



## INTRODUCTION

This Baicells Nova249 eNodeB (eNB) is an outdoor Long-Term Evolution (LTE) product that operates in Frequency Division Duplexing (FDD) mode. This eNB provides users with high-speed broadband wireless access to the Internet using 2x40 watts output power (2x2 MIMO with 40 watts output each channel). This unit is compact, lightweight, and easy to deploy.

The Nova249 eNB offers excellent performance, helping operators to provide better coverage and higher capacity.

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 FDD Bands 1/3/5/7/8/20/28
- Complies with 3GPP Release 10 standards
- Excellent Non-Line-of-Sight (NLOS) coverage performance
- Any IP based backhaul can be used, including public transmission protected by Internet Protocol Security (IPsec)
- Peak rate: Up to DL 195Mbps and UL 75Mbps with 20MHz bandwidth.
- 1024 RRC connected users
- Supports TR069 network management protocol
- External high-gain antenna
- Higher transmission power for extended coverage
- Supports RET function AISG 2.0.
- Inter operation with all standard LTE Evolved Packet Core (EPC)
- GUI-based local and remote Web management
- Lower power consumption to reduce OPEX

### TECHNOLOGY

<b>Standard</b>	LTE FDD RAN (3GPP R10 compliant)
<b>Frequency Band</b>	Band1 (UL: 1920MHz-1980MHz, DL: 2110MHz-2170MHz) Band3 (UL: 1710MHz-1785MHz, DL: 1805MHz-1880MHz) Band5 (UL: 824MHz-849MHz, DL: 869MHz-894MHz) Band7 (UL: 2500MHz-2570MHz, DL: 2620MHz-2690MHz) Band8 (UL: 880MHz-915MHz, DL: 925MHz-960MHz) Band20(UL: 832MHz-862MHz, DL: 791MHz-821MHz) Band28 (UL: 703MHz-748MHz, DL: 758MHz-803MHz)
<b>Channel Bandwidth</b>	Band1/3/7/20/28: 5/10/15/20MHz Band5/8: 5/10MHz
<b>Multiplexing</b>	MIMO: 2x2 (DL)
<b>Security</b>	Radio: SNOW 3G/AES-128/ZUC Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)
<b>Voice</b>	VoLTE, Circuit Switched Fallback (CSFB) to GSM and UTRAN
<b>Inter-RAT Mobility</b>	To GSM, UTRAN and 5G NSA/SA
<b>Daisy Chain</b>	2 level cascading
<b>SON</b>	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>
<b>VSWR</b>	Supported
<b>RET support</b>	Yes
<b>Traffic Offload</b>	Local breakout
<b>Maintenance</b>	<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> <li>Logging</li> <li>Connectivity diagnosis</li> <li>Automatic start and configuration</li> <li>Alarm reporting</li> </ul>

	<ul style="list-style-type: none"> <li>User information tracing</li> <li>Signaling trace</li> </ul>
<b>Network Management</b>	IPv4, HTTP/HTTPS, TR-069, SSH
<b>VLAN</b>	802.IQ
<b>Power Control</b>	UL Open/Close-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)
<b>Quality of Service</b>	Nine-level priority indicated by QoS Class Identifiers (QCI)
<b>ARQ/HARQ</b>	Supported
<b>Synchronization</b>	GPS/ 1588 V2

## PERFORMANCE

<b>Peak Data Rate</b>	20MHz: DL 195Mbps, UL 75Mbps 10MHz: DL 97.5Mbps, UL 31Mbps
<b>User Capacity</b>	1024 RRC connected users
<b>Maximum Deployment Range</b>	14 kilometers
<b>Latency</b>	30 milliseconds
<b>Receive Sensitivity</b>	-102 dBm (per channel)
<b>EVM</b>	QPSK<5%; 16QAM<5%; 64QAM<5%, 256QAM<3.5%
<b>Modulation</b>	MCS0 (QPSK) to MCS27 (256QAM) DL: QPSK, 16QAM, 64QAM, 256QAM UL: QPSK, 16QAM, 64QAM
<b>Transmit Power Range</b>	36 to 46 dBm per channel (combined +49dBm, configurable with 1 dB interval)

## MODULATION LEVELS (ADAPTIVE)

MCS	Modulation Scheme	RSRP (dBm)
0 - 4	QPSK	-120<= RSRP < -110
5 - 10	16QAM	-110<= RSRP < -100
11 - 19	64QAM	-100<= RSRP < -85
20 - 27	256QAM	RSRP >= -85

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.



### INTERFACE

<b>Ethernet Interface</b>	1 RJ-45 Ethernet interface (1 GE) and 1 optical (SFP) interface
<b>Powering Method</b>	-40VDC to -57VDC, nominal -48VDC (The AC/DC adaptor is optional.)
<b>LED Indicators</b>	4 x status LED PWR/ALM/RUN/ACT
<b>Antenna connection</b>	Mini-DIN or N type connector for external high gain antenna
<b>GPS Antenna</b>	External GPS antenna, N Type connector

### PHYSICAL SPECIFICATIONS

<b>Spurious Emissions</b>	9kHz-150kHz/1kHz <= -36dBm 150kHz-30MHz/10kHz <= -36dBm 30MHz-1GHz/100kHz <= -36dBm 1GHz-12.75GHz/1MHz <= -30dBm		
<b>Frequency Exactitude</b>	$\pm(0.05\text{PPM}+12\text{Hz})$		
<b>Adjacent Channel Selectivity</b>	3GPP TS36.104		
<b>ACLR</b>	3GPP TS36.104		
<b>Surge Suppression</b>	Supported		
<b>Power Interface Lightning Protection</b>	Differential mode: $\pm 10$ KA Common mode: $\pm 20$ KA		
<b>MTBF</b>	$\geq 150000$ hours		
<b>MTTR</b>	$\leq 1$ hour		
<b>Ingress Protection Rating</b>	IP66		
<b>Operating Temperature</b>	-40°F to 131°F / -40°C to 55°C		
<b>Storage Temperature</b>	-49°F to 158°F / -45°C to 70°C		
<b>Humidity</b>	5% to 95% RH		
<b>Atmospheric Pressure</b>	70 kPa to 106 kPa		
<b>Power Consumption</b>	Typical < 200W, maximum < 300W		
<b>Weight</b>	With pre-installed bracket: About 26.0lbs / 11.80kg Without pre-installed bracket: About 25.2lbs / 11.45kg		
		Band1/3/7	Band5/8/20/28
	With joint	18.0 x 10.9 x 4.8 inches/	18.0 x 10.9 x 5.0 inches/



<b>Dimensions (HxWxD)</b>		457 x 276 x 123 millimeters	457 x 276 x 127 millimeters
	Without joint and handle	16.9 x 9.8 x 4.8 inches/ 430 x 250 x 123 millimeters	16.9 x 9.8 x 5.0 inches/ 430 x 250 x 127 millimeters
<b>Installation</b>	Pole or wall mount		

## MODEL NUMBERS

sBS32010	Nova249 outdoor FDD eNB - LTE Release 10, 2x40W (46 dBm), 2 port, UL1920MHz-1980MHz / DL2110MHz-2170MHz, B1, 48VDC, external antenna/GPS
sBS32000	Nova249 outdoor FDD eNB - LTE Release 10, 2x40W (46 dBm), 2 port, UL1710MHz-1785MHz / DL1805MHz-1880MHz, B3, 48VDC, external antenna/GPS
sBS32030	Nova249 outdoor FDD eNB - LTE Release 10, 2x40W (46 dBm), 2 port, UL824MHz-849MHz / DL869MHz-894MHz, B5, 48VDC, external antenna/GPS
sBS32020	Nova249 outdoor FDD eNB - LTE Release 10, 2x40W (46 dBm), 2 port, UL2500MHz-2570MHz / DL2620MHz-2690MHz, B7, 48VDC, external antenna/GPS
sBS32101	Nova249 outdoor FDD eNB - LTE Release 10, 2x40W (46 dBm), 2 port, UL880MHz-915MHz / DL925MHz-960MHz, B8, 48VDC, external antenna/GPS
sBS32120	Nova249 outdoor FDD eNB - LTE Release 10, 2x40W (46 dBm), 2 port, UL832MHz-862MHz / DL791MHz-821MHz, B20, 48VDC, external antenna/GPS
sBS32070	Nova249 outdoor FDD eNB - LTE Release 10, 2x40W (46 dBm), 2 port, UL703MHz-748MHz / DL758MHz-803MHz, B28, 48VDC, external antenna/GPS

NOTE: Customized versions can be requested.