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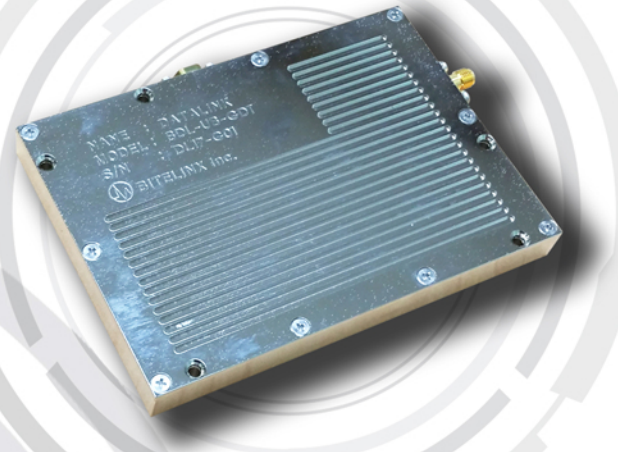
BDL-UB – UHF-band Datalink Transceiver

Features



- 1W full digital UHF-band transceiver
- 410 ~ 480MHz, 100kHz step
- GPS-aided or Master/Slave TDD/TDMA
- Up to 10 nodes supported by TDMA
- Data rate up to 160kbps
- 200/100kHz bandwidth
- CPFSK for both downlink and uplink
- Reed-Solomon and BERT
- Compact, light module

The BDL-UB is a UHF-band full-digital transceiver for datalink. The uplink and downlink data traffic shares the aerial link based on TDD/TDMA that supports up to 10 nodes. The TDD/TDMA slots are designed to cover a mission range of 100km. The Master/Slave mode enables the slave node or nodes to operate in synchronization with the master node without access to the GPS service. The CPFSK waveform, compliant with IRIG-106, is immune to such impairments as frequency drift and non-linear distortion and is further protected by an FEC, Reed-Solomon. Users can easily configure a BDL-UB module as either a ground or onboard unit using software.

RF features

Users have a 70MHz programmable tuning range within 410MHz and 480MHz in steps of 100kHz and alternately access the wireless medium for communication between two nodes or among more, based on TDD and TDMA, respectively. Considering the round-trip propagation delay for a mission range of 100km, the BDL-UB secures a guard interval of about 0.7ms between transmissions of data. A data rate up to 160bps is supported in the wideband mode while halved down in the narrowband mode where the bandwidth is 100kHz.

Waveforms

The CPFSK is a very reliable waveform, the performance of which has been used reliably for decades. The Reed-Solomon code dramatically improves the link performance. The full-digital feature allows the user to select another waveform from among MSK, GMSK and GFSK, depending on the application. The frame is designed to support TDD/TDMA accommodating 200 time slots of 5ms per second. This minimizes the transmission delay required for round-trip propagation and signal processing. Users can also choose the band operation mode either wideband or narrowband, subject to frequency or bandwidth requirements. Up to 10 nodes can alternately the aerial link on the basis of a compact PHY and TDMA MAC protocol.

Supplementary functions

Users can test a link performance by simply changing the transmit mode into BERT 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 to also monitor the performance.

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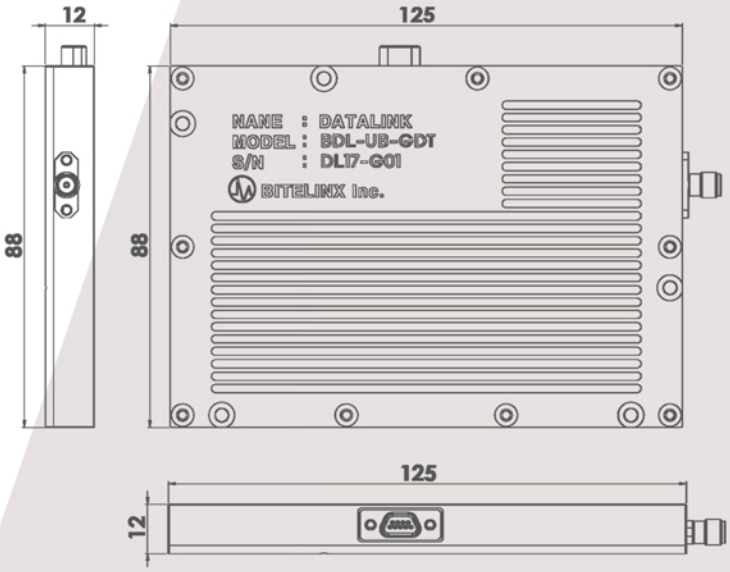
Electrical specifications

Frequency range	410 ~ 480MHz
Tuning step	100kHz
Frequency stability	±1ppm
VSWR	2.0 : 1 or less
Duplex/Mulitiplex	TDD/TDMA
Supported nodes	TDD : 2 TDMA : Up to 10
Transfer frequency	TDD : 100Hz or less TDMA : 20 or 40Hz
TDD/TDMA synchronization	GPS-aided or Master/Slave(non-GPS-aided)
Transmit power	1Watt
Input dynamic range	80dB
RF sensitivity	-106dBm
Date rate	160bps
Waveforms	CPFSK, MSK, GMSK, GFSK
FEC	Reed-solomon
Supplementary	BERT
Input/output signals	RS232, RS422(option) or Ethernet(option)
mpedance	50Ω
Interface	RF : SMA Digital : Micro-DSUB15
Primary power	12VDC, 0.8A

Dimensions & weight

Dimensions	125 X 88 X 12mm^3
Weight	200g



Environmental specifications

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

For further information, Please contact :
Bitelinx Inc.
#704, DoosanVenture-digm
250, Hagui-ro, Dongan-gu, Anyang-si,
Gyeonggi-do, Korea Republic, 14056
Tel)+82-31-426-0987
Fax)+88-70-4009-3929
Email)hkim@bitelinx.com
URL)http://www.bitelinx.com