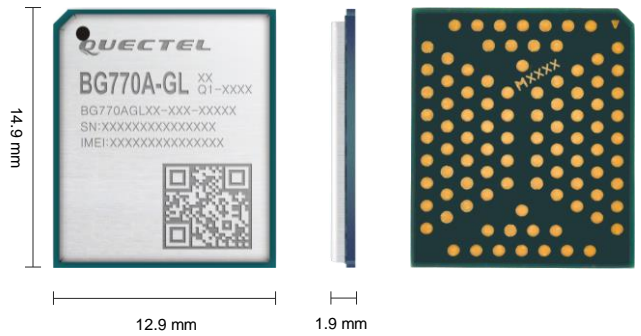




Quectel BG770A-GL

Ultra-Compact LTE Cat M1/NB2 Module



The BG770A-GL is an ultra-compact LPWA module with an integrated GNSS engine, which supports LTE Cat M1 and LTE Cat NB2 bands. The module is fully compliant with the 3GPP Rel-14 specification and provides global carrier band combinations. It features the MIPS 5150 processor and the ultra-low power consumption by leveraging the integrated RAM and flash to achieve extremely low current consumption in various standby/hibernation modes, including 3GPP PSM and e-I-DRX. This feature enables over 15 years of battery life. In addition, the BG770A-GL contains a GNSS* and cellular-based location engine that supports GPS and GLONASS.

The BG770A-GL module boasts a comprehensive hardware-based security feature - Integrated Security Elements (ISE). With an ultra-compact SMT form factor of 14.9 mm × 12.9 mm × 1.9 mm and a high integration level, the module enables integrators and developers to easily design their applications and take advantage of the module's low-power consumption and mechanical intensity. The BG770A-GL's advanced LGA package allows for fully automated manufacturing required for high-volume applications.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities extend the applicability of the module to a wide range of M2M applications, such as wireless POS, smart metering, tracking, wearable devices, and many more.



Key Features

- ✓ Extremely compact LTE Cat M1/Cat NB2 module with ultra-low power consumption
- ✓ Integrated RAM and flash
- ✓ Super slim profile in the LGA package
- ✓ Embedded with abundant Internet service protocols
- ✓ Support for VoLTE* (Cat M1 only), QuecLocator®*, and DFOTA*
- ✓ Rich set of external, multi-band interfaces that ensure convenient applications
- ✓ Fast time-to-market: reference designs, evaluation tools and timely technical support minimize design in time and development efforts
- ✓ Robust mounting and interfaces



LTE Cat M1 & Cat NB2



LGA Package



Super Compact Size



Abundant Protocols Embedded



DFOTA*



USB 2.0 Interface*



Ultra-Low Power Consumption



Quectel Enhanced AT Commands



Integrated RAM/Flash in Chipset

Version: 1.0.0 | Status: Preliminary

Quectel BG770A-GL

LTE Cat M1/NB2	BG770A-GL
Region/Operator	Global
Dimensions (mm)	14.9 × 12.9 × 1.9
Package	LGA
Temperature Range	
Operating Temperature	-35 °C to +75 °C
Extended Temperature	-40 °C to +85 °C
Frequency Bands	
LTE-FDD	Cat M1: B1/B2/B3/B4/B5/B8/B9*/B10*/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66 Cat NB2: B1/B2/B3/B4/B5/B8/B9*/B10*/B12/B13/B17/B18/B19/B20/B25/B27*/B28/B66
Data Rate (Max.)	
Cat M1	600 kbps (DL)/ 1000 kbps (UL)
Cat NB2	120 kbps (DL)/ 140 kbps (UL)
Cat NB1	62.5 kbps (DL)/ 27.2 kbps (UL)
Certifications	
Carrier	Vodafone*/Deutsche Telekom* (Europe) Verizon*/AT&T*/T-Mobile*/Sprint* (America) NTT DOCOMO*/SoftBank*/KDDI* (Japan)
Regulatory	GCF* (Global) CE* (Europe) PTCRB* (North America) FCC* (America) IC* (Canada) SRRC*/NAL*/CCC* (China) KC* (South Korea) NCC* (Taiwan, China) JATE*/TELEC* (Japan) RCM* (Australia/New Zealand)
Others	RoHS*
Interfaces	
USB 2.0*	× 1 (Full Speed only)
UART	× 3
PCM*	× 1 (For VoLTE only)
I2C*	× 1 (For VoLTE only)
ADC	× 2
(U)SIM	× 1 (Supports 1.8 V only)
GPIO	× 7
GRFC	× 2
NET_STATUS	× 1 (For network status indication)
STATUS	× 1 (For power on/off indication)
Antenna	× 2 (For the main antenna and GNSS antenna, respectively)
Voice	
VoLTE*	Voice over LTE (For Cat M1 only)
SMS	
Short Message Service*	Point-to-point MO and MT SMS Cell Broadcast Text and PDU Mode
Enhanced Features	
GNSS*	GPS/GLONASS
DFOTA*	Delta Firmware Upgrade Over The Air
QuecLocator®**	Cell ID Positioning

Note:

*: Under development / in progress.

Quectel BG770A-GL

LTE Cat M1/NB2	BG770A-GL
Software Features	
3GPP	3GPP E-UTRA Release 14
AT Commands	3GPP TS 27.007 3GPP TS 27.005 Quectel Enhanced AT Commands
Drivers	USB Serial Driver: TBD GNSS/RIL Driver: TBD
Protocols*	TCP/ PPP/ UDP/ SSL/ MQTT/ FTP(S) / HTTP(S) / LwM2M/ IPv4/ IPv6/ TLS/ DTLS/ PING/ CoAP/ NITZ
Firmware Upgrade	UART DFOTA*
Electrical Features	
Output Power	Max. 23 dBm
Supply Voltage Range	2.2–4.35 V
Power Consumption (Typical) ①	PSM: 1.4 μ A Sleep Mode: 82 μ A @ DRX = 1.28 s / 2.56 s 17 μ A @ e-I-DRX = 81.92 s Idle Mode: 1.05 mA @ DRX = 1.28 s 35 μ A @ e-I-DRX = 81.92 s Active Mode: TBD

Notes:

- 1.*: Under development/ in progress.
2. TBD: To Be Determined.
3. ①: The power consumption is presented only on the platform level.