ZXSDR R8882

Macro Radio Remote Unit

Product Description

Hardware Version: HV2.1

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LEGAL INFORMATION

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Contents

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About This Manual

Purpose

The ZXSDR R8882 is a multi-mode remote RF unit that supports 2T2R/2T4R FDD. It supports GSM, UMTS, CDMA, and LTE communications systems and features compact structure, large capacity, and easy installation.

The ZXSDR R8882 works with a BBU to constitute the distributed SDR BTS, that is, ZXSDR of ZTE.

This manual provides a general description of the ZXSDR R8882, covering the product features, services and functions, system architecture, operation and maintenance, networking, and technical specifications.

Intended Audience

This manual is intended for

- Engineering personnel and technicians
- Installation engineers
- Maintenance engineers

What is in This Manual

This manual contains the following chapters:

Chapter	Summary
Chapter 1, Product Overview	Describes the position of the ZXSDR R8882 in the radio network, product features, services and functions, and installation scenarios.
Chapter 2, System Structure	Describes the hardware and software structures of the ZXSDR R8882 and the functions.
Chapter 3, Operation and Maintenance	Describes the operation and maintenance modes of the ZXSDR R8882.
Chapter 4, Networking	Describes the networking modes supported by the ZXSDR R8882.
Chapter 5, Technical Specifications	Describes the technical specifications of the ZXSDR R8882.
Chapter 6, FCC&IC STATEMENT	States that the device complies with Part 15 of the FCC Rules.

Conventions

ZTE documents employ the following typographical conventions.

Typeface	Meaning
Italics	References to other Manuals and documents.

Typeface	Meaning
“Quotes”	Links on screens.
Bold	Menus, menu options, function names, input fields, radio button names, check boxes, drop-down lists, dialog box names, window names.
CAPS	Keys on the keyboard and buttons on screens and company name.
	Note: Provides additional information about a certain topic.
	Checkpoint: Indicates that a particular step needs to be checked before proceeding further.
	Tip: Indicates a suggestion or hint to make things easier or more productive for the reader.

Chapter 1
Product Overview

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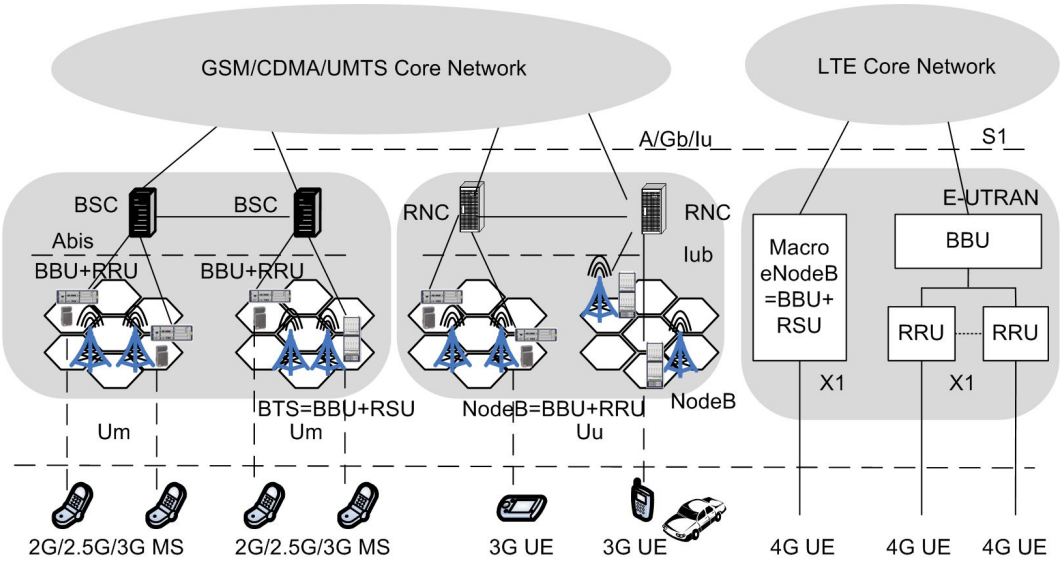
1.1 Position of the ZXSDR R8882 in the Radio Network

The ZXSDR R8882 is the outdoor remote Radio Frequency (RF) unit of the ZTE Base Transceiver Station (BTS). The ZXSDR R8882 and a Base Band Unit (BBU) form a complete BTS/NodeB/eNodeB, implementing radio transmission in the covered area, controlling radio channels and realizing the communication with the Base Station Controller (BSC)/Radio Network Controller (RNC)/Long Term Evolution (LTE).

Figure 1-1 shows the position of the ZXSDR R8882 (RRU) in the radio network.

Figure 1-1 Position of the ZXSDR R8882 in the Radio Network



1.2 Product Features

The ZXSDR R8882 is an outdoor Radio Remote Unit (RRU) with dual transmitters. The ZXSDR R8882 works with a Baseband Unit (BBU) to provide all logical functions of a BTS.

Based on the digital intermediate frequency and multi-carrier technologies, the ZXSDR R8882 is capable of transmitting dual channels of radio signals and receiving four channels of radio signals. The ZXSDR R8882 can act as an independent remote RF unit for Global System for Mobile Communication (GSM)/Universal Mobile Telecommunication System (UMTS)/Code Division Multiple Access (CDMA)/Long Term Evolution(LTE)

The features of the ZXSDR R8882 are as follows:

- Multiple radio access modes

  The ZXSDR R8882 supports single mode, dual mode, or multi-mode, including GSM, UMTS, CDMA, and LTE.

- Distributed architecture

  BBUs and RRUs constitute distributed BTS systems, providing flexible office deployment.

- Smooth evolution

  Through software upgrade, the ZXSDR R8882 can be smoothly evolved.

- Flexible configuration and networking

  → Because the dual-density multi-carrier technologies are used, when the ZXSDR R8882 works in GSM mode, it supports 2 x 6 carriers through software configuration. (A single channel supports 6 carriers.)

  → When the ZXSDR R8882 works in UMTS mode, it supports up to 2 × 4 carriers. (A single channel supports 4 carriers.)

  → When the ZXSDR R8882 works in CDMA mode, it supports up to 2 × 8 carriers. (A single channel supports 8 carriers.)

  → When the ZXSDR R8882 works in GSM/UMTS dual mode, the ZXSDR R8882 supports 4 GSM carriers + 1 UMTS carrier or 2 GSM carriers + 2 UMTS carriers (in each PA).

  → When the ZXSDR R8882 works in GSM/LTE dual mode, the ZXSDR R8882 supports 8 GSM TRXs + LTE 10 MHz (G/L dual-mode 900 MHz)or 8 GSM TRXs + LTE 20 MHz(G/L dual-mode 1800 MHz).

  → When the ZXSDR R8882 works in LTE mode, the ZXSDR R8882 supports one carrier.

  → The baseband-RF interface of ZXSDR R8882 supports star and chain networking.

- Advanced internal structure

  Between internal boards and modules, blind interconnection and hard link interconnection are used.

- Energy saving and environment-friendly design

Energy-saving and environment-friendly due to multi-carrier power amplifiers, and advanced Doherty and Digital Pre-Distortion (DPD) linear power amplification technologies.

- Easy installation and maintenance

  Easy installation and maintenance due to compact size and light weight.

1.3 Services and Functions

Services

The ZXSDR R8882 works with BBUs to provide the following services:

- GSM
  - → Full Rate (FR) voice service
  - → Enhanced Full Rate (EFR) voice service
  - → Half Rate (HR) voice service
  - → Adaptive Multiple Rate (AMR) voice service
  - → 9.6 Kbps Circuit Switched (CS) domain data service
  - → General Packet Radio Service (GPRS)
- UMTS
  - → R99 services
  - → HSDPA services
  - → HSUPA services
  - → HSPA+ services
- CDMA
  - → 1X service
  - → DO service
  - → PTT service
- LTE
  - → Improved capacity and data transmission speed of mobile network and shortened service latency, with 100 Mbps peak downlink data transmission rate and 50 Mbps peak uplink data transmission rate.
  - → Optimized data transmission based on IP architecture. As a whole-IP network, LTE supports both IPV4 and IPV6 and can transmit VoIP services.
  - → Scalable bandwidth and flexible spectrum analysis.
- Positioning services
  - → Cell ID, Cell ID + Round Trip Time (RTT), and Assisted Global Positioning System (AGPS) positioning

- Multimedia Broadcast/Multicast Service (MBMS) services:
  - → Supports broadcast and multicast functions, and supports the Point-To-Point (PTP) and Point-To-Multipoint (PTM) multicast modes.
  - → Supports mobility management.
  - → Supports the streaming and background MBMS services.

Basic Functions

- Common functions

  The ZXSDR R8882 works with BBUs to constitute the distributed BTS system. The ZXSDR R8882 forwards signals that are received or to be transmitted to the BBU for further processing. By connecting to the BBU, the ZXSDR R8882 provides the following functions:

  - → Through the antenna, the ZXSDR R8882 provides access to terminals and provides RF link transmission functions, including RF receiving/transmitting duplex, low noise amplification of received RF signals, amplification of sent RF signals, modulation/demodulation, measurement and report, power control, calibration, and synchronization.
  - → Supports mixed-mode networking structure.
  - → The ZXSDR R8882 is connected to the BBU through the optical interface. The optical interface implements the following functions: clock synchronization, propagation delay measurement and compensation, IQ data transmission, operation maintenance and configuration.
  - → Provides power amplifier control and protection functions, including over-power-amplification alarms, over-temperature alarms, and Standing Wave Ratio (SWR) alarms. Supports protection against reverse power connection. Supports alarm query for operation and maintenance.
  - → Through the operation and maintenance interface, provides system management functions, including configuration management, alarm management, status check and monitoring.
  - → Locally/remotely supports software and hardware versions inquiry, software upgrade, board resetting, power inquiry, automatic calibration, and RET antenna adjustment.

- GSM mode

  When working in GSM mode, the ZXSDR R8882 provides the following functions:

  - → Supports GSM frequency bands.
  - → Supports GSM Phase I/Phase II/Phase II +.
  - → Supports GPRS CS1 to CS4 encoding modes.
  - → Supports space diversity, frequency diversity, time diversity, and polarization diversity.

- → The receive end supports the Viterbi decoding algorithm, improving the system receive sensibility and channel decoding capability.
- → Supports frequency hopping and Discontinuous Transmission (DTX).
- → Supports Timing Advance (TA) calculation and super-distance coverage. The maximum coverage distance is 120 km.
- → Supports the Co-BCCH technology.

- UMTS mode

  When working in UMTS mode, the ZXSDR R8882 provides the following functions:

  - → Supports UMTS frequency bands.
  - → Supports UMTS R99, R4, R5, R6, R7, and R8.

- CDMA mode

  When working in CDMA mode, the ZXSDR R8882 provides the following functions:

  - → Supports CDMA frequency bands.
  - → The air interface complies with the IS-2000 Release A series standards and IS-856-A standard.
  - → Provides Received Signal Strength Indicator (RSSI) query.
  - → Provides reverse spectrum query.

- LTE mode

  When working in LTE mode, the ZXSDR R8882 provides the following functions:

  - → Supports LTE frequency bands.
  - → The air interface complies with related 3GPP standards.
  - → Supports QPSK, 16-QAM, and 64-QAM on uplink and downlink.
  - → Supports Multiple-Input Multiple-Output (MIMO).

- Mixed mode

  When working in mixed mode, the ZXSDR R8882 provides the following functions:

  - → The air interface complies with the related 3GPP and 3GPP2 standards.
  - → Supports the mixed-mode configuration, such as GU, GL, and CL, for corresponding frequency bands.

1.4 Product Specifications

Table 1-1 shows the specifications of the ZXSDR R8882.

Table 1-1 Product Specifications

Product Specifications	Description
ZXSDR R8882 S9000 (C)	Three optical ports; a maximum of 6 Gbps; GSM single mode; 900 MHz frequency band; 2 × 60 W

Product Specifications	Description
ZXSDR R8882 S1800 (C)	Three optical ports; a maximum of 6 Gbps; GSM single mode, 1800 MHz frequency band; 2 × 60 W
ZXSDR R8882 S9000 (B)	Two optical ports; a maximum of 3 Gbps; GSM single mode, UMTS single mode, or GSM/UMTS dual mode; 900 MHz frequency band; 2 × 60 W
ZXSDR R8882 S9000 (B6C)	Two optical ports; a maximum of 3 Gbps; GSM single mode, 900 MHz frequency band; 35MHz bandwidth for duplexer, 2 × 60 W
ZXSDR R8882 S8500 (B6B)	Two optical ports; a maximum of 3 Gbps; CDMA/GSM single mode, GSM/UMTS dual mode, or CDMA/LTE dual mode; 850 MHz frequency band; 2 × 60 W
	Two optical ports; a maximum of 3 Gbps; CDMA/LTE dual mode; 850 MHz frequency band; 2 × 60 W
ZXSDR R8882 S8000 (B4A)	Two optical ports; a maximum of 3 Gbps; LTE single mode ; DD frequency band; 2 × 40 W
ZXSDR R8882 S2600 (B4A)	Two optical ports; a maximum of 3 Gbps; LTE single mode ; 2.6 Gbps frequency band; 2 × 30 W
	Two optical ports; a maximum of 3 Gbps; LTE single mode ; 2.6 Gbps frequency band; 2 × 40 W, CEPT
ZXSDR R8882 S2600 (B6A)	Two optical ports; a maximum of 3 Gbps; LTE single mode ; 2.6 Gbps frequency band; 2 Carrier, 2 × 60 W, CEPT
ZXSDR R8882 S2100 (B)	Two optical ports; a maximum of 3 Gbps; UMTS single mode; 2T4R; 2100 MHz frequency band; 2 × 60 W
	Two optical ports; a maximum of 3 Gbps; LTE single mode; single Carrier; 2100 MHz frequency band; 2 × 60 W
ZXSDR R8882 S1900 (B6B)	Two optical ports; a maximum of 3 Gbps; CDMA/GSM single mode, GSM/UMTS dual mode, or CDMA/LTE dual mode; 1900 MHz frequency band; 2 × 50 W
	Two optical ports; a maximum of 3 Gbps; LTE single mode; 1900 MHz frequency band; 2 × 60 W
ZXSDR R8882 S1800 (B6B)	Two optical ports; a maximum of 3 Gbps; GSM single mode, or GSM/LTE dual mode; 1800 MHz frequency band; 2 × 60 W
ZXSDR R8882 S1800 (B6C)	Two optical ports; a maximum of 3 Gbps; 2T2R, GSM single mode; 1800 MHz frequency band; 2 × 60 W
ZXSDR R8882 S1700 (B6A)	Two optical ports; a maximum of 3 Gbps; LTE single mode; 1700 MHz frequency band; 2 × 60 W

Product Specifications	Description
ZXSDR R8882 S8100 (B6B)	Two optical ports; a maximum of 3 Gbps; LTE single mode; 810 MHz frequency band; 2 × 60 W
ZXSDR R8882 S7200 (B6A)	Two optical ports; a maximum of 3 Gbps; LTE single mode; 2T2R; 720 MHz frequency band; 2 × 60 W

1.5 Installation Scenarios

The ZXSDR R8882 supports the following installation modes: wall-mounting, pole-mounting, and L-shape gantry-mounting.

- Wall-mounting

  The ZXSDR R8882 can be wall-mounted indoor or outdoor.

- Pole-mounting

  In pole-mounting installation, you can install one, two, three, or four ZXSDR R8882 devices on one pole.

- L-shape gantry mounting

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Chapter 2
System Structure

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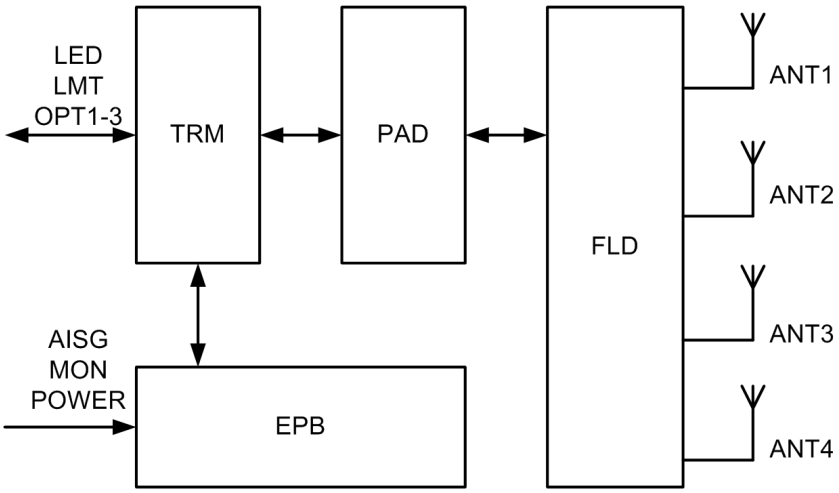
2.1 Hardware Subsystem

Figure 2-1 takes the ZXSDR R8882 with three optical ports for example to show the general hardware architecture.

Figure 2-1 ZXSDR R8882 Hardware Subsystem



NOTE **Note:**

The OPT3 interface is not available for a ZXSDR R8882 with two optical interfaces.

The ZXSDR R8882 is composed of Multi-mode TRX module (TRM), Power amplification module (PAD), Duplexer and filter (FLD), and EMC protection module (EPB). The functions of each module are as follows:

TRM

- Processes uplink and downlink RF signals.
- Processes optical interface signals.

- Processes clock signals.
- Provides LED indication.
- Provides external monitoring interfaces.
- Supports local or remote monitoring.

PAD

- Amplifies downlink radio signals received from the TRM, and outputs the amplified signals to the FLD.
- Amplifies four signals received from the FLD through the LNA, and then sends the amplified signals to the TRM.
- Provides a pre-distortion feedback interface for the TRM.
- Provides an interface to the TRM for Voltage Standing Wave Ratio (VSWR) detection (forward power detection).
- Supports separate switch-off.
- Supports inner-module temperature detection.

FLD

- Transmits and receives uplink and downlink signals in duplex mode.
- Suppresses spurious emission on the downlink to get acceptable out-band Tx spurious emission required by the system and related protocol.
- Suppresses interference signals on the uplink to achieve a satisfied noise coefficient.

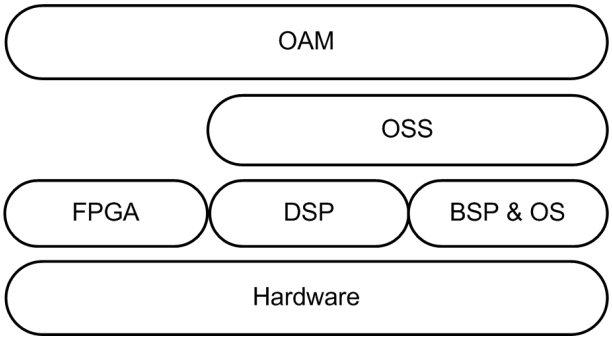
EPB

- Provides lightning protection for -48 V power supply.
- Provides -48 V power filter.
- Protects AISG signals (AISG power, half-duplex 485 signal).
- Performs dry contact protection.
- Protects the RS485 monitoring signals.
- Provides adaptation for external MON interface, AISG interface, and power interface.

2.2 Software Subsystem

Figure 2-2 shows the software subsystem of the ZXSDR R8882.

Figure 2-2 Software Architecture



The lower-layer software modules of boards include BSP, DSP, and FPGA.

- BSP&OS module: initializes the system hardware, and provides driver interface functions and operating system.
- DSP module: exchanges information with the CPU, exchanges control signals and data with the FPGA module, implements maintenance and measurement functions such as extracting and updating pre-distortion parameters, and detecting errors and alarms.
- FPGA module: exchanges control signals and data with the BSP and DSP modules.

The Operation Support Sub-system (OSS) is a support layer for the entire software. It provides a hardware irrelevant platform on which the system software runs to provide basic software functions, such as scheduling, timing, memory management, inter-module communication, queuing controlling, monitoring, alarm management, and log management.

The OAM provides the functions of version management, fault management, diagnosis test, configuration management, tool management, performance management, system management, dynamic data management, and communication management.

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Chapter 3
Operation and Maintenance

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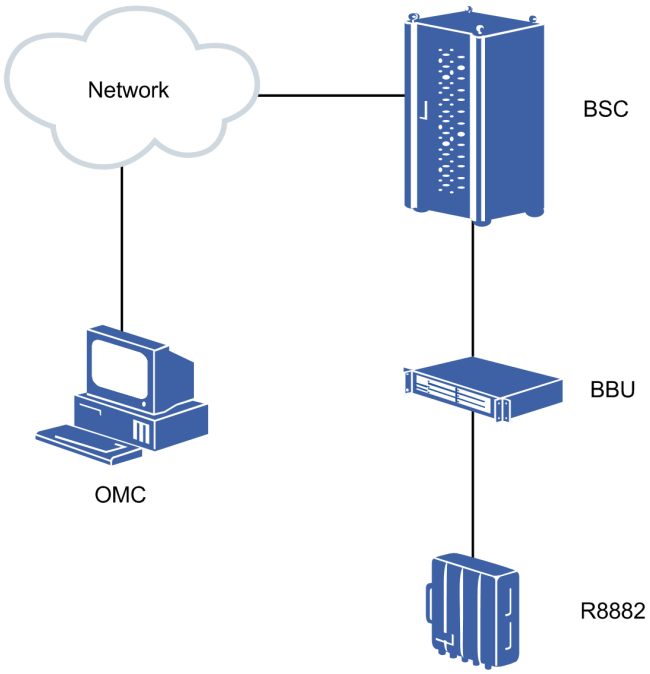
3.1 Operation and Maintenance Modes

Remote Maintenance Mode

In remote maintenance mode, the NetNumen™ M3 OMC of ZTE is connected to the BSC/RNC/BBU, and then connected to the ZXSDR R8882 through the Abis/Iub/CPRI interface. In this way, you can operate and maintain the ZXSDR R8882 through the OMC. Figure 3-1 shows the networking.

Figure 3-1 Remote Maintenance Mode (Taking CDMA and GSM for Example)

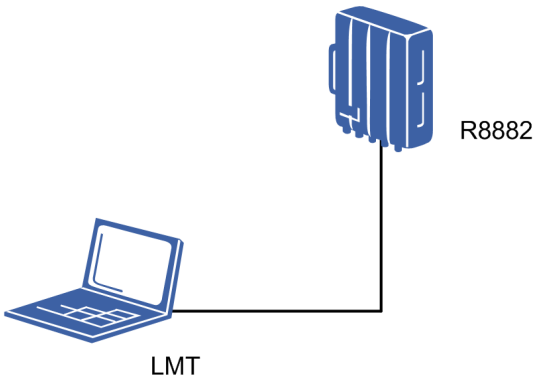


In remote maintenance mode, the OMC and NEs are connected through the TCP/IP protocol. One OMC can maintain multiple BTSs.

Local Maintenance Mode

In local maintenance mode, the Local Maintenance Terminal (LMT), usually a PC, is connected to the ZXSDR R8882 through an Ethernet cable. Figure 3-2 shows the networking.

Figure 3-2 Local Maintenance Mode



Through the LMT, you can query the power, increase or decrease the power, and perform calibration on the ZXSDR R8882. Through the LMT, you can maintain the entire BTS.

3.2 Operation and Maintenance Functions

The NetNumen™ M3 OMC provides a topological view on the GUI interface. Through the GUI interface, users can view the information about all the NEs in the entire network. The users can select a required NE and view its detailed performance data, alarm information, and configuration data. They can also operate and maintain one type of NEs through the topological view. The OMC provides the following functions:

- Configuration management

  Adds, queries, deletes, modifies physical and radio resource data of BTSs. Performs data consistency check; and supports dynamic and static data configuration modes.

- Security management

  Ensures that only authorized users can perform the specified groups of commands.

- Performance management

  Supports performance analysis, invocation tracing, and signaling tracing.

- Version management

  Through the OMC, users can query the software and hardware versions that are in use. The OMC provides the software download mechanism, supporting software upgrade of NEs.

- Fault management

  Supports alarm management and diagnosis test. Monitors the BTS operating status in a centralized manner; Collects abnormal information of boards and links in real time,

which helps the operation and maintenance personnel to determine the equipment faults and maintain the equipment.

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Chapter 4
Networking

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4.1 Networking Description

Table 4-1 shows the networking description of the ZXSDR R8882.

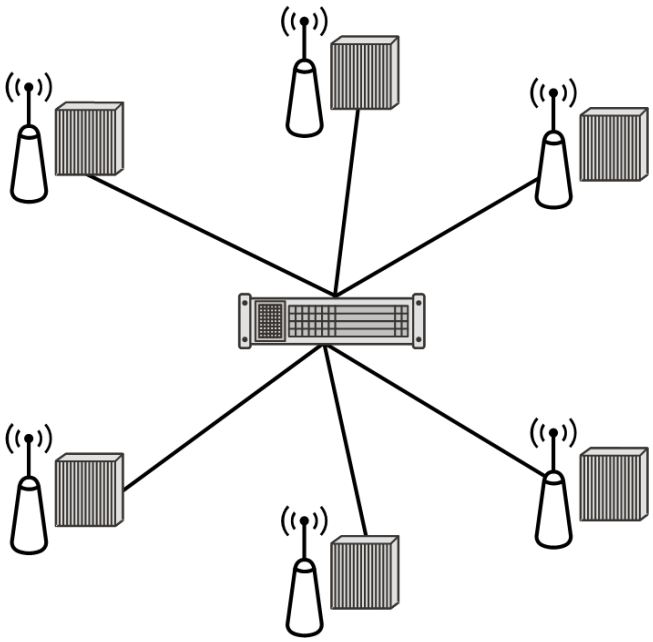
Table 4-1 Networking Description

Network Type	GSM	UMTS	CDMA	LTE
Star Networking	support	support	support	support
Cascade Networking	support(4 grades)	support(4 grades)	support(6 grades)	not support

4.2 Star Networking

Figure 4-1 shows the star networking of a BBU and multiple RRUs (ZXSDR R8882).

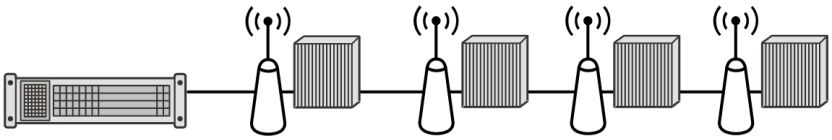
Figure 4-1 Star Networking



4.3 Cascade Networking

Figure 4-2 shows the cascade networking of a BBU and multiple RRUs (ZXSDR R8882).

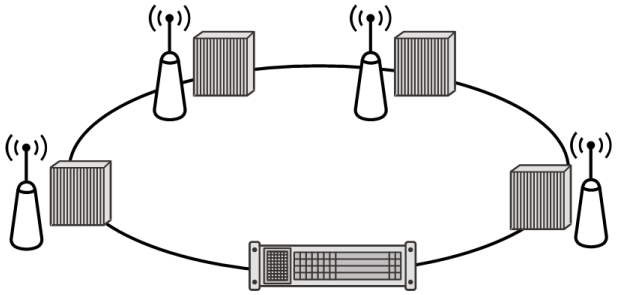
Figure 4-2 Cascade Networking



4.4 Ring Networking

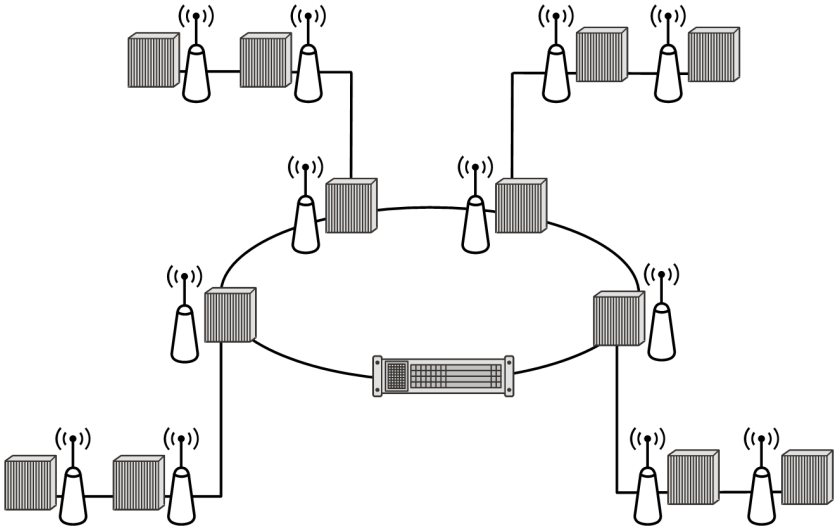
Ring networking is only available for CRAN. Figure 4-3 shows the ring networking of a BBU and multiple RRUs (ZXSDR R8882).

Figure 4-3 Ring Networking



When ZXSDR R8882 provides three optical ports, chain (cascading) networking can be added to the ring networking, as shown in Figure 4-4.

Figure 4-4 Ring and Chain Networking (with Three Optical Ports)



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Chapter 5
Technical Specifications

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5.1 Physical Specifications

Appearance

Item	Specifications
Dimensions	480 mm × 320 mm × 150 mm (Height × Width × Depth)
Weight	23 kg
Color	White

Power Supply Requirements and Power Consumption

Item	Specifications
Average power consumption in GSM single mode	S44: 310 W(900 MHz) / 320 W(1800 MHz) S66: 295 W(900 MHz) / 305 W(1800 MHz) S66: 355 W(850 MHz) / 440 W(1900 MHz)
Average power consumption in UMTS single mode(900 MHz)	S1: 140 W S2: 165 W S3: 185 W S11: 210 W S22: 265 W S33: 310 W S1 MIMO: 210 W S2 MIMO: 265 W S3 MIMO: 315 W

Item	Specifications
Average power consumption in UMTS single mode(2100 MHz)	S1: 130 W S2: 150 W S3: 180 W S11: 200 W S22: 215 W S33: 265 W S1 MIMO: 170 W S2 MIMO: 215 W S3 MIMO: 270 W
Average power consumption in CDMA single mode	310 W (850 MHz) / 320 W (1900 MHz)
Average power consumption in LTE single mode	330 W (1800 MHz)
Rated input voltage	–48 V DC (-57 V DC~-37 V DC)

Environmental Requirements

Item	Specifications
Operation	Ambient temperature: -40 ℃ to +55 ℃ Relative humidity: 10 % to 100 %
Storage	Ambient temperature: -40 ℃ to +70 ℃ Relative humidity: 10 % to 100 %
Transportation condition	In condition of 4K2, 4Z5, 4Z7, 4B1, 4C2, 4S3, or 4M3, the transportation must be completed within 180 days

Reliability

Item	Specifications
Availability	99.999689%
Mean Time Between Critical Failures (MTBF)	≥322,000 hours
Mean Time To Recovery (MTTR)	1 hour
System service interruption time	The service interruption time of the entire system is less than 1.632 minutes per year.

Wind Load

Wind Speed	Front	Side	Rear
150 km/h	422 N	197 N	422 N
240 km/h	1092 N	510 N	1092 N

5.2 Radio Performance

Capacity Specifications

Item	Specifications
GSM single mode	Maximum: 2 × 6 carriers
UMTS single mode	Maximum: 2 × 4 carriers
CDMA single mode	Maximum: 2 × 8 carriers
LTE single mode	1 carrier
GSM/UMTS dual mode	2 × 4 GSM carriers + 2 × 1 UMTS carriers, or 2 × 2 GSM carriers + 2 × 2 UMTS carriers
GSM/LTE dual mode	● G/L dual-mode 900 MHz: 8 GSM TRXs + LTE 10 MHz ● G/L dual-mode 1800 MHz: 8 GSM TRXs + LTE 20 MHz
CDMA/LTE dual mode	2 × 4 CDMA carriers + 2 × 1 LTE carriers

RF Specifications

Item	Specifications
Working frequency band	● GSM: 850 MHz/900 MHz/1800 MHz/1900 MHz ● UMTS: 850 MHz/900 MHz/1900 MHz/2100 MHz ● CDMA: 850 MHz/1900 MHz ● LTE: 800 MHz/1800 MHz/2600 MHz/1700 MHz/720 MHz
Transmit power	● GSM (850 MHz/900 MHz/1800 MHz): 2 × 60 W(GMSK)/2 × 40 W(8PSK) ● GSM (1900 MHz): 2 × 60 W(GMSK)/2 × 32 W(8PSK) ● UMTS: 2 × 60 W(900 MHz/2100 MHz/850 MHz)，2 × 60 W(1900 MHz) ● LTE: 2 × 60 W(S1700)/2 × 60 W(S1800)/2 × 40 W(S8000)/2 × 30 W(S2600)/2 × 60 W(S7200)
Static receiver sensibility	● GSM: -113.5 dBm (850 MHz/900 MHz/1800 MHz) ● UMTS single antenna: -125.8 dBm ● UMTS dual antennas: -128.5 dBm ● CDMA: –115 dBm ● LTE single antenna: -106 dBm ● LTE dual antenna: -108.6 dBm

5.3 Interfaces

The ZXSDR R8882 provides the following interfaces:

Item	Specifications
Baseband-RF interface (optical port)	ZXSDR R8882 S9000(C) Provides three optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ● OPT3: the interface through which the ZXSDR R8882 is cascaded to a branch RRU(for CRAN) ZXSDR R8882 S1800(C) Provides three optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ● OPT3: the interface through which the ZXSDR R8882 is cascaded to a branch RRU(for CRAN) ZXSDR R8882 S9000(B) Provides two optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ZXSDR R8882 S8500(B) Provides two optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ZXSDR R8882 S8000(B) Provides two optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ZXSDR R8882 S2600(B) Provides two optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ZXSDR R8882 S2100(B) Provides two optical ports:

Item	Specifications
	● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ZXSDR R8882 S1900(B) Provides two optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ZXSDR R8882 S1800(B) Provides two optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU ZXSDR R8882 S1700(B) Provides two optical ports: ● OPT1: the interface through which the ZXSDR R8882 is cascaded to a BBU ● OPT2: the interface through which the ZXSDR R8882 is cascaded to an RRU
MON interface	One MON interface, through which the external monitoring devices are connected, providing input of RS485 signals and two pairs of dry contacts.
Ethernet interface	One Ethernet interface, which is used for local maintenance.
Antenna and feeder interface	Four antenna and feeder interfaces through which antennas and feeders are connected.
AISG interface	One AISG interface, which is used for the electrical tilt tunable antenna.
Power interface	One power interface, which provides external power input.
Protective Earth (PE) interface	One PE interface, through which the ZXSDR R8882 is connected to the PE.

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Chapter 6
FCC&IC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

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

Note:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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Glossary

AGPS
- Assisted Global Positioning System

AMR
- Adaptive Multiple Rate

BBU
- Base Band Unit

BSC
- Base Station Controller

BSP
- Board Support Package

BTS
- Base Transceiver Station

CDMA
- Code Division Multiple Access

CS
- Circuit Switched

DO
- Digital Output

DPD
- Digital Pre-Distortion

DSP
- Digital Signal Processing

DTX
- Discontinuous Transmission

EFR
- Enhanced Full Rate

FDD
- Frequency Division Duplex

FPGA
- Field Programmable Gate Array

FR
- Full Rate

GPRS
- General Packet Radio Service

GSM
- Global System for Mobile Communications

HR
- Half Rate

HSDPA
- High Speed Downlink Packet Access

HSUPA
- High Speed Uplink Packet Access

LMT
- Local Maintenance Terminal

LTE
- Long Term Evolution

MBMS
- Multimedia Broadcast/Multicast Service

MIMO
- Multiple-Input Multiple-Output

MTBF
- Mean Time Between Failures

MTTR
- Mean Time To Recovery

OAM
- Operation, Administration and Maintenance

OSS
- Operation Support Subsystem

PE
- Protective Earth

PTM
- Point To Multipoint

PTP
- Point-To-Point

PTT
- Push-To-Talk

RET
- Remote Electrical Tilt

RF
- Radio Frequency

RNC
- Radio Network Controller

RRU

- Remote Radio Unit

RSSI

- Received Signal Strength Indicator

RTT

- Round Trip Time

SDR

- Software Defined Radio

SWR

- Standing Wave Ratio

TA

- Timing Advance

UMTS

- Universal Mobile Telecommunication System

VSWR

- Voltage Standing Wave Ratio