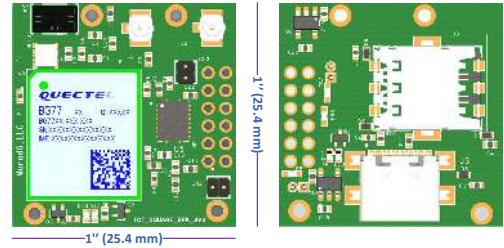




10 yrs/500 MB  
250 SMS  
Data Plan  
included

## IoT<sup>2</sup>BRK3V3

### BG77 LTE-M/NB2 Breakout Board



IoT<sup>2</sup>BRK3V3 is the simplest way to add cellular connectivity and GNSS to your application. It is based on the ultra-compact LTE cat M1/cat NB2 BG77 module. This 1-inch square board comes with an on-board GNSS low-noise amplifier front-end with integrated pre and post SAW filters and a GNSS ceramic antenna. External active or passive GNSS antennas can be used via the U.FL connector. The BG77 is an ultra-compact LPWA module supporting LTE Cat M1, LTE Cat NB2 and integrated GNSS. It is fully compliant with 3GPP Rel-14 specification and provides maximum data rates of 588 kbps downlink and 1119 kbps uplink. It features ultra-low power consumption by leveraging the integrated RAM/flash as well as the ARM Cortex A7 processor supporting ThreadX, achieving up to 70% reduction in PSM leakage and 85% reduction in eDRX current consumption compared to its predecessor.

#### Key

##### Benefits

- ✓ SWAP (Size, Weight, and Power) IoT solution
- ✓ Robust mounting and interface
- ✓ 3 GNSS antenna options
- ✓ On-Board USIM Holder
- ✓ LTE antenna u.FL connector
- ✓ USB-C interface
- ✓ Module and Network status LEDs

##### Applications

- ✓ Asset Management
- ✓ Logistics
- ✓ Tracking
- ✓ Geo-Fence
- ✓ Wearables
- ✓ Smart Energy
- ✓ Medical Devices
- ✓ PPPoS/Hotspot

## Key

### Features

<b>Cellular Technology</b>	Cat M1: LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85*  Cat NB2: LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85*
<b>Data</b>	Cat M1: Max. 588 kbps (DL)/1119 kbps (UL)  Cat NB2: Max. 127 kbps (DL)/158.5 kbps (UL)
<b>Voice</b>	VoLTE (Cat M1 Only)
<b>SMS</b>	Point-to-point MO and MT SMS Cell Broadcast Text and PDU Mode
<b>Interface</b>	USB-C UART GPIO NET_STATUS STATUS Antennas
<b>GNSS</b>	GPS/GLONASS/BeiDou/Galileo/QZSS QuecLocator (Cell ID Positioning)
<b>GNSS SAW/LNA/SAW</b>	Signal gain: 17 dB Out-of-band rejection: +80 dBc, 1627 to 1660 MHz Low current consumption: 3.1 mA
<b>Firmware Upgrade</b>	Via USB-C interface  DFOTA (Delta Firmware Upgrade Over-the-Air)
<b>Power Supply</b>	1- USB-C Receptacle 2- 2.7 V – 3.6 V (typ. 3.3 V), 1 A at the header
<b>I/O Voltage</b>	2.7 V – 3.6 V
<b>Electrical Characteristics</b>	Output Power: 21 dBm (Max.)  Consumption @ LTE CAT M1 (typical): Power Saving Mode: 3.2 $\mu$ A Idle State: TBD

	<p>Sleep State:  1.63 mA @ DRX = 1.28 s  0.76 mA @ e-I-DRX = 81.92 s, PTW = 20.48 s  LTE Connected Mode:  228 mA @ 21dBm, GNSS off</p> <p>Consumption @ LTE CAT NB2 (typical):  Power Saving Mode: 3.2 µA  Idle State: TBD  Sleep State:  1.5 mA @ DRX = 1.28 s  0.79 mA @ e-I-DRX = 81.92 s, PTW = 20.48 s</p> <p>LTE Connected Mode:  165 mA @ 21dBm, GNSS off</p> <p>GNSS: TBD</p>
<b>Protocols</b>	PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/PING/MQTT/LwM2M/CoAP/IPv6*
<b>Operating Temperature</b>	-35 °C to +75 °C
<b>Dimensions</b>	1 inch x 1 inch (25.4 mm x 25.4 mm)
<b>Approvals</b>	<p>Carrier:  Vodafone* (Global)  Deutsche Telekom* (Europe)  Sprint/Verizon*/AT&amp;T*/T-Mobile* (North America)  Telus* (Canada)  China Telecom*/China Mobile*/China Unicom* (China)  SKT* (South Korea)  NTT DOCOMO*/SoftBank*/KDDI* (Japan)  Telstra* (Australia)</p> <p>Regulatory:  GCF* (Global)  CE (Europe)  FCC/PTCRB* (North America)  IC* (Canada)  SRRC*/NAL*/CCC* (China)  KC* (South Korea)  NCC* (Taiwan, China)  JATE/TELEC (Japan)  RCM (Australia/New Zealand)  NBTC* (Thailand)</p>

\* Means development/on-going/plannin