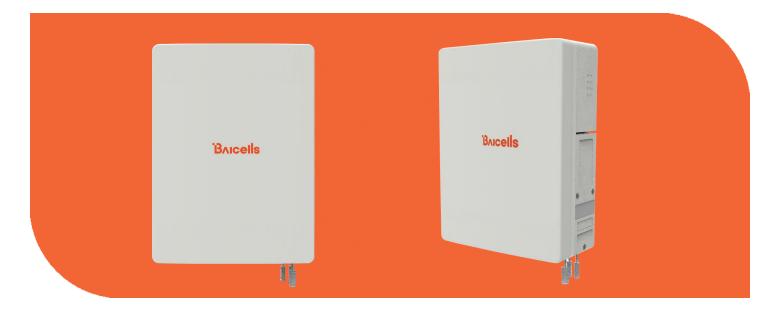# Nova430/430i Outdoor TDD eNodeB

Baicells

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

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

Synchronization	GPS
Interfaces	1 RJ-45 Ethernet interface (1 FE/GE)
MIMO	DL: 2x2 on each carrier, 2 carriers
Installation	Pole or wall mount

Antenna	• 430: One 4-port or two 2-port external antennas
	• 430i: 13.5 dBi built-in 4-port antenna
	    – Horizontal Beamwidth: 65±10°
	    – Vertical Beamwidth: 17°
	    – Polarization: ±45°

Antenna Gain	430i: 13.5 ± 0.8 dB
Dimensions (HxWxD)	• 12.2 x 8.9 x 4.1 inches • 309 x 227 x 104 millimeters
Weight	10.7 lbs./4.85 kgs
MTBF	≥ 150000 hours
MTTR	≤ 1 hour

SOFTWARE SPECIFICATIONS

LTE Standard	3GPP Release 15		
Peak Rate (up to) in DC mode SA - Subframe Assignment (configurable parameter) SA1: config. 1(DSUUD) 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 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 • 96+96 concurrent users in DC mode • 96 concurrent users in CA mode		

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 • UL: QPSK, 16 QAM, 64 QAM
Traffic Offload	Local breakout
Voice	VoLTE (future software release)
SON	Self-organizing network: • Automatic setup • Automatic Neighbor Relation (ANR) • PCI confliction detection
Network Mgmt	TR-069, SNMP
Maintenance	• Local/Remote Web maintenance • Online status management • Performance statistics • Fault management • Local/Remote software upgrade • Logging • Connectivity diagnosis • Automatic start and configuration • Alarm reporting • User information tracing • Signaling Trace

ENVIRONMENTAL SPECIFICATIONS

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 Common mode: ±20 KA

GLOBAL PART NUMBERS

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. • FCC certification: TBD • IC certification: TBD
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. • FCC certification: 2AG32PBS3101S • IC certification: 20982-PBS3101S

Note: Customized versions can be requested.