

NUMBER	SB 1703
TO	T-Series Dealer Network and Customer Base
SUBJECT	ARINC Fan Input Temperature Requirement
REVISION	Rev A
DATE	05/19/2017

AFFECTED ASTRONICS AEROSAT PRODUCT

DESCRIPTION	FliteStream Tailmount Antenna System Antenna Control with Modem Unit and Low Power Transceiver
PART NUMBER	000-2129-1001
PART NUMBER REVISION	Rev A

REFERENCE DOCUMENTATION

000-2129-1000-IM	INSTALLATION MANUAL T-200 SERIES REV C
000-2129-1000-LMM	LINE MAINTENANCE MANUAL T-200 SERIES REV A

1.0 COMPLIANCE – MANDATORY

Compliance with this Service Bulletin is mandatory prior to 30 August 2017. Failure to comply with the requirements listed in this Service Bulletin within the selected timeline will result in the termination of Warranty of the installed ACMU and LPT.

2.0 BACKGROUND

During operation at altitude, conditions were noted that the ACMU is operating near the upper temperature limit of its specifications. While the ACMU and LPT are designed to withstand ambient conditions of 70°C, the lifecycle of the components is believed to be diminished during prolonged exposure to these conditions during operation. As the ACMU's tested condition shows the ability to cool within 15°C ±5°C of ambient conditions, are confident the equipment box in which the ACMU and LPT are housed is not receiving adequate airflow due to internal operating temperatures up to 72°C after one hour of operation in flight conditions. Such a situation would cause the system to progressively increase in temperature until adequate pressure differential exists to begin circulating airflow through the box without assistance.

3.0 PURPOSE

The purpose of this Service Bulletin is to define the requirement of ambient airflow through the ACMU and LPT's equipment box, in efforts to maintain nominal internal operating temperatures during normal operation in network. As qualification tests have proven, with adequate ambient airflow, the AeroSat FliteStream T-200 series is capable of operating near ambient conditions. This requirement for circulating ambient airflow will be included in the 000-2129-1000-IM Rev D and beyond, as necessary.

4.0 SCOPE

Requirement of ARINC inlet fan nominal temperature, as detailed in Table 1, shall be added to the operational requirement for the ACMU and LPT after two hours of normal operation.

Cabin Ambient Temperature	ARINC Fan Inlet Temperature
5°C/41°F	20°C/68°C
10°C/50°F	25°C/77°F
15°C/59°F	30°C/86°F
20°C/68°F	35°C/95°F
25°C/77°F	40°C/104°F
30°C/86°F	45°C/113°F
35°C/95°F	50°C/122°F
40°C/104°F	55°C/131°F
45°C/113°F	60°C/140°F

Table 1: Maximum Temperature Delta Example

5.0 APPROVAL

This repair has been approved by Astronics AeroSat Engineering. Reference 14 CFR 43.5 (a).(b.) Approval for return to service after maintenance, preventative maintenance, rebuilding, or alteration. Per guidance in 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.

6.0 PROCEDURE

This requirement entails the nominal inlet temperature for the ARINC cooling fans installed on the ACMU and LPT not to exceed 15°C above current ambient conditions after two hours of normal operation while transmitting in flight configuration.

6.1 PERSONNEL REQUIREMENTS

Task requires one qualified technician and approximately 3 hours to test. Compliance completion varies based on installation design amendments required.

6.2 TOOLING REQUIREMENTS

Tooling varies based on cooling method chosen.

6.3 PARTS REQUIREMENTS

Parts vary based on cooling method chosen.

6.4 WEIGHT AND BALANCE

There is no effect to the weight and balance

6.5 ELECTRICAL LOAD

Electrical load will vary based on chosen method of cooling.

7.0 INSTRUCTIONS

Follow the instructions below to ensure compliance with this Service Bulletin.

1. Test current conditions of operation to determine if a repair is required. If not; proceed to step 2
 - a. Measure current ambient temperature of baggage compartment and equipment box prior to enabling power to the Astronics AeroSat Ku system. Use any calibrated thermometer. Values should be no more than $\pm 3^{\circ}\text{C}$ from each other. Allow temperature difference to stabilize prior to performing step b.
 - b. Enable power to the Astronics AeroSat system and ensure the system is able to pass traffic to the internet for no less than 100 minutes of 120 consecutive minutes.
 - c. Measure ambient temperature of baggage compartment and equipment box at ACMU ARINC Fan inlet. Value of ACMU ARINC Fan inlet temperature shall be no greater than $+15^{\circ}\text{C}$ above post test ambient temperature of baggage compartment. If greater, proceed to step 2, otherwise, skip to step 4.

2. If fix is required: make appropriate adjustments to installation as required to ensure compliance with released requirement.
3. Repeat test in step 1
4. Download log files and submit to AeroSat.Support@Astronics.com following successful completion of verification test as detailed in section 8.0.

8.0 ACCEPTANCE/REJECTION CRITERIA

Operational test should be performed when the system is in flight condition and in network for no less than 120 minutes. The delta between ambient temperature in the baggage compartment and the equipment box at the beginning of the test to the end of the test should be no greater than +15°C.

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. Log files are to be downloaded post verification test, and submitted to AeroSat.Support@Astronics.com as record of potentially warranty impacting compliance.

CONTACT INFORMATION

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

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