# Nova430/430i Outdoor TDD eNodeB


## INTRODUCTION

The Baicells Nova430/430i is an advanced two-carrier outdoor eNodeB (eNB) compliant with 3GPP LTE TDD technology. This 4x250mW eNB can operate in Carrier Aggregation (CA) mode or Dual Carrier (DC)/split mode.

The Nova430 is available in two variants: The Nova430, which has one 4-port or two 2-port external antennas, and the Nova430i, which has four integrated high-gain LTE antennas.

In CA mode, contiguous or non-contiguous channels are aggregated to provide up to 40 MHz bandwidth. This doubles the downlink capacity when CA mode is used with all Cat6/7 or higher user equipment.

In DC mode, each carrier is treated as an independent cell, supporting 96+96 users, with each supporting 5, 10, 15, or 20 MHz bandwidth. Using a Nova430/430i in DC mode simplifies and streamlines the deployment of split sectors.

In addition to CA and DC mode options, HaloB (an embedded MME option) is available on the Nova430/430i as part of the base software. The Baicells patented HaloB solution migrates the necessary core network functions to the eNB.

This product comes with a standard product warranty; an extended warranty is available.

## FEATURES

Note: Features may vary based on model or region.

- Standard LTE TDD Bands 48 and partial 42, 43
  - Customization can be requested; contact sales_na@baicells.com.
- 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
- Aggregate peak rate: (up to) DL 220 Mbps, UL 28 Mbps with 2x20 MHz, using all Cat6/7 or higher CPEs/UEs
- 96 concurrent users per carrier, 96+96 in DC mode
- Built-in 4-port antenna
- Integrated small cell form factor for quick and easy installation
- Configured out of the box to work with Baicells CloudCore
- Embedded HaloB (lite EPC) solution
- Supports Citizens Broadband Radio Service (CBRS)
- Plug-and-play with self-organizing network (SON) capabilities
- IoT with all standard LTE Evolved Packet Core (EPC)
- TR-069 network management interface support
- Lower power consumption, which reduces OPEX, can be powered easily by Baicells compact outdoor UPS

## HARDWARE SPECIFICATIONS

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|---|---|
| LTE Mode | TDD |
| Frequency Bands | B48 and partial B42, B43 |
| Channel Bandwidth | 5/10/15/20 MHz per carrier |
| Max Output Power | 24 dBm/channel |
| Power Supply | PoE++, IEEE 802.3bt standard |
| Power Consumption | Typical 20 W, MAX 25 W |
| Receive Sensitivity | -100 dBm |

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| Synchronization | GPS |
| Interfaces | 1 RG45, 1 RG45 (Management), and 1 SFP port |
| MIMO | DL: 2x2 on each carrier, 2 carriers |
| Installation | Pole or wall mount |
| Antenna | • 430: One 4-port or two 2-port external antennas compatible with N-type eNB connectors<br>• 430i: 13.5 dBi built-in 4-port antenna<br>– Horizontal Beamwidth: 65±10°<br>– Vertical Beamwidth: 17°<br>– Polarization: ±45° |
| Antenna Gain | 430i: 13.5 ± 0.8 dB |
| Dimensions (HxWxD) | • 12.2 x 8.9 x 4.1 inches<br>• 309 x 227 x 104 millimeters |
| Weight | 10.7 lbs./4.85 kgs |
| MTBF | ≥ 150000 hours |
| MTTR | ≤ 1 hour |

## SOFTWARE SPECIFICATIONS

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|---|---|---|---|
| LTE Standard | 3GPP Release 15 | | |
| Peak Rate (up to) in DC mode<br><br>SA - Subframe Assignment (configurable parameter)<br><br>SA1: config. 1(DSUUD)<br>SA2: config. 2(DSUDD) | **2x20 MHz:** | DL (Mbps) | UL (Mbps) |
| | SA1: | 2x80 | 2x28 |
| | SA2: | 2x110 | 2x14 |
| | **2x10 MHz:** | DL (Mbps) | UL (Mbps) |
| | SA1: | 2x40 | 2x14 |
| | SA2: | 2x55 | 2x7 |
| Peak Rate (up to) in CA mode<br><br>Rates based on using all CAT6/7 or higher CPEs | **2x20 MHz:** | DL (Mbps) | UL (Mbps) |
| | SA1: | 160 | 28 |
| | SA2: | 220 | 14 |
| | **2x10 MHz:** | DL (Mbps) | UL (Mbps) |
| | SA1: | 80 | 14 |
| | SA2: | 110 | 7 |
| User Capacity | • 96 concurrent users in single carrier mode<br>• 96+96 concurrent users in DC mode<br>• 96 concurrent users in CA mode | | |

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| QoS Control | 3GPP standard Quality of Service Class Identifier (QCI), support SC1 |
| Modulation | • DL: QPSK, 16 QAM, 64 QAM, and future software release 256 QAM<br>• UL: QPSK, 16 QAM, 64 QAM |
| Traffic Offload | Local breakout |
| Voice | VoLTE (future software release) |
| SON | Self-organizing network:<br>• Automatic setup<br>• Automatic Neighbor Relation (ANR)<br>• PCI confliction detection |
| Network Mgmt | TR-069, SNMP |
| Maintenance | • Local/Remote Web maintenance<br>• Online status management<br>• Performance statistics<br>• Fault management<br>• Local/Remote software upgrade<br>• Logging<br>• Connectivity diagnosis<br>• Automatic start and configuration<br>• Alarm reporting<br>• User information tracing<br>• Signaling Trace |

## ENVIRONMENTAL SPECIFICATIONS

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| Operating Temperature | -40°F to 131°F / -40°C to 55°C |
| Storage Temperature | -49°F to 158°F / -50°C to 65°C |
| Humidity | 5% to 95% RH |
| Atmospheric Pressure | 70 kPa to 106 kPa |
| Ingress Protection Rating | IP65 |
| Power Interface Lightning Protection | Differential mode: ±10 KA<br>Common mode: ±20 KA |

## GLOBAL PART NUMBERS

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|---|---|
| pBS3101SE | Nova430 Outdoor TDD eNodeB - LTE Release 15, 4x250mW (24 dBm), 4-port, 3.5 GHz (3550-3700 MHz), B42/43/48. Carrier Aggregation/Dual Carrier.<br>• FCC certification: 2AG32PBS3101SE<br>• IC certification: 20982-PBS3101SE |
| pBS3101S | Nova430i Outdoor TDD eNodeB - LTE Release 15, 4x250mW (24 dBm), 13.5 dBi built-in antenna, 3.5 GHz (3550-3700 MHz), B42/43/48. Carrier Aggregation/Dual Carrier.<br>• FCC certification: 2AG32PBS3101S<br>• IC certification: 20982-PBS3101S |

Note: Customized versions can be requested.