

# XQ800S

## Communication module

LTE Cat1 module

Designed specifically for both M2M and IoT applications

### 1. Product introduction

XQ800S is an LTE Cat1 wireless communication module developed based on ASR1602S, which supports LTE-FDD, LTE-TDD network data connection, and can provide voice functions for customers in specific scenarios

The compact package of the module, only 19.3mm x 17.4mm x 2.2 mm, can meet almost all M2M application requirements, such as automation, smart metering, tracking systems, security systems, wireless POS machines, etc.

The XQ800S is a patch module with 103 pins, of which 45 are LCC pins and the remaining 56 are LGA pins.

### 2. Main performance

CPU Cortex-R5, maximum clock rate: 614MHz

Memory pSRAM 4MB+QSPI Flash 4MB (ASR1602S)

LTETCat1 Power consumption

Class 3 (23dBm $\pm$ 2dB), LTE-FDD band

Class 3 (23dBm $\pm$ 2dB), LTE-TDD band;

### 3. Function

#### Functional overview

- Support LTE Cat 1;
- pin-to-pin with XQ800G module;
- Support Bluetooth communication (need external ASR5801)
- Ultra-thin LCC+LGA package;
- Baseband chip with integrated RAM and flash;
- Support FOTA;
- USB 2.0 high-speed interface;

### 4. Communication characteristic

#### 4.1 Frequency band

XQ800S-EU:

LTE-FDD: B1/B3/B7/B8/B20/B28;

LTE-TDD: B34/B38/B39/B40/B41

XQ800S-LA:

LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66

#### 4.2. LTE features

LTE Rate (Mbps) LTE-FDD: Max. 10 (DL) /Max. 5 (UL) ;LTE-TDD:Max. 7.88 (DL) /Max. 3 (UL)

#### 4.3. Call up

nonsupport

#### 4.4. SMS

- support

### 5. Interface

#### 5.1. General interface

- 1 USB2.0 high-speed interface;
- 3 UART interfaces;
- 3 ADC interfaces;
- 3 I2C interfaces;
- 1 1.8/3.0V (U) SIM port;
- RESET (low active)
- PWRKEY(low active)

#### 5.2. Antenna

LTE antenna;

#### 5.3. SIM

Support for the 1.8V USIM / SIM card

#### FirmwareUpgrade

USBinterface;

#### OTA

Delta Firmware Upgrade Over-the-Air;

### 6. General characteristics

#### 6.1.3 The GPP standard

3GPP TS 27.007, 27.005 for the defined command

## 6.2. temperature

### storage temperature

-40° C ~ +85° C;

### working temperature

-20° C ~ +70° C;

## 6.3. Appearance

### *size*

19.3mm × 17.4mm × 2.2 mm;

### *weight*

About 4. g;

## 6.4. operating voltage

### *input the operating voltage range*

3.3V~4.3V, 3.8V Typ

## FCC regulatory compliance statement

### §15.19 Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### §15.21 Information to user

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

- **List of applicable FCC rules:**

47 CFR Part 22, 24, 27

- **Summarize the specific operational use conditions**

This module can be used in IOT devices, the input voltage to the module is nominally 4V.

- **Limited module procedures**

This module is a single module.

- **Trace antenna designs**

The antenna is not a trace antenna.

- **RF exposure considerations**

This Module complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

- **Antennas**

If you desire to increase antenna gain and either change antenna type or use same antenna type certified, a Class II permissive change application is required to be filed by us, or you (host manufacturer) can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application.

Antenna list: PIFA antenna and Dipole antenna which the antenna gain not exceed 6dBi can meet the compliance requirements.

- **Label and compliance information**

Please notice that if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains FCC ID: 2AMLF-XQ800S " any similar wording that expresses the same meaning may be used.

§ 15.19 Labelling requirements shall be complied on end user device.

Labelling rules for special device, please refer to §2.925, § 15.19 (a)(5) and relevant KDB publications. For E-label, please refer to §2.935.

- **Information on test modes and additional testing requirements**

The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.

The module is limited to installation in mobile application, a separate approval is required for all other operating configurations, including portable configurations with respect to §2.1093 and difference antenna configurations.

- **FCC other Parts, Part 15B Compliance Requirements for Host product manufacturer**

This modular transmitter is only FCC authorized for the specific rule parts listed on our grant, host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

Host manufacturer in any case shall ensure host product which is installed and operating with the module is in compliant with Part 15B requirements.

Please note that For a Class B or Class A digital device or peripheral, the instructions furnished the user manual of the end-user product shall include statement set out in §15.105 *Information to the user* or such similar statement and place it in a prominent location in the text of host product manual. Original texts as following:

For Class B

*Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

*—Reorient or relocate the receiving antenna.*

*—Increase the separation between the equipment and receiver.*

*—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*

*—Consult the dealer or an experienced radio/TV technician for help.*

For Class A

*Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.*