**Tech Note #100727-001**

**Setting up Wireless Configuration using the Lantronix Web ManagerEthernet and Serial Port**

(Note: This is an excerpt from WiPort™ User Guide)

# Configuration Using Web-Manager

This chapter describes how to configure the WiPort using Web-Manager, Lantronix's browser-based configuration tool. The unit's configuration is stored in nonvolatile memory and is retained without power. The unit performs a reset after the configuration is changed and stored.

## Accessing WiPort Web-Manager using DeviceInstaller

Follow the instructions on the product CD to install and run DeviceInstaller.
*Note: For more information on DeviceInstaller, see 3:Using DeviceInstaller.*

1. Run DeviceInstaller and search for the list of available Lantronix device servers.
2. Select the WiPort unit by clicking on its IP address.
3. In the right window, click the **Web Configuration** tab.
4. To view the WiPort's Web-Manager in the current DeviceInstaller window, click **Go**.

To open the Web-Manager in a web browser, click Use **External Browser**. The Web-Manager displays.
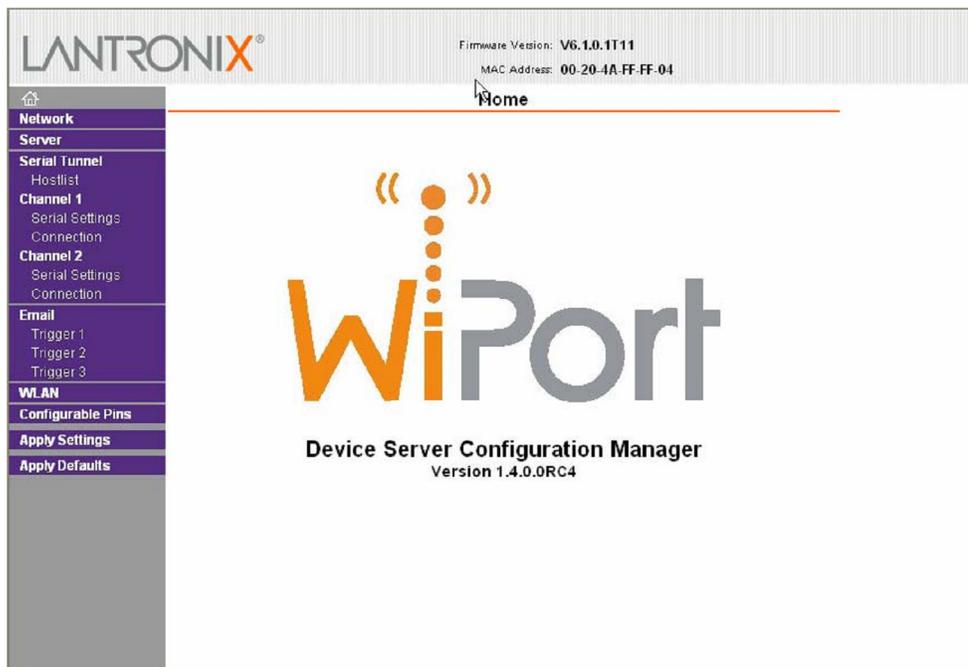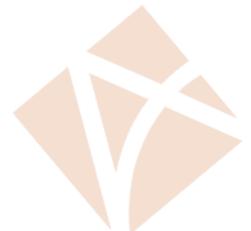


**Figure 4-1. Web-Manager**

The main menu is in the left side of the Web-Manager window.

*Note: Alternatively, access the WiPort's Web-Manager if it is connected to the network by entering its IP address in a web browser.*

## WLAN Configuration

Without adequate protection, a wireless LAN is susceptible to access by unauthorized users.
To configure the WiPort's WLAN settings:
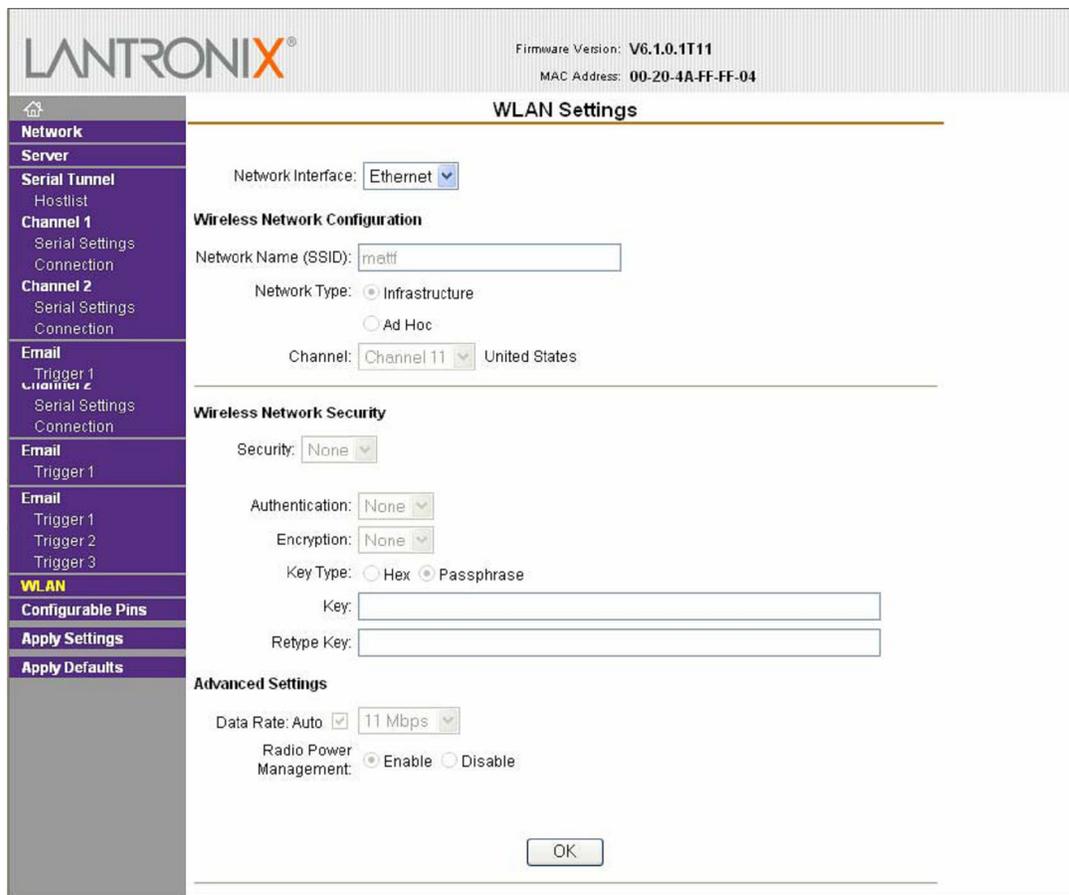1. Select **WLAN** from the main menu to open the WLAN Settings window.



**Figure 4-10. WLAN Settings**

2. Enter or modify the following fields:  **Network Interface** Use the pull down menu to select a **WLAN** interface or an **Ethernet** interface.
*Note: Fields on this page are not modifiable when **Ethernet** is selected.*

## Wireless Network Configuration

**Network Name** Enter the name of the wireless network (SSID). The WiPort connects to this wireless network.
**Network Type** Select **Infrastructure** or **Ad-Hoc**.
**Channel** Configurable only when Network Type is set to **Ad-Hoc**.
Select from the pull down menu the radio channel for the Ad
Hoc network. The default value is **11**.

## Wireless Network Security

**Security** As a security measure, enable **WEP** or **WPA** on the WiPort. By default, wireless security is disabled on WiPort.

## WEP Options

**Authentication** Select an authentication scheme (**Open/None** or **Shared**) from the drop down menu. **Encryption** Select the encryption type (**64 bits** or **128 bits** for WEP) from the pull down menu. **64 bits** is the default encryption for WEP. **Key Type** Select the key type (**Hex** or **Passphrase**). **Key** Enter the **Encryption Key** in hexadecimal value if **Hex** is selected as the Key Type. Enter key as a string if **Passphrase** is selected as the Key Type. Passphrase input is not the same as ASCII input. . A passphrase of more than 20 characters is recommended for adequate security. Spaces and punctuation are permitted.

## WPA Options

**Authentication** Select **Pre-Shared Keys** from the drop down menu. **Encryption** Select the encryption type from the pull down menu. **TKIP** is the default encryption for WPA. **Key Type** Select the key type (**Hex** or **Passphrase**). **Key** Enter the **Encryption Key** in hexadecimal value if **Hex** is selected as the Key Type. Enter key as a string if **Passphrase** is selected as the Key Type. Passphrase input is not the same as ASCII input. A passphrase of more than 20 characters is recommended. Spaces and punctuation characters are permitted.
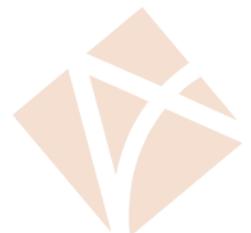
## Advanced Settings

**Data Rate** WiPort permits the control of the transmission data rate. Click the **Auto** check box to allow the WiPort to automatically set the data rate (or leave unchecked to manually set the transmission rate). The default rate is **11 Mbps**. If the **Auto** check box is selected, choose the maximum data rate from the drop down menu. If the **Auto** check box was not selected, select the fixed data
rate (in Mbps) from the drop down menu.
*Note: For WiPort version WP2001000G-02 (WiPort-G), the maximum data rate cannot be selected when the WiPort automatically sets the data rate. WiPort-G supports the following additional rates: 18 Mbps, 24 Mbps, 36 Mbps, and 54 Mbps.*

**Radio Power Management**
Power management reduces the overall power consumption of the WiPort unit. Selecting **Enable** increases the response time.

3425 Harvester Rd, Suite 200
Burlington, ON  L7N 3N1
Tel.: 905-635-1540
Tel.: 866-573-3895
Fax: 866-272-4239
www.astrixnet.com

# Configuration via Serial Mode or Telnet Port

Configure the unit so that it can communicate on a network with your serial device.  As an alternative to Web-Manager, the WiPort unit is configurable using a terminal program to access the serial port locally. Using this terminal program to respond to prompts is referred to as the **Setup Mode**. A Telnet connection may also be used to configure the unit over the network. The unit's configuration is stored in nonvolatile memory and is retained without power. You can change the configuration at any time. The unit performs a reset after the configuration has been changed and stored.

*Note: The menus in this section show a typical device. Not all devices display information in the same manner.*

## Accessing Setup Mode

### Telnet Access
*Note: Alternatively, use DeviceInstaller to access Telnet. Select the device from the main window list, and click the **Telnet Configuration** tab in the right window. If using **Telnet** from the DeviceInstaller toolbar, skip steps 1 through 3.*

To configure the unit over the network, establish a Telnet connection to port 9999:

1. From the Windows **Start** menu, click **Run**.
2. From the Run dialogue box**,** type the following command (where x.x.x.x is the IP address and 9999 is the unit's fixed network configuration port number):

>    Windows: `telnet x.x.x.x 9999`
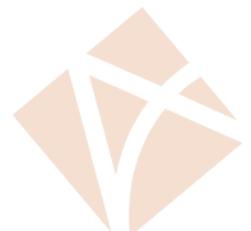>    UNIX: `telnet x.x.x.x:9999`

3. Click **OK**. The following information displays:

```
MAC address 00204AFFFF30
Software version V6.0.0.0 (050214)
Press Enter to go into Setup Mode
```

**Figure 5-1. MAC Address**

4. To enter the Setup Mode, press **Enter** within 5 seconds.

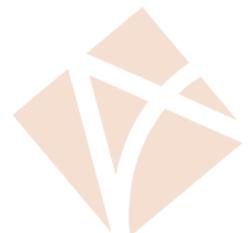*Note: Connection fails if **Enter** is not pressed within 5 seconds.*

The configuration settings display, followed by the setup menu options:

```
Change Setup:
0 Server
1 Channel 1
2 Channel 2
3 Email
4 WLAN
5 Expert
6 Security
7 Defaults
8 Exit without save
9 Save and exit Your choice ?
```

**Figure 5-2. Setup Menu Options**

5.  Select an option on the menu by entering the number of the option in the **Your choice ?** field and pressing **Enter**.  View the current configuration by pressing **Enter** from the Change Setup menu. To enter a value for a parameter, type the value and press **Enter**. To confirm a current value, press **Enter** (without inputted parameters).
6.  When finished, save the new configurations (**9 Save and exit**). The unit reboots.

3425 Harvester Rd, Suite 200
Burlington, ON  L7N 3N1
Tel.: 905-635-1540
Tel.: 866-573-3895
Fax: 866-272-4239
www.astrixnet.com

## Serial Port Access

*Note:* An Mx1053 can be used to configure the Lantronix on the Ax2200HS by connecting a DB9 null cable from COM3 to a PC with the following settings: 9600 Baud, 8 Data Bits, 1 Stop Bits, No Parity and No Flow control.

To configure the unit through a serial connection:

1. Connect a console terminal or PC running a terminal emulation program to your unit's serial port. The default serial port settings are 9600 baud, 8 bits, no parity, 1 stop bit, no flow control.
2. Reset the WiPort unit by cycling the unit's power (turning the power off and back on).  Immediately upon resetting the device, enter three lowercase **x** characters (**xxx**).
   *Note: The easiest way to enter Setup Mode is to hold down the **x** key at the terminal (or emulation) while resetting the unit. This must be done within three seconds of resetting the WiPort.*
3. Upon connection, the following information displays:

```
MAC address 00204AFFFF30
Software version V6.0.0.0 (050214)
Press Enter to go into Setup Mode
```

**Figure 5-3. MAC Address**

4. To enter the Setup Mode, press **Enter** within 5 seconds.
5. 

*Note: Connection fails if **Enter** is not pressed within 5 seconds.*

The configuration settings display, followed by the setup menu options:

```
Change Setup:
0 Server
1 Channel 1
2 Channel 2
3 Email
4 WLAN
5 Expert
6 Security
7 Defaults
8 Exit without save
9 Save and exit Your choice ?
```

**Figure 5-4. Setup Menu Options**

6. Select an option on the menu by entering the number of the option in the **Your choice ?** field and pressing **Enter**.  View the current configuration by pressing **Enter** from the Change Setup menu.  To enter a value for a parameter, type the value and press **Enter**. To confirm a current value, press **Enter** (without inputted parameters).
7. When finished, save the new configurations (**9 Save and exit**). The unit reboots.

## WLAN Settings

Without adequate protection, a wireless LAN is susceptible to access by unauthorized users. As such, WiPort features the WPA security standard, based on IEEE802.11i and IEEE802.1X. WEP is provided for backwards compatibility and interaction with older devices. To modify WLAN settings, select **4 WLAN** from the Change Setup menu.

### Enable WLAN

Enable the Ethernet or the Wireless interface. When enabling WLAN, the Ethernet interface is disabled.

```
Enable WLAN (Y) ? _
```

### Topology

Select **Infrastructure** (ESS) mode or **Adhoc** (IBSS) mode. Infrastructure mode communicates with Access Points. Adhoc mode communicates only with other clients.

```
Topology 0=Infrastructure, 1=Adhoc (0) ? _
```

### Network Name (SSID)

Enter the name of the network to which the WiPort will connect.

```
Network name (LTRX_IBSS) ? _
```

### Adhoc Network Channel

When **Adhoc** is selected in the **Topology** parameter and the WiPort cannot find the specified network, it creates one with that name by transmitting a beacon on the selected channel.

```
Channel (11) ? _
```

Only channels allowed in the country for which the WiPort is designated can be selected. The country is shown in the settings overview.

### Security

The WiPort features WEP and WPA to secure all wireless communication. WPA is not available when **Adhoc** is selected as the topology.

```
Security 0=none, 1=WEP, 2=WPA (0) ? _
```

### WEP

```
Authentication 0=open/none, 1=shared (0) ?
_
Encryption 0=WEP64, 1=WPE128 (0) ?
Display current key (N) ?
Change key (N) ?
Key type 0=hex, 1=passphrase (0) ?
Enter key:
```

3425 Harvester Rd, Suite 200
Burlington, ON  L7N 3N1
Tel.: 905-635-1540
Tel.: 866-573-3895
Fax: 866-272-4239
www.astrixnet.com

**Authentication** selects whether the encryption keys are matched (**1** = shared) with those of the communication partner before passing through messages or not (**2** = open/none). The **Encryption** prompt requests the length of the encryption key and the security strength. WEP64 uses a 40bits/5 bytes key (option **0**). WPE128 uses a 104bits/13 bytes key (option **1**). Select (**Y**) Yes at the **Display current key** prompt to show the currently configured key/passphrase **Change key** permits modifying the currently configured key by selecting (**Y**) Yes. The **Key type** requests whether the new key is in hexadecimal or passphrase format. **Enter key** prompts for the new encryption key. The passphrase input is not the same as ASCII input (as used on some products). ASCII is translated directly into hexadecimal bytes according to the ASCII table. The WiPort passphrase is hashed using the Neesus Datacom algorithm (for WEP64) or MD5 (for WEP128).  The passphrase input is safer because it is up to 63 chars long. ASCII input is a maximum of 5 (WEP64) or 13 (WEP128) characters long and limits the number of key combinations. Please refer to the other equipment's manual to determine the passphrase input style recommended.

*Note: Lantronix recommends using a passphrase of 20 characters or more for maximum security.*

## WPA
This firmware version allows only Pre-Shared Keys (PSK) for authentication.

```
Group encryption 1=WEP64, 2=WEP128, 3=TKIP
(1) ?
Display current key (N) ?
Change key (N) ?
Key type 0=hex, 1=passphrase (1) ?
Enter key: () ?
```

Set the **Group encryption** type to **1 (WEP64)**, **2 (WEP128)**, or **3 (TKIP)**. The group encryption for all wireless devices communicating with the same access point must be equal to receive broadcast and multicast messages. If any of these devices are WEP-only (no support for WPA), set the group encryption to WEP for all devices. Select (**Y**) Yes at the **Display current key** prompt to show the currently configured key/passphrase **Change key** permits modifying the currently configured key by selecting (**Y**) Yes. The **Key type** requests whether the new key is in hexadecimal or passphrase format. **Enter key** prompts for the new encryption key. The passphrase input is not the same as ASCII input (as used on other products). ASCII is translated directly into hexadecimal bytes according to the ASCII table. The WiPort passphrase is hashed using the Neesus Datacom algorithm (for WEP64) or MD5 (for WEP128). The passphrase input is safer because it is up to 63 chars long. ASCII input is a maximum of 5 (WEP64) or 13 (WEP128) characters long and limits the number of key combinations. Please refer to the other equipment's manual to determine the passphrase input style recommended.

*Note: Lantronix recommends using a passphrase of 20 characters or more for maximum security.*

## Fixed or Automatic Data Rate
WiPort permits the control of the transmission rate. Select **0** to set a fixed data rate or select **1** to set an automatic data rate. The default is **1** (auto).

```
TX Data rate 0=fixed, 1=auto (1) ? _
```

## Transmission Data Rate

If the above **TX Data rate** is set to **fixed**, the selected data rate is the WiPort's fixed transmission rate. If the above **TX Data rate** is set to **auto**, the selected data rate is the WiPort's maximum data rate. Lower data rates allow for larger distances. It may also be required when communicating with older devices. The default is 11 Mbps.

```
TX Data rate 0=1, 1=2, 2=5.5, 3=11 Mbps (0) ? _
```

WiPort version WP2001000G-02 offers additional transmission rate options:

```
TX Data rate 0=1, 1=2, 2=5.5, 3=11 4=18, 5=24, 6=36, 7=54 Mbps (0) ? _
```

*Note: WiPort version WP2001000G-02's maximum data rate cannot be selected when **TX Data rate** is set to **auto**.*

## Enable Power Management

This allows the software to turn off the radio when expecting not to receive or transmit soon. This feature reduces the power consumption by up to 170 mA. Enabling power management increases the response time, because the radio needs to start up again. The radio is enabled to synchronize and check for incoming messages (every 100 ms).
*Note: This option is not available when the **Topology** is set to **Adhoc**.*

```
Enable power management (N) ? _
```

## Transmission Power Level

*Note: Available on WiPort version WP2001000G-02 (WiPort-G).*
Select the transmission power level. Higher values allow a wider range but increase peak current and average power consumption. The default is **18 dBm**.

```
TX power level 0=0, 1=6, 2=12, 3=18 dBm (0) ? _
```