



**AIRLAN Base Station (Connectorized)**



**AIRLAN CPE**

## CPE Technical Summary

- 10/100 Base-T port
- Integrated 17 dBi dual-pol antenna
- Passive POE Support
- Water-resistant Enclosure w/grounding
- Power Consumption: 9W
- Operating Temperature: -40 to 70C
- Storage Temperature: -40 to 90C
- Dimensions: 28 x 12 x 10 cm
- Weight of radio unit: 1 lb (450 g)
- Shipping info for 10 unit carton:  
9 x 13 x 31 inches, 24 lb (11 kg)

## Feature Summary

- 2x2 MIMO OFDM Radio Technology.
- Optimized for ISP traffic patterns with downlink priority
- radio output power— 26dBm Base station, 23 dBm CPE
- Adaptive Coding and Modulation (ACM).
- PPM<sup>tm</sup> – Polling MAC Protocol for Multipoint.
- Built-in Spectrum Analyzer.
- LED-based Antenna Alignment Tool.
- Wide Frequency range from 4.90 to 6.0 GHz.
- HyperARQ<sup>tm</sup> – Preserve system performance out to long distance.

## Product Description

As Solectek's third-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 Solectek's successful 802.11d WiMAX product lines, is designed to provide utmost performance for carriers and enterprises. AIRLAN 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 industry-leading 400mW high-output power radio extends the coverage area for a base station, while the advanced MIMO-based OFDM technology enhances near line-of-sight connections. Solectek's HyperARQ protocol is designed to preserve the data throughput even at long link distances.

For data security, the AIRLAN-Clarity system incorporates 128-bit AES hardware-based encryption at full line speed, without loss of data throughput. The AES algorithm was selected to be the standard encryption method by the US National Institute of Standards and Technology (NIST). In addition, the AIRLAN Series provides up to two levels of AAA protection through the configurable use of 802.1x/RADIUS and RF MAC authentication.

System	AR 5800 BTS	AR 5820 CPE
Operating Mode	TDD / Half-Duplex	
Data Rate	300 Mbps	
Link Range (1)	Up to 10 miles, Antenna dependent	
<b>Radio</b>		
Frequency	5.35–5.85 GHz (2)	
RF Power	400mW Max (5800), 200mW for (5820)	
RF Channel Size	10, 20, and 40 MHz	
MIMO	2 x 2, 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	External Antenna	Built-in 17 dBi
<b>Networking</b>		
Ethernet	Gig Ethernet (3)	Fast Ethernet
	Auto-negotiation, Full/Half Duplex, Max 100m separation between radio and shelter/closet.	
QoS	<ul style="list-style-type: none"> <li>Proprietary frame aggregation</li> <li>HyperARQ™ – intelligent packet correction</li> <li>Line speed packet inspection of 802.1p tags</li> <li>4 queue prioritization engine</li> </ul>	
Protocol Support	<ul style="list-style-type: none"> <li>Transparent MAC layer bridging</li> <li>Transparent VLAN (802.1q)</li> </ul>	
Management	<ul style="list-style-type: none"> <li>HTTP web server &amp; Telnet</li> <li>SNMP v1, v2c with private MIB</li> <li>NTP for server-based time support</li> <li>Filterable event log</li> </ul>	
Security	<ul style="list-style-type: none"> <li>Line speed 128bit AES encryption</li> <li>802.1x/RADIUS authentication</li> <li>MAC-based network access control</li> </ul>	

<b>Electrical</b>		
Voltage	48V DC, nominal	
Dissipation	10W (avg), 15W (peak)	
POE	Integrated POE/Power Supply	
<b>AC/DC Power</b>		
Voltage	100-240 VAC / 50-60 Hz	
Efficiency	> 85%	
AC Cord	3 prong, IEC 320 C13, country specific	
<b>Mechanical</b>		
	AR 5800 BTS	AR 5820 CPE
Dimensions	9" x 9" x 3" in	11" x 4.5" x 1" in
Weight	5.5 lb (2.5 kg)	1 lb (450 g)
Material	A380 Aluminum / ABS Plastic	
Finish	Powdercoat, Pantone 1C DuPont	
Network Ports	RJ45 via environmental seal, included	
Antenna Ports	2 N-type connector	None
<b>Mounting Kits</b>		
Dimensions	6.5" x 3.0" in / built-in for AS5820	
Deg. Freedom	3 deg (elev, azimuth, rotation) - AR5800 Azimuth – AR5820, tilt with external arm	
Adjust Range	Elevation: +/- 75 degrees Azimuth: +/- 90 degrees Polarization: 360 degrees	
Mast Mount	Mast Diameter: 0.75 to 2 inches	
Wall Mount	4 x clamps through holes	
<b>Environmental</b>		
	Outdoor Radio	Indoor POE / PS
Temperature	-40 to 65 C	0 to 40 C
Humidity	5-95% condensing	20-80% non-condensing
Protection	NEMA4 / IP67	IP42
<b>Regulatory</b>		
FCC / IC	CFR47, Part 15, RSS-120	
EU	CE Mark	

Notes: 1. based on 20 MHz, QAM16-1/2, 2 stream. RF dependent.  
2. Country specific, depends on local regulations.  
3. GigE port may not be available until May, 2011