



INTRODUCTION

Nova227 is a 2x250mW LTE TDD outdoor microcell eNodeB (eNB). It is simple and compact design, low power consumption, and it can provide excellent performance. Combined with macro station, Nova227 is an effective supplement to network deployment and improves the three-dimensional coverage effect of the network. Nova227 is applied to blind coverage in dense areas, network edge coverage, network capacity improvement in areas with concentrated traffic.

When paired with self-install indoor User Equipment (UE), such customer sets can be captured quickly and with a near-immediate ROI. For private network operators, this microcell is 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
- 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 of 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
- Inter operation with all standard LTE Evolved Packet Core (EPC)
- Supports TR-069 network management interface
- Lower power consumption, which reduces OPEX, can be powered easily by Baicells compact outdoor smart UPS

Nova227

Outdoor Base Station Datasheet

Baicells
Connect More with Less

TECHNOLOGY

Standard	LTE TDD RAN (3GPP R13.50 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, SNMPv2c, 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

Peak Data Rate	20 MHz	DL (Mbps)	UL (Mbps)
	UL/DL Config 0	50	42

	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 @ Band38/40/41 -100 dBm @ Band42/43/48		
Modulation	MCS0 (QPSK) to MCS28 (64QAM)		
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	$-120 \leq \text{RSRP} < -110$	$3.5 < D \leq 5$
10 - 16	16QAM	$-110 \leq \text{RSRP} < -100$	$1.2 < D < 3.5$
17 - 28	64QAM	$\text{RSRP} \geq -100$	$D \leq 1.2$

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 - Automatic setup - Automatic Neighbor Relation (ANR) - PCI confliction detection
EPC	HaloB (Embedded EPC)
Traffic Offload	Local breakout
Layer 2 Support	Transparent Bridge Mode*
Maintenance	- 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 - Horizontal Beamwidth 65° - Vertical Beamwidth 20° - Polarization: $\pm 45^\circ$
Electrical Down Tilt	10 degrees @Band48
Antenna Gain	10.5 $\pm$ 0.5 dBi@Band38/40/41 13 $\pm$ 0.5 dBi@Band42/43/48
GPS Antenna	Built-in GPS antenna
Maximum EIRP	37.5 $\pm$ 0.5 dBm@Band38/40/41 40 $\pm$ 0.5 dBm@Band42/43/48
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 18W, maximum 25W
Weight	6.1 lbs / 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

MODEL NUMBERS

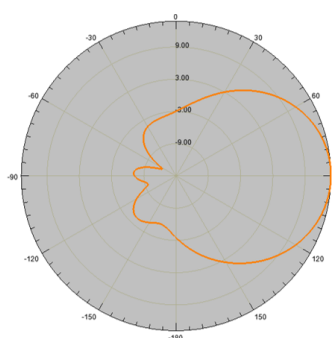
pBS11004	Nova227 outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 10.5 dBi integrated 65-degree antenna, 2.5 GHz, B41 - FCC certification: 2AG32PBS11004 (2501-2685 MHz) - IC certification: 20982-PBS11004 (2500-2690 MHz)
pBS2120	Nova227 outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 13 dBi integrated 65-degree antenna, 3.5 GHz, B42/43/48 - FCC certification: 2AG32PBS212096N (3655-3695 MHz) - IC certification: 20982-PBS2120 (3650-3700 MHz)
pBS11001	Nova227 outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 10.5 dBi integrated 65-degree antenna, 2.5 GHz, B38
pBS11003	Nova227 outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 10.5 dBi integrated 65-degree antenna, 2.3 GHz, B40

pBS11005	Nova227 outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 13 dBi integrated 65-degree antenna, 3.4 GHz, B42
pBS11006	Nova227 outdoor TDD eNB – LTE Release 13.5, 2x250mW (24 dBm), 2 port, 13 dBi integrated 65-degree antenna, 3.6 GHz, B43

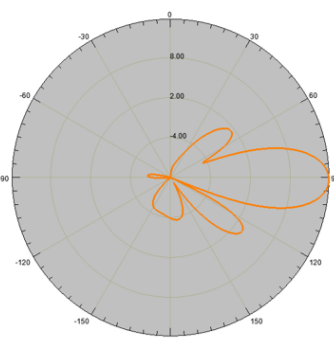
NOTE: Customized versions can be requested.

ANTENNA PATTERN

13dBi

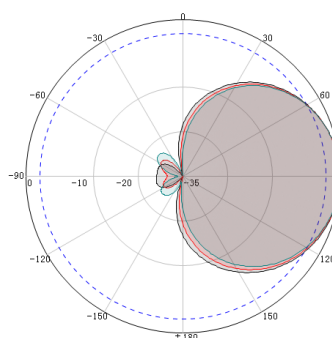


H-Pattern

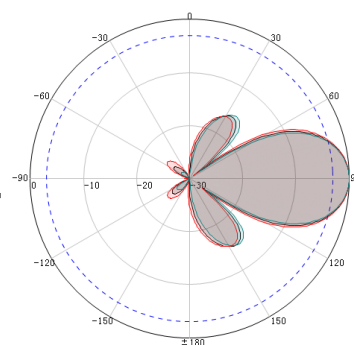


V-Pattern

10.5dBi



H-Pattern



V-Pattern