



# VIEW Certified Configuration Guide

## Colubris Networks

5000 Series MultiService Controllers  
with MAP-320/330 MultiService Access Points

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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 in the following section have been thoroughly tested in Polycom's lab using the VIEW Certification Test Plan. This document details how to configure Colubris Networks 5000 Series MultiService Controllers (MSC-5100, MSC-5200 and MSC-5500) and MultiService Access Points (MAP-320 and MAP-330) with SpectraLink Wireless Telephones.

## Certified Product Summary

Manufacturer:	Colubris Networks: <a href="http://www.colubris.com">www.colubris.com</a>			
Approved products:	Wireless Controllers	Access Points		
	MSC-5100 <sup>†</sup>	MAP-320		
	MSC-5200 MSC-5500	MAP-330 <sup>†</sup>		
RF technology:	802.11a/b/g			
Radio:	2.4 GHz (802.11b/g), 5 GHz (802.11a)			
Quality of Service:	SpectraLink Voice Priority			
Security:	WPA-PSK and WPA2-PSK			
AP firmware version certified:	Release 5.1.6			
SpectraLink handset models certified: **	e340/h340/i640	8020/8030		
SpectraLink handset software certified:	89.135	122.013 or greater		
SpectraLink radio mode:	802.11b	802.11b	802.11g	802.11a
Maximum telephone calls tested per AP:	12	12	12*	12*
Recommended network topology:	Switched Ethernet			

<sup>†</sup> Denotes products directly used in VIEW Certification testing

\* Maximum calls tested during VIEW Certification. The certified product may actually support a higher number of maximum calls for 802.11a and 802.11g radio modes.

\*\* SpectraLink handset models 8020/8030, e340/h340/i640 and their OEM derivatives 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 Colubris Networks technical support at 1-866-241-8324 or visit [www.colubris.com/support](http://www.colubris.com/support).

## Known Limitations

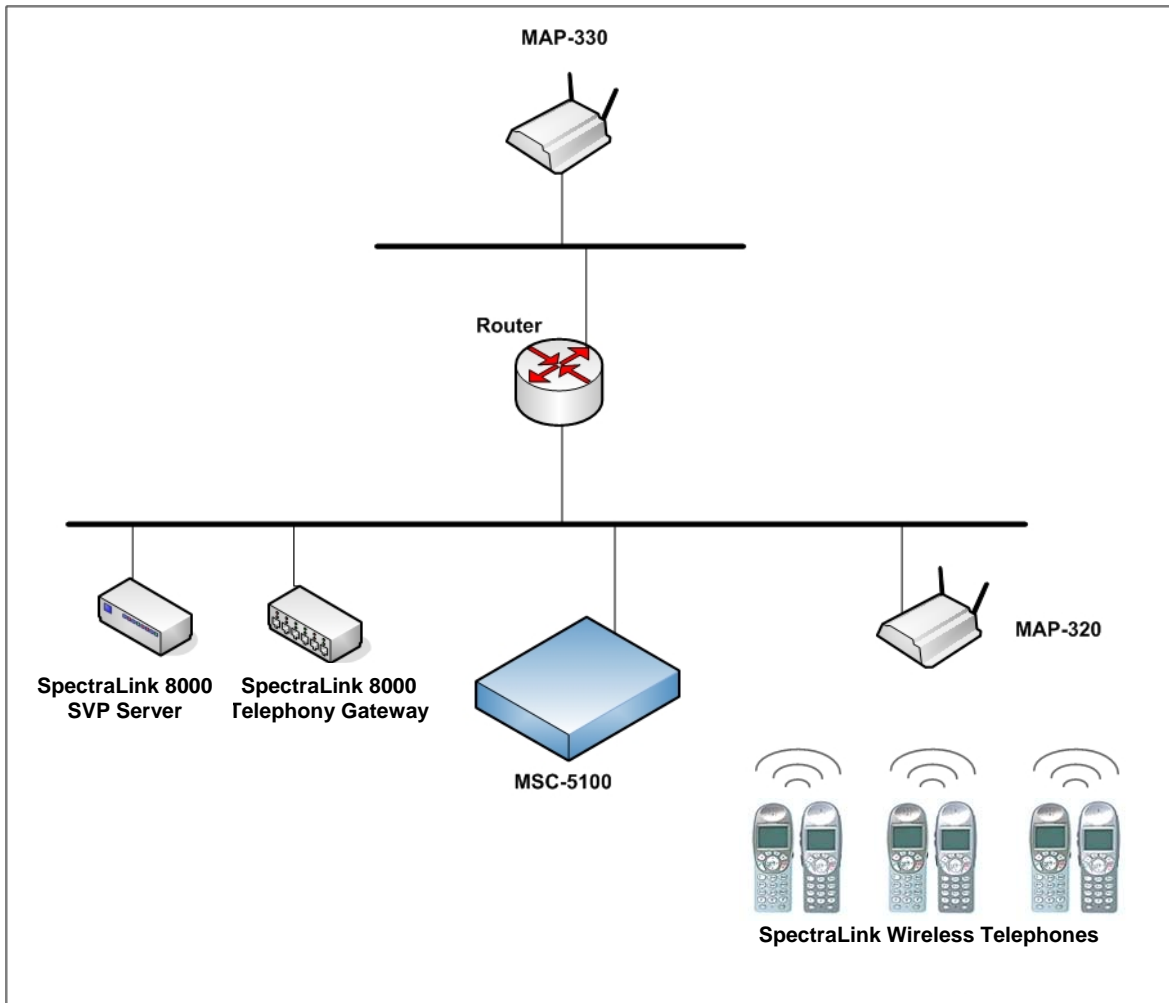
Since Colubris MultiService Access Points (MAPs) automatically recognize and prioritize SpectraLink Voice Priority (SVP) traffic, it is recommended that Wi-Fi Multimedia (WMM) be disabled on the SpectraLink Service Set Identifier (SSID).



Colubris MAPs can operate in one of two modes: autonomous or controlled. When in autonomous mode, each AP must be configured separately. In controlled mode, the configuration is created once on the MultiService Controller (MSC) and is then pushed out to all MAPs. Colubris MAPs were VIEW Certified with MSCs; however, it was confirmed that the APs behave exactly the same in autonomous mode. The controllers allow Layer 3 roaming of the SpectraLink Wireless Telephones. Layer 3 roaming is not supported in autonomous mode.

## Network Topology

The topology below was used during VIEW Certification testing. Colubris MSCs can manage MAPs across multiple subnets without tunneling data back to the MSC. Data is tunneled through the MSC only when a client is performing L3 roaming.



# Configuration Settings

Colubris products can be configured using several different methods: Web browser, Colubris Networks Management System (CNMS), or CLI. This document will describe all configuration steps using the Web interface exclusively.



The term Virtual Service Community (VSC) used on Colubris products is the equivalent of the Service Set Identifier (SSID) in the SpectraLink Wireless Telephone.

This document assumes that you have an MSC up and running with software version 5.1.6 with all MAPs discovered and synchronized. For help with initial configuration settings on the MSC, including logging in, setting IP addresses, upgrading firmware and provisioning MAPs, please see the *Administrator's Guide* that is included on the documentation CD you received with your Colubris equipment.

To support L3 Mobility, a Mobility license must be purchased with your MSC. If a Mobility license is not installed, the **Enable L3 Mobility** check box on the **VSC profile** screen will be grayed out. Contact your Colubris Networks representative for information on obtaining licenses.



The radio parameters of the MSC must be modified depending on what radio mode the SpectraLink Wireless Telephones are using (802.11a, b & b/g mixed, or g-only). The VSC parameters of the MSC are the same regardless of the radio mode of the handsets.

# Configuring the VSC Parameters

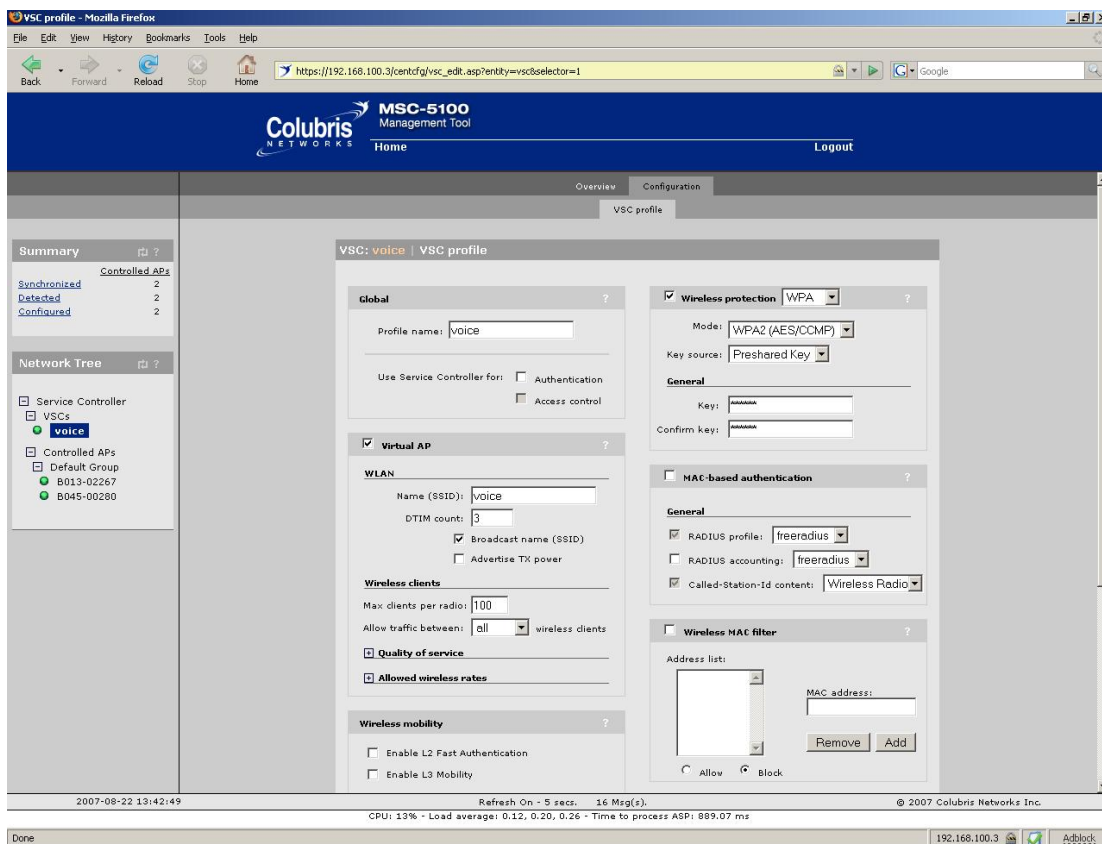
1. Once logged in to the MSC, click **Controlled APs** in the navigation pane. This will show all **MAPs** discovered by the MSC.

The screenshot shows the Colubris MSC-5100 Management Tool interface. The main content area displays the 'Discovered APs' page. The page title is 'Discovered APs' and the base group is set to 'All'. The number of access points is 2. A table lists the discovered APs:

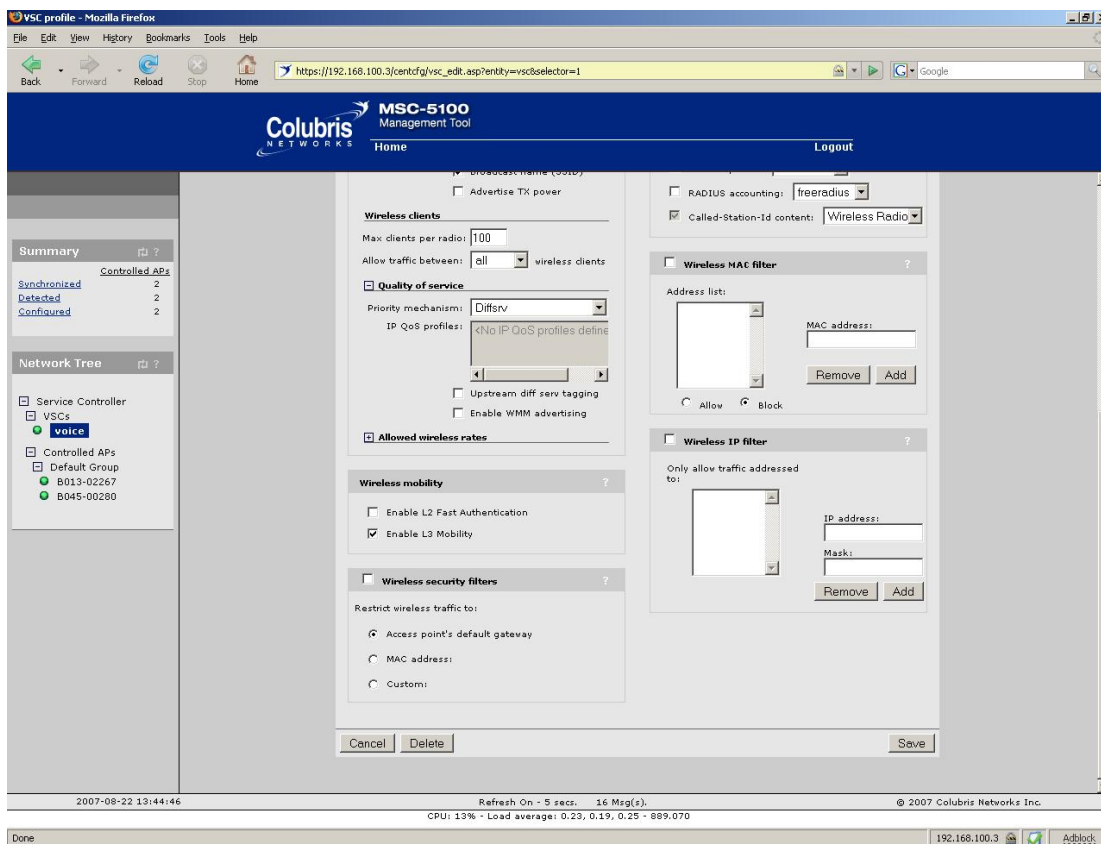
Status	AP name	Serial number	Wireless services	Wireless clients	Diagnostic	Action
Synchronized	B045-00280	B045-00280	0	0	Synchronized	
Synchronized	B013-02267	B013-02267	0	0	Synchronized	

Below the table, there are icons for AP Mode, Local Mesh Mode, AP/Local Mesh Mode, Monitor Mode, Sensor Mode, and Disabled. The status bar at the bottom shows the date and time (2007-08-22 13:30:30), refresh interval (5 secs), CPU usage (13%), and load average (0.86, 0.52, 0.39).

2. Click **VSCs** in the navigation pane.
3. Edit the existing VSC by clicking the name (the default VSC is **Colubris Networks**). In this example, the VSC has been named **voice**. Set the following parameters for optimal SpectraLink Wireless Telephone performance:
4. Change the **Profile name** to **voice**.
5. At **Use Service Controller for:** ensure that neither **Authentication** nor **Access Control** are selected.
6. Change the **Name (SSID)** to **voice**.
7. For optimal Push-to-talk (**PTT**) performance, set the **DTIM count** to **3**.
8. If using wireless encryption, select the **Wireless protection** check box, and select the desired encryption type, **Mode** and **Key source** from the drop-down lists.



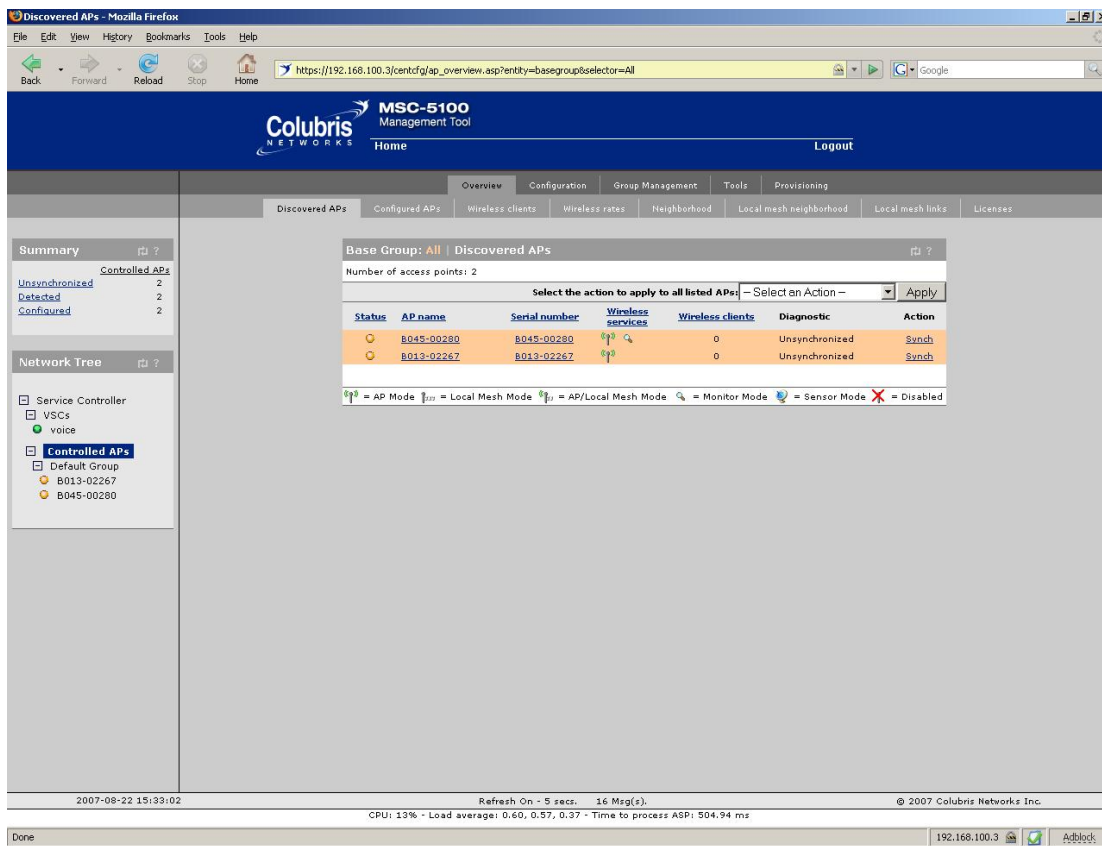
9. Leave **Quality of Service** at its default value of **Diffsvr**. Colubris MAPs automatically prioritize SpectraLink Wireless Telephone traffic.
10. Clear the **Enable WMM advertising** check box.
11. If desired, select the **Enable L3 Mobility** check box.
12. Clear the **Wireless security filters** check box.
13. Click the **Save** button at the bottom right of the screen to save all changes.



# Synchronizing Changes

Saving the changes on the **VSC** screen will cause all connected MAPs to become unsynchronized. Unsynchronized MAPs will show up as yellow in the **Overview** screen.

1. Synchronize the MAPs by selecting **Synchronize Configuration** from the **Select an Action** drop-down list.
2. Click the **Apply** button.



## Configuring Radio Parameters

SpectraLink Wireless Telephones can be set to one of the following 802.11 radio modes:

- 802.11a
- 802.11b & b/g mixed
- 802.11g only

When operating in 802.11b & b/g mixed mode, the SpectraLink Wireless Telephones will act as 802.11b clients. When set to 802.11g-only mode, the handsets **must** operate in a network environment with only 802.11g-capable clients; no 802.11b clients can be present on the wireless network.

Colubris Networks recommends using dual radio MAP-330 APs when deploying SpectraLink Wireless Telephones. Data clients should use the 802.11b/g radio and the SpectraLink Wireless Telephones should use the 802.11a radio. This deployment gives a dedicated radio for voice traffic that won't be interfered with by data clients on the other radio.

The **Channel** and **Transmit power** settings for each MAP (configured on the **Radio** screen) will vary depending on the deployment location. A thorough radio frequency (RF) site survey should be performed to determine the optimal AP placement and power scheme. Please consult your facility's RF site survey, designed for voice traffic, to determine if you have sufficient coverage to support all data rates.



For additional details on RF deployment please see the [Deploying Enterprise-Grade Wi-Fi Telephony](#) white paper and the [Best Practices Guide for Deploying SpectraLink 8020/8030 Wireless Telephones](#).

SpectraLink Wireless Telephones require the following dBm levels to operate at the listed rates:

802.11 Radio Standard	Enabled Data Rates (Mb/s)	Required Minimum Signal Strength (RSSI)
802.11b	11, 5.5, 2, 1	-70 dBm
	11 only	-60 dBm
802.11g	54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, 1	-60 dBm
	54 only	-45 dBm
802.11a	54, 48, 36, 24, 18, 12, 9, 6	-60 dBm
	54 only	-45 dBm

1. Click **Controlled APs** in the navigation pane.
2. Click the **Configuration** tab in the main screen.
3. If you are using MAP-320s, click the **Single radio** tab.
4. If you are using MAP-330s, click the **Dual radios** tab.
5. If you have a mix of MAP-320s and MAP-330s deployed, you must make changes on both the **Single radio** and **Dual radios** screens.

## Radio parameters for SpectraLink Wireless Telephones using 802.11a mode

Set the following values on the appropriate radio screen (**Single radio** or **Dual radios**):

1. Set **Operating mode** to **Access Point Only**.
2. Set **Wireless mode** to **802.11a**.
3. If PTT will be used on the SpectraLink Wireless Telephones, set the **Multicast Tx rate** to the appropriate data rate depending on RF coverage.
4. Select the **SpectraLink VIEW** check box.
5. Click the **Save** button at the bottom of the screen.
6. Synchronize all MAPs with the new changes.

The screenshot displays the Colubris MSC-5100 Management Tool interface. The browser address bar shows the URL: `https://192.168.100.3/centcfg/wireless_radio.asp?entity=basegroup&selector=All`. The page title is "Single radio - Mozilla Firefox". The interface includes a navigation menu with tabs for Overview, Configuration, Group Management, Tools, and Provisioning. The "Configuration" tab is active, and the "Single radio" sub-tab is selected. The "Radio" configuration panel is open, showing the following settings:

- Operating mode:** Access point only
- Wireless mode:** 802.11a
- Channel:** Automatic
- Interval:** Disabled
- Time of day:** 00:00:00
- Automatic channel exclusion list:** Channel 1, 2, 412GHz; Channel 2, 2, 417GHz; Channel 3, 2, 422GHz
- Distance between access points:** Large
- RTS threshold:** (disabled)
- Multicast Tx rate:** 36.0 Mb/s
- Antenna selection:** Diversity (both antennas)
- Beacon interval:** 100 time units (TU)
- Spectralink VIEW:**

The "Transmit power control" section is also visible, with the following settings:

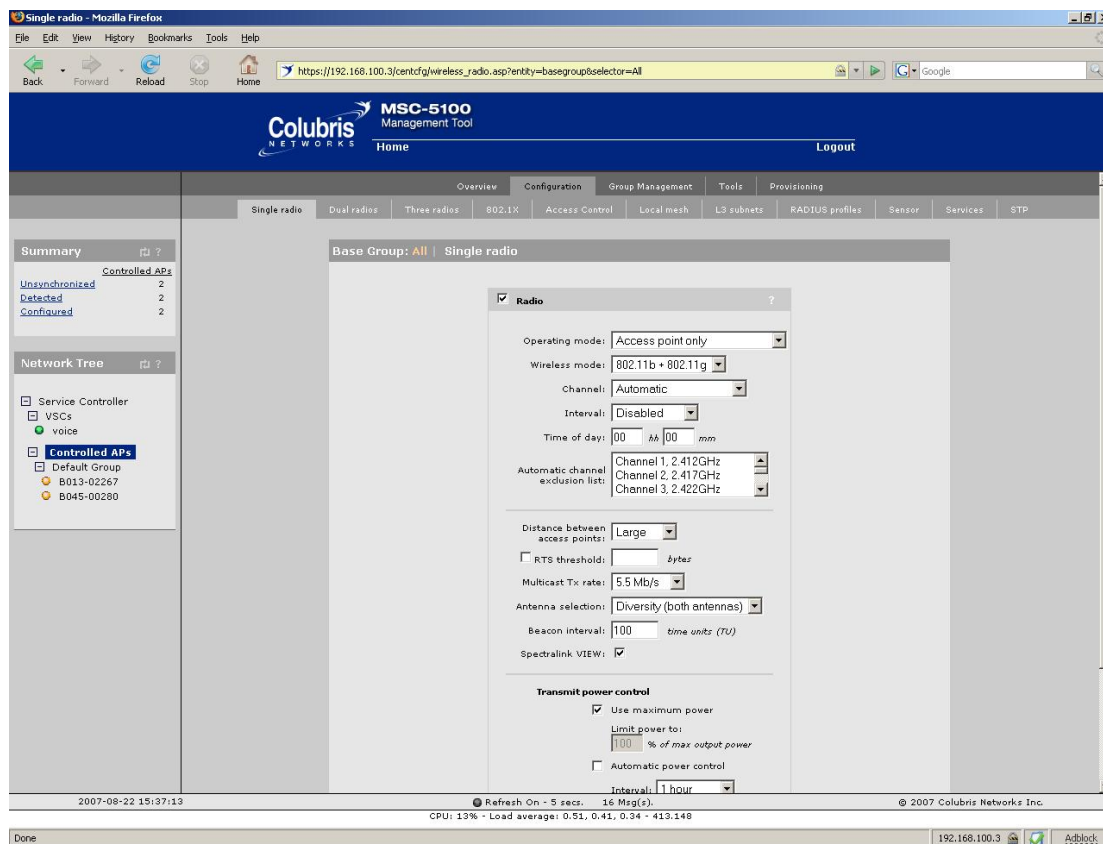
- Use maximum power:**
- Limit power to:** 100 % of max output power
- Automatic power control:**
- Interval:** 1 hour

The status bar at the bottom of the page shows the date and time (2007-08-22 15:40:07), refresh interval (5 secs), CPU usage (13%), and load average (0.06, 0.25, 0.28 - 413.140). The browser status bar shows the address 192.168.100.3 and the Adobe Flash Player icon.

## Radio parameters for SpectraLink Wireless Telephones using 802.11 b & b/g mixed

Set the following values on the appropriate radio screen (**Single radio** or **Dual radios**):

1. Set **Operating mode** to **Access Point Only**.
2. Set **Wireless mode** to **802.11b + 802.11g**.
3. If PTT will be used on the SpectraLink Wireless Telephones, set the **Multicast Tx rate** to the appropriate data rate depending on RF coverage.
4. Select the **Spectralink VIEW** check box.
5. Click the **Save** button at the bottom of the screen.
6. Synchronize all MAPs with the new changes.



## Radio parameters for SpectraLink Wireless Telephones using 802.11g only

When set to 802.11g-only mode, no 802.11b-only clients can be present in the same network. SpectraLink Wireless Telephones do not support 802.11g protected mode (a method for allowing 802.11b and 802.11g clients to co-exist in the same network). To prevent 802.11b-only clients from associating to the network, you can set the radio mode on Colubris products to 802.11g only. The downside of this is that the lower rates (1, 2, 5.5 and 11 Mb/s) will not be advertised by the AP. Some data clients may encounter problems with this.

Colubris recommends setting the AP radio to **802.11b + 802.11g** mode and leaving it up to the network administrator to ensure that no b-only clients connect to the network.

Set the following values on the appropriate radio screen (**Single radio** or **Dual radios**):

1. Set **Operating mode** to **Access Point Only**.
2. Set **Wireless mode** to **802.11b + 802.11g**.
3. If PTT will be used on the SpectraLink Wireless Telephones, set the **Multicast Tx rate** to the appropriate data rate depending on RF coverage.
4. Select the **Spectralink VIEW** check box.
5. Click the **Save** button at the bottom of the screen.
6. Synchronize all MAPs with the new changes.

The screenshot displays the Colubris MSC-5100 Management Tool web interface. The browser window title is "Single radio - Mozilla Firefox" and the address bar shows the URL: `https://192.168.100.3/centcfg/wireless_radio.asp?enby=basegroup&selector=All`. The interface has a blue header with the Colubris logo and "MSC-5100 Management Tool". Below the header is a navigation menu with tabs: Overview, Configuration, Group Management, Tools, and Provisioning. The "Configuration" tab is active, and within it, the "Single radio" sub-tab is selected. On the left side, there is a "Summary" section showing "Controlled APs" with 2 Unsyncronized, 2 Detected, and 2 Configured. Below that is a "Network Tree" showing a hierarchy: Service Controller -> VSCs -> voice -> Controlled APs -> Default Group -> B013-02267 and B045-00280. The main content area is titled "Base Group: All | Single radio" and contains a "Radio" configuration form. The form includes the following settings:
 

- Operating mode: Access point only
- Wireless mode: 802.11b + 802.11g
- Channel: Automatic
- Interval: Disabled
- Time of day: 00 : 00 : 00
- Automatic channel exclusion list: Channel 1, 2.412GHz; Channel 2, 2.417GHz; Channel 3, 2.422GHz
- Distance between access points: Large
- RTS threshold: (empty) bytes
- Multicast Tx rate: 36.0 Mb/s
- Antenna selection: Diversity (both antennas)
- Beacon interval: 100 time units (TU)
- Spectralink VIEW:
- Transmit power control:
  - Use maximum power
  - Limit power to: 100 % of max output power
  - Automatic power control
  - Interval: 1 hour

 At the bottom of the page, there is a status bar showing the date and time "2007-08-22 15:40:49", system information "Refresh On - 5 sec. 16 Msg(s)", CPU usage "CPU: 13% - Load average: 0.18, 0.25, 0.28 - 413.140", and the IP address "192.168.100.3".