

NUMBER: MB 500-31-009, Rev D
MODEL: ECLIPSE EA500
SUBJECT: IFMS 2.06 to 2.08 Equipment Upgrade

Recommended

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1. PLANNING INFORMATION

A. Effectivity

Aircraft Serial Numbers: 000001 to 000262, 000266 and 000267, post SB 500-34-024.

B. Reason

This Modification Bulletin upgrades the EFIS software from IFMS 2.06 to 2.08.

C. Description

This Modification Bulletin upgrades aircraft from IFMS 2.06 to 2.08.

Revision D of the Modification Bulletin updates the ISPS installation information.

Revision C of this Modification Bulletin updates the IS&S service bulletin information.

Revision B of this Modification Bulletin updates the information for IS&S SB, the Compliance section, the Tooling information, and AFMS references.

D. Relevant Publications

06-121770-09 Airplane Flight Manual Supplement (AFMS) for IFMS 2.08

1D-08290, IS&S Instructions for Continued Airworthiness (ICA)

1D-08399, IS&S Pilot's Guide Supplement for IFMS

1D-08308, IS&S Pilot's Guide Supplement – EFB FPDS

1D-09554, IS&S Pilot's Guide Supplement – Eclipse 550 FPDS

06-124577, Eclipse 550 Pilot's Guide, current revision

06-117751, EA500 AMM, current revision

06-122204, EA500 AFM, current revision

06-117753, EA500 WDM, current revision

06-120792, EA500 WRM, current revision

E. Compliance

This Modification Bulletin must be accomplished at an Eclipse Aerospace Authorized Service Center.

Must have the following bulletins accomplished prior to, or in conjunction with this Modification Bulletin:

MB 500-31-005, BIO Software Update to Version 6.0

MB 500-31-004, Aircraft Computer System (ACS) Software Update to 5.5.06, most current revision

MB 500-24-005, ECBU Configuration Upgrade (Rev. -006)

Compliance with revision A, B and C does constitute compliance with Rev D.

F. Approval

This Modification Bulletin is based on engineering data that is FAA-approved, and the modification herein complies with the applicable regulations.

G. Labor Requirements

Refer to IS&S SB1414, as amended.

H. Weight and Balance Change

Refer to IS&S SB1414, as amended.

I. Electrical Load Data Change

Refer to IS&S SB1414, as amended.

J. Software Accomplishment Summary

Refer to IS&S SB1414, as amended.

K. References

SB1414, IS&S Service Bulletin NG 2.08 Software Upgrade, as amended

MB 500-24-005, ECBU Configuration Upgrade (Rev. -006)

MB 500-24-006, Power Supply Upgrade for In Seat Power Supply (ISPS) System

MB 500-31-003, Avio NG 2.5 Provisions, most current revision

MB 500-31-004, Aircraft Computer System (ACS) Software Update to 5.5.06

MB 500-31-005, BIO Software Update to Version 6.0

06-121770-09, EA500 AFM, Supplement for IFMS 2.08, current revision

1D-07048, IS&S Operation And Installation Manual, Flat Panel Display System.

E530-FSCI-0113, Fielded Aircraft Software Collector for the Eclipse Model 500

E530-WI-0119, Work Instruction, Electronic Circuit Breaker Unit Database Load

E530-WI-0092, Work Instruction, Aircraft Configuration

L. Publications Affected

06-117751, EA500 AMM, current revision

06-122204, EA500 AFM, current revision

2. MATERIAL INFORMATION

A. Materials

Refer to IS&S SB1414, as amended, and the tables below.

Parts Removal:

Part Number	Part Description	QTY
1215-1 ^[1]	IN-SEAT POWER SUPPLY, DC/AC INVERTER	1
NAS7703	BOLT, PAN HEAD, CLOSE TOLERANCE	1
NAS1149D0316J	WASHER, FLAT	1

[1] This part number is modified to 24-124691-1001 per this MB.

KIT MBK500-31-009-01A, ISPS 1215-1 Upgrade Kit:

Part Number	Part Description	QTY
MS21919WDG4	CLAMP, LOOP TYPE, CUSHIONED SUPPORT	1
NAS1149D0316J	WASHER FLAT	1
NAS1801-3-48	SCREW, HEX HEAD	1
NAS43DD3-76FC	SPACER, SLEEVE-SCREW AND BOLT	2
TVS06RF-15-4P or TVS06RF-15-4PN	STRAIGHT PLUG TV06R – CRIMP METAL (M39029/58-365 contacts included.)	1
S4784R15L12	ADAPTER ASSEMBLY STRAIGHT, 45 AND 90 CONFIGURATION, SELF SEATING WITH STR	1
M81824-1-3 or D-436-38	SPLICE, ELECTRIC, PERMANENT, CRIMP STYLE COPPER, INSULATED, ENVIRONMENT R	4
M39029/58-365	CONTACT, PIN 12 (38999, 24308)	1
MS25036-108	LUG, RING TERMINAL, 16-14, #10, BLUE	3
S4784S15L12 or 450HS001M15G	BACKSHELL, STRAIGHT	1
TVS07RF-15-4SN or TVS07RF-15-4S	CIRC CONN, RECEPT (M39029/56-353 contacts included.)	1

B. Tooling

The following special tooling/support equipment is required to accomplish this Modification Bulletin.

Nomenclature	Specification	Use
20-120576-1001 ^[1] or 20-121926-1001 ^[1]	Avio Maintenance Computer (AMC) version 2.5.00 or higher	Software Load
20-124554-1001 ^[1]	EPDS T-Harness Assembly (includes RS485 adapter and USB cable)	Software Load
20-121580-1002 or 20-121580-1001	USB flash drive or equivalent	Software Load

Nomenclature	Specification	Use
AC Milliohmeter	Per EAC P1026	Electrical Bond Check
M22520/1-01	Crimp Tool	Wire Harness Modification
M22520/1-04	Positioner	Wire Harness Modification
AD1377	Crimp Tool	Wire Harness Modification
9K-08400-5 Kit	IS&S P/N 9B-08400-5 rev 14 v2.08 R2 ^[2]	To Load EFIS 2.08 OFP and Service Code
9K-09399-1 Kit	IS&S P/N 9B-09399-1 rev 5 GPS FLS 2.08/2.5.2, rev 6 GPS FLS 2.08/2.5.2R2 OR rev 7 GPS FLS 2.08/2.5.2R2 ^[2]	To Load GPS 2.11 OFP Code

[1] Use latest approved dash number.

[2] Flashdrive contained in the kit.

C. Consumables

Specification	Material	Use
M22759/43-14-9	Wire – approximately 200 inches	Harness Rework
Sharpie® T.E.C. Markers (NEW/MK-13401-BK), Edding Aerospace Markers, or equivalent	Permanent Ink Marker	Part Marking

D. Interchangeability/Intermixability of Parts

N/A

E. Part Re-identification

Modified ISPS and modified main wire harness will be identified per the Accomplishment Instructions in this bulletin.

F. Cost

Contact Eclipse Aerospace Customer Care for information and availability.

3. ACCOMPLISHMENT INSTRUCTIONS

A. Procedure

- (1) Refer to IS&S SB1414, as amended.
- (2) Make the aircraft safe for maintenance. Refer to AMM 20-00-01 MAKE SAFE FOR MAINTENANCE.
- (3) Scroll to the ECB Synoptic Page and "UNCOLLAR" the Autothrottle Servos ECB.

NOTE: This accomplishes step 8 of section 2, Test Configuration, of the IS&S SB1414, as amended.

- (4) Verify that ACS 5.5.06 and BIO 6.0 have been installed per MB 500-31-004 and MB 500-31-005.
- (5) Accomplish IS&S SB1414, as amended.
- (6) Update the APDC to the -006 database per E530-WI-0119.

NOTE: By completing this step MB 500-24-005 has been accomplished.

- (7) Modify 39-108860 main cabin harness as follows:

NOTE: TVS06 and TVS07 Connectors are similar in design and assembly to MIL-C-38999 Series III Connectors.

- (a) Modify 24A04P04. Refer to (Figure 1, Sheet 1).

1. Disassemble connectors 24A04P04 and 24A30J01 and remove wire OPT1141-14 / OPT1142-16 from 24A04P04 Pos L and 24A30J01 Pos A per Table 1: 39-108860 wire removal and Wiring Repair Manual (WRM) 3.25.
2. Install wire OPT1820-14 (1) into 24A04P04 Pos A with an M39029/58-365 (2) contact per "Layout, 24J01 (ISPS)", Table 2: 39-108860 Connection list, and WRM section 3.11 and 3.14.
3. Route wire OPT1820-14 to 24A30J01 area per WRM section 5.2, 5.3, 5.5, and 5.6.

- (b) Add 24J01, remove 24A30J01. Refer to (Figure 1, Sheet 1).

1. Remove and discard 24A30J01 and all attached wiring per Table 1: 39-108860 wire removal.
2. Install new connector 24J01 (5) per Table 2: 39-108860 Connection list, "Layout, 24J01 (ISPS)", and WRM section 3.11 and 3.14.
3. Install 91GS130DC-A (3), 91GS186SH-A (3), and 91GS186SH-A (3) ground stud connections per Table 2: 39-108860 Connection list, "Layout, 24J01 (ISPS)", and WRM section 5.2, 5.3, 5.5, 5.6, and 5.12.
4. Assemble 24J01 connector backshell (4) per WRM section 3.17.
5. Ring out installed wiring per Table 3: 39-108860 Ringout.
6. Locate original harness labels at 91J62 and 91J04 and add 24-124692-1001-a to label. Use an additional label and/or replace existing label if needed, but all existing part marking must be retained, per WRM 3.3.

- (8) If current ISPS 1215-1 is being retained, perform the following modification:

- (a) Remove 1215-1 and modify. Refer to (Figure 2, Sheet 1).

1. Cut the pigtail to a length such that less than 3 inches of the wire remains external to the LRU.
2. For each connection splice on a length of M22759/43-14-9 wire such that the new pigtail length is 15 +1/-0 inches, using an M81824-1-3 (1) splice per WRM section 3.21.
3. Terminate the end of each M22759/43-14-9 wire per WRM section 3.11 and 3.14 with contacts for new connector 24P01 (3).

4. Mark wires per wire diagram and WRM section 3.3.
 5. Assemble 24P01 connector backshell (2) per WRM section 3.17.
 6. Pin wires per wire diagram pin comparison table.
 7. Re-identify 1215-1 as 24-124691-1001 using a permanent ink marker.
- (b) Install ISPS, P/N 24-124691-1001. Refer to (Figure 2, Sheet 2).
1. Use the existing hardware to mount ISPS in three places.
 2. Electrical bond per EAC P1026. Maximum bonding resistance of 2.5 milliohms per interface.
 3. Attach using new hardware P/N MS21919WDG4, NAS1149D0316J, NAS1801-3-48, and NAS43DD3-76FC (X2) to secure 24-124691-1001 at the fwd RH location.
 4. Remark Interface Bracket with 24J01 using a permanent ink marker.
- (9) If new ISPS 1215-30 is being installed, refer to MB 500-24-006, Power Supply Upgrade for In Seat Power Supply (ISPS) System, most current revision.
- (10) ISPS and ABS configuration options must be set to installed per E530-WI-0092.
- (11) Collar the ABS, L BRAKE CTRL, and R BRAKE CTRL ECBs.
- (12) Verify software and EFIS checklist per E530-FSCI-0113.
- (13) If all other maintenance is complete, return the aircraft to service. Refer to the AMM 20-00-02 RETURN TO SERVICE (AFTER MAINTENANCE).

CHANGE	CableName	WireName	WAS DeviceFrom	WAS PinFrom	WAS DeviceTo	WAS PinTo
Removed	OPT1142	OPT1142-16	24A04P04E06	1	24A30U01	A
Removed	OPT1150	OPT1150-16N	91GS130DC-A	LUG	24A30U01	B
Removed	OPT1270	OPT1270-16N	91GS186SH-A	LUG	24A30U01	C
Removed	OPT1280	OPT1280-16N	91GS186SH-B	LUG	24A30U01	D

TABLE 1: 39-108860 WIRE REMOVAL

CHANGE	CableName	WireName	IS DeviceFrom	IS PinFrom	IS DeviceTo	IS PinTo
New	OPT1820	OPT1820-14	24U01	A	24A04P04	A
New	OPT1830	OPT1830-14N	91GS130DC-A	LUG	24U01	B
New	OPT1840	OPT1840-14N	91GS186SH-A	LUG	24U01	C
New	OPT1850	OPT1850-14N	91GS186SH-B	LUG	24U01	D

TABLE 2: 39-108860 CONNECTION LIST

Device From	Pin From	Device To	Pin To	COMPLETED
24A04P04	A	24U01	A	
91GS130DC-A	LUG	24U01	B	
91GS186SH-A	LUG	24U01	C	
91GS186SH-B	LUG	24U01	D	

TABLE 3: 39-108860 RINGOUT

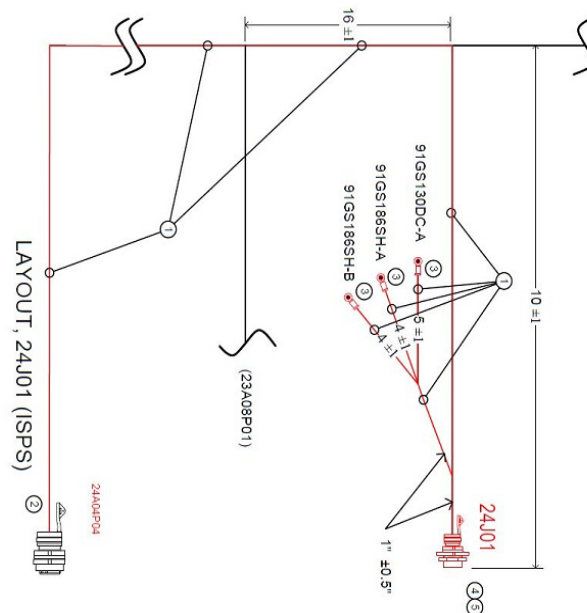
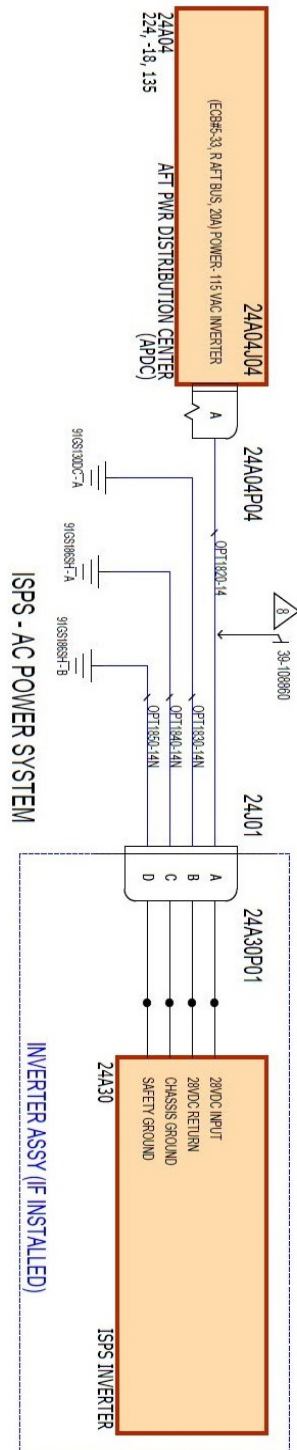
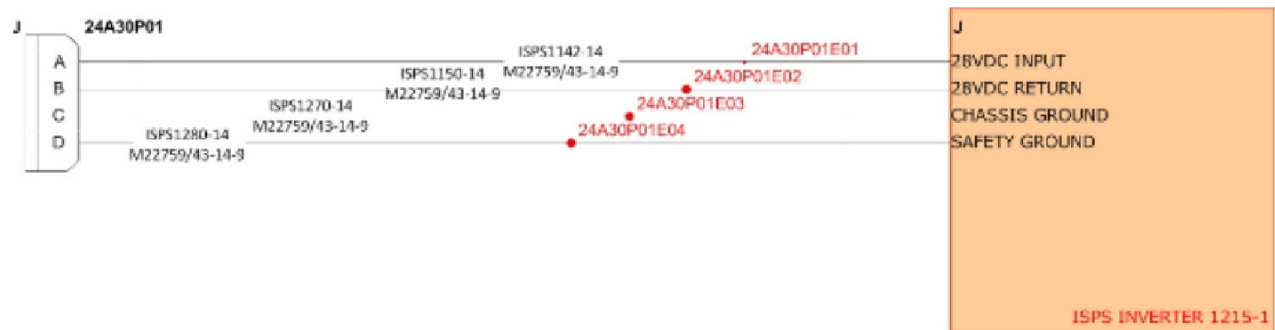


Figure 1. Wire Harness Modification (Sheet 1 of 1)



PIN OUT COMPARISON TABLE

SIGNAL NAME	OLD CONNECTOR PIN	NEW CONNECTOR PIN
28VDC INPUT	A	A
28VDC RETURN	B	B
CHASSIS GROUND	C	C
SAFETY GROUND	D	D

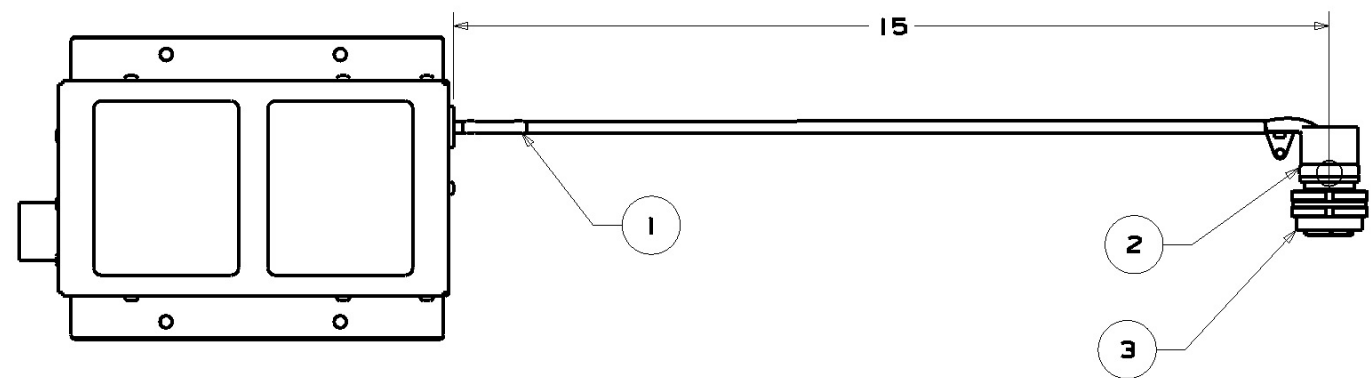


Figure 2. ISPS Modification (Sheet 1 of 2)

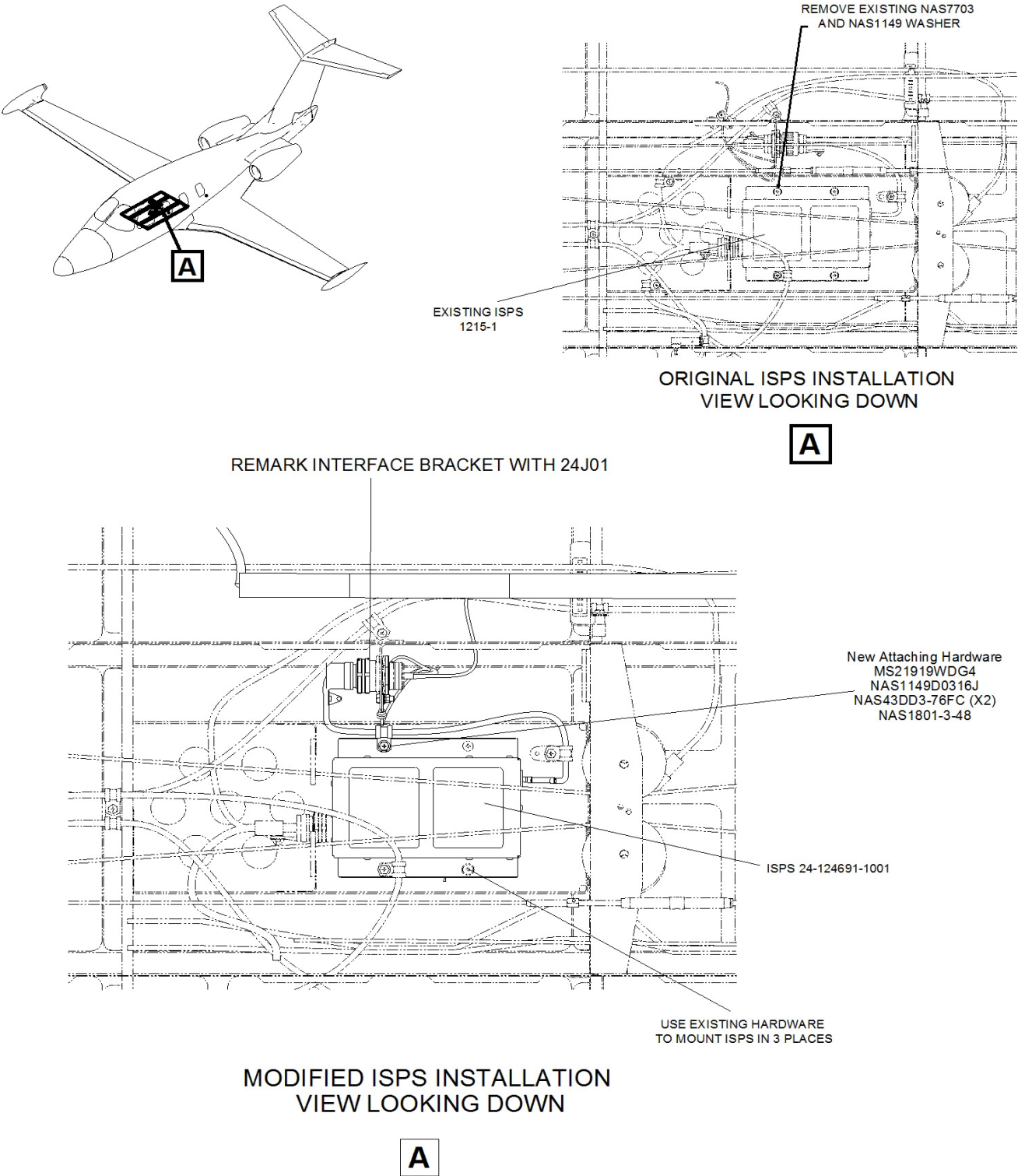


Figure 2. ISPS Modification (Sheet 2 of 2)

B. Limitations and Procedures

The following must be used after completion of this Modification Bulletin:

- 06-121770-09 Airplane Flight Manual Supplement (AFMS) for IFMS 2.08
- 1D-08290, IS&S Instructions for Continued Airworthiness (ICA) EFB FPDS
- 1D-08571, IS&S Instructions for Continued Airworthiness (ICA) NG 2.0X FMS Upgrade
- 1D-08399, IS&S Pilot's Guide Supplement for IFMS
- 1D-08308, IS&S Pilot's Guide Supplement – EFB FPDS

4. RECORD OF COMPLIANCE

Upon completion of this Modification Bulletin, make an appropriate maintenance-record entry specifying the Modification Bulletin number.

5. NOTIFYING ECLIPSE AEROSPACE

On completing this Modification Bulletin, the operator/maintainer shall complete the attached Compliance Record and send it to Eclipse Aerospace via regular mail, fax, or e-mail.

Mailing Address	Eclipse Aerospace Incorporated ATTN: Service Engineering 2503 Clark Carr Loop SE Albuquerque, NM 87106
Fax	1-505-241-8802
E-mail	sbcompliance@eclipse.aero

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