ST-WX5830 Subscriber Unit

SensorTec
Canada

5 GHz 2x2 MIMO Last-Mile CPE

Feature Summary

- 2x2 MIMO OFDM Radio Technology.
- Optimized for ISP traffic patterns with downlink priority
- POE Ethernet RJ45 port
- Tx Output Power: 18 dBm Max
- GPS-based Base Station Synchronization for easy co-location
- Adaptive Coding and Modulation (ACM).
- L-Bracket mounting hardware for elevation control (Optional).
- PPM^{tm} — Polling MAC Protocol for Multipoint.
- Built-in Spectrum Analyzer.
- LED-based Antenna Alignment Tool.
- Wide Frequency range from 4.90 to 6.0 GHz (country dependent)
- HyperARQ^{tm} — Preserve system performance out to long distance.

Product Description

As SensorTec's fourth-generation OFDM multipoint product line in the 5GHz frequency band, the AIRLAN-Clarity series represents a new class of cost-effective and yet feature rich product solution for rural and emerging markets for competitive Internet Service Providers.

At the heart of the system is the newly designed MAC protocol optimized for efficiency and scalability in dense subscriber deployments in multipoint systems. The PPM Protocol is based on deterministic polling algorithm that will enhance the system capacity and subscriber unit count per base station. This new protocol, based on SensorTec's successful 802.11d WiMAX product lines, is designed to provide utmost performance for carriers and enterprises. AIR- LAN has its MAC protocol tuned for optimal downlink performance in order to fit the profile of traffic patterns of ISP operations.

The improved RF link performance allows more flexible deployments as well. The advanced MIMO-based OFDM technology enhances near line-of-sight connections. SensorTec's HyperARQ protocol is designed to preserve the data throughput even at long link distances.

The second Ethernet port can be used to power up another 24V device such as an IP camera or as a second LAN port.

Technical Summary

- 10/100 Base-T port
- Integrated 19 dBi dual-pol antenna
- Passive POE Support
- Water-resistant Enclosure
- Power Consumption: 9W
- Operating Temperature: -40 to 65C
- Storage Temperature: -45 to 70C
- Dimensions: 28 x 9 x 4.5 cm
- Weight of radio unit: 0.8 lb (370 g)
- Shipping info for 30 unit carton:
  54 x 41 x 41 cm, 21 kg

TECHNICAL SPECIFICATIONS

System	ST-WX5830
Operating Mode	TDD / Half-Duplex
Data Rate	100 Mbps
Link Range	3 Miles
CPE Capacity	128 CPEs per base station sector
Radio	
Frequency	4.9 GHz to 6 GHz
RF Power	18 dBm @ BPSK, 15 dBm @ 64QAM
RF Channel Size	5, 10, 20, and 40 MHz
MIMO	2 x 2, 1 or 2 streams
Modulation	OFDM — QAM64, QAM16, QPSK, BPSK
Modulation Modes	Fixed or Adaptive Coding & Modulation (ACM)
FEC	1/2, 2/3, 3/4
Media Access	PPM™ — Multipoint Polling MAC
Antenna	Built-in 19 dBi
Networking	
Ethernet Ports	Fast Ethernet port
Ethernet interface	Auto-negotiation, Full/Half Duplex, Max 100m separation between radio and shelter/closet.
QoS	• Proprietary frame aggregation • HyperARQ™ — intelligent packet correction • Line speed packet inspection of 802.1p tags
Protocol Support	• Transparent MAC layer bridging • Transparent VLAN (802.1q)
Management	• HTTP web server & Telnet • SNMP v1, v2c with private MIB • NTP for server-based time support
Security	• Line speed 128bit AES encryption • 802.1x/RADIUS authentication • MAC-based network access control

Electrical	
Voltage	24V DC, nominal
Dissipation	8W (avg), 10W (peak)
POE	Integrated POE/Power Supply
AC/DC Power	
Voltage	100-240 VAC / 50-60 Hz
Efficiency	> 85%
Mechanical	
Dimensions	28 x 9 x 4.5 cm
Weight	5.5 lb (2.5 kg)
Material	ABS Plastic Enclosure
Network Ports	RJ45 CAT5 cable, outdoor grade
Antenna Ports	None
Mounting Kits	
Fasteners	(tie wraps included metal hose clamps (optional) No elevation control
L-Bracket Dimensions	Elevation control—90 degrees 12.5 x 9 x 9 cm Note: L-Brackets are optional and sold separately.
Mast Mount	Diameter Range: 0.75 to 2 inches
Wall Mount	4 x clamps through holes

Environmental	Outdoor Radio	Indoor POE / PS
Temperature	-40 to 65 C	0 to 40 C
Humidity	5-95% condensing	20-80% non-condensing
Protection	NEMA3 / IP66	IP42
Regulatory		
FCC / IC	CFR47, Part 15, RSS-120	
EU	CE Mark	