

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com

Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

Garmin G3X Touch README File

G3X-PRE-SETS-READ-ME-11-29-18 Rev 10

Overall it is our hope that use of the settings files will make installing new products and maintaining current software on older EFIS screens much easier.

What's New:

We realize that you may have read this document many times before. Here is a heads up on major changes to look for. It is still strongly encouraged to read the entire document as many small changes may have been incorporated as well.

Rev 10 11/29/18

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

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

There are two types of files that may be loaded into the G3X, software and configuration files.

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 a 8GB SanDisk SD card.

“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 software. Click on the following link or on the G3X Touch page navigate to “Other References” then click on “G3X Software” (near the bottom of the page).

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

On the Updates and Downloads page click “download” on the latest software for “GDU 46x Cockpit Display.....”.

Complete the menu choices and save the file to the desktop (or other known area).

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.

Step 5: Turn on the Avionics switch and Autopilot switch [RV-12 only]. Check that the COM radio is turned on.

NOTE: Software for LRU’s (GTR200, Autopilot Servos, GDLXXR, GEA24, GSU25) is included inside the G3X Software file and will update automatically to each LRU if connected. Note GTR200 will only automatically update if the software level is 2.3 or above. Since the transponder is a TSO’d device it 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.

Step 6: 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 7: 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.

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

“Configuration files” supplied by Van’s are specific to RV-12 model aircraft 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 “RV-12iS” or “RV-12ULS”.

NOTE: The RV-12XX G3XT Base Configuration Rev X.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.

NOTE: 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.

To install airplane specific configuration files:

CAUTION! When downloading right-click the file name and select “save target as”. Left clicking will load the file in your browser and when saved will add browser formatting to the file that will render it unusable.

Step 1: Download the latest configuration files from Van’s web site.

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: Make a folder on the SD card named “Garmin”.
If a folder named “Garmin” already exists then skip to Step 4.

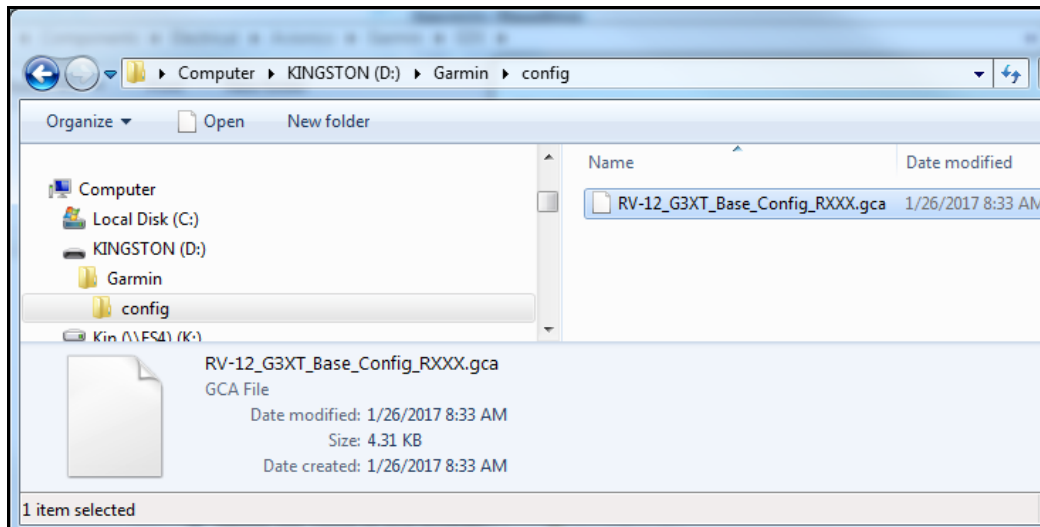
Step 4: Inside the folder named “Garmin” make a new folder named “config”.

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm



Step 5: Place the files ending with extension “.gca” inside the “config” folder.

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.

Step 6: Insert the SD card into the SD card slot on the front of the G3X Touch display in the aircraft.

Step 7: 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.

Step 8: Inside the main configuration menu touch the button named “config”.

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: First load the main RV-12XX G3XT Base Config RX.gca file then load other files such as RV-12XX G3XT AFCS.gca [autopilot installations only] and or G3XSilentHektikRegulator.gca [RV-12ULS only]. **If you reload the Base Config file in the future all other .gca files will need to be reloaded again.**

Step 9: The configuration files located inside the “config” folder 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.

Check the box near the “RV-12XX G3XT Base Config RX”. This file must be always loaded first. Agree to install the settings.

If an autopilot is installed check the box near the “RV-12XX G3XT AFCS”.

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

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 manufacture. 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" 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.**

Step 10: Check inside the Transponder menu that the Mode S Type and Address (transponder US Tail #, Octal or HEX code...any of the three will work within the US) has been entered for the aircraft. For Octal or Hex code see your aircraft under the aircraft registry. <http://registry.faa.gov/aircraftinquiry/>

Loading the RV-12XX G3XT Base Configuration Rev X.gca will reset the transponder type to a GTX35R. If you have an older GTX23 ES transponder [RV-12 ULS] you will need to change the transponder type under the transponder menu back to "GTX 23ES".

Step 11: If you have GPS 20A ADS-B out capability, go to the Transponder menu and set the position integrity to "IFR GPS 1E-7".

Under the System Information menu, verify that the transponder software is at version GTX V7.02 or later for ADS-B compliance. Update the transponder software as required.

Step 12 [RV-12ULS]: If you have ADS-B In capability provided by a GDL 39R, go to the RS-232 menu and set Serial Port 3 to "Garmin Data Transfer".

Step 12 [RV-12iS]: If you have ADS-B In capability provided by a GDL 5XR, go to the RS-232 menu and set Serial Port 3 to "Connex 57600".

Step 13: If you have GPS 20A ADS-B out capability and only one GPS antenna, go to the GPS menu and set the PFD to "No GPS Antenna Connected". If you have a dual screens and a second GPS antenna, set the MFD to "Use PFD GPS Antenna".

Step 14: If required, calibrate the ADAHRS. 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 button perform the pitch and roll offset compensation, magnetometer interference check, and magnetometer calibration. 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

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

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. Here at Van's we hold full right brake with slight left brake and use the vernier throttle to add just enough power to turn slowly then left brake to stop.

For initial installations complete the Engine Run-Up Vibration Test.

Step 15: For initial installations, weight and balance information needs to be configured for the aircraft, in accordance with the G3X Installation Manual. Loading a new RV-12XX G3XT Base Config RX.gca file may reset the weight and balance information for weight and arm. Enter the weight and balance menu and re-enter the weight and balance information for the aircraft.

Step 16: The configuration file will not enable screen shots (a picture of the current screen to be saved to the SD card). While in "Configuration mode", go to Display menu and "enable" screen shots. 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.

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".

Step 17: Under the engine menu "FUEL LVL 1", select "Calibrate", then check/configure the fuel level.

Step 18 [RV-12ULS]: 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.

Step 19 [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.

Step 20: Under the LRU Configuration menu set AOA1 to "Enabled"

Under the AOA Configuration Page set "Show AOA Above" to 30 kts

Under the AOA Configuration Page set "Hide AOA on Ground Below" to 20 kts

Under the Sounds Configuration page set "AOA Alert" to Enabled.

Under the Sounds Configuration page set "AOA Volume" to 80% and test to confirm AOA volume is audible.

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

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

Step 21: If a Silent Hektik 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 22: After all configuration changes have been made, use the Save & Reboot button.

NOTE [RV-12ULS]: Fuel Flow at this time 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.

Step 23: 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.

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

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.

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

RV-12 Base Configuration Revision Summary:

Rev 0-4	Development pre-release revisions
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

RV-12iS Base Configuration Revision Summary:

Rev 0	Initial Release
-------	-----------------

Read-Me 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_O.
V_A can be manually replaced with V_O (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.

VAN'S AIRCRAFT

TOTAL PERFORMANCE

14401 Keil Road NE, Aurora, Oregon, USA 97002

PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

Rev 9 04-06-18

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

Rev 10 11/29/18

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