

ESTeem 210 Series Vs. 192 Series Products

Features	ESTeem Model 210 Series	ESTeem Model 192 Series
Frequency of Operation (210C & 192C)	450-470 MHz	450-470 MHz
Frequency of Operation (210M & 192M)	150-174 MHz	150-174 MHz
12.5 KHz Narrowband Compliant	Yes	Yes
Frequency Selectability	6.25 KHz	6.25 KHz
Modulation Type	4 QAM, 16 QAM, 64 QAM	4 Level FSK
RF Data-Rate	21.6-64.8 Kbps (12.5 KHz Channel)	9.6 Kbps (12.5 KHz Channel)
RF Power Output	2 Watts (Average)	2-4 Watts
Range	10+ Miles	10+ miles
Repeater Capability	Yes	Yes
Mobile Client Mode	Yes	No
Ethernet Interface	10/100/1Gbps	No
Serial Interface	9-Pin Sub-D Female	25-Pin Sub-D Female
Serial Protocols	RS-232C	RS-232C,RS-422,RS-485
Programming Interface	Ethernet, Mini-USB	RS-232, Infrared
Wireless Network Monitoring	SNMP and Web Interface (On-Line)	ESTeem Utility (Off-line)
Receive Signal Strength Output	RSSI Meter Front Panel Web Interface Status Menu	ESTeem Utility (Off-line)
Input voltage	10.8 to 16 VDC	10.8 to 16 VDC
Input current (receive)	400 mA	400 mA
Input current (transmit - 2W)	2 A	1.5 A
Size	2.45" H x 8.16" W x 9.37" L	2.45" H x 8.16" W x 9.37" L
Weight	5 lbs	5 lbs
FCC Licensed Required	Yes	Yes
Environment	-30 to +60 ° C 95% Non-condensing	-30 to +60 ° C 95% Non-condensing

What are the differences between the new ESTeem Model 210 Series and the ESTeem 192 Series?

The ESTeem 210 Series is the latest generation of wireless modem operating in the narrow band licensed 450-470 MHz and 150-174 MHz frequencies. Building on the innovative success of the ESTeem 192 Series over the last decade, the 210 Series was designed for today's wireless network requirements. The primary difference between the two products is the addition of an Ethernet interface on the 210 Series and the dramatic increase in data throughput. This Ethernet port will allow a direct connection to the latest generation of industrial controllers. To support the higher data throughput requirements of the Ethernet interface, the

modulation technique was updated to provide up to 64.8 Kbps RF data rate on a narrowband channel. The 210 Series also has a serial RS-232 data port for connection to legacy external hardware but all configurations are programmed through either the Ethernet interface or the mini-USB programming port to match current hardware.

Why is the ESTeem Model 210 Series so much faster?

The Model 210 Series uses a Quadrature Amplitude Modulation (QAM) technique allowing a much higher RF data rate within a narrowband channel. The QAM modulation allows the ESTeem 210 Series to operate within the new 12.5 KHz channel spacing requirement of the 2013



FCC update but still provide RF data rates up to 64.8 Kbps. Due to the new modulation scheme, ***"The 210 Series is not downward compatible with the 192 Series products"***.

What are the Mobile Client Modes and how are they used?

The mobile client modes are a configuration of the 210 Series that allow the modems to "roam" between other fixed 210 Series products in the network. This feature will allow the user mobile access to the wireless Ethernet network and all connected devices.

What other Ethernet modes are available and how are they used?

The ESTeem Model 210 Series can be used in bridge, router or firewall mode to link single or multiple Ethernet devices. The 210 Series is not well suited for bridging large Ethernet networks together due to its data rate, but is ideally suited to connecting single Ethernet devices or controllers in long distance SCADA applications.

What is MESH networking and why is this an advantage for the ESTeem 210C network?

MESH networking allows any remote ESTeem 210C in the network to be used as a repeater for any other 210C in the network. In addition, multiple repeater routes can be configured and prioritized to a remote location creating a self-healing redundant network.

This same MESH networking feature can be used to create automatic backup redundancy at a single location by simply installing two or more ESTeem 210C wireless modems connected through an Ethernet switch. These features are standard functions of the 210C network and are available in all networks without additional hardware or cost.

What other wireless troubleshooting features have been added to the ESTeem 210 Series?

The ESTeem Model 210 Series supports SNMP protocol to allow real-time access to critical wireless information such as receive signal strength and link up-time. The 210 Series also has a receive signal strength indicator on the front panel to help with quick troubleshooting and antenna alignment. All wireless status information can also be viewed through the 210 Series web interface from any wireless modem in the network.

I'm currently using your 192C or 192M products and want to upgrade my site to the 210 or 195 Series Products. What are my options?

ESTeem will offer a one for one Trade-in Credit of \$250 for your existing ESTeem radio towards any new 210 or 195E series product. Also you can still use your existing accessories; lightning arrestor, feedline and antenna if you use the 210 product of the same frequency of operation of your existing site.

I'm currently using your 192 Series products and do not want to upgrade my site to the newer technology. What are my options for expansion in the future?

ESTeem is developing the 195C (450-470 MHz) and 195M (150-174 MHz) that are downward compatible with the 192 Series Products. These products use the 195E Series case format and are pole or cabinet mountable. The factory will also provide as "Refurbished in New Condition" 192 Series Products as they become available from our hardware exchange program.

When you compare all the options available in the ESTeem network and look at the overall system cost both now and in the future, there is only one practical choice.... ESTeem.

