



Remote Data Radio - ER450

E Series



Features and Specifications

Trio DataCom's ER450 is an advanced high speed digital data radio modem designed for the most complex and demanding requirements in both Point-to-Point and Point-to-Multipoint (Multiple Address Radio) SCADA and telemetry applications.

The powerful and flexible ER450 is part of the high performance E Series data radio system products that includes the EB450 Advanced Base / Repeater and the EH450 Hot Standby Base / Repeater stations.

Features

Radio and Modem

- Fully integrated radio, modem and data multiplexer
- True 19,200 bps over-air data rates (also 4800 and 9600 bps)
- Fast data turnaround
- Simplex, Half Duplex and Full Duplex
- Broad frequency range with fully synthesized all digital radio design
- Full specification operation from -30° to + 60°C (+70°C option)
- Compact, rugged diecast alloy housing
- Low power consumption with sleep mode operation
- Insurance against obsolescence with field upgradeable firmware in flash memory
- Multi-function LED Front Panel Status Display
- Digital orderwire option

Network Management Remote Diagnostic option

(In conjunction with TView+™ Software)

- Exceptional network management tools
- Over-the-air user configuration
- Transparent Operation - simultaneous with user data
- Network wide operation from any radio terminal

Data Ports

- Two independent configurable data ports and separate system port
- Compatible with most industry standard data protocols. eg: MODBUS, DNP-3, IEC 870 etc.
- Selectable 300 -76.8 k bps 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 - buffered store and forward
- Unique integrated C/DSMA collision avoidance technology permits simultaneous polling and spontaneous alarm reporting operation in the same system

Innovative and sophisticated
digital communications
designs products and solutions



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Radio

Frequency Range: 330-520 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 60°C) (-22 to 140°F) ambient, Optional (-30 to 70°C) (-22 to 158°F)

Aging: ≤ 1 ppm/annum

Operational Modes: Simplex, Half duplex or Full duplex*

Configuration: All configuration via Windows based software

Compliances:

ETSI EN300113, EN301489
FCC PART 15, PART 90
IC RS119, ICES-001
ACA AS4295-1995

Transmitter

Tx Power: 0.1 - 5W (+37 dBm) ± 1 dB
User configurable with over-temperature and reverse power protection

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

Tx Keyup Time: < 1 mS

Timeout Timer: Programmable 0-255 seconds

Tx Spurious: ≤ -37 dBm

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

Receiver

Sensitivity: -118 dBm for 12 dB SINAD

Selectivity: Better than 80 dB

Intermodulation: Better than 75 dB

Spurious Response: Better than 80 dB

AFC Tracking: Digital receiver frequency tracking

Mute: Programmable digital mute

Diagnostics (Optional)

Network wide operation from any remote terminal.

Non intrusive protocol - runs simultaneously with the application.

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

Programmable exception reporting of alarms.

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 for diagnostic, configuration and re-programming

Antenna: N female bulkhead. Separate N (Tx) and SMA (Rx) connectors for full duplex.*

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 #1: RS232, DCE, 600-76,800 bps asynchronous

Data Serial Port #2: 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 Half / 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)

Collision Avoidance: Trio DataCom's unique supervisory channel C/DSMA collision avoidance system

Multistream™: Trio DataCom unique simultaneous delivery of multiple data streams (protocols)

Data Turnaround Time: < 10 mS

Firmware: Field upgradeable Flash memory

General

Power Supply: 13.8 Vdc nominal (10-16 Vdc)

Transmit Current: 750 mA nom. @ 1 W
1600 mA nom. @ 5 W

Receive Current: < 125 mA nom

Sleep Mode

Hardware: External control, < 1 mA
Software: User configurable modes

Dimensions: Rugged Diecast Enclosure
170 x 150 x 42mm
6.7 x 5.9 x 1.65 inches
With Mounting Plate
190 x 150 x 47mm
7.5 x 5.9 x 1.85 inches

Mounting: Fitted Mounting Plate

Weight: 1.27 kg (2.8lbs.)

Options

ERFD450 Full Duplex Operation with separate N (Tx) and SMA (Rx) connectors

DUPLX450BR External Duplexer, Band Reject (for single antenna operation)

EDOVm Digital Order Wire Voice Module

NEMA 4/R Stainless Steel Enclosure (IP65, NEMA 4 rated)

TVIEW+™ Configuration, Network Management and Diagnostic Windows GUI Software

DIAGS/E Network Management and Remote Diagnostics Facilities per Radio Modem

Related Products

EB450 Base Station

EH450 Hot Standby Base Station

95MSR 6 and 9 Port Stream Router Multiplexer

* With ERFD450 full duplex option plus external duplexer for single antenna operation



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.

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