Atom OD15G-HP/OD15G-HP EUD

Outdoor Customer Premise Equipment Datasheet

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INTRODUCTION

The Baicells Atom OD15G-HP Outdoor High-Gain CPE provides superior performance and routing capabilities to bring end-user broadband data and voice services. It operates on standard LTE TDD, supports multiple bands, and complies with 3GPP Release 12 CAT15 standards.

The Atom OD15G-HP 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. The CPE supports the High-Power User Equipment (HPUE) feature; the maximum transmit power can reach up to 30 dBm. It also supports Carrier Aggregation (CA), which extends bandwidth, increases data rates, and improves overall network performance.

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

HIGHLIGHTS

NOTE: Features can vary based on model or region.

- Supports LTE TDD Bands 41/42/43/48
  - Customization can be requested:
    - Email sales_na@baicells.com for North America.
    - Email 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 70 Mbps
- Supports HPUE feature; maximum TX Power can reach up to 30 dBm
- 256 QAM for DL and 64 QAM for UL as the highest order modulation formats
- Built-in LTE directional antenna for 2T4R diversity
- Built-in GPS for self-positioning
- Power supply with Passive PoE
- GUI-based local and remote Web management
- Supports TR-069 network management protocol
- 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)

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TECHNOLOGY

LTE Standard	3GPP Release12, CAT15
LTE Mode	TDD
Channel Bandwidth	SC: 5/10/15/20 MHz CA: 80 MHz as maximum aggregated bandwidth
Frequency Bands	B41 (2496 MHz–2690 MHz) B42 (3400 MHz–3600 MHz) B43 (3600 MHz–3800 MHz) B48 (3550 MHz–3700 MHz)
Multiplexing	DL 4x4 MIMO, UL 2x2 MIMO
Security	Firewall: IP/MAC/URL filter; ACL rule

INTERFACE

Ethernet Interface	1 RJ-45 port 10/100/1000 auto-sensing, auto-MDX, Passive PoE
Power Supply	24 V/48 VDC Passive PoE Injector
Protocols Used	IPv4/IPV6, UDP, TCP, IP, ICMP, SNMPv2c, SNMPv3c, HTTPS, SSH, TELNET, TR069, CBSD
Network Management	Web GUI, ACS, OMC, SNMP
VLAN	802.1Q

PERFORMANCE

Peak Data Rate (LTE)	**4x20 MHz (CA)**	**DL (2x2 MIMO, 256 QAM)**	**UL (64 QAM, 2x20 MHz only)**
	TDD UL/DL Config. 1	420 Mbps	60 Mbps
	TDD UL/DL Config. 2	580 Mbps	30 Mbps
	TDD UL/DL Config. 6	340 Mbps	70 Mbps
	2x20 MHz (CA)	**DL (4x4 MIMO, 64 QAM)**	**UL (64 QAM)**
	TDD UL/DL Config. 1	320 Mbps	60 Mbps
	TDD UL/DL Config. 2	440 Mbps	30 Mbps
	TDD UL/DL Config. 6	170 Mbps	70 Mbps
Modulation	DL: QPSK, 16 QAM, 64 QAM, 256 QAM UL: QPSK, 16 QAM, 64 QAM		
Carrier Aggregation	DL Contiguous and Non-contiguous 2CA/3CA/4CA (2x2 MIMO) DL Contiguous and Non-contiguous 2CA (4x4 MIMO) UL: Contiguous and Non-contiguous 2CA (SISO)		
Receive Sensitivity	-96 ± 2 dBm @ QPSK, 20 MHz, 25°C, -102 ± 2 dBm @ 4RX Diversity		

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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

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 uptime; 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
Positioning	GPS (built-in)
CBRS	Automatic installation of CBSD certificate*

*Planned for future release

LINK BUDGET

GPS Antenna	External GPS antenna, N-Type connector (TBC)
Antenna Type	Internal directional, 2T4R
Antenna Gain	M11: 18 dBi M11-EUD: 18 dBi
Max Transmit Power	M11: 30 dBm (combined, to regional EIRP limit) M11-EUD: 5 dBm (combined, to regional EIRP limit)
Maximum EIRP	M11: 48 dBm M11-EUD: 23 dBm

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PHYSICAL

IP Protection Rating	IP66
LED Indicators	PWR, LTE, LTE Signal
USIM	1.8 V/3 V 2FF
Restore Button	Press for 10 seconds to restore the UE 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	<10 W
Power Supply	With PoE Adaptor: INPUT 100-240 VAC OUTPUT 24 VDC 0.5 A
Weight	About 7.3 lb/3.47 kg
Dimensions	14.5 x 14.5 x 2.9 inches / 368 x 368 x 74 millimeters

WI-FI ALIGNMENT SPECIFICATIONS

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

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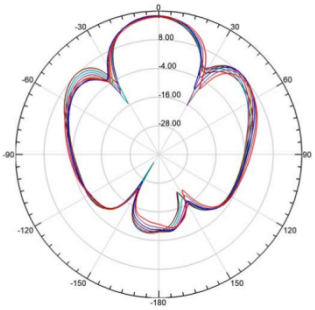
MODEL NUMBERS

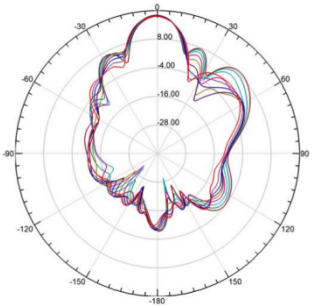
EG8015G-M11-HP	Atom Outdoor CAT15 HPUE, 2T4R, 3.5 GHz, 18 dBi, B42/43/48 CPE, IP66 • FCC certification: 2AG32EG8015GM11HP (3550–3700 MHz) • IC certification: 20982-8015GM11HP
EG8015G-M11-EUD-HP	Atom Outdoor CAT15 HPUE, 2T4R, 3.5 GHz, 18 dBi, B42/43/48 CPE, IP66 FCC certification: 2AG328015GM11HPEUD

ANTENNA PATTERN

EG8015G-M11-HP
EG8015G-M11-EUD-HP



H-Pattern



V-Pattern