Dual-Modem ModMan Server
Modem Manager

High-Flying, High-Performance IP SATCOM Broadband Satellite Connectivity

Astronics Dual-Modem ModMan (ADMM) extends the requirements of ARINC 791/792 by combining the unique needs of airborne satellite communications with a full-featured airborne server. ADMM is a 4 MCU ARINC 600 Line Replaceable Unit (LRU) that supports two different aeronautical satellite modems thereby eliminating the need for second ModMan LRU and allowing service providers the flexibility to select the most appropriate modem/satellite network during flight. ADMM support different modem configurations as ordering options.
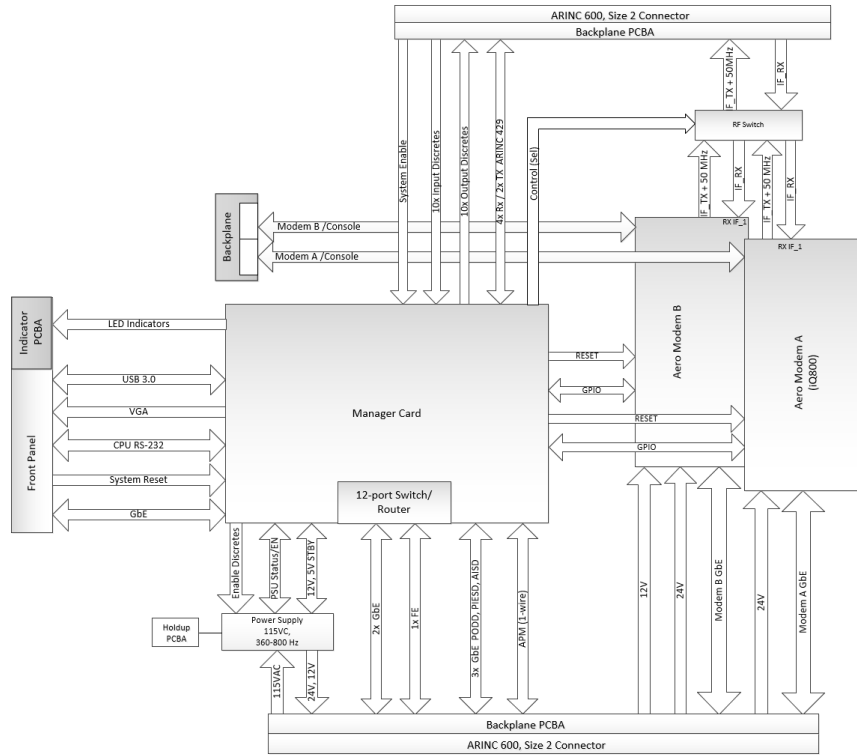
ADMM is built for the future optimized to take advantage of today's and tomorrow's LEO/MEO/GEO networks enabling fast, secure and reliable IP communications to airline passengers, crew and airline operations personnel. ADMM is designed to be installed on all commercial aircraft types for both retrofit STC and OEM line-fit installations.

Astronics has a long history of integrating different modems into IFEC systems across a variety of networks offered by satellite providers around the world. Astronics' hardware and software development experience and understanding of the unique interfaces, APIs, and messaging structures allows for detailed performance analysis and fault isolation across modem and network types.

Product Features

- Provisions for up to two aeronautical modems supporting the latest standards and high throughput satellite transmissions.

- Internal RF Switch for modem selection

- Compliant to ARINC 791/792

- Modern, full-featured airborne server architecture featuring 11th Generation Intel® Core™ i7 Quad Core Processor with up to 64GB of DDR4 memory.

- L2+ Managed Ethernet Switch

- Support for other onboard aircraft interfaces including ARINC 429, Discrete I/O, and Aircraft Personality Module (APM).

- Ample onboard storage for inflight entertainment content distribution.

- ARINC 600, 4MCU form factor.

- DO-160G Certified and OEM Line-Fit ready

- Supports third party applications via virtual machine or container

- Includes GUI based application for system control and monitoring of terminal system

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Block Diagram

ARINC 600, Size 2 Connector
Backplane PCBA

RF Switch

IF_TX + 50MHz IF_RX

System Enable
10x Input Discretes
10x Output Discretes
4x Rx / 2x TX ARINC 429
Control [Sel]

IF_TX + 50 MHz IF_RX IF_TX + 50 MHz IF_RX

Backplane

Modem B /Console
Modem A /Console

RX IF_1 RX IF_1

Indicator PCBA

LED Indicators

Aero Modem B

Aero Modem A (iQ800)

USB 3.0

VGA

Manager Card

RESET

GPIO

Front Panel

CPU RS-232

RESET

System Reset

GPIO

GbE

12-port Switch/ Router

Enable Discretes
PSU Status/EN
12V, 5V STBY

2x GbE

1x FE

3x GbE PODD, PIESD, AISD

APM [1-wire]

12V

24V

Modem B GbE

24V

Modem A GbE

Holdup PCBA

Power Supply 115VC, 360-800 Hz

115VAC

24V, 12V

Backplane PCBA
ARINC 600, Size 2 Connector

Specifications

COMPONENT	DESCRIPTION		
Processor / Memory	11th generation Intel® Core™ i7 (Tiger Lake); 4 Cores 8 Threads 1.8 GHz (i7-1185G7E), 12 MB Cache, 32GB of DDR4 ECC (capable of up to 64GB)		
Modem Configuration	Config	Modem A	Modem B
	001	ST IDirect iQ800	(Not Populated)
	002	ST IDirect iQ800	Gilat Taurus
	003	ST IDirect iQ800	Hughes Jupiter 2
Ethernet Switch	L2+ Managed Ethernet Switch		
Storage	1x Solid State Drive (NVMe SSD) – 500 GB (OS)		
	1x Solid State Drive (NVMe SSD) – 1 TB (Data)		
Front I/O			
USB 3.0	USB 3.0, Type A		
Video	DB15		
RJ45	GbE		
Micro USB	Processor, Manager Card Serial/Console Port		
Ethernet Ports	5x GbE, 1x 10/100Base-T with 3x GbE with Separate NICs Supporting ARINC 791 Domain Separation		
RF Interfaces	TX and RX with 50 MHz Reference Clock on TX port. Integrated RF Switch for Modem Selection.		
APM	Support for a tray-mounted 1-wire serial EEPROM		
Discrete I/O	10x Output / 10x Input		
ARINC 429	4x RX / 2x TX; High or Low Speed Configurable		
Front Panel Indicators	Manager Card and SATCOM status		
Power Supply Unit	115VAC, 360Hz-800Hz, Single-phase, 200msec Hold-up (min) – 100W (max)		
Form Factor	4MCU per ARINC 600		
Weight	18 Lbs. maximum		
Environment	RTCA/DO-160G, CAT A1 (-15°C to +55°C)		

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