ULTRA | Intelligence & Communications

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Digital Tone-Based Flight Termination Receiver/Decoder Model HFTR60-3

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

Overview

The Ultra HFTR60-3 is the next generation programmable, digital Flight Termination Receiver (FTR) that uses advanced Digital Signal Processing (DSP) techniques to process standard IRIG tones. The HFTR60-3 is functionally compliant and qualified to RCC319-14 and is a form, fit and function replacement for legacy Flight Termination System (FTS) configurations using tone-based flight termination receivers.

The HFTR60-3 is a compact unit, capable of handling the harshest environments and is qualified to meet military operational environments and EMI. The HFTR60-3 employs the latest technologies and manufacturing processes to provide a high performance, highly reliable, stable, and long-life product.

Features

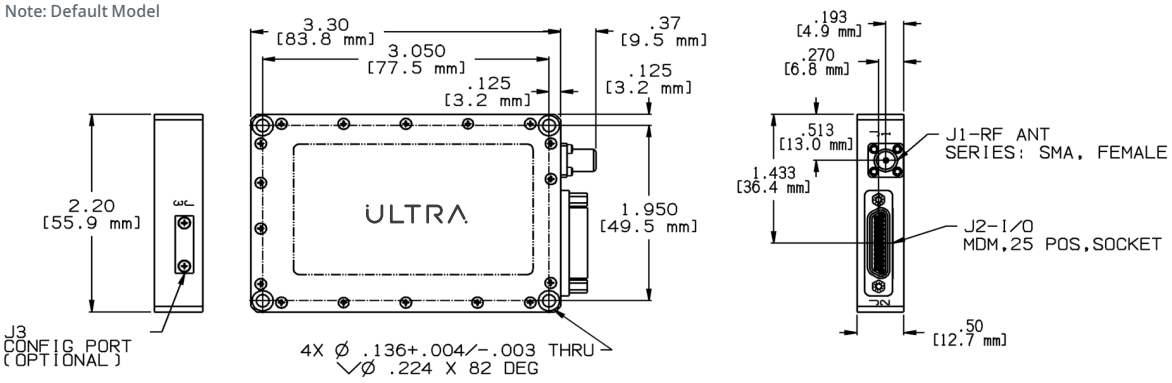
- RCC 319-14 Functionally Compliant
- Programmable frequency 420-450 MHz, three or four tones
- Programmable 3 or 4 tone channels
- Capable of storing up to 32 factory or field programmed configurations
- All solid-state design
- High sensitivity receiver
- Small, less than 3.7 cubic inches
- Lightweight, less than 5 ounces
- No RF/IF tuning elements
- Reverse polarity power protection
- Telemetry output protection
- Designed for extreme environments
- Operating temperature to -54° and +85°

Options

- 406 to 420 MHz band
- No failsafe, STD failsafe, commanded failsafe
- Common returns: Signal strength and D returns
- All returns connected to chassis
- Nominal IF Bandwidth Audio output: 7 kHz to 32 kHz, 155mV to 310mV RMS
- Extended audio bandwidth available
- J2 Pin 11 Low Voltage Telemetry Output (LVTM)
- Supports constant current terminate output

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.

Note: Default Model



Pin	Function
1.	DC Input Voltage
2.	N/C
3.	DC Return
4.	DC Return
5.	DC Return
6.	Failsafe Enable (FSE)
7.	Failsafe Input
8.	TERMINATE Command
9.	Audio Output (opt.)
10.	OPTIONAL Command
11.	Low Voltage Sense (Input), LVTM (opt.)
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: 420 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
- Unit Power: 4.5 W 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

Physical

- 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*

- Random Vibration (ATP): 0.04 g2/Hz (6.1 grms)
- Random Vibration (Qual): 29.7 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): 1300g SRS
- Altitude (Qual): 15,000 ft
- Humidity (Qual): 95%
- Acceleration (Qual): Up to 125 g'S

**As of publishing date*

Receiver

- Design: Double conversion super-heterodyne
- Sensitivity: -107 to -116 dBm
- Frequency Band: 370 to 390 MHz, and 406 to 450 MHz
- 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.
- Power-On Self Test (POST) Indicator on Output

Decoder

- Command Response Time: 4 to 25 msec
- Number of Tone Decoders: 3 or 4, programmable IRIG tones 1-13
- 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 20 dB
- Adjacent Tone Rejection: Rejects simultaneous adjacent tones greater than +/- 50 kHz deviation
- Decoder Threshold Deviation: +/- 9-18 kHz
- Power Dropout Recovery: 50 msec power dropout, Command, FS Enable restore
- Failsafe: Loss of Tone A (programmable, 1 to 120 sec, +/- 5% at 0.1s resolution
- Low Voltage Failsafe Sense: programmable, > 21 Vdc in 0.5 V steps +/-0.5Vdc
- Failsafe Event: Arm/Terminate Latch "On", Power Down to Reset
- Failsafe: RCC319-14, Dual receiver cross strap operation compliant

PRODUCT NUMBERS

P/N 570014-xxx (see options)

Ultra reserves the right to vary these specifications without notice.

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