



SOFTWARE SERVICE BULLETIN
NO.: 0808 Rev B

TO: All Garmin Aviation Distributors and Authorized Service Centers
DATE: June 6, 2008
SUBJECT: 400W / 500W Series Unit's software upgrade to Main Software version 3.10 and GPS Software version 3.1

PURPOSE

This Service Bulletin announces the availability of new 400W / 500W Series Unit's software version 3.10 and GPS/WAAS software version 3.1. Revision B of this Service Bulletin provides additional information regarding MapMX installation requirements and a statement regarding the update of the AFMS.

The 400W / 500W Series Main Software version 3.10 adds a number of new capabilities and features, including:

- New splash pages at power up
- MapMX interface support
- Corrected "Approach Mode" on the Ryan TCAD 9900 and 9900BX to now load airport elevation automatically
- NEXRAD now available on the 530W's NAV1 page
- All GAMA 429 output configurations on GPS ARINC 429 OUT now include WAAS Approach Type within Label 261G (bits 17-19)
- Corrected the operation of the Aviation No Alt interface to perform the same as legacy units
- Support for displaying XM Graphical METARs for airports with three-character identifiers
- Modified behavior of the Inhibit Terrain user setting; when Terrain is inhibited, it remains inhibited across power cycles (when TAWS is inhibited it does NOT remain inhibited across power cycles)
- Changed the declutter level settings for Airspace Type; MOA declutter now occurs one level earlier
- Changing the waypoint more than once on the VNAV page no longer requires closing and reopening the page
- Corrected the operation of the "Ignore CDI key" configuration by suppressing the erroneous message "Select VLOC on CDI for approach"
- Corrections made to the VNAV operation with Crossfill; there were issues with the selection of a VNAV waypoint on the VNAV page

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The GPS/WAAS Software version 3.1 provides improved TAWS availability (GNS 530W TAWS and GPS 500W TAWS) by enhancements made to the performance of the WAAS engine when operating outside of the WAAS service area.

DESCRIPTION

This software service bulletin describes the process for upgrading the 400W / 500W Series Unit's Main Software to version 3.10 and upgrading the GPS Software to version 3.1.

APPROVAL

The 400W / 500W Series Main Software version 3.10 and the GPS Software version 3.1 comply with applicable Federal Aviation Regulations and are FAA approved under TSOA for design approval. Both Main Software version 3.10 and GPS Software version 3.1 have airworthiness approval when installed in accordance with STC SA01933LA. The software changes are both minor TSO software changes.

AFMS AND PILOT'S GUIDE CONSIDERATIONS

There are no AFMS changes. Any changes to the Pilot's Guides for software v3.10 are minimal and do not include any procedural changes for unit operation.

Verify the AFMS has been updated in compliance with instructions found in Software Service Bulletin 0740, "400W / 500W Series Unit's software upgrade to Main Software version 3.00 & GPS Software version 3.0." If v3.00 was not previously installed, perform all AFMS updates required in SB 0740.

PRODUCTS AFFECTED

The information provided herein applies to the following models:

GPS 400W------(Garmin P/N 011-01057-())
GNC 420W------(Garmin P/N 011-01058-())
GNC 420AW------(Garmin P/N 011-01059-())
GNS 430W------(Garmin P/N 011-01060-())
GNS 430AW------(Garmin P/N 011-01061-())
GPS 500W------(Garmin P/N 011-01062-())
GPS 500W,TAWS---(Garmin P/N 011-01063-())
GNS 530W -----(Garmin P/N 011-01064-())
GNS 530W,TAWS---(Garmin P/N 011-01065-())
GNS 530AW------(Garmin P/N 011-01066-())
GNS 530AW,TAWS--(Garmin P/N 011-01067-())

COMPLIANCE

For all units excluding GNS 530W TAWS and GPS 500W TAWS:

Recommended. It is recommended that the software be upgraded; however, the decision to modify the software is at the owner's discretion and is not warranty reimbursable

For GNS 530W TAWS and GPS 500W TAWS units:

Mandatory. This modification is mandatory and is warranty labor reimbursable.

REFERENCES

Software Service Bulletin 0740
400W Series Installation Manual (Garmin P/N 190-00356-02) Rev E

500W Series Installation Manual (Garmin P/N 190-00357-02) Rev E
GNS 400W Series Pilot Guide (Garmin P/N 190-00356-00) Rev B or later
GNS 400W Series Quick Reference Guide (Garmin P/N 190-00356-01) Rev B or later
GNS 400W/500W Series Garmin Optional Display Addendum (Garmin P/N 190-00356-30) Rev B or later
GNS 400W/500W Series Display Interface Addendum (Garmin P/N 190-00356-31) Rev B or later
GNS 500W Series Pilot Guide (Garmin P/N 190-00357-00) Rev B or later
GNS 500W Series Quick Reference Guide (Garmin P/N 190-00357-01) Rev B or later
GNS 400W/500W Series SW v3.00 Upgrade Supplement (Garmin P/N 190-00356-32) Rev A

Note: The combination of the information in the GNS 400W/500W Series SW v3.00 Upgrade Supplement and the 400W/500W Series Pilot's Guides and Display Addendums at Rev A, is equivalent to the information found in Rev B of the 400W/500W Series Pilot's Guides and Display Addendums.

There were no significant changes in the Pilot's Guides or Addendums for the 400W / 500W Series SW v3.10.

MANPOWER

One hour (1) labor

WARRANTY INFORMATION

For all units excluding GNS 530W TAWS and GPS 500W TAWS:

This modification is a customer option and is not warranty reimbursable.

For GNS 530W TAWS and GPS 500W TAWS units:

This modification is warranty reimbursable for the manpower listed above. When completing the Garmin warranty claim include: the unit's serial number, aircraft make, model, registration number and airframe serial number and indicate this service bulletin has been complied with, to ensure proper reimbursement.

MODIFICATION INSTRUCTIONS

There are two software upgrades that may be performed. If both upgrades are to be performed then the Main Software Upgrade must be completed before performing the GPS Software Upgrade. It is not necessary to remove the unit from the plane to accomplish this upgrade.

Part One: Main Software Upgrade Procedure (to be completed before the GPS Software Upgrade)

- 1) Attach the aircraft to ground power before starting this procedure and take appropriate precautions to prevent inadvertent power disruption to the unit being updated during the software loading process.
- 2) With the unit powered off, remove the Database card from the right-hand card slot in the front of the unit.
- 3) Insert the Main Software Loader card (p/n 010-00446-03) in the right-hand card slot. Make sure that the card is firmly seated.
- 4) Turn on the unit. Instructions to press ENT will be displayed immediately. Press ENT and follow all on-screen prompts.
- 5) The update will take less than one minute to complete. After the update has completed, turn the unit off.

- 6) Remove the Software Loader card and insert the Database card removed in step “2”. Make sure that the card is seated firmly.
- 7) Turn the unit on. After the unit has initialized, use the right knob to get to the AUX | UTILITY | SOFTWARE VERSIONS page. Verify that the following software versions are displayed:

Main SW= 3.10, IO FPGA = 2.3, Stage 1 = 2.01, and Stage 2 = 3.10.

- 8) This completes the first part of the process. (Note: The Software Loader card can be used for multiple upgrades.)

Part Two: GPS Software Upgrade Procedure

- 9) With the unit powered off, remove the Database card from the left-hand card slot in the front of the unit.
- 10) Insert the GPS Software Loader card (p/n 010-00706-01) in the left-hand card slot. Make sure that the card is firmly seated.
- 11) Turn the unit on. Instructions to press ENT will be displayed immediately. Press ENT and follow all on-screen prompts.
- 12) The update will take several minutes to complete. After the update has completed, turn the unit off.
- 13) Remove the Software Loader card and insert the Database card removed in step “9.” Make sure the card is firmly seated.
- 14) Turn the unit on and verify that the GPS Software version 3.1 is displayed in the center of the initial startup screen. (The GPS Software version can also be viewed by turning the right-hand knob and viewing the AUX | UTILITY | SOFTWARE VERSIONS page.)
- 15) This completes the process. (Note: The loader card can be used for multiple upgrades.)

Part Three: Testing Procedure

- 16) Verify that the Terrain, Obstacle, World Airport Terrain and Aviation Databases are all present.
- 17) Verify that the unit acquires a GPS position.
- 18) Verify that all interfaces to other aircraft systems are functioning correctly. Refer to the Interface Checkout section in the unit’s installation manual: Section 5.5.6 in the 400W Series Installation Manual (Garmin P/N 190-00356-02), or Section 5.5.7 in the 500W Series Installation Manual (Garmin P/N 190-00357-02).
- 19) For units with TAWS, verify that the TAWS self-test passes (refer to Section 5.5.6 in the 500W Series Installation Manual).

Part Four: Documentation Update Procedure

- 20) Make an entry in the aircraft maintenance records to indicate that Main SW v3.10 and/or GPS SW v3.1 have been installed in accordance with this Service Bulletin.

MATERIAL INFORMATION

Two loader cards are required to complete the software upgrade; one for the Main Software upgrade to version 3.10 and one for the GPS Software upgrade to version 3.1:

Main Software Loader card for software version 3.10	Garmin part no. 010-00446-03
GPS Software Loader card for software version 3.1	Garmin part no. 010-00706-01

The Software Loader cards carry a charge of \$50.00 each which will be refunded upon return of both cards to Garmin. Contact Garmin International to order software loader cards.

ADDITIONAL INFORMATION

MapMX is a data output format that enables 400W/500W units to interface with the G600 system and improves the interfacing of the GMX 200 and MX20 Multi-Function Displays with 400W/500W units.

After upgrading to software version 3.10 (or newer) the installer must then perform the following:

Enter the install mode of the 400W/500W unit and select the MapMX output on the appropriate RS-232 serial port. Refer to section 5.3.2 of the 400W Series Installation Manual (Garmin P/N 190-00356-02), or the 500W Series Installation Manual (Garmin P/N 190-00357-02).

If connecting to a GMX 200, the installer must enter the install mode of the GMX200 and select "MapMX" as the GPS Source Type. If connecting to an MX20 it is not necessary to make any changes to the MX20 install mode setting but the MX20 must have software version 5.7 or later to be compatible.

In some 400W/500W installations, the serial output port connected to either the MX20 or GMX 200 may also be connected in parallel to other devices. Under these circumstances, reprogramming this serial output port to MapMX will result in the following: any other devices connected to the output port will no longer be able to receive usable data from the 400W/500W and in addition, this sets the corresponding input port to off and the 400W/500W will no longer be able to receive data on this input port. If this is the case, the other devices may be connected to an unused RS-232 port on the 400W/500W (if available) and this port can be programmed to an appropriate output selection, or the GMX 200 or MX20 can be moved to an unused port.

Note: Two serial ports cannot be programmed to the same output selection on the 400W/500W.