



INTRODUCTION

The Baicells Nova452 is an advanced two-carrier outdoor eNodeB (eNB) compliant with 3GPP LTE FDD and hardware-ready for NR 5G technology. This 4x40W eNB operates in Dual Carrier (DC) mode.

In DC mode, each carrier is treated as an independent cell, supporting 1024+1024 users with each cell supporting 5, 10, 15, 20MHz bandwidth. Using a Nova452 in DC mode simplifies and streamlines the deployment of split sectors.

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

HIGHLIGHTS

NOTE: Features can vary based on model or region.

- Standard LTE FDD Band 1*/3/7*/8*/20*/28*
- GUI-based local and remote Web management
- Excellent Non-Line-of-Sight (NLOS) coverage
- Suitable for private and public deployments; any IP based backhaul can be used, including public transmission protected by Internet Protocol Security (IPsec)
- Peak rate: Up to DL 540Mbps with 4x4MIMO in Dual Carrier (DC) mode and up to UL 150Mbps

- Supports 1024 RRC connected users per cell, 1024+1024 RRC connected users in DC mode.
- Supports downlink of 256QAM
- Integrated small cell form factor for quick and easy installation
- Configured out-of-the-box to work with the Cloud Core
- Plug-and-play with Self-Organizing Network (SON) capabilities
- Inter operation with all standard LTE Evolved Packet Core (EPC)
- Highly secured with equipment certification against potential intrusion risk
- Supports TR-069 network management interface
- Lower power consumption, which reduces OPEX, can be powered easily by the compact outdoor smart UPS
- Supports software update to 5G or 4G+5G RRU
- Supports RET function AISG 2.0

* Planned for future release

TECHNOLOGY

Standard	LTE FDD RAN (3GPP R15 compliant)
Frequency Band	Band1 (UL 1920MHz– 1980 MHz, DL 2110 MHz– 2170 MHz)* Band3 (UL 1710 MHz– 1785 MHz, DL 1805 MHz– 1880 MHz) Band7 (UL 2500MHz– 2570 MHz, DL 2620 MHz– 2690 MHz)* Band8 (UL 880MHz– 915 MHz, DL 925 MHz– 960 MHz)* Band20 (UL 832MHz– 862 MHz, DL 791 MHz– 821 MHz)* Band28 (UL 703MHz– 748 MHz, DL 758 MHz– 803 MHz)*
Channel Bandwidth	SC: 5/10/15/20 MHz DC: maximum 40 MHz bandwidth
Multiplexing	4x4 MIMO (DL)
Security	Radio: SNOW 3G/AES-128 Backhaul: IPsec (AES-128, AES-256, SHA-128, SHA-256)
Voice	VoLTE, Circuit Switched Fallback (CSFB)*
SON	Self-Organizing Network <ul style="list-style-type: none"> Automatic setup Automatic Neighbor Relation (ANR) PCI confliction detection
VSWR	Supported
RET support	AISG2.0, 20VDC ~30VDC, RS-485, 3GPP TS 25.461
Traffic Offload	Local breakout
Layer 2 Support	Transparent Bridge Mode
Maintenance	<ul style="list-style-type: none"> Local/Remote Web maintenance Online status management Performance statistics Fault management Local/Remote software upgrade Logging Connectivity diagnosis
Network Management	IPv4/IPv6, HTTP/HTTPS, TR-069, SSH
VLAN/VxLAN	802.IQ/VxLAN

Power Control	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)
Quality of Service	Nine-level priority indicated by QoS Class Identifiers (QCI)
ARQ/HARQ	Supported
Synchronization	GPS/1588v2

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PERFORMANCE

Peak Data Rate	20MHz	DL256QAM (Mbps)	DL64QAM (Mbps)	UL64QAM (Mbps)
	DL 4x4 MIMO	390(SC) -	300(SC) 540(DC)	75(SC) 150(DC)
	DL 2x2 MIMO	195(SC) 390(DC)	150(SC) 300(DC)	75(SC) 150(DC)
	10MHz	DL256QAM (Mbps)	DL64QAM (Mbps)	UL64QAM (Mbps)
	DL 4x4 MIMO	195(SC) -	150(SC) 300(DC)	37(SC) 75(DC)
	DL 2x2 MIMO	97(SC) 195(DC)	75(SC) 150(DC)	37(SC) 75(DC)
User Capacity	Up to 1024 RRC connected users per cell <ul style="list-style-type: none"> SC: 1024 RRC connected users DC: 1024+1024 RRC connected users 			
Maximum Deployment Range	60 kilometers			
Latency	30 milliseconds			
Receive Sensitivity	Band1*/3/7*: -105.0dBm (per channel) Band8*/20*/28*: -105.5dBm (per channel)			
Modulation	MCS0 (QPSK) to MCS27 (256QAM) DL: QPSK, 16QAM, 64QAM, 256QAM UL: QPSK, 16QAM, 64QAM			
Transmit Power Range	36dBm to 46dBm per channel (combined +52dBm, configurable with 1 dB interval)			

* Planned for future release

MODULATION LEVELS (ADAPTIVE)

MCS	Modulation Scheme	RSRP (dBm)
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0 - 4	QPSK	$-120 \leq \text{RSRP} < -110$
5 - 10	16QAM	$-110 \leq \text{RSRP} < -100$
11-19	64QAM	$-100 \leq \text{RSRP} < -85$
20 - 27	256QAM	$\text{RSRP} \geq -85$ ($\text{SINR} \geq 30$)

NOTE: The information provided is for reference only as the environment can impact modulation levels.

Scenario: Base Station height is 30 meters; Customer User Equipment (CPE) height is two meters.

INTERFACE

Ethernet Interface	1 x optical interface (SFP) 1 x optical interface (SFP+) 1 x RJ-45 Ethernet interface (GE)
Power Supply	-40VDC ~ -57VDC, nominal -48VDC AC adaptor (multi-national standards)
LED Indicators	5 x status LED PWR/RUN/ALM/LINK0/LINK1
Antenna Connection	4T4R external high gain antenna with mini-DIN connectors
GPS Antenna	External GPS antenna, N-Type connector

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 400W, maximum 600W
Weight	Without bracket: 40.6lbs/18.4kg@Band1/3/7 47.2lbs/21.4kg@Band8/20/28 With pre-installed bracket: 41.9lbs/19.0kg@Band1/3/7

	48.5lbs /22.0kg@Band8/20/28
Dimensions (HxWxD)	Band1/3/7: 20.7 x 12.1 x 4.7 inches/527 X 308 X 120 millimeters Band8/20/28: 20.7 x 12.1 x 5.3 inches/527 X 308 X 135 millimeters
Installation	Pole or wall mount

MODEL NUMBERS

sBS72010*	Nova452 outdoor FDD eNB – Band1(UL1920MHz-1980MHz/DL2110MHz-2170MHz), 4T4R, 4*40W, -48VDC, external antenna, 2*OPT +1*RJ45)
sBS72030	Nova452 outdoor FDD eNB – Band3(UL1710MHz-1785MHz/DL1805MHz-1880MHz), 4T4R, 4*40W, 48VDC, external antenna, 2*OPT +1*RJ45)
sBS72070*	Nova452 outdoor FDD eNB – Band7(UL2500MHz-2570MHz/DL2620MHz-2690MHz), 4T4R, 4*40W, -48VDC, external antenna, 2*OPT +1*RJ45)
sBS72080*	Nova452 outdoor FDD eNB – Band8(UL880MHz-915MHz/DL925MHz-960MHz), 4T4R, 4*40W, -48VDC, external antenna, 2*OPT +1*RJ45)
sBS72200*	Nova452 outdoor FDD eNB – Band20(UL832MHz-862MHz/DL791MHz-821MHz), 4T4R, 4*40W, -48VDC, external antenna, 2*OPT +1*RJ45)
sBS72280*	Nova452 outdoor FDD eNB – Band28(UL703MHz-748MHz/DL758MHz-803MHz), 4T4R, 4*40W, -48VDC, external antenna, 2*OPT +1*RJ45)

NOTE: Customized versions can be requested. (AC version will be ready in the future)

* Planned for future release