

INTRODUCTION

The Baicells Aurora243 is an advanced outdoor 5G Sub-6G integrated base station (gNB), which is designed and developed based on 5G SoC solution. This is a low power consumption gNB up to 2x10 watts, 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.

The band n48 model is FCC certified with 2x5 watts, the band n77/n78 models are CE certified with 2x3 watts and the band n79 model is TELEC certified with 2x10 watts.

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

HIGHLIGHTS

NOTE: Features can vary based on model or region.

- Standard NR FR1 Band n41/n48/n77/n78/n79
- Comply with 3GPP Release 15 and 16
- GUI-based local and remote Web management
- Supports up to 100MHz bandwidth
- Peak rate: Up to DL 850Mbps/UL 660Mbps
- Supports up to 1200 users
- Supports Stand Alone (SA) mode
- Supports F1 setting*
- Supports SCTP control (IKE SCTP)
- Embedded 5G core network solution (HaloB)*
- Supports integrated antenna panel kit
- 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 ($\mu=1$): DDDDD+DDSUU 5ms periodicity ($\mu=1$): DDDDD+SUUUU* 5ms periodicity($\mu=1$): DDDSUUDSUU 2.5ms dual periodicity ($\mu=1$): DDDSU+DDSUU 2.5ms single periodicity ($\mu=1$): DDDSU*, DSUUU
Frequency Band	n41 (2515 MHz – 2675 MHz) n48 (3550 MHz – 3700 MHz) n77 (3800 MHz – 4200 MHz) n78 (3300 MHz – 3600 MHz) / (3600 MHz – 3800 MHz) n79 (4500 MHz – 4900 MHz) / (4800 MHz – 4900 MHz)
Channel Bandwidth	n41: 10/20/30/40/50/60/70/80/90/100 MHz n48: 10/20/30/40 MHz n77: 10/20/30/40/50/60/70/80/90/100 MHz n78: 10/20/30/40/50/60/70/80/90/100 MHz n79: 100 MHz
Multiplexing	2x2 MIMO
Security	Radio: Null/SNOW 3G/AES-128/ZUC Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)
Voice	VoLTE/EPS-FB
SON*	Self-Organizing Network <ul style="list-style-type: none"> Automatic Neighbor Relation (ANR) PCI confliction detection
Embedded 5GC*	Supported
VSWR	Support detection
Traffic Offload	Local breakout
Maintenance	<ul style="list-style-type: none"> 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.IQ/VxLAN
Power Control	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)
Quality of Service	Complied with 3GPP standard 5G QoS Identifier (5QI)
ARQ/HARQ	Supported
Synchronization	GPS/ 1588 V2

PERFORMANCE

Peak Data Rate with UL 256QAM	100MHz	DL (Mbps)	UL (Mbps)
	5ms periodicity (DDDDDD+DDSUU ,6:4:4)	850	230
	5ms periodicity (DDDDDD+SUUUU ,6:4:4)*	525	400
	5ms periodicity (DDDSUUDSUU ,6:4:4)	445	406
	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	2 kilometers		
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	30dBm to 40dBm per channel (combined +43dBm, configurable with 1 dB interval) NOTE: Maximum value is not for all modules.		

INTERFACE

Ethernet Interface	1 x optical (SFP) 1 x RJ-45 Ethernet interface (1 GE)
Power Supply	90VAC to 264VAC, 47Hz to 63Hz or -40VDC to -57VDC, nominal -48VDC
LED Indicators	4 x status LED

	PWR/ACT/RUN/ALM				
Antenna Connection	2T2R external high gain antenna with N-type connectors				
Integrated RF Antenna		n41	n77	n48/78	n79
	Antenna Gain	2T2R 13.5dBi	2T2R 14.5dBi	2T2R 14.5dBi	2T2R 14.5dBi
	Horizontal Beam width	65±5°	65±5°	65±5°	65±5°
	Vertical Beam width	20°	13°	14°	15°
	Polarization	±45°	±45°	±45°	±45°
GPS Antenna	External GPS antenna with N-Type connector				

PHYSICAL

Surge Suppression	Network interface: 1KV Power Interface: Differential mode: 2KA; Common mode: 4KA	
Power Interface Lightning Protection	Differential mode: ±10 KA Common mode: ±20 KA	
MTBF	≥ 150000 hours	
MTTR	≤ 1 hour	
Ingress Protection Rating	IP65	
Operating Temperature	-22°F to 131°F / -30°C to 55°C	
Storage Temperature	-40°F to 149°F / -40°C to 65°C	
Humidity	2% to 95% RH	
Atmospheric Pressure	70 kPa to 106 kPa	
Power Consumption	Typical 100W	
Weight	Without bracket:	15.9lbs / 7.2kg
	With pre-installed bracket:	16.5lbs / 7.5kg
Dimensions (HxWxD)	13.1 x 9.4 x 4.3 inches/333 X 240 X 109 millimeters	
Installation	Pole or wall mount	

* Planned for future release

MODEL NUMBERS

BSC7078L243	Aurora243 outdoor 5G NR integrated TDD gNB – n78(3300MHz-3600MHz), 2T2R, 2*3W, -48VDC, external antenna or integrated antenna, 1*RJ45+1*OPT)
BSC7078H243	Aurora243 outdoor 5G NR integrated TDD gNB – n78(3600MHz-3800MHz), 2T2R, 2*3W, -48VDC, external antenna or integrated antenna, 1*RJ45+1*OPT) <ul style="list-style-type: none"> • CE certification • UKCA certification
BSC7048A243	Aurora243 outdoor 5G NR integrated TDD gNB – n48(3550MHz-3700MHz), 2T2R, 2*5W, -48VDC, external antenna or integrated antenna, 1*RJ45+1*OPT) <ul style="list-style-type: none"> • FCC certification: 2AG32BSC7048A243
BSC7041C243	Aurora243 outdoor 5G NR integrated TDD gNB – n41(2515MHz-2675MHz), 2T2R, 2*10W, -48VDC, external antenna or integrated antenna, 1*RJ45+1*OPT)
BSC7077H243	Aurora243 outdoor 5G NR integrated TDD gNB – n77(3800MHz-4200MHz), 2T2R, 2*3W, -48VDC, external antenna or integrated antenna, 1*RJ45+1*OPT) <ul style="list-style-type: none"> • CE certification • UKCA certification
BSC7079B243	Aurora243 outdoor 5G NR integrated TDD gNB – n79(4500MHz-4900MHz), 2T2R, 2*3W, -48VDC, external antenna or integrated antenna, 1*RJ45+1*OPT)
BSC7079C243	Aurora243 outdoor 5G NR integrated TDD gNB – n79(4800MHz-4900MHz), 2T2R, 2*10W, -48VDC, external antenna or integrated antenna, 1*RJ45+1*OPT) <ul style="list-style-type: none"> • TELEC certification

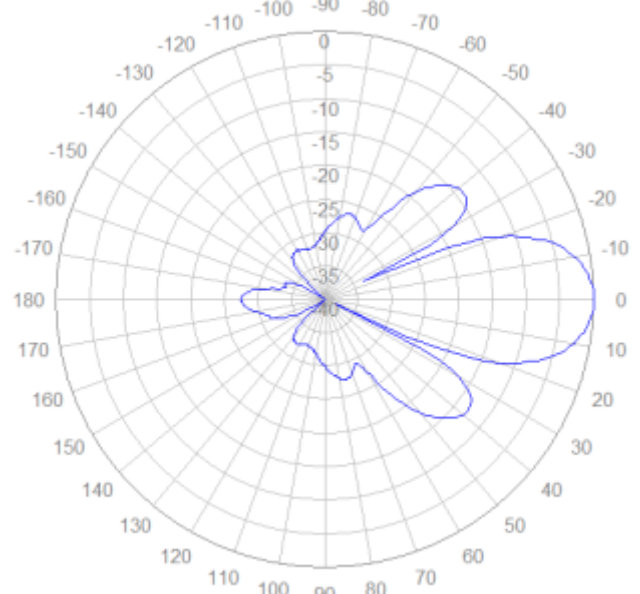
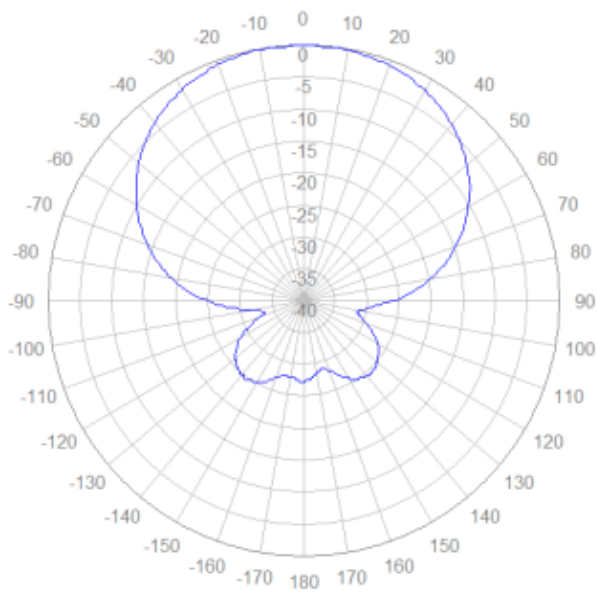
NOTE: Customized versions can be requested. (AC version will be ready in the future)

ANTENNA PATTERN

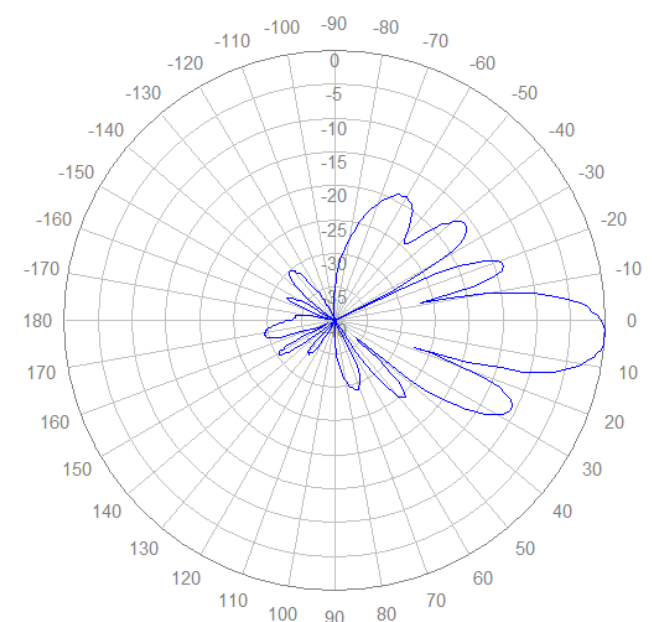
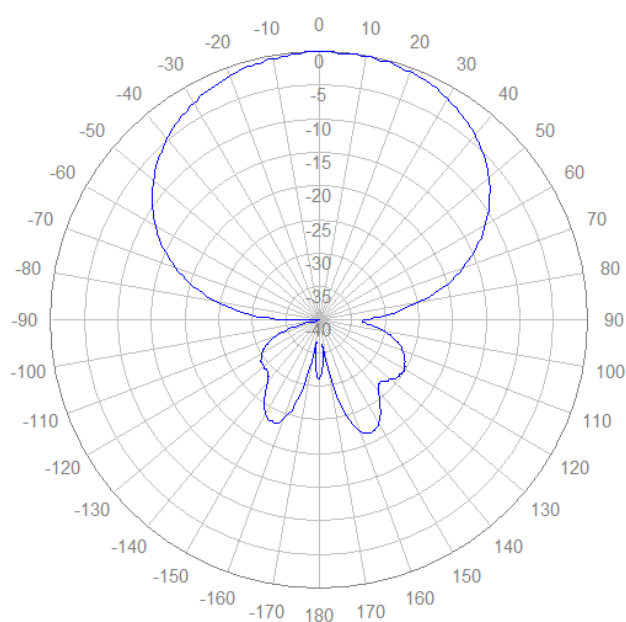
H-Pattern

V-pattern

n41



n77



n48/78

