

Enhanced Flight Termination Receiver Model EFTR80-1

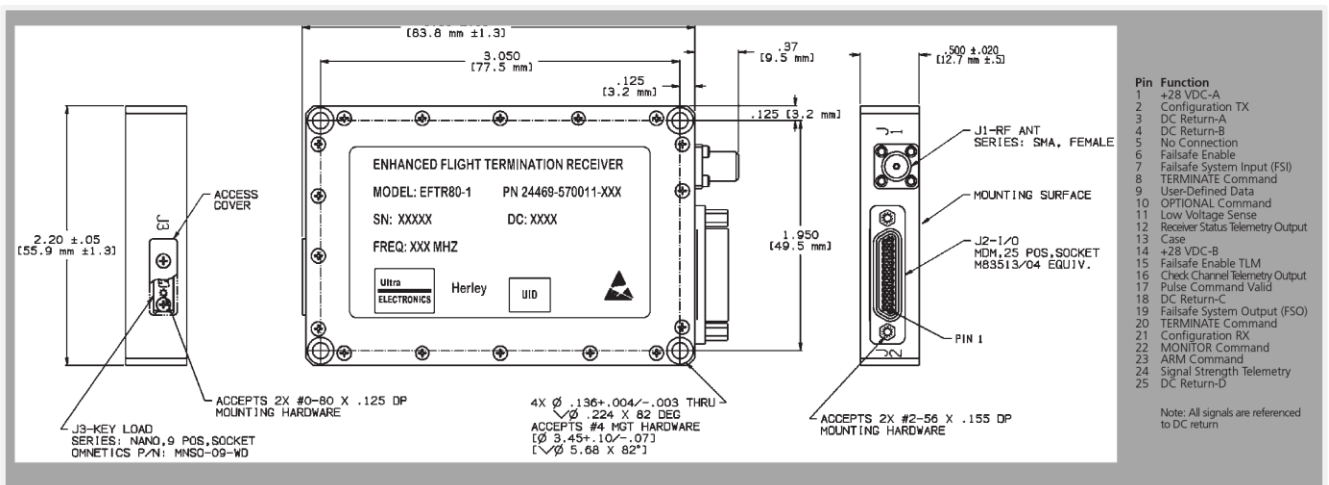


Supplying high performance flight instrumentation, RF/microwave assemblies, power amplifiers, IFF and data acquisition systems for severe environments.

The EFTR80-1 Enhanced Flight Termination Receiver (EFTR) the next generation in flight termination receivers that provides superior mission security over legacy FTRs. The EFTR80-1 is an EFTS (Enhanced Flight Termination System) compatible unit designed for Missile, Space Launch, Unmanned Aerial Vehicle (UAV) and Target applications. It is designed for minimum size, weight, and power (SWAP).

The EFTR80-1 utilizes a digital receiver which demodulates a CPFSK signal and decrypts the EFTS messages using the Triple Data Encryption Standard (TDDES). This unit meets the requirements of both RCC 319-14 and RCC 325-11.

The EFTR80-1 is intended for programs and applications with stringent environmental, EMI, and reliability requirements.



Enhanced Flight Termination Receiver

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FEATURES:

- EFTS (Enhanced Flight Termination System) compatible
- Embedded Triple Data Encryption Standard (TDES)
- MIL-STD-461 and RCC compliant
- Frequency range 420 to 450 MHz
- High sensitivity receiver, -115 dBm (typical)
- Forward error correction
- Small, less than 3.7 cubic inches
- Lightweight, 5 ounces maximum
- Stores up to 32 user definable configurations as defined by EFTR specifications
- All solid-state design
- Designed for extreme environments

RF CHARACTERISTICS:

- Impedance: 50 ohms nominal
- VSWR: Less than 2:1
- Frequency Range: 420 MHz to 450 MHz
- Dynamic Range: -107 dBm to +13dBm
- Maximum RF input power without damage: +25 dBm
- Tuning Accuracy: +/- 0.005%
- Threshold Sensitivity: -107 dBm to -116 dBm
- Operating Bandwidth: +/- 35 kHz
- Deviation Sensitivity: +/- 50 kHz
- IF Bandwidth: 3dB @ +/- 90 kHz
- Selectivity: 60 dB @ +/- 180 kHz
- Image Rejection: > 60 dB
- Capture Ratio: > 0.8

DECODING CHARACTERISTICS:

- FM Demodulation: CPFSK
- Data Format: Manchester encoded
- Data Rate: 50 Hz Message
- Rate, 7200 bits/sec
- Acquisition Time: 60 ms typ. (100ms max)
- Command Response Time: < 1 ms

OUTPUT FUNCTIONS:

- Configuration/Status: Serial RS-232
- User Defined: Serial RS-232
- Discrete Telemetry: Check Channel, Failsafe Enable, Pulsed Command Valid
- SSTO (Signal Strength): No RF 0.5Vdc \pm 0.25Vdc, increasing to 4.5Vdc minimum at -60 to -50dBm input, Maximum voltage; 4.75Vdc \pm 0.25Vdc

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- RSTO (Receiver Status): 10 report states, 0 to 4.5 Vdc in 0.5V steps
 - Command Outputs: (Constant-Voltage) < 3.5 V Drop - Monitor, Optional, Arm, Terminate, 2A max, < 4 V Drop
 - Terminate 7.5A max for a 50ms pulse
 - Failsafe Functions: Loss of command link time and low voltage threshold levels (Failsafe functions are program configurable)
 - Cross Strap: Redundant FTR FSI to FSO Cross Strap RCC 319-14 logic compliant
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DC CHARACTERISTICS/ PROTECTION:

- Input Voltage: +22 Vdc to +36 Vdc; ± 45 Vdc over voltage protected
 - Input Power: 3.5 W typical
 - Telemetry Outputs: ± 45 Vdc over voltage protected
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ENVIRONMENTAL:

- Temperature, Operating (ATP): - 40°C to +71°C standard
 - Temperature, Operating (QUAL): - 54°C to +85°C
 - Random Vibration (ATP): Up to 12grms, 20 Hz to 2 KHz
 - Random Vibration (QUAL): Up to 29.7 grms, 10 Hz to 2 KHz
 - Temperature, Storage (QUAL): - 54°C to +95°C
 - Shock (QUAL): 30 g's, 11 msec, half-sine
 - Altitude (QUAL): unlimited, test to 0.0001 torr pressure
 - Humidity (QUAL): 85% to 100%RH, +30°C to +61°C
 - Acceleration (QUAL): Up to 125 g's, ± 3 axes
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RELIABILITY:

- Derating: meets RCC 319, APPENDIX C guidelines
 - Reliability: > 0.999 at a 95% confidence level
 - Single Point Failure: No inadvertent Terminate output
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PHYSICAL/CONNECTORS

- Dimensions: 3.3 X 2.2 X .5 inches (8.4 X 5.6 X 1.3 CM), less connectors
 - Weight: 5 ounces maximum
 - RF Input (J1): MIL-C-39012/60 equivalent
 - Data I/O (J2): M83513/04 (MDM- 25 positions, socket)
 - Fill I/O (J3): MNSO-09-WD (nano, 9position, socket)
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RFI/EMI:

- MIL-STD-461F: for 28 V aircraft, safety critical equipment, methods;CE102, CE106, CS101, CS103,CS104, CS105, CS114, CS115,CS116, RE102, RE103 and RS103
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FACTORY SET OPTIONS:

- SSTO Return: Isolated from DC input return
 - Terminate Constant-Current: 5.25A to 8.25 A for a 50 ms pulse
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PRODUCT NUMBERS

- 570011-XXX (EFTR80-1)
 - 570011-KLC Key Load Cable,24 inches (sold separately)
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* Product in development, targeted specification