

NUMBER	SIL1611
TO	All F-Series Installers/Aircraft Maintenance Providers
SUBJECT	Required Grounding of the 70-100-0000-0X Series Fuselage Mounted Unit (FMU)
REVISION	Rev B
DATE	10/23/17

AFFECTED ASTRONICS AEROSAT PRODUCT

DESCRIPTION	Fuselage Mounted Unit
PART NUMBER	70-100-0000-0X
PART NUMBER REVISION	All Revisions

REFERENCE DOCUMENTATION

ESPM	Airbus Standard Wiring Practices Manual (Chapter 20)
D6-54446	Boeing Standard Wiring Procedures Manual (Chapter 20)
AC 43.13-1B	Acceptable Methods, Techniques, and Practices (Chapter 11)
SAE, ARP 1870	Aerospace Systems Electrical Bonding

1.0 COMPLIANCE – REQUIRED

Compliance with this service information letter is required for installation and replacement of the Fuselage Mounted Antenna to meet the specified grounding recommendations. Failure to adhere to this previously specified requirement will lead to a void in the manufacturer's warranty.

2.0 BACKGROUND

Clarification on bonding standards for the 70-100-0000-0X series Fuselage Mounted Antenna is required, as many fielded units have been found installed with non-compliant bonding to the airframe.

3.0 PURPOSE

The purpose of the FMU airframe bonding is to facilitate proper flow of electrical potential from the FMU to the airframe during the occurrence of an Electro Static Discharge Event and the proper operation of the sensitive components internal to the FMU.

4.0 SCOPE

Proper bonding techniques are required for all installation variations of the Astronics AeroSat Fuselage Mounted Unit and are standard maintenance practices required by AC 41.13-1B Chapter 11 Section 15 and the Applicable Aircraft Manufacturers Standard Wiring Practices Manual.

5.0 APPROVAL

This repair has been approved by Astronics AeroSat Engineering, 14 CFR 43.5 (a.)(b.) Approval for return to service after maintenance, preventative maintenance, rebuilding, or alteration. Per AC-120-77 Paragraph 10 a. 2. This change is substantiated by technical data consisting of engineering information related to service experience, maintenance and alteration experience, and reliability data thus not requiring the FAA's explicit approval.

6.0 PROCEDURE

All work shall be performed in accordance with this Service Information Letter, Applicable Aircraft Manufacturers Standard Wiring Practices Manual, and/or AC 43.13-1B Chapter 11 Section 15.

6.1 PERSONNEL REQUIREMENTS

This task requires two qualified technicians and approximately one hour to complete if the radome was previously removed, or 3 hours if the radome is installed.

6.2 TOOLING REQUIREMENTS

The following tools are required to perform this task:

- general hand tools
- appropriate valued torque wrench
- CEM DT-5302 High-Accuracy Milliohm Meter or equivalent
- bonding brush

6.3 PARTS REQUIREMENTS

The following parts are required:

- P/S 872 PRC-Desoto Class B corrosion inhibitive sealant or equivalent
- Alodine 1201 Type 1, Class 3 or Touch-N-Prep Alodine 871 Type 2, Class 3 or equivalent
- 99% Isopropyl Alcohol or equivalent

6.4 WEIGHT AND BALANCE

There is no effect to the weight and balance.

6.5 ELECTRICAL LOAD

There is no effect to the electrical load of the aircraft.

7.0 INSTRUCTIONS

1. Remove power from the Astronics AeroSat SATCOM system.
2. Remove the antenna radome to gain access to the Fuselage Mounted Unit (FMU).
3. Disconnect the bonding straps from the FMU.
4. Remove non-conducting paint finish only, using a standard bonding brush (see Figure 1).

Refer to the airframe specific Structural Repair Manual for detailed instructions regarding surface preparations of the Aluminum FMU base.



Figure 1: Standard Bonding Brush

Note: Ensure that only the paint that is within a 0.5" radius from the two bonding stud locations located near the forward mounting points is removed (see Figure 2).



Figure 2: Typical Prepared Bonding Surface

5. Prepare the bonding surface with 99% Isopropyl Alcohol or equivalent and treat with Alodine 1201 Type 1, Class 3 or Touch-N-Prep Alodine 871 Type 2, Class 3 or equivalent per manufacturer's instructions for corrosion prevention.
6. Install the appropriate fasteners to reattach the bonding strap to the base of the FMU.
Note: Proper torque is required to prevent damage to the equipment and to ensure an adequate bond to the airframe.
7. With the use of a milliohm meter type CEM DT-5302 High-Accuracy Milliohm Meter® or equivalent, measure the resistance from the FMU to the airframe structure. A value of < 2.5 milliohms per faying surface, not to exceed 10 milliohms is required, as per AC 43.13-1B.
Note: Use of the aircraft specific Standard Wiring Practices Manual for measurement of the resistance is preferred. Acceptable value would be defined by the lowest resistance tolerance.
8. Seal the bonding surface with a P/S 872B2 PRC sealant or equivalent to prevent corrosion and to ensure electrical conductivity.
9. Reinstall the radome.

TASK COMPLETE

8.0 ACCEPTANCE/REJECTION CRITERIA

Acceptable criteria for completion of this Service Information Letter are:

- a measured resistance of < 2.5 milliohms per faying surface not to exceed 10 milliohms (unless otherwise specified by the airframe manufacturer's Standard Wiring Practices Manual) as mentioned in above paragraph 7
- completion of a systems functional checkout, and
- completion of all appropriate aircraft maintenance records.

9.0 RECORD OF COMPLIANCE

Upon completion of the maintenance action, ensure an entry is made in the appropriate aircraft log or operator's maintenance documentation system.

CONTACT INFORMATION

For questions regarding this Service Information Letter, please contact Astronics AeroSat Product Support.

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