Aurora249

Outdoor gNB Datasheet

Baicells
Connect More with Less

INTRODUCTION

The Baicells Aurora249 is an advanced outdoor 5G Sub-6G integrated base station (gNB), which is designed and developed based on 5G SoC solution. This 2x40 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 n40/n41/n78
- Comply with 3GPP Release 15 and Release 16
- GUI-based local and remote Web management
- Supports 100MHz bandwidth
- Peak rate: Up to DL 850Mbps and UL 660Mbps
- Supports up to 1200 users
- Supports Stand Alone (SA) mode
- Supports F1 setting*
- Supports SCTP control (IKE SCTP)
- Supports embedded 5G core (HaloB)
- 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 R15 and R16 compliant)
TDD UL/DL Configuration	5ms periodicity (μ=1): DDDDD+DDSUU
	5ms periodicity (μ=1): DDDDD+SUUUU*
	2.5ms dual periodicity (μ=1): DDDSU+DDSUU
	2.5ms single periodicity (μ=1): DDDSU*, DSUUU
Frequency Band	n40 (2350 MHz – 2390 MHz)
	n41 (2515 MHz – 2615 MHz) / (2590 MHz – 2690 MHz)
	n78 (3400 MHz – 3500 MHz)/ (3500 MHz – 3600 MHz)/ (3700 MHz – 3800 MHz)
Channel Bandwidth	n40: 40MHz
	n41: 100MHz
	n78: 60/70/100MHz
Multiplexing	2x2 MIMO (DL: 2L, UL: 2L)
Security	Radio: SNOW 3G/AES-128
	Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)

* Planned for future release

INTERFACE

Ethernet Interface	1 x 1GE optical interface (SFP)
	2 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/OPT0/OPT1
RF Antenna	2T2R external high gain antenna with N-Type connectors, or integrated antenna
GPS Antenna	External GPS 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)	850	230

	5ms periodicity (DDDDD+SUUUU, 6:4:4)*	525	400
	2.5ms dual periodicity (DDDSU+DDSUU, 10:2:2)	720	330
	2.5ms single periodicity (DDDSU, 10:2:2)*	850	230
	2.5ms single periodicity (DSUUU, 10:2:2)	380	660
User Capacity	Up to 1200 users		
Maximum Deployment Range	5km		
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	37dBm to 46 dBm per channel (combined +49dBm, configurable) (1 dB interval)		
Quality of Service	Complied with 3GPP standard 5G QoS Identifier (5QI)		
ARQ/HARQ	Supported		
Synchronization	GPS		

* Planned for future release

FEATURES

Voice	VoNR/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 = (49+G)dBm/100MHz
Power Control	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 38.213 compliant)

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	IP65
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 360W
Weight	34.2lbs/15.5kg
Dimensions (HxWxD)	16.5 x 12.4 x 4.8 inches/420 X 315 X 123 millimeters
Installation	Pole or wall mount

MODEL NUMBERS

BSC7078L249	Aurora249 outdoor 5G NR integrated TDD gNB −n78(3400MHz-3500MHz),2T2R,2*40W, -48VDC, external antenna, 1*(GE)OPT+2*(10GE)OPT)
BSC7078L249	Aurora249 outdoor 5G NR integrated TDD gNB −n78(3500MHz-3600MHz),2T2R,2*40W, -48VDC, external antenna, 1*(GE)OPT+2*(10GE)OPT)
BSC7078H249	Aurora249 outdoor 5G NR integrated TDD gNB −n78(3700MHz-3800MHz),2T2R,2*40W, -48VDC, external antenna, 1*(GE)OPT+2*(10GE)OPT)

BSC7040S249D	Aurora249 outdoor 5G NR integrated TDD gNB —n40(2350MHz-2390MHz),2T2R,2*40W, -48VDC, external antenna, 1*(GE)OPT+2*(10GE)OPT）
BSC7041C249D	Aurora249 outdoor 5G NR integrated TDD gNB —n41(2515MHz-2615MHz),2T2R,2*40W, -48VDC, external antenna, 1*(GE)OPT+2*(10GE)OPT）
BSC7041E249D	Aurora249 outdoor 5G NR integrated TDD gNB —n41(2590MHz-2690MHz),2T2R,2*40W, -48VDC, external antenna, 1*(GE)OPT+2*(10GE)OPT）

NOTE: Customized versions can be requested. (AC version will be ready in the future)