

2 BTS3012 Cabinet

About This Chapter

The BTS3012 cabinet consists of the common subrack, DAFU subrack, DTRU subrack, FAN subrack, transmission subrack, and cabinet top subrack. The BTS3012 cabinet is designed in compliance with the IEC297 standard, featuring a modular structure. It is used to process the signals within the BTS.

[2.1 Structure of the BTS3012 Cabinet](#)

The BTS3012 cabinet is designed in compliance with the IEC60297 standard. It is blue in color and vertical in appearance.

[2.2 Physical Structure of the BTS3012](#)

The BTS3012 has the following components: BTS3012 cabinet, antenna system, and Operation and Maintenance (OM) equipment.

[2.3 Cable Distribution of the BTS3012](#)

The cable distribution of the BTS3012 includes the cable distribution on the cabinet front and the internal cable distribution on the cabinet top. The cable distribution on the cabinet front applies to the configuration of DDPU or DFCU in the cabinet.

[2.4 Engineering Specifications for the BTS3012](#)

The BTS3012 engineering specifications are concerned with dimensions, weight, power supply, and power consumption of the BTS3012.

2.1 Structure of the BTS3012 Cabinet

The BTS3012 cabinet is designed in compliance with the IEC60297 standard. It is blue in color and vertical in appearance.

Figure 2-1 shows the BTS3012 cabinet.

Figure 2-1 BTS3012 cabinet



2.2 Physical Structure of the BTS3012

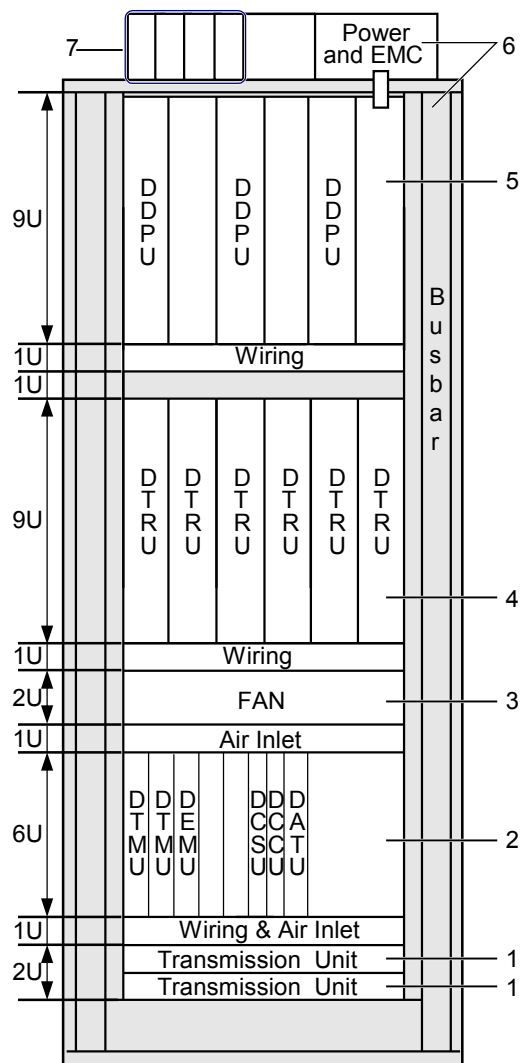
The BTS3012 has the following components: BTS3012 cabinet, antenna system, and Operation and Maintenance (OM) equipment.

Physical Structure of the BTS3012 Cabinet

The BTS3012 cabinet has the following components: DAFU subrack, DTRU subrack, fan subrack, common subrack, top subrack, transmission subrack, and power supply unit.

Figure 2-2 shows a fully configured BTS3012 under S4/4/4 cell configuration.

Figure 2-2 Fully configured BTS3012 cabinet



- | | | |
|--------------------------|--------------------|-----------------------|
| (1) Transmission subrack | (2) Common subrack | (3) FAN subrack |
| (4) DTRU subrack | (5) DAFU subrack | (6) Power supply unit |
| (7) Cabinet top subrack | | |

- DAFU Subrack
The DAFU subrack can be configured with [4.8 DDPU](#), [4.5 DCOM](#), [4.12 DFCU](#), or [4.11 DFCB](#).
For details about the DAFU subrack, refer to [BTS3012 RF Front-End Subsystem](#).
- DTRU Subrack
One DTRU subrack supports up to six [4.17 DTRUs](#).
For details about the DTRU subrack, refer to [BTS3012 Double-Transceiver Subsystem](#).
- FAN Subrack
The FAN subrack has only one FAN box inside it. The FAN box contains one fan monitoring board and four fans. The fan monitoring board detects the temperature at the air inlets at the bottom of the cabinet, and adjusts the speed and working status of the fans.
For details about the fan subrack, refer to [4.18 FAN Box](#).
- Common Subrack
The common subrack is below the fan subrack. It is configured with the following parts:
 - [4.15 DTMU](#)
 - [4.9 DEMU](#)
 - [4.2 DATU](#)
 - [4.6 DCSU](#)
 - [4.3 DCCU](#)For details about the common subrack, refer to [BTS3012 Common Subsystem](#).
- Cabinet Top Subrack
The cabinet top subrack is located at the top of the BTS3012 cabinet. It is configured with the following parts:
 - [4.13 DMLC](#)
 - [4.10 DELC](#)
 - [4.14 DSAC](#)For details about the cabinet top subrack, refer to [BTS3012 Signal Protection Subsystem](#).
- Power Supply Unit
The power supply unit consists of the DC lightning arrester, EMI filter, PGND bar, busbar terminal socket on top of the cabinet, and the Busbar in the right of the cabinet.
For details about the power supply unit, refer to [BTS3012 Power Subsystem](#).
- Transmission Subrack
The transmission subrack is below the common subrack. The transmission subrack reserves space for installing the Baseband Unit (BBU). The SDH and microwave transmission equipment can be installed in the transmission subrack

Physical Structure of the Antenna System

For details about the antenna system, refer to [Antenna Subsystem of the BTS](#).

Physical Structure of the Equipment

For details about the equipment, refer to [OM of the BTS](#).

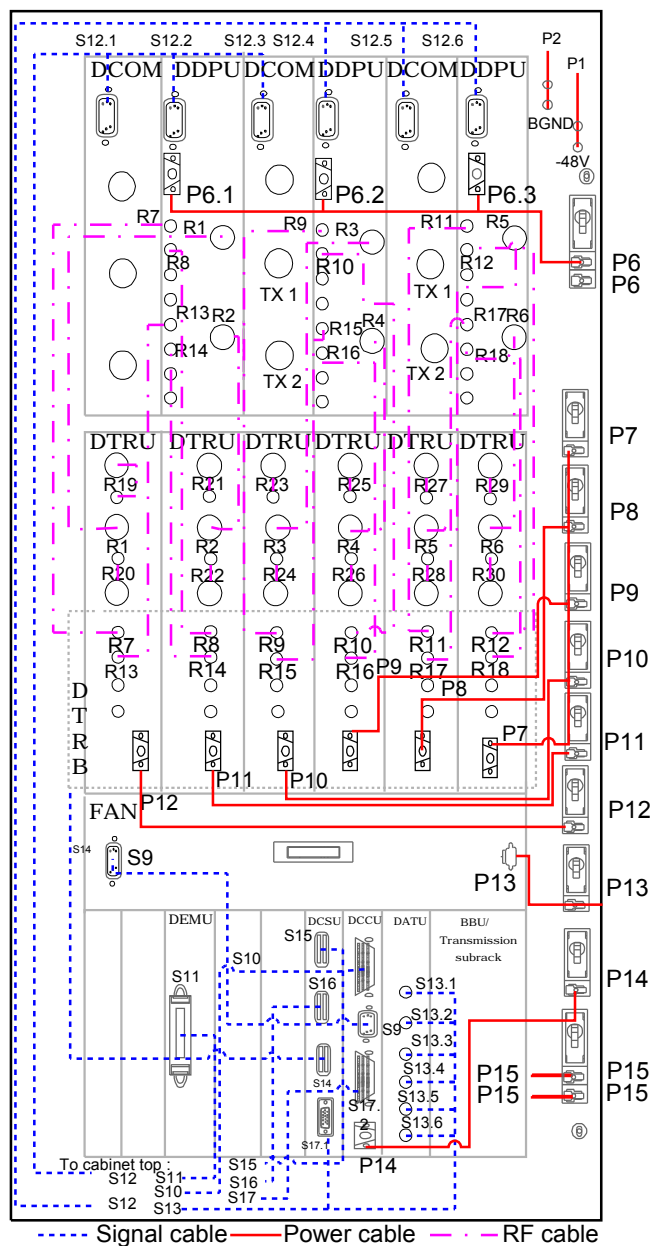
2.3 Cable Distribution of the BTS3012

The cable distribution of the BTS3012 includes the cable distribution on the cabinet front and the internal cable distribution on the cabinet top. The cable distribution on the cabinet front applies to the configuration of DDPU or DFCU in the cabinet.

Cable Distribution on the Cabinet Front

Figure 2-3 shows the cable distribution on the cabinet front when the DDPU is configured.

Figure 2-3 Cable distribution on the cabinet front (configured with the DDPU)

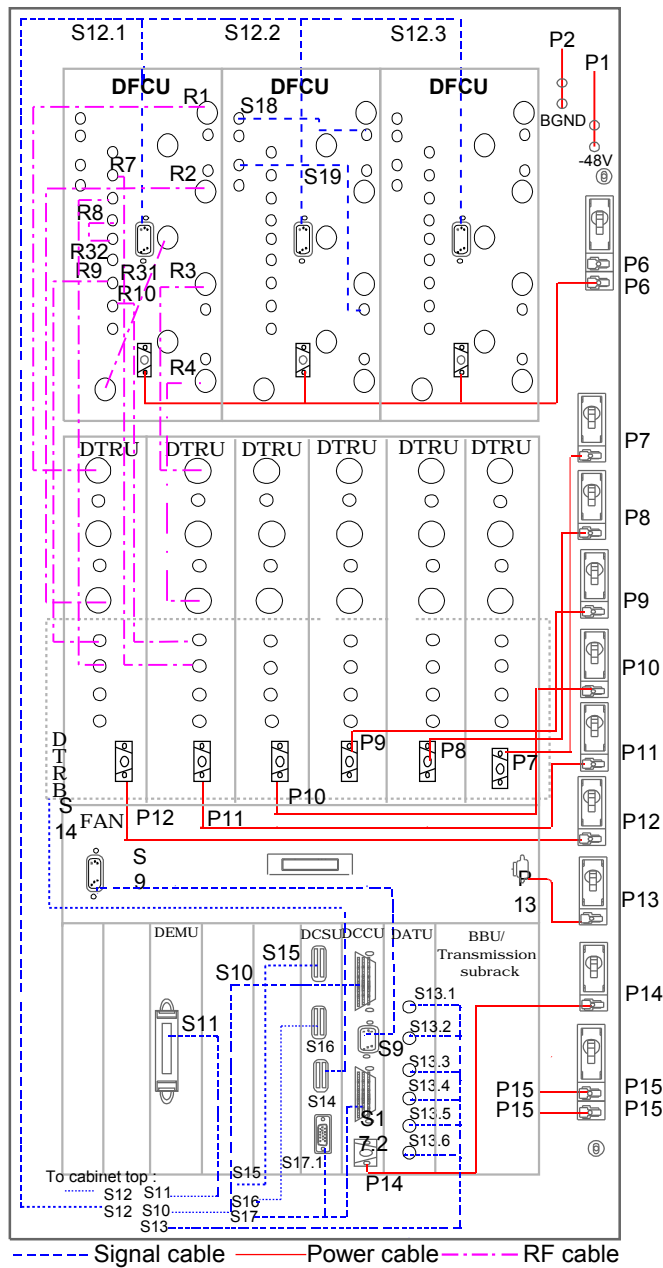


NOTE

- As shown in **Figure 2-3**, the RF cables connected between the DTRU and the DDCU are based on the S4/4/4 cell configuration.
- Normally, the DCOM is not configured in S4/4/4 cell configuration. However, the DCOM is added in **Figure 2-3** for easy description of the cable connections between the DCTB and the DAFU subrack.
- The seven signal cables in **Figure 2-3**, namely, S10-S13 and S15-S17, are connected to the cabinet top.

Figure 2-4 shows the cable distribution on the cabinet front when the DFCU is configured.

Figure 2-4 Cable distribution on the cabinet front (configured with the DFCU)



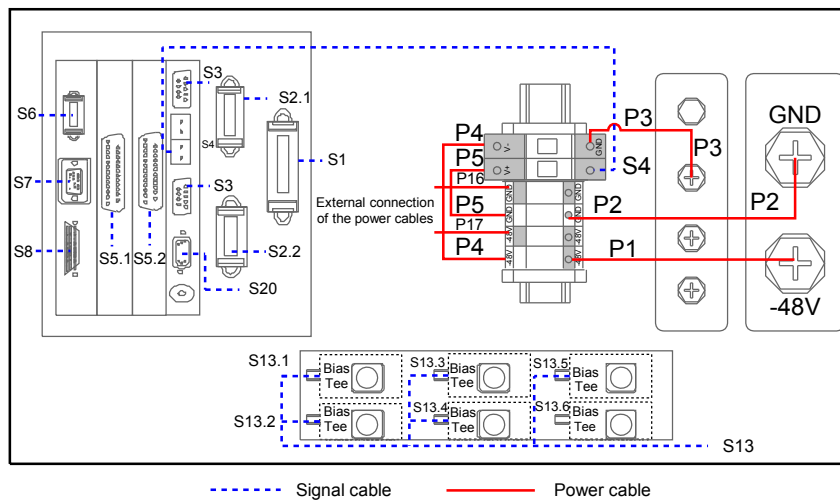
NOTE

As shown in **Figure 2-4**, the RF cables connected between the DTRU and the DFCU are based on the S4/4/4 cell configuration. As the number of cables is great, for easy recognition, connections of only the RF TX cables are provided in sector 1 and connections of only the power detection cables are provided in sector 2. Actually, the RF signal cables and the power detection cables in every sector should be connected.

Internal Cable Distribution on the Cabinet Top

Figure 2-5 shows the internal cable distribution on the cabinet top.

Figure 2-5 Internal cable distribution on the cabinet top



Description of Cable Distribution on the Cabinet

Table 2-1 describes the cable distribution of the cabinet.

Table 2-1 Description of Cable Distribution in the Cabinet

Cable No.	Cable Name	Quantity
R1–R6	RF TX cable	6
R7–R18	RF RX cable	12
R19–R30	Cable for the combiner on the DTRU	12
R31	Cable for the combiner on the DTRU	3
R32	Diversity receive short-circuiting cable	3
S1	Signal cable between combined cabinets	1
S2	Signal cable between cabinet groups	2
S3	Environment monitoring signal cable	1
S4	Lightning protection failure alarm cable on the cabinet top	1
S5	E1 cable	2

Cable No.	Cable Name	Quantity
S6	Boolean value input cable	1
S7	Boolean value output cable	1
S8	Dedicated monitoring signal cable	1
S9	FAN subrack signal transfer cable	1
S10	E1 signal transfer cable	1
S11	Boolean value signal transfer cable	1
S12	Signal cable between the DCTB and the DAFU subrack	2
S13	RET control signal cable	6
S14	Signal cable between the DCSU and the DTRB	1
S16/S15	Signal transfer cable for combined cabinets	1
S17	Signal cable between the DCCU/DCSU and the DCTB	1
S18-S19	Power detection cable	6
S20	EAC signal cable	1
P1-P2	Power cable	1
P3	PGND cable	1
P4-P5	Power cable	1
P6-P15	Busbar power cable	—
P16-P17	Power cable	2

 **NOTE**

Use the combination mode in the DFCU first when the cabinet using the DFCU is configured in S4/4/4 cell configuration. Because the combination mode in the DTRU is not used, the cables for the combiner on the DTRU (R19-R30) are not required.

2.4 Engineering Specifications for the BTS3012

The BTS3012 engineering specifications are concerned with dimensions, weight, power supply, and power consumption of the BTS3012.

Dimensions

Table 2-2 Dimensions (appearance)

Item	Width (mm)	Depth (mm)	Height (mm)
Cabinet	600	450	1600
Cabinet+top subrack	600	450	1680
Cabinet+top subrack+base	600	450	1750

Weight

Table 2-3 Weight of the cabinet

Configuration Type	Weight of the Cabinet (Kg)
Empty cabinet (including the boards in the common subrack)	120
Full configuration (S4/4/4)	200
Full configuration (S4/4/4 cell configuration including the transmission modules and the DCOMs)	220

Power Supply

The BTS3012 uses the —48 V DC that complies with the specification ETS 300 132-2. [Table 2-4](#) lists specifications for the input power.

Table 2-4 Specifications for the input power

Power Type	Rated Value	Specifications
-48 V DC	-48 V DC	-40 V DC to -60 V DC

 **NOTE**

The BTS3012 cabinet supports 110 V AC, 220 V AC, and +24 V DC through an external power subrack.

Power Consumption

[Table 2-5](#) lists the typical power consumption value of the BTS3012 when the DTRU (type A) is used.

Table 2-5 Power consumption

Parameter	Configuration Type	Power Consumption
Mean value	Normal temperature, 900 MHz 40 W TRX, S4/4/4 full configuration, DC power consumption in mean traffic volume (–48 V DC used)	1.6 kW

Table 2-6 lists the typical power consumption value of the BTS3012 when the DTRU (type B) is used.

Table 2-6 Power consumption

Parameter	Configuration Type	Power Consumption
Mean value	Normal temperature, 900 MHz 40 W TRX, S4/4/4 full configuration, DC power consumption in mean traffic volume (–48 V DC used)	0.95 kW