Aurora452

Outdoor gNB Datasheet

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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 4x60 watts gNB is low power consumption, subminiature and easy to maintenance.

This product helps operators to enhance the coverage performance of 5G networks effectively, improve the capacity of 5G networks and eliminate the blind district, 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 n41
- Comply 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
- Supports up to 1200 users
- Supports Stand Alone (SA) mode
- Supports SCTP control (IKE SCTP)
- Integrated small cell form factor for quick and easy installation
- Supports flexible xHaul
- Highly secured with equipment certification against potential intrusion risk
- Supports TR-069 network management interface
- Lower power consumption, which reduces OPEX, can be powered easily 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 (μ=1): DDDDD+DDSUU 2.5ms dual periodicity (μ=1): DDDSU+DDSUU 2.5ms single periodicity (μ=1): DSUUU
Frequency Band	n41 (2496 MHz – 2690MHz)
Channel Bandwidth	n41: 10/40/50/60/70/80/90/100MHz
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)

* Planned for future release

INTERFACE

Ethernet Interface	1 x 2.5GE RJ-45 3 x 10GE optical interface (SFP+)
Power Supply	-40VDC ~ -57VDC, nominal -48VDC
Protocols Used	IPv4/IPv6, UDP, TCP, ICMP, NTP, SSH, IPsec, TR-069, HTTP/HTTPs, DHCP
Network Management	IPv4/IPv6, HTTP/HTTPs, TR-069, SSH, Embedded 5GC*
VLAN/VxLAN	802.IQ/VxLAN
LED Indicators	5 x status LED RUN/ACT/ALM/BH/FB
RF Antenna	4T4R external high gain antenna with N-Type connectors, or integrated antenna*
GNSS Antenna	External GNSS antenna, N-Type connector

* Planned for future release

PERFORMANCE

Peak Data Rate	100 MHz	DL (Mbps)	UL (Mbps) with 256QAM
	5ms periodicity (DDDDD+DDSUU, 6:4:4)	1500	230
	2.5ms dual periodicity (DDDSU+DDSUU, 10:2:2)	1400	330
	2.5ms single periodicity (DSUUU, 10:2:2)	750	660
User Capacity	Up to 1200 users per carrier		

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Maximum Deployment Range	15km (60km*)
Latency	Round-trip delay (RTD) less than 10 milliseconds
Receive Sensitivity	-95 dBm (per channel)
Modulation	UL: MCS0 (QPSK) to MCS27 (256QAM) DL: MCS0 (QPSK) to MCS27 (256QAM)
Transmit Power Range	38dBm to 47.78 dBm per channel (combined +54dBm, configurable) (1 dB interval)
Quality of Service	Complied with 3GPP standard 5G QoS Identifier (5QI)
ARQ/HARQ	Supported
Synchronization	GNSS/IEEE 1588V2

* Planned for future release

FEATURES

Voice	VoNR/ViNR/EPS-FB
SON*	Self-Organizing Network • Automatic Neighbor Relation (ANR) • PCI confliction detection
Traffic Offload	Local breakout
Maintenance	• Local/Remote Web maintenance • Online status management • Performance statistics • Fault management • Local/Remote software upgrade • Logging • Connectivity diagnosis • Auto startup

LINK BUDGET

VSWR	<=1.5
EIRP	Antenna gain = G EIRP = (54+G)dBm/100MHz
Power Control	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 38.213 compliant)

MODULATION LEVELS(ADAPTIVE, DL LOS)

MCS	Modulation Scheme	RSRP(dbm)	Coverage Distance(km)
20~27	256QAM	-90≤RSRP<-50	D≤6
11~19	64QAM	-102≤RSRP<-90	6<D≤8
5~10	16QAM	-107≤RSRP<-102	8<D≤9
0~4	QPSK	-117≤RSRP<-107	9<D≤14

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

BSQ7041A452	Aurora452 outdoor 5G NR integrated TDD gNB −n41(2496MHz-2690MHz),4T4R,4*60W, -48VDC, external antenna, 1*(2.5G)RJ45+3*(10GE)OPT

NOTE: Customized versions can be requested.