

11 Managing Equipment

About This Chapter

This function is performed to configure racks and boards. In addition, this function can be performed to set or operate boards. Equipment management consists of resetting a board, starting a board, testing the operation status of a board software, changing board management state, viewing board information and extended information, viewing board alarms and DATU board parameters, setting BTS clock, antenna system parameters, and TMA parameters, and testing the connection between the tested board and the main control board.

[11.1 Configuring Racks](#)

The function is performed to configure boards based on the selection of racks and to add boards in batches.

[11.2 Configuring Boards](#)

This function is performed to configure boards. After a board is configured, the configuration information of the board is sent to the BTS through the Site Maintenance Terminal System.

[11.3 Resetting Boards](#)

This function is performed to reset a board.

[11.4 Testing Boards](#)

This function is performed to check whether the board hardware is damaged.

[11.5 Changing Board Management States](#)

This function is performed to change the management state of TRUs or channels. You can lock or unlock the board or channels manually.

[11.6 Viewing Board Information](#)

This function is performed to view the board running state, software version, board alarm count, current clock state, board in position, and clock master/backup state.

[11.7 Viewing Extended Information on Board](#)

This function is performed to view the extended information on a board, such as the support capability of an E1 port and the information about DIP switches.

[11.8 Performing Loopback Test on Board Communication Links](#)

The TRU loopback test is performed to test the state of the communication link between the TRU and the DTMU. The DTMU loopback test is performed to test the state of the link between the Site Maintenance Terminal System and the DTMU.

11.9 Viewing Board Alarms

This function is performed to view the current alarms of a board.

11.10 Setting BTS Clock

This function is performed to set the working mode of the BTS clock.

11.11 Setting Antenna and Feeder Parameters

This function is performed to set the power attenuation value of the antenna and feeder on the antenna port ANTA or ANTB on the DDPM.

11.12 Configuring Antenna System and TMA Parameters

This function is performed to set the attenuation factor based on the configuration modes of the DTRU and the DDPU.

11.13 Viewing Board Parameters

This function is performed to view the operational parameters and configuration parameters. In addition, this function can be performed to configure parameters on the DATU.

11.14 Switching Over Active and Standby DTMUs

This function is performed to switch over the active and standby DTMUs manually or clear the alarms reported because of switchover.

11.15 Viewing DPMU Parameters

This function is performed to view the power information, battery information, parameters of battery management, and production date of a Power Supply Unit (PSU). These parameters can be set to the default values.

11.16 Maintaining Battery Parameters

This function is performed to view the battery installation date, charge count, and discharge count. It also can be performed to test the usage of the battery.

11.17 Viewing Parameter States and Slot Information

This function is performed to view the current limitation states, control states of the power system, permission states of the battery disconnection, and type of DPSUs. In addition, this function can be performed to display the installation slots of DPSUs.

11.1 Configuring Racks

The function is performed to configure boards based on the selection of racks and to add boards in batches.

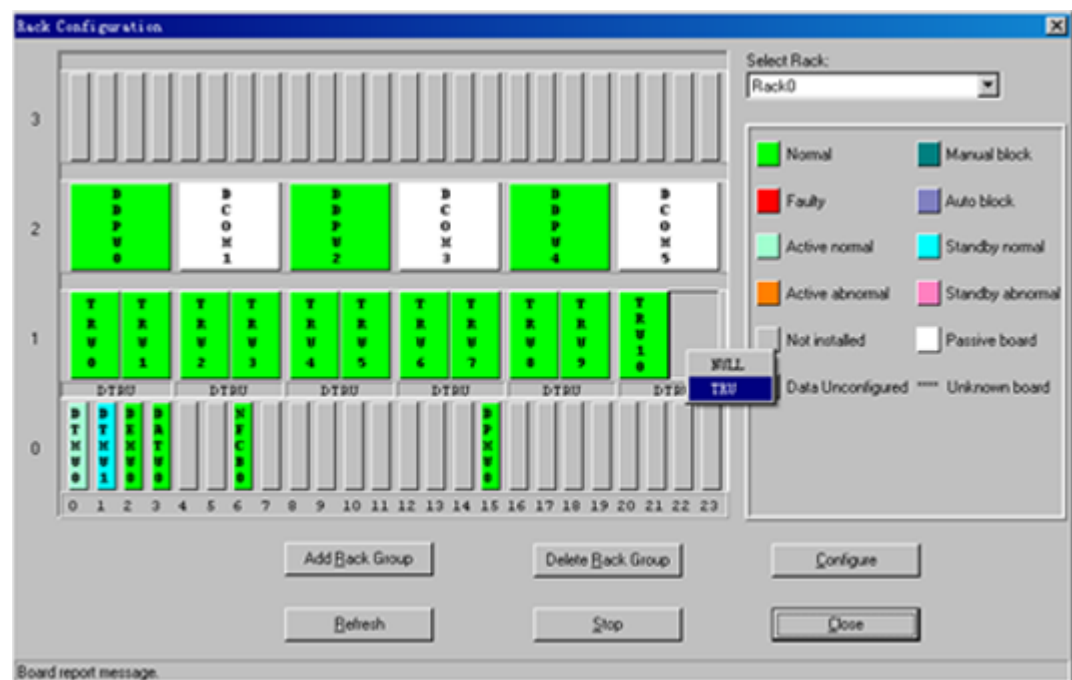
Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Procedure

- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Rack Configuration**.
The **Rack Configuration** dialog box is displayed.
- Step 2** Determine whether a rack group needs to be added or deleted.
 - If a rack group needs to be added or deleted, click **Add Rack Group** or **Delete Rack Group**. After the operation is complete, go to **Step 3**.
 - If a rack group does not need to be added or deleted, go to **Step 3**.
- Step 3** In the **Select Rack** drop-down list box, select a rack, as shown in **Figure 11-1**.

Figure 11-1 Rack configuration



NOTE

Take rack 0 as an example. Subrack 0 holds the common subrack and the cabinet top subrack. Subrack 1 holds the DTRUs. Subrack 2 holds the DAFU. Subrack 3 is not in use temporarily.

- Step 4** Right-click a slot, and choose a board.

Step 5 Click **Rack Configuration**.

The configuration information of all the boards are sent to the BTS through the Site Maintenance Terminal System. The **Configuring rack successfully**. message is displayed on the status bar. The result is displayed on the equipment panel (Green indicates normal and red indicates faulty).

Step 6 Click **Refresh**.

The system verifies the boards configured on the equipment panel and the boards configured on the BTS to refresh the result displayed on the equipment panel.

---End

11.2 Configuring Boards

This function is performed to configure boards. After a board is configured, the configuration information of the board is sent to the BTS through the Site Maintenance Terminal System.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Procedure

Step 1 In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Configuration**.

The **Board Configuration** dialog box is displayed.

Step 2 Determine whether a rack group needs to be added or deleted.

- If a rack group needs to be added or deleted, click **Add Rack Group** or **Delete Rack Group**. After the operation is complete, go to **Step 3**.
- If a rack group does not need to be added or deleted, go to **Step 3**.

Step 3 In the **Select Rack** drop-down list box, select a rack.

Step 4 Right-click a slot, and select a board.

The configured board shows green on the equipment panel. Subsequently, the system verifies the configured boards on the equipment panel and the boards configured in the BTS to refresh the displayed result on the equipment panel.

 **NOTE**

After the displayed result on the equipment panel is refreshed, if the board still shows green, the configured board runs normally.

After the displayed result on the equipment panel is refreshed, if the board shows red, the causes are as follows:

- The board is configured on the equipment panel. The board is not actually configured in the BTS.
- The board is configured on the equipment panel and the BTS, however, the communication between the board and the DTMU cannot be established.

Step 5 Click **Refresh**.

The system refreshes the result displayed on the equipment panel. The **Configuring board successfully**. message is displayed on the status bar, as shown in **Figure 11-2**.

Figure 11-2 Board configuration



---End

11.3 Resetting Boards

This function is performed to reset a board.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Procedure

- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-3](#).

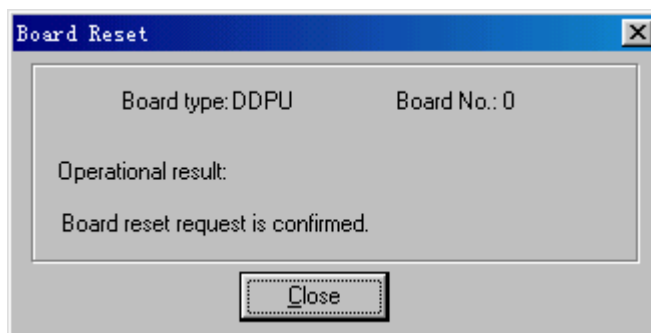
Figure 11-3 Board management



Step 2 Right-click the board to be reset, such as the **DDPU**.
A shortcut menu is displayed.

Step 3 Select **Reset**.
The result is displayed in the **Board Reset** dialog box, as shown in [Figure 11-4](#).

Figure 11-4 Resetting a board



----End

11.4 Testing Boards

This function is performed to check whether the board hardware is damaged.

Prerequisite

- You have logged in to the BTS through the Site Maintenance Terminal.

NOTE

If the test is successful, no board hardware is damaged.

---End

11.5 Changing Board Management States

This function is performed to change the management state of TRUs or channels. You can lock or unlock the board or channels manually.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Context

Only the DTRU supports this function of changing board management states.

Procedure

Step 1 In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-7](#).

Figure 11-7 Board management



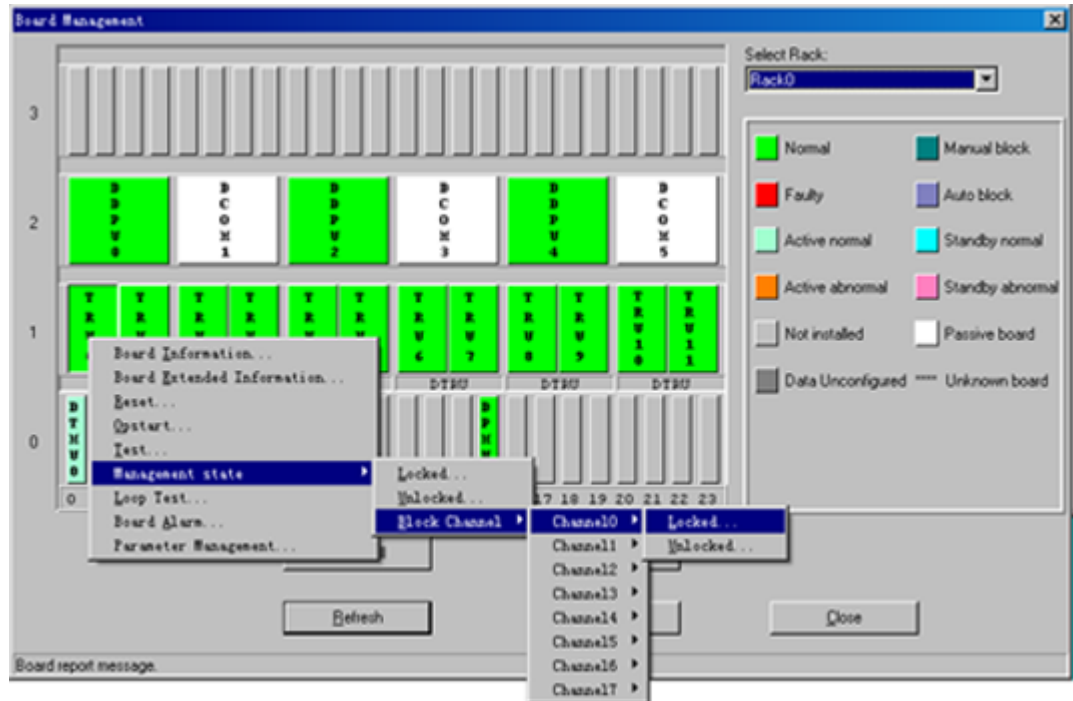
Step 2 Right-click a TRU, for example, **TRU0**.

A shortcut menu is displayed.

Step 3 Select **Management state**, as shown in [Figure 11-8](#).

- To change the management state of a TRU, choose **Management state > Locked** or **Management state > Unlocked**.
- To change the management state of a channel, select a channel. For example, choose **Management state > Block Channel > Channel0 > Locked** or **Management state > Block Channel > Channel0 > Unlocked**.

Figure 11-8 Changing the board management state



---End

11.6 Viewing Board Information

This function is performed to view the board running state, software version, board alarm count, current clock state, board in position, and clock master/backup state.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Context

Only the DTMU supports the function of viewing the clock master/backup state.

Procedure

Step 1 In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-9](#).

Figure 11-9 Board management



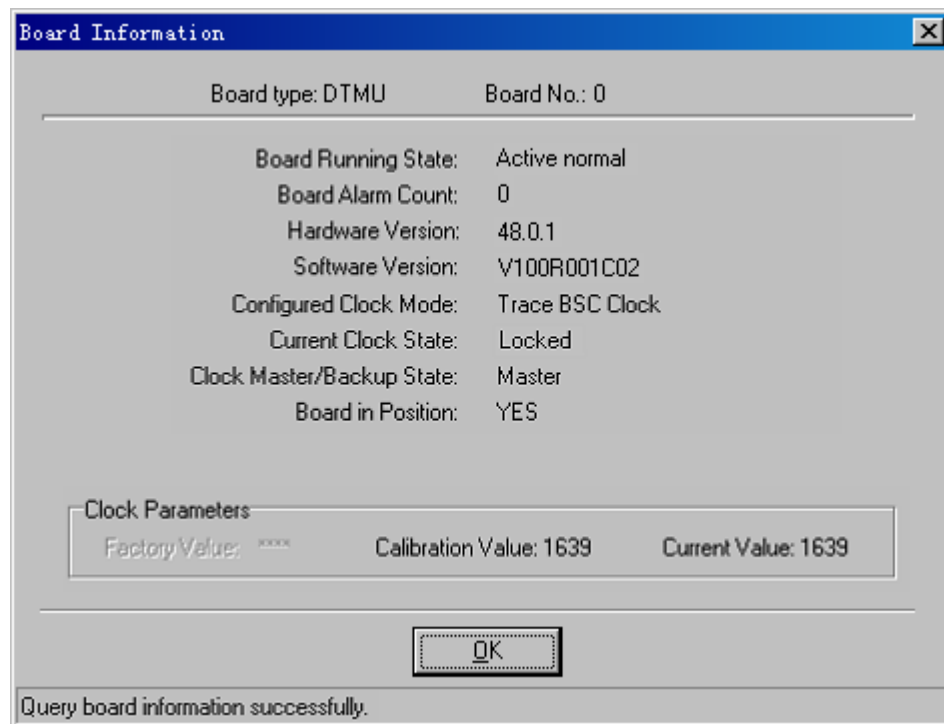
Step 2 Right-click the board to be viewed.

A shortcut menu is displayed.

Step 3 Select **Board Information**.

The result is displayed in the **Board Information** dialog box, as shown in [Figure 11-10](#).

Figure 11-10 Board information



---End

11.7 Viewing Extended Information on Boardd

This function is performed to view the extended information on a board, such as the support capability of an E1 port and the information about DIP switches.

Prerequisite

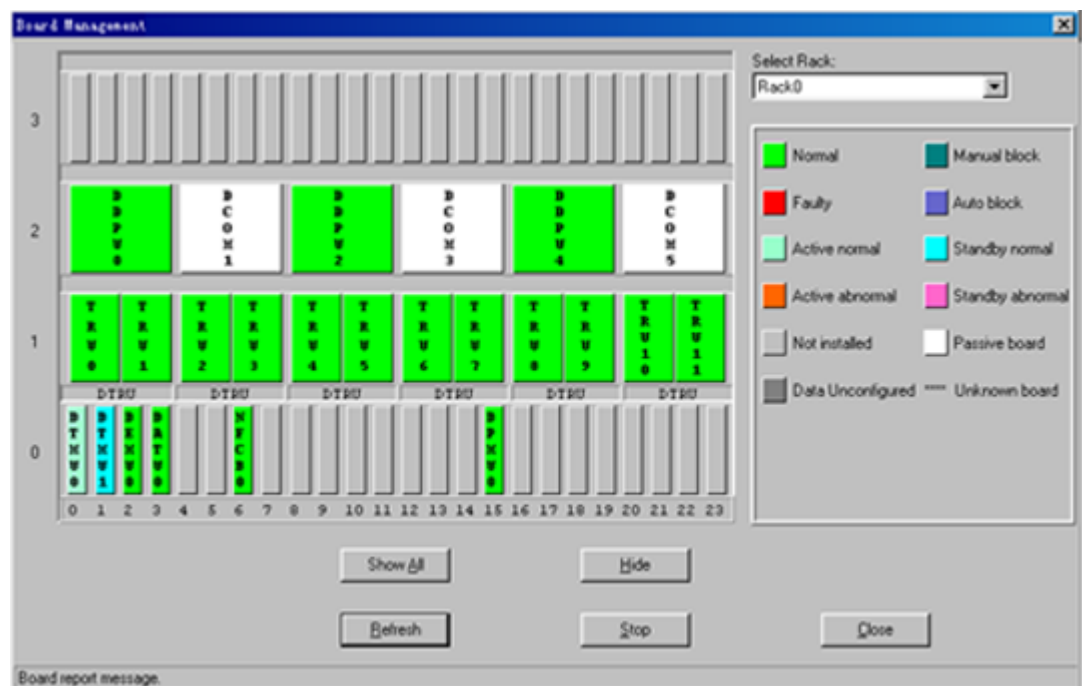
You have logged in to the BTS through the Site Maintenance Terminal.

Procedure

- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-11](#).

Figure 11-11 Board management

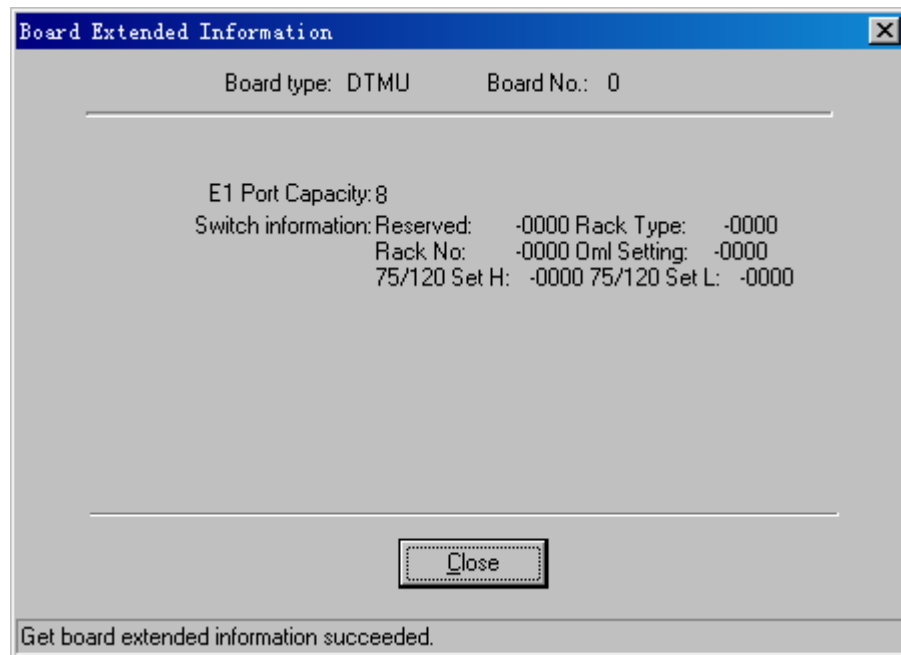


- Step 2** Right-click the board to be viewed.

A shortcut menu is displayed.

- Step 3** Select **Board Extended Information**.

The result is displayed in the **Board Extended Information** dialog box, as shown in [Figure 11-12](#).

Figure 11-12 Board extended information

---End

11.8 Performing Loopback Test on Board Communication Links

The TRU loopback test is performed to test the state of the communication link between the TRU and the DTMU. The DTMU loopback test is performed to test the state of the link between the Site Maintenance Terminal System and the DTMU.

Prerequisite

- You have logged in to the BTS through the Site Maintenance Terminal.
- The TRU and the DTMU are configured properly and are functional.

Context

Only the TRU and the DTMU support loopback test. [Table 11-1](#) lists the description of the parameter configuration.

Table 11-1 Parameters in the Loop Test dialog box

Parameter Name	Meaning	Value Range
Data Length	Refers to the length of the valid data of the single frame of the loopback test command sent from the DTMU to the board.	1 ~ 220

Parameter Name	Meaning	Value Range
Initial Data	Refers to the initial value of the valid data of the loopback test command sent from the DTMU to the board.	0 ~ 255
Data Step Length	Refers to the incremental step length of the valid data of the loopback test command sent from the DTMU to the board.	0 ~ 255

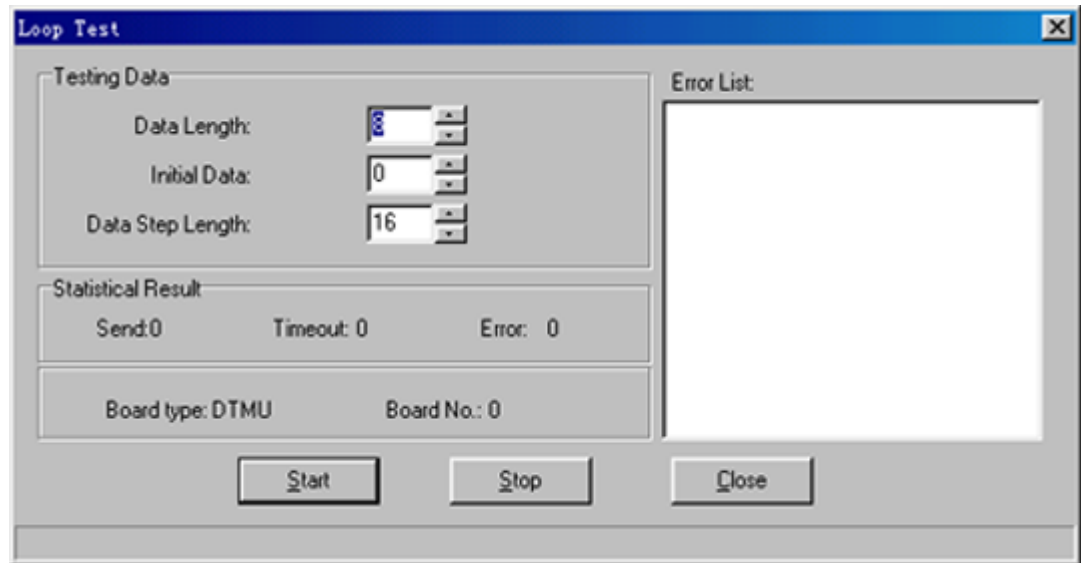
Procedure

- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**. The **Board Management** dialog box is displayed, as shown in [Figure 11-13](#).

Figure 11-13 Board management



- Step 2** Right-click the board to be viewed. A shortcut menu is displayed.
- Step 3** Select **Loop Test**. The **Loop Test** dialog box is displayed, as shown in [Figure 11-14](#).

Figure 11-14 Performing loopback test**Step 4** Click **Start**.

After the test is complete, the result is displayed on the status bar.

----End

11.9 Viewing Board Alarms

This function is performed to view the current alarms of a board.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Procedure

Step 1 In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-15](#).

Figure 11-15 Board management

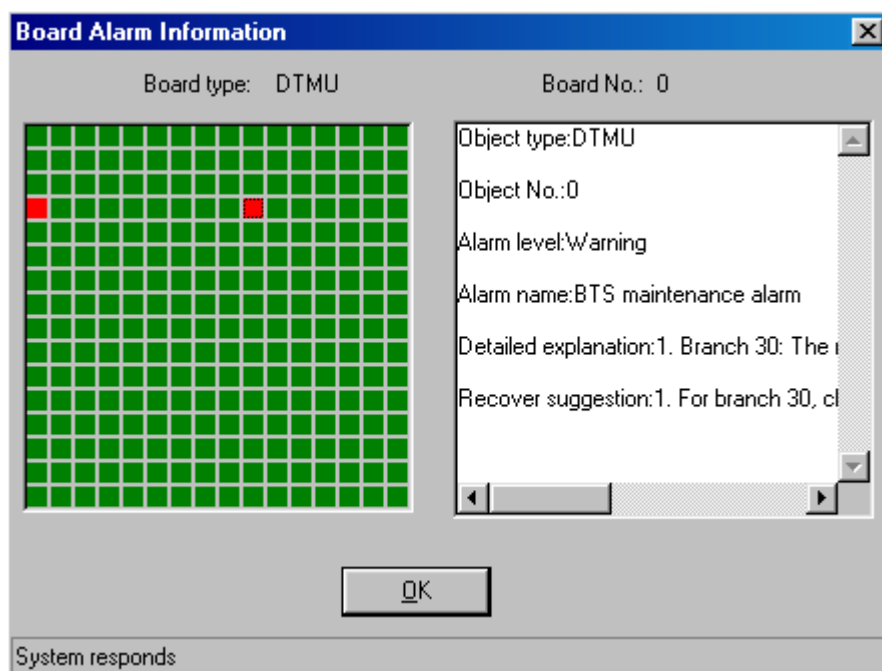


Step 2 Right-click the board to be viewed.
 A shortcut menu is displayed.

Step 3 Select **Board Alarm**.
 The **Board Alarm Information** dialog box is displayed.

Step 4 Click a red grid.
 The description of a specific alarm is displayed in the right pane, as shown in [Figure 11-16](#).

Figure 11-16 Board alarm information



 **NOTE**

A red grid represents an alarm.

----End

11.10 Setting BTS Clock

This function is performed to set the working mode of the BTS clock.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Context

Only the DTMU supports this function of setting BTS clock. [Table 11-2](#) lists the description of the parameter configuration.

Table 11-2 Parameters in the Clock Setup dialog box

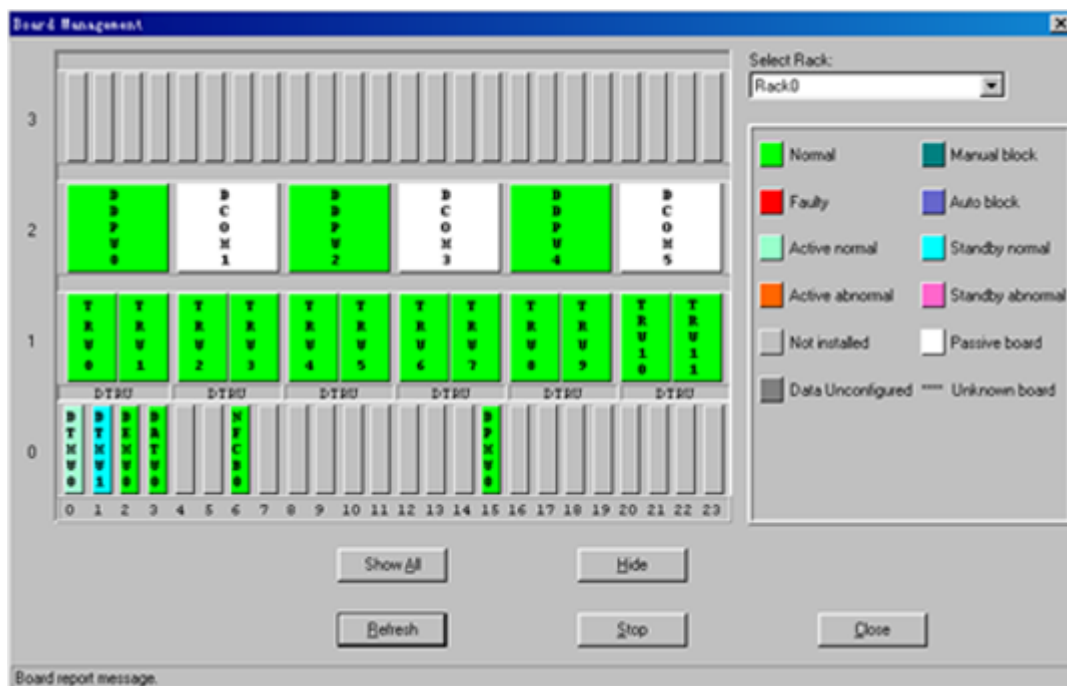
Parameter Name	Meaning	Value Range
internal clock	The clock unit works in free oscillation mode. It is not synchronous with the network clock.	—
Trace BSC clock	The clock unit works in phase-locked mode. It is synchronous with the 2 MHz clock abstracted from the Abis interface.	—
External Sync. clock	The clock unit works in phase-locked mode. It is synchronous with the external 2 MHz reference clock.	—
Clock Calibration	It is used to adjust the frequency of the crystal oscillator.	0–4095
Enable Trace Range Limit	When the BSC clock is offset from the specified range of frequency, the BTS is not synchronous with the BSC clock.	—
Disable Trace Range Limit	Irrespective of what value the BSC clock frequency is, the BTS clock is synchronous with the BSC.	—

Procedure

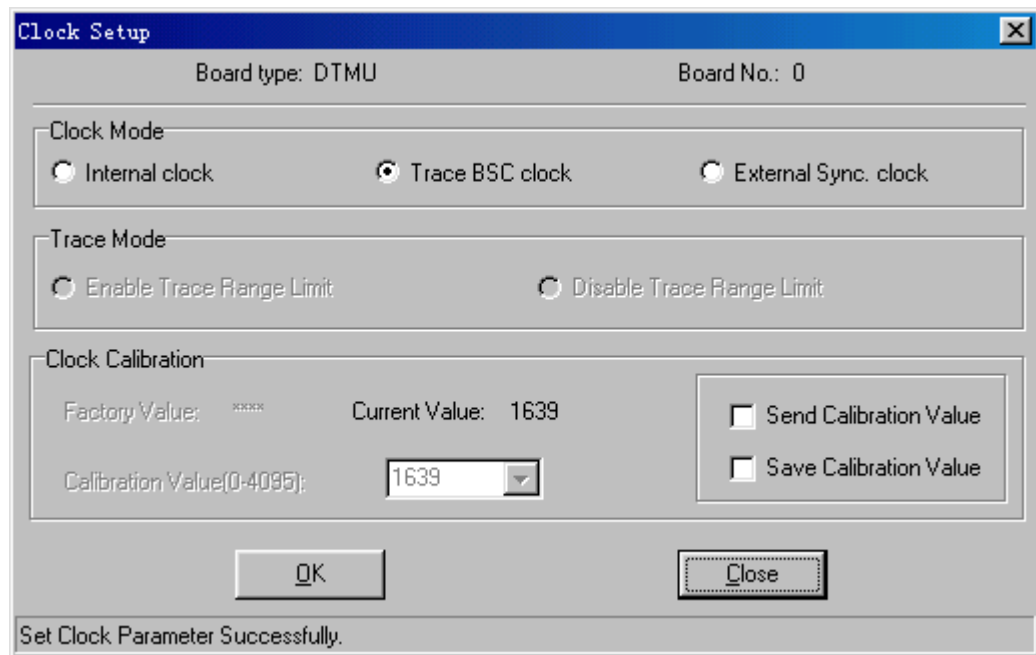
Step 1 In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-17](#).

Figure 11-17 Board management



- Step 2** Right-click **DTMU**.
A shortcut menu is displayed.
- Step 3** Select **Clock Setup**.
The **Clock Setup** dialog box is displayed.
- Step 4** In the **Clock Mode** area, select a clock mode.
- Step 5** Click **OK**.
The result is displayed on the status bar, as shown in [Figure 11-18](#).

Figure 11-18 Clock mode selection

Step 6 If you need to change the current frequency, in the **Clock Calibration** area, select **Calibration Value(0–4095)**, and then select **Send Calibration Value**. Click **OK**.

Calibrate the current clock frequency.

Step 7 Select **Save Calibration Value**. Click **OK**. The specified clock frequency is saved in the system.

NOTE

In the **Clock Mode** area, only when you select **Trace BSC clock**, the **Trace Mode** can be selected.

---End

11.11 Setting Antenna and Feeder Parameters

This function is performed to set the power attenuation value of the antenna and feeder on the antenna port ANTA or ANTB on the DDPM.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Context

Only the DDPU supports this function of configuring antenna system and TMA parameters. [Table 11-3](#) lists the description of the parameter configuration.

Table 11-3 Parameters in the Antenna Feeder Setup dialog box

Parameter Name	Meaning	Value Range
device type	Dual-duplexer module for the DTRU BTS	CDU

Parameter Name	Meaning	Value Range
Subroute No.	Number of the uplink signal branch	<ul style="list-style-type: none"> ● 0: main tower amplification ● 1: diversity tower amplification
Attenuation value	The power attenuation of the uplink signals	0–15 dB

Procedure

Step 1 In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-19](#).

Figure 11-19 Board management



Step 2 Right-click **DDPU**.

A shortcut menu is displayed.

Step 3 Select **Antenna Feeder Setup**.

The **Antenna Feeder Setup** dialog box is displayed.

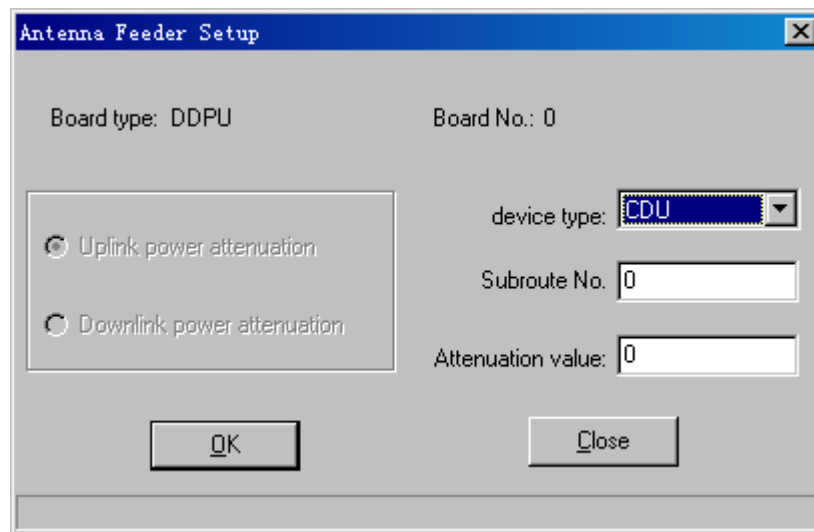
Step 4 specify a subroute number and set the power attenuation value of the subroute number.

NOTE

For the setting of the antenna and feeder parameters, the uplink power attenuation is set by default.

Step 5 Click **OK**.

The result is displayed on the status bar, as shown in [Figure 11-20](#).

Figure 11-20 Antenna and feeder setup

----End

11.12 Configuring Antenna System and TMA Parameters

This function is performed to set the attenuation factor based on the configuration modes of the DTRU and the DDPU.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Context

Only the DDPU supports this function of configuring antenna system and TMA parameters. [Table 11-4](#) lists the description of the parameter configuration.

Table 11-4 Parameters in the Configure CDU dialog box

Parameter Name	Meaning	Value Range
Direction	Signal direction	Uplink or downlink
Subroute No.	Number of the uplink or downlink signal branch	0 ~ 2
With Tower Amplification	Indicates whether the TMA is configured.	Yes or No
Attenuation Factor	Power attenuation of the uplink signals. It is valid only for uplink signals.	0-15 (0 indicates no attenuation.)
TRX No. List	Number of the TRX to which the DDPU is connected	0 ~ 12

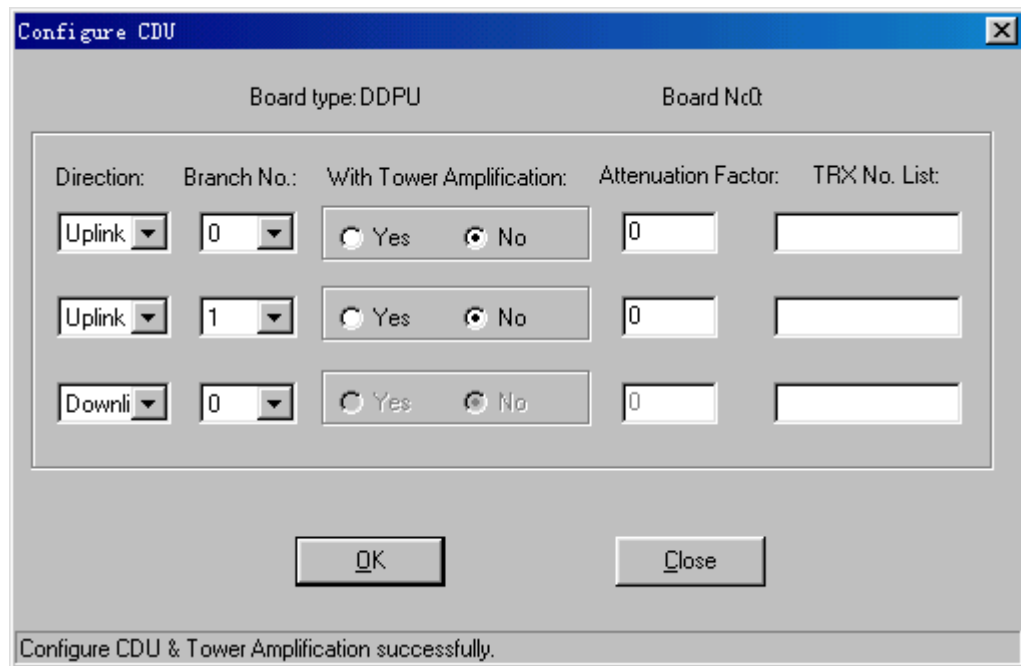
Procedure

- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.
The **Board Management** dialog box is displayed, as shown in [Figure 11-21](#).

Figure 11-21 Board management



- Step 2** Right-click **DDPU**.
A shortcut menu is displayed.
- Step 3** Select **Configure CDU**.
The **Configure CDU** dialog box is displayed.
- Step 4** Based on the configuration modes of the DTRU and the DDPU, in the **Direction** and the **Branch No.** drop-down list boxes, select required direction and branch number separately. In the **With Tower Amplification** option button, make a choice. In the **Attenuation Factor** text box, specify a value. In the **TRX No. List** text box, specify a TRX number used for the connection between the DTRU and the DDPU.
- Step 5** Click **OK**.
The result is displayed on the status bar, as shown in [Figure 11-22](#).

Figure 11-22 Configuring antenna system and TMA

----End

11.13 Viewing Board Parameters

This function is performed to view the operational parameters and configuration parameters. In addition, this function can be performed to configure parameters on the DATU.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Context

Only the DATU can support the parameter configuration function. The other boards support only the function of viewing the operational parameters and configuration parameters.

Procedure

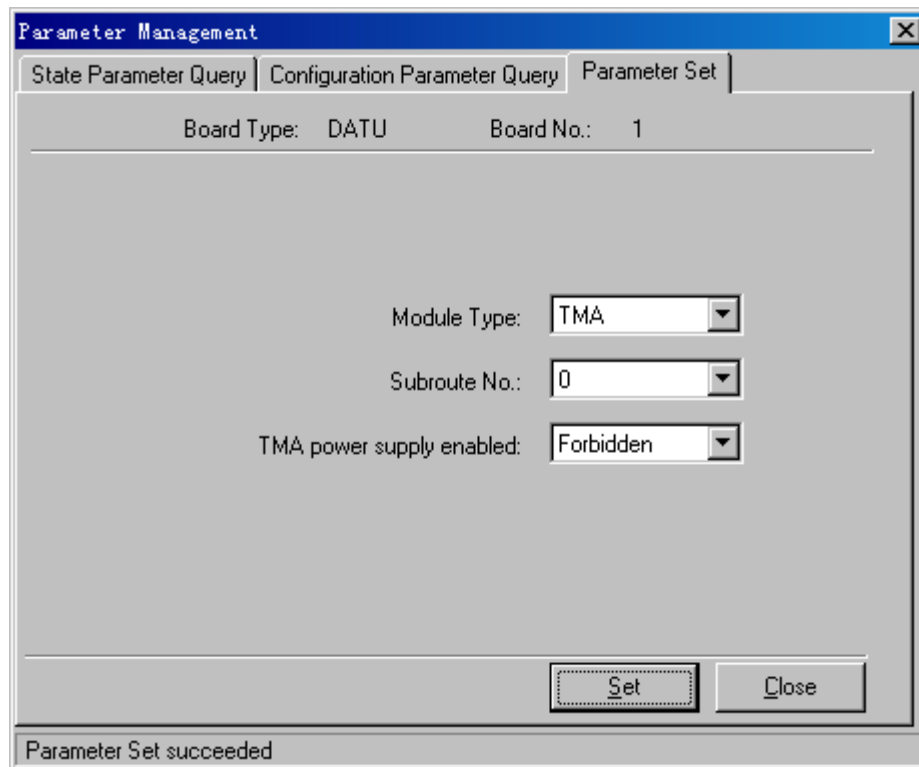
- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-23](#).

Figure 11-23 Board management



- Step 2** Right-click the board to be viewed.
A shortcut menu is displayed. Select **Parameter Management**.
- Step 3** In the **Parameter Management** dialog box, click the **State Parameter Query** tab and the **Configuration Parameter Query** tab to view the operational parameters and configuration parameters of each board. To set the TMA parameters of the DATU, go to [Step 4](#).
- Step 4** Click the **Parameter Set** tab, specify **Module Type**, **Subroute No.**, and **TMA power supply enabled**, as shown in [Figure 11-24](#).

Figure 11-24 Parameter management

Step 5 Click Set.

The **Parameter Set succeeded** message is displayed on the status bar.

----End

11.14 Switching Over Active and Standby DTMUs

This function is performed to switch over the active and standby DTMUs manually or clear the alarms reported because of switchover.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal. [Table 11-5](#) lists the description of the parameter configuration.

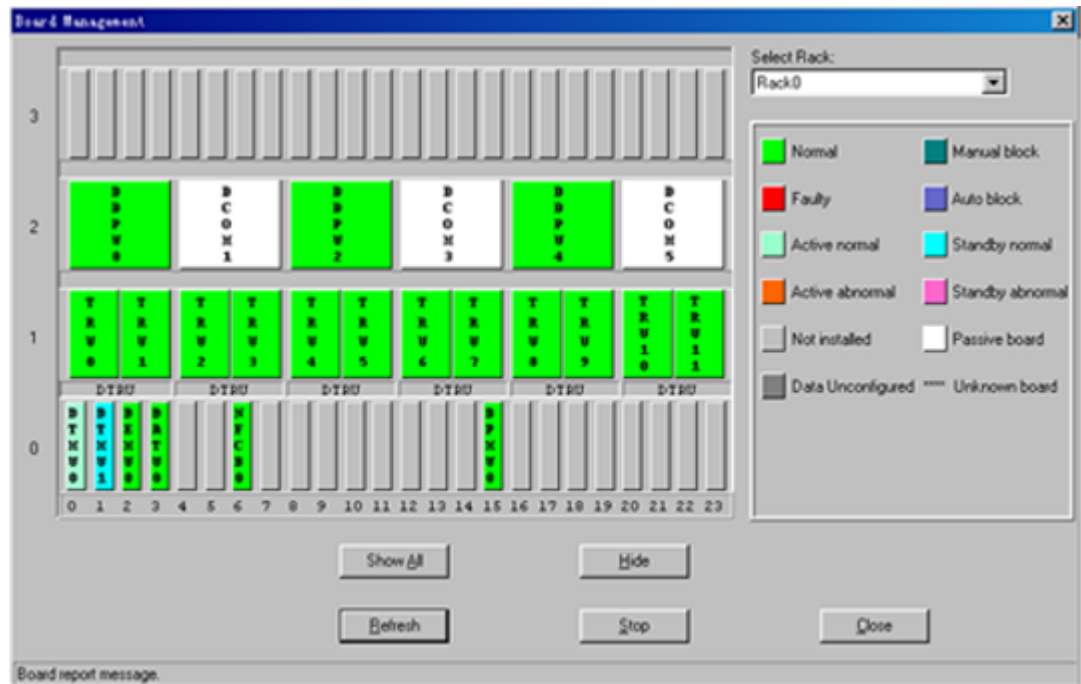
Table 11-5 Parameters in the Changeover dialog box

Parameter Name	Meaning	Value Range
Manual Changeover	Indicates that you choose to switch over the DTMU to active or standby state manually.	—
Clear Changeover Alarm	Clears the alarm reported due to a manual switchover.	—

Procedure

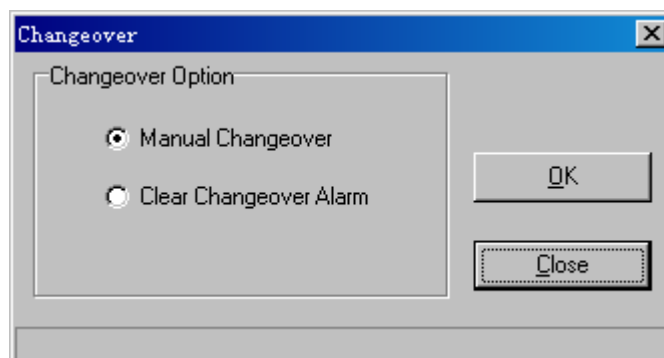
- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.
The **Board Management** dialog box is displayed, as shown in [Figure 11-25](#).

Figure 11-25 Board management



- Step 2** Right-click **DTMU**.
A shortcut menu is displayed.
- Step 3** Choose **Changeover**.
The **Changeover** dialog box is displayed, as shown in [Figure 11-26](#).

Figure 11-26 Changeover dialog box



- Step 4** In the **Changeover Option** list box, select an option.
- Step 5** Click **OK**.
After the test is complete, the result is displayed on the status bar.

----End

11.15 Viewing DPMU Parameters

This function is performed to view the power information, battery information, parameters of battery management, and production date of a Power Supply Unit (PSU). These parameters can be set to the default values.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Procedure

- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-27](#).

Figure 11-27 Board management



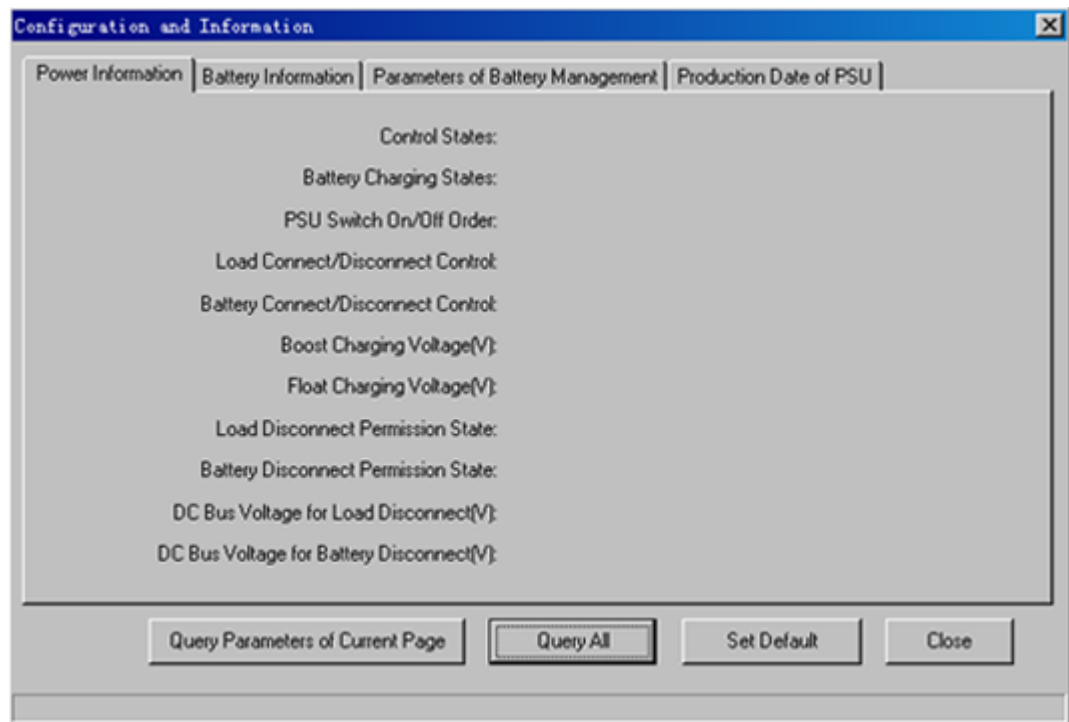
- Step 2** Right-click **DPMU**.

A shortcut menu is displayed.

- Step 3** Select **Configuration and Information**.

The **Configuration and Information** dialog box is displayed, as shown in [Figure 11-28](#).

Figure 11-28 Configuration and Information dialog box



Step 4 Click buttons to be operated.

- Click **Query Parameters of Current Page** to obtain the parameter values on the current tab page.
- Click **Query All** to obtain all the parameter values on the four tab pages.
- Click **Set Default** to set all the parameter values on the four tab pages to the default values.

The result of viewing each parameter is displayed on the tab pages. The operational result is displayed on the status bar.

----End

11.16 Maintaining Battery Parameters

This function is performed to view the battery installation date, charge count, and discharge count. It also can be performed to test the usage of the battery.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Context

Only the DPMU supports this function of viewing the DPMU state and slot information.

Procedure

Step 1 In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-29](#).

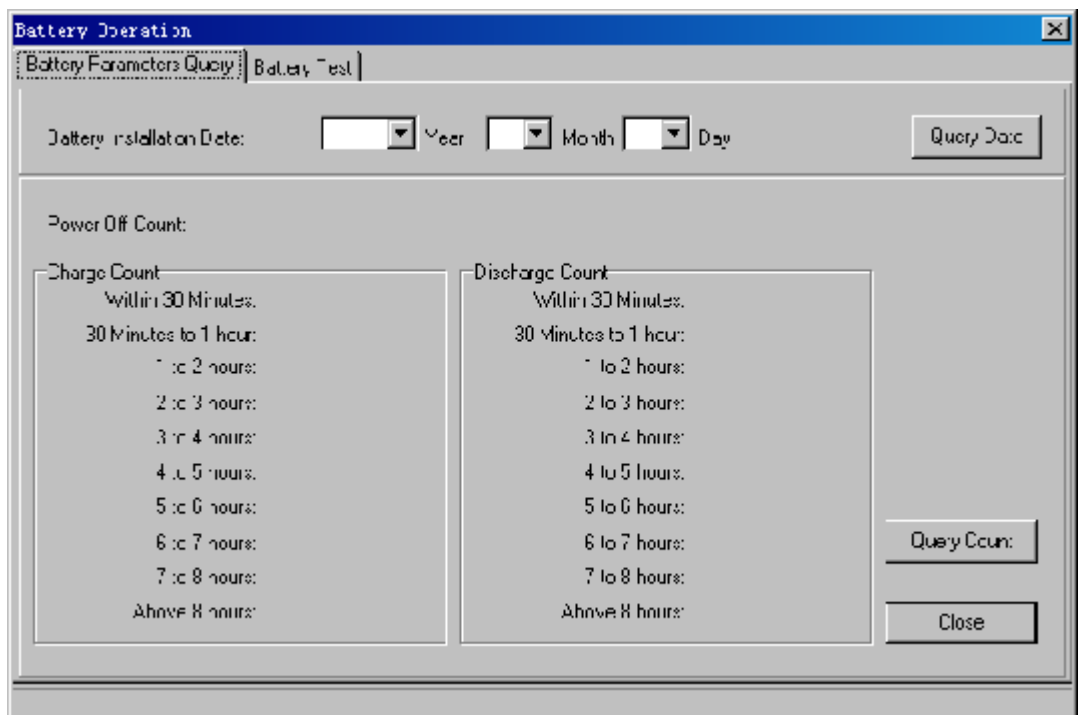
Figure 11-29 Board management



Step 2 Right-click **DPMU**.
A shortcut menu is displayed.

Step 3 Select **Battery Operation**.
The **Battery Operation** dialog box is displayed, as shown in [Figure 11-30](#).

Figure 11-30 Battery Operation dialog box



Step 4 Click the option to be operated.

- In the **Battery Parameter Query** tab, click **Query Date** to view the installation date of the battery. Click **Query Count** to view the charge and discharge counts.
- In the **Battery Test** tab, specify **Test Type**, and then click **Start**. Specify **Serial No. of Test Result**, and then click **Query Result**.

The result is displayed on the status bar.

----End

11.17 Viewing Parameter States and Slot Information

This function is performed to view the current limitation states, control states of the power system, permission states of the battery disconnection, and type of DPSUs. In addition, this function can be performed to display the installation slots of DPSUs.

Prerequisite

You have logged in to the BTS through the Site Maintenance Terminal.

Context

- Only the DPMU supports this function of viewing the DPMU state and slot information.
- The number of slots for the DPSUs displayed by the BTS3012 is eight. The slots are numbered from DPSU 0 to DPSU 7.
- The number of slots for the DPSUs displayed by the BTS3012AE is seven. The slots are numbered from DPSU 0 to DPSU 6.

Procedure

Step 1 In the left pane of the **Site Maintenance Terminal System** window, select **Board**. In the right pane of the window, double-click **Board Management**.

The **Board Management** dialog box is displayed, as shown in [Figure 11-31](#).

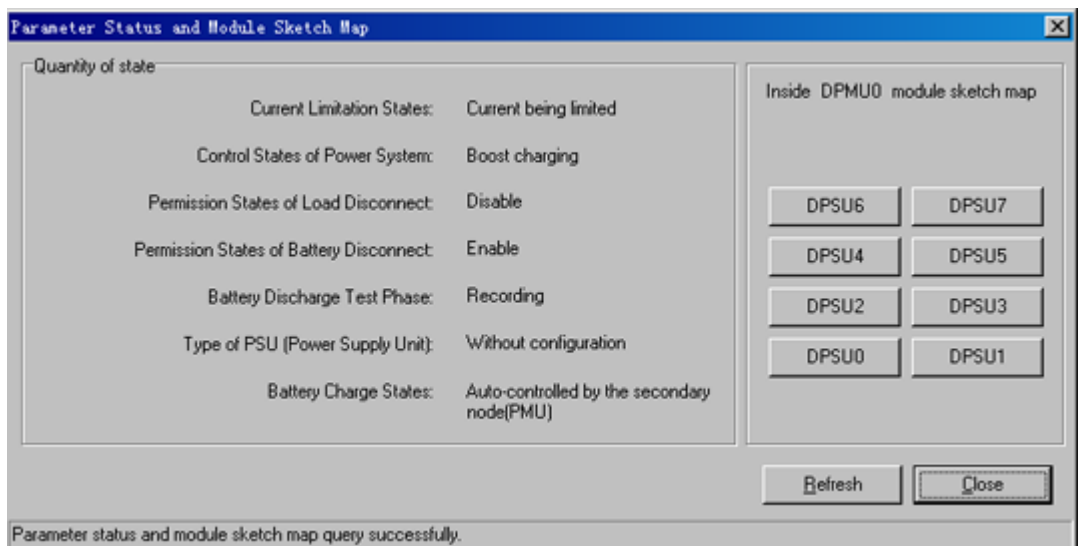
Figure 11-31 Board management



Step 2 Right-click a DPMU, for example, **DPMU0**.
A shortcut menu is displayed.

Step 3 Select **Parameter Status and Module Sketch Map**.
The **Parameter Status and Module Sketch Map** dialog box is displayed. The result is displayed, as shown in **Figure 11-32**.

Figure 11-32 Parameter state and slot information



NOTE

If the dialog box is open for some time, click **Refresh** to refresh the dialog box.

----End