

# Pilot Guide Addendum, PFD Evolution Software Version 2.3.1 Upgrade

This addendum is applicable to the following Primary Flight Display Pilot Guides:

- EFD1000 PFD Pilot's Guide
- EFD 1000 C3 PRO PFD Pilot's Guide
- EFD1000H PFD Pilot's Guide

Evolution Software Version 2.3.1 incorporates several new features that enhance the functionality and operation of your Evolution Flight Display System. This Pilot Guide Addendum describes these new features and enhancements.

## 1. Knob Improvements

Software Version 2.3.1 introduces improvements to the knob interface. A knob press is no longer required to activate a knob before it may be used to change a display parameter. The knobs are now activated either by pressing them (as before) or by simply rotating them, thus permitting convenient course or heading adjustment.

To prevent inadvertent adjustment, the BARO function was also removed from the Right Knob round robin sequence and is now accessed by a dedicated Hot Key.

## 2. Setting the Barometric Pressure (BARO)

Software Version 2.3.1 moves the BARO function from the Right Knob to a dedicated Hot Key (**Figure 1**). The BARO Hot Key is available from all Hot Key pages; 1/2 and 2/2.

When selected, the BARO Hot Key Label turns inverse green and the barometric pressure is adjusted by rotating the Right Knob.

After 10 seconds of inaction or if any other button/key is pressed, the BARO function is disabled and the Right Knob returns to normal operation.

A. To set the Barometric Pressure:

1. Press the BARO Hot Key and Rotate Right Knob to change the barometric pressure setting
2. Press the BARO Hot Key, Right Knob or any other button/key to exit

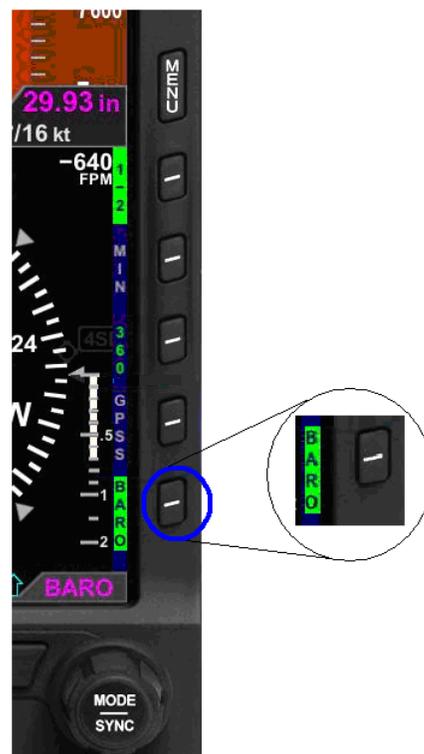


Figure 1

### 3. Map Declutter Levels

With Software Version 2.3.1, the Map Declutter function has been removed from the Hot Keys and may be found in the MAP SETTINGS page of the Main Menu.

The Map Declutter Settings may be configured to Declutter Levels 4, 3, 2, 1 and 0 as follows:

DECLUTTER LEVELS				
				
Level 4	Level 3	Level 2	Level 1	Level 0

**Table 1**

NOTE:

Refer to Section 5.2 in the PFD Pilot's Guide for a description of the Map Declutter Settings

A. To change the Map Declutter Level:

1. Press the MENU Button and rotate the Right Knob to 360 MAP SETTINGS page or ARC MAP SETTINGS page
2. Press the 360 DCLTR LVL Menu Key or the ARC DCLTR LVL Menu Key and rotate the Right Knob to select the desired declutter level
3. Press the MENU Button to exit

### 4. ADF Bearing Pointer Sources

When a compatible ADF receiver is installed, the Bearing Pointers may be connected to the available ADF sources. The PFD will support up to two ADF receivers, ADF1 and ADF2.

A. To select a Bearing Pointer source:

1. Press the Lower Left Button until the desired Single-Line Bearing Pointer Navigation Source is shown above the button (**Figure 2**)
2. Press the Lower Right Button until the desired Double-Line Bearing Pointer Navigation Source is shown above the button (**Figure 2**)



Figure 2

## 5. Radio Altitude Display

When a compatible radio altimeter is connected to the Evolution display, radio altitude height in feet above ground level (AGL) may be displayed at the bottom left of the Attitude Display (**Figure 3**). The pilot must enable the radio altitude display window from the Menu.

When the aircraft is above the maximum range of the radio altimeter, the RA window is removed.

**NOTE:**

The *maximum* displayed altitude value will depend on the range of the radar altimeter equipment installed in the aircraft



Figure 3

Radio altitudes that are greater than or equal to 500 feet AGL are displayed in 100 foot increments (RA 500, RA 600, RA 700 ...) and altitudes less than 500 feet AGL are displayed in 10 foot increments (RA 490, RA 480, RA 470 ...).

The digital readout in the RA window is normally displayed in green.

While at or below the decision height set on the onboard radio altimeter's indicator (if applicable), the RA window on the PFD will show the DH legend as inverse amber and the current radio altitude readout in amber (**Figure 4**).



Figure 4

If the PFD detects a malfunction of the onboard radio altimeter, the RA window is displayed with a red slash through the digital readout (**Figure 5**).



Figure 5

A. To enable or disable the Radio Altitude display:

1. Press the MENU Button and rotate the Right Knob to the GENERAL SETTINGS A page
2. Press the RAD ALT Menu Key and rotate the Right Knob to ENABLE or DISABLE
3. Press the Menu Key or MENU Button to exit

**NOTE:**

"RAD ALT: DISABLE" is shown in gray if a compatible radio altimeter is not installed

## 6. MINIMUMS Display

Software Version 2.3.1 moves the MINIMUMS annunciation from the lower half of the Attitude Display and incorporates the annunciation in the Selected Minimums Field.

The MIN legend in the Selected Minimums Field turns inverse amber to alert the pilot if the aircraft's altitude is lower than the selected minimums setting (**Figure 6**). The amber MIN Alert is cancelled when the aircraft's altitude is equal to or above minimums setting plus 100 feet, or when the selected minimums is set to a new altitude.



Figure 6

## 7. Battery Annunciation and Overvoltage Protection

Software Version 2.3.1 moves the Battery Annunciation from the lower center of the display to the top left corner of the Attitude Display below the Selected Airspeed Field (Figure 7).

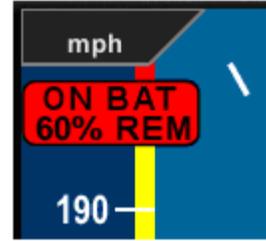


Figure 7

In the event of an overvoltage condition in the aircraft's electrical system, (greater than 33 volts) the PFD will automatically switch to its battery power and continue to operate without any pilot action required. Operation from the aircraft electrical system will not be possible while the overvoltage condition is present. When aircraft power decreases below 33 volts, pilot action is required to manually switch from the PFD battery power to the aircraft power. To restore aircraft power to the PFD, go to the POWER SETTINGS page of the Main Menu and select EXT PWR.

## 8. Color Speed Markers and Barber Pole

**NOTE: Not applicable to the EFD1000H**

Software Version 2.3.1 has added the ability for the installer to configure the EFD1000 to display redline or barber pole airspeed limits that vary with pressure altitude. The colors are configured to correspond with your aircraft's approved markings on the mechanical airspeed indicator.

## 9. MACH Number Display for Mmo Aircraft

**NOTE: Not applicable to the EFD1000H**

Software Version 2.3.1 introduces the ability for the installer to configure the EFD1000 display to show aircraft Mach number in the Data Bar for Mmo aircraft. The Mach number can be configured to be displayed whenever the aircraft is above a selected altitude or above a selected Mach number.

If the configuration is set to ALTITUDE transition, the TAS indication will be replaced by the Mach number whenever the aircraft is above the selected transition altitude. If the configuration is set to SPEED transition, the TAS indication will be replaced by the Mach number whenever the aircraft is above the selected transition Mach number.

A. To select the desired transition setting:

1. Press the MENU Button and rotate the Right Knob to the GENERAL SETTINGS C page
2. Press the MACH DSPL Hot Key and rotate the Right Knob to the desired Altitude or Speed setting
3. Press the MENU Button to exit

**NOTE:**

The Mach number is shown with a display resolution of 0.01 Mach.

## 10. Pitot Obstruction Monitor

Software Version 2.3.1 introduces alternate implementations for the Pitot Obstruction Monitor operation, allowing the Pitot Obstruction Monitor to behave differently on different applications such as rotorcraft.

The alternate Pitot Obstruction Monitor implementation will present a “CROSS CHECK ATTITUDE” annunciation and retain the display of attitude data. This implementation has been found to be preferable in some rotorcraft applications.

With this alternate implementation, when a rotorcraft is flying slow, (generally less than 10 KIAS) yet has a ground speed greater than 30 knots, the Evolution System will compare the airspeed to the groundspeed and annunciate a “CROSS CHECK ATTITUDE” message on the Attitude Display (**Figure 8**).



**Figure 8**

During this slow flight condition, the Attitude Display will continue to present the attitude information. The “CROSS CHECK ATTITUDE” message will generally extinguish as the airspeed increases to 30 KIAS.

Refer to the RFMS (Rotorcraft Flight Manual Supplement) or the AFMS (Airplane Flight Manual Supplement) to determine how the Pitot Obstruction Monitor is configured for your aircraft.

## 11. Traffic Overlay

Software Version 2.3.1 combines the Traffic Overlay Display and the Traffic Altitude Filter Levels into a single dedicated Hot Key. Traffic Overlay is disabled when the TRFC Hot Key Label is shown as gray. The Traffic Altitude Filter function is ON when the Hot Key label is shown as inverse green. Pressing the TRFC Hot Key will cycle through TRFC - TFCN - TFCU- TFCA - TFCB in a round-robin sequence as shown below: (**Table 2**)

Hot Key Label	Altitude Filter Level
TRFC	Off
TFCN	Normal
TFCU	Unrestricted
TFCA	Above
TFCB	Below

**Table 2**

A. To change the Traffic Altitude Filter:

1. Select the 2/2 Hot Key Menu
2. Press the TRFC Hot Key to select the desired Altitude Filter

## 12. RSM GPS Sharing

In the event that all of the panel-mounted GPSs experience a failure, Software Version 2.3.1 improves the RSM GPS intercommunicated capability by sharing the RSM GPS position among all of the Evolution Displays. This “sharing” feature permits any EFD (as configured by the installer) to receive and display the RSM GPS position data, thus assuring the pilot continuous navigational awareness.

We thank you for your continued support of Aspen Avionics and confidence in the Evolution Flight Display System.



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