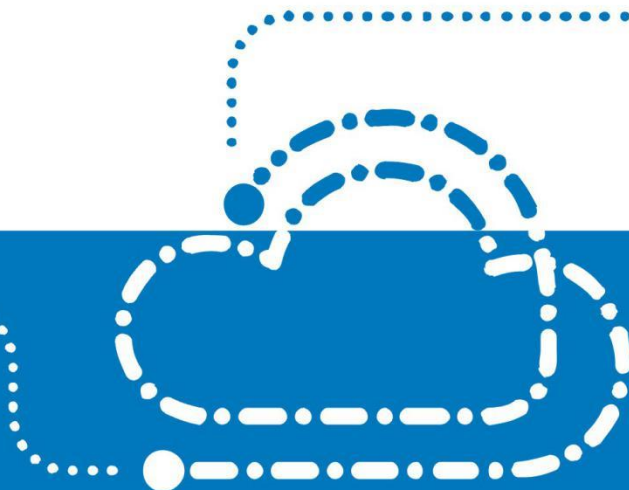


ZTE

Operator Logo

ZXSDR A8988S S3600

Product Description



ZXSDR A8988S S3600 Product Description

Version	Date	Author	Reviewer	Notes
V1.0	2017-07-24	Liu Qiang	Wei Yuan	Newly write the product description, including product highlights, function, system structure, technical specification, installation modes, networking modes, etc.

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1 **FCC Related Statements**

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses 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.

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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 1.26 m between the radiator & your body.

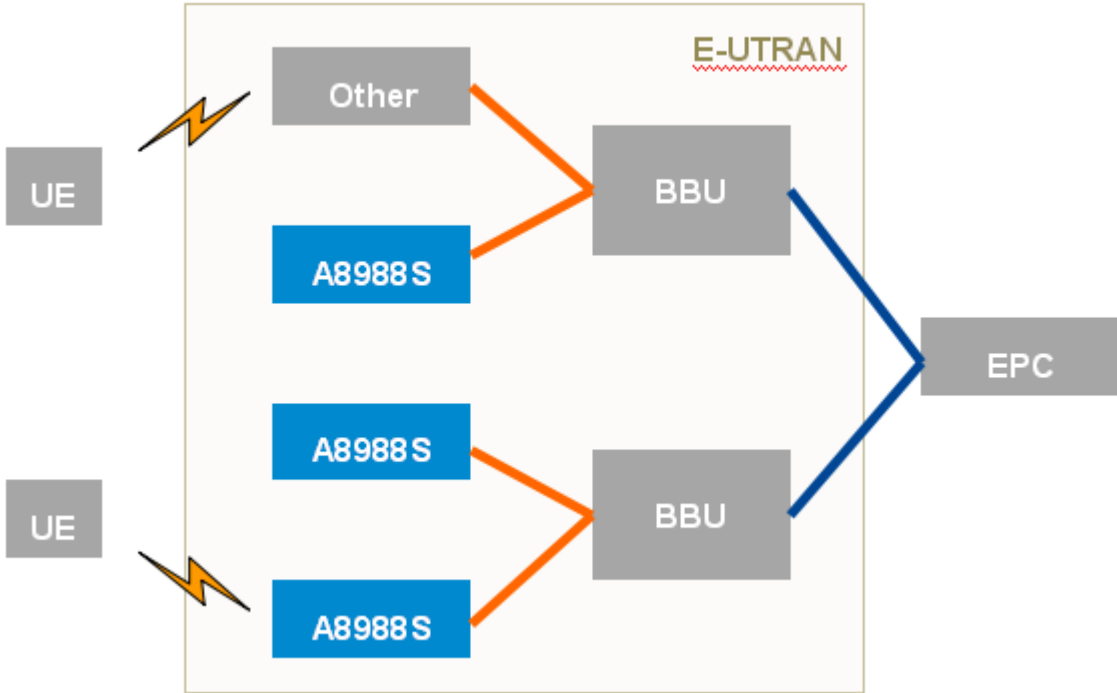
2 Overview

The ZXSDR A8988S is an 8T8R AAU integrated with antenna, and its ultra wide bandwidth and large capacity make it quite suitable for macro coverage in various scenarios.

Generally, the existing distributed base stations use the BBU + RRU architecture. As an AAU, the ZXSDR A8988S is connected with the Base Band Unit (BBU) by optical fibers to form an integrated base station. It has internal antennas to provide the Uu interface to the User Equipment (UE).

Figure 2-1 shows its position in the TD-LTE system.

Figure 2-1 Position of the A8988S in the TD-LTE System



3 Product Highlights

3.1 Unified Platform

The ZXSDR A8988S is based on the unified SDR platform, and can smoothly evolve to support future new technologies. It supports TD-LTE, and provides smooth evolution to LTE-A. The ZXSDR A8988S satisfies a variety of networking requirements, and maximizes operators' investments.

3.2 Green Base Station

The ZXSDR A8988S supports OBW 50MHz, reducing the number of devices and avoiding the hardware upgrade replacement.

Multiple high-efficiency power amplifier technologies are used, including Crest Factor Reduction (CFR), Digital Pre-distortion (DPD) and Doherty, effectively reduce the power consumption.

The ZXSDR A8988S supports natural heat dissipation, power saving and without any noise.

Timeslot energy saving and voltage regulation energy saving are provided to save power consumption.

3.3 Large Capacity, High Performance, MIMO and BF

The ZXSDR A8988S supports OBW 50MHz filling 3650-3700 MHz.

The EIRP of the ZXSDR A8988S is 40 dBm/10 MHz, meeting the requirements of FCC part 90 (§90.1321 Power and antenna limits).

The ZXSDR A8988S supports Carrier Aggregation (CA), effectively improving the system capacity.

The ZXSDR A8988S supports MIMO and BF, greatly optimizing the spectrum efficiency and bringing an excellent user experience.

3.4 Integrated Antenna, Improved Performance and Lower Installation Costs

The ZXSDR A8988S is integrated with antenna, reducing the project time and improving the project quality without RF cable installation.

Reducing the loss of jumper and connector, the capacity of the uplink and downlink is enhanced.

3.5 Camouflage Design and Easy Site Selecting

The features of the ZXSDR A8988S, beautified design, high integration, lightweight and compact, can reduce the difficulty of site selecting and make it suitable for outdoor camouflage macro coverage.

4 **Functionality**

The ZXSDR A8988S has the following functions:

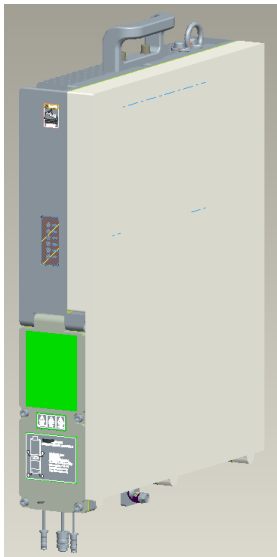
- Eight-channel antenna to receive and transmit signals, MIMO and BF technologies, integrated antenna
- Channel bandwidth: 10MHz, 20MHz
- Uplink and downlink timeslot configuration
- GPS backhaul and channel calibration
- BBU-RRU interface
- DC power supply
- Local maintenance terminal (LMT), monitoring and management

5 System Structure

An aluminum-alloy die-casting chassis with plastic antenna housing is used for the ZXSDR A8988S. The chassis has the traits of light weighted and excellent heat dissipation. With AAS integrated design, the ZXSDR A8988S has the features of small size and compact structure.

The following figure shows the external view of the ZXSDR A8988S.

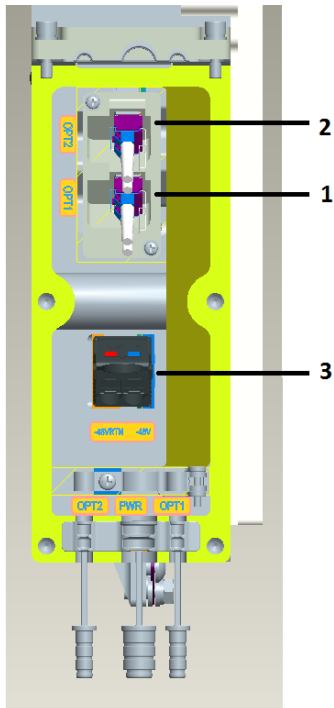
Figure 5-1 External View of ZXSDR A8988S



The external interfaces of the chassis are distributed in the side operation maintenance unit and in the bottom chassis. The side operation maintenance unit includes an embedded DC power interface and two optical interfaces (OPT1 and OPT2). The indicators and operation maintenance unit are located on the same side so that the operational status of ZXSDR A8988S can be easily observed.

The following figure shows the side interfaces of the ZXSDR A8988S.

Figure 5-2 Side Interfaces of the ZXSDR A8988S



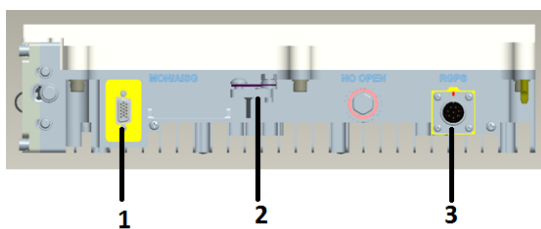
The following table shows the type and connector of the side interfaces of the ZXSDR A8988S.

Table 5-1 Side Interfaces of the ZXSDR A8988S

No.	Label	Interface
1	OPT1	Optical interface, BBU and RRU Interface/RRU superior cascading interface
2	OPT2	Optical interface, BBU and RRU Interface/RRU subordinate cascading interface
3	PW	-48 V power input interface

The following figure shows the bottom interfaces of the ZXSDR A8988S.

Figure 5-3 Bottom Interfaces of the ZXSDR A8988S



The following table shows the type and connector of the bottom interfaces of the ZXSDR A8988S.

Table 5-2 Bottom Interfaces of the ZXSDR A8988S

No.	Label	Interface
1	MON/AISG	MON/AISG interface
2	PE	Protective earth interface
3	RGPS	RGPS interface

6 Technical Specifications

6.1 System Indices

Table 6-1 System Indices of the ZXSDR A8988S

Item	Description
Duplexing Mode	TDD
Operating band	Part 96: 3550-3700 MHz, band 48 Part 90, subpart Z: 3650-3700 MHz
Channel Raster	100 kHz
Instantaneous Bandwidth	Part 96: 150 MHz Part 90, subpart Z: 50 MHz
Occupied Bandwidth	Part 96: 80 MHz Part 90, subpart Z: 50 MHz
EIRP	Part 96: Maximum 47 dBm/10 MHz Part 90, subpart Z: Maximum 40 dBm/10 MHz
Reference Sensitivity Levels	-103 dBm
Antenna Type	Integrated-antenna
Antenna Gain	12 dBi
Frequency Error	±0.05 ppm
Physical Interface	Optical interface, power interface, monitoring interface, LMT interface
IP Code/IEC standard 60529	RRU IP66, Antenna IP55
MTBF	> 180000 hours
MTTR	< 1 hour

6.2 Weight and Dimensions

Table 6-2 Weight and Dimensions of the ZXSDR A8988S

Item	Description
Total Weight	13 kg
Dimensions (H x W x D)	450 x 372 x 93 (mm)

6.3 Electrical Characteristics

Table 6-3 Electrical Characteristics of the ZXSDR A8988S

Item	Description
Operational Power Supply	-48 V DC (-37 V DC to -60 V DC) 100/110/220 V AC (90 V AC to 290 V AC, external lighting protection box)
Power Consumption	168 W (DL/UL 2:2) (typical) 199 W (DL/UL 3:1) (typical)

6.4 Environmental Requirements

6.4.1 Working Environment Requirements

Table 6-4 Working Environment Requirements of the ZXSDR A8988S

Item	Description
Temperature	-40°C to +55°C
Normal Operating Humidity	4% to 100%
Air Pressure	70 kPa to 106 kPa

6.4.2 Storage Environment Requirements

Table 6-5 Storage Environment Requirements of the ZXSDR A8988S

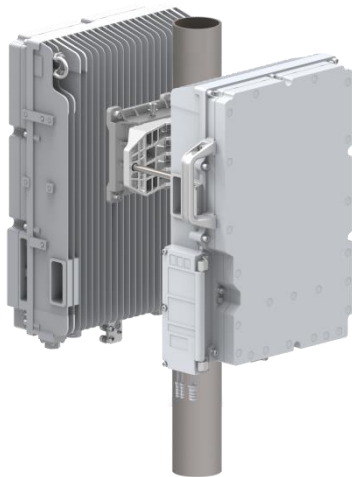
Item	Description
Temperature	-50°C to +70°C
Normal Operating Humidity	5% to 100%
Air Pressure	70 kPa to 106 kPa

7 Installation Modes

The ZXSDR A8988S can be installed in the following modes:

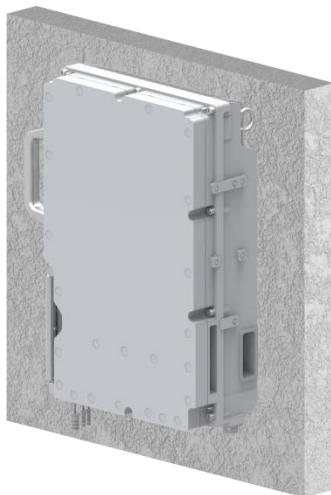
- Pole-mounted installation

Figure 7-1 Pole-mounted Installation



- Wall-mounted installation

Figure 7-2 Wall-mounted Installation



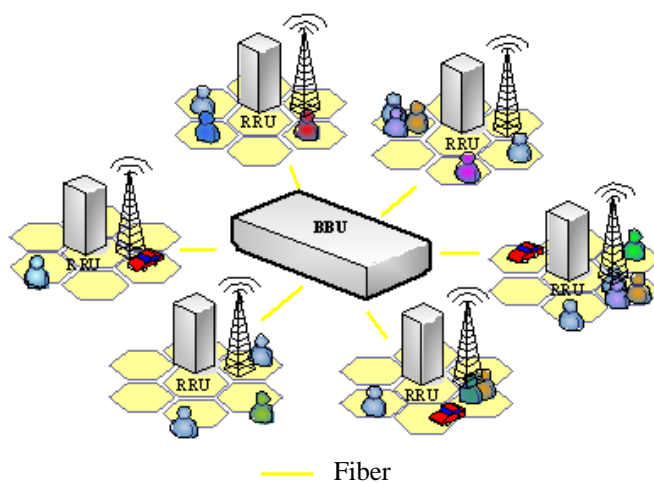
8 Networking Modes

The ZXSDR A8988S supports star networking solution.

In the star network, each AAU/RRU is connected to the BBU as the end equipment to facilitate maintenance and engineering. The network of this type ensures reliable signal transmission due to the simple transmission route.

The following figure shows the star networking deployment of the ZXSDR A8988S.

Figure 8-1 Star Networking Deployment of the ZXSDR A8988S



9 Glossary

AAU	Active Antenna Unit
BBU	Base Band Unit
CA	Carrier Aggregation
CFR	Crest Factor Reduction
DPD	Digital Pre-distortion
eNodeB	Evolved Node B
EPC	Evolved Packet Core
IBW	Instantaneous Bandwidth
IP66	International Protection code 66
IQ	In-phase - Quadrature phase
LMT	Local Maintenance Terminal
LTE	Long Term Evolution
MIMO	Multiple-Input Multiple-Out-put
MTTR	Mean Time To Repair
MTBR	Mean Time Between Failures
OAM	Operation and Maintenance
OBW	Occupied Bandwidth
RRU	Remote Radio Unit
SDR	Software Defined Radio
TD-LTE	Time Division Duplex-Long Term Evolution