

6 Accessories

About This Chapter

The accessories include the cabling racks, cabling troughs, grounding bars, transmission equipment, DDF, GPS/GLONASS, and feeder windows.

[6.1 Installing the Cabling Rack and Cabling Trough](#)

This section describes how to install the cable rack that facilitates the routing of cables. The cable racks are classified into indoor cable racks and outdoor cable racks. A cable rack consists of a cable ladder and a cable trough(s). The cable troughs, however, are optional.

[6.2 Installing the Grounding Bar](#)

The grounding bar is used for surge protection. In principle, the grounding bar should be installed near the cabinet or on the rainproof wall of the feeder inlet on the rooftop. In practice, the grounding bar should be installed according to the engineering design.

[6.3 Preparing the Transmission Devices and the DDF](#)

Before constructing a site, prepare the transmission devices and the DDF.

[6.4 Satellite Antenna System Installation Preparations](#)

The tools and feeder window required for the installation of the satellite antenna system should be prepared in advance.

[6.5 Antenna System Installation Preparations](#)

Before installing the antenna system, you must keep the necessary tools and instruments, and the feeder window ready.

[6.6 Feeder Windows](#)

A feeder window facilitates leading feeders into the equipment room. A feeder window has 12 or 27 holes. The feeder window with 12 holes is commonly used.

6.1 Installing the Cabling Rack and Cabling Trough

This section describes how to install the cable rack that facilitates the routing of cables. The cable racks are classified into indoor cable racks and outdoor cable racks. A cable rack consists of a cable ladder and a cable trough(s). The cable troughs, however, are optional.



CAUTION

For mounting the cable rack, an equipotential connection is required.

- **Introduction to Cable Racks**
- **Procedure for Installing the Cable Rack**
- **Installing the Indoor Cable Rack**
 - **Installing the Indoor Cable Rack on the Ceiling or on the Floor**
 - **Installing the Indoor Cable Rack on the Wall**
 - **Installing the Indoor Cable Rack over the Cabinet**
- **Installing the Outdoor Cable Rack**
 - **Installing the Outdoor Cable Rack on the Floor**
 - **Installing the Outdoor Cable Rack on the Wall**
- **Connecting Cable Ladders**
 - **Docking Cable Ladders**
 - **Connecting Cabling Ladders or Cabling Troughs in T Shape**
 - **Connecting the Cabling Ladder to the Cabling Trough in T Shape**
 - **Connecting the Cabling Ladder to the Wall**
 - **Connecting Cable Ladders on Different Planes**
- **Installing the Cable Trough**
 - **Connecting Cabling Troughs**
 - **Installing the Cable Trough on the Cable Ladder**
 - **Installing the Sloping Cable Trough**
- **Mounting the Accessories**
 - **Mounting the Cable Manager**
 - **Installing the End Cover, Bushing, and Baffle Ring**

6.2 Installing the Grounding Bar

The grounding bar is used for surge protection. In principle, the grounding bar should be installed near the cabinet or on the rainproof wall of the feeder inlet on the rooftop. In practice, the grounding bar should be installed according to the engineering design.

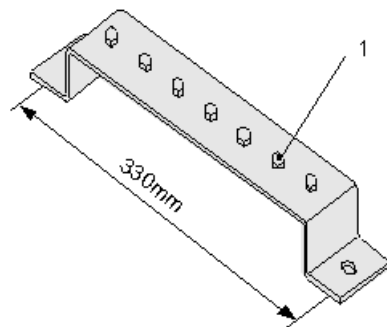
Context

NOTE

If the grounding bar is available on site and you need not install it, skip this part.

Figure 6-1 shows an indoor grounding bar.

Figure 6-1 Indoor grounding bar

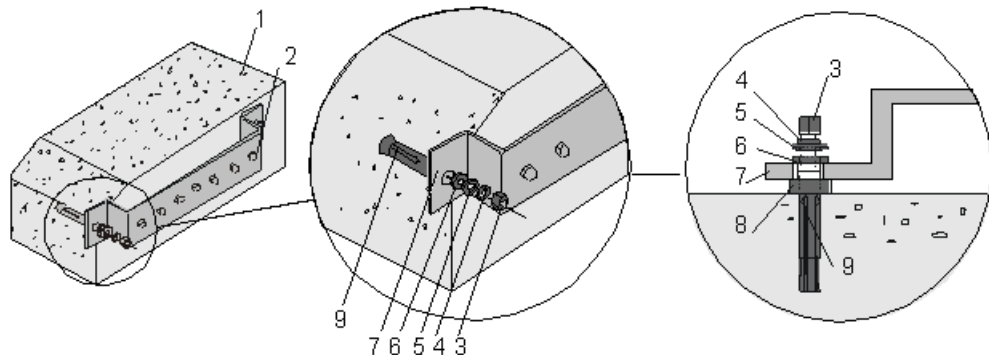


(1) Bolt M8

Procedure

Install a grounding bar on the wall.

Figure 6-2 Installing a grounding bar on the wall



(1) Wall

(2) Bolt M8

(3) Bolt M12

(4) Spring washer M12

(5) Flat washer

(6) Insulation washer a

(7) Grounding bar

(8) Insulation washer b

(9) Expansion tube and nut

----End

6.3 Preparing the Transmission Devices and the DDF

Before constructing a site, prepare the transmission devices and the DDF.

Requirements for the Transmission Devices

- The transmission devices must meet the requirements for future expansion.
- If the BSC and the BTS are close to the metropolitan area or the backbone network, you can select the E1 or SDH port and use ATM/IP mode to access the transmission network. If the transmission distance of the E1 cables exceeds 700 m, contact Huawei Technical Support.
- If the BSC and the BTS are far from the metropolitan area or the backbone network, and the requirements for the microwave line-of-sight transmission are met, you can use microwave transmission. The indoor units of the micro transmission device must be placed in the reserved space.
- If the BSC and the BTS are far from the metropolitan area or the backbone network and the requirements for the microwave line-of-sight transmission are not met, but the fixed telephone lines are rich, you can use xDSL. The transmission devices used in xDSL mode is recommended to be put in the reserved space.

Requirements for the DDF

The E1 cables of the BTS connect to the transmission cables of the transmission devices through the DDF. The requirements for the DDF are as follows:

- The connectors on the DDF must match the E1 cables.
- The installation of the DDF and the cables must be complete before the installation of the BTS.
- The copper wires for the DDF connect to the protection grounding bar in the equipment room.

6.4 Satellite Antenna System Installation Preparations

The tools and feeder window required for the installation of the satellite antenna system should be prepared in advance.

Preparing Tools and Instruments

Table 6-1 shows the special tools and instruments that are used for the installation. The common tools (such as a percussion drill or screwdriver) that are used for installing base station equipment can be also used for antenna system installation.

Table 6-1 Tools and instruments used for antenna system installation

Measurement Tool	Angle instrument and compass
Ceiling Installation Tool	Pulley block, two 150-meter cords (one is a thick cord and the other is a thin cord), and feeder noose
Feeder-Making Tool	Scissor, scribe (matching with the feeder model), blowtorch (used in a cold environment), and antirust aluminium paint
Safety Tool	Safety belt, safety helmet, safety rope, thick work clothes, radiation protective clothing, and ESD wrist strap

Tool Provided by the Local Customer	A-shaped ladder, wooden wheel, and axle used for raising feeders
Other Tool	Canvas bag, glove, interphone, multi-function socket, spanner, screwdriver, pliers, and skinning knife
Measurement Instrument	Test handset (optional), wireless analyzer (such as CELLMASTER and power meter), and antenna standing wave tester (such as SITEMASTER)

Feeder Window

NOTE

Skip this section if it is unnecessary to install a feeder window on site.

The feeder window has two types:

- 12-hole feeder window
- 27-hole feeder window

Generally, the 12-hole feeder window is used. [Figure 6-3](#) shows its dimension and [Figure 6-4](#) shows its structure.

Figure 6-3 Dimension of the 12-hole feeder window

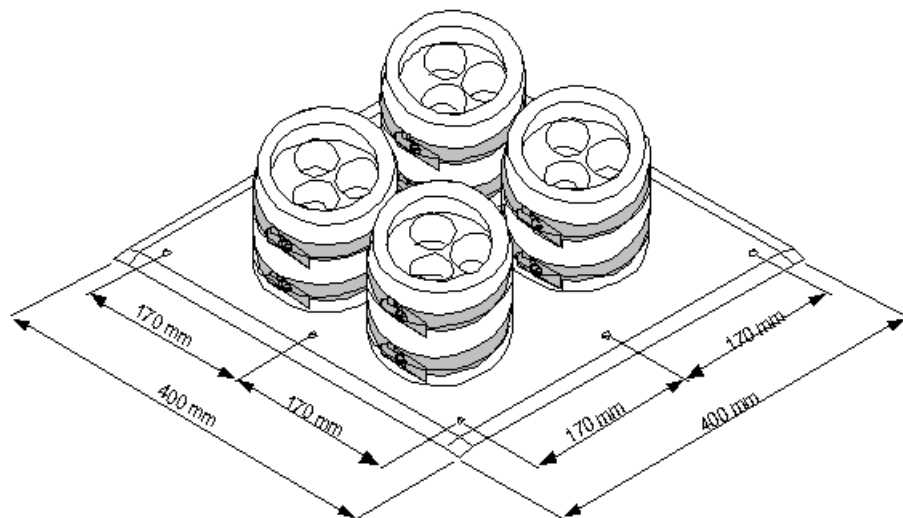
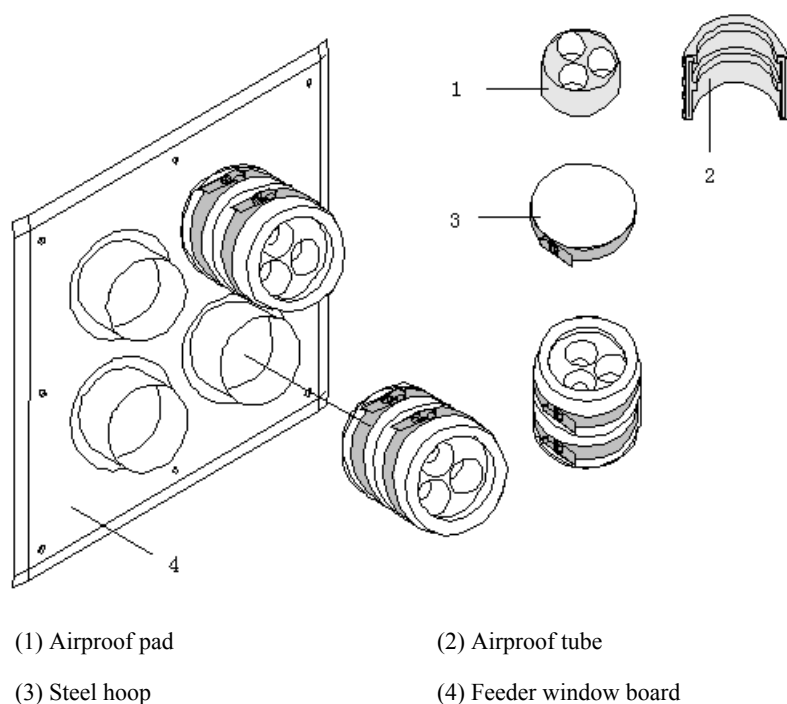


Figure 6-4 Structure of the 12-hole feeder window

(1) Airproof pad

(2) Airproof tube

(3) Steel hoop

(4) Feeder window board

6.5 Antenna System Installation Preparations

Before installing the antenna system, you must keep the necessary tools and instruments, and the feeder window ready.

Arranging Tools and Instruments

Table 6-2 lists the tools and instruments required for installing the antenna system. The common tools (such as a percussion drill or screwdriver) that are used for indoor equipment installation can also be used for antenna system installation.

Table 6-2 Tools and instruments for the antenna system installation

Measurement Tools	An angle display; a compass
Tools for Hoisting Devices	An assembly pulley; two ropes (1 thin and 1 thick, both 150 m long); feeder noose
Tools for Feeders	A feeder nipper; cable cutter (matching the feeder specification); blast lamp (to warm and soften the waterproof and sealing materials in cold environment); anti-rust aluminum paint
Tools for Safety	Safety belts (for personnel operating out of the tower platform); protecting caps; safety ropes; thick union suits; RF protective clothing; ESD wrist strap
Tools from the Local Customer	Double ladder; lifting tools for the main feeder wheel spindle

Other Tools	Canvas bag for tools; gloves; walkie-talkie; multi-purpose outlets; wrench; screwdriver; pliers; cable peeler
Test Instruments	Test mobile phone (optional); radio analyzer (such as CELLMASTER and power meter); VSWR tester (such as SITEMASTER)

Installing the Feeder Window

NOTE

If there is no need to install the feeder window, skip this section.

There are two types of feeder window:

- 12-hole feeder window
- 27-hole feeder window

Generally the 12-hole feeder window is used. **Figure 6-5** shows the dimensions of the 12-hole feeder window. **Figure 6-6** shows the structure of the 12-hole feeder window.

Figure 6-5 Dimensions of the 12-hole feeder window

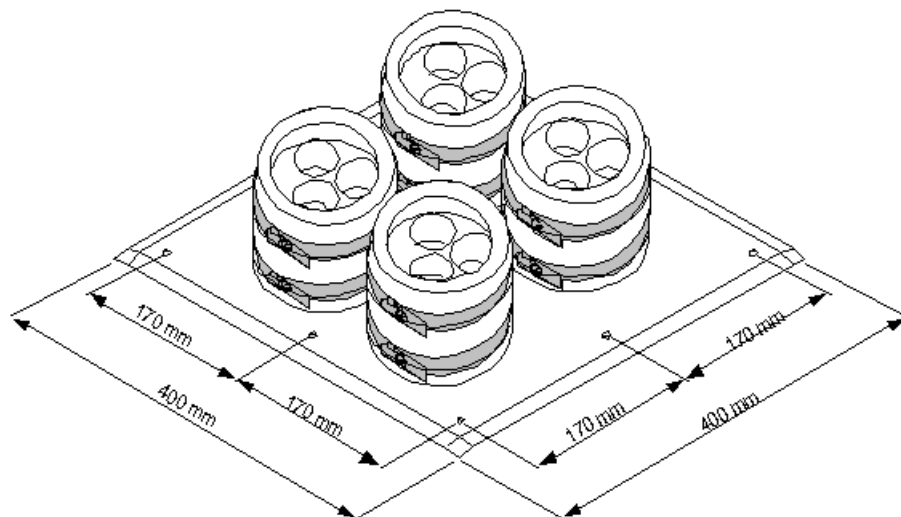
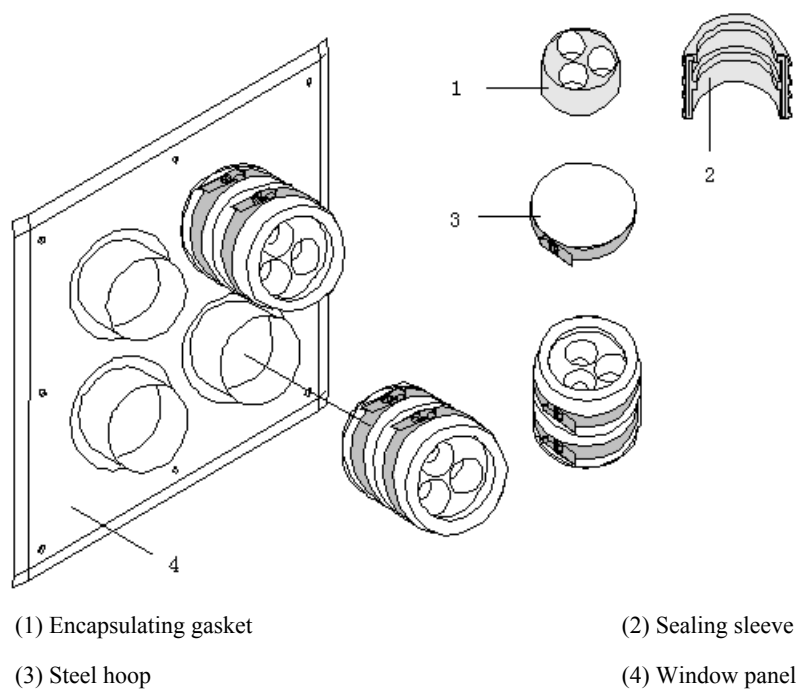


Figure 6-6 Structure of the 12-hole feeder window

Spacing Requirements for Antenna Installation

The installation of the antenna support and the antenna must satisfy the spacing requirements. Refer to the following for the spacing requirements:

- [Spacing Requirements for GSM Antenna Installation](#)

6.6 Feeder Windows

A feeder window facilitates leading feeders into the equipment room. A feeder window has 12 or 27 holes. The feeder window with 12 holes is commonly used.

Prerequisite

For a feeder window with 12 holes, the dimensions is as shown in [Figure 6-7](#) and the structure is as shown in [Figure 6-8](#).

Figure 6-7 Dimensions of a feeder window with 12 holes

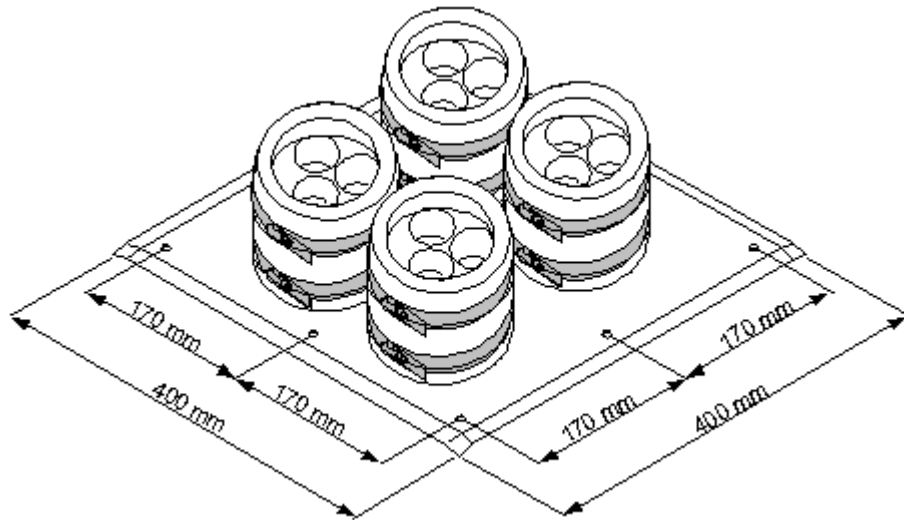
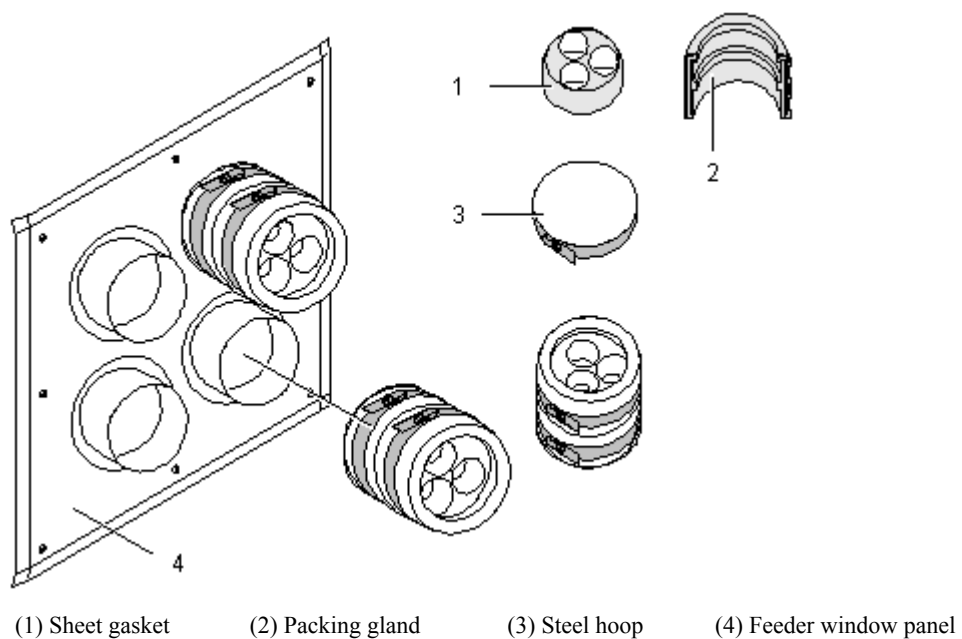


Figure 6-8 Structure of a feeder window with 12 holes



(1) Sheet gasket (2) Packing gland (3) Steel hoop (4) Feeder window panel

Context

Install the feeder window outdoors in a place near the cabling rack. Install the feeder window on the roof if the feeder is led from the roof into the equipment room.

To install a 12-hole feeder window on the wall, perform the following steps:

Procedure

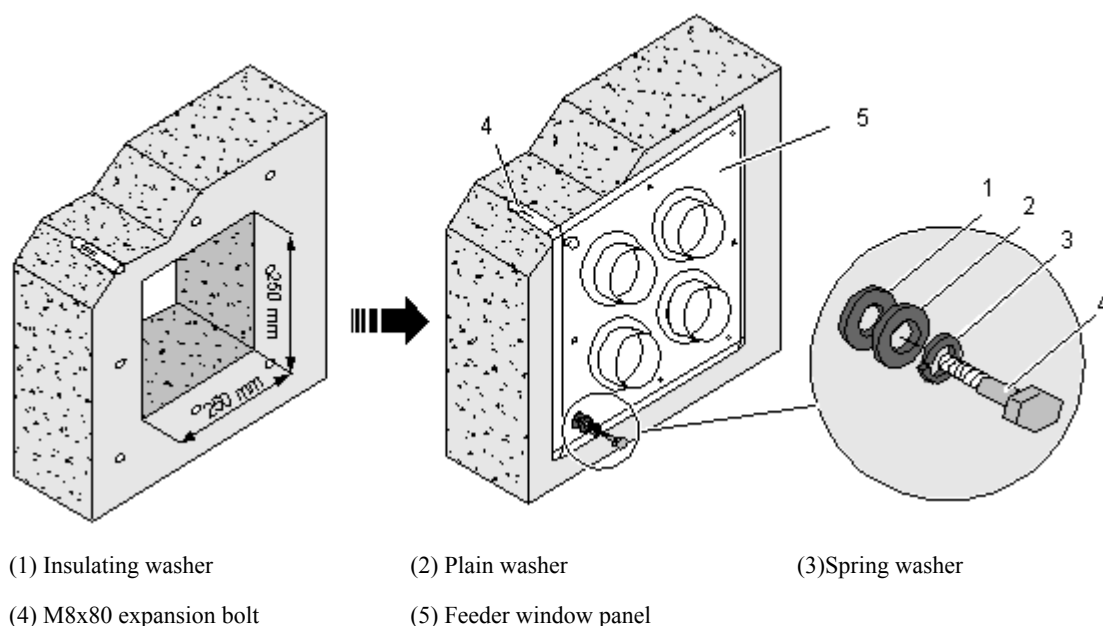
Step 1 Determine the installation position of the feeder window according to the window dimensions and the engineering drawings.

Step 2 Mark the holes for the expansion bolts and the position of the feeder window on the wall.

Step 3 Make a 250 mm x 250 mm (9.84 in. x 9.84 in.) opening on the wall.

Step 4 Use a percussion drill to drill eight holes for the expansion bolts, as shown in [Figure 6-9](#).

Figure 6-9 Installation holes on the feeder window



Step 5 Use expansion bolts to fasten the panel to the feeder window, as shown in [Figure 6-9](#).



CAUTION

- Mount the expansion bolts together with spring washers and flat washers. Place spring washers upon flat washers.
- Mount the sheet gasket and packing gland of the feeder window when leading feeders into the equipment room.
- Keep the glue-injection hole on the packing gland facing upward.

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