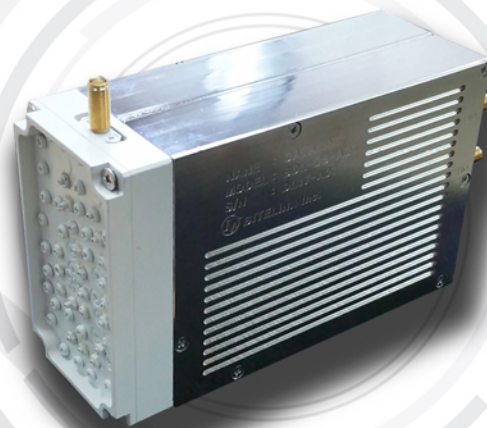




BDL-CB-ADT – C-band Onboard Datalink Transceiver

Features

- Full digital C-band FDD transceiver
- +27dBm transmit power
- 2 video ports (1HD & 1SD)
- 7Mbps downlink (extendable up to 30Mbps)
- 4.8MHz bandwidth for downlink
- 8PSK-TCM downlink, CPFSK uplink
- Concatenated FEC coding with Reed-Solomon
- BERT for both downlink and uplink



The BDL-CB-ADT is a C-band full-digital onboard transceiver for datalink. The uplink and downlink data traffic share the aerial link based on FDD. It transmits two channel video and one FCC data over a downlink while receiving control and mission data over an uplink. The high-performance downlink waveform, 8PSK-TCM, allows for a bandwidth-efficient, reliable transmission of data. The datalink system is designed so as to cover up a mission range of up to 50km.

RF features

The downlink and uplink frequencies are tuned to 5,145MHz and 5,035MHz, respectively. Users need to choose from two different sets of two frequencies between 4.7 ~ 5.2GHz at the time of ordering, because the FDD diplexer has to be so properly tuned as to support the frequencies. The diplexer secures an isolation of 70dBc between downlink and uplink. The frequency stability of the LO used is less than ± 1 ppm and its phase noise is also very low, for those LO characteristics are critical to the downlink over which the PSK-TCM modulated signal is transmitted. With a mission range of 50km, the transmit power over the downlink is 1W and can be digitally adjusted down if necessary.

Waveforms

The highly bandwidth-efficient 8PSK-TCM allows for a reliable transmission of bulk data over a downlink through a narrow bandwidth. Concatenated with Reed-Solomon, the convolution code nature of the modulated signal helps dramatically improve the link performance. The CPFSK for uplink is also a very robust waveform, the performance of which has been used reliably for decades in the Telemetry industry. The BDL-CB-ADT, compliant with the IRIG-106 standard, is immune to such impairments as frequency drift, non-linear distortion, amplitude fluctuation and so on. The narrow-bandwidth uplink traffic is further protected by the Convolution Code.

Supplementary functions

Users can test link performance by simply changing the transmit mode into BERT which is available for both downlink and uplink.

Dedicated software

The GUI software allows users not only to easily configure the transceiver according to the operational purpose but also to monitor the performance.



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Electrical specifications

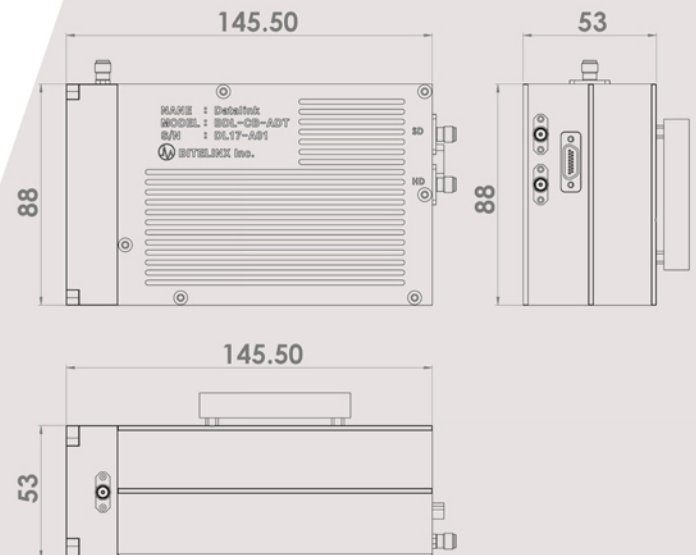
Frequency range	4,700 ~ 5,200MHz
Tuning step	100kHz
Frequency stability	±1ppm
VSWR	2.0 : 1 or less
Duplex	FDD
Duplex isolation	70dBc
Transmit power	0.5Watt
Input dynamic range	90dB(-10~-100dBm)
RF sensitivity	Threshold
Date rate	Downlink : 1 ~30Mbps Uplink : 32kpbs default
Waveforms	Downlink : 8PSK-TCM Uplink : CPFSK
FEC	Downlink : Reed-solomon Uplink : Convolution
Supplementary	BERT
Input video channels	1 HD, 1SD
Input/output signals	RS232@115. 2kbps(baud) or RS422(option)
Impedance	50Ω
Interface	RF : SMA Digital : Micro-DSUB15
Primary power	12VDC, 3A (with fan)

Environmental specifications

Operating temperature	-20 ~ +55°C
Storage temperature	-40 ~ +85°C
Humidity	90%, non-condensing

Dimensions & Weight

Dimensions	145.5 X 88 X 53mm ³
Weight	985g



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