

Photon OD63H EG8561A

Outdoor Customer Premise Equipment Datasheet

Baicells
Connect More with Less



INTRODUCTION

Baicells 5G outdoor CPE supports two network architectures, 5G Standalone (SA) and non-Standalone (NSA), with faster transmission speed, better bearing capacity and lower network delay.

CPE supports 5G Sub6 band access to base station, LAN side supports WIFI6 access, providing perfect experience for customers in laptop, gateway, industrial monitoring, telemedicine, unmanned aerial vehicle, virtual reality and immersive experience (VR and AR).

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

HIGHLIGHTS

NOTE: Features can vary based on model or region.

- 5G SA/NSA Dual mode
- Supports NR Bands
N1/N2/N3/N5/N7/N8/N12/N13/N14/N18/
N20/N25/N26/N28/N29/N30/N38/N40/
N41/N48/N66/N70/N71/N75/N76/N77/
N78/N79
- Supports TDD Bands
B34/B38/B39/B40/B41/B42/B43/B46(LAA)/
B48(CBRS)
- Supports LTE FDD Bands
B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/
B18/B19/B20/B25/B26/B28/B29/B30/B32/
B66/B71
- Complies with 3GPP Release 16 standards
- 1000 Mbps Ethernet interface
- Peak data rate of up to NR SA DL 2500 Mbps, UL 900 Mbps; NR NSA DL 3500Mbps, UL 555Mbps
- 256QAM for DL and 256QAM for UL as the highest order modulation formats.
- Built-in bipolar directional 5G antenna
- GUI-based local and remote Web management
- Excellent Non-Line-of-Sight (NLOS) coverage
- Supports TR069 network management protocol
- Cell lock, SIM lock, and pin lock
- User-friendly LED status indicators
- Pole or wall mounted
- Wi-Fi assisted alignment
- Transparent bridge mode* (L2 Support).

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TECHNOLOGY

Standard	3GPP Release16
Mode	TDD/FDD
Channel Bandwidth	NR: 5~100 MHz LTE: 100 MHz as maximum aggregated bandwidth (5 CC) EN-DC: 80+100 MHz (4 DL + FR1)
Frequency Bands	N1 (UL:1920 MHz - 1980 MHz)(DL:2110 MHz - 2170 MHz) N2 (UL:1850 MHz - 1910 MHz)(DL:1930 MHz - 1990 MHz) N3 (UL:1710 MHz - 1785 MHz)(DL:1805 MHz - 1880 MHz) N5 (UL:824 MHz - 849 MHz)(DL:869 MHz - 894 MHz) N7 (UL:2500 MHz - 2570 MHz)(DL:2620 MHz - 2690 MHz) N8 (UL:880 MHz - 915 MHz)(DL:925 MHz - 960 MHz) N12 (UL:699 MHz - 716 MHz)(DL:729 MHz - 746 MHz) N13 (UL:777MHz - 787MHz)(DL:746MHz - 756MHz) N14 (UL:788 MHz - 798 MHz)(DL:758 MHz - 768 MHz) N18 (UL:815MHz - 830MHz)(DL:860MHz - 875MHz) N20 (UL:832 MHz - 862 MHz)(DL:791 MHz - 821 MHz) N25 (UL:1850 MHz - 1915 MHz)(DL:1930 MHz - 1995 MHz) N26 (UL:814MHz - 849MHz)(DL:859MHz - 894MHz) N28 (UL:703 MHz - 748 MHz)(DL:758 MHz - 803 MHz) N29 (DL:717MHz - 728MHz) N30 (UL:2305 MHz - 2315 MHz)(DL:2350 MHz - 2360 MHz) N38 (2570 MHz - 2620 MHz) N40 (2300 MHz - 2400 MHz) N41 (2496 MHz - 2690 MHz) N48 (3550 MHz - 3700 MHz) N66 (UL:1710 MHz - 1780 MHz)(DL:2110 MHz - 2200 MHz) N70 (UL:1695 MHz - 1710 MHz)(DL:1995 MHz - 2020 MHz) N71 (UL:663 MHz - 698 MHz)(DL:617MHz - 652 MHz)

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N75 (DL:1432 MHz - 1517MHz)
N76 (DL:1427 MHz - 1432 MHz)
N77 (3300 MHz - 4200 MHz)
N78 (3300 MHz - 3800 MHz)
N79 (4400MHz - 5000MHz)
B1 (UL:1920 MHz - 1980 MHz)(DL:2110 MHz - 2170 MHz)
B2 (UL:1850 MHz - 1910 MHz)(DL:1930 MHz - 1990 MHz)
B3 (UL:1710 MHz - 1785 MHz)(DL:1805 MHz - 1880 MHz)
B4 (UL:1710 MHz - 1755 MHz)(DL:2110 MHz - 2155 MHz)
B5 (UL:824 MHz - 849 MHz)(DL:869 MHz - 894 MHz)
B7 (UL:2500 MHz - 2570 MHz)(DL:2620 MHz - 2690 MHz)
B8 (UL:880 MHz - 915 MHz)(DL:925 MHz - 960 MHz)
B12 (UL:699 MHz - 716 MHz)(DL:729 MHz - 746 MHz)
B13 (UL:777 MHz - 787 MHz)(DL:746 MHz - 756 MHz)
B14 (UL:788 MHz - 798 MHz)(DL:758 MHz - 768 MHz)
B17 (UL:704MHz - 716MHz)(DL:734MHz - 746MHz)
B18 (UL:815MHz - 830MHz)(DL:860MHz - 875MHz)
B19(UL:830MHz - 845MHz)(DL:875MHz - 890MHz)
B20 (UL:832 MHz - 862 MHz)(DL:791 MHz - 821 MHz)
B25 (UL:1850 MHz - 1915MHz)(DL:1930 MHz - 1995 MHz)
B26 (UL:814MHz - 849MHz)(DL:859MHz - 894 MHz)
B28 (UL:703 MHz - 748 MHz)(DL:758 MHz - 803 MHz)
B29 (DL:717 MHz - 728 MHz)
B30 (UL:2305 MHz - 2315 MHz)(DL:2350 MHz - 2360 MHz)
B32 (DL:1452 MHz - 1496 MHz)
B34 (2010MHz - 2025MHz)
B38 (2570 MHz - 2620 MHz)
B39 (1880 MHz - 1920 MHz)
B40 (2300 MHz - 2400 MHz)
B41 (2496 MHz - 2690 MHz)

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	B42 (3400 MHz - 3600 MHz) B43 (3600 MHz - 3800 MHz) B46 (5150 MHz - 5925 MHz) B48 (3550 MHz - 3700 MHz) B66 (UL:1710 MHz - 1780 MHz)(DL:2110 MHz - 2200 MHz) B71 (UL:663 MHz - 698 MHz)(DL:617 MHz - 652 MHz)
Multiplexing	LTE: DL 4x4 MIMO NR: DL 4x4 MIMO, UL 2x2MIMO
Security	Firewall: IP/MAC/URL filter; ACL rule

INTERFACE

Ethernet Interfaced	1 RJ-45 port 10/100/1000 auto-sensing, auto-MDX, PoE
Protocols Used	IPv4/IPV6, UDP, TCP, IP, ICMP, SNMPv2c, SNMPv3c, HTTPS, SSH, TELNET, TR069, TR104, CBSD
Network Management	Web GUI, ACS, OMC, SNMP
VLAN	802.1Q

PERFORMANCE

Peak Rate		DL (Mbps)	UL (Mbps)
	NR SA	Max. 2500	Max. 900
	NR NSA	Max. 3500	Max. 555
	LTE	Max. 1600	Max. 211
Modulation	DL: QPSK, 16QAM, 64QAM, 256QAM UL: QPSK, 16QAM, 64QAM, 256QAM		
Carrier Aggregation	LTE: Up to 5DL / 4UL EN-DC: Up to LTE 5DL + NR 1DL or LTE 2DL + NR 2DL / LTE 3UL + NR 1UL NR SA: Up to 2DL* / 2UL		
Transmit Power	Power Class 3 (23dBm $\pm$ 1.5dBm) for LTE Bands Power Class 3 (23dBm $\pm$ 1.5dBm) for NR Bands Power Class 2 (26dBm $\pm$ 1.5dBm) for B41/B48*/N41/N48*/N77		
Receive Sensitivity	N41 (100MHz), -85dBm		

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	N48 (20MHz), -94dBm N77 (100MHz), -86dBm
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FEATURES

Network Mode	NAT or Bridge
SIM	PIN management, SIM lock
Network Connection	Auto or manual
LTE Scan Mode	Full band scan or frequency lock
VPN	L2TP L2/L3, GRE L2/L3
NAT	Port forwarding, port trigger, DMZ, ALG
Diagnostics	TCP dump, ping, traceroute
Statistics	LTE status; connection/system up time; device status; DHCP client list; Wi-Fi station list; firewall status
Maintenance	Date and time setting; reboot; restore factory settings; restore or back up configuration file; firmware upgrade locally or OTA
CBRS	Automatic installation of CBSD certificate*

LINK BUDGET

Antenna Type	Internal directional, 2T4R
Antenna Gain	NR0/NR1/NR2/NR3/NR6: 700-960MHz: 2 dBi other frequency bands: 8dBi S48: 14dBi
Max Transmit Power	LTE: 26dBm for B38/41/42/43*, otherwise 23dBm. NR: 29dBm for N41/77/78/79*, 26dBm for N38/40, otherwise 23dBm (combined, to regional EIRP limit)
Maximum EIRP	NR0/NR1/NR2/NR3/NR6: 25dBm~37dBm NR11: 37dBm~43dBm

PHYSICAL

IP Protection Rating	IP67
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LED Indicators	MIU, LTE, SIM, LAN, PWR, LTE Signal
USIM	1.8V/3V 2FF
Restore Button	Press for 10 seconds to restore the CPE to its factory settings
Temperature	- Operating Temperature: -40°F to 131°F / -40°C to 55°C - Storage Temperature: -40°F to 158°F / -40°C to 70°C
Humidity	5%~95%
Power Consumption	<24 W
Power Supply	With PoE Adaptor: - INPUT 100-240VAC - OUTPUT 24VDC 1A
Weight	About 4.4 lbs / 2 kg
Dimensions	9.8 x 9.8 x 3.2 inches / 248 x 248 x 80 millimeters

WI-FI SPECIFICATIONS

Alignment	Alignment: EG8561A-NR2, EG8561A-NR3
Standard	IEEE 802.11b/g/n/ax
Channel Bandwidth	20MHz,40MHz,80 MHz
Frequency	2.4 GHz, 5GHz, 6GHz*
MIMO	2x2
Peak Rate	802.11ax: 567 + 1200 Mbps
Modulation	DSSS/CCK, OFDM
Receive Sensitivity	802.11b BW20 : -99.5dBm (1M), -91dBm (11M) 802.11g BW20 : -96dBm (6M), -78dBm (54M) 802.11n: HT20 : -95.5dBm (MCS0), -75dBm (MCS7) 802.11n: HT40 : -93dBm (MCS0), -72dBm (MCS7) 802.11ac: VHT20: -95.5dBm (MCS0), -71dBm (MCS9) 802.11ac: VHT40: -93dBm (MCS0), -69dBm (MCS9) 802.11ax: HE20: -95.5dBm (MCS0), -65.5dBm (MCS11) 802.11ax: HE40: -93dBm (MCS0), -63dBm (MCS11)
Max Output Power	24 dBm * 2 + 24 dBm * 2
Users (WLAN only)	512

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MODEL NUMBERS

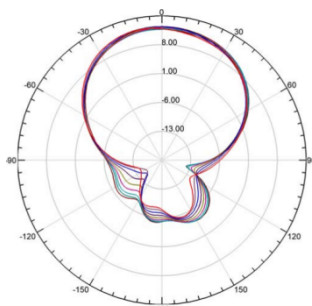
EG8561A-NR2	Photon OD63H Outdoor NR CPE, 2T4R, 8 dBi, internal directional antenna, 1 GE, PoE 24V, IP67 5G Sub-6: n2/5/12/14/25/30/41/48/66/70/71/77 LTE FDD: B2/4/5/12/13/29/30/66/71 LTE TDD: B41/46(LAA)/48 - FCC certification: TBD - IC certification: TBD
EG8561A-NR3	Photon OD63H Outdoor NR CPE, 2T4R, 8 dBi, internal directional antenna, 1 GE, PoE 24V, IP67 5G Sub-6: n1/3/5/7/8/20/28/38/40/41/75/76/77/78 LTE FDD: B1/3/5/7/8/20/28/32 LTE TDD: B38/40/41/42/43 - FCC certification: TBD - IC certification: TBD
EG8561A-NR6	Photon OD63H Outdoor NR CPE, 2T4R, 8 dBi, internal directional antenna, 1 GE, PoE 24V, IP67 5G Sub-6: N1/N2/N3/N5/N7/N8/N12/N13/N14/N18/N20/N25/N26/N28/N29/ N30/N38/N40/N41/N48/N66/N70/N71/N75/N76/N77/N78/N79 LTE FDD: B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/29/30/32//66/71 LTE TDD: B34/38/39/40/41/42/43/46(laa)/48 WCDMA: B1/2/4/5/8/19 - FCC certification: TBD - IC certification: TBD
EG8561A-NR11	Photon OD63H Outdoor NR CPE, 2T4R, 14 dBi, internal directional antenna, 1 GE, PoE 24V, IP67 5G Sub-6: N48/N77/N78 LTE TDD: B42/43/48 - FCC certification: TBD - IC certification: TBD

NOTE: Customized versions can be requested.

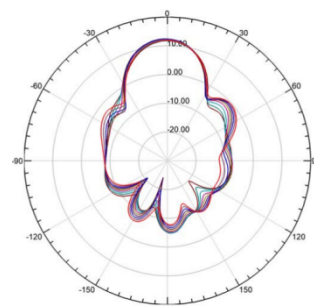
* Planned for future release

ANTENNA PATTERN

EG8561A-NR2/NR3/NR6

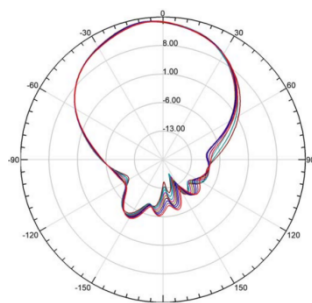


H-Pattern

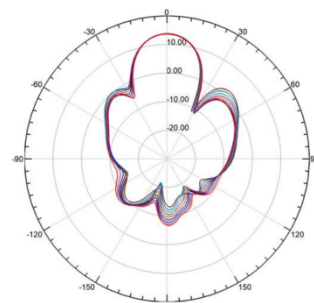


V-Pattern

EG8561A-NR11



H-Pattern



V-Pattern

BAND LIST DETAILS

5G Bands Supports (NR2)	N2, FDD, SCS(15KHz), PC(3), BW(5/10/15/20/25/30/40) N5, FDD, SCS(15KHz), PC(3), BW(5/10/15/20) N12, FDD, SCS(15KHz), PC(3), BW(5/10/15) N14, FDD, SCS(15KHz), PC(3), BW(5/10/15) N25, FDD, SCS(15KHz), PC(3), BW(5/10/15/20) N30, FDD, SCS(15KHz), PC(3), BW(5/10) N41, TDD, SCS(30KHz), PC(2), BW(10/15/20/30/40/50/60/70/80/90/100) N48, TDD, SCS(30KHz), PC(3), BW(10/15/20/30/40) N66, FDD, SCS(15KHz), PC(3), BW(5/10/15/20/25/30/40) N70, FDD, SCS(15KHz), PC(3), BW(5/10/15/20/25) N71, FDD, SCS(15KHz), PC(3), BW(5/10/15/20) N77, TDD, SCS(30KHz), PC(2), BW(10/15/20/30/40/50/60/70/80/90/100)
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5G Bands Supports (NR3)	N1, FDD, SCS(15KHz), PC(3), BW(5/10/15/20/25/30/40) N3, FDD, SCS(15KHz), PC(3), BW(5/10/15/20/25/30/40) N5, FDD, SCS(15KHz), PC(3), BW(5/10/15/20) N7, FDD, SCS(15KHz), PC(3), BW(5/10/15/20/25/30/40) N8, FDD, SCS(15KHz), PC(3), BW(5/10/15/20) N20, FDD, SCS(15KHz), PC(3), BW(5/10/15/20) N28, FDD, SCS(15KHz), PC(3), BW(5/10/15/20/30) N38, TDD, SCS(30KHz), PC(3), BW(10/15/20/30/40) N40, TDD, SCS(30KHz), PC(2), BW(10/15/20/30/40/50/60/80) N41, TDD, SCS(30KHz), PC(2), BW(20/30/40/50/60/70/80/90/100) N66, FDD, SCS(15KHz), PC(3), BW(5/10/15/20/25/30/40) N75, SDL, SCS(-), PC(N/A), BW(5/10/15/20/25/30) N76, SDL, SCS(-), PC(N/A), BW(5) N77, TDD, SCS(30KHz), PC(2), BW(10/15/20/30/40/50/60/70/80/90/100) N78, TDD, SCS(30KHz), PC(2), BW(10/15/20/30/40/50/60/70/80/90/100)
5G Bands Supports (NR6)	N1 (UL:1920 MHz - 1980 MHz)(DL:2110 MHz - 2170 MHz) N2 (UL:1850 MHz - 1910 MHz)(DL:1930 MHz - 1990 MHz) N3 (UL:1710 MHz - 1785 MHz)(DL:1805 MHz - 1880 MHz) N5 (UL:824 MHz - 849 MHz)(DL:869 MHz - 894 MHz) N7 (UL:2500 MHz - 2570 MHz)(DL:2620 MHz - 2690 MHz) N8 (UL:880 MHz - 915 MHz)(DL:925 MHz - 960 MHz) N12 (UL:699 MHz - 716 MHz)(DL:729 MHz - 746 MHz) N13 (UL:777MHz - 787MHz)(DL:746MHz - 756MHz) N14 (UL:788 MHz - 798 MHz)(DL:758 MHz - 768 MHz) N18 (UL:815MHz - 830MHz)(DL:860MHz - 875MHz) N20 (UL:832 MHz - 862 MHz)(DL:791 MHz - 821 MHz) N25 (UL:1850 MHz - 1915 MHz)(DL:1930 MHz - 1995 MHz) N26 (UL:814MHz - 849MHz)(DL:859MHz - 894MHz) N28 (UL:703 MHz - 748 MHz)(DL:758 MHz - 803 MHz) N29 (DL:717MHz - 728MHz)

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N30 (UL:2305 MHz - 2315 MHz)(DL:2350 MHz - 2360 MHz)
N38 (2570 MHz - 2620 MHz)
N40 (2300 MHz - 2400 MHz)
N41 (2496 MHz - 2690 MHz)
N48 (3550 MHz - 3700 MHz)
N66 (UL:1710 MHz - 1780 MHz)(DL:2110 MHz - 2200 MHz)
N70 (UL:1695 MHz - 1710 MHz)(DL:1995 MHz - 2020 MHz)
N71 (UL:663 MHz - 698 MHz)(DL:617MHz - 652 MHz)
N75 (DL:1432 MHz - 1517MHz)
N76 (DL:1427 MHz - 1432 MHz)
N77 (3300 MHz - 4200 MHz)
N78 (3300 MHz - 3800 MHz)
N79 (4400MHz - 5000MHz)

CA LIST DETAILS



CA LIST Details