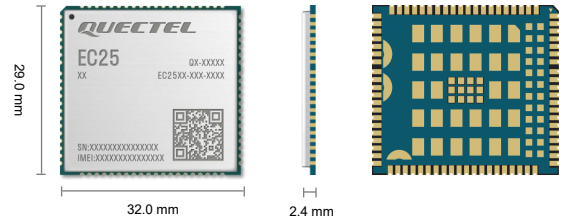


Quectel EC25 Series

IoT/M2M-optimized
LTE Cat 4 Module



Quectel EC25 is a series of LTE Cat 4 modules optimized specially for M2M and IoT applications. Adopting the 3GPP Rel-11 LTE technology, it delivers maximum data rates up to 150 Mbps downlink and 50 Mbps uplink. Designed in the compact and unified form factor, EC25 series is compatible with Quectel multi-mode LTE Standard EC21 series/EC20-CE/EG25-G/EG21-G modules and UMTS/HSPA+ UC200A-GL module, which allows for flexible migration among them in design and manufacturing.

EC25 series contains 14 variants: EC25-A, EC25-ADL, EC25-V, EC25-AF, EC25-AFDL (Data-only), EC25-AFX, EC25-AFXD (Data-only), EC25-AU, EC25-AUX, EC25-J, EC25-EU, EC25-EUX, EC25-E, EC25-EC and EC25-EM. This makes it backward-compatible with existing EDGE and GSM/GPRS networks, ensuring that it can be connected even in remote areas devoid of 4G or 3G coverage.

EC25 series supports Qualcomm® IZat™ location technology Gen8C Lite (GPS, GLONASS, BDS, Galileo and QZSS). The integrated GNSS greatly simplifies product design, and provides quicker, more accurate and more dependable positioning.

A rich set of Internet protocols, industry-standard interfaces and abundant functionalities (USB serial drivers for Windows 10/11, Linux, Android) extend the applicability of the module to a wide range of M2M and IoT applications such as industrial router, industrial PDA, rugged tablet PC, video transmission, and digital signage.



Key Features

- ✓ LTE Cat 4 module optimized for M2M and IoT applications
- ✓ Worldwide LTE, UMTS/HSPA(+) and GSM/GPRS/EDGE coverage
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
- ✓ Feature refinements: supports DFOTA and DTMF
- ✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems

 4G LTE	 3G HSPA+	 LCC LCC Package
LTE Cat 4 Max. 150 Mbps (DL) Max. 50 Mbps (UL)	Max. 42 Mbps (DL) Max. 5.76 Mbps (UL)	
 Wi-Fi	 Bluetooth	 Multi-constellation GNSS (Optional)
 Embedded Abundant Protocols	 USB 2.0 High Speed Interface	 AT Quectel Enhanced AT Commands
 USB Drivers		

Quectel EC25 Series

LTE Cat 4	EC25-A	EC25-ADL	EC25-V
Region/ Operator	North America	North America	America Verizon
Dimensions (mm)	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4
Temperature Ranges			
Operating Temperature	-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
Frequency Bands			
LTE-FDD	B2/ 4/ 12	B2/ 4/ 12	B4/ 13
LTE-TDD	-	-	-
WCDMA	B2/ 4/ 5	-	-
GSM/ EDGE	-	-	-
GNSS (Optional)	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS
Certifications			
Carrier	America: AT&T/ T-Mobile Canada: Rogers/ Telus	America: AT&T/ T-Mobile	America: Verizon
Regulatory/ Conformance	North America: PTCRB America: FCC Canada: IC	North America: PTCRB America: FCC Canada: IC	Global: GCF America: FCC
Others	RoHS/ WHQL	RoHS/ WHQL	RoHS/ WHQL
Max. Data Transmission Rates			
LTE-FDD (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)
LTE-TDD (Mbps)	-	-	-
DC-HSPA+ (Mbps)	42 (DL)/ 5.76 (UL)	-	-
WCDMA (kbps)	384 (DL)/ 384 (UL)	-	-
EDGE (kbps)	-	-	-
GPRS (kbps)	-	-	-
Interfaces			
(U)SIM	× 1	× 1	× 1
UART	× 2	× 2	× 2
USB 2.0	× 1	× 1	× 1
Audio Digital (PCM)	× 1	-	× 1
I2C	× 1	× 1	× 1
SDIO	× 2	× 2	× 2
SGMII	× 1	× 1	× 1
Wi-Fi	× 1	× 1	× 1
Bluetooth	× 1	× 1	× 1
ADC	× 2	× 2	× 2
GRFC (Optional)	× 2	× 2	× 2
Voice			
Speech Codec Modes	AMR/ AMR-WB	AMR/ AMR-WB	AMR/ AMR-WB
Echo Arithmetic	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression
VoLTE (Optional)	Digital Audio and VoLTE (Voice over LTE)	-	Digital Audio and VoLTE (Voice over LTE)
Enhanced Features			
DTMF	●	*	●
DFOTA	●	●	●
QMI/ RmNet	●	●	●
Audio Playback/ Audio Recording	Optional	*	Optional
QuecFile®	●	●	●
(U)SIM Card Detection	●	●	●
SMS	●	●	●
eSIM	-	-	-
Drivers			
USB Serial Driver	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x
GNSS Driver	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x
RIL Driver	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x
USB NDIS Driver	Windows 10/11	Windows 10/11	Windows 10/11
USB MBIM Driver	Windows 10/11, Linux 4.4–6.17	Windows 10/11, Linux 4.4–6.17	Windows 10/11, Linux 4.4–6.17
USB GobiNet Driver	Linux 2.6–3.4	Linux 2.6–3.4	Linux 2.6–3.4
USB QMI_WWAN Driver	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7
Electrical Features			
Supply Voltage Range	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.
Power Consumption (Typ.)	10 µA @ Power off 1.1 mA @ Sleep 21 mA @ Idle	7 µA @ Power off 0.72 mA @ Sleep 18.69 mA @ Idle	10 µA @ Power off 1.1 mA @ Sleep 21 mA @ Idle

NOTE:
1. * : Under development.
2. ● : Supported.

Quectel EC25 Series

LTE Cat 4	EC25-AF	EC25-AFDL (Data-only)	EC25-AFX	EC25-AFXD (Data-only)
Region/ Operator	North America	North America	North America	North America
Dimensions (mm)	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4
Temperature Ranges				
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
Frequency Bands				
LTE-FDD	B2/ 4/ 5/ 12/ 13/ 14/ 66/ 71	B2/ 4/ 5/ 12/ 13/ 14/ 66/ 71	B2/ 4/ 5/ 12/ 13/ 14/ 66/ 71	B2/ 4/ 5/ 12/ 13/ 14/ 66/ 71
LTE-TDD	-	-	-	-
WCDMA	B2/ 4/ 5	-	B2/ 4/ 5	B2/ 4/ 5
GSM/ EDGE	-	-	-	-
GNSS (Optional)	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS
Certifications				
Carrier	America: Verizon/ AT&T/ T-Mobile/ U.S. Cellular Canada: Rogers/ Telus	America: Verizon/ AT&T/ T-Mobile/ U.S. Cellular Canada: Rogers/ Telus	America: Verizon/ AT&T/ U.S. Cellular Canada: Telus	America: Verizon/ AT&T/ T-Mobile/ U.S. Cellular Canada: Telus
Regulatory/ Conformance	Global: GCF North America: PTCRB America: FCC Canada: IC	Global: GCF North America: PTCRB America: FCC Canada: IC	Global: GCF North America: PTCRB America: FCC Canada: IC	Global: GCF North America: PTCRB America: FCC Canada: IC
Others	RoHS/ WHQL	RoHS/ WHQL	RoHS/ WHQL	RoHS/ WHQL
Max. Data Transmission Rates				
LTE-FDD (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)
LTE-TDD (Mbps)	-	-	-	-
DC-HSPA+ (Mbps)	42 (DL)/ 5.76 (UL)	-	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)
WCDMA (kbps)	384 (DL)/ 384 (UL)	-	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)
EDGE (kbps)	-	-	-	-
GPRS (kbps)	-	-	-	-
Interfaces				
(U)SIM	× 1	× 1	× 1	× 1
UART	× 2	× 2	× 2	× 2
USB 2.0	× 1	× 1	× 1	× 1
Audio Digital (PCM)	× 1	× 1	× 1	× 1
I2C	× 1	× 1	× 1	× 1
SDIO	× 2	× 2	× 1	× 1
SGMII	× 1	× 1	× 1	× 1
Wi-Fi	× 1	× 1	-	-
Bluetooth	× 1	× 1	-	-
ADC	× 2	× 2	× 2	× 2
GRFC (Optional)	× 2	× 2	× 2	× 2
Voice				
Speech Codec Modes	AMR/ AMR-WB	-	AMR/ AMR-WB	-
Echo Arithmetic	Echo Cancellation/ Noise Suppression	-	Echo Cancellation/ Noise Suppression	-
VoLTE (Optional)	Digital Audio and VoLTE (Voice over LTE)	-	Digital Audio and VoLTE (Voice over LTE)	-
Enhanced Features				
DTMF	●	-	●	-
DFOTA	●	●	●	●
QMI/ RmNet	●	●	●	●
Audio Playback*/ Audio Recording*	Optional	Optional	Optional	Optional
QuecFile®	●	●	●	●
(U)SIM Card Detection	●	●	●	●
SMS	●	●	●	●
eSIM	-	-	-	-
Drivers				
USB Serial Driver	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x
GNSS Driver	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x
RIL Driver	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x
USB NDIS Driver	Windows 10/11	Windows 10/11	Windows 10/11	Windows 10/11
USB MBIM Driver	Windows 10/11, Linux 4.4–6.17	Windows 10/11, Linux 4.4–6.17	Windows 10/11, Linux 4.4–6.17	Windows 10/11, Linux 4.4–6.17
USB GobiNet Driver	Linux 2.6–3.4	Linux 2.6–3.4	Linux 2.6–3.4	Linux 2.6–3.4
USB QMI_WWAN Driver	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7
Electrical Features				
Supply Voltage Range	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.
Power Consumption (Typ.)	10 µA @ Power off 1.0 mA @ Sleep 23.3 mA @ Idle	7 µA @ Power off 0.81 mA @ Sleep 19.7 mA @ Idle	8.0 µA @ Power off 0.83 mA @ Sleep 14.9 mA @ Idle	8.0 µA @ Power off 0.83 mA @ Sleep 14.9 mA @ Idle

NOTE:
1. * : Under development.
2. ● : Supported.

Quectel EC25 Series

LTE Cat 4	EC25-AU	EC25-AUX	EC25-J	EC25-EC
Region/ Operator	Latin America/ Australia/ New Zealand	Latin America/ Australia/ New Zealand	Japan	EMEA/ Thailand
Dimensions (mm)	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4
Temperature Ranges				
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
Frequency Bands				
LTE-FDD	B1/ 2 ^① / 3/ 4/ 5/ 7/ 8/ 28	B1/ 2 ^① / 3/ 4/ 5/ 7/ 8/ 28	B1/ 3/ 8/ 18/ 19/ 26	B1/ 3/ 7/ 8/ 20/ 28A
LTE-TDD	B40	B40	B41	-
WCDMA	B1/ 2/ 5/ 8	B1/ 2/ 4/ 5/ 8	B1/ 6/ 8/ 19	B1/ 8
GSM/ EDGE	B2/ 3/ 5/ 8	B2/ 3/ 5/ 8	-	B3/ 8
GNSS (Optional)	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS
Certifications				
Carrier	Australia: Telstra	Australia: Telstra	Japan: NTT DOCOMO/ SoftBank/ KDDI/ Rakuten ^②	-
Regulatory/ Conformance	Global: GCF America: FCC Brazil: Anatel Taiwan, China: NCC Australia/ New Zealand: RCM	Europe: CE America: FCC Brazil: Anatel Australia/ New Zealand: RCM South Africa: ICASA	Japan: JATE/ TELEC	Europe: CE Australia/ New Zealand: RCM
Others	RoHS/ WHQL	RoHS/ WHQL	RoHS/ WHQL	RoHS/ WHQL
Max. Data Transmission Rates				
LTE-FDD (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)
LTE-TDD (Mbps)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	-
DC-HSPA+ (Mbps)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)
WCDMA (kbps)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)
EDGE (kbps)	296 (DL)/ 236.8 (UL)	296 (DL)/ 236.8 (UL)	-	296 (DL)/ 236.8 (UL)
GPRS (kbps)	107 (DL)/ 85.6 (UL)	107 (DL)/ 85.6 (UL)	-	107 (DL)/ 85.6 (UL)
Interfaces				
(U)SIM	× 1	× 1	× 1	× 1
UART	× 2	× 2	× 2	× 2
USB 2.0	× 1	× 1	× 1	× 1
Audio Digital (PCM)	× 1	× 1	× 1	× 1
I2C	× 1	× 1	× 1	× 1
SDIO	× 2	× 1	× 2	× 1
SGMII	× 1	× 1	× 1	× 1
Wi-Fi	× 1	-	× 1	-
Bluetooth	× 1	-	× 1	-
ADC	× 2	× 2	× 2	× 2
GRFC (Optional)	× 2	× 2	× 2	× 2
Voice				
Speech Codec Modes	HR/ FR/ EFR/ AMR/ AMR-WB	HR/ FR/ EFR/ AMR/ AMR-WB	AMR/ AMR-WB	HR/ FR/ EFR/ AMR/ AMR-WB
Echo Arithmetic	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression
VoLTE (Optional)	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)
Enhanced Features				
DTMF	●	●	●	●
DFOTA	●	●	●	●
QMI/ RmNet	●	●	●	●
Audio Playback*/ Audio Recording*	Optional	Optional	Optional	Optional
QuecFile®	●	●	●	●
(U)SIM Card Detection	●	●	●	●
SMS	●	●	●	●
eSIM	-	Optional	-	Optional
Drivers				
USB Serial Driver	Windows 10/11, Linux 2.6-6.17, Android 4.x-14.x	Windows 10/11, Linux 2.6-6.17, Android 4.x-14.x	Windows 10/11, Linux 2.6-6.17, Android 4.x-14.x	Windows 10/11, Linux 2.6-6.17, Android 4.x-14.x
GNSS Driver	Android 4.x-16.x	Android 4.x-16.x	Android 4.x-16.x	Android 4.x-16.x
RIL Driver	Android 4.x-16.x	Android 4.x-16.x	Android 4.x-16.x	Android 4.x-16.x
USB NDIS Driver	Windows 10/11	Windows 10/11	Windows 10/11	Windows 10/11
USB MBIM Driver	Windows 10/11, Linux 4.4-6.17	Windows 10/11, Linux 4.4-6.17	Windows 10/11, Linux 4.4-6.17	Windows 10/11, Linux 4.4-6.17
USB GobiNet Driver	Linux 2.6-3.4	Linux 2.6-3.4	Linux 2.6-3.4	Linux 2.6-3.4
USB QMI_WWAN Driver	Linux 3.4-6.7	Linux 3.4-6.7	Linux 3.4-6.7	Linux 3.4-6.7
Electrical Features				
Supply Voltage Range	3.3-4.3 V, 3.8 V Typ.	3.3-4.3 V, 3.8 V Typ.	3.3-4.3 V, 3.8 V Typ.	3.3-4.3 V, 3.8 V Typ.
Power Consumption (Typ.)	11 μA @ Power off 1.3 mA @ Sleep 22 mA @ Idle	9.0 μA @ Power off 0.9 mA @ Sleep 16.9 mA @ Idle	10 μA @ Power off 0.9 mA @ Sleep 21 mA @ Idle	6.9 μA @ Power off 1.1 mA @ Sleep 17.7 mA @ Idle

NOTE:
1. ①: LTE-FDD B2 for EC25-AU and EC25-AUX does not support Rx-diversity.
2. ②: Support data only.
3. * : Under development/ In progress.
4. ●: Supported.
5. eSIM function can be supported by software, but an external eSIM chip is required.

Quectel EC25 Series

LTE Cat 4	EC25-E	EC25-EU	EC25-EUX	EC25-EM
Region/ Operator	EMEA/ South Korea/ Thailand/ India	EMEA/ Thailand	EMEA/ Thailand	EMEA/ Southeast Asia
Dimensions (mm)	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4	29.0 × 32.0 × 2.4
Temperature Ranges				
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
Frequency Bands				
LTE-FDD	B1/ 3/ 5/ 7/ 8/ 20	B1/ 3/ 7/ 8/ 20/ 28A	B1/ 3/ 7/ 8/ 20/ 28A	B1/ 3/ 5/ 7/ 8/ 20/ 28
LTE-TDD	B38/ 40/ 41	B38/ 40/ 41	B38/ 40/ 41	B38/ 40/ 41
WCDMA	B1/ 5/ 8	B1/ 8	B1/ 8	B1/ 5/ 8
GSM/ EDGE	B3/ 8	B3/ 8	B3/ 8	B3/ 8
GNSS (Optional)	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS	GPS/ GLONASS/ BDS/ Galileo/ QZSS
Certifications				
Carrier	Europe: Vodafone/ Deutsche Telekom/ British Telecom/ Telefónica South Korea: KT/ SKT/ LGU+	Europe: Deutsche Telekom/ British Telecom	Europe: Vodafone/ Deutsche Telekom/ Telefónica/ Orange/ British Telecom	-
Regulatory/ Conformance	Global: GCF Europe: CE The UK: UKCA South Korea: KC Taiwan, China: NCC Australia/ New Zealand: RCM Thailand: NBTC South Africa: ICASA	Global: GCF Europe: CE The UK: UKCA Taiwan, China: NCC Australia/ New Zealand: RCM	Global: GCF Europe: CE The UK: UKCA South Korea: KC Taiwan, China: NCC Australia/ New Zealand: RCM	Europe: CE Australia/ New Zealand: RCM
Others	RoHS/ WHQL	RoHS/ WHQL	RoHS/ WHQL	RoHS/ WHQL
Max. Data Transmission Rates				
LTE-FDD (Mbps)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)	150 (DL)/ 50 (UL)
LTE-TDD (Mbps)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)	130 (DL)/ 30 (UL)
DC-HSPA+ (Mbps)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)	42 (DL)/ 5.76 (UL)
WCDMA (kbps)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)	384 (DL)/ 384 (UL)
EDGE (kbps)	296 (DL)/ 236.8 (UL)	296 (DL)/ 236.8 (UL)	296 (DL)/ 236.8 (UL)	296 (DL)/ 236.8 (UL)
GPRS (kbps)	107 (DL)/ 85.6 (UL)	107 (DL)/ 85.6 (UL)	107 (DL)/ 85.6 (UL)	107 (DL)/ 85.6 (UL)
Interfaces				
(U)SIM	× 1	× 1	× 1	× 1
UART	× 2	× 2	× 2	× 2
USB 2.0	× 1	× 1	× 1	× 1
Audio Digital (PCM)	× 1	× 1	× 1	× 1
I2C	× 1	× 1	× 1	× 1
SDIO	× 2	× 2	× 1	× 1
SGMII	× 1	× 1	× 1	× 1
Wi-Fi	× 1	× 1	-	-
Bluetooth	× 1	× 1	-	-
ADC	× 2	× 2	× 2	× 2
GRFC (Optional)	× 2	× 2	× 2	× 2
Voice				
Speech Codec Modes	HR/ FR/ EFR/ AMR/ AMR-WB	HR/ FR/ EFR/ AMR/A MR-WB	HR/ FR/ EFR/ AMR/ AMR-WB	HR/ FR/ EFR/ AMR/ AMR-WB
Echo Arithmetic	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression	Echo Cancellation/ Noise Suppression
VoLTE (Optional)	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)
Enhanced Features				
DTMF	●	●	●	●
DFOTA	●	●	●	●
QMI/RmNet	●	●	●	●
Audio Playback*/ Audio Recording*	Optional	Optional	Optional	Optional
QuecFile®	●	●	●	●
(U)SIM Card Detection	●	●	●	●
SMS	●	●	●	●
eSIM	Optional	Optional	Optional	Optional
Drivers				
USB Serial Driver	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x	Windows 10/11, Linux 2.6–6.17, Android 4.x–14.x
GNSS Driver	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x
RIL Driver	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x	Android 4.x–16.x
USB NDIS Driver	Windows 10/11	Windows 10/11	Windows 10/11	Windows 10/11
USB MBIM Driver	Windows 10/11, Linux 4.4–6.17	Windows 10/11, Linux 4.4–6.17	Windows 10/11, Linux 4.4–6.17	Windows 10/11, Linux 4.4–6.17
USB GobiNet Driver	Linux 2.6–3.4	Linux 2.6–3.4	Linux 2.6–3.4	Linux 2.6–3.4
USB QMI_WWAN Driver	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7	Linux 3.4–6.7
Electrical Features				
Supply Voltage Range	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.	3.3–4.3 V, 3.8 V Typ.
Power Consumption (Typ.)	11 µA @ Power off 1.16 mA @ Sleep 19.5 mA @ Idle	11 µA @ Power off 1.16 mA @ Sleep 19.5 mA @ Idle	9.0 µA @ Power off 0.9 mA @ Sleep 14.5 mA @ Idle	7.0 µA @ Power off 0.84 mA @ Sleep 21.33 mA @ Idle

NOTE:

- * : Under development.
- : Supported.
- eSIM function can be supported by software, but an external eSIM chip is required.