

# 5 BTS3012 RF Front-End Subsystem

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## About This Chapter

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### [5.1 Components of the BTS3012/BTS3012AE RF Front-End Subsystem](#)

The functions of the BTS3012/BTS3012AE RF front-end subsystem are performed by the boards in the DAFU subrack. The DAFU subrack can be configured with the DDPU, DCOM, DFCU, DFCB, or the combination of these modules.

### [5.2 Functions of the BTS3012/BTS3012AE RF Front-End Subsystem](#)

The BTS3012/BTS3012AE RF front-end subsystem performs the following functions: duplexing received and transmitted signals, combining signals for transmission, dividing received signals, and amplifying the low noise of the received signals.



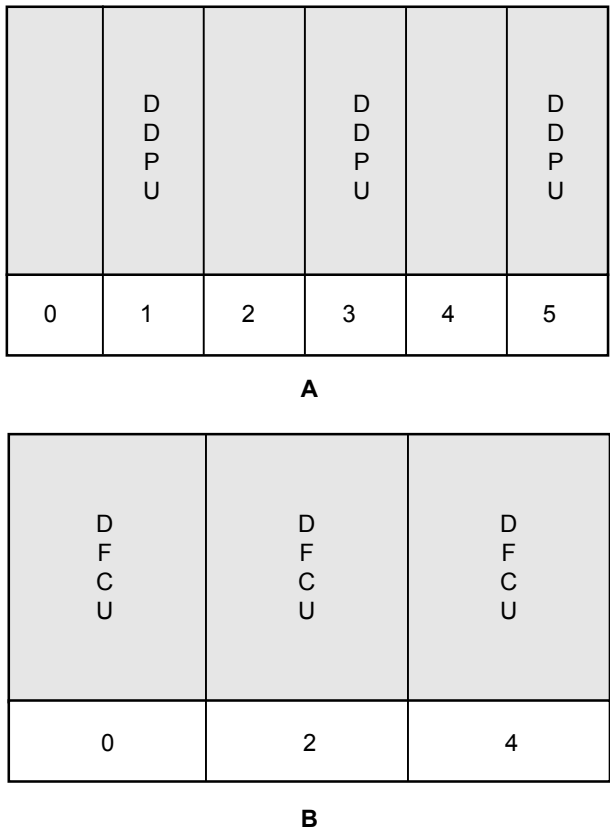
## 5.1 Components of the BTS3012/BTS3012AE RF Front-End Subsystem

The functions of the BTS3012/BTS3012AE RF front-end subsystem are performed by the boards in the DAFU subrack. The DAFU subrack can be configured with the DDPU, DCOM, DFCU, DFCB, or the combination of these modules.

### Internal Composition

Part A in [Figure 5-1](#) shows the DAFU subrack configured with the DDPU and part B in [Figure 5-1](#) shows the DAFU subrack configured with the DFCU.

**Figure 5-1** Fully configured DAFU subrack



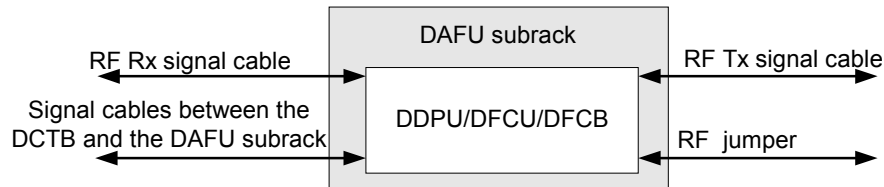
- NOTE**
- A maximum of six DDPUs can be configured in the DAFU subrack. The DCOM is used with the DDPU only when a cell is configured with more than four TRXs.
  - At present, the DFCU is applied only over EGSM 900 M frequency band. It is used only in S4/4/4 or higher cell configuration.
  - If the DAFU subrack is only configured with the DFCU, a maximum of three DFCUs can be configured. The DFCB is only cascaded with the DFCU during the expansion of the DFCU, enabling the six-in-one function.
  - The DDPU and the DFCU can be configured in the same subrack.



## External Cabling

**Figure 5-2** shows the external cabling of the BTS3012/BTS3012AE DAFU subrack.

**Figure 5-2** External cabling of the BTS3012/BTS3012AE DAFU subrack



## 5.2 Functions of the BTS3012/BTS3012AE RF Front-End Subsystem

The BTS3012/BTS3012AE RF front-end subsystem performs the following functions: duplexing received and transmitted signals, combining signals for transmission, dividing received signals, and amplifying the low noise of the received signals.

The DAFU subsystem performs the following functions:

- Combining multiple channels of RF Tx signals for transmission
- Transmitting and receiving signals through a duplexer
- Detecting and reporting antenna Voltage Standing Wave Ratio (VSWR) alarms and low noise amplification alarms
- Controlling the low noise amplification gain
- Detecting and reporting the transmit power on the antenna ports
- Detecting and reporting the temperature of the boards
- Detecting whether a board is in position
- Supporting online software upgrade



