



INTRODUCTION

Neutrino224 is an indoor 2×125 mW picocell eNodeB for family, small-enterprise and other indoor scenarios. The BaiBS_QAFA/QATA 2.17.x product family includes separate LTE FDD and LTE TDD variants; their radio parameters and model numbers must be selected by duplex mode.

FDD / TDD OVERVIEW

Parameter	FDD	TDD
Standard	LTE FDD RAN; 3GPP Release 10 compliant	LTE TDD RAN; 3GPP Release 10 compliant
Bands	B1/B2/B3/B5/B7/B8	B38/B40/B42/B48
Peak rate — 20 MHz	DL 150 Mbps / UL 50 Mbps	SA1: DL 80 / UL 20 Mbps SA2: DL 110 / UL 10 Mbps
User capacity	32 RRC connected users	32 RRC connected users
RF output	0–21 dBm per channel; combined +24 dBm	0–21 dBm per channel; combined +24 dBm
Model count	6 listed FDD models	4 listed TDD models

Common source features include GUI-based local/remote management, IPsec-protected IP backhaul, PoE+, TR-069, Cloud Core/EPC interoperability and a standard one-year warranty.

NOTE: Features can vary by model or region; customized versions can be requested.

TECHNOLOGY

Parameter	FDD	TDD
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Standard	LTE FDD RAN (3GPP R10 compliant)	LTE TDD RAN (3GPP R10 compliant)
TDD UL/DL configuration	Not applicable	1, 2 (Special Subframe Configuration 7)
Frequency bands	B1: UL 1920–1980 / DL 2110–2170 MHz B2: UL 1850–1910 / DL 1930–1990 MHz B3: UL 1710–1785 / DL 1805–1880 MHz B5: UL 824–849 / DL 869–894 MHz B7: UL 2500–2570 / DL 2620–2690 MHz B8: UL 880–915 / DL 925–960 MHz	B38: 2570–2620 MHz B40: 2300–2400 MHz B42: 3400–3600 MHz B48: 3550–3700 MHz
Channel bandwidth	B1/B2/B3/B7: 5/10/15/20 MHz B5/B8: 5/10 MHz	5/10/15/20 MHz
Multiplexing	MIMO 2×2 (DL)	MIMO 2×2 (DL)
Security	Radio: SNOW 3G/AES-128/ZUC Backhaul: IPsec (X.509 AES-128/AES-256, SHA-128/SHA-256)	Radio: SNOW 3G/AES-128/ZUC Backhaul: IPsec (X.509 AES-128/AES-256, SHA-128/SHA-256)

INTERFACE

Parameter	FDD	TDD
Ethernet	1× RJ-45 1GE backhaul + 1× RJ-45 1GE local management	1× RJ-45 1GE backhaul + 1× RJ-45 1GE local management
Power supply	12 VDC adaptor; PoE+; IEEE 802.3at	12 VDC adaptor; PoE+; IEEE 802.3at
Protocols	IPv4/IPv6 dual stack, UDP, TCP, ICMP, NTP, SSH, IPsec, TR-069, HTTP/HTTPS, 1588v2, DHCP	IPv4/IPv6 dual stack, UDP, TCP, ICMP, NTP, SSH, IPsec, TR-069, HTTP/HTTPS, 1588v2, DHCP
Management	IPv4/IPv6, HTTP/HTTPS, TR-069, SSH, Embedded EPC	IPv4/IPv6, HTTP/HTTPS, TR-069, SSH, Embedded EPC
VLAN/VxLAN	802.IQ/VxLAN (as printed)	802.IQ/VxLAN (as printed)
LED indicators	1× status LED	1× status LED

PERFORMANCE

Parameter	FDD	TDD
Peak rate — 20 MHz	DL 150 Mbps / UL 50 Mbps	SA1: DL 80 Mbps / UL 20 Mbps SA2: DL 110 Mbps / UL 10 Mbps
Peak rate — 10 MHz	DL 75 Mbps / UL 25 Mbps	SA1: DL 40 Mbps / UL 7 Mbps SA2: DL 55 Mbps / UL 5 Mbps
User capacity	32 RRC connected users	32 RRC connected users
Latency	30 milliseconds	30 milliseconds
Receive sensitivity	B1/B2/B3/B5/B8: -101 dBm B7: -100 dBm	B40: -101 dBm B38/B42/B48: -100 dBm
Modulation	MCS0 (QPSK) to MCS28 (64QAM) DL: QPSK/16QAM/64QAM UL: QPSK/16QAM	MCS0 (QPSK) to MCS28 (64QAM) DL: QPSK/16QAM/64QAM UL: QPSK/16QAM
Transmit power range	0–21 dBm per channel; combined +24 dBm, configurable, 1 dB interval	0–21 dBm per channel; combined +24 dBm, configurable, 1 dB interval
Quality of service	Nine QCI priority levels	Nine QCI priority levels
ARQ/HARQ	Supported	Supported
Synchronization	GPS, 1588v2, network listening (NL)	GPS, 1588v2, network listening (NL)

FEATURES

Parameter	FDD	TDD
Voice	VoLTE; CSFB to GSM and UTRAN	VoLTE; CSFB to GSM and UTRAN
Inter-RAT mobility	To GSM, UTRAN and 5G NSA/SA	To GSM, UTRAN and 5G NSA/SA
SON	Self-organizing network; automatic setup; ANR; PCI	Self-organizing network; automatic setup; ANR; PCI

	conflict detection	conflict detection
EPC	HaloB (Embedded EPC)	HaloB (Embedded EPC)
Traffic offload	Local breakout	Local breakout
UL interference detection	Supported	Supported
Maintenance	Local/remote Web maintenance; online status; performance and fault management; software upgrade; logging; diagnostics; automatic configuration; alarms; UE tracing	Local/remote Web maintenance; online status; performance and fault management; software upgrade; logging; diagnostics; automatic configuration; alarms; UE tracing

LINK BUDGET

Parameter	FDD	TDD
Antenna type	External omni; horizontal 360°; vertical 45°±5; vertical polarization	External omni; horizontal 360°; vertical 40°±5; vertical polarization
RF antenna gain	4 dBi @ B1/B2/B3 2 dBi @ B5/B8 5 dBi @ B7	5 dBi
GPS antenna	External GPS antenna, SMA connector	External GPS antenna, SMA connector
Maximum EIRP	28 dBm @ B1/B2/B3 26 dBm @ B5/B8 29 dBm @ B7	29 dBm
Power control	UL open/closed-loop; DL power allocation (3GPP TS 36.213)	UL open/closed-loop; DL power allocation (3GPP TS 36.213)

PHYSICAL

Parameter	FDD	TDD
MTBF	≥150,000 hours	≥150,000 hours

MTTR	≤1 hour	≤1 hour
Operating temperature	23°F to 113°F / -5°C to 45°C	23°F to 113°F / -5°C to 45°C
Storage temperature	14°F to 122°F / -10°C to 50°C	14°F to 122°F / -10°C to 50°C
Humidity	5%–95% RH	5%–95% RH
Power consumption	Typical 11.25 W; maximum 15 W	Typical 11.25 W; maximum 15 W
Weight	1.0 lb / 455 g	1.0 lb / 455 g
Flat-antenna dimensions	11.9 × 6.9 × 1.2 in 301.6 × 175 × 30.5 mm	11.9 × 6.9 × 1.2 in 301.6 × 175 × 30.5 mm
Vertical-antenna dimensions	5.8 × 6.9 × 7.1 in 146.5 × 175 × 180.4 mm	5.8 × 6.9 × 7.1 in 146.5 × 175 × 180.4 mm
Installation	Ceiling/wall mount or desktop	Ceiling/wall mount or desktop

MODEL NUMBERS

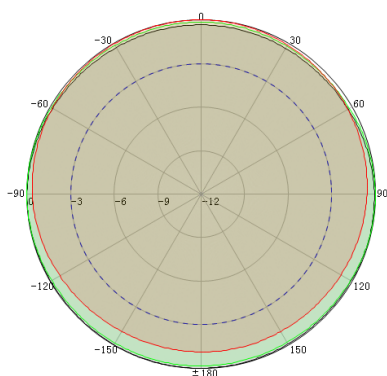
Mode	Model	Source specification
FDD	pBS4210	B1; 2×125 mW (21 dBm), 2GE, 4 dBi antenna; UL 1920–1980 / DL 2110–2170 MHz
FDD	pBS4240	B2; 2×125 mW (21 dBm), 2GE, 4 dBi antenna; UL 1850–1910 / DL 1930–1990 MHz
FDD	pBS4200	B3; 2×125 mW (21 dBm), 2GE, 4 dBi antenna; UL 1710–1785 / DL 1805–1880 MHz
FDD	pBS4230	B5; 2×125 mW (21 dBm), 2GE, 2 dBi antenna; UL 824–849 / DL 869–894 MHz
FDD	pBS4220	B7; 2×125 mW (21 dBm), 2GE, 5 dBi antenna; UL 2500–2570 / DL 2620–2690 MHz
FDD	pBS42100	B8; 2×125 mW (21 dBm), 2GE, 2 dBi antenna; source model row prints UL 880–915 / DL 925–2960 MHz

TDD	pBS4100	B40; 2×125 mW (21 dBm), 2GE, 5 dBi antenna; 2.3 GHz
TDD	pBS4110	B48; 2×125 mW (21 dBm), 2GE, 5 dBi antenna; 3.5 GHz
TDD	pBS4130	B42; 2×125 mW (21 dBm), 2GE, 5 dBi antenna; 3.4 GHz
TDD	pBS4150	B38; 2×125 mW (21 dBm), 2GE, 5 dBi antenna; 2.5 GHz

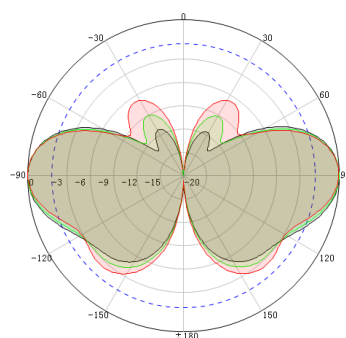
Source discrepancy: the FDD pBS42100 model row prints DL 925–2960 MHz, while the FDD Technology table specifies B8 DL 925–960 MHz. Both source statements are retained here for review before external publication.

NOTE: Customized versions can be requested.

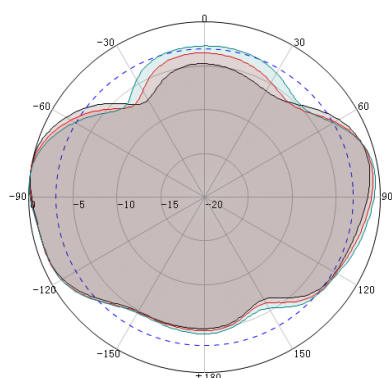
ANTENNA PATTERN



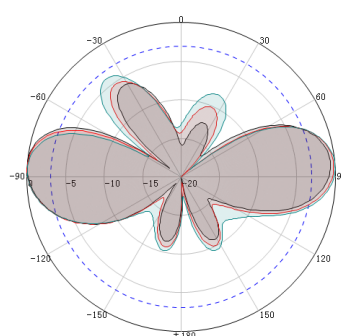
FDD — H-Pattern



FDD — V-Pattern



TDD — H-Pattern



TDD — V-Pattern