

PWP-GW-M96

Wireless Gateway Modem

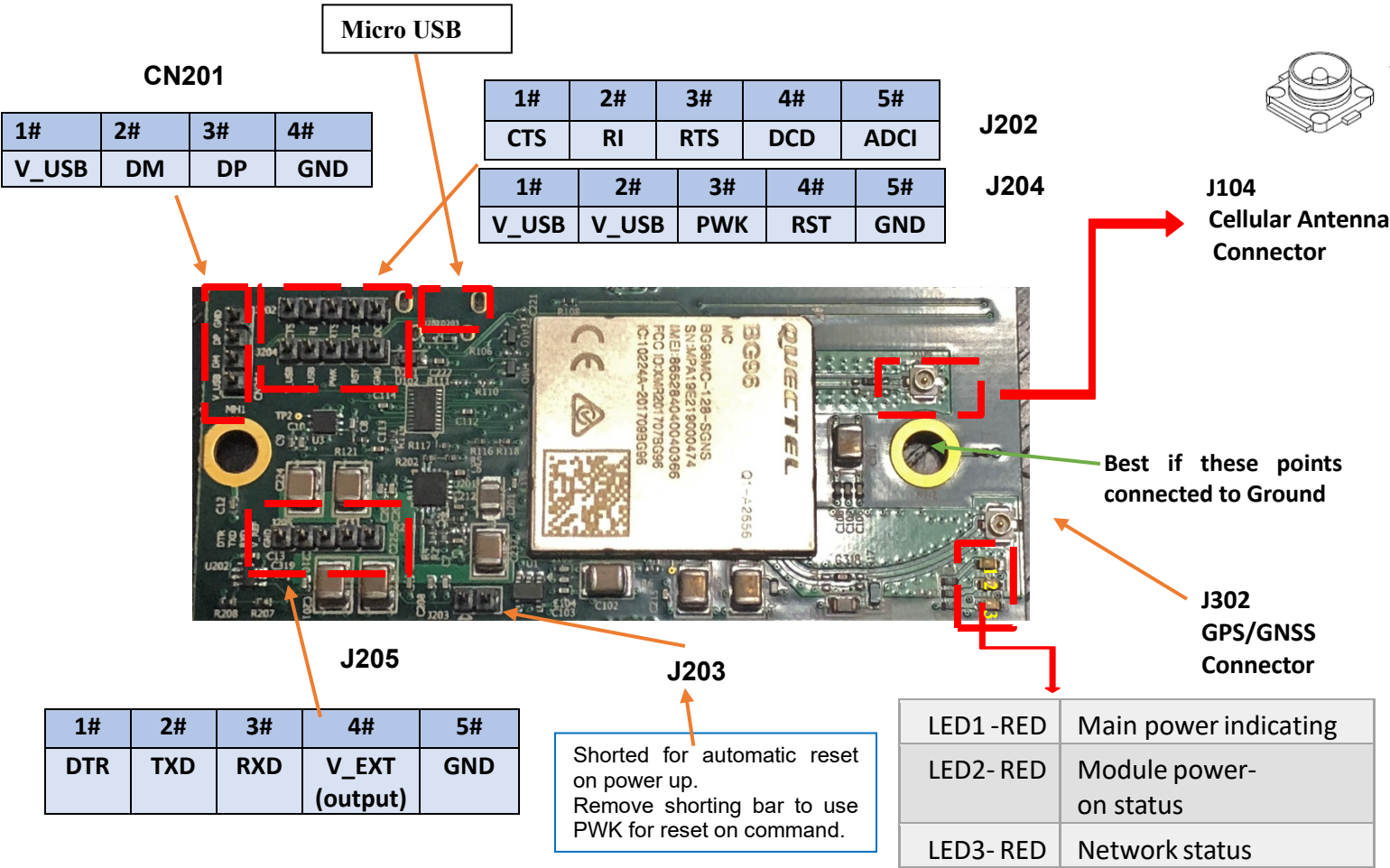
User Manual



| Revision | Date | Author | Description of change |
|----------|-----------|--------|---------------------------------------|
| 1.1 | 2/16/2018 | LK | Added connector info and GNSS Command |



Interface Introduction: Top Side



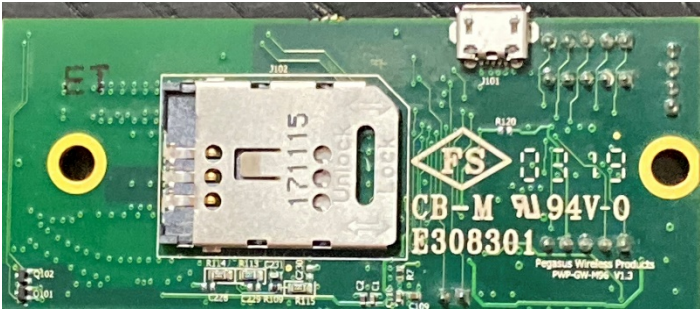
| | Voltage Range | Description |
|---------------|---------------------|--|
| Vbus | 4.2~6V (Typ. 5.0 V) | Main Power supply |
| PWK | 0V~1.8V | Pull High to turn on Device |
| PWN | 0V~1.8V | Pull High to turn off Device |
| VEXT (output) | 1.8V from Module | Reference Voltage level for UART Voltage shift IC on Mother Board if required. M96 Gateway has the Level Shifter On-Board. |

Warning: VEXT (Pin #4) is a reference output ONLY for an external reference. DO NOT connect POWER Source as damage to the M96 Module will occur.

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SIM Card Holder Interface: Bottom Side



Antenna Requirements (with u.FL Connector) LTE/GSM Antenna

| Specification | Requirements |
|------------------------|--|
| Frequency Range | Cable Insertion Loss:< 1.0 dB (LTE B5/B8/B12/B13/B18/B19/B20/B25/B26 /B28 GSM850/GSM900) Cable Insertion Loss < 1.5 dB (LTE B1/B2/B3/B4/B39, DCS1800/PCS1900) |
| VSWR | <2 |
| Gain (dBi) | 1 |
| Max Input Power (W) | 50 |
| Input Impedance (Ohms) | 50 |
| Polarization Type | Vertical |

Recommended Antennas: PWP-ANT-10122-X Internal Mount



PWP-JCG-410-L External Mount Antenna



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Antenna Requirements (with u.FL Connector) GPS/GNSS

| Specification | Requirements |
|----------------------------------|----------------|
| Frequency Range | 1561 ~1615 MHz |
| Polarization | RHCP or Linear |
| VSWR | < 2 (Typ.) |
| Passive Antenna Gain | >0 dBi |
| Active Antenna Noise figure | <1.5 dB |
| Active Antenna Gain | -2dBi |
| Active Antenna embedded LNA gain | 20 dB (Typ.) |
| Active Antenna total Gain | 18dBi (Typ.) |

Recommended Antennas:

PWP-JCA-057



Set up & Operation

Power ON Power OFF Operation

All Gateway communication is performed using the USB or UART Interface and Quectel AT Commands for the Quectel BG96 Wireless Module.

1. Plug Gateway into control board, either directly or remotely using jumper cable.
2. Insert SIM Card in to SIM Socket and secure socket latch.
3. Apply power and observe LED's:
 - a. LED 1 (Red) Lights – Indicates Main Power ON.
 - b. *When BG96 is in power off mode, it can be turned on to normal mode by driving the PWRKEY (PIN 3 of J204) to V_USB high level for at least 500ms.*
LED 2(Red) Lights – Indicates BG96 Module Powered ON
 - c. LED 3 (Red) Lights –
 - i. Blinks Rapidly Indicates Search for Network Signal

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- ii. Blinks Slowly Indicates Network Connected
- 4. Run System Programs using AT Commands.
- 5. To turn off Modem:
 - a. *When BG96 is in power on mode, it can be turned off by driving the PWRKEY (PIN 3 of J204) to V_USB high level for at least 650ms. The module can also be powered down by sending the AT+POWD=1 command.*

LED 2(Red) Goes OFF – Indicates BG96 Module Powered Down.

Note: Some functions for lower power operation require the use of DTR (pin 1 of J205)

- 6. For additional Information on Communications please refer to:
 - a. Quectel BG96 Hardware Design Manual
 - b. Quectel BG96 AT Commands Manual
 - c. Quectel BG96 TCPIP Commands Manual
 - d. Quectel BG96 GPS/GNSS AT Commands Manual.
- 7. **GPS/GNSS is turned off.** To Turn on and make active issue Command:
AT+QGPS
 - a. Refer to Section 1.1 of the Quectel BG96 GPS/GNSS AT Commands Manual for configuration information.

A soft copy of the latest Manuals can be obtained by sending an email request to:
Support@pegasuswirelessproducts.com.

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