ASPEN AVIONICS

Aspen Avionics, Inc.
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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
or
SUPPLEMENTAL AIRPLANE FLIGHT MANUAL
for the
ASPEN AVIONICS EVOLUTION FLIGHT DISPLAY SYSTEM
EFD1000 PRIMARY FLIGHT DISPLAY
Optionally with
EFD1000 AND/OR EFD500 MULTI-FUNCTION DISPLAYS

The information contained in this Supplement must be attached to the FAA Approved Airplane Flight Manual or placed with the Pilot's Operating Handbook or other operating information when the Aspen EFD1000 PFD and optionally the Aspen EFD1000 MFD and/or EFD500 MFD are installed in accordance with AML STC SA10822SC. This document must be carried in the aircraft at all times.

The information in this Supplement supplements or supersedes the information in the FAA Approved Airplane Flight Manual or other operating information only as set forth herein.

For limitations, procedures, and performance data not contained in this Supplement, consult the Airplane Flight Manual or other operating information.

Airplane Make: PIPER

Airplane Model: PA 28-236

Airplane Registration Number: N2363U

Airplane Serial Number: 28-7911306

FAA APPROVED By: Scott A Horn

Scott Horn
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Installed Equipment	EFD1000 PFD PRO	EFD1000 PFD PRO C3	EFD1000 PFD PILOT	EFD1000 PFD VFR	EFD1000 MFD	EFD500 MFD	Remarks
N/A = Not Available							
ADS-B Traffic Interface with TAS incorporated		N/A	N/A				ADS-B Traffic Interface Model: TAS Model:
TCAS I Traffic Interface			N/A				TCAS I Model:
TAS Traffic Interface			N/A				TAS Model:
TIS-A Traffic Interface			N/A				TIS A Model:
XM Datalink Weather Interface (EWR50)		N/A	N/A				
ADS-B (FIS-B) Weather Interface		N/A	N/A				ADS-B (FIS-B) Weather Interface Model:
L3 Stormscope® Interface (STRK)		N/A	N/A				
Terminal Procedure Charts	N/A	N/A	N/A	N/A			Requires a database.
MFD NAV Map	N/A	N/A	N/A	N/A	√	√	Requires a database.
EA100 Autopilot AHRS Software Version			N/A			N/A	
Evolution Synthetic Vision and the Aspen Terrain Warning System (TWS)		N/A	N/A	N/A			Requires a database.
10-Hour Evolution Synthetic Vision Demo and the Aspen Terrain Warning System (TWS)		N/A	N/A	N/A	N/A	N/A	Only enabled for a trial period. Acknowledgment page shows the status of the trial period. Requires a database.
Audible alerts for the Aspen Terrain Warning System (TWS)			N/A	N/A	N/A	N/A	Audible alerts are only available if TAWS is not installed.
Aspen Connected Gateway (CG100) Software Version	N/A	N/A	N/A	N/A			Not authorized for EASA-registered aircraft.
Radar Altitude Numeric Display Input			N/A	N/A		N/A	
Radar Altitude Decision Height Input			N/A	N/A		N/A	
ADF1 Interface			N/A	N/A		N/A	ADF Model:
ADF2 Interface			N/A	N/A		N/A	ADF Model
VHF1 (VLOC1) Navigation Radio Interface			N/A			N/A	VHF Nav 1 Model:

CHG	Change
CM	Configuration Module
CNUS	Continental United States
Config	Configuration
CTL	Control
CWS	(autopilot) Control Wheel Steering
DH	Decision Height
DISC	Disconnect
EA	Evolution Adapter
EASA	European Aviation Safety Agency
EBB	Emergency Backup Battery
ECO	Engineering Change Order
EFB	Electronic Flight Bag
EFD	Evolution Flight Display
EFIS	Electronic Flight Instrument System
EMER	Emergency
EOC	Executable Object Code
ESV	Evolution Synthetic Vision
EWR	Evolution Weather Receiver
EXT PWR	External Power
FAA	Federal Aviation Administration
FIS-B	Flight Information Service- Broadcast
FPL	Flight Plan
FPM	Flight Path Marker
Ft	Fort
FOV	Field of View
GEO-REFERENCED	Chart scaling that permits ownship depiction
GTWY	Aspen Connected Gateway, including the CG100
GPS	Global Positioning System
GPSS	GPS Steering
HDG	Heading
HORZ	Horizontal
HSI	Horizontal Situation Indicator
IAS	Indicated Airspeed
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
Inc.	Incorporated
INIT	Initialization
INTEG	Integrity
IOP	Input-Output Processor
JSUM	Jeppesen Services Update Manager
KOEL	Kinds of Operations Equipment List
L3	L3 Communications
LRU	Line replaceable Unit
LTNG	Lightning
LOC	Localizer
MAP	Main Application Processor
MEMS	Micro Electromechanical Systems
MFD	Multi-Function Display
MIC	Microphone
MIN	Minimums
MSG	Message
N/A	Not Applicable
NACO	National Aeronautical Charting Office
NAV	Navigation
NAVAIDS	Navigational Aids

2 Limitations

The following limitations pertain to the installed equipment in the aircraft. See Table 1 for the list of installed equipment in this aircraft.

2.1 Kinds of Operation

This is a list of installed Aspen equipment that affects flight operations. This list does not preclude any approved Minimum Equipment List or other equipment required by regulation.

See the aircraft placard located on the flight deck to determine if this aircraft is authorized for Day, Night, VFR or IFR.

At minimum, one vertical column of equipment must be operational for flight. See Table 1 for the equipment installed in this aircraft:

Example: There is a placard in clear view of the pilot that specifies the kind of operations to which the operation of the airplane is limited or from which it is prohibited. If the placard shows authorization for IFR and the aircraft has an operational EFD1000 PFD and EFD1000 MFD, Magnetic Compass, Standby Altimeter, Standby Airspeed Indicator and IFR GPS (Configuration 2), and the aircraft has all the other equipment and certifications required by regulation, the aircraft is qualified for IFR flight.

	Day VFR	Day/ Night VFR	Day/ Night VFR	IFR Config. 1	IFR Config. 2	IFR Config. 3
EFD1000 PFD (includes PRO, VFR or PILOT)	✓	✓		✓	✓	✓
EFD1000 MFD with EBB		✓		✓		
EFD1000 MFD with Internal Battery					✓	
Magnetic Compass	✓	✓	✓	✓	✓	✓
Standby Attitude Indicator				✓	✓	✓
Standby Airspeed Indicator			✓		✓	✓
Standby Altimeter			✓		✓	✓
IFR Approved GPS				✓	✓	

Table 3 – Minimum Equipment Required for a Flight Operation

2.2 EFD1000 PFD System Limitations

1. The following Pilot Guide, corresponding to the PFD version installed, must be carried in the aircraft and available to the pilot:
   a. EFD1000 PFD PILOT or PFD PRO: Aspen Avionics document 091-00005-001, EFD1000 PFD Pilot's Guide, Revision A or subsequent revision.
   b. EFD1000 PFD VFR: Aspen Avionics document 091-00005-001, EFD1000 PFD Pilot's Guide, Revision A or subsequent revision.
   c. EFD1000 PFD PRO C3: Aspen Avionics document 091-00019-001, EFD1000 C3 Pro PFD Pilot's Guide Revision ( ) or subsequent revision.
2. The moving map display is not a substitute for approved maps or charts required by the operating rules.

2.3 EFD1000 and EFD500 MFD System Limitations

1. Aspen Avionics document 091-00006-001, EFD1000/500 MFD Pilot's Guide Revision ( ) or subsequent must be carried in the aircraft and available to the flight crew.
2. Maneuvering based solely on the EFD1000 terrain and obstacle depiction is not authorized.
3. For the Evolution **Synthetic Vision** option, the following limitations apply:
    a. Aspen document 091-00032-001 Evolution Synthetic Vision ESV Quick Reference Revision ( ) or subsequent must be carried in the aircraft and available to the flight crew.
    b. Navigation or maneuvering based solely on the Synthetic Vision background display and associated Terrain Warning System (TWS) is not authorized. The Pilot-In-Command has the responsibility to use accepted visual and instrument procedures to avoid terrain and other obstacles.
    c. Barometric pressure must be set accurately for proper operation.
    d. Cold temperatures affect the accuracy of the SV system.
4. The moving map displays are not a substitute for approved maps or charts required by the operating rules.
5. The RSM GPS is limited to EMERGENCY USE ONLY.
6. Barometric pressure must be set accurately for proper terrain depiction.
7. Cold temperatures affect the accuracy of the terrain depiction.
8. When the EFD1000 MFD is used as the **backup altimeter and/or airspeed indicator** (see Table 2), the following limitations apply:
    a. When the EBB charge status is less than 80% or has failed, takeoff is NOT AUTHORIZED.
    b. When the cabin temperature is below -20°C, takeoff is NOT AUTHORIZED.
    c. When the "ON BAT" annunciation is shown on any EFD display, takeoff is NOT AUTHORIZED.
9. For **Traffic and Weather** options, the following limitations apply:
    a. Maneuvering based solely on the traffic display is not authorized.
    b. XM Weather information is supplemental to data available from official sources.
    c. NEXRAD data is limited to the contiguous United States.
    d. FIS-B information is to be used for pilot planning decisions and pilot near-term decisions focused on avoiding areas of inclement weather that are beyond visual range or where poor visibility precludes visual acquisition of inclement weather.
    e. FIS-B information, including, weather information, NOTAMs, and TFR areas, are intended for the sole purpose of assisting in long- and near-term planning decision making. The system lacks sufficient resolution and updating capability necessary for aerial maneuvering associated with immediate decisions.
10. For the **Terminal Procedure Charts** option, the following limitations apply:
    a. The aircraft ownship position presented on the Airport Diagrams and Terminal Procedures charts may be inaccurate – reference to ownship position for navigation or maneuvering is prohibited.
    b. Except as provided for by regulation, the Terminal Procedures Charts depictions on the EFD are not substitutes for aeronautical charts required to be carried aboard the

6. When the Aspen Synthetic Vision Demo is configured and the trial period is not expired, the following electronic placard is displayed:

CAUTION:
Aspen Synthetic Vision Demo Time Remaining: ## Hours ## Minutes Synthetic Vision information and Terrain information are for awareness Only. Do not maneuver based solely on this Information.

7. When the Aspen Synthetic Vision Demo is configured and the trial period has expired, the following electronic placard is displayed:

CAUTION:
Aspen Synthetic Vision Demo has Expired To Re-Enable SV, See your Authorized Dealer

3.2.4 Attitude and Heading (AHRS) Reset

1. AUTOPILOT ..... MANUALLY DISCONNECT
2. MENU ..... Select the first page, titled "GENERAL SETTINGS"
3. "AHRS: RESET?" LINE SELECT KEY ..... PRESS
4. "AHRS: RESET?" LINE SELECT KEY ..... PRESS AGAIN TO CONFIRM RESET

3.2.5 Turn Off the EFD in Flight

EFD1000 MFD (with EBB)

1. EFD Circuit Breaker / Switch ..... PULL / OFF
2. EBB Disconnect Switch ..... DISC

EFD1000/500 PFD or MFD with Internal Battery

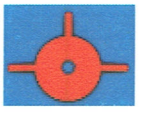
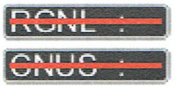
1. EFD Circuit Breaker / Switch ..... PULL / OFF
2. REV Button ..... Push and hold until the display turns off

3.2.6 Continuous EFD1000 or EFD500 System Reset (does not apply to C3 PFD)

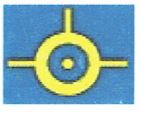
In the event of a condition that causes the system to continually reset, proceed as follows:

1. REMOVE THE DATABASE CARD ..... PERMIT THE SYSTEM TO REINITIALIZE.
   If the condition persists, then:
2. TURN OFF THE Aspen GTWY SWITCH .. PERMIT THE SYSTEM TO REINITIALIZE.
   If the condition persists, then:
3. PULL THE ADS-B CIRCUIT BREAKER ..... PERMIT THE SYSTEM TO REINITIALIZE.
   If the condition persists, then:
4. PULL THE XM WEATHER CIRCUIT BREAKER ..... PERMIT THE SYSTEM TO REINITIALIZE.
   If the condition persists, then:
5. PULL THE STORMSCOPE CIRCUIT BREAKER ..... PERMIT THE SYSTEM TO REINITIALIZE.

Warning W Caution C Advisory A

	Applies to:							Annunciation	Description	Pilot Action
	EFD 1000 PFD PRO C3	EFD 1000 PFD PRO	EFD 1000 VFR	EFD 1000 PFD PILOT	EFD 1000 MFD REV	EFD 1000 MFD	EFD 500 MFD			
W		✓			✓	✓	✓		Synthetic Vision Flight Path marker. Terrain or obstacle conflict w ithin 30 seconds.	Avoid the terrain or obstacle.
W	✓	✓			✓				Radar Altitude Failed	Use alternate means for altitude determination.
W		✓			✓	✓	✓	 Or 	Synthetic Vision system terrain or obstacle conflict w ithin 30 seconds.	Avoid the terrain or obstacle.
W	✓	✓	✓		✓	✓	✓	MAP SW 2.6 and earlier:  MAP SW 2.7 and later: 	XM Weather or Traffic Failure	Use an alternate w eather information source Increase vigilance for traffic.
W		✓	✓		✓	✓	✓		Regional or CONUS NEXRAD data is not valid	Use an alternate w eather information source.
W						✓	✓		METAR Data is not valid	Use an alternate w eather information source.
W		✓	✓		✓	✓	✓	MAP SW 2.6 and earlier  MAP SW 2.7 and later 	Stormscope (STRK) has failed.	No action. Avoid thunderstorms.

Warning W Caution C Advisory A

	Applies to:							Annunciation	Description	Pilot Action
	EFD 1000 PFD PRO C3	EFD 1000 PFD PRO	EFD 1000 VFR	EFD 1000 PFD PILOT	EFD 1000 MFD REV	EFD 1000 MFD	EFD 500 MFD			
C	✓	✓	✓	✓	✓	✓		CHECK PITOT HEAT	Possible Pitot Obstruction. Accompanied by Red X attitude and heading.	Use an alternate attitude and heading source. Turn on Pitot Heat to clear the condition if icing is the cause.
C	✓	✓	✓	✓*	✓	✓	✓	GPS1 GPS2 RSM GPS GPS1 REVERSION GPS2 REVERSION RSM GPS REVERSION EMER USE ONLY	GPS Invalid indications	Select an operational GPS or alternate navigation.
C		✓			✓	✓	✓		Synthetic Vision Flight Path marker. Terrain or obstacle conflict w ithin 45 seconds.	Avoid the terrain or obstacle.
C		✓			✓	✓	✓	CAUTION – TERRAIN, TERRAIN CAUTION – OBSTACLE, OBSTACLE	Synthetic Vision system terrain or obstacle conflict w ithin 45 seconds.	Avoid the terrain or obstacle.
C						✓	✓	GPS POS FAILED	NAV and Terrain Map indication w hen of all Navigation GPS devices have failed.	No immediate action. NAV and terrain maps no longer move w ith the aircraft.
C	✓	✓	✓	✓	✓	✓		INTEG	GPS Integrity indication	The GPS in use is degraded. See the applicable GPS AFMS for more information.

Warning W Caution C Advisory A

	Applies to:							Annunciation	Description	Pilot Action
	EFD 1000 PFD PRO C3	EFD 1000 PFD PRO	EFD 1000 VFR	EFD 1000 PFD PILOT	EFD 1000 MFD REV	EFD 1000 MFD	EFD 500 MFD			
C						✓	✓	TERRAIN FAIL	The dedicated terrain display is unusable.	No immediate action.
C		✓			✓	✓	✓	TRAFFIC 	Traffic Alert.	See and avoid the traffic. Press TRFC (lower center button) to display a plan view of the traffic.
C	✓	✓	✓		✓	✓	✓	TRFC UNAV	TIS-A option: Traffic data is unavailable.	No immediate action. See and avoid traffic.
C	✓	✓	✓		✓	✓	✓	TRFC RMVD AGE 00:13	TIS-A option: Traffic was removed. The PFD does not display the AGE	No immediate action. See and avoid traffic.
C						✓	✓	TRFC FAIL	TIS-A option: Traffic sensor failure.	No immediate action. See and avoid traffic.
C		✓	✓					UAT LINK	ADS-B OUT: The UAT link has failed	No immediate action.
C		✓	✓					UAT POS	ADS-B OUT: The UAT position source has failed	No immediate action.
C		✓	✓					UAT FAIL	ADS-B OUT: The UAT transmitter has failed.	No immediate action.
C						✓	✓	FAIL	Stormscope Option: Sensor has failed.	No immediate action. Use an alternate means to detect thunderstorms.
C						✓	✓	ERROR	Stormscope Option: Sensor has failed.	No immediate action. Use an alternate means to detect thunderstorms.

Warning W Caution C Advisory A

	Applies to:							Annunciation	Description	Pilot Action
	EFD 1000 PFD PRO C3	EFD 1000 PFD PRO	EFD 1000 VFR	EFD 1000 PFD PILOT	EFD 1000 MFD REV	EFD 1000 MFD	EFD 500 MFD			
C	✓	✓	✓	✓	✓	✓	✓		Annunciation presented in the menus when the connected EFD battery is not detected or failed	No immediate action. The EFD display will not be available in the event of an aircraft power loss. If the MFD is used for backup altimeter and/or airspeed indicator, takeoff is not authorized. See Section 2.3.
A	✓	✓	✓		✓				GPSS is operational	No action. GPSS can be used if desired.
A	✓	✓	✓		✓	✓			GPS annunciations that are provided by the GPS source. TERM can also be displayed in the same location as APPR.	No action. See the GPS AFMS for additional information on the meaning of these annunciations.
A		✓	✓						When this message is displayed, the PFD is the UAT controller.	Press MENU to access the page to change the Code or to IDENT.
A	✓	✓	✓		✓	✓	✓		Green annunciation that indicates that the traffic sensor is enabled.	No action. See and avoid traffic.
A						✓	✓		Green annunciation that indicates that the traffic sensor is in standby.	No action. See and avoid traffic.

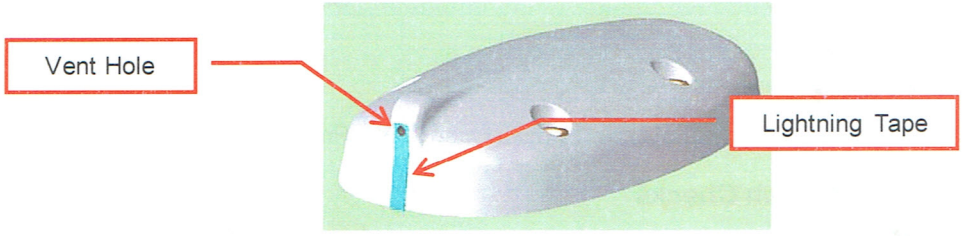
Warning W Caution C Advisory A

	Applies to:							Annunciation	Description	Pilot Action
	EFD 1000 PFD PRO C3	EFD 1000 PFD PRO	EFD 1000 VFR	EFD 1000 PFD PILOT	EFD 1000 MFD REV	EFD 1000 MFD	EFD 500 MFD			
A						✓	✓	DATABASE FAIL	Database Failure	No action. Functions that require a database are not available. See Table 1.
A						✓	✓	MAP LOADING...	The Database for the NAV Map is loading	No action. Not all the available data on the NAV Map is displayed yet.
A						✓	✓	OWNSHIP NOT AVAILABLE	Charts Option: The ownship cannot be displayed.	No action.
A						✓	✓	OWNSHIP OFF CHART	Charts Option: The ownship is off the chart.	No action.
A		✓			✓	✓	✓	SV UNAVAILABLE : ADAHRS FAIL	Synthetic Vision Option: Failed	No action
A		✓			✓	✓	✓	SV POSITION INVALID	Synthetic Vision Option: Failed	No action
A		✓			✓	✓	✓	DATABASE FAIL	Synthetic Vision Option: Failed	No action
A		✓			✓	✓	✓	DATABASE INIT	Synthetic Vision Option: Not yet operational	No action
A		✓			✓	✓	✓	SV DATABASE UNAVAILABLE	Synthetic Vision Option: Failed	No action
A		✓			✓	✓	✓	SV LOADING...	Synthetic Vision Option: Not yet operational	No action
A		✓			✓	✓	✓	MAP LOADING...	Synthetic Vision Option: Not yet operational	No action

4 Normal Procedures

4.1 Exterior Inspection

1. RSM ..... Check for condition and security
2. RSM Vent Hole ..... Check Clear of obstructions
3. RSM Lightning Tape ..... Check for condition and security



4.2 Before Take-Off Checks

1. PFD ..... Configure for departure

If an EFD1000 MFD with EBB is installed in lieu of a backup altimeter and/or airspeed indicator (see Table 2), perform the following:

1. EBB Switch ..... NORM
2. MENU ..... Select POWER SETTINGS page
3. EXT PWR: (Aircraft Input Voltage) ..... Check > 12.3V/24.6V
4. BAT ..... Verify battery status is not shown as "FAIL"
5. EFD1000 MFD ..... Select "BATTERY"
6. EFD1000 MFD ..... Verify battery charge is above 80%
7. EFD1000 MFD ..... Select EXT PWR

   MENU ..... Press the MENU button to return to normal operation

   EFD1000 MFD ..... Select REV then press XFILL. The MFD must be operated in the PFD reversion mode for takeoff.

Except as instructed in Section 3.2.2, the EBB switch should be left in the NORM position at all times, including when away from the aircraft.

4.3 Altitude Preselector

1. Altitude Alerter ..... Set as desired
2. PRESEL ..... Press for ARMED

To deselect:

3. PRESEL ..... Press to Disarm

5 Performance

There is no change to the airplane performance.

7 Systems Description

The following paragraphs describe the evaluation flight display and the optional interfaces shown in Table 1.

7.1 Evolution Flight Display

The Evolution Flight Display System consists of one or more integrated Electronic Flight Display (EFD1000 or EFD500) systems. The EFD1000 system can be configured as a Primary Flight Display (PFD) or as a multi-function display (MFD). The EFD500 system can be configured as an MFD only.

7.1.1 Internal Battery

The EFD1000 and EFD500 contain internal batteries which provide for continued operation for approximately 30 minutes (at a full charge and a shirt-sleeve environment) in the event of a complete loss of electrical power to the systems.

7.1.2 Emergency Backup Battery (EBB)

The EBB is an external rechargeable battery for the EFD1000 MFD. This is a larger battery that will provide at least 30 minutes operation (at 80% charge) in the event of complete loss of electrical power.

7.2 Databases

The following table provides information regarding the databases in the EFD.

Database Type	Includes	Update Cycle	Used In	Database Provider	Comment
Terrain	High resolution terrain data for Americas, International, or Worldwide geographic regions. Terrain depiction is limited to the region between 65° North latitude to 65° South latitude	Delivered with the EFD, updated intermittently as announced by Jeppesen	Synthetic Vision, Nav Maps and Terrain Maps	Jeppesen mail order	These databases are not to be used for navigation.
NavData	Includes Navaids, Controlled Airspace, Restricted, Prohibited and Special Use Airspace, Airports, etc.	28 day update cycle	Synthetic Vision and Nav Maps	Jeppesen JSUM©	
Cultural	Includes Roads, Rivers, Railroads, Political boundaries, Cities, etc.	28 day update cycle	Synthetic Vision and Nav Maps	Jeppesen JSUM©	
Obstacles	Includes man made obstacles greater than 200 ft. AGL. This database relies upon data reported by government agencies and may not include all obstacles due to inherent reporting and processing delays in the data. In addition, obstacle data may not be available for all regions within the data card coverage area.	28 day update cycle	Synthetic Vision and Nav Maps and Terrain maps	Jeppesen JSUM©	
Charts	AeroNav Terminal Procedures Charts	28 day update cycle	Terminal Procedures and Airport Diagrams	Seattle Avionics	

Table 5 – Databases

ownship on geo-reference instrument approach procedures and airport diagrams. The ownship is only available for display on the airport diagram when the aircraft is on the ground.

The ownship position is centered at the intersection of the wings and fuselage.

The Terminal Procedures Charts require a database.

Only Geo-referenced charts are eligible for ownship depiction.

7.9 NAV and Terrain Maps

The PFD and MFD both support a moving map.

The PFD moving map is integrated into the navigation display on the bottom-half of the PFD.

The MFD moving map is a dedicated view that displays NAVAIDs, Controlled Airspace, Restricted, Prohibited and Special Use Airspace, Airports, etc.

The terrain and obstacle data can be displayed on the moving map or as a dedicated view on the MFD. The dedicated view is titled TERR. The terrain and obstacle data is advisory only.

The terrain and obstacle data is colorized information based on the aircraft's proximity to terrain and obstacles. The aircraft's proximity to terrain and obstacles is determined by computing the altitude difference between the terrain and obstacles in the database and the aircraft's baro-corrected altitude.

The MFD Nav and Terrain maps require a database. The PFD moving map does not require a database.

7.10 EA100 Autopilot AHRS

The EA100 provides pitch and roll signals information to the autopilot.

7.11 Synthetic Vision and Terrain Warning System

The PFD and MFD can both support the display of Synthetic Vision. The display of the Synthetic Vision depiction is advisory only.

The Synthetic Vision depiction is a computer-derived perspective view of the nearby terrain obstacles and airports. The Synthetic Vision depiction supports a flight path marker to display the vertical and lateral path of the aircraft based. The Synthetic Vision depiction also supports a Terrain Warning System (TWS) that uses the flight path marker to present an estimated time-to-collision function for terrain and obstacles. Unless inhibited by the pilot, TWS operates even when Synthetic Vision is turned off.

The MFD Nav and Terrain maps require a database.

7.12 Connected Gateway

The Connected Gateway provides a means to communicate flight plan information from a portable device to the navigation system.

7.13 Radar Altitude

When installed and configured. Radar Altitude information can be presented on the PFD. When the height exceeds the Radar Altitude maximum height, the indication is suppressed. When the Radar Altitude is at or below the maximum height, the Radar Altitude is shown as a number marked RA on the PFD.