

LTE Advanced Carrier Aggregation 450Mbps CAT9 Gateway w/802.11ac

The BulletPlusAC-CAT9 is a industrial strength cellular solution using LTE Advanced Carrier Aggregation technology for critical data applications. The BulletPlusAC-CAT9 provides fast CAT9 3CA LTE connections with up to 450 Mbps for today's data intensive applications. The BulletPlusAC-CAT9 features 4x Gigabit LAN Ports, 2x Independent Gigabit WAN Ports, Dual SIM w/Failover, 802.11ac WIFI, RS232/485 Serial Data Port, 2x Programmable I/O and Standalone GPS.

CAT9 - 450 Mbps LTE

Carrier Aggregation

Dual Independent WAN

6 Gigabit Ethernet Ports

802.11bgna/ac WIFI

Dual Serial Ports



Features

- Ultra Fast CAT9 LTE Operation
- Up to 450 Mbps Downlink / 50 Mbps Uplink Over Air
- Dual SIM Card Support w/Failover & Load Balancing
- Support for 802.11bgna/ac devices (Up to 1.3 Gbps)
- Firewall with ACL Security, DMZ & Port Forwarding
- 2x Programmable Analog/Digital Inputs or 2 Digital Outputs
- IPSec, GRE / VPN Tunneling
- RS232/485 Serial Data Port / RS232 Console/Data Port
- 6 - 10/100/1000 Ethernet (PoE), (6LAN/2WAN)
- IPv6 & IPv4 Support
- Standalone GPS (TCP/UDP/SMTP)
- Wide Operating Temperature (-40°C to +85°C)
- Data Usage Alerts (Email, SMS)
- User interface via SSH or HTTP/HTTPS web browser
- Microhard NMS Support



BulletPlusAC-CAT9 Specifications

| Cellular Supported Bands | LTE FDD Bands: 1, 2, 3, 4, 5, 7, 8, 11, 12, 13, 17, 18, 19, 20, 21, 26, 28, 29, 30, 66 LTE TDD Bands: 38, 39, 40, 41 HSPA+ Bands: 1, 2, 4, 5, 8 LTE 2DL carrier aggregation combinations North America 1+3,5,8,18,19,20,21,26;2+2:2+4,5,12,13,17,29,30,66;3+3;3+5,7,8,19,20,28;4+4;4+5,12,13,17,29,30;5+7,30,66;7+7;7+20,28;12+30;13+66;29+30;40+40;41+41 LTE 3DL carrier aggregation combinations North America 2+2+5,2+2+13,3+3+7,3+7+7,3+3+20,4+4+5,4+4+1,3,5+66+66,13+66+66,66+66+2,66+66+66,1+3+7,1+3+19,1+3+20,1+19+21,2+4+5,2+4+13,2+5+30,2+12+30,2+29+30,3+7+20,3+7+28,4+5+30,4+12+30,4+29+30,5+66+2,13+66+2 | SMS | SMS to/from Ethernet via Telnet SMS Alerts SMS Remote Control | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|---------------------------|---|-----------------------|-------------------------------------|----------|---|-----|---------|---------|--------------------------------|----|---------|--------|---|----|---------|---------|---|----|---------|--------|---|----|---------|---------|---|----|---------|------|----------|----|---------|------|----------|----|---------|------|----------|----|---------|------|----------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|-----------------|---|
| Cellular Data Features* | LTE FDD: 450 Mbps DL, 50 Mbps Up LTE TDD: 347 Mbps DL, 30Mbps UL HSPA+: DL/UL 42/5.76 Mbps <small>*Module Standalone Laboratory Performance</small> | Carrier Connection | ICMP Keep Alive, Traffic Watchdog, DDNS, Failover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WiFi Features | 802.11b/g/n (2.4GHz), 802.11a/n/ac (5.8 GHz) | Network Protocols | IPv4, IPv6, TCP, UDP, TCP/IP, ARP, ICMP, DHCP, HTTP, SNMP, FTP, DNS, Serial over IP, Modbus Slave (TCP/Serial), Load Balancer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WiFi Performance (3X3 MIMO) | <table border="1"> <thead> <tr> <th>Rate</th> <th>Mode</th> <th>Tx(dBm)*</th> <th>Rx(dBm)</th> </tr> </thead> <tbody> <tr><td>6 Mbps</td><td>a</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>54 Mbps</td><td>a</td><td>26</td><td>-80 ± 2</td></tr> <tr><td>1 Mbps</td><td>b</td><td>26</td><td>-95 ± 2</td></tr> <tr><td>11 Mbps</td><td>b</td><td>26</td><td>-90 ± 2</td></tr> <tr><td>6 Mbps</td><td>g</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>54 Mbps</td><td>g</td><td>26</td><td>-80 ± 2</td></tr> <tr><td>MCS0</td><td>n (HT20)</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>MCS7</td><td>n (HT20)</td><td>26</td><td>-76 ± 2</td></tr> <tr><td>MCS0</td><td>n (HT40)</td><td>26</td><td>-92 ± 2</td></tr> <tr><td>MCS7</td><td>n (HT40)</td><td>26</td><td>-73 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT20)</td><td>26</td><td>-93 ± 2</td></tr> <tr><td>MCS8</td><td>ac (VHT20)</td><td>26</td><td>-71 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT40)</td><td>26</td><td>-90 ± 2</td></tr> <tr><td>MCS9</td><td>ac (VHT40)</td><td>26</td><td>-67 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT80)</td><td>26</td><td>-88 ± 2</td></tr> <tr><td>MCS9</td><td>ac (VHT80)</td><td>26</td><td>-66 ± 2</td></tr> </tbody> </table> <small>*Total Tx power in dBm for 3 chains</small> | Rate | Mode | Tx(dBm)* | Rx(dBm) | 6 Mbps | a | 26 | -94 ± 2 | 54 Mbps | a | 26 | -80 ± 2 | 1 Mbps | b | 26 | -95 ± 2 | 11 Mbps | b | 26 | -90 ± 2 | 6 Mbps | g | 26 | -94 ± 2 | 54 Mbps | g | 26 | -80 ± 2 | MCS0 | n (HT20) | 26 | -94 ± 2 | MCS7 | n (HT20) | 26 | -76 ± 2 | MCS0 | n (HT40) | 26 | -92 ± 2 | MCS7 | n (HT40) | 26 | -73 ± 2 | MCS0 | ac (VHT20) | 26 | -93 ± 2 | MCS8 | ac (VHT20) | 26 | -71 ± 2 | MCS0 | ac (VHT40) | 26 | -90 ± 2 | MCS9 | ac (VHT40) | 26 | -67 ± 2 | MCS0 | ac (VHT80) | 26 | -88 ± 2 | MCS9 | ac (VHT80) | 26 | -66 ± 2 | Security | VPN, IPsec with IKE/ISAKMP; Multiple tunnel support (16); 3DES and up to 256-bit AES Encryption, VPN Tunneling L2TP, GRE, Open VPN, HTTPS, RADIUS |
| Rate | Mode | Tx(dBm)* | Rx(dBm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Mbps | a | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 Mbps | a | 26 | -80 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Mbps | b | 26 | -95 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 Mbps | b | 26 | -90 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Mbps | g | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 Mbps | g | 26 | -80 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | n (HT20) | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS7 | n (HT20) | 26 | -76 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | n (HT40) | 26 | -92 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS7 | n (HT40) | 26 | -73 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT20) | 26 | -93 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS8 | ac (VHT20) | 26 | -71 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT40) | 26 | -90 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS9 | ac (VHT40) | 26 | -67 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT80) | 26 | -88 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS9 | ac (VHT80) | 26 | -66 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Interface | RS232/485 Serial Data Port RS232 Serial Console/Data Port | Firewall | NAT, NAT-T VPN Tunneling, Port Forwarding, VPN/GRE pass-through; Access Control Lists, DMZ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Baud Rate | 300bps to 921kbps | Management | Telnet, WebUI, SNMP V1/2/3, Wireless Upgrade (HTTP/FTP), AT Command Interface (Serial/Telnet), Microhard NMS Support, Data Usage Alerts, SSH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Port Service | Extensive Serial Port Support: TCP Server/Client / UDP Server/Client / Modbus / SMTP | Diagnostics | RSSI, Ec/No, Voltage, Temperature, Remote diagnostics, UDP Event Reporting, SMS Alerts, Netflow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethernet | 4x LAN 10/100/1000, Auto - MDI/X IEEE 802.3 2x WAN 10/100/1000, Auto - MDI/X IEEE 802.3 | Input Voltage | 7 - 30VDC Passive PoE on WAN (optional) Reverse polarity protection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I/O | 2x Programmable Analog/Digital Inputs or 2x Digital Outputs | Connectors: | <table border="0"> <tr><td>Antenna</td><td>2x SMA Female (Cell, Diversity/GPS)</td></tr> <tr><td>Data</td><td>3x RPSMA Female (WiFi) 6x RJ-45 (Ethernet) 4 PIN Interlock (Vin, I/O) 2x DB9 RS232</td></tr> <tr><td>USB</td><td>Type A</td></tr> <tr><td>SIM</td><td>Dual Nano (4FF) SIM (Failover)</td></tr> </table> | Antenna | 2x SMA Female (Cell, Diversity/GPS) | Data | 3x RPSMA Female (WiFi) 6x RJ-45 (Ethernet) 4 PIN Interlock (Vin, I/O) 2x DB9 RS232 | USB | Type A | SIM | Dual Nano (4FF) SIM (Failover) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Antenna | 2x SMA Female (Cell, Diversity/GPS) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Data | 3x RPSMA Female (WiFi) 6x RJ-45 (Ethernet) 4 PIN Interlock (Vin, I/O) 2x DB9 RS232 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| USB | Type A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIM | Dual Nano (4FF) SIM (Failover) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| USB | Type A USB 2.0 | Environmental | <table border="0"> <tr><td>Operating Temperature</td><td>-40°C to +85°C</td></tr> <tr><td>Humidity</td><td>5-95%, non-condensing</td></tr> </table> | Operating Temperature | -40°C to +85°C | Humidity | 5-95%, non-condensing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating Temperature | -40°C to +85°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Humidity | 5-95%, non-condensing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GPS | TCP/UDP/Email Reporting, GpsGate, TAIP GNSS Systems GLONASS, BeiDou & Galileo GPS Protocols NMEA 0183 V3.0 Acquisition Sensitivity -145 dBm (Cold-start) Tracking Sensitivity -160 dBm (Open Sky/Active-patch Antenna) Accuracy <2m CEP-50 (Open sky, 1 Hz tracking) Standalone time to first fix 1s/29s/32s (hot/warm/cold) Total number of SVs ~55 SVs | Weight | Approx. 350 grams | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Dimensions | Approx. 5.05" x 3.0" x 1.2" (128mm x 76mm x 30mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Approvals | FCC / IC PTCRB UL HazLoc (C1D2) Carrier Specific Approvals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Order Options

Model BulletPlusAC-CAT9

Contact Information

For more information please contact:



BOCK OPTRONICS INC.

14 Steinway Blvd., Unit 7
Toronto, Ontario M9W 6M6

Tel: (416) 674-2804
sales@bockoptronics.ca
www.bockoptronics.ca

Copyright 2020 Microhard Systems Inc.
Specifications subject to change without notice.



LTE Advanced Carrier Aggregation 600Mbps CAT12 Gateway w/802.11ac

The BulletPlusAC-CAT12 is an industrial strength cellular solution using LTE Advanced Carrier Aggregation technology for critical data applications. The BulletPlusAC-CAT12 provides fast CAT12 LTE connections with download speeds of up to 600 Mbps for today's data intensive applications. The BulletPlusAC-CAT12 features 4x Gigabit LAN Ports, 2x Independent Gigabit WAN Ports, Dual SIM w/Failover, 802.11ac WIFI, RS232/485 Serial Data Ports, 2x Programmable I/O and Standalone GPS.

CAT12 - 600 Mbps LTE

Carrier Aggregation

Dual Independent WAN

6 Gigabit Ethernet Ports

802.11bgna/ac WIFI

Dual Serial Ports



Features

- Ultra Fast CAT12 LTE Operation
- Up to 600 Mbps Downlink / 150 Mbps Uplink Over Air
- Dual SIM Card Support w/Failover & Load Balancing
- Support for 802.11bgna/ac devices (Up to 1.3 Gbps)
- Firewall with ACL Security, DMZ & Port Forwarding
- 2x Programmable Analog/Digital Inputs or 2 Digital Outputs
- IPSec, GRE / VPN Tunneling
- RS232/485 Serial Data Port / RS232 Console/Data Port
- 6 - 10/100/1000 Ethernet (PoE), (6LAN/2WAN)
- IPv6 & IPv4 Support
- Standalone GPS (TCP/UDP/SMTP)
- Wide Operating Temperature (-40°C to +85°C)
- Data Usage Alerts (Email, SMS)
- User interface via SSH or HTTP/HTTPS web browser
- Microhard NMS Support



BulletPlusAC-CAT12 Specifications

| Cellular Supported Bands LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B14/B17/B18/B19/B20/B21/B25/B26/B28/B29/B30/B32/B66; LTE-TDD: B38/39/B40/B41 WCDMA: B1/B2/B3/B4/B5/B8/B9/B19 DL 2×CA: B1+3/5/18/19/20/26; B2+2/4/5/12/13/17/29/30/66; B3+3/5/7/8/19/20/28; B4+4/5/12/13/17/29/30; B5+7/30/66; B7+7/20/28; B12+30; B13+66; B19+21; B20+B32; B29+30; B38+38; B39+39; B39+39; B39+41; B40+40; B41+41; B66+66, 12, 29, 30, 5; B2+B14; B14+B30; B14+B66; DL 3×CA: DL inter-band 3CA: B1+3+5/7/8/19/20/28; B1+7+20; B2+4+5; B2+4+13, B2+5+30; B2+12+30; B2+29+30, B3+7+20, B3+7+28, B3+7+8, B4+5+30, B4+12+30, B4+29+30, B5+66+2, B13+66+2; B66+12+30; B66+29+30, B66+5+30; B2+B14+B66; DL 2 intra-band plus inter-band 3CA: B2+2+5; B2+2+13; B3+3+7; B3+7+7; B3+3+20; B3+3+28; B3+3+1; B4+4+5; B4+4+13; B7+7+28; B5+66+66; B13+66+66; B66+66+2; B39+B39+B41; B39+B41+B41; B14+B66+B66 DL 3 intra-band 3CA: B40+40+40; B41+41+41; B66+66+66 UL 2×CA: B3+3; B41+41 | GPS GNSS Systems GPS Protocols Acquisition Sensitivity Tracking Sensitivity Accuracy Standalone time to first fix Total number of SVs TCP/UDP/Email Reporting, GpsGate, TAIP GLONASS, BeiDou & Galileo NMEA 0183 V3.0 -145 dBm (Cold-start) -160 dBm (Open Sky/Active-patch Antenna) <2m CEP-50 (Open sky, 1 Hz tracking) 1s/29s/32s (hot/warm/cold) ~55 SVs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|---------------|-------------------|-------------------|--|------------------|---|--|---------|---|----|---------|--------|---|----|---------|---------|---|----|---------|--------|---|----|---------|---------|---|----|---------|------|----------|----|---------|------|----------|----|---------|------|----------|----|---------|------|----------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|
| Cellular Data Features* *Module Standalone Laboratory Performance LTE-FDD: Max 600Mbps (DL), Max 150Mbps (UL) LTE-TDD: Max 430Mbps (DL), Max 30Mbps (UL) DC-HSDPA: Max 42Mbps (DL) HSUPA: Max 5.76Mbps (UL) WCDMA: Max 384Kbps (DL), Max 384Kbps (UL) | Carrier Connection ICMP Keep Alive, Traffic Watchdog, DDNS, Failover Network Protocols IPv4, IPv6, TCP, UDP, TCP/IP, ARP, ICMP, DHCP, HTTP, SNMP, FTP, DNS, Serial over IP, Modbus Slave (TCP/Serial), Load Balancer Security VPN, IPSec with IKE/ISAKMP; Multiple tunnel support (16); 3DES and up to 256-bit AES Encryption, VPN Tunneling L2TP, GRE, Open VPN, HTTPS, RADIUS Firewall NAT, NAT-T VPN Tunneling, Port Forwarding, VPN/GRE pass-through; Access Control Lists, DMZ Management Telnet, WebUI, SNMP V1/2/3, Wireless Upgrade (HTTP/FTP), AT Command Interface (Serial/Telnet), Microhard NMS Support, Data Usage Alerts, SSH Diagnostics RSSI, Ec/No, Voltage, Temperature, Remote diagnostics, UDP Event Reporting, SMS Alerts, Netflow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WiFi Features | 802.11b/g/n (2.4GHz), 802.11a/n/ac (5.8 GHz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WiFi Performance (3X3 MIMO) | <table border="1"> <thead> <tr> <th>Rate</th> <th>Mode</th> <th>Tx(dBm)*</th> <th>Rx(dBm)</th> </tr> </thead> <tbody> <tr><td>6 Mbps</td><td>a</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>54 Mbps</td><td>a</td><td>26</td><td>-80 ± 2</td></tr> <tr><td>1 Mbps</td><td>b</td><td>26</td><td>-95 ± 2</td></tr> <tr><td>11 Mbps</td><td>b</td><td>26</td><td>-90 ± 2</td></tr> <tr><td>6 Mbps</td><td>g</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>54 Mbps</td><td>g</td><td>26</td><td>-80 ± 2</td></tr> <tr><td>MCS0</td><td>n (HT20)</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>MCS7</td><td>n (HT20)</td><td>26</td><td>-76 ± 2</td></tr> <tr><td>MCS0</td><td>n (HT40)</td><td>26</td><td>-92 ± 2</td></tr> <tr><td>MCS7</td><td>n (HT40)</td><td>26</td><td>-73 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT20)</td><td>26</td><td>-93 ± 2</td></tr> <tr><td>MCS8</td><td>ac (VHT20)</td><td>26</td><td>-71 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT40)</td><td>26</td><td>-90 ± 2</td></tr> <tr><td>MCS9</td><td>ac (VHT40)</td><td>26</td><td>-67 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT80)</td><td>26</td><td>-88 ± 2</td></tr> <tr><td>MCS9</td><td>ac (VHT80)</td><td>26</td><td>-66 ± 2</td></tr> </tbody> </table> <p>*Total Tx power in dBm for 3 chains</p> | Rate | Mode | Tx(dBm)* | Rx(dBm) | 6 Mbps | a | 26 | -94 ± 2 | 54 Mbps | a | 26 | -80 ± 2 | 1 Mbps | b | 26 | -95 ± 2 | 11 Mbps | b | 26 | -90 ± 2 | 6 Mbps | g | 26 | -94 ± 2 | 54 Mbps | g | 26 | -80 ± 2 | MCS0 | n (HT20) | 26 | -94 ± 2 | MCS7 | n (HT20) | 26 | -76 ± 2 | MCS0 | n (HT40) | 26 | -92 ± 2 | MCS7 | n (HT40) | 26 | -73 ± 2 | MCS0 | ac (VHT20) | 26 | -93 ± 2 | MCS8 | ac (VHT20) | 26 | -71 ± 2 | MCS0 | ac (VHT40) | 26 | -90 ± 2 | MCS9 | ac (VHT40) | 26 | -67 ± 2 | MCS0 | ac (VHT80) | 26 | -88 ± 2 | MCS9 | ac (VHT80) | 26 | -66 ± 2 |
| Rate | Mode | Tx(dBm)* | Rx(dBm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Mbps | a | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 Mbps | a | 26 | -80 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Mbps | b | 26 | -95 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 Mbps | b | 26 | -90 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Mbps | g | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 Mbps | g | 26 | -80 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | n (HT20) | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS7 | n (HT20) | 26 | -76 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | n (HT40) | 26 | -92 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS7 | n (HT40) | 26 | -73 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT20) | 26 | -93 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS8 | ac (VHT20) | 26 | -71 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT40) | 26 | -90 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS9 | ac (VHT40) | 26 | -67 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT80) | 26 | -88 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS9 | ac (VHT80) | 26 | -66 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Interface | RS232/485 Data Port, RS232 Console/Data Port | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Baud Rate | 300bps to 921kbps | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Port Service | Extensive Serial Port Support: TCP Server/Client / UDP Server/Client / Modbus / SMTP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethernet | 4x LAN 10/100/1000, Auto - MDI/X IEEE 802.3 2x WAN 10/100/1000, Auto - MDI/X IEEE 802.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I/O | 2x Programmable Analog/Digital Inputs or 2x Digital Outputs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| USB | Type A USB 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SMS | SMS to/from Ethernet via Telnet SMS Alerts SMS Remote Control | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td data-bbox="841 254 1143 436"> Input Voltage 7 - 30VDC Passive PoE on WAN (optional) Reverse polarity protection </td> <td data-bbox="1143 254 1516 436"> Connectors: Antenna 2x SMA Female (Cell, Diversity/GPS) 3x RPSMA Female (WiFi) Data 6x RJ-45 (Ethernet) 4 PIN Interlock (Vin, I/O)) 2x DB9 RS232 USB Type A SIM Dual Nano (4FF) SIM (Failover) </td> </tr> <tr> <td data-bbox="841 436 1143 493"> Weight </td> <td data-bbox="1143 436 1516 493"> Approx. 350 grams </td> </tr> <tr> <td data-bbox="841 493 1143 550"> Dimensions </td> <td data-bbox="1143 493 1516 550"> Approx. 5.05" x 3.0" x 1.2" (128mm x 76mm x 30mm) </td> </tr> <tr> <td data-bbox="841 550 1143 606"> Approvals </td> <td data-bbox="1143 550 1516 606"> FCC / IC PTCRB UL Hazloc (C1D2) Carrier Specific Approvals </td> </tr> </table> | Input Voltage 7 - 30VDC Passive PoE on WAN (optional) Reverse polarity protection | Connectors: Antenna 2x SMA Female (Cell, Diversity/GPS) 3x RPSMA Female (WiFi) Data 6x RJ-45 (Ethernet) 4 PIN Interlock (Vin, I/O)) 2x DB9 RS232 USB Type A SIM Dual Nano (4FF) SIM (Failover) | Weight | Approx. 350 grams | Dimensions | Approx. 5.05" x 3.0" x 1.2" (128mm x 76mm x 30mm) | Approvals | FCC / IC PTCRB UL Hazloc (C1D2) Carrier Specific Approvals | <h2 style="text-align: center;">Order Options</h2> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input Voltage 7 - 30VDC Passive PoE on WAN (optional) Reverse polarity protection | Connectors: Antenna 2x SMA Female (Cell, Diversity/GPS) 3x RPSMA Female (WiFi) Data 6x RJ-45 (Ethernet) 4 PIN Interlock (Vin, I/O)) 2x DB9 RS232 USB Type A SIM Dual Nano (4FF) SIM (Failover) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weight | Approx. 350 grams | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dimensions | Approx. 5.05" x 3.0" x 1.2" (128mm x 76mm x 30mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approvals | FCC / IC PTCRB UL Hazloc (C1D2) Carrier Specific Approvals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td data-bbox="841 1547 1143 1644"> Model </td> <td data-bbox="1143 1547 1516 1644"> BulletPlusAC-CAT12 </td> </tr> </table> | Model | BulletPlusAC-CAT12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Model | BulletPlusAC-CAT12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Contact Information

For more information please contact:



BOCK OPTRONICS INC.

14 Steinway Blvd., Unit 7
 Toronto, Ontario M9W 6M6

Tel: (416) 674-2804
sales@bockoptronics.ca
www.bockoptronics.ca

Copyright 2020 Microhard Systems Inc.
 Specifications subject to change without notice.



LTE Advanced Carrier Aggregation 600Mbps CAT11 Gateway w/802.11ac

The BulletPlusAC is a industrial strength cellular solution using LTE Advanced Carrier Aggregation technology for critical data applications. The BulletPlusAC provides fast CAT11 CA LTE connections with up to 600 Mbps for today's data intensive applications. The BulletPlusAC features 4x Gigabit LAN Ports, 2x Independent Gigabit WAN Ports, Dual SIM w/Failover, 802.11ac WiFi, RS232/485 Serial Data, 2x Programmable I/O and Standalone GPS.

CAT11 - 600 Mbps LTE

Carrier Aggregation

Dual Independent WAN

6 Gigabit Ethernet Ports

802.11bgna/ac WiFi

Dual Serial Ports



Features

- Ultra Fast CAT11 LTE Operation
- Up to 600 Mbps Downlink / 75 Mbps Uplink Over Air
- Dual SIM Card Support w/Failover & Load Balancing
- Support for 802.11bgna/ac devices (Up to 1.3 Gbps)
- Firewall with ACL Security, DMZ & Port Forwarding
- 2x Programmable Analog/Digital Inputs or 2 Digital Outputs
- IPSec, GRE / VPN Tunneling
- RS232/485 Serial Data Port / RS232 Console/Data Port
- 6 - 10/100/1000 Ethernet (PoE), (6LAN/2WAN)
- IPv6 & IPv4 Support
- Standalone GPS (TCP/UDP/SMTP)
- Wide Operating Temperature (-40°C to +85°C)
- Data Usage Alerts (Email, SMS)
- User interface via SSH or HTTP/HTTPS web browser
- Microhard NMS Support



BulletPlusAC

Specifications

| Cellular Supported Bands | <p>LTE FDD Bands: 1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 20, 25, 26, 28, 29, 30, 66</p> <p>LTE TDD Bands: 38, 40, 41</p> <p>HSPA+ Bands: 1, 2, 4, 5, 8</p> <p>LTE 2DL carrier aggregation combinations North America B2+B2, B2+B4, B2+B5, B2+B12, B2+B13, B2+B17, B2+B29, B2+B30, B4+B4, B4+B5, B4+B7, B4+B12, B4+B13, B4+B17, B4+B29, B4+B30, B5+B30, B12+B12, B12+B30, B25+B25, B25+B26, B25+B41, B26+B41, B29+B30, B41+B41</p> <p>LTE 3DL carrier aggregation combinations North America B2+B2+B12/17, B2+B2+B13, B2+B2+B4, B2+B4+B5, B2+B4+B12, B2+B4+B13, B2+B4+B29, B2+B5+B30, B2+B12+B12, B2+B12+B30, B2+B29+B30, B4+B4+B5, B4+B4+B7, B4+B4+B12, B4+B4+B13, B4+B5+B30, B4+B12+B12, B4+B12+B30, B4+B29+B30, B25+B26+B41, B25+B41+B41, B26+B41+B41, B41+B41+B41</p> | <p>SMS</p> <p>SMS to/from Ethernet via Telnet SMS Alerts SMS Remote Control</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|---|--|---------|----------|---------|--------|---|----|---------|---------|---|----|---------|--------|---|----|---------|---------|---|----|---------|--------|---|----|---------|---------|---|----|---------|------|----------|----|---------|------|----------|----|---------|------|----------|----|---------|------|----------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|------|------------|----|---------|---|
| Cellular Data Features* | <p>LTE Up to 600 Mbps DL w/3x CA DL, 256QAM DL Up to 75 Mbps UL w/UL 64 QAM HSPA+ Rel. 8: DL/UL up to 42/11.5 Mbps</p> | <p>Carrier Connection</p> <p>ICMP Keep Alive, Traffic Watchdog, DDNS, Failover</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WiFi Features | 802.11b/g/n (2.4GHz), 802.11a/n/ac (5.8 GHz) | <p>Network Protocols</p> <p>IPv4, IPv6, TCP, UDP, TCP/IP, ARP, ICMP, DHCP, HTTP, SNMP, FTP, DNS, Serial over IP, Modbus Slave (TCP/Serial), Load Balancer</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WiFi Performance (3X3 MIMO) | <table border="1"> <thead> <tr> <th>Rate</th> <th>Mode</th> <th>Tx(dBm)*</th> <th>Rx(dBm)</th> </tr> </thead> <tbody> <tr><td>6 Mbps</td><td>a</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>54 Mbps</td><td>a</td><td>26</td><td>-80 ± 2</td></tr> <tr><td>1 Mbps</td><td>b</td><td>26</td><td>-95 ± 2</td></tr> <tr><td>11 Mbps</td><td>b</td><td>26</td><td>-90 ± 2</td></tr> <tr><td>6 Mbps</td><td>g</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>54 Mbps</td><td>g</td><td>26</td><td>-80 ± 2</td></tr> <tr><td>MCS0</td><td>n (HT20)</td><td>26</td><td>-94 ± 2</td></tr> <tr><td>MCS7</td><td>n (HT20)</td><td>26</td><td>-76 ± 2</td></tr> <tr><td>MCS0</td><td>n (HT40)</td><td>26</td><td>-92 ± 2</td></tr> <tr><td>MCS7</td><td>n (HT40)</td><td>26</td><td>-73 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT20)</td><td>26</td><td>-93 ± 2</td></tr> <tr><td>MCS8</td><td>ac (VHT20)</td><td>26</td><td>-71 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT40)</td><td>26</td><td>-90 ± 2</td></tr> <tr><td>MCS9</td><td>ac (VHT40)</td><td>26</td><td>-67 ± 2</td></tr> <tr><td>MCS0</td><td>ac (VHT80)</td><td>26</td><td>-88 ± 2</td></tr> <tr><td>MCS9</td><td>ac (VHT80)</td><td>26</td><td>-66 ± 2</td></tr> </tbody> </table> <p>*Total Tx power in dBm for 3 chains</p> | Rate | Mode | Tx(dBm)* | Rx(dBm) | 6 Mbps | a | 26 | -94 ± 2 | 54 Mbps | a | 26 | -80 ± 2 | 1 Mbps | b | 26 | -95 ± 2 | 11 Mbps | b | 26 | -90 ± 2 | 6 Mbps | g | 26 | -94 ± 2 | 54 Mbps | g | 26 | -80 ± 2 | MCS0 | n (HT20) | 26 | -94 ± 2 | MCS7 | n (HT20) | 26 | -76 ± 2 | MCS0 | n (HT40) | 26 | -92 ± 2 | MCS7 | n (HT40) | 26 | -73 ± 2 | MCS0 | ac (VHT20) | 26 | -93 ± 2 | MCS8 | ac (VHT20) | 26 | -71 ± 2 | MCS0 | ac (VHT40) | 26 | -90 ± 2 | MCS9 | ac (VHT40) | 26 | -67 ± 2 | MCS0 | ac (VHT80) | 26 | -88 ± 2 | MCS9 | ac (VHT80) | 26 | -66 ± 2 | <p>Security</p> <p>VPN, IPSec with IKE/ISAKMP; Multiple tunnel support (16); 3DES and up to 256-bit AES Encryption, VPN Tunneling L2TP, GRE, Open VPN, HTTPS, RADIUS</p> |
| Rate | Mode | Tx(dBm)* | Rx(dBm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Mbps | a | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 Mbps | a | 26 | -80 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Mbps | b | 26 | -95 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 Mbps | b | 26 | -90 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Mbps | g | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 Mbps | g | 26 | -80 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | n (HT20) | 26 | -94 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS7 | n (HT20) | 26 | -76 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | n (HT40) | 26 | -92 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS7 | n (HT40) | 26 | -73 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT20) | 26 | -93 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS8 | ac (VHT20) | 26 | -71 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT40) | 26 | -90 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS9 | ac (VHT40) | 26 | -67 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | ac (VHT80) | 26 | -88 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS9 | ac (VHT80) | 26 | -66 ± 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Interface | RS232/485 Serial Data Port RS232 Serial Console/Data Port | <p>Firewall</p> <p>NAT, NAT-T VPN Tunneling, Port Forwarding, VPN/GRE pass-through; Access Control Lists, DMZ</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Baud Rate | 300bps to 921kbps | <p>Management</p> <p>Telnet, WebUI, SNMP V1/2/3, Wireless Upgrade (HTTP/FTP), AT Command Interface (Serial/Telnet), Microhard NMS Support, Data Usage Alerts, SSH</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Port Service | Extensive Serial Port Support: TCP Server/Client / UDP Server/Client / Modbus / SMTP | <p>Diagnostics</p> <p>RSSI, Ec/No, Voltage, Temperature, Remote diagnostics, UDP Event Reporting, SMS Alerts, Netflow</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethernet | 4x LAN 10/100/1000, Auto - MDI/X IEEE 802.3 2x WAN 10/100/1000, Auto - MDI/X IEEE 802.3 | <p>Input Voltage</p> <p>7 - 30VDC Passive PoE on WAN (optional) Reverse polarity protection</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I/O | 2x Programmable Analog/Digital Inputs or 2x Digital Outputs | <p>Connectors:</p> <p>Antenna 3x SMA Female (Cell, Div, GPS) 3x RPSMA Female (WiFi) Data 6x RJ-45 (Ethernet) 4 PIN Interlock (Vin, I/O)) 2x DB9 RS232 USB Type A SIM 2x Nano SIM 1.8 / 3.0V (4FF)</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| USB | Type A USB 2.0 | <p>Environmental</p> <p>Operating Temperature -40°C to +85°C Humidity 5-95%, non-condensing</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GPS | TCP/UDP/Email Reporting, GpsGate, TAIP | <p>Weight</p> <p>Approx. 350 grams</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GNSS Systems | GLONASS, BeiDou & Galileo | <p>Dimensions</p> <p>Approx. 5.05" x 3.0" x 1.2" (128mm x 76mm x 30mm)</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GPS Protocols | NMEA 0183 V3.0 | <p>Approvals</p> <p>FCC / IC PTCRB UL HazLoc Carrier Specific Approvals</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acquisition Sensitivity | -145 dBm (Cold-start) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tracking Sensitivity | -160 dBm (Open Sky/Active-patch Antenna) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Accuracy | <2m CEP-50 (Open sky, 1 Hz tracking) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Standalone time to first fix | 1s/29s/32s (hot/warm/cold) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total number of SVs | ~55 SVs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Order Options

Model BulletPlusAC

Contact Information

For more information please contact:



BOCK OPTRONICS INC.

14 Steinway Blvd., Unit 7
Toronto, Ontario M9W 6M6

Tel: (416) 674-2804
sales@bockoptronics.ca
www.bockoptronics.ca

Copyright 2020 Microhard Systems Inc.
Specifications subject to change without notice.



BulletPlus-NA2 - 4G/LTE Ethernet/Serial/USB Gateway w/WIFI

The BulletPlus-NA2 provides a feature packed, compact industrial strength wireless solution using ultra fast 4G/LTE technology for critical data applications. Supporting commonly used North America Bands the BulletPlus-NA2 provides up to 150 Mbps for today's data intensive applications. The BulletPlus-NA2 features 3x 10/100 Ethernet Ports, Dual SIM support, 802.11b/g/n WIFI, RS232 Serial Data, 2x Programmable I/O and Standalone GPS.

4G/LTE

Dual SIM

Standalone GPS

3x Ethernet Ports

Low Power

RS232 Serial Port



Features

- Low Power Consumption
- Ultra Fast 4G/LTE Operation
- Up to 150Mbps Downlink / 50 Mbps Uplink Over Air
- Dual SIM Card Support w/Failover
- Support for 802.11b/g/n devices (Up to 150 Mbps)
- IP Pass-through Mode
- Firewall with ACL Security, DMZ & Port Forwarding
- 2x Programmable Analog/Digital Inputs or 2 Digital Outputs
- IPSec, GRE / VPN Tunneling
- RS232 Serial Data/Console Port
- 3 - 10/100 Ethernet (PoE), (3x LAN or 1x WAN/2xLAN)
- USB Host Port
- Standalone GPS (TCP Server, UDP Reporting, SMTP)
- Wide Operating Temperature (-40°C to +85°C)
- Data Usage Alerts (Email, SMS)
- User interface via telnet or web browser
- Microhard NMS Support



BulletPlus-NA2 Specifications

| Supported Bands | LTE FDD: B2,B4,B5,B12,B13,B14,B66,B71 WCDMA: B2,B4,B5 | Security | VPN, IPSec with IKE/ISAKMP; Multiple tunnel support (16); 3DES and up to 256-bit AES Encryption, VPN Tunneling L2TP, GRE, HTTPS, RADIUS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-------------------------------------|--|-----------------------|--------------------------------|----------|------------------------|-----------|---------------------|---------|----------------------------|----|-----------|--------|--------|-----|---------------------|---------|---|----|---------|------|----------|----|---------|------|----------|----|---------|------|----------|----|---------|------|----------|----|---------|----------------------|---|
| Cellular Data Features* | LTE FDD: Up to 150 Mbps DL, 50 Mbps UL LTE TDD: Up to 130 Mbps DL, 35 Mbps UL DC-HSPA+: Up to 42 Mbps DL, 5.7 Mbps UL WCDMA: Up to 384 Kbps DL, 384 Kbps UL | Firewall | NAT, NAT-T VPN tunneling, Port forwarding, VPN/GRE pass-through; Access control lists, DMZ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <small>*Module Standalone Laboratory Performance</small> | | Management | Telnet, WebUI, SNMP V1/2/3, Wireless Upgrade (HTTP/FTP), AT Command Interface (Serial/Telnet), Microhard NMS Support, Data Usage Alerts, SSH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WiFi Features | 802.11b/g/n (2.4GHz) | Diagnostics | RSSI, Ec/No, Voltage, Temperature, Remote diagnostics, UDP Event Reporting, SMS Alerts, Netflow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WiFi Performance | <table border="1"> <thead> <tr> <th>Rate</th> <th>Mode</th> <th>Tx (dBm)</th> <th>Rx (dBm)</th> </tr> </thead> <tbody> <tr> <td>1 Mbps</td> <td>b</td> <td>30</td> <td>-97 ± 1</td> </tr> <tr> <td>11 Mbps</td> <td>b</td> <td>30</td> <td>-92 ± 1</td> </tr> <tr> <td>6 Mbps</td> <td>g</td> <td>30</td> <td>-94 ± 1</td> </tr> <tr> <td>54 Mbps</td> <td>g</td> <td>26</td> <td>-75 ± 1</td> </tr> <tr> <td>MCS0</td> <td>n (HT20)</td> <td>30</td> <td>-96 ± 1</td> </tr> <tr> <td>MCS7</td> <td>n (HT20)</td> <td>26</td> <td>-75 ± 1</td> </tr> <tr> <td>MCS0</td> <td>n (HT40)</td> <td>30</td> <td>-94 ± 1</td> </tr> <tr> <td>MCS7</td> <td>n (HT40)</td> <td>26</td> <td>-73 ± 1</td> </tr> </tbody> </table> | Rate | Mode | Tx (dBm) | Rx (dBm) | 1 Mbps | b | 30 | -97 ± 1 | 11 Mbps | b | 30 | -92 ± 1 | 6 Mbps | g | 30 | -94 ± 1 | 54 Mbps | g | 26 | -75 ± 1 | MCS0 | n (HT20) | 30 | -96 ± 1 | MCS7 | n (HT20) | 26 | -75 ± 1 | MCS0 | n (HT40) | 30 | -94 ± 1 | MCS7 | n (HT40) | 26 | -73 ± 1 | Input Voltage | 7 - 30VDC Passive PoE on WAN (optional) Reverse polarity protection |
| Rate | Mode | Tx (dBm) | Rx (dBm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Mbps | b | 30 | -97 ± 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 Mbps | b | 30 | -92 ± 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Mbps | g | 30 | -94 ± 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 Mbps | g | 26 | -75 ± 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | n (HT20) | 30 | -96 ± 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS7 | n (HT20) | 26 | -75 ± 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS0 | n (HT40) | 30 | -94 ± 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCS7 | n (HT40) | 26 | -73 ± 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Interface | RS232 Serial Data Port | Current Consumption (@12VDC) | Idle (LTE Connected): 120 mA WiFi (AP mode+LTE): 170 mA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Baud Rate | 300bps to 921kbps | Connectors: | <table border="0"> <tr> <td>Antenna</td> <td>3x SMA Female (Cell, Div, GPS)</td> </tr> <tr> <td></td> <td>1x RPSMA Female (WiFi)</td> </tr> <tr> <td>Data</td> <td>3x RJ-45 (Ethernet)</td> </tr> <tr> <td></td> <td>4 PIN Interlock (Vin, I/O)</td> </tr> <tr> <td></td> <td>DB9 RS232</td> </tr> <tr> <td>USB</td> <td>Type A</td> </tr> <tr> <td>SIM</td> <td>2x 1.8 / 3.0V (2FF)</td> </tr> </table> | Antenna | 3x SMA Female (Cell, Div, GPS) | | 1x RPSMA Female (WiFi) | Data | 3x RJ-45 (Ethernet) | | 4 PIN Interlock (Vin, I/O) | | DB9 RS232 | USB | Type A | SIM | 2x 1.8 / 3.0V (2FF) | | | | | | | | | | | | | | | | | | | | | | |
| Antenna | 3x SMA Female (Cell, Div, GPS) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1x RPSMA Female (WiFi) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Data | 3x RJ-45 (Ethernet) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 PIN Interlock (Vin, I/O) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DB9 RS232 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| USB | Type A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIM | 2x 1.8 / 3.0V (2FF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serial Port Service | Extensive Serial Port Support: TCP Server/Client / UDP Server/Client / Modbus / SMTP | Environmental | <table border="0"> <tr> <td>Operating Temperature</td> <td>-40°C to +85°C</td> </tr> <tr> <td>Humidity</td> <td>5-95%, non-condensing</td> </tr> <tr> <td>Vibration</td> <td>MIL-STD-810G</td> </tr> </table> | Operating Temperature | -40°C to +85°C | Humidity | 5-95%, non-condensing | Vibration | MIL-STD-810G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating Temperature | -40°C to +85°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Humidity | 5-95%, non-condensing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vibration | MIL-STD-810G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ethernet | 2x LAN 10/100, Auto - MDI/X IEEE 802.3 1x WAN 10/100, Auto - MDI/X IEEE 802.3 | Weight | Approx. 175 grams | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I/O | 2x Programmable Analog/Digital Inputs or 2x Digital Outputs | Dimensions | Approx. 3.05" x 2.2" x 1.1" (77mm x 55mm x 28mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| USB | Host Type A USB 2.0 | Approvals | FCC / IC PTCRB UL Hazloc MIL-STD-810G Carrier Specific Approvals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GPS | TCP Server, UDP/Email Reporting, GpsGate GPS, GNSS, GLONASS, BeiDou | <h2>Order Options</h2> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Navigation Update Rate | Up to 5 Hz | Model | BulletPlus-NA2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Accuracy | Position: 2.5 m CEP SBAS: 2.0 m CEP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sensitivity* (Active/Passive Antenna) | Tracking: -160 dBm Cold Starts: -145 dBm Hot Starts: -155 dBm *Sensitivities are typical and may vary | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SMS | SMS to/from Ethernet via Telnet SMS Alerts SMS Remote Control | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carrier Connection | PAP, CHAP, ICMP Keep Alive, Traffic Watchdog, DDNS, IP pass-through. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Network Protocols | TCP, UDP, TCP/IP, ARP, ICMP, DHCP, HTTP, SNMP, FTP, DNS, Serial over IP, Modbus Slave (TCP/Serial) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Contact Information

For more information please contact:



BOCK OPTRONICS INC.

14 Steinway Blvd., Unit 7
Toronto, Ontario M9W 6M6

Tel: (416) 674-2804
sales@bockoptronics.ca
www.bockoptronics.ca

Copyright 2020 Microhard Systems Inc.
Specifications subject to change without notice.

