Nova430i Outdoor TDD eNodeB

Baicells

INTRODUCTION

The Baicells Nova430i 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 Nova430e, which has one 4-port or two 2-port external antennas, and the Nova430i, which has four integrated high-gain LTE antennas. The Nova430i is described in this datasheet.

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 Nova430i 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 Nova430i 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: 2CC CA for both DL/UL (up to) DL 220 Mbps, UL 56 Mbps with 2x20 MHz, using all CAT6/7 or higher CPEs
- 96 concurrent 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
- Embedded HaloB (lite EPC) solution
- Supports Citizens Broadband Radio Service (CBRS)
- Plug-and-play with Self-Organizing Network (SON) capabilities
- Internet of Things (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	• 13.5 dBi built-in 4-port antenna
	  – Horizontal Beamwidth: 65±10°
	  – Vertical Beamwidth: 17°
	  – Polarization: ±45°

Antenna Gain	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 lb/4.85 kg
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	56	
	SA2:	220	28	
	2x10 MHz:	DL (Mbps)	UL (Mbps)	
	SA1:	80	28	
	SA2:	110	14	
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 / -45°C to 70°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 NUMBER

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

Note: Customized versions can be requested.