



The TRIO Datacom EB450 is an advanced Full Duplex Digital Base/Repeater Station for the most complex and demanding Point-to-Point and Point-to-Multipoint (Multiple Address Radio) SCADA and telemetry systems.

Base stations and repeaters are key elements in data radio communication systems and are subject to heavy duty cycle operation. The EB450 has been specially designed to deliver highly reliable, continuous full duplex operation at maximum rated (5W) or (20W) output power. TRIO Datacom can also supply the EH450 1+1 Base/Repeater station when Hot Standby redundancy is required.

The EB450 is fully capable of reliable 100% duty cycle operation in ambient temperatures up to +60°C and may be user configured for operation in either E Series or M Series modes.

Features

Radio and Modem

- True 19,200 bps over-air data rates in 12.5kHz FCC Channels (also 9600 bps)
- Fully integrated radio, modem and data multiplexer
- 128-bit AES encryption (export restrictions may apply)
- 12.5 or 25kHz channel operation
- Fast data turnaround
- Simplex, Full and Half Duplex Operation
- Full specification operation from -30°C to +60°C
- Compatible with legacy systems (Non Packet Digital and Bell 202 Modes)
- 5 Watt or 20 Watt transmitter output with 100% duty cycle
- 19" 2RU rack mount
- Field upgradable firmware
- Extensive front panel LED display
- Internal (compact) or external duplexer options
- Digital Inputs and Outputs

Data Ports

- Dual independent data ports and separate system port
- Compatible with most industry standard data protocols. e.g.: MODBUS, DNP-3, IEC 870, SEL Mirrored Bits, etc.
- Selectable 300 - 57.6 kbps asynchronous RS-232 interface
- Multistream™ simultaneous data streams allow for multiple vendor devices/protocols to be transported on the one radio network
- Flexible data stream routing providing optimum radio channel efficiency
- Internal repeater operation - single radio store and forward
- Channelshare™ unique integrated collision avoidance technology permits simultaneous polling and spontaneous alarm reporting operation in the same system

Network Management and Remote Diagnostic option

(In conjunction with TView+™ Software)

- Remote fully transparent network management and diagnostics
- Network wide operation from any radio modem
- Full SCADA style features such as database, trending and networking
- Over-the-air modem reconfiguration
- Full graphical presentation (HMI)



EB450

Radio

Frequency Range: 380-520 MHz (various sub-frequency bands available)

Frequency Splits: Various Tx/Rx frequency splits - programmable

Channel Selection: Dual synthesizer, 6.25 kHz channel step

Channel Spacing: 12.5 or 25 kHz

Frequency Accuracy: ± 1 ppm (-30 to 60C) (-22 to 140F) ambient

Aging: ≤ 1 ppm/annum

Operational Modes: Full and Half duplex, Simplex (Simplex requires separate TX/RX antennas)

Duplexer: Optional Internal or external duplexer available for single antenna operation.

Configuration: All configuration via Windows based software

Compliances:

ETSI EN300 113, EN301 489, EN60950

FCC PART 15, PART 90

IC RS119, ICES-001

ACA AS4295-1995(Data)

Local regulatory conditions may determine the performance and suitability of individual versions in different countries. It is the responsibility of the buyer to confirm these regulatory conditions. Performance data indicates typical values related to the described unit.

Information subject to change without notice.

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• Export restrictions may apply

Note: Not all product features are available in every mode of operation.

Transmitter

Tx Power:

1W to 5W (+30dBm to 37dBm) ± 1 dB or

5W to 20W (+37dBm to 43dBm) ± 1 dB
User configurable with over-temperature and reverse power protection

Modulation: User configurable narrow band digitally filtered GMSK or 4 Level FSK

Tx Keyup Time: < 2 mS

Timeout Timer: Programmable 0-255 seconds

Tx Spurious: ≤ -37 dBm

PTT Control: Auto (on Data) / RTS line (Port A or B) / System Port Override

Receiver

Sensitivity: -118 dBm for 12 dB SINAD

Selectivity: Better than 60 dB

Intermodulation: Better than 70 dB

Spurious Response: Better than 70 dB

AFC Tracking: Digital receiver frequency tracking

Mute: Programmable digital mute

Diagnostics

Network wide operation from any remote terminal.

Non intrusive protocol - runs simultaneously with the application.

Over-the-air re-configuration of user parameters.

Storage of data error and channel occupancy statistics.

In-built Error Rate testing capabilities.

Connections

User Data Ports: 2 x DB9 female ports wired as DCE (modem)

System Port: RJ45 (front and rear) for diagnostics, configuration and programming

Antenna:

2 x N female bulkhead (separate Tx and Rx ports)

1 x N female bulkhead (with optional internal duplexer)

Power: 2 pin locking, mating connector supplied

LED Display: Multimode Indicators for Pwr, Tx, Rx, Sync, TxD and RxD data LEDs (for both port A and B)

Modem

Data Serial Port A: RS232, DCE, 600-57,600 bps asynchronous

Data Serial Port B: RS232, DCE, 300-38,400 bps asynchronous

System Port: RS232, 19,200 bps asynchronous

Flow Control: Selectable hardware/software/3 wire interface

RF Channel Data Rate: 4800/9600/19,200 bps Full duplex

Data Buffer: 16 kbyte of on-board RAM

Bit Error Rate:

$< 1 \times 10^{-6}$ @ -110 dBm (4800 bps)

$< 1 \times 10^{-6}$ @ -108 dBm (9600 bps)

$< 1 \times 10^{-6}$ @ -106 dBm (19,200 bps)

Encryption: 128-bit AES encryption

Collision Avoidance: TRIO Datacom's unique supervisory Channelshare™ collision avoidance system

Multistream™: TRIO Datacom's unique simultaneous delivery of multiple data streams (protocols)

Data Turnaround Time: < 10 ms

Firmware: Field upgradable Flash memory

General

Power Supply: 13.8 Vdc nominal (11-16 Vdc)

Operating Temp: -30degC to +60degC

Transmit Current:

5W Version: 1.3 A Nom @ 1 W

2.5 A Nom @ 5 W

20W Version: 2.7 A Nom @ 5 W

4.7 A Nom @ 20 W

Receive Current: < 350 mA

Dimensions:

5W: 19" 2 RU rack mount 485 x 90 x 420 mm (Including heatsink) 19 x 3.5 x 16.5 inches

20W: 19" 2 RU rack mount 485 x 90 x 446 mm (Including heatsink) 19 x 3.5 x 17.5 inches

Weight: 5.5kg (12 lbs)

(excluding optional duplexer)

Digital I/O:

2 Inputs monitored by TVIEW+ Diagnostics Software

2 Outputs user configurable by TVIEW+ Diagnostics Software

Options

DUPLX450Bx Internal / External Duplexers, Band Reject and Band Pass

Related Products

EH450 Hot Standby Base Station

ER450 Remote Data Radio

MR450 Remote Data Radio

MSR9 Port Stream Router

Multiplexer

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All TRIO Datacom Radios come with a industry leading 3 year Warranty