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GDL 69 Series

Pilot's Guide

This pilot's guide covers GDL 69 software v5.01, or earlier. There may be some operational differences when comparing the information in this manual to later software versions.

This part shall comply with Garmin Banned and Restricted Substances document, 001-00211-00.

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Limited Warranty

All Garmin avionics products are warranted to be free from defects in materials or workmanship for: two years from the date of purchase for new Remote-Mount and Panel-Mount products; one year from the date of purchase for new portable products and any purchased newly-overhauled products; six months for newly-overhauled products exchanged through a Garmin Authorized Service Center; and 90 days for factory repaired or newly-overhauled products exchanged at Garmin in lieu of repair. Within the applicable period, Garmin will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not apply to: (i) cosmetic damage, such as scratches, nicks and dents; (ii) consumable parts, such as batteries, unless product damage has occurred due to a defect in materials or workmanship; (iii) damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes; (iv) damage caused by service performed by anyone who is not an authorized service provider of Garmin; or (v) damage to a product that has been modified or altered without the written permission of Garmin. In addition, Garmin reserves the right to refuse warranty claims against products or services that are obtained and/or used in contravention of the laws of any country.

THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE.

IN NO EVENT SHALL GARMIN BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Garmin retains the exclusive right to repair or replace (with a new or newly-overhauled replacement product) the product or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

Online Auction Purchases: Products purchased through online auctions are not eligible for warranty coverage. Online auction confirmations are not accepted for warranty verification. To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. Garmin will not replace missing components from any package purchased through an online auction.

International Purchases: A separate warranty may be provided by international distributors for devices purchased outside the United States depending on the country. If applicable, this warranty is provided by the local in-country distributor and this distributor provides local service for your device. Distributor warranties are only valid in the area of intended distribution. Devices purchased in the United States or Canada must be returned to the Garmin service center in the United Kingdom, the United States, Canada, or Taiwan for service.

To obtain warranty service, contact your local Garmin Authorized Service Center. For assistance in locating a Service Center near you, visit the Garmin website at www.garmin.com, or contact Garmin Customer Service at (866) 739-5687.

WARNING: The Garmin GDL 69/69A has a very high degree of functional integrity. However, the pilot must recognize that providing monitoring and/or self-test capability for all conceivable system failures is not practical. Although unlikely, it may be possible for erroneous operation to occur without a fault indication shown by the interfaced display. It is thus the responsibility of the pilot to detect such an occurrence by means of cross-checking with all redundant or correlated information available in the cockpit.

WARNING: Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information contained within data link weather products may not accurately depict current weather conditions.

WARNING: Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.

WARNING: For safety reasons, GDL 69/69A operational procedures must be learned on the ground.

CAUTION: The Garmin GDL 69/69A does not contain any user-serviceable parts. Repairs should only be made by an authorized Garmin service center. Unauthorized repairs or modifications could void both the warranty and the pilot's authority to operate this device under FAA/FCC regulations.

NOTE: Do not solely rely upon data link services to provide Temporary Flight Restrictions (TFR) information. Always confirm TFR information through official sources such as Flight Service Stations or Air Traffic Control.

NOTE: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our website at www.garmin.com/prop65.

Product Registration and Support

Product registration provides notifications regarding updates, new products, and tracking information on lost or stolen units. The product's serial number is required for registration.

To register, log on to www.garmin.com. Select the Product Registration link. From the product registration Home page, choose the applicable product category.

For questions, contact Garmin Product Support, Monday through Friday, 7:00 AM to 7:00 PM CT.

US: (913) 397-8200

US Toll Free: (866) 739-5687

Canada Toll Free: (866) 429-9296

For unit accessories, contact a Garmin dealer.

Record of Revisions			
Part Number	Revision	Date	Description
190-00355-12	A	06/15	Production Release

Table of Contents

1 Introduction

The GDL 69 Series Line Replaceable Units (LRUs) are a family of remotely mounted satellite receivers that provide datalink weather and audio entertainment to interfaced display units. For unit specific display aspects and user interface information, reference the applicable GDL 69 Series pilot guide. See table 1-1.

Table 1-1
GDL 69 Series Pilot Guide P/Ns

Document	P/N
G500 Pilot's Guide	190-01102-02
G600 Pilot's Guide	190-00601-02
G900X Integrated Flight Deck Pilot's Guide	190-00726-00
G950 Integrated Avionics System Pilot's Guide	190-00870-( )
G1000 Pilot's Guide	[1]
GMX 200 Pilot's Guide and Reference	190-00607-02
GNC 420(A) Pilot's Guide and Reference	190-00140-20
GNS 430(A) Pilot's Guide and Reference	190-00140-00
GNS 530(A) Pilot's Guide and Reference	190-00181-00
GPS 400 Pilot's Guide and Reference	190-00140-60
GPS 500 Pilot's Guide and Reference	190-00181-60
400W/500W Series Pilot's Guide Addendum	190-00356-30
GTN 625/635/650 Pilot's Guide	190-01004-03
GTN 725/750 Pilot's Guide	190-01007-03
MX20 Pilot's Guide	560-1026-( )

[1]   G1000 Pilot's Guides are airframe specific. For additional information, refer to Garmin's website.

2   GDL 69 Series Units

Unless otherwise specified, the term GDL 69 Series encompasses all models mentioned within this document. For GDL 69 Series unit part numbers, see table 2-1.

Table 2-1

GDL 69 Series Unit P/Ns

GDL 69 Units	P/N	XM WX Satellite Network	SiriusXM Aviation Satellite Network	Fixed Wing	Helicopter	Weather Data	Audio Entertainment
GDL 69	011-00986-00	X		X		X	
GDL 69A	011-00987-00	X		X		X	X
GDL 69H	011-00986-10	X			X	X	
GDL 69AH	011-00987-10	X			X	X	X
GDL 69 SXM	011-03177-00		X	X		X	
GDL 69A SXM	011-03177-10		X	X		X	X
GDL 69H SXM	011-03177-20		X		X	X	
GDL 69AH SXM	011-03177-30		X		X	X	X

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2.1 Display Interfaces

GDL 69 Series units interface with the displays listed in table 1-1.

NOTE: Not all display interfaces support all GDL 69/69A functions. Refer to the unit's pilot guide for information. See table 1-1.

Table 2-2

GDL 69 Series Unit Interface Displays

400/500 Series Navigator
400W/500W Series Navigator
MX20 Multi-Function Display (MFD)
GMX 200 MFD
GTN 6XX/7XX Touch Navigator
GX000 (G1000/G2000/G3000/G5000 Display Systems)
G900X/G950 Integrated Avionics Systems
G600/G500/G500H Integrated Avionics Systems (GDU 620)

3 GDL 69 Series System Functions

3.1 Weather Data

The GDL 69 Series units receive weather data that is displayed on various interfaced cockpit displays, or on portable devices via an interfaced Flight Stream Bluetooth receiver. For information about a specific unit's weather product display, refer to the appropriate display pilot guide. See table 1-1. For information regarding available weather products and user subscriptions, refer to the SiriusXM website at www.siriusxm.com/sxmaviation, or call (855) 798-9847.

3.2 Audio Entertainment

The GDL 69A Series units receive both weather data and audio entertainment. Audio is distributed through an interfaced audio panel. Audio channels and volume are controlled through an interfaced display, GRT/GRC 10 remote system, or on a portable device via an interfaced Flight Stream Bluetooth tranceiver.

4 SiriusXM Aviation Network

The GDL 69 SXM units utilize a new satellite network, designed as backwards compatible with existing interfaced displays. See table 2-2 for a list of these displays. The behavior of the GDL 69 SXM when interfaced to these displays is described in this section.

> *NOTE: Some of the new network features require a software update for interface display use.*

4.1 Determine the Network

To determine which satellite network the installed GDL 69 Series unit is using, verify the software version via an interfaced display. For information on verifying software, refer to the display unit's pilot guide. See table 1-1.

- Units with software prior to v5.00 use the XM WX Network
- Units with software v5.00 and later use the SiriusXM Aviation Network

4.2 Subscription Packages

The XM WX network and SiriusXM Aviation network use different subscription classifications. As a result, the existing interface display software cannot recognize SiriusXM Aviation subscriptions. Weather and audio data are still available on these displays, but will exhibit the following behaviors.

Service Class

Interfaced displays with existing display software identify SiriusXM Aviation subscriptions as legacy XM WX subscriptions. Therefore, these displays indicate "Aviator Lite," "Aviator," or "Aviator Pro," depending on the purchased subscription tier, instead of the actual subscription package purchased from SiriusXM.

Subscribed Weather Products

Existing interface display software identifies SiriusXM Aviation subscription packages as legacy XM WX subscriptions. Therefore, the subscribed and available weather products correspond to the legacy subscription packages. As a result, some subscribed weather products from the SiriuxXM Aviation network may be unavailable on existing interface displays. For a list of legacy subscription packages, see table 4-1.

Table 4-1

Legacy Subscription Packages

Weather Product	Aviator LT	Aviator	Aviator Pro
NEXRAD	US Only	US & Canada	US & Canada
Radar Coverage	x	x	x
TFRs	x	x	x
METAR	x	x	x
TAF	x	x	x
City Forecast	x	x	x
County Warnings	x	x	x
Lightning		x	x
Storm Cell Movement		x	x
Winds Aloft		x	x
AIRMET/SIGMET		x	x
PIREP/AIREP		x	x
Surface Analysis		x	x
Canada METAR		x	x
Canada TAF		x	x
Cloud Top		x	x
Echo Top		x	x
Freezing Level		x	x
Cyclone			x
Turbulence			x
Icing			x

4.3 Weather and Audio

Product Age and Update

Weather products contain a timestamp that indicate the displayed weather's data age. To assist with pilot awareness, some interfaced displays color the timestamp or remove data at certain intervals. The update and broadcast rates of weather products differ between the XM WX network and the SiriusXM Aviation network. This difference does not affect the interfaced display's behavior when displaying timestamps.

NEXRAD

A base reflectivity NEXRAD image shows echo returns at a single low elevation scan of the radar. A composite reflectivity NEXRAD image shows the highest intensity return from all scanned elevations. The XM WX network NEXRAD weather product provides a composite reflectivity NEXRAD image. The SiriusXM Aviation network provides both base and composite reflectivity NEXRAD images. However, existing interface display software only supports a single NEXRAD image and will only provide the base reflectivity image.

Some displays have the capability to display the NEXRAD image without the Radar Coverage map. With the Radar Coverage map removed, the Canadian NEXRAD image supplied by the SiriusXM Aviation network will cover a large portion of northern continental United States (CONUS). This behavior does not degrade the performance or usability of the NEXRAD product.

SIGMET

The SIGMET weather product provides graphical depiction of active SIGMETs. For units using the XM WX network, if there are no SIGMETs active, the display will receive and display a valid timestamp indicating data has been received. For units using the SiriusXM Aviation network, if there are no SIGMETs active, no timestamp is received by the display. As a result, when there are no active SIGMETs, the behavior of the display is the same as when the GDL 69 SXM unit is not receiving any SIGMET data.

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Cyclone

The Cyclone weather product provides forecast tracks for tropical storms. For units using the XM WX network, if there are no cyclones to report, the display will receive and display a valid timestamp indicating the data was received. For units using the SiriusXM Aviation network, if there are no cyclones to report, no timestamp is received by the display. As a result, when there are no reports, the behavior of the display is the same as when the GDL 69 SXM unit is not receiving any Cyclone data.

Storm Cell Movement

The legacy XM WX network's Storm Cell Movement weather product includes the storm cell base and top altitude. The SiriusXM Aviation network provides Storm Cell Movement data that does not include the storm cell base altitude. For units using the SiriusXM Aviation network, interfaced displays with existing software indicate that the base altitude for all storm cells is 0ft. For some interfaced displays, later software versions remove the display of storm cell base altitude.

Audio Products

The SiriusXM Radio network provides a broader selection of audio entertainment products than the existing XM Radio network. Existing interface display software can display and tune up to 255 audio channels. Channels above 255 are not available with the existing interfaced display software.