

Nova436H

Outdoor eNodeB Datasheet

Baicells
Connect More with Less



INTRODUCTION

The Nova436H is the highest-power outdoor radio for the Helium network. With four external antenna ports, this radio transmits at the highest power allowed in the CBRS band when mated to the appropriate antenna.

The Nova436H is pre-loaded with FreedomFi-approved software, ready to plug-n-play with a FreedomFi or Powered by FreedomFi Helium 5G hotspot.

The Nova436H 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.

Dual Carrier mode is not supported on the Nova436H. External antenna sold separately.

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

HIGHLIGHTS

NOTE: Features can vary based on model or region.

- 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
- Supports 4-port antenna
- Integrated small cell form factor for quick and easy installation
- Configured out-of-the-box to work with FreedomFi Decentralized Wireless Core
- Supports Citizens Broadband Radio Service (CBRS)
- Plug-and-play with Self-Organizing Network (SON) capabilities
- Interoperable with FreedomFi Decentralized Wireless Core
- 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 on each carrier, 2 carriers (DL)
Security	Radio: SNOW 3G/AES-128 Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)

INTERFACE

Ethernet Interface	1 optical (SFP) and 1 RJ-45 Ethernet interface (1 GE)
Power Supply	+/-48 VDC AC adaptor (multi-national standards)
Protocols Used	IPv4, UDP, TCP, ICMP
Network Management	FreedomFi Decentralized Wireless Core
LED Indicators:	4 x status LED CELL1/CELL2/ALM/PWR

PERFORMANCE

	2x20 MHz	DL (Mbps)	UL (Mbps)
Peak Data Rate (CA)	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

User Capacity	Up to 96 RRC connected users per cell (4 users per TTI): SC/CA: 96 RRC connected users
Maximum Deployment Range	12 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 33 dBm per channel (combined +36 dBm, configurable) (1 dB interval)
Quality of Service	Nine-level priority indicated by QoS Class Identifiers (QCI)
ARQ/HARQ	Supported
Synchronization	GPS

LINK BUDGET

Antenna Connection	External high-gain antenna with N-Type connectors, supports one 4-port antenna
GPS Antenna	External GPS antenna, N-Type connector
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	IP66
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 60 W, maximum 100 W
Weight	16.5 lb/7.5 kg

Dimensions (HxWxD)	With joint: <ul style="list-style-type: none">• 13.1 x 9.4 x 4.1 inches• 333 x 240 x 105 millimeters Without joint and handle: <ul style="list-style-type: none">• 11.8 x 9.4 x 4.1 inches• 300 x 240 x 105 millimeters
Installation	Pole or wall mount

MODEL NUMBERS

mBS31001H	Nova436H Outdoor TDD eNB – LTE Release 15, 4x1W (30 dBm), 1 GE+1 OPT, 3.5 GHz (3550 MHz–3700 MHz), B48, external antenna <ul style="list-style-type: none">• FCC certification: 2AG32MBS3100196N• IC certification: 20982-MBS31001• UL certified – Ordinary location• UL certified – HazLoc C1D2
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NOTE: Customized versions can be requested.