



## INTRODUCTION

The Baicells Nova246 eNodeB (eNB) is an advanced dual carrier (DC) outdoor Long-Term Evolution (LTE) product that operates in Time Division Duplexing (TDD) mode. This eNB provides users with high-speed broadband wireless access to the Internet using 2\*20 W output power (2x2 MIMO with 20 W output each channel). This eNB operates in Dual Carrier (DC) or Single Carrier (SC) mode.

In DC mode, each carrier is treated as an independent cell, supporting 96+96 users with each cell supporting 5, 10, 15, or 20 MHz bandwidth. Using a Nova246 in DC mode simplifies and streamlines the deployment of split sectors.

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 38/40/41/48
  - Customization can be requested:
    - Email [sales\\_na@baicells.com](mailto:sales_na@baicells.com) for North America.
    - Email [contact@baicells.com](mailto: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)
- External high-gain antenna
- Higher transmission power for extended coverage
- Excellent Non-Line-of-Sight (NLOS) coverage
- Peak rate (per unit): Up to DL 220 Mbps, UL 28 Mbps with 2x20 MHz bandwidth
- 96 RRC connected users per carrier, 96+96 in DC mode
- Integrated small cell form factor for quick and easy installation
- Configured out-of-the-box to work with Baicells CloudCore
- HaloB as embedded EPC solution
- Supports Citizens Broadband Radio Service (CBRS)
- Supports RET function AISG 2.0
- Plug-and-play with Self-Organizing Network (SON) capabilities
- Interoperates with 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 SmartUPS

## TECHNOLOGY

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

## INTERFACE

|                           |  |
|---------------------------|--|
| <b>Ethernet Interface</b> | 1 RJ-45 Ethernet interface (1 GE) and 1 optical (SFP) interface              |
| <b>Power Supply</b>       | -40 VDC to -57 VDC, nominal -48 VDC<br>AC adaptor (multi-national standards) |
| <b>Protocols Used</b>     | IPv4, UDP, TCP, ICMP, NTP, SSH, IPsec, TR-069, HTTP/HTTPS, 1588v2, DHCP      |
| <b>Network Management</b> | IPv4, HTTP/HTTPS, TR-069, SSH, Embedded EPC                                  |
| <b>VLAN</b>               | 802.IQ   |
| <b>LED Indicators</b>     | 4 x status LED<br>CELL1/CELL2/ALM/PWR  |

## PERFORMANCE

| Peak Data Rate (DC)             | 2x20 MHz   | DL (Mbps)          | UL (Mbps)          |
|---------------------------------|--|--------------------|--------------------|
|                                 | UL/DL Config 0   | 2x50               | 2x42               |
|                                 | UL/DL Config 1   | 2x80               | 2x28               |
|                                 | UL/DL Config 2   | 2x110              | 2x14               |
|                                 | Ethernet interface   | Ethernet interface | Ethernet interface |
|                                 | UL/DL Config 0   | 2x25               | 2x21               |
|                                 | UL/DL Config 1   | 2x40               | 2x14               |
|                                 | UL/DL Config 2   | 2x55               | 2x7                |
| <b>User Capacity</b>            | Up to 96 RRC connected users per cell (4 users per TTI)<br><ul style="list-style-type: none"> <li>• SC: 96 RRC connected users</li> <li>• DC: 96+96 RRC connected users</li> </ul> |                    |                    |
| <b>Maximum Deployment Range</b> | 28 kilometers  |                    |                    |
| <b>Latency</b>                  | 30 milliseconds  |                    |                    |
| <b>Receive Sensitivity</b>      | -102 dBm (per channel)   |                    |                    |
| <b>Modulation</b>               | MCS0 (QPSK) to MCS28 (64 QAM)  |                    |                    |

|                             |  |
|-----------------------------|--|
| <b>Transmit Power Range</b> | 0 to 46 dBm (combined, with 1 dB interval)                   |
| <b>Quality of Service</b>   | Nine-level priority indicated by QoS Class Identifiers (QCI) |
| <b>ARQ/HARQ</b>             | Yes  |
| <b>Synchronization</b>      | GPS  |

## MODULATION LEVELS (ADAPTIVE)

| MCS   | Modulation Scheme | RSRP (dBm)          | Coverage Distance (km) |
|-------|-------------------|---------------------|------------------------|
| 0–9   | QPSK              | -120 <= RSRP < -110 | 15 < D <= 28           |
| 10–16 | 16 QAM            | -110 <= RSRP < -100 | 7.5 < D < 15           |
| 17–28 | 64 QAM            | RSRP >= -100        | D <= 7.5               |

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

|                        |   |
|------------------------|---|
| <b>Voice</b>           | VoLTE, Circuit Switched Fallback (CSFB) to GSM  |
| <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>EPC</b>             | HaloB (Embedded EPC)  |
| <b>RET Support</b>     | Yes   |
| <b>Traffic Offload</b> | Local breakout  |
| <b>Layer 2 Support</b> | Transparent Bridge Mode*  |
| <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> <li>• User information tracing</li> <li>• Signaling trace</li> </ul> |

\* Planned for future release.

## LINK BUDGET

|                           |  |
|---------------------------|--|
| <b>Antenna Connection</b> | N-Type connector for external high-gain antenna                            |
| <b>GPS Antenna</b>        | External GPS antenna, N-Type connector                                     |
| <b>VSWR</b>               | < 1.5  |
| <b>Power Control</b>      | UL Open-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant) |

## PHYSICAL

|   |  |
|---|--|
| <b>Surge Suppression</b>                    | Yes  |
| <b>Power Interface Lightning Protection</b> | Differential mode: ±10 KA<br>Common mode: ±20 KA   |
| <b>MTBF</b>                                 | ≥ 150000 hours   |
| <b>MTTR</b>                                 | ≤ 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 155 W, maximum 180 W   |
| <b>Weight</b>                               | 24.9 lb/11.3 kg (with pre-installed bracket)   |
| <b>Dimensions (HxWxD)</b>                   | With joint: <ul style="list-style-type: none"> <li>• 17.6 x 11.3 x 4.4 inches</li> <li>• 447 x 287 x 113 millimeters</li> </ul> Without joint and handle: <ul style="list-style-type: none"> <li>• 17.0 x 9.7 x 4.4 inches</li> <li>• 431 x 247 x 113 millimeters</li> </ul> |
| <b>Installation</b>                         | Pole or wall mount   |

## GLOBAL PART NUMBERS

|                     |   |
|---------------------|---|
| <b>sBS81060 (G)</b> | Nova246 Outdoor TDD eNB – LTE Release 13.5, 2x20 W (43 dBm), 2 port, 2570 MHz–2620 MHz, B38 <ul style="list-style-type: none"><li>• FCC certification: TBD</li><li>• IC certification: TBD</li></ul>                      |
| <b>sBS81000 (G)</b> | Nova246 Outdoor TDD eNB – LTE Release 13.5, 2x20 W (43 dBm), 2 port, 2300 MHz–2400 MHz, B40 <ul style="list-style-type: none"><li>• FCC certification: TBD</li><li>• IC certification: TBD</li></ul>                      |
| <b>sBS81040 (G)</b> | Nova246 Outdoor TDD eNB – LTE Release 13.5, 2x20 W (43 dBm), 2 port, 2469 MHz–2690 MHz, B41 <ul style="list-style-type: none"><li>• FCC certification: 2AG32SBS81040</li><li>• IC certification: 20982-SBS81040</li></ul> |
| <b>sBS81010G</b>    | Nova246 Outdoor TDD eNB – LTE Release 13.5, 2x20 W (43 dBm), 2 port, 3550 MHz–3700 MHz, B48 <ul style="list-style-type: none"><li>• FCC certification: TBD</li><li>• IC certification: TBD</li></ul>                      |

NOTE: Customized versions can be requested.