C H A P T E R **7**

Working with Spectrum Tabs, Plots, and Charts

Spectrum Tabs, Plots, and Charts Overview

Cisco Spectrum Expert software provides two spectrum tabs, **Spectrum** and **Spectrum (2)**. Each tab operates identically. The tabs allow you to create, name, and save two distinct configurations of plots and charts. (You can create and save more than two plot/chart configurations; but you can have two of them as defaults that automatically appear on these tabs.)

Descriptions of the specific charts and plots—including the parameters for fine-tuning the plot/chart content—may be found in the Online Help, and in "Using Spectrum View Plots" and "Using Spectrum View Charts" of this guide. This chapter provides an overview of how to use these tabs (**Spectrum** and **Spectrum (2)**) to create your custom plot/chart views.

Create A Spectrum Plot or Chart

To add a spectrum plot or chart, follow these steps:

Step 1   Right-click in the workspace for the spectrum plots and select
Add Plot > <Plot Type> or **Add Chart > <Chart Type>**.
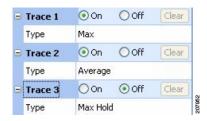
You can also use the menu
Spectrum > Add Plot > <Plot Type> or **Spectrum > Add Chart > <Chart Type>**.

Step 2   Use the **Plot Control** panel at the left of the display to set the parameters for the plot or chart. The particular parameters will vary depending on the type of plot. An overview of the **Plot Control** panel is presented in "Spectrum Plot Controls." Detailed descriptions of chart parameters are also contained in the Cisco Spectrum Expert Software Online Help system.

Note   Of particular importance for the spectrum plots, and for some of the charts – in order to see any data displayed at all, you need to select the **On** button for at least one **Trace**. A **Trace** describes the line of data shown on a plot.

By default, the **Trace** or **Traces** for a plot are set to **Off**.

- If you are in a **Spectrum** tab and the **Controls** are not visible, select **View > Control Panel**.

- To access the **plot Control Panel** for a particular plot or chart, simply use the mouse to click on that plot.

> **Note** If you have more than one plot in view, then as you click on different plots, the **plot Control Panel** will display the configuration options for the currently selected plot.

Multiple Plots

You can repeat the instructions immediately above to place more than one plot on display. You can configure any combination of up to nine plots and charts (in 1024x768 mode or higher), or four plots and charts (in 800x600 mode) per **Spectrum View** tab.

Measurement Interval

Unless you have paused a plot (discussed below), the Cisco Spectrum Expert Software updates each plot or chart once per measurement interval, which is typically once every second.

Pause and Resume Plotting

At times an event may occur in your network, such that you want to immediately capture the RF environment at that moment for sustained study and review. You can pause and resume plots and charts by right-clicking in the workspace, and selecting the appropriate menu options, or by selecting these options from the **Spectrum** menu (For example, **Spectrum ‡ Select All Items ‡ Pause Selected Items**):

- **Select All Items**—Selects all plots/charts displayed in the currently selected **Spectrum** tab and enables the **Spectrum** menu options.
- **Pause Selected Items**—Freezes the data displayed on the currently selected plot(s) or chart(s). Be sure to right-click on the appropriate plot/chart when you bring up the context menu.
- **Resume Selected Items**—Resumes the real-time data display for the currently selected plot/chart(s).
- **Pause Selected Items**—Freezes the data display on all plots/charts.
- **Resume Selected Items**—Resumes the real-time update of data on all plots/charts.

Copying Plots and Charts

All plots and charts displayed in Cisco Spectrum View can be copied and pasted within the pane area of the window. You can copy and paste a plot or chart using on of the following three methods.

Method 1

Click on the top of the plot frame and hold down the **<Ctrl>** key. The cursor changes to indicate *copy* mode.

Move the mouse to the desired location.

Release the mouse button to paste a copy of the plot or chart. The copied plot or chart is subject to total count checking and PvT/PvF trace limit checking.

Method 2

Step 1   Select a plot.

Step 2   Press **<Ctrl + C>.** The selected plot is copied to the clipboard.

Method 3

Step 1   Right-click on a plot or chart to display the pop-up menu. Or, select **Spectrum** from the **Main** menu to display the drop-down menu.

Step 2   Select the **Copy** option. The selected plot is copied to the clipboard.

Pasting Plots and Charts from the Clipboard

Spectrum View plots and charts can be retrieved from the clipboard and pasted into your current Spectrum View session, an additional Spectrum View session running on your machine, or a different machine running Cisco Spectrum Expert Software with the same card type. The paste feature is subject to total plot/chart count checking and PvT/PvF trace limit checking.

To paste a plot from the clipboard, follow these steps:

Step 1   Open the clipboard and copy the desired plot.

Step 2   Right-click within the **View** pane to display the pop-up menu.

Step 3   Press **<Ctrl + V>**. The plot gets pasted to the end of the view.

Or, you can paste a plot from the clipboard using the **Main** menu as follows:

   a.   Open the clipboard and copy the desired plot.

   b.   Select **Spectrum** from the **Main** menu to display the drop-down menu.

   c.   Select the **Paste** option. The plot gets pasted to the end of the view.

Cutting Plots and Charts

Use any of the following methods to cut a plot or chart:

Method 1

Step 1   Select a plot.

Step 2   Press **<Ctrl + X>**. This removes the plot and copies it to the clipboard.

Method 2

Step 1   Right-click a plot to display the pop-up menu.

Step 2   Select the **Cut** option. This removes the plot from the display and copies it to the clipboard.

Method 3

Step 1   Select a plot.

Step 2   Select **Spectrum** from the **Main** menu to display the drop-down menu.

Step 3   Select the **Cut** option. This removes the plot from the display and copies it to the clipboard.

Method 4

Step 1   Left-click on the plot or chart of interest.

Step 2   Press **Delete**.

Method 5

Step 1   Left-click on the **X** icon located in the upper right-hand corner of the plot or chart.

Method 6

Step 1   Left-click on the plot or chart of interest.

Step 2   Select **Spectrum ‡ Remove Selected Item...** from the **Main** menu to display the drop-down menu.

Moving Plots and Charts

All plots and charts displayed in Spectrum View can be moved within the pane area of the window.

Method 1

Step 1   Left-click on the top banner of the plot frame.

Step 2   Drag the plot to the desired location. A blinking vertical line indicates the new location.

Step 3   Release the mouse button to drop the plot in the new location.

Method 2

Step 1   Right-click on the top banner of the plot frame.

Step 2   Drag the plot to the desired location. A blinking vertical line indicates the new location.

Step 3   Release the mouse button to drop the plot in the new location. A pop-up menu displays.

Step 4   Select on of the following options:

- **Copy Here**—pastes a duplicate of the original plot in this location.
- **Move Here**—relocates the original plot to this location.
- **Cancel**—terminates the operation.

Selecting Multiple Plots and Charts

In cases where you need to perform the same operation on more than one plot or chart, multiple plots and charts can be selected. For example, you may want to remove, pause, or resume more than one plot at the same time.

✎
Note   When multiple plots and charts are selected, the control panel displays a message indicating that **Multiple items are selected and** no controls are available for configuring plots and charts.

Multiple plots and charts can be selected as follows:

Step 1   Hold down the **<Ctrl>** key.

Step 2   Left-click each plot to select it.

Zoom In/Out

For optimal viewing, a plot or chart can be maximized (zoom in) and minimized (zoom out) to its original size. A plot or chart in **Zoom In** mode is indicated by an orange background. Additionally, you can zoom in/out on up to two plots or charts at the same time.

To zoom in/out a single plot, follow these steps:

Step 1   Double-click, or right-click, the frame or left click the magnifying glass icon of the plot to maximize it. The orange background indicates **Zoom In** mode.

Step 2   Double-click the frame or left-click the magnifying glass icon to minimize it.

Or, use the **View** menu to zoom in/out:

Step 1   Select a plot.

Step 2   Select **Spectrum** from the **Main** menu to display the drop-down menu. Or, right-click within the View pane to display the pop-up menu.

Step 3   Select the **Zoom In** option to maximize the plot. Or, select **Zoom Out** to minimize it.

To zoom in/out multiple (up to two) plots, follow these steps:

Step 1   Hold down the **<Ctrl>** key.

Step 2   Double-click the frame of each plot to maximize them. Or, double-click each frame to minimize them.

Or, use the **View** menu to zoom in/out multiple plots:

Step 1   Hold down the **<Ctrl>** key.

Step 2   Select the plots.

Step 3   Select **Spectrum** from the **Main** menu to display the drop-down menu. Or, right-click within the **View** pane to display the pop-up menu.

Step 4   Select the **Zoom In** option to maximize the plot. Or, select **Zoom Out** to minimize it.

Saving and Restoring Spectrum View Layouts

Other operations are available for working with plots and charts. The operations **Open Spectrum View Configuration…**, **Save Spectrum View Configuration…**, and **New Spectrum View Configuration** can all be selected from the **Spectrum** menu. **Remove Selected Items…** can be selected from the **Spectrum** menu.

> **Note**   All these operations can also be selected by right-clicking on the frame of a plot or chart, and selecting from the context menu that appears.

- **Save Spectrum View Configuration**—Enables you to save the current configuration of open plots and charts, including their specific display parameters. (The current data, however, is not saved.)

Step 1   In the Save Spectrum View Configuration dialog, type in the name for your configuration, or select the name of a previously defined configuration.

> **Note**   The name you type here will also appear on the **Spectrum** and **Spectrum(2)** tabs, so we suggest you use something short but descriptive, for example, "Plots Only", "Charts Only", "Duty Cycle Charts and Plot", "Devices and RF Power", and so on.

Step 2   To make the current configuration be the default configuration, be sure to first select the **Set as startup default for this view** check box. If you select this, the current configuration will appear every time you log into the Cisco Spectrum Expert Software, and select the current tab.

> **Note**   You can save a separate default view for each Spectrum tab.

Select **[OK]** to save or **Cancel** to exit without saving changes..

- **Open Spectrum View Configuration…**—The dialog box for this operation will list all of your currently saved spectrum views. Select one view, and then select **OK**.

- **New Spectrum View Configuration**—This operation clears all currently displayed plots.

- **Remove Selected Items…**—This operation will close only the currently selected plot.

Deleting A Spectrum View

To delete a saved spectrum view, follow these steps:

Step 1   Right-click on the **Plots** workspace and select **Save Spectrum View Configuration or** Select **File > Save Spectrum View Configuration**.

Step 2   In the **Save Spectrum View Configuration** dialog, select an existing view.

Step 3   Select **Remove Saved Configuration**.

Step 4   Select **OK** on the confirmation dialog box.

Exporting Data

The **Export Data** feature provides additional functionality to all **Spectrum** plots and charts, as well as the active devices listed in the **Active Devices** tree. This feature allows you to export device information to a file for future analysis. This option can be accessed by right-clicking on a device name, on any plot or chart, or anywhere in the display pane to display a pop-up menu.

When **Export Selected Data…** is selected, a window appears providing a default file name and Save in location (Spectrum Captures folder). The window also allows user selection of the file name and Save in location. A sample exported data file for an **Interference Power** chart is as follows:

Table 7-1   Interference Power

Interference Power

Vertical Scale: 10 dBm /

Channel	In-Network Wi-Fi AP	Max Interference	Cordless Phones	Wi-Fi CCI	Wi-Fi ACI
WiFi Ch. 1	-85	-78.6	-81.2	-85	
WiFi Ch. 2		-78.6	-81.2		-82.4
WiFi Ch. 3	-90	-78.6	-81.2		-80.1
WiFi Ch. 4		-78.6	-81.2		-74.9
WiFi Ch. 5		-78.6	-81.2		-70.9
WiFi Ch. 6	-71	-78.6	-81.2	-83	-88
WiFi Ch. 7		-78.6	-81.2		-70.7
WiFi Ch. 8	-84	-78.6	-81.2		-70.2
WiFi Ch. 9		-78.6	-81.2		-65.8
WiFi Ch. 10		-78.6	-81.2		-62
WiFi Ch. 11	-62	-78.6	-81.2	-87	