GARMIN

GTN 6XX/7XX

Part 27 AML STC Maintenance Manual

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RECORD OF REVISIONS

Revision	Revision Date	Description
2	3/29/16	Added software v6.11 functionality.
3	12/4/18	Added software v6.51 functionality.
4	1/29/20	Added software v6.70 functionality. Added Flight Stream 510 support.

CURRENT REVISION DESCRIPTION

Section	Description
	Included Flight Stream 510 to references of GTN and GMA 35 installations where appropriate.
2.1.4	Added section for description of Flight Stream 510.
2.2.1	Updated list of optional GTN interfaces to include G500H TXi (EFIS display), Garmin ADS-B traffic and FIS-B weather, and Flight Stream 510.
2.2.2	Updated Figure 2-1 GTN System Interface Diagram to include new interfaces.
3.2.1	Added Windows 10 as a compatible operating system to run the application to create a software loader card.
3.3	Updated software version to v6.70 and updated screen shots in following sections where required.
3.3.3	Added vertical navigation settings to the description of the ***Navigation Features*** page.
	Added ***Flight Stream*** page description and **Update Config Module** button description.
3.3.4.1.1	Updated HTAWS configuration settings options.
3.3.5	Updated diagnostic page titles and descriptions to compare with changes in v6.70 software.
3.4	Updated database update procedure to include Flight Stream 510.
4.3.1.1	Corrected COM connector to P1003-44.
4.4	Added Section 4.4 Flight Stream 510 Troubleshooting.
5.3	Added Flight Stream 510 to section.
6.2.10	Added Section 6.2.10 Flight Stream 510.
6.3.5	Added COM RX Squelch Check.
6.6.5	Added Section 6.6.5 Display checkout.
6.11	Added Section 6.11 Flight Stream 510 Interface Checks.
Appendix A	Updated Configuration Log and included new features/settings.

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DEFINITIONS OF WARNINGS, CAUTIONS, AND NOTES

WARNING

*A **Warning** means injury or death is possible if the instructions are not obeyed.*

CAUTION

*A **Caution** means that damage to the equipment is possible.*

NOTE

*A **Note** gives more information.*

CAUTION

GTN 6XX/7XX units have a special anti-reflective coated display that is sensitive to waxes and abrasive cleaners. CLEANERS CONTAINING AMMONIA WILL HARM THE COATING. It is important to clean the display using a clean, lint-free cloth and a cleaner that is safe for anti-reflective coatings.

NOTE

All screen shots used in this document are current at the time of publication. Screen shots are intended to provide visual reference only. All information depicted in screen shots, including software file names, versions, and part numbers, is subject to change and may not be up-to-date.

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1 INTRODUCTION

1.1 Scope

This document provides maintenance instructions for the GTN 6XX/7XX, GMA 35/35c, and Flight Stream 510 as installed under the GTN 6XX/7XX Part 27 STC.

1.2 Unit Return

A Return Merchandise Authorization (RMA) number must be requested from Garmin before a Garmin unit is returned. Units returned without an RMA will be refused and returned at the sender's expense. Send units with assigned RMA numbers to the following address:

Garmin International, Inc.
Factory Repair
1200 E. 151st St.
RMA Number: _____
Dock Door #20
Olathe, KS 66062

1.3 Organization

The following outline briefly describes the organization of this manual:

Section 2: System Description

Provides a description of the equipment installed by the GTN 6XX/7XX Part 27 STC. An overview of the GTN, GMA 35, and Flight Stream 510 system interfaces are also provided.

Section 3: GTN Control and Operation

Presents basic control and operation information specifically tailored to maintenance practices. Basic GTN Configuration mode operation is also described as well as loading of software.

Section 4: Troubleshooting

This section provides troubleshooting information to aid in diagnosing and resolving potential problems with the GTN, GMA 35, and Flight Stream 510 equipment.

Section 5: Equipment Removal and Replacement

This section provides instructions for the removal and replacement of the GTN, GMA 35, and Flight Stream 510 equipment.

Section 6: System Return to Service Procedure

This section provides instructions for the configuration and testing of the GTN, GMA 35, and Flight Stream 510 equipment.

This section specifies return to service procedures to be performed upon completion of maintenance of the GTN, GMA 35, and Flight Stream 510 equipment.

1.4 Abbreviations

The *GTN 6XX/7XX Part 27 AML STC Installation Manual* may be referred to within this manual as the STC IM. Except where specifically noted, references made to the GMA 35 will apply to the GMA 35c as well. The following abbreviations are used within this document:

AC	Alternating Current
ADS-B	Automatic Dependent Surveillance-Broadcast
AGC	Automatic Gain Control
AGCS	Automatic Ground Clutter Suppression
AHRS	Altitude and Heading Reference System
AML	Approved Model List
ASR	Automatic Speech Recognition
BIT	Built-In Test
CDI	Course Deviation Indicator
CFR	Code of Federal Regulations
COM	Communications
CRG	Cockpit Reference Guide
CSA	Conflict Situational Awareness
DME	Distance Measuring Equipment
EFIS	Electronic Flight Instrument System
EHSI	Electronic Horizontal Situation Indicator
ELT	Emergency Locator Transmitter
ES	Extended Squitter
FPGA	Field-Programmable Gate Array
GS	Glideslope
GAD	Garmin Interface Adapter
GDL	Garmin Datalink
GDU	Garmin Display Unit
GMA	Garmin Audio Panel
GNS	Garmin Navigation System
GPS	Global Position System
GSR	Garmin Services
GTN	Garmin Touch Navigator
GWX	Garmin Weather Radar
HSDB	High-Speed Data Bus
HTAWS	Helicopter Terrain Awareness System
ICA	Instructions for Continued Airworthiness
ICS	Intercom System
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IRU	Inertial Reference Unit
LED	Light Emitting Diode
LOC	Localizer
LOI	Loss of Integrity
LRU	Line Replaceable Unit
MHz	Mega-Hertz
MKR	Marker Beacon
MOT	Mark on Target
NAV	Navigation
NV	Night Vision
OBS	Omni Bearing Selector
PA	Passenger Address
PED	Portable Electronic Device
POH	Pilot's Operating Handbook
PTC	Push-to-Command
PTT	Push-to-Talk
R/T	Radar Transceiver
RAIM	Receiver Autonomous Integrity Monitoring
RF	Radio Frequency
RFMS	Rotorcraft Flight Manual Supplement
RMI	Radio Magnetic Indicator
RX	Receive
SAR	Search and Rescue
SBAS	Satellite Based Augmentation System
SDI	Source/Destination Identifiers
SSM	Sign/Status Matrix
STC	Supplemental Type Certificate
TAS	Traffic Advisory System
TCAS	Traffic Collision Avoidance System
TCAD	Traffic Collision Avoidance Device
TIS	Traffic Information Service
TSO	Technical Standard Order
TVS	Transient Voltage Suppressors
TX	Transmit
UTC	Coordinated Universal Time
VDC	Volts Direct Current
VFR	Visual Flight Rules
VHF	Very High Frequency
VLOC	VOR/LOC
VOR	VHF Omni-directional Range
WAAS	Wide Area Augmentation System
WXR	Weather Radar
XPDR	Transponder

1.5 Publications

Publications related to the operation and maintenance of the GTN are listed in Table 1-1.

Table 1-1 GTN Related Publications

Part Number	Garmin Document
005-00533-H0	*Master Drawing List, GTN 6XX/7XX Part 27 AML STC* [1]
005-00533-H1	*Equipment List, GTN 6XX/7XX Part 27 AML STC*
190-01007-B3	*GTN 6XX/7XX Part 27 AML STC Installation Manual*

Notes:

[1] Refer to this document for part numbers of model-specific Instructions for Continued Airworthiness (ICA).

1.6 Distribution

This document is required for maintaining the continued airworthiness of the rotorcraft. When this document is revised, every page will be revised to indicate the current revision level. Garmin Dealers may obtain the latest revision of this document on the Garmin Dealer Resource Center website.

Owner/operators may obtain the latest revision of this document from flyGarmin.com or by contacting a Garmin dealer. Other contacts include Garmin Product Support at (913) 397-8200, (888) 606-5482, or using around the world contact information on flyGarmin.com.

A Garmin Service Bulletin describing the revision to this document will be sent to Garmin dealers if the revision is determined to be significant.

2 SYSTEM DESCRIPTION

2.1 Equipment Descriptions

The GTN WAAS navigators are a family of aviation panel-mounted products. The following sections will describe the available functions for each unit in the GTN 6XX/7XX navigators.

2.1.1 GTN 6XX

The GTN 6XX WAAS navigators are a family of panel-mounted GPS/NAV/COM navigators.GTN 6XX units include the GTN 625, GTN 635, and GTN 650. GTN 6XX units are 6.25 inches wide and 2.65 inches tall. The GTN 6XX features a 600 × 266 pixel color LCD touchscreen. The GTN 625 is a GPS/SBAS unit that meets the requirements of TSO-C146c. The GTN 635 includes all of the features of the GTN 625 in addition to an airborne VHF communications transceiver. The GTN 650 includes all of the features of the GTN 625 in addition to an airborne VHF communications transceiver and airborne VOR/LOC and G/S receivers.

2.1.2 GTN 7XX

The GTN 7XX WAAS navigators are a family of GPS/NAV/COM aviation panel-mounted products. GTN 7XX units include the GTN 725 and GTN 750. GTN 7XX units are 6.25 inches wide and 6.00 inches tall. They feature a 600 × 708 pixel color LCD touchscreen. The GTN 725 is a GPS/SBAS unit that meets the requirements of TSO-C146c. The GTN 750 includes all of the features of the GTN 725 in addition to an airborne VHF communications transceiver and airborne
VOR/LOC and GS receivers. The GTN 725 and 750 also have the ability to remotely control GMA 35 audio panel functions.

2.1.3 GMA 35/35c Audio Panel

The GMA 35 Audio Panel is both a marker beacon receiver and an audio panel with a 6-place intercom that interfaces to the communications and navigation radios, headsets, microphones, and speakers. The GMA 35 is remote-mounted and relies upon the GTN 725 or GTN 750 to control and display the audio functions. The GMA 35c provides the functionality of the GMA 35 with the added capability to pair Bluetooth™ audio sources. This enables the distribution of audio to ICS positions when using a compatible device. The GMA 35c supports up to ten stored devices and one active Bluetooth device.

The GMA 35 interfaces to the GTN 7XX via RS-232 for control and display of audio panel functions. The GMA 35 includes a six-position ICS with electronic cabin noise de-emphasis, two stereo music inputs, and independent pilot/co-pilot/passenger volume controls. The intercom provides three selectable isolation modes. A pilot-selectable cabin speaker output is used to listen to the selected rotorcraft radios or to broadcast PA announcements.

2.1.4 Flight Stream 510

NOTE

The Flight Stream 510 is a wireless-enabled data card that is inserted into the GTN data card slot.

The Flight Stream 510 interfaces to the GTN 6XX/7XX by replacing the front-loaded data card to allow wireless database synchronization with PEDs. Synchronized information is then disseminated to various LRUs through their existing GTN interface connections.

2.1.5 NAV Antenna Cable Splitter

The navigation antenna cable splitter (Garmin P/N 013-00112-00) is used for installations involving dual VHF navigation capable GTNs or a single VHF navigation capable GTN installation with a second non-Garmin navigation unit.

2.1.6 NAV Antenna Cable Diplexer

GTN 650/750 navigation units have a single navigation antenna port and require a composite signal for those installations that include separate VOR/LOC and GS antennas. The navigation diplexer (Comant diplexer VOR/GS, Model CI-507) is used for these installations.

2.1.7 HTAWS Annunciator

Installation of HTAWS annunciators is required when the optional HTAWS feature is activated. For HTAWS annunciator installation and equipment details, refer to the model-specific installation drawing.

2.1.8 Cyclic Control Grip

An optional Otto Controls Flight Control Grip Kit (Otto Controls P/N G2-0048 or G2-B-8) may be included with the GTN installation. For eligibility and detailed cyclic control grip kit information, refer to the model-specific installation drawing.

2.2 GTN System Interfaces

2.2.1 GTN Optional Interfaces

Optional equipment interfaces to the GTN include:

- Audio panel
- Air data computer
- Altitude serializer or fuel/air data computers
- EFIS displays
- Navigation indicators
- Weather, traffic, and terrain systems
- HTAWS annunciator panels
- Garmin Iridium transceiver
- Radar altimeter
- Garmin ADS-B traffic and FIS-B weather sources
- Flight Stream 510

2.2.2 GTN 6XX/7XX Interfaces

The GTN utilizes ARINC 429, RS-232, discrete inputs/outputs, and HSDB interfaces to communicate with other LRUs and systems on the rotorcraft. A summary of GTN interfaces is shown in Figure 2-1.

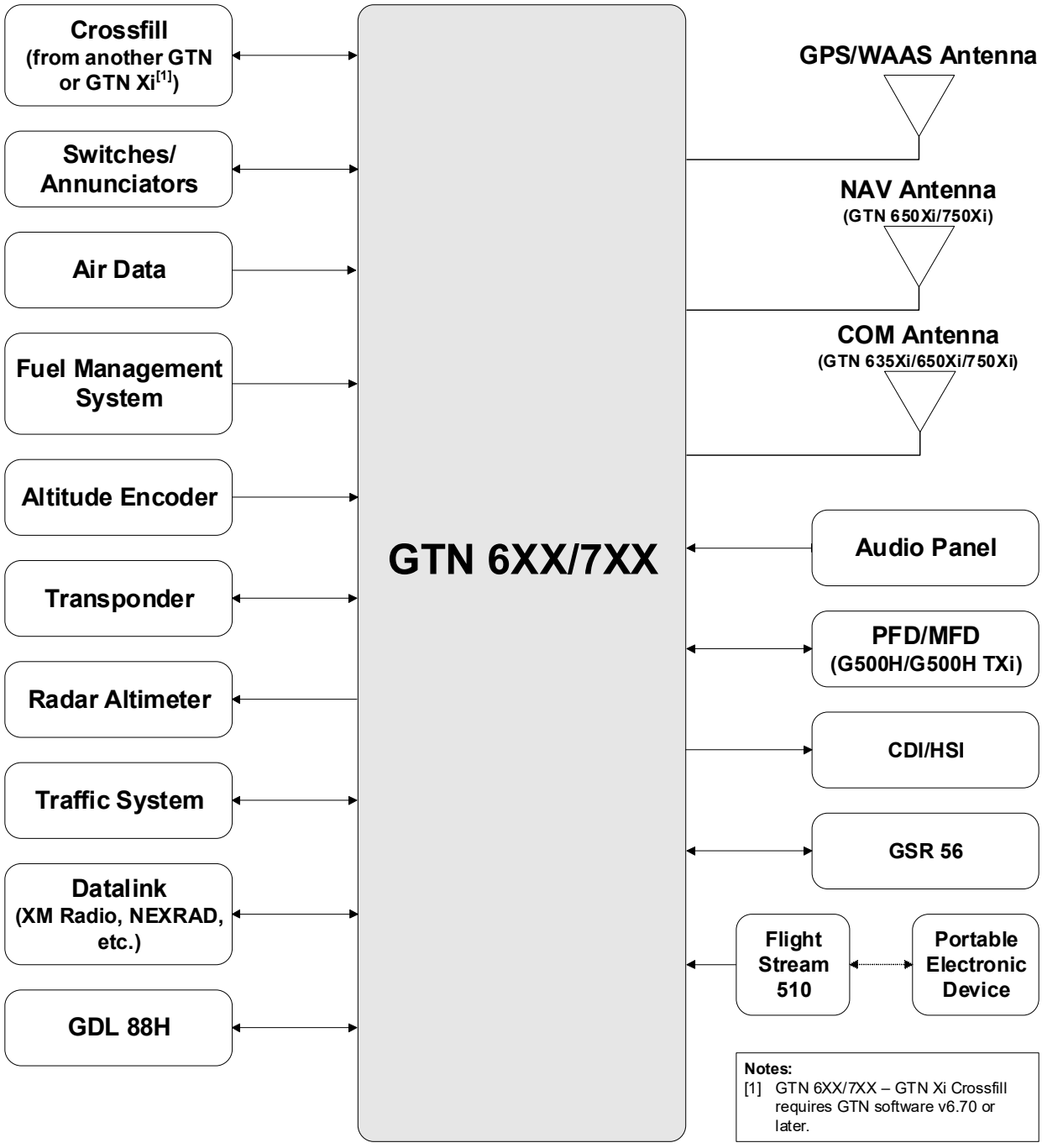


Figure 2-1 GTN System Interface Diagram

The GTN 6XX/7XX interfaces with other avionics equipment through the rear connectors. The COM board is available only in the GTN 635, 650, and 750. The NAV board is present only in the GTN 650 and 750.

NOTE

Empty COM and NAV board connector positions on the these models are concealed with cover plates.

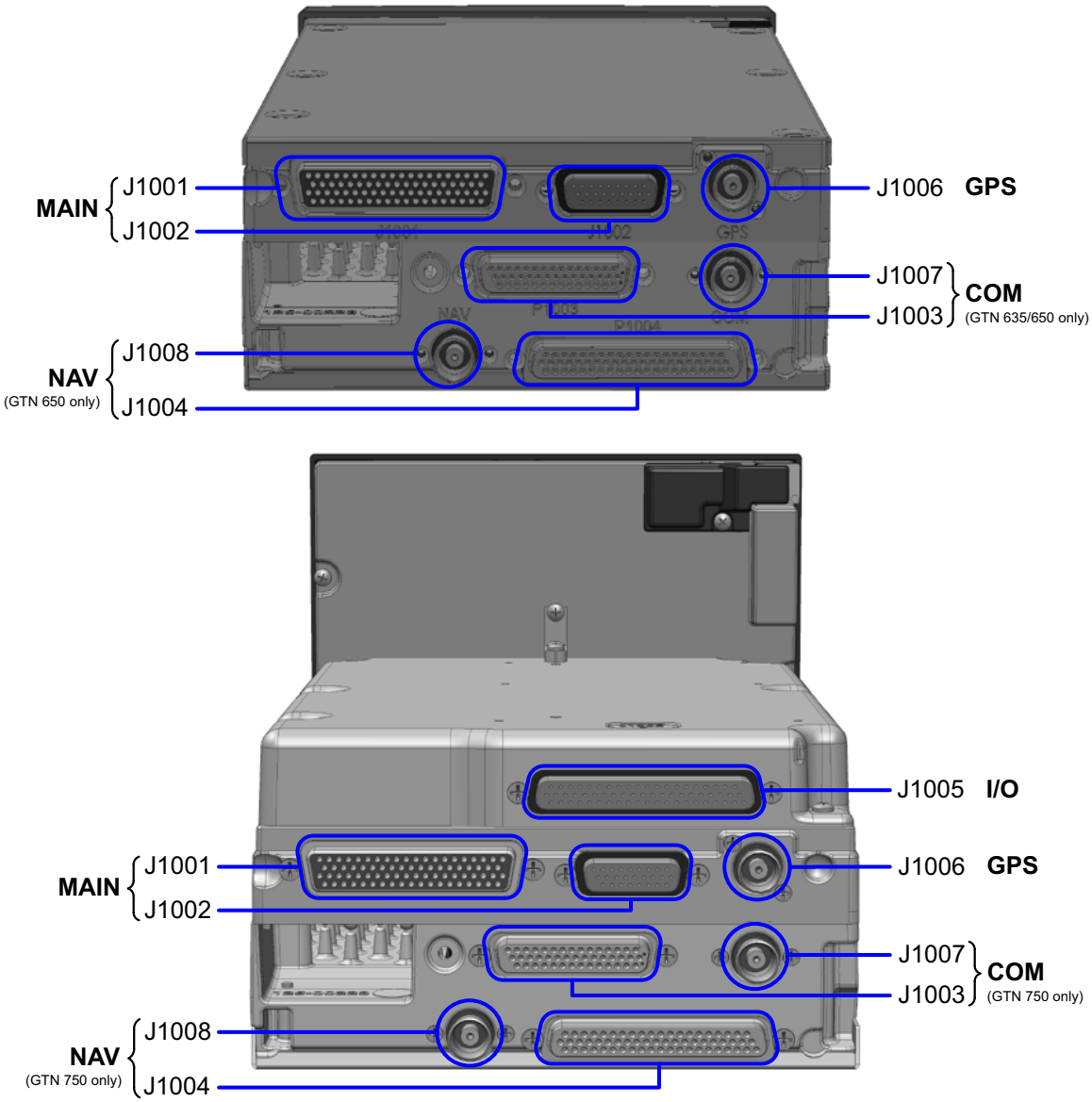


Figure 2-2 GTN 6XX/7XX Connector Layout Detail
GTN 650 (top) and 750 (bottom) shown

2.2.3 GMA 35 Equipment Interfaces

The GMA 35 utilizes RS-232, discrete inputs/outputs, and analog audio inputs/outputs to communicate with other systems on the rotorcraft.

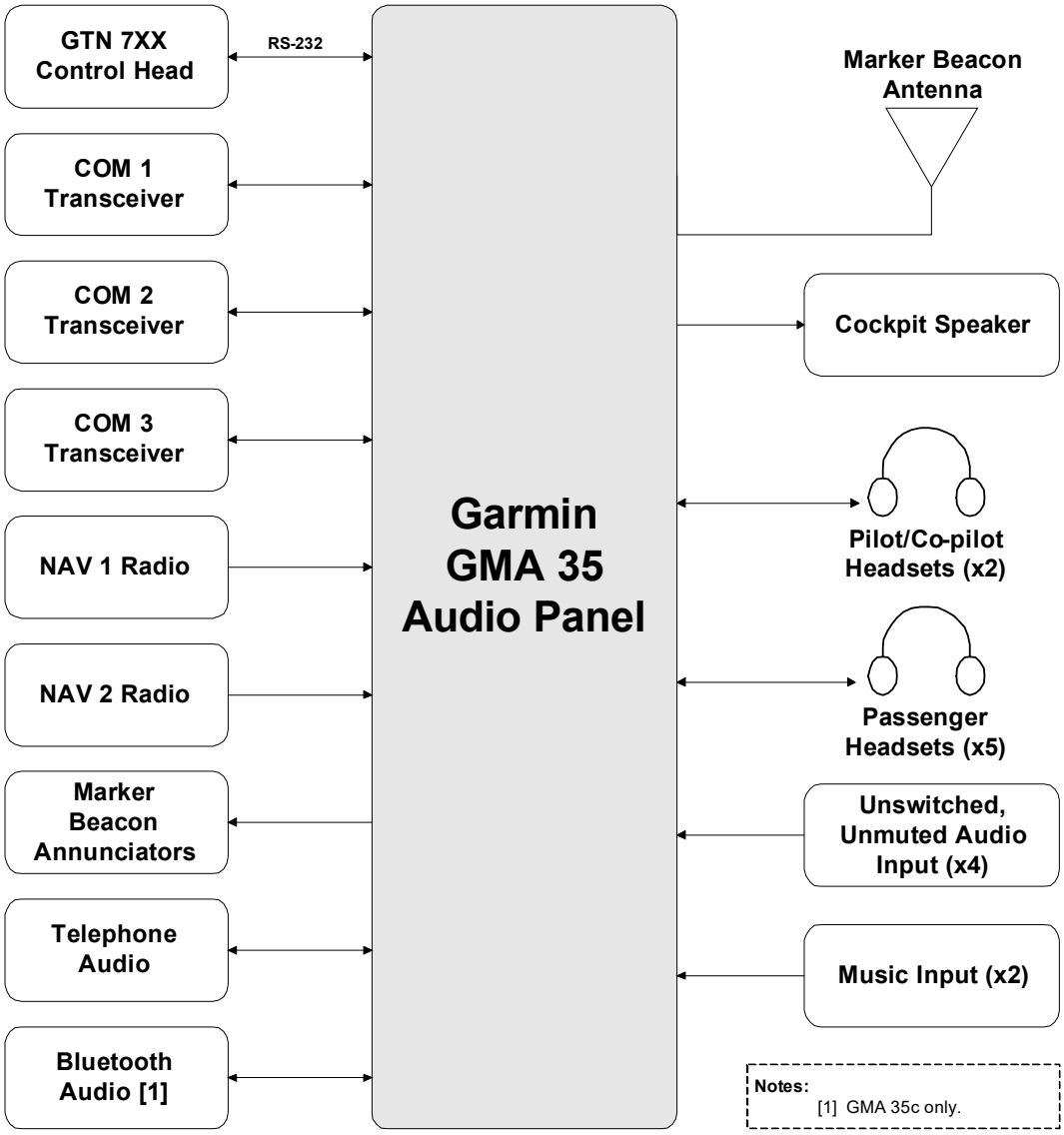


Figure 2-3 GMA 35 System Interface Diagram

The GMA 35 interfaces with other avionics equipment through the rear connectors. The GMA 35c has a connector for the Bluetooth antenna on the front of the unit.

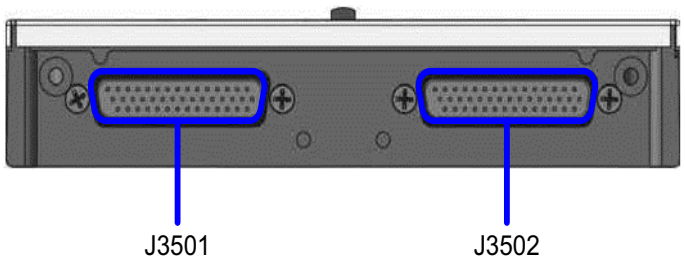


Figure 2-4 GMA 35 Rear Connectors

3 GTN CONTROL AND OPERATION

3.1 GTN Controls

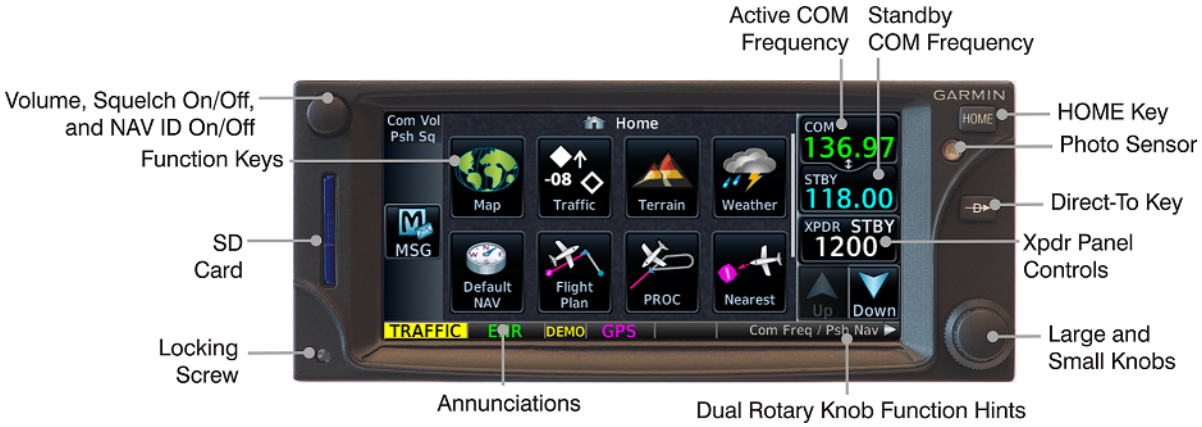


Figure 3-1 GTN 6XX Control Features (GTN 650 Shown)

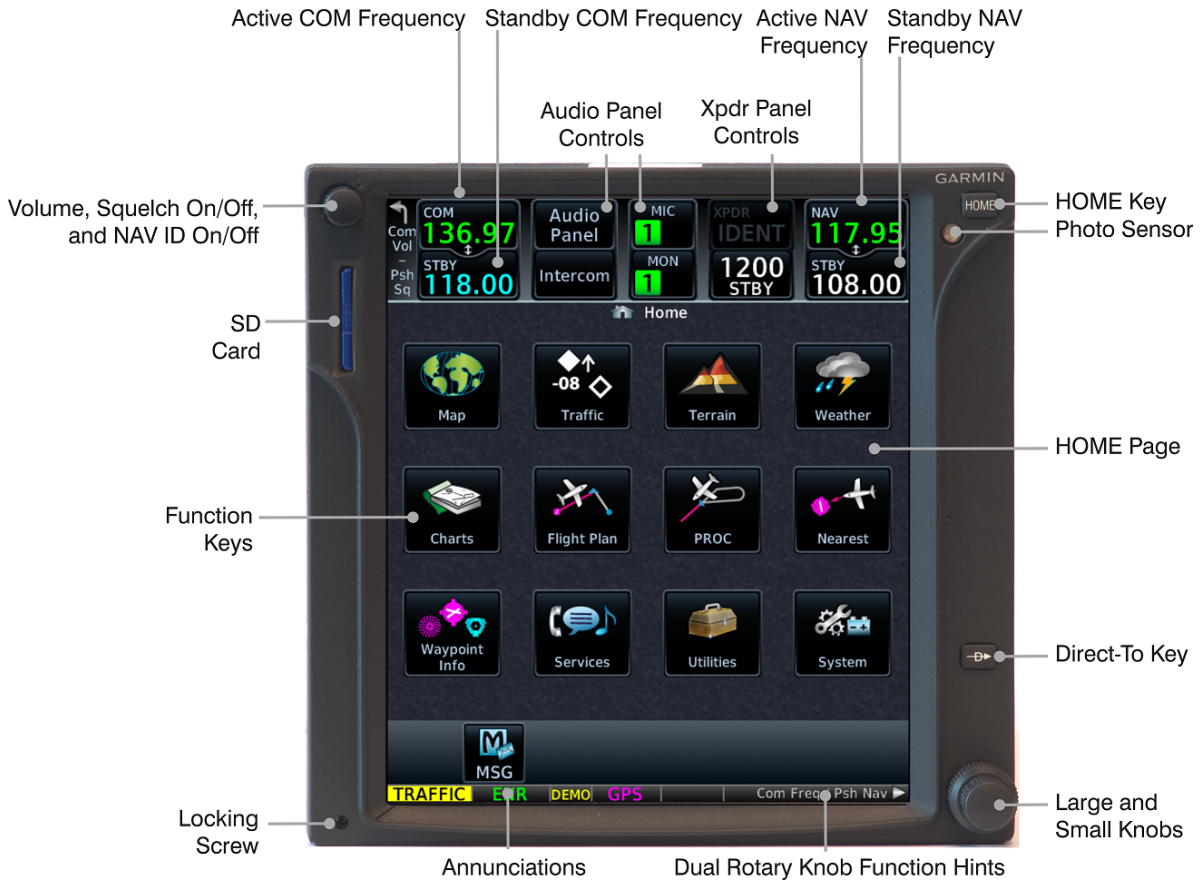


Figure 3-2 GTN 7XX Control Features (GTN 750 Shown)

3.2 Software Loading

3.2.1 GTN Software Loader Card Creation

NOTE

The application to create the GTN Software Loader Card runs on PCs with Windows (Windows 2000, XP, Vista, Windows 7, and Windows 10). There is no Macintosh support at this time.

NOTE

An data card reader is needed to create the GTN Software Loader Card using the application that is downloaded from Garmin. The approved readers are SanDisk® SDDR-999 and SDDR-93, although other data card readers may work.

A GTN Software Loader Card is created using GTN Downloadable Software and a data card with the GTN software application. It is downloaded from the Dealer Resource Center on Garmin's website. The Dealer Resource Center allows the technician to choose which software package(s) to load onto the card.

Create a GTN Software Loader Card as follows:

CAUTION

In order to create a GTN Software Loader Card, the drive that you select will be completely erased.

1. Go to the Garmin Dealer Resource Center.
2. Download the GTN Software Loader Image. For the correct Software Loader Image part number, refer to the Equipment List.
3. Connect a data card reader to the PC.
4. Insert the data card into the card reader.
5. Run the executable file.
6. Click **Setup**.

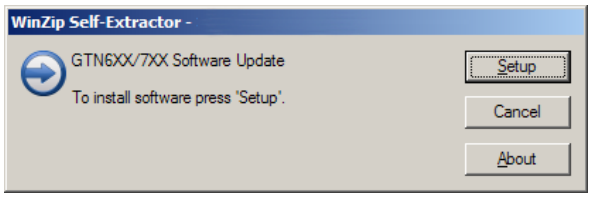


Figure 3-3 GTN Software Updater

7. Click **Next**.

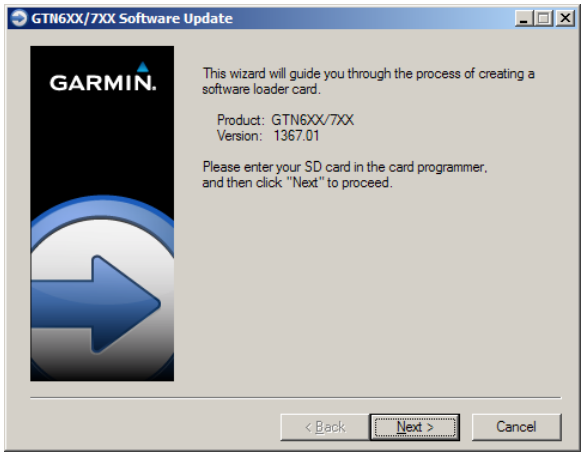


Figure 3-4 System and Software Version

8. Ensure that the correct drive is selected and click **Next.**

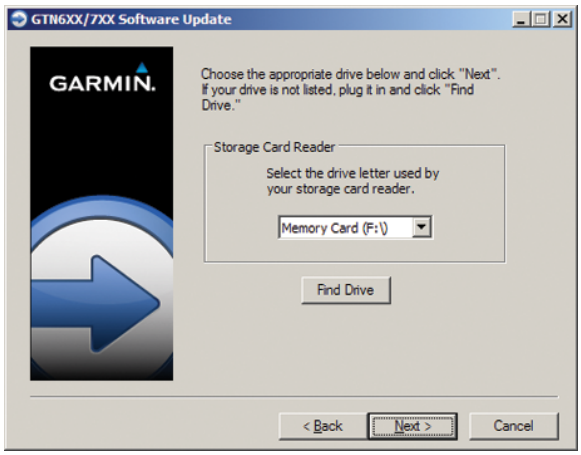


Figure 3-5 GTN Software Loader Card Formatting

9. Click **Next** to acknowledge any warnings that appear.

Figure 3-6 Update Progress Window

10. Click **Finish.**

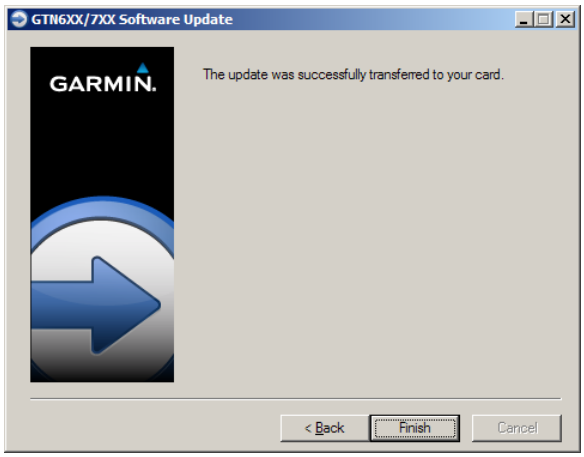


Figure 3-7 Update Completion

11. Eject the card from the card reader or stop the card reader in Windows.

3.2.2 GMA 35 Software Loading

NOTE

The GMA 35 software will be present on the data card when creating a GTN Software Loader Card. A separate card is not required to perform GMA 35 software updates.

1. Remove power from the GTN 7XX.
2. Insert the GTN Software Loader Card into the GTN 7XX data card slot. For instructions on how to create a GTN Software Loader Card, refer to Section 3.2.1.
3. Hold down the **HOME** key until "Garmin" is fully lit on the display after power is applied to the GTN 7XX.
4. Ensure the GMA 35 circuit breaker is closed.
5. Touch the **Updates** key. To display available software, touch the **Updates** key.
6. Touch the **Updates** key.
7. Touch **GMA 35 Software Updates**.
8. Touch **Select All**.
9. Touch the **Updates** key.
10. Touch **OK**.
11. When completed, remove power from the GTN and GMA 35.
12. Remove the Software Loader Card.
13. Re-insert the database card into the data card slot.
14. Restore power on the GTN and GMA 35.
15. Ensure the software was updated correctly. Refer to Section 3.3.2.

3.2.3 GMA 35 Boot Block Loading

NOTE

The GMA 35 Boot Block Loader Card is separate from the GMA 35 Software Loader Card and is required to update Boot Block software to v4.10. Refer to Section 3.2.1 for instructions on how to create the GTN Software Loader Card.

1. Remove power from the GTN 7XX.
2. Insert the GTN Boot Block Loader Card into the GTN 7XX data card slot.
3. Make sure the GMA 35 circuit breaker is closed.
4. Apply power to the GTN 7XX.
5. Select all GMA 35 Boot Block updates.
6. Touch the **Update** key.
7. Touch **OK**.
8. Remove power from the GTN.
9. Remove power from the GMA 35.
10. Remove the Boot Block Loader Card.
11. Re-insert the database card in the data card slot.
12. Apply power to the GTN.
13. Apply power to the GMA 35.
14. Go to the ***System Information*** page.
15. Select **GMA 35**.
16. Make sure the software level matches what was on the GTN Boot Block Loader Card.

3.3 GTN Configuration Mode Overview

NOTE

When configuring the GTN, ensure that no configuration module service messages are displayed in the message queue. This indicates the configuration module is improperly wired or damaged.

NOTE

The configuration pages shown reflect main software v6.70. Some differences in operation may be observed when comparing information in this manual to later software versions.

Configuration mode is used to configure the GTN settings for each specific installation. To access Configuration mode, perform the following steps:

1. Remove power from the GTN.
2. Press and hold the **HOME** key and reapply power to the GTN.
3. Release the **HOME** key when the display activates and the name "Garmin" appears fully lit on the screen.

The first page displayed is the ***Configuration Mode*** page. For detailed information regarding how to configure the GTN, refer to *GTN 6XX/7XX Part 27 AML STC Installation Manual*. While in Configuration mode, pages can be selected by touching the necessary key on the display. Some pages may require page scrolling to view all of the information and keys on the page. To scroll, touch the screen and drag the page in the necessary direction or touch the **Up** or **Down** keys.

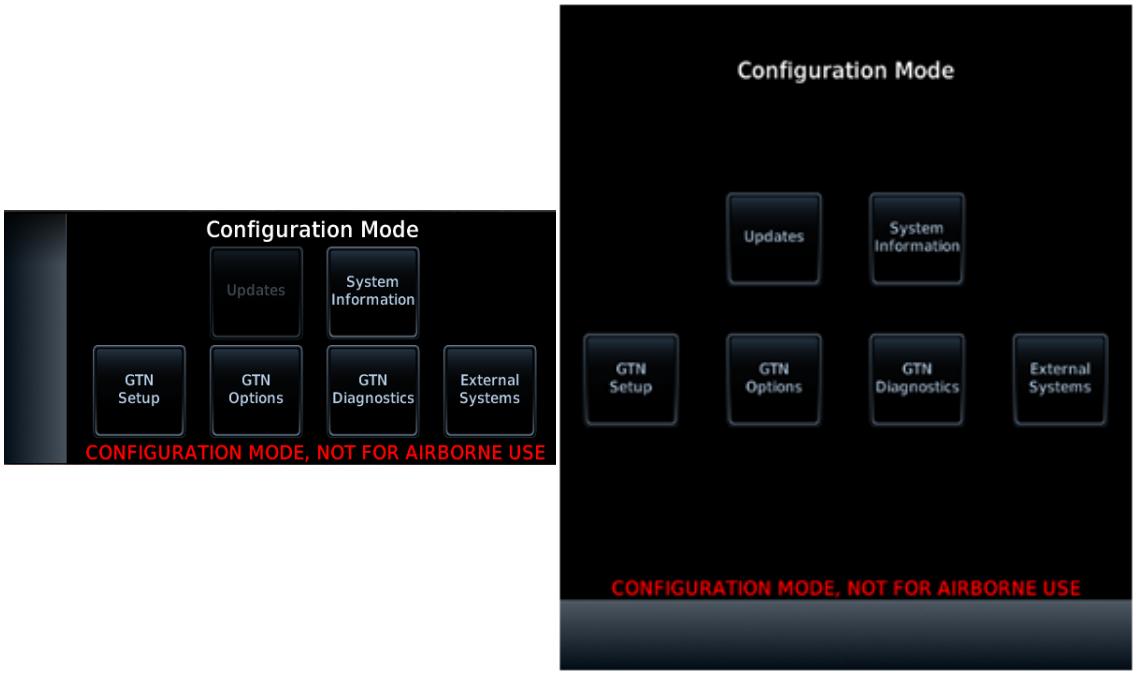


Figure 3-8 GTN 6XX and GTN 7XX Configuration Mode Pages

3.3.1 GTN Software Updates

NOTE

The following steps need to be repeated for each GTN unit that requires a software update.

Figure 3-9 GTN 7XX Updates Page

To update the GTN software, perform the following steps:

1. Remove power from the GTN.
2. Remove the database card and insert the correct GTN Software Loader Card into the data card slot. To create a GTN Software Loader Card, refer to Section 3.2.1.
3. Power up the GTN in Configuration mode.
4. Touch **Updates.**
5. Check that the software version being loaded into the GTN matches the software version listed on *Equipment List, GTN 6XX/7XX Part 27 AML STC* (P/N 005-00533-H1). The ***Updates*** page displays the version that is installed on the unit and the version installed on the loader card.
6. Check the available GTN software updates are being displayed by ensuring that the **Updates** key is highlighted in the upper-left corner (upper-right corner for GTN 6XX) of the display.
7. Touch **Select All**.
8. Touch **Updates**.
9. Touch **OK**.
10. When completed, remove power from the GTN.
11. Remove the Software Loader Card.
12. Re-insert the database card into the data card slot.

3.3.2 System Information

To view the ***System Information*** page, touch the **System Information** key on the ***Configuration Mode*** page. The ***System Information*** page displays the unit type, serial number, and system ID for the GTN. It also contains the software and hardware versions of the Main, I/O, Display, Keypad, LED, GPS/WAAS, COM, and NAV boards. This information is also available for certain other LRUs connected to the GTN. Touch the **GTN** key and choose which LRU to display. Touch **Up** or **Down** to view all the information.

Figure 3-10 System Information Page

3.3.3 GTN Setup Page

A brief overview of the pages that are accessed from the ***GTN Setup*** page are described below. To access the ***GTN Setup*** page, touch the **GTN Setup** key from the ***Configuration Mode*** page.

Figure 3-11 GTN 7XX GTN Setup Page

ARINC 429

The ***ARINC 429*** page allows the user to configure the ARINC 429 input and output ports on the GTN. Both ARINC 429 formats and bus speeds are set from this configuration page.

RS-232

The ***RS-232*** page allows the user to configure the RS-232 input and output ports on the GTN.

HSDB (Ethernet)

The ***HSDB (Ethernet)*** page allows the user to set which Ethernet ports are connected.

Interfaced Equipment

The ***Interfaced Equipment*** page allows the user to configure which LRUs are installed and interfaced to the GTN. The transponder selection is automatically configured when a valid transponder configuration is selected under the ***RS-232*** page.

Main Indicator (Analog)

The ***Main Indicator (Analog)*** page allows the user to calibrate the OBS resolver, configure the CDI key, selected course for GPS, and VLOC, as well as the V-Flag state.

Lighting

The ***Lighting*** page allows the user to set the display parameters that affect the backlight and key lighting brightness.

Enhanced Lighting

The ***Enhanced Lighting*** page replaces the ***Lighting*** page when enabled under the ***Main System*** configuration page. Enhanced lighting allows the user to set the display parameters that affect the backlight and key lighting brightness. Enhanced lighting may be used to configure separate day/night lighting curves.

Audio

The ***Audio*** page allows the user to configure the aural alert volume.

Traffic

The ***Traffic*** page allows the user to configure the traffic intruder symbol color and configure whether or not the GTN is the display used to control the traffic system.

Main System

The ***Main System*** page allows the user to display miscellaneous configuration options for the GTN. Options available are air/ground threshold, air/ground discrete, fuel type, and heading/altitude input source connection statuses.

COM

The ***COM*** page allows the user to configure the RX squelch volume, microphone 1 gain, and sidetone volume. These selections are only available for the GTN 635, 650, and 750 units.

VOR/LOC/GS

The ***VOR/LOC/GS*** page allows the user to check the CDI outputs from the VOR/LOC/GS receiver as well as the OBS resolver input to the VOR receiver. This selection is only available for the GTN 650 and 750 navigation units.

Discretes

The ***Discretes*** page allows the user to customize the configuration of some discrete inputs/outputs on the J1001 and J1002 connectors.

Navigation Features

The ***Navigation Features*** page provides the options to allow Mark On Target (MOT) waypoint filtering and RF procedural legs in Normal mode, and to configure Vertical Navigation settings.

Ownship

The ***Ownship*** page allows the user to select the displayed ownship icon from a list.

Flight Stream

The Flight Stream page allows the user to configure settings for the Flight Stream 510. These settings are not approved under this STC.

Update Config Module

The **Update Config Module** button allows the user to update the configuration module with the current configuration settings.

3.3.4 GTN Options Page

The ***GTN Options*** page leads to optional features that can be purchased and enabled. To access the ***GTN Options*** page, touch the **GTN Options** key on the ***Configuration Mode*** page.

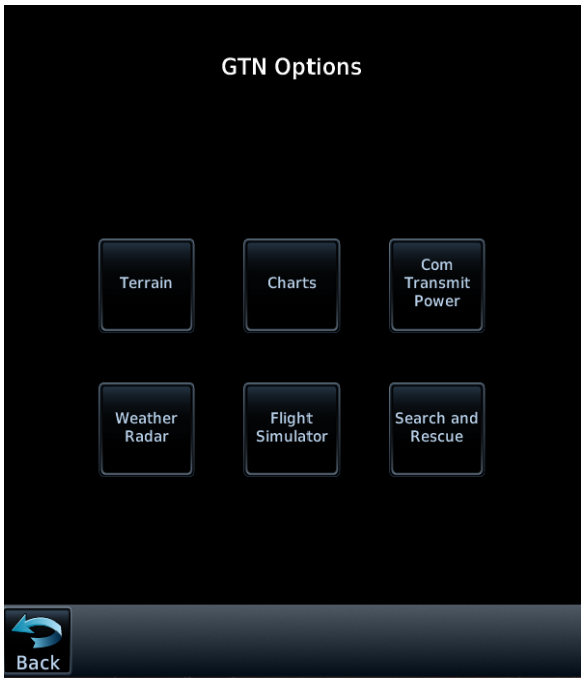


Figure 3-12 GTN 7XX Options Page

3.3.4.1 HTAWS Re-Enablement

NOTE

This manual only describes the necessary steps to re-enable the HTAWS feature for existing installations. For first-time HTAWS enablement, refer to GTN 6XX/7XX Part 27 AML STC Installation Manual.

NOTE

The feature enablement card should be provided to the customer after service to the GTN has been completed.

When the optional HTAWS feature is enabled, the GTN will provide HTAWS functionality. To reactivate the HTAWS feature in the GTN, complete the following steps:

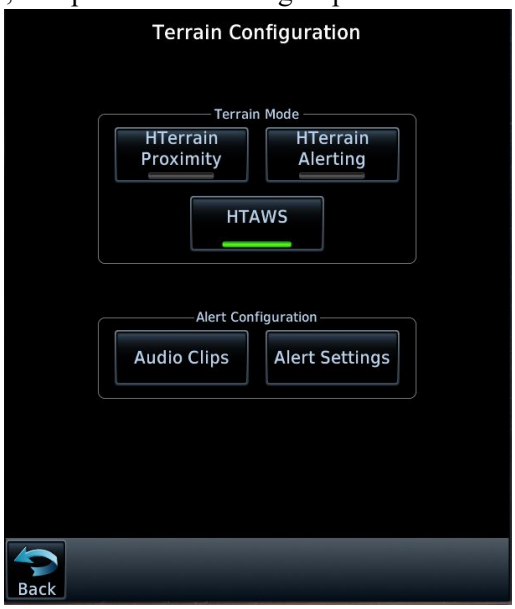


Figure 3-13 GTN 7XX Terrain Configuration Page

1. Remove power from the GTN.
2. Remove the database data card from the data card slot.
3. Insert the HTAWS Enablement Card (P/N 010-00878-02) used during initial installation.
4. Power up the GTN in Configuration mode.
5. Go to the ***Terrain Configuration*** page from the ***GTN Options*** page.
6. Touch the **HTAWS** key.
7. When prompted, touch **Yes** to enable HTAWS. When activated, the **HTAWS** key will be lit green.

3.3.4.1.1 HTAWS Configuration Options

When HTAWS is enabled, the following configuration settings are available:

Audio Clips

This allows the user to select and test aural alert messages for various caution and warning types.

Alert Settings

The GTN HTAWS alerting algorithm adapts the terrain alerting criteria based on nearby airports. The Airport Criteria configuration options allow the user to select the minimum criteria that the airport must meet to be considered as a nearby airport for the purpose of HTAWS alerting.

3.3.4.2 ChartView Re-Enablement (GTN 7XX Only)

NOTE

This manual only describes the necessary steps to re-enable the ChartView feature for existing installations. For first-time ChartView enablement, refer to GTN 6XX/7XX Part 27 AML STC Installation Manual.

NOTE

The ChartView Feature Enablement Card should be provided to the customer after service to the GTN has been completed.

The GTN 7XX can display Jeppesen charts using the optional ChartView feature, which must be activated. Complete the following procedure to re-enable ChartView:

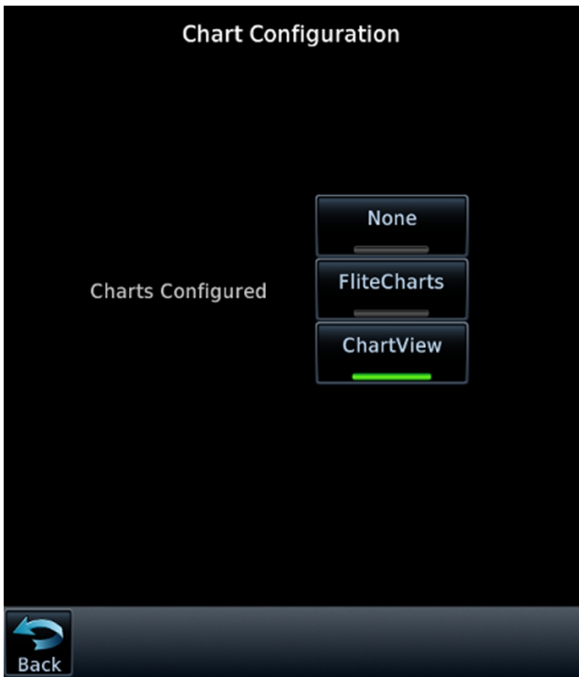


Figure 3-14 Chart Configuration Page

1. Remove power from the GTN.
2. Remove the database data card from the data card slot.
3. Insert the ChartView Enablement Card (P/N 010-00878-40) used during initial installation.
4. Power up the GTN in Configuration mode.
5. Go to the ***Charts*** page from the ***GTN Options*** page.
6. Touch the **ChartView** key.
7. When prompted, touch **Yes** to enable ChartView. When activated, the **ChartView** key will be lit green.

3.3.4.3 COM Transmit Power Re-Enablement (GTN 635/650/750 Only)

NOTE

This manual only describes the necessary steps to re-enable the 16W COM transmit power for existing installations. For first-time 16W COM transmit power enablement, refer to the GTN 6XX/7XX Part 27 AML STC IM.

NOTE

The 16W COM Transmit Feature Enablement Card should be provided to the customer after service to the GTN has been completed.

When the optional 16W COM power is configured, the GTN COM will transmit with 16 watts rather than the standard 10 watts. This section describes how to re-enable the 16W COM transmit power:

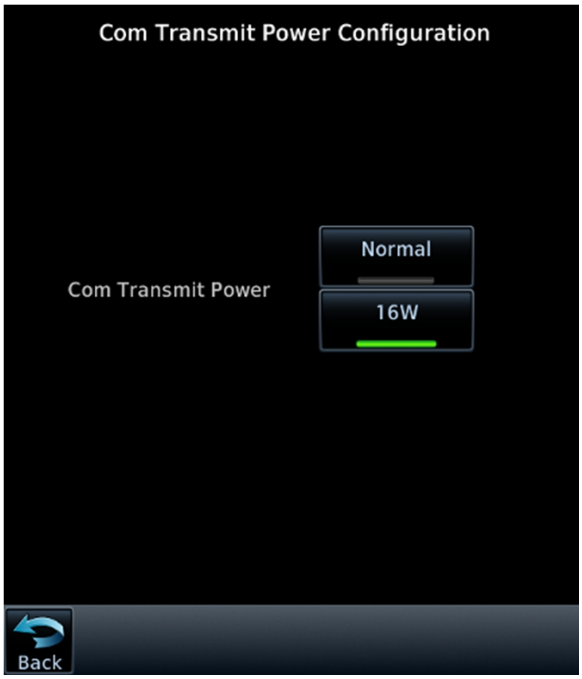


Figure 3-15 COM Transmit Power Configuration Page

1. Remove power from GTN.
2. Remove the database data card from the data card slot.
3. Insert the 16W Enablement Card (P/N 010-00878-04) used during initial enablement.
4. Power on the GTN in Configuration mode.
5. Go to the ***COM Transmit Power*** page from the ***GTN Options*** page.
6. Touch the **16W** key.
7. When prompted, touch **Yes** to enable 16W COM feature. When activated, the **16W** key will be lit green.

3.3.4.4 Search and Rescue Re-Enablement

NOTE

A Search and Rescue Enablement Card (P/N 010-00878-03) is needed for enablement.

NOTE

The Search and Rescue Feature Enablement Card should be provided to the customer after service to the GTN has been completed.

The GTN 6XX/7XX Search and Rescue Enablement Card is only used on one GTN. In dual GTN installations, when Search and Rescue is enabled on one GTN, the enablement is automatically transferred to the other GTN. The search and rescue status displays "Unlocked Remotely." If the first enabled GTN is disconnected from the second GTN, the Search and Rescue is disabled on the remotely unlocked GTN. The SAR status displays, "Unavailable – Remote Unlock Missing."

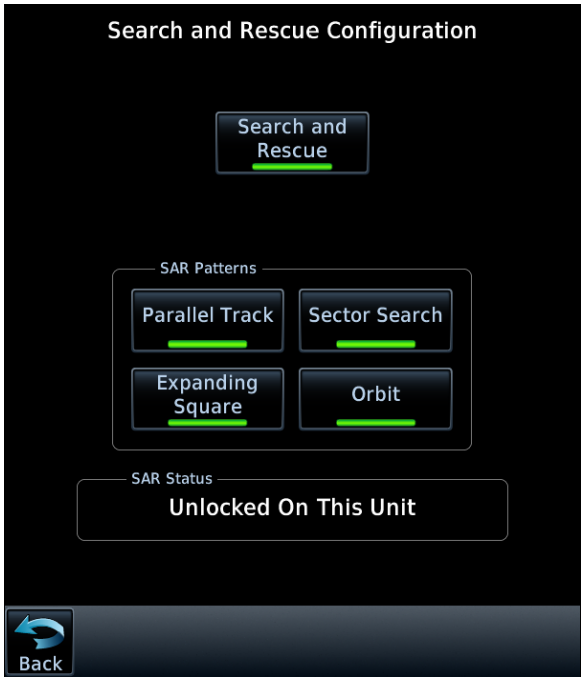


Figure 3-16 Search and Rescue Configuration Page

To enable the Search and Rescue feature:

1. Removed power from the GTN.
2. Remove the database data card from the data card slot.
3. Insert the enablement card used during the initial installation.
4. Power on the GTN in Configuration mode.
5. Go to the ***Search and Rescue Configuration*** page from the ***GTN Options*** page.
6. Touch the **Search and Rescue** key
7. When prompted, touch **Yes** to enable Search and Rescue. When activated, the **Search and Rescue** key will be lit green.
8. Select the Search and Rescue (SAR) patterns. Selections are Parallel Track, Sector Search, Expanding Square, and Orbit.

3.3.5 GTN Diagnostics Page

The ***GTN Diagnostics*** page, is accessed from the ***Configuration Mode*** home page and is a useful tool for diagnosing issues and troubleshooting problems. Ground checks are also performed using the tools on this page.

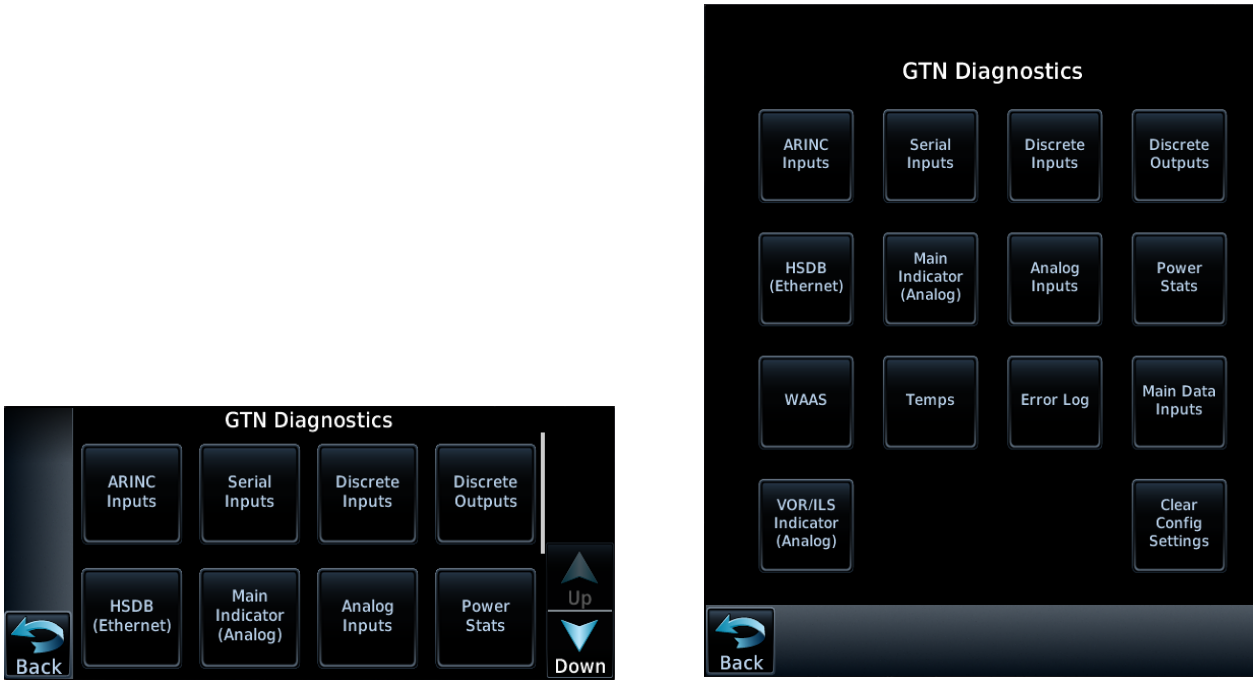


Figure 3-17 GTN 6XX and 7XX Diagnostics Pages

ARINC Inputs

The ***ARINC Inputs*** page displays the ARINC 429 data being received over each ARINC 429 port. Each port can be chosen for display by touching the **Port** key and toggling between the input ports. Select a port to display. The GTN will then display the label, SSM, Data, and SDI for each ARINC 429 input port. This is useful for determining if the expected labels are being received and also for troubleshooting incorrect or swapped wiring to the input ports. The data log is paused by toggling the **Pause** key. Clear the data log by touching **Clear Log** key.

Serial Inputs

The ***Serial Inputs*** page displays the serial data that is being received and is useful for determining if the GTN is receiving data on each connected port. Select the desired port by touching the **Port** key and selecting the RS-232 channel from the list. The data log can be paused by toggling the **Pause** key. Clear the data log by touching **Clear Log**.

Discrete Inputs

The ***Discrete Inputs*** page displays the state of each of the discrete input pins on the GTN. This page is useful for troubleshooting discrete wiring issues.

Discrete Outputs

The ***Discrete Outputs*** page displays the state of each of the discrete outputs and allows them to be toggled between active and inactive. This is useful for ensuring that annunciator and signal outputs are properly connected to annunciator lights or other LRUs and that they are receiving the signal.

HSDB (Ethernet)

The ***HSDB (Ethernet)*** page displays the status of each HSDB port to be displayed. It displays whether or not each port is receiving data and displays whether the port is connected or not connected. The communication status of each installed HSDB LRU is also displayed.

Main Indicator (Analog)

The ***Main Indicator (Analog)*** page displays the CDI connected to the main board (P1001) to be ground checked and allows the interface to be verified.

Analog Inputs

The ***Analog Inputs*** page displays the bus voltage setting for lighting bus 1 and lighting bus 2, as well as the input voltage setting for each bus. It also displays synchro heading input diagnostics information, such as heading angle, heading valid status, AC voltage, and AC frequency.

Power Stats

The ***Power Stats*** page displays the number of times the GTN has powered up, as well as the total elapsed operating hours for the GTN.

WAAS

The ***WAAS*** page displays the WAAS engine status, including UTC date/time, current LAT/LON, overall navigation status, oscillator temperature, and AGC voltage. This page also allows the GPS/SBAS engine to be reset.

Temps

The ***Temps*** page displays the current, minimum, maximum, and average board temperatures for the LED Board, Main Board, Display Interface Board, GPS/SBAS Board, COM Board, and COM oscillator.

Logs

The ***Logs*** page allows the error log, connection log, WAAS diagnostic log, or flight data log to be written to the data card in the front slot. It also allows the error log and WAAS diagnostic log to be cleared.

Main Data Inputs

The ***Main Data Inputs*** page allows the data on ARINC 429, RS-232, and other electrical inputs to be monitored. This is used for checking the electrical interfaces during installation and troubleshooting. Information that is not being received by the GTN is dashed out.

VOR/ILS Indicator (Analog)

The ***VOR/ILS Indicator (Analog)*** page allows the CDI connected to the NAV board (P1004) to be ground checked and allows the NAV indicator interface to be verified.

COM Board Diagnostics Page

The ***COM Board Diagnostics*** page displays status of the FPGA flash, nonvolatile memory, synthesizer lock calibration, and reversionary, as well as the transmitter power limit.

Clear Config Settings

CAUTION

*If the intent is to clear all configuration settings, touch the **Clear Config Settings** key. Touching the **Clear Config Settings** key opens a confirmation window to reset all of the settings stored in the configuration module to their defaults.*

3.4 Database Updates

CAUTION

The databases on the GTN Database Card are locked to specific GTN installations. The first time the GTN Database Card is inserted into a GTN, it associates exclusively with that particular GTN and will not work in other installations.

The GTN utilizes various databases. All databases are loaded to the GTN through the single data card that is inserted into the vertical slot on the left side of the GTN. The Navigation, Basemap, SafeTaxi, and Obstacle databases reside internal to the GTN. The Terrain, FliteCharts, and ChartView databases are stored on the removable memory card located in the vertical slot on the left side of the GTN. Databases are updated by removing the database card from the GTN, updating the database on the card, and re-inserting the card. Database updates can be applied in Normal mode at power-up. Alternatively, the databases can be updated in Configuration mode through the ***Updates*** page. The GTN, by default, will only update to effective databases. If loading databases that are not yet effective, or if the GTN GPS time is out-of-date, press and hold the dual concentric knob during power-up to install all database updates from the data card.

Databases can also be updated using a Flight Stream 510 wireless data card and a portable device. When powering on in Normal mode with a Flight Stream 510 inserted into the data card slot, the GTN will provide on-screen instructions on how to transfer databases from a portable device (with a compatible application) over Wi-Fi.

Database cards and the Flight Stream 510 should not be swapped between GTNs if multiple units are installed.

GTN users can update their database card by purchasing database subscription updates from Garmin. Contact Garmin at (866) 739-5687 or go to flyGarmin.com for more information and instructions.

For a summary of the database location and update rate, refer to Table 3-1. The GTN Database card (Garmin P/N 010-01157-()) includes the Basemap, Obstacle, SafeTaxi, and Navigation databases.

Table 3-1 GTN Database Summary

Database	Update Rate	Storage Location
Terrain	Periodic (when available)	Data card
FliteCharts	28 days	
ChartView	14 days	
Obstacle	56 days	Internal
SafeTaxi	56 days	
Basemap	Periodic (when available)	
Navigation	28 days	

4 TROUBLESHOOTING

4.1 GTN General Troubleshooting

This section provides information to assist troubleshooting if problems occur after completing the maintenance. Refer to the GTN System Configuration and Checkout Log retained in the rotorcraft permanent maintenance records for a list of the interfaced equipment and system configuration data.

If any system fault persists after performing the associated troubleshooting actions, return the unit to Garmin for service. Refer to Section 1.2.

Table 4-1 GTN Troubleshooting Guide

Problem	Possible Cause	Corrective Action
GTN does not power on.	The unit is not getting power to the main connector P1001.	Ensure power is connected to the main 78-pin connector P1001, pins 19 and 20, and ground to P1001, and pins 77 and 78. Check circuit breakers and main avionics switch.
GTN does not compute a position.	Not receiving adequate GPS signals.	Check the GPS antenna connections. Make sure the rotorcraft is clear of hangars, buildings, trees, etc.
		Wait 20 minutes for GTN to download full GPS almanac and acquire position.
GPS signal levels drop when avionics are turned on.	Noise interference from other avionics.	Turn all avionics off, then turn on each piece one at a time to isolate the source of the interference. Route GPS cable and locate GPS antenna away from sources of interference.
GPS signal levels are very low.	Improper antenna installation or coaxial routing.	Check GPS antenna installation, connections, and cable routing. The GPS antenna must be mounted on the top of the rotorcraft.
	Antenna is shaded from satellites.	Make sure the rotorcraft is clear of hangars, buildings, trees, etc.
	RF interference at 1575.42 MHz from VHF COM.	Add a 1575.42 MHz notch filter in COM coaxial. Fix or replace the COM. Disconnect the ELT antenna coaxial to check for possible re-radiation. Move GPS antenna further from the COM antenna.
GTN COM does not transmit.	The PTT input is not being pulled low.	Check that the MIC 1 Transmit (P1003-11) input is pulled low for transmit. The state of this discrete input can be monitored on the ***Discrete Inputs*** page found on the ***GTN Diagnostics*** page. Refer to Section 3.3.5.
	No transmit power to COM.	Make sure power input is connected to the COM 44-pin connector P1003-30, 43, and 44, and ground to P1003-37, -38, and -40.
	The input voltage is too low.	Increase input supply voltage to >11VDC.
Sidetone level is too low or too high.	Wrong type of headsets or sidetone level needs adjustment.	If necessary, adjust the sidetone level. Sidetone adjustment is found on the ***COM Setup Config Mode*** page.

Problem	Possible Cause	Corrective Action
OBS Resolver won't calibrate.	Incompatible resolver or improper connection.	Check the resolver specifications and wiring.
OBS indication on GTN does not agree with OBS setting.	GTN resolver input not calibrated correctly.	Check wiring and calibration.
	Resolver has not been calibrated.	
GTN HTAWS audio not heard.	HTAWS audio volume level set too low.	Increase HTAWS audio volume level. Check wiring.
	Check audio panel volume and audio wiring.	
	Main software version has just been updated.	1. Allow up to 5 minutes for the TAWS audio clips to load. 2. Cycle power on the GTN and verify the HTAWS audio is working properly.
GTN is not receiving heading from compass system (ARINC 429 heading input used).	ARINC 429 input port speed not correct.	Check ARINC 429 input port speed setting for port that device is connected to and verify the speed is correct for that device.
	Wiring connections are incorrect.	The raw data being received by the GTN can be monitored on the ***ARINC Inputs*** page found on the ***GTN Diagnostics*** page. Refer to Section 3.3.5. Check wiring.
ARINC 429 device is not receiving data from the GTN.	GTN ARINC 429 output not configured correctly.	Check ARINC 429 output port setting for port that device is connected.
	Receiving LRU ARINC 429 input port speed not correct.	Check ARINC 429 input port speed setting for port that device is connected to and verify the speed is correct for that device.
	Wiring connections are incorrect.	Check wiring.

Problem	Possible Cause	Corrective Action
RS-232 device is not communicating with the GTN.	GTN RS-232 port not configured correctly.	Check RS-232 port setting for port which the device is connected.
	Improper setup on the remote device.	Verify the configuration of the other device.
	Device not compatible or improper connection.	Verify GTN RX is connected to remote device TX and GTN TX is connected to remote device RX.
	Multiple TX lines connected together.	Verify there is only one TX source per RX port.
	Wiring connections are incorrect.	Check wiring.
	Baud rate and parity settings not set correctly.	Ensure the correct baud rate and parity settings are selected in Configuration mode.
GTN boots into Configuration mode rather than Normal mode.	Software Loader Card is inserted into data card slot.	Remove Software Loader Card and insert database card. Ensure GTN powers up in Normal mode after this. Reload software into the GTN. Refer to Section 3.2. Ensure the GTN powers up in Normal mode.

4.2 GTN Failure Annunciations

If data fields become invalid, the GTN typically annunciates the failures with a large red “X”.

Figure 4-1 Failure Screen

4.3 GTN System Messages

4.3.1 GTN System Related Alerts

Table 4-2 Alert Text Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
CDI/HSI FLAG - Main lateral/ vertical flag on CDI/HSI is inoperative.	The main lateral or vertical superflag has been turned off due to an overcurrent condition.	Check the GTN main lateral and vertical superflag connections to the CDI/HSI for correct wiring, shorts to ground, and overcurrent. Superflags should not drive more than 320 mA.
COOLING - GTN overtemp. Reducing backlight brightness.	The GTN has detected excessive display backlight temperature. The backlight has been automatically dimmed to reduce the unit temperature.	Check for adequate ventilation or check cooling airflow. Also ensure the cooling fan is operating and is unobstructed.
COOLING FAN - The cooling fan has failed.	The wiring to the fan may be faulty, the fan connector may be unplugged, or the fan may have failed.	1. Check the wires between P1001-43, -58, and -59, and the fan to ensure they are not cut, damaged, or broken. Ensure the fan connector is completely engaged. Check the fan blades for obstructions and ability to turn. 2. Note if the fan does not turn on if the unit is cool. 3. Check P1001 for ground lugs pushing on fan.
CONFIGURATION MODULE - GTN configuration module needs service.	The GTN configuration module has failed. The GTN configuration module is incorrectly wired.	Verify the configuration module wiring is correct. Replace the configuration module.
CROSSFILL ERROR - Crossfill is inoperative. See CRG for crossfilled items.	An error was detected during unit-to-unit communication of data. This can be caused by problems with HSDB wiring or by either GTN needing service. Refer to the Cockpit Reference Guide (CRG) for cross-filled items.	1. Start both GTNs in Configuration mode and ensure that both GTNs are configured for cross-fill. 2. Check J1002 connection on cross-filled GTN units. 3. Ensure that P1002-10 of GTN #2 is connected to ground.
CROSSFILL ERROR - GTN software mismatch. See CRG for crossfilled items.	The software does not match between GTNs. Cross-fill disabled. Refer to the Cockpit Reference Guide (CRG) for cross-filled items.	Check the software version of both GTNs and ensure they match. Update the software if needed.
CROSSFILL ERROR - GTN Navigation DB mismatch.	GTN #1 and GTN #2 have different cycles of the navigation database.	If it is desired to utilize the cross-fill function, load the most current cycles of the navigation database to each GTN.

Alert Text	Possible Cause	Corrective Action
DATACARD ERROR - Data card is invalid or failed.	The data card is not being properly read by the GTN.	Load the Terrain database and any chart databases to a new data card. Replace the failed data card.
DEMO MODE - Demo mode is active. Do not use for navigation.	The GTN is in Demo mode and must not be used for actual navigation.	Check that the DEMO MODE SELECT* input (P1002-1) is not tied to ground. Also ensure that the **Direct-To** key is not stuck.
GTN - GTN needs service.	The GTN has detected an internal failure.	Contact Garmin Product Support.
INTERNAL SD CARD ERROR - GTN needs service.	The GTN's internal data storage has become corrupt or nonfunctional.	Contact Garmin Product Support.
INTERNAL SD CARD REMOVED - GTN needs service.	The GTN's internal data storage has been removed or has become nonfunctional.	Contact Garmin Product Support.
KEY STUCK - HOME key is stuck.	The bezel's **Home** key is stuck in the enabled or pressed state.	Press the **Home** key again to cycle its operation. If the message persists, contact Garmin Product Support.
KEY STUCK - Direct-to key is stuck.	The bezel's **Direct-To** key is stuck in the enabled or pressed state.	Touch the **Direct-To** key again to cycle its operation. If the message persists, contact Garmin Product Support.
KNOB STUCK - Dual concentric inner knob is stuck in the pressed position.	The inner large knob push-key is stuck in the enabled or pressed state. Knob is located on the right side of the unit.	Press the knob to cycle its operation. If the message persists, contact Garmin Product Support.
KNOB STUCK - Volume knob is stuck in the pressed position.	The small knob push-key is stuck in the enabled or pressed state. Knob is located on the left side of the unit.	Press the knob to cycle its operation. If the message persists, contact Garmin Product Support.
REMOTE KEY STUCK - Remote OBS key is stuck.	The remote OBS switch is stuck in the enabled or pressed state.	1. Press the switch again to cycle its operation. 2. Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the OBS switch is pressed and released. 3. Verify the remote OBS switch wiring is correct.
		Contact Garmin Product Support.

Alert Text	Possible Cause	Corrective Action
REMOTE KEY STUCK - Remote CDI key is stuck.	The remote CDI key is stuck in the enabled or pressed state.	1. Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the CDI switch is pressed and released. 2. Verify the CDI switch wiring is correct. 3. Press the switch again to cycle its operation.
		Contact Garmin Product Support.

4.3.1.1 COM Related Alerts

Table 4-3 COM Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
COM RADIO - COM radio may be inoperative.	The GTN is not able to communicate with its COM transceiver.	Check COM connector pins P1003-43 and P1003-44 are receiving aircraft power.
		Check COM connector pins P1003-37 and P1003-38 are connected to aircraft ground.
		If message persists, contact Garmin Product Support.
COM RADIO - COM radio needs service.	A failure has been detected in the COM transceiver. The transceiver may still be usable.	This message may appear after operations in Configuration mode. Cycle power to the entire GTN (both GPS/NAV and COM circuit breakers) and see if the message has cleared.
		Contact Garmin Product Support.
REMOTE KEY STUCK - COM push-to-talk key is stuck.	The COM push-to-talk switch is stuck in the enabled or pressed state.	Press the PTT switch to cycle its operation.
		Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the PTT switch is pressed and released.
		Verify the PTT switch wiring is correct.
		If the message persists, contact Garmin Product Support.
REMOTE KEY STUCK - COM remote transfer key is stuck.	The COM remote transfer key is stuck in the enabled or pressed state.	Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the COM remote transfer switch is pressed and released.
		Verify the COM remote transfer switch wiring is correct.
		Press the COM remote transfer switch to cycle its operation.
		If the problem persists, contact Garmin Product Support.

Table 4-3 COM Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
REMOTE KEY STUCK - COM remote frequency increment key is stuck.	The **COM remote frequency increment** key is stuck in the enabled or pressed state.	Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the **COM remote frequency increment** switch is pressed and released.
		Verify the COM remote frequency increment switch wiring is correct.
		Press the **COM remote frequency increment** key to cycle its operation.
		If the problem persists, contact Garmin Product Support.
REMOTE KEY STUCK - COM remote frequency decrement key is stuck.	The **COM remote frequency decrement** key is stuck in the enabled or pressed state.	Press the **COM remote frequency decrement** key to cycle its operation.
		Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the **COM remote frequency decrement** switch is pressed and released.
		Verify the COM remote frequency decrement switch wiring is correct.
		If the problem persists, contact Garmin Product Support.
COM RADIO - COM overtemp or undervoltage. Reducing transmitter power.	The COM is reporting a high temperature.	Ensure the fan is functioning properly and check for adequate airflow around the unit.
		Ensure that the COM radio is receiving adequate input voltage (11-33 VDC).
COM RADIO - COM locked to 121.5 MHz. Hold remote COM transfer key to exit.	The **COM remote transfer** switch has been pressed for at least 2 seconds.	In Lockout mode, the COM will tune the active frequency to 121.5 MHz and not allow the frequency to be changed. COM Lockout mode can be exited by pressing the **COM remote transfer** switch for at least 2 seconds.

4.3.1.2 GPS/SBAS Related Alerts

Table 4-4 GPS/SBAS Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
GPS RECEIVER - GPS receiver has failed. Check GPS coaxial for electrical short.	A failure has been detected in the GPS/SBAS receiver.	Verify the center conductor is not shorted to the braid in the coaxial cable. Contact Garmin Product Support for assistance.
	GPS antenna cable may be shorted to ground.	
GPS RECEIVER - GPS receiver needs service.	The GTN has detected an internal failure in the GPS/SBAS receiver.	Contact Garmin Product Support.
LOSS OF INTEGRITY (LOI) - Verify GPS position with other navigation equipment.	Improper antenna installation or coaxial routing.	Check GPS antenna installation, connections, and cable routing. The GPS antenna must be mounted on top of the rotorcraft.
	Antenna shaded from satellites.	Make sure the rotorcraft is clear of hangars, buildings, trees, etc.
	RF interference at 1575.42 MHz from VHF COM.	Move GPS antenna further from the COM antenna. Add a 1575.42 MHz notch filter in COM coaxial. Fix or replace the COM. Disconnect the ELT antenna coaxial to check for possible re-radiation.
GPS NAVIGATION LOST - Insufficient satellites. Use other navigation source.	There is no GPS fix available or the system is in Dead Reckoning mode.	Wait for GPS satellite geometry to improve.
		Ensure the rotorcraft has a clear view of the sky.
GPS NAVIGATION LOST - Erroneous position. Use other navigation source.	An internal position warning has occurred.	RAIM has determined that the info from one or more GPS satellites may be in error.
		Ensure the rotorcraft has a clear view of the sky.
GPS RECEIVER - Low internal clock battery.	The GTN has detected a low battery. Almanac data may have been lost.	Replace the battery.
SEARCHING SKY - Search-the-sky in progress.	The GTN is searching the sky for GPS satellites.	Wait 20 minutes for the unit to complete the cycle or until the current position is located.

4.3.1.3 VLOC/GS Related Alerts

Table 4-5 VLOC/GS Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
VLOC RECEIVER - Navigation receiver needs service.	The GTN 650/750 has detected a failure in its navigation receiver.	Contact Garmin Product Support.
VLOC RECEIVER - Navigation receiver has failed.	The GTN 650/750 has detected an internal failure in its VLOC receiver.	Contact Garmin Product Support.
GLIDESLOPE - Glideslope receiver needs service.	The GTN 650/750 has detected an internal failure in its glideslope receiver.	Contact Garmin Product Support.
GLIDESLOPE - Glideslope receiver has failed.	The GTN has detected an internal failure in its glideslope receiver.	Contact Garmin Product Support.
REMOTE KEY STUCK - NAV remote transfer key is stuck.	**NAV remote transfer** key is stuck in the enabled or pressed state.	Press the **NAV remote transfer** switch to cycle its operation.
		Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the **NAV remote transfer** switch is pressed and released.
		Verify the **NAV remote transfer** switch wiring is correct.
		If the problem persists, contact Garmin Product Support.

4.3.1.4 Remote Transponder Related Alerts

Table 4-6 Remote Transponder Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
TRANSPONDER 1 - Transponder 1 needs service.	The transponder is reporting a system failure.	Refer to the transponder installation manual.
TRANSPONDER 2 - Transponder 2 needs service.	The transponder is reporting a system failure.	Refer to the transponder installation manual.
TRANSPONDER 1 - Transponder 1 is inoperative or connection to GTN is lost.	The GTN cannot communicate with the transponder or the transponder is reporting a system failure.	If two transponders are present, ensure that both GTNs are powered on.
		Check for proper configuration of the GTN and transponder RS-232 ports.
		Check for correct wiring.
		Refer to the transponder installation manual.
TRANSPONDER 2 - Transponder 2 is inoperative or connection to GTN is lost.	The GTN cannot communicate with the transponder or the transponder is reporting a system failure.	Ensure that both GTNs are powered on.
		Check for proper configuration of the GTN and transponder RS-232 ports.
		Check for correct wiring.
		Refer to the transponder installation manual.
TRANSPONDER - Transponder 1 and 2 Mode S addresses do not match.	The transponders are configured for different Mode S addresses.	Check the Mode S address for each transponder and verify they match.

4.3.1.5 Traffic Related Alerts

Table 4-7 Traffic Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
TRAFFIC - Traffic device is inoperative or connection to GTN is lost.	Traffic device is not powered up.	Ensure the traffic device is receiving power and is connected to ground.
		Verify the wiring between the GTN and the traffic device.
	Traffic device has failed.	Raw ARINC 429 data can be viewed on the ***GTN Diagnostics - ARINC Inputs*** page in Configuration mode.
TRAFFIC - Traffic device has been in standby for more than 60 seconds.	The GTN is in the airborne state and the traffic device has been in standby for more than 60 seconds.	Troubleshoot the traffic system. Refer to traffic system installation manual.
TRAFFIC - Traffic device user config settings not saved.	The connected traffic system is reporting the battery is low.	Traffic system may require service. Refer to external traffic system maintenance manual for additional details.

4.3.1.6 Data Link Related Alerts

Table 4-8 Data Link Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
DATALINK – GDL 69 is inoperative or connection to GTN is lost.	The GTN cannot communicate with the GDL 69.	Check for proper configuration.
		Ensure the GDL 69 is powered-up.
		Verify the GDL 69 Ethernet ports are enabled.
		HSDB data from the GDL 69 can be routed to the GTN through other Garmin LRUs. Ensure that all Garmin LRUs are powered-up.
DATALINK - GSR 56 is inoperative or connection to the GTN is lost.	The GTN is not able to communicate with the GSR 56 Iridium transceiver.	Check that the GTN is configured correctly with the GSR 56 Iridium transceiver.
		Check the RS-232 wiring between the GTN and GSR 56.
		Check that the GSR 56 is receiving aircraft power and is connected to aircraft ground.
DATALINK - GSR 56 data services inoperative; registration required.	Registration settings have been altered or deleted.	1. In Normal mode, select ***System>External LRUs***. 2. Touch the **More Info** key. 3. Select **Connext Registration** 4. Re-enter the access code. 5. Reactivate account.

4.3.1.7 HTAWS Related Alerts

Table 4-9 HTAWS Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
CONFIGURATION – Terrain/HTAWS configuration is invalid. GTN needs service.	The HTAWS configuration is invalid due to a loss or corrupted registry.	The HTAWS/terrain configuration setting must be re-selected. Re-select the HTAWS or terrain selection and cycle power to the GTN.
		If the problem persists, contact Garmin Product Support.
REMOTE KEY STUCK - RP Mode key is stuck.	The **RP Mode** key/switch is stuck in the enabled or pressed state.	Press the **HTAWS Inhibit** key to cycle its operation.
		Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the **HTAWS Inhibit** switch is pressed and released.
		Verify wiring to the switch.
		If the problem persists, contact Garmin Product Support.
REMOTE KEY STUCK - HTAWS inhibit key is stuck.	The **HTAWS Inhibit** input is stuck in the enabled or pressed state.	Press the **HTAWS Inhibit** key to cycle its operation.
		Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check that the state of the input changes when the **HTAWS Inhibit** switch is pressed and released.
		Verify wiring to the switch.
		If the problem persists, contact Garmin Product Support.
TAWS AUDIO INHIBITED - The TAWS Audio Inhibit discrete has been active for at least 30 seconds.	There is a wiring problem or a problem with the remote LRU(s) that are connected to the GTN audio inhibit input.	Verify wiring to the TAWS AUDIO INHIBIT input.
		Go to the ***GTN Diagnostics - Discrete Inputs*** page in Configuration mode and check the state of the discrete input.
		If the problem persists, contact Garmin Product Support.
HTAWS - Invalid Terrain Database	The terrain database on the data card is not of sufficient resolution for HTAWS.	Go to flyGarmin.com and retrieve the appropriate 3 arc-second terrain database. Load database to the unit and verify the system message has disappeared.
		If the system message persists, contact Garmin Product Support.

4.3.1.8 Third-Party Sensors Related Alerts

Table 4-10 Third-Party Sensor Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
DATA SOURCE - Pressure altitude source inoperative or connection to GTN lost.	The GTN is configured to receive pressure altitude, but is not receiving it from any source.	If the GTN is not expected to receive pressure altitude, ensure that ALTITUDE SOURCE INPUT is configured for *Not Connected*.
		Check RS-232 port setting for the port that the device is connected.
		Verify the configuration of the other device.
		Verify the GTN RX channel is connected to the remote device TX channel.
		Verify there is only one TX source per RX port.
		Check wiring.
DATA SOURCE - Heading source inoperative or connection to GTN lost.	The GTN is configured to receive heading, but is not receiving it from any source.	If the GTN is not expected to receive heading, ensure HEADING SOURCE INPUT and SYNCHRO HEADING INPUT (GTN 7XX only) are configured for *Not Connected*.
		Check ARINC 429 or RS-232 port setting for the port connected to the heading source.
		Verify the configuration of the heading source.
		Check RS-232, ARINC 429, or Synchro (GTN 7XX only) wiring between the GTN and heading source.

4.4 Flight Stream 510 Troubleshooting

Table 4-11 Flight Stream 510 Troubleshooting

Problem	Possible Cause	Corrective Action
Unable to pair PED to Flight Stream 510.	Trying to pair with device while not on the ***Bluetooth Pairing*** page.	Access the ***Connext Bluetooth Pairing*** page by pressing **Home** > **System** > **Connext Setup**.
	Flight Stream 510 paired device storage is full.	Refer to the list of paired devices and verify that the queue is not full. If 13 devices have been previously paired with the Flight Stream, remove a device from the list to pair the new device with the Flight Stream.
	Ensure the Flight Stream has the latest certified software version.	Check software version and update if there is a newer approved version.
PED is not receiving any data from the Flight Stream 510.	Devices need to be re-synced with each other.	1. Access the ***Connext Bluetooth Pairing*** page by pressing **Home** > **System** > **Connext Setup**. 2. Remove the PED from the list of paired devices on the GTN. 3. Remove the GTN from the list of Bluetooth devices on the PED. 4. Re-pair the devices.

4.5 GMA 35 Troubleshooting

4.5.1 GMA 35 Failure Annunciations

A typical failure indication of the GMA 35 audio panel is a red “X”.

Figure 4-2 GMA 35 Failure Annunciation

4.5.2 GMA 35 Troubleshooting Guide

If problems occur after completing maintenance, this section provides information to assist troubleshooting. Refer to the System Configuration and Checkout Log retained in the rotorcraft permanent records for a list of interfaced equipment and system configuration data.

Table 4-12 GMA 35 Troubleshooting Guide

Problem	Possible Cause	Corrective Action
Audio volume, audio routing, music, marker beacon status, or intercom are not working properly.	GMA 35 is not configured properly.	Check the configuration against the configuration log to ensure that the GMA 35 is configured properly.
Audio panel operates only in Fail-safe mode (pilot headset connected to one COM radio, red "X" over the audio panel control field).	GMA 35 is disconnected from rotorcraft power or ground.	Ensure power is connected to P3502, pins 8, and 9, and ground is connected to P3502, pins 10, and 11. Check circuit breakers and avionics switch.
	GMA 35 is not seated correctly.	Verify the GMA 35 is fully seated. Verify that counter-sunk flathead screws are used to secure the GMA 35 connectors to the backplate.
	RS-232 communication between the GTN 7XX and the GMA 35 is not functioning correctly.	Check for proper configuration of the GTN and GMA 35 RS-232 ports.
		Check for correct wiring between the audio panel and the GTN 7XX.
Automatic Speech Recognition (ASR) is not functioning.	ASR is not enabled.	Check the configuration of the controlling GTN 7XX to ensure that VOICE COMMAND under ***Main System Configuration*** is *Enabled*.
	Problems with the Push-To-Command (PTC) switch or wiring from the PTC switch to the GMA 35.	Check the PTC switch for proper operation.
		Inspect the wiring from the PTC switch to the GMA 35.
Bluetooth not working	SMA cable is loose at antenna or on back of the GMA 35c.	Ensure the cable is tight at the antenna and back of the GMA 35c.
	Bluetooth disabled.	Enable Bluetooth under ***Connext Setup*** → ***GMA 35c***.
Unable to pair device to the GMA 35c	Trying to pair the device while not on the *GMA 35c Pairing* page.	Access the ***GMA 35c Pairing*** page by touching **Home** → **System** → **Connext Setup** → **GMA 35c**. If the GMA 35c is the only Bluetooth device, touching **Connext Setup** will automatically open the ***GMA 35c Pairing*** page.

4.5.3 GMA 35 System Messages

Table 4-13 Remote Audio Panel Alert Troubleshooting Guide

Alert Text	Possible Cause	Corrective Action
AUDIO PANEL - Audio panel needs service.	Audio panel should be serviced.	Return audio panel to Garmin for service.
AUDIO PANEL - Audio panel is inoperative or connection to GTN is lost.	Audio panel is not powered-up.	Ensure the audio panel is receiving power and connected to ground.
	Audio panel has failed.	Verify the wiring from the audio panel to the GTN.
	Wiring connections are incorrect.	

5 EQUIPMENT REMOVAL AND REPLACEMENT

This section describes how to remove and replace equipment associated with this STC. After removal and replacement, LRUs must be configured and tested as described in Section 6.

CAUTION

When removing and/or replacing a GTN, GMA 35, or any other item under the scope of the STC installation, always ensure that the rotorcraft power is off. Unplug any auxiliary power supply.

5.1 GTN

Removal

1. Remove power from the GTN.
   Bell and MD Helicopter Models: To remove power, pull all GTN circuit breakers.
   Eurocopter Models: Power is removed for units located in the console by switching off the avionics master relay. For units located in the instrument panel, power is removed by switching off the GPS 1 or GPS/COM 1 switch.
2. Locate the unit retention mechanism access hole at the bottom-left corner of the unit face.
3. Insert a 3/32" hex tool into the access hole and turn the fastener counterclockwise until the unit is forced out about 3/8 inches and can be freely pulled from the rack.
4. Slide the GTN unit out of the rack.

Replacement

CAUTION

Be sure not to overtighten the unit into the rack. The application of hex drive tool torque exceeding 15 in-lbf can damage the locking mechanism.

NOTE

It may be necessary to insert the hex drive tool into the access hole and turn the cam mechanism 90° counterclockwise to ensure correct position prior to placing the unit in the rack.

CAUTION

The Bluetooth antenna port on the GMA 35c has a tight clearance between the GMA and GTN. Ensure the GMA and antenna cable are fully seated before inserting the GTN. The face of the GMA 35c should be flush with the mounting rack when fully seated.

1. Ensure that no power is being supplied to the GTN.
2. Slide the GTN straight into the rack until it stops about 1.0 inch short of the fully-seated position.
3. Insert a 3/32" hex drive into the unit retention mechanism access hole at the bottom of the unit face and turn the tool clockwise while pressing the bezel until the unit is firmly seated in the rack.
4. Verify the unit power-up self-test sequence is successfully completed.
5. Verify there are no failure messages or configuration error messages annunciated. Refer to Section 5.1.1.

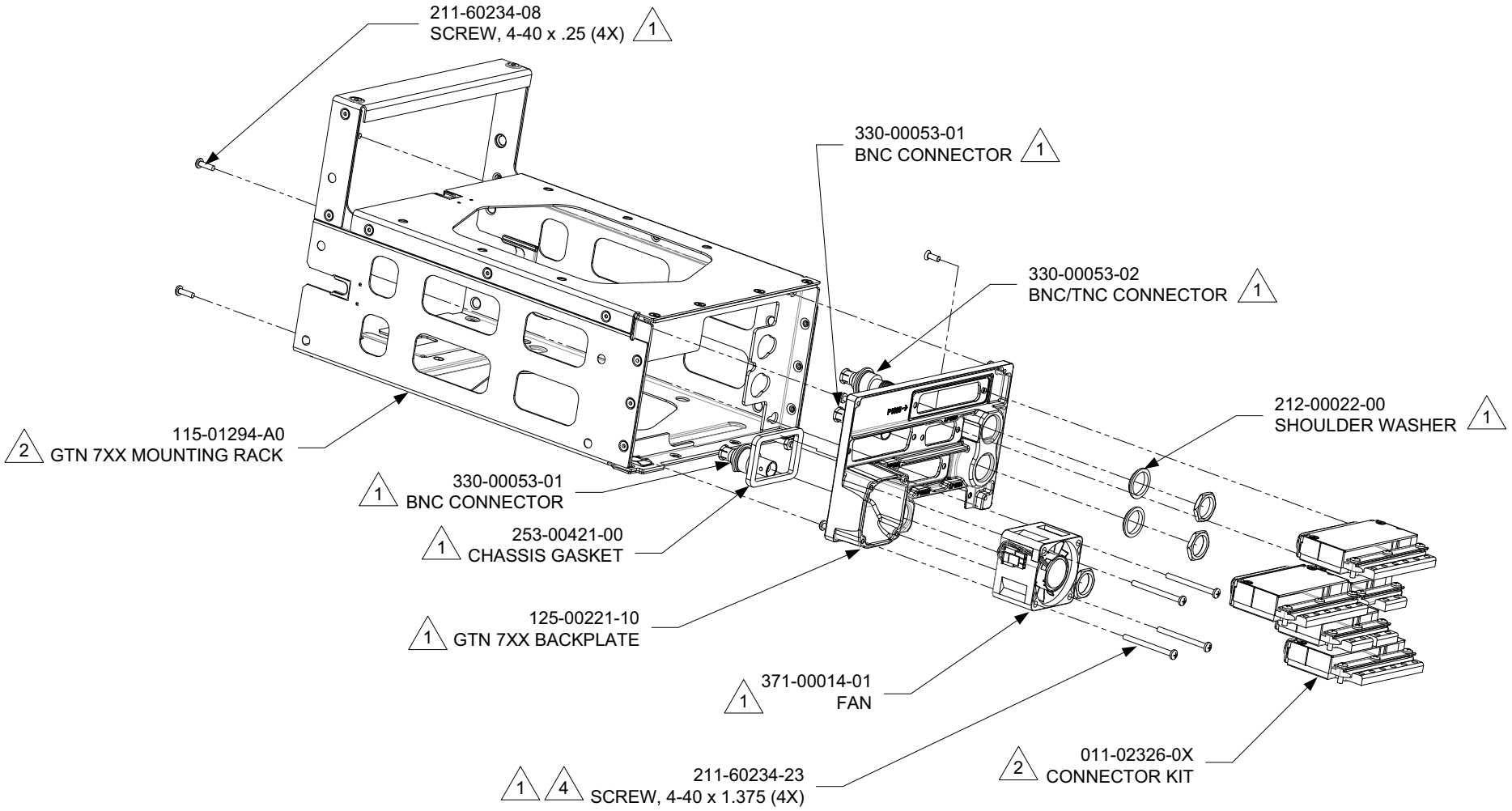


Figure 5-1 GTN 7XX Mounting Rack Assembly
Sheet 1 of 2

UNIT DESCRIPTION	UNIT AND INSTALLATION KIT (5)	CONNECTOR KIT (2)	BACKPLATE KIT (2)	MOUNTING RACK (2)	BACKPLATE KIT CONTENT DIFFERENCES			
					WASHER	QTY (EACH)	BNC CONNECTOR	QTY (EACH)
GTN 725	010-00819-50	011-02326-00	011-02246-00	115-01294-00	212-00022-00	1	330-00053-02	0
GTN 750, (HELO, BLACK)	010-00820-A0	011-02326-02	011-02246-02	115-01294-A0		3		2
GTN 750 (BLACK)	010-00820-50	011-02326-02	011-02246-02	115-01294-00		3		2
GTN 750 (GRAY)	010-00890-50	011-02326-02	011-02246-02	115-01294-00		3		2
GTN 750 (NV, HELO, BLACK)	010-01060-A0	011-02326-02	011-02246-02	115-01294-A0		3		2

NOTES

(1) PART OF P/N 011-02246-00 (GTN 725, BLACK) AND P/N 011-02246-02 (GTN 750, BLACK AND GRAY) KITS. SEE TABLE FOR KIT CONTENT DIFFERENCES.

(2) REFERENCE P/N 010-00819-50 (GTN 725, BLACK), P/N 010-00820-50 (GTN 750, BLACK) AND P/N 010-00890-50 (GTN 750, GRAY) KITS.

3 SEE TABLE FOR KIT REFERENCE INFORMATION.

(4) TORQUE 4.5 - 5.2 IN-LBF.

(5) UNIT AND INSTALLATION KIT PART NUMBER CONTAINS THE UNIT, CONNECTOR KIT, AND MOUNTING RACK.

Figure 5-1 GTN 7XX Mounting Rack Assembly
2 of 2

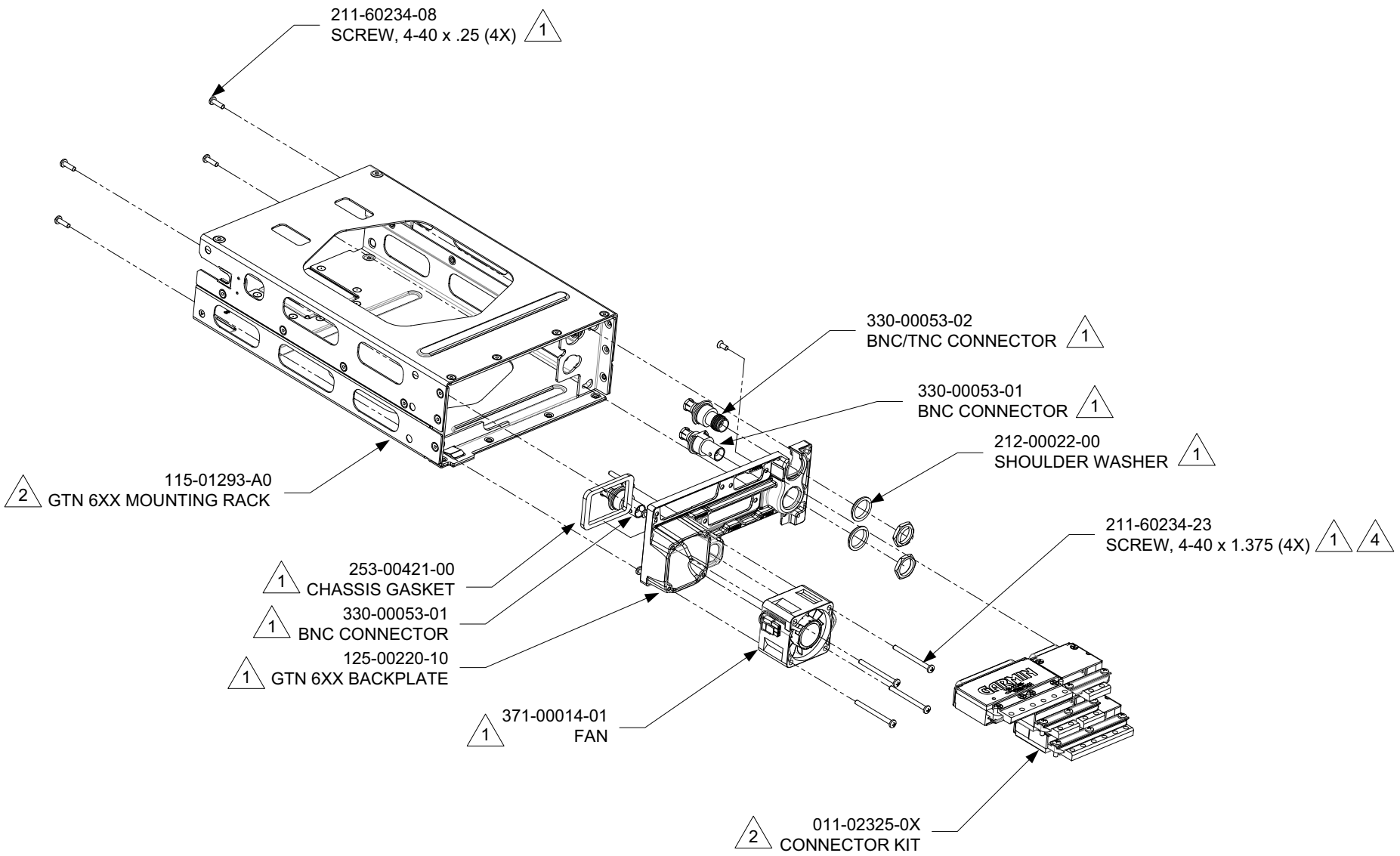


Figure 5-2 GTN 6XX Mounting Rack Assembly
Sheet 1 of 2

UNIT DESCRIPTION	UNIT AND INSTALLATION KIT (5)	CONNECTOR KIT (2)	BACKPLATE KIT (2)	MOUNTING RACK (2)	BACKPLATE KIT CONTENT DIFFERENCES			
					WASHER	QTY (EACH)	BNC CONNECTOR	QTY (EACH)
GTN 625	010-00811-50	011-02325-00	011-02245-00	115-01293-00	212-00022-00	1	330-00053-01	0
GTN 635	010-00812-50	011-02325-01	011-02245-01	115-01293-00		2		1
GTN 635 (HELO, BLACK)	010-00812-A0	011-02325-01	011-02245-01	115-01293-A0		2		1
GTN 650 (BLACK)	010-00813-50	011-02325-02	011-02245-02	115-01293-00		3		2
GTN 650 (HELO, BLACK)	010-00813-A0	011-02325-02	011-02245-02	115-01293-A0		3		2
GTN 650 (GRAY)	010-00889-50	011-02325-02	011-02245-02	115-01293-00		3		2
GTN 650 (NV, HELO, BLACK)	010-01059-A0	011-02325-02	011-02245-02	115-01293-A0		3		2

NOTES

(1) PART OF P/N 011-02245-00 (GTN 625, BLACK) AND P/N 011-02245-01 (GTN 635, BLACK), AND P/N 011-02245-02 (GTN 650, BLACK, GRAY, AND NV) KITS. SEE TABLE FOR KIT CONTENT DIFFERENCES.

(2) REFERENCE P/N 010-00811-50 (GTN 625, BLACK), P/N 010-00812-50 (GTN 635, BLACK), P/N 010-00812-A0 (GTN 635, HELO, BLACK), AND P/N 010-00890-50 (GTN 650, GRAY), P/N 010-00813-50, (GTN 650, BLACK), P/N 010-00813-A0 (GTN 625, HELO, BLACK), AND P/N 010-01059-A0 (GTN 650, NV, HELO, BLACK) KITS.

3 SEE TABLE FOR KIT REFERENCE INFORMATION.

(4) TORQUE 4.5 - 5.2 IN-LBF.

(5) UNIT AND INSTALLATION KIT PART NUMBER CONTAINS THE UNIT, CONNECTOR KIT, AND MOUNTING RACK.

Figure 5-2 GTN 6XX Mounting Rack Assembly
Sheet 2 of 2

5.1.1 Display of Self-Test Data

Following normal power-up, the database pages are displayed, followed by the ***Instrument Panel Self-Test*** page. Touch **Continue** to display the ***Instrument Panel Self-Test*** page. During this time, the electrical outputs are activated and set to the values listed below. Touch **Continue** to acknowledge the ***Instrument Panel Self-Test*** page. This is not a required check, although this page can be useful for troubleshooting installation problems.

Table 5-1 Self-Test Values

Parameter	Self-Test Value
Course Deviation	Half-scale left deviation, TO indication, flag pulled
Glideslope/Vert. Deviation	Half-scale up deviation, flag pulled
Annunciators	All On
OBS	The GTN displays the OBS value (149.5° if interfaced to an HSI with driven course pointer)
Desired Track	149.5° (Displayed as 150°)
Distance to Go [1]	10.0 nautical miles
Time to Go [1]	4 minutes
Bearing to Waypoint (RMI) [1]	135°
Active Waypoint [1]	“GARMN”
Groundspeed [1]	150 knots
Present Position [1]	N 39°04.05’, W 94°53.86’
Waypoint Alert [1]	Active
Phase of Flight [1] [2]	En Route
Message Alert [1] [3]	Active
Leg/OBS Mode [1]	Leg Mode
GPS Integrity [1]	Invalid
Roll Steering (if applicable) [1]	Flight director commands 0° bank (level flight) for 5 seconds; commands increasing right bank at 1°/second for 5 seconds; commands 5° right bank for 5 seconds; commands decreasing right bank at 1°/second for 5 seconds, until command is 0° bank again. This cycle repeats continuously

Notes:

[1] Not displayed on the ***Instrument Panel Self-Test*** page.

[2] Not displayed on the GDU 620.

[3] Not displayed on the GDU 620 for GDU software versions prior to v6.11.

5.2 GMA 35

CAUTION

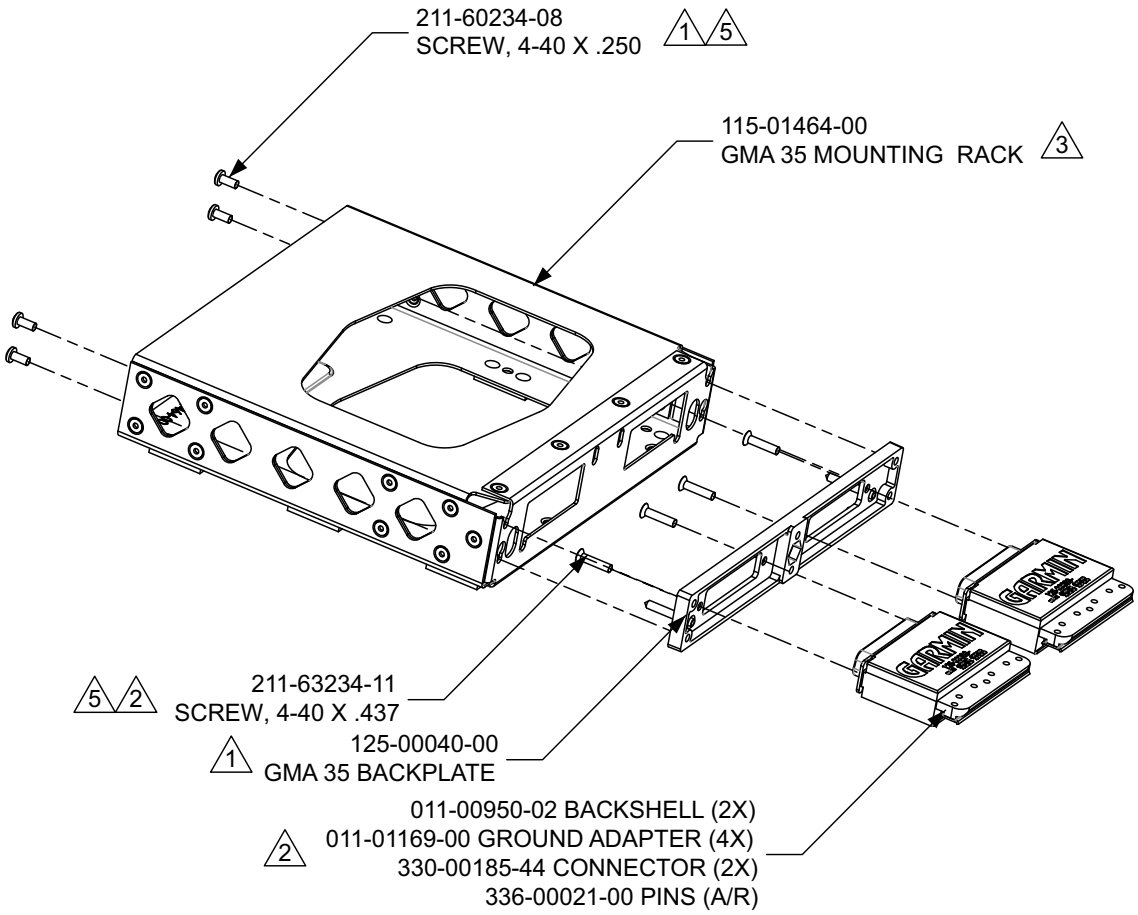
Avoid overtightening the unit into the rack. The application of hex drive tool torque exceeding 15 in-lbf can damage the locking mechanism.

Removal

1. Remove power from the audio panel.
   Bell and MD Helicopter Models: This is accomplished by pulling the audio panel circuit breaker.
   Eurocopter Models: Power is removed from the GMA by switching off the avionics master relay.
2. Ensure that the GTN(s) are not receiving power prior to removal of the audio panel.
3. Remove the GTN 7XX.
4. **GMA 35c only:** Remove the Bluetooth antenna cable.
5. Locate the GMA 35 unit retention mechanism access hole at the bottom center of the unit face.
6. Insert a 3/32" hex tool into the access hole and turn the fastener counterclockwise until the unit is forced out about 3/8 inches and can be freely pulled from the rack
7. Slide the GMA 35 unit out of the rack.

Replacement

1. Ensure that the audio panel and the GTN units are not receiving power.
2. Slide the GMA 35 straight into the rack until it stops.
3. Insert a 3/32" hex drive into the unit retention mechanism access hole at the bottom of the unit face and turn the tool clockwise while pressing on the face of the unit until the GMA 35 is firmly seated in the rack.
4. **GMA 35c only:** Re-install the Bluetooth antenna cable. Torque to 8-10 in-lbf using a 5/16” SMA torque wrench.
5. Re-install the GTN 7XX.
6. Verify there are no failure messages or annunciations when the GTN and audio panel are powered on.



1 PART OF 011-02300-00 BACKPLATE KIT.

2 PART OF 011-02302-00 CONNECTOR KIT.

3 PART OF 010-00831-01 INSTALLATION KIT.

4 REFER TO TABLE FOR KIT REFERENCE INFORMATION.

5 TORQUE 4.5 – 5.2 IN-LBS.

Unit DESCRIPTION	INSTALLATION KIT	CONNECTOR KIT	BACKPLATE KIT
GMA 35	**010-00831-01**	**011-02302-00**	**011-02300-00**
GMA 35	**010-00831-21**	**011-02302-00**	**011-02300-00**
GMA 35c	**010-00831-41**	**011-02302-00**	**011-02300-00**

Figure 5-3 GMA 35 Mounting Rack Assembly

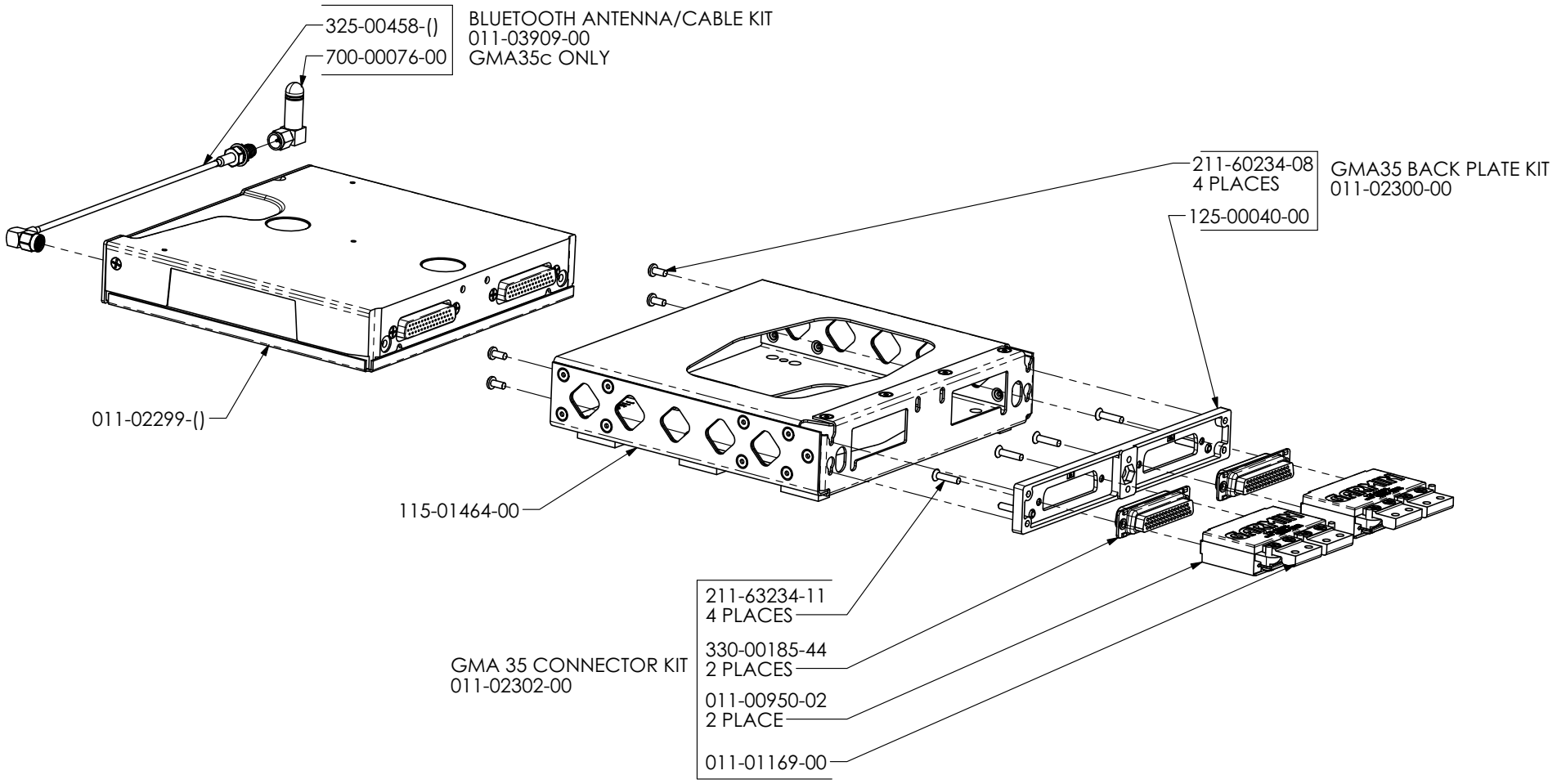


Figure 5-4 GMA 35c Mounting Rack Assembly Overview

5.3 Data Card/Flight Stream 510

CAUTION

Handle the data cards carefully. Do not touch the connector edge of the data card.

NOTE

A data card containing databases (including Flight Stream 510) is required for full system functionality and must be installed during operation.

To replace the data card, complete the following steps:

1. Ensure that the GTN is turned off.
2. Remove the data card by pressing the card until it disengages and then pull the data card to extract from the unit.
3. With the label facing right, insert the new data card by pushing the card straight into the slot and press until it is fully inserted.

5.4 GPS/WAAS Antenna

Removal

1. Verify the power to the GTN unit is off.
2. Disconnect the coaxial antenna connector(s) on the antenna.
3. Remove the sealant from the antenna and fuselage.
4. Remove the mounting screws on the antenna.
5. Retain the screws for replacement.
6. Remove the antenna.

Replacement

1. Clean the area of debris or excess sealant.
2. Install the antenna with four mounting screws. Torque mounting screws to specified value called out in the antenna installation instructions.
3. Verify the resistance is 2.5 mΩ or less between the antenna connector body and a nearby exposed portion of conductive aircraft structure.
4. Re-seal the antenna to the fuselage.
5. Connect the antenna connector(s) to the antenna ensuring each connector is secured.

5.5 NAV Antenna Cable Diplexer

Removal

1. Disconnect the coaxial connectors from diplexer, taking note of which coaxial connectors are connected to each port on the diplexer.
2. Remove the mounting screws and diplexer.

Replacement

1. Replace the diplexer over the existing hole pattern and re-install fasteners. Torque fasteners within 22 to 25 in-lbf.
2. Reconnect the coaxial connectors to the diplexer.

5.6 NAV Antenna Cable Splitter

Removal

1. Disconnect the coaxial connectors from splitter, taking note of which coaxial connectors are connected to each port on the splitter.
2. Remove the mounting screws and splitter.

Replacement

1. Re-install the splitter over the existing hole pattern and re-install fasteners. Torque fasteners within 5 to 6 in-lbf.
2. Reconnect the coaxial connectors to the splitter.

5.7 Configuration Module (P1001 Only)

GTN P1001 connector assemblies serve as the housing for a configuration module. This section lists configuration module assembly for existing GTN installations.

Table 5-2 Configuration Module Wire Color Reference Chart

Color	Function	P1001 Contact
Red	Vcc	65
Black	Ground	64
Yellow	Data	62
White	Clock	63

NOTE

The pin contacts supplied with the GTN configuration module are specifically made to accommodate 28 AWG wire. The crimp tool should have the indenter set to the correct setting when crimping these contacts to the configuration module harness.

Configuration modules are located within the GTN harness connector backshell. Refer to Figure 5-5. The configuration module kit listed in Table 5-3 is recommended for all replacements.

Table 5-3 Configuration Module Kit P/N 011-00979-03 (P1001)

Refer to Figure 5-5	Description	Garmin P/N
1	Configuration module, PCB board assembly w/EEPROM	011-02178-00
3	4-conductor harness	325-00122-00
4	Pin contact, crimp, #22D	336-00021-00

Removal

1. Disconnect the connector from the GTN backplate assembly.
2. Remove two screws (**8**) from cover (**7**) and remove cover. Refer to Figure 5-5 for this step.
3. Unplug the connector from the configuration module (**1**).
4. Remove the configuration module from the backshell connector.

Replacement

1. Inspect the connector for damaged pins (**4**).
2. Place the configuration module (**1**) in position.
3. Insert connector into the configuration module (**1**).
4. Place the cover (**7**) back on the connector and reinstall screws (**8**). Refer to Figure 5-5 for this step.

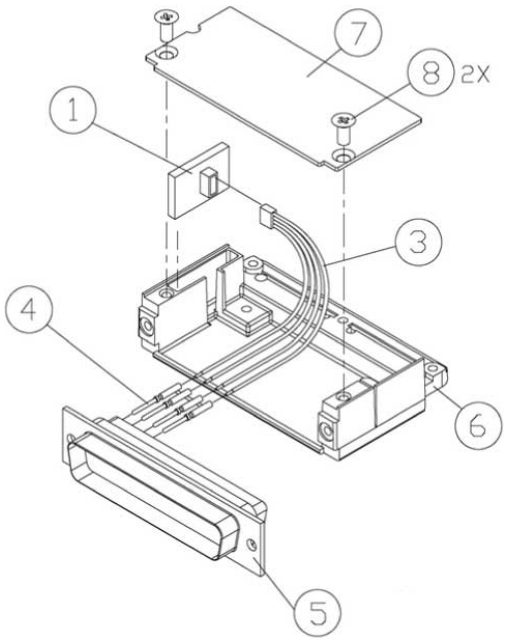


Figure 5-5 Backshell Assembly (Potted Configuration Module)

5.8 GTN Cooling Fan

CAUTION

To avoid damage to the GTN, take precautions to prevent Electrostatic Discharge (ESD) when handling the GTN, connectors, fan, and associated wiring. ESD damage can be prevented by touching an object that is of the same electrical potential as the GTN before handling the GTN itself.

The GTN cooling fan assembly is located behind the rack relative to the unit. Fan removal and replacement details for specific installations fall outside the scope of this manual.

Removal

1. Remove power from the GTN.
2. Remove the GTN unit from the rack. Refer to Section 5.1.
3. Loosen the four 4-40 x 0.25" panhead screws at each corner of the inside rear wall of the rack.
4. While depressing the metal spring at the lower-left corner of the rack's rear face, slide the connector backplate to the left. The connector backplate is now free of the rack.
5. Disconnect the fan power connector. Be careful to avoid damaging the fan wires.
6. Remove the four 4-40 x 1.375" panhead screws attaching the fan to the backplate.

Replacement

1. Position the fan on the backplate with the fan connector pigtail oriented along the left edge of the backplate, as shown in Figure 5-6.
2. Re-install screws.
3. Connect fan power connector.

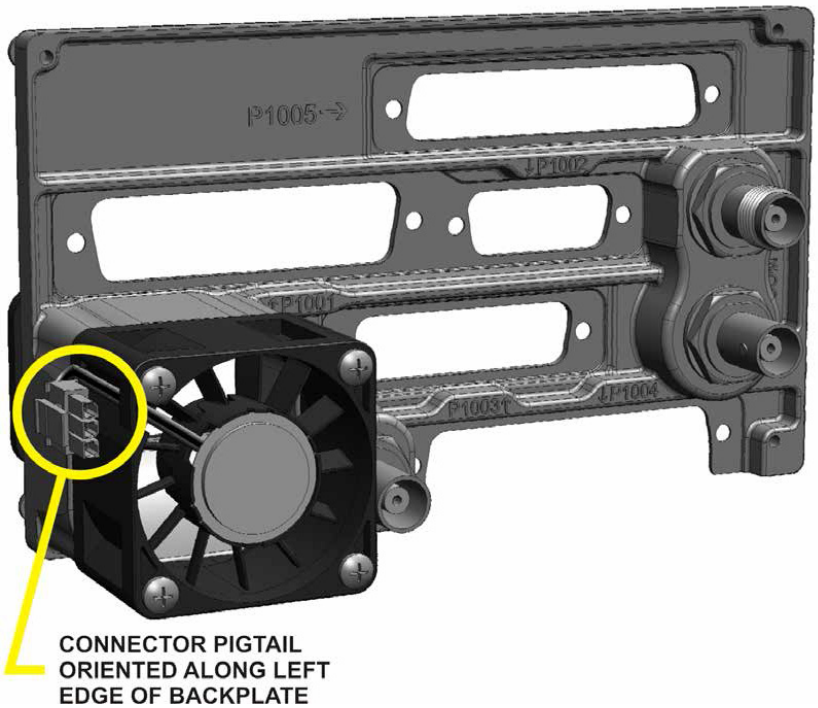


Figure 5-6 Fan Location on GTN Backplate (GTN 7XX Shown)

Table 5-4 lists part numbers for the fan kit that is used with P1001 only.

Table 5-4 Fan Kit

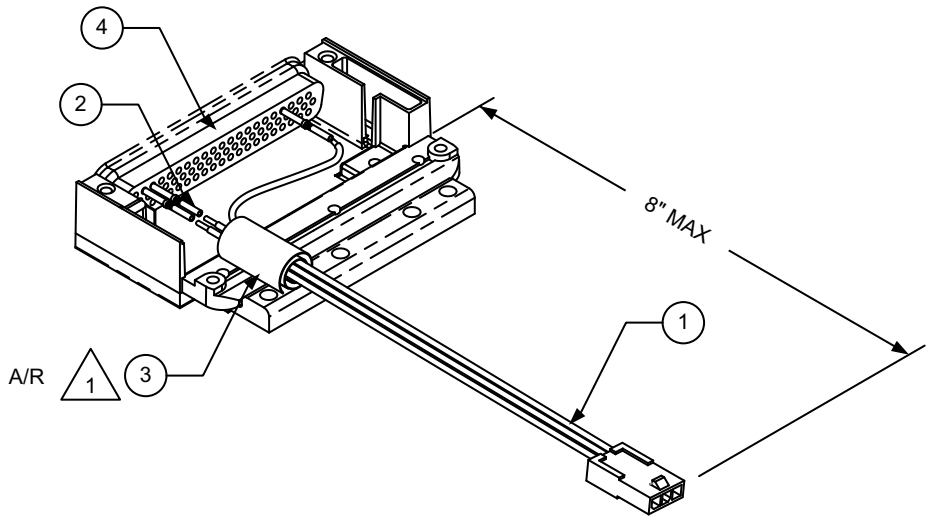
Refer to Figure 5-7	Description	Garmin P/N
1	Fan cable assembly, 3-conductor harness	320-00600-00
2	Pin contact, crimp, #22D	336-00021-00
3	Silicone fusion tape	249-00114-00

Table 5-5 Fan Cable Wire Color Reference Chart

Color	Function	P1001 Contact
Red	Power	59
Black	Ground	43
Yellow	Fan tachometer	58

Fan Wiring Harness Replacement

1. Strip 0.17 inches of insulation from each wire prior to crimping.
2. Crimp socket contacts onto each wire of the 3-conductor wire harness.
3. Insert newly crimped socket contacts and wires into the appropriate connector housing location, as shown in Figure 5-7.
4. Plug the 3-conductor wire harness connector into the connector on the fan.



NOTES:

1. WRAP FAN WIRES FITH FUSION TAPE SEPARATELY FROM THE MAIN HARNESS.

Figure 5-7 Fan Wiring Installation

6 RETURN TO SERVICE

This section provides return to service procedures to be followed after removal and replacement of equipment comprising part of or interfaced to the GTN 6XX/7XX. After conducting all of the required return to service procedures in accordance with this section, the craft may be returned to service.

6.1 Maintenance Records

Record the following information in the appropriate rotorcraft maintenance logs:

- Version number(s) of software loaded during maintenance
- Part and serial numbers of any equipment replaced
- Database updates performed during maintenance
- Other relevant rotorcraft maintenance information

6.2 Return to Service Procedures

6.2.1 GTN 6XX/7XX

Original GTN 6XX/7XX Re-Installed

If the removed GTN is installed in its original position, no software loading or configuration setting changes are required. This does not include units that were returned for repair as their software and configuration files are deleted during the repair testing progress. It is recommended to perform the Connector Engagement Check to ensure that the GTN is properly seated to the connectors. Refer to Section 6.3.2.

New, Repaired, or Exchanged GTN Installed

If a new, repaired, or exchanged GTN is installed, the correct software must be loaded to the unit. Some configuration files must be set. Any enabled features such as HTAWS B or ChartView will not need to be re-enabled if the configuration module was left in the rotorcraft. Verify configuration of the new GTN against the configuration log and set any configuration settings that are not the same as the previously configured unit. Refer to *GTN 6XX/7XX Part 27 AML STC Installation Manual* for configuration details.

NOTE

The steps in the following procedure are applicable to all GTN models unless otherwise noted in the individual steps.

1. For the GTN 635/650/750, complete the COM Configuration Procedure described in Section 6.3.1.
2. For the GTN 650/750, complete the VOR/LOC/GS Configuration Procedure in Section 6.6.2.
3. Complete the GTN ground checks described in Section 6.3.
4. For the GTN 650/750, complete the VOR/ILS/GS Indicator Ground Checks described in Section 6.6.4.
5. Complete the appropriate interface checks in Section 6.3.
6. Ensure that the Basemap, Navigation, SafeTaxi, and Obstacle databases are up-to-date, as described in Section 3.4.
7. Insert the data card from the original GTN into the replacement unit.

6.2.2 GTN Configuration Module

Original Configuration Module Re-Installed

No return to service procedures are required.

New or Exchanged Configuration Module Installed

Verify GTN configuration settings against the configuration log kept with the rotorcraft permanent record. Refer to *GTN 6XX/7XX Part 27 AML STC Installation Manual* for configuration details.

6.2.3 GTN Fan

Perform the fan check in Section 6.9.

6.2.4 GMA 35 (GTN 725/750 Only)

Original GMA 35 Re-Installed

No return to service procedures are required.

New, Repaired, or Exchanged GMA 35 Installed

1. Configure the GMA 35 in accordance with the configuration log kept with the rotorcraft permanent record.
2. Perform the GMA 35 testing procedure in Section 6.4.2.

6.2.5 Navigation Indicator

Original Navigation Indicator Re-Installed

No return to service procedures are required.

New, Repaired, or Exchanged Navigation Indicator Installed

Calibrate the navigation indicator in accordance with Section 6.6.

6.2.6 Transponder

Original Transponder Re-Installed

No return to service procedures are required.

New, Repaired, or Exchanged Transponder Installed

1. Configure the transponder in accordance with Section 6.7.1.
2. Perform the appropriate interface check in accordance with Section 6.7.2.
3. If TIS is enabled, perform the appropriate interface check in accordance with Section 6.8.3.

6.2.7 Altitude Encoder/Air Data Computer/Fuel-Air Data Computer

On the ***GTN Diagnostics*** page, verify the GTN is receiving data from the LRU/sensor.

6.2.8 Traffic/Weather System

Original Traffic/Weather System Re-Installed

No return to service procedures are required.

New, Repaired, or Exchanged Traffic/Weather System Installed

Perform the appropriate interface check in Section 6.8.

6.2.9 Radar Altimeter

Original Radar Altimeter Re-Installed

No return to service procedures are required.

New, Repaired, or Exchanged Radar Altimeter Installed

Perform interface check in accordance with Section 6.10.

6.2.10 Flight Stream 510

Original Flight Stream 510 Re-Installed

No return to service procedures are required.

New, Repaired, or Exchanged Flight Stream 510 Installed

Update databases as necessary, as described in Section 3.4.

6.3 GTN Configuration and Testing

This section covers the configuration and checkout procedures that must be completed when a GTN is replaced with an equivalent unit. The steps provided in this section are only applicable for replacement of an equivalent GTN unit (i.e., 750 for 750, 625 for 625, etc.). If wiring updates are needed, or the configuration module is being replaced simultaneously, refer to *GTN 6XX/7XX Part 27 AML STC Installation Manual* for installation instructions.

For instructions on feature enablement, refer to Section 3.3.4. If the configuration module is not replaced, the enabled features will be retained upon replacing the GTN.

Ground checks of the GTN require the GTN to be powered-up in Configuration mode as described in Section 3.3.

6.3.1 COM Configuration Page (GTN 635/650/750 Only)

Select the ***COM Configuration*** page from the ***GTN Setup*** page. These values are set at the factory and rarely require calibration.

To enable or disable the COM radio, touch the **COM** key to toggle between *Enabled* and *Disabled*. The COM radio defaults to the enabled state.

Review the COM configuration settings on the GTN and compare them against the GTN Configuration Log that is retained with the rotorcraft permanent record. A blank copy of the GTN Configuration Log form may be found in Appendix A of this document. If any of the settings differ from the checkout log, update the settings to the correct value. For information regarding individual settings, refer to *GTN 6XX/7XX Part 27 AML STC Installation Manual*.

6.3.2 Connector Engagement Check

Prior to configuration and checkout of the GTN, perform a connector engagement check.

1. Remove power from the GTN.
2. Slide the GTN straight into the rack until it stops about 1 inch short of the fully seated position.
3. Insert a 3/32" hex drive into the unit retention mechanism access hole at the bottom of the unit face and turn the tool clockwise while pressing the bezel until the unit is firmly seated in the rack.
4. With the GTN seated, re-apply power.
5. Insert the hex drive into the unit retention mechanism access hole.
6. Turn the tool counterclockwise to back out the retention mechanism. Ensure that three (3) complete revolutions of the hex screw can be performed without a red “X” indication or loss of power to the GTN.

NOTE

If power is lost or the red “X” condition occurs with fewer than three (3) turns, ensure there are no obstructions to the unit fully seating in the rack. The mounting rack may need to be moved aft (toward the pilot) such that the rotorcraft panel does not obstruct the unit from properly engaging in the rack.

7. Remove power from the unit.
8. Re-seat the GTN as described in step 3.

6.3.3 Signal Acquisition Check

NOTE

All other avionics should be turned off at the start of this test, with the GTN powered on in Normal mode. After replacement, the initial acquisition of position can take up to 20 minutes. Subsequent acquisitions will not take as long.

NOTE

For best results, this check should be performed outdoors away from large buildings or objects that could obstruct the GPS antenna.

NOTE

If the unit is unable to acquire satellites, move the rotorcraft away from obstructions that might be shading GPS reception. If the GPS solution does not improve, check the GPS antenna installation.

1. Ensure the GTN is able to acquire sufficient satellites to compute a GPS position.
2. From the home page, touch the **System** key.
3. Touch the **GPS Status** key.
4. Under GPS Solution, ensure that a 3D Fix or 3D Diff Fix is obtained.
5. Once GPS position information is available, verify the LAT/LON agree with a known reference position.

6.3.4 Receiver/Transmitter Operation (GTN 635/650/750 Only)

1. Tune the unit to a local VHF frequency.
2. Verify the receiver output produces a clear and understandable audio output.
3. Verify the transmitter functions properly by contacting another station and getting a report of reliable communications.

6.3.5 COM RX Squelch Check (GTN 635/650/750 Only)

NOTE

COM RX Squelch was referred to as COM RF Squelch in software versions prior to v6.50. The COM RX Squelch settings allow adjustment of the noise signal strength required to break squelch for the COM receiver.

In late 2013, Garmin changed the GTN COM radio factory calibration process to allow the level at which the auto squelch opens or closes to be set at a more sensitive level. The COM RX squelch range (0-100) was remapped, as shown in Table 6-1. Installations of radios with the expanded sensitivity calibration process may require a different COM RX Squelch setting to achieve the desired RX squelch performance. All current production units are shipped with the expanded sensitivity calibration process.

Approximate levels when the auto squelch opens and closes for various COM RX squelch settings is provided in Table 6-1. Installations of GTNs with the expanded sensitivity calibration will generally use a COM RX Squelch setting of 75 or higher. Installations of GTNs with the original sensitivity calibration will generally use a COM RX squelch setting of 0 or higher.

Table 6-1 Summary of COM RX Squelch Settings and Auto Squelch Levels

COM RX Squelch Setting		Original Calibration Approximation	Expanded Calibration Approximation
0	Auto Squelch open	-99 dBm	-105 dBm
	Auto Squelch close	-101 dBm	-107 dBm
75	Auto Squelch open	-97 dBm	-99 dBm
	Auto Squelch close	-99 dBm	-101 dBm
100	Auto Squelch open	-93 dBm	-93 dBm
	Auto Squelch close	-95 dBm	-95 dBm

To set the COM Squelch setting, tune the COM to a local COM frequency. Verify squelch breaks when the pilot begins talking. If the squelch breaks too early, increase the value. If it does not open when the pilot begins speaking over the radio, decrease the value.

COM Carrier Squelch Check (GTN Main Software v6.50 or Later, COM v2.30 or Later)

COM carrier squelch settings allow adjustment of the carrier signal strength required to break squelch for the COM receiver.

The COM carrier squelch level adjustment reduces the sensitivity of the COM receiver. Elevated, ambient RF interference levels in certain flight environments, such as aircraft operating busy airport environments or aircraft with equipment installed that interferes with the COM radio, may require adjustment of the COM carrier squelch to reduce undesired squelch breaks.

Table 6-2 COM Carrier Squelch Selections

Selection	Description
Basic	Applies a COM carrier squelch value of 0 to 25 kHz and 8.33 kHz spacing.
Advanced	Allows the adjustment of COM carrier squelch values.
Spacing	Allows the adjustment of COM carrier squelch values for 25 kHz and 8.33 kHz spacing separately.
Squelch	The COM carrier squelch is adjustable in the range of 0 to 100. The default value is 0. Decreasing the value allows the carrier squelch to be broken with low signal levels. Increasing the value requires higher signal levels to break carrier squelch.

Table 6-1 lists approximate levels when the carrier squelch opens for various COM Carrier Squelch settings. Installations requiring adjustment generally use a COM carrier squelch setting of 33 or higher for 25 kHz spacing and 0 for 8.33 kHz spacing.

Table 6-1 COM Carrier Squelch Selections

COM RF Squelch Setting [1]	**Carrier Squelch Open Approximation**	
	25kHz Spacing	**8.33 kHz Spacing** [3]
0 [3]	-96 dBm	-94 dBm
33	-93 dBm	-91 dBm
55 [2]	-91 dBm	-89 dBm
66	-90 dBm	-88 dBm
100	-87 dBm	-85 dBm

Notes:

[1] The COM carrier squelch range (0-100) is a linear response.

[2] Many aviation COM radios have the carrier squelch set to open at approximately -91 dBm in 25 kHz spacing and -94 dBm in 8.33 kHz spacing.

Setting the 8.33 kHz COM carrier squelch value to 0 ensures compliance with ETSO-2C169a. When the 8.33 kHz COM carrier squelch is set to a non-zero value, the COM receiver may not meet the multi-carrier sensitivity requirement of 3.1.3.2 of ED-23C.

6.4 GMA 35 Configuration and Testing

The following steps must be performed when replacing a GMA 35 Audio Panel.

1. Load GMA 35 software. Refer to Section 3.2.2.
2. Configure audio panel. Refer to Section 6.4.1.
3. Perform ground check. Refer to Section 6.4.2.

6.4.1 GMA 35 Audio Panel Configuration (GTN 7XX Only)

1. In Configuration mode, touch the **External Systems** key.
2. Touch the **Audio Panel** key.
3. To access configuration settings for audio routing, volume, and miscellaneous options, touch the **Configure** key.
4. To return to the ***Audio Panel*** page, touch **Back**.

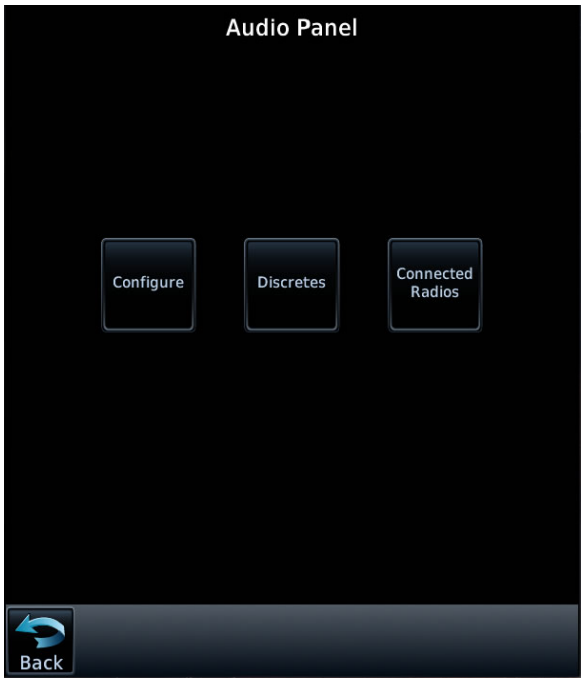


Figure 6-1 Audio Panel Configuration Page

5. To access the configuration settings for discrete connections to the audio panel, touch the **Discretes** key.
6. To return to the ***Audio Panel*** page, touch the **Back** key.
7. To set the status (*Present* or *Not Present*) of COM 2, COM 3, NAV 1, NAV 2, RCVR 3, RCVR 4, RCVR 5, TEL, Music 1, Music 2, and Marker Beacon, touch the **Connected Radios** key.
8. Touch the **Back** key to return to the ***Audio Panel*** page.
9. Review the GMA 35 Audio Panel configuration settings on the GTN and compare them against the GTN Configuration Log.

A blank copy of the GTN Configuration Log form may be found in the appendices of this document. If any of the settings differ from the configuration log, update the settings to the correct value. For information regarding individual settings, refer to *GTN 6XX/7XX AML STC Installation Manual*.

6.4.2 GMA 35 Interface Check (GTN 7XX Only)

1. With the GTN running and the GMA 35 Audio Panel powered on, go to the home page and touch the **Audio Panel** key.
2. Ensure a red "X" is not displayed over the **Audio Panel** key.

After configuring the audio panel, an in-rotorcraft checkout may be performed with a good microphone, headset, speaker, and avionics receivers. For testing the marker beacon, use a ramp tester that transmits a 75 MHz marker beacon test signal.

For instructions on how to operate the GMA 35 in Normal mode during checkout procedures, refer to *GTN 725/750 GMA 35 Pilot's Guide* (P/N 190-01007-03).

6.4.2.1 GMA 35c Bluetooth Audio Check

NOTE

In the following procedural steps, allow for variation in the configuration settings for the particular installation under test.

While on the ground, turn on the GTN and GMA 35c. A compatible Bluetooth-capable device is required.

NOTE

To verify telephone audio, a Bluetooth-compatible phone is required.

1. Go to the ***GMA 35c*** page by touching **System → Connext Setup → GMA 35c**.
2. Ensure Bluetooth is enabled.
3. On the PED, view the list of available Bluetooth devices.
4. Select the device that matches the Bluetooth name shown on the GTN screen.
5. Verify that the PED is paired with the GTN. A green checkmark is displayed by the paired device.
6. Touch **Intercom** on the GTN 725/750.
7. Touch **Bluetooth Audio** and set distribution to *Pilot, Co-pilot, and Passenger*.
8. Touch **Radio** to mute Bluetooth during radio transmissions.
9. Touch **Intercom** to mute Bluetooth during intercom transmissions.
10. Verify that the audio from the PED is distributed to the selected positions.
11. Tune and monitor a COM frequency to ensure communications over the radio are easily heard over the audio.

NOTE

If different values are used for the telephone and audio volume settings, repeat this procedure while making a call from a Bluetooth compatible phone.

12. Adjust the Bluetooth volume as necessary.

6.4.3 Failsafe Operation Check

NOTE

In the following procedural steps, allow for variation in the configuration settings for the particular installation under test.

NOTE

A true mono headset is required for the failsafe operation check. Do not use headsets with a mono/stereo switch. The failsafe mode will not function with mono headsets if the left channel (tip contact) and right channel (ring contact) are wired backwards.

NOTE

If the configuration setting COM 1 is connected as COM 2 is set to True, then the COM 2 microphone should be exercised rather than COM 1.

1. Power the GMA 35 off by pulling the audio panel circuit breaker.
2. Check the failsafe operation by exercising the COM1 microphone, microphone key, and audio over the pilot's headphones.
3. Verify that COM1 can key and transmit the pilot's microphone audio by verifying received sidetone or checking reception of the transmission with another radio tuned to receive this transmission (verify Pilot PTT and microphone operation is delivered to this transceiver).
4. Turn the unit back on to continue testing.

6.4.4 COM Transceiver Operational Check

NOTE

Depending on configuration settings, the mic-selected COM radio may mute audio from other COM radios.

NOTE

Depending on configuration settings, other transceivers may be muted during transmit. Also, the audio panel may mute the speaker during PTT.

1. Connect a headset to the pilot's headset output and microphone input jack.
2. Verify that each installed transceiver (COM) can be heard when selected.
3. Verify that each installed transceiver keys for transmission and transmits clear audio from the pilot's mic when selected for transmission and the Pilot **PTT** key is pressed. Because the audio panel can be configured to simulate received sidetone internally, verifying transmission with a separate radio not in the system is recommended.
4. Move the headset to the co-pilot's headset jacks and verify that any one of the installed transceivers (testing each is not necessary) receives and transmits co-pilot mic properly as above.

6.4.5 NAV Audio Check

Ensure the GMA 35 and each installed NAV receiver is powered on.

1. Tune the NAV receiver to a local VOR station.
2. Ensure the Morse code identifier is being received over the crew headsets.
3. If the audio is not heard, verify the wiring to the audio panel.
4. Ensure the audio volume is sufficient for all anticipated cockpit noise conditions.

Repeat steps 1 through 4 for each installed NAV receiver.

6.4.6 Alert Audio Check

If there is an alert audio source connected to the GMA 35, the interface should be verified as described below:

1. Cause the alert audio source to produce audio (e.g., if a traffic system is installed, command the traffic system into Self-Test mode. If a HTAWS system is installed, command the HTAWS system into Self-Test mode).
2. Verify the alert audio source is heard in the pilot and co-pilot headsets and that the audio volume is sufficient for all anticipated cockpit noise conditions. Adjust the audio volume level as needed. For modification of configuration settings, refer to the *GTN 6XX/7XX AML STC Installation Manual*.
3. If the alert audio source is not heard in the crew headsets, check the wiring from the source to the GMA 35 alert audio inputs.

Repeat steps 1 through 3 for each alert audio source connected to the GMA 35.

6.4.7 ICS Check

NOTE

If a monaural headset is plugged into any stereo phone jack position, no damage will occur to the GMA 35. In the case of plugging a monaural headset into any passenger position, any stereo listener will lose one channel when another passenger plugs in a monaural headset.

1. Place the audio panel into ALL ICS mode (refer to the *GTN 725/750 Pilot's Guide*) so that all ICS positions hear all others.
2. De-select or turn off other audio sources (e.g., MKR, transceivers, receivers, alerts). Some configurations may mute passenger intercom audio to crew when rotorcraft audio is present.
3. From the pilot headset position, verify the pilot, co-pilot, and all passenger mic inputs can be heard in the pilot's headset when speaking into the mic input under test (adjust pilot ICS volume, if necessary).
4. Speak into the pilot's mic and verify that pilot mic audio is heard in the co-pilot headset (adjust co-pilot ICS volume, if necessary) and in each passenger headset (adjust passenger ICS volume, if necessary).

6.4.8 Music System Check (If Installed)

1. Set the intercom to the ALL mode.
2. Connect a stereo audio source to MUSIC 1 or MUSIC 2. Verify that stereo audio is heard over the pilot headset position.
3. Tune a station on COM 1.
4. Verify the sound is muted by active COM 1 audio. If necessary, break squelch on COM 1.
5. Verify the stereo audio is heard in the passenger headsets.

6.4.9 Telligence™ Voice Command Check (If Installed)

1. Press and hold the pilot push-to-command switch.
2. Say a voice command into the pilot microphone (e.g., say, “Pilot Volume Up”).
3. Release the pilot push-to-command switch.
4. Verify the commanded audio panel setting is changed. Only one command needs to be tested to verify the functionality of the feature.
5. Repeat steps 1-4 for co-pilot push-to-command switch, if installed.

6.5 Interfaced Equipment Configuration and Checkout

This manual does not cover the removal and replacement of the following interfaced equipment. However, the following procedures are required to ensure proper functionality with the interfaced equipment. Perform the following calibration procedures and interface checks after replacing any of the optionally interfaced equipment.

6.6 Navigation Indicator Configuration and Checkout

1. Perform calibration per Section 6.6.2 (if using GPS) or Section 6.6 (GTN 650/750 only) if using VOR/LOC/GS receiver.
2. Perform ground checks per Section 6.3 and the appropriate interface check.

6.6.1 Main Indicator (Analog) Configuration Page

Select the ***Main Indicator (Analog) Configuration*** page from the ***GTN Setup*** page. This page allows you to calibrate the OBS resolver, configure the CDI key, selected course for GPS and VLOC, as well as the V-Flag state. The ***Main Indicator (Analog) Configuration*** page allows the CDI connected to the NAV board (P1001) to be ground checked and allows the NAV indicator interface to be verified. For the ground check procedure, refer to Section 6.6.3.

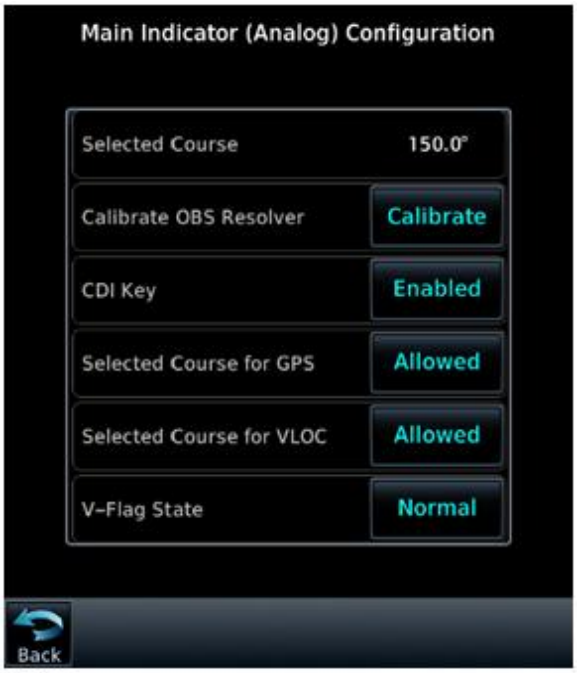


Figure 6-2 Main Indicator (Analog) Configuration Page

OBS Resolver Calibration

To calibrate the OBS resolver, perform the following steps:

1. Touch the **Calibrate** key from the ***Main Indicator (Analog) Configuration*** page.
2. Select **150**˚ on the External CDI/HSI.
3. Touch the **OK** key, as prompted on the display.
4. Touch **OK** after the GTN displays "OBS Resolver Calibration Complete!"
5. Verify OBS operation by checking the selected course displayed at the top of the page is within 2° of the selected course.

6.6.2 VOR/LOC/GS Configuration Page (GTN 650/750 Only)

Select the **VOR/LOC/GS** key on the ***GTN Setup*** page. This page allows you to verify the CDI outputs from the VOR/LOC/GS receiver as well as the OBS resolver input to the VOR receiver. It also allows you to select the format for the DME tuning data.

Figure 6-3 VOR/LOC/GS Configuration Page

OBS Resolver Calibration

To calibrate the OBS resolver, perform the following steps:

1. Touch the **Calibrate** key from the ***VOR/LOC/GS Configuration*** page.
2. Select **150**˚ on the external CDI/HSI.
3. Touch the **OK** key when prompted by the display.
4. Touch **OK** after calibration is complete.
5. Verify OBS operation by checking that the selected course displayed at the top of the page is within 2° of the selected course.

6.6.3 Main Indicator Check (Analog Only)

NOTE

If the GTN is interfaced to an electronic HSI/EFIS, and the main indicator analog output is not used, this check is not required.

NOTE

To verify if the indicator is interfaced with the GTN on the main connector (P1001), examine the response of the indicator during the GTN self-test upon power-up. If the indicator responds according to the values described on the screen, then it is connected to the main connector.

If the GTN is interfaced to an analog indicator on the main connector (P1001), perform the following steps in Configuration mode:

1. Touch **GTN Diagnostics** key.
2. Touch the **Main Indicator (Analog)** key.
3. Verify correct operation of the lateral deviation, flag, and TO/FROM flag using the corresponding selections.
4. Verify correct operation of the vertical deviation and flag using the corresponding selections.
5. Verify correct operation of the OBS knob using the OBS Resolver Setting display. At 30° increments around the OBS card, ensure that the indicated value is within 2° of the value set on the indicator. If the resolver is not within 2°, calibrate the resolver as described in Section 6.6.2.

6.6.4 VOR/LOC/GS Indicator

If the GTN is interfaced to an analog indicator on the VOR/ILS connector (P1004), perform the following steps in Configuration mode:

1. Touch **GTN Diagnostics** key.
2. Touch the **VOR/ILS Indicator (Analog)** key.
3. Verify correct operation of the lateral deviation, flag, and TO/FROM flag using the corresponding selections.
4. Verify correct operation of the vertical deviation and flag using the corresponding selections.
5. Verify correct operation of the OBS knob using the Selected Course display. At 30° increments around the OBS card, ensure that the indicated value is within 2° of the value set on the indicator. If the resolver is not within 2°, calibrate the resolver as described in Section 6.6.2.

6.6.5 Display

Perform the interface check for the replaced EFIS. No additional configuration on the GTN is required when replacing a display with an equivalent unit.

6.6.5.1 EFIS Deviation Scaling for HSI/CDI Driven by GTN through ARINC 429 Data

If the GTN has a serial connection to an EFIS display, proper scaling of the EFIS CDI and VDI must be verified.

1. Cycle power to the GTN and acknowledge the prompts until on the ***Instrument Panel Self-Test*** page (refer to Section 5.1.1).
2. With the ***Instrument Panel Self-Test*** page displayed on the GTN, look on the EFIS and verify that the lateral deviation is half-scale left and not flagged. If not correct, refer to applicable EFIS maintenance documentation.
3. With the ***Instrument Panel Self-Test*** page displayed on the GTN, look on the EFIS and verify that the vertical deviation is half-scale up and not flagged. If not correct, refer to applicable EFIS maintenance documentation.

6.7 Transponder

1. For remote transponders, configure transponder as described Section 6.7.1.
2. Perform interface check as described Section 6.7.2.

6.7.1 Remote Transponder Configuration

NOTE

If the GTN controls any transponder (GTX 32/33/327/328/330), then that transponder will boot into the same mode (Normal or Configuration) as the GTN.

NOTE

If the GTN is not communicating with the GTX transponder, all of the editable fields for the setup items shown in the following sections will be dashed out. If the fields are dashed out, check the wiring and pin connections from the GTN to the transponder.

NOTE

The GTN can interface to the GTX 327/328/330/330 ES; however, configuration of the panel-mounted GTX 327/328/330/330 ES is not supported. These transponders should be configured per their installation manuals rather than through the GTN.

A remote transponder can be configured by the GTN via RS-232 if a transponder is configured for one of the RS-232 ports. To configure the transponder, it must first be selected as *Present* and the type of transponder installed must be specified on the ***Interfaced Equipment*** page on the ***GTN Setup*** page.

1. Touch **External Systems** key.
2. Touch the **XPDR** key.
3. Configure the remote transponder in accordance with the installation manual for that specific transponder.

Figure 6-4 XPDR1 Configuration Page

6.7.2 Transponder Interface Check

If the GTN is interfaced to a GTX 32/33 remote transponder, or a GTX 327/328/330 configured as a remote transponder, the following checks must be completed:

1. With the GTN unit running in Normal mode and the transponder powered on, go to the home page and ensure there is no red “X” over the Transponder data field on the screen.
2. Check that a code can be entered into the Code field. Enter a code using the keypad and then touch the **Enter** key. Check that the code that was entered is displayed in the transponder data field.
3. If dual transponders are installed, select **Transponder 2**.
4. Perform steps 1 and 2 for the second transponder.
5. To check that wiring is not crossed, pull the transponder 1 circuit breaker.
6. Check Transponder 1 data field is displaying a red “X”.
7. Repeat steps 1 through 6 for GTN #2.

6.8 Traffic or Weather System

Perform the appropriate interface check for the traffic or weather system. No additional GTN configuration steps are required for replacing a traffic or weather device with an equivalent unit.

6.8.1 Ryan TCAD Traffic System Interface Check

If a Ryan TCAD has been connected to the GTN 6XX/7XX unit, the traffic interface should be verified as described in this section.

1. Go to the ***Traffic*** page on the GTN from the home page group.
2. Verify that "NO DATA" is not displayed in yellow in the center of the ***Traffic*** page.
3. Using the Shield Setup under the Traffic menu, verify the shield mode can be changed.

6.8.2 ARINC 429 Traffic System Interface Check

If a Garmin GTS 8XX Traffic system, L-3 Communications SKY497/SKY899 SkyWatch® sensor, or a Honeywell (Bendix/King) KTA 810 TAS/KMH 820 IHAS has been connected to the GTN through ARINC 429, the traffic interface should be verified as described in this section.

1. Go to the ***Traffic*** page on the GTN from the home page.
2. Verify that "NO DATA" is not displayed in yellow in the center of the ***Traffic*** page.
3. If the GTN is configured to control the traffic system, verify the traffic system mode can be changed from *STBY* to *OPER*.
4. Switch the traffic system mode to *STBY*, and then run the traffic self-test from the menu.
5. Verify the traffic system executes a self-test and that a self-test pattern is displayed on the GTN traffic display.
6. Restart the GTN in Configuration mode.
7. On the ***Traffic*** page in the External Systems page group, verify there is data displayed in the Altitude field.

6.8.3 TIS (Garmin GTX 33/330) Interface Check

If a Garmin GTX 33/330 transponder has been connected to the GTN as a TIS traffic source, the traffic interface should be verified as described in this section.

1. Select the ***Traffic Map*** from the GTN home page.
2. Verify that "TIS FAIL" is not displayed in the upper-left corner under Traffic Status, and that **"**NO DATA" (yellow) is not displayed over the ownship symbol.
3. In the upper-left corner of the ***Traffic Map*** page, verify the status of the traffic system is either "TIS Standby" or "TIS Operating/Unavailable" (i.e., "TAS" should not be displayed).

The following additional steps should only be completed if the GTN is controlling the traffic system:

1. Pull the transponder circuit breaker and verify the air data fields contain red "X"s.
2. If a squat switch (or airspeed switch) is connected to the GTX 33/330, ensure that it is in AIR mode.
3. Alternately touch the **Standby** key and **Operate** key to change the mode of the traffic system. It may take several seconds for the traffic system to change modes.
4. Verify the mode of the traffic system can be changed.

6.9 Fan Interface Check

The fan that is mounted to the GTN backplate should be checked after it is replaced. With the GTN unit running in Normal mode and the fan powered on and running perform, the following steps:

NOTE

Note the fan may take a few minutes to power on if the unit is below normal operating temperature.

1. Touch the **Message Queue** key on the home page.
2. Ensure that the "COOLING FAN- the cooling fan has failed" message is not displayed.

6.10 Radar Altimeter Interface Check

Complete the following procedure to check the GTN interface with a radar altimeter:

1. Apply power to the radar altimeter.
2. Power up the GTN in Configuration mode.
3. On the ***GTN Diagnostics*** page, verify the GTN is receiving data from the radar altimeter.

6.11 Flight Stream 510 Interface Checks

6.11.1 Bluetooth Setup

When the Flight Stream 510 device is powered on, pairing mode will not be enabled until the ***Connext Setup*** page is opened on the GTN.

The default Flight Stream 510 Bluetooth name is "Flight Stream 510" followed by the last four digits of the MAC address (e.g., Flight Stream 510 4000). A pop-up will appear on the GTN screen asking for confirmation of the new Bluetooth pairing. Select **Yes** to finish pairing the device.

Bluetooth setup only needs to be run when pairing with a device for the first time. Once a connection is established with a Bluetooth device, the Flight Stream 510 will automatically connect to the Bluetooth device upon power-up. The Flight Stream may be connected to up to four Bluetooth devices simultaneously. The Flight Stream 510 will also save up to thirteen Bluetooth device pairings.

1. Enable Bluetooth connectivity on the PED. Once enabled, Flight Stream 510 will be viewable in the list of available devices.
2. Select the Flight Stream 510 from the list of available Bluetooth devices on the PED.

After pairing the Flight Stream 510 with the PED, verify the device is communicating with the GTN, GDL 88H (if installed), and GDL 69A (if installed). This test should be performed outside, away from buildings and large obstructions. If any of the tests below are unsuccessful, refer to Section 4 for troubleshooting information.

6.11.2 Flight Stream to GTN Interface Check

1. On the Garmin Pilot application, go to the ***Flight Plan*** page and create a flight plan.
2. Select the **Connext** icon at the top of the page.
3. Select the option to send the flight plan to the GTN. If successful, a message will be available on the GTN.

6.12 Enabled Features

Refer to Section 3.3.4 for guidance on enabling features.

6.13 HTerrain/HTAWS System Checks (For Units with HTerrain/HTAWS Only)

Re-configure HTerrain/HTAWS settings per the Configuration Checkout Log. The ***Terrain Configuration*** settings are located under the ***GTN Options*** menu.

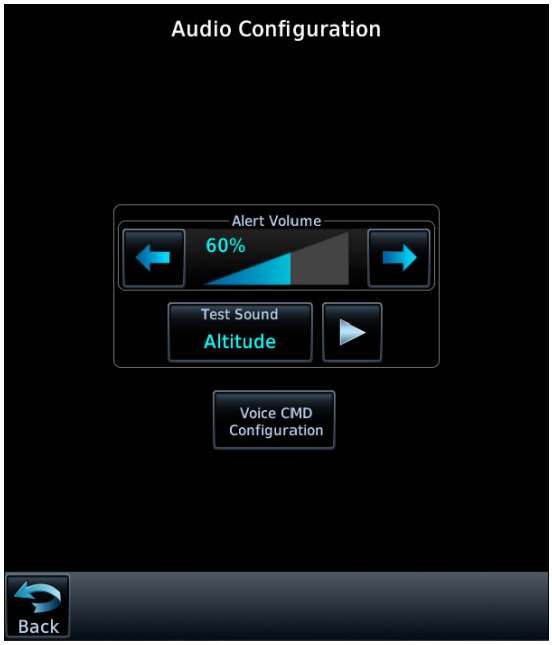


Figure 6-5 Audio Configuration Page

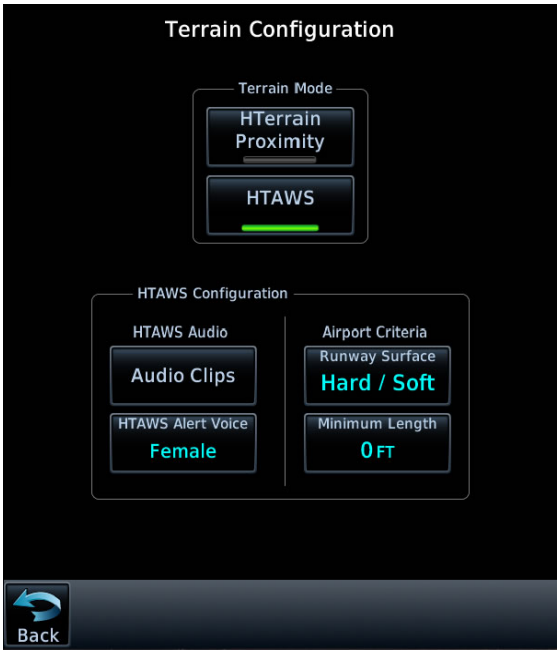


Figure 6-6 Terrain Configuration Page

NOTE

If no audio message is heard, then a fault exists within the audio system or associated wiring, and the HTerrain/HTAWS capability must be considered non-functional. Verify the wiring to the audio panel.

NOTE

If any of the annunciators do not light up, then verify that discrete output is configured properly. If the discrete output is configured properly, then the fault exists within the annunciator or the wiring.

NOTE

A 3D GPS position fix is required to conduct the check.

While on the ground, apply power to the GTN and audio panel following normal power-up procedures.

1. Select the Terrain page from the Normal mode home page.
2. Touch the **Menu** key.
3. Touch the **Test Terrain** or **Test HTAWS** key.
4. Verify that all external HTAWS annunciators (if installed) light up.
5. Wait until the HTerrain/HTAWS self-test completes (10-15 seconds) to hear the HTerrain/HTAWS system status aural message.
   - The aural message “Terrain system test OK” or “HTAWS system test OK” annunciates if the HTerrain/HTAWS system is functioning properly
   - The aural message “Terrain system failure” or “HTAWS system failure” annunciates if the HTerrain/HTAWS system is NOT functioning properly. Also, “Terrain FAIL” or “HTAWS FAIL” will appear in amber on the screen

APPENDIX A AIRCRAFT-SPECIFIC INFORMATION

An electronic fillable form is available on the Dealer Resource Center website. Acrobat Reader 8.0 or later is necessary to view and fill out the form. You can download Acrobat Reader by visiting www.adobe.com.

When updating software, it is necessary to fill out a new Configuration Log. The Current Revision Description in the beginning of this manual identifies all pages with changes. Fill out the applicable pages and append them to the back of the existing Configuration Log.

GENERAL INFORMATION

Date:_____/_____/_____ By: _____

AIRCRAFT:

AIRCRAFT MAKE: _____

AIRCRAFT MODEL: _____

AIRCRAFT SERIAL #: _____

AIRCRAFT REG. #: _____

GTN Xi #1:

Unit P/N:_____ Mod Level: _____

Unit Model:_____ Serial #: _____

GPS Antenna P/N #:_____ GPS Antenna Model: _____

GTN Xi #2: ❑ [N/A]

Unit P/N:_____ Mod Level: _____

Unit Model:_____ Serial #: _____

GPS Antenna P/N #:_____ GPS Antenna Model: _____

GMA 35: ❑ [N/A]

Unit P/N:_____ Mod Level: _____

Unit Model:_____ Serial #: _____

FLIGHT STREAM: ❑ [N/A]

Unit P/N:_____ Mod Level: _____

Unit Model:_____ Serial #: _____

HTAWS Annunciation: ❑ Required ❑ Not Installed ❑ Installed

Unit P/N:_____ Mod Level: _____

Unit Model:_____ Serial #: _____

GTN PART 27 CONFIGURATION LOG – GTN #1

SYSTEM INFORMATION

GTN Xi SOFTWARE VERSIONS

Main Board

Software:_____ Boot Code:_____ FPGA: _____

Touch Controller Board

Software:_____ Boot Code: _____

GPS/WAAS Board

Software: _____

NAV Board ❑ [N/A]

Software:_____ Boot Code:_____ FPGA: _____

COM Board ❑ [N/A]

Software:_____ Boot Code:_____ FPGA: _____

GTN SETUP MENU

ARINC 429 CONFIGURATION

In 1: ❑ High ❑ Low_____ **Out 1:** ❑ High ❑ Low _____

In 2: ❑ High ❑ Low_____ **Out 2:** ❑ High ❑ Low _____

In 3: ❑ High ❑ Low_____ **Out 3:** ❑ High ❑ Low _____

In 4: ❑ High ❑ Low_____ **SDI:** ❑ Common ❑ LNAV 1 ❑ LNAV 2

RS-232 CONFIGURATION

In 1:_____ **Out 1:** _____

In 2:_____ **Out 2:** _____

In 3:_____ **Out 3:** _____

In 4:_____ **Out 4:** _____

In 5:_____ **Out 5:** _____

In 6:_____ **Out 6:** _____

MORE RS-232 SETUP

Forward ALT to GTX ❑Enabled ❑Disabled

This setting is only available if a transponder is configured on a RS-232 port.

GTN PART 27 CONFIGURATION LOG – GTN #1 - CONTINUED

GTN SETUP MENU - CONTINUED

HSDB (ETHERNET) CONFIGURATION

Port 1: ❑ Connected ❑ Not Connected **Port 3:** ❑ Connected ❑ Not Connected

Port 2: ❑ Connected ❑ Not Connected **Port 4:** ❑ Connected ❑ Not Connected

INTERFACED EQUIPMENT CONFIGURATION

Cross-Side Navigator: ❑ Present ❑ Not Present Type:_____

GDL 69/69A: ❑ Present ❑ Not Present Type:_____

GDL 88H: ❑ Present ❑ Not Present Type:_____

ADS-B In Source: ❑ Present ❑ Not Present Type:_____

GDU #1: ❑ Present ❑ Not Present Type:_____

GDU #2: ❑ Present ❑ Not Present Type:_____

GDU #3: ❑ Present ❑ Not Present Type:_____

GDU #4: ❑ Present ❑ Not Present Type:_____

Transponder #1: ❑ Present ❑ Not Present Type:_____

Transponder #2: ❑ Present ❑ Not Present Type:_____

GSR 56: ❑ Present ❑ Not Present

GWX: ❑ Present ❑ Not Present Type:_____

MAIN INDICATOR (ANALOG) CONFIGURATION

CDI Key: ❑ Enabled ❑ Disabled **Selected Course for VLOC:** ❑ Allowed ❑Ignored

Selected Course for GPS: ❑ Allowed ❑Ignored **V-Flag State:** ❑Normal ❑Declutter

LIGHTING CONFIGURATION (IF ENHANCED LIGHTING IS DISABLED)

Lighting Configuration: ❑**[N/A]**

Display Source: ❑Photocell ❑Lighting Bus 1 **Keys Source:** ❑Photocell ❑Lighting Bus 1 ❑Lighting Bus 2

Display Minimum Level:_____% **Keys Minimum Level:**_____%

Configure Photocell: ❑**[N/A]**

Response Time:_____ sec **Slope:**_____ **Offset**: _____

Photocell Override

Key Backlight Cutoff:_____% **Photocell Transition**: _____

Configure Lighting Bus: ❑**[N/A]**

Lighting Bus 1: ❑14 VDC ❑28 VDC ❑5 VDC ❑ 5VAC

Response Time:_____ sec **Slope:**_____ **Offset:**_____

Lighting Bus 2: ❑**[N/A]** ❑14 VDC ❑28 VDC ❑5 VDC ❑ 5VAC

Response Time:_____ sec **Slope:**_____ **Offset:**_____

GTN PART 27 CONFIGURATION LOG – GTN #1 - CONTINUED

GTN SETUP MENU - CONTINUED

ENHANCED LIGHTING CONFIGURATION
(IF ENABLED ON MAIN SYSTEM CONFIGURATION PAGE)

ENHANCED LIGHTING: ❑ **[N/A]**

SOURCE SETTINGS

Display Source: ❑ Photocell ❑ Lighting Bus 1 **Keys Source:** ❑ Photocell ❑ Lighting Bus 1 ❑ Lighting Bus 2

Photocell: Response Time:_____sec

Lighting Bus 1: ❑ **[N/A]** Input Type: ❑ 14 VDC ❑ 28 VDC ❑ 5 VDC ❑ 5VAC Response Time:_____sec

Lighting Bus 2: ❑ **[N/A]** Input Type: ❑ 14 VDC ❑ 28 VDC ❑ 5 VDC ❑ 5VAC Response Time:_____sec

DAY MODE OPERATION

Photocell Transition:_____% **Key Backlight Cutoff:**_____%

DISPLAY

Minimum Level:_____% **Maximum Level:**_____%

Configure Curve

Vertex 1: Input Level_____% **Output Level**_____% **Vertex 3: Input Level**_____% **Output Level**_____%

Vertex 2: Input Level_____% **Output Level**_____% **Vertex 4: Input Level**_____% **Output Level**_____%

KEYS

Minimum Level:_____% **Maximum Level:**_____%

Configure Curve

Vertex 1: Input Level_____% **Output Level**_____% **Vertex 3: Input Level**_____% **Output Level**_____%

Vertex 2: Input Level_____% **Output Level**_____% **Vertex 4: Input Level**_____% **Output Level**_____%

NIGHT MODE OPERATION ❑ **[N/A]**

Photocell Transition:_____% **Key Backlight Cutoff:**_____%

DISPLAY

Minimum Level:_____% **Maximum Level:**_____%

Configure Curve

Vertex 1: Input Level_____% **Output Level**_____% **Vertex 3: Input Level**_____% **Output Level**_____%

Vertex 2: Input Level_____% **Output Level**_____% **Vertex 4: Input Level**_____% **Output Level**_____%

KEYS

Minimum Level:_____% **Maximum Level:**_____%

Configure Curve

Vertex 1: Input Level_____% **Output Level**_____% **Vertex 3: Input Level**_____% **Output Level**_____%

Vertex 2: Input Level_____% **Output Level**_____% **Vertex 4: Input Level**_____% **Output Level**_____%

GTN PART 27 CONFIGURATION LOG – GTN #1 - CONTINUED

GTN SETUP MENU - CONTINUED

AUDIO CONFIGURATION

Alert Volume Level:_____%

VOICE COMMAND CONFIGURATION

Voice Commands: ❑ Off ❑On **Mute Tone:** ☒Off **"Say…" Commands:** ❑ Off ❑On
(Not approved per this STC)

TRAFFIC CONFIGURATION

Traffic Intruder Symbol Color: ❑ Cyan ❑ White **GTN Control of Traffic System:** ❑ Yes ❑ No

TCAS Display Output: ❑ Format 1 ❑ Format 2 **Select TCAS Controller Range Set:** _____

MAIN SYSTEM CONFIGURATION

Airframe Type: ❑ Fixed-Wing ❑ Rotorcraft

Air/Ground Threshold:_____KT

Air/Ground Discrete: ❑ Active for Airborne
❑ Active for Ground

GPS Antenna Height Above Ground:_____**FT**

Fuel Type: ❑ AV Gas ❑ Jet A ❑ Jet B

Synchro Heading Input: ❑ Connected
❑ Not Connected

GPS Select: ❑ Auto ❑ Prompt

Heading Source Input: ❑ Connected
❑ Not Connected

Radio Altimeter Input: Connected Not Connected

Altitude Source Input: ❑ Connected ❑ Not Connected

Enhanced Lighting Mode: ❑ Enabled ❑ Disabled

Pilot Position: ❑ Right ❑ Left

Crossfill Status Alert: ❑ Enabled ❑ Disabled
(Crossfill Status Alert not approved under this STC)

System ID: ❑ GTN 1 ❑ GTN 2

Database SYNC: ❑ Pilot Control ❑ Enabled ❑ Disabled

Airspace Labels: ❑ Enabled ❑ Disabled

Checklist Page Title: ❑Checklist ❑ Task List

Blackout Mode: ❑ Enabled ❑ Disabled

External Flight Plan: ❑ Enabled ❑ Disabled

Remote Database Confirmation: ❑ Enabled ❑ Disabled

COM CONFIGURATION (GTN 635Xi/650Xi/750Xi ONLY)

COM Radio: ❑Enabled ❑Disabled

RX Squelch Mode: ❑ Basic ❑ Advanced
❑ Spacing ❑ Squelch

COM RX Squelch:_____ %

MIC 1 Gain: _____dB

Sidetone Source: ❑ External ❑ Internal

Sidetone Volume:_____dB

Sidetone Pilot Control: ❑ Enabled ❑ Disabled

VOR/LOC/GS CONFIGURATION (GTN 650Xi/750Xi ONLY)

NAV Radio: ❑ Enabled ❑ Disabled

ARINC 429 TX Speed: ❑ High ❑ Low

ARINC 429 SDI: ❑ Common ❑ VOR/ILS 1 ❑ VOR/ILS 2

Filtered LOC/GS: ❑ Enabled ❑ Disabled

DME Mode: ❑ Standby ❑ Directed Freq. 1 ❑ Directed Freq. 2
(Not approved under this STC)

DME Channel Mode: _____

NAV Radio Display Timeout: ❑ Enabled ❑ Disabled

GTN PART 27 CONFIGURATION LOG – GTN #1 - CONTINUED

GTN SETUP MENU - CONTINUED

ARINC 453/708 CONFIGURATION

Port 1: External Weather Radar: ❑ Off ❑ On **Device:** _____

DISCRETES CONFIGURATION

J1001-16: _____	**J1001-52:** VLOC Annunciate
J1001-36: _____	**J1001-53:** _____
J1001-37: _____	**J1001-54:** _____
J1001-38: _____	**J1001-55:** _____
J1001-39: _____	**J1001-56:** ILS/GPS Approach Annunciate
J1002-01: Demo Mode Select	**J1001-57:** _____
J1002-10: _____	**J1001-71:** _____
J1002-11: _____	**J1001-72:** _____
J1005-33*: Synchro Valid - Low	**J1001-73:** _____
J1005-53*: Do Not Use	**J1001-74:** _____
J1005-54*: Synchro Valid - High	**J1001-75:** _____
J1001-14: _____	**J1002-76:** _____
J1001-15: GPS Annunciate	**J1002-03:** _____
J1001-33: _____	**J1002-12:** _____
J1001-34: _____	**J1005-13*:** _____
J1001-35: _____	**J1005-34***: _____

*Available only on GTN 725Xi/750Xi units.

NAVIGATION FEATURES

Mark on Target: ❑ Enabled ❑ Disabled

RF Procedure Legs: ❑ Enabled ❑ Disabled

VERTICAL NAVIGATION

Vertical Navigation Type: ❑ VCALC ❑ VNAV **Transition Altitude:** _____

Transition to Approach: ❑ Enabled ❑ Disabled **VDI Scale:** ❑ 500 FT ❑ 1000 FT

OWNSHIP CONFIGURATION

Ownship Configuration: _____

FLIGHT STREAM

Stream Active Flight Data: ❑ Enabled ❑ Disabled **Transfer Past FD Logs:** ❑ Enabled ❑ Disabled

GTN PART 27 CONFIGURATION LOG – GTN #1 - CONTINUED

GTN OPTIONS MENU

TERRAIN CONFIGURATION

Terrain Mode: ❑ HTerrain Proximity ❑ HTerrain Alerting ❑ HTAWS

Terrain Alert Settings

Runway Surface: ❑ Any ❑ Hard Only ❑ Hard/Soft ❑ Water

Minimum Runway Length: _____ FT

Alert Voice: ❑ Female ❑ Male

CHARTS

Charts Configured: ❑ None ❑ FliteCharts ❑ ChartView

COM TRANSMIT POWER

Com Transmit Power: ❑ Normal ❑ 16W

WEATHER RADAR *(Not approved under this STC)*

Digital Radar: ❑ N/A ❑ Enabled

Turbulence Detection: ❑ N/A ❑ Enabled

Ground Clutter Suppression: ❑ N/A ❑ Enabled

FLIGHT SIMULATOR

Flight Simulator: ❑ N/A ❑ Enabled

SEARCH AND RESCUE

Search and Rescue: ❑ N/A ❑ Enabled

SAR Patterns

Parallel Track: ❑ N/A ❑ Enabled

Sector Search: ❑ N/A ❑ Enabled

Expanding Square: ❑ N/A ❑ Enabled

Orbit: ❑ N/A ❑ Enabled

GTN PART 27 CONFIGURATION LOG – GTN #1 – CONTINUED

NOTES

GTN PART 27 CONFIGURATION LOG – GTN #2

SYSTEM INFORMATION

GTN Xi SOFTWARE VERSIONS

Main Board

Software:_____ Boot Code:_____ FPGA: _____

Touch Controller Board

Software:_____ Boot Code: _____

GPS/WAAS Board

Software: _____

NAV Board ❑ [N/A]

Software:_____ Boot Code:_____ FPGA: _____

COM Board ❑ [N/A]

Software:_____ Boot Code:_____ FPGA: _____

GTN SETUP MENU

ARINC 429 CONFIGURATION

In 1: ❑ High ❑ Low_____ **Out 1:** ❑ High ❑ Low _____

In 2: ❑ High ❑ Low_____ **Out 2:** ❑ High ❑ Low _____

In 3: ❑ High ❑ Low_____ **Out 3:** ❑ High ❑ Low _____

In 4: ❑ High ❑ Low_____ **SDI:** ❑ Common ❑ LNAV 1 ❑ LNAV 2

RS-232 CONFIGURATION

In 1:_____ **Out 1:** _____

In 2:_____ **Out 2:** _____

In 3:_____ **Out 3:** _____

In 4:_____ **Out 4:** _____

In 5:_____ **Out 5:** _____

In 6:_____ **Out 6:** _____

MORE RS-232 SETUP

Forward ALT to GTX ❑Enabled ❑Disabled

This setting is only available if a transponder is configured on a RS-232 port.

GTN PART 27 CONFIGURATION LOG – GTN #2 - CONTINUED

GTN SETUP MENU - CONTINUED

HSDB (ETHERNET) CONFIGURATION

Port 1: ❑ Connected ❑ Not Connected **Port 3:** ❑ Connected ❑ Not Connected

Port 2: ❑ Connected ❑ Not Connected **Port 4:** ❑ Connected ❑ Not Connected

INTERFACED EQUIPMENT CONFIGURATION

Cross-Side Navigator: ❑ Present ❑ Not Present Type:_____

GDL 69/69A: ❑ Present ❑ Not Present Type:_____

GDL 88H: ❑ Present ❑ Not Present Type:_____

ADS-B In Source: ❑ Present ❑ Not Present Type:_____

GDU #1: ❑ Present ❑ Not Present Type:_____

GDU #2: ❑ Present ❑ Not Present Type:_____

GDU #3: ❑ Present ❑ Not Present Type:_____

GDU #4: ❑ Present ❑ Not Present Type:_____

Transponder #1: ❑ Present ❑ Not Present Type:_____

Transponder #2: ❑ Present ❑ Not Present Type:_____

GSR 56: ❑ Present ❑ Not Present

GWX: ❑ Present ❑ Not Present Type:_____

MAIN INDICATOR (ANALOG) CONFIGURATION

CDI Key: ❑ Enabled ❑ Disabled **Selected Course for VLOC:** ❑ Allowed ❑Ignored

Selected Course for GPS: ❑ Allowed ❑Ignored **V-Flag State:** ❑Normal ❑Declutter

LIGHTING CONFIGURATION (IF ENHANCED LIGHTING IS DISABLED)

Lighting Configuration: ❑**[N/A]**

Display Source: ❑Photocell ❑Lighting Bus 1 **Keys Source:** ❑Photocell ❑Lighting Bus 1 ❑Lighting Bus 2

Display Minimum Level:_____% **Keys Minimum Level:**_____%

Configure Photocell: ❑**[N/A]**

Response Time:_____ sec **Slope:**_____ **Offset**: _____

Photocell Override

Key Backlight Cutoff:_____% **Photocell Transition**: _____

Configure Lighting Bus: ❑**[N/A]**

Lighting Bus 1: ❑14 VDC ❑28 VDC ❑5 VDC ❑ 5VAC

Response Time:_____ sec **Slope:**_____ **Offset:**_____

Lighting Bus 2: ❑**[N/A]** ❑14 VDC ❑28 VDC ❑5 VDC ❑ 5VAC

Response Time:_____ sec **Slope:**_____ **Offset:**_____

GTN PART 27 CONFIGURATION LOG – GTN #2 - CONTINUED

GTN SETUP MENU - CONTINUED

ENHANCED LIGHTING CONFIGURATION
(IF ENABLED ON MAIN SYSTEM CONFIGURATION PAGE)

ENHANCED LIGHTING: ❑ **[N/A]**

SOURCE SETTINGS

Display Source: ❑ Photocell ❑ Lighting Bus 1 **Keys Source:** ❑ Photocell ❑ Lighting Bus 1 ❑ Lighting Bus 2

Photocell: Response Time:_____sec

Lighting Bus 1: ❑ **[N/A]** Input Type: ❑ 14 VDC ❑ 28 VDC ❑ 5 VDC ❑ 5VAC Response Time:_____sec

Lighting Bus 2: ❑ **[N/A]** Input Type: ❑ 14 VDC ❑ 28 VDC ❑ 5 VDC ❑ 5VAC Response Time:_____sec

DAY MODE OPERATION

Photocell Transition:_____% **Key Backlight Cutoff:**_____%

DISPLAY

Minimum Level:_____% **Maximum Level:**_____%

Configure Curve

Vertex 1: Input Level_____% **Output Level**_____% **Vertex 3: Input Level**_____% **Output Level**_____%

Vertex 2: Input Level_____% **Output Level**_____% **Vertex 4: Input Level**_____% **Output Level**_____%

KEYS

Minimum Level:_____% **Maximum Level:**_____%

Configure Curve

Vertex 1: Input Level_____% **Output Level**_____% **Vertex 3: Input Level**_____% **Output Level**_____%

Vertex 2: Input Level_____% **Output Level**_____% **Vertex 4: Input Level**_____% **Output Level**_____%

NIGHT MODE OPERATION ❑ **[N/A]**

Photocell Transition:_____% **Key Backlight Cutoff:**_____%

DISPLAY

Minimum Level:_____% **Maximum Level:**_____%

Configure Curve

Vertex 1: Input Level_____% **Output Level**_____% **Vertex 3: Input Level**_____% **Output Level**_____%

Vertex 2: Input Level_____% **Output Level**_____% **Vertex 4: Input Level**_____% **Output Level**_____%

KEYS

Minimum Level:_____% **Maximum Level:**_____%

Configure Curve

Vertex 1: Input Level_____% **Output Level**_____% **Vertex 3: Input Level**_____% **Output Level**_____%

Vertex 2: Input Level_____% **Output Level**_____% **Vertex 4: Input Level**_____% **Output Level**_____%

GTN PART 27 CONFIGURATION LOG – GTN #2 - CONTINUED

GTN SETUP MENU - CONTINUED

AUDIO CONFIGURATION

Alert Volume Level:_____%

VOICE COMMAND CONFIGURATION

Voice Commands: ❑ Off ❑On **Mute Tone:** ☐ Off **"Say…" Commands:** ❑ Off ❑On
(Not approved per this STC)

TRAFFIC CONFIGURATION

Traffic Intruder Symbol Color: ❑ Cyan ❑ White **GTN Control of Traffic System:** ❑ Yes ❑ No

TCAS Display Output: ❑ Format 1 ❑ Format 2 **Select TCAS Controller Range Set:** _____

MAIN SYSTEM CONFIGURATION

Airframe Type: ❑ Fixed-Wing ❑ Rotorcraft

Air/Ground Threshold:_____KT

Air/Ground Discrete: ❑ Active for Airborne ❑ Active for Ground

GPS Antenna Height Above Ground:_____**FT**

Fuel Type: ❑ AV Gas ❑ Jet A ❑ Jet B

Synchro Heading Input: ❑ Connected ❑ Not Connected

GPS Select: ❑ Auto ❑ Prompt

Heading Source Input: ❑ Connected ❑ Not Connected

Radio Altimeter Input: ❑ Connected ❑ Not Connected

Altitude Source Input: ❑ Connected ❑ Not Connected

Enhanced Lighting Mode: ❑ Enabled ❑ Disabled

Pilot Position: ❑ Right ❑ Left

Crossfill Status Alert: ❑ Enabled ❑ Disabled

System ID: ❑ GTN 1 ❑ GTN 2

Database SYNC: ❑ Pilot Control ❑ Enabled ❑ Disabled

Airspace Labels: ❑ Enabled ❑ Disabled

Checklist Page Title: ❑Checklist ❑ Task List

Blackout Mode: ❑ Enabled ❑ Disabled

External Flight Plan: ❑ Enabled ❑ Disabled

Remote Database Confirmation: ❑ Enabled ❑ Disabled

COM CONFIGURATION (GTN 635Xi/650Xi/750Xi ONLY)

COM Radio: ❑Enabled ❑Disabled

RX Squelch Mode: ❑ Basic ❑ Advanced ❑ Spacing ❑ Squelch

COM RX Squelch:_____ %

MIC 1 Gain: _____dB

Sidetone Source: ❑ External ❑ Internal

Sidetone Volume:_____dB

Sidetone Pilot Control: ❑ Enabled ❑ Disabled

VOR/LOC/GS CONFIGURATION (GTN 650Xi/750Xi ONLY)

NAV Radio: ❑ Enabled ❑ Disabled

ARINC 429 TX Speed: ❑ High ❑ Low

ARINC 429 SDI: ❑ Common ❑ VOR/ILS 1 ❑ VOR/ILS 2

Filtered LOC/GS: ❑ Enabled ❑ Disabled

DME Mode: ❑ Standby ❑ Directed Freq. 1 ❑ Directed Freq. 2
(Not approved per this STC)

DME Channel Mode: _____

NAV Radio Display Timeout: ❑ Enabled ❑ Disabled

GTN PART 27 CONFIGURATION LOG – GTN #2 - CONTINUED

GTN SETUP MENU - CONTINUED

ARINC 453/708 CONFIGURATION

Port 1: External Weather Radar: ❑ Off ❑ On **Device:** _____

DISCRETES CONFIGURATION

J1001-16: _____	**J1001-52:** VLOC Annunciate
J1001-36: _____	**J1001-53:** _____
J1001-37: _____	**J1001-54:** _____
J1001-38: _____	**J1001-55:** _____
J1001-39: _____	**J1001-56:** ILS/GPS Approach Annunciate
J1002-01: Demo Mode Select	**J1001-57:** _____
J1002-10: _____	**J1001-71:** _____
J1002-11: _____	**J1001-72:** _____
J1005-33*: Synchro Valid - Low	**J1001-73:** _____
J1005-53*: Do Not Use	**J1001-74:** _____
J1005-54*: Synchro Valid - High	**J1001-75:** _____
J1001-14: _____	**J1002-76:** _____
J1001-15: GPS Annunciate	**J1002-03:** _____
J1001-33: _____	**J1002-12:** _____
J1001-34: _____	**J1005-13*:** _____
J1001-35: _____	**J1005-34***: _____

*Available only on GTN 725Xi/750Xi units.

NAVIGATION FEATURES

Mark on Target: ❑ Enabled ❑ Disabled

RF Procedure Legs: ❑ Enabled ❑ Disabled

VERTICAL NAVIGATION

Vertical Navigation Type: ❑ VCALC ❑ VNAV **Transition Altitude:** _____

Transition to Approach: ❑ Enabled ❑ Disabled **VDI Scale:** ❑ 500 FT ❑ 1000 FT

OWNSHIP CONFIGURATION

Ownship Configuration: _____

FLIGHT STREAM

Stream Active Flight Data: ❑ Enabled ❑ Disabled **Transfer Past FD Logs:** ❑ Enabled ❑ Disabled

GTN PART 27 CONFIGURATION LOG – GTN #2 - CONTINUED

GTN OPTIONS MENU

TERRAIN CONFIGURATION

Terrain Mode: ❑ HTerrain Proximity ❑ HTerrain Alerting ❑ HTAWS

Terrain Alert Settings

Runway Surface: ❑ Any ❑ Hard Only ❑ Hard/Soft ❑ Water

Minimum Runway Length: _____ FT

Alert Voice: ❑ Female ❑ Male

CHARTS

Charts Configured: ❑ None ❑ FliteCharts ❑ ChartView

COM TRANSMIT POWER

Com Transmit Power: ❑ Normal ❑ 16W

WEATHER RADAR *(Not approved per this STC)*

Digital Radar: ❑ N/A ❑ Enabled

Turbulence Detection: ❑ N/A ❑ Enabled

Ground Clutter Suppression: ❑ N/A ❑ Enabled

FLIGHT SIMULATOR

Flight Simulator: ❑ N/A ❑ Enabled

SEARCH AND RESCUE

Search and Rescue: ❑ N/A ❑ Enabled

SAR Patterns

Parallel Track: ❑ N/A ❑ Enabled

Sector Search: ❑ N/A ❑ Enabled

Expanding Square: ❑ N/A ❑ Enabled

Orbit: ❑ N/A ❑ Enabled

GTN PART 27 CONFIGURATION LOG – GTN #2 – CONTINUED

NOTES

GTN PART 27 CONFIGURATION LOG

GMA 35 AUDIO PANEL CONFIGURATION ❑ [N/A] Software Version:_____

AUDIO PANEL CONFIGURATION

INTERCOM

Mute PASS to CREW intercom during alerts ❑ True ❑ False
Mute PASS to CREW intercom during selected audio ❑ True ❑ False
Passengers hear selected audio ❑ True ❑ False
Receiver 5 is Passenger ❑ True ❑ False

PASSENGER ADDRESS

Disable PA functionality ❑ True ❑ False

MUSIC

Mute PASS music during intercom ❑ True ❑ False

ALERTS

Passengers hear alerts ❑ True ❑ False

SECONDARY RADIOS

Mute secondary radios on primary radio reception ❑ True ❑ False

SIDETONE

Audio Processor generates COM1 internal sidetone ❑ True ❑ False
Audio Processor generates COM2 internal sidetone ❑ True ❑ False
Audio Processor generates COM3 internal sidetone ❑ True ❑ False

COM 1/2 CONNECTIONS

COM 1 is connected as COM 2 ❑ True ❑ False

SPEAKER

Ambient Noise Mic On ❑ True ❑ False

HEADSET

Ambient Noise Mic On ❑ True ❑ False

INPUT VOLUME

Alert 1 input audio volume	_____dB	Music 1	_____dB
Alert 2 input audio volume	_____dB	Music 2	_____dB
Alert 3 input audio volume	_____dB	Telephone	_____dB
Alert 4 input audio volume	_____dB	Text to Speech (TTS)	_____dB
Failsafe Warn input audio volume	_____dB	Bluetooth Audio	_____dB
Marker volume	_____dB	Bluetooth Telephone	_____dB
		Audio Clips	_____dB

SPEAKER VOLUME

Pilot PA_____dB Copilot PA_____dB Crew Audio_____dB Alert Audio Sum_____dB

SQUELCH THRESHOLD

COM1_____dB	NAV1_____dB	RCVR4_____dB	ALERT1_____dB
COM2_____dB	NAV2_____dB	RCVR5_____dB	ALERT2_____dB
COM3_____dB	RCVR3_____dB	WARN1_____dB	ALERT3_____dB
			ALERT4_____dB

OTHER

Marker Beacon high sense threshold_____dB
Marker Beacon low sense threshold_____dB
Marker external lamp lighting offset_____dB

GTN PART 27 CONFIGURATION LOG

GMA 35 AUDIO PANEL CONFIGURATION – CONTINUED

AUDIO PANEL DISCRETES

J3501-16: _____

J3502-14: _____

J3502-30: _____

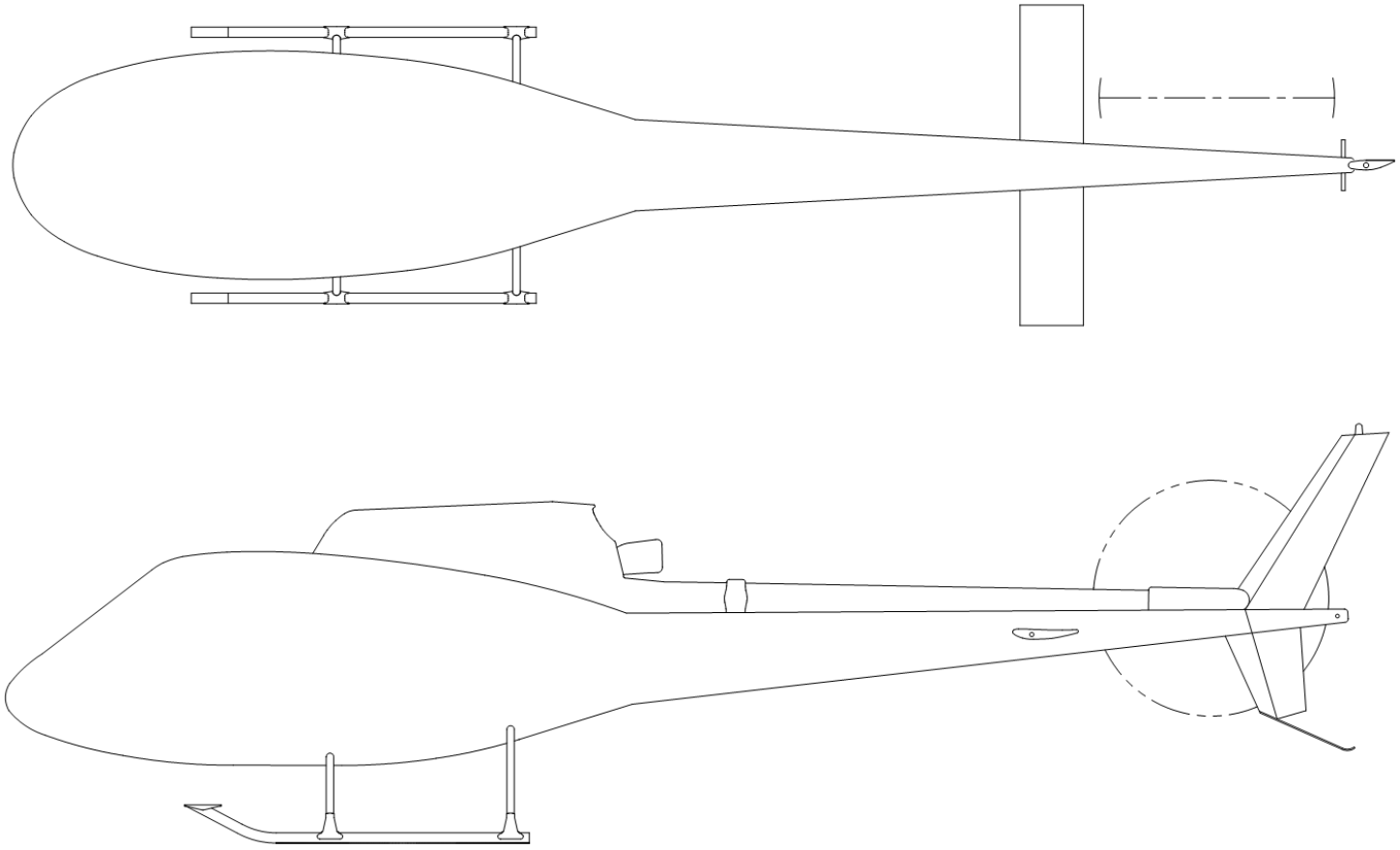
AUDIO PANEL CONNECTED RADIOS

COM 2:	❑ Present	❑ Not Present	
COM 3:	❑ Present	❑ Not Present	
NAV 1:	❑ Present	❑ Not Present	
NAV 2:	❑ Present	❑ Not Present	
RCVR 3:	❑ Present	❑ Not Present	Type: _____
RCVR 4:	❑ Present	❑ Not Present	Type: _____
RCVR 5:	❑ Present	❑ Not Present	Type: _____
TEL:	❑ Present	❑ Not Present	
MUSIC 1:	❑ Present	❑ Not Present	
MUSIC 2:	❑ Present	❑ Not Present	
MARKER BEACON:	❑ Present	❑ Not Present	

Wire Routing

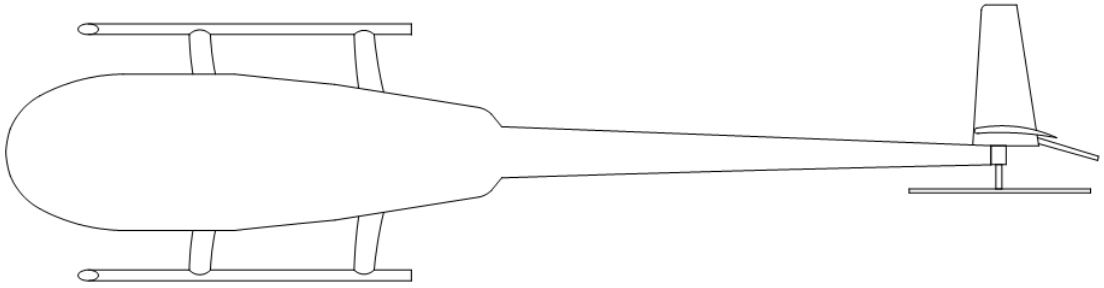
Medium Body

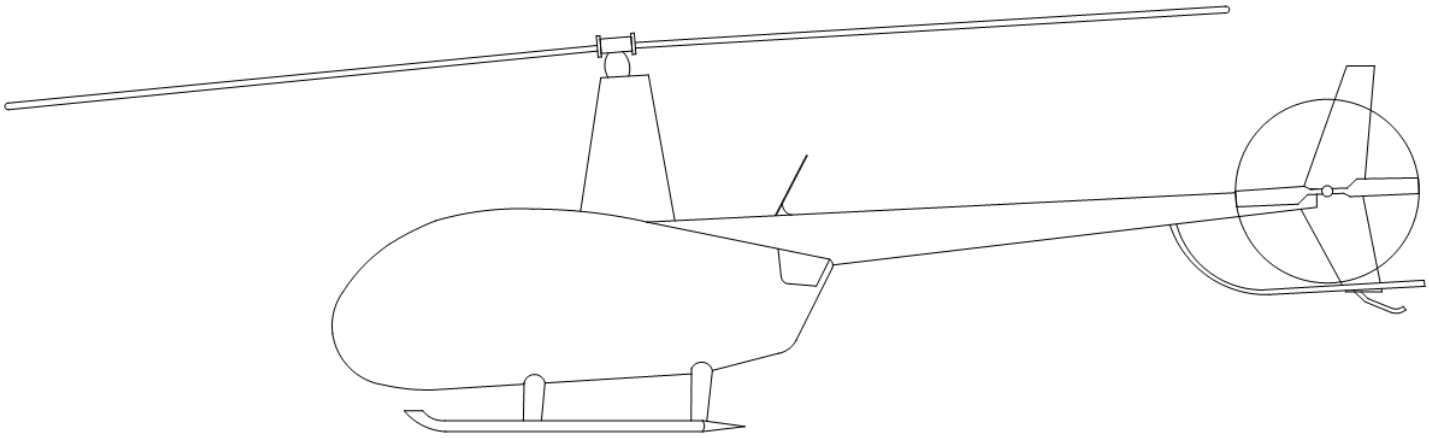
The following diagram depicts approximate location of all LRUs and antenna(s) along with the wire routing for the GTN and GMA 35 throughout the aircraft structure for a medium body rotorcraft.



Small Body

The following diagram depicts approximate location of all LRUs and antenna(s) along with the wire routing for the GTN and GMA 35 throughout the aircraft structure for a small body rotorcraft.





Aircraft Wiring Diagrams

Attach the aircraft wiring diagrams showing the equipment installed by this STC or a markup of the interconnect diagrams from the STC installation manual detailing which equipment was installed and how it was connected.

NOTE

Electrical loads for equipment installed by this STC are listed in GTN 6XX/7XX Part 27 AML STC Installation Manual.

Check all that apply and add a brief description of the location.

SPLITTER

Included in Installation: ❑Yes ❑No

Description of Location:

DIPLEXER

Included in Installation: ❑Yes ❑No

Description of Location:

Equipment Interfaced to the GTN

The purpose of the GTN Interfaced Equipment Lists (GTN #1 and GTN #2 (if applicable)) is to document the equipment that is interfaced to the GTN. Use the following guidance when filling out these tables:

- **Installed?**: Check “Yes” if the equipment is installed in the aircraft and interfaced to the GTN. If the equipment is not installed in the aircraft, check “No.” If the equipment is installed in the aircraft but not interfaced to the GTN, check “No.”
- **Model(s)**: Enter the model number or numbers of the equipment that is interfaced to the GTN.
- **Interface(s)**: Enter the type of interface used to connect to the GTN.
- **GTN Port Numbers**: When applicable, enter the GTN port number or numbers used for the interface. This column is generally applicable only to serial ports such as RS-232 and ARINC 429.
- **Covered by GTN 6XX/7XX Part 27 AML STC Installation Manual?**: Refer to Section 3. Check “Yes” if the equipment is listed in Appendix C of *GTN 6XX/7XX Part 27 AML STC Installation Manual*. Check “No” if the equipment is not listed in Appendix C of *GTN 6XX/7XX Part 27 AML STC Installation Manual*.

NOTE

This information is optional and is not required to be completed or maintained with the aircraft records.

GTN #1 Interfaced Equipment List

Equipment Type

COM Antenna
Installed: ❑Yes ❑No

NAV Antenna
Installed: ❑Yes ❑No

AUDIO PANEL

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

AIR DATA COMPUTER(S)

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

ALTITUDE SERIALIZER OR FUEL/AIR DATA

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

EFIS DISPLAY(S)

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

GTN #1 Interfaced Equipment List - CONTINUED

GSR 56

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

GDL 88H

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

TRANSPONDER(S)

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

NAV INDICATORS

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

GTN #1 Interfaced Equipment List - CONTINUED

TRAFFIC SOURCE

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

HTAWS (EXTERNAL TO GTN)

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

WEATHER SOURCE: GDL 69/69A

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

HTAWS ANNUNCIATOR PANEL

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

GTN #1 Interfaced Equipment List - CONTINUED

SYNCHRO HEADING SOURCE

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

If a second GTN is not installed in the aircraft, check this box and do not fill out the following table.

❑ **[GTN #2 Not Installed]**

GTN #2 Interfaced Equipment

Equipment Type

COM Antenna Installed: ❑Yes ❑No

NAV Antenna Installed: ❑Yes ❑No

AUDIO PANEL

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑ No

AIR DATA COMPUTER(S)

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

ALTITUDE SERIALIZER OR FUEL/AIR DATA

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

EFIS DISPLAY(s)

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

GTN #2 Interfaced Equipment - CONTINUED

GSR 56

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

GDL 88H

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

TRANSPONDER(s)

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

NAV INDICATORS

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

GTN #2 Interfaced Equipment - CONTINUED

TRAFFIC SOURCE

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

HTAWS (EXTERNAL TO GTN)

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

WEATHER SOURCE: GDL 69/69A

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

HTAWS ANNUNCIATOR PANEL

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

GTN #2 Interfaced Equipment - CONTINUED

SYNCHRO HEADING SOURCE

Installed: ❑Yes ❑No

Model(s): _____

Interface(s) (Analog, RS-232, ARINC 429, etc.): _____

GTN Port Number(s) (if applicable): _____

Covered by GTN STC Installation Manual? ❑ Yes ❑No

Equipment Interfaced to the GMA 35

The purpose of the GMA 35 Interfaced Equipment List is to document the equipment that is interfaced to the GTN. Use the following guidance when filling out these tables:

- **Installed?**: Check "Yes" if the equipment is installed in the aircraft and interfaced to the GTN. If the equipment is not installed in the aircraft, check "No." If the equipment is installed in the aircraft but not interfaced to the GTN, check "No."
- **Model(s)**: Enter the model number or numbers of the equipment that is interfaced to the GTN.
- **Interface(s)**: Enter the type of interface used to connect to the GTN.

If a GMA 35 audio panel is not installed in the aircraft, check this box and do not fill out the following table.

❑ **[GMA 35 Not Installed]**

NOTE

This information is optional and is not required to be completed or maintained with the aircraft records.

Equipment Type

COM RADIO #1

Installed: ❑ Yes ❑ No

Model(s): _____

COM RADIO #2

Installed: ❑ Yes ❑ No

Model(s): _____

COM RADIO #3

Installed: ❑ Yes ❑ No

Model(s): _____

NAV RADIO #1

Installed: ❑ Yes ❑ No

Model(s): _____

NAV RADIO #2

Installed: ❑ Yes ❑ No

Model(s): _____

NAV RADIO #3

Installed: ❑ Yes ❑ No

Model(s): _____

NAV RADIO #4

Installed: ❑ Yes ❑ No

Model(s): _____

Marker Beacon Antenna

Installed: ❑ Yes ❑ No


GARMIN