

An aerial night view of a city with a network overlay. The city is illuminated with blue and white lights, and a network of glowing blue nodes and lines is superimposed over the scene, representing a communication network. The background is dark, and the city lights create a vibrant, futuristic atmosphere.

QUECTEL

Quectel EM060K Series LTE-A Module

Introduction

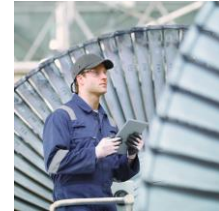
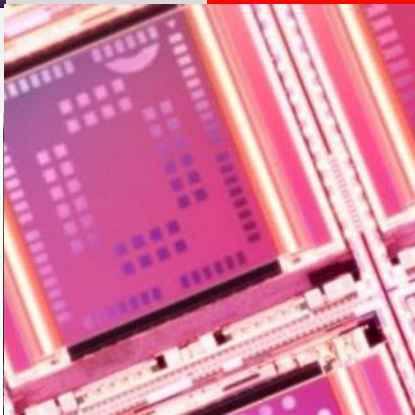
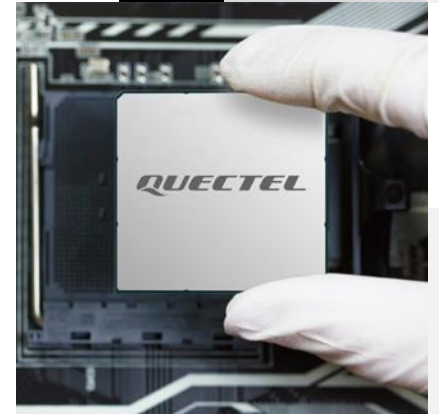
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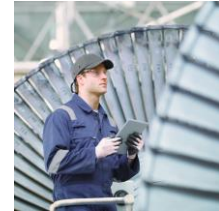
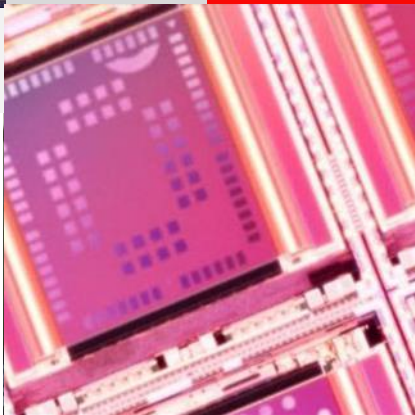
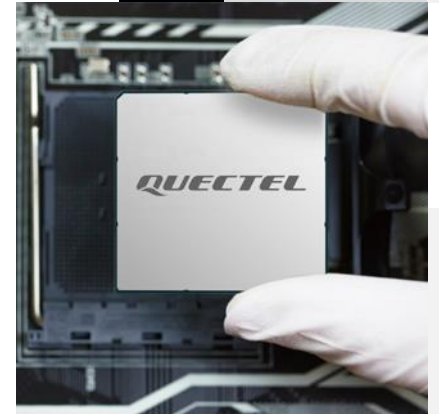
Overview

Specification & Timeline

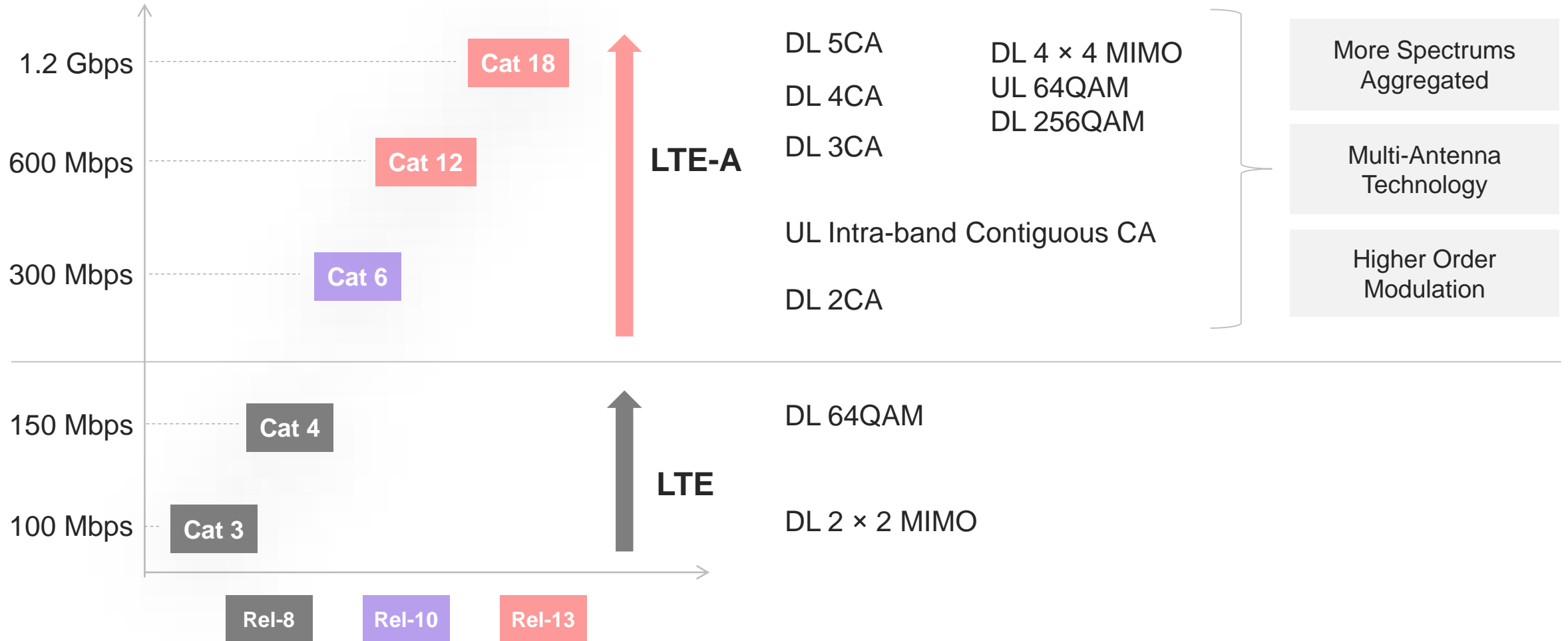
Software & Support

Typical Applications

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LTE-A Key Technology


















CA: Carrier Aggregation

Version: 1.1 | Status: Released

LTE-A Module Overview

















<p>Cat 16/ 18</p>	<p>EG18</p>  <ul style="list-style-type: none"> • SDX20 • Rel-12 	<p>EM160R</p>  <ul style="list-style-type: none"> • SDX24 • Rel-14 	
<p>Cat 12</p>	<p>EG12</p>  <p>EM12</p>  <ul style="list-style-type: none"> • SDX20 • Rel-12 	<p>EG512R</p>  <p>EM12xR</p>  <ul style="list-style-type: none"> • SDX24 • Rel-14 	<p>EG120K</p>  <p>EM120K</p>  <ul style="list-style-type: none"> • SDX12 • Rel-12 <p>NEW</p>
<p>Cat 6</p>	<p>EG06</p>  <p>EP06</p>  <p>EM06</p>  <ul style="list-style-type: none"> • MDM9x40 • Rel-11 	<p>EG060V</p>  <ul style="list-style-type: none"> • ASR1826 • Rel-9 	<p>EG060K</p>  <p>EG065K</p>  <p>EM060K</p>  <ul style="list-style-type: none"> • SDX12 • Rel-12 <p>NEW</p>

LTE-A Module Portfolio



LTE-Advanced

		LTE-Advanced			
		LGA, 42 × 38 mm	LGA, 39.5 × 37 mm		M.2, 30 × 42 mm
Cat 12/ 16/ 18			 EG18 (SDX20) • EA (EMEA/ APAC ^① / Brazil) • NA (North America)	 EM120R/EM121R/EM160R (SDX24) • GL (Global)	
	 EG512R (SDX24) • EA (EMEA/ APAC ^① / Brazil)	 EG12 (SDX20) • GT (Global TDD 3.5 GHz) • EA (EMEA/ APAC ^① / Brazil)	 EM12 (SDX20) • G (Global)		
		 EG120K (SDX12) • EA (EMEA/ APAC ^① / Brazil) • NA (North America) • LA (LATAM excl. Brazil)	 EM120K (SDX12) • GL (Global)		
Cat 6	LGA, 31 × 28 mm	 EG065K (SDX12) • EA (EMEA/ APAC ^① / LATAM) • NA (North America)	 EG060K (SDX12) • EA (EMEA/ APAC ^① / Brazil) • GT (Global TDD 3.5 GHz) • NA (North America) • LA (LATAM excl. Brazil)	 EM060K (SDX12) • GL (Global) • NA ^{ES} (North America)	
	Mini PCIe, 30 × 51 mm	 EP06 (MDM9X40) • E (EMEA/ APAC ^① / Brazil) • A (North America)	 EG06 (MDM9X40) • E (EMEA/ APAC ^① / Brazil) • EA (EMEA/ APAC ^① / Brazil) • A (North America)	 EM06 (MDM9X40) • E (EMEA/ APAC ^① / Brazil) • A (North America) • J (Japan)	
		 EG060V (ASR1826) • EA (EMEA/ APAC ^① / Brazil)			

ES: Engineering Sample. * : Under development. ①: Excl. China/Japan



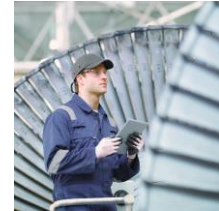
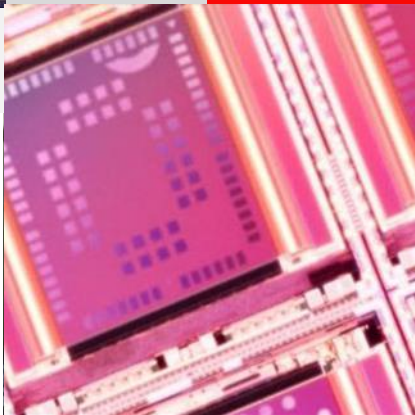
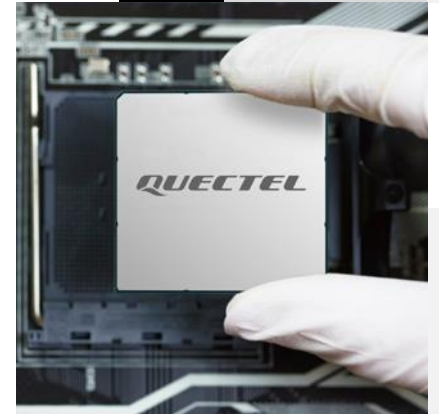
Overview

Specification & Timeline

Software & Support

Typical Applications

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EM060K Series Specifications

30.0 mm × 42.0 mm × 2.3 mm
LTE Cat 6 M.2 Module, 300M DL/ 50M UL



Variant		EM060K-GL	EM060K-NA
Region		Global	North America
LTE Category		6	6
Platform		SDX12	SDX12
3GPP Release		Release 12	Release 12
LTE	LTE-FDD Band	B1/ 2/ 3/ 4/ 5/ 7/ 8/ 12/ 13/ 14/ 17 ^① / 18/ 19/ 20/ 25/ 26/ 28/ 29 ^② / 30/ 32 ^② / 66/ 71	B2/ 4/ 5/ 7/ 12/ 13/ 14/ 17/ 25/ 26/ 29/ 30/ 66/ 71
	LTE-TDD Band	B34/ 38/ 39/ 40/ 41/ 42/ 43/ 46 ^② (LAA)/ 48 (CBRS)	B41/ 48
	2CA	Intra-band and Inter-band	Intra-band and Inter-band
	DL 64QAM/ UL 16QAM	Supported	Supported
UMTS	WCDMA Band	B1/ 2/ 3/ 4/ 5/ 6/ 8/ 19	-
Embedded GNSS		Supported	Supported
eSIM		Optional	Optional
USB 2.0/ 3.0 Interface		Supported	Supported
PCIe Interface		Optional (RC Mode)*	Optional (RC Mode)*
Certification	Carrier	Verizon*/ AT&T*/ T-Mobile*/ NTT DOCOMO ^③ / KDDI ^③	TBD
	Regulatory	GCF/ PTCRB/ NCC/ CE/ RCM/ FCC/ IC/ JATE*/ TELEC*	GCF*/ PTCRB*/ FCC/ IC*
	Others	WHQL	TBD
Product Status		CS	CS

①: 17 is supported through MFBI + B12.

②: LTE-FDD B29/ B32 and LTE-TDD B46 support Rx only and are only for secondary component carrier.

③: TBD.

* : Under development/ In progress.

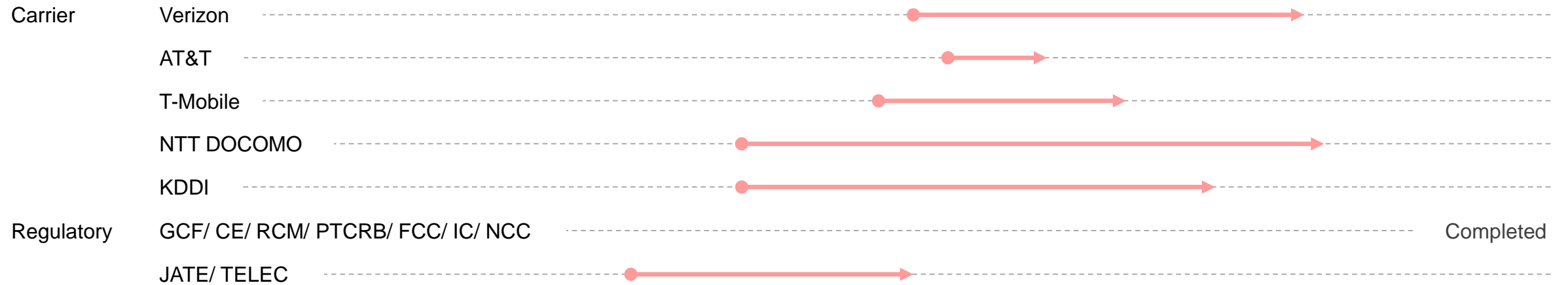
EM060K Series Timeline



2022						2023								
Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.

EM060K-GL

Certification



EM060K-NA

Certification





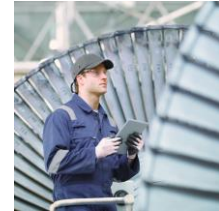
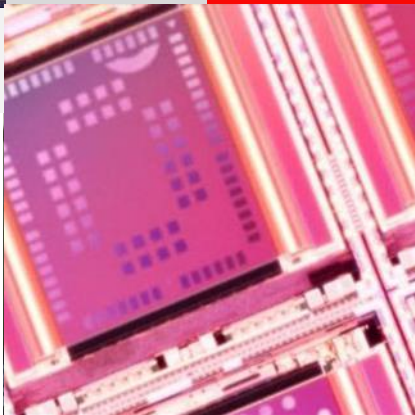
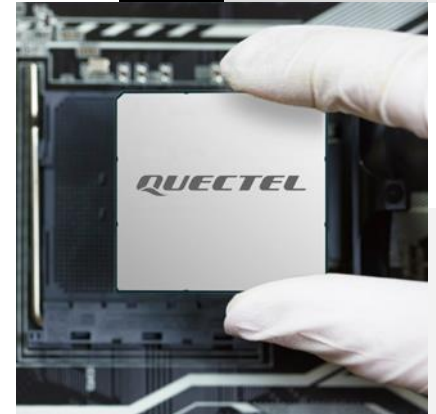
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Specification & Timeline

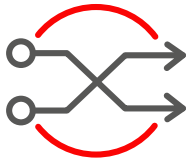
Software & Support

Typical Applications

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Software Advantages



USB Serial Drivers

Windows 7/8/8.1/10/11
WinCE 5.0/6.0/7.0*
Linux 2.6–5.18
Android 4.x–12.x

Quality Guarantee

Reliable network protocols
Steady flash protection mechanism
Superior audio algorithms



RIL/ NDIS/ MBIM/ GobiNet/ QMI_WWAN Drivers

RIL Driver: Android 4.x–12.x
NDIS Driver: Windows 7/8/8.1/10/11
MBIM Driver: Windows 8/8.1/10/11,
Linux 3.18–5.18
GobiNet Driver: Linux 2.6–5.18
QMI_WWAN Driver: Linux 3.4–5.18



Special Features

DTMF: Dual-tone Multi-frequency
DFOTA: Delta Firmware Upgrade
Over-the-Air

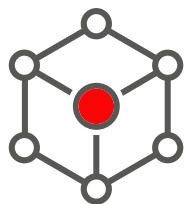


Flexible Applications

Digital Audio and VoLTE
(U)SIM Card Detection

Abundant Protocols

QMI/MBIM/NITZ/HTTP/HTTPS/FTP/
LwM2M*/PING*

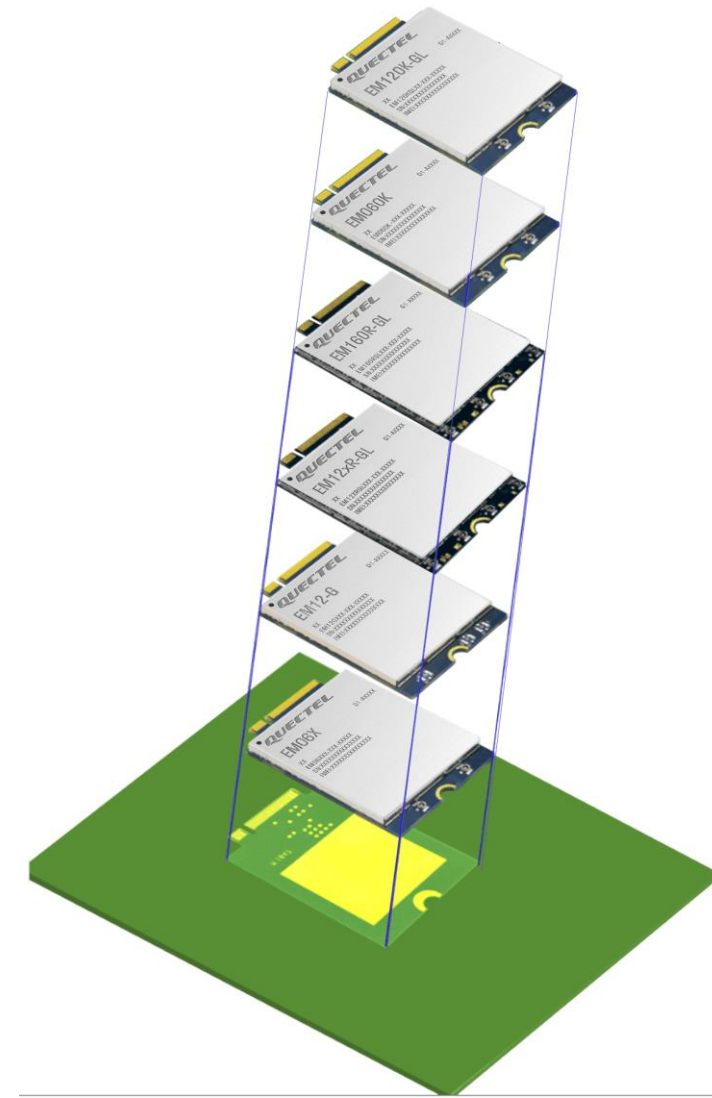


EM060K-GL Compatibility



Quectel EM060K-GL is compatible with the following modules:

- Quectel Cat 6 module: EM06 Series
- Quectel Cat 12 module: EM12-G/ EM120K-GL/ EM121R-GL/ EM120R-GL
- Quectel Cat 16 module: EM160R-GL



NOTE: 1. The compatibility diagram shown above is for illustration purpose only.
2. The actual label design of the modules may be different.



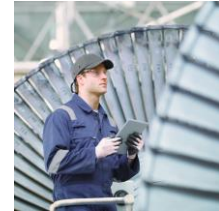
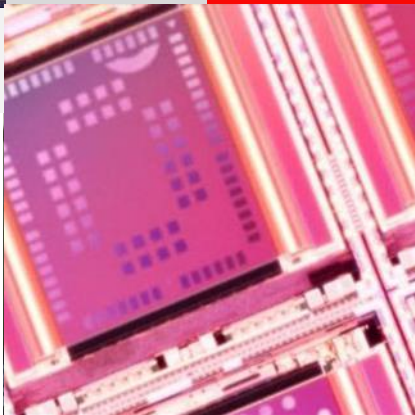
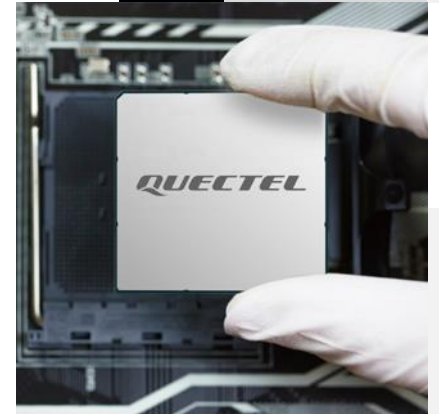
Overview

Specification & Timeline

Software & Support

Typical Applications

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Typical Applications – Fixed Wireless Access



Fixed Wireless Access

- Home Gateway
- Industrial Router
- CPE
- DTU
- Enterprise Gateway
- Mobile Hotspot

Typical Applications – Mobile Broadband Devices



Mobile Broadband Devices

- Consumer Laptop
- Industrial Tablet
- High-Definition Live Broadcast
- AR/VR
- Drone

Typical Applications – Industrial Automation



Industrial Automation

- Automated Guided Vehicle
- Remote Control
- Smart Grid
- Smart Mine
- Robot



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Thank You

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