CHAPTER - 34 HIGHLIGHTS
(Summary of Changes)

Revision No. TR34-15 Jun 26/18

TO: HOLDERS OF THE AIRCRAFT MAINTENANCE MANUAL (06-117751)

Pages that have been added or revised are summarized below. Remove and insert the affected pages as listed, and enter the above revision number with issue date into the Record of Revisions sheet.

This Temporary Revision incorporates and supersedes previously released temporary revisions for the chapters listed below.

Do not remove this page. Keep it in place as a record of previous changes.

CH/SE/SU Page Block No.	Description of Change
34-50-10 PgBlk 1 (B)	Revised Effectivity (ALL POST MB 500-31-018). Revised Description.
34-50-10 PgBlk 201 (A)	Revised Effectivity (ALL POST MB 500-31-018). Updated for ADS-B Out – Config A.
34-50-10 PgBlk 201 (B)	Added GPS 3 (GDL 88) Maintenance Practices – Config B.
34-50-10 PgBlk 501 (C)	Adjustment/Test for GPS Units – Config C
34-50-11 PgBlk 401-Rem (C)	Added GPS 3 (GDL 88) Unit Removal procedure.
34-50-11 PgBlk 401-Inst (B)	Revised Effectivity (ALL POST MB 500-31-018) and Job Close-Up.
34-50-11 PgBlk 401-Inst (C)	Added GPS 3 Unit Installation procedure.
34-50-13 PgBlk 401-Rem	Added GPS 3 Mount Removal procedure.
34-50-13 PgBlk 401-Inst	Added GPS 3 Mount Installation procedure.
34-50-14 PgBlk 401-Rem	Added GPS 2 Antenna Splitter Removal procedure.
34-50-14 PgBlk 401-Inst	Added GPS 2 Antenna Splitter Installation procedure.
34-50-20 PgBlk 201	Added Transponder – Maintenance Practices

CH/SE/SU Page Block No.	Description of Change
34-50-20 PgBlk 501 (C)	Added Transponder Adjustment/Test for ADS-B Out. - Config C.
34-50-21 PgBlk 1	Added ADS-B Out with GPS 3 – Description and Operation.
34-50-21 PgBlk 401-Inst	Revised Job Set-Up.
34-50-26 PgBlk 401-Rem	Added ADS-B Fail Indicator Removal procedure.
34-50-26 PgBlk 401-Inst	Added ADS-B Fail Indicator Installation procedure.

GPS - DESCRIPTION AND OPERATION

AMM-34-50-10-081-B-801

1. Introduction

A. Global Positioning System/Wide Area Augmentation System (GPS/WAAS) is a U.S. satellite-based navigational, positioning and time transfer system operated by the Department of Defense (DOD). The GPS system provides highly accurate position and velocity information and precise time on a continuous global basis to an unlimited number of properly-equipped users. The system is unaffected by weather and provides a worldwide common grid reference system based on a world fixed coordinate system.

GPS operation is based on the concept of ranging and triangulation from a group of 24 satellites in space which act as precise reference points. A minimum of five satellites are always observable by a user anywhere on earth. A GPS receiver measures distance from a satellite using the travel time of a radio signal. The GPS receiver needs at least four satellites to yield a three-dimensional position (latitude, longitude and altitude). It also yields time solutions for navigational values such as distance and bearing to a way point and ground speed.

B. The GPS system is made up of the components that follow, refer to Fig. 1.

- Two GPS antennas (Combination Antennas)
- Two GPS 400W units

C. Garmin GPS 400W

(1) The GPS 400W has an internal GPS receiver, a 240 by 128 pixel color LCD display and a re-moveable data card containing a Jeppesen data base. It presents an active flight plan and moving map on its display and provides guidance and status display on its LCD and outputs guidance, flight plan and status data to external devices.

(2) The GPS 400W has a WAAS GPS engine that is TSO C146a certified for primary domestic, oceanic and remote navigation including en route, terminal and non-precision approaches and approaches with vertical guidance, such as LPV and LNAV/VNAV (when connected to an antenna of appropriate standard).

(3) The two GPS 400Ws function as autonomous units and can, in principle, have different active flight plans. However a serial data bus interface between two units enables a “cross fill” function that permits the two GPS 400W units to directly communicate and, depending on the crossfill mode selected, to have their active flight plans synchronized continuously or with pilot action. This allows one pilot to build or modify a flight plan on one GPS without affecting active navigation to the other GPS and when, the crew is satisfied, crossfill to synchronize the flight plans in the two units. Alternatively, one crew member can update the active flight plan knowing that the other GPS is continuously reflecting the changes that were made.

2. Description

SUBTASK AMM-34-50-10-081-B-871-001

A. Garmin GPS 400W

(1) The left-side GPS 400W is referred to as “GPS 1” and the right side GPS 400W installed will be called “GPS 2”.

If ADS-B function is installed, both GPS units are configured to output ADS-B OUT GPS position data in the Garmin model GTX33 transponder compatible format. This requires both GPS units to be at a specific software level as noted in the configuration procedures that follow.

NOTE: Only GPS 1 has RS-232 interface with XPDR 1. ADS-B OUT data is then broadcast using XPDR 1 only.

B. Physical Installation

(1) Two GPS 400W units are installed as standard equipment in the location formerly occupied by the left and right keyboard.

(2) The aft combo antenna is connected to the right GPS 400W (“GPS 2”) and the forward combo antenna is connected to the left GPS 400W (“GPS 1”).

3. Operation

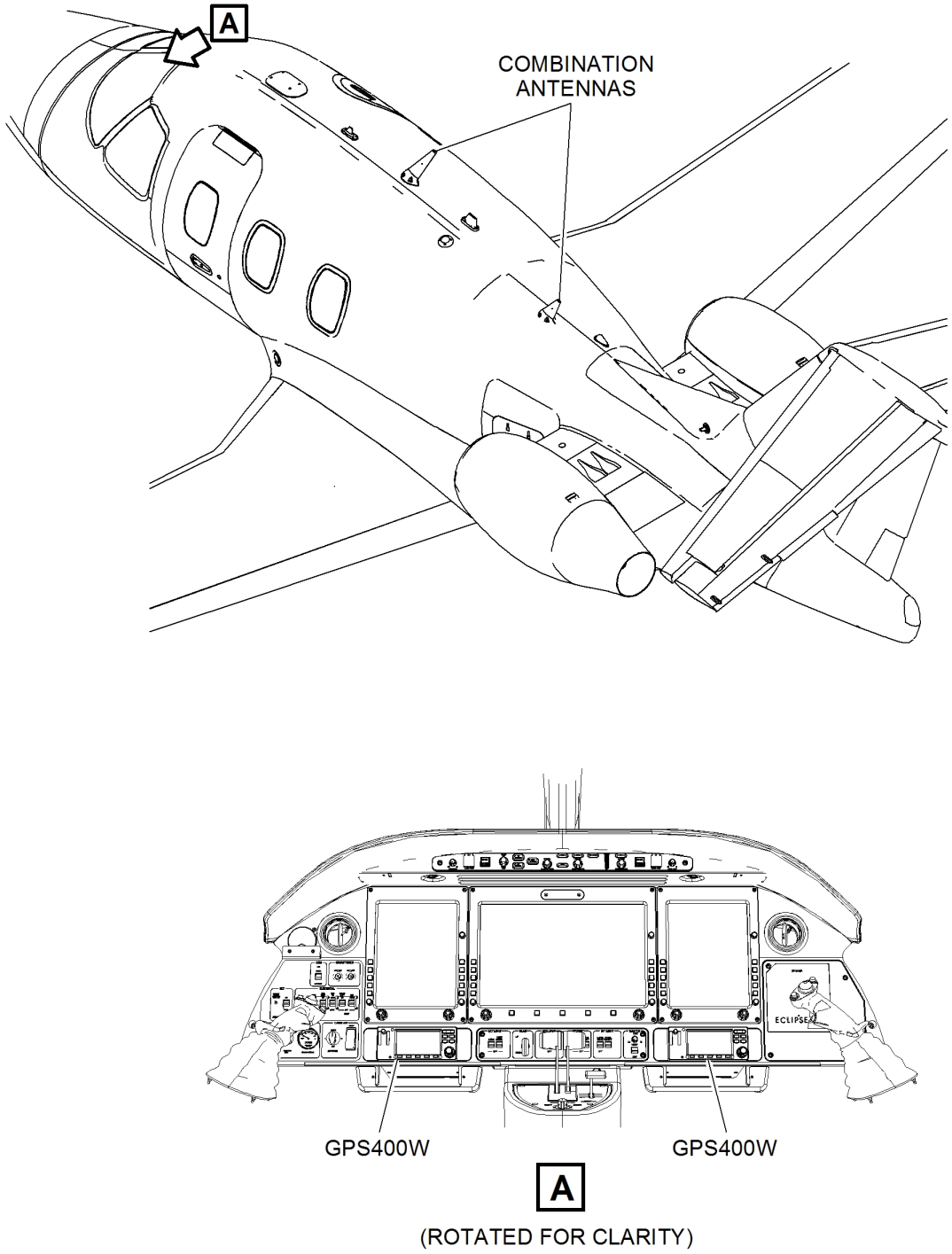
SUBTASK AMM-34-50-10-081-B-871-002

NOTE: Refer to AMM-34-50-10-051-A-801 – GPS - Maintenance Practices for general operating information and instructions for configuring the unit to the aircraft.

A. Two GPS antennas (Combination Antennas) and two GPS/WAAS units make up the GPS system on this aircraft. The GPS processes signals from satellites to give the position of the aircraft and to calculate navigation and flight data.

B. GPS 400W Standby Altitude/Airspeed Indication (Standby Indication and Electrical Provisions Package Option)

(1) If the optional Standby Indication and Electrical Provisions Package (i.e., GPS 400W Standby Altitude/Airspeed Indication) is installed, then an additional and independent display of altitude and airspeed is provided. The Left GPS 400W will display "IND ALT" and "CAS", actually KEAS as provided by ADC 3 through the ACS. The ADC3 data is displayed on the Left GPS 400W AUX page group, Flight Planning page, Density Alt / TAS / Winds selection.



GPS — Combination Antenna Location
Figure 1 (Sheet 1 of 1)

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GPS - MAINTENANCE PRACTICES

AMM-34-50-10-051-A-801

1. General

A. The purpose of this task is to provide instructions for configuring the GPS 400W for use on the Eclipse Model 500 aircraft.

B. If ADS-B OUT is installed, GPS software must be at least at the following level:

SW P/N 006-B1144-23 Main SW v5.03

SW P/N 006-B0803-20 GPS WAAS SW v5.0.

NOTE: As applicable, make sure that the GPS software is in same configuration as it was when the removal task was completed. If necessary, update GPS software to the required level.

2. Equipment and Materials

Table 201. Special Tools and Equipment

Name and Part Number
Ground Power Unit (GPU) (AllStar 450, AllStar G.S.E., Hobart GPU-400, Hobart GPU- 600, or Bycan PS-28100)
Weight-on-Wheels (WOW) Box (EAI, 87-117390-1001) or AMC 2.4.01 (or higher).

3. Job Set-Up

SUBTASK AMM-34-50-10-051-A-921-001

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

B. Connect the ground power cart to electrical utility connector. Connect the ground power cart to the aircraft EXTERNAL POWER RECEPTACLE and turn on power on the cart. Ensure the green EXT POWER light on the IPL is on. But do not turn on aircraft's power. Refer to AMM-24-40-00-051-801 – External Power - Maintenance Practices.

C. Connect Weight On Wheels (WOW) box or Aircraft Maintenance Computer (AMC) and set to W-On-W for start of test. Refer to AMM-20-00-04-051-801 – Weight On Wheels (WOW) Box - Connect/Disconnect.

D. On the IPL set the SYS BATT and START BATT switches to the ON (up) position and BUS TIE to AUTO (up) position. On the right side of the MFD, press the PROCEED soft key. Clear any "MASTER CAUTIONS" and "MASTER WARNINGS" as needed.

E. On the ECB AVIONICS synoptic page. Make sure the following ECBs are AUTO-ON:

- ECB - GPS 1 (R FWD Bus) or
- ECB - GPS 2 (L FWD Bus)

F. Make sure the following circuit breakers in the pilot's and co-pilot's armrest (Com-Jack Panels) are engaged:

- MECHANICAL CIRCUIT BREAKER - CIRCUIT BREAKER BOX LEFT, XPDR1/GPS1 (or) MECHANICAL CIRCUIT BREAKER - CIRCUIT BREAKER BOX LEFT, XPDR1/GPS1/ATT3
- MECHANICAL CIRCUIT BREAKER - CIRCUIT BREAKER BOX RIGHT, XPDR2/GPS2

4. General Operating Information

SUBTASK AMM-34-50-10-051-A-701-001

(Refer to Fig. 201.)

A. Power

(1) Each GPS 400W has its own power knob in the upper left corner. The power knob has an on/off detent; the range of knob rotation clockwise from the detent has no effect on operation. This power control is in series with aircraft power.

B. Menus

(1) In normal operating mode, the lower right corner of the display indicates the current page group and page. The large right knob may be used to change page group among NAV, WPT, AUX, and NRST, while the small right knob may be used to select a page within the page group. Other page groups are available via dedicated keys: DRCT, MSG, FPL and PROC. The NAV page group may be accessed directly by pressing and holding CLR.

C. Entering or Changing Data

(1) In most cases, entering data or changing a parameter or selection requires a cursor, represented by an inverse flashing block. The cursor is turned on when the small right knob is pressed. When the cursor is on, the large right knob generally changes moves the cursor from field to field and the small right knob generally changes data or selections. The cursor may be dismissed by pressing the small right knob again (although more than one small right knob press may be required if more than one selection level deep).

(2) Data entry is usually committed using ENT, or cancelled using the CLR.

5. Procedure

SUBTASK AMM-34-50-10-051-A-701-002

NOTE: This configuration procedure is for one GPS 400W unit. However, both installed GPS 400W units must be configured. Differences in the configuration of the left and right GPS 400W units are indicated in the procedure.

A. Power On and Reset GPS 400W.

CAUTION: HANDLE THE DATA CARDS CAREFULLY. DO NOT TOUCH THE CONNECTOR EDGE OF THE DATA CARD. DO NOT INSTALL OR REMOVE A DATA CARD WHILE THE GPS 400W IS ON.

(1) Make sure the GPS 400W has the Nav Database (left slot) and Terrain Database (right slot) data cards installed. The Nav Database data card is labeled IFRW, and the Terrain Database card is labeled TAWS/TERRAIN DATA. Database cards should be installed with the label facing left.

(2) Rotate the GPS 400W power knob fully counter-clockwise past the detent to the off position.

(3) Make sure aircraft is safe for power.

(4) On the Left Instrument Panel, set START BATT, BUS TIE, and SYS BATT switches to ON. Clear any “MASTER CAUTIONS” and “MASTER WARNINGS” as needed.

(5) On the ECB AVIONICS synoptic page, ensure ECB - GPS 1 (L FWD Bus) and ECB - GPS 2 (R FWD Bus) are AUTO/ON. Make sure the circuit breakers in the pilot’s and co-pilot’s armrest (Com-Jack Panels) MECHANICAL CIRCUIT BREAKER - CIRCUIT BREAKER BOX LEFT, XPDR1/GPS1 (or) MECHANICAL CIRCUIT BREAKER - CIRCUIT BREAKER BOX LEFT, XPDR1/GPS1/ATT3 and MECHANICAL CIRCUIT BREAKER - CIRCUIT BREAKER BOX RIGHT, XPDR2/ GPS2 are engaged.

(6) While pressing CLR, rotate the GPS 400W power knob clockwise past the detent to the ON position. Continue to hold CLR until the display comes on. Pressing and holding CLR while powering on the GPS 400W gives the option to reset the GPS 400W to its default configuration.

(7) The GPS 400W will display the following:

- “INITIALIZING SYSTEM”
- “DO YOU WANT TO CLEAR USER SETTINGS”
- “?”
- “PRESS CLR FOR NO AND ENT FOR YES”
- “NO ASSUMED IN x SECONDS”

(8) Press ENT within ten seconds of the appearance of the display shown in step 7.

(9) The GPS 400W will display the following:

- “CLEARING USER SETTINGS”

  (followed by the following display)

- “CONTINUING IN x SECONDS”

(10) After approximately one minute, the GPS 400W will start Self Test. Several screens of information will be displayed. When a flashing OK? is displayed, press ENT.

(11) The INSTRUMENT PANEL SELF-TEST screen is displayed, with a flashing OK?. Press ENT.

(12) Rotate the GPS 400W power knob fully counter-clockwise, past the detent to the OFF position. Wait for GPS 400W screen to go off.

B. Enter Configuration Mode.

(1) While pressing ENT, rotate the GPS 400W power knob clockwise past the detent to the on position. Continue to hold ENT until the display comes on. Pressing and holding ENT while powering on the GPS 400W places the unit in configuration mode.

(2) After powering on, the GPS 400W will start Self Test. Several screens of information will be displayed. When a flashing OK? is displayed, press ENT.

(3) The INSTRUMENT PANEL SELF-TEST screen is displayed, with a flashing OK?. Press ENT.

(4) MAIN ARINC 429 CONFIG screen should be displayed. If it is not, rotate the power knob to the off position, wait for the unit to power off, and repeat section B.

C. Configure ARINC 429 Interfaces.

(1) ARINC 429 interface configuration is performed on the MAIN ARINC 429 CONFIG page. Different configuration screens may be selected using the small right knob while in configuration mode.

(2) While on the MAIN ARINC 429 CONFIG screen, press the small right knob to turn on the cursor. The cursor may be moved to different fields by rotating the large right knob.

(3) With the cursor at the IN 1 / SPEED field, rotate the small right knob to select Low. Press ENT.

(4) With the cursor at the IN 1 / DATA field, rotate the small right knob to select EFIS / Airdata Press ENT. For aircraft configured for (Standby Indication and Electrical Provisions Package option), on the L GPS400W select Off. Press ENT.

- For left GPS 400W on aircraft NOT configured for (Standby Indication and Electrical Provisions Package option), rotate the small right knob to select EFIS / Airdata. Press ENT. If the EFIS / Airdata selection is grayed out (not selectable), select OFF and return to this field to select EFIS / Airdata after other fields on the page have been configured
- For the Right GPS 400W, regardless of configuration, rotate the small right knob to select EFIS / Airdata. Press ENT. If the EFIS / Airdata selection is grayed out

(not selectable), select OFF and return to this field to select EFIS / Airdata after other fields on the page have been configured.

NOTE: Note 1 in Fig. 202. For left GPS 400W, on aircraft configured for (Standby Indication and Electrical Provisions Package option), enter: “Off”; for aircraft NOT configured for (Standby Indication and Electrical Provisions Package option) or right GPS 400W, enter: “EFIS / Airdata”. Example shows left GPS 400W on aircraft not configured for European operations.

(5) In this same manner, set IN 2 / SPEED to Low, IN 2 / DATA to Off, OUT / SPEED to High, and OUT / DATA to GAMA 429 Grph w/ Int.

(6) Set SDI to Common and VNAV to Enable Labels.

(7) The MAIN ARINC 429 CONFIG screen settings should now match the settings in Fig. 202.

(8) Press the small right knob to dismiss the cursor. The small right knob may now be rotated to select other configuration screens.

D. Configure RS-232 Interfaces.

(1) Determine whether the aircraft has the Stormscope option installed. This will be indicated by the LIGHTNING STRIKE DETECTION option being displayed on the MFD or PFD INSTALLED EQUIPMENT list. The INSTALLED EQUIPMENT list may be accessed on the MFD or PFD via the SETUP tab, selecting SETTINGS, then selecting INSTALLED EQUIPMENT.

(2) On the GPS 400W, rotate small right knob to select MAIN RS232 CONFIG page.

(3) Press the small right knob to turn on the cursor.

(4) Using the large right knob to select fields as necessary, the small right knob to make selections, and ENT to confirm selections, set up the RS-232 configuration as shown in Fig. 203.

(a) Use the following settings for CHNL 2 INPUT:

1 “Off” for left GPS 400W on aircraft NOT configured for the (Standby Indication and Electrical Provisions Package option).

2 “Shadin-adc” ("In" only; "out" is "off") for left GPS 400W on aircraft configured for the (Standby Indication and Electrical Provisions Package option). Refer to Fig. 221 for example of modification.

3 “Off” for right GPS 400W regardless of configuration.

(b) If ADS-B OUT is installed, use the following settings for CHNL 2 OUTPUT:
CHNL 2/OUTPUT = ADS-B OUT+

NOTE: For this configuration selection to be available, GPS software must be at least at the following level:
SW P/N 006-B1144-23 Main SW v5.03
SW P/N 006-B0803-20 GPS WAAS SW v5.0.

NOTE: If applicable, make sure that the GPS software is in same configuration as it was when the removal task was completed. If necessary, update GPS software to the required level.

(c) Use the following settings for CHNL 4 INPUT and OUTPUT:

1 “WX-500” for left GPS 400W on Stormscope-equipped aircraft (INPUT and OUTPUT).

2 “Off” for left GPS 400W on aircraft not equipped with Stormscope (INPUT and OUTPUT).

3 “Off” for right GPS 400W regardless of Stormscope installation (INPUT and OUTPUT).

NOTE: Note 1 in Fig. 203. For left GPS 400W, and Stormscope equipped aircraft, enter: “WX-500” ; for non- Stormscope equipped aircraft or right GPS 400W, enter: “Off”. Example shows Left GPS 400W with a Stormscope installed.

NOTE: Note 2 in Fig. 203. For left GPS 400W, on aircraft configured for (Standby Indication and Electrical Provisions Package option), enter: “Shadin-adc”; for aircraft NOT configured for (Standby Indication and Electrical Provisions Package option) or right GPS 400W, enter: “Off”. Example shows left GPS 400W on aircraft NOT configured for (Standby Indication and Electrical Provisions Package option).

(5) If a cursor is still displayed, press the small right knob to dismiss it.

E. Configure Main System Configuration Items.

(1) Rotate small right knob to select MAIN SYSTEM CONFIG page.

(2) Press the small right knob to turn on the cursor.

(3) With the cursor at the CONFIGURE field, rotate the small right knob to select Fuel. Press ENT.

(4) With the cursor at the FUEL TYPE field, rotate the small right knob to select Jet A. Press ENT.

(5) The MAIN SYSTEM CONFIG – Fuel screen settings should now match the data entered in Fig. 204.

(6) Rotate the large right knob to place the cursor in the CONFIGURE field. Rotate the small right knob to select Terrain. Press ENT.

(7) With the cursor at the TERRAIN TYPE field, rotate the small right knob to select NONE. Press ENT.

(8) Rotate the large right knob to place the cursor on TEST CARD?. Press ENT. The TEST CARD? field will display Testing… and the percent counter will count up to 100%.

- If the TEST CARD? field displays No Card or something other than PASS after the percent counter reaches 100%, power off the GPS 400W and check installation and seating of the Terrain Database card. Restart this procedure from section B.

CAUTION: HANDLE THE DATA CARDS CAREFULLY. DO NOT TOUCH THE CONNECTOR EDGE OF THE DATA CARD. DO NOT INSTALL OR REMOVE A DATA CARD WHILE THE GPS 400W IS ON.

(9) The MAIN SYSTEM CONFIG – Terrain screen settings should now match the data entered in Fig. 205.

(10) Rotate the large right knob to place the cursor in the CONFIGURE field. Rotate the small right knob to select Discretes. Press ENT.

(11) With the cursor at the GPS SELECT field, rotate the small right knob to select Auto. Press ENT.

(12) The MAIN SYSTEM CONFIG – Discretes screen settings should now match the data entered in Fig. 206.

(13) If a cursor is still displayed, press the small right knob to dismiss it.

F. Check Inputs from PFD.

(1) Rotate small right knob to select MAIN INPUTS 1 page.

(2) Verify data displayed on MAIN INPUTS 1 screen is per notes in Fig. 207.

- Note 1 matches heading displayed on same-side PFD
- Note 2 matches OAT displayed on same-side PFD
- Note 3 within 10 ft of altitude displayed on same-side PFD

(3) Any discrepancy in the values as described by the notes indicates the GPS 400W was not configured correctly in previous steps, or there is a communication problem between the PFD and the GPS 400W. This should be resolved before proceeding with the remaining procedures.

G. Configure Backlighting.

(1) Rotate small right knob to select MAIN LIGHTING page.

(2) Press the small right knob to turn on the cursor.

(3) Using the large right knob to select fields as necessary, the small right knob to make selections and enter values, and ENT to confirm selections, set up the MAIN LIGHTING configuration as shown in Fig. 208.

H. Configure Antenna Offset

(1) Rotate small right knob to select GPS VERTICAL OFFSET page.

(2) Press the small right knob to turn on the cursor.

(3) Turn small right knob to select value of 6.0 feet as shown in Fig. 209.

(4) If a cursor is still displayed, press the small right knob to dismiss it.

I. Check Inputs From Stormscope (Option).

NOTE: This step applies to the Stormscope option and to the left GPS 400W only. Skip this step if these conditions do not apply.

(1) Rotate small right knob to select STORMSCOPE CONFIG page.

(2) Verify communication with Stormscope by confirming STORMSCOPE CONFIG page appears as shown in Fig. 210. If page appears different from Fig. 210, re-check settings in section C., and Stormscope installation and communication.

J. Configure User Settings on AUX Pages.

(1) Rotate the GPS 400W power knob fully counter-clockwise, past the detent to the off position. Wait for GPS 400W screen to go off, then rotate the power knob clockwise past the detent to the on position.

(2) After powering on, the GPS 400W will start Self Test. Several screens of information will be displayed. When a flashing OK? is displayed, press ENT.

(3) The INSTRUMENT PANEL SELF-TEST screen is displayed, with a flashing OK?. Press ENT.

(4) A page from the NAV page group will be displayed (either the Map page or the Satellite Status page). Rotate the large right knob until the AUX page group indication is displayed in the lower right corner of the GPS 400W display. Refer to Fig. 211, Sheet 1 (Figure 2).

(5) While on the first page of the AUX page group, press the small right knob to turn on the cursor. Rotate the large right knob to select Crossfill and press ENT.

(6) Using the large right knob to select fields as necessary, the small right knob to make selections, and ENT to confirm selections, set up the CROSSFILL configuration as shown in Fig. 211, Sheet 2.

(7) Press the small right knob to return to the first AUX page after CROSSFILL configuration is set. Press the small right knob again to dismiss the cursor on AUX page 1.

(8) Rotate the small right knob to select the third page of the AUX page group (SETUP 1).

(9) While on the SETUP 1 page, press the small right knob to turn on the cursor. Press ENT to select Airspace Alarms.

(10) Using the large right knob to select fields as necessary, the small right knob to make selections and enter values, and ENT to confirm selections, set up the AIRSPACE ALARMS configuration as shown in Fig. 212.

(11) Press the small right knob to return to the SETUP 1 page after AIRSPACE ALARMS configuration is set.

(12) Rotate the large right knob to select CDI / Alarms and press ENT.

(13) Using the large right knob to select fields as necessary, the small right knob to make selections and enter values, and ENT to confirm selections, set up the CDI / ALARMS configuration as shown in Fig. 213.

(14) Press the small right knob to return to the SETUP 1 page after CDI / ALARMS configuration is set.

(15) Rotate the large right knob to select Units / Mag Var and press ENT.

(16) Using the large right knob to select fields as necessary, the small right knob to make selections, and ENT to confirm selections, set up the UNITS / MAG VAR configuration as shown in Fig. 214.

(17) Press the small right knob to return to the SETUP 1 page after UNITS / MAG VAR configuration is set.

(18) Rotate the large right knob to select Position / Map Datum and press ENT.

(19) Using the large right knob to select fields as necessary, the small right knob to make selections, and ENT to confirm selections, set up the POSITION FORMAT / MAP DATUM configuration as shown in Fig. 215.

(20) Press the small right knob to return to the SETUP 1 page after POSITION FORMAT / MAP DATUM configuration is set.

(21) Rotate the large right knob to select Date / Time and press ENT.

(22) Using the large right knob to select fields as necessary, the small right knob to make selections and enter values, and ENT to confirm selections, set up the DATE / TIME configuration as shown in Fig. 216.

(23) Press the small right knob to return to the SETUP 1 page after DATE / TIME configuration is set. Press the small right knob again to dismiss the cursor on SETUP 1.

(24) Rotate the small right knob to select the fourth page of the AUX page group (SETUP 2).

(25) While on the third page of the SETUP 2 page, press the small right knob to turn on the cursor. Press ENT to select DISPLAY.

(26) Using the large right knob to select fields as necessary, the small right knob to make selections and enter values, and ENT to confirm selections, set up the DISPLAY configuration as shown in Fig. 217.

(27) Press the small right knob to return to the SETUP 2 page after DISPLAY configuration is set.

(28) Rotate the large right knob to select Nearest Airport Criteria and press ENT.

(29) Using the large right knob to select fields as necessary, the small right knob to make selections, and ENT to confirm selections, set up the NEAREST AIRPORT CRITERIA as shown in Fig. 218.

(30) Press the small right knob to return to the SETUP 2 page after NEAREST AIRPORT CRITERIA configuration is set.

(31) Rotate the large right knob to select SBAS Selection and press ENT.

(32) Using the large right knob to select fields as necessary, the small right knob to make selections, and ENT to confirm selections, set up the SBAS SELECTION configuration as shown in Fig. 219.

(33) Press the small right knob to return to the SETUP 2 page after SBAS SELECTION configuration is set.

(34) Rotate the large right knob to select Data Field Configuration and press ENT.

(35) Using the large right knob to select fields as necessary, the small right knob to make selections, and ENT to confirm selections, set up the DATA FIELD CONFIGURATION as shown in Fig. 220.

(36) Press the small right knob to return to the SETUP 2 page after DATA FIELD CONFIGURATION configuration is set. Press the small right knob again to dismiss the cursor on SETUP 2.

6. Job Close-Up

SUBTASK AMM-34-50-10-051-A-921-002

A. Power down the GPS 400W units. Rotate the GPS 400W power knob fully counter-clockwise past the detent to the off position.

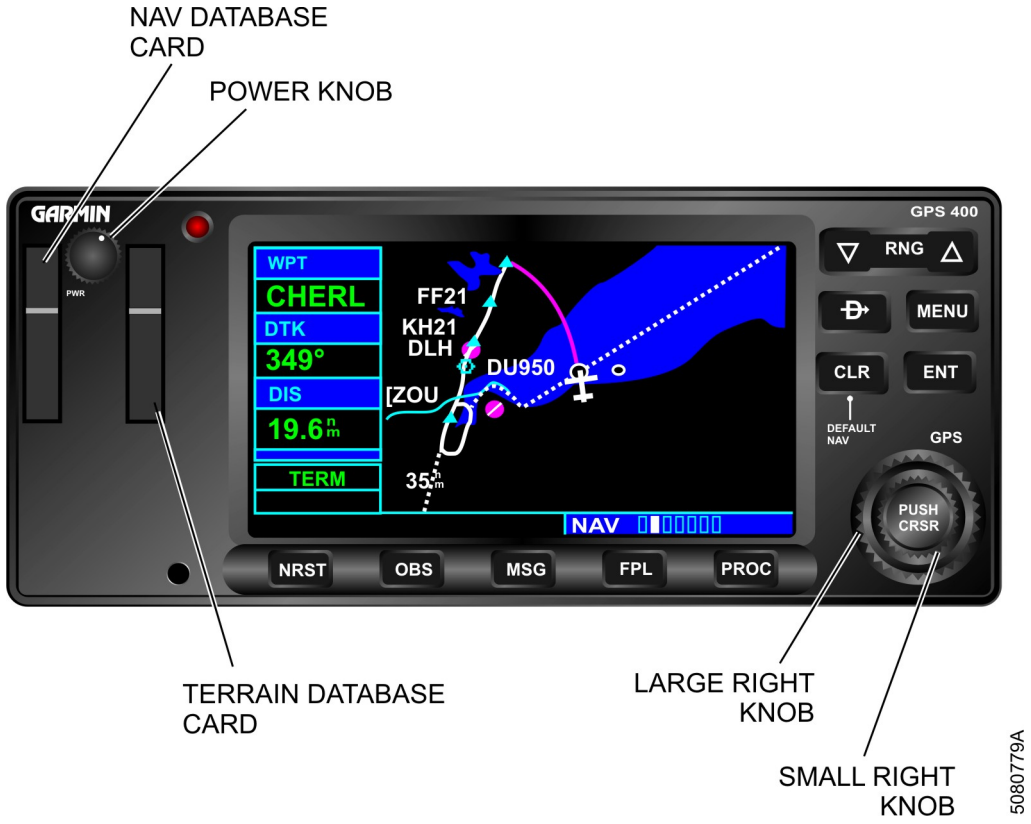
B. Remove all tools, equipment, and unwanted material from work area.

C. If no other work is to be performed, turn off the aircraft power by setting the SYS BATT and START BATT Switches to the OFF (down) position and BUS TIE to OPEN (down) position.

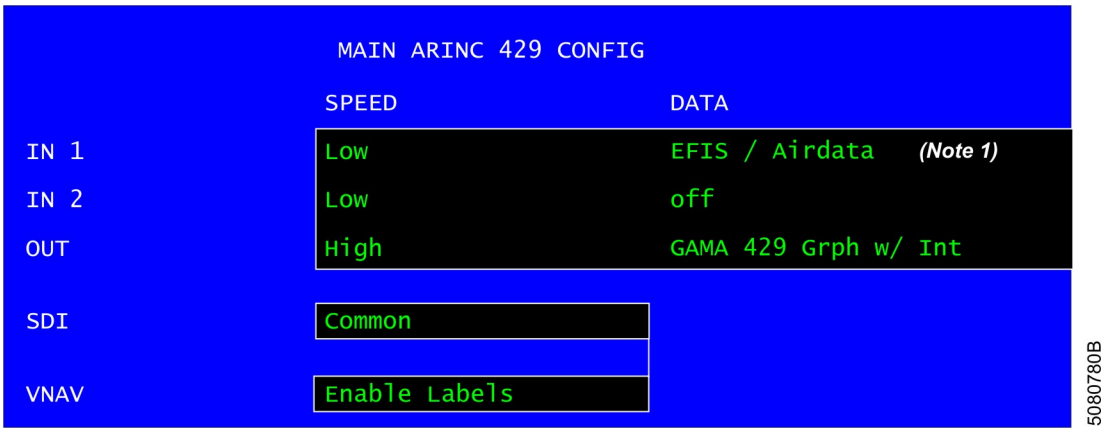
D. If no other requirements for External Power, Power down the GPU. Disconnect the GPU from the aircraft EXTERNAL POWER RECEPTICLE on the aircraft. Disconnect the GPU from the electrical utility connector.

E. If not previously accomplished, disconnect Weight On Wheels (WOW) box or Aircraft Maintenance Computer (AMC). Refer to AMM-20-00-04-051-801 – Weight On Wheels (WOW) Box - Connect/Disconnect.

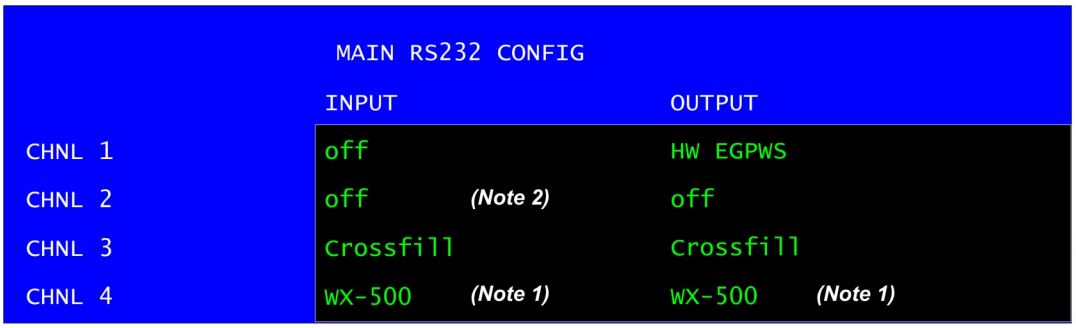
F. If all other maintenance is complete, return aircraft to service. Refer to AMM-20-00-02-051-801 – Return To Service (After Maintenance).



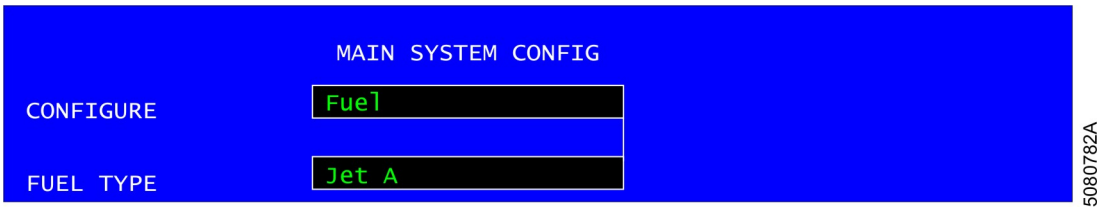
GPS 400W Panel – Layout
Figure 201 (Sheet 1 of 1)



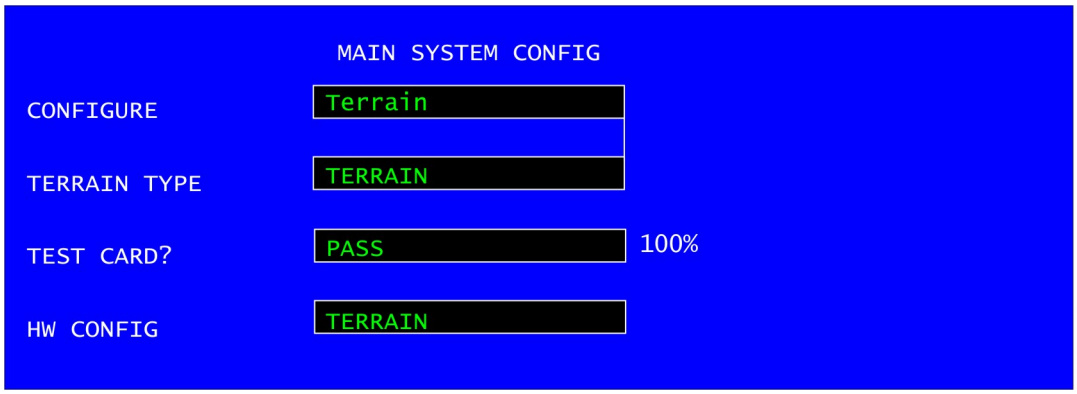
GPS 400W Panel – MAIN ARINC 429 CONFIG Settings
Figure 202 (Sheet 1 of 1)



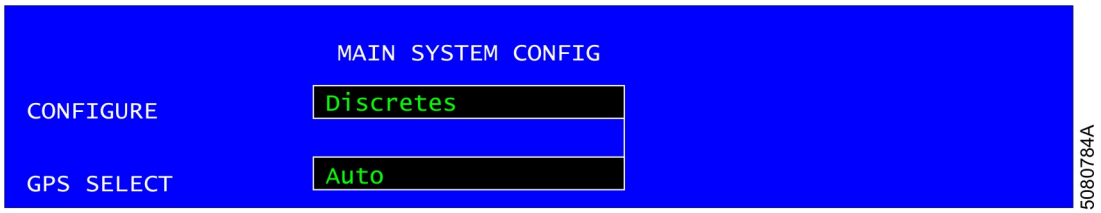
GPS 400W Panel – MAIN RS232 CONFIG Settings
Figure 203 (Sheet 1 of 1)



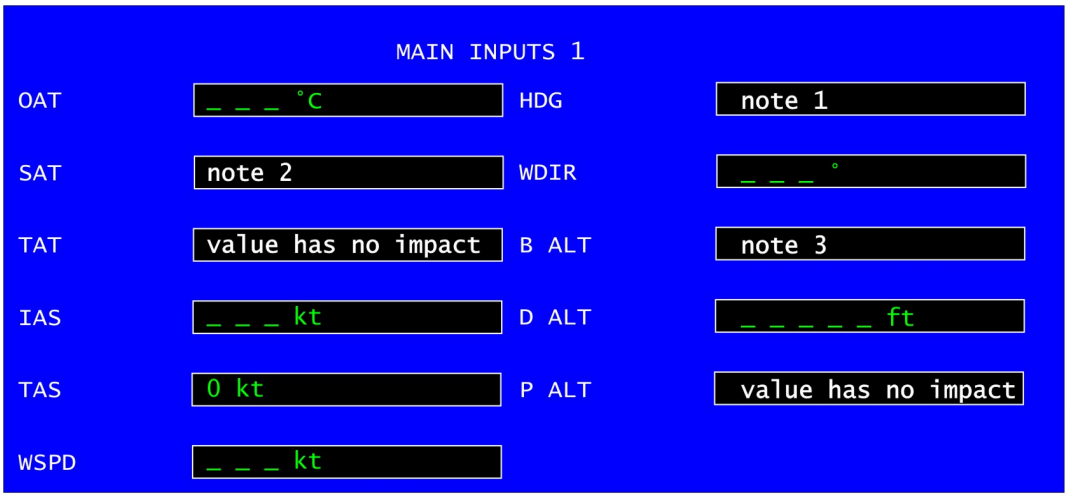
GPS 400W Panel – MAIN SYSTEM CONFIG – Fuel Settings
Figure 204 (Sheet 1 of 1)



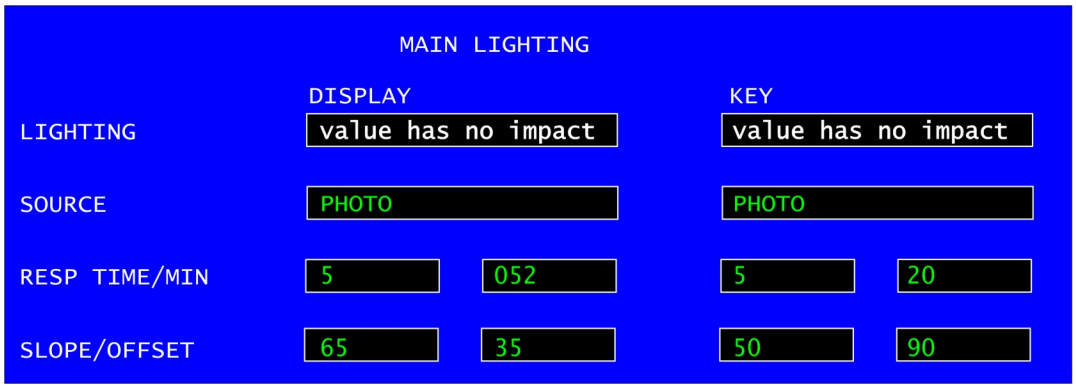
GPS 400W Panel – MAIN SYSTEM CONFIG – Terrain Settings
Figure 205 (Sheet 1 of 1)



GPS 400W Panel – MAIN SYSTEM CONFIG – Discretes Settings
Figure 206 (Sheet 1 of 1)

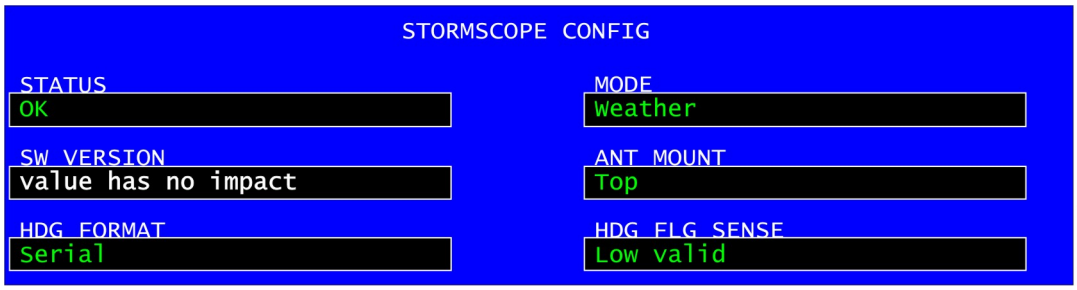


GPS 400W Panel – MAIN INPUTS 1 Display
Figure 207 (Sheet 1 of 1)

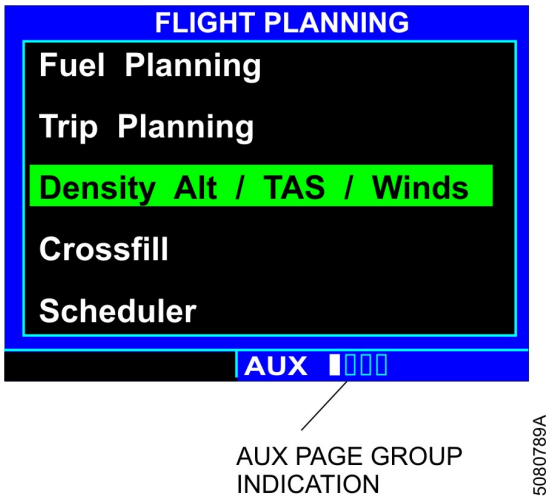


GPS 400W Panel – MAIN LIGHTING Settings
Figure 208 (Sheet 1 of 1)

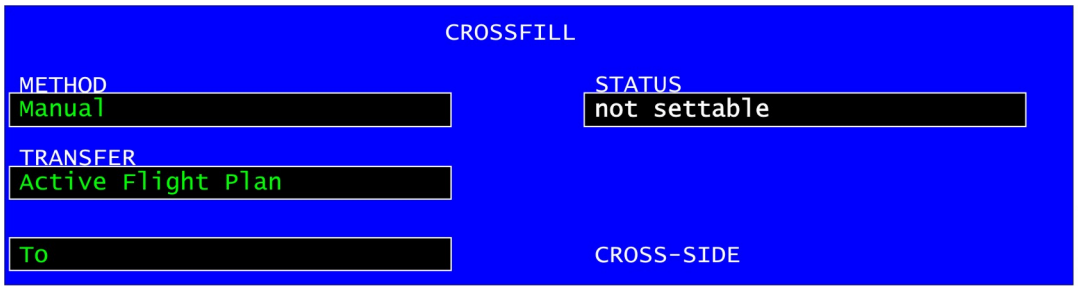
GPS 400W Panel – GPS VERTICAL OFFSET Settings
Figure 209 (Sheet 1 of 1)



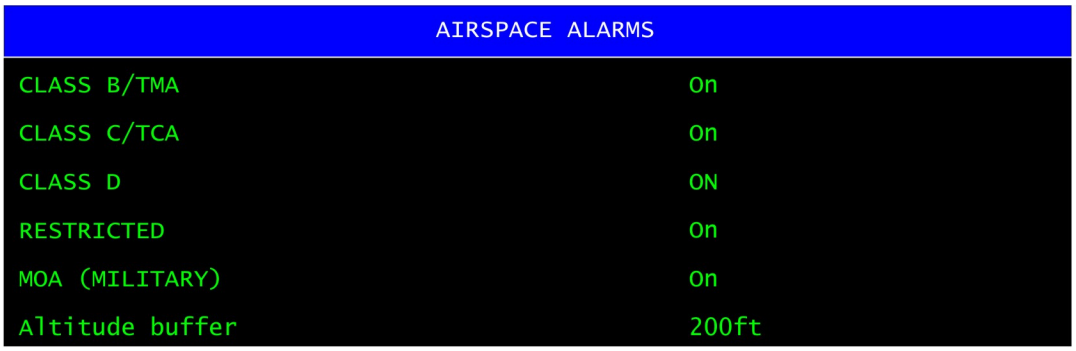
GPS 400W Panel – STORMSCOPE CONFIG Settings
Figure 210 (Sheet 1 of 1)



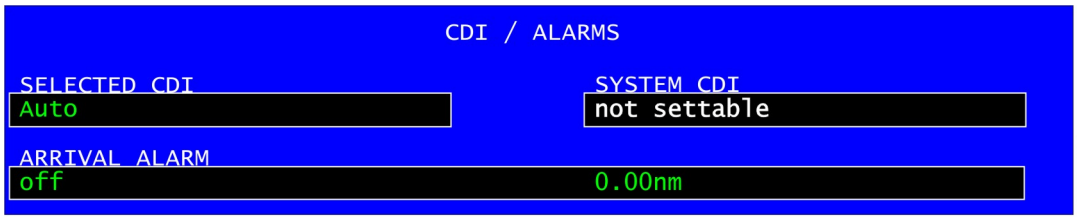
GPS 400W Panel – AUX Page Group & CROSSFILL Settings
Figure 211 (Sheet 1 of 2)



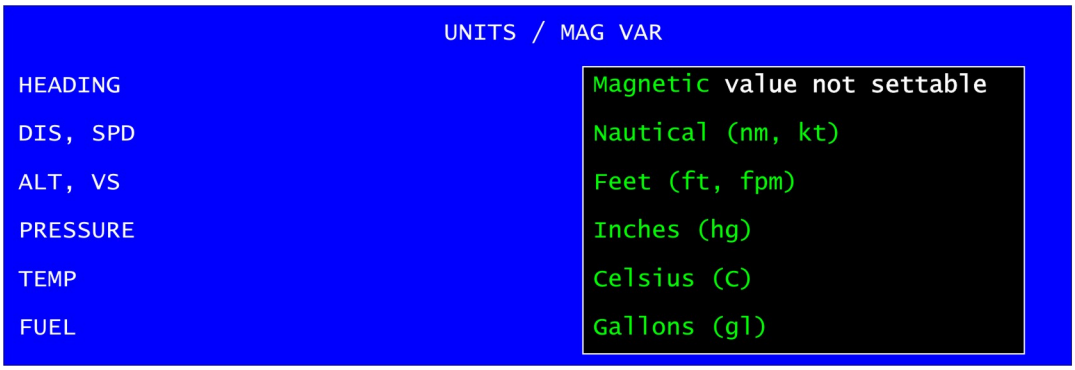
GPS 400W Panel – AUX Page Group & CROSSFILL Settings
Figure 211 (Sheet 2 of 2)



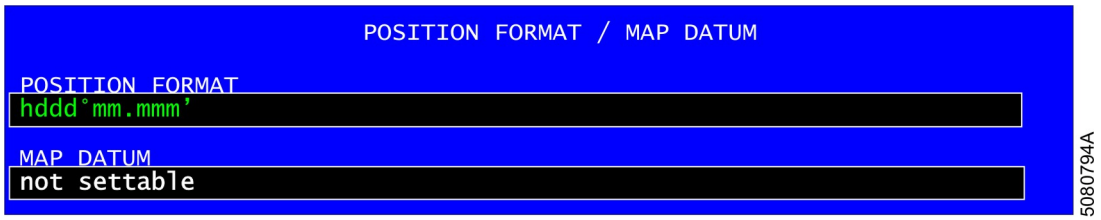
GPS 400W Panel – AIRSPACE ALARMS Settings
Figure 212 (Sheet 1 of 1)



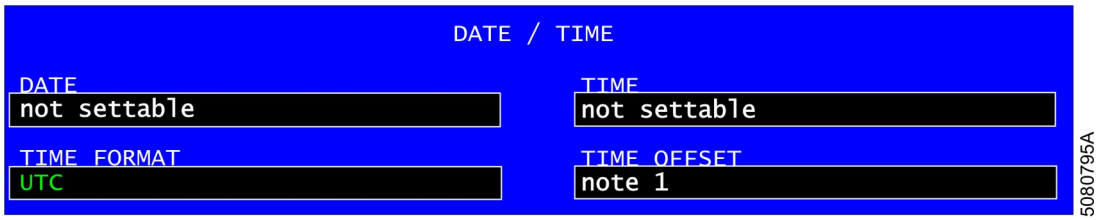
GPS 400W Panel – CDI / ALARMS Settings
Figure 213 (Sheet 1 of 1)



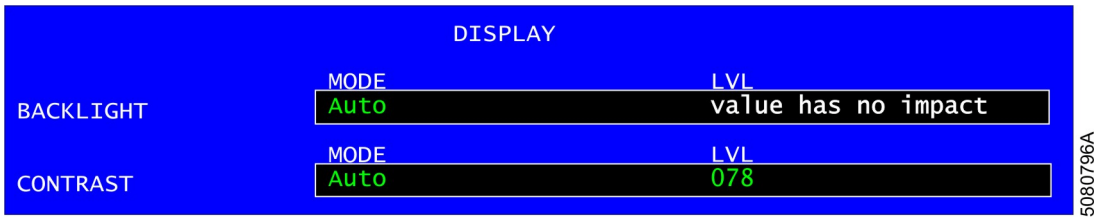
GPS 400W Panel – UNITS / MAG VAR Settings
Figure 214 (Sheet 1 of 1)



GPS 400W Panel – POSITION FORMAT / MAP DATUM Settings
Figure 215 (Sheet 1 of 1)



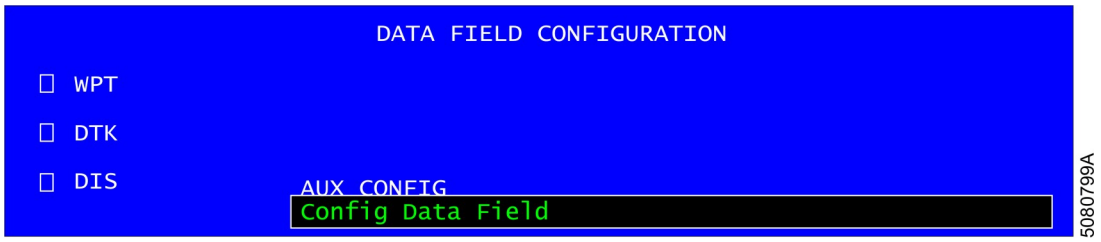
GPS 400W Panel – DATE / TIME Settings
Figure 216 (Sheet 1 of 1)



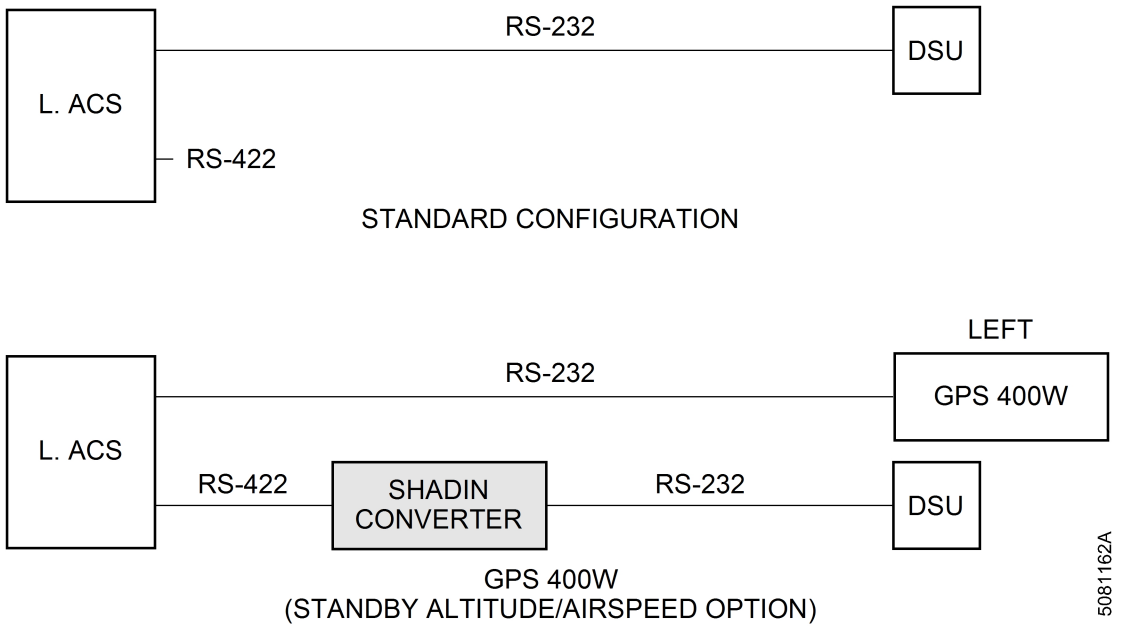
GPS 400W Panel – DISPLAY Settings
Figure 217 (Sheet 1 of 1)

GPS 400W Panel – NEAREST AIRPORT CRITERIA Settings
Figure 218 (Sheet 1 of 1)

GPS 400W Panel – SBAS SELECTION Settings
Figure 219 (Sheet 1 of 1)



GPS 400W Panel – DATA FIELD CONFIGURATION Settings
Figure 220 (Sheet 1 of 1)



GPS 400W – Standby Altitude/Airspeed Indication Option
Figure 221 (Sheet 1 of 1)

GPS 3- MAINTENANCE PRACTICES

AMM-34-50-10-051-B-801

1. General

A. The purpose of this task is to provide instructions for configuring GPS 3 (GDL 88) for use on the Eclipse Model 500 aircraft.

The following procedure must be performed on the bench with the Special Tools and Equipment listed below.

2. Equipment and Materials

Table 201. Special Tools and Equipment

Name & Part Number
Portable Power Supply capable of outputting 28 ± 0.5 VDC
GDL 88 Software Download Cable (87-125272-1001)
PC with Windows 7 SP 1
GDL 84/88 Install Tool ver 4.00, SW (006-A0248-20) [1]

[1] This tool is subject to change by Garmin. Refer to GDL 88 Installation Manual (IM), 190-01122-00, for more information. Use the IM as general guidance or Garmin Dealer website which is a source for downloading Garmin software and tools for a particular product.

3. Job Set-Up

SUBTASK AMM-34-50-10-051-B-921-001

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

4. Procedure

SUBTASK AMM-34-50-10-051-B-701-002

A. Perform the following configuration procedure.

(1) Using PC, install the GDL 88 Configuration Tool per the instructions in the GDL 88 IM, 190-01122-00.

(2) Turn the power supply on and make sure the power supply is set to 28 ± 0.5 VDC. Turn the power supply off.

(3) Connect backplate of the GDL 88 software download cable to the unit. Make sure the 1090 MHz antenna (BTM) connector is terminated by the 50 ohm/5 watt terminator.

(4) Connect the GDL 88 software download cable, 87-125272-1001, to the power supply.

(5) Connect the USB connector of the GDL 88 software download cable, 87-125272-1001, to the PC.

(6) Turn the power supply on.

(7) Run the GDL 8X Install Tool.

NOTE: USB drivers automatically install and it might take a few minutes before Install Tool can connect to GDL 88.

(8) Make sure the GDL 8x Install Tool interface window indicates the GDL 88 Connection Status in green color. Refer to Fig. 201, Sheet 1.

(9) Check or install the required hardware/software configuration of GDL 88 unit.

NOTE: If necessary, perform the software installation per the appropriate Garmin Software Service Bulletin

(10) On the GDL 8x Install Tool, select Diagnostics: Faults.

Make sure that the faults are acceptable. For example, Position and Altitude faults are acceptable as the procedure takes place on the bench, and, therefore, there is no GPS antenna installed or Altitude is not yet supplied at the time of configuration.

Refer to Garmin: 190-01310-00, GDL 84/88 Part 23 AML STC Installation Manual, for the Faults definitions and the respective corrective actions as required or contact Eclipse Service Engineering.

(11) On the GDL 8x Install Tool, select Configuration: Aircraft. Refer to Fig. 202, Sheet 1.

Populate the following aircraft specifics:

- Aircraft ICAO Address (Octal)
- ADS-B Transmit: Disable
- FIS-B Processing: Disable
- Internal GPS/SBAS: Enable
- Equipment Status Annunciations: Dual

(12) On the GDL 8x Install Tool, select Configuration: Antenna. Refer to Fig. 203, Sheet 1.

Make sure Internal GPS/SBAS Antenna specifics are as shown in Fig. 203, Sheet 1.

(13) On the GDL 8x Install Tool, select Configuration: Audio.

Set Output Method to None.

(14) On the GDL 8x Install Tool, select Configuration: ARINC 429.

Make sure all ports are disabled.

(15) On the GDL 8x Install Tool, select Configuration: RS-232/RS-422.

Make sure the ports' configuration is as shown in Fig. 204, Sheet 1.

(16) On the GDL 8x Install Tool, select Configuration: Ethernet.

Make sure this configuration is as shown in Fig. 205, Sheet 1.

(17) Close Garmin GDL 84/88 Install Tool.

(18) Cycle power to the GDL 88.

(19) Repeat steps (8) through (17) to confirm set parameters.

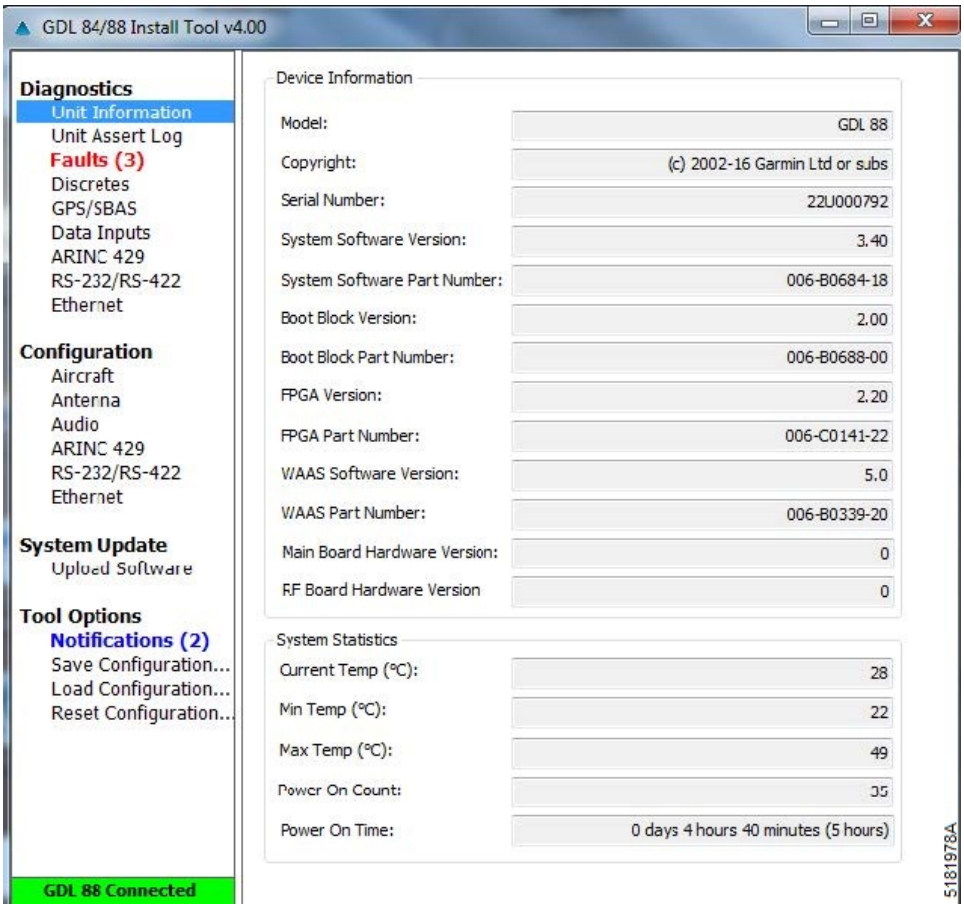
(20) Turn off power supply.

(21) Disconnect GDL 88 from backplate.

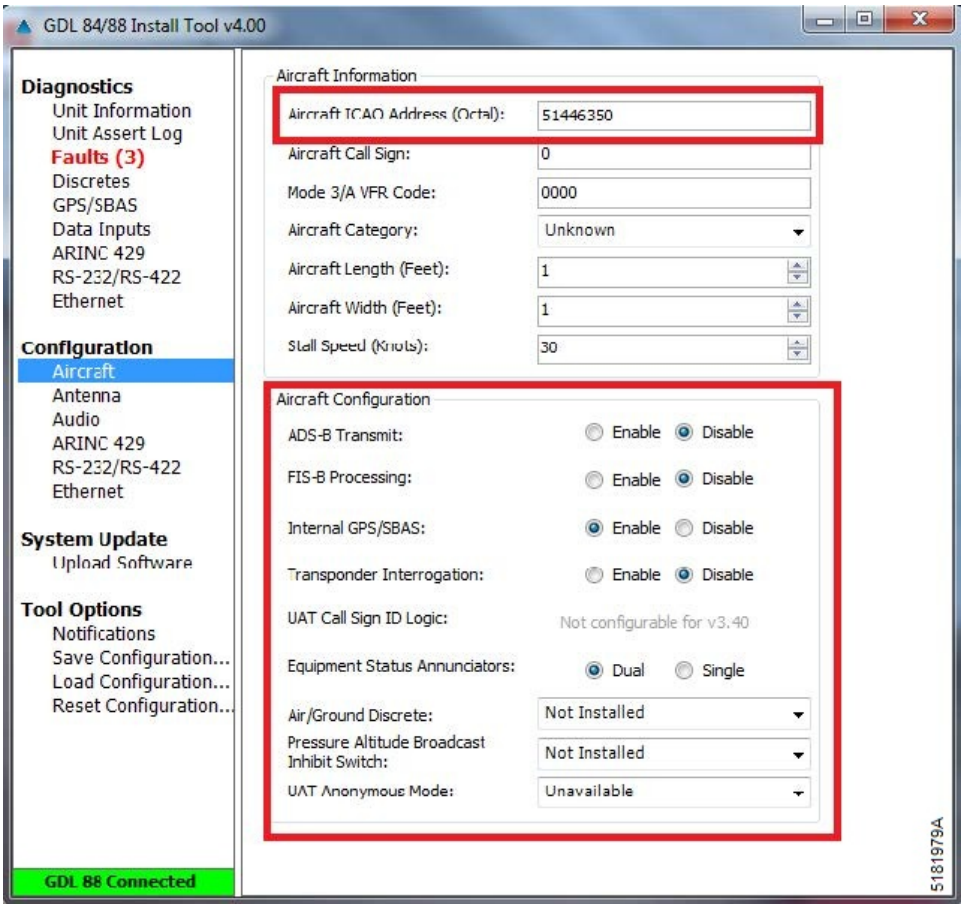
5. Job Close-Up

SUBTASK AMM-34-50-10-051-B-921-002

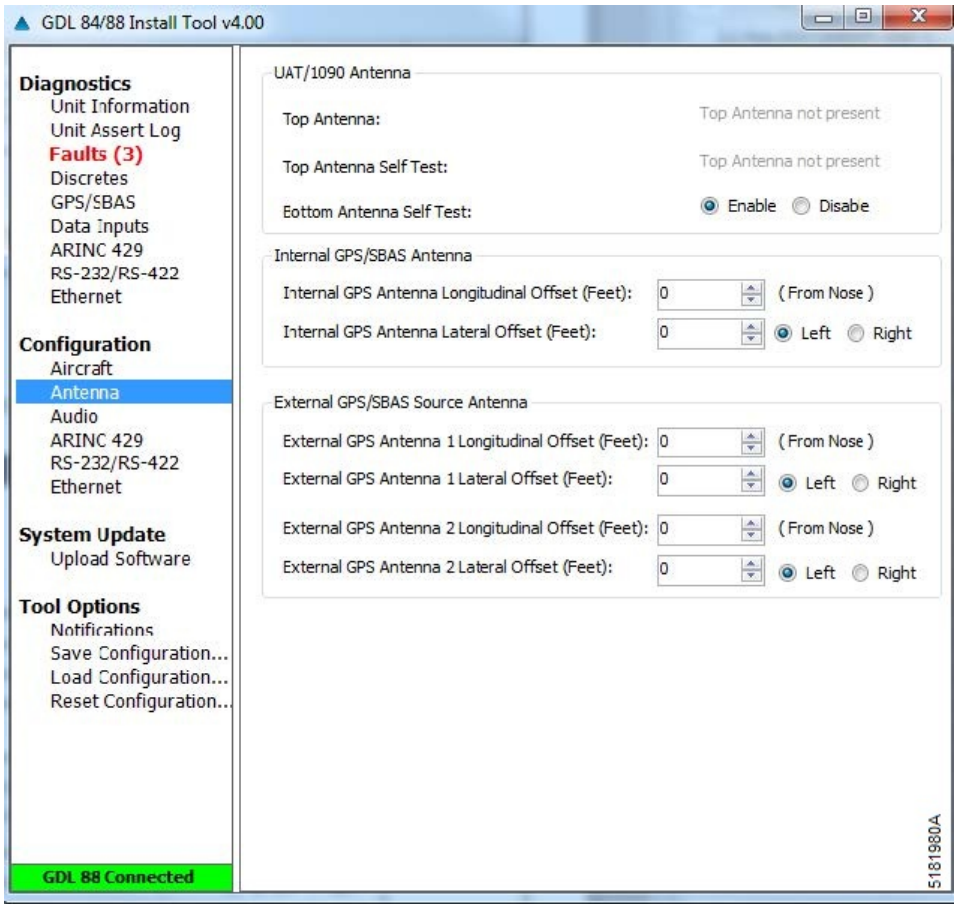
A. Remove all tools, equipment, and unwanted material from work area.



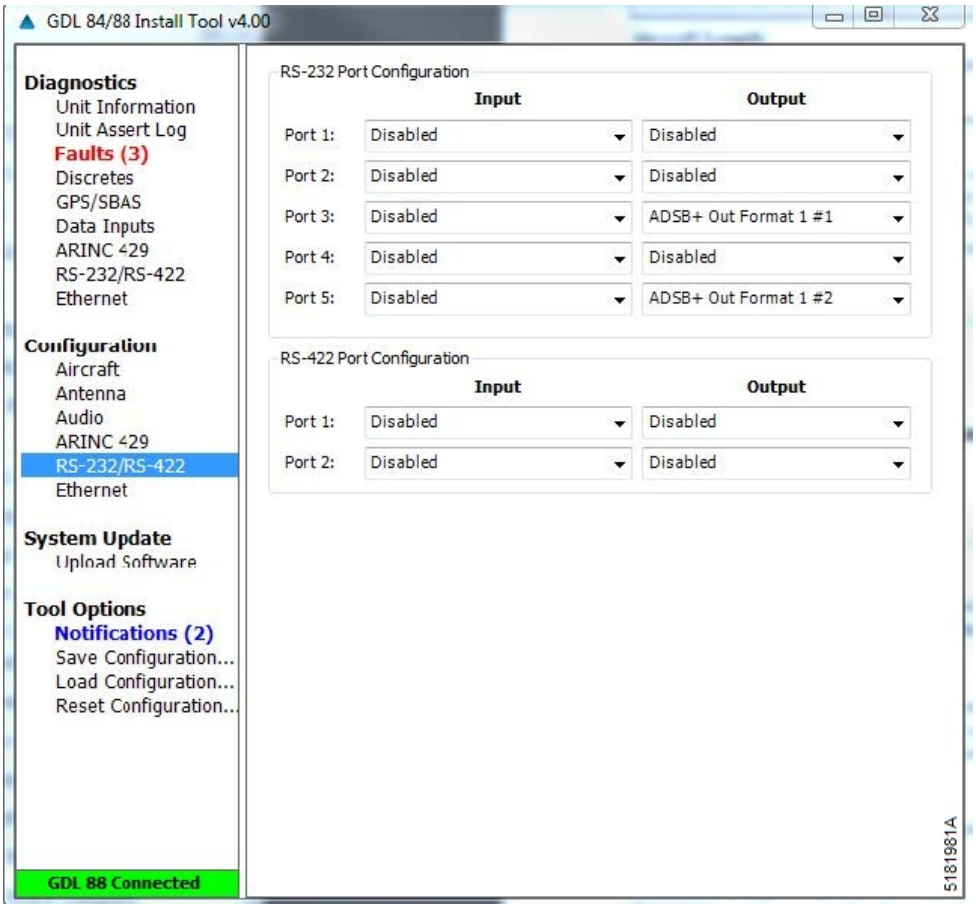
GDL 8x Install Tool: Unit Information
Figure 201 (Sheet 1 of 1)



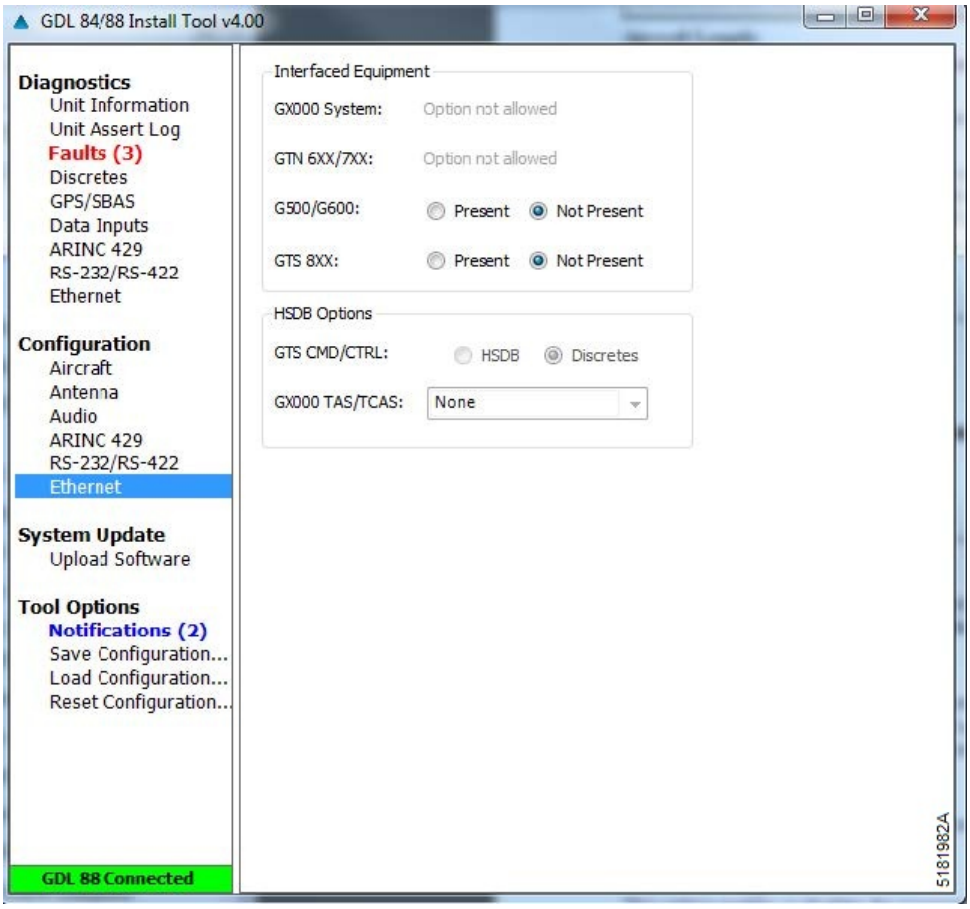
GDL 8x Install Tool: Aircraft Configuration
Figure 202 (Sheet 1 of 1)



GDL 8x Install Tool: Antenna Configuration
Figure 203 (Sheet 1 of 1)



GDL 8x Install Tool: RS-232/RS-422 Configuration
Figure 204 (Sheet 1 of 1)



GDL 8x Install Tool: Ethernet Configuration
Figure 205 (Sheet 1 of 1)

GPS - ADJUSTMENT/TEST

AMM-34-50-10-071-C-801

1. General

A. This task gives procedures to do the adjustment/test of the Global Positioning System (GPS 1 & GPS 2) components.

2. Job Set-Up

SUBTASK AMM-34-50-10-071-C-921-001

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

B. Connect external power. Refer to AMM-24-40-00-051-801 – External Power - Maintenance Practices.

3. MFD Set-Up

SUBTASK AMM-34-50-10-071-C-701-001

A. On the MFD system synoptic pages select the SETUP tab.

B. Press the Sensors Line Select Key.

C. Press the GPS Line Select Key. Confirm that both GPS receivers:

- display HPL, VPL, and VFOM information
- indicate a STATUS of 3D WAAS

D. Press the Satellite Status Line Select Key. Confirm that both GPS receivers are displaying satellite-status signal-strength information.

E. On the other side of the MFD, select the system synoptic page ECB tab.

4. GPS 1 Test

SUBTASK AMM-34-50-10-071-C-801-002

A. Do Job Set-Up. Refer to SUBTASK AMM-34-50-10-071-C-921-001.

B. Do MFD Set-Up. Refer to SUBTASK AMM-34-50-10-071-C-701-001.

C. On the MFD ECB page, ensure that the ECB - GPS 1 (R FWD Bus) and the ECB - INTEGRATED SENSOR 1 (BATT Bus) are AUTO-ON.

D. On the MFD ECB page, pull ECB - GPS 1 (R FWD Bus). After 5 seconds, make sure that GPS 1 is displaying satellite-status information.

E. On the MFD ECB page, reset ECB - GPS 1 (R FWD Bus).

F. On the MFD ECB page, pull ECB - INTEGRATED SENSOR 1 (BATT Bus). After 5 seconds, make sure that GPS 1 is displaying satellite-status information.

G. On the MFD ECB page, reset ECB - INTEGRATED SENSOR 1 (BATT Bus).

5. GPS 2 Test

SUBTASK AMM-34-50-10-071-C-801-003

A. Do Job Set-Up. Refer to SUBTASK AMM-34-50-10-071-C-921-001.

B. Do MFD Set-Up. Refer to SUBTASK AMM-34-50-10-071-C-701-001.

C. On the MFD ECB page, ensure that the ECB - GPS 2 (L FWD Bus) and the ECB - INTEGRATED SENSOR 2 (L AFT Bus) are AUTO-ON.

D. On the MFD ECB page, pull ECB - GPS 2 (L FWD Bus). After 5 seconds, make sure that GPS 2 is displaying satellite-status information

E. On the MFD ECB page, reset ECB - GPS 2 (L FWD Bus).

F. On the MFD ECB page, pull ECB - INTEGRATED SENSOR 2 (L AFT Bus). After 5 seconds, make sure that GPS 2 is displaying satellite-status information.

G. On the MFD ECB page, reset ECB - INTEGRATED SENSOR 2 (L AFT Bus).

6. Job Close-Up

SUBTASK AMM-34-50-10-071-C-921-002

A. Remove all tools, equipment, and unwanted material from work area.

B. Disconnect external power. Refer to AMM-24-40-00-051-801 – External Power - Maintenance Practices.

C. If all other maintenance is complete, return aircraft to service. Refer to AMM-20-00-02-051-801 – Return To Service (After Maintenance).

GPS 3- REMOVAL

AMM-34-50-11-001-C-801

1. General

A. This task gives procedures to remove the Global Positioning System (GPS 3) unit.

B. There is one GPS 3 (GDL 88) installed on the aircraft under 131 CZ-B - Floor Panel, Aft Short, Left Cabin.

2. Job Set-Up

SUBTASK AMM-34-50-11-001-C-921-001

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

B. Make sure all power is removed from the aircraft.

3. Procedure

SUBTASK AMM-34-50-11-001-C-011-001

(Refer to Fig. 401.)

CAUTION: DO NOT REMOVE 131 CZ-B - FLOOR PANEL, AFT SHORT, LEFT CABIN. THE GPS 3 (GDL 88) MOUNT AND WIRING ARE ATTACHED TO THE UNDERSIDE OF THE FLOOR PANEL.

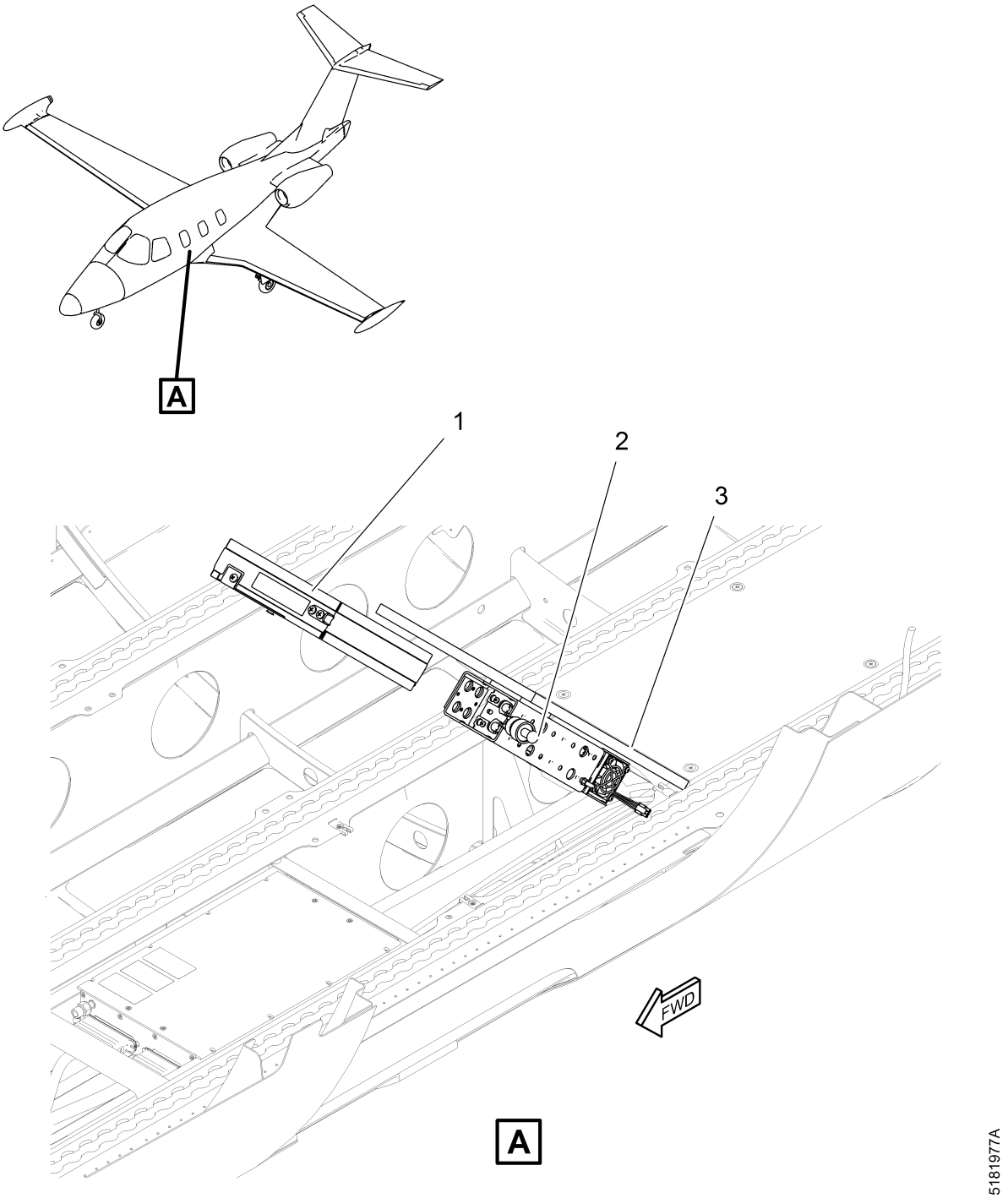
A. Remove screws, but do not remove 131 CZ-B - Floor Panel, Aft Short, Left Cabin *(3)* . Refer to AMM-25-11-30-001-801 – Cockpit Floor Panels - Removal .

B. Lift the forward edge and pivot 131 CZ-B - Floor Panel, Aft Short, Left Cabin *(3)* to access GDL 88 mounting knob *(2)* .

C. Pull on the lock down lever knob *(2)* while loosening. Disengage locking lever away from GPS 3 (GDL 88) unit right angled hook.

NOTE: Pulling on the lever knob will disengage the locking teeth.

D. Pull the GPS 3 (GDL 88) unit *(1)* straight out of the rack.



GPS 3- Removal/Installation
Figure 401 (Sheet 1 of 1)

GPS - INSTALLATION

AMM-34-50-11-041-B-801

1. General

A. This task gives procedures to install the Global Positioning System/Wide Area Augmentation System (GPS/WAAS) Garmin GPS 400W Navigator.

B. There are two GPS 400W units installed on the aircraft. Installation procedures are the same for both sides and given for the left side GPS 400W unit.

2. Equipment and Materials

Table 401. Special Tools and Equipment

Name & Part Number
Generic Hex Drive Tool, 3/32 in (Commercially Available)

3. Job Set-Up

SUBTASK AMM-34-50-11-041-B-921-001

A. Make sure aircraft is in same configuration as it was when removal task was completed. Refer to AMM-34-50-11-001-C-801 – GPS 3- Removal .

4. Procedure

SUBTASK AMM-34-50-11-041-B-411-001

(Refer to Fig. 401.)

A. GPS Bracket Assembly Back Plate Installation:

(1) If the back plate was previously removed, replace the back plate *(5)* by positioning the tabs on the back plate in the slots of the left side of the GPS bracket assembly *(6)* (viewing it from the cockpit) and attaching it by replacing the two screws *(4)* .

(2) Remove protective caps on electrical connector *(2)* and Coax connector *(3)* .

(3) Attach electrical connector *(2)* and Coax connector *(3)* .

B. GPS 400W Unit Insertion:

NOTE: If there is interference of the pawl locking assembly and the instrument panel, it may be necessary to use the 3/32- inch hex drive tool to rock the pawl assembly +/- 90 degrees while gently pushing (fwd) on the GPS 400W, in order to get the pawl assembly past the instrument panel.

(1) After the pawl assembly clears the instrument panel, the GPS 400W unit *(1)* is installed in the GPS bracket assembly *(6)* by sliding it straight in until it stops, about 1 inch short of the final position. A 3/32- inch hex drive tool is then inserted into the

access hole at the bottom of the unit face. Rotate the hex tool clockwise while pressing on the left side of the bezel until the unit is firmly seated in the rack.

(2) Be sure not to overtighten the unit into the GPS bracket assembly *(6)* . The application of hex drive tool torque exceeding -15 lbf.in can damage the locking mechanism.

5. Job Close-Up

SUBTASK AMM-34-50-11-041-B-921-002

A. Remove all tools, equipment, and unwanted material from work area.

B. Close circuit breakers that follow:

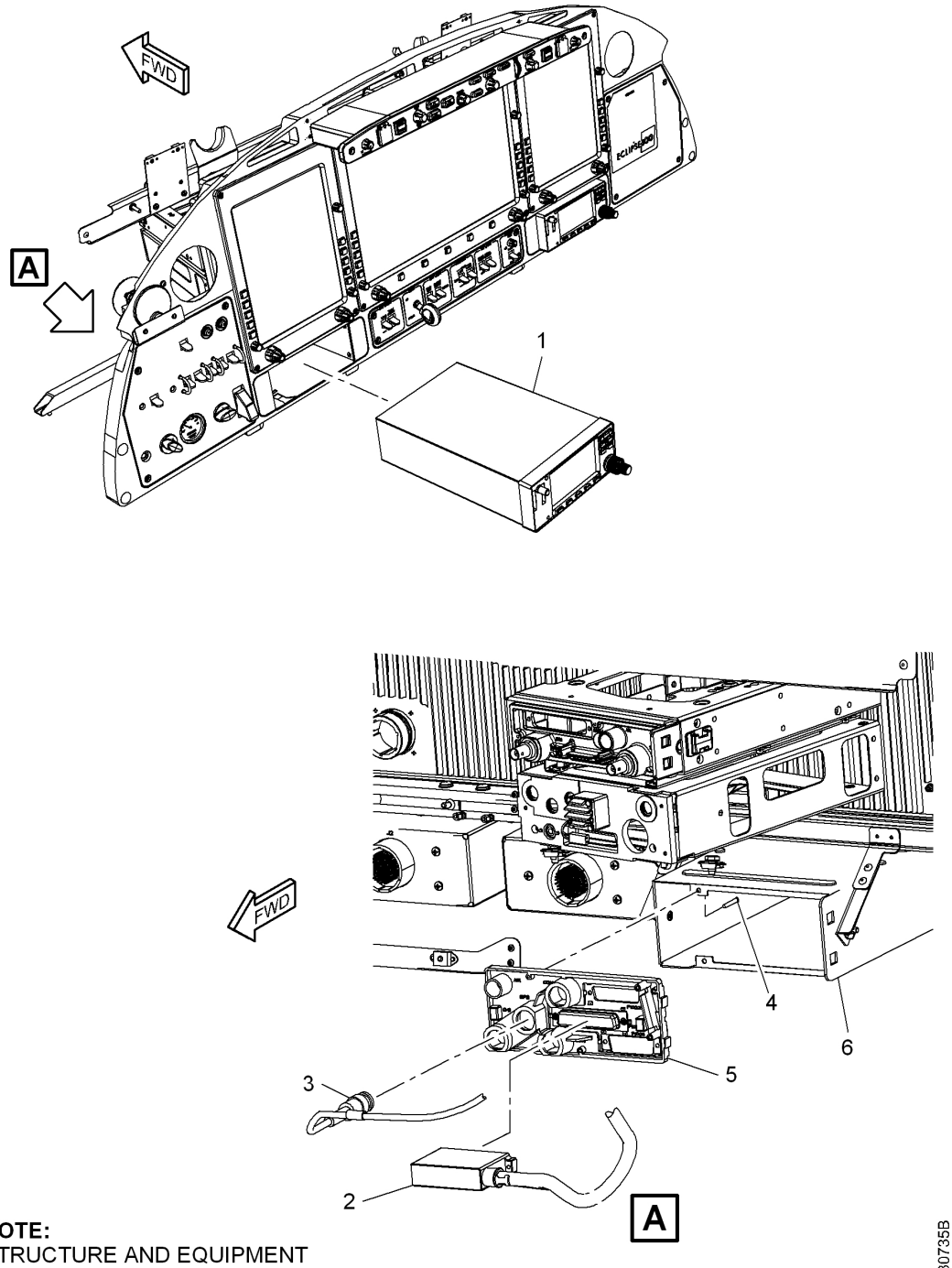
- ECB - GPS 1 (R FWD Bus)
- ECB - GPS 2 (L FWD Bus)

C. Complete GPS 400W configuration (if not previously accomplished), refer to AMM-34-50-10-051-801 – GPS - Maintenance Practices.

D. Do an adjustment/test of the GPS. Refer to AMM-34-50-10-071-C-801 – GPS - Adjustment/Test

If ADS-B function is installed, perform ADS-B Out Functional Test. Refer to SUBTASK AMM-34-50-20-071-C-701-006

E. If all other maintenance is complete, return aircraft to service. Refer to AMM-20-00-02-051-801 – Return To Service (After Maintenance).



NOTE:
STRUCTURE AND EQUIPMENT
REMOVED FOR CLARITY

GPS - Removal/Installation
Figure 401 (Sheet 1 of 1)

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GPS 3 - INSTALLATION

AMM-34-50-11-041-C-801

1. General

A. This task gives procedures to install the Global Positioning System (GPS 3) unit.

B. There is one GPS 3 installed on the aircraft under 131 CZ-B - Floor Panel, Aft Short, Left Cabin.

2. Job Set-Up

SUBTASK AMM-34-50-11-041-C-921-001

A. Make sure aircraft is in same configuration as it was when removal task was completed. Refer to AMM-34-50-11-001-C-801 – GPS 3- Removal .

B. Complete GPS 3 configuration (if not previously accomplished), refer to AMM-34-50-10-051-B-801 – GPS 3- Maintenance Practices .

C. Make sure that mount backplate has the 50 ohm/5 watt termination load is installed on coax receptacle BTM.

3. Procedure

SUBTASK AMM-34-50-11-041-C-411-001

(Refer to Fig. 401.)

A. Slide the GPS 3 unit *(1)* straight into the rack until it stops.

B. Lift the lock down arm *(2)* over the right angled hook on the unit and hand tightened.

C. Secure 131 CZ-B - Floor Panel, Aft Short, Left Cabin with four screws. Refer to AMM-25-11-30-041-801 – Cockpit Floor Panels - Installation .

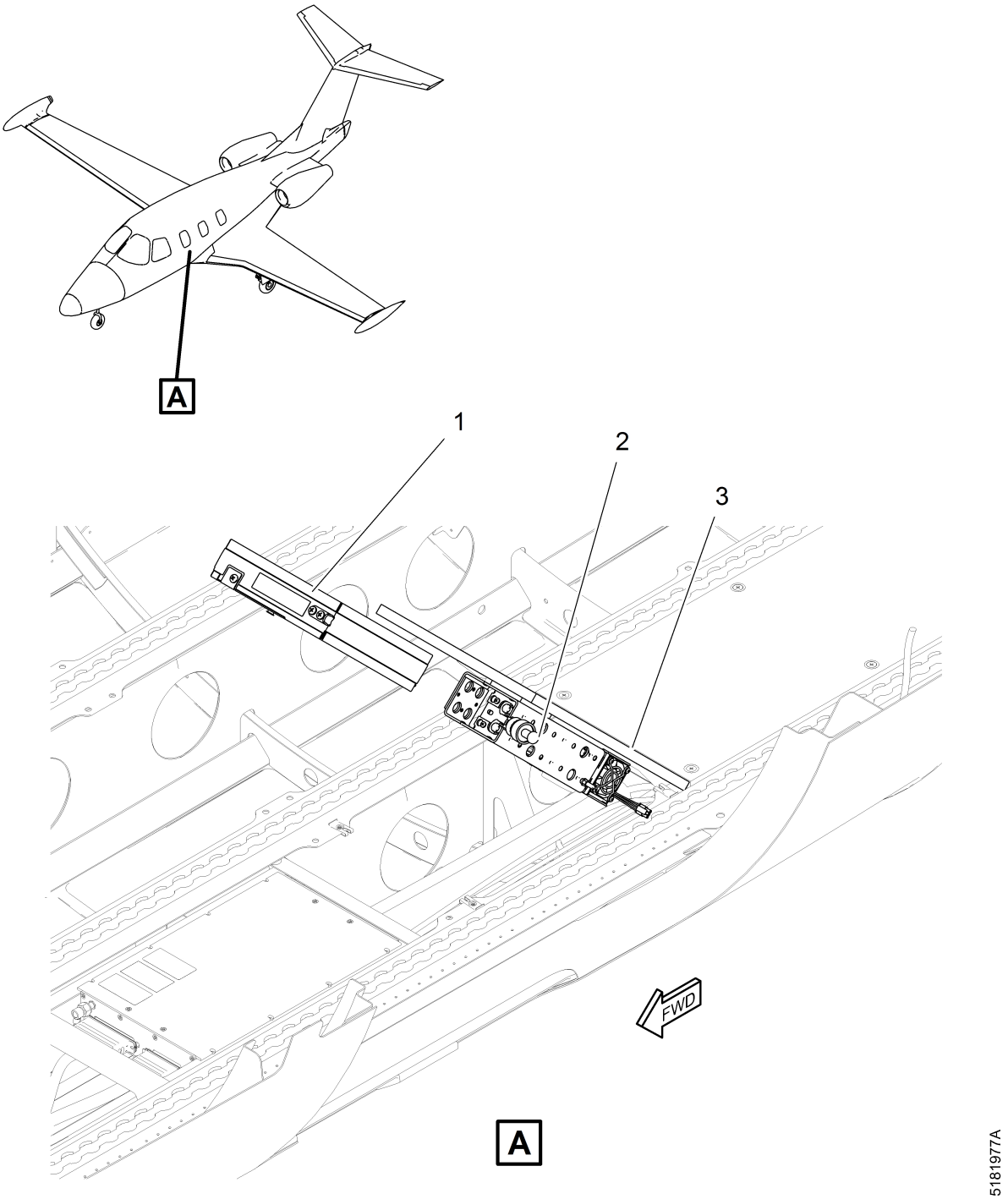
4. Job Close-Up

SUBTASK AMM-34-50-11-041-C-921-002

A. Remove all tools, equipment, and unwanted material from work area.

B. Do a system test of the ADS-B. Refer to SUBTASK AMM-34-50-20-071-C-701-005.

C. If all other maintenance is complete, return aircraft to service. Refer to AMM-20-00-02-051-801 – Return To Service (After Maintenance).



GPS 3 - Removal/Installation
Figure 401 (Sheet 1 of 1)

GPS 3 MOUNT - REMOVAL

AMM-34-50-13-001-801

1. General

A. This task gives procedures to remove the Global Positioning System (GPS 3) mount.

B. There is one GPS 3 mount installed under the baggage floor panel.

2. Job Set-Up

SUBTASK AMM-34-50-13-001-921-001

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

B. Make sure all power is removed from the aircraft.

C. Remove four screws, but do not remove 131 CZ-B - Floor Panel, Aft Short, Left Cabin. Refer to AMM-25-11-30-001-801 – Cockpit Floor Panels - Removal .

D. Remove the GPS 3 (GDL 88) unit. Refer to AMM-34-50-11-001-C-801 – GPS 3-Removal .

3. Procedure

SUBTASK AMM-34-50-13-001-011-001

(Refer to Fig. 401.)

CAUTION: DO NOT REMOVE 131 CZ-B - FLOOR PANEL, AFT SHORT, LEFT CABIN UNTIL MOUNT HAS BEEN DETACHED. THE GDL 88 MOUNT AND WIRING ARE ATTACHED TO THE UNDERSIDE OF THE FLOOR PANEL.

A. Lift the forward edge and pivot 131 CZ-B - Floor Panel, Aft Short, Left Cabin *(2)* while supporting the GPS 3 mount *(3)* , remove four screws *(1)* .

B. Remove 131 CZ-B - Floor Panel, Aft Short, Left Cabin *(2)* .

C. Disconnect wiring harness *(4)* from mount *(3)* .

D. Disconnect fan electrical molex connector *(11)* from harness molex connector *(10)* .

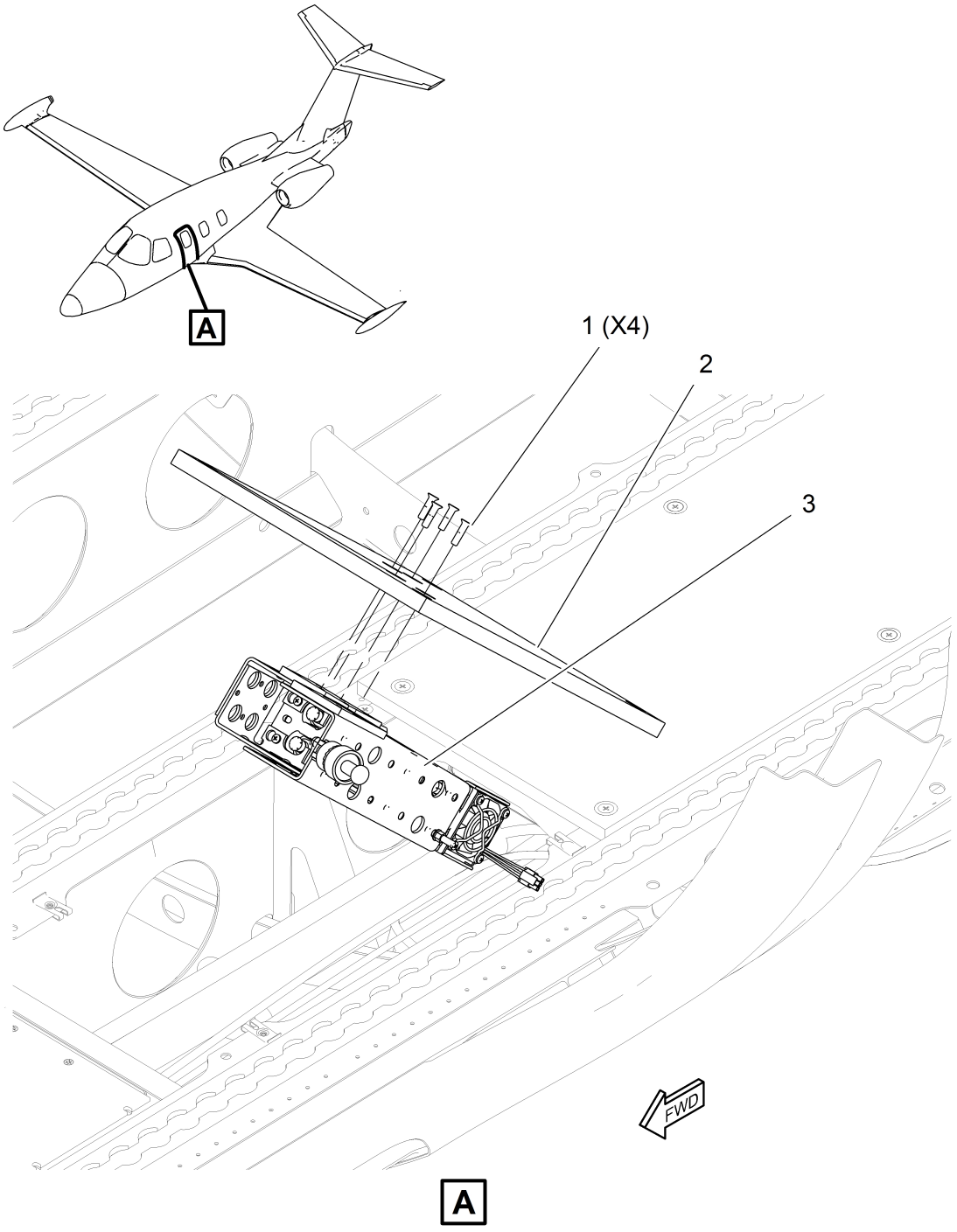
E. Disconnect 50 ohm/5 watt termination load *(5)* from the mount coax receptacle marked BTM

NOTE: The 50 ohm/5 watt termination load may remain connected with the mount if the same mount is to be reinstalled.

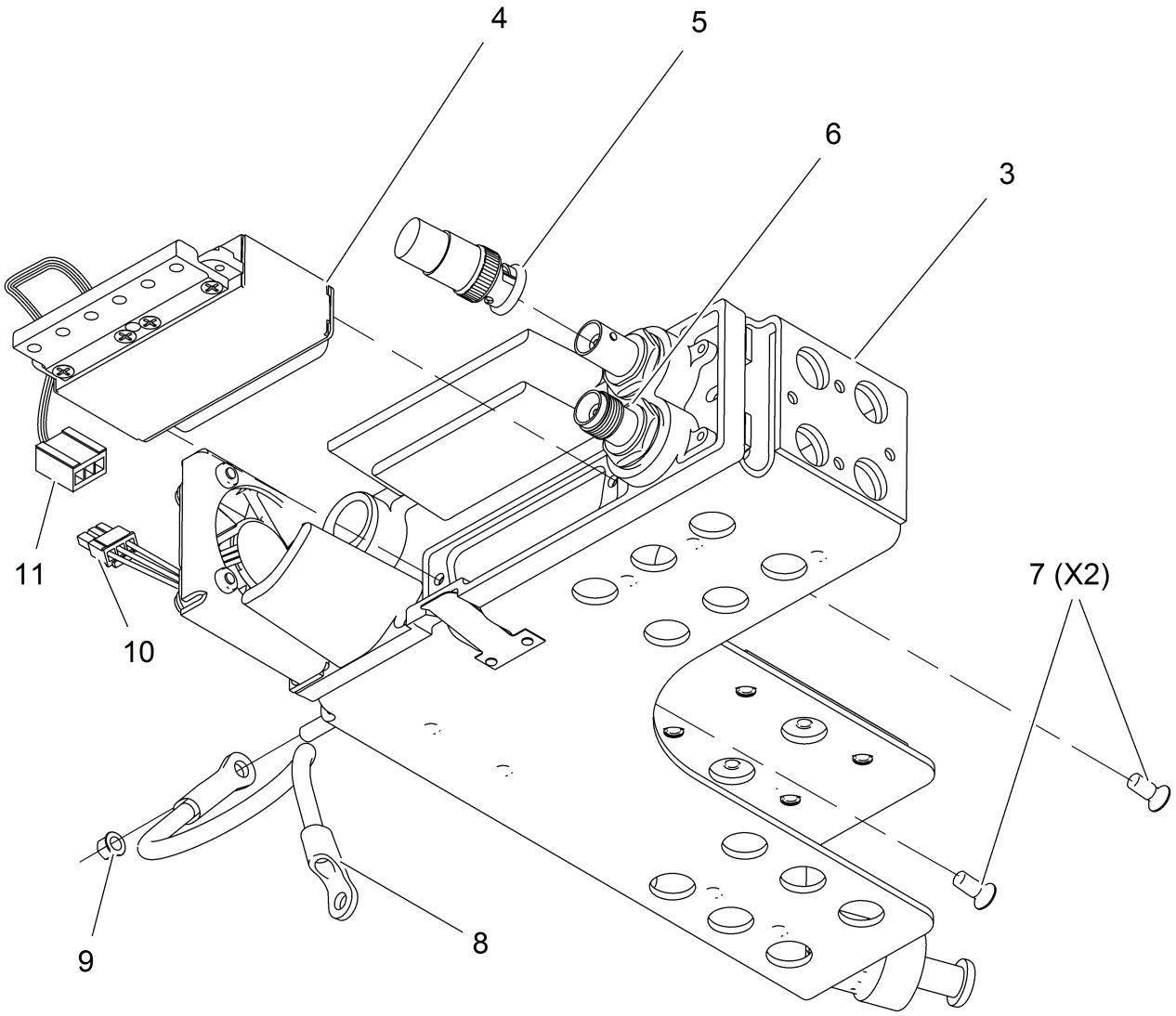
F. Disconnect GPS antenna coax cable connector *(6)* from the mount GPS coax receptacle

G. Remove nut *(9)* and disconnect jumper *(8)* .

H. Remove mount *(3)* .



GPS 3 Mount - Removal/Installation
Figure 401 (Sheet 1 of 2)



GPS 3 Mount - Removal/Installation
Figure 401 (Sheet 2 of 2)

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GPS 3 MOUNT - INSTALLATION

AMM-34-50-13-041-801

1. General

A. This task gives the procedures to install the Global Positioning System (GPS 3) mount.

B. There is one GPS 3 mount installed under the baggage floor panel.

2. Job Set-Up

SUBTASK AMM-34-50-13-041-921-001

A. Make sure the aircraft is in the same configuration as it was when the removal task was completed. Refer to AMM-34-50-13-001-801 – GPS 3 Mount - Removal .

3. Procedure

SUBTASK AMM-34-50-13-041-411-001

(Refer to Fig. 401.)

A. Remove the protective caps from the electrical connectors.

B. Connect jumper *(8)* to stud and install nut *(9)* .

C. Connect wiring harness plug *(4)* to the mount *(3)* with two screws *(7)* . Torque screws *(7)* to 15-12 lbf.in (1.35-1.69 Nm).

D. Connect fan electrical molex connector *(10)* to harness molex connector *(11)* .

E. Connect the GPS antenna coax cable connector to the GPS coax receptacle *(6)* marked GPS.

F. Connect 50 ohm/5 watt termination load *(5)* to coax receptacle marked BTM.

G. Position mount on to 131 CZ-B - Floor Panel, Aft Short, Left Cabin *(2)* and align holes.

H. Secure mount to 131 CZ-B - Floor Panel, Aft Short, Left Cabin *(2)* with four screws *(1)* . Torque screws to 15-12 lbf.in (1.35-1.69 Nm.

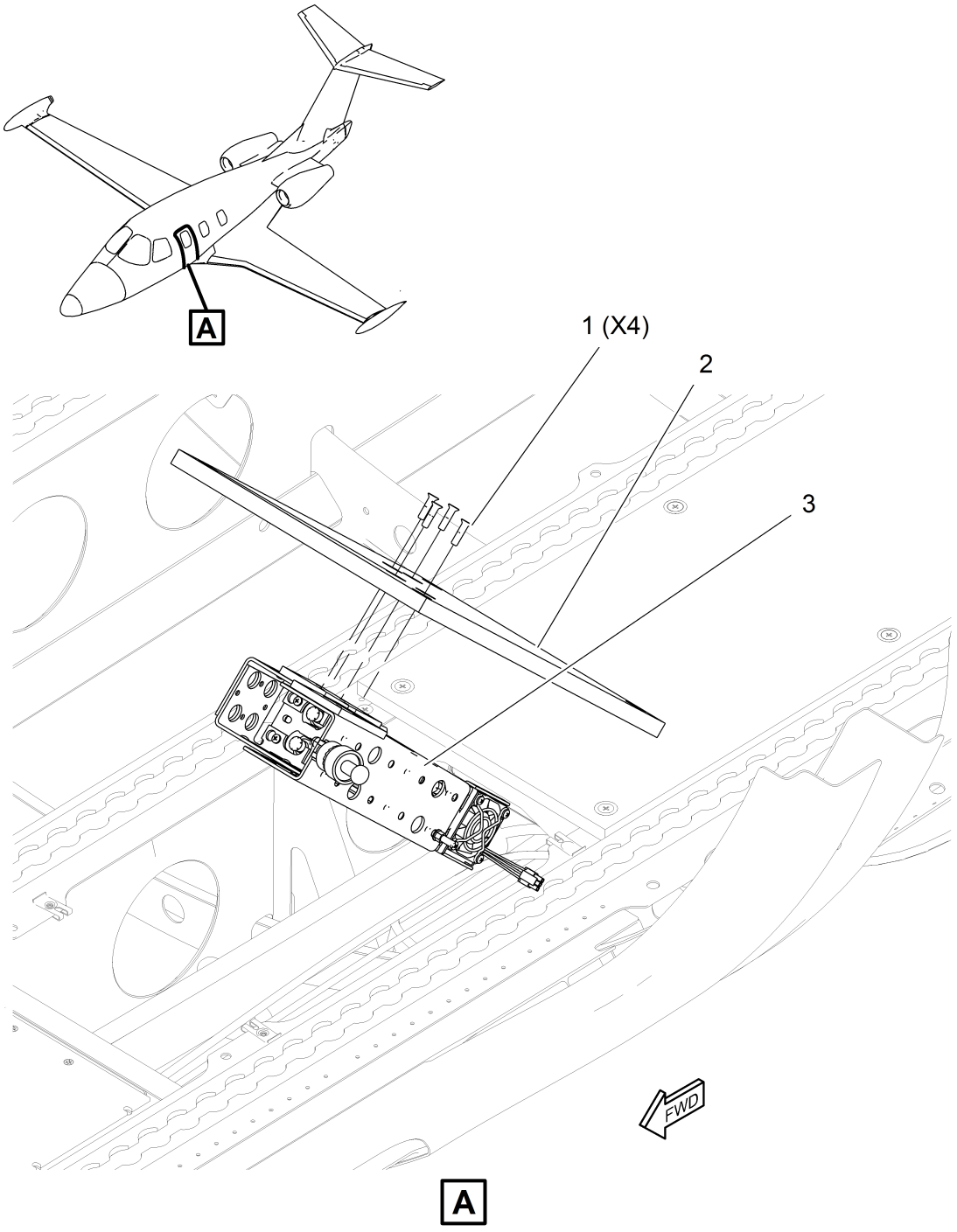
4. Job Close-Up

SUBTASK AMM-34-50-13-041-921-002

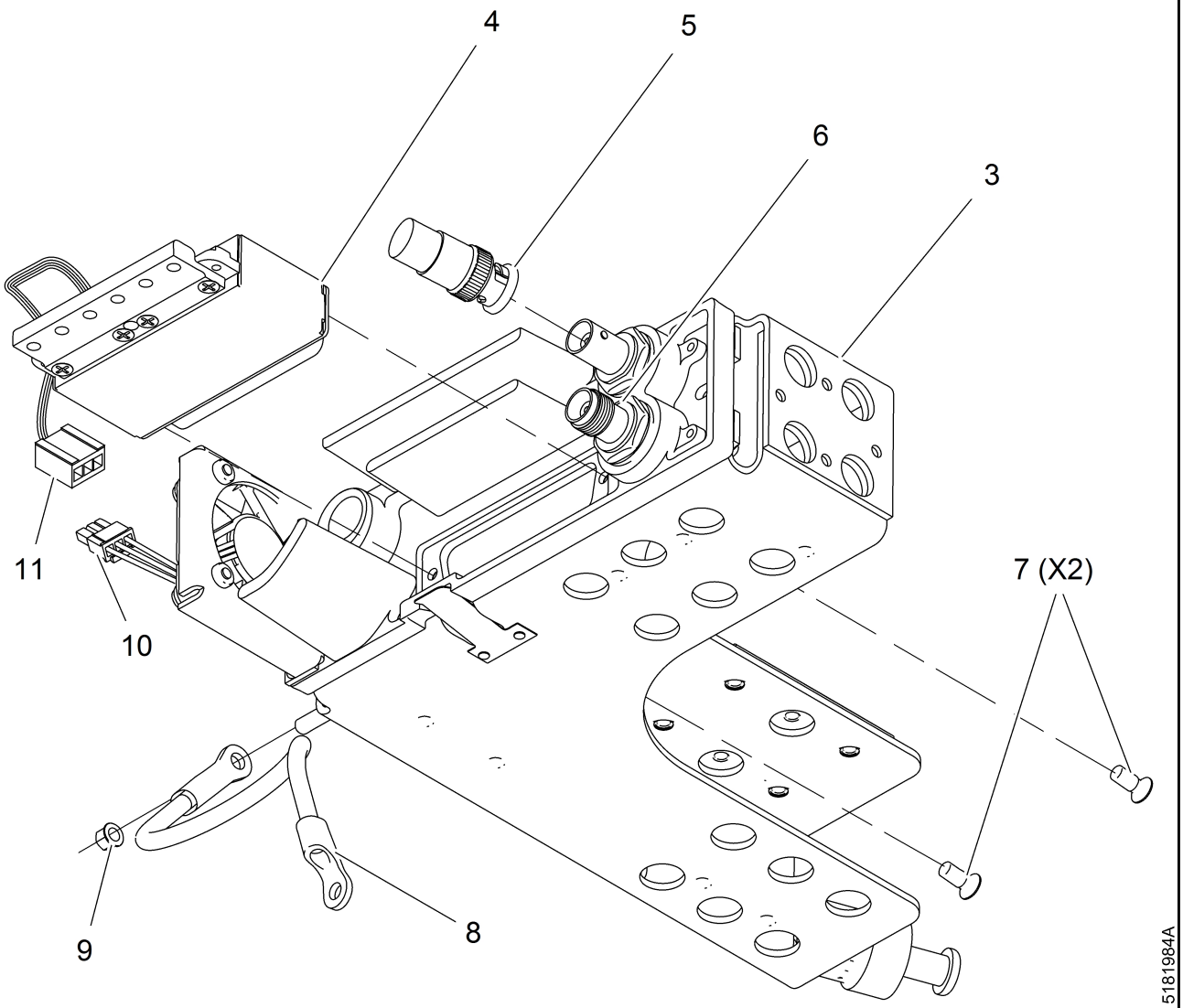
A. Install GPS 3 (GDL 88) unit. Refer to AMM-34-50-11-041-C-801 – GPS 3 - Installation .

B. Install 131 CZ-B - Floor Panel, Aft Short, Left Cabin *(2)* .

C. Remove all tools, equipment, and unwanted material from the work area.



GPS 3 Mount - Removal/Installation
Figure 401 (Sheet 1 of 2)



GPS 3 Mount - Removal/Installation
Figure 401 (Sheet 2 of 2)

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GPS 2 ANTENNA SPLITTER - REMOVAL

AMM-34-50-14-001-801

1. General

A. This task gives procedures to remove the GPS 2 Antenna Splitter.

B. There is one GPS 2 Antenna Splitter installed on the aircraft under 231 NZ - Floor Panel, Baggage Compartment.

2. Job Set-Up

SUBTASK AMM-34-50-14-001-921-001

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

B. Make sure all power is removed from the aircraft.

C. Remove 231 NZ - Floor Panel, Baggage Compartment. Refer to AMM-06-50-00-051-801 – Aircraft Access Panels for location and removal instructions.

3. Procedure

SUBTASK AMM-34-50-14-001-C-011-001

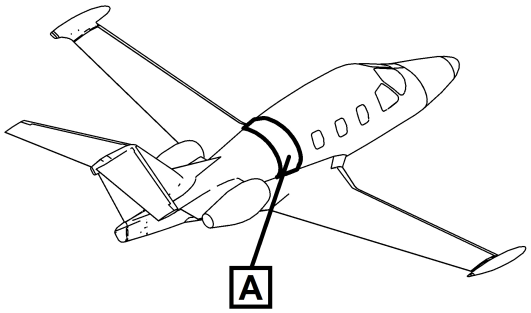
(Refer to Fig. 401.)

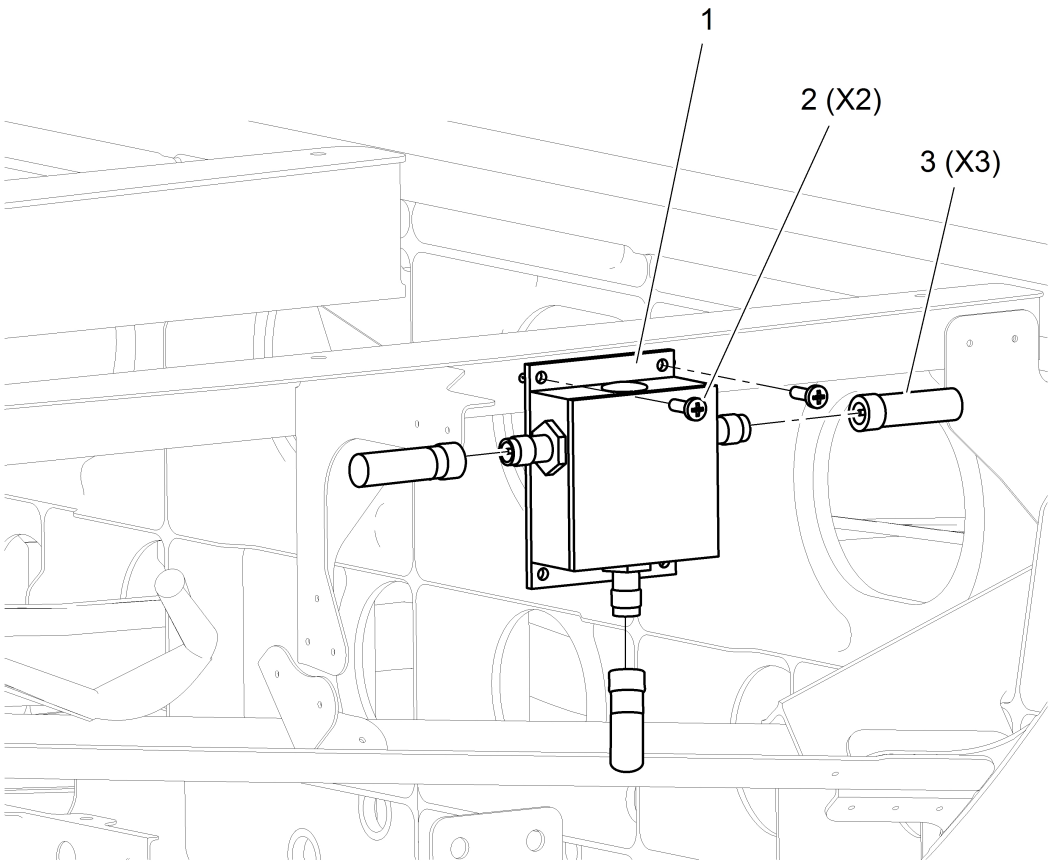
A. Disconnect the three coaxial connectors *(3)* from the GPS 2 Antenna Splitter *(1)* .

(1) Install protective caps on the three coaxial connectors *(3)* .

B. Remove two screws *(2)* that attach the GPS 2 Antenna Splitter *(1)* to the aircraft.

C. Remove the GPS 2 Antenna Splitter *(1)* from the aircraft.





A

(SOME STRUCTURE REMOVED FOR CLARITY)

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GPS 2 Antenna Splitter - Removal/Installation
Figure 401 (Sheet 1 of 1)

GPS 2 ANTENNA SPLITTER - INSTALLATION

AMM-34-50-14-041-801

1. General

A. This task gives procedures to install the GPS 2 Antenna Splitter.

B. There is one GPS 2 Antenna Splitter installed on the aircraft under 231 NZ - Floor Panel, Baggage Compartment.

2. Job Set-Up

SUBTASK AMM-34-50-14-041-921-001

A. Make sure the aircraft is in the same configuration as it was when the removal task was completed. Refer to AMM-34-50-14-001-801 – GPS 2 Antenna Splitter - Removal

3. Procedure

SUBTASK AMM-34-50-14-041-411-001

(Refer to Fig. 401.)

A. Remove the protective caps from the three coaxial connectors *(3)* .

B. Put the GPS 2 Antenna Splitter *(1)* on the structure and align the screw holes.

C. Attach the GPS 2 Antenna Splitter *(1)* to the aircraft with two screws *(2)* . Torque the screws *(2)* to 30-40 lbf.in (3.4-4.5 Nm).

D. Connect the three coaxial connectors *(3)* on the splitter *(1)* .

E. Electrically bond the GPS 2 Antenna Splitter to the structure. Refer to AMM-20-03-00-051-801 – Electrical Bonding - Maintenance Practices. Resistance must be 2.5 milliohms or less.

4. Job Close-Up

SUBTASK AMM-34-50-14-041-921-002

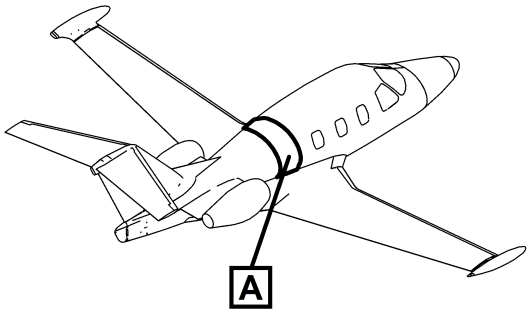
A. Install 231 NZ - Floor Panel, Baggage Compartment. Refer to AMM-06-50-00-051-801 – Aircraft Access Panels for location and installation instructions.

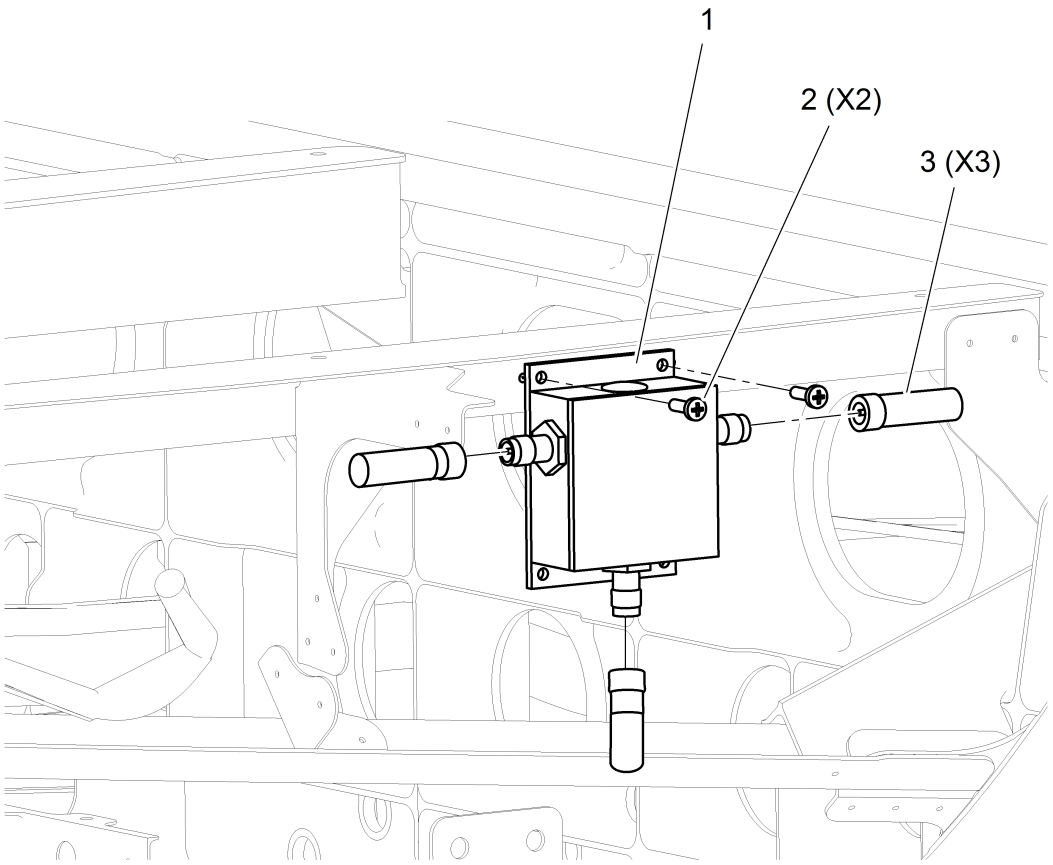
B. Remove all tools, equipment, and unwanted material from the work area.

C. Do GPS 2 Adjustment/Test. Refer to SUBTASK AMM-34-50-10-071-C-801-003.

D. Do a system test of the ADS-B. Refer to SUBTASK AMM-34-50-20-071-C-701-005.

E. If all other maintenance is complete, return the aircraft to service. Refer to AMM-20-00-02-051-801 – Return To Service (After Maintenance).





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(SOME STRUCTURE REMOVED FOR CLARITY)

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GPS 2 Antenna Splitter - Removal/Installation
Figure 401 (Sheet 1 of 1)

TRANSPONDER WITH ADS-B OUT – MAINTENANCE PRACTICES

AMM-34-50-20-051-801

1. General

A. The purpose of this task is to provide instructions for configuring the Transponder for ADS-B Out on the Eclipse 500 aircraft.

The following procedure is to be performed on the bench.

B. If the aircraft has ADS-B OUT function, ensure this transponder has Extended Capability (ES) enabled and software version is at 8.02 or above.

NOTE: If necessary, update transponder software to the required level.

2. Equipment and Materials

Table 201. Special Tools and Equipment

Name and Part Number
Portable Power Supply capable of outputting 28 ± 0.5 VDC
Harness Assy, GTX-33 Test (87-124598-1001)
PC with Windows Hyper Terminal with RS-232 Serial Port or USB to Serial Adapter (available with Windows XP OS only)

3. Job Set-Up

SUBTASK AMM-34-50-20-051-921-001

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

B. If installed on aircraft, remove affected transponder from aircraft. Refer to AMM-34-50-21-001-801 – Transponder - Removal .

C. Obtain the transponder configuration files from Eclipse Service Engineering. One of the configuration files sets transponder configuration to factory defaults; another file enables the ADS-B OUT function and configures the associated parameters to the required values.

D. Turn the power supply on and make sure the power supply is set to 28 ± 0.5 VDC. Turn the power supply off.

E. Connect transponder, PC and Power supply with Harness Assy, GTX-33 Test (87-124598-1001). Refer to Fig. 201, Sheet 1.

Make sure the Test Switch on the cable is in the OFF position.

NOTE: Make sure that 50 ohm/5 watt terminators are installed on transponder antenna ports P02 and P03.

F. Set up Hyper Terminal Interface as follows:

(1) On the PC with Windows XP OS only, open Windows Hyper Terminal app (All Programs>Accessories>Communications>Hyper Terminal) and enter *xpdr_configuration* as name for the connection. Refer to Fig. 202, Sheet 1.

(2) Enter the following connection properties: Refer to Fig. 202, Sheet 2.

- Connect To – Connect using: COM1
- COM1 Properties:
  - Bits per second: 9600
  - Data bits: 8
  - Parity: None
  - Stop bits: 1
  - Flow control: None

(3) To connect to the device, press ***call*** button; to disconnect, press ***disconnect*** button. Figure Fig. 202, Sheet 3 shows the communication with the transponder when connected.

(4) To send a file to the connected device, select the file through the Transfer-> Send Text File. Refer to Fig. 202, Sheet 4.

4. Procedure

SUBTASK AMM-34-50-20-051-701-002

A. Perform the following configuration procedure.

(1) Make sure the Test Switch on the cable is in the OFF position.

(2) Turn the power supply on and power up the transponder.

(3) Ensure the connection with transponder can be established by pressing the call button on the Hyper Terminal interface.

(4) Once the transponder is communicating with the computer, send the configuration file to the transponder to reset transponder configuration to factory defaults.

(5) Stop transponder communication using the disconnect button on the Hyper Terminal interface.

(6) Cycle power to the transponder.

(7) Ensure the connection with transponder can be established by pressing the call button on the Hyper Terminal interface.

(8) Once the transponder is communicating with the computer, send the ADS-B OUT parameter configuration file.

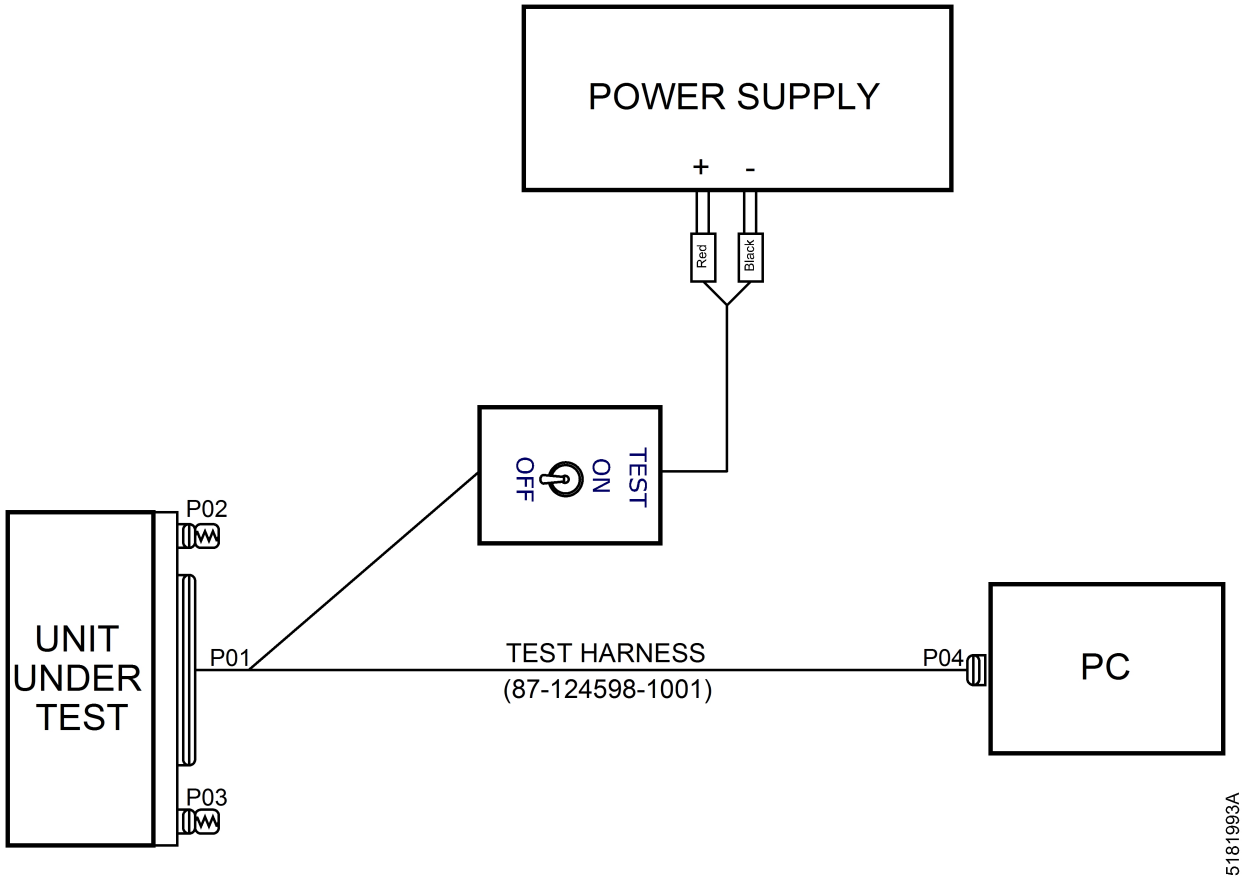
(9) Stop transponder communication using the disconnect button on the Hyper Terminal interface.

(10) Power down the transponder.

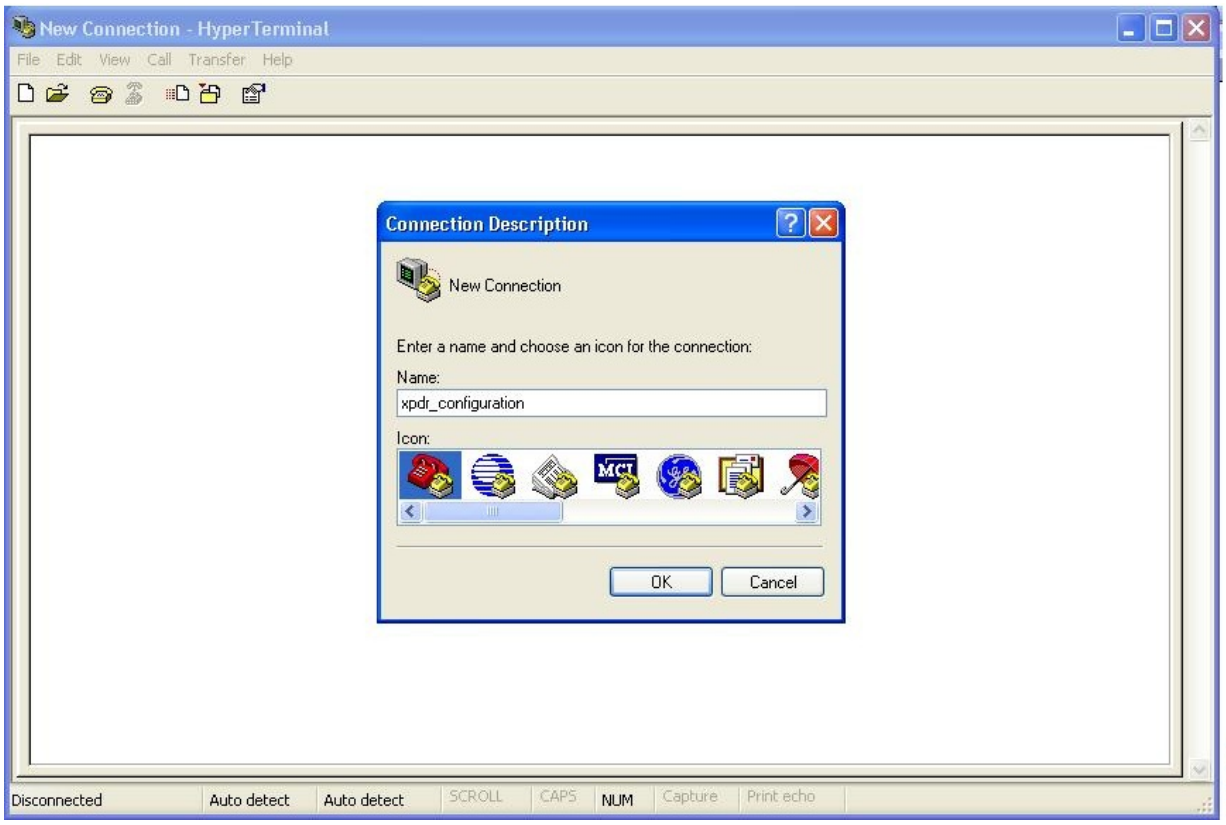
5. Job Close-Up

SUBTASK AMM-34-50-20-051-921-002

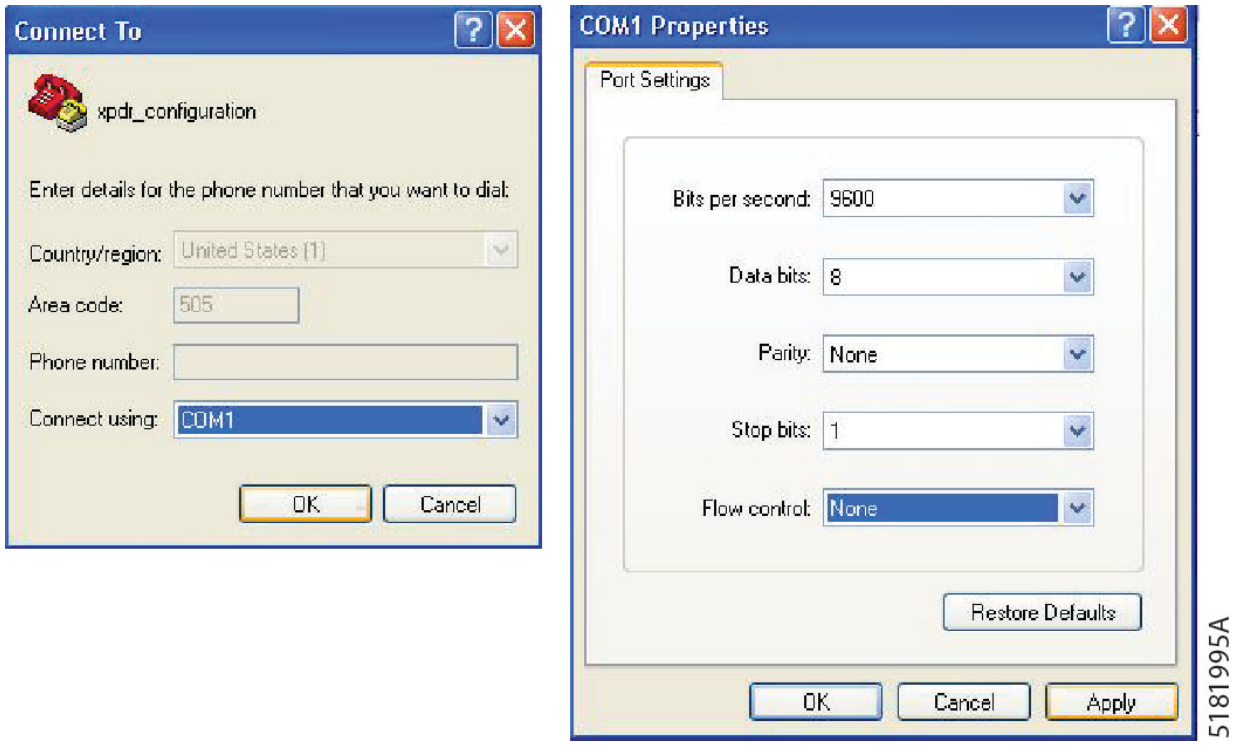
A. Disconnect Harness Assy, GTX-33 Test (87-124598-1001) from Power Supply and Transponder.



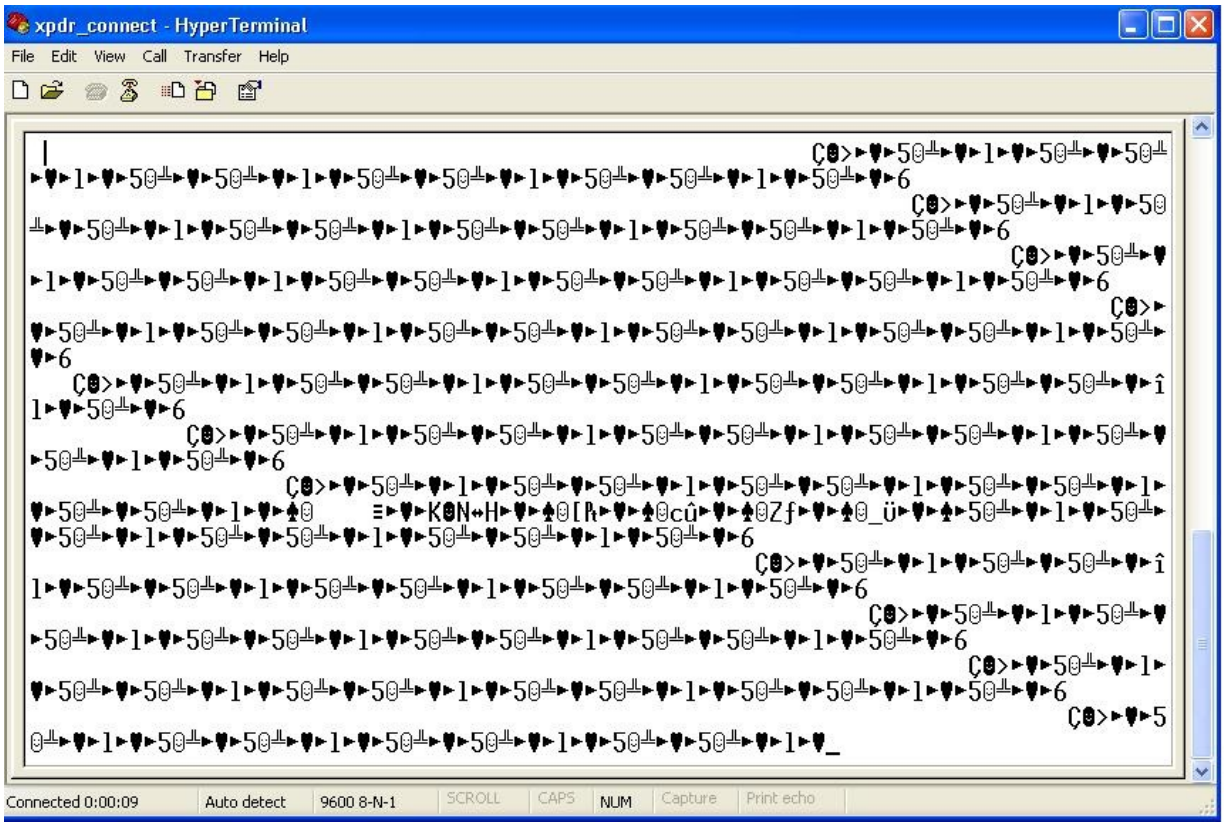
Test Setup
Figure 201 (Sheet 1 of 1)



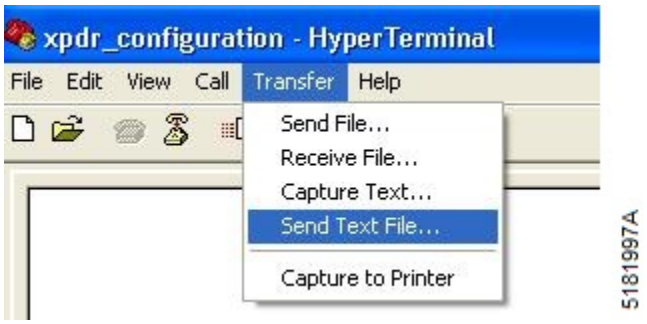
Hyper Terminal – New Connection
Figure 202 (Sheet 1 of 4)



Hyper Terminal – Connection Properties
Figure 202 (Sheet 2 of 4)



Hyper Terminal – Comm Demo
Figure 202 (Sheet 3 of 4)



Hyper Terminal – Send File
Figure 202 (Sheet 4 of 4)

TRANSPONDER - ADJUSTMENT/TEST

AMM-34-50-20-071-C-801

1. General

A. This task gives procedures to do the adjustment/test of the:

- Dual Standard (Non-Diversity) Transponder System and components or Dual Diversity Transponder System and components.

NOTE: An adjustment/test is only required for the transponder that is being installed. The opposite transponder, if it has not been removed, does not require an adjustment/test

B. Perform ADS-B Out System Test only if ADS-B function is enabled.

NOTE: Perform ADS-B Out Fail Indicator Functional Test only if the indicator is being replaced or removed and reinstalled.

Limitation: If the aircraft is equipped with Garmin GPS 400W, ADS-B OUT System Test test applies to Transponder 1 (XPDR 1) only.

(1) Refer to Table 501 for testing procedures.

Table 501. Test Matrix

System Test	Procedures
Dual Standard Transponder System Test	**Std. Transponder 1** *Adjustment/Test:* SUBTASK AMM-34-50-20-071-C-701-001, and **Std. Transponder 2** *Adjustment/Test:* SUBTASK AMM-34-50-20-071-C-701-002. **Transponder Cooling** *Adjustment/Test:* TASK AMM-34-50-24-071-801 .
Dual Diversity Transponder System Test	**Diversity Transponder 1** *Adjustment/Test:* SUBTASK AMM-34-50-20-071-C-701-003, and **Diversity Transponder 2** *Adjustment/Test:* SUBTASK AMM-34-50-20-071-C-701-004. **Transponder Cooling** *Adjustment/Test:* TASK AMM-34-50-24-071-801 .
ADS-B Out System Tests	**ADS-B Out** *Test Set-Up* SUBTASK AMM-34-50-20-071-C-701-005 **ADS-B Out** *Functional Test:* SUBTASK AMM-34-50-20-071-C-701-006 **ADS-B Out** *Parameter Test:* SUBTASK AMM-34-50-20-071-C-701-007 **ADS-B Out Fail Indicator** *Functional Test:* SUBTASK AMM-34-50-20-071-C-701-008

2. Equipment and Materials

Table 502. Special Tools and Equipment

Name and Part Number
Transponder Test Set (Aeroflex, IFR6000) or equivalent
Weight-on-Wheels (WOW) Box (EAI, 87-117390-1001) or AMC 2.4.01 (or higher).
Ground Power Unit (GPU) (AllStar 450, AllStar G.S.E., Hobart GPU-400, Hobart GPU- 600, or Bycan PS-28100)

3. Job Set-Up

SUBTASK AMM-34-50-20-071-C-921-001

* * * 0001-0104, 0113-0115, 0120, 0123-0124 POST SB 500-99-002; 0105-0112, 0116-0119, 0121-0122, 0125-0265 POST SB 500-99-005; AND 0266-0267; ALL POST MB 500-31-016, MB 500-31-018. and MB 500-34-030

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

B. If on jacks, refer to AMM-07-10-00-051-801 – Jacking - Maintenance Practices and AMM-08-20-00-051-801 – Leveling.

C. Connect external power. Refer to AMM-24-40-00-051-801 – External Power - Maintenance Practices. Do not turn on START BATT and SYS BATT switches until prompted.

D. Prepare Anti-ice system for maintenance. Refer to AMM-20-00-03-051-801 – Prepare Anti-Ice Systems For Maintenance .

E. Take proper safety precautions to protect personnel. Position aircraft such that multi-path RF reflections between the IFR-6000 test set, the aircraft's antennas, and surrounding objects are minimized. The area on the left side of the aircraft should not be up against a metal wall or another aircraft. If necessary, position the aircraft outside, away from metal buildings or other aircraft. Refer to Fig. 501.

   CAUTION: FAILURE TO COMPLY WITH THIS STEP AND CONTINUING WITH THIS PROCEDURE COULD IMPACT LOCAL AIRPORT TOWER OPERATIONS.

F. If applicable, contact local airport tower to inform them a transponder test is being run at your location (inside or outside). Request appropriate squawk and allotted time to run test.

   NOTE: If local airport tower is not informed, use code 1200.

G. Attach test set antenna to Transponder Test Set using 1 foot long test set cable (blue cable, supplied if IFR6000 is used), connected to ANT port on tester.

H. During testing, place the Transponder Test Set antenna approximately two feet to four feet forward and in line with right wing tip tank. May require periodic repositioning between two and four feet.

I. Connect Weight On Wheels (WOW) box or Aircraft Maintenance Computer (AMC) and set switches on Box to W-On-W (on-ground). Refer to AMM-20-00-04-051-801 – Weight On Wheels (WOW) Box - Connect/Disconnect.

4. Transponder-1 Adjustment/Test (Standard System)

SUBTASK AMM-34-50-20-071-C-701-001

* * * 0001-0104, 0113-0115, 0120, 0123-0124 POST SB 500-99-002; 0105-0112, 0116-0119, 0121-0122, 0125-0265 POST SB 500-99-005; AND 0266-0267

A. Begin adjustment/test as follows:

(1) Perform job setup, refer to SUBTASK AMM-34-50-20-071-C-921-001.

(2) Re-align the Transponder Test Set, IFR6000 antenna to point at the aircraft's Transponder–1 antenna (top of the center cabin/fuselage).

(3) Use the small rotary knob on the left PFD to select XPDR page. NOTE: The XPDR select page will time out and switch back to the COM page after 30 seconds. The operator will have to select XPDR page from time to time during this test.

(4) Make sure that Transponder 1 (XPDR 1) is ACTIVE transponder in STANDBY MODE.

(5) Scroll to FLT CTRLS using outer knob. Push inner knob to select. Scroll to the listed ECB using outer knob and highlight. Push "COLLAR" soft key. Push "CONFIRM COLLAR" soft key.

- ECB - NOSE LDG GEAR (L AFT Bus)
- ECB - L MAIN LDG GEAR (L AFT Bus)
- ECB - R MAIN LDG GEAR (L AFT Bus)

(6) Scroll to ENGINE using outer knob. Push inner knob to select. Scroll to the listed ECB using outer knob and highlight. Push "COLLAR" soft key. Push "CONFIRM COLLAR" soft key.

- ECB - L ENG FIRE EXTNGR (L FWD Bus)
- ECB - R ENG FIRE EXTNGR (R FWD Bus)

(7) Clear any "MASTER CAUTIONS" and "MASTER WARNINGS" as needed.

(8) Set both left and right PFD baro set to 29.92 (in/Hg) on Autopilot Control Panel (ACP) by pushing BARO SET knob.

B. Transponder-1 Setup

(1) Use the small rotary knob on the left PFD to select XPDR page.

NOTE: The XPDR select page times out and switches back to the COM page after 30 seconds. Select XPDR page from time to time during this test.

(2) Make sure that Transponder 1 (XPDR 1) is selected as ACTIVE transponder in STANDBY MODE.

(3) Push CODE soft key on left PFD and enter the transponder code provided by the control tower for this test. If no code was assigned, enter 1200.

C. Transponder-1 MODE A,C,S Test using Transponder Test Set, IFR6000

(1) Power up the Transponder Test Set (IFR 6000). After tester performs Self Test, push SETUP button on the test set to bring up the SETUP-XPDR page. If necessary, continue pressing SETUP button until tester cycles to SETUP-XPDR page.

(2) On the Transponder Test Set (IFR 6000)'s SETUP-XPDR page, use NEXT PARAM or PREV PARAM soft keys to select each parameter, and the "arrow" DATA keys to set the values listed below.

- ANTENNA: TOP
- RF PORT: ANTENNA
- ANT RANGE-TOP: 18 ft.
- ANT HEIGHT-TOP: 7 ft.
- ANT RANGE-BOTTOM: 18 ft.
- ANT HEIGHT-BOTTOM: 1 ft.
- DIR CABLE LOSS: Ignore
- ANT CABLE: 1 ft.
- ANT CABLE LOSS: As marked on blue cable (should be 0.1 dB)
- ANT GAIN (dBi) - 1.03 GHz: As marked on test set antenna
- ANT GAIN (dBi) - 1.09 GHz: As marked on test set antenna
- UUT ADDRESS: AUTO
- MANUAL AA: Ignore
- DIVERSITY TEST: OFF
- PWR LIM: FAR 43
- CHECK CAP: YES

(3) Push XPDR button to go to the XPDR-AUTO TEST page.

(4) Push CONFIG soft key to display the XPDR-CONFIG SCREEN page.

(5) On the XPDR-CONFIG SCREEN, scroll to GENERIC MODE S using the UP/Down DATA keys.

(6) With GENERIC MODE S highlighted, push RETURN soft key to confirm selection. This will also cause a return to the XPDR-AUTO TEST page.

(7) Set the WOW test box or AMC to W-off-W (airborne).

NOTE: Transponders will transition to ALT mode automatically when airborne or simulated airborne (W-off-W).

(8) Push RUN TEST soft key to start AUTO TEST. The tester will sequence through separate tests, after which a “PASS” message should be displayed.

(9) Top ERP should be between 48 to 60 dBm and MTL should be between -68 to -80 dBm to PASS.

NOTE: If values are obtained and any of the individual tests FAIL during AUTO TEST, press TEST LIST button on IFR 6000 and using UP/DOWN buttons scroll to the specific Failed test(s). Press SELECT TEST button, adjust IFR 6000 test set positioning anywhere within a 30 foot arc between the aircraft’s right wingtip and the nose as required, and Press RUN TEST button until PASS Message is received (this may take several test set position adjustments until IFR 6000 and aircraft Transponder “Sync up”). Press STOP TEST button. Repeat until all individual FAILED tests have achieved a PASS. It is not necessary to re-run AUTO TEST. AUTO TEST is a convenience feature only.

NOTE: If POWER/FREQ test Fails: After pressing RUN TEST, adjust IFR-6000 test set positioning while test is running until PASS message appears (this test performs a “Live” update of the dBm values). It may be required to position the test set anywhere within a 30 foot arc between the aircraft’s right wingtip and the nose. Press the STOP TEST button as soon as PASS message is displayed

(10) Push RUN TEST soft key on Transponder Test Set (IFR 6000) again.

(11) Make sure the following appears on the Transponder Test Set (IFR 6000):

- “A CODE” = transponder code entered
- “C ALT” = left PFD altitude indication +/- 100 ft.
- “S CODE” = ICAO code assigned to this aircraft/tail number
- “TAIL” = tail number assigned to this aircraft
- DF17 DETECTED = YES (IF ADS-B OUT IS INSTALLED) / NO (IF ADS-B OUT IS NOT INSTALLED)
- “FLT ID” = same as tail number
- “AA” = ICAO code assigned to this aircraft/tail number (8 digit number in parenthesis)
- “FS” = IN-AIR
- “VS” = IN-AIR

(12) On MFD, press SYS along bottom of MFD. Use the small lower knob on the MFD to scroll to the SETUP page. On the SETUP page, press the SETTINGS softkey to bring up the SETTINGS page. At the bottom of the SETTINGS page, verify:

(a) The “REGISTRATION NO” number (alphanumeric) matches the “TAIL” number (alphanumeric) displayed on the IFR 6000 (above).

(b) The “ICAO 24-BIT (OCT)” number matches the “AA” ICAO 24-bit code displayed on the IFR 6000 (above).

NOTE: If the aircraft’s registration number and/or ICAO 24-bit (octal) number are not present on the MFD’s SETTINGS page, the Aircraft Configuration File must be updated, refer to AMM-31-40-00-051-801 – Aircraft Computer Systems - Maintenance Practices. Steps (10) through this step must then be repeated.

(13) On the MFD, scroll to the SETUP tab, press the SENSOR Soft Key. Set the ADC PFD source selection from AUTO to ADC 2.

(14) On the IFR 6000, press the XPDR button once. Once XPDR - ALT ENCODER is displayed, press the SOURCE SELECT Soft Key until SOURCE - XPDR is displayed. Press the RUN TEST Soft Key.

(15) Make sure that the altitude reported on IFR 6000 matches L PFD altitude indication +/- 100 ft.

(16) On the MFD, set the ADC source back to AUTO.

(17) Set the WOW Box Switches to W-on-W (on-ground).

(18) Set XPDR 1 to STANDBY MODE.

5. Transponder-2 Adjustment/Test (Standard System)

SUBTASK AMM-34-50-20-071-C-701-002

* * * 0001-0104, 0113-0115, 0120, 0123-0124 POST SB 500-99-002; 0105-0112, 0116-0119, 0121-0122, 0125-0265 POST SB 500-99-005; AND 0266-0267

A. Begin adjustment/test as follows:

(1) Perform job setup, refer to SUBTASK AMM-34-50-20-071-C-921-001.

(2) Re-align the Transponder Test Set, IFR6000 antenna to point at the aircraft’s lower Transponder-2 antenna (bottom of the center cabin/fuselage).

(3) Use the small rotary knob on the left PFD to select XPDR page.

NOTE: The XPDR select page will time out and switch back to the COM page after 30 seconds. The operator will have to select XPDR page from time to time during this test.

(4) Push ACTIVE soft key, upper right button, on the left PFD to select XPDR 2.

(5) Make sure that Transponder 2 (XPDR 2) is in STANDBY MODE.

B. Transponder-2 Setup

(1) Push CODE soft key on right PFD and enter the transponder code provided by the control tower for this test. If no code was assigned, enter 1200.

C. Transponder-2 MODE A,C,S Test using Transponder Test Set, IFR6000

(1) Power up the Transponder Test Set (IFR 6000). After tester performs Self Test, push SETUP button on the test set to bring up the SETUP-XPDR page. If necessary, continue pressing SETUP button until tester cycles to SETUP-XPDR page.

(2) On the Transponder Test Set (IFR 6000) SETUP-XPDR page, use NEXT PARAM or PREV PARAM soft keys to select each parameter, and the “arrow” DATA keys to set the values listed below.

- ANTENNA: BOTTOM
- RF PORT: ANTENNA
- ANT RANGE-TOP: 18 ft.
- ANT HEIGHT-BOTTOM: 7 ft.
- ANT RANGE-BOTTOM: 18 ft.
- ANT HEIGHT-TOP: 1 ft.
- DIR CABLE LOSS: Ignore
- ANT CABLE: 1 ft.
- ANT CABLE LOSS: As marked on blue cable (should be 0.1 dB)
- ANT GAIN (dBi) - 1.03 GHz: As marked on test set antenna
- ANT GAIN (dBi) - 1.09 GHz: As marked on test set antenna
- UUT ADDRESS: AUTO
- MANUAL AA: Ignore
- DIVERSITY TEST: OFF
- PWR LIM: FAR 43
- CHECK CAP: YES

(3) Push XPDR button to go to the XPDR-AUTO TEST page.

(4) Push CONFIG soft key to display the XPDR-CONFIG SCREEN page.

(5) On the XPDR-CONFIG SCREEN, scroll to GENERIC MODE S using the up/down DATA keys.

(6) With GENERIC MODE S highlighted, push RETURN soft key to confirm selection. This will also cause a return to the XPDR-AUTO TEST page.

(7) Set the WOW Box Switches to W-off-W (airborne).

(8) Push RUN TEST soft key to start AUTO TEST. The tester will sequence through separate tests, after which a “PASS” message should be displayed.

(9) Bottom ERP should be between 48 to 60 dBm and MTL should be between -68 to -80 dBm to PASS.

NOTE: If values are obtained and any of the individual tests FAIL during AUTO TEST, press TEST LIST button on IFR 6000 and using UP/DOWN buttons scroll to the specific Failed test(s). Press SELECT TEST button, adjust IFR 6000 test set positioning anywhere within a 30 foot arc between the aircraft's right wingtip and the nose as required, and Press RUN TEST button until PASS Message is received (this may take several test set position adjustments until IFR 6000 and aircraft Transponder "Sync up"). Press STOP TEST button. Repeat until all individual FAILED tests have achieved a PASS. It is not necessary to re-run AUTO TEST. AUTO TEST is a convenience feature only.

NOTE: If POWER/FREQ test Fails: After pressing RUN TEST, adjust IFR-6000 test set positioning while test is running until PASS message appears (this test performs a "Live" update of the dBm values). It may be required to position the test set anywhere within a 30 foot arc between the aircraft's right wingtip and the nose. Press the STOP TEST button as soon as PASS message is displayed.

(10) Make sure the following appears on the Transponder Test Set (IFR 6000):

- "A CODE" = transponder code entered
- "C ALT" = left PFD altitude indication +/- 100 ft.
- "S CODE" = ICAO code assigned to this aircraft/tail number
- "TAIL" = tail number assigned to this aircraft
- "FLT ID" = same as tail number
- DF17 DETECTED" = YES (IF ADS-B OUT IS INSTALLED) / NO (IF ADS-B OUT IS NOT INSTALLED)
- "AA" = ICAO code assigned to this aircraft/tail number (8 digit number in parenthesis)
- "FS" = IN-AIR
- "VS" = IN-AIR

(11) On MFD, press SYS along bottom of MFD. Use the small lower knob on the MFD to scroll to the SETUP page. On the SETUP page, press the SETTINGS softkey to bring up the SETTINGS page. At the bottom of the SETTINGS page, verify:

(a) The "REGISTRATION NO" number (alphanumeric) matches the "TAIL" number (alphanumeric) displayed on the IFR 6000 (above).

(12) The "ICAO 24-BIT (OCT)" number matches the "AA" ICAO 24-bit code displayed on the IFR 6000 (above).

NOTE: If the aircraft's registration number and/or ICAO 24-bit (octal) number are not present on the MFD's SETTINGS page, the Aircraft Configuration File must be updated, refer to AMM-31-40-00-051-801 – Aircraft Computer Systems - Maintenance Practices. .

(13) On the MFD, scroll to the SETUP tab, press the SENSOR Soft Key. Set the ADC PFD source selection from AUTO to ADC 2.

(14) On the IFR 6000, press the XPDR button once.

(15) Once XPDR - ALT ENCODER is displayed, press the SOURCE SELECT Soft Key until SOURCE - XPDR is displayed. Press the RUN TEST Soft Key.

(16) Make sure that an altitude reported on IFR 6000 matches L PFD altitude indication +/- 100 ft.

(17) On the MFD, set the ADC source back to AUTO.

(18) Set the WOW Box Switches to W-on-W (on-ground).

(19) Set XPDR 2 to STANDBY MODE.

6. Diversity Transponder-1 Adjustment/Tests

SUBTASK AMM-34-50-20-071-C-701-003

* * * 0001-0104, 0113-0115, 0120, 0123-0124 POST SB 500-99-002; 0105-0112, 0116-0119, 0121-0122, 0125-0265 POST SB 500-99-005; AND 0266-0267

A. Begin adjustment/test as follows:

(1) Install Antenna Clamp and Shield Assembly (part of Transponder Test Set IFR 6000) on lower transponder antenna (bottom of the center cabin/fuselage), in accordance with instructions in IFR 6000 Ramp Test Set Operation Manual.

(a) Position Antenna Clamp inside the slot in the Antenna Shield Plate, aligning captive screws into the respective screw holes.

(b) Tighten captive screws.

(c) Cover the transponder's Antenna with Antenna Shield. Loosen thumbscrews if necessary.

NOTE: It may be necessary to remove the unit under test's Antenna Guard if access to the transponders Antenna is restricted.

(d) Secure Antenna Shield by tightening thumbscrews.

(2) Perform job setup, refer to SUBTASK AMM-34-50-20-071-C-921-001.

(3) Push ECB BY SYSTEM soft key. Scroll to FLCS using outer knob. Push inner knob to select. Scroll to the listed ECB using outer knob and highlight. Push “COLLAR” soft key. Push “CONFIRM COLLAR” soft key.

- ECB - NOSE LDG GEAR (L AFT Bus)
- ECB - L MAIN LDG GEAR (L AFT Bus)
- ECB - R MAIN LDG GEAR (L AFT Bus)

(4) Scroll to ENGINE using outer knob. Push inner knob to select. Scroll to the listed ECB using outer knob and highlight. Push “COLLAR” soft key. Push “CONFIRM COLLAR” soft key.

- ECB - L ENG FIRE EXTNGR (L FWD Bus)

- ECB - R ENG FIRE EXTNGR (R FWD Bus)

(5) Clear any “MASTER CAUTIONS” and “MASTER WARNINGS” as needed.

(6) Set both left and right PFD baro set to 29.92 (in/Hg.) on Autopilot Control Panel (ACP) by pushing BARO SET knob.

- Make sure Baro Set on PFD annunciates “29.92 IN”.

B. Diversity Transponder-1 Setup

(1) Use the small rotary knob on the left PFD to select XPDR page.

NOTE: The XPDR select page times out and switches back to the COM page after 30 seconds. Select XPDR page from time to time during this test.

(2) Push ACTIVE soft key (upper right button) on the left PFD to select D-XPDR1.

(3) Make sure that the selected transponder is in Standby Mode.

(4) Push CODE soft key on left PFD and enter the transponder code used for this test or 1200.

C. Diversity Transponder-1 MODE A,C,S Test using Transponder Test Set, IFR6000 (Upper Antenna)

(1) Power up the Transponder Test Set (IFR 6000). After tester performs Self Test, push SETUP button on the test set to bring up the SETUP-XPDR page. If necessary, continue pressing SETUP button until tester cycles to SETUP-XPDR page.

(2) On the Transponder Test Set (IFR 6000)’s SETUP-XPDR page, use NEXT PARAM or PREV PARAM soft keys to select each parameter, and the “arrow” DATA keys to set the values listed below.

- ANTENNA: TOP
- RF PORT: ANTENNA
- ANT RANGE-TOP: 18 ft.
- ANT HEIGHT-TOP: 7 ft.
- ANT RANGE-BOTTOM: 18 ft.
- ANT HEIGHT-BOTTOM: 1 ft.
- DIR CABLE LOSS: Ignore
- ANT CABLE: 1 ft.
- ANT CABLE LOSS: As marked on blue cable (should be 0.1 dB)
- ANT GAIN (dBi) - 1.03 GHz: As marked on test set antenna
- ANT GAIN (dBi) - 1.09 GHz: As marked on test set antenna
- UUT ADDRESS: AUTO
- MANUAL AA: Ignore
- DIVERSITY TEST: ON
- PWR LIM: FAR 43

- CHECK CAP: YES

(3) Push XPDR button to go to the XPDR-AUTO TEST page.

(4) Push CONFIG soft key to display the XPDR-CONFIG SCREEN page.

(5) On the XPDR-CONFIG SCREEN, scroll to GENERIC MODE S using the UP/Down DATA keys.

(6) With GENERIC MODE S highlighted, push RETURN soft key to confirm selection. This will also cause a return to the XPDR-AUTO TEST page.

(7) Set the WOW Box Switches to W-off-W (airborne).

(8) Push RUN TEST soft key to start AUTO TEST. The tester will sequence through separate tests, after which a “PASS” message should be displayed.

(9) Top ERP should be between 48 to 60 dBm and MTL should be between -68 to -80 dBm to PASS.

NOTE: If values are obtained and any of the individual tests FAIL during AUTO TEST, press TEST LIST button on IFR 6000 and using UP/DOWN buttons scroll to the specific Failed test(s). Press SELECT TEST button, adjust IFR 6000 test set positioning anywhere within a 30 foot arc between the aircraft’s right wingtip and the nose as required, and Press RUN TEST button until PASS Message is received (this may take several test set position adjustments until IFR 6000 and aircraft Transponder “Sync up”). Press STOP TEST button. Repeat until all individual FAILED tests have achieved a PASS. It is not necessary to re-run AUTO TEST. AUTO TEST is a convenience feature only.

NOTE: If POWER/FREQ test Fails: After pressing RUN TEST, adjust IFR-6000 test set positioning while test is running until PASS message appears (this test performs a “Live” update of the dBm values). It may be required to position the test set anywhere within a 30 foot arc between the aircraft’s right wingtip and the nose. Press the STOP TEST button as soon as PASS message is displayed

(10) Make sure the following appears on the Transponder Test Set (IFR 6000):

- “A CODE” = transponder code entered
- “C ALT” = left PFD altitude indication +/- 100 ft.
- “S CODE” = ICAO code assigned to this aircraft/tail number
- “TAIL” = tail number assigned to this aircraft
- “FLT ID” = same as tail number
- DF17 DETECTED” = YES (IF ADS-B OUT IS INSTALLED) / NO (IF ADS-B OUT IS NOT INSTALLED)
- “AA” = ICAO code assigned to this aircraft/tail number (8 digit number in parenthesis)
- “FS” = IN-AIR
- “VS” = IN-AIR

(11) On MFD, press SYS along bottom of MFD. Use the small lower knob on the MFD to scroll to the SETUP page. On the SETUP page, press the SETTINGS soft key to bring up the SETTINGS page. At the bottom of the SETTINGS page, verify:

(a) The “REGISTRATION NO” number (alphanumeric) matches the “TAIL” number (alphanumeric) displayed on the IFR 6000 (above).

(b) The “ICAO 24-BIT (OCT)” number matches the “AA” ICAO 24-bit code displayed on the IFR 6000 (above).

NOTE: If the aircraft’s registration number and/or ICAO 24-bit (octal) number are not present on the MFD’s SETTINGS page, the Aircraft Configuration File must be updated, refer to AMM-31-40-00-051-801 – Aircraft Computer Systems - Maintenance Practices. Steps (10) through this step must then be repeated.

(12) On the MFD, scroll to the SETUP tab, press the SENSOR Soft Key. Set the ADC PFD source selection from AUTO to ADC 2.

(13) On the IFR 6000, press the XPDR button once.

(14) Once XPDR - ALT ENCODER is displayed, press the SOURCE SELECT Soft Key until SOURCE - XPDR is displayed. Press the RUN TEST Soft Key.

(15) Make sure that an altitude reported on IFR 6000 matches L PFD altitude indication +/- 100 ft.

(16) On the MFD, set the ADC source back to AUTO.

(17) Set the WOW Box Switches to W-on-W (on-ground).

(18) Set D-XPDR 1 to STANDBY MODE.

D. Diversity Transponder-1 MODE A,C,S Test using Transponder Test Set (IFR 6000) (Lower Antenna)

(1) Remove Antenna Clamp and Shield Assembly (part of Transponder Test Set IFR 6000) from lower transponder antenna (bottom center cabin/fuselage).

(2) Install Antenna Clamp and Shield Assembly (part of Transponder Test Set IFR 6000) on upper transponder antenna (top of the center cabin/fuselage), in accordance with instructions in IFR 6000 Ramp Test Set Operation Manual.

(3) Pre-position the Transponder Test Set IFR 6000 antenna to point at the aircraft’s lower Transponder 2 antenna, (bottom of the center cabin/fuselage).

(4) Push XPDR button to go to the XPDR-AUTO TEST page.

(5) Push CONFIG soft key to display the XPDR-CONFIG SCREEN page.

(6) On the XPDR-CONFIG SCREEN, scroll to GENERIC MODE S using the UP/Down DATA keys.

(7) With GENERIC MODE S highlighted, push RETURN soft key to confirm selection. This will also cause a return to the XPDR-AUTO TEST page.

(8) Set the WOW Box Switches to W-off-W (airborne).

(9) Push RUN TEST soft key to start AUTO TEST. The tester will sequence through separate tests, after which a “PASS” message should be displayed.

(10) ERP should be between 48 to 60 dBm and MTL should be between -68 to -80 dBm to PASS.

NOTE: If values are obtained and any of the individual tests FAIL during AUTO TEST, press TEST LIST button on IFR 6000 and using UP/DOWN buttons scroll to the specific Failed test(s). Press SELECT TEST button, adjust IFR 6000 test set positioning anywhere within a 30 foot arc between the aircraft's right wingtip and the nose as required, and Press RUN TEST button until PASS Message is received (this may take several test set position adjustments until IFR 6000 and aircraft Transponder "Sync up"). Press STOP TEST button. Repeat until all individual FAILED tests have achieved a PASS. It is not necessary to re-run AUTO TEST. AUTO TEST is a convenience feature only.

NOTE: If POWER/FREQ test Fails: After pressing RUN TEST, adjust IFR-6000 test set positioning while test is running until PASS message appears (this test performs a "Live" update of the dBm values). It may be required to position the test set anywhere within a 30 foot arc between the aircraft's right wingtip and the nose. Press the STOP TEST button as soon as PASS message is displayed

(11) Remove Antenna Clamp and Shield Assembly.

(12) Set the WOW Box Switches to W-on-W (on-ground).

7. Diversity Transponder-2 Adjustment/Tests

SUBTASK AMM-34-50-20-071-C-701-004

* * * 0001-0104, 0113-0115, 0120, 0123-0124 POST SB 500-99-002; 0105-0112, 0116-0119, 0121-0122, 0125-0265 POST SB 500-99-005; AND 0266-0267

A. Begin adjustment/test as follows:

(1) Install Antenna Clamp and Shield Assembly (part of Transponder Test Set IFR 6000) on lower transponder antenna (bottom of the center cabin/fuselage), in accordance with instructions in IFR 6000 Ramp Test Set Operation Manual.

(a) Position Antenna Clamp inside the slot in the Antenna Shield Plate, aligning captive screws into the respective screw holes.

(b) Tighten captive screws.

(c) Cover the transponder's Antenna with Antenna Shield. Loosen thumbscrews if necessary.

NOTE: It may be necessary to remove the unit under test's Antenna Guard if access to the transponders Antenna is restricted.

(d) Secure Antenna Shield by tightening thumbscrews.

(2) Perform job setup, refer to SUBTASK AMM-34-50-20-071-C-921-001.

(3) Push ECB BY SYSTEM soft key. Scroll to FLCS using outer knob. Push inner knob to select. Scroll to the listed ECB using outer knob and highlight. Push "COLLAR" soft key. Push "CONFIRM COLLAR" soft key.

- ECB - NOSE LDG GEAR (L AFT Bus)

- ECB - L MAIN LDG GEAR (L AFT Bus)
- ECB - R MAIN LDG GEAR (L AFT Bus)

(4) Scroll to ENGINE using outer knob. Push inner knob to select. Scroll to the listed ECB using outer knob and highlight. Push “COLLAR” soft key. Push “CONFIRM COLLAR” soft key.

- ECB - L ENG FIRE EXTNGR (L FWD Bus)
- ECB - R ENG FIRE EXTNGR (R FWD Bus)

(5) Clear any “MASTER CAUTIONS” and “MASTER WARNINGS” as needed.

(6) Set both left and right PFD baro set to 29.92 (in/Hg.) on Autopilot Control Panel (ACP) by pushing BARO SET knob.

- Make sure Baro Set on PFD annunciates “29.92 IN”.

B. Diversity Transponder-2 Setup

(1) Use the small rotary knob on the left PFD to select XPDR page.

NOTE: The XPDR select page times out and switches back to the COM page after 30 seconds. Select XPDR page from time to time during this test.

(2) Push ACTIVE soft key (upper right button) on the left PFD to select D-XPDR2.

(3) Make sure that D-XPDR2 is in Standby Mode.

(4) Push CODE soft key on left PFD and enter the transponder code used for this test or 1200.

C. Diversity Transponder-2 MODE A,C,S Test using Transponder Test Set, IFR6000 (Upper Antenna)

(1) Power up the Transponder Test Set (IFR 6000). After tester performs Self Test, push SETUP button on the test set to bring up the SETUP-XPDR page. If necessary, continue pressing SETUP button until tester cycles to SETUP-XPDR page.

(2) On the Transponder Test Set (IFR 6000)’s SETUP-XPDR page, use NEXT PARAM or PREV PARAM soft keys to select each parameter, and the “arrow” DATA keys to set the values listed below.

- ANTENNA: TOP
- RF PORT: ANTENNA
- ANT RANGE-TOP: 18 ft.
- ANT HEIGHT-TOP: 7 ft.
- ANT RANGE-BOTTOM: 18 ft.
- ANT HEIGHT-BOTTOM: 1 ft.
- DIR CABLE LOSS: Ignore
- ANT CABLE: 1 ft.
- ANT CABLE LOSS: As marked on blue cable (should be 0.1 dB)
- ANT GAIN (dBi) - 1.03 GHz: As marked on test set antenna

- ANT GAIN (dBi) - 1.09 GHz: As marked on test set antenna
- UUT ADDRESS: AUTO
- MANUAL AA: Ignore
- DIVERSITY TEST: ON
- PWR LIM: FAR 43
- CHECK CAP: YES

(3) Push XPDR button to go to the XPDR-AUTO TEST page.

(4) Push CONFIG soft key to display the XPDR-CONFIG SCREEN page.

(5) On the XPDR-CONFIG SCREEN, scroll to GENERIC MODE S using the UP/Down DATA keys.

(6) With GENERIC MODE S highlighted, push RETURN soft key to confirm selection. This will also cause a return to the XPDR-AUTO TEST page.

(7) Set the WOW Box Switches to W-off-W (airborne).

(8) Push RUN TEST soft key to start AUTO TEST. The tester will sequence through separate tests, after which a “PASS” message should be displayed.

(9) Top ERP should be between 48 to 60 dBm and MTL should be between -68 to -80 dBm to PASS.

NOTE: If values are obtained and any of the individual tests FAIL during AUTO TEST, press TEST LIST button on IFR 6000 and using UP/DOWN buttons scroll to the specific Failed test(s). Press SELECT TEST button, adjust IFR 6000 test set positioning anywhere within a 30 foot arc between the aircraft’s right wingtip and the nose as required, and Press RUN TEST button until PASS Message is received (this may take several test set position adjustments until IFR 6000 and aircraft Transponder “Sync up”). Press STOP TEST button. Repeat until all individual FAILED tests have achieved a PASS. It is not necessary to re-run AUTO TEST. AUTO TEST is a convenience feature only.

NOTE: If POWER/FREQ test Fails: After pressing RUN TEST, adjust IFR-6000 test set positioning while test is running until PASS message appears (this test performs a “Live” update of the dBm values). It may be required to position the test set anywhere within a 30 foot arc between the aircraft’s right wingtip and the nose. Press the STOP TEST button as soon as PASS message is displayed

(10) Make sure the following appears on the Transponder Test Set (IFR 6000):

- “A CODE” = transponder code entered
- “C ALT” = left PFD altitude indication +/- 100 ft.
- “S CODE” = ICAO code assigned to this aircraft/tail number
- “TAIL” = tail number assigned to this aircraft
- “DF17 DETECTED” = YES (IF ADS-B OUT IS INSTALLED) / NO (IF ADS-B OUT IS NOT INSTALLED)

- "FLT ID" = same as tail number
- "AA" = ICAO code assigned to this aircraft/tail number (8 digit number in parenthesis)
- "FS" = IN-AIR
- "VS" = IN-AIR

(11) On MFD, press SYS along bottom of MFD. Use the small lower knob on the MFD to scroll to the SETUP page. On the SETUP page, press the SETTINGS softkey to bring up the SETTINGS page. At the bottom of the SETTINGS page, verify:

(a) The "REGISTRATION NO" number (alphanumeric) matches the "TAIL" number (alphanumeric) displayed on the IFR 6000 (above).

(b) The "ICAO 24-BIT (OCT)" number matches the "AA" ICAO 24-bit code displayed on the IFR 6000 (above).

NOTE: If the aircraft's registration number and/or ICAO 24-bit (octal) number are not present on the MFD's SETTINGS page, the Aircraft Configuration File must be updated, refer to AMM-31-40-00-051-801 – Aircraft Computer Systems - Maintenance Practices. Steps (10) through this step must then be repeated.

(12) On the MFD, scroll to the SETUP tab, press the SENSOR Soft Key. Set the ADC PFD source selection from AUTO to ADC 2.

(13) On the IFR 6000, press the XPDR button once.

(14) Once XPDR - ALT ENCODER is displayed, press the SOURCE SELECT Soft Key until SOURCE - XPDR is displayed. Press the RUN TEST Soft Key.

(15) Make sure that an altitude reported on IFR 6000 matches L PFD altitude indication +/- 100 ft.

(16) On the MFD, set the ADC source back to AUTO.

(17) Set the WOW Box Switches to W-on-W (on-ground).

(18) Set D-XPDR 2 to STANDBY MODE.

D. Diversity Transponder-2 MODE A,C,S Test using Transponder Test Set (IFR 6000) (Lower Antenna)

(1) Remove Antenna Clamp and Shield Assembly (part of Transponder Test Set IFR 6000) from lower transponder antenna (bottom of the center cabin/fuselage).

(2) Install Antenna Clamp and Shield Assembly (part of Transponder Test Set IFR 6000) on upper transponder antenna (top of the center cabin/fuselage), in accordance with instructions in IFR 6000 Ramp Test Set Operation Manual.

(3) Pre-position the Transponder Test Set IFR 6000 antenna to point at the aircraft's lower Transponder 2 antenna (bottom of the center cabin/fuselage).

(4) On the Transponder Test Set (IFR 6000) SETUP-XPDR page, use NEXT PARAM or PREV PARAM softkeys to select each parameter, and the "arrow" DATA keys to set the values listed below:

- ANTENNA: BOTTOM
- RF PORT: ANTENNA

- ANT RANGE-TOP: 18 ft.
- ANT HEIGHT-TOP: 7 ft.
- ANT RANGE-BOTTOM: 18 ft.
- ANT HEIGHT-BOTTOM: 1 ft.
- DIR CABLE LOSS: Ignore
- ANT CABLE: 1 ft.
- ANT CABLE LOSS: As marked on blue cable (should be 0.1 dB)
- ANT GAIN (dBi) - 1.03 GHz: As marked on test set antenna
- ANT GAIN (dBi) - 1.09 GHz: As marked on test set antenna
- UUT ADDRESS: AUTO
- MANUAL AA: Ignore
- DIVERSITY TEST: ON
- PWR LIM: FAR 43
- CHECK CAP: YES

(5) Push XPDR button to go to the XPDR-AUTO TEST page.

(6) Push CONFIG soft key to display the XPDR-CONFIG SCREEN page.

(7) On the XPDR-CONFIG SCREEN, scroll to GENERIC MODE S using the UP/Down DATA keys.

(8) With GENERIC MODE S highlighted, push RETURN soft key to confirm selection. This will also cause a return to the XPDR-AUTO TEST page.

(9) Set the WOW Box Switches to W-off-W (airborne).

(10) Push RUN TEST soft key to start AUTO TEST. The tester will sequence through separate tests, after which a “PASS” message should be displayed.

(11) Bottom ERP should be between 48 to 60 dBm and MTL should be between -68 to -80 dBm to PASS.

NOTE: If values are obtained and any of the individual tests FAIL during AUTO TEST, press TEST LIST button on IFR 6000 and using UP/DOWN buttons scroll to the specific Failed test(s). Press SELECT TEST button, adjust IFR 6000 test set positioning anywhere within a 30 foot arc between the aircraft's right wingtip and the nose as required, and Press RUN TEST button until PASS Message is received (this may take several test set position adjustments until IFR 6000 and aircraft Transponder "Sync up"). Press STOP TEST button. Repeat until all individual FAILED tests have achieved a PASS. It is not necessary to re-run AUTO TEST. AUTO TEST is a convenience feature only.

NOTE: If POWER/FREQ test Fails: After pressing RUN TEST, adjust IFR-6000 test set positioning while test is running until PASS message appears (this test performs a "Live" update of the dBm values). It may be required to position the test set anywhere within a 30 foot arc between the aircraft's right wingtip and the nose. Press the STOP TEST button as soon as PASS message is displayed

(12) Remove Antenna Clamp and Shield Assembly from aircraft and stow in IFR 6000 ramp test set kit.

(13) Remove Antenna Clamp and Shield Assembly and stow in ramp test kit.

(14) Set the WOW Box Switches to W-on-W (on-ground).

8. ADS-B Out System Test

SUBTASK AMM-34-50-20-071-C-701-005

* * * ALL POST MB 500-31-016, MB 500-31-018 AND MB 500-34-030

A. **ADS-B Out Test Set-Up**

(1) Power up the Transponder Test Set (IFR 6000).

NOTE: To check if IFR 6000 has the ADS-B test, press SETUP to display SETUP-GENERAL page. Press INFO and check that ADSB is listed in the OPTIONS area.

NOTE: If no transponder test set with the ADS-B test capability is available, as an additional or alternate method of making sure of proper operation and performance of the installed ADS-B OUT function, the FAA Public ADS-B Performance Report (PAPR) may be requested after a Return to Service (RTS) flight. This report request may be made online on the FAA web site at the ADS-B related area.

(2) After the Transponder Test Set (IFR 6000) performs Self Test, push SETUP button on the test set to bring up the SETUP-XPDR page. If necessary, continue pressing SETUP button until SETUP XPDR screen is displayed.

(3) Press ADS-B SETUP Soft Key to display the SETUP-ADSB Setup Screen. Use NEXT PARAM and PREV PARAM Soft Keys to select each parameter. Configure the setup parameters as shown in the following example:

POS DECODE: GLOBAL

LAT: 35 02 13.80 N

LON: 106 37 1.80 W

BARO PRES ALT: 5450 ft.

ADSB MON: DF17

NOTE: LAT and LON must be set to the values corresponding to the location of the test as shown on the MFD (or, if installed, GPS 400W unit) GPS Status Page. In this example, for the test set entry, the position data corresponds to the MFD (or, if installed, GPS 400W) displayed position data of N35º02.23' W106º37.03', where seconds are represented as a fraction of a minute, and, therefore, the entered seconds' values are 0.23 x 60 seconds = 13.80 seconds and 0.03 x 60 seconds = 1.80 seconds, respectively.
BARO PRES ALT is a test reference and must be set to the value corresponding to the tested aircraft Pressure Altitude. Therefore, using the Autopilot Control Panel (ACP) controls, set Baro Correction to 29.92 inHg, and then enter the altitude value displayed on the PFD into BARO PRES ALT entry field of IFR 6000. This entry may not be available in some IFR 6000 test sets.

(4) Make sure aircraft power is off.

(5) Set WOW Box switches to W-on-W (on-ground).

(6) On IFR 6000, press XPDR mode Key until ADSB/GICB/UAT MAIN menu is displayed. Press the ADS-B MON Soft Key to display the ADS-B MON list screen.

(7) Power up the aircraft.

NOTE: After initial system installation, the initial acquisition of GPS position can take up to 20 minutes. Subsequent acquisitions should take no more than 150 seconds.

(8) If installed, make sure that the ADS-B FAIL indicator is illuminated in white color. Refer to Fig. 502, Sheet 1. Make sure the ADS-B FAIL indicator extinguishes within 150 seconds or less after power up.

(9) Make sure that no ADS-B related CAS messages are displayed.

NOTE: It may take up to 150 seconds for the CAS messages to clear.

(10) If installed, allow for the amber INTEG message on the Left GPS 400W unit to extinguish.

NOTE: It may take up to 150 seconds for the GPS unit to obtain the GPS position and extinguish the INTEG message.

(11) Make sure that the Baro Correction is set to 29.92 inHg. Use the Autopilot Control Panel (ACP) to set.

(12) On either PFD, select transponder under test as ACTIVE transponder and enter transponder test squawk code as assigned by Air Traffic Control for the test.

Transponder should be in STBY mode.

(13) Set WOW Box switches to W-off-W (airborne). Transponder should transition to ALT mode.

SUBTASK AMM-34-50-20-071-C-701-006

* * * ALL POST MB 500-31-016, MB 500-31-018 AND MB 500-34-030

A. **ADS-B Out Functional Test**

(1) Do ADS-B Out Test Set-Up. Refer to SUBTASK AMM-34-50-20-071-C-701-005.

(2) In order to check that ADS-B OUT function is active, for each installed transponder, except for noted limitation, perform the following test using IFR 6000 or an equivalent test set.

Limitation: If the aircraft is equipped with Garmin GPS 400W, this test applies to Transponder 1 (XPDR 1) only.

(a) On IFR 6000, press RUN TEST soft key to start test. When a specific extended squitter BDS is captured, AVAIL will be displayed to the right of the BDS name. Use Data Keys to select specific BDS and press BDS DATA soft key to display selected BDS screen.
Press Return soft key to return to ADSB MON list screen or press PREV TEST or NEXT TEST soft keys to select specific ADS-B MON BDS screens.

(b) Select BDS 0,5 AIRBORNE POS and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
LAT = comparable to the aircraft latitude.
LON = comparable to the aircraft longitude.
BARO PRES ALT = matches aircraft altitude displayed on the L PFD within ±125 ft.

SURVEILLANCE STATUS = NO INFO

SUBTASK AMM-34-50-20-071-C-701-007

* * * ALL POST MB 500-31-016, MB 500-31-018 AND MB 500-34-030

A. **ADS-B Parameter Test**

(1) Do ADS-B Out Test Set-Up. Refer to SUBTASK AMM-34-50-20-071-C-701-005 or continue testing using the set-up from SUBTASK AMM-34-50-20-071-C-701-004.

(2) For each installed transponder (except for noted limitation), perform the following procedure.

Limitation: If the aircraft is equipped with Garmin GPS 400W, this test applies to Transponder 1 (XPDR 1) only.

(a) Select BDS 0,8 IDENT & CAT and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
FLIGHT ID = Aircraft Registration number (N-number for US registered aircraft)
EMIT CAT = LIGHT

(b) Select BDS 6,1 A/C STATUS ST1 and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
MODE A (4096) CODE = Entered Squawk Code from the PFD

(c) Select BDS 6,2 TSS SUBTYPE 1 and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
SIL ≥ 3
TCAS OP = NO
SELECTED ALTITUDE = comparable Selected Altitude using ACP controls
BARO PRESS = comparable selected Baro Pressure Setting

(d) Select BDS 6,5 A/C OP STATUS AIR and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
VERSION = 2 - DO-260B
1090 = 0
SIL ≥ 3

(e) On IFR 6000, press STOP TEST.

(f) Set WOW Box switches to W-on-W (on-ground).

(g) Set active XPDR = ALT mode.

(h) Press RUN TEST soft key to start test.

(i) Select BDS 0,6 SURFACE POS and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
LAT = comparable to the aircraft latitude
LON = comparable to the aircraft longitude
MOVEMENT = STOPPED
HDG = current aircraft heading on the L PFD within 1 deg

(j) Select BDS 0,8 IDENT & CAT and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
FLIGHT ID = Aircraft Registration number
EMIT CAT = LIGHT

(k) Select BDS 6,1 A/C STATUS ST1 and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
MODE A (4096) CODE = Entered Squawk Code from the PFD
EMERG/PRIOR CODE = 0 - NO EMERGENCY

(l) Select BDS 6,5 A/C STATUS SUR and check the following data:
AA = matches aircraft ICAO code displayed on the MFD Settings Page
VERSION = 2 - DO-260B
1090 = 0
ANT OFF = RT 0 m, 6 m (for the Garmin GPS 400W equipped aircraft, ANT OFF = RT 0 m, 4 m)
SIL ≥ 3
LN/WD = 1 - <15m; <23m.

(m) On IFR 6000, press STOP TEST.

9. ADS-B FAIL Indicator Functional Test

SUBTASK AMM-34-50-20-071-C-701-008

* * * ALL POST MB 500-34-030

NOTE: This procedure is required only upon ADS-B FAIL Indicator replacement or removal and installation.

A. ADS-B FAIL Indicator Functional Test

NOTE: After initial system installation, the initial acquisition of GPS position can take up to 20 minutes. Subsequent acquisitions should take no more than 150 seconds. This test must be done prior to GPS position acquisition and extinguishing of the ADS-B FAIL indicator.

(1) Power up the aircraft.

(2) Make sure that the ADS-B FAIL indicator is illuminated in white color. Refer to Fig. 502, Sheet 1.

(3) Check that the brightness of the indicator can be adjusted with the Master Dim switch on the Center Switch Panel (CSP).

(4) Make sure the ADS-B FAIL indicator extinguishes within 150 seconds or less after power up.

10. Job Close-Up

SUBTASK AMM-34-50-20-071-C-921-002

* * * 0001-0104, 0113-0115, 0120, 0123-0124 POST SB 500-99-002; 0105-0112, 0116-0119, 0121-0122, 0125-0265 POST SB 500-99-005; AND 0266-0267; ALL POST MB 500-31-016, MB 500-31-018. and MB 500-34-030

A. Set WOW Box switches to W-on-W (on-ground)

B. Reset the collared ECB's. Refer to AMM-20-00-03-051-801 – Prepare Anti-Ice Systems For Maintenance.

C. Scroll to FLCS using outer knob. Press inner knob to select. Scroll to the listed ECB using outer knob and highlight. Push “RESET” Soft key. Press “CONFIRM RESET” soft key.

- ECB - NOSE LDG GEAR (L AFT Bus)
- ECB - L MAIN LDG GEAR (L AFT Bus)
- ECB - R MAIN LDG GEAR (L AFT Bus)

D. Scroll to ENGINE using outer knob. Press inner knob to select. Scroll to the listed ECB using outer knob and highlight. Push “RESET” Soft key. Press “CONFIRM RESET” soft key.

- ECB - L ENG FIRE EXTNGR (L FWD Bus)
- ECB - R ENG FIRE EXTNGR (R FWD Bus)

E. Power down the aircraft by setting the SYS BATT and START BATT switches to OFF and the BUS TIE to OPEN.

F. Disconnect WOW Box from aircraft. Refer to AMM-20-00-04-051-801 – Weight On Wheels (WOW) Box - Connect/Disconnect.

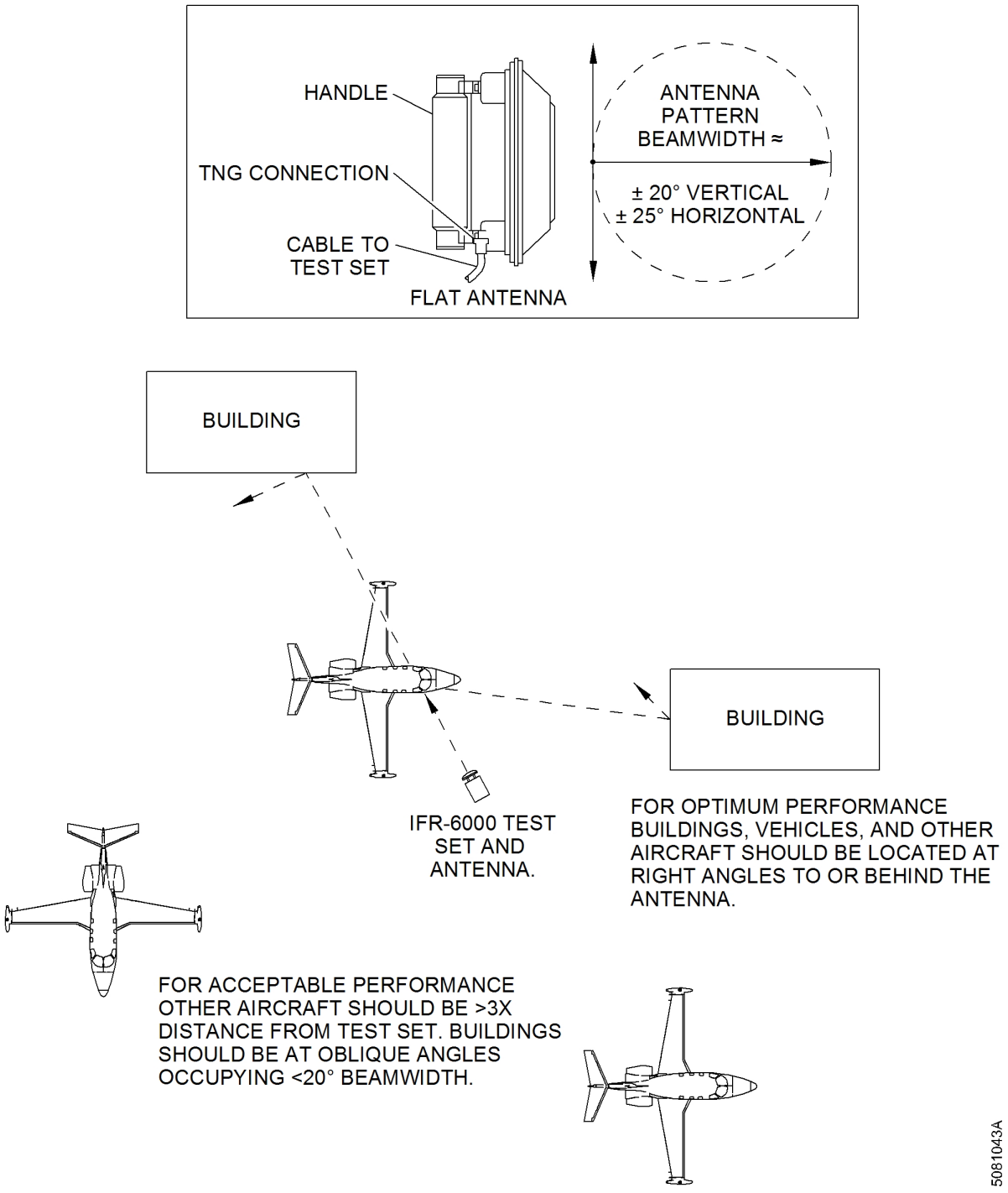
G. If on jacks, lower aircraft and remove jacks. Refer to AMM-07-10-00-051-801 – Jacking - Maintenance Practices.

H. If applicable, call the local control tower and tell them the transponder test is complete.

I. Remove all tools, equipment and unwanted material from work area.

J. Disconnect external power. Refer to AMM-24-40-00-051-801 – External Power - Maintenance Practices.

K. If all other maintenance is complete, return aircraft to service. Refer to AMM-20-00-02-051-801 – Return To Service (After Maintenance).



Transponder - Adjustment/Test
Figure 501 (Sheet 1 of 1)
* * * 0001-0104, 0113-0115, 0120, 0123-0124 POST SB 500-99-002; 0105-0112, 0116-0119, 0121-0122, 0125-0265 POST SB 500-99-005; AND 0266-0267

ADS-B Fail Annunciation
Figure 502 (Sheet 1 of 1)
* * * ALL POST MB 500-34-030

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ADS-B OUT WITH GPS 3 - DESCRIPTION AND OPERATION

AMM-34-50-21-081-801

1. Introduction

A. The Automatic Dependent Surveillance – Broadcast Out (ADS-B Out) provides air traffic controllers with real-time position information.

B. ADS-B Out with GPS 3 system have these components:

- One GPS antenna (GPS 2) (Combination Antenna)
- One GPS 2 Antenna Splitter
- One GPS/Wide Area Augmentation System (WAAS) sensor GPS 3 (GDL 88)
- One ADS-B fail annunicator

2. Description

A. ADS-B OUT System with Dual Transponder System (Diversity or Non-Diversity).

(1) The Dual Transponder System, both transponders are the Enhanced Mode S transponders with or without the antenna diversity by Garmin, models GTX–33(D). Both transponders, XPDR 1 and XPDR 2, are located behind the Instrument Panel (IP).

(2) The GPS 3 (GDL 88) unit is located beneath the cabin floor on the left side of the aircraft.

(3) The GPS 2 Antenna Splitter is located under the aft baggage compartment floor.

(4) ADS-B system failure annunciation (based on the GPS 3 position source failure) is located in the cockpit on the lower left instrument panel.

3. Operation

A. The ADS-B OUT system utilizes the Extended Squitter (ES) capability of the transponders.

GPS 3 (GDL 88) with internal GPS provides the necessary ADS-B OUT compliant position data to the already installed transponders. GPS 3 outputs the ADS-B OUT compliant GPS data to both transponders via a dedicated RS-232 line.

B. GPS 3 (GDL 88) makes use of the GPS 2 antenna through the GPS 2 Antenna Splitter, which is located below the aft baggage compartment floor.

C. The ADS-B system failure indicator provides an advisory message to the pilot via a white ADS-B FAIL indication if any of the following events occur:

- GPS 3 loses its integrity
- During R Smoke Clear procedure
- Manually pulling ECB
- Battery-only Load shed
- Unintended power loss

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TRANSPONDER - INSTALLATION

AMM-34-50-21-041-801

1. General

A. This task gives the procedures to install the transponder.

B. There are two transponders, one is behind the left PFD and the other is behind the right PFD. The installation procedure is given for the left transponder and is the same for the right transponder.

C. If the aircraft has ADS-B OUT function, ensure this transponder has Extended Capability (ES) enabled and software version is at 8.02 or above.

NOTE: Make sure that the transponder software is in same configuration as it was when the removal task was completed. If necessary, update transponder software to the required level.

2. Job Set-Up

SUBTASK AMM-34-50-21-041-921-001

A. Make sure that the aircraft is in same configuration as it was when the removal task was completed. Refer to AMM-34-50-21-001-801 – Transponder - Removal.

B. As required, make sure that transponder is configured for ADS-B. Refer to AMM-34-50-20-051-801 – Transponder with ADS-B Out – Maintenance Practices .

3. Procedure

SUBTASK AMM-34-50-21-041-411-001

(Refer to Fig. 401 .

A. Loosen the captive screw *(2)* and rotate the lever *(3)* to the open position on the transponder.

B. Slide the transponder *(1)* into the mount *(4)* . Rotate the lever *(3)* to the closed position and tighten the screw *(2)* .

C. Electrically bond the transponder *(1)* to the structure. Refer to AMM-20-03-00-051-801 – Electrical Bonding - Maintenance Practices. Resistance must be 2.5 milliohms or less.

4. Job Close-Up

SUBTASK AMM-34-50-21-041-921-002

A. Remove all tools, equipment, and unwanted material from the work area.

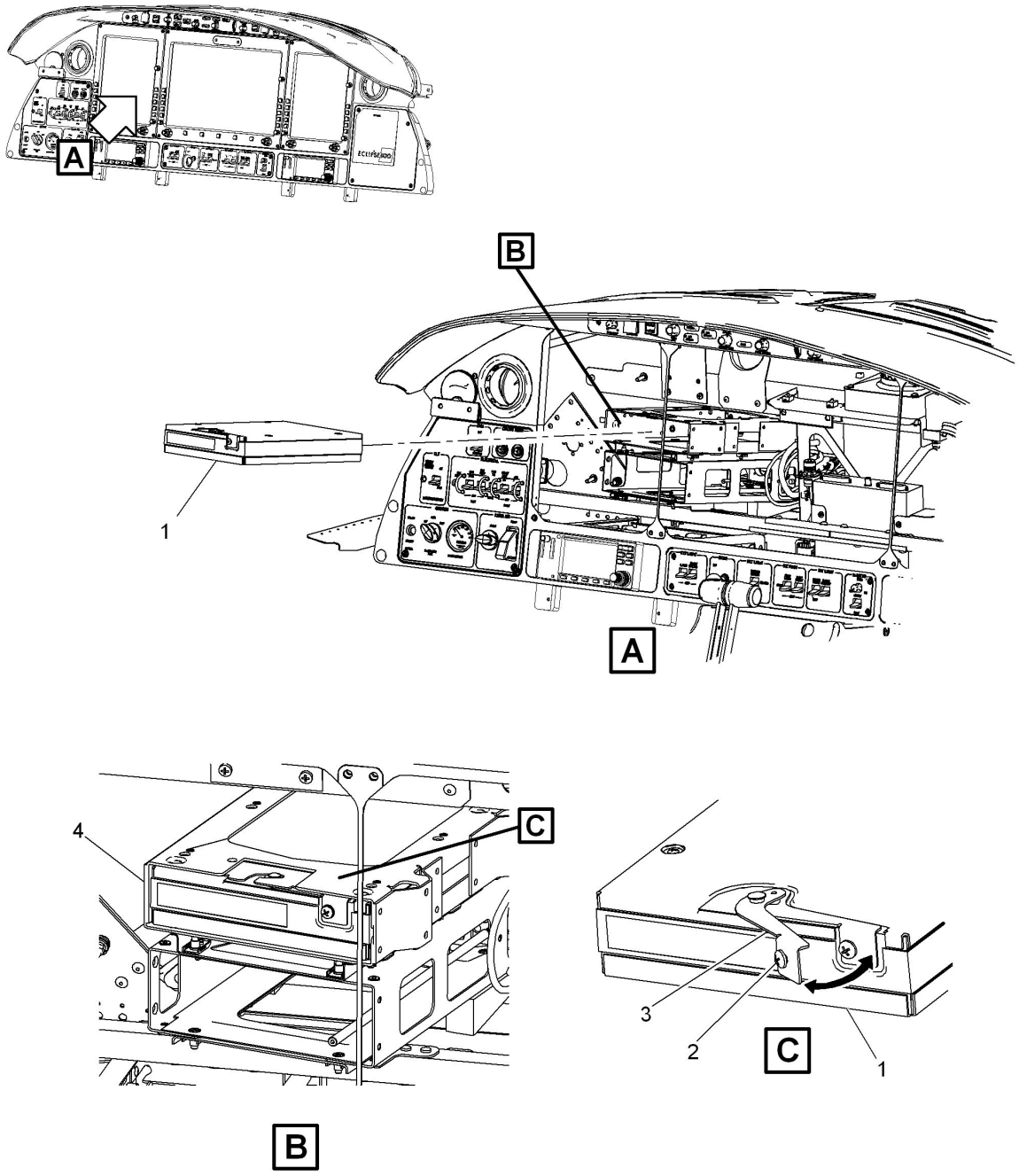
B. Install the following:
Refer to AMM-31-10-16-041-801 – Primary Flight Display - Installation.

- 221 PZ - Left Primary Flight Display (PFD).
- 222 JZ - Right Primary Flight Display (PFD).

C. Remove the warning placard.

D. Do an adjustment/test of the transponder system. Refer to AMM-34-50-20-071-C-801 – Transponder - Adjustment/Test .

E. If all other maintenance is complete, return the aircraft to service. Refer to AMM-20-00-02-051-801 – Return To Service (After Maintenance).



NOTE:
STRUCTURE AND EQUIPMENT
REMOVED FOR CLARITY

5080776A

Transponder - Removal/Installation (Avio NG +1.5 display shown)
Figure 401 (Sheet 1 of 1)

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ADS-B FAIL INDICATOR - REMOVAL

AMM-34-50-26-001-801

1. General

A. This task gives procedures to remove the ADS-B Fail Indicator.

B. There is one ADS-B Fail Indicator installed on the lower left instrument panel.

2. Equipment and Materials

Table 401. Special Tools and Equipment

Name & Part Number
Extraction Tool (Aerospace Optics 18–234)
Cap Extractor Tool (Aerospace Optics 17–150)

3. Job Set-Up

SUBTASK AMM-34-50-26-001-921-001

A. Make aircraft safe for maintenance. Refer to AMM-20-00-01-051-801 – Make Safe For Maintenance.

B. Make sure all power is removed from the aircraft.

4. Procedure

SUBTASK AMM-34-50-26-001-011-001

(Refer to Fig. 401.)

A. Remove the ADS-B Fail Indicator as follows:

(1) Remove two screws *(2)* that secure bracket *(1)* to the Instrument panel.

(2) Disconnect electrical connector *(3)* from switch body *(6)* with extraction tool 18–234.

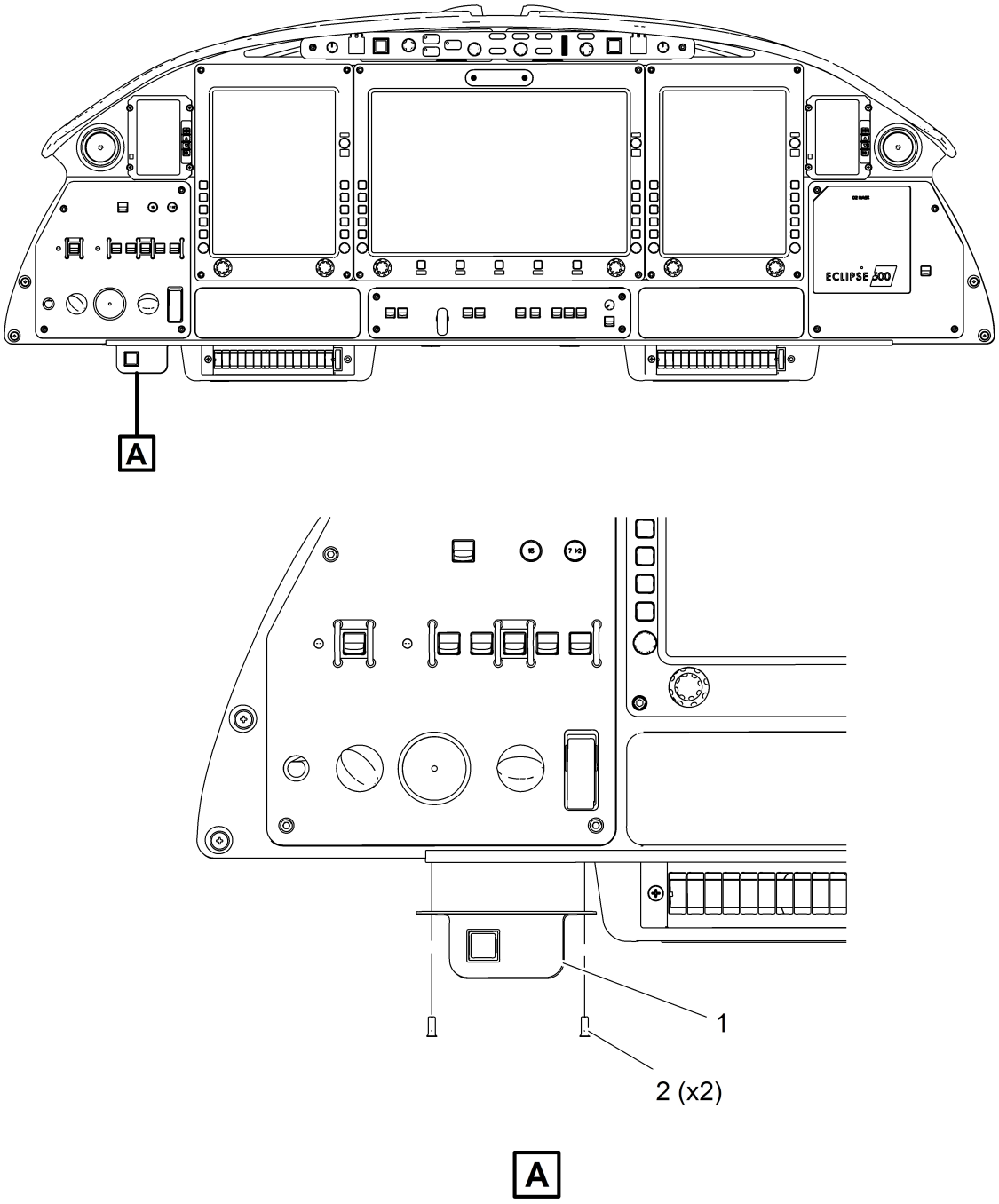
(3) Identify the two extraction slots positioned on either side of the cap *(7)* . Extract the switch cap *(7)* by using the Cap Extractor Tool (Part Number: 17-150) or by applying finger pressure on two sides of the switch cap pulling the switch cap from the switch body.

(4) Remove switch cap *(7)* from the switch body *(6)* by gently removing the cap pins from the hinged slide retainer.

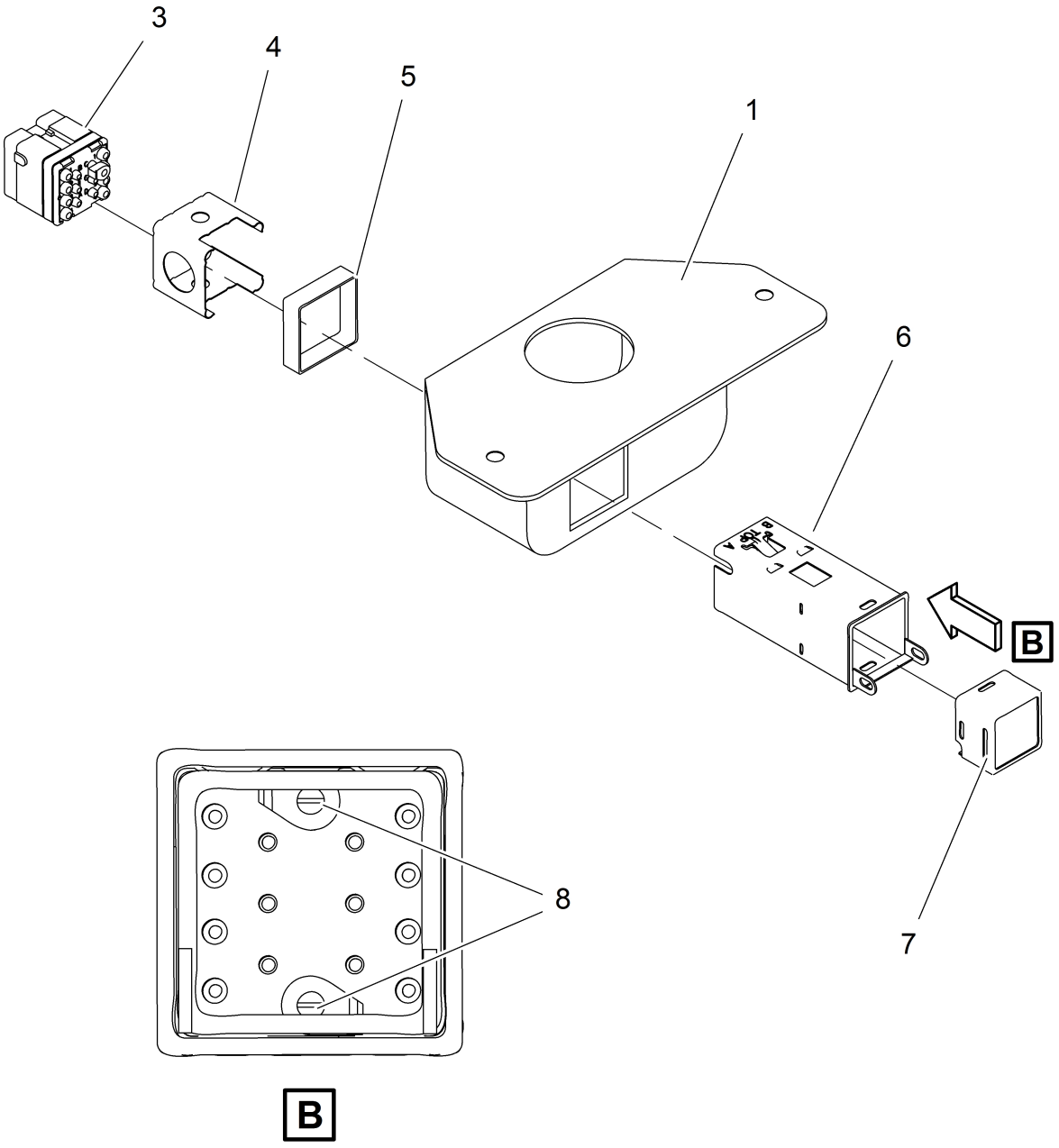
(5) From the front of the switch body *(6)* locate the two slot head integral mounting screws *(8)* in the base of the body. Loosen the two screws until the Integral Mounting Hardware releases the mounting sleeve from the mounting panel.

(6) From behind the bracket *(1)* , remove the locking sleeve *(4)* and spacer *(5)* from the switch body by sliding aft from the bracket *(1)* .

(7) Remove switch body *(6)* from the bracket *(1)* .



ADS-B Fail Indicator - Removal/Installation
Figure 401 (Sheet 1 of 2)



ADS-B Fail Indicator - Removal/Installation
Figure 401 (Sheet 2 of 2)

ADS-B FAIL INDICATOR - INSTALLATION

AMM-34-50-26-041-801

1. General

A. This task gives procedures to install the ADS-B Fail Indicator.

B. There is one ADS-B Fail Indicator installed on the lower left instrument panel.

2. Job Set-Up

SUBTASK AMM-34-50-26-041-921-1

A. Make sure the aircraft and Fail Indicator (disassembled) are in the same configuration as it was when the removal task was completed. Refer to AMM-34-50-26-001-801 – ADS-B Fail Indicator - Removal

3. Procedure

SUBTASK AMM-34-50-26-041-411-1

(Refer to Fig. 401.)

A. Install the ADS-B Fail Indicator as follows:

(1) Insert the back of the switch body *(6)* into the mounting bracket *(1)* by sliding it through the bracket *(1)* from the front. Ensure the switch body label “TOP” is positioned up.

(2) From behind the mounting bracket *(1)* , place the locking sleeve *(4)* onto the switch body *(6)* and sliding it forward against the mounting bracket *(1)* .

(3) From the front of the switch body *(6)* locate the two slot head integral mounting screws *(8)* in the base of the body. Tighten the two screws *(8)* until the Integral Mounting Hardware pulls the mounting sleeve *(4)* against the mounting bracket *(1)* . Torque screws to 18-25 ounce.in.

(4) Replace the switch cap *(7)* by inserting the cap pins into the slide retainer *(6)* and push the cap *(7)* into the switch body *(6)* .

(5) Align keyways and push electrical connector *(3)* on to the back of the switch body *(6)* until it clicks.

B. Position bracket *(1)* with assembled ADS-B Fail Indicator on to the left lower instrument panel and align screw holes.

C. Attach bracket *(1)* with ADS-B Fail Indicator with two screws *(2)* . Torque screws *(2)* to 18-23 lbf.in.

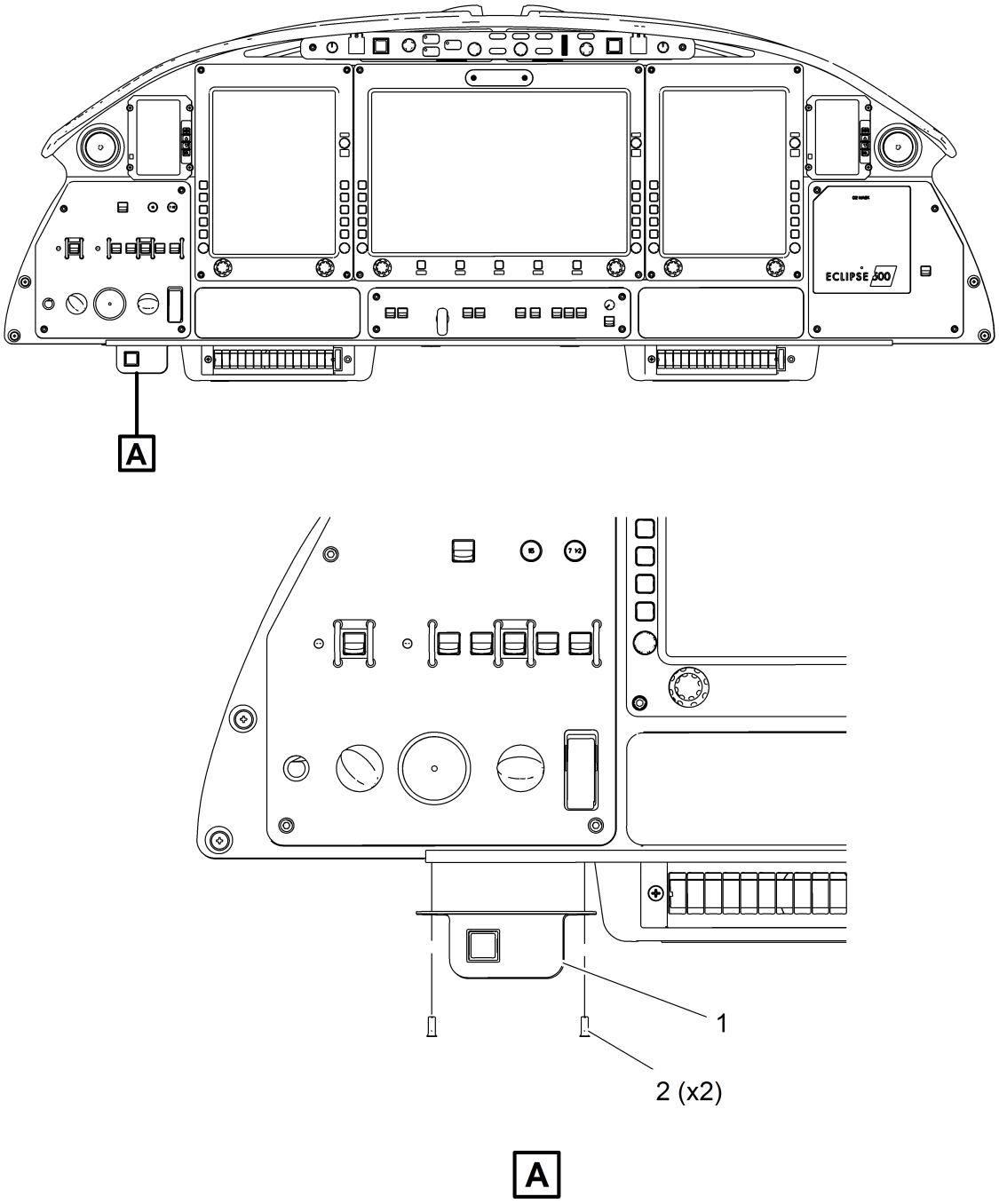
4. Job Close-Up

SUBTASK AMM-34-50-26-041-921-002

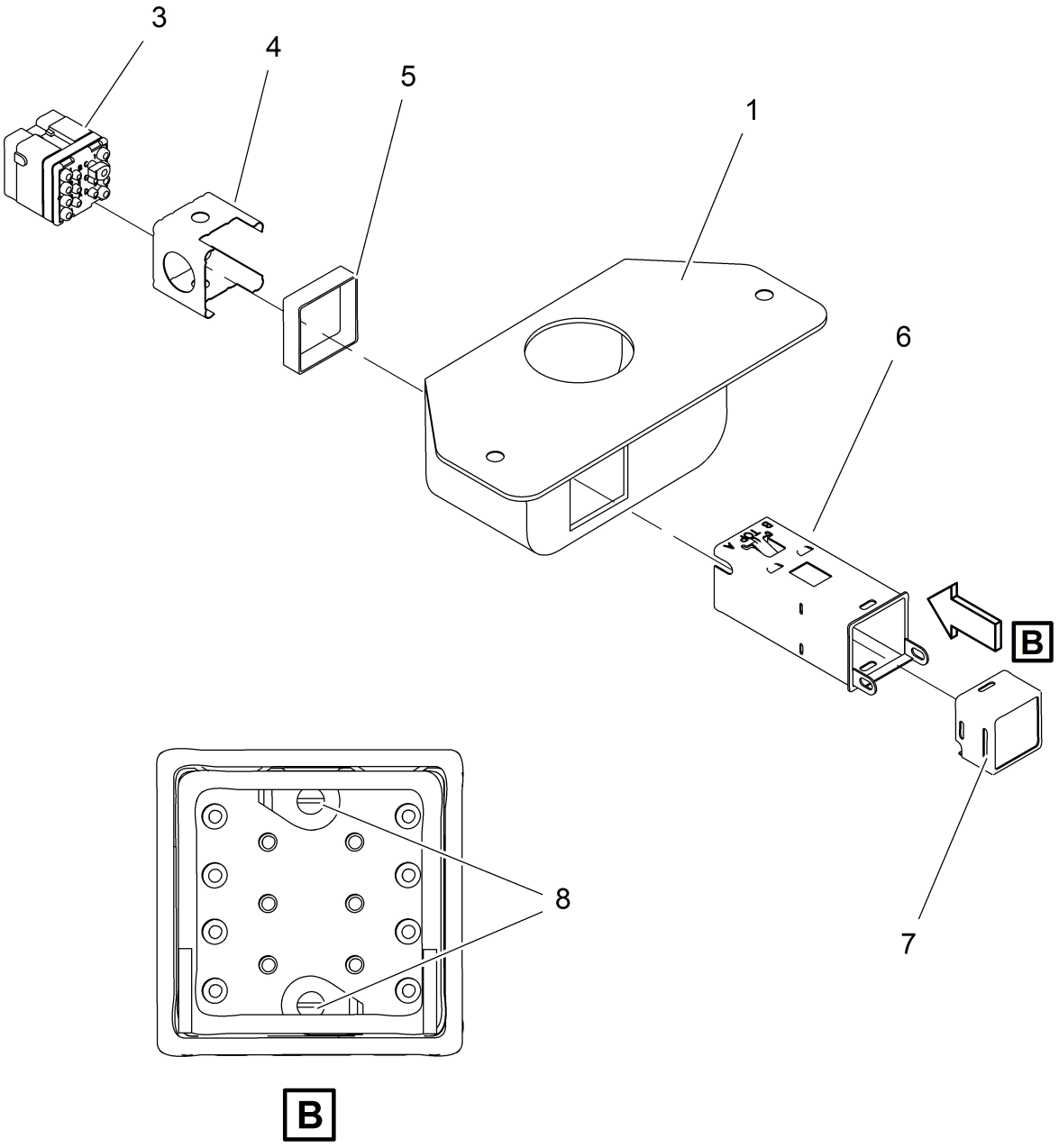
A. Remove all tools, equipment, and unwanted material from the work area.

B. Do ADS-B FAIL Indicator Functional Test. Refer to SUBTASK AMM-34-50-20-071-C-701-008.

C. If all other maintenance is complete, return the aircraft to service. Refer to AMM-20-00-02-051-801 – Return To Service (After Maintenance).



ADS-B Fail Indicator - Removal/Installation
Figure 401 (Sheet 1 of 2)



ADS-B Fail Indicator - Removal/Installation
Figure 401 (Sheet 2 of 2)