Neutrino220

Indoor Base Station Datasheet

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INTRODUCTION

The Neutrino220 is an indoor 2x50mW microcell eNodeB (eNB), which offers lower cost access for indoor user equipment (UE) and solve indoor blind area problem and enhance the hotspot capacity. It is specifically used in family, small enterprise, and other indoor scenarios. As with all Baicells products, the Neutrino220 supports Long-Term Evolution (LTE) technology, and it operates in Frequency Division Duplexing (FDD) and Time Division Duplexing (TDD) mode.

With high capacity and easy deployment, the Neutrino220 series eNB can help mobile operators to provide better coverage and higher capacity with lower network deployment cost and operating expense (OPEX).

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 TDD/FDD Bands 1/3/5/40
- GUI-based local and remote Web management
- Compact, all-in-one design of internal antenna
- Support 1588v2 and Network Listening (NL) synchronization
- Any IP based backhaul can be used, including public transmission protected by Internet Protocol Security (IPsec)
- Peak rate: Up to DL 110Mbps and UL 10Mbps with 20MHz bandwidth in LTE TDD mode
- Peak rate: Up to DL 150Mbps and UL 50Mbps with 20MHz bandwidth in LTE FDD mode
- 32 RRC connected users
- Configured out of the box to work with Baicells Cloud Core
- Inter operation with all standard LTE Evolved Packet Core (EPC)
- Lower power consumption to reduce OPEX
- Support TR-069 network management interface

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TECHNOLOGY

Standard	LTE TDD/FDD RAN (3GPP R10 compliant)
TDD UL/DL Configuration	1, 2 (with Special Subframe Configuration 7)
Frequency Band	FDD: B1 (UL: 1920MHz-1980MHz, DL: 2110MHz-2170MHz) B3 (UL: 1710MHz-1785MHz, DL: 1805MHz-1880MHz) B5 (UL: 824MHz-849MHz, DL: 869MHz-894MHz) TDD: B40 (2300MHz – 2400MHz)
Channel Bandwidth	Band1/3/40: 5/10/15/20 MHz Band5: 5/10 MHz
Multiplexing	MIMO: 2x2 (DL)
Security	Radio: SNOW 3G/AES-128/ZUC Backhaul: IPsec (X.509 AES-128, AES-256, SHA-128, SHA-256)

INTERFACE

Ethernet Interface	One RJ-45 Ethernet backhaul interface (1 GE) and one RJ-45 local Mgmt. interface (1 GE)
Power Supply	12VDC, AC adaptor (multiple standards optional)
Protocols Used	IPv4/IPv6 (Dual Stack), UDP, TCP, ICMP, NTP, SSH, IPsec, TR-069, HTTP/HTTPs, 1588v2, DHCP
Network Management	IPv4/IPv6, HTTP/HTTPs, TR-069, SSH, Embedded EPC
VLAN/VxLAN	802.IQ/VxLAN
LED Indicators	3 X STATUS LED PWR/LTE/ALM

PERFORMANCE

Peak Data Rate – TDD mode	20MHz: SA1: DL 80Mbps, UL 20Mbps SA2: DL 110Mbps, UL 10Mbps 10MHz: SA1: DL 40Mbps, UL 7Mbps SA2: DL 55Mbps, UL 5Mbps
Peak Data Rate – FDD mode	20MHz: DL 150Mbps, UL 50Mbps 10MHz: DL 75Mbps, UL 25Mbps
User Capacity	32 RRC connected users

Latency	30 milliseconds
Receive Sensitivity	-100dBm
Modulation	MCS0 (QPSK) to MCS28 (64QAM) DL: QPSK, 16QAM, 64QAM UL: QPSK, 16QAM
Transmit Power Range	0 to 20 dBm (combined, with 1 dB interval)
Quality of Service	Nine-level priority indicated by QoS Class Identifiers (QCI)
ARQ/HARQ	Supported
Synchronization	1588v2, Network Listening (NL)

FEATURES

Voice	VoLTE, Circuit Switched Fallback (CSFB) to GSM and UTRAN
Inter-RAT Mobility	To GSM, UTRAN and 5G NSA/SA
SON	Self-Organizing Network • Automatic setup • Automatic Neighbor Relation (ANR) • PCI confliction detection
EPC	HaloB (Embedded EPC)
Traffic Offload	Local breakout
UL Interference Detection	Supported
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

LINK BUDGET

Antenna Type	Built-in Omni Antenna • Horizontal Beamwidth 360°

	• Vertical Beamwidth 60°±5 • Polarization: Vertical
RF Antenna Gain	4dBi@Band1/3 2dBi@Band5 5dBi@Band40
Maximum EIRP	24 dBm@Band1/3 22 dBm@Band5 25 dBm@Band40
Power Control	UL Open-loop/Closed-loop Power Control, DL Power Allocation (3GPP TS 36.213 compliant)

PHYSICAL

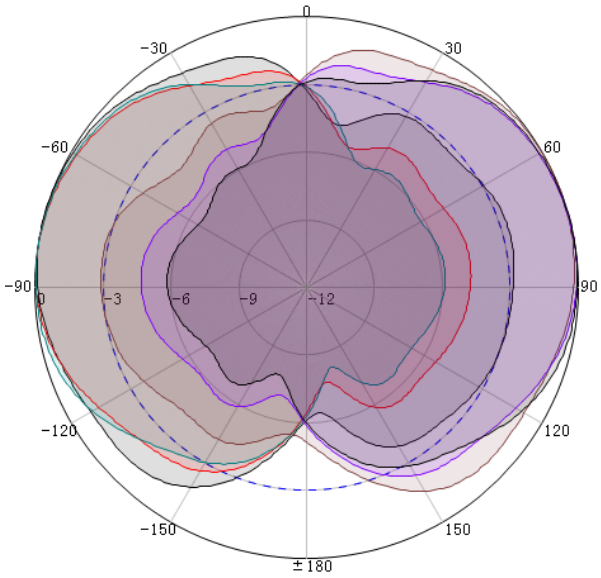
MTBF	≥ 150000 hours
MTTR	≤ 1 hour
Operating Temperature	23°F to 113°F / -5°C to 45°C
Storage Temperature	14°F to 122°F / -10°C to 50°C
Humidity	5% to 95% RH
Power Consumption	Typical 9W, maximum 12W
Weight	0.9 lbs / 410g
Dimensions (HxWxD)	5.5 x 7.1 x 1.9 inches 140 x 180 x 47.5 millimeters
Installation	Desktop

GLOBAL PART NUMBERS

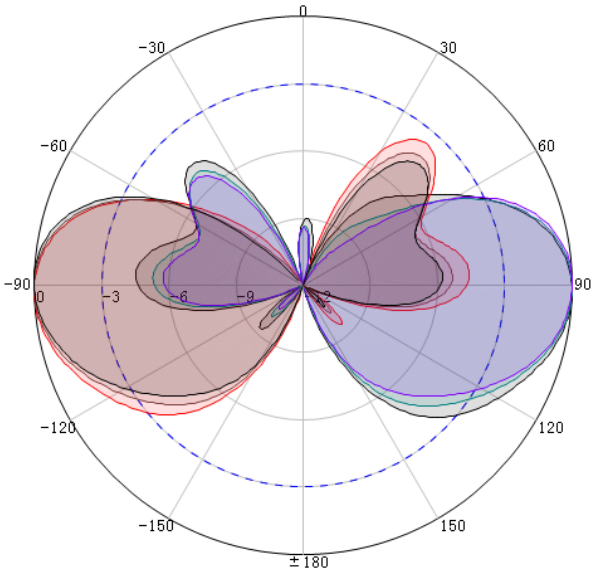
pBS4208	Neutrino220 indoor FDD eNB – LTE Release 10, 2x50mW (17 dBm), 2GE, 4 dBi internal antenna, UL1710-1785MHz / DL1805-1880MHz, B3
pBS4218	Neutrino220 indoor FDD eNB – LTE Release 10, 2x50mW (17 dBm), 2**GE**, 4 dBi internal antenna, UL1920-1980MHz / DL2110-2170MHz, B1
pBS42030	Neutrino220 indoor FDD eNB – LTE Release 10, 2x50mW (17 dBm), 2**GE**, 2 dBi internal antenna, UL824-849MHz / DL869-894MHz, B5
pBS4109	Neutrino220 indoor TDD eNB – LTE Release 10, 2x50mW (17 dBm), 2**GE**, 5 dBi internal antenna, 2300-2400MHz, B40

NOTE: Customized versions can be requested

ANTENNA PATTERN



H-Pattern



V-Pattern