POLYCOM® | VIEW Certified

VIEW Certified Configuration Guide

Motorola

WS 2000
with AP 300

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Introduction

Polycom's Voice Interoperability for Enterprise Wireless (VIEW) Certification Program is designed to ensure interoperability and high performance between SpectraLink Wireless Telephones and WLAN infrastructure products.

The products listed below have been thoroughly tested in Polycom's lab using the VIEW Certification Test Plan. This document details how to configure the WS 2000 Wireless Switch and the AP 300 access point (AP) with SpectraLink Wireless Telephones.

Certified Product Summary

Manufacturer:	Motorola: http://support.symbol.com/support/product/manuals.do			
Approved products:	Wireless Switch		Access Point	
	WS 2000 †		AP 300 †	
RF technology:	802.11b/g			
Radio frequency:	2.4 – 2.484 GHz			
Quality of service:	SpectraLink Voice Priority (SVP)			
Security:	WPA-TKIP (PSK), WPA2-CCMP (PSK)			
Wireless Switch firmware version certified:	2.2.1.0-018R			
SpectraLink handset models certified: **	e340/h340/i640	8020/8030		
SpectraLink handset software certified:	89.134	122.010 or greater		
SpectraLink radio mode:	802.11b	802.11b	802.11g	802.11a
Maximum telephone calls per AP:	8	8	Not certified	
Recommended network topology:	Switched Ethernet			

† Denotes products directly used in VIEW Certification testing

** SpectraLink handset models 8020/8030, e340/h340/i640 and their OEM derivates are VIEW Certified with the WLAN hardware and software identified in the table. Throughout the remainder of this document they will be referred to collectively as "SpectraLink Wireless Telephones".

Service Information

If you encounter difficulties or have questions regarding the configuration process, please contact Motorola technical support at (800) 653-5350, or at http://www.symbol.com/services/contactsupport.

Known Limitations

Voice quality may be impaired in an environment with heavy wireless TCP traffic, such as FTP data transfers.

Access Point Capacity and Positioning

Please refer to the Polycom *Deploying Enterprise-Grade Wi-Fi Telephony* white paper. This document covers the security, coverage, capacity and QoS considerations necessary for ensuring excellent voice quality with enterprise Wi-Fi networks.

For more detailed information on wireless LAN layout, network infrastructure, QoS, security and subnets, please see the *Best Practices Guide for Deploying SpectraLink 8020/8030 Wireless Telephones*. This document identifies issues and solutions based on Polycom's extensive experience in enterprise-class Wi-Fi telephony, and provides recommendations for ensuring that a network environment is adequately optimized for use with SpectraLink 8020/8030 Wireless Telephones.

Network Topology

The following topology was used during VIEW Certification testing.
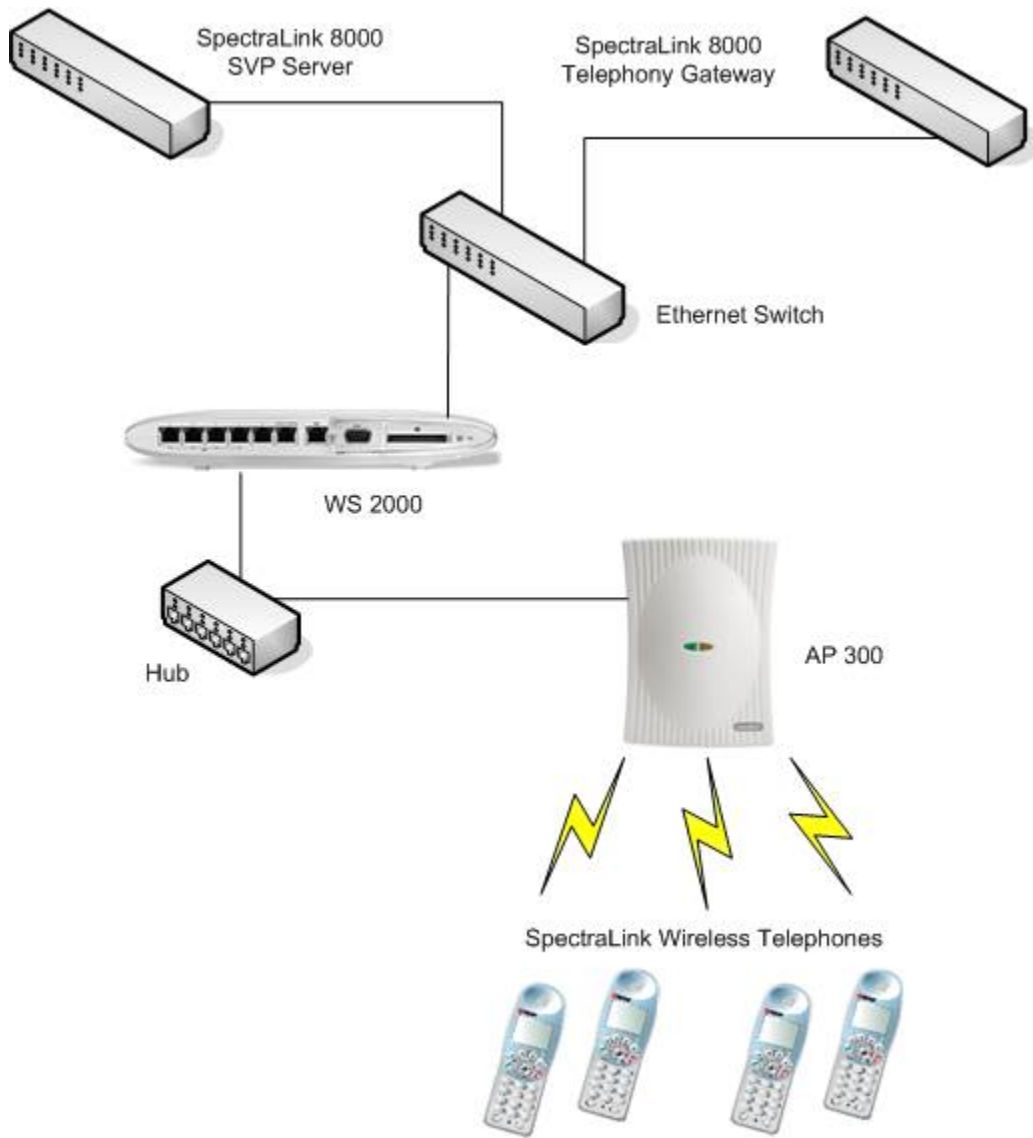
Configuration Settings

Installing a new image

The VIEW Certified firmware release can be obtained from Motorola 'Dev Zone'. Upgrading the WS 2000 Wireless Switch to the new firmware can be done through the Web interface or through the command line interface (CLI). Place the image on the FTP server, TFTP server or through Compact Flash card, depending on the file transfer mechanism chosen.

Installing firmware through the CLI

1. Enter your username and password to log into the CLI. The defaults are user: **admin** password: **symbol**. The serial interface parameters are **19200,8,n,1,n**.

2. Connect the FTP/TFTP server to subnet 1.

    a. For TFTP, issue the following commands.
    ```
    admin>
    admin>system
    admin(system)>config
    admin(system.config)>set server 192.168.0.100
    admin(system.config)>set fw file
    mf_02010100009R.bin
    admin(system.config)>update tftp s1
    ```

    b. For FTP, issue the following commands.
    ```
    admin>
    admin>system
    admin(system)>config
    admin(system.config)>set server 192.168.0.100
    admin(system.config)>set fw file
    mf_02010100009R.bin
    admin(system.config)>set fw path /home/<user>
    admin(system.config)>set user <username>
    admin(system.config)>set passwd <password>
    admin(system.config)>update ftp s1
    ```

3. The WS 2000 Wireless Switch will reboot and load the firmware.

Installing firmware through the Web interface

1. Open the WS 2000 applet by entering the IP address of the wireless switch: **http://192.168.0.1**

2. In the navigation pane, click **Firmware Update**. The **Firmware Update** page will appear.

3. Under **Filename**, enter the firmware file name from the TFTP server.

4. Click the **TFTP Server on Subnet** option.

5. At **IP Address**, enter the TFTP server IP address.

6. Click the **Apply** button.

7. Click the **Perform Update** button.

8. The WS 2000 Wireless Switch will reboot and load the firmware from the location specified.

Configuring the Wireless Switch from the Default Configuration

Radio settings: The SpectraLink Wireless Telephones use an 802.11b radio; therefore VIEW Certification testing was done with the 802.11b mode only and not the b/g mode.

Commands	Default Settings	VIEW Tested Settings
Beacon-interval	100	100 *
DTIM-period	10	3 *
BG mode	B and G	B only *
Power level	20 dBm	20 dBm
Channel	1	1
Rates	1, 2, 5.5, 11	1, 2, 5.5, 11
Short preamble	Disabled	Disabled *

* Denotes settings that are required for operation with SpectraLink Wireless Telephones

Configuring radio settings through the CLI

To configure radio settings for the wireless switch, use the following commands.

```
admin>
admin>network
admin(network)>ap
admin(network.ap)>
admin(network.ap)>set beacon intvl  1 100
admin(network.ap)>set dtim 1 3
admin(network.ap)>set rate 1 1,2,5.5,11 1,2,5.5,11
```

Setting the channel

Regulatory parameter values depend on country of operation and radio type. Refer to documentation for regulatory product information.

User selection

You can specify the desired channel manually by using the following command.

```
admin(network.ap)>set reg 1 in 11 20
```

```
set  reg <access port index> <indoor/outdoor>
```

Configuring radio settings through the Web interface

1. In the WS 2000 applet navigation pane, select **AP1<index> [BG]**.

2. In the **AP1** page, go to **802.11 b/g mode**, and select **B Only** from the dropdown list.

3. Rates will be set automatically to **1, 2, 5.5, 11**.

4. From the **Channel** and **Power Level** dropdown lists, select the desired settings. Please consult your facility site survey to determine power and channel settings.

5. Click the **Apply** button.
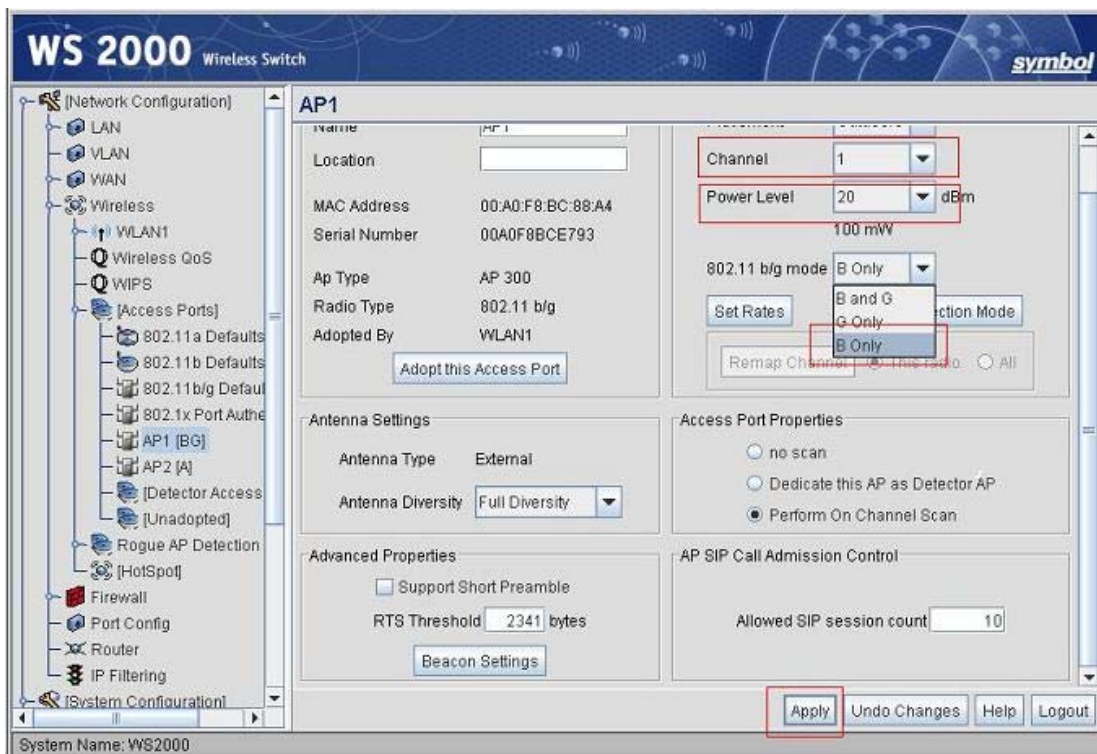
6. In the WS 2000 applet navigation pane, select **AP<index> [BG]**.

7. In the **AP1** page, click the **Beacon Settings** button.

8. In the **Beacon Settings** dialog box, set the **DTIM Period** to **3 Beacons**.

9. Click the **OK** button.

10. Click the **Apply** button.
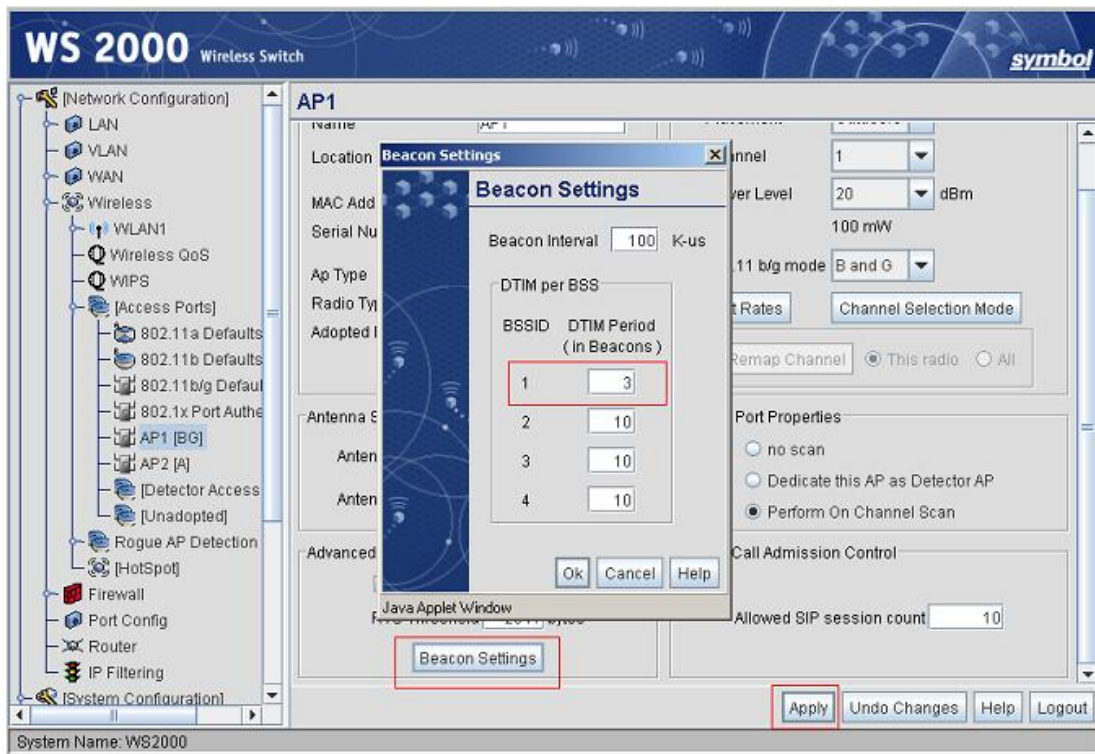
Voice Prioritization Setting

1. In the WS 2000 Wireless Switch, voice prioritization on a WLAN is enabled by default.

2. **Multicast Address 1** should be set to **01:00:5E:00:01:74** for SpectraLink multicast traffic.

3. Click the **Apply** button
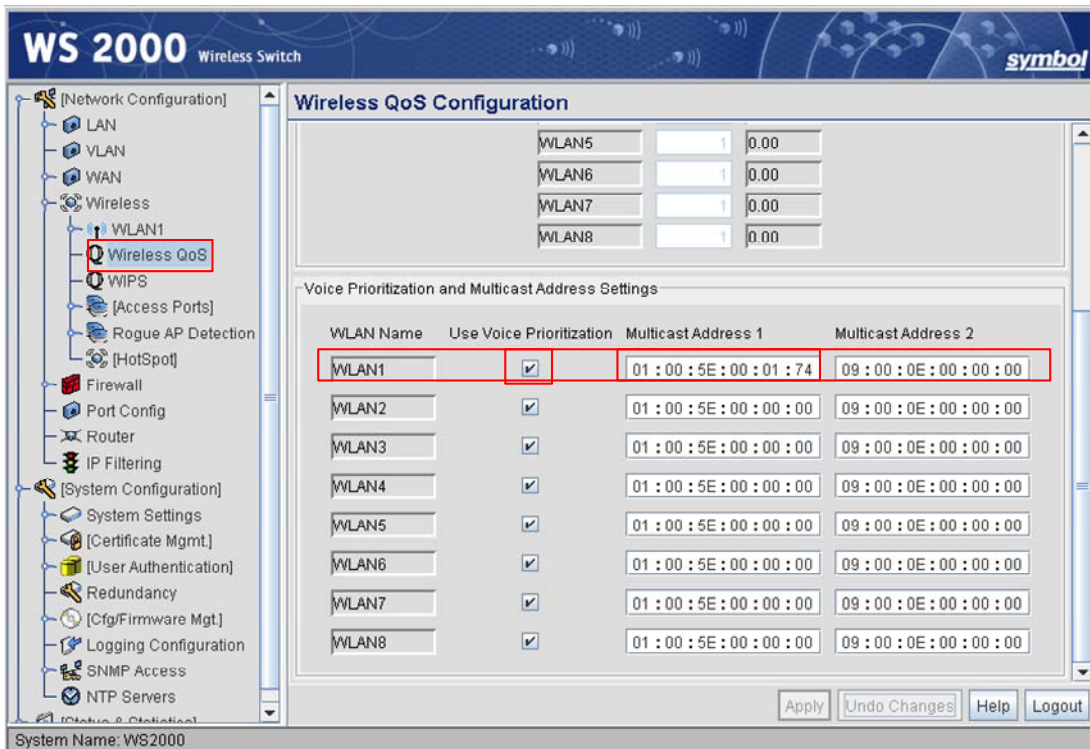
SSID Settings

Configuring SSID settings through the CLI

Commands	Default Settings	VIEW Tested settings
ESSID	101	spectralink

* Denotes settings that are required for operation with SpectraLink Wireless Telephones

Configure the SSID settings of the wireless switch using the following commands.

```
admin>
admin>network
admin(network)>wlan
admin(network.wlan)>set ess 1 spectralink
```

Configuring SSID settings through the Web interface

1. In the WS 2000 applet navigation pane, under **Wireless**, select **WLAN1.**

2. Configure the **ESSID** (e.g. **spectralink**).

3. Click the **Apply** button.
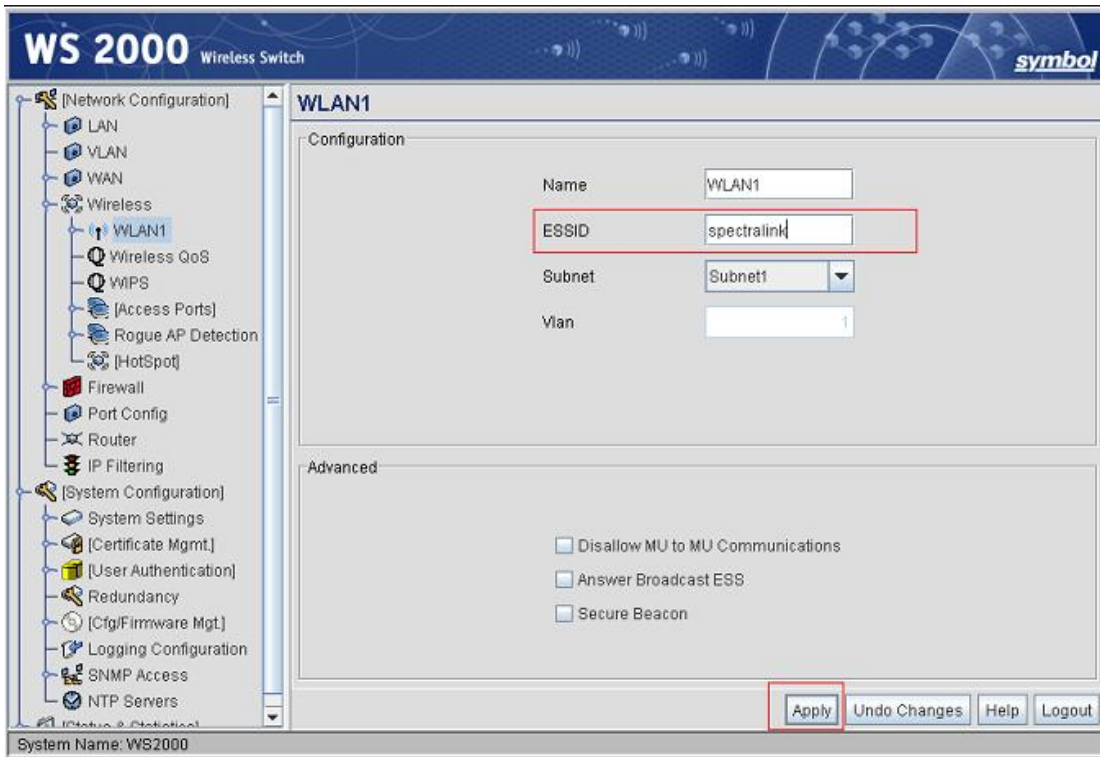
Security Settings

Enable WPA/WPA2 security mode.

Configuring WPA/WPA2 TKIP through the CLI
(when SpectraLink Wireless Telephones are configured for WPA-PSK)

To configure WPA-TKIP (PSK) as security option, use the following commands

```
admin>network
admin(network)>wlan
admin(network.wlan)>set enc 1 tkip
admin(network.wlan)>set tkip phrase 1 12345678
admin(network.wlan)>save
```

Configuring WPA/WPA2 TKIP through the Web interface
(when SpectraLink Wireless Telephones are configured for WPA-PSK)

1. In the WS 2000 applet navigation pane, double-click **WLAN1**, and then click **WLAN1 Security**.

2. Click the **WPA/WPA2-TKIP** option, and click the **WPA/WPA2-TKIP Settings** button. The **WPA/WPA2-TKIP Settings** dialog box will appear.

> The WS 2000 Wireless Switch supports mixed-mode operation of WPA-TKIP and WPA2-TKIP. The steps below enable WPA-TKIP by default. WPA-TKIP was used for VIEW Certification testing.

3. In the **WPA/WPA2-TKIP Settings** page, under **Key Settings**, click the **ASCII passphrase** option to enter the ASCII passphrase.

4. A warning dialog box will appear while you are trying to enter the key. Click **Yes.**

5. Enter the ASCII passphrase. This will configure the WPA-TKIP (PSK) mode. Click the **OK** button.
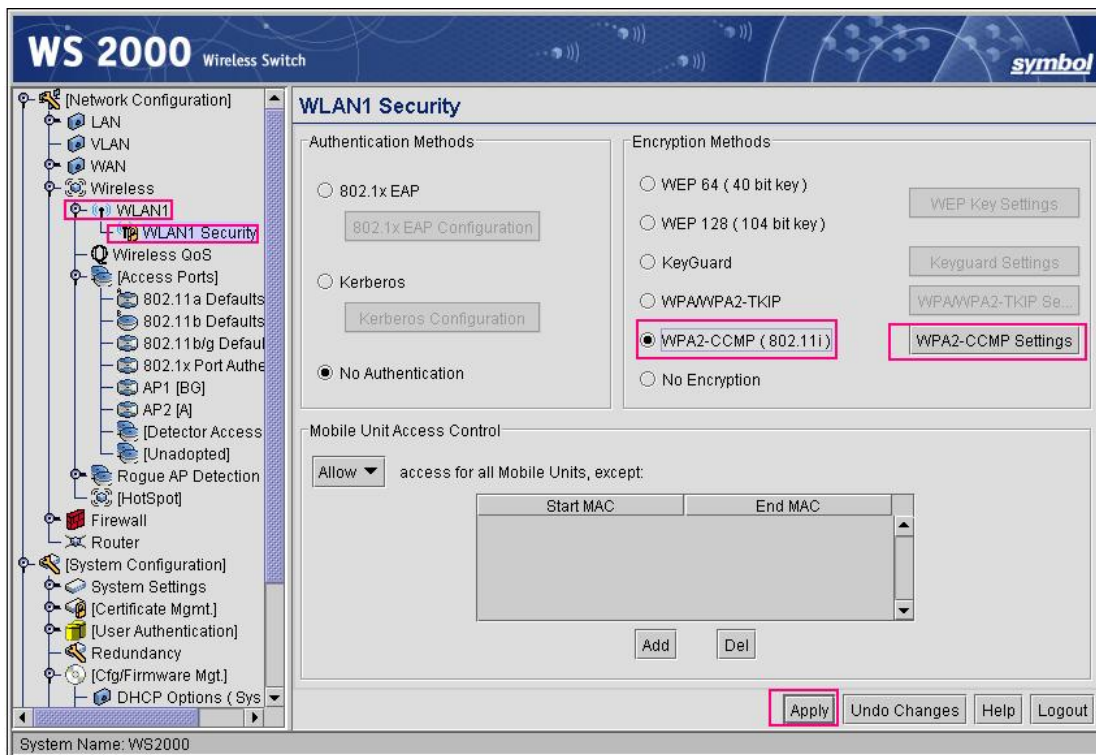
6. Click the **Apply** button.
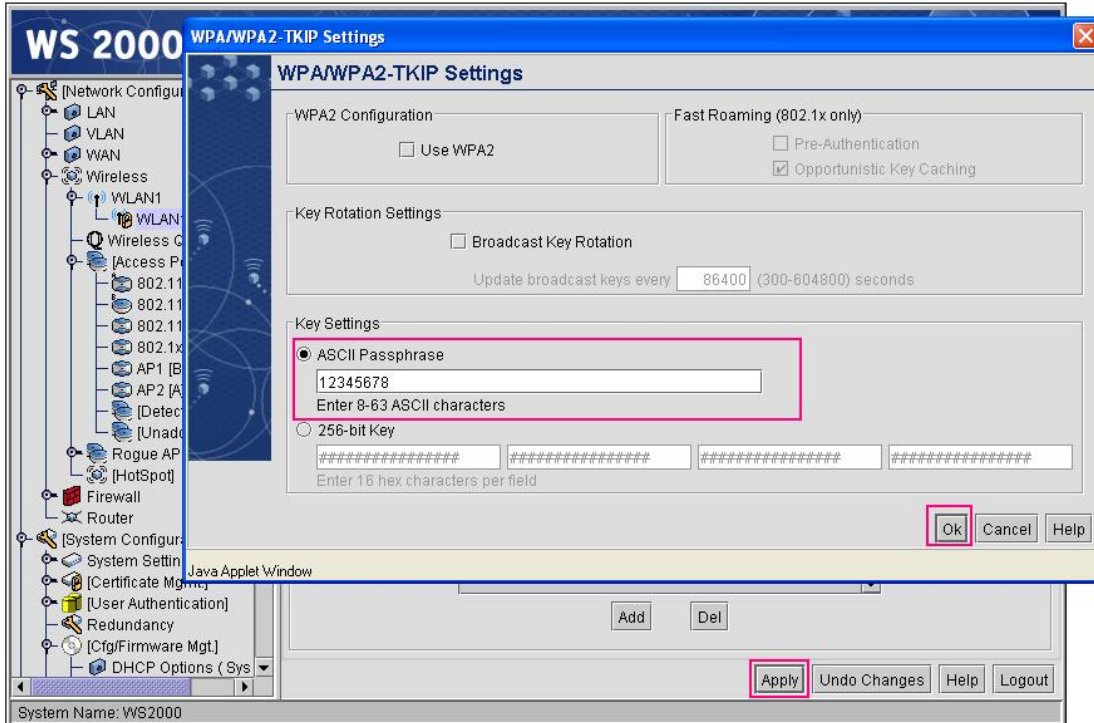
Configuring WPA2-CCMP through the CLI
(when SpectraLink Wireless Telephones are configured for WPA2-PSK)

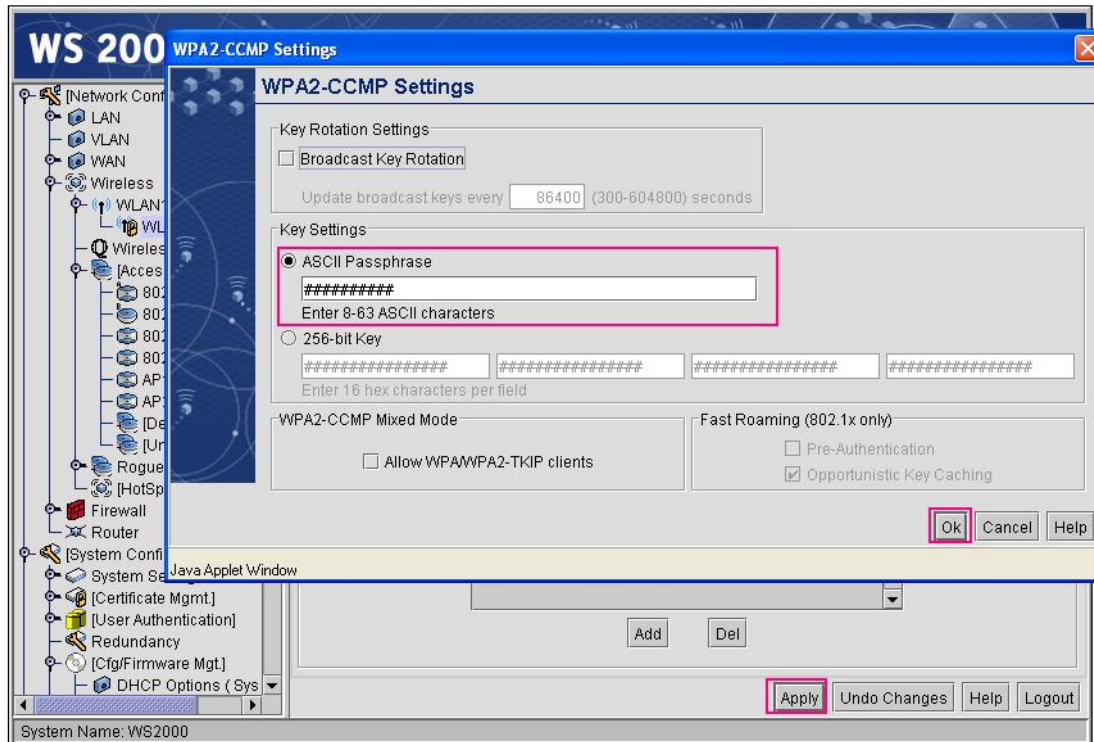To configure WPA2-CCMP as a security option, use the following commands.

```
admin>network
admin(network)>wlan
admin(network.wlan)>set enc 1 ccmp
admin(network.wlan)>set ccmp phrase 1 12345678
admin(network.wlan)>save
```

Configuring WPA2-CCMP through the Web interface
(when SpectraLink Wireless Telephones are configured for WPA2-PSK)

1. In the WS 2000 applet navigation pane, double-click **WLAN1**, and then click **WLAN1 Security**. The **WLAN1 Security** page will appear.

2. In the **WLAN1 Security** page, click the **WPA2-CCMP (802.11i)** option, and click the **WPA2-CCMP Settings** button.

3. In the **WPA2-CCMP Settings** dialog box, under **Key Settings**, click the **ASCII passphrase** option to enter the ASCII passphrase.

4. A warning dialog box will appear. Click **Yes**.

5. Enter the ASCII passphrase. Click the **OK** button.

6. Click the **Apply** button.

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