



POINT-TO-MULTIPOINT

M900S™ 900 MHz Access Point & Subscriber Unit Non-line-of-sight Broadband Wireless System

POINT-TO-MULTIPOINT BROADBAND WIRELESS INTERNET ACCESS

The M900S™ point-to-multipoint wireless broadband internet access (BWA) platform utilizes the advantages of the 900 MHz license-exempt spectrum and delivers up to 3 Mbps to the subscriber. Ideal for non-line-of-sight (NLOS) deployment, this fully integrated outdoor system includes internal dual polarized antennas as well as connectors for optional external antennas.

900 MHz Non-Line-of-Sight Performance

» The M900S™ was designed for deployment in areas where foliage and other obstructions obscure line-of-sight. The system offers excellent receiver sensitivity and best-in-class overall system gain for outstanding NLOS range of up to 6 miles or beyond*. Use of external antennas increases range and fade margin even farther. In addition, Spread Spectrum modulation promotes resistance to multipath fading, and combined with Trango's patented SMARTPolling™ results in maximum cell performance.

Antenna Flexibility

» The M900S™ AP and SU each include an integrated 10 dBi dual polarized patch antenna as well as a connector for optional external antennas. The lower cost M915S2-SU-EXT features only a connector for an external antenna. External antenna options include omni antennas for the AP and yagi-style antennas for both the AP and SU. The auto-sensing feature on the M900S™ SU allows the firmware to choose the antenna with the strongest signal, or the user can manually select either the internal or external antenna.

Channel Flexibility

» The system is configured with four channels, each 6 MHz apart. The user can redefine channels by selecting frequencies in single MHz increments. The SU scans all channels until it associates with a properly configured AP. This allows redundancy of APs as well as a simple and quick method to switch channels on an entire sector.

Highlights

- Up to 3 Mbps usable subscriber throughput
- Up to 20-mile range with external antenna
- Superb NLOS performance through foliage/ obstructions
- 4 non-overlapping channels
- Robust interference rejection (ARQ)

Interference Mitigation

» The M900S™ system offers powerful resistance to interference with the Automatic Repeat Request (ARQ) feature which automatically retransmits packets to mask RF errors to higher layer protocols. In addition, the system includes interference mitigation tools such as software selectable dual polarity antennas, automatic SU power leveling, and threshold control.

Management Features

» The system offers remote and local management via Telnet, SNMP and HTTP via browser. Powerful tools such as site survey and upstream/downstream CIR/MIR controls allow operators total control and flexibility in managing their network.

Patented SMARTPolling™

The M900S™ system is equipped with SMARTPolling™, a powerful prioritization scheme designed to ensure the highest quality of service to active bandwidth subscribers. SMARTPolling™ allows the AP to dynamically and adaptively poll each SU efficiently favoring subscribers that are engaged in passing traffic, guaranteeing the lowest latency for those users.

Compatibility / Range Chart

Part Number	Model Type	Antenna	Range / Fade Margin
M900S-AP	Access Point w/ integrated & external antennas	Internal, 10 dBi, External	Up to 6 miles NLOS* / 10 dBi
M900S-SU	Subscriber Unit w/ integrated & external antennas	Internal, 10 dBi, External	Up to 20 miles LOS / 18 dBi
M915S2-SU-EXT	Subscriber Unit Connectorized	External only	Depends on external antenna selection

* Non-line-of-sight performance may vary due to antenna height, leaf density, moisture content, and other environmental factors.

Specifications

RADIO PARAMETERS	
Frequency of Operation	902 - 928 MHz
Channels	4 non-overlapping, software selectable
Channel Spacing	6 MHz, software selectable
RF Power Output	M900S AP & SU: +26 dBm Max Setting, -4 dBm Min Setting M915S2-SU-EXT: +26 dBm Max Setting, 0 dBm Min Setting
Modulation Format	Direct Sequence Spread Spectrum (DSSS)
Certification / Compliance	FCC Part 15.247
Receiver Sensitivity (BER 10 ⁻⁶)	-90 dBm typical
DATA AND OPERATIONAL PARAMETERS	
Access Method	TDD with SMARTPolling™
User Data Throughput	3 Mbps
Upstream/Downstream Throughput	Dynamic, automatically adjusts to suit demand
Bandwidth Control	CIR and MIR upstream/downstream control by AP
Maximum Number SUs per AP	126
Auto Repeat Request	Continuous ARQ with Selective Repeat
Security	Trango proprietary authentication method, based on MAC address and alphanumeric base ID; over-the-air data scrambling.
Configuration & Management	Telnet, SNMP, TFTP, HTTP
ANTENNA PARAMETERS	
Internal Antennas	M900S AP & SU: Integrated 10 dBi 60° X 60° patch dual polarized (HPOL/VPOL)
External Antenna Connection	Reverse Polarity SMA (RP-SMA)
Omni Antenna** (Optional)	8.5 dBi 360° X 10° (VPOL) - Comtelco Part # BS915XL7** (Requires N-SMA RP adapter)
Yagi Antenna*** (Optional)	15 dBi 30° X 30° (VPOL or HPOL) - Cushcraft part # PC9013N*** (Requires N-SMA RP adapter)
POWER PARAMETERS	
Power Method	Power-over-Ethernet (PoE Injector JBox included)
Voltage Input	24 VDC
Standard Power Supply	120VAC to 24VDC
PoE Cat-5 Max Cable Length	300 feet on 24 AWG STP Cat-5 cable
PHYSICAL AND ENVIRONMENTAL	
Ethernet Interface	RJ45, 10/100BaseT, auto sense, auto negotiate
Antenna Connector	SMA reverse polarity
Reset Button	Resets unit to factory default settings
Radio Enclosure	All-weather, powder coated, cast aluminum with polycarbonate radome
Temperature Range	-40° to 60° C (-40° to 140° F)
Radio Weight	4 lbs.
Radio Dimensions	12.5" x 8" x 2.75"
Mounting Hardware	Mounts to pole or wall (2 V-mounting brackets, 4 threaded rods, 4 lock washers and 8 kepnuts)
User Interfaces	RJ45 (shielded)

** Available from Comtelco (www.comtelcoantennas.com) and Comtelco distributors

*** Available from Cushcraft (www.cushcraft.com) and Cushcraft distributors

Contact


 +57(1) 284 6932 - 284 6940
www.andeswireless.com
 BOGOTA, COLOMBIA

