



# Bitelinx

## BDL-CB-GDT – C-band Ground Datalink Transceiver

### Features

- C-band full digital FDD transceiver
- +27dBm transmit power
- 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
- Standard 2U rack-fixable

**The** BDL-CB-GDT is a C-band full-digital ground transceiver for datalink and supports up to 2 RF inputs. The uplink and downlink data traffic shares the aerial link based on FDD. It receives two channel video and one FCC data through downlink while transmitting control and mission data via 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 50km.

### RF features

The downlink and uplink frequencies are tuned to 5,145MHz and 5,035MHz, respectively. Users can choose from two different sets of frequencies between 4.7 ~ 5.2GHz at the time of ordering, because the FDD diplexer needs to be properly tuned. The diplexer secures an isolation of 70dBc between the downlink and the uplink. The frequency stability of the LO used is less than  $\pm 1$ 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 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 frame is designed to be suitable for transmission of TS video packets, minimizing the processing delays. The CPFSK used for uplink is also a very reliable waveform, the performance of which has been used reliably for decades in the Telemetry industry. The BDL-CB-GDT, 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 a 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 to not only easily configure the transceiver according to the operational purpose but also to monitor the performance.



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## Electrical specifications

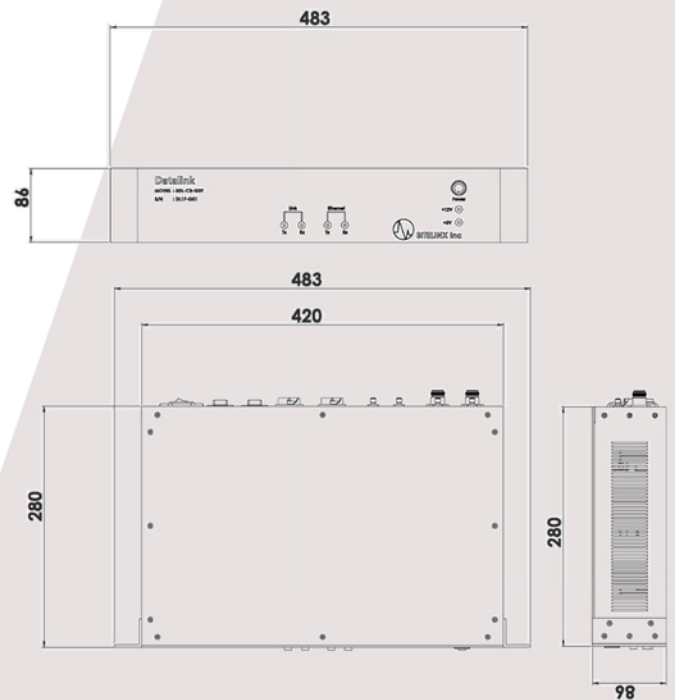
Frequency range	4,700 ~ 5,200MHz
Tuning step	100kHz
Frequency stability	±1ppm
VSWR	2.0 : 1 or less
Duplex	FDD
Duplex isolation	70dBc
Transmit power	0.5Watt
RF inputs	1 or 2(option) channels
Input dynamic range	90dB(-10 ~ -100dBm)
RF sensitivity	Threshold
Data rate	Downlink : 1 ~ 30Mbps Uplink : 32kpbs default
Waveforms	Downlink : 8PSK-TCM Uplink : CPFSK
FEC	Downlink : Reed-Solomon Uplink : Convolution
Supplementary	BERT
Output videos	1 HD, 1 SD
Input/output signals	Ethernet
Impedance	50 Ω
Interface	RF : N-Type or SMA Digital : RJ-45, DSUB15
Primary power	220/110VAC

## Environmental specifications

Operating temperature	0 ~ +50°C
Storage temperature	-40 ~ +85°C
Humidity	90%, non condensing

## Dimensions & Weight

Dimensions	19inches/2U (Standard 2U rack-fixable)
Weight	5,000g or less



For further information, Please contact:

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