

# SERVICE BULLETIN

NO.: 1853 Rev A

TO: All Garmin Aviation Service Centers

**DATE:** August 24, 2018

SUBJECT: GTS 8X0 Software Version 4.12 for Non-GX000 Integrated Flight Deck Installations Only

# CERTIFICATION

AUTHORIZATION: TSO Authorization

TSO/ETSO authorization does not provide installation airworthiness approval. Separate installation airworthiness approval is required for type certified aircraft. Notification of revision to any Garmin STC(s) will be provided under a separate service bulletin.

### PRODUCTS AFFECTED

All GTS 8X0 (GTS 800/GTS 820/GTS 850) units with software version 4.10 (or earlier) and interfaced to a GTN 6XX/7XX, GNS 4XX(W)/5XX(W), GNS 480, G500, G500H, G600, GMX 200, MX20, or other 3<sup>rd</sup> party flight display system are affected by this bulletin.

The current GTS 8X0 software version can be viewed by using the GTS 8X0 Install Tool (refer to the Modification Instructions section of this bulletin), on the software label adjacent to the GTS 8X0 serial number tag (for installations unable to electronically display the software part number), or on the display for those units interfaced through HSDB (e.g. GTN 6XX/7XX, G500, G500H, and G600).

### PURPOSE

GTS 8X0 software version 4.12 includes the following enhancements:

- Fixes an issue related to ADS-B In surface traffic targets between 0 and -90 degrees longitude. Previously, the targets would not be displayed (brown chevrons).
- Improves extrapolation of target positions in systems connected to HSDB displays.
- Allows for quicker detection of invalid own ship GPS data.
- Allows ADS-B In traffic to be displayed during the following faults since they are not critical to ADS-B In processing:
  - Barometric Altitude fault
  - o TCAS Equipage fault

NOTE	

This functionality requires the GTS configuration item "Allow ADS-B in Standby" to be enabled.

© 2018 Garmin Ltd. or its subsidiaries All Rights Reserved

Except as expressly provided herein, no part of this document may be reproduced, copied, transmitted, disseminated, downloaded or stored in any storage medium, for any purpose without the express prior written consent of Garmin. Garmin hereby grants permission to download a single copy of this document and of any revision to this document onto a hard drive or other electronic storage medium to be viewed and to print one copy of this document or of any revision hereto, provided that such electronic or printed copy of this document or revision must contain the complete text of this copyright notice and provided further that any unauthorized commercial distribution of this document or any revision hereto is strictly prohibited.

- Improves the startup speed of the ADS-B In SURF application.
- Allows ADS-B In processing to automatically turn on eight seconds after GTS powers on or after own ship transitions from on-ground to airborne.

This functionality requires the GTS configuration item "Allow ADS-B in Standby" to be enabled.

- Automatically logs calibration diagnostic data during a self test to the assert log.
- Removes the Radio Altitude fault.

#### DESCRIPTION

This modification consists of accessing the Dealer Resource Center of the Garmin website, downloading (from the Garmin website) and then uploading the following files to the unit:

- GTS 8X0 System software version 4.12
- Region List version 4.00
- Airport Database
- Magnetic Variation version 1.03

NOTE

The Region List must be uploaded to the GTS 8X0 before uploading the System Software.

#### **COMPLIANCE**

Optional: This Service Bulletin may be incorporated at the owner's discretion and is not warranty reimbursable.

#### APPROVAL

TSO/ETSO authorization does not provide installation airworthiness approval. Separate installation airworthiness approval is required for type certified aircraft. Notification of revision to any Garmin STC(s) will be provided under a separate service bulletin.

The GTS 8X0 software version 4.12 is FAA approved under TSOA for design approval.

# **DOCUMENTATION CONSIDERATIONS**

The GTS Traffic Systems Pilot's Guide (190-00587-02) Rev E or later is to be issued to the aircraft operator/owner before the aircraft is returned to service.

Garmin Part Number	Document Title
190-00587-00	GTS 8X0 Installation Manual, Revision M or newer

#### **REFERENCES**

GTS 8X0 Installation Manual, Garmin part number 190-00587-00 Rev M or later

Referenced documents are available at <u>dealers.garmin.com</u>.

### MANPOWER

Two hours (2) labor.

#### WARRANTY INFORMATION

This modification is not warranty reimbursable.

# **MODIFICATION INSTRUCTIONS**

# NOTE

Make sure that a configuration module is installed.

- 1. Gain access to the GTS 8X0.
- 2. Construct a GTS 8X0 Dongle cable as described in the GTS 8X0/GPA 65 Installation Manual.
- 3. From the Dealers Resource Center section of <u>dealers.garmin.com</u> download and install the GTS 8X0 Install Tool as described in the GTS 8X0 Installation Manual.
- 4. From the Dealers Resource Center section of <u>dealers.garmin.com</u> download and save the following files to your computer's desktop:
  - 006-B0551-34\_0A.ZIP
  - 006-D0159-03\_0A.ZIP
  - 006-D0725-02\_0A.ZIP
  - 006-D3844-00\_0A.ZIP
- 5. Unzip the files saved in Step 4 and save the contents to your computer's desktop.
- 6. Attach the GTS 8X0 Dongle cable to the GTS 8X0 and the PC USB port.
- 7. Apply +14/28 VDC to the GTS 8X0.
- 8. Open the GTS 8X0 Install Tool.

- 9. Right click on the top portion of the Install Tool.
- 10. Select "About GTS 8X0 Install Tool..."

					i i	Restore	
nal	Configuration	Input/Output Configuration	Upload	Diagnostics		Move	
						Size	
					-	Minimize	
						Maximize	
					x	Close	Alt+F4
						Always On Top	
						About GTS 8XX Inst	all Tool
				Waiting for Cor	nnection		
				Waiting for Cor	nnection		
				Waiting for Cor	nnection		
				Waiting for Cor	nnection		
				Waiting for Cor	nnection		
				Waiting for Cor	nnection		
				Waiting for Cor	nnection		

11. Make sure that the Install Tool is version 4.12 or later. If Install Tool is not version 4.12 or later, download the latest version from the Dealer Resource Center.

About G	TS 8XX Install Tool	×
	GTS 8XX Install Tool Version 4.12 Part Number 006-A0242-00	ОК
	Copyright (c) 2005-18 Garmin Ltd or subs	

12. Select the Upload Tab of the GTS 8X0 Install Tool.

NOTE	

When changing the view between tabs the GTS 8X0 will reboot.

If updating from 3.XX System Software to 4.XX System Software, the Region List must be uploaded to the GTS 8X0 prior to uploading the System Software.

13. Make sure that the current GTS 8X0 Region List version is 4.00 (or later). If the Region List version <u>is not</u> 4.00 (or later) perform following steps. If the Region List version is 4.00 (or later) proceed to Step 19 and perform the System SW upload.

GTS 8XX Install	Tool	<u>8_</u>	
rmal Configurat	on Input/Output Configuration Opload Diagnostics		
Boot Block			
Current version	: 006-B0551-BD 2.00 GTS8XX		
Reaion List	¥		-
Current version	006-D0725-01 2.00 GTS8XX REGION LIST		Upload
Replace with	:	Browse	List
System			
Current version	006-B0551-12 3.10 GTS8XX TRAFFIC SYSTEM		Upload
Replace with	1 1	Browse	System
FPGA			
Current version	: 006-C0081-20 2.0 GTS8XX FPGA		Upload
Replace with		Browse	FPGA
Audio			
Current version	: 006-D0726-00 2.00 GTS8XX AUDIO REGION		Upload
Replace with	:	Browse	Audio
Magnetic Variatio	n		
Current version	006-D0159-03 2015.00 IGRF MODEL PARAMETERS		Upload
Replace with		Browse	Variation
Airport Database			
Current version	: 006-D3844-00 1402 GTR		Upload
Replace with	:	Browse	Database

Service Bulletin 1853 August 24, 2018 14. Select "Browse" in the Region List field.

GTS 8XX Install	[ool				
mal Configuratio	n Input/Output Configuration	Upload Diagnostics			
Boot Block	Protocologica de la composición				
Current version:	006-B0551-BD 2.00 GTS8XX				
Reaion List					[ trained
Current version:	006-D0725-01 2.00 GIS8XX REI	GION LIST		<b>+</b>	Region
Replace with:				Browse	List
System					0
Current version:	006-B0551-12 3.10 GTS8XX TR/	AFFIC SYSTEM			Upload
Replace with:				Browse	System
FPGA	[				
Current version:	006-C0081-20 2.0 GTS8XX FPG	A			Upload
Replace with:				Browse	FPGA
Audio	2				
Current version:	006-D0726-00 2.00 GTS8XX AU	DIO REGION			Upload
Replace with:				Browse	Audio
Magnetic Variation					
Current version:	006-D0159-03 2015.00 IGRF M	ODEL PARAMETERS			Upload
Replace with:				Browse	Variation
Airport Database					
Current version:	006-D3844-00 1402 GTR				Upload
Replace with:				Browse	Database
		1			
			Exit		

15. Select file "006-D0725-02\_0A.HEX."

🖉 Open						>
- → ~ <b>↑</b>	≪ Local Disk (C:) → GTS Software	~	ō	Search GTS Sof	tware	P
Organize 👻 Ne	ew folder				III - II	?
	Name		Da	te modified	Туре	
🖈 Quick access	006-D0725-02_0A.hex		7/	19/2016 5:30 PM	HEX File	
\land OneDrive						
This PC						
-						
Pretwork						
	¢					
	< File <u>n</u> ame: 006-D0725-02_0A.hex		~	Hexadecimal F	iles (*.hex)	
	< File <u>n</u> ame: 006-D0725-02_0A.hex	_	~	Hexadecimal F	iles (*.hex)	~

- 16. Select "Open."
- 17. Select "Upload Region List."

Status:	SENDING
Filename:	C:\GTS Software\006-D0725-02_0A.hex
Progress:	4.43kB of 29.60kB (15.0%)
Rate:	40.27kB/s
ETA:	0:01

18. Once the Region List upload is complete, make sure that Region List version is 4.00 (or later).

GTS 8XX Install		-	
mal Configurati	on Input/Output Configuration Ipload Diagnostics		
Boot Block			
Current version	006-B0551-BD 2.00 GTS8XX		
Reaion List	¥		
Current version	006-D0725-02 4.00 GTS8XX REGION LIST		Upload
Replace with	C:\GTS Software\006-D0725-02_0A.hex	Browse	List
System			
Current version	006-B0551-12 3. 10 GTS8XX TRAFFIC SYSTEM		Upload
Replace with		Browse	System
FPGA			
Current version	006-C0081-20 2.0 GTS8XX FPGA		Upload
Replace with		Browse	FPGA
Audio			
Current version	006-D0726-00 2.00 GTS8XX AUDIO REGION		Upload
Replace with		Browse	Audio
Magnetic Variatio			1
Current version	006-D0159-03 2015.00 IGRF MODEL PARAMETERS		Upload
Replace with		Browse	Variation
Airport Database			
Current version	006-D3844-00 1402 GTR		Upload
Replace with		Browse	Database

\_

 Repeat steps 13-18 of this procedure for the System (006-B0551-34\_0A.HEX), the Airport Database (006-D3844-00.dat), and Magnetic Variation (igrf.bin) files. Make sure that the current System software version is 4.12. Make sure that the current Airport Database version part number is 006-D3844-00. Make sure that the current Magnetic Variation version part number is 006-D0159-03.

# NOTE

Always return the GTS 8X0 Install Tool to normal mode by selecting the Normal tab. Failure to return the install Tool to normal mode will keep the GTS 8X0 from going into Operate mode.

- 20. Select the Normal Tab.
- 21. Make sure that the System software version is 4.12.

GTS 8XX Install Too	1				
ormal Configuration	Input/Output Config	uration Upload Diagnostics			
System Status			/		
Operating Status		System Faults	Status Flags		
Power On Count:	848	Calibration Data	Mag Variation Available	Mag Variation Available	
Power On Time:	46.9 Hours	Configuration Data	GPS Available Display #1 Active Display #2 Active Badio Altitude Available		
Temperature:	32.0°C	ROM Execution			
Alpha Values Front-Back Diagonal		Electrical Whisper Shout	Mag Heading Available Airborne Self Test Allowed		
Top Antenna Ur	nknown Unknown	Transmit Pover 1030 MHz			
Bottom Antenna	nknown Unknown	1090 MHz			
		Receiver Cal			
		Transmitter Cal Pressure Altitude			
	/	Temperature	Fimeout		
		Radio Altitude	meout		
Craund Test					
Enable	Disoled				
	/	Exit			

- 22. Refer to the GTS 8X0/GPA 65 Installation Manual for instructions on enabling the "Calculated Height Above Ground" and the "Short Aurals" options, and to make sure of correct unit configuration and installation requirements.
- 23. Installations that are unable to electronically display the software part number of the GTS 8X0 should affix a label on the GTS 8X0 LRU marked with the software part number to meet the TSO marking requirements. For the installer's convenience, a label has been applied adjacent to the LRU serial number tag.

Service Bulletin 1853 August 24, 2018

# **RETURN TO SERVICE TEST PROCEDURE**

Passing the software verification steps 18 through 21 of this service bulletin, is adequate to return the unit to service.

### DOCUMENTATION UPDATE PROCEDURE

Log the software change (compliance with Garmin Service Bulletin 1853) in aircraft documentation in accordance with the applicable aviation authority requirements.

Installations that are unable to electronically display the software part number of the GTS 8X0 should affix a label on the GTS 8X0 LRU marked with the software part number to meet the TSO marking requirements. For the installer's convenience, a label has been applied adjacent to the LRU serial number tag.

#### MATERIAL INFORMATION

The files listed below are available for download from the Dealer Resource Center portion of the Garmin website (<u>dealers.garmin.com</u>).

QTY	Part Number	Description
1	006-A0242-00	GTS 8X0 Install Tool (v4.12)
1	006-B0551-34	GTS 8X0 System Image (v4.12)
1	006-D0159-03	IGRF Binary Magvar File (v1.03)
1	006-D0725-02	GTS 8X0 Region List (v4.00)
1	006-D3844-00	GTS Processor Airport Database (Cycle 1402)