

The RDM 600 is a rugged lightweight modem designed specifically for low power consumption in harsh conditions. Developed initially by MASS as a key component of the ATRACKS helicopter and ground data tasking system, the RDM 600 is a bespoke modem designed to pass data through HF or VHF radios.



FEATURES

- Lightweight serial modem with full handshaking and independent radio pre-keying
- HF or VHF compatibility
- Synchronous or Asynchronous operation
- Selectable baud rates 75 to 2400 (with design options for higher rates)
- Up to 4 pre-set protocols,
- Supports remote configuration for most Mil-Std and STANAG protocols.
- Balanced 600-Ohm audio output with 4 level settings
- Transmit and receive status indicators
- Very low power consumption
- Wide operating temperature range
- Full airworthiness (Form 100A) clearance
- Lightweight, fully rugged design
- Small footprint

INTERFACES

Data input is through a standard asynchronous RS232 serial port, with full handshaking, radio pre-keying and connections for remote configuration. Synchronous data input is also supported at standard RS232 signal levels.

A balanced 600-Ohm audio interface is designed to connect directly with existing VHF and HF Clansman radios. Input and output levels are adjustable from 30mV to 2V. The radio keying operates open circuit, short circuit contacts capable of sinking 100mA. Alternative audio interfaces to meet other customer requirements are available.

PROTOCOLS

The RDM 600 currently supports the Mil-Std 118-110A Single Serial Tone and STANAG 4285 protocols. Alternative serial modem protocols to meet customer requirements are externally programmable.

INTERNAL SPECIFICATIONS

The core of the RDM is run by a 16-Bit fixed point DSP running at 75 MIPS. The DSP can access up to 64K of external SRAM and 8M bits of flash memory and peripherals such as a 12-Bit DAC, ADC and DUART.

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General

Audio Output	Balanced 600 Ohm with 4 setting levels and independent radio keying Designed to work with HF and VHF audio radios
Protocols	3 selectable protocols: Mil Std 118-110A STANAG 4285 Programmable for other protocols
Baud Rates	75, 150, 300, 600, 1200, 2400
Size	150 x 200 x 36 mm
Weight	930 gm

Operation

Radio keying	open circuit, short circuit contacts capable of sinking 100mA
Synchronous (selectable)	Provides hardware handshake and clock to SDT-500 encryptor
Asynchronous (selectable)	75-2400 baud – 8 bit – no parity
Gain (selectable)	Input & output levels from 30mV to 2V
Indications	Message being Transmitted Message being Received Remote configuration from aircraft data terminal (Air System mode)

Power

Requirement	9 – 36V DC
Consumption	<1.75W @ 28V

Interfaces

IN	RS232 Serial 9600 baud – 8 bit - even parity – hardware handshaking
OUT	RS232 Serial Sync: provides clock source, or Async: Baud Rates 75 - 2400

Environmental

Temperature	-40 to +75 °C (+90°C storage)
Humidity	35% to 85% (relative) (BS 3G.100 Part 2)
Pressure	523 mm Hg (10,000 ft)
Sustained Acceleration	6g for 10 s (DEF STAN 00-35:1999 (Part3)/3)
Vibration	Helicopter (SK4) main fuselage zone mount. (DEF STAN 00-35:1999 (Part3)/3)
Noise	140 dB, 31.5 to 10,000 Hz for 3 hours (DEF STAN 00-35 (Part 3)/3)
EMC	DEF STAN 95-41 (Part 3)/5
Power Supply	DEF STAN 61-5 (Part 4)/2. DEF STAN 61-5 (Part 6)/5. BS 3G.100 : Part 3 : 1979
Microbiological	DEF STAN 00-35 (Part 3)/3 Test CN1
Fluid	DEF STAN 00-35 (Part 3)/3 Test CN4
Shock	30 g, 18 ms, 4 shocks (DEF STAN 00-35 (Part 3)/3)
Drop & Topple	10 to 50 mm, 12 shocks (DEF STAN 00-35 (Part 3)/3)
Bump	10 g, 18ms, 1002 shocks (DEF STAN 00-35 (Part 3)/3)
Tropical Exposure	95% rh, 20 to 35 °C (BS 3G.100 Part 2)
Drip-Proof (operational)	379 dm ³ /m ² /hr (DEF STAN 00-35:1999 (Part3)/3)
Dust & Sand	2 kg/m ³ Coarse grade, Turbulent, for 2 hours (DEF STAN 00-35 (Part 3)/3)
Salt Atmosphere	Salt spray at 15 to 35 °C for 2 hours, then storage at 40 °C, 93% rh for 20 to 22 hours, repeated twice (DEF STAN 00-35 (Part 3)/3)
Explosive Atmosphere	PAEWG/R/2

