EC4501 Wi-Fi

User Guide

Beta Draft

SIERRA WIRELESS

Rev 1.0

1: LAN/WiFi Configuration

The LAN/WiFi tab that displays in ACEmanager is applicable across all Sierra Wireless AirLink GX400/440 devices.

Note: The LAN/WiFi tab only displays in ACEmanager when a WiFi card is installed in the AirLink device. If a WiFi card is not installed, this tab will display as LAN.

The primary purpose of the AirLink LS300 is to route data from one or more devices connected to one or more of the ports to the cellular network and, ultimately, under most circumstances, to the Internet.

Public and Private Mode

To support some legacy installations, the AirLink device can act as a one-to-one gateway giving the cellular network granted IP address directly to a connected device. This is Public mode.

Since the one-to-one gateway configuration will not allow the flexibility of a LAN environment where several devices can connect to the AirLink device, Private Mode provides a NAT environment with an optional DHCP server.

Tip: *When using Public mode, Sierra Wireless recommends connecting the device directly to the computer or other end device. Using a hub or switch may prevent the AirLink LS300 from updating the IP address of the end device when an IP address is received from the cellular network.*

In ACEmanager, the Host Public mode and DHCP settings are part of the LAN/WiFi tab**.** Subtabs of the LAN/WiFi tab address the configuration of each interface or network type.

DHCP/Addressing

This section is mostly a status display of the configurations with a few options which are global to all the interface types. Interfaces which are enabled in the current configuration will be displayed with their configured settings.

DHCP addresses and subnets assigned to the physical LAN side interfaces display. When WiFi is bridged to Ethernet, Ethernet and WiFi on the same subnet display.

Note: If the device has not been reset since configuration changes were made the current configuration in use may be different.

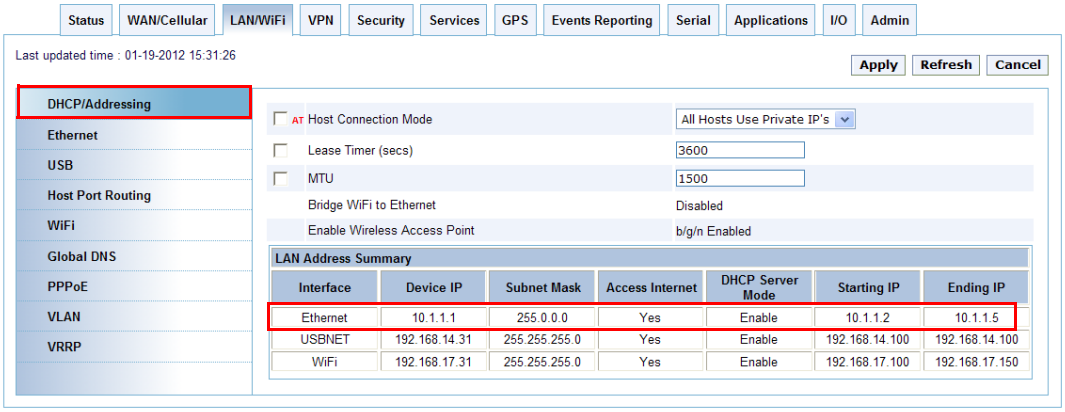

Figure 1-1: ACEmanager: LAN - DHCP/Addressing

Note: Bridging between the WLAN and USBnet is not supported.

Field	Description
Host Connection Mode	Sets the Host Interface that uses the Public IP address granted by the cellular network or if all should use private IP addresses. All host interfaces which are not using the public IP address will use private IP addresses. Options: 0 = Ethernet Uses Public IP; 1 = All Hosts Use Private IP's - (Default) 2 = USB Uses Public IP *Note: The connected computer receives the DHCP address from ALEOS and, it has the default router set up to device IP.*
Lease Timer (secs)	Configurable DHCP lease time.
MTU	Sets the maximum transmission unit size.
Bridge WiFi to Ethernet	Displays the state of the WiFi bridge to the Ethernet: Options: Enabled or Disabled.

Field	Description
LAN Address Summary	Displays the interfaces which have been enabled. By default, only the Ethernet and USBNET Interfaces are enabled.
Interface	The physical interface port or VLAN ID.
Device IP	The IP address of the AirLink device for the specified interface port.. By default, this is set to 192.168.13.31 for Ethernet/WiFi and 192.168.14.31 for USB/net.
Subnet Mask	The subnet mask indicates the range of host IP addresses which can be reached directly. Changing this will limit or expand the number of clients that can connect to the AirLink device. The default is 255.255.255.0 and means that 254 clients can connect to the AirLink device. Using 192.168.13. as the first three octets of their IP address if the device IP is 192.168.13.31.
Access Internet	Appears if the interface is configured to allow connected host(s) access to the Internet.
DHCP Server Mode	Indicates if the interface will have a DHCP server enabled to provide dynamically allocated IP addresses provided to connected hosts.
Starting IP	Ethernet DHCP pool starting IP address.
Ending IP	The ending IP for the interface. If the starting and ending IP are the same, there is a single address in the pool and only one host will receive an IP address from the DHCP server for that interface. Some interfaces, such as USB, can only have a single host connection. For others, statically assigned IP addresses in the same subnet but outside of the DHCP pool will still be able to connect and use the device in the same way as a DHCP connected host.

Tip: *If you are using Private Mode for all hosts (*HOSTPRIVMODE=1), you need to make sure that device IP, Starting IP, and Ending IP are on the same subnet defined by the DHCP network mask. If the subnet mask is 255.255.255.0, it is safe to use 192.168.x.y for each as long as the x is the same number (0 in the example screen shot above) and the y is different (1 and 2 in the example) and between 0 and 254.*

Internal DHCP Server

DHCP (Dynamic Host Configuration Protocol) has become a primary component of today's network environments. DHCP allows one server to automatically and dynamically allocate network IP addresses and other network related settings (such as subnet masks, routers, etc.) to each computer or device without the need to set up each specifically or keep track of what addresses have already been used.

In a default configuration, the AirLink LS300 acts as a DHCP host to any device connected to its ports. This DHCP host provides that device with an IP address which can be used to communicate on the Internet. In Public Mode, that will be the IP address assigned by the cellular network. In Private Mode, that will be the IP addresses defined in the LAN pages.

Address Assignment in Public Mode

1. When the AirLink LS300 registers on the cellular network, it is assigned an IP address from the carrier, e.g., 10.1.2.0.
2. When using a specific interface, the AirLink device acts as a DHCP server unless disabled. When the Host Connection Mode is Ethernet Uses Public IP, and the AirLink LS300 receives a DHCP request from an Ethernet device connected to its ports, it hands off the assigned address to the device and sets up the default gateway address as 10.1.2.1. If the fourth octet value is already a 1, it assigns 10.1.2.2 as the router address.

Note: The primary gateway to the cellular network, for any connected device, is enabled by default.

3. The AirLink LS300 also sends a /24 netmask (255.255.255.0 by default) and sets up a static route which maps 192.168.13.31 (or the address configured with *HOSTPEERIP if it is changed) to 10.1.2.1 (or 10.1.2.2 if that was what the gateway address was given as).

Tip: *When PPPoE is used with the AirLink LS300, the DHCP server needs to be disabled. A tunnel is set up connecting a device (such as your computer or a router) with the AirLink device. The device will then use the MAC address of the AirLink LS300 to send all outgoing packets.*

Ethernet

The AirLink device is equipped with an Ethernet port which can be enabled or disabled as needed. When the Ethernet port is disabled, no host can use the device on the Ethernet port with either a DHCP address or a statically assigned address. No ARP queries will receive a response on the Ethernet port.

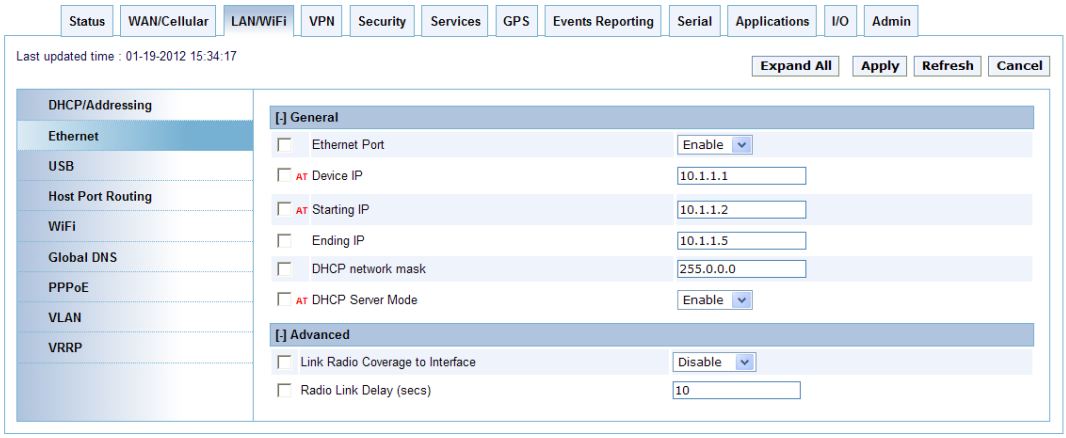

Figure 1-2: ACEmanager: LAN - Ethernet

Field	Description
General	
Ethernet Port	Enabled or disabled.
Device IP	The Ethernet IP address of the AirLink device. By default this is set to 192.168.13.31.
Starting IP	Ethernet DHCP pool starting IP address. *Note: If only one computer or device is connected directly to the Ethernet port, this is the IP address it will be assigned.*
Ending IP	The ending IP for the Ethernet interface DHCP pool.
DHCP network mask	The Netmask given to any Ethernet DHCP client.
DHCP Server Mode	Enabled or disabled. By default, the Ethernet DHCP server is enabled. Disabling the DHCP server will require all connected clients to have static IP addressing. Static IP hosts need to be within the same subnet as defined by the device IP and DHCP network mask.

Field	Description
Advanced	
Link Radio coverage to Interface	This disables the specified port when there is no cellular coverage. Options: • Disable • Ethernet • USB Default: Disable
Radio Link Delay (secs)	The delay in seconds before the selected interface goes down when there is no cellular coverage.

USB

The AirLink LS300 is equipped with a USB port which increases the methods by which you can send and receive data from a connected computer. The USB port can be set to work as either a virtual Ethernet port or a virtual serial port, or be disabled to prevent access by USB. A driver installation is required to use the USB port in either mode.

By default, the port is set to work as a virtual Ethernet port.

Note: It is recommended that you use a USB 2.0 cable with your AirLink LS300 and connect directly to your computer for best throughput.

To change the USB port to allow virtual serial port communication in ACEmanager in the LAN > USB group, choose USB Serial as the USB Device Mode. To disable the USB port, select Disable from the same menu.

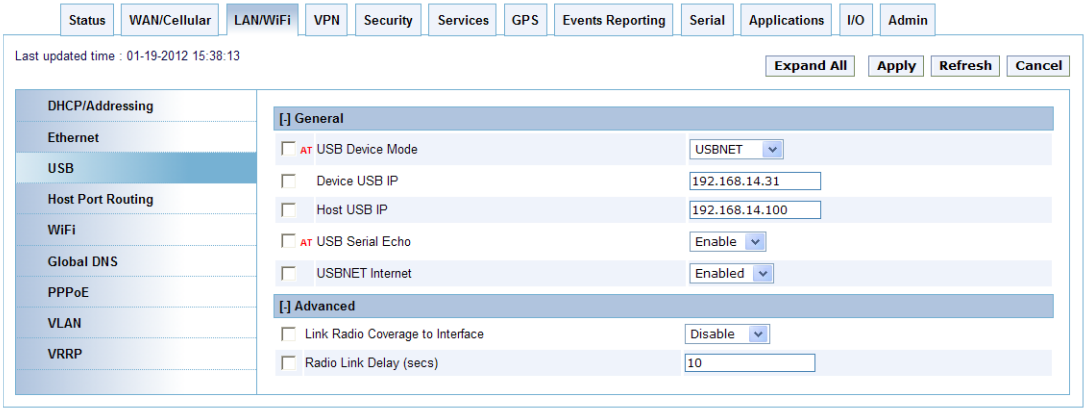

Figure 1-3: ACEmanager: LAN - USB

Note: There are USB/net and USB/serial drivers available for Windows XP and Windows 7 32-bit with a separate pair of drivers for Windows 7 64-bit. USB/serial works with Linx CDC-ACM drivers.

Note: A device reboot is required to activate the USB mode change.

Field	Description
General	
USB Device Mode	*USBDEVICE=n 1 - USBNET 0 - USB Serial 2 - Disabled This parameter alters the default startup data mode for the USB port.
Device USB IP	The USB/net IP address of the AirLink device. By default this is set to 192.168.14.31.
Host USB IP	The IP for the computer or device connected to the USB port.
USB Serial Echo	Toggle AT command echo mode when the USB is configured for virtual serial. 0 = OFF; 1 = ON
USBNET Internet	Enabled (default) or Disabled.
Advanced	
Link Radio Coverage to Interface	This disables the specified port when there is no cellular coverage. Options: • Disable • Ethernet • USB Default: Disable
Radio Link Delay (secs)	The delay in seconds before the selected interface goes down when there is no cellular coverage.

Installing the USB Drivers for Windows

Virtual Ethernet is the default setting for the USB port. If you want to install the virtual serial port, change the Device Mode to USB Serial

When you connect the AirLink LS300 for the first time to a USB port on your computer, Windows will detect a new device and prompt you to install the driver.

Note: The directions in this section are for Windows XP. To install the drivers under Windows 7, you will need to start the driver installation from the Windows Device Manager.

Note: Windows will see each port type as a different USB device and will see every port on your computer separately. If you change the port type on the AirLink LS300 or connect to a different USB port on your computer or hub, Windows will see it as a new device.

Figure 1-4: Found New Hardware Wizard

a. To start the install of the USB virtual Ethernet driver, select No, not this time and click Next.

b. Select Install from a list of specific location and click Next.

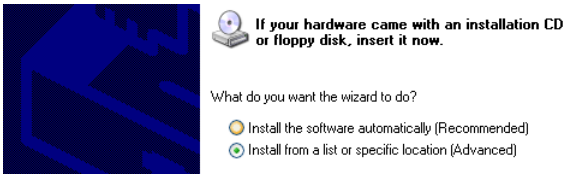

Figure 1-5: Hardware Wizard: Location options

a. Select and/or enter the location of the driver.

- If the driver is on the CD and the CD is in your drive, you can just select Search removable media.
- If you have installed ACEmanager or the Setup Wizard, the drivers have been conveniently copied to your hard drive. Enter C:\Program Files\Common Files\AirLink as the location to search.
- If you will be installing the driver from a file downloaded from the Sierra Wireless website, select Include this location in the search and type in the location where you downloaded the file.

b. Click Next.

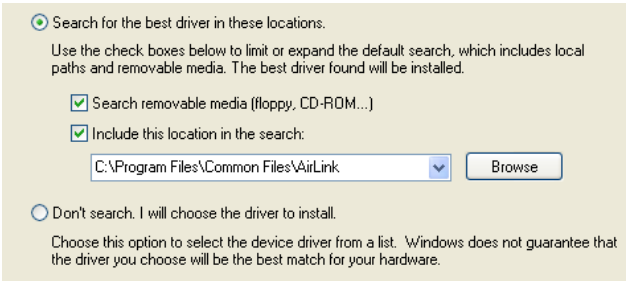

Figure 1-6: Hardware Wizard: Install location

After you select the location, the installation should begin. If you get a message asking if you want to continue the installation, click Continue Anyway.

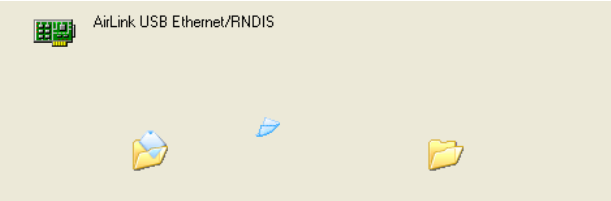

Figure 1-7: Hardware Wizard: Installing

c. Click Finish to complete the installation. The driver should be enabled without any need to reboot your computer.

Figure 1-8: Hardware Wizard: Finish

Virtual Ethernet

The USB Ethernet connection will show up in your Network Connections window as a Local Area Connection.

Tip: *If you also have an Ethernet card on the computer or have installed the USB Ethernet to more than one USB port on your computer, the USB Ethernet may show up with a number.*

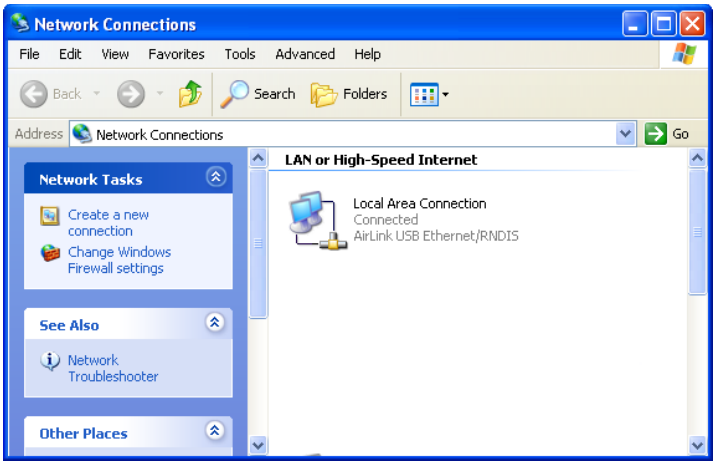

Figure 1-9: Network Connections

Note: By default, your Host IP for USB/net is 192.168.14.100.

You can also verify the installation by looking in the Device Manager.

a. Click on Start > Control Panel.

b. Double-click on the System icon.

c. Select the Hardware tab, and click the Device Manager button.

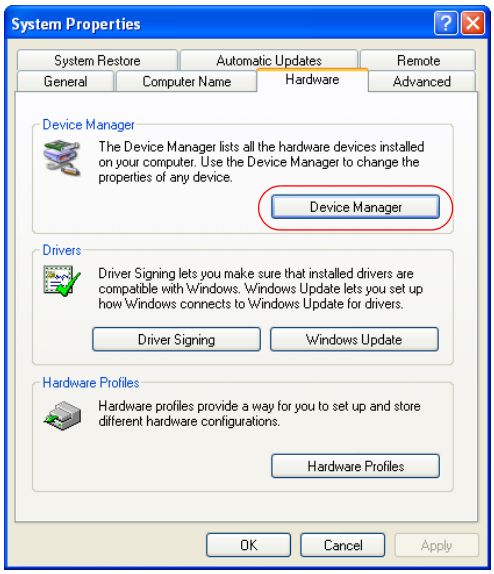

Figure 1-10: System Properties

d. Click on the + in front of *Network Adapters*.

The newly installed driver, AirLink USB Ethernet/RNDIS, should be displayed. If the driver is displayed with a # and number behind the driver name (e.g., AirLink USB Ethernet/RNDIS #2), it means more than one is installed on your computer, most likely for a different USB port. More than one copy of the driver should not cause any problems since only the connected port and its driver would be active.

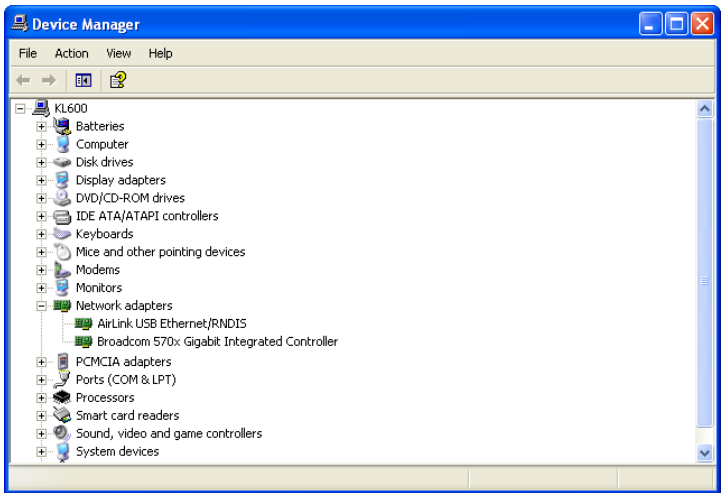

Figure 1-11: Device Manager - Ethernet

Once the driver is installed, you can use the USB port just like a standard Ethernet port.

Virtual Serial

Verify the installation by looking in the Device Manager.

a. Click on Start > Control Panel.

b. Double-click on the System icon.

c. Select the Hardware tab, and click the Device Manager button.

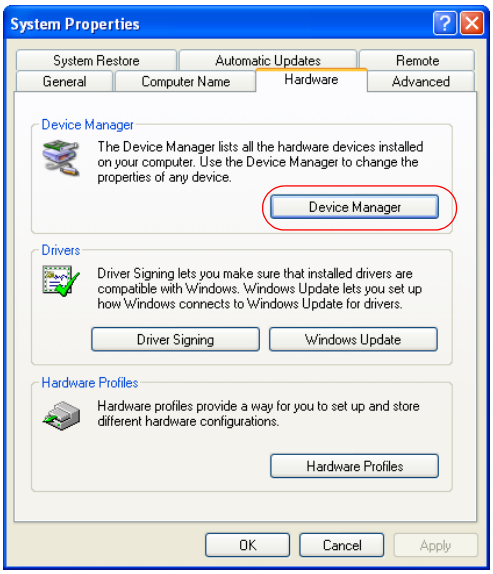

Figure 1-12: System Properties

d. Click on the + in front of *devices*.

The newly installed driver, AirLink USB Serial Port, should be displayed.

Tip: *If the driver is displayed with a number sign (#) and number behind the driver name (e.g., AirLink USB Serial Port #2), more than one driver is installed on your computer, most likely for a different USB port. More than one copy of the driver should not cause any problems since only the connected port and its driver would be active.*

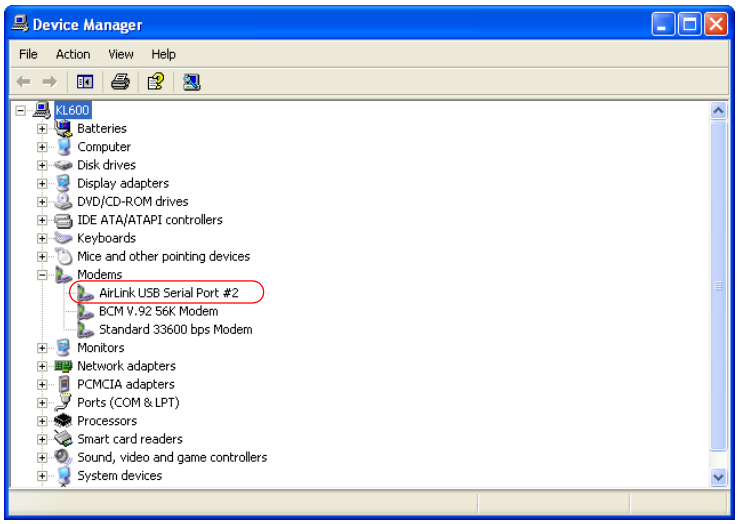

Figure 1-13: Device Manager - Serial

To connect to the device using the USB virtual serial, most applications or utilities will require you to select or enter the serial (COM) port number. The USB connection will appear as a standard serial port, so you will need to determine its number to connect to it. The driver installation will automatically assign a port, or you can change it if you wish to another unused port.

a. From the Device Manager, right click on the driver name and select Properties.

Figure 1-14: Device Manager: Driver menu

b. Select the Advanced tab and click the Advanced Port Settings button.

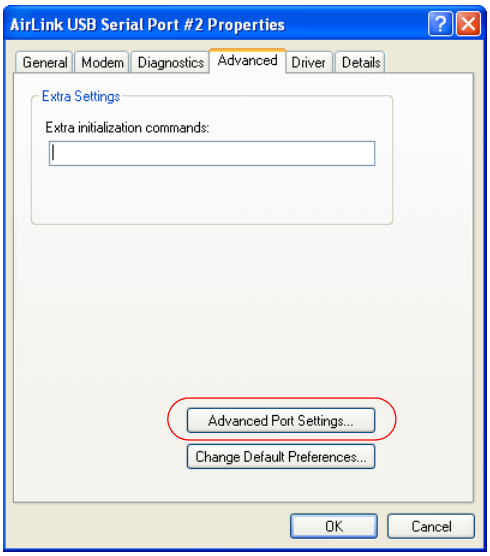

Figure 1-15: Driver Properties

c. At the bottom of the screen, the current port used will be listed. Use the drop down menu to select an available COM port number if you need to change it.

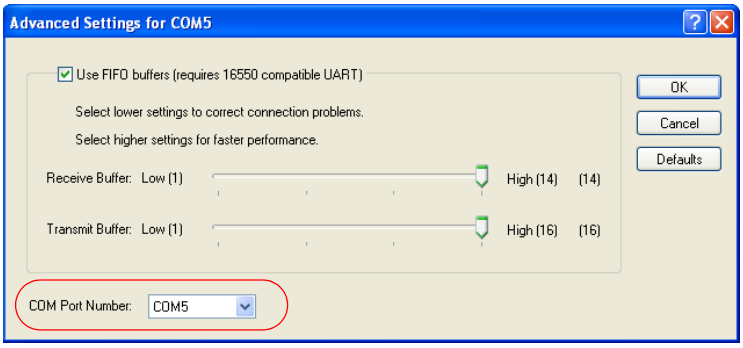

Figure 1-16: Advanced Settings

Note: The COM port number assigned by driver installation is the next available port.The port number may vary depending on the number of devices connected (using serial or virtual serial).

Once the driver is installed, you can use the USB port just like a standard serial port.

Host Port Routing

The “Host Network” is the equivalent of the IP route command.

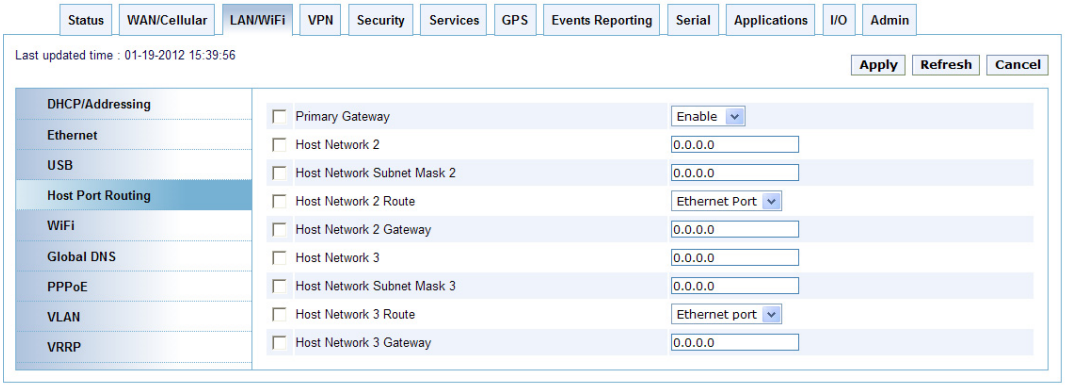

Figure 1-17: ACEmanager: LAN/WiFi - Host Port Routing

Field	Description
Primary Gateway	When enabled, your device is the Primary Gateway for the network behind a router connected to it. ALEOS responds to ARPs for all non-host Ethernet subnets.
Host Network 2 and Host Network 3	Network to route to host interface connected to Ethernet. Host Network 2 and 3 are secondary networks connected to the AirLink device. For example, 192.168.10.0.
Host Network Subnet Mask 2 and Host Network Subnet Mask 3	This is the subnet for the applicable network. For example, 255.255.255.0, which would with the setting above define a secondary network of 192.168.10.0/24.
Host Network 2 Route and Host Network 3 Route	This indicates what type of router is being used for the host network. If it is a traditional router which handles ARP for addresses on its subnet, select Ethernet. If it is a “dumb” gateway which is a conduit to a subnet but does not handle any ARP, select Gateway. When Gateway is selected, ALEOS will ARP for the destination address and send it to the defined Host Network Gateway address.
Host Network 2 Gateway and Host Network 3 Gateway	This is the IP address of the 'dumb' Gateway. This should be left as 0.0.0.0 if the Host Network Route is Ethernet. Many routers will respond to ARP requests for subnets behind the router. The default is Ethernet, which means the user does not have to configure the gateway IP. Some routers, however, do not respond to ARP requests for subnets, and users then need to enter the gateway address.

WiFi

ALEOS provides WiFi configuration support and capabilities. Depending on the configuration parameter settings, up to five separate sections may display when the LAN/WiFi > WiFi selection is made.

The basic WiFi screen (below figure) displays when the WiFi Security Encryption type field is set to “Open” and the Bridge WiFi to Ethernet field is set to “Enabled.”

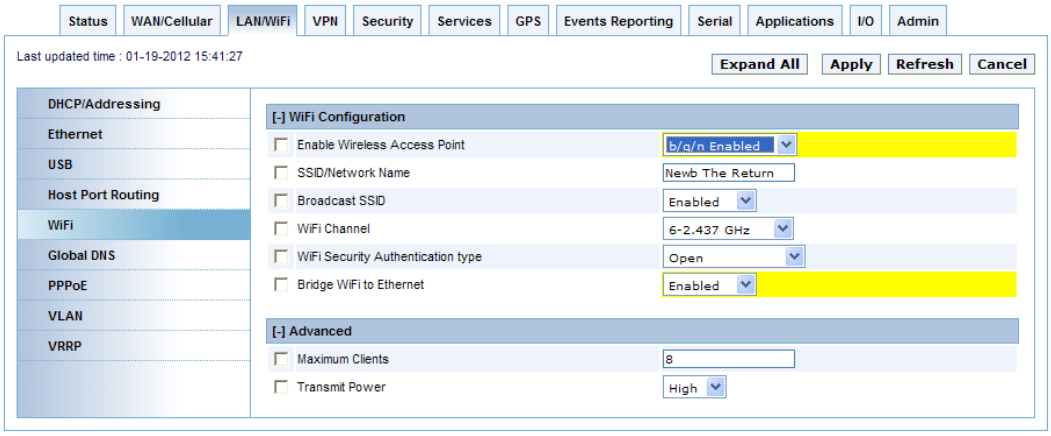

Figure 1-18: ACEmanager: LAN/WiFi - WiFi - WiFi Security Encryption type - Open

Field	Description
WiFi Configuration	
Enable Wireless Access Point	Wireless access point operation works like an On/Off switch for the WiFi module. When this field is set to disabled, the WiFi module is powered off. The wireless mode configures operation for either 802.11b/g or b/g/n. This field combines both mode and operation into a single configuration item. Options: • WiFi OFF • b/g Enabled • b/g/n Enabled (Default)
SSID/Network Name	SSID/Network Name can be set either by the user or automatically generated (default). The SSID (Service Set Identifier) default value is the same as the GX400/440 serial number which appears on the label on the bottom of the device. Note: Only one SSID is available. Minimum and Maximum SSID lengths are X - X alphanumeric characters.
Broadcast SSID	Suppressses the SSID name in the WiFi Access Point beacon message. Options: • Enabled (Default) • Disabled.
Wifi Channel	This field allows you to select from among 14 WiFi channels. Options begin with Channel 1 at 2.412 GHz, and each subsequent channel increases in frequency by .005 GHz (*except* for Channel 14 which is set at 2.484 GHz). Default: 1-2.412 GHz. *Note: Channels 12 - 14 are currently not available on the User Interface for GX devices in the US.*

Field	Description
WiFi Security Encryption type	This field allows you to select the following authentication options: • Open (Default) - No authentication is needed when this option is selected. This option is generally not recommended because it allows any user to connect to the AP. • WPA Personal • WPA2 Personal
Bridge WiFi to Ethernet	This field allows routing between the Ethernet Lan and the WLAN. When enabled, the Ethernet port and the WiFi ports are on the same subnet. Options: • Enabled • Disabled (Default)

When the Bridge WiFi to Ethernet field is set to Disabled, the DHCP section displays.

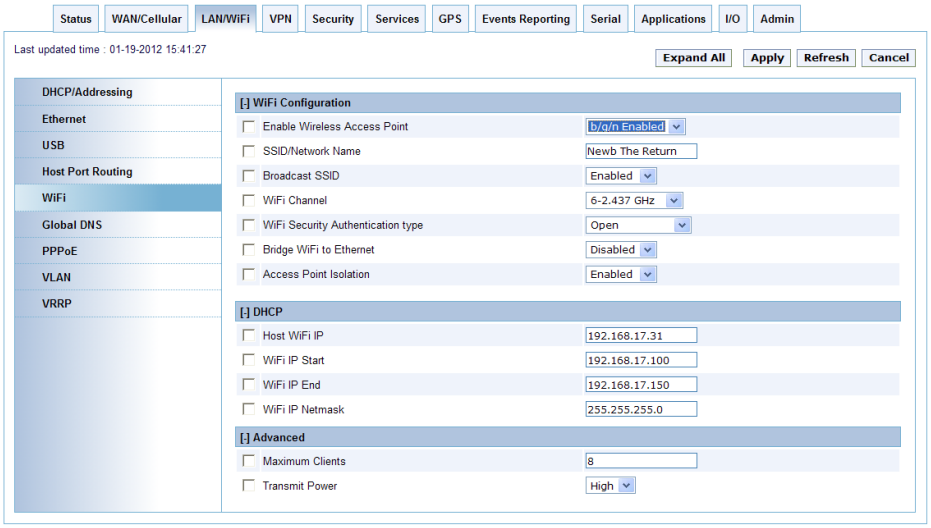

Figure 1-19: ACEmanager: LAN/WiFi - WiFi - DHCP

Field	Description
DHCP	
Host WiFi IP	Shows the Access Point address. Default: 192.168.17.31.
WiFi IP Start	Shows the beginning IP address to be served.
WiFi IP End	Shows the ending IP address to be served.
WiFi IP Netmask	Shows thesubnet mask of the WiFi network.

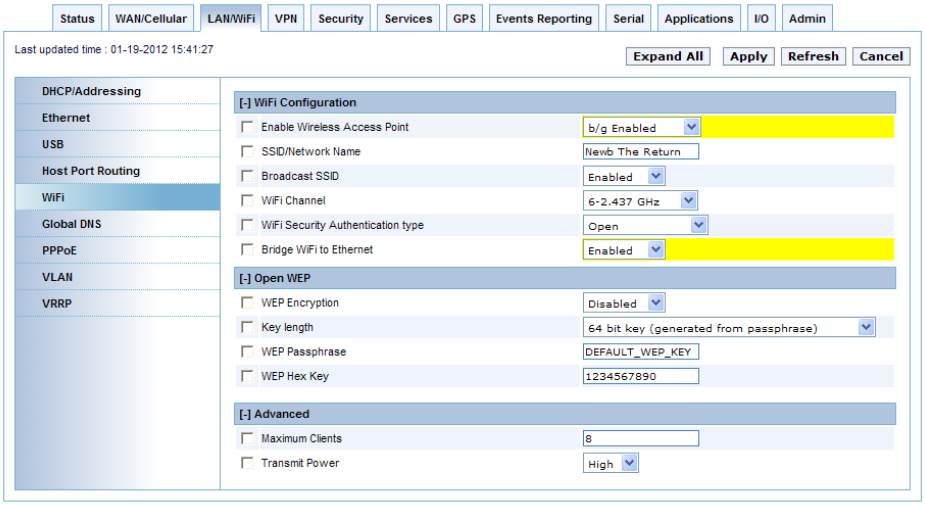

Figure 1-20: ACEmanager: LAN/WiFi - WiFi - WiFi Security Encryption type - Open WEP

Field	Description
Open WEP	
WEP Encryption	If Enabled is selected, the following three fields in this table display. Options: Enabled or Disabled
Key length	Options: • Default: 64 bit key (generated from password) • 128 bit key (generated from password) • 64 or 128 bit key (customer specifies 5 or 10 hex characters)
WEP Passphrase	May be 10 - 255 ASCII characters long. This field is not used if the 64 or 128 bit key (customer) option is selected in the Key length field.
WEP Hex Key	WEP security code as a sequence of hexadecimal digits. 64-bit WEP generates a 10-digit key; 128-bit WEP generates a 26-digit key.
Advanced	
Maximum Clients	Specify a maximum number of concurrent client user sessions. Options: 1 to 8. Default: 8.
Transmit Power	Adjusts the transmit power of the AP. Options: • Low - Low Power (10 dB) • High - High Power (16 dB); default.

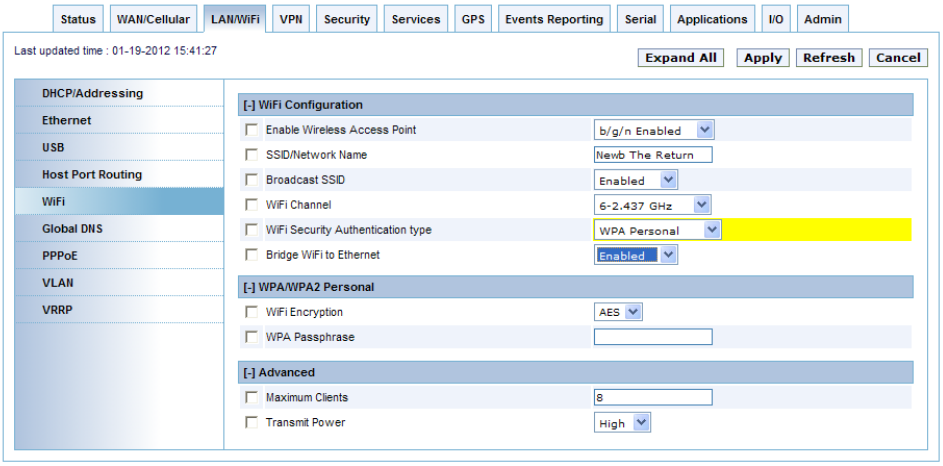

Figure 1-21: ACEmanager: LAN/WiFi - WiFi - WiFi Security Encryption type - WPA Personal

Field	Description
WPA/WPA2 Personal	
Wifi Encryption	Specify the encryption type for WPA or WPA2 authentication. Options: • TKIP - Available for 802.11b/g, not available for 802.11n. • AES (default)
WPA Passphrase	Specify the length of the WPA Passphrase. Minimum length is 8 characters, and maximum length is 64. Default: None.
Advanced	
Maximum Clients	Specify a maximum number of concurrent client user sessions. Options: 1 to 8. Default: 8.
Transmit Power	Adjusts the transmit power of the AP. Options: • Low - Low Power (10 dB) • High - High Power (16 dB); default.

Global DNS

When the cellular network grants the IP address to the device, it includes the IP addresses to its DNS servers. Global DNS allows you to override the carrier's DNS settings for all connected devices. This is useful when the connected devices need to use a private network.

Note: If there are no alternate DNS defined, the default is the cellular network DNS sever.

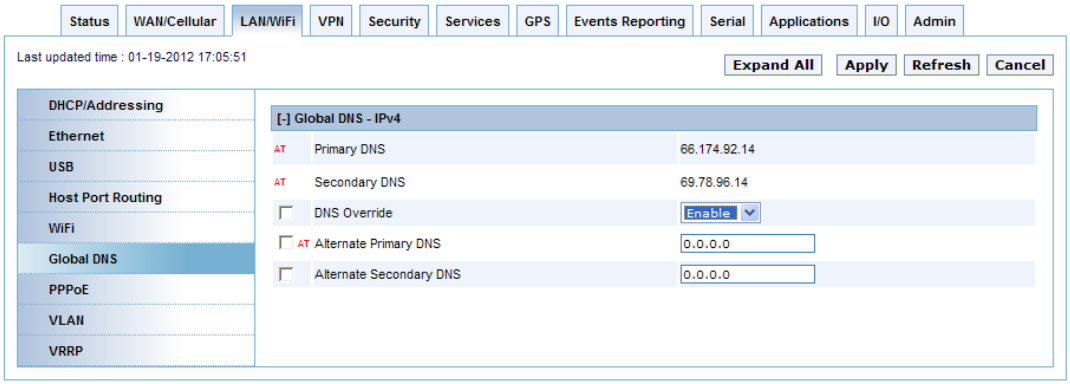

Figure 1-22: ACEmanager: LAN - Global DNS

Field	Description
Primary DNS	Primary carrier DNS IP Address. This and the secondary DNS are generally granted by the cellular network along with the Network IP.
Secondary DNS	Secondary carrier DNS IP Address.
DNS Override	Overrides the carrier DNS addresses with user configured ones. Some carriers will ignore the use of Alternate DNS servers and route all DNS requests to their own servers. Options: Disable or Enable. Default: Disable.
Alternate Primary DNS	Configurable DNS server to use instead of the cellular network granted one.
Alternate Secondary DNS	Configurable DNS server to use instead of the cellular network granted one.

PPPOE

PPPoE (Point-to-Point Protocol over Ethernet) allows a point-to-point connection using Ethernet. Like dial up protocols, PPPoE uses traditional user name and password authentication to establish a direct connection between two Ethernet devices on a network (e.g., your AirLink LS300 and a computer or router).

Application examples for PPPoE with your AirLink LS300:

- Backup connectivity solution for your network.
- Individualized Internet connection on a LAN.
- Password restricted Internet connection.

Only one computer, router, or other network device at a time can connect to the AirLink LS300 using PPPoE.If you are using the AirLink LS300 connected to a router as a back up Internet connection for your network, you should configure the router to use the PPPoE connection and not the individual computers.

You may need to use Private Mode to configure the IP address of your AirLink LS300 to be available on a LAN.

Note: To configure a PPPoE connection on Microsoft Windows XP, 2000, or NT, you will need administrator privileges to the computer you are configuring or access granted by an administrator on the network to add or remove devices to your computer.

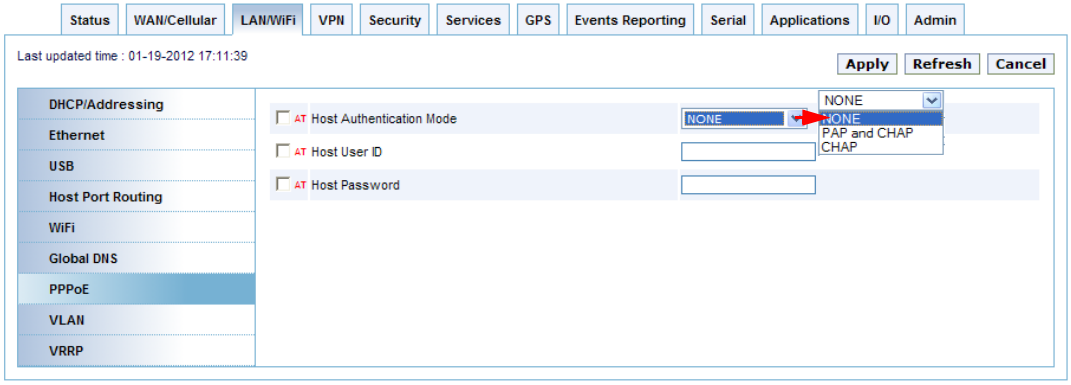

Figure 1-23: ACEmanager: LAN - PPPoE

Field	Description
Host Authentication Mode	Use PAP or CHAP to request the user login and password during PPP or CHAP negotiation on the host connection. The username and password set in *HOSTUID and *HOSTPW are used. • NONE (Default) • PAP and CHAP • CHAP
Host User ID	Host User ID for PAP or CHAP. • user id (up to 64 bytes)
Host Password	Host Password for PAP or CHAP.

Configure the AirLink Device to Support PPPoE

Note: You must disable the DHCP server for PPPoE to work.

- From the groups on the left, select *PPPoE* under LAN.
- Change Host Authentication Mode to 2.
- Enter a user name for PPP User ID for the PPPoE connection.
- Enter a password (PPP password) for the PPPoE to connection.

Tip: *If you leave* PPP User ID *and* PPP password *blank, any computer or device can connect to the device using PPPoE.*

Note: ACEmanager shows the existing values for PPP User ID *and* PPP password *encrypted and character padded.*

Optional: Configure *Device Name

a. In ACEmanager, select Dynamic DNS from the groups on the left, under Services.

b. Enter a name for Device Name, such as AirLink LS300 or the ESN.

The name you choose for Device Name will not affect the connection but may need to be configured in PPPoE settings for the router, device, or computer you will be connecting to your AirLink LS300.

VLAN

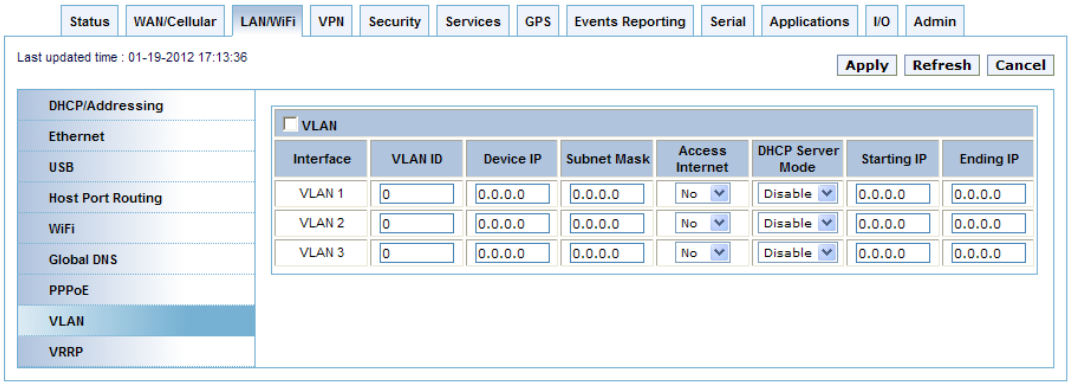

Figure 1-24: ACEmanager: LAN - VLAN

Field	Description
Interface	Displays three VLAN IDs.
VLAN ID	Displays the VLAN ID.
Device IP	The IP address of the AirLink device for that VLAN interface.
Subnet Mask	The subnet mask indicates the range of host IP addresses which can be reached directly. Changing this will limit or expand the number of clients that can connect to the AirLink device.
Access Internet	Choose access to the internet. Scroll down options: “Yes” or “No.”
DHCP Server Mode	Options are Enable and Disable. Default: Disable.
Starting IP	VLAN interface DHCP pool starting IP address.
Ending IP	The ending IP for the VLAN interface.

VRRP

VRRP (Virtual Router Redundancy Protocol) allows multiple routers to act as the default gateway router for a subnet, thereby reducing the possibility of a single point of failure.

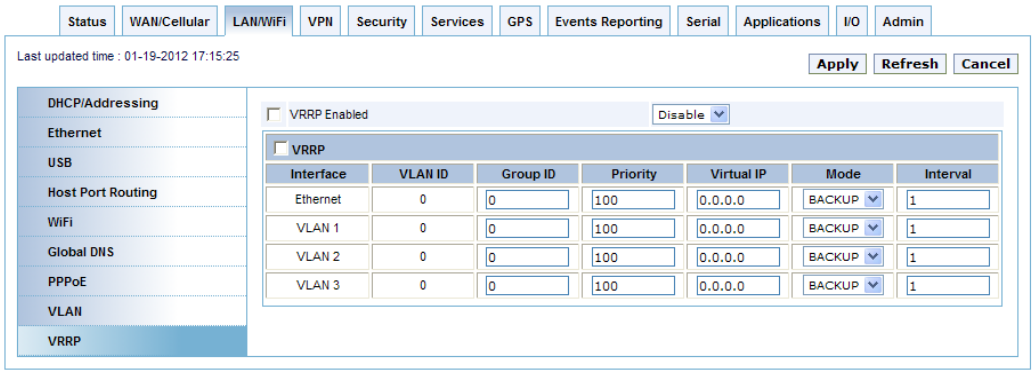

Figure 1-25: ACEmanager: LAN - VRRP

Field	Description
VRRP Enabled	Disable (default) or Enable VRRP.
VRRP	
Interface	Displays the Ethernet and three VLAN IDs.
VLAN ID	Displays the VLAN ID.
Group ID	Enter the VRRP Group ID. VRRP routers in the master and slave have the same Group ID.
Priority	VRRP decides whether the device is the master or slave. A greater value of priority indicates that the device is the master.
Virtual IP	If a device is configured with VRRP, the host connected to the device will display the Virtual ID. Virtual IP becomes the VRRP router's Device IP.
Mode	Indicates whether the device is MASTER or BACKUP. The Priority number determines the master or backup status. Default: BACKUP.
Interval	VRRP advertised interval. Default: 1 second.

WiFi Landing Page

The purpose of the WiFi Landing Page is to make users visit a specific web page before being allowed to have normal Internet service. The WiFi Landing Page is available on the Services tab in ACEmanager.

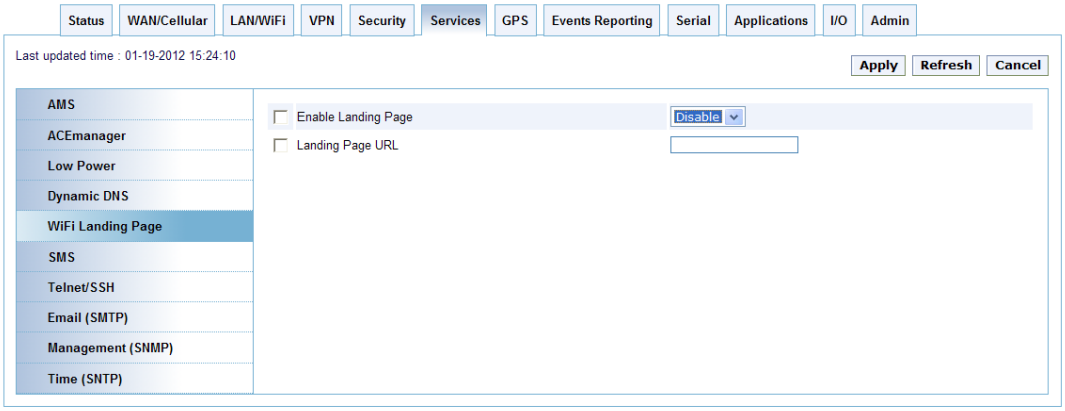

Figure 1-26: ACEmanager: Services - WiFi Landing Page

Field	Description
Enable Landing Page	Activates the WiFi Landing Page. Options: Disable (default) or Enable.
Landing Page URL	Place to insert a valid land page address (URL).

WiFi OTA Enable

ALEOS allows you to enable or disable WIFi access to ACEmanager. The ACEmanager configuration parameter is available on the Services tab.

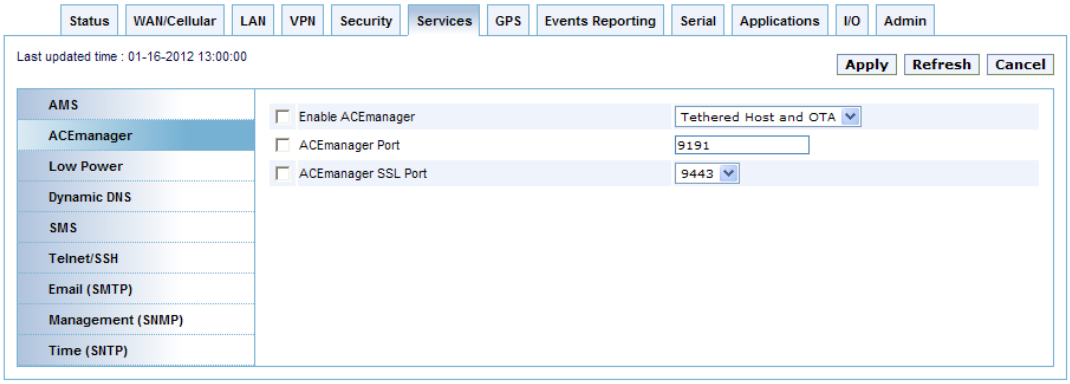

Figure 1-27: ACEmanager: Services - ACEmanager

Field	Description
Enable ACEmanager	Configures the availability for connections to ACEmanager. Options: • Tethered Host Only • Tethered Host and OTA (Default) • Tethered Host and WiFi • All
ACEmanager Port	Identifies the port set for ACEmanager (9191 in example figure). Reboot the device if you change the port settings.
ACEmanager SSL Port	Identifies the SSL port set for ACEmanager. Options: 9443 through 9449, 443. Default: 9443

WiFi Status Values

The Status tab LAN/WiFi screen provides limited status and statistics reporting related to the Access Point operation.

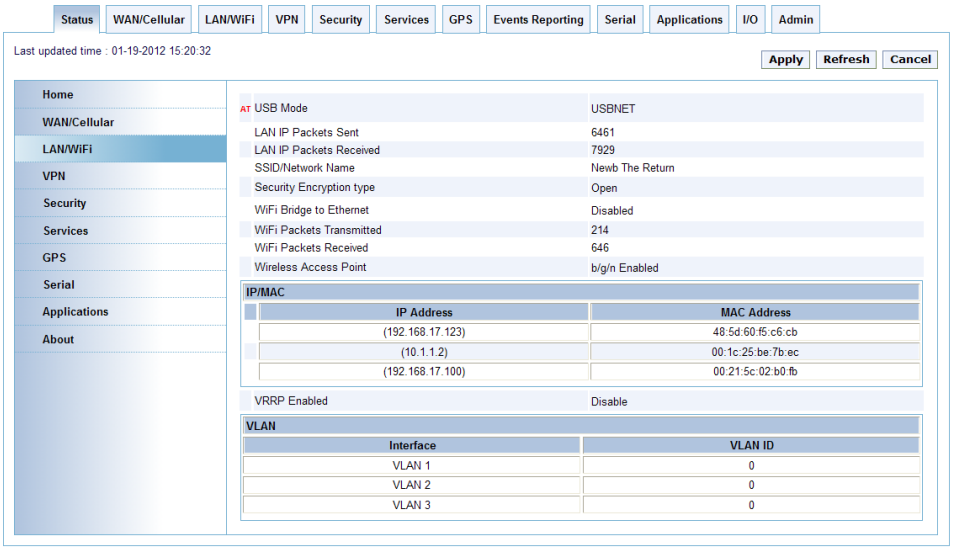

Figure 1-28: ACEmanager: Services - ACEmanager

Field	Description
USB Mode	Indicates which port of the USB port is set: USBNEIT or USB serial
LAN IP Packets Sent	Number of IP packets sent to the host interface since the system startup.
LAN IP Packets Received	Number of IP packets received from the host interface since the system startup.

Field	Description
SSID/Network Name	SSID/Network Name can be set either by the user or automatically generated (default). The SSID (Service Set Identifier) default value is the same as the GX400/440 serial number which appears on the label on the bottom of the device. Note: Only one SSID is available. Minimum and Maximum SSID lengths are X - X alphanumeric characters.
Security Encryption type	This field allows you to select the following authentication options: • Open (Default) - No authentication is needed when this option is selected. This option is generally not recommended because it allows any user to connect to the AP. • WPA Personal • WPA2 Personal
WiFi Bridge to Ethernet	This field allows routing between the Ethernet Lan and WLAN. When enabled, the Ethernet port and the WiFi ports are on the same subnet. Options: • Enabled (Default) • Disabled.
WiFi Packets Transmitted	Number of WiFi packets sent to the host interface since the system startup.
WiFi Packets Received	Number of IP packets received from the host interface since the system startup.
Wireless Access Point	Wireless access point operation works like an On/Off switch for the WiFi module. When this field is set to disabled, the WiFi module is powered off. The wireless mode configures operation for either 802.11b/g or b/g/n. This field combines both mode and operation into a single configuration item. Options: • WiFi OFF • b/g Enabled • b/g/n Enabled (Default)
IP/MAC table	Displays the local IP Address and the MAC Address of connected hosts.
VLAN table	Provides the identities (Interface name and ID) of the configured VLANs.

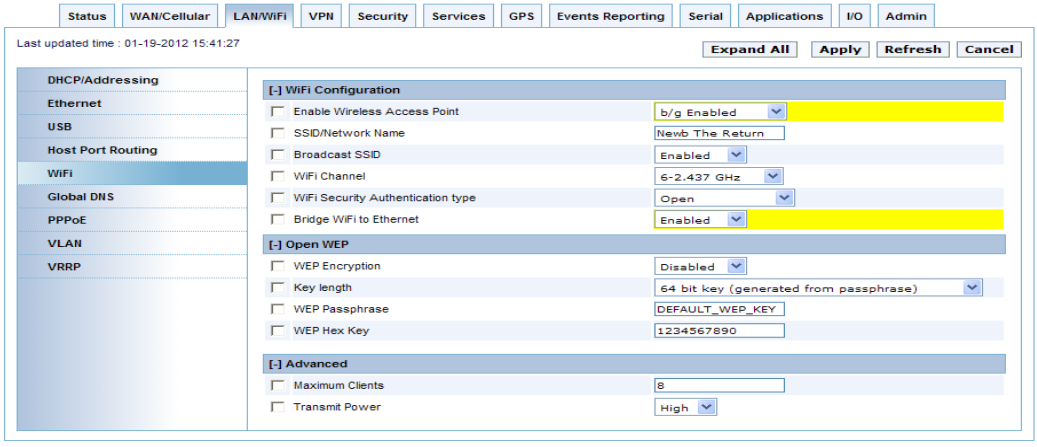

Figure 1-29: LAN/WiFi - WiFi basic screen

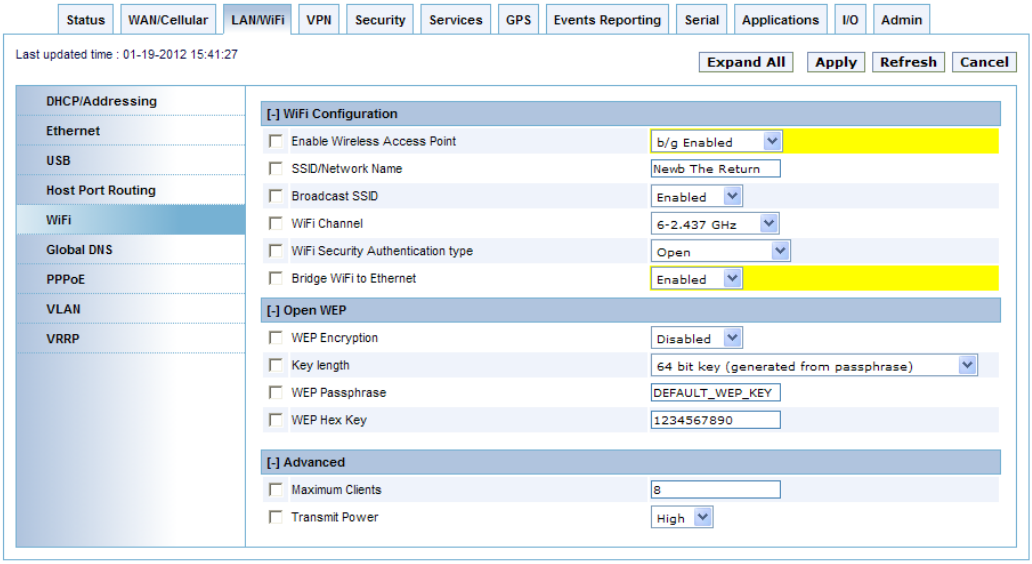

Figure 1-30: LAN/WiFi - WiFi - WiFi Security Authentication - Open WEP

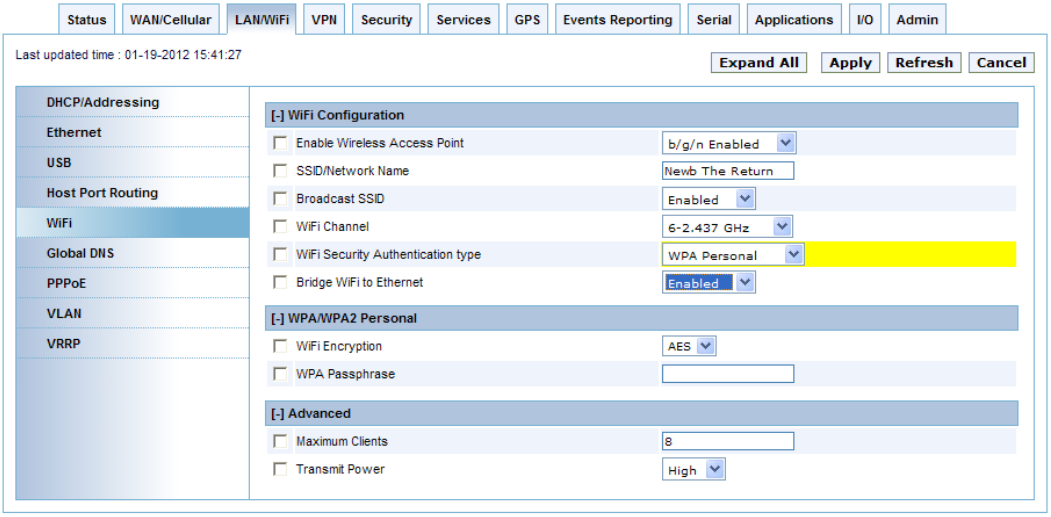

Figure 1-31: LAN/WiFi - WiFi - WiFi Security Authentication - WPA/WPA2 Personal

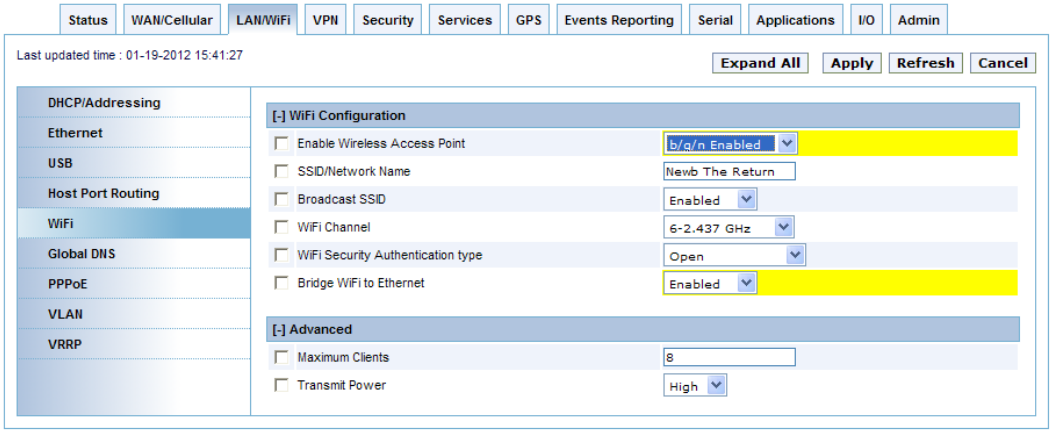

Figure 1-32: LAN/WiFi - WiFi - Bridge WiFi to Ethernet

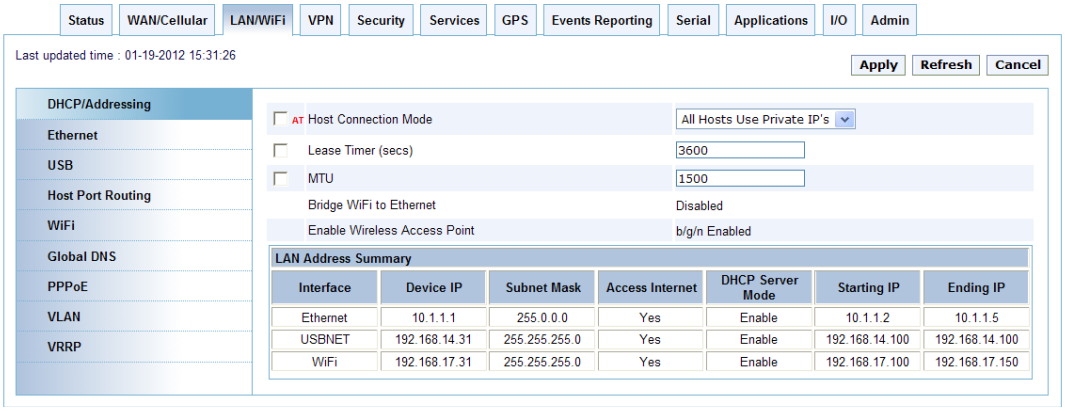

Figure 1-33: LAN/WiFi - DHCP Addressing - LAN Address Summary

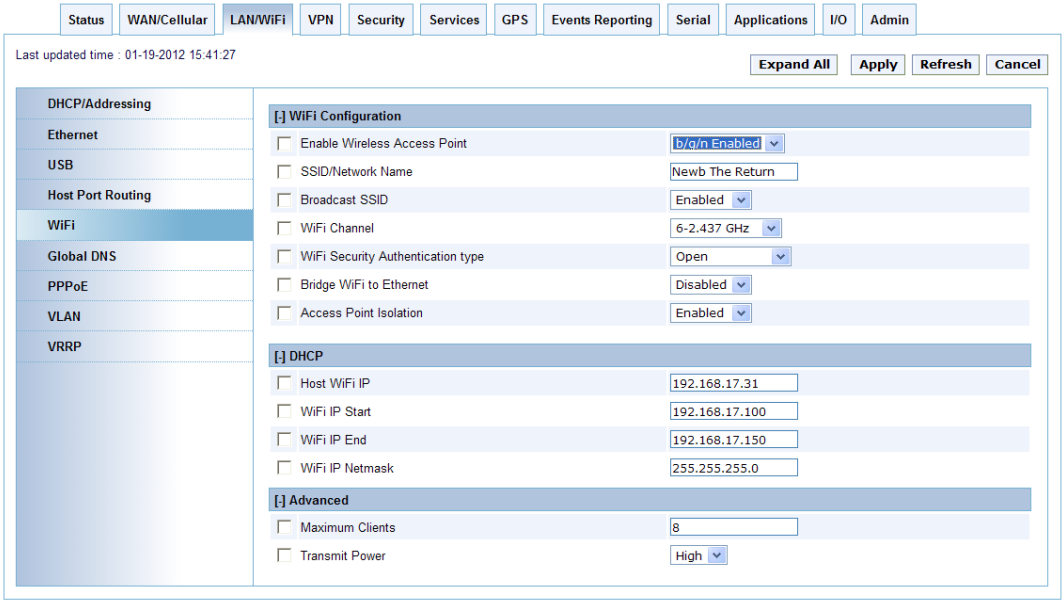

Figure 1-34: LAN/WiFi - WiFi - DHCP

2: Regulatory Information

Federal Communications Commission (FCC) Notice - United States

Electronic devices, including computers and wireless devices, generate RF energy incidental to their intended function and are therefore subject to FCC rules and regulations.

This equipment has been tested to, and found to be within the acceptable limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

This equipment generates radio frequency energy and is designed for use in accordance with the manufacturer's user manual. However, there is no guarantee that interference will not occur in any particular installation.

If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/television technician for help
- This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Warning: *Changes or modifications to this device not expressly approved by Sierra Wireless could void the user's authority to operate this equipment.*

Radiation Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

End Product Labeling

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains FCC ID: EC4501 and IC ID2417C - EC4501.”

Industry Canada

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Radiation Exposure

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

RF Exposure

In accordance with FCC/IC requirements of human exposure to radio frequency fields, the radiating element shall be installed such that a minimum separation distance of 20cm should be maintained from the antenna and the user's body.

Warning: *This product is only to be installed by qualified personnel!*

To comply with FCC/IC regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum Wi-Fi antenna gain must not exceed 2.3 dBi.

Warning: *A minimum separation distance of 20 cm must be maintained between the antenna(s) used for this transmitter and all personnel.*

EU

Sierra Wireless hereby declares that the AirLink GX devices conform to all the essential requirements of Directive 1999/5/EC.

Products are marked with a CE and notified body number.

CE 0984

The Declaration of Conformity made under Directive 1999/5/EC is available for viewing at the following location in the EU community.

Sierra Wireless (UK) Limited
Suite 5, The Hub
Fowler Avenue
Farnborough Business Park
Farnborough, United Kingdom GU14 7JP

WEEE Notice

If you purchased your AirLink LS300 in Europe, be sure that the device is collected separately from general domestic waste at the end of its life. WEEE (Waste of Electric and Electronic Equipment) products may be recognized by their wheeled bin label on the product label.