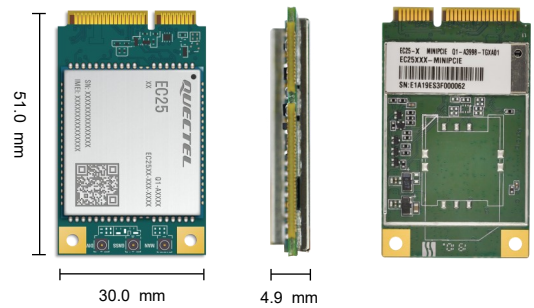


# Quectel

## EC25 Series Mini PCIe

### IoT/M2M-optimized LTE Cat 4 Module



Quectel EC25 Mini PCIe is a series of LTE Cat 4 module adopting standard PCI Express® Mini Card form factor (Mini PCIe). It is optimized specially for M2M and IoT applications, and delivers 150 Mbps downlink and 50 Mbps uplink data rates.

EC25 series Mini PCIe contains 15 variants: EC25-A Mini PCIe, EC25-ADL Mini PCIe, EC25-V Mini PCIe, EC25-AF Mini PCIe, EC25-AFDL (Data-only) Mini PCIe, EC25-AFX Mini PCIe, EC25-AFXD (Data-only) Mini PCIe, EC25-MX Mini PCIe, EC25-AU Mini PCIe, EC25-AUX Mini PCIe, EC25-J Mini PCIe, EC25-EU Mini PCIe, EC25-EUX Mini PCIe, EC25-E Mini PCIe and EC25-EM Mini PCIe. 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 Mini PCIe (excluding EC25-MX Mini PCIe) 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 7/8/8.1/10/11, Linux, Android) extend the applicability of the module to a wide range of M2M applications such as industrial router, industrial PDA, rugged tablet PC, video surveillance and digital signage.



## Key Features

- ✓ LTE Cat 4 module optimized for broadband IoT applications
- ✓ Worldwide LTE, UMTS/HSPA(+) and GSM/GPRS/EDGE coverage
- ✓ Standard PCI Express® Mini Card form factor (Mini PCIe) ideal for manufacturers to easily integrate wireless connectivity into their devices
- ✓ MIMO technology meets demands for data rate and link reliability in modem wireless communication systems
- ✓ Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment



LTE Cat 4  
Max. 150 Mbps (DL)  
Max. 50 Mbps (UL)



Max. 42 Mbps (DL)  
Max. 5.76 Mbps (UL)



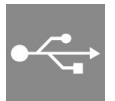
Mini PCIe  
Package



Embedded Abundant  
Protocols



Multi-constellation  
GNSS



USB 2.0 High Speed  
Interface



Quectel Enhanced  
AT Commands



USB Drivers

# Quectel EC25 Series Mini PCIe

LTE Cat 4	EC25-A Mini PCIe	EC25-ADL Mini PCIe	EC25-V Mini PCIe
<b>Region/Operator</b>	North America	North America	America Verizon
<b>Dimensions (mm)</b>	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9
<b>Temperature Range</b>			
<b>Operating Temperature</b>	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C
<b>Extended Temperature</b>	-40 °C to +80 °C	-40 °C to +85 °C	-40 °C to +80 °C
<b>Frequency Bands</b>			
<b>LTE-FDD</b>	B2/4/12	B2/4/12	B4/13
<b>LTE-TDD</b>	-	-	-
<b>WCDMA</b>	B2/4/5	-	-
<b>GSM/EDGE</b>	-	-	-
<b>GNSS (Optional)</b>	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
<b>Certifications</b>			
<b>Carrier</b>	America: AT&T/T-Mobile Canada: Rogers/Telus	America: AT&T/T-Mobile	America: Verizon
<b>Regulatory</b>	North America: PTCRB America: FCC Canada: IC	North America: PTCRB America: FCC Canada: IC	Global: GCF America: FCC
<b>Others</b>	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL
<b>Max. Data Transmission Rates</b>			
<b>LTE-FDD (Mbps)</b>	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)
<b>LTE-TDD (Mbps)</b>	-	-	-
<b>DC-HSPA+ (Mbps)</b>	42 (DL)/5.76 (UL)	-	-
<b>WCDMA (kbps)</b>	384 (DL)/384 (UL)	-	-
<b>EDGE (kbps)</b>	-	-	-
<b>GPRS (kbps)</b>	-	-	-
<b>Interfaces</b>			
<b>(U)SIM</b>	× 1	× 1	× 1
<b>USB 2.0</b>	× 1	× 1	× 1
<b>Digital Audio (PCM)</b>	× 1	× 1	× 1
<b>I2C</b>	× 1	× 1	× 1
<b>LED_WWAN#</b>	× 1	× 1	× 1
<b>W_DISABLE#</b>	× 1	× 1	× 1
<b>UART</b>	× 1	× 1	× 1
<b>PERST#</b>	× 1	× 1	× 1
<b>Voice</b>			
<b>Speech Codec Modes</b>	HR/FR/EFR/AMR/AMR-WB	-	HR/FR/EFR/AMR/AMR-WB
<b>Echo Arithmetic</b>	Echo Cancellation/Noise Suppression	-	Echo Cancellation/Noise Suppression
<b>VoLTE (Optional)</b>	Digital Audio and VoLTE (Voice over LTE)	-	Digital Audio and VoLTE (Voice over LTE)
<b>Enhanced Features</b>			
<b>DTMF</b>	●	*	●
<b>DFOTA</b>	●	●	●
<b>QMI/ RmNet</b>	●	●	●
<b>Audio Playback/ Audio Recording</b>	Optional	*	Optional
<b>QuecLocator®</b>	●	●	●
<b>QuecFile®</b>	●	●	●
<b>(U)SIM Card Detection</b>	●	●	●
<b>Drivers</b>			
<b>USB Serial Driver</b>	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x
<b>GNSS Driver</b>	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x
<b>RIL Driver</b>	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x
<b>USB NDIS Driver</b>	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11
<b>USB MBIM Driver</b>	Windows 8/8.1/10/11, Linux 3.18–5.18	Windows 8/8.1/10/11, Linux 3.18–5.18	Windows 8/8.1/10/11, Linux 3.18–5.18
<b>USB GobiNet Driver</b>	Linux 2.6–5.18	Linux 2.6–5.18	Linux 2.6–5.18
<b>USB QMI_WWAN Driver</b>	Linux 3.4–5.18	Linux 3.4–5.18	Linux 3.4–5.18
<b>Electrical Features</b>			
<b>Supply Voltage Range</b>	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.
<b>Power Consumption (Typ.)</b>	3.6 mA @ Sleep 27 mA @ Idle	2.27 mA @ Sleep 25.23 mA @ Idle	3.4 mA @ Sleep 30 mA @ Idle

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

# Quectel EC25 Series Mini PCIe

LTE Cat 4	EC25-AF Mini PCIe	EC25-AFDL Mini PCIe (Data-only)	EC25-AFX Mini PCIe	EC25-AFXD Mini PCIe (Data-only)
<b>Region/Operator</b>	North America	North America	North America	North America
<b>Dimensions (mm)</b>	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9
<b>Temperature Range</b>				
<b>Operating Temperature</b>	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C
<b>Extended Temperature</b>	-40 °C to +80 °C	-40 °C to +80 °C	-40 °C to +80 °C	-40 °C to +80 °C
<b>Frequency Bands</b>				
<b>LTE-FDD</b>	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
<b>LTE-TDD</b>	-	-	-	-
<b>WCDMA</b>	B2/4/5	-	B2/4/5	B2/4/5
<b>GSM/EDGE</b>	-	-	-	-
<b>GNSS (Optional)</b>	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
<b>Certifications</b>				
<b>Carrier</b>	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: Rogers*/Telus
<b>Regulatory</b>	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
<b>Others</b>	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL
<b>Max. Data Transmission Rates</b>				
<b>LTE-FDD (Mbps)</b>	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)
<b>LTE-TDD (Mbps)</b>	-	-	-	-
<b>DC-HSPA+ (Mbps)</b>	42 (DL)/5.76 (UL)	-	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)
<b>WCDMA (kbps)</b>	384 (DL)/384 (UL)	-	384 (DL)/384 (UL)	384 (DL)/384 (UL)
<b>EDGE (kbps)</b>	-	-	-	-
<b>GPRS (kbps)</b>	-	-	-	-
<b>Interfaces</b>				
<b>(U)SIM</b>	× 1	× 1	× 1	× 1
<b>USB 2.0</b>	× 1	× 1	× 1	× 1
<b>Digital Audio (PCM)</b>	× 1	× 1	× 1	× 1
<b>I2C</b>	× 1	× 1	× 1	× 1
<b>LED_WWAN#</b>	× 1	× 1	× 1	× 1
<b>W_DISABLE#</b>	× 1	× 1	× 1	× 1
<b>UART</b>	× 1	× 1	× 1	× 1
<b>PERST#</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	-
<b>Echo Arithmetic</b>	Echo Cancellation/ Noise Suppression	-	Echo Cancellation/ Noise Suppression	-
<b>VoLTE (Optional)</b>	Digital Audio and VoLTE (Voice over LTE)	-	Digital Audio and VoLTE (Voice over LTE)	-
<b>Enhanced Features</b>				
<b>DTMF</b>	●	-	●	-
<b>DFOTA</b>	●	●	●	●
<b>QMI/ RmNet</b>	●	●	●	●
<b>Audio Playback*/ Audio Recording*</b>	Optional	Optional	Optional	Optional
<b>QuecLocator®</b>	●	●	●	●
<b>QuecFile®</b>	●	●	●	●
<b>(U)SIM Card Detection</b>	●	●	●	●
<b>Drivers</b>				
<b>USB Serial Driver</b>	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x
<b>GNSS Driver</b>	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x
<b>RIL Driver</b>	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x
<b>USB NDIS Driver</b>	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11
<b>USB MBIM Driver</b>	Windows 8/8.1/10/11, Linux 3.18–5.18	Windows 8/8.1/10/11, Linux 3.18–5.18	-	-
<b>USB GobiNet Driver</b>	Linux 2.6–5.18	Linux 2.6–5.18	Linux 2.6–5.18	Linux 2.6–5.18
<b>USB QMI_WWAN Driver</b>	Linux 3.4–5.18	Linux 3.4–5.18	Linux 3.4–5.18	Linux 3.4–5.18
<b>Electrical Features</b>				
<b>Supply Voltage Range</b>	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.
<b>Power Consumption (Typ.)</b>	2.2 mA @ Sleep 21.7 mA @ Idle	2.3 mA @ Sleep 26.5 mA @ Idle	1.67 mA @ Sleep 22 mA @ Idle	1.67 mA @ Sleep 22 mA @ Idle

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

# Quectel EC25 Series Mini PCIe

LTE Cat 4	EC25-MX Mini PCIe	EC25-AU Mini PCIe	EC25-AUX Mini PCIe	EC25-J Mini PCIe
<b>Region/Operator</b>	Mexico	Latin America/Australia/New Zealand	Latin America/Australia/New Zealand	Japan
<b>Dimensions (mm)</b>	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9
<b>Temperature Range</b>				
<b>Operating Temperature</b>	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C
<b>Extended Temperature</b>	-40 °C to +80 °C	-40 °C to +80 °C	-40 °C to +80 °C	-40 °C to +80 °C
<b>Frequency Bands</b>				
<b>LTE-FDD</b>	B2/4/5/7/28/66	B1/2 <sup>①</sup> /3/4/5/7/8/28	B1/2 <sup>①</sup> /3/4/5/7/8/28	B1/3/8/18/19/26
<b>LTE-TDD</b>	-	B40	B40	B41
<b>WCDMA</b>	B2/4/5	B1/2/5/8	B1/2/4/5/8	B1/6/8/19
<b>GSM/EDGE</b>	-	B2/3/5/8	B2/3/5/8	-
<b>GNSS (Optional)</b>	-	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
<b>Certifications</b>				
<b>Carrier</b>	-	Australia: Telstra	-	Japan: NTT DOCOMO/SoftBank/KDDI
<b>Regulatory</b>	North America: PTCRB America: FCC Mexico: IFETEL	Global: GCF America: FCC Taiwan, China: NCC Brazil: Anatel Australia/New Zealand: RCM	Europe: CE America: FCC Brazil: Anatel Australia/New Zealand: RCM South Africa: ICASA	Japan: JATE/TELEC
<b>Others</b>	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL
<b>Max. Data Transmission Rates</b>				
<b>LTE-FDD (Mbps)</b>	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)
<b>LTE-TDD (Mbps)</b>	-	130 (DL)/30 (UL)	130 (DL)/30 (UL)	130 (DL)/30 (UL)
<b>DC-HSPA+ (Mbps)</b>	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)
<b>WCDMA (kbps)</b>	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)
<b>EDGE (kbps)</b>	-	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	-
<b>GPRS (kbps)</b>	-	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	-
<b>Interfaces</b>				
<b>(U)SIM</b>	× 1	× 1	× 1	× 1
<b>USB 2.0</b>	× 1	× 1	× 1	× 1
<b>Digital Audio (PCM)</b>	× 1	× 1	× 1	× 1
<b>I2C</b>	× 1	× 1	× 1	× 1
<b>LED_WWAN#</b>	× 1	× 1	× 1	× 1
<b>W_DISABLE#</b>	× 1	× 1	× 1	× 1
<b>UART</b>	× 1	× 1	× 1	× 1
<b>PERST#</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 (Optional)</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>Enhanced Features</b>				
<b>DTMF</b>	●	●	●	●
<b>DFOTA</b>	●	●	●	●
<b>QMI/ RmNet</b>	●	●	●	●
<b>Audio Playback*/ Audio Recording*</b>	Optional	Optional	Optional	Optional
<b>QuecLocator®</b>	●	●	●	●
<b>QuecFile®</b>	●	●	●	●
<b>(U)SIM Card Detection</b>	●	●	●	●
<b>Drivers</b>				
<b>USB Serial Driver</b>	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x
<b>GNSS Driver</b>	-	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x
<b>RIL Driver</b>	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x
<b>USB NDIS Driver</b>	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11
<b>USB MBIM Driver</b>	-	Windows 8/8.1/10/11, Linux 3.18–5.18	-	Windows 8/8.1/10/11, Linux 3.18–5.18
<b>USB GobiNet Driver</b>	Linux 2.6–5.18	Linux 2.6–5.18	Linux 2.6–5.18	Linux 2.6–5.18
<b>USB QMI_WWAN Driver</b>	Linux 3.4–5.18	Linux 3.4–5.18	Linux 3.4–5.18	Linux 3.4–5.18
<b>Electrical Features</b>				
<b>Supply Voltage Range</b>	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.
<b>Power Consumption (Typ.)</b>	1.55 mA @ Sleep 20 mA @ Idle	2.6 mA @ Sleep 22 mA @ Idle	1.9 mA @ Sleep 23.4 mA @ Idle	3.2 mA @ Sleep 31.5 mA @ Idle

NOTE:  
1. ①: LTE-FDD B2 for EC25-AU Mini PCIe and EC25-AUX Mini PCIe does not support Rx-diversity.  
2. \* : Under development.  
3. ● : Supported.

# Quectel EC25 Series Mini PCIe

LTE Cat 4	EC25-E Mini PCIe	EC25-EU Mini PCIe	EC25-EUX Mini PCIe	EC25-EM Mini PCIe
<b>Region/Operator</b>	EMEA/ South Korea/ Thailand/ India	EMEA/Thailand	EMEA/Thailand	EMEA/Southeast Asia
<b>Dimensions (mm)</b>	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9	30.0 × 51.0 × 4.9
<b>Temperature Range</b>				
<b>Operating Temperature</b>	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C	-35 °C to +75 °C
<b>Extended Temperature</b>	-40 °C to +80 °C	-40 °C to +80 °C	-40 °C to +80 °C	-40 °C to +80 °C
<b>Frequency Bands</b>				
<b>LTE-FDD</b>	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
<b>LTE-TDD</b>	B38/40/41	B38/40/41	B38/40/41	B38/40/41
<b>WCDMA</b>	B1/5/8	B1/8	B1/8	B1/5/8
<b>GSM/EDGE</b>	B3/8	B3/8	B3/8	B3/8
<b>GNSS (Optional)</b>	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS	GPS/GLONASS/BDS/Galileo/QZSS
<b>Certifications</b>				
<b>Carrier</b>	Europe: Vodafone/Deutsche Telekom/ British Telecom/Telefónica South Korea: SKT/KT*/LGU+*	Europe: Deutsche Telekom/ British Telecom	-	-
<b>Regulatory</b>	Global: GCF Europe: CE South Korea: KC Taiwan, China: NCC Australia/New Zealand: RCM Thailand: NBTC South Africa: ICASA	Global: GCF Europe: CE Taiwan, China: NCC Australia/New Zealand: RCM	Global: GCF Europe: CE Taiwan, China: NCC Australia/New Zealand: RCM	Europe: CE* Australia/New Zealand: RCM*
<b>Others</b>	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL	RoHS/WHQL
<b>Max. Data Transmission Rates</b>				
<b>LTE-FDD (Mbps)</b>	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)	150 (DL)/50 (UL)
<b>LTE-TDD (Mbps)</b>	130 (DL)/30 (UL)	130 (DL)/30 (UL)	130 (DL)/30 (UL)	130 (DL)/30 (UL)
<b>DC-HSPA+ (Mbps)</b>	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)	42 (DL)/5.76 (UL)
<b>WCDMA (kbps)</b>	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)	384 (DL)/384 (UL)
<b>EDGE (kbps)</b>	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)	296 (DL)/236.8 (UL)
<b>GPRS (kbps)</b>	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)	107 (DL)/85.6 (UL)
<b>Interfaces</b>				
<b>(U)SIM</b>	× 1	× 1	× 1	× 1
<b>USB 2.0</b>	× 1	× 1	× 1	× 1
<b>Digital Audio (PCM)</b>	× 1	× 1	× 1	× 1
<b>I2C</b>	× 1	× 1	× 1	× 1
<b>LED_WWAN#</b>	× 1	× 1	× 1	× 1
<b>W_DISABLE#</b>	× 1	× 1	× 1	× 1
<b>UART</b>	× 1	× 1	× 1	× 1
<b>PERST#</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 (Optional)</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>Enhanced Features</b>				
<b>DTMF</b>	●	●	●	●
<b>DFOTA</b>	●	●	●	●
<b>QMI/ RmNet</b>	●	●	●	●
<b>Audio Playback*/Audio Recording*</b>	Optional	Optional	Optional	Optional
<b>QuecLocator®</b>	●	●	●	●
<b>QuecFile®</b>	●	●	●	●
<b>(U)SIM Card Detection</b>	●	●	●	●
<b>Drivers</b>				
<b>USB Serial Driver</b>	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x	Windows 7/8/8.1/10/11, Linux 2.6–5.18, Android 4.x–12.x
<b>GNSS Driver</b>	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x
<b>RIL Driver</b>	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x	Android 4.x–12.x
<b>USB NDIS Driver</b>	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11	Windows 7/8/8.1/10/11
<b>USB MBIM Driver</b>	Windows 8/8.1/10/11, Linux 3.18–5.18	Windows 8/8.1/10/11, Linux 3.18–5.18	-	-
<b>USB GobiNet Driver</b>	Linux 2.6–5.18	Linux 2.6–5.18	Linux 2.6–5.18	Linux 2.6–5.18
<b>USB QMI_WWAN Driver</b>	Linux 3.4–5.18	Linux 3.4–5.18	Linux 3.4–5.18	Linux 3.4–5.18
<b>Electrical Features</b>				
<b>Supply Voltage Range</b>	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.	3.0–3.6 V, 3.3 V Typ.
<b>Power Consumption (Typ.)</b>	3.9 mA @ Sleep 30 mA @ Idle	3.4 mA @ Sleep 23.3 mA @ Idle	1.69 mA @ Sleep 18.51 mA @ Idle	2.3 mA @ Sleep 29.65 mA @ Idle

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