



Compliance and Safety Manual

AAU3940

Issue 01
Date 2015-12-15

HUAWEI TECHNOLOGIES CO., LTD.



Copyright © Huawei Technologies Co., Ltd. 2010. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions



HUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute the warranty of any kind, express or implied.

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

1 Safety

About This Chapter

- 1.1 Health and Safety
- 1.2 Equipment Safety
- 1.3 Electromagnetic Field Exposure

1.1 Health and Safety

- 1.1.1 Overview

1.1.1 Overview

Introduction

This section describes the safety precautions you must take before installing or maintaining Huawei equipment.

- To ensure safety of humans and the equipment, pay attention to the safety symbols on the equipment and all the safety instructions in this document.
- The "NOTE", "CAUTION", and "WARNING" marks in other documents do not represent all the safety instructions. They are only supplements to the safety instructions.
- Installation and maintenance personnel must understand basic safety precautions to avoid hazards.
- When operating Huawei equipment, in addition to following the general precautions in this document, follow the specific safety instructions given by Huawei.
- Only trained and qualified personnel are allowed to install, operate, and maintain Huawei equipment.
- To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Local Safety Regulations

When operating Huawei equipment, you must follow the local laws and regulations. The safety instructions in this document are only supplements to the local laws and regulations.

General Requirements

To minimize risk of personal injury and damage to equipment, read and follow all the precautions in this document before performing any installation or maintenance.

Ensure that the instructions provided in this document are followed completely. This section also provides guidelines for selecting the measuring and testing devices.

Installation

- The device (or system) must be installed in an access-controlled location.
- Tighten the thumbscrews by using a tool after initial installation and subsequent access to the panel.

Ground

- Do not damage the ground conductor or operate the device in the absence of a properly installed ground conductor. Conduct the electrical inspection carefully.
- The device (or system) must be connected permanently to the protection ground before an operation. The cross-sectional area of the protective ground conductor must be at least 16mm².
- The device must be fixed securely on the floor or other reliable objects, such as the walls and the mounting racks before operation.
- When installing the unit, always make the ground connection first and disconnect it last

Power Supply

- For DC-supplied model: The device applies to DC power source that complies with the Safety Extra-Low Voltage (SELV) requirements in IEC 60950-1 based safety standards.
- Prepared conductors are connected to the terminal block, and only the appropriate AWG/Type of wire is secured with the lug terminals.
- This device relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 80 VDC, 30A for DC supplied model is used on the phase conductors (all current-carrying conductors).
- For this device, a readily accessible disconnect device shall be incorporated external to the equipment
- To minimize the risk of fire, use only No. 26 AWG or larger telecommunication line cord.

Human Safety

- Do not operate the device or cables during lightning strikes.
- To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telecommunication network voltage (TNV) circuits.

- Move or lift the chassis by holding its lower edge. Do not hold the handles on certain modules such as power supply, fans, and boards because they cannot support the weight of the device.
- Do not look into the optical port without eye protection.
- Do not wear jewelry or watches when you operate the device.
- Reinforced insulation or double insulation must be provided to isolate DC source from AC mains supply.

Operator

- Only qualified professional personnel are allowed to install, configure, operate, and disassemble the device.
- Only the personnel authenticated or authorized by Huawei are allowed to replace or change the device or the parts of the device (including the software).
- Any fault or error that might cause safety problems must be reported immediately to a supervisor.
- Only qualified personnel are allowed to remove or disable the safety facilities and to troubleshoot and maintain the device.
- Ensure that the instructions provided in this document are followed completely. The document also provides guidelines in selecting the measuring and testing device.

1.2 Equipment Safety

1.2.1 Electricity Safety

Thunderstorm



CAUTION

During thunderstorms, the electromagnetic field generated in the thunderstorm area may damage the electronic parts. To prevent damage to the device during lightning, ground the device properly.

High Electrical Leakage



CAUTION

If the "high electrical leakage" tag is present on the power terminal of the device, you must ground the device before powering it on.

Fuse



WARNING

If a fuse is to be replaced, the new fuse must be of the same type and specifications.

1.3 Electromagnetic Field Exposure

Introduction

The Base Transceiver Station (BTS) emits Radio Frequency (RF) radiation. Follow the local safety regulations when installing and operating the BTS to avoid radiation hazard.

Guidelines on Limiting Exposure to Electromagnetic Fields

There are a number of international regulations, standards, and guidelines for exposure to electromagnetic fields. Some European countries have adopted the recommendation of the council of the European Union (1999/519/EC), released on July 12, 1999, focusing on the hazards of exposure to electromagnetic fields. The recommendation is based on the guideline published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

Location of Base Station Antennas

Base station antennas, the source of the radiation, are usually mounted:

- On freestanding towers, with a height up to 30 m
- On a tower on the top of buildings
- To the side of buildings, on rare occasions

Generally, the antenna cannot be located in a position lower than 10 m. The energy usually forms a horizontal main beam and is slightly tilted downwards. The remaining energy forms into weaker beams on both sides of the main beam. The main beam, however, does not reach the ground if the antenna is around 50–200 m away from the ground.

The highest level of emission would be expected in close vicinity of the antenna and in line of sight to the antenna.

Exclusion Zones

The requirements for exclusion zones are as follows:

- The antenna should be properly located to prevent the public from accessing the area where the RF radiation exceeds the previously mentioned limits.
- If areas with excessive RF radiation are accessible to the operation and maintenance (O&M) personnel, ensure that they know the source of radiation and can power off or shut down the transmitters before entering high radiation areas. In addition, such areas must be confined within a distance of 10 m from the antennas.

- Each exclusion zone should be defined by a physical barrier and by a recognizable sign warning the public or O&M personnel.

FCC Statement:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct

The interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

This device may not cause harmful interference, and this device must accept any interference received, including interference that may cause undesired operation.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate this equipment.

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 9.46 meters between the radiator and your body.

IC Statement

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

- This device may not cause interference; and
- This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- L'appareil ne doit pas produire de brouillage;

- L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This radio transmitter has been approved by Industry Canada to operate with the antenna types with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Radiation Exposure Statement

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 9.46m between the radiator & your body.

Déclaration d'exposition aux radiations

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 9.46m entre le radiateur et votre corps.