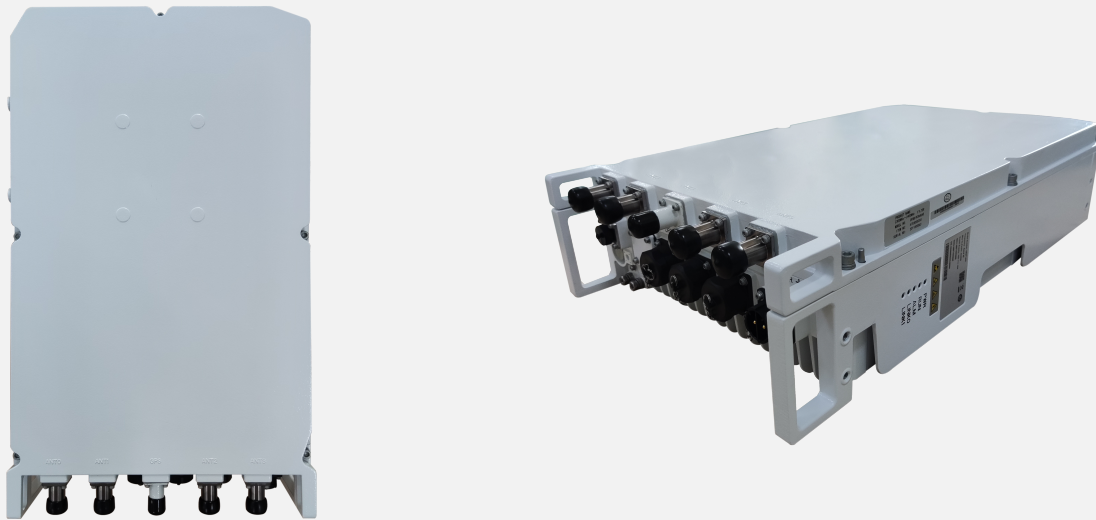




INTRODUCTION

The Baicells Aurora452 is an advanced outdoor 5G Sub-6G integrated ALL-IN-ONE base station (gNB), which is designed and developed based on Qualcomm up-to-date 5G SoC solution. This 4 × 40 W gNB features low power consumption, a compact form factor, and easy maintenance.

This product helps operators to enhance the coverage performance of 5G networks effectively, improve the capacity of 5G networks and eliminate coverage dead zones. Meanwhile it also can help to reduce the system power consumption.

This product comes with a standard one-year warranty; an extended warranty is also available.

HIGHLIGHTS

NOTE: Features can vary based on model or region.

- Standard NR FR1 Bands n40*, n41, n50, and n78
- Complies with 3GPP Release 16 and Release 17 RedCap*
- GUI-based local and remote Web management
- Supports 100MHz carrier bandwidth and 2 carrier aggregation*
- Peak rate: Up to DL 1500Mbps, UL 660Mbps with 100MHz bandwidth
- Supports up to 1200 users
- Supports standalone (SA) mode
- Supports SCTP control (IKE SCTP)
- Supports EN-DC option 3x

- Integrated small cell form factor for quick and easy installation
- Supports flexible xHaul
- Highly secure with equipment certification against potential intrusion risk
- Supports TR-069 network management interface
- Its lower power consumption reduces OPEX, and the unit can be powered by Baicells compact outdoor smart UPS

* Planned for future release

TECHNOLOGY

Standard	5G NR TDD (3GPP R16 and R17* compliant)
TDD UL/DL Configuration	5ms periodicity ($\mu=1$): DDDDD+DDSUU 2.5ms dual periodicity ($\mu=1$): DDDSU+DDSUU 2.5ms single periodicity ($\mu=1$): DSUUU
Frequency Band	n40 (2300 MHz – 2400MHz)* n41 (2496 MHz – 2690MHz)/(2545 MHz - 2645 MHz)* n50 (1432 MHz – 1512 MHz) n78L (3300 MHz – 3600 MHz) n78H (3500 MHz - 3800 MHz)
Channel Bandwidth	n40: 100MHz n41: 10/20/30/40/50/60/70/80/90/100MHz n50: 80MHz n78: 10/20/30/40/50/60/70/80/90/100MHz
Multiplexing	4x4 MIMO (DL: 4L, UL: SU 2L, and MU 4L*)
Security	Radio: Null/SNOW 3G/AES-128/ZUC Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)
Voice	VoNR/ViNR/EPS-FB
SON*	Self-Organizing Network • Automatic Neighbor Relation (ANR) • PCI conflict detection
Embedded 5GC*	Supported

VSWR	Supports VSWR detection
Maintenance	- Local/Remote Web maintenance - Online status management - Performance statistics - Fault management - Local/Remote software upgrade - Logging - Connectivity diagnosis - Auto startup
Network Management	IPv4/IPv6, HTTP/HTTPS, TR-069, SSH, Embedded 5GC*
VLAN/VxLAN	802.1Q/VxLAN
Power Control	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 38.213 compliant)
Quality of Service	Complied with 3GPP standard 5G QoS Identifier (5QI)
ARQ/HARQ	Supported
RET support	AISG2.0, 20VDC ~30VDC, RS-485, 3GPP TS 25.461
Synchronization	GNSS

* Planned for future release

PERFORMANCE

Peak Data Rate with UL 256QAM	100 MHz	DL (Mbps)	UL (Mbps)
	5ms periodicity (DDDDD+DDSUU, 6:4:4)	1500	230
	2.5ms dual periodicity (DDDSU+DDSUU, 10:2:2)	1300	330
	2.5ms single periodicity (DSUUU, 10:2:2)	660	660
	80 MHz	DL (Mbps)	UL (Mbps)** with 256QAM 2 Layers
	5ms periodicity (DDDDD+DDSUU, 6:4:4)	1100	168(80MHz)/ 125(60MHz)
	2.5ms dual periodicity (DDDSU+DDSUU, 10:2:2)	1000	252(80MHz)/

			188(60MHz)
	2.5ms single periodicity (DSUUU, 10:2:2)	550	504(80MHz)/ 376(60MHz)
User Capacity	Up to 1200 users per carrier		
Maximum Deployment Range	10km (60km*)		
Latency	Round-trip delay (RTD) less than 10 milliseconds		
Receive Sensitivity	-98 dBm (per channel)		
Modulation	UL: MCS0 (QPSK) to MCS27 (256QAM) DL: MCS0 (QPSK) to MCS27 (256QAM)		
Transmit Power Range	38dBm to 46 dBm per channel (combined +52dBm, configurable with 1 dB interval)		

** According to UE capability

INTERFACE

Ethernet Interface	1 x 2.5GE RJ-45 3 x 10GE optical interfaces (SFP+)
Power Supply	-40VDC ~ -57VDC, nominal -48VDC
LED Indicators	5 status LEDs RUN/ACT/ALM/BH/FB
RF Antenna	4T4R external high gain antenna with N-Type connectors (mini-DIN for n40), or integrated antenna*
GNSS Antenna	External GNSS antenna, N-Type connector

* Planned for future release

MODULATION LEVELS (ADAPTIVE, DL LOS)

MCS	Modulation Scheme	RSRP (dbm)
20~27	256QAM	-90≤RSRP<-50
11~19	64QAM	-102≤RSRP<-90
5~10	16QAM	-107≤RSRP<-102
0~4	QPSK	-117≤RSRP<-107

PHYSICAL

Surge Suppression	Power interface: Differential mode: 2 KA; Common mode: 4 KA
Lightning Protection	Power interface: Differential mode: ± 10 KA; Common mode: ± 20 KA
MTBF	≥ 150000 hours
MTTR	≤ 1 hour
Ingress Protection Rating	IP66
Operating Temperature	-40°F to 131°F / -40°C to 55°C
Storage Temperature	-58°F to 149°F / -50°C to 65°C
Humidity	5% to 95% RH
Atmospheric Pressure	70 kPa to 106 kPa
Power Consumption	Maximum 650W
Weight	18kg
Dimensions (HxWxD)	527 X 308X 120 millimeters
Installation	Pole or wall mount

MODEL NUMBERS

BSQ7040A452	Aurora452 outdoor 5G NR integrated TDD gNB – n40(2300MHz-2400MHz), 4T4R, 4*40W, -48VDC, external antenna, 1*(2.5G)RJ45+3*(10GE)OPT
BSQ7041A452	Aurora452 outdoor 5G NR integrated TDD gNB – n41(2496MHz-2690MHz), 4T4R, 4*40W, -48VDC, external antenna, 1*(2.5G)RJ45+3*(10GE)OPT
BSQ7041C452	Aurora452 outdoor 5G NR integrated TDD gNB – n41(2545MHz-2645MHz), 4T4R, 4*40W, -48VDC, external antenna, 1*(2.5G)RJ45+3*(10GE)OPT
BSQ7078LA452	Aurora452 outdoor 5G NR integrated TDD gNB – n78L (3300 MHz – 3600 MHz), 4T4R, 4*40W, -48VDC, external antenna, 1*(2.5G)RJ45+3*(10GE)OPT
BSQ7078HA452	Aurora452 outdoor 5G NR integrated TDD gNB – n78H (3500 MHz - 3800 MHz), 4T4R, 4*40W, -48VDC, external antenna, 1*(2.5G)RJ45+3*(10GE)OPT
BSQ7050A452	Aurora452 outdoor 5G NR integrated TDD gNB – n50 (1432 MHz – 1512 MHz), 4T4R, 4*40W, -48VDC, external antenna, 1*(2.5G)RJ45+3*(10GE)OPT

NOTE: Customized versions can be requested.