

6 Managing Board Software

About This Chapter

The board software management consists of forced downloading software, activating the DTMU board software, activating other board software, and checking software versions. Downloading software does not affect services. Activating software validates the new version software on boards and affects services. Huawei recommends downloading software in daytime and activating it at night.

[6.1 Introduction to Board Software](#)

The board software consists of the DTMU software/DOMU software, the IASU software, the DTRU software/DDRM software, the DDPU software/DDPM software, the DFCU software, the DEMU software, the NFCB software, the DHEU software, and the DATU software/DATM software.

[6.2 Downloading Board Software](#)

This function is performed to download the software to be downloaded, including the main control board software and other board software, to the main control board.

[6.3 Activating Board Software](#)

This function is performed to validate the board software (including the main control board software and other board software) that is loaded onto the DTMU.

[6.4 Checking Software Versions](#)

This function is performed to check whether each board software version is correct.

6.1 Introduction to Board Software

The board software consists of the DTMU software/DOMU software, the IASU software, the DTRU software/DDRM software, the DDPU software/DDPM software, the DFCU software, the DEMU software, the NFCB software, the DHEU software, and the DATU software/DATM software.

- The board software of the BTS3012 consists of the DTMU software, the DTRU software, the DDPU software, the DFCU software, the NFCB software, the DATU software, and the DEMU software.
- The board software of the BTS3012AE consists of the DTMU software, the DTRU software, the DDPU software, the DFCU software, the NFCB software, the DATU software, the DEMU software, and the DHEU software.
- The board software of the BTS3006C consists of the DOMU software, the IASU software, the DDRM software, the DDPM software, and the DATM software.

Functions of the DTMU/DOMU Software

- Managing the configuration data of the BTS
- Initializing the BTS
- Managing the board configuration of the BTS
- Monitoring and managing the running status of the BTS
- Collecting alarms
- Monitoring resource usage and tracing the interface information
- Controlling the terrestrial transmission link between the BSC and the BTS

Functions of the IASU Software

- Supporting the SDH service
- Managing the IASU software
- Configuring and initializing the IASU
- Managing the alarms of the IASU
- Supporting the configuration management of transparently transmitting command lines in optical transmission service

Functions of the DTRU/DDRM Software

The DTRU software consists of Signal Control Processor (SCP) and baseband signal processor.

- The SCP serves as the control part of the DTRU. It has the following functions:
 - Communicating with the DTMU through CBUS2
 - Performing radio resource management and part of the Um interface layer3 functions with the cooperation with the BSC
 - Supporting the LAPD function of the Abis interface
 - Supporting the LAPDm function of the Um interface
- The baseband signal processor mainly provides the following functions:

- Coding/decoding the speech, data, and signaling on the radio channels and also demodulating the received signals
- Together with the hardware circuits in the processing part of the DTRU digital signals, achieving the functions at the physical layer on the Um interface

Functions of the DDPU/DDPM Software

- Communicating with the DTMU through CBUS3
- Monitoring the attenuation value and the running status of the DLNA receiving-channel digital attenuator
- Collecting and handling the DAFU internal alarms, including:
 - LNAM_ALM (low noise amplifier alarm on receiving path A)
 - LNAD_ALM (low noise amplifier alarm on receiving path B)
 - Internal power supply alarm, clock alarm, and Sidepower alarm
- Sampling the forward power (V_F) and reverse power (V_R) of the duplexer, checking the sampled power for detecting VSWR alarms and calculating the forward power, and then reporting the alarms
- Performing power-on test and resetting
- Reporting board temperature
- Upgrading board software when the system is running

Functions of the DFCU Software

- Communicating with the DTMU through CBUS3
- Monitoring the attenuation value and the running status of the DLNA receiving-channel digital attenuator
- Collecting and handling the DAFU internal alarms, including:
 - LNAM_ALM (low noise amplifier alarm on receiving path A)
 - LNAD_ALM (low noise amplifier alarm on receiving path B)
 - Internal power supply alarm, clock alarm, and Sidepower alarm
- Sampling the forward power (V_F) and reverse power (V_R) of the duplexer, checking the sampled power for detecting VSWR alarms and calculating the forward power, and then reporting the alarms
- Performing power-on test and resetting
- Reporting board temperature
- Controlling the initial tuning of the cavities in the DFCU and periodically fine-tuning the cavity
- Monitoring the tuning status of the cavities in the DFCU
- Upgrading board software when the system is running

Functions of the DEMU Software

- Communicating with the DTMU through CBUS3
- Detecting and reporting the power supply voltage when the DEMU is running

- Detecting temperature, humidity, water immersion, smoke, and anti-theft (including infrared ray and door status) alarms
- Setting the threshold of the analog alarms
- Detecting 32 Boolean values input and four analog input and also controlling six relays output
- Upgrading the board software when the system is running

Functions of the NFCB Software

- Monitoring the temperature of the cabinet air inlet and the FAN module frame
- Adjusting the fan speed
- In communication with the host, controlling the temperature, adjusting the fan speed, and reporting alarms
- Upgrading the board software when the system is running

Functions of the DATU/DATM Software

- Communicating with the DTMU through CBUS3
- Collecting and handling the DATU internal alarms, which consist of:
 - Internal power supply alarm
 - Clock alarm
 - EPLD read and write alarm
- Controlling switches of six feeding channels and collecting information of alarms in each feeding channel (undercurrent, overcurrent, and short circuit)
- Controlling the remote electric tilt (RET)
- Performing power-on test and resetting
- Upgrading the board software when the system is running

Functions of the DHEU Software

- Communicating with the DTMU through CBUS3
- Reporting the software version and hardware version of the DHEU and also reporting the state of the DHEU
- Reporting the extended information of the DHEU, such as the type of equipment, the information of the manufacturer, and the production date
- Configuring and viewing the control parameters of the DHEU
- viewing the operational parameters
 - Temperature of the DHEU
 - Outlet and inlet temperatures of the cabinet
 - Average rotational speed of the internal and extrinsic circulation fans
 - Working mode of the DHEU
- Collecting and processing the alarms inside the DHEU
- Upgrading the board software when the system is running

6.2 Downloading Board Software

This function is performed to download the software to be downloaded, including the main control board software and other board software, to the main control board.

Prerequisite

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

Context

- The main control board of the BTS3012/BTS3012AE is the DTMU. The main control board of the BTS3006C is the DOMU.
- You need to download the main control board software, and then download other board software. There are no strict requirements for the sequence of downloading other board software.
- Downloading software does not affect services. Activating software validates the new version software on boards and affects services. Huawei recommends downloading software in daytime and activating it at night.

Table 6-1 lists the description of the parameter configuration.

Table 6-1 Parameters in the Software Download dialog box

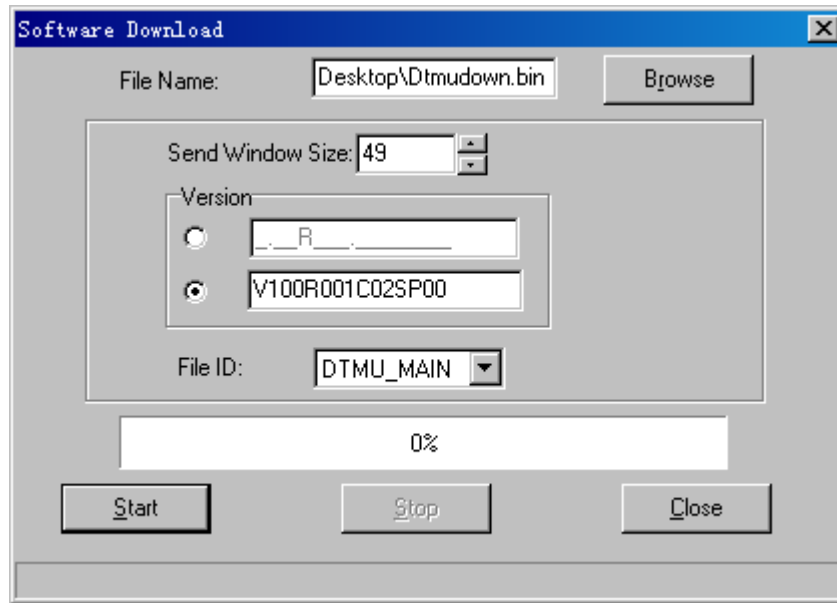
Parameter Name	Meaning	Value Range
File Name	The file name of the software to be downloaded, that is, the saving path of the software.	-
Send Window Size	The size of the data packet when the software is downloaded.	1–49 (49 is recommended.)
Version	Version of the downloaded software Should be consistent with the version of the downloaded file.	-
File ID	The type of a board whose software is to be downloaded Should be consistent with the type of the downloaded file.	-

Procedure

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

The **Software Download** dialog box is displayed.

Step 2 Choose the main control board to be loaded from **File Name**. In the **Send Window Size** spin box, specify a size. In the **Version** area, enter a version number. In the **File ID** drop-down list box, select **DTMU_MAIN**, as shown in **Figure 6-1**.

Figure 6-1 Forced software download**Step 3** Click **Start**.

Through the Site Maintenance Terminal System, the loading progress can be displayed on the status bar. If the software loading is successful, the **Loading software successfully** message is displayed.

Step 4 Continue to download other board software. Select the software to be loaded from **File Name**. In the **Send Window Size** spin box, specify a size. In the **Version** area, enter a version number. In the **File ID** drop-down list box, enter a file ID.**Step 5** Click **Start**.

Through the Site Maintenance Terminal System, the loading progress can be displayed on the status bar. If the software loading is successful, the **Loading software successfully** message is displayed.

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6.3 Activating Board Software

This function is performed to validate the board software (including the main control board software and other board software) that is loaded onto the DTMU.

Prerequisite

- You have logged in to the BTS through the Site Maintenance Terminal.
- The board software to be activated is downloaded.

Context

- The main control board of the BTS3012/BTS3012AE is the DTMU. The main control board of the BTS3006C is the DOMU.

- You need to download the main control board software, and then download other board software. There are no strict requirements for the sequence of downloading other board software.
- Downloading software does not affect services. Activating software validates the new version software on boards and affects services. Huawei recommends downloading software in daytime and activating it at night.

Table 6-2 lists the description of the parameter configuration.

Table 6-2 Parameters in the Software Activation dialog box

Parameter Name	Meaning	Value Range
Version	Version of the downloaded software	The version is selected based on the actual situation.
Board No.	Specify the board to be activated.	Enter an integer that indicates a board number. You can use – to connect two digits. This indicates that multiple boards are activated. For example, 0–5 indicates that the boards to be activated are numbered from board 0 to board 5. Entering no numbers indicates that the type of all the boards in a BTS are activated.
File ID	The type of a board whose software is to be upgraded	The version is selected based on the actual situation.

Procedure

- Step 1** In the left pane of the **Site Maintenance Terminal System** window, select **Site**. In the right pane of the window, double-click **Software Activation**.
The **Software Activation** dialog box is displayed.
- Step 2** In the **Version** area, enter the version number of the main control board software. In the **File ID** drop-down list box, enter the file ID, as shown in **Figure 6-2**.

Figure 6-2 Activating the DTMU software

Software Activation

Version

R

V100R001C02SP00

Board No.:

File ID: DTMU_MAIN

The number of the board activated successfully:

OK Close

NOTE

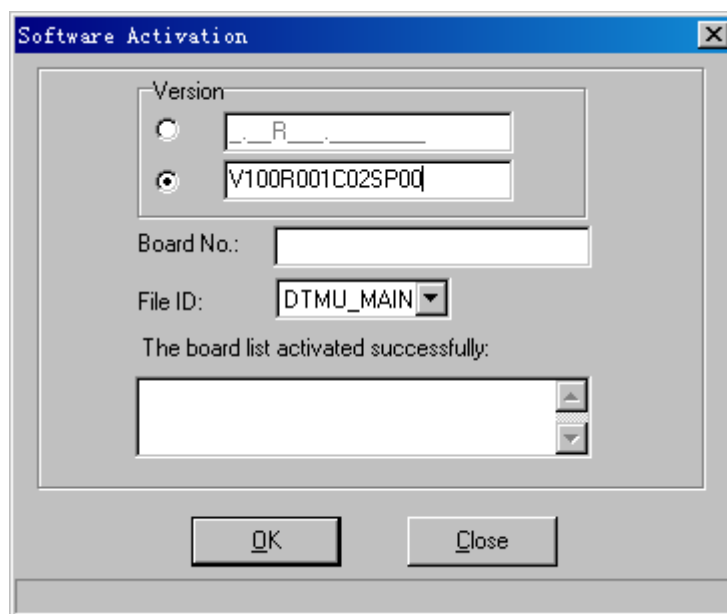
The board numbers of the DTMU software, DOMU software, and IASU software in **Board No.** are null and cannot be entered.

Step 3 Click **OK**.

The number of the board that is successfully activated is displayed in the **The number of the board activated successfully.** area. The **Software activation successfully** message is displayed on the status bar.

Step 4 Continue to activate other board software. In the **Version** area, enter the version number of the software to be activated. In the **Board No.** area, enter the number of the board to be activated. In the **File ID** drop-down list box, enter the board software to be activated, as shown in [Figure 6-3](#).

Figure 6-3 Activating the DTRU software



Step 5 Click **OK**.

The number of the board that is successfully activated is displayed in the **The number of the board activated successfully**. area. The **Software activation successfully** message is displayed on the status bar.

----End

6.4 Checking Software Versions

This function is performed to check whether each board software version is correct.

Prerequisite

- You have logged in to the BTS through the Site Maintenance Terminal.
- The rack configuration and the board configuration are complete.

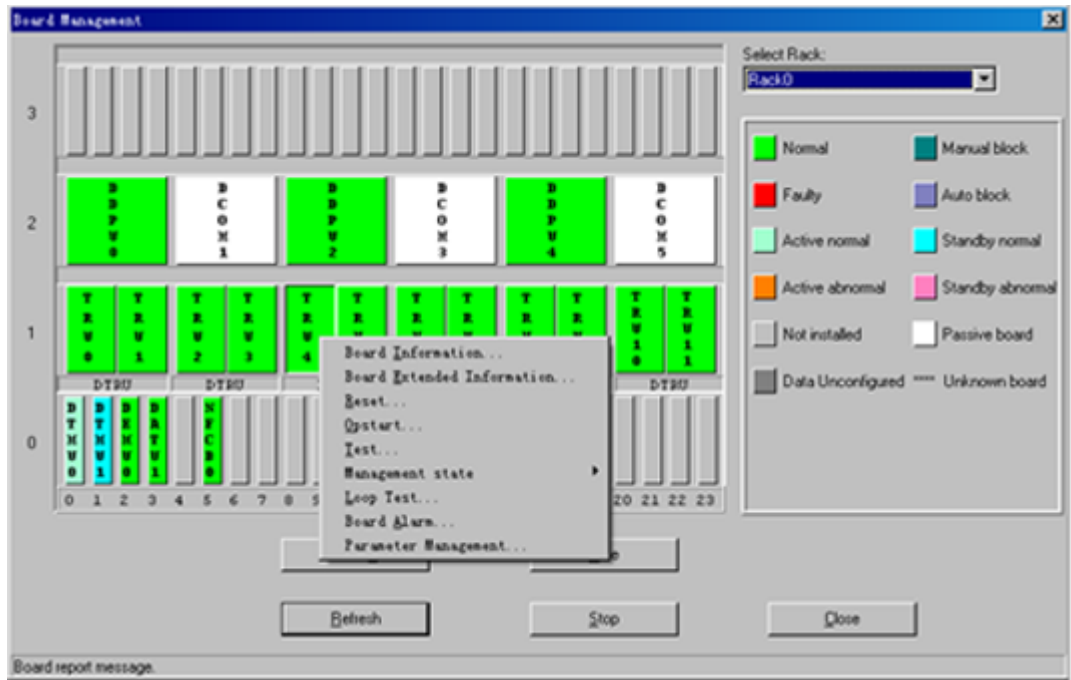
Procedure

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

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

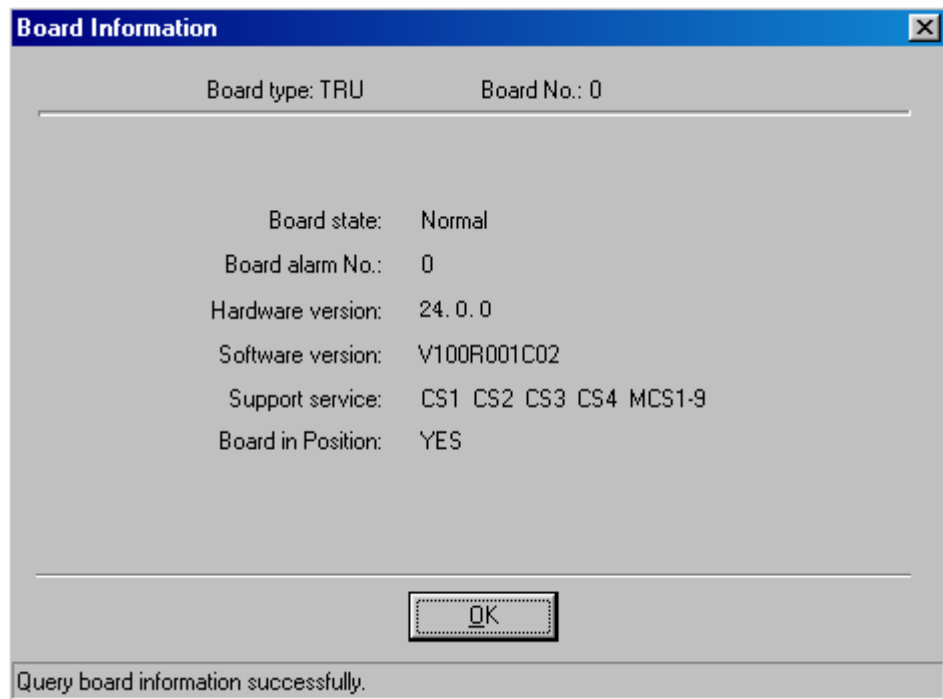
Step 2 Right-click the board to be viewed, and then select **Board Information** on the shortcut menu, as shown in [Figure 6-4](#) (take a TRU as an example).

Figure 6-4 DTRU board management



Step 3 Check whether the information about the software version in the **Board Information** dialog box is correct, as shown in [Figure 6-5](#).

Figure 6-5 DTRU board information



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