



Tiamis-800 Transceiver Characteristics

General characteristics

Frequency band of operation 902...928 MHz

RF channel throughput

User Selectable

- From 1200 b/s to 256 kb/s for 2-level modulation schemas;
- Up to 1.3 MB/s for more complex modulation types

Signal OC-BW

Dependent on the type of modulation chosen and the RF bit rate selected, from 5.5 kHz to 500 kHz.

Modulation types supported

Frequency modulation: SOQPSK, MSK, GMSK, FSK, BPSK, QPSK

Error detection

CRC16, CRC24 (ARDS-compliant, MIL-STD 188-184), CRC32

Network topologies supported

Point-to-Point, Point-to-Multipoint, Push-to-Talk, TDMA

RF Network security

The following parameters are user selectable, providing required network security

- Hop Rate as fast as 100,000 times per second ;
- Fast frequency hopping option ;
- Number of data bytes within each RF packet;
- Deviation/modulation index for RF channel transmissions;
- Hop Table up to 128 frequency channels long. Each frequency channel is user selectable with 0.25 kHz resolution
- Available cryptography (AES, DES, and 3DES algorithm).





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Methods available to user to overcome in-band interference

User has ability to:

- Select frequency channels for their network, which will be overlapping the in-band interfering signal the least;
- Select different hopping rate;
- Select from pre-loaded Hopping Tables.
- Select different number of data bytes per each RF packet.

Transmitter

Frequency band

902...928 MHz.

Output power

Programmable, up to 1 Watt.

Current in transmit mode at maximum output power

- 1.5A @ 4.5 VDC;
- 1.1 A @ 6 VDC;
- 550 mA @ 12 VDC.

Receiver

Frequency band

902...928 MHz.

Sensitivity

-110 dBm @ 10^{-6}

RF selectivity

Depends on the modulation schema used and RF channel bit rate selected.

Current in full receive mode

- 350 mA @ 4.5 VDC;
- 250 mA @ 6 VDC;
- 125 mA @ 12 VDC.



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Electrical and Mechanical characteristics

Input voltage range	4.5...32 VDC.
Operating temperature range	-40 ... + 80 deg C.
Humidity	Up to 90%, non-condensing.
RF connector	MCX board level, SMA enclosure.
Data connectors	Depends on the interface board option used with the transceiver.
Data interfaces	Single or dual RS232, RS485 or RS422 (Asynchronous, Full Duplex) Ethernet, Digital inputs and outputs, SPI.
Programming the transceiver	SNMP-like protocol. Configuration software is included.
Dimensions (board level)	3.18'' x 2.89'' x 0.47''.
Weight	3.5 oz. (approx.)