

Nova430H

Outdoor eNodeB Datasheet

Baicells
Connect More with Less



INTRODUCTION

The Baicells Nova430H is the sweet spot between high power and installation complexity. The integrated antenna, all-in-one form factor, and power output of up to 40 dBm/10 MHz make the Nova430H an excellent option for easy outdoor Helium coverage.

The Nova430H supports two Carrier Aggregation (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 or higher user equipment.

The Nova430H is pre-loaded with FreedomFi-approved software, ready to plug-and-play with a FreedomFi or Powered by FreedomFi Helium 5G hotspot.

Dual Carrier mode is not supported on the Nova430H.

This product has a standard one-year warranty; an extended warranty is available.

HIGHLIGHTS

NOTE: Features can vary based on model or region.

- Compact, all-in-one design of internal antenna and GPS
- Excellent Non-Line-of-Sight (NLOS) coverage
- Peak rate: Up to DL 290 Mbps and UL 68 Mbps with 2x20 MHz bandwidth
- 2CC DL/UL CA improves the spectrum efficiency of fragmented spectrum resources
- 96 RRC connected users upgradeable to higher capacity in future releases
- Integrated small cell form factor for quick and easy installation
- Configured out-of-the-box to work with FreedomFi and Powered-By-FreedomFi 5G Hotspots
- Supports Citizens Broadband Radio Service (CBRS)
- Plug-and-play with Self-Organizing Network (SON) capabilities
- Interoperable with FreedomFi Decentralized Wireless Core technology
- Lower power consumption, which reduces OPEX, can be powered easily by Baicells compact outdoor SmartUPS

TECHNOLOGY

Standard	LTE TDD RAN (3GPP Release 15 compliant)
TDD UL/DL Configuration	1, 2, 6 (with Special Subframe Configuration 7)
Frequency Band	B48 (3550 MHz–3700 MHz)
Channel Bandwidth	SC: 5/10/15/20 MHz CA: 40 MHz as maximum aggregated bandwidth
Multiplexing	MIMO: 2x2 (DL)
Security	Radio: SNOW 3G/AES-128 Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)

INTERFACE

Ethernet Interface	1 RJ-45 Ethernet interface (1 FE/GE)
Power Supply	PoE++ (IEEE 802.3bt compliant)
Protocols Used	IPv4, UDP, TCP, ICMP, NTP
Network Management	FreedomFi Decentralized Wireless Core
LED Indicators	4 x status LED CELL1/CELL2/ALM/PWR

PERFORMANCE

Peak Data Rate (CA)	2x20 MHz	DL (Mbps)	UL (Mbps)
	UL/DL Config 1	210	56
	UL/DL Config 2	290	28
	UL/DL Config 6	174	68
	2x10 MHz	DL (Mbps)	UL (Mbps)
	UL/DL Config 1	105	28
	UL/DL Config 2	145	14
	UL/DL Config 6	87	34
	20 MHz + 10 MHz	DL (Mbps)	UL (Mbps)
	UL/DL Config 1	154.5	42
	UL/DL Config 2	213	21
	UL/DL Config 6	126	51
	20 MHz + 15 MHz	DL (Mbps)	UL (Mbps)
	UL/DL Config 1	185	48
	UL/DL Config 2	253	24
	UL/DL Config 6	151	60
	Up to 96 RRC connected users per cell (4 users per TTI): SC/CA: 96 RRC connected users		
	User Capacity		

Maximum Deployment Range	5 kilometers (requires line of sight and high power fixed wireless CPE, range is smaller when serving mobile handsets)
Latency	30 milliseconds
Receive Sensitivity	-100 dBm (per channel)
Modulation	MCS0 (QPSK) to MCS27 (256 QAM) DL: QPSK, 16 QAM, 64 QAM, 256 QAM UL: QPSK, 16 QAM, 64 QAM
Transmit Power Range	0 to 24 dBm per channel (combined +30 dBm, configurable) (1 dB interval)
Quality of Service	Nine-level priority indicated by QoS Class Identifiers (QCI)
ARQ/HARQ	Yes
Synchronization	GPS (built-in)

LINK BUDGET

Antenna	13.5 dBi built-in 4-port antenna <ul style="list-style-type: none"> • Horizontal Beamwidth $65 \pm 10^\circ$ • Vertical Beamwidth 17° • Polarization: $\pm 45^\circ$
Electrical Downtilt	6° at Band 48
Antenna Gain	13 ± 1 dBi
Maximum EIRP	43 ± 1 dBm
Power Control	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)

PHYSICAL

Surge Suppression	Yes
Power Interface Lightning Protection	Differential mode: ± 10 KA Common mode: ± 20 KA
MTBF	≥ 150000 hours
MTTR	≤ 1 hour
Ingress Protection Rating	IP65
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
Power Consumption	Typical 20 W, maximum 25 W
Weight	10.7 lb/4.85 kg (without bracket)
Dimensions (HxWxD)	12.6 x 8.9 x 4.1 inches 319 x 227 x 104 millimeters
Installation	Pole or wall mount

MODEL NUMBER

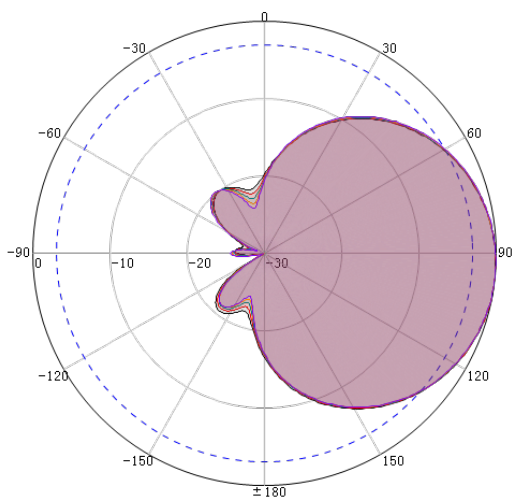
pBS3101SH

Nova430H Outdoor TDD eNB – LTE Release 15, 4x250mW (24 dBm), 1 FE/GE, PoE++, 3.5 GHz (3550 MHz–3700 MHz), B48, built-in antenna

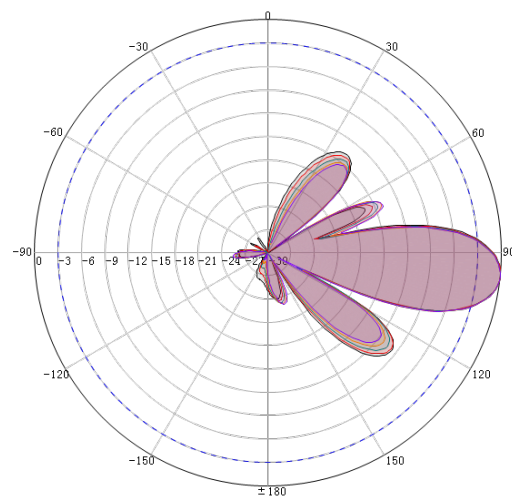
- FCC certification: 2AG32PBS3101S
- IC certification: 20982-PBS3101S

NOTE: Customized versions can be requested.

ANTENNA PATTERN



H-Pattern



V-Pattern