
CZ2408E51S

Specification Document

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1、Overview

The CZ2408E51S 5G integrated base station can be equipped with an optional 5G core network and optional self-organizing network capabilities. It features interference resistance based on spectrum sensing, meeting the requirements for independent running of 5G base stations as well as the needs for inter-cell coordinated networking between 5G base stations.

2、Product Appearance and External Interfaces

2.1 Product Appearance



Figure 1: Appearance of CZ2408E51S

2.2 External Interfaces

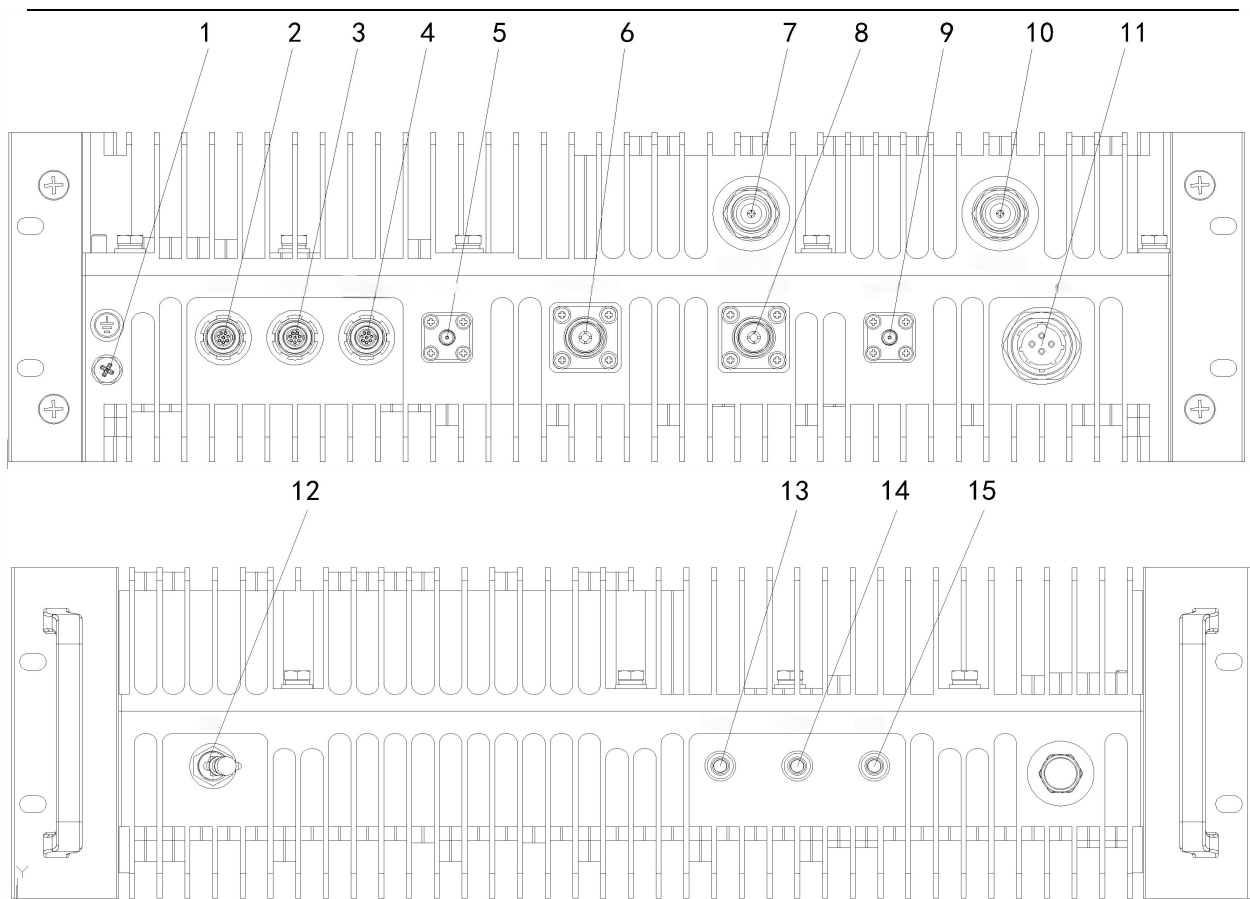


Figure 2: External Interface Diagram

Table 1: External Interface Description

Number	Function	Description	Notes
1	GND	For installing ground cable	
2	Scenario 1	Ethernet interface, used for base station backhaul data transmission	Aerospace Connector
3	Scenario 2	Reserved	Aerospace Connector
4	Maintenance / External Time Reference	External Time of Day (TOD) input, Pulse Per Second (PP1S) input, and system debugging serial port	Aerospace Connector
5	Specturm-Scanning Antenna	Specturm-Scanning Antenna Interface	SMA Female Connector
6	Self-Organizing	Self-Organizing Network Antenna 1	N Female

Number	Function	Description	Notes
	Network Antenna 1		Connector
7	5G Antenna 1	5G NR Antenna 1	N Female Connector
8	Self-Organizing Network Antenna 2	Self-Organizing Network Antenna 2	N Female Connector
9	Beidou Antenna	Beidou Antenna Interface	SMA Female Connector
10	5G Antenna 2	5G NR Antenna 2	N Female Connector
11	Power Supply DC24V	24V DC Power Input	Aerospace Connector
12	Switch	Power Supply Switch	
13	System 1	For 5G networking, ON: NG_TX status is normal; OFF: abnormal	
14	System 4	Self-Organizing Network Indicator Light, ON: Self-Organizing Network Established Successfully, OFF: Network Not Established	
15	Power	Power Indicator Light, ON: Powered On, OFF: Not Powered	

3、Product Technical Specifications

3.1 Functional Specifications

- (1) The entire unit adopts an integrated design, including a 5G base station, optional 5G core network, and optional self-organizing network, supporting concurrent operation of 5G and self-organizing network dual modes;
- (2) It has the capability for user access, authentication, and mobility management;
- (3) It has the ability to support roaming handover between 5G user cells;
- (4) It has the capability for user bearer resource policy control;
- (5) It has interference resistance based on spectrum sensing;
- (6) Multiple devices have the capability for networking based on collaborative frequency planning;
- (7) It has GPS/Beidou positioning capability;
- (8) It supports Beidou timing reference and external timing reference;
- (9) It can be integrated into a 19-inch standard rack.

3.2 Performance Specifications

3.2.1 Overall Performance Specifications

Table 2: Overall Performance Specifications

Data Transmission Rate (@30MHz operating bandwidth)	Maximum Uplink Rate \geq 150 Mbps, Maximum Downlink Rate \geq 300 Mbps
Transmission Delay	End-to-Base Station / Base Station-to-End Delay \leq 30ms
Transmission Distance	Maximum Coverage Distance from Base Station to Terminal \geq 5km, with uplink/downlink edge communication rate \geq 5Mbps (under line-of-sight conditions)
Concurrent Performance	200 Active Users
Anti-interference	Frequency band blocking \leq 30%, Throughput \geq 2 Mbps (communication bandwidth \geq 10 MHz)

3.2.2 Unit Specifications

Table 3: Unit Specifications

Color	RAL9003 White color
Max Power Consumption	≤600W
Power Supply	DC 24V (supports voltage range: 16-40V)
Weight	≤25 kg (excluding antenna)
Dimensions	482.6×445×132.5mm
Operating Temperature	-25℃~+60℃
Storage Temperature	-30℃~+70℃
Mounting Method	19-inch rack mounting

3.2.3 5G Technical Specifications

Table 4: 5G Technical Specifications

Operating Frequency Band	Uplink: 703–748 MHz, Downlink: 758–803 MHz
Operating Bandwidth	5/10/15/20/30 MHz
Transmit Power	2×40W

3.2.4 Ad-Hoc Network Technical Specifications

Table5: Ad-Hoc Network Technical Specifications

perating Frequency Band	1.0–1.2 GHz or 566–678 MHz (optional/customizable)
Operating Bandwidth	10/20 MHz
Transmit Power	2×10 W
Maximum Throughput	≥100 Mbps
Transmission Range	Single-hop max. distance ≥20 km (under clear line-of-sight conditions)

3.2.5 5G Core Network Technical Specifications

Table 6: 5G Core Network Technical Specifications

5GC Support	Supported
Distributed Networking	Supported
Registered User Capacity	600 (single node)
Concurrent Users	200
IMS Support	Supported (optional)
IMS Registered Users	300 (single node)
IMS Concurrent Users	50
PDU/PCF Sessions	600