

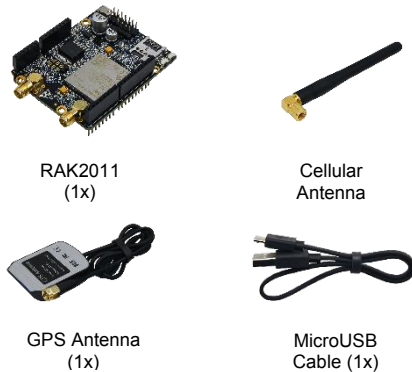


# WisLink Cellular BG96 Arduino Shield

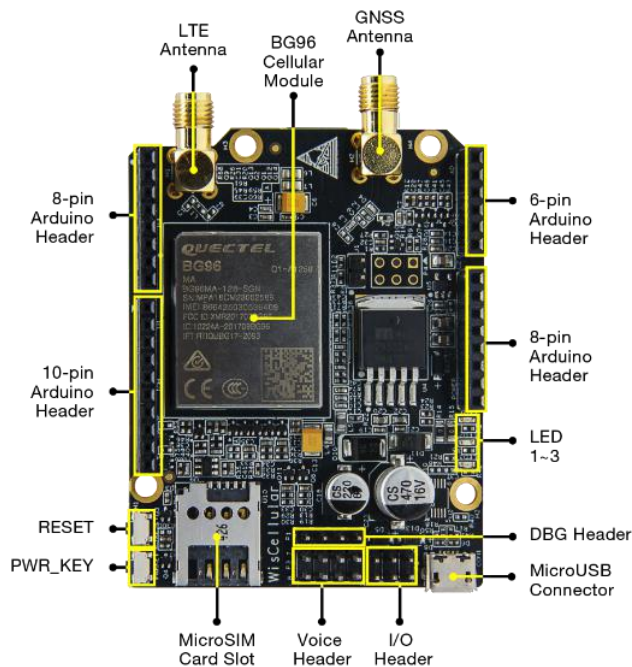
## RAK2011



### Package Content



### Board Parts



### Product Description

WisLink Cellular BG96 Arduino Shield RAK2011 is a compact cellular communications module that supports Low-Power Wide-Area (LPWA) technology for networking Internet-of-Things (IoT) devices. It can simultaneously support 2G, 4G/LTE, NB-IoT and GPS, with an additional feature of Voice-over-LTE (VoLTE) for high definition (HD) and uninterrupted voice calls.

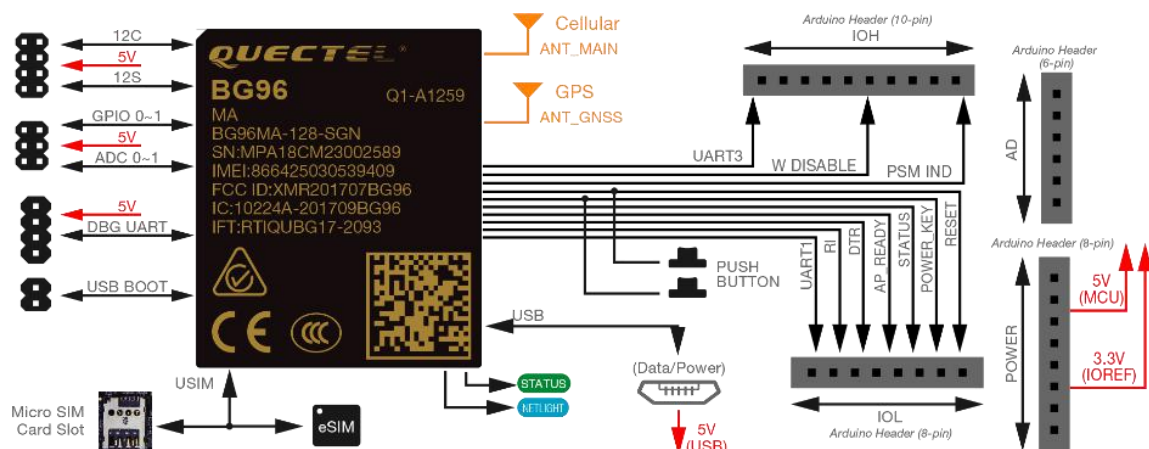
This multitude of features allow users the flexibility of migrating from 2G to 4G/LTE without requiring any hardware change, improve power consumption, system capacity and spectrum efficiency by utilizing the Narrow Band Internet-of-Things, tracking units through GPS and location base services (LBS), stay on the 4G/LTE network even when making or receiving calls and other networking features.

The RAK2011 is based on the Quectel BG96 module and comes with drivers for Windows, Linux and Android support via AT commands. It supports networking protocols such as PPP, TCP, UDP, SSL, TLS, FTP(S), HTTP(S), NITZ, PING and MQTT. This is useful for facilitating software development and system integration into any IoT applications.

RAK2011 can be used as a development platform in tandem with external microcontrollers / microprocessors based platforms for IoT applications or it can be used as standalone device.

It is in full compliance with FCC, CE, RoHS and Japan TELEC/JATE.

### Functional Diagram





## Key Features

Cellular Module	<ul style="list-style-type: none"> <li>• Quectel BG96 (based on Qualcomm MDM9206)</li> </ul>
Cellular Network	<ul style="list-style-type: none"> <li>• 2G/GSM (GPRS/EPGRS)</li> <li>• 4G/LTE-M (Cat M1)</li> <li>• NB-IoT (Cat NB1)</li> </ul>
Global Bands	<ul style="list-style-type: none"> <li>• EDGE/EGPRS: 850/900/1800/1900MHz</li> <li>• LTE FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28</li> <li>• LTE TDD: B39 (For Cat M1 Only)</li> </ul>
Data Rate	<ul style="list-style-type: none"> <li>• Cat M1: Max. 300Kbps (DL), Max. 375Kbps (UL)</li> <li>• Cat NB1: Max. 32Kbps (DL), Max. 70Kbps (UL)</li> <li>• EDGE: Max. 296Kbps (DL), Max. 236.8Kbps (UL)</li> <li>• GPRS: Max. 107Kbps (DL), Max. 85.6Kbps (UL)</li> </ul>
Voice	<ul style="list-style-type: none"> <li>• VoLTE (Cat M1 Only)</li> </ul>
SMS	<ul style="list-style-type: none"> <li>• Point-to-point MO and MT</li> <li>• SMS Cell Broadcast</li> <li>• Text and PDU Mode</li> </ul>
GNSS (optional)	<ul style="list-style-type: none"> <li>• GPS</li> </ul>
Peripheral Interface	<ul style="list-style-type: none"> <li>• Micro USB</li> <li>• Arduino Headers</li> <li>• 8-pin PCM Audio Header</li> <li>• 6-pin Digital/Analog I/O Header</li> <li>• 4-pin Debug Header</li> <li>• Micro SIM Card Slot</li> </ul>
LED	<ul style="list-style-type: none"> <li>• Red: Board Power-on Indication</li> <li>• Green: Cellular Module Power-on Indication</li> <li>• Blue: Network Status Indication</li> </ul>
Power Consumption	<ul style="list-style-type: none"> <li>• Min 10uA @Power Saving Mode (PSM) for 4G/LTE Cat M1 and Cat NB1</li> <li>• Max 190mA @23dBm for 4G/LTE Cat M1 and 78mA @23dBm for 4G/LTE Cat NB1</li> </ul>
Software	<ul style="list-style-type: none"> <li>• Enhanced AT Commands</li> <li>• Protocol: PPP/TCP/UDP/SSL/TLS/FTP(S)/HTTP(S)/NITZ/PING/MQTT</li> <li>• Driver Support for Windows, Linux and Android</li> </ul>
Physical Dimension	<ul style="list-style-type: none"> <li>• Dimension: 68.58 x 53.34 x 21 mm (LxWxH)</li> <li>• Weight: Approximately 1.17 oz</li> </ul>
Temperature Range	<ul style="list-style-type: none"> <li>• Operation Temperature: -35° C ~ +75° C</li> <li>• Extended Temperature: -40° C ~ +85° C</li> <li>• Storage Temperature: 40° C ~ +90° C</li> </ul>
Standards	<ul style="list-style-type: none"> <li>• 3GPP E-UTRA Release 13</li> </ul>
Certification	<ul style="list-style-type: none"> <li>• FCC, CE, WEEE, RoHS, Japan TELEC/JATE</li> </ul>



## Order Information

Part Number	Package
RAK2011-00-R01	Single piece retail package
RAK2011-00-C10	10-piece board and cellular/GPS antenna carton package



### About RAKwireless:

RAKwireless is the pioneer in providing innovative and diverse cellular and LoRa connectivity solutions for IoT edge devices. It's easy and modular design can be used in different IoT applications and accelerate time-to-market turnover. For more information, please visit RAKwireless website at [www.rakwireless.com](http://www.rakwireless.com).

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