ALICO SYSTEMS INC.

Ruggedized Enterprise Class High Power Integrated Wireless Access Point + Router

AP58-LFR Key Features

- ♦ **802.11a** capable 54 Mbps Wireless Access Point
- ♦ **Amplified** Super Range 400 mW radio with a choice of external antennas such as omni, sector, flat panel, dish, or mobile
- ♦ **Weatherproof** - attractive cast aluminum NEMA 4 packaging works indoors or outdoors; N-Female connectors for RF and standard a weather proof RJ45 Ethernet connector
- ♦ **POE** - Universal Input (110/240 VAC) 48VDC Power Supply with Power Over Ethernet (POE) Injector (Low voltage special factory option available)
- ♦ **VLAN** – supports 802.1Q VLAN protocol; up to 4095 VLAN interfaces per physical Ethernet interface
- ♦ **VAP** – Virtual Access Point support. Setup up to 128 SSIDs on the Wireless LAN with their own unique MAC addresses, router, DHCP/NAT and security settings
- ♦ **Security** - Wired Equivalent Privacy (WEP) and WiFi Protected Access (WPA) capable, AES Encryption
- ♦ **Wireless Distribution System** - Allows packets to pass from one wireless AP to another
- ♦ **Bandwidth** control capability on wireless and Ethernet side
- ♦ **Firewall** - built in configurable firewall capability with stateful packet filtering and NAT
- ♦ **Router** - full functionality, DHCP server and client, DNS server and client, and bridging; WLAN peer to peer user access control; RIP v1 / v2, OSPF v2, BGP v4, Universal Plug and Play support
- ♦ **DSL Support** - PPoE protocol for connection to DSL modem
- ♦ **Hotspot** support with Radius authentication and accounting
- ♦ **Second Radio Option** - second radio can be ordered as a 2.4 GHz AP/bridge, 5.8 GHz AP/bridge or a CPE
- ♦ **Tools** - ping; traceroute; bandwidth test; ping flood; Telnet; SSH; packet sniffer; Dynamic DNS update tool
- ♦ **Winbox** – Microsoft Windows based AP configuration tool allows access to all AP58-LFR functions

Package Includes

1. Cast Aluminum NEMA 4 enclosure
2. Power over Ethernet Injector with Surge Suppressor & 48VDC power supply; 110/240 VAC input. CAT-5 cable can be ordered separately.
3. CDROM with Windows based configuration software.

Mechanical Specifications

- ♦ 11" x 6.6" x 3.5" dimensions
- ♦ 10 lbs weight
- ♦ 15W max power consumption
- ♦ Grey cast Aluminum NEMA 4 Enclosure
- ♦ N Female connectors
- ♦ Weatherproof RJ45 Connector

Overview

The AP58-LFR is a ruggedized enterprise class wireless AP developed to provide outstanding functionality. This product is ideal for providing maximum coverage for wireless distribution to business and homes. It is easy to install with a choice of antennas including high gain omni (up to 15 dBi), sector (up to 17 dBi), flat panel (up to 26 dBi), parabolic dish (up to 32 dBi), or a mobile omni (up to 9 dBi).

Power to the AP58-LFR is provided by the CAT-5 Ethernet cable using a 48VDC Power Over Ethernet module. The AP58-LFR is designed with a weatherproof Ethernet connector which allows the use of a standard CAT-5 cable. The AP58-LFR includes a full router capability typically available only on standalone enterprise class routers. Flexibility and scalability is the key hallmark of the AP58-LFR Series with features such as full VLAN capability on the Ethernet interface.

Wireless Access Point

The AP58-LFR provides complete support for IEEE 802.11a and 802.11b/g (for second radio option) wireless networking standards. There are several features implemented for the wireless data communication in the AP58-LFR - WPA (Wi-Fi Protected Access), WEP (Wired Equivalent Privacy), WDS (Wireless Distribution System), DFS (Dynamic Frequency Selection), Alignment mode (for positioning antennas and monitoring wireless signal), disable packet forwarding among clients, and others. Some of the major features are:

- ♦ Virtual Access Point (VAP) capability can be used to provide additional virtual APs. Create a new AP with different **SSID** and **MAC-address**. It can be compared to a VLAN where the **SSID** from VAP is the VLAN **tag** and the hardware interface is the VLAN switch. Up to 128 VAP interfaces with their own settings can be configured for each wireless LAN interface.
- ♦ WDS (Wireless Distribution System) allows packets to pass from one wireless AP (Access Point) to another, just as if the APs were ports on a wired Ethernet switch. APs must use the same standard (802.11a, 802.11b or 802.11g) and work on the same frequencies in order to connect to each other.
- ♦ Security - The Wi-Fi Protected Access is a combination of 802.1X, EAP, MIC, TKIP and AES. The WEP encrypts data between 802.11 devices. It supports 40 bit and 104 bit keys.

Routing & Networking

The AP58-LFR includes a router. Major features are:

♦ Routing - Static routing; Equal cost multi-path routing; Policy based routing; RIP v1/v2, OSPF v2 and BGP v4

♦ Firewall and NAT - Stateful packet filtering; source and destination NAT; classification by source MAC, IP addresses and address types, port range, IP protocols, interfaces, internal packet and connection marks ToS (DSCP) byte, content, matching sequence/frequency, packet size, time, etc.

♦ Bandwidth Management & QoS - limit data rate for certain IP addresses, subnets, protocols, ports and other parameters; limit peer to peer traffic; prioritize some packet flows over others; use queue bursts for faster web browsing; apply queues on fixed time intervals, share available traffic among users equally, or depending on the load of the channel.

♦ HotSpot Gateway - authentication of clients using local client database, or RADIUS server accounting using local database, or RADIUS server Walled-garden system (accessing some web pages without authorization).

♦ SOCKS - proxy server that allows TCP based application data to relay across the firewall, even if the firewall would block the packets. The SOCKS protocol is independent from application protocols, so it can be used for many services, e.g., WWW, FTP, TELNET, and others.

♦ VLAN - an implementation of the 802.1Q VLAN protocol. It allows multiple virtual LANs on a single Ethernet interface, giving the ability to segregate LANs efficiently. It supports up to 4095 VLAN interfaces per Ethernet interface.

Integrated Second Radio Option

The AP58-LFR can be ordered with an optional integrated second radio (2.4/5.8GHz 802.11bg or a unit). The second (400 mW) radio connects to a N-Female bulkhead connector. This radio can be setup as a second AP with an external antenna or as a point to point radio for wireless backhaul. For the wireless backhaul application the radio can be set in a bridge mode providing a dedicated 30 Mbps link. With an appropriate antenna and mounting scheme the point to point link can connect up to 50 KMs. The wireless link can also be setup with our proprietary protocol providing enhanced performance. A single Ethernet connection supports both radios with full routing capability.

Provisioning & Monitoring

The AP58-LFR can be provisioned with a MS Windows based application program called "Winbox". Other options to provision the AP58-LFR include a Telnet or SSH capability, using a powerful command line interface.
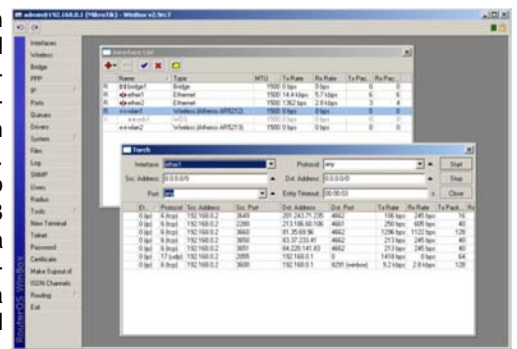
Runtime configuration and monitoring can be performed on the AP58-LFR. Some of the monitoring functions include a Wireless Sniffer to sniff packets from the wireless network, a net watch tool, and a traffic monitor tool. The traffic monitor tool is used to execute scripts when the interface traffic crosses a threshold.

Ordering Information (Professional Installation Required)			
Type	**Model**	**Description**	**Part #**
Single Radio	AP58-LFR-00	♦ 5.8 GHz 802.11a high power access point with N-Female connector, external antenna ordered separately ♦ Power Over Ethernet	211-5800-0000
Dual Radio	AP58-LFR-58	♦ 5.8 GHz 802.11a high power access point with N-Female connector, external antenna ordered separately ♦ **Second 5.8 GHz 802.11a radio** with N–Female connector, external antenna ordered separately ♦ Power Over Ethernet	211-5800-5800
Dual Radio	AP58-LFR-24	♦ 5.8 GHz 802.11a high power access point with N-Female connector, external antenna ordered separately ♦ **Second 2.4 GHz 802.11b/g radio** with N–Female connector, external antenna ordered separately ♦ Power Over Ethernet	211-5800-2400

Specifications subject to change without notice: