

5 Power Supply Subsystem of the BTS

About This Chapter

This topic describes the functional structure, hardware configuration, and power distribution solutions of the power supply subsystem of the BTS.

[5.1 Functional Structure of the Power Supply Subsystem](#)

This topic describes the functional structure of the power supply subsystem. The power supply subsystem consists of the power modules, power distribution module, surge protection module, and monitoring module.

[5.2 Hardware Configuration of the Power Supply Subsystem](#)

This topic describes the hardware configuration of the power supply subsystem. The power supply subsystem has five slots for SPSUs.

[5.3 Power Distribution Solutions of the Power Supply Subsystem](#)

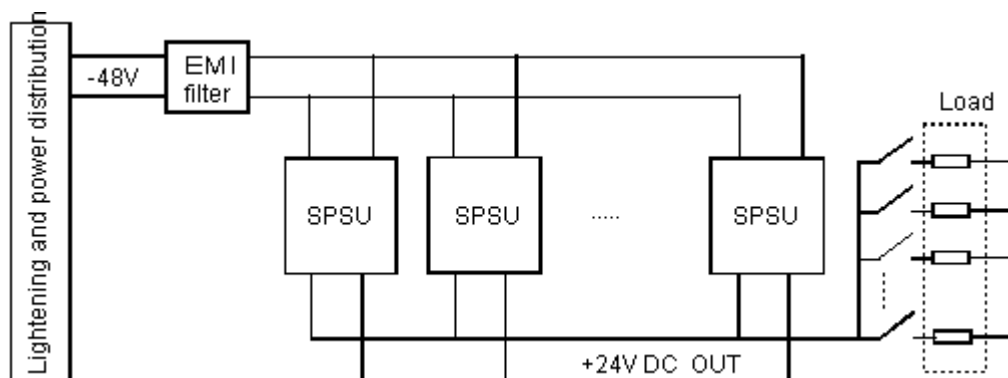
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5.1 Functional Structure of the Power Supply Subsystem

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Figure 5-1 shows the functional structure of the power supply subsystem.

Figure 5-1 Functional structure of the power supply subsystem



The power supply subsystem uses a flexible, convenient, and reliable power distribution and monitoring solution, which has features such as centralized surge protection and distributed DC power supply. The distributed DC power supply technology makes the power supply subsystems of the cabinets independent of one another.

Power modules provide the BTS with +24 V power supply.

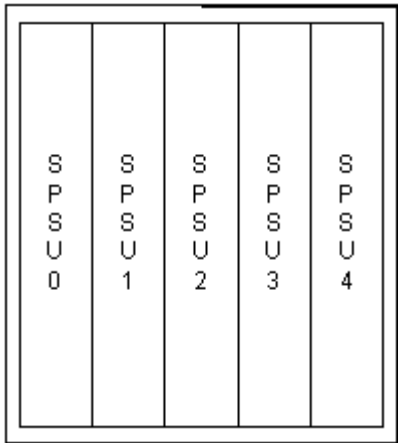
5.2 Hardware Configuration of the Power Supply Subsystem

This topic describes the hardware configuration of the power supply subsystem. The power supply subsystem has five slots for SPSUs.

The SPSUs convert -48 V power supply into +24 V power supply, and they are hot-swappable. Multiple working SPSUs have the same output power.

Figure 5-2 shows the full configuration of the power supply subsystem.

Figure 5-2 Full configuration of the power supply subsystem



5.3 Power Distribution Solutions of the Power Supply Subsystem

This topic describes the power distribution solutions of the power supply subsystem.

-48 V Power Distribution Solution

When the -48 V power distribution solution is used, the power supply is processed by the EMI filter and sent to the wiring terminals at the top of the cabinet. Then, the power supply is sent to the input busbar on the backplane of the power subrack. The SPSUs convert the -48 V power supply to +24 V and outputs it to the output busbar on the backplane of the power subrack. After that, the +24 V power supply is led, through the cables in the cabling troughs of the cabinet, to the distribution copper bar of the BTS3606C direct current switch box (BDCS) at the top of the cabinet.

To ensure that when one power-consuming unit fails because of over-currents the other power-consuming units are not affected, the BDCS is configured with an overcurrent protection device for each power-consuming unit. Through the over-current protection device, the distribution copper bar is connected to the wiring terminals on the rear panel of the distribution box. These wiring terminals provide power for the power-consuming units.

The -48 V power distribution solution uses SPSUs, which convert -48 V power supply to +24 V and send the +24 V power supply to the output busbar on the backplane of the power subrack. The +24 V power supply output by the power subrack is led to the distribution copper bar of the BDCS through the copper bar on the rear column. The distribution copper bar divides the power supply into a number of paths, which are led to the terminal bar through the switch. The wiring terminals on the terminal bar provide power supply for power-consuming units. The surge protection alarm indicator is available on the BDCS.

Multiple working SPSUs in the power supply subsystem have the same output power.

