

Securing your wireless network is a simple process, which generally does not require a lot of time. Please follow these instructions to secure your wireless network.

WRT54G

Before you begin, please try to configure the WRT54G from a hardwired PC for simplicity. Whenever security is changed you'll need to change the settings on all wireless units so it's a good rule of thumb to do security changes from a hardwired PC if possible.

Accessing the Router

1. Go to your desktop and double click on Internet Explorer (Located on the Start Menu in Windows XP)
2. When "Internet Explorer" opens type the routers IP address into the "Address" bar and hit the **[Enter]** key (The Wireless routers default IP address is <http://192.168.1.1>)
3. The "Enter Network Password" window will appear.
4. Skip user name and type in your password (**admin** is the default password), and click **OK**

Setup Page Security Options

When you arrive at the Setup page, you'll see the bulk of your wireless security features. There are three things you're going to want to set on this page:

1. **SSID**
 - a) Delete **linksys** from the "SSID" field
 - b) Input your own unique SSID. We general recommend something easy to remember, but secure enough to where people would not be able to guess it easily. Sometimes your best bet is to use your last name and add some numbers, in this example we're using **linksys12345678910**.
 - c) Click **Apply** then **Continue**

2. **SSID Broadcast**

SSID broadcasts allows other 802.11b and 802.11g users to see your Access Points SSID, by disabling this option is similar to closing your blinds and not letting people see through. If you have Windows XP computer(s), do this step last.

- a) Select **Disable** on the "SSID Broadcast".
- b) Click **Apply** then **Continue**

3. **WEP**

- a) Set "Wireless Security" to **Enable**.
- b) Click the **Edit Security Settings** button.
- c) A window will appear prompting you "Do you want to enable the Security Encryption?" click **OK**.
- d) When the "Security Settings" Window appears, set the "Security Mode" to **WEP***. Then set the "WEP Encryption" to the **128 bits 26 hex digits** option.
NOTE: 128 bit WEP may not work on non-Linksys products due to its lack of an IEEE standard
- e) Enter a passphrase** that is different from the SSID. Try to make it alphanumeric; instead of just **security**, use **security12345**, then click the **Generate** button.

- f) After the key has been generated copy the key into a notepad document and copy that file onto a floppy.
***NOTE:** There are other security options, which the WRT54G uses, however, not all wireless adapter currently support security implementations such WPA and 802.1x. Most wireless adapters support either 64-bit WEP or 128-bit WEP, so Linksys recommends using WEP unless you know that all of your wireless adapters support WPA.

****NOTE:** The passphrase will not work with non-Linksys products, so you will need to use the 1st key that you copied onto floppy. You will also need the key, not the passphrase for using Linksys products under Windows XP

The router supports 4 different types of security settings. WPA Pre-Shared Key, WPA RADIUS, RADIUS, and WEP. Please see the help tab for more details on the different types of security settings.

Security Mode: WEP

Default Transmit Key: 1 2 3 4

WEP Encryption: 128 bits 26 hex digits

Passphrase: security12345

Key 1: BA58B3DE2D7922755162042DB8

Key 2: 81653E04025A28F1D8E1A532D0

Key 3: 2D303B92FA97C6AF84436CA865

Key 4: 7902FDA9567947877575F333BD

- g) Click **Apply** then **Continue**
- h) Close the window
- i) Click **Apply** then **Continue** on the setup page.

Note: If you need help setting up WEP on your wireless NIC's, please see [Answer ID 749](#)

Setting up Wireless MAC Filtering

The Wireless MAC Filtering option is a very good security feature. This option either allows or denies access to all wireless clients that are listed. The best security is for you to only allow those whom are listed. To setup Wireless MAC Filtering, have all of your wireless PC's online wirelessly and follow these instructions:

1. From the "Setup" page, click the **Advanced** tab.
2. When you arrive at the "Advanced Wireless" section, set the "Wireless MAC Filter" option to **Enable**.
3. Set the option under "Wireless MAC Filter" to **Permit only**, then click the **Edit MAC Filter List** button.

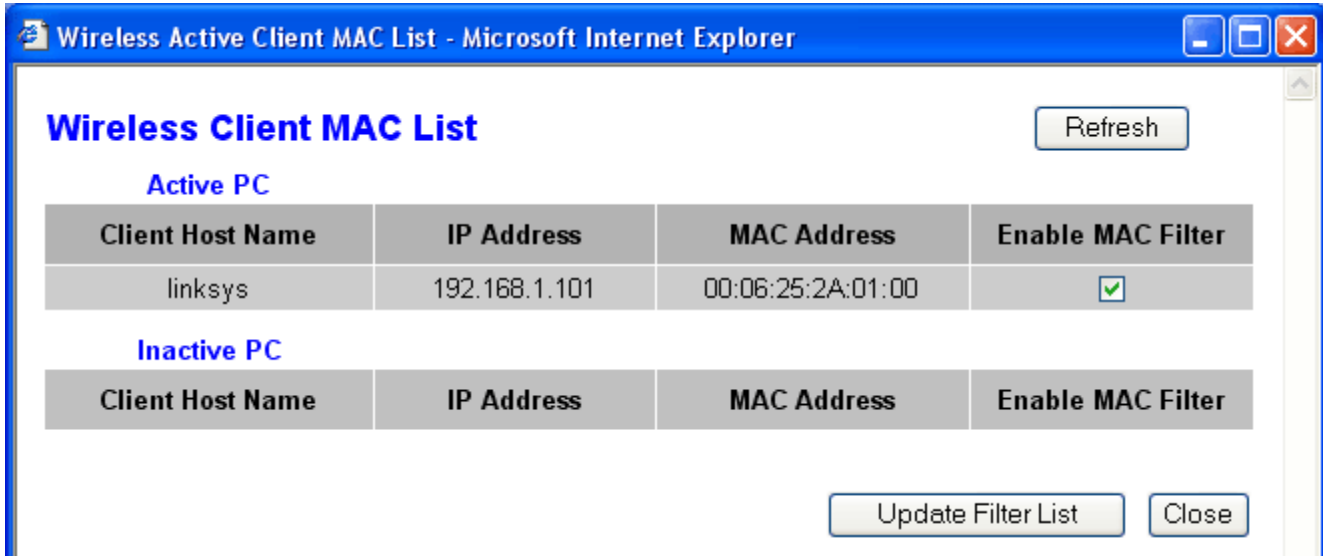
Wireless MAC Filter: Enable

Prevent PCs listed below from accessing the wireless network

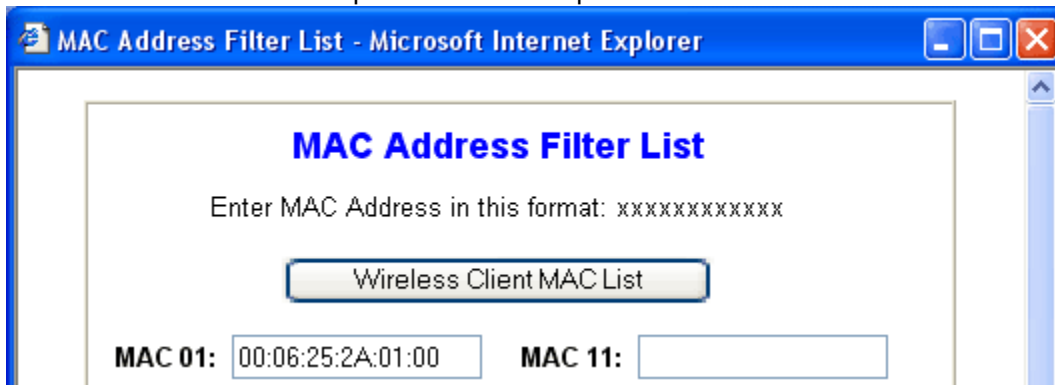
Permit only PCs listed below to access the wireless network

4. When the "MAC Address Filter List" window appears, click the **Wireless MAC List** button.

- The "Wireless Active Client MAC List" window will open, when it does check the box under **Enable MAC Filter** for each of your PC's that are listed under "Active PC". After you do this, click the **Update Filter List** button.



- After you click the "Update Filter List" button, you should be back at the "MAC Address Filter List" window, and each of the MAC Addresses will be input into their own space. Scroll to the bottom of the list and click the **Apply** button.



- If the "MAC Address Filter List" window is still active, close it and click the **Apply** button on the "Advanced Wireless" page.

BEFW11S4

Before you begin, please try to configure the BEFW11S4 from a hardwired PC for simplicity. Whenever security is changed you'll need to change the settings on all wireless units so it's a good rule of thumb to do security changes from a hardwired PC if possible.

Accessing the Router

- Go to your desktop and double click on Internet Explorer (Located on the Start Menu in Windows XP)
- When "Internet Explorer" opens type the routers IP address into the "Address" bar and hit the **[Enter]** key (The Wireless routers default IP address is <http://192.168.1.1>)
- The "Enter Network Password" window will appear.
- Skip user name and type in your password (**admin** is the default password), and click **OK**

Setup Page Security Options

When you arrive at the Setup page, you'll see the bulk of your wireless security features. There are three things you're going to want to set on this page:

1. SSID

- Delete linksys from the "SSID" field

e) Input your own unique SSID. We general recommend something easy to remember, but secure enough to where people would not be able to guess it easily. Sometimes your best bet is to use your last name and add some numbers, however for this example we're using **KB1234**.

f) Click **Apply** then **Continue**

8. SSID Broadcast (Firmware 1.42.7 and above only)

SSID broadcasts allows other 802.11b and 802.11g users to see your Access Points SSID, by disabling this option is similar to closing your binds and not letting people see through.

c) Click **No** on the Allow "Broadcast" SSID to associate?

d) Click **Apply** then **Continue**

9. WEP

b) Click **Mandatory** for the "WEP" Option

j) Click the **WEP Key Settings** button

k) A window will appear prompting you to change "WEP to Mandatory", click **Yes**.

l) When the "Wep Key Settings" Window appears, change the option from 64 to **128***

NOTE: 128 bit WEP may not work on non-Linksys products due to its lack of an IEEE standard

m) Enter a passphrase** that is different from the SSID. Try to make it alphanumeric; instead of password, use **password5532**, then click **Generate**.

n) After the key has been Generated copy the key into a notepad document and copy that file onto a floppy.

****NOTE:** The passphrase will not work with non-Linksys products, so you will need to use the passphrase that you copied onto floppy.

The router supports 4 different types of security settings. WPA Pre-Shared Key, WPA RADIUS, RADIUS, and WEP. Please see the help tab for more details on the different types of security settings.

Security Mode: WEP

Default Transmit Key: 1 2 3 4

WEP Encryption: 128 bits 26 hex digits

Passphrase: security12345

Key 1: BA58B3DE2D7922755162042DB8

Key 2: 81653E04025A28F1D8E1A532D0

Key 3: 2D303B92FA97C6AF84436CA865

Key 4: 7902FDA9567947877575F333BD

o) Click **Apply** then **Continue**

p) Close the window

q) Click **Apply** then **Continue** on the setup page.

Note: If you need help setting up WEP on your NIC, please see [Answer ID 749](#)

The screenshot shows the Linksys Setup page with the following elements:

- Navigation Tabs:** Setup (selected), Password, Status, DHCP, Log, Security, Help, Advanced.
- Section Header:** SETUP
- Introductory Text:** "This screen contains all of the router's basic setup functions. Most users will be able to use the router's default settings without making any changes. If you require help during configuration, please see the user guide."
- Configuration Fields:**
 - Host Name: [] (Required by some ISPs)
 - Domain Name: [] (Required by some ISPs)
 - Firmware Version: 1.42.7, Apr 03 2002
 - LAN IP Address: (MAC Address: 00-06-25-5D-E7)
[192] . [168] . [1] . [1] (Device IP Address)
[255.255.255.0] (Subnet Mask)
 - Wireless:
 - Enable Disable
 - SSID: [KB1234]
 - Allow "Broadcast" SSID to associate? Yes No
 - Channel: [6] (Domain:)
 - WEP: Mandatory Disable [WEP Key Setting]
 - WAN Connection Type: (MAC Address: 00-06-25-5D-E8)
[Obtain an IP automatically] Select the Internet connection type you wish to use
- Buttons:** Apply, Cancel

Setting up Station MAC Filter

The Station MAC Filter option is a very good security feature that has been added to Firmware 1.42.7 and above. This option denies all wireless clients except those listed. To implement this feature please follow these instructions:

- From the "Setup" page, click **Advanced**
- When the "Filters" page opens, click on the **Wireless** tab
- Make sure all wireless computers are setup to the router, and are currently able to access the internet. Once this is done, click on the **Active MAC Table** button.
- Move the "Wireless Active MAC Table" window and click on **Edit MAC Filter Settings** on the main window.
- When the "Wireless Group MAC Table" opens, go to the task bar and click on the Wireless Active MAC Table so that window appears.
- With the two windows side by side enter the MAC Addresses from the "Wireless Active MAC Table" window into the Wireless Group MAC Table.

LINKSYS®

Filters Forwarding Dynamic Routing Static Routing DMZ Host MAC Addr. Clone **Wireless** Setup

WIRELESS

The advance Wireless Setting includes Beacon Interval, RTS Threshold, Fragmentation, DTIM interval, Rates, Authentication Type etc.

Firmware Version: 1.1.2

Wireless Active MAC Table - Microsoft Internet Explorer

Refresh

| Station | MAC Address |
|---------|-------------------|
| 1 | 00-04-5A-C9-17-7B |

Wireless Group MAC Table - Microsoft Internet Explorer

Wireless MAC Entry: 1~10

| Station | MAC Address | Filter |
|---------|--------------|--------------------------|
| 1: | 00045ac9177b | <input type="checkbox"/> |
| 2: | 0 | <input type="checkbox"/> |
| 3: | 0 | <input type="checkbox"/> |
| 4: | 0 | <input type="checkbox"/> |
| 5: | 0 | <input type="checkbox"/> |
| 6: | 0 | <input type="checkbox"/> |
| 7: | 0 | <input type="checkbox"/> |
| 8: | 0 | <input type="checkbox"/> |
| 9: | 0 | <input type="checkbox"/> |
| 10: | 0 | <input type="checkbox"/> |

Apply Undo

- **NOTE:** When you enter the MAC Addresses do not include the dashes, and do not click "Filter"

14. Click **Apply** then **Continue** in the "Wireless Group MAC Table" window.

15. Close the "Wireless Group MAC Table" window and the "Wireless Active MAC Table" window

16. On the Main window **Enable** the "Station MAC Filter setting".

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Filters Forwarding Dynamic Routing Static Routing DMZ Host MAC Addr. Clone **Wireless** Setup

WIRELESS

The advance Wireless Setting includes Beacon Interval, RTS Threshold, Fragmentation, DTIM interval, Rates, Authentication Type etc.

Firmware Version: 1.1.2

Beacon Interval: (msec, *100)

RTS Threshold: (range: 256~2432, *2432)

Fragmentation Threshold: (range: 256~2346, *2346, even number only)

DTIM Interval: (range: 1~65535, *3)

Basic Rates:

TX Rates:

Preamble Type:

Authentication Type:

Antenna Selection:

Station MAC Filter: Enable Disable

WAP11

Before you begin, please try to configure the WAP11 from a hardwired PC for simplicity. Whenever security is changed you'll need to change the settings on all wireless units so it's a good rule of thumb to do security changes from a hardwired PC if possible.

Accessing the WAP11's Configuration

1. Go to your desktop and double click on Internet Explorer (Located on the Start Menu in Windows XP)
2. When "Internet Explorer" opens type the WAP11's IP address into the "Address" bar and hit the **[Enter]** key (Note: The WAP11's default IP address is <http://192.168.1.251>)
3. The "Enter Network Password" window will appear.
4. Skip user name and type in your password (**admin** is the default password), and click **OK**

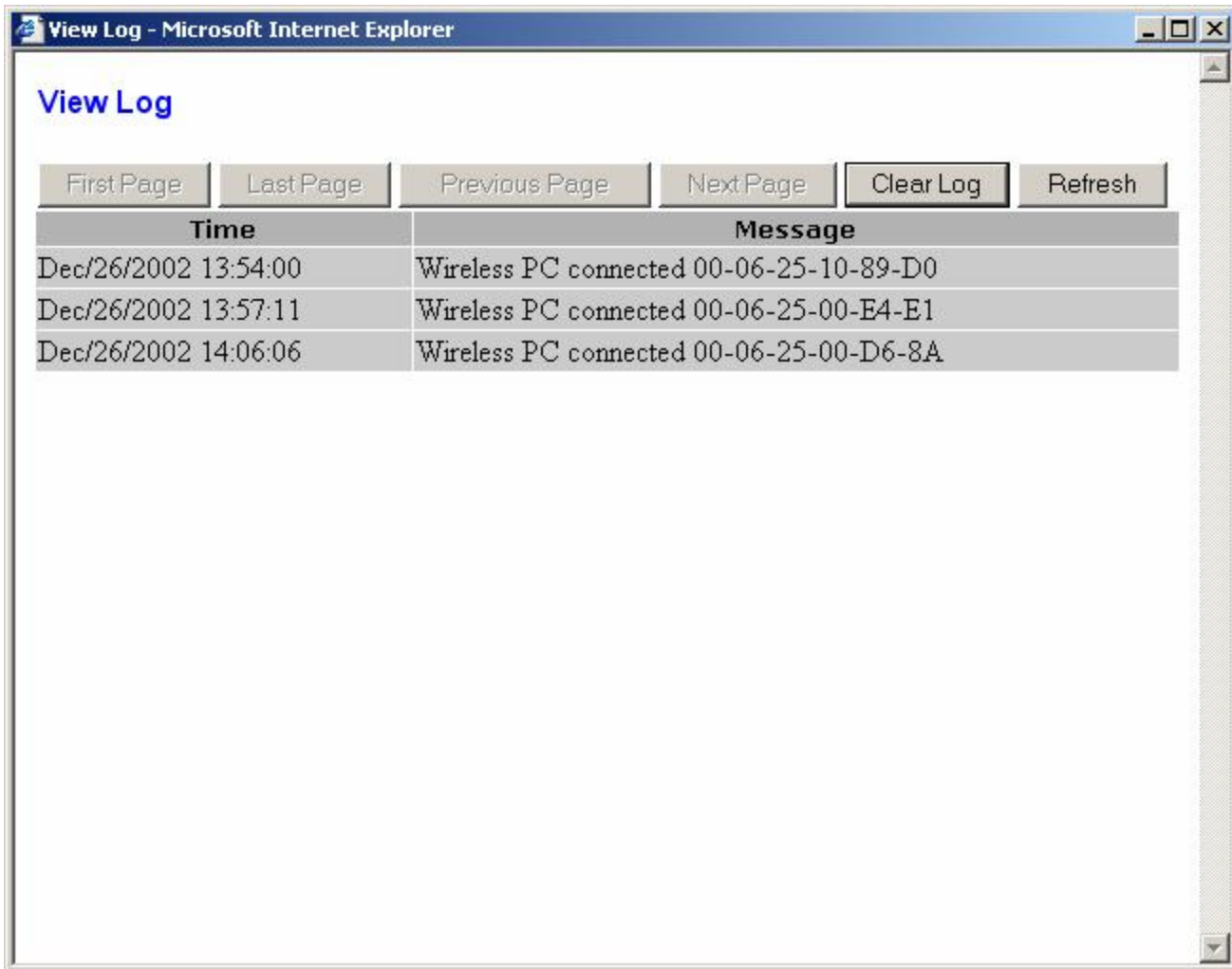
Setting up MAC Filtering

The Station MAC Filter option is a very good security feature. This option denies all wireless clients except those listed. To implement this feature please follow these instructions:

Before proceeding, please make sure that all the wireless computers are turned off.

1. From the "Setup" page, on the **Log** tab.

2. When the “Log” area loads, make sure that the “Access Log” is set to **Enable**, if it is not, then click on **Enable**, then click **Apply**.
3. Click on the **View Log** button, and a new window, “View Log”, will appear. Click on the **Clear Log** button, then turn on all the wireless PC’s.
4. After the Wireless PC’s have started and are logged onto the WAP11, click on the **Refresh** button. You should see all your wireless stations under the “Message” column. Leave this window open and proceed step.



5. Click on the **Advanced** Tab.
6. After the “Filters” area loads, set the “Filtered MAC Address” option to **Enable**, then make sure the option for “Only **allow** PCs with MAC listed below to access device” is selected.
7. After doing that input the numbers after “Wireless PC connected” from the “View Log” window, however do not put the dashes. After you do that your window should look similar to this:

LINKSYS

Filters Wireless Setup

Filters enable you to prevent certain PCs on your network from accessing your device.

Filter

Filtered MAC Address: **Enabled** **Disabled**

Only **deny** PCs with MAC listed below to access device

Only **allow** PCs with MAC listed below to access device

1~10

MAC 1 :

MAC 2 :

MAC 3 :

MAC 4 :

MAC 5 :

MAC 6 :

MAC 7 :

MAC 8 :

MAC 9 :

MAC 10 :

Apply Undo Help

8. Click **Apply** then **Continue**.

Disabling SSID Broadcast

SSID broadcasts allows other 802.11b and 802.11g users to see your Access Points SSID, by disabling this option is similar to closing your blinds and not letting people see through.

1. From the "Filters" tab in the "Advanced" section of the WAP11's setup, click on the **Wireless** tab.
2. When you arrive at the "Wireless" tab, you'll notice the last option is called "SSID Broadcast", by default the option is set to **Enable**, however to secure your network, click on the **Disable** option, then click **Apply**, then **Continue**.

LINKSYS Filters Wireless Setup

WIRELESS

The advance Wireless Setting includes Beacon Interval, RTS Threshold, Fragmentation, DTIM interval, Rates, Authentication Type etc.

Beacon Interval: (msec, range:1~1000, default:100)

RTS Threshold: (range: 256~2432, default:2432)

Fragmentation Threshold: (range: 256~2346, default:2346, even number only)

DTIM Interval: (range: 1~65535, default:3)

Basic Rates: 1-2(Mbps) 1-2-5.5-11(Mbps)

Transmission Rates: 1-2(Mbps) 1-2-5.5-11(Mbps)

Preamble Type: Short Preamble Long Preamble

Authentication Type: Open System Shared Key Both

Antenna Selection: Left Antenna Right Antenna Diversity Antenna

SSID Broadcast: Enable Disable

Setup Page Security Options

These are basic functions found under the "Setup" tab. It's recommended to utilize the features here after you've secured your network by filtering MAC Addresses and disabling the SSID Broadcast.

1. SSID

- a) Delete linksys from the "SSID" field
- b) Input your own unique SSID. We general recommend something easy to remember, but secure enough to where people would not be able to guess it easily. Sometimes your best bet is to use your last name and add some numbers, however for this example we're using **KB1234**.

2. WEP

- a) Click **Mandatory** for the "WEP" Option
- b) Click the **WEP Key Settings** button
- c) When the "Wep Key Settings" Window appears, change the option from 64 to **128***
NOTE: 128 bit WEP may not work on non-Linksys products due to its lack of an IEEE standard

- d) Enter a passphrase** that is different from the SSID. Try to make it alphanumeric; for example instead of just **password**, use **password5532**, then click **Generate**.
- e) After the key has been Generated copy the key into a notepad document and copy that file onto a floppy. Make sure to copy the keys side by side.

****NOTE:** The passphrase will not work with non-Linksys products, so you will need to use the passphrase that you copied onto floppy.

To create a new WEP key, either enter a passphrase and press the generate button, or enter the key elements into the table below.

Mode: 128Bit

Passphrase: password5532

Key 1:

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| A9 | 9E | 37 | CF | 91 | 42 | 84 | 02 | 31 | C3 |
| AF | F5 | 23 | | | | | | | |

Key 2:

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 38 | BC | 03 | 55 | F6 | 6D | 8F | 52 | DD | 9B |
| C2 | 28 | 45 | | | | | | | |

Key 3:

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| AF | 5E | 5E | 2B | 8F | 13 | 1C | 14 | 95 | C9 |
| 96 | 2B | 3D | | | | | | | |

Key 4:

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 0A | 45 | 4C | 9A | 4E | 3A | 0B | 1D | 7D | 1E |
| 01 | AF | F5 | | | | | | | |

Default TX Key: 1

- f) Click **Apply** then close the window
- g) Click **Apply** then **Continue** on the "Setup" page.