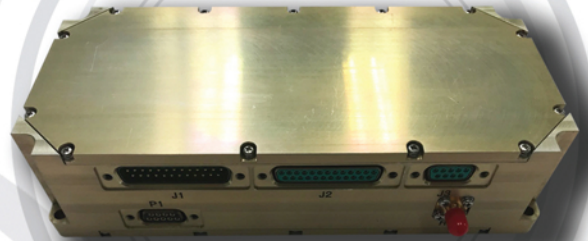# Bitelinx

BTR – Flight Termination Receiver

Features

- Full digital FTR
- 420 to 450MHz
- Secure tones
- IRIG standard RCC 313-01
- MIL-STD-461F, Space Systems
- MHA-secured codes
- Reconfigurable registers for code updates

BTR is a secure-tone based UHF full-digital flight termination receiver for FTS. Besides the RF circuits, most functional blocks are implemented on the integrated processor while analog parts are subject to minimal use. The receiver is so sensitive as to be capable of detecting a weak signal at as low as -110dBm. The other staple features include a set of MHA-secured codes and reconfigurable registers. In regard to the environmental standards including EMI/EMC, vibration and shock, the BTR has been fully tested in compliance with MIL-STD-461F.

RF features

Users can choose a frequency within 420MHz to 450MHz in steps of 100kHz at the time of ordering. The frequency stability is within ±0.0002%. The occupied bandwidth of the received signal is 90kHz. The 3dB and 60dB bandwidths for IF the filter are 180kHz and 360kHz, respectively. The input dynamic range is as wide as 100dB, 0 ~ -100dBm. The received signal inherits the nature of FM modulated signals so that it is immune to non-linear distortions and frequency drift. The test conditions for the BTR conform to IRIG RCC 313-01.

Signal detection

All key functional blocks are built into a single integrated processor, minimizing the analog portion of the baseband circuit. The BTR, as a result, is relatively unaffected by changes in the operating environment. Benefiting from the state-of-art DSP techniques, the high performance narrow tone filters are integrated in form of a filter bank based on TDM. This minimizes use of logic resources.

Supplementary functions

While being primarily used as an FTR including high performance AGC and AFC, the BTR also features a monitoring frame for internal status and the received power monitoring signal.

Mechanical robustness

The robustness of the BTR has been verified under the conditions specified in MIL-STD-810G. The PCB and the mechanical designs of the BTR allow it to be mounted on space systems.

Reconfigurable registers

The reconfigurable registers allow the user to change the code set at any time for security purposes.

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## Electrical specifications

Frequency range	420~450MHz(select at order)
Tuning step	100kHz
Frequency stability	± 0.0002%
AFC	± 50kHz max
VSWR	1.5:1 or less
Input dynamic range	100dB(0 ~ -100dBm)
RF sensitivity	-110dBm, nominal
Transmit bandwidth	90kHz
IF filter bandwidth	180kHz(3dB), 360kHz(60dB)
Demodulation	FM
Command format	Secure tones
Tone spacing	1.05kHz
Tone filter	Digital filter bank (30dBc)
Image rejection	60dBc
Spurious rejection	80dBc
AM rejection	100%, 3uV max
Control & monitoring	Control:RS232 Monitoring:RS422
Impedance	50 Ω
Interface	RF:SMA Digital:DSUB15
Primary power	28V±4VDC, 1A

Environmental specifications

Operating temperature	-20 ~ +70℃
Vibration, shock	20grms, 3,000g
Humidity	90%, non-condensing

Dimensions & Weight

Demension	200 X 90 X 50mm^3
Weight	930g
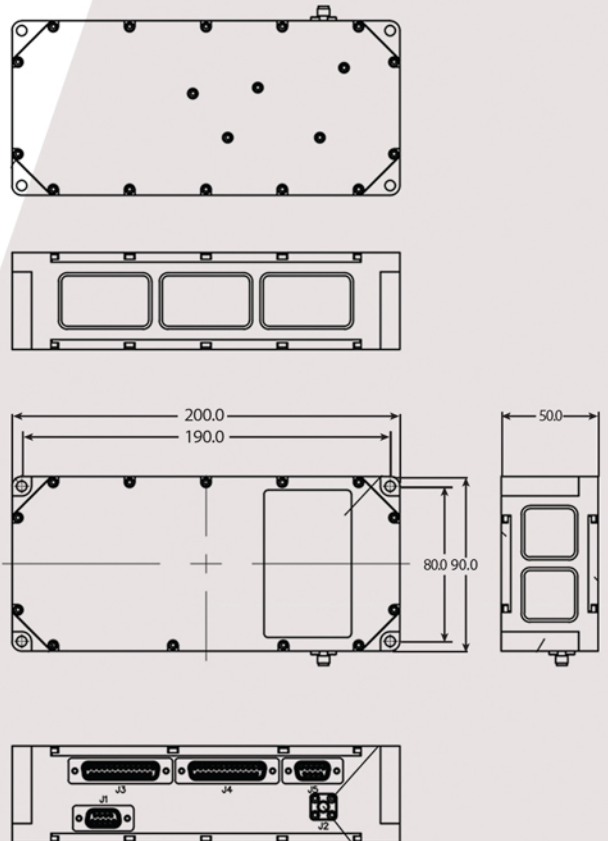
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