BlueMAX

Cirrus Perspective / RDM Installation Quick Reference Guide

Date: 2021-07-21

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1. Preparation for Installation

1.1. Aircraft Identification

BlueMAX installation procedures vary by the avionics configuration. The first step is to identify the aircraft's applicable configuration. This guide applies to Cirrus SR aircraft equipped with Garmin Perspective avionics

1.2. Cirrus Perspective Connector Identification (RDM)

P1048 and J1048 are located inside access hole RE2 located on the right side of the empennage below the horizontal stabilizer. See Figure 1

Figure 1. Connectors for Cirrus Perspective RDM
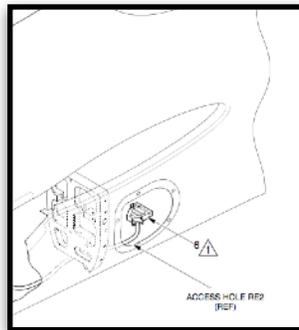
2. Parts required

Installation of BlueMAX in Cirrus Perspective aircraft requires the BlueMAX module, the BlueMAX Cirrus RDM adapter harness part number 4370-9652, and two BlueMAX window stickers. Additionally, Loctite 5140, a 3/8 inch horsehair acid brush for sealing the connector and cable ties for securing the installation will be required.

3. Installation

NOTE: An iOS device (i.e. iPad / iPhone) or Android device will be required post installation to verify proper BlueMAX operation.

3.1. Procedure

NOTE: (visit FlightData.com/BlueMAX for a more detailed set of installation instructions, including a step by step video)

1. Set BAT 1, BAT 2, and AVIONICS switches to OFF positions.

2. Pull FUEL QTY, STALL WARNING, and GPS NAV GIA 1 circuit breakers.

3. Remove access panel RE2 found on the right side of the empennage below the horizontal stabilizer

4. Locate connector pair P1048/J1048 inside the access hole. Disconnect P1048 and J1048 from each other and re-connect to the RDM adapter harness.

5. Temporarily orient and stabilize connectors in a level position inside tail area with open back-shells facing up.

   Note: Use brush to coat entire inside of back-shell with sealant, including wiring, connector body, walls and ring lug. Ensure small gaps and features between wires and connector are coated.

6. Coat outer surfaces of mated connectors with sealant.

7. Pour sealant into open connector backshells to fill up to top of connector. Allow 24 hours undisturbed to cure.

8. Attach backshell cover plates and brush coat entire outer surface of mated connectors including connector interfaces and cable entries. Allow time to cure.

   WARNING: Verify no interference exists between RDM cable and flight controls.

9. Plug the BlueMAX module into the other end of the adapter harness.

   CAUTION: Ensure mated connectors and BlueMAX module are secured along fuselage wall and off BL0 floor.

   Note: Ensure that the BlueMAX module are secured upright such that connector is facing the aft of the aircraft. This will orient the bluetooth antenna in the most favorable position to connect with a mobile device in the cabin.

10. Secure the module, connectors and cabling to existing structure or wire bundles using cable ties such.

11. Reset FUEL QTY, STALL WARNING and GPS NAV GIA 1 circuit breakers.

12. Perform Operational Test - Aircraft Data Logger System IAW the Cirrus AMM.

13. Replace access panel RE2.

14. Place BlueMAX stickers in the lower left corners of the two aft passenger windows as predicted here:

4. Post install checks

The BlueMAX module may require configuration after installation. This is performed via the BlueMAX app which is available for iOS and Android. The module must be powered up for this process.

4.1. App Installation

Either use the following URLs or search the App Store (iOS) or Play Store (Android) for "BlueMAX Aircraft Monitor" and install the app on an iPad or Android tablet.

1. iOS - https://apps.apple.com/au/app/bluemax-aircraft-monitor/id1238996807
2. Android - https://play.google.com/store/apps/details?id=com.controlj.bluemax.app

4.2. Connection

If the app is freshly installed and has not previously connected to any BlueMAX module it will automatically connect to the first one it finds after it is opened. If it has previously connected to a different module then it will be necessary to find the new module in the Bluetooth page. This is selected via the Bluetooth menu item. The menu can be opened by swiping across from the left hand side of the screen. Note: The BlueMAX module is a BLE device and it will **not** appear as a Bluetooth device in the iOS Bluetooth settings page. Bluetooth connection to the BlueMAX module is managed exclusively in the BlueMAX app. For troubleshooting help, see section A.2 of the troubleshooting guide below.
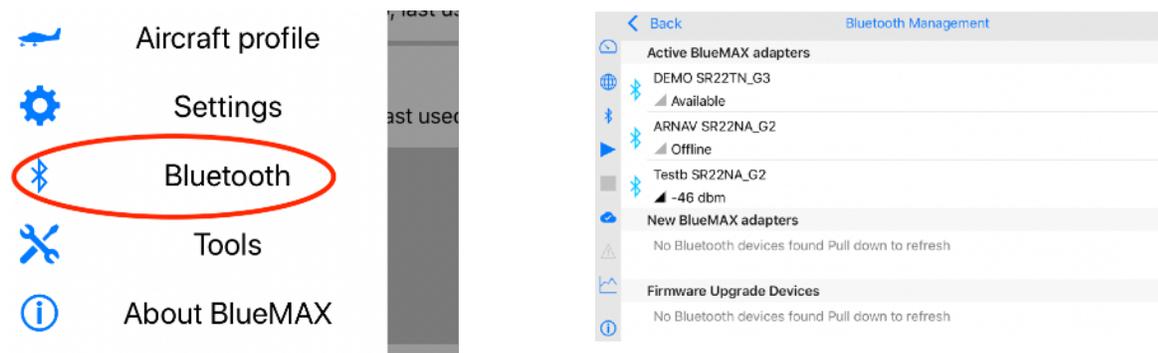
Figure 2 - BlueMAX app: main menu

4.3. Firmware upgrade

Before configuring the BlueMAX module check for a firmware upgrade for the module.

CAUTION: Do not attempt to upgrade firmware in flight.

Notes:
1) Internet connection required to perform update.
2) The BlueMAX adapter must be powered (turn on aircraft battery) and you will need to be within range of the bluetooth connection

There are two ways to do the update. If method one does not work, use method two.

Method One:

1. Open the Main menu: Swipe across the screen from the left.

2. Access the Tool menu: Tap the "Tools" button.

3. Now choose "Firmware upgrade". A dialog will appear (see Figure 3) and if an upgrade is available will prompt to install it. Tap Update. If no upgrade is available the dialog will disappear with a message "Firmware is up to date."

Method Two (This method can be used if you need to update multiple modules):

4. Open the Main menu: Swipe across the screen from the left.

5. Access the *Bluetooth Management* page: tap the "Bluetooth" button.

6. In the page that opens find your device (if you only use one, that's all there should be.) If you have previously connected to it the device will be under "Active BlueMAX adapters", otherwise it will be under "New BlueMAX adapters". The page can be refreshed by dragging down.

7. Tap the device name and a menu will pop up. If one of the options is "disconnect" choose that, then tap the device name again.

8. Now choose "Firmware upgrade". A dialog will appear and if an upgrade is available will prompt to install it. Tap Update. If no upgrade is available the dialog will disappear with a message "Firmware is up to date." After a few seconds it should complete and disconnect.

9. You can now connect to the device by tapping the name again and selecting "Connect".

*Figure 3 - BlueMAX app:
Update firmware pop up menu*

4.4. Configuration

Note: Configuration should be accomplished when the BlueMAX module is NOT connected to the app. If you are already connected to the device, select the device from the Bluetooth management screen and click disconnect before following the directions below.

1. Tap the device name and select "Configure". The dialog box shown in Figure 4 will appear with various options

2. Set interface field to "RDM" and select OK.

3. Tap the device name again and select "Connect". The app will connect to the module and should display engine data.
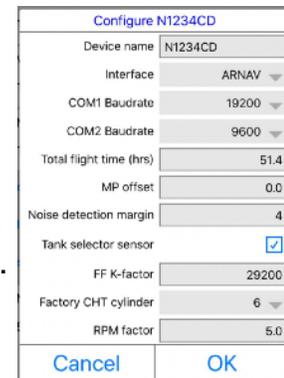
*Figure 4 - BlueMAX app:
module configuration page*

4.5. Enabling Automatic Connection to the BlueMAX Module

The BlueMAX can automatically connect to your mobile device when powered and in range for BLE connection. To enable this feature follow the directions below.

Note: Auto connection will <u>not</u> work in "airplane mode". If using "airplane mode", the BlueMAX will require manual connection.

1. Open the BlueMAX mobile app.

2. Open the main menu: Swipe across the screen from the left.

3. Select "Settings".

4. Select the "Auto connect in the background" box.

Note: iOS users will also need to modify location services. Refer to section 10.6.1 below for details.
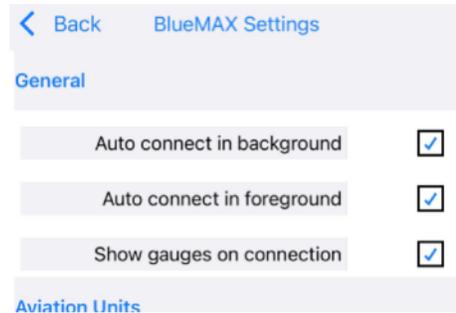
Figure 5 - BlueMAX Setting Menu

4.5.1. Enabling Location Services (iOS Users only)

For automatic connection to the BlueMAX module on iOS devices, BlueMAX location services need to be set to "Always". If location services are set to "While Using the App" you will need to open up the mobile app prior to each flight to initiate the connection to the BlueMAX module. To change the location services option follow these steps:

1. Open Phone Settings.

2. Select "Privacy".

3. Select "Location Services" at the top.

4. Select "BlueMAX" from the list.

5. Select "Always" from the list of Location Access Options.
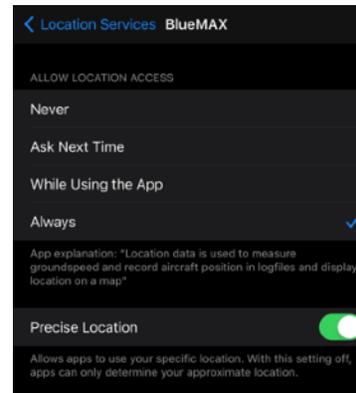
Figure 6 - BlueMAX Location Services Menu

Note: After you enable this option, you will get notifications from time to time reminding you that location services have been running for BlueMAX and it will ask if you would like to change your location services option. If you change it to "While Using the App" you will lose the automatic connection function.

5. Weight and balance

The installed weight of the BlueMAX module and adapter harness is approximately 120g (less than 4 ounces) and results in a change in the CG position of approximately 0.008% MAC. This is considered a negligible change per AC 43.13-1B and no weight and balance update is required.

6. Flight Manual Supplement

Complete the required information on the provided Flight Manual Supplement and insert it into the aircraft Flight Manual or POH.

7. Logbook entry

Make a suitable logbook entry documenting the installation. Sample text below for USA registered aircraft, edit as required for specific installation:

"Installed BlueMAX RDM adapter harness (p/n 4370-9652) and BlueMAX module (p/n 4370-2730) at connector pair P1048 /J1048. Sealed connectors with Loctite 5140 IAW the Cirrus AMM RDM installation procedure. Secured BlueMax module and cabling to existing structure using cable ties. All work IAW AC43.13-1B. Performed operational test of the Aircraft Data Logger Systems IAW Cirrus AMM. No defects noted at this time."

8. Instructions for continued airworthiness

No routine maintenance or inspection of the BlueMAX module is required. Correct display of primary and supplementary engine data should be monitored during normal operation.

9. Removal of the BlueMAX installation

For temporary removal, disconnect the module from P1426B and remove it. For permanent removal, remove the adapter harness, and reconnect P1048A/J1048A in accordance with the Cirrus Wiring Manual.

10. Technical support

For assistance with installation issues or for service or replacement parts, contact FlightData via email atc@flightdata.com.

11. Warranty information and Limitations of Liability

BlueMAX products have a one-year limited warranty from the date of their original purchase. If during this one-year period any BlueMAX product is not properly functioning, and after all troubleshooting contact FlightData to obtain an RMA for confirmation of defectiveness. If so confirmed, FlightData will send a replacement unit at no cost except for shipping. No labor is included in this limited warranty. FlightData expressly disclaims all other warranties, including but not limited to any implied warranties of merchantability or fitness for a particular purpose. The sole remedy for any and all claims is the replacement product. FlightData will not be liable for any incidental or consequential damages resulting from the use of its products or the operation of any aircraft which relies on the indications of the BlueMAX product. At all times, the Pilot in Command is responsible for the safe operation of the aircraft without any reference to BlueMAX indications.