



Garmin G3X Touch README File

G3X-PRE-SETS-READ-ME-Rev18

Disclaimer and Warning

The goal of Van's Aircraft in providing these settings files is our attempt to make it easier for Van's Aircraft customers to install new EFIS products and maintain current software on older EFIS screens. However, the information contained in this document is provided for informational purposes only and is subject to change without notice. Van's Aircraft makes no representation or warranty regarding the accuracy, reliability, or completeness of the information contained herein. It is important that you understand that you as the builder, owner and pilot of your aircraft assume all risks associated with the installation, configuration and updating of all avionics and EFIS systems in your aircraft, including any use of this document and any software updates referenced herein. Van's Aircraft shall not be liable for any damages arising from the use or inability to use the information contained in this document.

WARNING! Garmin software must be downloaded directly from the Garmin website. When installing G3X software and settings, it is important to ensure the settings file and G3X software version you are using are compatible. Van's Aircraft does not have access to many generations of displays sold by Garmin and therefore does not have the capability to test settings files for various EFIS systems with the latest software released by Garmin. When updating software or making configuration changes, problems may occur which could impact flight reliability and safety. When a new software version is installed or configurations changed, a test flight should be conducted to confirm that there are no issues between your EFIS system, and the latest software installed. If any issues are found, please direct all support questions related to the software to Garmin. If issues are found with the settings file contained herein, please direct these to the Van's Aircraft support team.

What's New:

We realize that you may have read this document many times before. Review the Revision Summary at the end of this document for a description of the major changes. It is still strongly encouraged to read the entire document as many small changes may have been incorporated as well.

Important Notes: Read Me First

There are two types of files that may be loaded into the G3X: software and configuration files. The first section "Installing G3X Software" will walk you through installation of the latest software developed by Garmin for your Garmin installed equipment. After the Garmin software section is up to date a second section "Installing Aircraft Specific Configuration Files" will guide you through installation of files with a file extension of .gca. These files include settings specific to your RV. The final section is "Basic Setup".

NOTE: Older SD cards may not be compatible with the G3X screen. If the steps below are not working and the G3X Touch is not able to view files on the SD card, purchase a new SD card. Garmin recommends using an 8GB SanDisk SD card.

NOTE: The following steps may take some time. It is advisable to place the aircraft on a battery charger compatible with your aircraft's battery. This will prevent damaging the battery. Some functions may have a red X through them if the battery voltage drops too far.



Entering Setup/Configuration Menus:

G3X

Hold down the “**MENU**” button on the front of the display then turn on the master switch to turn on the display. Continue to hold the menu button down until the configuration message appears above the word Garmin. The screen will then boot to the main in “**Configuration mode**”.

If the G3X is already powered up reboot the screen by pressing, then releasing “**NRST**” + “**MENU**” + “**BACK**” simultaneously. After the screen goes dark hold down the menu button as described above to enter the configuration menu.

GTR 200 and GTR 205x

There are two configuration menus for the GTR200/GTR205x. One is accessible with the unit turned on in normal operation by pressing “**MENU**” then highlighting “**SETUP**” and pressing the small knob on the right side. To access the internal setup/configuration menu turn off the GTR200/GTR205x (if powered on, then press in and hold the small knob on the right side as you turn on the power. Continue to hold the knob in until the configuration menu appears.

GTN 650Xi

Turn off the “**Avionics**” switch to turn off the GTN 650Xi. Hold down the “**HOME**” button in the upper right as you turn on the power back on. Continue to hold down the “**HOME**” button until the unit enters “**Configuration Mode**”.



Installing G3X Software:

Software Download

Software is independent of aircraft specific settings and may be downloaded from the Garmin G3X Touch web page.

To install software:

Step 1: Download the latest Garmin software. Click on the following link.

<http://www8.garmin.com/support/collection.jsp?product=010-00G3X-00&cID=155&pID=63892>

Step 2: Insert a SD card (blank with all files removed for best results) into a card reader (or SD slot on your laptop or computer).

Step 3: Run the software executable file downloaded in Step 1. When prompted, select the drive letter for the card reader then finish the prompts given by the software.

Step 4: View the contents of the SD card and confirm a "Garmin" folder has been added to the card. Check that files have been added inside the Garmin folder.

NOTE: Software for LRU's (GTR200/GTR205x, Autopilot Servos, GEA24, GSU25) is included inside the G3X Software file and will update automatically for each LRU if connected. Note the GTR200/205x will only automatically update if the software level is 2.3 or above. Since the transponder and GTN 650Xi IFR navigator are TSO'd devices, they may not be updated through the non-TSO's G3X Touch and must be updated separately. When updating software, check that all LRU's have been updated before flight. The latest software version for each LRU is noted on the Garmin web site.

Loading Software

Step 5: Turn on the "Avionics" switch.

Check that the COM radio is turned on.

Step 6 [RV-12 Only]: Turn on the "Autopilot" switch.

Step 7: Turn on the "Master" switch to turn on the display.

Insert the SD card into the SD card slot on the front of the G3X Touch display in the aircraft. (It is also acceptable to insert the SD card before turning on the display.)

Step 8: When prompted, agree to the installation of the new software. If a second screen is installed in the aircraft, turn the master switch off, move the SD card to the second screen, turn the master on again and agree when prompted to installation of the new software on the second screen.



Installing Aircraft Specific Configuration Files:

Configuration files supplied by Van's are specific to RV-12 or RV-12iS model aircraft and avionics type but not to an individual aircraft. The autopilot configuration file may overwrite changes (tweaks) made to the autopilot settings.

NOTE: There are different .gca files depending on the engine type installed in the aircraft denoted by "12iS" or "12ULS".

NOTE: For new installations the "12XXX_VFR_Base_Config_RevYY.gca" or "12iS_IFR_Base_Config_RevYY.gca" file was loaded into the G3X Touch before delivery. There is no need to load the configuration file unless the system needs to be reset.

WARNING: Loading a configuration will overwrite the fuel level calibration. Save a backup. Inside the "Engine" menu select "FUEL LVL 1" then "Calib". Inside the "Calib" menu press the menu key. A dialog box will appear allowing the fuel level settings to be written to or read from the SD card. Loading a configuration file will also reset the dimmer defaults. Record your dimmer values in a safe place.

NOTE: It is only necessary to load configuration files onto the PFD if a dual screen installation is installed. The settings will automatically be pushed to the MFD.

NOTE: The "12iS_IFR_Base_Config_RevXX.gca" has the Nav/Com version of the Base Configuration, as well as the AFCS (autopilot settings) built into it, and does not require installation of any other .gca files. Use this configuration file, and only this configuration file for Nav/Com Avionics Kits.

NOTE: First load the main "12XX_XXX_Base Config_RevXX.gca" file, then load other files such as "RV-12XXX_AFCS_Option_Rev_X.gca" [12iS_VFR and 12ULS autopilot installations only] and or "G3XSilentHektikRegulator.gca" [12ULS only].

NOTE: If you reload the Base Config file in the future all other .gca files will need to be reloaded again.

NOTE: There is no .gca file that may be used to return the GTN 650Xi back to the default settings. Before delivery changes that are made to the defaults are noted on the opening page of the WH-00136 wiring harness drawing available on the downloads page of the Van's Aircraft web site.

Software Download

Step 9: Download the latest configuration files from Van's web site.

Step 10: Insert a SD card (blank with all files removed or the SD card used in the previous section with only Garmin software files) into a card reader (or SD slot on your laptop or computer).

Step 11: Make a folder on the SD card named "Garmin". This may have already been created when installing the Garmin software in the section above. If a folder named "Garmin" already exists, then skip to the next Step.



Step 12: Inside the folder named "Garmin" make a new folder named "config".

Step 13: Place the files ending with extension ".gca" inside the "config" folder.

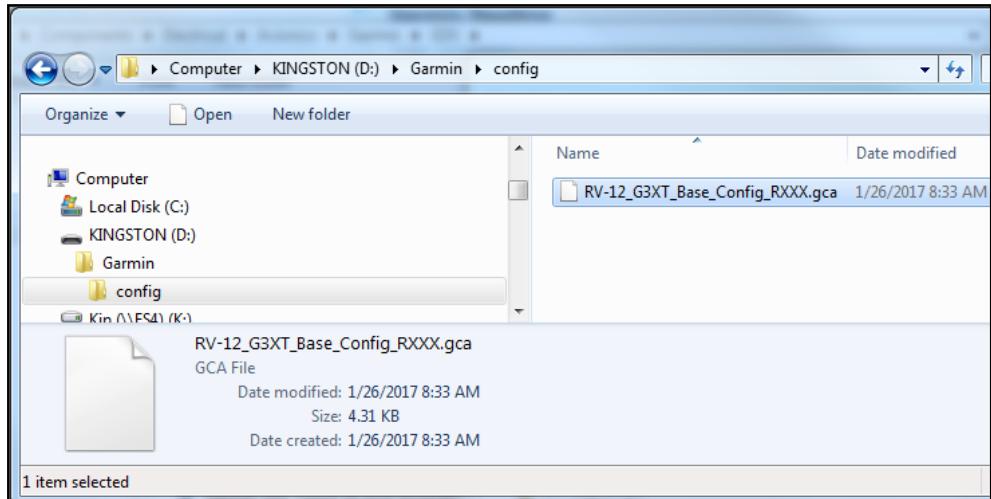


FIGURE 1: Making the "config" folder

Loading Software

Step 14: Insert the SD card into the SD card slot on the front of the G3X Touch display in the aircraft.

Step 15: Boot the PFD into the configuration menu. See "G3X" in the initial section of this document "Enter Setup/Configuration Menus".

Step 16: In "Configuration mode", go to "Config Files".

Check the box and load the "12XX_XXX_Base Config_RevXX.gca" file applicable to your aircraft. Agree to install the settings.

The configuration files located inside the "config" folder on the SD card will be listed. If the files are not appearing this is because the SD card in use is not compatible with the G3X Touch or the file has been corrupted in some way. See the note near the top of this document on SD cards.

Step 17 [VFR Avionics with Autopilot]: Check the box and load the "RV-12XXX AFCS_Option_Rev_X.gca".

NOTE: The autopilot settings reflect the settings used successfully here at Van's Aircraft. Some aircraft may vary slightly. If there is a need to fine tune the autopilot settings it is our recommendation to place the aircraft near the aft cg limit, then follow the instructions provided by the EFIS manufacturer. Double check that the cg will stay within limits for the entire flight accounting for consumed fuel.

You have completed loading the files, but further setup will be required even if the unit was previously setup. Please complete the "Basic Setup" portion of this readme file.



Basic Setup:

The steps in this section will be needed after loading the configuration file or if installing the system for the first time. The following steps have been written in the context of both possibilities. Skip those steps that are not applicable.

Read the G3X Installation Manual “GDU 4XX CONFIGURATION AND POST INSTALLATION CHECKOUT” before continuing.

NOTE: For this section it is assumed that the PFD has been placed in “Configuration mode”.

Transponder Setup

Step 18: Check inside the “Transponder” menu that the “Aircraft Registration” is correct.

Step 19 [RV-12 ULS]: Loading the Base Configuration will reset the transponder type to a GTX35R. If you have an older GTX23 ES transponder used on the RV-12 ULS you will need to change the “Transponder Type” under the “Transponder” menu back to “GTX 23ES”.

Step 20: Under the “Transponder” menu, verify under “Status” that the transponder software is at version GTX V2.07 or later for ADS-B compliance. Check the Garmin web site to confirm you have the latest software installed. Update the transponder software as required using the instructions provided with the transponder or take the transponder to a local avionics shop that services Garmin equipment.

ADS-B Setup

NOTE: If you are unsure of the model ADS-B receiver installed in your aircraft look for GDL XXX in “System Information” under main configuration menu.

Step 21 [RV-12ULS GDL 39R]: Go to the “RS-232” menu and set “RS-232 Port 3” to “Garmin Data Transfer”.

Step 22 [RV-12iS GDL 5XR]: Go to the “RS-232” menu and set “RS-232 Port 3” to “Connext 57600 baud”.

GPS Antenna Setup

Step 23 [1 GPS WAAS Antenna]: Go to the “GPS” menu and set the “PFD” to “No GPS Antenna Connected”. If a second screen is installed set the “MFD” to “No GPS Antenna Connected”.

NOTE: The main WAAS antenna sends data through the GAD29 or GTX 45R box to both PFD and MFD displays. The RV-12iS IFR Avionics package and some older RV-12 aircraft have a backup GPS antenna model GA26X. For dual screens the GA26X is connected to the back of the MFD. If the main WAAS antenna would fail this arrangement would still provide GPS data to the MFD which is the screen most likely set to map mode. The GA26X data is not shared between multiple G3X screen. For older RV-12 single screen configurations the GA26X is connected to the back of the PFD.

Step 24 [Dual Screen IFR Avionics 2 GPS Antennas or Dual Screen RV-12 Avionics with a GA26X antenna]: Go to the “GPS” menu and set the “MFD” to “Use MFD GPS Antenna” and the “PFD” to “No GPS Antenna Connected”.



Step 25 [Single Screen RV-12 Avionics with a GA26X antenna]: Go to the “GPS” menu and set the “PFD” to “Use PFD GPS Antenna”.

ADAHRS & Magnetometer Setup

Step 25: Under the “ADAHRS Calibration” menu change the “Unit Orientation” to “Tubes Down Connectors Forward”. Changing this will require going through the calibration steps so check this first before continuing with calibrations.

Under the “ADAHRS Calibration” perform “Pitch/Roll Offset” calibration.

Under the “ADAHRS Calibration” perform “Engine Run-up Test”.

NOTE: When performing the magnetometer calibration take care to use an area well away from buildings or pavement that may have metal grating or imbedded rebar...yes we learned this the hard way. The magnetometer calibration requires you to turn right slowly and stop and hold position at different points. As you approach the point where you will be required to hold there will be less and less dots. This will help you anticipate and stop in time. If you turn slow enough this should not be a problem. Not stopping in time may cause a failed calibration. On some aircraft the test may fail due to excessive vibration with the engine running. In such cases pull the aircraft through the test points on the ground by hand.

Step 26: Under “Magnetometer” set the “Magnetometer Orientation” to “Connector Aft”.

Under “Magnetometer” complete the “Magnetometer Interference Test”.

Under “Magnetometer” complete the “Magnetometer Calibration”.

Weight & Balance Aircraft Data Setup

NOTE: For initial installations, weight and balance information needs to be configured for the aircraft, in accordance with the G3X Installation Manual. Loading a new Base Configuration may reset the weight and balance information for weight and arm.

Step 27: Go to “Weight & Balance”.

Step 28: Check that the envelope type is set to “Advanced”.

Step 29: Enter or correct all the information under the “Stations” tab from the weight and balance information in the POH for your aircraft.

Enabling Screenshots

NOTE: The configuration file will not enable screen shots (a picture of the current screen to be saved to the SD card). Hold down the menu (for an extended period of timecount to 5) button to take a screen shot. An SD card must be inserted into the screen used to take the screen shot. A message will appear letting you know that a screen shot has been saved to the SD card when in normal operation. Within the config menu no message will appear.

Step 30: Go to “Display” menu and set “Screenshot” to “Enable” screen shots.



WARNING: Some items under the Engine setup menu show the description “UNKNOWN” or “NOT CONFIGURABLE”. DO NOT edit or change the settings of these items! These represent items that use special RV-12 software. Shunt 1, Discrete 1 (Stall Warning) and Discrete 3 (Canopy Latch) are examples of Engine setup menu items set to “NOT CONFIGURABLE”.

Fuel Level Calibration

Step 31: Go to “Engine & Airframe” then under the “GEA 24 Inputs” tab, select “Fuel 1” then “Calibrate”.

Step 32: Set the “0.0 gal” value first.

Step 33: Add fuel to the tank in 2 gallon increments up to 20 gallons setting each calibration point as you proceed.

Step 34: Before exiting “Calibrate Input” press the “Menu” tactile button on the bottom of the G3X.

Select “Write Calibration File” then “OK” to save a copy to the SD card.

Step 35: Save a copy of the fuel calibrations from the SD card in a safe location on your personal computer system then reinsert the SD card into the PFD.

Step 36: Select “Save” to exit “Calibrate Input”.

Select “Save” again to exit the “Fuel 1” “Edit Input”.

Fuel Pressure Sensor Setup

Step 37: Go to “Engine & Airframe” then under the “GEA 24 Inputs” tab, highlight “Fuel Pressure”.

Step 38: Press the “Menu” key, then select “Clear Configuration”, then “Yes”.

Step 39: Select “Fuel Pressure” and set the sensor type, Display Options, and Display Range to mirror what is shown in Figure FIGURE 2. Set Pressure Reference to “Manifold Pressure” and set EIF Display to “Normal”. Save the settings.

Step 40: Select “Calibrate” and set “Pressure Offset” equal to “+14.7”.

Step 41: Save and exit the screen.

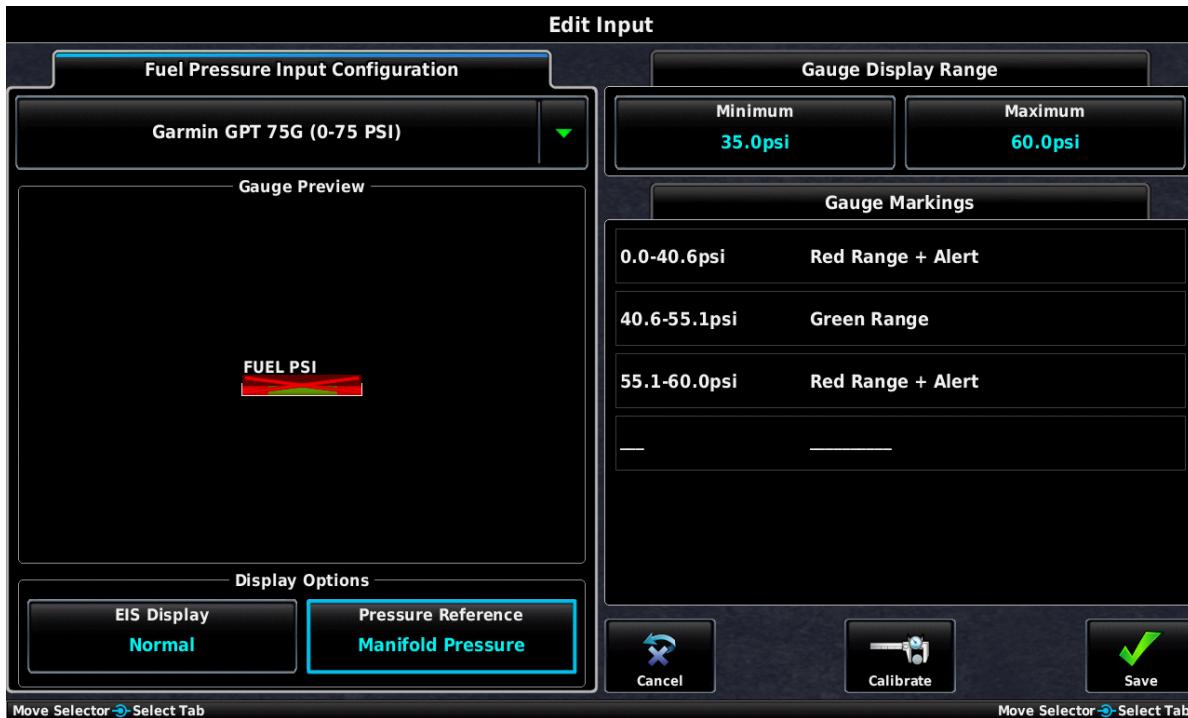


FIGURE 2: Fuel Pressure Sensor Settings

AOA Setup

Step 42: Go to "LRU".

Under "ADAHRS" set "AOA1" to "Enabled"

Step 43: Go back to the main "Configuration Mode" menu then go to "AOA".

Set "Hide AOA on Ground Below" to "20 kt"

Set "Show AOA Above" to "30 kt"

Step 44: Go back to the main "Configuration Mode" menu then go to "Sound".

Set "AOA Alert" to "Enabled".

Set "AOA Volume" to "50%". Test to confirm AOA volume correct.

NOTE: The AOA in-flight calibration will still need to be completed before the AOA will function. Reference the G3X Installation Manual.



Checklists

NOTE: At this time only checklists exist for a RV-12iS aircraft equipped with a Rotax 912iS engine.

Step 45: From the Van's Aircraft downloads page download the latest checklist. This will be in the format:

“12iS_G3X_Checklist_RX.ace”

Step 46: Save the file inside the root folder of the SD card used during flight.

Step 47: Insert the SD card into the G3X PFD. When the unit is turned on in normal operating mode press the tactile “Menu” button. Within the menu that appears a Checklists button will now be available for use.

Lighting Bus (Dimming) Setup

Step 48: Double check that the aircraft is on a battery charger.

Turn on switches for “Avionics”, “Nav Strobe”, “Landing Light Steady”, “Fuel Pump 1”, and “Fuel Pump 2”.

Step 49 [IFR Avionics]: Enter the “Configuration Mode” on the G3X and GTN 650Xi.

Step 50 [IFR Avionics]: On the GTN 650Xi go to “GTN Setup” then “Main System” then scroll down and set “Enhanced Lighting Mode” to “Enabled”.

Step 51 [IFR Avionics]: On the GTN 650Xi go to “GTN Setup” then “Enhanced Lighting” then “Source Settings”.

Set the “Display Source” and “Keys Source” to “Lighting Bus 1”.

Set the parameters of “Lighting Bus 1” to “14V DC” and “1 SEC”.

Step 52 [IFR Avionics]: On the GTN 650Xi go to “GTN Setup” then “Enhanced Lighting” then “Day Mode Operation”. Inside the menu set the parameters to the following:

Under “Display”

Minimum Level	.05%
Maximum Level	100.00%

Under “Photocell Override”

Photocell Transition	10%
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Under “Keys”

Minimum Level	1%
Maximum Level	100.00%

Under “Display” select “Configure Curve”

Vertex 1 Input Level	1.0%
Vertex 1 Output Level	1.0%



Vertex 2 Input Level 8.0%
Vertex 2 Output Level 1.0%

Vertex 3 Input Level 88.0%
Vertex 3 Output Level 100.0%

Vertex 4 Input Level 99.0%
Vertex 4 Output Level 100.0%

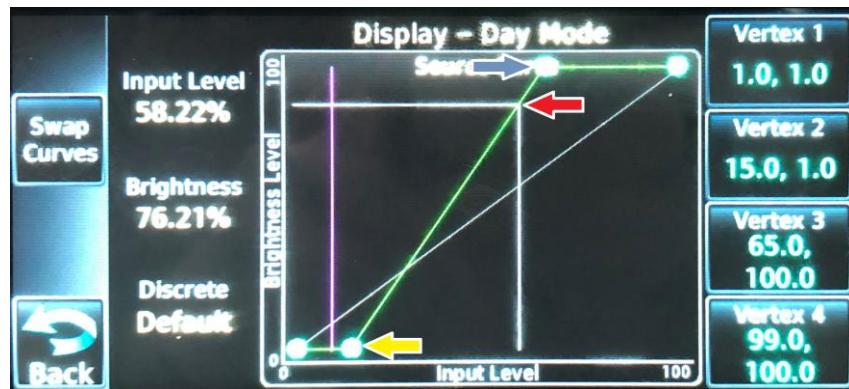


FIGURE 3: GTN 650Xi Dimmer Setup

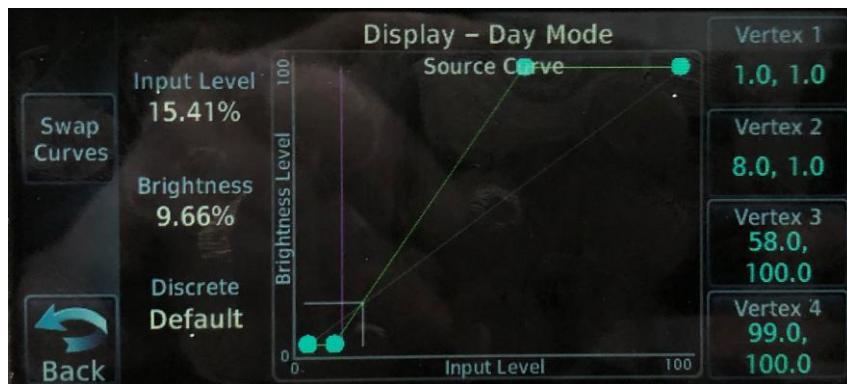


FIGURE 4: GTN 650Xi Typical Minimum Dim Level

NOTE: In Figure FIGURE 3 the red arrow shows the current dimming position on the curve. The yellow arrow is Vertex 2 and the blue arrow is Vertex 3.



Step 53 [IFR Avionics]: Turn the dimmer knob to full bright. Change the “Vertex 3 Input Level” so that the maximum dimming level coincides with Vertex 3.

For example, if (as shown in **FIGURE 3**) the current dimming position with the dimmer knob at full bright is to the left and below Vertex 3 then decrease the “Vertex 3 Input Level” until the points coincide. If the dimming position would have been to the right of Vertex 3, the “Vertex 3 Input Level” would need to be increased until the points coincided.

Step 54 [IFR Avionics]: Turn the dimmer knob to full dim. Change the “Vertex 2 Input Level” to be sufficiently to the left of the minimum dimming position to give enough brightness at the lowest dim level.

For example, with the dimmer knob at the dimmest position if the screen was too dark to see, decrease the “Vertex 2 Input Level” until the screen was bright enough. See Figure **FIGURE 4**.



FIGURE 5: G3X Backlight Configuration

Step 55 [IFR Avionics]: Press “Back” then under “Save Current Configuration” select “Yes”

Press “Back” then “Back” to return to the “GTN Setup” menu, then press “Update Config Module” select “Yes”

Step 56: On the G3X go to “Backlight”

Set the “Current Input” and “Default Input” to “Lighting Bus”

Set the following parameters:

Button Brightness Offset 50%

Light Sensor Brightness Min 5%



Light Sensor Brightness Max	100%
Light Sensor Time Constant	5.0
Lighting Bus Type	14v Bus
Lighting Bus Min Brightness	10%
Lighting Bus Max Brightness	100%
Lighting Bus Time Constant	0.0
Lighting Bus Off Threshold Input	0.5v
Lighting Bus Off Threshold Hysteresis	0.5v

Step 57: Turn the **dimmer knob** to full bright. Note the **Bus Input** voltage.

Set the **“Lighting Bus Max Input”** voltage equal to the **“Bus Input”** voltage.

Turn the **dimmer knob** to full dim. Note the **Bus Input** voltage.

Set the **“Lighting Bus Min Input”** voltage equal to the **“Bus Input”** voltage.

Step 58: Check the minimum dim levels in a dark area or at night on the ground. If a GTN 650Xi is installed compare the minimum dim levels of the GTN 650Xi to the G3X, then adjust the units to have similar dim levels.

Step 59: After all configuration changes have been made, use the **Save & Reboot** button.

Step 60 [VFR Avionics]: On the GTR 200/GTR205x, enter the internal configuration menu then select **“LIGHTING SETUP”**.

Set the following parameters:

LIGHTING SOURCE	14V
TIME CONSTANT	0.2
MIN INPUT LEVEL	20%
MIN BRIGHTNESS	10%
MAX INPUT LEVEL	85%
MAX BRIGHTNESS	100%
OFF THRESHOLD	21%
OFF HYSTERESIS	0.1%
BUTTON OFFSET	10%

Step 61 [VFR Avionics]: Go to the **“LIGHTING GRAPH”** then turn the **dimmer knob** to full bright and full dim.

Adjust **“MIN INPUT LEVEL”** and **“MAX INPUT LEVEL”** as required to match the GTR 200/GTR 205x screen to the G3X.

CAUTION: Loading a base configuration file will overwrite the dimmer settings. Take screen shots and record all of your settings for future use.

Fly Garmin Account Setup

Step 62: Go to www.fly.garmin.com and create an account.

All updates to Firmware, Data Base (charts, obstacle, terrain, etc.) can be obtained by visiting the website (www.fly.garmin.com) and performed in normal mode. Read G3X Installation Manual.



NOTE: The remaining steps are for Rotax ULS equipped aircraft or RV-12 Legacy aircraft.

Fuel Flow (ULS Only)

NOTE [RV-12ULS]: Fuel Flow currently is not setup for G3X. Some aircraft may exhibit erroneously high fuel flows (this condition is independent of the EFIS system in use). We hope at some time in the future to enable this feature on Garmin equipped RV-12's. For RV-12iS aircraft, fuel flow data is supplied to the EFIS via the engines CAN bus system. This data is calculated by the engine computer and no calibration of fuel flow is needed.

WARNING: Fuel flow should never be used as a primary means of determining fuel level.

Elevator Trim Setup (RV-12 Aircraft Only)

NOTE: The RV-12iS aircraft model equipped with either a Rotax 912iS or Rotax 912 ULS Engine will come with trim pre-set from the factory. We have learned that most Garmin equipped RV-12iS aircraft have trim settings with negligible differences between aircraft.

Step 63 [RV-12 Aircraft]: Under elevator trim check/configure the elevator trim. In the lower left side of the screen check under "Display Options" that "Gauge Display" is set to "Inverted". If calibrating the elevator trim for the first time note that the Neutral calibration is in the middle of the two extreme voltages for trim full up and full down (the trim position sensor is linear). Set up both extremes then calculate the average of the two voltages. Select "Neutral" then run the trim until the displayed voltage equals the calculated average voltage of the extremes. Save that voltage as the Neutral calibration.

Audio Level Setup (ULS Only)

Step 64 [RV-12ULS]: While in the configuration menu, go to "Sound" and verify Alert volume, Message volume, etc.

If an MFD (dual screen) is installed turn up the AUX2 Left and Right 'pots' on the AV-50000A Control Module. These are turned off by default. These are 27 turn potentiometers. Turning the 'pot' counter clockwise increases the volume.

Voltage Regulator Setup (ULS Only)

Step 65 [RV-12ULS]: If a Silent Hektik or B&C voltage regulator is installed load the RV-12 G3X Silent Hektik Regulator.gca file. This will generate a voltage regulator warning on the EFIS.

Step 66 [RV-12ULS]: After all configuration changes have been made, use the Save & Reboot button.

GMC 307 Setup (iS Only)

Step 67 [RV-12iS]: If using the older GMC 307 Autopilot Control Module (communication via RS-232) instead of the GMC 507 (communication via CAN Bus), load the 12iS_IFR_GMC307_Config_Rev0.gca or 12iS_VFR_GMC307_Config_Rev0.gca file. This will set the GMC RS-232 port from "None" to "Garmin Instrument Data".



Common “Gotchas”

Red X on Com and/or Transponder: Did you load the Mode S Address...and is the avionics switch on?

No ADS-B Traffic Audio Alerts [RV-12ULS]: Check that the potentiometer for the autopilot sound level on the AV-50000A is turned up to a setting where it may be heard. Older SkyView control modules had this sound level turned off and some of those control modules may be in service.

Autopilot not functioning: Is the autopilot switch on? [RV-12ULS] ...we have to ask.

Did you accidentally load the autopilot config file before the base configuration (autopilot button will not appear in the config menu...this also can be caused by a corrupt config file...try downloading the config file again and start over).

If you have not completed all the calibration steps for the ADAHRS the autopilot will turn on and be recognized by the PFD but will not perform NAV, VNAV etc. functions.

Numerous functions randomly have a red X: Most likely the battery voltage has dropped too low. Place the aircraft on a battery charger.

If Rotax 912iS engine parameters are showing a red X, ensure both “lane” switches are turned on.

NOTE: If the links or references within the readme are out of date please notify us and as soon as time permits, we will update this document.



RV-12 Base Configuration Revision Summary:

- Rev 4 Initial Release
- Rev 5 RS-232 Output to ELT changed to NEMA 9600 BAUD
- Rev 6 Added ESP Parameters
- Rev 7 Regenerated TOC
- Rev 8 Updated Oil Temp Band
- Rev 9 VA removed and replaced with VO to match ASTM F37 standards
- Rev 10 GTX Information Updated
- Rev 11 Fix Oil Temp / RPM Alert to match Rotax 912 requirements
- Rev 12 Changed Oil Temp Sensor Type to match tested data using a mechanical gauge
- Rev 13 Skipped Rev number not used.
- Rev 14 Skipped Rev number not used.
- Rev 15 Base config updated to Rev 15 - Internal Config name updated.
- Rev 16 Pushed xpdr button to data bar on both displays

RV-12iS VFR Base Configuration Revision Summary:

- Rev 6 Initial Release
- Rev 7 Added pitch and roll trim servo configurations. Updated pitch trim sensor down voltage. Updated Vne mode to TAS and IAS.
- Rev 8 Updated fuel pressure gauge band ranges. Updated rpm trigger for increase rpm alert.
- Rev 9 Pushed xpdr button to data bar on both displays
- Rev 10 Set the internal PFD external GPS receiver to off.
- Rev 11 Set GMC RS-232 port to None.
- Rev 12 Changed fuel pressure gauge bands.
- Rev 13 Removed neutral trim calibration point. Changed TAKEOFF trim position.
- Rev 14 Changed EGT gauge bands.
- Rev 15 Updated for installation of GTX 45R

RV-12iS IFR Nav/Com Base Configuration Revision Summary:

- Rev 1 Initial Release
- Rev 2 Minor updates to TO/GA Angle, Alert 1 volume, and CWS
- Rev 3 Added pitch and roll trim servo configurations. Updated pitch trim sensor down voltage. Updated Vne mode to TAS and IAS
- Rev 4 Updated fuel pressure gauge ranges. Updated rpm trigger for rpm increase alert.
- Rev 5 Removed audio panel from data bar, Added XPDR control to data bar, Set select external nav on boot to TRUE
- Rev 6 Set GMC RS-232 port to None.
- Rev 7 Changed fuel pressure gauge bands.
- Rev 8 Removed neutral trim calibration point. Changed TAKEOFF trim position.
- Rev 9 Changed EGT gauge bands.
- Rev 10 Updated for installation of GTX 45R



Revision Summary:

This summary tracks changes to the software settings files and the readme document.

Rev 5 11-10-16

- 1) *Added a rev level and revision summary to the read-me document to communicate rev changes to customers.*
- 2) *RV-12 G3XT Base Config R9.gca' File: Replaced V_A with V_0 .
 V_A can be manually replaced with V_0 (without overwriting any settings) by performing the following:
Hold down the "MENU" button on the front of the display then turn on the master switch to turn on the display. Continue to hold the menu button down until the configuration message appears above the word *Garmin*. The screen will then boot to the main configuration menu. Inside the main configuration menu touch the button named "Aircraft". Under the "Reference Speeds" tab, scroll down to " V_A " and delete (clear) the speed in the adjacent field, then scroll down to "Custom Speed 1" and enter "0" and "72 knots" in the adjacent fields.*

Rev 6 01-25-17

- 1) *Added AOA information*

Rev 7 03-22-17

- 1) *Transponder changed to GTX35R was GTX23 ES*

Rev 8 08-29-17

- 1) *Added a reminder to turn up the Aux 2 potentiometers on the AV-50000A when a MFD (dual screen) is installed. See Step 18.*
- 2) *Added a Section to document rev changes in the RV-12 Base Configuration File.*
- 3) *Add note to place the aircraft at aft cg when testing or adjusting the autopilot settings.*

Rev 9 04-06-18

- 1) *Added step for installation of a Silent Hektik voltage regulator.*

Rev 10 11-29-18

- 1) *Added steps and information pertaining to RV-12iS.*

Rev 11 05-02-19

- 1) *Added steps and information pertaining to RV-12iS Nav/Com Avionics Kit.*

Rev 12 11/05/19

- 1) *12iS_IFR_Base_Config_Rev5.gca, 12iS_VFR_Base_Config_Rev9.gca, and 12ULS_Base_Config_Rev16.gca: Transponder control box moved to upper data bar.*
- 2) *12iS_IFR_Base_Config_Rev5.gca: On PFD, "Select External GPS at Powerup" set to "TRUE". This will force the PFD to use WAAS GPS data from the GTN 650 and not the GA 26. On the MFD, "Select External GPS at Powerup" set to "FALSE".*
- 3) *12iS_VFR_Base_Config_Rev9.gca: Audio panel box removed from upper data bar.*
- 4) *12iS_VFR_Base_Config_Re10.gca: Set the internal PFD external GPS receiver to off.*



- 5) *12ULS_Base_Config_Rev16.gca: Audio panel box removed from upper data bar.*
- 6) *12iS_IFR_Base_Config_Rev4.gca and 12iS_VFR_Base_Config_Rev8.gca: Changed the minimum 912iS fuel pressure values to match the minimum values stated in the Rotax operating limitations. Previous values were based on the lower limits allowable for a limited amount of time per the Rotax operating limitations. Upper limitations values remain elevated above the operating limitations per agreement with Rotax for the RV-12iS installation.*
"0-39 psi RED" was changed to "0-40.6 psi RED"
"39-41 psi YELLOW" was changed to "40.6-44 psi YELLOW"
"41-51 psi GREEN" was changed to "44-51 psi GREEN"
- 7) *12iS_IFR_Base_Config_Rev4.gca and 12iS_VFR_Base_Config_Rev8.gca: The coolant temp warning feature rpm was increased from 2500 rpm to 3500 rpm. This feature provides a warning to the pilot if the temperature of the coolant/cht exceeds 220 deg F and the RPM is below 3500 rpm. For further information read RV-12iS FTS Section III "HOT WEATHER OPERATION".*
- 8) *12ULS_Base_Config_Rev15.gca: Made corrections to the adaptive tach range dependent on oil temperature. This was not functioning with the prior rev of the .gca file.*
- 9) *Added electronic checklists for RV-12iS aircraft equipped with a Rotax 912iS engine.*
- 10) *Made numerous changes to the read-me. Updated out of date steps. Added "Entering Setup/Configuration Menu:". Added new Van's Logo. Added Page Numbers. Made numerous orders of operation and editorial corrections.*

Rev 13 05/07/20

- 1) *Replaced GTN 650 with GTN 650Xi.*
- 2) *Updated Vertex 2 Input Level and Vertex 3 Input Level on page 10.*
- 3) *Added instruction for loading additional configuration file if using a GMC 307.*
- 4) *Added references for B&C voltage regulator.*

Rev 14 02/08/21

- 1) *12iS_IFR_Base_Config_Rev8.gca and 12iS_VFR_Base_Config_Rev13.gca: Removed Fuel Pressure yellow ranges and expanded green range from the lower to the upper redlines.*
"40.6-44 psi YELLOW" was removed
"51-55 psi YELLOW" was removed
"41-51 psi GREEN" was changed to "40.6-55.1 psi GREEN"
- 2) *Removed "Fuel Pressure – CHECK above 43.5 psi (3 bar)" from Engine Start checklist*
- 3) *Adjusted takeoff trim position*

Rev 15 07/14/2023

- 1) *Updated storage location of the Garmin checklist on SD Card from "Garmin" folder to root folder.*
- 2) *EGT redline updated to 1742F, was 1550 F*

Rev 16 06/04/2024

- 1) *Removed GLDXXR*
- 2) *Instances of GA26 corrected to GA26X*
- 3) *Updated for installation of GTX 45R*



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Rev 17 02/27/2025

- 1) *On Page 1 added disclaimer and warning.*

Rev 18 XX/XX/XX

- 1) *Updated all callouts of the GTR 200 to include the GTR 205x as shown in the example below*
 - a. *... GTR 200 ... is now ... GTR 200/GTR 205x ...*
- 2) *Added Fuel Pressure Sensor Setup Instructions to detail the programming from the base config file.*
 - a. *Steps 37-41*