



INTRODUCTION

Nova227 is a 2x250mW LTE TDD outdoor microcell eNodeB (eNB). It has a simple and compact design, low power consumption, and provides excellent performance.

Combined with a macro station, the Nova227 is an effective supplement to network deployment and improves the network's three-dimensional coverage effect in high-density usage areas (campuses, RV parks, townhomes, and apartments). Nova227 is specifically designed to eliminate coverage holes and provide network edge coverage.

When paired with self-install indoor Customer Premise Equipment (CPE), such customer sets can be captured quickly and with a near-immediate ROI. For private network operators, this microcell is also perfect for clusters of cameras, such as those used at traffic intersections and other devices.

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 LTE TDD Bands 38/40/41/42/43/48
 - Customization can be requested:
 - Email sales_na@baicells.com for North America.
 - Email contact@baicells.com for all other regions.
- GUI-based local and remote Web management
- Suitable for private and public deployments; any IP-based backhaul can be used, including public transmission protected by Internet Protocol Security (IPsec)
- Compact, all-in-one design includes an internal antenna and integrated GPS
- Excellent Non-Line-of-Sight (NLOS) coverage
- Peak rate: Up to DL 110 Mbps and UL 14 Mbps with 20 MHz bandwidth
- 32 RRC connected users
- Cloud/Local/Embedded EPC (HaloB) is supported for more convenient and economical deployment
- Supports Citizens Broadband Radio Service (CBRS)
- Plug-and-play with Self-Organizing Network (SON) capabilities
- Interoperable with all standard LTE Evolved Packet Core (EPC)
- Supports TR-069 network management interface
- Transparent Bridge Mode* (L2 Support)
- Lower power consumption, which reduces OPEX, can be powered easily by Baicells compact outdoor SmartUPS

** Planned for future release.*

TECHNOLOGY

Standard	LTE TDD RAN (3GPP Release 13.5 compliant)
TDD UL/DL Configuration	0, 1, 2 (with Special Subframe Configuration 7)
Frequency Band	B38 (2570 MHz–2620 MHz) B40 (2300 MHz–2400 MHz) B41 (2496 MHz–2690 MHz) B42 (3400 MHz–3600 MHz) B43 (3600 MHz–3800 MHz) B48 (3550 MHz–3700 MHz)
Channel Bandwidth	5/10/15/20 MHz
Multiplexing	MIMO: 2x2 (DL)
Security	Radio: SNOW 3G/AES-128/ZUC Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128)

INTERFACE

Ethernet Interface	1 RJ-45 Ethernet interface (1 GE)
Power Supply	PoE+ (IEEE 802.3at compliant)
Protocols Used	IPv4, UDP, TCP, ICMP, NTP, SSH, IPsec, TR-069, HTTP/HTTPS, 1588v2, DHCP
Network Management	IPv4, HTTP/HTTPS, TR-069, SSH, Embedded EPC
VLAN/VxLAN	802.IQ/VxLAN
LED Indicators	4 x status LED PWR/ACT/RUN/ALM

PERFORMANCE

	20 MHz	DL (Mbps)	UL (Mbps)
	Peak Data Rate	UL/DL Config 0	50
UL/DL Config 1		80	28
UL/DL Config 2		110	14
10 MHz		DL (Mbps)	UL (Mbps)
UL/DL Config 0		25	21
UL/DL Config 1		40	14
UL/DL Config 2	55	7	
User Capacity	32 RRC connected users		
Maximum Deployment Range	5 kilometers		
Latency	30 milliseconds		
Receive Sensitivity	-101 dBm at B38/40/41 -100 dBm at B42/43/48		

Modulation	MCS0 (QPSK) to MCS28 (64 QAM)
Transmit Power Range	0 to 27 dBm (combined, with 1 dB interval)
Quality of Service	Nine-level priority indicated by QoS Class Identifiers (QCI)
ARQ/HARQ	Yes
Synchronization	GPS (built-in), 1588v2

MODULATION LEVELS (ADAPTIVE)

MCS	Modulation Scheme	RSRP (dBm)	Coverage Distance (km)
0–9	QPSK	-120 <= RSRP < -110	3.5 < D <= 5
10–16	16 QAM	-110 <= RSRP < -100	1.2 < D < 3.5
17–28	64 QAM	RSRP >= -100	D <= 1.2

NOTE: The information provided is for reference only as the environment can impact modulation levels.
 Scenario: Base Station height is 30 meters; Customer User Equipment (CPE) height is two meters.

FEATURES

Voice	VoLTE, Circuit Switched Fallback (CSFB) to GSM
SON	Self-Organizing Network <ul style="list-style-type: none"> • Automatic setup • Automatic Neighbor Relation (ANR) • PCI confliction detection
EPC	HaloB (Embedded EPC)
RET Support	Yes
Traffic Offload	Local breakout
Layer 2 Support	Transparent Bridge Mode*
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 • Automatic start and configuration • Alarm reporting • User information tracing • Signaling trace

* Planned for future release.

LINK BUDGET

Antenna Type	Internal 2T2R high-gain antenna <ul style="list-style-type: none"> • Horizontal Beamwidth: 65° • Vertical Beamwidth: 20° • Polarization: ±45°
Electrical Downtilt	10° at B48
Antenna Gain	10.5 ± 0.5 dBi at B38/40/41 13 ± 0.5 dBi at B42/43/48
GPS Antenna	Built-in GPS antenna
Maximum EIRP	37.5 ± 0.5 dBm at B38/40/41 40 ± 0.5 dBm at B42/43/48
Power Control	UL Open-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)

PHYSICAL

Surge Suppression	Yes
Power Interface Lightning Protection	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	-49°F to 158°F / -45°C to 70°C
Humidity	5% to 95% RH
Atmospheric Pressure	70 kPa to 106 kPa
Power Consumption	Typical 18 W, maximum 25 W
Weight	6.1 lb/2.75 kg
Dimensions (HxWxD)	9.8 x 9.8 x 3.2 inches 248 x 248 x 80 millimeters
Installation	Pole or wall mount

GLOBAL PART NUMBERS

pBS11004	<p>Nova227 Outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 10.5 dBi integrated 65-degree antenna, 2.5 GHz, B41</p> <ul style="list-style-type: none"> • FCC certification: 2AG32PBS11004 (2501 MHz–2685 MHz) • IC certification: 20982-PBS11004 (2500 MHz–2690 MHz)
pBS2120	<p>Nova227 Outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 13 dBi integrated 65-degree antenna, 3.5 GHz, B42/43/48</p> <ul style="list-style-type: none"> • FCC certification: 2AG32PBS2120 (3655 MHz–3695 MHz) • IC certification: 20982-PBS2120 (3650 MHz–3700 MHz)
pBS11001	<p>Nova227 Outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 10.5 dBi integrated 65-degree antenna, 2.5 GHz, B38</p>
pBS11003	<p>Nova227 Outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 10.5 dBi integrated 65-degree antenna, 2.3 GHz, B40</p>
pBS11005	<p>Nova227 Outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 13 dBi integrated 65-degree antenna, 3.4 GHz, B42</p>
pBS11006	<p>Nova227 Outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 13 dBi integrated 65-degree antenna, 3.6 GHz, B43</p>

NOTE: Customized versions can be requested.

ANTENNA PATTERN

