



INTRODUCTION

The Baicells Pulsar NL0402 distributed base station (gNB) is a high performance 4G+5G dual mode integrating solution for various scenarios, which consists of Base-Band Unit (BBU), Extension Unit (EU), and Radio Remote Unit (RRU). It can be deployed indoors & outdoors to provide wireless coverage solution and improve the wireless capacity.

The Pulsar NL0402 gNB supports GNSS synchronization. Communication between modules adopts optical fiber or photoelectric hybrid cable. The gNB provides high reliability, easy deployment, and flexible configuration based on mature technologies, suitable for various complex scenarios.

The gNB software based on 3GPP R15 version, including the processing functions of the whole user interface (UP) and control surface (CP), and provides the backhaul interface (NG interface) with the core network and the interconnection interface (Xn interface) between base stations.

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

HIGHLIGHTS

NOTE: Features can vary based on model or region.

- 3GPP Release 15 and Release 16* standard Compliance
- Supports Stand Alone (SA) and Non Stand Alone (NSA)* mode
- Supports FR1 NR FDD*/TDD Mode
- Supports LTE FDD/TDD Mode* (via BU733pVE)
- BBU & RRU Splitting deployment
- CU/DU integrated or split
- Up to 100MHz bandwidth per 5G cell, 20MHz bandwidth per 4G cell
- TDD frame configuration options
 - 5ms periodicity ($\mu=1$): DDDDD+DDSUU
- 5G Peak rate (up to): DL 1.5 Gbps, UL 230 Mbps
- 4G Peak rate (up to): DL 195 Mbps, UL 75 Mbps
- 200 active users per 5G cell, 128 active users per LTE cell
- Cell selection/Reselection and NG-based handover
- 5G Supports SMS and VoNR/EPS-Fallback
- 4G Supports SMS and VoLTE and Handover/Redirection
- Secure end-to-end IP-based transport for both private and public deployments
- Local and remote management (through O&M interface remotely)
- To-add (Multi-BWP), (Multi-PLMN)
- Supports TR069 network management interface

* Planned for future release

TECHNOLOGY

Standard	3GPP R15 and R16* compliant: NR-Uu, NG, F1, E1, Xn S1-U, X2 (NSA only), E2*
TDD UL/DL Configuration	NR: 5ms periodicity ($\mu=1$): DDDDD+DDSUU
Multiplexing	- SU-MIMO: 2x2, 4x4(NR) - MU-MIMO: 8x8*
Security	Radio: SNOW 3G/AES-128/ZUC

* Planned for future release

INTERFACE

Mgmt. Interface	1 x RJ-45 (10/100/1000 Mbps)
Backhaul Interface	2 x 10GE optical interface (SFP+)
Fronthaul Interface	4 x 10GE optical (SFP+)
Power Supply	(AC) 90VAC -264VAC, 50-60Hz or (DC) -48VDC
Protocols Used	IPv4/IPv6 (Dual Stack), UDP, TCP, ICMP, NTP, SSH, TR-069, HTTP/HTTPS, DHCP
Network Management	IPv4/IPv6 (Dual Stack), HTTP/HTTPS, TR-069, SSH
VLAN/VxLAN	802.IQ
LED Indicators	4 x status LED A(LM)/S(YNC)/R(UN)/P(WR)

PERFORMANCE

Peak Data Rate	NR (100MHz@256QAM): 5ms periodicity (DDDDD+DDSUU ,6:4:4): 1 UE: DL: 1.5 Gbps (4T4R), UL: 200 Mbps 100 UEs: DL: 1.26 Gbps (4T4R), UL: 180 Mbps LTE (20MHz@256QAM): 1UE: DL: 195Mbps, UL:75Mbps 128 UEs: DL: 195 Mbps (2T2R), UL: 75 Mbps
User Capacity	NR: Maximum 4*2T2R cells or 2*4T4R cells, 200 active users per cell LTE: 1 cell, 128 active users per cell
Quality of Service	3GPP standard 5QI
Modulation	NR:

	UL: QPSK, 16QAM, 64QAM, 256QAM DL: QPSK, 16QAM, 64QAM, 256QAM LTE: UL: QPSK, 16QAM, 64QAM DL: QPSK, 16QAM, 64QAM, 256QAM
Receive Sensitivity	-102 dBm (per channel)
Synchronization	GPS

FEATURES

Vo5G	• EPS Fallback • RAT Fallback* • VoNR
SON*	• Automatic setup • Automatic Neighbor Relation (ANR)
Mobility	NG-based & Xn-based: • Intra-/Inter-frequency Handover • Intra-/Inter-gNB Handover • IRAT Handover
Security	• 3GPP: - Ciphering - NIA0/NIA1/NIA2/NIA3 - Integrity - NEA0/NEA1/NEA2 • IETF: - IPsec*, X.509*
Scheduler	NR: 4UEs/TTI ($\mu=0, 1$) LTE: 2UEs/TTI
Dual Connectivity*	3GPP EN-DC
RAN Sharing	Supported
O&M Interface	• BBF: TR-069, TR-181 • IETF: NETCONF, YANG • 3GPP: NRM, PM, KPI • O-RAN*: O1, E2, FH-CUS&M
Maintenance	• Local/Remote Web maintenance • Online status management • Performance statistics • Fault management • Local/Remote software upgrade

Pulsar NL0402

Base Band Unit Datasheet

- Logging

* Planned for future release

PHYSICAL

Processor System	16-core 64-bit ARM processor
Storage	5 x2.5" HDD/SSD
MTBF	≥ 150000 hours
MTTR	≤ 1 hour
Operating Temperature	23°F to 131°F / -5°C to 55°C
Storage Temperature	-40°F to 158°F / -40°C to 70°C
Humidity	5% to 95% RH
IP level	IP31
Atmospheric Pressure	70 kPa to 106 kPa
Power Consumption	Single mode (5G) < 100W, dual mode < 150W
Weight	33.1lbs / 15kg
Dimensions (HxWxD)	3.5 x 16.9 x 16.9 inches 88 x 430 x 430 millimeters
Installation	Place on the desk or standard 19 inches cabinet

GLOBAL PART NUMBER

BU1520	Pulsar NL0402 4G&5G BBU – indoor, 2U*430, -48VDC, CPRI/4*optical (SFP+ 10G), 2*optical (SFP+ 10G), GPS, IP31
BU1521	Pulsar NL0402 4G&5G BBU – indoor, 2U*430, 220VAC, CPRI/4*optical (SFP+ 10G), 2*optical (SFP+ 10G), GPS, IP31

NOTE: Customized versions can be requested.