

EG800Z Series QuecDuino EVB Specification

LTE Standard Products

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Safety Information

The following safety precautions must be observed during all phases of operation, such as usage, service or repair of any terminal or mobile incorporating the module. Manufacturers of the terminal should notify users and operating personnel of the following safety information by incorporating these guidelines into all manuals of the product. Otherwise, Quectel assumes no liability for customers' failure to comply with these precautions.



Full attention must be paid to driving at all times in order to reduce the risk of an accident. Using a mobile while driving (even with a handsfree kit) causes distraction and can lead to an accident. Please comply with laws and regulations restricting the use of wireless devices while driving.



Switch off the terminal or mobile before boarding an aircraft. The operation of wireless appliances in an aircraft is forbidden to prevent interference with communication systems. If there is an Airplane Mode, it should be enabled prior to boarding an aircraft. Please consult the airline staff for more restrictions on the use of wireless devices on an aircraft.



Wireless devices may cause interference on sensitive medical equipment, so please be aware of the restrictions on the use of wireless devices when in hospitals, clinics or other healthcare facilities.



Terminals or mobiles operating over radio signal and cellular network cannot be guaranteed to connect in certain conditions, such as when the mobile bill is unpaid or the (U)SIM card is invalid. When emergency help is needed in such conditions, use emergency call if the device supports it. In order to make or receive a call, the terminal or mobile must be switched on in a service area with adequate cellular signal strength. In an emergency, the device with emergency call function cannot be used as the only contact method considering network connection cannot be guaranteed under all circumstances.



The terminal or mobile contains a transceiver. When it is ON, it receives and transmits radio frequency signals. RF interference can occur if it is used close to TV sets, radios, computers or other electric equipment.



In locations with explosive or potentially explosive atmospheres, obey all posted signs and turn off wireless devices such as mobile phone or other terminals. Areas with explosive or potentially explosive atmospheres include fueling areas, below decks on boats, fuel or chemical transfer or storage facilities, and areas where the air contains chemicals or particles such as grain, dust or metal powders.

About the Document

Revision History

Version	Date	Author	Description
-	2026-07-28	Arnold Feng	Creation of the document
1.0	2026-08-07	Arnold Feng	First official release

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1 Product Overview

The QuecDuino EVB is equipped with Quectel EG800Z series module.

1.1. EVB Kit Accessories

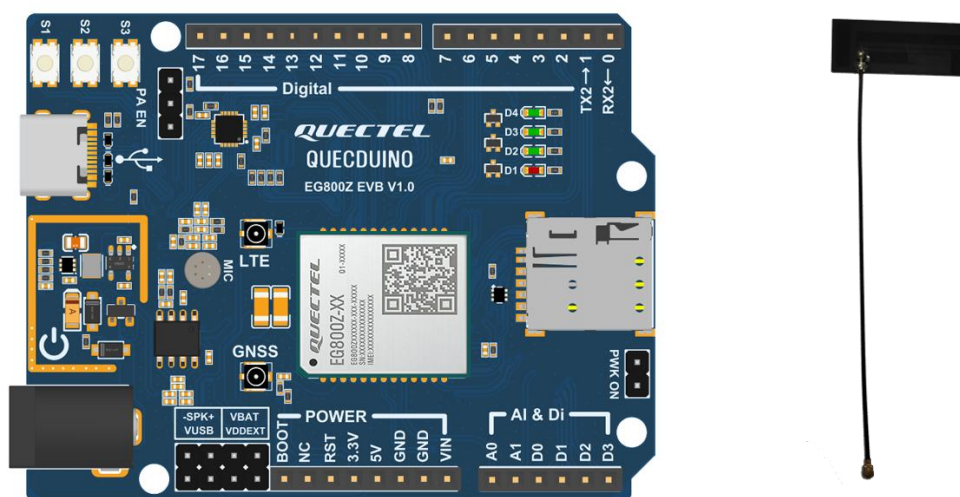


Figure 1 : EVB Kit Accessories

NOTE

The figure above is for reference only, please refer to the actual product for appearance.

1.2. Development Board Features

The QuecDuino EVB is a development platform based on Quectel EG800Z series module, featuring the following characteristics:

- Adopts EG800Z series module as the core processor (CPU).
- 20 digital pins (GPIO) in total, silkscreen labeled D0~D3, 0~13, 16 and 17.
- 2 analog input pins (ADC) in total, silkscreen labeled A0~A1.
- 1 LTE antenna interface.
- 1 GNSS antenna interface ¹.
- 1 Nano-SIM interface.
- 1 USB 2.0 Type-C interface.
- 1 Arduino female header interface.
- Audio ¹: 1 on-board MIC and 1 channel of 3W Class-D stereo power amplifier.
- 3 physical buttons (S1~S3) and 4 LEDs (D1~D4).
- Supports up to 2 × UART, 1 × SPI and 1 × I2C.
- 1 RESET pin (pull-down to reset the module).
- 1 BOOT pin (pull-up to enter forced download mode).
- Recommended input voltage (VIN): 5~16 V / 2 A. It can be powered by 5 V via the USB Type-C interface or 5 V female header pin, and 5~16 V via the DC05 interface. On-board 3.3 V / 200 mA output.

¹ This function is optional. If you need this function, contact Quectel Technical Support.

2 Interfaces

2.1. Interface Distribution

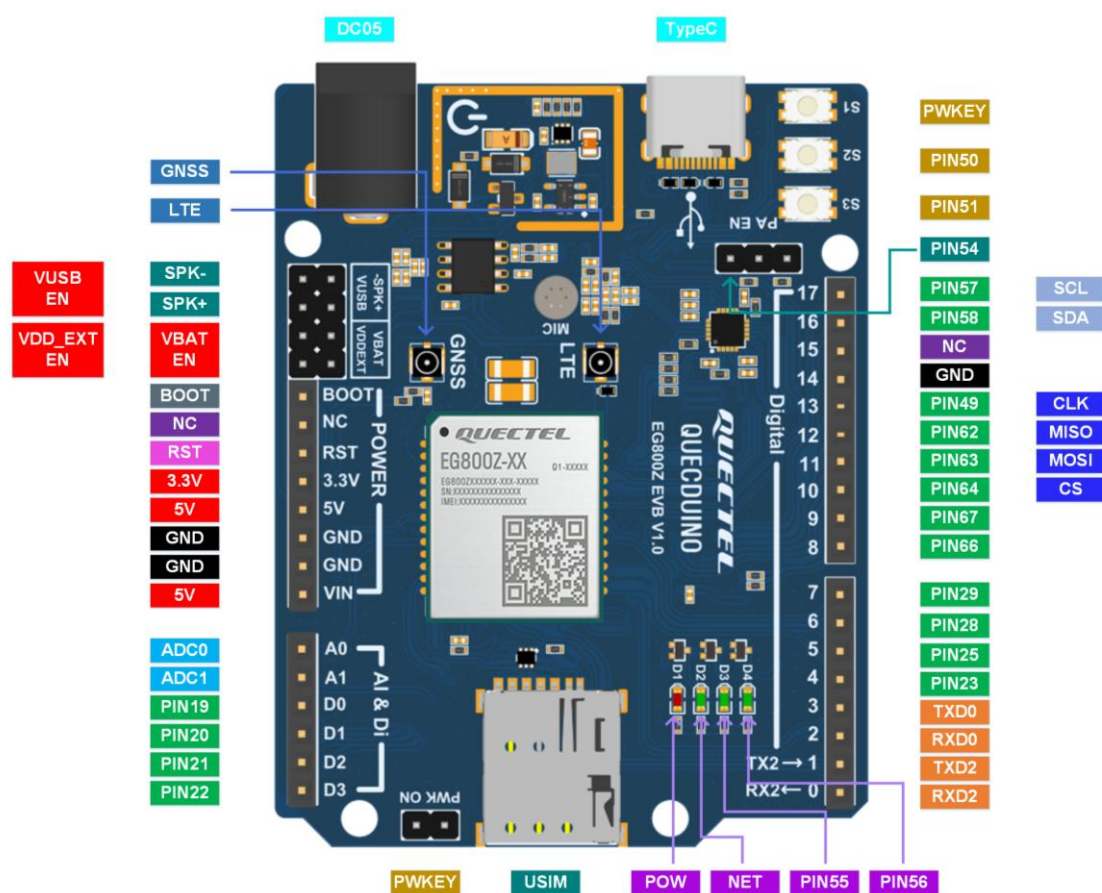


Figure 2: EVB Interface Distribution

NOTE

Before powering up the EVB, short the VUBS EN, VDD_EXT EN and VBAT EN pin headers with jumpers.

2.2. Interface Definition

Table 1: Interface Definition

Pin Header Name	Module Pin Name	Description	DC Characteristics
BOOT		USB_BOOT pin of the module (pull-up to enter forced download mode).	-
NC		Not connected	-
RST		RESET_N pin of the module (pull down to reset the module)	-
3.3V		Power supply output	3.3 V/ 200 mA
5V		Power supply input/output	5 V/ 2 A input for EVB power supply; 5 V output is supported when powered via USB.
GND		Ground	-
GND		Ground	-
VIN		Power supply input/output	5–16 V input for EVB power supply; DC voltage output is available when powered via DC.
A0		ADC0 input pin of the module	0–1.6 V
A1		ADC1 input pin of the module	0–1.6 V
D0	19	I/O	1.8/3.3 V
D1	20	I/O	1.8/3.3 V
D2	21	I/O	1.8/3.3 V
D3	22	I/O	1.8/3.3 V
0		Main UART receive	1.8/3.3 V
1		Main UART transmit	1.8/3.3 V
2		Debug UART receive	1.8/3.3 V
3		Debug UART transmit	1.8/3.3 V

4	23	I/O	1.8/3.3 V
5	25	I/O	1.8/3.3 V
6	28	I/O	1.8/3.3 V
7	29	I/O	1.8/3.3 V
8	66	I/O	1.8/3.3 V
9	67	I/O	1.8/3.3 V
10	64	Slave device chip select	1.8/3.3 V
11	63	Master device data output; slave device data input	1.8/3.3 V
12	62	Master device data input; slave device data output	1.8/3.3 V
13	49	Master SPI serial clock	1.8/3.3 V
14		Ground	-
15		NC	-
16	58	Master I2C serial data	1.8/3.3 V
17	57	Master I2C serial clock	1.8/3.3 V

2.2.1. Power Supply

The power supply voltage of EVB is 5~16 V. Power input options include Type-C (5 V), DC05 interface(5~16 V), 5 V female header pin (5 V), and VIN (5~16 V). When powered by USB, the female header 5 V pin outputs 5 V. When powered via the DC connector, the VIN pin outputs the voltage from the DC connector. To ensure normal operation of the development board under all conditions, the input current should be at least 2 A.

2.2.2. UART



Figure 3: UART Location

TXD2 and RXD2 are the main UART. They can be used for AT command communication, data transmission and firmware upgrade. Supported baud rates include 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps, 460800 bps and 921600 bps, with 115200 bps as the default. In standard mode, the main UART is the AT port; in Open CPU or QuecPython mode, it is the standard UART2.

2.2.3. Power Consumption Test

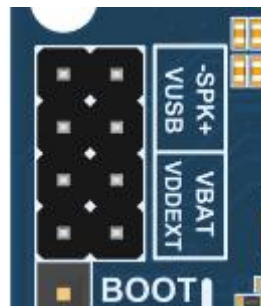


Figure 4: Pin Header Location

Remove the jumpers on VBAT EN, VUSB EN and VDD_EXT EN. Connect an ammeter in series to the VBAT EN pin header; then power up the board to measure the module power consumption.

2.2.4. BOOT test point

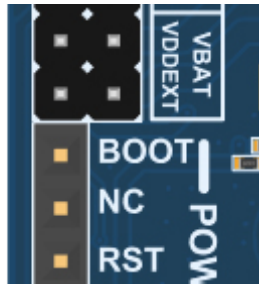


Figure 5:Test Point Location

Short BOOT and VDD_EXT EN, then power up to enter BOOT mode.

Shorting is prohibited before the module powers up normally.

2.2.5. SIM Card Interface

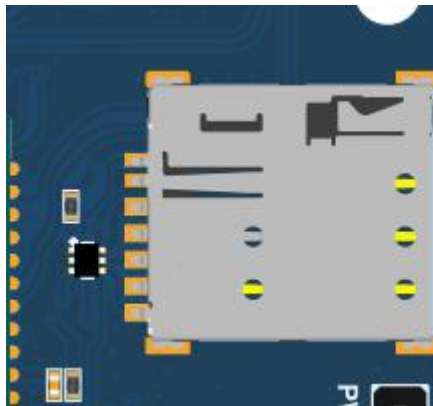


Figure 6: SIM Card

The EVB is equipped with a Nano-SIM card slot. The USIM complies with ISO/IEC 7816-3 and ETSI TS 131 101 standards, and supports 1.8 V and 3.0 V USIM cards.

2.2.6. USB interface

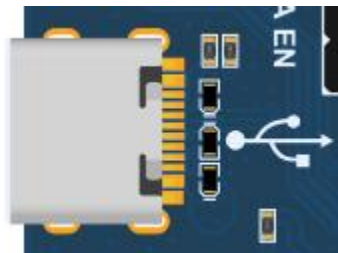


Figure 7: USB Interface

The EVB is equipped with a USB Type-C interface, which only supports slave mode. This interface complies with the USB 2.0 specification, supporting high-speed mode with a maximum rate of 480 Mbps, and is backward compatible with 12 Mbps full-speed mode. This interface can be used for AT command communication, data transmission, GNSS NMEA sentence output, software debugging and firmware upgrade.

2.2.7. ADC interfaces

The EVB is equipped with two ADC interfaces.

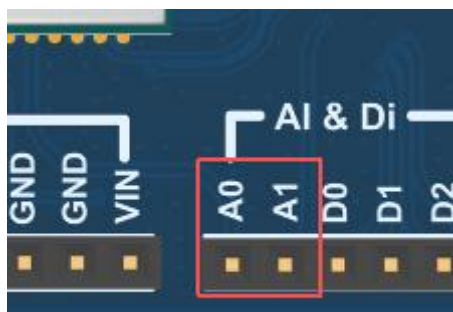


Figure 8: ADC Interfaces

Table 2: Characteristics of ADC Interfaces

Parameters	Min.	Typ.	Max.	Unit
ADC0 Input Voltage	0	-	1.6	V
ADC1 Input Voltage	0	-	1.6	V

ADC Resolution	-	12	-	bits
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2.2.8. PA Enable Interface



Figure 9: PA Enable Interface

The left side of the jumper is pulled up to power enable, and the right side is connected to module's pin 54 for enable control.

2.3. Status Indicators

The EVB is equipped with four indicator LEDs. D1 is the red power indicator, which lights up once powered up.

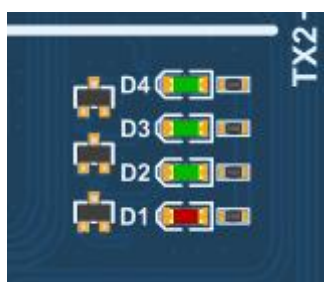


Figure 10: Status Indicators

D2 is the green network indicator. Its statuses are shown in the table below.

Table 3: Network Indicator Status

Status	Network Status
--------	----------------

D2	Blink slowly (200 ms ON/1800 ms OFF)	Network searching
	Blink slowly (1800 ms ON/200 ms OFF)	Idle
	Blink quickly (125 ms ON/125 ms OFF)	Data transmission is ongoing

D3 and D4 are green LEDs and they are configured by module pin 55 and pin 56.

2.4. Buttons

The EVB is equipped with three buttons: S1 (Turn-on Button), S2 (RESET Button) and S3 (User-defined Button), as shown in the figure.

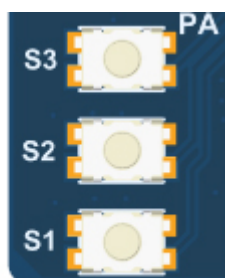


Figure 11 : Buttons

2.5. Antenna Interfaces



Figure 12: Antenna Interfaces

NOTE

For more information about the antenna interfaces and RF connector recommendations, please refer to the hardware design document of the corresponding project.

3 Electrical Characteristics and Reliability

3.1. Absolute Maximum Ratings

Table 4: Absolute Maximum Ratings

Parameters	Min.	Max.	Unit
Type-C	-0.3	6	V
DC05	-0.3	16	V
Voltage at 3.3 V Pins	-0.3	3.4	V
Voltage at Digital Pins	-0.3	3.4	V
ADC0 Input Voltage	-	1.6	V
ADC1 Input Voltage	-	1.6	V
Voltage at 5 V Pins	-	2	A

3.2. Power Supply Ratings

Table 5: Power Supply Ratings

Parameters	Condition	Min.	Typ.	Max.	Unit
Type-C	The actual input voltages must be kept between the minimum and maximum values.	4.5	5.0	5.25	V
DC05	The actual input voltages must be kept between the minimum and maximum values.	4.5	12	16	V

I _V BAT	Maximum power control level under LTE	-	1.5	2	A
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3.3. Operating and Storage Temperatures

Table 6: Operating and Storage Temperatures

Parameters	Min.	Typ.	Max.	Unit
Normal operating temperature ²	-35	+25	+75	°C
Extended operating temperature ³	-40	-	+85	°C
Storage temperature	-40	-	+90	°C

² Within this range, the module's indicators comply with 3GPP specification requirements.

³ Within the range of -40 to -35 °C or 75 to 85 °C, the module retains the ability to establish and maintain functions such as SMS and data transmission, without any unrecoverable malfunction. Radio spectrum and radio network remain uninfluenced, whereas the value of one or more parameters, such as Pout, may decrease and fall below the range of the 3GPP specified tolerances. When the temperature returns to the normal operating temperature range, the module's indicators will comply with 3GPP specification requirements again.

4 Mechanical Information

4.1. Mechanical Dimensions

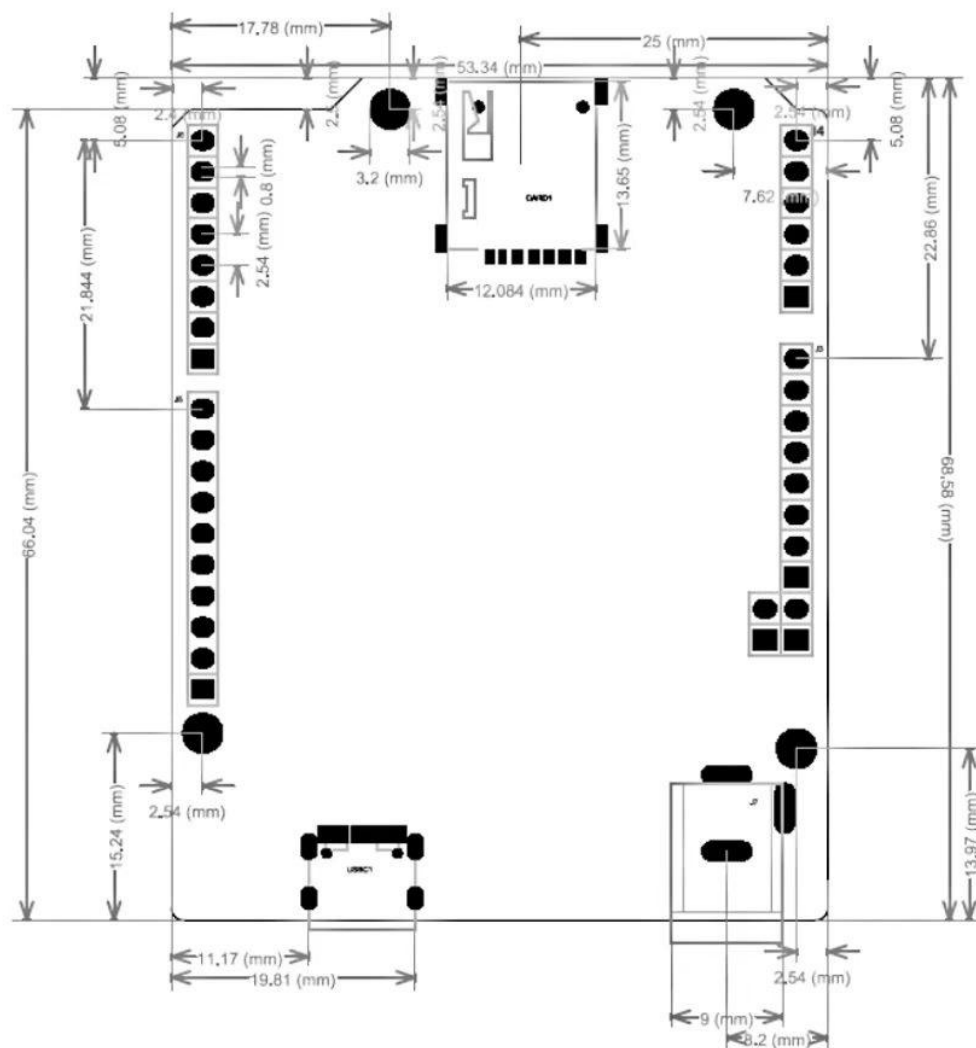


Figure 13: EVB Mechanical Dimensions

4.2. Top, Side and Bottom Views

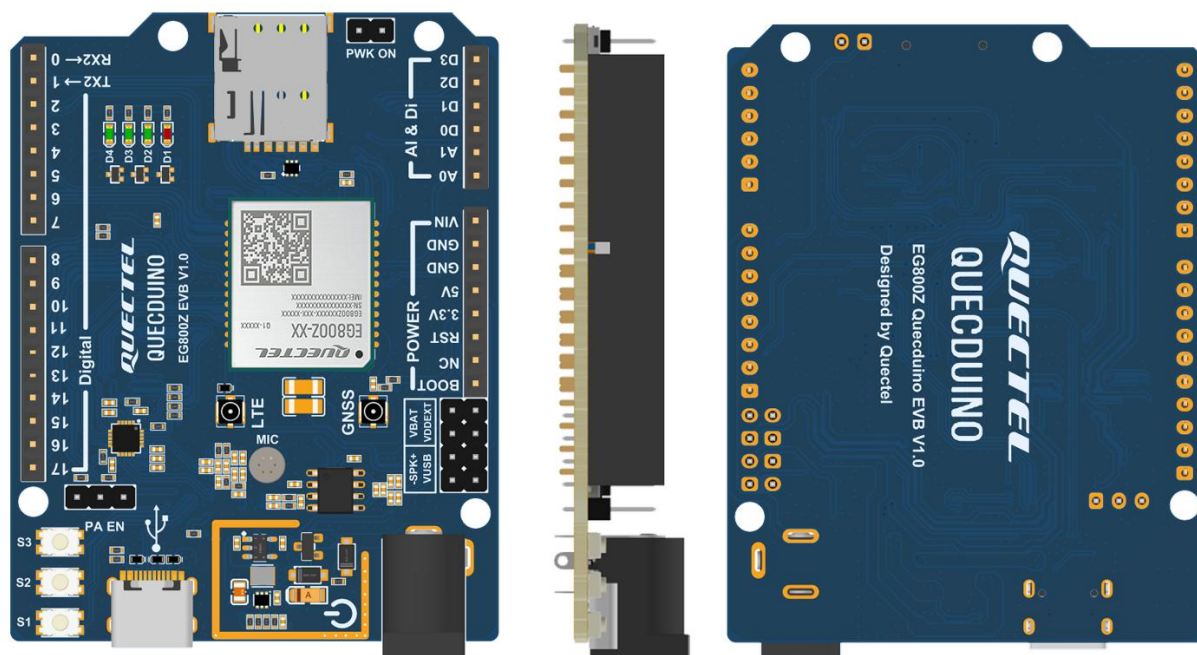


Figure 14: Top, Side and Bottom Views

NOTE

The figure above is for reference only. Refer to the actual product for the physical appearance and label information.

5 Packaging

1. Each unit is packed in an independent package box.
2. The shipment contents are as follows: 1 development board, 1 Type-C cable, and 1 4G FPC test antenna.

6 Appendix References

Table 7: Terms and Abbreviations

Abbreviation	Description
ADC	Analog-to-Digital Converter
bps	bit(s) per second
CPU	Central Processing Unit
DC	Direct Current
ETSI	European Telecommunications Standards Institute
EVB	Evaluation Board
FPC	Flexible Printed Circuit
GND	Ground
GPIO	General-Purpose Input/Output
I/O	Input/Output
I2C	Inter-Integrated Circuit
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
LED	Light Emitting Diode
LTE	Long Term Evolution
Mbps	Megabits per second
MIC	Microphone
NMEA	NMEA (National Marine Electronics Association) 0183 Interface Standard
PA	Power Amplifier

RXD	Receive Data
SIM	Subscriber Identity Module
SPI	Serial Peripheral Interface
TXD	Transmit Data
UART	Universal Asynchronous Receiver/Transmitter
USB	Universal Serial Bus
USIM	Universal Subscriber Identity Module