



## INTRODUCTION

The Nova230i is a lower power outdoor 2x500mW microcell eNodeB (eNB) specifically for tightly clustered pockets of customers, coverage holes, edges of your network, or simply opportunistic micro targeting, like RV parks, marinas, and high-density dwellings such as townhomes and apartments. As with all Baicells products, the Nova230i supports Long-Term Evolution (LTE) technology, and it operates in Time Division Duplexing (TDD) mode.

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.

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

## HIGHLIGHTS

*NOTE: Features can vary based on model or region.*

- Standard LTE TDD Band 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)
- Excellent Non-Line-of-Sight (NLOS) coverage
- Peak rate: Up to DL 110Mbps and UL 35Mbps with 20MHz bandwidth
- 32 RRC connected users
- PoE++ power supply; only one Ethernet cable required for data transmission and power supply
- Cloud /Local/Embedded EPC (HaloB) is supported for more convenient and economical deployment
- 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

### TECHNOLOGY

Standard	LTE TDD RAN (3GPP R15 compliant)
TDD UL/DL Configuration	1, 2, 6 (with Special Subframe Configuration 7)
Frequency Band	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++, comply with IEEE 802.3bt standard
Protocols Used	IPv4/IPv6 (Dual Stack), UDP, TCP, ICMP, NTP, SSH, IPsec, TR-069, HTTP/HTTPS, 1588v2, DHCP
Network Management	IPv4/IPv6, 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 1	80	28
	UL/DL Config 2	110	14
	UL/DL Config 6	65	35
	10 MHz	DL (Mbps)	UL (Mbps)
	UL/DL Config 1	38	14
	UL/DL Config 2	52	7
	UL/DL Config 6	31	17
User Capacity	Up to 32 RRC connected users per cell (4 users per TTI)		
Maximum Deployment Range	7 kilometers		

Latency	30 milliseconds
Receiving Sensitivity	-99.5 dBm (per channel)
Modulation	MCS0 (QPSK) to MCS28 (64QAM) DL: QPSK, 16QAM, 64QAM UL: QPSK, 16QAM, 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	Supported
Synchronization	GPS (built-in), 1588v2

## MODULATION LEVELS (ADAPTIVE)

MCS	Modulation Scheme	RSRP (dBm)	Coverage Distance (km)
0 - 9	QPSK	$-120 \leq \text{RSRP} < -100$	$5 < D \leq 7$
10 - 16	16QAM	$-100 \leq \text{RSRP} < -90$	$3 < D \leq 5$
17 - 28	64QAM	$\text{RSRP} \geq -90$	$D \leq 3$

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
NSA	Supported
SON	Self-Organizing Network <ul style="list-style-type: none"> <li>Automatic setup</li> <li>Automatic Neighbor Relation (ANR)</li> <li>PCI confliction detection</li> </ul>
EPC	HaloB (Embedded EPC)
Traffic Offload	Local breakout
Layer 2 Support	Transparent Bridge Mode
Maintenance	<ul style="list-style-type: none"> <li>Local/Remote Web maintenance</li> <li>Online status management</li> <li>Performance statistics</li> <li>Fault management</li> <li>Local/Remote software upgrade</li> </ul>



	<ul style="list-style-type: none"> <li>• Logging</li> <li>• Connectivity diagnosis</li> <li>• Automatic start and configuration</li> <li>• Alarm reporting</li> <li>• User information tracing</li> <li>• Signaling trace</li> </ul>
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## LINK BUDGET

Antenna Type	Built-in high-gain antenna <ul style="list-style-type: none"> <li>• Horizontal Beamwidth <math>65^{\circ} \pm 5</math></li> <li>• Vertical Beamwidth <math>\geq 21^{\circ}</math></li> <li>• Polarization: <math>\pm 45^{\circ}</math></li> </ul>
RF Antenna Gain	13.5dBi
Maximum EIRP	43.5 dBm
Power Control	UL Open-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)

## PHYSICAL

Power Interface Lightning Protection	Differential mode: $\pm 3$ KA Common mode: $\pm 5$ KA
MTBF	$\geq 150000$ hours
MTTR	$\leq 1$ hour
Ingress Protection Rating	IP65
Operating Temperature	$-40^{\circ}\text{F}$ to $131^{\circ}\text{F}$ / $-40^{\circ}\text{C}$ to $55^{\circ}\text{C}$
Storage Temperature	$-49^{\circ}\text{F}$ to $158^{\circ}\text{F}$ / $-45^{\circ}\text{C}$ to $70^{\circ}\text{C}$
Humidity	5% to 95% RH
Atmospheric Pressure	70 kPa to 106 kPa
Power Consumption	Typical 22.5W, maximum 25W
Weight	3.42 lbs / 1.55kg
Dimensions (HxWxD)	8.7 x 5.9 x 2.05 inches 221 x 150 x 52 millimeters
Installation	Pole or wall mount

## MODEL NUMBERS

pBS41010	Nova230i outdoor TDD eNB – LTE Release 15, 2x500mW (27 dBm), 1 port, built-in antenna, 3.5 GHz (3550 MHz -3700 MHz), PoE++, B48
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NOTE: Customized versions can be requested.

## ANTENNA PATTERN

