AIRBORNE MISSION SYSTEMS

AGU-1
Aircraft Gateway Unit
Installation Manual

AMS-IM-2-01 Rev 1
5 August 2025

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Product Warranty

This product manufactured by AMS is warranted to be free of defects in workmanship or performance for 2 years from the date of installation by an authorized AMS installer. This warranty covers the cost of all materials and labour to repair or replace the unit but does not include the cost of transporting the defective unit to and from AMS or its designated warranty repair centre, or of removing and replacing the defective unit in the aircraft. This warranty does not cover failures due to abuse, misuse, accident, or unauthorized alteration or repairs.

THIS WARRANTY IS VOID IF THE PRODUCT IS NOT INSTALLED BY AN AUTHORIZED AMS INSTALLER. If the product registration card is not completed and returned to AMS, the product will be warranted from the date of the purchase invoice or tax receipt.

Contact AMS for return authorization, and for any questions regarding this warranty and how it applies to your unit(s). AMS is the final arbiter concerning warranty issues.

Important Notice

The information contained in this document is subject to change at any time and without notice. To ensure this is the current version, visit the AMS website: www.airbornemissionsystems.com or contact sales@ams-aus.com

Log of Revisions

Revision	Date	Change Notes
1	5 August 2025	Initial Revision

Cautions and Notes

The following information boxes are used to draw the installers attention to specific facts relevant to the information being presented.

CAUTION

IMPORTANT INFORMATION THAT IMPACTS INSTALLATION DESIGN

NOTE

Additional context to assist with installer decision making

WARNING

This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This Notice is being provided in accordance with California's Proposition 65.

Contact Airborne Mission Systems by visiting our website www.airbornemissionsystems.com and fill out our contact us form should you like an additional information or have any questions.

https://www.p65warnings.ca.gov/

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1 Product Description & Design Specification

1.1 Introduction

This manual provides information about the Airborne Mission Systems AGU-1 Aircraft Gateway Unit. Contained in this manual is information for installation of this product and its components into an aircraft, however this manual does not constitute, and is not intended to be accepted as approved data on its own. Using the information provided herein without appropriate and necessary design, planning and approvals by the aviation regulator applicable to the aircraft in which is being modified can lead to unsafe outcomes. Airborne Mission Systems does not recommend using this information and referenced data and materials as the sole source in the design of a specific installation into your aircraft.

This manual is intended only for competent, appropriately qualified avionics technicians and avionics engineers who have read this manual completely and are knowledgeable of the information contain herein and are aware of the latest revision of this manual and referenced materials. Standard practices are assumed to be followed in all instances.

Before commencing a design and/or planning of an installation of the AGU-1 please ensure this installation manual has been read and the requirements understood.

NOTE

FCC CFR Part 15 § 15.203 requires that the AGU-1 be professionally installed in accordance with this installation manual. It is the installers responsibility to ensure that the appropriate and proper antennas are installed so that the limits in this part are not exceeded.

For current installation manuals, information, service bulletins and service information letters about the AGU-1, visit www.airbornemissionsystems.com or email sales@ams-aus.com.

1.2 Description

The AGU-1 is an LTE/Wi-Fi Gateway with Satellite link fail-over where its primary function is to provide real time position tracking of aircraft with near global connectivity. It has expanded functionality in providing near real-time event-based telemetry reports when connected with aircraft sensors and the Airborne Mission Systems AFDAU-T1 ATU units.

When in a standard configuration the AGU-1 connects to cellular towers when in LTE coverage, or via a pre-configured Wi-Fi connection to deliver position and event messages. Outside of this coverage the AGU-1 fails over to the Iridium transceiver to delivers messages via Iridium's SBD service.

The AGU-1 also features Bluetooth (BLE) connectivity to allow additional telemetry to be collected from custom Pilot and Crew smartphone applications.

All position, event messages, logs and data are delivered either from the Iridium Satellite or LTE/Wi-Fi networks to the Airborne Mission Systems: Auster Cloud from which can be connected to 3rd Party applications via Web API.

1.2.1 Physical Characteristics

1.2.2 External Attributes

Rear View

FEATURE	DESCRIPTION
SATELLITE ANTENNA PORT	TNC Iridium transceiver connector.
GPS ANTENNA PORT	BNC GPS receiver antenna connector. Supplies 5V DC bias for active antennas.
CELL ANTENNA PORT	BNC cellular transceiver connector.
P1 MAIN CONNECTOR	Main I/O connector

FEATURE	DESCRIPTION
PROGRAMMING PORT (1)	Used to connect to a PC running the AGU-1 Configuration Tool.
LINK LED (2)	**OFF:** No cellular or Iridium session established. **STEADY PULSE (1 HZ):** Iridium only session established. **ON STEADY:** Cellular session established.
POWER LED (3)	Indicates that the unit is receiving power, this LED is supplied by an internal 3.3V DC bus. This LED is a steady green when system is operating normally. No LED indication could mean no airframe power supply to the P1 Main connector, or an internal fault with the power supply system.
STATUS LED (4)	**OFF:** No power supply, or internal fault **ON STEADY:** Internal fault **STEADY PULSE (1 HZ):** Indicates that the unit is operating normally. **FAST PULSE (2 HZ):** Indicates that the unit is performing a firmware load.
WIFI/BLE ANTENNA PORT	SMA WiFi/Bluetooth (LE) transceiver antenna connector.

1.2.3 Dimensions & Weight

Characteristics	Specification
Width	120 mm (4.73”)
Height	100 mm (3.94”)
Depth	27.5 mm (1.10”)
Weight	0.3kg (0.66lb)

1.2.4 Identification

This table outlines the part number variations of the AGU-1 product, and its model identification:

Model Number	Part Number	Description
AGU-1	231-2401-XX	Aircraft Gateway Unit; Limited Pre-release
AGU-1	231-2401-00	Aircraft Gateway Unit

This table provides the part numbers of orderable kits:

Part Number	Description
231-002001-00	Kit, Standard, AGU-1

1.2.5 Optional Antenna Kits

The following antennas can be ordered from Airborne Mission Systems or direct from local suppliers. It is the responsibility of the installer to determine the suitability of the antennas listed below for the installation they are undertaking.

Part Number	Description	MPN	Manufacturer
231-002002-00	Kit, Standard, External GPS/Iridium Antenna (Non-TSO’d)	S5GIR1516RR-AP-XBT-1	Antcom
231-002003-00	Kit, Standard, External Cellular LTE Antenna (TSO’d)	AV-289	Rami

1.3 Intentional Radiator Declarations of Conformity

NOTE

This device does not contain and user-serviceable parts. Unauthorised repairs or modifications could result in permanent damage to the device and may affect your warranty coverage and regulatory authorisations.

FCC Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

ACMA Declaration of Conformity

Hereby, Airborne Mission Systems declares that this product is in compliance with the relevant statutory requirements. The full text of the declaration of conformity is available at the following internet address: airbornemissionsystems.com/compliance.

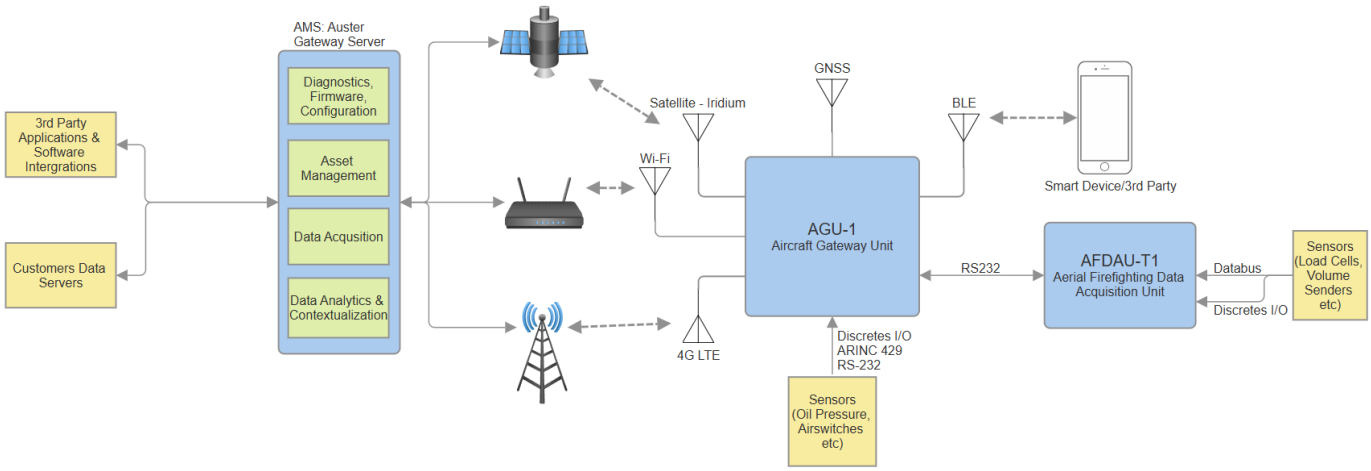
EU Declaration of Conformity

Hereby, Airborne Mission Systems declares that this product is in compliance with the Directive 2014/53/EU. The full text of the declaration of conformity is available at the following internet address: airbornemissionsystems.com/compliance.

UK Declaration of Conformity

Hereby, Airborne Mission Systems declares that this product is in compliance with the relevant statutory requirements. The full text of the declaration of conformity is available at the following internet address: airbornemissionsystems.com/compliance.

1.4 Product Overview



The AGU-1 features the following network radio interfaces, for connecting to the AMS Auster Gateway server:

- CAT 1 4G LTE Transceiver
- Wi-Fi 802.11 b/g/n Transceiver
- Iridium SBD Transceiver

The AGU-1 features the following interfaces for connecting to onboard sensors:

- Bluetooth Low Energy Transceiver (BLE)
- USB-C Interface
- Six Discrete Inputs – Configurable for Active Low or Active High sensing
- Two RS-232 Ports
- One ARINC 429 Receiver Port
- One CAN Bus Port
- One Fault Indicator Active Low Discrete Output
- One Configurable Active Low Discrete Output

The AGU-1 is designed to interface to the ACM-100 Configuration module, allowing the AGU-1 to be replacement with minimal re-configuration and providing LRU like convenience.

NOTE

The AGU-1 enables connection to the internet, therefore the design data contained within this manual limit its interfaces to "listen only" communication protocols. Where a two-way communication system is provided this is on the basis of connecting to non-essential auxiliary equipment not required for flight. Engineers designing AGU-1 intergrations outside the scope of this manual are responsible for ensuring safe and isolated communications.

1.5 Primary Functions

1.5.1 Position Tracking

When supplied GPS via a GPS antenna, a track event is generated every 15 seconds. Track events are sent unrestricted over the Cellular and Wi-Fi network and at a restricted rate over the Iridium Network as follows:

Transmission Type	Interval
Cellular/Wi-Fi	15 Seconds
Wi-Fi	15 Seconds
Iridium SBD	1 Minute

Track events contain the following data:

- Date & Time
- Position (latitude, longitude)
- Altitude (above mean sea level)
- Ground speed
- Course
- GPS fix quality

1.5.2 Event Messaging

The AGU-1 provides several interfaces to detect aircraft state changes and report those events in near real time. Blending internal detection functions and technology with external sensors the AGU-1 captures and transmits the event data of the following:

- Engine Start/Stop
- Take-off/Landing
- Hover Entry/Exit (Rotary-Wing Configuration Only)
- Distress Button Activation

1.5.3 Enhanced ATU Integration

The AGU-1 provides enhanced integration with the AMS flagship AFDAU-T1 Aerial Firefighting Data Acquisition Unit product, providing the AFDAU-T1 with GPS data, and connectivity for firefighting agency compliance.

The AGU-1 also enables the following Over-The-Air (OTA) functionality for the AFDAU-T1:

- OTA diagnostics.
- OTA log download.
- OTA end of flight event data validation.

1.5.4 Over-The-Air (OTA) Functionality

The AGU-1 provides the following OTA functionality:

- OTA firmware updates.
- OTA configuration changes.
- OTA diagnostics.
- OTA log download.

1.6 Technical Specifications

1.6.1 Environmental Specifications

Environmental specifications detailed below are based on the Environmental Qualification Form produced by Airborne Missions Systems and can be obtained from www.airbornemissionsystems.com

Attribute	Specification
Operating Voltage	9 to 30 VDC
Operating Power	12 Watts Max
Operating Temperature	-45ºC to +70ºC
Storage Temperature	-55ºC to +85ºC
Humidity	95% non-condensing
Altitude Range	35,000 feet

1.6.2 Cellular Specifications

Attribute	Specification
Radio Type	CAT 1 LTE, UMTS/HSPA+ (3G), GSM/GPRS(2G), EDGE
Frequency Bands	LTE-FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28; LTE-TDD: B38/39/40/41; WCDMA: B1/2/4/5/6/8/19; GSM: B2/3/5/8
Transmitting Power	+35 dBm for GSM/GRPS, +30 dBm for EDGE +25 dBm for 3G +25 dBm for LTE
Tx/Rx Port	Cellular BNC
Frequencies	700 Mhz – 960 Mhz 1710 Mhz – 2700 Mhz

1.6.3 Iridium Satellite Communication Specifications

Attribute	Specification
Satellite Network	Iridium
Communication Technology	Iridium Short Burst Data® (SBD®)
Frequency Range	1616 Mhz – 1626.5 Mhz
Transmit Power	1.5W
Tx/Rx Port	Satellite TNC

1.6.4 Wi-Fi Specifications

Attribute	Specification
Wi-Fi Wireless Standard	IEEE 802.11b/g/n
Frequency Range (Centre Frequency)	2412 ~ 2484 Mhz
Transmit Power	+20.5 dBm max
Tx/Rx Port	Wi-Fi/BLE SMA

1.6.5 Bluetooth Specifications

Attribute	Specification
Radio Technology	Bluetooth 5 (LE)
Frequency Range (Centre Frequency)	2402 ~ 2480 Mhz
Transmit Power Range	-20.5 dBm ~ 20.0 dBm
Tx/Rx Port	Wi-Fi/BLE SMA

1.6.6 GNSS Specifications

Attribute	Specification
Supported GNSS Constellations	GPS, GLONASS, Galileo, BeiDou
Antenna Bias Voltage	4.5 - 5.0 VDC
Max Current Supply (Limited)	70mA Max
Tx/Rx Port	GPS BNC

1.6.7 Internal Battery Specifications

The AGU-1 contains a non-rechargeable Lithium battery that keeps memory functions alive for the main process and GPS receiver.

Attribute	Specification
Power	3.6 V, 1.2Ah (4.32Wh)
Chemistry	Lithium Thionyl Chloride
Safety Standard	Compliant to IEC86-4
UL Component Recognition	HM46165

1.7 Antenna Specifications

1.7.1 Cellular Antenna

Typical antenna is the AMS P/N: 231-002003-00 (Rami AV-289) externally mounted antenna. Other antennas selected must meet the following specifications:

Attribute	Specification
Frequency Range	700 MHz to 2700 MHz
Nominal Impedance	50 Ohms
VSWR	< 3:1
Gain (max)	7 dBi

1.7.2 Satellite Antenna

Typical antenna is the dual GPS/Iridium AMS P/N: 231-002002-00 (Antcom S5GIR1516RR-AP-XBT-1) externally mounted antenna. Other antennas selected must meet the following specifications:

Attribute	Specification
Frequency Range	1616 MHz to 1626.5 MHz
Nominal Impedance	50 Ohms
VSWR	1.5:1 (In Iridium Band) 3:1 (Out of Band)
Gain (max)	3 dBi
Polarization	RHCP

1.7.3 GNSS Antenna

Typical antenna is the AMS P/N 231-230001-00 GPS/Iridium (Antcom S5GIR1516RR-AP-XBT-1) externally mounted antenna. Other antennas selected must meet the following specifications:

Attribute	Specification
L1 GPS Frequency Range	1575.42 +/ 12 MHz
Nominal Impedance	50 Ohms
VSWR	<2.0:1
Type	Active
Polarization	RHCP
DC Voltage Operating Range	3.8 - 5.5 V DC
DC Current Draw	< 70mA

1.7.4 Wi-Fi/Bluetooth Antenna

Typical antenna is the WiFi/BLE Antenna AMS P/N: 231-230002-00 (Inventek W24-RSMA-M) unit mounted antenna. Other antennas selected must meet the following specifications:

Attribute	Specification
Frequency	2400 MHz to 2500 MHz
Nominal Impedance	50 Ohms
VSWR	≤ 1.5
Gain (max)	2.15 dBi
Power	50 W

2 Operating Instructions

The AGU-1 has no controls or indicators that require user access and is therefore a remote-mount LRU. Operation of the device is automatic at power on as it attempts to acquire GPS position and make a cellular or satellite connection to commence tracking.

Registration and activation are carried out by Airborne Mission Systems prior to shipping the product, and a Global Sim Card is pre-installed internally, and is not user accessible.

A Subscription with Airborne Mission System includes an unlimited cellular data plan.

Iridium airtime plans will need to be purchased via an airtime provider or Integration Partner.

Where an external 'fault' annunciation is installed, this indication notifies the user that the device is not performing its base level function of tracking via either the Satellite network or the Cellular/Wi-Fi network.

3 Installation Overview

3.1 Introduction

It is the installers' responsibility to design installation of and obtain approval for this product based on the instructions within this manual.

Specifications of antennas, coaxial cable lengths and connector losses affect the overall performance of the radio transmitters contained in this product and by not paying careful attention to the information contained within this manual, deviations outside the scope of regulatory approvals may be made.

3.2 Minimum Requirements

Before commencing installation of the AGU-1 please ensure the following minimum requirements have been met.

At a minimum the following equipment is required to provide position reporting:

- GPS Antenna
- Iridium and/or Cellular Antenna

Note that in the case of only one of either an Iridium or Cellular antenna being installed and the other left disconnected, then the device's configuration should be updated accordingly.

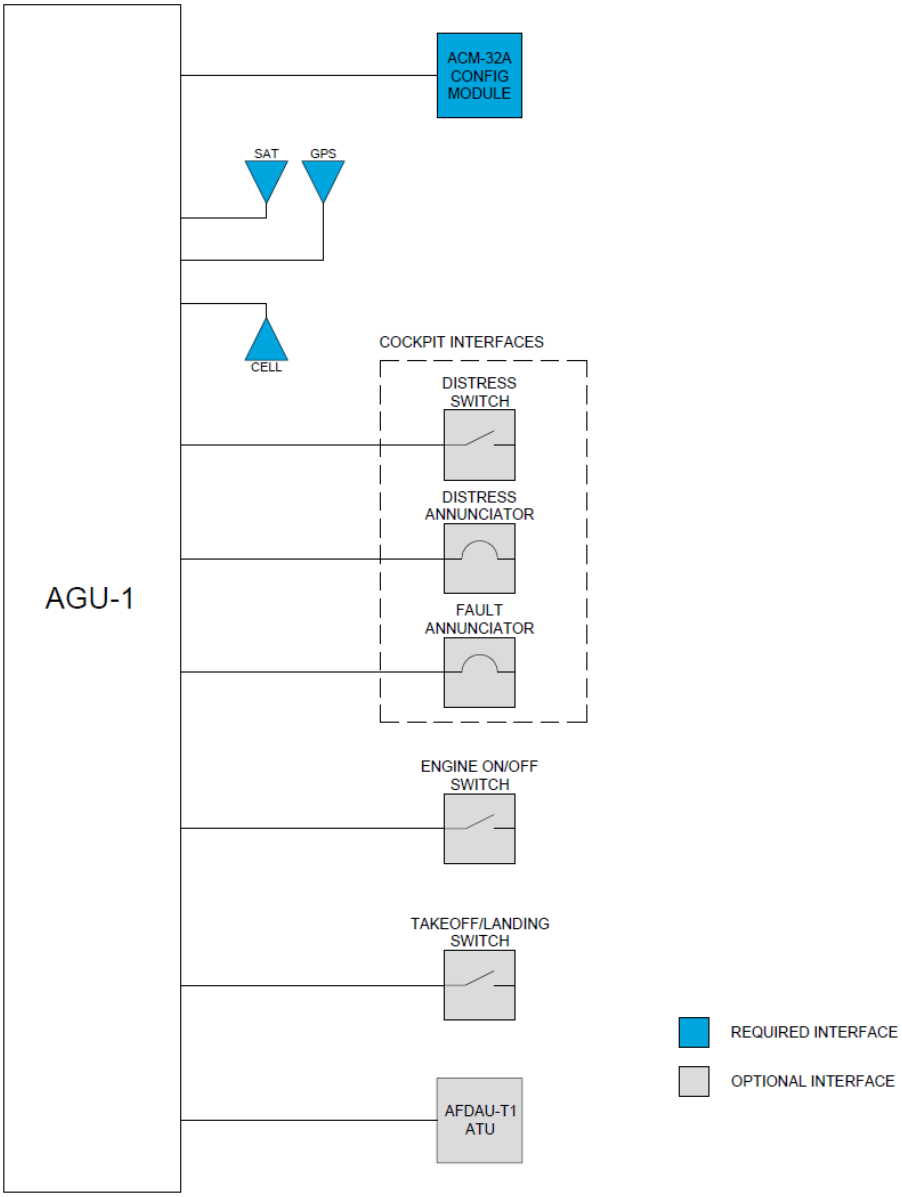
3.3 Hardware & Materials Required but not Supplied

The installer must ensure that the additional materials required are suitably sourced and prepared prior to installation. Detailed is a list of hardware required but not supplied to successful install the AGU-1:

- Mounting hardware for the AGU-1.
- Mounting hardware for antenna installations.
- Coaxial cable and RF connectors.
- Wire and cabling materials.

3.4 Interfaced Equipment and Sensors Considerations

3.4.1 Overview



3.4.2 Configuration Module

The AGU-1 requires installation of an ACM-32A configuration module. The configuration module holds configuration information specific to the aircraft and is installed in the AGU-1 connector backshell so that it remains with the aircraft if the AGU-1 needs to be swapped or replaced for any reason.

3.4.3 Engine Start/Stop

The AGU-1 can be configured for a discrete switched signal that represents the engine on/off state of the aircraft on one of the 6 GPI inputs.

Typically, this would be connected to an existing main gearbox oil pressure switch. Refer to Section 3.5 for guidance on how to connect this input.

3.4.4 Take-off/Landing

The AGU-1 can be configured for a discrete switched signal that represents the airborne or on-ground state of the aircraft on one of the 6 GPI inputs.

Typically, this would be connected to a new or existing collective lever microswitch. Refer to section 3.5 for guidance on how to connect this input.

CAUTION

IT IS NOT RECOMMENDED TO USE A TORQUE SWITCH COMMON ON SOME FIXED WING AIRCRAFT AS RESULTS ARE NOT RELIABLE. INSTALLATION OF AN AIRSPEED SWITCH IS RECOMMENDED.

3.4.5 Distress Switch

The AGU-1 can be configured for a discrete switched signal that represents the distress state of the aircraft on one of the 6 GPI inputs.

Typically, this would be connected to a new or existing collective lever microswitch. Refer to section 3.5 for guidance on how to connect this input.

3.4.6 Distress Annunciator

The AGU-1 has a dedicated distress annunciator output pin. The pin provides a ground when the AGU-1 is in an active distress state.

3.4.7 Fault Annunciator

The AGU-1 has a dedicated fault annunciator output pin. The pin provides a ground when the AGU-1 is in an active fault state.

3.4.8 Additional Telemetry Units (ATUs)

The AGU-1 may be interfaced to the following compatible ATUs:

Airborne Mission Systems AFDAU-T1 Data Acquisition Unit

Pinouts						
AGU-1 J1		AFDAU-T1 J1				Description
Port 1	Port 2	Port 1	Port 2	Port 3	Port 4	
8	9	27	28	29	30	RS232 RX
17	18	9	10	11	12	RS232 TX
26	26	21	21	21	21	Signal Return

3.5 Discrete Inputs

3.5.1 Overview

The AGU-1 provides 6 inputs for discrete sensor connections. These inputs can be configured as various airframe inputs. The following discrete sensors can be connected to the discrete inputs of the AGU-1:

- Engine Start/Stop Switch
- Take-off/Landing
- Distress Switch

3.5.2 General Purpose Inputs

Six general purpose inputs, GPI_1 through GPI_6, are provided for connection of discrete sensors. The inputs are configurable for voltage sense or ground sense mode.

Table 1 – GPI Connection Pinouts

Main Connector (J1) GPI Pins						Description
GPI_1	GPI_2	GPI_3	GPI_4	GPI_5	GPI_6	
2	3	4	5	10	11	Switch to Ground or Switch to Voltage

Table 2 – Discrete Input Specifications

Attribute	Min	Max	Unit
Input Voltage	0	30	VDC
Input Current	2.10	3.0	mA
On Threshold Voltage (Voltage Sense Mode)	6.6	7.6	VDC
Off Threshold Voltage (Voltage Sense Mode)	5.6	6.5	VDC
On Threshold Voltage (Ground Sense Mode)	(VIN)-7.4	(VIN)-6.4	VDC
Off Threshold Voltage (Ground Sense Mode)	(VIN)-6.3	(VIN)-5.4	VDC

4 Installation Procedures

4.1 Incoming Inspection

Carefully unpack and inspect the received equipment. The items listed in Table 3 should be present. Report any damaged items to the carrier involved. Report any shortage to your supplier.

Table 3 – AGU-1 Standard Kit (P/N 231-002001-00)

Part Number	Description
231-2401-00	Aircraft Gateway Unit, AGU-1
231-003001-00	Connector Kit, AGU-1
231-003003-00	Kit, Standard, ACM-32A
231-210002-00	Antenna, Whip, 2.4GHz, SMA, Female
231-305001-00	Cable, USB-C Male to USB-A Male

Table 4 – AGU-1 Connector Kit (P/N 231-003001-00)

Part Number	Description
M24308/2-12F	Connector, D-Subminiature, Standard D, Crimp, 26 Way, High Density, Female
231-300002-00	Connector Backshell, 15 Way, 180deg, Shielded

Table 5 – ACM-32A Standard Kit (P/N 231-003003-00)

Part Number	Description
231-200001-00	Configuration Module, ACM-32A
231-305002-00	Cable, 1.0mm Pitch, 4 Way, JST SH, Female to Female, 100mm Long
231-309001-00	Heatshrink, ACM-32A

4.2 Standard Procedures

Installation is to be carried out in accordance with the instructions included in this manual, or later revision. AMS accepts no liability arising from installations deviating from the installation described herein.

Unless otherwise stated, adhere to the standard practices described in FAA AC 43.13-1B, Acceptable Methods Techniques, and Practices – Aircraft Inspection and Repair, Change 1, dated 8 September 1998.

Installation approval is the responsibility of the end user.

4.3 Structural Installation

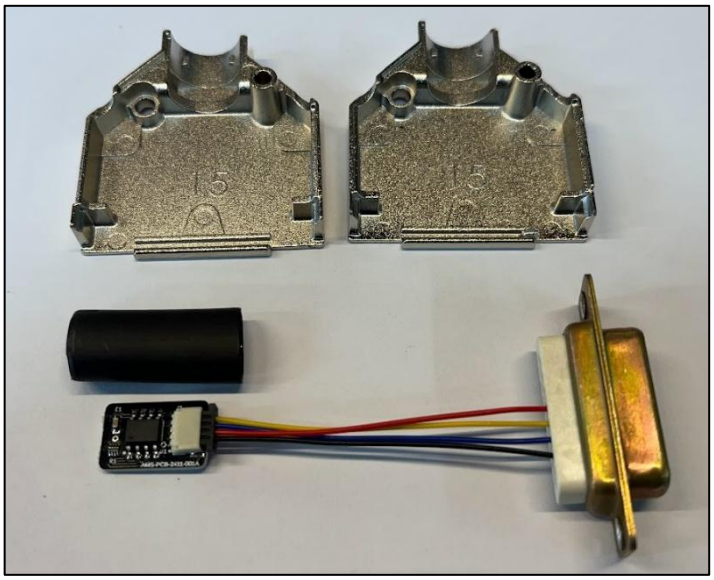
The AGU-1 can be installed in any location in the aircraft suitable for its mass and mounting requirements. Consideration should be given to locating the unit such that the power and status lights are visible, and the USB port is accessible, during maintenance.

NOTE

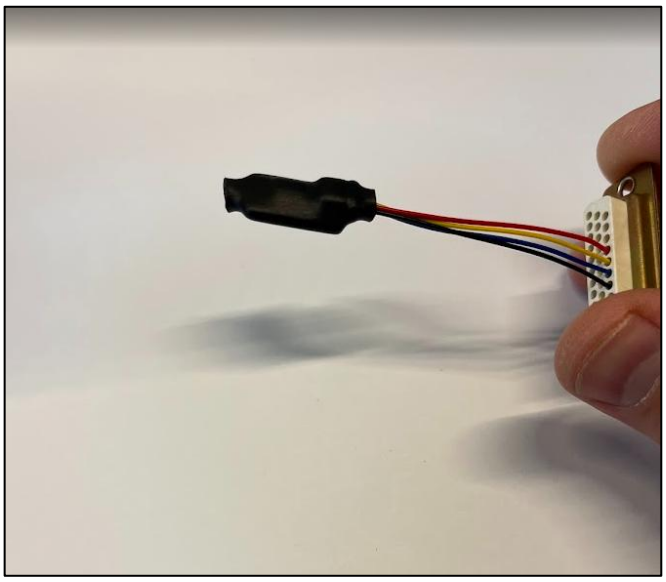
Locations subject to direct or accumulated contact with water are to be avoided. To minimise the possibility of water ingress where moisture may pool, avoid placing the AGU-1 with the USB or Main Connector port facing upward.

4.4 Configuration Module Installation

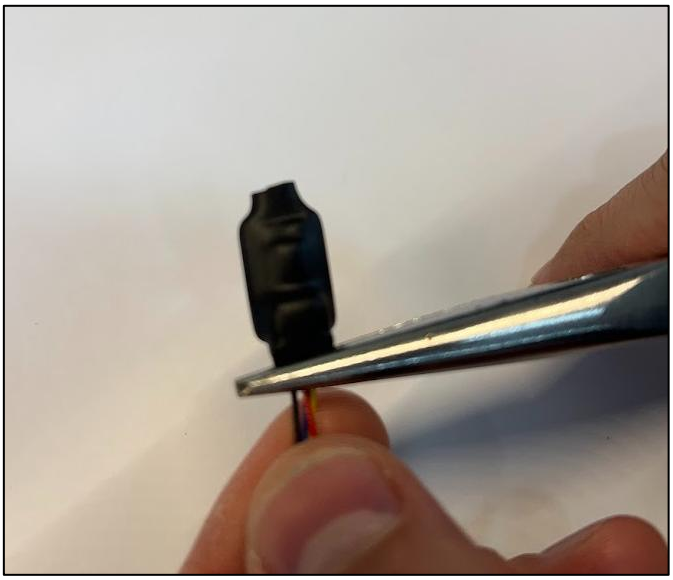
1. Crimp sockets for the 26-way high density d-sub connector (P/N M24308/2-12F) supplied in the AGU-1 connector kit onto the four (4) exposed wires on cable (P/N 231-305002-00) supplied in the ACM-32A standard kit. Pin the cable into the connector in accordance with Diagram 1A (refer Section 9.2) and connect the ACM-32A configuration module to the connector on the other end of the cable.



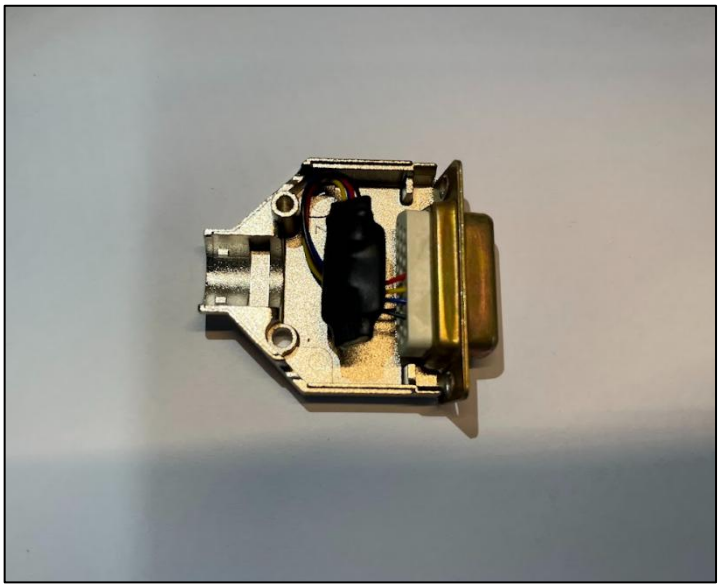
2. Slide the heatshrink (P/N 231-309001-00) supplied in the ACM-32A standard kit over the configuration module so there is equal overhang on either side of the configuration module. Apply heat until the heatshrink is securely in place.
   Note: If a new piece of heatshrink is required, cut a 25mm length of 10mm diameter glue-lined heatshrink.



3. Crimp both ends of the heatshrink overhanging the configuration module using a pair of pliers to seal the module in the heatshrink.

4. When assembling the connector backshell, insert the configuration module into the backshell as shown. Ensure there is not excessive strain on the cable, the cable and configuration module are fully enclosed in the backshell without excessive compressive force and the cable and configuration are clear of the connector screw holes and thumbscrew passageway.



4.5 Antenna Installations

Antenna installations require installation approval.

4.5.1 GPS Antenna

The GPS antenna should be installed on the top fuselage of the aircraft in a location with minimal obstruction between the antenna and the sky to the horizon in all directions. If installing under a rotor, locate as far from the rotor hub and as far under the blade as possible while maintaining good visibility. Locate as far as practical from any transmitting antennas.

4.5.2 Iridium Antenna

The Iridium antenna should be installed on the top fuselage of the aircraft in a location with minimal obstruction between the antenna and the sky to the horizon in all directions. If installing under a rotor, locate as far from the rotor hub and as far under the blade as possible while maintaining good visibility. Locate as far as practical from any transmitting antennas.

The total implementation loss for connectors and cable between the transceiver and the antenna should not exceed 2.3dB.

4.5.3 Cellular

The cellular antenna should be installed on the bottom fuselage of the aircraft.

4.6 Wiring Installation

All wiring is to be completed in accordance with the notes and diagrams contained in Section 9 of this manual.

4.7 Post Installation Procedures

4.7.1 Wiring Inspection

1. Inspect all wiring and terminals to ensure security and attachment.
2. Check wiring for correct polarity and terminated to correct pins of the main connector.

4.7.2 Power-on Checks

1. Apply power to the unit and ensure the green POWER LED on the front of the unit is solid.
2. After 10s, ensure the green STATUS LED on the front of the unit is flashing steadily.

4.7.3 Functional Checks

1. After 30s, ensure the green LINK LED on the front of the unit is solid.

5 Configuration and Firmware Update

Contact AMS for configuration and firmware update details.

6 Troubleshooting

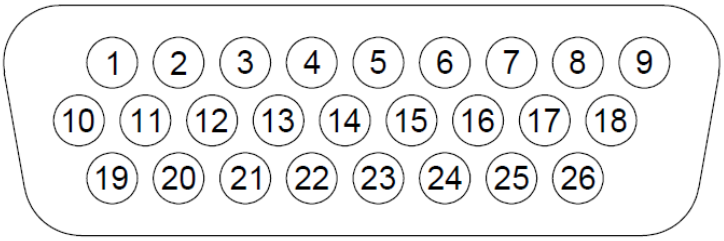
FAULT DESCRIPTION	CAUSE	RECTIFICATION
The Power LED light does not light up when powered on.	1. Internal power supply circuit is not getting a regulated 5V DC supply.	1. Ensure that 14-28VDC is available on Pin 1 of P1 Main Connector 2. Ensure that airframe ground is available on Pin 26 of P1 Main Connector 3. If steps 1-2 above are OK, there is an internal fault in the unit. Contact AMS for repair.
The Power LED light is on, but the Status LED light is always on or always off.	1. There is an internal fault in the unit or a bug in the firmware preventing the software progressing.	1. Reset power to the unit. If this solves the problem, notify AMS of the issue. 2. If the behaviour persists, there is an internal fault in the unit. Contact AMS for repair.
The Link LED light doesn't come on.	1. The unit isn't receiving GPS. 2. The unit is unable to transmit on the cellular or Iridium satellite networks.	1. Check GPS antenna is connected to the GPS antenna port on the unit. 2. Check the GPS coaxial cable for shorts between the conductor and shield and for discontinuity. 3. Check Cellular and Iridium antennas are connected to the Cellular and Iridium antenna ports on the unit respectively. 4. Check the Cellular and Iridium coaxial cable for shorts between the conductor and shield and for discontinuity. 5. If steps 1-4 above are OK, there may be a configuration issue or internal fault with the unit. Contact AMS for support.
The Link LED light is on or flashing but no tracks are being shown on my mapping application.	1. Not configured on the AMS Auster Cloud	1. Check the device has been registered with the Auster cloud. 2. Check the device is assigned to an asset. 3. Check the asset has been configured to pass data to your mapping application. 4. If steps 1-3 above are OK, contact AMS for additional support.

7 Mechanical Drawings

Nil.

8 Connector Pinouts

8.1 P1 – Main Connector



PIN	NAME	DESCRIPTION	PIN	NAME	DESCRIPTION
1	POWER INPUT	14V / 28V DC Power Input	**14**	GPO_2	General Purpose Output
2	GPI_1	General Purpose Input	**15**	A429 IN B1	ARINC-429 Input B Port 1
3	GPI_2	General Purpose Input	**16**	CANL	CAN Bus Low
4	GPI_3	General Purpose Input	**17**	RS232 RX 1	RS-232 Receive Port 1
5	GPI_4	General Purpose Input	**18**	RS232 RX 2	RS-232 Receive Port 2
6	A429 IN A1	ARINC-429 Input A Port 1	**19**	POWER GND	Airframe ground input
7	CANH	CAN Bus High	**20**	CONFIG GND	Common with pin 19. Connect config module ground.
8	RS232 TX 1	RS-232 Transmit Port 1	**21**	CONFIG DATA	Config module data
9	RS232 TX 2	RS-232 Transmit Port 2	**22**	CONFIG CLOCK	Config module clock
10	GPI_5	General Purpose Input	**23**	CONFIG POWER	3.3V DC output. Connect config module power.
11	GPI_6	General Purpose Input	**24**	POWER GND	Airframe ground input
12	GPO_1	General Purpose Output	**25**	POWER GND	Airframe ground input
13	POWER GND	Airframe ground input	**26**	SHIELD GND	Common with pin 19. Connect data bus shields.

9 Wiring Diagrams

9.1 Wiring Installation Considerations

1. UNLESS SPECIFICALLY NOTED ON THIS DRAWING, WIRE TYPE AND GAUGE IS TO BE SELECTED IN ACCORDANCE WITH THE AIRCRAFT PUBLICATIONS (I.E. WIRING OR MAINTENANCE MANUAL) OR FAA AC 43.13-1B CHANGE 1 PARAGRAPH 11-76 THROUGH 11-78.

2. UNLESS OTHERWISE NOTED ALL POWER AND GROUND LINES ARE TO BE 20AWG. ALL OTHER WIRING IS TO BE 22AWG. IF IN DOUBT, SELECT A GAUGE BASED ON THE INLINE CIRCUIT BREAKER RATING IN ACCORDANCE WITH FAA AC43.13-1B CHANGE 1 SECTION 11.

3. UNSHIELDED WIRE TYPES ARE TO BE QUALIFIED TO MIL-W-22759 PER FAA AC 43.13-1B CHANGE 1 PARAGRAPH 11-85, 11-86 AND TABLE 11-11. WHERE A SHIELDED WIRE TYPE IS INDICATED, USE MIL-DTL-27500 SHIELDED WIRE WITH SOLDER SLEEVES FOR SHIELD TERMINATIONS. ALLOW 75MM (3") FROM THE END OF THE SHIELDED WIRE TO THE SHIELD TERMINATION TO FACILITATE CLAMSHELL HOOD INSTALLATION AFTER WIRING IS COMPLETE.

4. WIRING LOOMS ARE TO BE SUPPORTED AT INTERVALS NO GREATER THAN 600MM (24"). ADHERE TO CLAMPING AND SEPARATION REQUIREMENTS OF AIRCRAFT PUBLICATIONS OR FAA AC 43.13-1B CHANGE 1 PARAGRAPH 11-146.ROUTE WIRES IN ACCORDANCE WITH AIRCRAFT PUBLICATIONS.

9.2 Power, Config Module and Antenna Interfaces

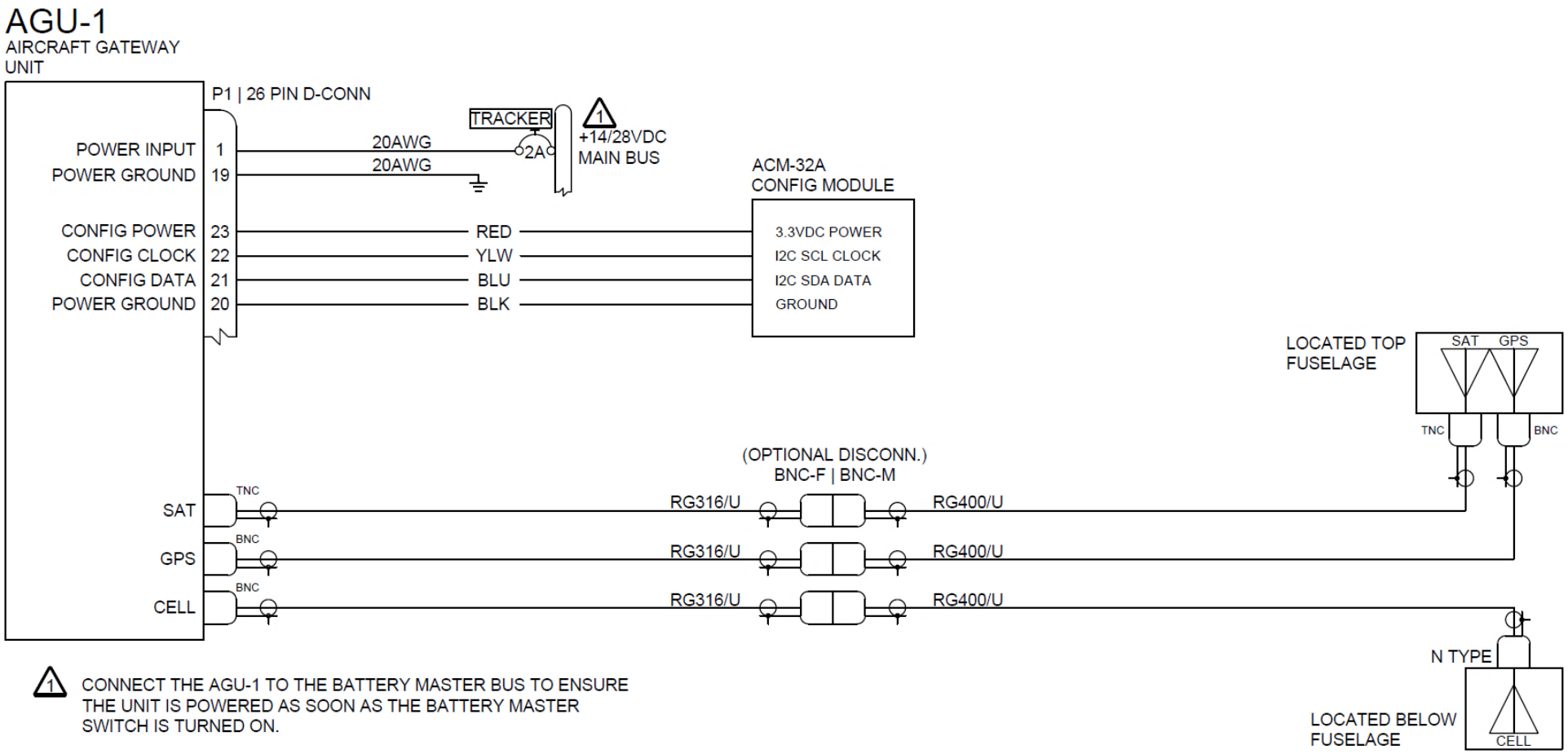


DIAGRAM 1A - POWER, CONFIG MODULE AND ANTENNA INTERFACE

9.3 ATU Interface – Airborne Mission Systems AFDAU-T1

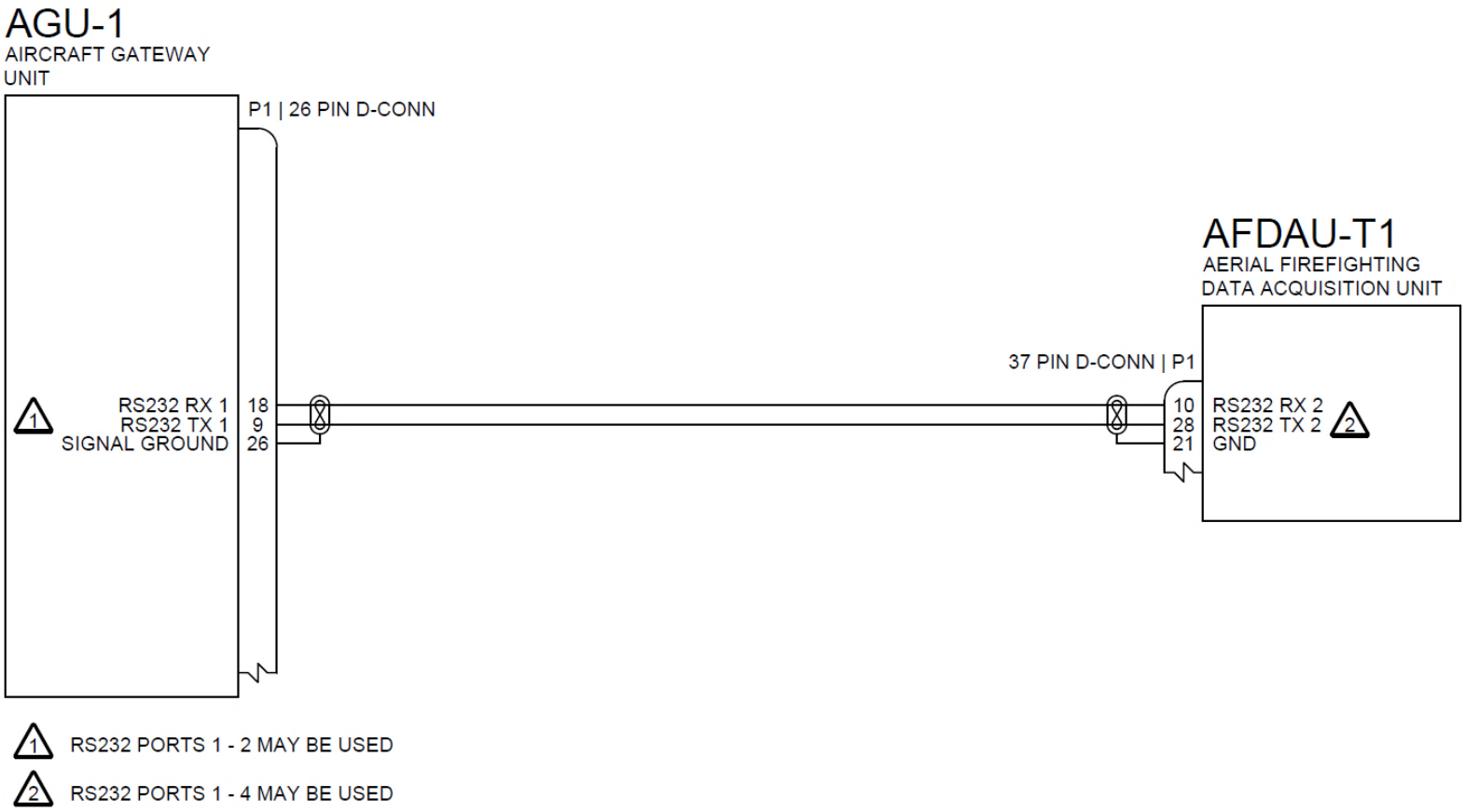


DIAGRAM 2A - AIRBORNE MISSION SYSTEMS
AFDAU-T1 INTERFACE