APPAREO

RECOVERABLE DATA MODULE MODEL 300

DESCRIPTION

The RDM-300 is a lightweight, flexible, and affordable crash-hardened memory storage device. The RDM-300 is built with a rugged and compact enclosure to withstand intense DO-160G category tests to ensure the survival of critical flight data. At a weight of less than 2 pounds, the RDM-300 perfectly balances rigorous survivability needs while optimizing the size and weight of the product.

The RDM-300 can be used in conjunction with the Appareo Conexus® line of connectivity modules to further data storage, acquisition, and transmission options.

HARDWARE FEATURES

- Configurable ARINC 429 Data Decoding
- ARINC 429 High or Low Speed Receiver
- RS-422 Transmitter and Receiver
- Optional RS-422 Transmitter
- 5 GB eMMC Storage
- Less than 2 Pounds
- AS Flight Compatible
- Integrates with Appareo Conexus® modules
- Can receive and store flight data from AIRS-400

SOFTWARE UTILITY FEATURES

- Configurable ARINC 429 Data Decoding
- Compatible with Windows 7 and 10
- USB Communication
- Report RDM Health
- RDM Firmware Update
- RDM Data Offload
  - ARINC 429 to GPX Forma to AS Flight
  - ARINC 429 to CSV
  - ARINC 429 tot BIN
  - Download Diagnostic Data to CSV
- Format RDM eMMC
- RDM ARINC Bus Speed Configuration

QUALIFICATIONS

DO-160G | DO-178B Level E
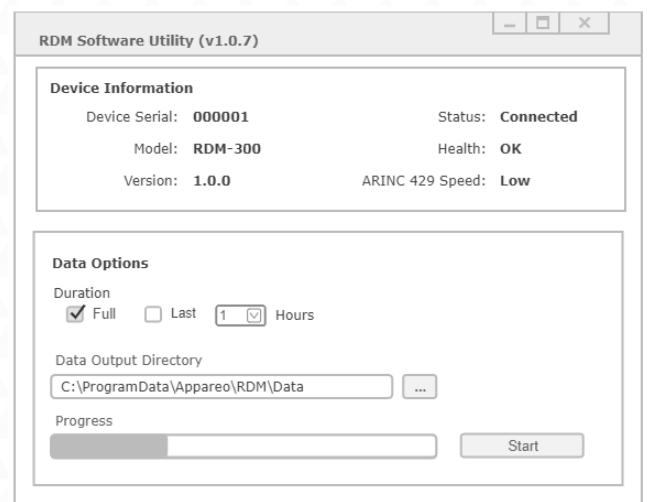
INPUT / OUTPUT
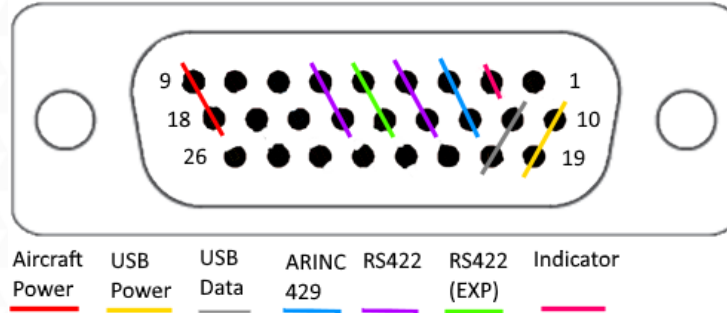
Connector Pin	Signal Name	Function
1	Reserved	Reserved
2	IND_OUT	Indicator Output
3	ARINC429_L	ARINC 429 Low
4	RS422_H_RX	RS422 High Receive
5	RS422_E_H_TX	RS422 High Transmit
6	RS422_H_TX	RS422 High Transmit
7	Reserved	Reserved
8	Reserved	Reserved
9	AIR_PWR_IN	Aircraft Power In
10	USB_GND	USB Ground In
11	USB_DP	USB Data +
12	ARINC429_H	ARINC 429 High
13	RS422_L_RX	RS422 Low Receive
14	RS422_E_L_TX	RS422 Low Transmit
15	RS422_L_TX	RS422 Low Transmit
16	Reserved	Reserved
17	Reserved	Reserved
18	AIR_GND	Aircraft Ground
19	USB_PWR_IN	USB Power In
20	USB_DM	USB Data -
21	Reserved	Reserved
22	Reserved	Reserved
23	Reserved	Reserved
24	Reserved	Reserved
25	Reserved	Reserved
26	Reserved	Reserved

ABSOLUTE MAXIMUM RATINGS

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating conditions for extended periods may affect device reliability and lifetime.

Parameter	Value	Unit
Storage Temperature	-55 to 85	°C
Operating Temperature	-55 to 70	°C

ENVIRONMENTAL SPECIFICATIONS

Section	Section Title	DO-160G Category
4	Temperature and Altitude	C4
5	Temperature Variation	A
6	Humidity	A
7	Operational Shocks and Crash Safety	A
8	Vibration	S/M, H/R
15	Magnetic Effect	B
16	Power Input	B
17	Voltage Spike	B
18	Audio Frequency Conducted Susceptibility	B
19	Induced Signal Susceptibility	BC
19.3.5	Spikes Induced into Interconnecting Cables	X (ISO 7637-2-2004)
20	Radio Frequency Susceptibility	S
21	Emission of Radio Frequency Energy	M
22	Lightning Induced Transient Susceptibility	A3XXXX
25	Electrostatic Discharge	A

SURVIVABILITY

Parameter	Value
Impact	1,000Gs x .5 mSec
Fire	1,000 degrees C / 15 minutes
Water	Immersion to 200' for 48 hours

ELECTRICAL SPECIFICATIONS

Parameter	Min	Typ	Max	Unit
Power				
Input voltage	8	28	32.2	VDC
Current		48	70	mA
ARINC 429				
Data Rate	Low Speed 12.5		High Speed 100	Kbps
RS-422				
Data Rate		230.4		Kbps
RS-422 (Expansion)				
Data Rate	115.2			Kbps
USB				
USB Client	Meets USB 2.0 full speed			
USB Power In	4.5	5	5.5	VDC
		224	300	mA

MECHANICAL

26 PIN HD DSUB CONNECTOR
FEMALE SOCKETS
4-40 UNC FEMALE JACKSCREWS
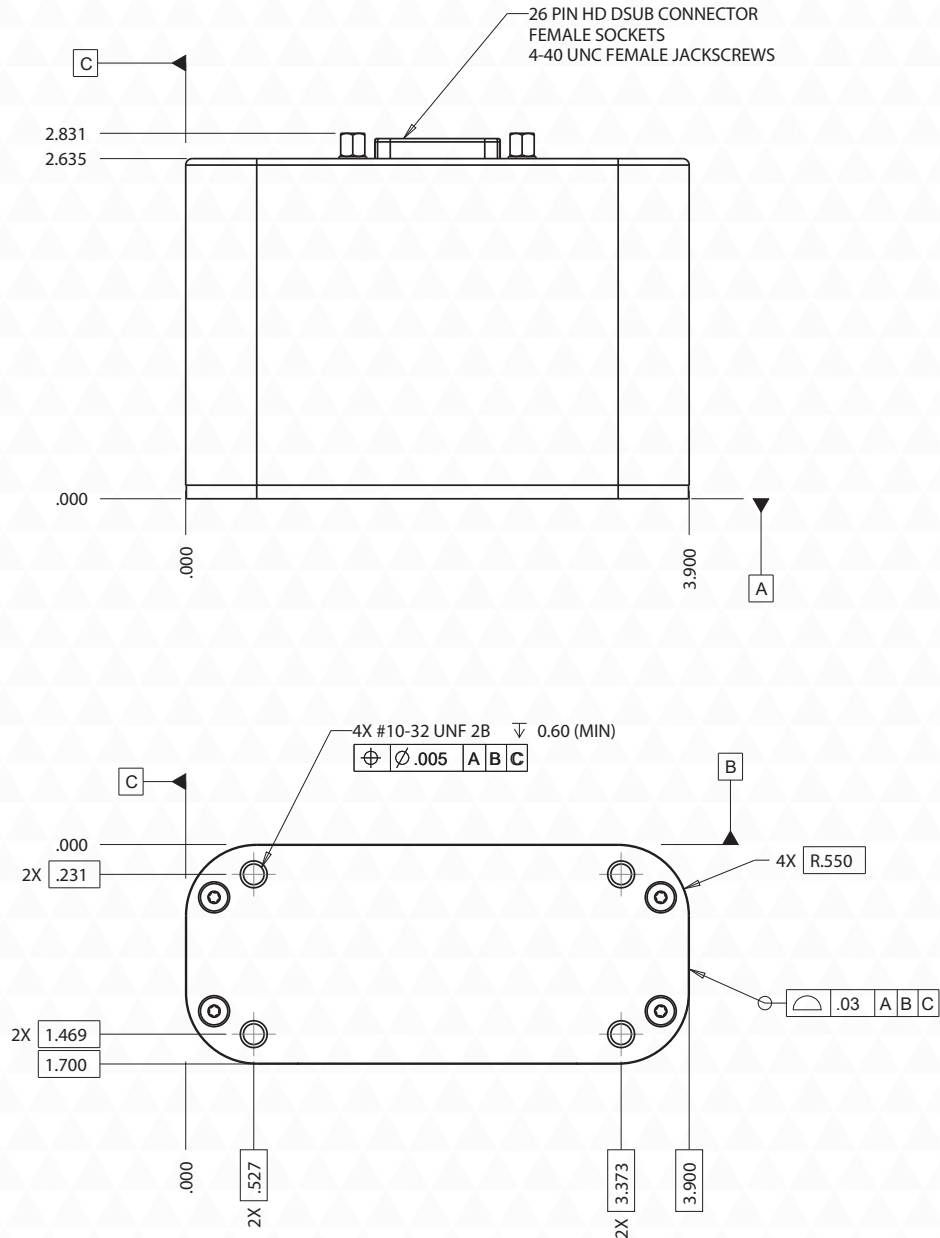
Measurement Units: Inches

Weight: 1.83 lbs
IP Rating: IP67

Recommended Mating Connectors:
HD-DSUB-26M

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