Garmin International, Inc.
1200 East 151st Street
Olathe, Kansas 66062
P: 913-397-8200 F: 913-397-8282

20-Feb-2026

Manufacturer: Garmin International, Inc.
Address: 1200 E. 151st St.
Olathe, KS 66062-3426
U.S.A.
Chile Representative: Matías Rodríguez Correa
Rosario Norte 660 piso 24, Las Condes Santiago
Province CP 7550083, Chile
Contact Email: matias.rodriguez@garmin.com

Subject: SUBTEL, Chile (Resolution 737) Certification Compliance 2026

Commercial Name: zūmo® XT3 4.7"

	Información (Information)
Tipo de equipo (Equipment type)	Portable Digital Transceiver
Marca (Brand)	Garmin GARMIN
Modelo (Model)	A05116
Tecnología o modulación (Technology or modulation)	GFSK, DSSS, OFDM
Frecuencias (Frequencies)	2400-2483.5 MHz 5170-5250 MHz 5250-5330 MHz 5490-5730 MHz 5735-5835 MHz
Ganancia de antena (dBi) (Antenna gain (dBi))	2400-2483.5 MHz: 1.4 dBi 5170-5250 MHz: 1.0 dBi 5250-5330 MHz: 1.5 dBi 5490-5730 MHz: 1.75 dBi 5735-5835 MHz: 0.0 dBi
P.i.r.e. (E.I R P.)	19.73 dBm, 94 mW
Módulos (Modules)	Wi-Fi, BT, BLE, ANT/ANT+

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: 16025792-E3V2

Applicant	:	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	:	A05116
Brand	:	Garmin
FCC ID	:	IPH-05116
IC	:	1792A-05116
EUT Description	:	Portable Digital Transceiver
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-210 ISSUE 11 ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2026-01-09

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2026-01-07	Initial Issue	---
V2	2026-01-09	Updated Section 6.1	Tina Chu

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UL VERIFICATION SERVICES INC.
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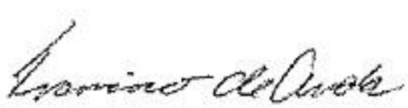
1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	A05116
Brand	Garmin
FCC ID	IPH-05116
IC	1792A-05116
EUT Description	Portable Digital Transceiver
Serial Number	3522388213 (Radiated); 3522388124 (Conducted)
Sample Receipt Date	2025-10-17
Date Tested	2025-10-20 to 2025-10-30
Applicable Standards	FCC 47 CFR Part 15 Subpart C ISED RSS-210 Issue 11 ISED RSS-GEN Issue 5 + A1 + A2
Test Results	COMPLIES

UL Verification Services Inc. 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 ensure 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 Verification Services Inc., and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released By:	Prepared & Reviewed By:
	
Francisco de Anda Staff Engineer UL Verification Services, Inc.	Zach Sutton Lab Engineer UL Verification Services, Inc.

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2. TEST RESULTS SUMMARY

This report contains data provided by the customer, which can impact the validity of the results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

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

1. Antenna gain and type (see section 6.3)
2. Cable loss (see section 6.3)

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result
Duty Cycle	-	-	Reporting purposes only
20dB BW / 99% OBW	-	RSS-GEN 6.7	Complies
Radiated Emissions	15.249 (a) (c)	RSS-GEN 8.9, 8.10 and RSS-210 Annex B.10(a)	Complies
AC Mains Conducted Emissions	15.207	RSS-Gen 8.8	Not applicable. EUT powered by battery/DC power supply

3. TEST METHODOLOGY

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

- ANSI C63.10-2020 (FCC)
- ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+ Errata to C63.10a-2024 (ISED)
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15C
- KDB 414788 D01 Radiated Test Site
- RSS-GEN Issue 5 + A1 + A2
- RSS-210 Issue 11

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, 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
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

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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 regularly, with a maximum time between calibrations of one year or the manufacturer's 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
Time Domain Measurements	3.39%
Occupied Bandwidth	1.22 %
Temperature	±0.57 %
Relative Huminity	3.39 %
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB

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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Portable Digital Transceiver.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum fundamental peak and average E-field strength output powers as follows:

Frequency Range (MHz)	Mode	Peak E-field Strength (dBuV/m)	Avg E-field Strength (dBuV/m)	Distance (m)
2402 - 2480	ANT/ANT+	93.93	76.21	3.00

6.3. DESCRIPTION OF AVAILABLE ANTENNAS AND CABLE LOSS

The antenna(s) gain and type, as provided by the manufacturer, are as follows:

The radio utilizes a PIFA antenna with a maximum gain of 1.40 dBi and 0.71 dB cable loss.

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware and software installed during testing were versions 0.74.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz and above 18GHz were performed with the EUT set to transmit at the channel with the highest output power as a 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.

EUT was investigated in three orthogonal orientations: X (Flatbed), Y (Landscape), and Z (Portrait). The Z (Portrait) is the worst-case orientation. The full tests of the EUT have been made upon Z (Portrait) orientation. After investigation, the worst configuration set for all radiated tests is EUT powered by an internal battery, and the USB-C port is terminated by a laptop via USB cable.

Plots included in the report are representative of the method and settings parameters used for the test.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description	Manufacturer	Model	Serial Number		FCC ID/ DoC	
Laptop	Lenovo	T14	PF4BYGWJ		DOC	
Laptop AC/DC adapter	Lenovo	ADLX65YLC2A	8SSA10M13948L1CZ8CJ0EA6		DOC	
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	3-prongs	Un-Shielded	1.8	AC Mains to Analyzer
2	Antenna	1	SMA	Shielded	0.1	EUT to coupler to Analyzer to EUT
I/O CABLES (RF RADIATED)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC	1	DC	Shielded	1.8	AC/DC Adapter to Laptop
2	AC	1	2-prongs	Unshielded	1.8	AC Mains to AC/DC Adapter
3	USB	1	USB-C	Shielded	1	N/A

TEST SETUP

The EUT setup is shown below. Test software exercised the radio card.

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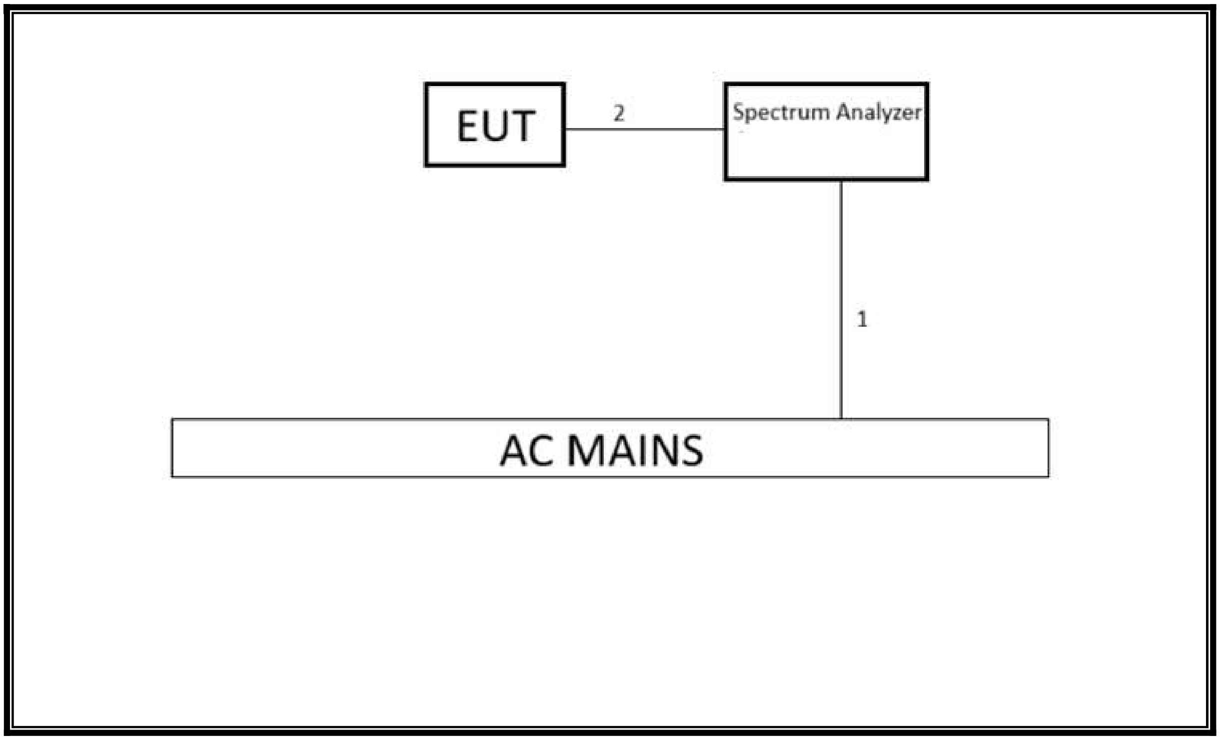
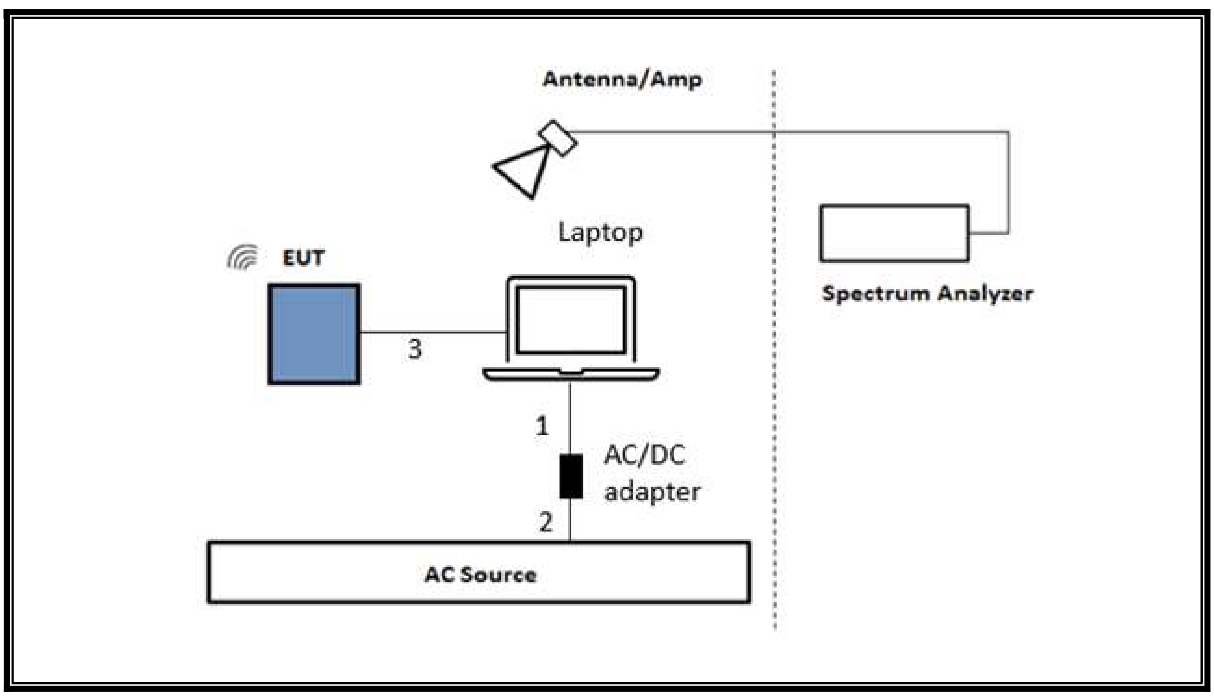
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz



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7. MEASUREMENT METHOD

Test Item	Test Method
On Time and Duty Cycle	ANSI C63.10 Section 11.6
20 dB BW	ANSI C63.10 Subclause 6.9.2
99% BW	ANSI C63.10, Subclause 6.9.3.
Radiated emissions 30-1000MHz	ANSI C63.10 Subclause 6.3, 6.5
Radiated emissions above 1GHz	ANSI C63.10 Subclause 6.3, 6.6
Radiated Spurious Emissions Below 30MHz	ANSI C63.10 Subclause 6.4
Band-edge	ANSI C63.10 Subclause 6.10.5

8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	206808	2027-04-30
RF Filter Box, 1-18GHz	UL-FR1	RATS 1.0, 2 Amp, 8 Port	197920	2026-03-31
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	81140	2027-05-31
Link File, RF Amplifier Assembly, 18-26.5GHz, 60dB Gain	UL-FR1	AMP18G26.5-60	215705	2026-10-31
EMI Test Receiver	Rohde & Schwarz	ESW44	225688	2026-02-28
Antenna, Passive Loop 100kHz to 30MHz	ELECTRO-METRICS	EM-6872	219910	2026-08-31
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	219908	2026-08-31
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	202329	2027-04-30
Link File, 9KHz-1GHz Port 0 Factors	UL-FR1	Port 0 Factors	213877	2026-03-31
EMI TEST RECEIVER, with B8 option	Rohde & Schwarz	ESW44	245268	2026-02-28
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	252765	Verified
Spectrum Analyzer, PXA, 3Hz to 44GHz	N9030A	Keysight Technologies Inc	85214	2026-01-31

UL AUTOMATION SOFTWARE			
Radiated Software	UL	UL EMC	Ver 9.5, 25 Aug 2025
Conducted Software	UL	UL EMC	2024-02-23

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

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

ON TIME AND DUTY CYCLE RESULTS

Note: DCCF is based on the manufacturer's declared duty cycle of 13%, 20log(0.13) = -17.72dB.

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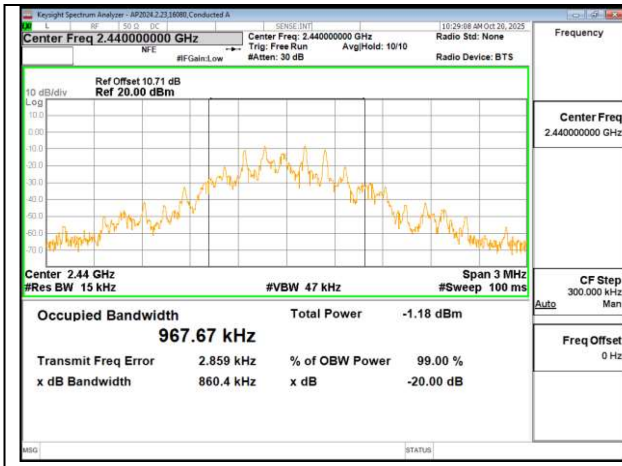
9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	0.97373
Middle	2440	0.96767
High	2480	0.97030



MID CHANNEL

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9.3. 20dB BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

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

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2402	0.930
Middle	2440	0.930
High	2480	0.927

LOW CHANNEL

10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

ISED RSS-GEN, Section 8.9 and 8.10

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

FCC §15.249

RSS-210 Annex B.10.

Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHZ, and 24.0–24.25 GHz.
(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental Limit (millivolts/meter) at 3 m	Field strength of harmonics Limit (microvolts/meter) at 3 m
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

(e) As shown in Sec. 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

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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. Peak detection is used unless otherwise noted as a quasi-peak.

For pre-scans above 1 GHz, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz 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 average measurements were calculated: AVG = Peak Reading + Duty Cycle Correction Factor

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.

For below 30MHz testing, an investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel). Parallel and perpendicular are the worst orientations, therefore, testing was performed on these two orientations only. Blue color trace on plots: Parallel orientation. Green color trace on plots: Perpendicular orientation.

Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as report in the table) using free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB to the corresponding RSS-Gen Table 6 limit as must 15.209(a) limit.

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

Based 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.

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

RESULTS

The plots in these sections are for reference settings only.

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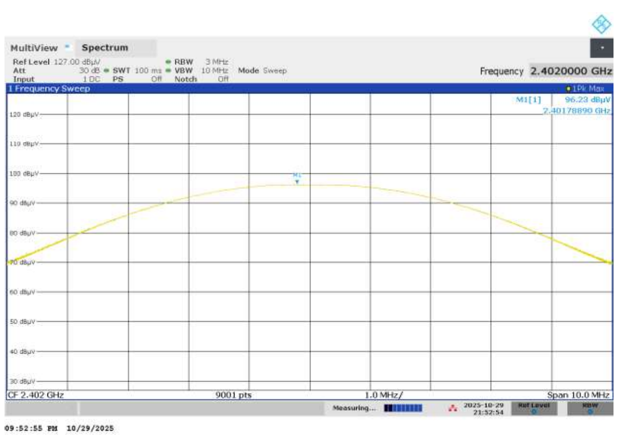
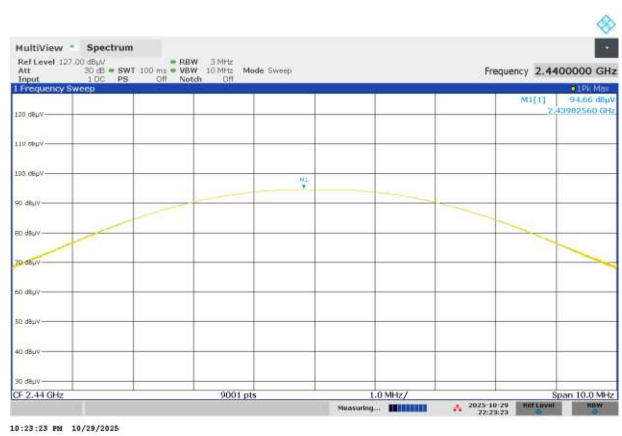
10.1. FUNDAMENTAL FREQUENCY RADIATED EMISSION

Frequency (GHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (dB)	DCCF (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2402	95.37	Pk	32.3	-34.6	0	93.07	-	-	114	-20.93	271	274	V
	95.37	Avg	32.3	-34.6	-17.72	75.35	94	-18.65	-	-	271	274	V
	96.23	Pk	32.3	-34.6	0	**93.93**	-	-	114	-20.07	37	321	H
	96.23	Avg	32.3	-34.6	-17.72	**76.21**	94	-17.79	-	-	37	321	H
2440	93.58	Pk	32.4	-34.4	0	91.58	-	-	114	-22.42	279	328	V
	93.58	Avg	32.4	-34.4	-17.72	73.86	94	-20.14	-	-	279	328	V
	94.66	Pk	32.4	-34.4	0	92.66	-	-	114	-21.34	35	248	H
	94.66	Avg	32.4	-34.4	-17.72	74.94	94	-19.06	-	-	35	248	H
2480	91.78	Pk	32.6	-34.3	0	90.08	-	-	114	-23.92	244	292	H
	91.78	Avg	32.6	-34.3	-17.72	72.36	94	-	-	-	244	292	H
	93.20	Pk	32.6	-34.3	0	91.5	-	-	114	-22.5	58	304	V
	93.20	Avg	32.6	-34.3	-17.72	73.78	94	-20.22	-	-	58	304	V

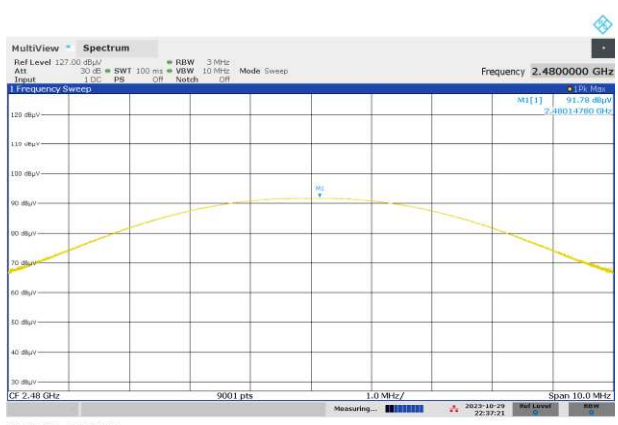
PK - Peak detector
AVG = Measured Peak Reading + Duty Cycle Correction Factor
Duty Cycle Correction Factor = -17.72dB



LOW CHANNEL HORIZONTAL RESULT



MID CHANNEL HORIZONTAL RESULT



HIGH CHANNEL HORIZONTAL RESULT

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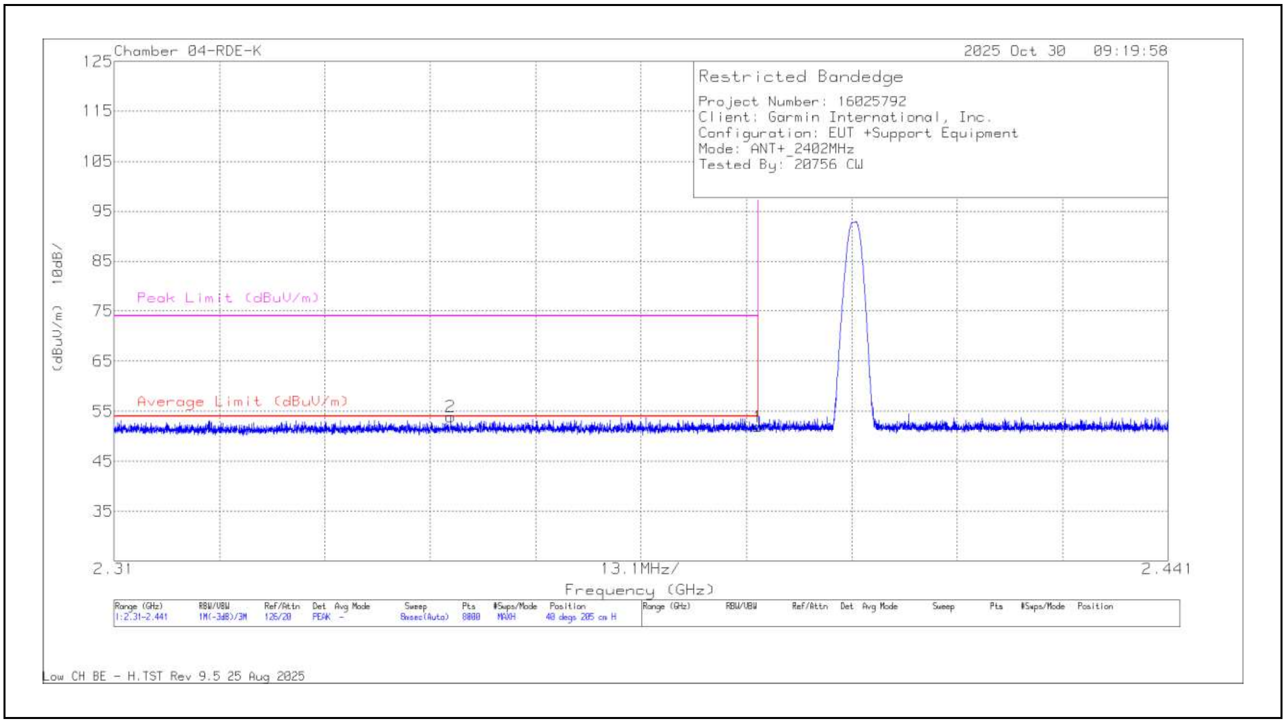
10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (dB)	DCCF (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.16	Pk	32.3	-34.6	0	51.86	-	-	74	-22.14	40	205	H
	* 2.39	54.16	Avg	32.3	-34.6	-17.72	34.14	54	-19.86	-	-	40	205	H
2	* 2.351827	56.61	Pk	32.1	-34.8	0	53.91	-	-	74	-20.09	40	205	H
	* 2.351827	56.61	Avg	32.1	-34.8	-17.72	36.19	54	-17.81	-	-	40	205	H

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

PK - Peak detector

AVG = Measured Peak Reading + Duty Cycle Correction Factor

Duty Cycle Correction Factor = -17.72dB

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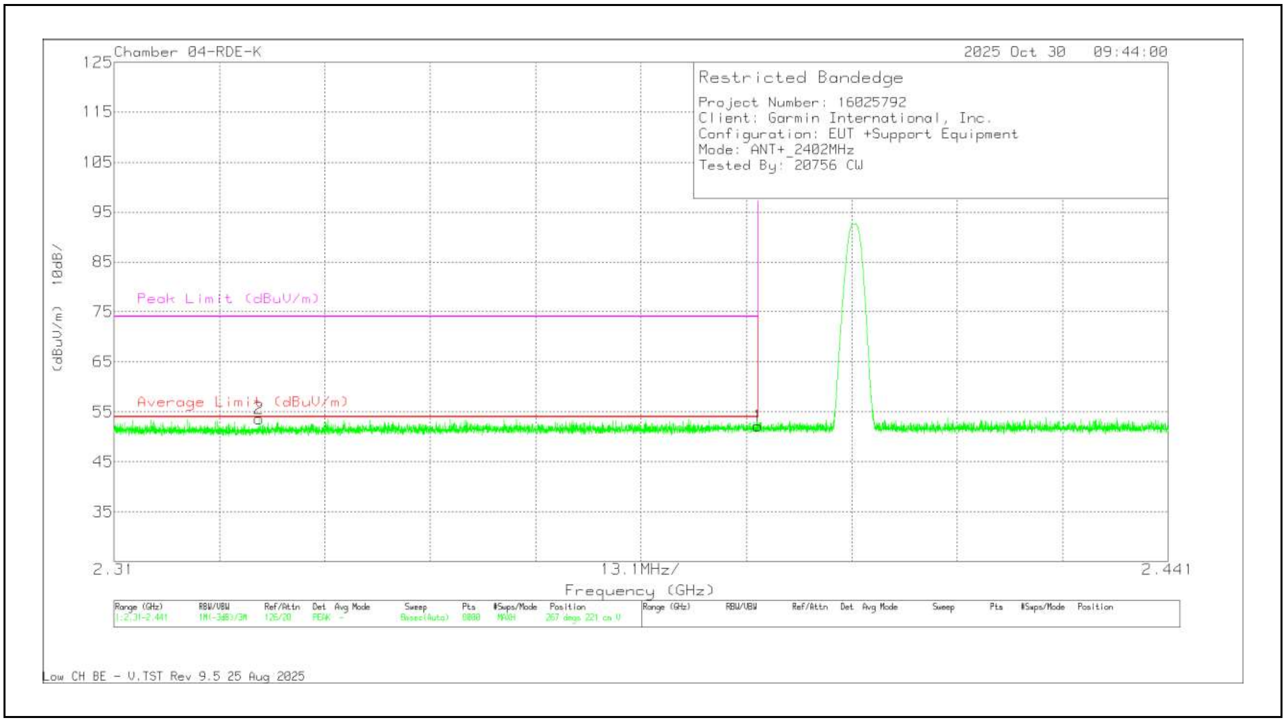
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (dB)	DCCF (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.41	Pk	32.3	-34.6	0	52.11	-	-	74	-21.89	267	221	V
	* 2.39	54.41	Avg	32.3	-34.6	-17.72	34.39	54	-19.61	-	-	267	221	V
2	* 2.328047	56.59	Pk	32	-34.9	0	53.69	-	-	74	-20.31	267	221	V
	* 2.328047	56.59	Avg	32	-34.9	-17.72	35.97	54	-18.03	-	-	267	221	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK - Peak detector
AVG = Measured Peak Reading + Duty Cycle Correction Factor
Duty Cycle Correction Factor = -17.72dB

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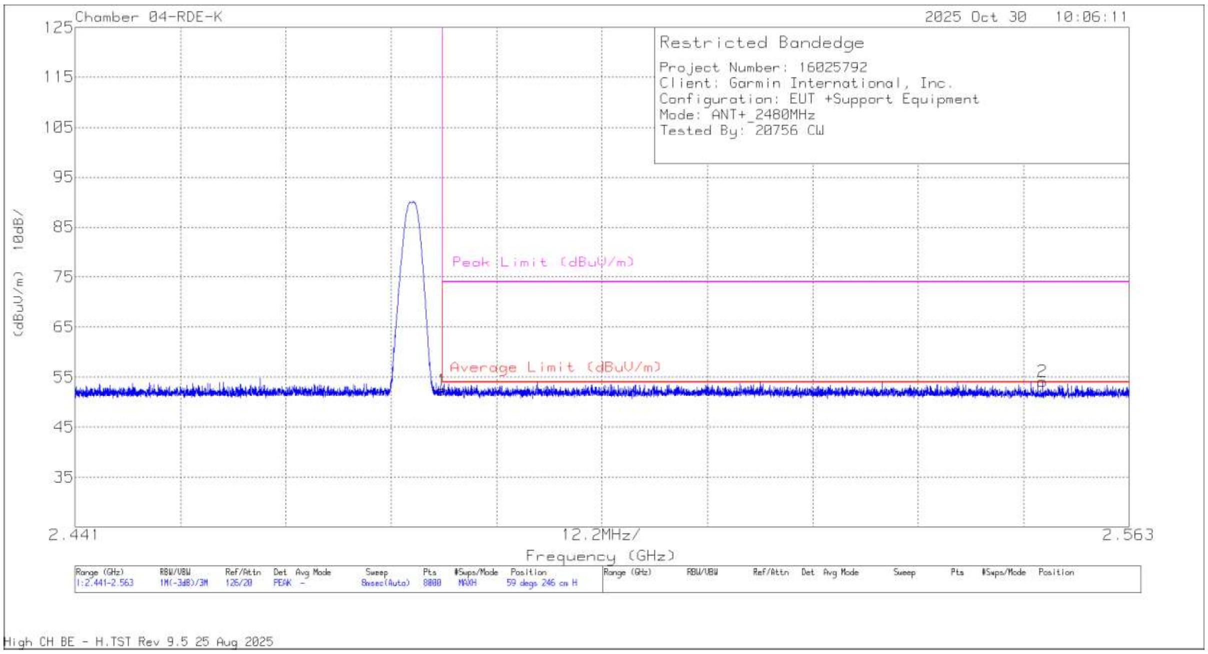
10.2.2. BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (dB)	DCCF (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	54.06	Pk	32.6	-34.2	0	52.46	-	-	74	-21.54	59	246	H
	* 2.4835	54.06	Avg	32.6	-34.2	-17.72	34.74	54	-19.26	-	-	59	246	H
2	2.552995	55.72	Pk	32.4	-34	0	54.12	-	-	74	-19.88	59	246	H
	2.552995	55.72	Avg	32.4	-34	-17.72	36.4	54	-17.6	-	-	59	246	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK - Peak detector
AVG = Measured Peak Reading + Duty Cycle Correction Factor
Duty Cycle Correction Factor = -17.72dB

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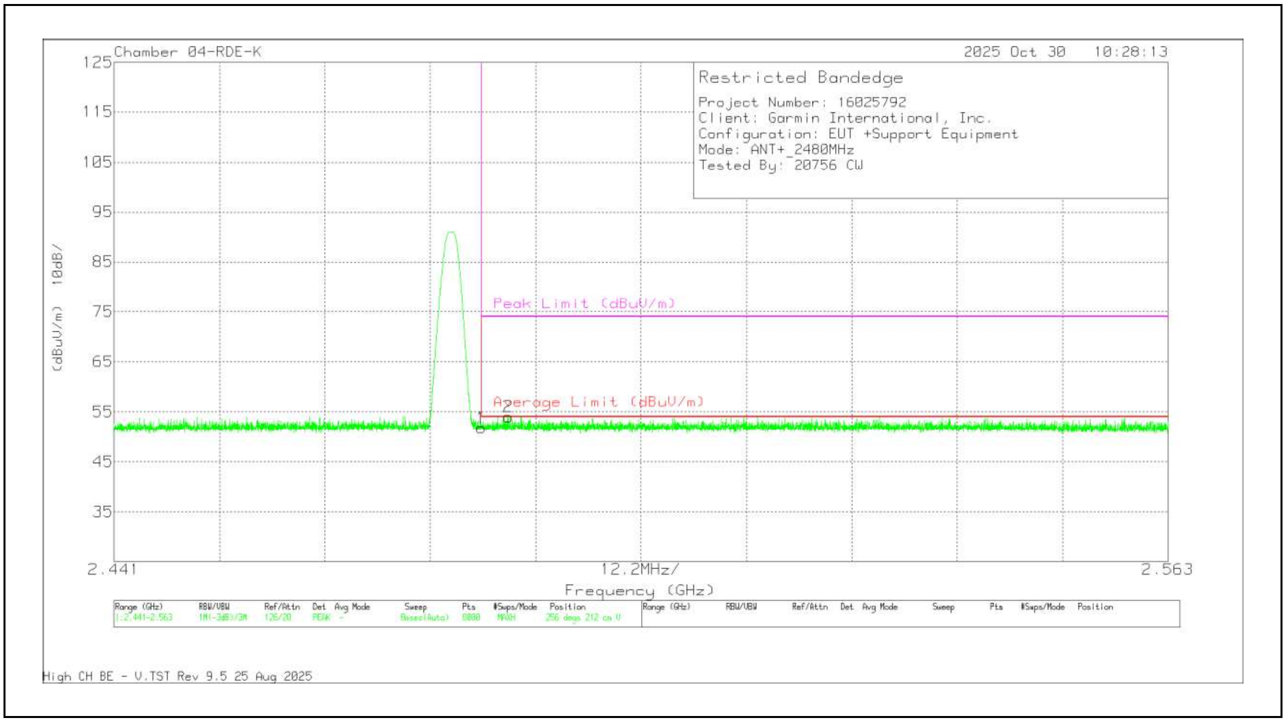
VERTICAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (dB)	DCCF (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	53.36	Pk	32.6	-34.2	0	51.76	-	-	74	-22.24	256	212	V
	* 2.4835	53.36	Avg	32.6	-34.2	-17.72	34.04	54	-19.96	-	-	256	212	V
2	* 2.486603	55.67	Pk	32.6	-34.2	0	54.07	-	-	74	-19.93	256	212	V
	* 2.486603	55.67	Avg	32.6	-34.2	-17.72	36.35	54	-17.65	-	-	256	212	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK - Peak detector
AVG = Measured Peak Reading + Duty Cycle Correction Factor
Duty Cycle Correction Factor = -17.72dB

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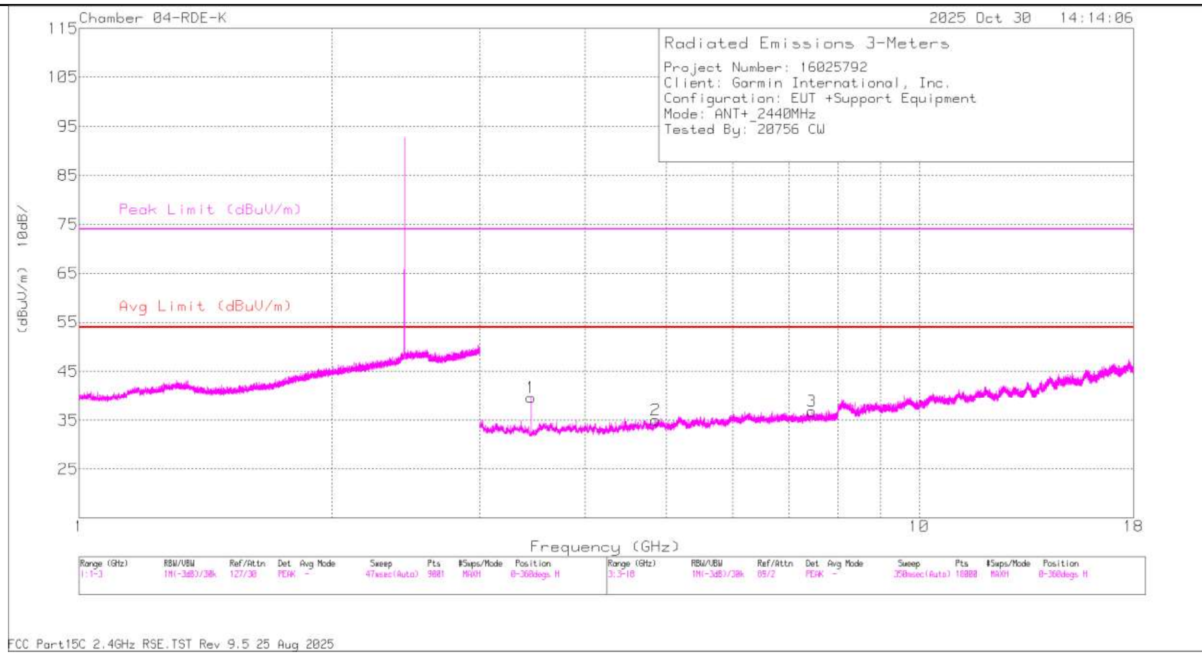
10.2.3. HARMONICS AND SPURIOUS EMISSIONS

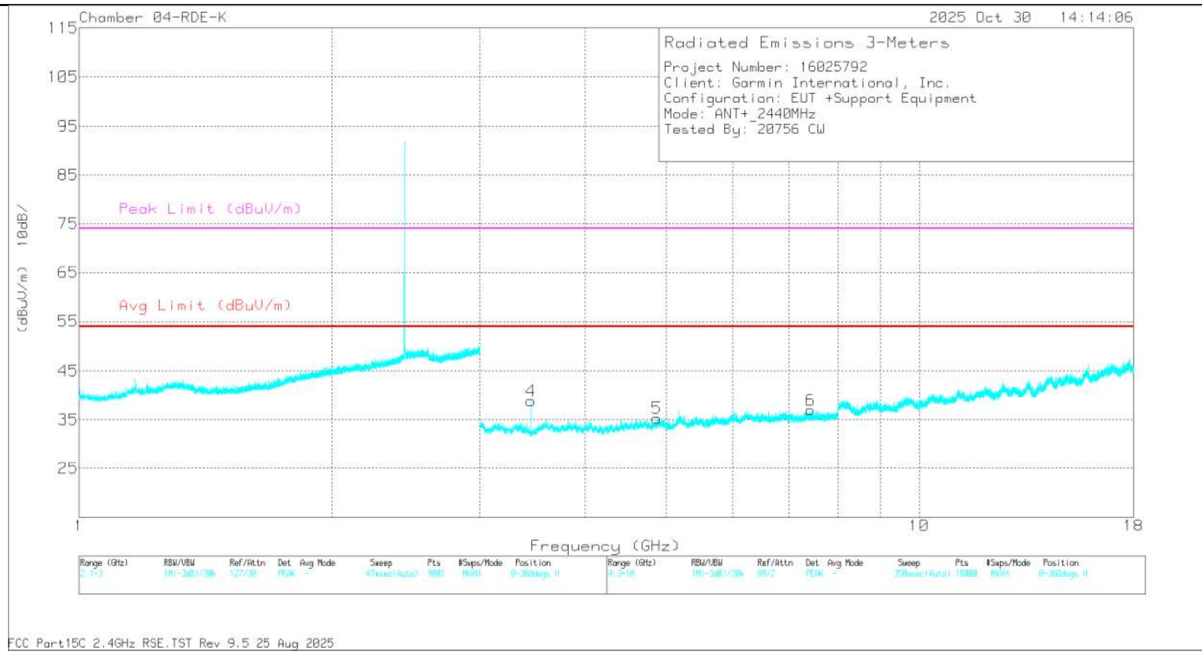
2.4 GHz (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
ANT/ANT+	2402	* 4.779886	50.41	PK2	34.2	-40.5	0	44.11	-	-	74	-29.89	342	249	H
		* 4.779886	50.41	Avg	34.2	-40.5	-17.72	26.39	54	-27.61	-	-	342	249	H
		* 7.572915	49.21	PK2	35.7	-37.7	0	47.21	-	-	74	-26.79	309	349	H
		* 7.572915	49.21	Avg	35.7	-37.7	-17.72	29.49	54	-24.51	-	-	309	349	H
		* 4.79946	55.41	PK2	34.2	-40.3	0	49.31	-	-	74	-24.69	190	239	V
		* 4.79946	55.41	Avg	34.2	-40.3	-17.72	31.59	54	-22.41	-	-	190	239	V
		* 11.688438	47.53	PK2	38.4	-35.2	0	50.73	-	-	74	-23.27	350	294	V
		* 11.688438	47.53	Avg	38.4	-35.2	-17.72	33.01	54	-20.99	-	-	350	294	V
		3.453298	57.14	PK2	32.7	-41.6	0	48.24	-	-	-	-	25	222	H
		3.453459	55.21	PK2	32.7	-41.6	0	46.31	-	-	-	-	219	188	V
	2440	* 4.878465	51.05	PK2	34.1	-40.2	0	44.95	-	-	74	-29.05	205	331	H
		* 4.878465	51.05	Avg	34.1	-40.2	-17.72	27.23	54	-26.77	-	-	205	331	H
		* 7.452886	48.61	PK2	35.6	-37.7	0	46.51	-	-	74	-27.49	122	370	H
		* 7.452886	48.61	Avg	35.6	-37.7	-17.72	28.79	54	-25.21	-	-	122	370	H
		* 4.879851	51.16	PK2	34.1	-40.2	0	45.06	-	-	74	-28.94	281	129	V
		* 4.879851	51.16	Avg	34.1	-40.2	-17.72	27.34	54	-26.66	-	-	281	129	V
		* 7.428127	48.73	PK2	35.6	-37.6	0	46.73	-	-	74	-27.27	123	239	V
		* 7.428127	48.73	Avg	35.6	-37.6	-17.72	29.01	54	-24.99	-	-	123	239	V
		3.45315	55.51	PK2	32.7	-41.6	0	46.61	-	-	-	-	21	240	H
		3.453424	54.89	PK2	32.7	-41.6	0	45.99	-	-	-	-	224	164	V
	2480	* 4.971747	51.41	PK2	34.1	-40.2	0	45.31	-	-	74	-28.87	203	400	H
		* 4.971747	51.41	Avg	34.1	-40.2	-17.72	27.41	54	-26.59	-	-	203	400	H
		* 7.430548	48.9	PK2	35.6	-37.5	0	47	-	-	74	-27	300	398	H
		* 7.430548	48.9	Avg	35.6	-37.5	-17.72	29.28	54	-24.72	-	-	300	398	H
		* 4.960081	51.27	PK2	34.1	-40.2	0	45.17	-	-	74	-28.83	274	138	V
		* 4.960081	51.27	Avg	34.1	-40.2	-17.72	27.45	54	-26.55	-	-	274	138	V
		* 7.429334	48.67	PK2	35.6	-37.5	0	46.77	-	-	74	-27.23	245	237	V
		* 7.429334	48.67	Avg	35.6	-37.5	-17.72	29.05	54	-24.95	-	-	245	237	V
		3.453152	55.12	PK2	32.7	-41.6	0	46.22	-	-			24	250	V
		3.453287	54.11	PK2	32.7	-41.6	0	45.21	-	-			31	101	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
AVG = Measured Peak Reading + Duty Cycle Correction Factor
Duty Cycle Correction Factor = -17.72dB

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL)



HORIZONTAL



VERTICAL

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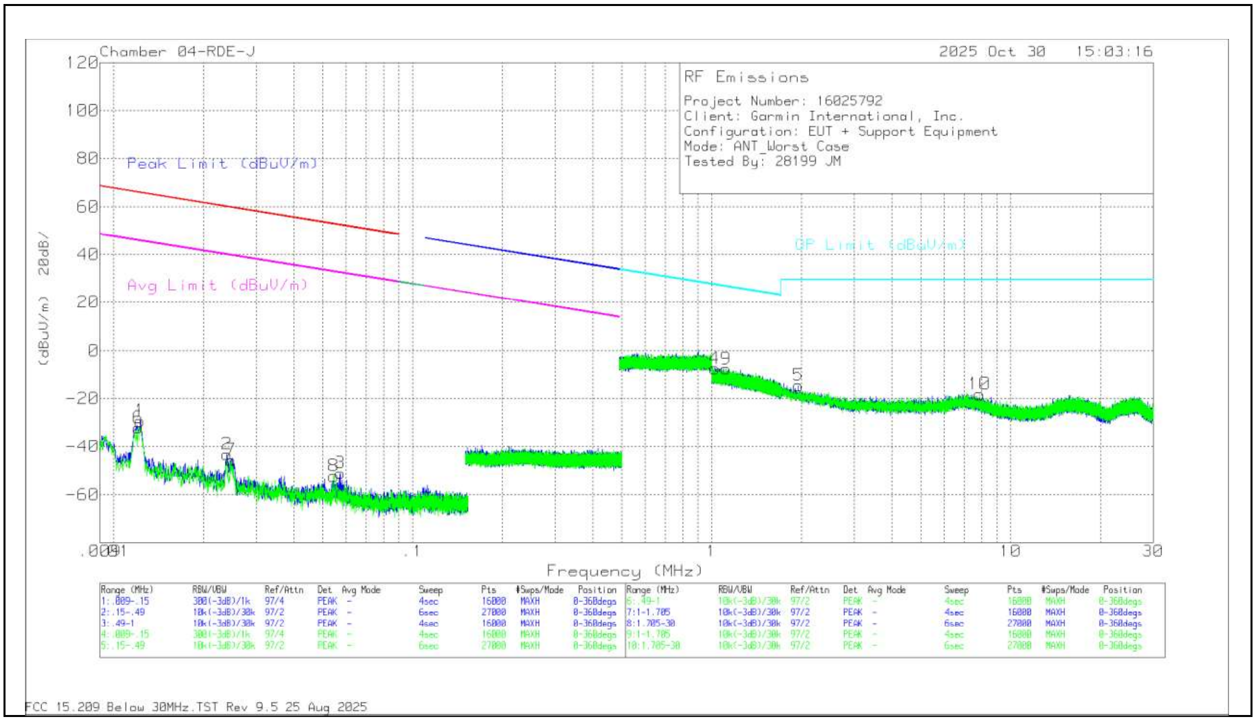
10.3. TRANSMITTER WORST CASE BELOW 30MHz

SPURIOUS EMISSIONS BELOW 30MHz (WORST-CASE CONFIGURATION)



Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity (Degs)
1	.0122	21.05	Pk	60.1	-30.4	-80	-29.25	65.82	-95.07	45.82	-75.07	0-360	0
2	.0239	9.64	Pk	58.7	-31.6	-80	-43.26	60.01	-103.27	40.01	-83.27	0-360	0
3	.0573	4.39	Pk	56.5	-32	-80	-51.11	52.42	-103.53	32.42	-83.53	0-360	0
6	.0121	18.06	Pk	60.2	-30.4	-80	-32.14	65.94	-98.08	45.94	-78.08	0-360	90
7	.0247	7.34	Pk	58.6	-31.6	-80	-45.66	59.72	-105.38	39.72	-85.38	0-360	90
8	.0545	2.89	Pk	56.7	-31.9	-80	-52.31	52.86	-105.17	32.86	-85.17	0-360	90

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity (Degs)
4	1.0257	18.1	Pk	46.7	-32.3	-40	-7.5	27.4	-34.9	0-360	0
5	1.9502	15.56	Pk	41.8	-32	-40	-14.64	29.5	-44.14	0-360	0
9	1.117	18.1	Pk	46.2	-32	-40	-7.7	26.66	-34.36	0-360	90
10	7.8672	18.94	Pk	34.5	-31.7	-40	-18.26	29.5	-47.76	0-360	90

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

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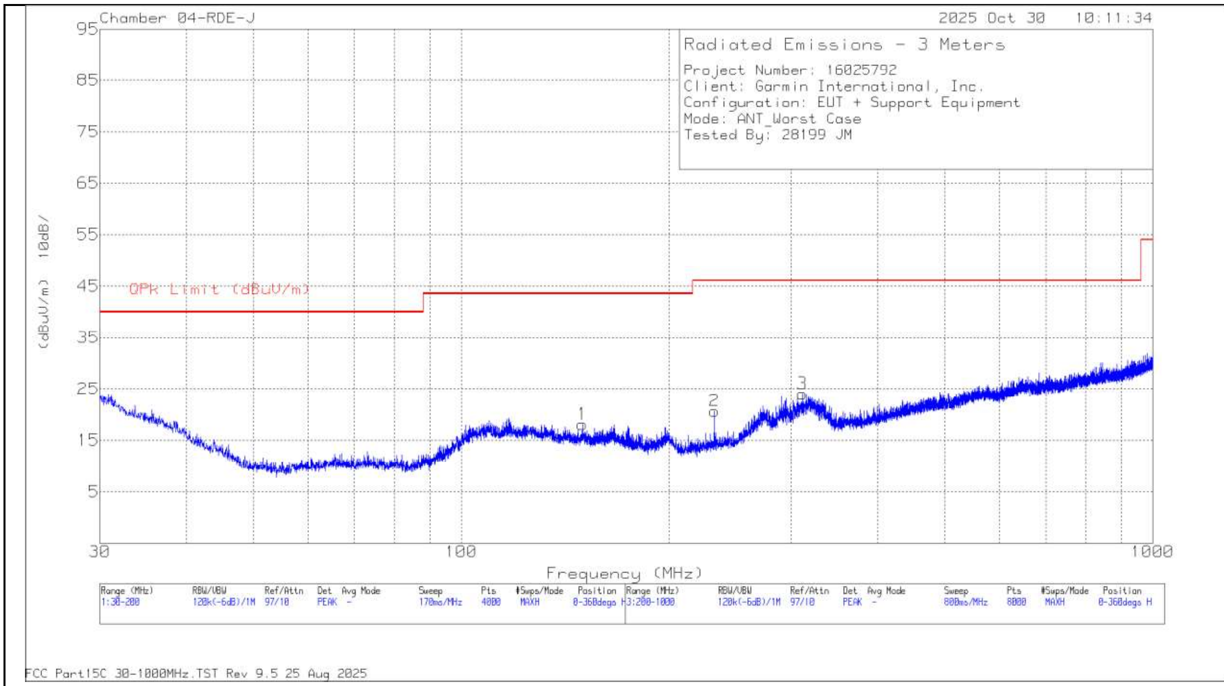
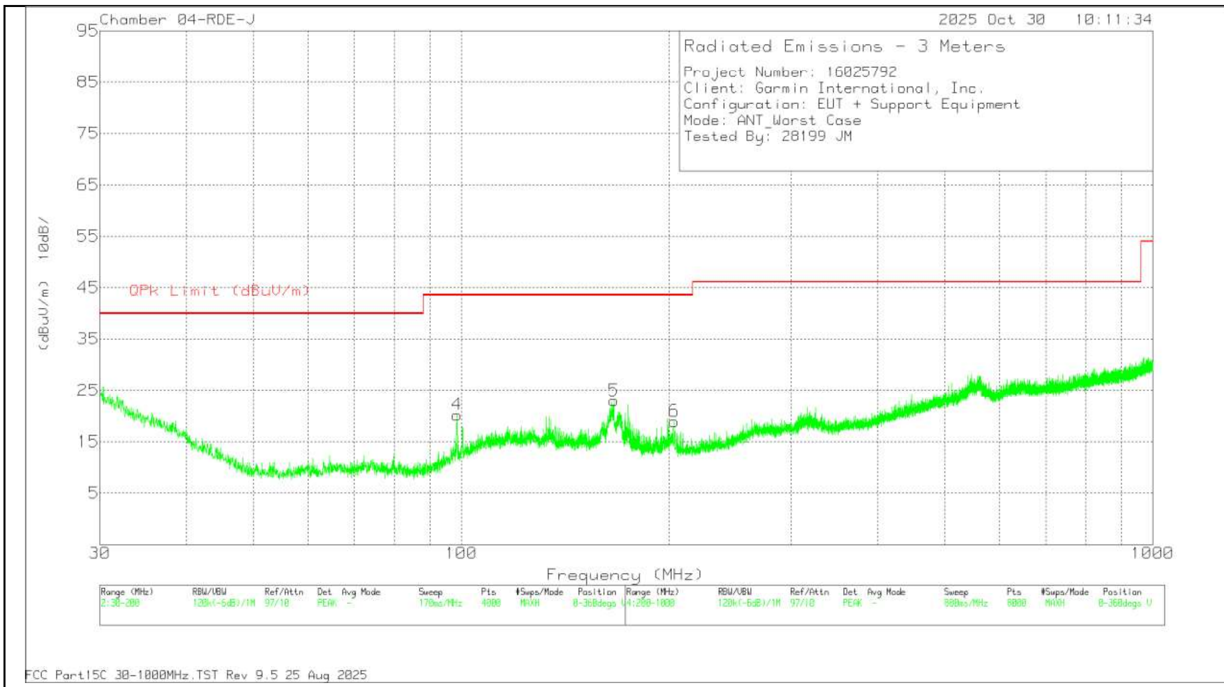
10.4. TRANSMITTER WORST CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



HORIZONTAL



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Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	202329 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	149.626	30.47	Pk	18.5	-30.9	18.07	43.52	-25.45	0-360	199	H
2	232.204	34.29	Pk	17	-30.6	20.69	46.02	-25.33	0-360	99	H
3	311.314	34.74	Pk	19.6	-30.3	24.04	46.02	-21.98	0-360	99	H
4	98.5277	35.59	Pk	15.8	-31.2	20.19	43.52	-23.33	0-360	100	V
5	165.333	35.75	Pk	17.9	-30.9	22.75	43.52	-20.77	155	101	V
	165.333	29.41	Qp	17.9	-30.9	16.41	43.52	-27.11	155	101	V
6	203.3	32.34	Pk	17.3	-30.7	18.94	43.52	-24.58	0-360	99	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

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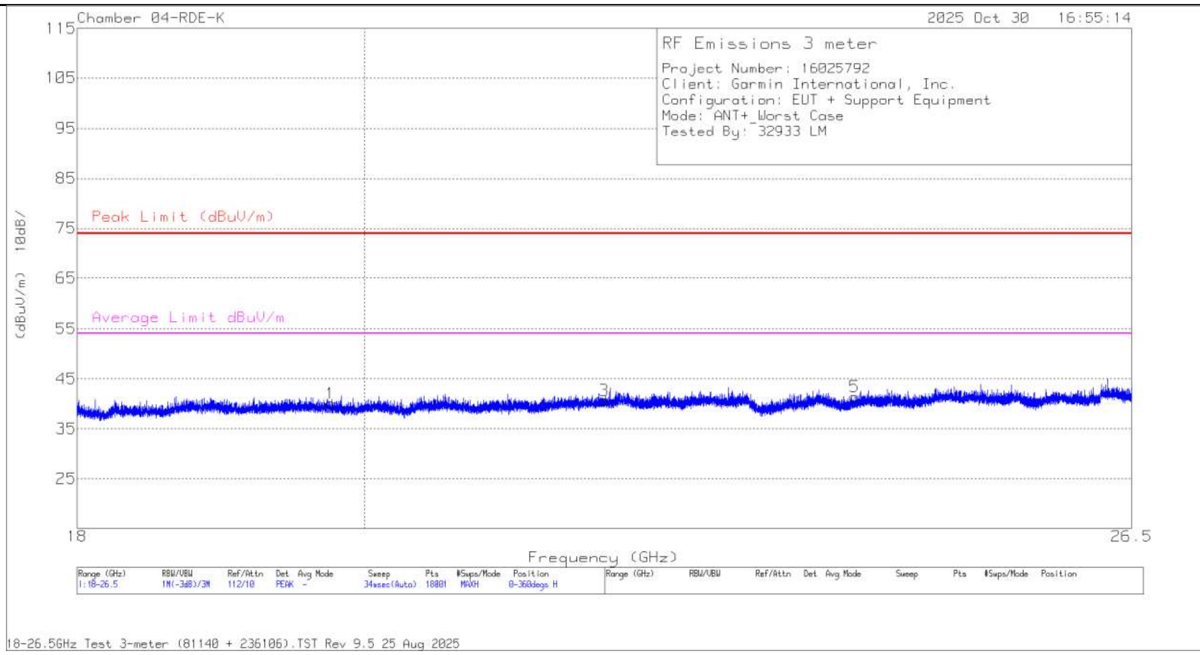
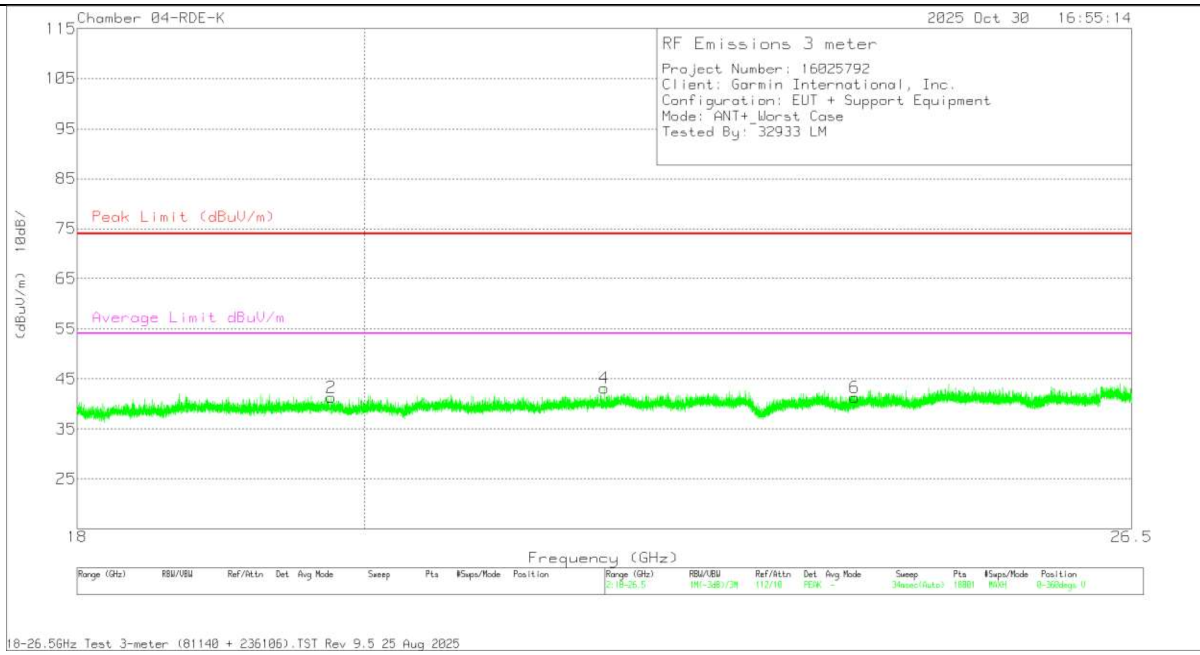
10.5. TRANSMITTER WORST CASE 18-26 GHz

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

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18 – 26GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	81140 ACF (dB/m)	CBL/AMP (dB)	CBL (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit dBuV/m	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 19.751944	50.03	Pk	32.4	-62.4	20	40.03	74	-33.97	54	-13.97	0-360	200	H
2	* 19.759027	51.31	Pk	32.4	-62.4	20	41.31	74	-32.69	54	-12.69	0-360	200	V
3	21.840582	49.83	Pk	32.8	-62.8	20.8	40.63	74	-33.37	54	-13.37	0-360	200	H
4	21.840582	52.39	Pk	32.8	-62.8	20.8	43.19	74	-30.81	54	-10.81	0-360	200	V
5	* 23.939136	49.57	Pk	33.5	-63.5	21.8	41.37	74	-32.63	54	-12.63	0-360	101	H
6	* 23.941025	49.47	Pk	33.5	-63.5	21.8	41.27	74	-32.73	54	-12.73	0-360	200	V

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

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11. SETUP PHOTOS

Please refer to 16025792-EP1 for setup photos

END OF REPORT

UL VERIFICATION SERVICES INC.
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TEST REPORT

Report Number: 16025792-E2V2

Applicant	:	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	:	A05116
Brand	:	Garmin
FCC ID	:	IPH-05116
IC	:	1792A-05116
EUT Description	:	Portable Digital Transceiver
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 4 ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2026-01-09

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2026-01-07	Initial Issue	---
V2	2026-01-09	Updated Section 6.1	Tina Chu

UL VERIFICATION SERVICES INC.
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UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	A05116
Brand	Garmin
FCC ID	IPH-05116
IC	1792A-05116
EUT Description	Portable Digital Transceiver
Serial Number	3522388213 (Radiated); 3522388124 (Conducted)
Sample Receipt Date	2025-10-17
Date Tested	2025-10-17 to 2025-12-04
Applicable Standards	FCC 47 CFR Part 15 Subpart C ISED RSS-247 Issue 4 ISED RSS-GEN Issue 5 + A1 + A2
Test Results	COMPLIES

UL Verification Services Inc. 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 ensure 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 Verification Services Inc., and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released By:	Prepared & Reviewed By:
Francisco de Anda Staff Engineer UL Verification Services, Inc.	David Collins Senior Test Engineer UL Verification Services, Inc.

2. TEST RESULTS SUMMARY

This report contains data provided by the customer, which can impact the validity of the results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

Below is a list of the data provided by the customer:
1. Antenna gain and type (see section 6.3)
2. Cable loss (see section 6.3)

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result
Duty Cycle	-	-	Reporting purposes only
99% OBW	-	RSS-GEN 6.7	Complies
6dB BW	15.247 (a) (2)	RSS-247 6.3.1 (a)	Complies
Output Power	15.247 (b) (3)	RSS-247 6.3.2	Complies
PSD	15.247 (e)	RSS-247 6.3.1 (b)	Complies
Conducted Spurious Emissions	15.247 (d)	RSS-247 6.6	Complies
Radiated Emissions	15.209, 15.205	RSS-GEN 8.9, 8.10	Complies
AC Mains Conducted Emissions	15.207	RSS-Gen 8.8	Not applicable. EUT is powered by battery/DC power supply

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with;
- ANSI C63.10-2020 (FCC)
- ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+ Errata to C63.10a-2024 (ISED)
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15C
- KDB 558074 D01 15.247 Meas Guidance
- KDB 414788 D01 Radiated Test Site
- RSS-GEN Issue 5 + A1 + A2
- RSS-247 Issue 4

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, 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
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☐	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

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 regularly, with a maximum time between calibrations of one year or the manufacturer's 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}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using a Power Meter	0.45 dB (Ave), 1.30 dB Peak)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22 %
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB

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 dBuV + 18.7 dB/m + 0.6 dB **–** 26.9 dB = 28.9 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 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Portable Digital Transceiver.

6.2. MAXIMUM OUTPUT POWER

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

BLE Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	1Mbps	**5.19**	3.30
2402 - 2480	2Mbps	5.04	3.19

6.3. DESCRIPTION OF AVAILABLE ANTENNAS AND CABLE LOSS

The antenna(s) gain and type, as provided by the manufacturer, are as follows:

The radio utilizes a PIFA antenna with a maximum gain of 1.40 dBi and 0.71 dB cable loss.

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware and software installed during testing were versions 0.74 and 1.24.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz were performed with the EUT set to transmit at the channel with the highest output power as a 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.

EUT was investigated in three orthogonal orientations: X (Flatbed), Y (Landscape), and Z (Portrait). The Z (Portrait) is the worst-case orientation. The full tests of the EUT have been made upon Z (Portrait) orientation. After investigation, the worst configuration set for all radiated tests is EUT powered by an internal battery, and the USB-C port is terminated by a laptop via USB cable.

Data rates provided by the client were:
BLE mode: 1Mbps
BLE mode: 2Mbps

Plots included in the report are representative of the method and settings parameters used for the test.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description		Manufacturer	Model	Serial Number		FCC ID/ DoC
Laptop		Lenovo	T14	PF4BYGWJ		DOC
Laptop AC/DC adapter		Lenovo	ADLX65YLC2A	8SSA10M13948L1CZ8CJ0EA6		DOC
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	3-prongs	Un-Shielded	1.8	AC Mains to Analyzer/Power Meter
2	Antenna	1	SMA	Shielded	0.1	Analyzer/Power Meter to EUT
I/O CABLES (RF RADIATED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC	1	DC	Unshielded	1.8	AC/DC Adapter to Laptop
2	AC	1	2-prongs	Unshielded	1.8	AC Mains to AC/DC Adapter
3	USB	1	USB-C	Shielded	1	Laptop to EUT

TEST SETUP

The EUT setup is shown below. Test software exercised the radio card.

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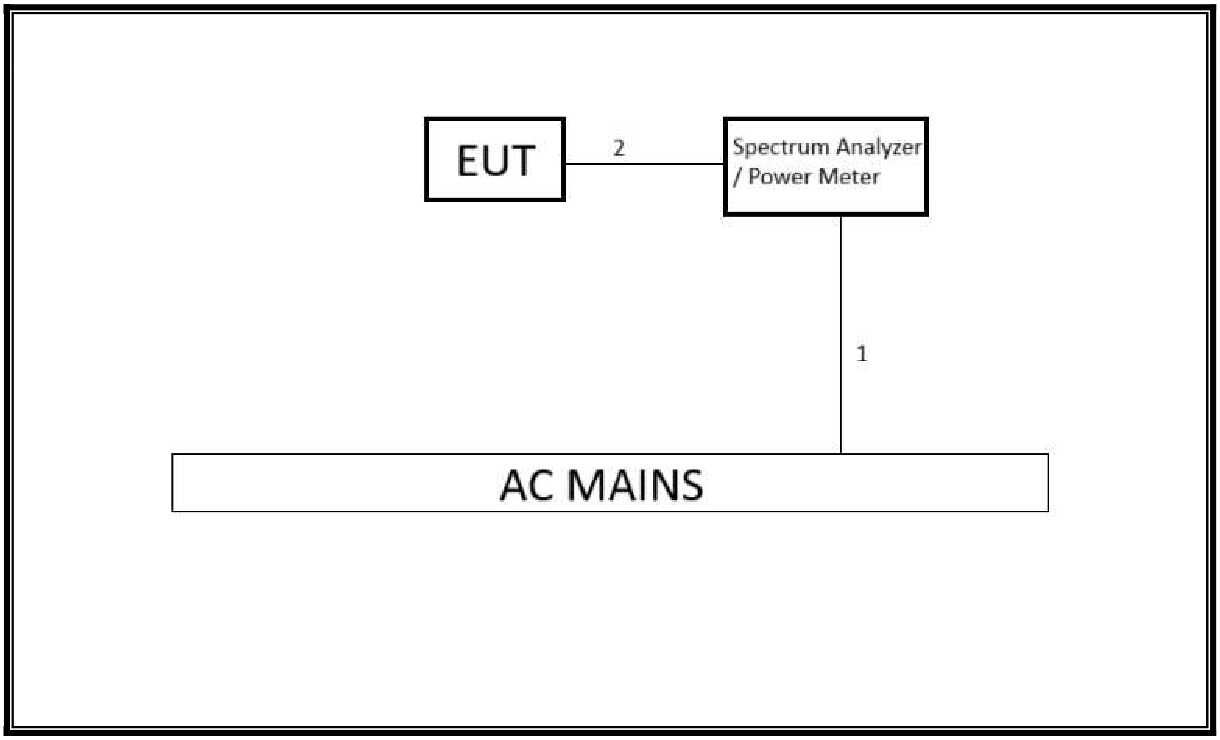
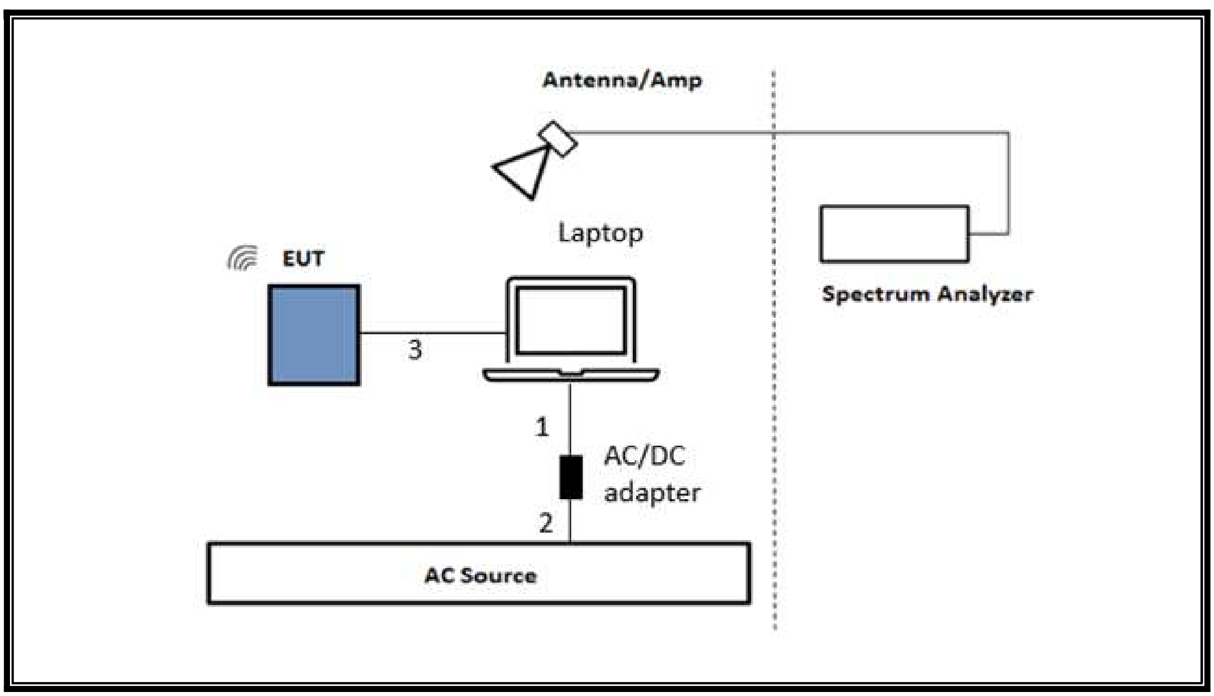
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS



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7. MEASUREMENT METHOD

Test Item	Test Method
On Time and Duty Cycle	ANSI C63.10 Section 11.6
6 dB BW	ANSI C63.10 Subclause -11.8.1 RBW ≥ DTS BW
99% BW	ANSI C63.10, Subclause 6.9.3.
Conducted Output Power	ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM G (Measurement using an RF average-reading power meter), 11.9.1.2 Method PKPM1 Peak-reading power meter
Power Spectral Density	ANSI C63.10 Subclause -11.10.2 Method PKPSD (peak PSD)
Radiated emissions non-restricted frequency bands	ANSI C63.10 Subclause -11.11
Radiated emissions restricted frequency bands	ANSI C63.10 Subclause -11.12.1
Conducted emissions in restricted frequency bands	ANSI C63.10 Subclause -11.12.2
Band-edge	ANSI C63.10 Subclause -11.12.2.4: Peak Measurement
Band-edge	ANSI C63.10 Subclause -11.12.2.5: Average Measurement
Radiated Spurious Emissions Below 30MHz	ANSI C63.10 Subclause 6.4

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8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	206808	2027-04-30
RF Filter Box, 1-18GHz	UL-FR1	RATS 1.0, 2 Amp, 8 Port	197920	2026-03-31
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	81140	2027-05-31
Link File, RF Amplifier Assembly, 18-26.5GHz, 60dB Gain	UL-FR1	AMP18G26.5-60	215705	2026-10-31
EMI Test Receiver	Rohde & Schwarz	ESW44	225688	2026-02-28
Antenna, Passive Loop 100kHz to 30MHz	ELECTRO-METRICS	EM-6872	219910	2026-08-31
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	219908	2026-08-31
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	202329	2027-04-30
Link File, 9KHz-1GHz Port 0 Factors	UL-FR1	Port 0 Factors	213877	2026-03-31
EMI TEST RECEIVER, with B8 option	Rohde & Schwarz	ESW44	245268	2026-02-28
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	252765	Verified
Spectrum Analyzer, PXA, 3Hz to 44GHz	N9030A	Keysight Technologies Inc	85214	2026-01-31
Power Meter	Keysight	N1912A	259286	2026-03-31
Wideband Power Sensor	Keysight	N1921A	257703	2026-03-31

UL AUTOMATION SOFTWARE			
Radiated Software	UL	UL EMC	Ver 9.5, Aug 25 2023
Conducted Software	UL	UL EMC	2024.2.23

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

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

ON TIME AND DUTY CYCLE RESULTS

Worst-Case Mode	ON Time T (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
BLE 1Mbps	0.390	0.626	0.623	62.30	2.06	2.564
BLE 2Mbps	0.222	0.626	0.355	35.46	4.50	4.505

DUTY CYCLE PLOTS

DUTY CYCLE BLE 1Mbps

DUTY CYCLE BLE 2Mbps

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9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Only the mid-channel plot is reported to show that the setting parameter complies with the testing method/procedure.

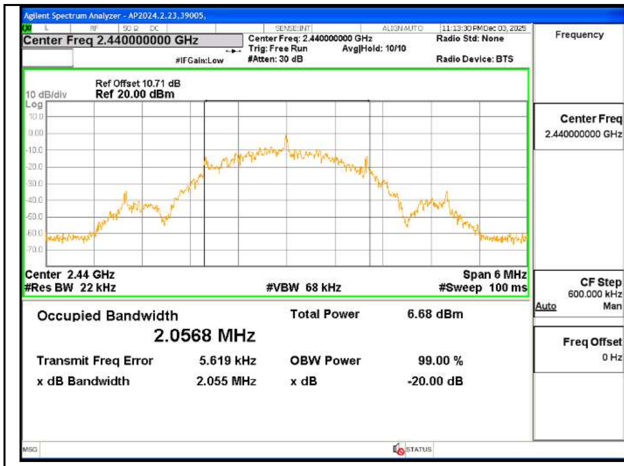
9.2.1. BLE (1Mbps)

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0547
Middle	2440	1.0553
High	2480	1.0581

MID CHANNEL

9.2.2. BLE (2Mbps)

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	2.0606
Middle	2440	2.0568
High	2480	2.0528



MID CHANNEL

9.3. 6dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

RSS-247 6.3.1 (a)

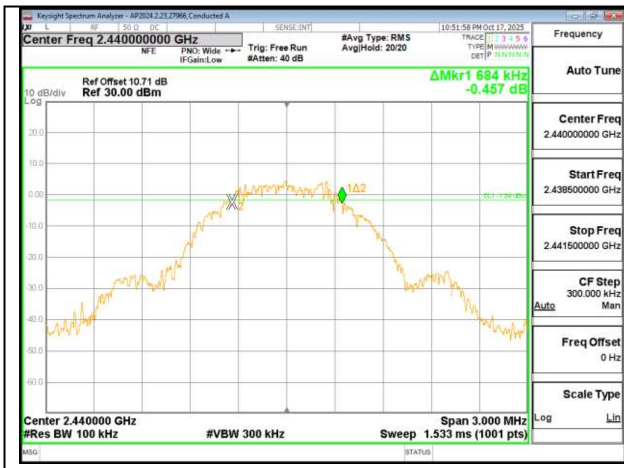
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Only the mid-channel plot is reported to show that the setting parameter complies with the testing method/procedure.

9.3.1. BLE (1Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.621	0.5
Middle	2440	0.684	0.5
High	2480	0.675	0.5



MID CHANNEL

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9.3.2. BLE (2Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	1.080	0.5
Middle	2440	1.038	0.5
High	2480	1.080	0.5

MID CHANNEL

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9.4. OUTPUT POWER AND POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (b) (3) & (e)

RSS-247 6.3.2 & 6.3.1 (b)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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.

TEST PROCEDURE

Power Measurements are performed using a wideband RF power meter.

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

DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output; therefore, the directional gain is equal to the antenna gain of 1.40dBi

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RESULTS

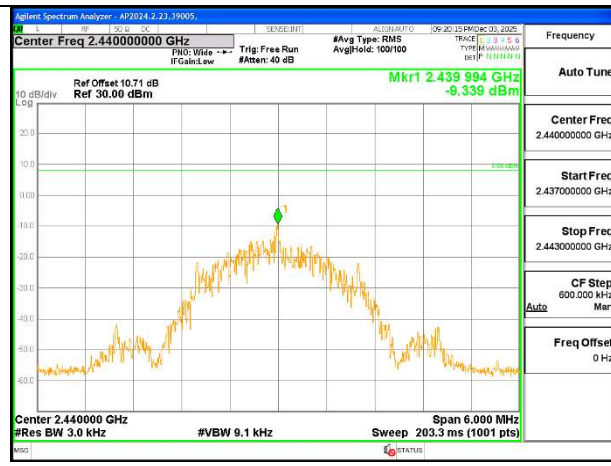
Only the mid-channel plot is reported to show that the setting parameter complies with the testing method/procedure.

Mode	No. of Tx	Channel	Freq (MHz)	Measured Conducted Avg Power (dBm)	Measured Conducted Peak Power (dBm)	Output Power Limit (dBm)	Output Power Margin (dB)	Measured PSD (dBm/3kHz)	*DCCF (dB)	Corrected Total PSD with DCCF (dBm/3kHz)	PSD Limit (dBm/3kHz)	PSD Margin (dB)
BLE 1Mbps	1Tx	0	2402	4.72	4.96	30.00	-25.04	-8.790	0.00	-8.79	8.00	-16.79
		19	2440	4.96	**5.19**	30.00	-24.81	-8.980	0.00	-8.98	8.00	-16.98
		39	2480	3.82	4.06	30.00	-25.94	-9.869	0.00	-9.87	8.00	-17.87
BLE 2Mbps	1Tx	0	2402	4.36	4.78	30.00	-25.22	-9.902	0.00	-9.90	8.00	-17.90
		19	2440	4.70	**5.04**	30.00	-24.96	-9.339	0.00	-9.34	8.00	-17.34
		39	2480	3.17	3.50	30.00	-26.50	-10.897	0.00	-10.90	8.00	-18.90

*PSD using Method PKPSD (peak PSD), DCCF=0

PSD Plots

Mid Channel (1Mbps)



Mid Channel (2Mbps)

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9.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 6.6

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

RESULTS

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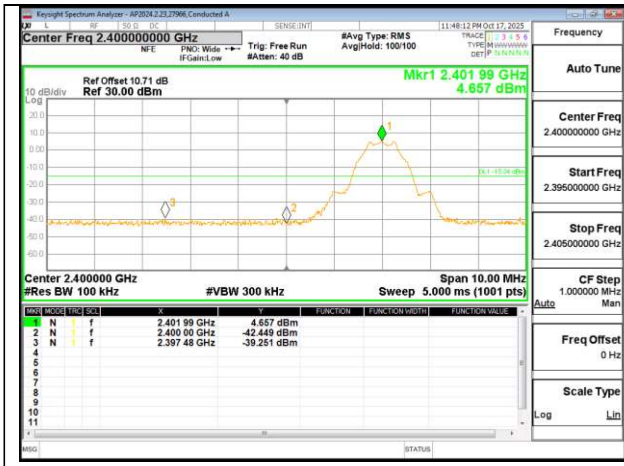
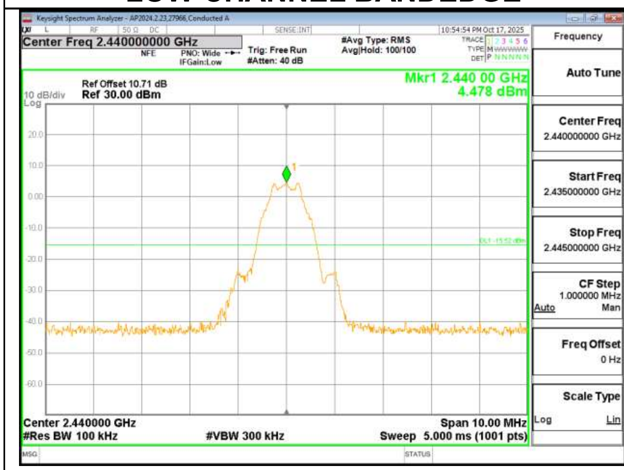
9.5.1. BLE (1Mbps)

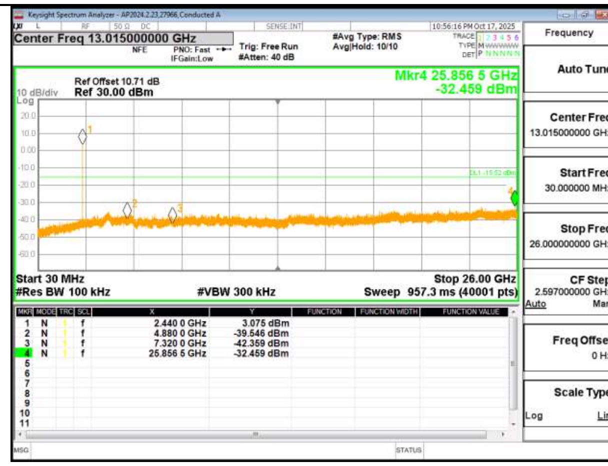


LOW CHANNEL BANDEDGE

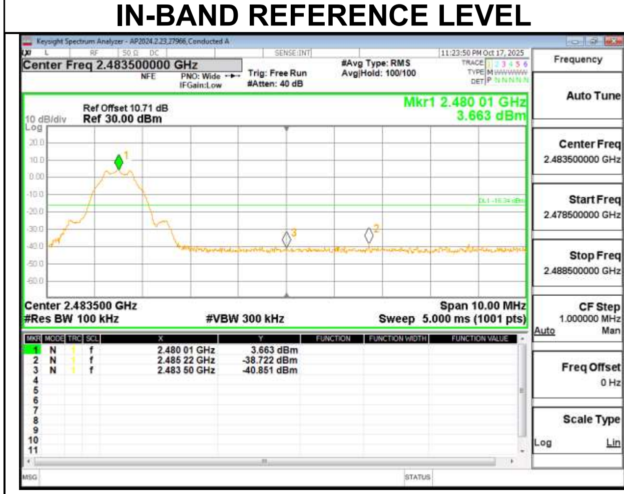
OUT-OF-BAND LOW CHANNEL



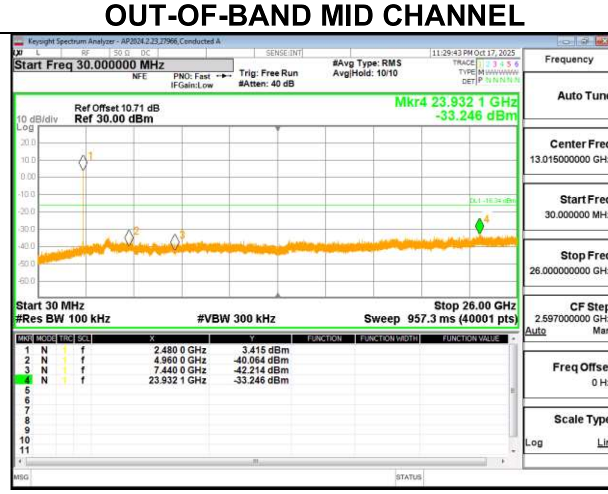
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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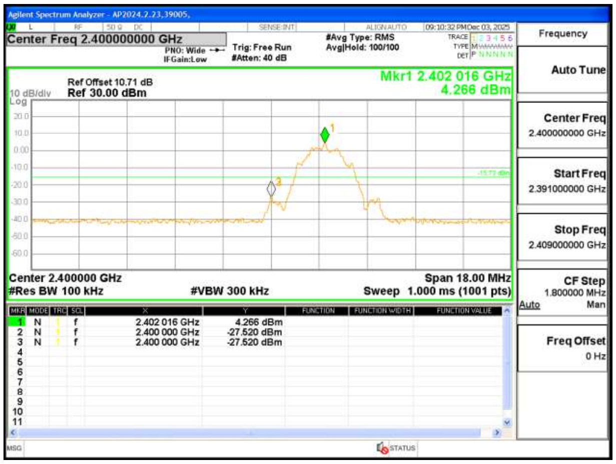
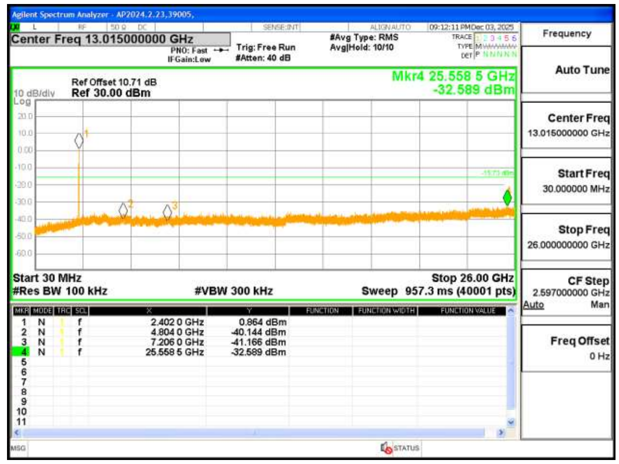
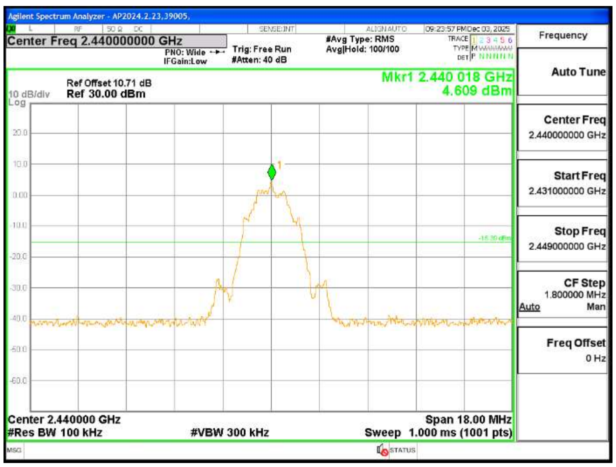
9.5.2. BLE (2Mbps)



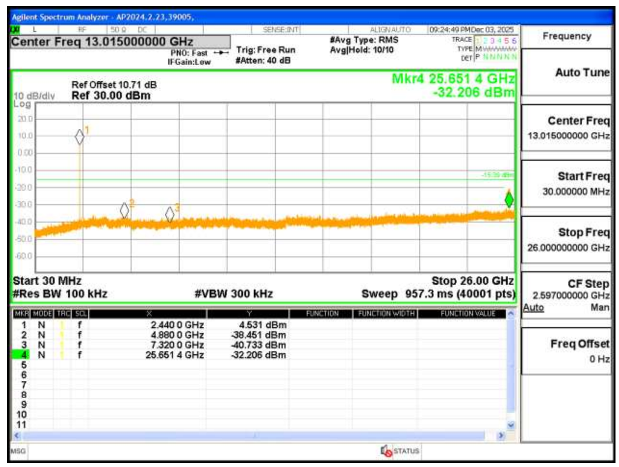
LOW CHANNEL BANDEDGE



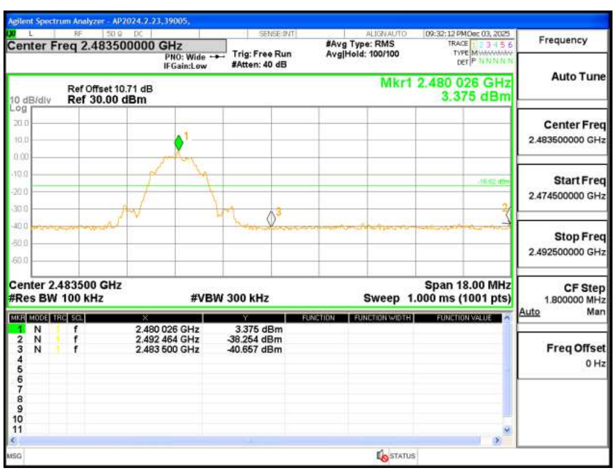
OUT-OF-BAND LOW CHANNEL



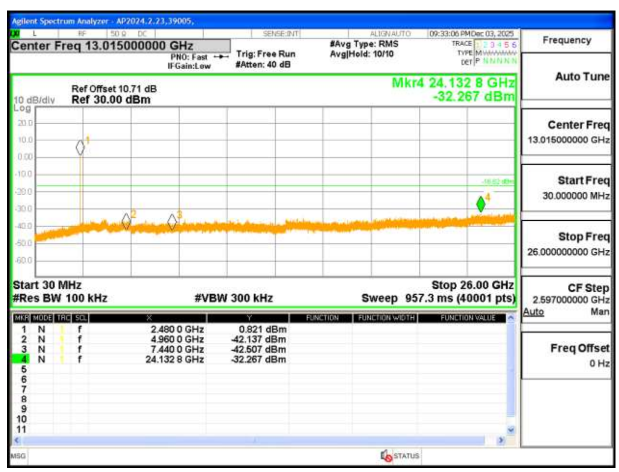
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209
RSS-GEN, Sections 8.9 and 8.10

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

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. Peak detection is used unless otherwise noted as a quasi-peak.

For pre-scans above 1 GHz, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz 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 average measurements.

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.

For below 30MHz testing, an investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel). Parallel and perpendicular are the worst orientations, therefore, testing was performed on these two orientations only. Blue color trace on plots: Parallel orientation. Green color trace on plots: Perpendicular orientation.

Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as report in the table) using free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB to the corresponding RSS-Gen Table 6 limit as it must 15.209(a) limit.

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

Based 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.

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

RESULTS

The plots in these sections are for reference settings only.

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10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. LOW BANDEDGE

2.4GHz (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1Mbps	2402	* 2.39	54.76	Pk	32.3	-34.6	0	52.46	-	-	74	-21.54	40	183	H
		* 2.35294	56.9	Pk	32.1	-34.7	0	54.3	-	-	74	-19.7	40	183	H
		* 2.39	43.51	RMS	32.3	-34.6	2.06	43.27	54	-10.73	-	-	40	183	H
		* 2.361866	44.77	RMS	32.2	-34.7	2.06	44.33	54	-9.67	-	-	40	183	H
		* 2.39	53.69	Pk	32.3	-34.6	0	51.39	-	-	74	-22.61	132	185	V
		* 2.3807	56.69	Pk	32.2	-34.7	0	54.19	-	-	74	-19.81	132	185	V
		* 2.39	43.79	RMS	32.3	-34.6	2.06	43.55	54	-10.45	-	-	132	185	V
		* 2.387627	44.36	RMS	32.3	-34.6	2.06	44.12	54	-9.88	-	-	132	185	V
2Mbps	2402	* 2.39	54.55	Pk	32.2	-37.1	0	49.65	-	-	74	-24.35	340	281	H
		* 2.37179	57.42	Pk	32.2	-37.1	0	52.52	-	-	74	-21.48	340	281	H
		* 2.39	43.81	RMS	32.2	-37.1	4.5	43.41	54	-10.59	-	-	340	281	H
		* 2.367401	45.07	RMS	32.1	-37.1	4.5	44.57	54	**-9.43**	-	-	340	281	H
		* 2.39	55.22	Pk	32.2	-37.1	0	50.32	-	-	74	-23.68	244	196	V
		* 2.380929	56.68	Pk	32.2	-37.1	0	51.78	-	-	74	-22.22	244	196	V
		* 2.39	43.51	RMS	32.2	-37.1	4.5	43.11	54	-10.89	-	-	244	196	V
		* 2.385694	44.67	RMS	32.2	-37.1	4.5	44.27	54	-9.73	-	-	244	196	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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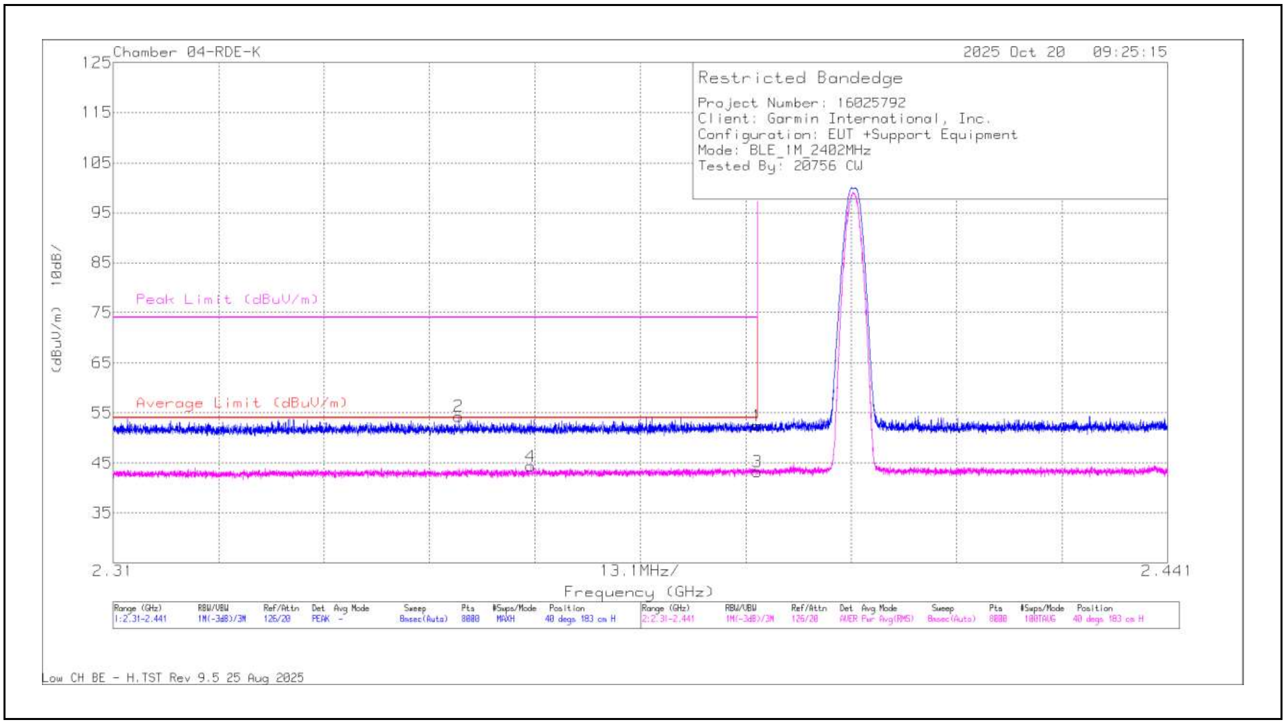
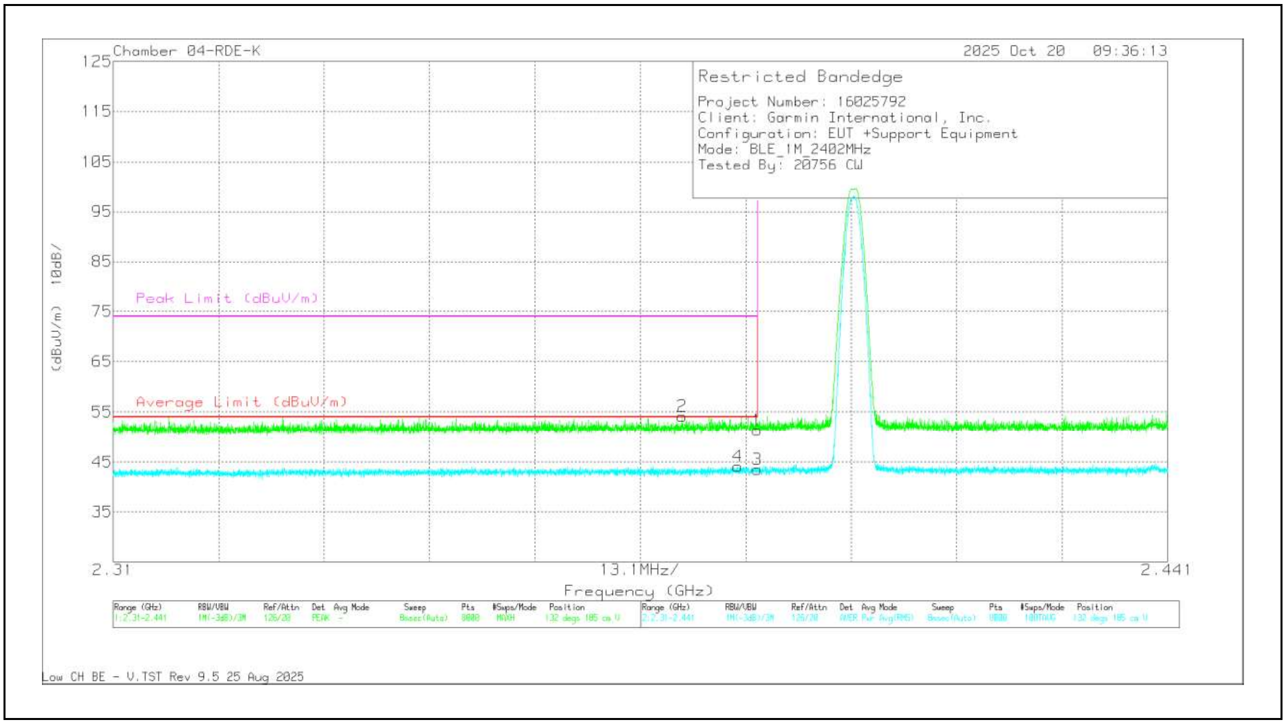
BANDEDGE (LOW CHANNEL), 1Mbps

HORIZONTAL RESULT



VERTICAL RESULT



10.1.2. HIGH BANDEDGE

2.4GHz (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1Mbps	2480	* 2.4835	54	Pk	32.6	-34.2	0	52.4	-	-	74	-21.6	40	196	H
		2.524581	56.19	Pk	32.5	-34.1	0	54.59	-	-	74	-19.41	40	196	H
		* 2.4835	42.97	RMS	32.6	-34.2	2.06	43.43	54	-10.57	-	-	40	196	H
		2.53358	44.48	RMS	32.5	-34.1	2.06	44.94	54	**-9.06**	-	-	40	196	H
		* 2.4835	54.1	Pk	32.6	-34.2	0	52.5	-	-	74	-21.5	267	330	V
		* 2.495572	56.54	Pk	32.6	-34.2	0	54.94	-	-	74	-19.06	267	330	V
		* 2.4835	43.11	RMS	32.6	-34.2	2.06	43.57	54	-10.43	-	-	267	330	V
		* 2.487488	44.17	RMS	32.6	-34.2	2.06	44.63	54	-9.37	-	-	267	330	V
2Mbps	2480	* 2.4835	56.12	Pk	32.4	-36.9	0	51.62	-	-	74	-22.38	346	215	H
		2.503853	56.55	Pk	32.5	-36.9	0	52.15	-	-	74	-21.85	346	215	H
		* 2.4835	44.21	RMS	32.4	-36.9	4.5	44.21	54	-9.79	-	-	346	215	H
		* 2.484804	44.37	RMS	32.4	-36.9	4.5	44.37	54	-9.63	-	-	346	215	H
		* 2.4835	56.68	Pk	32.4	-36.9	0	52.18	-	-	74	-21.82	243	129	V
		* 2.483553	57.04	Pk	32.4	-36.9	0	52.54	-	-	74	-21.46	243	129	V
		* 2.4835	44.48	RMS	32.4	-36.9	4.5	44.48	54	-9.52	-	-	243	129	V
		* 2.483507	44.75	RMS	32.4	-36.9	4.5	44.75	54	-9.25	-	-	243	129	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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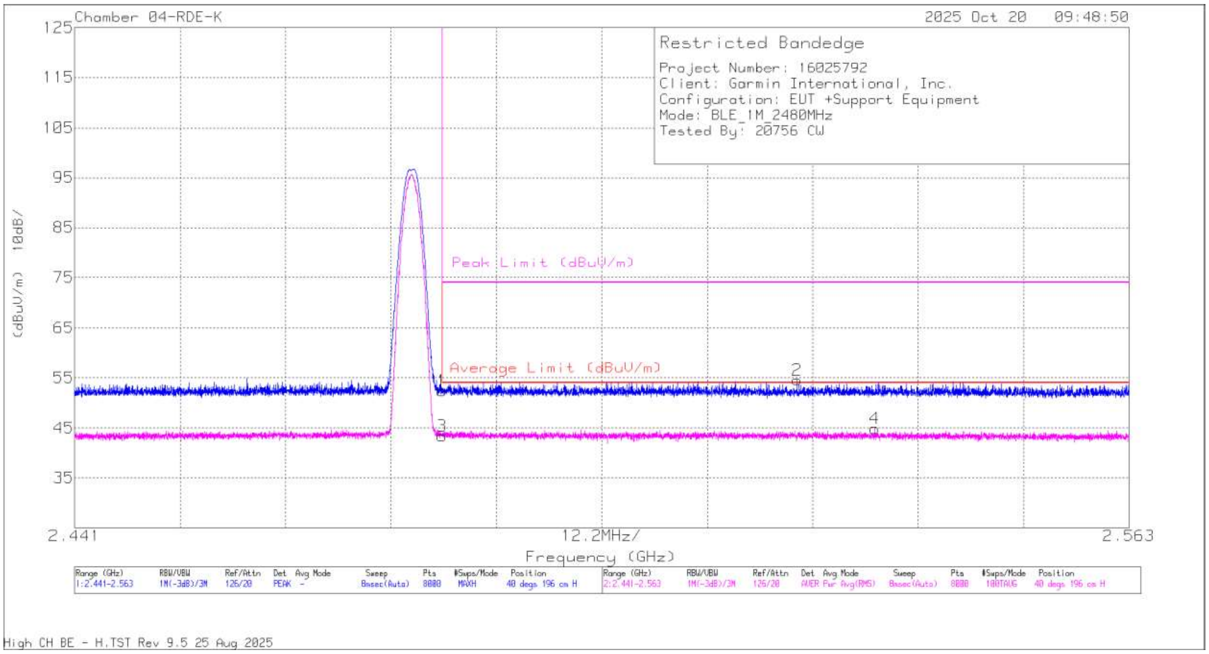
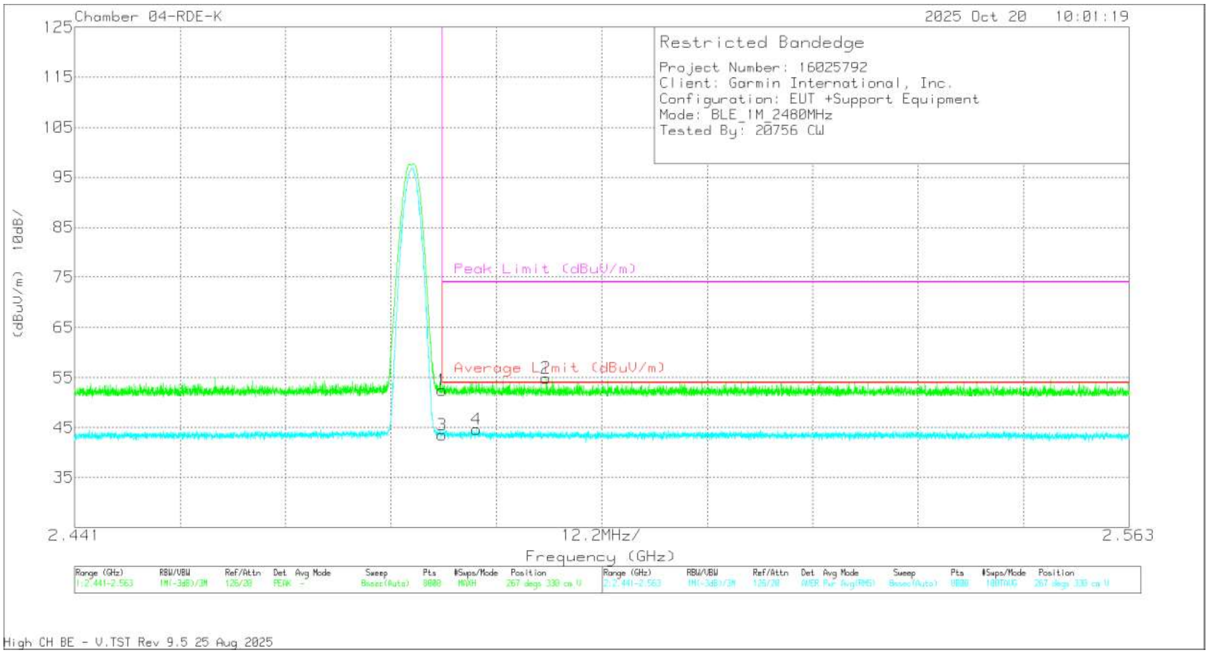
BANDEDGE (HIGH CHANNEL), 1Mbps

HORIZONTAL RESULT



VERTICAL RESULT



10.1.3. SPURIOUS EMISSIONS

2.4 GHz (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1Mbps	2402	* 4.804366	53.39	PK2	34.1	-40.2	0	47.29	-	-	74	-26.71	65	199	H
		* 4.803779	43.21	MAv1	34.1	-40.3	2.06	39.07	54	-14.93	-	-	65	199	H
		* 4.8038	54.62	PK2	34.1	-40.3	0	48.42	-	-	74	-25.58	307	227	V
		* 4.803831	45.32	MAv1	34.1	-40.3	2.06	41.18	54	-12.82	-	-	307	227	V
		3.453306	55.26	PK2	32.7	-41.6	0	46.36	-	-	-	-	239	139	V
		3.453364	55.12	PK2	32.7	-41.6	0	46.22	-	-	-	-	354	210	H
		7.20665	51.24	PK2	35.6	-38.2	0	48.64	-	-	-	-	236	213	H
		7.20536	52.75	PK2	35.6	-38.2	0	50.15	-	-	-	-	248	179	V
	2440	* 4.879954	54.24	PK2	34.1	-40.2	0	48.14	-	-	74	-25.86	270	204	H
		* 4.880314	44.16	MAv1	34.1	-40.2	2.06	40.12	54	-13.88	-	-	270	204	H
		* 7.319304	51.13	PK2	35.6	-37.8	0	48.93	-	-	74	-25.07	184	265	H
		* 7.319384	40	MAv1	35.6	-37.8	2.06	39.86	54	-14.14	-	-	184	265	H
		* 4.880346	54.43	PK2	34.1	-40.2	0	48.33	-	-	74	-25.67	318	233	V
		* 4.879755	45.62	MAv1	34.1	-40.2	2.06	41.58	54	-12.42	-	-	318	233	V
		* 7.319503	52.19	PK2	35.6	-37.8	0	49.99	-	-	74	-24.01	254	197	V
		* 7.31925	42.79	MAv1	35.6	-37.8	2.06	42.65	54	-11.35	-	-	254	197	V
		3.45319	55.5	PK2	32.7	-41.6	0	46.6	-	-	-	-	65	197	H
		3.453239	56.41	PK2	32.7	-41.6	0	47.51	-	-	-	-	351	109	V
	2480	* 4.959191	53.8	PK2	34.1	-40.2	0	47.7	-	-	74	-26.3	241	199	H
		* 4.960053	43.59	MAv1	34.1	-40.2	2.06	39.55	54	-14.45	-	-	241	199	H
		* 7.439512	49.8	PK2	35.6	-37.6	0	47.8	-	-	74	-26.2	204	191	H
		* 7.440632	39.2	MAv1	35.6	-37.6	2.06	39.26	54	-14.74	-	-	204	191	H
		* 4.969899	52.86	PK2	34.1	-40.2	0	46.76	-	-	74	-27.24	348	218	V
		* 4.960393	41.52	MAv1	34.1	-40.2	2.06	37.48	54	-16.52	-	-	348	218	V
		* 7.440738	51.53	PK2	35.6	-37.6	0	49.53	-	-	74	-24.47	237	175	V
		* 7.439467	41.41	MAv1	35.6	-37.6	2.06	41.47	54	-12.53	-	-	237	175	V
		3.453096	52.79	PK2	32.7	-41.6	0	43.89	-	-	-	-	316	181	H
		3.453512	58.5	PK2	32.7	-41.6	0	49.6	-	-	-	-	9	154	V
2Mbps	2402	2.482013	60.36	PK2	32.4	-36.9	0	55.86	-	-	-	-	340	216	H
		2.481733	60.6	PK2	32.4	-36.9	0	56.1	-	-	-	-	222	129	V
		* 4.802865	55.37	PK2	34.3	-45.4	0	44.27	-	-	74	-29.73	194	199	H
		* 4.803043	43.61	MAv1	34.3	-45.4	4.5	37.01	54	-16.99	-	-	194	199	H
		* 4.799572	58	PK2	34.3	-45.4	0	46.9	-	-	74	-27.1	164	101	V
		* 4.799421	43.71	MAv1	34.3	-45.4	4.5	37.11	54	-16.89	-	-	164	101	V
		7.204611	53.77	PK2	35.5	-42.5	0	46.77	-	-	-	-	164	191	H
		7.207147	53.74	PK2	35.5	-42.6	0	46.64	-	-	-	-	172	244	V
	2440	* 4.879255	56.74	PK2	34.3	-44.9	0	46.14	-	-	74	-27.86	223	198	V
		* 4.879512	46.1	MAv1	34.3	-44.9	4.5	40	54	-14	-	-	200	199	H
		* 4.879668	45.58	MAv1	34.3	-44.9	4.5	39.48	54	-14.52	-	-	223	198	V
		* 4.880881	57.28	PK2	34.3	-44.9	0	46.68	-	-	74	-27.32	200	199	H
		* 7.318618	41.93	MAv1	35.5	-42.6	4.5	39.33	54	-14.67	-	-	159	189	H
		* 7.318769	53.82	PK2	35.5	-42.6	0	46.72	-	-	74	-27.28	159	189	H
		* 7.318813	40.57	MAv1	35.5	-42.6	4.5	37.97	54	-16.03	-	-	223	198	V
		* 7.321288	52.29	PK2	35.5	-42.6	0	45.19	-	-	74	-28.81	223	198	V
		9.598345	52.85	PK2	37	-40.3	0	49.55	-	-	-	-	154	243	V
		9.598358	42.14	MAv1	37	-40.3	4.5	43.34	-	-	-	-	154	243	V
		9.598564	41.19	MAv1	37	-40.3	4.5	42.39	-	-	-	-	114	136	H
		9.59872	52.8	PK2	37	-40.3	0	49.5	-	-	-	-	114	136	H
	2480	* 11.417384	51.65	PK2	38.2	-40.3	0	49.55	-	-	74	-24.45	307	204	H
		* 11.448504	39.39	MAv1	38.3	-40	4.5	42.19	54	-11.81	-	-	307	204	H
		* 11.473921	39.55	MAv1	38.4	-39.5	4.5	42.95	54	-11.05	-	-	186	101	V
		* 11.477401	52.15	PK2	38.4	-39.5	0	51.05	-	-	74	-22.95	186	101	V
		* 4.959348	55.28	PK2	34.2	-45	0	44.48	-	-	74	-29.52	249	274	V
		* 4.959401	43.59	MAv1	34.2	-45	4.5	37.29	54	-16.71	-	-	249	274	V
		* 4.960063	55.68	PK2	34.2	-45	0	44.88	-	-	74	-29.12	204	213	H
		* 4.96061	43.82	MAv1	34.2	-45	4.5	37.52	54	-16.48	-	-	204	213	H
		* 7.438652	55.74	PK2	35.5	-42.3	0	48.94	-	-	74	-25.06	186	238	V
		* 7.43883	44.23	MAv1	35.5	-42.3	4.5	41.93	54	-12.07	-	-	186	238	V
		* 7.438835	42.36	MAv1	35.5	-42.3	4.5	40.06	54	-13.94	-	-	159	279	H
		* 7.441071	54.65	PK2	35.6	-42.3	0	47.95	-	-	74	-26.05	159	279	H

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

Pk - Peak detector

RMS - RMS detection

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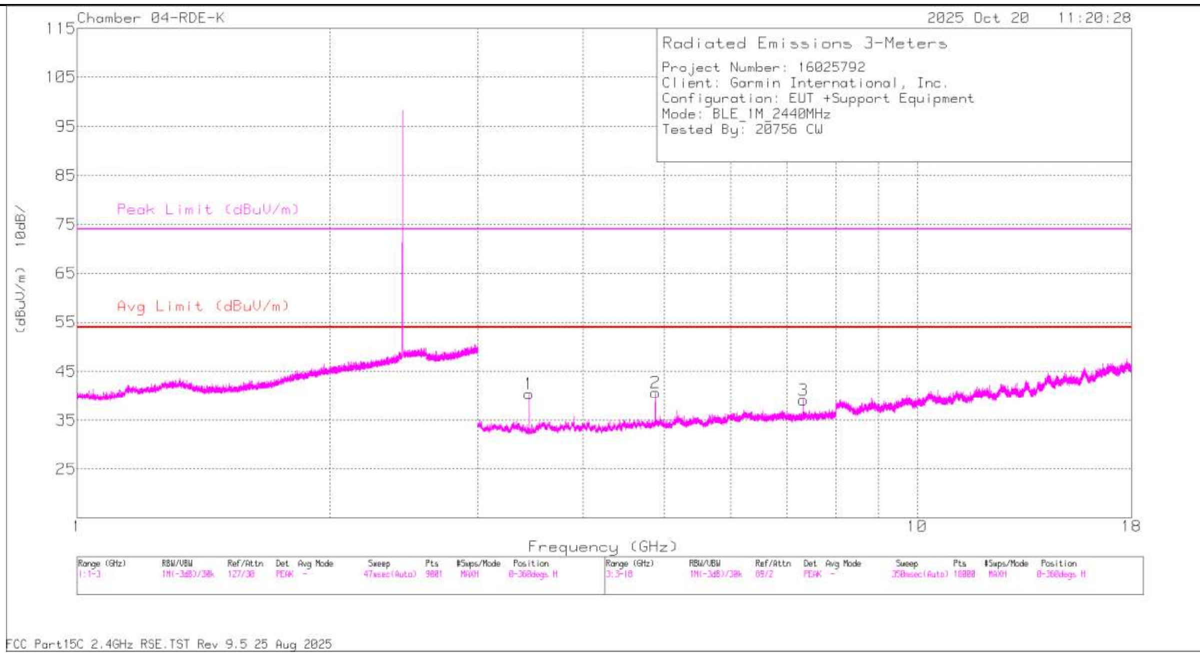
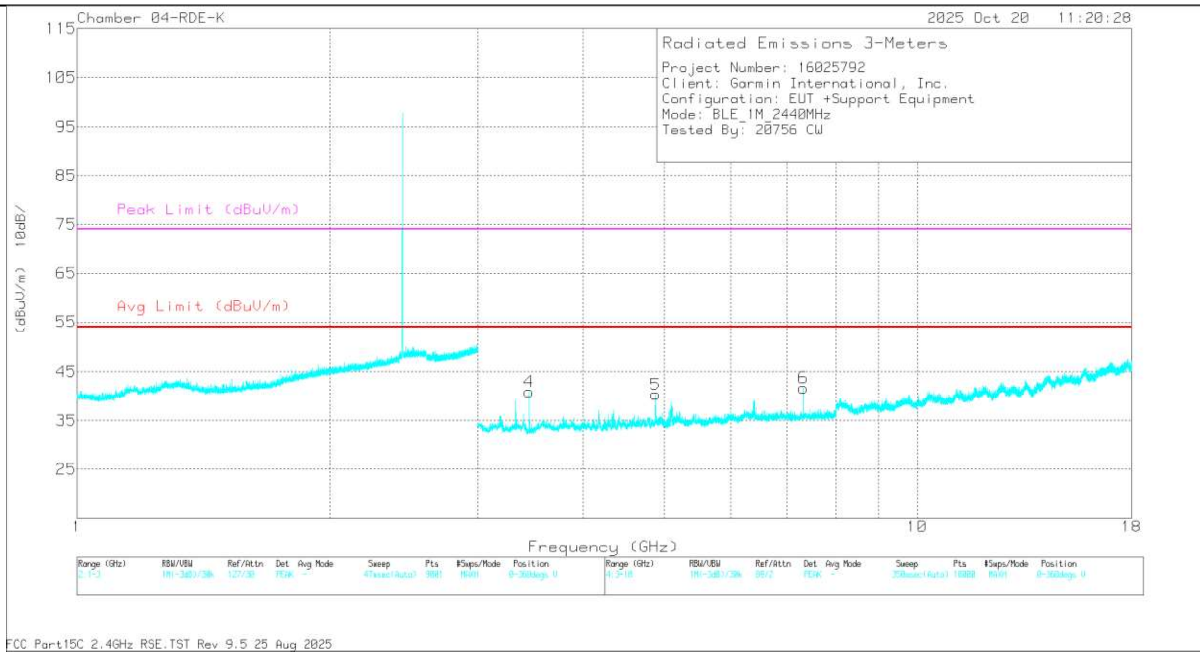
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL), 1Mbps



HORIZONTAL



VERTICAL

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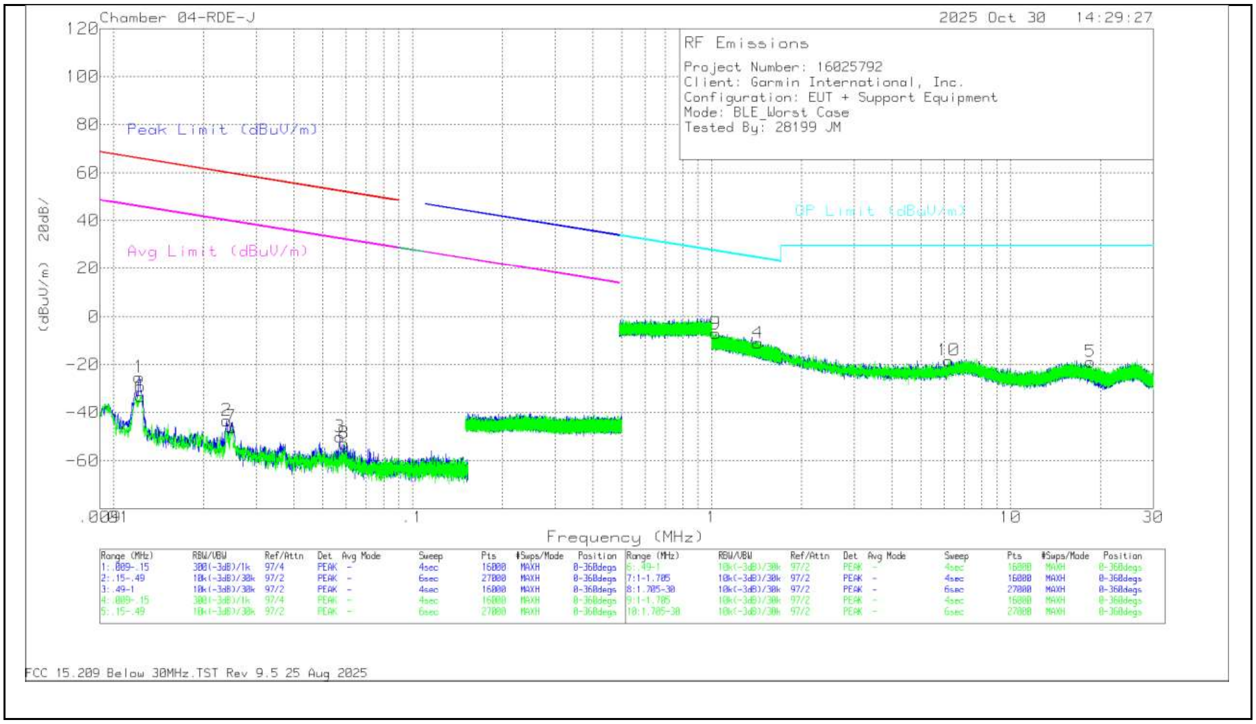
10.2. TRANSMITTER WORST CASE BELOW 30MHz

SPURIOUS EMISSIONS BELOW 30MHz (WORST-CASE CONFIGURATION)



Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.0122	25.07	Pk	60.1	-30.4	-80	-25.23	65.88	-91.11	45.88	-71.11	0-360
2	.0239	9.53	Pk	58.7	-31.6	-80	-43.37	60.02	-103.39	40.02	-83.39	0-360
3	.057	5.4	Pk	56.5	-32	-80	-50.1	52.47	-102.57	32.47	-82.57	0-360
6	.0123	17.15	Pk	60.1	-30.5	-80	-33.25	65.78	-99.03	45.78	-79.03	0-360
7	.0247	6.98	Pk	58.6	-31.6	-80	-46.02	59.73	-105.75	39.73	-85.75	0-360
8	.059	2.96	Pk	56.3	-32.1	-80	-52.84	52.17	-105.01	32.17	-85.01	0-360

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	1.4266	16.4	Pk	44.5	-32	-40	-11.1	24.54	-35.64	0-360
5	18.4824	18.55	Pk	34.1	-31.5	-40	-18.85	29.5	-48.35	0-360
9	1.0326	18.58	Pk	46.6	-32.3	-40	-7.12	27.34	-34.46	0-360
10	6.1999	18.56	Pk	35	-31.9	-40	-18.34	29.5	-47.84	0-360

Pk - Peak detector

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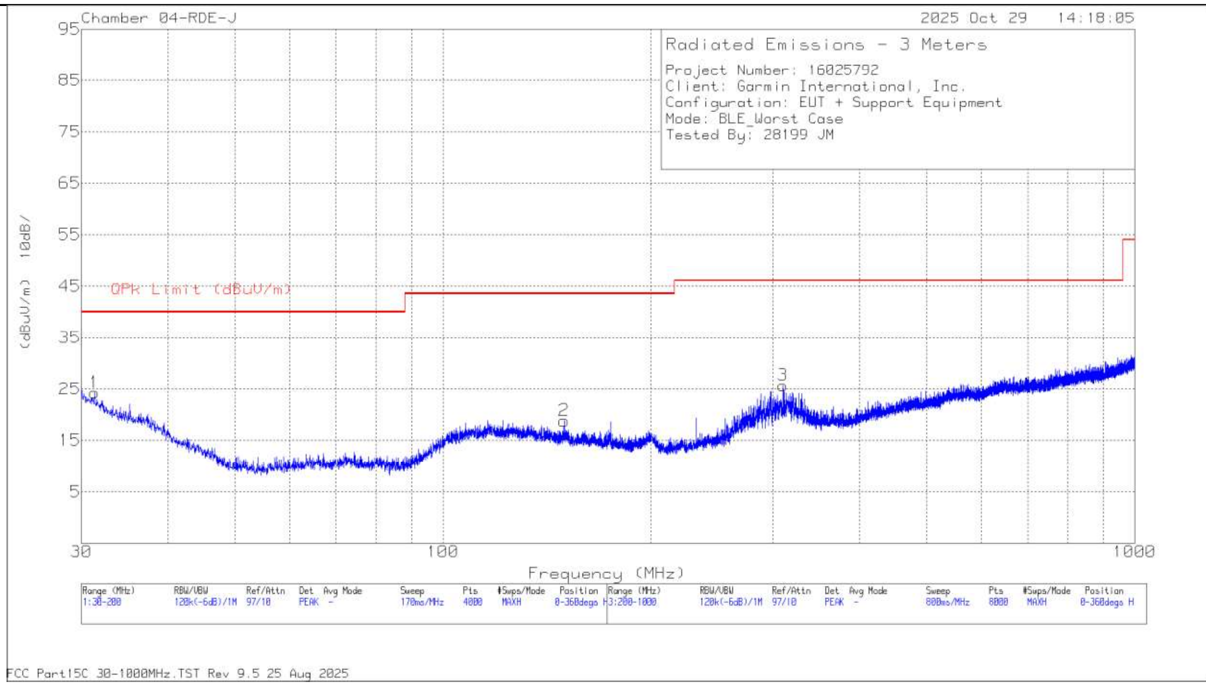
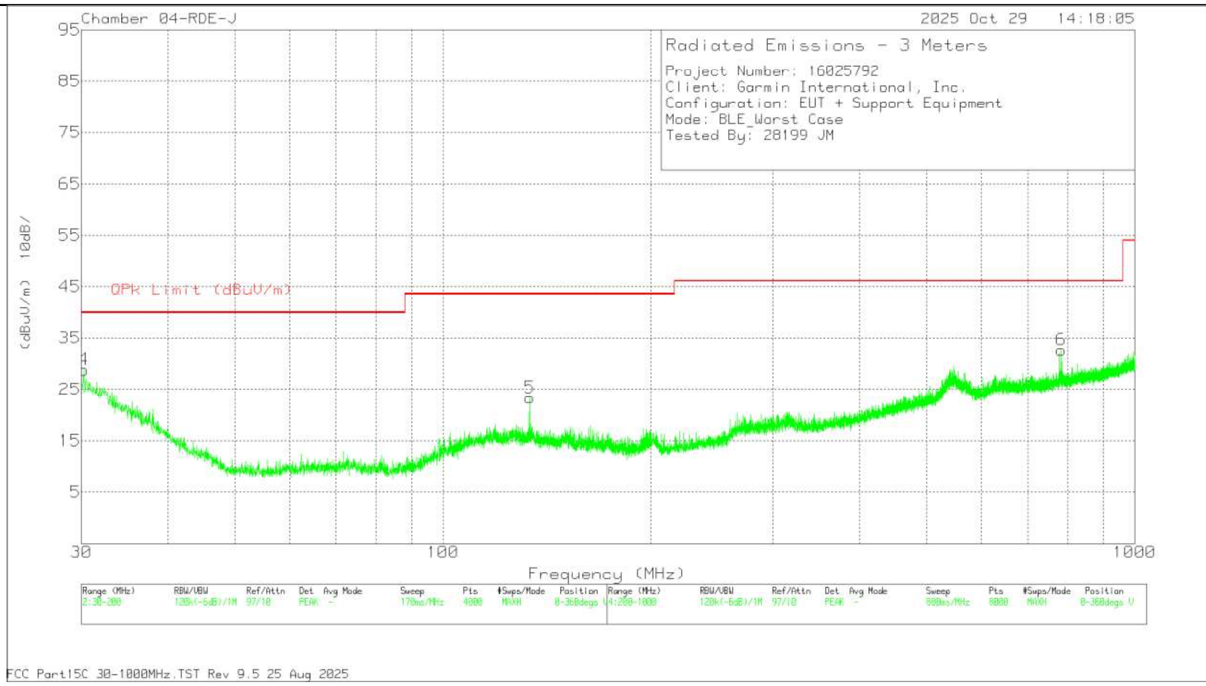
10.3. TRANSMITTER WORST CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	202329 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.3178	30.37	Pk	25.7	-31.8	24.27	40	-15.73	0-360	398	H
2	149.626	31.16	Pk	18.5	-30.9	18.76	43.52	-24.76	0-360	198	H
3	310.114	36.4	Pk	19.6	-30.3	25.7	46.02	-20.32	0-360	101	H
4	30.6654	34.69	Pk	26.2	-31.8	29.09	40	-10.91	230	100	V
	30.6654	27.07	Qp	26.2	-31.8	21.47	40	-18.53	230	100	V
5	* 133.429	34.94	Pk	19.4	-31	23.34	43.52	-20.18	0-360	101	V
6	782.576	34.27	Pk	26.9	-28.5	32.67	46.02	-13.35	0-360	398	V

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

Pk - Peak detector

Qp - Quasi-Peak detector

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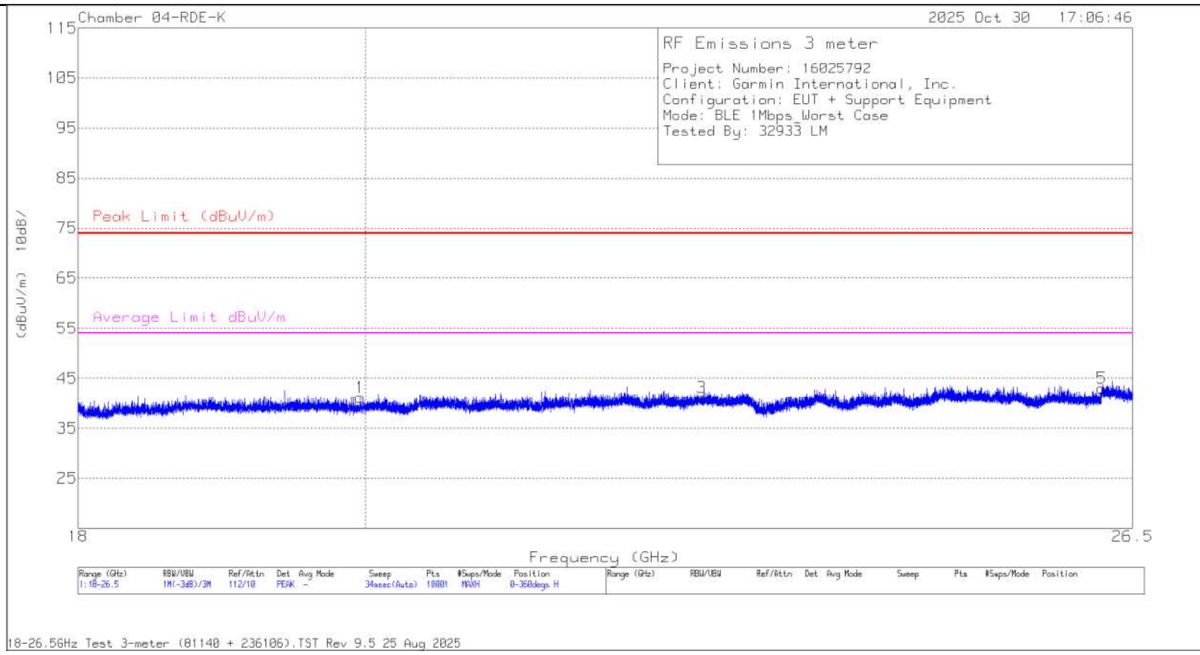
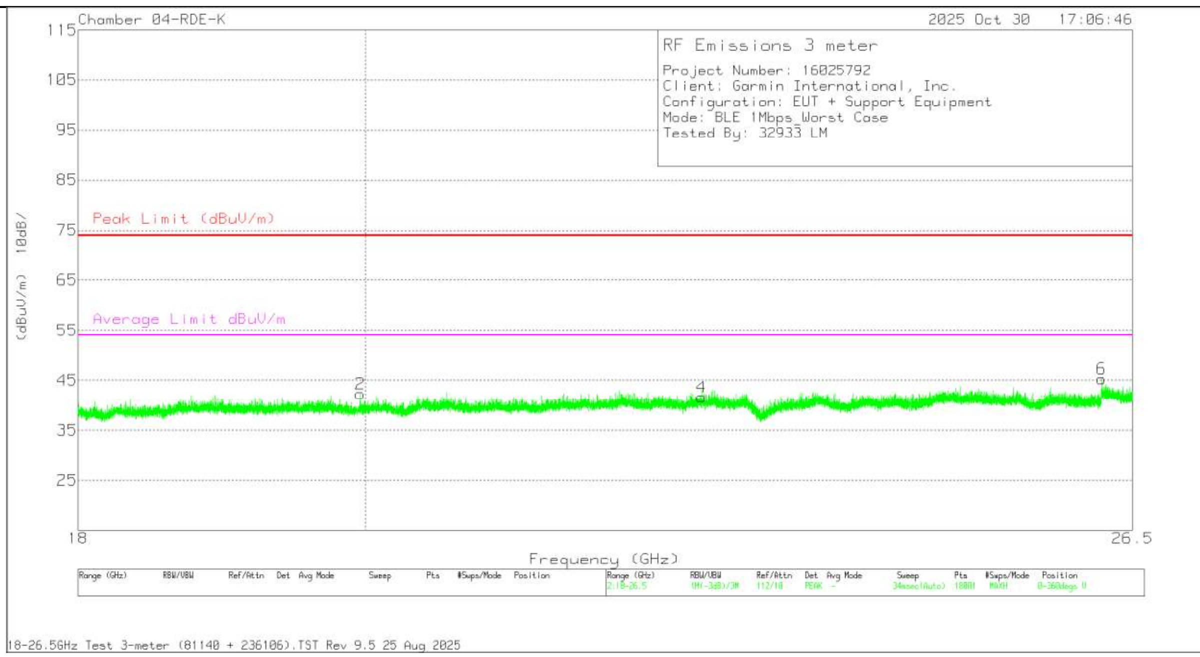
10.4. TRANSMITTER WORST CASE 18-26 GHz

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

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18 – 26GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	81140 ACF (dB/m)	CBL/AMP (dB)	CBL (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit dBuV/m	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 19.962555	50.59	Pk	32.5	-62	20.1	41.19	74	-32.81	54	-12.81	0-360	200	H
2	* 19.96161	51.7	Pk	32.5	-62	20.1	42.3	74	-31.7	54	-11.7	0-360	101	V
3	* 22.625414	48.91	Pk	33	-62.1	21.3	41.11	74	-32.89	54	-12.89	0-360	101	H
4	* 22.625887	49.4	Pk	33	-62.1	21.3	41.6	74	-32.4	54	-12.4	0-360	200	V
5	26.200607	48.3	Pk	34.1	-62.3	22.9	43	74	-31	54	-11	0-360	200	H
6	26.200135	50.61	Pk	34.1	-62.3	22.9	45.31	74	-28.69	54	-8.69	0-360	200	V

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

UL VERIFICATION SERVICES INC.
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11. SETUP PHOTOS

Please refer to 16025792-EP1 for setup photos

END OF REPORT

UL VERIFICATION SERVICES INC.
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TEST REPORT

Report Number: 16025792-E1V2

Applicant	:	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	:	A05116
Brand	:	Garmin
FCC ID	:	IPH-05116
IC	:	1792A-05116
EUT Description	:	Portable Digital Transceiver
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 4 ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2026-01-09

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2026-01-07	Initial Issue	---
V2	2026-01-09	Updated Section 6.1	Tina Chu

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

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UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	A05116
Brand	Garmin
FCC ID	IPH-05116
IC	1792A-05116
EUT Description	Portable Digital Transceiver
Serial Number	3522388213 (Radiated); 3522388124 (Conducted)
Sample Receipt Date	2025-10-17
Date Tested	2025-10-20 to 2025-10-31
Applicable Standards	FCC 47 CRF Part 15 Subpart C ISED RSS-247 Issue 4 ISED RSS-GEN Issue 5 + A1 + A2
Test Results	COMPLIES

UL Verification Services Inc. 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 ensure 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 Verification Services Inc., and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released By:	Prepared & Reviewed By:
Francisco deAnda Staff Engineer UL Verification Services Inc.	Glenn Escano Senior Test Engineer UL Verification Services Inc.

2. TEST RESULTS SUMMARY

This report contains data provided by the customer, which can impact the validity of the results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

Below is a list of the data provided by the customer:
1. Antenna gain and type (see section 6.3)
2. Cable loss (see section 6.3)

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result
Duty Cycle	-	-	Reporting purposes only
20dB BW / 99% OBW	-	RSS-GEN 6.7	Complies
Hopping Frequency Separation	15.247 (a)(1)	RSS-247 (6.2.1) (b)	Complies
Number of Hopping Channels	15.247 (a)(1)(iii)	RSS-247 (6.2.3.1) (b)	Complies
Average Time of Occupancy	15.247 (a)(1)(iii)	RSS-247 (6.2.3.1) (b)	Complies
Output Power	15.247 (b) (1)	RSS-247 (6.2.3.2)	Complies
Average Power	-	-	Reporting purposes only
Conducted Spurious Emissions	15.247 (d)	RSS-247 (6.6)	Complies
Radiated Emissions	15.209, 15.205	RSS-GEN 8.9, 8.10	Complies
AC Mains Conducted Emissions	15.207	RSS-Gen 8.8	Not applicable. EUT is powered by battery/DC power supply

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:
- ANSI C63.10-2020 (FCC)
- ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+ Errata to C63.10a-2024 (ISED)
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15C
- KDB 558074 D01 15.247 Meas Guidance
- KDB 414788 D01 Radiated Test Site
- RSS-GEN Issue 5 + A1 + A2
- RSS-247 Issue 4

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, 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
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

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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 regularly, with a maximum time between calibrations of one year or the manufacturer's 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}
Conducted Antenna Port Emission Measurement	1.94 dB
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using Power Meter	0.450 dB (Ave), 1.30 dB (PK)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22 %
Carrier Frequency Separation	19.70 Hz
Number of Hopping Frequencies	0.000 dB
Worst Case Conducted Disturbance, 9kHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9kHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB

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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Portable Digital Transceiver.

6.2. MAXIMUM OUTPUT POWER

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

BT Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	Basic GFSK	**8.03**	6.35
2402 - 2480	DQPSK	6.20	4.17
2402 - 2480	Enhanced 8PSK	6.59	4.56

Note: GFSK, DQPSK, and 8PSK average powers are all investigated. The GFSK and 8PSK powers are the worst case. Testing is based on these modes to show compliance. For average power data, please refer to section 9.6.

6.3. DESCRIPTION OF AVAILABLE ANTENNAS AND CABLE LOSS

The antenna(s) gain and type, as provided by the manufacturer, are as follows:

The radio utilizes a PIFA antenna with a maximum gain of 1.40 dBi and 0.71 dB cable loss.

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware and software installed during testing were versions 0.74.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz and above 18GHz were performed with the EUT set to transmit at the channel with the highest output power as a 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.

EUT was investigated in three orthogonal orientations: X (Flatbed), Y (Landscape), and Z (Portrait). The Z (Portrait) is the worst-case orientation. Full tests on the EUT were made on Z (Portrait) orientation. After investigation, the worst configuration set for all radiated tests is with EUT powered by an internal battery and the USB-C port is terminated by a laptop via USB cable.

Worst-case data rates as provided by the client were:
GFSK mode : DH5
8PSK mode : 3-DH5

Plots included in the report are representative of the method and settings parameters used for the test.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
Laptop	Lenovo	T14	PF4BYGWJ	DOC
Laptop AC/DC adapter	Lenovo	ADLX65YLC2A	8SSA10M13948L1CZ8CJ0EA6	DOC
Bluetooth Tester	Rohde & Schwarz	CBT	81929	DoC

I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	2	3-prongs	Un-Shielded	1.8	AC Mains to BT Tester/Analyzer/Power Meter
2	Antenna	3	SMA	Shielded	0.1	BT Tester to coupler to Analyzer/Power Meter to EUT

I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC	1	DC	Shielded	1.8	AC/DC Adapter to Laptop
2	AC	1	2-prongs	Unshielded	1.8	AC Mains to AC/DC Adapter
3	USB	1	USB-C	Shielded	1	Laptop to EUT
4	SMA Cable	1	N	Shielded	3.5	Bluetooth tester to horn antenna
5	AC	1	3-prongs	Unshielded	1.8	AC Mains to to BT tester

TEST SETUP

The EUT setup is shown below. Test software exercised the radio card.

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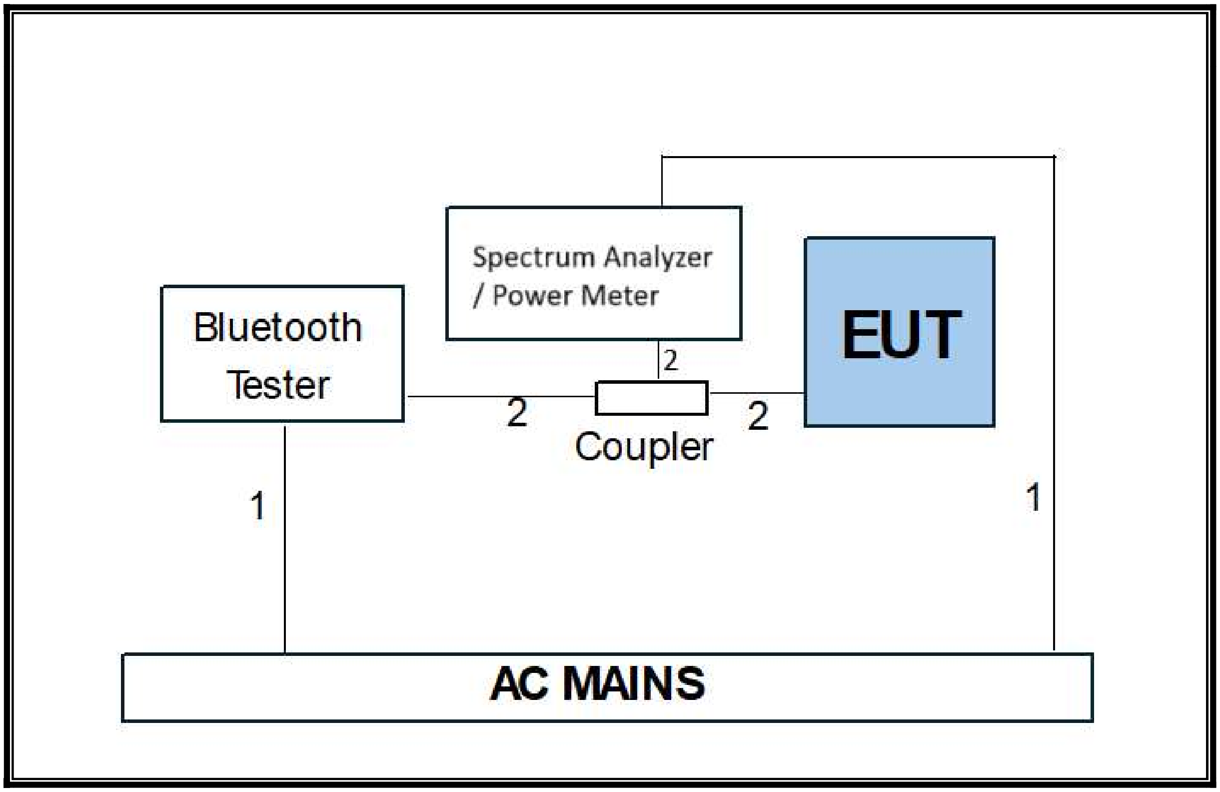
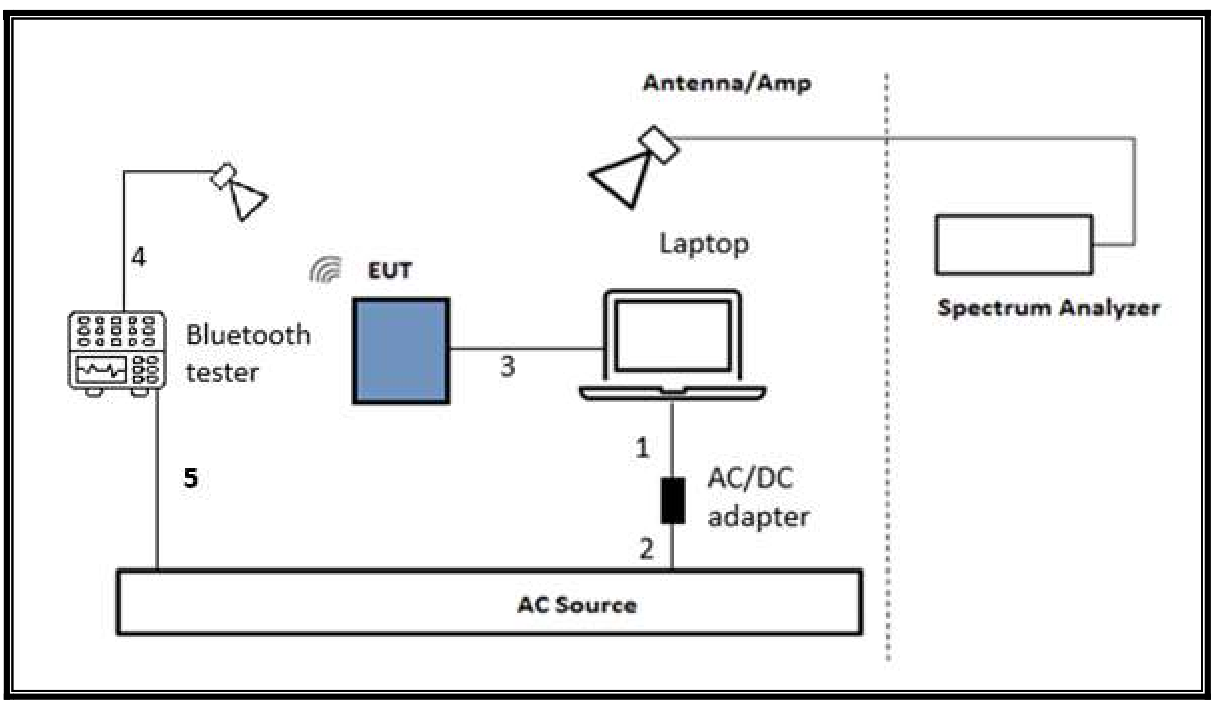
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS



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7. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	206808	2027-04-30
RF Filter Box, 1-18GHz	UL-FR1	RATS 1.0, 2 Amp, 8 Port	197920	2026-03-31
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	81140	2027-05-31
Link File, RF Amplifier Assembly, 18-26.5GHz, 60dB Gainr	UL-FR1	AMP18G26.5-60	215705	2026-10-31
EMI Test Receiver	Rohde & Schwarz	ESW44	225688	2026-02-28
Antenna, Passive Loop 100kHz to 30MHz	ELECTRO-METRICS	EM-6872	219910	2026-08-31
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	219908	2026-08-31
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	202329	2027-04-30
Link File, 9KHz-1GHz Port 0 Factors	UL-FR1	Port 0 Factors	213877	2026-03-31
EMI TEST RECEIVER, with B8 option	Rohde & Schwarz	ESW44	245268	2026-02-28
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	252765	Verified
P-Series Power Meter	Keysight Technologies Inc	N1912A-CFG003	259286	2026-03-31
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	257703	2026-03-31
Spectrum Analyzer, PXA, 3Hz to 44GHz	N9030A	Keysight Technologies Inc	85214	2026-01-31

UL AUTOMATION SOFTWARE			
Radiated Software	UL	UL EMC	Ver 9.5, 25 Aug 2025
Conducted Software	UL	UL EMC	2024-02-23

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8. MEASUREMENT METHOD

TEST ITEM	TEST METHOD
On Time and Duty Cycle	ANSI C63.10 Section 11.6
Occupied BW (20dB)	ANSI C63.10 Section 6.9.2
Occupied BW (99%)	ANSI C63.10 Section 6.9.3
Carrier Frequency Separation	ANSI C63.10 Section 7.8.2
Number of Hopping Frequencies	ANSI C63.10 Section 7.8.3
Time of Occupancy (Dwell Time)	ANSI C63.10 Section 7.8.4
Peak Output Power	ANSI C63.10 Section 7.8.5
Conducted Spurious Emissions	ANSI C63.10 Section 7.8.7
Conducted Band-Edge	ANSI C63.10 Section 6.10.4
Radiated Spurious Emissions Below 30MHz	ANSI C63.10 Section 6.4
Radiated Spurious Emissions 30-1000MHz	ANSI C63.10 Section 6.3, 6.5
Radiated Spurious Emissions above 1GHz	ANSI C63.10 Section 6.3, 6.6
Radiated Band-edge	ANSI C63.10 Section 6.10.5

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

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

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time T (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
GFSK	2.880	3.750	0.768	76.8	1.15	0.347
8PSK	2.895	3.750	0.772	77.2	1.12	0.345

BT GFSK

BT 8PSK

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9.2. 20dB 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% of the 20 dB bandwidth. The VBW is set to ≥ 3xRBW. The sweep time is coupled.

RESULTS

Worst-Case Mode (SISO)	Frequency (MHz)	Channel Number	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
GFSK	2402	Low	0.9322	0.89989
	2441	Mid	0.9373	0.9012
	2480	High	0.9361	0.89524
8PSK	2402	Low	1.374	1.2310
	2441	Mid	1.368	1.2294
	2480	High	1.364	1.2304

Mid Channel (GFSK)

Mid Channel (8PSK)

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9.3. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)

RSS-247 (6.2.1) (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 >= 3xRBW. The sweep time is coupled.

RESULTS

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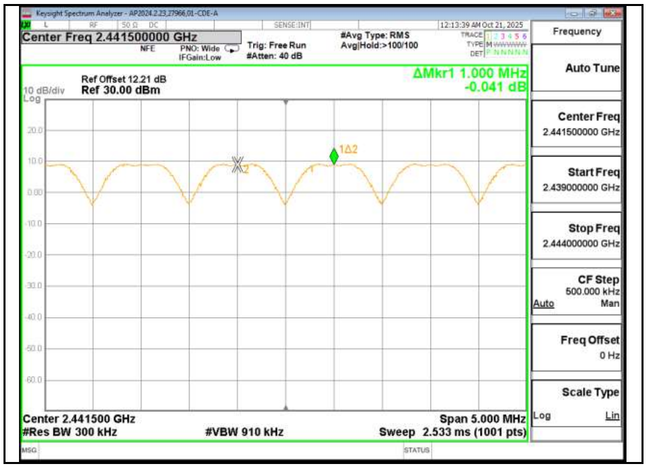
9.3.1. BASIC DATA RATE GFSK MODULATION

HOPPING FREQUENCY SEPARATION



9.3.2. ENHANCED DATA RATE 8PSK MODULATION

HOPPING FREQUENCY SEPARATION

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9.4. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (iii)

RSS-247 (6.2.3.1) (b)

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. RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

Normal Mode: 79 Channels Observed.

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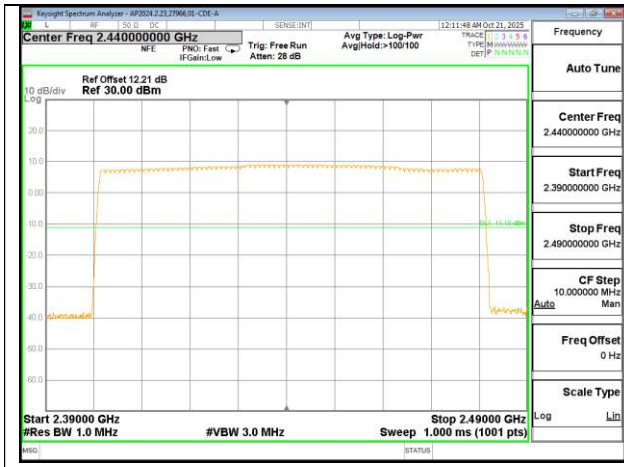
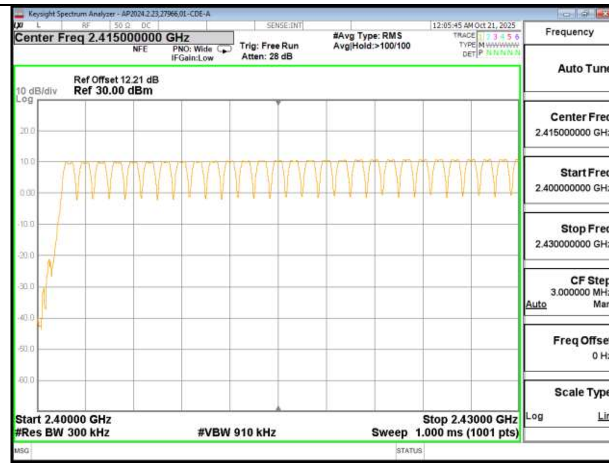
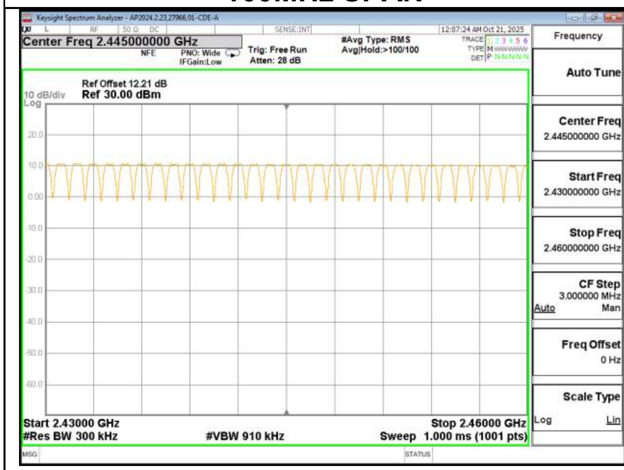
9.4.1. BASIC DATA RATE GFSK MODULATION



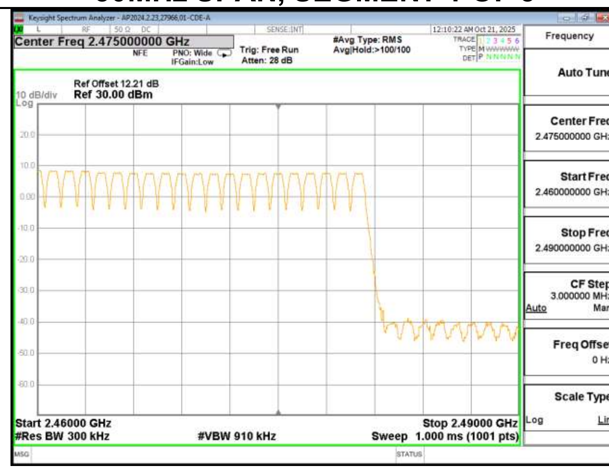
100MHz SPAN



30MHz SPAN, SEGMENT 1 OF 3



30MHz SPAN, SEGMENT 2 OF 3



30MHz SPAN, SEGMENT 3 OF 3

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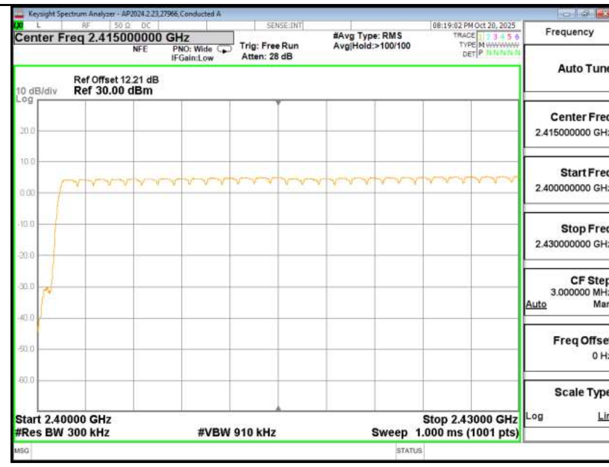
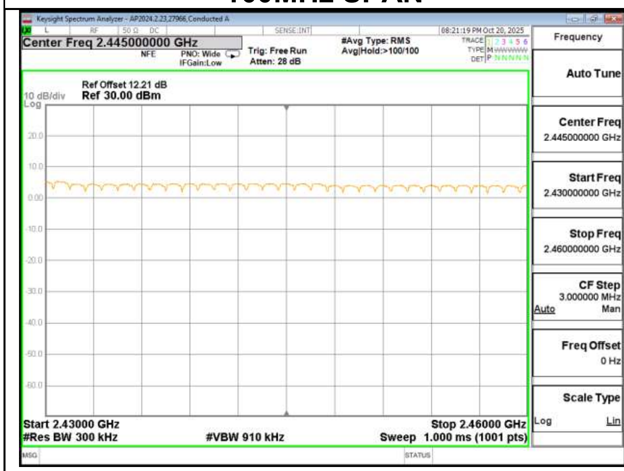
9.4.2. ENHANCED DATA RATE 8PSK MODULATION

100MHz SPAN



30MHz SPAN, SEGMENT 1 OF 3



30MHz SPAN, SEGMENT 2 OF 3

30MHz SPAN, SEGMENT 3 OF 3

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9.5. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (iii)

RSS-247 (6.2.3.1) (b)

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 * (# of pulses in 3.16 s) * 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 * (# of pulses in 0.8 s) * pulse width.

RESULTS

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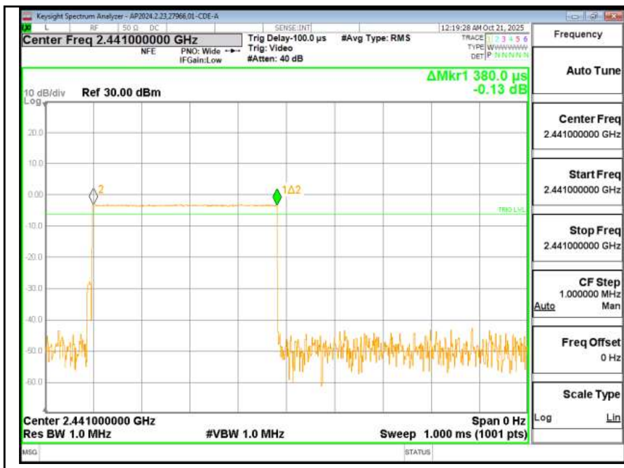
9.5.1. BASIC DATA RATE GFSK MODULATION

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	0.380	32.0	0.122	0.4	-0.278
DH3	1.634	15.0	0.245	0.4	-0.155
DH5	2.876	10.0	0.288	0.4	-0.112

DH Packet	Pulse Width (msec)	Number of Pulses in 0.8 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
GFSK AFH Mode					
DH1	0.38	8.00	0.030	0.4	-0.370
DH3	1.634	3.75	0.061	0.4	-0.339
DH5	2.876	2.50	0.072	0.4	-0.328



PULSE WIDTH – DH1

PULSE WIDTH – DH3

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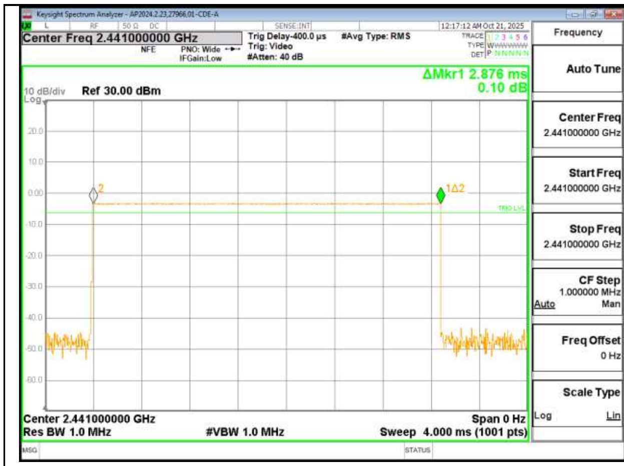
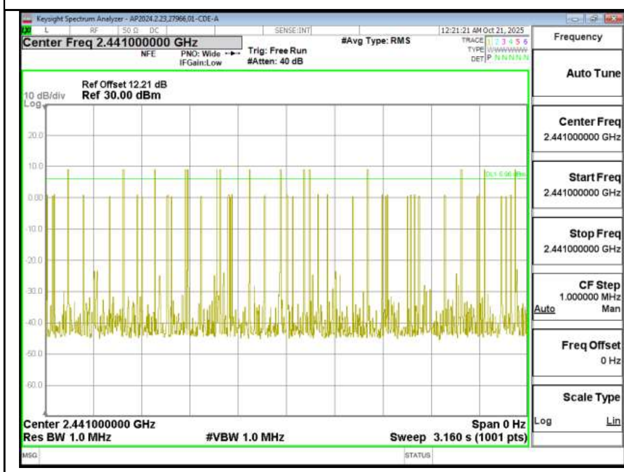
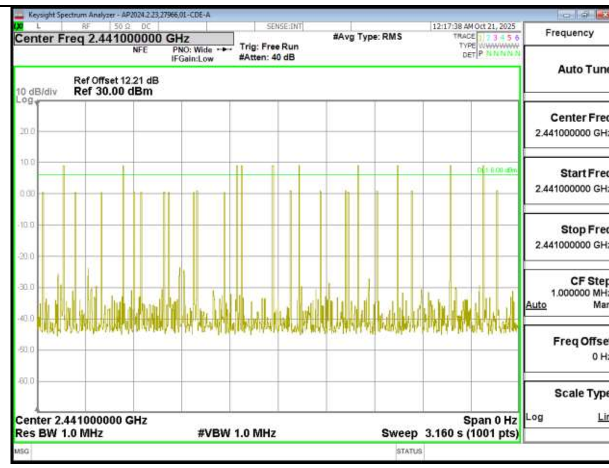


PULSE WIDTH – DH5

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

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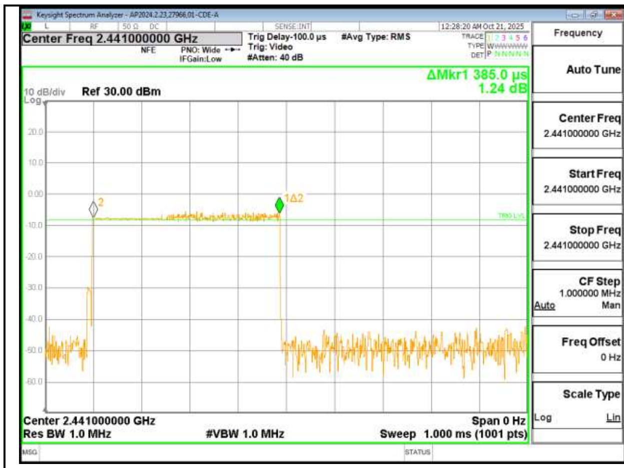
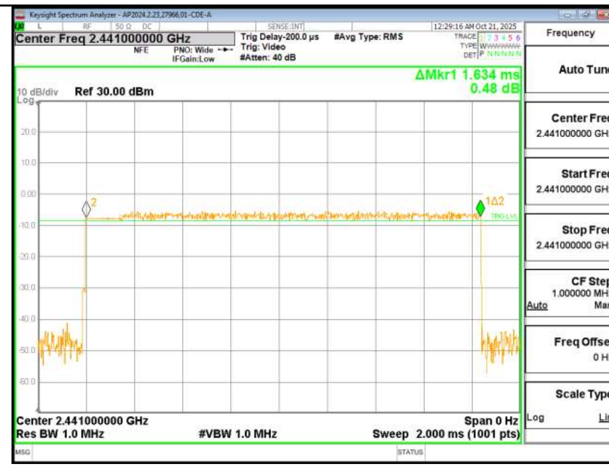
9.5.2. ENHANCED DATA RATE 8PSK MODULATION

DH Packet	Pulse Width (msec)	Number of Pulses in 3.16 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
8PSK Normal Mode					
3DH1	0.385	32	0.1232	0.4	-0.2768
3DH3	1.634	16	0.2614	0.4	-0.1386
3DH5	2.880	9	0.2592	0.4	-0.1408

Note: for AFH(8PSK) mode, please refer to the results of AFH(GFSK) mode; the channel selection and hopping rate are the same for both EDR and Basic Rate operation, data for Basic Rate demonstrates compliance with channel occupancy when AFH is employed.



PULSE WIDTH – 3DH1



PULSE WIDTH – 3DH3

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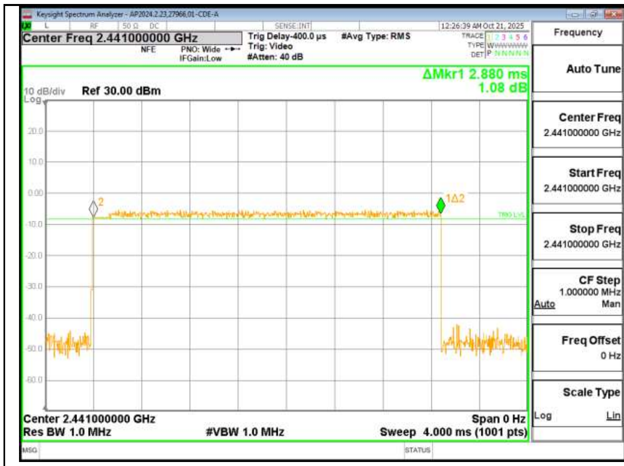

PULSE WIDTH – 3DH5

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3DH1

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3DH3

NUMBER OF PULSES IN 3.16 SECOND OBSERVATION PERIOD – 3DH5

9.6. OUTPUT POWER

LIMITS

§15.247

(a) (1) 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.

(b) (1) 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

RSS-247

(6.2.3.1)
a. FHS operating in the band 2400-2483.5 MHz 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 that the systems operate with an output power no greater than 0.125 W.

(6.2.3.2)
The following transmitter output power and e.i.r.p. requirements shall apply:

a. If the hopset uses 75 or more hopping channels, the maximum peak conducted output power shall not exceed 1.0 W.

b. If the hopset uses less than 75 hopping channels, the maximum peak conducted output power shall not exceed 0.125 W.

c. the e.i.r.p. shall not exceed 4 W, except as provided in sections 6.5 a) and b).

TEST PROCEDURE

Measurements are performed using a wideband RF power meter.

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

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DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output; therefore, the directional gain is equal to the antenna gain.

RESULTS

Only the mid-channel plot is reported to show setting parameters comply with the testing method/procedure.

Tested By:	27966 PV
Date:	2025-10-21

2.4G (SISO)							
Chain 0 (dBi)		1.4					
2.4G (SISO)	Freq (MHz)	Ch. #	Power Limit (dBm)	Average Power (Gated) (dBm)	Total Corrected Average Power (dBm)	Peak Power (dBm)
GFSK	2402	Low	21	6.12	6.12	6.37
	2441	Mid		7.84	**7.84**	**8.03**
	2480	High		6.47	6.47	6.70
DQPSK	2402	Low		3.29	3.29	6.06
	2441	Mid		3.65	**3.65**	**6.20**
	2480	High		2.20	2.20	4.81
8PSK	2402	Low		3.31	3.31	6.32
	2441	Mid		3.66	**3.66**	**6.59**
	2480	High		2.21	2.21	5.12

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9.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 6.6

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 band edges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

RESULTS

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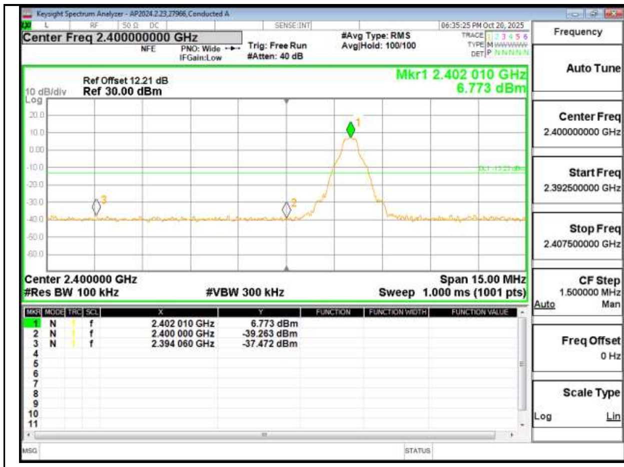
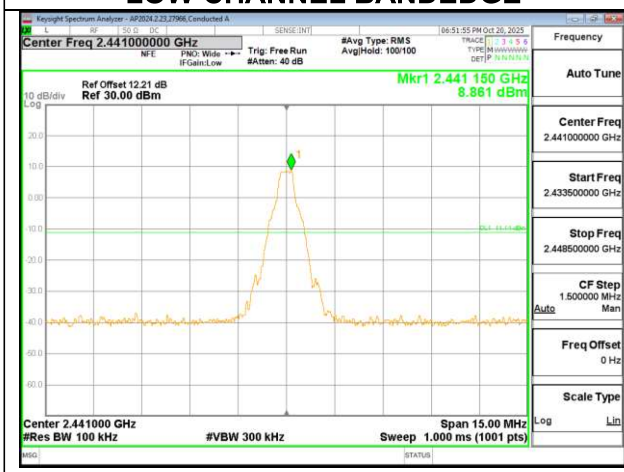
9.7.1. BASIC DATA RATE GFSK MODULATION

SPURIOUS EMISSIONS, NON-HOPPING



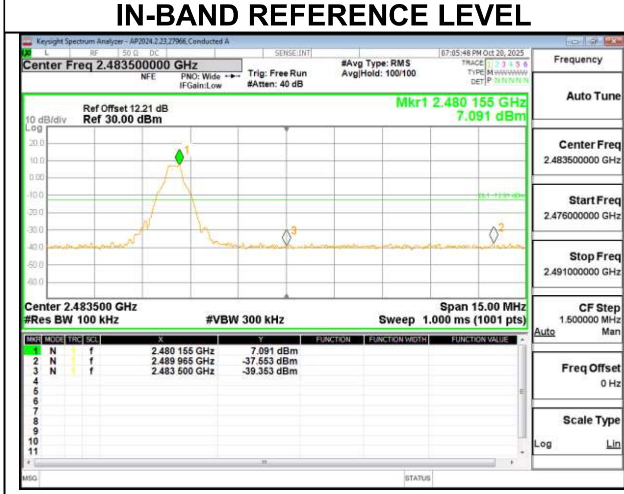
LOW CHANNEL BANDEDGE

OUT-OF-BAND LOW CHANNEL

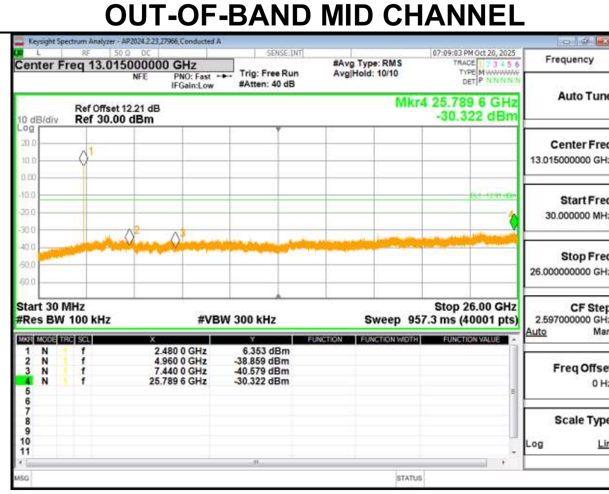


IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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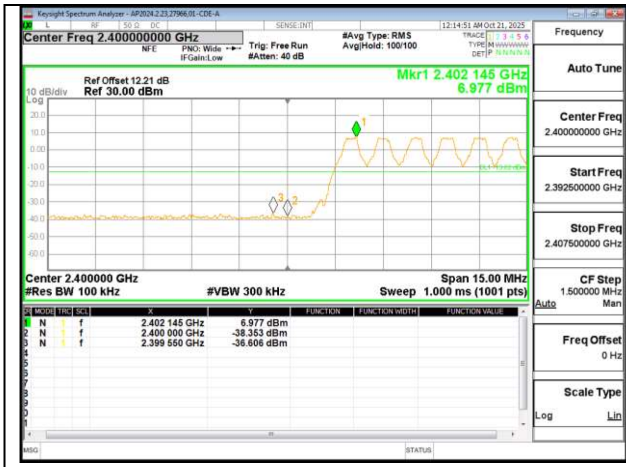
SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

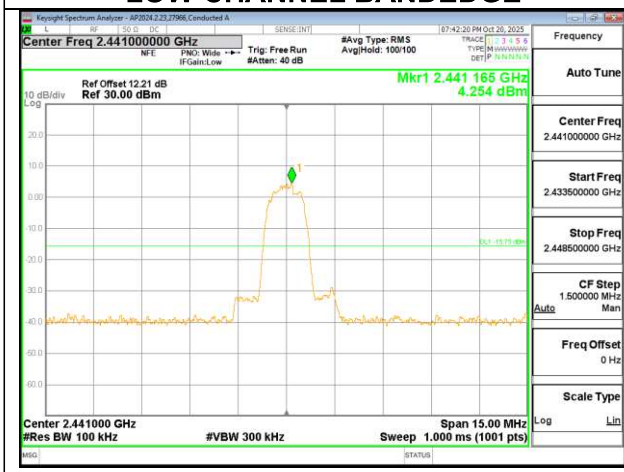
	
LOW BANDEDGE	HIGH BANDEDGE

9.7.2. 8PSK ENHANCED DATA RATE 8PSK MODULATION

SPURIOUS EMISSIONS, NON-HOPPING

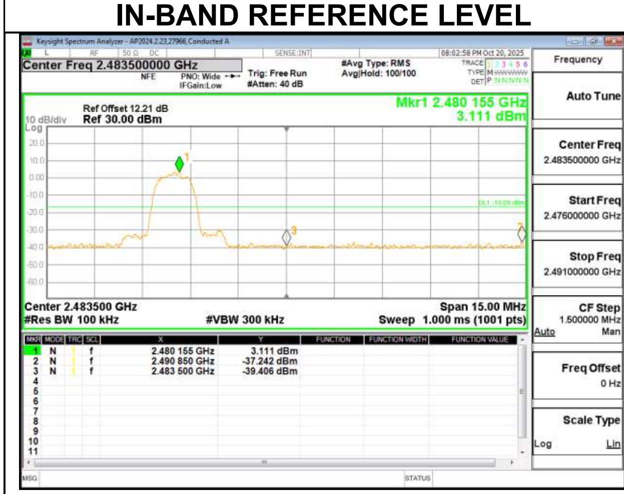
LOW CHANNEL BANDEDGE

OUT-OF-BAND LOW CHANNEL

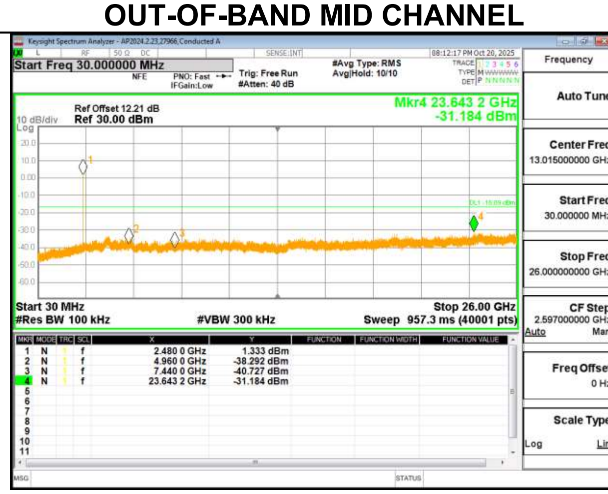


IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON

LOW BANDEDGE	HIGH BANDEDGE

10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209
RSS-GEN, Section 8.9 and 8.10

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

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. Peak detection is used unless otherwise noted as a quasi-peak.

For pre-scans above 1 GHz, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz 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 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements.

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.

For below 30MHz testing, an investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel). Parallel and perpendicular are the worst orientations, therefore, testing was performed on these two orientations only. Blue color trace on plots: Parallel orientation. Green color trace on plots: Perpendicular orientation.

Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-Gen Table 6 limit as it must 15.209(a) limit.

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

Based 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.

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

RESULTS

The plots in these sections are for reference settings only for different modes.

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10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. LOW BANDEDGE

2.4GHz (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
GFSK	2402	* 2.39	54.5	Pk	32.3	-34.6	52.2	-	-	74	-21.8	159	319	H
		* 2.361293	56.9	Pk	32.2	-34.7	54.4	-	-	74	-19.6	159	319	H
		* 2.39	41.43	VA1T	32.3	-34.6	39.13	54	-14.87	-	-	159	319	H
		* 2.385007	41.81	VA1T	32.3	-34.6	39.51	54	-14.49	-	-	159	319	H
		* 2.39	54.08	Pk	32.3	-34.6	51.78	-	-	74	-22.22	271	313	V
		* 2.354529	56.75	Pk	32.2	-34.7	54.25	-	-	74	-19.75	271	313	V
		* 2.39	41.35	VA1T	32.3	-34.6	39.05	54	-14.95	-	-	271	312	V
		* 2.388036	41.9	VA1T	32.3	-34.6	39.6	54	-14.4	-	-	271	312	V
8PSK	2402	* 2.39	54.2	Pk	32.3	-34.6	51.9	-	-	74	-22.1	156	285	H
		* 2.316518	57.39	Pk	32	-34.9	54.49	-	-	74	-19.51	156	285	H
		* 2.39	41.36	VA1T	32.3	-34.6	39.06	54	-14.94	-	-	156	285	H
		* 2.356724	42.06	VA1T	32.2	-34.7	39.56	54	-14.44	-	-	156	285	H
		* 2.39	54.23	Pk	32.3	-34.6	51.93	-	-	74	-22.07	274	311	V
		* 2.389363	56.85	Pk	32.3	-34.6	54.55	-	-	74	-19.45	274	311	V
		* 2.39	41.5	VA1T	32.3	-34.6	39.2	54	-14.8	-	-	274	310	V
		* 2.389641	41.75	VA1T	32.3	-34.6	39.45	54	-14.55	-	-	274	310	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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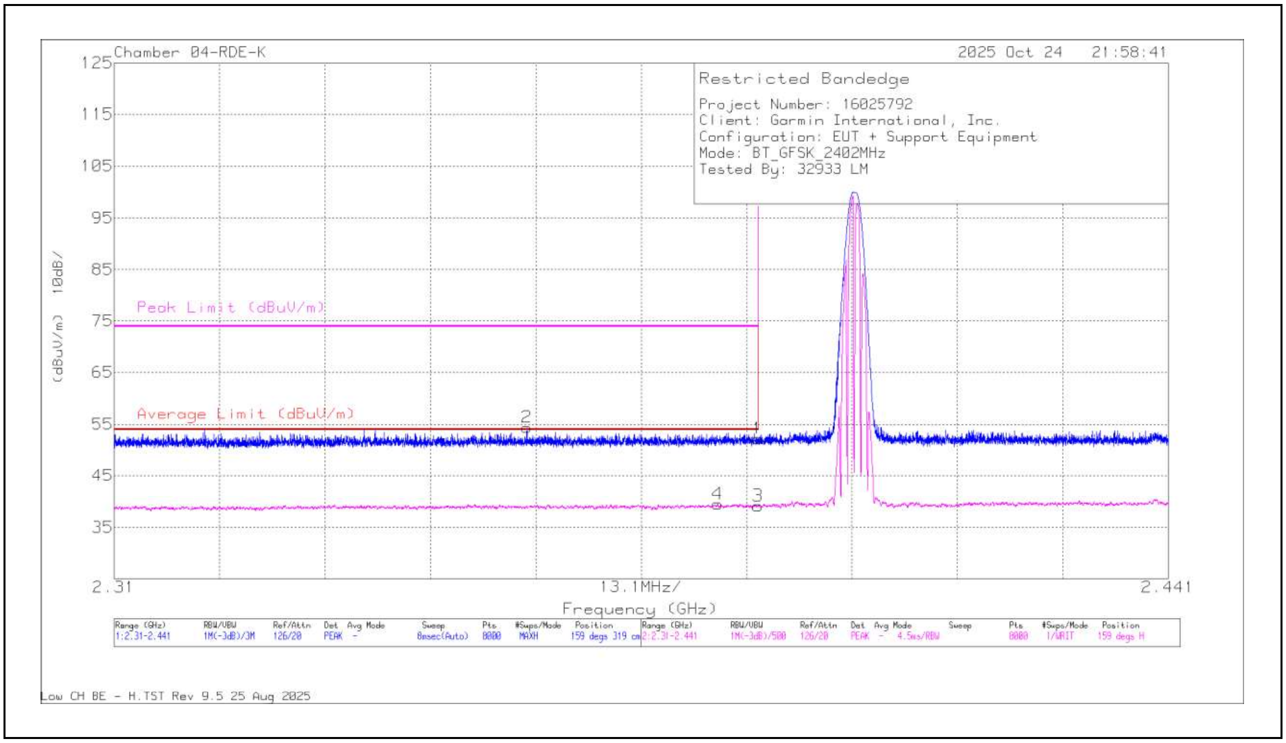
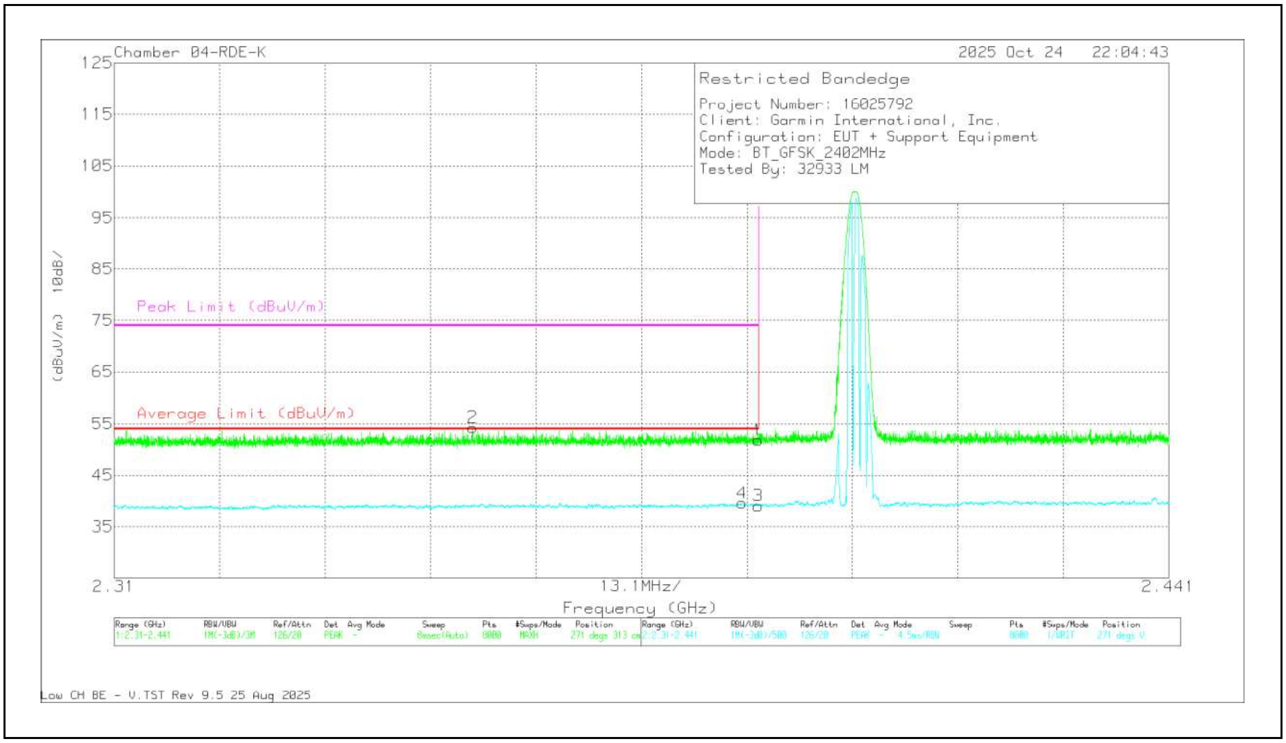
BANDEDGE (LOW CHANNEL), GFSK

HORIZONTAL RESULT



VERTICAL RESULT



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10.1.2. HIGH BANDEDGE

2.4GHz (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
GFSK	2480	* 2.4835	55.11	Pk	32.6	-34.2	53.51	-	-	74	-20.49	159	240	H
		2.51697	56.11	Pk	32.6	-34.1	54.61	-	-	74	-19.39	159	240	H
		* 2.4835	42.09	VA1T	32.6	-34.2	40.49	54	-13.51	-	-	159	240	H
		* 2.483782	42.36	VA1T	32.6	-34.2	40.76	54	-13.24	-	-	159	240	H
		* 2.4835	55.24	Pk	32.6	-34.2	53.64	-	-	74	-20.36	279	240	V
		* 2.483553	56.27	Pk	32.6	-34.2	54.67	-	-	74	-19.33	279	240	V
		* 2.4835	42.13	VA1T	32.6	-34.2	40.53	54	-13.47	-	-	279	240	V
		* 2.483629	42.34	VA1T	32.6	-34.2	40.74	54	-13.26	-	-	279	240	V
8PSK	2480	* 2.4835	55.16	Pk	32.6	-34.2	53.56	-	-	74	-20.44	72	260	H
		2.516055	55.78	Pk	32.6	-34.1	54.28	-	-	74	-19.72	72	260	H
		* 2.4835	42.15	VA1T	32.6	-34.2	40.55	54	-13.45	-	-	72	260	H
		* 2.483507	42.14	VA1T	32.6	-34.2	40.54	54	-13.46	-	-	72	260	H
		* 2.4835	54.65	Pk	32.6	-34.2	53.05	-	-	74	-20.95	272	262	V
		* 2.483858	57.19	Pk	32.6	-34.2	55.59	-	-	74	-18.41	272	262	V
		* 2.4835	42.16	VA1T	32.6	-34.2	40.56	54	-13.44	-	-	272	262	V
		* 2.483751	42.15	VA1T	32.6	-34.2	40.55	54	-13.45	-	-	272	262	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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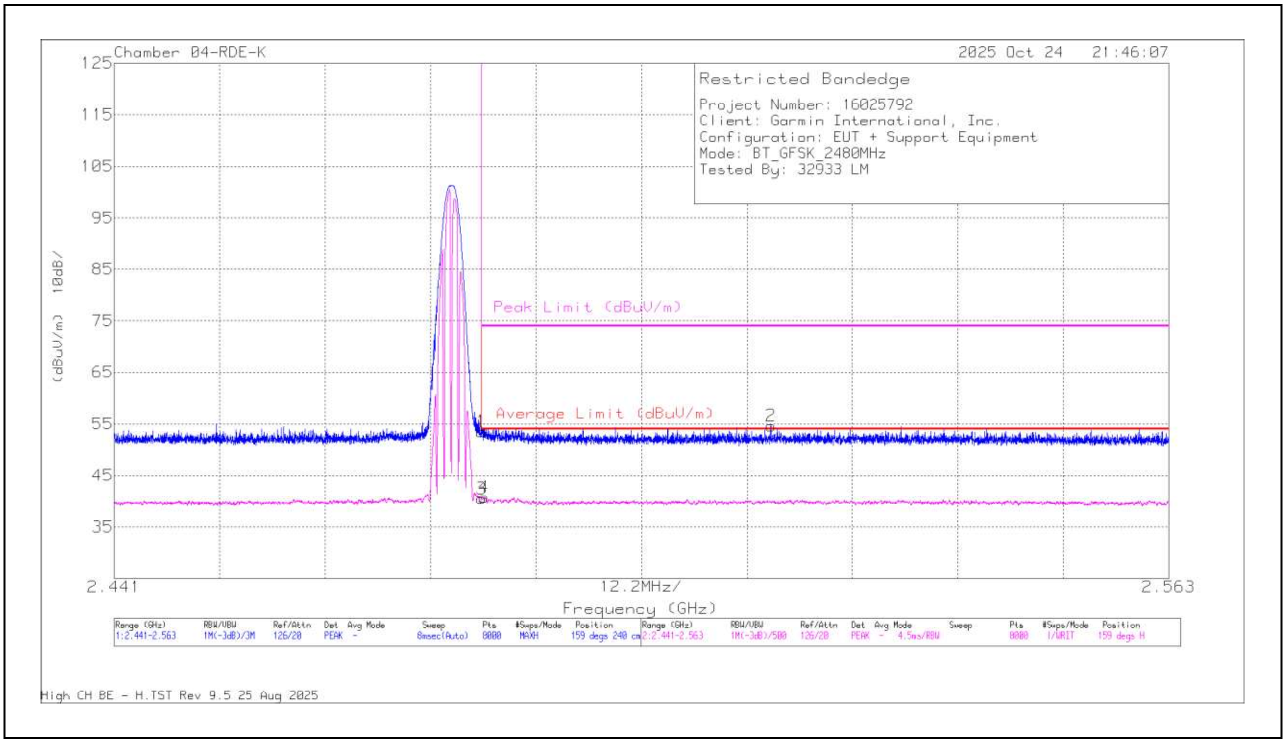
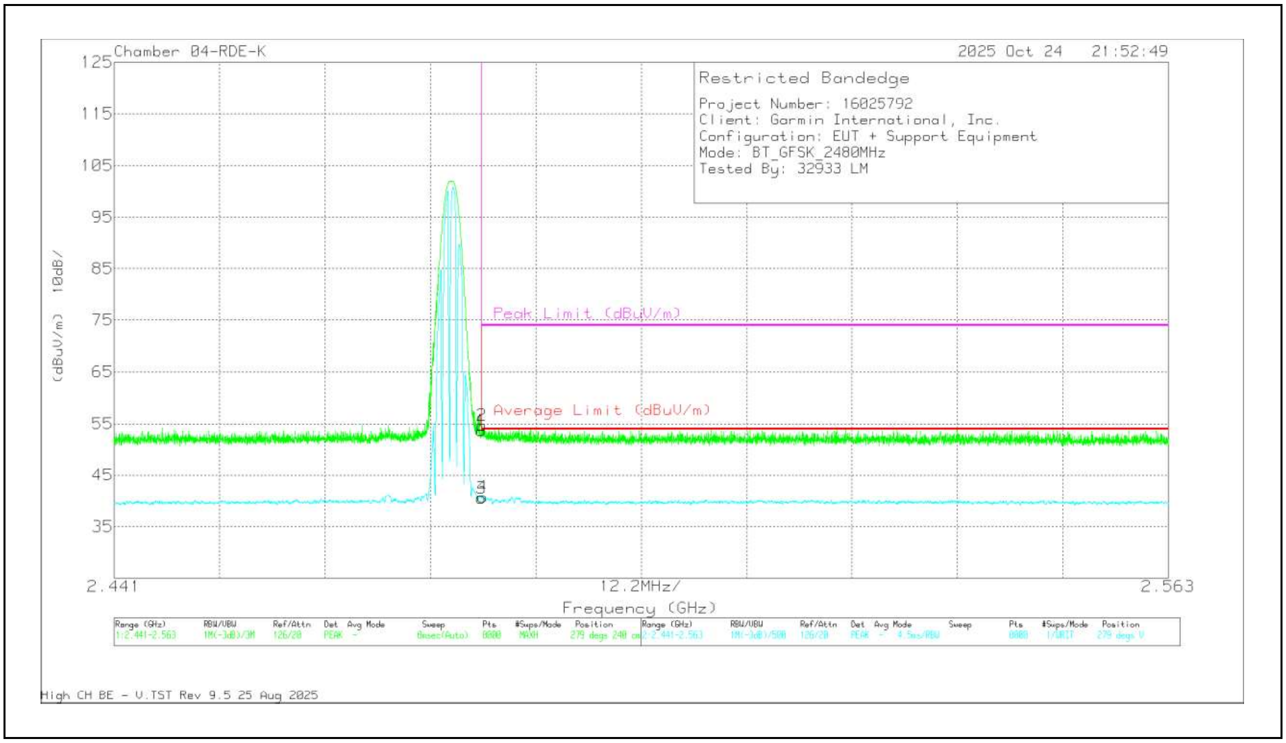
BANDEDGE (HIGH CHANNEL), GFSK

HORIZONTAL RESULT



VERTICAL RESULT



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10.1.3. HARMONICS AND SPURIOUS EMISSIONS

2.4 GHz (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
GFSK	2402	3.453224	53.1	PKFH	32.7	-41.6	44.2	-	-	-	-	358	205	H
		3.45334	54	PKFH	32.7	-41.6	45.1	-	-	-	-	216	392	V
		* 4.803797	52.97	PKFH	34.1	-40.3	46.77	-	-	74	-27.23	269	108	H
		* 4.804082	46.35	VA1T	34.1	-40.3	40.15	54	-13.85	-	-	269	108	H
		* 4.803927	52.69	PKFH	34.1	-40.3	46.49	-	-	74	-27.51	287	229	V
		* 4.804021	46.5	VA1T	34.1	-40.3	40.3	54	-13.7	-	-	287	229	V
		7.206502	51.42	PKFH	35.6	-38.2	48.82	-	-	-	-	175	214	H
		7.204661	47.65	PKFH	35.6	-38.2	45.05	-	-	-	-	225	106	V
		2.481959	59.94	PKFH	32.6	-34.2	58.34	-	-	-	-	46	174	H
		2.481921	59.96	PKFH	32.6	-34.2	58.36	-	-	-	-	289	242	V
	2441	3.453311	54.12	PKFH	32.7	-41.6	45.22	-	-	-	-	243	226	H
		3.453076	53.34	PKFH	32.7	-41.6	44.44	-	-	-	-	224	178	V
		* 4.882329	56.04	PKFH	34.1	-40.2	49.94	-	-	74	-24.06	85	211	H
		* 4.882049	50.5	VA1T	34.1	-40.2	44.4	54	-9.6	-	-	85	211	H
		* 4.882095	55.65	PKFH	34.1	-40.2	49.55	-	-	74	-24.45	313	258	V
		* 4.882001	51.17	VA1T	34.1	-40.2	45.07	54	-8.93	-	-	313	258	V
		* 7.322799	52.3	PKFH	35.6	-37.8	50.1	-	-	74	-23.9	208	174	H
		* 7.322817	46.12	VA1T	35.6	-37.8	43.92	54	-10.08	-	-	208	174	H
		* 7.323291	54.69	PKFH	35.6	-37.8	52.49	-	-	74	-21.51	240	217	V
		* 7.322957	50.05	VA1T	35.6	-37.8	47.85	54	-6.15	-	-	240	217	V
	2480	3.453066	54.47	PKFH	32.7	-41.6	45.57	-	-	-	-	40	359	H
		3.453362	54.36	PKFH	32.7	-41.6	45.46	-	-	-	-	358	280	V
		* 4.959774	55.61	PKFH	34.1	-40.2	49.51	-	-	74	-24.49	236	225	H
		* 4.960063	50.51	VA1T	34.1	-40.2	44.41	54	-9.59	-	-	236	225	H
		* 4.960364	53.28	PKFH	34.1	-40.2	47.18	-	-	74	-26.82	336	257	V
		* 4.959808	46.64	VA1T	34.1	-40.2	40.54	54	-13.46	-	-	336	257	V
		* 7.440027	52.68	PKFH	35.6	-37.6	50.68	-	-	74	-23.32	212	184	H
		* 7.440107	47.14	VA1T	35.6	-37.6	45.14	54	-8.86	-	-	212	184	H
		* 7.439632	55.67	PKFH	35.6	-37.6	53.67	-	-	74	-20.33	251	249	V
		* 7.44017	50.48	VA1T	35.6	-37.6	48.48	54	-5.52	-	-	251	249	V
8PSK	2402	3.453339	54.61	PKFH	32.7	-41.6	45.71	-	-	-	-	19	149	H
		3.453739	53.86	PKFH	32.7	-41.6	44.96	-	-	-	-	344	118	V
		* 4.804055	53.08	PKFH	34.1	-40.3	46.88	-	-	74	-27.12	55	215	H
		* 4.803735	44.13	VA1T	34.1	-40.3	37.93	54	-16.07	-	-	55	215	H
		* 4.803459	54.15	PKFH	34.1	-40.3	47.95	-	-	74	-26.05	288	232	V
		* 4.803846	45.51	VA1T	34.1	-40.3	39.31	54	-14.69	-	-	288	232	V
		7.205576	49.55	PKFH	35.6	-38.2	46.95	-	-	-	-	173	356	H
		7.20533	50.94	PKFH	35.6	-38.2	48.34	-	-	-	-	252	102	V
	2441	3.453184	53.72	PKFH	32.7	-41.6	44.82	-	-	-	-	15	112	H
		3.453063	53.81	PKFH	32.7	-41.6	44.91	-	-	-	-	343	135	V
		* 4.87186	51.37	PKFH	34.1	-40.2	45.27	-	-	74	-28.73	164	211	H
		* 4.882034	41.81	VA1T	34.1	-40.2	35.71	54	-18.29	-	-	164	211	H
		* 4.881263	51.88	PKFH	34.1	-40.3	45.68	-	-	74	-28.32	246	103	V
		* 4.88189	41.13	VA1T	34.1	-40.3	34.93	54	-19.07	-	-	246	103	V
		* 7.322869	49.26	PKFH	35.6	-37.8	47.06	-	-	74	-26.94	199	184	H
		* 7.322976	38.72	VA1T	35.6	-37.8	36.52	54	-17.48	-	-	199	184	H
		* 7.322411	51.6	PKFH	35.6	-37.8	49.4	-	-	74	-24.6	237	156	V
		* 7.322824	41.47	VA1T	35.6	-37.8	39.27	54	-14.73	-	-	237	156	V
	2480	3.453373	53.43	PKFH	32.7	-41.6	44.53	-	-	-	-	29	160	H
		3.453262	53.95	PKFH	32.7	-41.6	45.05	-	-	-	-	351	116	V
		* 4.959875	52.98	PKFH	34.1	-40.2	46.88	-	-	74	-27.12	242	204	H
		* 4.959915	44.1	VA1T	34.1	-40.2	38	54	-16	-	-	242	204	H
		* 4.960381	51.8	PKFH	34.1	-40.2	45.7	-	-	74	-28.3	339	232	V
		* 4.960012	42.77	VA1T	34.1	-40.2	36.67	54	-17.33	-	-	339	232	V
		* 7.440235	49.14	PKFH	35.6	-37.6	47.14	-	-	74	-26.86	213	186	H
		* 7.439862	39.11	VA1T	35.6	-37.6	37.11	54	-16.89	-	-	213	186	H
		* 7.440374	52.49	PKFH	35.6	-37.6	50.49	-	-	74	-23.51	250	241	V
		* 7.440214	42.16	VA1T	35.6	-37.6	40.16	54	-13.84	-	-	250	241	V

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

PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

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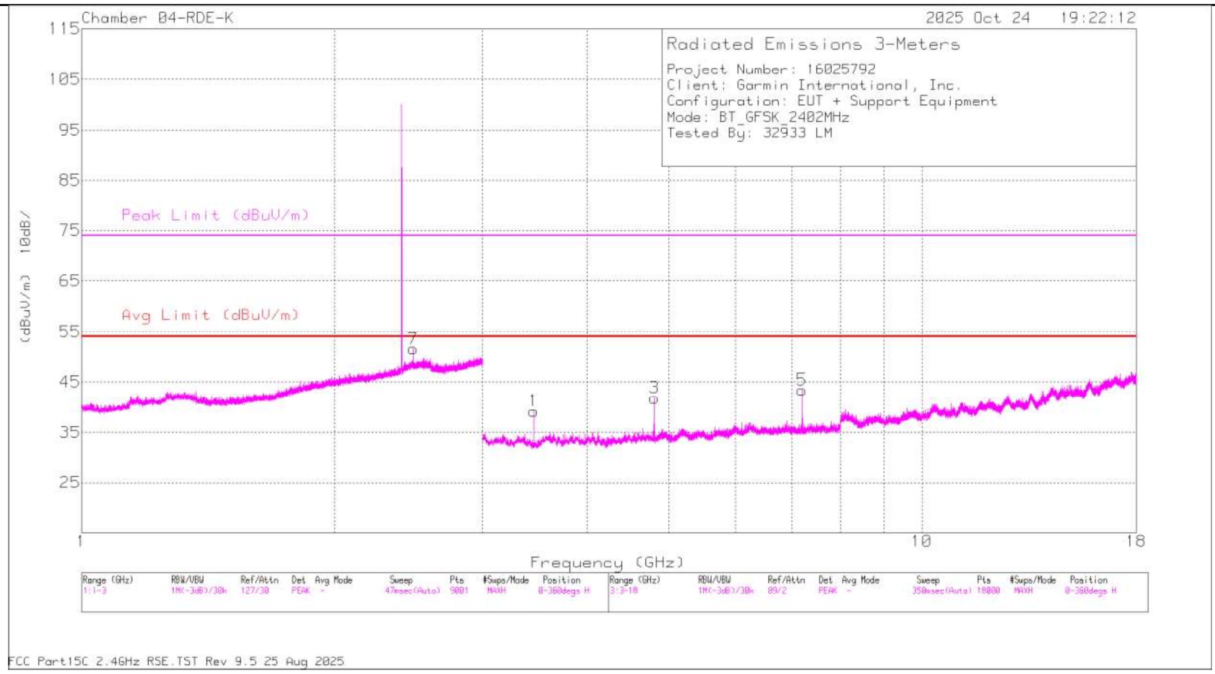
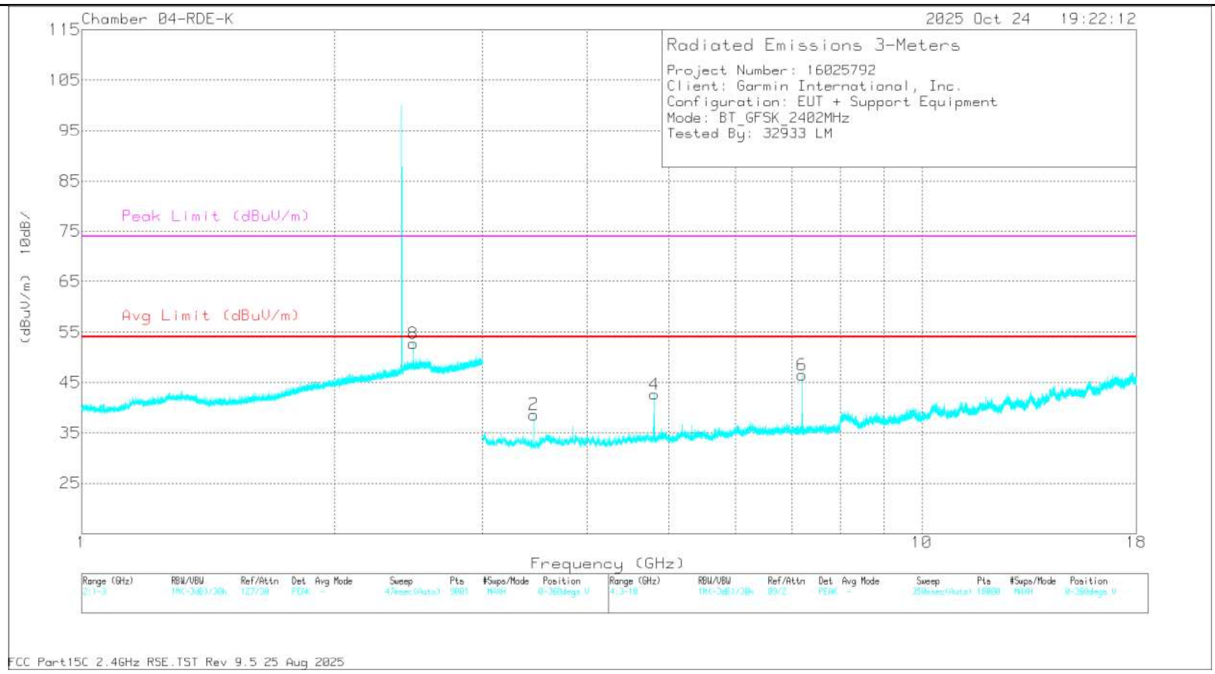
HARMONICS AND SPURIOUS EMISSIONS (GFSK LOW CHANNEL)



HORIZONTAL



VERTICAL

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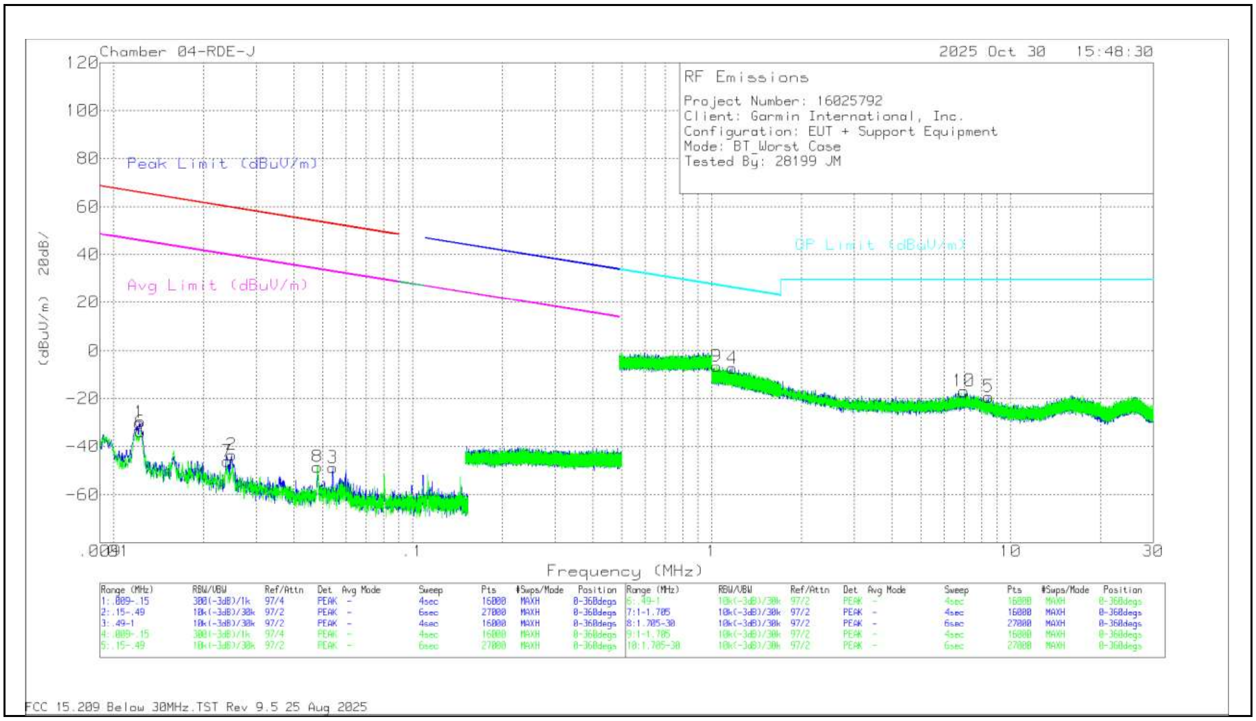
10.2. TRANSMITTER WORST CASE BELOW 30MHz

SPURIOUS EMISSIONS BELOW 30MHz (WORST-CASE CONFIGURATION)



Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity (Degs)
1	.0122	20.28	Pk	60.1	-30.4	-80	-30.02	65.86	-95.88	45.86	-75.88	0-360	0
2	.0248	9.49	Pk	58.6	-31.6	-80	-43.51	59.69	-103.2	39.69	-83.2	0-360	0
3	.054	6.33	Pk	56.8	-31.9	-80	-48.77	52.93	-101.7	32.93	-81.7	0-360	0
6	.0123	16.6	Pk	60.1	-30.5	-80	-33.8	65.77	-99.57	45.77	-79.57	0-360	90
7	.024	6.72	Pk	58.7	-31.6	-80	-46.18	59.98	-106.16	39.98	-86.16	0-360	90
8	.0481	6.2	Pk	57.2	-31.9	-80	-48.5	53.95	-102.45	33.95	-82.45	0-360	90

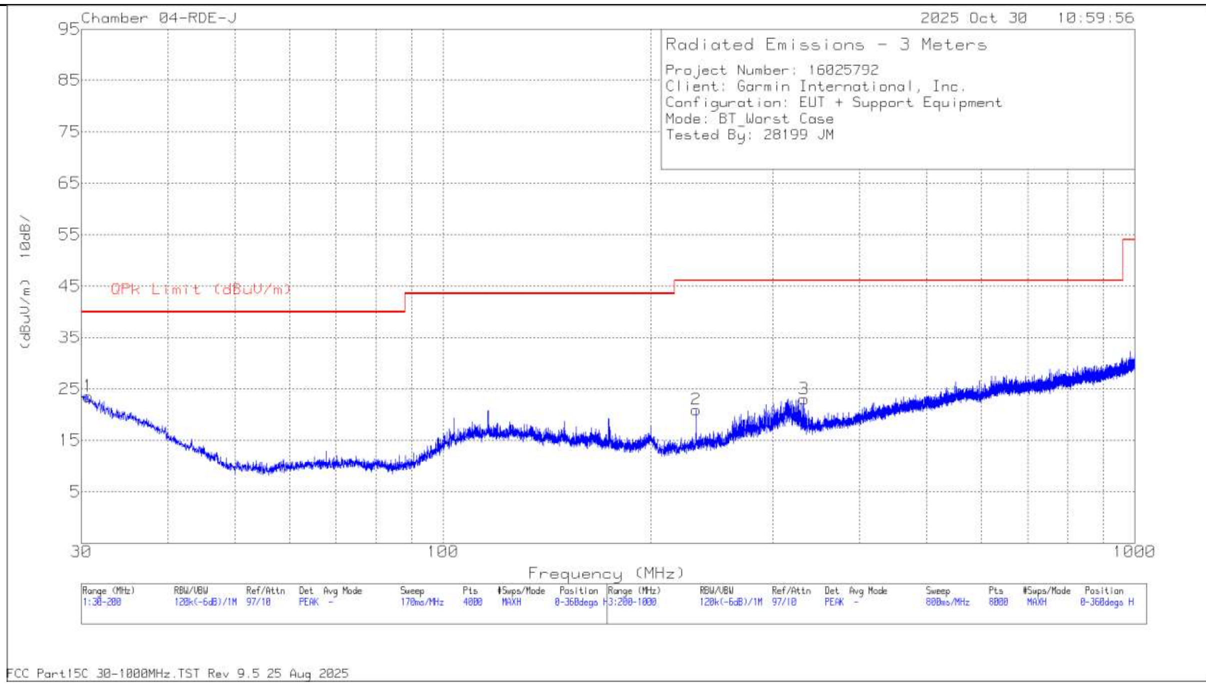
Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity (Degs)
4	1.1746	18.75	Pk	45.9	-32.1	-40	-7.45	26.23	-33.68	0-360	0
5	8.4395	17.92	Pk	34.5	-31.7	-40	-19.28	29.5	-48.78	0-360	0
9	1.0391	19.13	Pk	46.6	-32.3	-40	-6.57	27.29	-33.86	0-360	90
10	6.9796	20.22	Pk	34.7	-31.9	-40	-16.98	29.5	-46.48	0-360	90

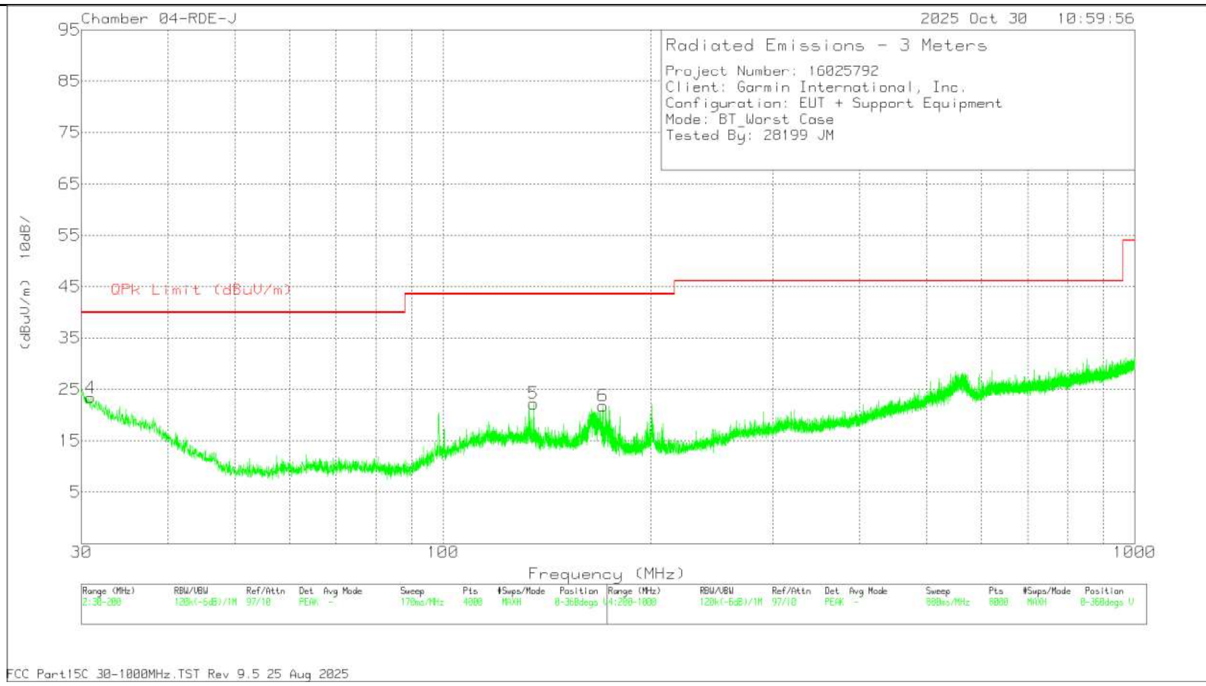
Pk - Peak detector

10.3. TRANSMITTER WORST CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	202329 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.6608	30.92	Pk	25.4	-31.7	24.62	40	-15.38	43	281	H
	31.6608	21.96	Qp	25.4	-31.7	15.66	40	-24.34	43	281	H
2	232.204	34.52	Pk	17	-30.6	20.92	46.02	-25.1	0-360	99	H
3	332.417	33.42	Pk	19.8	-30.2	23.02	46.02	-23	0-360	99	H
4	30.9352	29.12	Pk	26	-31.8	23.32	40	-16.68	0-360	100	V
5	135.087	33.9	Pk	19.3	-31	22.2	43.52	-21.32	0-360	100	V
6	170.244	34.94	Pk	17.6	-30.8	21.74	43.52	-21.78	0-360	100	V

Pk - Peak detector
Qp - Quasi-Peak detector

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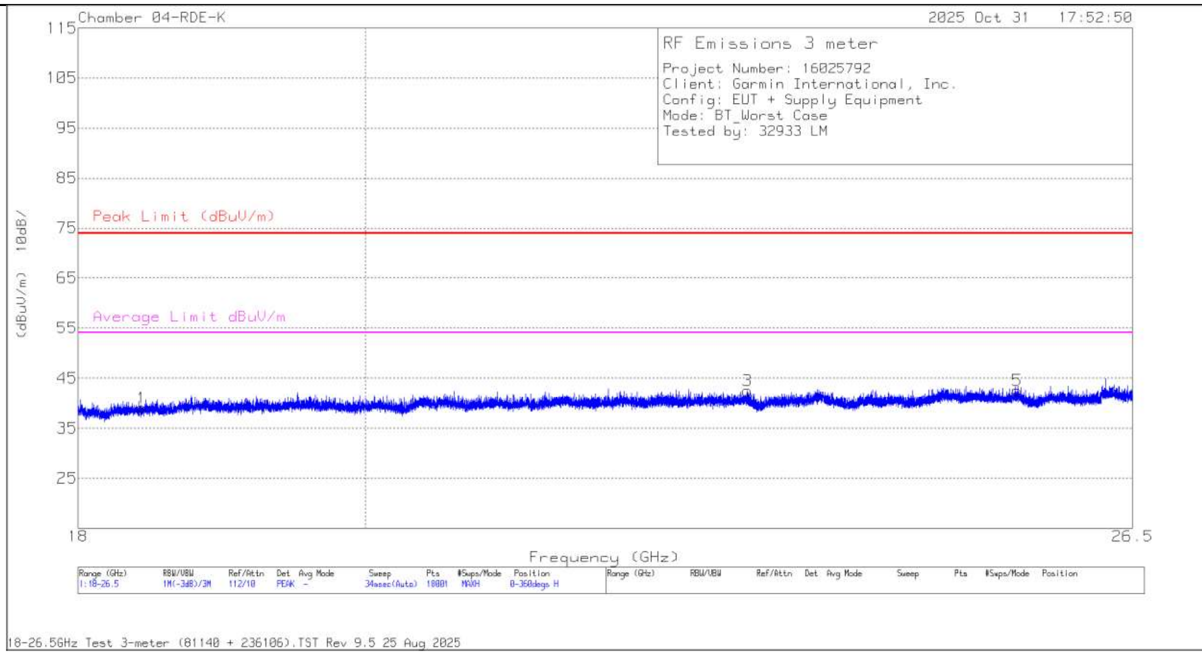
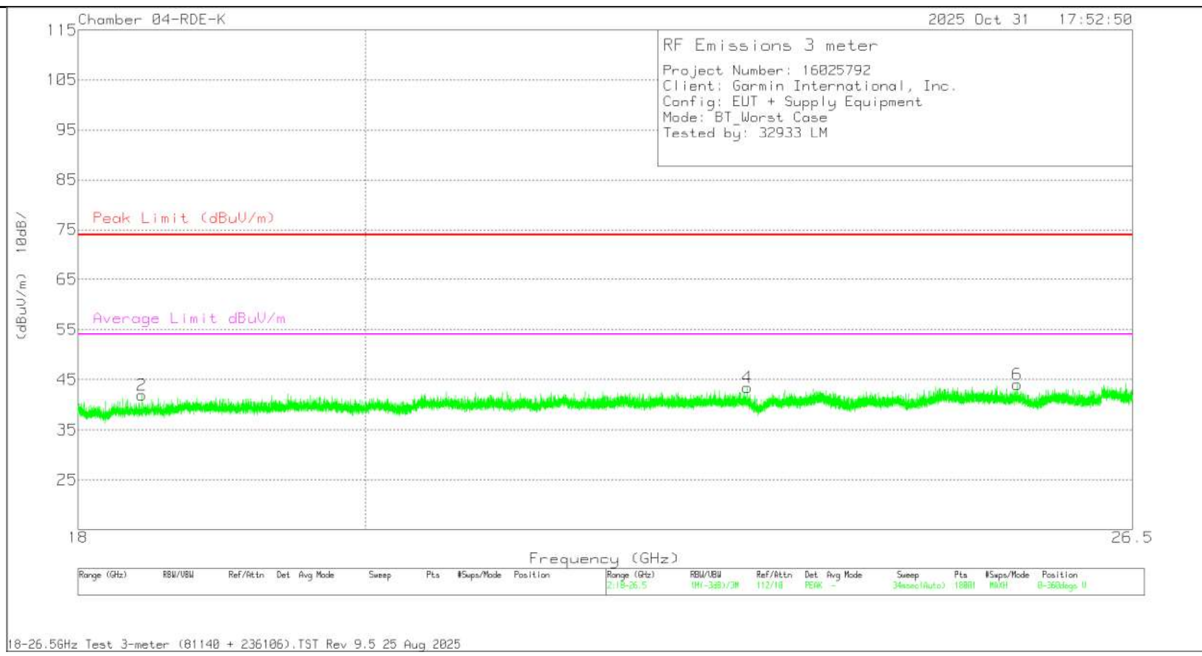
10.4. TRANSMITTER WORST CASE 18-26 GHz

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

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18 – 26GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	81140 ACF (dB/m)	CBL/AMP (dB)	CBL (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 18.425472	50.78	Pk	32.1	-63.2	19.4	39.08	74	-34.92	-	-	0-360	101	H
2	* 18.424528	53.82	Pk	32	-63.3	19.4	41.92	74	-32.08	-	-	0-360	200	V
3	* 23.010748	49.98	Pk	33.2	-62.2	21.5	42.48	74	-31.52	-	-	0-360	200	H
4	* 23.008859	50.94	Pk	33.2	-62.2	21.5	43.44	74	-30.56	-	-	0-360	200	V
5	25.401608	48.95	Pk	33.9	-62.8	22.5	42.55	74	-31.45	-	-	0-360	200	H
6	25.401608	50.4	Pk	33.9	-62.8	22.5	44	74	-30	-	-	0-360	200	V

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

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11. SETUP PHOTOS

Please refer to 16025792-EP1 for setup photos.

END OF REPORT

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TEST REPORT

Report Number: 16025792-E4V2

Applicant	:	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	:	A05116
Brand	:	Garmin
FCC ID	:	IPH-05116
IC	:	1792A-05116
EUT Description	:	Portable Digital Transceiver
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 4 ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2026-01-09

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2026-01-07	Initial issue	---
V2	2026-01-09	Updated Section 6.1 and 9.3	Tina Chu

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UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	A05116
Brand	Garmin
FCC ID	IPH-05116
IC	1792A-05116
EUT Description	Portable Digital Transceiver
Serial Number	3522388213 (Radiated); 3522388124 (Conducted)
Sample Receipt Date	2025-10-17
Date Tested	2025-10-17 to 2025-10-30, 2026-01-09
Applicable Standards	FCC 47 CFR Part 15 Subpart C ISED RSS-247 Issue 4 ISED RSS-GEN Issue 5 + A1 + A2
Test Results	COMPLIES

UL Verification Services Inc. 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 ensure 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 Verification Services Inc., and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released By:	Prepared & Reviewed By:
Francisco de Anda Staff Engineer UL Verification Services, Inc.	Vien Tran Senior Lab Engineer UL Verification Services, Inc.

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2. TEST RESULTS SUMMARY

This report contains data provided by the customer, which can impact the validity of the results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

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

1. Antenna gain and type (see section 6.3)
2. Cable loss (see section 6.3)

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result
Duty Cycle	-	-	Reporting purposes only
99% OBW	-	RSS-GEN 6.7	Complies
6dB BW	15.247 (a) (2)	RSS-247 6.3.1 (a)	Complies
Output Power	15.247 (b) (3)	RSS-247 6.3.2	Complies
PSD	15.247 (e)	RSS-247 6.3.1 (b)	Complies
Conducted Spurious Emissions	15.247 (d)	RSS-247 6.6	Complies
Radiated Emissions	15.209, 15.205	RSS-GEN 8.9, 8.10	Complies
AC Mains Conducted Emissions	15.207	RSS-Gen 8.8	Not applicable. EUT is powered by battery/DC power supply

3. TEST METHODOLOGY

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

- ANSI C63.10-2020 (FCC)
- ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+ Errata to C63.10a-2024 (ISED)
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15C
- KDB 558074 D01 15.247 Meas Guidance
- KDB 414788 D01 Radiated Test Site
- RSS-GEN Issue 5 + A1 + A2
- RSS-247 Issue 4

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, 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
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

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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 regularly, with a maximum time between calibrations of one year or the manufacturer's 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}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using a Power Meter	0.45 dB (Ave), 1.30 dB Peak)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22 %
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB

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 dBuV + 18.7 dB/m + 0.6 dB **–** 26.9 dB = 28.9 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 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Portable Digital Transceiver.

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)
1Tx			
2412 - 2462	802.11b	20.44	110.66
	802.11g	25.01	316.96
	802.11n HT20	25.06	320.63

6.3. DESCRIPTION OF AVAILABLE ANTENNAS AND CABLE LOSS

The antenna(s) gain and type, as provided by the manufacturer, are as follows:

The radio utilizes a PIFA antenna with a maximum gain of 1.40 dBi and 0.71 dB cable loss

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware and software installed during testing versions 0.74.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz and above 18GHz were performed with the EUT set to transmit at the channel with the highest output power as a 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.

EUT was investigated in three orthogonal orientations: X (Flatbed), Y (Landscape), and Z (Portrait). The Z (Portrait) is the worst-case orientation. The full tests of the EUT have been made upon Z (Portrait) orientation. After investigation, the worst configuration set for all radiated tests is with EUT powered by an internal battery and the USB-C port is terminated by a laptop via USB cable.

Worst data rates provided by the manufacturer as follows:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0

Plots included in the report are representative of the method and settings parameters used for the test.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description		Manufacturer	Model	Serial Number		FCC ID/ DoC
Laptop		Lenovo	T14	PF4BYGWJ		DOC
Laptop AC/DC adapter		Lenovo	ADLX65YLC2A	8SSA10M13948L1CZ8CJ0EA6		DOC
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	3-prongs	Un-Shielded	1.8	AC Mains to Analyzer/Power Meter
2	Antenna	1	SMA	Shielded	0.1	Analyzer/Power Meter to EUT
I/O CABLES (RF RADIATED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC	1	DC	Shielded	1.8	AC/DC Adapter to Laptop
2	AC	1	2-prongs	Unshielded	1.8	AC Mains to AC/DC Adapter
3	USB	1	USB-C	Shielded	1	Laptop to EUT

TEST SETUP

The EUT setup is shown below. Test software exercised the radio card.

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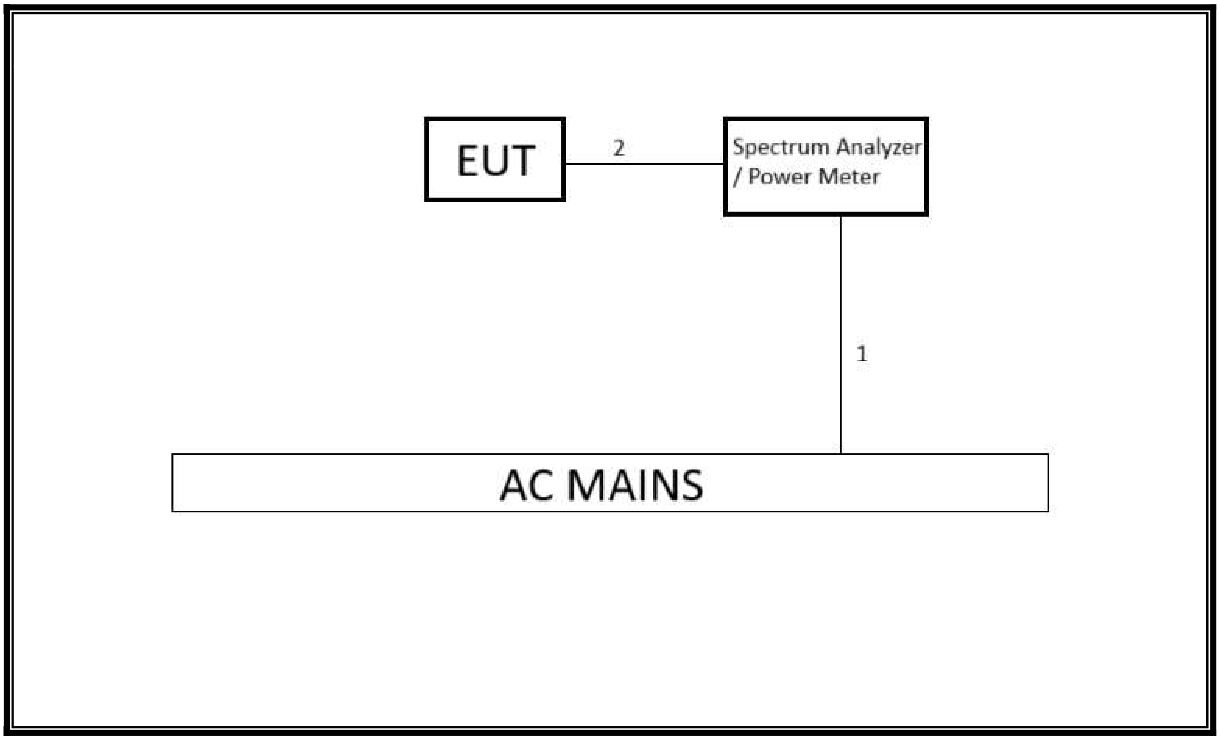
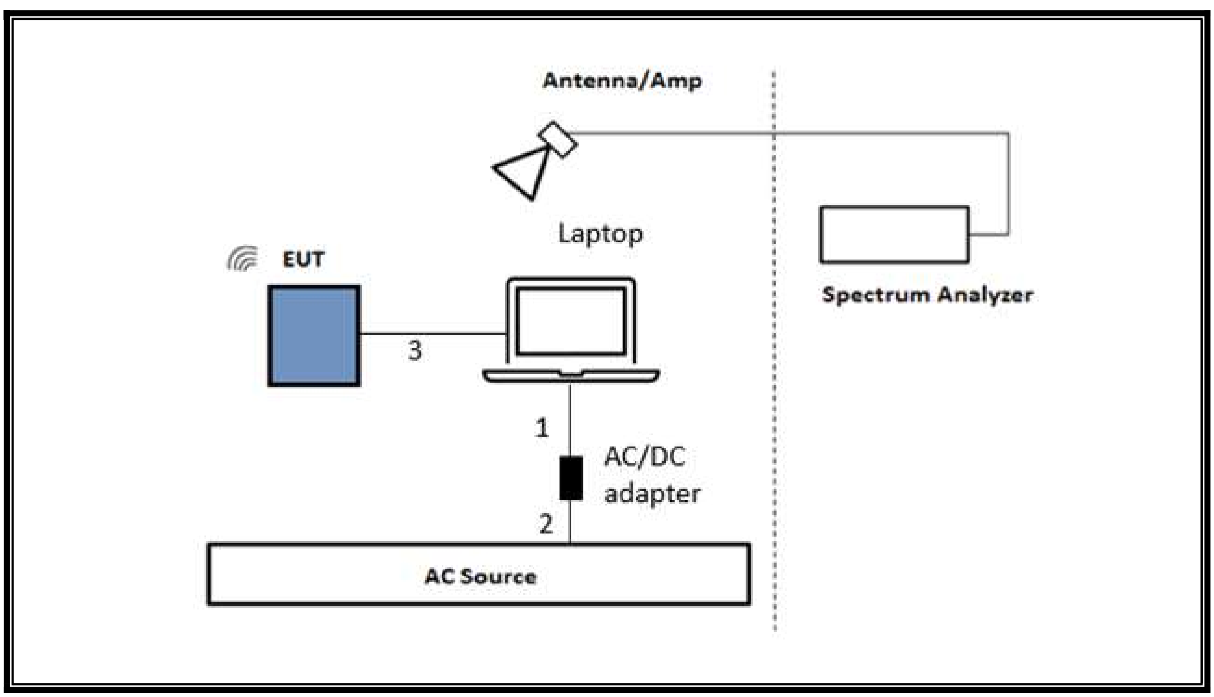
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS



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7. MEASUREMENT METHOD

Test Item	Test Method
On Time and Duty Cycle	ANSI C63.10 Section 11.6
6 dB BW	ANSI C63.10 Subclause -11.8.1 RBW ≥ DTS BW
99% BW	ANSI C63.10, Subclause 6.9.3.
Conducted Output Power	ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM G (Measurement using an RF average-reading power meter), 11.9.1.2 Method PKPM1 Peak-reading power meters
Power Spectral Density	ANSI C63.10 Subclause -11.10.2 Method PKPSD (peak PSD)
Radiated emissions non-restricted frequency bands	ANSI C63.10 Subclause -11.11
Radiated emissions restricted frequency bands	ANSI C63.10 Subclause -11.12.1
Conducted emissions in restricted frequency bands	ANSI C63.10 Subclause -11.12.2
Band-edge	ANSI C63.10 Subclause -11.12.2.4: Peak Measurement
Band-edge	ANSI C63.10 Subclause -11.12.2.5: Average Measurement
Radiated Spurious Emissions Below 30MHz	ANSI C63.10 Subclause 6.4

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8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	206808	2027-04-30
RF Filter Box, 1-18GHz	UL-FR1	RATS 1.0, 2 Amp, 8 Port	197920	2026-03-31
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	81140	2027-05-31
Link File, RF Amplifier Assembly, 18-26.5GHz, 60dB Gainr	UL-FR1	AMP18G26.5-60	215705	2026-10-31
EMI Test Receiver	Rohde & Schwarz	ESW44	225688	2026-02-28
Antenna, Passive Loop 100kHz to 30MHz	ELECTRO-METRICS	EM-6872	219910	2026-08-31
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	219908	2026-08-31
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	202329	2027-04-30
Link File, 9KHz-1GHz Port 0 Factors	UL-FR1	Port 0 Factors	213877	2026-03-31
EMI TEST RECEIVER, with B8 option	Rohde & Schwarz	ESW44	245268	2026-02-28
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	252765	Verified
Spectrum Analyzer, PXA, 3Hz to 44GHz	N9030A	Keysight Technologies Inc	85214	2026-01-31
Power Meter	Keysight	N1912A	259286	2026-03-31
Wideband Power Sensor	Keysight	N1921A	257703	2026-03-31

UL AUTOMATION SOFTWARE			
Radiated Software	UL	UL EMC	Ver 9.5, 25 Aug 2025
Conducted Software	UL	UL EMC	2024-02-23

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

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

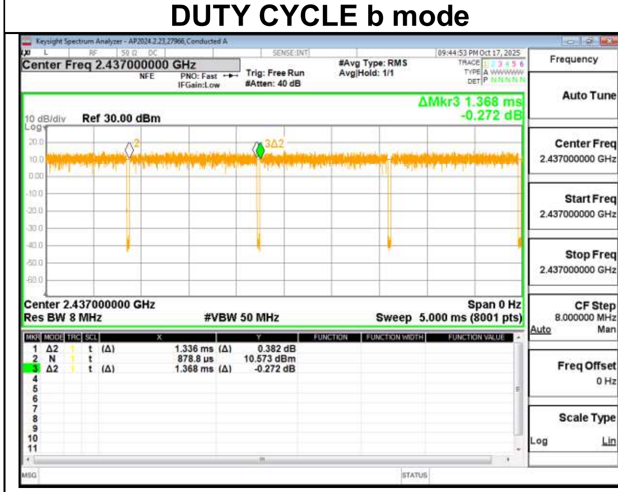
ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time T (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
b	8.61	8.634	0.9969	99.69	0.00	0.010
g	1.428	1.460	0.9781	97.81	0.10	0.700
HT20	1.336	1.368	0.9766	97.66	0.10	0.749

DUTY CYCLE PLOTS

DUTY CYCLE b mode

DUTY CYCLE g mode



DUTY CYCLE HT20 mode

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9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Only the mid-channel plot is reported to show that the setting parameter complies with the testing method/procedure.

Mode	Frequency (MHz)	Channel Number	99% Bandwidth (MHz)
b	2412	1	12.006
	2437	6	12.031
	2462	11	12.108
g	2412	1	16.607
	2417	2	16.394
	2422	3	16.457
	2437	6	16.388
	2452	9	16.365
	2457	10	16.524
	2462	11	16.701
HT20	2412	1	17.761
	2417	2	17.574
	2422	3	17.672
	2437	6	17.559
	2452	9	17.611
	2457	10	17.586
	2462	11	17.820

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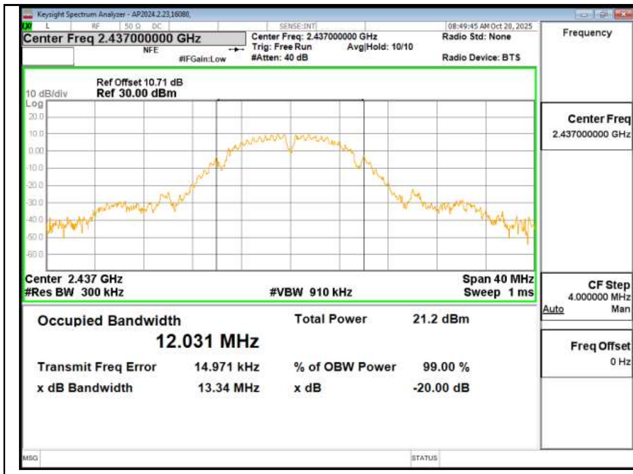
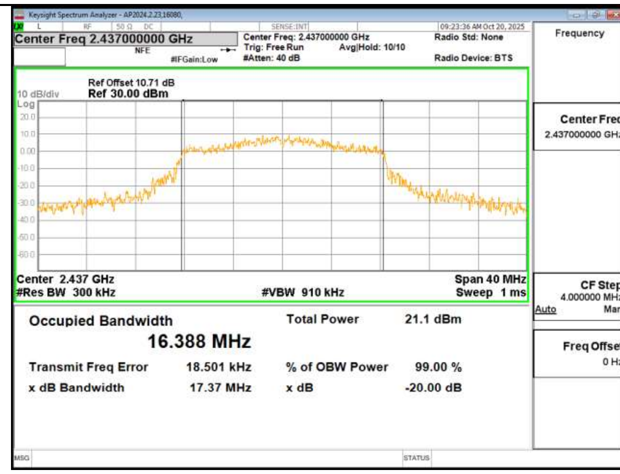
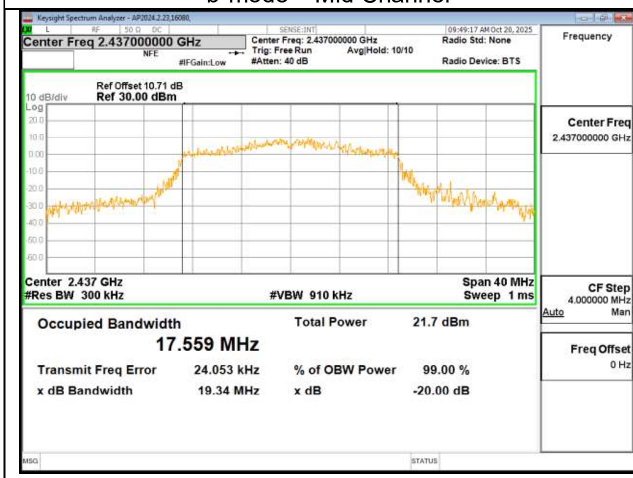


b-mode – Mid Channel



g-mode – Mid Channel



HT20-mode – Mid Channel

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9.3. 6dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

RSS-247 6.3.1 (a)

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

RESULTS

Only the mid-channel plot is reported to show that the setting parameter complies with the testing method/procedure.

Mode (SISO)	Frequency (MHz)	Channel Number	6dB Bandwidth (MHz)
b	2412	1	8.32
	2437	6	8.32
	2462	11	8.76
g	2412	1	15.16
	2417	2	15.32
	2422	3	16.04
	2437	6	16.00
	2452	9	16.08
	2457	10	16.04
	2462	11	15.84
HT20	2412	1	16.60
	2417	2	17.40
	2422	3	17.04
	2437	6	17.48
	2452	9	17.52
	2457	10	17.44
	2462	11	17.00

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 b-mode – Mid Channel	 g-mode – Mid Channel
 HT20-mode – Mid Channel	**Intentionally left blank**

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9.4. OUTPUT POWER AND POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (b) (3) & (e)

RSS-247 6.3.2 & 6.3.1 (b)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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.

TEST PROCEDURE

Measurements are performed using a wideband RF power meter.

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

DIRECTIONAL ANTENNA GAIN

For 1 TX:

There is only one transmitter output; therefore, the directional gain is equal to the antenna gain of 1.40dBi.

RESULTS

Only the mid-channel plot is reported to show that the setting parameters comply with the testing method/procedure.

Mode	No. of Tx	Channel	Freq (MHz)	Measured Conducted Avg Power (dBm)	Measured Conducted Peak Power (dBm)	Outpower Power Limit (dBm)	Power Margin (dB)	Measured PSD (dBm/3kHz)	*DCCF (dB)	Corrected Total PSD with DCCF (dBm/3kHz)	PSD Limit (dBm/3kHz)	PSD Margin (dB)
b	1Tx	1	2412	17.43	**20.44**	30.00	-9.56	-3.921	0.00	-3.92	8.00	-11.92
		6	2437	16.29	19.30	30.00	-10.70	-4.949	0.00	-4.95	8.00	-12.95
		11	2462	16.68	19.69	30.00	-10.31	-3.936	0.00	-3.94	8.00	-11.94
g	1Tx	1	2412	13.62	21.77	30.00	-8.23	-8.007	0.00	-8.01	8.00	-16.01
		2	2417	15.76	23.59	30.00	-6.41	-7.381	0.00	-7.38	8.00	-15.38
		3	2422	17.53	24.77	30.00	-5.23	-5.546	0.00	-5.55	8.00	-13.55
		6	2437	17.63	24.97	30.00	-5.03	-5.443	0.00	-5.44	8.00	-13.44
		9	2452	18.01	**25.01**	30.00	-4.99	-5.651	0.00	-5.65	8.00	-13.65
		10	2457	15.80	24.76	30.00	-5.24	-7.786	0.00	-7.79	8.00	-15.79
		11	2462	12.69	22.32	30.00	-7.68	-9.221	0.00	-9.22	8.00	-17.22
HT20	1Tx	1	2412	13.98	21.44	30.00	-8.56	-8.447	0.00	-8.45	8.00	-16.45
		2	2417	16.14	24.59	30.00	-5.41	-6.860	0.00	-6.86	8.00	-14.86
		3	2422	18.16	24.93	30.00	-5.07	-4.937	0.00	-4.94	8.00	-12.94
		6	2437	18.19	25.00	30.00	-5.00	-4.784	0.00	-4.78	8.00	-12.78
		9	2452	18.33	**25.06**	30.00	-4.94	-4.582	0.00	-4.58	8.00	-12.58
		10	2457	16.27	24.65	30.00	-5.35	-6.452	0.00	-6.45	8.00	-14.45
		11	2462	14.14	20.89	30.00	-9.11	-7.449	0.00	-7.45	8.00	-15.45

*PSD using Method PKPSD (peak PSD), DCCF=0

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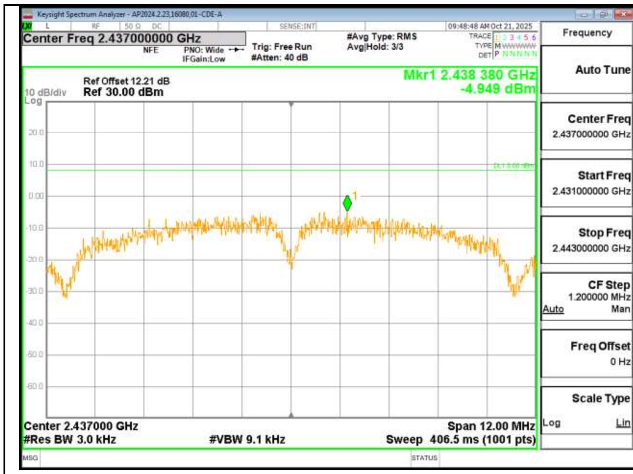
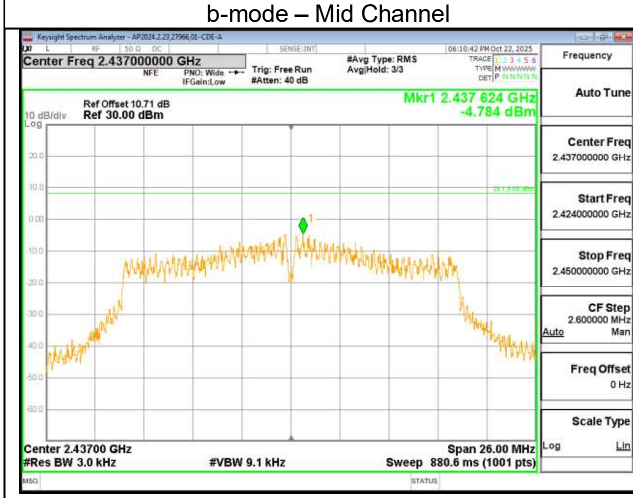
PSD PLOT



b-mode – Mid Channel

g-mode – Mid Channel



HT20-mode – Mid Channel

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9.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 6.6

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

RESULTS

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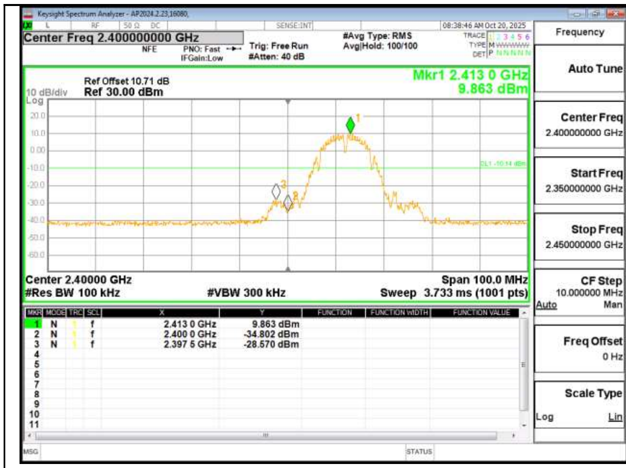
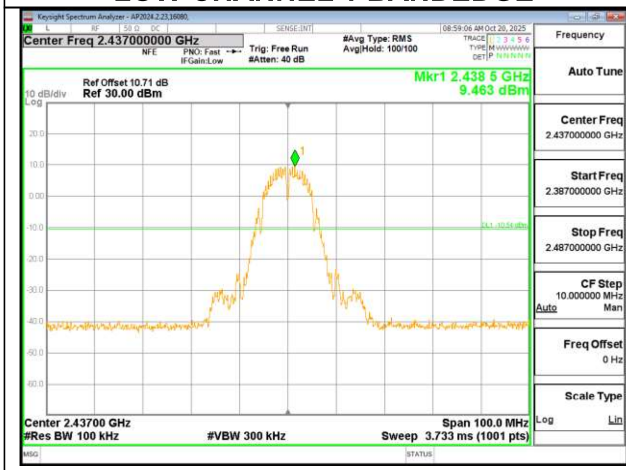
9.5.1. 802.11b MODE



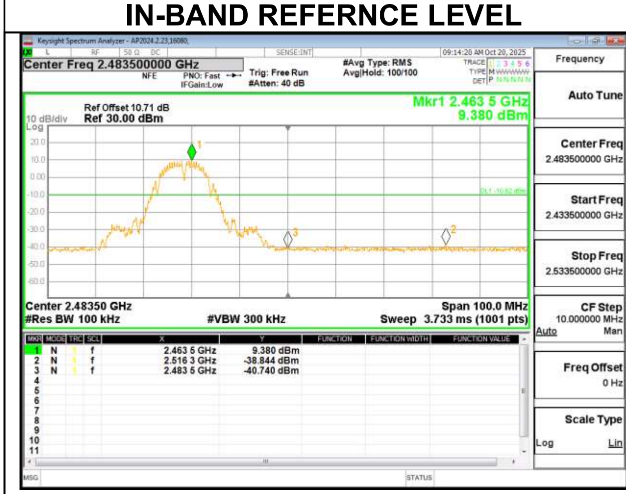
LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1

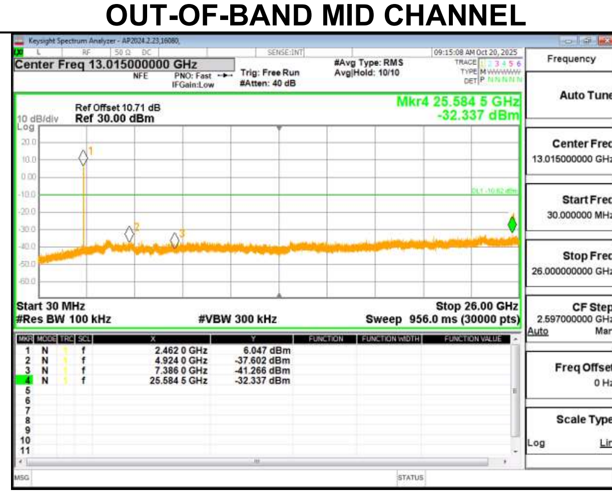


IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 11 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 11

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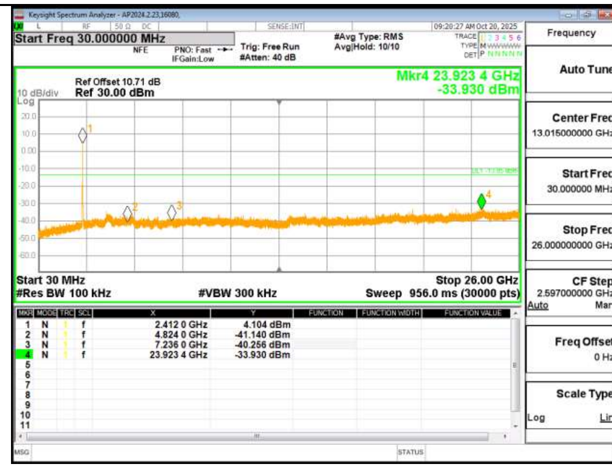
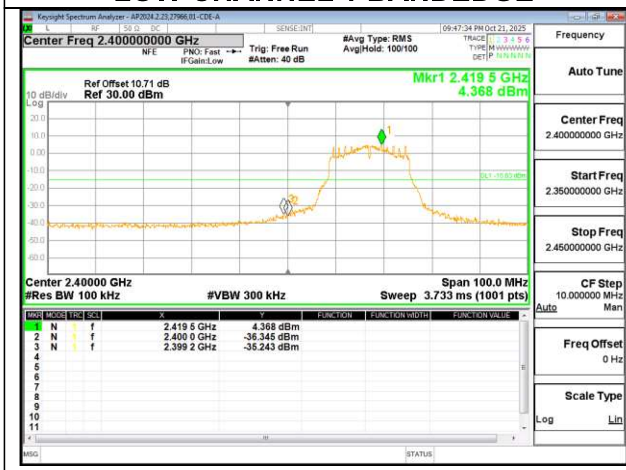
9.5.2. 802.11g MODE

LOW CHANNEL 1 BANDEDGE

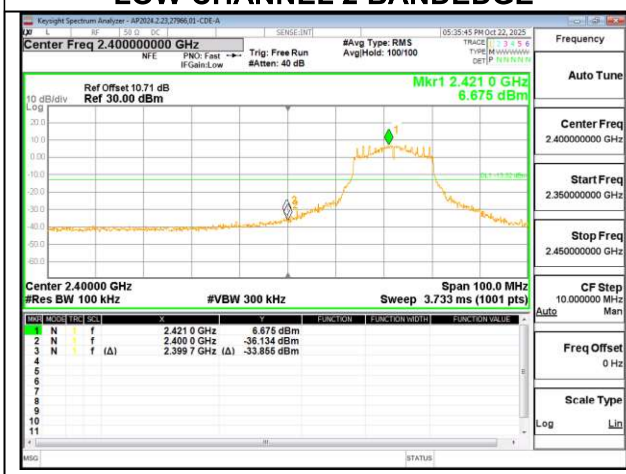


OUT-OF-BAND LOW CHANNEL 1

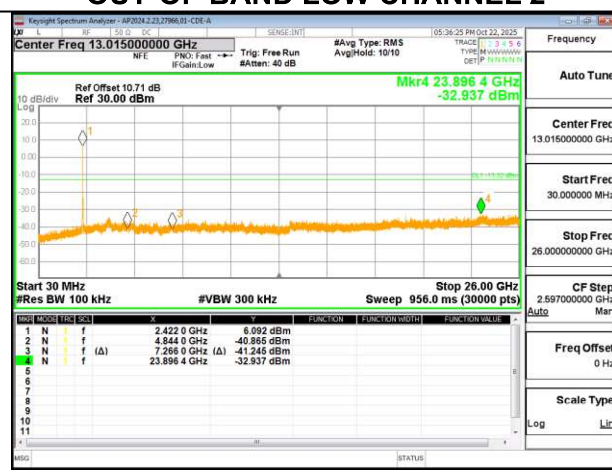


LOW CHANNEL 2 BANDEDGE

OUT-OF-BAND LOW CHANNEL 2



LOW CHANNEL 3 BANDEDGE



OUT-OF-BAND LOW CHANNEL 3

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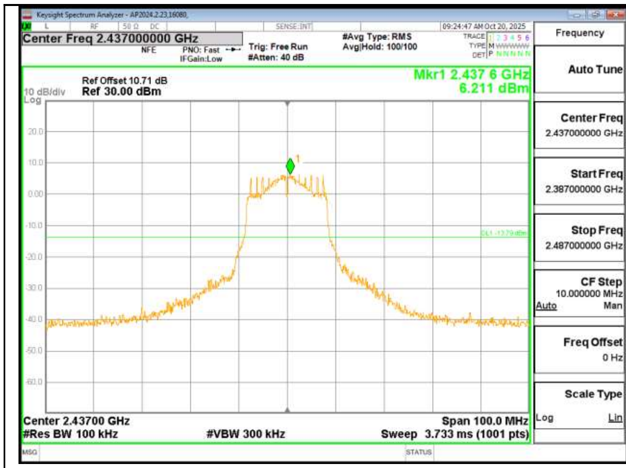
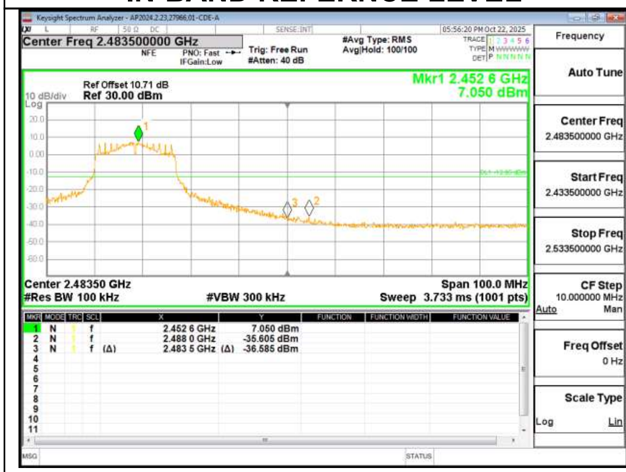
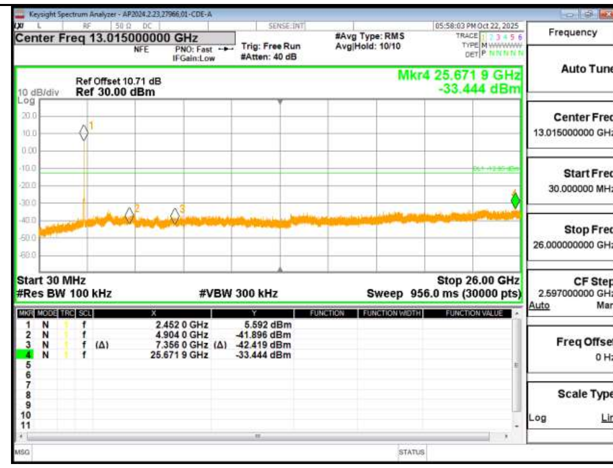


IN-BAND REFERNCE LEVEL

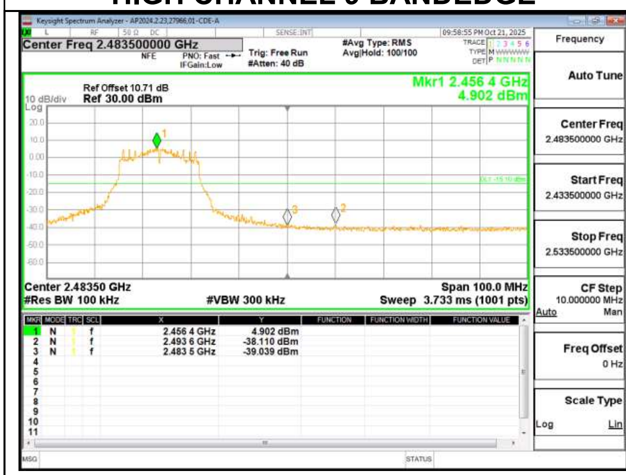
OUT-OF-BAND MID CHANNEL



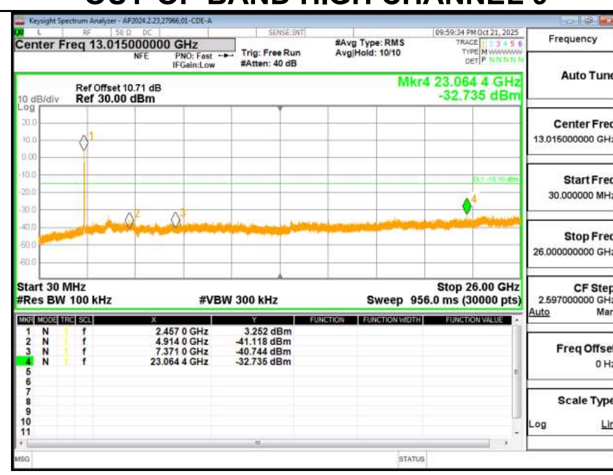
HIGH CHANNEL 9 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 9



HIGH CHANNEL 10 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 10

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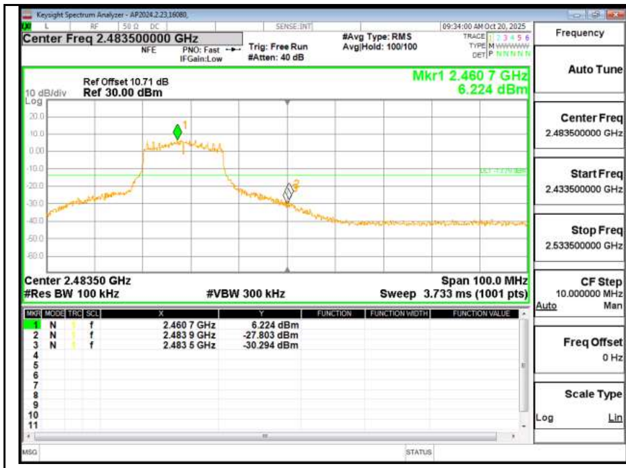
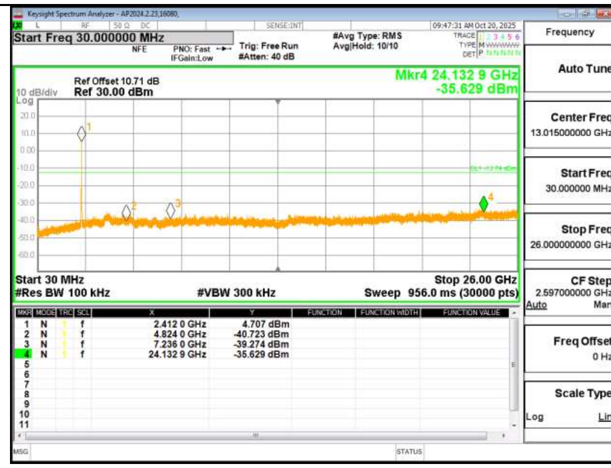
	
HIGH CHANNEL 11 BANDEDGE	**OUT-OF-BAND HIGH CHANNEL 11**

9.5.3. 802.11n HT20 MODE

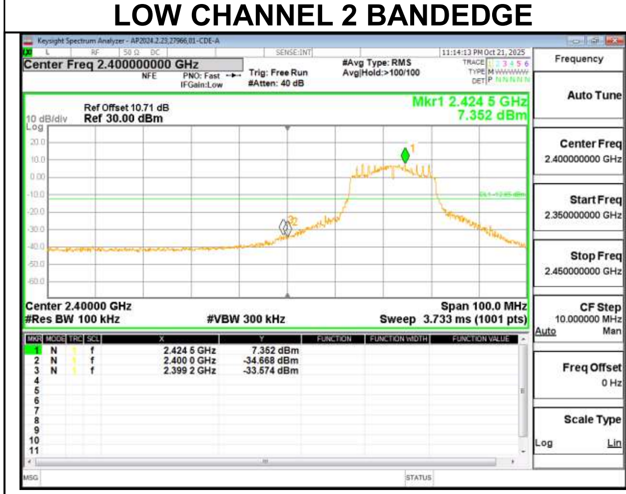
LOW CHANNEL 1 BANDEDGE



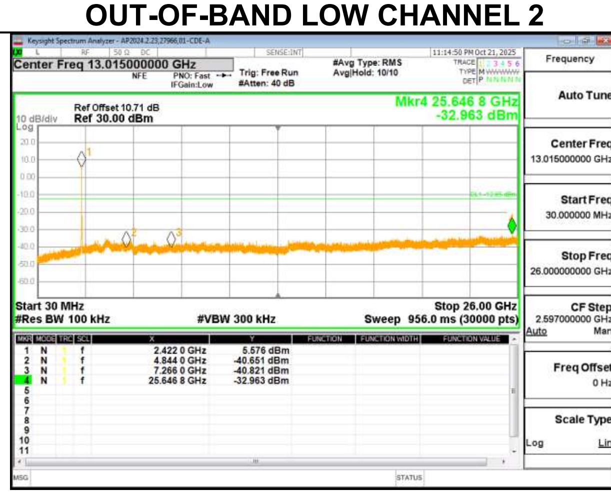
OUT-OF-BAND LOW CHANNEL 1

LOW CHANNEL 2 BANDEDGE

OUT-OF-BAND LOW CHANNEL 2



LOW CHANNEL 3 BANDEDGE



OUT-OF-BAND LOW CHANNEL 3

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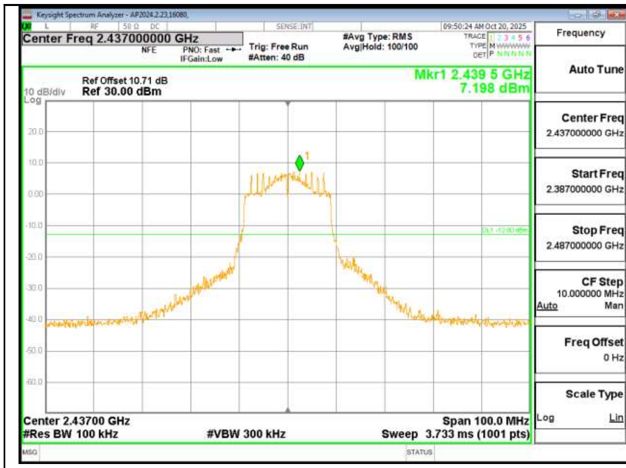
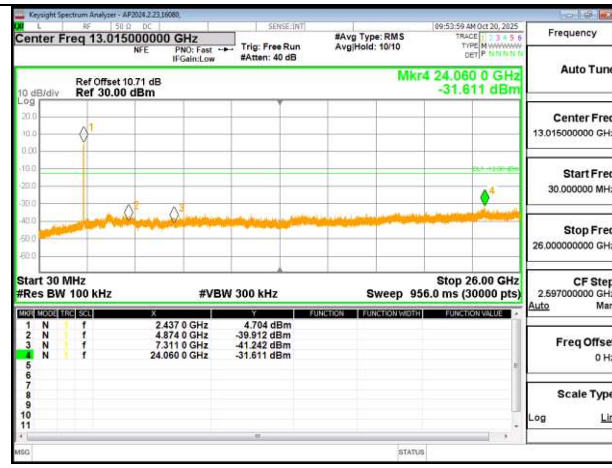


IN-BAND REFERNCE LEVEL

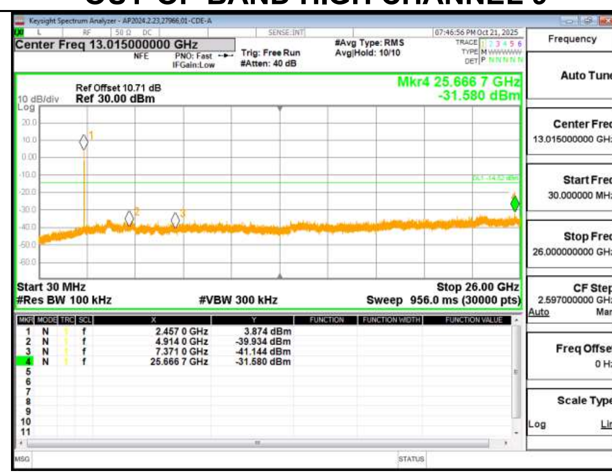


OUT-OF-BAND MID CHANNEL

HIGH CHANNEL 9 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 9

HIGH CHANNEL 10 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 10

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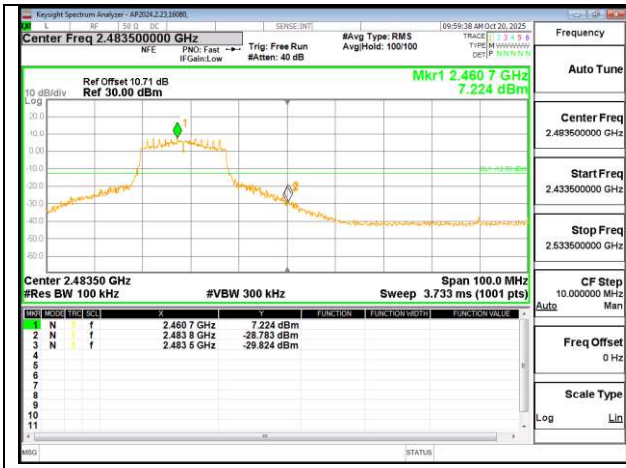

HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209
RSS-GEN, Sections 8.9 and 8.10

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

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. Peak detection is used unless otherwise noted as a quasi-peak.

For pre-scans above 1 GHz, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz 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 average measurements.

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.

For below 30MHz testing, an investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel). Parallel and perpendicular are the worst orientations, therefore, testing was performed on these two orientations only. Blue color trace on plots: Parallel orientation. Green color trace on plots: Perpendicular orientation.

Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB to the corresponding RSS-Gen Table 6 limit as the 15.209(a) limit.

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

Based 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.

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

RESULTS

The plots in these sections are for reference settings only for different bandwidths and different antennas.

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10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. LOW BANDEDGE

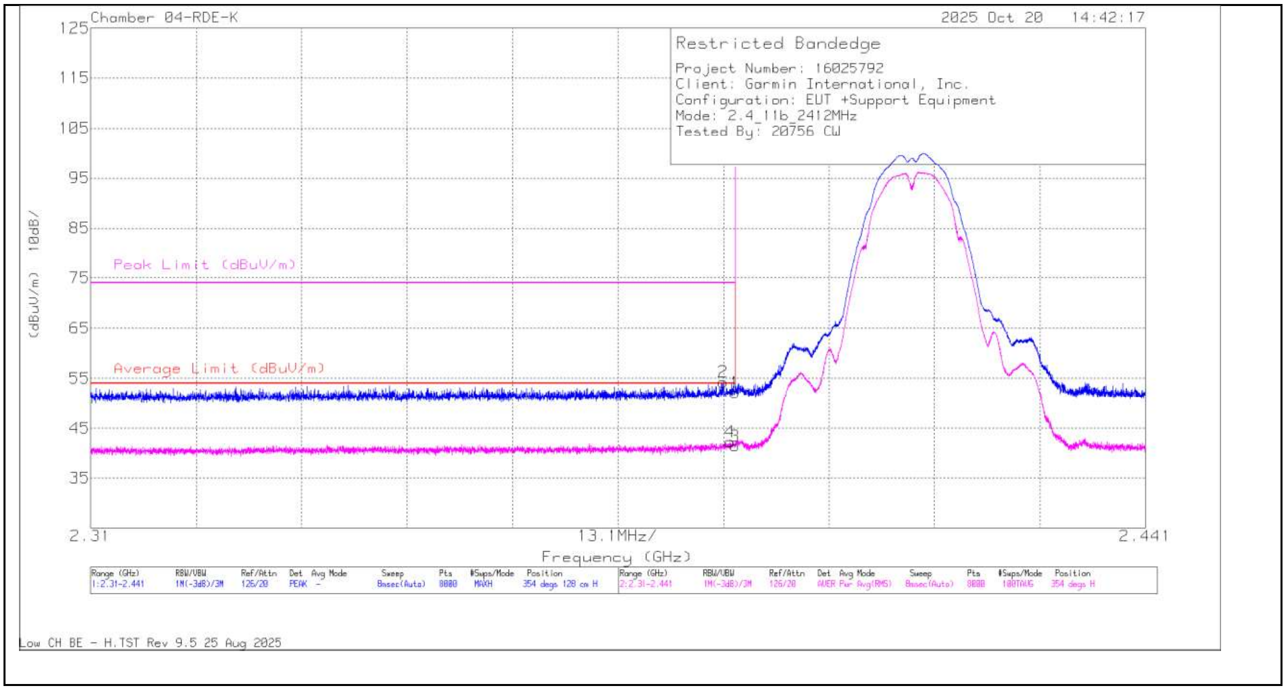
DTS (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	DCCF (dB)	Gain/Loss (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
b-Mode	2412	* 2.39	54.49	Pk	32.3	0	-34.6	52.19	-	-	74	-21.81	354	128	H
		* 2.388593	56.54	Pk	32.3	0	-34.6	54.24	-	-	74	-19.76	354	128	H
		* 2.39	43.75	RMS	32.3	0	-34.6	41.45	54	-12.55	-	-	354	128	H
		* 2.389445	44.56	RMS	32.3	0	-34.6	42.26	54	-11.74	-	-	354	128	H
		* 2.39	56.46	Pk	32.3	0	-34.6	54.16	-	-	74	-19.84	304	150	V
		* 2.389641	57.2	Pk	32.3	0	-34.6	54.9	-	-	74	-19.1	304	150	V
		* 2.39	46.14	RMS	32.3	0	-34.6	43.84	54	-10.16	-	-	304	150	V
		* 2.389953	46.28	RMS	32.3	0	-34.6	43.98	54	-10.02	-	-	304	150	V
g- Mode	2412	* 2.39	71.61	Pk	32.3	0	-34.6	69.31	-	-	74	-4.69	63	284	H
		* 2.389854	72.25	Pk	32.3	0	-34.6	69.95	-	-	74	-4.05	63	284	H
		* 2.39	53.27	RMS	32.3	0.1	-34.6	51.07	54	-2.93	-	-	63	284	H
		* 2.389772	53.03	RMS	32.3	0.1	-34.6	50.83	54	-3.17	-	-	63	284	H
		* 2.39	69.36	Pk	32.3	0	-34.6	67.06	-	-	74	-6.94	268	313	V
		* 2.389838	70.38	Pk	32.3	0	-34.6	68.08	-	-	74	-5.92	268	313	V
		* 2.39	48.76	RMS	32.3	0.1	-34.6	46.56	54	-7.44	-	-	268	313	V
		* 2.389822	51.26	RMS	32.3	0.1	-34.6	49.06	54	-4.94	-	-	268	313	V
	2417	* 2.39	69.28	Pk	32.3	0	-34.6	66.98	-	-	74	-7.02	166	362	H
		* 2.389232	71.88	Pk	32.3	0	-34.6	69.58	-	-	74	-4.42	166	362	H
		* 2.39	50.85	RMS	32.3	0.1	-34.6	48.65	54	-5.35	-	-	166	362	H
		* 2.389822	53.03	RMS	32.3	0.1	-34.6	50.83	54	-3.17	-	-	166	362	H
		* 2.39	68.62	Pk	32.3	0	-34.6	66.32	-	-	74	-7.68	249	205	V
		* 2.38915	71.93	Pk	32.3	0	-34.6	69.63	-	-	74	-4.37	249	205	V
		* 2.39	52.65	RMS	32.3	0.1	-34.6	50.45	54	-3.55	-	-	249	205	V
		* 2.389969	53.21	RMS	32.3	0.1	-34.6	51.01	54	-2.99	-	-	249	205	V
	2422	* 2.39	67.71	Pk	32.3	0	-34.6	65.41	-	-	74	-8.59	53	251	H
		* 2.389592	68.92	Pk	32.3	0	-34.6	66.62	-	-	74	-7.38	53	251	H
		* 2.39	54.18	RMS	32.3	0.1	-34.6	51.98	54	-2.02	-	-	53	251	H
		* 2.389985	53.75	RMS	32.3	0.1	-34.6	51.55	54	-2.45	-	-	53	251	H
		* 2.39	66.26	Pk	32.3	0	-34.6	63.96	-	-	74	-10.04	282	273	V
		* 2.389903	67.15	Pk	32.3	0	-34.6	64.85	-	-	74	-9.15	282	273	V
		* 2.39	50.73	RMS	32.3	0.1	-34.6	48.53	54	-5.47	-	-	282	273	V
		* 2.389789	52.36	RMS	32.3	0.1	-34.6	50.16	54	-3.84	-	-	282	273	V
HT20-Mode	2412	* 2.39	69.27	Pk	32.3	0	-34.6	66.97	-	-	74	-7.03	64	286	H
		* 2.389969	72.8	Pk	32.3	0	-34.6	70.5	-	-	74	-3.5	64	286	H
		* 2.39	51.18	RMS	32.3	0.1	-34.6	48.98	54	-5.02	-	-	64	286	H
		* 2.389887	51.33	RMS	32.3	0.1	-34.6	49.13	54	-4.87	-	-	64	286	H
		* 2.39	65.86	Pk	32.3	0	-34.6	63.56	-	-	74	-10.44	264	313	V
		* 2.389641	70.2	Pk	32.3	0	-34.6	67.9	-	-	74	-6.1	264	313	V
		* 2.39	48.83	RMS	32.3	0.1	-34.6	46.63	54	-7.37	-	-	264	313	V
		* 2.389134	50	RMS	32.3	0.1	-34.6	47.8	54	-6.2	-	-	264	313	V
	2417	* 2.39	72.73	Pk	32.3	0	-34.6	70.43	-	-	74	-3.57	42	183	H
		* 2.388544	74.7	Pk	32.3	0	-34.6	72.4	-	-	74	-1.6	42	183	H
		* 2.39	50.8	RMS	32.3	0.1	-34.6	48.6	54	-5.4	-	-	42	183	H
		* 2.389543	52.97	RMS	32.3	0.1	-34.6	50.77	54	-3.23	-	-	42	183	H
		* 2.39	72.51	Pk	32.3	0	-34.6	70.21	-	-	74	-3.79	197	159	V
		* 2.389887	73.35	Pk	32.3	0	-34.6	71.05	-	-	74	-2.95	197	159	V
		* 2.39	51.61	RMS	32.3	0.1	-34.6	49.41	54	-4.59	-	-	197	159	V
		* 2.389969	52.27	RMS	32.3	0.1	-34.6	50.07	54	-3.93	-	-	197	159	V
	2422	* 2.39	68.63	Pk	32.3	0	-34.6	66.33	-	-	74	-7.67	56	257	H
		* 2.389527	72.01	Pk	32.3	0	-34.6	69.71	-	-	74	-4.29	56	257	H
		* 2.39	53.79	RMS	32.3	0.1	-34.6	51.59	54	-2.41	-	-	56	257	H
		* 2.388593	54.48	RMS	32.3	0.1	-34.6	52.28	54	-1.72	-	-	56	257	H
		* 2.39	70.16	Pk	32.3	0	-34.6	67.86	-	-	74	-6.14	255	157	V
		* 2.389625	70.91	Pk	32.3	0	-34.6	68.61	-	-	74	-5.39	255	157	V
		* 2.39	52.69	RMS	32.3	0.1	-34.6	50.49	54	-3.51	-	-	255	157	V
		* 2.389576	54.21	RMS	32.3	0.1	-34.6	52.01	54	-1.99	-	-	255	157	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

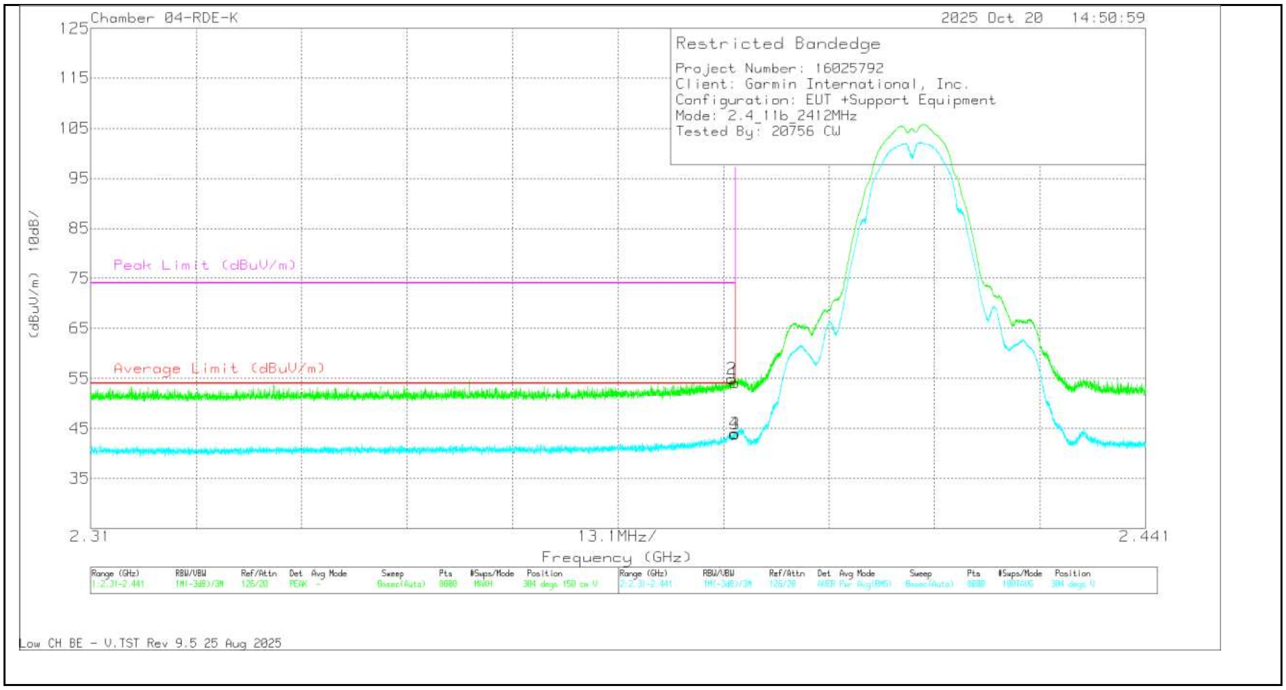
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

BANDEDGE (LOW CHANNEL / 2412MHz), 802.11b Mode

HORIZONTAL RESULT



VERTICAL RESULT



10.1.2. HIGH BANDEDGE

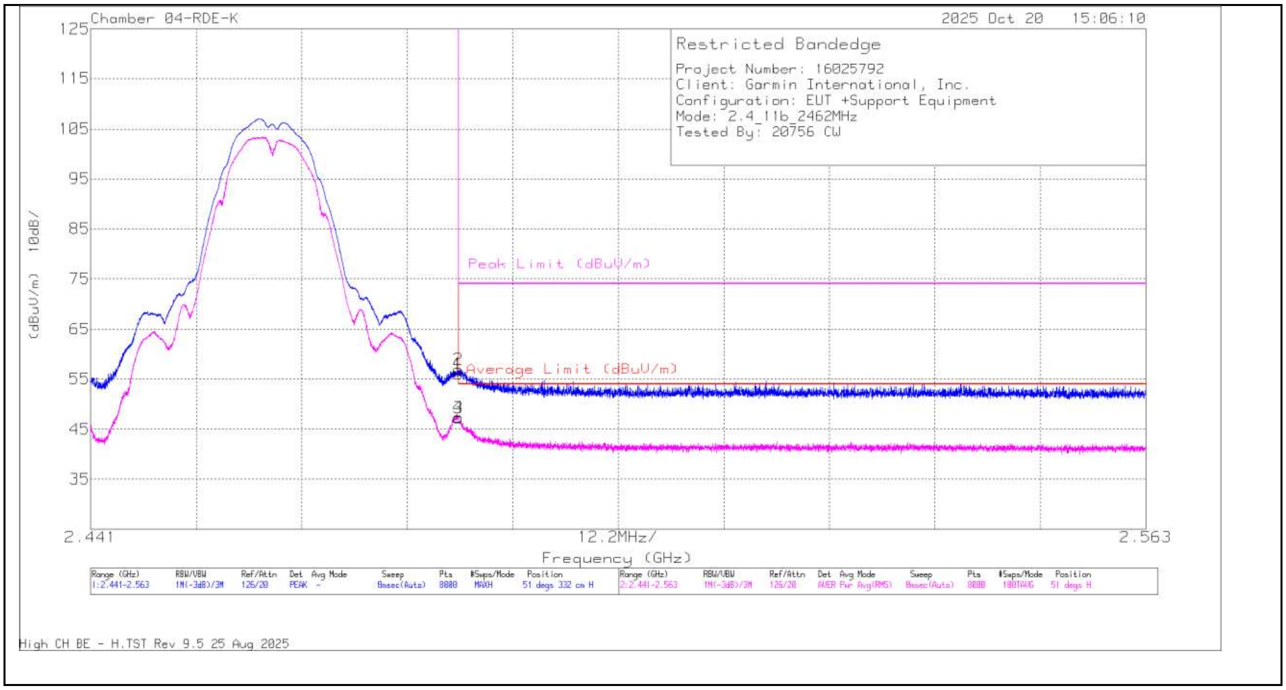
DTS (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	DCCF (dB)	Gain/Loss (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
b-Mode	2462	* 2.4835	57.66	Pk	32.6	0	-34.2	56.06	-	-	74	-17.94	51	332	H
		* 2.483523	58.5	Pk	32.6	0	-34.2	56.9	-	-	74	-17.1	51	332	H
		* 2.4835	48.84	RMS	32.6	0	-34.2	47.24	54	-6.76	-	-	51	332	H
		* 2.483538	49.04	RMS	32.6	0	-34.2	47.44	54	-6.56	-	-	51	332	H
		* 2.4835	57.88	Pk	32.6	0	-34.2	56.28	-	-	74	-17.72	268	191	V
		* 2.483584	58.88	Pk	32.6	0	-34.2	57.28	-	-	74	-16.72	268	191	V
		* 2.4835	49.32	RMS	32.6	0	-34.2	47.72	54	-6.28	-	-	268	191	V
		* 2.483584	49.66	RMS	32.6	0	-34.2	48.06	54	-5.94	-	-	268	191	V
g- Mode	2462	* 2.4835	69.14	Pk	32.6	0	-34.2	67.54	-	-	74	-6.46	71	271	H
		* 2.483721	69.66	Pk	32.6	0	-34.2	68.06	-	-	74	-5.94	71	271	H
		* 2.4835	49.85	RMS	32.6	0.1	-34.2	48.35	54	-5.65	-	-	71	271	H
		* 2.48366	51.78	RMS	32.6	0.1	-34.2	50.28	54	-3.72	-	-	71	271	H
		* 2.4835	68.42	Pk	32.6	0	-34.2	66.82	-	-	74	-7.18	252	241	V
		* 2.483568	68.93	Pk	32.6	0	-34.2	67.33	-	-	74	-6.67	252	241	V
		* 2.4835	48.8	RMS	32.6	0.1	-34.2	47.3	54	-6.7	-	-	252	241	V
		* 2.483751	50.29	RMS	32.6	0.1	-34.2	48.79	54	-5.21	-	-	252	241	V
	2457	* 2.4835	69.66	Pk	32.6	0	-34.2	68.06	-	-	74	-5.94	48	268	H
		* 2.483599	70.06	Pk	32.6	0	-34.2	68.46	-	-	74	-5.54	48	268	H
		* 2.4835	50.84	RMS	32.6	0.1	-34.2	49.34	54	-4.66	-	-	48	268	H
		* 2.483782	53.42	RMS	32.6	0.1	-34.2	51.92	54	-2.08	-	-	48	268	H
		* 2.4835	69.74	Pk	32.6	0	-34.2	68.14	-	-	74	-5.86	294	187	V
		* 2.483584	69.92	Pk	32.6	0	-34.2	68.32	-	-	74	-5.68	294	187	V
		* 2.4835	51.71	RMS	32.6	0.1	-34.2	50.21	54	-3.79	-	-	294	187	V
		* 2.483797	53.32	RMS	32.6	0.1	-34.2	51.82	54	-2.18	-	-	294	187	V
	2452	* 2.4835	67.38	Pk	32.6	0	-34.2	65.78	-	-	74	-8.22	68	269	H
		* 2.484499	68.42	Pk	32.6	0	-34.3	66.72	-	-	74	-7.28	68	269	H
		* 2.4835	53.65	RMS	32.6	0.1	-34.2	52.15	54	-1.85	-	-	68	269	H
		* 2.483828	53.77	RMS	32.6	0.1	-34.2	52.27	54	-1.73	-	-	68	269	H
		* 2.4835	66.92	Pk	32.6	0	-34.2	65.32	-	-	74	-8.68	251	216	V
		* 2.483584	67.44	Pk	32.6	0	-34.2	65.84	-	-	74	-8.16	251	216	V
		* 2.4835	52.19	RMS	32.6	0.1	-34.2	50.69	54	-3.31	-	-	251	216	V
		* 2.483736	53.86	RMS	32.6	0.1	-34.2	52.36	54	-1.64	-	-	251	216	V
HT20-Mode	2462	* 2.4835	71.93	Pk	32.6	0	-34.2	70.33	-	-	74	-3.67	66	299	H
		* 2.484331	73.02	Pk	32.6	0	-34.2	71.42	-	-	74	-2.58	66	299	H
		* 2.4835	47.19	RMS	32.6	0.1	-34.2	45.69	54	-8.31	-	-	66	299	H
		* 2.483873	49.66	RMS	32.6	0.1	-34.2	48.16	54	-5.84	-	-	66	299	H
		* 2.4835	67.78	Pk	32.6	0	-34.2	66.18	-	-	74	-7.82	283	238	V
		* 2.483553	69.94	Pk	32.6	0	-34.2	68.34	-	-	74	-5.66	283	238	V
		* 2.4835	46.76	RMS	32.6	0.1	-34.2	45.26	54	-8.74	-	-	283	238	V
		* 2.48427	48.98	RMS	32.6	0.1	-34.2	47.48	54	-6.52	-	-	283	238	V
	2457	* 2.4835	69.61	Pk	32.6	0	-34.2	68.01	-	-	74	-5.99	55	242	H
		* 2.483919	70.45	Pk	32.6	0	-34.2	68.85	-	-	74	-5.15	55	242	H
		* 2.4835	50.36	RMS	32.6	0.1	-34.2	48.86	54	-5.14	-	-	55	242	H
		* 2.48366	51.5	RMS	32.6	0.1	-34.2	50	54	-4	-	-	55	242	H
		* 2.4835	68.48	Pk	32.6	0	-34.2	66.88	-	-	74	-7.12	259	239	V
		* 2.484788	71.27	Pk	32.6	0	-34.3	69.57	-	-	74	-4.43	259	239	V
		* 2.4835	50.88	RMS	32.6	0.1	-34.2	49.38	54	-4.62	-	-	259	239	V
		* 2.483889	51.8	RMS	32.6	0.1	-34.2	50.3	54	-3.7	-	-	259	239	V
	2452	* 2.4835	66.98	Pk	32.6	0	-34.2	65.38	-	-	74	-8.62	39	216	H
		* 2.483675	70.71	Pk	32.6	0	-34.2	69.11	-	-	74	-4.89	39	216	H
		* 2.4835	50.31	RMS	32.6	0.1	-34.2	48.81	54	-5.19	-	-	39	216	H
		* 2.483553	51.15	RMS	32.6	0.1	-34.2	49.65	54	-4.35	-	-	39	216	H
		* 2.4835	69.03	Pk	32.6	0	-34.2	67.43	-	-	74	-6.57	267	171	V
		* 2.483599	72.97	Pk	32.6	0	-34.2	71.37	-	-	74	-2.63	267	171	V
		* 2.4835	51.47	RMS	32.6	0.1	-34.2	49.97	54	-4.03	-	-	267	171	V
		* 2.483767	52.87	RMS	32.6	0.1	-34.2	51.37	54	-2.63	-	-	267	171	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

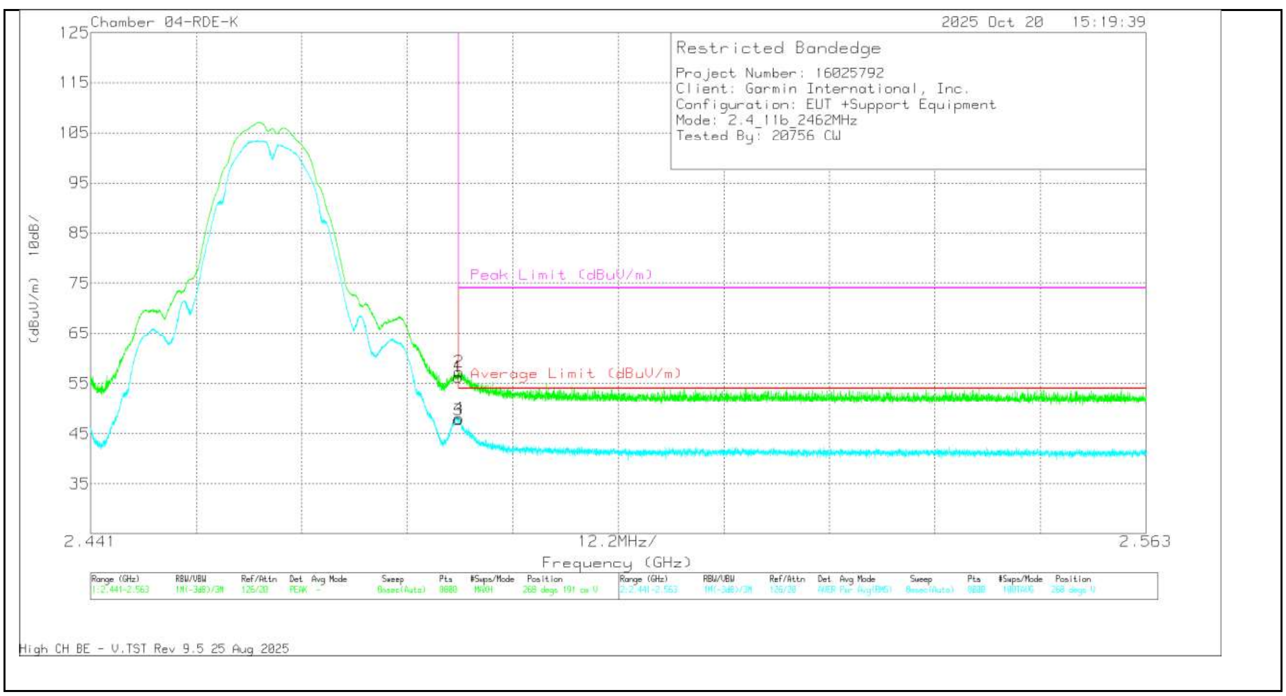
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

BANDEDGE (HIGH CHANNEL / 2462MHz), 802.11b Mode

HORIZONTAL RESULT



VERTICAL RESULT



UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10.1.3. 802.11b MODE – HARMONIC AND SPURIOUS EMISSIONS

DTS (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Gain/Loss (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
b-Mode	2412	* 4.82394	51.18	MAv1	34.1	-40.2	0	45.08	54	-8.92	-	-	44	202	H
		* 4.824016	56.07	PK2	34.1	-40.2	0	49.97	-	-	74	-24.03	44	202	H
		* 4.823752	58.27	PK2	34.1	-40.2	0	52.17	-	-	74	-21.83	308	230	V
		* 4.823939	54.43	MAv1	34.1	-40.2	0	48.33	54	-5.67	-	-	308	230	V
		7.237019	50.91	MAv1	35.6	-38.1	0	48.41	-	-	-	-	193	201	H
		7.237295	56.76	PK2	35.6	-38.1	0	54.26	-	-	-	-	193	201	H
		7.234798	59.02	PK2	35.6	-38.1	0	56.52	-	-	-	-	241	103	V
		7.236878	53.98	MAv1	35.6	-38.1	0	51.48	-	-	-	-	241	103	V
		9.598606	49.94	PK2	36.7	-36.4	0	50.24	-	-	-	-	172	220	H
		9.598691	39.02	MAv1	36.7	-36.4	0	39.32	-	-	-	-	172	220	H
		9.597882	49.57	PK2	36.7	-36.4	0	49.87	-	-	-	-	223	365	V
		9.598469	39.48	MAv1	36.7	-36.4	0	39.78	-	-	-	-	223	365	V
b-Mode	2437	* 4.873922	57.15	PK2	34.1	-40.2	0	51.05	-	-	74	-22.95	282	159	H
		* 4.874015	51.73	MAv1	34.1	-40.2	0	45.63	54	-8.37	-	-	282	159	H
		* 4.873961	58.37	PK2	34.1	-40.2	0	52.27	-	-	74	-21.73	315	260	V
		* 4.873979	54.08	MAv1	34.1	-40.2	0	47.98	54	-6.02	-	-	315	260	V
		* 7.30952	55.09	PK2	35.6	-37.7	0	52.99	-	-	74	-21.01	191	199	H
		* 7.312156	48.88	MAv1	35.6	-37.8	0	46.68	54	-7.32	-	-	191	199	H
		* 7.312008	52.7	MAv1	35.6	-37.8	0	50.5	54	-3.5	-	-	240	102	V
		* 7.312137	58.18	PK2	35.6	-37.8	0	55.98	-	-	74	-18.02	240	102	V
		9.747935	39.94	MAv1	36.8	-36.4	0	40.34	-	-	-	-	207	144	H
		9.74829	49.21	PK2	36.8	-36.4	0	49.61	-	-	-	-	207	144	H
		9.747927	37.6	MAv1	36.8	-36.4	0	38	-	-	-	-	155	220	V
		9.764763	49.43	PK2	36.9	-36.2	0	50.13	-	-	-	-	155	220	V
b-Mode	2462	* 4.924011	51.82	MAv1	34.1	-40.3	0	45.62	54	-8.38	-	-	281	101	H
		* 4.924091	56.66	PK2	34.1	-40.3	0	50.46	-	-	74	-23.54	281	101	H
		* 4.923666	56.65	PK2	34.1	-40.3	0	50.45	-	-	74	-23.55	319	229	V
		* 4.923994	52.19	MAv1	34.1	-40.3	0	45.99	54	-8.01	-	-	319	229	V
		* 7.384903	47.2	MAv1	35.6	-37.6	0	45.2	54	-8.8	-	-	211	208	H
		* 7.385147	54.06	PK2	35.6	-37.6	0	52.06	-	-	74	-21.94	211	208	H
		* 7.384723	56.39	PK2	35.6	-37.6	0	54.39	-	-	74	-19.61	246	101	V
		* 7.384874	50.94	MAv1	35.6	-37.6	0	48.94	54	-5.06	-	-	246	101	V
		9.848032	38.32	MAv1	37	-35.9	0	39.42	-	-	-	-	240	103	H
		9.848094	48.23	PK2	37	-35.9	0	49.33	-	-	-	-	240	103	H
		9.833431	48.4	PK2	37	-36.1	0	49.3	-	-	-	-	19	287	V
		9.834577	36.73	MAv1	37	-36	0	37.73	-	-	-	-	19	287	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC.
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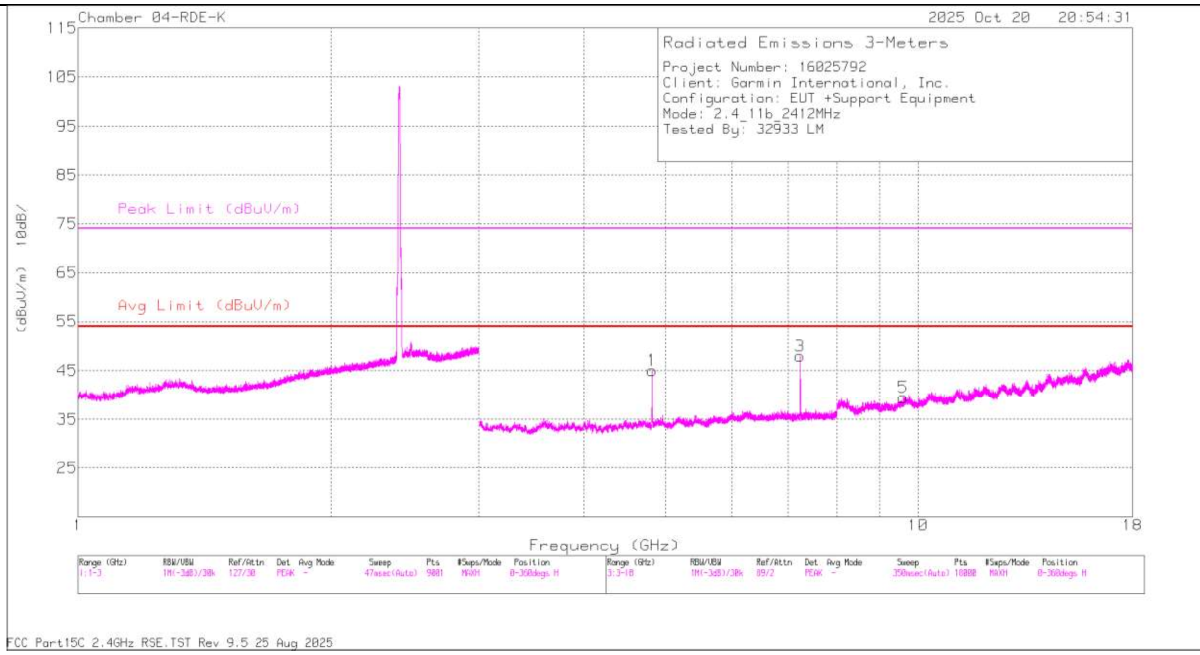
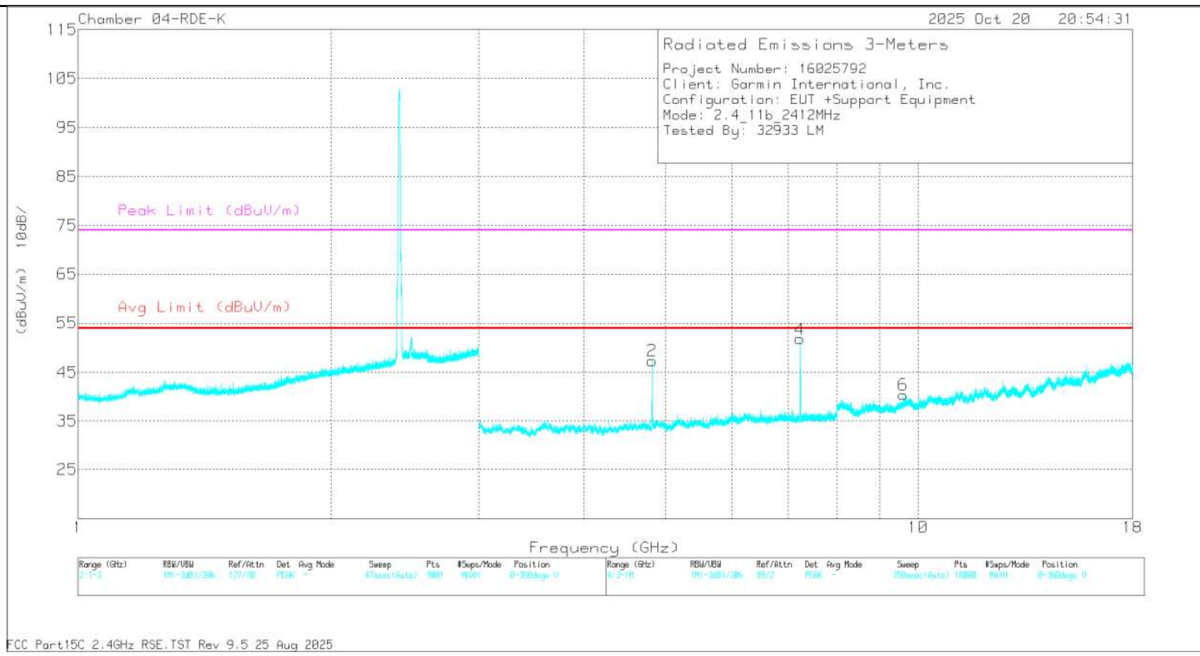
LOW CHANNEL, CH 1 RESULTS, 802.11b Mode



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10.1.4. 802.11g MODE – HARMONIC AND SPURIOUS EMISSIONS

DTS (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Gain/Loss (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
g-Mode	2412	* 4.822967	56.65	PK2	34.1	-40.2	0	50.55	-	-	74	-23.45	84	223	H
		* 4.824985	43.36	MAv1	34.1	-40.2	0.1	37.36	54	-16.64	-	-	84	223	H
		* 4.823181	56.78	PK2	34.1	-40.2	0	50.68	-	-	74	-23.32	185	394	V
		* 4.825435	44.76	MAv1	34.1	-40.2	0.1	38.76	54	-15.24	-	-	185	394	V
		7.237171	47.25	MAv1	35.6	-38.1	0.1	44.85	-	-	-	-	239	210	H
		7.239913	61.27	PK2	35.6	-38.1	0	58.77	-	-	-	-	239	210	H
		7.237659	62.79	PK2	35.6	-38.1	0	60.29	-	-	-	-	239	164	V
		7.23901	49.09	MAv1	35.6	-38.1	0.1	46.69	-	-	-	-	239	164	V
		9.652777	37.31	MAv1	36.7	-36.5	0.1	37.61	-	-	-	-	218	290	H
		9.655354	49.21	PK2	36.7	-36.5	0	49.41	-	-	-	-	218	290	H
		9.628954	49.1	PK2	36.7	-36.4	0	49.4	-	-	-	-	302	381	V
		9.64231	37.38	MAv1	36.7	-36.4	0.1	37.78	-	-	-	-	302	381	V
g-Mode	2437	* 12.147584	35.06	MAv1	38.8	-34.5	0.1	39.46	54	-14.54	-	-	137	390	H
		* 12.169713	47.04	PK2	38.8	-34.6	0	51.24	-	-	74	-22.76	137	390	H
		* 12.17779	46.91	PK2	38.8	-34.6	0	51.11	-	-	74	-22.89	190	297	V
		* 12.17863	35.13	MAv1	38.8	-34.6	0.1	39.43	54	-14.57	-	-	190	297	V
		* 4.873145	59.46	PK2	34.1	-40.2	0	53.36	-	-	74	-20.64	277	110	H
		* 4.874758	46.68	MAv1	34.1	-40.2	0.1	40.68	54	-13.32	-	-	277	110	H
		* 4.872903	55.66	PK2	34.1	-40.2	0	49.56	-	-	74	-24.44	273	113	V
		* 4.874618	43.92	MAv1	34.1	-40.2	0.1	37.92	54	-16.08	-	-	273	113	V
		* 7.311266	46.53	MAv1	35.6	-37.8	0.1	44.43	54	-9.57	-	-	336	229	H
		* 7.312146	59.99	PK2	35.6	-37.8	0	57.79	-	-	74	-16.21	336	229	H
		* 7.312767	50.55	MAv1	35.6	-37.8	0.1	48.45	54	-5.55	-	-	237	177	V
		* 7.314603	63.8	PK2	35.6	-37.8	0	61.6	-	-	74	-12.4	237	177	V
g-Mode	2462	* 2.38557	64.59	PK2	32.3	-34.6	0	62.29	-	-	74	-11.71	42	231	H
		* 2.38293	52.9	MAv1	32.2	-34.6	0.1	50.6	54	-3.4	-	-	42	231	H
		* 2.384402	62.78	PK2	32.2	-34.6	0	60.38	-	-	74	-13.62	299	163	V
		* 2.384824	51.32	MAv1	32.3	-34.6	0.1	49.12	54	-4.88	-	-	299	163	V
		* 4.923116	58.43	PK2	34.1	-40.3	0	52.23	-	-	74	-21.77	275	114	H
		* 4.925933	46.11	MAv1	34.1	-40.3	0.1	40.01	54	-13.99	-	-	275	114	H
		* 4.923185	57.66	PK2	34.1	-40.3	0	51.46	-	-	74	-22.54	321	184	V
		* 4.925691	45.36	MAv1	34.1	-40.3	0.1	39.26	54	-14.74	-	-	321	184	V
		* 7.389298	59.15	PK2	35.6	-37.6	0	57.15	-	-	74	-16.85	212	216	H
		* 7.379867	46.69	MAv1	35.6	-37.5	0.1	44.89	54	-9.11	-	-	212	216	H
		* 7.385989	51.33	MAv1	35.6	-37.6	0.1	49.43	54	-4.57	-	-	249	182	V
		* 7.386136	63.71	PK2	35.6	-37.6	0	61.71	-	-	74	-12.29	249	182	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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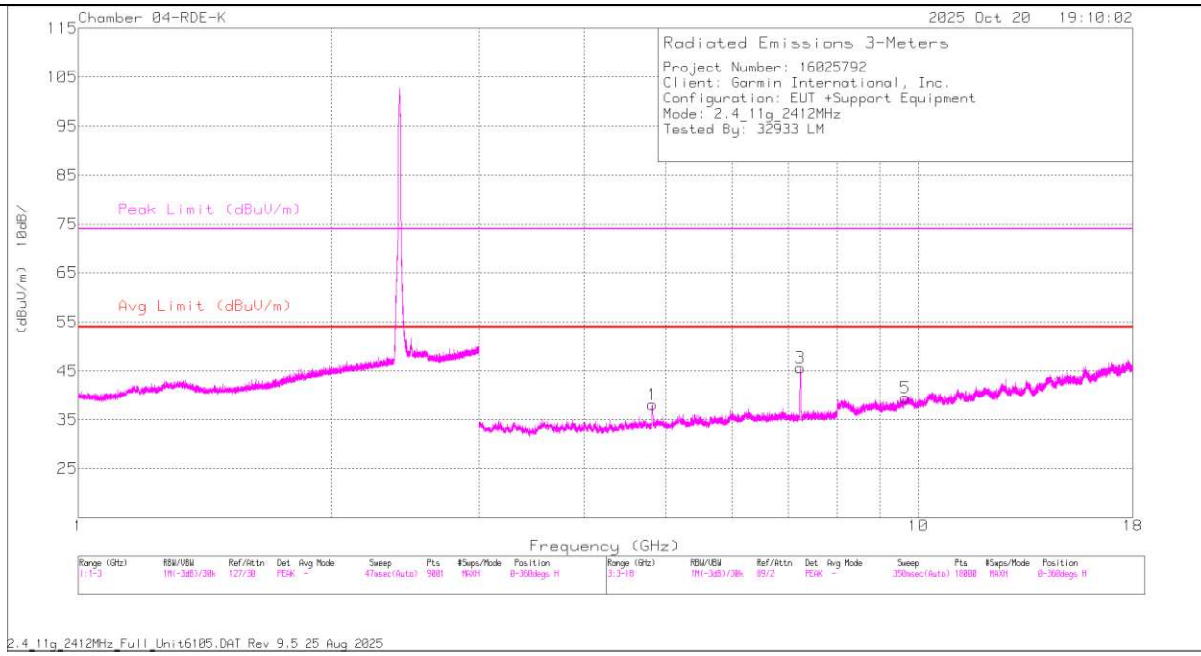
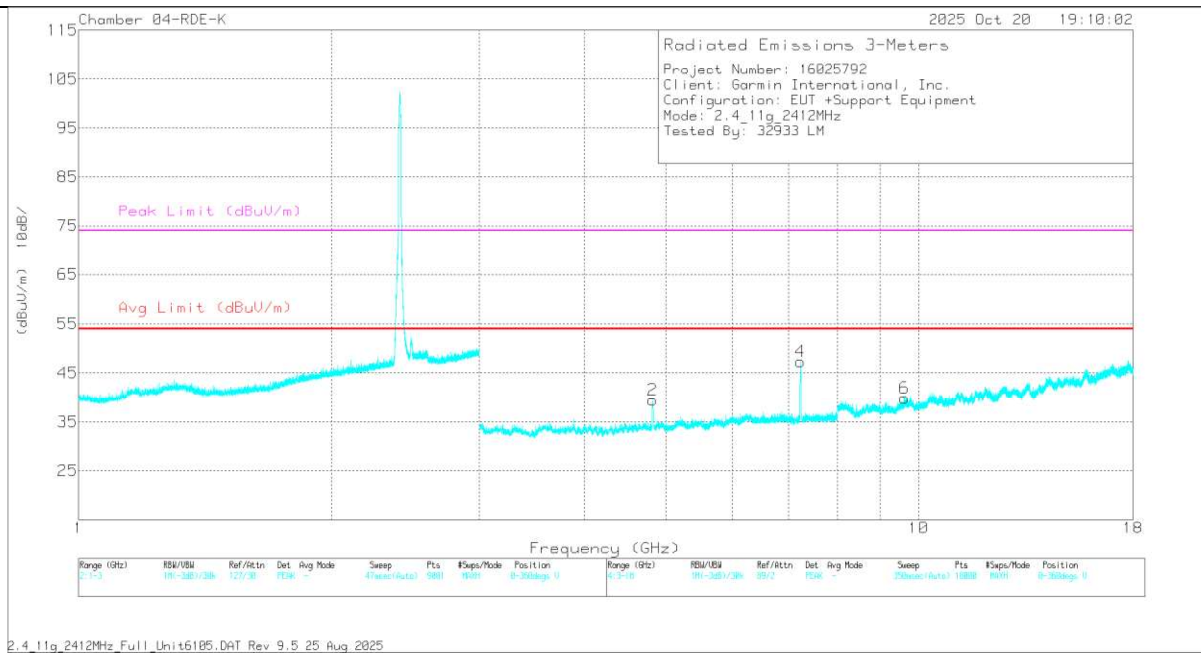
LOW CHANNEL, CH 1 RESULTS, 802.11g Mode



HORIZONTAL



VERTICAL

10.1.5. 802.11n HT20 MODE – HARMONIC AND SPURIOUS EMISSIONS

DTS (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	DCCF (dB)	Gain/Loss (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
HT20-Mode	2412	* 12.114571	34.98	MAv1	38.8	-34.3	0.1	39.58	54	-14.42	-	-	154	370	H
		* 12.116798	47.45	PK2	38.8	-34.3	0	51.95	-	-	74	-22.05	154	370	H
		* 12.129279	46.46	PK2	38.8	-34.4	0	50.86	-	-	74	-23.14	305	346	V
		* 12.140208	34.99	MAv1	38.8	-34.5	0.1	39.39	54	-14.61	-	-	305	346	V
		* 4.821993	54.63	PK2	34.1	-40.2	0	48.53	-	-	74	-25.47	216	187	H
		* 4.824766	42.92	MAv1	34.1	-40.2	0.1	36.92	54	-17.08	-	-	216	187	H
		* 4.822986	44.24	MAv1	34.1	-40.2	0.1	38.24	54	-15.76	-	-	184	113	V
		* 4.824048	56.46	PK2	34.1	-40.2	0	50.36	-	-	74	-23.64	184	113	V
		7.235676	64.04	PK2	35.6	-38.2	0	61.44	-	-	-	-	222	266	V
		7.234996	49.76	MAv1	35.6	-38.1	0.1	47.36	-	-	-	-	222	266	V
		7.235021	62.74	PK2	35.6	-38.1	0	60.24	-	-	-	-	333	209	H
		7.235168	48.33	MAv1	35.6	-38.1	0.1	45.93	-	-	-	-	333	209	H
HT20-Mode	2437	* 12.183759	47.2	PK2	38.8	-34.6	0	51.4	-	-	74	-22.6	19	384	V
		* 12.191008	35.02	MAv1	38.8	-34.6	0.1	39.32	54	-14.68	-	-	19	384	V
		* 12.202649	34.54	MAv1	38.8	-34.6	0.1	38.84	54	-15.16	-	-	341	176	H
		* 12.212982	46.64	PK2	38.8	-34.5	0	50.94	-	-	74	-23.06	341	176	H
		* 4.872015	59.34	PK2	34.1	-40.2	0	53.24	-	-	74	-20.76	288	109	H
		* 4.873517	46.38	MAv1	34.1	-40.2	0.1	40.38	54	-13.62	-	-	288	109	H
		* 4.874635	46.09	MAv1	34.1	-40.2	0.1	40.09	54	-13.91	-	-	284	288	V
		* 4.874808	57.98	PK2	34.1	-40.2	0	51.88	-	-	74	-22.12	284	288	V
		* 7.310518	66.34	PK2	35.6	-37.7	0	64.24	-	-	74	-9.76	226	124	V
		* 7.310678	52.44	MAv1	35.6	-37.7	0.1	50.44	54	-3.56	-	-	226	124	V
		* 7.310746	62.96	PK2	35.6	-37.7	0	60.86	-	-	74	-13.14	177	199	H
		* 7.312341	48.73	MAv1	35.6	-37.8	0.1	46.63	54	-7.37	-	-	177	199	H
HT20-Mode	2462	* 4.925009	45.85	MAv1	34.1	-40.3	0.1	39.75	54	-14.25	-	-	287	134	H
		* 4.9258	59.63	PK2	34.1	-40.3	0	53.43	-	-	74	-20.57	287	134	H
		* 7.38365	44.5	MAv1	35.6	-37.6	0.1	42.6	54	-11.4	-	-	287	200	H
		* 7.385081	57.71	PK2	35.6	-37.6	0	55.71	-	-	74	-18.29	287	200	H
		* 12.324277	34.05	MAv1	38.8	-34	0.1	38.95	54	-15.05	-	-	18	216	H
		* 12.345308	45.86	PK2	38.8	-33.8	0	50.86	-	-	74	-23.14	18	216	H
		* 4.924354	58.32	PK2	34.1	-40.3	0	52.12	-	-	74	-21.88	266	101	V
		* 4.925052	45.76	MAv1	34.1	-40.3	0.1	39.66	54	-14.34	-	-	266	101	V
		* 7.38369	52.11	MAv1	35.6	-37.6	0.1	50.21	54	-3.79	-	-	242	166	V
		* 7.385032	65.82	PK2	35.6	-37.6	0	63.82	-	-	74	-10.18	242	166	V
		* 12.292092	45.7	PK2	38.8	-34.3	0	50.2	-	-	74	-23.8	117	365	V
		* 12.294394	34.29	MAv1	38.8	-34.3	0.1	38.89	54	-15.11	-	-	117	365	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

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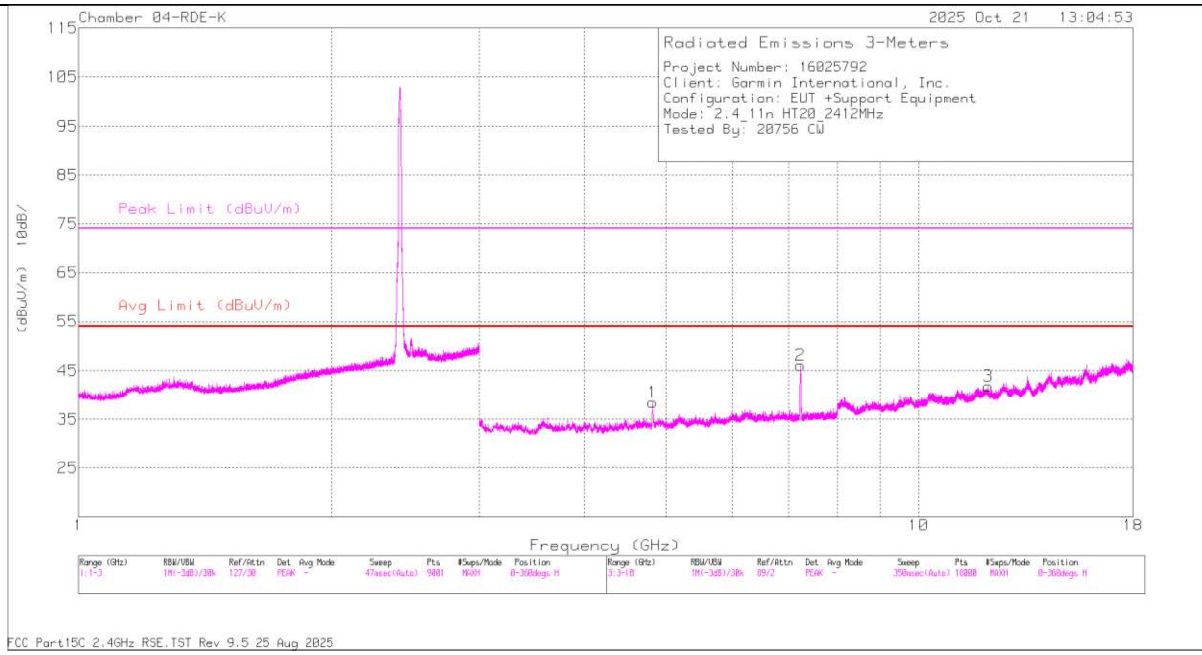
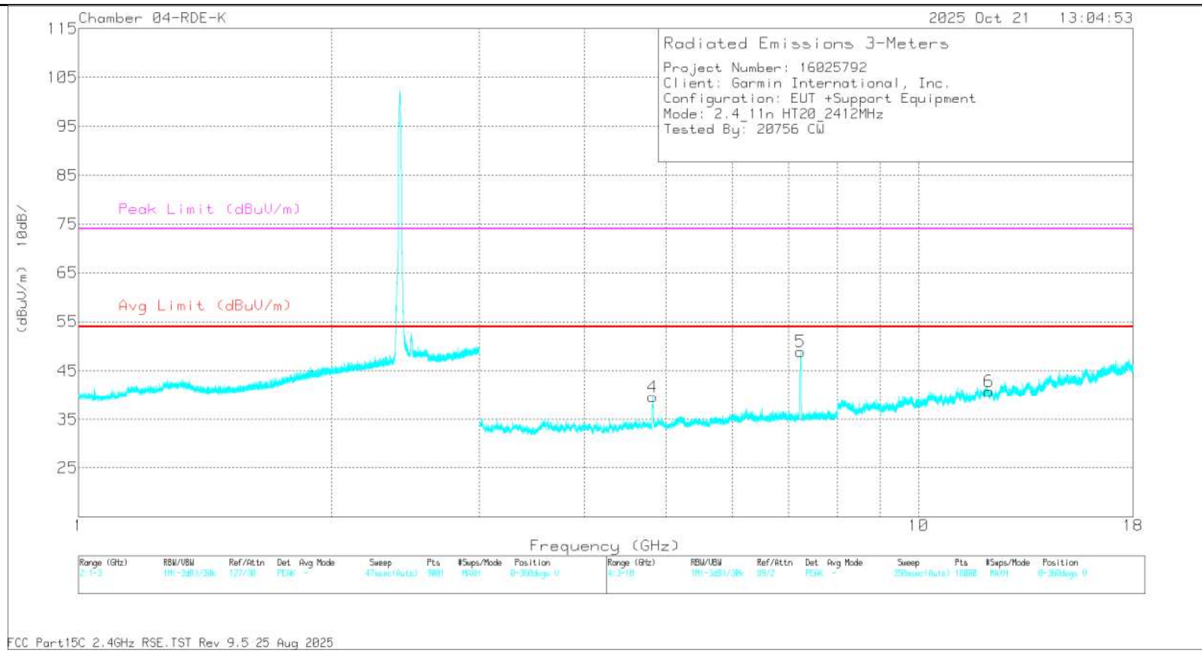
LOW CHANNEL, CH 1 RESULTS, 802.11n HT20 Mode



HORIZONTAL



VERTICAL

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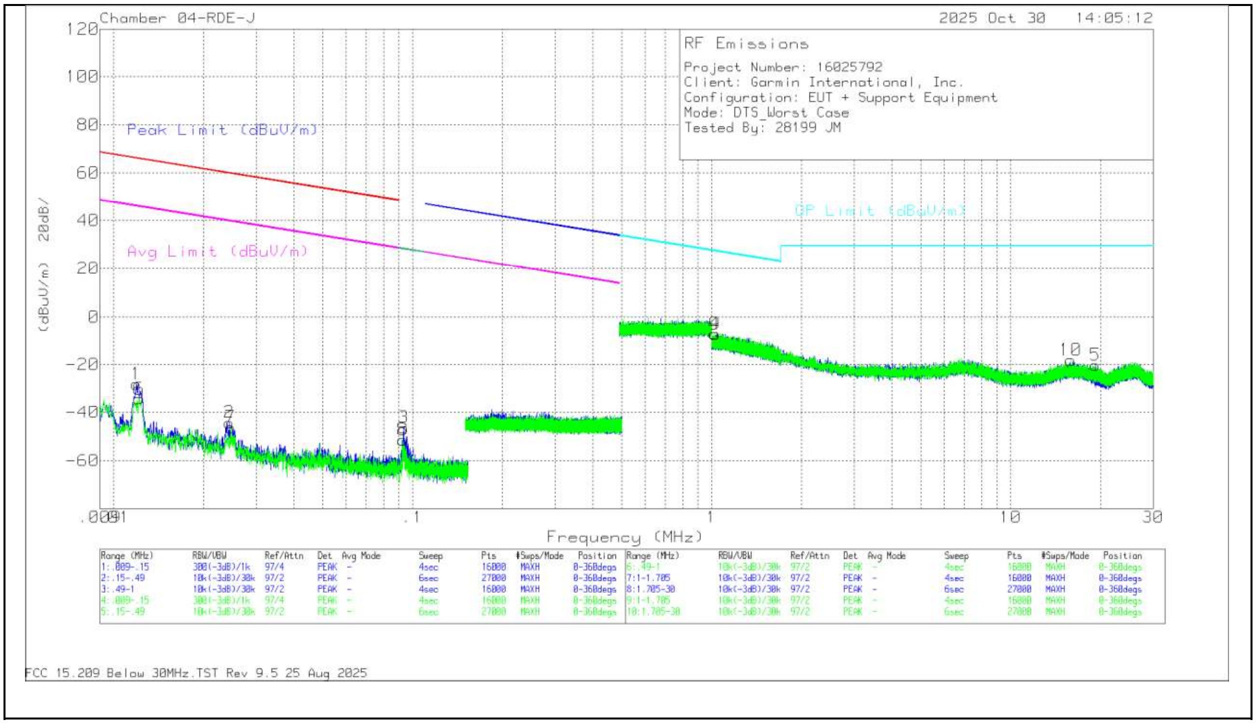
10.2. TRANSMITTER WORST CASE BELOW 30MHz

SPURIOUS EMISSIONS BELOW 30MHz (WORST-CASE CONFIGURATION)



Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	QP Limit (dBuV/m)	Azimuth (Degs)
1	.0119	22.12	Pk	60.2	-30.4	-80	-28.08	66.07	-94.15	46.07	-74.15	-	0-360
2	.0244	8.75	Pk	58.6	-31.6	-80	-44.25	59.85	-104.1	39.85	-84.1	-	0-360
3	.0934	10.23	Pk	55.8	-32.4	-80	-46.37	-	-	-	-	28.19	0-360
6	.0122	15.92	Pk	60.1	-30.4	-80	-34.38	65.89	-100.27	45.89	-80.27	-	0-360
7	.0246	6.69	Pk	58.6	-31.6	-80	-46.31	59.76	-106.07	39.76	-86.07	-	0-360
8	.0927	5.12	Pk	55.8	-32.4	-80	-51.48	-	-	-	-	28.25	0-360

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	1.0231	18.5	Pk	46.7	-32.4	-40	-7.2	27.42	-34.62	0-360
5	19.2202	17.6	Pk	34.1	-32	-40	-20.3	29.5	-49.8	0-360
9	1.0267	18.44	Pk	46.6	-32.3	-40	-7.26	27.39	-34.65	0-360
10	15.8876	20.11	Pk	33.7	-32	-40	-18.19	29.5	-47.69	0-360

Pk - Peak detector

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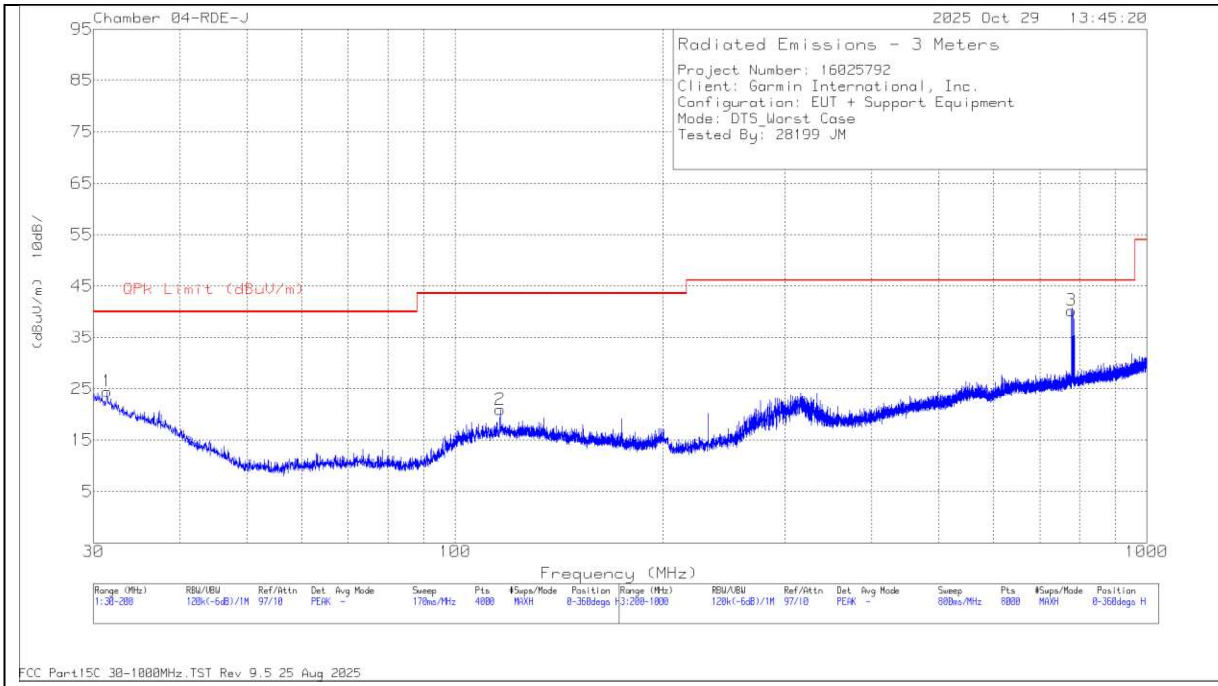
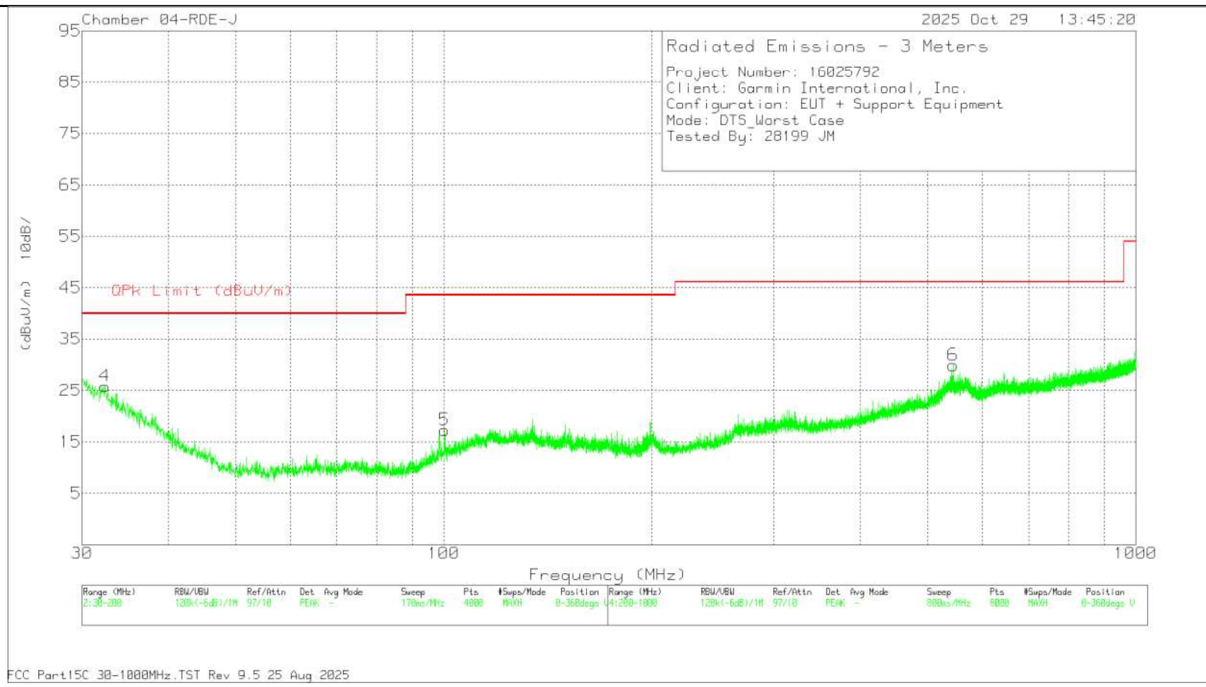
10.3. TRANSMITTER WORST CASE BELOW 1 GHz



HORIZONTAL



VERTICAL

Radiated Emissions

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	202329 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.4029	30.67	Pk	25.6	-31.8	24.47	40	-15.53	0-360	99	H
2	* 116.17	32.58	Pk	19.4	-31.1	20.88	43.52	-22.64	0-360	298	H
3	777.975	41.94	Pk	26.9	-28.6	40.24	46.02	-5.78	0-360	298	H
	777.975	21.36	Qp	26.9	-28.5	19.76	46.02	-26.26	43	334	H
4	32.3806	32.72	Pk	24.8	-31.7	25.82	40	-14.18	0-360	100	V
5	100.271	32.21	Pk	16.3	-31.2	17.31	43.52	-26.21	0-360	100	V
6	544.645	35.51	Pk	24	-29.6	29.91	46.02	-16.11	0-360	99	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

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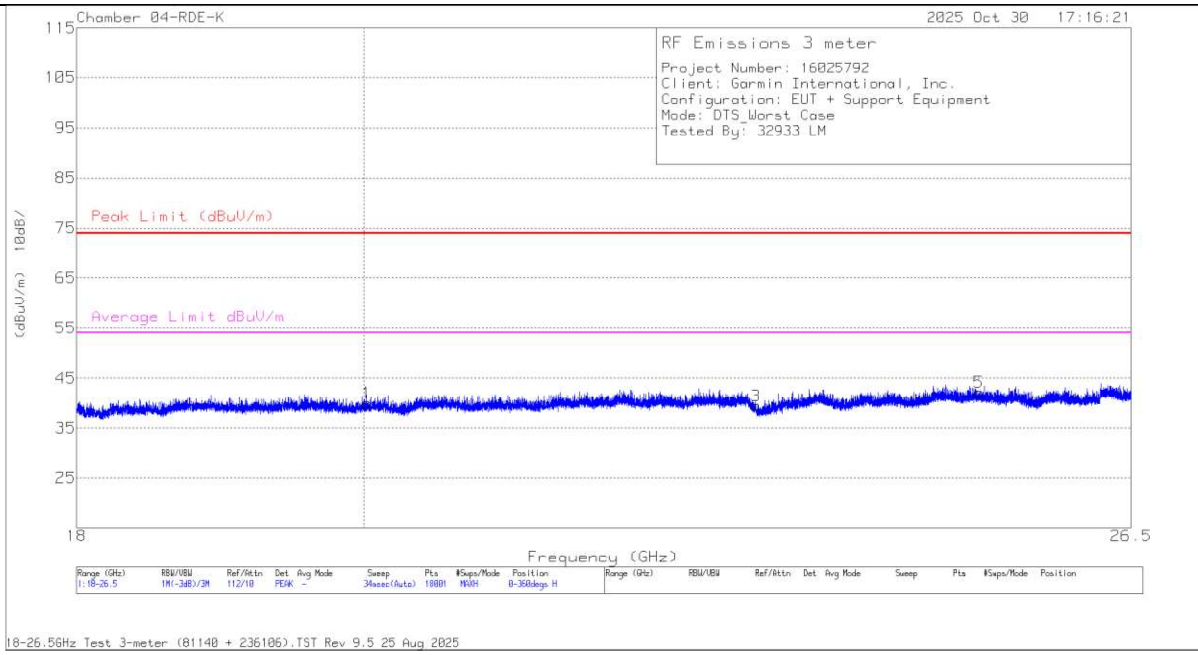
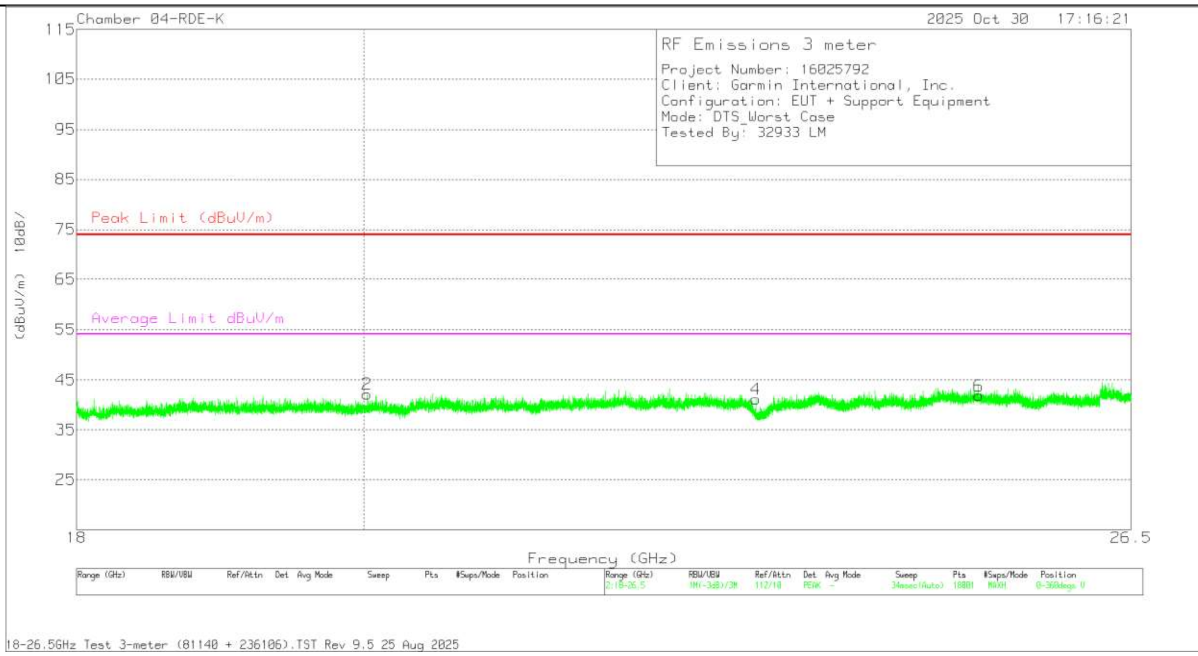
10.4. TRANSMITTER WORST CASE 18-26 GHz



HORIZONTAL



VERTICAL

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18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	81140 ACF (dB/m)	CBL/AMP (dB)	CBL (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 20.024888	49.1	Pk	32.5	-61.7	20.1	40	74	-34	-	-	0-360	200	H
2	* 20.024416	51.27	Pk	32.5	-61.7	20.1	42.17	74	-31.83	-	-	0-360	200	V
3	* 23.093386	47.77	Pk	33.1	-62.9	21.5	39.47	74	-34.53	-	-	0-360	200	H
4	* 23.092914	49.42	Pk	33.1	-62.9	21.5	41.12	74	-32.88	-	-	0-360	101	V
5	25.062552	48.92	Pk	33.8	-62.9	22.3	42.12	74	-31.88	-	-	0-360	200	H
6	25.062552	48.64	Pk	33.8	-62.9	22.3	41.84	74	-32.16	-	-	0-360	200	V

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

UL VERIFICATION SERVICES INC.
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11. SETUP PHOTOS

Please refer to 16025792-EP1 for setup photos.

END OF REPORT

UL VERIFICATION SERVICES INC.
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TEST REPORT

Report Number: 16025792-E5V2

Applicant	:	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	:	A05116
Brand	:	Garmin
FCC ID	:	IPH-05116
IC	:	1792A-05116
EUT Description	:	Portable Digital Transceiver
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E ISED RSS-247 ISSUE 4 ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2026-01-09

Prepared by:

UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2026-01-07	Initial Review	---
V2	2026-01-09	Updated Section 6.1	Tina Chu

UL VERIFICATION SERVICES INC.
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UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	Garmin International Inc. 1200 East 151st Street Olathe, KS 66062-3426, USA
Model	A05116
Brand	Garmin
FCC ID	IPH-05116
IC	1792A-05116
EUT Description	Portable Digital Transceiver
Serial Number	3522388213 (Radiated); 3522388124 (Conducted)
Sample Receipt Date	2025-08-13
Date Tested	2025-10-17 to 2025-11-26
Applicable Standards	FCC 47 CFR Part 15 Subpart E ISED RSS-247 Issue 4 ISED RSS-GEN Issue 5 + A1 + A2
Test Results	COMPLIES

UL Verification Services Inc. 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 ensure 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 Verification Services Inc., and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released By:	Prepared By:
Francisco deAnda Staff Engineer UL Verification Services Inc.	Vien Tran Senior Lab Engineer UL Verification Services Inc.

UL VERIFICATION SERVICES INC.
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2. TEST RESULT SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

Below is a list of the data provided by the customer:
1. Antenna gain and type (see section 6.3)
2. Cable loss (see section 6.3)

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result
Duty Cycle	-	-	Reporting purposes only
26dB BW/99% OBW	-	RSS-GEN 6.7	Complies
6 dB BW	15.407 (e)	RSS-247 7.3.4.2	Complies
Output Power	15.407 (a) (1-4), (h) (1)	RSS-247 7.3	Complies
PSD	15.407 (a) (1-3, 5)	RSS-247 7.3	Complies
Radiated Emissions	15.209, 15.205, 15.407 (b)	RSS-GEN 8.9, 8.10, RSS-247 7.3	Complies
AC Mains Conducted Emissions	15.207	RSS-Gen 8.8	Not applicable. EUT is powered by a battery/DC power supply

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:
- ANSI C63.10-2020 (FCC)
- ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024+ Errata to C63.10a-2024 (ISED)
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules
- FCC KDB 414788 D01 Radiated Test Site
- RSS-GEN Issue 5 + A1 +A2
- RSS-247 Issue 4

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, 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
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

UL VERIFICATION SERVICES INC.
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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}
Conducted Antenna Port Emission Measurement	1.940 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using Power Meter	0.450 dB (Ave), 1.30 dB (PK)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Portable Digital Transceiver.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Band	Mode	Min Frequency (MHz)	Max Frequency (MHz)	Output Power (dBm)	Output Power (mW)
UNII-1 (FCC)	11a	5180	5240	15.63	36.56
	11n HT20	5180	5240	15.33	34.12
	11n HT40	5190	5230	15.85	**38.46**
	11ac VHT80	5210	5210	8.64	7.31
UNII-2A	11a	5260	5320	16.89	48.87
	11n HT20	5260	5320	16.90	**48.98**
	11n HT40	5270	5310	13.59	22.86
	11ac VHT80	5290	5290	7.38	5.47
UNII-2C	11a	5500	5700	14.75	29.85
	11n HT20	5500	5700	15.21	33.19
	11n HT40	5510	5670	16.15	**41.21**
	11ac VHT80	5530	5610	15.07	32.14
UNII-3	11a	5745	5825	15.46	35.16
	11n HT20	5745	5825	15.12	32.51
	11n HT40	5755	5795	16.02	**39.99**
	11ac VHT80	5775	5775	15.86	38.55

Band	Mode	Min Frequency (MHz)	Max Frequency (MHz)	EIRP Output Power (dBm)	EIRP Output Power (mW)
UNII_1 (ISED)	11a	5180	5240	16.63	46.03
	11n HT20	5180	5240	16.33	42.95
	11n HT40	5190	5230	16.85	**48.42**
	11ac VHT80	5210	5210	9.64	9.20

6.3. DESCRIPTION OF AVAILABLE ANTENNAS AND CABLE LOSS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

The radio utilizes a PIFA antenna.

Frequency Band	Peak Gain (dBi)	Cable Loss (dB)
5.15 to 5.25 GHz	1.00	1.44
5.25 to 5.35 GHz	1.50	1.57
5.47 to 5.725 GHz	0.75	1.25
5.725 to 5.85 GHz	0.00	0.94

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware and software installed during testing were versions 0.74 and 1.24.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, were performed with the EUT set to transmit at the channel with the highest output power as a 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.

EUT was investigated in three orthogonal orientations: X (Flatbed), Y (Landscape), and Z (Portrait). The X (Flatbed) is the worst-case orientation. The full tests of the EUT have been made upon X (Flatbed). orientation. After investigation, the worst configuration set for all radiated tests is with EUT powered by an internal battery, and the USB-C port is terminated by a laptop via USB cable.

Worst data rates provided by the manufacturer as follows:

802.11a mode: 6Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0
802.11n VHT80 mode: MCS0

Plots included in the report are representative of the method and settings parameters used for the test.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
Laptop	Lenovo	T14	PF4BYGWJ	DOC
Laptop AC/DC adapter	Lenovo	ADLX65YLC2A	8SSA10M13948L1CZ8CJ0EA6	DOC

I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	3-prongs	Un-Shielded	1.8	AC Mains to Analyzer/Power Meter
2	Antenna	1	SMA	Shielded	0.1	Analyzer/Power Meter to EUT
I/O CABLES (RF RADIATED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC	1	DC	Shielded	1.8	AC/DC Adapter to Laptop
2	AC	1	2-prongs	Unshielded	1.8	AC Mains to AC/DC Adapter
3	USB	1	USB-C	Shielded	1	Laptop to EUT

TEST SETUP

The EUT setup is shown below. Test software exercised the radio card.

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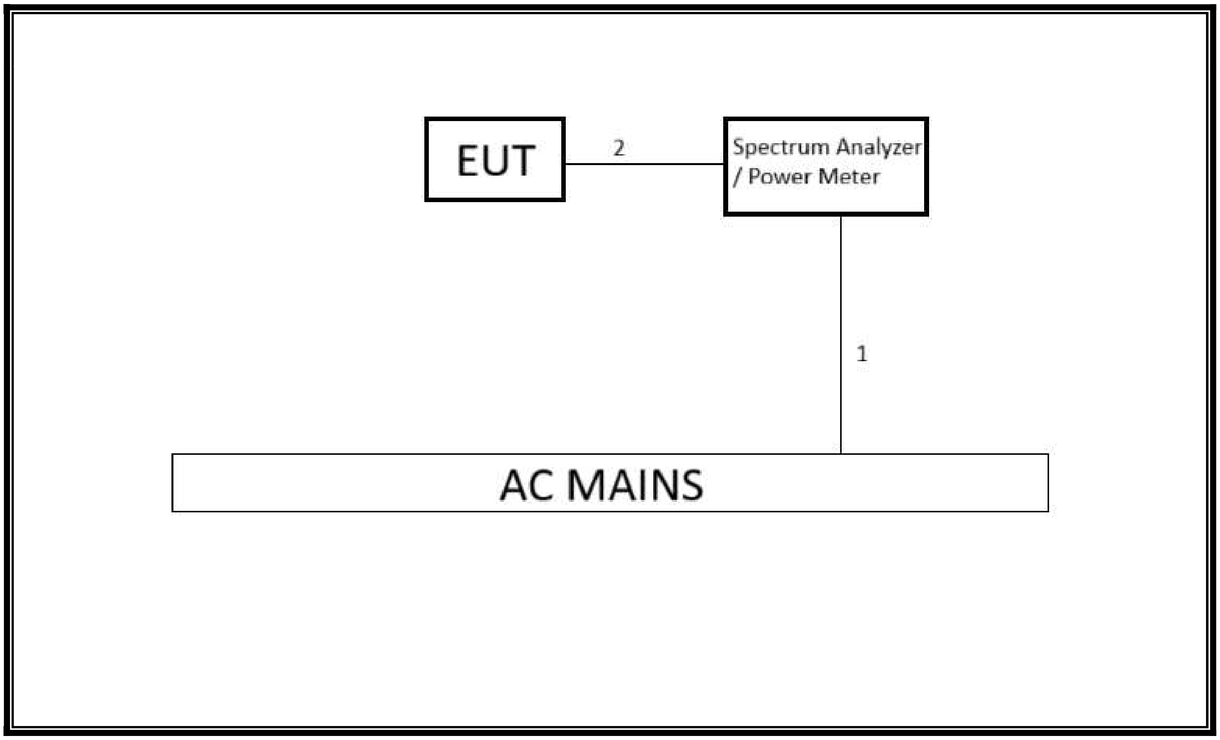
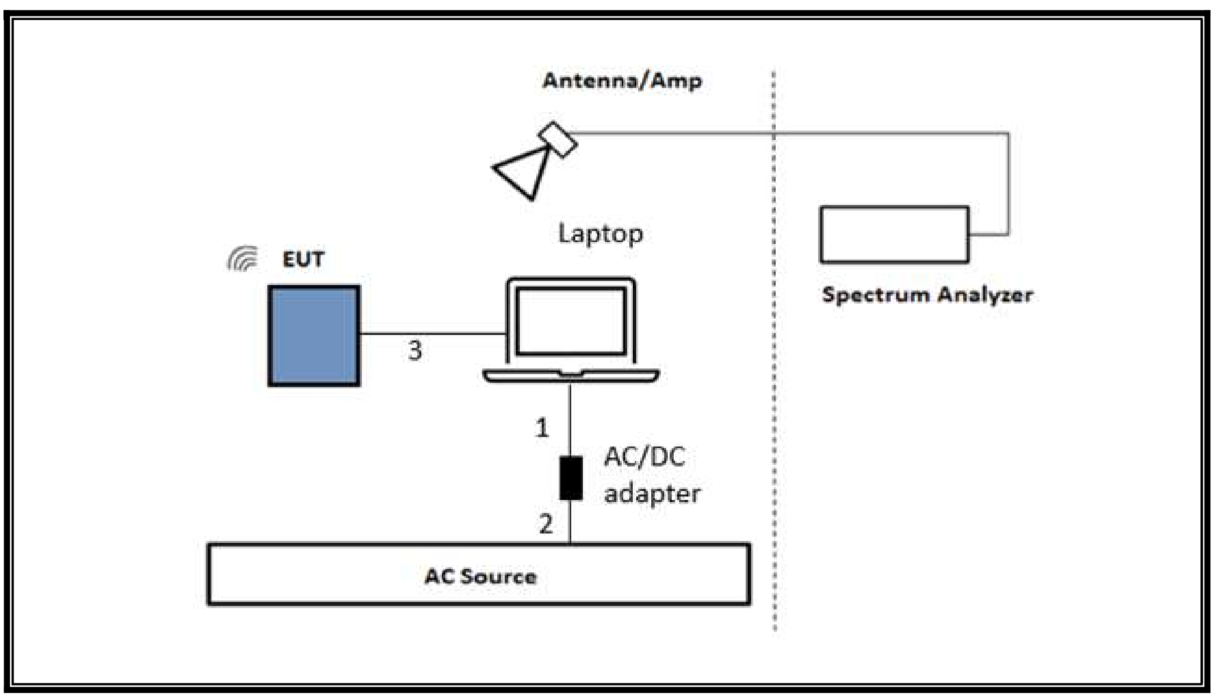
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz



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7. MEASUREMENT METHOD

TEST ITEM	TEST METHOD
On Time and Duty Cycle	ANSI C63.10 Subclause -12.2
6 dB Emission BW	ANSI C63.10 Subclause -12.5.1
26 dB Emission BW	ANSI C63.10 Subclause -12.5.2
99% Occupied BW	ANSI C63.10 Subclause - 6.9.3
Conducted Output Power	ANSI C63.10 Subclause -12.4.3.2
Power Spectral Density	ANSI C63.10 Subclause -12.6
Unwanted Emissions in Restricted Bands	ANSI C63.10 Subclause -12.7.2
Unwanted Emissions in Non-Restricted Bands	ANSI C63.10 Subclause -12.7.3
AC Power Line Conducted Emissions	ANSI C63.10, Section 6.2
Radiated Spurious Emissions Below 30MHz	ANSI C63.10, Section 6.4

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8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	206808	2027-04-30
RF Filter Box, 1-18GHz	UL-FR1	RATS 1.0, 2 Amp, 8 Port	197920	2026-03-31
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	81140	2027-05-31
RF Device, Active, Amplifier, 26.5	AMPLICAL	AMP26G40-60	236107	2026-05-31
Link File, RF Amplifier Assembly, 18-26.5GHz, 60dB Gainr	UL-FR1	AMP18G26.5-60	215705	2026-10-31
Antenna, Horn 26.5 to 40GHz	A.R.A.	MWH-2640/B	230656	2027-05-31
Link File, RF Amplifier Assembly, 26-40GHz, 65dB Gain	AMPLICAL	AMP26G40-65	221834	2026-05-31
EMI Test Receiver	Rohde & Schwarz	ESW44	225688	2026-02-28
Antenna, Passive Loop 100kHz to 30MHz	ELECTRO-METRICS	EM-6872	219910	2026-08-31
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	219908	2026-08-31
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	202329	2027-04-30
Link File, 9KHz-1GHz Port 0 Factors	UL-FR1	Port 0 Factors	213877	2026-03-31
EMI TEST RECEIVER, with B8 option	Rohde & Schwarz	ESW44	245268	2026-02-28
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	252765	Verified
Spectrum Analyzer, PXA, 3Hz to 44GHz	N9030A	Keysight Technologies Inc	85214	2026-01-31
Power Meter	Keysight	N1912A	259286	2026-03-31
Wideband Power Sensor	Keysight	N1921A	257703	2026-03-31

UL AUTOMATION SOFTWARE			
Radiated Software	UL	UL EMC	Ver 9.5, 25 Aug 2025
Conducted Software	UL	UL EMC	2024-02-23

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

ANSI C63.10, Subclause 12.2.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time T	Period	Duty Cycle x (linear)	Duty Cycle (%)	DCCF (dB)	1/T Minimum VBW (kHz)
802.11a	1.428	1.460	0.98	97.81	0.10	0.70
802.11n HT20	1.336	1.368	0.98	97.66	0.10	0.75
802.11n HT40	0.664	0.695	0.96	95.54	0.20	1.51
802.11ac VHT80	0.331	0.363	0.91	91.18	0.40	3.02

DUTY CYCLE PLOTS

802.11n HT20 MODE

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9.2. 99%, 26 dB, AND 6 dB BANDWIDTHS

LIMITS

99% BANDWIDTH LIMITS
None; for reporting purposes only.

26 dB BANDWIDTH LIMITS
None; for reporting purposes only.

6 dB BANDWIDTH LIMITS
FCC §15.407 (e)

RSS-247 7.3.4.2

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

RESULTS

Plots included in the report are representative of the method and settings parameters used for the test.

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Band	No. of Tx	Mode	Channel	Freq (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
UNII-1	1	11a	36	5180	16.719	22.840
			40	5200	**16.746**	23.760
			48	5240	16.732	22.880
		11n HT20	36	5180	17.891	25.280
			40	5200	17.830	22.640
			48	5240	**17.923**	26.080
		11n HT40	38	5190	36.126	40.960
			46	5230	**36.302**	44.720
		11ac VHT80	42	5210	**17.690**	83.360
UNII-2A	1	11a	52	5260	16.974	25.720
			56	5280	16.982	24.280
			60	5300	16.973	26.520
			64	5320	**17.002**	25.000
		11n HT20	52	5260	17.939	25.240
			56	5280	**18.025**	23.640
			60	5300	17.999	23.680
			64	5320	17.945	24.720
		11n HT40	54	5270	**36.278**	47.280
			62	5310	36.221	41.520
		11ac VHT80	58	5290	**75.555**	82.560
UNII-2C	1	11a	100	5500	16.721	21.960
			116	5580	**16.855**	24.840
			140	5700	16.735	21.920
		11n HT20	100	5500	17.836	22.120
			116	5580	**17.937**	23.240
			140	5700	17.815	22.360
		11n HT40	102	5510	36.157	57.040
			110	5550	36.250	57.040
			134	5670	**36.319**	57.360
		11ac VHT80	106	5530	**75.830**	91.360
			122	5610	75.820	92.160

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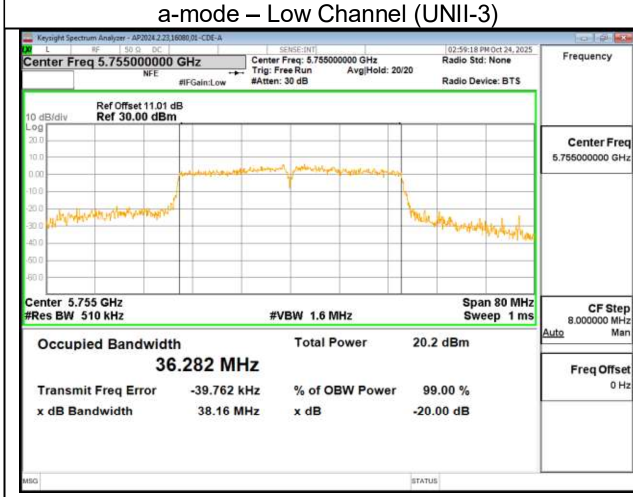
Band	No. of Tx	Mode	Channel	Freq (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	6dB Bandwidth (MHz)	6dB Minimum Limit (MHz)
UNII-3	1	11a	149	5745	16.847	24.480	16.332	0.5
			157	5785	16.861	24.760	16.340	0.5
			165	5825	**16.897**	24.800	16.356	0.5
		11n HT20	149	5745	17.931	23.920	17.576	0.5
			157	5785	17.868	22.800	17.284	0.5
			165	5825	**17.977**	22.760	17.604	0.5
		11n HT40	151	5755	36.282	47.840	36.320	0.5
			159	5795	**36.366**	47.680	35.240	0.5
		11ac VHT80	155	5775	**76.069**	95.520	75.168	0.5

<u>99% Bandwidth Plots</u>

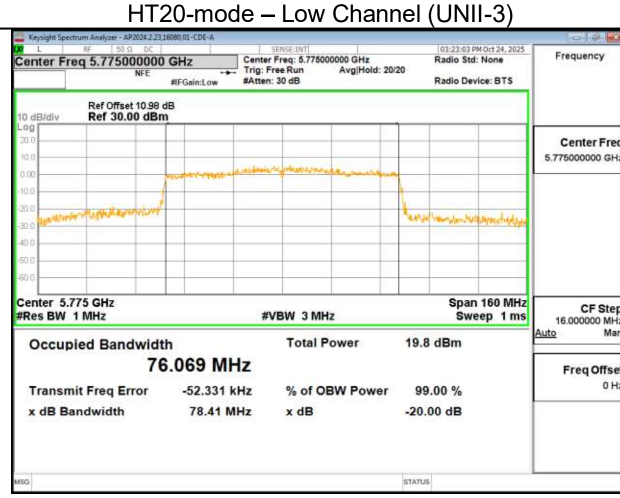
<u>U-NII-3</u>

a-mode – Low Channel (UNII-3)

HT20-mode – Low Channel (UNII-3)



HT40-mode – Low Channel (UNII-3)



VHT80-mode – Mid Channel (UNII-3)

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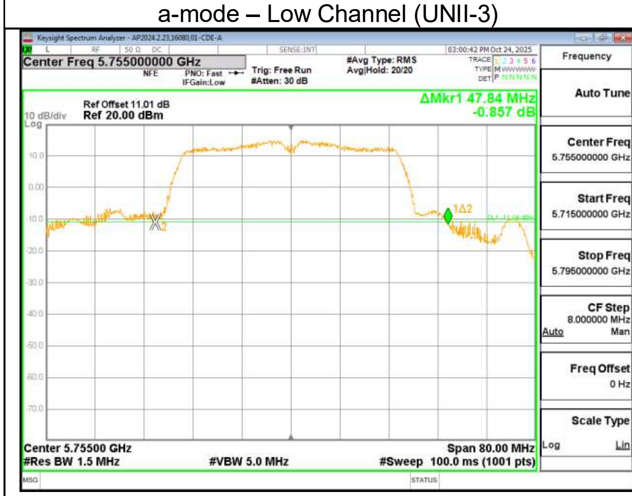
26 dB Bandwidth Plots

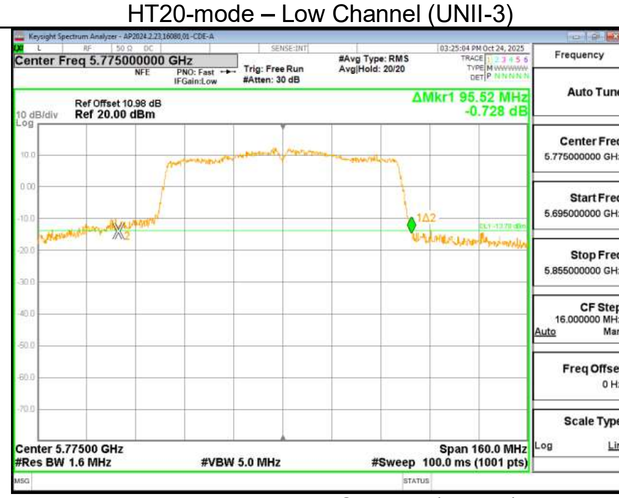
U-NII-3

a-mode – Low Channel (UNII-3)

HT20-mode – Low Channel (UNII-3)



HT40-mode – Low Channel (UNII-3)



VHT80-mode – Mid Channel (UNII-3)

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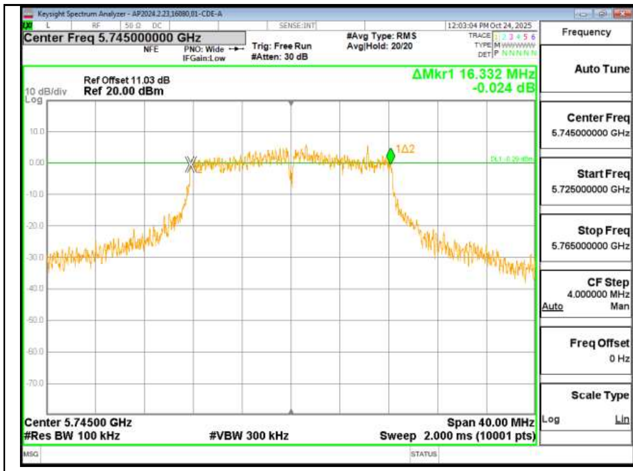
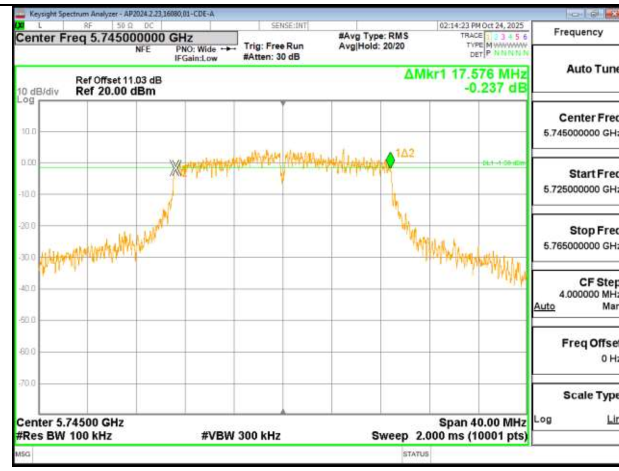
6 dB Bandwidth Plots

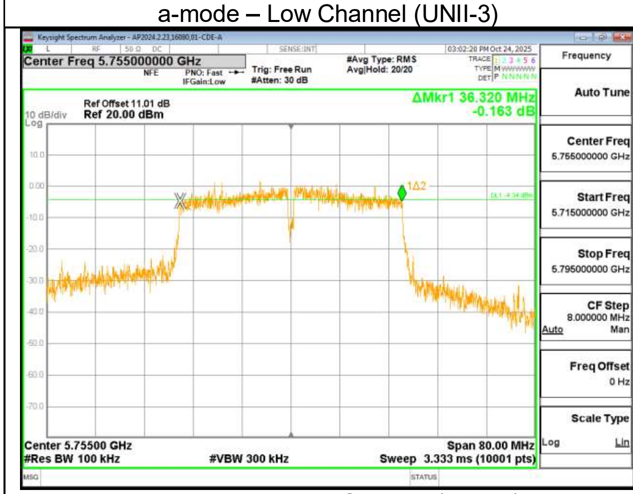
U-NII-3



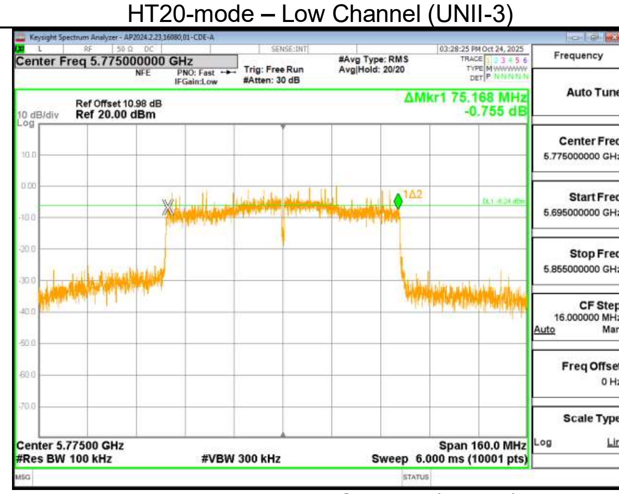
a-mode – Low Channel (UNII-3)



HT20-mode – Low Channel (UNII-3)



HT40-mode – Low Channel (UNII-3)



VHT80-mode – Mid Channel (UNII-3)

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9.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

Band 5.15–5.25 GHz

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW, provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1-megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Bands 5.25-5.35 GHz and 5.47-5.725 GHz
The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1-megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

RSS-247

Band 5.15–5.25 GHz
7.3.1.2
For all other devices, the maximum e.i.r.p. spectral density shall not exceed 10 dBm/MHz. The maximum e.i.r.p. shall not exceed the lesser of:

a. 200 mW; or
b. 10 + 10 $\log_{10}$B, dBm.

Band 5.25-5.35 GHz
7.3.2.2
All other devices shall comply with the following:

a. The maximum power spectral density shall not exceed 11 dBm/MHz, and the maximum conducted output power shall not exceed the lesser of:
    i. 250 mW; or
    ii. 11 + 10 $\log_{10}$B, dBm.
b. The maximum e.i.r.p. shall not exceed the lesser of:
    i. 1.0 W; or
    ii. 17 + 10 $\log_{10}$B, dBm.
c. Devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

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Band 5.47-5.725 GHz
7.3.3.2
Equipment operating in the 5470-5725 MHz band shall comply with the following power limits:

a. the maximum conducted output power shall not exceed the lesser of:

   i. 250 mW; or
   ii. $11 + 10 \log_{10}B$, dBm.

b. The maximum power spectral density shall not exceed 11 dBm/MHz.

c. The maximum e.i.r.p. shall not exceed the lesser of:

   i. 1.0 W; or
   ii. $17 + 10 \log_{10}B$, dBm.

d. Equipment with a maximum e.i.r.p. greater than 500 mW shall implement TPC to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Band 5.725-5.85 GHz
7.3.4.3
Equipment operating in the band 5725-5850 shall comply with the following power limits:

a. The maximum conducted output power shall not exceed 1 W; and
b. The maximum output power spectral density shall not exceed 30 dBm/500 kHz.

When transmitting antennas with a directional gain exceeding 6 dBi, the maximum conducted output power, and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

TEST PROCEDURE

The measurement method used for output power is ANSI C63.10 Subclause -12.4.3.2 (Method PM-G).

The measurement method used for power spectral density is ANSI C63.10 Subclause -12.6.

For all straddle channels, full bandwidth power and PSD/MHz are reported in the 5.6GHz section because the combined 5.6GHz and 5.8GHz power and PSD/MHz already passed the worst-case 5.6GHz power and 5.8 GHz PSD/500kHz limits.

11n HT20 straddle channel 26dB bandwidth= (26dB BW/2)+5
11n HT20 straddle channel 99% bandwidth= (99% BW/2)+5

DIRECTIONAL ANTENNA GAIN

For 1 TX: 1dBi
There is only one transmitter output; therefore, the directional gain is equal to the antenna gain.

RESULTS

Plots included in the report are representative of the method and settings parameters used for the test.

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Band	No. of Tx	Mode	Channel	Freq (MHz)	Min 99% BW (MHz)	Min 26% BW (MHz)	Antenna Peak Gain (dBi)	Uncorrelated Directional Gain (dBi)	Correlated Directional Gain (dBi)	FCC Power Limit (dBm)	EIRP ISED Power Limit UNII-1: 10 + 10 log10B, UNI-2A/-2C: 17 + 10 log10B, (dBm)	Corrected ISED Power Limit (dBm)	FCC/ISED Power Limit (dBm)	FCC PSD Limit (dBm/1MHz)	EIRP ISED PSD Limit (dBm/1MHz)	ISED PSD Limit (dBm/1MHz)	FCC/ISED PSD Limit (dBm/1MHz)
UNII-1	1	11a	36	5180	16.719	22.840	1.00	1.00	1.00	24.00	22.23	21.23	21.23	11.00	10.00	9.00	9.00
			40	5200	16.746	23.760	1.00	1.00	1.00	24.00	22.24	21.24	21.24	11.00	10.00	9.00	9.00
			48	5240	16.732	22.880	1.00	1.00	1.00	24.00	22.24	21.24	21.24	11.00	10.00	9.00	9.00
		11n HT20	36	5180	17.891	25.280	1.00	1.00	1.00	24.00	22.53	21.53	21.53	11.00	10.00	9.00	9.00
			40	5200	17.830	22.640	1.00	1.00	1.00	24.00	22.51	21.51	21.51	11.00	10.00	9.00	9.00
			48	5240	17.923	26.080	1.00	1.00	1.00	24.00	22.53	21.53	21.53	11.00	10.00	9.00	9.00
		11n HT40	38	5190	36.126	40.960	1.00	1.00	1.00	24.00	23.00	22.00	22.00	11.00	10.00	9.00	9.00
			46	5230	36.302	44.720	1.00	1.00	1.00	24.00	23.00	22.00	22.00	11.00	10.00	9.00	9.00
		11ac VHT80	42	5210	17.690	83.360	1.00	1.00	1.00	24.00	22.48	21.48	21.48	11.00	10.00	9.00	9.00
UNII-2A	1	11a	52	5260	16.974	25.720	1.50	1.50	1.50	24.00	29.30	23.30	23.30	11.00	[redacted]	11.00	11.00
			56	5280	16.982	24.280	1.50	1.50	1.50	24.00	29.30	23.30	23.30	11.00	[redacted]	11.00	11.00
			60	5300	16.973	26.520	1.50	1.50	1.50	24.00	29.30	23.30	23.30	11.00	[redacted]	11.00	11.00
			64	5320	17.002	25.000	1.50	1.50	1.50	24.00	29.31	23.31	23.31	11.00	[redacted]	11.00	11.00
		11n HT20	52	5260	17.939	25.240	1.50	1.50	1.50	24.00	29.54	23.54	23.54	11.00	[redacted]	11.00	11.00
			56	5280	18.025	23.640	1.50	1.50	1.50	24.00	29.56	23.56	23.56	11.00	[redacted]	11.00	11.00
			60	5300	17.999	23.680	1.50	1.50	1.50	24.00	29.55	23.55	23.55	11.00	[redacted]	11.00	11.00
			64	5320	17.945	24.720	1.50	1.50	1.50	24.00	29.54	23.54	23.54	11.00	[redacted]	11.00	11.00
		11n HT40	54	5270	36.278	47.280	1.50	1.50	1.50	24.00	30.00	24.00	24.00	11.00	[redacted]	11.00	11.00
			62	5310	36.221	41.520	1.50	1.50	1.50	24.00	30.00	24.00	24.00	11.00	[redacted]	11.00	11.00
		11ac VHT80	58	5290	75.555	82.560	1.50	1.50	1.50	24.00	30.00	24.00	24.00	11.00	[redacted]	11.00	11.00
UNII-2C	1	11a	100	5500	16.721	21.960	0.75	0.75	0.75	24.00	29.23	23.23	23.23	11.00	[redacted]	11.00	11.00
			116	5580	16.855	24.840	0.75	0.75	0.75	24.00	29.27	23.27	23.27	11.00	[redacted]	11.00	11.00
			140	5700	16.735	21.920	0.75	0.75	0.75	24.00	29.24	23.24	23.24	11.00	[redacted]	11.00	11.00
		11n HT20	100	5500	17.836	22.120	0.75	0.75	0.75	24.00	29.51	23.51	23.51	11.00	[redacted]	11.00	11.00
			116	5580	17.937	23.240	0.75	0.75	0.75	24.00	29.54	23.54	23.54	11.00	[redacted]	11.00	11.00
			140	5700	17.815	22.360	0.75	0.75	0.75	24.00	29.51	23.51	23.51	11.00	[redacted]	11.00	11.00
		11n HT40	102	5510	36.157	57.040	0.75	0.75	0.75	24.00	30.00	24.00	24.00	11.00	[redacted]	11.00	11.00
			110	5550	36.250	57.040	0.75	0.75	0.75	24.00	30.00	24.00	24.00	11.00	[redacted]	11.00	11.00
			134	5670	36.319	57.360	0.75	0.75	0.75	24.00	30.00	24.00	24.00	11.00	[redacted]	11.00	11.00
		11ac VHT80	106	5530	75.830	91.360	0.75	0.75	0.75	24.00	30.00	24.00	24.00	11.00	[redacted]	11.00	11.00
			122	5610	75.820	92.160	0.75	0.75	0.75	24.00	30.00	24.00	24.00	11.00	[redacted]	11.00	11.00

Band	No. of Tx	Mode	Channel	Freq (MHz)	Antenna Peak Gain (Tx0) (dBi)	Uncorrelated Directional Gain (dBi)	Correlated Directional Gain (dBi)	FCC/ISED Power Limit (dBm)	FCC/ISED PSD Limit (dBm/500kHz)
UNII-3	1	11a	149	5745	0.00	0.00	0.00	30.00	30.00
			157	5785	0.00	0.00	0.00	30.00	30.00
			165	5825	0.00	0.00	0.00	30.00	30.00
		11n HT20	149	5745	0.00	0.00	0.00	30.00	30.00
			157	5785	0.00	0.00	0.00	30.00	30.00
			165	5825	0.00	0.00	0.00	30.00	30.00
		11n HT40	151	5755	0.00	0.00	0.00	30.00	30.00
			159	5795	0.00	0.00	0.00	30.00	30.00
		11ac VHT80	155	5775	0.00	0.00	0.00	30.00	30.00

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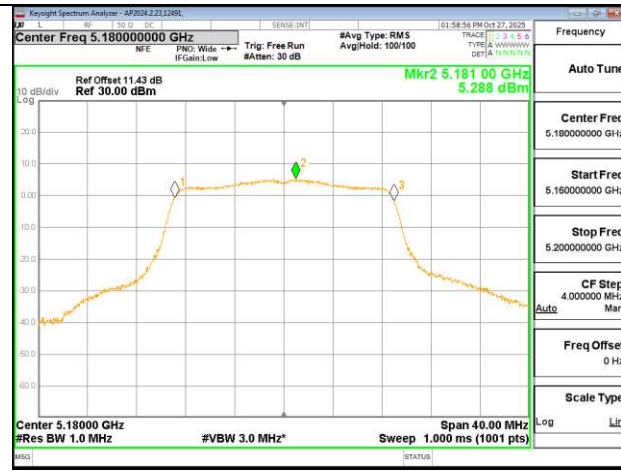
9.3.1. UNII-1 BAND

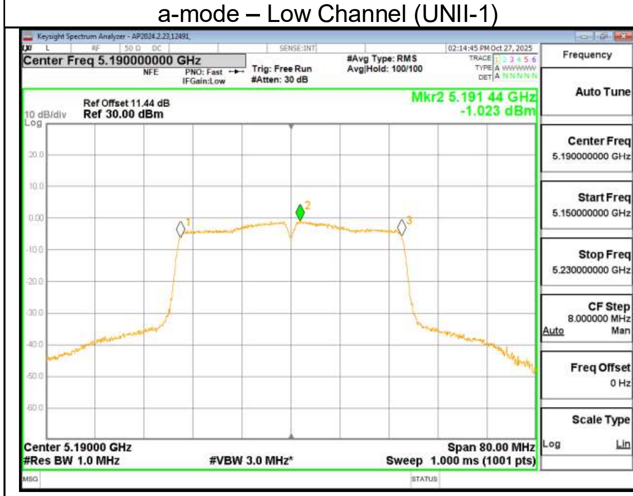
Band	Mode	Channel	Frequency (MHz)	Uncorrelated Directional Gain (dBi)	Correlated Directional Gain (dBi)	Measured Conducted Avg Power (dBm)	ISED Corrected Conducted Avg EIRP Power (dBm)	FCC/ISED Power Limit (dBm)	Power Margin (dB)	PSD (dBm/1MHz)	DCCF (dB)	Corrected PSD with DCCF (dBm/1MHz)	Corrected EIRP ISED PSD (dBm/1MHz)	FCC/ISED PSD Limit (dBm/1MHz)	PSD Margin (dB)
UNII-1	11a	36	5180	1.00	1.00	15.55	16.55	21.23	-5.68	6.019	0.10	6.12	7.12	9.00	-2.88
		40	5200	1.00	1.00	**15.63**	**16.63**	21.24	-5.61	6.067	0.10	6.16	7.16	9.00	-2.84
		48	5240	1.00	1.00	15.48	16.48	21.24	-5.76	6.031	0.10	6.13	7.13	9.00	-2.87
	11n HT20	36	5180	1.00	1.00	15.26	16.26	21.53	-6.27	5.288	0.10	5.39	6.39	9.00	-3.61
		40	5200	1.00	1.00	**15.33**	**16.33**	21.51	-6.18	5.380	0.10	5.48	6.48	9.00	-3.52
		48	5240	1.00	1.00	15.05	16.05	21.53	-6.48	5.276	0.10	5.38	6.38	9.00	-3.62
	11n HT40	38	5190	1.00	1.00	12.12	13.12	22.00	-9.88	-1.023	0.20	-0.82	0.18	9.00	-9.82
		46	5230	1.00	1.00	**15.85**	**16.85**	22.00	-6.15	2.993	0.20	3.19	4.19	9.00	-5.81
	11ac VHT80	42	5210	1.00	1.00	**8.64**	**9.64**	21.48	-12.84	-7.068	0.40	-6.67	-5.67	9.00	-15.67

PSD Plots

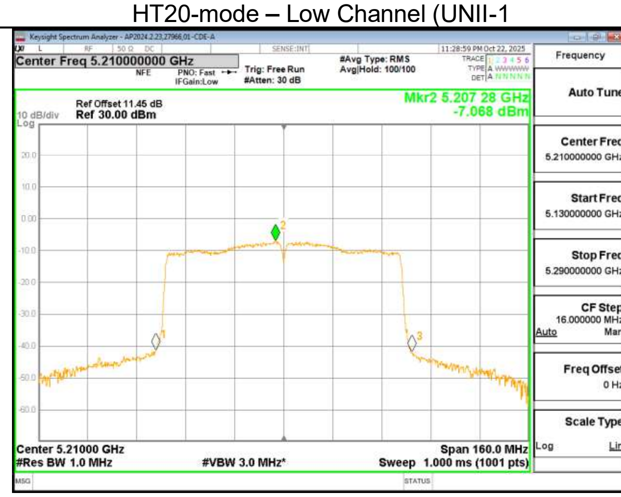
a-mode – Low Channel (UNII-1)



HT20-mode – Low Channel (UNII-1



HT40-mode – Low Channel (UNII-1)



VHT80-mode – Low Channel (UNII-1)

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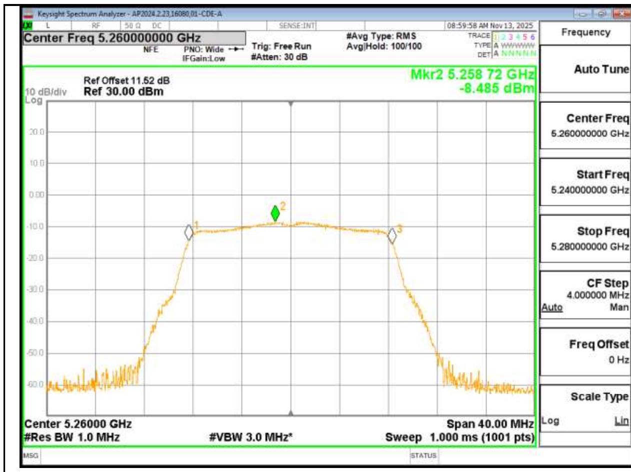
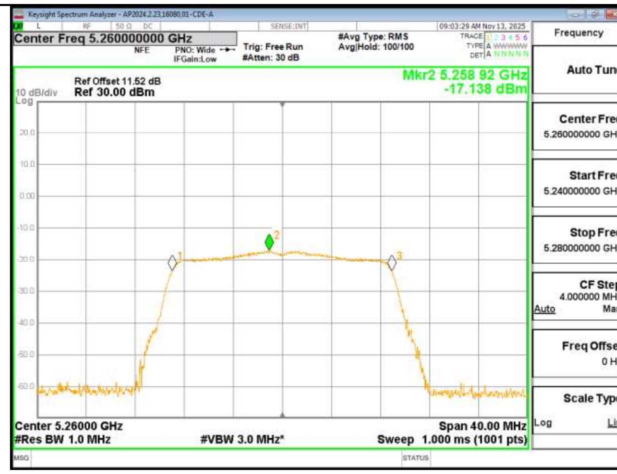
9.3.2. UNII-2A BAND

Band	Mode	Channel	Frequency (MHz)	Measured Conducted Avg Power (dBm)	Power Limit (dBm)	Power Margin (dB)	PSD (dBm/1MHz)	DCCF (dB)	Corrected PSD with DCCF (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
UNII-2A	11a	52	5260	0.91	23.30	-22.39	-8.485	0.10	-8.39	11.00	-19.39
		56	5280	**16.89**	23.30	-6.41	7.725	0.10	7.82	11.00	-3.18
		60	5300	14.55	23.30	-8.75	4.748	0.10	4.84	11.00	-6.16
		64	5320	13.52	23.31	-9.79	3.763	0.10	3.86	11.00	-7.14
	11n HT20	52	5260	-7.36	23.54	-30.90	-17.138	0.10	-17.04	11.00	-28.04
		56	5280	**16.90**	23.56	-6.66	7.065	0.10	7.17	11.00	-3.83
		60	5300	15.14	23.55	-8.41	4.996	0.10	5.10	11.00	-5.90
		64	5320	15.07	23.54	-8.47	4.573	0.10	4.68	11.00	-6.32
	11n HT40	54	5270	8.71	24.00	-15.29	-4.233	0.20	-4.03	11.00	-15.03
		62	5310	**13.59**	24.00	-10.41	0.298	0.20	0.50	11.00	-10.50
	11ac VHT80	58	5290	**7.38**	24.00	-16.62	-8.761	0.40	-8.36	11.00	-19.36

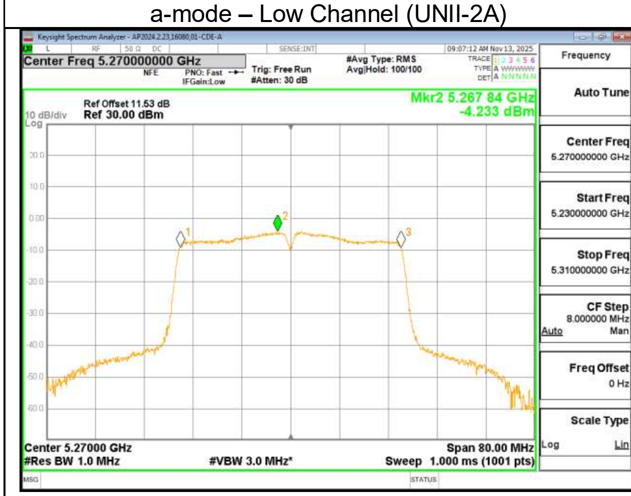
PSD Plots



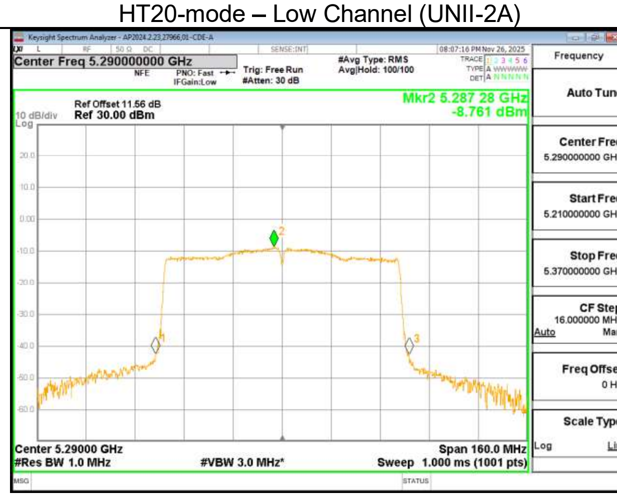
a-mode – Low Channel (UNII-2A)



HT20-mode – Low Channel (UNII-2A)



HT40-mode – Low Channel (UNII-2A)



VHT80-mode – Low Channel (UNII-2A)

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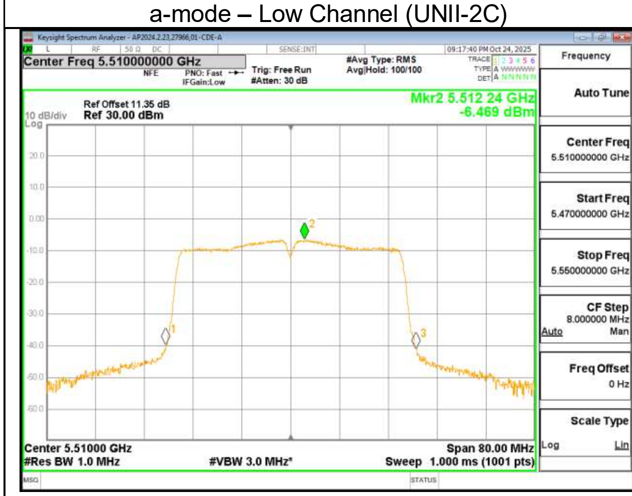
9.3.3. UNII-2C BAND

Band	Mode	Channel	Frequency (MHz)	Measured Conducted Avg Power (dBm)	Power Limit (dBm)	Power Margin (dB)	PSD (dBm/1MHz)	DCCF (dB)	Corrected PSD with DCCF (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
UNII-2C	11a	100	5500	11.64	23.23	-11.59	1.304	0.10	1.40	11.00	-9.60
		116	5580	13.97	23.27	-9.30	3.873	0.10	3.97	11.00	-7.03
		140	5700	**14.75**	23.24	-8.49	4.803	0.10	4.90	11.00	-6.10
	11n HT20	100	5500	12.24	23.51	-11.27	1.699	0.10	1.80	11.00	-9.20
		116	5580	14.72	23.54	-8.82	4.122	0.10	4.22	11.00	-6.78
		140	5700	**15.21**	23.51	-8.30	5.056	0.10	5.16	11.00	-5.84
	11n HT40	102	5510	7.24	24.00	-16.76	-6.469	0.20	-6.27	11.00	-17.27
		110	5550	15.28	24.00	-8.72	1.581	0.20	1.78	11.00	-9.22
		134	5670	**16.15**	24.00	-7.85	2.524	0.20	2.72	11.00	-8.28
	11ac VHT80	106	5530	5.84	24.00	-18.16	-10.222	0.40	-9.82	11.00	-20.82
		122	5610	**15.07**	24.00	-8.93	-0.853	0.40	-0.45	11.00	-11.45

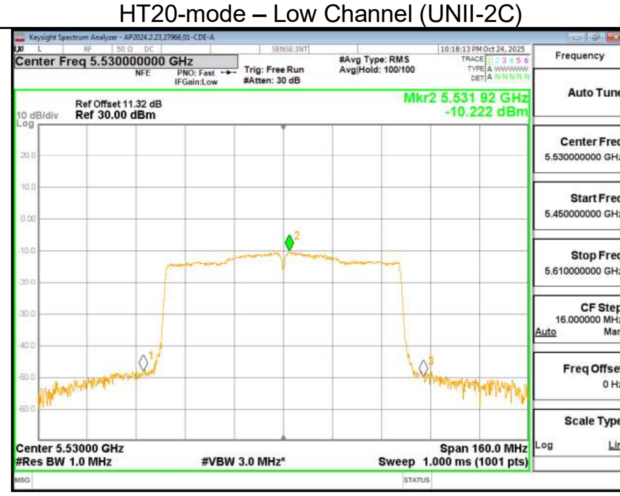
PSD Plots

a-mode – Low Channel (UNII-2C)

HT20-mode – Low Channel (UNII-2C)



HT40-mode – Low Channel (UNII-2C)



VHT80-mode – Low Channel (UNII-2C)

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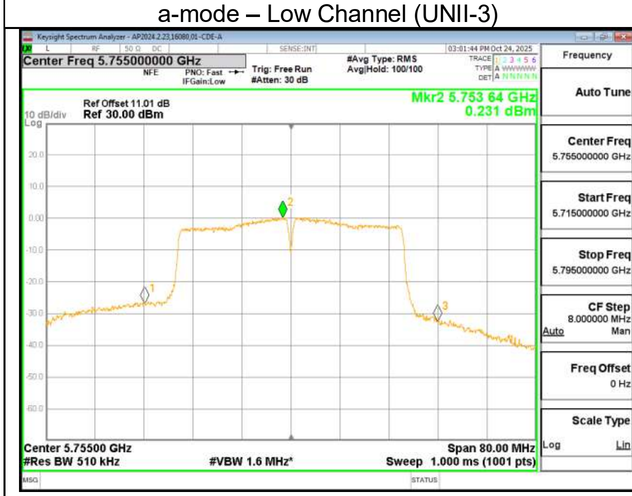
9.3.4. UNII-3 BAND

Band	Mode	Channel	Frequency (MHz)	Measured Conducted Avg Power (dBm)	Power Limit (dBm)	Power Margin (dB)	PSD (dBm/500kHz)	DCCF (dB)	Corrected PSD with DCCF (dBm/500kHz)	PSD Limit (dBm/500kHz)	PSD Margin (dB)
UNII-3	11a	149	5745	**15.46**	30.00	-14.54	2.976	0.096	3.07	30.00	-26.93
		157	5785	13.55	30.00	-16.45	1.490	0.096	1.59	30.00	-28.41
		165	5825	13.71	30.00	-16.29	1.482	0.096	1.58	30.00	-28.42
	11n HT20	149	5745	14.20	30.00	-15.80	1.441	0.103	1.54	30.00	-28.46
		157	5785	**15.12**	30.00	-14.88	2.604	0.103	2.71	30.00	-27.29
		165	5825	14.26	30.00	-15.74	1.700	0.103	1.80	30.00	-28.20
	11n HT40	151	5755	16.01	30.00	-13.99	0.231	0.198	0.43	30.00	-29.57
		159	5795	**16.02**	30.00	-13.98	0.604	0.198	0.80	30.00	-29.20
	11ac VHT80	155	5775	**15.86**	30.00	-14.14	-2.941	0.401	-2.54	30.00	-32.54

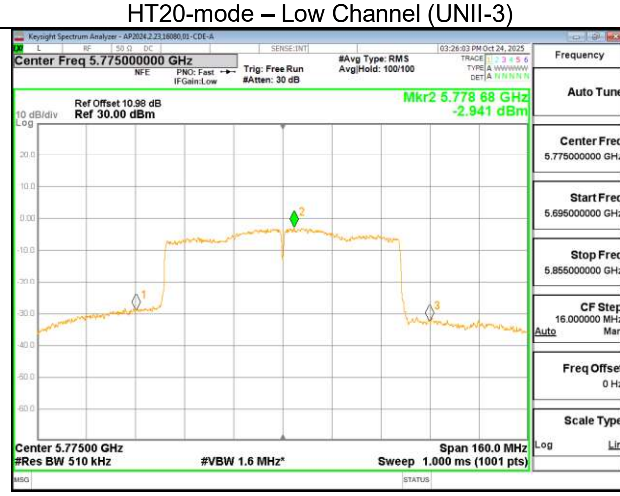
PSD Plots

a-mode – Low Channel (UNII-3)

HT20-mode – Low Channel (UNII-3)



HT40-mode – Low Channel (UNII-3)



VHT80-mode – Low Channel (UNII-3)

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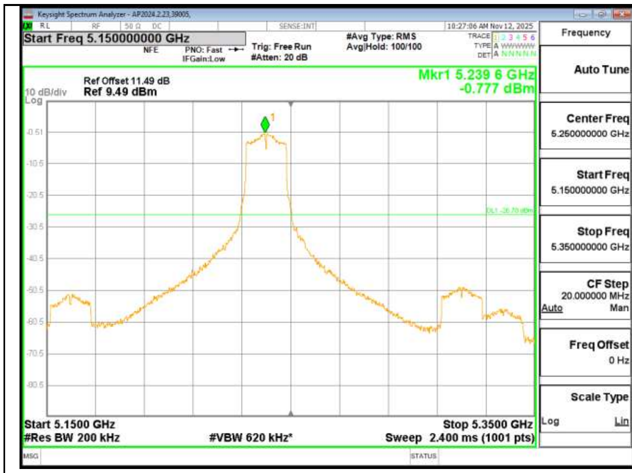
9.4. 5.250-5.350 GHz (CONDUCTED UNWANTED EMISSIONS)

LIMITS

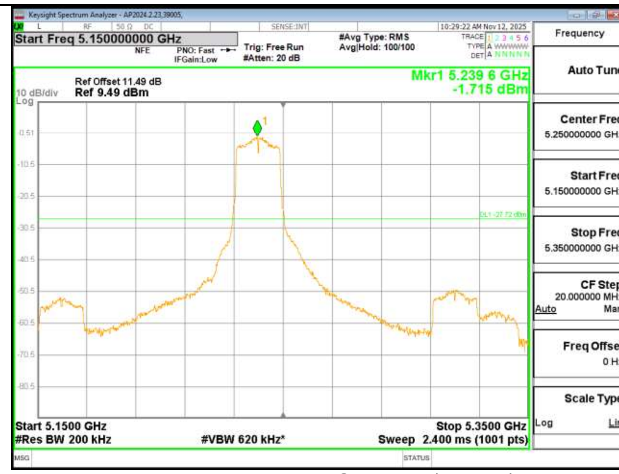
RSS-247 7.3.1.3

(b)Any unwanted emissions that fall between the upper edge of the 26 dB bandwidth and 5350 MHz shall be attenuated below the channel power by at least 26 dB when measured using a resolution bandwidth between 1% and 5% of the occupied bandwidth.

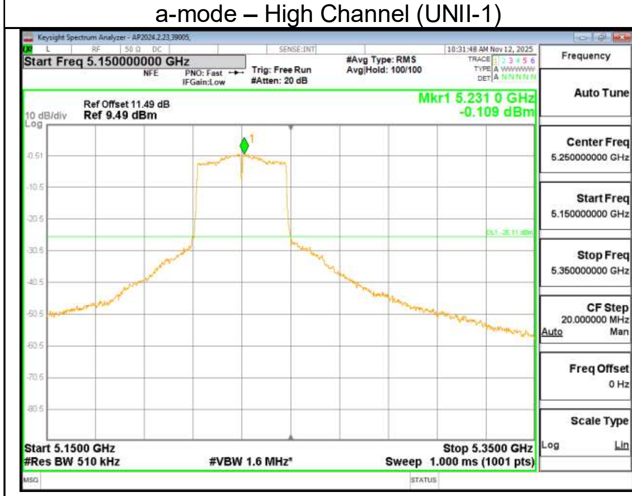
RESULTS



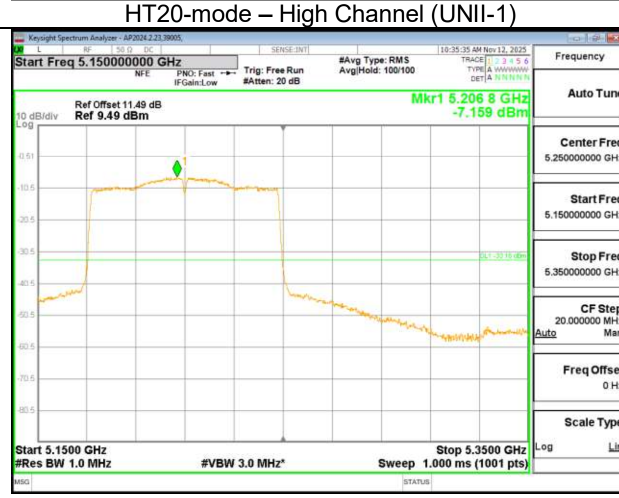
a-mode – High Channel (UNII-1)



HT20-mode – High Channel (UNII-1)



HT40-mode – High Channel (UNII-1)



VHT80-mode – Mid Channel (UNII-1)

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10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209 -Restricted bands
FCC §15.407(b) (1-3) -Un-Restricted bands

RSS-GEN, Sections 8.9 and 8.10.
RSS 247 Issue 4 Sections
7.3.1.3 (for 5150-5250 MHz band)
7.3.2.3 (for 5250-5350 MHz band)
7.3.3.3 (for 5470-5725 MHz band)
7.3.4.4 (for 5725-5850 MHz band)

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 and 1.5 meters 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 30 kHz 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 average measurements.

The spectrum from 30 MHz to 1GHz and 18GHz to 40 GHz is investigated with the transmitter set to transmit at the channel with the highest output power as a worst-case scenario. The 1GHz to 18GHz range was set to the lowest, middle, and highest channels in the 5GHz band.

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 maximize the emission further. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

For below 30MHz testing, an investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel). Parallel and perpendicular are the worst orientations; therefore, testing was performed on these two orientations only. Blue color trace on plots: Parallel orientation. Green color trace on plots: Perpendicular orientation.

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Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.
In addition:

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

Based 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.

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

RESULTS

The plots in these sections are for reference settings only for different bandwidths and different antennas.

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10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. SISO MODE IN UNII-1 BAND – BANDEDGE

UNII-1 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
a	5180	* 5.15	62.99	Pk	34.4	-30.7	0	66.69	-	-	74	-7.31	233	201	H
		* 5.149707	63.48	Pk	34.4	-30.7	0	67.18	-	-	74	-6.82	233	201	H
		* 5.15	44.72	RMS	34.4	-30.7	0.1	48.52	54	-5.48	-	-	233	201	H
		* 5.149269	45.46	RMS	34.4	-30.7	0.1	49.26	54	-4.74	-	-	233	201	H
		* 5.15	66.37	Pk	34.4	-30.7	0	70.07	-	-	74	-3.93	305	220	V
		* 5.149925	66.26	Pk	34.4	-30.7	0	69.96	-	-	74	-4.04	305	220	V
		* 5.15	46.89	RMS	34.4	-30.7	0.1	50.69	54	-3.31	-	-	305	220	V
		* 5.149675	47.76	RMS	34.4	-30.7	0.1	51.56	54	-2.44	-	-	305	220	V
HT20	5180	* 5.15	61.55	Pk	34.4	-30.7	0	65.25	-	-	74	-8.75	39	332	H
		* 5.148582	65.2	Pk	34.4	-30.7	0	68.9	-	-	74	-5.1	39	332	H
		* 5.15	45.27	RMS	34.4	-30.7	0.1	49.07	54	-4.93	-	-	39	332	H
		* 5.149894	46.02	RMS	34.4	-30.7	0.1	49.82	54	-4.18	-	-	39	332	H
		* 5.15	61.19	Pk	34.4	-30.7	0	64.89	-	-	74	-9.11	343	228	V
		* 5.14805	65.61	Pk	34.4	-30.7	0	69.31	-	-	74	-4.69	343	228	V
		* 5.15	45.33	RMS	34.4	-30.7	0.1	49.13	54	-4.87	-	-	343	228	V
		* 5.149394	46.4	RMS	34.4	-30.7	0.1	50.2	54	-3.8	-	-	343	228	V
HT40	5190	* 5.15	60.14	Pk	34.4	-30.7	0	63.84	-	-	74	-10.16	59	114	H
		* 5.149519	63.52	Pk	34.4	-30.7	0	67.22	-	-	74	-6.78	59	114	H
		* 5.15	47.11	RMS	34.4	-30.7	0.2	51.01	54	-2.99	-	-	59	114	H
		* 5.149988	47.36	RMS	34.4	-30.7	0.2	51.26	54	-2.74	-	-	59	114	H
		* 5.15	60.34	Pk	34.4	-30.7	0	64.04	-	-	74	-9.96	348	242	V
		* 5.149519	61.77	Pk	34.4	-30.7	0	65.47	-	-	74	-8.53	348	242	V
		* 5.15	46.82	RMS	34.4	-30.7	0.2	50.72	54	-3.28	-	-	348	242	V
		* 5.149675	47.24	RMS	34.4	-30.7	0.2	51.14	54	-2.86	-	-	348	242	V
VHT80	5210	* 5.15	57.57	Pk	34.4	-30.7	0	61.27	-	-	74	-12.73	47	125	H
		* 5.149613	59.94	Pk	34.4	-30.7	0	63.64	-	-	74	-10.36	47	125	H
		* 5.15	46.36	RMS	34.4	-30.7	0.4	50.46	54	-3.54	-	-	47	125	H
		* 5.1498	47.12	RMS	34.4	-30.7	0.4	51.22	54	-2.78	-	-	47	125	H
		* 5.15	59.06	Pk	34.4	-30.7	0	62.76	-	-	74	-11.24	355	135	V
		* 5.149988	59.16	Pk	34.4	-30.7	0	62.86	-	-	74	-11.14	355	135	V
		* 5.15	45.28	RMS	34.4	-30.7	0.4	49.38	54	-4.62	-	-	355	135	V
		* 5.149644	46.07	RMS	34.4	-30.7	0.4	50.17	54	-3.83	-	-	355	135	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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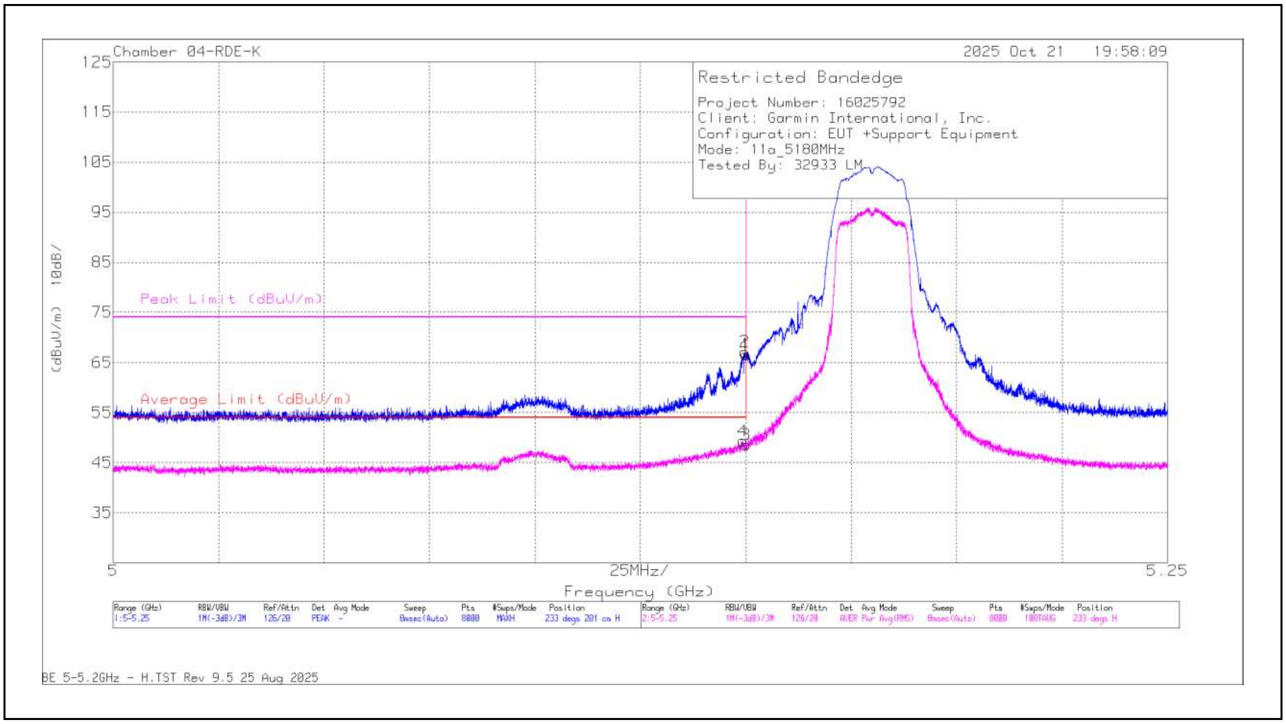
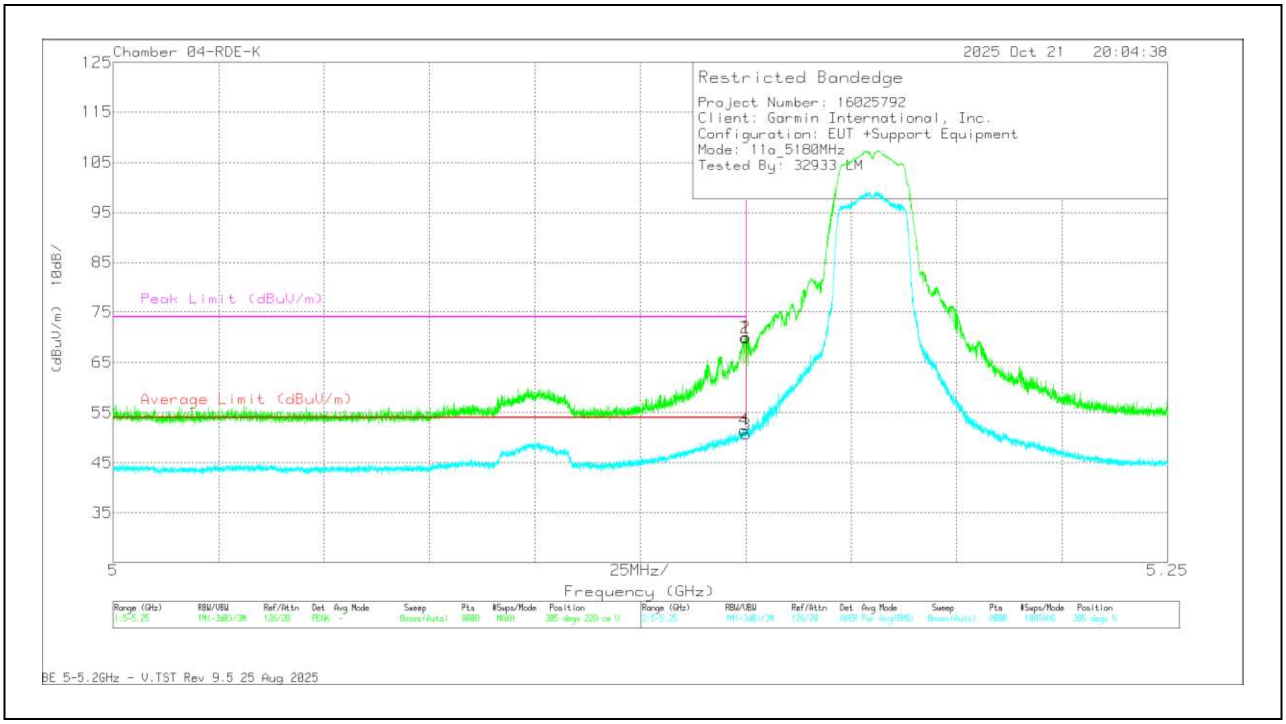
BANDEDGE (LOW CHANNEL / 5180MHz), a mode

HORIZONTAL RESULT



VERTICAL RESULT



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10.1.2. SISO MODE IN UNII-1 BAND – SPURIOUS EMISSIONS

a mode

UNII-1 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11a	5180	* 15.504086	46.53	PK-U	40.2	-33.4	0	53.33	-	-	74	-20.67	185	354	H
		* 15.536576	34.64	ADR	40.2	-33.6	0.1	41.34	54	-12.66	-	-	185	354	H
		* 15.515053	46.08	PK-U	40.2	-33.5	0	52.78	-	-	74	-21.22	323	259	V
		* 15.531096	34.22	ADR	40.2	-33.6	0.1	40.92	54	-13.08	-	-	323	259	V
		3.452975	54.41	PK-U	32.7	-41.8	0	45.31	-	-	68.2	-22.89	19	114	V
		3.453427	55.85	PK-U	32.7	-41.8	0	46.75	-	-	68.2	-21.45	15	387	H
		10.359131	61.67	PK-U	37.5	-36.9	0	62.27	-	-	68.2	-5.93	154	363	H
		10.359199	64.01	PK-U	37.5	-36.9	0	64.61	-	-	68.2	-3.59	269	118	V
	5200	3.466746	56.65	PK-U	32.7	-41.8	0	47.55	-	-	68.2	-20.65	5	125	H
		3.466544	55.32	PK-U	32.7	-41.8	0	46.22	-	-	68.2	-21.98	316	336	V
		* 5.04958	56.32	PK-U	34.2	-38.1	0	52.42	-	-	74	-21.58	24	101	H
		* 5.049145	45.12	ADR	34.2	-38.1	0.1	41.32	54	-12.68	-	-	24	101	H
		* 5.0468	55.45	PK-U	34.2	-38.2	0	51.45	-	-	74	-22.55	7	115	V
		* 5.049546	42.81	ADR	34.2	-38.1	0.1	39.01	54	-14.99	-	-	7	115	V
		10.39911	61.93	PK-U	37.5	-36.7	0	62.73	-	-	68.2	-5.47	160	359	H
		10.398862	64.03	PK-U	37.5	-36.7	0	64.83	-	-	68.2	-3.37	271	101	V
	5240	3.493334	56.37	PK-U	32.8	-41.9	0	47.27	-	-	68.2	-20.93	6	267	H
		3.493496	55.99	PK-U	32.8	-41.9	0	46.89	-	-	68.2	-21.31	305	236	V
		* 4.968369	51.3	PK-U	34.1	-39	0	46.4	-	-	74	-27.6	18	317	H
		* 4.969786	39.99	ADR	34.1	-39	0.1	35.19	54	-18.81	-	-	18	317	H
		* 4.953361	51.68	PK-U	34.1	-39.1	0	46.68	-	-	74	-27.32	120	279	V
		* 4.962467	39.86	ADR	34.1	-39	0.1	35.06	54	-18.94	-	-	120	279	V
		10.478949	63.53	PK-U	37.5	-36.9	0	64.13	-	-	68.2	-4.07	151	357	H
		10.479049	64.06	PK-U	37.5	-36.9	0	64.66	-	-	68.2	-3.54	273	101	V

HT20

UNII-1 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11n	5180	3.453365	54.92	PK-U	32.7	-41.8	0	45.82	-	-	68.2	-22.38	57	176	H
		3.453376	55.7	PK-U	32.7	-41.8	0	46.6	-	-	68.2	-21.6	303	245	V
		* 5.029596	42.44	ADR	34.1	-38.6	0.1	38.04	54	-15.96	-	-	46	320	H
		* 5.029822	53.5	PK-U	34.1	-38.6	0	49	-	-	74	-25	46	320	H
		* 5.027555	41.7	ADR	34.1	-38.6	0.1	37.3	54	-16.7	-	-	119	222	V
		* 5.031359	53.4	PK-U	34.1	-38.6	0	48.9	-	-	74	-25.1	119	222	V
		10.362206	60.89	PK-U	37.5	-36.8	0	61.59	-	-	68.2	-6.61	162	124	H
		10.362587	63.5	PK-U	37.5	-36.8	0	64.2	-	-	68.2	-4	271	108	V
	5200	3.466668	54.67	PK-U	32.7	-41.8	0	45.57	-	-	68.2	-22.63	34	228	H
		3.466732	54.79	PK-U	32.7	-41.8	0	45.69	-	-	68.2	-22.51	0	380	V
		* 5.045173	54.37	PK-U	34.2	-38.2	0	50.37	-	-	74	-23.63	22	101	H
		* 5.048617	42.71	ADR	34.2	-38.1	0.1	38.91	54	-15.09	-	-	22	101	H
		* 5.047281	54.21	PK-U	34.2	-38.2	0	50.21	-	-	74	-23.79	340	251	V
		* 5.050094	42.61	ADR	34.2	-38.1	0.1	38.81	54	-15.19	-	-	340	251	V
		10.398476	60.85	PK-U	37.5	-36.7	0	61.65	-	-	68.2	-6.55	152	106	H
		10.401795	64.08	PK-U	37.5	-36.7	0	64.88	-	-	68.2	-3.32	269	102	V
	5240	3.493449	56.15	PK-U	32.8	-41.9	0	47.05	-	-	68.2	-21.15	7	272	H
		3.493256	54.86	PK-U	32.8	-41.9	0	45.76	-	-	68.2	-22.44	1	109	V
		10.478329	60.67	PK-U	37.5	-36.9	0	61.27	-	-	68.2	-6.93	154	128	H
		10.481454	63.62	PK-U	37.5	-36.9	0	64.22	-	-	68.2	-3.98	280	102	V
		* 15.853676	47.31	PK-U	40.5	-33.4	0	54.41	-	-	74	-19.59	149	326	H
		* 15.845464	35.44	ADR	40.5	-33.5	0.1	42.54	54	-11.46	-	-	149	326	H
		* 15.825086	47.45	PK-U	40.5	-33.6	0	54.35	-	-	74	-19.65	178	318	V
		* 15.839409	36.04	ADR	40.5	-33.5	0.1	43.14	54	-10.86	-	-	178	318	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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HT40

UNII-1 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11n	5190	3.460054	55.69	PK-U	32.7	-41.8	0	46.59	-	-	68.2	-21.61	327	102	H
		3.460129	55.11	PK-U	32.7	-41.8	0	46.01	-	-	68.2	-22.19	33	199	V
		* 5.045697	55.7	PK-U	34.2	-38.2	0	51.7	-	-	74	-22.3	53	118	H
		* 5.036383	43.55	ADR	34.2	-38.5	0.2	39.45	54	-14.55	-	-	53	118	H
		* 5.044801	54.88	PK-U	34.2	-38.2	0	50.88	-	-	74	-23.12	327	119	V
		* 5.038704	42.93	ADR	34.2	-38.4	0.2	38.93	54	-15.07	-	-	327	119	V
		10.37616	59.04	PK-U	37.5	-36.7	0	59.84	-	-	68.2	-8.36	157	359	H
		10.376181	61.15	PK-U	37.5	-36.7	0	61.95	-	-	68.2	-6.25	278	116	V
	5230	* 15.691727	47.32	PK-U	40.4	-33.6	0	54.12	-	-	74	-19.88	214	206	H
		* 15.699878	34.6	ADR	40.4	-33.6	0.2	41.6	54	-12.4	-	-	214	206	H
		* 15.704244	47.04	PK-U	40.4	-33.6	0	53.84	-	-	74	-20.16	278	213	V
		* 15.689899	34.9	ADR	40.4	-33.6	0.2	41.9	54	-12.1	-	-	278	213	V
		3.486458	55.27	PK-U	32.8	-41.8	0	46.27	-	-	68.2	-21.93	9	374	H
		3.486522	54.67	PK-U	32.8	-41.8	0	45.67	-	-	68.2	-22.53	349	106	V
		10.456182	59.15	PK-U	37.5	-36.8	0	59.85	-	-	68.2	-8.35	151	342	H
		10.456302	61.27	PK-U	37.5	-36.8	0	61.97	-	-	68.2	-6.23	272	101	V

VHT80

UNII-1 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11ac	5210	3.473247	55.88	PK-U	32.7	-41.8	0	46.78	-	-	-	-	68.2	-21.42	12
		3.473292	50.22	ADR	32.7	-41.8	0.4	41.52	-	-	-	-	-	-	12
		3.47326	55.34	PK-U	32.7	-41.8	0	46.24	-	-	-	-	68.2	-21.96	130
		3.473424	48.27	ADR	32.7	-41.8	0.4	39.57	-	-	-	-	-	-	130
		* 5.02095	56.12	PK-U	34.1	-38.8	0	51.42	-	-	74	-22.58	-	-	49
		* 5.020941	44.01	ADR	34.1	-38.8	0.4	39.71	54	-14.29	-	-	-	-	49
		* 5.019222	54	PK-U	34.1	-38.8	0	49.3	-	-	74	-24.7	-	-	346
		* 5.020924	42	ADR	34.1	-38.8	0.4	37.7	54	-16.3	-	-	-	-	346
		10.416994	56.92	PK-U	37.5	-36.7	0	57.72	-	-	-	-	68.2	-10.48	161
		10.42862	43.35	ADR	37.5	-36.7	0.4	44.55	-	-	-	-	-	-	161
		10.425512	59.02	PK-U	37.5	-36.7	0	59.82	-	-	-	-	68.2	-8.38	274
		10.433551	45.09	ADR	37.5	-36.7	0.4	46.29	-	-	-	-	-	-	274

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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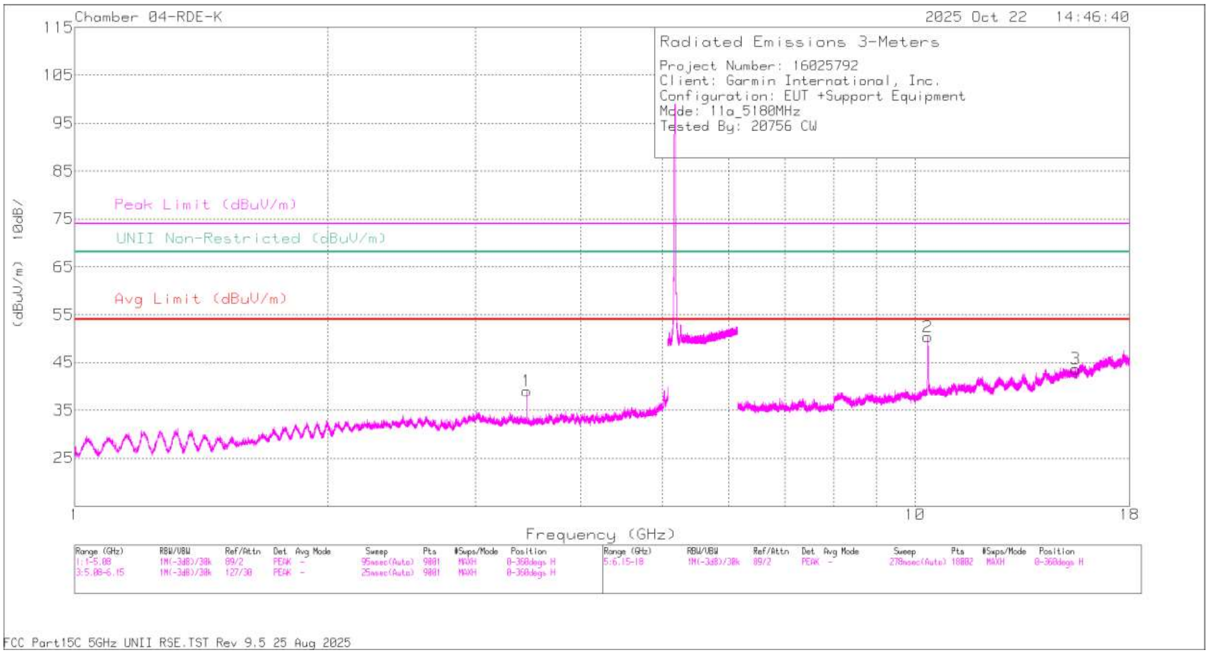
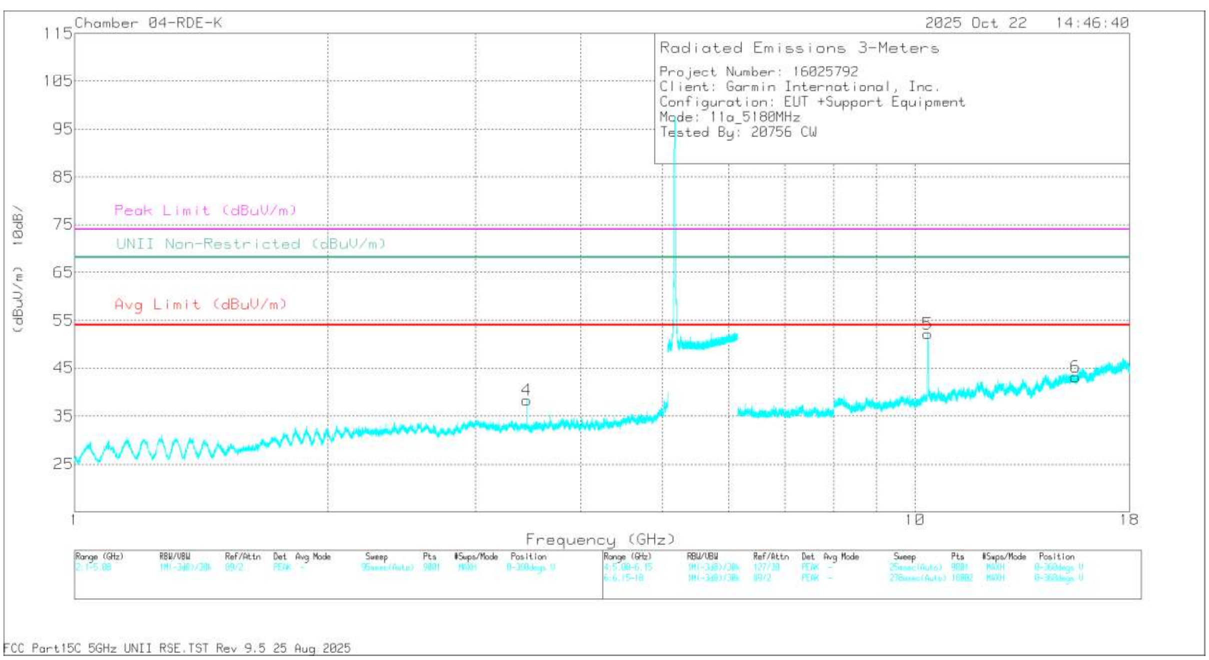
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL / 5180MHz), a mode

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

10.1.3. SISO MODE IN UNII-2A BAND – BANDEDGE

UNII-2A (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
a	5260	*, **5.25	65.66	Pk	34.5	-35.2	-	64.96	-	-	68.2	-3.24	89	250	H
		*, **5.25	65.8	Pk	34.5	-35.2	-	65.1	-	-	68.2	-3.1	92	144	V
	5320	* 5.35	59.97	Pk	34.6	-30.5	0	64.07	-	-	74	-9.93	41	240	H
		* 5.352754	63.28	Pk	34.6	-30.5	0	67.38	-	-	74	-6.62	41	240	H
		* 5.35	47.26	RMS	34.6	-30.5	0.1	51.45	54	-2.55	-	-	41	240	H
		* 5.350024	47.83	RMS	34.6	-30.5	0.1	52.02	54	-1.98	-	-	41	240	H
		* 5.35	59.09	Pk	34.6	-30.5	0	63.19	-	-	74	-10.81	343	251	V
		* 5.352203	62.29	Pk	34.6	-30.5	0	66.39	-	-	74	-7.61	343	251	V
		* 5.35	46.65	RMS	34.6	-30.5	0.1	50.84	54	-3.16	-	-	343	251	V
		* 5.350076	47.22	RMS	34.6	-30.5	0.1	51.41	54	-2.59	-	-	343	251	V
HT20	5260	*, **5.249937	58.62	Pk	34.5	-35.2	-	57.92	-	-	68.2	-10.28	90	101	H
		*, **5.249837	60.16	Pk	34.5	-35.2	-	59.46	-	-	68.2	-8.74	95	166	V
	5320	* 5.35	59.14	Pk	34.6	-30.5	0	63.24	-	-	74	-10.76	40	151	H
		* 5.352938	60.83	Pk	34.6	-30.5	0	64.93	-	-	74	-9.07	40	151	H
		* 5.35	44.26	RMS	34.6	-30.5	0.1	48.46	54	-5.54	-	-	40	151	H
		* 5.399117	45.64	RMS	34.6	-30.5	0.1	49.84	54	-4.16	-	-	40	151	H
		* 5.35	58.81	Pk	34.6	-30.5	0	62.91	-	-	74	-11.09	350	115	V
		* 5.350549	60.72	Pk	34.6	-30.5	0	64.82	-	-	74	-9.18	350	115	V
		* 5.35	44.65	RMS	34.6	-30.5	0.1	48.85	54	-5.15	-	-	350	115	V
		* 5.39896	46.08	RMS	34.6	-30.5	0.1	50.28	54	-3.72	-	-	350	115	V
HT40	5270	*, **5.249862	64.46	Pk	34.5	-35.2	-	65.26	-	-	68.2	-4.44	83	101	H
		*, **5.25	65.96	Pk	34.5	-35.2	-	78.08	-	-	68.2	-2.94	88	139	V
	5310	* 5.35	67.64	Pk	34.6	-30.5	0	71.74	-	-	74	-2.26	42	105	H
		* 5.350129	67.58	Pk	34.6	-30.5	0	71.68	-	-	74	-2.32	42	105	H
		* 5.35	45.42	RMS	34.6	-30.5	0.2	49.72	54	-4.28	-	-	42	105	H
		* 5.350024	46.4	RMS	34.6	-30.5	0.2	50.7	54	-3.3	-	-	42	105	H
		* 5.35	62.53	Pk	34.6	-30.5	0	66.63	-	-	74	-7.37	138	118	V
		* 5.350365	64.47	Pk	34.6	-30.5	0	68.57	-	-	74	-5.43	138	118	V
		* 5.35	43.09	RMS	34.6	-30.5	0.2	47.39	54	-6.61	-	-	138	118	V
		* 5.350313	44.48	RMS	34.6	-30.5	0.2	48.78	54	-5.22	-	-	138	118	V
VHT80	5290	5.249887	62.09	Pk	34.5	-30.6	-	65.99	-	-	68.2	-2.21	37	105	H
		5.249962	55.99	Pk	34.5	-30.6	-	59.89	-	-	68.2	-8.31	234	159	V
	5290	* 5.35	59.3	Pk	34.6	-30.5	0	63.4	-	-	74	-10.6	36	110	H
		* 5.353463	60.53	Pk	34.6	-30.5	0	64.63	-	-	74	-9.37	36	110	H
		* 5.35	46.28	RMS	34.6	-30.5	0.4	50.78	54	-3.22	-	-	36	110	H
		* 5.353594	46.84	RMS	34.6	-30.5	0.4	51.34	54	-2.66	-	-	36	110	H
		* 5.35	55.72	Pk	34.6	-30.5	0	59.82	-	-	74	-14.18	341	302	V
		* 5.351862	58.88	Pk	34.6	-30.5	0	62.98	-	-	74	-11.02	341	302	V
		* 5.35	44.52	RMS	34.6	-30.5	0.4	49.02	54	-4.98	-	-	341	302	V
		* 5.350785	44.97	RMS	34.6	-30.5	0.4	49.47	54	-4.53	-	-	341	302	V

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

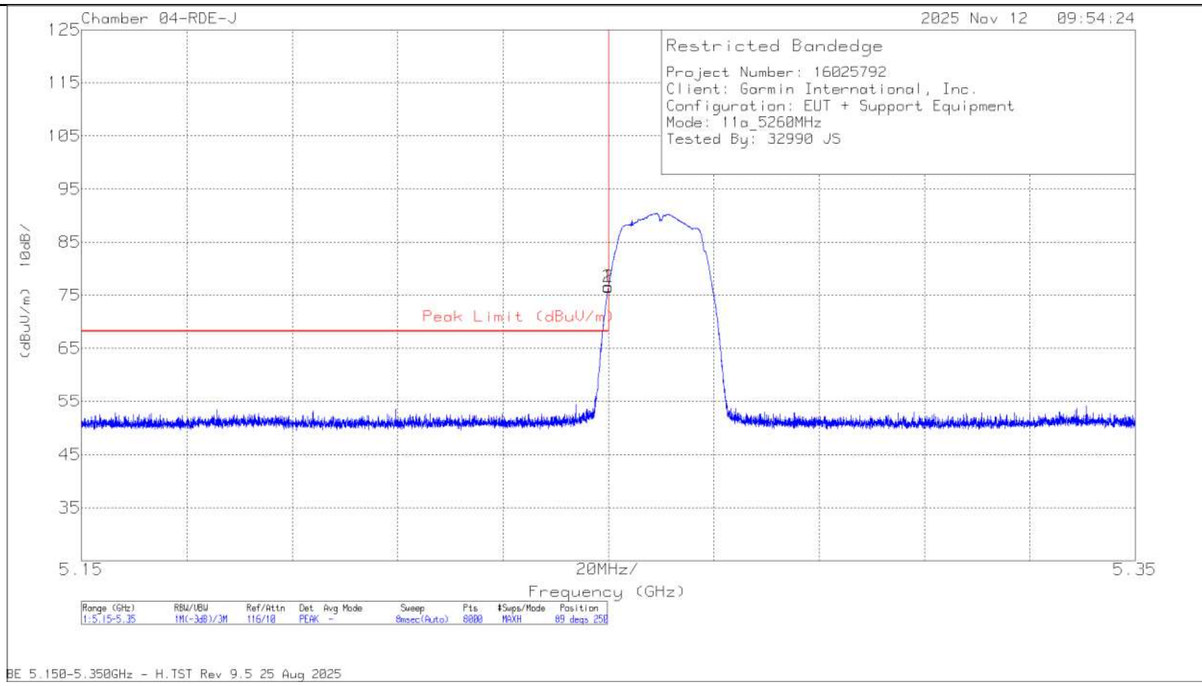
** - Zoom-in 1MHz integration method (Worst-case)

Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

BANDEDGE (LOW CHANNEL / 5260MHz), a mode

HORIZONTAL RESULT

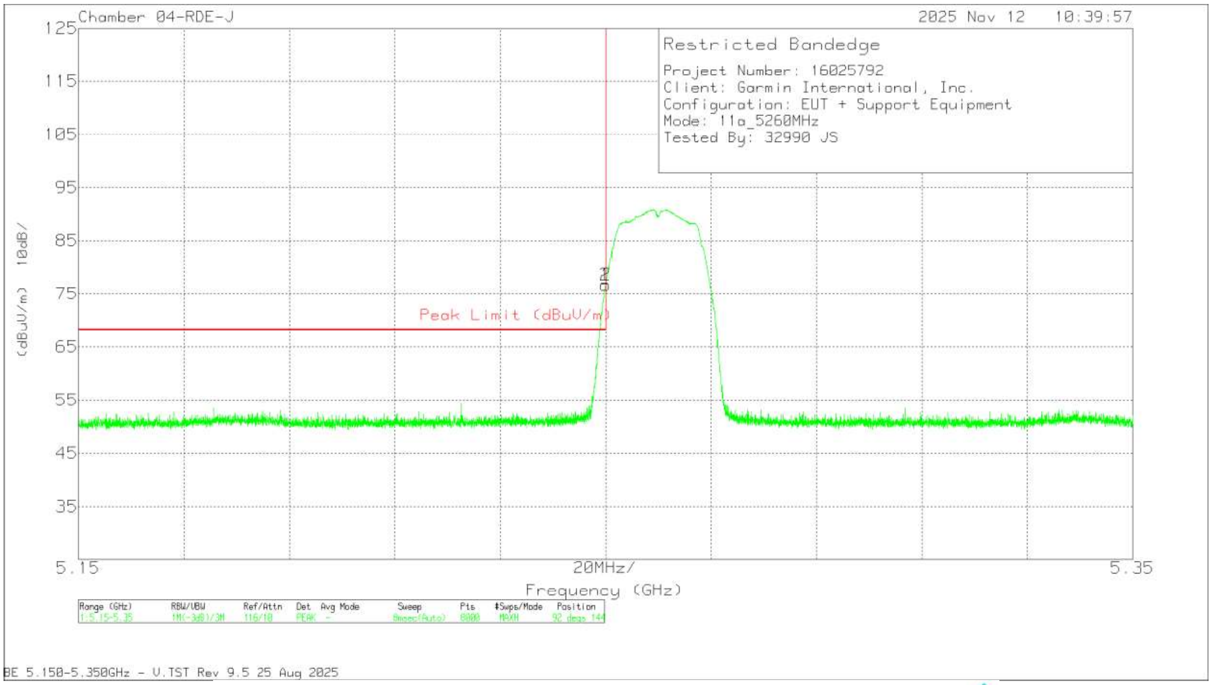


ZOOM-IN

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

BANDEDGE (LOW CHANNEL / 5260MHz), a mode

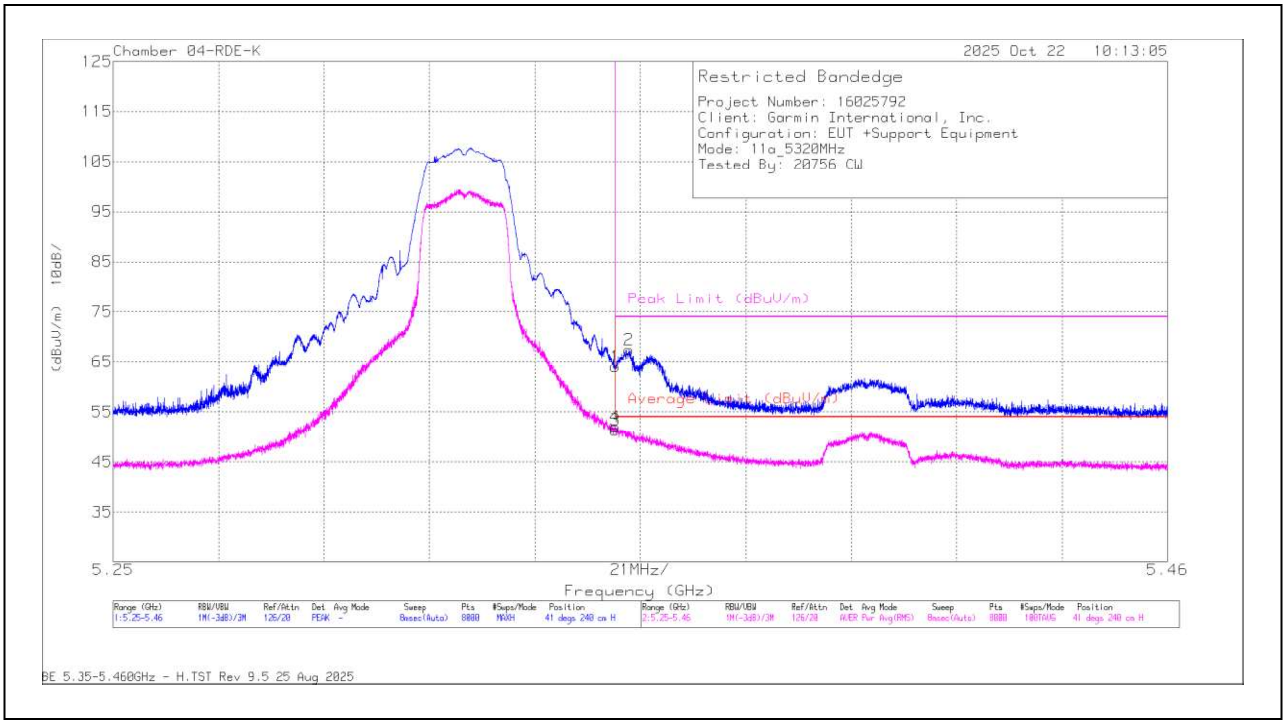
VERTICAL RESULT



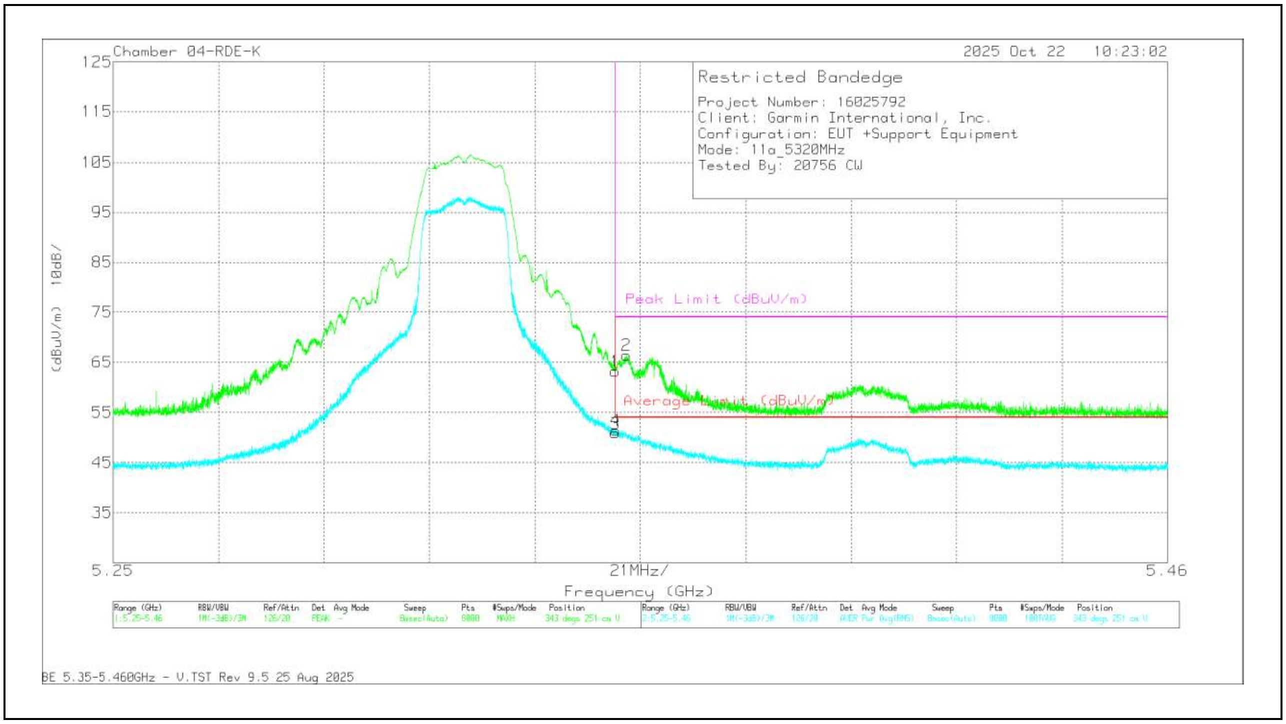
ZOOM-IN

BANDEDGE (HIGH CHANNEL / 5320MHz), a mode

HORIZONTAL RESULT



VERTICAL RESULT



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10.1.4. SISO MODE IN UNII-2A BAND – SPURIOUS EMISSIONS

a mode

UNII-2a (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11a	5260	* 3.506685	50.03	ADR	32.8	-41.9	0.1	41.03	54	-12.97	-	-	13	115	H
		* 3.506778	56.34	PK-U	32.8	-41.9	0	47.24	-	-	74	-26.76	13	115	H
		* 3.506636	55.08	PK-U	32.8	-41.9	0	45.98	-	-	74	-28.02	305	199	V
		* 3.506698	47.95	ADR	32.8	-41.9	0.1	38.95	54	-15.05	-	-	305	199	V
		* 5.035572	41.1	ADR	34.2	-38.5	0.1	36.9	54	-17.1	-	-	35	108	H
		* 5.036887	53.22	PK-U	34.2	-38.5	0	48.92	-	-	74	-25.08	35	108	H
		* 5.0337	52.14	PK-U	34.2	-38.6	0	47.74	-	-	74	-26.26	339	234	V
		* 5.037935	40.37	ADR	34.2	-38.4	0.1	36.27	54	-17.73	-	-	339	234	V
		10.519006	61.69	PK-U	37.6	-36.8	0	62.49	-	-	68.2	-5.71	149	348	H
		10.519151	63.23	PK-U	37.6	-36.8	0	64.03	-	-	68.2	-4.17	272	101	V
	5300	* 3.533262	50.62	ADR	33	-41.8	0.1	41.92	54	-12.08	-	-	20	225	H
		* 3.53348	56.36	PK-U	33	-41.8	0	47.56	-	-	74	-26.44	20	225	H
		* 3.50067	52.32	PK-U	32.8	-41.9	0	43.22	-	-	74	-30.78	341	302	V
		* 3.522867	41.07	ADR	32.9	-41.8	0.1	32.27	54	-21.73	-	-	341	302	V
		6.794994	49.07	PK-U	35.6	-37.6	0	47.07	-	-	68.2	-21.13	28	227	H
		6.761786	49.45	PK-U	35.6	-37.8	0	47.25	-	-	68.2	-20.95	136	345	V
		10.599047	60.05	PK-U	37.6	-36.9	0	60.75	-	-	68.2	-7.45	257	105	H
		10.598747	63.44	PK-U	37.6	-36.9	0	64.14	-	-	68.2	-4.06	283	101	V
	5320	2.568387	43.26	ADR	32.4	-43.9	0.1	31.86	-	-	-	-	291	181	H
		2.592225	57.15	PK-U	32.4	-43.7	0	45.85	-	-	68.2	-22.35	291	181	H
		2.566145	43.35	ADR	32.4	-43.9	0.1	31.95	-	-	-	-	339	239	V
		2.587542	56.54	PK-U	32.4	-43.7	0	45.24	-	-	68.2	-22.96	339	239	V
		* 3.546581	55.81	PK-U	33.1	-41.9	0	47.01	-	-	74	-26.99	19	172	H
		* 3.546652	49.86	ADR	33.1	-41.9	0.1	41.16	54	-12.84	-	-	19	172	H
		* 3.546998	55.34	PK-U	33.1	-41.9	0	46.54	-	-	74	-27.46	333	101	V
		* 3.5467	49.22	ADR	33.1	-41.9	0.1	40.52	54	-13.48	-	-	333	101	V
		* 10.639092	58.04	PK-U	37.6	-36.7	0	58.94	-	-	74	-15.06	245	101	H
		* 10.642198	45.51	ADR	37.6	-36.7	0.1	46.51	54	-7.49	-	-	245	101	H
		* 10.639216	60.89	PK-U	37.6	-36.7	0	61.79	-	-	74	-12.21	275	101	V

HT20

UNII-2a (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11n	5260	* 3.506624	50.4	ADR	32.8	-41.9	0.1	41.4	54	-12.6	-	-	19	193	H
		* 3.506651	56.03	PK-U	32.8	-41.9	0	46.93	-	-	74	-27.07	19	193	H
		* 3.506598	55.15	PK-U	32.8	-41.9	0	46.05	-	-	74	-27.95	333	259	V
		* 3.50666	48.83	ADR	32.8	-41.9	0.1	39.83	54	-14.17	-	-	333	259	V
		* 4.773528	51.2	PK-U	34.2	-40.4	0	45	-	-	74	-29	143	272	H
		* 4.79529	39.76	ADR	34.2	-40.2	0.1	33.86	54	-20.14	-	-	143	272	H
		* 4.786036	51.22	PK-U	34.2	-40.3	0	45.12	-	-	74	-28.88	16	279	V
		* 4.793008	39.74	ADR	34.2	-40.3	0.1	33.74	54	-20.26	-	-	16	279	V
		10.519112	47.92	ADR	37.6	-36.8	0.1	48.82	-	-	-	-	156	108	H
		10.52201	60.8	PK-U	37.6	-36.8	0	61.6	-	-	68.2	-6.6	156	108	H
		10.51821	63.17	PK-U	37.6	-36.8	0	63.97	-	-	68.2	-4.23	280	104	V
		10.518793	50.3	ADR	37.6	-36.8	0.1	51.2	-	-	-	-	280	104	V
	5300	* 3.533206	55.27	PK-U	33	-41.8	0	46.47	-	-	74	-27.53	5	290	H
		* 3.533375	48.89	ADR	33	-41.8	0.1	40.19	54	-13.81	-	-	5	290	H
		* 3.533299	55.45	PK-U	33	-41.8	0	46.65	-	-	74	-27.35	278	295	V
		* 3.533326	49.02	ADR	33	-41.8	0.1	40.32	54	-13.68	-	-	278	295	V
		* 8.171355	38.57	ADR	35.9	-37.5	0.1	37.07	54	-16.93	-	-	224	320	H
		* 8.173599	50.34	PK-U	35.9	-37.5	0	48.74	-	-	74	-25.26	224	320	H
		* 8.175168	38.71	ADR	35.9	-37.5	0.1	37.21	54	-16.79	-	-	178	376	V
		* 8.187656	50.65	PK-U	35.9	-37.5	0	49.05	-	-	74	-24.95	178	376	V
		10.599526	49.02	ADR	37.6	-36.9	0.1	49.82	-	-	-	-	150	372	H
		10.599797	61.95	PK-U	37.6	-36.9	0	62.65	-	-	68.2	-5.55	150	372	H
		10.598401	62.44	PK-U	37.6	-36.9	0	63.14	-	-	68.2	-5.06	278	103	V
		10.59973	49.51	ADR	37.6	-36.9	0.1	50.31	-	-	-	-	278	103	V
	5320	* 3.546628	51.77	ADR	33.1	-41.9	0.1	43.07	54	-10.93	-	-	57	101	H
		* 3.546641	56.55	PK-U	33.1	-41.9	0	47.75	-	-	74	-26.25	57	101	H
		* 3.546669	55.49	PK-U	33.1	-41.9	0	46.69	-	-	74	-27.31	297	199	V
		* 3.546753	49.52	ADR	33.1	-41.9	0.1	40.82	54	-13.18	-	-	297	199	V
		* 10.640511	61.78	PK-U	37.6	-36.7	0	62.68	-	-	74	-11.32	245	101	H
		* 10.640716	49.26	ADR	37.6	-36.7	0.1	50.26	54	-3.74	-	-	245	101	H
		* 10.637465	49.18	ADR	37.6	-36.7	0.1	50.18	54	-3.82	-	-	324	212	V
		* 10.641864	61.85	PK-U	37.6	-36.7	0	62.75	-	-	74	-11.25	324	212	V
		* 15.699687	46.93	PK-U	40.4	-33.6	0	53.73	-	-	74	-20.27	163	255	H
		* 15.704398	34.97	ADR	40.4	-33.6	0.1	41.87	54	-12.13	-	-	163	255	H
		* 15.696412	35.32	ADR	40.4	-33.6	0.1	42.22	54	-11.78	-	-	54	356	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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HT40

UNII-2a (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11n	5270	* 3.513126	57.05	PK-U	32.8	-41.9	0	47.95	-	-	74	-26.05	61	103	H
		* 3.513295	52.31	ADR	32.8	-41.9	0.2	43.41	54	-10.59	-	-	61	103	H
		* 3.513301	49.48	ADR	32.8	-41.9	0.2	40.58	54	-13.42	-	-	312	218	V
		* 3.513416	56.02	PK-U	32.8	-41.9	0	46.92	-	-	74	-27.08	312	218	V
		10.536269	59.16	PK-U	37.6	-36.8	0	59.96	-	-	68.2	-8.24	250	102	H
		10.542058	62.15	PK-U	37.6	-36.9	0	62.85	-	-	68.2	-5.35	277	101	V
		* 15.798216	47.65	PK-U	40.4	-33.7	0	54.35	-	-	74	-19.65	343	365	H
		* 15.806735	35.88	ADR	40.4	-33.7	0.2	42.78	54	-11.22	-	-	343	365	H
		* 15.817048	35.71	ADR	40.5	-33.7	0.2	42.71	54	-11.29	-	-	21	342	V
		* 15.827816	47.54	PK-U	40.5	-33.6	0	54.44	-	-	74	-19.56	21	342	V
	5310	2.112297	57.03	PK-U	31.6	-45.2	0	43.43	-	-	68.2	-24.77	289	306	H
		2.112853	45.03	ADR	31.6	-45.2	0.2	31.63	-	-	-	-	289	306	H
		2.107633	56.57	PK-U	31.6	-45.2	0	42.97	-	-	68.2	-25.23	332	140	V
		2.108775	44.97	ADR	31.6	-45.2	0.2	31.57	-	-	-	-	332	140	V
		* 3.54002	56.53	PK-U	33.1	-41.8	0	47.83	-	-	74	-26.17	350	266	H
		* 3.540083	50.26	ADR	33.1	-41.8	0.2	41.76	54	-12.24	-	-	350	266	H
		* 3.540133	55	PK-U	33.1	-41.8	0	46.3	-	-	74	-27.7	313	203	V
		* 3.540044	48.19	ADR	33.1	-41.8	0.2	39.69	54	-14.31	-	-	313	203	V
		* 10.6162	58.2	PK-U	37.6	-36.7	0	59.1	-	-	74	-14.9	244	101	H
		* 10.616027	45.7	ADR	37.6	-36.7	0.2	46.8	54	-7.2	-	-	244	101	H
		* 10.617251	61.09	PK-U	37.6	-36.7	0	61.99	-	-	74	-12.01	274	104	V
		* 10.618997	49.06	ADR	37.6	-36.7	0.2	50.16	54	-3.84	-	-	274	104	V

VHT80

UNII-2a (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11ac	5290	* 1.322693	46.5	ADR	28.7	-46.1	0.4	29.5	54	-24.5	-	-	184	109	H
		* 1.325049	58.21	PK-U	28.7	-46.1	0	40.81	-	-	74	-33.19	184	109	H
		* 1.318262	46.67	ADR	28.7	-46.1	0.4	29.67	54	-24.33	-	-	83	219	V
		* 1.323888	58.09	PK-U	28.7	-46.1	0	40.69	-	-	74	-33.31	83	219	V
		* 3.526541	57.15	PK-U	33	-41.8	0	48.35	-	-	74	-25.65	353	266	H
		* 3.526763	51.63	ADR	33	-41.8	0.4	43.23	54	-10.77	-	-	353	266	H
		* 3.526718	55.47	PK-U	33	-41.8	0	46.67	-	-	74	-27.33	352	110	V
		* 3.526776	49.07	ADR	33	-41.8	0.4	40.67	54	-13.33	-	-	352	110	V
		10.585546	57.31	PK-U	37.6	-37	0	57.91	-	-	68.2	-10.29	239	102	H
		10.589515	43.65	ADR	37.6	-36.9	0.4	44.75	-	-	-	-	239	102	H
		10.585578	59.7	PK-U	37.6	-37	0	60.3	-	-	68.2	-7.9	268	103	V
		10.588889	46.19	ADR	37.6	-37	0.4	47.19	-	-	-	-	268	103	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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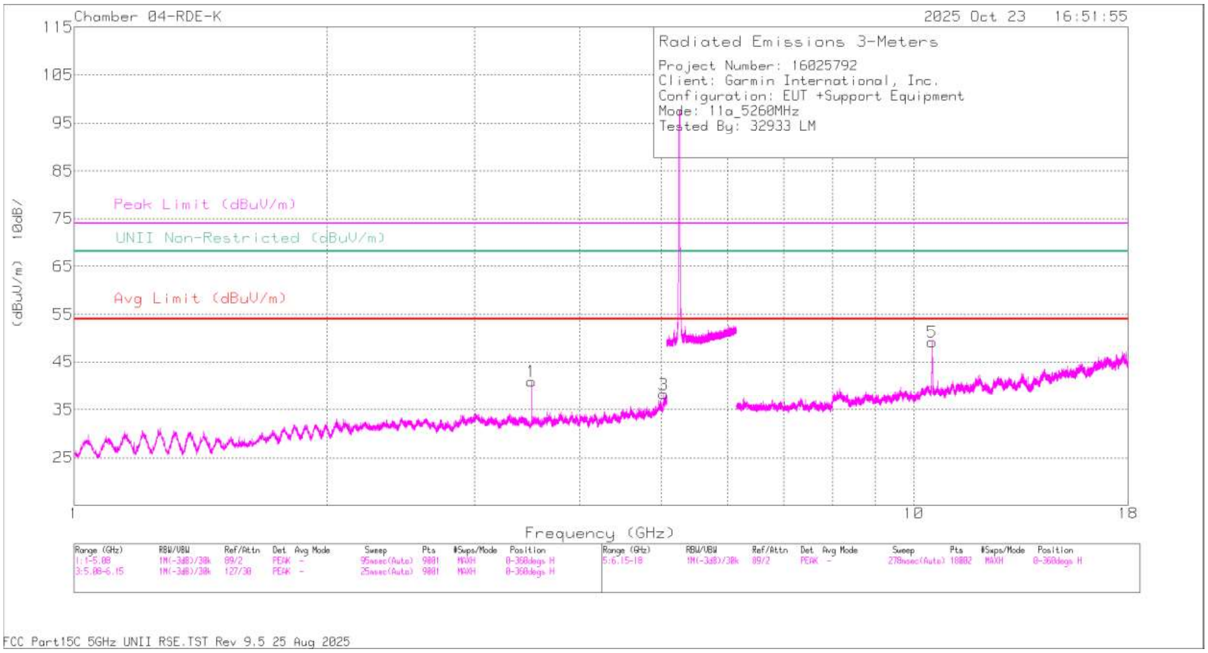
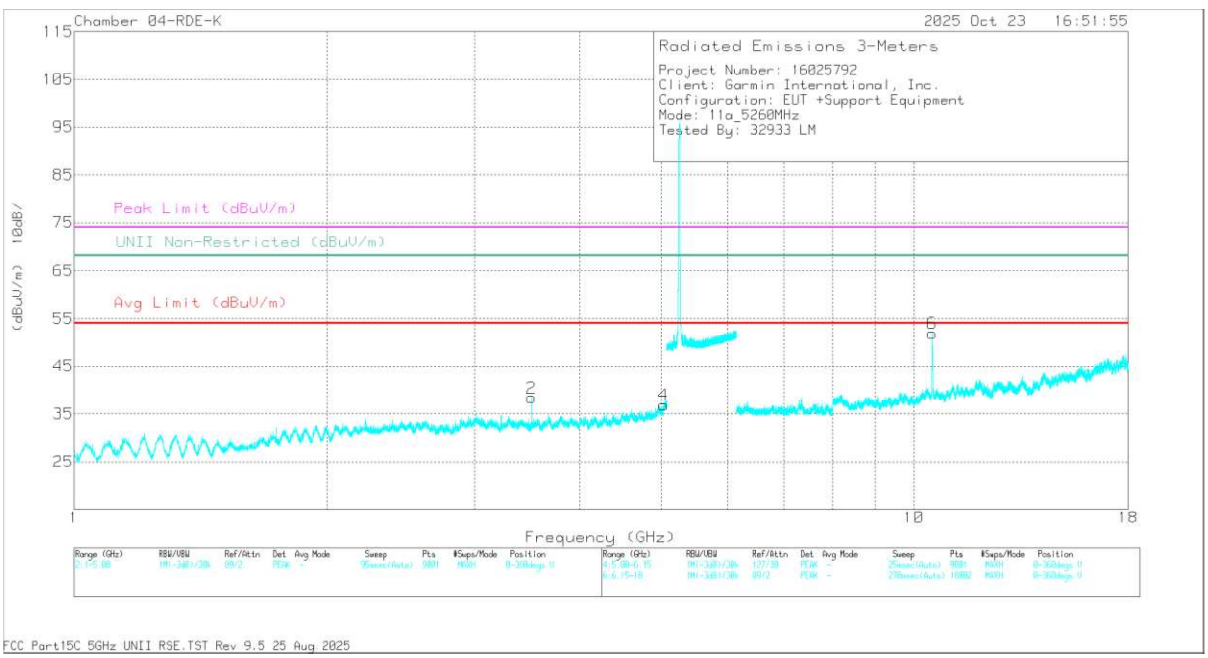
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL / 5260MHz), a mode

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

10.1.5. SISO MODE IN UNII-2C BAND – BANDEDGES

UNII-2c (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
a	5500	* 5.46	52.45	Pk	34.6	-30.4	-	56.65	-	-	68.2	-11.55	24	134	H
		* 5.419108	55.57	Pk	34.6	-30.5	-	59.67	-	-	74	-14.33	24	134	H
		5.47	56.84	Pk	34.6	-30.4	-	61.04	-	-	68.2	-7.16	24	134	H
		5.469164	60.61	Pk	34.6	-30.4	-	64.81	-	-	68.2	-3.39	24	134	H
		* 5.46	40.9	RMS	34.6	-30.4	0.1	45.19	54	-8.81	-	-	24	134	H
		* 5.419433	43.45	RMS	34.6	-30.4	0.1	47.74	54	-6.26	-	-	24	134	H
		5.47	41.95	RMS	34.6	-30.4	0.1	46.24	-	-	-	-	24	134	H
		* 5.419433	43.45	RMS	34.6	-30.4	0.1	47.74	54	-6.26	-	-	24	134	H
		* 5.46	51.56	Pk	34.6	-30.4	-	55.76	-	-	68.2	-12.44	336	178	V
		* 5.417683	54.11	Pk	34.6	-30.4	-	58.31	-	-	74	-15.69	336	178	V
		5.47	55.69	Pk	34.6	-30.4	-	59.89	-	-	68.2	-8.31	336	178	V
		5.469139	58.51	Pk	34.6	-30.4	-	62.71	-	-	68.2	-5.49	336	178	V
		* 5.46	39.7	RMS	34.6	-30.4	0.1	43.99	54	-10.01	-	-	336	178	V
		* 5.420934	42.64	RMS	34.6	-30.4	0.1	46.93	54	-7.07	-	-	336	178	V
		5.47	40.26	RMS	34.6	-30.4	0.1	44.55	-	-	-	-	336	178	V
		* 5.420934	42.64	RMS	34.6	-30.4	0.1	46.93	54	-7.07	-	-	336	178	V
	5700	5.725	60.77	Pk	34.6	-29.9	-	65.47	-	-	68.2	-2.73	285	291	H
		5.725593	61.73	Pk	34.7	-29.9	-	66.53	-	-	68.2	-1.67	285	291	H
		5.725	60.8	Pk	34.6	-29.9	-	65.5	-	-	68.2	-2.7	340	124	V
		5.725612	61.62	Pk	34.7	-29.9	-	66.42	-	-	68.2	-1.78	340	124	V
HT20	5500	* 5.46	53.64	Pk	34.6	-30.4	-	57.84	-	-	68.2	-10.36	291	201	H
		* 5.459938	56.74	Pk	34.6	-30.4	-	60.94	-	-	74	-13.06	291	201	H
		5.47	58.98	Pk	34.6	-30.4	-	63.18	-	-	68.2	-5.02	291	201	H
		5.466889	62.42	Pk	34.6	-30.4	-	66.62	-	-	68.2	-1.58	291	201	H
		* 5.46	41.24	RMS	34.6	-30.4	0.1	45.54	54	-8.46	-	-	291	201	H
		* 5.419283	43.5	RMS	34.6	-30.4	0.1	47.8	54	-6.2	-	-	291	201	H
		5.47	43.27	RMS	34.6	-30.4	0.1	47.57	-	-	-	-	291	201	H
		* 5.419283	43.5	RMS	34.6	-30.4	0.1	47.8	54	-6.2	-	-	291	201	H
		* 5.46	52.69	Pk	34.6	-30.4	-	56.89	-	-	68.2	-11.31	349	388	V
		* 5.458138	55.09	Pk	34.6	-30.4	-	59.29	-	-	74	-14.71	349	388	V
		5.47	60.63	Pk	34.6	-30.4	-	64.83	-	-	68.2	-3.37	349	388	V
		5.469814	62.28	Pk	34.6	-30.4	-	66.48	-	-	68.2	-1.72	349	388	V
		* 5.46	40.62	RMS	34.6	-30.4	0.1	44.92	54	-9.08	-	-	349	388	V
		* 5.458813	41.83	RMS	34.6	-30.4	0.1	46.13	54	-7.87	-	-	349	388	V
		5.47	42.85	RMS	34.6	-30.4	0.1	47.15	-	-	-	-	349	388	V
	5700	5.725	58.72	Pk	34.6	-29.9	-	63.42	-	-	68.2	-4.78	300	105	H
		5.726368	60.99	Pk	34.7	-29.9	-	65.79	-	-	68.2	-2.41	300	105	H
		5.725	59.9	Pk	34.6	-29.9	-	64.6	-	-	68.2	-3.6	143	101	V
		5.725011	59.96	Pk	34.6	-29.9	-	64.66	-	-	68.2	-3.54	143	101	V
HT40	5510	* 5.46	54.58	Pk	34.6	-30.4	0	58.78	-	-	68.2	-9.42	21	178	H
		* 5.459713	54.97	Pk	34.6	-30.4	0	59.17	-	-	74	-14.83	21	178	H
		5.47	58.44	Pk	34.6	-30.4	0	62.64	-	-	68.2	-5.56	21	178	H
		5.467464	61.94	Pk	34.6	-30.4	0	66.14	-	-	68.2	-2.06	21	178	H
		* 5.46	40.7	RMS	34.6	-30.4	0.2	45.1	54	-8.9	-	-	21	178	H
		* 5.459388	41.38	RMS	34.6	-30.4	0.2	45.78	54	-8.22	-	-	21	178	H
		5.47	45.27	RMS	34.6	-30.4	0.2	49.67	-	-	-	-	21	178	H
		* 5.459388	41.38	RMS	34.6	-30.4	0.2	45.78	54	-8.22	-	-	21	178	H
		* 5.46	52.75	Pk	34.6	-30.4	0	56.95	-	-	68.2	-11.25	344	115	V
		* 5.459738	55.48	Pk	34.6	-30.4	0	59.68	-	-	74	-14.32	344	115	V
		5.47	57.82	Pk	34.6	-30.4	0	62.02	-	-	68.2	-6.18	344	115	V
		5.469814	62.06	Pk	34.6	-30.4	0	66.26	-	-	68.2	-1.94	344	115	V
		* 5.46	40.62	RMS	34.6	-30.4	0.2	45.02	54	-8.98	-	-	344	115	V
		* 5.459938	41.26	RMS	34.6	-30.4	0.2	45.66	54	-8.34	-	-	344	115	V
		5.47	44.95	RMS	34.6	-30.4	0.2	49.35	-	-	-	-	344	115	V
		* 5.459938	41.26	RMS	34.6	-30.4	0.2	45.66	54	-8.34	-	-	344	115	V
	5670	5.725	56.55	Pk	34.6	-29.9	-	61.25	-	-	68.2	-6.95	292	320	H
		5.726077	58.51	Pk	34.7	-29.9	-	63.31	-	-	68.2	-4.89	292	320	H
		5.725	56.92	Pk	34.6	-29.9	-	61.62	-	-	68.2	-6.58	350	352	V
		5.725302	58.8	Pk	34.6	-29.9	-	63.5	-	-	68.2	-4.7	350	352	V
VHT80	5530	* 5.46	56.75	Pk	34.6	-30.4	-	60.95	-	-	68.2	-7.25	53	320	H
		* 5.459838	58.31	Pk	34.6	-30.4	-	62.51	-	-	74	-11.49	53	320	H
		5.47	59.37	Pk	34.6	-30.4	-	63.57	-	-	68.2	-4.63	53	320	H
		5.467989	60.69	Pk	34.6	-30.4	-	64.89	-	-	68.2	-3.31	53	320	H
		* 5.46	43.77	RMS	34.6	-30.4	0.4	48.37	54	-5.63	-	-	53	320	H
		* 5.459338	45	RMS	34.6	-30.4	0.4	49.6	54	-4.4	-	-	53	320	H
		5.47	46.47	RMS	34.6	-30.4	0.4	51.07	-	-	-	-	53	320	H
		* 5.459338	45	RMS	34.6	-30.4	0.4	49.6	54	-4.4	-	-	53	320	H
		* 5.46	57.11	Pk	34.6	-30.4	-	61.31	-	-	68.2	-6.89	354	321	V
		* 5.459863	59.43	Pk	34.6	-30.4	-	63.63	-	-	74	-10.37	354	321	V
		5.47	59.26	Pk	34.6	-30.4	-	63.46	-	-	68.2	-4.74	354	321	V
		5.469189	60.37	Pk	34.6	-30.4	-	64.57	-	-	68.2	-3.63	354	321	V
		* 5.46	43.91	RMS	34.6	-30.4	0.4	48.51	54	-5.49	-	-	354	321	V
		* 5.459188	45.1	RMS	34.6	-30.4	0.4	49.7	54	-4.3	-	-	354	321	V
		5.47	46.88	RMS	34.6	-30.4	0.4	51.48	-	-	-	-	354	321	V
		* 5.459188	45.1	RMS	34.6	-30.4	0.4	49.7	54	-4.3	-	-	354	321	V
	5610	5.725	57.61	Pk	34.6	-29.9	-	62.31	-	-	68.2	-5.89	285	303	H
		5.727227	60.9	Pk	34.7	-29.9	-	65.7	-	-	68.2	-2.5	285	303	H
		5.725	55.79	Pk	34.6	-29.9	-	60.49	-	-	68.2	-7.71	354	357	V
		5.729108	58.85	Pk	34.7	-29.9	-	63.65	-	-	68.2	-4.55	354	357	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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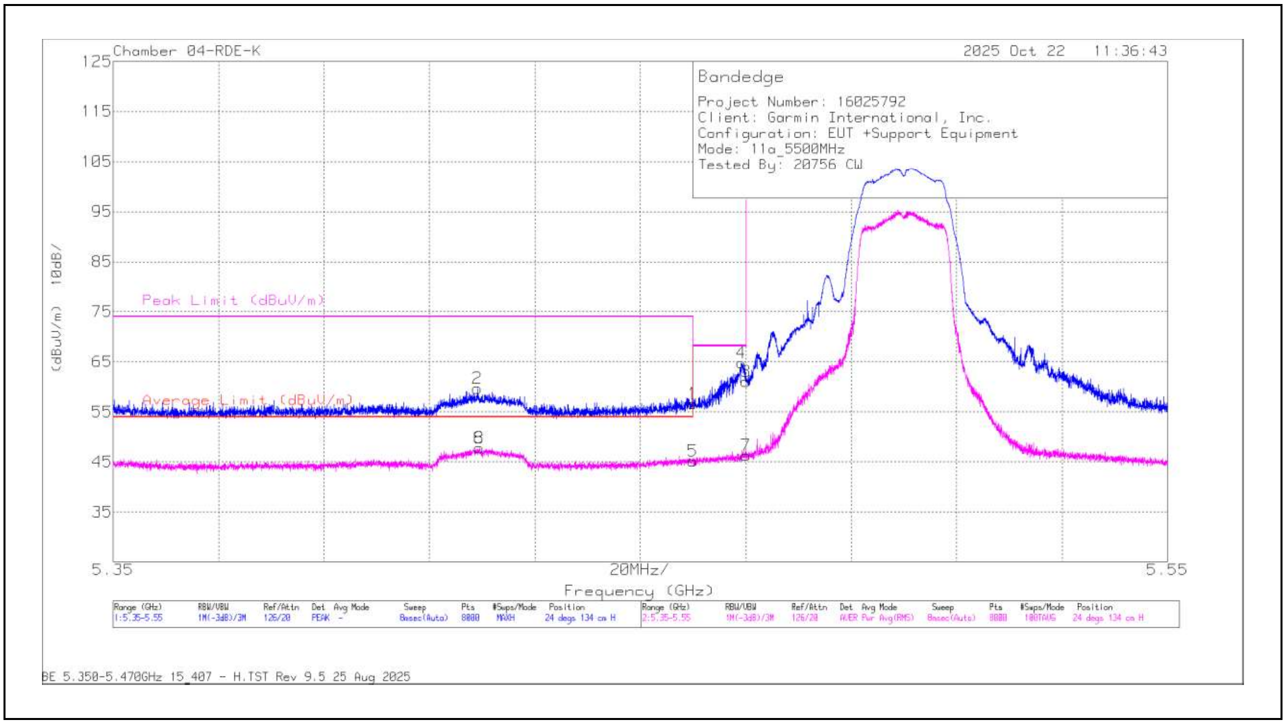
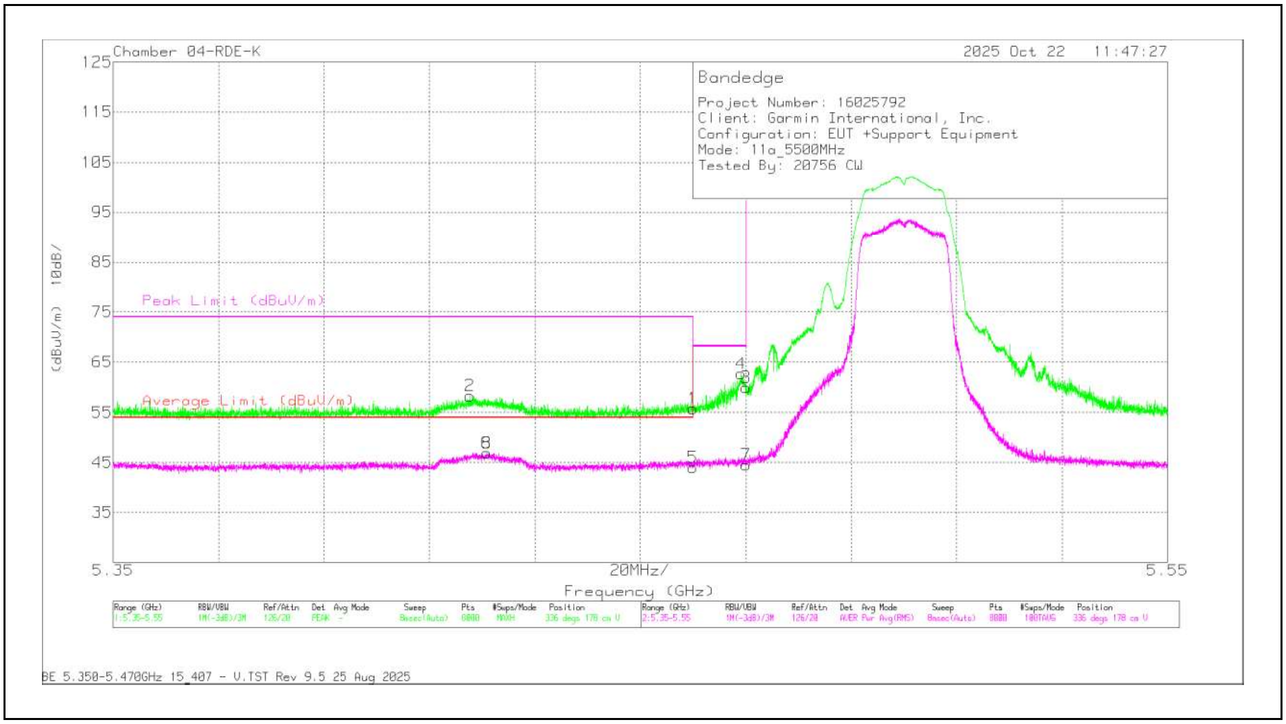
BANDEDGE (LOW CHANNEL / 5500MHz), a mode

HORIZONTAL RESULT



BANDEDGE (LOW CHANNEL / 5500MHz), a mode

VERTICAL RESULT



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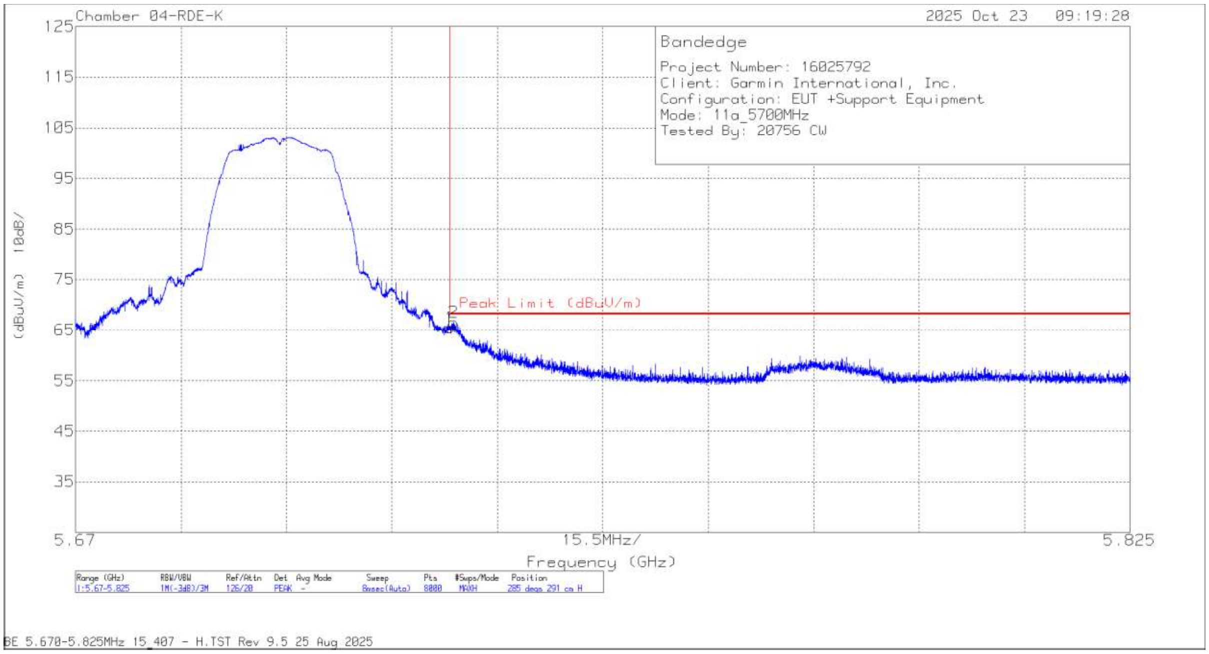
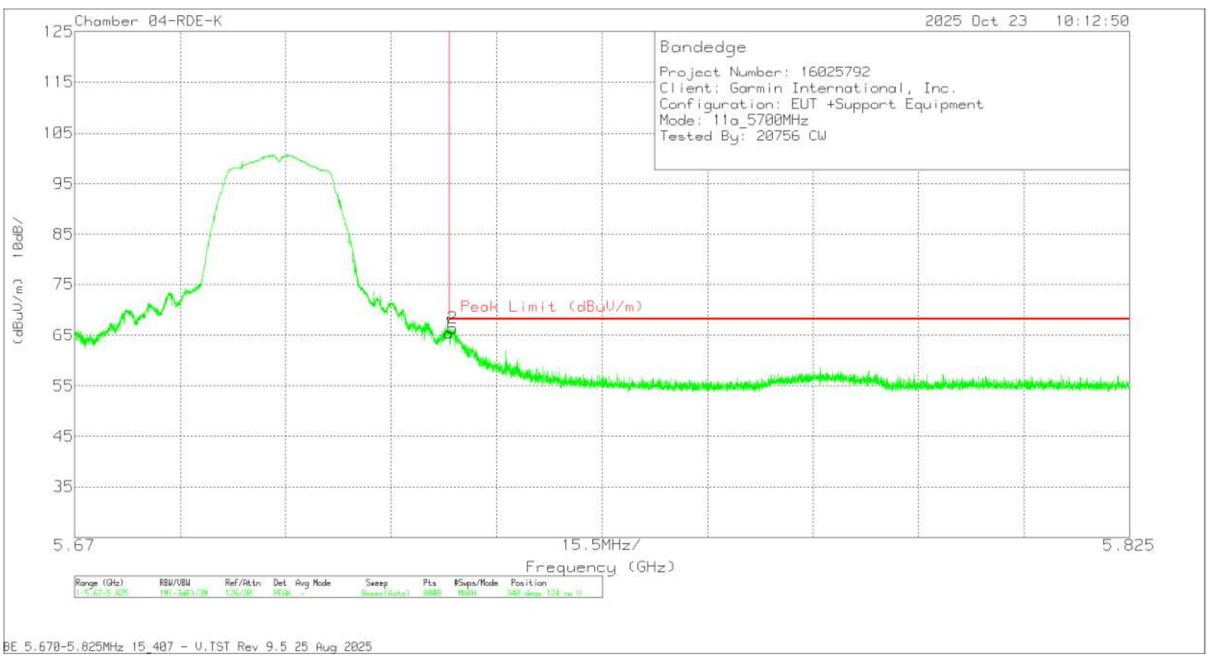
BANDEDGE (HIGH CHANNEL / 5700MHz), a mode

HORIZONTAL RESULT



BANDEDGE (HIGH CHANNEL / 5700MHz), a mode

VERTICAL RESULT



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10.1.6. SISO MODE IN UNII-2C BAND – SPURIOUS EMISSIONS

a mode

UNII-2c (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11a	5500	* 10.998927	60.52	PK-U	37.8	-36.4	0	61.92	-	-	74	-12.08	150	101	H
		* 11.001865	48.02	ADR	37.8	-36.4	0.1	49.52	54	-4.48	-	-	150	101	H
		* 10.998935	61.45	PK-U	37.8	-36.4	0	62.85	-	-	74	-11.15	265	103	V
		* 11.002188	49	ADR	37.8	-36.4	0.1	50.5	54	-3.5	-	-	265	103	V
		* 15.864576	47.16	PK-U	40.5	-33.3	0	54.36	-	-	74	-19.64	32	142	V
		* 15.868415	35.4	ADR	40.5	-33.3	0.1	42.7	54	-11.3	-	-	32	142	V
		* 15.92496	46.84	PK-U	40.6	-33.2	0	54.24	-	-	74	-19.76	341	273	H
		* 15.940087	35.06	ADR	40.6	-33.1	0.1	42.66	54	-11.34	-	-	341	273	H
		* 3.666418	54.55	PK-U	33.5	-41.7	0	46.35	-	-	74	-27.65	347	107	V
		* 3.666675	47.94	ADR	33.5	-41.7	0.1	39.84	54	-14.16	-	-	347	107	V
		* 3.666603	50.96	ADR	33.5	-41.7	0.1	42.86	54	-11.14	-	-	14	193	H
		* 3.666719	56.6	PK-U	33.5	-41.7	0	48.4	-	-	74	-25.6	14	193	H
	5580	* 11.15892	61.15	PK-U	37.9	-36.3	0	62.75	-	-	74	-11.25	252	102	V
		* 11.161821	48.31	ADR	37.9	-36.3	0.1	50.01	54	-3.99	-	-	252	102	V
		* 11.15902	59.95	PK-U	37.9	-36.3	0	61.55	-	-	74	-12.45	147	105	H
		* 11.159749	47.16	ADR	37.9	-36.3	0.1	48.86	54	-5.14	-	-	147	105	H
		* 15.445138	34.18	ADR	40.1	-32.9	0.1	41.48	54	-12.52	-	-	292	145	H
		* 15.473726	45.74	PK-U	40.1	-33.1	0	52.74	-	-	74	-21.26	292	145	H
		* 15.847334	36.03	ADR	40.5	-33.5	0.1	43.13	54	-10.87	-	-	343	271	V
		* 15.865518	47.66	PK-U	40.5	-33.3	0	54.86	-	-	74	-19.14	343	271	V
		* 3.719961	55.09	PK-U	33.4	-41.7	0	46.79	-	-	74	-27.21	315	117	H
		* 3.71997	48.5	ADR	33.4	-41.7	0.1	40.3	54	-13.7	-	-	315	117	H
		* 3.720108	46.39	ADR	33.4	-41.7	0.1	38.19	54	-15.81	-	-	351	108	V
		* 3.720117	53.77	PK-U	33.4	-41.7	0	45.47	-	-	74	-28.53	351	108	V
	5700	* 11.398977	59.37	PK-U	38.1	-35.7	0	61.77	-	-	74	-12.23	335	101	V
		* 11.402066	46.64	ADR	38.1	-35.7	0.1	49.14	54	-4.86	-	-	335	101	V
		* 11.402124	46.18	ADR	38.1	-35.7	0.1	48.68	54	-5.32	-	-	355	103	H
		* 11.40248	58.72	PK-U	38.1	-35.7	0	61.12	-	-	74	-12.88	355	103	H
		* 2.21718	44.1	ADR	31.8	-45	0.1	31	54	-23	-	-	80	176	V
		* 2.227401	44.28	ADR	31.8	-45	0.1	31.18	54	-22.82	-	-	6	293	H
		* 2.244466	55.67	PK-U	31.8	-44.8	0	42.67	-	-	74	-31.33	80	176	V
		* 2.245821	56.12	PK-U	31.8	-44.8	0	43.12	-	-	74	-30.88	6	293	H
		* 3.800013	45.17	ADR	33.5	-41.7	0.1	37.07	54	-16.93	-	-	332	229	V
		* 3.800105	47.48	ADR	33.5	-41.7	0.1	39.38	54	-14.62	-	-	298	128	H
		* 3.800186	53.86	PK-U	33.5	-41.7	0	45.66	-	-	74	-28.34	332	229	V
		* 3.800198	54.76	PK-U	33.5	-41.7	0	46.56	-	-	74	-27.44	298	128	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

HT20

UNII-2c (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11n	5500	* 10.998356	62.11	PK-U	37.8	-36.4	0	63.51	-	-	74	-10.49	260	110	V
		* 11.000533	49.39	ADR	37.8	-36.4	0.1	50.89	54	-3.11	-	-	260	110	V
		* 11.003674	61.62	PK-U	37.8	-36.5	0	62.92	-	-	74	-11.08	145	106	H
		* 10.998942	48.99	ADR	37.8	-36.4	0.1	50.49	54	-3.51	-	-	145	106	H
		* 15.680033	47.22	PK-U	40.4	-33.5	0	54.12	-	-	74	-19.88	354	280	H
		* 15.690388	35.2	ADR	40.4	-33.6	0.1	42.1	54	-11.9	-	-	354	280	H
		* 15.804043	36.09	ADR	40.4	-33.7	0.1	42.89	54	-11.11	-	-	140	271	V
		* 15.829982	47.61	PK-U	40.5	-33.6	0	54.51	-	-	74	-19.49	140	271	V
		* 3.666783	55.86	PK-U	33.5	-41.7	0	47.66	-	-	74	-26.34	14	139	H
		* 3.666676	50.45	ADR	33.5	-41.7	0.1	42.35	54	-11.65	-	-	14	139	H
		* 3.666617	54.94	PK-U	33.5	-41.7	0	46.74	-	-	74	-27.26	307	359	V
		* 3.666719	47.72	ADR	33.5	-41.7	0.1	39.62	54	-14.38	-	-	307	359	V
	5580	* 3.720008	49.44	ADR	33.4	-41.7	0.1	41.24	54	-12.76	-	-	13	121	H
		* 3.720128	55.32	PK-U	33.4	-41.7	0	47.02	-	-	74	-26.98	13	121	H
		* 11.160446	47.03	ADR	37.9	-36.3	0.1	48.73	54	-5.27	-	-	271	109	H
		* 11.161948	60.15	PK-U	37.9	-36.3	0	61.75	-	-	74	-12.25	271	109	H
		* 15.846774	35.82	ADR	40.5	-33.5	0.1	42.92	54	-11.08	-	-	47	283	H
		* 15.850649	47.4	PK-U	40.5	-33.4	0	54.5	-	-	74	-19.5	47	283	H
		* 3.720062	48.06	ADR	33.4	-41.7	0.1	39.86	54	-14.14	-	-	314	101	V
		* 3.720111	54.28	PK-U	33.4	-41.7	0	45.98	-	-	74	-28.02	314	101	V
		* 11.158175	62.12	PK-U	37.9	-36.3	0	63.72	-	-	74	-10.28	254	106	V
		* 11.158886	48.79	ADR	37.9	-36.3	0.1	50.49	54	-3.51	-	-	254	106	V
		* 15.790691	47.46	PK-U	40.4	-33.8	0	54.06	-	-	74	-19.94	134	370	V
		* 15.807223	36.16	ADR	40.4	-33.7	0.1	42.96	54	-11.04	-	-	134	370	V
	5700	* 1.374321	58.24	PK-U	28.4	-46	0	40.64	-	-	74	-33.36	265	329	H
		* 1.377943	46.76	ADR	28.3	-46	0.1	29.16	54	-24.84	-	-	265	329	H
		* 1.37368	58.01	PK-U	28.4	-46	0	40.41	-	-	74	-33.59	93	328	V
		* 1.375782	46.76	ADR	28.4	-46	0.1	29.26	54	-24.74	-	-	93	328	V
		* 3.799993	54.67	PK-U	33.5	-41.7	0	46.47	-	-	74	-27.53	15	214	H
		* 3.800033	46.96	ADR	33.5	-41.7	0.1	38.86	54	-15.14	-	-	15	214	H
		* 3.800055	45.47	ADR	33.5	-41.7	0.1	37.37	54	-16.63	-	-	341	109	V
		* 3.80017	53.59	PK-U	33.5	-41.7	0	45.39	-	-	74	-28.61	341	109	V
		* 11.398292	61.36	PK-U	38.1	-35.7	0	63.76	-	-	74	-10.24	271	101	H
		* 11.398336	47.84	ADR	38.1	-35.7	0.1	50.34	54	-3.66	-	-	271	101	H
		* 11.399287	48.38	ADR	38.1	-35.7	0.1	50.88	54	-3.12	-	-	333	101	V
		* 11.401838	61.98	PK-U	38.1	-35.7	0	64.38	-	-	74	-9.62	333	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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HT40

UNII-2c (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11n	5510	* 3.673252	55.66	PK-U	33.6	-41.8	0	47.46	-	-	74	-26.54	14	267	H
		* 3.673394	49.33	ADR	33.6	-41.8	0.2	41.33	54	-12.67	-	-	14	267	H
		* 3.673147	53.64	PK-U	33.6	-41.8	0	45.44	-	-	74	-28.56	351	109	V
		* 3.673436	45.12	ADR	33.6	-41.8	0.2	37.12	54	-16.88	-	-	351	109	V
		* 4.983069	51.89	PK-U	34.1	-38.9	0	47.09	-	-	74	-26.91	57	127	H
		* 5.01846	40.42	ADR	34.1	-38.8	0.2	35.92	54	-18.08	-	-	57	127	H
		* 5.022024	52.24	PK-U	34.1	-38.8	0	47.54	-	-	74	-26.46	341	227	V
		* 5.02282	40.36	ADR	34.1	-38.8	0.2	35.86	54	-18.14	-	-	341	227	V
		* 11.020627	60.69	PK-U	37.8	-36.5	0	61.99	-	-	74	-12.01	150	101	H
		* 11.021147	48.71	ADR	37.8	-36.5	0.2	50.21	54	-3.79	-	-	150	101	H
		* 11.020131	49.22	ADR	37.8	-36.5	0.2	50.72	54	-3.28	-	-	253	101	V
		* 11.022273	60.74	PK-U	37.8	-36.5	0	62.04	-	-	74	-11.96	253	101	V
	5550	* 1.381201	46.37	ADR	28.3	-46	0.2	28.87	54	-25.13	-	-	37	287	H
		* 1.382063	57.9	PK-U	28.3	-46	0	40.2	-	-	74	-33.8	37	287	H
		* 1.378247	58.25	PK-U	28.3	-46	0	40.55	-	-	74	-33.45	115	240	V
		* 1.379936	46.62	ADR	28.3	-46	0.2	29.12	54	-24.88	-	-	115	240	V
		* 3.699974	56.17	PK-U	33.5	-41.7	0	47.97	-	-	74	-26.03	14	174	H
		* 3.700045	50.23	ADR	33.5	-41.7	0.2	42.23	54	-11.77	-	-	14	174	H
		* 3.70003	54.73	PK-U	33.5	-41.7	0	46.53	-	-	74	-27.47	340	113	V
		* 3.70003	46.7	ADR	33.5	-41.7	0.2	38.7	54	-15.3	-	-	340	113	V
		* 11.101193	47.66	ADR	37.8	-36.4	0.2	49.26	54	-4.74	-	-	146	105	H
		* 11.104584	59.58	PK-U	37.8	-36.5	0	60.88	-	-	74	-13.12	146	105	H
		* 11.100165	48.59	ADR	37.8	-36.4	0.2	50.19	54	-3.81	-	-	258	101	V
		* 11.104502	60.57	PK-U	37.8	-36.5	0	61.87	-	-	74	-12.13	258	101	V
	5670	* 3.779749	54.54	PK-U	33.5	-41.6	0	46.44	-	-	74	-27.56	308	101	H
		* 3.77994	47.72	ADR	33.5	-41.6	0.2	39.82	54	-14.18	-	-	308	101	H
		* 3.77966	53.54	PK-U	33.5	-41.6	0	45.44	-	-	74	-28.56	342	106	V
		* 3.779931	45.39	ADR	33.5	-41.6	0.2	37.49	54	-16.51	-	-	342	106	V
		* 11.336126	58.02	PK-U	38	-35.9	0	60.12	-	-	74	-13.88	267	101	H
		* 11.341352	45.46	ADR	38	-35.9	0.2	47.76	54	-6.24	-	-	267	101	H
		* 11.338795	45.31	ADR	38	-35.9	0.2	47.61	54	-6.39	-	-	331	101	V
		* 11.34447	58	PK-U	38	-35.8	0	60.2	-	-	74	-13.8	331	101	V
		14.334854	36.73	ADR	39.2	-35.4	0.2	40.73	-	-	-	-	138	235	H
		14.336605	48.28	PK-U	39.2	-35.4	0	52.08	-	-	68.2	-16.12	138	235	H
		14.344942	36.83	ADR	39.2	-35.4	0.2	40.83	-	-	-	-	108	310	V
		14.351808	48.79	PK-U	39.2	-35.4	0	52.59	-	-	68.2	-15.61	108	310	V

VHT80

UNII-2c (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11ac	5530	* 1.149065	46.92	ADR	28	-46.5	0.4	28.82	54	-25.18	-	-	317	192	H
		* 1.155402	58.47	PK-U	28	-46.5	0	39.97	-	-	74	-34.03	317	192	H
		* 1.148405	47.05	ADR	28	-46.5	0.4	28.95	54	-25.05	-	-	351	328	V
		* 1.155364	58.63	PK-U	28	-46.5	0	40.13	-	-	74	-33.87	351	328	V
		* 3.686732	55.79	PK-U	33.6	-41.8	0	47.59	-	-	74	-26.41	12	179	H
		* 3.686758	49.02	ADR	33.6	-41.8	0.4	41.22	54	-12.78	-	-	12	179	H
		* 3.686438	54.07	PK-U	33.6	-41.8	0	45.87	-	-	74	-28.13	340	104	V
		* 3.686576	46.43	ADR	33.6	-41.8	0.4	38.63	54	-15.37	-	-	340	104	V
		* 11.059494	58.32	PK-U	37.8	-36.6	0	59.52	-	-	74	-14.48	139	104	H
		* 11.068942	45.39	ADR	37.8	-36.6	0.4	46.99	54	-7.01	-	-	139	104	H
		* 11.065899	58.02	PK-U	37.8	-36.6	0	59.22	-	-	74	-14.78	252	105	V
		* 11.071267	44.84	ADR	37.8	-36.6	0.4	46.44	54	-7.56	-	-	252	105	V
	5610	* 3.739701	54.46	PK-U	33.4	-41.7	0	46.16	-	-	74	-27.84	316	125	V
		* 3.740003	47.74	ADR	33.4	-41.7	0.4	39.84	54	-14.16	-	-	316	125	V
		* 3.74003	55.01	PK-U	33.4	-41.7	0	46.71	-	-	74	-27.29	299	101	H
		* 3.74003	48.72	ADR	33.4	-41.7	0.4	40.82	54	-13.18	-	-	299	101	H
		* 11.221273	55.98	PK-U	37.9	-36.2	0	57.68	-	-	74	-16.32	350	101	H
		* 11.238738	42.78	ADR	37.9	-36.2	0.4	44.88	54	-9.12	-	-	350	101	H
		* 11.225284	57.32	PK-U	37.9	-36.2	0	59.02	-	-	74	-14.98	250	101	V
		* 11.241398	43.55	ADR	38	-36.2	0.4	45.75	54	-8.25	-	-	250	101	V
		13.446417	47.71	PK-U	39.1	-34.6	0	52.21	-	-	68.2	-15.99	13	212	H
		13.454278	35.97	ADR	39.1	-34.6	0.4	40.87	-	-	-	-	13	212	H
		13.472566	36.64	ADR	39	-34.7	0.4	41.34	-	-	-	-	23	362	V
		13.476468	48.08	PK-U	39	-34.7	0	52.38	-	-	68.2	-15.82	23	362	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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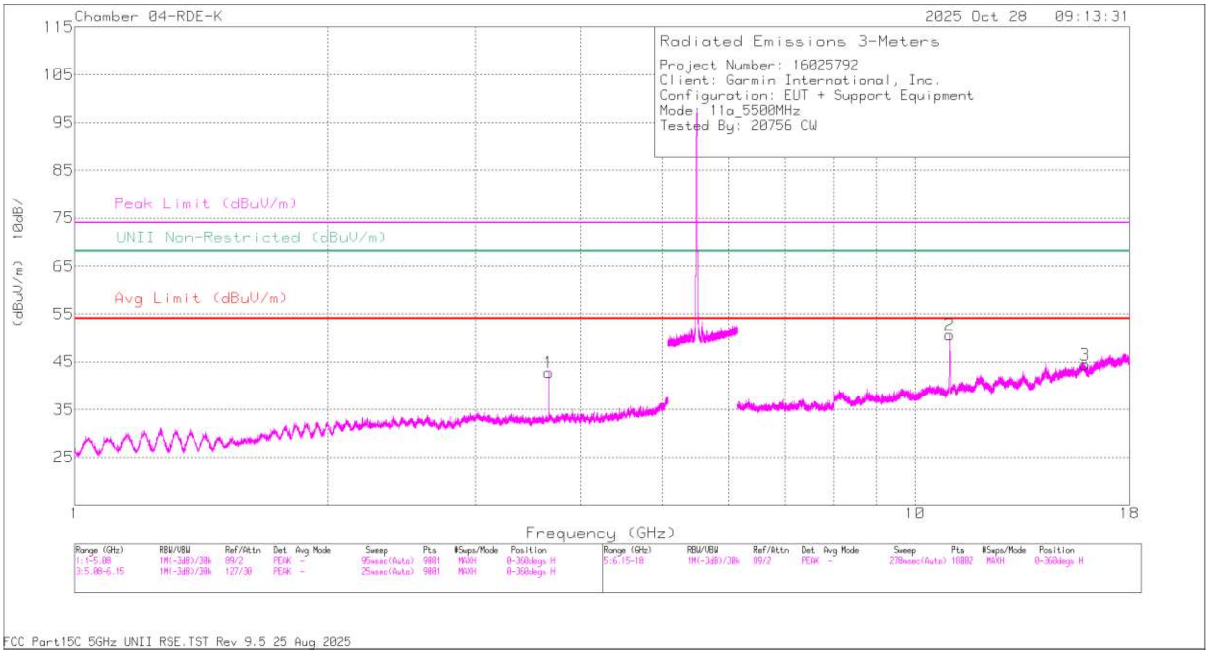
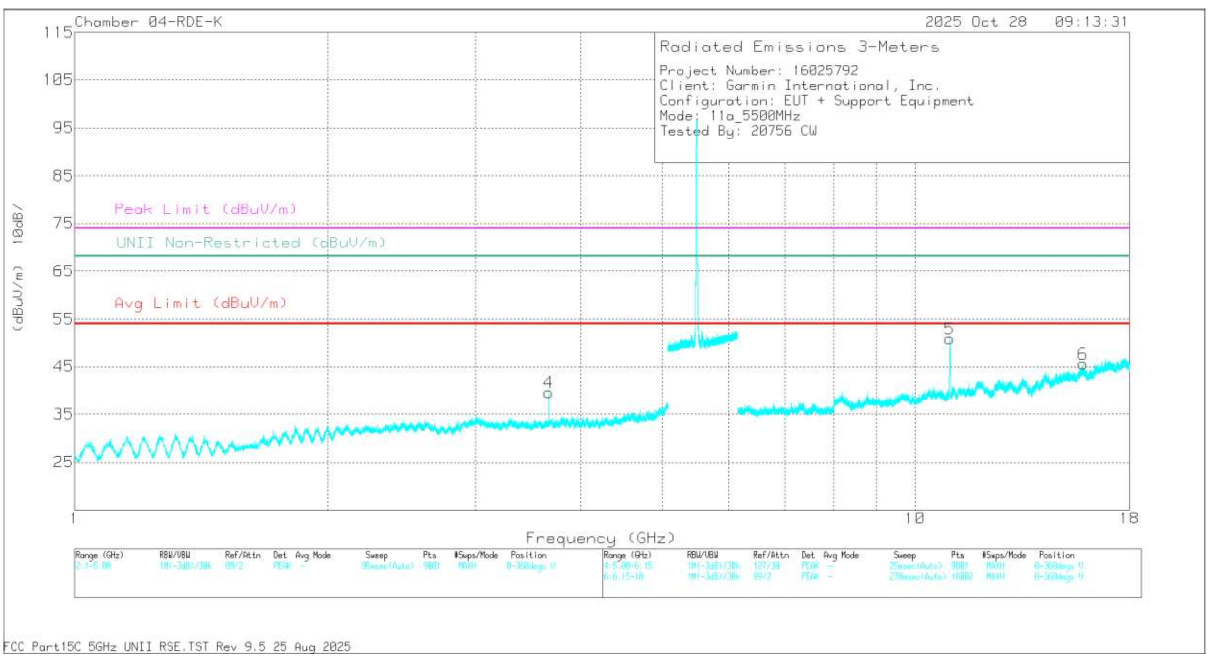
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL / 5500MHz), a mode



HORIZONTAL



VERTICAL

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10.1.7. SISO MODE IN UNII-3 BAND BANDEDGES

UNII-3 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	Conversion Factor (dB)	DCCF (dB)	Correct Reading EIRP (dBm)	Pk Limit (dBm)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
a	5745	5.725	-35.86	Pk	34.6	-29.9	11.8	-	-19.36	27	-46.36	275	109	H
		5.646096	-53.83	Pk	34.6	-30	11.8	-	-37.43	-27	-10.43	275	109	H
		5.725	-36.33	Pk	34.6	-29.9	11.8	-	-19.83	27	-46.83	150	104	V
		5.63417	-54.33	Pk	34.5	-30.1	11.8	-	-38.13	-27	-11.13	150	104	V
	5825	5.85	-44.1	Pk	35	-29.8	11.8	-	-27.1	27	-54.1	38	109	H
		5.969428	-53.57	Pk	35.2	-29.6	11.8	-	-36.17	-27	-9.17	38	109	H
		5.85	-43.32	Pk	35	-29.8	11.8	-	-26.32	27	-53.32	153	126	V
		5.972916	-54.13	Pk	35.2	-29.6	11.8	-	-36.73	-27	-9.73	153	126	V
HT20	5745	5.725	-35.83	Pk	34.6	-29.9	11.8	-	-19.33	27	-46.33	275	294	H
		5.629425	-54.18	Pk	34.5	-30.1	11.8	-	-37.98	-27	-10.98	275	294	H
		5.725	-36.34	Pk	34.6	-29.9	11.8	-	-19.84	27	-46.84	348	360	V
		5.638108	-54.12	Pk	34.5	-30	11.8	-	-37.82	-27	-10.82	348	360	V
	5825	5.85	-47.02	Pk	35	-29.8	11.8	-	-30.02	27	-57.02	48	382	H
		5.93947	-54.28	Pk	35.2	-29.6	11.8	-	-36.88	-27	-9.88	48	382	H
		5.85	-45.34	Pk	35	-29.8	11.8	-	-28.34	27	-55.34	358	384	V
		5.968753	-53.96	Pk	35.2	-29.5	11.8	-	-36.46	-27	-9.46	358	384	V
HT40	5755	5.725	-35.72	Pk	34.6	-29.9	11.8	-	-19.22	27	-46.22	275	280	H
		5.643715	-54.3	Pk	34.6	-30	11.8	-	-37.9	-27	-10.9	275	280	H
		5.725	-36.34	Pk	34.6	-29.9	11.8	-	-19.84	27	-46.84	349	306	V
		5.63312	-53.4	Pk	34.5	-30.1	11.8	-	-37.2	-27	-10.2	349	306	V
	5795	5.85	-49.8	Pk	35	-29.8	11.8	-	-32.8	27	-59.8	59	299	H
		5.973141	-54.03	Pk	35.2	-29.6	11.8	-	-36.63	-27	-9.63	59	299	H
		5.85	-54.37	Pk	35	-29.8	11.8	-	-37.37	27	-64.37	5	319	V
		5.963014	-54.51	Pk	35.2	-29.5	11.8	-	-37.01	-27	-10.01	5	319	V
VHT80	5775 (Lower)	5.725	-34.46	Pk	34.6	-29.9	11.8	-	-17.96	27	-44.96	288	308	H
		5.648121	-51.62	Pk	34.6	-30	11.8	-	-35.22	-27	-8.22	288	308	H
		5.725	-37.94	Pk	34.6	-29.9	11.8	-	-21.44	27	-48.44	348	356	V
		5.647109	-52.32	Pk	34.6	-30	11.8	-	-35.92	-27	-8.92	348	356	V
	5775 (Upper)	5.85	-47.85	Pk	35	-29.8	11.8	-	-30.85	27	-57.85	284	115	H
		5.926362	-54.33	Pk	35.2	-29.7	11.8	-	-37.03	-27	-10.03	284	115	H
		5.85	-48.5	Pk	35	-29.8	11.8	-	-31.5	27	-58.5	142	102	V
		5.973338	-54.4	Pk	35.2	-29.6	11.8	-	-37	-27	-10	142	102	V

Pk - Peak detector

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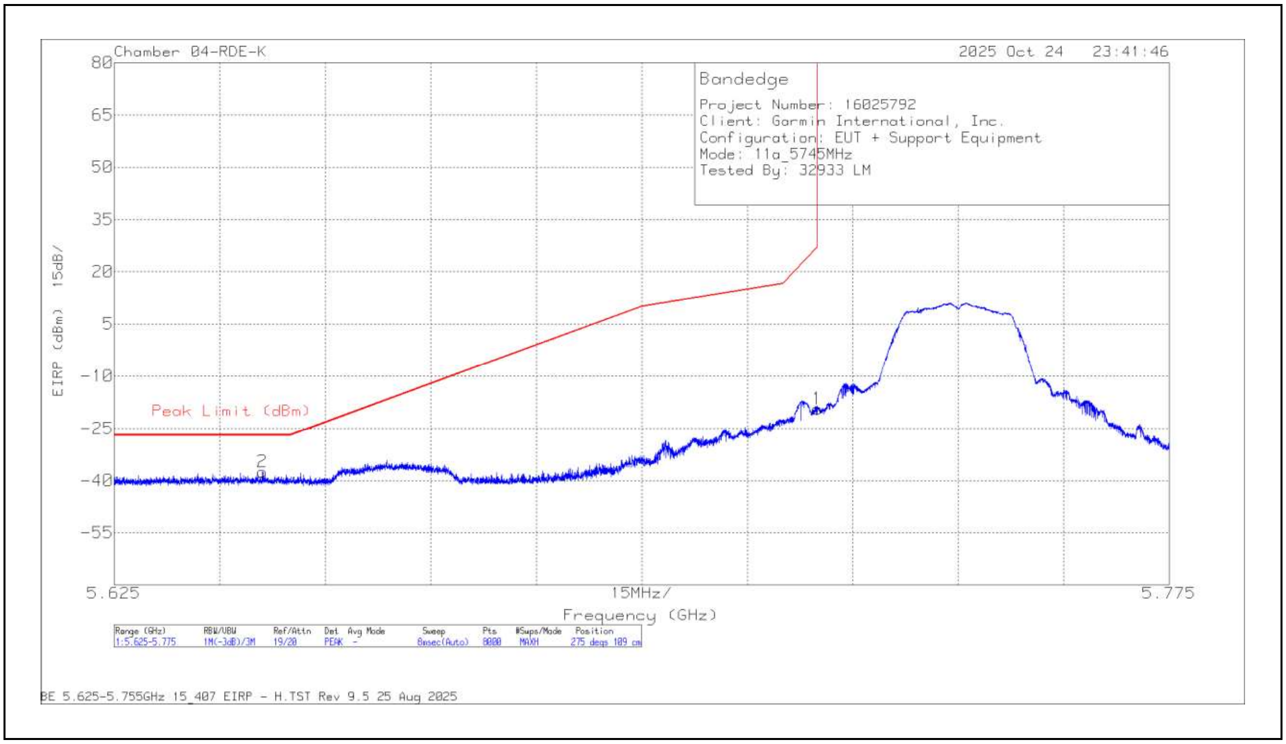
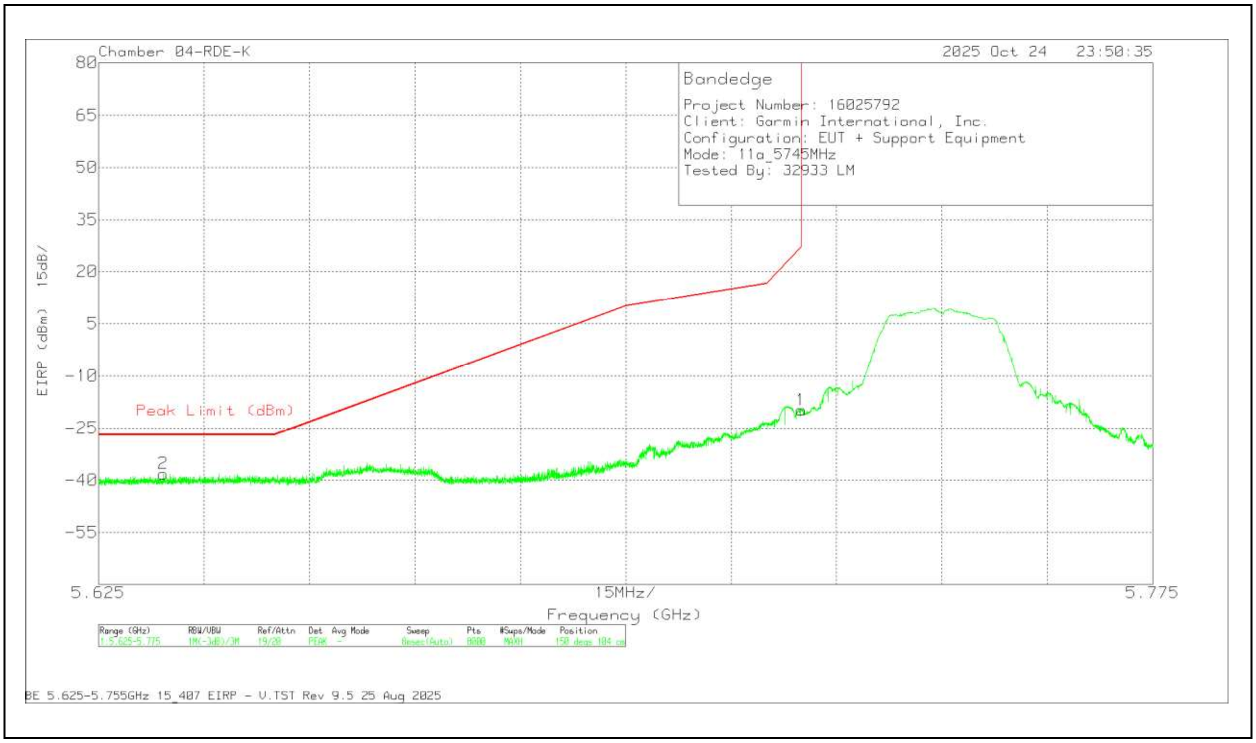
BANDEDGE (LOW CHANNEL / 5745MHz), a mode

HORIZONTAL RESULT



BANDEDGE (LOW CHANNEL / 5745MHz), a mode

VERTICAL RESULT



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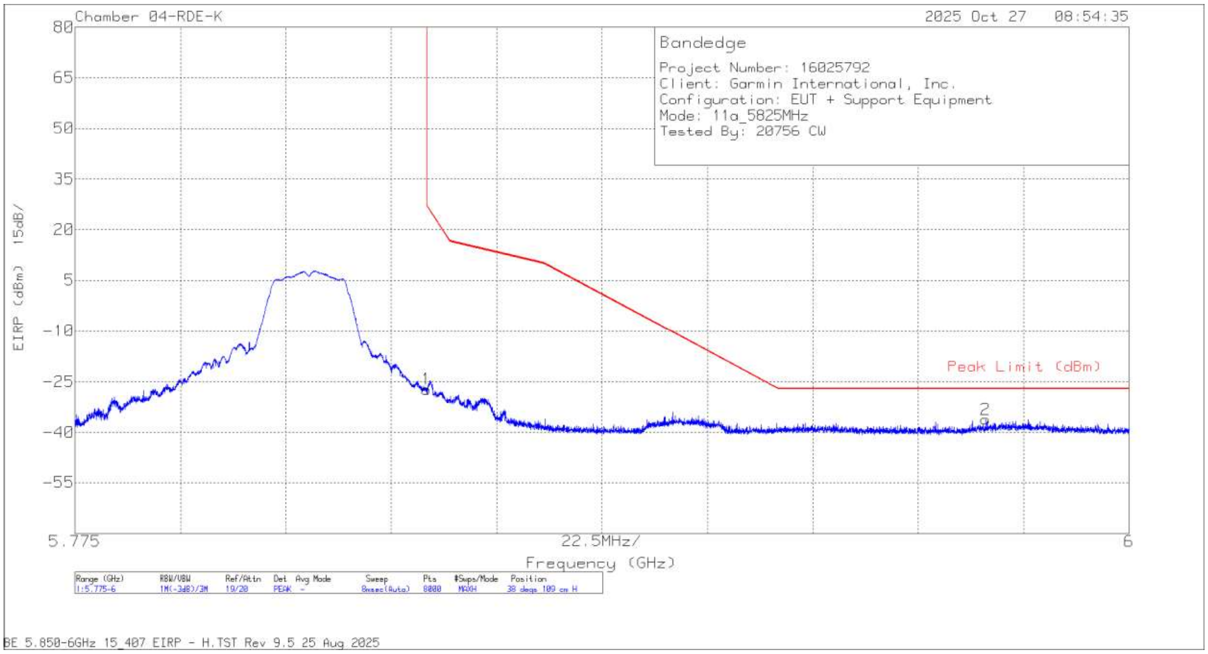
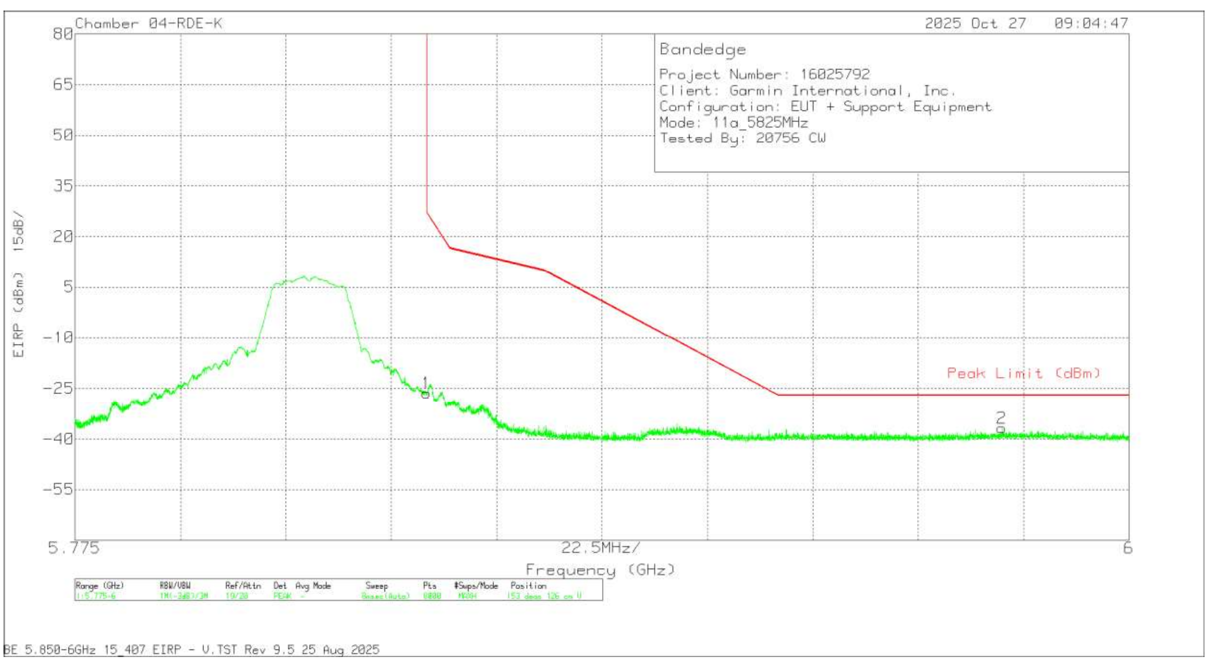
BANDEDGE (HIGH CHANNEL / 5825MHz), a mode

HORIZONTAL RESULT



BANDEDGE (HIGH CHANNEL / 5825MHz), a mode

VERTICAL RESULT



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10.1.8. SISO MODE IN UNII-3 BAND – SPURIOUS EMISSIONS

a mode

UNII-3 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11a	5745	2.577085	54.99	PK-U	32.4	-43.8	0	43.59	-	-	68.2	-24.61	91	296	H
		2.577432	43.33	ADR	32.4	-43.8	0.1	32.03	-	-	-	-	91	296	H
		2.573899	43.34	ADR	32.4	-43.9	0.1	31.94	-	-	-	-	340	334	V
		2.577267	55.16	PK-U	32.4	-43.8	0	43.76	-	-	68.2	-24.44	340	334	V
		* 3.830113	47.65	ADR	33.5	-41.6	0.1	39.65	54	-14.35	-	-	296	101	H
		* 3.830148	54.36	PK-U	33.5	-41.6	0	46.26	-	-	74	-27.74	296	101	H
		* 3.829927	53.8	PK-U	33.5	-41.6	0	45.7	-	-	74	-28.3	343	101	V
		* 3.829976	45.21	ADR	33.5	-41.6	0.1	37.21	54	-16.79	-	-	343	101	V
		* 11.488901	60.53	PK-U	38.1	-35.9	0	62.73	-	-	74	-11.27	349	101	H
		* 11.491959	47.52	ADR	38.1	-35.8	0.1	49.92	54	-4.08	-	-	349	101	H
		* 11.488889	61.11	PK-U	38.1	-35.9	0	63.31	-	-	74	-10.69	330	125	V
		* 11.492044	48.51	ADR	38.1	-35.8	0.1	50.91	54	-3.09	-	-	330	125	V
	5785	* 11.568838	58.14	PK-U	38.2	-35.7	0	60.64	-	-	74	-13.36	334	102	V
		* 11.571803	45.54	ADR	38.2	-35.7	0.1	48.14	54	-5.86	-	-	334	102	V
		* 11.568912	59.43	PK-U	38.2	-35.7	0	61.93	-	-	74	-12.07	347	101	H
		* 11.571188	46.26	ADR	38.2	-35.7	0.1	48.86	54	-5.14	-	-	347	101	H
		* 15.747623	35.58	ADR	40.4	-33.7	0.1	42.38	54	-11.62	-	-	16	298	H
		* 15.747939	47.49	PK-U	40.4	-33.7	0	54.19	-	-	74	-19.81	16	298	H
		* 16.103413	34.66	ADR	40.6	-33.5	0.1	41.86	54	-12.14	-	-	32	298	V
		* 16.124966	46.13	PK-U	40.7	-33.4	0	53.43	-	-	74	-20.57	32	298	V
		* 3.856777	55.86	PK-U	33.6	-41.5	0	47.96	-	-	74	-26.04	17	312	H
		* 3.856661	49.25	ADR	33.6	-41.5	0.1	41.45	54	-12.55	-	-	17	312	H
		* 3.856706	47.84	ADR	33.6	-41.5	0.1	40.04	54	-13.96	-	-	319	206	V
		* 3.856777	54.88	PK-U	33.6	-41.5	0	46.98	-	-	74	-27.02	319	206	V
	5825	* 11.649054	58.63	PK-U	38.3	-35.5	0	61.43	-	-	74	-12.57	196	102	V
		* 11.650023	45.89	ADR	38.3	-35.4	0.1	48.89	54	-5.11	-	-	196	102	V
		* 11.649137	60.05	PK-U	38.3	-35.5	0	62.85	-	-	74	-11.15	342	104	H
		* 11.649808	47.43	ADR	38.3	-35.4	0.1	50.43	54	-3.57	-	-	342	104	H
		* 15.805715	35.56	ADR	40.4	-33.7	0.1	42.36	54	-11.64	-	-	340	241	H
		* 15.8225	47.9	PK-U	40.5	-33.6	0	54.8	-	-	74	-19.2	340	241	H
		* 15.908343	35.4	ADR	40.5	-33.3	0.1	42.7	54	-11.3	-	-	250	301	V
		* 15.912485	47.69	PK-U	40.5	-33.3	0	54.89	-	-	74	-19.11	250	301	V
		* 3.883242	47.19	ADR	33.6	-41.4	0.1	39.49	54	-14.51	-	-	315	272	V
		* 3.883309	54.06	PK-U	33.6	-41.4	0	46.26	-	-	74	-27.74	315	272	V
		* 3.883371	48.74	ADR	33.6	-41.4	0.1	41.04	54	-12.96	-	-	21	232	H
		* 3.883545	55.35	PK-U	33.6	-41.4	0	47.55	-	-	74	-26.45	21	232	H

HT20

UNII-3 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/ Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11n	5745	* 11.492389	60.77	PK-U	38.1	-35.8	0	63.07	-	-	74	-10.93	349	101	H
		* 11.490114	47.04	ADR	38.1	-35.8	0.1	49.44	54	-4.56	-	-	349	101	H
		* 11.491472	45.43	ADR	38.1	-35.8	0.1	47.83	54	-6.17	-	-	335	103	V
		* 11.491694	59.1	PK-U	38.1	-35.8	0	61.4	-	-	74	-12.6	335	103	V
		* 15.761199	35.56	ADR	40.4	-33.7	0.1	42.36	54	-11.64	-	-	73	250	H
		* 15.775109	47.05	PK-U	40.4	-33.7	0	53.75	-	-	74	-20.25	73	250	H
		* 15.797113	47.36	PK-U	40.4	-33.7	0	54.06	-	-	74	-19.94	254	240	V
		* 15.807823	35.99	ADR	40.4	-33.7	0.1	42.79	54	-11.21	-	-	254	240	V
		* 3.829914	55.48	PK-U	33.5	-41.6	0	47.38	-	-	74	-26.62	21	234	H
		* 3.830056	49.22	ADR	33.5	-41.6	0.1	41.22	54	-12.78	-	-	21	234	H
		* 3.829968	55.54	PK-U	33.5	-41.6	0	47.44	-	-	74	-26.56	307	260	V
		* 3.830061	48.78	ADR	33.5	-41.6	0.1	40.78	54	-13.22	-	-	307	260	V
	5785	* 11.570901	61.91	PK-U	38.2	-35.7	0	64.41	-	-	74	-9.59	353	101	H
		* 11.569159	48.04	ADR	38.2	-35.7	0.1	50.64	54	-3.36	-	-	353	101	H
		* 11.572124	60.09	PK-U	38.2	-35.7	0	62.59	-	-	74	-11.41	198	101	V
		* 11.569404	47.12	ADR	38.2	-35.7	0.1	49.72	54	-4.28	-	-	198	101	V
		* 15.756972	35.41	ADR	40.4	-33.7	0.1	42.21	54	-11.79	-	-	260	365	V
		* 15.768744	47.86	PK-U	40.4	-33.8	0	54.46	-	-	74	-19.54	260	365	V
		* 15.786008	35.58	ADR	40.4	-33.8	0.1	42.28	54	-11.72	-	-	2	297	H
		* 15.788212	47.58	PK-U	40.4	-33.8	0	54.18	-	-	74	-19.82	2	297	H
		* 3.856574	55.51	PK-U	33.6	-41.5	0	47.61	-	-	74	-26.39	325	257	V
		* 3.856686	48.83	ADR	33.6	-41.5	0.1	41.03	54	-12.97	-	-	325	257	V
		* 3.856609	48.84	ADR	33.6	-41.5	0.1	41.04	54	-12.96	-	-	20	211	H
		* 3.856733	55.54	PK-U	33.6	-41.5	0	47.64	-	-	74	-26.36	20	211	H
	5825	* 3.883389	48.12	ADR	33.6	-41.4	0.1	40.42	54	-13.58	-	-	18	137	H
		* 3.883509	54.93	PK-U	33.6	-41.4	0	47.13	-	-	74	-26.87	18	137	H
		* 3.883277	46.57	ADR	33.6	-41.4	0.1	38.87	54	-15.13	-	-	315	223	V
		* 3.883682	53.91	PK-U	33.6	-41.4	0	46.11	-	-	74	-27.89	315	223	V
		* 4.59786	52.29	PK-U	34.3	-40.8	0	45.79	-	-	74	-28.21	301	375	H
		* 4.600855	40.4	ADR	34.3	-40.8	0.1	34	54	-20	-	-	301	375	H
		* 4.606997	40.23	ADR	34.3	-40.7	0.1	33.93	54	-20.07	-	-	31	225	V
		* 4.616476	51.61	PK-U	34.3	-40.6	0	45.31	-	-	74	-28.69	31	225	V
		* 11.651121	47.79	ADR	38.3	-35.4	0.1	50.79	54	-3.21	-	-	346	103	H
		* 11.651588	60.51	PK-U	38.3	-35.4	0	63.41	-	-	74	-10.59	346	103	H
		* 11.649734	46.78	ADR	38.3	-35.4	0.1	49.78	54	-4.22	-	-	299	231	V
		* 11.650921	59.51	PK-U	38.3	-35.4	0	62.41	-	-	74	-11.59	299	231	V

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HT40

UNII-3 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11n	5755	* 3.83662	55.36	PK-U	33.5	-41.6	0	47.26	-	-	74	-26.74	14	156	H
		* 3.836647	49.44	ADR	33.5	-41.6	0.2	41.54	54	-12.46	-	-	14	156	H
		* 3.836625	48.94	ADR	33.5	-41.6	0.2	41.04	54	-12.96	-	-	308	258	V
		* 3.836829	55.97	PK-U	33.5	-41.6	0	47.87	-	-	74	-26.13	308	258	V
		* 11.50979	47.4	ADR	38.2	-35.8	0.2	50	54	-4	-	-	344	101	H
		* 11.510101	59.6	PK-U	38.2	-35.8	0	62	-	-	74	-12	344	101	H
		* 11.510023	58.76	PK-U	38.2	-35.8	0	61.16	-	-	74	-12.84	291	382	V
		* 11.510277	46.36	ADR	38.2	-35.8	0.2	48.96	54	-5.04	-	-	291	382	V
		14.319081	48.54	PK-U	39.2	-35.1	0	52.64	-	-	68.2	-15.56	81	298	H
		14.335408	36.66	ADR	39.2	-35.4	0.2	40.66	-	-	-	-	81	298	H
		14.280168	47.56	PK-U	39.2	-34.7	0	52.06	-	-	68.2	-16.14	3	263	V
		14.29406	36.1	ADR	39.2	-34.6	0.2	40.9	-	-	-	-	3	263	V
	5795	* 3.863215	54.44	PK-U	33.6	-41.4	0	46.64	-	-	74	-27.36	21	252	H
		* 3.863251	47.18	ADR	33.6	-41.4	0.2	39.58	54	-14.42	-	-	21	252	H
		* 3.863344	46.96	ADR	33.6	-41.4	0.2	39.36	54	-14.64	-	-	322	292	V
		* 3.863384	54.81	PK-U	33.6	-41.4	0	47.01	-	-	74	-26.99	322	292	V
		* 7.357422	37.17	ADR	35.6	-36.8	0.2	36.17	54	-17.83	-	-	299	394	H
		* 7.383663	50.06	PK-U	35.6	-37.5	0	48.16	-	-	74	-25.84	299	394	H
		* 7.36185	48.67	PK-U	35.6	-36.9	0	47.37	-	-	74	-26.63	78	319	V
		* 7.371133	36.93	ADR	35.6	-37.1	0.2	35.63	54	-18.37	-	-	78	319	V
		* 11.590052	47.95	ADR	38.2	-35.5	0.2	50.85	54	-3.15	-	-	343	101	H
		* 11.594252	59.62	PK-U	38.2	-35.5	0	62.32	-	-	74	-11.68	343	101	H
		* 11.590141	59.14	PK-U	38.2	-35.5	0	61.84	-	-	74	-12.16	196	101	V
		* 11.590897	47.04	ADR	38.2	-35.5	0.2	49.94	54	-4.06	-	-	196	101	V

VHT80

UNII-3 (SISO)	Channel Frequency (MHz)	Frequency (GHz)	Meter Reading (dBuV)	Det	ACF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DCCF (dB)	Correct Reading (dBuV/m)	Avg Limit (dBuV/m)	Avg Margin (dB)	Pk Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
11ac	5775	* 3.84998	55.67	PK-U	33.6	-41.5	0	47.77	-	-	74	-26.23	17	307	H
		* 3.850002	48.4	ADR	33.6	-41.5	0.4	40.9	54	-13.1	-	-	17	307	H
		* 3.850011	48.27	ADR	33.6	-41.5	0.4	40.77	54	-13.23	-	-	316	259	V
		* 3.850096	54.88	PK-U	33.6	-41.5	0	46.98	-	-	74	-27.02	316	259	V
		* 7.268242	48.08	PK-U	35.6	-37.5	0	46.18	-	-	74	-27.82	309	113	H
		* 7.284693	36.33	ADR	35.6	-36.9	0.4	35.43	54	-18.57	-	-	309	113	H
		* 7.289882	36.79	ADR	35.6	-36.8	0.4	35.99	54	-18.01	-	-	299	362	V
		* 11.549522	57.56	PK-U	38.2	-35.7	0	60.06	-	-	74	-13.94	348	102	H
		* 11.568506	44.26	ADR	38.2	-35.7	0.4	47.16	54	-6.84	-	-	348	102	H
		* 7.302107	48.66	PK-U	35.6	-36.8	0	47.46	-	-	74	-26.54	299	362	V
		* 11.555161	56.3	PK-U	38.2	-35.7	0	58.8	-	-	74	-15.2	297	226	V
		* 11.566795	42.74	ADR	38.2	-35.7	0.4	45.64	54	-8.36	-	-	297	226	V
		17.206511	58.68	PK-U	41.3	0	0	99.98	-	-	68.2	-10.92	110	210	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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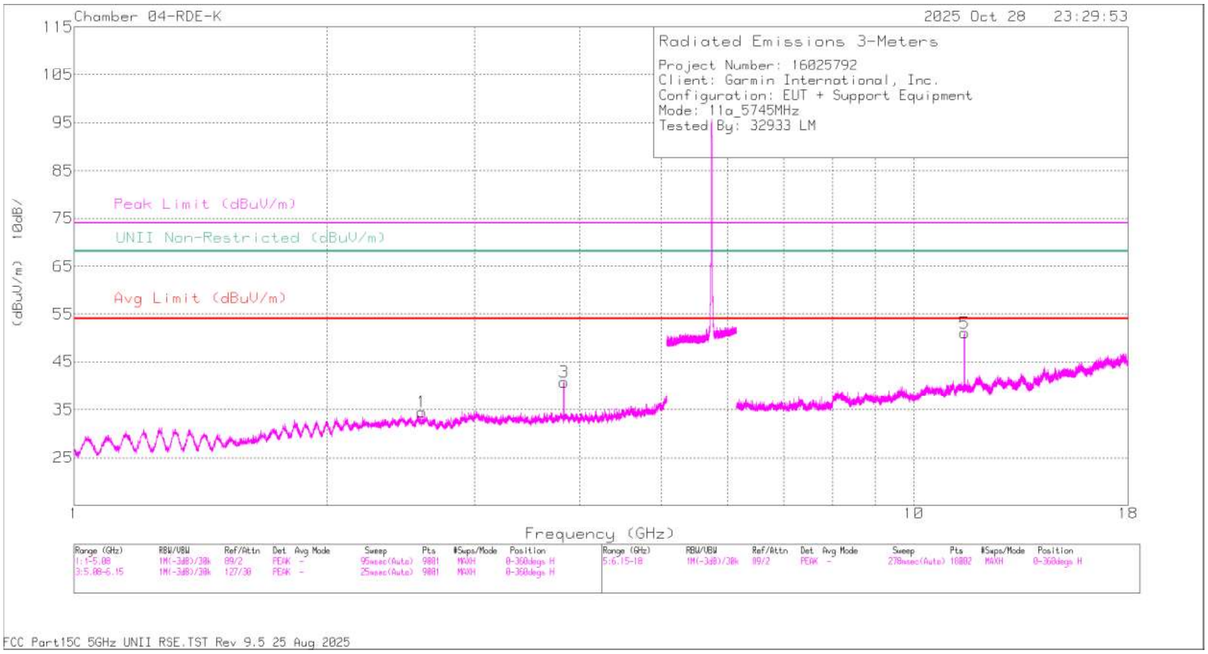
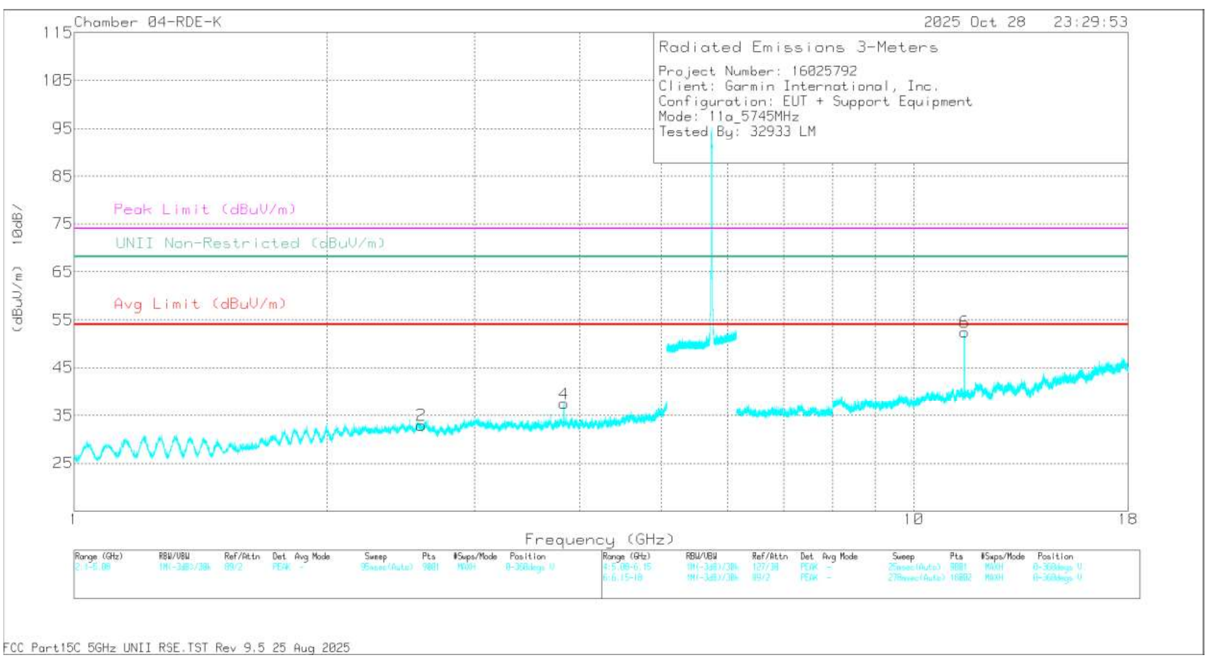
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL / 5745MHz), a mode



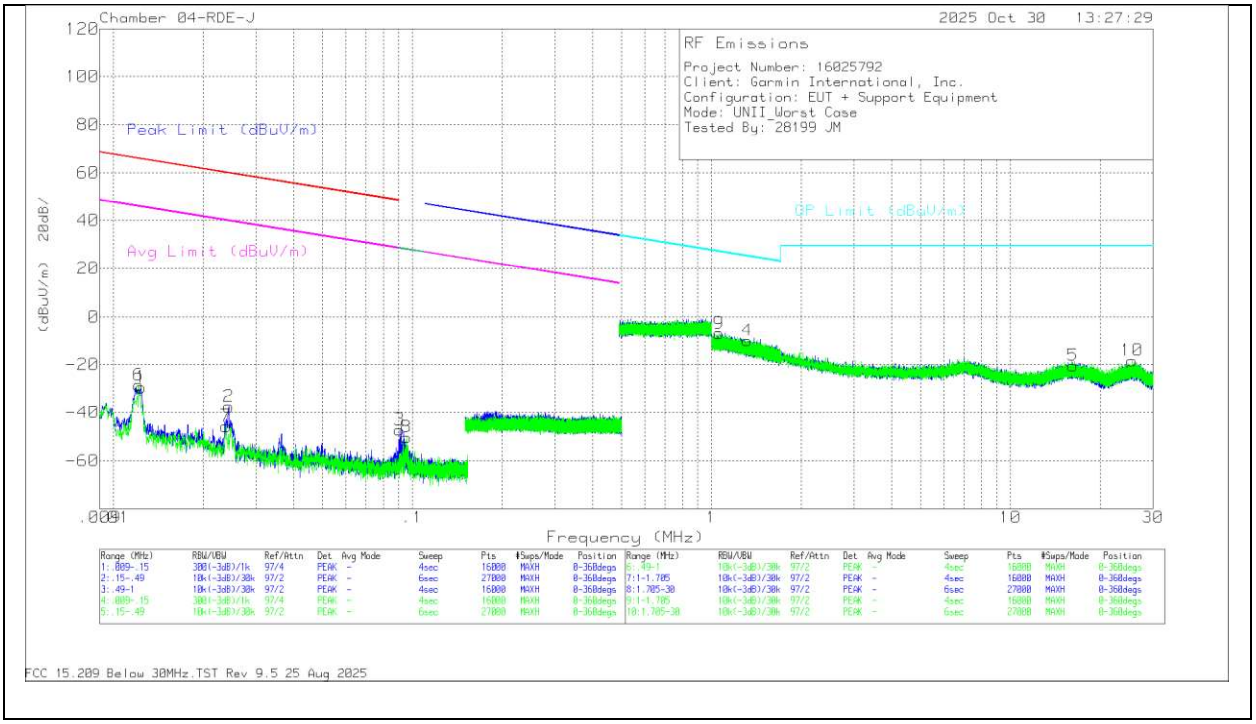
HORIZONTAL



VERTICAL

10.2. TRANSMITTER WORST CASE BELOW 30MHz

SPURIOUS EMISSIONS BELOW 30MHz (WORST-CASE CONFIGURATION)



Below 30MHz Data

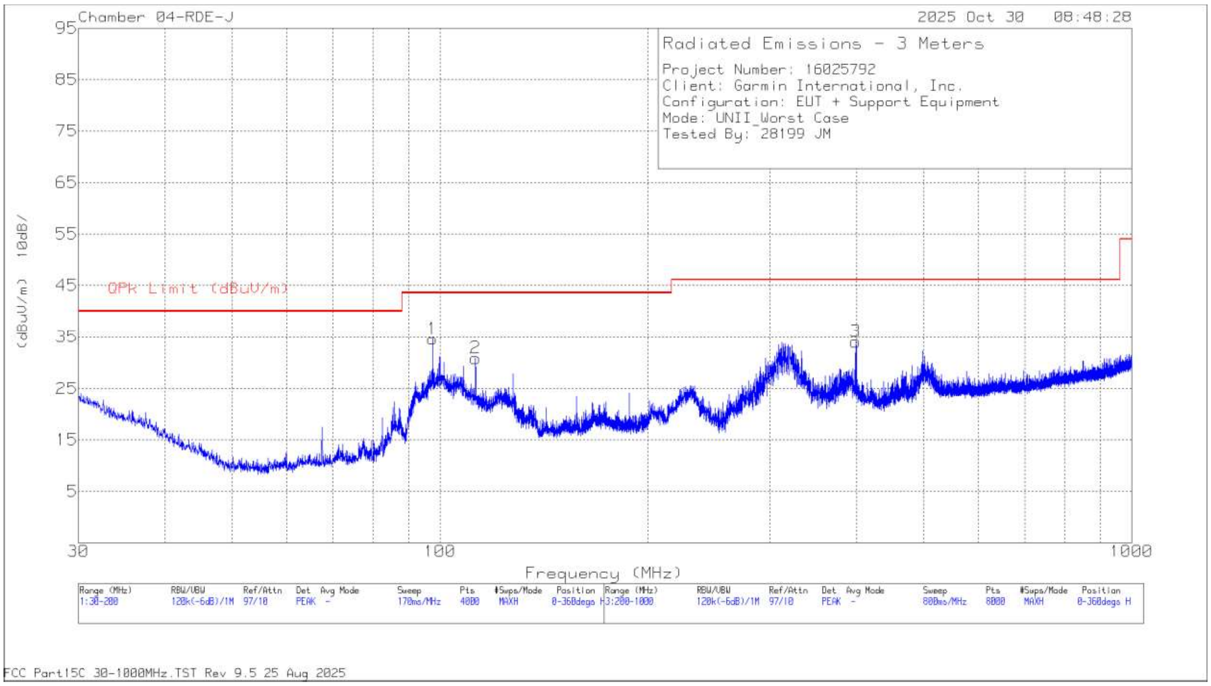
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.0124	20.89	Pk	60.1	-30.5	-80	-29.51	65.75	-95.26	45.75	-75.26	-	-	0-360
2	.0243	15.4	Pk	58.6	-31.6	-80	-37.6	59.87	-97.47	39.87	-77.47	-	-	0-360
3	.0906	9.28	Pk	55.8	-32.3	-80	-47.22	-	-	-	-	28.44	-75.66	0-360
6	.0121	21.77	Pk	60.1	-30.4	-80	-28.53	65.9	-94.43	45.9	-74.43	-	-	0-360
7	.0238	7.16	Pk	58.7	-31.6	-80	-45.74	60.05	-105.79	40.05	-85.79	-	-	0-360
8	.0956	6.48	Pk	55.7	-32.5	-80	-50.32	-	-	-	-	27.99	-78.31	0-360

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E (dB/m)	CBL/AMP (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
4	1.3175	17.15	Pk	45.1	-32.2	-40	-9.95	25.23	-35.18	0-360
5	16.1999	17.48	Pk	33.8	-31.7	-40	-20.42	29.5	-49.92	0-360
9	1.0592	18.73	Pk	46.5	-32.2	-40	-6.97	27.12	-34.09	0-360
10	25.5313	20.06	Pk	33.2	-31.6	-40	-18.34	29.5	-47.84	0-360

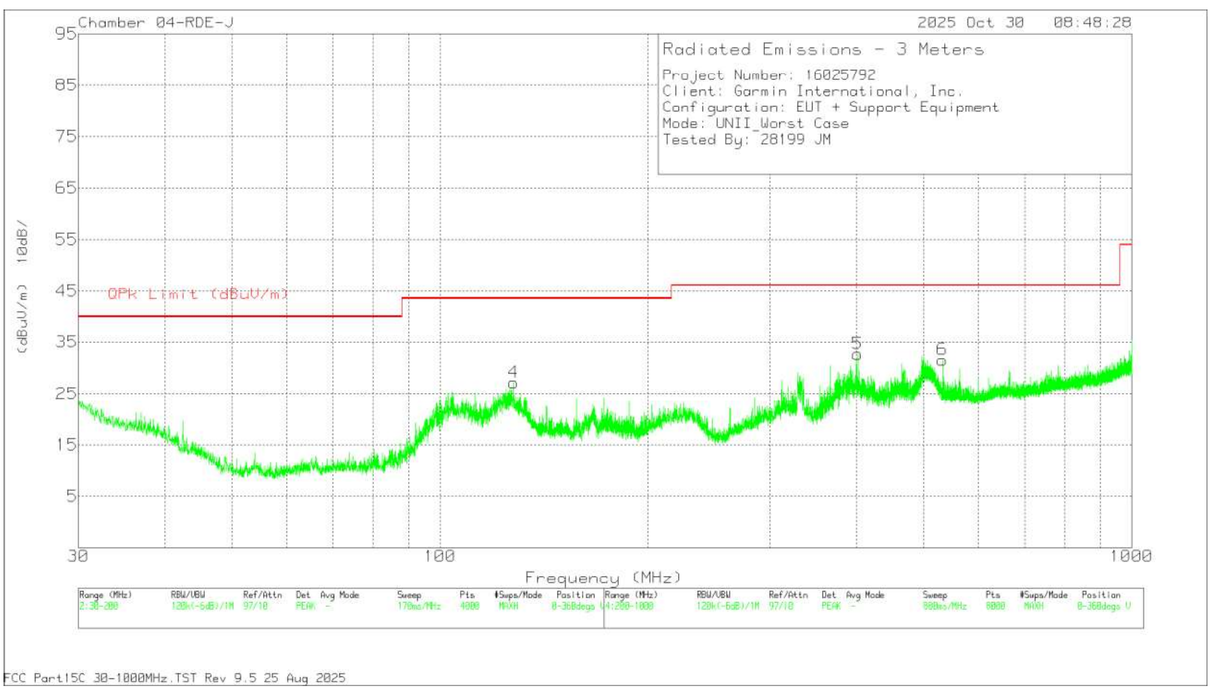
Pk - Peak detector

10.3. TRANSMITTER WORST CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

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Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	202329 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	97.5075	50.29	Pk	15.5	-31.2	34.59	43.52	-8.93	0-360	298	H
	97.5385	47.18	Qp	15.5	-31.2	31.48	43.52	-12.04	283	285	H
2	112.514	42.96	Pk	19.1	-31.2	30.86	43.52	-12.66	0-360	298	H
3	398.826	42.74	Pk	21.3	-30	34.04	46.02	-11.98	0-360	99	H
4	127.775	38.58	Pk	19.7	-31.1	27.18	43.52	-16.34	0-360	100	V
5	401.526	41.28	Pk	21.4	-30	32.68	46.02	-13.34	0-360	99	V
6	532.343	37.45	Pk	23.8	-29.7	31.55	46.02	-14.47	0-360	99	V

Pk - Peak detector
Qp - Quasi-Peak detector

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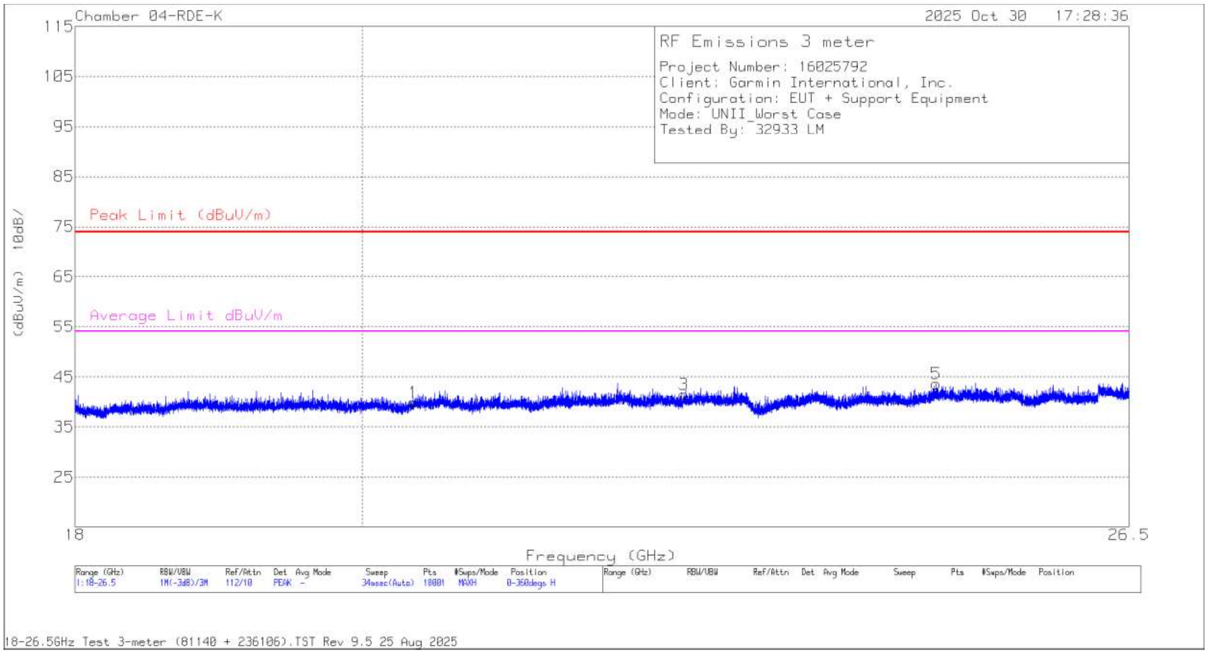
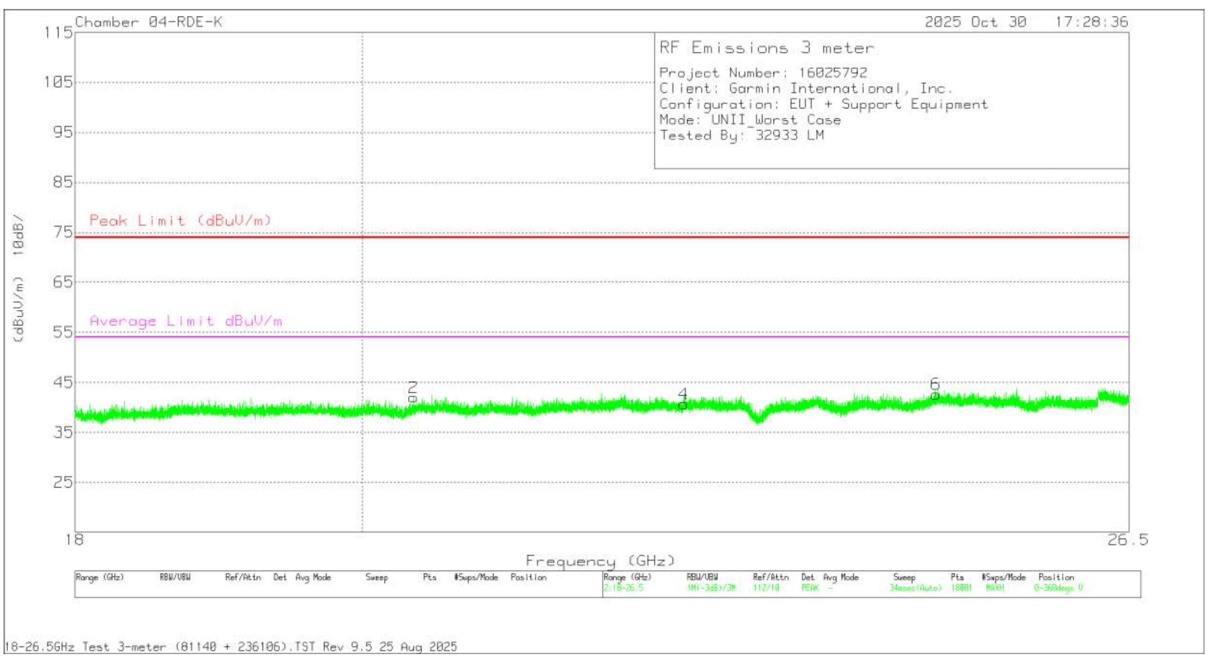
10.4. TRANSMITTER WORST CASE 18-26 GHz

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

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18 – 26GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	81140 ACF (dB/m)	CBL/AMP (dB)	CBL (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 20.380943	48.1	Pk	32.7	-61.2	20.3	39.9	74	-34.1	0-360	199	H
2	* 20.380943	50.18	Pk	32.7	-61.2	20.3	41.98	74	-32.02	0-360	200	V
3	* 22.505942	49.54	Pk	33.1	-62.3	21.2	41.54	74	-32.46	0-360	199	H
4	* 22.50547	48.64	Pk	33.1	-62.3	21.2	40.64	74	-33.36	0-360	101	V
5	24.68808	50.95	Pk	33.7	-63.1	22.1	43.65	74	-30.35	0-360	199	H
6	24.689497	50	Pk	33.7	-63.1	22.1	42.7	74	-31.3	0-360	200	V

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

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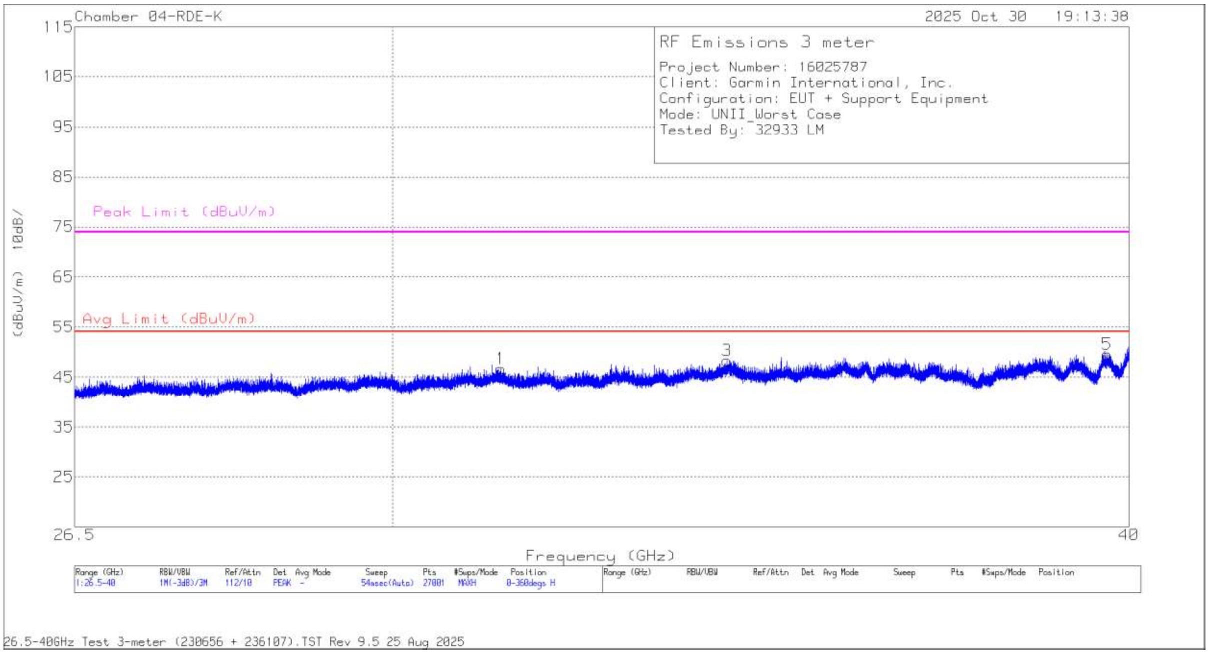
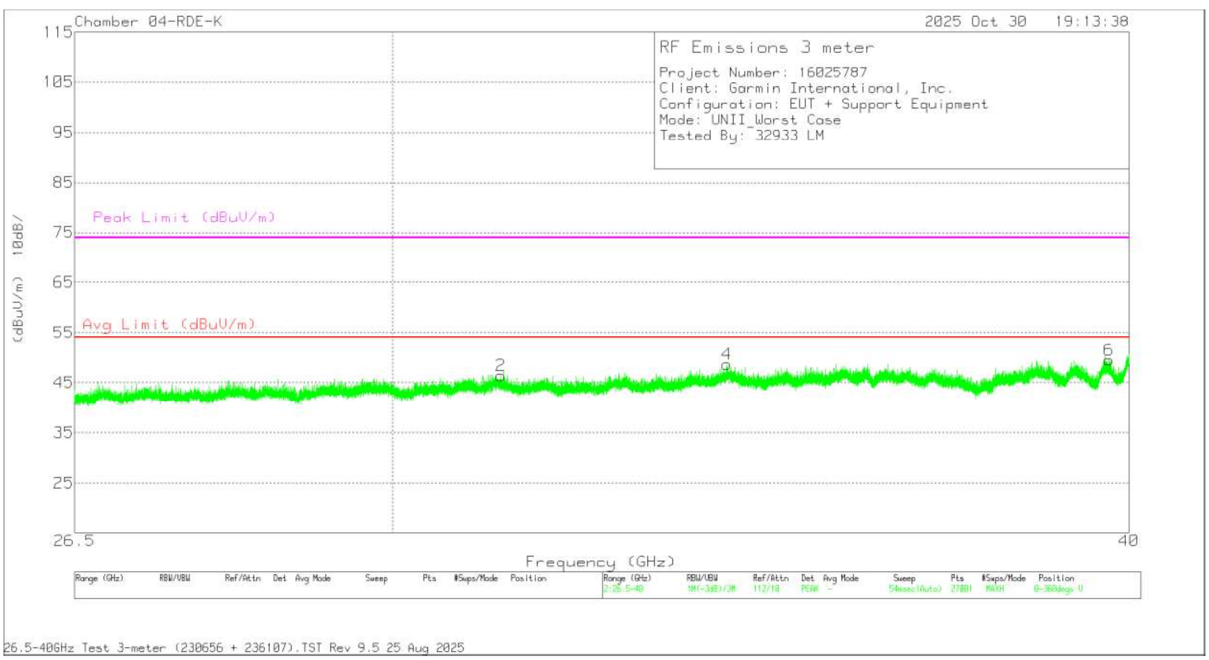
10.5. TRANSMITTER WORST CASE 26-40 GHz

SPURIOUS EMISSIONS 26-40 GHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

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26 – 40GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230656 ACF (dB/m)	CBL/AMP (dB)	CBL (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 31.296	45.7	Pk	36.6	-60.7	25.1	46.7	-	-	74	-27.3	0-360	200	H
2	* 31.303	45.41	Pk	36.6	-60.7	25.1	46.41	-	-	74	-27.59	0-360	200	V
3	34.1855	46.74	Pk	37.1	-61.9	26.3	48.24	-	-	74	-25.76	0-360	200	H
4	34.1845	47.2	Pk	37.1	-61.9	26.3	48.7	-	-	74	-25.3	0-360	200	V
5	* 39.658	46.46	Pk	38.2	-64	28.9	49.56	-	-	74	-24.44	0-360	200	H
6	* 39.6905	46.19	Pk	38.2	-63.8	28.9	49.49	-	-	74	-24.51	0-360	101	V

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

UL VERIFICATION SERVICES INC.
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11. SETUP PHOTOS

Refer to 16025792-EP1 Setup_Photo for setup photos.

END OF REPORT

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

TEST REPORT

Report Number : 16025792-E6V1

Applicant	:	Garmin International Inc 1200 E 151ST ST OLATHE, KS US
Model	:	A05116
FCC ID	:	IPH-05116
IC	:	1792A-05116
EUT Description	:	Portable Digital Transceiver
Test Standard(s)	:	DFS PORTION of FCC 47 CFR PART 15 SUBPART E DFS PORTION of ISED CANADA RSS-247 ISSUE 4

Date Of Issue:
2026-01-09

Prepared by:
UL VERIFICATION SERVICES INC.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

CERT #0751.05

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2026-01-09	Initial Issue	--

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701J
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: Portable Digital Transceiver

MODEL: A05116

SERIAL NUMBER: 3522388765

DATE TESTED: 2025-10-15

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
DFS Portion of 47 CFR Part 15 Subpart E	Complies
DFS Portion of ISED CANADA RSS-247 Issue 4	Complies

UL Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released For
UL Verification Services Inc. By:

Frank Ibrahim
Staff Engineer
CONSUMER TECHNOLOGY DIVISION
UL Verification Services Inc.

Prepared By:

Henry Lau
Project Engineer
CONSUMER TECHNOLOGY DIVISION
UL Verification Services Inc.

Reviewed by
UL LLC. By:

John E. Manser III
Laboratory Supervisor
CONSUMER TECHNOLOGY DIVISION
UL LLC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following standards/ rules:

DFS portion of FCC 47 CFR Part 2
FCC 47 CFR Part 15
FCC KDB 789033
KDB 905462 D02 and D03
RSS-247 Issue 4

3. SUMMARY OF TEST RESULTS

Requirement Description	Result	Remarks
DFS Portion of FCC 47 CFR PART 15 SUBPART E	Complies	None
DFS Portion of ISED CANADA RSS-247 ISSUE 4	Complies	None

4. REFERENCE DOCUMENTS

Measurements of transmitter parameters as referenced in this report and all other manufacturer’s declarations relevant to the RF test requirements are documented in UL Verification Services report number 16025792-E5.

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

5. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, 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
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☐	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

6. DECISION RULES AND MEASUREMENT UNCERTAINTY

6.1. 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.

6.2. 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).

6.3. 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 Bandwidth	1.22%
Power Spectral Density	2.47 dB
RF Power Measurement Direct Method Using Power Meter	1.3 dB (PK) / 0.45 dB (AV)
Unwanted Emissions, Conducted	1.94 dB
Worst Case Conducted Disturbance, 9kHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9kHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB
Time Domain Measurements	0.02 %
Temperature	0.57˚C
Humidity	3.39%
DC Supply Voltages	0.57%

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

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7. DYNAMIC FREQUENCY SELECTION

7.1. OVERVIEW

7.1.1. LIMITS

INNOVATION, SCIENCE and ECONOMIC DEVELOPMENT CANADA (ISED)

ISED RSS-247 is closely harmonized with FCC Part 15 DFS rules. The deviations are as follows:

RSS-247 Issue 4

Note: For the band 5600–5650 MHz, only the ETSI EN 301 893 test procedure shall be used to demonstrate compliance. Devices using the FCC KDB Procedure 905462 must operate exclusively within the 5250-5350 MHz, 5470-5600 MHz, 5650-5725 MHz bands, or any combination of these bands.

FCC

§15.407 (h), FCC KDB 905462 D02 "COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION" and KDB 905462 D03 "U-NII CLIENT DEVICES WITHOUT RADAR DETECTION CAPABILITY".

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client **(without DFS)**	Client **(with DFS)**
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar DFS	Client (without DFS)
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in all 20 MHz channel blocks and a null frequency between the bonded 20 MHz channel blocks.		

Table 3: Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see notes)
E.I.R.P. ≥ 200 mill watt	-64 dBm
E.I.R.P. < 200 mill watt and power spectral density < 10 dBm/MHz	-62 dBm
E.I.R.P. < 200 mill watt that do not meet power spectral density requirement	-64 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna
Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.
Note 3: E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. (See Note 3)

Note 1: *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
Note 2: The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.
Note 3: During the *U-NII Detection Bandwidth* detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (usec)	PRI (usec)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in table 5a	Roundup: {(1/360) x (19 x 10^6 /PRI_{usec})}	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 usec. With a minimum increment of 1 usec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Note 1: Short Pulse Radar Type 0 should be used for the *Detection Bandwidth* test, *Channel Move Time*, and *Channel Closing Time* tests.

Table 6 – Long Pulse Radar Test Signal

Radar Waveform Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

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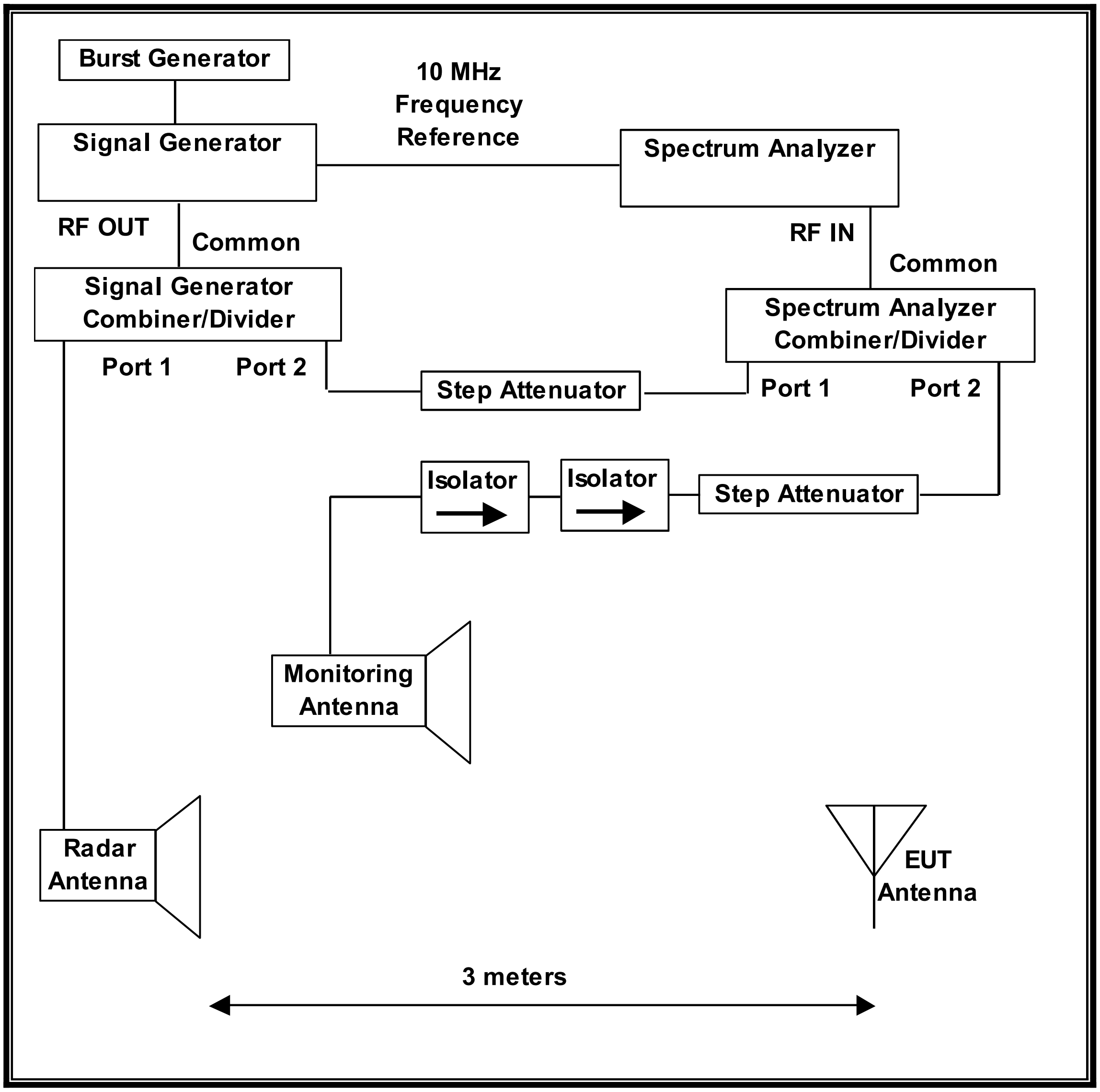
7.1.2. TEST AND MEASUREMENT SYSTEM

RADIATED METHOD SYSTEM BLOCK DIAGRAM



SYSTEM OVERVIEW

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 1, 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of KDB 905462 D02. The frequency of the signal generator is incremented in 1 MHz steps from F_L to F_H for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold.

SYSTEM CALIBRATION

A 50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a horn antenna via a coaxial cable, with the reference level offset set to (horn antenna gain – coaxial cable loss). The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –64 dBm as measured on the spectrum analyzer.

Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. The Reference Level Offset of the spectrum analyzer is adjusted so that the displayed amplitude of the signal is –64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

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ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

A link is established between the Master and Client and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Client devices. Fping is used to generate WLAN traffic. Traffic that meets or exceeds the minimum loading requirement is streamed from the Master device to the Client Device. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Date**	**Cal Due**
Spectrum Analyzer, PXA, 3Hz to 8.4GHz	Keysight	N9030A	150667	2025-01-21	2026-01-31
Signal Generator, MXG X-Series RF Vector	Keysight	N5182B	215999	2025-01-22	2026-01-31
Frequency Extender	Keysight	N5182BX	213906	2025-01-22	2026-01-31
Arbitrary Waveform Generator	Agilent / HP	33220A	80815	2025-01-21	2026-01-31

Note: An MXG series Signal Generator and separate external Frequency Extender module are shown in the preceding test system block diagram as a stand-alone Signal Generator.

7.1.3. TEST AND MEASUREMENT SOFTWARE

The following test and measurement software were utilized for the tests documented in this report:

TEST SOFTWARE LIST		
Name	**Version**	**Test / Function**
Aggregate Time-PXA	3.1	Channel Loading and Aggregate Closing Time
PXA Read	3.1	Signal Generator Screen Capture
SGXProject.exe	1.7	Radar Waveform Generation and Download

7.1.4. TEST ROOM ENVIRONMENT

The test room temperature and humidity shall be maintained within normal temperature of 15~35 °C and normal humidity 20~75% (relative humidity).

ENVIRONMENT CONDITION

Parameter	Value
Temperature	22 °C
Humidity	46 %

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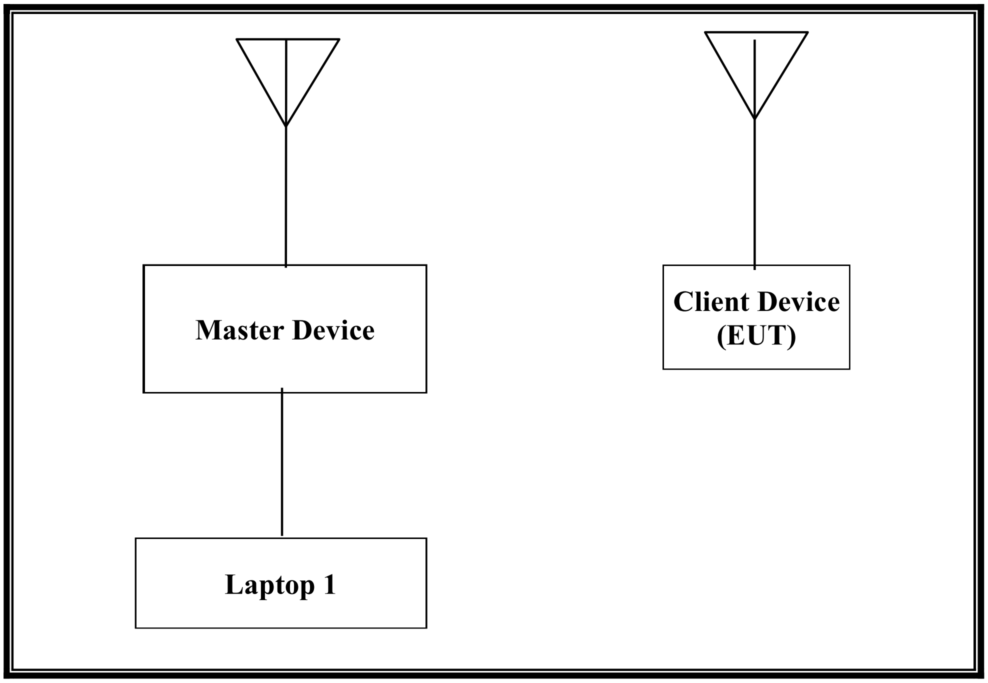
7.1.5. SETUP OF EUT

RADIATED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

The following support equipment was utilized for the tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
802.11ac Dual Band Wireless Access Point	Cisco	AIR-CAP3702E-A-K9	FTX181570A6	LDK102087
P.O.E. Injector	Phihong	POE30U-560(G)	PHI170102N2	DoC
Laptop 1	Lenovo	Type 4236-B92	PB-HEXC4 12/05	DoC
AC Adapter (Laptop 1)	Lenovo	42T4418	11S42T4418Z1ZGWG08R90M	DoC
AC Adapter (EUT)	Samsung	ETA0U61JWE	SC2F422AS/A-E	DoC

7.1.6. DESCRIPTION OF EUT

The EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges.

The EUT is a Client Device without Radar Detection.

Client EUT EIRP, maximum conducted output power, antenna assembly gain and TPC information can be found in the RF report referenced in section 4 of this report.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore, the required interference threshold level is –64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is –64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

The EUT uses one transmitter/receiver chain connected to an antenna to perform radiated tests.

WLAN traffic that meets or exceeds the minimum required loading was generated by transferring a data stream from the Master Device to the Client Device using fping software package

The EUT utilizes the 802.11ac architecture. Three nominal channel bandwidths are implemented: 20 MHz, 40 MHz and 80 MHz.

Manufacturer declares that channel puncturing is not supported by the EUT.

Manufacturer declares that channel bandwidth reduction is not supported by the EUT.

TDLS (Tunneled Direct Link Setup) mode is not supported by the EUT.

The software installed in the EUT is 0.75.

The software installed in the access point is AP3G2-K9W7-M Version 15.3(3)JAB.

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Client Devices.

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OVERVIEW OF MASTER DEVICE WITH RESPECT TO §15.407 (h) REQUIREMENTS

The Master Device is a Cisco Access Point, FCC ID: LDK102087. The minimum antenna gain for the Master Device is 6 dBi.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore, the required interference threshold level is –64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is –64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

The software installed in the access point is AP3G2-K9W7-M Version 15.3(3)JAB.

7.2. RESULTS FOR 80 MHz BANDWIDTH

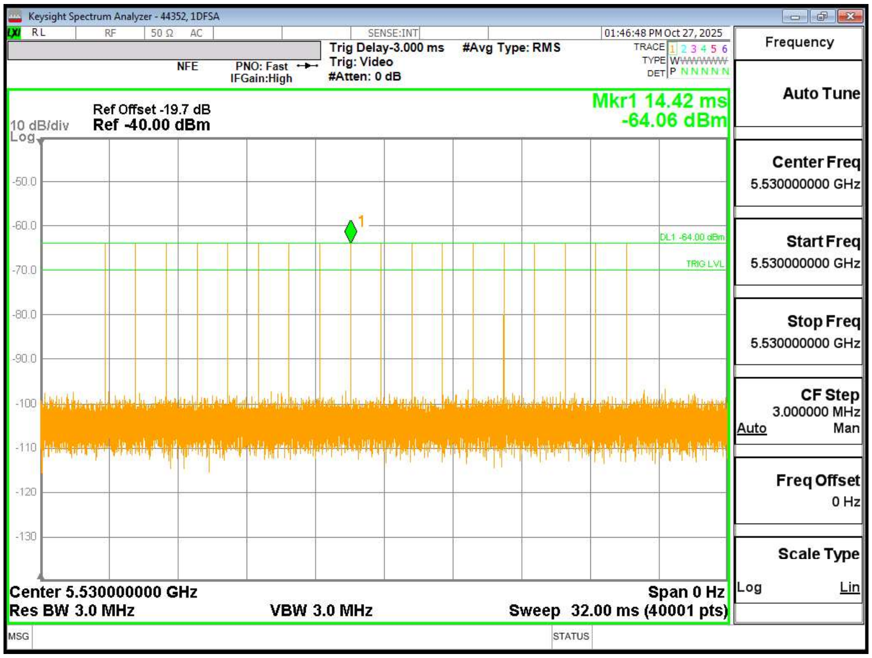
7.2.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5530 MHz.

7.2.2. RADAR WAVEFORM AND TRAFFIC

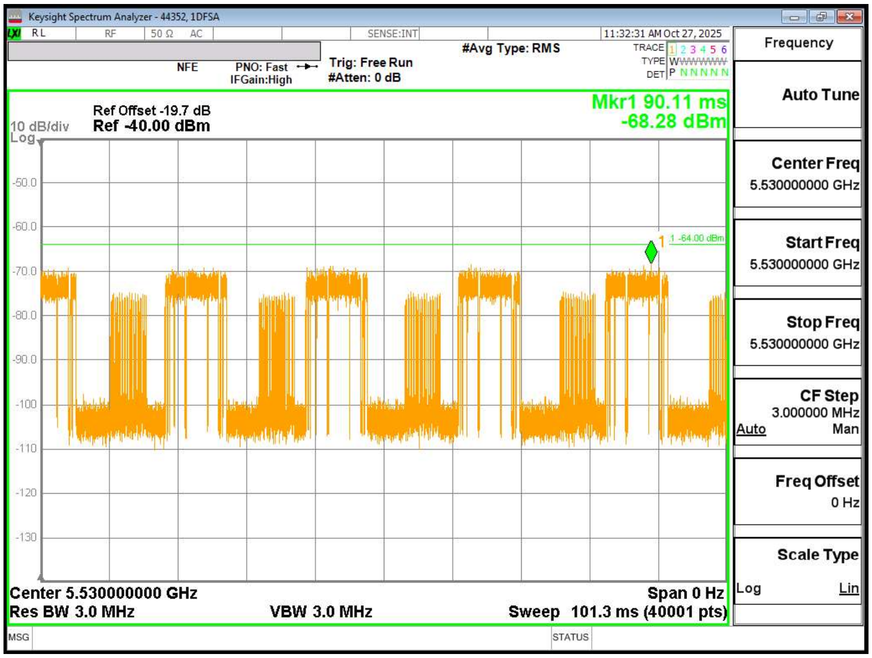
RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER

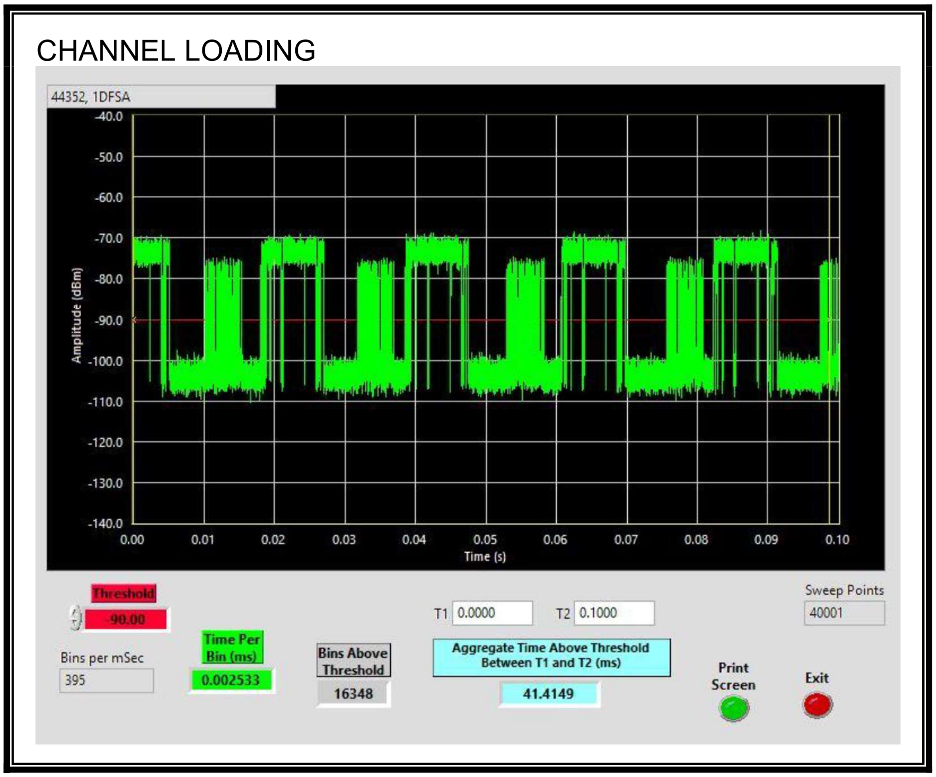


TRAFFIC

TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 41.4149%.

7.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

7.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =
(Number of analyzer bins showing transmission) * (dwell time per bin)

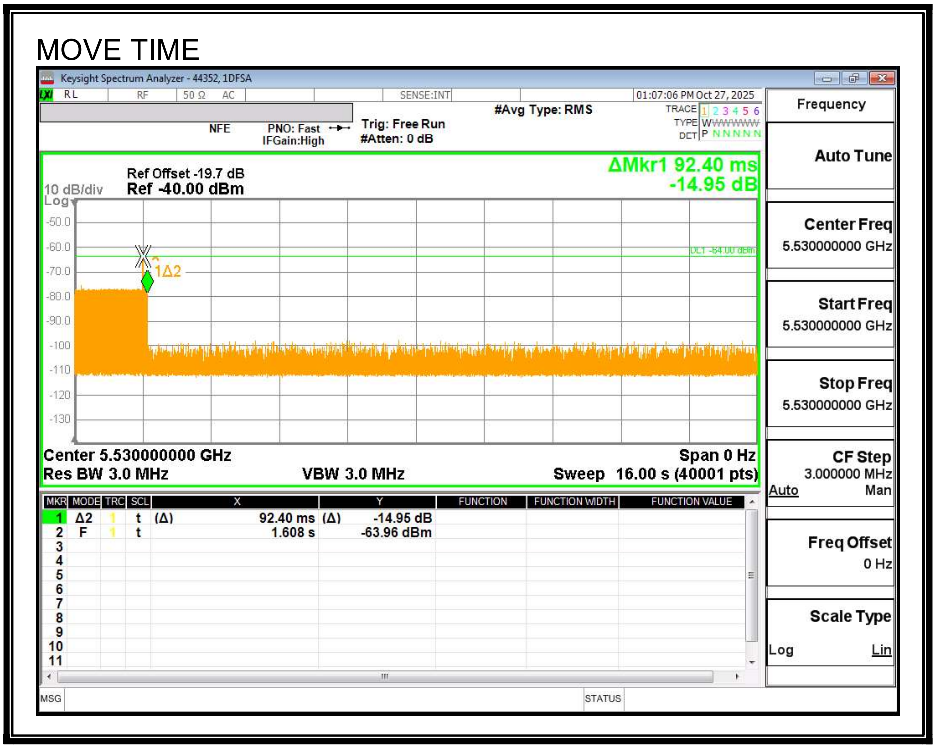
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.0924	10

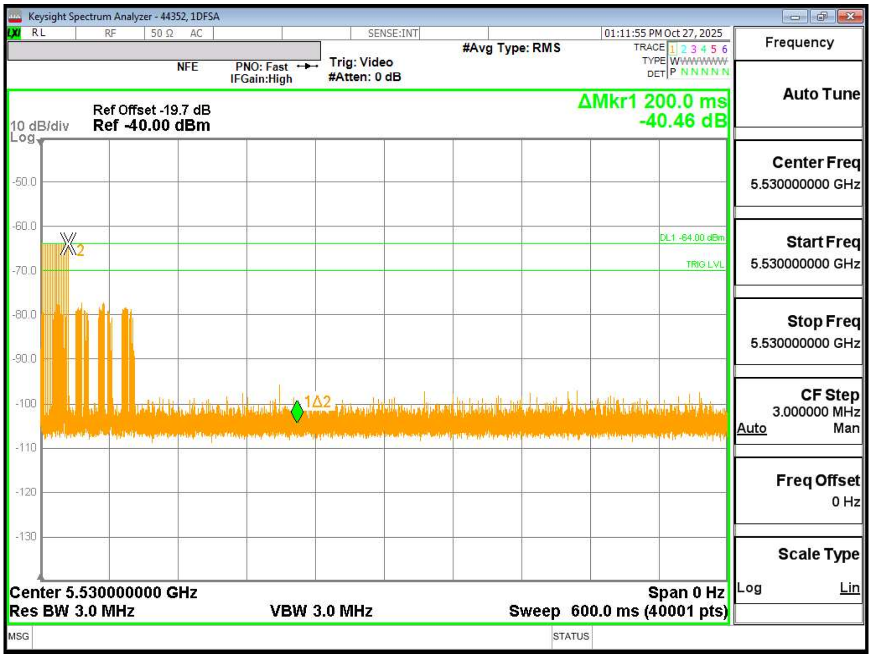
Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0	60

MOVE TIME


MOVE TIME
Keysight Spectrum Analyzer - 44352, 1DFSA
SENSE:INT
01:07:06 PM Oct 27, 2025
#Avg Type: RMS
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
ΔMkr1 92.40 ms
-14.95 dB
Ref Offset -19.7 dB
10 dB/div Ref -40.00 dBm
Center 5.530000000 GHz
Span 0 Hz
Res BW 3.0 MHz
VBW 3.0 MHz
Sweep 16.00 s (40001 pts)
1 Δ2 1 t (Δ) 92.40 ms (Δ) -14.95 dB
2 F 1 t 1.608 s -63.96 dBm
Frequency
Auto Tune
Center Freq 5.530000000 GHz
Start Freq 5.530000000 GHz
Stop Freq 5.530000000 GHz
CF Step 3.000000 MHz
Freq Offset 0 Hz
Scale Type

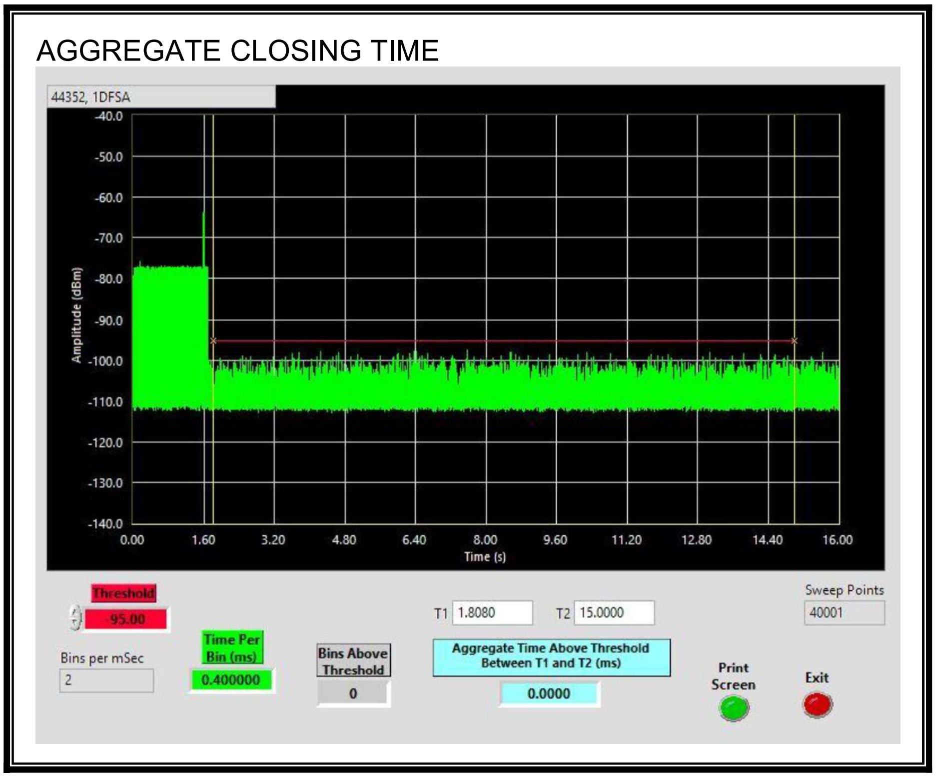
CHANNEL CLOSING TIME

CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

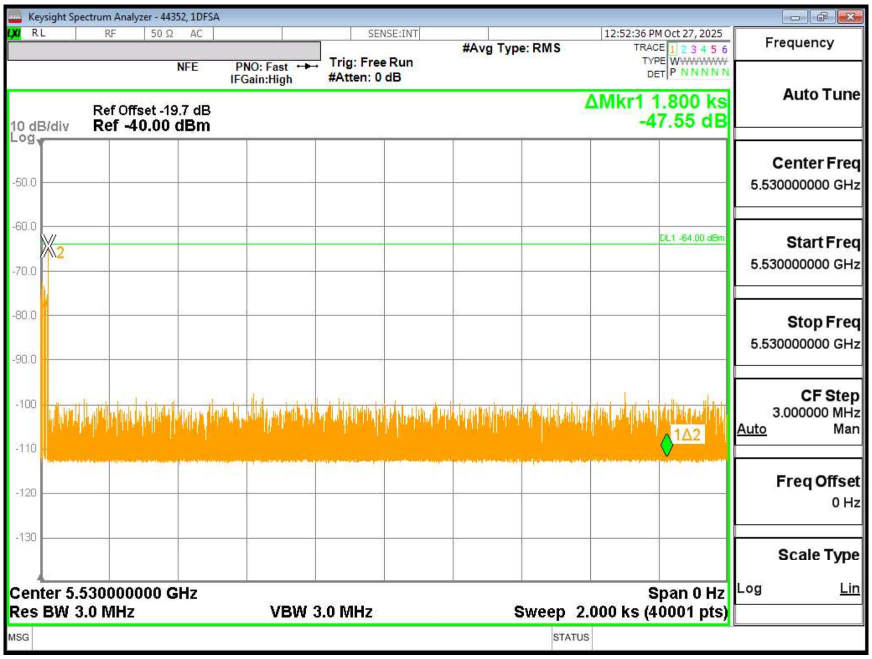


7.2.5. NON-OCCUPANCY PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.

NON-OCCUPANCY PERIOD



8. SETUP PHOTOS

Please refer to 16025792-EP1 for setup photos

END OF TEST REPORT

SAR EVALUATION REPORT

IEEE Std 1528-2013

For
Portable Digital Transceiver

FCC ID: IPH-05116
Model Name: A05116

Report Number: 16025792-S1V3
Issue Date: 1/14/2026

Prepared for
Garmin International Inc
1200 E 151ST ST
OLATHE, Kansas 66062-3426
United States

Prepared by

UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888
FCC Registration: 550739

CERT #0751.05

Revision History

Rev.	Date	Revisions	Revised By
V1	1/9/2026		Alvino Silva
V2	1/12/2026	Updated Section 3	Kiara Davis
V3	1/14/2026	Updated note in Section 9.1	Miguel Llamas

Table of Contents

1. Attestation of Test Results

Applicant Name	Garmin International Inc.			
FCC ID	IPH-05116			
Model Name	A05116			
Applicable Standards	Published RF exposure KDB procedures. IEEE Std 1528-2013			
Exposure Category	SAR Limits (W/Kg)			
	Peak spatial-average (1g of tissue)		Extremities (hands, wrists, ankles, etc.) (10g of tissue)	
General population / Uncontrolled exposure	1.6		4	
RF Exposure Conditions	Equipment Class - Highest Reported SAR (W/kg)			
	DTS	NII	DSS	ANT/ANT+
Standalone	0.352	0.410	N/A	N/A
Extremity	0.423	0.379	0.021	N/A
Date Tested	10/16/2025 to 1/9/2026			
Test Results	Complies			

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested can demonstrate 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 Verification Services Inc. 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 ensure 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 considered unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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, or any agency of the U.S. government.

Approved & Released By:	Prepared By:
	
Devin Chang Senior Laboratory Engineer UL Verification Services Inc.	Alvino Miguel Silva Laboratory Engineer UL Verification Services Inc.

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
- 447498 D04 Interim General RF Exposure Guidance v01
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D07 UMPC Mini Tablet 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 May 2017; RF Exposure Procedures (Broadband Liquid Above 3 GHz)
- TCB Workshop April 2019; RF Exposure Procedures (Tissue Simulating Liquids (TSL))

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

47173 Benicia Street
SAR Lab C

UL Verification Services Inc. is accredited by A2LA, Certificate Number 0751.05

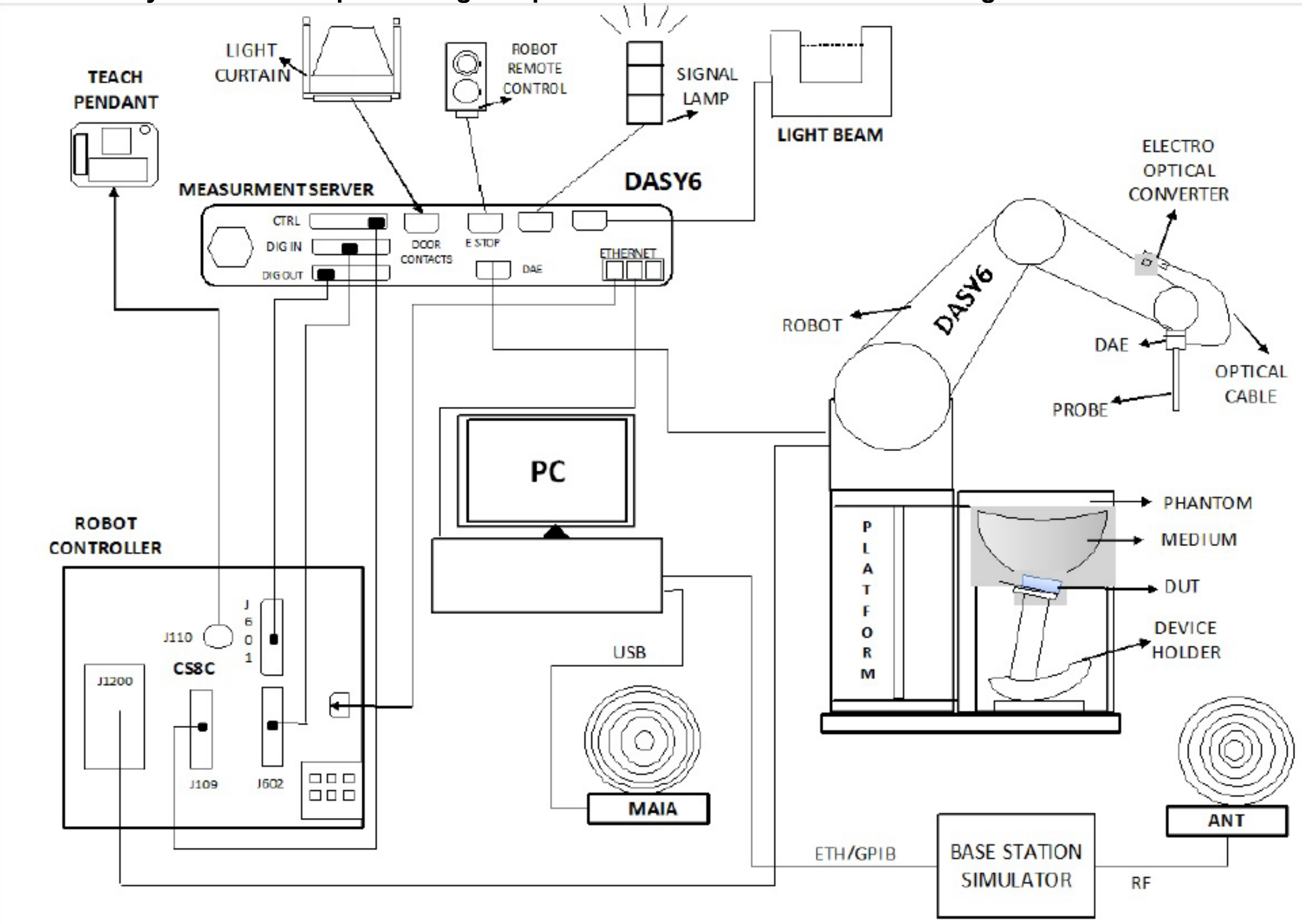
The Test Lab Conformity Assessment Body Identifier (CABID)

Location	CABID	Company Number	FCC Registration
47173 Benicia Street, Fremont, CA, 94538 UNITED STATES	US0104	2324A	550739

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 DASY6/8[1] 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] DASY6/8 software used: DASY6.16.2 or DASY8.16.2 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	½·δ·ln(2) ± 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

<table>
<tr><th colspan="3"></th><th>$\leq$ 3 GHz</th><th>$>$ 3 GHz</th></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>$\leq$ 2 GHz: $\leq$ 8 mm
2 – 3 GHz: $\leq$ 5 mm*</td><td>3 – 4 GHz: $\leq$ 5 mm*
4 – 6 GHz: $\leq$ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>$\leq$ 5 mm</td><td>3 – 4 GHz: $\leq$ 4 mm
4 – 5 GHz: $\leq$ 3 mm
5 – 6 GHz: $\leq$ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>$\leq$ 4 mm</td><td>3 – 4 GHz: $\leq$ 3 mm
4 – 5 GHz: $\leq$ 2.5 mm
5 – 6 GHz: $\leq$ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>$\geq$ 30 mm</td><td>3 – 4 GHz: $\geq$ 28 mm
4 – 5 GHz: $\geq$ 25 mm
5 – 6 GHz: $\geq$ 22 mm</td></tr>
<tr><td colspan="5">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 <u>reported</u> SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is $\leq$ 1.4 W/kg, $\leq$ 8 mm, $\leq$ 7 mm and $\leq$ 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.</td></tr>
</table>

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. Due Date
Vector Network Analyzer*	Copper Mountain Tech	R140N	21130078	1/1/2026
Vector Network Analyzer	Rohde & Schwarz	ZNLE6	1323.0012K56-101274-mn	2/28/2026
Dielectric Probe kit	SPEAG	DAK-3.5 Probe	1082	4/14/2026
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	2/28/2026
Thermometer	Traceable Calibration Control Co.	4242	240054866	1/31/2026

Note(s):

*Equipment not used past calibration due date.

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Power Source	SPEAG	Powersource1	4371	4/30/2026
Power Meter	Keysight	N1911A	MY55196009	1/31/2026
Signal Generator	Rohde & Schwarz	SMB 100A	406.600K03-180970-	2/28/2026
Power Sensor	Keysight	N1912A	MY55196004	1/31/2026
Power Sensor	Rohde & Schwarz	NRP18A	24.6815K02-100992	2/28/2026
Directional coupler	Mini-Circuits	ZUDC10-83-S+	2224	N/A

Lab Equipment

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
E-Field Probe (SAR Lab C)	SPEAG	EX3DV4	7501	3/12/2026
Data Acquisition Electronics (SAR Lab C)	SPEAG	DAE4	1547	4/14/2026
System Validation Dipole	SPEAG	D2450V2	748	2/8/2026
System Validation Dipole	SPEAG	D5GHzV2	1168	2/6/2026

OTHER

Name of Equipment	Manufacturer	Type/Model	T Number	Serial No.	Cal. Due Date
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	959	137873-WG	2/19/2022

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 ≤ 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	Overall (Length x Width): 127.4 mm x 74.3 mm Overall Diagonal: 142.3 mm Display Diagonal: 116.8 mm This is a UMPC mini-tablet device(an overall diagonal dimensions ≤ 20 cm) Refer to Appendix A
Back Cover	The Back Cover is not removable
Battery Options	The rechargeable battery is not user accessible.
Test sample information	**S/N** / **IMEI** / **Notes** 18058259 / N/A / Radiated Sample 9014964 / N/A / Conducted Sample
Hardware Version	N/A
Software Version	1.24

6.2. Wireless Technologies

Wireless Technologies	Frequency Bands	Operating Mode
Wi-Fi	2.4 GHz	802.11b/g/n (20 MHz BW)
	5 GHz UNII-1/2A/2C/3	802.11a/n/ac (20/40/80 MHz BW)
		Does this device support Bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No
		Does this device support Band gap channel(s)? ☐ Yes ☒ No
Bluetooth	2.4 GHz	BR, EDR, and LE
ANT/ANT+	2.4 GHz	GFSK

Notes:

1. Duty cycle for Wi-Fi is referenced from the DTS and U-NII reports. Refer to Section 10 for Duty Cycle values used for testing.

7. RF Exposure Conditions (Test Configurations)

Refer to Appendix A for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

7.1. Standalone SAR Test Exclusion Considerations

Per 447498 D01 v06 General RF Exposure Guidance § 4.3.1 and Appendix A and Appendix B:

These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions, and platform requirements, to any part of the body or extremity of a user or bystander. To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified, typically in the SAR measurement or SAR analysis report, by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, according to the required published RF exposure KDB procedures.

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
   [(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where
   - f(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 values 3.0 and 7.5 are referred to as numeric thresholds in step b) below

b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):
   1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)]} mW, for 100 MHz to 1500 MHz
   2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10]} mW, for > 1500 MHz and ≤ 6 GHz

SAR Test Exclusion Calculations

- When the separation distance from the antenna to an adjacent edge is ≤ 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
- When the separation distance from the antenna to an adjacent edge is > 5 mm, the actual antenna-to-edge separation distance is applied to determine SAR test exclusion.

Antennas ≤ 50mm to adjacent edges

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						SAR Exemption Limit (mW) & Exclusion					
			dBm	mW	Back	Front	Edge Top	Edge Right	Edge Bottom	Edge Left	Back	Front	Edge Top	Edge Right	Edge Bottom	Edge Left
2.4 GHz ANT	Wi-Fi 2.4 GHz	2462	19.0	79	7.9	9.6	63.2	73.1	6.6	34.8	Limit: 7 mW -MEASURE-	Limit: 9 mW -MEASURE-	Limit: 342 mW -EXEMPT-	Limit: 451 mW -EXEMPT-	Limit: 5 mW -MEASURE-	Limit: 110 mW -EXEMPT-
5 GHz ANT	Wi-Fi 5.2 GHz	5240	17.5	56	7.5	9.6	27.1	107.3	37.3	16.6	Limit: 3 mW -MEASURE-	Limit: 6 mW -MEASURE-	Limit: 49 mW -MEASURE-	Limit: 845 mW -EXEMPT-	Limit: 95 mW -EXEMPT-	Limit: 18 mW -MEASURE-
5 GHz ANT	Wi-Fi 5.3 GHz	5320	18.5	71	7.5	9.6	27.1	107.3	37.3	16.6	Limit: 3 mW -MEASURE-	Limit: 6 mW -MEASURE-	Limit: 49 mW -MEASURE-	Limit: 843 mW -EXEMPT-	Limit: 95 mW -EXEMPT-	Limit: 18 mW -MEASURE-
5 GHz ANT	Wi-Fi 5.5 GHz	5700	17.0	50	7.5	9.6	27.1	107.3	37.3	16.6	Limit: 3 mW -MEASURE-	Limit: 5 mW -MEASURE-	Limit: 47 mW -MEASURE-	Limit: 835 mW -EXEMPT-	Limit: 92 mW -EXEMPT-	Limit: 17 mW -MEASURE-
5 GHz ANT	Wi-Fi 5.8 GHz	5825	17.5	56	7.5	9.6	27.1	107.3	37.3	16.6	Limit: 3 mW -MEASURE-	Limit: 5 mW -MEASURE-	Limit: 47 mW -MEASURE-	Limit: 833 mW -EXEMPT-	Limit: 91 mW -EXEMPT-	Limit: 17 mW -MEASURE-
2.4 GHz ANT	Bluetooth	2480	8.0	6	7.9	9.6	63.2	73.1	6.6	34.8	Limit: 6 mW -EXEMPT-	Limit: 9 mW -EXEMPT-	Limit: 341 mW -EXEMPT-	Limit: 450 mW -EXEMPT-	Limit: 5 mW -MEASURE-	Limit: 109 mW -EXEMPT-
2.4 GHz ANT	ANT/ANT+	2480	-2.0	1	7.9	9.6	63.2	73.1	6.6	34.8	Limit: 6 mW -EXEMPT-	Limit: 9 mW -EXEMPT-	Limit: 341 mW -EXEMPT-	Limit: 450 mW -EXEMPT-	Limit: 5 mW -EXEMPT-	Limit: 109 mW -EXEMPT-

Note(s):
According to KDB 447498, if the calculated threshold value is >3 (1g SAR), then SAR testing is required.

Antennas > 50mm to adjacent edges

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						SAR Exemption Limit (mW) & Exclusion					
			dBm	mW	Back	Front	Edge Top	Edge Right	Edge Bottom	Edge Left	Back	Front	Edge Top	Edge Right	Edge Bottom	Edge Left
2.4 GHz ANT	Wi-Fi 2.4 GHz	2462	19.0	79	7.9	9.6	63.2	73.1	6.6	34.8	*< 50 mm*	*< 50 mm*	227.6 mW -EXEMPT-	326.6 mW -EXEMPT-	*< 50 mm*	*< 50 mm*
5 GHz ANT	Wi-Fi 5.2 GHz	5240	17.5	56	7.5	9.6	27.1	107.3	37.3	16.6	*< 50 mm*	*< 50 mm*	*< 50 mm*	638.5 mW -EXEMPT-	*< 50 mm*	*< 50 mm*
5 GHz ANT	Wi-Fi 5.3 GHz	5320	18.5	71	7.5	9.6	27.1	107.3	37.3	16.6	*< 50 mm*	*< 50 mm*	*< 50 mm*	638 mW -EXEMPT-	*< 50 mm*	*< 50 mm*
5 GHz ANT	Wi-Fi 5.5 GHz	5700	17.0	50	7.5	9.6	27.1	107.3	37.3	16.6	*< 50 mm*	*< 50 mm*	*< 50 mm*	635.8 mW -EXEMPT-	*< 50 mm*	*< 50 mm*
5 GHz ANT	Wi-Fi 5.8 GHz	5825	17.5	56	7.5	9.6	27.1	107.3	37.3	16.6	*< 50 mm*	*< 50 mm*	*< 50 mm*	635.2 mW -EXEMPT-	*< 50 mm*	*< 50 mm*
2.4 GHz ANT	Bluetooth	2480	8.0	6	7.9	9.6	63.2	73.1	6.6	34.8	*< 50 mm*	*< 50 mm*	227.3 mW -EXEMPT-	326.3 mW -EXEMPT-	*< 50 mm*	*< 50 mm*
2.4 GHz ANT	ANT/ANT+	2480	-2.0	1	7.9	9.6	63.2	73.1	6.6	34.8	*< 50 mm*	*< 50 mm*	227.3 mW -EXEMPT-	326.3 mW -EXEMPT-	*< 50 mm*	*< 50 mm*

Note(s):
According to KDB 447498, if the calculated Power threshold is less than the output power, then SAR testing is required.

7.2. Required Test Configurations

The table below identifies the standalone test configurations required for this device according to the findings in Section 7.1:

Antenna	Band	Back	Front	Edge Top	Edge Right	Edge Bottom	Edge Left
2.4 GHz ANT	Wi-Fi 2.4 GHz	Yes	Yes	No	No	Yes	No
5 GHz ANT	Wi-Fi 5 GHz	Yes	Yes	Yes	No	No	Yes
2.4 GHz ANT	Bluetooth 2.4 GHz	No	No	No	No	Yes	No
2.4 GHz ANT	ANT/ANT+	No	No	No	No	No	No

8. Dielectric Property Measurements & System Check

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°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 (εr) and conductivity (σ) ranges of ± 20%, but ranges of ± 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 ± 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

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 100 mW.
- The results are normalized to 1 W input power.

Liquid Check										System Check												
SAR Lab	Date	Band (MHz)	Freq. (MHz)	Relative Permittivity (εr)			Conductivity (σ)			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.
				Measured	Target	Delta	Measured	Target	Delta					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 C	12/12/2025	2450	2450	38.39	39.20	-2.07%	1.74	1.80	-3.61%	12/12/2025	D2450V2 SN: 748	2/8/2026	17.0	2.56	51.08	51.70	-1.2%	1.21	24.14	24.20	-0.2%	
			2400	38.44	39.30	-2.18%	1.70	1.75	-3.06%													
			2500	38.32	39.14	-2.09%	1.78	1.85	-4.21%													
SAR C	12/15/2025	5250	5250	33.87	35.93	-5.74%	4.36	4.70	-7.30%	12/15/2025	D5GHzV2 SN: 1168 (5.25 GHz)	2/6/2026	17.0	4.19	83.60	81.10	3.1%	1.21	24.14	23.10	4.5%	
			5150	33.92	36.05	-5.90%	4.24	4.60	-7.78%													
			5350	33.44	35.82	-6.64%	4.42	4.80	-7.92%													
SAR C	12/15/2025	5600	5600	33.12	35.53	-6.79%	4.76	5.06	-5.89%	12/15/2025	D5GHzV2 SN: 1168 (5.60 GHz)	2/6/2026	17.0	4.31	86.00	81.50	5.5%	1.22	24.34	23.40	4.0%	
			5500	33.19	35.65	-6.90%	4.66	4.96	-6.01%													
			5725	32.92	35.39	-6.98%	4.87	5.19	-6.15%													
SAR C	12/15/2025	5750	5750	32.94	35.36	-6.85%	4.90	5.21	-6.09%	12/15/2025	D5GHzV2 SN: 1168 (5.75 GHz)	2/6/2026	17.0	4.37	87.19	79.40	9.8%	1.24	24.74	22.50	10.0%	1
			5700	32.98	35.42	-6.89%	4.82	5.16	-6.65%													
			5850	32.79	35.30	-7.11%	5.04	5.32	-5.24%													
SAR C	12/17/2025	2450	2450	39.92	39.20	1.84%	1.75	1.80	-2.83%	12/17/2025	D2450V2 SN: 748	2/8/2026	20.0	5.47	54.70	51.70	5.8%	2.58	25.80	24.20	6.6%	
			2400	39.98	39.30	1.74%	1.72	1.75	-2.09%													
			2500	39.84	39.14	1.80%	1.79	1.85	-3.51%													
SAR C	12/30/2025	5250	5250	33.67	35.93	-6.30%	4.39	4.70	-6.70%	12/30/2025	D5GHzV2 SN: 1168 (5.25 GHz)	2/6/2026	17.0	4.14	82.60	81.10	1.9%	1.19	23.74	23.10	2.8%	
			5150	33.80	36.05	-6.23%	4.27	4.60	-7.13%													
			5350	33.26	35.82	-7.14%	4.45	4.80	-7.38%													
SAR C	12/30/2025	5600	5600	32.97	35.53	-7.22%	4.76	5.06	-5.91%	12/30/2025	D5GHzV2 SN: 1168 (5.60 GHz)	2/6/2026	17.0	4.46	88.99	81.50	9.2%	1.27	25.34	23.40	8.3%	2
			5500	32.99	35.65	-7.46%	4.69	4.96	-5.36%													
			5725	32.69	35.39	-7.63%	4.88	5.19	-5.96%													
SAR C	12/30/2025	5750	5750	32.75	35.36	-7.39%	4.92	5.21	-5.73%	12/30/2025	D5GHzV2 SN: 1168 (5.75 GHz)	2/6/2026	17.0	4.31	86.00	79.40	8.3%	1.23	24.54	22.50	9.1%	
			5700	32.74	35.42	-7.57%	4.83	5.16	-6.46%													
			5850	32.58	35.30	-7.71%	5.05	5.32	-5.04%													
SAR C	1/1/2026	2450	2450	38.04	39.20	-2.96%	1.73	1.80	-3.78%	1/1/2026	D2450V2 SN: 748	2/8/2026	17.0	2.78	55.47	51.70	7.3%	1.32	26.34	24.20	8.8%	3
			2400	38.11	39.30	-3.02%	1.69	1.75	-3.52%													
			2500	37.93	39.14	-3.08%	1.78	1.85	-4.10%													
SAR C	1/6/2026	2450	2450	36.32	39.20	-7.35%	1.67	1.80	-7.06%	1/6/2026	D2450V2 SN: 748	2/8/2026	17.0	2.56	51.08	51.70	-1.2%	1.22	24.34	24.20	0.6%	
			2400	36.38	39.30	-7.42%	1.64	1.75	-6.49%													
			2500	36.23	39.14	-7.43%	1.71	1.85	-7.66%													
SAR C	1/6/2026	5250	5250	35.49	35.93	-1.23%	4.61	4.70	-1.87%	1/6/2026	D5GHzV2 SN: 1168 (5.25 GHz)	2/6/2026	20.0	7.51	75.10	81.10	-7.4%	2.14	21.40	23.10	-7.4%	4
			5150	35.61	36.05	-1.21%	4.49	4.60	-2.34%													
			5350	35.02	35.82	-2.23%	4.69	4.80	-2.32%													
SAR C	1/6/2026	5600	5600	34.66	35.53	-2.46%	5.04	5.06	-0.50%	1/6/2026	D5GHzV2 SN: 1168 (5.60 GHz)	2/6/2026	20.0	7.98	79.80	81.50	-2.1%	2.25	22.50	23.40	-3.8%	
			5500	34.76	35.65	-2.49%	4.94	4.96	-0.30%													
			5725	34.39	35.39	-2.83%	5.17	5.19	-0.29%													
SAR C	1/6/2026	5750	5750	34.44	35.36	-2.61%	5.20	5.21	-0.36%	1/6/2026	D5GHzV2 SN: 1168 (5.75 GHz)	2/6/2026	20.0	7.32	73.20	79.40	-7.8%	2.08	20.80	22.50	-7.6%	
			5700	34.47	35.42	-2.68%	5.12	5.16	-0.92%													
			5850	34.36	35.30	-2.66%	5.36	5.32	0.66%													

9. Conducted Output Power Measurements

The selection between antennas in the application is based on RSSI based antenna selection. The full details of power selections are described in the operational description. Refer to Sec. 7 and Sec. 10 for details of the testing. Test reductions have applied accordingly following the SAR KDB Procedure for the supported wireless technologies of the DUT. This is noted in detail for each technology in their respective Sections.

The Maximum Output Power already includes component uncertainty. KDB 447498 sec.4.1.(d) at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

Maximum Output Power (Tune-up Power Limit) 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 ≤ 1.2 W/kg.

Wi-Fi 2.4GHz Measured Results

Band	Mode	Ch #	Freq. (MHz)	2.4 GHz ANT (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)
DSSS 2.4 GHz	802.11b	1	2412	17.4	18.0	Yes
		6	2437	16.3	18.0	
		11	2462	16.7	18.0	
OFDM 2.4 GHz	802.11g	1	2412		15.0	No
		6	2437		19.0	
		11	2462		14.0	
	802.11n (HT20)	1	2412		15.0	No
		6	2437		19.0	
		11	2462		15.0	

Note(s):
Channel 12 and 13 are not supported for this region per the manufacturer.

9.2. Wi-Fi 5GHz (U-NII 1-3 Bands)

Maximum Output Power (Tune-up Limit) for Wi-Fi 5 GHz

When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/n/ac modes, the channel in the lower order/sequence 802.11 transmission mode is selected.

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 802.11a/n/ac 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.

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.

Wi-Fi 5 GHz Measured Results

Band	Mode	Ch #	Freq. (MHz)	5 GHz ANT (dBm)		
				Meas Pwr	**Tune-up**	**SAR Test (Yes/No)**
UNII-2A 5.3 GHz	802.11a	52	5260	0.9	2.5	Yes
		56	5280	16.9	18.5	
		60	5300	14.6	16.0	
		64	5320	13.5	15.0	
	802.11n (HT20)	52	5260		5.0	No
		56	5280		18.0	
		60	5300		17.0	
		64	5320		17.0	
	802.11ac (VHT20)	52	5260		5.0	No
		56	5280		18.0	
		60	5300		17.0	
		64	5320		17.0	
	802.11n (HT40)	54	5270		10.0	No
		62	5310		15.0	
	802.11ac (VHT40)	54	5270		10.0	No
		62	5310		15.0	
	802.11ac (VHT80)	58	5290		9.0	No

Band	Mode	Ch #	Freq. (MHz)	5 GHz ANT (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-2C 5.5 GHz	802.11a	100	5500		14.0	No
		116	5580		15.5	
		124	5620		15.5	
		140	5700		15.5	
	802.11n (HT20)	100	5500		14.0	No
		116	5580		16.0	
		124	5620		16.0	
		140	5700		16.0	
	802.11ac (VHT20)	100	5500		14.0	No
		116	5580		16.0	
		124	5620		16.0	
		140	5700		16.0	
	802.11n (HT40)	102	5510	7.2	9.0	Yes
		118	5590	15.1	17.0	
		126	5630	15.3	17.0	
		134	5670	16.2	17.0	
	802.11ac (VHT40)	102	5510		9.0	No
		118	5590		17.0	
		126	5630		17.0	
		134	5670		17.0	
	802.11ac (VHT80)	106	5530		7.5	No
		122	5610		16.5	
		138	5690		16.5	
Band	Mode	Ch #	Freq. (MHz)	5 GHz ANT (dBm)		
				Meas Pwr	Tune-up	SAR Test (Yes/No)
UNII-3 5.8 GHz	802.11a	149	5745		17.0	No
		157	5785		15.0	
		165	5825		15.0	
	802.11n (HT20)	149	5745		16.0	No
		157	5785		17.0	
		165	5825		16.0	
	802.11ac (VHT20)	149	5745		16.0	No
		157	5785		17.0	
		165	5825		16.0	
	802.11n (HT40)	151	5755		17.5	No
		159	5795		17.5	
	802.11ac (VHT40)	151	5755		17.5	No
		159	5795		17.5	
	802.11ac (VHT80)	155	5775	15.9	17.5	Yes

9.3. Bluetooth

Maximum Output Power (Tune-up Limit) for Bluetooth

From October 2016 TCB workshop, Power and SAR measurements were performed with test software using DH5 modulation and a duty cycle of 76.80%.

SAR measurement is not required for the EDR and LE. When the secondary mode is ≤ ¼ dB higher than the primary mode.

Bluetooth Measured Results

Band	Mode	Ch #	Freq. (MHz)	2.4 GHz ANT		
				Meas Pwr	Tune-up	SAR Test (Yes/No)
Bluetooth 2.4 GHz	BR GFSK	0	2402	6.1	8.0	Yes
		39	2441	7.8	8.0	
		78	2480	6.5	8.0	
	EDR π/4 DQPSK	0	2402		5.5	No
		39	2441		5.5	
		78	2480		5.5	
	EDR 8-DPSK	0	2402		5.5	No
		39	2441		5.5	
		78	2480		5.5	
	LE GFSK	37	2402		5.5	No
		17	2440		5.5	
		39	2480		5.5	

Duty Factor Measured Results

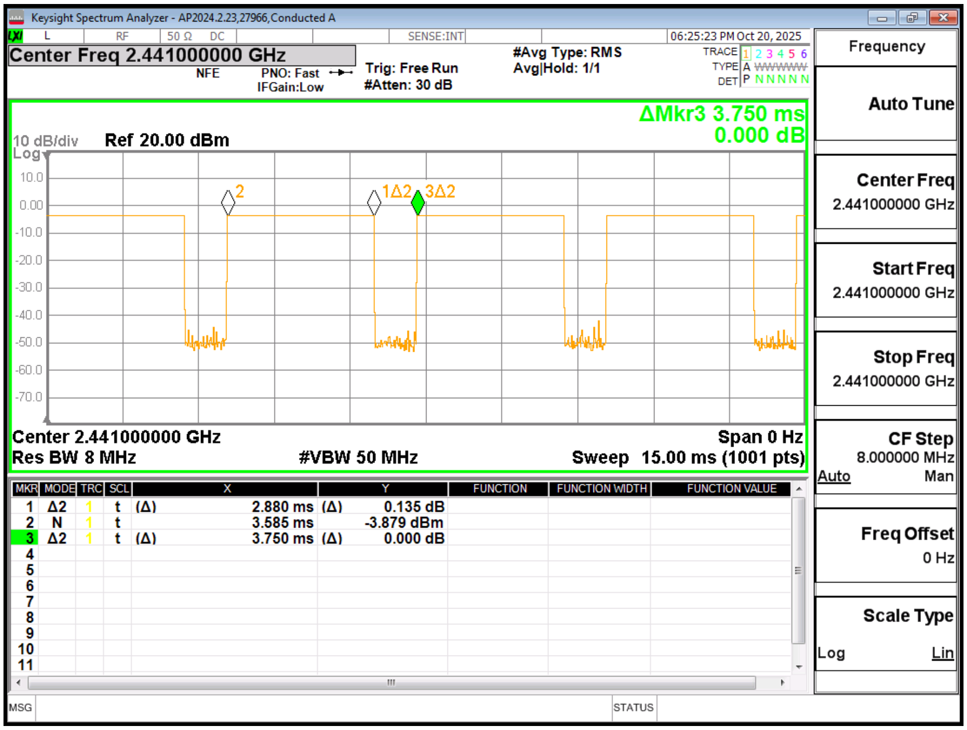
Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.88	3.75	76.80%	1.30

Note(s):

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

Duty Cycle plots

GFSK



10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for WWAN and Bluetooth = Measured SAR *Tune-up Scaling Factor
- Reported SAR(W/kg) for Wi-Fi and Bluetooth = 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 highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
- 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 ≤ 0.8 W/kg, no further SAR testing is required. If SAR is > 0.8 W/kg and ≤ 1.2 W/kg, SAR is required for the next highest measured output power channel. Finally, if SAR is > 1.2 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 ≤ 1.2 W/kg.

Standalone

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	1-g Meas. (W/kg)	1-g Scaled (W/kg)	Plot No.
Wi-Fi 2.4 GHz	Standalone	802.11b	5	99.7%	Back	1	2412	18.0	17.4	0.308	**0.352**	1
Wi-Fi 2.4 GHz	Standalone	802.11b	5	99.7%	Front	1	2412	18.0	17.4	0.215	0.246	
Wi-Fi 2.4 GHz	Standalone	802.11b	5	99.7%	Edge Left	1	2412	18.0	17.4	0.052	0.059	
Wi-Fi 2.4 GHz	Standalone	802.11b	5	99.7%	Edge Bottom	1	2412	18.0	17.4	0.327	0.374	

Extremity

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	10-g Meas. (W/kg)	10-g Scaled (W/kg)	Plot No.
Wi-Fi 2.4 GHz	Extremity	802.11b	0	99.7%	Back	1	2412	18.0	17.4	0.249	0.285	
Wi-Fi 2.4 GHz	Extremity	802.11b	0	99.7%	Front	1	2412	18.0	17.4	0.262	0.300	
Wi-Fi 2.4 GHz	Extremity	802.11b	0	99.7%	Edge Bottom	1	2412	18.0	17.4	0.370	**0.423**	2
Wi-Fi 2.4 GHz	Extremity	802.11b	0	99.7%	Edge Left	1	2412	18.0	17.4	0.351	0.401	

Adjusted SAR for 802.11g mode

Standalone

802.11b Max. Power		802.11g Max. Power		Worst SAR for 802.11b (W/kg)	Adjusted SAR for 802.11g
dBm	mW	dBm	mW		
18.0	63	19.0	79	0.352	0.443

Extremity

802.11b Max. Power		802.11g Max. Power		Worst SAR for 802.11b (W/kg)	Adjusted SAR for 802.11g
dBm	mW	dBm	mW		
18.0	63	19.0	79	0.423	0.533

10.2. Wi-Fi (U-NII 1-3 Bands)

UNII-1 &2A

When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest *reported* SAR for UNII band 2A is

- ≤ 1.2 W/kg, SAR is not required for UNII band I
- > 1.2 W/kg, both bands should be tested independently for SAR.

Standalone

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	1-g Meas. (W/kg)	1-g Scaled (W/kg)	Plot No.
WiFI 5.3 GHz	Standalone	802.11a	5	97.8%	Back	56	5280	18.5	16.9	0.211	0.313	
WiFI 5.3 GHz	Standalone	802.11a	5	97.8%	Front	56	5280	18.5	16.9	0.048	0.071	
WiFI 5.3 GHz	Standalone	802.11a	5	97.8%	Edge Top	56	5280	18.5	16.9	0.137	0.203	
WiFI 5.3 GHz	Standalone	802.11a	5	97.8%	Edge Left	56	5280	18.5	16.9	0.277	**0.410**	3

Extremity

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	10-g Meas. (W/kg)	10-g Scaled (W/kg)	Plot No.
WiFI 5.3 GHz	Extremity	802.11a	0	97.8%	Back	56	5280	18.5	16.9	0.172	0.255	
WiFI 5.3 GHz	Extremity	802.11a	0	97.8%	Front	56	5280	18.5	16.9	0.051	0.076	
WiFI 5.3 GHz	Extremity	802.11a	0	97.8%	Edge Left	56	5280	18.5	16.9	0.256	**0.379**	4
WiFI 5.3 GHz	Extremity	802.11a	0	97.8%	Edge Top	56	5280	18.5	16.9	0.045	0.067	

UNII-2C

Standalone

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	1-g Meas. (W/kg)	1-g Scaled (W/kg)	Plot No.
Wi-Fi 5.5 GHz	Standalone	802.11n (HT40)	5	95.5%	Back	134	5670	17.0	16.2	0.093	0.117	
Wi-Fi 5.5 GHz	Standalone	802.11n (HT40)	5	95.5%	Front	134	5670	17.0	16.2	0.066	0.083	
Wi-Fi 5.5 GHz	Standalone	802.11n (HT40)	5	95.5%	Edge Top	134	5670	17.0	16.2	0.079	0.099	
Wi-Fi 5.5 GHz	Standalone	802.11n (HT40)	5	95.5%	Edge Left	134	5670	17.0	16.2	0.314	**0.395**	5

Extremity

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	10-g Meas. (W/kg)	10-g Scaled (W/kg)	Plot No.
Wi-Fi 5.5 GHz	Extremity	802.11n (HT40)	0	95.5%	Back	134	5670	17.0	16.2	0.092	0.116	
Wi-Fi 5.5 GHz	Extremity	802.11n (HT40)	0	95.5%	Front	134	5670	17.0	16.2	0.073	0.092	
Wi-Fi 5.5 GHz	Extremity	802.11n (HT40)	0	95.5%	Edge Left	134	5670	17.0	16.2	0.238	**0.299**	6
Wi-Fi 5.5 GHz	Extremity	802.11n (HT40)	0	95.5%	Edge Top	134	5670	17.0	16.2	0.054	0.068	

UNII-3

Standalone

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	1-g Meas. (W/kg)	1-g Scaled (W/kg)	Plot No.
Wi-Fi 5.8 GHz	Standalone	802.11ac (VHT80)	5	91.2%	Back	155	5775.0	17.5	15.9	0.074	0.118	
Wi-Fi 5.8 GHz	Standalone	802.11ac (VHT80)	5	91.2%	Front	155	5775.0	17.5	15.9	0.069	0.110	
Wi-Fi 5.8 GHz	Standalone	802.11ac (VHT80)	5	91.2%	Edge Top	155	5775.0	17.5	15.9	0.092	0.147	
Wi-Fi 5.8 GHz	Standalone	802.11ac (VHT80)	5	91.2%	Edge Left	155	5775.0	17.5	15.9	0.219	**0.350**	7

Extremity

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	10-g Meas. (W/kg)	10-g Scaled (W/kg)	Plot No.
Wi-Fi 5.8 GHz	Extremity	802.11ac (VHT80)	0	91.2%	Back	155	5775.0	17.5	15.9	0.061	0.098	
Wi-Fi 5.8 GHz	Extremity	802.11ac (VHT80)	0	91.2%	Front	155	5775.0	17.5	15.9	0.016	0.026	
Wi-Fi 5.8 GHz	Extremity	802.11ac (VHT80)	0	91.2%	Edge Left	155	5775.0	17.5	15.9	0.135	**0.216**	8
Wi-Fi 5.8 GHz	Extremity	802.11ac (VHT80)	0	91.2%	Edge Top	155	5775.0	17.5	15.9	0.030	0.048	

10.3. Bluetooth

Band	RF Exposure Condition(s)	Mode(s)	Dist. (mm)	Duty Cycle (%)	Test Position(s)	Channel	Freq. (MHz)	TuP Limit (dBm)	Meas. (dBm)	10-g Meas. (W/kg)	10-g Scaled (W/kg)	Plot No.
BT 2.4 GHz	Extremity	GFSK (BDR)	0	76.8%	Back	39	2441	8.0	7.8	0.012	0.013	
BT 2.4 GHz	Extremity	GFSK (BDR)	0	76.8%	Front	39	2441	8.0	7.8	0.011	0.012	
BT 2.4 GHz	Extremity	GFSK (BDR)	0	76.8%	Edge Bottom	39	2441	8.0	7.8	0.020	**0.021**	9
BT 2.4 GHz	Extremity	GFSK (BDR)	0	76.8%	Edge Left	39	2441	8.0	7.8	0.021	0.022	

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.

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	First Repeated		Second Repeated		Third Repeated
						Measured SAR (W/kg)	Largest to Smallest SAR Ratio	Measured SAR (W/kg)	Largest to Smallest SAR Ratio	Measured SAR (W/kg)
2400	Wi-Fi 802.11b/g/n	Standalone	Rear	No	0.308	N/A	N/A	N/A	N/A	N/A
5300	Wi-Fi 802.11a/n/ac	Standalone	Edge Left	No	0.277	N/A	N/A	N/A	N/A	N/A
5500	Wi-Fi 802.11a/n/ac	Standalone	Edge Left	No	0.314	N/A	N/A	N/A	N/A	N/A
5800	Wi-Fi 802.11a/n/ac	Standalone	Edge Left	No	0.219	N/A	N/A	N/A	N/A	N/A

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	First Repeated		Second Repeated		Third Repeated
						Measured SAR (W/kg)	Largest to Smallest SAR Ratio	Measured SAR (W/kg)	Largest to Smallest SAR Ratio	Measured SAR (W/kg)
2400	Wi-Fi 802.11b/g/n	Extremity	Edge Right	No	0.370	N/A	N/A	N/A	N/A	N/A
	BT	Extremity	Edge Bottom	No	0.020	N/A	N/A	N/A	N/A	N/A
5300	Wi-Fi 802.11a/n/ac	Extremity	Edge Left	No	0.256	N/A	N/A	N/A	N/A	N/A
5500	Wi-Fi 802.11a/n/ac	Extremity	Edge Left	No	0.238	N/A	N/A	N/A	N/A	N/A
5800	Wi-Fi 802.11a/n/ac	Extremity	Edge Left	No	0.135	N/A	N/A	N/A	N/A	N/A

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 SAR Analysis

This device does not support simultaneous transmission.

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

System Performance Check Report for D5GHzV2 - SN1168

Exposure Conditions

Frequency [MHz] | Channel Number	5750.000 | 0	**TSL Permittivity**	32.9
Group | UID	CW | 0--	**TSL Conductivity [S/m]**	4.90
Conversion Factor	5.34	**Phantom Section | TSL**	Flat | Head Simulating Liquid

Hardware Setup

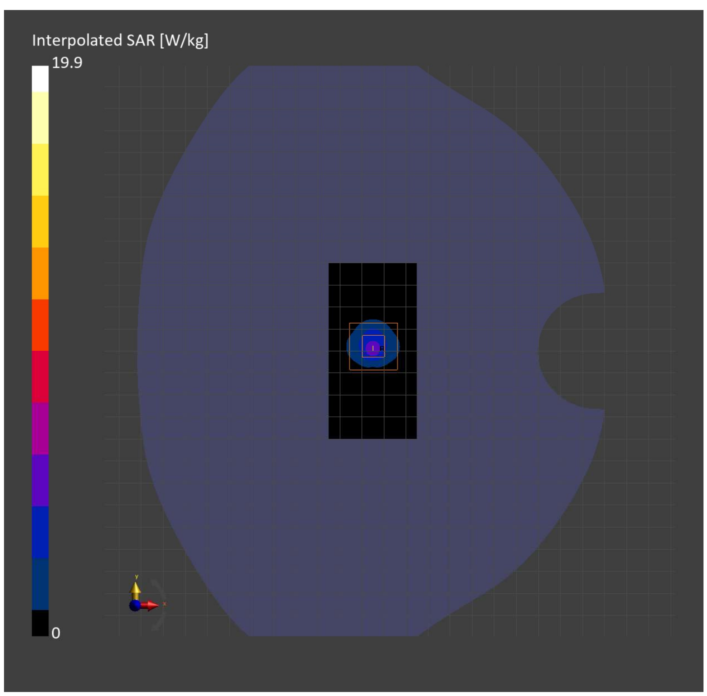
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	32.0 x 32.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
M2/M1 [> 30%]		58.7
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		7.3

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	3.81	**4.37**
psSAR10g [W/Kg]	1.10	**1.24**
Power Drift [±0.2 dB]	N/A	-0.03



System Performance Check Report for D5GHzV2 - SN1168

Exposure Conditions

Frequency [MHz] | Channel Number	5600.000 | 0	**TSL Permittivity**	33.0
Group | UID	CW | 0--	**TSL Conductivity [S/m]**	4.76
Conversion Factor	5.27	**Phantom Section | TSL**	Flat | Head Simulating Liquid

Hardware Setup

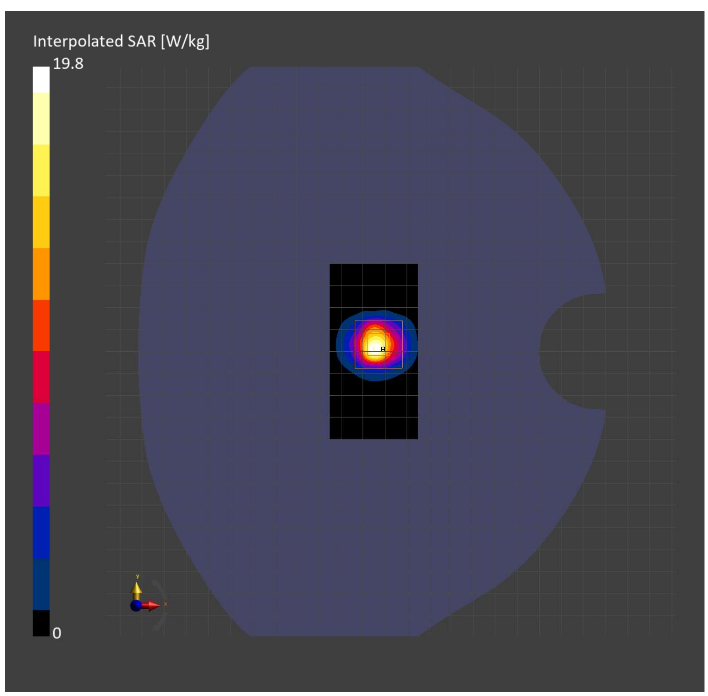
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	32.0 x 32.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
M2/M1 [> 30%]		58.8
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		7.4

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	3.96	**4.46**
psSAR10g [W/Kg]	1.17	**1.27**
Power Drift [±0.2 dB]	N/A	0.02



System Performance Check Report for D2450V2 - SN748

Exposure Conditions

Frequency [MHz] | Channel Number	2450.000 | 0	**TSL Permittivity**	38.0
Group | UID	CW | 0--	**TSL Conductivity [S/m]**	1.73
Conversion Factor	7.16	**Phantom Section | TSL**	Flat | Head Simulating Liquid

Hardware Setup

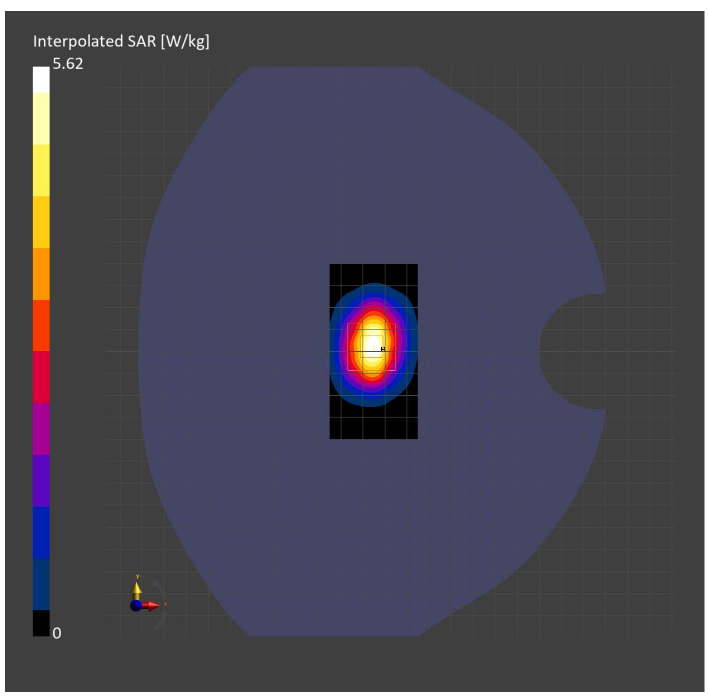
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scans Setup

	Area Scan	**Zoom Scan**
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 31.2
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 [> 30%]		80.0
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		9.0

Measurement Results

	Area Scan	**Zoom Scan**
psSAR1g [W/Kg]	2.75	**2.78**
psSAR10g [W/Kg]	1.28	**1.32**
Power Drift [±0.2 dB]	N/A	0.01



System Performance Check Report for D5GHzV2 - SN1168

Exposure Conditions

Frequency [MHz] | Channel Number	5250.000 | 0	**TSL Permittivity**	35.5
Group | UID	CW | 0--	**TSL Conductivity [S/m]**	4.61
Conversion Factor	5.47	**Phantom Section | TSL**	Flat | Head Simulating Liquid

Hardware Setup

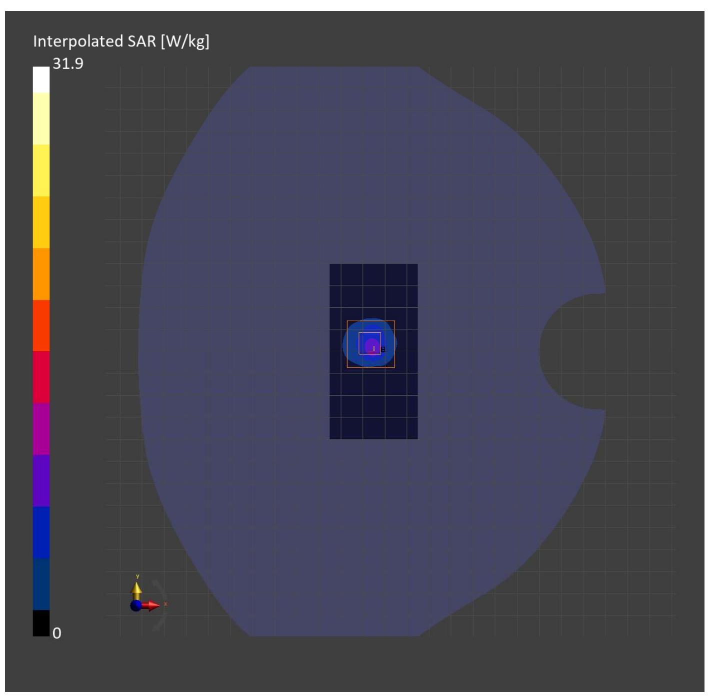
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scans Setup

	Area Scan	**Zoom Scan**
Grid Extents [mm]	40.0 x 80.0	32.0 x 32.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
M2/M1 [> 30%]		60.5
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		7.2

Measurement Results

	Area Scan	**Zoom Scan**
psSAR1g [W/Kg]	6.31	**7.51**
psSAR10g [W/Kg]	1.90	**2.14**
Power Drift [±0.2 dB]	N/A	-0.07



WLAN 2.4GHz: IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle), BACK

Exposure Conditions

Band	WLAN 2.4GHz	**TSL Permittivity**	36.4
Frequency [MHz] | Channel Number	2412.000 | 1	**TSL Conductivity [S/m]**	1.65
Group | UID	WLAN | 10415-AAA	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	7.16	**Test Distance [mm]**	5.00

Hardware Setup

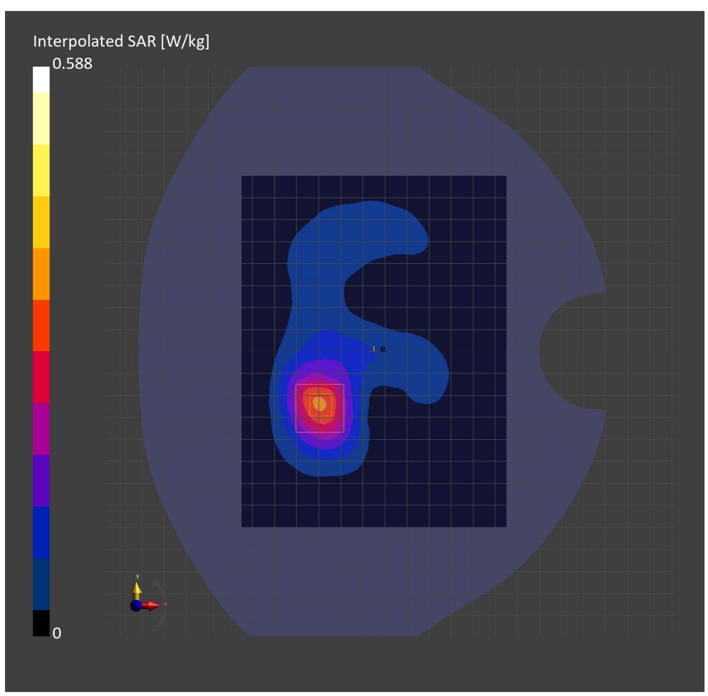
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 160.0	30.0 x 30.0 x 31.2
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 [> 30%]		80.3
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		11.5
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	0.588, -49.1, -24.4, -207.6

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.285	**0.308**
psSAR10g [W/Kg]	0.146	**0.156**
Power Drift [±0.2 dB]	N/A	-0.08



WLAN 2.4GHz: IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle), EDGE BOTTOM

Exposure Conditions

Band	WLAN 2.4GHz	**TSL Permittivity**	38.1
Frequency [MHz] | Channel Number	2412.000 | 1	**TSL Conductivity [S/m]**	1.70
Group | UID	WLAN | 10415-AAA	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	7.16	**Test Distance [mm]**	0.00

Hardware Setup

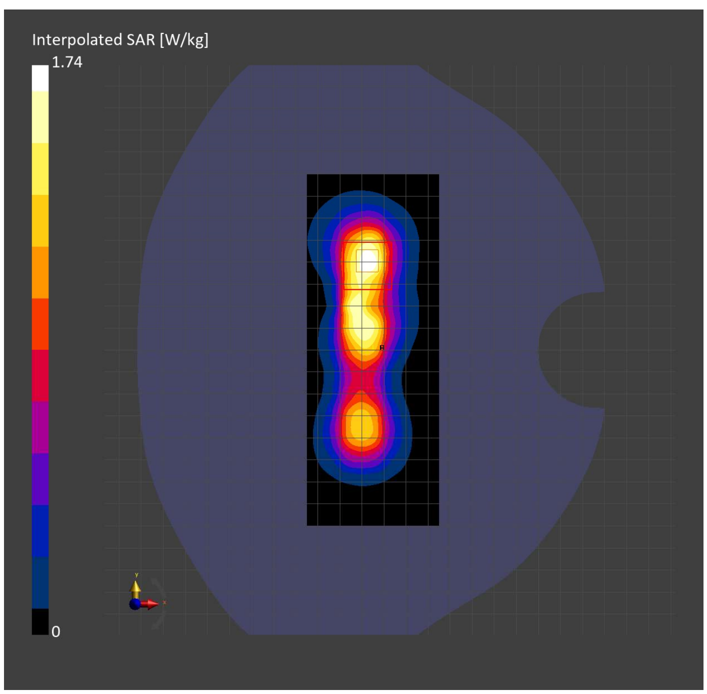
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 160.0	40.0 x 45.0 x 31.2
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 [> 30%]		72.8
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		7.0
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	1.74, -27.4, 38.3, -196.2

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.701	**0.747**
psSAR10g [W/Kg]	0.350	**0.370**
Power Drift [±0.2 dB]	N/A	-0.01



WLAN 5GHz: IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle), EDGE LEFT

Exposure Conditions

Band	WLAN 5GHz	**TSL Permittivity**	35.4
Frequency [MHz] | Channel Number	5280.000 | 56	**TSL Conductivity [S/m]**	4.65
Group | UID	WLAN | 10417-AAD	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	5.47	**Test Distance [mm]**	5.00

Hardware Setup

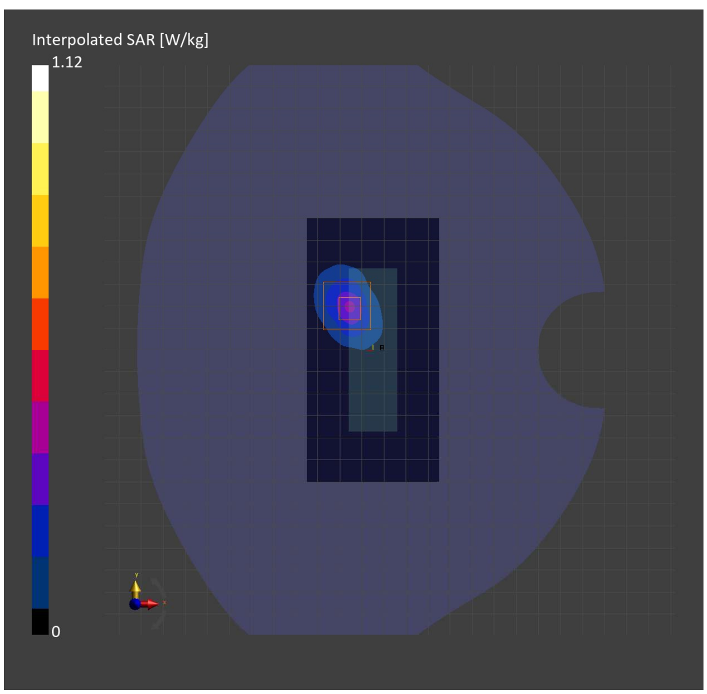
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan	Secondary Zoom Scan
Grid Extents [mm]	60.0 x 120.0	24.0 x 24.0 x 22.9	24.0 x 24.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4	1.4
Graded Grid	N/A	Yes	Yes
M2/M1 [> 30%]		59.8	59.6
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		7.9	7.9
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	1.12, -35.4, 18.9, -208.0	1.10, -35.4, 18.9, -208.0

Measurement Results

	Area Scan	Zoom Scan	Secondary Zoom Scan
psSAR1g [W/Kg]	0.261	**0.277**	**0.268**
psSAR10g [W/Kg]	0.090	**0.085**	**0.080**
Power Drift [±0.2 dB]	N/A	1.47	0.51



WLAN 5GHz: IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle), EDGE LEFT

Exposure Conditions

Band	WLAN 5GHz	**TSL Permittivity**	33.5
Frequency [MHz] | Channel Number	5280.000 | 56	**TSL Conductivity [S/m]**	4.43
Group | UID	WLAN | 10417-AAE	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	5.47	**Test Distance [mm]**	0.00

Hardware Setup

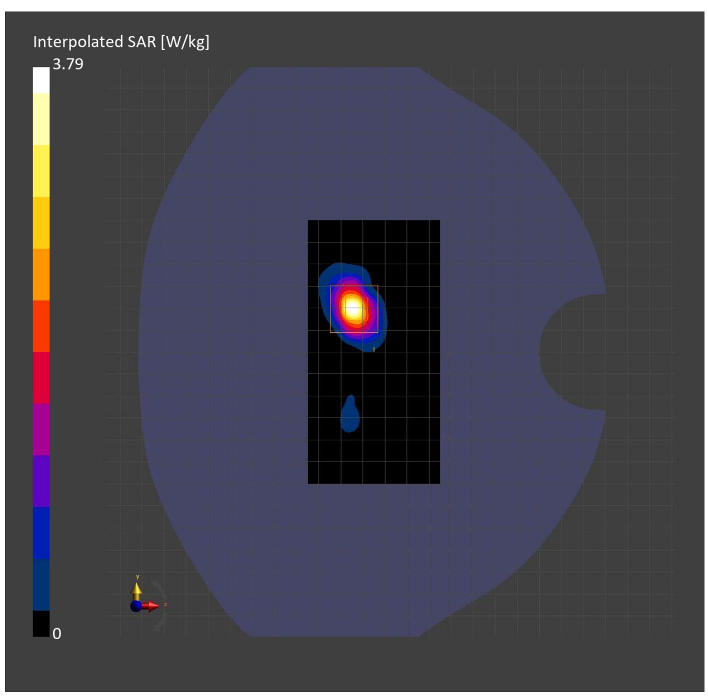
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 120.0	24.0 x 24.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
M2/M1 [> 30%]		62.4
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		5.9
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	3.79, -34.0, 19.7, -196.2

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.797	**0.925**
psSAR10g [W/Kg]	0.229	**0.256**
Power Drift [±0.2 dB]	N/A	-0.06



WLAN 5GHz: IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK), EDGE LEFT

Exposure Conditions

Band	WLAN 5GHz	**TSL Permittivity**	34.5
Frequency [MHz] | Channel Number	5670.000 | 134	**TSL Conductivity [S/m]**	5.05
Group | UID	WLAN | 10114-CAE	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	5.27	**Test Distance [mm]**	5.00

Hardware Setup

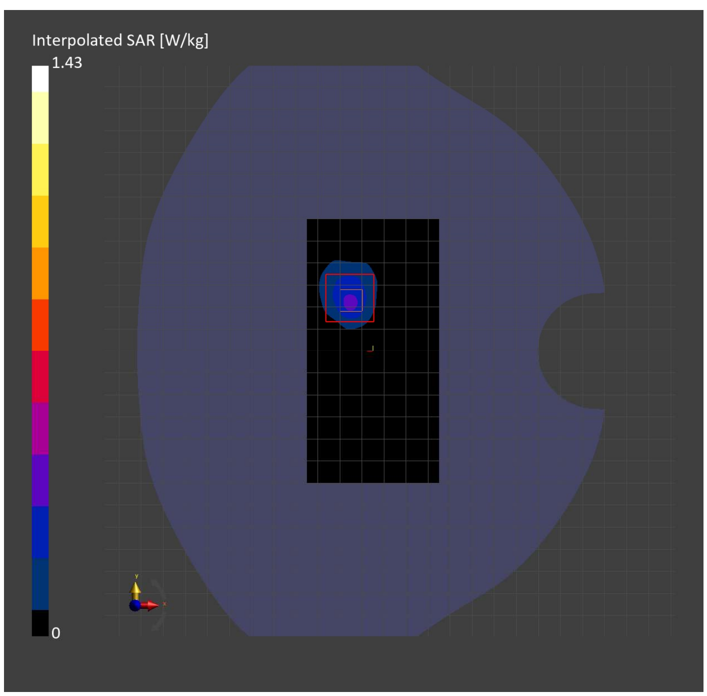
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan	Secondary Zoom Scan
Grid Extents [mm]	60.0 x 120.0	24.0 x 24.0 x 22.9	24.0 x 24.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4	1.4
Graded Grid	N/A	Yes	Yes
M2/M1 [> 30%]		60.4	59.4
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		7.2	6.9
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	1.43, -34.8, 23.1, -202.0	1.40, -34.8, 23.1, -202.0

Measurement Results

	Area Scan	Zoom Scan	Secondary Zoom Scan
psSAR1g [W/Kg]	0.276	**0.314**	**0.304**
psSAR10g [W/Kg]	0.095	**0.093**	**0.089**
Power Drift [±0.2 dB]	N/A	-0.90	-1.34



WLAN 5GHz: IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK), EDGE LEFT

Exposure Conditions

Band	WLAN 5GHz	**TSL Permittivity**	32.7
Frequency [MHz] | Channel Number	5670.000 | 134	**TSL Conductivity [S/m]**	4.78
Group | UID	WLAN | 10114-CAE	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	5.27	**Test Distance [mm]**	0.00

Hardware Setup

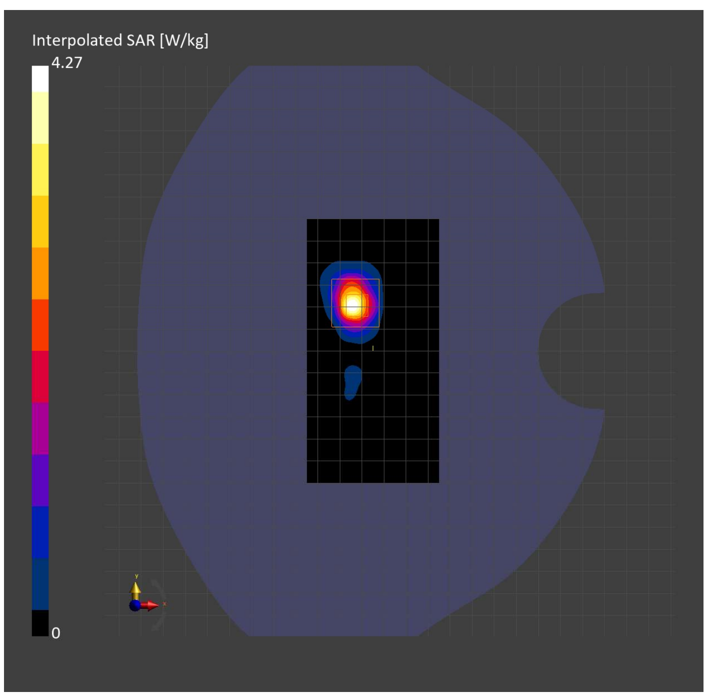
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 120.0	24.0 x 24.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
M2/M1 [> 30%]		59.6
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		5.6
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	4.27, -32.8, 21.8, -196.2

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.783	**0.928**
psSAR10g [W/Kg]	0.221	**0.238**
Power Drift [±0.2 dB]	N/A	-0.09



WLAN 5GHz: IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle), EDGE LEFT

Exposure Conditions

Band	WLAN 5GHz	**TSL Permittivity**	34.4
Frequency [MHz] | Channel Number	5775.000 | 155	**TSL Conductivity [S/m]**	5.19
Group | UID	WLAN | 10544-AAD	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	5.34	**Test Distance [mm]**	5.00

Hardware Setup

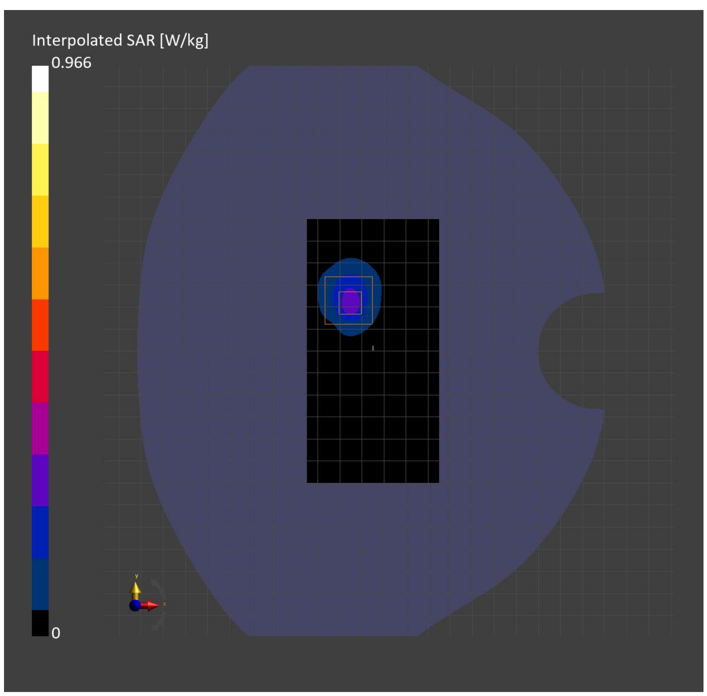
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan	Secondary Zoom Scan
Grid Extents [mm]	60.0 x 120.0	24.0 x 24.0 x 22.9	24.0 x 24.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4	1.4
Graded Grid	N/A	Yes	Yes
M2/M1 [> 30%]		55.6	59.5
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		8.7	7.2
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	0.962, -35.4, 21.9, -202.0	0.966, -35.4, 21.9, -202.0

Measurement Results

	Area Scan	Zoom Scan	Secondary Zoom Scan
psSAR1g [W/Kg]	0.205	**0.219**	**0.211**
psSAR10g [W/Kg]	0.070	**0.067**	**0.063**
Power Drift [±0.2 dB]	N/A	-0.37	-0.35



WLAN 5GHz: IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle), EDGE LEFT

Exposure Conditions

Band	WLAN 5GHz	**TSL Permittivity**	32.7
Frequency [MHz] | Channel Number	5775.000 | 155	**TSL Conductivity [S/m]**	4.91
Group | UID	WLAN | 10544-AAD	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	5.34	**Test Distance [mm]**	0.00

Hardware Setup

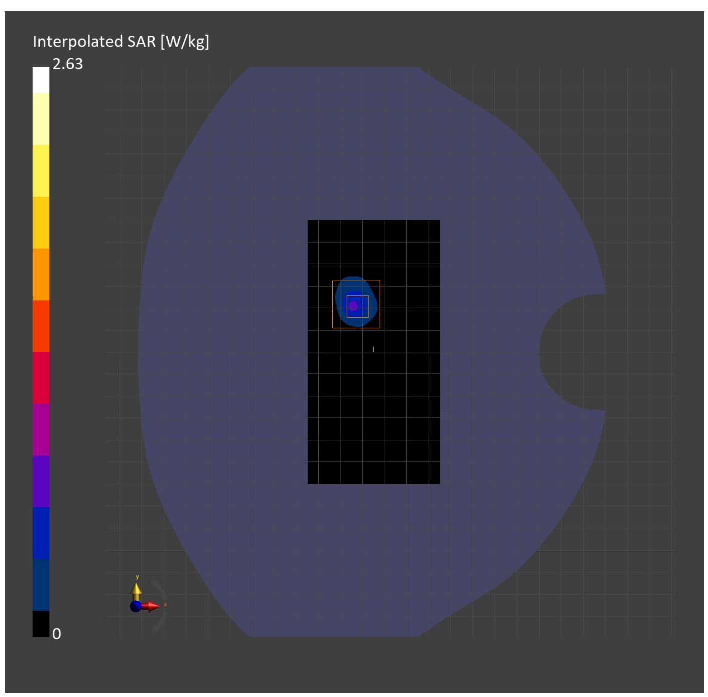
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 120.0	24.0 x 24.0 x 22.9
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
M2/M1 [> 30%]		57.4
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		5.6
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	2.63, -32.8, 21.8, -196.2

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.453	**0.544**
psSAR10g [W/Kg]	0.127	**0.135**
Power Drift [±0.2 dB]	N/A	-0.09



ISM 2.4 GHz Band: IEEE 802.15.1 Bluetooth (GFSK, DH1), EDGE BOTTOM

Exposure Conditions

Band	ISM 2.4 GHz Band	**TSL Permittivity**	38.1
Frequency [MHz] | Channel Number	2441.000 | 39	**TSL Conductivity [S/m]**	1.73
Group | UID	Bluetooth | 10030-CAA	**Phantom Section | TSL**	Flat | HSL
Conversion Factor	7.16	**Test Distance [mm]**	0.00

Hardware Setup

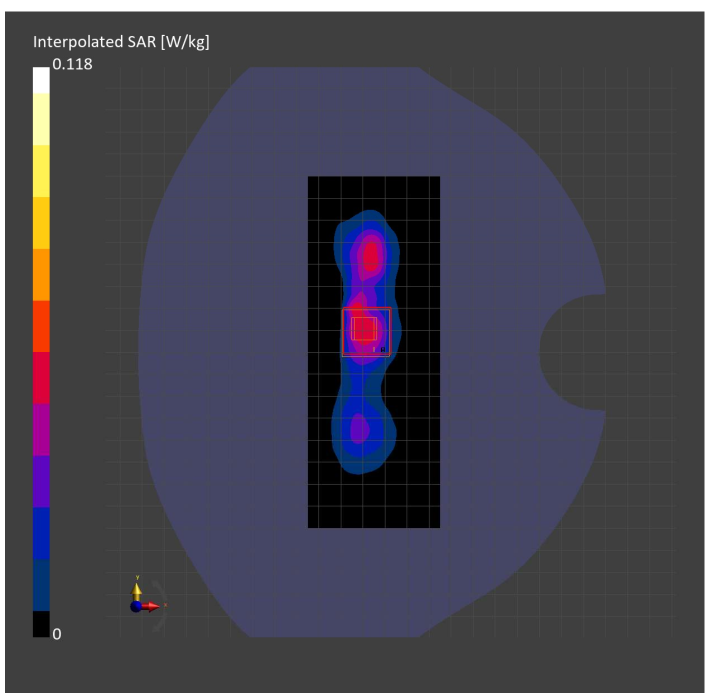
Probe | Calibration Date	EX3DV4 - SN7501 | 2025-03-12	**Phantom**	Twin-SAM V8.0 (30deg probe tilt)
DAE | Calibration Date	DAE4 Sn1547 | 2025-04-14	**TSL Type**	HBBL-600-10000
Software Version	16.4.0.5005		

Scan Setup

	Area Scan	Zoom Scan	Secondary Zoom Scan
Grid Extents [mm]	60.0 x 160.0	30.0 x 30.0 x 31.2	30.0 x 30.0 x 31.2
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4	1.4
Graded Grid	N/A	Yes	Yes
M2/M1 [> 30%]		80.5	85.2
Dist 3dB Peak [> Grid Steps Δx, Δy mm]		6.1	6.0
Peak SAR [W/kg], SAR Peak Location [mm]	N/A	0.118, -28.7, 8.6, -196.2	0.117, -28.1, 9.7, -196.2

Measurement Results

	Area Scan	Zoom Scan	Secondary Zoom Scan
psSAR1g [W/Kg]	0.046	**0.049**	**0.050**
psSAR10g [W/Kg]	0.021	**0.021**	**0.020**
Power Drift [±0.2 dB]	N/A	-1.28	-0.65



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** HSL300V2 HSL450V2 HSL750V2 HSL900V2	**Test Frequency (MHz)** 300 450 750 835, 900	**Main Ingredients** Water, Sugar Water, Sugar Water, Sugar Water, Sugar
Broad-Band Solutions (±5% Tolerance)	**Product** HBBL1350-1850V3 HBBL1550-1950V3 HBBL1900-3800V3 HBBL3500-5800V5	**Test Frequency (MHz)** 1450 – 1800 1750 – 1850 1950 – 3000 3500 – 5800	**Main Ingredients** Water, Tween Water, Tween Water, Tween Water, Oil
Broad-Band Solutions (±10% Tolerance)	**Product** HBBL4-250V3 HBBL1350-1850V3 HBBL1550-1950V3 HBBL1900-3800V3 HBBL600-10000V6	**Test Frequency (MHz)** 4 – 250 1300 – 1850 1550 – 1950 1900 – 3800 600 – 10000	**Main Ingredients** Water, Tween Water, Tween Water, Tween Water, Tween Water, Oil

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

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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

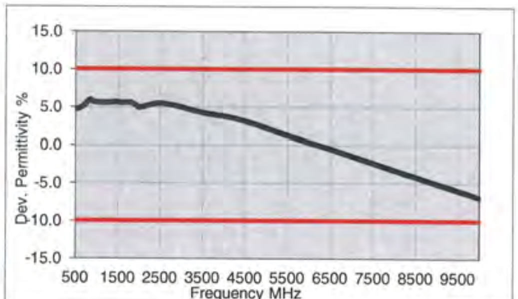
Ambient Condition	22°C ; 30% humidity
TSL Temperature	22°C
Test Date	8-Feb-18
Operator	WM

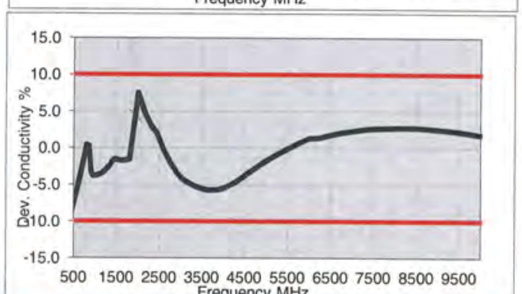
Additional Information

TSL Density	
TSL Heat-capacity	

Results

	Measured			Target		Diff.to Target [%]	
f [MHz]	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





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Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
www.speag.swiss, info@speag.swiss

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 ± 2.5% towards the target values of Methanol.

Target Parameters

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

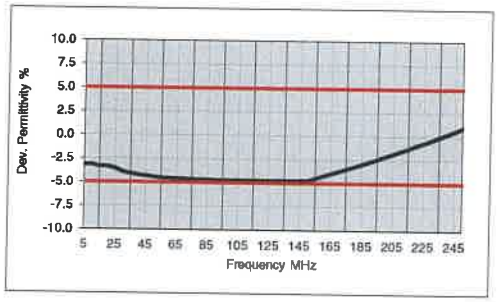
Test Condition

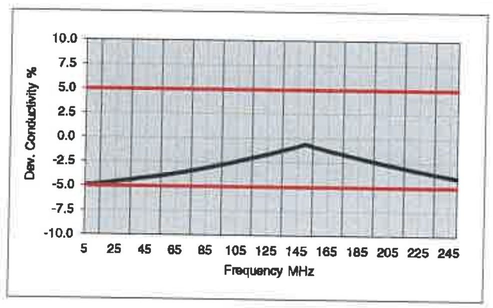
Ambient	Environment temperatur (22 ± 3)°C and humidity < 70%.
TSL Temperature	22°C
Test Date	7-Jan-22
Operator	JML

Additional Information

TSL Density	1.042 g/cm3
TSL Heat-capacity	3.574 kJ/(kg*K)

	Measured			Target		Diff.to Target [%]	
f [MHz]	e'	e''	sigma	eps	sigma	Δ-eps	Δ-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	186.31	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	146.15	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	99.62	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	51.6	0.77	-4.0	-1.2
170	49.4	80.63	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





Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Accreditation No.: SCS 0108

Client **UL**
Fremont, USA

Certificate No. **EX-7501_Mar25**

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:7501
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	March 12, 2025

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	Calibration Date (Certificate No.)	Sched. Cal.
Power Sensor R&S NRP-33T	SN: 100967	28-Mar-24 (No. 217-04038)	Mar-25
Short [S6019i] + Attenuator [S6020i]	SN: L1119	26-Mar-24 (No. 217-04048)	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	10-Jan-25 (No. EX3-7349_Jan25)	Jan-26
DAE4	SN: 1301	07-Nov-24 (No. DAE4-1301_Nov24)	Nov-25

Secondary Standards	ID	Check Date (in house)	Sched. Check
ACAP 2020 Calibration Box	SN: L1404	30-Sep-24 (No. Report_ACAP2020E-Cave_20240930s)	Sep-25

	Name	Function	Signature
Calibrated by	Joanna Lleshaj	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: March 13, 2025

Glossary

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,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:

a) 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.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z*: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,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.
- *DCPx,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
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,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 *NORMx,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 *NORMx* (no uncertainty required).

Parameters of Probe: EX3DV4 - SN:7501

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc ($k = 2$)
Norm (μV/(V/m)^2) [A]	0.58	0.65	0.60	±10.1%
DCP (mV) [B]	102.4	100.0	102.7	±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	117.8	±1.6%	±4.7%
		Y	0.00	0.00	1.00		119.4		
		Z	0.00	0.00	1.00		118.2		
10352	Pulse Waveform (200Hz, 10%)	X	1.45	60.31	6.18	10.00	60.0	±8.6%	±9.6%
		Y	2.00	62.00	7.00		60.0		
		Z	1.48	60.36	6.13		60.0		
10353	Pulse Waveform (200Hz, 20%)	X	8.00	72.00	9.00	6.99	80.0	±2.8%	±9.6%
		Y	20.00	74.00	9.00		80.0		
		Z	0.77	60.00	4.68		80.0		
10354	Pulse Waveform (200Hz, 40%)	X	0.03	123.59	1.34	3.98	95.0	±2.4%	±9.6%
		Y	0.06	131.58	0.53		95.0		
		Z	0.04	125.65	1.59		95.0		
10355	Pulse Waveform (200Hz, 60%)	X	15.75	158.08	9.28	2.22	120.0	±1.5%	±9.6%
		Y	6.35	159.99	14.66		120.0		
		Z	0.53	156.89	12.81		120.0		
10387	QPSK Waveform, 1 MHz	X	0.47	63.29	12.57	1.00	150.0	±3.3%	±9.6%
		Y	0.60	64.74	13.40		150.0		
		Z	0.44	61.82	11.10		150.0		
10388	QPSK Waveform, 10 MHz	X	1.27	66.15	13.73	0.00	150.0	±1.0%	±9.6%
		Y	1.41	66.55	14.48		150.0		
		Z	1.18	64.64	12.81		150.0		
10396	64-QAM Waveform, 100 kHz	X	1.66	64.56	16.94	3.01	150.0	±1.4%	±9.6%
		Y	1.57	63.22	15.50		150.0		
		Z	1.62	63.81	15.50		150.0		
10399	64-QAM Waveform, 40 MHz	X	2.76	66.43	15.20	0.00	150.0	±1.8%	±9.6%
		Y	2.86	66.34	15.29		150.0		
		Z	2.71	65.87	14.77		150.0		
10414	WLAN CCDF, 64-QAM, 40 MHz	X	3.84	66.90	15.65	0.00	150.0	±2.8%	±9.6%
		Y	3.99	66.61	15.71		150.0		
		Z	3.64	65.71	14.98		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 E^2-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:7501

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	7.8	57.65	34.58	0.92	0.00	4.90	0.00	0.00	1.01
y	9.8	72.08	34.67	1.54	0.00	4.90	0.00	0.03	1.00
z	8.4	61.43	34.26	0.97	0.00	4.90	0.35	0.00	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	59.1°
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:7501

Calibration Parameter Determined in HSL

f (MHz)[C]	Relative Permittivity[F]	Conductivity[F] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unc[H] ($k = 2$)
2450	39.2	1.80	7.16	7.19	7.49	0.33	1.27	±11.0%
5250	35.9	4.71	5.47	5.49	5.72	0.30	1.27	±13.1%
5600	35.5	5.07	5.27	5.29	5.51	0.27	1.27	±13.1%
5750	35.4	5.22	5.34	5.37	5.59	0.26	1.27	±13.1%
5850	35.2	5.32	5.38	5.41	5.63	0.25	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:7501

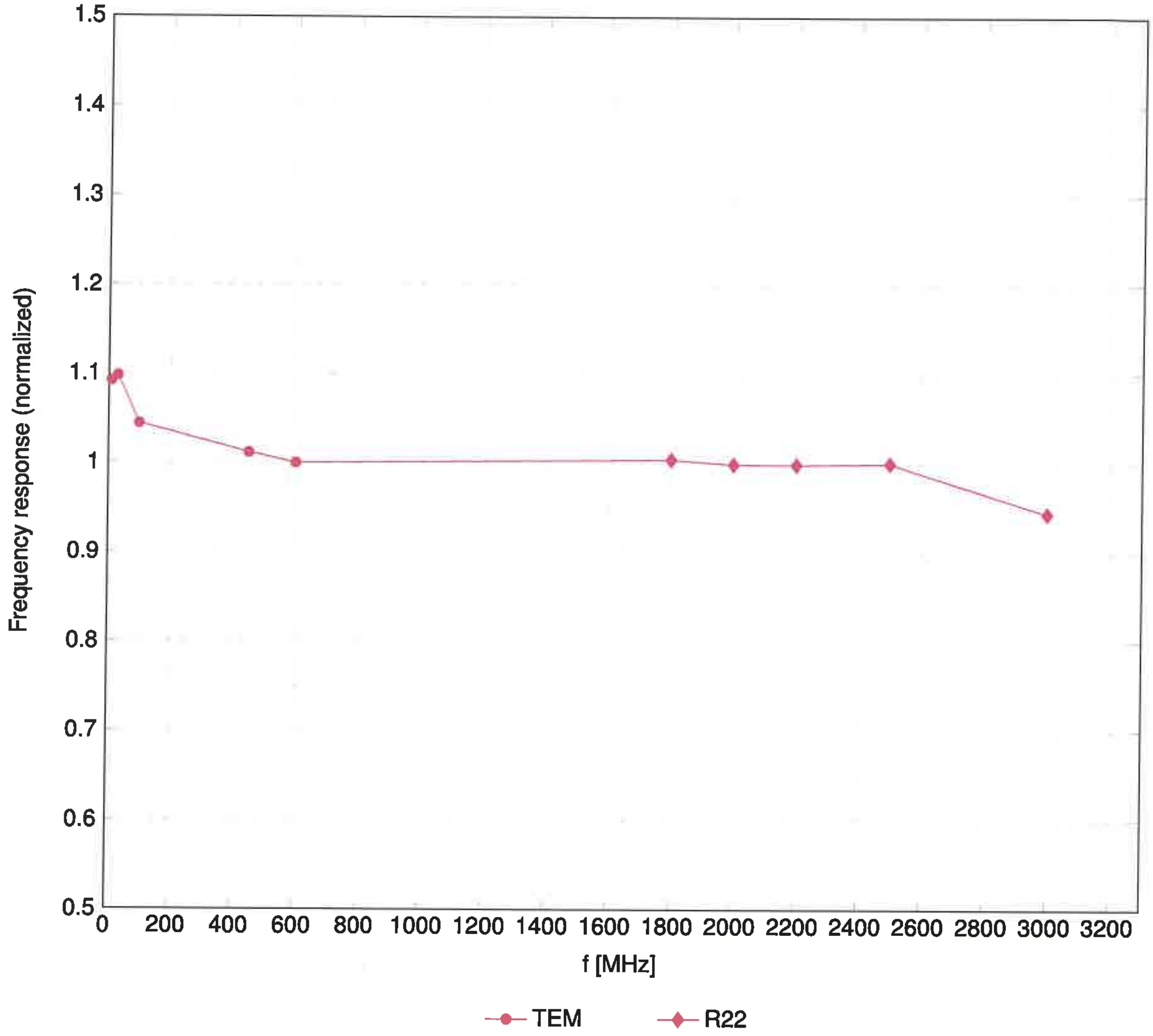
Calibration Parameter Determined in HSL

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	5.42	5.44	5.67	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.

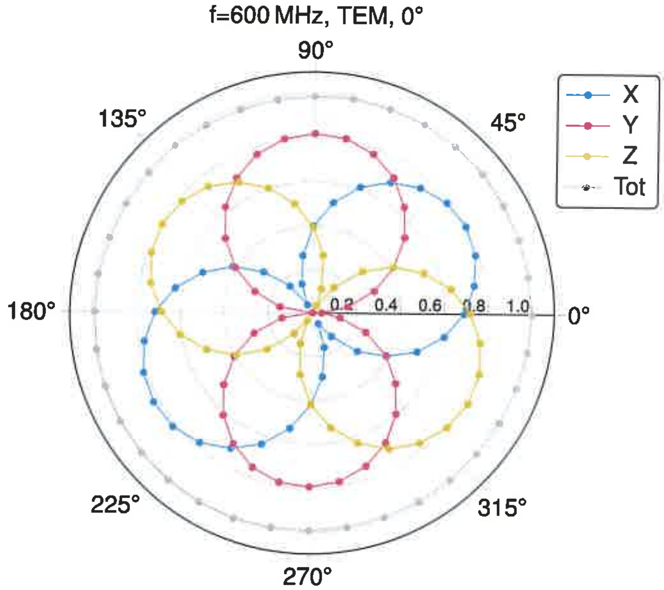
Frequency Response of E-Field

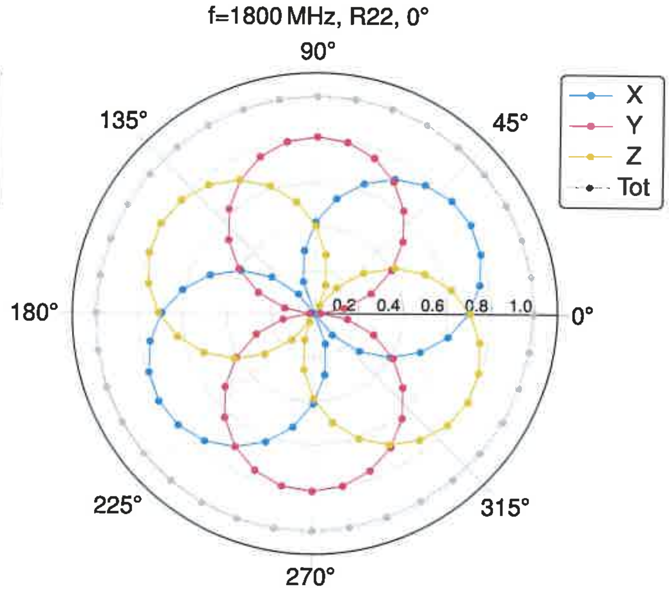
(TEM-Cell:ifi110 EXX, Waveguide:R22)

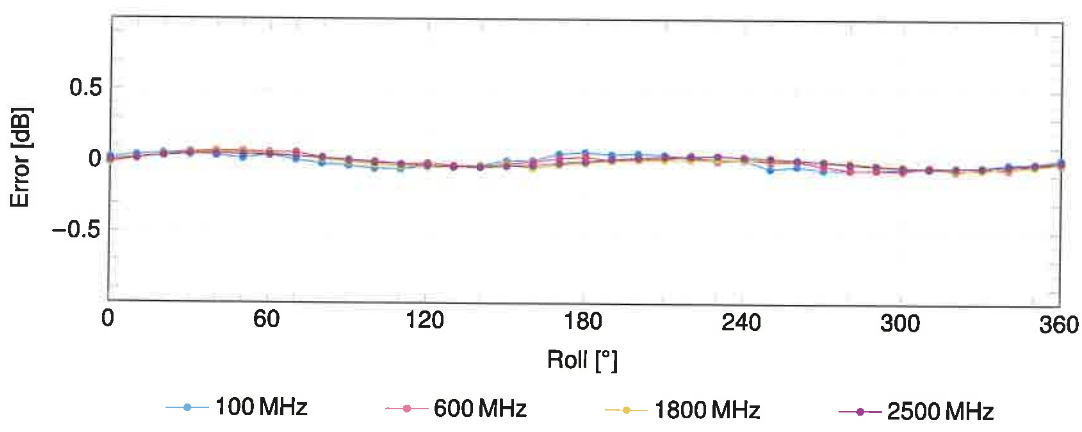


Uncertainty of Frequency Response of E-field: ±6.3% (k=2)

Receiving Pattern (ϕ), $\vartheta = 0°$



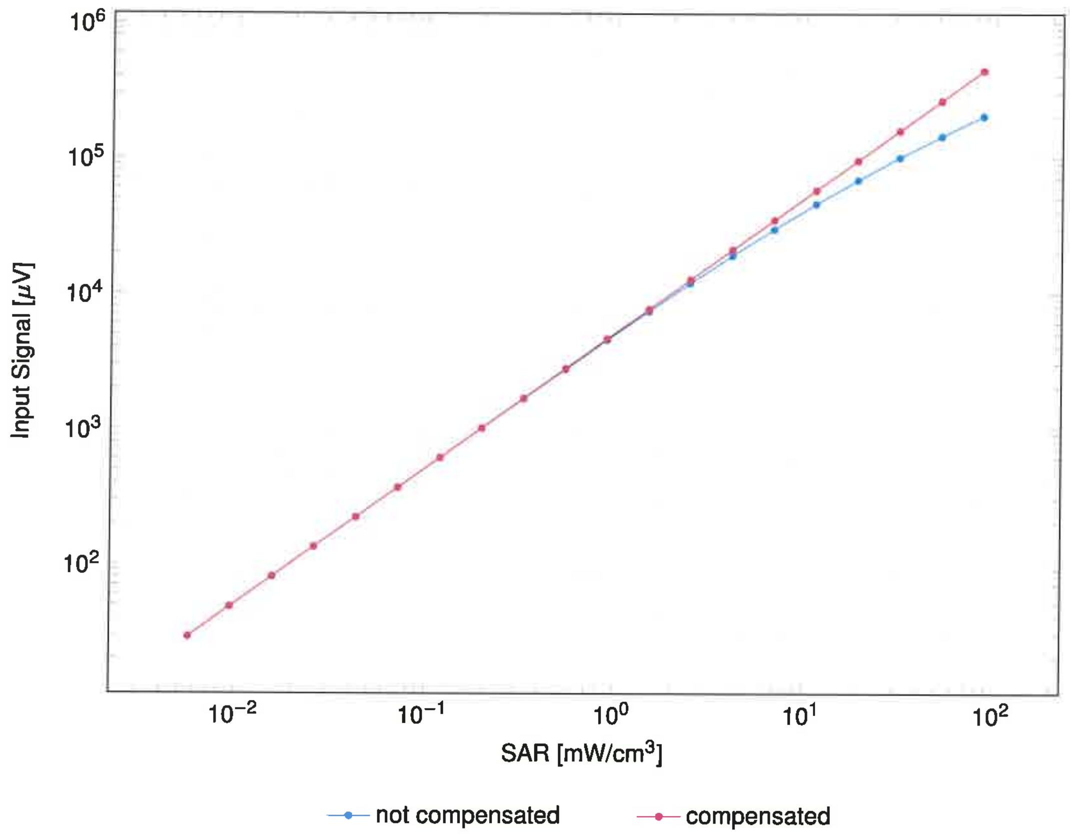


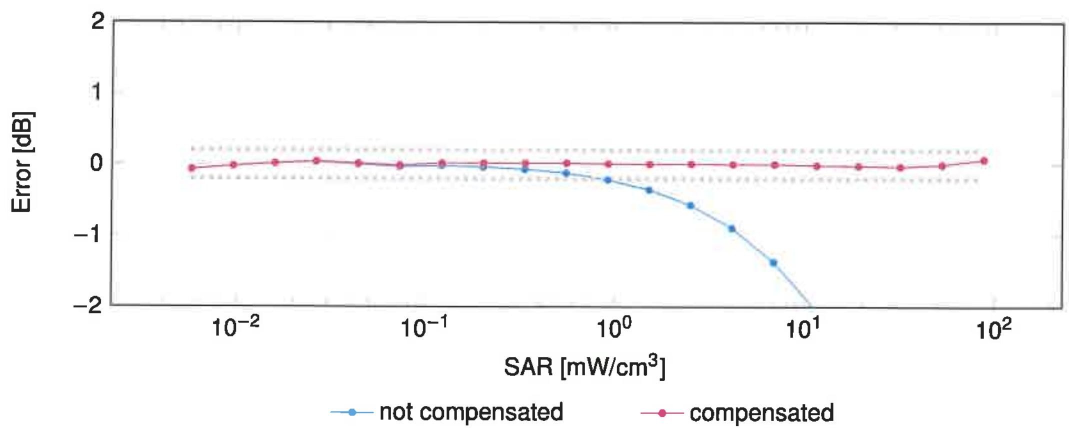


Uncertainty of Axial Isotropy Assessment: ±0.5% (k=2)

Dynamic Range f(SAR_{HSL})

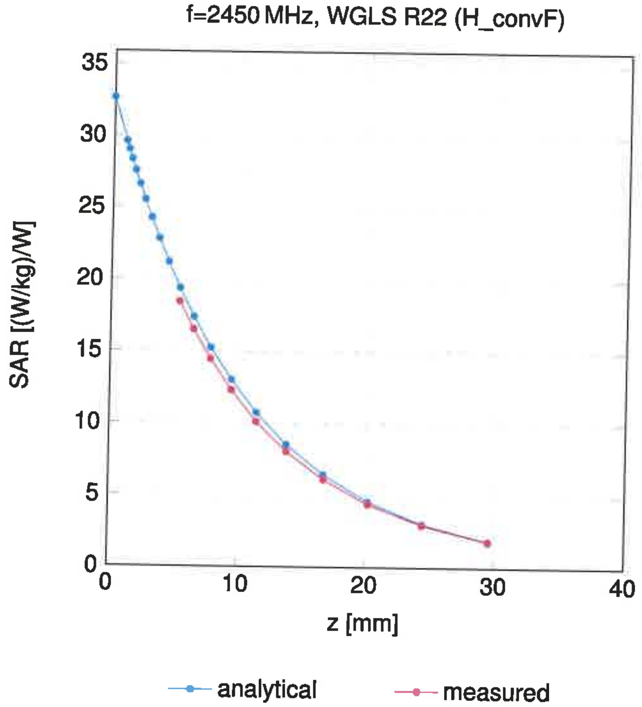
(TEM cell, f_{eval} = 1900 MHz)



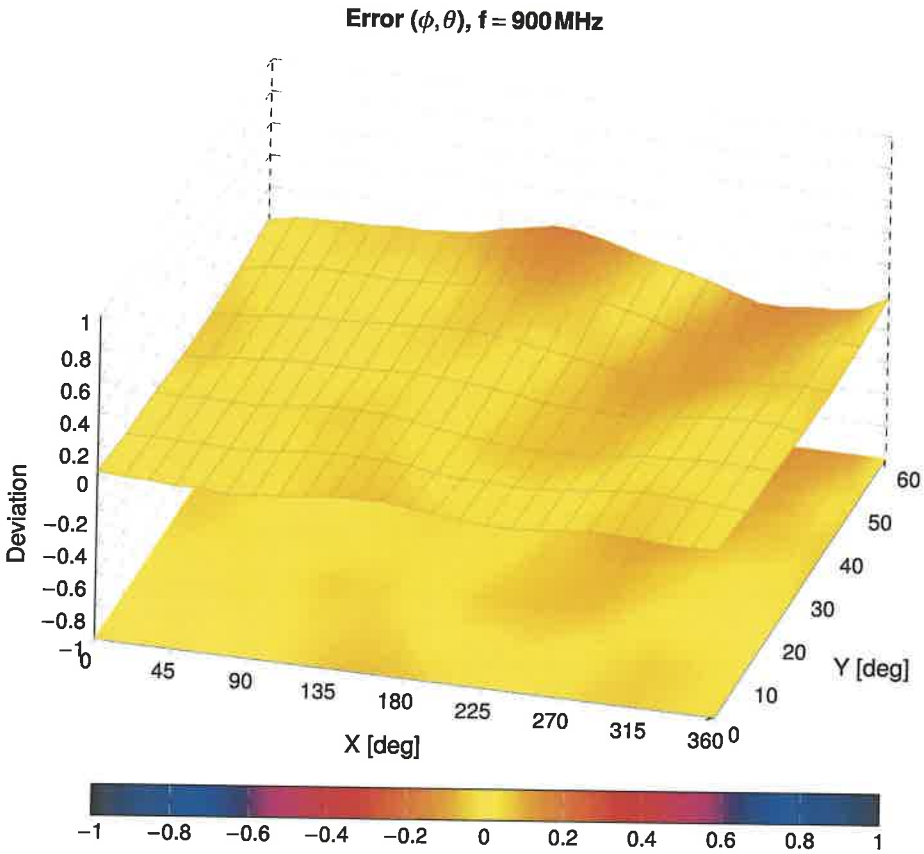


Uncertainty of Linearity Assessment: ±0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment: ±2.6% (k=2)

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k = 2$
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 preambule)	WLAN	8.14	±9.6
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	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, Clippin 44%)	LTE-FDD	7.53	±9.6
10449	AAD	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 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

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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

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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

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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.

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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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

Client **UL USA**

Certificate No: D2450V2-748_Feb23

CALIBRATION CERTIFICATE

Object	D2450V2 - SN:748
Calibration procedure(s)	QA CAL-05.v12 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	February 08, 2023

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 NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 7349	10-Jan-23 (No. EX3-7349_Jan23)	Jan-24
DAE4	SN: 601	19-Dec-22 (No. DAE4-601_Dec22)	Dec-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-22)	In house check: Oct-24
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by:	Paulo Pina	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: February 9, 2023

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:

a) 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.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) 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	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

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 ± 0.2) °C	39.3 ± 6 %	1.85 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.1 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**51.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.08 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.2 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.1 Ω - 0.6 jΩ
Return Loss	- 27.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.156 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

DASY5 Validation Report for Head TSL

Date: 08.02.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:748

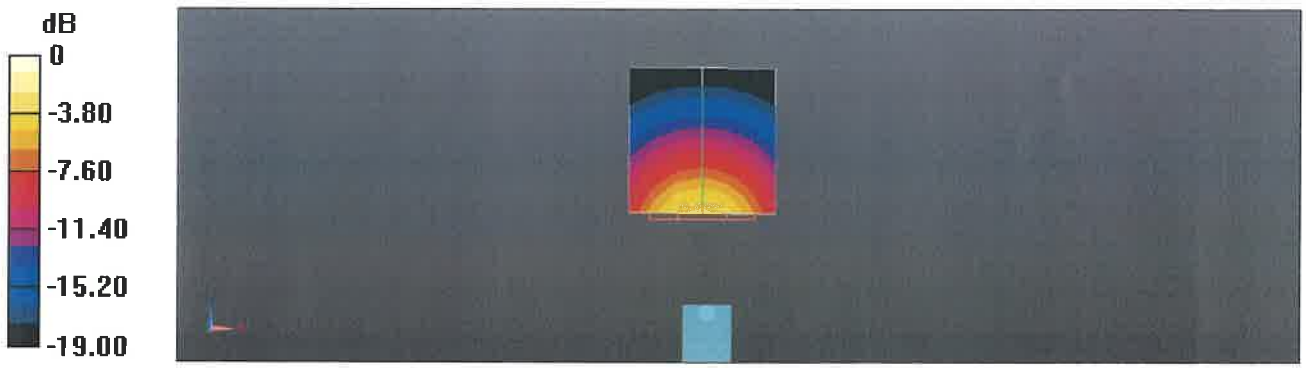
Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.85 S/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.88, 7.88, 7.88) @ 2450 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

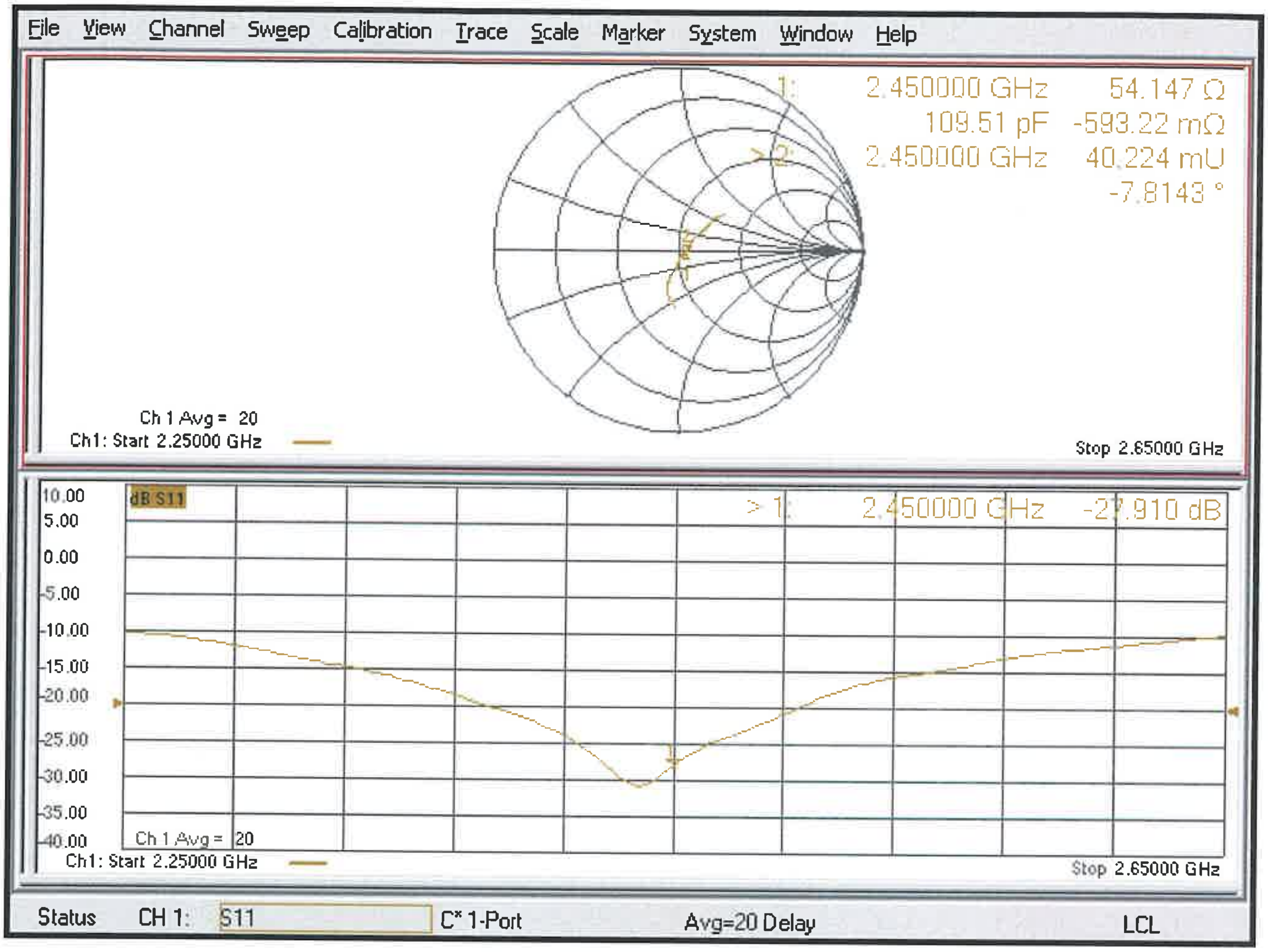
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 115.0 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 26.0 W/kg
SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.08 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 50.5%
Maximum value of SAR (measured) = 21.5 W/kg



0 dB = 21.5 W/kg = 13.32 dBW/kg

Impedance Measurement Plot for Head TSL



Dipole Impedance Measurement

Equipment Location	Equipment Name	Model Name	Date of Verification
UL Verification Services Inc. 47173 Benicia Street Fremont, CA 94538, U.S.A.	Dipole Antenna	D2450V2-748	January 01, 2024

Number:	Check List:	Result:
1	Visual Inspection	Pass
2	Return/Loss and Impedance	Pass
3	Dipole Arms	Pass

Equipment List:	
Equipment Name:	Calibration Date:
R&S ZNLE6 Vector Network Analyzer	03/05/2024
ZV-Z135 Calibration Kit	03/27/2024

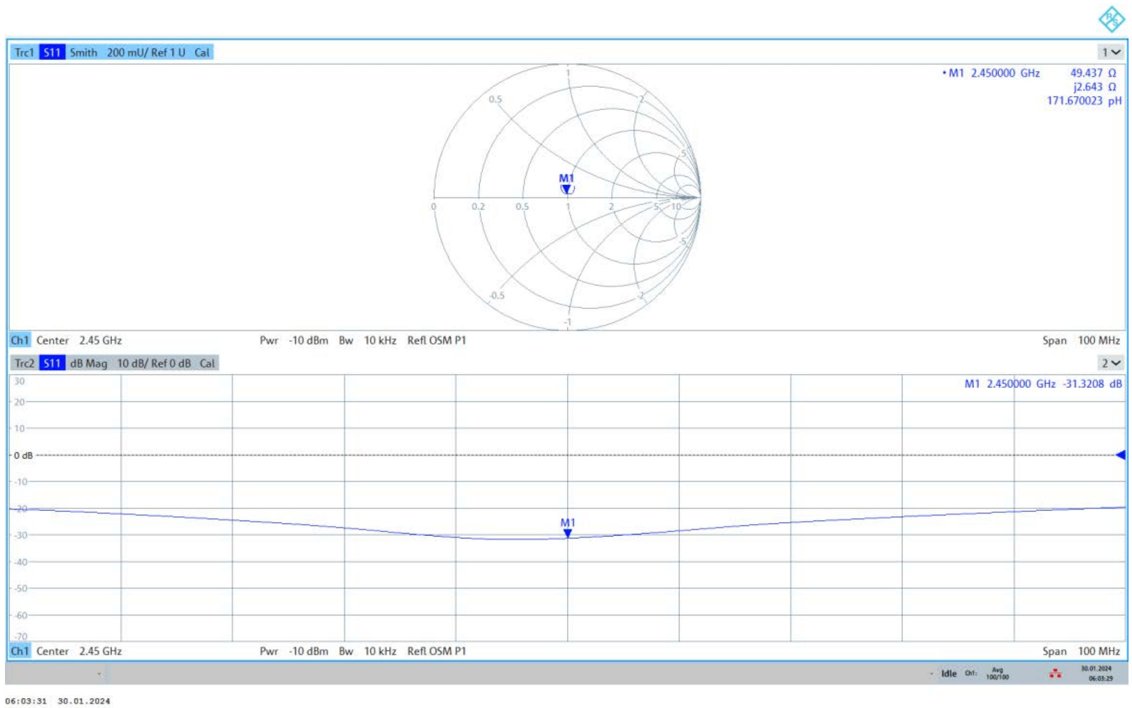
Dipole Impedance Measurement

1) Photo of Dipole

- The connector of dipole contains no abnormalities.

Dipole Impedance Measurement

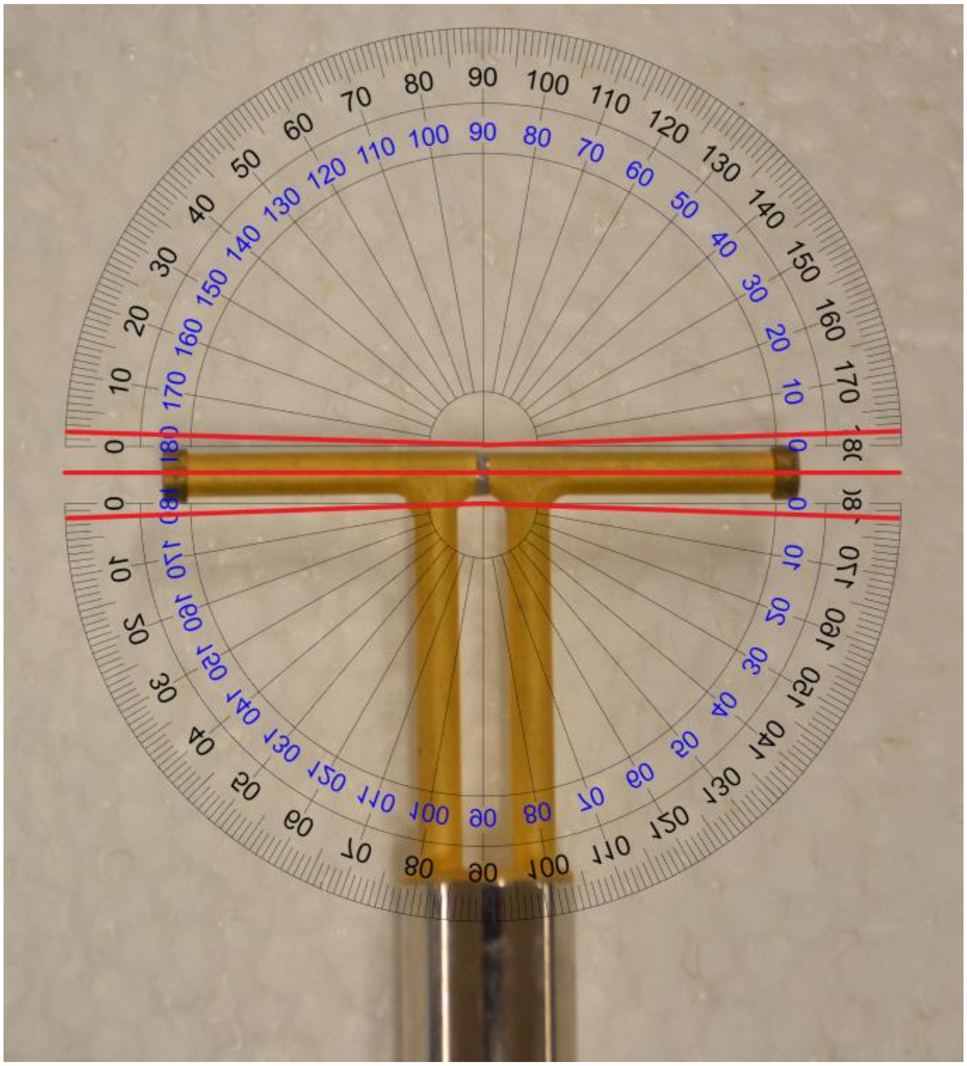
2) Impedance and Return/Loss



- Return/Loss is greater than the -20 dB cutoff and Impedance is within 5 Ω of previous value.

Dipole Impedance Measurement

3) Dipole Arms



- The center red line indicates that the arms of the dipole fall within $\pm 2°$

Dipole Impedance Measurement

Equipment Location	Equipment Name	Model Name	Date of Verification
UL Verification Services Inc. 47173 Benicia Street Fremont, CA 94538, U.S.A.	Dipole Antenna	D2450V2-748	February 3, 2025

Number:	Check List:	Result:
1	Visual Inspection	Pass
2	Return/Loss and Impedance	Pass
3	Dipole Arms	Pass

Equipment List:	
Equipment Name:	Calibration Date:
R&S Vector Network Analyzer	2/13/2024
ZV-Z135 Calibration Kit	3/27/2024

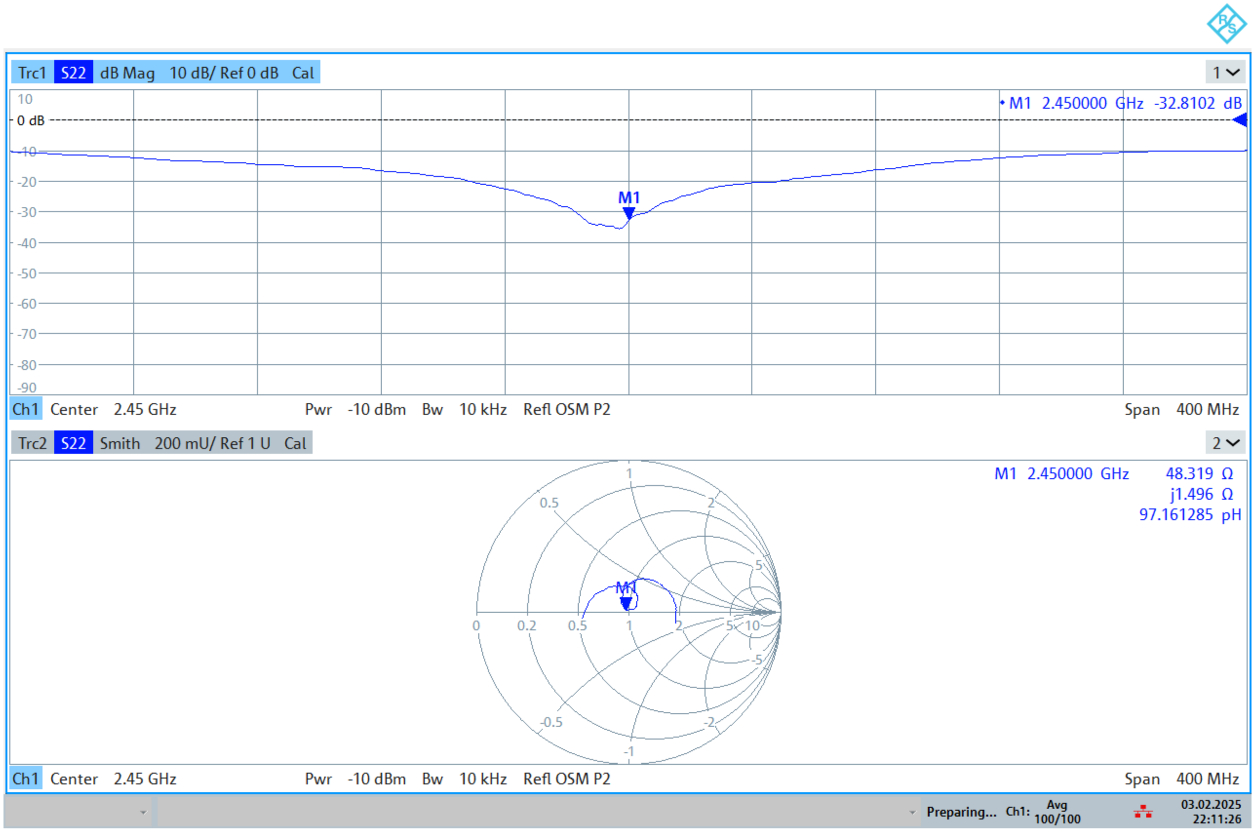
Dipole Impedance Measurement

1) Photo of Dipole

- The connector of dipole contains no abnormalities.

Dipole Impedance Measurement

2) Impedance and Return/Loss

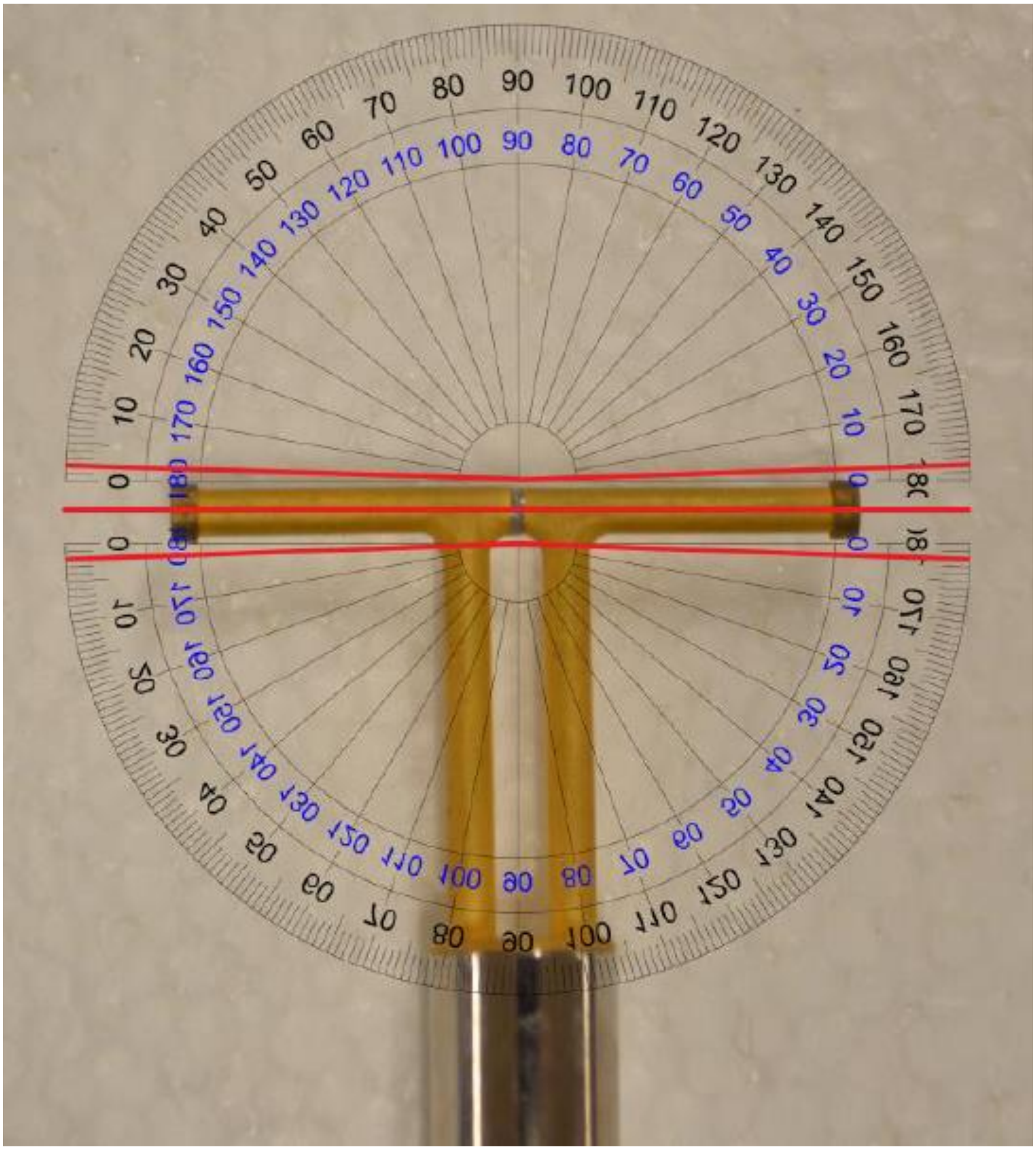


22:11:27 03.02.2025

- Return/Loss is greater than the -20 dB cutoff and Impedance is within 5 Ω of previous value.

Dipole Impedance Measurement

3) Dipole Arms



- The center red line indicates that the arms of the dipole fall within $\pm 2°$

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Swiss Calibration Service

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

Accreditation No.: SCS 0108

Client **UL**
Fremont, USA

Certificate No. **D5GHzV2-1168_Feb25**

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN: 1168
Calibration procedure(s)	QA CAL-22.v7 Calibration Procedure for SAR Validation Sources between 3 - 10 GHz
Calibration date	February 6, 2025

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 $(22 \pm 3)°C$ 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	29-Jan-25 (No. 4030A315009658)	Jan-26
Mismatch; Short [S4188] Attenuator [S4423]	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
OCP DAK-12	SN: 1016	24-Sept-24 (No. OCP-DAK12-1016_Sep24)	Sep-25
OCP DAK-3.5	SN: 1249	23-Sept-24 (No. OCP-DAK3.5-1249_Sep24)	Sep-25
Reference Probe EX3DV4	SN: 7349	10-Jan-25 (No. EX3-7349_Jan25)	Jan-26
DAE4ip	SN: 1836	28-Oct-24 (No. DAE4ip-1836_Oct24)	Oct-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	Claudio Leubler	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: February 6, 2025

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 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 = 4mm, dz = 1.4mm	Graded Ratio = 1.4 mm (Z direction)
Frequency	5250MHz ±1MHz 5600MHz ±1MHz 5750MHz ±1MHz 5850MHz ±1MHz	

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	35.1 ±6%	4.55 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	8.11 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.1 W/kg ±19.9% (k = 2)

SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	2.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.1 W/kg ±19.5% (k = 2)

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	34.4 ±6%	4.92 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	8.15 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.5 W/kg ±19.9% (k = 2)

SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.4 W/kg ±19.5% (k = 2)

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	34.2 ±6%	5.08 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	7.94 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	79.4 W/kg ±19.9% (k = 2)

SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	2.25 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.5 W/kg ±19.5% (k = 2)

Head TSL parameters at 5850 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.2	5.32 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	34.1 ±6%	5.18 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5850 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	8.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.3 W/kg ±19.9% (k = 2)

SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	2.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.1 W/kg ±19.5% (k = 2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance	48.8 Ω – 4.4 jΩ
Return Loss	-26.8 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance	52.3 Ω – 1.7 jΩ
Return Loss	-31.0 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance	58.0 Ω + 4.1 jΩ
Return Loss	-21.6 dB

Antenna Parameters with Head TSL at 5850 MHz

Impedance	55.0 Ω + 4.2 jΩ
Return Loss	-24.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.189 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]
D5GHzV2 - SN1168	5250	HSL	20

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--	5250, 0	5.68	4.55	35.1

Hardware Setup

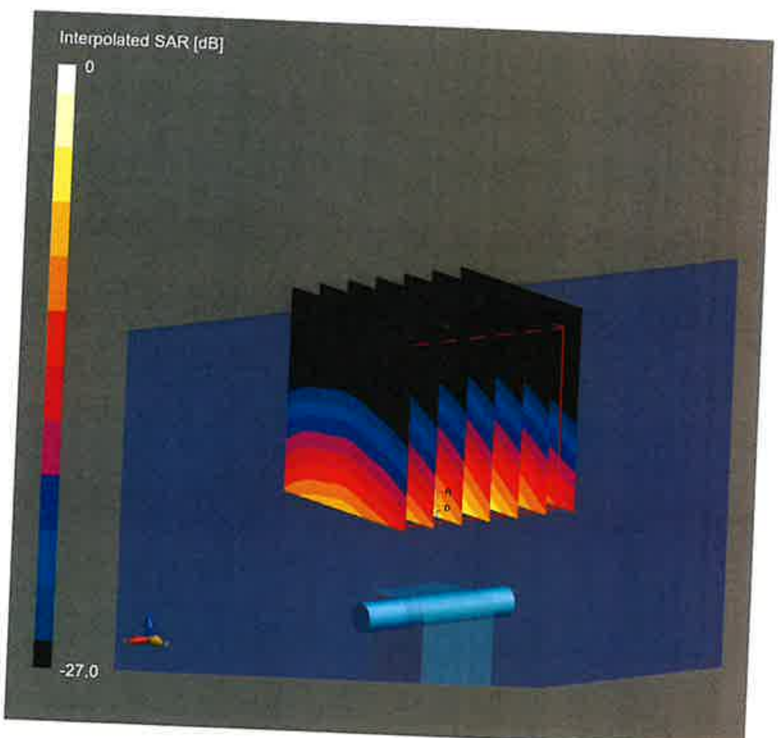
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
MFP V8.0 Center	HSL, 2025-02-06	EX3DV4 - SN7349, 2025-01-10	DAE4ip Sn1836, 2024-10-28

Scans Setup

	Zoom Scan
Grid Extents [mm]	22 x 22 x 22
Grid Steps [mm]	4.0 x 4.0 x 1.4
Sensor Surface [mm]	1.4
Graded Grid	Yes
Grading Ratio	1.4
MAIA	N/A
Surface Detection	VMS + 6p
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2025-02-06
psSAR1g [W/Kg]	8.11
psSAR10g [W/Kg]	2.31
Power Drift [dB]	-0.06
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative



0 dB = 32.6 W/Kg

System Performance Check Report

Summary

Dipole	Frequency [MHz]	TSL	Power [dBm]
D5GHzV2 - SN1168	5600	HSL	20

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--	5600, 0	5.21	4.92	34.4

Hardware Setup

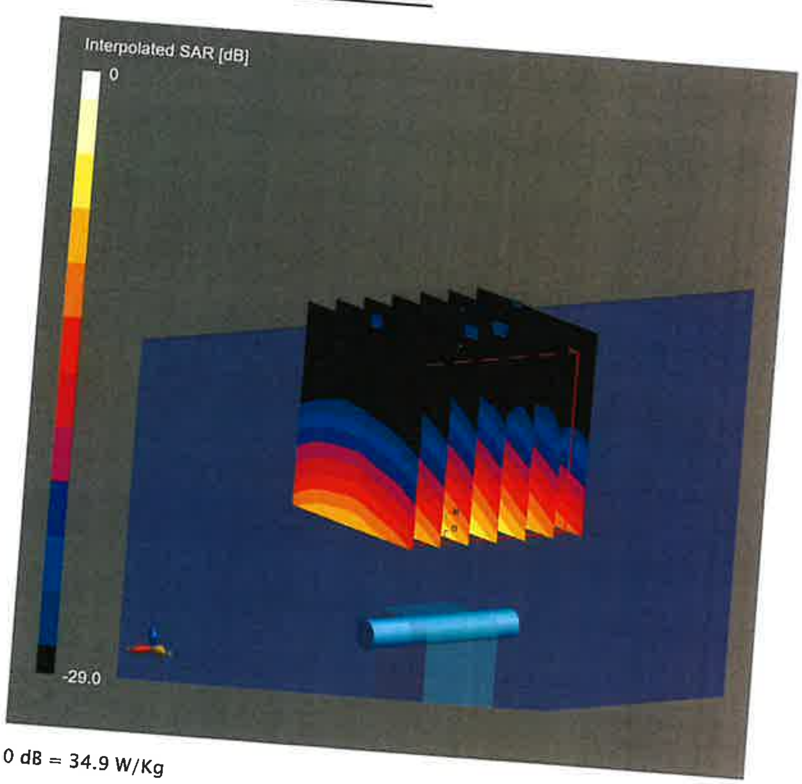
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
MFP V8.0 Center	HSL, 2025-02-06	EX3DV4 - SN7349, 2025-01-10	DAE4ip Sn1836, 2024-10-28

Scans Setup

	Zoom Scan
Grid Extents [mm]	22 x 22 x 22
Grid Steps [mm]	4.0 x 4.0 x 1.4
Sensor Surface [mm]	1.4
Graded Grid	Yes
Grading Ratio	1.4
MAIA	N/A
Surface Detection	VMS + 6p
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2025-02-06
psSAR1g [W/Kg]	8.15
psSAR10g [W/Kg]	2.34
Power Drift [dB]	-0.02
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative



0 dB = 34.9 W/Kg

February 6, 2025

System Performance Check Report

Summary

Dipole	Frequency [MHz]	TSL	Power [dBm]
D5GHzV2 - SN1168	5750	HSL	20

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--	5750, 0	5.38	5.08	34.2

Hardware Setup

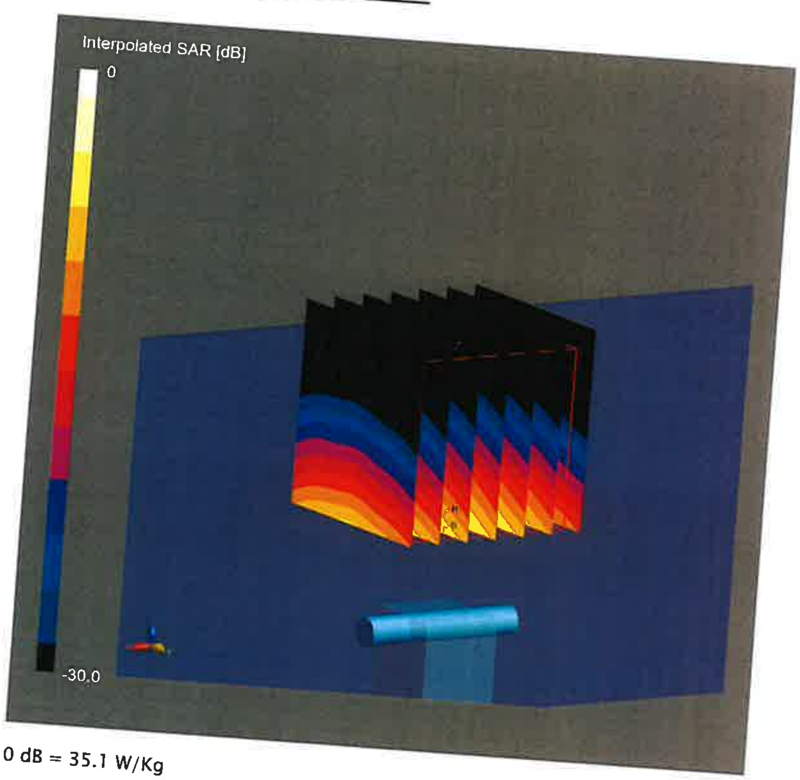
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
MFP V8.0 Center	HSL, 2025-02-06	EX3DV4 - SN7349, 2025-01-10	DAE4ip Sn1836, 2024-10-28

Scans Setup

	Zoom Scan
Grid Extents [mm]	22 x 22 x 22
Grid Steps [mm]	4.0 x 4.0 x 1.4
Sensor Surface [mm]	1.4
Graded Grid	Yes
Grading Ratio	1.4
MAIA	N/A
Surface Detection	VMS + 6p
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2025-02-06
psSAR1g [W/Kg]	7.94
psSAR10g [W/Kg]	2.25
Power Drift [dB]	0.00
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative



0 dB = 35.1 W/Kg

February 6, 2025

System Performance Check Report

Summary

Dipole	Frequency [MHz]	TSL	Power [dBm]
D5GHzV2 - SN1168	5850	HSL	20

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--	5850, 0	5.11	5.18	34.1

Hardware Setup

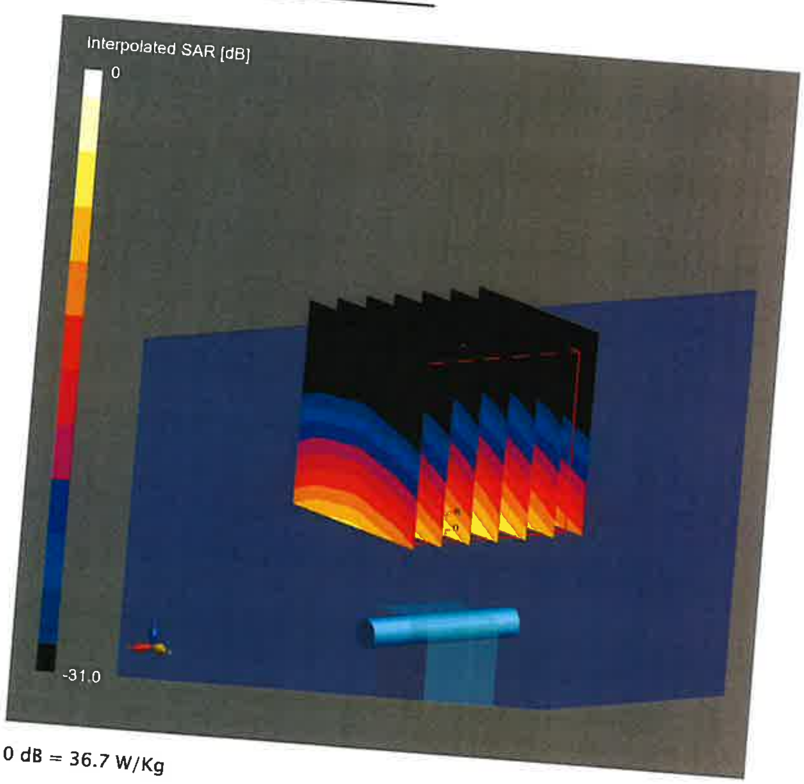
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
MFP V8.0 Center	HSL, 2025-02-06	EX3DV4 - SN7349, 2025-01-10	DAE4ip Sn1836, 2024-10-28

Scans Setup

	Zoom Scan
Grid Extents [mm]	22 x 22 x 22
Grid Steps [mm]	4.0 x 4.0 x 1.4
Sensor Surface [mm]	1.4
Graded Grid	Yes
Grading Ratio	1.4
MAIA	N/A
Surface Detection	VMS + 6p
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2025-02-06
psSAR1g [W/Kg]	8.13
psSAR10g [W/Kg]	2.31
Power Drift [dB]	-0.06
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative



0 dB = 36.7 W/Kg

Impedance Measurement Plot for Head TSL

February 6, 2025