Modular Acquisition Unit

ANALOG AND DIGITAL DATA ACQUISITION AND PROCESSING FOR AIRCRAFT APPLICATIONS

The MAU is an easily customizable data acquisition system designed for extremely harsh environments that gathers aircraft data to be transferred to a Flight Data Recorder (FDR) or other avionics systems on an aircraft. It is able to capture ARINC 429, ARINC 717 and MIL-STD-1553 digital data, as well as analog and discrete sensor inputs including synchros and LVDTs. The MAU provides 24 channels in the base module with 24 additional channels per expansion module. RS-422 data can also be acquired on an aircraft-specific basis.

The MAU’s rugged aluminum flange-mount housing, along with MIL-DTL-38999 connectors, provides an environmentally-sealed enclosure that can be mounted in any attitude and is ideal for most operational settings. This includes both commercial and military fixed-wing and rotarywing aircraft. Because of its small size the MAU can be readily mounted on the airframe and does not require a pressurized location.

Expansion of the MAU’s capabilities includes the following modules:
- Expanded Data Acquisition with ARINC 717 and 429 output
  - ARINC 717, ARINC 429 and MIL-STD-1553 inputs
  - Analog/Discrete inputs
- Pneumatic (Pitot-Static)
- Quick Access Recorder (QAR)
- GPS Splitter & Receiver Unit
- Emergency Locator Transmitter
- Wireless Data Transfer
- Available 4.3-inch EMI-shielded touch screen LCD with optional NVG Class A capability

CAPABILITIES
- Lightweight and compact
- Modular hardware and software design
- Software-defined data acquisition
- Safety critical soft-core processor for customer loadable analysis software
- Internal ambient temperature sensor
- Aircraft-specific configuration
- Data output via ARINC 717 and 429
- Flange mount in any attitude
- Qualified to DO-160G and MIL-STD-810F / 461F / 704F
- Internal, non-volatile memory

Expansion modules for the MAU:
GPS Splitter & Receiver Unit (left), expanded MAU with QAR (back), MAU with user interface (front) and expanded MAU (right)
### MAU Specifications

#### Inputs
- **(Up to 24 bit with 2 megasamples/second per channel)**
- ARINC 717, ARINC 429, MIL-STD-1553
- Analogs, Discretes, Synchrons, LVDT

#### Outputs
- ARINC 429, ARINC 717

#### Additional Capabilities
- Pneumatic (Pitot-Static)
- Quick Access Recorder (QAR)
- GPS receiver
- Emergency locator transmitter
- Wireless data transfer
- 115 VAC, 400 Hz power
- Available 4.3-inch EMI-shielded touch screen LCD with optional NVG Class A capability
- Internal, non-volatile memory (up to 64 GB)

#### Physical
- **Dimensions (inches):** 1.4 in. H (min) x 3.9 in. D x 4.6 in. W
- **Dimensions (millimeters):** 35mm H (min) x 100mm D x 115mm W
- **Weight:** 1.5 lb. nom.

#### Power
- **Input Power:** 28 VDC
- **Consumption:** 5 W

#### Main Connector
- MIL-C-38999 Series II, 66-pin

#### Environmental
- Operating Temperature: -55 °C to 70 °C
- Non-operating Temperature: -55 °C to 85 °C
- Humidity: 100%
- Operational Altitude: 55,000 ft.
- Operational Shock: 20 g
- Vibration: 14 g
- EMI/EMC: DO-160G, MIL-STD-461F / 704F
- Reliability: > 12,000 operating hrs. MTBF
- Cooling: Passive convection

---

**Flight Data Systems**

**AVIATION PRODUCTS & SERVICES FOR COMMERCIAL & MILITARY**

**Australia** | 31 McGregors Drive, Keilor Park, Victoria 3042, Australia | Phone: +61.3.8331.2900 | Fax: +61.3.9336.1758
**UK** | Building 9, Britannia Court, The Green, West Drayton, Middlesex UB7 7PN, United Kingdom | Phone: +44.0.2035401777
**USA** | 6497 Parkland Drive, Suite J, Sarasota FL 34243, USA | Phone: +941.756.9394

[www.flightdata.aero](http://www.flightdata.aero) | Email: sales@flightdata.aero

Data, including specifications, contained within this document are summary in nature and subject to change at any time without notice at Flight Data Systems’ discretion. Call for latest revision. All brand names and product names referenced are trademarks, registered trademarks, or trade names of their respective holders.