



## INTRODUCTION

The Baicells Neutrino430 is an advanced two-carrier indoor eNodeB (eNB) compliant with 3GPP LTE TDD technology. This 4x250mW eNB can operate in Carrier Aggregation (CA) mode or Dual Carrier (DC)/split mode.

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 Neutrino430 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 Neutrino430 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](mailto: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)

- Built-in integrated antenna
- 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
- 96 concurrent users per carrier, 96+96 in DC mode
- Built-in 4-port omni antenna
- Integrated small cell form factor for quick and easy installation
- Configured out of the box to work with Baicells CloudCore.
- Supports HaloB operating mode
- Supports Citizens Broadband Radio Service (CBRS)
- Plug-and-play with self-organizing network (SON) capabilities
- TR-069 network management interface support
- IoT with standard LTE Evolved Packet Core (EPC)
- Lower power consumption, which reduces OPEX
- Built-in DHCP server, DNS client, and NAT functionality, providing strong high-speed routing

## HARDWARE SPECIFICATIONS

LTE Mode	TDD
Frequency Bands	Band 48 and partial bands 42, 43
Channel Bandwidth	5/10/15/20 MHz per carrier
Max Output Power	24 dBm/port
Power Supply	12 VDC, POE ±48 V
Power Consumption	~20 W (peak)
Receive Sensitivity	-100 dBm

Synchronization	GPS, Network Listening (NL), 1588v2
Interfaces	1 optical (SFP) and 1 RJ-45 Ethernet interface (1 GE)
MIMO	DL: 2x2 on each carrier
Installation	Ceiling or wall mount
Antenna	4 dBi, built-in 4-port omni antenna
Antenna Gain	4 ± 1 dBi
Dimensions (HxWxD)	8.7 x 8.7 x 1.8 inches 220 x 220 x 45 millimeters
Weight	3.52 lbs/1.6 kgs
MTBF	≥ 150000 hours
MTRR	≤ 1 hour

## SOFTWARE SPECIFICATIONS

LTE Standard	3GPP Release 15		
Peak Rate (up to) in DC mode	<b>2x20 MHz:</b>	<u>DL (Mbps)</u>	<u>UL (Mbps)</u>
	SA1:	2x80	2x28
	SA2:	2x110	2x14
	SA - Subframe Assignment (configurable parameter)	<b>2x10 MHz:</b>	<u>DL (Mbps)</u>
SA1: config. 1 (DSUUD)	SA1:	2x40	2x14
SA2: config. 2 (DSUDD)	SA2:	2x55	2x7
Peak Rate (up to) in CA mode	<b>2x20 MHz:</b>	<u>DL (Mbps)</u>	<u>UL (Mbps)</u>
	SA1:	160	28
	SA2:	220	14
	Rates based on using all Cat6/7 or higher CPEs	<b>2x10 MHz:</b>	<u>DL (Mbps)</u>
	SA1:	80	14
	SA2:	110	7
User Capacity	<ul style="list-style-type: none"> <li>96 concurrent users in single carrier mode</li> <li>96+96 concurrent users in DC mode</li> <li>96 concurrent users in CA mode</li> </ul>		
QoS Control	3GPP standard Quality of Service Class Identifier (QCI)		
Modulation	<ul style="list-style-type: none"> <li>DL: QPSK, 16 QAM, 64 QAM, and future software release 256 QAM</li> <li>UL: QPSK, 16 QAM, 64 QAM</li> </ul>		

Traffic Offload	Local breakout
Voice	VoLTE (future software release)
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>
RAN Sharing	Multi-Operator Core Network (MOCN)
Network Mgmt	TR-069
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> <li>Logging</li> <li>Connectivity diagnosis</li> <li>Automatic start and configuration</li> <li>Alarm reporting</li> <li>KPI reporting</li> <li>User information tracing</li> <li>Signaling Trace</li> </ul>

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	23°F to 113°F / -5°C to 45°C
Storage Temperature	14°F to 122°F / -10°C to 50°C
Humidity	5% to 95% RH
Atmospheric Pressure	70 kPa to 106 kPa

## GLOBAL PART NUMBER

pBS31010	Neutrino430 Indoor TDD eNodeB - LTE Release 15, 4x250mW (24 dBm), 3 dBi built-in antenna, 3.5 GHz (3550-3700 MHz), B42/43/48. Carrier Aggregation/Dual Carrier. <ul style="list-style-type: none"> <li>FCC Certification: 2AG32PBS31010</li> <li>IC certification: TBD</li> </ul>
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Note: Customized versions can be requested.