ESTEEM Wireless Modems

PRODUCT SHEET
MODEL 195E SERIES

Wireless High Speed Ethernet and Serial Ports

The ESTeem Model 195E Series, designed for the rigors of the Industrial, Public Safety, and Federal markets, is the next generation wireless modem with ***two Ethernet*** and ***one independent Serial RS-232C port***. The Model 195E Series provides wireless networking with an RF data rate of up to ***54 Mbps,*** with a nominal 5 to 10+ mile range depending on the model type an antenna used. Now you have greater bandwidth for all your control, video, and VoIP needs, on one radio channel. Wireless networks over large geographical areas become a reality using the 195E Series ***Multiple Repeating*** feature. The Model 195Eg has a user enabled 802.11b/g protocol for communication to Client's laptops, PDA's and mobile tablets. All 195E Series products have a ***Client Mode*** so they can be used in mobile applications under a 195E Series radio canopy.

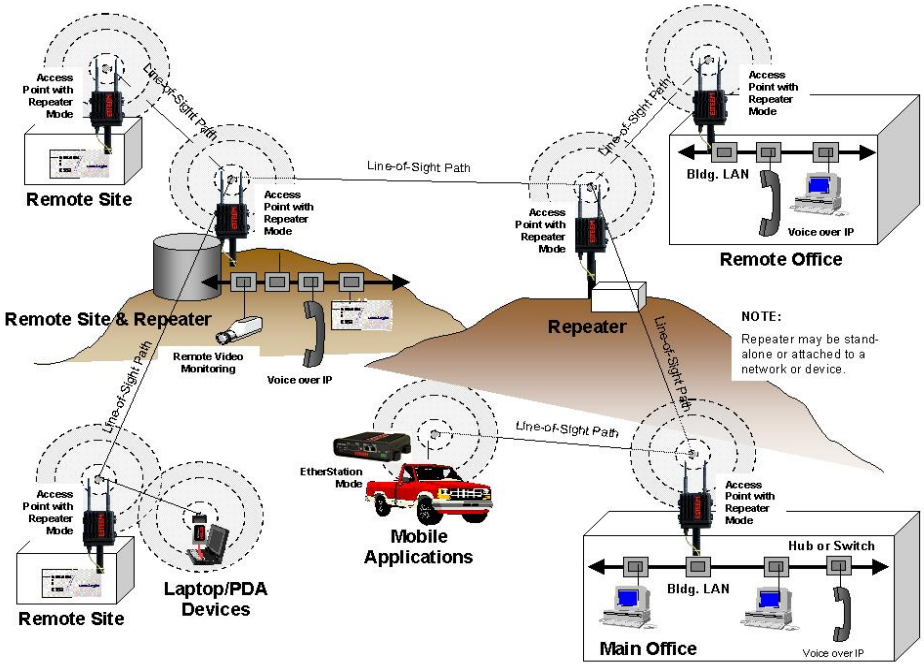
Model	Frequency (MHz)	RF Data Rate
195Es	902 to 928 Unlicensed	200 Kbps
195Ed	902 to 928 Unlicensed	6-54 Mbps
195Eg	2400 Unlicensed	1-54 Mbps
195Ep	4900 Licensed	1-54 Mbps
195Ea	5800 Unlicensed	6-54 Mbps

Model 195E Series Reduces Site Costs

- **Outdoor case design**. The new NEMA 4 case design and weatherproofing kit allows the unit to be indoors or outdoor pole mounted in harsh environments. This feature eliminates the enclosure costs needed with other radios.
- **Eliminates costly RF feed lines.** Direct pole mounting eliminates feedline cost and high signal losses.
- **Lower installation costs.** Simple pole mounting saves installation time and expense.

Software Features

- **High Security AES Encryption**. The 195E Series uses the high-security 128-bit AES-CCMP required in most municipal, public safety and federal applications. 195Eg is compatible with both IEEE 802.11i and WPA-2 encryption.
- **Simple Network Management Protocol (SNMP).** SNMP is standard in the 195Ea/d/g/p products and optional in the 195Es. SNMP can be used for critical network diagnostics and management using the open SNMP protocol.
- **Rapid Spanning Tree Protocol (RSTP – IEEE 802.1d).** The Rapid Spanning Tree protocol will allow faster recovery times in the ESTeem Mesh networks.
- **Enhanced Network Operation.** The 195E Series includes support for VLAN pass-through and IGMP Snooping to support enhanced network functionality.



Common Features

- MESHing Self Healing Network Architecture (195Ea d, g, and p only)
- 5 to 10+ Mile Nominal Range
- Industrial Hardened Case
- Direct Outdoor Pole Mountable
- Extended Temperature Specifications
- Power over Ethernet Cable (PoE)
- Dual Ethernet Ports
- Serial RS-232 Communications Port

Modes of Operation

- Ethernet Bridge Mode
  - Point-to-Point
  - Point-to-Multipoint
  - All Bridges can be Repeaters
  - Available in all Access Point and Bridging Modes
- Access Point (AP)
  - AP/Bridge, Router and Masquerade
- Client Modes (Mobile)
  - EtherStation
  - Station Router
  - Station Masquerade

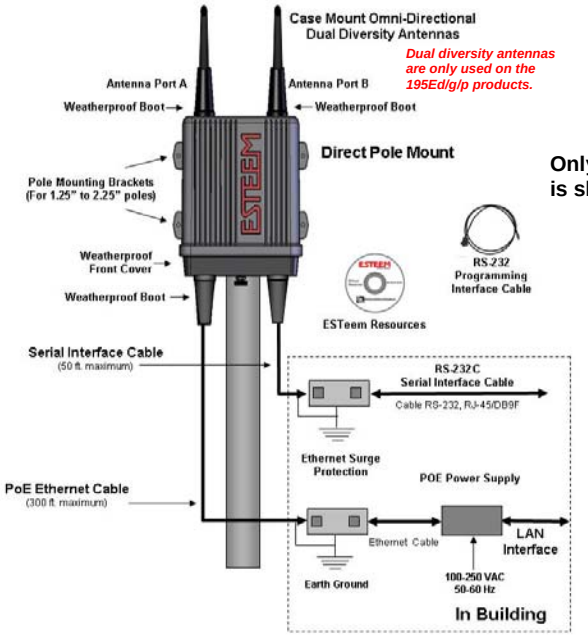
Security

- AES Encryption (CCMP)
- 128/64 Bit WEP Encryption
- Access Control List (ACL)
- Temporal Key Integrity Protocol (TKIP)
  - 802.11i Compatible (195Eg only)

Technical Specifications Model 195E Series

ESTeem 195E Specifications					
Transmiter/Receiver	**195Es**	**195Ed**	**195Eg**	**195Ep**	**195Ea**
Frequency of Operation (Software Selectable)	902 to 928 MHz	902 to 928 MHz (4-channels)	2.4 GHz (11-channels)	4.9 GHz (2-channels)	5.8 GHz (17-channels)
RF Data Rate	200 Kbps	6 to 54 Mbps (8 steps)	1 to 54 Mbps (12 steps)		6 to 54 Mbps (8 steps)
Tx Output Power (Software Selectable)	125 mW to 1 Watt (Pk) (4-levels)	250 to 1000 mW (Pk) (4-levels)		250 to 2000 mW (Pk) (4-levels)	125 to 1000 mW (Pk) (4-levels)
Tx Output Impedance	50 ohms				
Rx Sensitivity	-100 dBm	-95 to -72 dBm	-89 to -68 dBm	-92 to -68 dBm	-97 to -72 dBm
FCC Type Acceptance	ENPESTEEM195ES	ENPESTEEM195ED-1	ENPESTEEM195EG-1	ENPESTEEM195EP	ENPESTEEM195EA
Industry Canada Type Acceptance	2163A-19ES	1457A-195E1	2163A-195EG	1457A-195EP	2163A-195EA
LED Indicators	Power (On/Off) - Carrier Detect (On/Off) - Transmitter (On/Off) - Reveiver (On/Off)				
Power Requirements					
Receive	220 ma @ 12 VDC	200 ma @ 12 VDC	320 ma @ 12 VDC	320 ma @ 12 VDC	250 ma @ 12 VDC
Transmit	1000 ma @ 12 VDC	450 ma @ 12 VDC	1000 ma @ 12 VDC	1500 ma @ 12 VDC	1250 ma @ 12 VDC
PoE Power Supply	(IEEE 802.3af,13 watts) (opt)			(IEEE 802.3at,30 watts) (opt)	(IEEE 802.3at,30 watts) (opt)
External Power Input	10 to 16 VDC @ 1000 ma	10 to 28 VDC @ 450 ma	10 to 28 VDC @ 1000 ma	10 to 28 VDC @ 1500 ma	10 to 28 VDC @ 1250 ma
Input/Output Connectors					
Ethernet Port 1 (10/100)	RJ-45 Female				
Ethernet Port 2 (10/100)					
802.11 Compatibility	n/a		802.11b/g	n/a	802.11a
RS-232C Comm Port (2,400 to 115.2 K baud)	RJ-45 Female				
RS-232C Programming Port (38,400, N, 8, 1)					
Antenna Input/Outputs	TNC Reverse Female			TNC Female	TNC Reverse Female
External DC Input Power	Mini-Combicon, 3 pin female				
Case					
Temperature Range	-30° to +60° C				
Humidity	95% Non-condensing				
Dimensions	1.9 in. H x 6.7 in. W x 6.2 in. L				
Weight	1.25 lbs.				
Product Warranty	1 Year				
Other					
Outdoor Pole Mt. Kit	AA195PM (opt)				
PoE Power Supply	AA175 (opt)			AA175.2 (opt)	
External DC Input Power Connector	AA195PP (opt)				

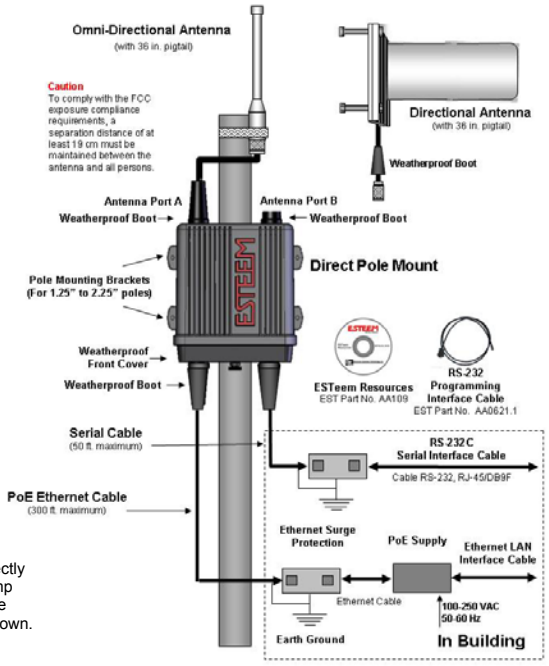
Model 195E Series Direct Mount Antennas Hardware Diagram



Only single Ethernet connection is shown in diagrams.

The unit can also be powered directly from 10 to 28 VDC, 0.45 to 1.5 amp (based on model) source using the optional male power connector shown. EST P/N AA195PP.

Model 195E Series External Mount Antenna Hardware Diagram



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Specifications subject to change without notice
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