
5G NR BBU SBB65xxD

Product Specification

Version: V1.0

Version History

Version	Date	Remark
V1.0		Original Version

Catalogue

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5. More Support	Ошибка! Закладка не определена.

1. Overview

1.1 Overview

NR+LTE BBU is a distributed base station, is a small low power indoor digital distributed base station, through the fixed-line broadband, private network backpass, such as access to the mobile core network, to provide indoor scene 5G and 4G mobile communication signal coverage, realizes the accurate depth of coverage and capacity of network data business Internet experience, at the same time also can absorb hot traffic, to the macro network data stream. The distributed base station includes a host baseband unit (BBU), an extended unit (EU), and a remote radio unit (RRU).

SBB65xxS is a dual-mode host baseband unit based on X86 platform of the distributed small base station of Sageran, mainly responsible for baseband signal processing.

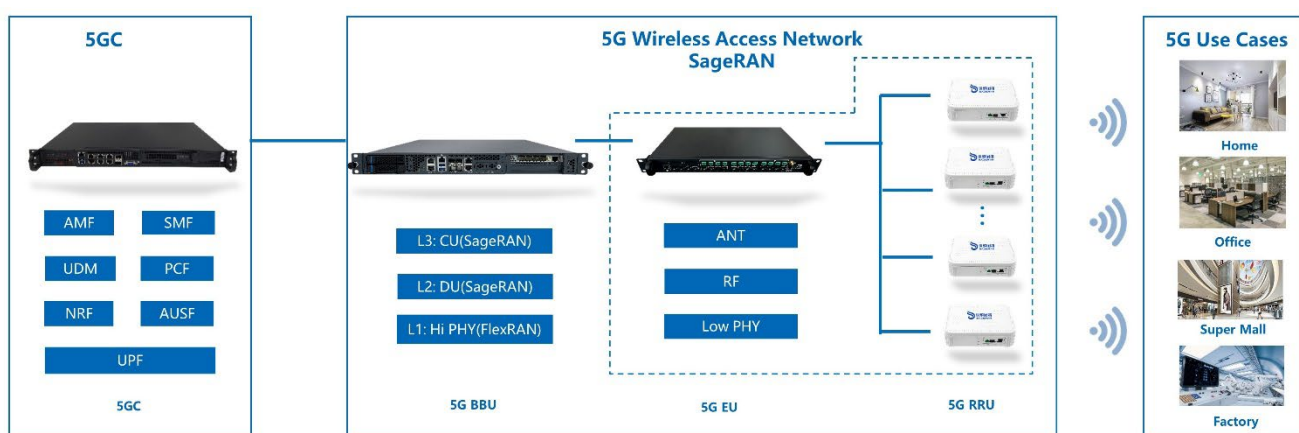


Figure 1-1 Networking

1.2 Highlights

- Support NR and LTE
- Self-developed gNB Protocol Stack
- White-box hardware and support FlexRAN, O-RAN, CRAN architecture.
- Low cost and easy to deploy.

1.3 Use Cases

SBB65xxD support with expansion unit (EU) and RRU constitute a complete 5G network coverage scheme, which can be widely used in indoor network coverage. The following are some typical application scenarios.

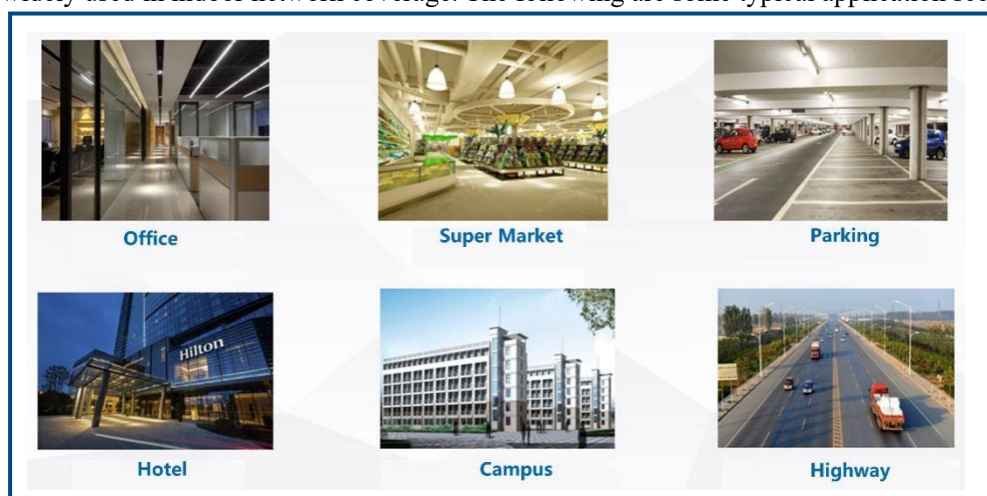


Figure 1-2 Use Cases

2. System Infrastructure

A NR+LTE baseband system consists of at least one baseband unit (BBU), one Expansion Unit and one remote radio units (RRU), to provide wireless network service.

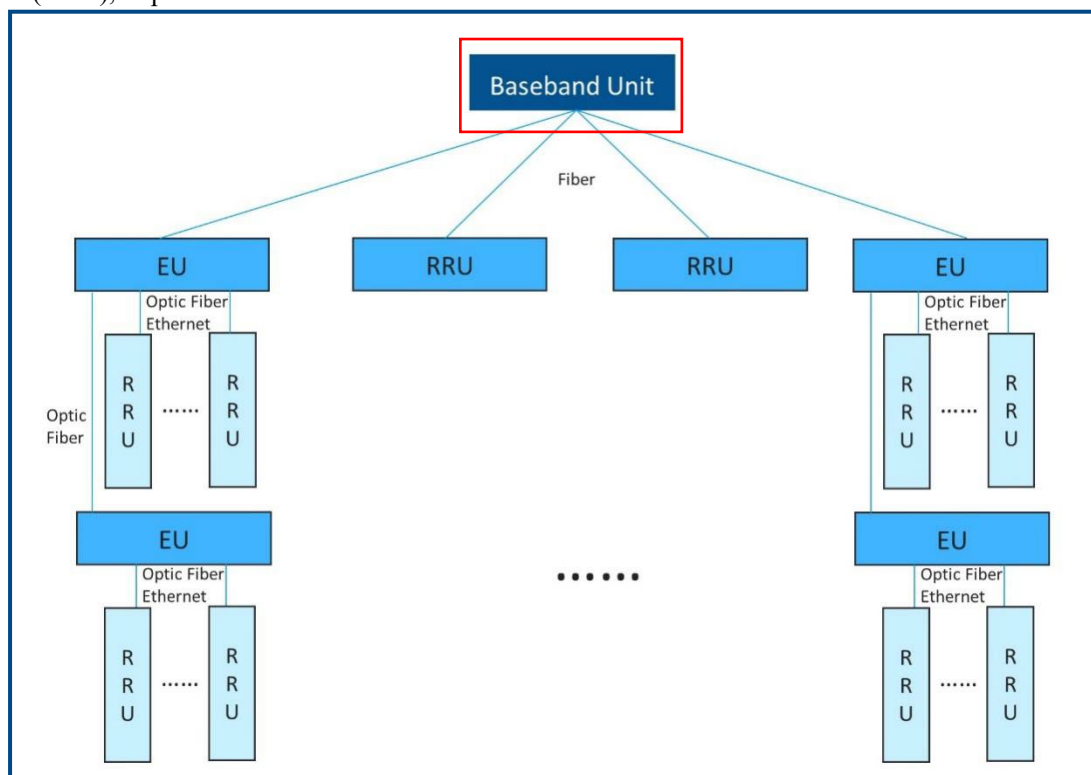


Figure 2-1 5G Distributed Base Station System Infrastructure

2.1 Product Appearance

5G BBU SBB65xxD is mainly composed of an x86 server, an Accelerator Card and a NR+LTE Time-sync Card (by SageRAN).



Figure 2-2 Product Appearance

3. Technical Specifications

3.1 System Specifications

Item	Specifications
Standard	3GPP R15
Networking	SA
Carrier Bandwidth	100MHz/80MHz/60MHz/40MHz
SCS	30kHz
Capability	4*100MHz 2T2R cell
NR Peak Data Rate	DDDDD DDSUU , 4T4R DL 1.35Gbps, UL 210Mbps 2T2R DL 700Mbps, UL 210Mbps DDDSU DDSUU 2T2R DL 675Mbps, UL 337.5Mbps DSUUU 2T2R DL 315Mbps, UL 612Mbps
User Capability	200 active users/cell 1200 connected users/cell
Cell Split and Joint	Support
Synchronization	GPS, Beidou, 1588 V2, 1PPS+TOD
Clock	$\pm 1.5\mu\text{s}$ holdover without synchronization clock : $\leq 1\text{h}$ (Ordinary OCXO) 8h (High-end crystal oscillator module) 24h (High-end crystal oscillator module)

Table 3-1 system Specifications

3.2 LTE System Specifications

Item	Specifications
Duplexing	LTE FDD

Frequency	Band3
Carrier Bandwidth	20MHz/10MHz/5MHz
Capability	1*20MHz 2T2R LTE cell
User Capability	128 Active Users/Cell 384 Connected Users/Cell
Peak Data Rate	UL:75Mbps DL:150Mbps

Table 3-2 LTE System Specifications

3.3 Server Configuration

Item	Configuration
CPU	Intel® Xeon® D-2100
Flash	2x16GB DDR4-2666 RDIMM ECC, REG
Hard Drive	≥ 128GB M.2 SSD
Expansion slot	2*FHFL PCIE3.0 X16
OTII	Support

Table 3-3 Server Configuration

3.4 Connectors and Ports

Item	Specification	Type	Qty	Remark
Backhaul	10Gbps, Connects to 5GC	SFP+	4	
DC Power	-48V Power Plug	Terminal	2	Rear Panel. DC and AC is optional. The quantity of power port is one, if 1+1 redundant power supply is not configured.
AC Power	220V Power Plug	Y style	2	
External TOD Input	RS422, external pps+TOD input	RJ45	1	
External TOD Output	RS422, external pps+TOD output	RJ45	1	
N2	100/1000BASE-T Ethernet port, N2 can be configured with an independent Ethernet port for transmission, or transmitted through the backhaul ports	RJ45	1	
Local Management port	100/1000BASE-T Ethernet Port, connect to BMC and System	RJ45	2	
VGA	Used for screen	VGA	1	Rear Panel
Fronthaul	eCPRI, 10Gbps, Connects to EU/RU	SFP+	4	Fronthaul Card Main Ports
GPS	Connect the GPS antenna	SMA	1	

Item	Specification	Type	Qty	Remark
RGPS	RS422, work with RGPS	RJ45	1	

Table 3-4 Connectors and Ports

3.5 Led Indicators

3.5.1 Server Main Led Indicators

Logo	Qty	Function	Color	Status	Remark
	1	Power Indicator	Green	Off	No Power or system is down
				On	System running normally
	1	Alarm Indicator	Red	Off	Alarm
				On	System running normally
	1	Hard Drive Indicator	Yellow	Off	Hard drive not working
				Flashing	Hard drive working
UID	1	Service Indicator	Blue	Off	All cells out of service
				On	At least one cell is running
HB	1	BMC Indicator	Yellow	Quick Flashing	BMC starting
				Slow Flashing	BMC running
				Off	BMC running Abnormally

Figure 3-5 LED Indicators

3.5.2 Fronthaul Card Main Indicators

Logo	Qty	Function	Color	Status	Remark
RUN	1	Run/Alarm Indicator	Green Orange	Green	Power on, SW is not running
				Green Flashing in 1s	Equipment Running
				Orange	Alarms or Abnormal
				Off	Power off or main board Abnormal
OP	8	Optical Port Indicators	Green Orange	Green Off	Optical Module missing
				Green On	Optical Module working
				Orange On	Abnormal Optical Power (LOS)
				Orange Flashing	Abnormal optical link (e.g., link failure, high bit error rate)
				Orange Off	Normal optical link
		Optical Port Indicators	Green	Green On	Port is enabled, but no packets sent or received
				Green Off	Port is disabled
				Green Flashing	There are receiving and sending packets, the flashing frequency is proportional to the frequency of receiving and sending packets
RGPS	2	Synchronizatio	1*Green	Green On	Pps, Synchronization is normal

		n Indicator (RJ45)	1*Orange	Green Flashing	Pps, Synchronization is failed
				Green Off	No pps
				Orange On	RGPS Power on
				Orange Off	RGPS Power off

Table 3-6 Indicator

3.6 Physical Specifications

Item	Specification
Size (Width*Height*Depth, mm)	438mm x 44mm x 420mm
Weight (Kilogram)	<7.5kg

Table 3-7 Dimension

3.7 Electrical Characteristics

3.7.1 Voltage

Item	Specification	Remark
-48V DC (-40V ~ -57V)	DC power module	
220V AC (100V ~ 264V)	AC power module	Max 300V

Table 3-8 Voltage

3.7.2 Consumption

Item	Consumption (W)
4cell*100MHz NR+1cell*20MHz LTE	<250W

Table 3-9 Consumption

3.8 Environmental

Item	Specifications
Temperature	- 5 ~ +55° C
Humidity	5% ~ 95%
IP Grade	IP20
Air Pressure	70 ~ 106 kPa

Table 3-10 Environmental

3.9 Electromagnetic Compatibility

Support 3GPP TS 38.113 (2017-12 R15).

3.10 Reliability

Item	Index
Annual failure rate	<2%

Table 3-11 Reliability

4. Purchase Model

Model	Capacity	Remark
SBB6542D	4*100MHZ 2T2R cell +1*20MHZ 2T2R FDD LTE cell	
SBB6522D	2*100MHz 2T2R cell +1*20M 2T2R FDD LTE cell	

Table 4-1 Product Model

Remark: Please consult your AM if to customize capacity.