GRT
AVIONICS

Garmin GTX 330 Series

Equipment Supplement

Revision A1

23-Oct-2013

Record of Revisions

Revision	Date	Change Description
A	15-Dec-2012	Initial Release
A1	23-Oct-2013	Section 2.1- Corrected Sport pin assignments according to Sport Installation Manual, Rev D. Added suggestion to use Serial Port 5 in systems equipped with 5 serial ports to avoid conflict with pre-wired port for EIS.

Table of Contents

Section 1: Introduction

1.1 About the GTX 330 Series

The Garmin GTX 330 Mode S transponder series provides normal altitude encoding data to ATC as well as traffic data link capability to the GRT family of EFIS systems. With the use of an ES (Extended Squitter) version of the GTX 330 series, you have the first step to ADS-B compliance for the 2020 mandate. 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 transponder 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.

The interface between this unit and the EFIS allows for:

- Pressure altitude, flight ID, GPS position, groundspeed and ground track to be transmitted to ATC ground stations

- TIS traffic alerts (both units) and ADS-B OUT (GTX 330ES only when paired with suitable GPS)

- Note: In this section, wherever the term GTX 330 is used, it applies to either of the following transponders: GTX 330, GTX 330ES.

1.2 Data Port & Hardware Requirements

Required Display Unit Data Port	Suggested Assignment
Serial Port IN	Serial 2 IN
Serial Port OUT	Serial 2 OUT

NOTE: Serial setup is recommended for simplicity. Advanced users concerned about running out of serial ports may utilize ARINC 429 instead of serial data. Refer to GTX 330 installation manual for details. GRT Sport EFIS systems require the external GRT ARINC429 module for ARINC connections. Horizon HX and HXr systems have built-in ARINC 429 ports (Connector C).

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.

Horizon HX and HXr EFIS

Display Unit Pin	Display Unit Function	GTX 330 Pin	GTX 330 Function
B22	Serial 7 OUT	P3301-22 (Serial 1 IN)**	Fuel air data in for encoder and flight information
B23	Serial 7 IN	P3301-23 (Serial 1 OUT)**	Output of TIS traffic data
** Any GTX 330 serial port pair may be used. ** Multiple Serial ports can be used to connect multiple display units for redundancy.			

Sport EFIS

Display Unit Pin	Sport Display Unit Function	GTX 330 Pin	GTX 330 Function
Sport Pin 35	Serial 2 OUT	P3301-22 (Serial 1 IN)**	Fuel air data in for encoder and flight information
Sport Pin 31	Serial 2 IN	P3301-23 (serial 1 OUT)**	Output of TIS traffic data
** Any GTX 330 serial port pair may be used. ** Multiple serial ports can be used to connect multiple display units for redundancy. **NOTE:** If Sport is equipped with 5 serial ports, Serial Port 5 In/Out may be a better choice for GTX 330 to avoid conflict with pre-installed serial wire for EIS in Pin 31.			

2.2 Worksheet: My System

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

Display Unit Pin	Display Unit Port	GTX 330 Pin	GTX 330 Port	Wire Color
	Serial _____ OUT	P3301- _____	Serial _____ IN	
	Serial _____ IN	P3301- _____	Serial _____ OUT	

Section 3: Setup & Programming

3.1 Display Unit Setup

After the display unit and the GTX 330 unit are installed and wired, use the following table to program the display unit to communicate with the GTX 330.

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. This Setup information applies to all GRT EFIS Systems.

Set Menu Page	Setting	Value
General Setup	Serial Port _____ Rate*	9600
General Setup	Serial Port _____ Input*	GTX 330
General Setup	Serial Port _____ Output*	Fuel/Air Data(Z format)
General Setup	Traffic Altitude Filter	Unlimited *
Moving Map	Traffic Alert Window	On
* Fill in blank with display unit serial port you designated for the GTX 330.		

3.2 Configuring the GTX 330

Refer to the most current Garmin GTX 330 installation manual for instructions for accessing the transponder Configuration page and setting up other important transponder characteristics. This configuration information only applies to the settings that affect the transponder's communication with the EFIS system; there may be other settings required to make the transponder function properly.

RS-232 INPUT/OUTPUT page	INPUT	OUTPUT
CHNL 1*	FADC W/ALT	TIS w/REMOTE
* GTX 330 serial port pair wired to Display Unit Multiple serial ports may be used to connect multiple displays for redundancy.		

3.3 Post-Installation Checkout for the GTX 330

1. Check that the GTX 330 has a pressure altitude showing on the display.

2. With the GTX 330 turned on go to the Set Menu, General Setup. Check the designated serial ports counter is active and counting.
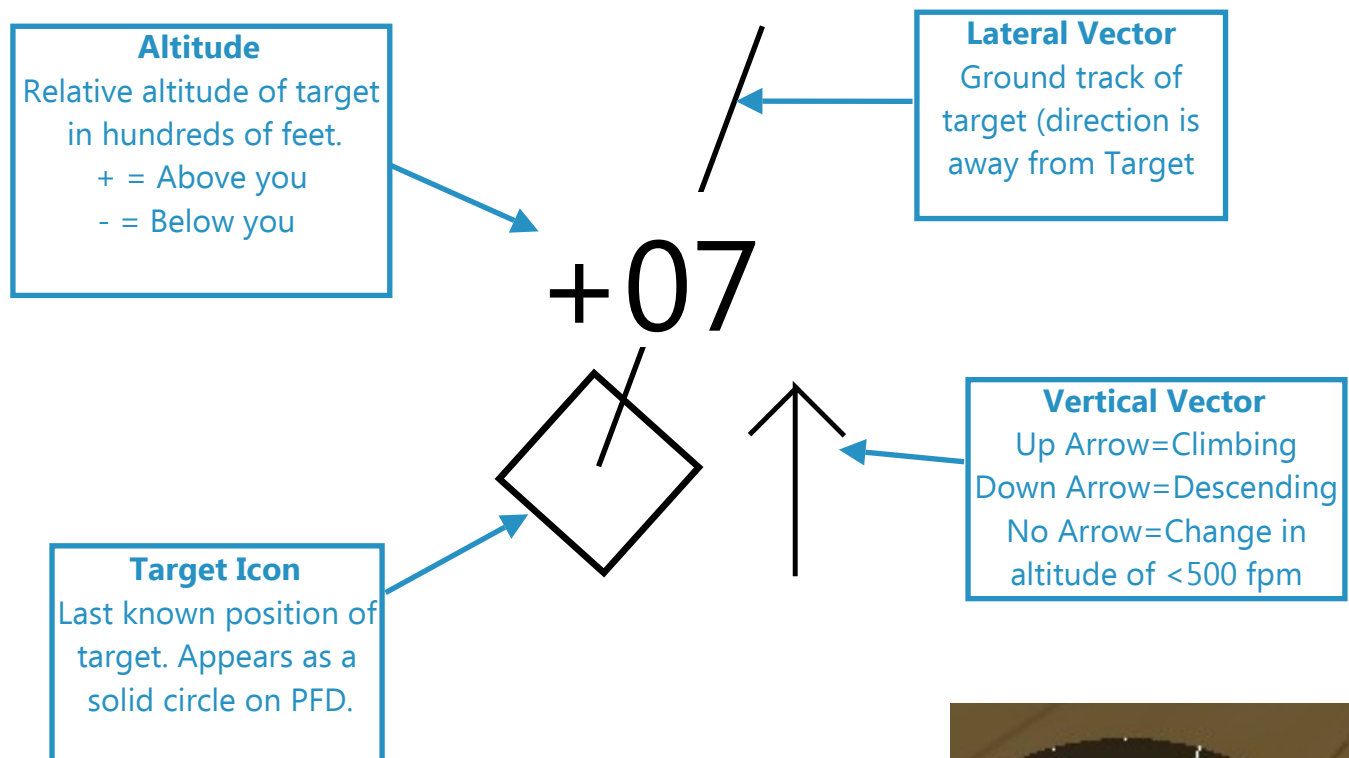
Section 4: Pilot's Guide

4.1 Using the GTX 330

Standard operating procedures apply to GTX 330 transponders when used with GRT EFIS systems. Please refer to the Garmin GTX 330 user manual for transponder operating instructions.

4.2 Traffic Display Icon

When the display unit is programmed to the specifications in Section 3, traffic alerts will pop up on the map and/or primary flight display automatically when within range of radar-based TIS (Traffic Information Service) or ADS-B when equipped with an ADS-B receiver.

ADS-B and TIS traffic alerts use the same symbols. Note that if target aircraft do not have Mode C capability, altitude information is omitted from the icon.

Altitude
Relative altitude of target in hundreds of feet.
+ = Above you
- = Below you

Lateral Vector
Ground track of target (direction is away from Target

+07

Target Icon
Last known position of target. Appears as a solid circle on PFD.

Vertical Vector
Up Arrow=Climbing
Down Arrow=Descending
No Arrow=Change in altitude of <500 fpm

In the example given here, your aircraft is the large icon in the center of the circle. The target traffic is at your 1 o'clock position, 700 feet above you, climbing at least 500 fpm, and heading nearly the same direction.

4.3 Horizon I or Sport Traffic Display

When enabled in the Setup Menu (see Section 3) and in range of services, traffic is displayed on the Moving Map page. When targets are detected within 2 nm of your position, a dedicated Traffic Alert window will appear automatically on the Map or PFD display. The word TRAFFIC appears in the lower right corner of the screen in green or yellow, as described below, to indicate service.

4.4 HXr Traffic Display

To Activate Traffic Inset:

1. Press INSET softkey on either the lower Left or Right side of screen.

2. Press TRAFFIC softkey.

3. Press either 2, 6, or 12 softkey (lower left side) to select Inset map range. Range value is the diameter of inset ring.

4. If no Traffic inset is active, but the EFIS is receiving traffic information, a Traffic inset popup window will automatically appear if a target appears within 2 nm of your position.

Traffic Service Indicator
Green=Receiving Information
Yellow=No Service/Searching

Traffic Inset
• L or R corner of screen
• 2, 6 or 12 nm Range
• HDG Up

NOTE: RNG softkeys control full-screen map range, not Inset.