T-Series ACMU Software v1.12.7
Release Notes

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EDITION NOTICE

Proprietary Information

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TABLE OF CONTENTS

1 INTRODUCTION

1.1 Purpose

This document describes the software release for the T-210 Series SATCOM Antenna Control Modem Unit (ACMU). It document shall be revised each time the Software Documents or Software Programs are revised and released.

1.2 Scope

The information in this document is intended to describe the features and configuration information of the software release, including:

- Features in this revision.
- Defects fixed in this revision.
- Known issues remaining.
- Limitations of the software.
- Software executables and firmware.
- Hardware configurations.

The information included in this document is representative at the time of publication and is associated with the specific release therein. Use the most recently released documentation to ensure information is up to date.

1.3 Applicable Documents

These are the software documents defining the ACMU/ACU software:

Table 1.1 — Applicable Documents

Document Description	Document No.
Software Interface Description Document	002-0129-0000-IDD
Software Functional Description Document	002-0129-0000-FDD
Software Requirements Matrix	002-0129-0000-SWRM

1.4 Associated Documents

This documentation shall be used in conjunction with revisions of the following documents current as of the production date for the system:

Table 1.2 — Associated Documents

Document Description	Document No.
On Air Test Procedure (Internal)	000-2129-1000-OATP
Software Release Process (Internal)	10725

2 NEW FEATURES IN THIS RELEASE

2.1 Hardware Support

This release provides support for Maxon motors.

2.2 Motor Application

- The Motor application supports driving the new Maxon motors.
- There is support for cold starting:
  - The axes are calibrated one at time to avoid exceeding available power.
  - Each axis is enabled as soon as its calibration is complete rather than waiting for the others to finish.
- The QUAL gimbal limit switch configuration has support.
- The following configurable Boolean parameter has been added:

  `reverse_limit_switches`

  This configuration parameter will swap the low and high limit switch values.

2.3 Firmware

The parameter files for the Elmo motor controllers have been updated to support Maxon motors.

2.4 Built-In Monitoring (BIM)

New values have been added for monitoring the following parameter:

`psu_vcc_amps`

The new values support larger current draw for the new front panel.

2.5 Watchdog

The Watchdog utility now reads the model and ratios from gimbal configuration, and adjusts motor monitoring appropriately.

3 DEFECTS FIXED IN THIS RELEASE

3.1 AltaDT PCIe ARINC Card Driver

There are two issues fixed in the ARINC card driver:

- The stabilizer position label (315) was incorrectly being scaled. This label is received on the second channel (ARINC_6) from one of the following equipment IDs:
  - 001 (Flight Control Computer)
  - 0A1 (FCC Controller)
  - 029 (ADDCS/EICAS)
- The driver was incorrectly using the internal time source to timestamp the labels in the AltaDT card. This caused a discrepancy with the kernel's system clock that resulted in errors in the navigation data prediction algorithm. The driver has been reconfigured to use kernel monotonic time to timestamp the labels.

3.2 IAI TAMAM TNL16G INS/IRU Driver

The driver for the TNL16G Intertial Reference Unit (IRU) was run at system startup even though the system was never configured to use it. This driver locks an RS422 output port, which cannot be locked and was failing the ACMU ATP.

3.3 Inoperable Remote Logging

An issue with configuring the system to log to a remote address was fixed.

4 KNOWN ISSUES REMAINING

4.1 Only the CEC12 Platform has been Tested

The iDirect-ARINC and Hughes-RS422 platforms have not been tested and may not be functional in this release.

4.2 Transmit Altitude

Changing `transmit_altitude` while in flight may not clear the `set_tx_below_altitude` override. If this is an issue, it is recommended to explicitly manage `set_tx_below_altitude` as needed after changing `transmit_altitude`.

4.1 SNMP Communication with the HPT Occurs Regardless of the AdminState

SNMP communication should only occur when the HPT application is in the `AdminState` state "**enable**".

4.2 Partial Support of Portescap Motors

This software release:

- Includes support for the newer Maxon motors
- Limits functionality of the older Portescap motors.

5 LIMITATIONS

5.1 TV or Data

If the system is in TV mode then the data operation will not work, even if using the same satellite and polarization type (linear or circular).

If the system is in Data mode then TV operation might still be possible if on the same satellite and using the same polarization.

5.2 Antenna Mating

The Antenna and ACMU must be mated before the system will become operational. This is a one-time event that occurs automatically when the ACMU powers up and detects a new antenna.

Changing an antenna requires the system to be first put into the "uninstalled" state. This can be done through the web page, or the CLI.

5.3 ACMU MIB

This release supports SNMP v2c. SNMP v3 will not be supported.

5.4 ACMU Command Line Interface (CLI)

The ACMU CLI is fully functional and supports all CLI commands required to operate and debug the ACU. The ACMU CLI currently supports two user login levels:

- ***aerosat*** — To manage antenna operations the operator should use the *aerosat* user login.
- ***root*** — To manage ACU operating system functions or upgrade software the operator should use the ***root*** user login.

5.5 Modem

Modem commissioning is a manual process. An options file must be installed specific to the service and serial number of the installed modem.

5.6 Software Update

The software update function currently has the following limitations:

- Updates are only allowed to the major release installed on the ACMU. For example, 1.12.4 can be updated to 1.12.5 but not to 1.14.1.
- Updating between major released versions (1.8.x → 1.9.x) will be supported in future releases as a service/offline procedure. This is intended to be a "hands off" procedure other than the steps required to work with the system in a service mode. It should be noted that this procedure would also allow installation of prior versions.
- Updating to the next major release may require manual operations such as logging into the ACMU and running commands.
- If the software update process is interrupted, restarting it requires manually running the software update script from a command line interface (console or ssh). The script will complete any partial updates.

5.7 Software rollback

ACMU software rollback is not supported.

6 RELEASED SOFTWARE

6.1 Executables

This software release contains both software and firmware for various LRUs.

Table 6.1 — Executables

Description	Part No	File Name	MD5 Sum
LRU Base OS Software	19212	Aero_Base_OS-1.0-22aero.i586.rpm	1bc82fd305d4d3f3223a22cbc161cd3f
LRU Software v1.12.7 (“Gatsby”)	900-24270	Gatsby_Release-1.12.7-4aero.i586.rpm	8ce7ad92026afad760adf836714f7559
LRU Software Update v.1.12.7		Gatsby_Update-1.12.7-4aero.pkg	2537de0ac66b31e397ac290a30dd52aa

6.2 Firmware Versions

This release contains the following firmware.

Table 6.2 — Firmware Versions

Package	Part No
ACMU PIC subsystems	800-21501
iDirect e850MP BSP	800-21502
iDirect e850MP remote	800-21503
Wavestream HPT Atmel	800-21505

6.3 Hardware Configurations

This software release supports the following platform hardware configurations.

Table 6.3 — Hardware Configurations

Description	Part No
T210 Antenna Control Modem Unit (ACMU)	002-2129-1001
T210 Gimbal Antenna Unit (GAU)	001-2129-1001
T210 Low Power Transceiver (LPT)	005-2025-1001
T210 Power Amplifier Unit (PAU)	005-3025-1001
T210 Down Converter Unit (DCU)	005-2129-1001