

BTS3202E LTE
V100R004C00

Site Maintenance Guide

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Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
 Bantian, Longgang
 Shenzhen 518129
 People's Republic of China

Website: <http://www.huawei.com>

Email: support@huawei.com

About This Document

Purpose

This document describes routine maintenance procedures for the BTS3202E, such as equipment maintenance and power-on and power-off operations. It also describes how to replace the BTS3202E and optical modules.

Product Version

The following table lists the product version related to this document.

Product Name	Product Version
BTS3202E LTE (referred to as the BTS3202E in this document)	V100R004C00

Intended Audience

This document is intended for:

- System engineers
- Site maintenance engineers

Organization

[1 Changes in the BTS3202E LTE Site Maintenance Guide](#)

This chapter describes the changes in the *BTS3202E LTE Site Maintenance Guide*.

[2 Powering On and Powering Off a BTS3202E](#)

After a BTS3202E is powered on, check the status of the indicators on the BTS3202E. When you power it off, you can perform normal power-off.

[3 Replacing a BTS3202E](#)

The BTS3202E is an integrated micro eNodeB. If a BTS3202E is faulty, you must replace it within a short period. Replacing a BTS3202E interrupts all the services carried by the eNodeB.

4 Replacing an Optical Module

An optical module implements optical-electrical conversion, enabling optical transmission between a BTS3202E and other devices. You must disconnect the fiber optic cable from an optical module before replacing the optical module. Disconnecting the fiber optic cable interrupts the transmission of optical signals.

Conventions

Symbol Conventions

The symbols that may be found in this document are defined as follows.

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

General Conventions

The general conventions that may be found in this document are defined as follows.

Convention	Description
Times New Roman	Normal paragraphs are in Times New Roman.
Boldface	Names of files, directories, folders, and users are in boldface . For example, log in as user root .
<i>Italic</i>	Book titles are in <i>italics</i> .
Courier New	Examples of information displayed on the screen are in Courier New.

Command Conventions

The command conventions that may be found in this document are defined as follows.

Convention	Description
Boldface	The keywords of a command line are in boldface .
<i>Italic</i>	Command arguments are in <i>italics</i> .
[]	Items (keywords or arguments) in brackets [] are optional.
{ x y ... }	Optional items are grouped in braces and separated by vertical bars. One item is selected.
[x y ...]	Optional items are grouped in brackets and separated by vertical bars. One item is selected or no item is selected.
{ x y ... }*	Optional items are grouped in braces and separated by vertical bars. A minimum of one item or a maximum of all items can be selected.
[x y ...]*	Optional items are grouped in brackets and separated by vertical bars. Several items or no item can be selected.

GUI Conventions

The GUI conventions that may be found in this document are defined as follows.

Convention	Description
Boldface	Buttons, menus, parameters, tabs, window, and dialog titles are in boldface . For example, click OK .
>	Multi-level menus are in boldface and separated by the ">" signs. For example, choose File > Create > Folder .

Keyboard Operations

The keyboard operations that may be found in this document are defined as follows.

Format	Description
Key	Press the key. For example, press Enter and press Tab .
Key 1+Key 2	Press the keys concurrently. For example, pressing Ctrl+Alt+A means the three keys should be pressed concurrently.
Key 1, Key 2	Press the keys in turn. For example, pressing Alt, A means the two keys should be pressed in turn.

Mouse Operations

The mouse operations that may be found in this document are defined as follows.

Action	Description
Click	Select and release the primary mouse button without moving the pointer.
Double-click	Press the primary mouse button twice continuously and quickly without moving the pointer.
Drag	Press and hold the primary mouse button and move the pointer to a certain position.

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1 Changes in the BTS3202E LTE Site Maintenance Guide

This chapter describes the changes in the *BTS3202E LTE Site Maintenance Guide*.

Draft A (2011-07-30)

This is the draft.

2 Powering On and Powering Off a BTS3202E

About This Chapter

After a BTS3202E is powered on, check the status of the indicators on the BTS3202E. When you power it off, you can perform normal power-off.

2.1 Powering On a BTS3202E

This section describes how to power on a BTS3202E and how to check the running status of the BTS3202E by observing the status of the indicators.

2.2 Powering Off a BTS3202E

This section describes how to power off a BTS3202E.

2.1 Powering On a BTS3202E

This section describes how to power on a BTS3202E and how to check the running status of the BTS3202E by observing the status of the indicators.

Prerequisite

- The BTS3202E and related cables are installed.
- The input voltage of the BTS3202E ranges from 100 V AC to 240 V AC.

Context



CAUTION

After you unpack a BTS3202E, you must power it on within 24 hours. If you power off the BTS3202E for maintenance, you must restore power to it within 24 hours.

Procedure

Step 1 Power on the BTS3202E.



DANGER

Do not look into the optical module without eye protection after the BTS3202E is powered on.

Step 2 Wait three to five minutes, and then check the status of the BTS3202E indicators. For details, see BTS3202E Indicators.



If BTS3202Es are cascaded, check the status of all BTS3202E indicators.

Step 3 Take corresponding actions based on the status of the indicators.

If...	Then...
The BTS3202E operates properly	End the power-on check task.
If the BTS3202E is faulty	Rectify the fault, and then go to Step 1 .

----End

2.2 Powering Off a BTS3202E

This section describes how to power off a BTS3202E.

Procedure

Step 1 Turn off the external power switch of the BTS3202E.

----End

3 Replacing a BTS3202E

The BTS3202E is an integrated micro eNodeB. If a BTS3202E is faulty, you must replace it within a short period. Replacing a BTS3202E interrupts all the services carried by the eNodeB.

Prerequisite

- Tools and materials, such as electrostatic discharge (ESD) gloves or an ESD wrist strap, M4 Phillips screwdrivers, M6 Phillips screwdrivers, waterproof tape, and polyvinyl chloride (PVC) insulation tape, are ready.
- The type and number of BTS3202Es to be replaced are confirmed, and new BTS3202Es are ready.
- Associated personnel have obtained keys and site access permission.

Context



NOTE

The camouflage shell is optional. Following uses the BTS3202E equipped with a camouflage shell as an example.

Procedure

Step 1 Two maintenance modes are available for a BTS3202E: **Remote maintenance** and **Local maintenance**.

- Remote maintenance

1. Report the electronic serial number (ESN) of a new BTS3202E to the M2000 administrator. For details, see [Obtaining the ESN](#).
2. Instruct the M2000 administrator to modify the ESN of the BTS3202E to be replaced.
3. Power off the faulty BTS3202E. For details, see [2.2 Powering Off a BTS3202E](#).
4. Replace the BTS3202E. For details, see [Step 2](#) through [Step 13](#).
5. Add a BTS3202E based on the site deployment process by using the latest configuration data saved on the Configuration Management Express (CME). For details, see the *BTS3202E Commissioning Guide*.
6. Install the camouflage shell. For details, see [Step 14](#) through [Step 17](#).

- Local maintenance

1. Report the electronic serial number (ESN) of a new BTS3202E to the M2000 administrator. For details, see [Obtaining the ESN](#).
2. Export the latest configuration data of the faulty BTS3202E, and save the data on a Universal Serial Bus (USB) storage device or laptop.
3. Copy the eNodeB software and license file and paste them to the USB storage device or laptop.
4. Power off the faulty BTS3202E. For details, see [2.2 Powering Off a BTS3202E](#).
5. Replace the BTS3202E. For details, see [Step 2](#) through [Step 13](#).
6. Deploy the new eNodeB based on the local site deployment process. For details, see the [BTS3202E Commissioning Guide](#).
7. Install the camouflage shell. For details, see [Step 14](#) through [Step 17](#).

Step 2 Wear an ESD wrist strap or ESD gloves.

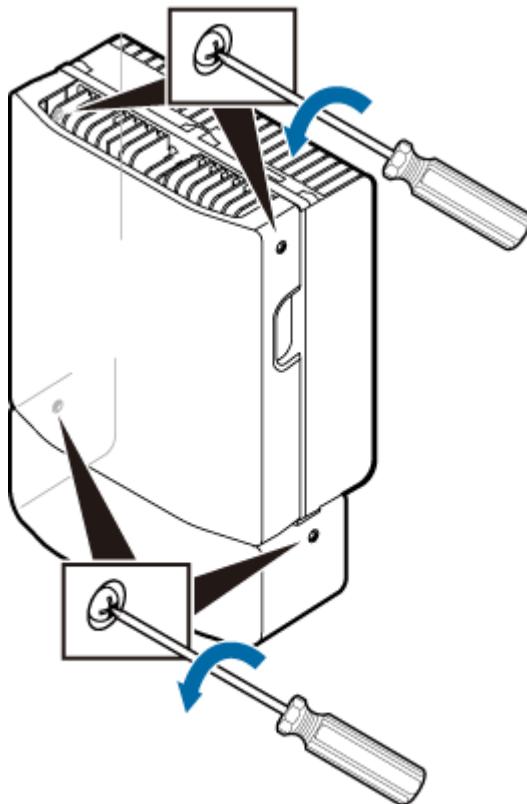


WARNING

Take proper ESD protection measures, for example, wear an ESD wrist strap or ESD gloves, to prevent electrostatic damage to the boards, modules, or electronic components.

Step 3 Use an M4 Phillips screwdriver to loosen the four captive screws from the housing, as shown in [Figure 3-1](#).

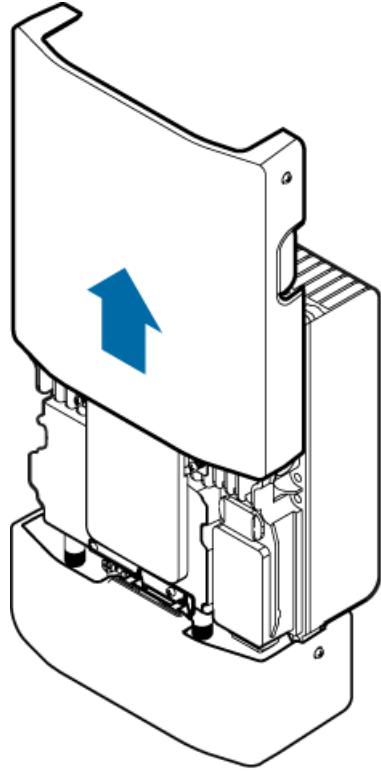
Figure 3-1 Loosening the screws from the housing



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Step 4 Move the upper housing until it is stopped, as shown in [Figure 3-2](#).

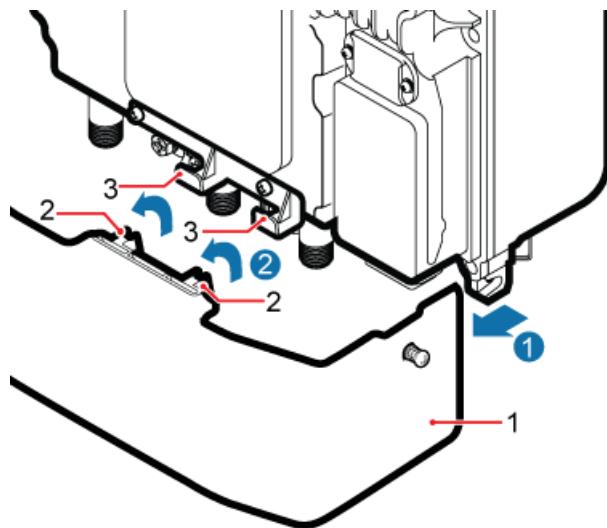
Figure 3-2 Moving the upper housing



HIX06C0032

Step 5 Separate the slots on the camouflage shell from the tabs to remove the shell, as shown in [Figure 3-3](#).

Figure 3-3 Removing the camouflage shell



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(1) Camouflage shell

(2) Slots

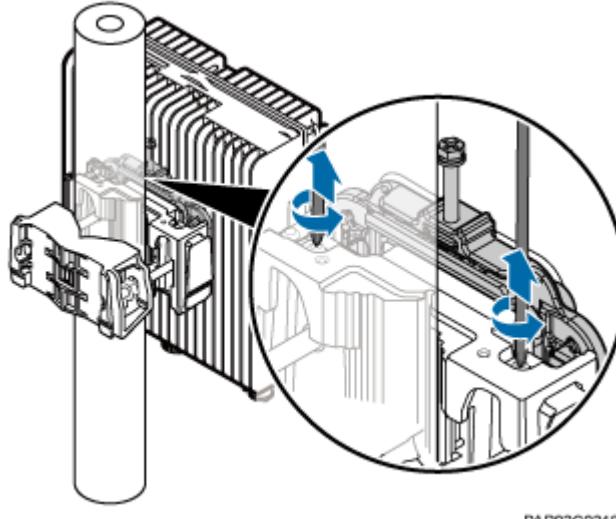
(3) Tabs

Step 6 Record all the cable connections on the bottom of the faulty BTS3902E.

Step 7 Disconnect the cables connected to external devices from the bottom of the BTS3202E.

Step 8 Loosen the captive screws on the two hoist clamps on the main mounting bracket using an M4 Phillips screwdriver, as shown in [Figure 3-4](#).

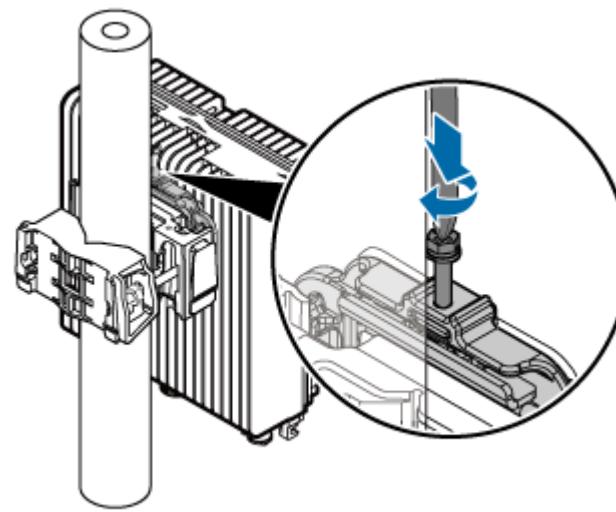
Figure 3-4 Loosening captive screws on the main mounting bracket



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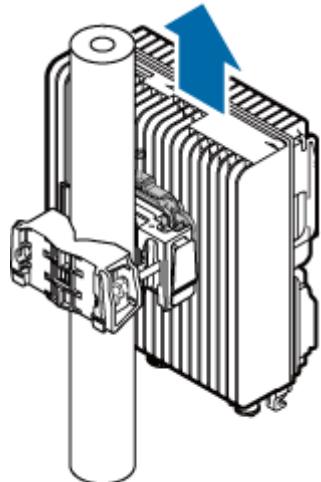
Step 9 Tighten the screws on the attachment plate of the BTS3202E using an M6 Phillips screwdriver, as shown in [Figure 3-5](#). Use the screw only for removing the BTS3202E to loosen the connection between the attachment plate and the main bracket, and then hold the BTS3202E bottom to lift it, as shown in [Figure 3-6](#).

Figure 3-5 Tightening screws on the attachment plate



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Figure 3-6 Lifting the BTS3202E



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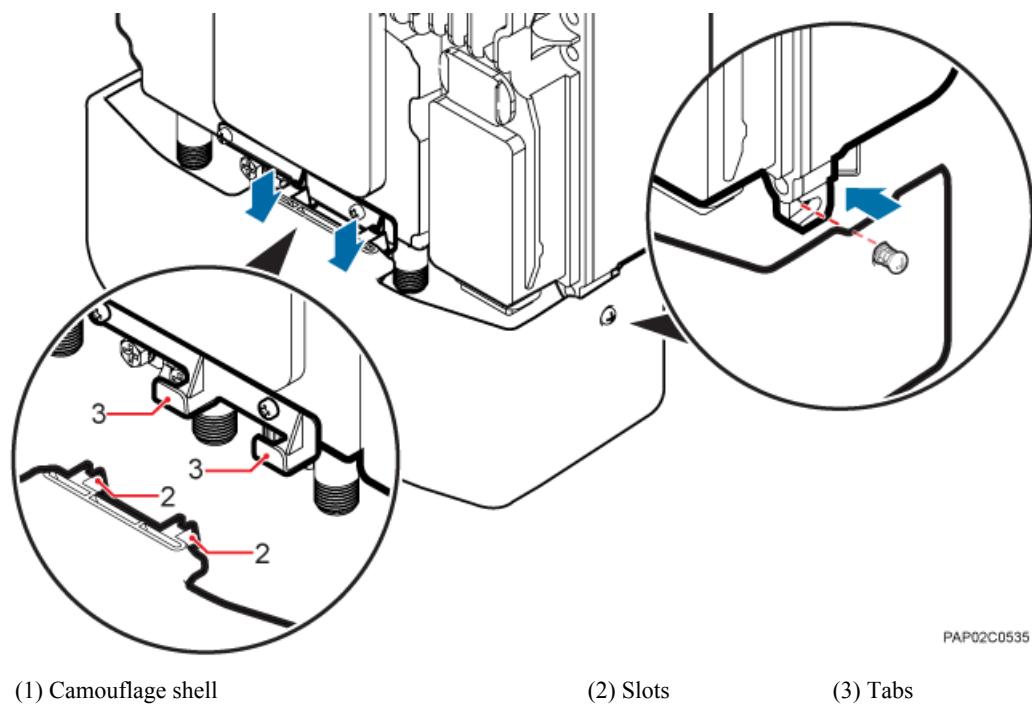


CAUTION

When removing the BTS3202E, hold the BTS3202E handle with both hands to lift the BTS3202E.

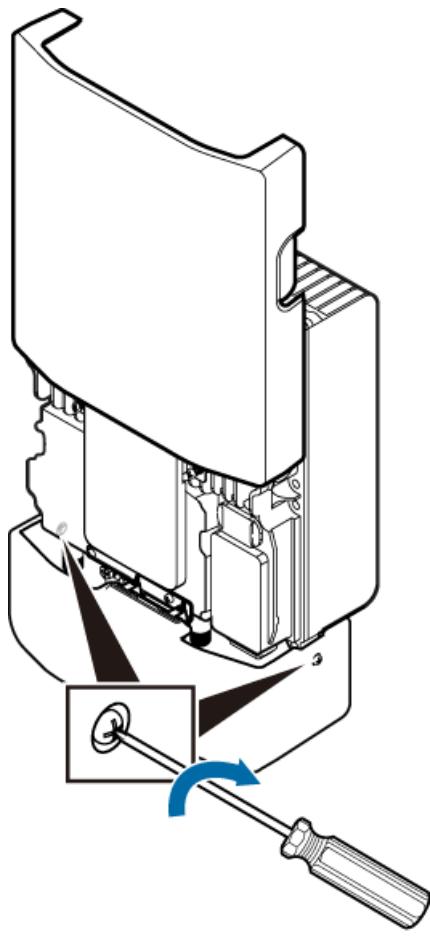
- Step 10** Tighten the captive screws on the two hoist clamps on the main bracket to $1.4 \text{ N}\cdot\text{m}$. Install a new BTS3202E and then waterproof it.
- Step 11** Connect all the cables on the BTS3202E and waterproof vacant ports.
- Step 12** Power on the BTS3202E. For details, see [2.1 Powering On a BTS3202E](#).
- Step 13** Check the operating status of the new BTS3202E by observing the indicators. For details about the status of the indicators, see [BTS3202E Indicators](#).
- Step 14** Install the slots on the camouflage shell to the tabs to secure the shell, as shown in [Figure 3-7](#).

Figure 3-7 Installing the camouflage shell



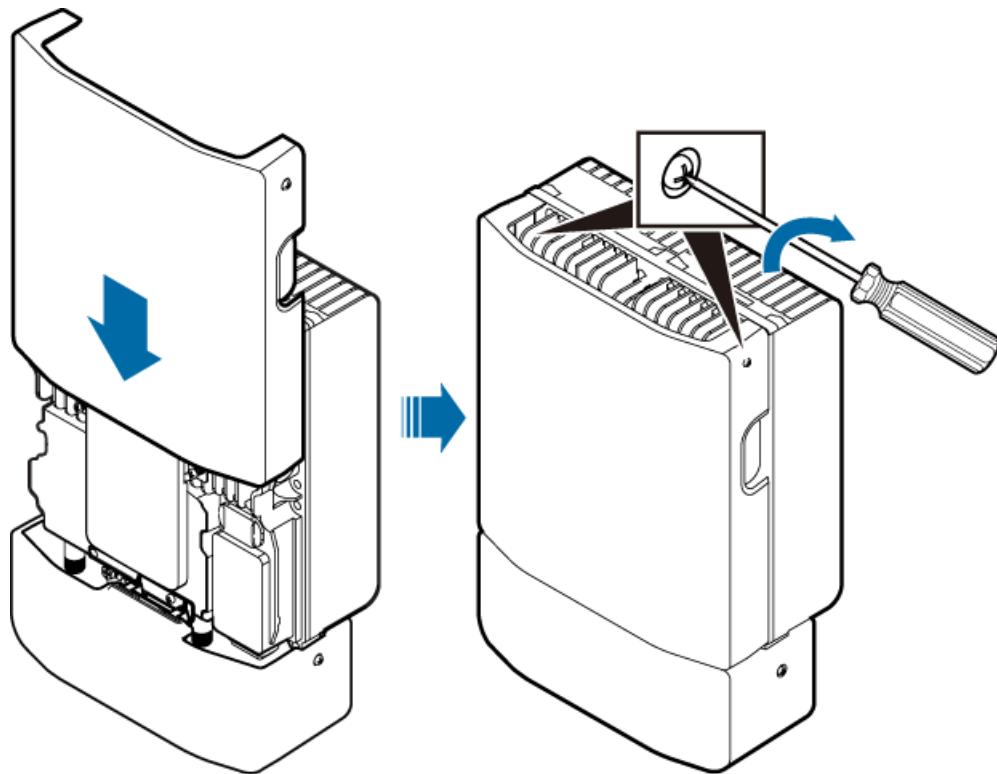
Step 15 Use an M4 Phillips screwdriver to tighten the two captive screws to 1.2 N·m, as shown in [Figure 3-8](#).

Figure 3-8 Tightening the screws



Step 16 Close the housing, and use an M4 Phillips screwdriver to tighten the two captive screws to 1.2 N·m, as shown in **Figure 3-9**.

Figure 3-9 Closing the housing and tightening the screws



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Step 17 Take off the ESD wrist strap or ESD gloves, and pack up all the tools.

----End

Follow-up Procedure

- Place the replaced component into the ESD box or bag. Then, place the ESD box or bag into a carton padded with foam or into the packing box of the new component.
- Fill in the fault form with the detail information of the replaced component.
- Contact the local Huawei office to handle the faulty component.

4 Replacing an Optical Module

An optical module implements optical-electrical conversion, enabling optical transmission between a BTS3202E and other devices. You must disconnect the fiber optic cable from an optical module before replacing the optical module. Disconnecting the fiber optic cable interrupts the transmission of optical signals.

Prerequisite

- The type and number of optical modules to be replaced are confirmed, and new optical modules are ready.
- Tools and materials, such as electrostatic discharge (ESD) gloves, M4 Phillips screwdrivers, and an ESD box or bag, are ready.

Context

- The optical module is installed on the OPT port on the BTS3202E.
- Optical modules are hot-swappable.
- It takes about five minutes to replace an optical module on the BTS3202E, which involves disconnecting the fiber optic cable, removing the faulty optical module, inserting a new optical module, reconnecting the fiber optic cable, and waiting for common public radio interface (CPRI) links to resume.

Procedure

Step 1 Wear ESD gloves.



CAUTION

Take proper ESD protection measures; for example, wear ESD gloves, to prevent electrostatic damage to the boards, modules, or electronic components.

Step 2 Record the connections of the optical module and fiber optic cable.

Step 3 Press the latch on the connector of the fiber optic cable, and then remove the connector from the faulty optical module.



WARNING

Do not look into the fiber optic cable or optical module without eye protection after the fiber optic cable is removed from the optical module.

Step 4 Lower the puller on the faulty optical module, and then pull the puller until the optical module is removed from the BTS3202E.

Step 5 Prepare an optical module of the same type as the faulty optical module according to the label on the module. Install the new optical module onto the BTS3202E.



NOTE

The optical modules to be installed must match the rate at the fast Ethernet or gigabit Ethernet (FE/GE) port.

Step 6 Insert the fiber optic cable connector into the new optical module.

Step 7 Check the transmission of FE/GE signals by observing the status of the indicators labeled O. For details about the status of the indicators, see BTS3202E Indicators.

Step 8 Take off the ESD gloves, and pack up all the tools.

----End

Follow-up Procedure

- Place the removed optical module into the ESD box or bag. Then, place the ESD box or bag into a foam-padded carton or the packing box of the new module.
- Fill in the fault form with detailed information about the removed component.
- Contact the local Huawei office to handle the faulty optical module.