GoodieE GIT-1000

IOT LTE CAT-M1/NB-IOT Solution Board

Reference Specification

GIT-1000 is an LPWA solution board supporting LTE Cat M1/NB2/EGPRS/GNSS and integrated Temperature/Humidity sensor and Tri-axis Digital Accelerometer optimized specially for M2M and IoT applications. LTE Cat M1 is 3GPP Rel-14 compliant and offers maximum data rate of 588 kbps downlink and 1119 kbps uplink. The integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning. A rich set of Internet protocols, industrystandard interfaces extend the applicability of this board to a wide range of M2M and IoT applications. Via the external SPI/UART/I2C/ RS-485/ADC/DAC interface and 3.3V/5V multiDC output ability, SIB2018B can integrate lots sensors or extra functions to become a complete product more easily

Key Benefits

✓ LTE Cat M1/Cat NB2 and integrated GNSS solution optimized for worldwide M2M and IoT applications

✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment.

✓ Support VoLTE (Cat M1 only).

✓ Support active GNSS antenna.

✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems.

✓ Support SPI/I2C/UART/RS-485 interface for external connection.

✓ Support share I/O for 12-bit, 350ksps ADC or 10-bit, 350ksps DAC.

✓ Integrated Battery Charger function, 3A Fast charging current.

✓ Integrated Humidity and Temperature sensor.

✓ Integrated Tri-axis Digital Accelerometer.

✓ Wide DC input range from 4V to 13.5V.

✓ Low power consumption at Idle and Stand-by Sleep modes.

Applications

- ✓ Smart Metering
- ✓ Wearable Devices
- ✓ Environmental Monitoring
- ✓ Wireless POS
- ✓ Asset Tracking
- ✓ Fleet Management
- ✓ Security and Alarm Systems
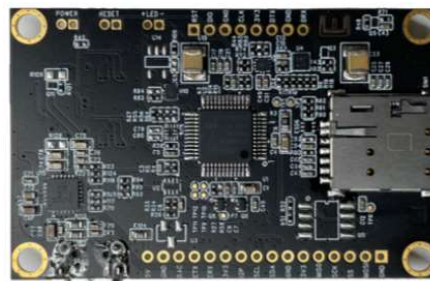
Specifications

MCU	
Part No	MICROCHIP SAMD20G18AAUT
Core	Arm® Cortex®-M0+ CPU running at up to 48 MHz
RAM	32KB
ROM	256KB / 16MB (Extend SPI FLASH)

LTE / GNSS		
Part No		Quectel BG95 Series
Region/Operator		Global
Frequency Bands	Cat M1	B1/ 2/ 3/ 4/ 5/ 8/ 12/ 13/ 18/ 19/ 20/ 25/ 26/ 27/ 28/ 66/ 85
	Cat NB2	B1/ 2/ 3/ 4/ 5/ 8/ 12/ 13/ 18/ 19/ 20/ 25/ 28/ 66/ 71/ 85
EGPRS		850/900/1800/1900 MHz
GNSS		GPS/GLONASS/BDS/Galileo/QZSS
Data Rate	Cat M1	DL: 588Kbps / UL:1119Kbps (max.)
	Cat NB2	DL: 127Kbps / UL:158.5Kbps (max.)
	Cat NB1	DL: 32Kbps / UL:70Kbps (max.)
Protocols		PPP/TCP/UDP/SSL/TLS/FTP (S)/HTTP(S)/NITZ/PING/ MQTT/LwM2M/CoAP/IPv6
Carrier	Europe	Vodafone/Deutsche Telekom/Telefónica/ Orange
	America	Verizon/AT&T/T-Mobile/ Sprint/U.S. Cellula
	Canada	Rogers/Telus
	Japan	NTT DOCOMO/KDDI
	Brazil	Claro

Accelerometer Sensor	
Part No	ROHM KXTJ3-1057
G-ranges	±2g, ±4g, ±8g, ±16g
Resolution	8/12/14 bit modes
Cross Axis Sensitivity	2%

Temperature / Humidity Sensor	
Part No	TI HDC2010
Temperature Range	Operating: –40°C to 85°C Functional: –40°C to 125°C
Temperature Accuracy	±0.2°C typical
Humidity Range	0% to 100%
Humidity Accuracy	±2%
Battery Charger	
Part No	TI BQ25611D
Charging Current	3A (max.)
TS Profile	JEITA, with adjustable temperature thresholds
Battery Type	Lithium battery
Extended Interface and I/O	
UART	x1 (default), x2 (max.)
I2C	x1
SPI	x1
RS-485	x1 (optional)
ADC/DAC	x1 (selectable)
Power ON/OFF Switch	Yes
Reset Button	Yes
System Power	
Input Voltage	4-13.5V (DC)
Input Type	Adapter/Solar Panel/Micro USB
Output Voltage/Current	5V/3.7A (max.), 3.3V/1A (max.)
Power Consumption	273.3mWH (Active), 1.83mWH (Sleep)
Others	
Antenna Connector	IPEX MHF 20279-001E-01
LED Indicators	Green/Red/Orange
SIM Card Type	Nano SIM
Board Dimension	55.0 (L) x 35.0 (W) x 8.0 (H) mm
Weight	10.3g

Function Block

BLE
LoRa
SigFox
Zigbee
Z-Wave

CO/CO_2 sensor
PM2.5/PM10 sensor
TOF sensor
Flow sensor
Optical sensor
Pressure sensor

Solar

LTE

GNSS

(Built-in Temperature/Humidity sensor and Tri-axis Digital