



## Loop-W8110 Outdoor Wireless Access Point/Repeater/Bridge /Professional Vehicle Transceiver

### 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
- 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

### 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.

#### RoHS Compliance Statement

This product complies with DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the restriction of the use of certain hazardous substances in electrical and electronic equipment, dated 27 January 2003, including ANNEX.






**CERTIFIED  
ISO-9001**

## 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 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: POE adaptor, AP, Mounting bracket, CD, 3m Ethernet Cable & Quick installation guide.
W8110-A-500-EANT-APBR-G	802.11a 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: POE adaptor, AP, Mounting bracket, CD, 3m Ethernet Cable & Quick installation guide.
W8110-BG-100-EANT-APB-G	802.11 b/g 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: POE adaptor, AP, Mounting bracket, CD, 3m Ethernet Cable & Quick installation guide.
W8110-A-100-IANT18-APB-G	802.11a 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: POE adaptor, AP, Mounting bracket, CD, 3m Ethernet Cable & Quick installation guide.
W8110-A-100-IANT18-B-G	802.11a 100mW WLAN Outdoor Wireless Client/bridge (CPE) IP65 Housing, up to 8km range, LOS. Built-in internal 18dBi antenna (5.1~5.9 GHz), adjustable radio power. Standard package: POE adaptor, AP, Mounting bracket, CD, 3m Ethernet Cable & Quick installation guide.
W8110-BG-100-IANT14-APB-G	802.11 b/g 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: POE adaptor, AP, Mounting bracket, CD, 3m Ethernet Cable & Quick installation guide.
W8110-BG-100-IANT14-B-G	802.11 b/g 100mW WLAN Outdoor Wireless Client/bridge (CPE) IP65 Housing, up to 8km range, LOS. Built-in internal 14dBi antenna, adjustable radio power. Standard package: POE adaptor, AP, Mounting bracket, CD, 3m Ethernet Cable & Quick installation guide.
<b>Accessories/Spare Parts Options</b>	
<b>User's Manual</b>	
Loop-W8110-UM	User's Manual (optional, paper copy). A CD version of the manual is already included as standard equipment.

<b>POE Adapter</b>		
W8110-PUTP-Combiner-06-G	Power Over UTP Combiner (combine 48v DC power and Data)	
<b>RF Cable</b>		
W8110-RFC400-010-NN-G	50 OHM Low Loss RF Cable (1m) N(M) ~ N(M)	
W8110-RFC400-030-NN-G	50 OHM Low Loss RF Cable (3m) N(M) ~ N(M)	
<b>Lightning Arrestor</b>		
W8110-Arrestor-01-G	Lightning Arrestor	
<b>5.8GHz Series Antenna</b>		
W8110-ANT5-D23-G	Directional Patch Antenna 23dBi (5.150GHz ~ 5.875GHz)	
W8110-ANT5U-DP20-G	Directional Patch Antenna 20dBi, upper band, 5.4 - 5.85GHz	
W8110-ANT5U-OD8-G	Omni directional Antenna 8dBi (5.4GHz ~ 5.875GHz)	
W8110-ANT5L-OD8-G	Omni directional Antenna 8dBi (4.9GHz~5.325GHz)	
<b>2.4 GHz Series Antenna</b>		
W8110-ANT2-GP24-G	Grid Parabolic Antenna 24dBi	
W8110-ANT2-GP18-5-G	Grid Parabolic Antenna 18.5dBi	
W8110-ANT2-DP12-G	Directional Patch Antenna 12dBi (Wall mounting only)	
W8110-ANT2-DP12Mount-G	Pole Mounting Kit for 12dBi antenna (ANT-DP12)	
W8110-ANT2-OD8-G	Omni directional Antenna 8dBi	
<b>Power Cord for Poe Adapter</b>		
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 for 2.4 GHz Radio](#)

### [RF \(Radio Frequency\) Specifications](#)

Frequency	2400~24835MHz				
Wireless Data Rate	54, 48, 36, 24, 12, 11, 9, 6, 5.5, 2, 1 Mbps 108 Mbps for Turbo mode				
Channels	11 channels (USA/Canada), 13 channels (Singapore, Europe except France), 14 channels (Japan)				
Transmitter Output Power	Up to 27 dBm ± 2 dBm				
Nominal Antenna Port Impedance	50 ohms x 2 (for external antenna connector, if applicable)				
Media Access Protocol	Carrier Sense Multi-point Access/Collision detection with acknowledgement (CSMA/CA with ACK)				
Modulation Technique	DSS, DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16QAM, 64QAM				
Receiver Sensitivity	Bit Rate	54 Mbps	11 Mbps	6 Mbps	1 Mbps
	Error Rate	10%	8%	10%	8%
	Signal	-73 dBM	-86dBm	-88dBm	-91dBM

### [Ethernet Functions](#)

Ethernet Port	10/100 Base-T (RJ-45 connector) with auto MDIX
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### [Management Functions](#)

Web-based management	
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	50

supported (AP mode)  
 Number of Wireless uplinks supported (Repeater mode)

1

**Security**

Static WLAN WEP Max 152 bits  
 MAC Address Access Control  
 WPA with Radius Server EAP-TLS, EQP-TTLS, PEAP (EAP-GTC) in access point mode  
 WPA-PSK AES  
 TKIP

**Electrical**

Power adapter 18~48V DC through RJ45  
 Power Consumption: Typical 8.5 Watts, 9.0 Watts Max

**Physical and Environmental**

Dimensions 121.3 mm x 214.2 mm x 46mm (WxHxD)  
 Antenna Connectors Two (2) 50 ohm, N-type (female)

Operating Temperature -35°C ~ +75°C  
 Relative Humidity (non-condensing) Max. 95%

**Standards and Compliances**

IEEE Wireless Standard 802.11 b/g/e  
 Drop IEC-68-2-32  
 Salt Fog IEC-68-2-11  
 Solar Radiation IEC-68-2-5 IEC-68-2-5  
 Safety EN 60950  
 EMC and RFI FCC Part 15 C  
 ESD IEC 61000-4-2  
 Certification W8110-BG-500-EANT-APBR-**G** In approval process  
 W8110-BG-100-EANT-APB-**G** EN 300 328 V1.6.1 (2004-11),  
 W8110-BG-100-IANT14-APB-**G** EN 50385:2002,  
 W8110-BG-100-IANT14-B-**G** EN 301 489-1 V1.4.1 (2002-08),  
 EN 301 489-17 V1.21 (2002-08).

**Loop-W8110 PRODUCT SPECIFICATIONS for 5.8 GHz Radio**

**RF (Radio Frequency) Specifications**

Frequency 4900~5875MHz  
 Wireless Data Rate Maximum 108Mbps with Auto Fall Back  
 Transmitter Output Power Up to 27 dBm  
 Channels Varies according to country code  
 Channel Bandwidth ≤20MHz  
 Channel Frequency Step Size 5MHz  
 Radio Power Control (3dB steps) 5 levels from Max  
 Modulation OFDM, BPSK, QPSK, 16-QAM, 64-QAM  
 Receiver Sensitivity

Bit Rate (Mbps)	6	9	12	18	24	36	48	54
Signal (dBm)	-88	-87	-86	-84	-81	-78	-75	-73

**Ethernet Functions**

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

**Management Functions**

Auto Associate to AP with same ESSID  
 DHCP Client Auto negotiate for IP  
 Seamless Roaming  
 Static IP  
 Wireless association status

Firmware upgrade while in use	Will not interfere with operation but you must reboot to start new firmware
Web based management	
Configurable through Telnet	
Can Ping from device via Telnet	
Password access controls to configuration	2 levels
Number of client associations supported (AP mode)	250
Number of concurrent users supported (AP mode)	50
Number of Wireless uplinks supported (Repeater mode)	1
Number of concurrent users supported (Repeater)	30
Uplink and Downlink packets and bytes counters	
User pre-set range between BS	

### **Security**

Static WEP	Max 152 bits
MAC Access Control	
WPA, 802.1x support	IAP mode only
WPA-PSK	Pass Phase with TKIP and AEDS cipher via Telnet
Configuration file download	
Firmware upgrade	
Filtering	Broadcast and multicast
Multiple FTP pass through	
Bandwidth limiting with QoS	When enabled, the data bandwidth is set. The balance of the bandwidth is used for live data such as video and VoIP packets.
QoS	Priority for voice and multimedia
Wireless client to client isolation	AP mode
SNMP	V1, V2C
VLAN Transparent	
Multiple FTP passthrough	
Suppress SSID	
Software reset	

### **Electrical**

Power over Ethernet	Passive PoE, non-3af compliant
Power requirement (estimate)	11W max

### **Physical and Environmental**

Dimensions	121.3 mm x 214.2 mm x 48mm (WxHxD)
Weight	1.2 Kg. (module only)
Antenna Type	Two ports for receive diversity: Tx/Rx and Rx
Power requirement (estimate)	11W max
Operating Temperature	-35°C ~ +60°C( industrial model)
Relative Humidity (non-condensing)	Max. 95%
Wind speed support	120km/hr. (Maxi)
Waterproof rating	IP67

### **Standards and Compliances**

RoHS compliant	
IEEE Wireless Standard	802.11 a/h
IEEE Ethernet Standard	802.3, 802.3ui (CSMA/CD)
Drop	IEC-68-2-32
Shock	IEC-68-2-11
Random Vibration	IEC-68-2-64
Solar Radiation	EN 60950
EMC and RFI	EN 301893, EN 301489C
ESD	IEC 61000-4-2

Certification	W8110-A-500-EANT-APBR-G	In approval process
	W8110-A-100-IANT18-APB-G	EN 300 328 V1.6.1 (2004-11),
	W8110-A-100-IANT18-APB-G	EN 301 489-1 V1.4.1 (2002-08),
		EN 301 489-17 V1.21 (2002-08),
		EN 50385:2002,
		EN 60950-1:2001
Transmitter Spectral Masks	ETSI EN 301893	
Transmitter Spurious Emission	ETSI EN 301893	

## Application Illustrations



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