Viewing Alarm Details

In many instances, a page will have an **Alarm Status** column, which indicates whether an alarm is active. If an alarm is active, there will be a **Minor** or **Major** link (as shown in Figure 19) that you click to open a dialog that defines the active alarm. The background color of the **Alarm Status** cell also indicates the alarm level.

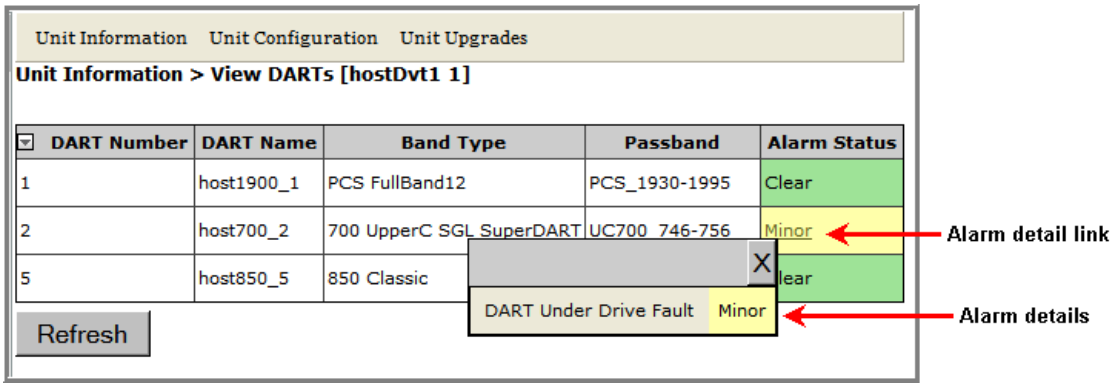


Figure 19. Alarm Link

For information on the Alarm indicator in the System Tree, see "System Tree" on page 41.

Sorting Tables

You can change the order of a table's contents by applying an alphanumeric sort on a column (see Figure 20). To toggle a column by ascending or descending order, click in the column heading.

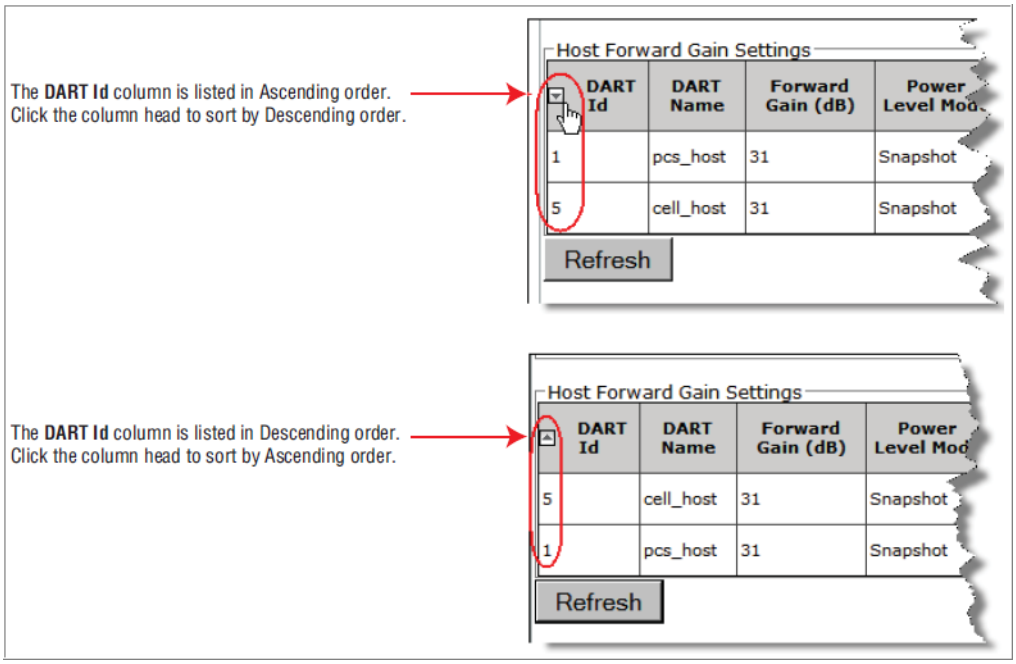


Figure 20. Sorting Tables in the GUI

FOLLOWING THE PROCEDURES IN THIS DOCUMENT

This section tells you how to use this document to use the FlexWave Prism EMS to configure and manage Prism devices.

Starting a Procedure

All procedures in this document assume that you have already logged in to the EMS as described in "Access the EMS" on page 57.

Modifying Parameters

In general, the procedures in this document end by having you click **OK** or **Apply** to accept changes or input.

When an operation completes, an **Operation completed** message displays, such as the one shown in Figure 21. If an error message displays, follow the screen prompts.

You can click **Refresh** to update the data being shown.

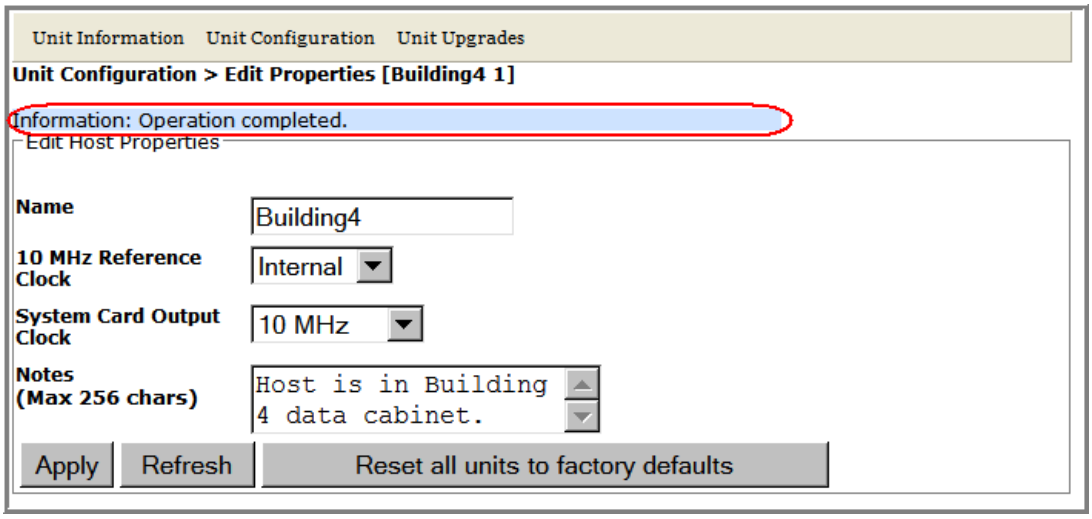
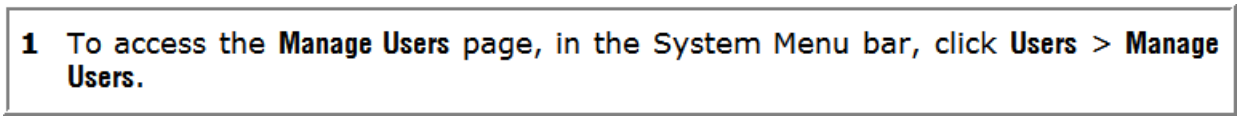


Figure 21. Operation Completed Message

Selecting Menu Items

In the Prism user documentation, when a procedure requires that you select a sequence of menu items, a right-angle symbol separate the items. For example, in the following graphic, “click **Users** > **Manage Users**” indicates that in the System Menu bar you select **Users**, and then in the **Users** list, select **Manage Users**.

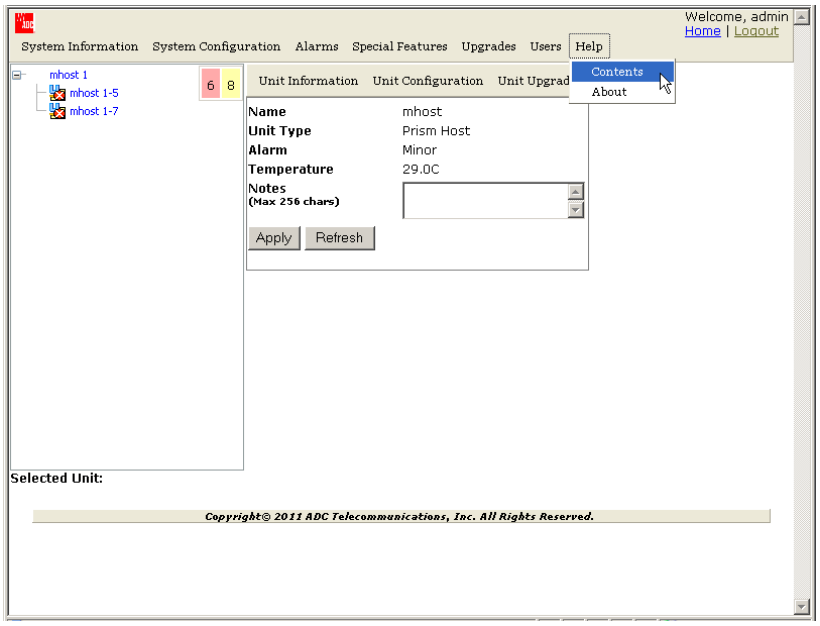


USING THE HELP EMBEDDED IN THE GUI

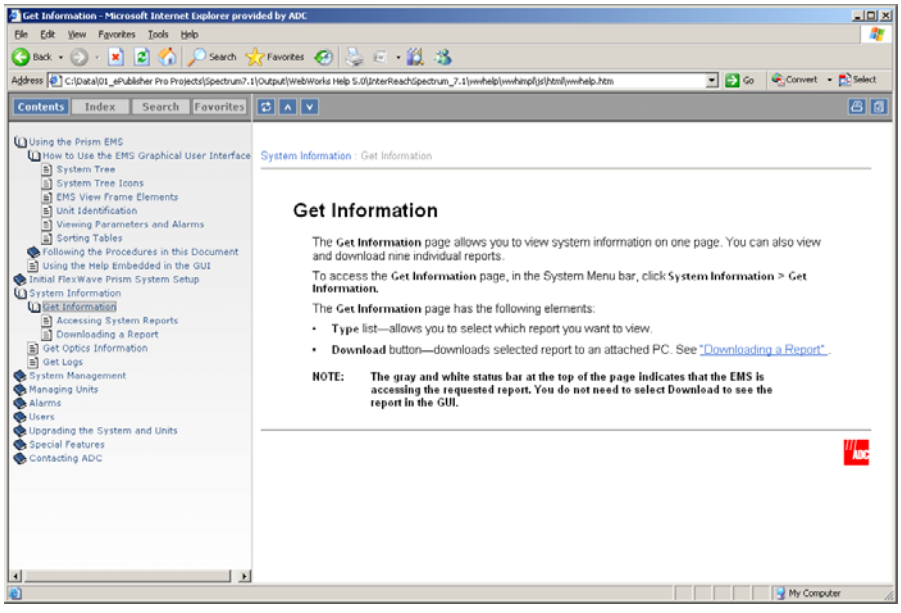
The following sections tell you how top access and use the embedded Prism Help module.

Accessing Help

In the Orientation Links, click **Help > Contents**.



Prism Help is context sensitive, which means that the Help topic that opens will pertain to the current view in the EMS View Frame. In the following example, the Help Topic for the **Get Information** page has opened.



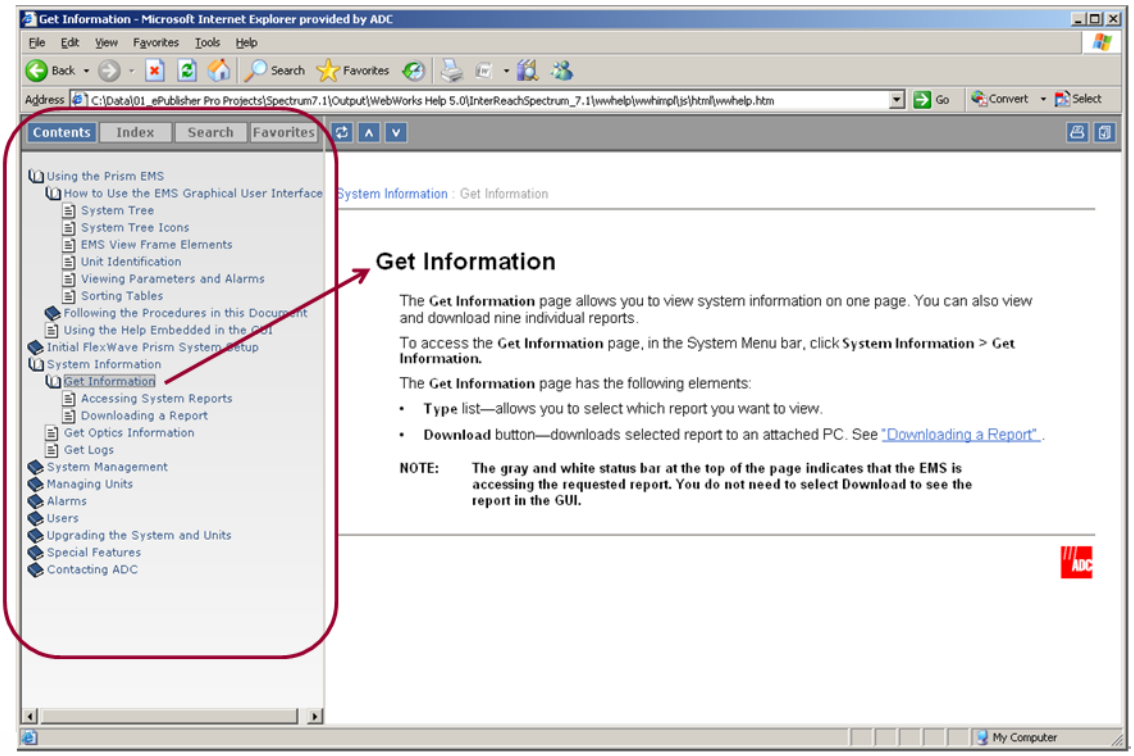
Navigating Help

The Help Module is designed like a book to make it easy to navigate.

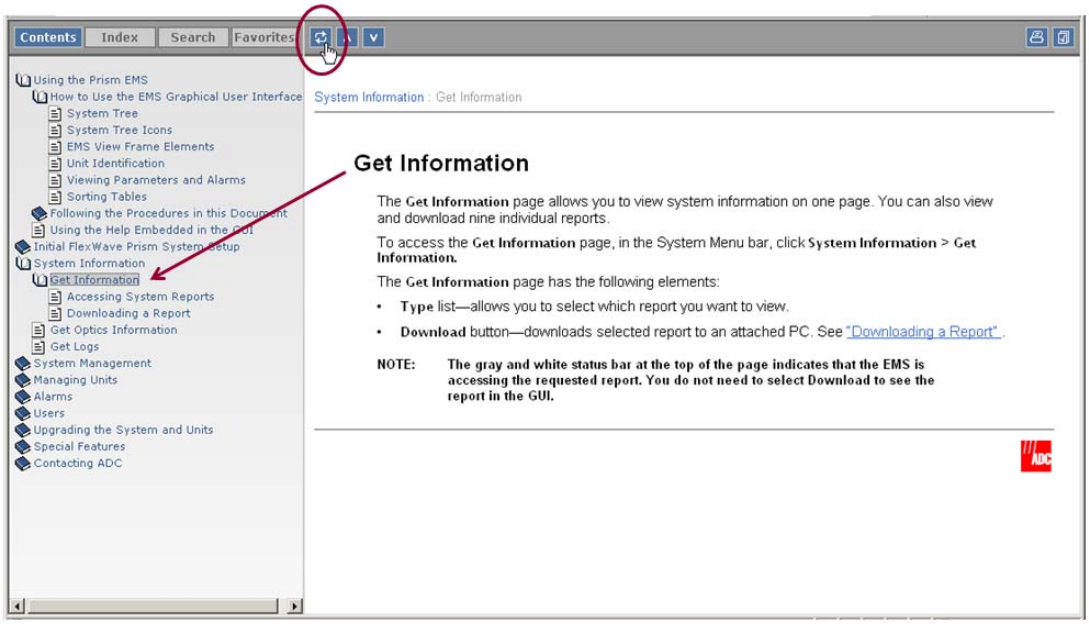
Using the Contents Tab

The default view opens with the **Contents** navigation tool open. In the following example, you can see where the **Get Information** topic falls within the order of contents.

- Click on any of the **Contents** links to go to the specified topic.
- Click on the book icons to open/close the chapters.

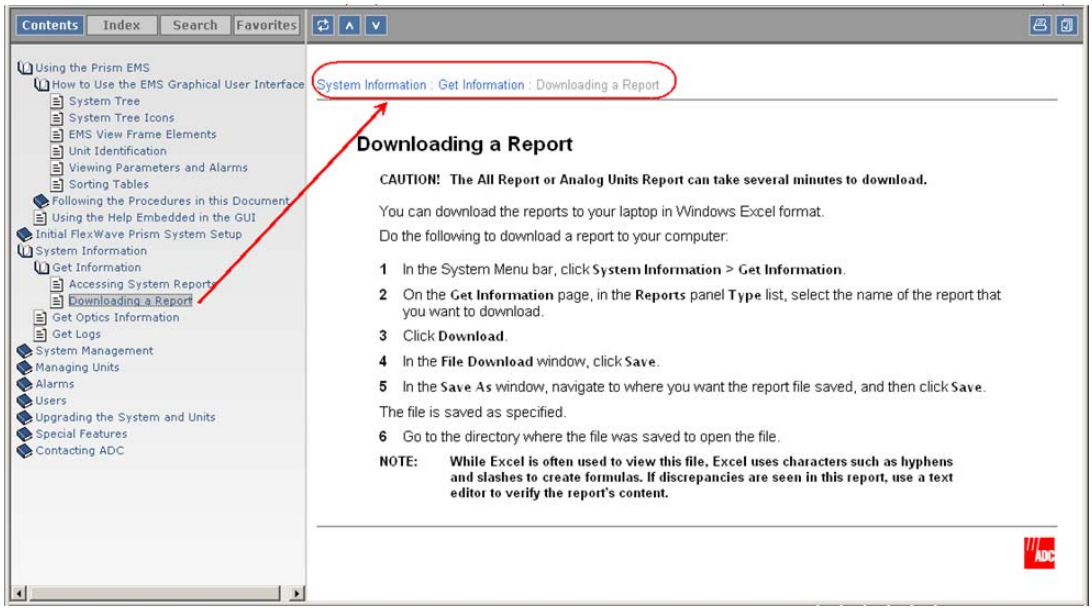


You can also use the **Show in Contents** button to show where a topic falls within the book hierarchy:

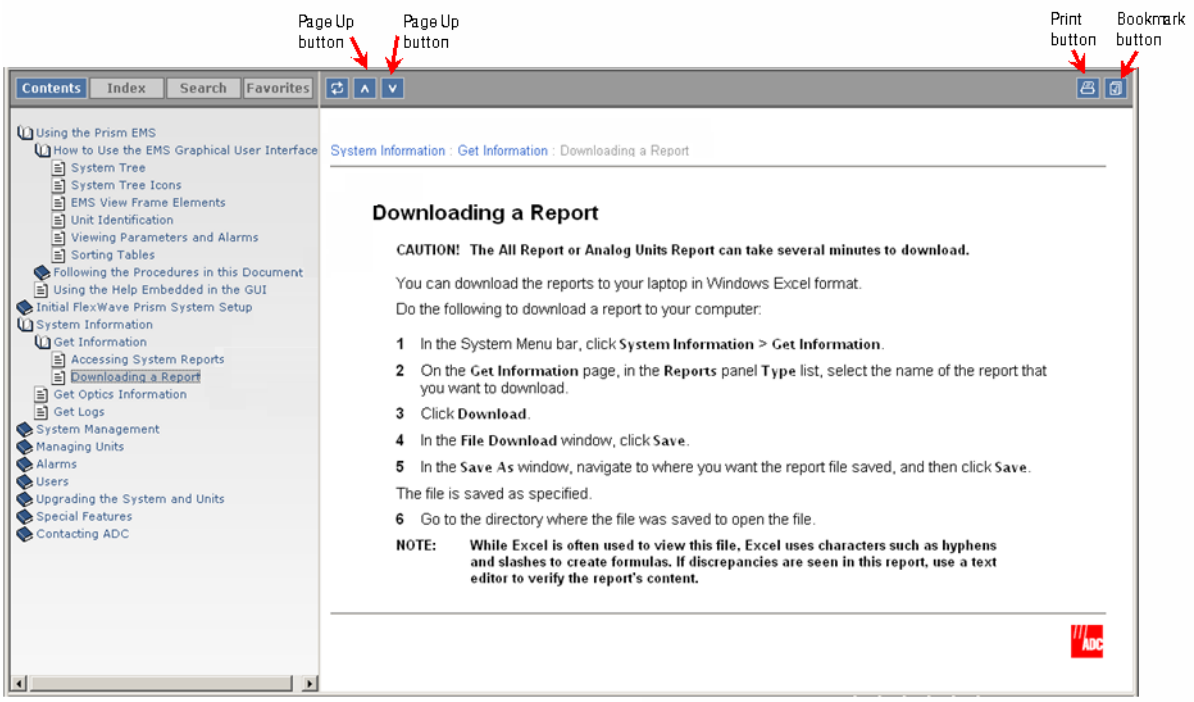


Using the Orientation Links and Buttons

You can use the interactive orientation links in the topic header. These links show where the topic falls within a chapter. Click on the links in the topic header to move back one step in the book hierarchy.

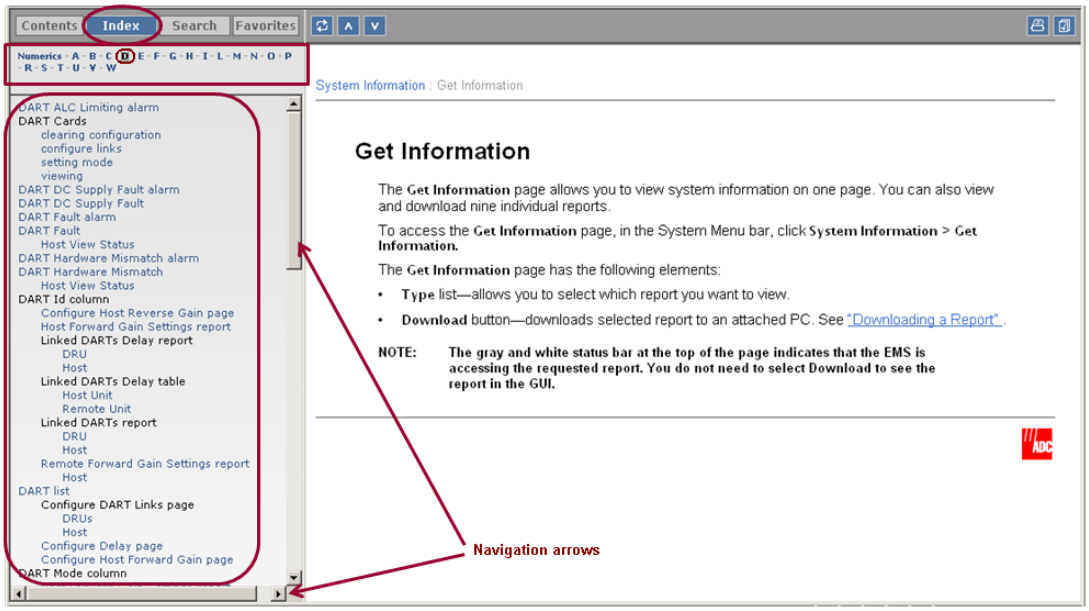


You can also use the Page Up button, Page Down button, Print button, and Bookmark button to bookmark a topic.



Using the Index Tab

Click **Index** to open the **Index** panel.



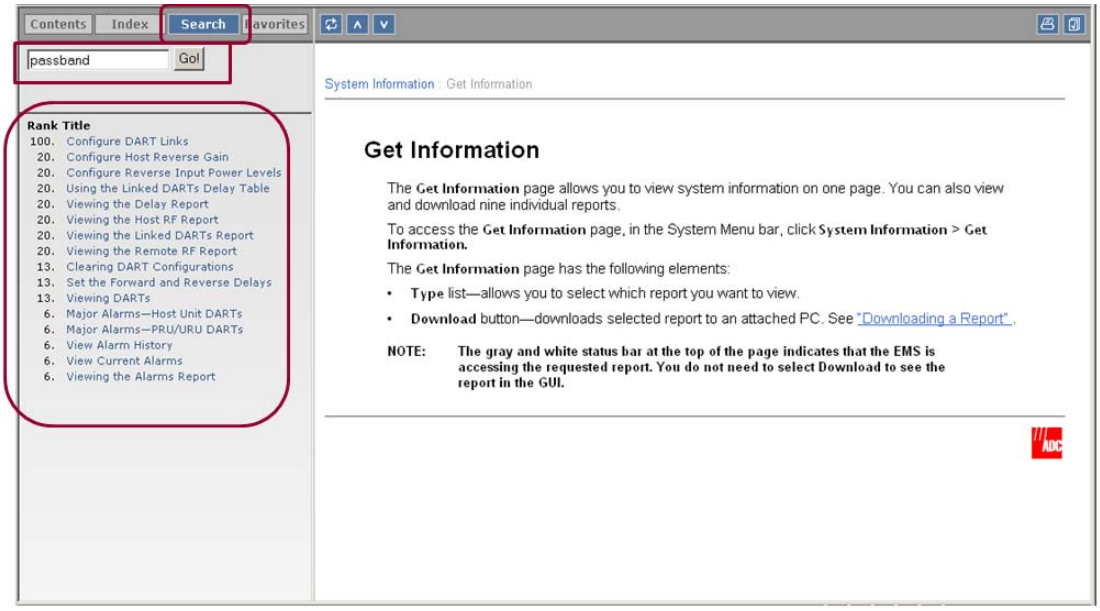
At the top of the **Index** panel is the alpha-numeric orientation tool. In this example, the letter **D** is selected, which results in only those indexed words that start with

"D" to display, in alphabetic order. Click on any of the links to go to the topic that has the indexed term in it.

To move up/down or left/right to change the orientation of the text in the Index panel, use the navigation arrows.

Using the Search Tab

1 Click **Search** to open the **Search** panel.



2 At the top of the **Search** panel is a text box in which you enter the term for which you want to search. In this example the user is searching for the word "passband."

3 To activate the search, click the Go button.

The **Search** panel is populated with links to the topics that contain the word "passband" and are ordered from top down in order of probability of which topic will contain the topic for which you are searching.

Intentionally Blank Page

INITIAL FLEXWAVE PRISM SYSTEM SETUP

Topics **Page**

The steps provided in this chapter configure a basic Prism system that includes:

- one Host Unit (Host)
- at least one Prism Remote Unit (PRU).

MINIMUM EMS SYSTEM REQUIREMENTS

The computer that you use to remotely access the EMS must meet the following minimum requirements:

- Windows 2000 or Windows XP operating system
- Internet Explorer version 7.x or FireFox 3.6
- Network Interface Card (NIC)
- Ethernet cable with RJ-45 connectors.

The EMS database can also be accessed remotely using an SNMP manager. In this case, the user interface varies depending on the SNMP manager, but the underlying parameters, parameter values, and alarms are the same as in the standard EMS interface.

ACCESS THE EMS

NOTE: In the default configuration, the Craft port has a DHCP server that assigns an IP address to the computer that is connected. You should therefore have your network interface configured for DHCP, or configured with a static IP address in the same subnet, where the default is 192.168.0.1/24.

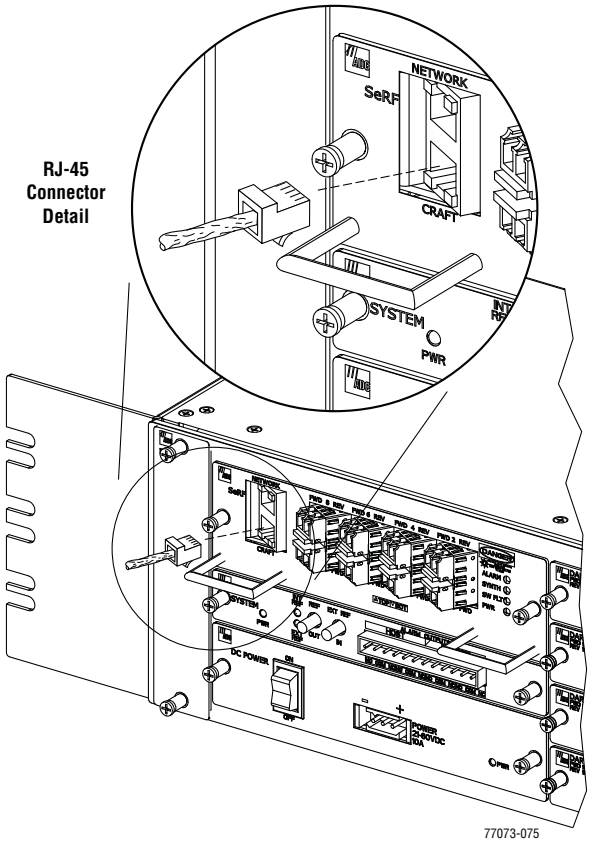
1 To allow the EMS popup and alarm screens to function correctly, do one of the following:

- Disable the popup blocker for your web browser.
- Enter the system IP address in the web browser's trusted sites list.

2 Use an Ethernet CAT 5 cable (straight or crossover) with RJ-45 connectors to connect a laptop to the Craft port of the Host.

3 Connect your computer and start a web browser.

4 In the web browser URL box, enter the following IP address: **192.168.0.1**

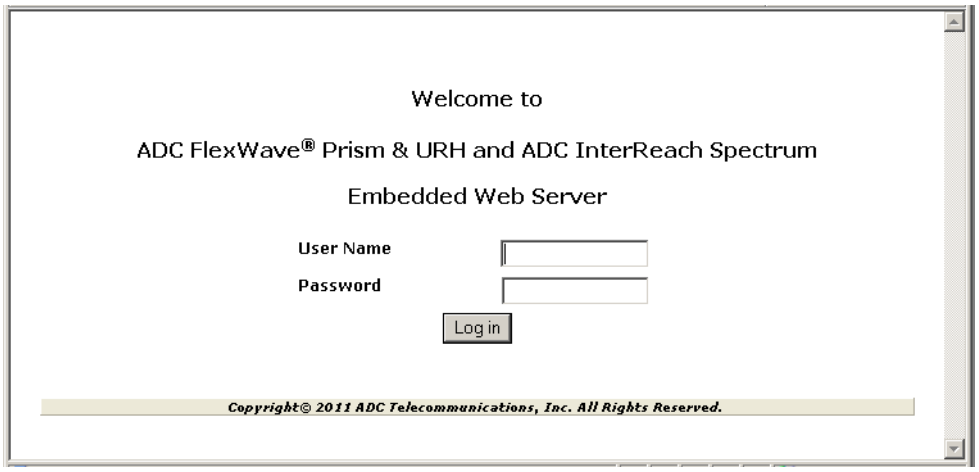


5 When the **Welcome to ADC FlexWave Prism & URH and ADC InterReach Spectrum** window opens:

a In the **User Name** box, type the user name provided by ADC or by the Network Administrator. The default user name is **admin**.

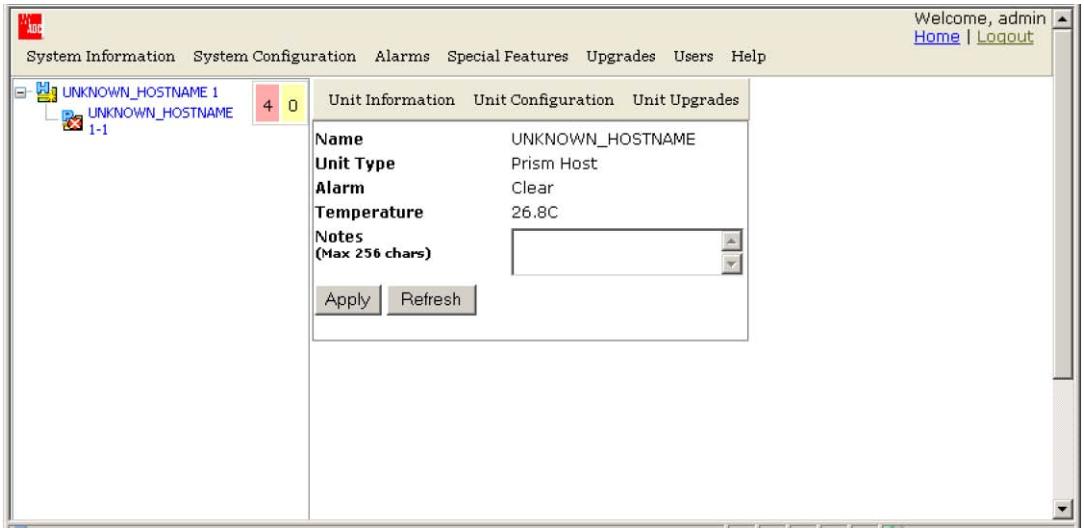
b In the **Password** box, type the password provided by ADC or by the Network Administrator. The default password is **adc123**.

Once installation is complete, users can be added and passwords can be changed. For further information, see "Users" on page 203.



6 Click **Log in** to open the default page, which comprises the elements listed below.

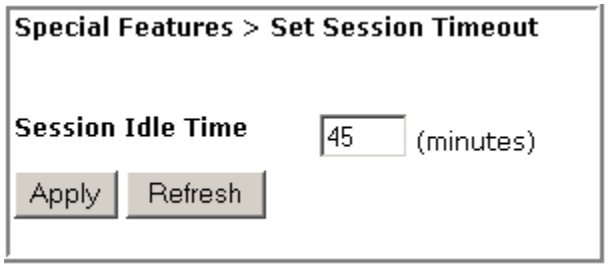
- The System Tree will be populated with installed devices, but no device will be selected.
- In the EMS View Frame, the default page displays when the Host is selected in the System Tree.



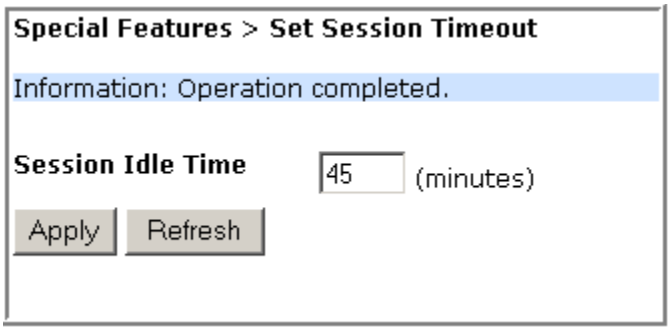
SET SESSION TIMEOUT

NOTE: This feature is accessible only by a user logged in to the EMS as the admin user.

1. To access the **Set Session Timeout** page, in the System Menu bar, click **Special Features** > **Set Session Timeout**.
2. In the **Session Idle Time** box, enter in minutes how long the EMS session can be idle before a forced log out occurs; the value must be between **10** and **60** minutes. The default is **30** minutes.



3. Click **Apply**. Once the system executes the command, an **Operation completed** message displays.



SET DATE AND TIME

The following rules apply to the system time and date:

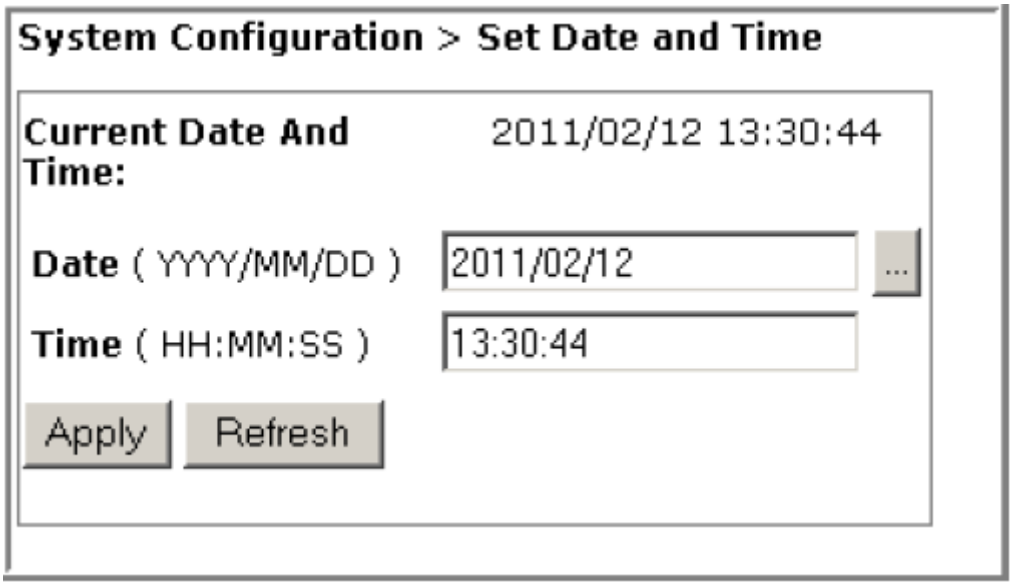
- The supported date and time range is from 1 January 2005 00:00:00 (12 AM) to 31 December 2037 23:59:59 (11:59:59 PM), where January is **1** and December is **12**.
- Time zone and day light savings are not supported.
- All PRUs synchronize time with the managing Host at the time the connected PRU is discovered. The date and time on the PRUs then synchronize to the Host and do not drift.
- If the system date or time is changed while a PRU is out of communication with the Host (for example, loss of power or scheduled maintenance), once communication is reestablished it will take up to 10 minutes for the PRU to display the updated date or time.
- If the difference between the set time and the present time is greater than the session time out setting, the user will be logged out. For example, if the **Session Idle Time** is set to 10 minutes, and the time set in this procedure is 11:10 AM but it is actually 11:30 AM, there is a 20 minute difference, which triggers the **Session Idle Time** and the user will be logged out.

NOTE: It can take up to 17 minutes before the updated time or date to take effect in connected Remote Units.

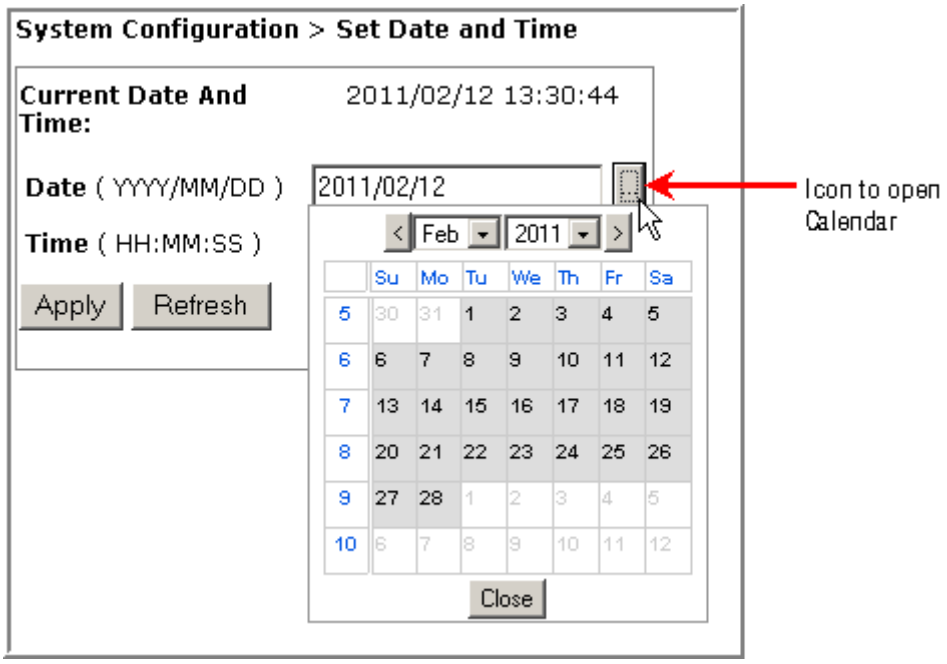
NOTE: You can set the date and time at any time independent from one another. For example, to change the time for daylight savings, open the System Date and Time page, click on the hour shown in the System Time box, increase or decrease the hour by one, and then click Apply.

Do the following to set the date and time:

1 To access the **Set Date and Time** page, in the System Menu bar, click **System Configuration** > **Set Date and Time**.



2 To change the date, click the **...** icon after the **Date (YYYY/MM/DD)** box.



3 In the **Calendar** that opens, do the following:

a In the Month list, select the month.

b If necessary, use the right arrow to adjust the year higher.

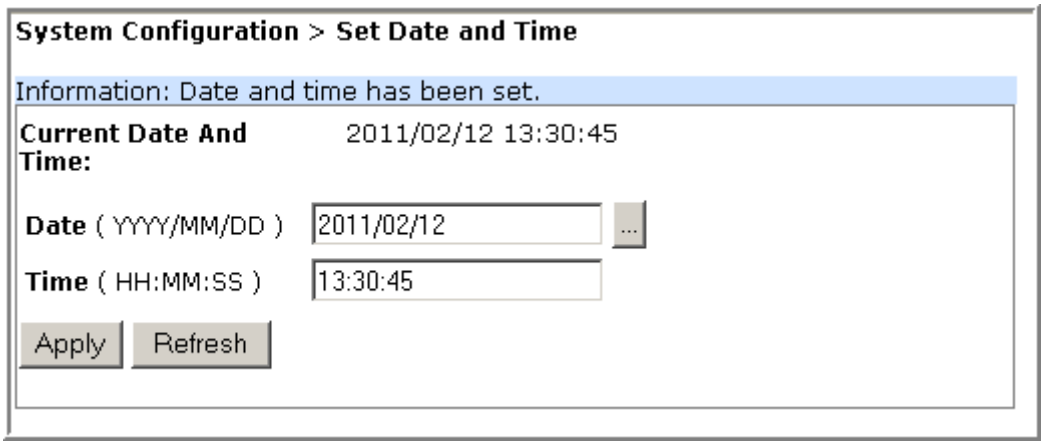
c In the calendar, select the date.

d Click **Close**.

4 In the **Time (HH:MM:SS)** box, enter the system time in the 24-hour clock HH:MM:SS format (for example, to set the system time to 5:19:56 PM, you would enter **17:19:56**).

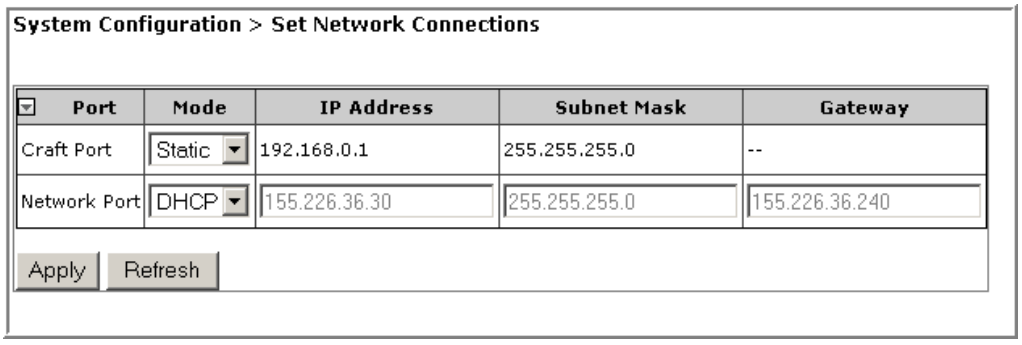
5 In the **Set Date and Time** page, verify the date and time showing in the **System Date** and **System Time** fields.

6 Click **Apply**. Once the system executes the command, an **Operation completed** message displays.



SET NETWORK CONNECTIONS

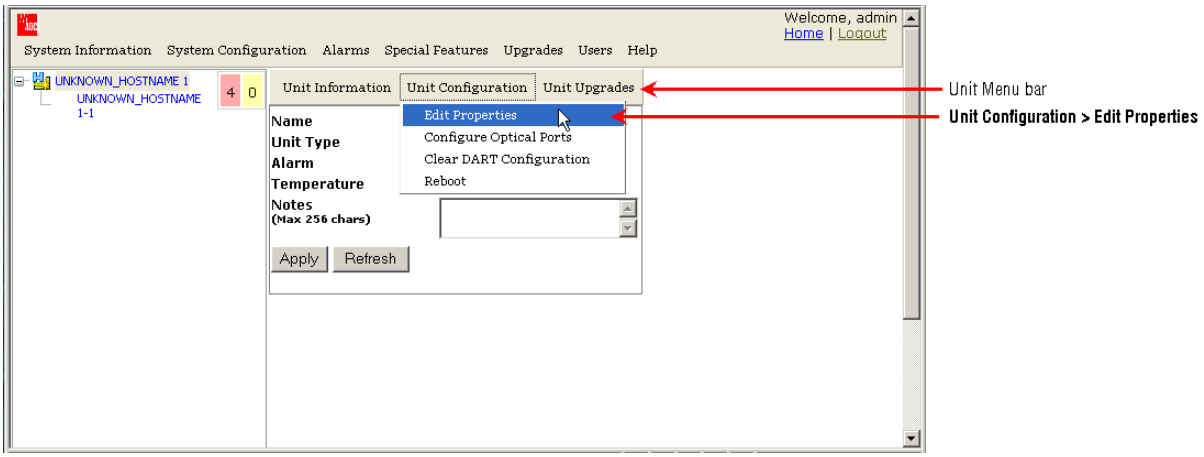
1. To access the **Set Network Connections** page, in the System Menu bar, click **System Configuration** > **Set Network Connections**.
2. Use the **Networking Mode** list to specify the mode under which IP addresses are assigned to the Host Craft and Network ports. A single IP address defines the system. This IP address is assigned to the Host either statically or by the DHCP server on the NOC. No user setting/IP configuration is required for the PRUs—IP addresses for connected PRUs are auto assigned.
   - **DHCP**—this mode indicates that the Host is a DHCP client and expects an IP address to be assigned by an external DHCP server through a network Ethernet connector. The Host Craft port has a DHCP server that can be used to communicate with the Host directly, and from which you can access the EMS.
   - **Static**—the default mode for the **Craft Port**, with a default IP address of 192.168.0.1. The **Static Networking Mode** allows you to set an IP address for the Host and connected Remote Units that do not change unless you manually change them.
3. If you change a port to **Static Networking Mode**, the address fields are enabled. Otherwise you cannot change the network addresses. If you set a port to **Static Networking Mode**, then do the following:
   a. In the **IP Address** box, enter a new IP address for the system, in the format of **xxx.xxx.xxx.xxx**.
   b. In the **Subnet Mask** box, enter a new Subnet Mask address for the system, in the format of **xxx.xxx.xxx.xxx**.
   c. In the **Gateway** box, enter a new Gateway address for the system, in the format of **xxx.xxx.xxx.xxx**.



4. Click **Apply**. Once the system executes the command, an **Operation completed** message displays.

CONFIGURE BASIC HOST UNIT PROPERTIES

1. In the System Tree, click on the Host icon.
2. In the Unit Menu bar, click **Unit Configuration** > **Edit Properties**, to open the **Unit Configuration > Edit Properties** page.

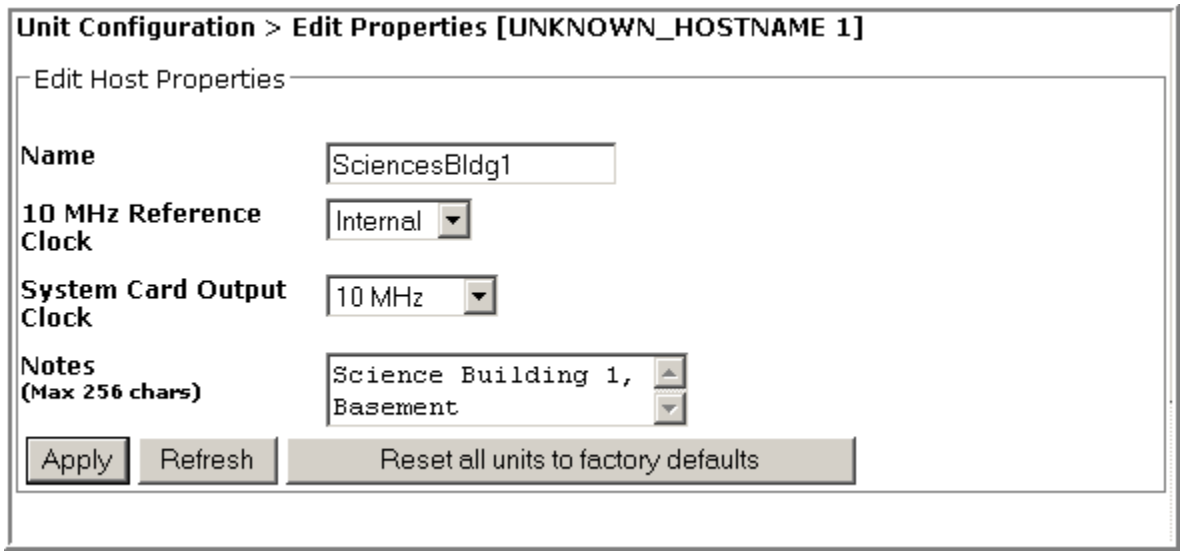


3. In the **Name** box, enter an identifying name for the Host. The **Name** must start with an alphabetical character, contain between 5 and 40 characters (alphanumeric or underscore only), and contain no spaces.
4. (Optional) The SeRF board on each Host and Remote contains the clock for that unit. At the Remote, the reference is a clock derived from the Host clock. The **10 MHz Reference Clock** default is **Internal.** You can change the **10 MHz Reference Clock** setting to **External**, which allows you to frequency lock the clock to an external 10 MHz reference.

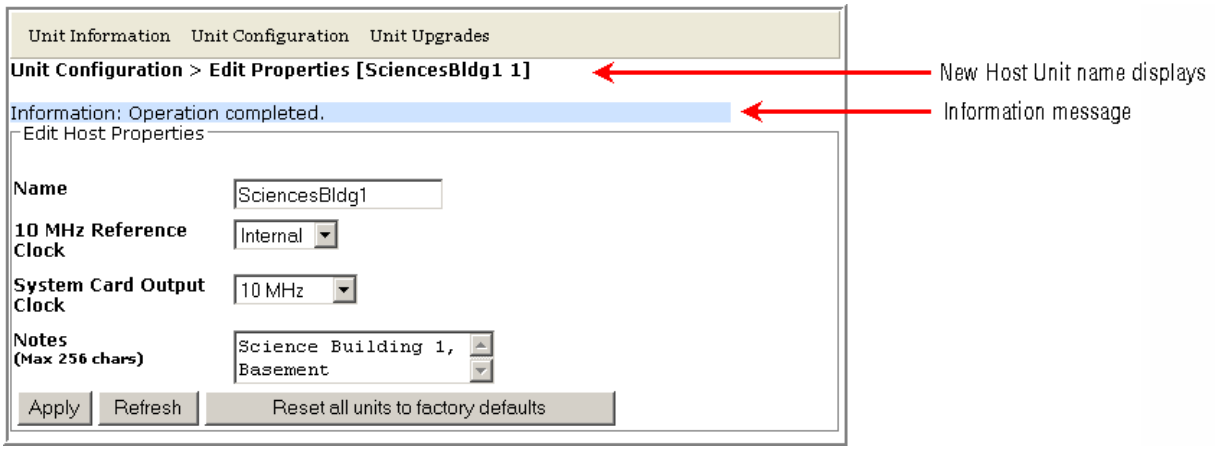
CAUTION! When using the 10 MHz external reference clock, the signal must be connected to the Host before enabling the clock in the software. If an external 10MHz reference clock is selected for operation, but is not present or outside of the frequency range of 10MHz +/- 5ppm, communication between the Host and Remote over the optical fiber will fail.

5. In the **System Card Output Clock** list, select one of the following:
   - **10 MHz** to set the Host as the System Card Output Clock.
   - **Off** to disable the System Card Output Clock. Unless your system requires the 10 MHz output, it is best to leave the **System Card Output Clock** disabled, as this setting saves power and lowers emissions.
   - **30.72 MHz** is not applicable to a Prism system and should not be selected.

6 (Optional) Use the **Notes** box to enter notes specific to this Host. You can enter up to 256 characters; all keyboard characters can be used.



7 Click **Apply**. Once the system executes the command, an **Operation completed** message displays.

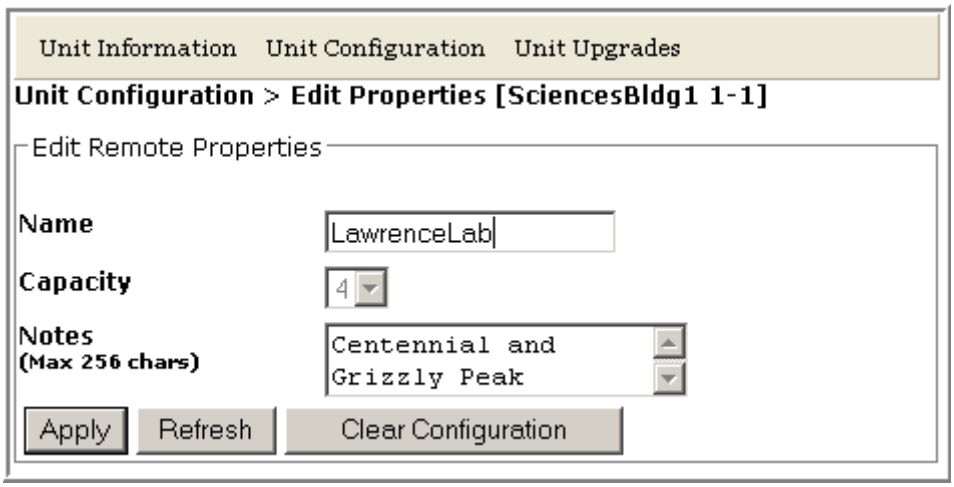


LABEL THE PRU/URU

1. In the System Tree, click the icon of the PRU/URU whose properties you want to change.
2. In the Unit Menu bar, click **Unit Configuration** > **Edit Properties**, to open the **Unit Configuration > Edit Properties** page for the selected PRU/URU.
3. In the **Name** box, enter an identifying name for the PRU/URU. The **Name** must start with an alphabetical character, contain between 5 and 40 characters (alphanumeric or underscore only), and contain no spaces.
4. Leave the **Capacity** setting as is.

CAUTION! **The Capacity setting pertains to the PRU/URU Remote SeRF Interface (RSI) board and the number of RF groups available to the Remote Unit. This parameter is set during manufacturing and should be changed only when the RSI board has been replaced. See** "Set the Capacity for a New Remote Unit RSI Board" on page 162.

5. (Optional) Use the **Notes** box to enter notes specific to the selected PRU/URU. You can enter up to 256 characters; all keyboard characters can be used.

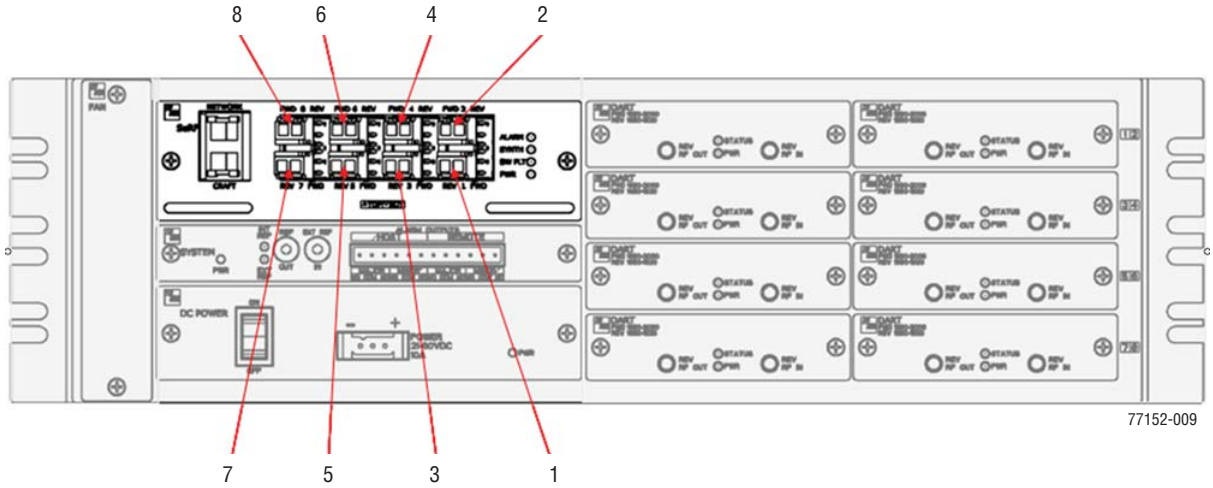


6. Click **Apply**. Once the system executes the command, an **Operation completed** message displays.
7. Repeat this process for each PRU/URU in the system.

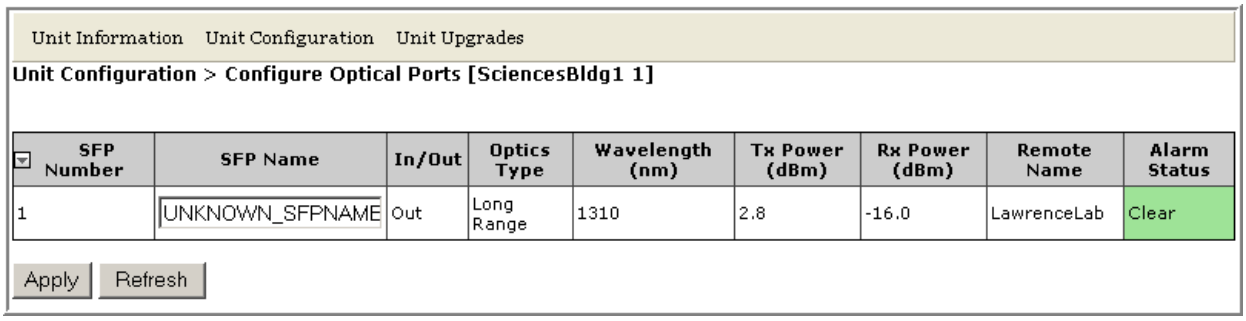
LABEL THE HOST OPTICAL PORTS

CAUTION! If fibers must be moved or reconfigured at any time during installation or setup, follow the steps in "Moving or Reconfiguring Fibers" on page 122**.**

There can be up to eight Host SeRF optical ports that correspond to the eight physical ports on the Host. In this section, you should label the Host SeRF Optical ports to provide for easier off-site management.

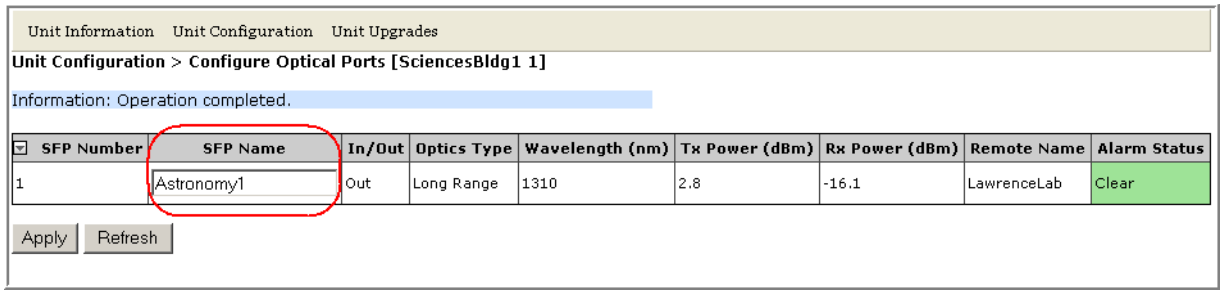


1. In the System Tree, click on a Host icon.
2. In the Unit Menu bar, click **Unit Configuration** > **Configure Optical Ports**, to open the **Unit Configuration > Configure Optical Ports** page.



3 In the **SFP Name** box, enter a label for the selected Optics port. The **SFP Name** must start with an alphabetical character, contain 5 to 32 characters (alphanumeric or underscore only), and contain no spaces. The default **SFP Name** is **UNKNOWN_SFPNAME**.

4 Click **Apply**. Once the system executes the command, an **Operation completed** message displays.



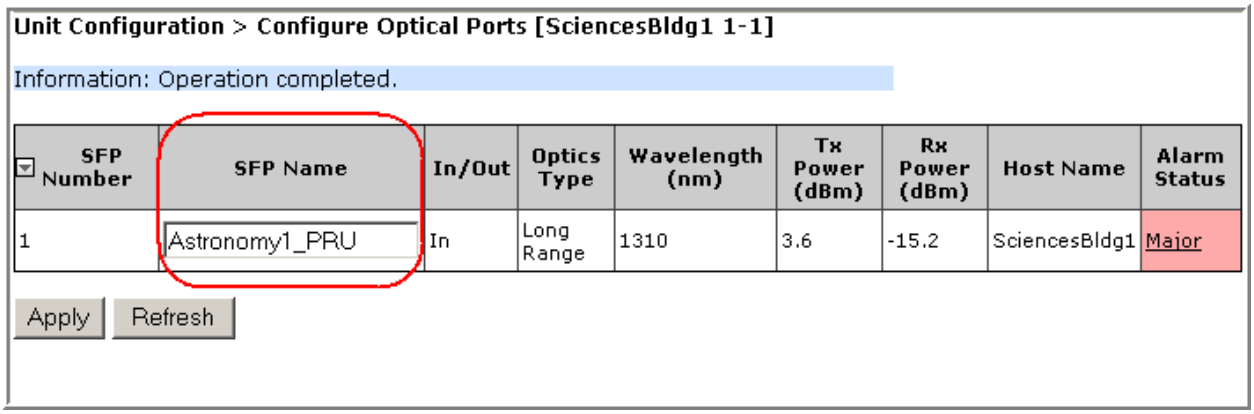
The **Configure Optical Ports** table provides the following information.

- **SFP Number**—system assigned number (from **1** to **8**) for the Optical ports
- **SFP Name**—see Step 3 on page 68.
- **In/Out**—used for cascading, which is not supported in this release. The Host will therefore always be set as **Out** (indicates that the forward link for the connected SFP is going away from the Host) and the SFPs for all Remote Units will always be set as **In**.
- **Optics Type**
  - **LongRange**—26 dB
  - **IntermediateRange**—18 dB)
- **Wavelength (nm)**—number displayed is the wavelength transmitted through this port:
  - Non-duplex and WDM configurations
    - 1550 nm fwd
    - 1310 nm rev
  - CWDM configurations can be one of eight wavelengths:
    - 1470 nm
    - 1490 nm
    - 1510 nm
    - 1530 nm
    - 1550 nm
    - 1570 nm
    - 1590 nm
    - 1610 nm

- **Tx Power (dBm)**—launch power level in dBm of forward path signal.
  - LongRange (LR)
    - minimum is -2 dBm
    - maximum is 3 dBm.
  - IntermediateRange (IR)
    - minimum is -5 dBm
    - maximum is 0 dBm.
- **Rx Power (dBm)**—receive power level in dBm of reverse path signal, which incorporates the launch power of the Remote Unit SFP plus all optical losses (insertion losses, fiber cable loss, and so forth).
  - LongRange (LR)
    - minimum is -27 dBm
    - maximum is -9 dBm.
  - IntermediateRange (IR)
    - minimum is -18 dBm
    - maximum is 0 dBm.
- **Remote Name** or **Host Name—**when a Host Unit is selected in the System Tree, the **Configure Optical Ports** table provides a column for **Remote Name**, which is name of the Remote Unit connected to this Optics port. When a Remote Unit is selected in the System Tree, the **Configure Optical Ports** table provides a column for the **Host Name**, which is the name of the Host connected to this Optics port.
- **Alarm Status**—whether an alarm is active. If an alarm is active, there will be a **Minor** or **Major** link that you click to open a dialog that defines the active alarm, as described in "Viewing Alarm Details" on page 45. The background color of the **Alarm Status** cell also indicates the alarm level (see "Alarm Color Codes" on page 44).

LABEL PRU/URU OPTICAL PORTS

1. In the System Tree, click on a PRU/URU icon.
2. In the Unit Menu bar, click **Unit Configuration** > **Configure Optical Ports**, to open the **Unit Configuration > Configure Optical Ports** page.
3. In the **SFP Name** box, enter a label for the selected Optics port. The **SFP Name** must start with an alphabetical character, contain between 5 and 32 characters (alphanumeric or underscore only), and contain no spaces. The default **SFP Name** is **UNKNOWN_SFPNAME**.



4. Click **Apply**. Once the system executes the command, an **Operation completed** message displays.
5. Repeat this process for each PRU/URU in the system.

The **Configure Optical Ports** table provides the same information as what is shown for a Host Unit—see "Label the Host Optical Ports" on page 67.

CONFIGURE DART LINKS

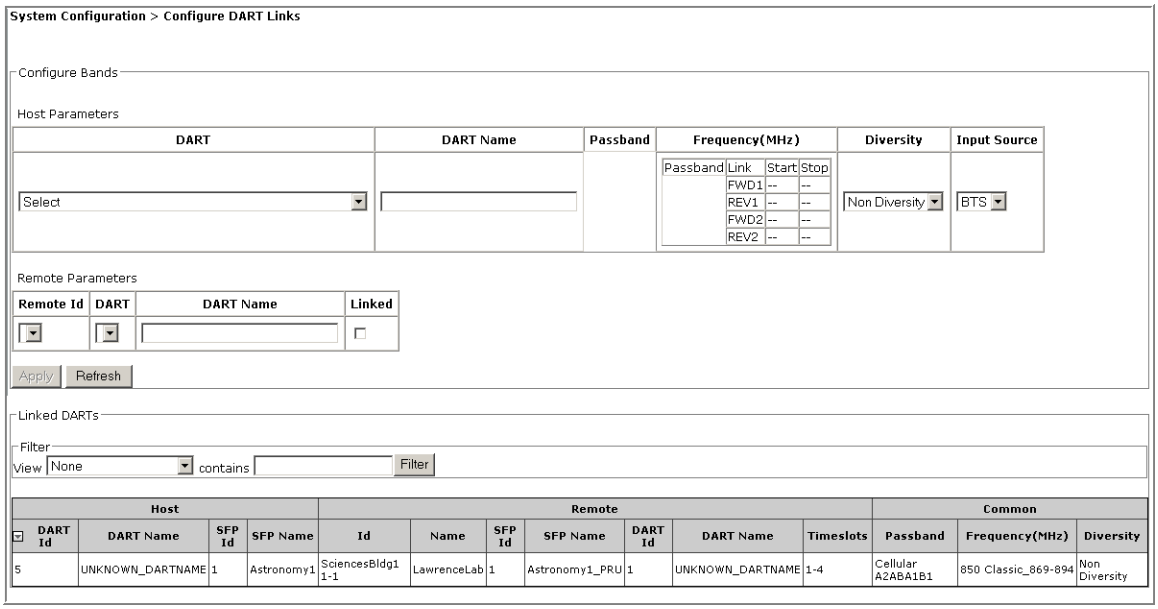
"Linking" establishes an association in software between a particular Host DART and a particular Remote DART, enabling the two DARTs to act as an operational unit in providing one RF band. There are four pre-requisites to this procedure:

- The Host DART and Remote DART must be connected through the optical fiber and be communicating with each other.
- To link the Remote Unit DARTs to the DARTs in a Host Unit, the DARTs must be the same type e (such as, Cellular to Cellular).
- SuperDARTs and Classic DARTS do not operate with each other. Link a SuperDART to a SuperDART and a Classic DART to a Classic DART.
- There must be a sufficient number of fiber timeslots available in order to accommodate the requested passband (for example, PCS A band requires 3 timeslots).

In the **Configure DART Links** page, all Remote DARTs are listed that have the same band as the selected Host DART. A link is established by selecting a Remote DART to be paired with the Host DART, and then clicking the **Linked** box. To provide for an RF Simulcast, a Single Host DART can be linked to up to eight Remote DARTs.

Do the following to establish DART links:

1 To access the **Configure DART Links** page, in the System Menu bar, click **System Configuration** > **Configure DART Links**.



NOTE: **For information on the Linked DARTs table at the bottom of the Configure DART Links page, see** "Viewing the Linked DARTs Report" on page 105**.**

You use the **Configure Bands** panel to configure the Host for DART linking, and the **Remote Parameters** panel to configure the Remote Unit.

2 In the **Host Parameters** panel, set the following parameters:

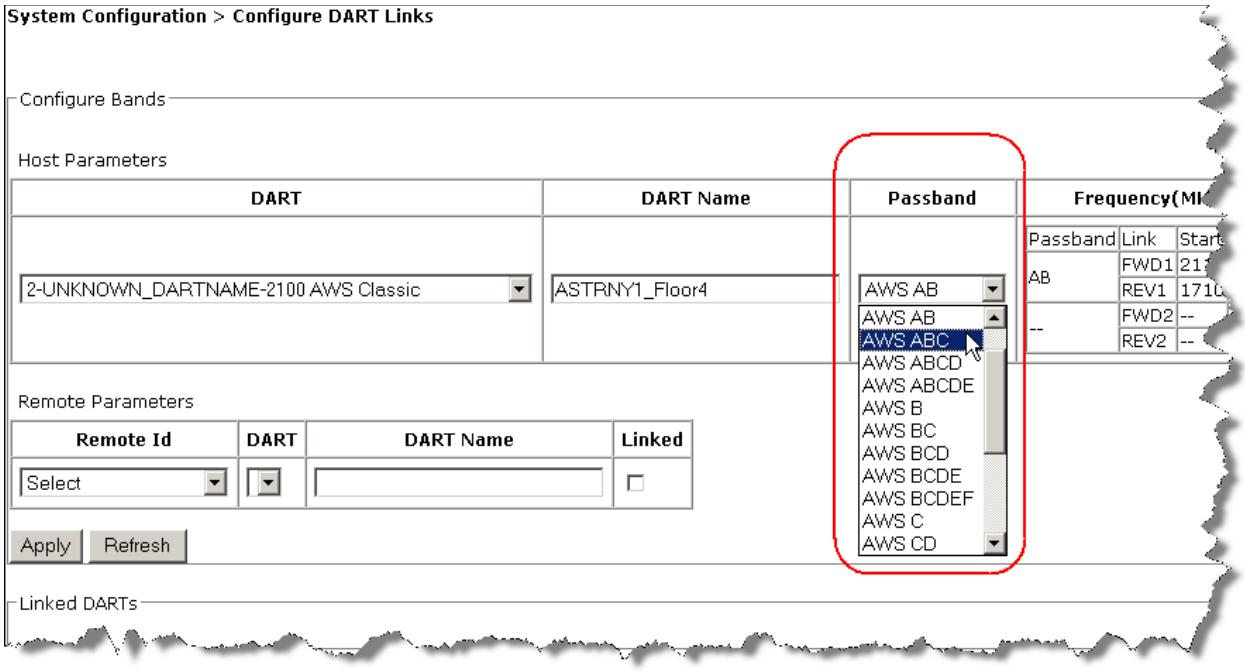
a In the **DART** list, select the Host DART that you want to link to the Remote Unit DART.

b In the **DART Name** box, enter a name for the DART, which must start with an alphabetical character, contain between 5 and 32 characters (alphanumeric or underscore only), and contain no spaces.

c Use the **Passband** column to set the passband for the selected DART.

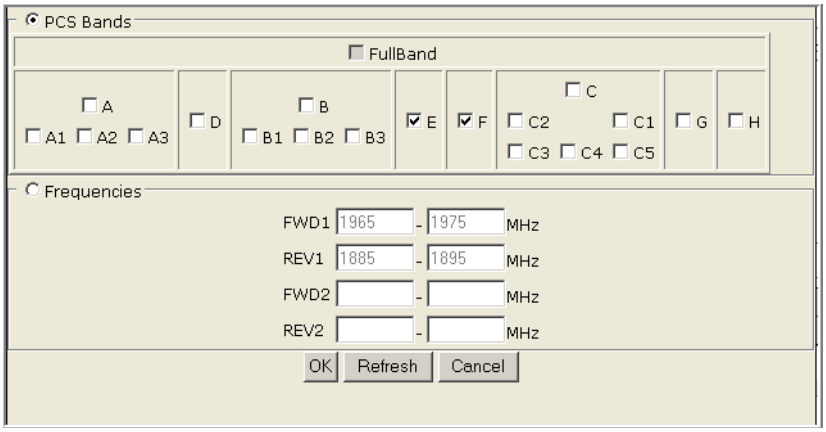
- If you are configuring a Classic DART, then refer to the passband selection table in the corresponding section:
  - "800 APAC iDEN Classic DART" on page 75
  - "800 SMR Classic DART" on page 75
  - "900 SMR Classic" on page 76
  - "2100 AWS Classic DART" on page 76
  - "Cellular Classic DART" on page 77
  - "PCS Classic DART" on page 77

  The following figure shows the passband selections for the 2100 AWS Classic DART, which are described in "2100 AWS Classic DART" on page 76.



- If you are configuring a SuperDART, in the **Passband** column, click on the Configure link, and then in the passband selection window that opens, set the passband according to the rules specified for each SuperDART type:
  - "700 Lower ABC SuperDART" on page 79
  - "700 UpperC SuperDART" on page 79
  - "2100 AWS SuperDART" on page 79
  - "EGSM 900 SuperDART" on page 79
  - "GSM 1800 SuperDART" on page 80
  - "PCS SuperDART" on page 80
  - "UMTS SuperDART" on page 80

The following figure shows the passband selections for a PCS SuperDART, which are described in "PCS SuperDART" on page 80.



The **Frequency** table provides a read-only tabular view of forward and reverse paths.

- In the **Diversity** list, select whether the DART is to be configured as **Diversity** or **Non Diversity**. For a diversity application, one DART will be configured **Non Diversity** for the primary FWD/REV path signal and the other DART will be configured **Diversity**. This selection therefore determines whether the DART Module being configured will carry the primary or secondary REV (uplink) RF path.
- For dual DART configurations, such as dual-pcs, smr800/smr900 and dual-aws, both DARTs must have **DART Diversity Status** set to **Non Diversity**.
- In the **Input Source** list, select whether the Wireless Operator input will be from the **BDA** or **BTS**. **Input Source** determines whether System Test uses external RF (**BTS**) or internal RF (**BDA**) to test the forward path. However, this release does not support internal tone generation. Consequently, setting the **Input Source** as either **BDA** or **BTS** assumes an external RF signal. Default is **BTS**.

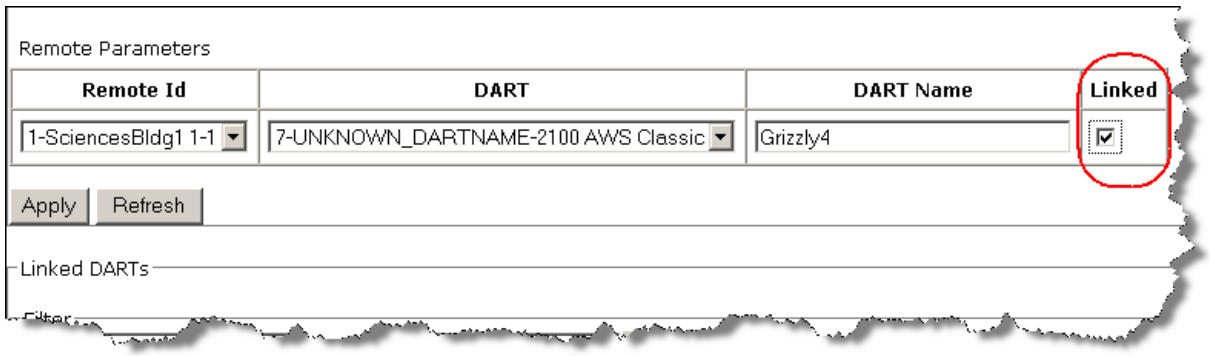
3 In the **Remote Parameters** table, set the following parameters:

a In the **Remote Id** list, select the Remote Unit whose DART you are linking to the Host DART.

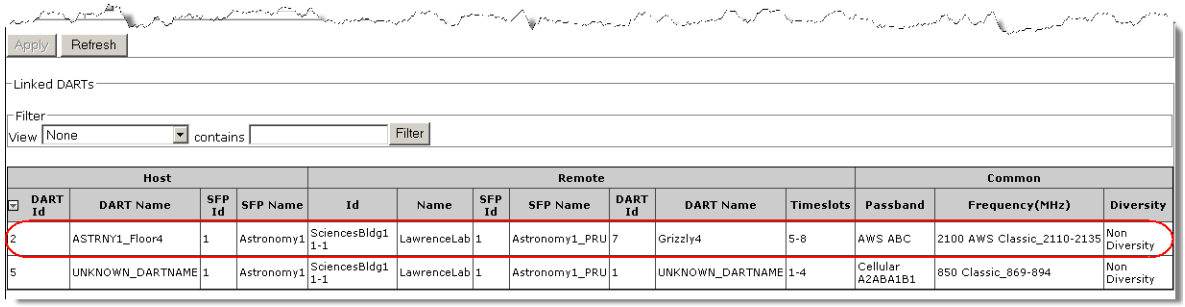
b In the **DART** list, select the Remote Unit DART that you are linking.

c In the **DART Name** box, enter a name for the DART, which must start with an alphabetical character, contain between 5 and 32 characters (alphanumeric or underscore only), and contain no spaces.

d Select the **Linked** box.



4 Click **Apply**. The **Linked DARTS** table at the bottom of the page updates with the new link.



5 Repeat Step through Step 4 for each Host and PRU/URU DART pairing.

NOTE: Each link takes approximately 1 minute to establish.

Classic DART Models

The following sections describe the Prism Classic DART options.

800 APAC iDEN Classic DART

Table 13 lists the passband selections for 800 APAC iDEN Classic DARTs.

Table 13. *800 APAC iDEN Classic DART Passband Selection*

Name	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
800 APAC iDEN	851 - 870	806 - 825

The 800 APAC iDEN DART also supports the SMR Low and SMR Low Wide passbands. The 800 APAC iDEN Classic DART can be linked to a DART of the same type and to an 800 SMR Classic DART (as long as the passband is either SMR Low or SMR Low Wide). Table 14 specifies supported linking between 800 SMR Classic DARTs and 800 APAC iDEN Classic DARTs.

Table 14. *Linking 800 SMR Classic DARTs and 800 APAC iDEN Classic DARTs*

Host DART	PRU/URU DART	Passbands
800APAC	800APAC	low, wide, apac
800APAC	800SMR	low, wide
800SMR	800APAC	low, wide
800SMR	800smr	low, wide

800 SMR Classic DART

Table 15 lists the passband selections for 800 SMR Classic DARTs.

Table 15. *800 SMR Classic DART Passband Selections*

Name	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
SMR Low	862 - 869	817 - 824
SMR Low Wide	851 - 869	806 - 824

900 SMR Classic

Table 16 lists the passband selections for 900 SMR Classic DARTs.

Table 16. *900 SMR Classic DART Passband Selections*

Name	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
SMR High	935 - 940	896 - 901
SMR High/Paging	935 - 941	896 - 902

NOTE: When installed in a PRU, the 900 SMR Remote Classic DART supports only the SMR High passband.

2100 AWS Classic DART

Table 17 lists the passband selections for 2100 AWS Classic DARTs.

Table 17. *2100 AWS Classic DART Passband Selection*

Name	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
A	2110 - 2120	1710 - 1720
A+B	2110 - 2130	1710 - 1730
A+B+C	2110 - 2135	1710 - 1735
A+B+C+D	2110 - 2140	1710 - 1740
A+B+C+D+E	2110 - 2145	1710 - 1745
B	2120 - 2130	1720 - 1730
B+C	2120 - 2135	1720 - 1735
B+C+D	2120 - 2140	1720 - 1740
B+C+D+E	2120 - 2145	1720 - 1745
B+C+D+E+F	2120 - 2155	1720 - 1755
C	2130 - 2135	1730 - 1735
C+D	2130 - 2140	1730 - 1740
C+D+E	2130 - 2145	1730 - 1745
C+D+E+F	2130 - 2155	1730 - 1755
D	2135 - 2140	1735 - 1740
D+E	2135 - 2145	1735 - 1745
D+E+F	2135 - 2155	1735 - 1755
E	2140 - 2145	1740 - 1745
E+F	2140 - 2155	1740 - 1755
F	2145 - 2155	1745 - 1755

Cellular Classic DART

Table 18 lists the passband selections for Cellular Classic DARTs.

Table 18. *Cellular Classic DART Passband Selections*

Name	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
A'' + A	869 - 880	824 - 835
A	870 - 880	825 - 835
A'' + A + A’	869 - 891.5	824 - 846.5
A’	890 - 891.5	845 - 846.5
B	880 - 890	835 - 845
B’	891.5 - 894	846.5 - 849
B + B’	880 - 894	835 - 849
A'' + A + B + A' + B’	869 - 894	824 - 849
A + B	870 - 890	825 - 845

NOTE: The Cellular Classic Remote DART supports the same passbands as the Cellular Classic Host DART. However, the LNA or Duplexer installed in the Remote Unit can restrain which passbands are supported.

PCS Classic DART

Table 19 lists the passband selections for PCS Classic DARTs.

Table 19. *PCS Classic DART Passband Selections*

Passband	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)	Passband	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
A1	1930 - 1935	1850 - 1855	E+F+C2	1965 - 1982.5	1885 - 1902.5
A2	1935 - 1940	1855 - 1860	C1+G + H	1982.5 - 2000	1902.5 - 1920
A3	1940 - 1945	1860 - 1865	A+D	1930 - 1950	1850 - 1870
B1	1950 - 1955	1870 - 1875	A2+A3+D+B1	1935 - 1955	1855 - 1875
B2	1955 - 1960	1875 - 1880	A3+D+B1+B2	1940 - 1960	1860 - 1880
B3	1960 - 1965	1880 - 1885	D+B	1945 - 1965	1865 - 1885
C3	1975 - 1980	1895 - 1900	B+E	1950 - 1970	1870 - 1890
C4	1980 - 1985	1900 - 1905	B2+B3+E+F	1955 - 1975	1875 - 1895
C5	1985 - 1990	1905 - 1910	B3+E+F+C3	1960 - 1980	1880 - 1900
D	1945 - 1950	1865 - 1870	E+F+C3+C4	1965 - 1985	1885 - 1905
E	1965 - 1970	1885 - 1890	F+C	1970 - 1990	1890 - 1910
F	1970 - 1975	1890 - 1895	C+G	1975 - 1995	1895 - 1915
G	1990 - 1995	1910 - 1915	C4+C5+G + H	1980 - 2000	1900 - 1920
H	1995 - 2000	1915 - 1920	B3+E+F+C2	1960 - 1982.5	1880 - 1902.5
C2	1975 - 1982.5	1895 - 1902.5	A+D+B1	1930 - 1955	1850 - 1875
C1	1982.5 - 1990	1902.5 - 1910	A2+A3+D+B1+B2	1935 - 1960	1855 - 1880

Table 19. *PCS Classic DART Passband Selections*

Passband	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)	Passband	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
A1+A2	1930 - 1940	1850 - 1860	A3+D+B	1940 - 1965	1860 - 1885
A2+A3	1935 - 1945	1855 - 1865	D+B+E	1945 - 1970	1865 - 1890
A3+D	1940 - 1950	1860 - 1870	B+E+F	1950 - 1975	1870 - 1895
D+B1	1945 - 1955	1865 - 1875	B2+B3+E+F+C3	1955 - 1980	1875 - 1900
B1+B2	1950 - 1960	1870 - 1880	B3+E+F+C3+C4	1960 - 1985	1880 - 1905
B2+B3	1955 - 1965	1875 - 1885	E+F+C	1965 - 1990	1885 - 1910
B3+E	1960 - 1970	1880 - 1890	F+C+G	1970 - 1995	1890 - 1915
E+F	1965 - 1975	1885 - 1895	C+G + H	1975 - 2000	1895 - 1920
F+C3	1970 - 1980	1890 - 1900	B2+B3+E+F+C2	1955 - 1982.5	1875 - 1902.5
C3+C4	1975 - 1985	1895 - 1905	A+D+B1+B2	1930 - 1960	1850 - 1880
C4+C5	1980 - 1990	1900 - 1910	A2+A3+D+B	1935 - 1965	1855 - 1885
C5+G	1985 - 1995	1905 - 1915	A3+D+B+E	1940 - 1970	1860 - 1890
G + H	1990 - 2000	1910 - 1920	D+B+E+F	1945 - 1975	1865 - 1895
F+C2	1970 - 1982.5	1890 - 1902.5	B+E+F+C3	1950 - 1980	1870 - 1900
C1+G	1982.5 - 1995	1902.5 - 1915	B2+B3+E+F+C3+C4	1955 - 1985	1875 - 1905
A	1930 - 1945	1850 - 1865	B3+E+F+C	1960 - 1990	1880 - 1910
A2+A3+D	1935 - 1950	1855 - 1870	E+F+C+G	1965 - 1995	1885 - 1915
A3+D+B1	1940 - 1955	1860 - 1875	F+C+G + H	1970 - 2000	1890 - 1920
D+B1+B2	1945 - 1960	1865 - 1880	A+D+B	1930 - 1965	1850 - 1885
B	1950 - 1965	1870 - 1885	A2+A3+D+B+E	1935 - 1970	1855 - 1890
B2+B3+E	1955 - 1970	1875 - 1890	A3+D+B+E+F	1940 - 1975	1860 - 1895
B3+E+F	1960 - 1975	1880 - 1895	D+B+E+F+C3	1945 - 1980	1865 - 1900
E+F+C3	1965 - 1980	1885 - 1900	B+E+F+C3+C4	1950 - 1985	1870 - 1905
F+C3+C4	1970 - 1985	1890 - 1905	B2+B3+E+F+C	1955 - 1990	1875 - 1910
C	1975 - 1990	1895 - 1910	B3+E+F+C+G	1960 - 1995	1880 - 1915
C4+C5 +G	1980 - 1995	1900 - 1915	E+F+C+G + H	1965 - 2000	1885 - 1920
C5+G + H	1985 - 2000	1905 - 1920			

SuperDART Models

The following sections describe the Prism SuperDART options.

700 Lower ABC SuperDART

The 700 Lower ABC SuperDART supports the following subbands: A, B, C.

Table 20 lists the passband selections for 700 Lower ABC SuperDARTs.

Table 20. *700 Lower ABC SuperDART Passband Selection*

Name	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
A	728 - 734	698 - 704
B	734 - 740	704 - 710
C	740 - 746	710 - 716

700 UpperC SuperDART

The 700 UpperC SuperDART supports the following passband: Upper C.

Table 21 lists the passband selections for 700 ABC SuperDARTs.

Table 21. *700 UpperC SuperDART Passband Selection*

Name	Downlink Frequency Range (MHz)	Uplink Frequency Range (MHz)
UpperC	746 - 756	776 - 786

2100 AWS SuperDART

You can select any number of the subbands based on the limitations specified below.

- The 2100 AWS SuperDART supports the following passbands: A, B, C, D, E, F.
- You can select up to two non-contiguous sets of subbands, but there must be at least a 5 MHz gap between the bands.
- The Start and Stop frequencies are in the range of 2110MHz - 2155MHz.

EGSM 900 SuperDART

The EGSM 900 SuperDART supports the selection of a Start and Stop frequency for the passband in the range of 925MHz - 960MHz.

GSM 1800 SuperDART

You can select a Start and Stop frequency for the passband in the frequency range of 1805 MHz - 1880 Mhz.

PCS SuperDART

PCS SuperDARTs support the following subbands: A, B, C, D, E, F, G, H, A1, A2, A3, B1, B2, B3, C1, C2, C3, C4, C5.

You can select any number of the subbands based on the limitations specified below:

- The subband A cannot be chosen in conjunction with A1, A2, or A3.
- The subband B cannot be chosen in conjunction with B1, B2, or B3.
- The subband C cannot be chosen in conjunction with C1, C2, C3, C4, or C5.
- The subbands C1 and C2 cannot be chosen in conjunction with the subbands C, C3, C4, or C5.
- The subbands C3, C4, and C5 cannot be chosen in conjunction with the subbands C, C1, or C2.
- Up to two non-contiguous sets of subbands can be selected, and there must be more than a 5 MHz gap between the bands.

The PCS SuperDART supports the following Start and Stop frequencies:

- The PCS RF SuperDART supports the selection of a Start and Stop frequency for the passband as listed in Table 19.
- The PCS RF SuperDART Start and Stop frequencies are in the range of 1930MHz - 2000MHz.

UMTS SuperDART

You can select a Start and Stop frequency for the passband in the frequency range of 2110 MHz - 2170 MHz.

DART Start and Stop Frequencies

Host SuperDARTs support the selection of a Start and Stop frequency for the passband or for the selection of subbands (up to two start-stop frequency pairs may be selected as long as the two pairs are at least 5 MHz apart and one is limited to 39 MHz and the other is limited to 25 MHz).

NOTE: Start/Stop frequencies and subbands may not be used at the same time.

Table 22 lists the supported start-stop frequency ranges for SuperDARTs.

Table 22. *Supported SuperDART Stop/Start Frequency Ranges*

Frequency Range (MHz)	Timeslots
6	1
12	2
18	3
25	4
39	6
45	8
75	12

SET THE FORWARD AND REVERSE DELAYS

NOTE: **The system comes up with a default delay. Once linking is complete, the system will calculate the actual delay. The initial parameters that are set may therefore be out of range. If necessary, correct the delay within the available range.**

NOTE: **If part of a simulcast, ensure that all links in the simulcast are set to the same delay value.**

NOTE: **For information on the Linked DARTs Delay table at the bottom of the page, see** "Using the Linked DARTs Delay Table" on page 83**.**

1 To access the **Configure Delay** page, in the System Menu bar, click **System Configuration** > **Configure Delay**.

2 In the **Remote Parameters** table, do the following:

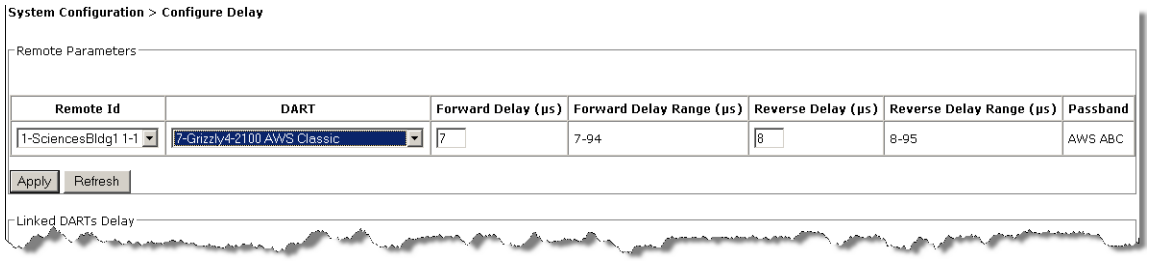
a In the **Remote Id** list, select the Remote Unit for which you want to configure the delay settings.

b In the **DART** list, select the DART for which you want to configure the delay settings. Only those DARTS that have been linked will be available in the **DART** list. The following information is populated in the **Remote Parameters** table, which corresponds to the Remote Unit and DART that you have selected.

- **Forward Delay** (μs)—the Forward Range in microseconds available for the selected DART
- **Forward Delay Range** (μs)—the Forward Delay Range in microseconds for the selected DART
- **Reverse Delay** (μs)—the Reverse Delay in microseconds available for the selected DART
- **Reverse Delay Range** (μs)—the Reverse Delay Range in microseconds for the selected DART
- **Passband**—type of passband provided by the DART

c If necessary, change the **Forward Delay** and the **Reverse Delay**:

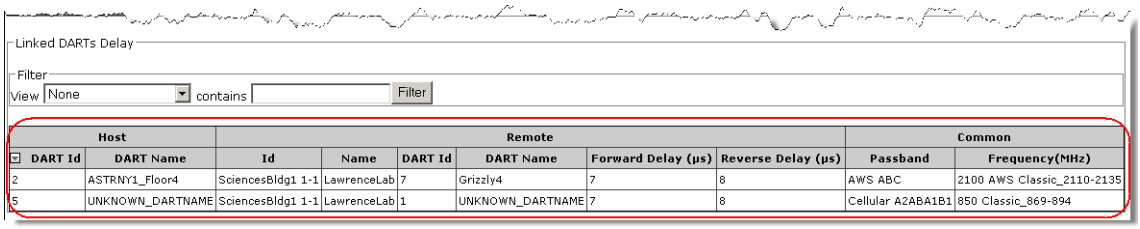
- **Forward Delay** (μs) box—enter the actual delay in microseconds that will be applied to the RF forward path signal. The **Forward Delay Range** (μs) field displays valid settings for the **Forward Delay.**
- **Reverse Delay** (μs) box—enter the actual delay in microseconds that will be applied to the RF reverse path signal. The **Reverse Delay Range** (μs) field displays valid settings for the **Reverse Delay**.



3 Click **Apply**. The **Operation complete** message displays, and the **Remote Parameters** table clears so you can set the delay for another DART.

4 Repeat Step 2 through Step 3 for each DART.

Using the Linked DARTs Delay Table



The **Linked DARTs Delay** table provides the following information:

- **Host** columns—identifies the Host in the link
  - **DART Id**—number of the Host slot in which the DART is installed
  - **DART Name**—user-defined name for the Host DART
- **Remote** columns—identifies the Remote and its elements
  - **Id**—Unit ID of PRU/URU based upon layered address; see "Unit Identification" on page 43
  - **Name**—user-defined label for the PRU/URU
  - **DART Id**—PRU/URU slot number in which the DART is installed
  - **DART Name**—user-defined name for the Remote DART
  - **Forward Delay** (µs)—user requested FWD RF path delay in microseconds
  - **Reverse Delay** (µs)—user requested REV RF path delay in microseconds
- **Common** columns—configuration settings common to the Host and Remote(s)
  - **Passband**—type of passband provided by the DART.
  - **Frequency (MHz)**—passband frequency of the DART

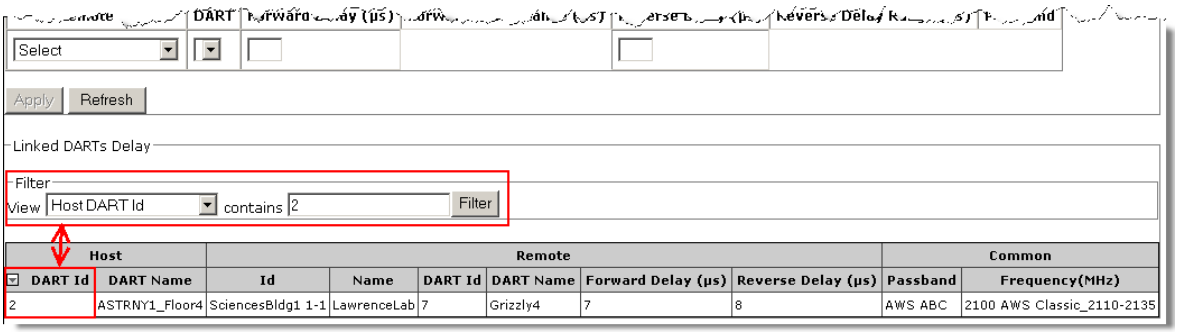
Filtering the Linked DARTs Delay Table

1 In the **Filter** panel **View** list, select a filter to be applied to the table.

2 **In the contains** box, enter filter criteria.

3 **Click Filter** to apply the filter.

In the following example, the **Linked DARTs Delay** table has been filtered to show only those Host Units with a **DART Id** that contains "**2**".



CONFIGURE HOST FORWARD GAIN

NOTE: Digital power measurements are inaccurate when ALC is active.

Follow these steps to set the **Forward Gain** value for the Host DART.

1 Determine what the Host DART Forward Gain should be. Use a signal generator and spectrum analyzer to measure the uplink attenuation from the Host to the BTS, and the FWD power at the Host from the BTS to determine unloaded power level.

The Host DART expects signal levels from **-25** to **+5 dBm**. If the fully loaded signal is +5 dBm, then the DART forward gain should be set to **0 dB**, if the fully loaded signal is -25 dBm, then the DART Forward Gain should be set to **31 dB**. The equation is:

DART Forward Gain = 5 - fully Loaded Base Station Signal

CAUTION! If you are setting up the system when no calls are going through, you must allow headroom for a fully loaded forward path. For CDMA protocols, the difference from unloaded to fully loaded is typically 8dB, so if the unloaded signal is -15dBm, then the fully loaded input would be -7 dBm and the Host Forward Gain should be set to 5-(-7) = 12 dB.

The same rules applies for GSM carriers, except that the unloaded to loaded is determined by the equation 10*log10(# RF Channels). So if there are 4 GSM RF Channels, then the loaded forward path is 6 dB above unloaded.

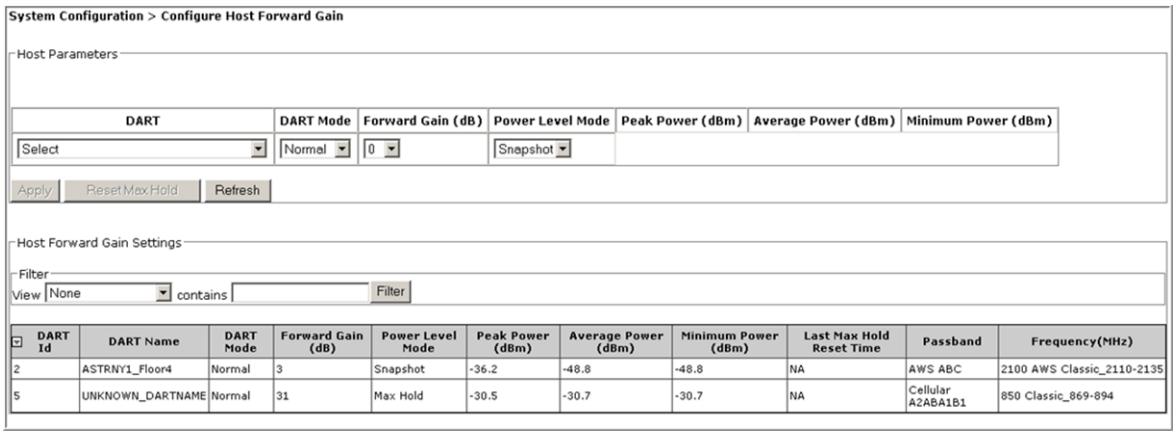
If sufficient headroom is not present, then the LPA can be over-powered causing a Loss Of Service.

CAUTION! When configured correctly, the Host DART Forward input can handle peaks of 14dB above the BTS signal level. For example, if the fully loaded CDMA carrier is -25dBm, then peaks up to -11 dBm can be handled (CDMA peak to average is typically 10-12 dB). If the peaks exceed the 14 dB of headroom, then Automatic Level Control (ALC) will occur to prevent over-driving the A/D Converter.

NOTE: In the EMS GUI, the reverse path gain range for Classic DARTs is 5 to 36 dB, which indicates actual reverse path system gain. If you set this gain through the SNMP SET commands, then the gain range is 0 to 31 dB, which maps to the actual GUI/system reverse path gain range of 5 to 36 dB.

2 In the EMS, do the following to set the Host Forward Gain parameters:

a To access the **Configure Host Forward Gain** page, in the System Menu bar, click **System Configuration** > **Configure Host Forward Gain**.



b In the **Host Parameters** table **DART** list, select the Host DART that you want to configure. Other information in the **Host Parameters** table is updated to show settings for the selected DART.

c In the **DART Mode** list, select one of the following:

- **Standby**—forces the RF function to be muted in the Host and its linked Remote Unit.
- **Normal**—allows the system to operate normally (RF function not forced to be muted), assuming all other system components are in proper working order. (Default setting.)

d In the **Fwd Gain (dB)** list, select the Forward Gain value of **0** to **31 dB**, based upon the fully loaded forward path signal level from the Base Station.

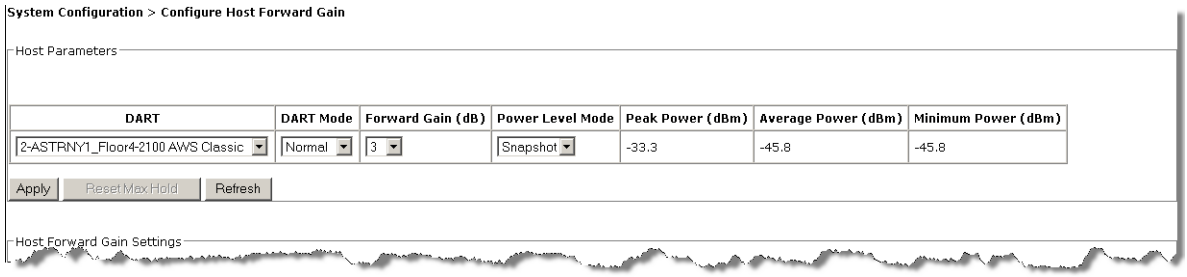
e In the **Power Level Mode** list, select one of the following:

- **Snapshot**—provides a “snap-shot” or current RF measurement for the selected Remote Unit DART (default setting).
- **Max Hold**—retains the maximum values for peak and peak average, and the minimum values for minimum average since the last **Max Hold Reset**.

NOTE: **The Power Level Mode is disabled if the:**

- **DART Operating mode is set to Standby**
- **DART Pass Band (Timeslots) parameter is set to Undefined (default)**
- **DART Diversity Status is set to Diversity.**

f If you set the **Power Level Mode** to **Max Hold**, you can click **Reset Max Hold** to reset the **Max Hold** values. The **Host Forward Gain Settings** table updates with the new settings.

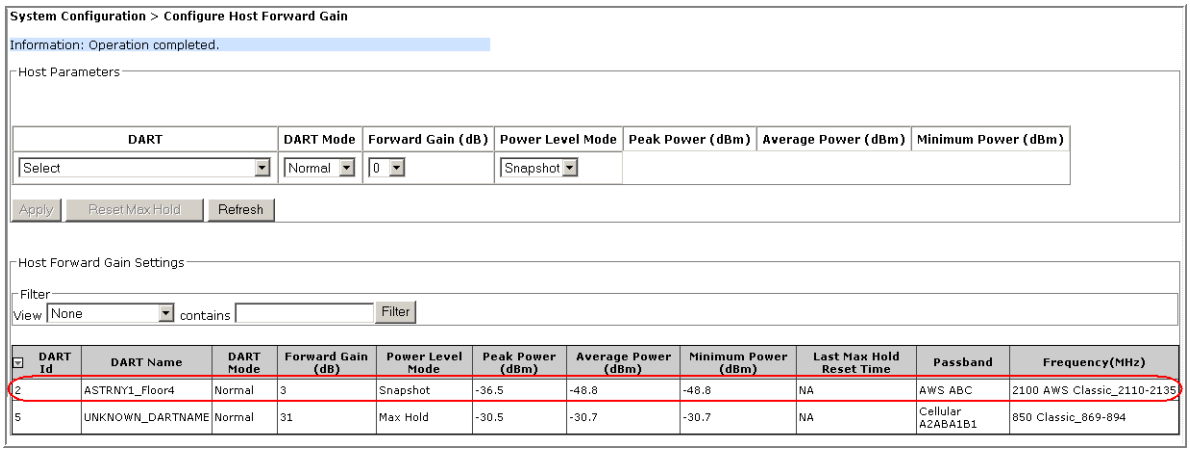


The **Host Parameters** table provides the following information:

- **Peak Power (dBm)**—shows the highest (peak) power level reached by the Host DART
- **Average Power (dBm)**—shows the average power level reached by the Host DART
- **Minimum Power (dBm)**—shows the minimum power level reached by the Host DART

g Click **Apply**.

- Once the system executes the command, an **Operation completed** message displays.
- The **Host Forward Gain Settings** table at the bottom of the page is updated with the new settings.



h Repeat Step b on page 86 through Step g for each Host DART.

For information on the **Host Forward Gain Settings** table, see "Viewing the Host RF Report" on page 108.

CONFIGURE HOST REVERSE GAIN

When setting the **Reverse Gain** value for the Host DART, the following rules must be observed:

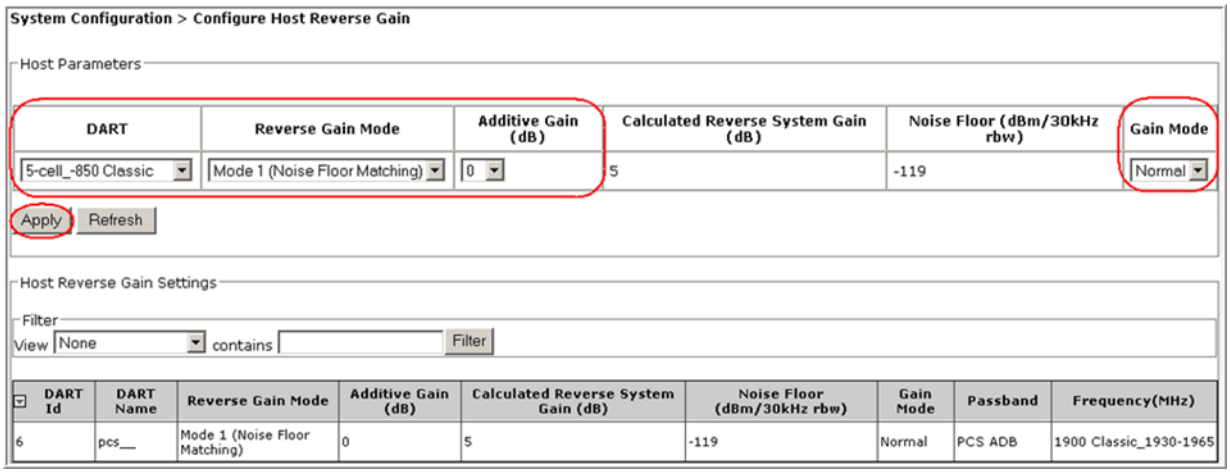
- The **Reverse Gain** setting can be used to overcome RF interfacing losses from the Host DART to the BTS/BDA. If you want unity reverse path gain and the losses to the BTS/BDA are 20 dB, then the Reverse Gain should be set to 20 dB.
- Simulcast changes the actual REV gain level by 10log(n) where n = the number of simulcast links. For example, if REV gain is set to 10dB in a 2:1 simulcast configuration, the actual REV gain is only 7dB (10dB - 3dB). If REV gain is set to 20dB in a 4:1 simulcast, the actual gain is 14dB (20dB - 6dB).

Follow these steps to set the **Reverse Gain** value for the Host DART.

1. To access the **Configure Host Reverse Gain** page, in the System Menu bar, click **System Configuration** > **Configure Host Reverse Gain**.
2. In the **Host Parameters** table **DART** list, select the Host DART that you want to configure. The **DART Name** column is populated with the user-defined name for the selected DART.
3. In the **Reverse Gain Mode** list, select the algorithm that should be used to add attenuation for a simulcast group to prevent clipping because of too strong a signal.
   - **Mode 1 (Noise Floor Matching)**—optimizes the reverse path dynamic range between simulcast nodes. For Prism/URU, the gains are reduced by 10*log10(N). This is the default for systems running Prism EMS 7.1.
   - **Mode 2 (Legacy Prism/URH)**—reduces the gain by 20*log10(N). This is the default setting for systems upgraded from 6.0.
4. Set the **Additive Gain (dB)** value to achieve the required gain from the input to the Remote Unit to the output of the Host DART. The range is **0** to **31 dB**.

5 In the **Gain Mode** list, select one of the following:

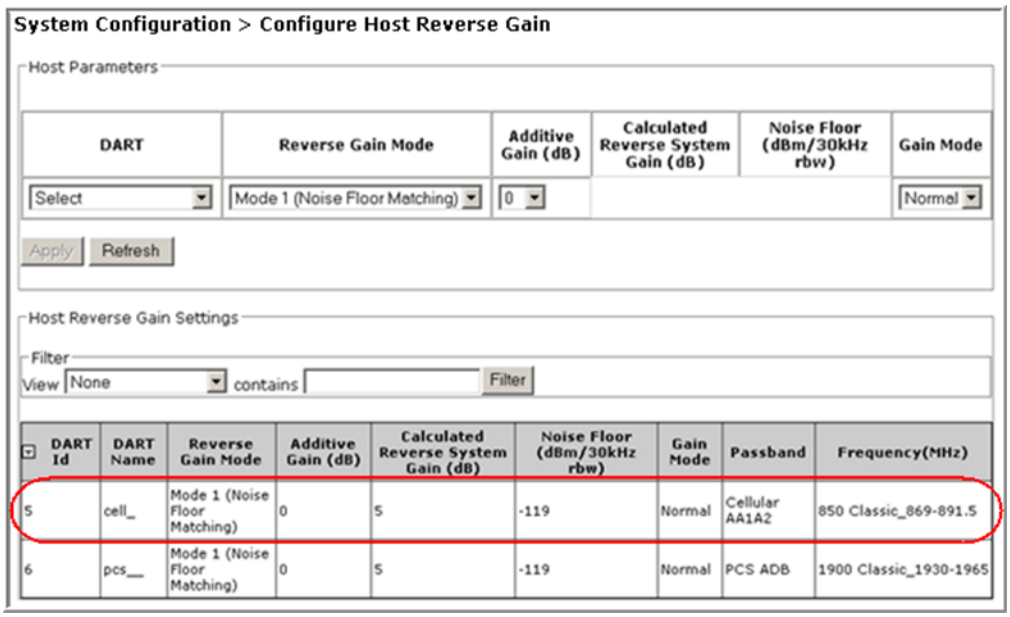
- **Normal**—no increase to the gain setting.
- **High**—the gain settings for Classic DARTs increase 2dB with a 1dB improvement in the Noise Figure and the gain setting for SuperDarts increase by 6 dB with a 2dB improvement in the Noise Floor.



6 Click **Apply**. The **Host Parameters** and **Host Reverse Gain Settings** tables are updated with the new configuration.

7 Repeat Step 2 through Step 6 for each Host DART.

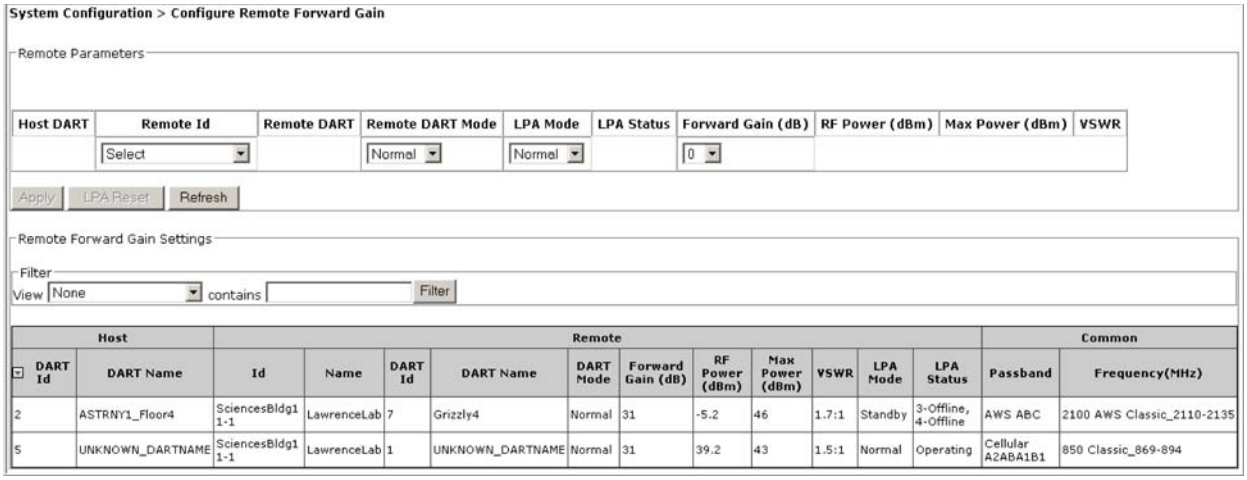
The **Host Reverse Gain Settings** table has the following columns.



- **DART Id**—identifies the Host DART by the slot in which it is installed, which can be from 1 through 8.
- **DART Name**—identifies the DART by its user-defined name.
- **Reverse Gain Mode**—whether the Reverse Gain Mode is **Mode 1 (Noise Floor Matching)** or **Mode 2 (Legacy Prism/URH).**
- **Additive Gain (dB)**—gain from the input to the Remote Unit to the output of the Host DART. The range is **0** to **31 dB**
- **Calculated Reverse System Gain (dB)**—shows the end-to-end gain based on the additive gain, gain mode, and number of Remote Units in the simulcast group.
- **Noise Floor (dBm/30kHz rbw)**—shows the noise level for the configuration. The noise floor is the measure of the signal created from the sum of all the noise sources.
- **Gain Mode**—whether the **Gain Mode** is **Normal** or **High**.
- **Passband**—type of passband provided by the DART.
- **Frequency (MHz)**—passband frequency of the DART.

CONFIGURE REMOTE FORWARD GAIN

1 To access the **Configure Remote Forward Gain** page, in the System Menu bar, click **System Configuration** > **Configure Remote Forward Gain**.



2 In the **Remote Parameters** table, do the following:

a Use the **Host DART** column to identify the connected Host.

b In the **Remote Id** list, select the Remote Unit for which you want to set the Forward Gain.

c In the **Remote DART Mode** list, set the DART mode:

- **Standby**—forces the RF function to be muted in the Host and its linked Remote Unit.
- **Normal**—allows the system to operate normally (RF function not forced to be muted), assuming all other system components are in proper working order. (Default setting.)

d In the **LPA Mode** list, select **Normal**. A Prism Linear Power Amplifier (LPA) is a high quality broadband RF amplifier used for achieving Prism product-rated power for the Remote Tx forward path spectrum RF. In a dual-LPA system, both LPAs will have the same **LPA Mode** setting.

- **Standby**—forces the RF function to be muted in the Host and its linked Remote Unit. (Default setting.)
- **Normal**—allows the system to operate normally (RF function not forced to be muted), assuming all other system components are in proper working order.

CAUTION! As soon as you set the LPA Operating Mode to Normal, RF transmission will start. Before you set the LPA Operating Mode to Normal, make sure that the antenna has been connected and the system is ready to transmit RF. For information on connecting the antenna, refer to the *ADC® FlexWave Prism Remote Unit Installation Guide* (ADCP-77-072).

e In the **Forward Gain** list, select the dB (**0** to **31**).

The **Forward Gain** is the actual gain, not attenuation, that will be applied to the RF forward path signal (where **0** = 0 dB gain, **1** = 1 dB gain, and so forth). The **Forward Gain** is based on the EIRP desired at the antenna. You therefore need to know how much cable, insertion, and any other loss (such as splitters) exist between the Remote Unit and the antenna. Set the **Forward Gain** to achieve the required output power level to meet the EIRP of your RF link budget.

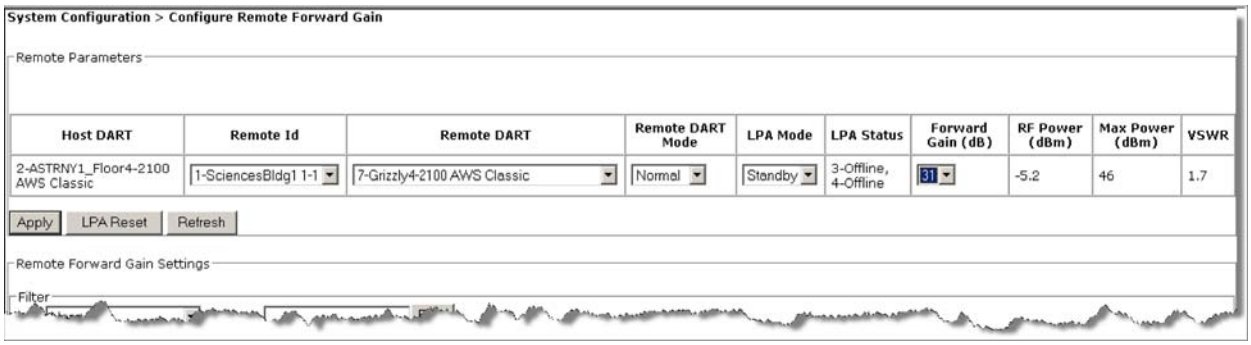
Configure the Host DART gain to achieve +5dB so that full scale output can be achieved at the Remote. For further information, refer to the FlexWave Prism commissioning guide.

f Refer to the following read-only fields for further information on the selected PRU/URU:

- **RF Power (dBm)** column displays the measurement of the RF power for the LPA identified in the LPA Number field.

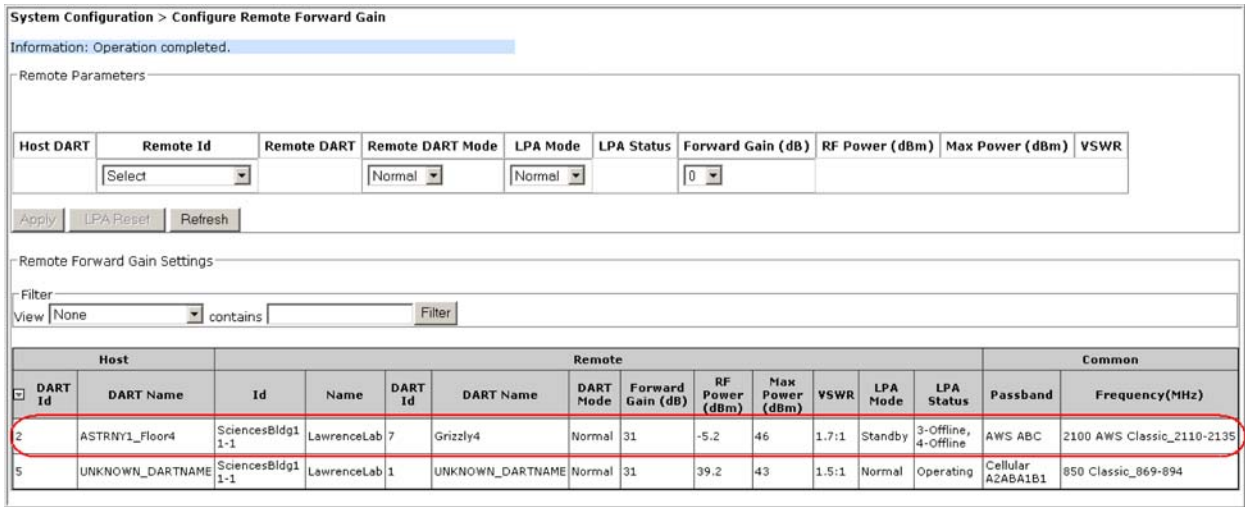
NOTE: **After a change in the DART Forward Gain, the EMS reflects the change in the RF Power column within 25 seconds, or if the Refresh button is used, within 12 seconds.**

- **Max Power (dBm)** column displays the maximum LPA power values.
- **VSWR** column displays the Voltage Standing Wave Ratio (VSWR) for the LPA. An **LPA VSWR Fault** occurs if the VSWR measurement exceeds the threshold, which is 3:1.



3 Click **Apply**.

- Once the system executes the command, an **Operation completed** message displays.
- The **Remote Forward Gain** table at the bottom of the page is updated with the new settings.



4 Repeat for each PRU/URU DART.

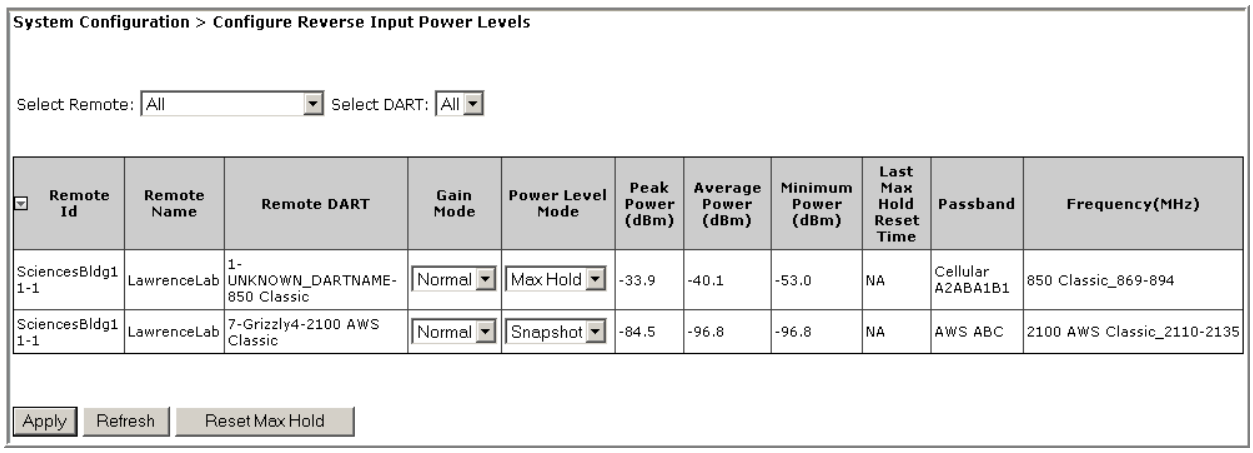
For additional information, refer to the following:

- For information on the **Remote Forward Gain Settings** table, see "Viewing the Remote RF Report" on page 109.
- For information on the **LPA Reset** button, see "Resetting an LPA" on page 165.

CONFIGURE REVERSE INPUT POWER LEVELS

NOTE: Digital power measurements are inaccurate when ALC is active.

1 To access the **Configure Reverse Input Power Levels** page, in the System Menu bar, click **System Configuration** > **Configure Reverse Input Power Levels**.



The read-Only columns in the table provide the following information:

- **Peak Power (dBm)**—shows the highest (peak) power level reached by the DART
- **Average Power (dBm)**—shows the average power level reached by the DART
- **Minimum Power (dBm)**—shows the minimum power level reached by the DART
- **Last Max Hold Reset Time**—shows the last time **MAX Hold** was reset.
- **Passband**—type of passband provided by the DART
- **Frequency (MHz)**—passband frequency of the DART

2 In the **Select Remote** list, select the PRU/URU that you are configuring. The table at the bottom of the page displays power level values for the selected Remote Unit and its DARTs.

3 In the **Select DART** list, do one of the following:

- Select a specific DART to configure. If you select a specific DART, the table at the bottom of the page displays power level values for the selected DART.
- Select **All** to configure all the DARTs the same at the same time. If you select **All**, the table at the bottom of the page displays power level values for the selected Remote Unit and all its DARTs.

4 In the **Gain Mode** list, set the High Gain mode to one of the following:

- **Normal**—effects the attenuation of the temperature compensation algorithm (default).
- **High**—does not effect the attenuation of the temperature compensation algorithm.

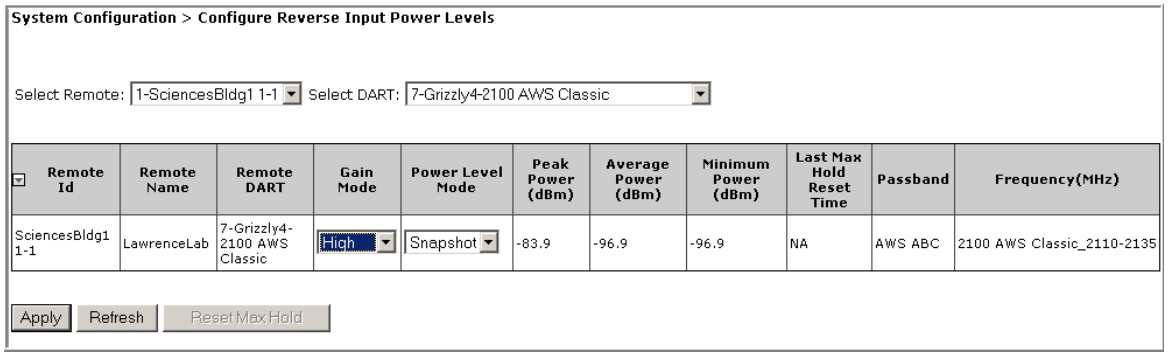
NOTE: When a Classic DART is in High Gain mode, the noise floor increases by 1 dBm. When a Super DART is in High Gain mode, the noise floor increases by 4 dBm.

5 In the **Power Level Mode** list, select one of the following:

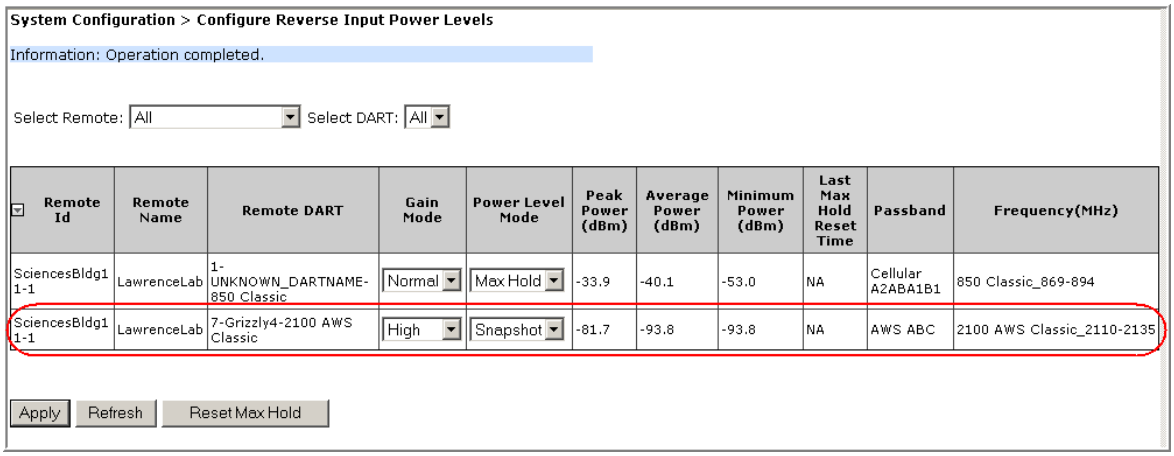
- **Snapshot**—provides a "snap-shot" or current RF measurement for the selected Remote Unit DART (default setting).
- **Max Hold**—retains the maximum values for peak and peak average, and the minimum values for minimum average since the last **Max Hold Reset**.

Power Level Mode is disabled under any of the following conditions:

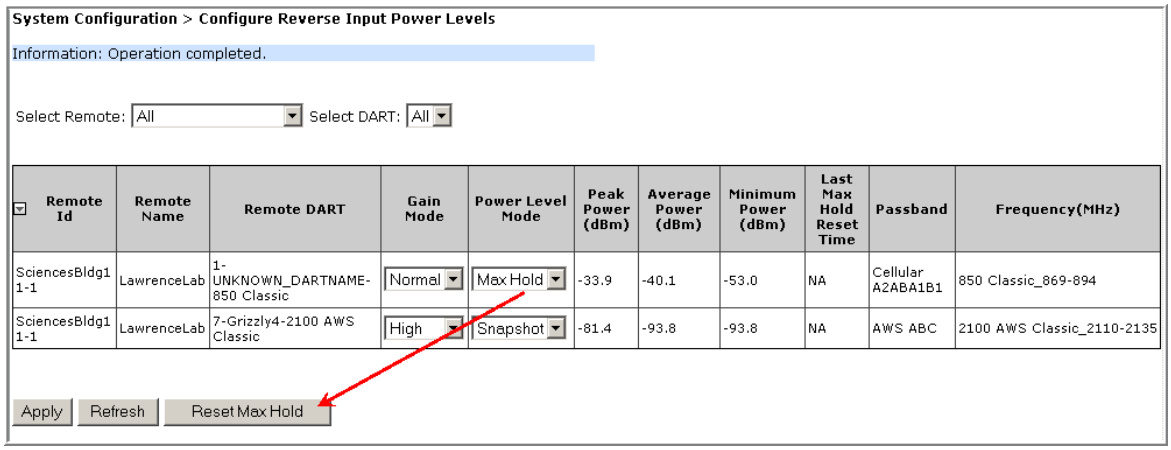
- if the **DART Operating** mode is set to **Standby**
- if the **DART Pass Band (Timeslots)** parameter is set to **Undefined** (default)



6 Click **Apply**.



7 (Optional) If you set the **Power Level Mode** to **Max Hold**, you can click **Reset Max Hold** to reset the **Max Hold** values.



PART III

SYSTEM MANAGEMENT

Intentionally Blank Page

SYSTEM INFORMATION

Topics **Page**

This section tells you how to get and manage system information.

GET INFORMATION

The **Get Information** page allows you to view system information on one page. You can also view and download nine individual reports.

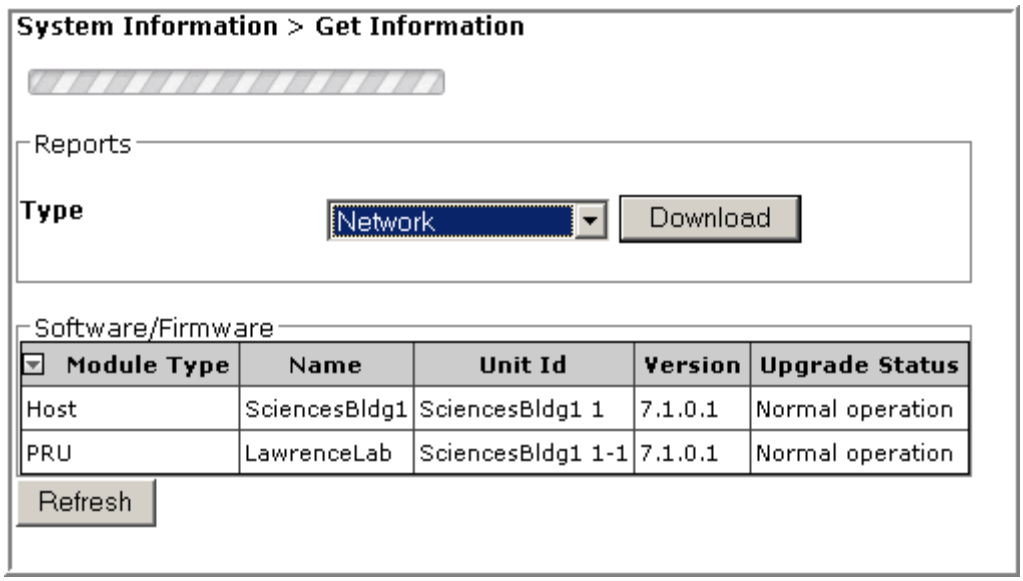
To access the **Get Information** page, in the System Menu bar, click **System Information** > **Get Information.**

The following graphic shows the default page in which **Type** is set to **System Inventory**.

The **Get Information** page has the following elements:

- **Type** list—allows you to select which report you want to view.
- **Download** button—downloads selected report to an attached PC. See "Downloading a Report" on page 113.

NOTE: **The gray and white status bar at the top of the page indicates that the EMS is accessing the requested report. You do not need to select Download to see the report in the GUI.**

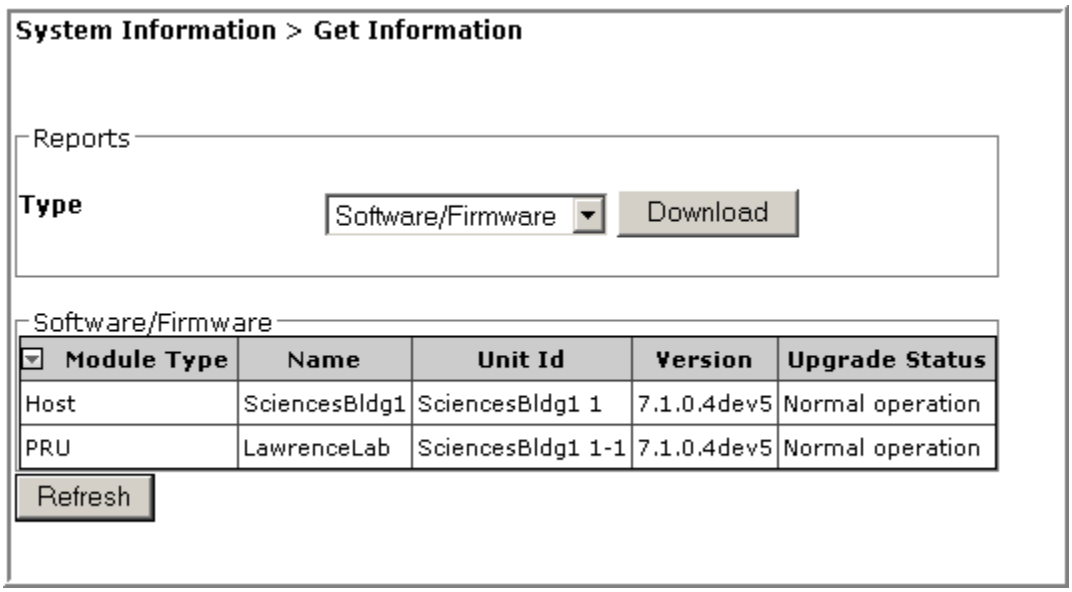


Accessing System Reports

You use the **Type** list in the **Reports** panel to select the type of report that you want to download. The following sections describe the reports that you can view and download.

Viewing the Software/Firmware Report

To access the **Software/Firmware** report, in the System Menu bar, click **System Information** > **Get Information**, and then in the **Reports** panel **Type** list, select **Software/Firmware**. (This is the default setting.)

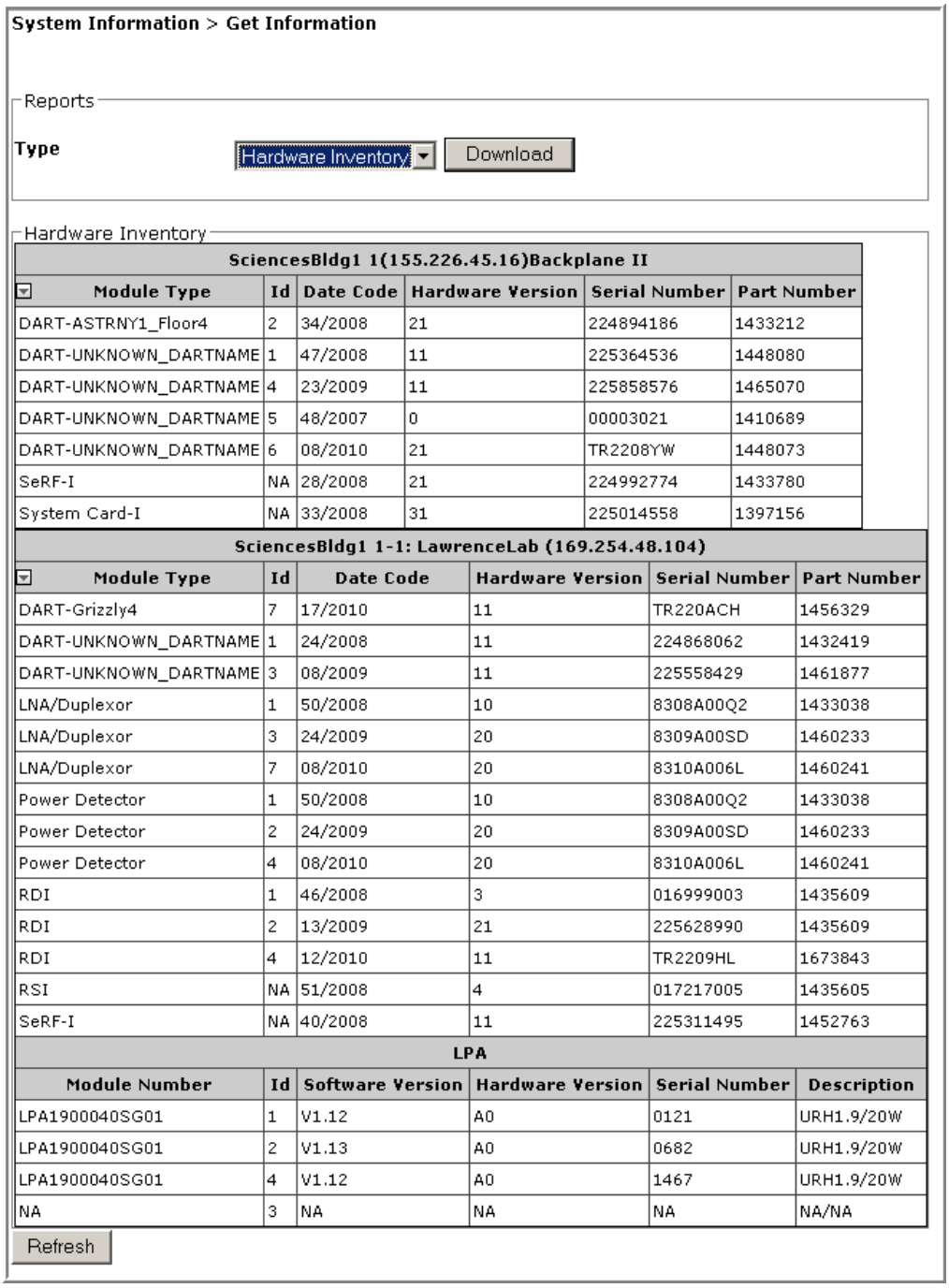


The **Software/Firmware** table provides the following information:

- **Module Type**—type of unit (Host, PRU, or URU).
- **Name**—user-assigned name for the unit.
- **Unit Id**—identifies the unit within the system; see "Unit Identification" on page 43.
- **Version**—version of installed software/firmware.
- **Upgrade Status**—the following states can be seen. However, with the exception of **Normal operation** and **Upgraded**, the states occur very quickly during the corresponding action and are rarely viewed.
  - **Normal operation**
  - **Upgrading**
  - **Upgrading reboot**
  - **Committing**
  - **Aborting**
  - **Recovering**
  - **Upgraded.**

Viewing the Hardware Inventory Report

To access the **Hardware Inventory** report for the Host and Remote Unit(s), in the System Menu bar, click **System Information** > **Get Information**, and then in the **Reports** panel **Type** list, select **Hardware Inventory**.



System Information > Get Information

Reports

Type: Hardware Inventory | Download

Hardware Inventory

SciencesBldg1 1(155.226.45.16)Backplane II					
Module Type	Id	Date Code	Hardware Version	Serial Number	Part Number
DART-ASTRNY1_Floor4	2	34/2008	21	224894186	1433212
DART-UNKNOWN_DARTNAME	1	47/2008	11	225364536	1448080
DART-UNKNOWN_DARTNAME	4	23/2009	11	225858576	1465070
DART-UNKNOWN_DARTNAME	5	48/2007	0	00003021	1410689
DART-UNKNOWN_DARTNAME	6	08/2010	21	TR2208YW	1448073
SeRF-I	NA	28/2008	21	224992774	1433780
System Card-I	NA	33/2008	31	225014558	1397156

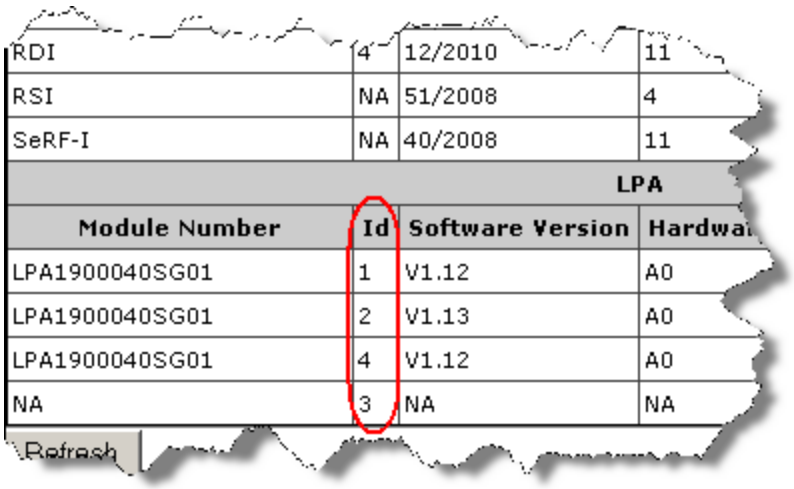
SciencesBldg1 1-1: LawrenceLab (169.254.48.104)					
Module Type	Id	Date Code	Hardware Version	Serial Number	Part Number
DART-Grizzly4	7	17/2010	11	TR220ACH	1456329
DART-UNKNOWN_DARTNAME	1	24/2008	11	224868062	1432419
DART-UNKNOWN_DARTNAME	3	08/2009	11	225558429	1461877
LNA/Duplexor	1	50/2008	10	8308A00Q2	1433038
LNA/Duplexor	3	24/2009	20	8309A00SD	1460233
LNA/Duplexor	7	08/2010	20	8310A006L	1460241
Power Detector	1	50/2008	10	8308A00Q2	1433038
Power Detector	2	24/2009	20	8309A00SD	1460233
Power Detector	4	08/2010	20	8310A006L	1460241
RDI	1	46/2008	3	016999003	1435609
RDI	2	13/2009	21	225628990	1435609
RDI	4	12/2010	11	TR2209HL	1673843
RSI	NA	51/2008	4	017217005	1435605
SeRF-I	NA	40/2008	11	225311495	1452763

LPA					
Module Number	Id	Software Version	Hardware Version	Serial Number	Description
LPA1900040SG01	1	V1.12	A0	0121	URH1.9/20W
LPA1900040SG01	2	V1.13	A0	0682	URH1.9/20W
LPA1900040SG01	4	V1.12	A0	1467	URH1.9/20W
NA	3	NA	NA	NA	NA/NA

Refresh

The **Hardware Inventory** page has separate tables for each Host and Remote Unit in the system. For each Remote Unit listed, there is also a corresponding LPA table. Each unit is identified by name and IP address in a title bar at the top of the table. Each table provides the following information:

- **Module Type**—identifies the module by type, such as System Card, DART, SeRF (not used in the LPA table).
- **Module Number** (LPA table only)—identifies the LPA.
- **Id**—applicable to the DARTs and LPAs only; for further information see "RF Module Capabilities and GUI Representation" on page 21.



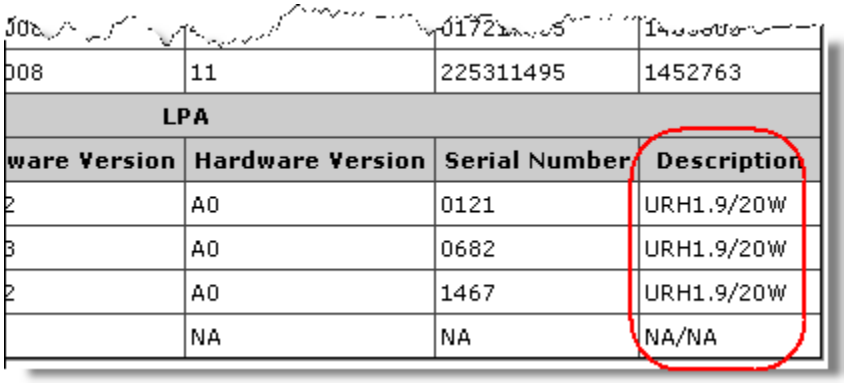
RDI	4	12/2010	11
RSI	NA	51/2008	4
SeRF-I	NA	40/2008	11

LPA

Module Number	Id	Software Version	Hardwa
LPA1900040SG01	1	V1.12	A0
LPA1900040SG01	2	V1.13	A0
LPA1900040SG01	4	V1.12	A0
NA	3	NA	NA

Refresh

- **Date Code**—date code for the module.
- **Hardware Version**—release version number for the module.
- **Serial Number**—serial number for the module assigned during manufacturing.
- **Part Number**—Part Number for the module assigned during manufacturing (not applicable to the LPA).
- **Description** (LPA only)—band type of LPA/LPA power in Watts.



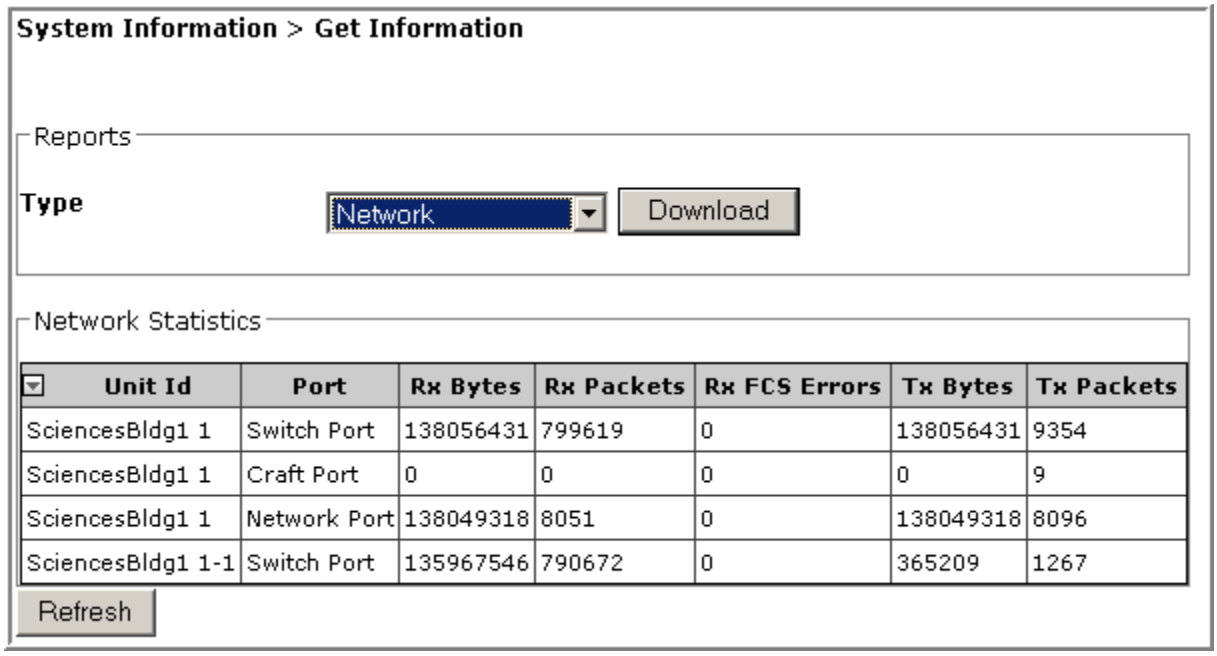
008	11	225311495	1452763

LPA

ware Version	Hardware Version	Serial Number	Description
2	A0	0121	URH1.9/20W
3	A0	0682	URH1.9/20W
2	A0	1467	URH1.9/20W
	NA	NA	NA/NA

Viewing the Network Report

To access the **Network** report, in the System Menu bar, click **System Information** > **Get Information**, and then in the **Reports** panel **Type** list, select **Network**.



Unit Id	Port	Rx Bytes	Rx Packets	Rx FCS Errors	Tx Bytes	Tx Packets
SciencesBldg1 1	Switch Port	138056431	799619	0	138056431	9354
SciencesBldg1 1	Craft Port	0	0	0	0	9
SciencesBldg1 1	Network Port	138049318	8051	0	138049318	8096
SciencesBldg1 1-1	Switch Port	135967546	790672	0	365209	1267

The **Network Statistics** table provides the following information:

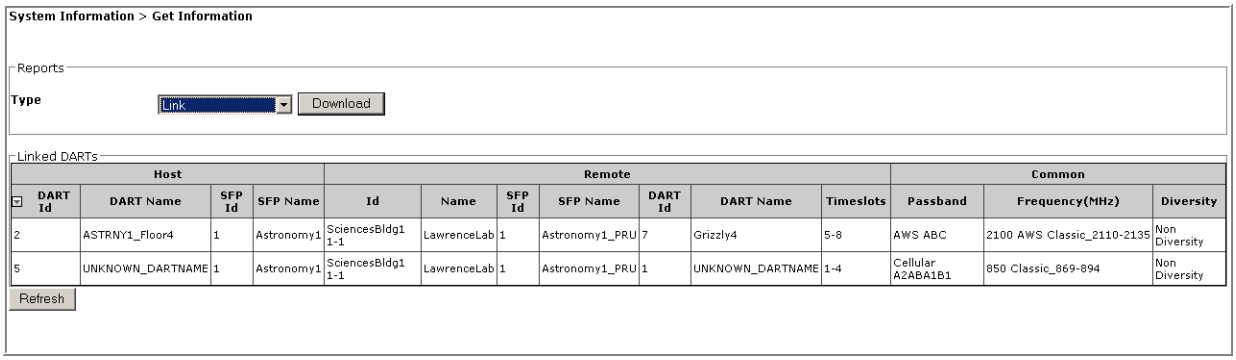
- **Unit Id**—identifies the unit within the system; see "Unit Identification" on page 43.
- **Port**—identifies the port
  - Host ports can be any of the following:
    - Network Port
    - Craft Port
    - Switch Port
  - Remote Unit port is indicated only as a Switch Port

NOTE: **A Switch Port is the CPU's connection to the Ethernet switch that in turn communicates to the fibers. This shows how much traffic the unit is generating and consuming.**

- **Rx Bytes**—count of Receive Bytes.
- **Rx Packets**—count of Receive Packets.
- **RX FCS Errors**—count of Receive FCS Errors.
- **Tx Bytes**—count of Transmit Bytes.
- **Tx Packets**—count of Transmit Packets.

Viewing the Linked DARTs Report

To access the **Linked DARTs** report, in the System Menu bar, click **System Information** > **Get Information**, and then in the **Reports** panel **Type** list, select **Link**.

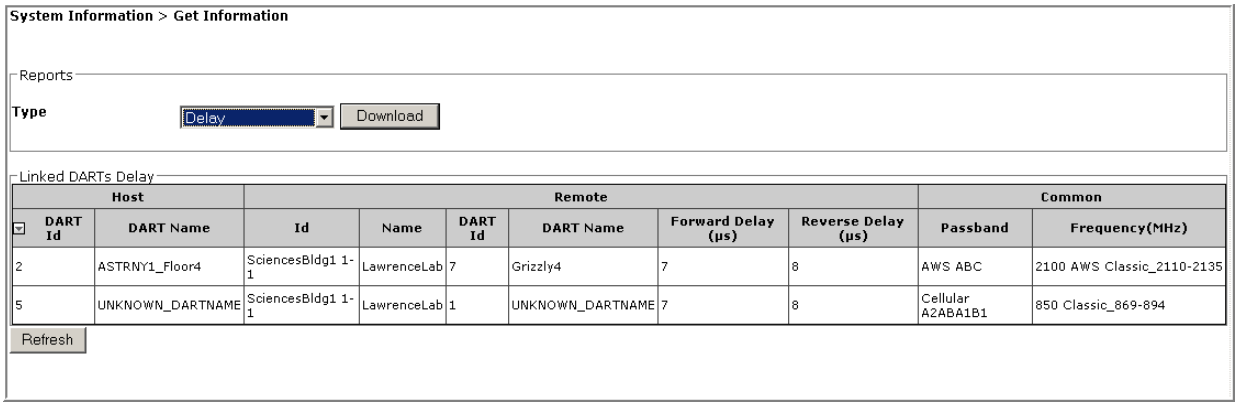


The **Linked DARTs** table provides the following information:

- **Host** columns—identifies the Host and its elements
  - **DART Id**—number of the Host slot in which the DART is installed
  - **DART Name**—user-defined name for the Host DART
  - **SFP Id**—port number of physical optical port where Host-Remote optical fiber is connected on the Host.
  - **SFP Name**—user-defined name for the Optics port.
- **Remote** columns—identifies the Remote and its elements
  - **Id**—Unit ID of PRU/URU based upon layered address; see "Unit Identification" on page 43
  - **Name**—user-defined label for the PRU/URU
  - **SFP Id**—identification (Id) of Remote side SFP connected toward the Host DART (can be from **1** through **8**)
  - **SFP Name**—user-defined name for the Optics port
  - **DART Id**—PRU/URU slot number in which the DART is installed
  - **DART Name**—user-defined name for the Remote DART
  - **Timeslots**—number of timeslots assigned to the link.
- **Common** columns—identify configuration settings that are common to the Host and connected Remote(s)
  - **Passband**—type of passband provided by the DART
  - **Frequency**—passband frequency of the DART
  - **Diversity**—whether DART is configured as **Diversity** or **Non Diversity**. For this release, this will always be **Non Diversity**.

Viewing the Delay Report

To access the **Linked DARTs Delay** report, in the System Menu bar, click **System Information** > **Get Information**, and then in the **Reports** panel **Type** list, select **Delay**.

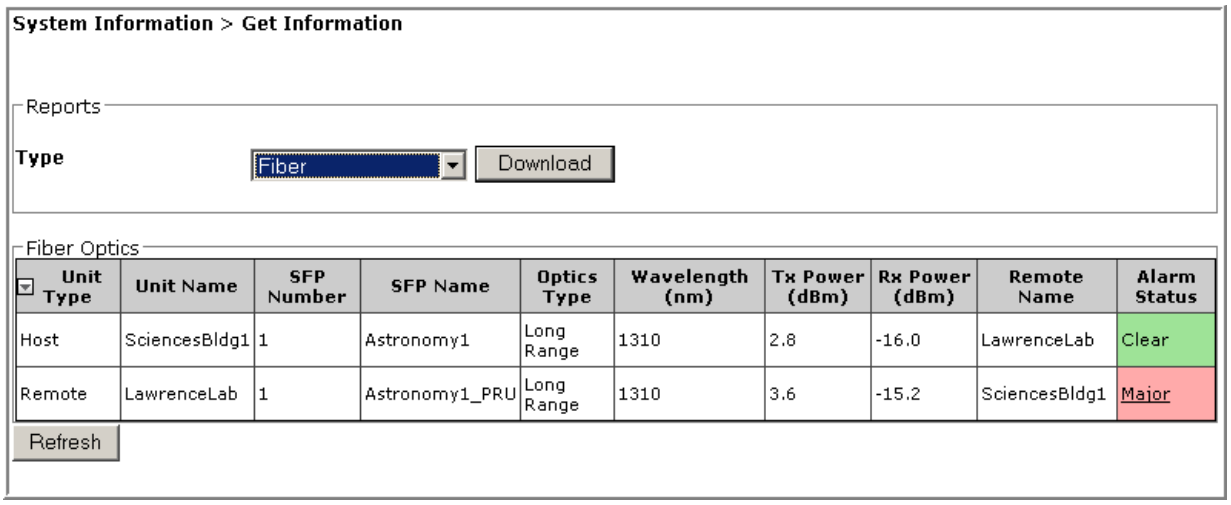


The **Linked DARTs Delay** table provides the following information:

- **Host** columns—identifies the Host in the link
  - **DART Id**—number of the Host slot in which the DART is installed
  - **DART Name**—user-defined name for the Host DART.
- **Remote** columns—identifies the Remote and its elements
  - **Id**—Unit ID of PRU/URU based upon layered address; see "Unit Identification" on page 43
  - **Name**—user-defined label for the PRU/URU
  - **DART Id**—PRU/URU slot number in which the DART is installed
  - **DART Name**—user-defined name for the Remote DART
  - **Forward Delay** (µs)—user requested FWD RF path delay in microseconds
  - **Reverse Delay** (µs)—user requested REV RF path delay in microseconds.
- **Common** columns—identify configuration settings that are common to the Host and connected Remote(s)
  - **Passband**—type of passband provided by the DART
  - **Frequency (MHz)**—passband frequency of the DART.

Viewing the Fiber Report

To access the **Fiber Optics** report, in the System Menu bar, click **System Information** > **Get Information**, and then in the **Reports** panel **Type** list, select **Fiber**.



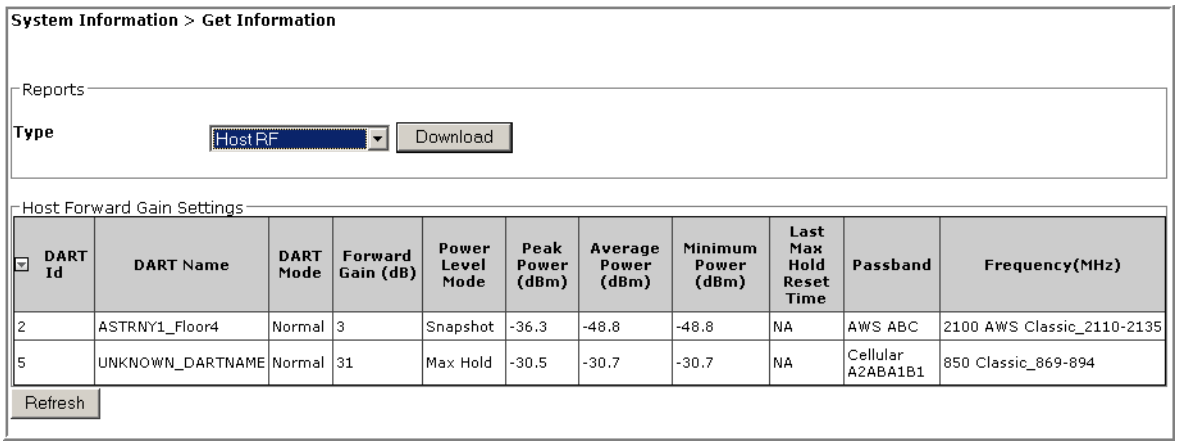
Unit Type	Unit Name	SFP Number	SFP Name	Optics Type	Wavelength (nm)	Tx Power (dBm)	Rx Power (dBm)	Remote Name	Alarm Status
Host	SciencesBldg1	1	Astronomy1	Long Range	1310	2.8	-16.0	LawrenceLab	Clear
Remote	LawrenceLab	1	Astronomy1_PRU	Long Range	1310	3.6	-15.2	SciencesBldg1	Major

The **Fiber Optics** table provides the following information:

- **Unit Type**—what the unit is, such as Host or Remote.
- **Unit Name**—Unit ID of the unit based upon layered address; see "Unit Identification" on page 43.
- **SFP Number**—Optical port number, from **1** to **8**.
- **SFP Name**—name assigned to the Optical port; default **SFP Name** is **UNKNOWN_SFPNAME**.
- **Optics Type**
  - **LongRange**—26 dB
  - **IntermediateRange**—18 dB).
- **Wavelength (nm)**—wave length transmitted through this port:
  - Non-duplex and WDM configurations: 1550 nm fwd, 1310 nm rev
  - CWDM configurations can be one of eight wavelengths: 1470 nm, 1490 nm, 1510 nm, 1530 nm, 1550 nm, 1570 nm, 1590 nm, and 1610 nm.
- **Tx Power (dBm)**—launch power level in dBm of forward path signal. The minimum FWD launch power is -2 dBm, and the maximum is 3 dBm.
- **Rx Power (dBm)**—receive power level in dBm of reverse path signal, which incorporates the launch power of the Remote Unit SFP plus all optical losses (insertion losses, fiber cable loss, and so forth).
- **Remote Name**—name of the Remote connected to this Optical port.
- **Alarm Status**—whether an alarm is active. If an alarm is active, there will be a **Minor** or **Major** link that you click to open a dialog that defines the active alarm, as described in "Viewing Alarm Details" on page 45. The background color of the **Alarm Status** cell also indicates the alarm level (see "Alarm Color Codes" on page 44).

Viewing the Host RF Report

To access the **Host Forward Gain Settings** report, in the System Menu bar, click **System Information** > **Get Information**, and then in the **Reports** panel **Type** list, select **Host RF**.



DART Id	DART Name	DART Mode	Forward Gain (dB)	Power Level Mode	Peak Power (dBm)	Average Power (dBm)	Minimum Power (dBm)	Last Max Hold Reset Time	Passband	Frequency(MHz)
2	ASTRNY1_Floor4	Normal	3	Snapshot	-36.3	-48.8	-48.8	NA	AWS ABC	2100 AWS Classic_2110-2135
5	UNKNOWN_DARTNAME	Normal	31	Max Hold	-30.5	-30.7	-30.7	NA	Cellular A2ABA1B1	850 Classic_869-894

The **Host Forward Gain Settings** table provides the following information.

- **DART Id**—number of the Host slot in which the DART is installed
- **DART Name**—user-defined name for the Host DART
- **DART Mode**—identifies the RF function
  - **Standby**—RF function is muted in the Host and its linked Remote Unit.
  - **Normal**—RF function not forced to be muted, allows the system to operate normally
- **Fwd Gain (db)**—Forward Gain in decibels assigned to the DART
- **Power Level Mode**—Host DART Input Power Level Mode:
  - **Snapshot**—provides a “snap-shot” or current RF measurement for the selected Remote DART (default setting).
  - **Max Hold**—retains the maximum values for peak and peak average, and the minimum values for minimum average since the last **Max Hold Reset**.

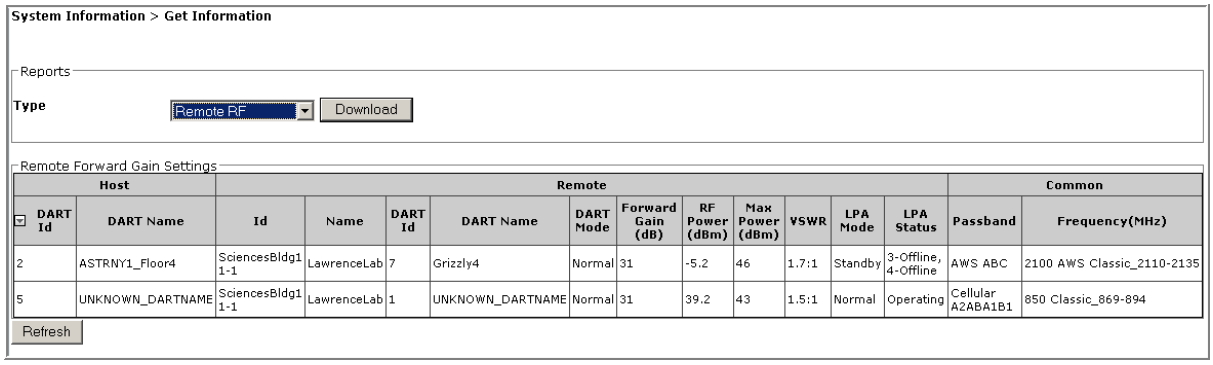
NOTE: **The Power Level Mode is disabled if the:**

- **DART Operating mode is set to Standby**
- **DART Pass Band (Timeslots) parameter is set to Undefined (default)**
- **DART Diversity Status is set to Diversity.**

- **Peak Power (dBm)**—highest level of power experienced on the DART Forward link.
- **Average Power (dBm)**—average power experienced on the DART Forward link.
- **Minimum Power (dBm)**—average minimum power experienced on the DART Forward link.
- **Last Max Hold Reset Time**—time that **Max Hold** was last reset.
- **Passband**—type of passband provided by the DART.
- **Frequency (MHz)**—passband frequency of the DART

Viewing the Remote RF Report

To access the **Remote Forward Gain Settings** report, in the System Menu bar, click **System Information** > **Get Information**, and then in the **Reports** panel **Type** list, select **Remote RF**.



Host		Remote											Common	
DART Id	DART Name	Id	Name	DART Id	DART Name	DART Mode	Forward Gain (dB)	RF Power (dBm)	Max Power (dBm)	VSWR	LPA Mode	LPA Status	Passband	Frequency(MHz)
2	ASTRNY1_Floor4	SciencesBldg1 1-1	LawrenceLab	7	Grizzly4	Normal	31	-5.2	46	1.7:1	Standby	3-Offline, 4-Offline	AWS ABC	2100 AWS Classic_2110-2135
5	UNKNOWN_DARTNAME	SciencesBldg1 1-1	LawrenceLab	1	UNKNOWN_DARTNAME	Normal	31	39.2	43	1.5:1	Normal	Operating	Cellular A2ABA1B1	850 Classic_869-894

The **Remote Forward Gain Settings** table provides the following information:

- **Host** columns—identifies the Host in the link
  - **DART Id**—number assigned by the EMS to the Host DART for identification purposes
  - **DART Name**—user-defined name for the DART.
- **Remote** columns—identifies the Remote and its elements
  - **DART Id**—Unit ID of PRU/URU based upon layered address; see "Unit Identification" on page 43
  - **DART Name**—user-defined label for the PRU/URU
  - **DART Mode**—how RF functions on that DART
    - **Standby**—forces the RF function to be muted in the Host and its linked Remote.
    - **Normal**—allows the system to operate normally (RF function not forced to be muted), assuming all other system components are in proper working order. (Default setting.)
  - **Forward Gain (db)**—actual gain, *not* attenuation, applied to the RF forward path signal (where **0** = **0 dB gain**, **1** = **1 dB gain**, and so forth)
  - **RF Power (dBm)**—estimated power level based upon input level and gain.
  - **Max Power (dBm)**—the maximum LPA power values
  - **VSWR**—the Voltage Standing Wave Ratio (VSWR) for the LPA. An **LPA VSWR Fault** occurs if the VSWR measurement exceeds the threshold, which is 3:1.
  - **LPA Mode**—the LPA Mode, which can be **Normal** or **Standby**
  - **LPA Status**—the LPA status. In case of dual LPA, it will indicate the value for both LPAs as either **1-Offline** or **2-Operating**.
- **Passband**—type of passband provided by the DART
- **Frequency (MHz)**—passband frequency of the DART