DATA COMM FOR BUSINESS

Loop-W8110 Outdoor Wireless Bridge

Features:

- Industrial grade IP67 rugged, cast aluminum casing
- Up to 25 Km range with external antenna
- Up to 108 Mbps data rate in Turbo Mode
- Channel bandwidth adjustable 5/10/20 MHz
- 500 mW output power transmission
- Bandwidth control with QoS, VOIP and video
- Power over UTP DC supply
- Wireless isolation between wireless clients
- Professional vehicle transceiver
- IEEE 802.11g compliant up to 54 Mbps
- Up to 250 associations and 50 concurrent users
- Seamless roaming is supported between access points in the same subnet
- Wireless Distribution System (WDS) support
- Dual antenna diversity
- RF power control: Transmit power software adjustable to between 12.5% and 100% of maximum radio power
- Protocol filtering for Internet and Intranet networks
- Web and SNMP management
- RoHS compliant

Description

The Loop-W8110 is designed for high data rates. It is a long distance outdoor bridge with high RF output power (up to 500mW). With an external antenna it can be used to establish wireless links up to 25 Km.

Configurable as either an Access Point or a Repeater, it can support up to 250 Client associations and 50 concurrent users in AP mode. As a repeater, it supports one wireless uplink and 20 concurrent wireless downlinks.

The Loop-W8110 comes in an industrial grade (IP67), rugged, cast aluminum casing and is designed with mobility in mind. It is ideal for use in moving vehicles where reliable, long haul wireless communication is critical.

Ordering Information

To specify options, choose from the list below.
Note: RoHS compliant units are identified by the letter **G** appearing immediately at the end of the ordering code

Model	Description
W8110-BG-500-EANT-APBR-**G**	802.11b/g (2.4GHz to 2.4835GHz) 500mW WLAN Outdoor AP (Turbo G), Repeater, Point to Multi-Points Wireless Bridge (AP & CPE). IP67 Housing, up to 25Km range with external antenna LOS. Supports dual external antenna diversity, adjustable radio power. Standard package: AP, Mounting bracket, CD, N jack metal cover, Water tight RJ45 connector (without cable) & Quick installation guide.
W8110-A-500-EANT-APBR-**G**	802.11a (4.9GHz to 5.875GHz) 500mW WLAN Outdoor AP (Turbo A), Repeater, Point to Multi-Points Wireless Bridge (AP & CPE) IP67 Housing, up to 25Km range with external antenna LOS. Supports dual external antenna diversity, adjustable radio power. Standard package: AP, Mounting bracket, CD, N jack metal cover, Water tight RJ45 connector (without cable) & Quick installation guide.
W8110-BG-100-EANT-APB-**G**	802.11 b/g (2.4GHz to 2.4835GHz) 100mW WLAN Outdoor AP (Turbo G) & Point to Multi-Points Wireless Bridge (AP & CPE) IP65 Housing, up to 6Km range with external antenna LOS. Supports external antenna, adjustable radio power. Standard package: AP, Mounting bracket, CD, N jack metal cover, Water tight RJ45 connector (without cable) & Quick installation guide.
W8110-A-100-IANT18-APB-**G**	802.11a (4.9GHz to 5.875GHz) 100mW WLAN Outdoor Wireless AP (Turbo A) and Client/bridge (CPE). IP65 Housing, up to 8Km range, LOS. Built-in internal 18dBi antenna (5.1~5.9GHz), adjustable radio power. Standard package: AP, Mounting bracket, CD, Water tight RJ45 connector (without cable) & Quick installation guide.
W8110-BG-100-IANT14-APB-**G**	802.11 b/g (2.4GHz to 2.4835GHz) 100mW WLAN Outdoor Wireless AP (Turbo G) and Client/bridge (CPE). IP65 Housing, up to 8Km range, LOS. Built-in internal 14dBi antenna, adjustable radio power. Standard package: AP, Mounting bracket, CD, Water tight RJ45 connector (without cable) & Quick installation guide.
W8110-A-100-EANT-APB-**G**	802.11a (4.9GHz to 5.875GHz) 100mW WLAN Outdoor AP (Turbo A), Point to Multi-Points Wireless Bridge (AP & CPE). IP67 Housing, up to 8Km range with external antenna LOS. Adjustable radio power. Standard package: AP, Mounting bracket, CD, N jack metal cover, Water tight RJ45 connector (without cable) & Quick installation guide.

Accessories/Spare Parts Options

Model	Description	Note
User's Manual		
Loop-W8110-UM	User's Manual (optional, paper copy). A CD version of the manual is already included as standard equipment.	
POE Adapter (Power over Ethernet)		
Loop- ACC-POE-COMB-AC-DC-RJ2-**G**	Input: 110-240 Vac Output: Combined 48Vdc power and data	You must select a PoE adaptor and the correct power cord below.

RF Cable		
LOOP- ACC-CAB-RFC4-NM-010-NM-01-**G**	50 Ohm Low Loss RF Cable (1m) N(M) ~ N(M)	
LOOP- ACC-CAB-RFC4-NM-030-NM-01-**G**	50 Ohm Low Loss RF Cable (3m) N(M) ~ N(M)	
Water-tight RJ45 Connector		
Loop-ACC-RJ45WTCON-**G**	Water-tight RJ45 connector	
Lightning Arrestor		
LOOP- ACC-LA-2-6G-NM-NF-01-**G**	Lightning Arrestor for 2.0 to 6.0 GHz	
LOOP- ACC-LA-0-3G-NM-NF-01-**G**	Lightning Arrestor for 1.0 to 3.0 GHz	
5.8GHz Series Antenna		
LOOP- ACC-ANT-DPA-23DB-5150-5875-02-**G**	Directional Patch Antenna 23dBi (5.150 GHz ~ 5.875 GHz)	
LOOP- ACC-ANT-DPA-19DB-5150-5850-02-**G**	Directional Patch Antenna 19dBi (5.15 GHz - 5.85 GHz	
LOOP- ACC-ANT-OA-08DB-5400-5875-02-**G**	Omni Antenna 8dBi (5.4 GHz ~ 5.875 GHz)	
LOOP- ACC-ANT-OA-08DB-5725-5850-01-**G**	Omni Antenna 8dBi (5.725 GHz to 5.850 GHz)	
LOOP- ACC-ANT-OA-10DB-5725-5850-01-**G**	Omni Antenna 10dBi (5.725 GHz to 5.850 GHz)	
LOOP- ACC-ANT-OA-12DB-5725-5850-01-**G**	Omni Antenna 12dBi (5.725 GHz to 5.850 GHz)	
LOOP- ACC-ANT-PA-16DB-5725-5850-01-**G**	High Performance Panel Antenna 16dBi (5.725 GHz to 5.850 GHz)	
LOOP- ACC-ANT-PA-18DB-5100-5725-01-**G**	High Performance Panel Antenna 18dBi (5.1 GHz to 5.725 GHz)	
LOOP- ACC-ANT-SGA-24DB-5725-5850-01-**G**	Square Grid Antenna 24dBi (5.725 GHz to 5.850 GHz)	
LOOP- ACC-ANT-SGA-27DB-5725-5850-01-**G**	Square Grid Antenna 27dBi (5.725 GHz to 5.850 GHz)	
2.4GHz Series Antenna		
LOOP- ACC-ANT-OA-08DB-2400-2483-01-**G**	Omni Antenna for Base Station 8dBi (2.4 GHz to 2.483 GHz)	
LOOP- ACC-ANT-OA-12DB-2400-2483-01-**G**	Omni Antenna for Base Station 12dBi (2.4 GHz to 2.483 GHz)	
LOOP- ACC-ANT-OA-15DB-2400-2500-01-**G**	Omni Antenna for Base Station 15dBi (2.4 GHz to 2.5 GHz)	
LOOP- ACC-ANT-PA-18DB-2400-2483-01-**G**	Panel Antenna 18dBi (2.4 GHz to 2.483 GHz)	
LOOP- ACC-ANT-PA-20DB-2400-2483-01-**G**	Panel Antenna 20dBi (2.4 GHz to 2.483 GHz)	
LOOP- ACC-ANT-SGA-19DB-2400-2483-01-**G**	Square Grid Antenna 19dBi (2.4 GHz to 2.483 GHz)	
LOOP- ACC-ANT-SGA-24DB-2400-2483-01-**G**	Square Grid Antenna 24dBi (2.4 GHz to 2.483 GHz)	
Power Cord for PoE Adapter		
Loop-ACC-PC-USA	AC power cord for Taiwan/America	
Loop-ACC-PC-EU	AC power cord for the EU	
Loop-ACC-PC-UK	AC power cord for the UK	
Loop-ACC-PC-AUS	AC power cord for AUS	
Loop-ACC-PC-CH	AC power cord for China	

Loop-W8110 PRODUCT SPECIFICATIONS

W8110-BG-500-EANT 2.4 GHz Access Point / Repeater / Bridge

RF (Radio Frequency) Specifications

Frequency	2400 to 2483 MHz
Maximum Data Rate with Auto Fall Back	108 Mbps
Wireless Data Rate	54, 48, 36, 24, 12, 11, 9, 6, 5.5, 2, 1 Mbps, 108 Mbps for Turbo mode
Channels	12 channels (USA/Canada), 13 channels (Singapore, Europe except France), 14 channels (Japan)
Channel frequency step size	5 MHz
Best Channel Scanning at Power up	AP Mode only
Radio Channel Select	Determine by AP
Radio Power Control (3dB steps)	5 level from Max
Transmitter Output Power	Up to 27 dBm
Modes Supported	AP, Repeater, CPE
Nominal Antenna Port Impedance	50 ohms x 2 (for external antenna connector, if applicable)
Media Access Protocol	CSMA/CA with ACK (Carrier Sense Multi-point Access/Collision detection with acknowledgement)
Modulation Technique	DSS, DBPSK, DQPSK, CCK, OFDMBPSK, QPSK, 16QAM, 64QAM
Receiver Sensitivity	-91dBm @ 1Mbps, -90dBm @ 2Mbps, -88dBm @ 5.5Mbps
	-88dBm @ 6Mbps, -87dBm @ 9Mbps, -86dBm @ 11Mbps
	-86dBm @ 12Mbps, -84dBm @ 18Mbps, -81dBm @ 24Mbps
	-78dBm @ 36Mbps, -75dBm @ 48Mbps, -73dBm @ 54Mbps
Max distance (With suitable antenna)	Up to 25 Km, point to point
Antenna Type	2 ports for receive diversity, Tx/Rx & Rx

Ethernet Functions

Ethernet Port	10/100 Base-T (RJ-45 connector) with auto MDIX

Management Functions

Web-based management	
SNMP	V1 and V2c
Auto Associate to IP with same ESSID	
Seamless Roaming	
DHCP Client, Auto Negotiate for IP	
IP address discovery software (Viper Quick Start)	
Firmware can be upgraded through web-server and Telnet	
Number of client associations supported (AP mode)	250
Number of concurrent users supported (AP mode)	50
Number of concurrent users supported (Repeater mode)	30
Number of Wireless uplinks supported (Repeater mode)	1
Password Access control to configuration	2 Levels
Ping from Device	Through Telnet

Security and Access Control

Static WEP	Max 152 bits
MAC Address control	
Remote AP MAC Control	
WPA, 802.1x Support	In AP mode only
WPA-PSK	Pass Phase with TKIP and AES ciphers

	EAP-TLs, EAP-TTLS, EAP-GTC in access point mode
Filtering	Broadcast & Multicast
Configuration file download (Telnet)	
SNMP	V1, V2c
Filtering	Broadcast & Multicast
Web Based Management	
Configuration file download (Telnet)	
Save last good Setting	
Software Reset	
Software Factory Reset	
Multiple FTP Pass Through	
VLAN Transparent	
Bandwidth Limiting with QoS* (priority for UTP over TCP data)	*Note: When this feature is enabled, the data bandwidth is set, and the balance of bandwidth will be used for live data such as video and VoIP packets.
802.11e QoS (priority for Voice and Multimedia)	
Wireless Client to Client Isolation	For AP Mode
Suppress SSID	
WDS (Wireless Distribution System)	Enable, Disable, Disable with multiple clients behind CPE
PPoE	

Electrical

Power adapter	18~48V DC through RJ45
Power Consumption:	Typical 8.5 Watts (Maximum 9 Watts)

Physical and Environmental

Dimensions	121.3 mm x 214.2 mm x 46mm (WxHxD)
Weight	1.2Kg, module only
Power Requirement	Maximum 11 Watts
Antenna Connectors	Two (2) 50 ohm, N-type (female)
Power Over Ethernet (PoE)	Passive PoE, non-3af compliant
Operating Temperature	-35°C to +75°C
Relative Humidity when operational	20% to 90% (non-condensing)
Relative Humidity during storage	Max. 95% (non-condensing)
Ambient Storage Temperature	-40°C to +75°C
Wind Speed Support	160 Km/hr.

Standards and Compliances

IEEE Wireless Standard	802.11 b/g
IEEE Ethernet Standard	802.3, 802.3u (CSMA/CD)
Waterproof Rating	IP67
Random Vibration	IEC-68-2-64
Shock	IEC-68-2-29
Drop	IEC-68-2-32
Salt Fog	IEC-68-2-11
Solar Radiation	IEC-68-2-5
Safety	EN 60950
EMC and RFI	FCC Part 15 C
ESD	IEC 61000-4-2
Lightning Protection at Ethernet Port	
Certification	FCC

W8110-BG-100-EANT 2.4 GHz Access Point & Bridge

RF (Radio Frequency) Specifications

Frequency	2400 to 2483 MHz
Maximum Data Rate with Auto Fall Back	108 Mbps
Max. Radio TX Output	Up to 20 dBm
Channels	12 channels (USA/Canada), 13 channels (Singapore, Europe except France), 14 channels (Japan)
Channel frequency step size	5 MHz
Best Channel Scanning at Power up	AP Mode only
Radio Channel Select	Determine by AP
Radio Power Control (3dB steps)	5 level from Max
Transmitter Output Power	Up to 20dBm
Modes Supported	AP, Repeater, CPE
Nominal Antenna Port Impedance	50 ohms (for external antenna connector)
Media Access Protocol	CSMA/CA with ACK (Carrier Sense Multi-point Access/Collision detection with acknowledgement)
Modulation Technique	DSS, DQPSK, DBPSK, CCK, OFDM, BPSK, QPSK, 16QAM, 64QAM
Receiver Sensitivity	-95dBm @ 1Mbps, -91dBm @ 2Mbps, -92dBm @ 5.5Mbps
	-90dBm @ 6Mbps, -90dBm @ 9Mbps, -87dBm @ 11Mbps
	-88dBm @ 12Mbps, -86dBm @ 18Mbps, -82dBm @ 24Mbps
	-79dBm @ 36Mbps, -75dBm @ 48Mbps, -73dBm @ 54Mbps
Max distance (With suitable antenna)	Up to 15 Km, point to point
Antenna Type	Single port for external connection

Ethernet Functions

Ethernet Port	10/100 Base-T (RJ-45 connector) with auto MDIX

Management Functions

Web-based management	
SNMP	V1 and V2c
Auto Associate to IP with same ESSID	
Seamless Roaming	
DHCP Client, Auto Negotiate for IP	
IP address discovery software (Viper Quick Start)	
Firmware can be upgraded through web-server and Telnet	
Number of client associations supported (AP mode)	250
Number of concurrent users supported (AP mode)	50
Number of uplinks supported (Repeater mode)	30
Number of Wireless uplinks supported (Repeater mode)	1
Password Access control to configuration	2 Levels
Ping from Device	Through Telnet
PPPoE	

Security and Access Control

Static WEP	Max 152 bits
CPE MAC Access control	
Remote AP MAC Control	
WPA, 802.1x Support	In AP mode only
WPA-PSK	PassPhase with TKIP and AES ciphers
	EAP-TLs, EAP-TTLS, EAP-GTC in access point mode

Filtering	Broadcast & Multicast
Configuration file download (Telnet)	
SNMP	V1, V2c
Filtering	Broadcast & Multicast
Web Based Management	
Save last good Setting	
Software Reset	
Software Factory Reset	
Multiple FTP Pass Through	
VLAN Transparent	
Bandwidth Limiting with QoS* (priority for UTP over TCP data)	***Note:** When this feature is enabled, the data bandwidth is set, and the balance of bandwidth will be used for live data such as video and VoIP packets.
802.11e QoS (priority for Voice and Multimedia)	
Wireless Client to Client Isolation	For AP Mode
Suppress SSID	
WDS (Wireless Distribution System)	Enable, Disable, Disable with multiple clients behind CPE

Electrical

Power adapter	18~48V DC through RJ45
Power Consumption:	Typical 6.5 Watts (Maximum 7 Watts)

Physical and Environmental

Dimensions	250 mm x 260 mm x 80 mm (WxHxD)
Weight	900 grams, module only
Power Requirement	Maximum 7 Watts
Antenna Connector	50 ohm, N-type female for external antenna connection
Operating Temperature	-35°C to +75°C
Relative Humidity when operational	20% to 90% (non-condensing)
Relative Humidity during storage	Max. 95% (non-condensing)
Ambient Storage Temperature	-40°C to +75°C
Wind Speed Support	160 Km/hr.

Standards and Compliances

IEEE Wireless Standard	802.11 b/g
IEEE Ethernet Standard	802.3, 802.3u (CSMA/CD)
Waterproof Rating	IP67
Random Vibration	IEC-68-2-64
Shock	IEC-68-2-29
Drop	IEC-68-2-32
Salt Fog	IEC-68-2-11
Solar Radiation	IEC-68-2-5
Safety	EN 60950
EMC and RFI	EN301893, EN301489
ESD	IEC 61000-4-2
Lightning Protection at Ethernet Port	
Certification	CE

W8110-BG-100-IANT14-APB (2.4 GHz Access Point / Bridge)
W8110-BG-100-IANT14-B (2.4 GHz CPE Bridge only)

RF (Radio Frequency) Specifications

Frequency	2400 to 2483 MHz
Maximum Data Rate with Auto Fall Back	108 Mbps
Wireless Data Rate	54, 48, 36, 24, 12, 11, 9, 6, 5.5, 2, 1 Mbps, 108 Mbps for Turbo mode
Max. Radio TX Output	Up to 20 dBm
Channels	12 channels (USA/Canada), 13 channels (Singapore, Europe except France), 14 channels (Japan)
Channel frequency step size	5 MHz
Best Channel Scanning at Power up	AP Mode (only) for Access Pont/Bridge model only
Radio Channel Select	Determine by AP
Radio Power Control (3dB steps)	5 level from Max
Transmitter Output Power	Up to 20dBm
Modes Supported	Access Point/Bridge Model : AP, CPE
	Bridge Model: CPE only
Modulation Technique	DSS, DQPSK, DBPSK, CCK, OFDM, BPSK, QPSK, 16QAM, 64QAM
Receiver Sensitivity	-109dBm @ 1Mbps, -104dBm@ 6Mbps
	-101dBm @ 11Mbps, -87dBm @ 54Mbps
Max distance	6 Km, point to point (line of sight)
Antenna Type	Built-in 14 dBi directional antenna

Ethernet Functions

Ethernet Port	10/100 Base-T (RJ-45 connector) with auto MDIX

Management Functions

Web-based management	
Auto Associate to IP with same ESSID	
Seamless Roaming	
IP address discovery software (Viper Quick Start)	
Firmware can be upgraded through web-server and Telnet	
Number of client associations supported (AP Mode)	250 (Access Point/Bridge model only)
Number of concurrent users supported (AP mode)	50 (Access Point/Bridge model only)
Static IPI	
Password Access control to configuration	2 Levels
Ping from Device	Through Telnet
PPPoE	
LED Type	Power = Orange; Link = Green

Security and Access Control

Static WEP	Max 152 bits
CPE MAC Access Control	Access Point/Bridge model only
Remote AP MAC Control	Bridge model only
WPA, 802.1x Support	Access Point/Bridge model only
WPA-PSK	PassPhase with TKIP and AES ciphers
	EAP-TLs, EAP-TTLS, EAP-GTC in access point mode
Filtering	Broadcast & Multicast
Configuration file download (Telnet)	
SNMP	V1, V2c
Web Based Management	
Save last good Setting	

Software Reset	
Software Factory Reset	
Multiple FTP Pass Through	
VLAN Transparent	
Bandwidth Limiting with QoS* (priority for UTP over TCP data)	*Note: When this feature is enabled, the data bandwidth is set, and the balance of bandwidth will be used for live data such as video and VoIP packets.
802.11e QoS (priority for Voice and Multimedia)	Access Point/Bridge model only
Wireless Client to Client Isolation	Access Point/Bridge model only
Suppress SSID	Access Point/Bridge model only
WDS (Wireless Distribution System)	Access Point/Bridge model only: Enable, Disable, Disable with multiple clients behind CPE

Electrical

Power adapter	18~48V DC through RJ45
Power Consumption:	Typical 6.5 Watts (Maximum 7 Watts)

Physical and Environmental

Dimensions	255 mm x 255 mm x 55 mm (WxHxD)
Weight	700 grams, module only
Power Requirement	Maximum 8 Watts
Operating Temperature	-35°C to +75°C
Relative Humidity when operational	20% to 90% (non-condensing)
Relative Humidity during storage	Max. 95% (non-condensing)
Ambient Storage Temperature	-40°C to +75°C
Wind Speed Support	160 Km/hr.

Standards and Compliances

IEEE Wireless Standard	802.11 b/g
IEEE Ethernet Standard	802.3, 802.3u (CSMA/CD)
Transmitter Spectral Mask	ETSI EN 301893
Transmission Spurious Emission	ETSI EN 301893
Case Sealing	IP65
Random Vibration	IEC-68-2-64
Shock	IEC-68-2-29
Drop	IEC-68-2-32
Salt Fog	IEC-68-2-11
Solar Radiation	IEC-68-2-5
Safety	EN 60950
EMC and RFI	EN301893, EN301489
ESD	IEC 61000-4-2
Lightning Protection at Ethernet Port	
Certification	CE
Power over Ethernet (PoE Type)	Passive PoE, non-3af compliant

W8110-A-500-EANT 4.9GHz to 5.875GHz Access Point / Repeater / Bridge

RF (Radio Frequency) Specifications

Frequency	4900 to 5875 MHz
Maximum Data Rate with Auto Fall Back	108 Mbps
Wireless Data Rate	54, 48, 36, 24, 18, 12, 9, 6 Mbps, 108 Mbps for Turbo mode
Channels	Country dependant
Channel Bandwidth	≤ 20 MHz
Channel frequency step size	5 MHz
Best Channel Scanning at Power up	AP Mode only
Radio Channel Select	Determine by AP
Radio Power Control (3dB steps)	5 level from Max
Transmit Power	Up to 27 dBm
Modes Supported	AP, Repeater, CPE
Nominal Antenna Port Impedance	Two 50 ohm N-Type (female)
Modulation Technique	OFDM, BPSK, QPSK, 16QAM, 64QAM
Receiver Sensitivity	-90 dBm @ 6 Mbps, -89 dBm @ 9 Mbps, -88 dBm @ 12 Mbps,
	-87 dBm @ 18 Mbps, -84 dBm @ 24 Mbps, -81 dBm @ 36Mbps.
	-74 dBm @ 48 Mbps, -71 dBm @ 54 Mbps
Max distance (With suitable antenna)	Up to 25 Km, point to point
Antenna Type	2 ports for receive diversity, Tx/Rx & Rx

Ethernet Functions

Ethernet Port	10/100 Base-T (RJ-45 connector) with auto MDIX

Management Functions

Auto Associate to AP with same ESASID	
Seamless Roaming	
SNMP	V1 and V2c
IP address discovery software (Viper Quick Start)	
Firmware can be upgraded through web-server and Telnet	
Number of client associations supported (AP mode)	250
Number of concurrent users supported (AP mode)	50
Number of concurrent users supported (Repeater mode)	30
Number of Wireless uplinks supported (Repeater mode)	1
Password Access control to configuration	2 Levels
Ping from Device	Through Telnet

Security and Access Control

Static WEP	Max 152 bits
MAC Address control	
WPA/2, 802.1x Support	AP mode
CPE MAC Access Control	AP mode
Remote AP MAC Control	CPE mode
WPA-PSK	PassPhase with TKIP and AES ciphers
	EAP-TLs, EAP-TTLS, EAP-GTC in access point mode
Filtering	Broadcast & Multicast
Configuration file download (Telnet)	
Web Based Management	
Save last good Setting	
Software Reset	
Software Factory Reset	
Multiple FTP Pass Through	

VLAN Transparent	
Bandwidth Limiting with QoS (priority for UTP over TCP data)	**Note:** When this feature is enabled, the data bandwidth is set, and the balance of bandwidth will be used for live data such as video and VoIP packets.
802.11e QoS (priority for Voice and Multimedia)	
Wireless Client to Client Isolation	For AP Mode
Suppress SSID	
WDS (Wireless Distribution System)	Enable, Disable, Disable with multiple clients behind CPE

Electrical

Power adapter	18~48V DC through RJ45
Power Consumption:	Typical15 Watts (Maximum 20 Watts)

Physical and Environmental

Dimensions	121.3 mm x 214.2 mm x 46mm (WxHxD)
Weight	1.2Kg, module only
Power Requirement	Maximum 11 Watts
Antenna Connectors	Two (2) 50 ohm, N-type (female)
Power Over Ethernet (PoE)	Passive PoE, non-3af compliant
Operating Temperature	-35°C to +75°C
Relative Humidity when operational	20% to 90% (non-condensing)
Relative Humidity during storage	Max. 95% (non-condensing)
Ambient Storage Temperature	-40°C to +75°C
Wind Speed Support	160 Km/hr.

Standards and Compliances

IEEE Wireless Standard	802.11 a/h
IEEE Ethernet Standard	802.3, 802.3u (CSMA/CD)
Waterproof Rating	IP67
Random Vibration	IEC-68-2-64
Shock	IEC-68-2-29
Drop	IEC-68-2-32
Salt Fog	IEC-68-2-11
Solar Radiation	IEC-68-2-5
Safety	EN 60950
EMC and RFI	EN301893, EN301489
ESD	IEC 61000-4-2
Lightning Protection at Ethernet Port	
Certification	CE

W8110-A-100-EANT-APB (5 GHz Access Point / Bridge)

RF (Radio Frequency) Specifications

Frequency	4900 to 5875 MHz
Maximum Data Rate with Auto Fall Back	108 Mbps
Wireless Data Rate	54, 48, 36, 24, 18, 12, 9, 6 Mbps, 108 Mbps for Turbo mode
Channels	Country dependant
Channel Bandwidth	5MHz, 10MHz, 20MHz, 40MHz
Channel frequency step size	5 MHz
Best Channel Scanning at Power up	Access Point /Bridge model AP Mode only
Radio Channel Select	Determine by AP
Radio Power Control (3dB steps)	5 level from Max
Transmit Power	Up to 20 dBm
Modes Supported	Access Point /Bridge model supports AP, CPE
Modulation Technique	OFDM, BPSK, QPSK, 16QAM, 64QAM
Receiver Sensitivity	-90 dBm @ 6 Mbps, -89 dBm @ 9 Mbps, -88 dBm @ 12 Mbps,
	-87 dBm @ 18 Mbps, -84 dBm @ 24 Mbps, -81 dBm @ 36Mbps.
	-74 dBm @ 48 Mbps, -71 dBm @ 54 Mbps
Max distance	Up to 10Km LOS range
Antenna Type	1 port for receive diversity, Tx/Rx

Ethernet Functions

Ethernet Port	10/100 Base-T (RJ-45 connector) with auto MDIX

Management Functions

Auto Associate to AP with same ESSID	
Seamless Roaming	
SNMP	V1 and V2c
DHCP Client, Auto Negotiate for IP	
Static IP	
Wireless Association Status	
PPPoE	
IP address discovery software (Viper Quick Start)	
Firmware can be upgraded through web-server and Telnet	
Number of client associations supported	250
Number of concurrent users supported	50
Password Access control to configuration	2 Levels
Ping from Device	Through Telnet
LED Type	Power = Orange; Link = Green

Security and Access Control

Static WEP	Max 152 bits
WPA/2, 802.1x Support	AP mode (Access Point/Bridge model only)
CPE MAC Access Control	
Remote AP MAC Control	
WPA-PSK	PassPhase with TKIP and AES ciphers
	EAP-TLs, EAP-TTLS, EAP-GTC in access point mode
Filtering	Broadcast & Multicast
Web Based Management	
Configuration file download (Telnet)	
Save last good Setting	
Software Reset	
Software Factory Reset	
Multiple FTP Pass Through	
VLAN Transparent	

Bandwidth Limiting with QoS (priority for UTP over TCP data)	**Note:** When this feature is enabled, the data bandwidth is set, and the balance of bandwidth will be used for live data such as video and VoIP packets.
802.11e QoS (priority for Voice and Multimedia)	
Wireless Client to Client Isolation	For AP Mode
Suppress SSID	
WDS (Wireless Distribution System)	Enable, Disable, Disable with multiple clients behind CPE

Electrical

Power adapter	18~48V DC through RJ45
Power Consumption:	Typical 6.5 Watts (Maximum 7 Watts)

Physical and Environmental

Dimensions	255 mm x 255 mm x 55 mm (WxHxD)
Weight	700 g, module only
Power Requirement	Maximum 8 Watts
Power Over Ethernet (PoE)	Passive PoE, non-3af compliant
Operating Temperature	-35°C to +70°C
Relative Humidity when operational	20% to 90% (non-condensing)
Relative Humidity during storage	Max. 95% (non-condensing)
Ambient Storage Temperature	-40°C to +75°C
Wind Speed Support	120 Km/hr.

Standards and Compliances

IEEE Wireless Standard	802.11 a/h
IEEE Ethernet Standard	802.3, 802.3u (CSMA/CD)
Transmitter Spectral Masks	ETSI EN 301893
TransmitterSpurioius Emission	ETSI EN 301893
Random Vibration	IEC-68-2-64
Shock	IEC-68-2-29
Drop	IEC-68-2-32
Salt Fog	IEC-68-2-11
Solar Radiation	IEC-68-2-5
Safety	EN 60950
EMC and RFI	EN301893, EN301489
ESD	IEC 61000-4-2
Lightning Protection at Ethernet Port	
Case Sealing	IP65
Certification	CE

W8110-A-100-IANT18-APB (5 GHz Access Point / Bridge)
W8110-A-100-IANT18-B (5 GHz CPE Bridge only)

RF (Radio Frequency) Specifications

Frequency	4900 to 5875 MHz
Maximum Data Rate with Auto Fall Back	108 Mbps
Wireless Data Rate	54, 48, 36, 24, 18, 12, 9, 6 Mbps, 108 Mbps for Turbo mode
Channels	Country dependant
Channel Bandwidth	≤ 20 MHz
Channel frequency step size	5 MHz
Best Channel Scanning at Power up	Access Point /Bridge model AP Mode only
Radio Channel Select	Determine by AP
Radio Power Control (3dB steps)	5 level from Max
Transmit Power	Up to 20 dBm
Modes Supported	Access Point /Bridge model supports AP, CPE CPE Bridge model supports CPE only
Modulation Technique	OFDM, BPSK, QPSK, 16QAM, 64QAM
Receiver Sensitivity	-90 dBm @ 6 Mbps, -89 dBm @ 9 Mbps, -88 dBm @ 12 Mbps,
	-87 dBm @ 18 Mbps, -84 dBm @ 24 Mbps, -81 dBm @ 36Mbps.
	-74 dBm @ 48 Mbps, -71 dBm @ 54 Mbps
Max distance (	8 Km, point to point
Integrated Patch Antenna Gain	5.1 to 5.9 GHz: 18 dBi; 4.9 to 5.1 GHz: >14 dBi

Ethernet Functions

Ethernet Port	10/100 Base-T (RJ-45 connector) with auto MDIX

Management Functions

Auto Associate to AP with same ESSID	
Seamless Roaming	
SNMP	V1 and V2c
DHCP Client, Auto Negotiate for IP	
Static IP	
Wireless Association Status	
PPPoE	
IP address discovery software (Viper Quick Start)	
Firmware can be upgraded through web-server and Telnet	
Number of client associations supported	250
Number of concurrent users supported	50
Password Access control to configuration	2 Levels
Ping from Device	Through Telnet
LED Type	Power = Orange; Link = Green

Security and Access Control

Static WEP	Max 152 bits
WPA/2, 802.1x Support	AP mode (Access Point/Bridge model only)
CPE MAC Access Control	
Remote AP MAC Control	
WPA-PSK	PassPhase with TKIP and AES ciphers
	EAP-TLs, EAP-TTLS, EAP-GTC in access point mode
Filtering	Broadcast & Multicast
Web Based Management	
Configuration file download (Telnet)	
Save last good Setting	
Software Reset	
Software Factory Reset	

Multiple FTP Pass Through	
VLAN Transparent	
Bandwidth Limiting with QoS (priority for UTP over TCP data)	**Note:** When this feature is enabled, the data bandwidth is set, and the balance of bandwidth will be used for live data such as video and VoIP packets.
802.11e QoS (priority for Voice and Multimedia)	
Wireless Client to Client Isolation	For AP Mode
Suppress SSID	
WDS (Wireless Distribution System)	Enable, Disable, Disable with multiple clients behind CPE

Electrical

Power adapter	18~48V DC through RJ45
Power Consumption:	Typical 6.5 Watts (Maximum 7 Watts)

Physical and Environmental

Dimensions	255 mm x 255 mm x 55 mm (WxHxD)
Weight	7600 grams, module only
Power Requirement	Maximum 8 Watts
Power Over Ethernet (PoE)	Passive PoE, non-3af compliant
Operating Temperature	-35°C to +70°C
Relative Humidity when operational	20% to 90% (non-condensing)
Relative Humidity during storage	Max. 95% (non-condensing)
Ambient Storage Temperature	-40°C to +75°C
Wind Speed Support	160 Km/hr.

Standards and Compliances

IEEE Wireless Standard	802.11 a/h
IEEE Ethernet Standard	802.3, 802.3u (CSMA/CD)
Transmitter Spectral Masks	ETSI EN 301893
TransmitterSpurioius Emission	ETSI EN 301893
Random Vibration	IEC-68-2-64
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ESD	IEC 61000-4-2
Lightning Protection at Ethernet Port	
Case Sealing	IP65
Certification	CE

Application Illustrations

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