

Multi-Service Data Link (MSDL) Transponder

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Features

- Field Proven Hardware
- Modular Design
- 99 Available Frequency Channels in the range of 359.5 MHz to 375 MHz
- GMSK Modulation
- Up to 35 watts RF Output Power
- 3 antenna ports
- Ruggedized Aluminum Chassis

Applications

- Autopilot Interface
- Command and Telemetry

Description

The Multi-Service Data Link (MSDL) transponder is a command receiver, digital command decoder, digital telemetry encoder, telemetry transmitter, and target interface enclosed in a single lightweight package. The transponder receives commands transmitted by the ground control station and interfaces with the vehicle management computer or autopilot.

Uplink UHF command messages from the ground control station are received by the transponder in the frequency band of 359.5 MHz to 375 MHz. The RF data is converted to a serial data stream that is digitally transmitted to the vehicle autopilot for processing. The autopilot can then send a serial data stream back to the transponder where the telemetry downlink is then transmitted down to the ground control station. The MSDL has three antenna ports to support multiple antenna inputs via the vehicle RF switch. Multiple antenna inputs can be toggled through for the strongest signal.

MSDL has also been qualified per MIL-STD-461 (EMI), MIL-STD-810 (Environmental), MIL-HDBK-781 (Reliability) making it one of the most capable devices in the industry.

Technical Specifications

AS9100C and ISO 9001:2008 Certified

Characteristics

- **Frequency:** 359.5 to 375 MHz
- **Channels:** 99 (programmable in 25kHz steps)
- **Channel Bandwidth:** 2.75 MHz
- **Occupied Bandwidth:** 263 kHz
- **Modulation:** GMSK
- **Burst Data Rate:** 230.4 kbps
- **Power Output:** Up to 35 watts
- **Maximum PRF:** 10 Hz

UHF Receiver

- **Sensitivity:** Greater than 97.5% @ -103 dBm
- **Selectivity:** -60 dBm @ 15.5 MHz
- **Spurious Rejection:** -80 dB

Environmental

- **Temperature:** Operating: -40°C to +71°C
- **Vibration:** Random, 20 to 2000 Hz, 11.514 G 48 minutes per orthogonal axis
- **Altitude:** 50,000 ft
- **Shock:** Sawtooth, 20 G for 11ms, 18 shocks total
- **Humidity:** Up to 95% @ 40°C (all boards are conformal coated)
- **EMI/RFI:** Certified to MIL-STD-461F

Power Requirements

- **DC Power:** 22 VDC to 32 VDC (28 VDC Nominal)
- **Reverse Polarity:** Yes
- **Power Consumption:** 55 Watts maximum (1.8 amps @ 28 VDC)

Physical

- **Size:** 5.00" W x 2.95" T x 6.00" D
- **Weight:** 6 pounds
- **Connectors:** Circular, SMA Female
- **Finish:** Black Paint
- **Installation:** Flange Mount Base Plate

Contact us for custom modifications

For additional information contact:

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