GDU 620
Installation Manual

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RECORD OF REVISIONS

Revision	Revision Date	Description
D	5/1/09	Updated TSO/ETSO Compliance and SW Assurance table.
E	6/8/09	Reflect changes made in version 3.00 software.
F	12/22/09	Updated ETSO information. See Current Revision description for detailed information.
G	1/29/10	Reflect changes made in version 4.00 software.
H	3/24/10	Updated TSO information. See Current Revision description for detailed information.

CURRENT REVISION DESCRIPTION

Revision	Page Number(s)	Section Number	Description of Change
H	1-9	1.5.1	Changed the functionality of Video to Video Input and Display. Also changed the RTCA/DO-178B Level from D to C for both the G500 and G600.
	1-11	1.5.2	Added deviation #2 to TSO-C151b.
	1-12	1.5.3	Added, “Display of Auxiliary Video Information” to Non-TSO Function Table.
	4-14	4.2.13	Deleted the sentence, “These inputs are not currently used” after table.
	5-9	5.5.1.2	Added description of Vne(Pwr Off) setting.

DOCUMENT PAGINATION

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This manual reflects the operation of software version 4.01. Some differences in operation may be observed when comparing the information in this manual to earlier or later software versions.

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CAUTION

The GDU 620 lens is coated with a special anti-reflective coating which is very sensitive to skin oils, waxes and abrasive cleaners. CLEANERS CONTAINING AMMONIA WILL HARM THE ANTI-REFLECTIVE COATING. It is very important to clean the lens using a clean, lint-free cloth and an eyeglass lens cleaner that is specified as safe for anti-reflective coatings.

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GDU 620 HARDWARE MOD LEVEL HISTORY

The following table identifies hardware modification (Mod) Levels for the GDU 620. Mod Levels are listed with the associated service bulletin number, service bulletin date, and the purpose of the modification. The table is current at the time of publication of this manual (see date on front cover) and is subject to change without notice. Authorized Garmin Sales and Service Centers are encouraged to access the most up-to-date bulletin and advisory information on the Garmin Dealer Resource web site at www.garmin.com using their Garmin-provided user name and password.

MOD LEVEL	SERVICE BULLETIN NUMBER	SERVICE BULLETIN DATE	PURPOSE OF MODIFICATION

1. GENERAL DESCRIPTION

1.1 Introduction

The GDU 620 PFD/MFD is the control display device for the G500, G500H and G600 Integrated Flight Deck. The G500/G500H/G600 is an advanced technology avionics suite designed to replace the standard six-pack of instruments. (i.e. ADI, HSI/CDI, airspeed indicator, altimeter, turn coordinator (if installed) and vertical speed indicator (if installed)). The system combines primary flight instrumentation, aircraft systems instrumentation, and navigational information, all displayed on dual 6.5" color screens.

NOTE

Throughout this document any references made to the GDU 620 shall apply equally to the left and right hand verions used with the G500, G500H and G600, unless otherwise specified. Also, references to the G500 will apply to the G500H, unless otherwise specified.

The GDU 620 PFD/MFDs used in the G500 and G600 systems are similar with respect to fit, form and function. They contain the same bezel, soft keys, hard keys, rotary knobs, displays and backlights, except that the left and right hand versions have the front face reversed. The difference between the G500 and G600 version of the GDU 620 PFD/MFD is the hardware and software part numbers. The software for the G500 version is certified to different DO-178B levels and supports fewer features than the G600 version; otherwise the two versions of the GDU 620 are similar from a pilot/installer perspective. Refer to Section 1.5 for a complete list of supported TSOs and DO-178B levels.

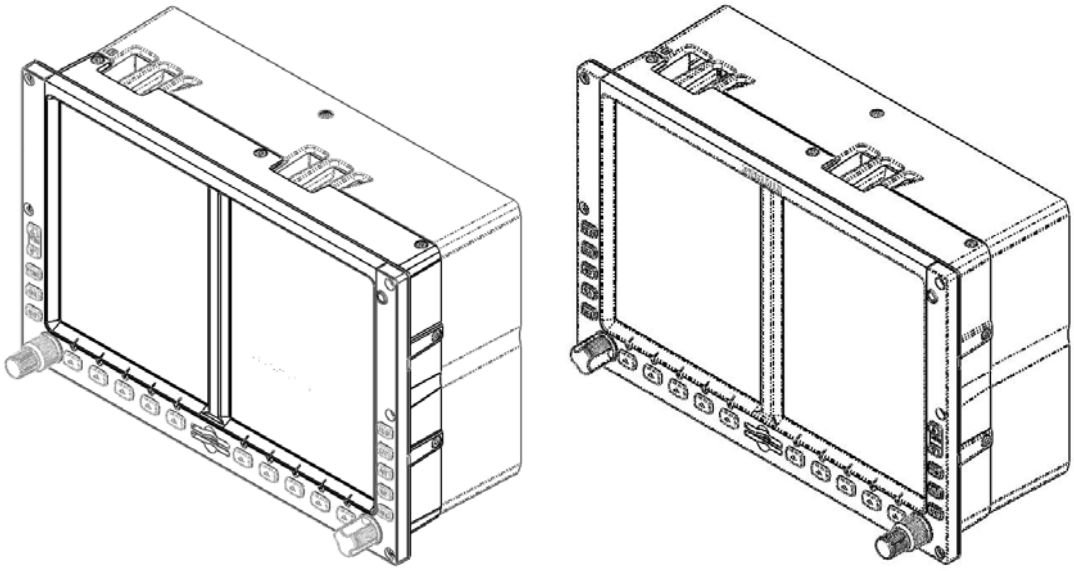


Figure 1-1. GDU 620 Unit View (RH and LH PFD)

NOTE

The part number of the GDU 620 that is used with the G500, G500H or G600 system is different depending upon which system it is used with.

1.2 Equipment Description

1.2.1 Flight Instrument Functions

- Display of attitude (pitch and roll), rate of turn, slip/skid, heading, airspeed, altitude, and vertical speed information
- Display of CDI/VDI/Flags along with ARINC 429 roll steering output
- Emulation of both course and heading error signals for both AC and DC HSIs

1.2.2 Navigation Instrument Functions

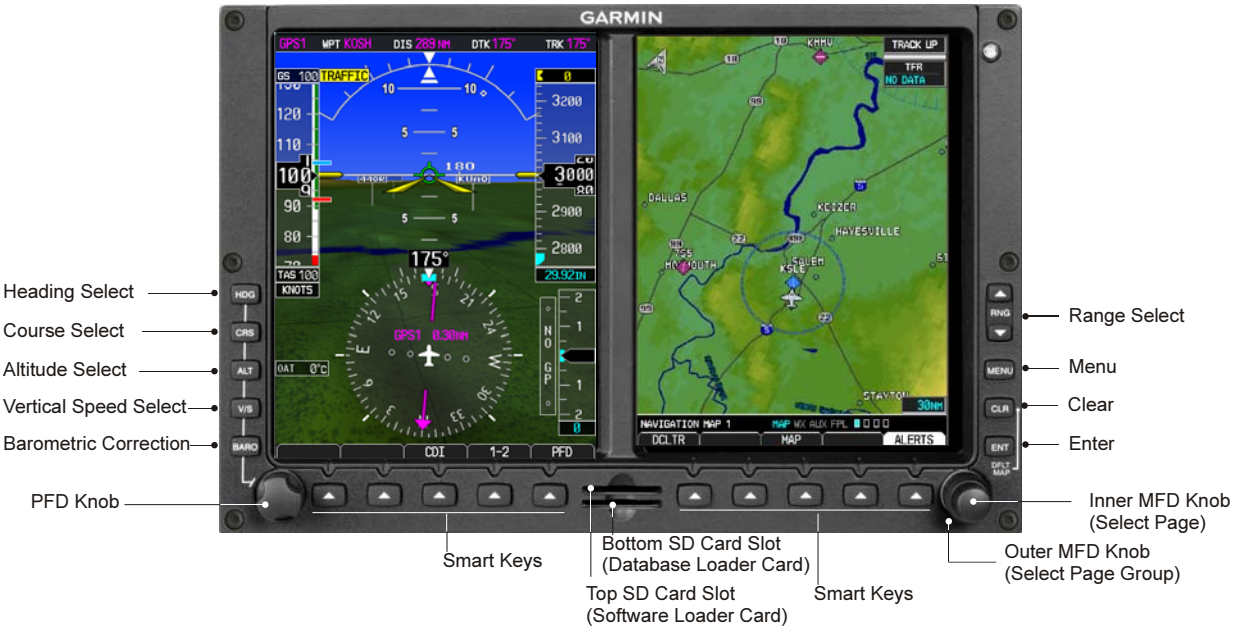
- Display of position and ground speed for use by the pilot/flight crew
- Display of stored navigation and map databases for use by the pilot/flight crew
- Control and display of the HSI, RMI, selected heading and selected courses (PFD only)
- Area navigation functions using the determined position/velocity and stored navigation data
- Approach navigation functions and associated databases

1.2.3 System Interface Functions

- Interfacing with an approved GPS navigator (400W Series, 500W Series, or GNS 480)
- Interfacing with the GRS77 AHRS (includes GMU 44 interface)
- Interfacing with the GDC 74( ) Air Data Computer
- Interfacing to approved autopilots to provide heading and course datum information, lateral and vertical deviation information and roll steering information
- Display of information obtained from dual NAV receivers (GNS 430W, GNS 530W, GNS 480 and SL30)
- Display of information obtained from a traffic system
- Display of information obtained from an ADF receiver
- Interfacing to an external audio system for aural alerts
- Display and control of the GDL 69/69A
- Display and control of the GWX 68 weather radar – GDU 620 #1 only (standard on G600, enabled with optional enablement card on G500)
- Output of RS-232 altitude data
- Interfacing with the GAD 43 to provide analog attitude, heading, and baro-correction to suitable autopilots *(standard on G600, enabled with optional enablement card on G500)*
- Display of information obtained from a video camera
- Interfacing with the GSR 56 Iridium phone system to provide position reporting *(enabled with the optional enablement card on G500 and G500H)*

1.2.4 Other Functions

- TAWS-B alerting and display – G600 only *(enabled with optional enablement card)*
- Synthetic Vision display on PFD *(standard on G600, enabled with optional enablement card on G500 and G500H)*



LH PFD

RH PFD

Figure 1-2. GDU 620 Description

1.3 Interface Summary

The GDU 620 is designed as an open architecture system that uses typical ARINC 429, RS-232, RS-422/485 and Ethernet communications interfaces. Various analog interfaces are also supported. All interfaces are described in the following sections.

1.3.1 ARINC 429 Interfaces

The GDU 620 has eight user-configurable ARINC 429 input ports and four ARINC 429 output ports. Each port can be configured for low or high speed operation. The GDU 620 can be set up to receive air data, attitude data, GPS data, and traffic data. The outputs can be configured to output ARINC 429 data in various formats.

1.3.2 RS-232 Interfaces

The GDU 620 has eight user-configurable RS-232 serial ports. The serial ports can be configured to receive RS-232 serial data from various sources, including 400W/500W Series unit, GNS 480, SL30, or GAD 43. These ports can also be configured to transmit RS-232 serial data in various formats, including Shadin altitude format.

1.3.3 RS-422/RS-485 Interfaces

The GDU 620 has four user-configurable, bi-directional RS-422/RS-485 ports. Each port can be configured for RS-422 transmit, RS-422 receive or RS-485 bi-directional operation. The serial ports can receive/transmit serial data from/to various sources.

1.3.4 Ethernet Interfaces

The GDU 620 has two bi-directional Ethernet interfaces. The Ethernet ports can be configured to receive Ethernet data from various sources, including another GDU 620, a GDL 69/69A and a GWX 68 weather radar.

1.3.5 Autopilot Interfaces

The GDU 620 is capable of interfacing to numerous autopilots, as described in the following sections.

1.3.5.1 Heading and Course Datum Outputs

The GDU 620 can provide AC or DC heading and course datum outputs. An input for AC reference voltage is also provided and is used with autopilots that use AC datums.

1.3.5.2 Analog Deviation Outputs

The GDU 620 has one set of lateral and vertical deviation outputs and associated low-level flag and superflag outputs. These outputs are provided for the autopilot and will reflect the navigation source that is currently selected for navigation on the HSI.

1.3.5.3 Flight Director Interface

The GDU 620 accepts pitch and roll analog inputs and an associated active-high enable input. This input can be configured to support various FD inputs.

1.3.6 Lighting Bus Input

The GDU 620 has a lighting bus input. The GDU 620 can be configured to track 28 VDC, 14 VDC, 5 VDC or 5 Vac lighting busses using this input. Alternatively, the GDU 620 can be configured to automatically adjust for ambient lighting conditions based on its photocell.

1.3.7 Discrete Inputs and Outputs

The GDU 620 has 10 discrete inputs (eight active-low and two active-high) and eight active-low discrete outputs. These are user-configurable and support interfacing to a wide variety of systems.

1.3.8 ADF Input

The GDU 620 has one interface that allows the ADF bearing to be displayed on the HSI as a bearing pointer. This input allows ADFs that provide a DC SIN/COS output to be connected to the GDU 620. No ability to control the ADF is provided in the GDU 620.

1.3.9 ARINC 453/708 Inputs *(function not currently implemented)*

The GDU 620 has two ARINC 453/708 inputs that will allow weather radar and TAWS data to be displayed on the GDU 620. The GDU 620 will also provide the necessary user interface and outputs to control the TAWS system. The display of weather radar and TAWS data is not currently supported via these inputs.

1.3.10 Configuration Module Interface

The GDU 620 has one interface to an external configuration module. This allows the GDU 620 to store installation-specific configuration data, allowing the GDU 620 to be replaced without the need for reconfiguration of the new unit.

1.3.11 Time Mark Input

The GDU 620 has two differential time mark inputs, one for GPS 1 and another for GPS 2 (if installed). These are used to accurately determine the time of GPS messages that are sent to the GRS 77 AHRS.

1.3.12 Message Audio Output

The GDU 620 has one 500 Ω audio output that can be connected to an audio panel to provide audible messages to the pilot. This output provides the altitude alerter chime and internal SVT-Terrain/TAWS aural alerts.

1.3.13 Composite Video Inputs *(software version 4.00 or later)*

The GDU 620 has two composite video inputs. These inputs allow video to be displayed on the MFD.

1.4 Technical Specifications

1.4.1 Environmental Qualification Form

It is the responsibility of the installing agency to obtain the latest revision of the GDU 620 Environmental Qualification Form. This form is available directly from Garmin under the following part number:

- GDU 620 Environmental Qualification Form, Garmin part number 005-00313-20.

To obtain a copy of this form, see the dealer/OEM portion of the Garmin web site (www.garmin.com).

1.4.2 Physical Characteristics

Characteristics	Specifications
Width	10.0 inches (25.4 cm)
Height	6.7 inches (17.0 cm)
Depth with Connector Kit	5.50 inches (14.0 cm)
Unit Weight w/out Connector Kit	6.38 pounds (2.90 kg)
Unit Weight with Connector Kit	7.04 pounds (3.20 kg)

1.4.3 General Specifications

The table below contains general specifications.

Characteristics	Specifications
Operating Temperature Range	-20°C to +55°C
Humidity	48 Hours 50°C 95%
Altitude Range	35,000 ft (maximum)
Input Voltage Range	10 to 40 VDC
Active Display Size	6.5” Diagonal (3.9” W x 5.2” H)
Display Format	480 pixels (W) x 640 pixels (H)
Viewing Angle (with 10:1 contrast ratio min) Left / Right: Up: Down:	 45° from perpendicular 30° from perpendicular 10° from perpendicular
Brightness Range	0.1 to 180fL
Power Consumption	
14 VDC	Typical: 3.9A Maximum: 5.4A
28 VDC	Typical: 1.9A Maximum: 2.7A

1.5 Certification

The conditions and tests required for TSO approval of this article are minimum performance standards. It is the responsibility of those installing this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in an aircraft. The article may be installed only in compliance under 14 CFR part 43 or the applicable airworthiness requirements.

1.5.1 TSO/ETSO Compliance

The GDU 620 displays data for all classes of compatible interfaced TSO-C63c and TSO-C147/ETSO-C147 authorized equipment. The GDU 620 equipment class is identical to that of the interfaced equipment.

Function	TSO/ETSO SAE/RTCA/EUROCAE	Category	Applicable LRU SW P/Ns (GDU 620 G500)	Applicable LRU SW P/Ns (GDU 620 G600)	Applicable Custom Logic Device P/Ns
Airspeed Instruments	TSO-C2d ETSO-C2d SAE AS8019A	Type C Range : 20 to 999 kts	006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Turn and Slip Instrument	TSO-C3d ETSO-C3d SAE AS8004 Incomplete System [1]	Type II	006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Bank and Pitch Instruments	TSO-C4c ETSO-C4c SAE AS8001 Incomplete System [1]	Turn Error, Category A	006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Direction (Heading) Instrument, Magnetic	TSO-C6d ETSO-C6d SAE AS8013A Incomplete System [1]		006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Vertical Velocity Instruments (Rate-Of-Climb)	TSO-C8d ETSO-C8d SAE AS8016A	Type C Range : -9950 to 9950 ft/min	006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Altimeter, Pressure Actuated, Sensitive Type	TSO-C10b ETSO-C10b SAE AS8009A	Range : -1000 to 99,980 ft	006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
ILS Glide Slope Receiving Equipment Operating Within The Radio Frequency Range of 328.6-335.4 Megahertz (MHz)	TSO-C34e ETSO-2C34f RTCA DO-192 EUROCAE ED-47B Incomplete System [1]		006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Airborne ILS Localizer Receiving Equipment Operating Within The Radio Frequency Range of 108-112 Megahertz	TSO-C36e ETSO-2C36f RTCA DO-195 EUROCAE ED-46B Incomplete System [1]		006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
VOR Receiving Equipment Operating Within The Radio Frequency Range Of 108-117.95 Megahertz (MHz)	TSO-C40c ETSO-2C40c RTCA DO-196 Incomplete System [1]		006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Airborne Automatic Direction Finding Equipment (ADF)	TSO-C41d ETSO-2C41d RTCA DO-179 Incomplete System [1]		006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )

Function	TSO/ETSO SAE/RTCA/EUROCAE	Category	Applicable LRU SW P/Ns (GDU 620 G500)	Applicable LRU SW P/Ns (GDU 620 G600)	Applicable Custom Logic Device P/Ns
Flight Director Equipment	TSO-C52b ETSO-C52b SAE AS8008 Incomplete System [1]		006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Airborne Weather and Ground Mapping Pulsed Radar	TSO-C63c ETSO-C63c RTCA DO-173 EUROCAE ED-38 Incomplete System [1] [2] [5]		006-B1071-10 through 006-B1071-1( )	006-B0498-10 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Airborne Multipurpose Electronic Displays	TSO-C113 ETSO-C113 SAE AS8034		006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Traffic Alert and Collision Avoidance System (TCAS I)	TSO-C118 ETSO-C118 RTCA DO-197 Incomplete System [1]		006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Traffic Advisory System (TAS) Airborne Equipment	TSO-C147 ETSO-C147 RTCA DO-197A Incomplete System [1] [2]	Class 3	006-B1071-10 through 006-B1071-1( )	006-B0498-05 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Terrain Awareness and Warning System	TSO-C151b ETSO-C151b [3]	B	N/A	006-B0498-10 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Synthetic Vision Technology	Non-TSO function [4]		006-B1071-10 through 006-B1071-1( )	006-B0498-10 through 006-B0498-1( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )
Display of Video Input	Non-TSO function [6]		006-B1071-20 through 006B1071-( )	006-B0498-20 through 006-B0498-( )	006-C0079-2( ) 006-C0078-2( ) 006-C0093-2( ) 006-C0094-2( )

Notes:

[1] The TSO/ETSO is for an incomplete system and requires the GDU 620 to be installed and checked out according to this installation manual. The GDU must be interfaced to units with applicable TSO/ETSO authorizations to be a complete TSO/ETSO system.

[2] The GDU 620 displays data for all classes of compatible interfaced TSO-C63c/ETSO-C63c and TSO-C147/ETSO-C147 authorized equipment. The GDU 620 equipment class is identical to that of the interfaced equipment.

[3] Applies only when TAWS is enabled in GDU 620.

[4] Applies only when Synthetic Vision Technology is enabled in GDU 620.

[5] Applies only when Weather Radar is enabled in GDU 620.

[6] Applies only when Video Input is enabled in GDU 620.

Software Design Assurance

FUNCTIONALITY	RTCA/DO-178B LEVEL GDU 620 G500	RTCA/DO-178B LEVEL GDU 620 G600
Operating System	C	B
PFD display of Flight Director Bars	C	B
PFD display of CDI and VDI information	C	B
PFD display of GPS data and level of service information	C	B
PFD display of VOR/ILS/LOC/GS, TAWS alerts (G600 only), baro altitude, attitude, slip-skid, rate-of-turn, heading, track, air speed, vertical speed, ground speed, ADF bearing pointer, track information, and outside air temperature	C	B
MFD Display of TAWS data (G600 only) and Weather Radar	C	C
Input processing of VOR/ILS/LOC/GS data	C	C
Display of other information – moving map, terrain, flight plan overlay, charts and TAS/TIS traffic, XM weather data, XM audio entertainment, supplement waypoint and airport information, and time	D	D
Video Input and Display	C	C

Hardware Design Assurance

The GDU 620 in both the G500 and G600 systems complies with RTCA/DO-254 Level B.

1.5.2 TSO/ETSO Deviations

TSO	Deviation
TSO-C2d	1. Garmin was granted a deviation from TSO-C2d to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
	2. Garmin was granted a deviation from TSO-C2d to use SAE AS 8019A instead of SAE AS 8019 as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	3. Garmin was granted a deviation from TSO-C2d to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	4. Garmin was granted a deviation from TSO-C2d to eliminate the requirement 3.2.3 in SAE AS 8019A that requires “the instrument face to be marked with ‘Airspeed’ or ‘IAS’ and also with the applicable units of measure.” The GDU 620 includes a primary flight display and is not dedicated to Airspeed indicator.
ETSO-C2d	1. Garmin was granted a deviation from ETSO-C2d to use SAE AS 8019A instead of SAE AS 8019 as the Minimum Performance Standard.
	2. Garmin was granted a deviation from ETSO-C2d to eliminate the requirement 3.2.3 in SAE AS 8019A that requires "the instrument face to be marked with 'Airspeed' or 'IAS' and also with the applicable units of measure."
TSO-C3d	1. Garmin was granted a deviation from TSO-C3d to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	2. Garmin was granted a deviation from TSO-C3d to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
TSO-C4c	1. Garmin was granted a deviation from TSO-C4c to use SAE AS 8001 instead of SAE AS 396B for Minimum Performance Standards and Environmental Standards.
	2. Garmin was granted a deviation from SAE Aerospace Standard AS 8001 to use RTCA DO-160D instead of RTCA DO-138 as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.

TSO	Deviation
ETSO-C4c	1. Garmin was granted a deviation from ETSO-C4c to use SAE AS 8001 instead of SAE AS 396B for Minimum Performance Standards and Environmental Standards.
	2. Garmin was granted a deviation from SAE Aerospace Standard AS 8001 to use RTCA DO-160D instead of RTCA DO-138 as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
TSO-C6d	1. Garmin was granted a deviation from TSO-C6d to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	2. Garmin was granted a deviation from TSO-C6d to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
	3. Garmin was granted a deviation from TSO-C6d to use SAE AS 8013A instead of SAE AS 8013 as the Minimum Performance Standard.
ETSO-C6d	1. Garmin was granted a deviation from ETSO-C6d to use SAE AS 8013A instead of SAE AS 8013 as the Minimum Performance Standard.
TSO-C8d	1. Garmin was granted a deviation from TSO-C8d to use RTCA DO-160D instead of RTCA DO-160C as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	2. Garmin was granted a deviation from TSO-C8d to use RTCA DO-178B instead of RTCA DO-178A to demonstrate compliance for the verification and validation of the computer software.
	3. Garmin was granted a deviation from TSO-C8d to use SAE AS 8016A instead of SAE AS 8016 as the Minimum Performance Standard.
ETSO-C8d	1. Garmin was granted a deviation from ETSO-C8d to use SAE AS 8016A instead of SAE AS 8016 as the Minimum Performance Standard.
TSO-C10b	1. Garmin was granted a deviation from TSO-C10b to use SAE AS 8009A instead of SAE AS 392c as the Minimum Performance Standard.
	2. Garmin was granted a deviation from TSO-C10b to use RTCA DO-160D instead of RTCA DO160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	3. Garmin was granted a deviation from SAE AS 8009A Section 3.11 to not display ALTITUDE or ALT next to the tape indicating altitude. The GDU 620 presents a scrolling altitude tape with digital readout in a standardized format and location directly to the right of the attitude indication on the primary flight display.
ETSO-C10b	1. Garmin was granted a deviation from Deviate from ETSO-C10b to use SAE AS 8009A instead of SAE AS 392C as the Minimum Performance Standard.
	2. Garmin was granted a deviation from SAE AS 8009A Section 3.11 to not display ALTITUDE or ALT next to the tape indicating altitude.
TSO-C34e	1. Garmin was granted a deviation from TSO-34e to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	2. Garmin was granted a deviation from TSO-C34e to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
TSO-C36e	1. Garmin was granted a deviation from TSO-C36e to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	2. Garmin was granted a deviation from TSO-C36e to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
TSO-C40c	1. Garmin was granted a deviation from TSO-C40c to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
	2. Garmin was granted a deviation from TSO-C40c to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
TSO-C41d	1. Garmin was granted a deviation from TSO-C41d to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	2. Garmin was granted a deviation from TSO-C41d to use RTCA DO-178B instead of RTCA DO-178 to demonstrate compliance for the verification and validation of the computer software.

TSO	Deviation
TSO-C52b	1. Garmin was granted a deviation from TSO-52b to use RTCA DO-160D instead of RTCA DO-160C as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
TSO-C63c	1. Garmin was granted a deviation from TSO-C63c to use RTCA DO-178B minimum software level C instead of RTCA DO-178 to demonstrate compliance for the verification and validation of the computer software.
	2. Garmin was granted a deviation from TSO-C63c to use RTCA DO-160D instead of RTCA DO-160A as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	3. Garmin was granted a deviation from TSO-C63c to include environmental categories in the installation manual rather than marking on the unit.
	4. Garmin was granted a deviation from TSO-C63c to refer to the installation manual for equipment class marking.
TSO-C113	1. Garmin was granted a deviation from TSO-C113 to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
	2. Garmin was granted a deviation from TSO-C113 to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
TSO-C118	1. Garmin was granted a deviation from TSO-C118 to use RTCA DO-160D instead of RTCA DO-160B as the standard for Environmental Conditions and Test Procedures for Airborne Equipment.
	2. Garmin was granted a deviation from TSO-C118 to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
TSO-C147	1. Garmin was granted a deviation from TSO-C147 to refer to the installation manual for equipment class marking.
	2. Garmin was granted a deviation from TSO-C147 to use RTCA DO-178B minimum software level C instead of RTCA DO-178A software level 2 to demonstrate compliance for the verification and validation of the computer software.
TSO-C151b	1. Garmin was granted a deviation from TSO-C151b to mark equipment with serial number rather than date of manufacture.
	2. Garmin was granted a deviation from TSO-C151b section 5.c for providing one copy of the data in paragraphs 5.a(12) through (13) if the unit performs functions beyond those described in paragraph 3 and 3.a of this TSO.

1.5.3 Non-TSO Functions

These functions were tested to RTCA/DO-160D environmental qualifications and were demonstrated only when the GDU 620 is installed as a component of a Garmin Integrated Flight Deck.

Function	Design Assurance	Applicable LRU SW Part Numbers (GDU 620 G500)	Applicable LRU SW Part Numbers (GDU 620 G600)	Applicable Custom Logic Device Part Numbers
Synthetic Vision Technology The display of a computer-generated image of the external scene topography from the pilot's perspective. The image is derived from aircraft attitude (or state), a high-precision navigation solution, and a database of terrain, obstacles, and relevant cultural features. Synthetic Vision Technology provides additional awareness of the aircraft position with respect to terrain. Synthetic Vision Technology consists of depictions of terrain, traffic, obstacles, and the predicted position of the aircraft. The performance requirements for the Synthetic Vision Technology function are based on FAA Advisory Circular 23-26, "Synthetic Vision and Pathway Depictions on the Primary Flight Display".	RTCA/DO-178B Level B (G600) RTCA/DO-178B Level C (G500/G500H) RTCA/DO-254 Level B	006-B1071-10 through 006-B1071-1( )	006-B0498-10 through 006-B0498-1( )	006-C0078-2( ) 006-C0079-2( ) 006-C0093-2( ) 006-C0094-2( )
Display of Auxiliary Video Information Display of auxiliary video information enhance situational awareness, provide entertainment, and/or allow for visual monitoring of the inside or outside of the airplane. The display is pilot-selectable on the MFD.	RTCA/DO-178B Level C (G600) RTCA/DO-178B Level C (G500/G500H) RTCA/DO-254 Level B	006-B1071-10 through 006-B1071-1( )	006-B0498-10 through 006-B0498-1( )	006-C0078-2( ) 006-C0079-2( ) 006-C0093-2( ) 006-C0094-2( )

1.6 Aviation Limited Warranty

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

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

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

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

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

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

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2. INSTALLATION OVERVIEW

2.1 Introduction

NOTE

Unless otherwise specified, items specified for a G500 unit also apply to a G500H.

This section provides hardware equipment information for installing the GDU 620 and related hardware. Installation of the GDU 620 should follow the aircraft TC or STC requirements. Cabling is fabricated by the installing agency to fit each particular aircraft. The guidance of FAA advisory circulars AC 43.13-1B and AC 43.13-2B, where applicable, may be found useful for making retro-fit installations that comply with FAA regulations.

2.2 Installation Materials

2.2.1 Configurations Available

The GDU 620 is available in various configurations under the following part numbers. Catalog part numbers are shown with and without the installation kit.

Table 2-1. Catalog Part Numbers

Model	Usage	PFD Location	Bezel Color	Unit P/N	Catalog P/N Without Installation Kit
GDU 620	G600	LHS	Black	011-01264-00	010-00482-00
GDU 620	G600	LHS	Gray [1]	011-01264-10	010-00482-10
GDU 620	G600	RHS	Black	011-01264-20	010-00482-20
GDU 620	G600	RHS	Gray [1]	011-01264-30	010-00482-30
GDU 620	G500 [2]	LHS	Black	011-01264-50	010-00482-50
GDU 620	G500 [2]	RHS	Black	011-01264-60	010-00482-60

[1] Contact factory for availability.
[2] G500 models can be converted to G500H models using a suitable unlock card. Refer to Section 2.2.3 for details.

Table 2-2. Installation Accessories

Item	Usage	Garmin P/N
GDU 620 Connector Kit [2]	G500/G600	011-01656-00
Trim Plate, (0.032”) [1]	G500/G600	115-01009-00
Trim Plate, (0.063”) [1]	G500/G600	115-01009-10
GDU 620 Mounting Screw Kit	G500/G600	011-02078-00 [3]

[1] Trim Plate is not painted. It must be cut to size and painted to match the installation.
[2] Configuration Module P/N 011-00979-02 is included in GDU 620 connector kit, P/N 011-01656-00.
[3] Mounting screw kit contains screws P/N 211-64307-14 (qty. 6).

2.2.2 Optional Accessories

Each of the following optional accessories are provided separately from the GDU 620 unit.

Table 2-3. Accessories Provided Separately

Item	Usage	Garmin P/N
GDU 620 Cutout Template [1]	G500/G600	115-01010-00
Installer Unlock SD Card	G500/G600	010-00769-60
GDU 620 Main Loader Card	G600	010-00678-( ) [2]
GDU 620 Main Loader Card	G500	010-00843-( ) [2]

[1] Cutout Template is clamped to instrument panel and used to mark the cutout required by the GDU 620. It is also used as a drill template to drill the holes for the six GDU 620 mounting screws. This template can be used to make multiple cutouts.

[2] Card dash number -( ) changes based upon software version.

2.2.3 Optional Features

The GDU 620 has optional features that can be enabled. Available features are listed below.

Table 2-4. Optional Features Available

Item	Usage	Part Number
GDU 6xx ChartView Enablement Card – Heavy Aircraft [1]	G500/G600	010-00769-50
GDU 6xx ChartView Enablement Card – Light Aircraft [1]	G500/G600	010-00769-53
GDU 6xx TAWS Enablement Card – Single GDU Installations [1]	G600	010-00769-51
GDU 6xx Altitude Preselect Enablement Card [1] [2]	G500/G600	010-00769-52
GDU 6xx TAWS Enablement Card – Dual GDU Installations [3]	G600	010-00769-56
GDU 6xx Synthetic Vision Technology Enablement Card [1] [4]	G500	010-00769-54
GDU 6xx Helicopter Enablement Card [1] [5]	G500 *only*	010-00769-55
GDU 6xx Weather Radar Enablement Card [1] [4]	G500	010-00769-57
GDU 6xx GAD 43 Enablement Card [1] [4]	G500	010-00769-58
GDU 6xx Helicopter SVT Enablement Card [1] [6]	G500H *only*	010-00769-59
GDU 6xx Video Enablement Card [1]	G500/G600	010-00769-61

[1] An SD enablement card is required to enable the indicated feature. Each enablement card can only be used once and, once used, the card will be only work with that particular aircraft installation.

[2] The Altitude Preselect option is only available for certain autopilots. Contact Garmin for availability for a specific autopilot.

[3] An SD enablement card is required to enable the indicated feature. A single enablement card will enable TAWS-B functionality on both GDU 620s in a dual GDU installation. Once used, this card will only work with that particular aircraft installation.

[4] This is a standard feature on the G600 and does not require an enablement card. This card will **not** work on G500 units that have been converted to G500H units.

[5] This enablement card converts a G500 (left hand or right hand PFD version) into a G500H, specifically for use in helicopters.

[6] This enablement card will only work in G500 displays that have been converted to the G500H helicopter version using the Helicopter Enablement Card.

2.2.4 Materials Required But Not Supplied

The GDU 620 is intended for use with the standard aviation accessories. The following items are required for installation, but not supplied:

- Wire (MIL-W-22759/16 or equivalent)
- Shielded Wire (MIL-C-27500 or equivalent)
- Nut Plates, Reduced Rivet Spacing, No. 6 (six minimum – MS21071-06 or equivalent)
- Circuit Breaker (5A for 28V installations, 7.5A for 14V installations)
- Tie Wraps or Lacing Cord
- Ring Terminals (for grounding)

2.3 Database Options

Item	Usage	Garmin P/N
Data Card, Terrain/Obstacle/Airports, SafeTaxi, FliteCharts	G600	010-00769-42 [1]
Data Card, Terrain/Obstacle/Airports, SafeTaxi, FliteCharts	G600	010-00769-43 [2]
Data Card, Terrain/Obstacle/Airports, SafeTaxi, FliteCharts	G500	010-00769-44
Data Card, Americas-North, Supplemental DBs (6AS Terrain) [3]	G500H	010-00769-4A
Data Card, Americas-South, Supplemental DBs (6AS Terrain) [3]	G500H	010-00769-4B
Data Card, Atlantic-North, Supplemental DBs (6AS Terrain) [3]	G500H	010-00769-4C
Data Card, Atlantic-South, Supplemental DBs (6AS Terrain) [3]	G500H	010-00769-4D
Data Card, Pacific-North, Supplemental DBs (6AS Terrain) [3]	G500H	010-00769-4E
Data Card, Pacific-South, Supplemental DBs (6AS Terrain) [3]	G500H	010-00769-4F

[1] Data card P/N 010-00769-42 must be used with GDU 620 software version 2.xx.

[2] Data card P/N 010-00769-43 must be used with GDU 620 software version 3.00 or later.

[3] Only one data card is supplied with the unit. Data card region must be specified at time of order.

2.4 Optional Reference Material

Item	Usage	Garmin P/N
G600 Pilot's Guide	G600	190-00601-02
G600 Cockpit Reference Guide	G600	190-00601-03
G500 Pilot's Guide	G500	190-01102-02
G500 Cockpit Reference Guide	G500	190-01102-03
G500H Pilot's Guide	G500H	190-01150-02
G500H Cockpit Reference Guide	G500H	190-01150-03

2.5 Installation Considerations

The existing "six-pack instruments" (i.e. ADI, HSI/CDI, airspeed indicator, altimeter, turn coordinator (if installed) and vertical speed indicator (if installed)) must be removed, and the GDU 620 will be installed in the space vacated by the removal of these instruments. The instrument panel must be cut out to accommodate the GDU 620 and six fixed nutplates must be installed for fastening the GDU 620 to the instrument panel. An optional trim plate may be installed for cosmetic reasons. A different trim plate can also be used to provide support for the GDU 620 if the layout of the existing instruments does not provide adequate material for installing the nutplates after the cutout for the GDU 620 is made. Cabling must also be fabricated to fit each particular aircraft.

The following sections describe issues that must be considered for each installation.

2.5.1 Cabling and Wiring

Use AWG #24 or larger wire for all connections unless otherwise specified by the aircraft manufacturer or Garmin. The standard-density socket contacts supplied in the connector kit are compatible with up to AWG #20 wire (P6201 and P6202). The high-density pin contacts supplied in the connector kit are compatible with up to AWG #22 wire (P6203). In cases where some installations have more than one unit sharing a common circuit breaker, sizing and wire gauge is based on aircraft circuit breaker layout, length of wiring, current draw of units, and internal unit protection characteristics. Do not attempt to combine more than one unit on the same circuit breaker unless it is specified on aircraft manufacturer approved drawings.

Ensure that routing of the wiring does not come in contact with sources of heat, RF or EMI interference. Check that there is ample space for the cabling and mating connectors. Avoid sharp bends in cabling and routing near aircraft control cables.

2.5.2 Cooling Requirements

The GDU 620 has two cooling fans integrated into the bottom of the chassis to supply forced-air cooling to the unit. The mounting configuration should not restrict intake airflow into the fans at the bottom of the display, or exhaust airflow from the ducts at the top of the display.

2.5.3 Mounting Requirements

The GDU 620 is designed to mount in the instrument panel, in place of the existing “six-pack instruments”. The GDU 620 mounting hardware is designed to accommodate various sheet metal panel thicknesses, from 0.063” to 0.125”. Allow an additional 2” of clearance behind the mating connectors on rear of the display for routing cables. Display details are shown in Figure B-3.

2.5.4 Compass Safe Distance

After reconfiguring the avionics in the cockpit panel recalibrate the compass and make the necessary changes for noting correction data.

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3. INSTALLATION PROCEDURE

3.1 Unpacking Unit

Carefully unpack the equipment and make a visual inspection of the unit for evidence of damage incurred during shipment. If the unit is damaged, notify the carrier and file a claim. To justify a claim, save the original shipping container and all packing materials. Do not return the unit to Garmin until the carrier has authorized the claim.

Retain the original shipping containers for return shipments. If the original containers are not available, a separate cardboard container should be prepared that is large enough to accommodate sufficient packing material to prevent movement.

3.2 Special Tools Required

Crimp Tool

A crimp tool meeting MIL specification M22520/2-01 and a positioner/locator are required to ensure consistent, reliable crimp contact connections for the rear D-sub connectors. Refer to Table 3-2 for a list of recommended crimp tools.

3.3 Equipment Mounting

When installing GDU 620 into a retrofit installation, the existing six-pack instruments must be removed and the instrument panel cut to accommodate the GDU 620. Six fixed nutplates must be installed on the instrument panel for fastening the GDU 620 to the instrument panel. An optional trim plate may be installed for cosmetic reasons. A different trim plate can also be used to provide support for the GDU 620 if the layout of the existing instruments does not provide adequate material for installing the nutplates after the cutout for the GDU 620 is made.

3.3.1 Instrument Panel Cutout

Remove all instruments required to facilitate the installation of the GDU 620. For the majority of installations, the GDU 620 will be installed in place of the previously installed six-pack instruments.

NOTE

The GDU 620 mounting hole pattern is not symmetrical top to bottom or left to right. Care must be taken to ensure that the template is oriented in the correct direction.

NOTE

The outside dimensions of the GDU 620 cutout pattern in the cutout template are identical to the outside dimensions of the GDU 620.

1. Position the GDU 620 Cutout Template on the instrument panel at the desired location for the GDU 620 and temporarily affix the Cutout Template in this location. When positioning the template ensure that the existing instrument panel material is visible by the maximum number of mounting holes. This will permit the maximum number of nutplates to be mounted in the instrument panel.
2. Using the template as a guide, drill six 0.1285” holes for the GDU 620 mounting points using a #30 drill bit.
3. Transfer the GDU 620 LRU outline to the instrument panel, using the *outside* edges of the cutout pattern.
4. Remove the template from the instrument panel. Fill in the gaps in the cutout markings on the instrument panel using a straight edge.
5. Enlarge the six mounting holes to 0.144 using a #27 drill bit.
6. Cut out the GDU 620 outline on the instrument panel.

7. Install six No. 6 fixed nutplates (P/N MS21071-06) as shown in Figure B-7.
8. If required, install the trim plate prior to installing the GDU 620.

3.4 Unit Replacement

Whenever the GDU 620 is removed and reinstalled, verify that the slide-lock is engaged on both sides of each connector. Also verify that the GDU 620 unit power-up self-test sequence is successfully completed, all databases are present and no failure messages are annunciated. If the unit was serviced or if a different unit is being installed, verify that the configuration is correct using the previously completed checkout log prior to verifying that the GDU 620 unit power-up self-test sequence is successfully completed and no failure messages are annunciated.

NOTE

The installation configuration settings are stored in the configuration module and will be retained when the GDU 620 is replaced with a new unit. However, user settings are in internal LRU flash memory and will be lost when the GDU 620 is replaced with a new unit.

3.5 Cabling and Wiring

The GDU 620 connector kit includes connectors and crimp contacts. Make the crimp connections with a crimp tool as specified in Table 3-2.

Refer to the interconnection diagrams in Appendix C for the appropriate interconnections. Use 22 or 24 AWG wire for all connections except for power. Use 20 AWG for power/ground. Install the configuration module as described in Section 3.6.1.2. Once the cable assemblies have been made, position the cable so that there is sufficient length to allow the GDU to be removed from the instrument panel with the cables attached. Route the wiring bundle as appropriate. Avoid sharp bends.

3.5.1 Wiring Harness

Allow adequate space for installation of cables and connectors. The installer supplies and fabricates all of the cables. All electrical connections are made through a 37-pin D-Subminiature connector, a 50-pin D-subminiature connector and a 62-pin D-subminiature connector provided by Garmin. Construct the wiring harness according to the information contained in this and the following sections. Cable lengths will vary depending upon installation. Strip all wires going to the connectors 0.17”. Insert the wire into the pin and crimp with one of the recommended (or equivalent) crimping tools. Insert the pin into the connector housing location as specified by the interconnect drawings in Appendix C. Verify the pin is properly engaged into the connector by gently tugging on the wire. Route and secure the cable run from the GDU 620 to the other units away from sources of electrical noise.

Section 4 provides I/O definition of all input and output signals. Required connectors and associated hardware are supplied with the connector kit. See Appendix C for interconnect wiring diagrams.

CAUTION

Check wiring connections for errors before connecting the cables to the GDU 620. Incorrect wiring could cause component damage.

Table 3-1. Socket Contact Part Numbers

Wire Gauge	37-pin connector (P6201) 50-pin connector (P6202)	Configuration Module 50-pin connector (P6202)	62-pin connector (P6203)
	20-24 AWG [1]	**28 AWG** [3]	**22-28 AWG**
Garmin P/N	336-00022-00	336-00022-01	336-00021-00
Military P/N	M39029/63-368	N/A	M39029/58-360
AMP	N/A	N/A	204370-2
Positronic	N/A	N/A	MC8522D
ITT Cannon	N/A	N/A	030-2042-000

Table 3-2. Recommended Crimp Tools

Manufacturer	Hand Crimping Tool	20-24 AWG (P6201/P6202) [3]		22-28 AWG (P6203)	
		Positioner	Insertion/ Extract Tool	Positioner	Insertion/ Extract Tool
Military P/N	M22520/2-01	M22520/2-08	M81969/14-02 M81969/1-02	M22520/2-09	M81969/14-01 M81969/1-04
Positronic	9507	9502-11	N/A	N/A	N/A
ITT Cannon	N/A	N/A	N/A	N/A	N/A
AMP	N/A	N/A	N/A	N/A	N/A
Daniels	AFM8	K13-1	N/A	K42	N/A
Astro	615717	615724	N/A	615725	N/A

Notes:

[1] Contacts listed are not to be used for configuration module wiring. Use the contacts supplied with the configuration module when installing configuration module wires in P6202.

[2] Non-Garmin part numbers shown are not maintained by Garmin and are subject to change without notice.

[3] For configuration module pins, ensure that the crimp tool is set to crimp 28 AWG wire (indenter setting of '4').

3.6 Backshell Assemblies

3.6.1 Backshell Assembly and D-Subminiature Connectors

The GDU 620 connector kit (P/N 011-01656-00) includes three Garmin backshell assemblies and three Garmin ground adapter assemblies. Backshell connectors give the installer the ability to terminate shield grounds at the backshell housing using the shield block ground kit. Table 3-3 lists Garmin part numbers for the GDU 620 D-sub connectors and the backshell assemblies.

Table 3-3. Backshell Assembly

Figure 3-1 thru Figure 3-3 Ref	Description	Garmin P/N	Notes
1	Cast Housing (P6201 / P6203) Cast Housing (P6202)	125-00084-00 125-00085-00	[2]
2	Shield block	117-00147-01	[3]
3	Screw, 4-40 x.250, FLHP100°, SS/P, Nylon	211-63234-08	[3]
4	Slide Lock Spring	N/A	[4]
5	Slide Lock Lever	N/A	[4]
6	Screw,4-40x.375,PHP,SS/P, w/Nylon	211-60234-10	[2], [5]
7	Strain Relief	115-00499-03	[2]
8	Cover (P6201 / P6203) Cover (P6202)	115-00500-03 115-00500-04	[2]
9	Screw,4-40x.187,FLHP100,SS/P, w/Nylon	211-63234-06	[2]
10	Connector, D-Sub, 37 Socket (P6201) Connector, D-Sub, 50 Socket (P6202) Connector, D-Sub, HD, 62 Pin (P6203)	330-00502-37 330-00502-50 330-00366-62	[5]
11	Multiple Conductor Shielded Cable (See Interconnect Diagrams, Appendix C)	As Required	[6]
12	Shield Terminator	As Required	[6], [7]
13	Wire, Insulated, 20 – 22 AWG (3” max length)	As Required	[6], [7]
14	Socket Contacts, #20 (P6201 / P6202) Pin Contacts, #22D (P6203)	336-00022-00 336-00021-00	
15	Ring terminal, #8, insulated, 18-22 AWG, 14-16 AWG	MS25036-149, MS25036-153, MS25036-156	[6]
16	Screw, PHP, 8-32x.312", Stainless or Cad Plated Steel	MS51957-42, MS35206-242	[6]
17	Split Washer, #8, (.045" compressed thickness) Stainless or Cad-plated steel	MS35338-137, MS35338-42	[6]
18	Flat Washer, #8, .032" thick, .174"ID, .375" OD, Stainless or Cad Plated Steel	NAS1149CN832R, NAS1149FN832P	[6]
19	Silicon Fusion Tape	249-00114-00	[6]

[1] All items are applicable to P6201, P6202 and P6203 unless otherwise specified.
[2] Supplied as part of Backshell Kits P/N 011-00950-03 (P6201 / P6203) and P/N 011-00950-04 (P6202).
[3] Supplied as part of Ground Adapter Kit P/N 011-01169-01.
[4] Supplied as part of Slide Lock Kit P/N 330-90006-03 (P6201/P6203) and P/N 330-90006-04 (P6202).
[5] Supplied as part of GDU 620 Connector Kit P/N 011-01656-00.
[6] Not supplied – must be purchased separately.
[7] Solder sleeve with pre-installed lead may be used instead of items 12 and 13.

3.6.1.1 Shield Block Assembly Procedure

The parts for the connector and backshell assemblies for the GDU 620 installations are listed in Table 3-3. The GDU 620 connector kit (P/N 011-01656-00) includes three Garmin backshell assemblies and three Garmin ground adapter assemblies. Backshell connectors give the installer the ability to terminate shield grounds at the backshell housing using the Shield Block ground kit. Table 3-3 lists Garmin part numbers for the GDU 620 D-sub connectors and the backshell assemblies.

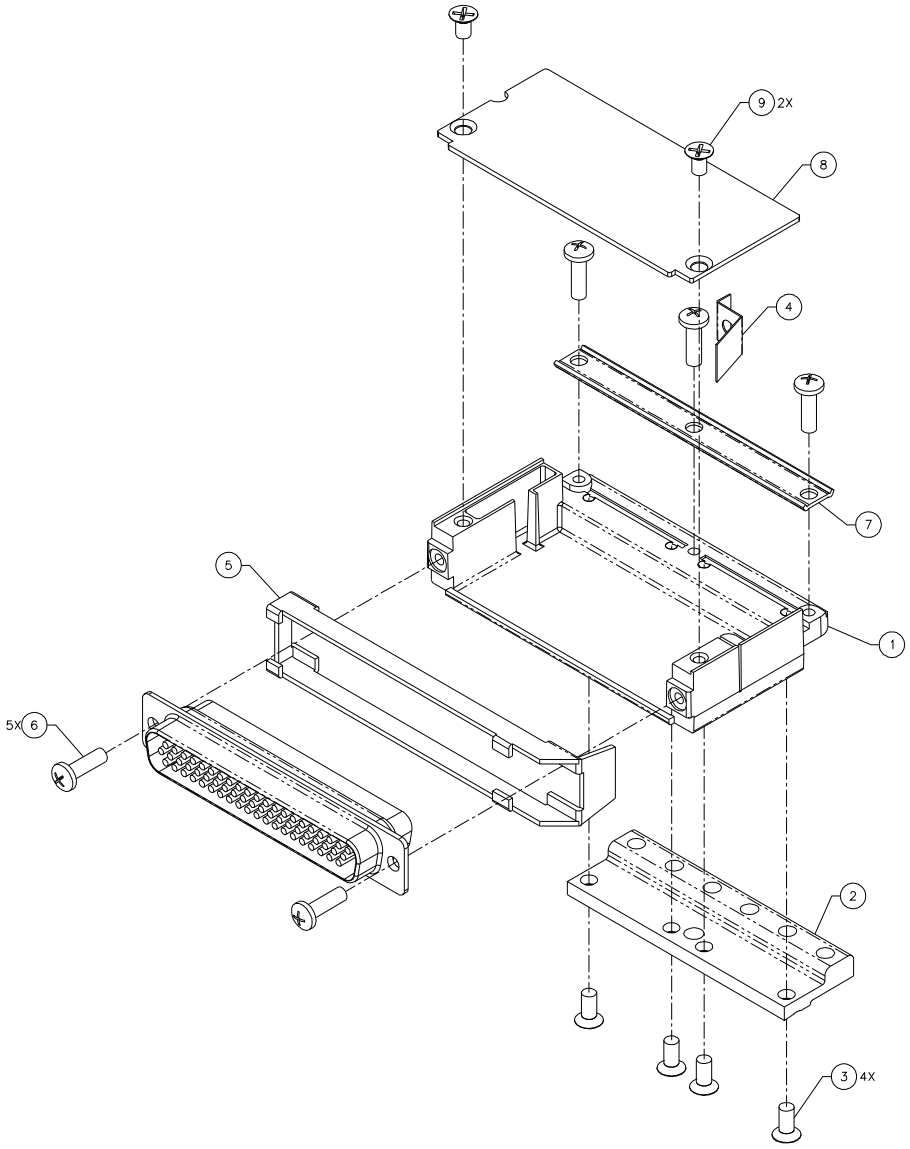
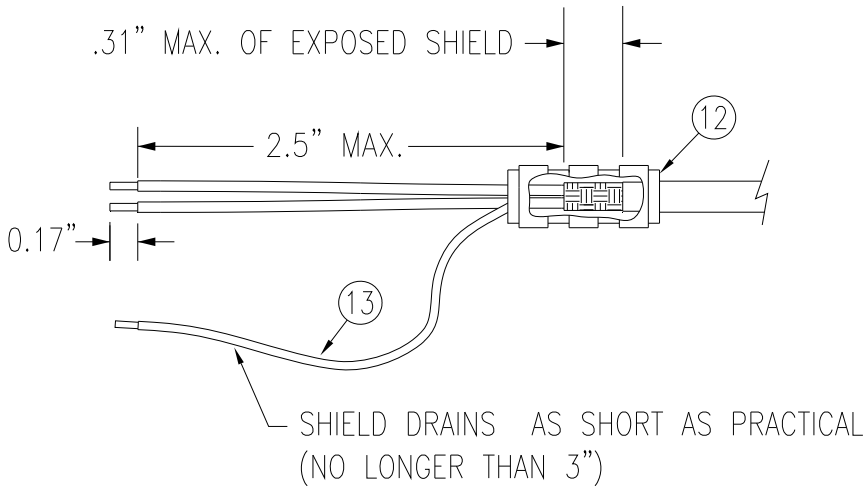
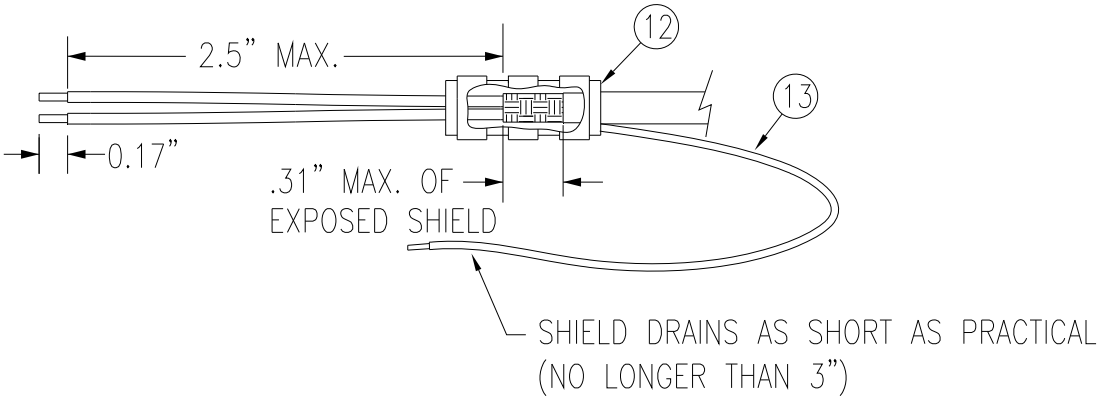


Figure 3-1. Connector and Backshell Assembly

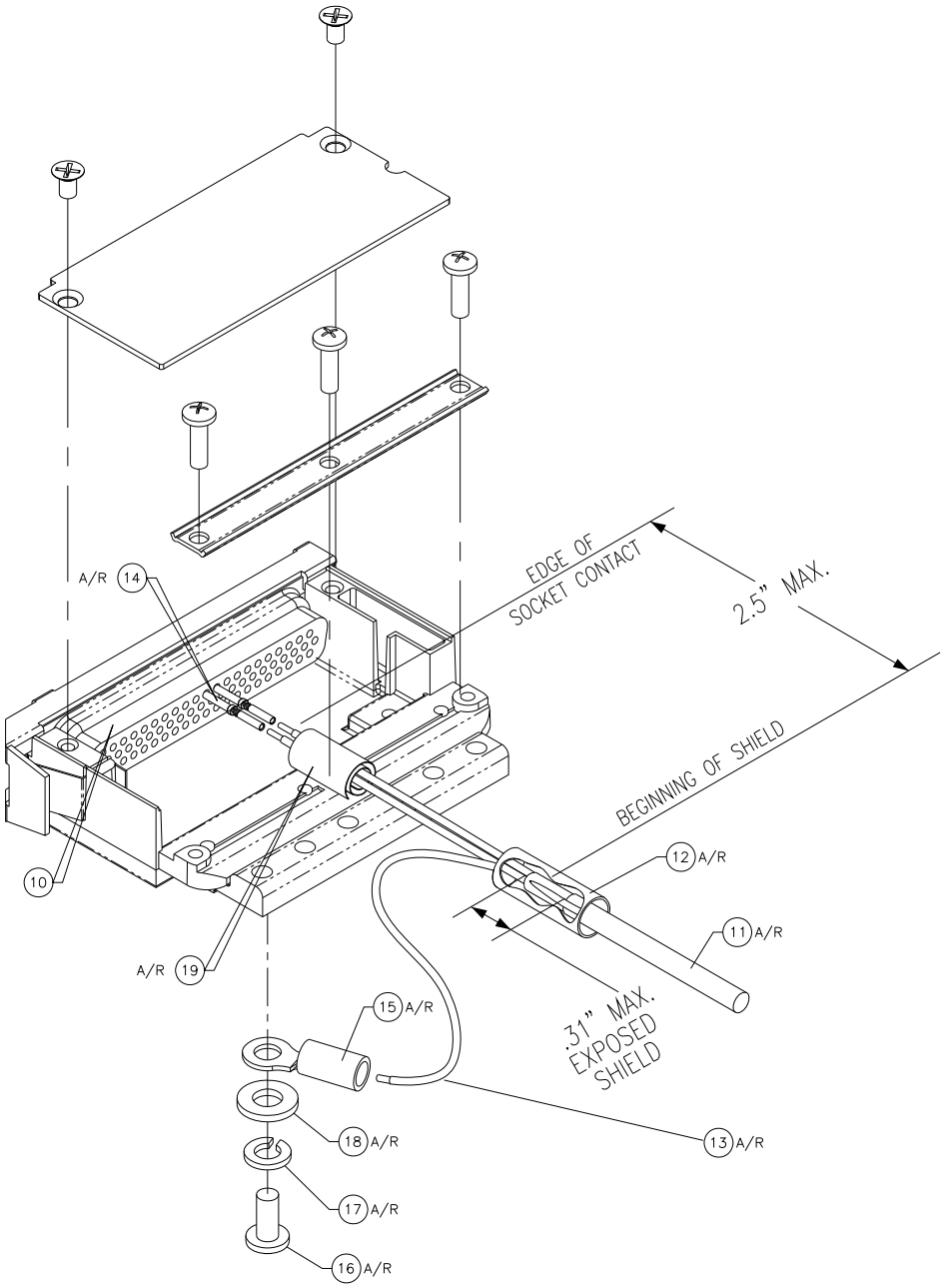


Preferred Method



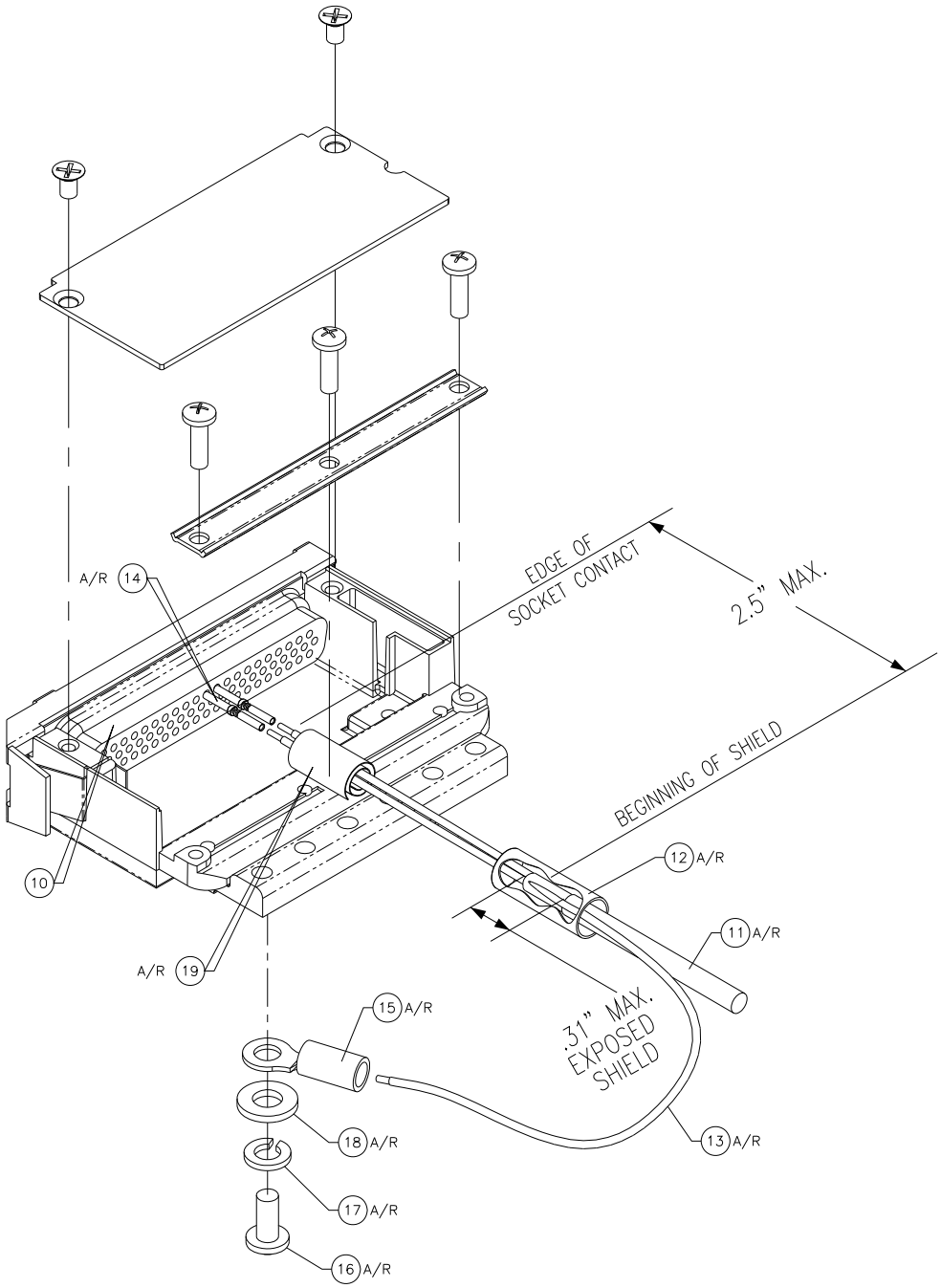
Alternate Method

Figure 3-2. Shielded Cable Preparation



Preferred Method

Figure 3-3. Shield Termination on Backshell Assembly
Sheet 1 of 2



Alternate Method

Figure 3-3. Shield Termination on Backshell Assembly
Sheet 2 of 2

Prepare all of the shielded cables as shown in Figure 3-2. Refer to Figure 3-3 for details of the shield termination to the connector backshell.

1. At the end of the shielded cable (11), strip back a 2.5" maximum length of the jacket to expose the braid. Remove this exposed braid. Carefully score the jacket 1/4" to 5/16" from the end and remove the jacket to leave the braid exposed.

NOTE

Solder sleeves with pre-installed shield drains may be used instead of separate shield terminators and individual wires.

2. Connect a 20 or 22 AWG wire (13) to the exposed shield of the prepared cable assembly. (See Figure 3-2). AC 43.13 maybe a helpful reference for termination techniques.

NOTE

Solder Sleeves with pre-installed lead: A preferred solder sleeves is the Raychem S03 Series with the thermochromic temperature indicator. These solder sleeves come with a pre-installed lead and effectively take the place of items 12 and 13. For detailed instructions on product use, refer to Raychem installation procedure.

3. Slide a shield terminator (12) onto the prepared cable assembly (11) and connect the wire (13) to the shield using a heat gun approved for use with solder sleeves. The chosen size of solder sleeve must accommodate both the number of conductors present in the cable and the wire (13) to be attached.

4. Repeat steps 1 through 3 as needed for the remaining shielded cables.

5. Crimp contacts (14) onto the wires and terminate in the connector (10) in accordance with the aircraft wiring drawings.

6. For P6202, install the configuration module wires into the connector. Refer to Section 3.6.1.2, steps 1 and 2 for instructions on installing the configuration module.

Assemble the backshell onto the connector:

1. Attach the Shield Block (2) to the backshell (1) by inserting the flathead screws (3) through the holes on the Shield Block and threading into the tapped holes on the backshell (1). (See Figure 3-1).

CAUTION

When mounting the slide lock, use only the specified screws (6). Do not attempt to use the self-tapping screws supplied in the slide lock kit, as these will damage the backshell housing.

2. Place the slide lock (5) over the connector (10). While holding the slide lock in place, attach the connector / slide lock to the backshell (1) by inserting two screws (6) through the holes on the connector and threading into the tapped holes on the backshell (1). (See Figure 3-1)

3. Wrap the cable bundle with Silicone Fusion Tape (19 or a similar version) at the point where the backshell strain relief and cast housing will contact the cable bundle.

CAUTION

Placing the grooved side of the strain relief across the cable bundle may damage wires.

4. Place the smooth side of the backshell strain relief (7) across the cable bundle and secure using the three screws (6).

5. For P6202, install the configuration module into the connector backshell. Refer to Section 3.6.1.2 steps 3 through 6 for instructions on installing the configuration module into the backshell.

6. Insert the slide lock spring (4) into the connector backshell (1). Attach the cover (8) to the backshell using two screws (9).

NOTE

Each tapped hole on the shield block (2) may accommodate only two ring terminals (15). It is preferred that a maximum of two wires (13) be terminated per ring terminal. Two wires per ring terminal will necessitate the use of a ring terminal, #8, insulated, 14-16 AWG (MS25036-153). If only a single wire is left or if only a single wire is needed for this connector a ring terminal, #8, insulated, 18-22 AWG (MS25036-149) can accommodate this single wire. If more wires exist for the connector than two per ring terminal, it is recommended that only three wires are terminated in each ring terminal to ensure a good electrical connection.

7. Install ring terminals (15) onto the wires (13), grouping wires as appropriate for the connector.

8. Terminate the ring terminals to the shield block (2) by placing items on the pan head screw (16) in the following order: split washer (17), flat washer (18), first ring terminal, second ring terminal if needed, before finally inserting the screw into the tapped holes on the shield block.

3.6.1.2 Configuration Module Installation (P6202 Only)

Table 3-4 lists part numbers for the Configuration Module Kit, which is used with P6202 only.

Table 3-4. Configuration Module Kit – 011-00979-02

Figure 3-4 Ref	Description	Garmin P/N
1	Configuration Module, PCB Board Assembly w/EEPROM	012-00605-00
2	Spacer, Config Module	213-00043-00
3	4-Conductor Harness	325-00122-00
4	Socket Contact, Crimp, #20	336-00022-01

Table 3-5. Configuration Module Wire Color Reference Chart

Color	Function	P6002 Contact
Black	Ground	27
Red	Vcc	24
Yellow	Data	19
White	Clock	17

NOTE

The socket contacts supplied with the GDU 620 configuration module are specifically made to accommodate 28 AWG wire. The crimp tool should have the indenter set to ‘4’ when crimping these contacts to the configuration module harness.

Assemble the configuration module:

1. Crimp socket contacts (4) onto each wire of the four-conductor wire harness (3). Strip 0.17” of insulation from each wire prior to crimping.
2. Insert newly crimped socket contacts and wires (3, 4) into the appropriate connector housing location as shown in Figure 3-4, Figure C-1, and Figure C-12.
3. Apply the spacer (2) by wrapping it around the PCB board (1) making sure to insert the plastic connector mounted on the board into the hole provided in the spacer.
4. Plug the four-conductor wire harness (3) into the connector on the PCB board (1).
5. With pad (2) in position, insert PCB board (1) into the backshell recess.
6. Orient the connector housing so that the inserted four conductor wire harness (3) is on the same side of the backshell as the inserted PCB board (1), as shown in Figure 3-4.

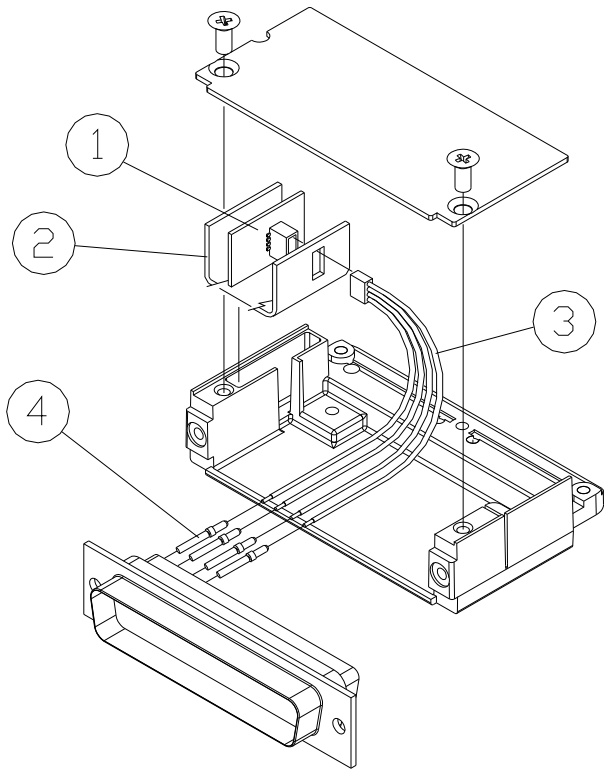


Figure 3-4. Configuration Module Installation

3.7 Unit Installation

The GDU 620 is mounted in the panel with six 6/32” socket head cap screws. Depending on installation specifics, the unit can be flush mounted with a standard 6-32 nut plate to an existing panel, panel doubler, or new sub-panel. A trim plate may be used as desired.

3.8 Continued Airworthiness

Maintenance of the GDU 620 is “on condition” only. For regulatory periodic functional checks, refer to approved aircraft maintenance manuals or manual supplements for actual aircraft maintenance requirements.

4. SYSTEM INTERCONNECTS

4.1 Pin Function List

4.1.1 P6201 Connector

View of J6201 connector from back of unit

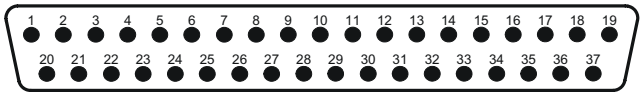


Table 4-1. P6201 Connector Pin-Out

Pin	Pin Name	I/O
1	COMPOSITE VIDEO IN 1 *(software version 4.00 or later)*	--
2	RESERVED	--
3	AUDIO INHIBIT IN* (*function not currently implemented)*	In
4	CDU SYSTEM ID PROGRAM*	In
5	SPARE DISC IN* 4	In
6	GSR STATUS IN* *(software version 4.00 or later)*	In
7	WEIGHT-ON-WHEELS IN* *(software version 4.00 or later/helicopter versions only)*	In
8	GPSS ENABLE IN*	In
9	FD ENABLE IN	In
10	ADF VALID IN	In
11	ETHERNET IN 1A	In
12	ETHERNET IN 1B	In
13	ETHERNET OUT 1A	Out
14	ETHERNET OUT 1B	Out
15	FLIGHT DIRECTOR PITCH UP	In
16	FLIGHT DIRECTOR PITCH DOWN	In
17	ADF X/COS IN	In
18	ADF Y/SIN IN	In
19	RESERVED	--
20	COMPOSITE VIDEO IN 2 *(software version 4.00 or later)*	Out
21	RESERVED	--
22	GROUND	--
23	TAWS AUDIO ACTIVE OUT* *(function not currently implemented)*	Out
24	ALTITUDE CAPTURE* *(software version 4.00 or later)*	Out
25	A/P BACKCOURSE* *(software version 3.00 or later)*	Out
26	TIS/TAS STANDBY*	Out
27	TAS TEST*	Out
28	AUDIO OUT HI	Out
29	AUDIO OUT LO	Out
30	ETHERNET IN 2A	In
31	ETHERNET IN 2B	In
32	ETHERNET OUT 2A	Out
33	ETHERNET OUT 2B	Out
34	FLIGHT DIRECTOR ROLL LEFT	In
35	FLIGHT DIRECTOR ROLL RIGHT	In
36	ADF DC REF IN	In
37	RESERVED	--

An asterisk (*) following a signal name denotes that the signal is an Active-Low, requiring a ground to activate. If there is no asterisk, the signal is an Active-High.

4.1.2 P6202 Connector

View of J6202 connector from back of unit

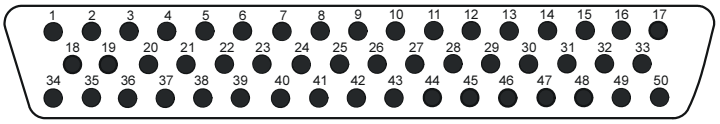


Table 4-2. P6202 Connector Pin-Out

Pin	Pin Name	I/O
1	AIRCRAFT POWER	In
2	AIRCRAFT GROUND	--
3	ARINC 429 OUT 1A	Out
4	ARINC 429 IN 1A	In
5	ARINC 429 IN 2A	In
6	ARINC 429 IN 3A	In
7	ARINC 429 IN 4A	In
8	ARINC 429 IN 5A	In
9	ARINC 429 IN 6A	In
10	RS-232 IN 1	In
11	RS-232 IN 2	In
12	RS-232 IN 3	In
13	RS-232 IN 4	In
14	RS-232 IN 5	In
15	LIGHTING BUS HI	In
16	LIGHTING BUS LO	In
17	RESERVED	--
18	AIRCRAFT POWER	In
19	AIRCRAFT GROUND	--
20	ARINC 429 OUT 1B	Out
21	ARINC 429 IN 1B	In
22	ARINC 429 IN 2B	In
23	ARINC 429 IN 3B	In
24	ARINC 429 IN 4B	In
25	ARINC 429 IN 5B	In
26	ARINC 429 IN 6B	In
27	RS-232 OUT 1	Out
28	RS-232 OUT 2	Out
29	RS-232 OUT 3	Out
30	RS-232 OUT 4	Out
31	RS-232 OUT 5	Out
32	CONFIG MODULE DATA	I/O
33	CONFIG MODULE CLOCK	Out
34	AIRCRAFT POWER	In
35	AIRCRAFT GROUND	--
36	DEMO MODE SELECT*	In
37	RESERVED	--
38	GROUND	--
39	RESERVED	--
40	TIME MARK IN 1A	In

Pin	Pin Name	I/O
41	TIME MARK IN 1B	In
42	TIME MARK IN 2A	In
43	TIME MARK IN 2B	In
44	RS-232 GND 1	--
45	RS-232 GND 2	--
46	RS-232 GND 3	--
47	RS-232 GND 4	--
48	RS-232 GND 5	--
49	CONFIG MODULE POWER	Out
50	CONFIG MODULE GND	Out

An asterisk (*) following a signal name denotes that the signal is an Active-Low, requiring a ground to activate. If there is no asterisk, the signal is an Active-High.

4.1.3 P6203 Connector

View of J6203 connector from back of unit

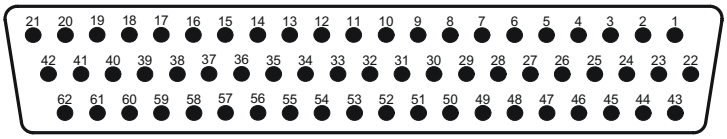


Table 4-3. P6203 Connector Pin-Out

Pin	Pin Name	I/O
1	ARINC 429 OUT 2A	Out
2	ARINC 429 OUT 3A	Out
3	ARINC 429 OUT 4A	Out
4	ARINC 429 IN 7A	In
5	ARINC 429 IN 8A	In
6	RS-232 IN 6	In
7	RS-232 IN 7	In
8	RS-232 IN 8	In
9	RS-422 IN 1A/RS-485 1A	I/O
10	RS-422 OUT 1A/RS-485 2A	I/O
11	RS-422 IN 2A/RS-485 3A	I/O
12	RS-422 OUT 2A/RS-485 4A	I/O
13	RESERVED	--
14	ARINC 708/453 IN 1A	In
15	ARINC 708/453 IN 1 TERM A	In
16	ARINC 708/453 IN 2A	In
17	ARINC 708/453 IN 2 TERM A	In
18	A/P HEADING ERROR HI	Out
19	A/P COURSE ERROR HI	Out
20	A/P AC REF HI	In
21	RESERVED	--
22	RESERVED	--
23	ARINC 429 OUT 2B	Out
24	ARINC 429 OUT 3B	Out
25	ARINC 429 OUT 4B	Out
26	ARINC 429 IN 7B	In
27	ARINC 429 IN 8B	In
28	RS-232 OUT 6	Out
29	RS-232 OUT 7	Out
30	RS-232 OUT 8	Out
31	RS-422 IN 1B/RS-485 1B	I/O
32	RS-422 OUT 1B/RS-485 2B	I/O
33	RS-422 IN 2B/RS-485 3B	I/O
34	RS-422 OUT 2B/RS-485 4B	I/O
35	RESERVED	--
36	ARINC 708/453 IN 1B	In
37	ARINC 708/453 IN 1 TERM B	In
38	ARINC 708/453 IN 2B	In
39	ARINC 708/453 IN 2 TERM B	In
40	A/P HEADING ERROR LO	--

Pin	Pin Name	I/O
41	A/P COURSE ERROR LO	--
42	A/P AC REF LO	In
43	RESERVED	--
44	GPS ANNUNCIATE*	Out
45	GPS SELECT*	Out
46	ILS/GPS APPROACH*	Out
47	GSR RMT PWR OUT* *(software version 4.00 or later)*	Out
48	GROUND	--
49	RS-232 GND 6	--
50	RS-232 GND 7	--
51	RS-232 GND 8	--
52	LATERAL +LEFT OUT	Out
53	LATERAL +RIGHT OUT	Out
54	LATERAL +FLAG OUT	Out
55	LATERAL –FLAG OUT	Out
56	VERTICAL +UP OUT	Out
57	VERTICAL +DOWN OUT	Out
58	VERTICAL +FLAG OUT	Out
59	VERTICAL –FLAG OUT	Out
60	LATERAL SUPERFLAG OUT	Out
61	VERTICAL SUPERFLAG OUT	Out
62	RESERVED	--

An asterisk (*) following a signal name denotes that the signal is an Active-Low, requiring a ground to activate. If there is no asterisk, the signal is an Active-High.

4.2 Functional Descriptions

4.2.1 Power

Pin Name	Connector	Pin	I/O
AIRCRAFT POWER	P6202	1	In
AIRCRAFT POWER	P6202	18	In
AIRCRAFT POWER	P6202	34	In
AIRCRAFT GND	P6202	2	--
AIRCRAFT GND	P6202	19	--
AIRCRAFT GND	P6202	35	--

The GDU 620 will accept input power from 9 to 33 VDC. At least two of the power inputs must be connected.

4.2.2 Configuration Module

Pin Name	Connector	Pin	I/O
CONFIG MODULE DATA	P6202	32	Out
CONFIG MODULE CLOCK	P6202	33	I/O
CONFIG MODULE POWER	P6202	49	Out
CONFIG MODULE GROUND	P6202	50	Out

The GDU 620 stores installation-specific configuration information in an aircraft configuration module located in the backshell of P6202. This eliminates the need to set up aircraft specific configuration items again if a new GDU 620 is installed. The configuration module is mounted within the connector backshell as described in Section 3.6.1.2.

4.2.3 Serial Data

4.2.3.1 RS-232

Pin Name	Function	Connector	Pin	I/O
RS-232 IN 1	AHRS	P6202	10	In
RS-232 OUT 1	AHRS (GPS 1 DATA)	P6202	27	Out
RS-232 GND 1	--	P6202	44	--
RS-232 IN 2	ADC	P6202	11	In
RS-232 OUT 2	ADC	P6202	28	Out
RS-232 GND 2	--	P6202	45	--
RS-232 IN 3	GPS 1	P6202	12	In
RS-232 OUT 3	GPS 1	P6202	29	Out
RS-232 GND 3	--	P6202	46	--
RS-232 IN 4	GPS 2	P6202	13	In
RS-232 OUT 4	AHRS (GPS 2 DATA)	P6202	30	Out
RS-232 GND 4	--	P6202	47	--
RS-232 IN 5	SL30	P6202	14	In
RS-232 OUT 5	SL30	P6202	31	Out
RS-232 GND 5	--	P6202	48	--
RS-232 IN 6	IRIDIUM (GSR 56)	P6203	6	In
RS-232 OUT 6	IRIDIUM (GSR 56)	P6203	28	Out
RS-232 GND 6	--	P6203	49	--
RS-232 IN 7	GAD 43	P6203	7	In
RS-232 OUT 7	GAD 43	P6203	29	Out
RS-232 GND 7	--	P6203	50	--
RS-232 IN 8	SPARE	P6203	8	In
RS-232 OUT 8	ALTITUDE DATA *(Software Version 3.00 or later)*	P6203	30	Out
RS-232 GND 8	--	P6203	51	--

The RS-232 outputs conform to EIA Standard RS-232C with an output voltage swing of at least ±5V when driving a standard RS-232 load.

The serial ports can receive/transmit serial data from/to various sources.

Refer to Section 5.5.1.9 for configuration information.

4.2.3.2 ARINC 429

Pin Name	Function	Connector	Pin	I/O
ARINC 429 IN 1A	AHRS	P6202	4	In
ARINC 429 IN 1B	AHRS	P6202	21	In
ARINC 429 IN 2A	ADC	P6202	5	In
ARINC 429 IN 2B	ADC	P6202	22	In
ARINC 429 IN 3A	GPS 1	P6202	6	In
ARINC 429 IN 3B	GPS 1	P6202	23	In
ARINC 429 IN 4A	NAV 1	P6202	7	In
ARINC 429 IN 4B	NAV 1	P6202	24	In
ARINC 429 IN 5A	GPS 2	P6202	8	In
ARINC 429 IN 5B	GPS 2	P6202	25	In
ARINC 429 IN 6A	NAV 2	P6202	9	In
ARINC 429 IN 6B	NAV 2	P6202	26	In

Pin Name	Function	Connector	Pin	I/O
ARINC 429 IN 7A	TRAFFIC SYSTEM	P6203	4	In
ARINC 429 IN 7B	TRAFFIC SYSTEM	P6203	26	In
ARINC 429 IN 8A	EXTERNAL TAWS	P6203	5	In
ARINC 429 IN 8B	EXTERNAL TAWS	P6203	27	In
ARINC 429 OUT 1A	GPS	P6202	3	Out
ARINC 429 OUT 1B	GPS	P6202	20	Out
ARINC 429 OUT 2A	AUTOPILOT	P6203	1	Out
ARINC 429 OUT 2B	AUTOPILOT	P6203	23	Out
ARINC 429 OUT 3A		P6203	2	Out
ARINC 429 OUT 3B		P6203	24	Out
ARINC 429 OUT 4A		P6203	3	Out
ARINC 429 OUT 4B		P6203	25	Out

The ARINC 429 outputs conform to ARINC 429 electrical specifications when loaded with up to five standard ARINC 429 receivers.

Refer to Section 5.5.1.8 for configuration information.

4.2.3.3 Ethernet

Pin Name	Function	Connector	Pin	I/O
ETHERNET IN 1A	GDL 69/69A	P6201	11	In
ETHERNET IN 1B	GDL 69/69A	P6201	12	In
ETHERNET OUT 1A	GDL 69/69A	P6201	13	Out
ETHERNET OUT 1B	GDL 69/69A	P6201	14	Out
ETHERNET IN 2A	GWX 68	P6201	30	In
ETHERNET IN 2B	GWX 68	P6201	31	In
ETHERNET OUT 2A	GWX 68	P6201	32	Out
ETHERNET OUT 2B	GWX 68	P6201	33	Out

This Ethernet based HSDB (High Speed Data Bus) meets the hardware aspects of IEEE standard 802.3 for 10 base T Ethernet communications.

4.2.3.4 RS-422/RS-485

Pin Name	Function	Connector	Pin	I/O
RS-422 IN 1A/RS-485 1A	S-TEC 55X	P6203	9	I/O
RS-422 OUT 1A/RS-485 2A		P6203	10	I/O
RS-422 IN 2A/RS-485 3A		P6203	11	I/O
RS-422 OUT 2A/RS-485 4A		P6203	12	I/O
RS-422 IN 1B/RS-485 1B	S-TEC 55X	P6203	31	I/O
RS-422OUT 1B/RS-485 2B		P6203	32	I/O
RS-422IN 2B/RS-485 3B		P6203	33	I/O
RS-422 OUT 2B/RS-485 4B		P6203	34	I/O

The RS-422/485 ports conform to EIA Standard RS-485 (RS-422 when configured as RS-422) with a differential output voltage swing of at least ± 1.5V when driving a standard RS-422/485 load.

The serial ports can receive/transmit serial data from/to various sources.

Refer to Section 5.5.1.9 for configuration information.

4.2.4 Lighting

Pin Name	Connector	Pin	I/O
LIGHTING BUS HI	P6202	15	In
LIGHTING BUS LO	P6202	16	In

The GDU 620 display and keys can be configured to track 28 VDC, 14 VDC, 5 VDC, or 5 VAC lighting buses using this input. Alternatively, the GDU 620 display and keys can automatically adjust for ambient lighting conditions based on the photocells on the front of the unit.

Refer to Section 5.5.1.3 for configuration information.

4.2.5 Autopilot Interfaces

The GDU 620 is capable of interfacing to numerous autopilots using the interfaces described below.

Refer to Section 5.5.5.1 for configuration information.

4.2.5.1 Heading and Course Datum Output

Pin Name	Connector	Pin	I/O
A/P HEADING ERROR HI	P6203	18	Out
A/P COURSE ERROR HI	P6203	19	Out
A/P AC REF HI	P6203	20	In
A/P HEADING ERROR LO	P6203	40	Out
A/P COURSE ERROR LO	P6203	41	Out
A/P AC REF LO	P6203	42	In
GPSS ENABLE IN*	P6202	8	In

An asterisk (*) following a signal name denotes that the signal is an Active-Low, requiring a ground to activate. If there is no asterisk, the signal is an Active-High.

The GDU 620 provides AC or DC heading and course datum outputs based upon the setting of the heading bug and course pointer on the HSI. An input for AC reference voltage is also provided and is used with autopilots that use AC datums.

When the GPSS Enable In* input is grounded, the heading datum output will be based upon GPSS information received from the selected navigator. Refer to Section 4.2.7.3 for additional details.

Refer to Section 5.5.5.1 for configuration information.

4.2.5.2 Deviation Outputs

Pin Name	Connector	Pin	I/O
LATERAL +LEFT OUT	P6203	52	Out
LATERAL +RIGHT OUT	P6203	53	Out
VERTICAL +UP OUT	P6203	56	Out
VERTICAL +DOWN OUT	P6203	57	Out

Each deviation output provides ±150 mV full scale and is capable of driving up to a 333Ω load, (i.e. up to a maximum of three 1kΩ loads connected in parallel).

4.2.5.3 Flag Outputs

Pin Name	Connector	Pin	I/O
LATERAL +FLAG OUT	P6203	54	Out
LATERAL -FLAG OUT	P6203	55	Out
VERTICAL +FLAG OUT	P6203	58	Out
VERTICAL -FLAG OUT	P6203	59	Out

Each low-level flag output provides 375 mV when valid information is present and is capable of driving up to a 333Ω load, (i.e. up to a maximum of three 1kΩ loads connected in parallel).

4.2.5.4 Superflag Outputs

Pin Name	Connector	Pin	I/O
LATERAL SUPERFLAG OUT	P6203	60	Out
VERTICAL SUPERFLAG OUT	P6203	61	Out

Each superflag output provides (V_{in} – 2) volts relative to ground when valid information is present, where V_{in} represents the aircraft power supplied to the GDU 620. Each output is capable of supplying up to 250 mA.

4.2.6 Flight Director Interface

Pin Name	Connector	Pin	I/O
FLIGHT DIRECTOR PITCH UP	P6201	15	In
FLIGHT DIRECTOR PITCH DOWN	P6201	16	In
FLIGHT DIRECTOR ROLL LEFT	P6201	34	In
FLIGHT DIRECTOR ROLL RIGHT	P6201	35	In

The flight director pitch and roll analog inputs allow an external source (usually an autopilot) to control the display of the flight director bars on the GDU 620.

The flight director interface has a discrete input associated with it. When configured for an external flight director, this input can be used by the GDU 620 to determine whether or not to display the FD bars. Refer to Section 4.2.7.4 for additional details.

Refer to Section 5.5.5.2 for configuration information.

4.2.7 Discrete Inputs

Pin Name	Connector	Pin	I/O
AUDIO INHIBIT IN* (*software version 4.00 or later – G500H only)*	P6201	3	In
CDU SYSTEM ID PROGRAM*	P6201	4	In
SPARE DISC IN* 4	P6201	5	In
GSR STATUS IN* *(software version 4.00 or later)*	P6201	6	In
WEIGHT-ON-WHEELS IN* *(software version 4.00 or later – G500H only)*	P6201	7	In
GPSS ENABLE IN*	P6201	8	In
FD ENABLE IN	P6201	9	In
ADF VALID IN	P6201	10	In
DEMO MODE SELECT*	P6202	36	In

An asterisk (*) following a signal name denotes that the signal is Active-Low, requiring a ground to activate. If there is no asterisk, the signal is Active-High.

Active-low discrete inputs are considered active if either the voltage to ground is <3.5 VDC or the resistance to ground is <375Ω. These inputs are considered inactive if the voltage to ground is 6.5-33 VDC or the resistance to ground is >100 kΩ.

Active-high discrete inputs are considered active if either the voltage to ground is > 6.5 VDC. These inputs are considered inactive if the voltage to ground is < 3.5 VDC or the resistance to ground is < 375 Ω.

The GDU 620 has 10 discrete inputs (eight active-low and two active-high) and eight active-low discrete outputs. These are user-configurable and support interfacing to a wide variety of systems.

4.2.7.1 Audio Inhibit In* *(software version 4.00 or later)*

G500H

A momentary low on this input *while a Forward Looking Terrain Avoidance (FLTA) Caution is active* will cause current FLTA Caution aural to be suppressed (the visual display is not affected). Subsequent FLTA Caution aurals will not be inhibited unless this input is actuated again. FLTA Warning aurals are not affected by this input.

G500/G600

This function is not currently implemented.

4.2.7.2 CDU System ID Program*

The CDU System ID Program input is used to determine if the GDU 620 is the #1 or #2 display in a dual GDU installation. Leave this input open for single GDU installations, or if the GDU 620 is the #1 display. Connect this input to P6201-22 (ground) if the GDU 620 is the #2 display.

4.2.7.3 GPSS Enable In*

The GPSS Enable In discrete input may be used to enable the GPS Steering (roll steering) function of the GDU 620. When the GPSS function is enabled, the heading datum (heading error) output to the autopilot will be driven based upon the roll steering command received from the selected GPS. A low on this input will enable the GPSS function. An open on this input will disable the GPSS function and the heading datum output will be based upon the setting of the heading bug.

4.2.7.4 FD Enable In

When enabled (refer to Section 5.5.5.2) the FD Enable In discrete input is used to determine whether or not the FD bars should be displayed. A high on this input will cause the FD bars to be displayed based upon the flight director inputs (refer to Section 4.2.6). A low or open on this input will cause the FD bars to be removed. When disabled, this input is not used when the GDU 620 determines whether or not the FD bars should be displayed.

4.2.7.5 Demo Mode Select*

The Demo Mode Select discrete input may be used to select Demo Mode on the GDU 620. A low on this pin at time of unit power-up invokes the Demo Mode. Demo Mode allows the GDU 620 to simulate inputs from the remainder of the G600 system.

CAUTION

Do not connect DEMO MODE SELECT in an aircraft installation.

4.2.7.6 ADF Valid In

When the interfacing ADF is configured with "+Superflag" as Present, the ADF Valid In discrete input is used to determine whether or not the ADF bearing is valid. A high on this input will cause the ADF bearing pointer to be positioned based on the ADF input (refer to Section 4.2.9). A low or open on this input will cause the ADF bearing pointer to be removed if it is being displayed.

4.2.7.7 GSR Status In* *(software version 4.00 or later)*

The GSR Status In discrete input is used to determine the status of the GSR 56 Iridium Data Link System. A low on this input indicates that the GSR 56 is valid. A high or open indicates that the GSR 56 is invalid.

4.2.7.8 Weight-on-Wheels In* *(software version 4.00 or later – G500H only)*

The Weight-on-Wheels In discrete input is used to determine the air/ground status for helicopters (the status of this discrete input is displayed for the G500/G600, but this input is ignored). A low on this input indicates that the aircraft is on the ground. A high or open indicates that the aircraft is in the air.

NOTE

If the Weight-on-Wheels indicates 'on ground' but the groundspeed is greater than 20 kts OR the true airspeed is greater than 50 kts, the GDU 620 will override this input and consider the system to be airborne.

4.2.8 Discrete Outputs

Pin Name	Connector	Pin	I/O
TAWS AUDIO ACTIVE OUT* (*function not currently implemented)*	P6201	23	Out
ALTITUDE CAPTURE* (*function not currently implemented)*	P6201	24	Out
A/P BACKCOURSE* *(Software Version 3.00 or later)*	P6201	25	Out
TIS/TAS STANDBY*	P6201	26	Out
TAS TEST*	P6201	27	Out
GPS ANNUNCIATE*	P6203	44	Out
GPS SELECT*	P6203	45	Out
ILS/GPS APPROACH*	P6203	46	Out
WX RADAR ON*(*function not currently implemented)*	P6203	47	Out

An asterisk (*) following a signal name denotes that the signal is Active-Low, producing a low (ground) on the output when active.

All discrete outputs from the GDU 620 are Active-Low. Each is an "open drain" output capable of sinking 250 mA when active.

4.2.8.1 TAWS Audio Active Out* (function not currently implemented)

The TAWS Audio Active discrete output may be used to suppress the aurals of a lower priority system. This output is pulled low whenever TAWS audio alerts are active. It is open otherwise.

4.2.8.2 TIS/TAS Standby* and TAS Test*

These discrete outputs are used to control compatible traffic systems.

The operation of these outputs is determined by the type of traffic system that is configured. Refer to Section 5.5.1.1.

4.2.8.3 GPS ANNUNCIATE*

The GPS annunciate output is driven low whenever GPS data is selected for display on the HSI. It is open otherwise.

4.2.8.4 GPS SELECT*

The GPS Select Output is driven low when GPS data is being displayed on the CDI/HSI and the ILS/GPS Approach Output is not active. It is intended for use with autopilots having a GPS Select input (such as the Bendix/King KAP 140 and KFC 225), so that the autopilot can capture vertical guidance while GPS data is being displayed on the CDI/HSI.

4.2.8.5 ILS/GPS APPROACH*

The ILS/GPS Approach Output is driven low when:

- GPS navigation is selected on the CDI and the selected GPS receiver is in Approach mode, or
- VLOC navigation is selected on the CDI and the selected navigation receiver has an ILS channel tuned.

This output is open otherwise.

This output may be connected to the ILS Energize input of an autopilot or flight director to provide higher autopilot gain while the selected navigation source is in the ILS or GPS Approach modes of operation.

4.2.8.6 GSR RMT PWR OUT* *(software version 4.00 or later)*

The GSR Remote Power Output is driven low when the GDU 620 commands the GSR 56 ON. This output is open otherwise.

4.2.8.7 Altitude Capture* *(software version 4.00 or later)*

The Altitude Capture discrete output is provided for the autopilot to indicate when to capture the altitude based on the altitude alerter setting. This discrete is momentarily driven low to command the autopilot to capture the current altitude. It is open otherwise. The behavior of this discrete is configured in Section 5.5.5.1

4.2.8.8 A/P Backcourse* (Software Version 3.00 or later)

The A/P Backcourse discrete output is provided for the autopilot to indicate when a backcourse is active. This discrete is driven low when a localizer is selected as the navigation source for the CDI and the course pointer is more than 90° from the current aircraft heading. It is open otherwise.

4.2.9 ADF Input

Pin Name	Connector	Pin	I/O
ADF X/COS IN	P6201	17	In
ADF Y/SIN IN	P6201	18	In
ADF DC REF IN	P6201	36	In

The GDU 620 has one interface that allows ADF bearing to be displayed on the HSI as a bearing pointer. This input allows ADFs that provide a DC SIN/COS output to be connected to the GDU 620. No ability to control the ADF is provided in the GDU 620.

The GDU 620 can optionally accept a valid (Superflag) signal from the ADF receiver. Refer to Section 4.2.7.6.

The ADF input is automatically configured for proper operation by the type of ADF specified. Refer to Section 5.5.1.1.

4.2.10 ARINC 453/708 Inputs *(function not currently implemented)*

Pin Name	Connector	Pin	I/O
ARINC 708/453 IN 1A	P6203	14	In
ARINC 708/453 IN 1 TERM A	P6203	15	In
ARINC 708/453 IN 2A	P6203	16	In
ARINC 708/453 IN 2 TERM A	P6203	17	In
ARINC 708/453 In 1B	P6203	36	In
ARINC 708/453 IN 1 TERM B	P6203	37	In
ARINC 708/453 In 2B	P6203	38	In
ARINC 708/453 IN 2 TERM B	P6203	39	In

The GDU 620 has two ARINC 453/708 inputs. These inputs are not currently used.

4.2.11 Time Mark Input

Pin Name	Connector	Pin	I/O
TIME MARK IN 1A	P6202	40	In
TIME MARK IN 1B	P6202	41	In
TIME MARK IN 2A	P6202	42	In
TIME MARK IN 2B	P6202	43	In

The GDU 620 has two differential time mark inputs, one provided for each GPS input. These inputs comply with Attachment 8 of ARINC 743A. These are used to accurately determine the time of GPS messages that are sent to the GRS 77 AHRS.

4.2.12 Message Audio Output

Pin Name	Connector	Pin	I/O
AUDIO OUT HI	P6201	28	Out
AUDIO OUT LO	P6201	29	Out

The GDU 620 has one 500 Ω audio output that can be connected to an audio panel to provide audible messages to the pilot. The audible alerts include the altitude alerter chimes and internal SVT-Terrain/TAWS aurals (if TAWS is enabled).

The message audio also has a discrete input associated with it. This discrete can be used to suppress non-TAWS aural messages. Refer to Section 4.2.7.1 for additional details.

4.2.13 Composite Video Inputs *(software version 4.00 or later)*

Pin Name	Connector	Pin	I/O
COMPOSITE VIDEO IN 1	P6201	1	In
COMPOSITE VIDEO IN 2	P6201	20	In

The GDU 620 has two composite video inputs.

5. SYSTEM CONFIGURATION AND CHECKOUT

5.1 Post Installation Power Check

Verify that all cables are properly secured and shields are connected to the shield block of the connector. Check the movement of the flight and engine controls to verify that there is no interference. Ensure wiring is installed in accordance with AC 43.13-1B, Chapter 11. Verify that the power and ground leads are correct.

5.2 GDU 620 Software Loading

Prior to using the GDU 620 display, its software should be updated as follows:

1. Pull the GDU circuit breaker.
2. Insert the current GDU 620 Main Loader Card P/N 010-00678-( ) into the top card slot.
3. Insert the Installer Unlock Card P/N 010-00769-60 into the bottom card slot.
4. While holding the ENT key, restore power by closing the GDU circuit breaker.
5. When the words INITIALIZING SYSTEM appear in the upper center of the PFD/MFD, release the ENT key.
6. Press the ENT key to acknowledge the following prompt:

7. The following item is displayed:

8. New software is loaded to the GDU. When complete, the following screen is displayed:

9. Press any soft key to acknowledge the prompt, and the GDU starts in configuration mode.

5.3 Initial Configuration of the GDU 620

As part of the initial configuration, the GDU 620 functions must be enabled/disabled as desired, external data sources must be configured, and miscellaneous options must be set up. To do this an Installer Unlock Card (P/N 010-00769-60) must be inserted, and the unit must be started in configuration mode by pressing and holding the ENT button while applying power.

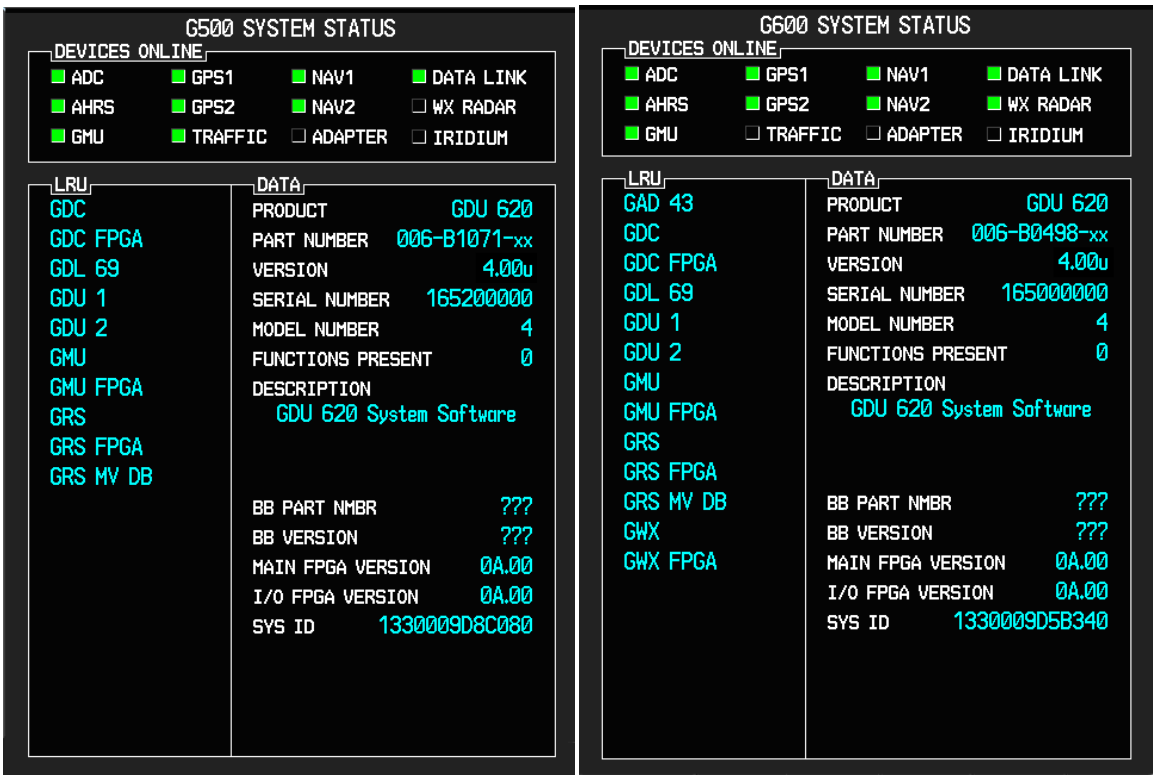
When in configuration mode the PFD has only one page that is used to display status and product information. The MFD has multiple pages that are used to configure and checkout the installation of the GDU 620.

NOTE

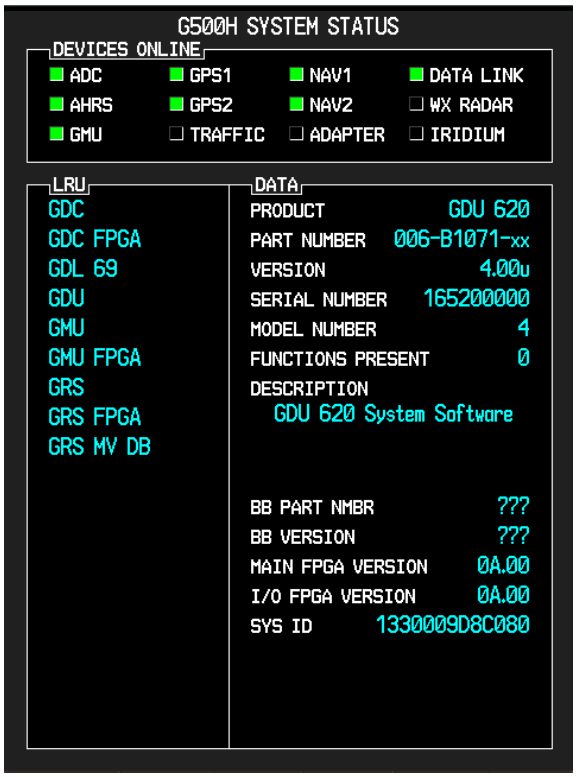
To access all of the configuration screens shown herein, an Installer Unlock Card P/N 010-00769-60 must be inserted in the bottom card slot prior to applying power to the GDU 620.

5.4 GDU 620 System Status Page (PFD Side)

This page is used as information reference only; it is not configurable.



G500 **G600**



G500H

Figure 5-1. PFD Screens of GDU 620

DEVICES ONLINE Window:

- Green Light: The device is configured as Present and valid data is being received as expected from the device.
- Red Light: The device is configured as Present and invalid or no data is being received from the device.
- No Light (Black): The device is configured as Not Present.

LRU and DATA Windows:

To navigate within the LRU window, push the PFD knob (knob on PFD side) to activate the cursor. Turn the PFD knob to select an LRU. Once an LRU is highlighted, information about it will be displayed in the DATA window.

5.4.1 System ID

The System ID (SYS ID) for the particular installation is displayed in the DATA window when the GDU is selected in the LRU window.

5.5 GDU 620 System Setup and Checkout Pages (MFD Side)

NOTE

Figure 5-2 shows all available configuration pages. Not all pages will appear in a typical installation – only pages for systems configured as 'Present' will be displayed.

The MFD knob (MFD side dual concentric knob) is the primary control for the GDU 620 MFD. Operation is similar to the Garmin 400/500 Series units.

- To change page groups and cycle through different configuration screens, rotate the large MFD knob. The small MFD knob will change pages within the group.
- To activate the cursor for a page, press the small MFD knob directly in, as one would push a regular button.
- To cycle the cursor through different data fields, rotate the large MFD knob.
- To change the contents of a highlighted data field, rotate the small MFD knob. This action either brings up a menu with options for a particular field, or in some cases allows the operator to enter data for the field.
- To confirm a selection, press the ENT button.
- To cancel a selection, press the small MFD knob in or press the CLR key. Pressing the small MFD knob in again will deactivate the cursor.

Some configuration pages have commands or selections that are activated by the GDU 620 soft keys. If a soft key is associated with a command, that command will be displayed directly above the key. A grayed-out soft key shows a command that is unavailable. A highlighted soft key shows the current active selection.

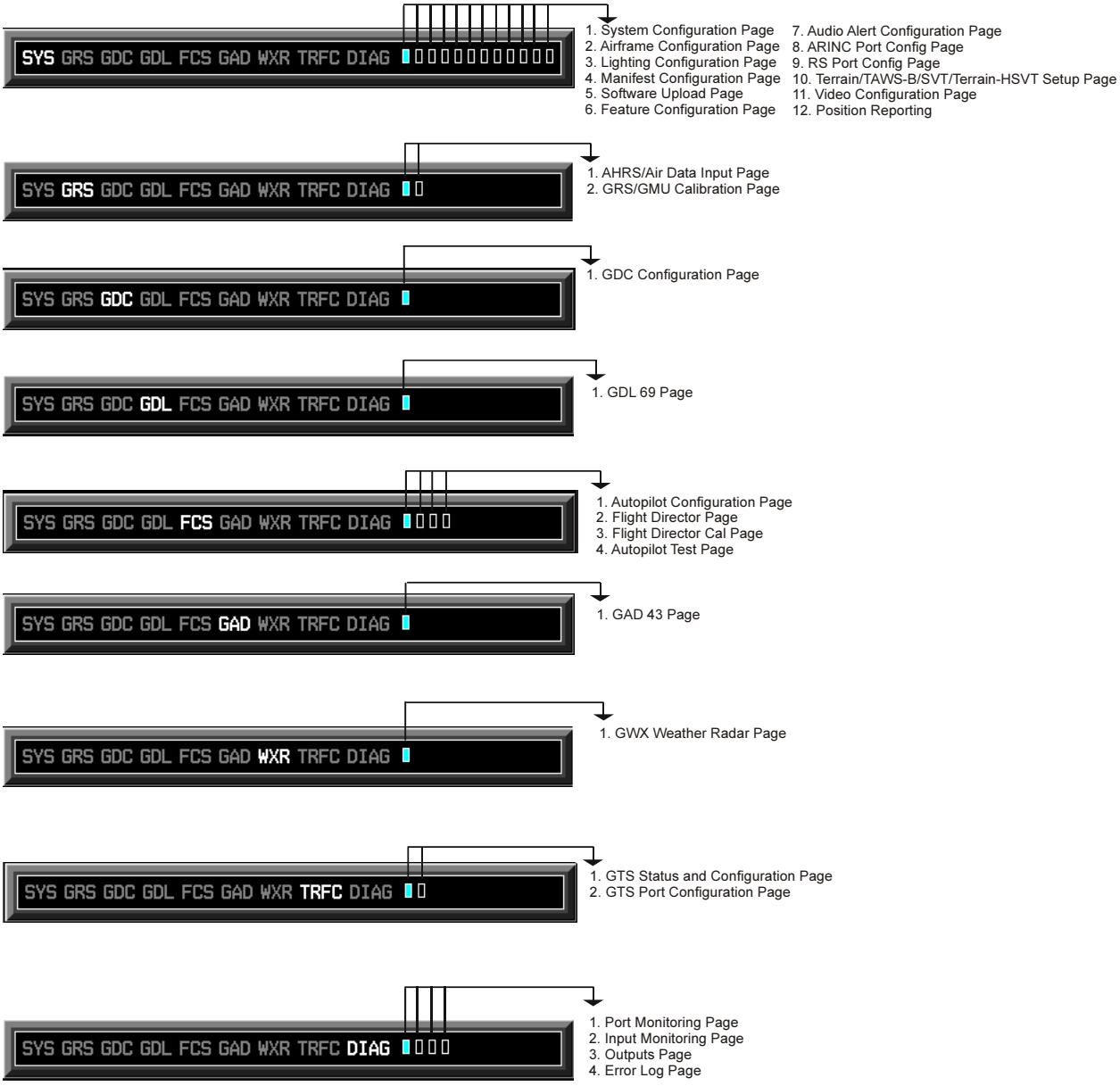


Figure 5-2. Configuration Page Navigation

5.5.1 System Page Group

Navigation of the different pages in the System Page Group is done by rotating the small MFD knob.

5.5.1.1 System Configuration Page

This page allows the installers to select what LRUs are present and not present in a given installation.

Activate the cursor, select the system using the large MFD knob, and then press the ENT button. This will activate or deactivate the highlighted system. For activated systems, use the small knob to select the appropriate LRU from the dropdown TYPE menu, and then press enter to select the LRU.

Continue to activate or deactivate each LRU, as required.

A green light means that the LRU is configured as 'present'. No light (black) means that the LRU is configured as 'not present' (the TYPE field will be blank in this case).

INTERFACING SYSTEMS Window:

1. **Cross-side GDU Type,** *Selections: GDU 620 is the only selection.*
2. **AHRS Type**, *Selections: GRS 77 is the only selection.*
3. **ADC Type**, *Selections: GDC 74 is the only selection.*
4. **GPS1 Type**, *Selections: GPS 400W, GNC 420W, GNS 430W, GNS 480, GPS 500W, GNS 530W.*
5. **GPS2 Type**, *Selections: GPS 400W, GNC 420W, GNS 430W, GNS 480, GPS 500W, GNS 530W.*

NOTE

The SL30 can only be configured as NAV1 or NAV2, and not for both NAV receivers simultaneously.

6. **NAV1 Type**, *Selections: GNS 430W, GNS 480, GNS 530W, SL30.*

7. **NAV2 Type**, *Selections: GNS 430W, GNS 480, GNS 530W, SL30. (Only available if NAV1 has been activated.)*
8. **ADF Type,** *Selections: KDF 806/KFS 586, KR 87, RCR-650, ADF-60B.*

   +Superflag, Select superflag if the ADF provides a superflag output indicating that the bearing is valid; otherwise leave this unselected.
9. **Traffic Type,** *Selections: SkyWatch, SkyWatch HP, KTA 870, KTA 970, GTX 330, Avidyne/Ryan TAS, GTS 800, GTS 820, GTS 850*

   +External Control, Select external control if there is an external controller for the traffic system. The GDU 620 will not be able to control the traffic system if this item is selected.
10. **Data Link Type,** *Selections: GDL 69, GDL 69A.*
11. **Weather Radar,** *Selections: GWX 68.* (This option is only displayed if Weather Radar is Enabled on the Feature Configuration page. Refer to Section 5.5.1.6 for additional details.)
12. **Adapter,** *Selections: GAD 43.* (This option is only displayed if GAD 43 Adapter is Enabled on the Feature Configuration page. Refer to Section 5.5.1.6 for additional details.)
13. **Iridium,** *Selections: GSR 56.*

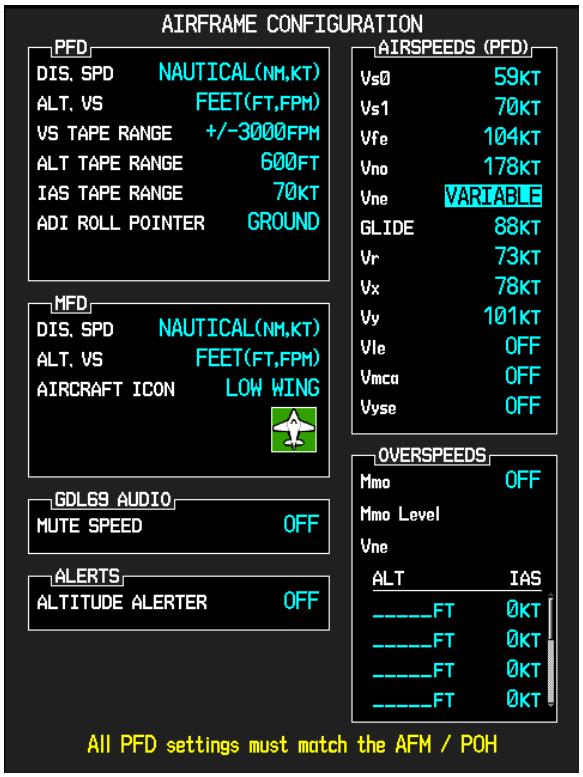
Deactivate the cursor. Use the small knob to move to the next page.

5.5.1.2 Airframe Configuration Page

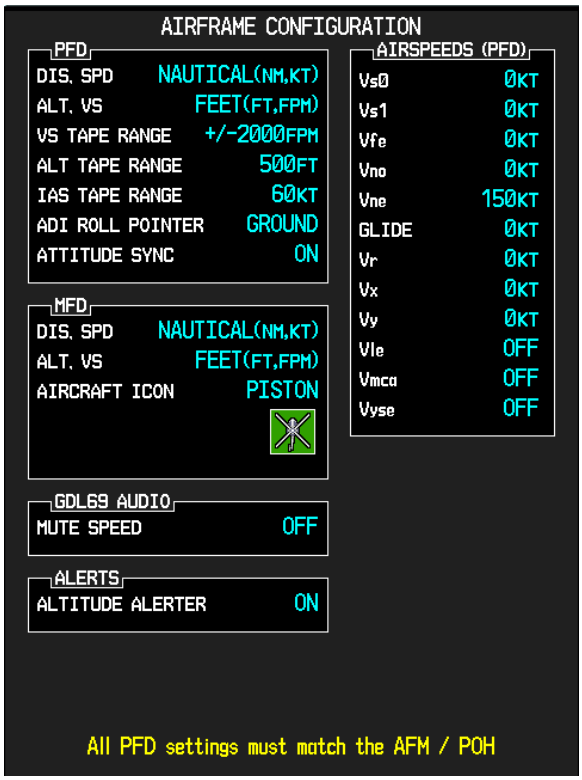
This page allows the installer to configure the PFD airspeed, altitude and vertical speed tape scales and appearance, MFD display, and GDL69 Audio.

NOTE

All PFD settings must match what is in the aircraft flight manual (AFM) or the pilot's operating handbook (POH).



G500/G600 Systems



G500H Systems

Activate the cursor and use the MFD knob to select following configurable items.

PFD Window:

1. **DIS. SPD**, changes the units displayed on the airspeed tape. *Selections: Imperial (SM, MPH), Metric (KM, KPH), Nautical (NM, KT).*
2. **ALT. VS**, changes the units displayed on the altitude and vertical speed tapes. *Selections: Feet (FT, FPM) is the only selection.*
3. **VS TAPE RANGE**, changes the range of the vertical speed tape. *Selections: +/- 2000 FPM, +/- 3000 FPM, +/- 4000 FPM.*

Both ALT Tape Range and the IAS Tape Range settings are for information only and are based on the VS Tape Range setting.

4. **ADI ROLL POINTER,** changes which pointer moves to indicate bank angle. *Selections: Ground, Sky*
5. **ATTITUDE SYNC,** *(G500H only)* used to enable or disable the ability to synch the aircraft symbol to the current pitch attitude. *Selections: On, Off*

MFD Window:

1. **DIS. SPD**, changes the distance and speed units displayed on the MFD. *Selections: Imperial (SM,MPH), Metric (KM, KPH), Nautical (NM, KT).*
2. **ALT. VS**, changes the altitude and vertical speed units on the MFD. *Selections: Feet (FT, FPM) is the only selection.*
3. **AIRCRAFT ICON**, changes the appearance of the ownship icon on the MFD map. *Selections: Low Wing, High Wing and Jet (G500/G600), or Piston and Turbine (G500H).*

GDL69 AUDIO Window:

1. **MUTE SPEED,** sets the airspeed below which the GDU 620 automatically mutes the GDL 69A audio. *Selections: OFF (automatic muting disabled), 1 to 999 in 1 kt increments.*

ALERTS Window:

1. **ALTITUDE ALERTER,** used to enable or disable the altitude alerter function of the GDU 620**.** *Selections: On, Off.*

NOTE

Some airframe manufacturers use the term Vno instead of Vne.

AIRSPEEDS (PFD) Window: The following settings affect the markings on the airspeed tape. Refer to the AFM or POH to determine the appropriate settings for this installation.

1. **Vs0,** stall speed in landing configuration
2. **Vs1,** stall speed in a specific flight configuration
3. **Vfe,** flap extended speed
4. **Vno,** normal operating speed
5. **Vne,** never exceed speed
   For G500/G600 only, when Vne is set to VARIABLE (<0) the OVERSPEEDS window appears
6. **GLIDE,** glide speed
7. **Vr,** takeoff rotation speed
8. **Vx,** best angle of climb speed
9. **Vy,** best rate of climb speed
10. **Vle,** landing gear extended speed (set to OFF for fixed gear aircraft)

11. **Vmca,** minimum controllable airspeed for a twin engine aircraft with only one engine operational (set to OFF for single engine aircraft)

NOTE

For rotary wing aircraft, Vyse and Vne(Pwr Off) settings are used to set the marking for maximum airspeed for engine power off flight. Using Vyse provides a blue mark at this airspeed. Using Vne(Pwr Off) provides a red/white striped mark at this airspeed. The one used should match the marking on the original airspeed indicator. Only one of these settings should be used, and the other setting must be set to OFF.

12. **Vyse,**
    fixed wing aircraft: single engine best rate of climb speed for a twin engine aircraft (set to OFF for single engine aircraft)

    rotary wing aircraft: this is set to the maximum airspeed for engine power off flight when the existing airspeed indicator is marked with a blue line at this airspeed
13. **Vne(Pwr Off),** this is set to the maximum airspeed for engine power off flight for rotary wing aircraft when the existing airspeed indicator is marked with a red/white striped line at this airspeed (set to OFF for fixed wing aircraft)

OVERSPEEDS Window *(G500/G600 only):*

The OVERSPEEDS window only appears when Vne is set to VARIABLE in the AIRSPEEDS (PFD) window. This window allows you to configure the behavior of the airspeed tape on aircraft that have a barber pole on the original airspeed indicator, or a published Mmo, or Vmo/Vne that varies with altitude.

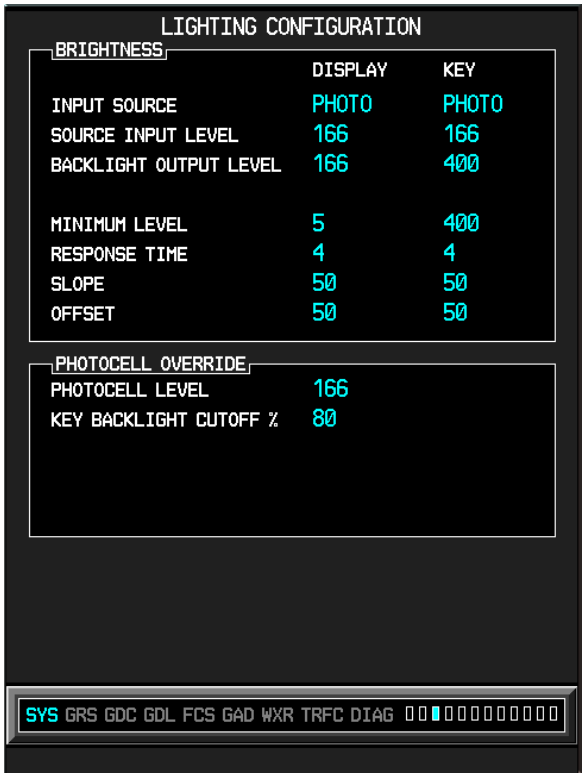
1. **Mmo**, For aircraft with a published Mmo, this value is set here; otherwise, the Mmo should be set to OFF.
2. **Mmo Level**, For aircraft with a published Mmo, the altitude above which the Mmo limit becomes effective. If no altitude is published, this value should be left blank.
3. **Vne ALT / IAS**, Up to 10 altitude/airspeed points can be specified to specify Vne (IAS) at various altitudes. The altitude for the first point should be sea level (0 ft), and the altitude of the last point should be either (i) the altitude where Mmo takes effect, or (ii) the service ceiling of the aircraft.

When determining where to place the bottom of the barber pole, the GDU 620 will interpolate between the points specified.

Deactivate the cursor to move to the next page.

5.5.1.3 Lighting Configuration Page

This page allows the installer to set parameters that affect the display backlight and key lighting brightness.



The DISPLAY and KEY lighting characteristics are adjusted separately, each with the following fields:

BRIGHTNESS Window:

1. **INPUT SOURCE**, this selection determines if the display brightness control is controlled by the photo cell or the dimming bus input. *Selections: Photo, 14V DC, 28V DC, 5V DC, 5V AC.*

Source Input Level and Backlight Output Level cannot change the display information about the current GDU620 screen settings.

2. **MINIMUM LEVEL**, sets the minimum brightness of the display. The higher the number, the brighter the minimum brightness. Display Minimum Level has a range of 5 and higher. Key Minimum Level has a range of 14 and higher. It is prudent to verify that display and key lighting characteristics match those of other equipment in the panel under night lighting conditions.
3. **RESPONSE TIME**, sets the speed with which the brightness responds to the input level (bus voltage or ambient light) changes. The higher the number the slower the display responds. This field has a range of 2-7.
4. **SLOPE**, sets the sensitivity of the display brightness in proportion to changes in the input level. The higher the number, the brighter the display is for a given increase in the input level. This field has a range of 0 to 99.
5. **OFFSET,** adjusts the lighting level up or down for any given input level. This field has a range of 0 to 99. This may also be used to match lighting curves with other equipment in the panel.

PHOTOCELL OVERRIDE Window:

1. **PHOTOCELL LEVEL,** the ambient light level that the photo cell is reading. This level cannot be adjusted; it is for informational purposes only.

NOTE

If the key lighting is set to track the photocell (the key input source is set to PHOTO), and the photocell input is above a certain level (daytime) the key backlighting will be switched off using the additional parameter described below.

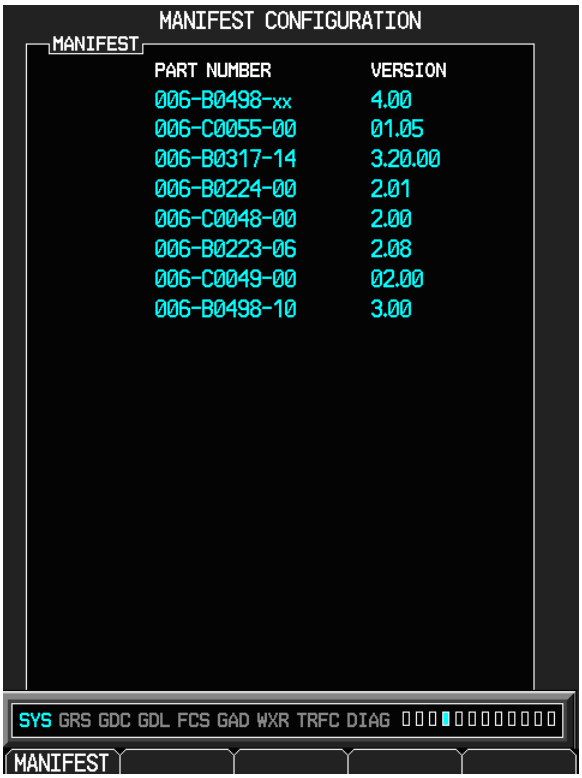
2. **KEY BACKLIGHT CUTOFF % -** When the photocell input is used to control the lighting of the bezel keys this parameter sets the point on the photocell input above which the key lighting is switched off. This field has a range of 20 to 99.

NOTE

If the display lighting is set to track the lighting bus, (the display input source is set to any selection other than PHOTO) and the lighting bus control is turned to its minimum (daytime) setting, the display brightness tracks the GDU 620 unit's photocell using additional parameters described below.

5.5.1.4 Manifest Configuration Page

This page allows the installer to enter or verify the software versions used in a particular installation.



The "manifest" consists of software part numbers and versions for various G600 LRUs. When the system is powered up in normal mode, the GDU 620 verifies the software part numbers and versions reported by the system LRUs against those listed in the manifest. If they agree, the system operates normally. If they disagree, communication with that LRU is stopped and a MANIFEST alert is set by the system.

NOTE

Upon first use, the manifest is empty and this page has no entries.

NOTE

When using the MANIFEST soft key, ensure that all configured LRUs show up as online in the DEVICES ONLINE window **before** pressing the MANIFEST soft key. The GDU 620 will only write the information for LRUs that have reported information. If an LRU has not reported information when the MANIFEST soft key is pressed, that LRU will automatically be removed from the manifest.

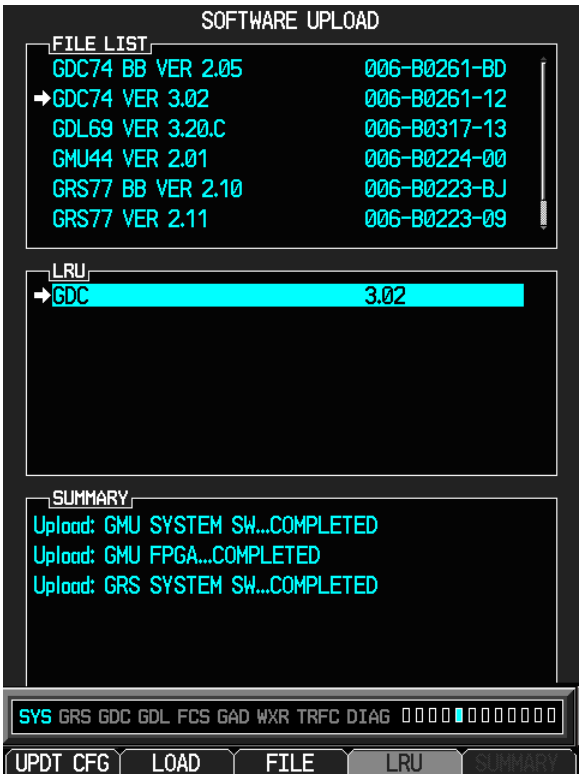
MANIFEST Soft Key: Pressing this soft key causes all LRU-reported software part numbers and versions to be written to the manifest. To edit individual items proceed as described below:

MANIFEST Window:

Activate the cursor and select the part number or version number that you wish to edit. Turn the small knob one click to begin editing the first digit in the part number or version number. Use the large knob to select the digit to be changed, and the small knob to change the value of the selected digit. When done, press ENT to accept the changes. The cursor automatically moves to the next editable field. When finished, press the small knob to deactivate the cursor.

5.5.1.5 Software Upload Page

This page allows the installer to load software to various LRUs in the system.



FILE LIST Window:

The FILE LIST window lists the software part numbers and versions that are on the currently installed loader card. This window is selected by pressing the **FILE** soft key. Rotate the large knob to select the software file which is to be loaded.

CAUTION

Pressing the CANCEL soft key to cancel a software load that is in progress can cause the LRU to stop functioning properly.

LRU Window:

Based upon the file selected in the FILE window, the LRU window lists the target LRU and the version of LRU software ***on the currently installed loader card***. This window is selected by pressing the **LRU** soft key. Rotate the large knob to select which LRU is to be loaded (generally there will only be one selection). When the correct LRU is selected, press the **LOAD** soft key to begin loading software to that LRU. The **LOAD** soft key will be replaced with a **CANCEL** soft key. Pressing the **CANCEL** soft key will cause the LRU software load to be stopped.

SUMMARY Window:

The SUMMARY window lists the status of each software load initiated. This window is selected by pressing the **SUMMARY** soft key. If there are too many loads to be completely displayed in the SUMMARY window, the large knob may be rotated to scroll through and display the status information for all loads.

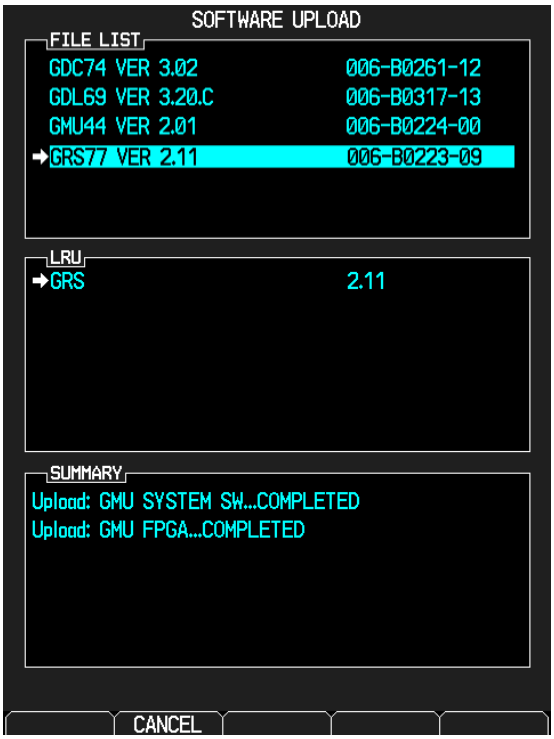
UPDATE CFG Soft key:

Pressing the **UPDT CFG** soft key causes all PFD configuration data to be written to the configuration module.

5.5.1.5.1 LRU Software Loading

The GDU 620 can be used to load software into supported LRUs. To load software into a supported LRU using the GDU 620, proceed as follows:

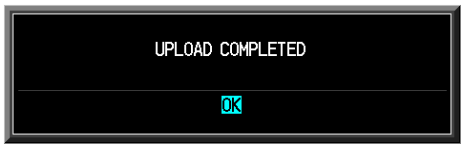
1. Ensure that an appropriate software loader card is inserted in the top card slot and the Installer Unlock Card P/N 010-00769-60 is inserted in the bottom card slot of the GDU 620.
2. Enter the configuration mode by holding the ENT key and restoring or cycling power to the GDU 620 using the GDU circuit breaker.
3. Navigate to the SOFTWARE UPLOAD page and highlight the LRU software file (the GRS 77 is shown in the figure below). Ensure that the LRU is displayed in the LRU window as shown.



4. Press the LOAD soft key.
5. Select OK and press the ENT key to acknowledge the following prompt:

6. The software for the LRU begins to load. Monitor the upload status as it progresses:

7. After the files finish loading, press the ENT key to acknowledge the following prompt:



8. Check the SUMMARY window to ensure the load is 'COMPLETE'.

5.5.1.6 Feature Configuration Page

This page allows the installer to enable optional GDU 620 features using an appropriate enablement card.

G500/G500H

G600

CAUTION

The Airframe type **must** be selected before enabling any optional features.

Activate the cursor to select from the following fields:

SYSTEM Window:

1. **Airframe:** determines the type of charts to be displayed. *Selections: None, FliteCharts, ChartView (ChartView requires an enablement card to enable. Refer to Section 2.2.3 for additional information).*

FEATURES Window:

1. **Charts:** determines the type of charts to be displayed. *Selections: None, FliteCharts, ChartView (ChartView requires an enablement card to enable. Refer to Section 2.2.3 for additional information).*
2. **Altitude Preselect:** used to enable autopilot altitude capture based upon the GDU 620 altitude bug. *Selections: Enabled, Disabled (Altitude Preselect requires an enablement card to enable. Refer to Section 2.2.3 for additional information).*

NOTE

For the G600, Synthetic Vision, Weather Radar and GAD 43 Adapter features are enabled by default in the G600 – no enablement cards are required. For the G500/G500H, these features are disabled by default and can be enabled using suitable enablement cards (refer to Section 2.2.3 for additional information).

3. **Synthetic Vision (software version 3.00 or later):** used to enable synthetic vision on the PFD. *Selections: Enabled, Disabled.*

4. **Weather Radar (software version 3.00 or later):** used to enable the interface to the weather radar. *Selections: Enabled, Disabled (the type of weather radar is selected on the System Configuration page – refer to Section 5.5.1.1 for additional information).*

5. **GAD 43 Adapter (software version 3.00 or later):** used to enable the interface to the GAD 43 adapter. *Selections: Enabled, Disabled (the type of adapter is selected on the System Configuration page – refer to Section 5.5.1.1 for additional information).*

6. **External Video (software 4.00 or later):** used to enable the interface to an external composite video source. *Selections: Enabled, Disabled.* When enabled, the format of the video source is selected on the Video Configuration page – refer to Section 5.5.1.11 for additional information. *(External video requires an enablement card to enable. Refer to Section 2.2.3 for additional information).*

NOTE

For the G600, the TAWS function requires an enablement card to enable the function. Refer to Section 2.2.3 for additional information. For the G500, TAWS is not available.

7. **TAWS (software version 3.00 or later – G600 only):** used to enable internal TAWS functionality. *Selections: Enabled, Disabled.*

5.5.1.7 Audio Alert Configuration Page

This page allows the installer to adjust the GDU 620 audio output volume level and play an audio message to evaluate the new volume setting.

Activate the cursor to select from the following:

CONFIG Window:

1. **VOLUME ADJUST**, selects level of volume. *Selections: -40dB to 0dB in 1 dB increments.*
2. **VOICE,** selects types of voice. *Selections: Male, Female*

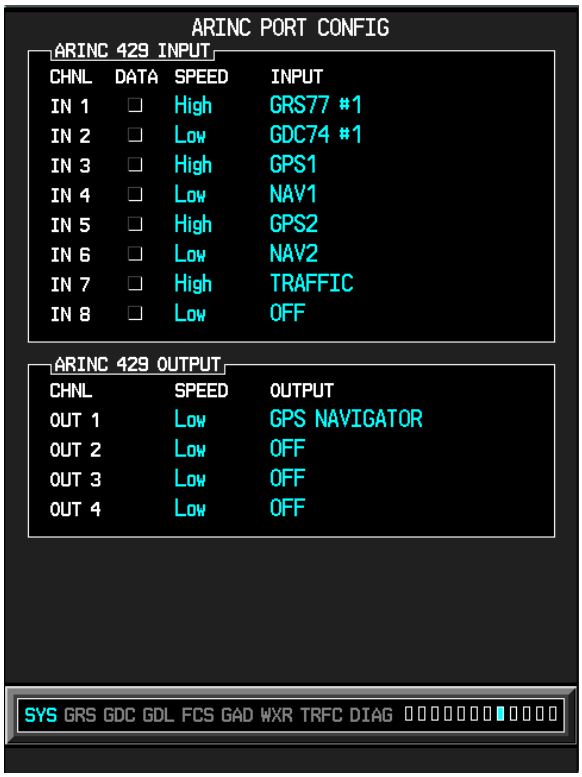
TEST Window:

1. **AUDIO MSG**, selects the stored message to be played. *Selections: Altitude Alert, Minimums (2x), Five Hundred, Caution Obstacle (2x), Caution Terrain (2x), Don't Sink, Obstacle Ahead (2x), Obstacle Ahead, Pull-Up (2x), Obstacle (x2); Pull Up (2x), Pull Up, Sink Rate, Terrain Ahead, Pull-Up (2x), Terrain Ahead (2x), Too Low, Terrain, TAWS Not Available, TAWS System Failure, TAWS System Test Ok, Terrain (2x); Pull-Up (2x), TAWS Available, Caution Terrain, Terrain, Caution Obstacle, Obstacle, Warning Terrain, Terrain, Warning Obstacle, Obstacle, TERRAIN System Failure, TERRAIN System Not Available, TERRAIN System Test OK, TERRAIN system available*

Move the cursor to the **PLAY** box and press **ENT** button to play the message.

5.5.1.8 ARINC Port Configuration Page

This page is for displaying port setting information only. Configuration is usually not required since port configuration is automatically set based upon which LRUs are configured as present (refer to Section 5.5.1.1). If required, settings can be changed as described below.



ARINC 429 INPUT Window:

1. **CHNL**, identifies the ARINC 429 input.
2. **DATA,** specifies whether or not data is being received on this input:

   Green Light: The device is configured as 'Present' and data is being received on this input.

   No Light (Black): The device is configured as 'Not Present' (OFF is set for INPUT), or the device is configured as 'Present' and no data is being received on this input.
3. **SPEED**, sets the ARINC 429 bus speed for this input. *Selections: Low, High.*
4. **INPUT**, specified the system associated with this input. The system cannot be changed and is automatically configured based upon the system configuration.

ARINC 429 OUTPUT Window:

1. **CHNL**, identifies the ARINC 429 output.
2. **SPEED**, sets the ARINC 429 bus speed for this output. *Selections: Low, High*
3. **OUTPUT**, specifies the data format for this output.

   OUT 1: This is always set to GPS NAVIGATOR.

   OUT 2: This output provides data to suitable autopilots and is only enabled when the Autopilot is set to Present. *Selections: Off, Autopilot, DFCS 1.*

OUT 3: This is a general purpose output that can be used to provide data to other systems.
Selections: Off, General Purpose 1.

OUT 4: This is a general purpose output that can be used to provide data to other systems.
Selections: Off, General Purpose 1.

5.5.1.8.1 ARINC 429 Output Formats

The labels transmitted for each particular setting are described below.

GPS NAVIGATOR Labels (ARINC 429 Output #1 Only)

Label #	Data	Notes
100P	Selected Course 1	[1]
203	Altitude (29.92" Hg)	
204	Baro Corrected Altitude	
206	Indicated Airspeed	
210	True Airspeed	
211	Total Air Temperature	
212	Vertical Speed	
213	Static Air Temperature	
314	True Heading	
320	Magnetic Heading	

Notes:

[1] This label uses proprietary implementation and should not be used to provide selected course to external systems.

AUTOPILOT (ARINC 429 Output #2 Only)

Label #	Data	Notes
100G	Selected Course	
101G	Selected Heading	
116G	Cross Track Distance	[1] [2]
117G	Vertical Deviation	[1] [2]
121	Horizontal Command	[1]
312	Ground Speed	[1]
314	True Heading	
320	Magnetic Heading	
326G	Lateral Scale Factor	[1] [2]
327G	Vertical Scale Factor	[1] [2]

Notes:

[1] Labels 116G, 117G, 121, 312, 326G and 327G received from the currently selected navigator will be forwarded. If GPS is not selected on the CDI, labels 116G, 117G, 121, 312, 326G and 327G from the GPS corresponding to the currently selected side (1 or 2) will be forwarded.

[2] Version 2.02 or later

DFCS 1 (ARINC 429 Output #2 Only)

(Software version 4.00 or later)

Label #	Data	Notes
100	Selected Course	
101G	Selected Heading	
121	Horizontal Command	[1]
203	Altitude (1013.25 mb)	
204	Baro Corrected Altitude	
206	Indicated Airspeed	
210	True Airspeed	
211	Total Air Temperature	
212	Vertical Speed	
213	Static Air Temperature	
312	Ground Speed	[1]
313	Track Angle (True)	[1]
314	True Heading	
320	Magnetic Heading	
324	Pitch Angle	
325	Roll Angle	
326	Body Pitch Rate	
327	Body Roll Rate	
330	Body Yaw Rate	
333	Body Normal Acceleration	
371G	GA Equipment Identifier	[2]
377	Equipment Identifier	[3]

Notes:

[1] Labels 121, 312 and 313 received from the currently selected navigator will be forwarded. If GPS is not selected on the CDI, labels 121, and 312 from the GPS corresponding to the currently selected side (1 or 2) will be forwarded.

[2] This label contains a Binary Company ID Code of 24 (Garmin) and an Equipment Hex ID of 25 (EFIS).

[3] This label contains an Equipment Hex ID of 025 (EFIS).

GENERAL PURPOSE 1 (ARINC 429 Output #3 and #4 Only)

(Software version 4.00 or later)

Label #	Data	Notes
100	Selected Course [Note 2]	
203	Altitude (1013.25 mb)	
204	Baro Corrected Altitude	
206	Indicated Airspeed	
210	True Airspeed	
211	Total Air Temperature	
212	Vertical Speed	
213	Static Air Temperature	
312	Ground Speed	[1]
313	Track Angle (True)	[1]
314	True Heading	
320	Magnetic Heading	
371G	GA Equipment Identifier	[2]
377	Equipment Identifier	[3]

Notes:

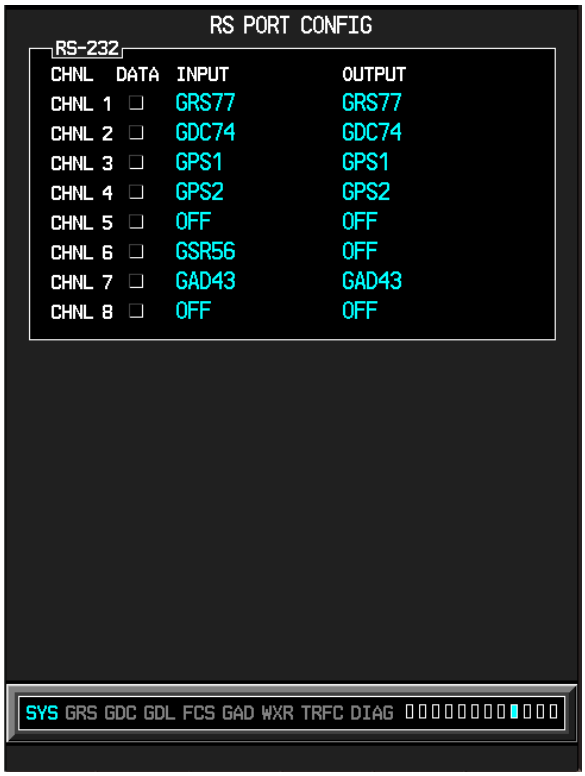
[1] Labels 312 and 313 received from the currently selected navigator will be forwarded. If GPS is not selected on the CDI, labels 121, and 312 from the GPS corresponding to the currently selected side (1 or 2) will be forwarded.

[2] This label contains a Binary Company ID Code of 24 (Garmin) and an Equipment Hex ID of 25 (EFIS).

[3] This label contains an Equipment Hex ID of 025 (EFIS).

5.5.1.9 RS Port Configuration Page

This page is for displaying port setting information. Configuration is usually not required, since port configuration is automatically set based upon which LRUs are configured as present (refer to Section 5.5.1.1). Exceptions are noted below.



RS-232 Window:

Green Light: The device is configured as 'Present' and data is being received on this input.

No Light (Black): The device is configured as 'Not Present' (OFF is set for INPUT), or the device is configured as 'Present' and no data is being received on this input.

1. **RS-232 CHNL 8 OUTPUT,** determines whether or not altitude data is transmitted.
   Selections: Off, Shadin-alt (software version 3.00 or later).

5.5.1.10 Terrain/TAWS/SVT/HSVT Setup (Software version 4.00 or later)

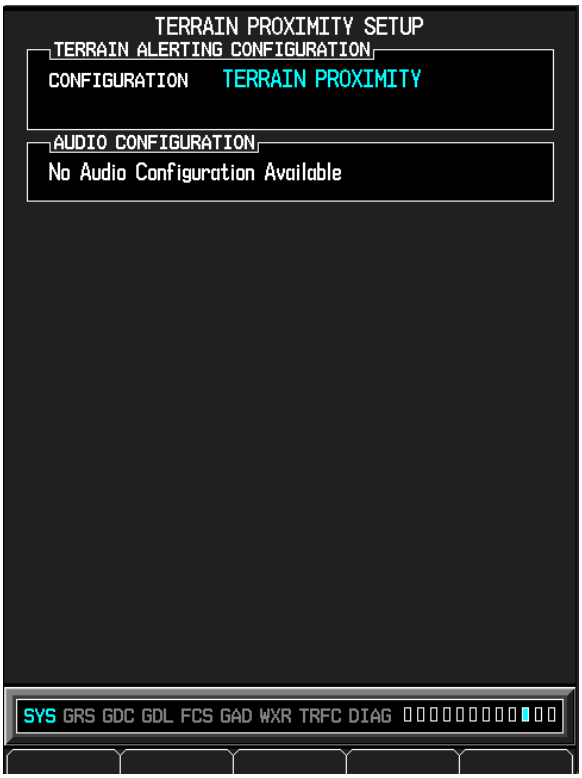
NOTE

Terrain/TAWS/SVT setup is available on the G500 and G600 variants in software version 3.00 or later.

The page that is displayed depends upon the configuration of the GDU 620. The following sections describe every possible page.

5.5.1.10.1 Terrain Proximity Setup Page (with SVT and TAWS disabled)

This page is the terrain proximity setup page and is displayed if both SVT and TAWS features are not enabled.



TERRAIN ALERTING CONFIGURATION Window:

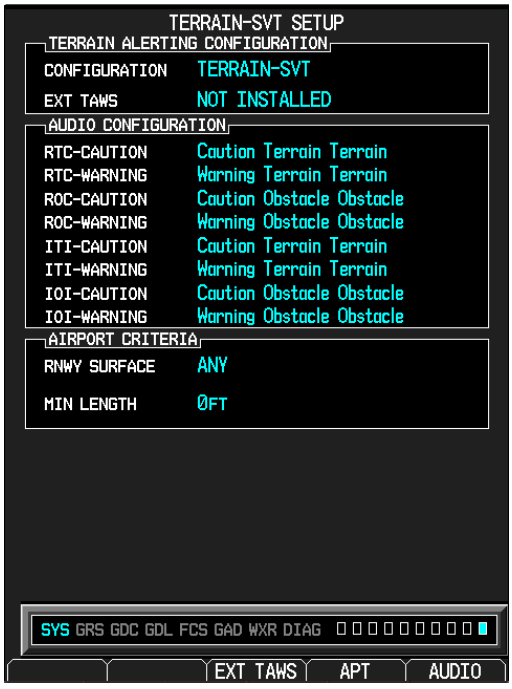
1. **CONFIGURATION,** displays the current selection for terrain alerting. This configuration is automatically determined based upon which features are enabled on the "Feature Configuration" page.

AUDIO CONFIGURATION Window:

No settings available.

5.5.1.10.2 Terrain-SVT Setup Page (with SVT enabled and TAWS disabled) (G500 and G600 Only)

This page displays terrain-SVT setup information when synthetic vision (but not TAWS) is enabled using a Synthetic Vision Technology Enablement Card.



TERRAIN ALERTING CONFIGURATION Window:

1. **CONFIGURATION,** displays the current selection for terrain alerting. This configuration is automatically determined based upon which features are enabled on the "Feature Configuration" page.
2. **EXTERNAL TAWS,** specifies whether or not an external TAWS is installed in the aircraft. *Selections: Not Installed, Installed*

AUDIO CONFIGURATION Window:

1. **RTC-CAUTION,** *Selection: Caution, Terrain Terrain*
2. **RTC-WARNING,** *Selection: Warning Terrain Terrain*
3. **ROC-CAUTION,** *Selection: Caution, Obstacle Obstacle*
4. **ROC-WARNING,** *Selection: Warning Obstacle Obstacle*
5. **ITI-CAUTION,** *Selection: Caution Terrain Terrain*
6. **ITI-WARNING,** *Selection: Warning Terrain Terrain*
7. **IOI-CAUTION,** *Selection: Caution Obstacle Obstacle*
8. **IOI-WARNING,** *Selection: Warning Obstacle Obstacle*

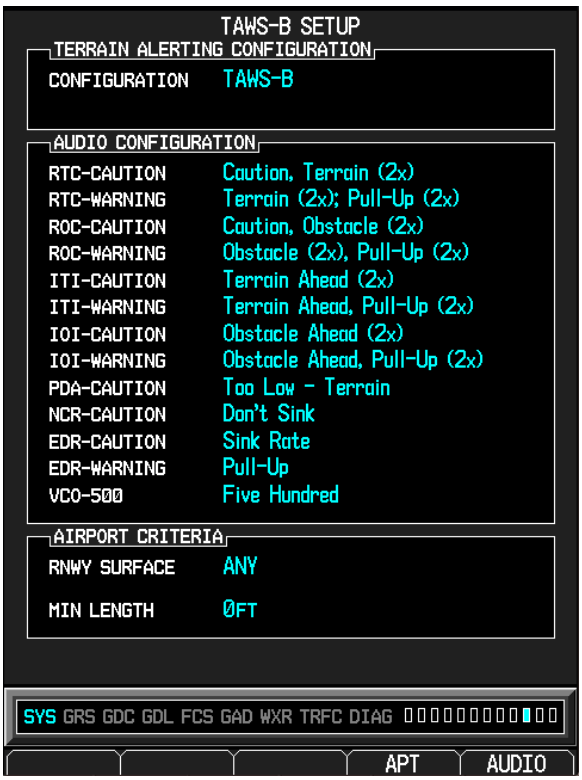
AIRPORT CRITERIA Window:

This sets the criteria used by the Terrain Alerting algorithm when determining if an airport is nearby. If an airport does not meet all of the specified criteria, it will never be considered a nearby airport for the purpose of Terrain alerting. Terrain alerting is relaxed at nearby airports to prevent nuisance alerts when landing.

1. **RNWY SURFACE,** specifies the options for runway types to consider when determining if an airport is nearby. *Selection: Any, Hard Only, Hard/Soft, Water.*
2. **MIN LENGTH,** specifies the minimum runway length to consider when determining if an airport is nearby. *Selection: 0 to 25000 feet in 1 foot increments.*

5.5.1.10.3 TAWS-B Setup Page (with TAWS enabled) (G500 and G600 Only)

This page displays TAWS-B setup information when TAWS is enabled using a TAWS Enablement Card.



TERRAIN ALERTING CONFIGURATION Window:

1. **CONFIGURATION,** displays the current selection for terrain alerting. This configuration is automatically determined based upon which features are enabled on the "Feature Configuration" page.

AUDIO CONFIGURATION Window:

1. **RTC-CAUTION,** *Selections: Caution, Terrain (2x)* ***or*** *Terrain Ahead (2x)*
2. **RTC-WARNING,** *Selections: Terrain (2x), Pull-Up* ***or*** *Terrain Ahead, Pull-Up (2x)*
3. **ROC-CAUTION,** *Selections: Caution, Obstacle (2x)* ***or*** *Obstacle Ahead (2x)*
4. **ROC-WARNING,** *Selections: Obstacle (2x), Pull Up (2x)* ***or*** *Obstacle Ahead, Pull-Up (2x)*
5. **ITI-CAUTION,** *Selections: Terrain Ahead (2x)* ***or*** *Caution, Terrain (2x)*
6. **ITI-WARNING,** *Selections: Terrain Ahead, Pull-Up (2x)* ***or*** *Terrain (2x), Pull-Up (2x)*
7. **IOI-CAUTION,** *Selections: Obstacle Ahead (2x)* ***or*** *Caution, Obstacle (2x)*
8. **IOI-WARNING,** *Selections: Obstacle Ahead, Pull-Up (2x)* ***or*** *Obstacle (2x), Pull-Up (2x)*
9. **PDA-CAUTION,** *Selection: Too Low - Terrain*
10. **NCR-CAUTION,** *Selections: Don't Sink or Too Low - Terrain*
11. **EDR-CAUTION,** *Selection: Sink Rate*
12. **EDR-WARNING,** *Selection: Pull-Up*
13. **VCO-500,** *Selection: Five Hundred*

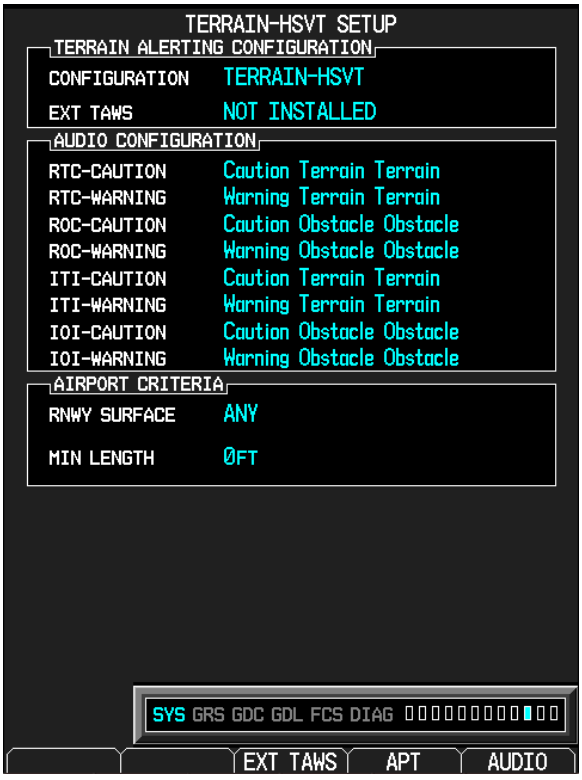
AIRPORT CRITERIA Window:

This sets the criteria used by the TAWS Alerting algorithm when determining if an airport is nearby. If an airport does not meet all of the specified criteria, it will never be considered a nearby airport for the purpose of TAWS alerting. TAWS alerting is relaxed at nearby airports to prevent nuisance alerts when landing.

1. **RNWY SURFACE,** specifies the options for runway types to consider when determining if an airport is nearby. *Selection: Any, Hard Only, Hard/Soft, Water.*
2. **MIN LENGTH,** specifies the minimum runway length to consider when determining if an airport is nearby. *Selection: 0 to 25000 feet in 1 foot increments.*

5.5.1.10.4 Terrain-HSVT Setup (G500H Only)

This page displays Terrain-HSVT setup information when SVT is enabled using a Helicopter SVT Enablement Card.



TERRAIN ALERTING CONFIGURATION Window:

1. **CONFIGURATION,** displays the current selection for terrain alerting. This configuration is automatically determined based upon which features are enabled on the "Feature Configuration" page.

AUDIO CONFIGURATION Window:

1. **RTC-CAUTION,** *Selections: Caution Terrain Terrain*
2. **RTC-WARNING,** *Selections: Warning Terrain Terrain*
3. **ROC-CAUTION,** *Selections: Caution Obstacle Obstacle*
4. **ROC-WARNING,** *Selections: Warning Obstacle Obstacle*
5. **ITI-CAUTION,** *Selections: Caution Terrain Terrain*
6. **ITI-WARNING,** *Selections: Warning Terrain Terrain*
7. **IOI-CAUTION,** *Selections: Caution Obstacle Obstacle*
8. **IOI-WARNING,** *Selections: Warning Obstacle Obstacle*

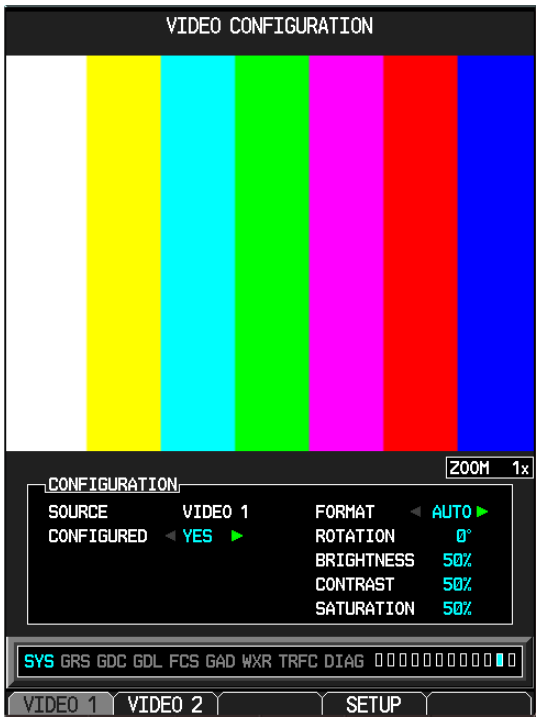
AIRPORT CRITERIA Window:

This sets the criteria used by the HSVT Alerting algorithm when determining if an airport is nearby. If an airport does not meet all of the specified criteria, it will never be considered a nearby airport for the purpose of HSVT alerting. HSVT alerting is relaxed at nearby airports to prevent nuisance alerts when landing.

1. **RNWY SURFACE,** specifies the options for runway types to consider when determining if an airport is nearby. *Selection: Any, Hard Only, Hard/Soft, Water.*
2. **MIN LENGTH,** specifies the minimum runway length to consider when determining if an airport is nearby. *Selection: 0 to 25000 feet in 1 foot increments.*

5.5.1.11 Video Configuration Page

This page is used to configure the interface to an optional video camera.



CONFIGURATION Window:

1. **SOURCE,** specifies which video input is selected for configuration and viewing. The source is selected by pressing the VIDEO 1 or VIDEO 2 soft key.

NOTE

The SETUP soft key must be pressed to allow adjustment of the following parameters.

2. **CONFIGURED,** specifies if Video 1 or Video 2 source is present. *Selections: Yes, No*
3. **FORMAT,** specifies the format of the incoming composite video. *Selections: Auto, NTSC, PAL.*
4. **ROTATION,** specifies the amount of how much the incoming video will be rotated when displayed. *Selections: 0°, 90°, 180°, 270°*
5. **BRIGHTNESS,** is used to adjust the brightness of the displayed video. *Selections: 0% to 100% in 1% increments.*
6. **CONTRAST,** is used to adjust the contrast of the displayed video. *Selections: 0% to 100% in 1% increments*
7. **SATURATION,** is used to adjust the saturation (color intensity) of the displayed video. *Selections: 0% to 100% in 1% increments*

VIDEO Window:

The window at the top of the page displays the composite video that is being received on the selected video input. The RNG up and down bezel keys can be used to adjust the zoom scale used when displaying the video. The inner MFD knob may be pressed and inner and outer MFD knobs can be turned to pan up/down and left/right across the video image.

5.5.1.12 Position Reporting Page *(Software Version 4.00 or later)*

This page is only available when the Iridium is configured as present.

STATUS Window:

This window provides information regarding the status of the GSR 56.

1. **TIME UNTIL TRANSMIT,** displays the time in mm:ss until the next position report transmission.
2. **REPORTING STATUS,** displays the status of the GSR 56. The following status information can be displayed: Unavailable, Initializing, Idle – on – Ground, Transferring.
3. **REPORTS IN QUEUE,** displays how many reports are in line to be transmitted at the next scheduled transmission.

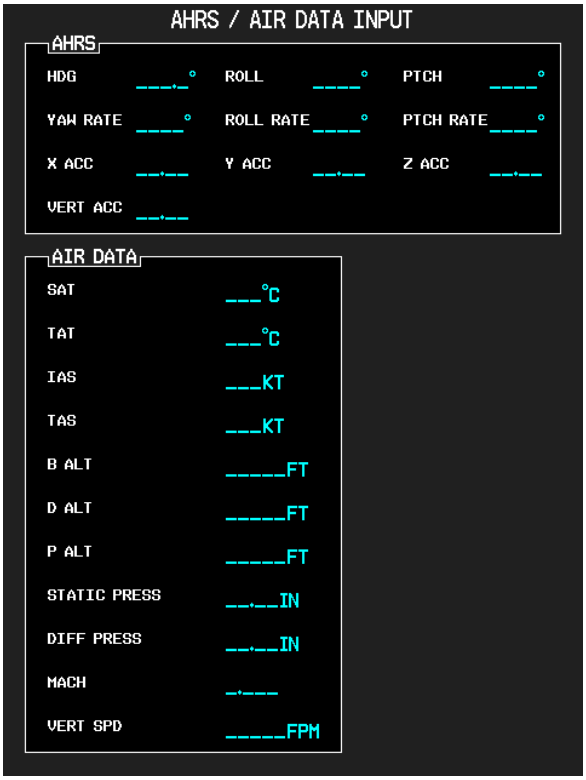
SETTINGS Window:

1. **REPORT TYPE,** specifies the type of position report that is transmitted over the Iridium network. *Selections: Standard, AFF*
2. **PERIOD,** specifies how often position reports are transmitted over the Iridium network. *Selections: Off, Automatic.* For the *Automatic* selection, the period of automatic position reports can be specified from 2 to 60 minutes, in one minute increments.

5.5.2 GRS Page Group

5.5.2.1 AHRS/Air Data Input Page

This page is used to monitor inputs to the GRS 77. There are no selectable items on this page. The parameters are as described below.



AHRS Window:

1. **T HDG,** True heading value input from GRS 77, expressed in degrees.
2. **ROLL,** Roll value input from GRS 77, expressed in degrees.
3. **PTCH,** Pitch value input from GRS 77, expressed in degrees.
4. **YAW RATE,** Yaw rate value input from GRS 77, expressed in degrees/sec.
5. **ROLL RATE,** Roll rate value input from GRS 77, expressed in degrees/sec.
6. **PITCH RATE,** Pitch rate value input from GRS 77, expressed in degrees/sec.
7. **X ACC,** X Axis acceleration value, expressed in m/s².
8. **Y ACC,** Y Axis acceleration value, expressed in m/s².
9. **Z ACC,** Z Axis acceleration value, expressed in m/s².
10. **VERT ACC,** Vertical acceleration value, expressed in m/s².

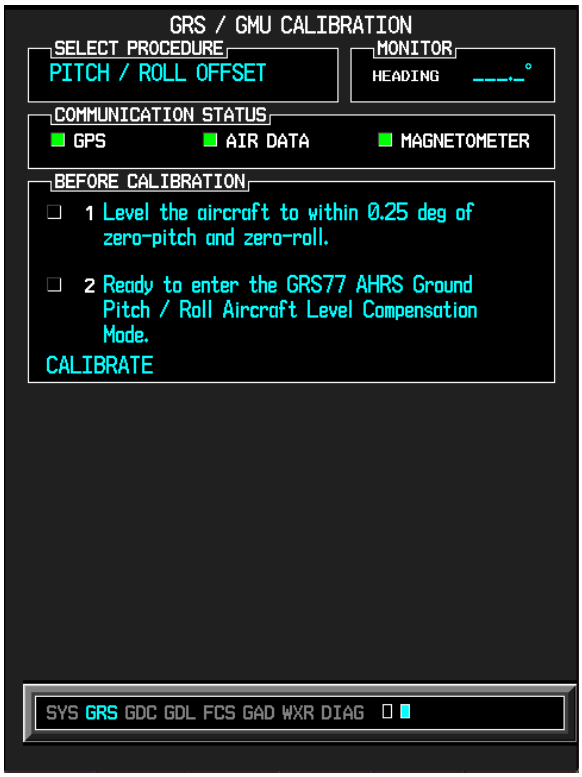
AIR DATA Window:

1. **SAT,** Static Air Temperature measurement input from GDC, expressed in degrees Centigrade.
2. **TAT,** Total Air Temperature measurement input from GDC, expressed in degrees Centigrade.
3. **IAS,** Indicated Air Speed measurement input from GDC, expressed in knots.
4. **TAS,** True Air Speed measurement input from GDC, expressed in knots.
5. **B ALT,** Barometric corrected altitude input from GDC, expressed in feet.
6. **D ALT,** Density altitude input from GDC, expressed in feet.
7. **P ALT,** Pressure altitude input from GDC, expressed in feet.

8. **STATIC PRESS,** Static pressure from GDC, expressed in inches.
9. **DIFF PRESS,** Differential pressure from GDC, expressed in inches.
10. **MACH,** Mach number
11. **VERT SPD,** Vertical speed from GDC, expressed in feet per minute.

5.5.2.2 GRS/GMU Calibration

This page allows installers to calibrate and test the GRS 77 installation.



SELECT PROCEDURE Window:

Activate the cursor to select the following procedures:

1. Pitch/Roll Offset
2. Magnetometer
3. Heading Offset
4. Engine Run-Up Test
5. Mag Interference Test

MONITOR Window:

1. **HEADING,** shows the magnetic heading from the GRS 77.

COMMUNICATION STATUS Window:

1. **GPS,** Shows status of GPS inputs from the GDU to GRS 77.
2. **AIR DATA,** Shows status of the air data input from GDC 74 to GRS 77.
3. **MAGNETOMETER,** Shows status of communication between GRS 77 and GMU 44.

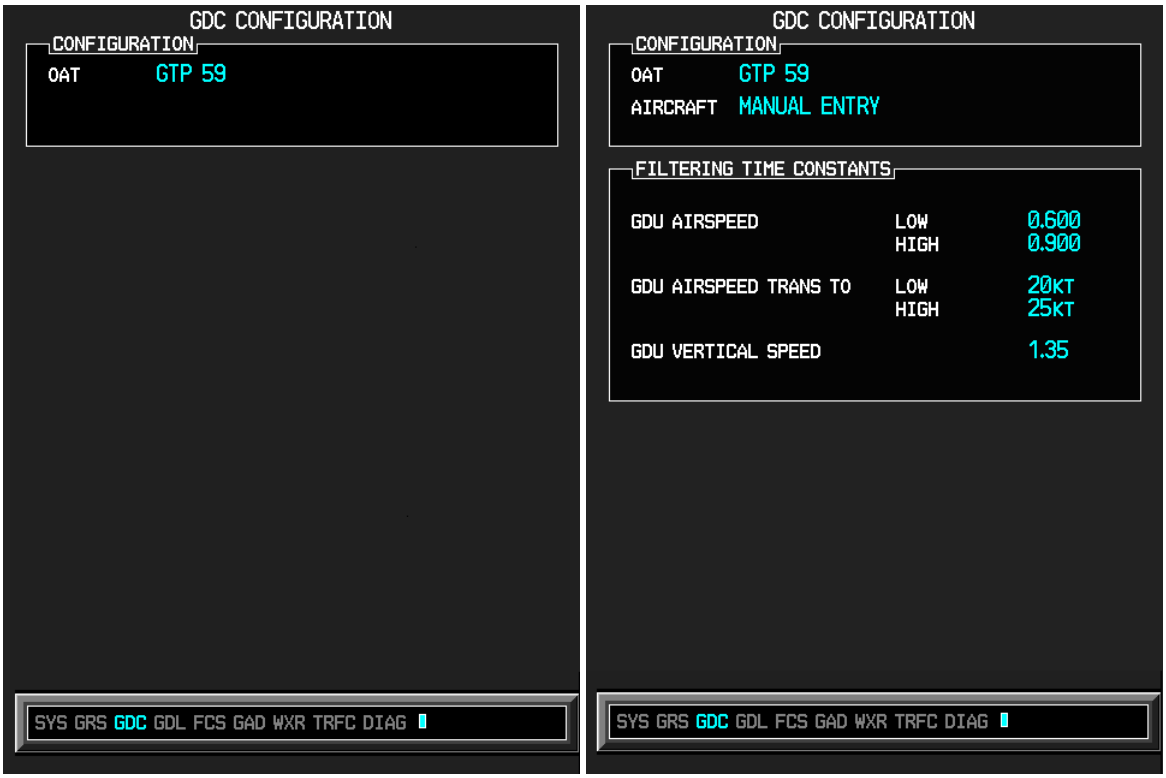
BEFORE CALIBRATION Window:

This window shows the specific steps an installer needs to take in order to perform each of the calibration procedures. Press the ENT key to confirm that each step has been completed and to begin calibration. The CALIBRATE command cannot be selected UNTIL each step is performed and checked by the installer or technician.

5.5.3 GDC Page Group

5.5.3.1 GDC Configuration Page

This page allows the installers to configure the GDC 74( ).



G500/G600 **G500H**

CONFIGURATION Window:

1. **OAT**, specifies the type of OAT probe connected to the GDC 74A. *Selections: None, GTP 59, Goodrich 102AU1AG, Harco 100723-2, ARINC TAT Input.*

NOTE

The Heli setting is only available with GDC 74( ) software version 3.06 or later.

2. **AIRCRAFT (G500H only)**, specifies the type of aircraft. *Selections: Manual Entry, Heli.*

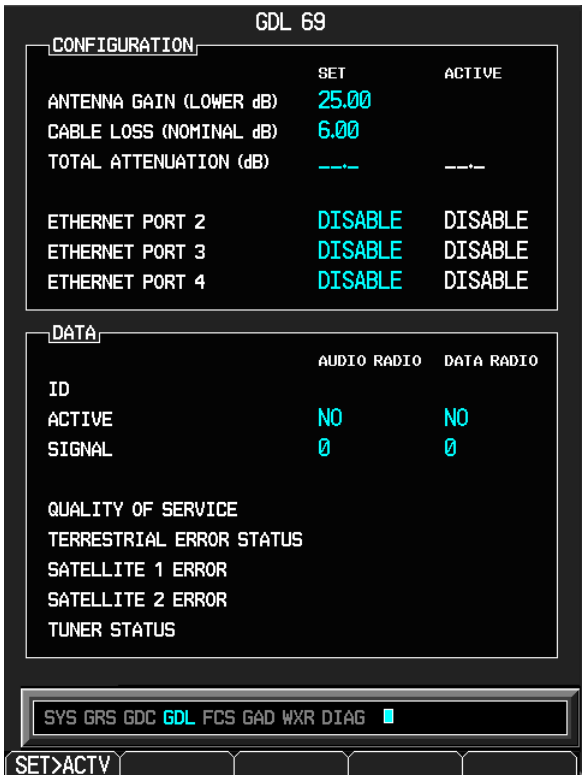
FILTERING TIME CONSTANTS Window (G500H only):

1. **GDU AIRSPEED**, specifies the filter time constants for the filtering that is applied to the airspeed tape display on the GDU. The higher the value, the more filtering that is applied. Different time constants can be specified for LOW airspeeds and HIGH airspeeds. *Selections: 0.050 to 1.500 in 0.001 increments.*
2. **GDU AIRSPEED TRANS TO**, specifies the airspeeds for applying the LOW and HIGH filtering constants. The LOW filtering is applied until the airspeed transitions above the HIGH limit. When the HIGH filtering is applied, it will be applied until the airspeed transitions below the LOW limit. *Selections: LOW: 0 to 25 kts / HIGH: 0 to 999 kts in 1 kt increments*
3. **GDU VERTICAL SPEED**, specifies the filter time constant for the filtering that is applied to the vertical speed display on the GDU. The higher the value, the more filtering that is applied. *Selections: 0.30 to 2.50 in 0.01 increments.*

5.5.4 GDL Page Group (Available only when GDL 69 Datalink present)

5.5.4.1 GDL 69 Page

This page allows installers to configure the GDL 69/69A.



CONFIGURATION Window:

NOTE

Refer to the GDL 69 Installation Manual (190-00322-02) for antenna gains and calculation of cable loss.

1. **ANTENNA GAIN (LOWER dB),** this is used to specify the antenna gain from 22.00 to 40.00 dB in 0.25 dB increments.
2. **CABLE LOSS (NOMINAL dB),** this is used to specify the antenna cable loss from 3.00 to 11.00 dB in 0.1 dB increments.

NOTE

The GDU 620 automatically calculates the total attenuation value that is required by the GDL 69/69A. The GDU 620 prevents the installer from entering antenna gain and cable loss values that result in a total attenuation that is outside the acceptable range of the GDL 69/69A.

3. **TOTAL ATTENUATION (dB)**, this field is automatically calculated based upon the antenna gain and cable loss values.
4. **ETHERNET PORT 2/3/4,** this is used to enable or disable Ethernet ports 2, 3, or 4 on the GDL 69/69A.

DATA Window:

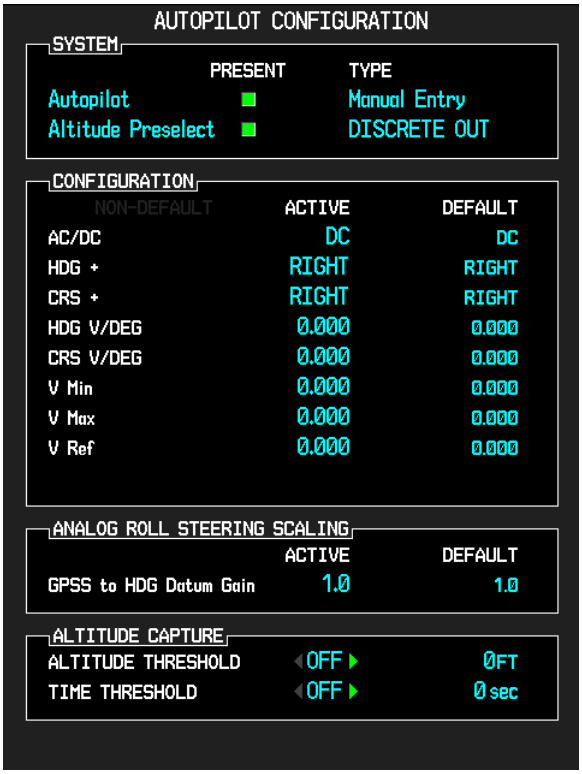
1. **ID,** displays the identification number for the data (GDL 69/69A) and audio (GDL 69A) radios.
2. **ACTIVE,** displays the active status for the data (GDL 69/69A) and audio (GDL 69A) radios.
3. **SIGNAL,** displays the signal strength for the data (GDL 69/69A) and audio (GDL 69A) radios.
4. **QUALITY OF SERVICE,** displays the quality of service for the data (GDL 69/69A) and audio (GDL 69A) radios.
5. **TERRESTRIAL ERROR STATUS,** displays the terrestrial status for the data (GDL 69/69A) and audio (GDL 69A) radios.
6. **SATELLITE 1 ERROR,** displays the error status for satellite 1.
7. **SATELLITE 2 ERROR,** displays the error status for satellite 2.
8. **TUNER STATUS,** displays the tuner status for the data (GDL 69/69A) and audio (GDL 69A) radios.

The SET>ACTV soft key can be used to write the configuration settings that are stored in the GDU 620 configuration module to the GDL 69/69A. In general, this soft key would only be used when replacing a GDL 69/69A.

5.5.5 FCS Page Group (Flight Control System)

5.5.5.1 Autopilot Configuration Page

This page allows the installers to specify whether or not an autopilot is present in the installation. It also allows the installer to configure the type of autopilot and adjust parameters for a particular installation if necessary.



SYSTEM Window:

1. **AUTOPILOT,** specifies type of autopilot present. *Selections: Manual Entry, Bendix IN-831, Century 2000, Century 21/31/41, Century II or III, Century IV, Century NSD 360 AC, Century NSD 360 DC, Cessna 400B AC, Cessna 400B DC, Collins APS-65, Collins PN 101, King KFC 250, King KFC 325, King KI 525, Sperry SPZ-500*

NOTE

ALTITUDE PRESELECT is only displayed if the Altitude Preselect feature is enabled (refer to Section 5.5.1.6).

2. **ALTITUDE PRESELECT,** specifies type of autopilot that will be utilizing the altitude preselect function. *Selections: S-TEC 55X*

CONFIGURATION Window:

NOTE

NON-DEFAULT is displayed in yellow when one or more of the settings is changed from its default value.

1. **AC/DC,** type of error signal. *Selections: AC or DC.*
2. **HDG +,** positive sense of the heading error signal. *Selections: Left or Right.*
3. **CRS +,** positive sense of the course error signal. *Selections: Left or Right.*
4. **HDG V/DEG**, scaling of the heading error signal. *Selections: 0.000 to 1.000.*
5. **CRS V/DEG,** scaling of the course error signal. *Selections: 0.000 to 1.000.*
6. **V Min,** minimum voltage output for error signals. *Selections:+18.000 to -18.000.*
7. **V Max,** maximum voltage output for error signals. *Selections: +18.000 to -18.000.*
8. **V Ref,** voltage output for 0° heading/course error signal. *Selections: +18.000 to -18.000.*

Once the Autopilot type has been selected the default values will be populated and displayed. If any changes are made to the default values, the message "MODIFIED NONDFLT" will be displayed on the screen.

ANALOG ROLL STEERING SCALING Window:

1. **GPSS to HDG Datum Gain,** adjusts the scaling that is used to convert the ARINC 429 roll steering command (bank angle) to a heading error. *Selections: 0.5 to 3.0 in 0.1 increments.*

3. For example: For a setting of 1.5, 1.0° of commanded bank angle is converted to 1.5° of heading error.

ALTITUDE CAPTURE Window:

NOTE

The Altitude Capture settings are only available when the Altitude Preselect option is enabled on the Feature Configuration page (Section 5.5.1.6) and the Altiutude Preselect is Present and set to DISCRETE OUT.

The ALTITUDE CAPTURE* discrete output (Section 4.2.8.7) is for use with autopilots that use a discrete to engage the Altitude Hold mode. The ALTITUDE CAPTURE* discrete will output one momentary active pulse for 500 ms when either (i) the aircraft has reached the preselected altitude + / - the configured Altitude Threshold, or (ii) the aircraft is climbing/descending at a rate such that it will reach the preselected altitude by the configured Time Threshold.

1. **ALTITUDE THRESHOLD,** difference from selected altitude that is used to determine when to trigger the ALTITUDE CAPTURE* discrete output. *Selections: OFF or ON.* When set to OFF, the altitude threshold value is not used in determining when to trigger the ALTITUDE CAPTURE* discrete output. When set to ON, the threshold value can be set from 0 to 500 ft in 10 ft increments.

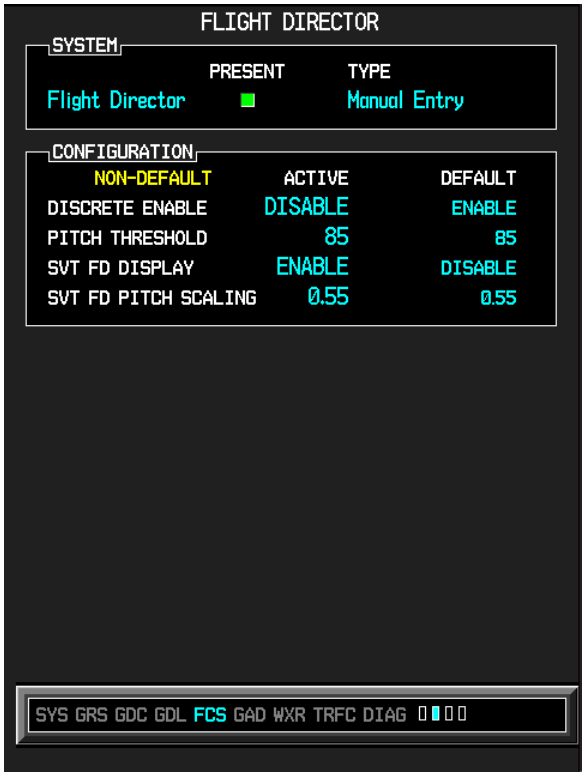
4. **TIME THRESHOLD,** based on current climb/descent rate, time to selected altitude that is used to determine when to trigger the ALTITUDE CAPTURE* discrete output. *Selections: OFF or ON.* When set to OFF, the time threshold value is not used in determining when to trigger the ALTITUDE CAPTURE* discrete output. When set to ON, the threshold value can be set from 0 to 30 sec in 1 sec increments.

5.5.5.2 Flight Director Page

NOTE

The Flight Director page and Flight Director Cal page are combined into a single Flight Director page for GDU 620 software prior to version 4.00.

This page allows the installers to configure the flight director.



SYSTEM Window:

1. **FLIGHT DIRECTOR,** specifies type of flight director present. *Selections: Manual Entry, Cessna 400B/800B, Collins AP-106/107, Collins APS-65, King KCI 310, King KI 256, S-TEC® 55X, S-TEC® ST-670.*

NOTE

NON-DEFAULT is displayed in yellow when one or more of the settings is changed from its default value.

CONFIGURATION Window:

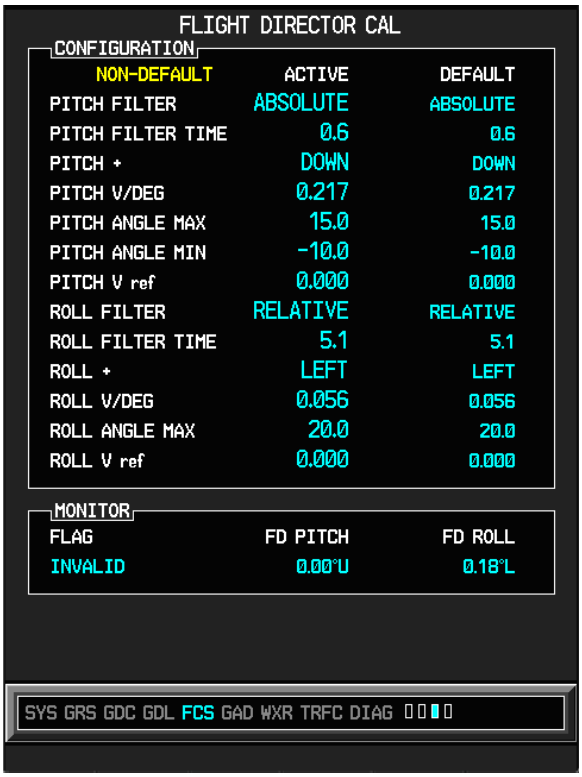
1. **DISCRETE ENABLE,** enables or disables use of the FD Enable In discrete input (Section 4.2.7.4) when displaying the FD bars. *Selections: Enable, Disable.*
2. **PITCH THRESHOLD,** if the DISCRETE ENABLE field is set to DISABLE, the GDU 620 will use the pitch command (Section 4.2.6) to determine whether or not to display the FD bars. When the absolute value of the pitch command is less than the Pitch Threshold, the Flight Director is considered valid and the FD bars will be displayed. Otherwise, the Flight Director is considered invalid and the FD bars are removed. *Selections: 0 to 180 degrees, in 1 degree increments.*

NOTE

The following items are only available with Synthetic Vision enabled (*software version 3.00 or later)*.

3. **SVT FD DISPLAY,** enables or disables the flight director display when SVT is selected for display on the PFD. *Selections: Enable, Disable.*
4. **SVT FD PITCH SCALING,** specifies the scaling that is applied to the flight director display when synthetic vision is selected on the PFD. *Selections: 0.00 to 1.00 in 0.01 increments.*

5.5.5.3 Flight Director Cal Page *(Software Version 4.00 or later)*



CONFIGURATION Window:

1. **PITCH FILTER,** specifies the type of pitch command filtering algorithm to be used. *Selections: Absolute or Relative.*
2. **PITCH FILTER TIME, +,** time constant (sec) for filtering applied to pitch axis of FD. A higher value corresponds to a slower response to the analog inputs. *Selections: 0.0 to 9.9.*
3. **PITCH +,** positive sense of flight director pitch input. *Selections: Up or Down*
4. **PITCH V/DEG,** scaling of flight director pitch input. *Selections: 0.000 to 9.999*
5. **PITCH ANGLE MAX,** maximum allowed pitch command. *Selections: 0 to 90 degrees.*
6. **PITCH ANGLE MIN,** minimum allowed pitch command. *Selections: -90 to 0 degrees.*
7. **PITCH V ref,** specifies voltage for 0° pitch command. *Selections: -15.000 to +15.000 volts.*
8. **ROLL FILTER,** specifies the type of roll command filtering algorithm to be used. *Selections: Absolute or Relative.*
9. **ROLL FILTER TIME,** time constant (sec) for filtering applied to roll axis of FD. A higher value corresponds to a slower response to the analog inputs. *Selections: 0.0 to 9.9.*

10. **ROLL +,** positive sense of flight director roll input, *Selections: Left or Right.*
11. **ROLL V/DEG,** scaling of flight director roll input. *Selections: 0.000 to 9.999*
12. **ROLL ANGLE MAX,** maximum allowed roll command. *Selections 0.0 to 99.9 degrees.*
13. **ROLL V ref,** specifies voltage for 0° pitch command. *Selections: -15.750 to +15.750 volts.*

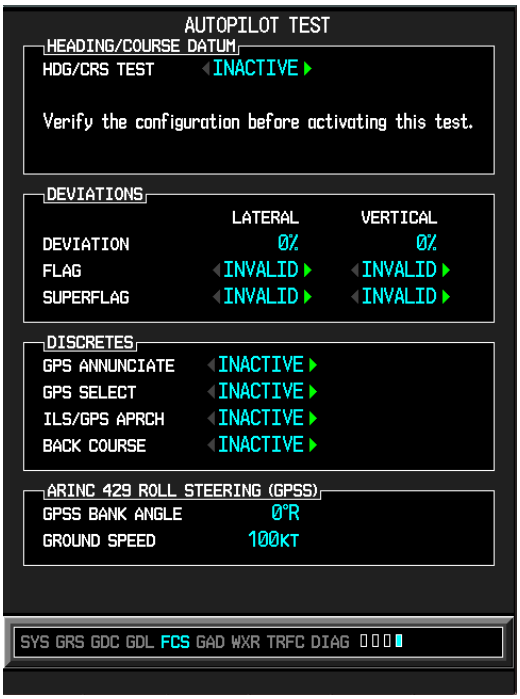
MONITOR Window:

This window is used to monitor the flight director inputs into the GDU 620. There are no selectable items in this window. The parameters are as defined below:

1. **VALID/INVALID,** state of the FD command bars as determined based upon the configuration settings set on the FLIGHT DIRECTOR page.
2. **FD PITCH,** raw value of the flight director pitch input.
3. **FD ROLL,** raw value of the flight director roll input.

5.5.5.4 Autopilot Test Page

This page allows the installers to test the autopilot.



HEADING/COURSE DATUM Window:

1. **HDG/CRS Test,** specifies status of heading/course test. *Selections: Inactive, Active*

DEVIATIONS Window:

This window allows the installer to drive the GDU 620 lateral and vertical analog deviations being sent to the autopilot.

1. **DEVIATION,** specifies the analog deviation output (lateral / vertical) in percent of full scale deflection (Left/Right / Up/Down), in 1% increments.
2. **FLAG,** specifies the status of the low-level flag output (lateral / vertical). *Selections: Invalid, Valid*
3. **SUPERFLAG,** specifies the status of the superflag output (lateral / vertical). *Selections: Invalid, Valid*

DISCRETES Window:

This window allows the installer to drive the GDU 620 discrete outputs being sent to the autopilot.

1. **GPS ANNUNCIATE,** specifies status of GPS Annunciate discrete output. *Selections: Inactive, Active*
2. **GPS SELECT,** specifies status of GPS Select discrete output. *Selections: Inactive, Active*
3. **ILS/GPS APRCH,** specifies status of ILS/GPS Approach discrete output. *Selections: Inactive, Active*
4. **BACK COURSE,** specifies status of Back Course discrete output. *Selections: Inactive, Active*

ARINC 429 ROLL STEERING (GPSS) Window:

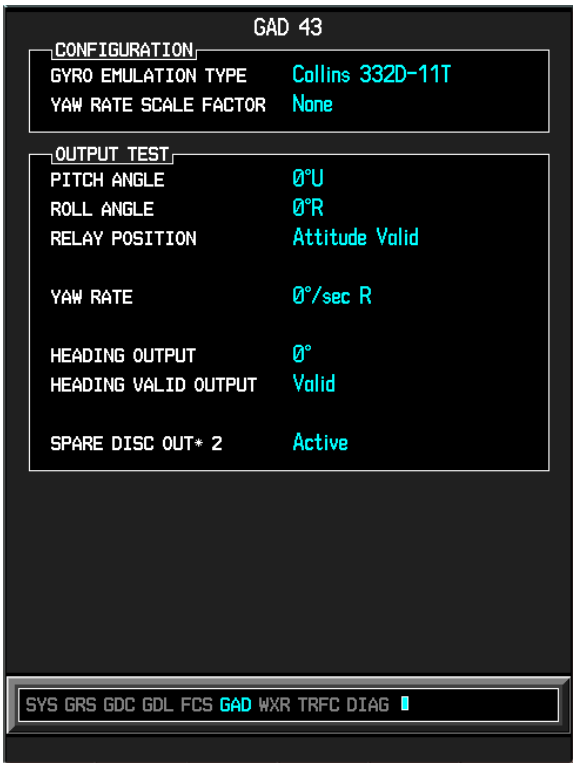
This window allows testing of the ARINC 429 roll steering interface (if installed) to the autopilot by allowing specific roll steering commands to be set.

1. **GPS BANK ANGLE,** specifies the bank angle output in degrees (Left or Right) in ARINC 429 label 121. *Selections: 180°L to 179°R in 1° increments.*
2. **GROUND SPEED,** specifies the groundspeed output in knots in ARINC 429 label 312. *Selections: 0 to 1000 knots in five knot increments.*

5.5.6 GAD Page Group (*Software version 3.00 or later)*

5.5.6.1 GAD 43 Page

This page allows the GAD 43 to be configured to provide data in formats suitable for interfacing to many different systems.



CONFIGURATION Window:

1. **GYRO EMULATION TYPE,** specifies the type of attitude gyro that the GAD 43 outputs will emulate. *Selections: Collins 332D-11T, Cessna/ARC G519, King KI 256, King KVG 350, Sperry VG-14A, Century 52C77-4 (Triden), Century 52C77-4 (41,)Century 52D67/M, Century 52D77-3, Century 52D77-4, Century 52D167/M, Century 52D188(,) Century 52D254, Century 52D267/M (Triden), Century 52D267/M (2000).*
2. **YAW RATE SCALE FACTOR,** specifies the scaling in mV/deg/sec used on the YAW RATE/BARO CORRECTION output. *Selections: None, 100, 200, 333, 666 (mV/deg/sec)*

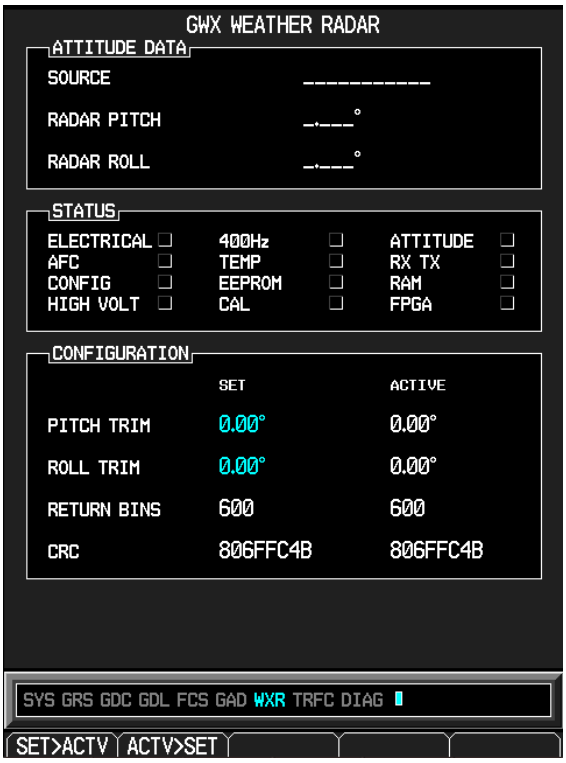
OUTPUT TEST Window:

1. **PITCH ANGLE,** specifies the pitch angle on all of the analog pitch outputs from the GAD 43. *Selections: 89°U to 90°D in 1° increments.*
2. **ROLL ANGLE,** specifies the roll angle on all of the analog roll outputs from the GAD 43. *Selections: 179°R to 180°L in 1° increments.*
3. **RELAY POSITION,** specifies the position of the Attitude Valid and AP Interlock Relay contacts. *Selections: Attitude Invalid or Attitude Valid.*
4. **YAW RATE,** specifies the yaw rate on the Yaw Rate/Baro Correction output from the GAD 43. *Selections: 127°/sec R to 128°/sec L in 1°/sec increments*
5. **HEADING,** specifies the heading angle on the synchro heading output from the GAD 43. *Selections: 0° to 359° in 1° increments.*
6. **HEADING VALID,** specifies the state of the Heading Valid discrete output. *Selections: Invalid or Valid.*
7. **SPARE DISC OUT 2*,** specifies the state of the Spare Disc Out 2 discrete output. *Selections: Active or Inactive.*

5.5.7 WXR Page Group (*Software version 3.00 or later)*

5.5.7.1 GWX Weather Radar

This page allows the GWX 68 Weather Radar to be configured.



ATTITUDE DATA Window (View Only):

1. **SOURCE,** displays the source of attitude data that is currently being used by the GWX 68 weather radar. *Possible values: None, HSDB, A429 or Gyro.*
2. **RADAR PITCH,** displays the current pitch value being received by the GWX weather radar from the stabilization source identified above.
3. **RADAR ROLL,** displays the current roll value being received by the GWX weather radar from the stabilization source identified above.

STATUS Window (View Only):

This window shows the internal status being reported by the GWX weather radar.

- A green light indicates that the item is functioning correctly.
- A red light indicates that the GWX is indicating a failure of that item.
- No light (black) indicates that no data is being received from the GWX.

CONFIGURATION Window:

1. **PITCH TRIM,** specifies the offset angle being used by the GWX for the pitch axis. *Selections: -4.00° to +4.00° in 0.05° increments.*
2. **ROLL TRIM,** specifies the offset angle being used by the GWX for the roll axis. *Selections: -4.00° to +4.00° in 0.05° increments.*
3. **RETURN BINS,** displays the number of range bins used to encode the data for one radar spoke. This value is predetermined by the G600 and cannot be changed.
4. **CRC,** displays the value of the CRC for the GWX configuration data. This value is predetermined and cannot be changed.

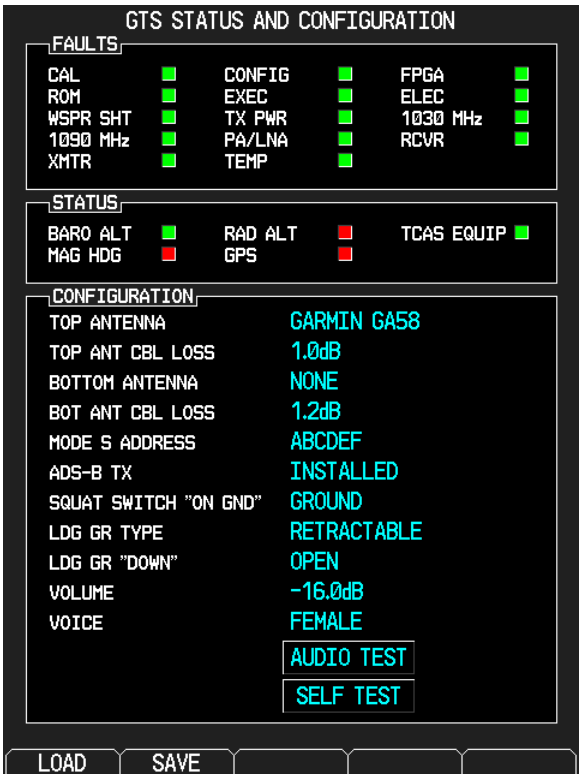
5.5.8 Traffic Page Group *(Software Version 4.00 or later)*

NOTE

The Traffic Page group will be available if GTS 800, GTS 820, or GTS 850 is selected as the traffic source on the system configuration page. See Section 5.5.1.1.

These configuration pages allow the installer to configure a GTS 8XX traffic system over HSDB rather than using the USB tool. Refer to the GTS 8XX Configuration, Checkout and Maintenance installation manual 190- 00993-03 for details about each of the settings. The displayed configuration settings are retrieved from the GTS 8XX – if the GDU 620 is not communicating with the GTS 8XX these fields will be blank.

5.5.8.1 GTS Status and Configuration Page



FAULTS Window:

The Faults window displays the status of various items internal to the GTS 8XX traffic computer.

- Green Light: The GTX 8XX is communicating with the GDU 620 and the indicated GTS 8XX item is functioning correctly.
- Red Light: The GTX 8XX is communicating with the GDU 620 and the GTS 8XX has detected a problem with that item.
- No Light (Black): The GTX 8XX is communicating with the GDU 620 (all items in the Faults window will be black).

STATUS Window:

The Status window displays the status of various external inputs to the GTS 8XX traffic computer.

- Green Light: The device is configured as Present and valid data is being received as expected from the device.
- Red Light: The device is configured as Present and invalid or no data is being received from the device.
- No Light (Black): The device is configured as Not Present.

The LOAD soft key will cause the GDU 620 to re-request the current configuration data from the GTS 8XX. **Any changes that were made to the GTS 8XX configuration and not saved will be discarded** when the LOAD soft key is pressed.

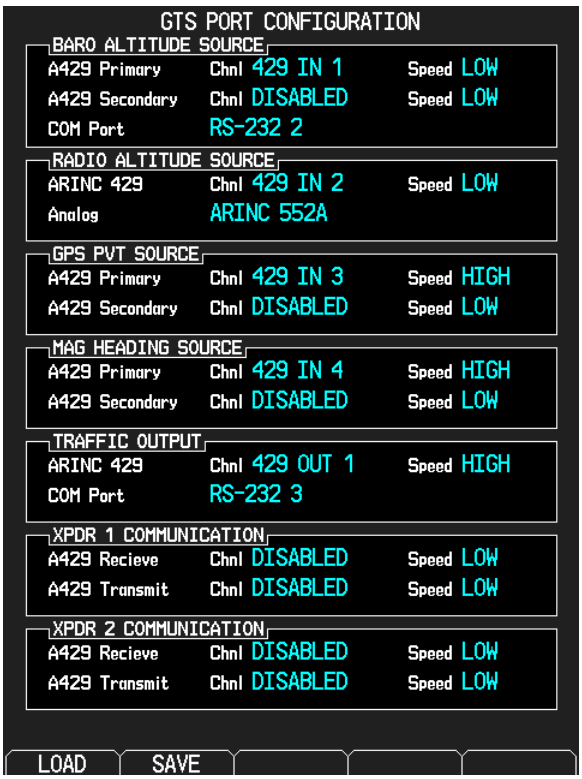
The SAVE soft key is used to save any configuration changes that were made to the GTS 8XX.

CONFIGURATION Window:

The Configuration window displays the status of various external inputs to the GTS 8XX traffic computer.

3. **TOP ANTENNA,** specifies the type antenna used on top. *Selections: Garmin GA58, Sensor Systems.*
4. **TOP ANT CBL LOSS,** specifies the top antenna cable loss. *Selections: 0.1 dB to 4.0 dB in 0.1 dB increments.*
5. **BOTTOM ANTENNA,** specifies the type antenna used on the bottom. *Selections: None, Monopole, Garmin GA58, Sensor Systems.*
6. **BOT ANT CBL LOSS,** specifies the bottom antenna cable loss. *Selections: 0.1 dB to 4.0 dB in 0.1 dB increments*
7. **MODE S ADDRESS,** specifies the Mode S address of the aircraft. *Selections: 000001 (hex) to FFFFFE (hex).*
8. **ADS-B TX,** specifies whether or not the aircraft is equipped with an ADS-B transmitter. *Selections: Installed, Not Installed.*
9. **SQUAT SWITCH "ON GND",** specifies the signal level corresponding to an 'on ground' input for the GTS 8XX "AIR/GROUND*" discrete input. *Selections: Ground, Open.*
10. **LDG GR TYPE,** specifies the type of landing gear on the aircraft. *Selections: Fixed, Retractable.*
11. **LDG GR "DOWN",** specifies the signal level corresponding to a 'gear down' input for the GTS 8XX "GEAR DOWN AND LOCKED*" discrete input. *Selections: Ground, Open.*
12. **VOLUME,** selects the volume level of the GTS 8XX audio output. *Selections: 0.0 dB to -63.0 dB in 0.5 dB increments*
13. **VOICE,** specifies the voice used for alerting. *Selections: Male, Female.*

5.5.8.2 GTS Port Configuration Page



The LOAD soft key will cause the GDU 620 to re-request the current configuration data from the GTS 8XX. **Any changes that were made to the GTS 8XX configuration and not saved will be discarded** when the LOAD soft key is pressed.

The SAVE soft key is used to save any configuration changes that were made to the GTS 8XX.

BARO ALTITUDE SOURCE Window:

1. **A429 Primary,** specifies the GTS 8XX ARINC 429 input that is used for the primary air data input. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*
2. **A429 Secondary,** specifies the GTS 8XX ARINC 429 input that is used for the secondary air data input. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*
3. **COM Port,** specifies the GTS 8XX RS-232 input that is used for air data input. *Selections: Disabled, RS-232 1 throughS-232 5.*

RADIO ALTITUDE Window:

1. **ARINC 429,** specifies the GTS 8XX ARINC 429 input that is used for the radio altitude input. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*
2. **Analog,** specifies the GTS 8XX RS-232 input that is used for air data input. *Selections: Disabled, ARINC 552, ARINC 552A, Bonzer MK10X, Collins ALT50, Collins ALT55, King KRA10, King KRA405, Sperry AA100, Terra TRA3000/3500.*

GPS PVT SOURCE Window:

1. **A429 Primary,** specifies the GTS 8XX ARINC 429 input that is used for the primary GPS data input. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*
2. **A429 Secondary,** specifies the GTS 8XX ARINC 429 input that is used for the secondary GPS data input. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*

MAG HEADING SOURCE Window:

1. **A429 Primary,** specifies the GTS 8XX ARINC 429 input that is used for the primary magnetic heading input. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*
2. **A429 Secondary,** specifies the GTS 8XX ARINC 429 input that is used for the secondary magnetic heading input. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*

TRAFFIC OUTPUT Window:

1. **ARINC 429,** specifies the GTS 8XX ARINC 429 output that is used to transmit traffic data. *Selections: Chnl: Disabled, 429 OUT 1 through 429 OUT 6; Speed: Low, High.*
2. **COM Port,** specifies the GTS 8XX RS-232 output that is used transmit traffic data. *Selections: Disabled, RS-232 1 throughS-232 5.*

NOTE

The XPDR 1 COMMUNICATION and XPDR 2 COMMUNICATION windows will be only be available if GTS 820, or GTS 850 is selected as the traffic source on the system configuration page. See Section 5.5.1.1.

XPDR 1 COMMUNICATION Window:

1. **A429 Receive,** specifies the GTS 8XX ARINC 429 input that is used to receive data from the transponder. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*
2. **A429 Transmit,** specifies the GTS 8XX ARINC 429 output that is used to transmit data to the transponder. *Selections: Chnl: Disabled, 429 OUT 1 through 429 OUT 6; Speed: Low, High.*

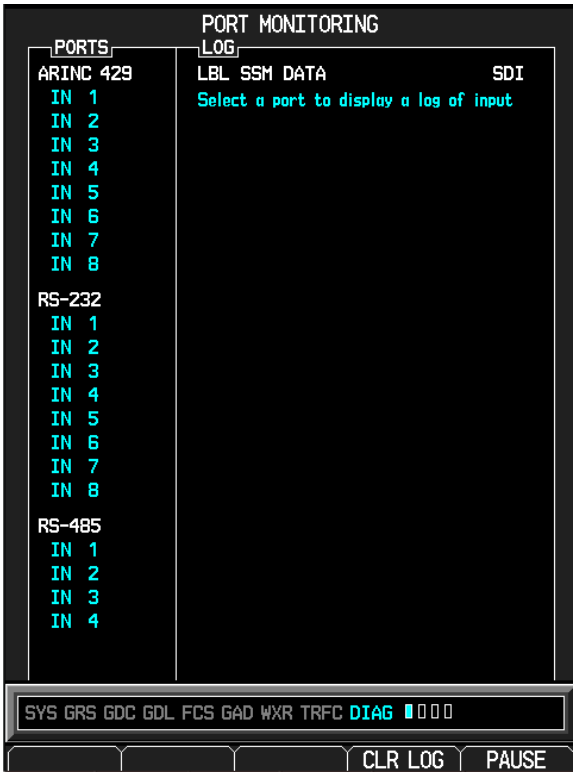
XPDR 2 COMMUNICATION Window:

1. **A429 Receive,** specifies the GTS 8XX ARINC 429 input that is used to receive data from a second transponder. *Selections: Chnl: Disabled, 429 IN 1 through 429 IN 6; Speed: Low, High.*
2. **A429 Transmit,** specifies the GTS 8XX ARINC 429 output that is used to transmit data to a second transponder. *Selections: Chnl: Disabled, 429 OUT 1 through 429 OUT 6; Speed: Low, High.*

5.5.9 DIAG Page Group

5.5.9.1 Port Monitoring Page

This window displays the status of the serial input ports. Data being received on a particular port can also be viewed.



NOTE

Ports are selected by activating the cursor and moving it to the desired port.

PORTS Window:

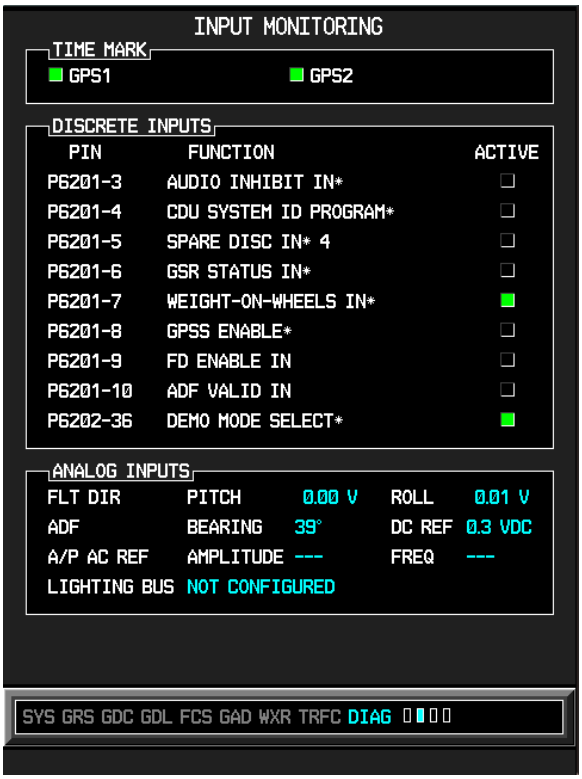
1. **ARINC 429,** select a port and information received on that port will be displayed on the right.
2. **RS-232,** select a port and information received on that port will be displayed on the right.
3. **RS-485,** select a port and information received on that port will be displayed on the right.

The PAUSE soft key is used to pause the data information for viewing. Pressing PAUSE a second time will resume data streaming.

The CLR LOG soft key is used to clear the information from the log window.

5.5.9.2 Input Monitoring Page

This window displays the status of the time mark, discrete and analog inputs. There are no selectable items on this page. The parameters are as described below.



TIME MARK Window:

1. **GPS1/GPS2,** shows the status of each GPS time mark input into the GDU 620, as follows:

- A green light indicates that the time mark is being correctly received.
- A red light indicates that the time mark is expected but not being received.
- No light (black) indicates that the GPS is configured as Not Present (GPS2 only).

DISCRETE INPUTS Window:

This window shows the status of all of the discrete inputs. If the Function name has a '*' following it, it is Active Low; otherwise, it is Active High.

- A green light indicates that the input is active.
- No light (black) indicates that the input is inactive (open).

ANALOG INPUTS Window:

1. **FLT DIR PITCH,** shows the voltage being received on the flight director pitch input.
2. **FLT DIR ROLL,** shows the voltage being received on the flight director roll input.
3. **ADF BEARING,** shows the bearing being received on the ADF input.
4. **ADF DC REF,** shows the voltage being received on the ADF DC Reference input.
5. **A/P AC REF AMPLITUDE,** shows the RMS value of the voltage being received on the autopilot AC reference. If no AC voltage is being received, this value is displayed as '---'.
6. **A/P AC REF FREQ,** shows the frequency in Hz of the voltage being received on the autopilot AC reference. If no AC voltage is being received, this value is displayed as '---'.

7. **LIGHTING BUS,** shows the voltage being received on the lighting bus input. The actual value displayed depends upon the type of input configured on the Display Input Source (i.e. 14V DC, 28V DC, 5V DC, or 5V AC). If both the Display and Key input sources are configured to use the photocell, NOT CONFIGURED is displayed.

5.5.9.3 OUTPUTS Page

This window allows the installer to turn the discrete outputs on and off.

DISCRETE OUTPUTS Window:

This window allows the discrete outputs to be turned on or off. If the Function name has a '*' following it, it is Active Low. Use the cursor to select a discrete, and then press ENT to toggle the state of the output.

- A green box indicates that the output is active (low).
- A black box indicates that the output is inactive (open).

5.5.9.4 Error Log Page

EXCEPTIONS Window:

This window lets you view the most recent exceptions (up to 100). Using the cursor you can highlight the exception and view additional information in the lower half of the window. This information is used for diagnostics and troubleshooting.

POWER ON STATS Window:

1. **POWER CYCLES,** indicates the number of times power has been applied to this particular GDU 620.
2. **POWER HOURS,** indicates the amount of time in hours that power has been applied to this particular GDU 620.

The SAVE LOG soft key will write the error log to the top SD card into a file called *err_rpt.dat*. This file may then be sent to Garmin for further analysis.

The CLR LOG soft key will clear all of the exceptions stored in the GDU 620 error log.

6. RESERVED

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7. LIMITATIONS

7.1 Operation

All functions of the G600 variant of the GDU 620 meet the appropriate design assurance qualifications for a primary system for aircraft in Class I, Class II, and Class III in accordance with AC 23.1309-1C, Figure 2.

All functions of the G500 variant of the GDU 620 meet the appropriate design assurance qualifications for a primary system for aircraft in Class I, and Class II in accordance with AC 23.1309-1C, Figure 2.

7.2 Installation

The conditions and tests required for TSO authorization of this article are minimum performance standards. It is the responsibility of those installing this article either on or within a specific type or class of aircraft to determine that the aircraft installation conditions are within the TSO standards. TSO articles must have separate approval for installation in an aircraft. The article may be installed only if performed under 14 CFR Part 43 or the applicable airworthiness requirements.

7.2.1 Equipment Interfaced to the GDU 620

GDU 620 interfaces to aircraft systems other than those shown in this installation manual are outside the scope of this manual and may require further evaluation and/or certification approval.

7.2.1.1 Traffic Sensor

The GDU 620 supports multiple types of traffic systems (TAS, TCAS I, and TIS), but only one system may be configured for use.

7.2.1.2 GNS 500W Series TAWS Annunciation

Only TAWS alerts from the No. 1 system (i.e., GPS or GPS1) are displayed on the PFD. If the aircraft's TAWS system is embedded in a GNS 500W Series system configured as system No. 2, the remote annunciations will not display on the GDU 620 PFD.

7.2.2 TAWS

Aircraft installations that have a TAWS which generates aural and visual annunciations are not interoperable with the GDU 620 internal implementation of TAWS (G600 only) or SVT-Terrain. Only one TAWS may be installed in the aircraft. If an external TAWS is installed along with SVT on the GDU 620, the GDU 620 must be configured to disable SVT-Terrain aural and visual annunciations.

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8. PERIODIC MAINTENANCE

8.1 Continued Airworthiness

Maintenance of the GDU 620 is “on condition” only. For regulatory periodic functional checks, refer to approved aircraft maintenance manuals or manual supplements for actual aircraft maintenance requirements.

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APPENDIX A ENVIRONMENTAL QUALIFICATION FORM

Go to the Dealers Only site at http://www.garmin.com for the latest Environmental Qualification Form. (Document number 005-00313-20)

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APPENDIX B OUTLINE AND INSTALLATION DRAWINGS

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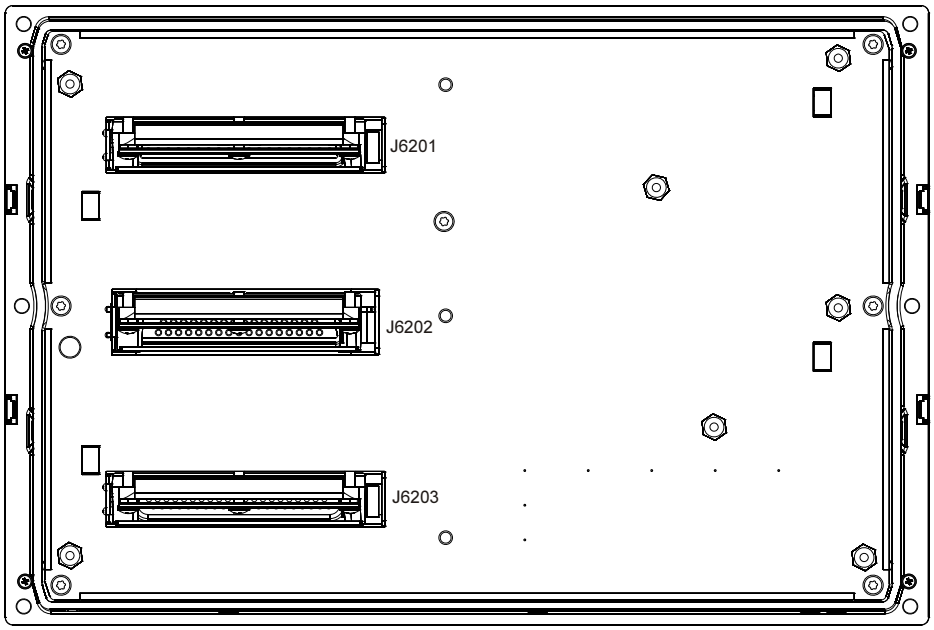


Figure B-1. Connector Locations

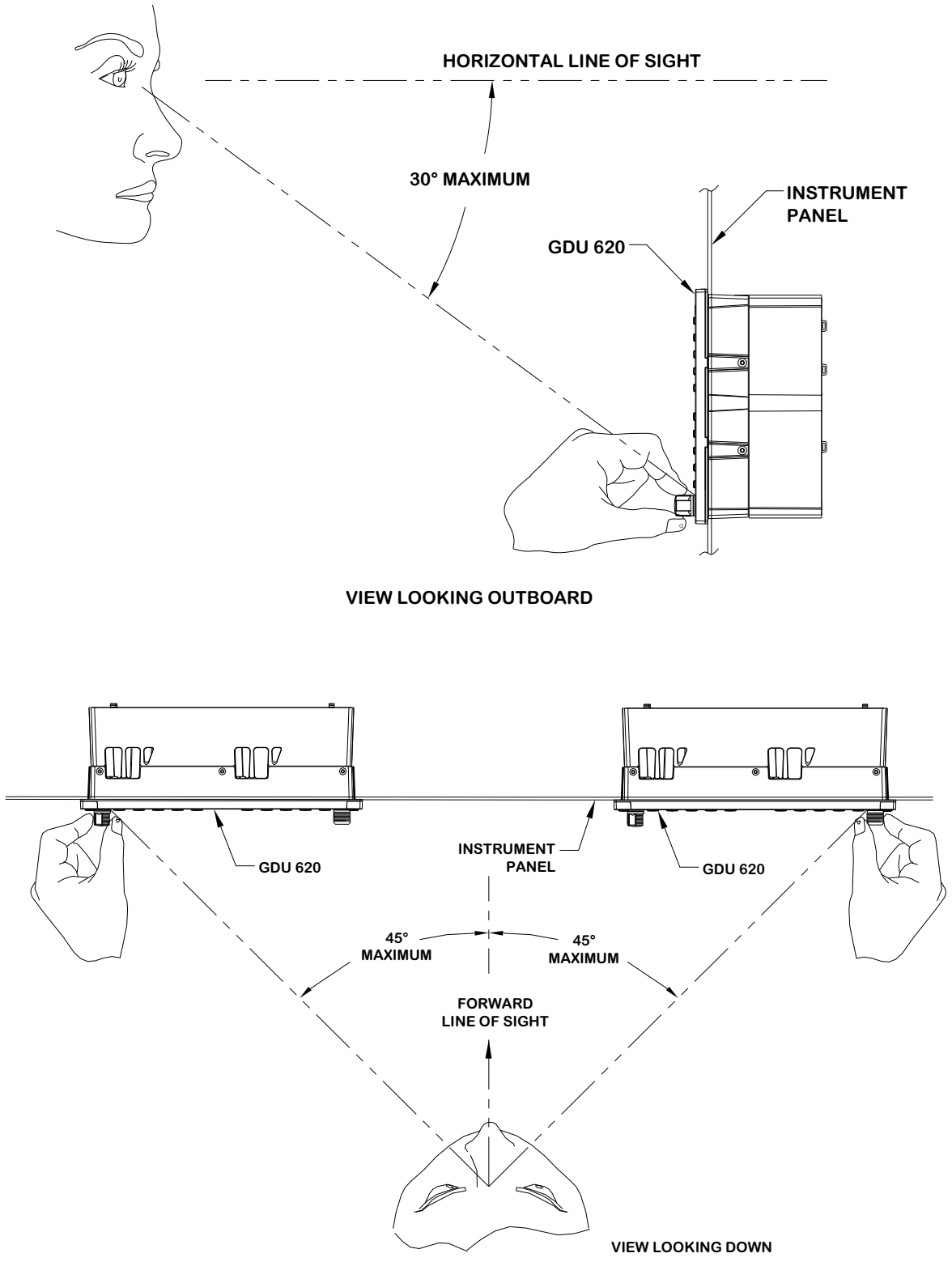


Figure B-2. Maximum Viewing Angle

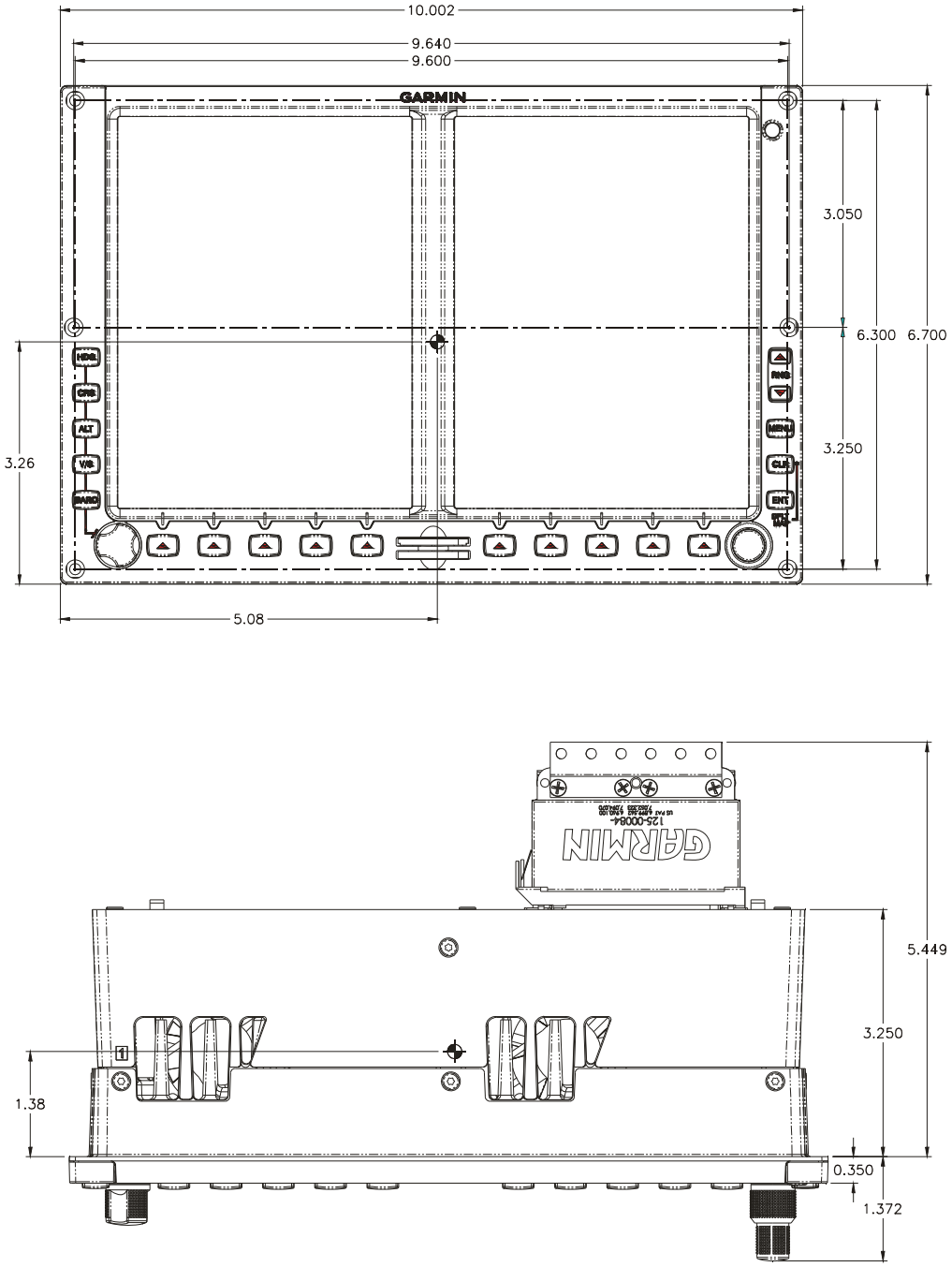
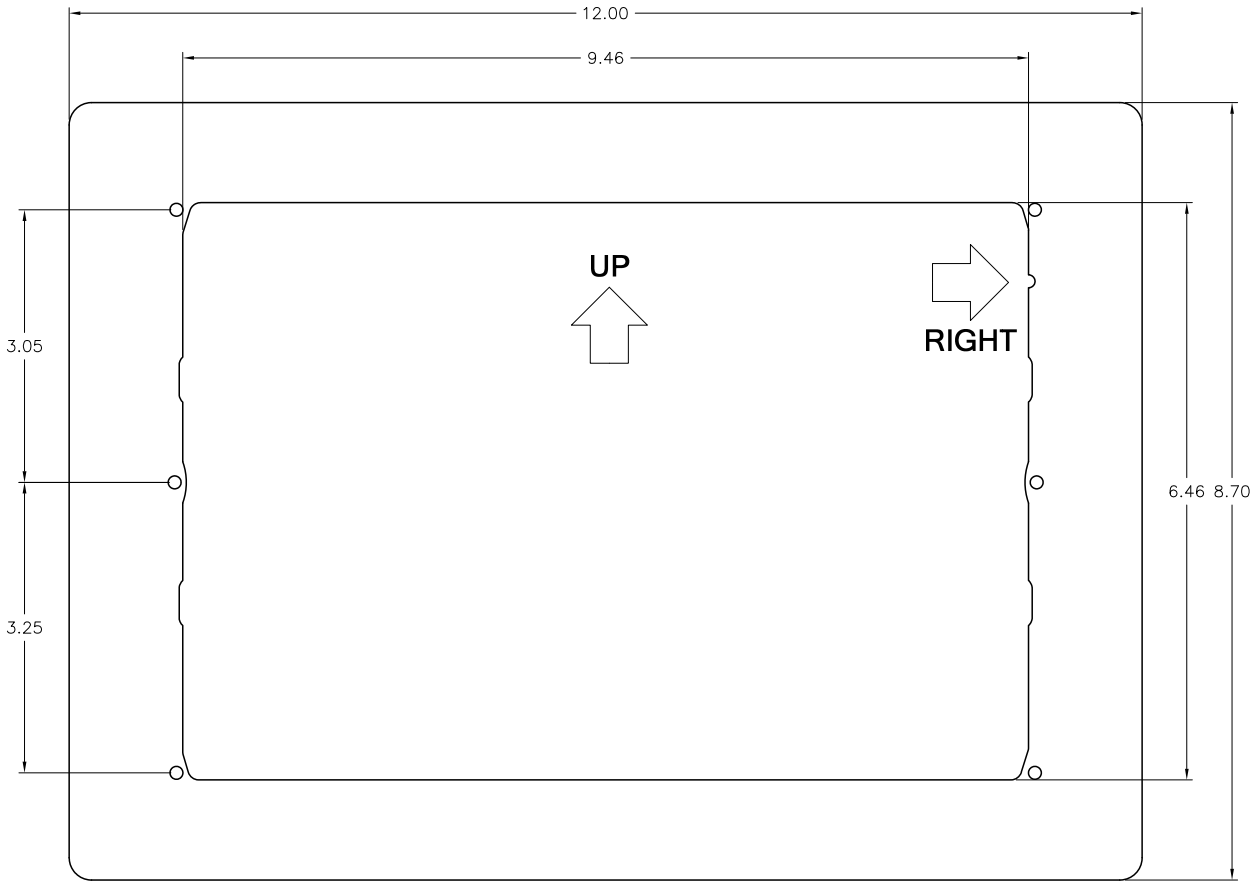


Figure B-3. GDU 620 Dimensions and Center of Gravity

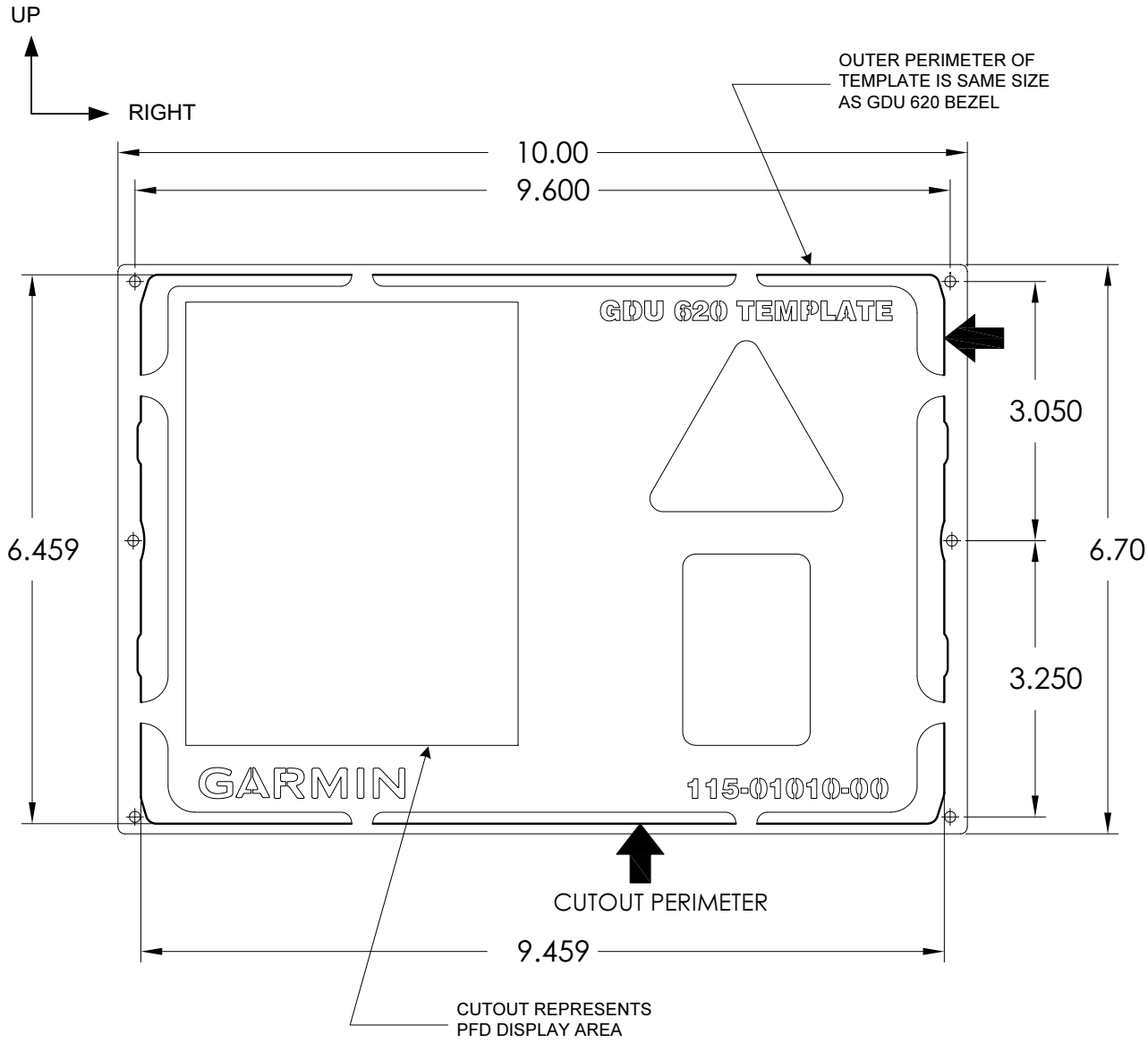


PART NUMBER	DESCRIPTION	THICKNESS (in)
115-01009-00	TRIM PLATE, THIN	0.032
115-01009-10	TRIM PLATE, THICK	0.063

NOTES:

1. TWO TRIM PLATES ARE AVAILABLE. BOTH ARE 2024-T3 ALUMINUM, WITH THICKNESSES OF 0.032" AND 0.063".
2. TRIM PLATE IS CHROMATED. IT MUST BE CUT TO THE CORRECT SIZE AND PAINTED TO MATCH EACH INSTALLATION.

Figure B-4. Trim Plate P/N 115-01009-( )



NOTES:

1. CUTOUT TEMPLATE IS MADE FROM STAINLESS STEEL AND CAN BE USED FOR MULTIPLE INSTALLATIONS.
2. CUTOUT TEMPLATE SHOULD BE TEMPORARILY AFFIXED TO INSTRUMENT PANEL IN DESIRED LOCATION PRIOR TO MARKING CUTOUT. **THE OUTSIDE EDGES OF THE CUTOUT PATTERN SHOULD BE USED WHEN MARKING THE CUTOUT ONTO THE INSTRUMENT PANEL.**
3. INSTRUMENT PANEL HOLES FOR GDU MOUNTING NUTPLATES SHOULD BE DRILLED USING A #30 (0.1285") DRILL BIT PRIOR TO REMOVAL OF THE TEMPLATE FROM THE INSTRUMENT PANEL. THE HOLES ARE RESIZED LATER TO THEIR FINAL DIAMETER.

Figure B-5. Cutout Template P/N 115-01010-00

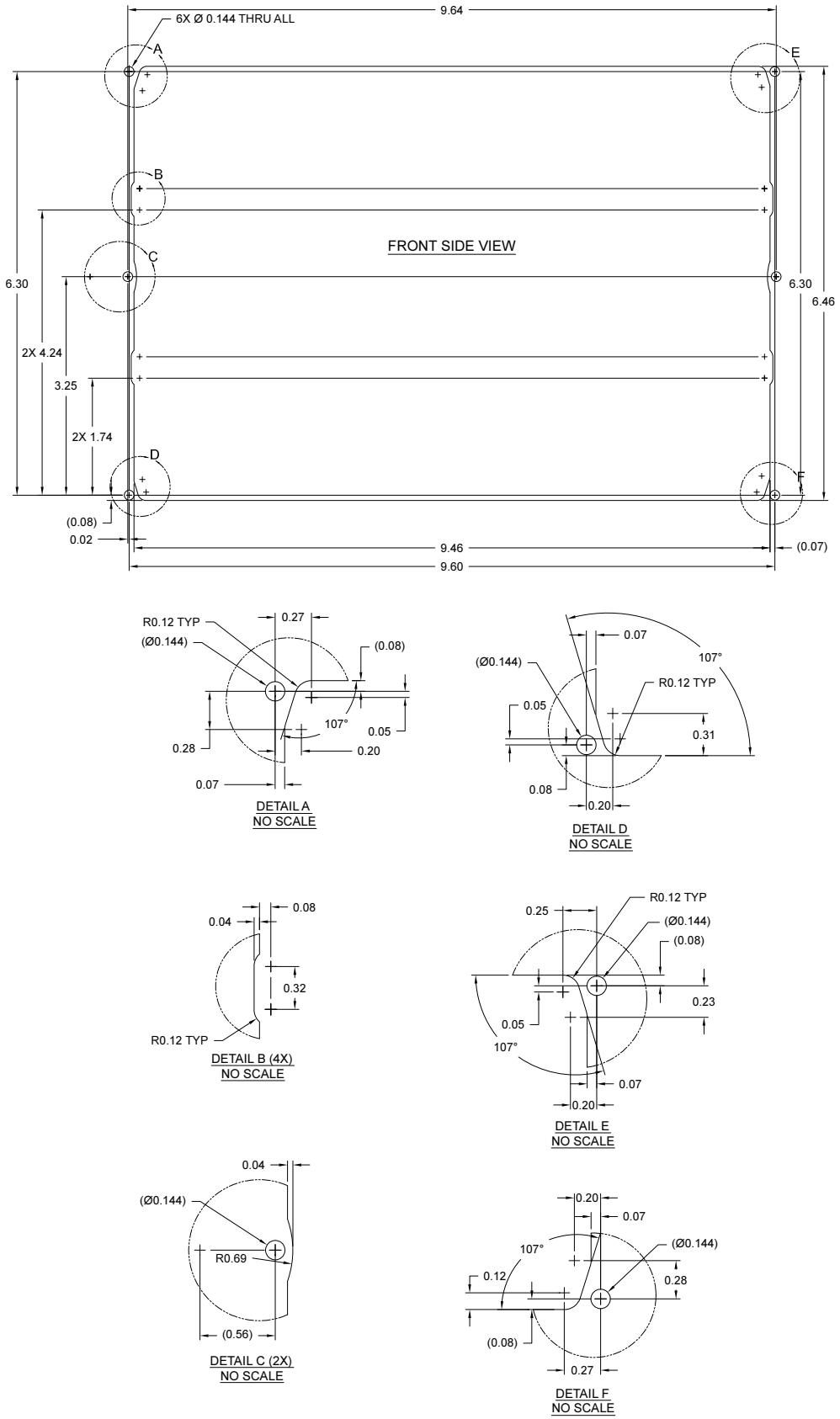


Figure B-6. Instrument Panel Cutout

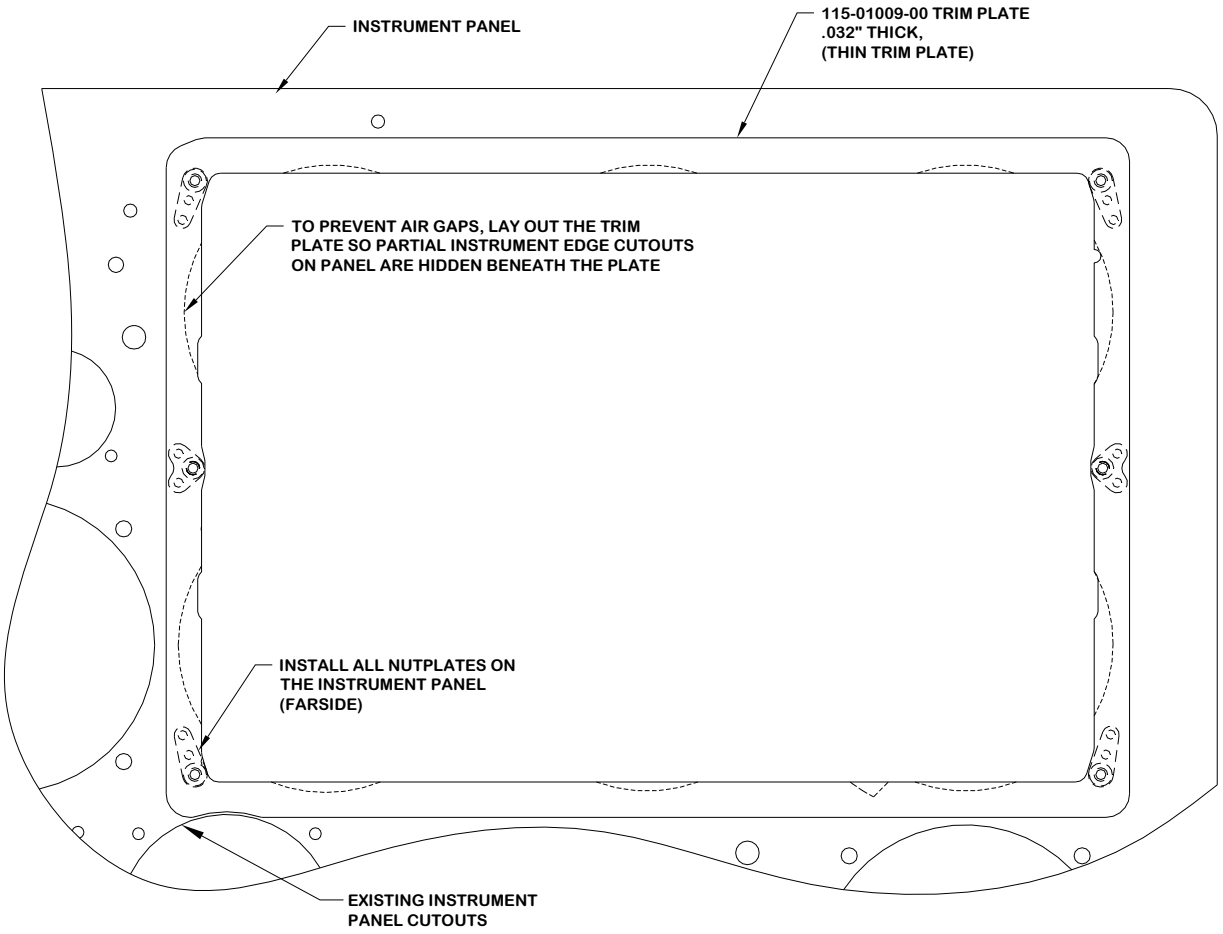


Figure B-7. Typical Installation – Thin Trim Plate

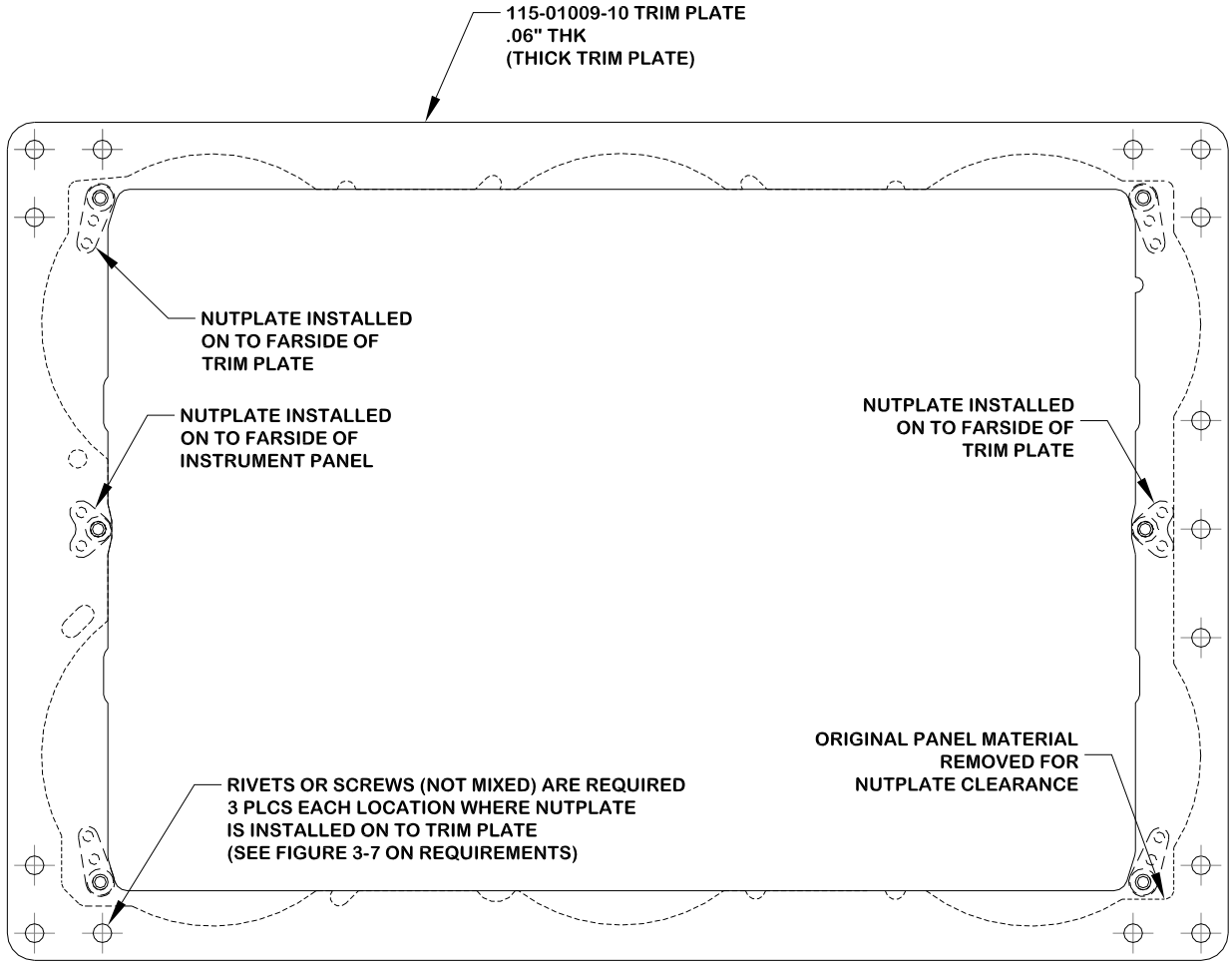


Figure B-8. Typical Installation – Thick Trim Plate

APPENDIX C INTERCONNECT DRAWINGS

The following drawings are included in this section:

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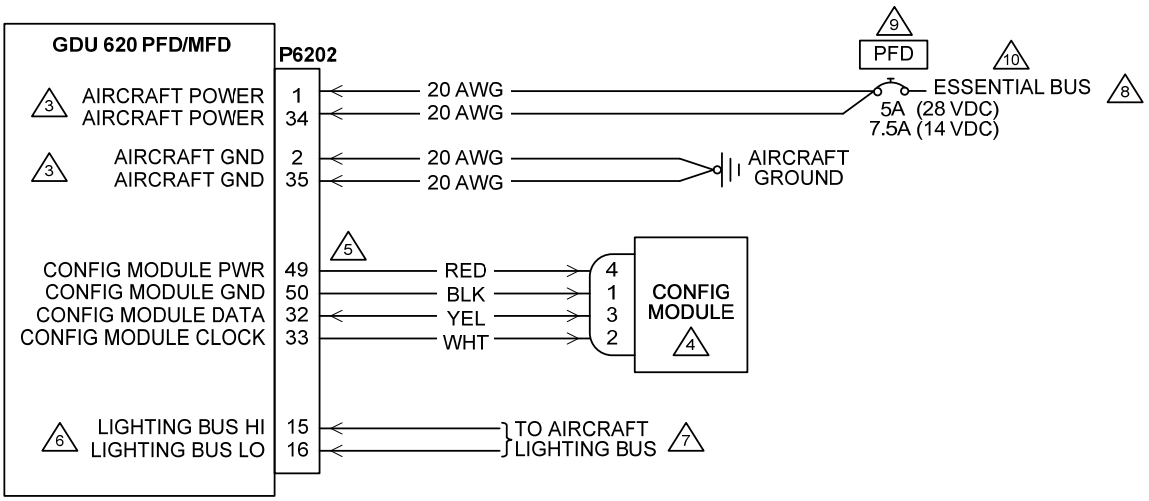
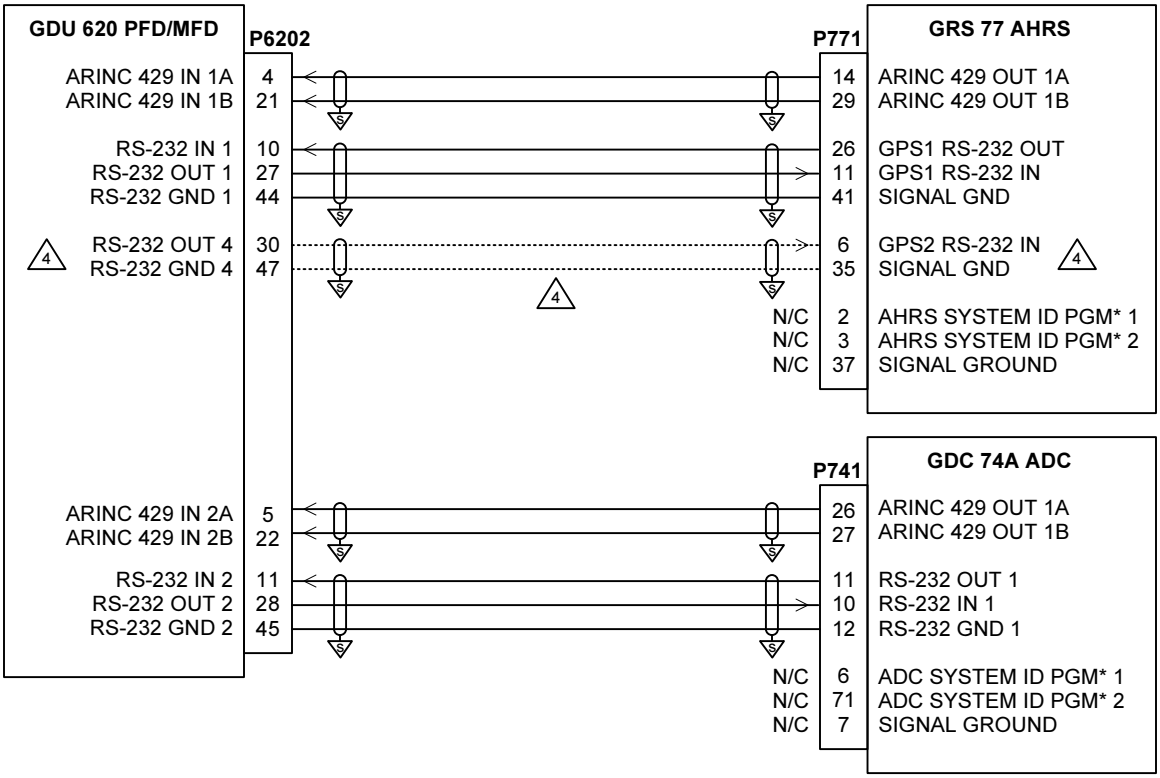


NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: ⏚ SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. BOTH POWER LEADS AND BOTH GROUND LEADS ARE REQUIRED.
4. CONFIGURATION MODULE IS MOUNTED IN THE BACKSHELL OF THE P6202 CONNECTOR.
5. CONFIGURATION MODULE HARNESS USES 28 AWG WIRES. CONTACTS SUPPLIED WITH CONFIGURATION MODULE MUST BE USED FOR CONNECTING CONFIGURATION MODULE HARNESS TO P6202.
6. THE GDU 620 MUST BE CONFIGURED FOR THE CORRECT LIGHTING BUS VOLTAGE (28 VDC, 14 VDC, 5 VDC OR 5 VAC). NO DAMAGE WILL OCCUR IF THE UNIT IS CONFIGURED INCORRECTLY. A MANUAL LIGHTING CONTROL OPTION IS ALSO AVAILABLE. REFER TO THE POST-INSTALLATION CONFIGURATION PROCEDURE.
7. OPTIONAL CONNECTION. IF NOT CONNECTED, THE GDU 620 LIGHTING MUST BE CONFIGURED TO AUTOMATICALLY COMPENSATE FOR AMBIENT LIGHTING CONDITIONS USING ITS PHOTOCELL. A MANUAL LIGHTING CONTROL OPTION IS ALSO AVAILABLE. REFER TO THE POST-INSTALLATION CONFIGURATION PROCEDURE.
8. THE GDU 620 MUST BE ON THE SAME POWER BUS AS THE GRS 77 AND GDC 74A. THE GDU 620 MUST NOT BE ON THE AVIONICS POWER BUS.
9. CIRCUIT BREAKER SHOULD BE LABELED AS SHOWN.
10. IF THE AIRCRAFT DOES NOT HAVE AN "ESSENTIAL" BUS, CONNECT TO A BUS THAT RECEIVES POWER AS SOON AS THE BATTERY MASTER IS TURNED ON. REFER TO SECTION 2.5.4 FOR ADDITIONAL INFORMATION.

Figure C-1. Power and Configuration Module Lighting Interconnect – Single GDU
Sheet 1 of 1

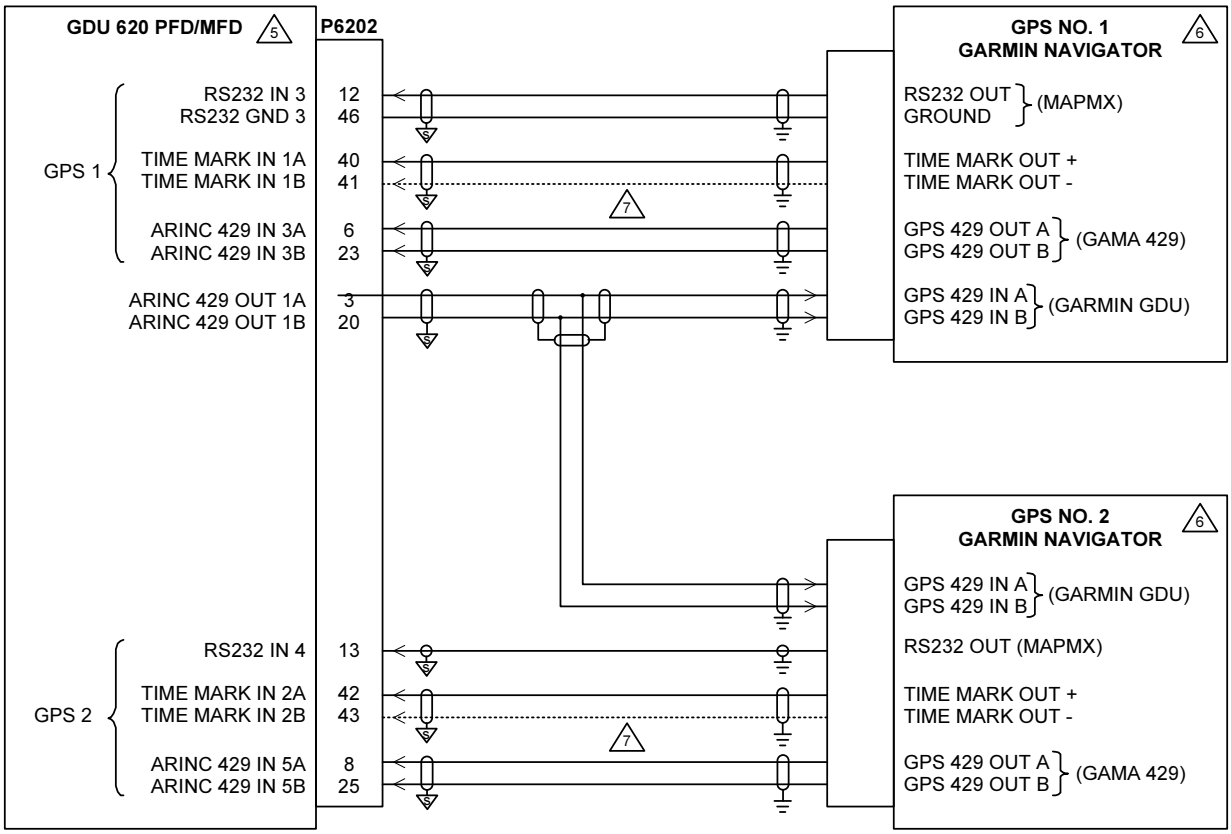


NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: ⏚ SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. AT GDU 620, GRS 77 AND GDC 74A, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ".

4. THIS CONNECTION IS ONLY REQUIRED IF GPS #2 IS CONNECTED TO THE GDU 620.

Figure C-2. Attitude – Air Data Interconnect – Single GDU
Sheet 1 of 1



NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT OTHER SHIELD GROUNDS TO AIRCRAFT CHASSIS WITH AS SHORT A CONDUCTOR AS PRACTICAL.
4. IF ONLY ONE NAVIGATOR IS INSTALLED, WIRE AS SHOWN FOR GPS 1.

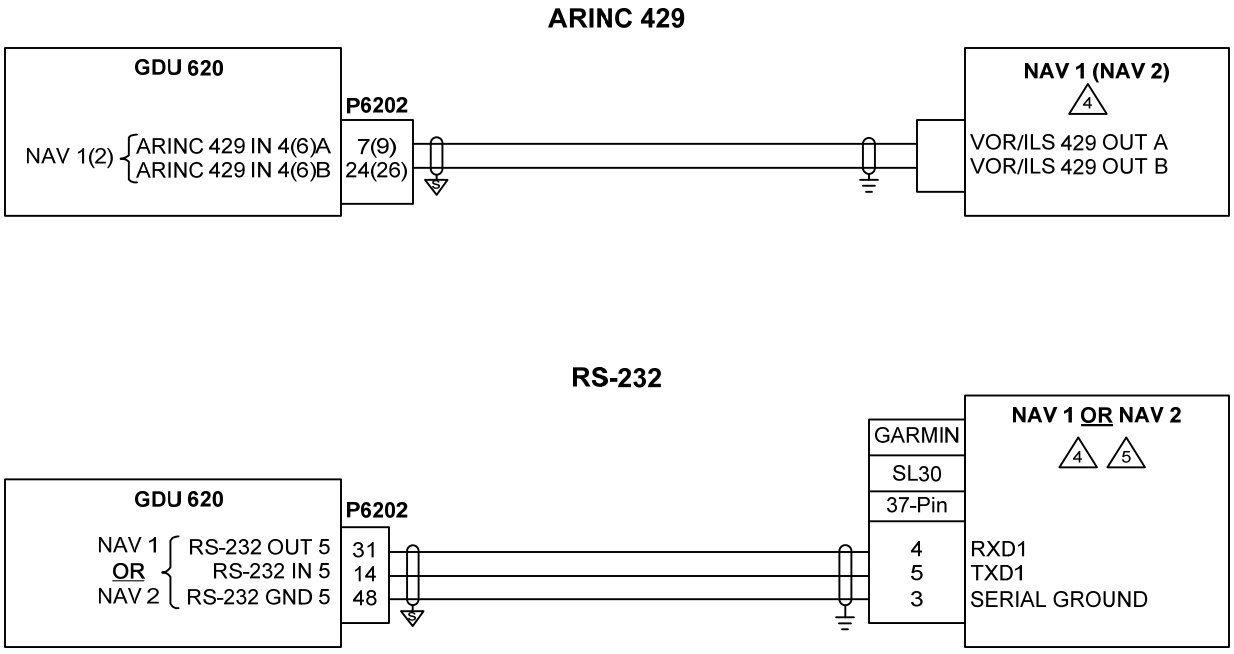
5. FOR GDU 620 SETUP ITEMS REFER TO SECTION 5.5

6. IF A TAWS-EQUIPPED 500W SERIES UNIT IS INSTALLED, IT **MUST** BE CONNECTED AS GPS1 – ONLY TAWS ANNUNCIATIONS FROM GPS1 ARE DISPLAYED ON THE PFD. IF TWO TAWS-EQUIPPED UNITS ARE INSTALLED, THE TAWS-EQUIPPED UNIT THAT IS CONNECTED TO THE AUDIO PANEL **MUST** BE CONNECTED AS GPS1.

7. THE TIME MARK B/- CONNECTION IS NOT REQUIRED FOR THE 400W/500W SERIES UNITS AND SHOULD BE LEFT UNCONNECTED IN THE INSTALLATION.

8. REFER TO MANUFACTURER'S DOCUMENTATION FOR COMPLETE PIN-OUT AND INTERCONNECT INFORMATION. PIN-OUTS OF OTHER UNITS SHOWN FOR REFERENCE ONLY.

Figure C-3. GPS Interconnect – Single GDU



NOTES:

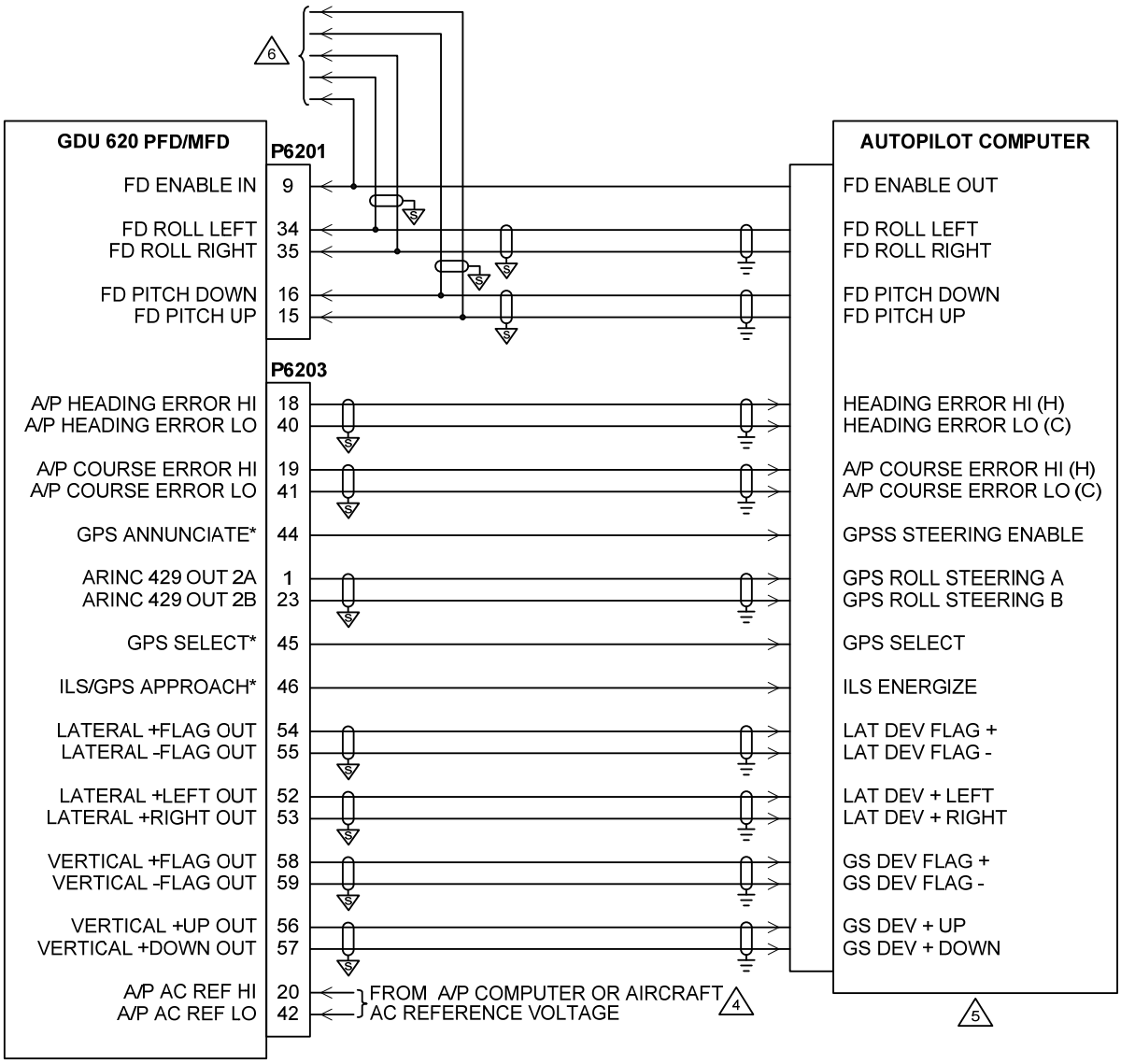
1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT OTHER SHIELD GROUNDS TO AIRCRAFT CHASSIS WITH AS SHORT A CONDUCTOR AS PRACTICAL, IN ACCORDANCE WITH LRU INSTALLATION INSTRUCTIONS.

4. IF ONLY ONE NAV RECEIVER IS INSTALLED, WIRE AS SHOWN FOR NAV 1.

5. ONLY ONE SL30 MAY BE CONNECTED TO THE GDU 620. IT CAN BE CONFIGURED AS NAV 1 OR NAV 2 IF NAV 1 IS CONFIGURED FOR AN ARINC 429 NAV SOURCE.

6. FOR GDU 620 SETUP ITEMS REFER TO SECTION 5.5.

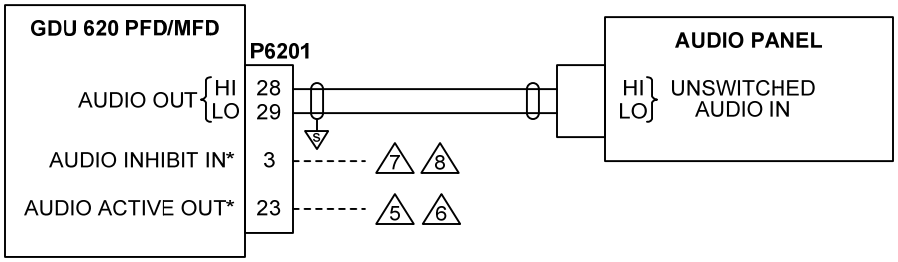
Figure C-4. NAV Interconnect



NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: ⏚ SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT OTHER SHIELD GROUNDS TO AIRCRAFT CHASSIS WITH AS SHORT A CONDUCTOR AS PRACTICAL.
4. THE A/P AC REF INPUT IS ONLY REQUIRED FOR AUTOPILOTS THAT USE AN AC HEADING AND COURSE ERROR INPUT.
5. CONNECTIONS ARE ONLY REQUIRED FOR THOSE INPUTS THAT THE AUTOPILOT COMPUTER SUPPORTS.
6. FOR DUAL-GDU 620 SYSTEMS, CONNECT THE FD SIGNALS TO THE SAME PINS ON GDU #2 AS WELL. ALL OTHER AUTOPILOT SIGNALS SHOULD BE CONNECTED ONLY TO GDU #1.

Figure C-5. Autopilot/Flight Director

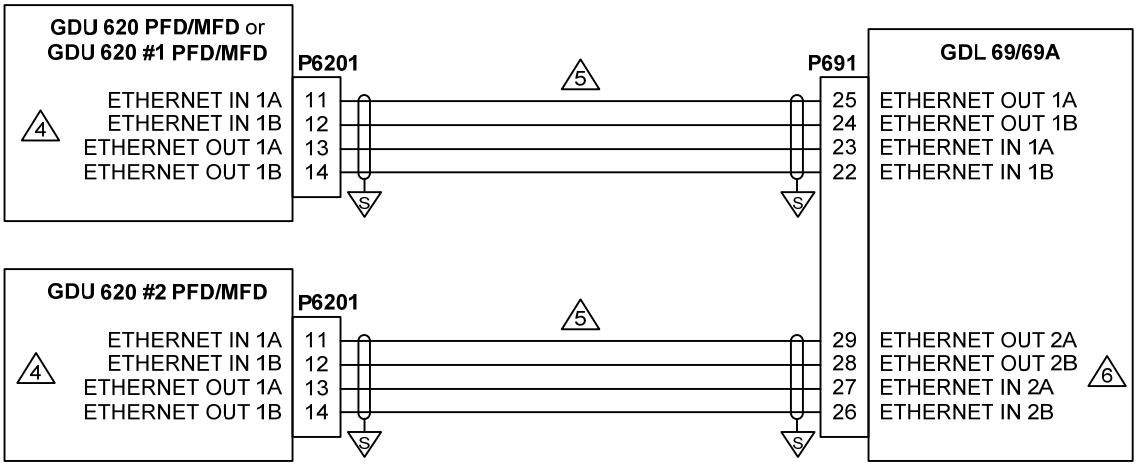


NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ".

4. *NOT USED.*
5. USE THE AUDIO ACTIVE OUT* DISCRETE OUTPUT TO INHIBIT AURAL ALERTS FROM LOWER PRIORITY SYSTEMS WHENEVER THE GDU 620 IS PLAYING AUDIO MESSAGES.
6. FUNCTION NOT CURRENTLY IMPLEMENTED.
7. FUNCTION NOT CURRENTLY IMPLEMENTED FOR FIXED-WING G500/G600.
8. USE THE AUDIO INHIBIT IN* DISCRETE INPUT TO SUPPRESS FLTA CAUTION AURAL ALERTS (G500H ONLY).

Figure C-6. Audio Interconnect



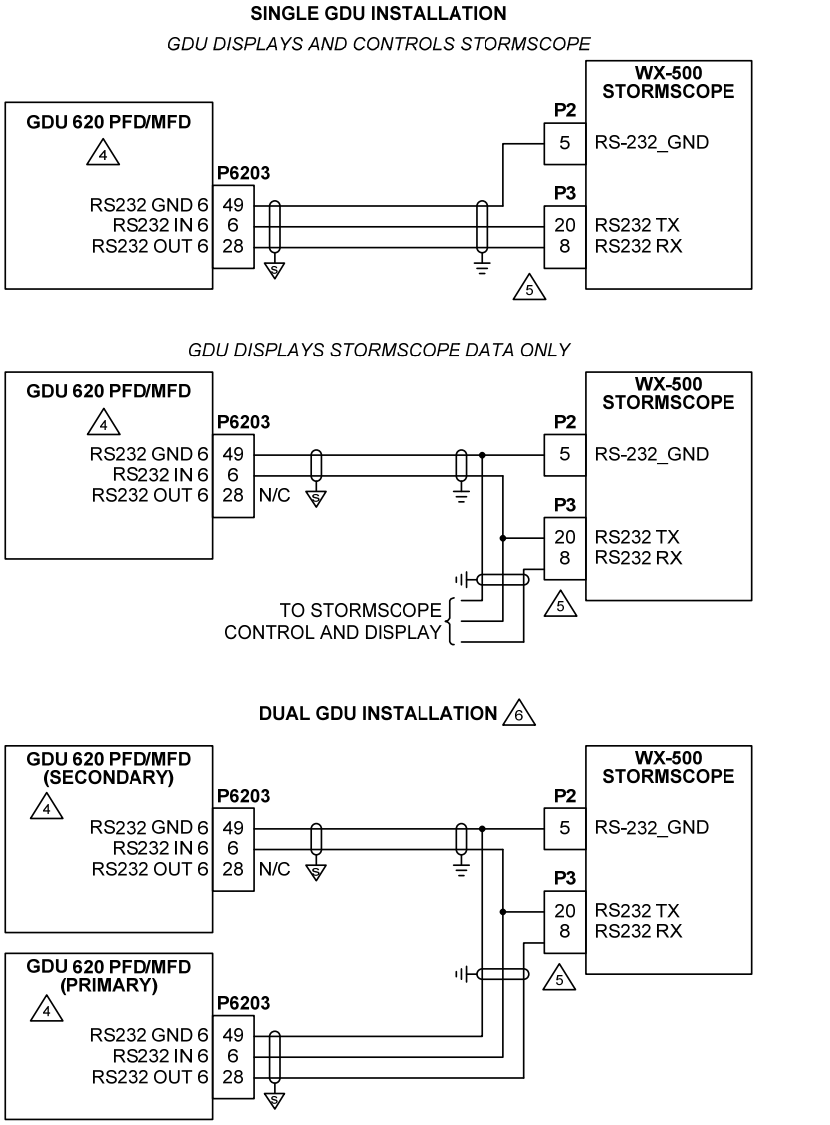
NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT THE SHIELD GROUNDS AT THE GDL 69/69A TO ITS CONNECTOR BACKSHELL IN ACCORDANCE WITH GDL 69/69A INSTALLATION INSTRUCTIONS.
4. ETHERNET PORT 2 MAY BE USED IN LIEU OF ETHERNET PORT 1. IF THERE ARE NO FREE PORTS ON THE GDU 620, THE OTHER LRU MUST BE DISCONNECTED AND THE GDL 69/69A MUST BE CONNECTED TO THE GDU 620 IN ITS PLACE. THE DISCONNECTED LRU MUST BE CONNECTED TO ETHERNET PORT 2, 3, OR 4 ON THE GDL 69/69A.
5. USE AIRCRAFT GRADE CATEGORY 5 ETHERNET CABLE. THESE INCLUDE THE FOLLOWING:

MANUFACTURER	P/N
PIC WIRE AND CABLE	E10424 (24 AWG)
ELECTRONIC CABLE SPECIALIST	392404 (24 AWG)

6. ETHERNET PORT 3 OR 4 MAY BE USED INSTEAD. THE PORT THAT IS USED MUST BE ENABLED IN CONFIGURATION MODE. REFER TO THE GDL 69 INSTALLATION MANUAL FOR ADDITIONAL DETAILS.

Figure C-7. GDL 69/69A Interconnect



NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT OTHER SHIELD GROUNDS TO AIRCRAFT CHASSIS WITH AS SHORT A CONDUCTOR AS PRACTICAL.

4. STORMSCOPE FUNCTION IS NOT CURRENTLY IMPLEMENTED IN GDU 620.

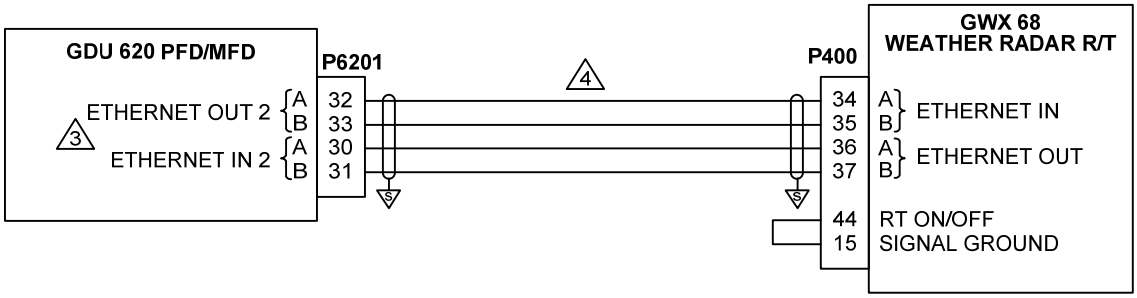
5. RECEIVE CHANNEL INTO STORMSCOPE MUST BE LEFT CONNECTED TO THE CURRENT STORMSCOPE DISPLAY IN THE AIRCRAFT. UNTIL THE GDU 620 STORMSCOPE FUNCTION IS IMPLEMENTED, THE GDU 620 WILL NOT PROVIDE CONTROL OF THE STORMSCOPE.

6. IF DUAL GDUS ARE INSTALLED, ONLY ONE GDU (THE PRIMARY) CAN CONTROL THE STORMSCOPE. BOTH GDUS CAN BE USED TO DISPLAY STORMSCOPE DATA. EITHER GDU #1 OR GDU #2 MAY BE CONNECTED AS THE PRIMARY STORMSCOPE DISPLAY.

NOTE

This feature is currently not implemented. However, provisional wiring for the interface defined above may be installed. If installing provisional wiring, ensure that existing display still controls the Stormscope.

Figure C-8. Stormscope Interconnect

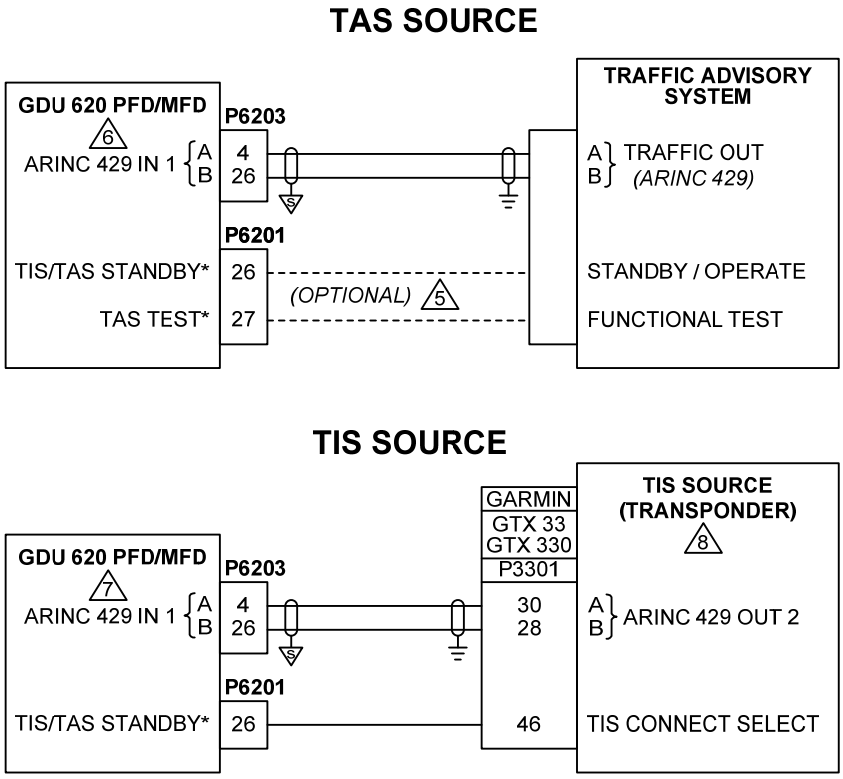


NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. ETHERNET PORT 1 MAY BE USED INSTEAD OF PORT 2, OR IF THERE ARE NO FREE ETHERNET PORTS THE GWX 68 MAY BE CONNECTED TO AN ETHERNET PORT ON THE GDL 69.
4. USE AIRCRAFT GRADE CATEGORY 5 ETHERNET CABLE. THESE INCLUDE THE FOLLOWING:

MANUFACTURER	P/N
PIC WIRE AND CABLE	E10424 (24 AWG)
ELECTRONIC CABLE SPECIALIST	392404 (24 AWG)

Figure C-9. WXR Interconnect

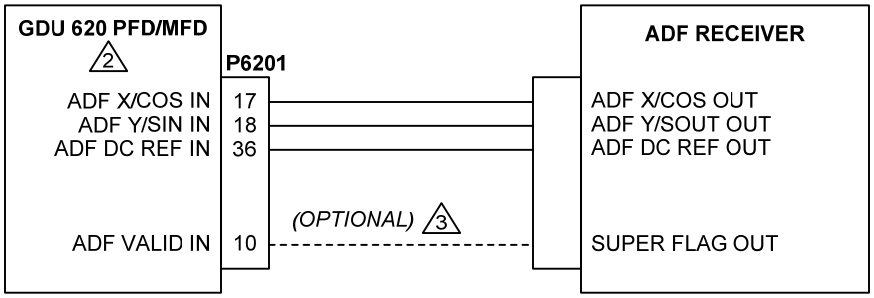


NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT OTHER SHIELD GROUNDS TO AIRCRAFT CHASSIS WITH AS SHORT A CONDUCTOR AS PRACTICAL.
4. **ONLY ONE TRAFFIC SOURCE MAY BE CONNECTED TO THE GDU 620.**

5. THESE OPTIONAL DISCRETE CONNECTIONS ARE NOT REQUIRED IF THE GDU 620 IN IS CONFIGURED FOR '+EXTERNAL CONTROL'. IN THIS CASE, THE GDU 620 WILL NOT CONTROL THE TRAFFIC SYSTEM OPERATION.
6. GDU 620 MUST BE CONFIGURED FOR THE SPECIFIC TRAFFIC SYSTEM THAT IS CONNECTED (FOR GDU 620 SETUP ITEMS REFER TO SECTION 5.5).
7. GDU 620 MUST BE CONFIGURED FOR 'GTX 330' TRAFFIC SYSTEM
8. THE ARINC 429 OUTPUT MUST BE SET TO 'GARMIN W/TIS'. THE 'TIS CONNECT SELECT' DISCRETE INPUT MAY BE DRIVEN BY MULTIPLE DISPLAY SOURCES.

Figure C-10. Traffic Interconnect



NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. FOR GDU 620 SETUP ITEMS REFER TO SECTION 5.5
3. THE ADF VALID DISCRETE IS ONLY USED BY SOME ADFS. WHEN THE GDU 620 IS CONFIGURED FOR A PARTICULAR ADF, THE SUPERFLAG BOX SHOULD BE CHECKED OR UNCHECKED AS APPROPRIATE. IF THE SUPERFLAG SIGNAL IS CONNECTED TO THE GDU, THE SUPERFLAG BOX SHOULD BE CHECKED.

Figure C-11. ADF Interconnect

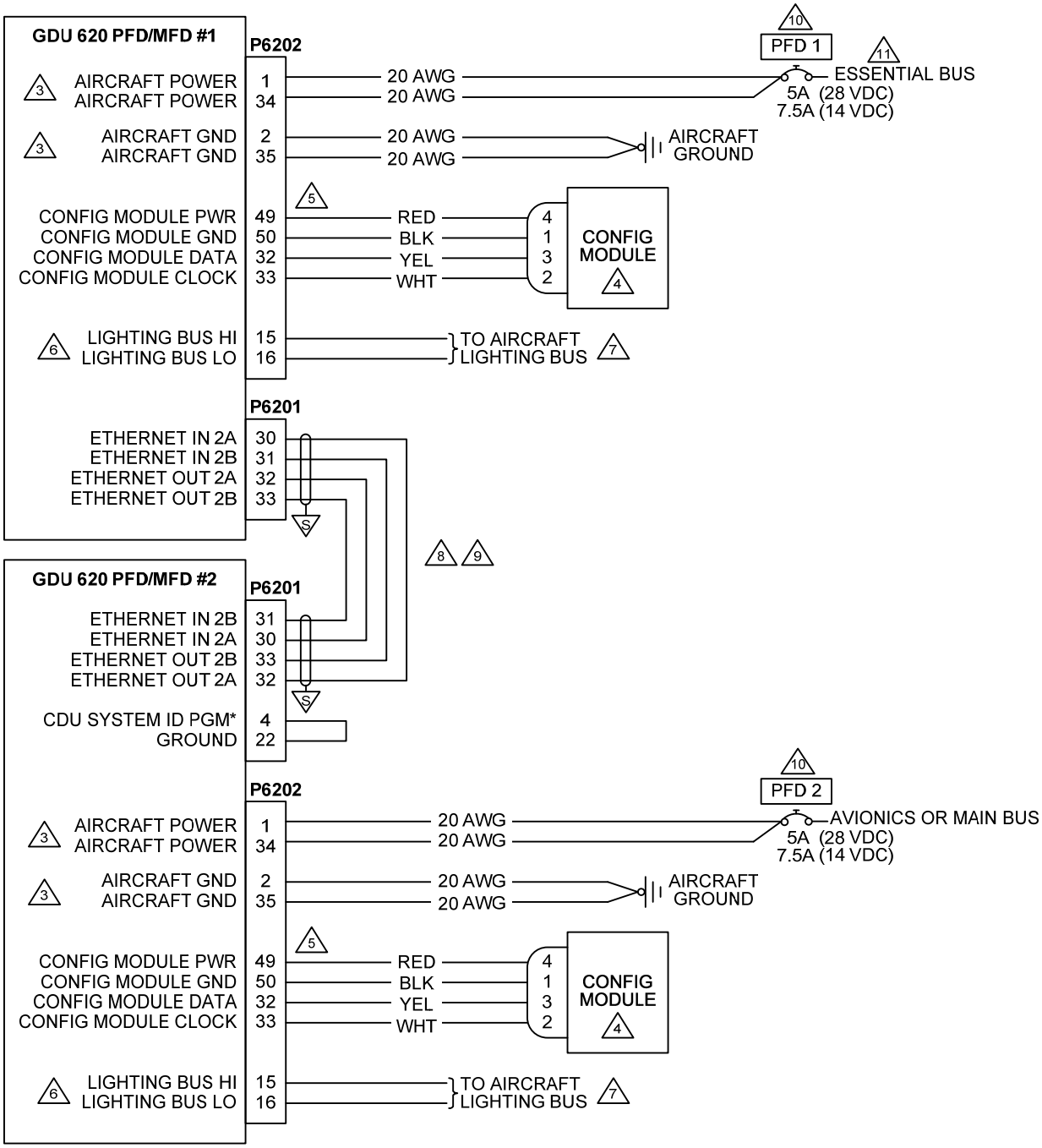


Figure C-12. Power and Configuration Module/Lighting – Dual GDUs
Sheet 1 of 2

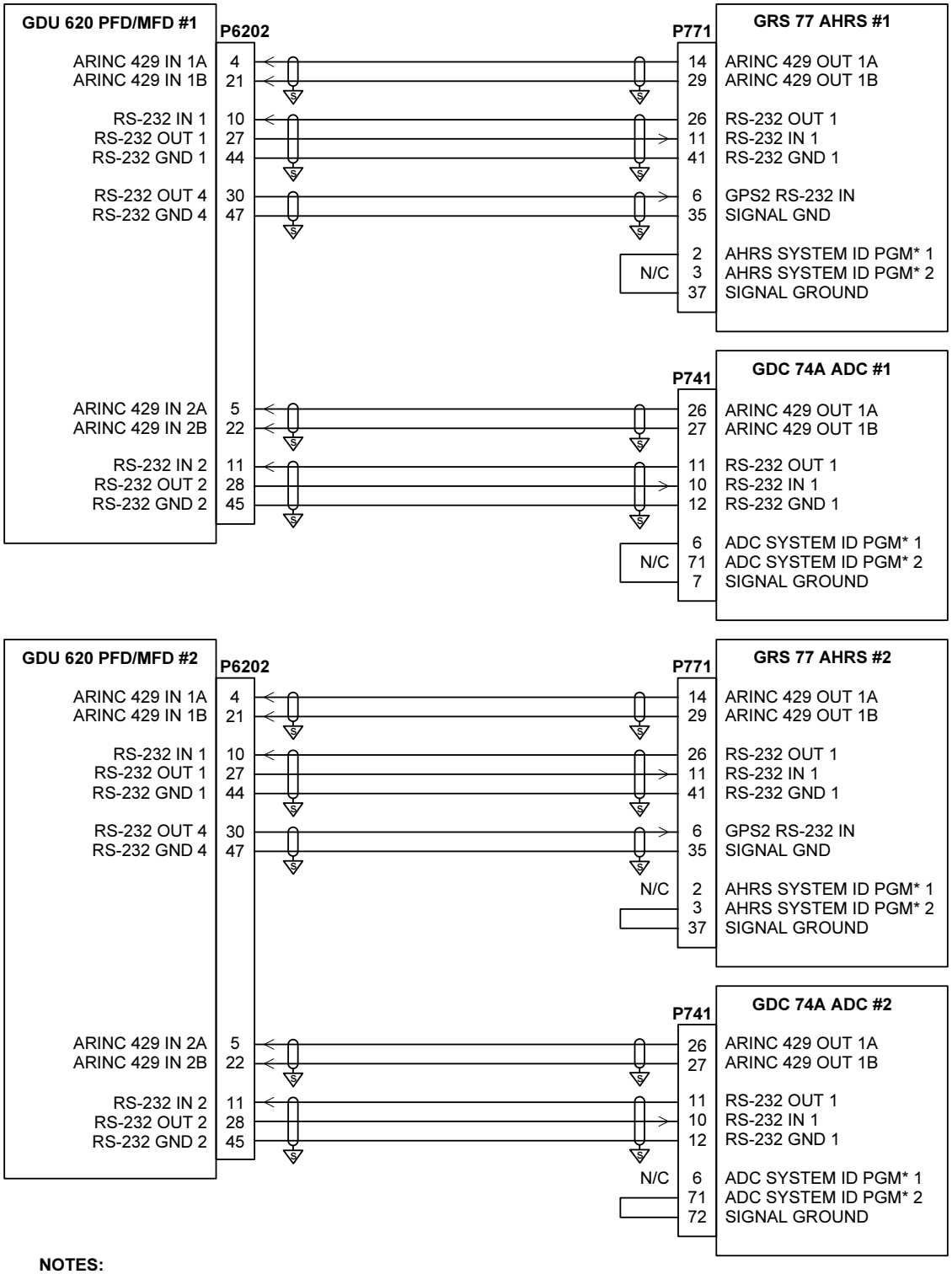
NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: ⏚ SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. BOTH POWER LEADS AND BOTH GROUND LEADS MUST BE CONNECTED.
4. CONFIGURATION MODULE IS MOUNTED IN THE BACKSHELL OF THE P6202 CONNECTOR.
5. CONTACTS SUPPLIED WITH CONFIGURATION MODULE MUST BE USED FOR CONNECTING CONFIGURATION MODULE HARNESS TO P6202.
6. THE GDU 620 MUST BE CONFIGURED FOR THE CORRECT LIGHTING BUS VOLTAGE (28 VDC, 14 VDC, 5 VDC OR 5 VAC). NO DAMAGE WILL OCCUR IF THE UNIT IS CONFIGURED INCORRECTLY. A MANUAL LIGHTING CONTROL OPTION IS ALSO AVAILABLE. REFER TO THE POST-INSTALLATION CONFIGURATION PROCEDURE.
7. OPTIONAL CONNECTION. IF NOT CONNECTED, THE GDU 620 LIGHTING MUST BE CONFIGURED TO AUTOMATICALLY COMPENSATE FOR AMBIENT LIGHTING CONDITIONS USING ITS PHOTOCELL. A MANUAL LIGHTING CONTROL OPTION IS ALSO AVAILABLE. REFER TO THE POST-INSTALLATION CONFIGURATION PROCEDURE.
8. GDU #1 MUST BE CONNECTED DIRECTLY TO GDU #2. IT IS NOT PERMITTED TO CONNECT ANOTHER DEVICE (E.G. GDL 69/69A) BETWEEN BOTH GDU'S.
9. USE AIRCRAFT GRADE CATEGORY 5 ETHERNET CABLE. THESE INCLUDE THE FOLLOWING:

MANUFACTURER	P/N
PIC WIRE AND CABLE	E10424 (24 AWG)
ELECTRONIC CABLE SPECIALIST	392404 (24 AWG)

10. CIRCUIT BREAKER SHOULD BE LABELED AS SHOWN.
11. IF THE AIRCRAFT DOES NOT HAVE AN "ESSENTIAL" BUS, CONNECT TO A BUS THAT RECEIVES POWER AS SOON AS THE BATTERY MASTER IS TURNED ON. REFER TO SECTION 2.5.4 FOR ADDITIONAL INFORMATION.
12. AT THE GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ".

Figure C-12. Power and Configuration Module/Lighting – Dual GDUs
Sheet 2 of 2



NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND AIRFRAME GROUND
3. AT GDU 620, GRS 77 AND GDC 74A, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ".

Figure C-13. Attitude – Air Data Interconnect – Dual GDUs
Sheet 1 of 1

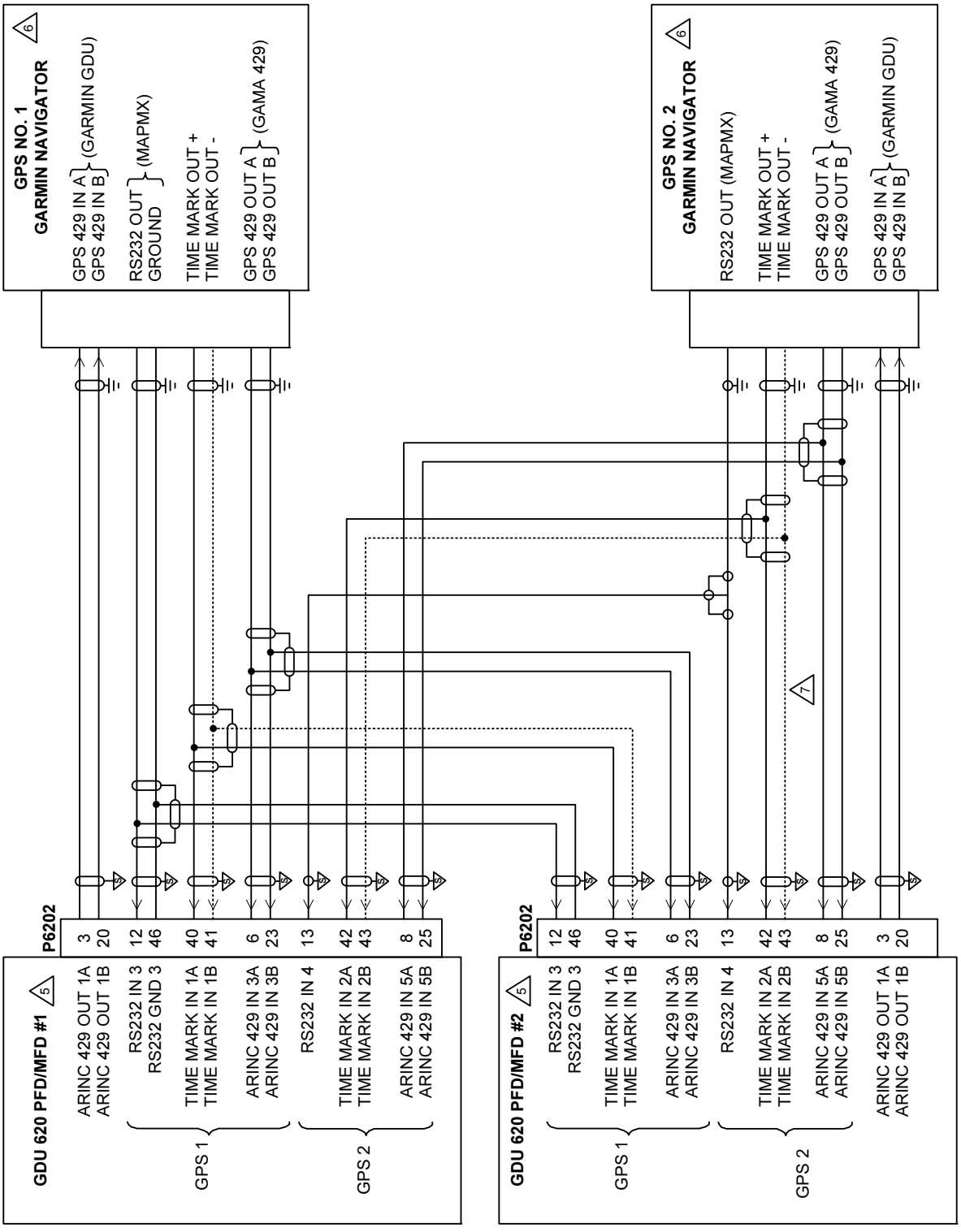


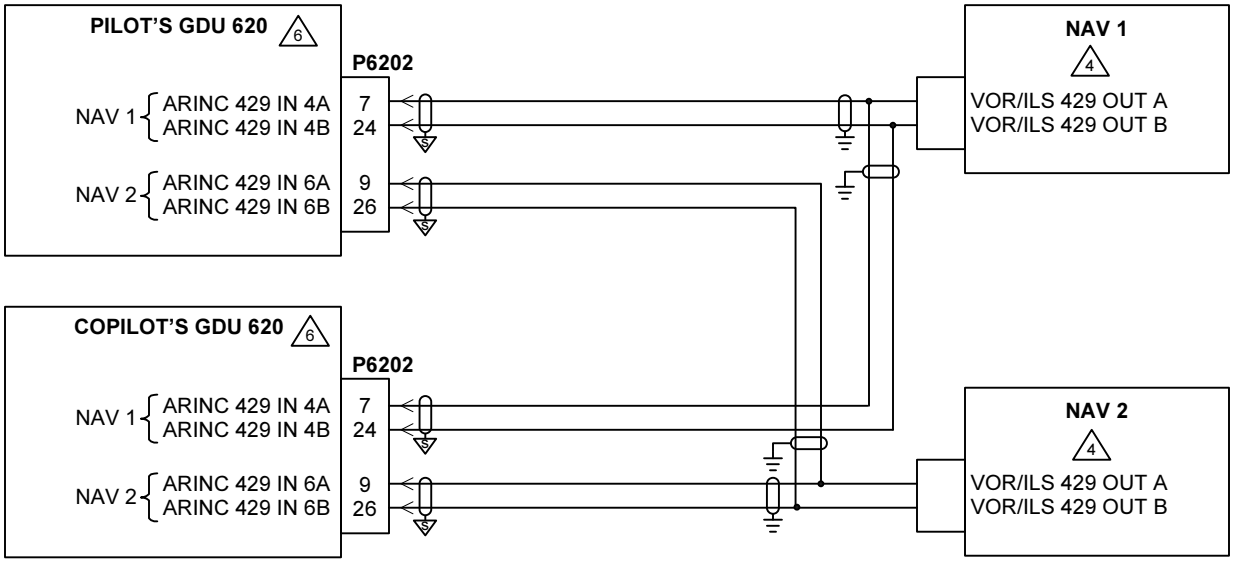
Figure C-14. GPS Interconnect – Dual GDUs
Sheet 1 of 2

NOTES:

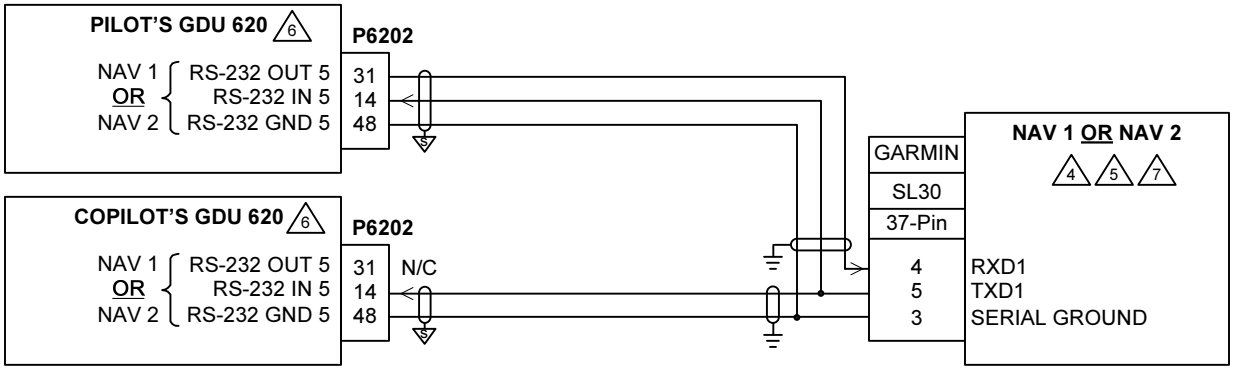
1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: ⏚ SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT OTHER SHIELD GROUNDS TO AIRCRAFT CHASSIS WITH AS SHORT A CONDUCTOR AS PRACTICAL.
4. FOR INSTALLATIONS WITH DUAL GDU'S, TWO SUITABLE GPS SENSORS ARE REQUIRED.
5. FOR GDU 620 SETUP ITEMS REFER TO SECTION 5.5
6. IF A TAWS-EQUIPPED 500W SERIES UNIT IS INSTALLED, IT **MUST** BE CONNECTED AS GPS1 – ONLY TAWS ANNUNCIATIONS FROM GPS1 ARE DISPLAYED ON THE PFD. IF TWO TAWS-EQUIPPED UNITS ARE INSTALLED, THE TAWS-EQUIPPED UNIT THAT IS CONNECTED TO THE AUDIO PANEL **MUST** BE CONNECTED AS GPS1.
7. THE TIME MARK B/- CONNECTION IS NOT REQUIRED FOR THE 400W/500W SERIES UNITS AND SHOULD BE LEFT UNCONNECTED IN THE INSTALLATION.
8. REFER TO MANUFACTURER'S DOCUMENTATION FOR COMPLETE PIN-OUT AND INTERCONNECT INFORMATION. PIN-OUTS OF OTHER UNITS SHOWN FOR REFERENCE ONLY.

Figure C-14. GPS Interconnect – Dual GDUs
Sheet 2 of 2

ARINC 429



RS-232



NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: ⏚ SHIELD BLOCK GROUND ⏚ AIRFRAME GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT OTHER SHIELD GROUNDS TO AIRCRAFT CHASSIS WITH AS SHORT A CONDUCTOR AS PRACTICAL, IN ACCORDANCE WITH LRU INSTALLATION INSTRUCTIONS.

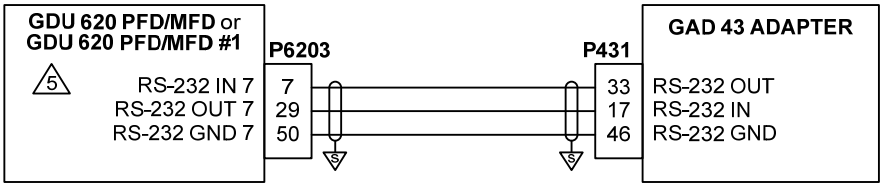
4. IF ONLY ONE NAV RECEIVER IS INSTALLED, WIRE AS SHOWN FOR NAV 1.

5. ONLY ONE SL30 MAY BE CONNECTED TO THE GDU 620. IT CAN BE CONFIGURED AS NAV 1, OR AS NAV 2 IF NAV 1 IS CONFIGURED FOR AN ARINC 429 NAV SOURCE.

6. FOR GDU 620 SETUP ITEMS REFER TO SECTION 5.5.

7. THE SL30 MUST BE CONNECTED AS THE SAME NAVIGATION SOURCE TO BOTH GDU'S (I.E. AS NAV 1 ON BOTH GDU'S, OR AS NAV 2 ON BOTH GDU'S)

Figure C-15. NAV Interconnect – Dual GDUs



NOTES:

1. ALL WIRES 24 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
2. GROUND DESIGNATIONS: SHIELD BLOCK GROUND
3. AT GDU 620, CONNECT SHIELD GROUNDS TO THE CONNECTOR BACKSHELL -- THE SHIELD LEADS MUST BE LESS THAN 3.0 ". CONNECT THE SHIELD GROUNDS AT THE GAD 43 TO ITS CONNECTOR BACKSHELL IN ACCORDANCE WITH GAD 43 INSTALLATION INSTRUCTIONS.
4. FOR DUAL GDU 620 INSTALLATIONS, THE GAD 43 SHOULD ONLY BE CONNECTED TO GDU #1.

5. FOR GDU 620 SETUP ITEMS REFER TO SECTION 5.5.

Figure C-16. GAD 43 Interconnect


GARMIN