

# 5G Module GM860A\_C1AX

- ◆ IATF16949
- ◆ APQP、PPAP
- ◆ FOTA
- ◆ 5G NR& 4G LTE & 3G & 2G
- ◆ Qualcomm SA515M
- ◆ Wide temperature range

**GM860A\_C1AX** is a series of wireless module which supports 5G NR, 4G LTE(Cat. 19) and 3G networks. It delivers 900Mbps upload and 2.12Gbps download data rates on 5G networks. It can also be fully backward compatible with existing 4G, 3G and 2G networks. The module supports C-V2X PC5 for low-latency information transmission for V2V, V2P, and V2I Provide low-latency, high-reliability information transmission, which can effectively ensure effective information exchange to avoid collision accidents.

GM860A\_C1AX features diversity reception. So it can effectively improve the communication quality and reliability of wireless connection.

GM860A supports a rich set of internet protocols (PAP,CHAP,PPP) and abundant functions (FOTA, TTS, Remote wakeup etc.), it also provides USB, PCIE, 2xUSIM, I2S multiple hardware interfaces. these protocols and functions can be used in many IoT (Internet of Things) applications.

This series module is produced and designed according to the requirements of IATF 16949:2016, and conforms to the quality control procedure such as APQP and PPAP. GM860A\_C1AX works within wide temperature range, has good EMC characteristics and excellent mechanical and reliability. It is suitable for vehicle application.

- Developed on the chipset of Qualcomm SA515M, excellent performance
- 5G module with 4G (LTE Cat 19)/3G/2G fallback,supporting both 5G NR NSA and SA modes
- 5G 2.12Gbps DL/900Mbps UL, High-speed connection experience
- LGA package, suitable for mass production
- Designed for automotive applications requiring IATF 16949:2016
- Automotive quality processes such as APQP, PPAP, etc.
- Pass 1500h high temperature endurance work test
- Wide operation temperature range (-40 °C to +85 °C)



LGA Compact package



Automotive quality processes



Qualcomm SA515M



5G/4G/3G/2G Full Netcom



GNSS+QDR+ RTK



Wide operation temperature range



4x4 MIMO



eCall



WeFoTA

Note: The pictures are just for reference, please in kind prevail

# 5G GM860A\_C1AX

- ◆ Ethernet
- ◆ ECALL
- ◆ Multi-constellation GNSS
- ◆ QDR
- ◆ RTK
- ◆ Multi-interfaces

## General Features

- ❑ LGA Compact Form Factor
- ❑ Dimensions: 46mm × 49mm × 3.0mm
- ❑ Weight: About 10.0g
- ❑ Network:
  - 5G NR/4G LTE/3G/2G
  - PC5

## Electrical&Sensitivity

- ❑ Transmit Power:
  - 5G NR: 26 ± 2.7dBm (Power Class 2)
  - 5G TDD: 26 ± 2.7dBm (Power Class 2)
  - LTE: 23 ± 2.7dBm (Power Class 3)
  - 3G: 23 ± 2.7dBm (Power Class 3)
  - 2G: 33 ± 2dBm (PCL 5) & 30 ± 2dBm (PCL 0)
- ❑ Antenna :
  - 4X4 MIMO
- ❑ Power Supply :
  - 3.8V Typical
  - 5V Typical

## Data Features

- ❑ 5G NR
  - Uplink 900 Mbps / Downlink 2.12 Gbps
- ❑ 4G LTE
  - Uplink 200 Mbps / Downlink 1.6 Gbps

## GM860A-C1AX Band Information

5G + V2X	GM860A_C1AX	GM860A_E1AX
Region	CHN/IND	EUR/SA/AUS/SEA/Kr
5G NR SUB 6G	FDD: N1/3/5/8/28 TDD: N41/77/78/79	FDD: N1/3/8/20/28 TDD: N41/78
EN-DC	4G+N77/78/79/41	4G+N78/41
4G LTE	FDD: B1/3/5/7/8 TDD: B34/38/39/40/41	FDD: B1/2/3/4/5/7/8/20/28/32 TDD: B38/40/41/42
3G WCDMA	B1/5/8	B1/3/5/6/8
GSM	900/1800 MHz	
PC5	B47 (5855–5925 MHz) / B46D (5725–5826 MHz)	
GNSS	GPS/GLONASS/BDS/Galileo/QZSS	

## Environmental

- ❑ Operation temperature:
  - 40° C to +85° C
- ❑ Extreme Operating temperature:
  - 40° C to +95° C
- ❑ Storage temperature:
  - 40° C to +95° C
- ❑ eCall Operating Temperature
  - 40° C to +95° C
- ❑ Humidity: 5%~ 95%

## Module Interface

- ❑ LGA Compact Form Factor
- ❑ PCIE 3.0 2-Lanes
- ❑ USB 3.1 Gen2 & USB2.0
- ❑ SIM x2 interface (1.8/3.0V)
- ❑ Audio I2S or PCM
- ❑ UARTs
- ❑ SPI
- ❑ I2C
- ❑ RGMII
- ❑ SDIO
- ❑ RFFE MIPI for antenna tune
- ❑ Antenna:
  - 4x for 4x4 MIMO can be extended to 8
  - antenna 1x for GNSS can be extended to 2
- ❑ GPIOs
- ❑ Reset & Power-on
- ❑ WAKE-IN & WAKE-OUT

## Applications

- ❑ Support embedded TCP & UDP protocols
- ❑ Support protocols PAP and CHAP used for PPP connection
- ❑ USB Selective Suspend & Remote wakeup
- ❑ RAS /ECM/RNDIS
- ❑ Control Via AT Commands according to 3GPP TS27.005, 27.007 and extended AT commands

## Driver&Tools

- ❑ Drivers
  - Windows XP, Vista, 7, 8, 10
  - Linux
- ❑ Diag-log Tool
- ❑ Firmware Update Tool

Note: \* is optional