**ESTEEM**
INDUSTRIAL WIRELESS SOLUTIONS

# ESTeem 210M

The **ESTeem 210M** is a ruggedized, industrial wireless device designed and built for the Water/Wastewater, Energy and Utility markets to bring Ethernet connectivity to the FCC Licensed narrowband spectrum. With user selectable Quadrature Amplitude Modulation (QAM) that delivers up to *64.8 Kbps* of data rate, the **ESTeem 210M** enables secure, modern IP based communication solutions for those terrain-challenging applications that demand the flexibility and range of a licensed frequency.

ESTeem's industrial-hardened *Industrial SMART RF* technology enables a scalable, self-healing wireless network architecture with built in redundancy for complete system reliability and stability over large geographical areas.
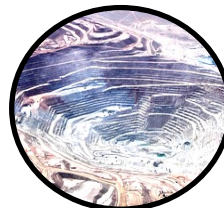
## Key Features

- ESTeem's scalable *Industrial SMART RF* technology enables redundant, self-healing networks to provide dependable and stable communications in extreme environmental conditions.

- Same device can be used for master, repeater and remote locations enabling superior network flexibility and scalability

- Private and Secure Communications

- Ethernet and serial interfaces

- Simple configuration

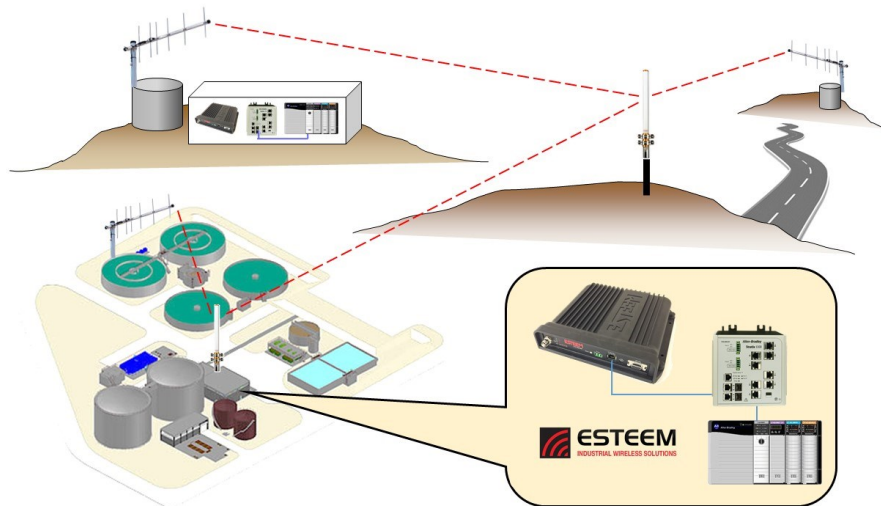- 15+ Mile range

- 150-174 Mhz


Water/Wastewater


Oil & Gas


Mining


Power & Energy

**ESTeem** Industrial Wireless Solutions

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## ESTeem 210M Specifications

### Transceiver

| | |
|---|---|
| Frequency of Operation (Software Selectable) | 150 to 174 MHz |
| Frequency Selectability | 6.25 KHz |
| Frequency Stability | ± 1.5 ppm |
| RF Data Rate @ 6.25 KHz Channel Bandwith | 9.6 Kbps (4 QAM), 19.2 Kbps (16 QAM),  28.8 Kbps (64 QAM) (software selectable) |
| RF Data Rate @ 12.5 KHz Channel Bandwidth | 21.6 Kbps (4 QAM), 43.2 Kbps (16 QAM), 64.8 Kbps (64 QAM) (software selectable) |
| RF Output Power @ 50 ohms (Z) | 2 Watts (average)/ 10 Watts (peak) |
| TX Duty Cycle | 100% |
| Transmitter Spurious & Harmonics | > 55 dB down from carrier |
| Transmitter Rise Time | 1 mSec |
| Transmit/Receive Switch | Integral to Unit |
| RX Sensitivity | -109 dBm (4 QAM) to -100 dBm (64 QAM) |
| Receiver Spurious & Image Rejection | > 50 dB |
| Receiver Squelch Sensitivity | Software Adjustable |
| Receiver Adjacent Channel Rejection | > 70 dB |

### LED Indicators

| | |
|---|---|
| Front Panel | Power (On/Off) - Transmitter (On/Off) - Rx Carrier Detect (On/Off) - Status (On/Off) - RSSI (16 levels) |

### Input/Output Interfaces

| | |
|---|---|
| Ethernet Port (10/100/1G) | RJ-45 Female |
| Radio Configuration Port | Mini-USB Port |
| RS-232C  Comm Port (2,400 to 115.2 K baud) | 9 Pin D-Sub Female |
| Antenna Input/Outputs | TNC Female Connector (50 ohm) |
| Input Power | Mini-Combicon, 3 pin Female |

### Switches

| | |
|---|---|
| CPU Reset | Front Panel (Push button) |

### Power Requirements

| | |
|---|---|
| Power Supply Voltage | 10.8 to 16 VDC |
| Power Supply Current | 400 mA Receive |
| | 2 A Transmit (2 W) |

### Case

| | |
|---|---|
| Temperature Range | -30 to +60 degrees C. |
| Humidity | 95% Non Condensing |
| Dimensions | 2.25 in. (H) x 9.33 in. (W) x 8.51 in. (L) |
| Weight | 5 lbs. |
| Product Warranty | 1 Year |

### Type Acceptance

| | |
|---|---|
| FCC (USA) | ENPESTEEM210M |
| Industry Canada | 2163A-ESTEEM210M |

### Security

| | |
|---|---|
| | WPA2, WPA, AES-128, TKIP, WEP-64/128   MAC ID filter |