



**Garmin GTN650/750 Series  
Equipment Supplement**



Revision A1

10-Jun-2014

## Record of Revisions

<b>Revision</b>	<b>Date</b>	<b>Change Description</b>
A	10-Sept-2013	Initial Release
A1	10-Jun-2014	Corrected switched Serial Port Input/Output Values, Section 3.1

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## Section 1: Introduction

### 1.1 About the GTN6XX/7XX Series

The Garmin GTN6XX and 7XX Series adds useful functionality, including IFR GPS approach capability, to any GRT system with an ARINC 429 module. This supplement provides suggested methods for connecting the GPS to the EFIS display unit to allow optimal performance of both units.

Download the current installation manual appropriate for your receiver from the Garmin website and follow all instructions thoroughly. GRT provides pin assignments here for convenience. While the chance that pin assignments will change is very slim, Garmin may change them at any time. This manual does not cover required antennas and hardware placement in the aircraft.

The interface between this GPS and the EFIS allows for:

- GPS position, groundspeed and ground track to the EFIS.
- GPS flight plan data to the EFIS (although curved paths such as DME arcs, procedure turns and holding patterns are not displayed)
- Display of Localizer/Glideslope data on the EFIS
- Transmission of Fuel/Air Data Z to the GPS to allow RAIM integrity monitoring and other functions

Note: In this section, wherever the term GNS6XX is used, it applies to any of the following receivers: GTN625, GTN635, GTN650, GTN725, GTN750.

### 1.2 Data Port & Hardware Requirements

GRT Sport and older Horizon systems require the external GRT ARINC429 module for ARINC connections. HX and HXr systems have built-in ARINC 429 ports (Connector C).

Required Display Unit Data Port	Suggested Assignment
Serial Port IN	Serial 1 IN
Serial Port OUT	Serial 1 OUT
ARINC 429 IN (GPS Input)	ARINC 429 IN 1-A
	ARINC 429 IN 1-B
ARINC 429 IN (VOR/LOC Input)	ARINC 429 IN 2-A
	ARINC 429 IN 2-B
ARINC 429 OUT	ARINC 429 OUT A
	ARINC 429 OUT B

## Section 2: Installation & Wiring

### 2.1 Suggested Connections

For more information on Display Unit pins and connectors, see Connector Definitions (HX, SX) on the GRT website or Pinout Diagrams in HXr Installation Manual.

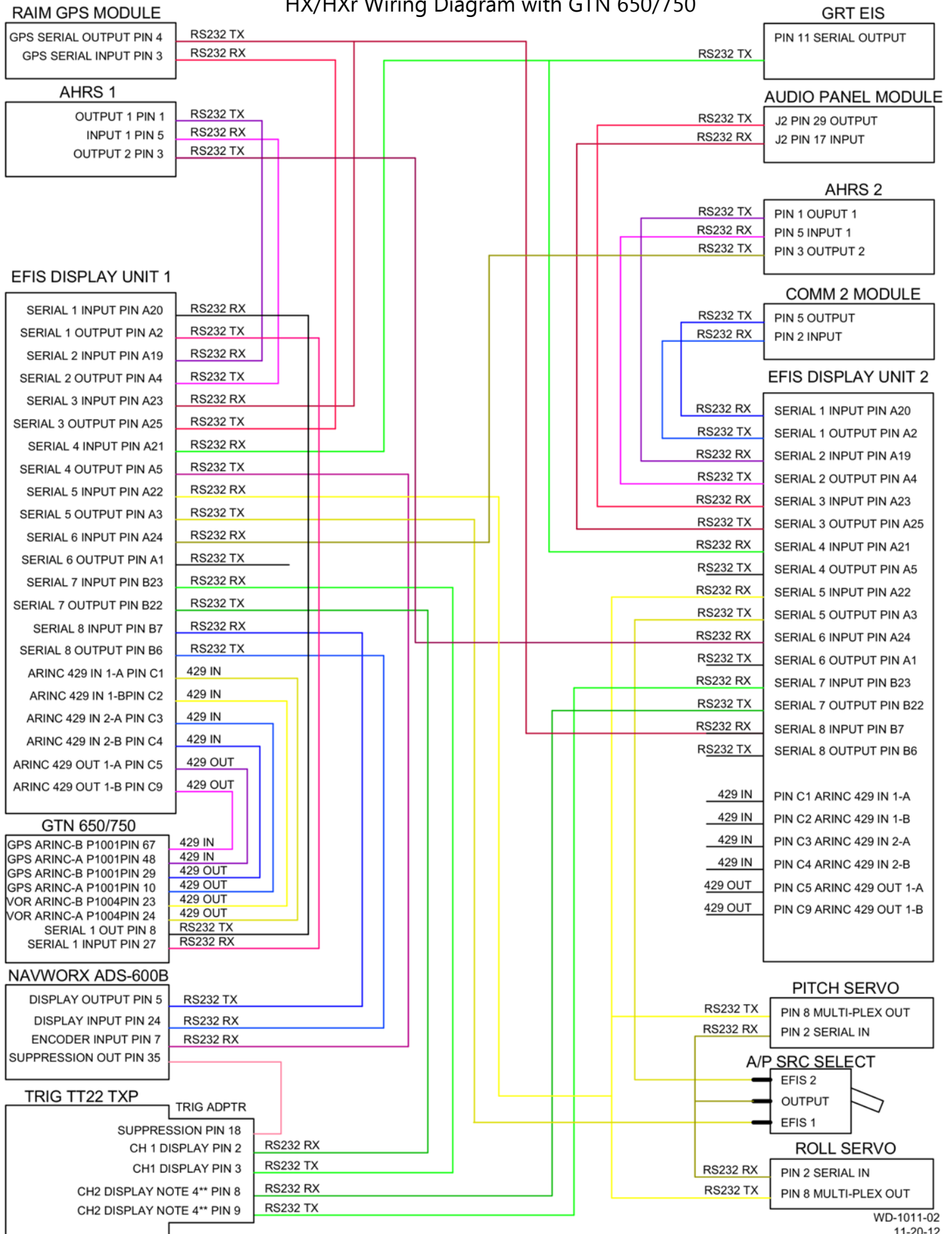
Display Unit Pin	Display Unit Function	GTN6XX Pin	GTN6XX Function
A2	Serial 1 OUT	P1001-27 (Serial 1 IN)**	FADC Format 1 for RAIM, etc.
A20	Serial 1 IN	P1001-8 (Serial 1 OUT)**	'Aviation Format 1 for GPS position information
C1	GPS Input A	P1001-10	ARINC 429 GPS Output
C2	GPS Input B	P1001-29	
C3	VOR/ILS Input A	P1004-24	ARINC 429 VOR/ILS Output
C4	VOR/ILS Input B	P1004-23	
C5	EFIS Output A	P1001-48*	ARINC 429 EFIS Input
C9	EFIS Output B	P1001-67*	
* GTN6XX ARINC IN pair 2A/2B may also be used. See Garmin Installation Manual for more information.			
** Any GTN6XX serial port pair may be used.			

### 2.2 Worksheet: My System

You may use this form to make a record of your own Serial Port and ARINC OUT choices.

Display Unit Pin	Display Unit Port	GTN6XX Pin	GTN6XX Port	Wire Color
	Serial ____ OUT	P1001- _____	Serial ____ IN	
	Serial ____ IN	P1001- _____	Serial ____ OUT	
C1	ARINC 429 IN 1-A	P1001-10	GPS ARINC 429 OUT A	
C2	ARINC 429 IN 1-B	P1001-29	GPS ARINC 429 OUT B	
C3	ARINC 429 IN 2-A	P1004-24	VOR/ILS ARINC 429 OUT A	
C4	ARINC 429 IN 2-B	P1004-23	VOR/ILS ARINC 429 OUT B	
C5	ARINC 429 OUT 1-A	P1001- _____	ARINC 429 IN ____ A	
C9	ARINC 429 OUT 1-B	P1001- _____	ARINC 429 IN ____ B	

### HX/HXr Wiring Diagram with GTN 650/750



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## Section 3: Setup & Programming

### 3.1 Display Unit Setup

After the display unit and the GTN6XX unit are installed and wired, use the following table to program the display unit to communicate with the GTN6XX.

Access the specified Set Menu page in the display unit. Then, look down the list to find each Setting. Press the right knob to activate the setting, and turn the knob to set each corresponding Value.

Set Menu Page	Setting	Value
General Setup	ARINC Receive Rate	Low
General Setup	ARINC Transmit Rate	Low
General Setup	Serial Port ____ Rate*	9600
General Setup	Serial Port ____ Input*	GPS 1 Aviation/Mapcom
General Setup	Serial Port ____ Output*	Fuel/Air Data Z Format
General Setup	ARINC VOR/ILS Inputs	Nav1 (or Nav2 if this display unit is connected to Number 2 GTN6XX)
General Setup	ARINC GPS Inputs	GPS1 (or GPS2 if this display unit is connected to Number 2 GTN6XX)
General Setup	Nav Mode Source	EXTERNAL
General Setup	Nav EXT1 Label	G650-1 or G750-1, as appropriate
Primary Flight Display Setup	ILS Type	Needles (displays crosshairs) or Scales
Primary Flight Display Setup	Show VOR CDI on Localizer	Yes (or as desired)
Primary Flight Display Setup	Show GPS on LOC/GS	Yes (required for LPV approach)
* Fill in blank with display unit serial port you designated for the GTN6XX.		

## 3.2 Configuring the GTN6XX

The following information is provided for your convenience; however, always refer to the most current Garmin GTN6XX/7XX installation manual for the most recent settings and values from Garmin.

<b>Main ARINC 429 CONFIG page</b>	<b>SPEED</b>	<b>DATA</b>
(GPS ARINC 429) IN 1	LOW	EFIS Format 2
(GPS ARINC 429) IN 2	LOW	OFF (Unless used by another device)
(GPS ARINC 429) OUT	LOW	GAMA Format 1
SDI	LNAV1	
<b>Main RS-232 CONFIG page</b>	<b>INPUT</b>	<b>OUTPUT</b>
CHNL 1*	FADC Format 1	Aviation Output 1
<b>VOR/LOC/GS ARINC 429 CONFIG page</b>	<b>RX</b>	<b>TX</b>
Speed	LOW	LOW
SDI	See GTN6XX Install Manual for more details	
DME Mode	See GTN6XX Install Manual for more details	
* GTN6XX serial port pair wired to Display Unit		

## 3.3 Post-Installation Checkout for ARINC 429 and GTN6XX

1. Select ARINC status on the Display Unit Maintenance page.
2. With the GTN6XX turned on, verify the VOR/ILS frequency tuned in the GTN6XX is displayed in the Display Unit Maintenance VOR/ILS Frequency field. This confirms that the VOR/ILS ARINC connection between the GTN6XX and the EFIS is functioning.
3. Never fly with newly-installed equipment in IFR conditions until ALL functions have been thoroughly tested in VFR conditions.