

# AtomOD15/OD15 EUD

Outdoor Customer Premise Equipment Datasheet

**Baicells**  
Connect More with Less



## INTRODUCTION

The Baicells AtomOD15/OD15 EUD Outdoor High-Gain CPE provides superior performance and routing capabilities to bring broadband data and voice services to end-users. It operates on standard LTE TDD, supports multiple bands, and complies with 3GPP Release 12 CAT15 standards.

The AtomOD15/OD15 EUD is available in two variants: The CAT-B CBSD, which requires SAS connectivity and CPI certification, and the EUD, which does not require SAS connectivity or CPI certification.

The CPE design incorporates UL 2x2 and DL 4x4 MIMO and RX diversity, enabling improved cell coverage and high-speed wireless communications. It also supports Carrier Aggregation (CA), which extends bandwidth, increases data rates, and improves overall network performance.

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

## HIGHLIGHTS

*NOTE: Features can vary based on model or region.*

- Supports LTE FDD and TDD Bands 1/3/7/8/20/38/40/41/42/43/48
  - Customization can be requested:
    - Email [sales\\_na@baicells.com](mailto:sales_na@baicells.com) for North America.
    - Email [contact@baicells.com](mailto:contact@baicells.com) for all other regions.
- Complies with 3GPP Release 12 CAT15 standards
- 1000 Mbps Ethernet interface
- Peak data rate of up to DL 580 Mbps and UL 30 Mbps
- Supports MCS
  - DL: QPSK/16 QAM/64 QAM/256 QAM
  - UP: QPSK/16 QAM/64 QAM
- 256 QAM for DL and 64 QAM for UL as the highest order modulation formats
- Built-in LTE directional antenna, 4x4 MIMO
- Power supply with Passive PoE
- GUI-based local and remote Web management
- Supports TR-069 network management interface
- Cell lock, SIM lock, and pin lock
- User-friendly LED status indicators
- Pole or wall mounted
- Wi-Fi assisted alignment
- CBRS EUD variant is available
- Transparent Bridge Mode\* (L2 Support)

\* *Planned for future release*

## TECHNOLOGY

<b>LTE Standard</b>	3GPP Release 12, CAT15
<b>LTE Mode</b>	FDD/TDD
<b>Channel Bandwidth</b>	SC: 5/10/15/20 MHz CA: 80 MHz as maximum aggregated bandwidth (DL 4CC/UL 2CC)
<b>Frequency Bands</b>	<ul style="list-style-type: none"><li>• FDD Mode: B1 (UL:1920 MHz–1980 MHz, DL: 2110 MHz–2170 MHz) B3 (UL: 1710 MHz–1785 MHz, DL: 1805 MHz–1880 MHz) B7 (UL: 2500 MHz–2570 MHz, DL: 2620 MHz–2690 MHz) B8 (UL: 880 MHz–915 MHz, DL: 925 MHz–960 MHz) B20 (UL: 832 MHz–862 MHz, DL: 791 MHz–821 MHz)</li><li>• TDD Mode: B38 (2570 MHz–2620 MHz) B40 (2300 MHz–2400 MHz) B41 (2496 MHz–2690 MHz) B42 (3400 MHz–3600 MHz) B43 (3600 MHz–3800 MHz) B48 (3550 MHz–3700 MHz)</li></ul>
<b>Multiplexing</b>	DL 4x4 MIMO, UL 2x2 MIMO
<b>Security</b>	Firewall: IP/MAC/URL filter; ACL rule

## INTERFACE

<b>Ethernet Interface</b>	1 RJ-45 port 10/100/1000 auto-sensing, auto-MDX, Passive PoE
<b>Power Supply</b>	24 VDC Passive PoE Injector
<b>Protocols Used</b>	IPv4/IPv6, UDP, TCP, IP, ICMP, SNMPv2c, SNMPv3c, HTTPS, SSH, TELNET, TR-069, CBSD
<b>Network Management</b>	Web GUI, ACS, OMC, SNMP
<b>VLAN</b>	802.1Q

## PERFORMANCE

<b>Peak Rate</b>	<b>4x20 MHz (CA)</b>	<b>DL (2x2 MIMO, 256 QAM)</b>	<b>UL (64 QAM, 2x20 MHz only)</b>
	TDD UL/DL Config. 1	420 Mbps	60 Mbps
	TDD UL/DL Config. 2	580 Mbps	30 Mbps
	<b>2x20 MHz (CA)</b>	<b>DL (4x4 MIMO, 64 QAM)</b>	<b>UL (64 QAM)</b>
	TDD UL/DL Config. 1	320 Mbps	60 Mbps
	TDD UL/DL Config. 2	440 Mbps	30 Mbps
<b>Modulation</b>	DL: QPSK, 16 QAM, 64 QAM, 256 QAM UL: QPSK, 16 QAM, 64 QAM		
<b>Carrier Aggregation</b>	DL 2CA/3CA/4CA (2x2 MIMO), DL 2CA (4x4 MIMO) UL: 2CA (SISO)		
<b>Receive Sensitivity</b>	-96 ± 2 dBm at QPSK, 20 MHz, 25°C, -102 ± 2 dBm at 4RX Diversity		

## MODULATION LEVELS (ADAPTIVE)

DL MCS	DL Modulation	CQI Index	Theoretical Data Rate
0 - 4	QPSK	1 - 3	10 Mbps–70 Mbps
5 - 10	16 QAM	4 - 6	100 Mbps–190 Mbps
11 - 19	64 QAM	7 - 11	200 Mbps–350 Mbps
20 - 27	256 QAM	12 - 15	400 Mbps–580 Mbps

UL MCS	UL Modulation	Theoretical Data Rate
0 - 10	QPSK	0.5 Mbps–7 Mbps
11 - 20	16 QAM	7 Mbps–17 Mbps
21 - 28	64 QAM	17 Mbps–30 Mbps

## FEATURES

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

## LINK BUDGET

<b>Antenna Type</b>	Internal directional, 2T4R
<b>Antenna Gain</b>	M11: 18 dBi M11-EUD: 18 dBi M19: 14 dBi M19-EUD: 14 dBi
<b>Max Transmit Power</b>	M11: 26 dBm (combined, to regional EIRP limit) M11-EUD: 5 dBm (combined, to regional EIRP limit) M19: 26 dBm (combined, to regional EIRP limit)
<b>Maximum EIRP</b>	M11: 44 dBm M11-EUD: 23 dBm M19: 40 dBm

## PHYSICAL

<b>IP Protection Rating</b>	IP66
<b>LED Indicators</b>	PWR, LTE, LTE Signal
<b>USIM</b>	1.8 V/3 V 2FF
<b>Restore Button</b>	Press for ten seconds to restore the CPE to its factory settings.
<b>Temperature</b>	<ul style="list-style-type: none"> <li>Operating Temperature: -40°F to 131°F / -40°C to 55°C</li> <li>Storage Temperature: -40°F to 158°F / -40°C to 70°C</li> </ul>
<b>Humidity</b>	5% to 95% RH
<b>Power Consumption</b>	<10 W
<b>Power Supply</b>	With Passive PoE Adaptor: <ul style="list-style-type: none"> <li>INPUT: 100 VAC to 240 VAC</li> <li>OUTPUT: 24 VDC 0.5 A</li> </ul>
<b>Weight</b>	About 7.3 lb/3.47 kg
<b>Dimensions</b>	14.5 x 14.5 x 2.9 inches 368 x 368 x 74 millimeters

## WI-FI ALIGNMENT SPECIFICATIONS

<b>Standard</b>	IEEE 802.11b/g/n
<b>Channel Bandwidth</b>	20/40 MHz
<b>Frequency</b>	2.4 GHz
<b>MIMO</b>	1x1
<b>Peak Rate</b>	802.11b: 11 Mbps 802.11g: 54 Mbps 802.11n: 150 Mbps
<b>Modulation</b>	DSSS/CCK, OFDM
<b>Receive Sensitivity</b>	-64 dBm at 65 Mbps, typical for 802.11n -65 dBm at 54 Mbps, typical for 802.11g -76 dBm at 11 Mbps, typical for 802.11b
<b>Max Output Power</b>	10 ± 3 dBm
<b>Antenna Type</b>	Internal omni, 1T1R
<b>Antenna Gain</b>	<1 dBi

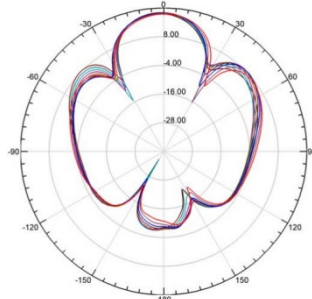
## GLOBAL PART NUMBERS

<b>EG8015G-M11</b>	Atom Outdoor CAT15, 2T4R, 3.5 GHz, 18 dBi, B42/43/48 CPE, IP67 <ul style="list-style-type: none"> <li>FCC certification: 2AG32EG8015GM11 (3550 MHz–3700 MHz)</li> <li>IC certification: 20982-EG8015GM11 (3450 MHz–3700 MHz)</li> </ul>
<b>EG8015G-M19</b>	Atom Outdoor CAT15, 2T4R, 2.6 GHz, 14 dBi, B38/40/41 CPE, IP67 <ul style="list-style-type: none"> <li>FCC certification: 2AG32EG8015GM19 (2490 MHz–2690 MHz)</li> <li>IC certification: 20982-EG8015GM19 (2570 MHz–2620 MHz)</li> </ul>
<b>EG8015G-M11-EUD</b>	Atom Outdoor CAT15, 2T4R, 3.5 GHz, 18 dBi, B42/43/48 CPE, IP67 <ul style="list-style-type: none"> <li>FCC certification: 2AG32EG8015GM11EUD (3550 MHz–3700 MHz)</li> <li>IC certification: TBD</li> </ul>
<b>EG8015G-M19-EUD</b>	Atom Outdoor CAT15, 2T4R, 2.6 GHz, 14 dBi, B38/40/41 CPE, IP67 <ul style="list-style-type: none"> <li>FCC certification: TBD</li> <li>IC certification: TBD</li> </ul>

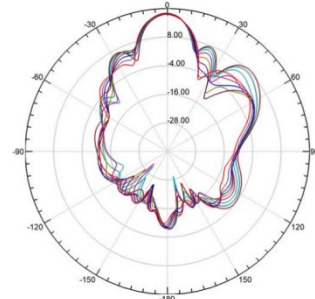
\*NOTE: Customized versions can be requested. Bands can be customized (B1/3/7/8/20/38/40/41).

## ANTENNA PATTERN

**EG8015G-M11**  
**EG8015G-M11-EUD**

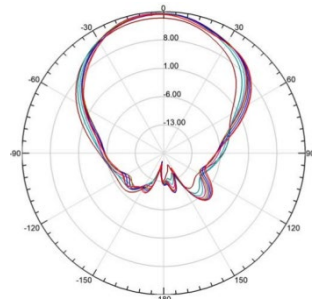


H-Pattern

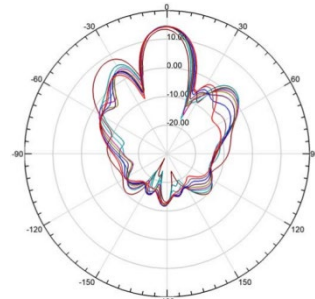


V-Pattern

**EG8015G-M19**  
**EG8015G-M19-EUD**



H-Pattern



V-Pattern