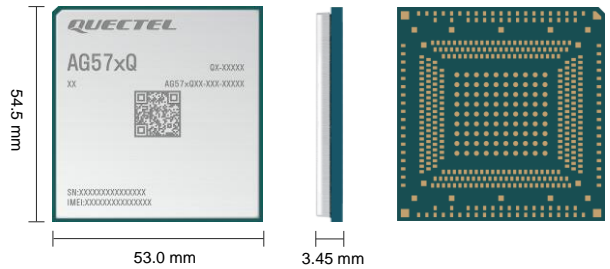


# Quectel AG57xQ Family

IATF 16949 Compliant  
Automotive Grade  
5G NR + C-V2X/DSDA Module  
Based on AEC-Q100 Qualified Chipset



AG57xQ is a family of Quectel’s automotive grade 5G NR Sub-6 GHz modules, supporting both 5G NR NSA and SA modes. Adopting 3GPP Rel-15 technology, the module supports maximum 2.4 Gbps downlink and 550 Mbps uplink data rates at 5G NSA mode, and maximum 1.2 Gbps downlink and 100 Mbps uplink data rates at LTE-A. Optional PC5-based C-V2X direct communications make AG57xQ family a great solution for automotive applications since it makes traffic smoother and more efficient by paving the way for automated driving and fully connected traffic. The module supports DSDA (optional) and provides abundant interfaces for developing customer applications. Its excellent performance in ESD and EMI protection ensures great robustness in harsh environments.

AG57xQ family consists of AG570Q (5G + DSSS + C-V2X), AG571Q (5G + DSSS), AG572Q (5G + DSDA) and AG573Q (5G + DSDA + C-V2X) series, each of which contains multiple modules (AG57xQ-CN, AG57xQ-EU, AG57xQ-NA and AG57xQ-ROW) to meet varied market demands. It is backward compatible with existing GSM, UMTS and LTE networks, enabling connectivity in areas without 5G NR deployment currently and even remote areas devoid of 3G or 4G coverage.

AG57xQ family supports multiple input multiple output (MIMO) technology. Using multiple antennas at the transmitting and receiving ends at the same time in the same frequency band greatly reduces errors and optimizes data speed. While supporting multi-constellation GNSS (GPS, GLONASS, BDS, Galileo, QZSS) based on Qualcomm® IZat™ location technology Gen9VT Lite, the module can also support dual-frequency GNSS, PPE (RTK) and QDR 3.0 integrated navigation solutions. This greatly simplifies product design and enables quicker, more accurate and more dependable positioning.

With AG57xQ family, we provide automotive OEMs and tier-1 suppliers with secure and reliable connected car solutions, and vehicle manufacturers with smart and flexible solutions to build self-driving cars. More specifically, the module is commonly used in telematics boxes (T-Box), telematics control units (TCU), advanced driver-assistance systems (ADAS), C-V2X (V2V, V2I, V2P) systems, on-board units (OBU), roadside units (RSU), and other automotive/traffic systems.



## Key Features

- ✓ Compliant with IATF 16949 and automotive quality processes such as APQP and PPAP
- ✓ Based on AEC-Q100 qualified Qualcomm SA515M chipset
- ✓ Automotive 5G NR module with 4G/3G/2G fallback, supporting both 5G NR NSA and SA modes
- ✓ MIMO technology in line with data rate and link reliability demands
- ✓ Optional C-V2X PC5 Mode 4 direct communications
- ✓ A great variety of navigation solutions (single or dual-frequency GNSS, PPE (RTK), QDR 3.0 integrated navigation, etc.) ensure fast and accurate positioning in any environment
- ✓ Optional DSDA for flexible user-oriented applications
- ✓ Feature refinements: DFOTA, VoLTE, QuecOpen®, High Security, etc.
- ✓ Wide operating temperature range (-40 °C to +85 °C) and high eCall operating temperature (up to +95 °C) meet the demanding requirements for automotive devices
- ✓ Excellent EMI protection makes the module operate satisfactorily in harsh environments

 <b>5G<sup>NR</sup></b> 5G NR Sub-6 GHz Max. 2.4 Gbps (DL) Max. 550 Mbps (UL)	 <b>4G</b> LTE-A LTE Cat 16 Max. 1.2 Gbps (DL) Max. 100 Mbps (UL)	 <b>3G</b> HSPA+ HSPA+ Max. 42 Mbps (DL) Max. 5.76 Mbps (UL)
 3GPP Rel-15 C-V2X Driving Safety	 <b>eCall</b> eCall	 Dual-frequency GNSS (Optional)
 USB 3.1 Interface	 Embedded Abundant Protocols	 DSDA (Optional)

# Quectel AG57xQ Family

AG57xQ Family	AG570Q Series	AG571Q Series	AG572Q Series	AG573Q Series
General Overview	<ul style="list-style-type: none"> <li>5G + DSSS + C-V2X</li> <li>Single-frequency GNSS (optional)</li> <li>Dual-frequency GNSS (optional)</li> <li>QDR 3.0 (optional)</li> <li>PPE (RTK) (optional)</li> <li>Ethernet</li> <li>-CN/-EU/-NA<sup>①</sup>/ROW<sup>①</sup></li> </ul>	<ul style="list-style-type: none"> <li>5G + DSSS</li> <li>Single-frequency GNSS (optional)</li> <li>Dual-frequency GNSS (optional)</li> <li>QDR 3.0 (optional)</li> <li>PPE (RTK) (optional)</li> <li>Ethernet</li> <li>-CN/-EU<sup>①</sup>/NA<sup>①</sup>/ROW<sup>①</sup></li> </ul>	<ul style="list-style-type: none"> <li>5G + DSDA</li> <li>Single-frequency GNSS (optional)</li> <li>Dual-frequency GNSS (optional)</li> <li>QDR 3.0 (optional)</li> <li>PPE (RTK) (optional)</li> <li>Ethernet</li> <li>-CN/-EU*/-NA*/-ROW*</li> </ul>	<ul style="list-style-type: none"> <li>5G + DSDA + C-V2X</li> <li>Single-frequency GNSS (optional)</li> <li>Dual-frequency GNSS (optional)</li> <li>QDR 3.0 (optional)</li> <li>PPE (RTK) (optional)</li> <li>Ethernet</li> <li>-CN/-EU<sup>①</sup>/NA*/-ROW<sup>①</sup></li> </ul>

5G NR	AG57xQ-CN	AG57xQ-EU	AG57xQ-NA	AG57xQ-ROW
Region	China	EMEA/Australia/India/Southeast Asia	North America/Mexico	Japan/Latin America
Dimensions	54.5 mm × 53.0 mm × 3.45 mm	54.5 mm × 53.0 mm × 3.45 mm	54.5 mm × 53.0 mm × 3.45 mm	54.5 mm × 53.0 mm × 3.45 mm
Temperature Range				
Operating Temperature	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C
Extended Temperature	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C	-40 °C to +85 °C
eCall Operating Temperature	-	-40 °C to +95 °C	-	-
Frequency Bands				
5G NSA	n41 <sup>②</sup> /77/78/79 <sup>②</sup>	n41/78	n41/77/78	n41/77/78/79 <sup>②</sup>
5G SA	n1/3/28A <sup>③</sup> /41/77/78/79 <sup>②</sup>	n1/3/5 <sup>②</sup> (or n71 <sup>②</sup> )/8/20/28A <sup>③</sup> /38 <sup>②</sup> /40 <sup>②</sup> /41/78	n2/5/12/25/41/66/71/77/78	n1/3/28/41/77/78/79 <sup>②</sup>
LTE-FDD	B1/3/5/7/8	B1/3/5 <sup>②</sup> (or B71 <sup>②</sup> )/7/8/20/28A/32 <sup>②</sup>	B2/4/5/7/12/13/14/17/25/26/29 <sup>④</sup> /30 <sup>④</sup> /66/71	B1/2/3/4/5/7/8/9/11 <sup>②</sup> /18/19/21/26/28
LTE-TDD	B34/38/39/40/41	B38/40/41/42 <sup>②</sup>	B41	B38/40/41
WCDMA	B1/8	B1/3/5 <sup>②</sup> /8	-	B1/3/5/6/7/8/9/19
GSM	900/1800 MHz	900/1800 MHz	1900 MHz	850/900/1800/1900 MHz
C-V2X	B47 (For AG570Q-CN/AG573Q-CN)	B47 (For AG570Q-EU/AG573Q-EU <sup>⑤</sup> )	B47 (For AG570Q-NA <sup>⑤</sup> /AG573Q-NA*)	B47 (For AG570Q-ROW <sup>⑤</sup> /AG573Q-ROW <sup>⑤</sup> )
Certifications				
Regulatory	AG570Q-CN: China: SRRC/NAL/CCC AG571Q-CN: China: CCC AG572Q/AG573Q-CN: China: CCC <sup>①</sup>	TBD	TBD	TBD
Carrier	TBD	TBD	TBD	TBD
Others	TBD	TBD	TBD	TBD
Data Transmission (Peak Rate)				
5G NSA	2.4 Gbps (DL)/550 Mbps (UL)	2.4 Gbps (DL)/550 Mbps (UL)	2.4 Gbps (DL)/550 Mbps (UL)	2.4 Gbps (DL)/550 Mbps (UL)
5G SA	2.0 Gbps (DL)/450 Mbps (UL)	2.0 Gbps (DL)/450 Mbps (UL)	2.0 Gbps (DL)/450 Mbps (UL)	2.0 Gbps (DL)/450 Mbps (UL)
LTE-FDD	1.2 Gbps (DL)/100 Mbps (UL)	1.2 Gbps (DL)/100 Mbps (UL)	1.2 Gbps (DL)/100 Mbps (UL)	1.2 Gbps (DL)/100 Mbps (UL)
LTE TDD	1.0 Gbps (DL)/60 Mbps (UL)	1.0 Gbps (DL)/60 Mbps (UL)	1.0 Gbps (DL)/60 Mbps (UL)	1.0 Gbps (DL)/60 Mbps (UL)
DC-HSDPA/HSUPA	42 Mbps/5.76 Mbps	42 Mbps/5.76 Mbps	-	42 Mbps/5.76 Mbps
WCDMA	384 kbps (DL)/384 kbps (UL)	384 kbps (DL)/384 kbps (UL)	-	384 kbps (DL)/384 kbps (UL)
EDGE	296 kbps (DL)/236.8 kbps (UL)	296 kbps (DL)/236.8 kbps (UL)	296 kbps (DL)/236.8 kbps (UL)	296 kbps (DL)/236.8 kbps (UL)
GPRS	107 kbps (DL)/85.6 kbps (UL)	107 kbps (DL)/85.6 kbps (UL)	107 kbps (DL)/85.6 kbps (UL)	107 kbps (DL)/85.6 kbps (UL)
C-V2X	30 Mbps (Tx)/30 Mbps (Rx)	30 Mbps (Tx)/30 Mbps (Rx)	30 Mbps (Tx)/30 Mbps (Rx)	30 Mbps (Tx)/30 Mbps (Rx)
Interfaces				
USB 2.0/3.1	× 1	× 1	× 1	× 1
UART	× 3 (UART1/Debug UART/Bluetooth UART)	× 3 (UART1/Debug UART/Bluetooth UART)	× 3 (UART1/Debug UART/Bluetooth UART)	× 3 (UART1/Debug UART/Bluetooth UART)
(U)SIM	× 2	× 2	× 2	× 2
PCIe 3.0	× 1	× 1	× 1	× 1
I2C	× 1	× 1	× 1	× 1
I2S	× 1	× 1	× 1	× 1
Digital Audio (PCM)	× 1	× 1	× 1	× 1
SDIO	× 1 (For eMMC)	× 1 (For eMMC)	× 1 (For eMMC)	× 1 (For eMMC)
ADC	× 2 (15-bit)	× 2 (15-bit)	× 2 (15-bit)	× 2 (15-bit)
RGMII	× 1	× 1	× 1	× 1
SPI	× 2	× 2	× 2	× 2
RESET_N	× 1 (Reset the module)	× 1 (Reset the module)	× 1 (Reset the module)	× 1 (Reset the module)
GPIO	× 15 (For QuecOpen® version only)	× 15 (For QuecOpen® version only)	× 15 (For QuecOpen® version only)	× 15 (For QuecOpen® version only)

NOTE:

1. <sup>①</sup>: Under planning.

2. <sup>②</sup>: Optional band, not supported by default.

3. <sup>③</sup>: n28A supports Tx at 703–733 MHz and Rx at 758–788 MHz.

4. <sup>④</sup>: LTE-FDD B29/30/32 supports Rx only.

5. \* : Under development.

# Quectel AG57xQ Family

5G NR	AG57xQ-CN	AG57xQ-EU	AG57xQ-NA	AG57xQ-ROW
<b>Antenna Interfaces</b>				
<b>Main</b>	× 1 (2G/3G/4G TRx0; 5G n1/3/28A/41 TRx0, n77/78/79 <sup>①</sup> DRx0)	× 1 (2G/3G/4G TRx0; 5G n1/3/5/8/28A/38 <sup>②</sup> /40 <sup>③</sup> /41/71 TRx0, n78 DRx0)	× 1 (2G/4G TRx0; 5G n2/5/12/25/41/66/71 TRx0, n77/78 DRx0)	× 1 (2G/3G/4G TRx; 5G n78/79 Rx)
<b>Diversity</b>	× 1 (3G/4G DRx0; 5G NR n1/3/28A/41 DRx0, n77/78/79 <sup>①</sup> TRx0)	× 1 (3G/4G DRx0; 5G n1/3/5/8/28A/38 <sup>②</sup> /40 <sup>③</sup> /41/71 DRx0, n78 TRx0)	× 1 (4G DRx0; 5G n2/5/12/25/41/66/71 DRx0, n77/78 TRx0)	× 1 (5G n77/78/79 TRx; 3G/4G DRx)
<b>MIMO3</b>	× 1 (4G B1/3/38/41 Rx1; 5G n1/3/41 Rx1, n77/78/79 <sup>①</sup> DRx1)	× 1 (4G B1/3/7/38/41 Rx1; 5G n1/3/38 <sup>②</sup> /41 Rx1, n78 DRx1)	× 1 (4G B2/4/66/41 Rx1; 5G n2/25/41/66 Rx1, n77/78 DRx1)	× 1 (5G n1/3 TRx; 4G/5G MIMO; 4G B11/21 TRx)
<b>MIMO4</b>	× 1 (4G B1/3/38/41 DRx1; 5G n1/3/41 DRx1, n77/78/79 <sup>①</sup> Rx1)	× 1 (4G B1/3/7/38/41 DRx1; 5G n1/3/38 <sup>②</sup> /41 DRx1, n78 Rx1)	× 1 (4G B2/4/66/41 DRx1; 5G n2/25/41/66 DRx1, n77/78 Rx1)	× 1 (4G/5G MIMO)
<b>DSDA - Main</b>	× 1 (2G/4G TRx)	× 1 (2G/4G TRx)	× 1 (2G/4G TRx)	× 1 (2G/4G TRx)
<b>DSDA - Diversity</b>	× 1 (4G DRx)	× 1 (4G DRx)	× 1 (4G DRx)	× 1 (4G DRx)
<b>C-V2X</b>	× 2 (TRx0/TRx1)	× 2 (TRx0/TRx1)	× 2 (TRx0/TRx1)	× 2 (TRx0/TRx1)
<b>GNSS</b>	× 1	× 1	× 1	× 1
<b>Voice</b>				
<b>Speech Codec Modes</b>	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB	HR/FR/EFR/AMR/AMR-WB
<b>Echo Arithmetic</b>	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression	Echo Cancellation/Noise Suppression
<b>VoLTE</b>	Digital Audio and VoLTE (Voice over LTE)	Digital Audio and VoLTE (Voice over LTE)	Digital Audio and VoLTE (Voice over LTE)	Digital Audio and VoLTE (Voice over LTE)
<b>SMS</b>				
<b>Point-to-point MO and MT</b>	●	●	●	●
<b>SMS Cell Broadcast</b>	●	●	●	●
<b>Text and PDU Mode</b>	●	●	●	●
<b>Enhanced Features</b>				
<b>eCall</b>	-	●	-	-
<b>DFOTA</b>	●	●	●	●
<b>QuecOpen® (Open Linux)</b>	●	●	●	●
<b>PCIe for WLAN Function</b>	●	●	●	●
<b>UART/PCM for Bluetooth Function</b>	●	●	●	●
<b>(U)SIM Detection</b>	●	●	●	●
<b>Temperature Management</b>	●	●	●	●
<b>eSIM (eUICC)</b>	Optional	Optional	Optional	Optional
<b>Single-frequency GNSS (GPS/GLONASS/BDS/Galileo/QZSS)</b>	Optional	Optional	Optional	Optional
<b>Dual-frequency GNSS (Default L1 + L5/Optional L1 + L2*)</b>	Optional	Optional	Optional	Optional
<b>PPE (RTK)</b>	Optional	Optional	Optional	Optional
<b>QDR 3.0 (External IMU Required)</b>	Optional	Optional	Optional	Optional
<b>High Security</b>	TrustZone TPM* (External HSM required) Secure Boot SELinux	TrustZone TPM* (External HSM required) Secure Boot SELinux	TrustZone TPM* (External HSM required) Secure Boot SELinux	TrustZone TPM* (External HSM required) Secure Boot SELinux
<b>ESD/EMI Protection</b>	Realized Through Internal Specific Circuits and Components	Realized Through Internal Specific Circuits and Components	Realized Through Internal Specific Circuits and Components	Realized Through Internal Specific Circuits and Components
<b>Gigabit Ethernet</b>	●	●	●	●
<b>C-V2X TDD B47</b>	AG570Q-CN/AG573Q-CN	AG570Q-EU/AG573Q-EU <sup>②</sup>	AG570Q-NA <sup>②</sup> /AG573Q-NA*	AG570Q-ROW <sup>②</sup> /AG573Q-ROW <sup>②</sup>
<b>DSDA (SIM2 for 2G/4G only)</b>	AG572Q-CN/AG573Q-CN	AG572Q-EU*/AG573Q-EU <sup>②</sup>	AG572Q-NA*/AG573Q-NA*	AG572Q-ROW*/AG573Q-ROW <sup>②</sup>
<b>1 GB NAND + 1 GB DDRAM</b>	Optional	Optional	Optional	Optional
<b>Drivers</b>				
<b>USB ECM Driver</b>	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5
<b>USB RNDIS Driver</b>	Windows 7/8/8.1/10/11 Linux 2.6–6.5	Windows 7/8/8.1/10/11 Linux 2.6–6.5	Windows 7/8/8.1/10/11 Linux 2.6–6.5	Windows 7/8/8.1/10/11 Linux 2.6–6.5
<b>USB GobiNet Driver</b>	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5	Linux 2.6–6.5
<b>USB QMI_WWAN Driver</b>	Linux 3.4–6.5	Linux 3.4–6.5	Linux 3.4–6.5	Linux 3.4–6.5
<b>USB Serial Driver</b>	Windows 7/8/8.1/10/11 Linux 2.6–6.5	Windows 7/8/8.1/10/11 Linux 2.6–6.5	Windows 7/8/8.1/10/11 Linux 2.6–6.5	Windows 7/8/8.1/10/11 Linux 2.6–6.5
<b>Electrical Features</b>				
<b>Supply Voltage Range</b>	<b>VBAT_BB/VBAT_RF:</b> 3.3–4.3 V, typ. 3.8 V <b>VBAT_C-V2X:</b> 4.75–5.25 V, typ. 5.0 V	<b>VBAT_BB/VBAT_RF:</b> 3.3–4.3 V, typ. 3.8 V <b>VBAT_C-V2X:</b> 4.75–5.25 V, typ. 5.0 V	<b>VBAT_BB/VBAT_RF:</b> 3.3–4.3 V, typ. 3.8 V <b>VBAT_C-V2X:</b> 4.75–5.25 V, typ. 5.0 V	<b>VBAT_BB/VBAT_RF:</b> 3.3–4.3 V, typ. 3.8 V <b>VBAT_C-V2X:</b> 4.75–5.25 V, typ. 5.0 V
<b>Power Consumption (Typ.)</b>	TBD @ Power off 1.4 mA @ Sleep 25.0 mA @ Idle	TBD @ Power off TBD @ Sleep TBD @ Idle	TBD @ Power off TBD @ Sleep TBD @ Idle	TBD @ Power off TBD @ Sleep TBD @ Idle

**NOTE:**

- ①: Optional band, not supported by default.
- ②: Under planning.
- \*: Under development.
- : Supported.