



Flight termination receiver/ decoder - Model HFTR60-2

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



Key features

- RCC 319-07/-14 functionally compliant
- 406 to 450 MHz band
- 3 or 4 tone decoders
- All solid-state design
- Over 2 Amp dc, 7.5 Amp pulse command output current capability
- High sensitivity receiver
- Small, less than 3.7 cubic inches
- Lightweight, less than 5 ounces
- No RF/IF tuning elements
- Standard range safety command logic
- Reverse polarity power protection
- Telemetry output protection
- Options include a Front End RF Limiter
- Operating temperature to -54°C and +85°C

Overview

Ultra's HFTR60-2 flight termination receiver/decoder is a three or four tone unit designed for missile and target applications. This unit is compact, and desirable for usage where size and weight are important considerations.

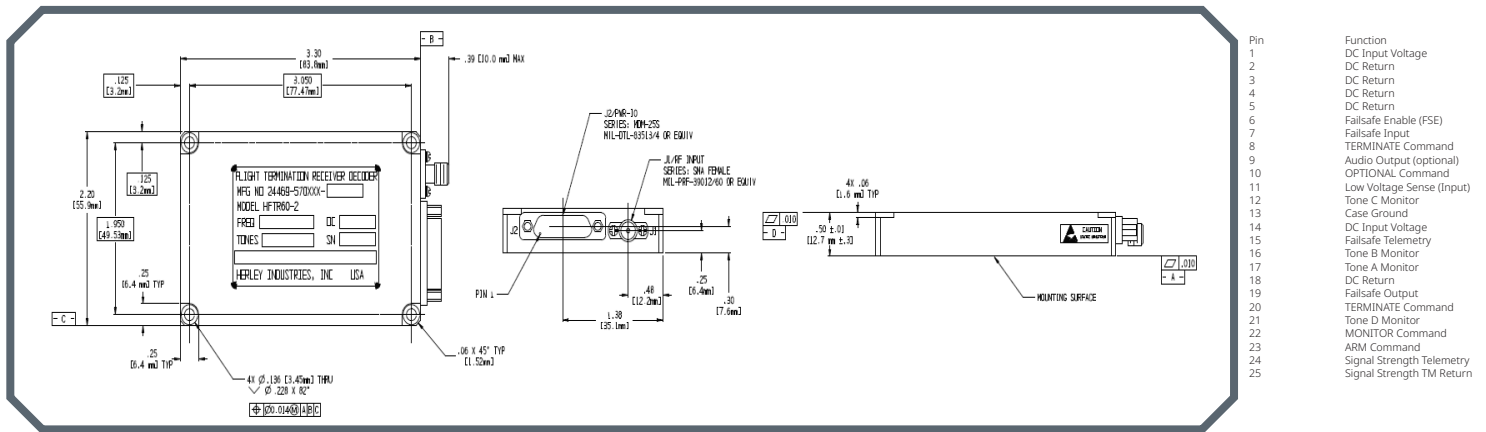
The HFTR60-2 is a single conversion receiver designed to the functional requirements of both RCC319-07/-14 and RCC313-01 documents. The design of the HFTR60-2 employs the latest in devices, circuitry and modern production processes to provide a reliable product with extremely long operating life. This unit is intended for programs and applications with stringent environmental, EMI, and reliability requirements.



Due to U.S. Export Control Reform this product has transitioned from ITAR to Department of Commerce Export Administration Regulations (EAR) making it ITAR-free.

DOD / OSR clearance 13-S-2093

ULTRA



Pin	Function
1	DC Input Voltage
2	DC Return
3	DC Return
4	DC Return
5	DC Return
6	Failsafe Enable (FSE)
7	Failsafe Input
8	TERMINATE Command
9	Audio Output (optional)
10	OPTIONAL Command
11	Low Voltage Sense (Input)
12	Tone C Monitor
13	Case Ground
14	DC Input Voltage
15	Failsafe Telemetry
16	Tone B Monitor
17	Tone A Monitor
18	DC Return
19	Failsafe Output
20	TERMINATE Command
21	Tone D Monitor
22	MONITOR Command
23	ARM Command
24	Signal Strength Telemetry
25	Signal Strength TM Return

ELECTRICAL

- Frequency Range: 406 to 450 MHz (factory preset to customer specified frequency)
- Impedance: 50 ohms nominal
- VSWR: Less than 2:1
- Reverse Polarity Protection: Built-in
- DC Input Voltage: +22 to +36 Vdc, ±45Vdc over voltage protected
- Input Current: 125 mA max.
- Low Voltage Sense: isolated input
- Telemetry Outputs: signal strength, 3 or 4 tone monitors, failsafe, ±45 Vdc over voltage protected
- Command Outputs: 4 solid-state outputs
- Command Outputs, Voltage Drop Under Load: terminate, arm, monitor, optional:
2 Vdc maximum at 1 amp
3.5Vdc maximum at 2 amps
terminate: 4Vdc maximum at 7.5 amps, 100 msec
- Output Leakage Current: 50 microamps maximum
- Isolated Returns: Signal strength output isolated from DC return and chassis ground
- RFI/EMI: Meets MIL-STD-461F, tests; CE102, CE106, CS101, CS103, CS104, CS105, CS114, CS115, CS116, RE102 and RS103
- Size: 3.3 X 2.2 X .5 inches (8.4 X 5.6 X 1.3 CM), less connectors

- Weight: 5 ounces maximum
- Antenna Connector (J1): RF input SMA - Female
- Power and Signal Connector (J2): 25-pin micro-D socket M83513/04-D05N

ENVIRONMENTAL (1)

- Random Vibration (ATP): 0.04 g²/Hz (6.1 grms)
- Random Vibration (Qual): 60 grms
- Temperature, Operating (ATP): -40°C TO +71°C standard
- Temperature, Operating (Qual): -54°C TO +85°C
- Temperature, Storage (Qual): -62°C TO +95°C
- Shock (Qual): 50 g'S, 40 ms, half-sine
- Pyrotechnic Shock (Qual): 1300 g'S peak
- Altitude (Qual): unlimited
- Humidity (Qual): 95%
- Acceleration (Qual): Up to 73 g'S

(1) Contact Ultra Electronics Herley for current qualification levels.

RECEIVER

- Design: Single conversion super-heterodyne
- Sensitivity: -107 to -116 dBm
- Frequency Band: 370 to 390 MHz, and 406 to 450 MHz
- Frequency Tuning: Synthesized local oscillator
- Tuning Accuracy: 0.005%
- Dynamic Range: -107 dBm to +13 dBm
- Operating Bandwidth: ±45 kHz minimum
- IF Bandwidth: 3dB @ ±90 kHz minimum
- Selectivity: 60 dB @ ±180 kHz maximum
- Image Rejection: Greater than 60 dB
- Capture Ratio: Greater than 0.8
- AM Rejection: 100% at 100µV input
- Frequency Deviation: ±30 kHz per tone, nominal
- Signal Strength Monitor Output: No RF 0.5Vdc ± 0.25Vdc monotonically increases to 4.5Vdc minimum at -60 to -50dBm input. Maximum voltage 4.75Vdc ± 0.25Vdc.

DECODER

- Command Response Time: 4 to 25 msec (5 msec typical)
- Number of Tone Decoders: 3 or 4
- Simultaneous Usable Tones: 3
- Tone Monitor Outputs (into 10k Ohm): Activated 4.5Vdc ±0.5Vdc, Unactivated 0.0Vdc ±0.5 Vdc
- Tone Decoder Bandwidth: ±1% minimum at 2dB, ±4% max at 14 dB
- Adjacent Tone Rejection: Rejects simultaneous adjacent tones at up to ±50 kHz deviation
- Decoder Threshold Deviation: ±12 kHz, typical
- Power Dropout Recovery: 50 msec power dropout, Command, FS Enable restore
- Failsafe: Loss of Tone A (8 sec ±2 sec - typical)
- Low Voltage Failsafe Sense: 23.0Vdc +/-0.5dc (typical)
- Failsafe Event: Arm/Terminate Latch "On", Power Down to Reset
- Failsafe: RCC319-07/-14, Dual receiver cross strap operation compliant

PRODUCT NUMBERS

- P/N 570306-XXX - Standard unit (check specs for ordering options)
- P/N 570206-XXX - High Control unit (Tailored parts program)



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