



BTS3900B GSM
V300R008&R009
Installation Guide

Issue: 04
Date: 2010-01-15

HUAWEI TECHNOLOGIES CO., LTD.



Safety Information

■ Following All Safety Precautions

Before any operation, read the instructions and precautions in this document carefully to minimize the possibility of accidents.

The Danger, Caution, and Note items in the documents do not cover all the safety precautions that must be followed. They only provide the generic safety precautions for operations.

When operating Huawei products and equipment, you must comply with safety precautions and special safety instructions related to corresponding equipment provided by Huawei. The safety precautions in the document are related to only Huawei products. Huawei is not liable for any consequence that results from the violation of universal regulations for safety operations and safety codes on design, production, and equipment use.

■ Complying with the Local Safety Regulations

When operating the device, comply with the local safety regulations. The safety precautions provided in the documents are supplementary. You must comply with the local safety regulations.

■ Qualified Personnel Only

The personnel in charge of installation and maintenance must be trained and master the correct operating methods and safety precautions before beginning work.

■ Symbols

 DANGER	<i>Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.</i>
 WARNING	<i>Indicates a hazard with a medium or low level of risk, which if not avoided, could result in minor or moderate injury.</i>
 CAUTION	<i>Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.</i>
 TIP	<i>Indicates a tip that may help you solve a problem or save time.</i>
 NOTE	<i>Provides additional information to emphasize or supplement important points of the main text.</i>

■ Safety of Personnel

- The high voltage power supply provides power for running the system. Direct contact with the high voltage power supply or contact through damp objects may result in fatal danger.
- Non-standard and improper high voltage operations may result in fire and electric shock.
- In a thunderstorm, do not perform operations on high voltage and AC power supply facilities or on a steel tower and mast.
- Ground the device before powering on the device. Otherwise, the personnel and device are in danger.
- Power off the device before performing operations on the power supply equipment.
- High power radio-frequency signals are harmful to human body. Before installing or maintaining an antenna on a steel tower or mast with a large number of transmitter antennas, the operator should coordinate with all parties to ensure that the transmitter antennas are shut down.
- When handling optical fibers, do not stand close to, or look into the optical fiber outlet with unaided eyes.
- Protect yourself when drilling holes. Flying dust may hurt your eyes or you may inhale the dust.
- Power off the batteries before connecting the cables to the batteries. Otherwise, casualties may occur.
- When working at a height, be cautious about falling objects.

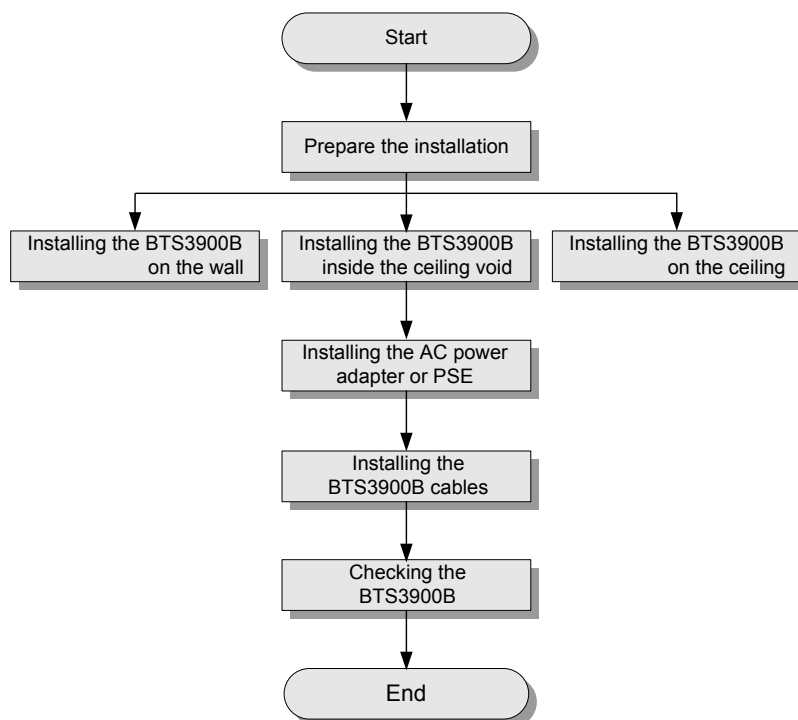
■ Device Safety

- Check the electrical connection of the device before operation and ensure that the device is reliably grounded.
- The static electricity generated by the human body may damage the electrostatic sensitive components on the circuit board, such as the large-scale integrated circuit (LIC). Wear an ESD wrist strap or ESD gloves when performing the operation.
- When working on batteries, take measures to prevent short circuits in the batteries and electrolyte spill/loss. The electrolyte may erode metal and boards, or even cause rust of the equipment or short circuits in the boards.

Installation Tools

			
Long measuring tape	Marking pen	Percussion drill	Ladder
			
Vacuum cleaner	Adjustable wrench	Cross screwdrivers	Claw hammer
			
Diagonal plier	Gradienter	Wire stripper	Scissors

Installation Procedure



NOTE

1. When the external antenna is used, you should connect the antenna to the BTS3900B before installing the BTS3900B. The following description is based on the installation of the BTS3900B configured with external antenna. The procedure for installing the BTS3900B configured with built-in antenna is the same.

2. When the BTS3900B is installed on the wall, the integrated mode is recommended.

3. The BTS3900B must be installed at least 0.5 m away from the interference sources such as power supply and at least 2 m away from the high frequency radiation sources.

4 . In POE power supply mode, only one carrier can be configured for the BTS3900B.

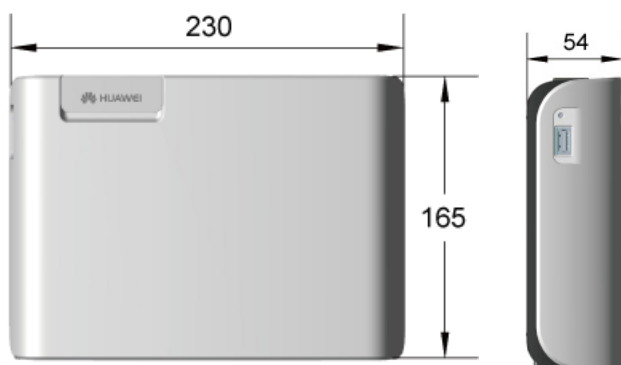
5 . In AC power supply mode, the distance between the AC power supply port and the BTS3900B is no longer than 1.5 m. When the PoE power supply mode is used, the distance of the cabling between the PSE and the BTS3900B is no longer than 50 m.

CAUTION

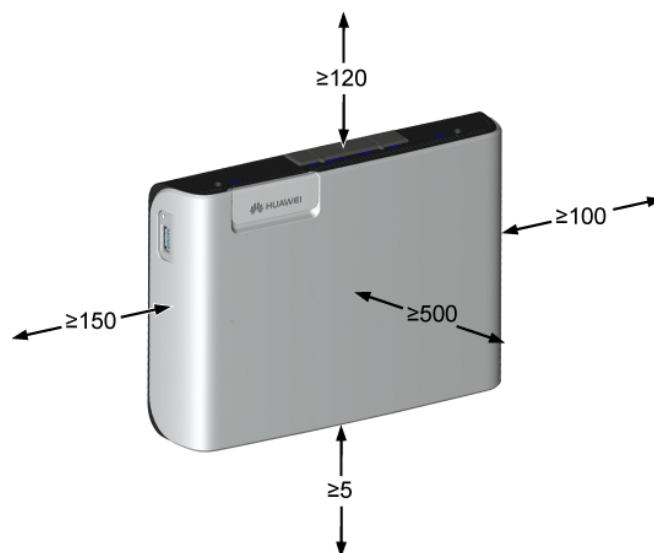
In working mode, the BTS3900B cannot be placed horizontally or vertically on flat object, such as table.

Space Requirements (Unit: mm)

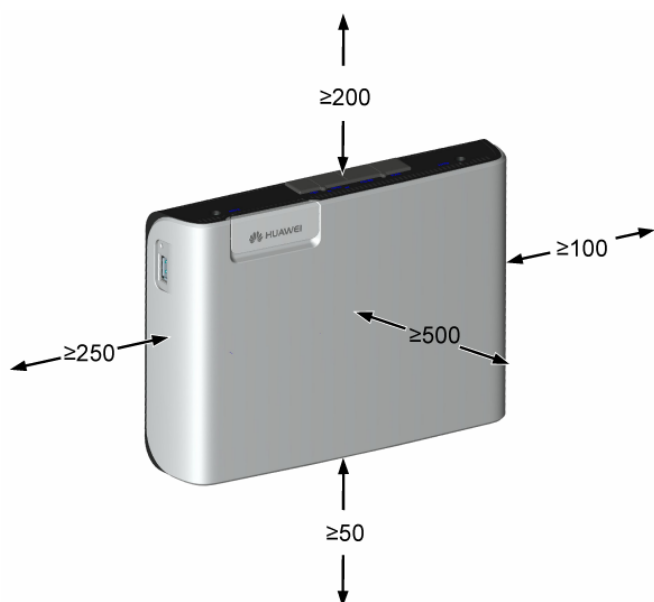
a Dimensions of the BTS3900B



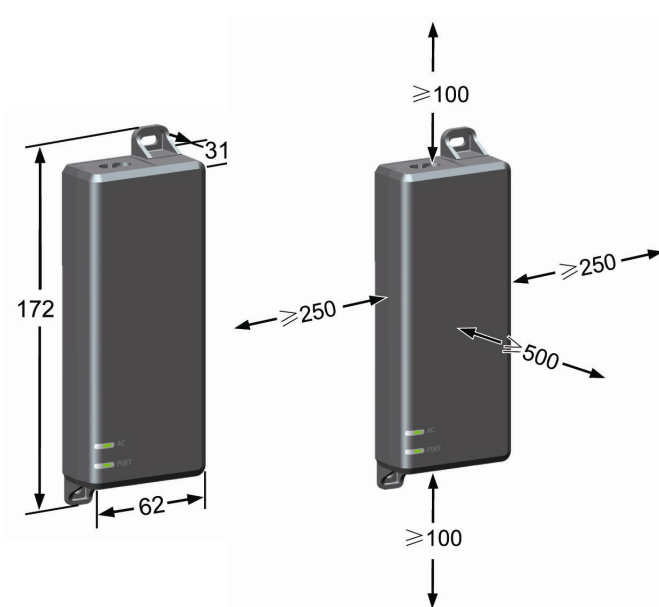
b Minimum Clearance Requirement



c Recommended Clearance Requirement



d Space Requirements of the PSE



NOTE

At least 500 mm should be reserved at the back of the BTS3900B in ceiling installation mode.

Installation Modes (AC Power Supply)

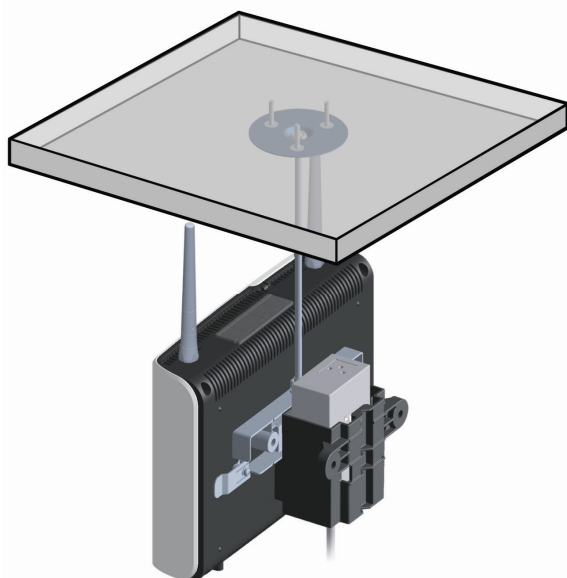
a Installing the BTS3900B on a Wall (in Separated Mode)



b Installing the BTS3900B on a Wall (in Integrated Mode)



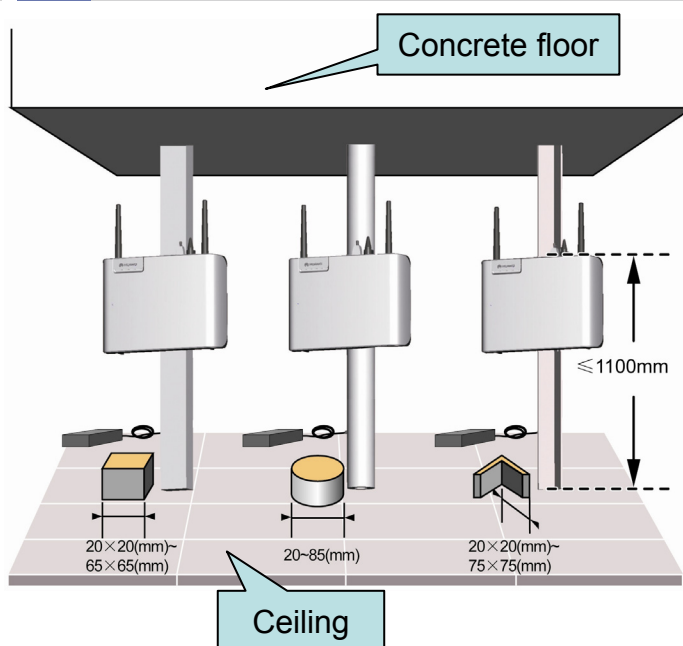
c Installing the BTS3900B on the Ceiling



NOTE

If the BTS3900B is to be installed on the ceiling, the ceiling must be made of concrete.

d Installing the BTS3900B Inside the Ceiling Void

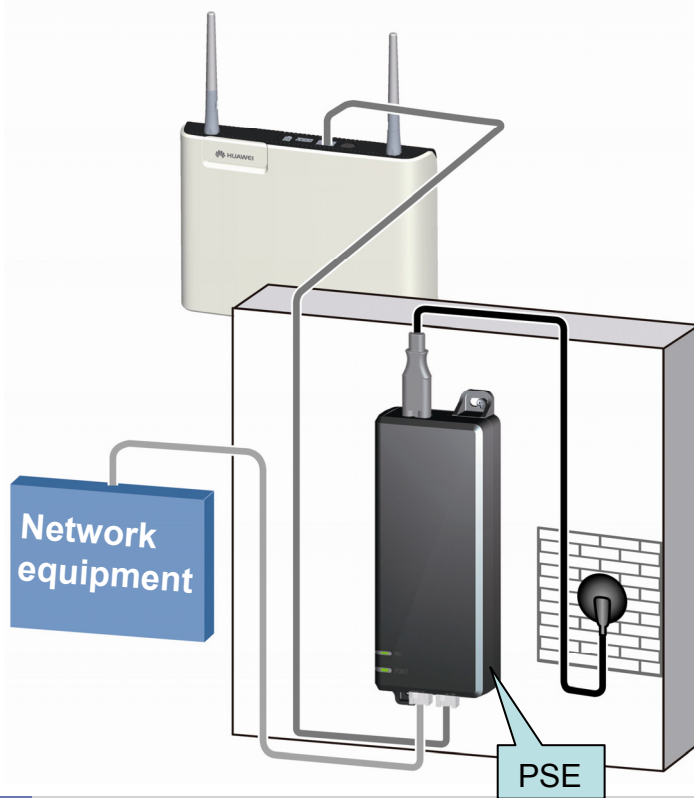


NOTE

If the BTS3900B is to be installed inside the ceiling, it must be installed on the metal pole between the ceiling and the concrete floor. As shown in the above figure, the BTS3900B can be installed on a square pole, on a round pole, or on an angle steel. In this guide, the description of the BTS3900B installation is based on the installation on a square pole. The procedure for installing the BTS3900B on a round pole or on an angle steel is the same as that for installing the BTS3900B on a square pole.

Installation Modes (PoE Power Supply)

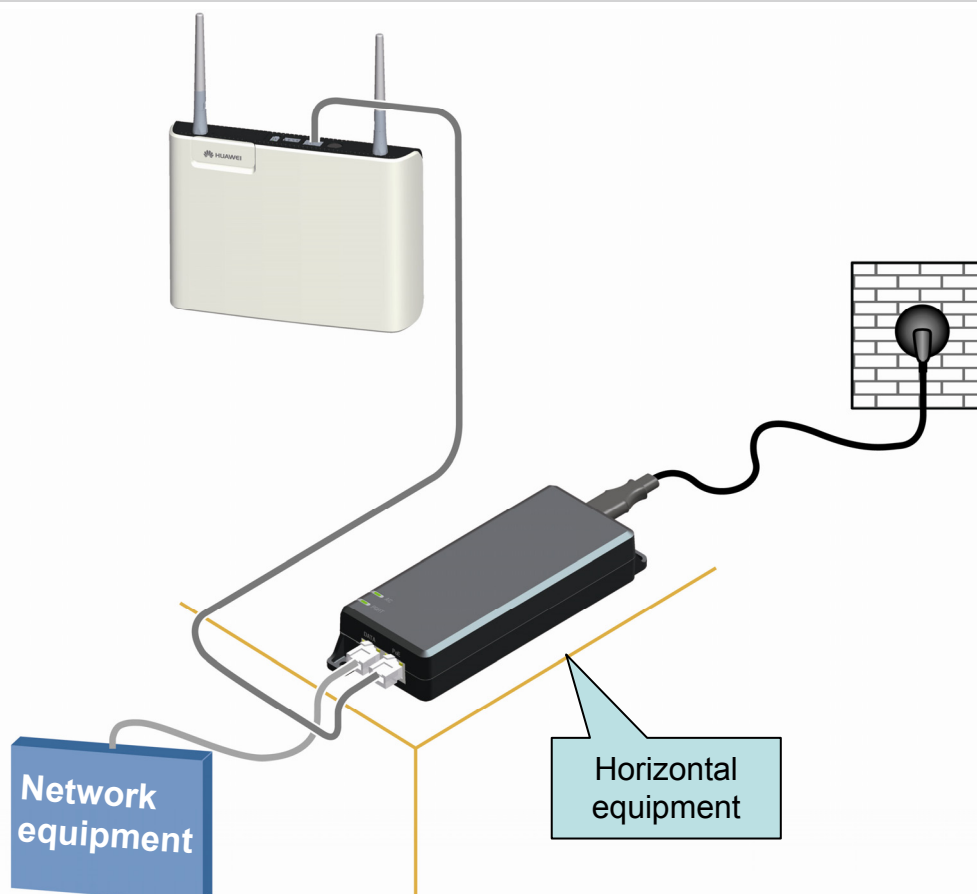
a Installing the BTS3900B on a Wall



NOTE

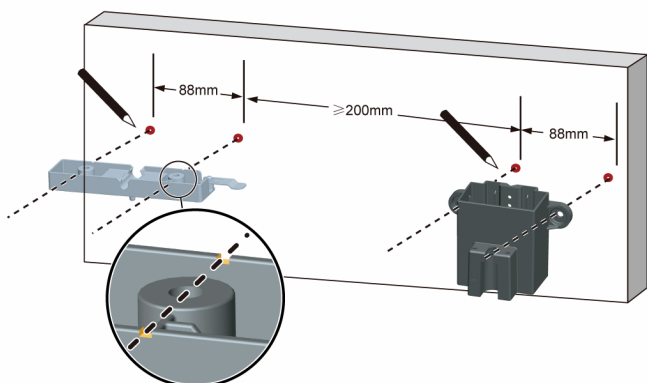
- In PoE power supply mode, the AC power adapter and the mounting frame are not required if the BTS3900B is installed on a wall. The mounting frame of the adapter is required if the BTS3900B is installed on the ceiling.
- For details of the installation modes of the BTS3900B, see "Installation Mode (AC Power Supply)" on page 4.

b Installing the BTS3900B Horizontally



Installing the BTS3900B on a Wall (AC Power Supply)

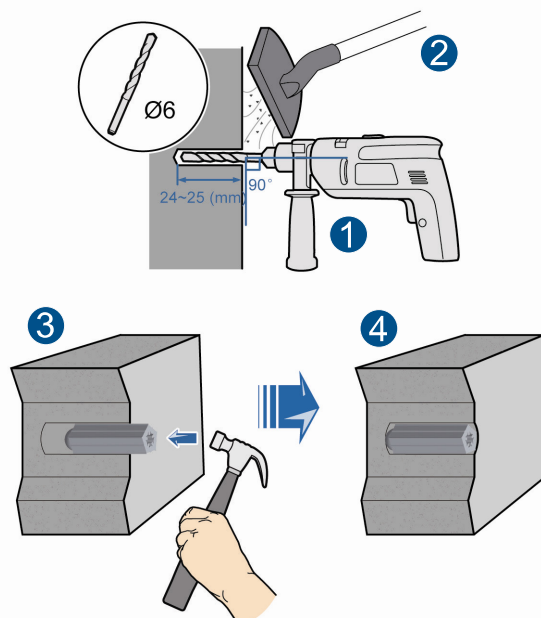
a Determining the Installation Positions of the Mounting Pieces



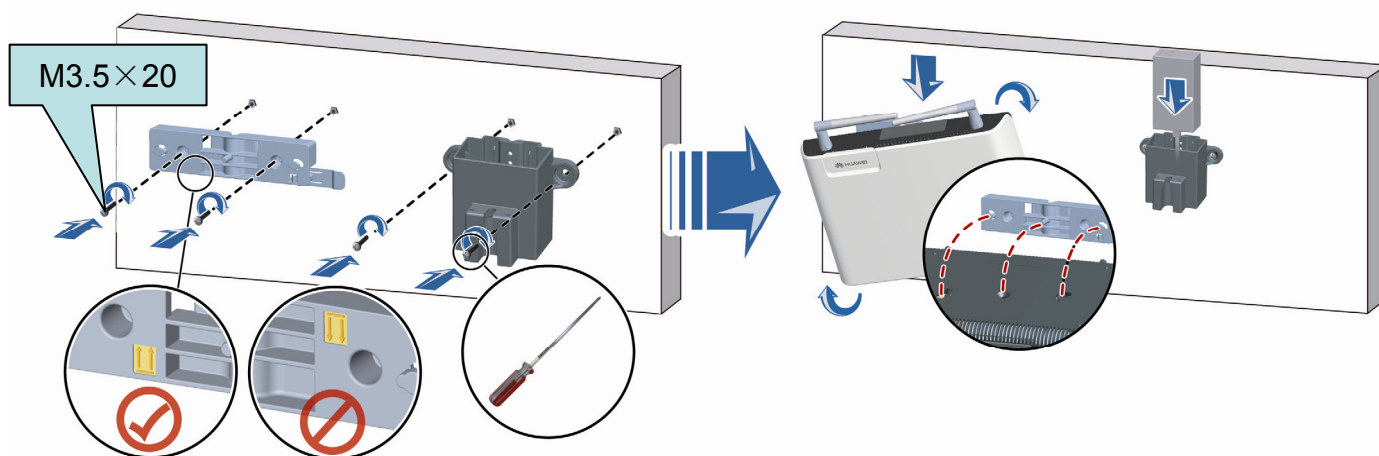
NOTE

In integrated mode, only the dimensions of the power adapter are required.

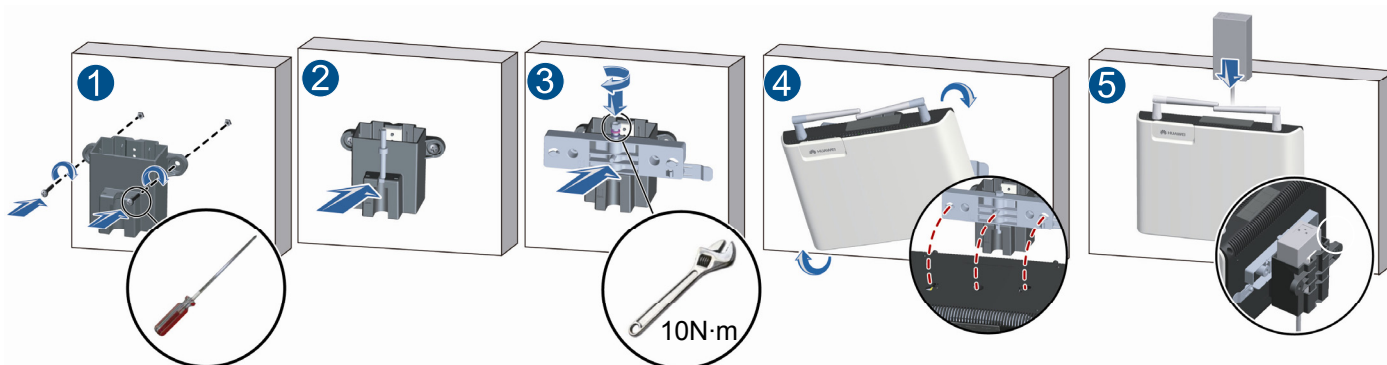
b Drilling Holes and Installing Expansion Bolts



c Installing the BTS3900B and Power Adapter Separately

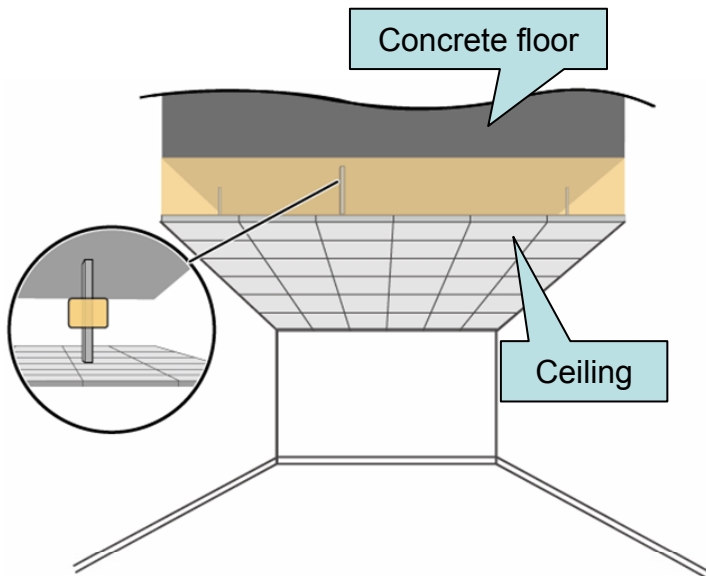


d Installing the BTS3900B and Power Adapter Together

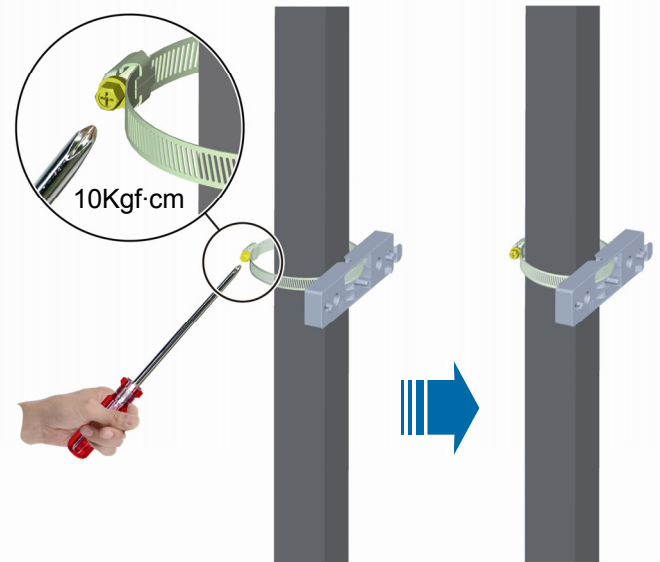


Installing the BTS3900B Inside the Ceiling Void (AC Power Supply)

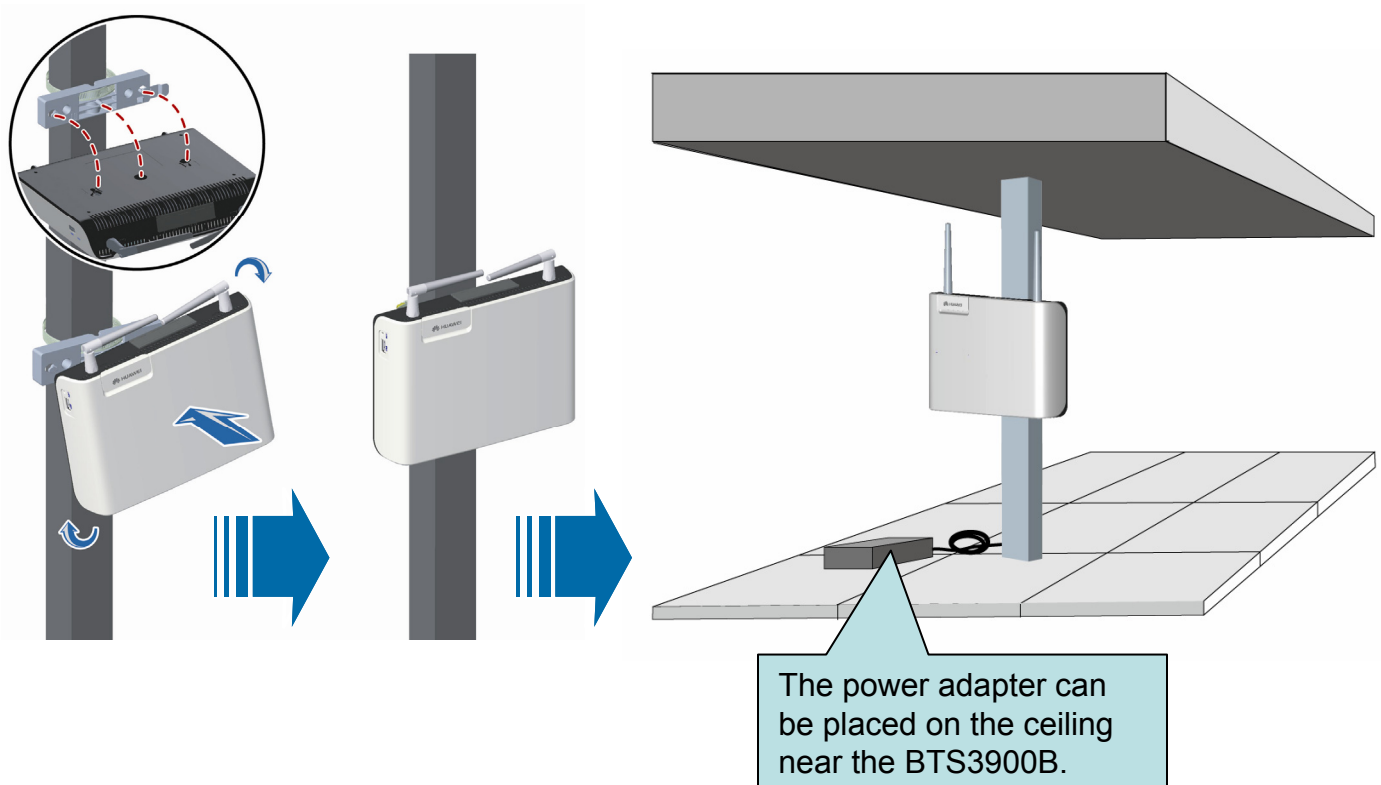
a Determining the Installation Positions



b Installing the Mounting Piece for the BTS3900B

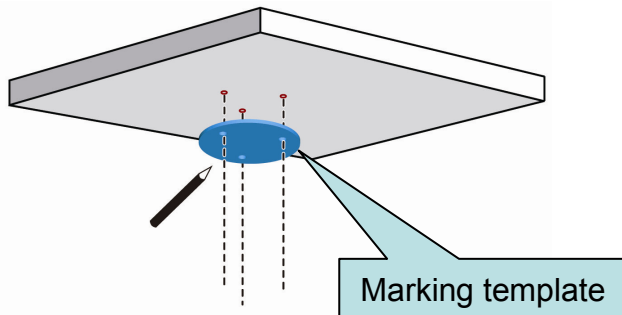


c Installing the BTS3900B and Placing the Power Adapter

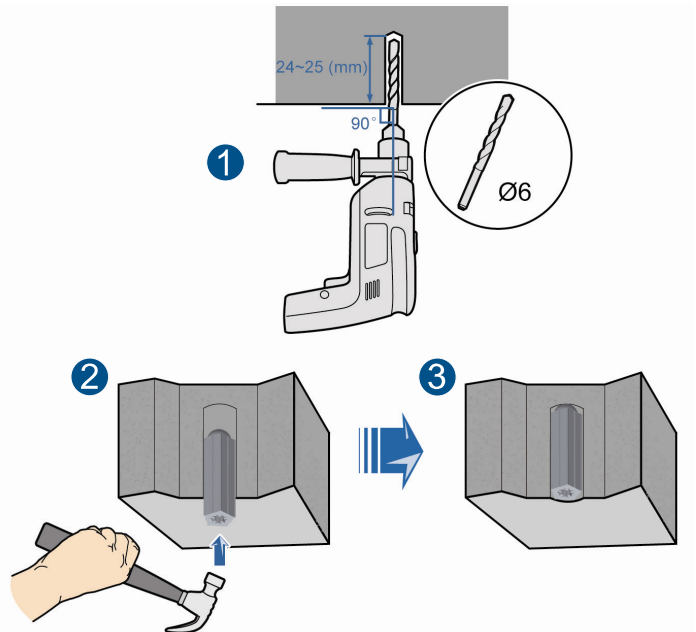


Installing the BTS3900B on the Ceiling (AC Power Supply)

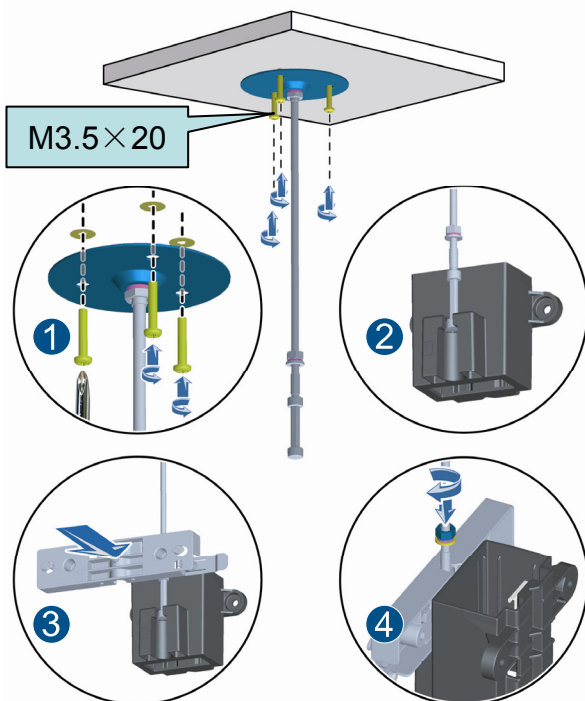
a Determining the Installation Positions



b Drilling Holes and Installing Expansion Bolts



c Installing the Bolt and Mounting Pieces



d Installing the BTS3900B and Power Adapter

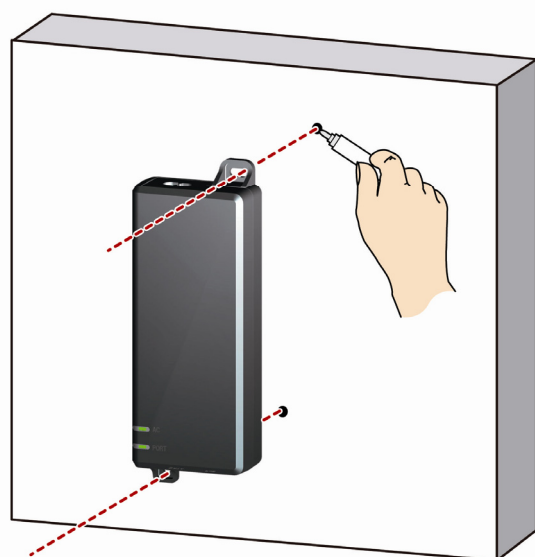


NOTE

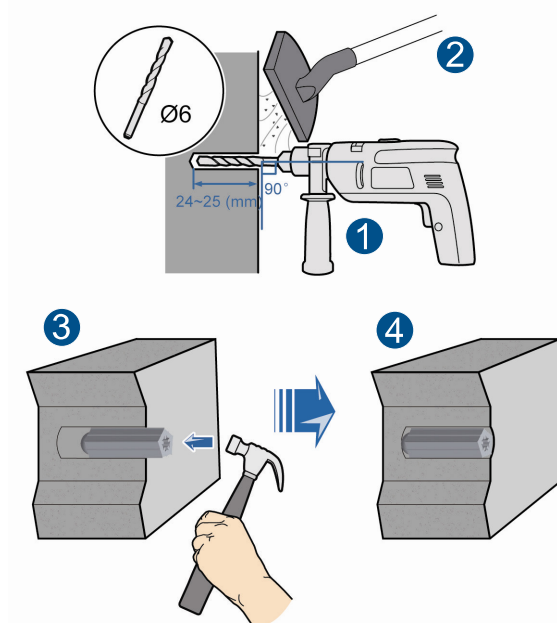
Before the BTS3900B is installed on the ceiling, the bolts and plastic washer should be fixed to prevent the bolts from falling off.

Installing the PSE (PoE Power Supply)

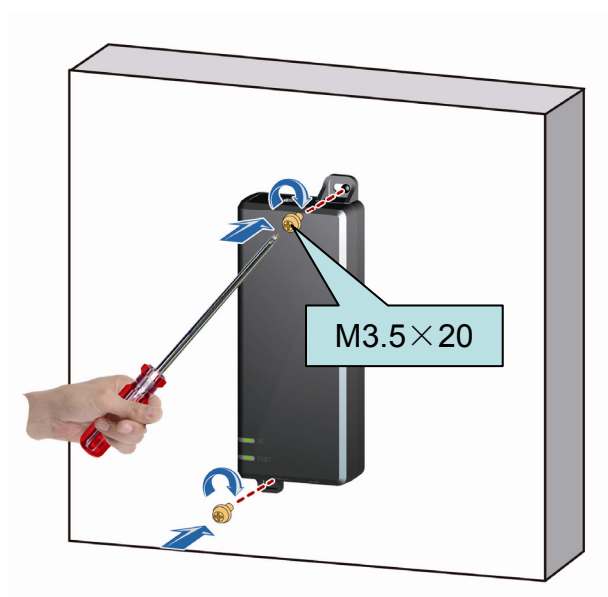
a Determining the Installation Positions of the Mounting Pieces



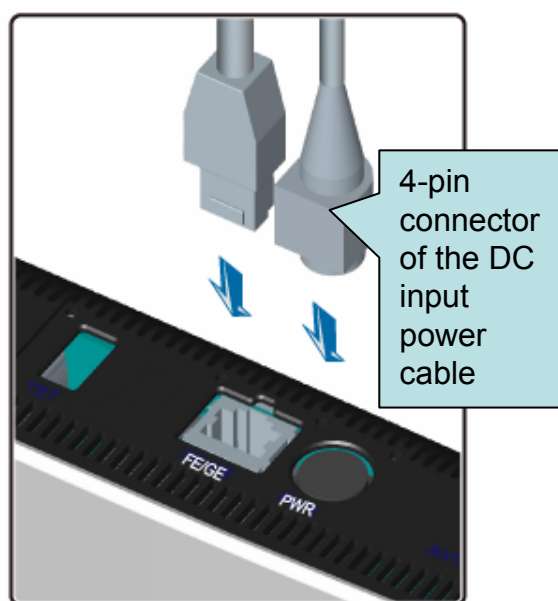
b Drilling Holes and Installing Expansion Bolts Assemblies



c Installing the PSE on a Wall



Installing the Cables (AC Power Supply)

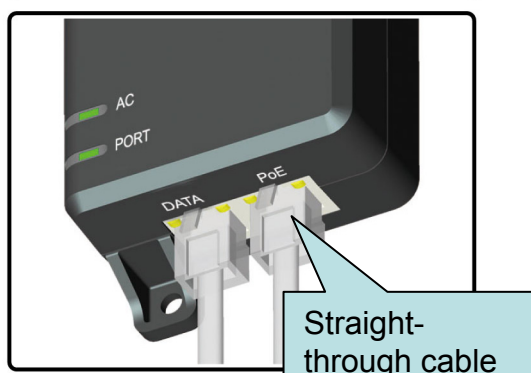
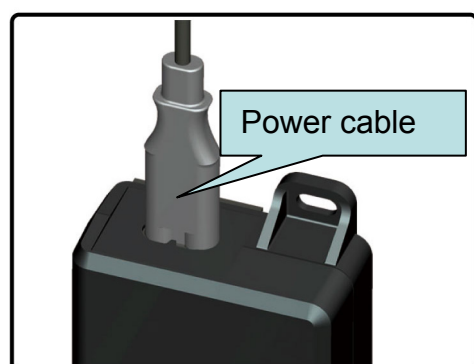


NOTE

If the delivered 3m Ethernet cable does not meet the requirement, the Ethernet cable should be made on site as required.

Cables	Connector	Connects To...
Straight-through cable	RJ-45 connector	FE/GE port
	RJ-45 connector	Transmission devices of the user
Power cable	PA male connector	AC power connector bar
	C7 female connector	AC input port of the PSE
DC input power cable	4-pin connector	PWR port
	The other end is connected to the power adapter	

Installation Cables (PoE Power Supply)



Cables	Connector	Connects To...
Power cable	PA male connector	AC power connector bar
	C7 female connector	AC input port of the PSE
Straight-through cable	RJ-45 connector	DATA port of the PSE
	RJ-45 connector	Network equipment
Straight-through cable	RJ-45 connector	PoE port of the PSE
	RJ-45 connector	FE/GE port of the BTS3900B

NOTE

In PoE power supply mode, the following types of unshielded Ethernet cables are used: fit5e, fit6, and fit6a. The number of Ethernet cables that are bound together should be less than 50.

Powering on the BTS3900B

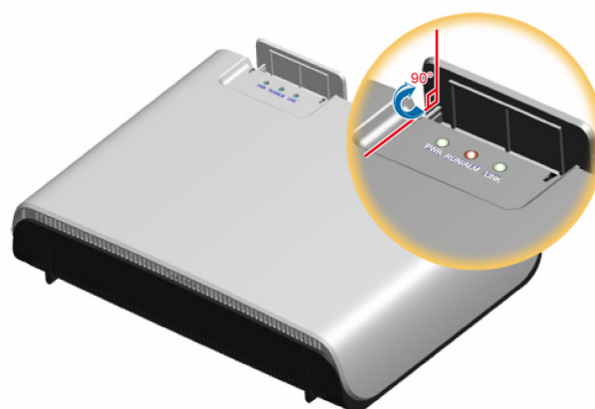
•Powering on the BTS3900B (AC Power Supply)

When the PA male connector is fixed to the wiring bar for the AC power cable, the BTS3900B is powered on. After the BTS3900B is powered on, check the status of the LEDs to decide whether the BTS3900B is properly powered on.

•Powering on the BTS3900B (PoE Power Supply)

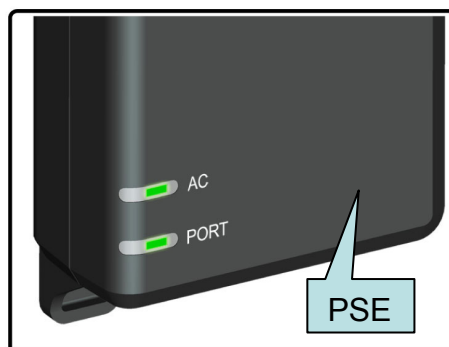
1.The PSE is powered on when the PA male connector is connected to the AC power connector bar. Check whether the PSE is powered on by observing the status of the indicator.

2. The PSE is powered on when the straight-through cable is connected to the BTS3900B.



LED	Color	Status	Description
PWR	Green	ON	The power supply is normal.
		OFF	Power supply is unavailable or the BTS3900B is faulty.
RUN/ALM	Red and green	Blinking green at 0.5 Hz	The BTS3900B is running properly.
		Blinking green at 4 Hz	The software is being loaded to the BTS3900B, or the BTS3900B is not started.
		ON (red)	Alarms are reported, and the replacement of the BTS3900B module is required.
		Blinking red (ON for 1s and OFF for 1s)	An alarm is generated and needs to be cleared according to the handling suggestion.
LINK	Green	ON	The link on the FE port is normal.
		Blinking at 4 Hz	Data is being transmitted and received over the FE port.
		OFF	The link on the FE port is not established.

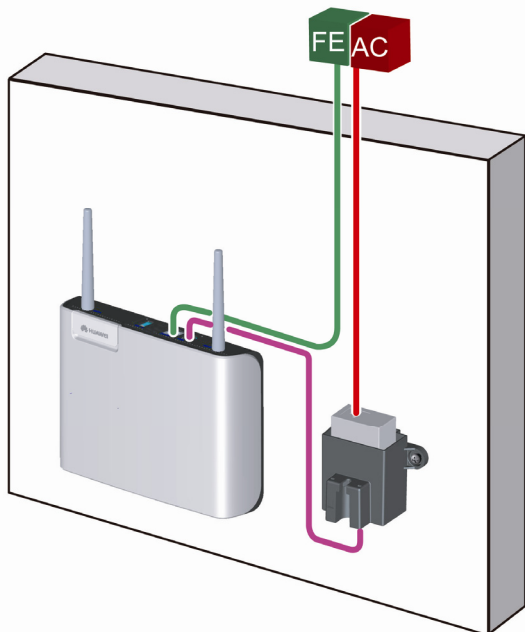
Powering on the BTS3900B



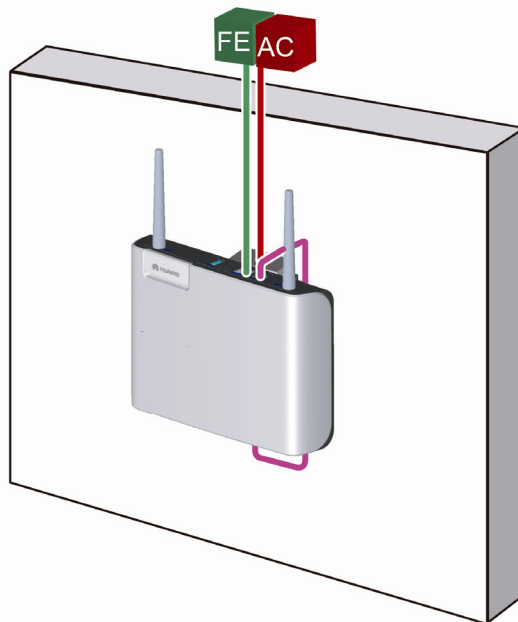
LED	Color	Status	Description
AC	Green	ON	The power supply is normal.
		OFF	The PSE has no power input or is faulty.
PORT	Green	ON	The connection between the main component of the BTS3900B and the PSE is normal.
		OFF	The connection between the main component of the BTS3900B and the PSE is faulty or the PSE is faulty.

Appendix : Routes for Cabling in Different Installation Modes (AC Power Supply)

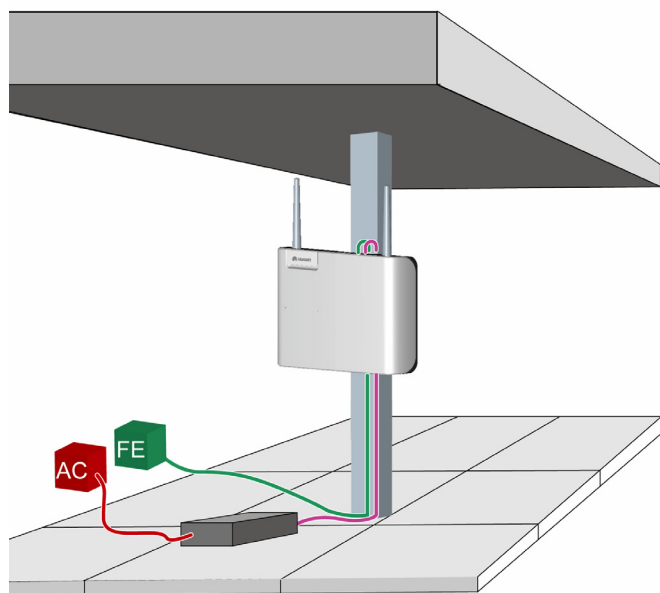
a Installing the BTS3900B on a Wall (in Separated Mode)



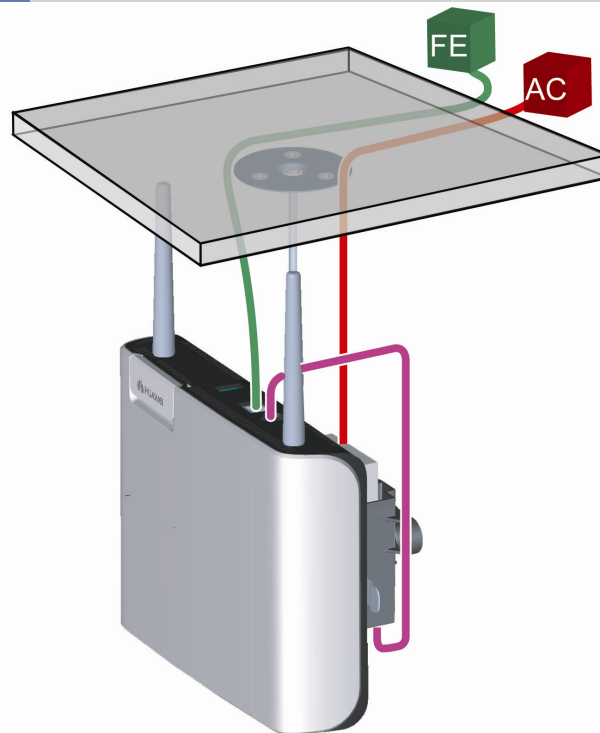
b Installing the BTS3900B on a Wall (in Integrated Mode)



c Installing the BTS3900B on the Ceiling



d Installing the BTS3900B Inside the Ceiling Void

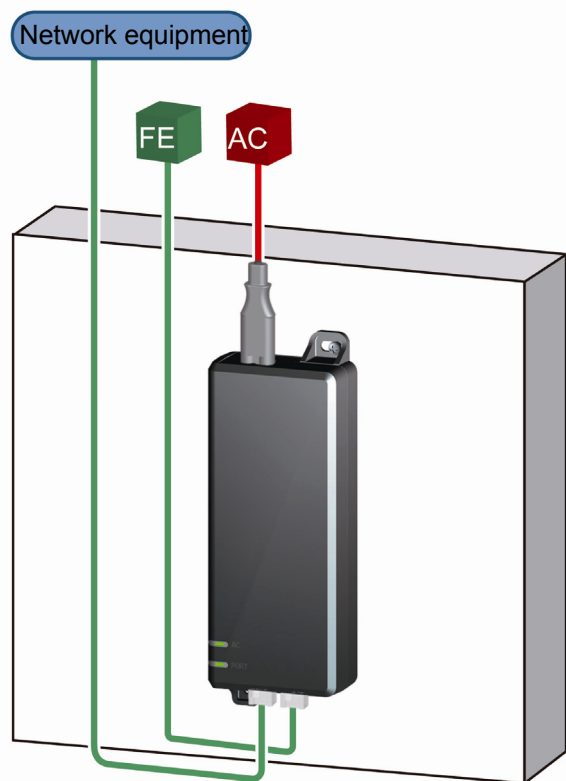


NOTE

- If the AC power cable is not long enough, the power transfer board can be used.
- In PoE power supply mode, only the cabling routes of the straight-through cable should be considered.

-  Straight-through cable
-  DC input power cable
-  Power cable

Appendix : Routes for Cabling in Different Installation Mode (PSE)

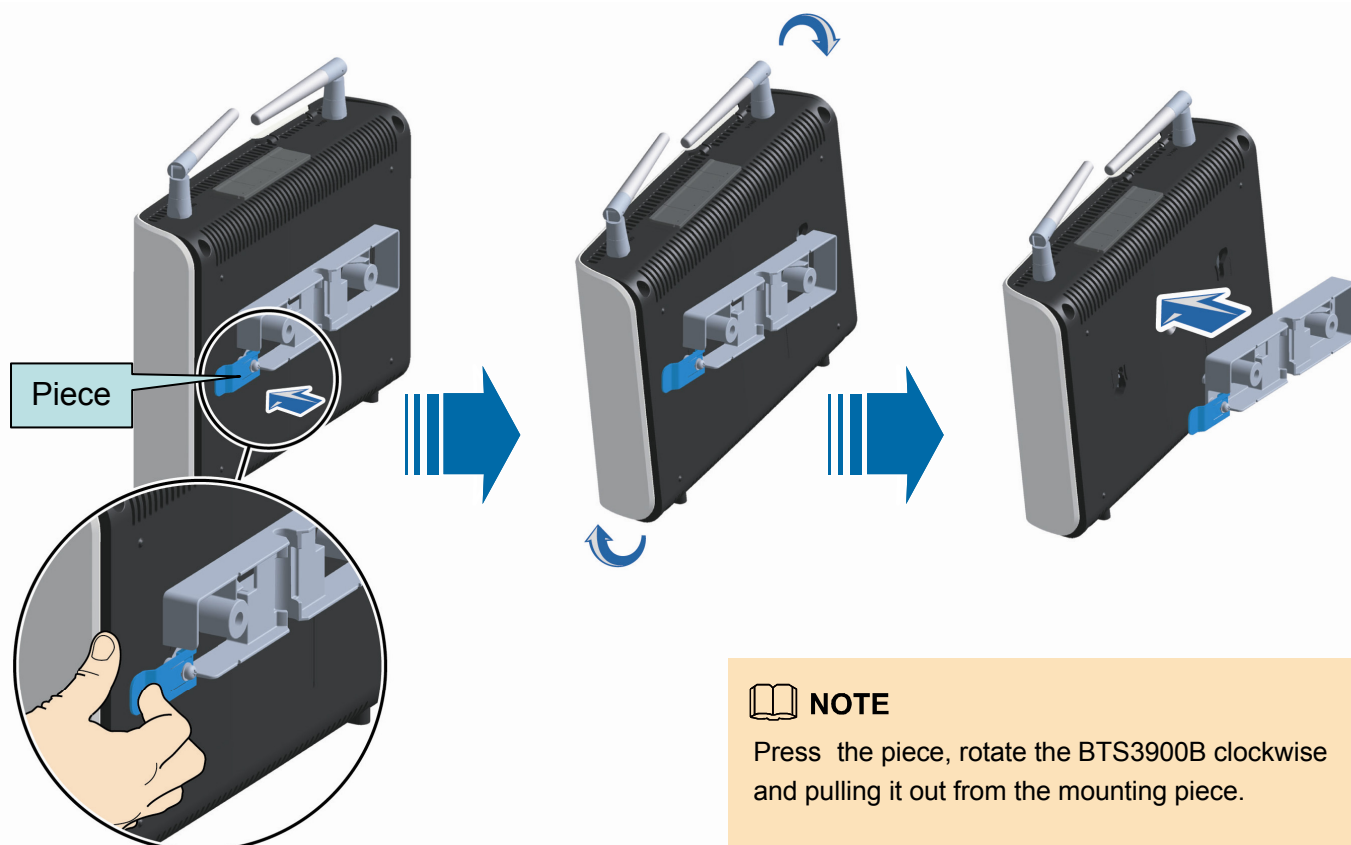


— Straight-through cable
— Power cable

NOTE

In PoE power supply mode, only the cabling routes of the straight-through cables should be considered. The cabling routes of cables connected to the BTS3900B side are the same as the cabling routes of cables in AC power supply mode.

Appendix: Removing the BTS3900B



NOTE

Press the piece, rotate the BTS3900B clockwise and pulling it out from the mounting piece.

Change History

This describes the changes in the BTS3900B GSM Installation Guide versions.

Issue 04 (2010-01-15)

This is the fourth commercial release.

Issue 03 (2009-09-10)

This is the third commercial release.

Compared with issue 02 (2009-06-30), the following part is added:

The description of Ethernet cable types in PoE power supply mode is added.

Issue 02 (2009-06-30)

This is the second commercial release.

Compared with 01 (2009-04-30), the document incorporates the following changes:

1. The installation of the PSE is added.
2. The figures are optimized.

Issue 01 (2009-04-30)

This is the first commercial release.

HUAWEI TECHNOLOGIES CO., LTD.

Huawei Industrial Base Bantian Longgang

Shenzhen 518129

People's Republic of China

www.huawei.com