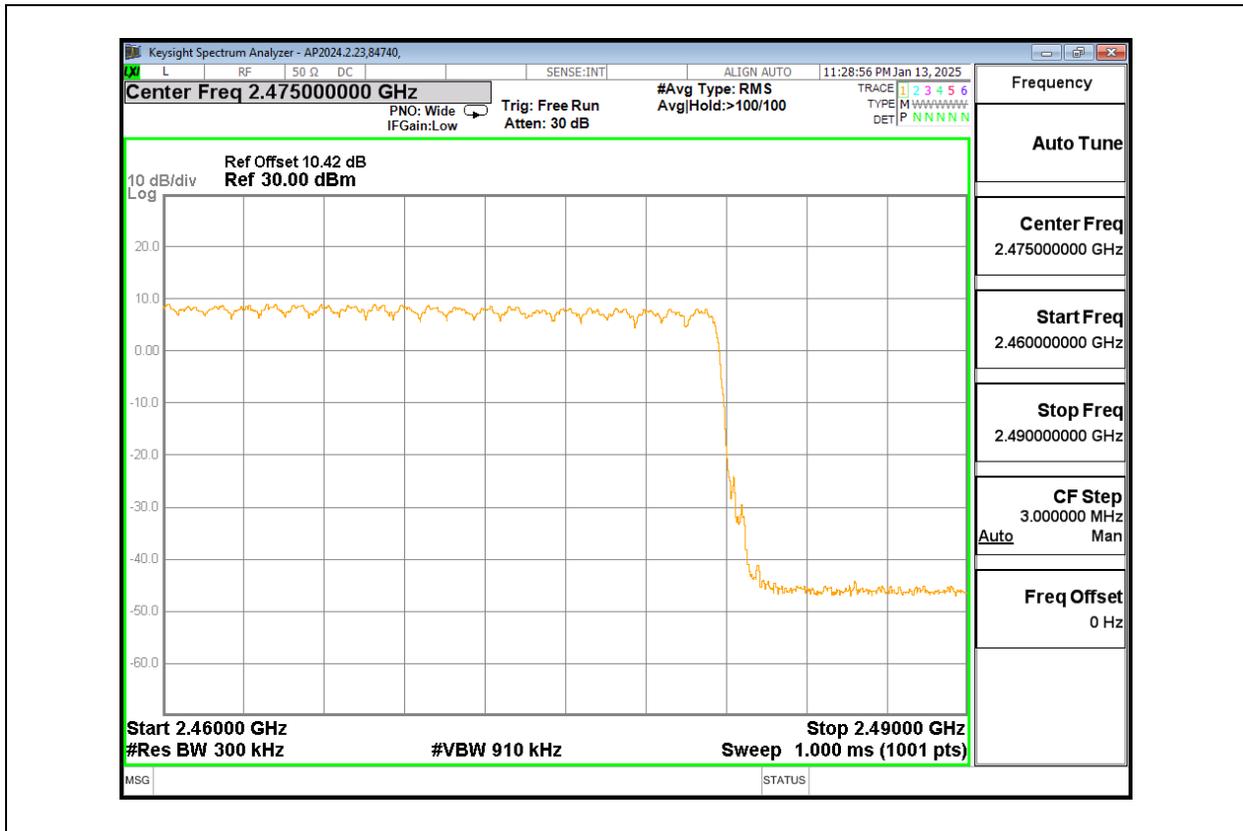
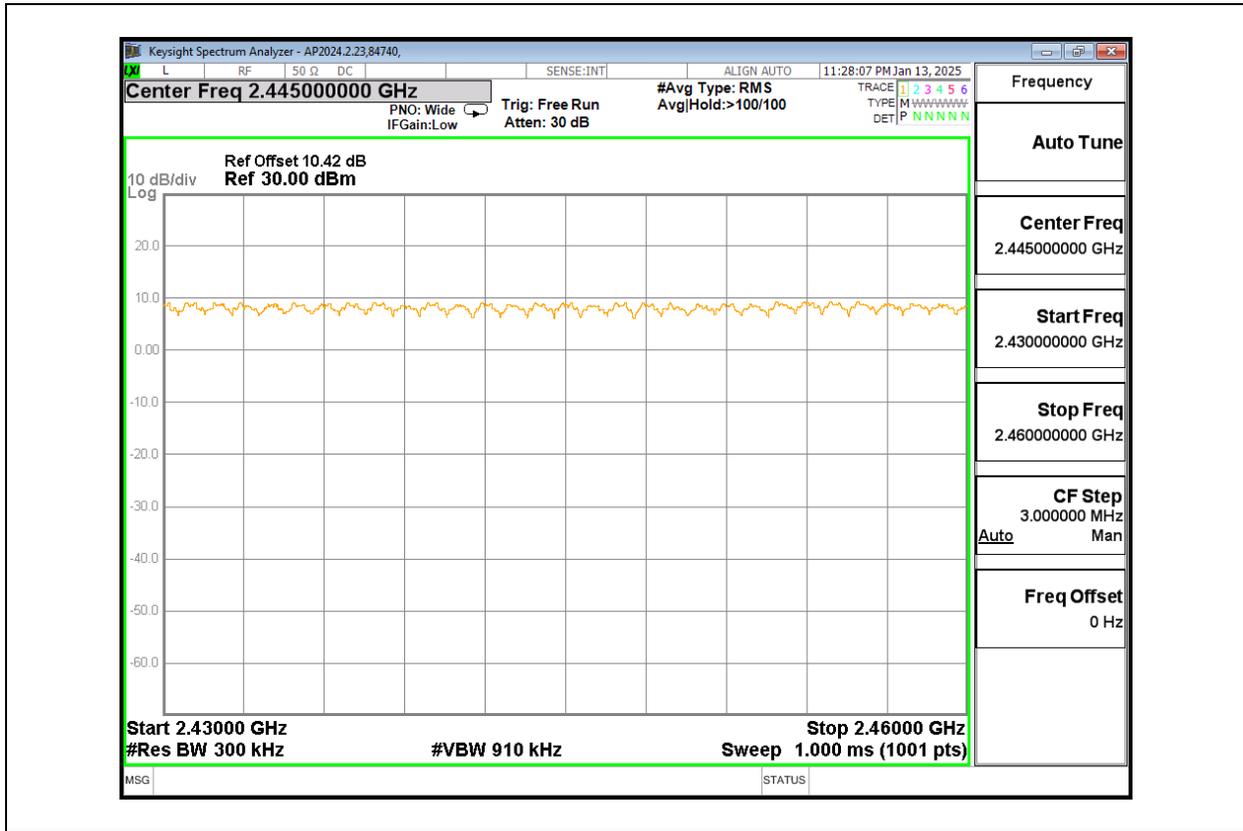
9.4.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION



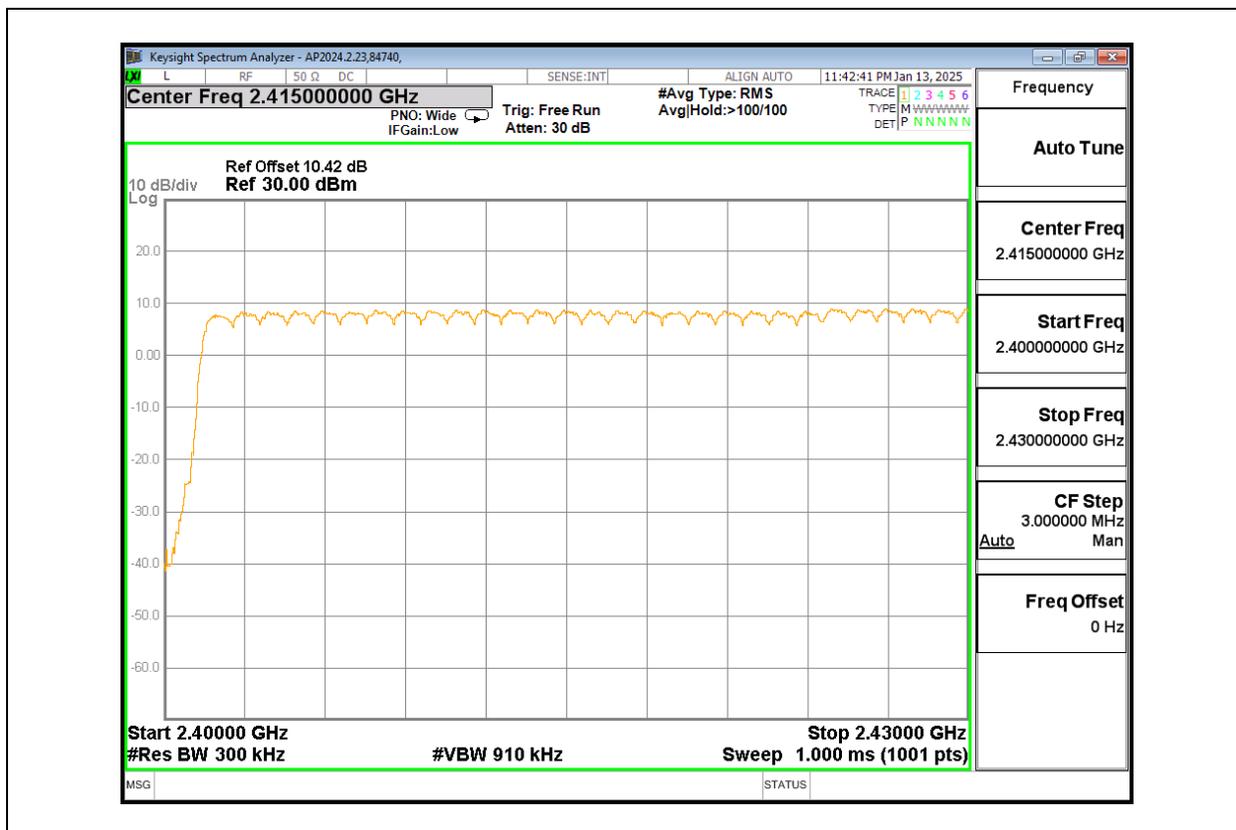
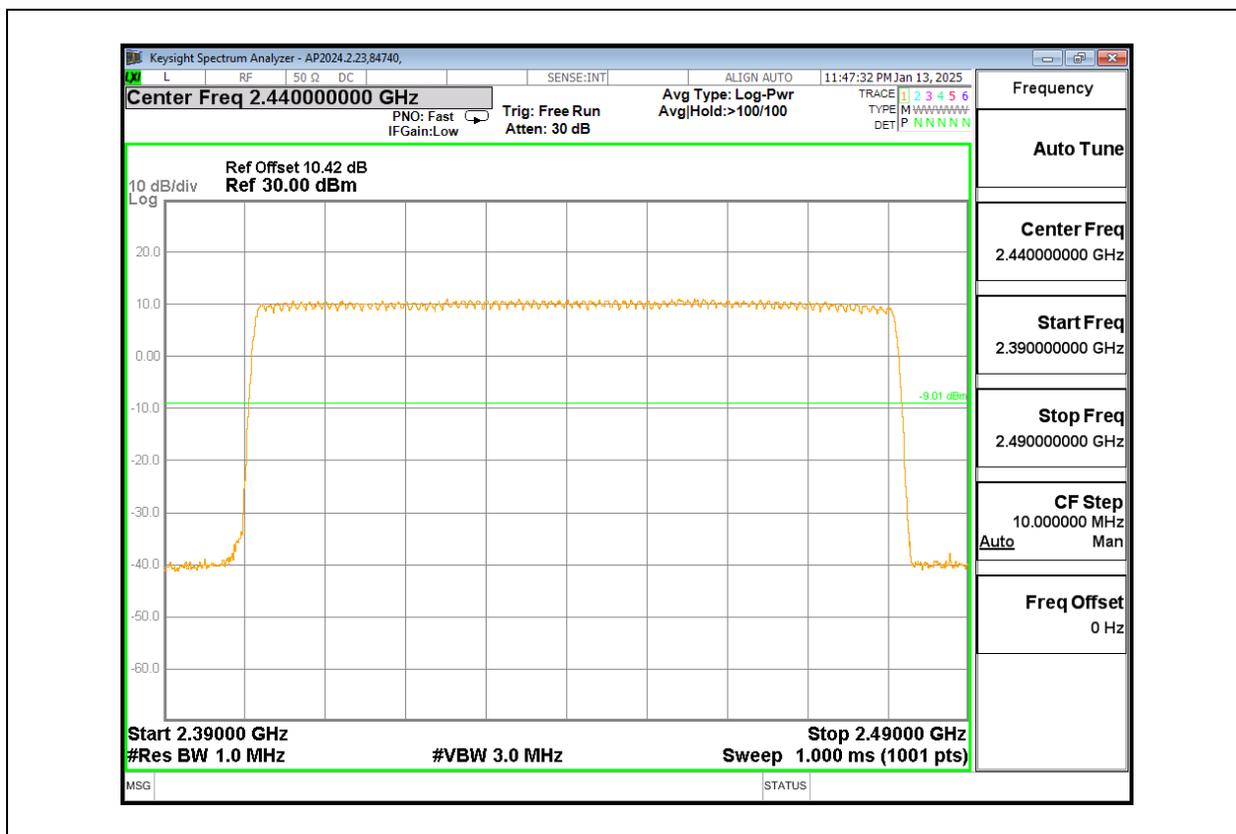


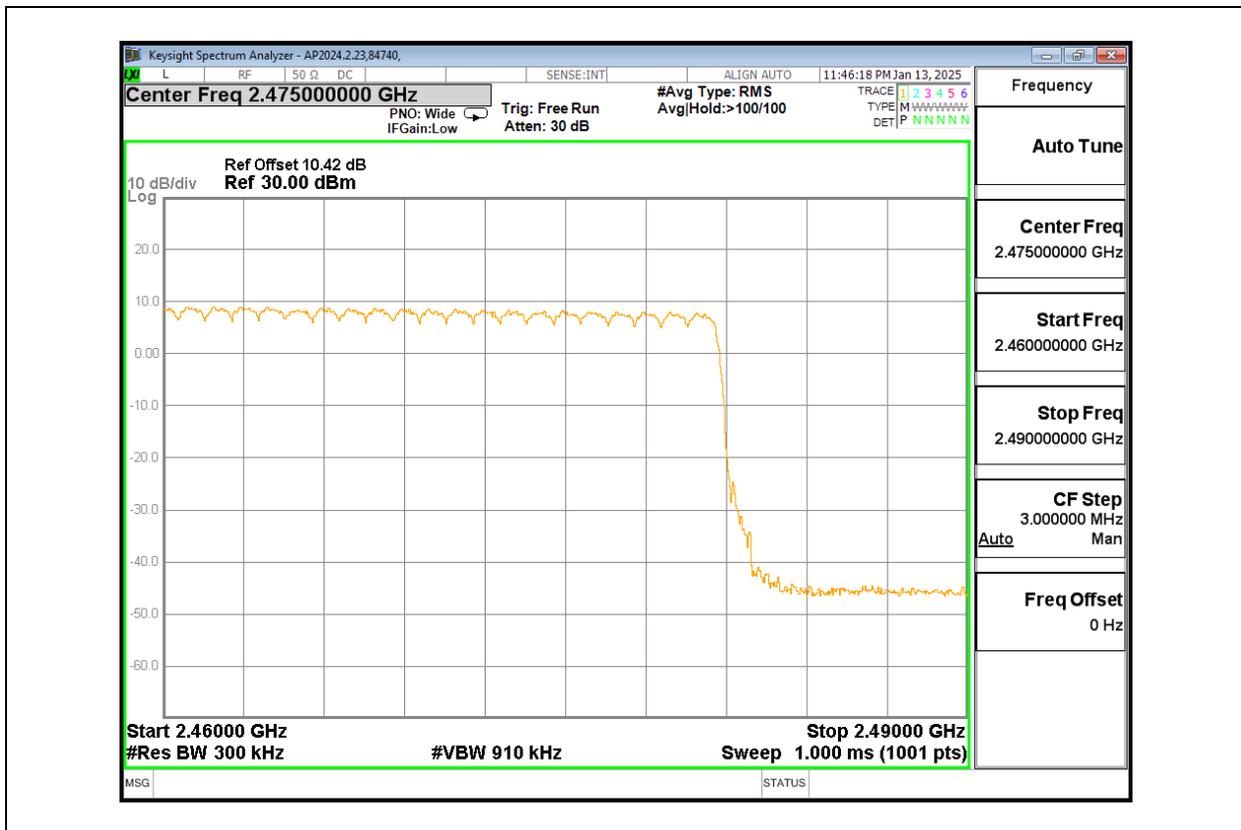
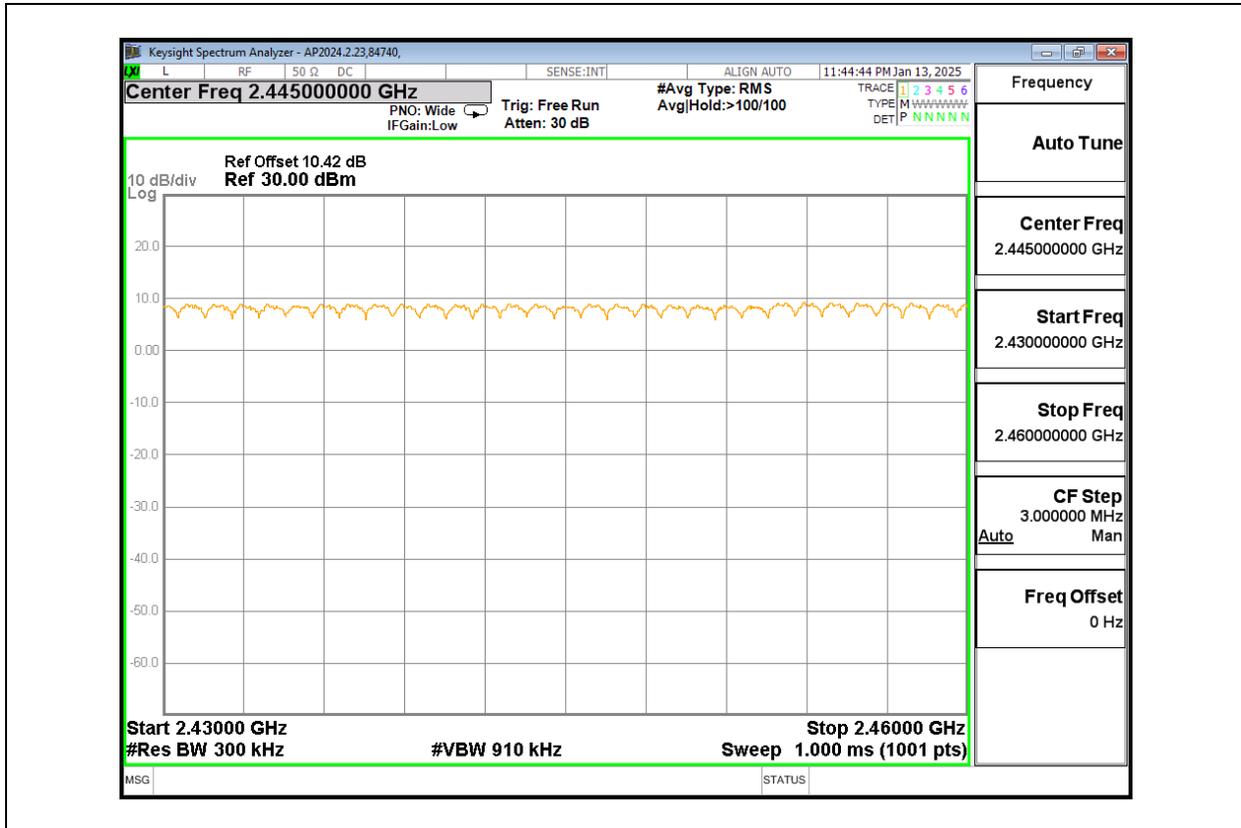
9.4.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION





9.4.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION





9.5. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)
 RSS-247 (5.1) (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

TEST PROCEDURE

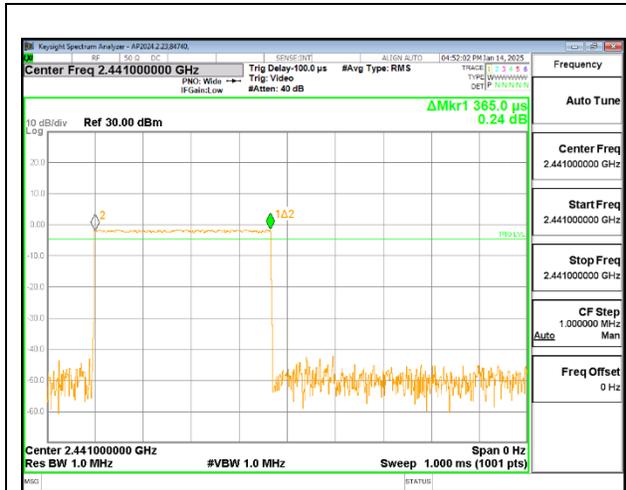
The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 3.16 second period (79 channels * 0.4 s) is equal to $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{ pulse width}$.

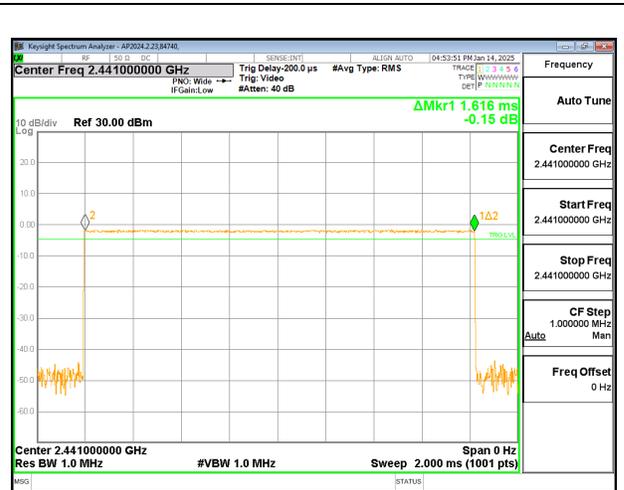
For AFH mode, the average time of occupancy in the specified 8 second period (20 channels * 0.4 seconds) is equal to $10 * (\# \text{ of pulses in } 0.8 \text{ s}) * \text{ pulse width}$.

9.5.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

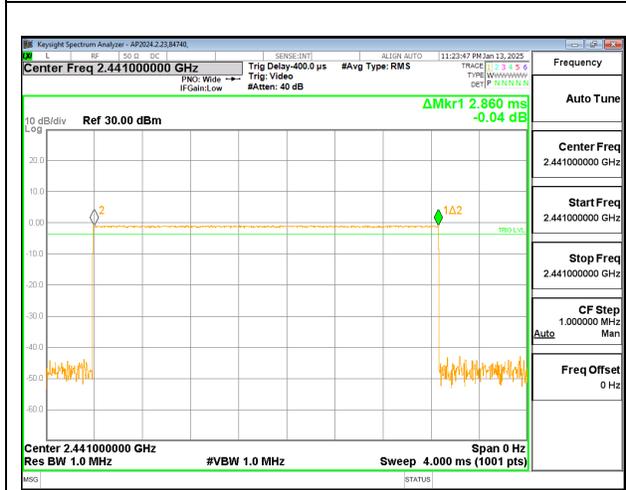
| DH Packet | Pulse Width (msec) | Number of Pulses in 3.16 seconds | Average Time of Occupancy (sec) | Limit (sec) | Margin (sec) |
|-------------------------|--------------------|----------------------------------|---------------------------------|-------------|--------------|
| GFSK Normal Mode | | | | | |
| DH1 | 0.365 | 31 | 0.1132 | 0.4 | -0.2869 |
| DH3 | 1.616 | 17 | 0.2747 | 0.4 | -0.1253 |
| DH5 | 2.86 | 10 | 0.2860 | 0.4 | -0.1140 |
| GFSK AFH Mode | | | | | |
| DH Packet | Pulse Width (sec) | Number of Pulses in 0.8 seconds | Average Time of Occupancy (sec) | Limit (sec) | Margin (sec) |
| DH1 | 0.365 | 7.75 | 0.02829 | 0.4 | -0.3717 |
| DH3 | 1.616 | 4.25 | 0.06868 | 0.4 | -0.3313 |
| DH5 | 2.86 | 2.5 | 0.07150 | 0.4 | -0.3285 |



PULSE WIDTH – DH1



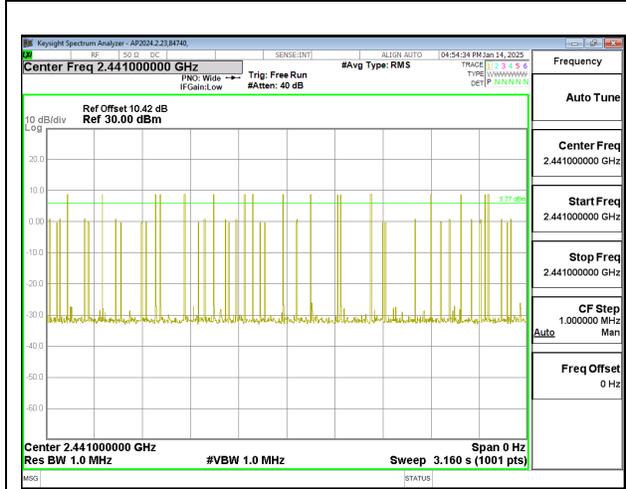
PULSE WIDTH – DH3



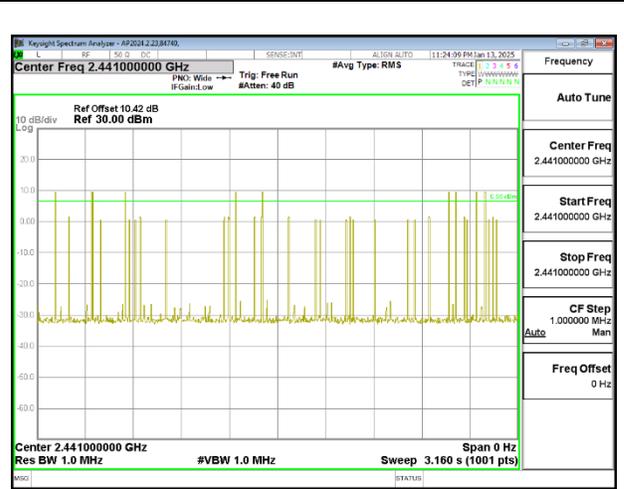
PULSE WIDTH – DH5



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH1



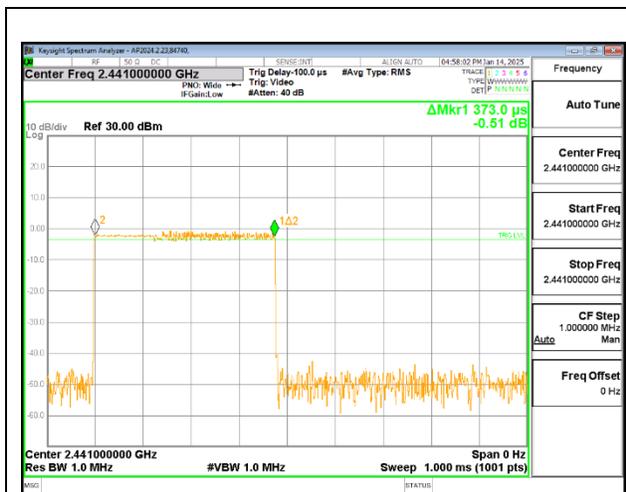
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH3



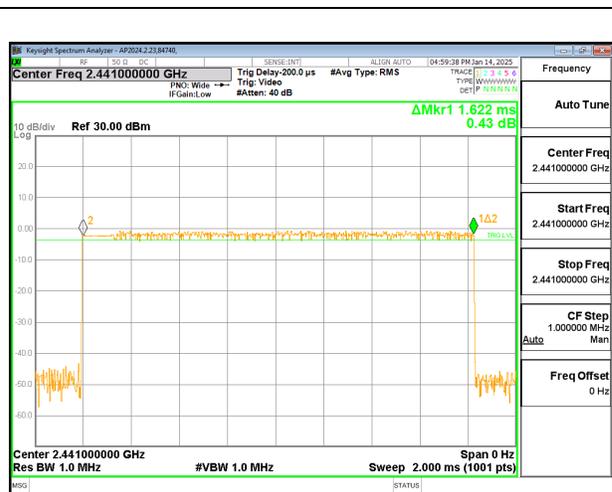
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH5

9.5.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION

| DH Packet | Pulse Width (msec) | Number of Pulses in 3.16 seconds | Average Time of Occupancy (sec) | Limit (sec) | Margin (sec) |
|------------------|--------------------|----------------------------------|---------------------------------|-------------|--------------|
| GFSK Normal Mode | | | | | |
| DH1 | 0.373 | 32 | 0.1194 | 0.4 | -0.2806 |
| DH3 | 1.622 | 13 | 0.2109 | 0.4 | -0.1891 |
| DH5 | 2.864 | 12 | 0.3437 | 0.4 | -0.0563 |
| | | | | | |
| DH Packet | Pulse Width (sec) | Number of Pulses in 0.8 seconds | Average Time of Occupancy (sec) | Limit (sec) | Margin (sec) |
| GFSK AFH Mode | | | | | |
| DH1 | 0.373 | 8 | 0.02984 | 0.4 | -0.3702 |
| DH3 | 1.622 | 3.25 | 0.05272 | 0.4 | -0.3473 |
| DH5 | 2.864 | 3 | 0.08592 | 0.4 | -0.3141 |



PULSE WIDTH – DH1



PULSE WIDTH – DH3



PULSE WIDTH – DH5



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH1



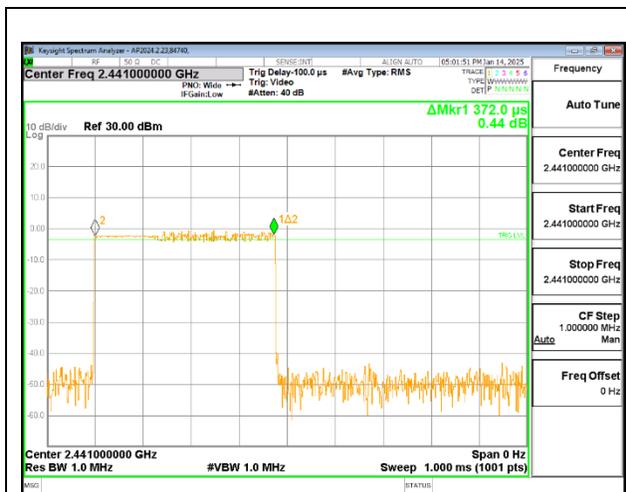
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH3



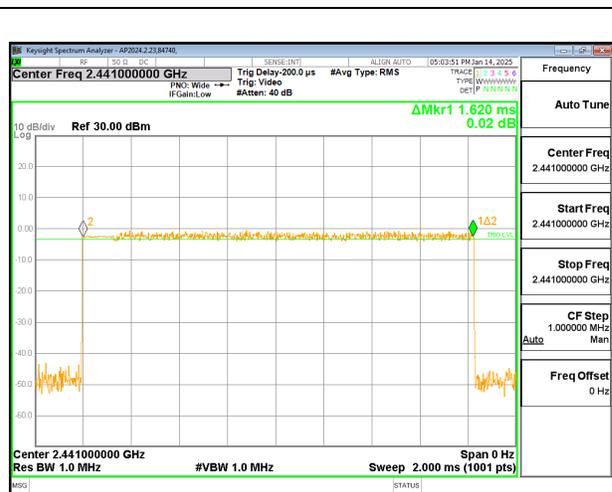
NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH5

9.5.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

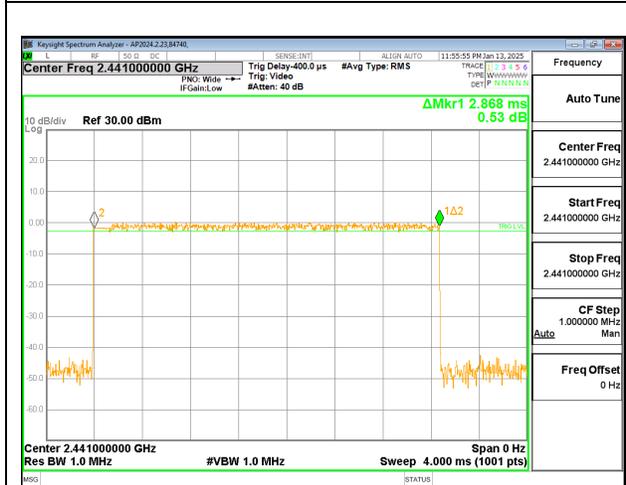
| DH Packet | Pulse Width (msec) | Number of Pulses in 3.16 seconds | Average Time of Occupancy (sec) | Limit (sec) | Margin (sec) |
|-------------------------|--------------------|----------------------------------|---------------------------------|-------------|--------------|
| 8PSK Normal Mode | | | | | |
| DH1 | 0.372 | 32 | 0.1190 | 0.4 | -0.2810 |
| DH3 | 1.62 | 17 | 0.2754 | 0.4 | -0.1246 |
| DH5 | 2.868 | 11 | 0.3155 | 0.4 | -0.0845 |
| 8PSK AFH Mode | | | | | |
| DH Packet | Pulse Width (sec) | Number of Pulses in 0.8 seconds | Average Time of Occupancy (sec) | Limit (sec) | Margin (sec) |
| 8PSK AFH Mode | | | | | |
| DH1 | 0.372 | 8 | 0.02976 | 0.4 | -0.3702 |
| DH3 | 1.62 | 4.25 | 0.06885 | 0.4 | -0.3312 |
| DH5 | 2.868 | 2.75 | 0.07887 | 0.4 | -0.3211 |



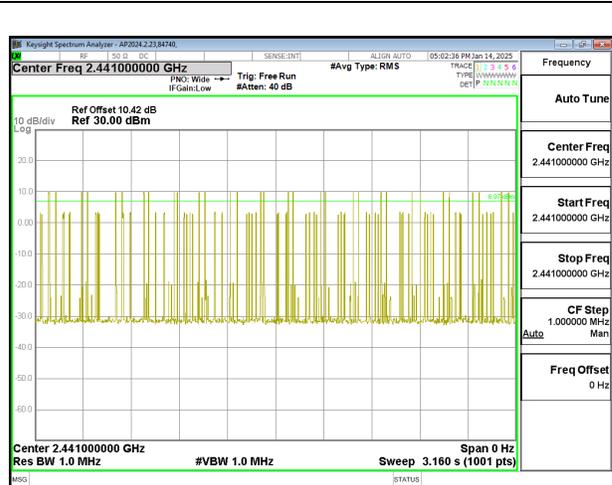
PULSE WIDTH – DH1



PULSE WIDTH – DH3



PULSE WIDTH – DH5



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH1



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH3



NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – DH5

9.6. OUTPUT POWER

LIMITS

§15.247 (b) (1)
RSS-247 (5.4) (b)

The maximum antenna gain is less than 6 dBi, therefore the limit is 30 dBm. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts

TEST PROCEDURE

Measurements performed using a wideband gated RF power meter.

The cable assembly insertion loss of 0.68 dB (including 0.68 dB cable) was entered as an offset in the power meter.

The power output was measured on the EUT antenna port using SMA cable connected to a power meter via wideband power sensor. Peak output power was read directly from power meter.

9.6.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

| | |
|------------|------------|
| Tested By: | 84740 |
| Date: | 2025-01-13 |

| Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) | Margin (dB) |
|---------|--------------------|-----------------------|----------------|----------------|
| Low | 2402 | 9.13 | 30 | -20.87 |
| Middle | 2441 | 9.82 | 30 | -20.18 |
| High | 2480 | 8.73 | 30 | -21.27 |

9.6.2. BLUETOOTH ENHANCED DATA RATE DQPSK MODULATION

| | |
|------------|------------|
| Tested By: | 84740 |
| Date: | 2025-01-13 |

| Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) | Margin (dB) |
|---------|--------------------|-----------------------|----------------|----------------|
| Low | 2402 | 10.61 | 30 | -19.39 |
| Middle | 2441 | 11.4 | 30 | -18.6 |
| High | 2480 | 10.23 | 30 | -19.77 |

9.6.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

| | |
|------------|------------|
| Tested By: | 84740 |
| Date: | 2025-01-13 |

| Channel | Frequency (MHz) | Output Power (dBm) | Limit (dBm) | Margin (dB) |
|---------|--------------------|-----------------------|----------------|----------------|
| Low | 2402 | 10.5 | 20.969 | -10.469 |
| Middle | 2441 | 11.14 | 20.969 | -9.829 |
| High | 2480 | 10.11 | 20.969 | -10.859 |

9.7. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

Measurements performed using a wideband gated RF power meter.

The cable assembly insertion loss of 0.68 dB (including 0.68 dB cable) was entered as an offset in the power meter.

The power output was measured on the EUT antenna port using SMA cable connected to a power meter via wideband power sensor. Gated average output power was read directly from power meter.

9.7.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

| | |
|------------|------------|
| Tested By: | 84740 |
| Date | 2025-01-13 |

| Channel | Frequency (MHz) | Average Power (dBm) |
|---------|--------------------|------------------------|
| Low | 2402 | 8.423 |
| Middle | 2441 | 9.133 |
| High | 2480 | 8.053 |

9.7.2. BLUETOOTH ENHANCED DATA RATE DQPSK MODULATION

| | |
|------------|------------|
| Tested By: | 84740 |
| Date | 2025-01-13 |

| Channel | Frequency (MHz) | Average Power (dBm) |
|---------|--------------------|------------------------|
| Low | 2402 | 7.586 |
| Middle | 2441 | 8.362 |
| High | 2480 | 7.206 |

9.7.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

| | |
|------------|------------|
| Tested By: | 84740 |
| Date | 2025-01-13 |

| Channel | Frequency (MHz) | Average Power (dBm) |
|---------|--------------------|------------------------|
| Low | 2402 | 7.358 |
| Middle | 2441 | 8.039 |
| High | 2480 | 6.961 |

9.8. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)
RSS-247 5.5

Limit = -20 dBc

TEST PROCEDURE

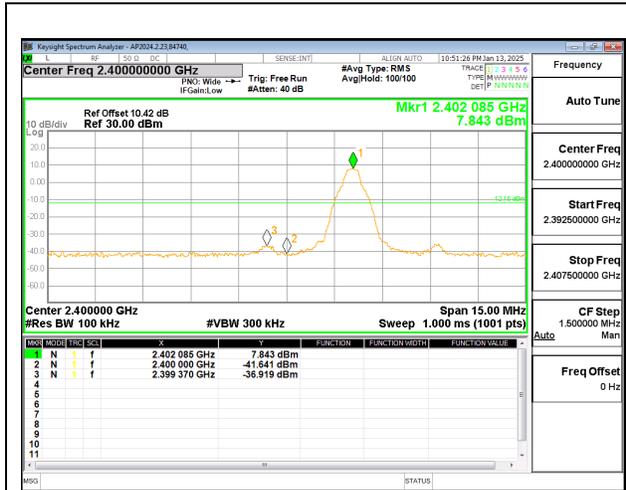
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping and hopping modes.

9.8.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

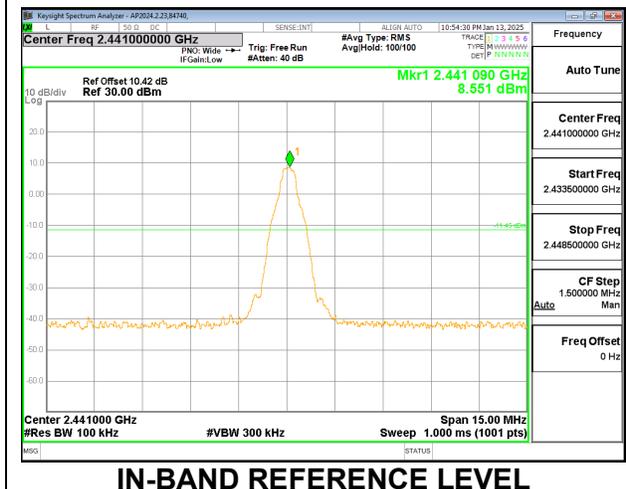
SPURIOUS EMISSIONS, NON-HOPPING



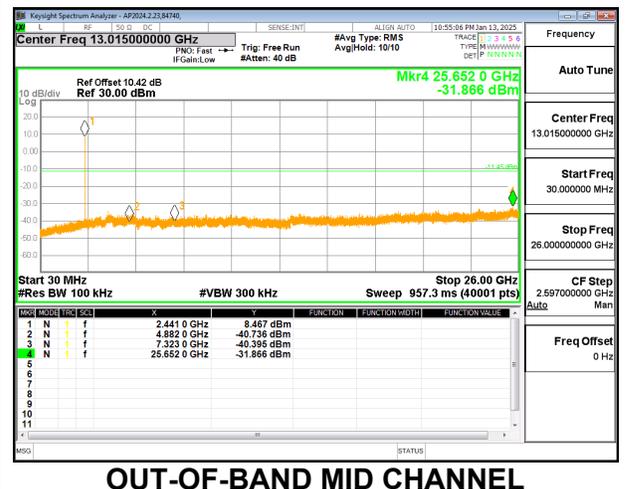
LOW CHANNEL BANDEDGE



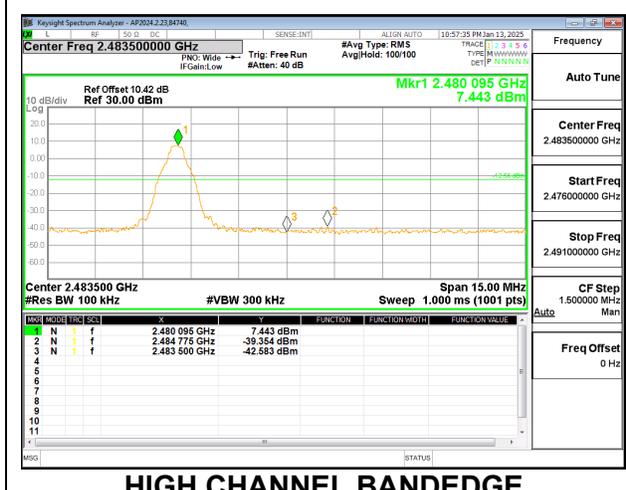
OUT-OF-BAND LOW CHANNEL



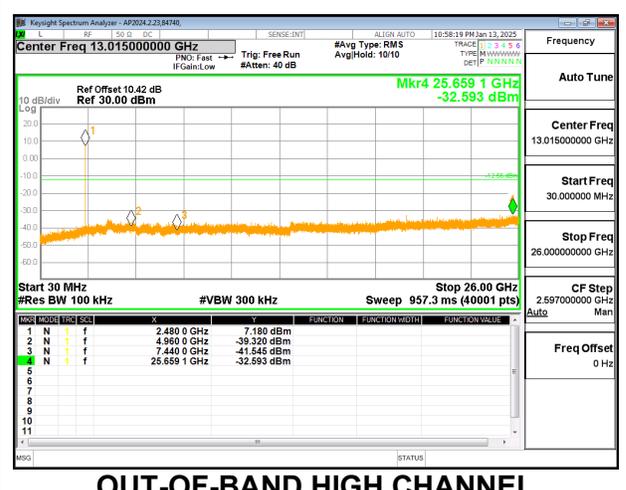
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

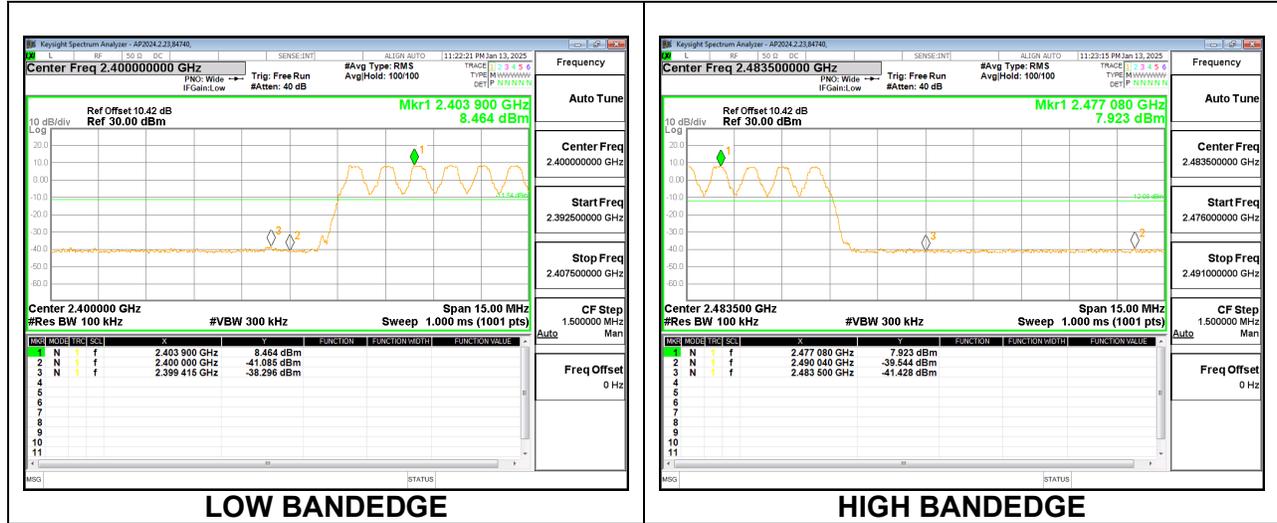


HIGH CHANNEL BANDEDGE



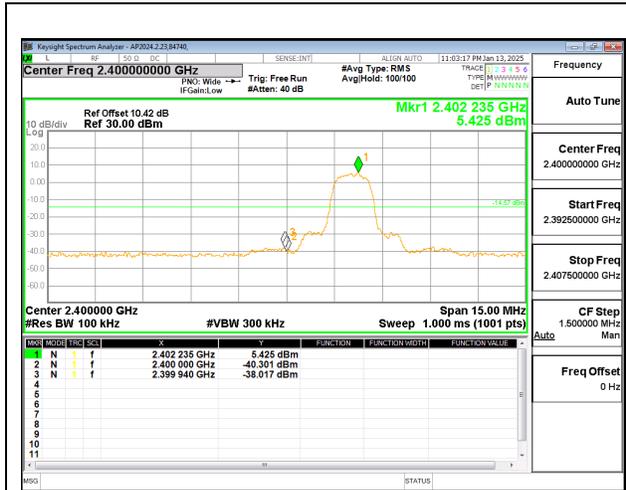
OUT-OF-BAND HIGH CHANNEL

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

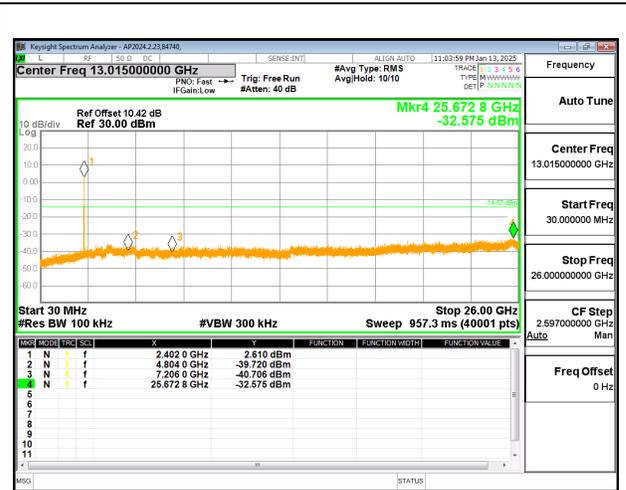


9.8.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION

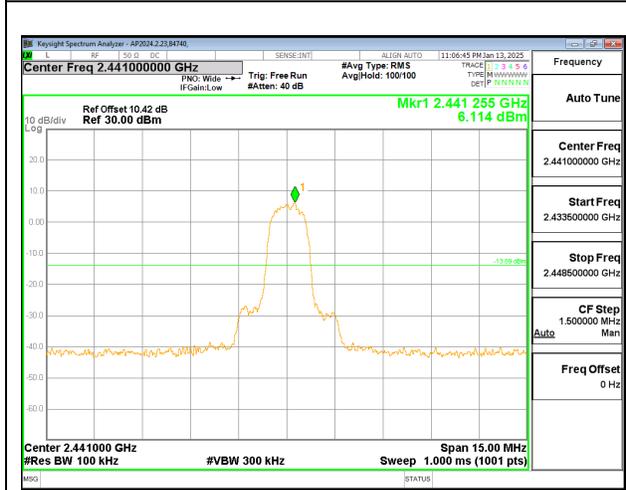
SPURIOUS EMISSIONS, NON-HOPPING



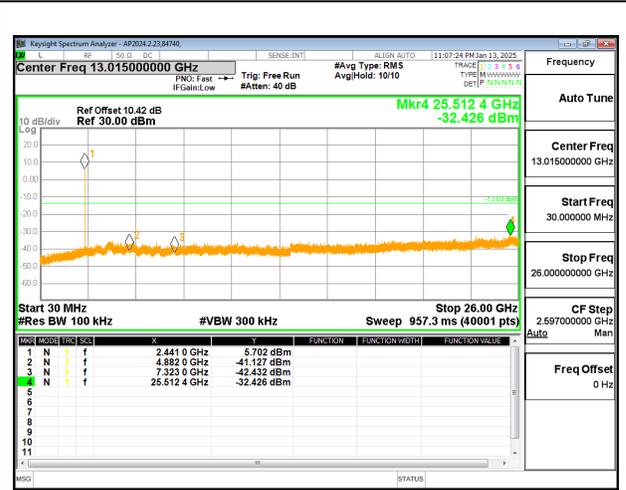
LOW CHANNEL BANDEDGE



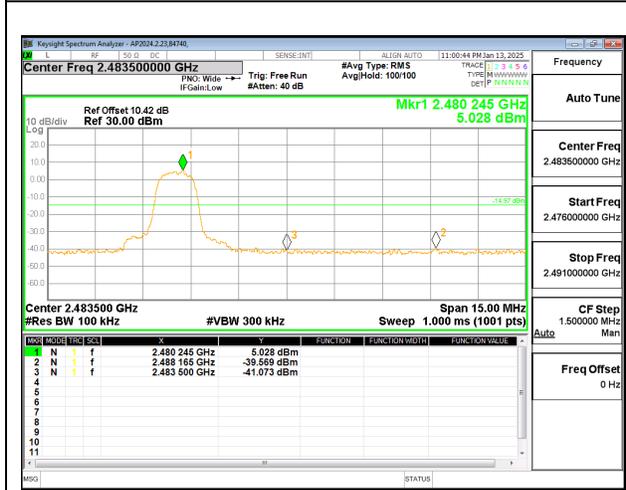
OUT-OF-BAND LOW CHANNEL



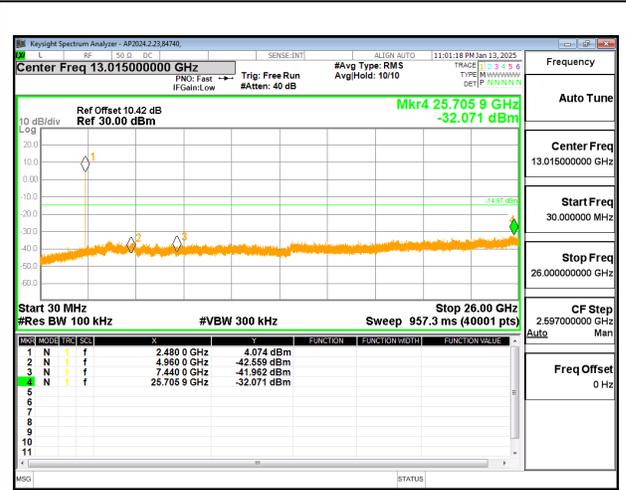
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



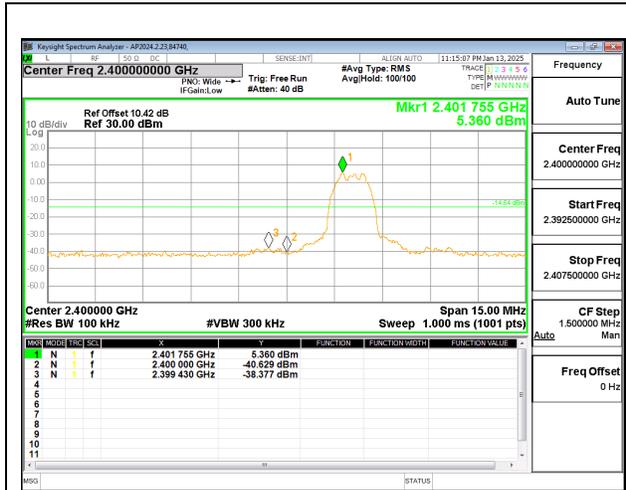
OUT-OF-BAND HIGH CHANNEL

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



9.8.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

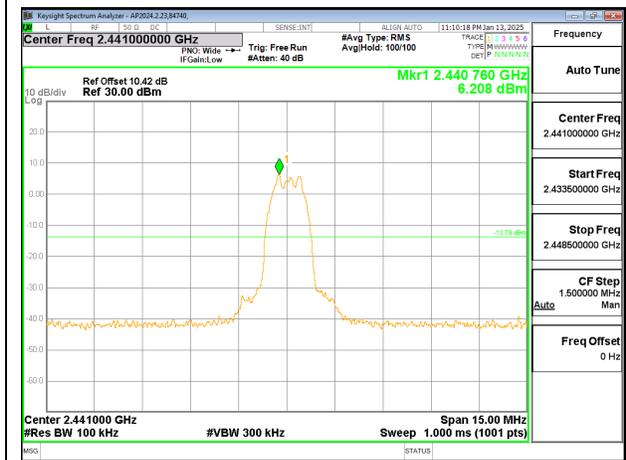
SPURIOUS EMISSIONS, NON-HOPPING



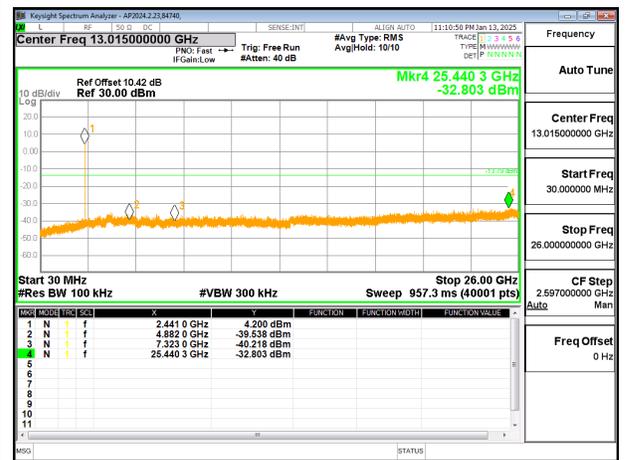
LOW CHANNEL BANDEDGE



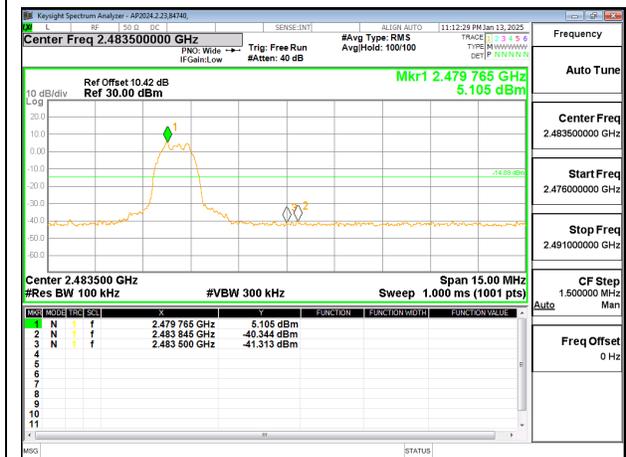
OUT-OF-BAND LOW CHANNEL



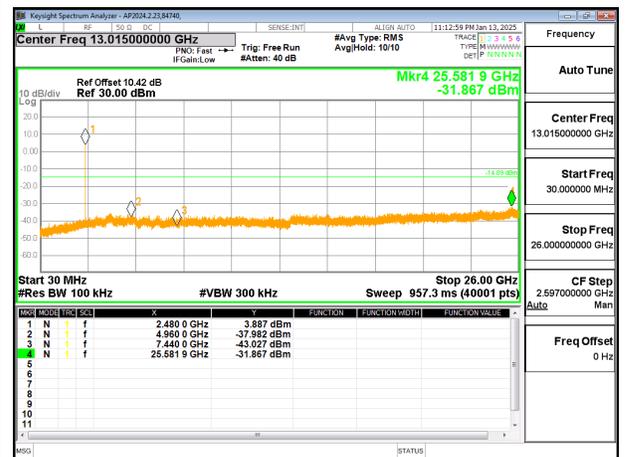
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
|-----------------------|------------------------------------|--------------------------------------|
| 0.009-0.490 | 2400/F(kHz) @ 300 m | - |
| 0.490-1.705 | 24000/F(kHz) @ 30 m | - |
| 1.705 - 30 | 30 @ 30m | - |
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

IC RSS-GEN Clause 8.9 and 8.10

| Frequency Range (kHz) | Field Strength Limit (uA/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
|-----------------------|------------------------------------|--------------------------------------|
| 0.009-0.490 | 6.37/F(kHz) @ 300 m | - |
| 0.490-1.705 | 63.7/F(kHz) @ 30 m | - |
| 1.705 - 30 | 0.08 @ 30m | - |
| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m |
| 30 - 88 | 100 | 40 |
| 88 - 216 | 150 | 43.5 |
| 216 - 960 | 200 | 46 |
| Above 960 | 500 | 54 |

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3MHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements. Average measurements are calculated based on KDB 558074 D01 15.247 Meas Guidance v05r02.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power was tested.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

3D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel).

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

KDB 414788 Open Field Site (OFS) and Chamber Correlation Justification

OFS and chamber correlation testing had been performed and chamber measured test result is the worst-case test result.

KDB 558074 D01 15.247 Meas Guidance v05r02

Use of a duty cycle correction factor (DCCF) is permitted for calculating average radiated field strength emission levels for an FHSS device in 15.247. This DCCF can be applied when the field strength limit (e.g., within a Government Restricted band) and the conditions specified in Section 15.35(c) can be satisfied. The average radiated field strength is calculated by subtracting the DCCF from the maximum radiated field strength level as determined through measurement. The maximum radiated field strength level represents the worst-case (maximum amplitude) RMS measurement of the emission(s) during continuous transmission (i.e., not including any time intervals during which the transmitter is off or is transmitting at a reduced power level). It is also acceptable to apply the DCCF to a measurement performed with a peak detector instead of the specified RMS power averaging detector.

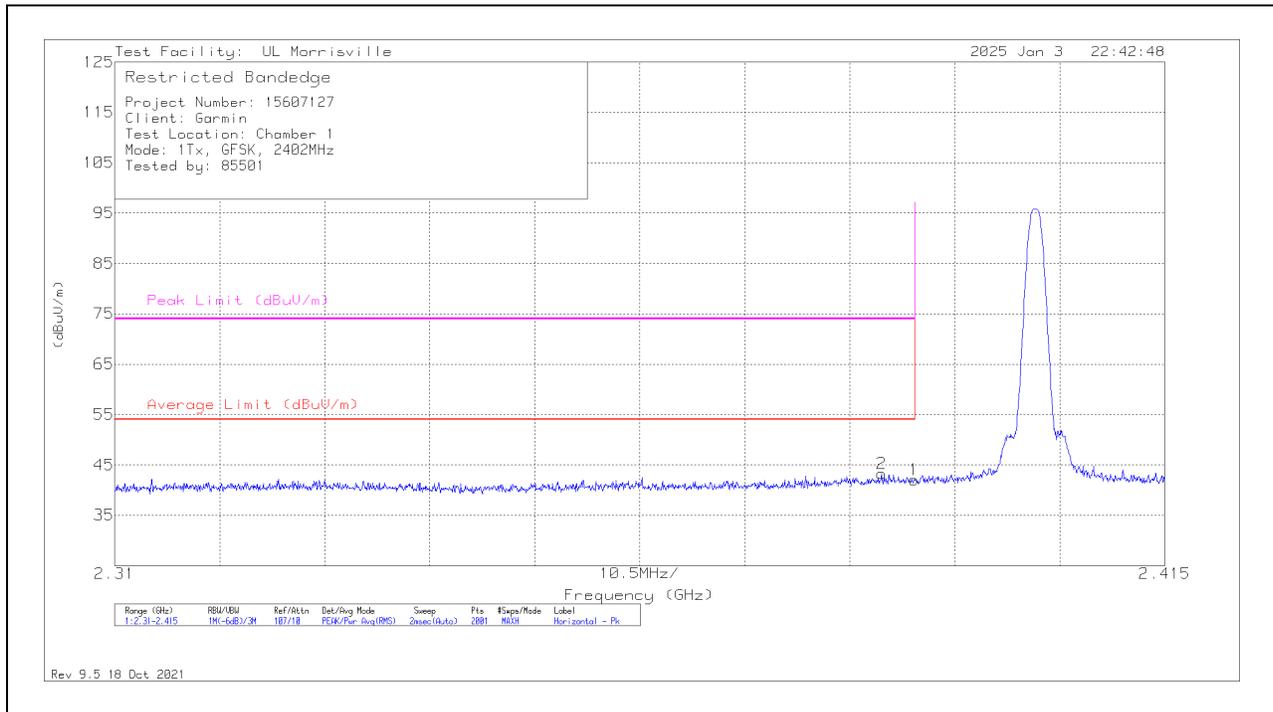
Note that Section 15.35(c) specifies that the DCCF shall represent the worst-case (greatest duty cycle) over any 100 msec transmission period.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. BLUETOOTH BASIC DATA RATE GFSK MODULATION

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 34.11 | Pk | 31.9 | -24 | 0 | 42.01 | - | - | 74 | -31.99 | 310 | 283 | H |
| | *** 2.38996 | 34.11 | Pk | 31.9 | -24 | -24 | 18.01 | 54 | -35.99 | - | - | 310 | 283 | H |
| 2 | *** 2.3867 | 35.29 | Pk | 31.9 | -23.9 | 0 | 43.29 | - | - | 74 | -30.71 | 310 | 283 | H |
| | *** 2.3867 | 35.29 | Pk | 31.9 | -23.9 | -24 | 19.29 | 54 | -34.71 | - | - | 310 | 283 | H |

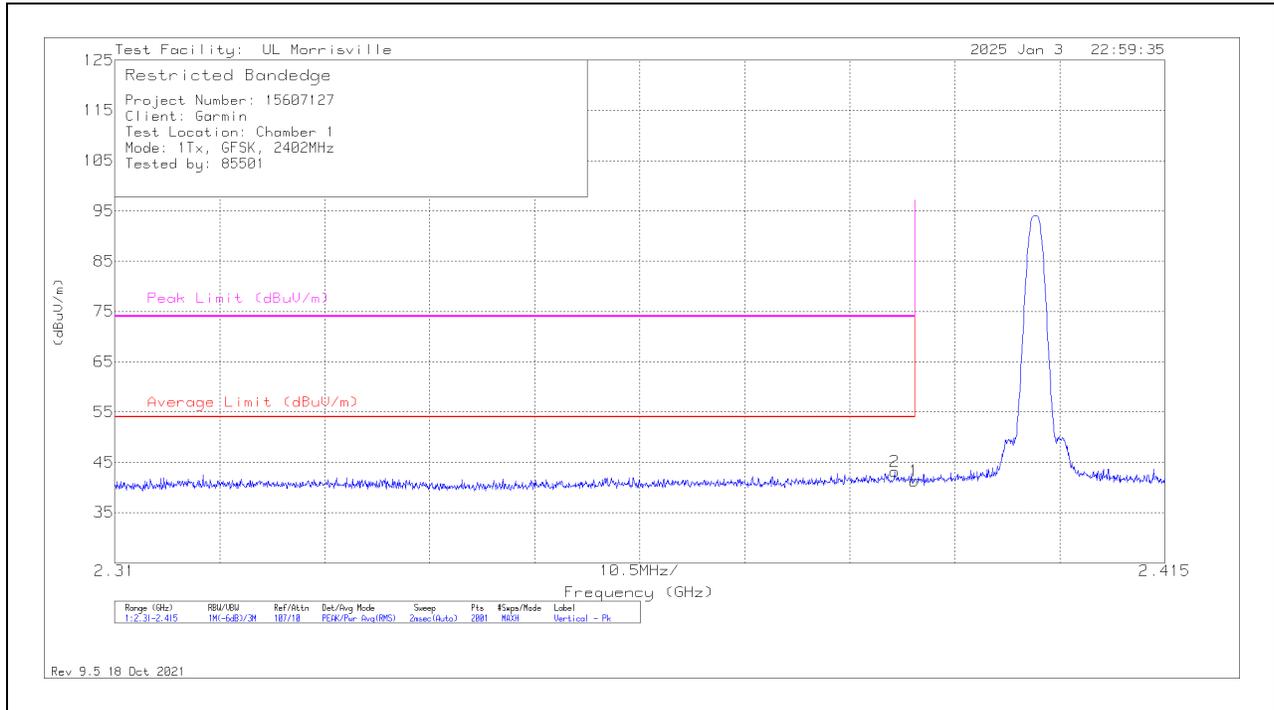
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



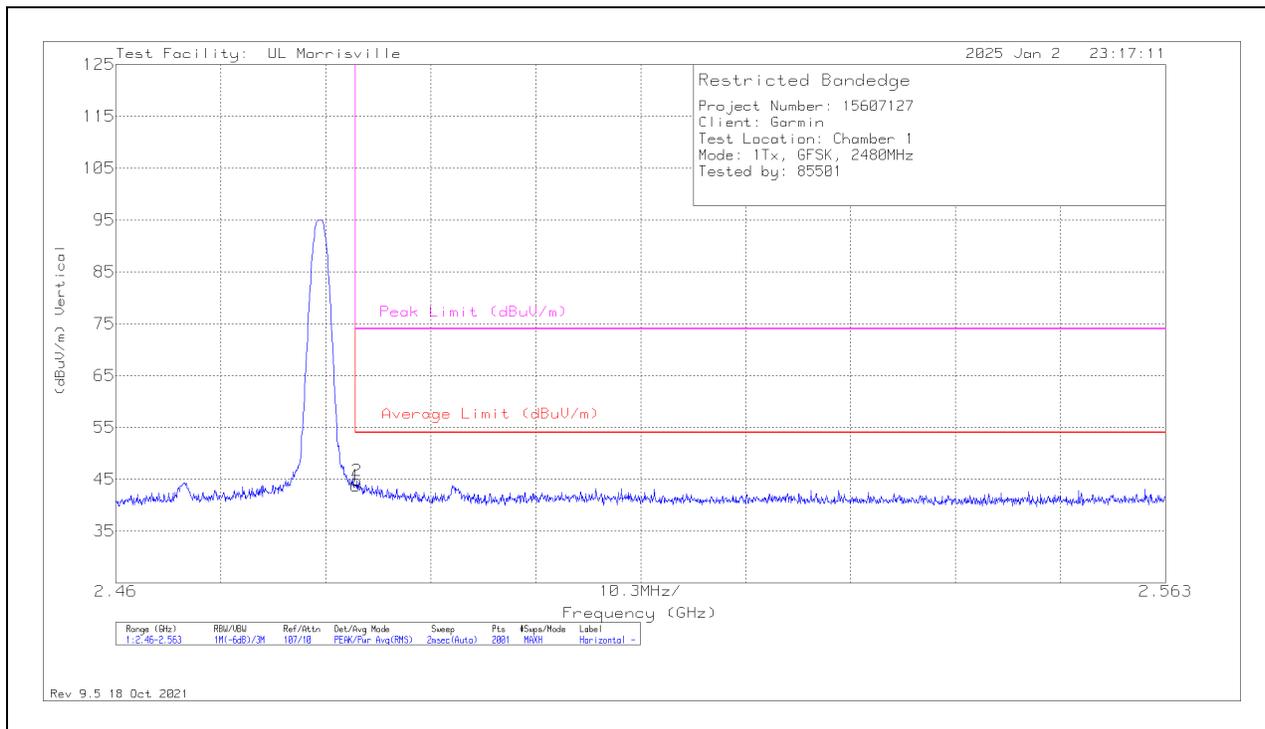
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 33.43 | Pk | 31.9 | -24 | 0 | 41.33 | - | - | 74 | -32.67 | 120 | 168 | V |
| | * ** 2.38996 | 33.43 | Pk | 31.9 | -24 | -24 | 17.33 | 54 | -36.67 | - | - | 120 | 168 | V |
| 2 | * ** 2.38802 | 35.12 | Pk | 31.9 | -23.9 | 0 | 43.12 | - | - | 74 | -30.88 | 120 | 168 | V |
| | * ** 2.38802 | 35.12 | Pk | 31.9 | -23.9 | -24 | 19.12 | 54 | -34.88 | - | - | 120 | 168 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 35.17 | Pk | 32.2 | -23.7 | 0 | 43.67 | - | - | 74 | -30.33 | 333 | 332 | H |
| | * ** 2.48354 | 35.17 | Pk | 32.2 | -23.7 | -24 | 19.67 | 54 | -34.33 | - | - | 333 | 332 | H |
| 2 | * ** 2.48369 | 36.21 | Pk | 32.2 | -23.7 | 0 | 44.71 | - | - | 74 | -29.29 | 333 | 332 | H |
| | * ** 2.48369 | 36.21 | Pk | 32.2 | -23.7 | -24 | 20.71 | 54 | -33.29 | - | - | 333 | 332 | H |

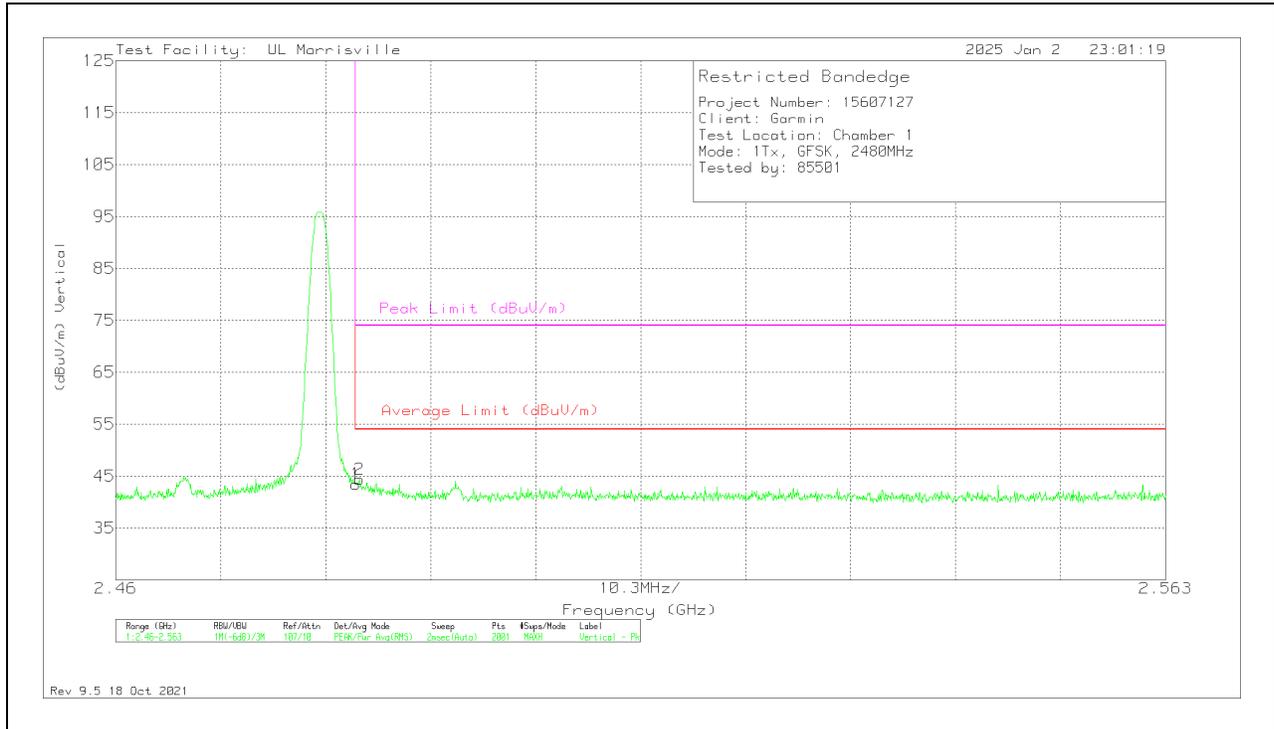
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



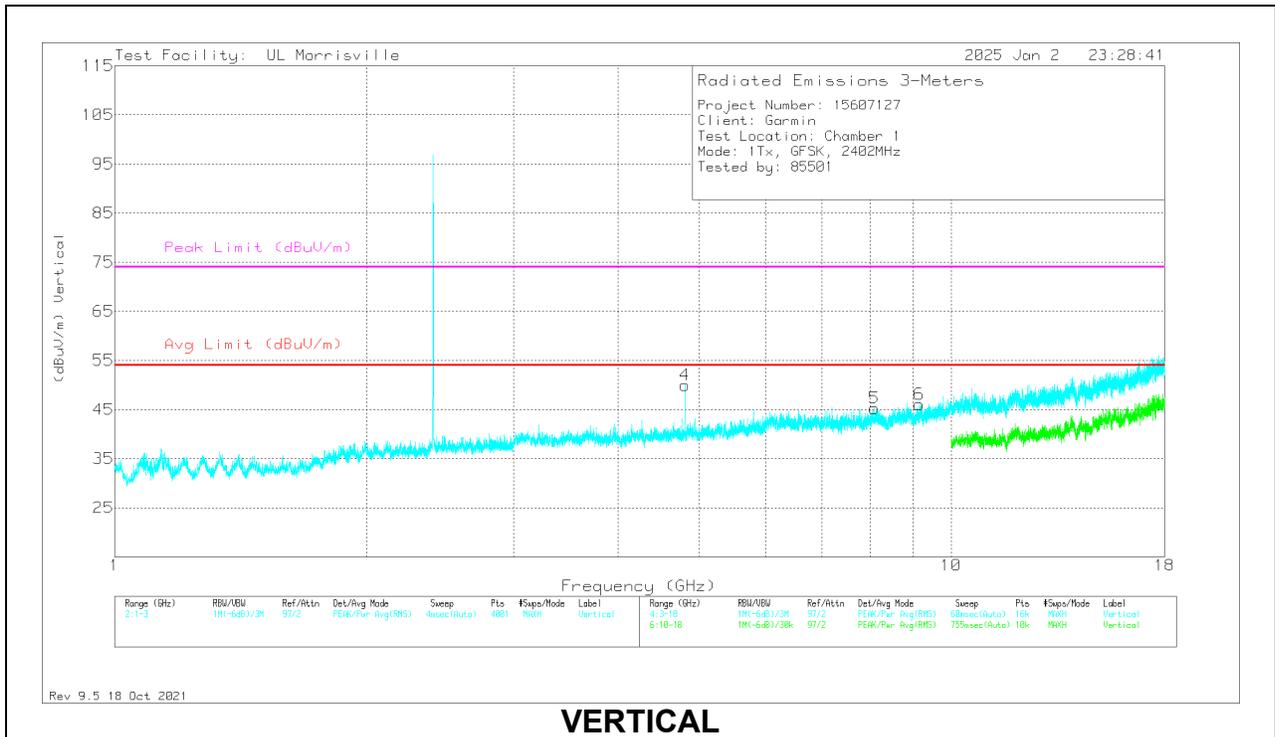
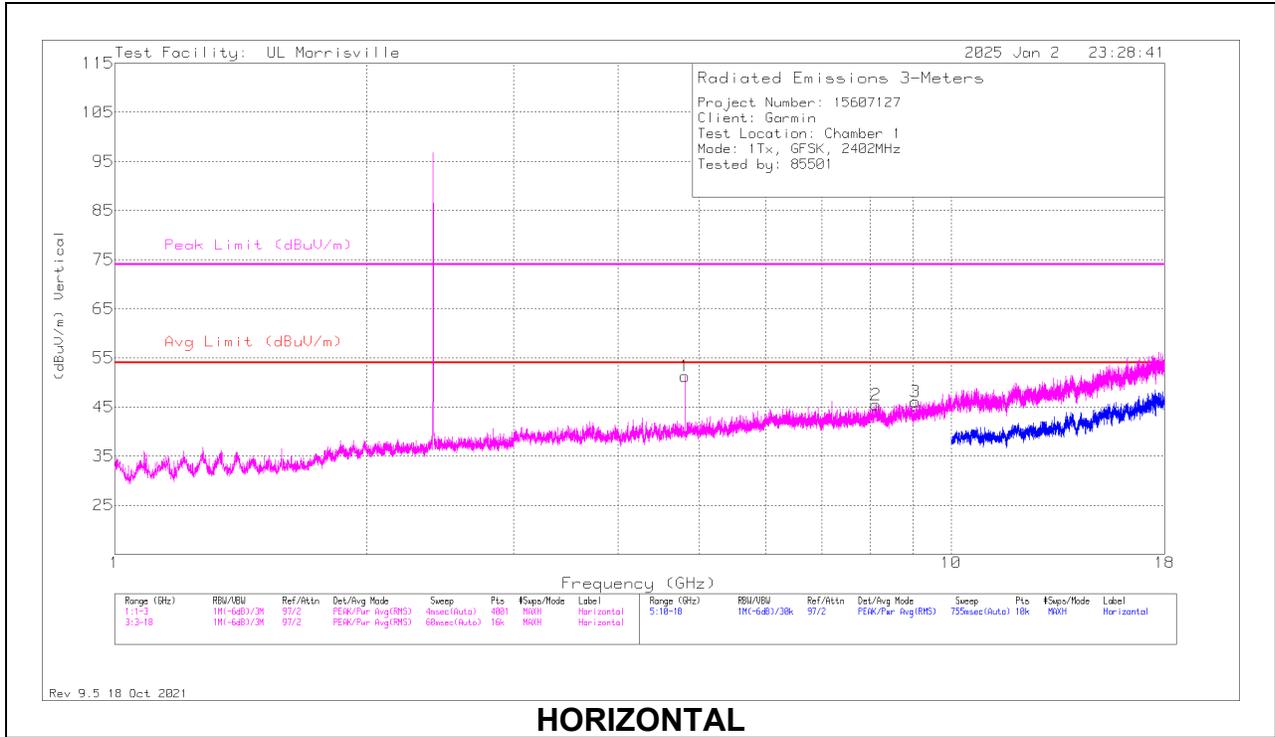
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 34.93 | Pk | 32.2 | -23.7 | 0 | 43.43 | - | - | 74 | -30.57 | 221 | 341 | V |
| | * ** 2.48354 | 34.93 | Pk | 32.2 | -23.7 | -24 | 19.43 | 54 | -34.57 | - | - | 221 | 341 | V |
| 2 | * ** 2.4839 | 35.85 | Pk | 32.2 | -23.7 | 0 | 44.35 | - | - | 74 | -29.65 | 221 | 341 | V |
| | * ** 2.4839 | 35.85 | Pk | 32.2 | -23.7 | -24 | 20.35 | 54 | -33.65 | - | - | 221 | 341 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.80372 | 63.96 | PK2 | 33.9 | -45.6 | 0 | 52.26 | - | - | 74 | -21.74 | 165 | 155 | H |
| | *** 4.80372 | 63.96 | PK2 | 33.9 | -45.6 | -24 | 28.26 | 54 | -25.74 | - | - | 165 | 155 | H |
| 2 | *** 8.13188 | 50.64 | Pk | 35.9 | -41.1 | 0 | 45.44 | 54 | -8.56 | 74 | -28.56 | 0-360 | 200 | H |
| 3 | *** 9.06469 | 50.67 | Pk | 35.8 | -40.4 | 0 | 46.07 | 54 | -7.93 | 74 | -27.93 | 0-360 | 101 | H |
| 4 | *** 4.80363 | 58.15 | PK2 | 33.9 | -45.6 | 0 | 46.45 | - | - | 74 | -27.55 | 204 | 169 | V |
| | *** 4.80363 | 58.15 | PK2 | 33.9 | -45.6 | -24 | 22.45 | 54 | -31.55 | - | - | 204 | 169 | V |
| 5 | *** 8.1 | 50.66 | Pk | 35.9 | -41.3 | 0 | 45.26 | 54 | -8.74 | 74 | -28.74 | 0-360 | 200 | V |
| 6 | *** 9.15656 | 50.33 | Pk | 35.9 | -40.2 | 0 | 46.03 | 54 | -7.97 | 74 | -27.97 | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

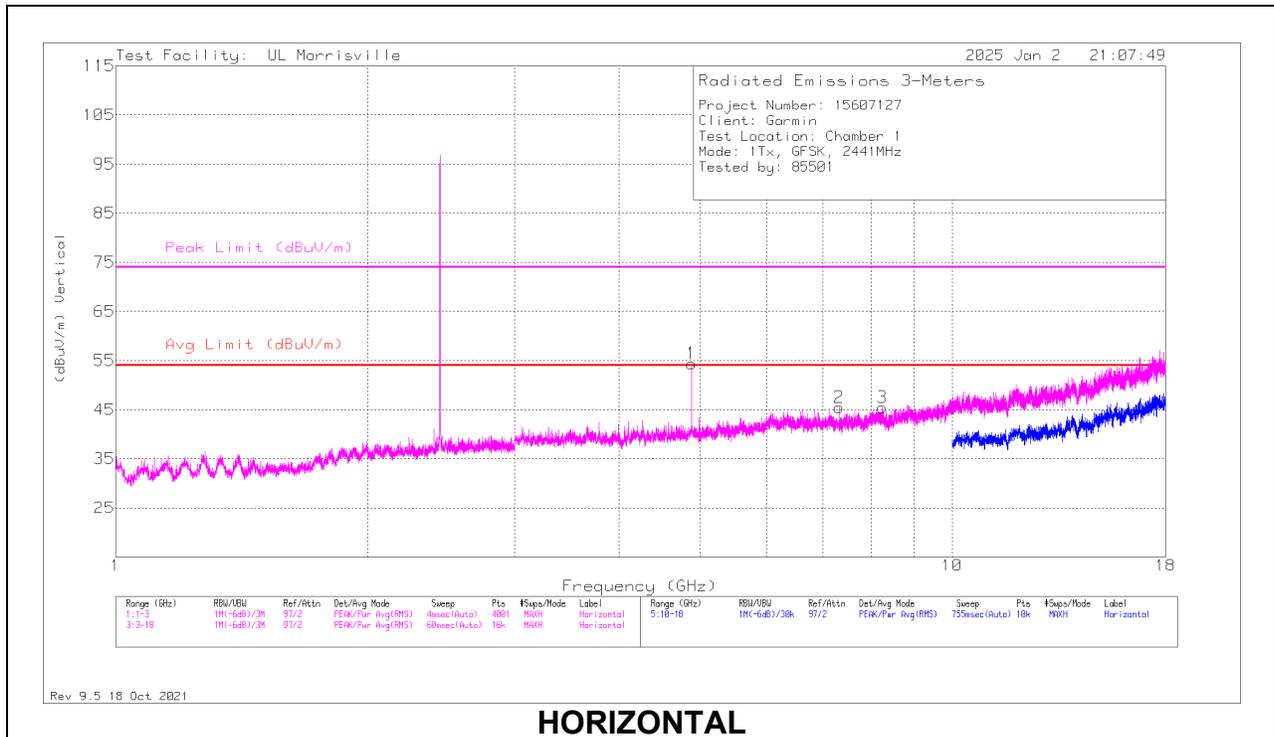
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

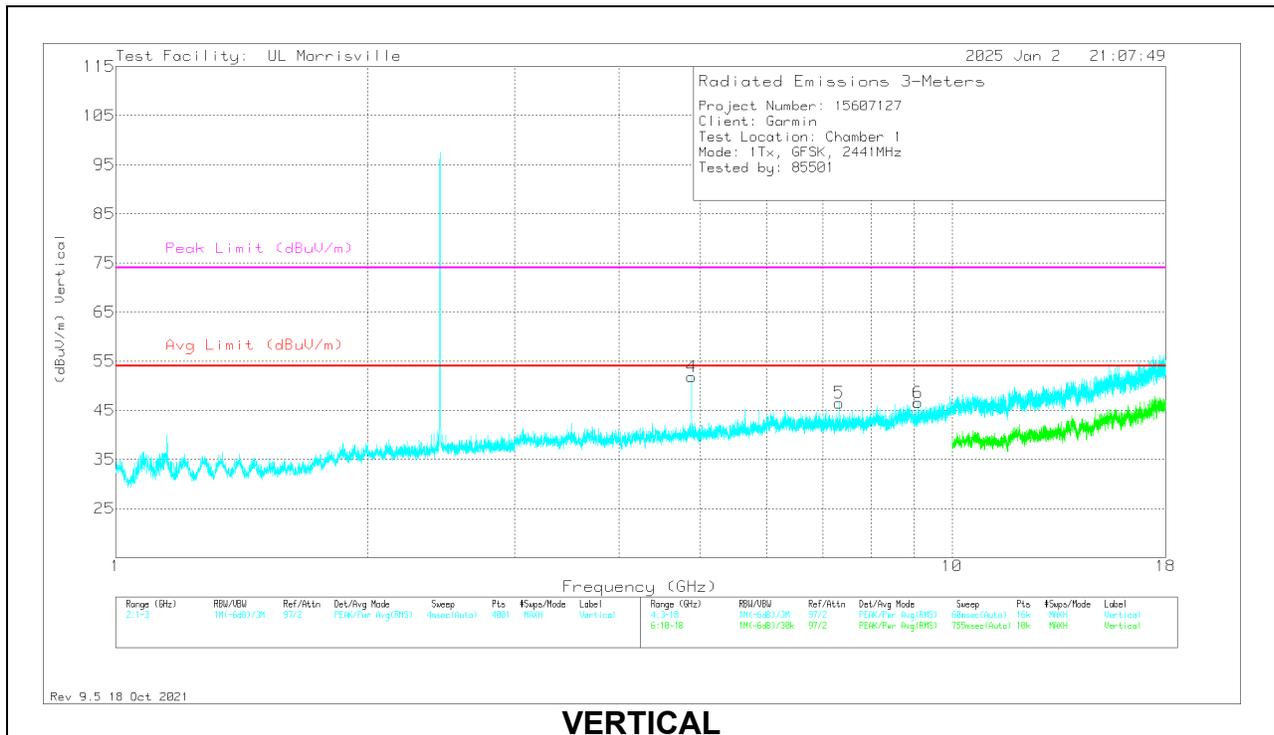
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.88228 | 66.87 | PK2 | 34 | -44.7 | 0 | 56.17 | - | - | 74 | -17.83 | 163 | 152 | H |
| | *** 4.88228 | 66.87 | PK2 | 34 | -44.7 | -24 | 32.17 | 54 | -21.83 | - | - | 163 | 152 | H |
| 2 | *** 7.32281 | 51.96 | Pk | 35.4 | -41.9 | 0 | 45.46 | 54 | -8.54 | 74 | -28.54 | 0-360 | 200 | H |
| 3 | *** 8.25094 | 50.36 | Pk | 35.9 | -40.8 | 0 | 45.46 | 54 | -8.54 | 74 | -28.54 | 0-360 | 101 | H |
| 4 | *** 4.88172 | 65.71 | PK2 | 34 | -44.7 | 0 | 55.01 | - | - | 74 | -18.99 | 198 | 173 | V |
| | *** 4.88172 | 65.71 | PK2 | 34 | -44.7 | -24 | 31.01 | 54 | -22.99 | - | - | 198 | 173 | V |
| 5 | *** 7.32281 | 53 | Pk | 35.4 | -41.9 | 0 | 46.5 | 54 | -7.5 | 74 | -27.5 | 0-360 | 101 | V |
| 6 | *** 9.10688 | 50.88 | Pk | 35.9 | -40.2 | 0 | 46.58 | 54 | -7.42 | 74 | -27.42 | 0-360 | 101 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

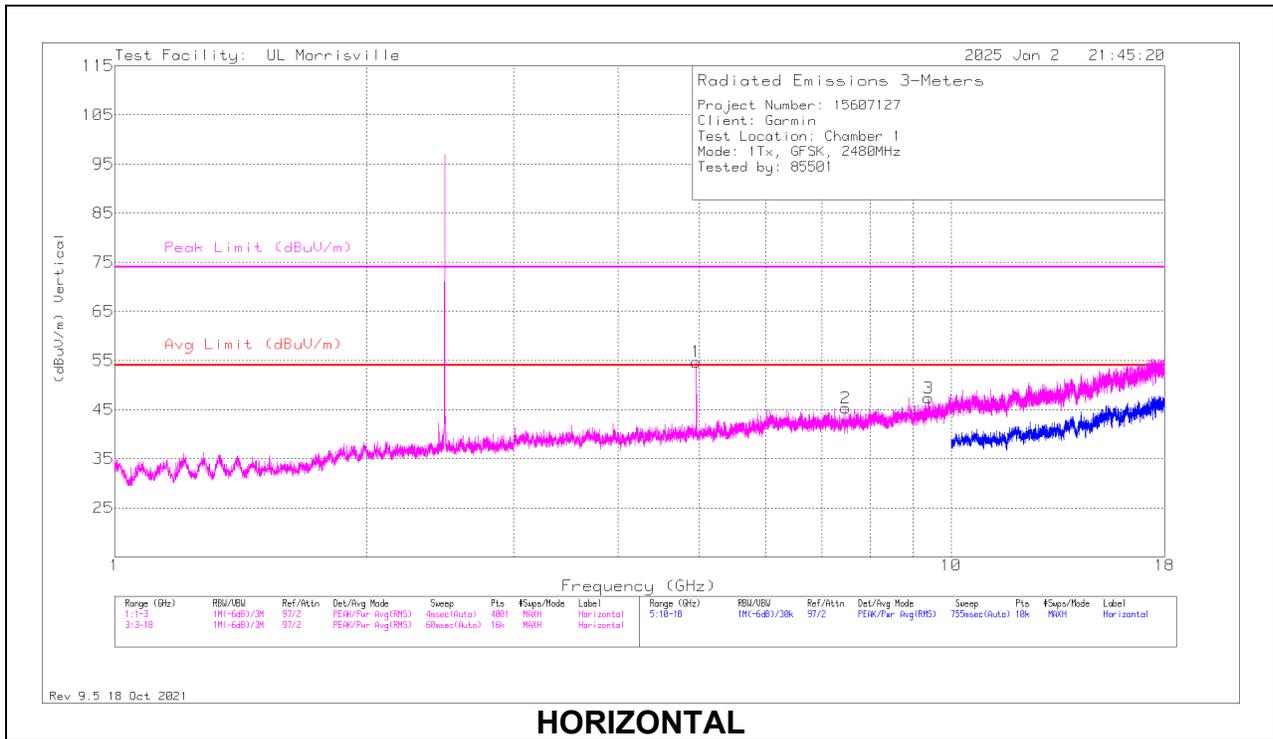
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

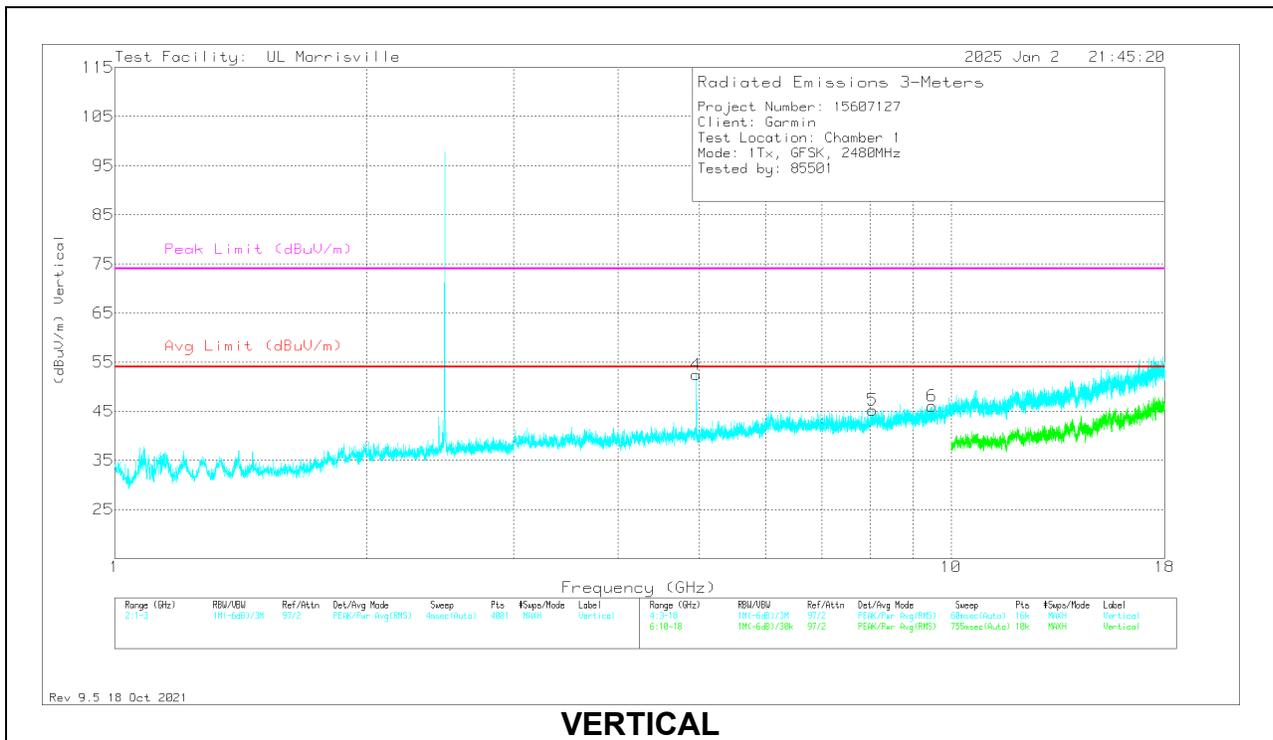
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.96027 | 67.34 | PK2 | 34.2 | -44.8 | 0 | 56.74 | - | - | 74 | -17.26 | 167 | 110 | H |
| | *** 4.96027 | 67.34 | PK2 | 34.2 | -44.8 | -24 | 32.74 | 54 | -21.26 | - | - | 167 | 110 | H |
| 2 | *** 7.4775 | 50.99 | Pk | 35.5 | -41.2 | 0 | 45.29 | 54 | -8.71 | 74 | -28.71 | 0-360 | 199 | H |
| 3 | *** 9.39563 | 51.13 | Pk | 36.3 | -40.1 | 0 | 47.33 | 54 | -6.67 | 74 | -26.67 | 0-360 | 101 | H |
| 4 | *** 4.96034 | 64.23 | PK2 | 34.2 | -44.8 | 0 | 53.63 | - | - | 74 | -20.37 | 163 | 262 | V |
| | *** 4.96034 | 64.23 | PK2 | 34.2 | -44.8 | -24 | 29.63 | 54 | -24.37 | - | - | 163 | 262 | V |
| 5 | ** 8.055 | 50.03 | Pk | 35.9 | -40.7 | 0 | 45.23 | 54 | -8.77 | 74 | -28.77 | 0-360 | 101 | V |
| 6 | *** 9.4875 | 50.02 | Pk | 36.4 | -40.4 | 0 | 46.02 | 54 | -7.98 | 74 | -27.98 | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

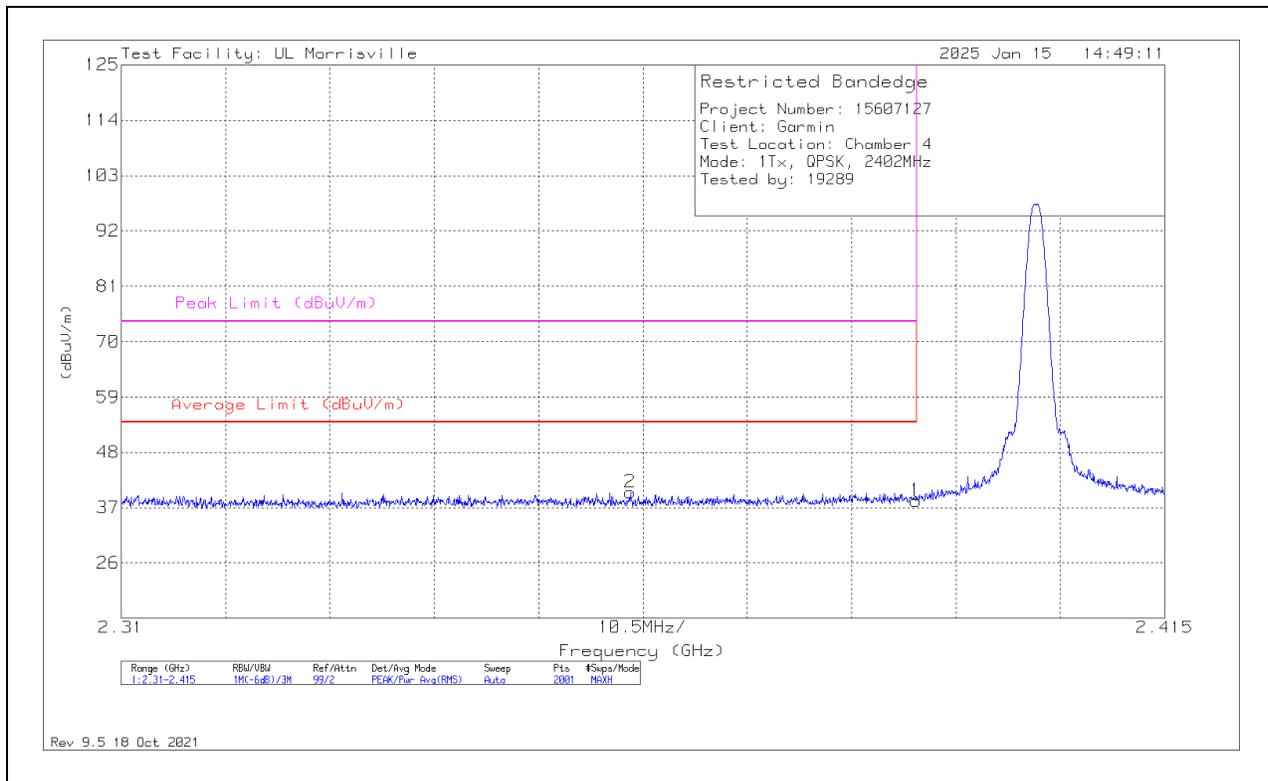
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

10.1.2. BLUETOOTH BASIC DATA RATE QPSK MODULATION

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 29.56 | Pk | 32 | -23.2 | 0 | 38.36 | - | - | 74 | -35.64 | 0 | 115 | H |
| | *** 2.38996 | 29.56 | Pk | 32 | -23.2 | -24 | 14.36 | 54 | -39.64 | 74 | -35.64 | 0 | 115 | H |
| 2 | *** 2.36124 | 31.14 | Pk | 31.9 | -23 | 0 | 40.04 | - | - | 74 | -33.96 | 0 | 115 | H |
| | *** 2.36124 | 31.14 | Pk | 31.9 | -23 | -24 | 16.04 | 54 | -37.96 | 74 | -33.96 | 0 | 115 | H |

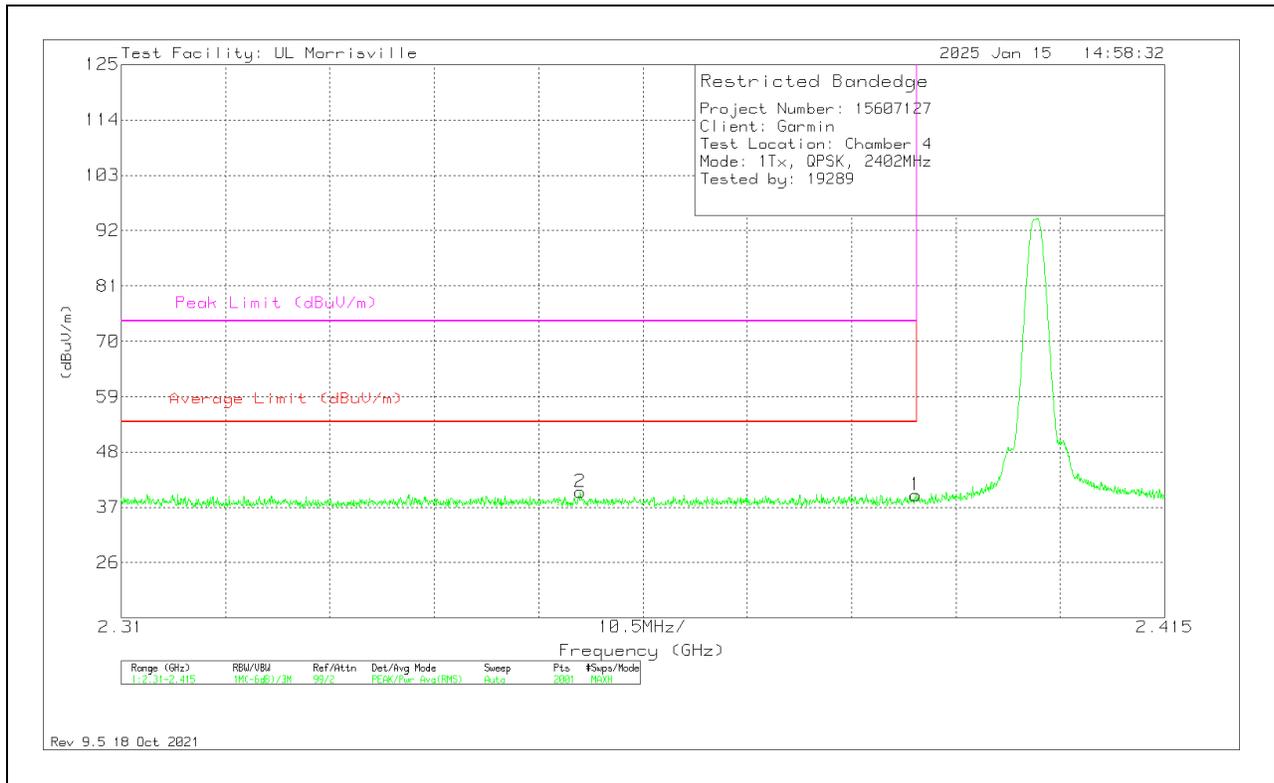
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



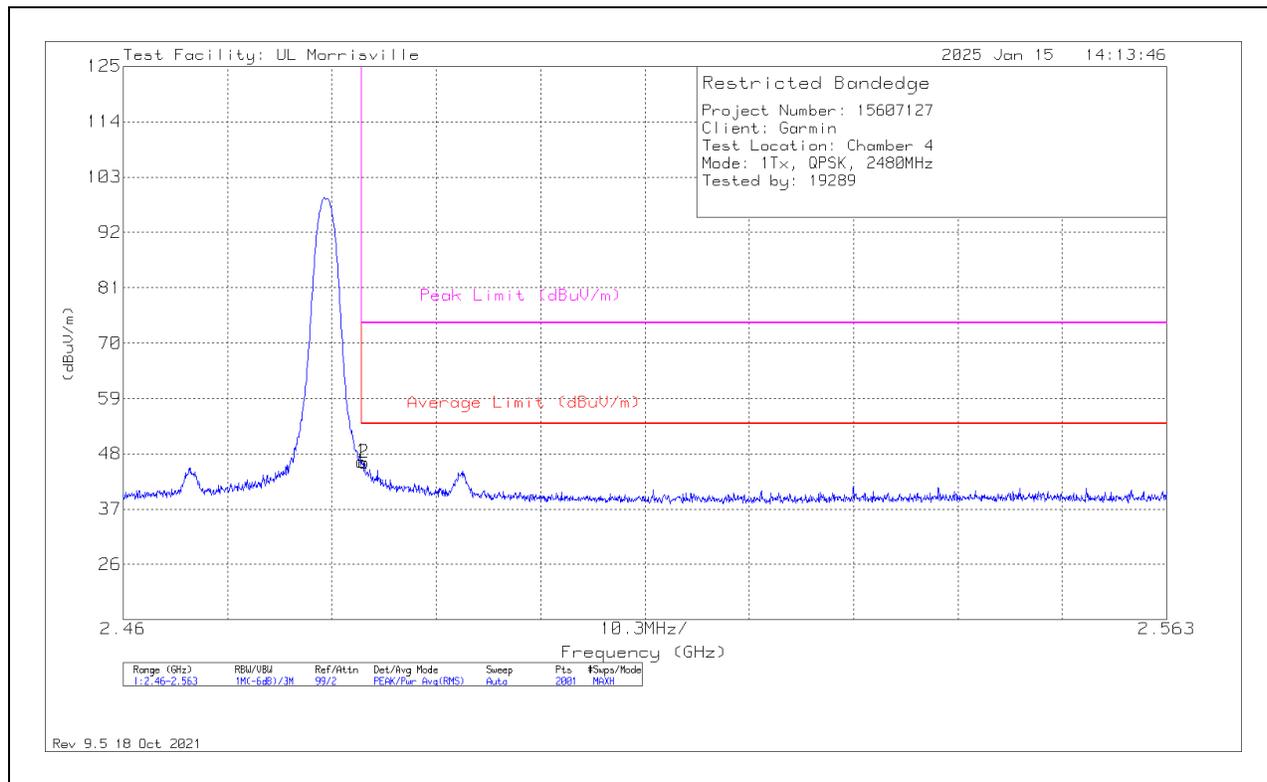
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.38996 | 30.69 | Pk | 32 | -23.2 | 0 | 39.49 | - | - | 74 | -34.51 | 22 | 106 | V |
| | * ** 2.38996 | 30.69 | Pk | 32 | -23.2 | -24 | 15.49 | 54 | -38.51 | 74 | -34.51 | 22 | 106 | V |
| 2 | * ** 2.3562 | 31.2 | Pk | 31.9 | -23 | 0 | 40.1 | - | - | 74 | -33.9 | 22 | 106 | V |
| | * ** 2.3562 | 31.2 | Pk | 31.9 | -23 | -24 | 16.1 | 54 | -37.9 | 74 | -33.9 | 22 | 106 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

BANEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 36.98 | Pk | 32.3 | -22.8 | 0 | 46.48 | - | - | 74 | -27.52 | 353 | 114 | H |
| | * ** 2.48354 | 36.98 | Pk | 32.3 | -22.8 | -24 | 22.48 | 54 | -31.52 | 74 | -27.52 | 353 | 114 | H |
| 2 | * ** 2.48379 | 36.8 | Pk | 32.3 | -22.8 | 0 | 46.3 | - | - | 74 | -27.7 | 353 | 114 | H |
| | * ** 2.48379 | 36.8 | Pk | 32.3 | -22.8 | -24 | 22.3 | 54 | -31.7 | 74 | -27.7 | 353 | 114 | H |

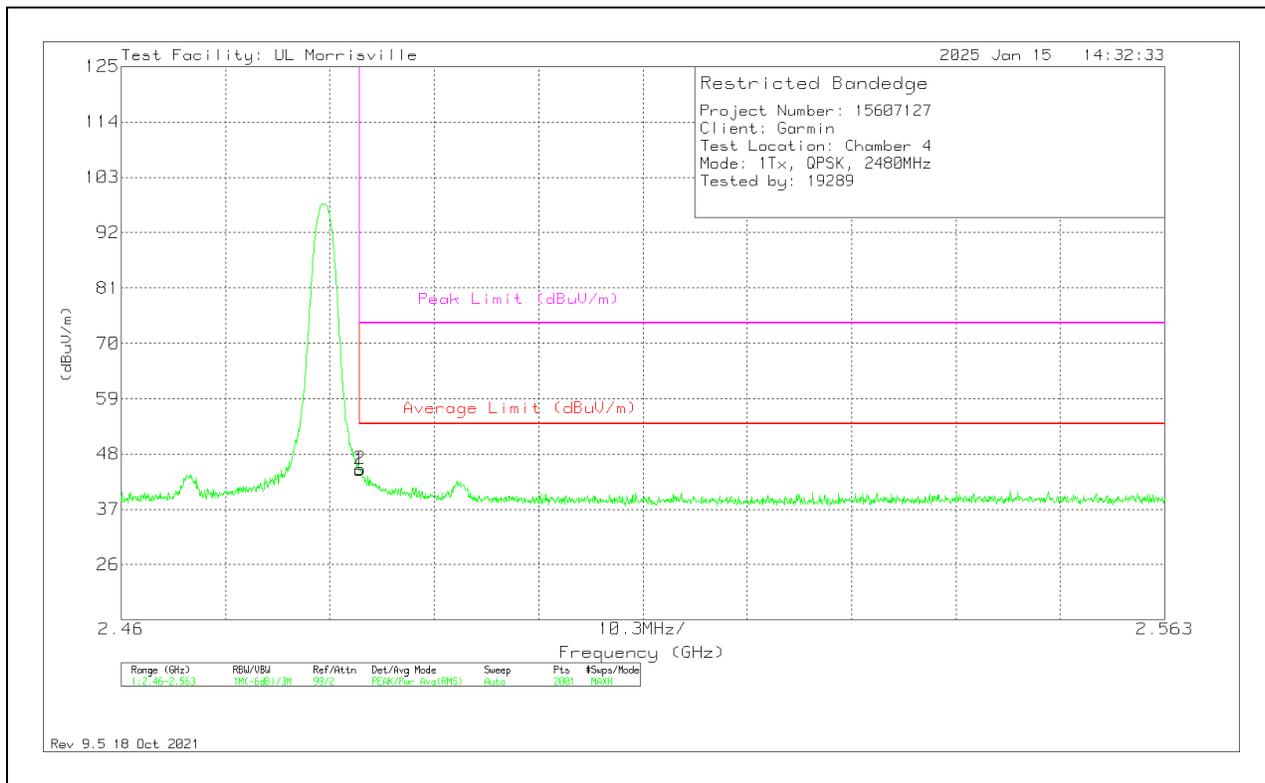
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.48354 | 35.3 | Pk | 32.3 | -22.8 | 0 | 44.8 | - | - | 74 | -29.2 | 196 | 131 | V |
| | *** 2.48354 | 35.3 | Pk | 32.3 | -22.8 | -24 | 20.8 | 54 | -33.2 | 74 | -29.2 | 196 | 131 | V |
| 2 | *** 2.48359 | 35.52 | Pk | 32.3 | -22.8 | 0 | 45.02 | - | - | 74 | -28.98 | 196 | 131 | V |
| | *** 2.48359 | 35.52 | Pk | 32.3 | -22.8 | -24 | 21.02 | 54 | -32.98 | 74 | -28.98 | 196 | 131 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

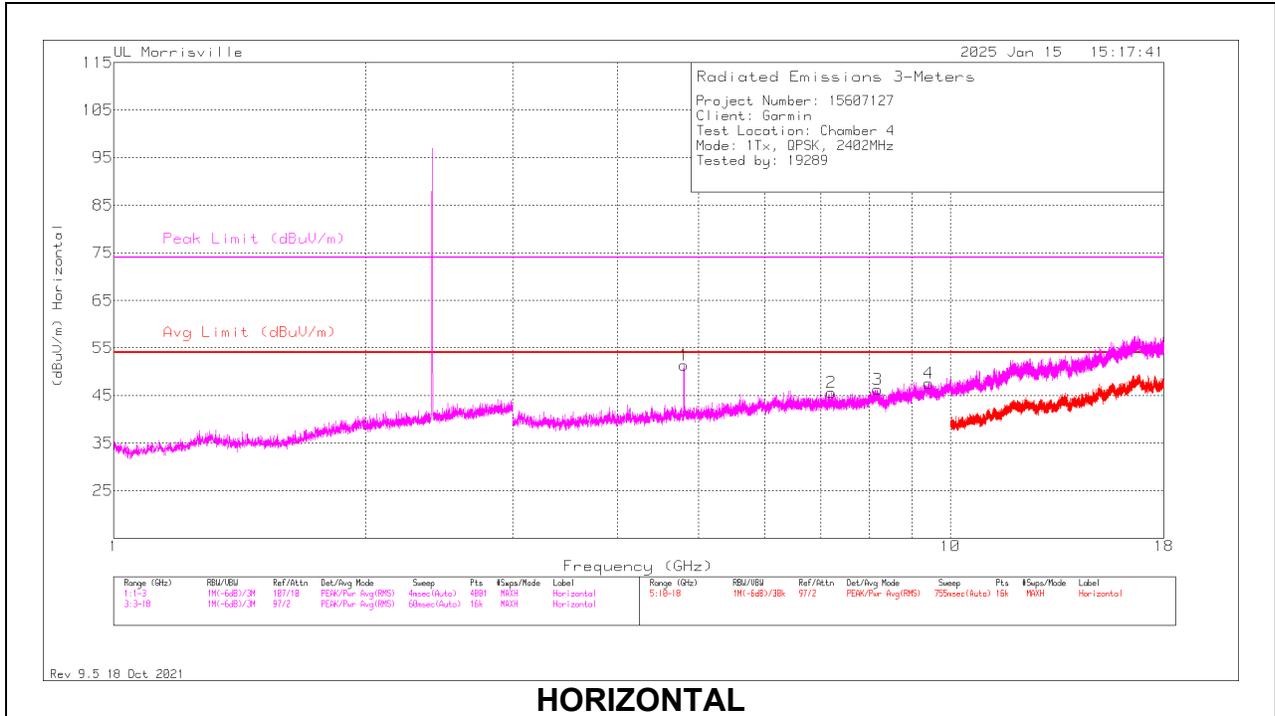
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

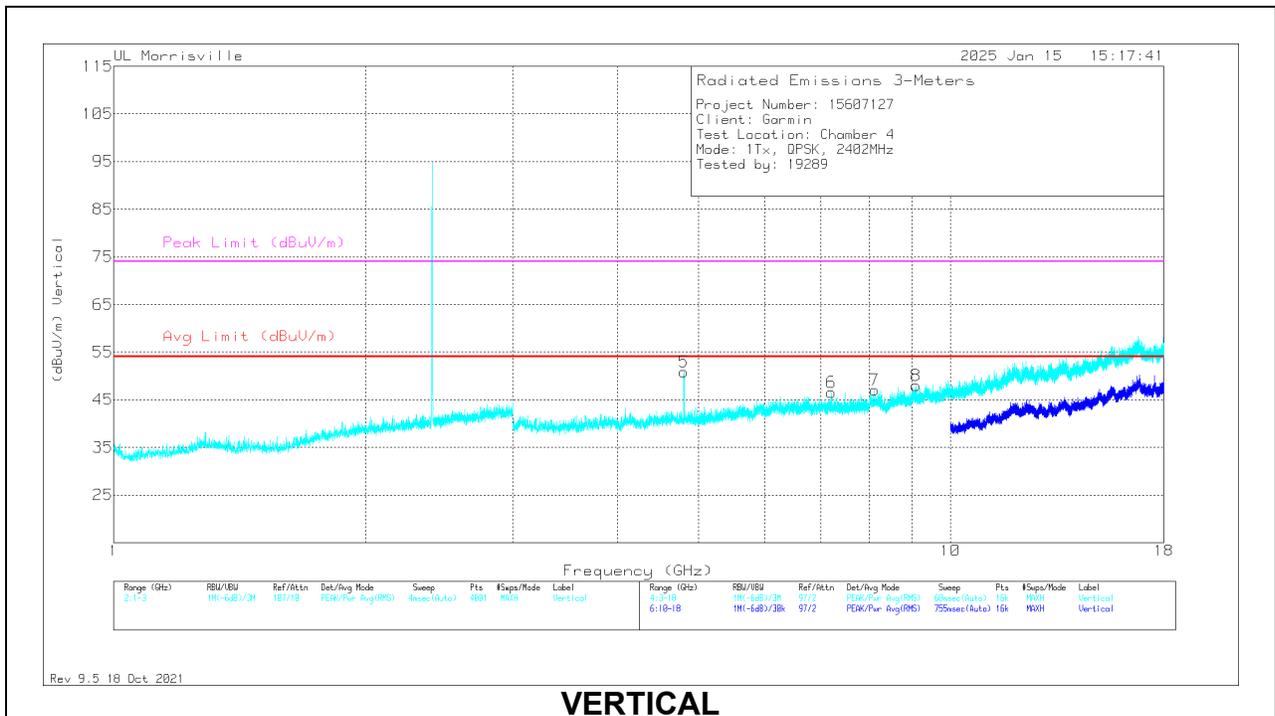
Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.80435 | 50.88 | PK2 | 34.1 | -31.4 | 0 | 53.58 | - | - | 74 | -20.42 | 68 | 114 | H |
| | * ** 4.80435 | 50.88 | PK2 | 34.1 | -31.4 | -24 | 29.58 | 54 | -24.42 | - | - | 68 | 114 | H |
| 3 | * ** 8.19188 | 36.65 | Pk | 35.8 | -26.2 | 0 | 46.25 | 54 | -7.75 | 74 | -27.75 | 0-360 | 100 | H |
| 4 | * ** 9.41625 | 36.12 | Pk | 36.6 | -25.1 | 0 | 47.62 | 54 | -6.38 | 74 | -26.38 | 0-360 | 100 | H |
| 5 | * ** 4.80363 | 48.27 | PK2 | 34.1 | -31.4 | 0 | 50.97 | - | - | 74 | -23.03 | 257 | 163 | V |
| | * ** 4.80363 | 48.27 | PK2 | 34.1 | -31.4 | -24 | 26.97 | 54 | -27.03 | - | - | 257 | 163 | V |
| 7 | * ** 8.1225 | 38.07 | Pk | 35.8 | -26.8 | 0 | 47.07 | 54 | -6.93 | 74 | -26.93 | 0-360 | 200 | V |
| 8 | * ** 9.10969 | 36.19 | Pk | 36.3 | -24.5 | 0 | 47.99 | 54 | -6.01 | 74 | -26.01 | 0-360 | 200 | V |
| 6 | 7.20563 | 38.63 | Pk | 35.6 | -27.7 | 0 | 46.53 | - | - | - | - | 0-360 | 200 | V |
| 2 | 7.20656 | 37.87 | Pk | 35.6 | -27.8 | 0 | 45.67 | - | - | - | - | 0-360 | 100 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

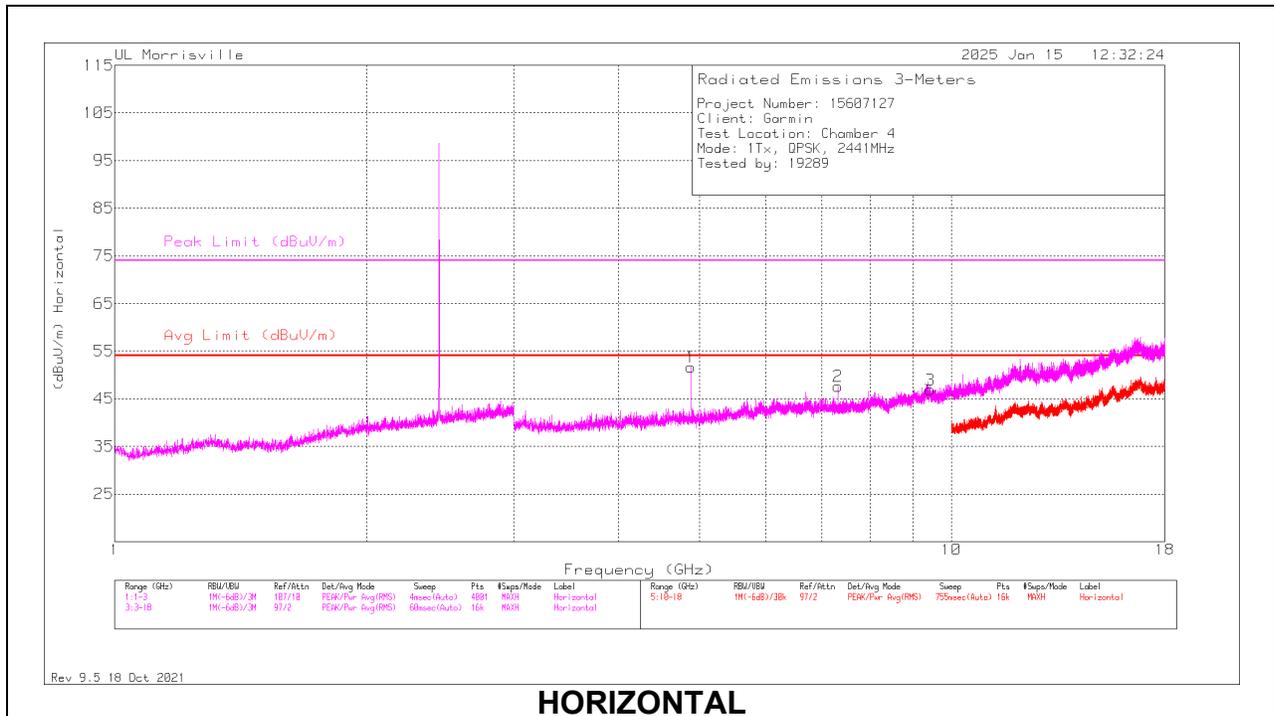
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

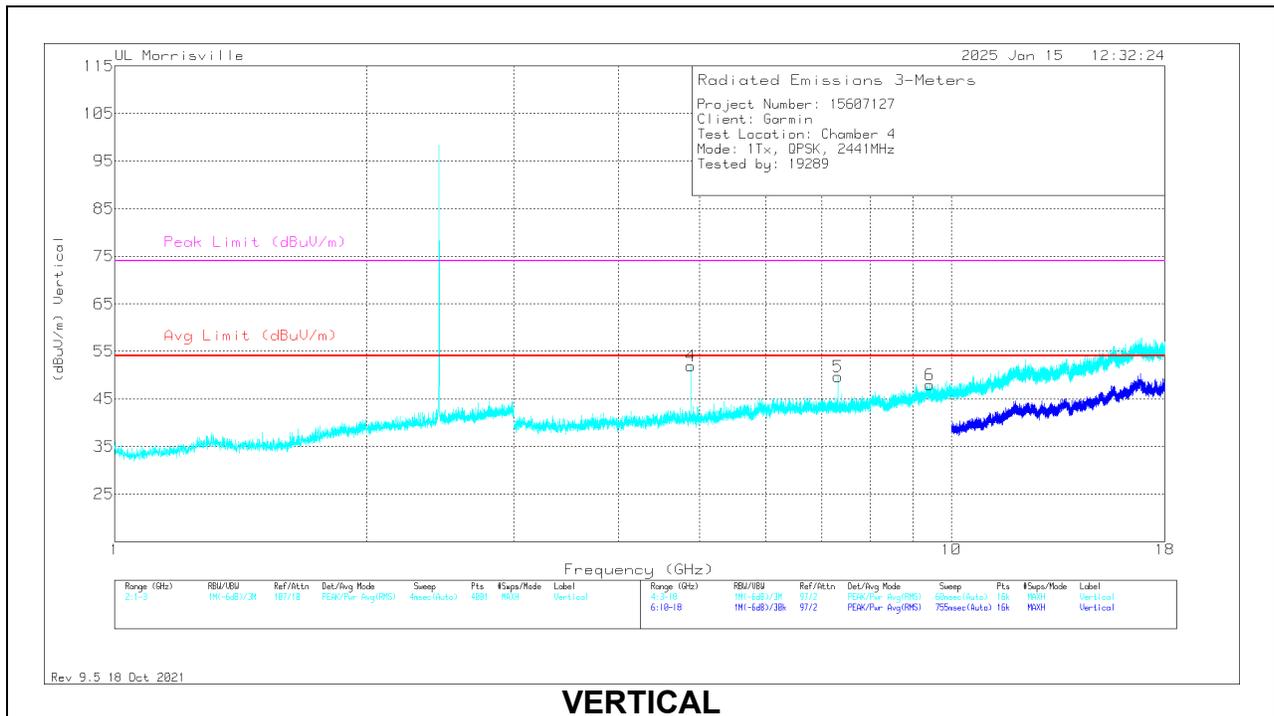
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.88186 | 52.18 | PK2 | 34 | -31 | 0 | 55.18 | - | - | 74 | -18.82 | 227 | 138 | H |
| | *** 4.88186 | 52.18 | PK2 | 34 | -31 | -24 | 31.18 | 54 | -22.82 | - | - | 227 | 138 | H |
| 2 | *** 7.32375 | 39.69 | Pk | 35.6 | -27.7 | 0 | 47.59 | 54 | -6.41 | 74 | -26.41 | 0-360 | 100 | H |
| 3 | *** 9.44344 | 35.27 | PK | 36.7 | -25.1 | 0 | 46.87 | 54 | -7.13 | 74 | -27.13 | 0-360 | 100 | H |
| 4 | *** 4.88179 | 49.41 | PK2 | 34 | -31 | 0 | 52.41 | - | - | 74 | -21.59 | 258 | 185 | V |
| | *** 4.88179 | 49.41 | PK2 | 34 | -31 | -24 | 28.41 | 54 | -25.59 | - | - | 258 | 185 | V |
| 5 | *** 7.3234 | 43.71 | PK2 | 35.6 | -27.7 | 0 | 51.61 | - | - | 74 | -22.39 | 4 | 124 | V |
| | *** 7.3234 | 43.71 | PK2 | 35.6 | -27.7 | -24 | 27.61 | 54 | -26.39 | - | - | 4 | 124 | V |
| 6 | *** 9.42978 | 36.9 | PK2 | 36.7 | -25.1 | 0 | 48.5 | - | - | 74 | -25.5 | 77 | 170 | V |
| | *** 9.42978 | 36.9 | PK2 | 36.7 | -25.1 | -24 | 24.5 | 54 | -29.5 | - | - | 77 | 170 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

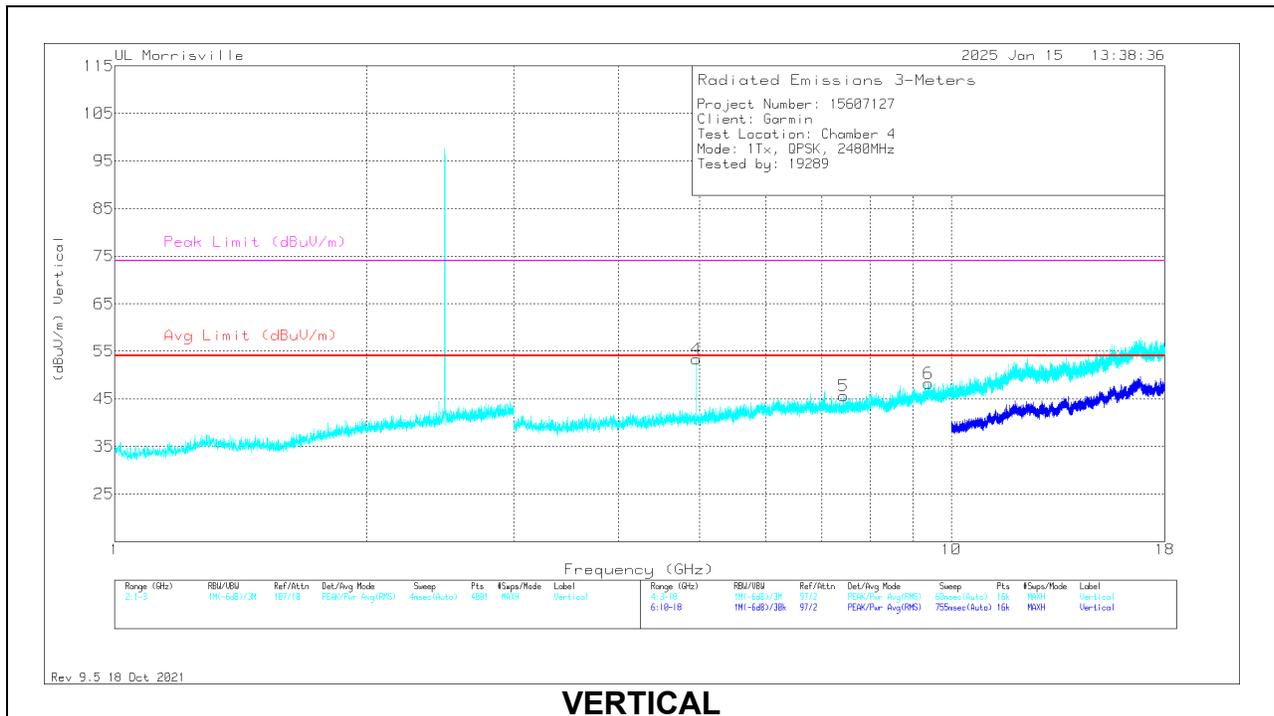
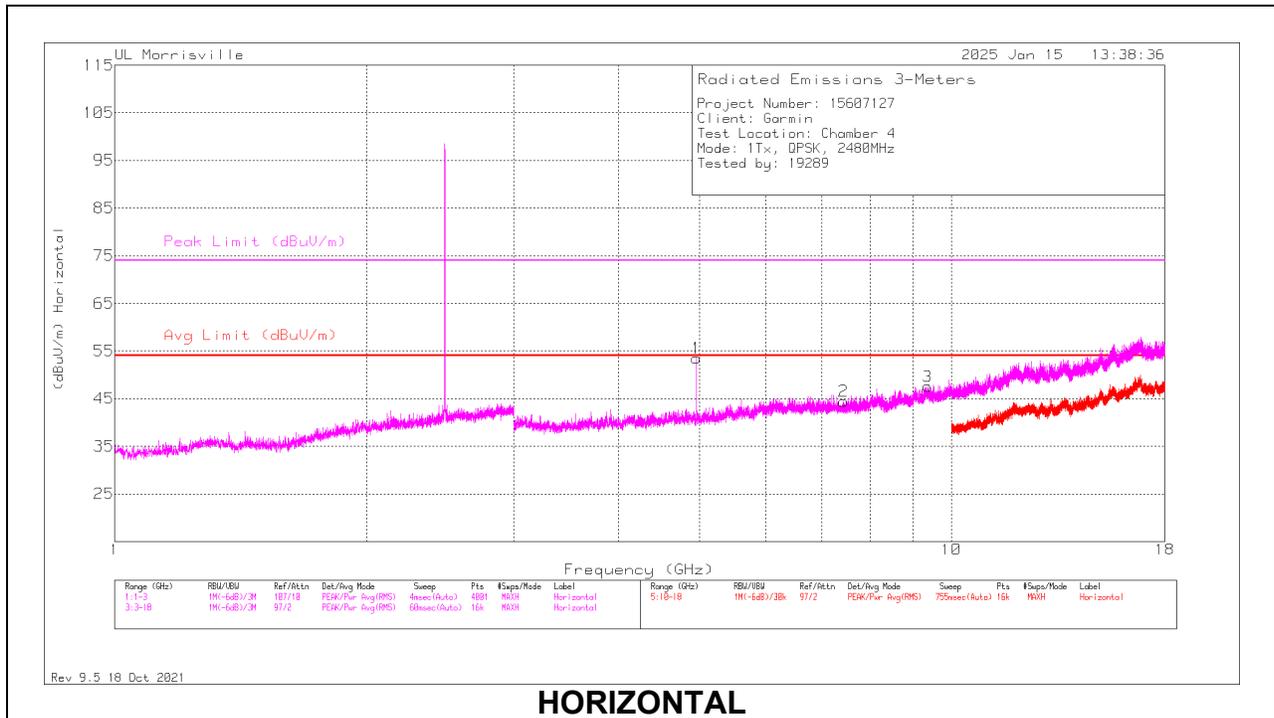
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HIGH CHANNEL RESULTS



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 89509 ACF (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|------------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.95981 | 52.38 | PK2 | 33.9 | -30.8 | 0 | 55.48 | - | - | 74 | -18.52 | 215 | 119 | H |
| | * ** 4.95981 | 52.38 | PK2 | 33.9 | -30.8 | -24 | 31.48 | 54 | -22.52 | - | - | 215 | 119 | H |
| 2 | * ** 7.44094 | 36.68 | Pk | 35.7 | -27.9 | 0 | 44.48 | 54 | -9.52 | 74 | -29.52 | 0-360 | 100 | H |
| 3 | * ** 9.36656 | 35.63 | Pk | 36.5 | -24.6 | 0 | 47.53 | 54 | -6.47 | 74 | -26.47 | 0-360 | 100 | H |
| 4 | * ** 4.96029 | 52.45 | PK2 | 33.9 | -30.8 | 0 | 55.55 | - | - | 74 | -18.45 | 229 | 110 | V |
| | * ** 4.96029 | 52.45 | PK2 | 33.9 | -30.8 | -24 | 31.55 | 54 | -22.45 | - | - | 229 | 110 | V |
| 5 | * ** 7.43906 | 37.79 | Pk | 35.7 | -27.9 | 0 | 45.59 | 54 | -8.41 | 74 | -28.41 | 0-360 | 200 | V |
| 6 | * ** 9.39351 | 37.05 | PK2 | 36.6 | -24.8 | 0 | 48.85 | - | - | 74 | -25.15 | 60 | 281 | V |
| | * ** 9.39351 | 37.05 | PK2 | 36.6 | -24.8 | -24 | 24.85 | 54 | -29.15 | - | - | 60 | 281 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

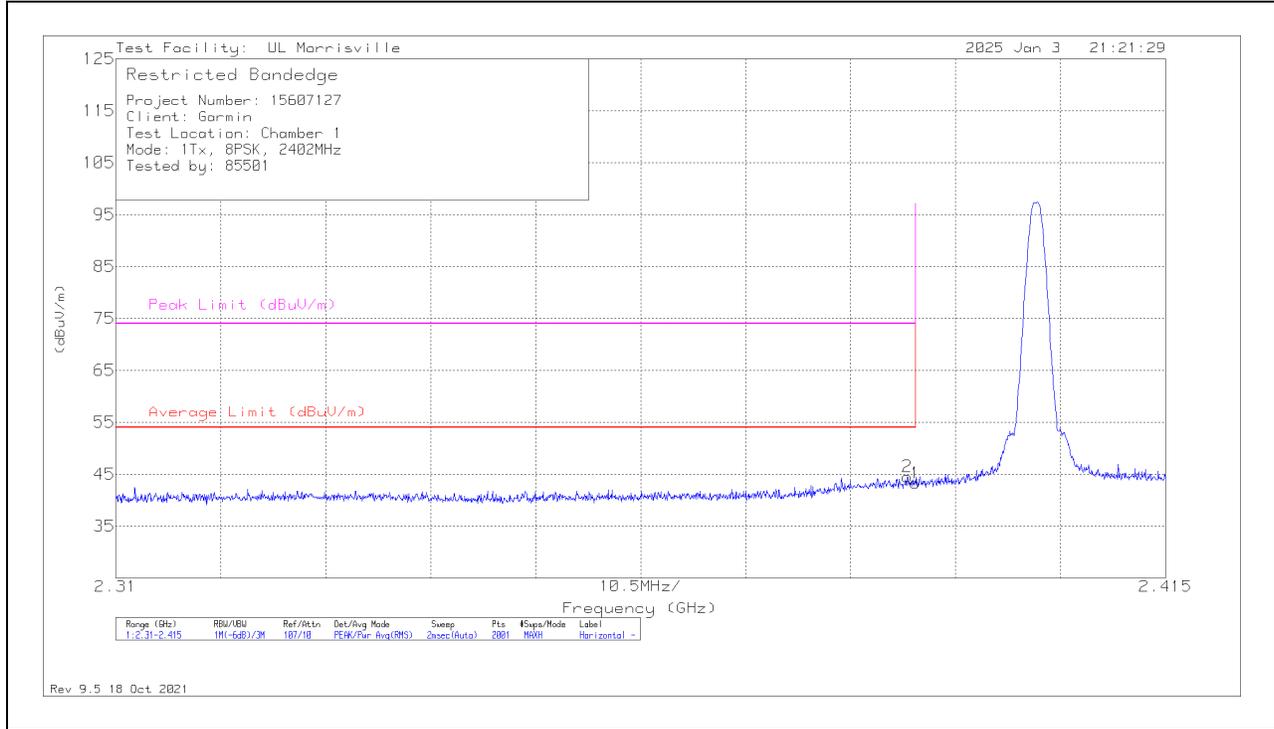
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

10.1.3. BLUETOOTH ENHANCED DATA RATE 8PSK MODULATION

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 35.39 | Pk | 31.9 | -24 | 0 | 43.29 | - | - | 74 | -30.71 | 306 | 156 | H |
| | *** 2.38996 | 35.39 | Pk | 31.9 | -24 | -24 | 19.29 | 54 | -34.71 | - | - | 306 | 156 | H |
| 2 | *** 2.38917 | 36.62 | Pk | 31.9 | -24 | 0 | 44.52 | - | - | 74 | -29.48 | 306 | 156 | H |
| | *** 2.38917 | 36.62 | Pk | 31.9 | -24 | -24 | 20.52 | 54 | -33.48 | - | - | 306 | 156 | H |

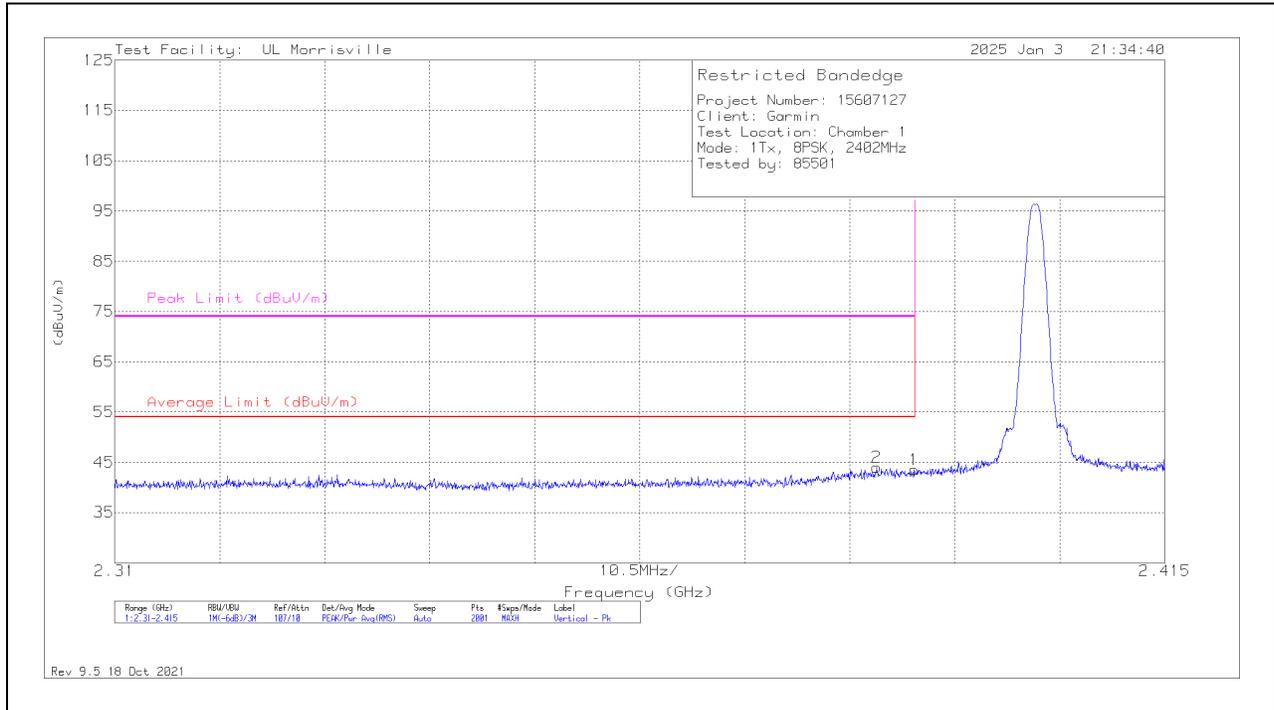
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



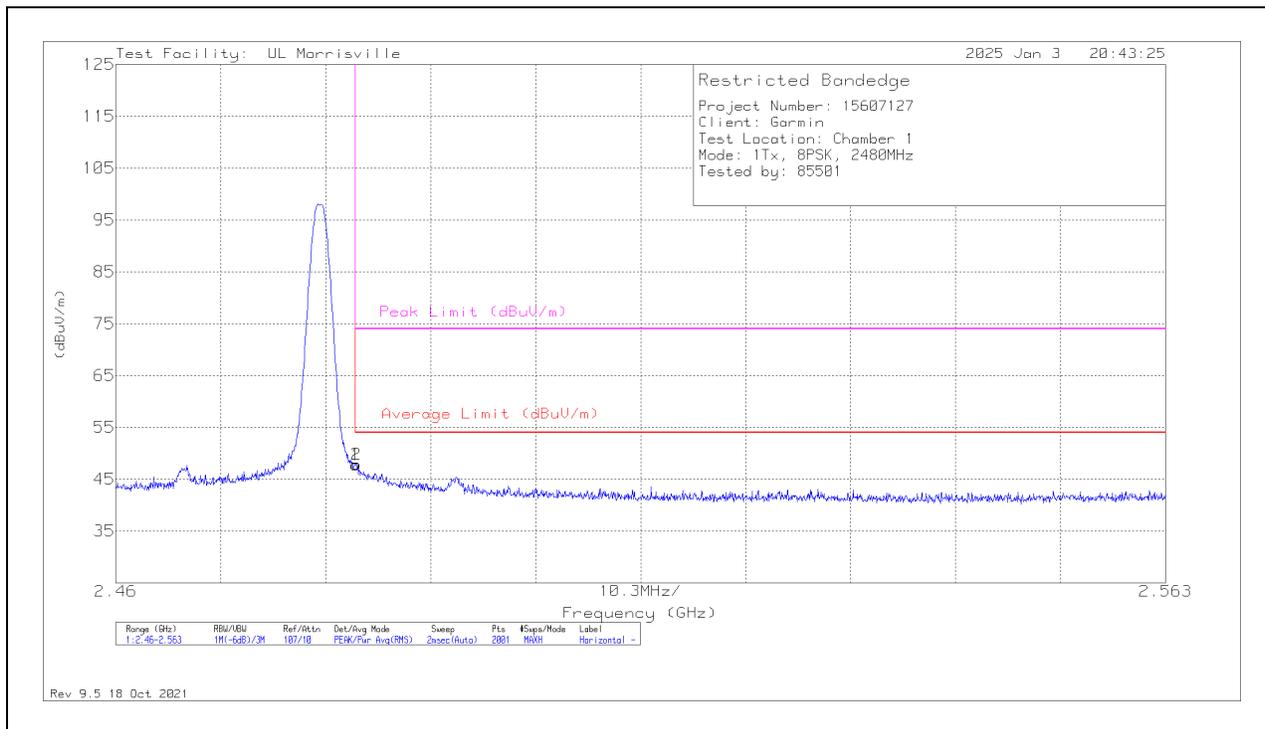
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 2.38996 | 35.63 | Pk | 31.9 | -24 | 0 | 43.53 | - | - | 74 | -30.47 | 137 | 155 | V |
| | *** 2.38996 | 35.63 | Pk | 31.9 | -24 | -24 | 19.53 | 54 | -34.47 | - | - | 137 | 155 | V |
| 2 | *** 2.38618 | 36.04 | Pk | 31.9 | -23.9 | 0 | 44.04 | - | - | 74 | -29.96 | 137 | 155 | V |
| | *** 2.38618 | 36.04 | Pk | 31.9 | -23.9 | -24 | 20.04 | 54 | -33.96 | - | - | 137 | 155 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT

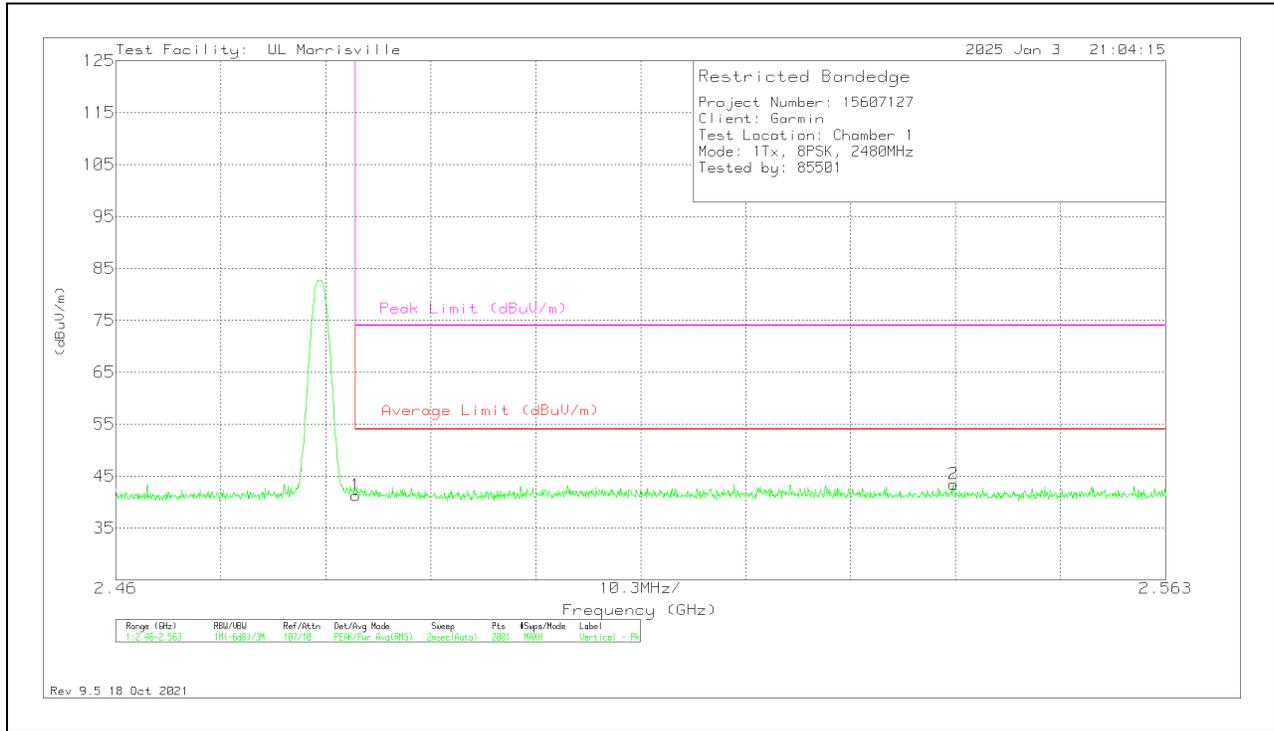


| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 39.23 | Pk | 32.2 | -23.7 | 0 | 47.73 | - | - | 74 | -26.27 | 256 | 361 | H |
| | * ** 2.48354 | 39.23 | Pk | 32.2 | -23.7 | -24 | 23.73 | 54 | -30.27 | - | - | 256 | 361 | H |
| 2 | * ** 2.48359 | 39.37 | Pk | 32.2 | -23.7 | 0 | 47.87 | - | - | 74 | -26.13 | 256 | 361 | H |
| | * ** 2.48359 | 39.37 | Pk | 32.2 | -23.7 | -24 | 23.87 | 54 | -30.13 | - | - | 256 | 361 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

VERTICAL RESULT



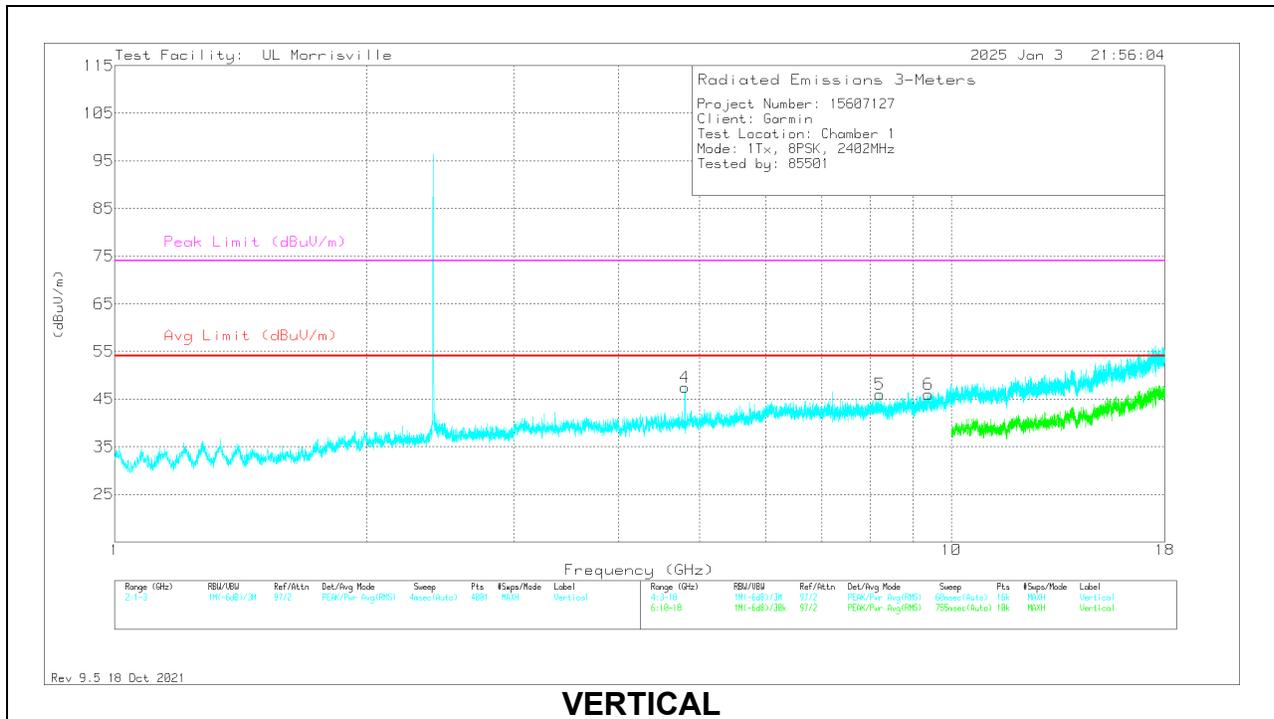
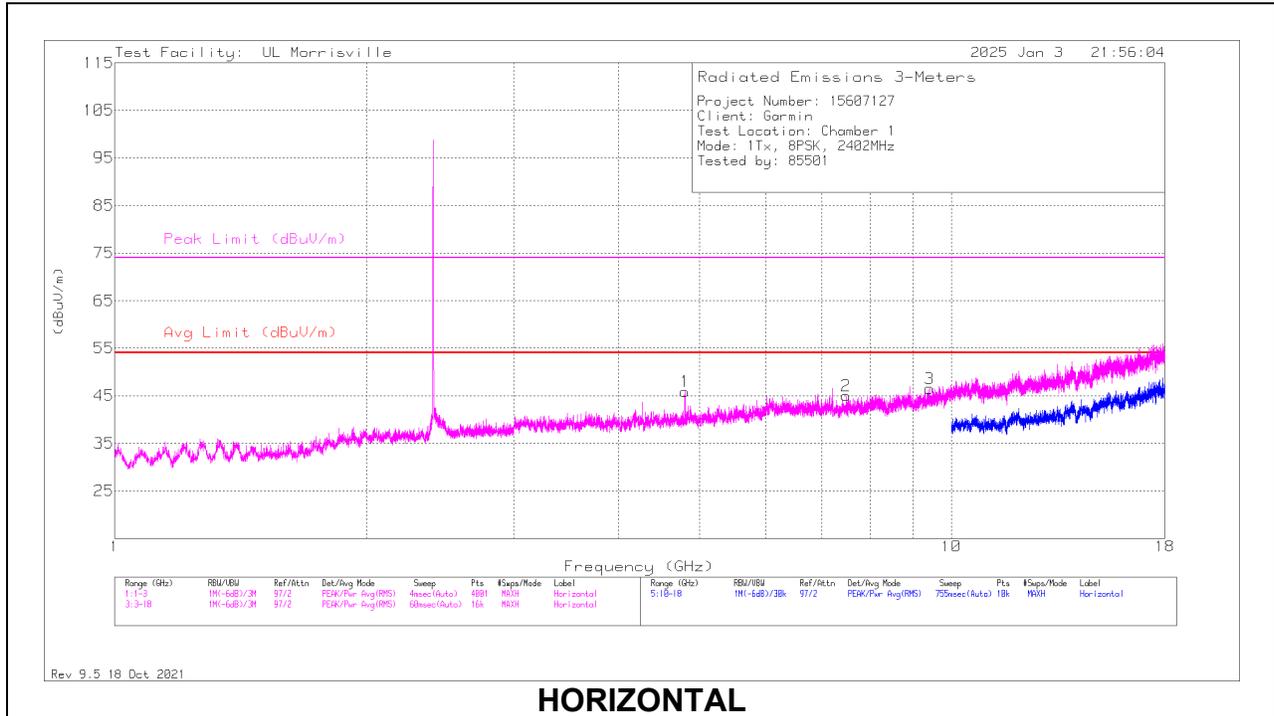
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|------------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 2.48354 | 32.78 | Pk | 32.2 | -23.7 | 0 | 41.28 | - | - | 74 | -32.72 | 242 | 124 | V |
| | * ** 2.48354 | 32.78 | Pk | 32.2 | -23.7 | -24 | 17.28 | 54 | -36.72 | - | - | 242 | 124 | V |
| 2 | ** 2.54219 | 35.37 | Pk | 32.3 | -24.2 | 0 | 43.47 | - | - | 74 | -30.53 | 242 | 124 | V |
| | ** 2.54219 | 35.37 | Pk | 32.3 | -24.2 | -24 | 19.47 | 54 | -34.53 | - | - | 242 | 124 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



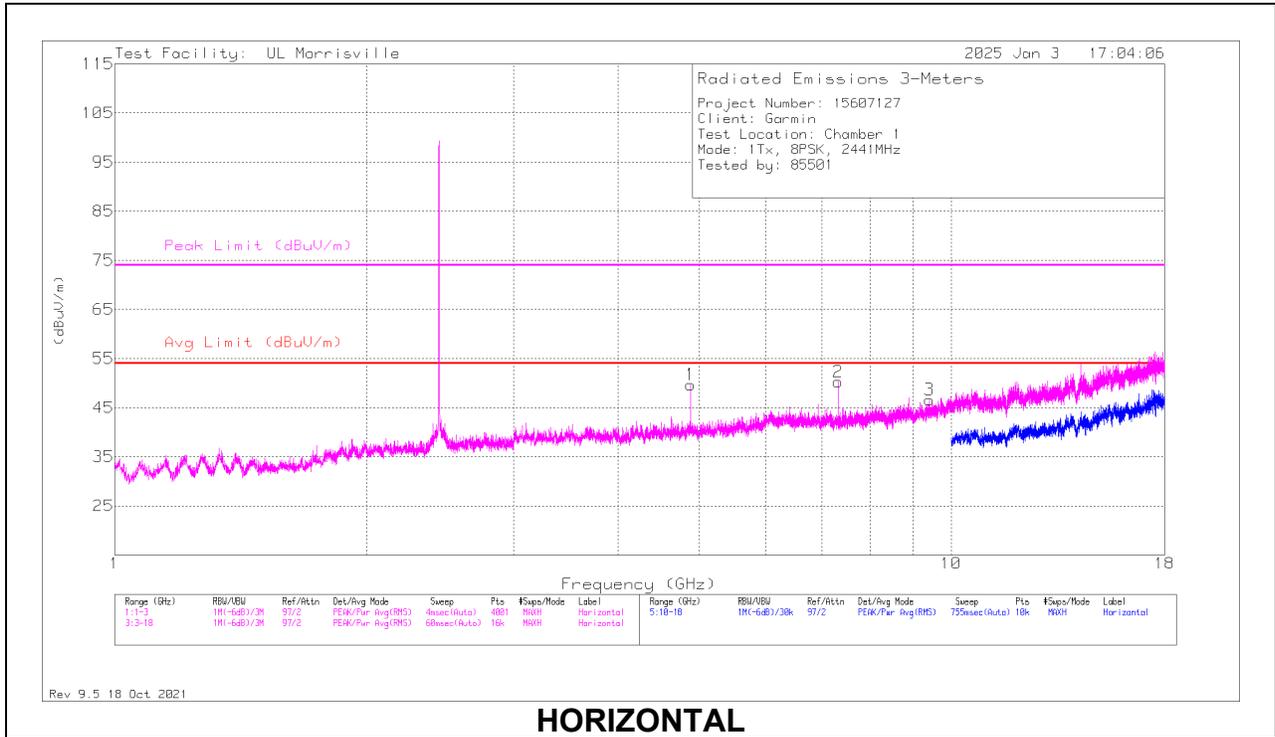
| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | * ** 4.80375 | 57.6 | Pk | 33.9 | -45.6 | 0 | 45.9 | 54 | -8.1 | 74 | -28.1 | 0-360 | 200 | H |
| 2 | * ** 7.49156 | 51.03 | Pk | 35.5 | -41.5 | 0 | 45.03 | 54 | -8.97 | 74 | -28.97 | 0-360 | 101 | H |
| 3 | * ** 9.41625 | 49.78 | Pk | 36.3 | -39.6 | 0 | 46.48 | 54 | -7.52 | 74 | -27.52 | 0-360 | 200 | H |
| 4 | * ** 4.80375 | 59.13 | Pk | 33.9 | -45.6 | 0 | 47.43 | 54 | -6.57 | 74 | -26.57 | 0-360 | 101 | V |
| 5 | * ** 8.21906 | 50.97 | Pk | 35.9 | -40.8 | 0 | 46.07 | 54 | -7.93 | 74 | -27.93 | 0-360 | 101 | V |
| 6 | * ** 9.38813 | 50.16 | Pk | 36.2 | -40.3 | 0 | 46.06 | 54 | -7.94 | 74 | -27.94 | 0-360 | 101 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

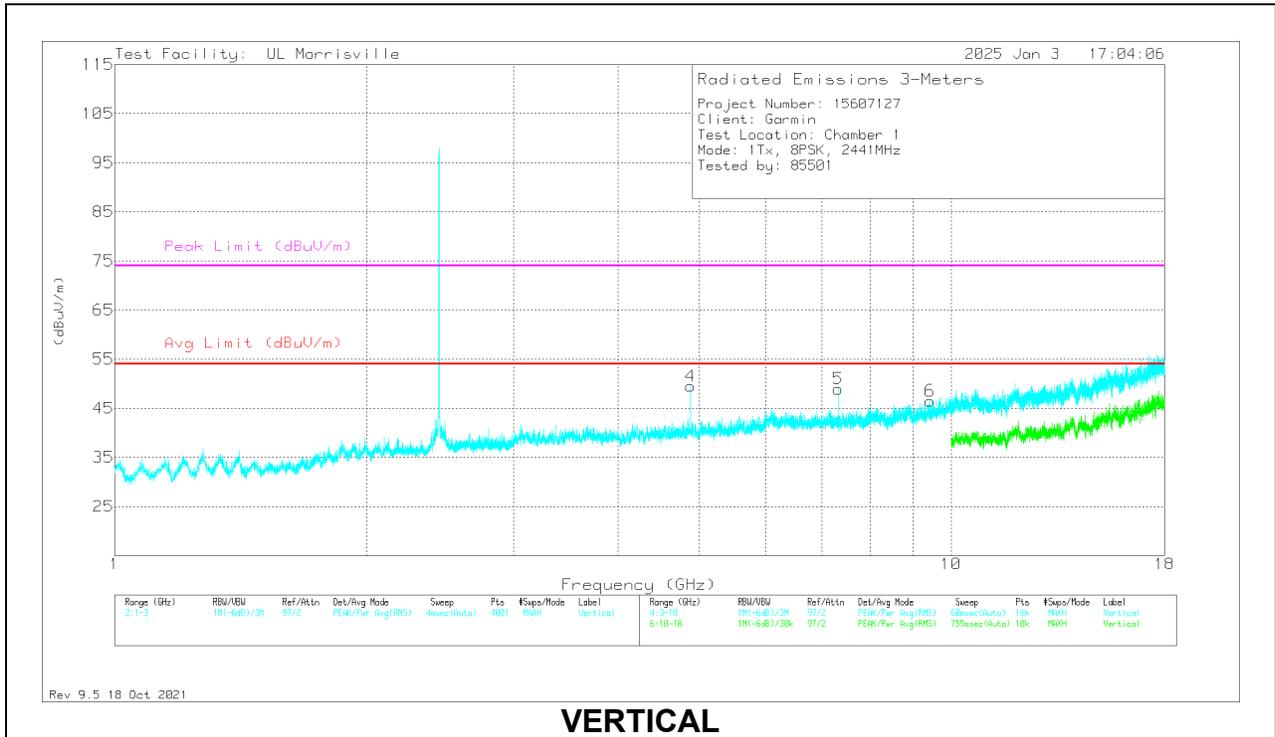
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBuV/m) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.8824 | 64.2 | PK2 | 34 | -44.8 | 0 | 53.4 | - | - | 74 | -20.6 | 172 | 200 | H |
| | *** 4.8824 | 64.2 | PK2 | 34 | -44.8 | -24 | 29.4 | 54 | -24.6 | - | - | 172 | 200 | H |
| 2 | *** 7.32352 | 58.67 | PK2 | 35.4 | -42 | 0 | 52.07 | - | - | 74 | -21.93 | 276 | 224 | H |
| | *** 7.32352 | 58.67 | PK2 | 35.4 | -42 | -24 | 28.07 | 54 | -25.93 | - | - | 276 | 224 | H |
| 3 | *** 9.42094 | 50.33 | PK | 36.3 | -40 | 0 | 46.63 | 54 | -7.37 | 74 | -27.37 | 0-360 | 199 | H |
| 4 | *** 4.88229 | 61.57 | PK2 | 34 | -44.7 | 0 | 50.87 | - | - | 74 | -23.13 | 301 | 257 | V |
| | *** 4.88229 | 61.57 | PK2 | 34 | -44.7 | -24 | 26.87 | 54 | -27.13 | - | - | 301 | 257 | V |
| 5 | *** 7.32309 | 58.28 | PK2 | 35.4 | -41.9 | 0 | 51.78 | - | - | 74 | -22.22 | 118 | 194 | V |
| | *** 7.32309 | 58.28 | PK2 | 35.4 | -41.9 | -24 | 27.78 | 54 | -26.22 | - | - | 118 | 194 | V |
| 6 | *** 9.435 | 50.47 | PK | 36.3 | -40.3 | 0 | 46.47 | 54 | -7.53 | 74 | -27.53 | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

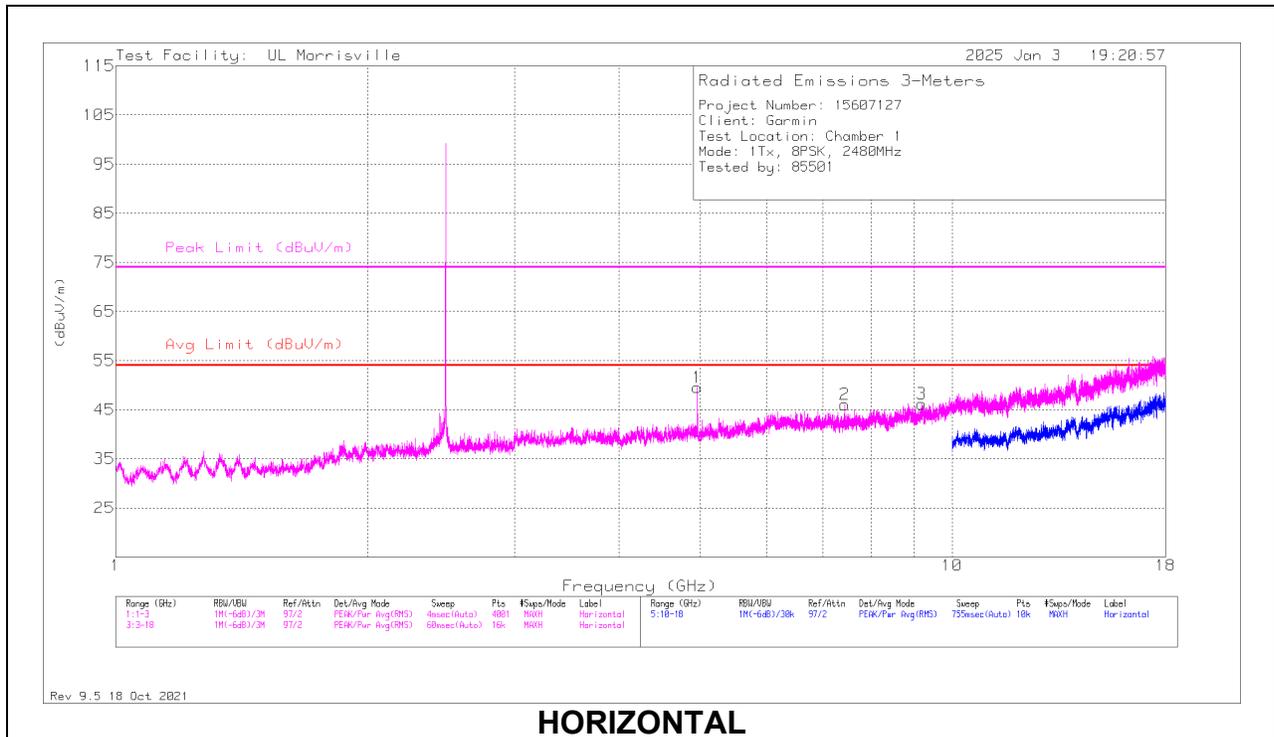
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

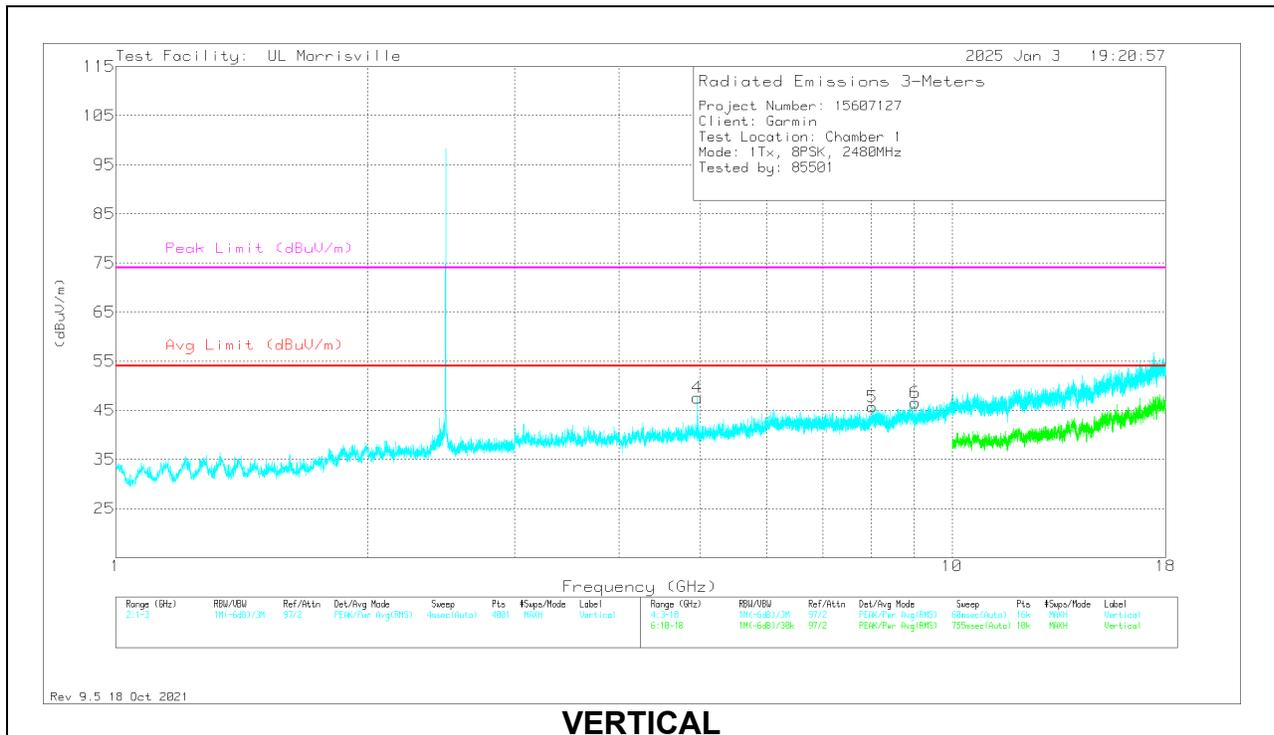
PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

| Marker | Frequency (GHz) | Meter Reading (dBUV) | Det | 135143 (dB/m) | Gain/Loss (dB) | DC Corr (dB) | Corrected Reading (dBUV/m) | Avg Limit (dBUV/m) | Margin (dB) | Peak Limit (dBUV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|--------------|----------------------------|--------------------|-------------|---------------------|----------------|----------------|-------------|----------|
| 1 | *** 4.96025 | 62.11 | PK2 | 34.2 | -44.8 | 0 | 51.51 | - | - | 74 | -22.49 | 172 | 222 | H |
| | *** 4.96025 | 62.11 | PK2 | 34.2 | -44.8 | -24 | 27.51 | 54 | -26.49 | - | - | 172 | 222 | H |
| 2 | *** 7.44 | 51.73 | Pk | 35.4 | -41.1 | 0 | 46.03 | 54 | -7.97 | 74 | -27.97 | 0-360 | 101 | H |
| 3 | *** 9.19125 | 49.75 | Pk | 36 | -39.6 | 0 | 46.15 | 54 | -7.85 | 74 | -27.85 | 0-360 | 101 | H |
| 4 | *** 4.96031 | 58.15 | Pk | 34.2 | -44.8 | 0 | 47.55 | 54 | -6.45 | 74 | -26.45 | 0-360 | 101 | V |
| 5 | *** 8.03156 | 50.97 | Pk | 35.9 | -41.2 | 0 | 45.67 | 54 | -8.33 | 74 | -28.33 | 0-360 | 101 | V |
| 6 | *** 9.03281 | 50.05 | Pk | 35.8 | -39.3 | 0 | 46.55 | 54 | -7.45 | 74 | -27.45 | 0-360 | 200 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

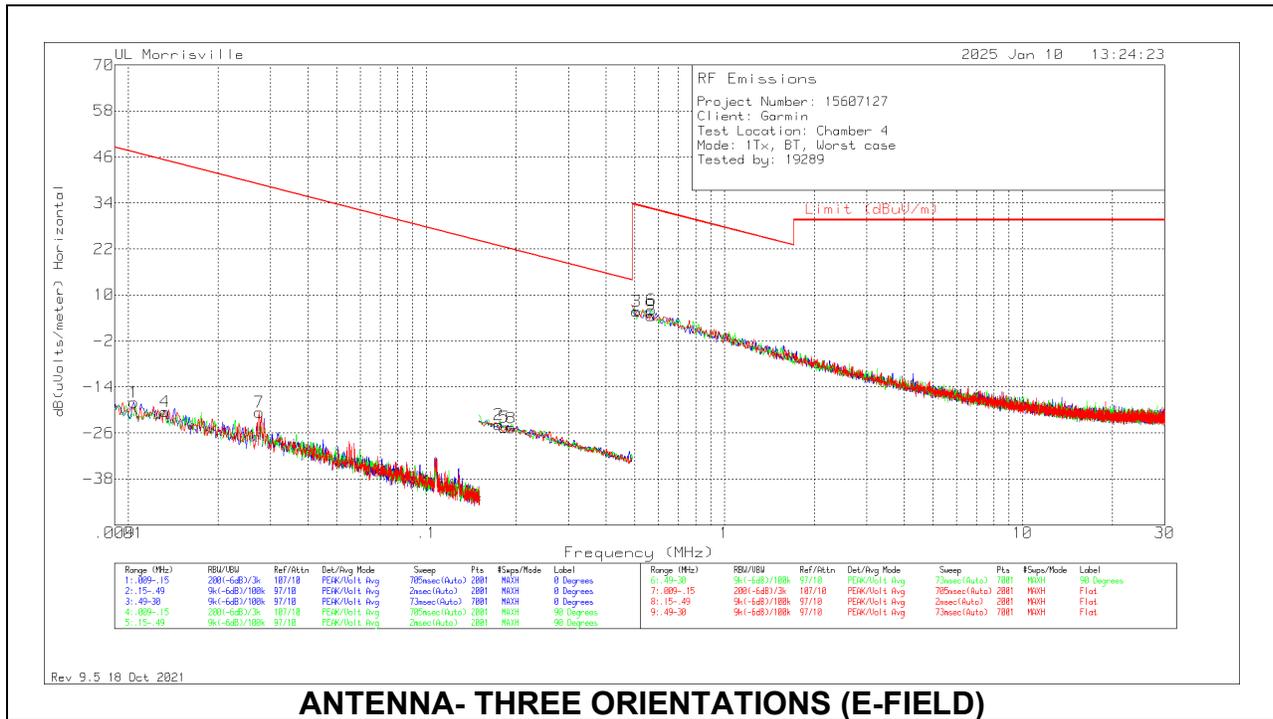
Pk - Peak detector

PK2 - Maximum Peak

Note: Average detection is calculated using a -24dB duty cycle correction factor from the PK measurement. Refer to section 9.2 for details on the duty cycle correction factor

10.2. WORST CASE SPURIOUS BELOW 30MHZ

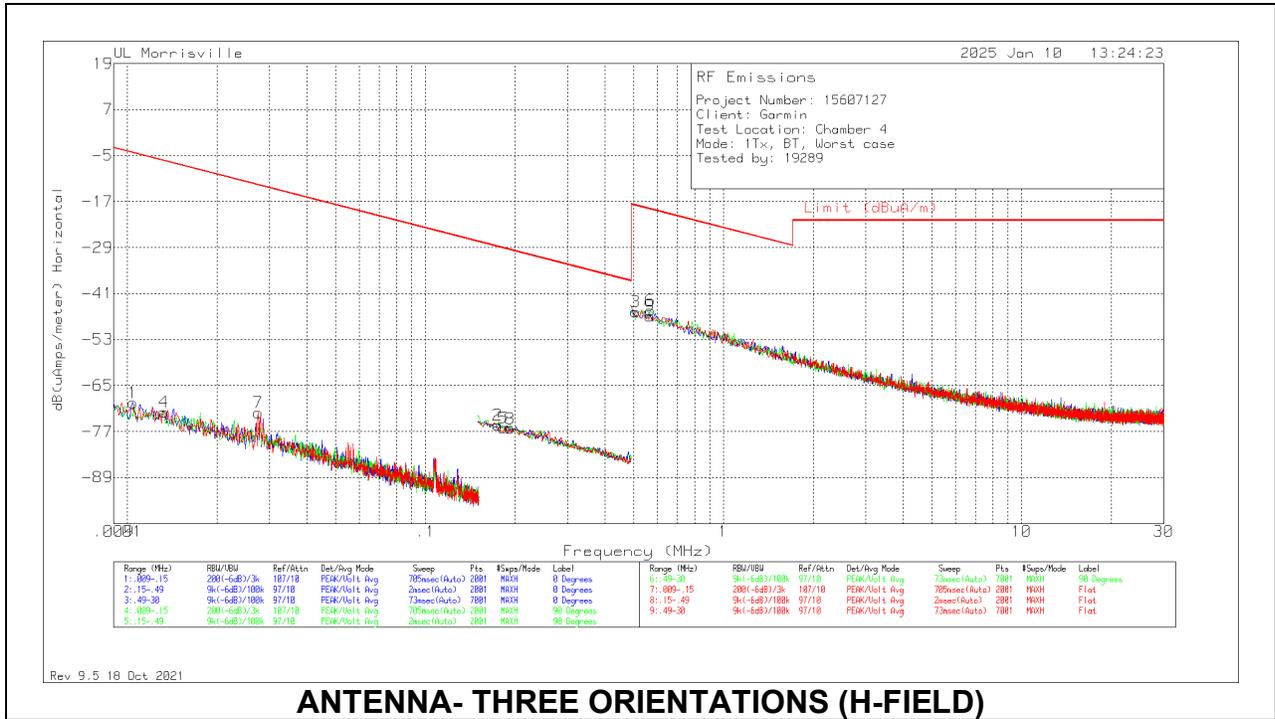
Note: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).



ANTENNA- THREE ORIENTATIONS (E-FIELD)

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uVolts/meter) | Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|------------------------------------|----------------|-------------|----------------|------------|
| 1 | .01042 | 43.93 | Pk | 18 | .1 | -80 | -17.97 | 47.25 | -65.22 | 0-360 | 0 degs |
| 4 | .01326 | 42.71 | Pk | 16.8 | .1 | -80 | -20.39 | 45.15 | -65.54 | 0-360 | 90 degs |
| 7 | .02746 | 46.01 | Pk | 13.3 | .1 | -80 | -20.59 | 38.83 | -59.42 | 0-360 | Flat |
| 2 | .17482 | 45.11 | Pk | 11 | .1 | -80 | -23.79 | 22.75 | -46.54 | 0-360 | 0 degs |
| 5 | .1829 | 44.33 | Pk | 11 | .1 | -80 | -24.57 | 22.36 | -46.93 | 0-360 | 90 degs |
| 8 | .19225 | 44.16 | Pk | 11 | .1 | -80 | -24.74 | 21.93 | -46.67 | 0-360 | Flat |
| 3 | .50686 | 34.68 | Pk | 11 | .1 | -40 | 5.78 | 33.51 | -27.73 | 0-360 | 0 degs |
| 9 | .56589 | 33.51 | Pk | 11 | .1 | -40 | 4.61 | 32.55 | -27.94 | 0-360 | Flat |
| 6 | .5701 | 34.94 | Pk | 11 | .1 | -40 | 6.04 | 32.48 | -26.44 | 0-360 | 90 degs |

Pk - Peak detector

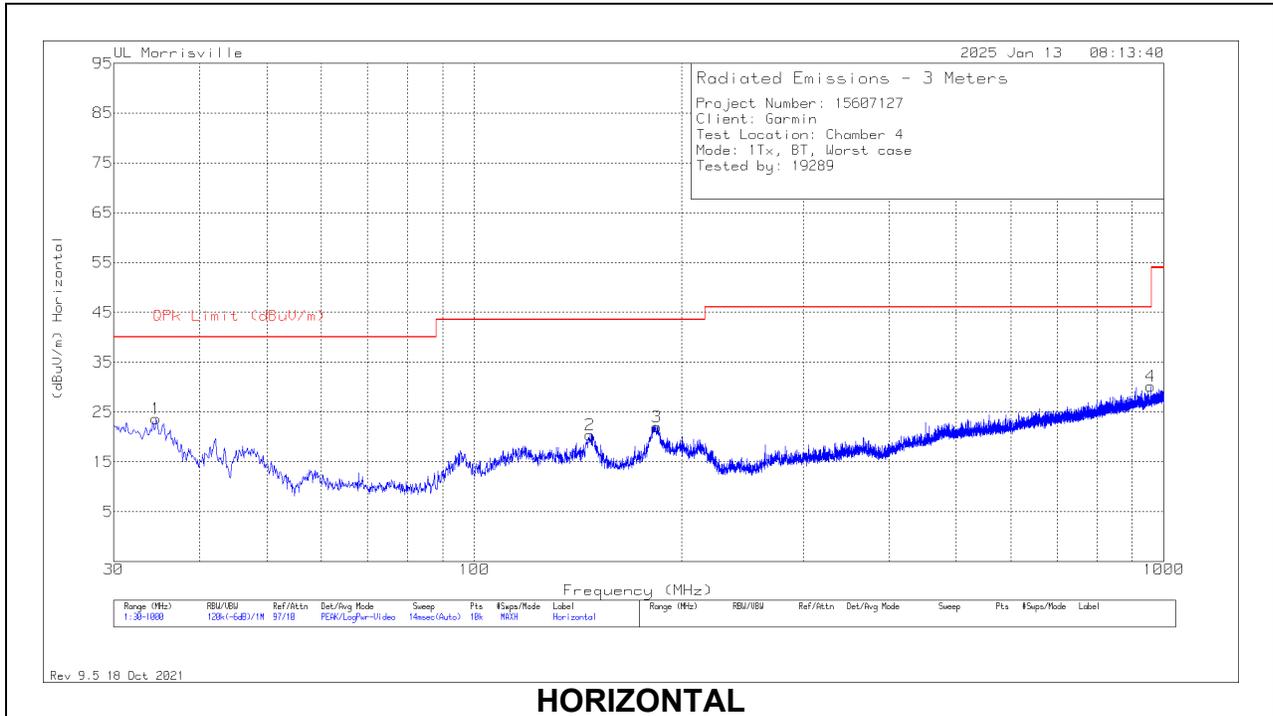


ANTENNA- THREE ORIENTATIONS (H-FIELD)

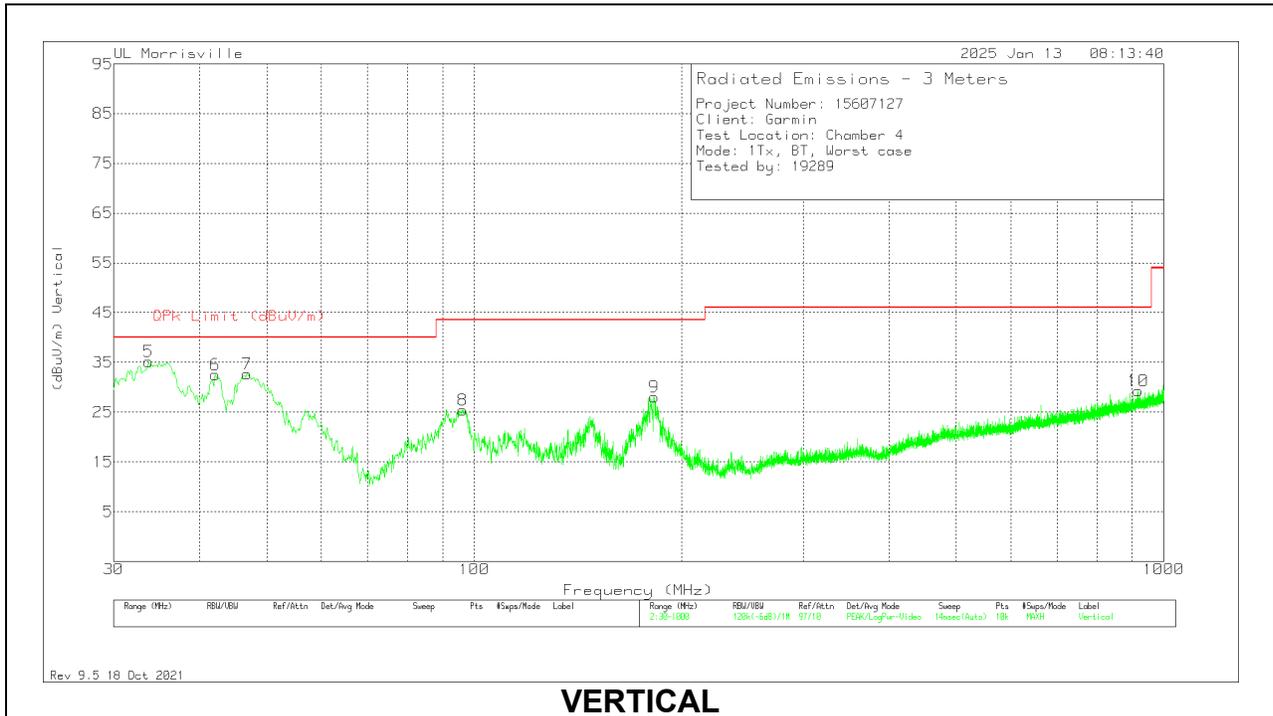
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 135144 (dB/m) | Gain/Loss (dB) | Dist. Corr. Factor (dB) | Corrected Reading dB(uAmps/meter) | Limit (dBuA/m) | Margin (dB) | Azimuth (Degs) | Loop Angle |
|--------|-----------------|----------------------|-----|---------------|----------------|-------------------------|-----------------------------------|----------------|-------------|----------------|------------|
| 1 | .01042 | 43.93 | Pk | -33.5 | .1 | -80 | -69.47 | -4.25 | -65.22 | 0-360 | 0 degs |
| 4 | .01326 | 42.71 | Pk | -34.7 | .1 | -80 | -71.89 | -6.35 | -65.54 | 0-360 | 90 degs |
| 7 | .02746 | 46.01 | Pk | -38.2 | .1 | -80 | -72.09 | -12.67 | -59.42 | 0-360 | Flat |
| 2 | .17482 | 45.11 | Pk | -40.5 | .1 | -80 | -75.29 | -28.75 | -46.54 | 0-360 | 0 degs |
| 5 | .1829 | 44.33 | Pk | -40.5 | .1 | -80 | -76.07 | -29.14 | -46.93 | 0-360 | 90 degs |
| 8 | .19225 | 44.16 | Pk | -40.5 | .1 | -80 | -76.24 | -29.57 | -46.67 | 0-360 | Flat |
| 3 | .50686 | 34.68 | Pk | -40.5 | .1 | -40 | -45.72 | -17.99 | -27.73 | 0-360 | 0 degs |
| 9 | .56589 | 33.51 | Pk | -40.5 | .1 | -40 | -46.89 | -18.95 | -27.94 | 0-360 | Flat |
| 6 | .5701 | 34.94 | Pk | -40.5 | .1 | -40 | -45.46 | -19.02 | -26.44 | 0-360 | 90 degs |

Pk - Peak detector

10.3. WORST CASE SPURIOUS 30-1000MHZ



HORIZONTAL



VERTICAL

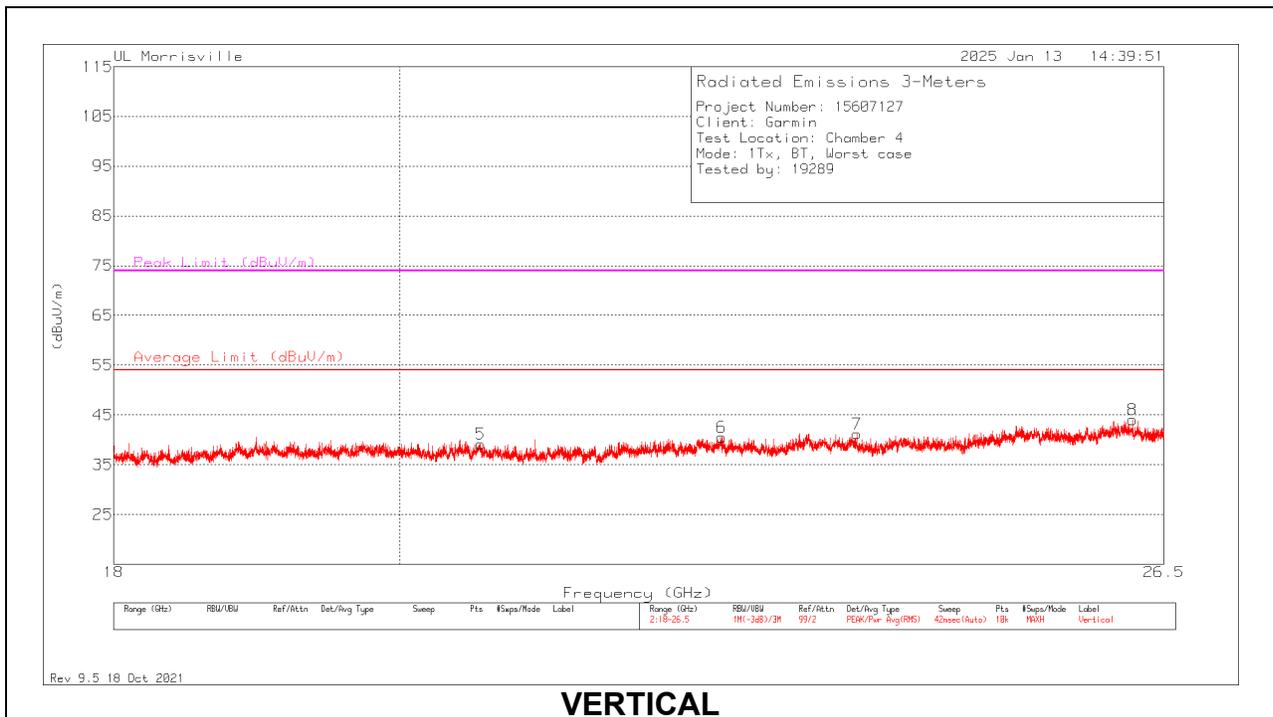
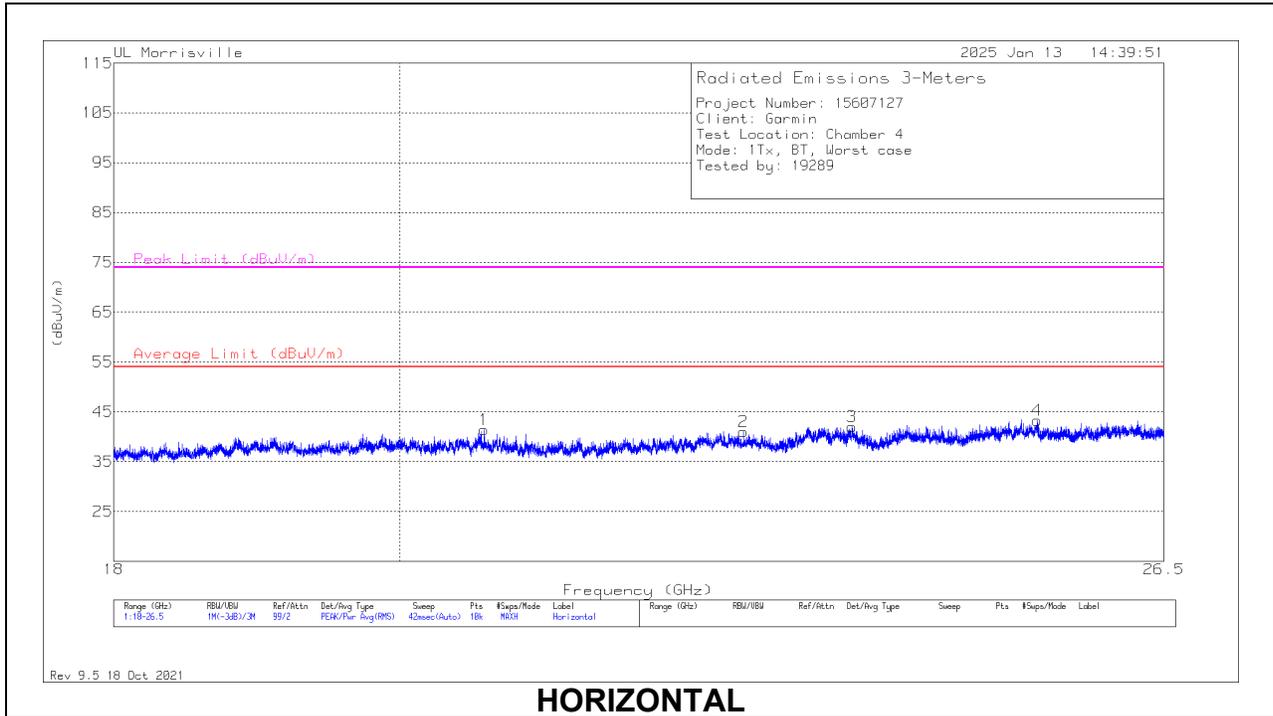
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | 90628 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|--------------|----------------|----------------------------|--------------------|-------------|----------------|-------------|----------|
| 5 | 35.679 | 41.83 | Qp | 23.1 | -32.1 | 32.83 | 40 | -7.17 | 285 | 102 | V |
| 1 | 34.559 | 31.91 | Pk | 23.8 | -32.1 | 23.61 | 40 | -16.39 | 0-360 | 200 | H |
| 6 | 42.125 | 45.92 | Pk | 18.5 | -31.9 | 32.52 | 40 | -7.48 | 0-360 | 100 | V |
| 7 | 46.781 | 49.16 | Pk | 15.5 | -32 | 32.66 | 40 | -7.34 | 0-360 | 100 | V |
| 8 | 96.154 | 41.39 | Pk | 15.4 | -31.4 | 25.39 | 43.52 | -18.13 | 0-360 | 100 | V |
| 2 | 147.079 | 32.73 | Pk | 18.7 | -31 | 20.43 | 43.52 | -23.09 | 0-360 | 100 | H |
| 9 | 182.29 | 41.68 | Pk | 17.2 | -30.8 | 28.08 | 43.52 | -15.44 | 0-360 | 100 | V |
| 3 | 183.939 | 35.68 | Pk | 17.1 | -30.8 | 21.98 | 43.52 | -21.54 | 0-360 | 100 | H |
| 10 | 917.647 | 27.99 | Pk | 28.4 | -27.1 | 29.29 | 46.02 | -16.73 | 0-360 | 100 | V |
| 4 | 956.835 | 27.91 | Pk | 28.8 | -26.5 | 30.21 | 46.02 | -15.81 | 0-360 | 200 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

10.4. WORST CASE SPURIOUS 18-26GHz



| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | 204704 (dB/m) | Gain/Loss (dB) | Corrected Reading (dBuV/m) | Average Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|---------------|----------------|----------------------------|------------------------|-------------|---------------------|-------------|----------------|-------------|----------|
| 1 | *** 20.63219 | 48.48 | Pk | 33.7 | -40.8 | 41.38 | 54 | -12.62 | 74 | -32.62 | 0-360 | 100 | H |
| 2 | *** 22.69918 | 46.49 | Pk | 34.1 | -39.6 | 40.99 | 54 | -13.01 | 74 | -33.01 | 0-360 | 100 | H |
| 3 | *** 23.62644 | 45.82 | Pk | 34.6 | -38.4 | 42.02 | 54 | -11.98 | 74 | -31.98 | 0-360 | 100 | H |
| 5 | *** 20.60414 | 46.04 | Pk | 33.7 | -40.6 | 39.14 | 54 | -14.86 | 74 | -34.86 | 0-360 | 300 | V |
| 6 | *** 22.51475 | 46.07 | Pk | 34.2 | -39.7 | 40.57 | 54 | -13.43 | 74 | -33.43 | 0-360 | 150 | V |
| 7 | *** 23.66638 | 44.91 | Pk | 34.5 | -38.2 | 41.21 | 54 | -12.79 | 74 | -32.79 | 0-360 | 150 | V |
| 4 | 25.29312 | 43.89 | Pk | 35.7 | -36.3 | 43.29 | - | - | - | - | 0-360 | 100 | H |
| 8 | 26.19573 | 44.03 | Pk | 35.3 | -35.3 | 44.03 | - | - | - | - | 0-360 | 150 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
RSS-Gen 8.8

| Frequency of Emission (MHz) | Conducted Limit (dBuV) | |
|-----------------------------|------------------------|-----------|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

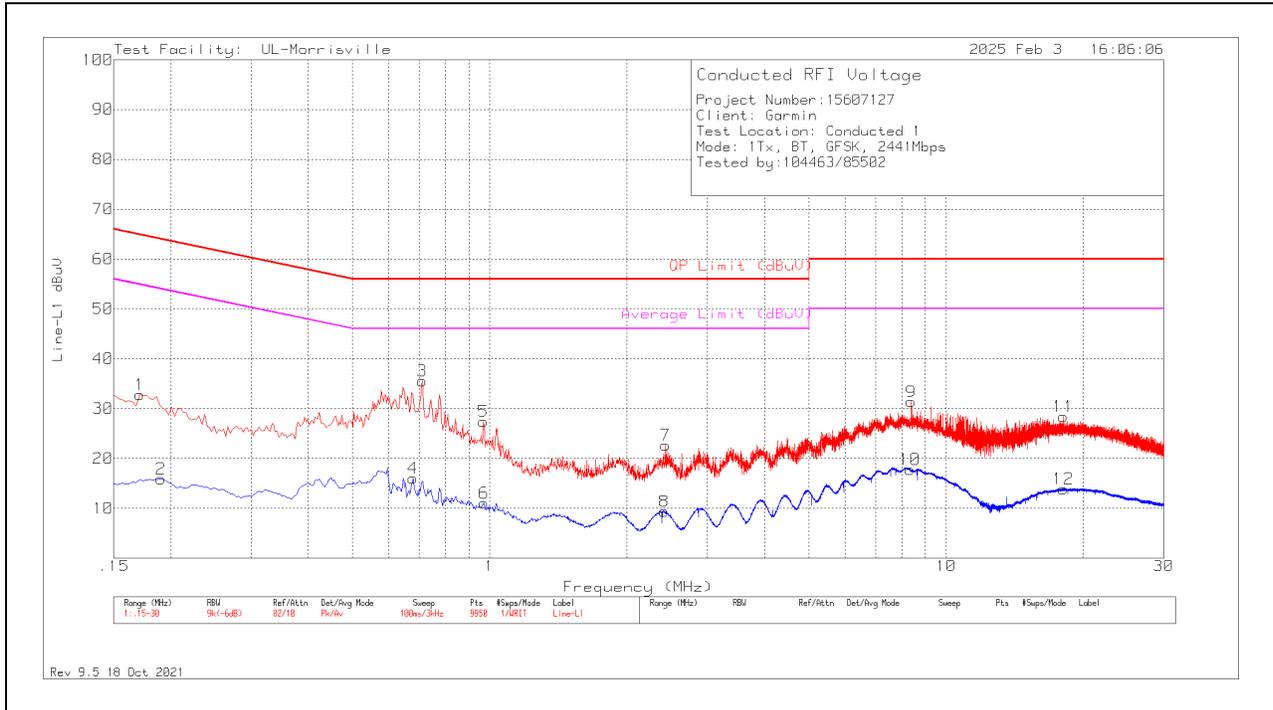
The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

11.1. AC POWER LINE

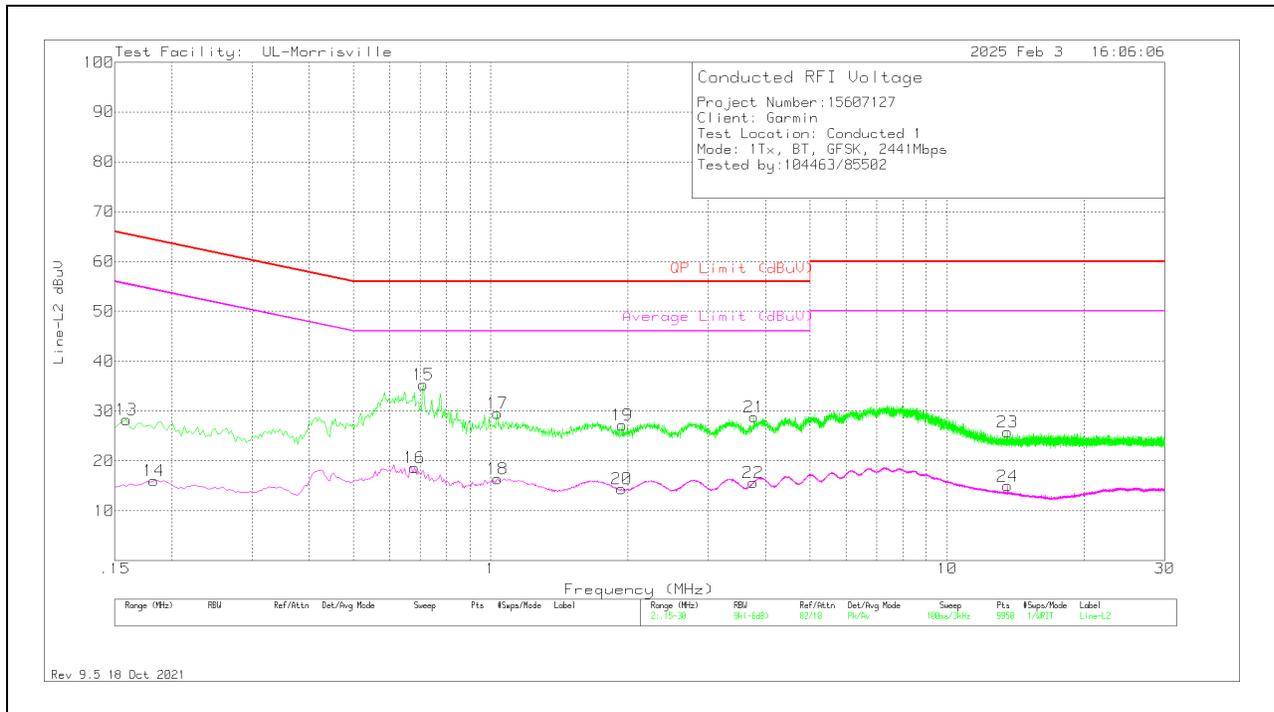
LINE 1 RESULTS



| Range 1: Line-L1 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 1 | .171 | 22.75 | Pk | .2 | 9.8 | 32.75 | 64.91 | -32.16 | - | - |
| 2 | .1905 | 5.9 | Av | .2 | 9.8 | 15.9 | - | - | 54.01 | -38.11 |
| 4 | .678 | 6.2 | Av | 0 | 9.8 | 16 | - | - | 46 | -30 |
| 3 | .711 | 25.76 | Pk | 0 | 9.8 | 35.56 | 56 | -20.44 | - | - |
| 5 | .969 | 17.65 | Pk | 0 | 9.8 | 27.45 | 56 | -28.55 | - | - |
| 6 | .972 | 1.24 | Av | 0 | 9.8 | 11.04 | - | - | 46 | -34.96 |
| 8 | 2.412 | -.47 | Av | 0 | 9.8 | 9.33 | - | - | 46 | -36.67 |
| 7 | 2.424 | 12.83 | Pk | 0 | 9.8 | 22.63 | 56 | -33.37 | - | - |
| 10 | 8.331 | 7.64 | Av | .1 | 10 | 17.74 | - | - | 50 | -32.26 |
| 9 | 8.391 | 21.25 | Pk | .1 | 10 | 31.35 | 60 | -28.65 | - | - |
| 12 | 18.057 | 3.56 | Av | .2 | 10.1 | 13.86 | - | - | 50 | -36.14 |
| 11 | 18.087 | 18.07 | Pk | .2 | 10.1 | 28.37 | 60 | -31.63 | - | - |

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS



| Range 2: Line-L2 .15 - 30MHz | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------------|------------------|------------------------|-----------------|-------------|----------------------|-------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN VDF (dB) | Cbl/Limiter (dB) | Corrected Reading dBuV | QP Limit (dBuV) | Margin (dB) | Average Limit (dBuV) | Margin (dB) |
| 13 | .159 | 18.24 | Pk | .2 | 9.8 | 28.24 | 65.52 | -37.28 | - | - |
| 14 | .183 | 6.05 | Av | .2 | 9.8 | 16.05 | - | - | 54.35 | -38.3 |
| 16 | .681 | 8.87 | Av | 0 | 9.8 | 18.67 | - | - | 46 | -27.33 |
| 15 | .711 | 25.45 | Pk | 0 | 9.8 | 35.25 | 56 | -20.75 | - | - |
| 17 | 1.035 | 19.71 | Pk | 0 | 9.8 | 29.51 | 56 | -26.49 | - | - |
| 18 | 1.035 | 6.6 | Av | 0 | 9.8 | 16.4 | - | - | 46 | -29.6 |
| 20 | 1.938 | 4.54 | Av | 0 | 9.8 | 14.34 | - | - | 46 | -31.66 |
| 19 | 1.941 | 17.35 | Pk | 0 | 9.8 | 27.15 | 56 | -28.85 | - | - |
| 22 | 3.759 | 5.78 | Av | 0 | 9.9 | 15.68 | - | - | 46 | -30.32 |
| 21 | 3.777 | 18.94 | Pk | 0 | 9.9 | 28.84 | 56 | -27.16 | - | - |
| 23 | 13.563 | 15.67 | Pk | .1 | 10 | 25.77 | 60 | -34.23 | - | - |
| 24 | 13.563 | 4.85 | Av | .1 | 10 | 14.95 | - | - | 50 | -35.05 |

PK - Peak detector
 Av - Average detection

12. SETUP PHOTOS

Please refer to R15607127-EP1 for setup photos.

END OF TEST REPORT



SAR EVALUATION REPORT

IEEE Std 1528-2013

For
Extremity Worn Digital Transceiver

FCC ID: IPH-04907
Model Name: A04907

Report Number: R15607127-S1
Issue Date: 2025-03-25

Prepared for
Garmin International Inc.
1200 E 151st St
Olathe, KS 66062-3426, USA

Prepared by
UL LLC
12 LABORATORY DR
RTP, NC 27709, U.S.A.
TEL: (919) 549-1400



Revision History

| Rev. | Date | Revisions | Revised By |
|------|------------|---|--------------|
| V1 | 2025-03-04 | Initial Issue | -- |
| V2 | 2025-03-18 | Updated NFC operating modes in §6.2 and ANT/ANT+ tune-up in §9.3. | Lindsay Ryan |
| V3 | 2025-03-25 | Updated BLE tune-up for Ch 36, 37, and 39. | Lindsay Ryan |
| | | | |

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1. Attestation of Test Results

| | | | |
|---|--|-------|-------|
| Applicant Name | Garmin International Inc. | | |
| FCC ID | IPH-04907 | | |
| Model Name | A04907 | | |
| Applicable Standards | Published RF exposure KDB procedures IEEE Std 1528-2013 | | |
| Exposure Category | SAR Limits (W/Kg) | | |
| | Extremities (hands, wrists, ankles, etc.) (10g of tissue) | | |
| General population / Uncontrolled exposure | 4.0 | | |
| RF Exposure Conditions | Equipment Class - Highest Reported SAR (W/kg) | | |
| | DTS | DSS | DXX |
| Extremity | 0.081 | 0.168 | 0.000 |
| Date Tested | 2025-01-13 to 2025-01-17 | | |
| Test Results | Pass | | |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the U.S. Government.

| | |
|---|--|
| Approved & Released By: | Prepared By: |
|  |  |
| Devin Chang Senior Test Engineer UL Verification Services Inc. | Lindsay Ryan Engineer UL LLC |

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE Std 1528-2013 the following FCC Published RF exposure [KDB](#) procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v06
- 447498 D03 Supplement C Cross-Reference v01
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02

In addition to the above, the following information was used:

- [TCB Workshop](#) October 2016; RF Exposure Procedures (Bluetooth Duty Factor)
- [TCB Workshop](#) October 2016; RF Exposure Procedures (DUT Holder Perturbations)
- [TCB Workshop](#) April 2019; RF Exposure Procedures (Tissue Simulating Liquids (TSL))

3. Facilities and Accreditation

UL LLC is accredited by A2LA, cert. # 0751.06 for all testing performed within the scope of this report. Testing was performed at the locations noted below.

The test sites and measurement facilities used to collect data are located at 2800 Perimeter Park Dr, Morrisville, NC, USA.

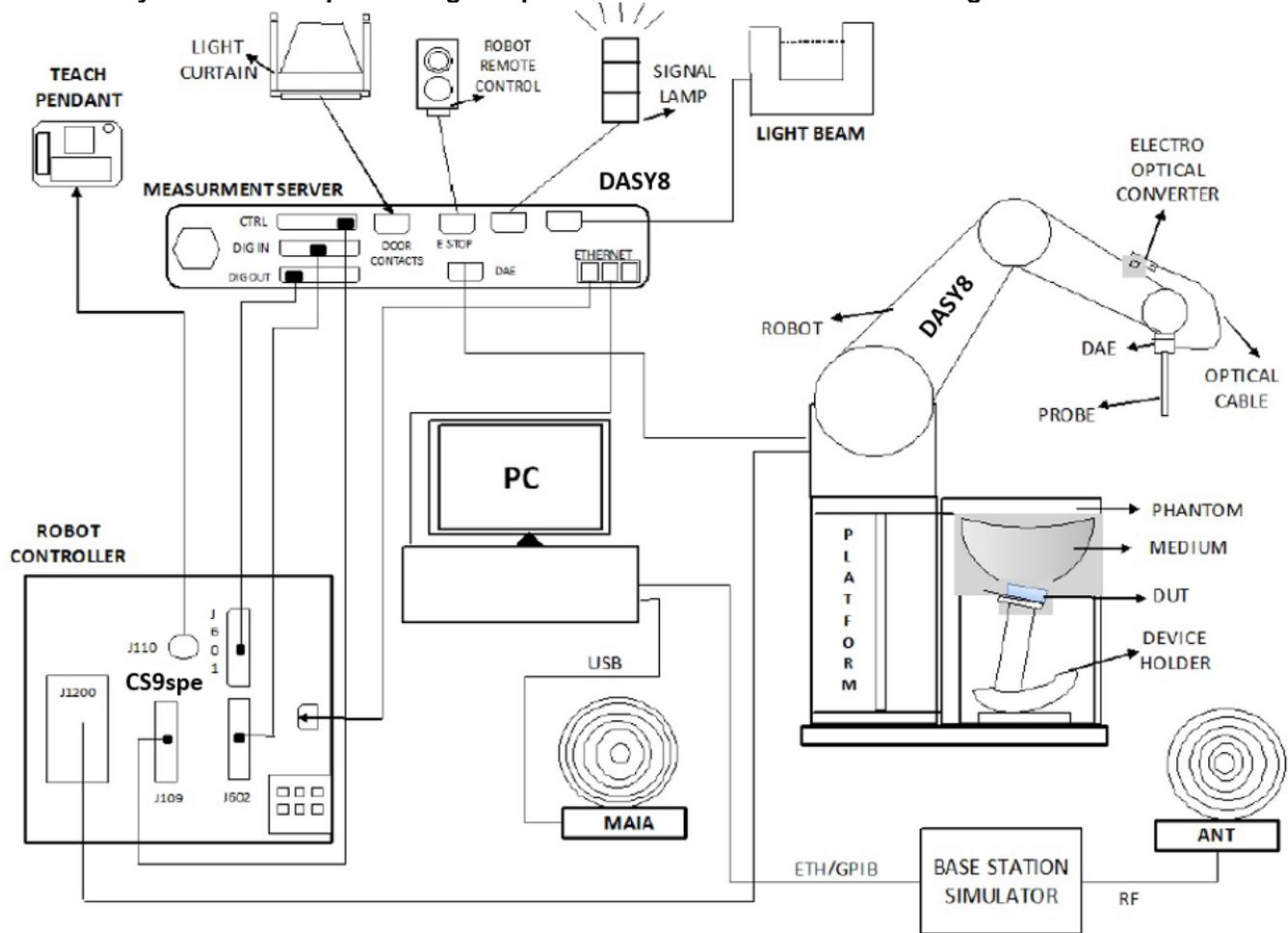
- SAR Lab 1A
- SAR Lab 2B

| | Address | ISED CABID | ISED Company Number | FCC Registration |
|-------------------------------------|--|------------|---------------------|------------------|
| <input type="checkbox"/> | Building: 12 Laboratory Dr RTP, NC 27709, U.S.A | US0067 | 2180C | 825374 |
| <input checked="" type="checkbox"/> | Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A | US0067 | 27265 | 825374 |

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

The DASY system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win10 and the DASY8¹ software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

¹ DASY8 software used: DASY16.4.0.5005 and older generations.

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEC/IEEE 62209-1528, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

| | ≤ 3 GHz | > 3 GHz |
|--|---|--|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | 5 ± 1 mm | $\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location | 30° ± 1° | 20° ± 1° |
| Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area} | ≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm | 3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm |
| | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device. | |

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

| | | | ≤ 3 GHz | > 3 GHz |
|--|------------------------------------|--|--|---|
| Maximum zoom scan spatial resolution: $\Delta x_{Zoom}, \Delta y_{Zoom}$ | | | ≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm* | 3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm* |
| Maximum zoom scan spatial resolution, normal to phantom surface | uniform grid: $\Delta z_{Zoom}(n)$ | | ≤ 5 mm | 3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm |
| | graded grid | $\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface | ≤ 4 mm | 3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm |
| | | $\Delta z_{Zoom}(n>1)$: between subsequent points | $\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ | |
| Minimum zoom scan volume | x, y, z | ≥ 30 mm | 3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm | |
| Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the <i>reported SAR</i> from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. | | | | |

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

4.3. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

Dielectric Property Measurements

| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Date | Cal. Due Date |
|-------------------|-------------------|---------------|---------------|------------|---------------|
| Network Analyzer | Keysight | E5063A | MY54100681 | 2024-07-31 | 2025-07-31 |
| Dielectric Probe | SPEAG | DAKS-3.5 | 1147 | 2024-03-11 | 2025-03-11 |
| Shorting Block | SPEAG | DAK-3.5 Short | SM DAK 200 DB | 2024-03-11 | 2025-03-11 |
| Dielectric Probe | SPEAG | DAKS-12 | 1037 | 2024-03-11 | 2025-03-11 |
| Shorting Block | SPEAG | DAK-12 Short | 2044 | 2024-03-11 | 2025-03-11 |
| Thermometer | Fisher Scientific | 15-078-181 | 1817705017 | 2023-03-30 | 2025-03-30 |

System Check

| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Date | Cal. Due Date |
|---------------------------|-----------------|--------------|--------------|------------|---------------|
| Signal Generator | Keysight | N5181A | MY50140788 | 2024-08-01 | 2025-08-01 |
| 3-Path Diode Power Sensor | Rohde & Schwarz | NRP8S | 112236 | 2024-07-12 | 2025-07-12 |
| 3-Path Diode Power Sensor | Rohde & Schwarz | NRP8S | 112237 | 2024-07-12 | 2025-07-12 |
| RF Power Meter | Keysight | N1912A | MY55136012 | 2024-08-02 | 2025-08-02 |
| RF Power Sensor | Keysight | N1921A | MY55090025 | 2024-08-16 | 2025-08-16 |
| RF Power Sensor | Keysight | N1921A | MY55090030 | 2024-07-09 | 2025-07-09 |
| Amplifier | Mini-Circuits | ZVA-183WA-S+ | S C484802241 | N/A | N/A |
| Directional Coupler | Mini-Circuits | ZJDC10-183+ | 2214 | NA | NA |
| Dual Directional Coupler | Werlatone | C5100-10 | 92249 | N/A | N/A |
| DC Power Supply | Miteq | PS 15V1 | 1990186 | N/A | N/A |

Lab Equipment

| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Date | Cal. Due Date |
|------------------------------|-------------------|------------|------------|------------|---------------|
| E-Field Probe | SPEAG | EX3DV4 | 7709 | 2024-11-11 | 2025-11-11 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1714 | 2024-11-06 | 2025-11-06 |
| System Validation Dipole | SPEAG | CLA13 | 1017 | 2024-03-07 | 2025-03-07 |
| System Validation Dipole | SPEAG | D2450V2 | 963 | 2024-10-11 | 2025-10-11 |
| Environmental Indicator | Fisher Scientific | Traceable | 240072452 | 2024-01-24 | 2026-01-24 |

Other

| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Date | Cal. Due Date |
|-------------------|---------------------|------------|------------|------------|---------------|
| RF Power Meter | Boonton Electronics | RTP5000 | 211058 | 2024-08-01 | 2025-08-01 |

5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

Therefore, the measurement uncertainty is not required.

6. Device Under Test (DUT) Information

6.1. DUT Description

| | | |
|-------------------------|---|--|
| Device Dimension | This is an extremity wrist-worn wearable device. | |
| Back Cover | The Back Cover is not removable | |
| Battery Options | The rechargeable battery is not user accessible. | |
| Test sample information | <p style="text-align: center;">S/N</p> <p>497652312</p> <p>497652467</p> | <p style="text-align: center;">Notes</p> <p>Conducted Sample #1</p> <p>Radiated Sample #1</p> |
| Hardware Version | Rev V3 | |
| Software Version | 3.95 | |

6.2. Wireless Technologies

| Wireless technologies | Frequency bands | Operating mode | Duty Cycle used for SAR testing |
|-----------------------|-----------------|--------------------------------------|--|
| Wi-Fi | 2.4 GHz | 802.11b 802.11g 802.11n (HT20) | 100.0% _(802.11b) ¹ |
| Bluetooth | 2.4 GHz | BR, EDR, LE | N/A ² |
| ANT/ANT+ | 2.4 GHz | GFSK | N/A ² |
| NFC | 13.56 MHz | Type A, B, AB, F, AF | 100% _(Type A) ¹ |

Notes:

1. Duty cycle for Wi-Fi and NFC is referenced from §9.
2. Measured Duty Cycle is not required due to SAR test exemption

7. RF Exposure Conditions (Test Configurations)

| Wireless technologies | RF Exposure Conditions | DUT-to-User Separation | Test Position | Antenna-to-edge/surface | SAR Required |
|-----------------------|------------------------|------------------------|---------------|-------------------------|-----------------|
| WLAN | Extremity (Hand/Wrist) | 0 | Back | N/A | Yes |
| BT | Extremity (Hand/Wrist) | 0 | Back | N/A | No ¹ |
| ANT/ANT+ | Extremity (Hand/Wrist) | 0 | Back | N/A | No ¹ |
| NFC | Extremity (Hand/Wrist) | 0 | Back | N/A | Yes |

Note(s):

1. Exempt from SAR testing

SAR Test Exclusion Calculations for WLAN

Antennas < 50mm to adjacent edges

| Tx Interface | Frequency (MHz) | Output Power | | Separation Distances (mm) | Calculated Threshold Value |
|--------------|-----------------|--------------|-------|---------------------------|----------------------------|
| | | dBm | mW | Back | Back |
| Bluetooth | 2480 | 10.00 | 10.00 | 5 | 3.1 -EXEMPT- |
| ANT/ANT+ | 2478 | 5.00 | 3.16 | 5 | 1 -EXEMPT- |

Note(s):

According to KDB 447498, if the calculated threshold value is >7.5 then SAR testing is required. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

8. Dielectric Property Measurements & System Check

8.1. Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

The methodology used to determine the SAR correction is described in IEEE Std 1528-2013. The methodology was conducted over a frequency range of 30 MHz to 6000 MHz, but it is implemented over the 300 MHz to 6000 MHz frequency range. The methodology was also studied for permittivity (ϵ_r) and conductivity (σ) ranges of $\pm 20\%$, but ranges of $\pm 10\%$ have been chosen. Given that the change in dielectric parameters influences the conversion factor of the probe, this influence will be small if a $\pm 10\%$ range is used.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

| Target Frequency (MHz) | Head | | Body | |
|------------------------|--------------|----------------|--------------|----------------|
| | ϵ_r | σ (S/m) | ϵ_r | σ (S/m) |
| 150 | 52.3 | 0.76 | 61.9 | 0.80 |
| 300 | 45.3 | 0.87 | 58.2 | 0.92 |
| 450 | 43.5 | 0.87 | 56.7 | 0.94 |
| 835 | 41.5 | 0.90 | 55.2 | 0.97 |
| 900 | 41.5 | 0.97 | 55.0 | 1.05 |
| 915 | 41.5 | 0.98 | 55.0 | 1.06 |
| 1450 | 40.5 | 1.20 | 54.0 | 1.30 |
| 1610 | 40.3 | 1.29 | 53.8 | 1.40 |
| 1800 – 2000 | 40.0 | 1.40 | 53.3 | 1.52 |
| 2450 | 39.2 | 1.80 | 52.7 | 1.95 |
| 3000 | 38.5 | 2.40 | 52.0 | 2.73 |
| 5000 | 36.2 | 4.45 | 49.3 | 5.07 |
| 5100 | 36.1 | 4.55 | 49.1 | 5.18 |
| 5200 | 36.0 | 4.66 | 49.0 | 5.30 |
| 5300 | 35.9 | 4.76 | 48.9 | 5.42 |
| 5400 | 35.8 | 4.86 | 48.7 | 5.53 |
| 5500 | 35.6 | 4.96 | 48.6 | 5.65 |
| 5600 | 35.5 | 5.07 | 48.5 | 5.77 |
| 5700 | 35.4 | 5.17 | 48.3 | 5.88 |
| 5800 | 35.3 | 5.27 | 48.2 | 6.00 |

Dielectric Property Results:

| Liquid Check | | | | | | | | | | |
|--------------|------------|-------------|------------|-------------|--|--------|--------|---------------------------|--------|--------|
| SAR Lab | Date | Tissue Type | Band (MHz) | Freq. (MHz) | Relative Permittivity (ϵ_r) | | | Conductivity (σ) | | |
| | | | | | Measured | Target | Delta | Measured | Target | Delta |
| SAR 1A | 2025-01-14 | Head | 13 | 13 | 54.2 | 55.0 | -1.47% | 0.72 | 0.75 | -4.67% |
| | | | | 12 | 54.2 | 55.0 | -1.45% | 0.71 | 0.75 | -4.68% |
| | | | | 14 | 54.2 | 55.0 | -1.53% | 0.72 | 0.75 | -4.65% |
| SAR 2B | 2025-01-15 | Head | 2450 | 2450 | 40.1 | 39.2 | 2.40% | 1.73 | 1.80 | -3.83% |
| | | | | 2400 | 40.2 | 39.3 | 2.30% | 1.69 | 1.75 | -3.52% |
| | | | | 2500 | 40.1 | 39.1 | 2.38% | 1.77 | 1.85 | -4.70% |

8.2. System Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

System Performance Check Measurement Conditions:

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was recorded and the results are normalized to 1 W input power.

System Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within ±10% of the manufacturer calibrated dipole SAR target. Refer to Appendix B for the SAR System Check Plots.

| System Check | | | | | | | | | | | | | |
|--------------|------------|-----------------------------|----------------------|-------------------|------------------------------|------------------|---------------------|------------|-------------------------------|------------------|---------------------|------------|----------|
| SAR Lab | Date | Dipole Type & Serial Number | Dipole Cal. Due Date | Input Power (dBm) | Measured results for 1-g SAR | | | | Measured results for 10-g SAR | | | | Plot No. |
| | | | | | Meas. Zoom Scan | Normalize to 1 W | Target (Ref. Value) | Delta ±10% | Meas. Zoom Scan | Normalize to 1 W | Target (Ref. Value) | Delta ±10% | |
| SAR 1A | 2025-01-14 | CLA13 SN: 1017 | 2025-03-07 | 16.0 | 0.021 | 0.527 | 0.551 | -4.27% | 0.013 | 0.327 | 0.344 | -5.07% | 1 |
| SAR 2B | 2025-01-15 | D2450V2 SN: 963 | 2025-10-11 | 17.0 | 2.550 | 50.879 | 52.600 | -3.27% | 1.210 | 24.143 | 24.400 | -1.05% | 2 |

9. Conducted Output Power Measurements

Tune-Up Power Limits provided by the manufacturer are used to scale measured SAR values.

9.1. Wi-Fi 2.4GHz (DTS Band)

Maximum Output Power (Tune-up Limit) for Wi-Fi 2.4 GHz

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11b/g/n mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 3 W/kg.

| Mode | Bandwidth | Channel | Frequency (MHz) | Tune-up PowerLimit (dBm) |
|---------|-----------|---------|-----------------|--------------------------|
| | | | | Main Antenna |
| 802.11b | 20 MHz | 1 | 2412 | 14.00 |
| | | 2 | 2417 | 14.00 |
| | | 3 | 2422 | 14.00 |
| | | 4 | 2427 | 14.00 |
| | | 5 | 2432 | 14.00 |
| | | 6 | 2437 | 14.00 |
| | | 7 | 2442 | 14.00 |
| | | 8 | 2447 | 14.00 |
| | | 9 | 2452 | 14.00 |
| | | 10 | 2457 | 14.00 |
| | | 11 | 2462 | 14.00 |
| | | 12 | 2467 | 14.00 |
| | | 13 | 2472 | 14.00 |
| 802.11g | 20 MHz | 1 | 2412 | 17.00 |
| | | 2 | 2417 | 17.00 |
| | | 3 | 2422 | 17.00 |
| | | 4 | 2427 | 17.00 |
| | | 5 | 2432 | 17.00 |
| | | 6 | 2437 | 17.00 |
| | | 7 | 2442 | 17.00 |
| | | 8 | 2447 | 17.00 |
| | | 9 | 2452 | 17.00 |
| | | 10 | 2457 | 17.00 |
| | | 11 | 2462 | 17.00 |
| | | 12 | 2467 | 15.00 |
| | | 13 | 2472 | 13.00 |
| 802.11n | 20 MHz | 1 | 2412 | 15.50 |
| | | 2 | 2417 | 15.50 |
| | | 3 | 2422 | 15.50 |
| | | 4 | 2427 | 15.50 |
| | | 5 | 2432 | 15.50 |
| | | 6 | 2437 | 15.50 |
| | | 7 | 2442 | 15.50 |
| | | 8 | 2447 | 15.50 |
| | | 9 | 2452 | 15.50 |
| | | 10 | 2457 | 15.50 |
| | | 11 | 2462 | 15.50 |
| | | 12 | 2467 | 15.50 |
| | | 13 | 2472 | 12.50 |

Wi-Fi 2.4GHz Measured Results

| Band | Mode | Ch # | Freq. (MHz) | Main Antenna Average Power (dBm) | | |
|-----------------|---------|------|-------------|----------------------------------|---------|-------------------|
| | | | | Meas Pwr | Tune-up | SAR Test (Yes/No) |
| DSSS 2.4 GHz | 802.11b | 1 | 2412 | 12.8 | 14.0 | Yes |
| | | 6 | 2437 | 13.5 | 14.0 | |
| | | 11 | 2462 | 13.5 | 14.0 | |
| | | 13 | 2472 | 12.6 | 14.0 | |

Duty Factor Measured Results

| Mode | T on (ms) | Period (ms) | Duty Cycle | Crest Factor (1/duty cycle) |
|---------|-----------|-------------|------------|-----------------------------|
| 802.11b | 100 | 100 | 100.0% | 1.00 |

Note(s):

Duty Cycle = (T on / period) * 100%

Duty Cycle plots

802.11b



9.2. Bluetooth

Maximum Output Power (Tune-up Limit) for Bluetooth

| Band | Mode | Channel | Frequency (MHz) | Tune-up PowerLimit (dBm) |
|-------------------|--------------------|---------|-----------------|--------------------------|
| | | | | Main Antenna |
| Bluetooth 2.4 GHz | BR | 0 | 2402 | 10.0 |
| | | 39 | 2441 | 10.0 |
| | | 78 | 2480 | 10.0 |
| | EDR, $\pi/4$ DQPSK | 0 | 2402 | 9.5 |
| | | 39 | 2441 | 9.5 |
| | | 78 | 2480 | 9.5 |
| | EDR, 8-DPSK | 0 | 2402 | 9.0 |
| | | 39 | 2441 | 9.0 |
| | | 78 | 2480 | 9.0 |
| | LE | 37 | 2402 | 0.0 |
| | | 0 | 2404 | 5.0 |
| | | 17 | 2440 | 5.0 |
| | | 35 | 2476 | 5.0 |
| | | 36 | 2478 | 0.0 |
| | | 39 | 2480 | 0.0 |

9.3. ANT/ANT+

Maximum Output Power (Tune-up Limit) for ANT/ANT+

| Band | Mode | Frequency (MHz) | Tune-up PowerLimit (dBm) |
|----------|------|-----------------|--------------------------|
| | | | Main Antenna |
| ANT/ANT+ | GFSK | 2402 | 1.0 |
| | | 2404 | 5.0 |
| | | 2440 | 5.0 |
| | | 2478 | 5.0 |
| | | 2480 | 1.0 |

9.4. NFC

Conducted output power cannot be measured for NFC, therefore a 2 dB scaling factor shall be used to account for potential variations between samples.

Duty Factor Measured Results

| Mode | T on (ms) | Period (ms) | Duty Cycle | Crest Factor (1/duty cycle) |
|--------|-----------|-------------|------------|-----------------------------|
| Type A | 100.000 | 100.000 | 100.0% | 1.00 |

Note(s):

Duty Cycle = (T on / period) * 100%

Duty Cycle plots

Type A



10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for Wi-Fi = Measured SAR * Tune-up scaling factor * Duty Cycle scaling factor
- Duty Cycle scaling factor = 1 / Duty cycle (%)

KDB 447498 D01 General RF Exposure Guidance:

Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 248227 D01 SAR meas for 802.11:

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the initial test position(s) by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The initial test position(s) is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the reported SAR for the initial test position is:

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested.
 - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
 - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required test channels are considered.
 - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

To determine the initial test position, Area Scans were performed to determine the position with the *Maximum Value of SAR (measured)*. The position that produced the highest *Maximum Value of SAR* is considered the worst case position; thus used as the initial test position.

10.1. Wi-Fi (DTS Band)

When the 802.11b reported SAR of the highest measured maximum output power channel is ≤ 2.0 W/kg, no further SAR testing is required. If SAR is > 2.0 W/kg and ≤ 3.0 W/kg, SAR is required for the next highest measured output power channel. Finally, if SAR is > 3.0 W/kg, SAR is required for the third channel.

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 3.0 W/kg.

| RF Exposure Conditions | Mode | Power State | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Area Scan Max. SAR (10g W/kg) | Duty Cycle | Power (dBm) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|---------|-------------|------------|---------------|-------|-------------|-------------------------------|------------|---------------|-------|-----------------|--------------|----------|
| | | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | |
| Extremity | 802.11b | Default | 0 | Back | 6 | 2437 | 0.083 | 100.0% | 14.0 | 13.5 | 0.072 | 0.081 | 1 |

Adjusted SAR for 802.11g mode

| 802.11b Max. Power | | 802.11g Max. Power | | Worst SAR for 802.11b (W/kg) | Adjusted SAR for 802.11g (W/kg) |
|--------------------|----|--------------------|----|------------------------------|---------------------------------|
| dBm | mW | dBm | mW | | |
| 14.0 | 25 | 17.0 | 50 | 0.072 | 0.144 |

10.2. NFC

| RF Exposure Conditions | Mode | Dist. (mm) | Freq. (MHz) | Duty Cycle | Tolerance Scaling ¹ (dB) | Test Position | 10-g SAR (W/kg) | | Plot No. |
|------------------------|--------|------------|-------------|------------|-------------------------------------|---------------|-----------------|--------------|----------|
| | | | | | | | Meas. | Scaled | |
| Extremity | Type A | 0 | 13.56 | 100% | 2 | Back | 0.000 | 0.000 | 2 |

Note:

Conducted output power measurements for NFC are not practical, therefore a 2 dB scaling factor shall be used to account for potential variations between samples.

10.3. Standalone SAR Test Exclusion Considerations & Estimated SAR

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$, for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

| RF Air interface | RF Exposure Conditions | Frequency (GHz) | Max. tune-up tolerance Power | | Min. test separation distance (mm) | SAR test exclusion Result* | Estimated 10-g SAR (W/kg) |
|------------------|------------------------|-----------------|------------------------------|-------|------------------------------------|----------------------------|---------------------------|
| | | | (dBm) | (mW) | | | |
| Bluetooth | Extremity | 2.480 | 10.00 | 10.00 | 5 | 3.1 | 0.168 |
| ANT/ANT+ | Extremity | 2.478 | 5.00 | 3.16 | 5 | 0.9 | 0.053 |

Conclusion:

*: The computed value is ≤ 7.5 ; therefore, this qualifies for Standalone SAR test exclusion.

11. SAR Measurement Variability

In accordance with published RF Exposure KDB 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.8 or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.8 or 2 W/kg (1-g or 10-g respectively), repeat that measurement once.
- 3) Perform a second repeated measurement only if the **ratio of largest to smallest SAR** for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 or 3.6 W/kg (~ 10% from the 1-g or 10-g respective SAR limit).
- 4) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

Note(s):

Repeated measurement is not required since the original highest measured SAR is < 0.8 W/kg (1-g) or 2 W/kg (10-g) .

12. Simultaneous Transmission Conditions

Simultaneous Transmission is not supported.

Appendixes

Refer to separated files for the following appendixes.

Appendix A: SAR Setup Photos

Appendix B: SAR System Check Plots

Appendix C: SAR Highest Test Plots

Appendix D: SAR Tissue Ingredients

Appendix E: SAR Probe Certificates

Appendix F: SAR Dipole Certificates

END OF REPORT

2025-01-14 System Performance Check Report CLA-13 - SN1017

Summary

| | | | |
|-----------------------|-------------------------------|----------------|-----|
| Dipole | CLA-13 - SN1017 | | |
| Frequency [MHz] | 13.0 | | |
| Phantom Section TSL | Flat Head Simulating Liquid | Dev. Peak [%] | n/a |
| Power [dBm] | 16.0 | Iso. Error [%] | 2.5 |

Exposure Conditions

| | | | |
|----------------------|-------|------------------------|------|
| Dipole Distance [mm] | 0 | TSL Permittivity | 54.2 |
| Conversion Factor | 15.55 | TSL Conductivity [S/m] | 0.72 |

Hardware Setup

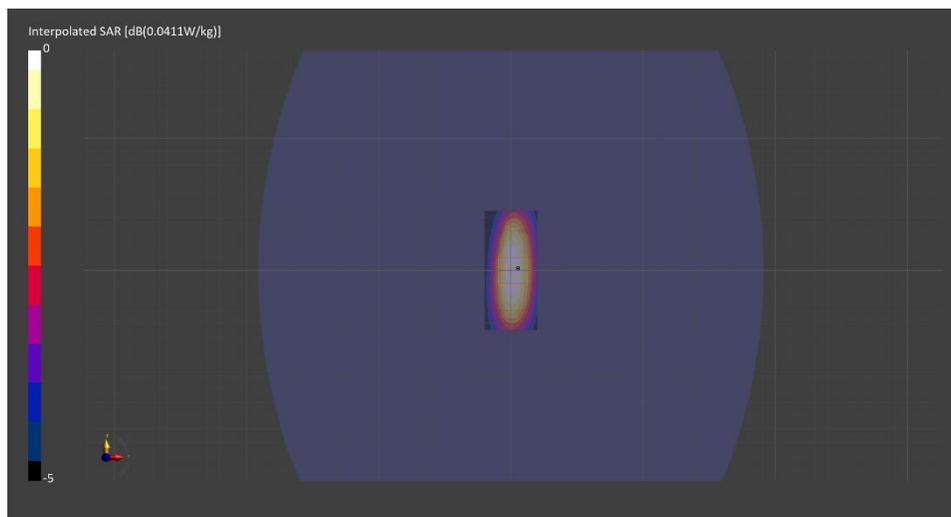
| | | | |
|--------------------------|------------------------------|------------------|--------------------------------------|
| Probe Calibration Date | EX3DV4 - SN7709 2024-11-11 | Phantom | ELI V8.0 (20deg probe tilt) - SN2081 |
| DAE Calibration Date | DAE4 Sn1714 2024-11-06 | TSL Meas. Date | HBBL4-250V3 2025-01-14 |

Scans Setup

| | Area Scan | Zoom Scan |
|---------------------|-------------|--------------------|
| Grid Extents [mm] | 40.0 x 90.0 | 30.0 x 30.0 x 30.0 |
| Grid Steps [mm] | 10.0 x 15.0 | 6.0 x 6.0 x 1.5 |
| Sensor Surface [mm] | 3.0 | 1.4 |
| Graded Grid | N/A | Yes |
| M2/M1 [%] | | 75.9 |
| Dist 3dB Peak [mm] | | 15.6 |

Measurement Results

| | Area Scan | Zoom Scan |
|------------------|-----------|--------------|
| psSAR1g [W/Kg] | 0.022 | 0.021 |
| psSAR10g [W/Kg] | 0.018 | 0.013 |
| Power Drift [dB] | N/A | -0.05 |



2025-01-15 System Performance Check Report D2450V2 - SN963

Summary

| | | | |
|-----------------------|-------------------------------|----------------|------|
| Dipole | D2450V2 - SN963 | | |
| Frequency [MHz] | 2450.0 | | |
| Phantom Section TSL | Flat Head Simulating Liquid | Dev. Peak [%] | -4.4 |
| Power [dBm] | 17.0 | Iso. Error [%] | 0.8 |

Exposure Conditions

| | | | |
|----------------------|------|------------------------|------|
| Dipole Distance [mm] | 10 | TSL Permittivity | 40.1 |
| Conversion Factor | 7.73 | TSL Conductivity [S/m] | 1.73 |

Hardware Setup

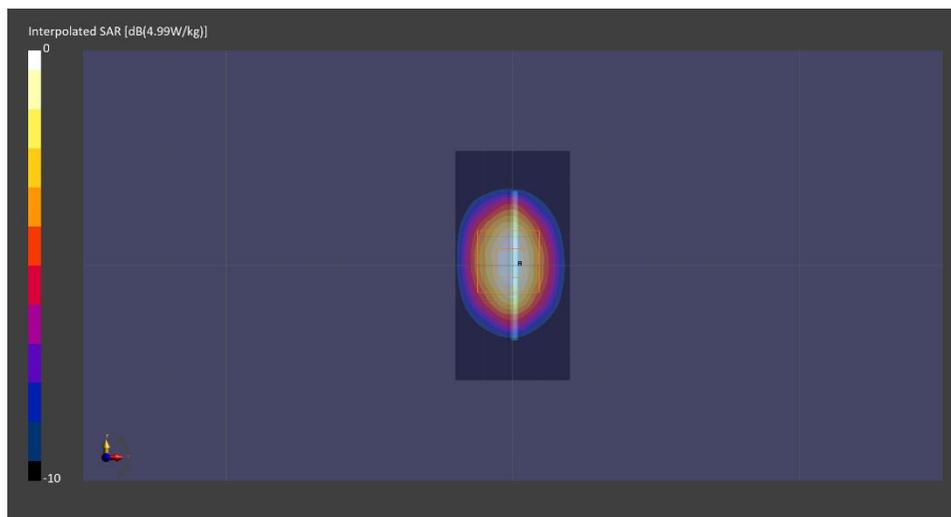
| | | | |
|--------------------------|------------------------------|------------------|--------------------------------------|
| Probe Calibration Date | EX3DV4 - SN7709 2024-11-11 | Phantom | ELI V5.0 (20deg probe tilt) - SN1196 |
| DAE Calibration Date | DAE4 Sn1714 2024-11-06 | TSL Meas. Date | HBBL-600-10000 2025-01-15 |

Scans Setup

| | Area Scan | Zoom Scan |
|---------------------|-------------|--------------------|
| Grid Extents [mm] | 40.0 x 80.0 | 30.0 x 30.0 x 30.0 |
| Grid Steps [mm] | 10.0 x 10.0 | 5.0 x 5.0 x 1.5 |
| Sensor Surface [mm] | 3.0 | 1.4 |
| Graded Grid | N/A | Yes |
| M2/M1 [%] | | 82.1 |
| Dist 3dB Peak [mm] | | 9.1 |

Measurement Results

| | Area Scan | Zoom Scan |
|------------------|-----------|-------------|
| psSAR1g [W/Kg] | 2.56 | 2.55 |
| psSAR10g [W/Kg] | 1.19 | 1.21 |
| Power Drift [dB] | -0.05 | 0.01 |



Measurement Report for WLAN 2.4GHz, BACK

Exposure Conditions

| | | | |
|----------------------------------|---|------------------------|-------------------------------|
| Band | WLAN 2.4GHz | TSL Permittivity | 39.8 |
| Frequency [MHz] Channel Number | 2437.000 6 | TSL Conductivity [S/m] | 1.73 |
| Group UID | WLAN 10415-AAA | Phantom Section TSL | Flat Head Simulating Liquid |
| Conversion Factor | 7.73 | Test Distance [mm] | 0.00 |
| Communication Configuration | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle) | | |

Hardware Setup

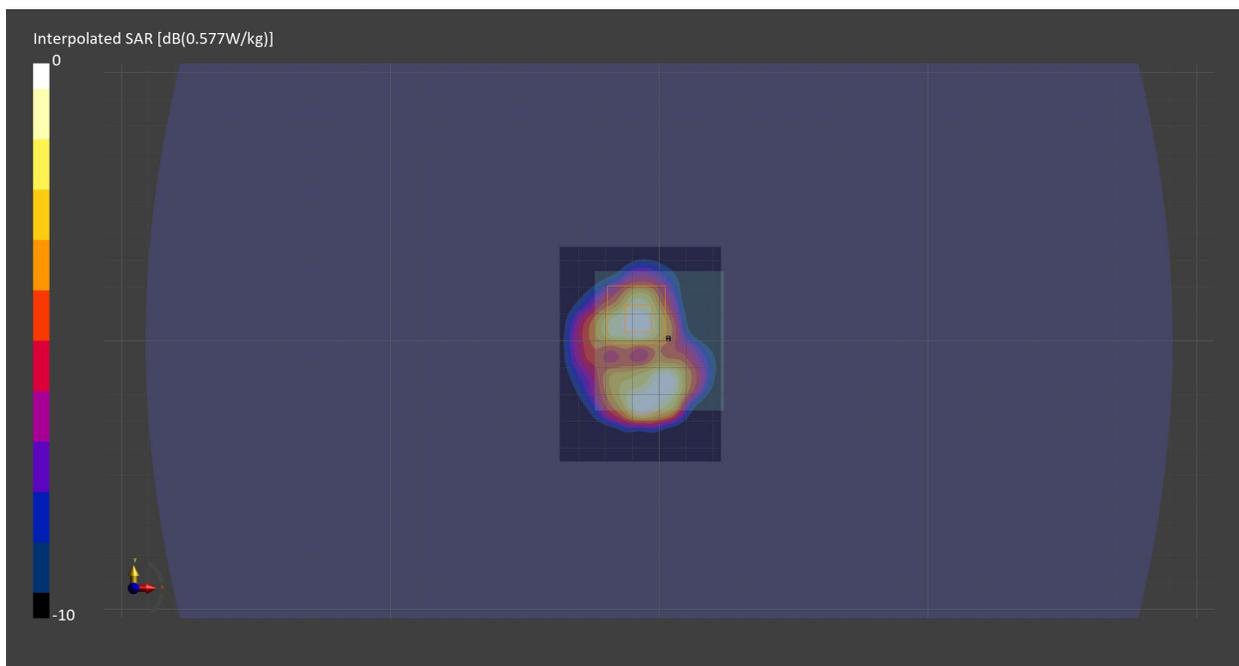
| | | | |
|--------------------------|------------------------------|---------|--------------------------------------|
| Probe Calibration Date | EX3DV4 - SN7709 2024-11-11 | Phantom | ELI V5.0 (20deg probe tilt) - SN1196 |
| DAE Calibration Date | DAE4 Sn1714 2024-11-06 | TSL | HBBL-600-10000 |

Scans Setup

| | Area Scan | Zoom Scan |
|---------------------|-------------|--------------------|
| Grid Extents [mm] | 60.0 x 80.0 | 30.0 x 30.0 x 30.0 |
| Grid Steps [mm] | 10.0 x 10.0 | 5.0 x 5.0 x 1.5 |
| Sensor Surface [mm] | 3.0 | 1.4 |
| Graded Grid | N/A | Yes |
| M2/M1 [%] | | 69.2 |
| Dist 3dB Peak [mm] | | 4.7 |

Measurement Results

| | Area Scan | Zoom Scan |
|------------------|-----------|--------------|
| psSAR1g [W/Kg] | 0.181 | 0.182 |
| psSAR10g [W/Kg] | 0.083 | 0.072 |
| Power Drift [dB] | 0.05 | -0.01 |



Measurement Report for Custom Band, BACK, NFC

Exposure Conditions

| | | | |
|----------------------------------|----------------|------------------------|-------------------------------|
| Band | Custom Band | TSL Permittivity | 54.2 |
| Frequency [MHz] Channel Number | 13.600 13600 | TSL Conductivity [S/m] | 0.72 |
| Group UID | CW 0-- | Phantom Section TSL | Flat Head Simulating Liquid |
| Conversion Factor | 15.55 | Test Distance [mm] | 0.00 |
| Communication Configuration | CW | | |

Hardware Setup

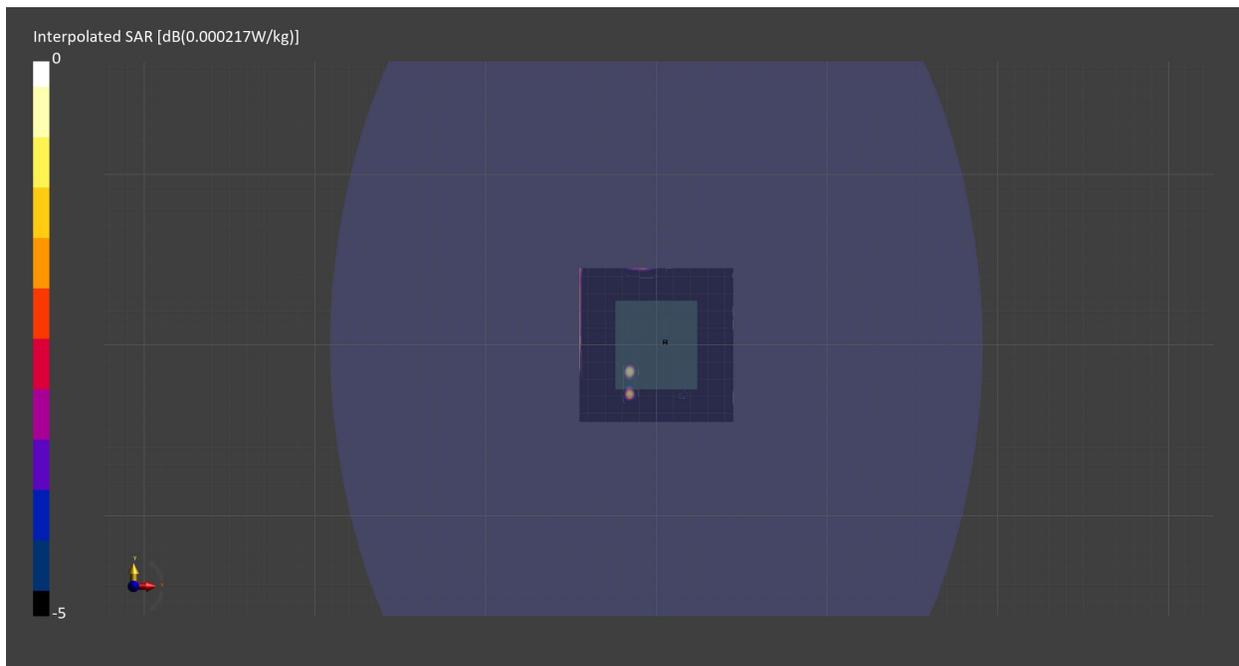
| | | | |
|--------------------------|------------------------------|---------|--------------------------------------|
| Probe Calibration Date | EX3DV4 - SN7709 2024-11-11 | Phantom | ELI V8.0 (20deg probe tilt) - SN2081 |
| DAE Calibration Date | DAE4 Sn1714 2024-11-06 | TSL | HBBL4-250V3 |

Scans Setup

| | Area Scan | Zoom Scan |
|---------------------|-------------|-----------|
| Grid Extents [mm] | 50.0 x 50.0 | x x |
| Grid Steps [mm] | 15.0 x 15.0 | x x |
| Sensor Surface [mm] | 3.0 | |
| Graded Grid | N/A | |
| M2/M1 [%] | | |
| Dist 3dB Peak [mm] | | |

Measurement Results

| | Area Scan | Zoom Scan |
|------------------|-----------|-----------|
| psSAR1g [W/Kg] | 0 | 0 |
| psSAR10g [W/Kg] | 0 | 0 |
| Power Drift [dB] | N/A | N/A |



Head Tissue Simulating Liquids

| | | | |
|--|---|-----------------------------|-------------------------|
| Application | Specific absorption rate according to standards (e.g., IEC 62209-x, IEEE 1528) | | |
| Packaging | Plastic container of 10 liters with nozzle | | |
| Life Time | Life time and stability of the liquid depend on usage, storage, and handling of tissue simulating liquid | | |
| Options | Tissue simulating liquids for frequencies outside the below listed ranges are available upon request (please contact info@speag.swiss) | | |
| Head Tissue | Parameters according to IEEE 1528 / IEC 62209-1/ IEC 62209-2 / FCC KDB 865664 | | |
| Narrow-Band Solutions (±5% Tolerance) | Product | Test Frequency (MHz) | Main Ingredients |
| | HSL300V2 | 300 | Water, Sugar |
| | HSL450V2 | 450 | Water, Sugar |
| | HSL750V2 | 750 | Water, Sugar |
| | HSL900V2 | 835, 900 | Water, Sugar |
| Broad-Band Solutions (±5% Tolerance) | Product | Test Frequency (MHz) | Main Ingredients |
| | HBBL1350-1850V3 | 1450 - 1800 | Water, Tween |
| | HBBL1550-1950V3 | 1750 - 1850 | Water, Tween |
| | HBBL1900-3800V3 | 1950 - 3000 | Water, Tween |
| | HBBL3500-5800V5 | 3500 - 5800 | Water, Oil |
| Broad-Band Solutions (±10% Tolerance) | Product | Test Frequency (MHz) | Main Ingredients |
| | HBBL4-250V3 | 4 - 250 | Water, Tween |
| | HBBL1350-1850V3 | 1300 - 1850 | Water, Tween |
| | HBBL1550-1950V3 | 1550 - 1950 | Water, Tween |
| | HBBL1900-3800V3 | 1900 - 3800 | Water, Tween |
| | HBBL600-10000V6 | 600 - 10000 | Water, Oil |

Measurement Certificate / Material Test

| | |
|--------------|---|
| Item Name | Head Tissue Simulating Liquid (HBBL600-10000V6) |
| Product No. | SL AAH U16 BD (Batch: 180208-1) |
| Manufacturer | SPEAG |

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

Test Condition

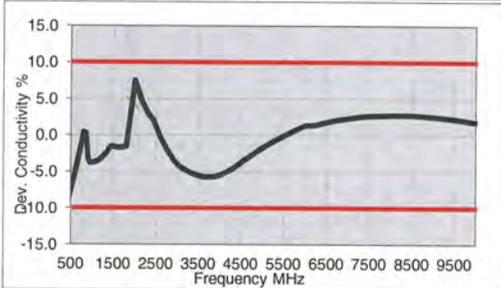
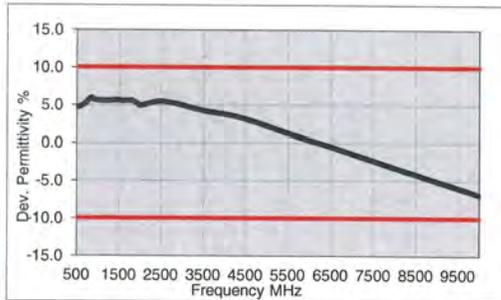
Ambient Condition 22°C ; 30% humidity
 TSL Temperature 22°C
 Test Date 8-Feb-18
 Operator WM

Additional Information

TSL Density
 TSL Heat-capacity

Results

| f [MHz] | Measured | | | Target | | Diff.to Target [%] | |
|---------|----------|------|-------|--------|-------|--------------------|---------|
| | e' | e'' | sigma | eps | sigma | Δ-eps | Δ-sigma |
| 800 | 44.1 | 20.3 | 0.90 | 41.7 | 0.90 | 5.8 | 0.3 |
| 825 | 44.1 | 19.9 | 0.91 | 41.6 | 0.91 | 6.0 | 0.4 |
| 835 | 44.1 | 19.7 | 0.92 | 41.5 | 0.91 | 6.1 | 0.9 |
| 850 | 44.0 | 19.4 | 0.92 | 41.5 | 0.92 | 6.0 | 0.4 |
| 900 | 43.9 | 18.7 | 0.94 | 41.5 | 0.97 | 5.8 | -3.1 |
| 1400 | 42.9 | 14.9 | 1.16 | 40.6 | 1.18 | 5.7 | -1.6 |
| 1450 | 42.8 | 14.7 | 1.18 | 40.5 | 1.20 | 5.7 | -1.7 |
| 1600 | 42.6 | 14.2 | 1.26 | 40.3 | 1.28 | 5.7 | -1.9 |
| 1625 | 42.6 | 14.1 | 1.28 | 40.3 | 1.30 | 5.8 | -1.4 |
| 1640 | 42.6 | 14.1 | 1.29 | 40.3 | 1.31 | 5.8 | -1.2 |
| 1650 | 42.5 | 14.1 | 1.29 | 40.2 | 1.31 | 5.6 | -1.8 |
| 1700 | 42.4 | 14.0 | 1.32 | 40.2 | 1.34 | 5.6 | -1.6 |
| 1750 | 42.3 | 13.9 | 1.35 | 40.1 | 1.37 | 5.5 | -1.5 |
| 1800 | 42.3 | 13.8 | 1.38 | 40.0 | 1.40 | 5.7 | -1.4 |
| 1810 | 42.3 | 13.8 | 1.39 | 40.0 | 1.40 | 5.7 | -0.7 |
| 1825 | 42.3 | 13.7 | 1.40 | 40.0 | 1.40 | 5.7 | 0.0 |
| 1850 | 42.2 | 13.7 | 1.41 | 40.0 | 1.40 | 5.5 | 0.7 |
| 1900 | 42.1 | 13.6 | 1.44 | 40.0 | 1.40 | 5.3 | 2.9 |
| 1950 | 42.0 | 13.6 | 1.47 | 40.0 | 1.40 | 5.0 | 5.0 |
| 2000 | 42.0 | 13.5 | 1.51 | 40.0 | 1.40 | 5.0 | 7.9 |
| 2050 | 41.9 | 13.5 | 1.54 | 39.9 | 1.44 | 5.0 | 6.6 |
| 2100 | 41.8 | 13.5 | 1.57 | 39.8 | 1.49 | 5.0 | 5.4 |
| 2150 | 41.8 | 13.5 | 1.61 | 39.7 | 1.53 | 5.2 | 5.0 |
| 2200 | 41.7 | 13.4 | 1.64 | 39.6 | 1.58 | 5.2 | 3.9 |
| 2250 | 41.6 | 13.4 | 1.68 | 39.6 | 1.62 | 5.2 | 3.6 |
| 2300 | 41.6 | 13.4 | 1.72 | 39.5 | 1.67 | 5.4 | 3.2 |
| 2350 | 41.5 | 13.4 | 1.76 | 39.4 | 1.71 | 5.4 | 2.9 |
| 2400 | 41.4 | 13.5 | 1.80 | 39.3 | 1.76 | 5.4 | 2.5 |
| 2450 | 41.4 | 13.5 | 1.84 | 39.2 | 1.80 | 5.6 | 2.2 |
| 2500 | 41.3 | 13.5 | 1.88 | 39.1 | 1.85 | 5.5 | 1.4 |
| 2550 | 41.2 | 13.5 | 1.92 | 39.1 | 1.91 | 5.4 | 0.6 |
| 2600 | 41.1 | 13.6 | 1.96 | 39.0 | 1.96 | 5.4 | -0.2 |
| 3500 | 39.6 | 14.1 | 2.75 | 37.9 | 2.91 | 4.3 | -5.5 |
| 3700 | 39.2 | 14.3 | 2.94 | 37.7 | 3.12 | 4.1 | -5.7 |



| | | | | | | | |
|-------|------|------|-------|------|-------|------|------|
| 5200 | 36.7 | 15.9 | 4.61 | 36.0 | 4.66 | 1.9 | -1.0 |
| 5250 | 36.6 | 16.0 | 4.67 | 35.9 | 4.71 | 1.8 | -0.9 |
| 5300 | 36.5 | 16.0 | 4.72 | 35.9 | 4.76 | 1.7 | -0.7 |
| 5500 | 36.1 | 16.2 | 4.96 | 35.6 | 4.96 | 1.3 | -0.1 |
| 5600 | 35.9 | 16.3 | 5.08 | 35.5 | 5.07 | 1.1 | 0.2 |
| 5700 | 35.7 | 16.4 | 5.19 | 35.4 | 5.17 | 0.9 | 0.5 |
| 5800 | 35.6 | 16.5 | 5.31 | 35.3 | 5.27 | 0.8 | 0.8 |
| 6000 | 35.2 | 16.6 | 5.55 | 35.1 | 5.48 | 0.4 | 1.3 |
| 6500 | 34.3 | 17.1 | 6.18 | 34.5 | 6.07 | -0.5 | 1.8 |
| 7000 | 33.4 | 17.5 | 6.81 | 33.9 | 6.65 | -1.4 | 2.3 |
| 7500 | 32.5 | 17.8 | 7.43 | 33.3 | 7.24 | -2.3 | 2.7 |
| 8000 | 31.7 | 18.1 | 8.06 | 32.7 | 7.84 | -3.2 | 2.8 |
| 8500 | 30.8 | 18.4 | 8.68 | 32.1 | 8.45 | -4.2 | 2.8 |
| 9000 | 30.0 | 18.6 | 9.31 | 31.5 | 9.08 | -5.1 | 2.6 |
| 9500 | 29.1 | 18.8 | 9.93 | 31.0 | 9.71 | -5.9 | 2.2 |
| 10000 | 28.3 | 19.0 | 10.55 | 30.4 | 10.36 | -6.9 | 1.8 |

Measurement Certificate / Material Test

| | |
|--------------|---|
| Item Name | Head Tissue Simulating Liquid (HBBL4-250V3) |
| Product No. | SL AAH 005 AD (Batch: 211221-1) |
| Manufacturer | SPEAG |

Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

Setup Validation

Validation results were within $\pm 2.5\%$ towards the target values of Methanol.

Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

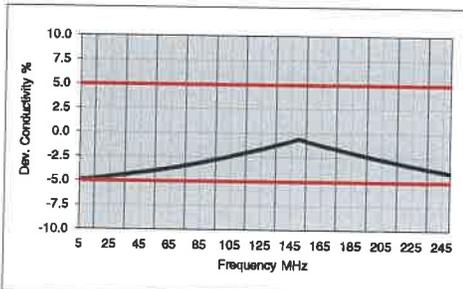
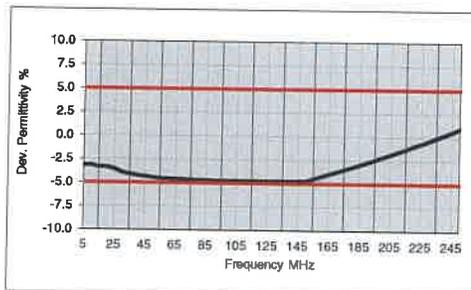
Test Condition

| | |
|-----------------|--|
| Ambient | Environment temperatur (22 \pm 3) $^{\circ}$ C and humidity < 70%. |
| TSL Temperature | 22 $^{\circ}$ C |
| Test Date | 7-Jan-22 |
| Operator | JML |

Additional Information

| | |
|-------------------|-------------------------|
| TSL Density | 1.042 g/cm ³ |
| TSL Heat-capacity | 3.574 kJ/(kg \cdot K) |

| f [MHz] | Measured | | | Target | | Diff.to-Target [%] | |
|---------|-------------|--------------|-------|--------|-------|--------------------|----------------|
| | ϵ' | ϵ'' | sigma | eps | sigma | $\Delta\epsilon'$ | $\Delta\sigma$ |
| 5 | 53.7 | 2584.30 | 0.71 | 55.5 | 0.75 | -3.2 | -4.9 |
| 10 | 53.7 | 1282.57 | 0.71 | 55.5 | 0.75 | -3.2 | -4.9 |
| 15 | 53.5 | 855.85 | 0.71 | 55.3 | 0.75 | -3.4 | -4.8 |
| 20 | 53.3 | 642.50 | 0.71 | 55.1 | 0.75 | -3.3 | -4.7 |
| 25 | 53.1 | 514.52 | 0.72 | 55.0 | 0.75 | -3.5 | -4.6 |
| 30 | 52.9 | 429.24 | 0.72 | 55.0 | 0.75 | -3.9 | -4.5 |
| 35 | 52.7 | 368.38 | 0.72 | 54.9 | 0.75 | -4.1 | -4.4 |
| 40 | 52.5 | 322.73 | 0.72 | 54.8 | 0.75 | -4.2 | -4.2 |
| 45 | 52.3 | 287.27 | 0.72 | 54.7 | 0.75 | -4.3 | -4.1 |
| 50 | 52.1 | 258.93 | 0.72 | 54.6 | 0.75 | -4.4 | -4.0 |
| 55 | 52.0 | 235.78 | 0.72 | 54.4 | 0.75 | -4.5 | -3.9 |
| 60 | 51.8 | 216.52 | 0.72 | 54.3 | 0.75 | -4.6 | -3.8 |
| 65 | 51.7 | 200.24 | 0.72 | 54.2 | 0.75 | -4.6 | -3.7 |
| 70 | 51.6 | 188.31 | 0.73 | 54.1 | 0.75 | -4.6 | -3.6 |
| 75 | 51.5 | 174.24 | 0.73 | 54.0 | 0.75 | -4.7 | -3.4 |
| 80 | 51.4 | 163.70 | 0.73 | 53.9 | 0.75 | -4.7 | -3.3 |
| 85 | 51.2 | 154.40 | 0.73 | 53.8 | 0.75 | -4.7 | -3.1 |
| 90 | 51.1 | 148.15 | 0.73 | 53.7 | 0.75 | -4.7 | -2.9 |
| 95 | 51.0 | 138.77 | 0.73 | 53.5 | 0.75 | -4.7 | -2.8 |
| 100 | 50.9 | 132.14 | 0.74 | 53.4 | 0.75 | -4.7 | -2.6 |
| 105 | 50.8 | 126.15 | 0.74 | 53.3 | 0.76 | -4.7 | -2.4 |
| 110 | 50.7 | 120.71 | 0.74 | 53.2 | 0.76 | -4.7 | -2.2 |
| 115 | 50.6 | 115.75 | 0.74 | 53.1 | 0.76 | -4.7 | -2.1 |
| 120 | 50.5 | 111.21 | 0.74 | 53.0 | 0.76 | -4.7 | -1.9 |
| 125 | 50.4 | 107.03 | 0.74 | 52.9 | 0.76 | -4.7 | -1.7 |
| 130 | 50.3 | 103.18 | 0.75 | 52.8 | 0.76 | -4.7 | -1.5 |
| 135 | 50.1 | 99.82 | 0.75 | 52.6 | 0.76 | -4.7 | -1.3 |
| 140 | 50.0 | 96.32 | 0.75 | 52.5 | 0.76 | -4.7 | -1.1 |
| 145 | 49.9 | 93.24 | 0.75 | 52.4 | 0.76 | -4.7 | -0.8 |
| 150 | 49.8 | 90.38 | 0.75 | 52.3 | 0.76 | -4.7 | -0.6 |
| 155 | 49.7 | 87.70 | 0.76 | 52.1 | 0.76 | -4.5 | -0.8 |
| 160 | 49.6 | 85.20 | 0.76 | 51.8 | 0.77 | -4.2 | -1.0 |
| 165 | 49.5 | 82.84 | 0.76 | 51.8 | 0.77 | -4.0 | -1.2 |
| 170 | 48.4 | 80.83 | 0.76 | 51.4 | 0.77 | -3.7 | -1.4 |
| 175 | 49.4 | 78.55 | 0.76 | 51.1 | 0.78 | -3.5 | -1.6 |
| 180 | 49.3 | 76.58 | 0.77 | 50.9 | 0.78 | -3.2 | -1.8 |
| 185 | 49.2 | 74.72 | 0.77 | 50.7 | 0.78 | -3.0 | -2.0 |
| 190 | 49.1 | 72.96 | 0.77 | 50.4 | 0.79 | -2.7 | -2.2 |
| 195 | 49.0 | 71.29 | 0.77 | 50.2 | 0.79 | -2.4 | -2.3 |
| 200 | 48.9 | 69.71 | 0.78 | 50.0 | 0.80 | -2.1 | -2.5 |
| 205 | 48.8 | 68.20 | 0.78 | 49.7 | 0.80 | -1.9 | -2.7 |
| 210 | 48.7 | 66.77 | 0.78 | 49.5 | 0.80 | -1.6 | -2.8 |
| 215 | 48.6 | 65.41 | 0.78 | 49.3 | 0.81 | -1.3 | -3.0 |
| 220 | 48.6 | 64.10 | 0.78 | 49.0 | 0.81 | -1.0 | -3.2 |
| 225 | 48.5 | 62.86 | 0.79 | 48.8 | 0.81 | -0.7 | -3.3 |
| 230 | 48.4 | 61.67 | 0.79 | 48.6 | 0.82 | -0.4 | -3.5 |
| 235 | 48.3 | 60.54 | 0.79 | 48.3 | 0.82 | 0.0 | -3.6 |
| 240 | 48.2 | 59.45 | 0.79 | 48.1 | 0.82 | 0.3 | -3.8 |
| 245 | 48.1 | 58.41 | 0.80 | 47.9 | 0.83 | 0.6 | -3.9 |
| 250 | 48.1 | 57.41 | 0.80 | 47.6 | 0.83 | 0.9 | -4.1 |





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Accreditation No.: **SCS 0108**

Client

UL

Research Triangle Park, USA

Certificate No.

EX-7709_Nov24

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:7709**

Calibration procedure(s) **QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6,
QA CAL-25.v8
Calibration procedure for dosimetric E-field probes**

Calibration date **November 11, 2024**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3) °C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID | Cal Date (Certificate No.) | Scheduled Calibration |
|----------------------------|------------------|-----------------------------------|-----------------------|
| Power meter NRP2 | SN: 104778 | 26-Mar-24 (No. 217-04036/04037) | Mar-25 |
| Power sensor NRP-Z91 | SN: 103244 | 26-Mar-24 (No. 217-04036) | Mar-25 |
| OCP DAK-3.5 (weighted) | SN: 1249 | 23-Sep-24 (OCP-DAK3.5-1249_Sep24) | Sep-25 |
| OCP DAK-12 | SN: 1016 | 24-Sep-24 (OCP-DAK12-1016_Sep24) | Sep-25 |
| Reference 20 dB Attenuator | SN: CC2552 (20x) | 26-Mar-24 (No. 217-04046) | Mar-25 |
| DAE4 | SN: 660 | 23-Feb-24 (No. DAE4-660_Feb24) | Feb-25 |
| Reference Probe EX3DV4 | SN: 7349 | 03-Jun-24 (No. EX3-7349_Jun24) | Jun-25 |

| Secondary Standards | ID | Check Date (in house) | Scheduled Check |
|-------------------------|------------------|-----------------------------------|------------------------|
| Power meter E4419B | SN: GB41293874 | 06-Apr-16 (in house check Jun-24) | In house check: Jun-26 |
| Power sensor E4412A | SN: MY41498087 | 06-Apr-16 (in house check Jun-24) | In house check: Jun-26 |
| Power sensor E4412A | SN: 000110210 | 06-Apr-16 (in house check Jun-24) | In house check: Jun-26 |
| RF generator HP 8648C | SN: US3642U01700 | 04-Aug-99 (in house check Jun-24) | In house check: Jun-26 |
| Network Analyzer E8358A | SN: US41080477 | 31-Mar-14 (in house check Sep-24) | In house check: Sep-26 |

| | | | |
|---------------|------------------|-----------------------|-----------|
| | Name | Function | Signature |
| Calibrated by | Krešimir Franjić | Laboratory Technician | |
| Approved by | Sven Kühn | Technical Manager | |

Issued: November 11, 2024

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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Accreditation No.: **SCS 0108**

Glossary

| | |
|--------------------------|--|
| TSL | tissue simulating liquid |
| NORM _{x,y,z} | sensitivity in free space |
| ConvF | sensitivity in TSL / NORM _{x,y,z} |
| DCP | diode compression point |
| CF | crest factor (1/duty_cycle) of the RF signal |
| A, B, C, D | modulation dependent linearization parameters |
| Polarization φ | φ rotation around probe axis |
| Polarization ϑ | ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis |
| Connector Angle | information used in DASY system to align probe sensor X to the robot coordinate system |

Calibration is Performed According to the Following Standards:

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices – Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal. DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,y,z}**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM_x (no uncertainty required).

Parameters of Probe: EX3DV4 - SN:7709

Basic Calibration Parameters

| | Sensor X | Sensor Y | Sensor Z | Unc (k = 2) |
|---------------------------------------|----------|----------|----------|-------------|
| Norm ($\mu V/(V/m)^2$) ^A | 0.67 | 0.76 | 0.65 | ±10.1% |
| DCP (mV) ^B | 101.9 | 103.6 | 104.5 | ±4.7% |

Calibration Results for Modulation Response

| UID | Communication System Name | | A dB | B dB $\sqrt{\mu V}$ | C | D dB | VR mV | Max dev. | Max Unc ^E k = 2 |
|-------|-----------------------------|---|---------|------------------------|-------|---------|----------|-------------|----------------------------------|
| 0 | CW | X | 0.00 | 0.00 | 1.00 | 0.00 | 130.4 | ±1.8% | ±4.7% |
| | | Y | 0.00 | 0.00 | 1.00 | | 126.8 | | |
| | | Z | 0.00 | 0.00 | 1.00 | | 123.0 | | |
| 10352 | Pulse Waveform (200Hz, 10%) | X | 1.62 | 61.12 | 6.78 | 10.00 | 60.0 | ±3.2% | ±9.6% |
| | | Y | 1.63 | 61.10 | 6.59 | | 60.0 | | |
| | | Z | 1.57 | 60.79 | 6.57 | | 60.0 | | |
| 10353 | Pulse Waveform (200Hz, 20%) | X | 0.76 | 60.00 | 5.02 | 6.99 | 80.0 | ±2.1% | ±9.6% |
| | | Y | 0.82 | 60.00 | 4.94 | | 80.0 | | |
| | | Z | 46.00 | 80.00 | 11.00 | | 80.0 | | |
| 10354 | Pulse Waveform (200Hz, 40%) | X | 0.11 | 133.32 | 0.70 | 3.98 | 95.0 | ±2.2% | ±9.6% |
| | | Y | 24.00 | 72.00 | 7.00 | | 95.0 | | |
| | | Z | 0.08 | 129.98 | 0.71 | | 95.0 | | |
| 10355 | Pulse Waveform (200Hz, 60%) | X | 8.93 | 158.89 | 27.35 | 2.22 | 120.0 | ±1.7% | ±9.6% |
| | | Y | 11.82 | 153.13 | 10.97 | | 120.0 | | |
| | | Z | 9.65 | 157.53 | 24.90 | | 120.0 | | |
| 10387 | QPSK Waveform, 1 MHz | X | 0.71 | 64.37 | 12.72 | 1.00 | 150.0 | ±3.8% | ±9.6% |
| | | Y | 0.72 | 63.79 | 11.95 | | 150.0 | | |
| | | Z | 0.58 | 62.31 | 11.36 | | 150.0 | | |
| 10388 | QPSK Waveform, 10 MHz | X | 1.46 | 65.59 | 14.06 | 0.00 | 150.0 | ±1.3% | ±9.6% |
| | | Y | 1.42 | 64.91 | 13.55 | | 150.0 | | |
| | | Z | 1.32 | 64.49 | 13.22 | | 150.0 | | |
| 10396 | 64-QAM Waveform, 100 kHz | X | 1.56 | 63.00 | 15.42 | 3.01 | 150.0 | ±1.4% | ±9.6% |
| | | Y | 1.72 | 64.37 | 15.62 | | 150.0 | | |
| | | Z | 1.57 | 63.11 | 15.15 | | 150.0 | | |
| 10399 | 64-QAM Waveform, 40 MHz | X | 2.93 | 66.08 | 15.07 | 0.00 | 150.0 | ±1.8% | ±9.6% |
| | | Y | 2.91 | 65.87 | 14.80 | | 150.0 | | |
| | | Z | 2.81 | 65.63 | 14.68 | | 150.0 | | |
| 10414 | WLAN CCDF, 64-QAM, 40 MHz | X | 3.97 | 65.66 | 15.24 | 0.00 | 150.0 | ±3.4% | ±9.6% |
| | | Y | 4.01 | 65.58 | 15.09 | | 150.0 | | |
| | | Z | 3.83 | 65.37 | 14.93 | | 150.0 | | |

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of Norm X,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Linearization parameter uncertainty for maximum specified field strength.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

Parameters of Probe: EX3DV4 - SN:7709

Sensor Model Parameters

| | C1 fF | C2 fF | α V ⁻¹ | T1 ms V ⁻² | T2 ms V ⁻¹ | T3 ms | T4 V ⁻² | T5 V ⁻¹ | T6 |
|---|----------|----------|-----------------------------|--------------------------|--------------------------|----------|-----------------------|-----------------------|------|
| x | 12.1 | 88.65 | 34.31 | 0.92 | 0.00 | 4.90 | 0.00 | 0.00 | 1.00 |
| y | 13.2 | 95.01 | 33.20 | 3.59 | 0.00 | 4.90 | 0.53 | 0.00 | 1.00 |
| z | 11.2 | 80.95 | 33.20 | 1.65 | 0.00 | 4.90 | 0.19 | 0.00 | 1.00 |

Other Probe Parameters

| | |
|---|------------|
| Sensor Arrangement | Triangular |
| Connector Angle | 77.1° |
| Mechanical Surface Detection Mode | enabled |
| Optical Surface Detection Mode | disabled |
| Probe Overall Length | 337 mm |
| Probe Body Diameter | 10 mm |
| Tip Length | 9 mm |
| Tip Diameter | 2.5 mm |
| Probe Tip to Sensor X Calibration Point | 1 mm |
| Probe Tip to Sensor Y Calibration Point | 1 mm |
| Probe Tip to Sensor Z Calibration Point | 1 mm |
| Recommended Measurement Distance from Surface | 1.4 mm |

Note: Measurement distance from surface can be increased to 3–4 mm for an *Area Scan* job.

Parameters of Probe: EX3DV4 - SN:7709

Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) ^C | Relative Permittivity ^F | Conductivity ^F (S/m) | ConvF X | ConvF Y | ConvF Z | Alpha ^G | Depth ^G (mm) | Unc ^H (k = 2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|--------------------------|
| 13 | 55.0 | 0.75 | 15.55 | 16.83 | 15.88 | 0.00 | 1.25 | ±13.3% |
| 450 | 43.5 | 0.87 | 11.94 | 11.94 | 11.94 | 0.16 | 1.30 | ±13.3% |
| 750 | 41.9 | 0.89 | 10.11 | 9.78 | 9.88 | 0.34 | 1.27 | ±11.0% |
| 900 | 41.5 | 0.97 | 9.47 | 9.16 | 9.25 | 0.34 | 1.27 | ±11.0% |
| 1750 | 40.1 | 1.37 | 8.63 | 8.35 | 8.44 | 0.34 | 1.27 | ±11.0% |
| 1900 | 40.0 | 1.40 | 8.34 | 8.07 | 8.15 | 0.34 | 1.27 | ±11.0% |
| 2100 | 39.8 | 1.49 | 8.42 | 8.15 | 8.23 | 0.34 | 1.27 | ±11.0% |
| 2300 | 39.5 | 1.67 | 8.03 | 7.77 | 7.85 | 0.35 | 1.27 | ±11.0% |
| 2450 | 39.2 | 1.80 | 7.73 | 7.48 | 7.56 | 0.35 | 1.27 | ±11.0% |
| 2600 | 39.0 | 1.96 | 7.81 | 7.56 | 7.63 | 0.35 | 1.27 | ±11.0% |
| 3300 | 38.2 | 2.71 | 7.16 | 6.93 | 7.00 | 0.35 | 1.27 | ±13.1% |
| 3500 | 37.9 | 2.91 | 7.11 | 6.88 | 6.95 | 0.35 | 1.27 | ±13.1% |
| 3700 | 37.7 | 3.12 | 7.13 | 6.90 | 6.97 | 0.35 | 1.27 | ±13.1% |
| 3900 | 37.5 | 3.32 | 6.98 | 6.75 | 6.82 | 0.35 | 1.27 | ±13.1% |
| 4100 | 37.2 | 3.53 | 6.86 | 6.63 | 6.70 | 0.36 | 1.27 | ±13.1% |
| 4200 | 37.1 | 3.63 | 6.81 | 6.58 | 6.65 | 0.36 | 1.27 | ±13.1% |
| 4400 | 36.9 | 3.84 | 6.69 | 6.47 | 6.54 | 0.36 | 1.27 | ±13.1% |
| 4600 | 36.7 | 4.04 | 6.54 | 6.32 | 6.39 | 0.36 | 1.27 | ±13.1% |
| 4800 | 36.4 | 4.25 | 6.55 | 6.34 | 6.41 | 0.36 | 1.27 | ±13.1% |
| 4950 | 36.3 | 4.40 | 6.45 | 6.24 | 6.30 | 0.35 | 1.27 | ±13.1% |
| 5250 | 35.9 | 4.71 | 6.23 | 6.03 | 6.09 | 0.32 | 1.27 | ±13.1% |
| 5400 | 35.8 | 4.86 | 5.91 | 5.72 | 5.78 | 0.30 | 1.27 | ±13.1% |
| 5600 | 35.5 | 5.07 | 5.75 | 5.56 | 5.62 | 0.28 | 1.27 | ±13.1% |
| 5750 | 35.4 | 5.22 | 5.72 | 5.54 | 5.60 | 0.27 | 1.27 | ±13.1% |
| 5850 | 35.2 | 5.32 | 5.77 | 5.59 | 5.64 | 0.26 | 1.27 | ±13.1% |

^C Frequency validity above 300 MHz of ±100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ±50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ±10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4–9 MHz, and ConvF assessed at 13 MHz is 9–19 MHz. Above 5 GHz frequency validity can be extended to ±110 MHz.

^F The probes are calibrated using tissue simulating liquids (TSL) that deviate for ϵ and σ by less than ±5% from the target values (typically better than ±3%) and are valid for TSL with deviations of up to ±10% if SAR correction is applied.

^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz and below ±2% for frequencies between 3–6 GHz at any distance larger than half the probe tip diameter from the boundary.

^H The stated uncertainty is the total calibration uncertainty (k = 2) of Norm-ConvF. This is equivalent to the uncertainty component with the symbol CF in Table 9 of IEC/IEEE 62209-1528:2020.

Parameters of Probe: EX3DV4 - SN:7709

Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) ^C | Relative Permittivity ^F | Conductivity ^F (S/m) | ConvF X | ConvF Y | ConvF Z | Alpha ^G | Depth ^G (mm) | Unc ^H (k = 2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|--------------------------|
| 6500 | 34.5 | 6.07 | 5.69 | 5.50 | 5.56 | 0.20 | 1.27 | ±18.6% |

^C Frequency validity at 6.5 GHz is -600/+700 MHz, and ±700 MHz at or above 7 GHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

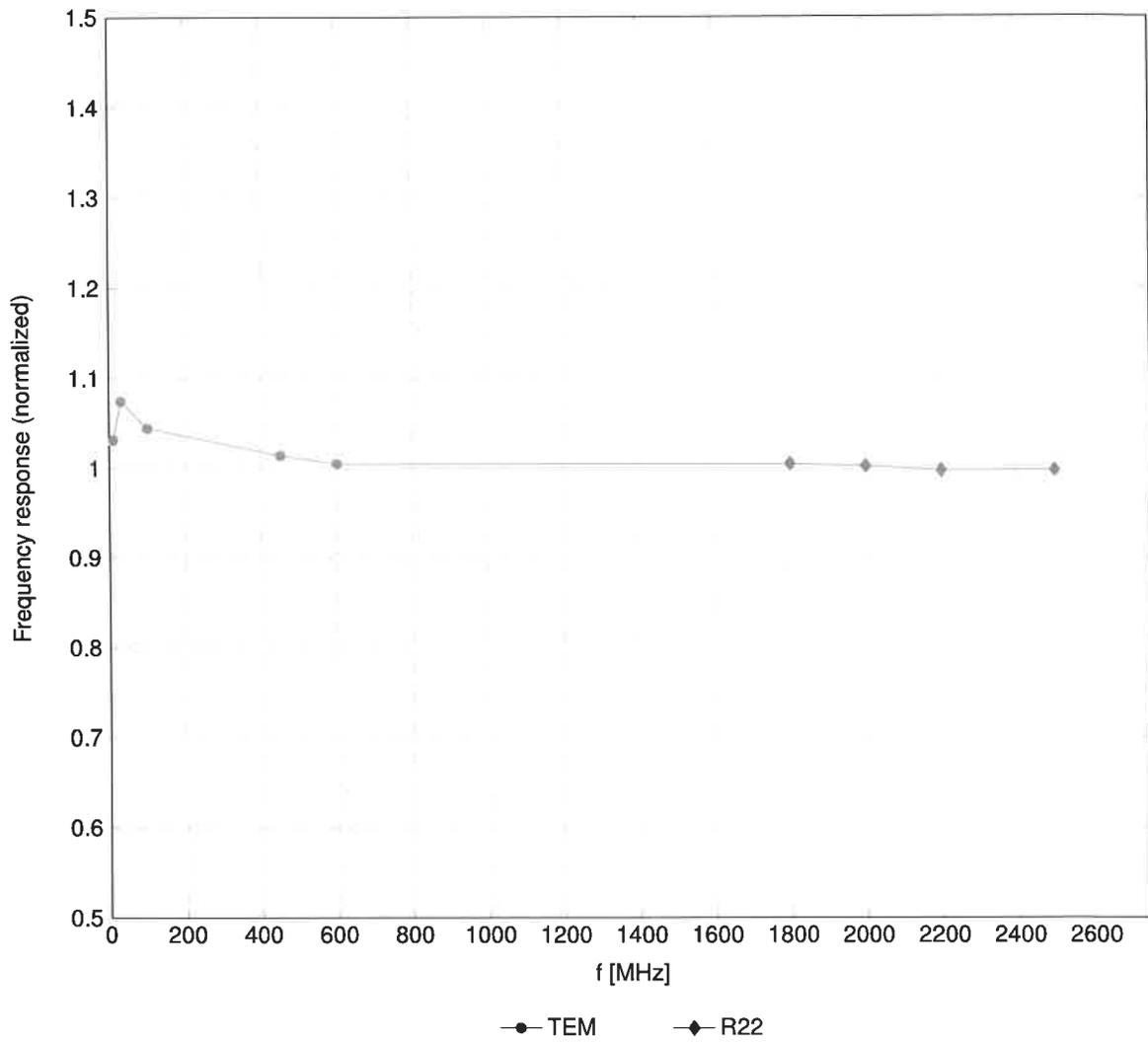
^F The probes are calibrated using tissue simulating liquids (TSL) that deviate for ϵ and σ by less than ±10% from the target values (typically better than ±6%) and are valid for TSL with deviations of up to ±10%.

^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz; below ±2% for frequencies between 3–6 GHz; and below ±4% for frequencies between 6–10 GHz at any distance larger than half the probe tip diameter from the boundary.

^H The stated uncertainty is the total calibration uncertainty (k = 2) of Norm-ConvF. This is equivalent to the uncertainty component with the symbol CF in Table 9 of IEC/IEEE 62209-1528:2020.

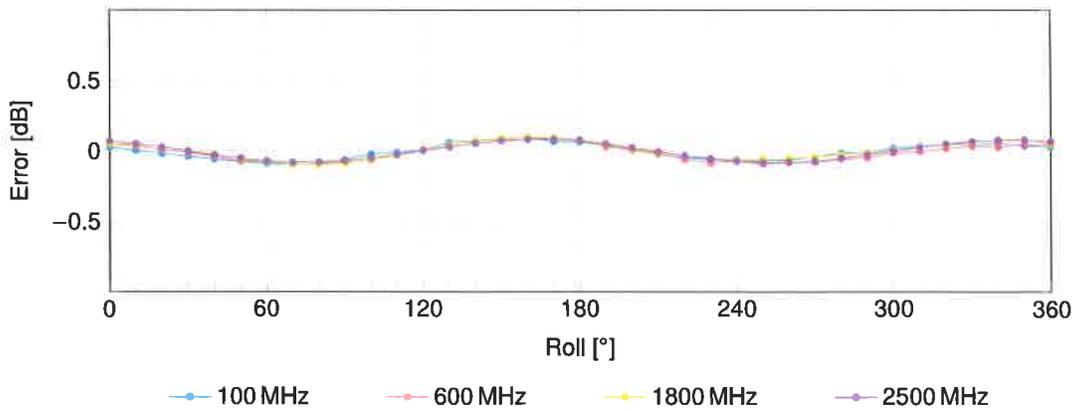
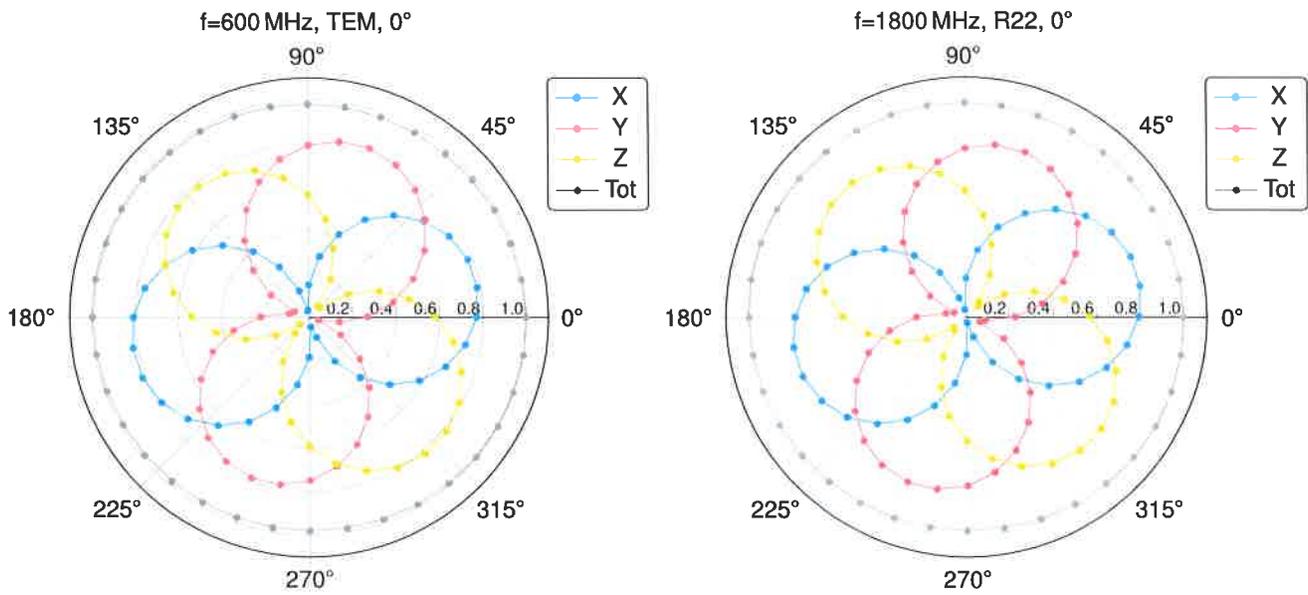
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide:R22)



Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

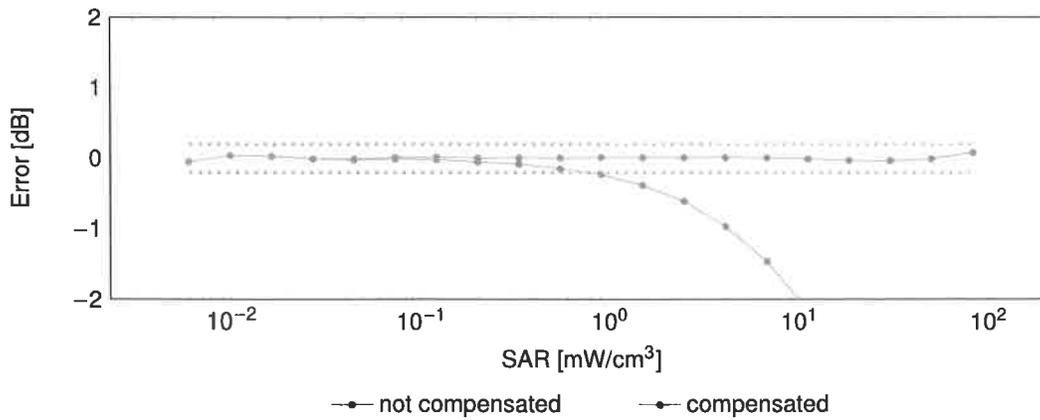
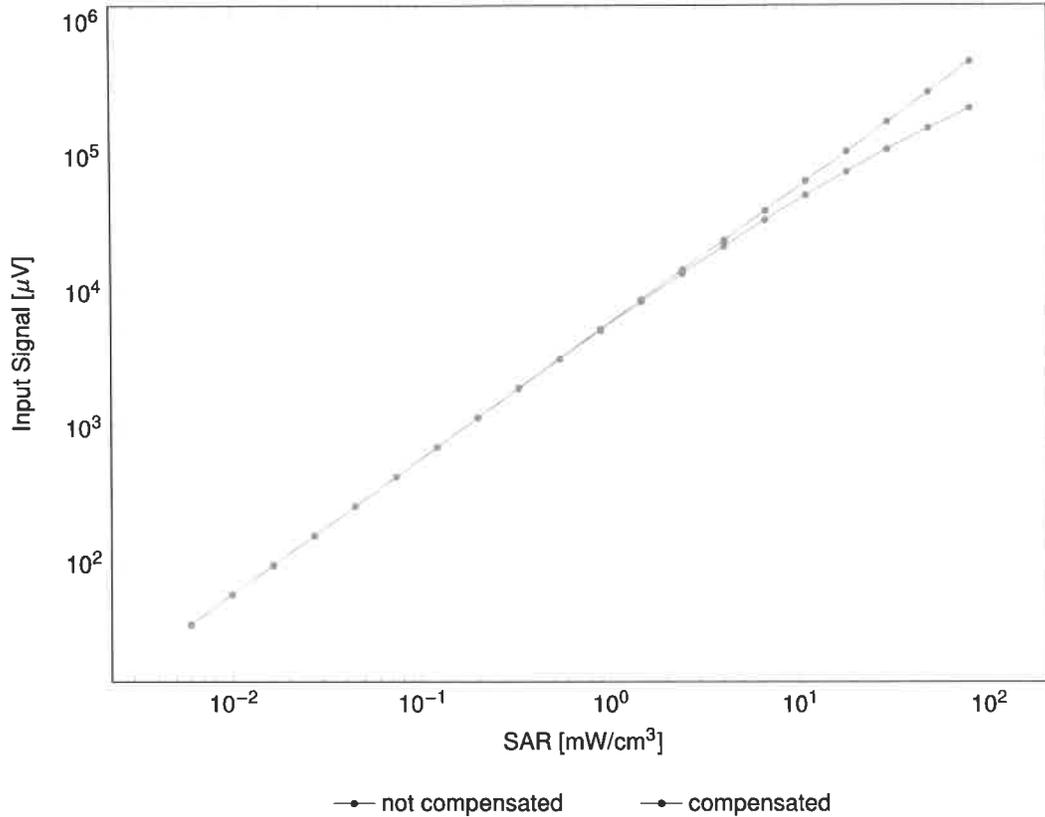
Receiving Pattern (ϕ), $\vartheta = 0^\circ$



Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

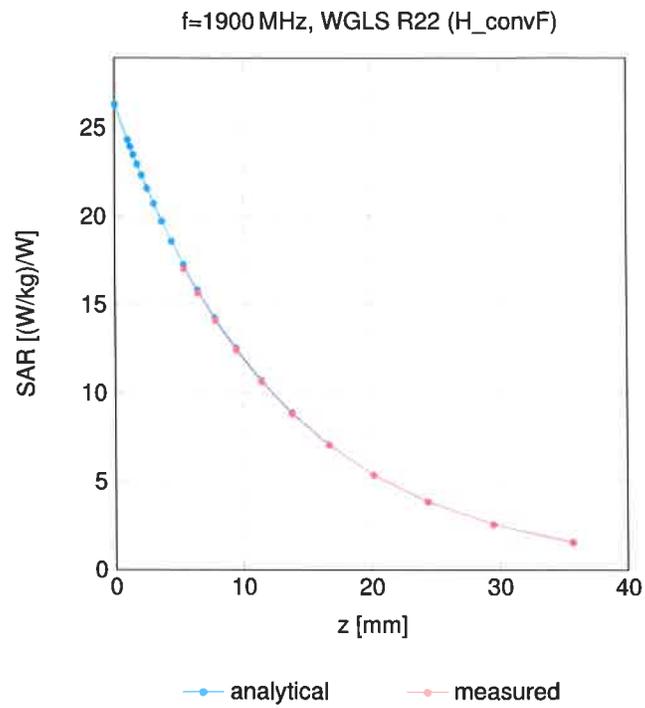
Dynamic Range f(SAR_{head})

(TEM cell, f_{eval} = 1900MHz)



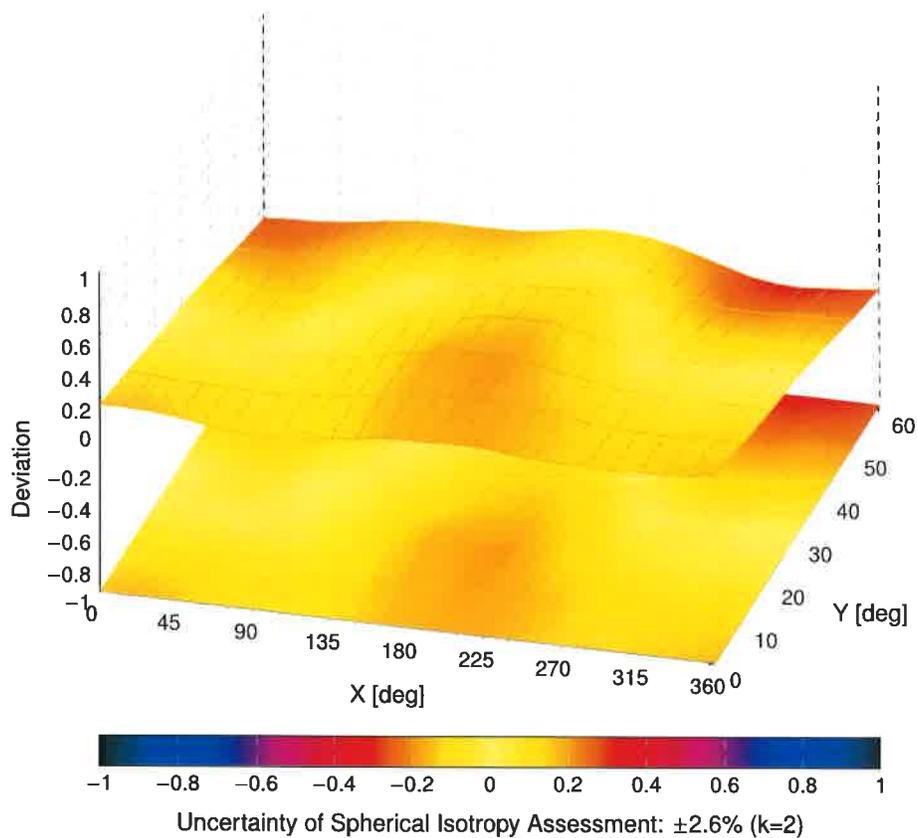
Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), f = 900 MHz



Appendix: Modulation Calibration Parameters

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^F k = 2 |
|-------|-----|---|-----------|----------|------------------------|
| 0 | | CW | CW | 0.00 | ±4.7 |
| 10010 | CAB | SAR Validation (Square, 100 ms, 10 ms) | Test | 10.00 | ±9.6 |
| 10011 | CAC | UMTS-FDD (WCDMA) | WCDMA | 2.91 | ±9.6 |
| 10012 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps) | WLAN | 1.87 | ±9.6 |
| 10013 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps) | WLAN | 9.46 | ±9.6 |
| 10021 | DAC | GSM-FDD (TDMA, GMSK) | GSM | 9.39 | ±9.6 |
| 10023 | DAC | GPRS-FDD (TDMA, GMSK, TN 0) | GSM | 9.57 | ±9.6 |
| 10024 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1) | GSM | 6.56 | ±9.6 |
| 10025 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0) | GSM | 12.62 | ±9.6 |
| 10026 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1) | GSM | 9.55 | ±9.6 |
| 10027 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2) | GSM | 4.80 | ±9.6 |
| 10028 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2-3) | GSM | 3.55 | ±9.6 |
| 10029 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2) | GSM | 7.78 | ±9.6 |
| 10030 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH1) | Bluetooth | 5.30 | ±9.6 |
| 10031 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH3) | Bluetooth | 1.87 | ±9.6 |
| 10032 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH5) | Bluetooth | 1.16 | ±9.6 |
| 10033 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1) | Bluetooth | 7.74 | ±9.6 |
| 10034 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3) | Bluetooth | 4.53 | ±9.6 |
| 10035 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5) | Bluetooth | 3.83 | ±9.6 |
| 10036 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH1) | Bluetooth | 8.01 | ±9.6 |
| 10037 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH3) | Bluetooth | 4.77 | ±9.6 |
| 10038 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH5) | Bluetooth | 4.10 | ±9.6 |
| 10039 | CAB | CDMA2000 (1xRTT, RC1) | CDMA2000 | 4.57 | ±9.6 |
| 10042 | CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate) | AMPS | 7.78 | ±9.6 |
| 10044 | CAA | IS-91/EIA/TIA-553 FDD (FDMA, FM) | AMPS | 0.00 | ±9.6 |
| 10048 | CAA | DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24) | DECT | 13.80 | ±9.6 |
| 10049 | CAA | DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12) | DECT | 10.79 | ±9.6 |
| 10056 | CAA | UMTS-TDD (TD-SCDMA, 1.28 Mcps) | TD-SCDMA | 11.01 | ±9.6 |
| 10058 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3) | GSM | 6.52 | ±9.6 |
| 10059 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps) | WLAN | 2.12 | ±9.6 |
| 10060 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps) | WLAN | 2.83 | ±9.6 |
| 10061 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps) | WLAN | 3.60 | ±9.6 |
| 10062 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps) | WLAN | 8.68 | ±9.6 |
| 10063 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps) | WLAN | 8.63 | ±9.6 |
| 10064 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps) | WLAN | 9.09 | ±9.6 |
| 10065 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps) | WLAN | 9.00 | ±9.6 |
| 10066 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps) | WLAN | 9.38 | ±9.6 |
| 10067 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps) | WLAN | 10.12 | ±9.6 |
| 10068 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps) | WLAN | 10.24 | ±9.6 |
| 10069 | CAE | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps) | WLAN | 10.56 | ±9.6 |
| 10071 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps) | WLAN | 9.83 | ±9.6 |
| 10072 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps) | WLAN | 9.62 | ±9.6 |
| 10073 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps) | WLAN | 9.94 | ±9.6 |
| 10074 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps) | WLAN | 10.30 | ±9.6 |
| 10075 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps) | WLAN | 10.77 | ±9.6 |
| 10076 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps) | WLAN | 10.94 | ±9.6 |
| 10077 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps) | WLAN | 11.00 | ±9.6 |
| 10081 | CAB | CDMA2000 (1xRTT, RC3) | CDMA2000 | 3.97 | ±9.6 |
| 10082 | CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate) | AMPS | 4.77 | ±9.6 |
| 10090 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-4) | GSM | 6.56 | ±9.6 |
| 10097 | CAC | UMTS-FDD (HSDPA) | WCDMA | 3.98 | ±9.6 |
| 10098 | CAC | UMTS-FDD (HSUPA, Subtest 2) | WCDMA | 3.98 | ±9.6 |
| 10099 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-4) | GSM | 9.55 | ±9.6 |
| 10100 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK) | LTE-FDD | 5.67 | ±9.6 |
| 10101 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM) | LTE-FDD | 6.42 | ±9.6 |
| 10102 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM) | LTE-FDD | 6.60 | ±9.6 |
| 10103 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK) | LTE-TDD | 9.29 | ±9.6 |
| 10104 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM) | LTE-TDD | 9.97 | ±9.6 |
| 10105 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM) | LTE-TDD | 10.01 | ±9.6 |
| 10108 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK) | LTE-FDD | 5.80 | ±9.6 |
| 10109 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM) | LTE-FDD | 6.43 | ±9.6 |
| 10110 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK) | LTE-FDD | 5.75 | ±9.6 |
| 10111 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM) | LTE-FDD | 6.44 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|--|---------|----------|------------------------|
| 10112 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM) | LTE-FDD | 6.59 | ±9.6 |
| 10113 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM) | LTE-FDD | 6.62 | ±9.6 |
| 10114 | CAE | IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK) | WLAN | 8.10 | ±9.6 |
| 10115 | CAE | IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM) | WLAN | 8.46 | ±9.6 |
| 10116 | CAE | IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM) | WLAN | 8.15 | ±9.6 |
| 10117 | CAE | IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK) | WLAN | 8.07 | ±9.6 |
| 10118 | CAE | IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM) | WLAN | 8.59 | ±9.6 |
| 10119 | CAE | IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM) | WLAN | 8.13 | ±9.6 |
| 10140 | CAF | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM) | LTE-FDD | 6.49 | ±9.6 |
| 10141 | CAF | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM) | LTE-FDD | 6.53 | ±9.6 |
| 10142 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK) | LTE-FDD | 5.73 | ±9.6 |
| 10143 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM) | LTE-FDD | 6.35 | ±9.6 |
| 10144 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM) | LTE-FDD | 6.65 | ±9.6 |
| 10145 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK) | LTE-FDD | 5.76 | ±9.6 |
| 10146 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM) | LTE-FDD | 6.41 | ±9.6 |
| 10147 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM) | LTE-FDD | 6.72 | ±9.6 |
| 10149 | CAF | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM) | LTE-FDD | 6.42 | ±9.6 |
| 10150 | CAF | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM) | LTE-FDD | 6.60 | ±9.6 |
| 10151 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK) | LTE-TDD | 9.28 | ±9.6 |
| 10152 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM) | LTE-TDD | 9.92 | ±9.6 |
| 10153 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM) | LTE-TDD | 10.05 | ±9.6 |
| 10154 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK) | LTE-FDD | 5.75 | ±9.6 |
| 10155 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM) | LTE-FDD | 6.43 | ±9.6 |
| 10156 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK) | LTE-FDD | 5.79 | ±9.6 |
| 10157 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM) | LTE-FDD | 6.49 | ±9.6 |
| 10158 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM) | LTE-FDD | 6.62 | ±9.6 |
| 10159 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM) | LTE-FDD | 6.56 | ±9.6 |
| 10160 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK) | LTE-FDD | 5.82 | ±9.6 |
| 10161 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM) | LTE-FDD | 6.43 | ±9.6 |
| 10162 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) | LTE-FDD | 6.58 | ±9.6 |
| 10166 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK) | LTE-FDD | 5.46 | ±9.6 |
| 10167 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM) | LTE-FDD | 6.21 | ±9.6 |
| 10168 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM) | LTE-FDD | 6.79 | ±9.6 |
| 10169 | CAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK) | LTE-FDD | 5.73 | ±9.6 |
| 10170 | CAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) | LTE-FDD | 6.52 | ±9.6 |
| 10171 | AAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) | LTE-FDD | 6.49 | ±9.6 |
| 10172 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK) | LTE-TDD | 9.21 | ±9.6 |
| 10173 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM) | LTE-TDD | 9.48 | ±9.6 |
| 10174 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM) | LTE-TDD | 10.25 | ±9.6 |
| 10175 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK) | LTE-FDD | 5.72 | ±9.6 |
| 10176 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM) | LTE-FDD | 6.52 | ±9.6 |
| 10177 | CAJ | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK) | LTE-FDD | 5.73 | ±9.6 |
| 10178 | CAH | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM) | LTE-FDD | 6.52 | ±9.6 |
| 10179 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM) | LTE-FDD | 6.50 | ±9.6 |
| 10180 | CAH | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM) | LTE-FDD | 6.50 | ±9.6 |
| 10181 | CAF | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK) | LTE-FDD | 5.72 | ±9.6 |
| 10182 | CAF | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM) | LTE-FDD | 6.52 | ±9.6 |
| 10183 | AAE | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM) | LTE-FDD | 6.50 | ±9.6 |
| 10184 | CAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK) | LTE-FDD | 5.73 | ±9.6 |
| 10185 | CAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM) | LTE-FDD | 6.51 | ±9.6 |
| 10186 | AAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM) | LTE-FDD | 6.50 | ±9.6 |
| 10187 | CAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK) | LTE-FDD | 5.73 | ±9.6 |
| 10188 | CAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM) | LTE-FDD | 6.52 | ±9.6 |
| 10189 | AAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM) | LTE-FDD | 6.50 | ±9.6 |
| 10193 | CAE | IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK) | WLAN | 8.09 | ±9.6 |
| 10194 | CAE | IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM) | WLAN | 8.12 | ±9.6 |
| 10195 | CAE | IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM) | WLAN | 8.21 | ±9.6 |
| 10196 | CAE | IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK) | WLAN | 8.10 | ±9.6 |
| 10197 | CAE | IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM) | WLAN | 8.13 | ±9.6 |
| 10198 | CAE | IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM) | WLAN | 8.27 | ±9.6 |
| 10219 | CAE | IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK) | WLAN | 8.03 | ±9.6 |
| 10220 | CAE | IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM) | WLAN | 8.13 | ±9.6 |
| 10221 | CAE | IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM) | WLAN | 8.27 | ±9.6 |
| 10222 | CAE | IEEE 802.11n (HT Mixed, 15 Mbps, BPSK) | WLAN | 8.06 | ±9.6 |
| 10223 | CAE | IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM) | WLAN | 8.48 | ±9.6 |
| 10224 | CAE | IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM) | WLAN | 8.08 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|--|----------|----------|------------------------|
| 10225 | CAC | UMTS-FDD (HSPA+) | WCDMA | 5.97 | ±9.6 |
| 10226 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM) | LTE-TDD | 9.49 | ±9.6 |
| 10227 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM) | LTE-TDD | 10.26 | ±9.6 |
| 10228 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK) | LTE-TDD | 9.22 | ±9.6 |
| 10229 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM) | LTE-TDD | 9.48 | ±9.6 |
| 10230 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM) | LTE-TDD | 10.25 | ±9.6 |
| 10231 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK) | LTE-TDD | 9.19 | ±9.6 |
| 10232 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM) | LTE-TDD | 9.48 | ±9.6 |
| 10233 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM) | LTE-TDD | 10.25 | ±9.6 |
| 10234 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK) | LTE-TDD | 9.21 | ±9.6 |
| 10235 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM) | LTE-TDD | 9.48 | ±9.6 |
| 10236 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM) | LTE-TDD | 10.25 | ±9.6 |
| 10237 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK) | LTE-TDD | 9.21 | ±9.6 |
| 10238 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM) | LTE-TDD | 9.48 | ±9.6 |
| 10239 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM) | LTE-TDD | 10.25 | ±9.6 |
| 10240 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK) | LTE-TDD | 9.21 | ±9.6 |
| 10241 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM) | LTE-TDD | 9.82 | ±9.6 |
| 10242 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM) | LTE-TDD | 9.86 | ±9.6 |
| 10243 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK) | LTE-TDD | 9.46 | ±9.6 |
| 10244 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM) | LTE-TDD | 10.06 | ±9.6 |
| 10245 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM) | LTE-TDD | 10.06 | ±9.6 |
| 10246 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK) | LTE-TDD | 9.30 | ±9.6 |
| 10247 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM) | LTE-TDD | 9.91 | ±9.6 |
| 10248 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM) | LTE-TDD | 10.09 | ±9.6 |
| 10249 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK) | LTE-TDD | 9.29 | ±9.6 |
| 10250 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM) | LTE-TDD | 9.81 | ±9.6 |
| 10251 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM) | LTE-TDD | 10.17 | ±9.6 |
| 10252 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK) | LTE-TDD | 9.24 | ±9.6 |
| 10253 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM) | LTE-TDD | 9.90 | ±9.6 |
| 10254 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM) | LTE-TDD | 10.14 | ±9.6 |
| 10255 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK) | LTE-TDD | 9.20 | ±9.6 |
| 10256 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM) | LTE-TDD | 9.96 | ±9.6 |
| 10257 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM) | LTE-TDD | 10.08 | ±9.6 |
| 10258 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK) | LTE-TDD | 9.34 | ±9.6 |
| 10259 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM) | LTE-TDD | 9.98 | ±9.6 |
| 10260 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM) | LTE-TDD | 9.97 | ±9.6 |
| 10261 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK) | LTE-TDD | 9.24 | ±9.6 |
| 10262 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM) | LTE-TDD | 9.83 | ±9.6 |
| 10263 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM) | LTE-TDD | 10.16 | ±9.6 |
| 10264 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK) | LTE-TDD | 9.23 | ±9.6 |
| 10265 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM) | LTE-TDD | 9.92 | ±9.6 |
| 10266 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM) | LTE-TDD | 10.07 | ±9.6 |
| 10267 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK) | LTE-TDD | 9.30 | ±9.6 |
| 10268 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM) | LTE-TDD | 10.06 | ±9.6 |
| 10269 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM) | LTE-TDD | 10.13 | ±9.6 |
| 10270 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK) | LTE-TDD | 9.58 | ±9.6 |
| 10274 | CAC | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10) | WCDMA | 4.87 | ±9.6 |
| 10275 | CAC | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4) | WCDMA | 3.96 | ±9.6 |
| 10277 | CAA | PHS (QPSK) | PHS | 11.81 | ±9.6 |
| 10278 | CAA | PHS (QPSK, BW 884 MHz, Rolloff 0.5) | PHS | 11.81 | ±9.6 |
| 10279 | CAA | PHS (QPSK, BW 884 MHz, Rolloff 0.38) | PHS | 12.18 | ±9.6 |
| 10290 | AAB | CDMA2000, RC1, SO55, Full Rate | CDMA2000 | 3.91 | ±9.6 |
| 10291 | AAB | CDMA2000, RC3, SO55, Full Rate | CDMA2000 | 3.46 | ±9.6 |
| 10292 | AAB | CDMA2000, RC3, SO32, Full Rate | CDMA2000 | 3.39 | ±9.6 |
| 10293 | AAB | CDMA2000, RC3, SO3, Full Rate | CDMA2000 | 3.50 | ±9.6 |
| 10295 | AAB | CDMA2000, RC1, SO3, 1/8th Rate 25 fr. | CDMA2000 | 12.49 | ±9.6 |
| 10297 | AAE | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK) | LTE-FDD | 5.81 | ±9.6 |
| 10298 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK) | LTE-FDD | 5.72 | ±9.6 |
| 10299 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM) | LTE-FDD | 6.39 | ±9.6 |
| 10300 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM) | LTE-FDD | 6.60 | ±9.6 |
| 10301 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC) | WiMAX | 12.03 | ±9.6 |
| 10302 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC, 3 CTRL symbols) | WiMAX | 12.57 | ±9.6 |
| 10303 | AAA | IEEE 802.16e WiMAX (31:15, 5 ms, 10 MHz, 64QAM, PUSC) | WiMAX | 12.52 | ±9.6 |
| 10304 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, 64QAM, PUSC) | WiMAX | 11.86 | ±9.6 |
| 10305 | AAA | IEEE 802.16e WiMAX (31:15, 10 ms, 10 MHz, 64QAM, PUSC, 15 symbols) | WiMAX | 15.24 | ±9.6 |
| 10306 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 64QAM, PUSC, 18 symbols) | WiMAX | 14.67 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|---|----------|----------|------------------------|
| 10307 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, QPSK, PUSC, 18 symbols) | WiMAX | 14.49 | ±9.6 |
| 10308 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 16QAM, PUSC) | WiMAX | 14.46 | ±9.6 |
| 10309 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 16QAM, AMC 2x3, 18 symbols) | WiMAX | 14.58 | ±9.6 |
| 10310 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, QPSK, AMC 2x3, 18 symbols) | WiMAX | 14.57 | ±9.6 |
| 10311 | AAE | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK) | LTE-FDD | 6.06 | ±9.6 |
| 10313 | AAA | iDEN 1:3 | iDEN | 10.51 | ±9.6 |
| 10314 | AAA | iDEN 1:6 | iDEN | 13.48 | ±9.6 |
| 10315 | AAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle) | WLAN | 1.71 | ±9.6 |
| 10316 | AAB | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 10317 | AAE | IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 10352 | AAA | Pulse Waveform (200Hz, 10%) | Generic | 10.00 | ±9.6 |
| 10353 | AAA | Pulse Waveform (200Hz, 20%) | Generic | 6.99 | ±9.6 |
| 10354 | AAA | Pulse Waveform (200Hz, 40%) | Generic | 3.98 | ±9.6 |
| 10355 | AAA | Pulse Waveform (200Hz, 60%) | Generic | 2.22 | ±9.6 |
| 10356 | AAA | Pulse Waveform (200Hz, 80%) | Generic | 0.97 | ±9.6 |
| 10387 | AAA | QPSK Waveform, 1 MHz | Generic | 5.10 | ±9.6 |
| 10388 | AAA | QPSK Waveform, 10 MHz | Generic | 5.22 | ±9.6 |
| 10396 | AAA | 64-QAM Waveform, 100 kHz | Generic | 6.27 | ±9.6 |
| 10399 | AAA | 64-QAM Waveform, 40 MHz | Generic | 6.27 | ±9.6 |
| 10400 | AAF | IEEE 802.11ac WiFi (20 MHz, 64-QAM, 99pc duty cycle) | WLAN | 8.37 | ±9.6 |
| 10401 | AAF | IEEE 802.11ac WiFi (40 MHz, 64-QAM, 99pc duty cycle) | WLAN | 8.60 | ±9.6 |
| 10402 | AAF | IEEE 802.11ac WiFi (80 MHz, 64-QAM, 99pc duty cycle) | WLAN | 8.53 | ±9.6 |
| 10403 | AAB | CDMA2000 (1xEV-DO, Rev. 0) | CDMA2000 | 3.76 | ±9.6 |
| 10404 | AAB | CDMA2000 (1xEV-DO, Rev. A) | CDMA2000 | 3.77 | ±9.6 |
| 10406 | AAB | CDMA2000, RC3, SO32, SCH0, Full Rate | CDMA2000 | 5.22 | ±9.6 |
| 10410 | AAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4) | LTE-TDD | 7.82 | ±9.6 |
| 10414 | AAA | WLAN CCDF, 64-QAM, 40 MHz | Generic | 8.54 | ±9.6 |
| 10415 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle) | WLAN | 1.54 | ±9.6 |
| 10416 | AAA | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle) | WLAN | 8.23 | ±9.6 |
| 10417 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle) | WLAN | 8.23 | ±9.6 |
| 10418 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble) | WLAN | 8.14 | ±9.6 |
| 10419 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble) | WLAN | 8.19 | ±9.6 |
| 10422 | AAD | IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK) | WLAN | 8.32 | ±9.6 |
| 10423 | AAD | IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM) | WLAN | 8.47 | ±9.6 |
| 10424 | AAD | IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM) | WLAN | 8.40 | ±9.6 |
| 10425 | AAD | IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK) | WLAN | 8.41 | ±9.6 |
| 10426 | AAD | IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM) | WLAN | 8.45 | ±9.6 |
| 10427 | AAD | IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM) | WLAN | 8.41 | ±9.6 |
| 10430 | AAE | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1) | LTE-FDD | 8.28 | ±9.6 |
| 10431 | AAE | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1) | LTE-FDD | 8.38 | ±9.6 |
| 10432 | AAD | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1) | LTE-FDD | 8.34 | ±9.6 |
| 10433 | AAD | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1) | LTE-FDD | 8.34 | ±9.6 |
| 10434 | AAB | W-CDMA (BS Test Model 1, 64 DPCH) | WCDMA | 8.60 | ±9.6 |
| 10435 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.82 | ±9.6 |
| 10447 | AAE | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%) | LTE-FDD | 7.56 | ±9.6 |
| 10448 | AAE | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%) | LTE-FDD | 7.53 | ±9.6 |
| 10449 | AAD | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%) | LTE-FDD | 7.51 | ±9.6 |
| 10450 | AAD | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%) | LTE-FDD | 7.48 | ±9.6 |
| 10451 | AAB | W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%) | WCDMA | 7.59 | ±9.6 |
| 10453 | AAE | Validation (Square, 10 ms, 1 ms) | Test | 10.00 | ±9.6 |
| 10456 | AAD | IEEE 802.11ac WiFi (160 MHz, 64-QAM, 99pc duty cycle) | WLAN | 8.63 | ±9.6 |
| 10457 | AAB | UMTS-FDD (DC-HSDPA) | WCDMA | 6.62 | ±9.6 |
| 10458 | AAA | CDMA2000 (1xEV-DO, Rev. B, 2 carriers) | CDMA2000 | 6.55 | ±9.6 |
| 10459 | AAA | CDMA2000 (1xEV-DO, Rev. B, 3 carriers) | CDMA2000 | 8.25 | ±9.6 |
| 10460 | AAB | UMTS-FDD (WCDMA, AMR) | WCDMA | 2.39 | ±9.6 |
| 10461 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.82 | ±9.6 |
| 10462 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.30 | ±9.6 |
| 10463 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.56 | ±9.6 |
| 10464 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.82 | ±9.6 |
| 10465 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.32 | ±9.6 |
| 10466 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.57 | ±9.6 |
| 10467 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.82 | ±9.6 |
| 10468 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.32 | ±9.6 |
| 10469 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.56 | ±9.6 |
| 10470 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.82 | ±9.6 |
| 10471 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.32 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^F k = 2 |
|-------|-----|--|---------|----------|------------------------|
| 10472 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.57 | ±9.6 |
| 10473 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.82 | ±9.6 |
| 10474 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.32 | ±9.6 |
| 10475 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.57 | ±9.6 |
| 10477 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.32 | ±9.6 |
| 10478 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.57 | ±9.6 |
| 10479 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.74 | ±9.6 |
| 10480 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.18 | ±9.6 |
| 10481 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.45 | ±9.6 |
| 10482 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.71 | ±9.6 |
| 10483 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.39 | ±9.6 |
| 10484 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.47 | ±9.6 |
| 10485 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.59 | ±9.6 |
| 10486 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.38 | ±9.6 |
| 10487 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.60 | ±9.6 |
| 10488 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.70 | ±9.6 |
| 10489 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.31 | ±9.6 |
| 10490 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.54 | ±9.6 |
| 10491 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.74 | ±9.6 |
| 10492 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.41 | ±9.6 |
| 10493 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.55 | ±9.6 |
| 10494 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.74 | ±9.6 |
| 10495 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.37 | ±9.6 |
| 10496 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.54 | ±9.6 |
| 10497 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.67 | ±9.6 |
| 10498 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.40 | ±9.6 |
| 10499 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.68 | ±9.6 |
| 10500 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.67 | ±9.6 |
| 10501 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.44 | ±9.6 |
| 10502 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.52 | ±9.6 |
| 10503 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.72 | ±9.6 |
| 10504 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.31 | ±9.6 |
| 10505 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.54 | ±9.6 |
| 10506 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.74 | ±9.6 |
| 10507 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.36 | ±9.6 |
| 10508 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.55 | ±9.6 |
| 10509 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.99 | ±9.6 |
| 10510 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.49 | ±9.6 |
| 10511 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.51 | ±9.6 |
| 10512 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 7.74 | ±9.6 |
| 10513 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.42 | ±9.6 |
| 10514 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.45 | ±9.6 |
| 10515 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) | WLAN | 1.58 | ±9.6 |
| 10516 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) | WLAN | 1.57 | ±9.6 |
| 10517 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) | WLAN | 1.58 | ±9.6 |
| 10518 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) | WLAN | 8.23 | ±9.6 |
| 10519 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) | WLAN | 8.39 | ±9.6 |
| 10520 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) | WLAN | 8.12 | ±9.6 |
| 10521 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) | WLAN | 7.97 | ±9.6 |
| 10522 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) | WLAN | 8.45 | ±9.6 |
| 10523 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) | WLAN | 8.08 | ±9.6 |
| 10524 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) | WLAN | 8.27 | ±9.6 |
| 10525 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS0, 99pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 10526 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS1, 99pc duty cycle) | WLAN | 8.42 | ±9.6 |
| 10527 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS2, 99pc duty cycle) | WLAN | 8.21 | ±9.6 |
| 10528 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS3, 99pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 10529 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS4, 99pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 10531 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS6, 99pc duty cycle) | WLAN | 8.43 | ±9.6 |
| 10532 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS7, 99pc duty cycle) | WLAN | 8.29 | ±9.6 |
| 10533 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS8, 99pc duty cycle) | WLAN | 8.38 | ±9.6 |
| 10534 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS0, 99pc duty cycle) | WLAN | 8.45 | ±9.6 |
| 10535 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS1, 99pc duty cycle) | WLAN | 8.45 | ±9.6 |
| 10536 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS2, 99pc duty cycle) | WLAN | 8.32 | ±9.6 |
| 10537 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS3, 99pc duty cycle) | WLAN | 8.44 | ±9.6 |
| 10538 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS4, 99pc duty cycle) | WLAN | 8.54 | ±9.6 |
| 10540 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS6, 99pc duty cycle) | WLAN | 8.39 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|---|-------|----------|------------------------|
| 10541 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS7, 99pc duty cycle) | WLAN | 8.46 | ±9.6 |
| 10542 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS8, 99pc duty cycle) | WLAN | 8.65 | ±9.6 |
| 10543 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS9, 99pc duty cycle) | WLAN | 8.65 | ±9.6 |
| 10544 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS0, 99pc duty cycle) | WLAN | 8.47 | ±9.6 |
| 10545 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS1, 99pc duty cycle) | WLAN | 8.55 | ±9.6 |
| 10546 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS2, 99pc duty cycle) | WLAN | 8.35 | ±9.6 |
| 10547 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS3, 99pc duty cycle) | WLAN | 8.49 | ±9.6 |
| 10548 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS4, 99pc duty cycle) | WLAN | 8.37 | ±9.6 |
| 10550 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS6, 99pc duty cycle) | WLAN | 8.38 | ±9.6 |
| 10551 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS7, 99pc duty cycle) | WLAN | 8.50 | ±9.6 |
| 10552 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS8, 99pc duty cycle) | WLAN | 8.42 | ±9.6 |
| 10553 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS9, 99pc duty cycle) | WLAN | 8.45 | ±9.6 |
| 10554 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS0, 99pc duty cycle) | WLAN | 8.48 | ±9.6 |
| 10555 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS1, 99pc duty cycle) | WLAN | 8.47 | ±9.6 |
| 10556 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS2, 99pc duty cycle) | WLAN | 8.50 | ±9.6 |
| 10557 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS3, 99pc duty cycle) | WLAN | 8.52 | ±9.6 |
| 10558 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS4, 99pc duty cycle) | WLAN | 8.61 | ±9.6 |
| 10560 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS6, 99pc duty cycle) | WLAN | 8.73 | ±9.6 |
| 10561 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS7, 99pc duty cycle) | WLAN | 8.56 | ±9.6 |
| 10562 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS8, 99pc duty cycle) | WLAN | 8.69 | ±9.6 |
| 10563 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS9, 99pc duty cycle) | WLAN | 8.77 | ±9.6 |
| 10564 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle) | WLAN | 8.25 | ±9.6 |
| 10565 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle) | WLAN | 8.45 | ±9.6 |
| 10566 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle) | WLAN | 8.13 | ±9.6 |
| 10567 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle) | WLAN | 8.00 | ±9.6 |
| 10568 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle) | WLAN | 8.37 | ±9.6 |
| 10569 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle) | WLAN | 8.10 | ±9.6 |
| 10570 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle) | WLAN | 8.30 | ±9.6 |
| 10571 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) | WLAN | 1.99 | ±9.6 |
| 10572 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) | WLAN | 1.99 | ±9.6 |
| 10573 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) | WLAN | 1.98 | ±9.6 |
| 10574 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) | WLAN | 1.98 | ±9.6 |
| 10575 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) | WLAN | 8.59 | ±9.6 |
| 10576 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) | WLAN | 8.60 | ±9.6 |
| 10577 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) | WLAN | 8.70 | ±9.6 |
| 10578 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) | WLAN | 8.49 | ±9.6 |
| 10579 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 10580 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) | WLAN | 8.76 | ±9.6 |
| 10581 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) | WLAN | 8.35 | ±9.6 |
| 10582 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) | WLAN | 8.67 | ±9.6 |
| 10583 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle) | WLAN | 8.59 | ±9.6 |
| 10584 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle) | WLAN | 8.60 | ±9.6 |
| 10585 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle) | WLAN | 8.70 | ±9.6 |
| 10586 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle) | WLAN | 8.49 | ±9.6 |
| 10587 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 10588 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle) | WLAN | 8.76 | ±9.6 |
| 10589 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle) | WLAN | 8.35 | ±9.6 |
| 10590 | AAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle) | WLAN | 8.67 | ±9.6 |
| 10591 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS0, 90pc duty cycle) | WLAN | 8.63 | ±9.6 |
| 10592 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS1, 90pc duty cycle) | WLAN | 8.79 | ±9.6 |
| 10593 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS2, 90pc duty cycle) | WLAN | 8.64 | ±9.6 |
| 10594 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS3, 90pc duty cycle) | WLAN | 8.74 | ±9.6 |
| 10595 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS4, 90pc duty cycle) | WLAN | 8.74 | ±9.6 |
| 10596 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS5, 90pc duty cycle) | WLAN | 8.71 | ±9.6 |
| 10597 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS6, 90pc duty cycle) | WLAN | 8.72 | ±9.6 |
| 10598 | AAD | IEEE 802.11n (HT Mixed, 20 MHz, MCS7, 90pc duty cycle) | WLAN | 8.50 | ±9.6 |
| 10599 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS0, 90pc duty cycle) | WLAN | 8.79 | ±9.6 |
| 10600 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS1, 90pc duty cycle) | WLAN | 8.88 | ±9.6 |
| 10601 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS2, 90pc duty cycle) | WLAN | 8.82 | ±9.6 |
| 10602 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS3, 90pc duty cycle) | WLAN | 8.94 | ±9.6 |
| 10603 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS4, 90pc duty cycle) | WLAN | 9.03 | ±9.6 |
| 10604 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS5, 90pc duty cycle) | WLAN | 8.76 | ±9.6 |
| 10605 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS6, 90pc duty cycle) | WLAN | 8.97 | ±9.6 |
| 10606 | AAD | IEEE 802.11n (HT Mixed, 40 MHz, MCS7, 90pc duty cycle) | WLAN | 8.82 | ±9.6 |
| 10607 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS0, 90pc duty cycle) | WLAN | 8.64 | ±9.6 |
| 10608 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS1, 90pc duty cycle) | WLAN | 8.77 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|--|-----------|----------|------------------------|
| 10609 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS2, 90pc duty cycle) | WLAN | 8.57 | ±9.6 |
| 10610 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS3, 90pc duty cycle) | WLAN | 8.78 | ±9.6 |
| 10611 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS4, 90pc duty cycle) | WLAN | 8.70 | ±9.6 |
| 10612 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS5, 90pc duty cycle) | WLAN | 8.77 | ±9.6 |
| 10613 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS6, 90pc duty cycle) | WLAN | 8.94 | ±9.6 |
| 10614 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS7, 90pc duty cycle) | WLAN | 8.59 | ±9.6 |
| 10615 | AAD | IEEE 802.11ac WiFi (20 MHz, MCS8, 90pc duty cycle) | WLAN | 8.82 | ±9.6 |
| 10616 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS0, 90pc duty cycle) | WLAN | 8.82 | ±9.6 |
| 10617 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS1, 90pc duty cycle) | WLAN | 8.81 | ±9.6 |
| 10618 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS2, 90pc duty cycle) | WLAN | 8.58 | ±9.6 |
| 10619 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS3, 90pc duty cycle) | WLAN | 8.86 | ±9.6 |
| 10620 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS4, 90pc duty cycle) | WLAN | 8.87 | ±9.6 |
| 10621 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS5, 90pc duty cycle) | WLAN | 8.77 | ±9.6 |
| 10622 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS6, 90pc duty cycle) | WLAN | 8.68 | ±9.6 |
| 10623 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS7, 90pc duty cycle) | WLAN | 8.82 | ±9.6 |
| 10624 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle) | WLAN | 8.96 | ±9.6 |
| 10625 | AAD | IEEE 802.11ac WiFi (40 MHz, MCS9, 90pc duty cycle) | WLAN | 8.96 | ±9.6 |
| 10626 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS0, 90pc duty cycle) | WLAN | 8.83 | ±9.6 |
| 10627 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS1, 90pc duty cycle) | WLAN | 8.88 | ±9.6 |
| 10628 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS2, 90pc duty cycle) | WLAN | 8.71 | ±9.6 |
| 10629 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle) | WLAN | 8.85 | ±9.6 |
| 10630 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS4, 90pc duty cycle) | WLAN | 8.72 | ±9.6 |
| 10631 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS5, 90pc duty cycle) | WLAN | 8.81 | ±9.6 |
| 10632 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS6, 90pc duty cycle) | WLAN | 8.74 | ±9.6 |
| 10633 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS7, 90pc duty cycle) | WLAN | 8.83 | ±9.6 |
| 10634 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle) | WLAN | 8.80 | ±9.6 |
| 10635 | AAD | IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle) | WLAN | 8.81 | ±9.6 |
| 10636 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS0, 90pc duty cycle) | WLAN | 8.83 | ±9.6 |
| 10637 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS1, 90pc duty cycle) | WLAN | 8.79 | ±9.6 |
| 10638 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS2, 90pc duty cycle) | WLAN | 8.86 | ±9.6 |
| 10639 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS3, 90pc duty cycle) | WLAN | 8.85 | ±9.6 |
| 10640 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS4, 90pc duty cycle) | WLAN | 8.98 | ±9.6 |
| 10641 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle) | WLAN | 9.06 | ±9.6 |
| 10642 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS6, 90pc duty cycle) | WLAN | 9.06 | ±9.6 |
| 10643 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS7, 90pc duty cycle) | WLAN | 8.89 | ±9.6 |
| 10644 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS8, 90pc duty cycle) | WLAN | 9.05 | ±9.6 |
| 10645 | AAE | IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle) | WLAN | 9.11 | ±9.6 |
| 10646 | AAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7) | LTE-TDD | 11.96 | ±9.6 |
| 10647 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7) | LTE-TDD | 11.96 | ±9.6 |
| 10648 | AAA | CDMA2000 (1x Advanced) | CDMA2000 | 3.45 | ±9.6 |
| 10652 | AAF | LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%) | LTE-TDD | 6.91 | ±9.6 |
| 10653 | AAF | LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%) | LTE-TDD | 7.42 | ±9.6 |
| 10654 | AAE | LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%) | LTE-TDD | 6.96 | ±9.6 |
| 10655 | AAF | LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%) | LTE-TDD | 7.21 | ±9.6 |
| 10658 | AAB | Pulse Waveform (200Hz, 10%) | Test | 10.00 | ±9.6 |
| 10659 | AAB | Pulse Waveform (200Hz, 20%) | Test | 6.99 | ±9.6 |
| 10660 | AAB | Pulse Waveform (200Hz, 40%) | Test | 3.98 | ±9.6 |
| 10661 | AAB | Pulse Waveform (200Hz, 60%) | Test | 2.22 | ±9.6 |
| 10662 | AAB | Pulse Waveform (200Hz, 80%) | Test | 0.97 | ±9.6 |
| 10670 | AAA | Bluetooth Low Energy | Bluetooth | 2.19 | ±9.6 |
| 10671 | AAC | IEEE 802.11ax (20 MHz, MCS0, 90pc duty cycle) | WLAN | 9.09 | ±9.6 |
| 10672 | AAC | IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle) | WLAN | 8.57 | ±9.6 |
| 10673 | AAC | IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle) | WLAN | 8.78 | ±9.6 |
| 10674 | AAC | IEEE 802.11ax (20 MHz, MCS3, 90pc duty cycle) | WLAN | 8.74 | ±9.6 |
| 10675 | AAC | IEEE 802.11ax (20 MHz, MCS4, 90pc duty cycle) | WLAN | 8.90 | ±9.6 |
| 10676 | AAC | IEEE 802.11ax (20 MHz, MCS5, 90pc duty cycle) | WLAN | 8.77 | ±9.6 |
| 10677 | AAC | IEEE 802.11ax (20 MHz, MCS6, 90pc duty cycle) | WLAN | 8.73 | ±9.6 |
| 10678 | AAC | IEEE 802.11ax (20 MHz, MCS7, 90pc duty cycle) | WLAN | 8.78 | ±9.6 |
| 10679 | AAC | IEEE 802.11ax (20 MHz, MCS8, 90pc duty cycle) | WLAN | 8.89 | ±9.6 |
| 10680 | AAC | IEEE 802.11ax (20 MHz, MCS9, 90pc duty cycle) | WLAN | 8.80 | ±9.6 |
| 10681 | AAC | IEEE 802.11ax (20 MHz, MCS10, 90pc duty cycle) | WLAN | 8.62 | ±9.6 |
| 10682 | AAC | IEEE 802.11ax (20 MHz, MCS11, 90pc duty cycle) | WLAN | 8.83 | ±9.6 |
| 10683 | AAC | IEEE 802.11ax (20 MHz, MCS0, 99pc duty cycle) | WLAN | 8.42 | ±9.6 |
| 10684 | AAC | IEEE 802.11ax (20 MHz, MCS1, 99pc duty cycle) | WLAN | 8.26 | ±9.6 |
| 10685 | AAC | IEEE 802.11ax (20 MHz, MCS2, 99pc duty cycle) | WLAN | 8.33 | ±9.6 |
| 10686 | AAC | IEEE 802.11ax (20 MHz, MCS3, 99pc duty cycle) | WLAN | 8.28 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|--|-------|----------|------------------------|
| 10687 | AAC | IEEE 802.11ax (20 MHz, MCS4, 99pc duty cycle) | WLAN | 8.45 | ±9.6 |
| 10688 | AAC | IEEE 802.11ax (20 MHz, MCS5, 99pc duty cycle) | WLAN | 8.29 | ±9.6 |
| 10689 | AAC | IEEE 802.11ax (20 MHz, MCS6, 99pc duty cycle) | WLAN | 8.55 | ±9.6 |
| 10690 | AAC | IEEE 802.11ax (20 MHz, MCS7, 99pc duty cycle) | WLAN | 8.29 | ±9.6 |
| 10691 | AAC | IEEE 802.11ax (20 MHz, MCS8, 99pc duty cycle) | WLAN | 8.25 | ±9.6 |
| 10692 | AAC | IEEE 802.11ax (20 MHz, MCS9, 99pc duty cycle) | WLAN | 8.29 | ±9.6 |
| 10693 | AAC | IEEE 802.11ax (20 MHz, MCS10, 99pc duty cycle) | WLAN | 8.25 | ±9.6 |
| 10694 | AAC | IEEE 802.11ax (20 MHz, MCS11, 99pc duty cycle) | WLAN | 8.57 | ±9.6 |
| 10695 | AAC | IEEE 802.11ax (40 MHz, MCS0, 90pc duty cycle) | WLAN | 8.78 | ±9.6 |
| 10696 | AAC | IEEE 802.11ax (40 MHz, MCS1, 90pc duty cycle) | WLAN | 8.91 | ±9.6 |
| 10697 | AAC | IEEE 802.11ax (40 MHz, MCS2, 90pc duty cycle) | WLAN | 8.61 | ±9.6 |
| 10698 | AAC | IEEE 802.11ax (40 MHz, MCS3, 90pc duty cycle) | WLAN | 8.89 | ±9.6 |
| 10699 | AAC | IEEE 802.11ax (40 MHz, MCS4, 90pc duty cycle) | WLAN | 8.82 | ±9.6 |
| 10700 | AAC | IEEE 802.11ax (40 MHz, MCS5, 90pc duty cycle) | WLAN | 8.73 | ±9.6 |
| 10701 | AAC | IEEE 802.11ax (40 MHz, MCS6, 90pc duty cycle) | WLAN | 8.86 | ±9.6 |
| 10702 | AAC | IEEE 802.11ax (40 MHz, MCS7, 90pc duty cycle) | WLAN | 8.70 | ±9.6 |
| 10703 | AAC | IEEE 802.11ax (40 MHz, MCS8, 90pc duty cycle) | WLAN | 8.82 | ±9.6 |
| 10704 | AAC | IEEE 802.11ax (40 MHz, MCS9, 90pc duty cycle) | WLAN | 8.56 | ±9.6 |
| 10705 | AAC | IEEE 802.11ax (40 MHz, MCS10, 90pc duty cycle) | WLAN | 8.69 | ±9.6 |
| 10706 | AAC | IEEE 802.11ax (40 MHz, MCS11, 90pc duty cycle) | WLAN | 8.66 | ±9.6 |
| 10707 | AAC | IEEE 802.11ax (40 MHz, MCS0, 99pc duty cycle) | WLAN | 8.32 | ±9.6 |
| 10708 | AAC | IEEE 802.11ax (40 MHz, MCS1, 99pc duty cycle) | WLAN | 8.55 | ±9.6 |
| 10709 | AAC | IEEE 802.11ax (40 MHz, MCS2, 99pc duty cycle) | WLAN | 8.33 | ±9.6 |
| 10710 | AAC | IEEE 802.11ax (40 MHz, MCS3, 99pc duty cycle) | WLAN | 8.29 | ±9.6 |
| 10711 | AAC | IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle) | WLAN | 8.39 | ±9.6 |
| 10712 | AAC | IEEE 802.11ax (40 MHz, MCS5, 99pc duty cycle) | WLAN | 8.67 | ±9.6 |
| 10713 | AAC | IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle) | WLAN | 8.33 | ±9.6 |
| 10714 | AAC | IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle) | WLAN | 8.26 | ±9.6 |
| 10715 | AAC | IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle) | WLAN | 8.45 | ±9.6 |
| 10716 | AAC | IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle) | WLAN | 8.30 | ±9.6 |
| 10717 | AAC | IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle) | WLAN | 8.48 | ±9.6 |
| 10718 | AAC | IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle) | WLAN | 8.24 | ±9.6 |
| 10719 | AAC | IEEE 802.11ax (80 MHz, MCS0, 90pc duty cycle) | WLAN | 8.81 | ±9.6 |
| 10720 | AAC | IEEE 802.11ax (80 MHz, MCS1, 90pc duty cycle) | WLAN | 8.87 | ±9.6 |
| 10721 | AAC | IEEE 802.11ax (80 MHz, MCS2, 90pc duty cycle) | WLAN | 8.76 | ±9.6 |
| 10722 | AAC | IEEE 802.11ax (80 MHz, MCS3, 90pc duty cycle) | WLAN | 8.55 | ±9.6 |
| 10723 | AAC | IEEE 802.11ax (80 MHz, MCS4, 90pc duty cycle) | WLAN | 8.70 | ±9.6 |
| 10724 | AAC | IEEE 802.11ax (80 MHz, MCS5, 90pc duty cycle) | WLAN | 8.90 | ±9.6 |
| 10725 | AAC | IEEE 802.11ax (80 MHz, MCS6, 90pc duty cycle) | WLAN | 8.74 | ±9.6 |
| 10726 | AAC | IEEE 802.11ax (80 MHz, MCS7, 90pc duty cycle) | WLAN | 8.72 | ±9.6 |
| 10727 | AAC | IEEE 802.11ax (80 MHz, MCS8, 90pc duty cycle) | WLAN | 8.66 | ±9.6 |
| 10728 | AAC | IEEE 802.11ax (80 MHz, MCS9, 90pc duty cycle) | WLAN | 8.65 | ±9.6 |
| 10729 | AAC | IEEE 802.11ax (80 MHz, MCS10, 90pc duty cycle) | WLAN | 8.64 | ±9.6 |
| 10730 | AAC | IEEE 802.11ax (80 MHz, MCS11, 90pc duty cycle) | WLAN | 8.67 | ±9.6 |
| 10731 | AAC | IEEE 802.11ax (80 MHz, MCS0, 99pc duty cycle) | WLAN | 8.42 | ±9.6 |
| 10732 | AAC | IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle) | WLAN | 8.46 | ±9.6 |
| 10733 | AAC | IEEE 802.11ax (80 MHz, MCS2, 99pc duty cycle) | WLAN | 8.40 | ±9.6 |
| 10734 | AAC | IEEE 802.11ax (80 MHz, MCS3, 99pc duty cycle) | WLAN | 8.25 | ±9.6 |
| 10735 | AAC | IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle) | WLAN | 8.33 | ±9.6 |
| 10736 | AAC | IEEE 802.11ax (80 MHz, MCS5, 99pc duty cycle) | WLAN | 8.27 | ±9.6 |
| 10737 | AAC | IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 10738 | AAC | IEEE 802.11ax (80 MHz, MCS7, 99pc duty cycle) | WLAN | 8.42 | ±9.6 |
| 10739 | AAC | IEEE 802.11ax (80 MHz, MCS8, 99pc duty cycle) | WLAN | 8.29 | ±9.6 |
| 10740 | AAC | IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle) | WLAN | 8.48 | ±9.6 |
| 10741 | AAC | IEEE 802.11ax (80 MHz, MCS10, 99pc duty cycle) | WLAN | 8.40 | ±9.6 |
| 10742 | AAC | IEEE 802.11ax (80 MHz, MCS11, 99pc duty cycle) | WLAN | 8.43 | ±9.6 |
| 10743 | AAC | IEEE 802.11ax (160 MHz, MCS0, 90pc duty cycle) | WLAN | 8.94 | ±9.6 |
| 10744 | AAC | IEEE 802.11ax (160 MHz, MCS1, 90pc duty cycle) | WLAN | 9.16 | ±9.6 |
| 10745 | AAC | IEEE 802.11ax (160 MHz, MCS2, 90pc duty cycle) | WLAN | 8.93 | ±9.6 |
| 10746 | AAC | IEEE 802.11ax (160 MHz, MCS3, 90pc duty cycle) | WLAN | 9.11 | ±9.6 |
| 10747 | AAC | IEEE 802.11ax (160 MHz, MCS4, 90pc duty cycle) | WLAN | 9.04 | ±9.6 |
| 10748 | AAC | IEEE 802.11ax (160 MHz, MCS5, 90pc duty cycle) | WLAN | 8.93 | ±9.6 |
| 10749 | AAC | IEEE 802.11ax (160 MHz, MCS6, 90pc duty cycle) | WLAN | 8.90 | ±9.6 |
| 10750 | AAC | IEEE 802.11ax (160 MHz, MCS7, 90pc duty cycle) | WLAN | 8.79 | ±9.6 |
| 10751 | AAC | IEEE 802.11ax (160 MHz, MCS8, 90pc duty cycle) | WLAN | 8.82 | ±9.6 |
| 10752 | AAC | IEEE 802.11ax (160 MHz, MCS9, 90pc duty cycle) | WLAN | 8.81 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|---|---------------|----------|------------------------|
| 10753 | AAC | IEEE 802.11ax (160 MHz, MCS10, 90pc duty cycle) | WLAN | 9.00 | ±9.6 |
| 10754 | AAC | IEEE 802.11ax (160 MHz, MCS11, 90pc duty cycle) | WLAN | 8.94 | ±9.6 |
| 10755 | AAC | IEEE 802.11ax (160 MHz, MCS0, 99pc duty cycle) | WLAN | 8.64 | ±9.6 |
| 10756 | AAC | IEEE 802.11ax (160 MHz, MCS1, 99pc duty cycle) | WLAN | 8.77 | ±9.6 |
| 10757 | AAC | IEEE 802.11ax (160 MHz, MCS2, 99pc duty cycle) | WLAN | 8.77 | ±9.6 |
| 10758 | AAC | IEEE 802.11ax (160 MHz, MCS3, 99pc duty cycle) | WLAN | 8.69 | ±9.6 |
| 10759 | AAC | IEEE 802.11ax (160 MHz, MCS4, 99pc duty cycle) | WLAN | 8.58 | ±9.6 |
| 10760 | AAC | IEEE 802.11ax (160 MHz, MCS5, 99pc duty cycle) | WLAN | 8.49 | ±9.6 |
| 10761 | AAC | IEEE 802.11ax (160 MHz, MCS6, 99pc duty cycle) | WLAN | 8.58 | ±9.6 |
| 10762 | AAC | IEEE 802.11ax (160 MHz, MCS7, 99pc duty cycle) | WLAN | 8.49 | ±9.6 |
| 10763 | AAC | IEEE 802.11ax (160 MHz, MCS8, 99pc duty cycle) | WLAN | 8.53 | ±9.6 |
| 10764 | AAC | IEEE 802.11ax (160 MHz, MCS9, 99pc duty cycle) | WLAN | 8.54 | ±9.6 |
| 10765 | AAC | IEEE 802.11ax (160 MHz, MCS10, 99pc duty cycle) | WLAN | 8.54 | ±9.6 |
| 10766 | AAC | IEEE 802.11ax (160 MHz, MCS11, 99pc duty cycle) | WLAN | 8.51 | ±9.6 |
| 10767 | AAG | 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 7.99 | ±9.6 |
| 10768 | AAE | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.01 | ±9.6 |
| 10769 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.01 | ±9.6 |
| 10770 | AAE | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.02 | ±9.6 |
| 10771 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.02 | ±9.6 |
| 10772 | AAE | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.23 | ±9.6 |
| 10773 | AAF | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.03 | ±9.6 |
| 10774 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.02 | ±9.6 |
| 10775 | AAF | 5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.31 | ±9.6 |
| 10776 | AAE | 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.30 | ±9.6 |
| 10777 | AAC | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.30 | ±9.6 |
| 10778 | AAE | 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.34 | ±9.6 |
| 10779 | AAC | 5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.42 | ±9.6 |
| 10780 | AAE | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.38 | ±9.6 |
| 10781 | AAF | 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.38 | ±9.6 |
| 10782 | AAE | 5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.43 | ±9.6 |
| 10783 | AAG | 5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.31 | ±9.6 |
| 10784 | AAE | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.29 | ±9.6 |
| 10785 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.40 | ±9.6 |
| 10786 | AAE | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.35 | ±9.6 |
| 10787 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.44 | ±9.6 |
| 10788 | AAE | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.39 | ±9.6 |
| 10789 | AAF | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.37 | ±9.6 |
| 10790 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 8.39 | ±9.6 |
| 10791 | AAG | 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.83 | ±9.6 |
| 10792 | AAE | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.92 | ±9.6 |
| 10793 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.95 | ±9.6 |
| 10794 | AAE | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.82 | ±9.6 |
| 10795 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.84 | ±9.6 |
| 10796 | AAE | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.82 | ±9.6 |
| 10797 | AAF | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.01 | ±9.6 |
| 10798 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.89 | ±9.6 |
| 10799 | AAF | 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.93 | ±9.6 |
| 10801 | AAF | 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.89 | ±9.6 |
| 10802 | AAE | 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.87 | ±9.6 |
| 10803 | AAF | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 7.93 | ±9.6 |
| 10805 | AAE | 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.34 | ±9.6 |
| 10806 | AAD | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.37 | ±9.6 |
| 10809 | AAE | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.34 | ±9.6 |
| 10810 | AAF | 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.34 | ±9.6 |
| 10812 | AAF | 5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.35 | ±9.6 |
| 10817 | AAG | 5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.35 | ±9.6 |
| 10818 | AAE | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.34 | ±9.6 |
| 10819 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.33 | ±9.6 |
| 10820 | AAE | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.30 | ±9.6 |
| 10821 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.41 | ±9.6 |
| 10822 | AAE | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.41 | ±9.6 |
| 10823 | AAF | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.36 | ±9.6 |
| 10824 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.39 | ±9.6 |
| 10825 | AAF | 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.41 | ±9.6 |
| 10827 | AAF | 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.42 | ±9.6 |
| 10828 | AAE | 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.43 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|--|---------------|----------|------------------------|
| 10829 | AAF | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 8.40 | ±9.6 |
| 10830 | AAE | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.63 | ±9.6 |
| 10831 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.73 | ±9.6 |
| 10832 | AAE | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.74 | ±9.6 |
| 10833 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.70 | ±9.6 |
| 10834 | AAE | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.75 | ±9.6 |
| 10835 | AAF | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.70 | ±9.6 |
| 10836 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.66 | ±9.6 |
| 10837 | AAF | 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.68 | ±9.6 |
| 10839 | AAF | 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.70 | ±9.6 |
| 10840 | AAE | 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.67 | ±9.6 |
| 10841 | AAF | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 7.71 | ±9.6 |
| 10843 | AAD | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.49 | ±9.6 |
| 10844 | AAE | 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.34 | ±9.6 |
| 10846 | AAE | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.41 | ±9.6 |
| 10854 | AAE | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.34 | ±9.6 |
| 10855 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.36 | ±9.6 |
| 10856 | AAE | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.37 | ±9.6 |
| 10857 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.35 | ±9.6 |
| 10858 | AAE | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.36 | ±9.6 |
| 10859 | AAF | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.34 | ±9.6 |
| 10860 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.41 | ±9.6 |
| 10861 | AAF | 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.40 | ±9.6 |
| 10863 | AAF | 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.41 | ±9.6 |
| 10864 | AAE | 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.37 | ±9.6 |
| 10865 | AAF | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz) | 5G NR FR1 TDD | 8.41 | ±9.6 |
| 10866 | AAF | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.68 | ±9.6 |
| 10868 | AAF | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.89 | ±9.6 |
| 10869 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz) | 5G NR FR2 TDD | 5.75 | ±9.6 |
| 10870 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz) | 5G NR FR2 TDD | 5.86 | ±9.6 |
| 10871 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 5.75 | ±9.6 |
| 10872 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 6.52 | ±9.6 |
| 10873 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 6.61 | ±9.6 |
| 10874 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 6.65 | ±9.6 |
| 10875 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz) | 5G NR FR2 TDD | 7.78 | ±9.6 |
| 10876 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz) | 5G NR FR2 TDD | 8.39 | ±9.6 |
| 10877 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 7.95 | ±9.6 |
| 10878 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 8.41 | ±9.6 |
| 10879 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 8.12 | ±9.6 |
| 10880 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 8.38 | ±9.6 |
| 10881 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz) | 5G NR FR2 TDD | 5.75 | ±9.6 |
| 10882 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz) | 5G NR FR2 TDD | 5.96 | ±9.6 |
| 10883 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 6.57 | ±9.6 |
| 10884 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 6.53 | ±9.6 |
| 10885 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 6.61 | ±9.6 |
| 10886 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 6.65 | ±9.6 |
| 10887 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz) | 5G NR FR2 TDD | 7.78 | ±9.6 |
| 10888 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz) | 5G NR FR2 TDD | 8.35 | ±9.6 |
| 10889 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 8.02 | ±9.6 |
| 10890 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 8.40 | ±9.6 |
| 10891 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 8.13 | ±9.6 |
| 10892 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 8.41 | ±9.6 |
| 10897 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.66 | ±9.6 |
| 10898 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.67 | ±9.6 |
| 10899 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.67 | ±9.6 |
| 10900 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.68 | ±9.6 |
| 10901 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.68 | ±9.6 |
| 10902 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.68 | ±9.6 |
| 10903 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.68 | ±9.6 |
| 10904 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.68 | ±9.6 |
| 10905 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.68 | ±9.6 |
| 10906 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.68 | ±9.6 |
| 10907 | AAE | 5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.78 | ±9.6 |
| 10908 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.93 | ±9.6 |
| 10909 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.96 | ±9.6 |
| 10910 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.83 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|---|---------------|----------|------------------------|
| 10911 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.93 | ±9.6 |
| 10912 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.84 | ±9.6 |
| 10913 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.84 | ±9.6 |
| 10914 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.85 | ±9.6 |
| 10915 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.83 | ±9.6 |
| 10916 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.87 | ±9.6 |
| 10917 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.94 | ±9.6 |
| 10918 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.86 | ±9.6 |
| 10919 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.86 | ±9.6 |
| 10920 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.87 | ±9.6 |
| 10921 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.84 | ±9.6 |
| 10922 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.82 | ±9.6 |
| 10923 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.84 | ±9.6 |
| 10924 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.84 | ±9.6 |
| 10925 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.95 | ±9.6 |
| 10926 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.84 | ±9.6 |
| 10927 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 5.94 | ±9.6 |
| 10928 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.52 | ±9.6 |
| 10929 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.52 | ±9.6 |
| 10930 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.52 | ±9.6 |
| 10931 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.51 | ±9.6 |
| 10932 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.51 | ±9.6 |
| 10933 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.51 | ±9.6 |
| 10934 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.51 | ±9.6 |
| 10935 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.51 | ±9.6 |
| 10936 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.90 | ±9.6 |
| 10937 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.77 | ±9.6 |
| 10938 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.90 | ±9.6 |
| 10939 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.82 | ±9.6 |
| 10940 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.89 | ±9.6 |
| 10941 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.83 | ±9.6 |
| 10942 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.85 | ±9.6 |
| 10943 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.95 | ±9.6 |
| 10944 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.81 | ±9.6 |
| 10945 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.85 | ±9.6 |
| 10946 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.83 | ±9.6 |
| 10947 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.87 | ±9.6 |
| 10948 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.94 | ±9.6 |
| 10949 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.87 | ±9.6 |
| 10950 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.94 | ±9.6 |
| 10951 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz) | 5G NR FR1 FDD | 5.92 | ±9.6 |
| 10952 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.25 | ±9.6 |
| 10953 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.15 | ±9.6 |
| 10954 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.23 | ±9.6 |
| 10955 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.42 | ±9.6 |
| 10956 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.14 | ±9.6 |
| 10957 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.31 | ±9.6 |
| 10958 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.61 | ±9.6 |
| 10959 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.33 | ±9.6 |
| 10960 | AAE | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.32 | ±9.6 |
| 10961 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.36 | ±9.6 |
| 10962 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.40 | ±9.6 |
| 10963 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.55 | ±9.6 |
| 10964 | AAE | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.29 | ±9.6 |
| 10965 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.37 | ±9.6 |
| 10966 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.55 | ±9.6 |
| 10967 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.42 | ±9.6 |
| 10968 | AAD | 5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.49 | ±9.6 |
| 10972 | AAC | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) | 5G NR FR1 TDD | 11.59 | ±9.6 |
| 10973 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz) | 5G NR FR1 TDD | 9.06 | ±9.6 |
| 10974 | AAD | 5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz) | 5G NR FR1 TDD | 10.28 | ±9.6 |
| 10978 | AAA | ULLA BDR | ULLA | 1.16 | ±9.6 |
| 10979 | AAA | ULLA HDR4 | ULLA | 8.58 | ±9.6 |
| 10980 | AAA | ULLA HDR8 | ULLA | 10.32 | ±9.6 |
| 10981 | AAA | ULLA HDRp4 | ULLA | 3.19 | ±9.6 |
| 10982 | AAA | ULLA HDRp8 | ULLA | 3.43 | ±9.6 |

| UID | Rev | Communication System Name | Group | PAR (dB) | Unc ^E k = 2 |
|-------|-----|--|---------------|----------|------------------------|
| 10983 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.31 | ±9.6 |
| 10984 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.42 | ±9.6 |
| 10985 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.54 | ±9.6 |
| 10986 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.50 | ±9.6 |
| 10987 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.53 | ±9.6 |
| 10988 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.38 | ±9.6 |
| 10989 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.33 | ±9.6 |
| 10990 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.52 | ±9.6 |
| 11003 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 10.24 | ±9.6 |
| 11004 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 10.73 | ±9.6 |
| 11005 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.70 | ±9.6 |
| 11006 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.55 | ±9.6 |
| 11007 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.46 | ±9.6 |
| 11008 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.51 | ±9.6 |
| 11009 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.76 | ±9.6 |
| 11010 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.95 | ±9.6 |
| 11011 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.96 | ±9.6 |
| 11012 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.68 | ±9.6 |
| 11013 | AAB | IEEE 802.11be (320 MHz, MCS1, 99pc duty cycle) | WLAN | 8.47 | ±9.6 |
| 11014 | AAB | IEEE 802.11be (320 MHz, MCS2, 99pc duty cycle) | WLAN | 8.45 | ±9.6 |
| 11015 | AAB | IEEE 802.11be (320 MHz, MCS3, 99pc duty cycle) | WLAN | 8.44 | ±9.6 |
| 11016 | AAB | IEEE 802.11be (320 MHz, MCS4, 99pc duty cycle) | WLAN | 8.44 | ±9.6 |
| 11017 | AAB | IEEE 802.11be (320 MHz, MCS5, 99pc duty cycle) | WLAN | 8.41 | ±9.6 |
| 11018 | AAB | IEEE 802.11be (320 MHz, MCS6, 99pc duty cycle) | WLAN | 8.40 | ±9.6 |
| 11019 | AAB | IEEE 802.11be (320 MHz, MCS7, 99pc duty cycle) | WLAN | 8.29 | ±9.6 |
| 11020 | AAB | IEEE 802.11be (320 MHz, MCS8, 99pc duty cycle) | WLAN | 8.27 | ±9.6 |
| 11021 | AAB | IEEE 802.11be (320 MHz, MCS9, 99pc duty cycle) | WLAN | 8.46 | ±9.6 |
| 11022 | AAB | IEEE 802.11be (320 MHz, MCS10, 99pc duty cycle) | WLAN | 8.36 | ±9.6 |
| 11023 | AAB | IEEE 802.11be (320 MHz, MCS11, 99pc duty cycle) | WLAN | 8.09 | ±9.6 |
| 11024 | AAB | IEEE 802.11be (320 MHz, MCS12, 99pc duty cycle) | WLAN | 8.42 | ±9.6 |
| 11025 | AAB | IEEE 802.11be (320 MHz, MCS13, 99pc duty cycle) | WLAN | 8.37 | ±9.6 |
| 11026 | AAB | IEEE 802.11be (320 MHz, MCS0, 99pc duty cycle) | WLAN | 8.39 | ±9.6 |

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Client **UL**
Research Triangle Park, USA

Certificate No. **CLA13-1017_Mar24**

CALIBRATION CERTIFICATE

Object **CLA13 - SN: 1017**

Calibration procedure(s) **QA CAL-15.v11
Calibration Procedure for SAR Validation Sources below 700 MHz**

Calibration date: **March 07, 2024**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID # | Cal Date (Certificate No.) | Scheduled Calibration |
|-----------------------------|--------------------|---------------------------------|-----------------------|
| Power meter NRP2 | SN: 104778 | 30-Mar-23 (No. 217-03804/03805) | Mar-24 |
| Power sensor NRP-Z91 | SN: 103244 | 30-Mar-23 (No. 217-03804) | Mar-24 |
| Power sensor NRP-Z91 | SN: 103245 | 30-Mar-23 (No. 217-03805) | Mar-24 |
| Reference 20 dB Attenuator | SN: CC2552 (20x) | 30-Mar-23 (No. 217-03809) | Mar-24 |
| Type-N mismatch combination | SN: 310982 / 06327 | 30-Mar-23 (No. 217-03810) | Mar-24 |
| Reference Probe EX3DV4 | SN: 3877 | 10-Jan-24 (No. EX3-3877_Jan24) | Jan-25 |
| DAE4 | SN: 654 | 15-Jan-24 (No. DAE4-654_Jan24) | Jan-25 |

| Secondary Standards | ID # | Check Date (in house) | Scheduled Check |
|---------------------------------|------------------|-----------------------------------|------------------------|
| Power meter NRP2 | SN: 107193 | 08-Nov-21 (in house check Dec-22) | In house check: Dec-24 |
| Power sensor NRP-Z91 | SN: 100922 | 15-Dec-09 (in house check Dec-22) | In house check: Dec-24 |
| Power sensor NRP-Z91 | SN: 100418 | 01-Jan-04 (in house check Dec-22) | In house check: Dec-24 |
| RF generator HP 8648C | SN: US3642U01700 | 04-Aug-99 (in house check Jun-22) | In house check: Jun-24 |
| Network Analyzer Agilent E8358A | SN: US41080477 | 31-Mar-14 (in house check Oct-22) | In house check: Oct-24 |

Calibrated by: **Jeton Kastrati** Function: **Laboratory Technician**

Approved by: **Sven Kühn** Technical Manager

Signature



Issued: March 8, 2024

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

| | |
|-------|---------------------------------|
| TSL | tissue simulating liquid |
| ConvF | sensitivity in TSL / NORM x,y,z |
| N/A | not applicable or not measured |

Calibration is Performed According to the Following Standards:

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

- DASY System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- SAR measured:* SAR measured at the stated antenna input power.
- SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

| | | |
|-----------------------------|----------------------------------|----------------------------------|
| DASY Version | DASY5 | V52.10.4 |
| Extrapolation | Advanced Extrapolation | |
| Phantom | ELI4 Flat Phantom | Shell thickness: 2 ± 0.2 mm |
| EUT Positioning | Touch Position | |
| Zoom Scan Resolution | $dx, dy = 4.0$ mm, $dz = 1.4$ mm | Graded Ratio = 1.4 (Z direction) |
| Frequency | 13 MHz ± 1 MHz | |

Head TSL parameters

The following parameters and calculations were applied.

| | Temperature | Permittivity | Conductivity |
|--|---------------------|----------------|------------------------|
| Nominal Head TSL parameters | 22.0 °C | 55.0 | 0.75 mho/m |
| Measured Head TSL parameters | (22.0 ± 0.2) °C | 53.5 ± 6 % | 0.72 mho/m ± 6 % |
| Head TSL temperature change during test | < 0.5 °C | ---- | ---- |

SAR result with Head TSL

| SAR averaged over 1 cm³ (1 g) of Head TSL | Condition | |
|---|------------------|---|
| SAR measured | 1 W input power | 0.537 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | 0.551 W/kg ± 18.4 % (k=2) |

| SAR averaged over 10 cm³ (10 g) of Head TSL | condition | |
|---|------------------|---|
| SAR measured | 1 W input power | 0.335 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | 0.344 W/kg ± 18.0 % (k=2) |

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

| | |
|--------------------------------------|--------------------------------|
| Impedance, transformed to feed point | 55.3 Ω + 6.7 j Ω |
| Return Loss | - 21.9 dB |

Additional EUT Data

| | |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: CLA13; Type: CLA13; Serial: CLA13 - SN: 1017

Communication System: UID 0 - CW; Frequency: 13 MHz

Medium parameters used: $f = 13$ MHz; $\sigma = 0.72$ S/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3877; ConvF(15.33, 15.33, 15.33) @ 13 MHz; Calibrated: 10.01.2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 15.01.2024
- Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2034
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7501)

CLA Calibration for HSL-LF Tissue/CLA-13, touch configuration, Pin=1W/Zoom Scan, dist=1.4mm (8x10x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 31.00 V/m; Power Drift = -0.01 dB

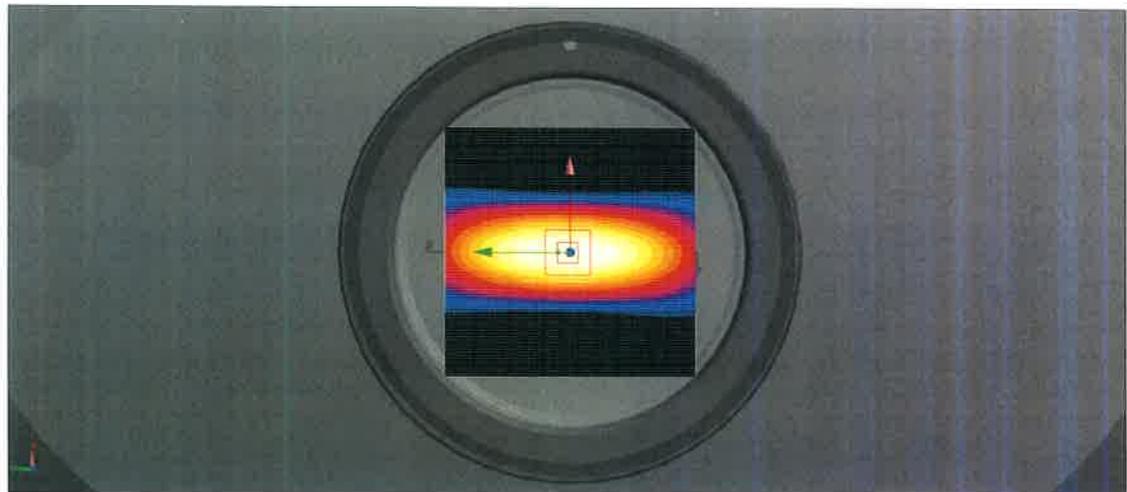
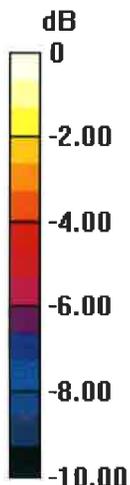
Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.537 W/kg; SAR(10 g) = 0.335 W/kg

Smallest distance from peaks to all points 3 dB below = 25.8 mm

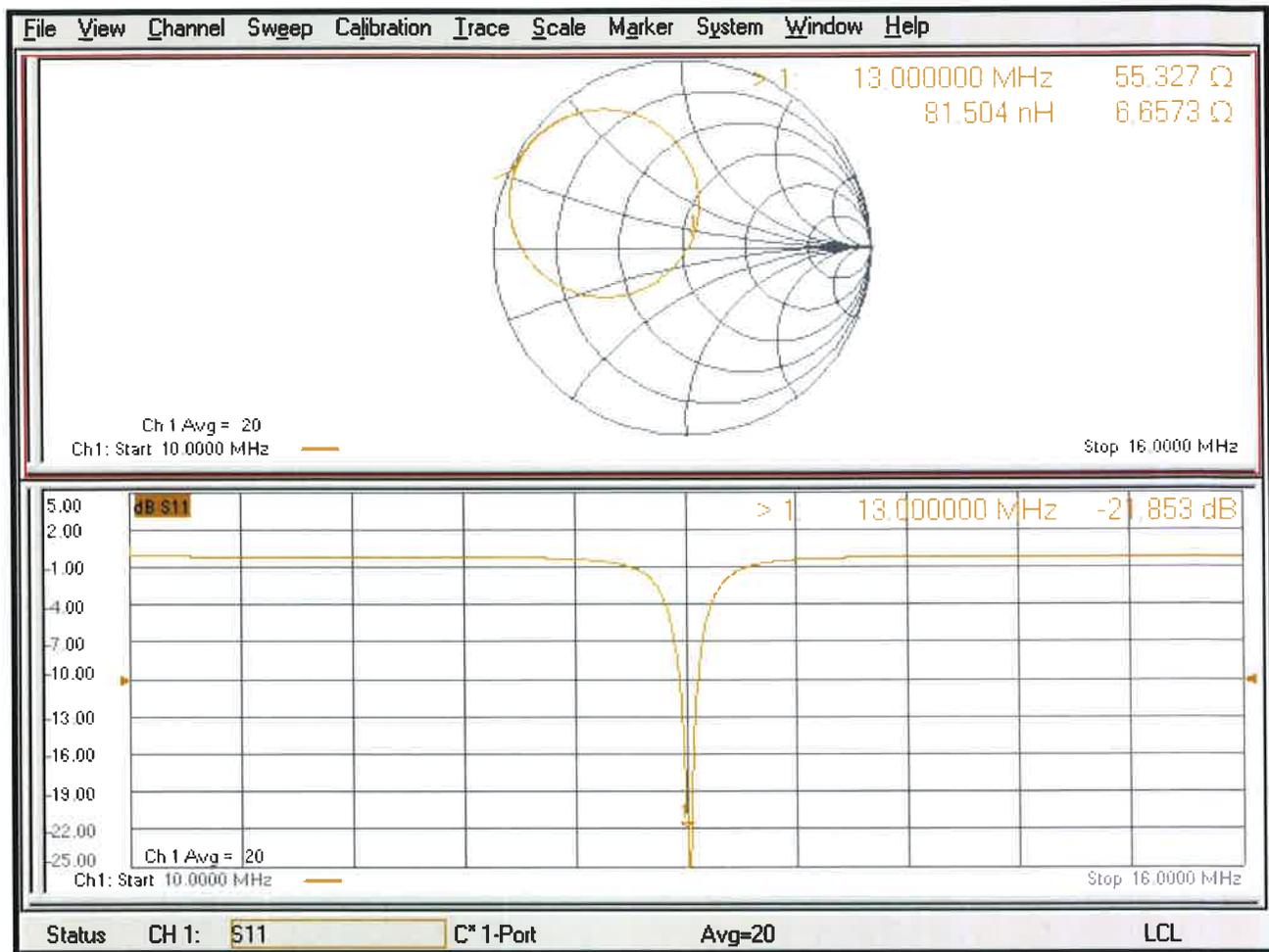
Ratio of SAR at M2 to SAR at M1 = 77.8%

Maximum value of SAR (measured) = 0.790 W/kg



0 dB = 0.790 W/kg = -1.02 dBW/kg

Impedance Measurement Plot for Head TSL





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Multilateral Agreement for the recognition of calibration certificates**

Accreditation No.: **SCS 0108**

Client **UL**
Research Triangle Park, USA

Certificate No. **D2450V2-963_Oct24**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 963**

Calibration procedure(s) **QA CAL-05.v12
Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz**

Calibration date **October 11, 2024**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.
Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID | Cal Date (Certificate No.) | Scheduled Cal |
|--|------------|---------------------------------------|---------------|
| Power Sensor R&S NRP-33T | SN: 100967 | 28-Mar-24 (No. 217-04038) | Mar-25 |
| Power Sensor R&S NRP18A | SN: 101859 | 22-Jul-24 (No. 4030A315008547) | Jul-25 |
| Spectrum Analyzer R&S FSV40 | SN: 101832 | 25-Jan-24 (No. 4030-315007551) | Jan-25 |
| Mismatch; Short [S4188] Attenuator [S4423] | SN: 1152 | 28-Mar-24 (No. 217-04050) | Mar-25 |
| OCP DAK-12 | SN: 1016 | 24-Sep-24 (No. OCP-DAK12-1016_Sep24) | Sep-25 |
| OCP DAK-3.5 | SN: 1249 | 23-Sep-24 (No. OCP-DAK3.5-1249_Sep24) | Sep-25 |
| Reference Probe EX3DV4 | SN: 7349 | 03-Jun-24 (No. EX3-7349_Jun24) | Jun-25 |
| DAE4ip | SN: 1836 | 10-Jan-24 (No. DAE4ip-1836_Jan24) | Jan-25 |

| Secondary Standards | ID | Check Date (in house) | Scheduled Check |
|------------------------------|------------|--|-----------------|
| ACAD Source Box | SN: 1000 | 28-May-24 (No. 675-ACAD_Source_Box-240528) | May-25 |
| Signal Generator R&S SMB100A | SN: 182081 | 28-May-24 (No. 675-CAL16-S4588-240528) | May-25 |
| Mismatch; SMA | SN: 1102 | 22-May-24 (No. 675-Mismatch_SMA-240522) | May-25 |

| | Name | Function | Signature |
|---------------|------------------|-----------------------|-----------|
| Calibrated by | Krešimir Franjić | Laboratory Technician | |
| Approved by | Sven Kühn | Technical Manager | |

Issued: October 14, 2024

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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Accreditation No.: **SCS 0108**

Glossary

| | |
|-------|---------------------------------|
| TSL | tissue simulating liquid |
| ConvF | sensitivity in TSL / NORM x,y,z |
| N/A | not applicable or not measured |

Calibration is Performed According to the Following Standards

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation

- DASYS System Handbook

Methods Applied and Interpretation of Parameters

- *Measurement Conditions*: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL*: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss*: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay*: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured*: SAR measured at the stated antenna input power.
- *SAR normalized*: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters*: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

| | | |
|-------------------------------------|--------------------------|-------------------------------------|
| DASY Version | DASY8 Module SAR | 16.4.0 |
| Extrapolation | Advanced Extrapolation | |
| Phantom | Modular Flat Phantom | |
| Distance Dipole Center - TSL | 10 mm | with spacer |
| Zoom Scan Resolution | dx, dy = 5mm, dz = 1.5mm | Graded Ratio = 1.5 mm (Z direction) |
| Frequency | 2450MHz \pm 1MHz | |

Head TSL parameters at 2450 MHz

The following parameters and calculations were applied.

| | Temperature | Permittivity | Conductivity |
|--|--------------------|---------------|---------------------|
| Nominal Head TSL parameters | 22.0 °C | 39.2 | 1.80 mho/m |
| Measured Head TSL parameters | (22.0 \pm 0.2)°C | 37.7 \pm 6% | 1.82 mho/m \pm 6% |
| Head TSL temperature change during test | < 0.5 °C | | |

SAR result with Head TSL at 2450 MHz

| SAR averaged over 1 cm³ (1 g) of Head TSL | Condition | |
|---|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters | 24 dBm input power | 13.2 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | 52.6 W/kg \pm 17.0% (k = 2) |

| SAR averaged over 10 cm³ (10 g) of Head TSL | Condition | |
|---|--------------------|-------------------------------|
| SAR for nominal Head TSL parameters | 24 dBm input power | 6.14 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | 24.4 W/kg \pm 16.5% (k = 2) |

Appendix (Additional assessments outside the scope of SCS 0108)**Antenna Parameters with Head TSL at 2450 MHz**

| | |
|-------------|--------------------------------|
| Impedance | 55.2 Ω + 2.7 j Ω |
| Return Loss | -25.1 dB |

General Antenna Parameters and Design

| | |
|----------------------------------|---------|
| Electrical Delay (one direction) | 1.16 ns |
|----------------------------------|---------|

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

| | |
|-----------------|-------|
| Manufactured by | SPEAG |
|-----------------|-------|

System Performance Check Report

Summary

| Dipole | Frequency [MHz] | TSL | Power [dBm] |
|-----------------|-----------------|-----|-------------|
| D2450V2 - SN963 | 2450 | HSL | 24 |

Exposure Conditions

| Phantom Section, TSL | Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|--------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat | 10 | | CW, 0-- | 2450, 0 | 7.24 | 1.82 | 37.7 |

Hardware Setup

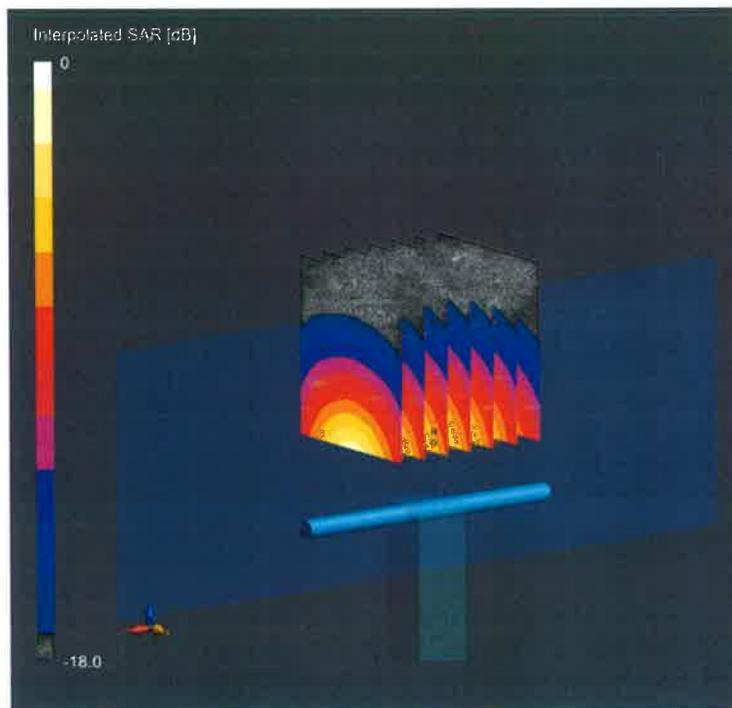
| Phantom | TSL, Measured Date | Probe, Calibration Date | DAE, Calibration Date |
|-----------------|--------------------|-----------------------------|---------------------------|
| MFP V8.0 Center | HSL, 2024-10-11 | EX3DV4 - SN7349, 2024-06-03 | DAE4ip Sn1836, 2024-01-10 |

Scans Setup

| | Zoom Scan |
|---------------------|-----------------|
| Grid Extents [mm] | 30 x 30 x 30 |
| Grid Steps [mm] | 5.0 x 5.0 x 1.5 |
| Sensor Surface [mm] | 1.4 |
| Graded Grid | Yes |
| Grading Ratio | 1.5 |
| MAIA | N/A |
| Surface Detection | VMS + 6p |
| Scan Method | Measured |

Measurement Results

| | Zoom Scan |
|---------------------|---------------------|
| Date | 2024-10-11 |
| psSAR1g [W/Kg] | 13.2 |
| psSAR10g [W/Kg] | 6.14 |
| Power Drift [dB] | 0.01 |
| Power Scaling | Disabled |
| Scaling Factor [dB] | |
| TSL Correction | Positive / Negative |



0 dB = 27.3 W/Kg

Impedance Measurement Plot for Head TSL

S11 Smith (R+jX) Scale 1.00

>1 2.450000 GHz 55.226 Ω 2.653 $j\Omega$

