

## Wireless Solution

ESTeem® wireless modem products provide a "Wireless Solution" by eliminating conventional hard wiring, leased phone lines, or cellular costs.

The ESTeem Model 192S comes with the industry standard RS-232C, RS-422, and RS-485 asynchronous communications ports to give the user a new dimension to "Local Area Networking".

Our "license free" spread spectrum 2.4 GHz packet burst wireless radio modem allows the user to create a high speed "Radio Area Network" of up to 255 users on a single frequency. The packet burst communications technique was chosen to give the system very high data integrity in high noise industrial environments. The ESTeem incorporates CRC error checking that provides received data accuracy of greater than one part in 100 million.

## Packet Protocols

By using a Carrier-Sensed-Multiple-Access (CSMA) communication protocol no polling station or token is required in the ESTeem network. When an ESTeem has information to send, it will check to see if the channel is clear before transmitting its packet and await an acknowledge. The ESTeem is a Master/Master system, meaning any ESTeem of the same model type can communicate with any other ESTeem of the same model type.

## Data Privacy

Transmitted data privacy is insured by the use of a direct sequence spread spectrum technique of the modulated data, user definable commands for unit addressing, network addressing, and security lock-out of software programming.

## Increased Operating Range

The internal Digi-Repeater feature allows the user to increase operating range by relaying transmissions through a maximum of three ESTeems to reach the destination ESTeem. An ESTeem can operate as an operating node, a repeater node, or both simultaneously for added flexibility.

## User Friendly

The ESTeem has user programmable software to allow the configuration of the unit for any application. These commands are saved in the ESTeem's internal non-volatile memory.



## FEATURES

### Transceiver

- 171K bps RF data rate
- 2.4 GHz UHF operating frequency
- Direct sequence spread spectrum
- Integral Digi-Repeater
- Receiver Squelch Software Programmable
- Remote Programmability of all features Over the RF or Infrared Interfaces
- Radio Diagnostic Programs included
- Packet Monitor
- Received Signal Strength Output
- No site license required

### Interfaces

- RS-232C, RS-422, and RS-485 communications ports for hardware interfacing
- Infrared communication port for Local Programming and Diagnostics

### Protocols

- Integral PLC and RTU Protocol Drivers
- Point-to-Point Protocol
- Point-to-Multi-Point Protocol
- Polled With Report-By-Exception Protocol
- Contingent Protocol
- Transparent Protocol

### Warranty

- One Year

# Technical Specifications

# Model 192S

171,000 bps  
RF Data Rate



### Communication Interfaces

- RS-232
- RS-422
- RS-485

### ESTeem Software Utility Program For

- Setup/Programming
- Diagnostic Programs
- Interference Testing
- PC Terminal Emulation
- Polling Program
- Site Survey Instructions



Infrared Communications Port for Remote Programming and Diagnostics Without Interruption Of The Wireless Radio Area Network

- 1 Watt RF output
- 100% duty cycle
- 50 ohms output impedance
- Protocol activated keying
- <1 ms typical latency
- Direct sequence spread spectrum

### RECEIVER

- Double conversion superheterodyne
- -93 dBm 8E-2 Frame Error Rate
- 80 dB Image Rejection
- > 35 dBm Adjacent Channel Rejection
- Four levels of squelch (software programmable)

### POWER REQUIREMENTS

- 11-16 VDC @ 700 mA Transmit  
290 mA Receive

### SIZE

- 2.45 in. Height
- 8.16 in. Width
- 9.37 in. Length

### WEIGHT:

- 5 lbs.
- Rugged die cast aluminum case

### ENVIRONMENT

- -30° to 50° C
- 95% Non-condensing

### WARRANTY

- 1 Year

### LED INDICATORS

- Power On
- Receiver Carrier Detect
- Transmitter Enable
- Link Connect/Disconnect
- Auto Connect Enable
- RS-232/422/485 Framing Error

### DATA TRANSMISSION PROTOCOL

- Carrier Sensed Multiple Access with Collision Detection (CSMA-CD)

### ERROR CHECKING

- 16 Bit Cyclic Redundancy check (CRC) with Packet Acknowledge and Retry

### I/O - CONNECTORS

- RS-232C/422/485 - 25 Pin Sub D Female
- Infrared Programming Port
- Antenna Output - TNC-R
- Input Power - 2 Pin Molex Female

### FREQUENCY OF OPERATION

- 2.4 to 2.462 Ghz.
- Frequency selectable in 11 frequency zones

### ADDRESSING RANGE

- 1 to 254

### RF DATA RATE

- 171K RF data rate

### TRANSMITTER

### DATA INPUT

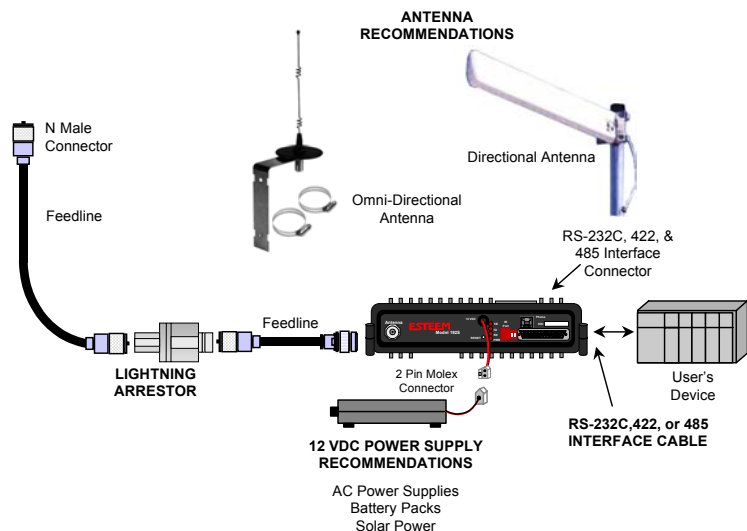
- RS-232/422/485 Asynchronous
- Selectable 1,200 to 57,600 baud
- 7 to 8 data bits
- Even, Odd or no parity
- One or Two Stop Bits

### DATA BUFFERS

- Transmit 4000 bytes
- Receive 4000 bytes

### FLOW CONTROL

- Hardware or Software



Typical Outdoor Hardware Block Diagram

Specifications subject to change without notice.  
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