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INVENTING A SMART FUTURE



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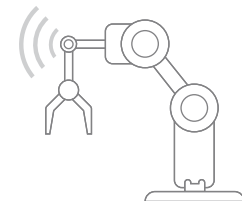
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PRODUCT PORTFOLIO BROCHURE

LTE-A



Smart Industry



4G

Wireless
Gateway

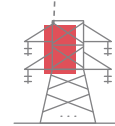
Smart Life

C-V2X
Automotive Electronics



5G

LPWA



Smart Energy

2G
Security Monitoring



Smart
Smart Payment



3G



Smart Agriculture

GNSS

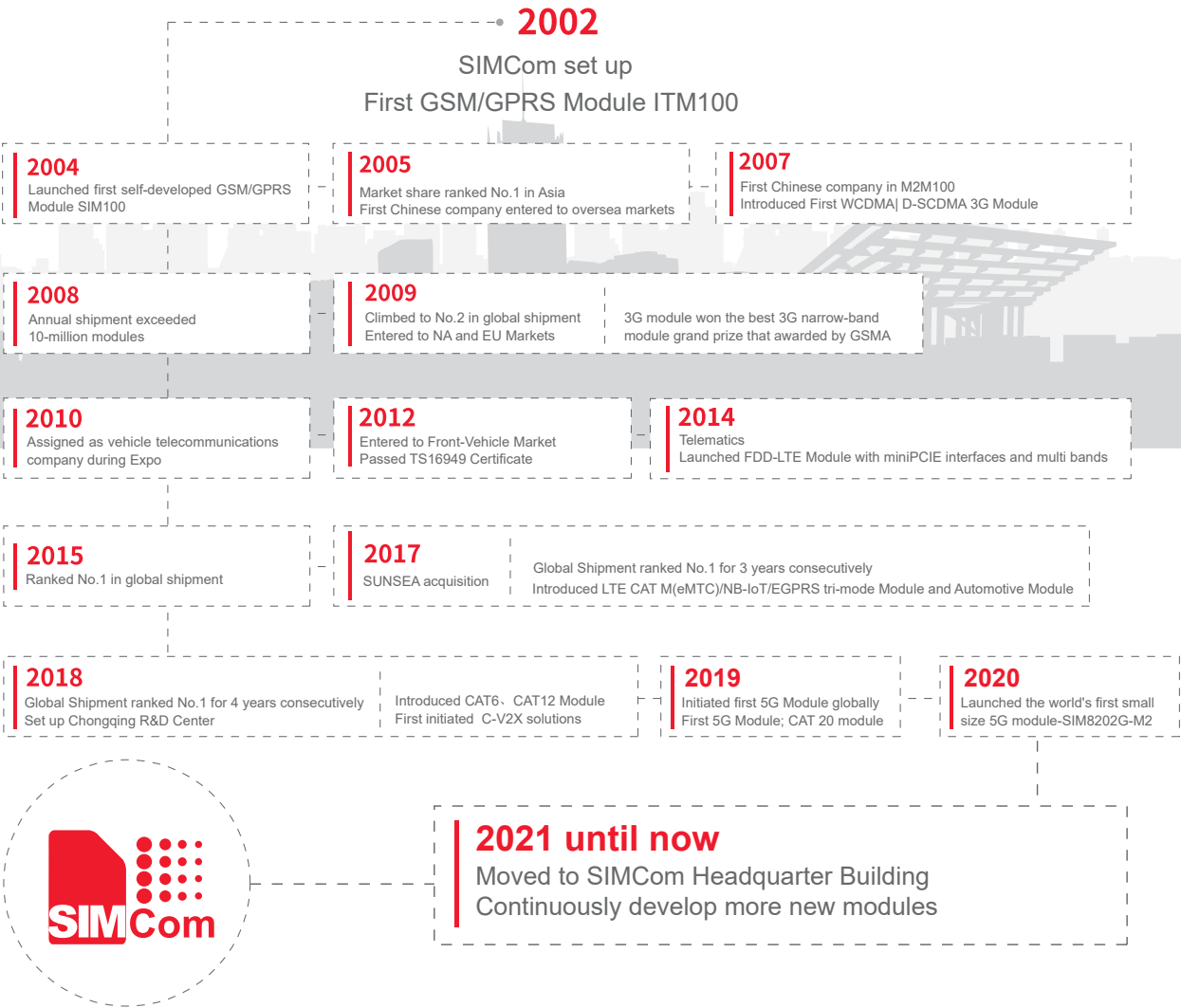


Urban Refined Management

About SIMCom

SIMCom Wireless Solutions Limited is a global leading IoT wireless modules and solutions supplier. Since established in 2002, SIMCom has been fully committed to providing a variety of wireless modules and terminal level solutions worldwide, such as 5G, 4G, LTE-A, LTE-M(CAT-M1), NB-IoT, 3G, 2G, and GPS/GLONASS/BEIDOU satellite positioning technology.

SIMCom insists on providing high-quality modules and industry solutions. With 22 years of professional technical innovation and service experiences, it continuously meets the needs of customers in all industries of the Internet of Things. While deepening the vertical industry, we continue to define advantageous products and build core competitiveness. With the Group's continuous investment in research and development, technology and production, we will continue to innovate and enrich our technology roadmap, and promote the development of the industry in the next few years.



5G Module

Technology		3GPP R17		
Product		SIM8270E	SIM8270NA	SIM8270SA
Picture				
Form Factor		LGA	LGA	LGA
Dimensions(mm)		46.0*53.0*3.0	46.0*53.0*3.0	46.0*53.0*3.0
Weight(g)		TBD	TBD	TBD
Mode		NSA/SA	NSA/SA	NSA/SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5/n7/n8/n20/n26*/n28/n38/n40/n41/n75/n76/n77/n78	n2/n5/n7/n12/n13/n14/n25/n26/n29/n30/n38/n41/n48/n66/n70/n71/n77/n78	n2/n4/n5/n7/n8/n28/n38/n40/n41*/n66/n71/n77*/n78
	5G NR (mmWave)			
	LTE-FDD	B1/B3/B5/B7/B8/B18*/B19*/B20/B26*/B28/B32	B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B29/B30/B66/B71	B2/B4/B5/B7/B8/B18*/B19*/B25/B26/B28/B66/B71
	LTE-TDD	B38/B40/B41/B42/B43/B46*	B38/B41/B42/B43/B46/B48	B38/B40/B41*/B42/B43/B48*
	WCDMA	B1/B5/B8	B2*/B4*/B5*	B1/B2/B4/B5
GNSS		GPS/GLONASS/Beidou/Galileo/QZSS	GPS/GLONASS/Beidou/Galileo/QZSS	GPS/GLONASS/Beidou/Galileo/QZSS
Temperature		-30℃ ~ +70℃ (Extended temprature:-40℃ ~ +85℃)	-30℃ ~ +70℃ (Extended temprature:-40℃ ~ +85℃)	-30℃ ~ +70℃ (Extended temprature:-40℃ ~ +85℃)
Electrical Features				
Supply Voltge Range		3.3~4.4V	3.3~4.4V	3.3~4.4V
Power Consumption (sleep)(mA)		TBD	TBD	TBD
Data Transfer				
mmWave				
Sub-6G		SA:5.3Gbps(DL)/1Gbps(UL) NSA:5Gbps(DL)/600Mbps(UL)	SA:5.3Gbps(DL)/1Gbps(UL) NSA:5Gbps(DL)/600Mbps(UL)	SA:5.3Gbps(DL)/1Gbps(UL) NSA:5Gbps(DL)/600Mbps(UL)
LTE		2Gbps(DL)/200Mbps(UL)	2Gbps(DL)/200Mbps(UL)	2Gbps(DL)/200Mbps(UL)
Software Features				
Protocol		TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTT/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTT/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTT/DNS
TLS		SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)
FOTA		●	●	●
VoLTE/CSFB/VoNR*		●	●	●
Android RIL		Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/Linux /Android	Microsoft Windows Win7/Win8/Win10/Linux /Android	Microsoft Windows Win7/Win8/Win10/Linux /Android
RNDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
MBIM		Win8/Win10	Win8/Win10	Win8/Win10
Firmware Upgrade		USB/FOTA	USB/FOTA	USB/FOTA
Interface				
USB		3.1 (2.0)	3.1 (2.0)	3.1 (2.0)
UART		●	●	●
(U)SIM Card		1.8V/2.95V	1.8V/2.95V	1.8V/2.95V
PCM		●	●	●
GPIO		●	●	●
I2C		●	●	●
PCIe		*3	*3	*3
SPI				
RGMII		UXGMII*2	UXGMII*2	UXGMII*2
SDIO3.0				
PMI				
ADC				
Antenna		4 or 8(8RX)	4 or 8(8RX)	4 or 8(8RX)
Certification				
Certification		RoHS*/REACH*/CE*/GCF*	RoHS*/REACH*/FCC*/PTCRB*	RoHS*/REACH*
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAV		

o : Optional * : Under Developing/On-going/Planning

| 5G Module

Technology		RedCap		
Product		SIM8230C	SIM8230E	SIM8230G
Picture				
Form Factor		LGA+LCC	LGA+LCC	LGA+LCC
Dimensions(mm)		30.0*30.0*2.5	30.0*30.0*2.5	30.0*30.0*2.5
Weight(g)		TBD	TBD	TBD
Mode		SA	SA	SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5/n8/n28/n40/n41/n78/n79	n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n77/n78	n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n30/n38/n40/n41/n48/n66/n70/n71/n77/n78
	5G NR (mmWave)			
	LTE-FDD	B1/B3/B5/B8	B1/B3/B5/B7/B8/B20/B28	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B30/B66/B71
	LTE-TDD	B34/B38/B39/B40/B41	B40/B41/B42/B43	B34/B38/B39/B40/B41/B42/B43/B48
	WCDMA			
GNSS		GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou
Temperature		-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃
Electrical Features				
Supply Voltge Range		3.3~4.4V	3.3~4.4V	3.3~4.4V
Power Consumption (sleep)(mA)		TBD	TBD	TBD
Data Transfer				
mmWave				
Sub-6G		Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)
LTE		150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)
Software Features				
Protocol		TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)
FOTA		●	●	●
VoLTE/CSFB/VoNR*		●	●	●
Android RIL		Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/ Linux /Android	Microsoft Windows Win7/Win8/Win10/ Linux /Android	Microsoft Windows Win7/Win8/Win10/ Linux /Android
RNDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
MBIM		Win8/Win10	Win8/Win10	Win8/Win10
Firmware Upgrade		USB/FOTA	USB/FOTA	USB/FOTA
Interface				
USB		3.1 (2.0)	3.1 (2.0)	3.1 (2.0)
UART		●	●	●
(U)SIM Card		1.8V/2.95V	1.8V/2.95V	1.8V/2.95V
PCM		●	●	●
GPIO		●	●	●
I2C		●	●	●
PCIe		●	●	●
SPI				
RGMII				
SDIO3.0				
PMI				
ADC				
Antenna		2+1	2+1	2+1
Certification				
Certification		RoHS*/REACH*	RoHS*/REACH*/CE*/GCF*	RoHS*/REACH*/CE*/FCC*/GCF*/PTCRB*
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAV		

o : Optional * : Under Developing/On-going/Planning

| 5G Module

Technology		RedCap		
Product		SIM8230JP	SIM8230NA	SIM8230SA
Picture				
Form Factor		LGA+LCC	LGA+LCC	LGA+LCC
Dimensions(mm)		30.0*30.0*2.5	30.0*30.0*2.5	30.0*30.0*2.5
Weight(g)		TBD	TBD	TBD
Mode		SA	SA	SA
Frequency Bands	5G NR (Sub6G)	n3/n28/n41/n77/n78/n79	n2/n5/n7/n12/n13/n14/n25/n26/n30/n38/n41/n48/n66/n70/n71/n77/n78	n2/n5/n7/n8/n28/n38/n40/n66/n71/n78
	5G NR (mmWave)			
	LTE-FDD	B1/B3/B5/B8/B18/B19/B26/B28	B2/B4/B5/B7/B12/B13/B14/B17/B25/B26 /B30/B66/B71	B2/B4/B5/B7/B8/B26/B28/B66
	LTE-TDD	B41/B42	B38/B41/B42/B43/B48	B38/B40/B42/B43
	WCDMA			
GNSS		GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou
Temperature		-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃
Electrical Features				
Supply Voltge Range		3.3~4.4V	3.3~4.4V	3.3~4.4V
Power Consumption (sleep)(mA)		TBD	TBD	TBD
Data Transfer				
mmWave				
Sub-6G		Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)
LTE		150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)
Software Features				
Protocol		TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)
FOTA		●	●	●
VoLTE/CSFB/VoNR*		●	●	●
Android RIL		Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/ Linux /Android	Microsoft Windows Win7/Win8/Win10/ Linux /Android	Microsoft Windows Win7/Win8/Win10/ Linux /Android
RNDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
MBIM		Win8/Win10	Win8/Win10	Win8/Win10
Firmware Upgrade		USB/FOTA	USB/FOTA	USB/FOTA
Interface				
USB		3.1 (2.0)	3.1 (2.0)	3.1 (2.0)
UART		●	●	●
(U)SIM Card		1.8V/2.95V	1.8V/2.95V	1.8V/2.95V
PCM		●	●	●
GPIO		●	●	●
I2C		●	●	●
PCIe		●	●	●
SPI				
RGMII				
SDIO3.0				
PMI				
ADC				
Antenna		2+1	2+1	2+1
Certification				
Certification		RoHS*/REACH*	RoHS*/REACH*/FCC*/PTCRB*	RoHS*/REACH*
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAV		

o : Optional * : Under Developing/On-going/Planning

| 5G Module

Technology		RedCap			
Product		SIM8230C-M2	SIM8230E-M2	SIM8230G-M2	SIM8230JP-M2
Picture					
Form Factor		M2	M2	M2	M2
Dimensions(mm)		42.0*31.4*3.4	42.0*31.4*3.4	42.0*31.4*3.4	42.0*31.4*3.4
Weight(g)		TBD	TBD	TBD	TBD
Mode		SA	SA	SA	SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5/n8/n28/n40/n41/n78/n79	n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n77/n78	n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n30/n38/n40/n41/n48/n66/n70/n71/n77/n78	n3/n28/n41/n77/n78/n79
	5G NR (mmWave)				
	LTE-FDD	B1/B3/B5/B8	B1/B3/B5/B7/B8/B20/B28	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B30/B66/B71	B1/B3/B5/B8/B18/B19/B26/B28
	LTE-TDD	B34/B38/B39/B40/B41	B40/B41/B42/B43	B34/B38/B39/B40/B41/B42/B43/B48	B41/B42
	WCDMA				
GNSS		GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou
Temperature		-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃
Electrical Features					
Supply Voltge Range		3.3~4.4V	3.3~4.4V	3.3~4.4V	3.3~4.4V
Power Consumption (sleep)(mA)		TBD	TBD	TBD	TBD
Data Transfer					
mmWave					
Sub-6G		Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)
LTE		150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)
Software Features					
Protocol		TCP/IP/IPV4/IPV6/Multi - PDP/ FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/ FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/ FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/ FTPS /HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)
FOTA		●	●	●	●
VoLTE/CSFB/VoNR*		●	●	●	●
Android RIL		Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/ Win10/ Linux /Android	Microsoft Windows Win7/Win8/ Win10/ Linux /Android	Microsoft Windows Win7/Win8/ Win10/ Linux /Android	Microsoft Windows Win7/Win8/ Win10/ Linux /Android
RNDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
MBIM		Win8/Win10	Win8/Win10	Win8/Win10	Win8/Win10
Firmware Upgrade		USB/FOTA	USB/FOTA	USB/FOTA	USB/FOTA
Interface					
USB		3.1 (2.0)	3.1 (2.0)	3.1 (2.0)	3.1 (2.0)
UART		●	●	●	●
(U)SIM Card		1.8V/2.95V	1.8V/2.95V	1.8V/2.95V	1.8V/2.95V
PCM		●	●	●	●
GPIO		●	●	●	●
I2C		●	●	●	●
PCIe		●	●	●	●
SPI					
RGMII					
SDIO3.0					
PMI					
ADC					
Antenna		2+1	2+1	2+1	2+1
Certification					
Certification		RoHS*/REACH*	RoHS*/REACH*/CE*/GCF*	RoHS*/REACH*/CE*/FCC*/GCF*/PTCRB*	RoHS*/REACH*
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAV			

o : Optional * : Under Developing/On-going/Planning

| 5G Module

Technology		RedCap			
Product		SIM8230C-PCIE	SIM8230E-PCIE	SIM8230G-PCIE	SIM8230JP-PCIE
Picture					
Form Factor		PCIE	PCIE	PCIE	PCIE
Dimensions(mm)		50.8*31.0*3.6	50.8*31.0*3.6	50.8*31.0*3.6	50.8*31.0*3.6
Weight(g)		TBD	TBD	TBD	TBD
Mode		SA	SA	SA	SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5/n8/n28/n40/n41/n78/n79	n1/n3/n5/n7/n8/n20/n28/n38/n40/n41/n77/n78	n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n30/n38/n40/n41/n48/n66/n70/n71/n77/n78	n3/n28/n41/n77/n78/n79
	5G NR (mmWave)				
	LTE-FDD	B1/B3/B5/B8	B1/B3/B5/B7/B8/B20/B28	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B30/B66/B71	B1/B3/B5/B8/B18/B19/B26/B28
	LTE-TDD	B34/B38/B39/B40/B41	B40/B41/B42/B43	B34/B38/B39/B40/B41/B42/B43/B48	B41/B42
	WCDMA				
GNSS		GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou	GPS/GLONASS/BeiDou
Temperature		-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃
Electrical Features					
Supply Voltge Range		3.0 ~ 3.6,type 3.3(With DC-DC Boost Function) 3.3 ~ 4.4,type 3.8(Without DC-DC Boost Function)	3.0 ~ 3.6,type 3.3(With DC-DC Boost Function) 3.3 ~ 4.4,type 3.8(Without DC-DC Boost Function)	3.0 ~ 3.6,type 3.3(With DC-DC Boost Function) 3.3 ~ 4.4,type 3.8(Without DC-DC Boost Function)	3.0 ~ 3.6,type 3.3(With DC-DC Boost Function) 3.3 ~ 4.4,type 3.8(Without DC-DC Boost Function)
Power Consumption (sleep)(mA)		TBD	TBD	TBD	TBD
Data Transfer					
mmWave					
Sub-6G		Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)	Up to 220Mbps(DL)/100Mbps(UL)
LTE		150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)	150Mbps(DL)/50Mbps(UL)
Software Features					
Protocol		TCP/IP/IPV4/IPV6/Multi - PDP/ FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/ FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/ FTPS /HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi - PDP/ FTPS /HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)
FOTA		●	●	●	●
VoLTE/CSFB/VoNR*		●	●	●	●
Android RIL		Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/ Win10/ Linux /Android	Microsoft Windows Win7/Win8/ Win10/ Linux /Android	Microsoft Windows Win7/Win8/ Win10/ Linux /Android	Microsoft Windows Win7/Win8/ Win10/ Linux /Android
RNDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
MBIM		Win8/Win10	Win8/Win10	Win8/Win10	Win8/Win10
Firmware Upgrade		USB/FOTA	USB/FOTA	USB/FOTA	USB/FOTA
Interface					
USB		3.1 (2.0)	3.1 (2.0)	3.1 (2.0)	3.1 (2.0)
UART		●	●	●	●
(U)SIM Card		1.8V/2.95V	1.8V/2.95V	1.8V/2.95V	1.8V/2.95V
PCM		●	●	●	●
GPIO		●	●	●	●
I2C		●	●	●	●
PCIe		●	●	●	●
SPI					
RGMII					
SDIO3.0					
PMI					
ADC					
Antenna		2+1	2+1	2+1	2+1
Certification					
Certification		RoHS*/REACH*	RoHS*/REACH*/CE*/GCF*	RoHS*/REACH*/CE*/FCC*/GCF*/PTCRB*	RoHS*/REACH*
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAV			

o : Optional * : Under Developing/On-going/Planning

5G Module

Technology		3GPP R16		
Product		SIM8260E	SIM8260A	SIM8260C
Picture				
Form Factor		LGA	LGA	LGA
Dimensions(mm)		41.0*43.6*2.8	41.0*43.6*2.8	41.0*43.6*2.8
Weight(g)		11.17±0.1	11.17±0.1	11.17±0.1
Mode		NSA/SA	NSA/SA	NSA/SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5/n7/n8/n20/n26/n28/n38/n40/n41/n48/n77/n78/n79	n1/n2/n5/n7/n12/n13/n14/n25/n26/n29/n30/n38/n41/n48/n66/n71/n77/n78/n79	n1/n3/n5*/n7*/n8*/n20*/n28/n38*/n40*/n41/n48*/n77*/n78/n79
	5G NR (mmWave)			
	LTE-FDD	B1/B3/B5/B7/B8/B18/B19/B20/B26/B28/B32	B1/B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B29/B30/B66/B71	B1/B3/B5/B7/B8/B20/B28
	LTE-TDD	B38/B39/B40/B41/B42/B43/B46*/B48	B38/B41/B42/B43/B46*/B48	B34/B38/B39/B40/B41/B42*/B43*/B48*
	WCDMA	B1/B5/B8	B1/B2/B4/B5	B1/B3*/B5/B8
GNSS		GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)	GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)	GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)
Temperature		-30°C ~ +70°C (Extended temprature:-40°C ~ +85°C)	-30°C ~ +70°C (Extended temprature:-40°C ~ +85°C)	-30°C ~ +70°C (Extended temprature:-40°C ~ +85°C)
Electrical Features				
Supply Voltge Range		3.3 ~ 4.4V	3.3 ~ 4.4V	3.3 ~ 4.4V
Power Consumption (sleep)(mA)		TBD	TBD	TBD
Data Transfer				
mmWave				
Sub-6G		2.4Gbps(DL)/1Gbps(UL)	2.4Gbps(DL)/1Gbps(UL)	2.1Gbps(DL)/900Mbps(UL)
LTE		1.6Gbps(DL)/200Mbps(UL)	1.6Gbps(DL)/200Mbps(UL)	1Gbps(DL)/200Mbps(UL)
Software Features				
Protocol		TCP/IP/IPV4/IPV6/Multi-PDP/FTPS/HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTPS/HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Mult-PDP/FTPS/HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)
FOTA		●	●	●
VoLTE/CSFB/VoNR*		●	●	●
Android RIL		Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/Linux/Android	Microsoft Windows Win7/Win8/Win10/Linux/Android	Microsoft Windows Win7/Win8/Win10/Linux/Android
RNDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
MBIM		Win8/Win10	Win8/Win10	Win8/Win10
Firmware Upgrade		USB/FOTA	USB/FOTA	USB/FOTA
Interface				
USB		3.1 (2.0)	3.1 (2.0)	3.1 (2.0)
UART		●	●	●
(U)SIM Card		1.8V/2.95V	1.8V/2.95V	1.8V/2.95V
PCM		●	●	●
GPIO		●	●	●
I2C		●	●	●
PCIe		●	●	●
SPI				
RGMII				
SDIO3.0				
PMI				
ADC				
Antenna		4	4	4
Certification				
Certification		CE(RED)/GCF/RoHS/REACH/TELEC/JATE/Deutsche Telekom/Orange*	PTCRB/GCF/IC/FCC/RoHS/REACH/T-Mobile/Verizon*	CCC/SRRC/CTA
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAV		

o : Optional * : Under Developing/On-going/Planning

5G Module

Technology		3GPP R16		
Product		SIM8260E-M2 V2.01	SIM8260A-M2 V2.01	SIM8260G-M2 V2.01
Picture				
Form Factor		M.2	M.2	M.2
Dimensions(mm)		30.0*52.0*2.3	30.0*52.0*2.3	30.0*52.0*2.3
Weight(g)		8.3g±0.1g	8.3g±0.1g	8.3g±0.1g
Mode		NSA/SA	NSA/SA	NSA/SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5/n7/n8/n20/n26/n28/n38/n40/n41/n48/n75/n76/n77/n78	n2/n5/n7/n12/n13/n14/n25/n26/n29/n30/n38/n41/n48/n66/n70/n71/n77/n78	n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n75/n76/n77/n78/n79
	5G NR (mmWave)			
	LTE-FDD	B1/B3/B5/B7/B8/B18/B19/B20/B26/B28/B32	B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B29/B30/B66/B71	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71
	LTE-TDD	B38/B40/B41/B42/B43/B48	B38/B41/B42/B43/B46/B48	B34/B38/B39/B40/B41/B42/B43/B46/B48
	WCDMA	B1/B5/B8	B2/B4/B5	B1/B2/B4/B5/B8/B19
GNSS		GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)	GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)	GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)
Temperature		-30°C ~ +70°C (Extended temprature:-40°C ~ +85°C)	-30°C ~ +70°C (Extended temprature:-40°C ~ +85°C)	-30°C ~ +70°C (Extended temprature:-40°C ~ +85°C)
Electrical Features				
Supply Voltge Range		3.135 ~ 4.4V	3.135 ~ 4.4V	3.135 ~ 4.4V
Power Consumption (sleep)(mA)		TBD	TBD	TBD
Data Transfer				
mmWave				
Sub-6G		SA 2.4Gbps(DL)/0.9Gbps(UL) NSA 3.4Gbps(DL)/550Mbps(UL)	SA 2.4Gbps(DL)/0.9Gbps(UL) NSA 3.4Gbps(DL)/550Mbps(UL)	SA 2.4Gbps(DL)/0.9Gbps(UL) NSA 3.4Gbps(DL)/550Mbps(UL)
LTE		1.6Gbps(DL)/200Mbps(UL)	1Gbps(DL)/150Mbps(UL)	1.6Gbps(DL)/200Mbps(UL)
Software Features				
Protocol		TCP/IP/IPV4/IPV6/Multi-PDP/FTPS/HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTPS/HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Mult-PDP/FTPS/HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)	● (Sending and Receiving)	● (Sending and Receiving)
FOTA		●	●	●
VoLTE/CSFB/VoNR*		●	●	●
Android RIL		Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0	Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/Linux/Android	Microsoft Windows Win7/Win8/Win10/Linux/Android	Microsoft Windows Win7/Win8/Win10/Linux/Android
RNDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10	Linux/Win7/Win8/Win10
MBIM		Win8/Win10	Win8/Win10	Win8/Win10
Firmware Upgrade		USB/FOTA	USB/FOTA	USB/FOTA
Interface				
USB		3.1 (2.0)	3.1 (2.0)	3.1 (2.0)
UART		●	●	●
(U)SIM Card		1.8V/2.95V	1.8V/2.95V	1.8V/2.95V
PCM		●	●	●
GPIO		●	●	●
I2C		●	●	●
PCIe		●	●	●
SPI				
RGMII				
SDIO3.0				
PMI				
ADC				
Antenna		4	5	4
Certification				
Certification		CE*/RoHS*/REACH*	FCC*/RoHS*/REACH*	CE*/FCC*/RoHS*/REACH*
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAV		

o : Optional * : Under Developing/On-going/Planning

5G Module

Technology		3GPP R16
Product		SIM8262E-M2
Picture		
Form Factor		M.2
Dimensions(mm)		30.0*42.0*2.3
Weight(g)		6.8±0.1
Mode		NSA/SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5/n7/n8/n18/n20/n26/n28/n38/n40/n41/n48/n66/n77/n78/n79
	5G NR (mmWave)	
	LTE-FDD	B1,B3,B4,B5,B7,B8,B18,B19,B20,B26,B28,B32,B66
	LTE-TDD	B38,B39,B40,B41,B42,B43,B48
	WCDMA	B1,B5,B8
GNSS		GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)
Temperature		-30℃ ~ +70℃ (Extended temprature:-40℃ ~ +85℃)
Electrical Features		
Supply Voltge Range		3.135 ~ 4.4V
Power Consumption (sleep)(mA)		TBD
Data Transfer		
mmWave		
Sub-6G		2.4Gbps(DL)/1Gbps(UL)
LTE		1.6Gbps(DL)/200Mbps(UL)
Software Features		
Protocol		TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)
FOTA		●
VoLTE/CSFB/VoNR*		●
Android RIL		Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/ Linux /Android
RNDIS		Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10
MBIM		Win8/Win10
Firmware Upgrade		USB/FOTA
Interface		
USB		3.1 (2.0)
UART		●
(U)SIM Card		1.8V/2.95V
PCM		●
GPIO		●
I2C		●
PCIe		●
SPI		
RGMII		
SDIO3.0		
PMI		
ADC		
Antenna		4
Certification		
Certification		CE(RED)/RoHS/REACH/JATE/TELEC/GCF
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAVCPE,MIFI,PC,Gateway,Router,UAV

o: Optional *: Under Developing/On-going/Planning

5G Module

Technology		3GPP R16
Product		SIM8260C-M2SIM8260G-M2
Picture		 
Form Factor		M.2
Dimensions(mm)		30.0*52.0*2.3
Weight(g)		8.3±0.1
Mode		NSA/SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5*/n7*/n8*/n20*/n28/n38*/n40*/n41/n48*/n77*/n78/n79
	5G NR (mmWave)	
	LTE-FDD	B1/B3/B5/B7/B8/B20/B28
	LTE-TDD	B34/B38/B39/B40/B41/B42*
	WCDMA	B1/B3*/B5/B8
GNSS		GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5*)GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)
Temperature		-30℃ ~ +70℃ (Extended temprature:-40℃ ~ +85℃)-30℃ ~ +70℃ (Extended temprature:-40℃ ~ +85℃)
Electrical Features		
Supply Voltge Range		3.135 ~ 4.4V3.135 ~ 4.4V
Power Consumption (sleep)(mA)		TBDTBD
Data Transfer		
mmWave		
Sub-6G		2.1Gbps(DL)/900Mbps(UL)SA:2.5Gbps(DL)/0.9Gbps(UL) NSA:3.25Gbps(DL)/460Mbps(UL)
LTE		1Gbps(DL)/150Mbps(UL)1.6Gbps(DL)/200Mbps(UL)
Software Features		
Protocol		TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNSTCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)● (Sending and Receiving)
FOTA		●●
VoLTE/CSFB/VoNR*		●●
Android RIL		Android 6.0/7.0/8.0/9.0Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/ Linux /AndroidMicrosoft Windows Win7/Win8/Win10/Linux/Android
RNDIS		Linux/Win7/Win8/Win10Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10Linux/Win7/Win8/Win10
MBIM		Win8/Win10Win8/Win10
Firmware Upgrade		USB/FOTAUSB/FOTA
Interface		
USB		3.1 (2.0)3.1 (2.0)
UART		●●
(U)SIM Card		1.8V/2.95V1.8V/2.95V
PCM		●●
GPIO		●●
I2C		●●
PCIe		●●
SPI		
RGMII		
SDIO3.0		
PMI		
ADC		
Antenna		54
Certification		
Certification		CCC/SRRC/CTA/ChinaMobileCE(RED)/FCC/IC/RCM/UKCA/JATE/TELEC/RoHS/REACH
Typical Applications		CPE,MIFI,PC,Gateway,Router,UAVCPE,MIFI,PC,Gateway,Router,UAV

o: Optional *: Under Developing/On-going/Planning

| 5G Module

Technology		3GPP R16
Product		SIM8380G-M2
Picture		
Form Factor		M.2
Dimensions(mm)		30.0*52.0*2.3
Weight(g)		8.3±0.1
Mode		NSA/SA
Frequency Bands	5G NR (Sub6G)	n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n71/n75/n76/n77/n78/n79
	5G NR (mmWave)	n257/n258/n260/n261
	LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71
	LTE-TDD	B34/B38/B39/B40/B41/B42/B43/B46/B48
	WCDMA	B1/B2/B4/B5/B8/B19
GNSS		GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)
Temperature		-30℃ ~ +70℃ (Extended temprature:-40℃ ~ +85℃)
Electrical Features		
Supply Voltge Range		3.135~4.4V
Power Consumption (sleep)(mA)		TBD
Data Transfer		
mmWave		8.76Gbps(DL)/2.69Gbps(UL)
Sub-6G		SA:6.2Gbps(DL)/0.9Gbps(UL) NSA:4.92Gbps(DL)/660Mbps(UL)
LTE		2Gbps(DL)/200Mbps(UL)
Software Features		
Protocol		TCP/IP/IPV4/IPV6/Multi - PDP/FTPS /HTTPS/MQTTs/DNS
TLS		SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)
FOTA		●
VoLTE/CSFB/VoNR*		●
Android RIL		Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/Linux/Android
RNDIS		Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10
MBIM		Win8/Win10
Firmware Upgrade		USB/FOTA
Interface		
USB		3.1 (2.0)
UART		●
(U)SIM Card		1.8V/2.95V
PCM		●
GPIO		●
I2C		●
PCIe		●
SPI		
RGMII		
SDIO3.0		
PMI		
ADC		
Antenna		8
Certification		
Certification		CE(RED)/FCC/IC/RCM/UKCA/JATE/TELEC/RoHS/REACH
Typical Applications		CPE,MIFI,PC, Gateway,Router,UAV

o : Optional * : Under Developing/On-going/Planning

| 5G Module

Technology		3GPP R15
Product		SIM8202E-M2
Picture		
Form Factor		M.2
Dimensions(mm)		30.0*42.0*2.3
Weight(g)		6.8±0.1
Mode		NSA/SA
Frequency Bands	5G NR (Sub6G)	n1/n3/n5/n7/n8/n12/n20/n28/n38/n40/n41/n48/n71/n77/n78/n79
	5G NR (mmWave)	
	LTE-FDD	B1/B3/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B26/B28/B29/B71
	LTE-TDD	B34/B38/B39/B40/B41/B42/B43/B48
	WCDMA	B1/B3/B5/B8
GNSS		GPS/GLONASS/BeiDou/QZSS/Compass
Temperature		-30℃ ~ +70℃ (Extended temprature:-40℃ ~ +85℃)
Electrical Features		
Supply Voltge Range		3.135~4.4V
Power Consumption (sleep)(mA)		<5mA
Data Transfer		
mmWave		
Sub-6G		2.4Gbps(DL)/500Mbps(UL)
LTE		1Gbps(DL)/200Mbps (UL)
Software Features		
Protocol		TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/HTTP/HTTPS/MQTTs/DNS/SSL3.0
TLS		SSL3.0/TLS1.0/TLS1.2
DTMF		● (Sending and Receiving)
FOTA		●
VoLTE/CSFB/VoNR*		●
Android RIL		Android 6.0/7.0/8.0/9.0
USB Driver		Microsoft Windows Win7/Win8/Win10/ Linux /Android
RNDIS		Linux/Win7/Win8/Win10
NDIS		Linux/Win7/Win8/Win10
PPP		Linux/Win7/Win8/Win10
MBIM		Win8/Win10
Firmware Upgrade		USB/FOTA
Interface		
USB		3.1 (2.0)
UART		●
(U)SIM Card		1.8V/2.95V
PCM		●
GPIO		●
I2C		●
PCIe		●
SPI		
RGMII		
SDIO3.0		
PMI		
ADC		
Antenna		4
Certification		
Certification		RoHS/REACH/CE(RED)/Deutsche Telekom
Typical Applications		CPE, MIFI, PC, Gateway, Router, UAV

o : Optional * : Under Developing/On-going/Planning

| LPWA Module

Technology			eMTC & NB-IoT & GSM	
Product			SIM7000X	
Picture				
Form Factor			LCC, 68PIN	
Dimensions(mm)			24.0*24.0*2.6	
Weight(g)			3±0.1	
Frequency Bands(MHz)	- A (North America)	CAT-M1&CAT-NB1: B2/B4/B12/B13		
	- E(Europe/ Africa/Australia/Southeast Asia)	CAT-M1&CAT-NB1:B3/B8/B20/B28 GPRS/EDGE: 900/1800Mhz		
	- JC(Japan)	CAT-M1:B1/B3/B5/B8/B18/B19/B26 CAT-NB1:B1/B3/B5/B8/B18/B19/B26 (no GPRS)		
	- G(Global)	CAT-M1: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28/B39; CAT-NB1: B1/B2/B3/B5/B8/B12/B13/B17/B18/B19/B20/B26/B28; GSM: 850/900/1800/1900MHz		
RF Power Class			PC3	
GNSS			◦	
Temperature			-40℃~-+85℃	
Electrical Features				
Supply Voltge Range			3.2V-4.3V	
Power Consumption	PSM	9uA@PSM		
	Sleep	1.2mA		
Network Registration Time(s)			12(Prefered band)	
Receive Sensitivity			-108dB@eMTC -126dB@NB-IoT 15KHz	
Data Transfer				
LTE CAT.NB(Kbps)			34(DL)/66(UL)	
LTE CAT.M1(Kbps)			300(DL)/375(UL)	
EDGE(Kbps)			236.8(DL)/236.8(UL)	
GPRS(Kbps)			85.6(DL)/85.6(UL)	
SMS			●	
Software Features				
Protocols			TCP/UDP/LWM2M/COAP/MQTT/ FTP/HTTP/TLS/DTLS/NTP/Ayla Cloud	
VoLTE			◦	
Embedded AT			●	
FOTA			●	
TLS			●	
USB Driver			Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux	
Firmware Upgrade			USB	
Interfaces				
UART	Two wire serial port			
	Full Function Uart	●		
USB			●	
PCM			◦	
Status Indicator			●	
GPIO			●	
SPI			◦	
I2C			●	
Certification				
Certification			A: RoHS/REACH/GCF/FCC/PTCRB/AT&T/Verizon/IC C: RoHS/REACH/CCC/NAL/SRRC/Mobile/Unicom/Telecom E: RoHS/REACH/KC/KT/LGU+*/IMDA/RCM/Telstra/Spark/CE(RED)/GCF/ Deutsche Telekom/Vodafone* JC: RoHS/REACH/JATE/Telec/Docomo/KDDI G: RoHS/REACH/RCM/CE(RED)/GCF/Deutsche Telekom/UKCA/FCC/IC/OCD(Anatel)	
Typical Applications			Home Security and Automation,Telematics,Smart Meters,Vending,Fleet Management,Asset Tracking	

◦ : Optional * : Under Developing/On-going/Planning

| LPWA Module

Technology		eMTC & NB-IoT & IoT-NTN	
Product		SIM7070G-HP	
Picture			
Form Factor		LCC, 68PIN	
Dimensions(mm)		24.0*24.0*2.3	
Weight(g)		2.8±0.1	
Frequency Bands(MHz)		CAT-M: B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B85* CAT-NB: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B71*/B85* -S CAT-M: B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B85* CAT-NB: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B71*/B85* NTN: B23/B255/B256	
RF Power Class		PC3	
GNSS		○	
Temperature		-40°C~+85°C	
Electrical Features			
Supply Voltge Range		2.9V-4.5V	
Power Consumption	PSM	3.5uA@PSM	
	Sleep	0.35mA	
Network Registration Time(s)		12(Prefered band)	
Receive Sensitivity		-108dB@eMTC; -126dB@NB-IoT 15KHz	
Data Transfer			
LTE CAT.NB(Kbps)		127(DL)/158.5(UL)	
LTE CAT.M1(Kbps)		589(DL)/1119(UL)	
EDGE(Kbps)		NA	
GPRS(Kbps)		NA	
SMS		●	
Software Features			
Protocols		TCP/UDP/HTTP/HTTPS/FTP/TLS/DTLS/PING/LWM2M/COAP/MQTT	
VoLTE		○	
Embedded AT		●	
FOTA		●	
TLS		●	
USB Driver			
Firmware Upgrade		USB	
Interfaces			
UART	Two wire serial port		
	Full Function Uart	●	
USB		●	
PCM		○	
Status Indicator		●	
GPIO		●	
SPI		○	
I2C		●	
Certification			
Certification		RoHS/REACH/KC/LGU+*/RCM/Telstra/CE(RED)*/GCF	
Typical Applications		Home Security and Automation,Telematics,Smart Meters,Vending,Fleet Management,Asset Tracking	

◦ : Optional * : Under Developing/On-going/Planning

| LPWA Module

Technology		NB-IoT&GNSS	NB-IoT&2G
Product		Y7080E	R7072
Picture			
Form Factor		LCC+LGA,77PIN	LCC 68PIN
Dimensions(mm)		17.6*15.7*2.4	24*24*2.5
Weight(g)		1.2±0.1	2.7±0.1g
Frequency Bands(MHz)		- E(Europe/ Africa/Australia/Southeast Asia)	Cat-NB B3/B5/B8/B20/B28 GSM 900/1800MHz
RF Power Class		PC3	PC3
GNSS		◦	N/A
Temperature		-40°C~-+85°C	-20 C~-+70 C
Electrical Features			
Supply Voltge Range		3.0V-4.2V(NB+GNSS) 2.2V-4.2V(NB only)	3.4V ~ 4.2V
Power Consumption	PSM	1.7 uA@PSM	4.5 uA@PSM
	Sleep	/	0.78mA
Network Registration Time(s)		12(Prefered band)	12(Prefered band)
Receive Sensitivity		-128dbm@NBlot 15kHz	-128dbm@NBlot 15kHz
Data Transfer			
LTE CAT.NB(Kbps)		127(DL)/159(UL)	21.25(DL)/15.625(UL)
LTE CAT.M1(Kbps)		N/A	N/A
EDGE(Kbps)		N/A	N/A
GPRS(Kbps)		N/A	171.2(DL)/171.2(UL)
SMS		•	•
Software Features			
Protocols		TCP/UDP/HTTP/DNS/NTP/PING/TLS*/DTLS*/LWM2M*/COAP/MQTT/OneNET/AEP/DFOTA	TCP/UDP/HTTP/HTTPS/LS/DTLS/PING/LWM2M/COAP/MQTT/FOTA
VoLTE			
Embedded AT		•	
FOTA		•	•
TLS		•	•
USB Driver			
Firmware Upgrade		UART	UART
Interfaces			
UART	Two wire serial port	•	
	Full Function Uart		•
USB			
PCM			
Status Indicator		•	•
GPIO		•	•
SPI		◦	•
I2C		•	•
Certification			
Certification		RoHS/REACH/NAL/SRRC/Mobile*/Unicom*/Telecom/CE(RED)/GCF/Orange*/TIM*/Deutsche Telekom*/Telefonica/Vodafone Spain/UKCA/Anatel	RoHS/REACH/CE
Typical Applications		Home Security and Automation,Telematics,Smart Meters,Vending,Fleet Management,Asset Tracking	

◦ : Optional * : Under Developing/On-going/Planning

| LPWA Module

Technology		CAT-M & NB-IoT		NB-IoT	
Product		SIM7080G	SIM7090G	SIM7022	Y7028
Picture					
Form Factor		LCC+LGA,77PIN	LGA, 101PIN	LCC, 42PIN	LCC 44PIN
Dimensions(mm)		17.6*15.7*2.4	14.8*12.8*2.0	17.6*15.7*2.3	17.6*15.7*2.1
Weight(g)		1.4±0.1	0.8±0.1	1.3±0.1	1.0±0.2
Frequency Bands(MHz)		- E(Europe/ Africa/Australia/Southeast Asia) - G(Global)	CAT-M1:B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B39/B66/B71/B85 CAT.NB2&CAT.M1: B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B27/B28/B39/B66/B71/B85	CAT-M1:B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B85 CAT-NB2: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66/B70/B85	CAT-NB1/NB2 B3/B5/B8/B20/B28
RF Power Class		PC5	PC5	PC3	PC3
GNSS		◦	◦	N/A	N/A
Temperature		-40°C~-+85°C	-40°C~-+85°C	-40°C~-+85°C	-40°C~-+85°C
Electrical Features					
Supply Voltge Range		2.7V-4.8V	2.7V-4.8V	2.2V-4.3V	2.2V ~ 4.2V
Power Consumption	PSM	3uA@PSM	3uA@PSM	0.8uA@PSM	1 uA@PSM
	Sleep	1.2mA	0.78mA	2uA	/
Network Registration Time(s)		12(Prefered band)	12(Prefered band)	12(Prefered band)	12(Prefered band)
Receive Sensitivity		-108dB@eMTC-126dB@NB-IoT15KHz	-108dB@eMTC-126dB@NB-IoT15KHz	-126dB@NB-IoT 15KHz	-128dbm@NBlot 15kHz
Data Transfer					
LTE CAT.NB(Kbps)		127(DL)/158.5(UL)	127(DL)/158.5(UL)	127Kbps(DL)/159Kbps(UL)	127(DL)/159(UL)
LTE CAT.M1(Kbps)		589(DL)/1119(UL)	589(DL)/1119(UL)	N/A	N/A
EDGE(Kbps)		N/A	N/A	N/A	N/A
GPRS(Kbps)		N/A	N/A	N/A	N/A
SMS		•	•	•	•
Software Features					
Protocols		TCP/UDP/HTTP/HTTPS/TLS/DTLS/PING/LWM2M/COAP/MQTT/Ayla Cloud	TCP/UDP/HHTTP/HTTPS/TLS/DTLS/PING/LWM2M/COAP/MQTT/Ayla Cloud	TCP/UDP/HTTP/TLS*/DTLS*/DNS/NTP/PING/LWM2M/COAP/MQTT/DFOTA*	TCP/UDP/HTTP/DNS/NTP/PING/TLS*/DTLS*/LWM2M*/COAP/MQTT/OneNET/AEP/DFOTA
VoLTE		•	•		
Embedded AT		•	•	•	•
FOTA		•	•	•	•
TLS		•	•	•	•
USB Driver					
Firmware Upgrade		USB	USB	UART	UART
Interfaces					
UART	Two wire serial port				
	Full Function Uart	•	•	•	•
USB		•	•		
PCM		◦	◦		
Status Indicator		•	•	•	•
GPIO		•	•		•
SPI		◦	◦		•
I2C		•	•		•
Certification					
Certification		RoHS/REACH/NCC/JATE/Telec/Docomo*/KDDI/Softbank/KC/RCM/CE(RED)/GCF/Orange*/TIM/Deutsche Telekom/Telefonica/UKCA/FCC/PTCRB/AT&T/Verizon/T-mobile/US Cellular/IC/OCD(Anatel)	RoHS/REACH/JATE/Telec/RCM/CE(RED)/GCF/Orange/Deutsche Telekom/FCC/PTCRB/AT&T/Verizon*/T-mobile/US Cellular/IC/OCD(Anatel)	RoHS/REACH/NCC/RCM/CE/GCF/Orange/TIM/Deutsche Telekom/Telefonica/TIM/Vodafone Spain/UKCA/FCC/PTCRB/AT&T*/Verizon*/T-mobile*	RoHS/REACH/CE
Typical Applications		Home Security and Automation,Telematics,Smart Meters,Vending,Fleet Management,Asset Tracking			

◦ : Optional * : Under Developing/On-going/Planning

| LTE-A Module

Technology			LTE CAT12	
Product			SIM7912X(E/A/G)-M2(X12)	SIM7912X(E/A)(X12)
Picture				
Form Factor			M.2	LGA
Dimensions(mm)			42.0*30.0*2.3	39.5*37.0*2.8
Weight(g)			6.1±0.1	6.1±0.1
Frequency Bands	- E(Europe/Africa/Australia/Southeast Asia)		LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B34/B38/B39/B40/B41/B42*/B43*/B46*/B48* WCDMA: B1/B3/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B34/B38/B39/B40/B41/B42*/B43*/B46*/B48* WCDMA: B1/B3/B5/B8
	-SA(New Zealand/Australia/South America)		LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B28/B66 LTE-TDD: B40/B41/B42*/B43*/B46*/B48* WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B28/B66/B71 LTE-TDD: B40/B41/B42*/B43*/B46*/B48* WCDMA: B2/B4/B5
	-G(Global)		LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71* LTE-TDD: B34/B38/B39/B40/B41/B42*/B43*/B46*/B48* WCDMA: B1/B2/B3/B4/B5/B8/B9/B19	
GNSS			Beidou/GPS/GLONASS/QZSS	Beidou/GPS/GLONASS/Galileo/QZSS
Temperature			-30°C ~ +70°C (Extended temperature: -40°C ~ +85°C)	-30°C ~ +70°C (Extended temperature: -40°C ~ +85°C)
Electrical Features				
Supply Voltge Range			3.135V~ 4.4V, 3.7V(typ)	3.1V~ 4.4V, 3.3V(typ)
Power Consumption (sleep)(mA)			TBD	TBD
Data Transfer				
LTE CAT 6				
LTE CAT 12			600Mbps(DL)/150Mbps (UL)	600Mbps(DL)/150Mbps (UL)
Software Features				
Protocol			TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/HTTP/HTTPS/DNS*	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/HTTP/HTTPS/DNS*
TLS			SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
FOTA			•	•
Android RIL			Android 2.3/4.0/5.0/6.0/7.0	Android 6/7/8/9
USB Driver			Microsoft Windows2000/XP/Vista/Win7/Win8/Win10/ Linux /Android	Microsoft Windows2000/XP/Vista/Win7/Win8/Win10/ Linux /Android
Firmware Upgrade			USB	USB/FOTA
Interface				
USB3.0			1	1
PCIE			1	1
PCM			1	1
GPIO			1	1
I2C			1	1
Antenna			3	5
Certification				
Certification			FCC/CE(RED)/RoHS/REACH/PTCRB/GCF	FCC/CE(RED)/RoHS/REACH/PTCRB/GCF
Typical Applications			Video Surveillance, Gateway, Industrail PDA, Router	

o : Optional * : Under Developing/On-going/Planning

| LTE-A Module

Technology			LTE CAT6	
Product			SIM7906X(E/A)(X12)	SIM7906X(E/A/G)-M2(X12)
Picture				
Form Factor			LGA	M.2
Dimensions(mm)			39.5*37.0*2.8	42.0*30.0*2.3
Weight(g)			6.1±0.1	6.1±0.1
Frequency Bands	- E(Europe/Africa/Australia/Southeast Asia)		LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B34/B38/B39/B40/B41/B42*/B43*/B46*/B48* WCDMA: B1/B3/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B34/B38/B39/B40/B41/B42*/B43*/B46*/B48* WCDMA: B1/B3/B5/B8
	-SA(New Zealand/Australia/South America)		LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B28/B66/B71 LTE-TDD: B40/B41/B42*/B43*/B46*/B48* WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B28/B66 LTE-TDD: B40/B41/B42*/B43*/B46*/B48* WCDMA: B2/B4/B5
	- G(Global)			LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71* LTE-TDD: B34/B38/B39/B40/B41/B42*/B43*/B46*/B48* WCDMA: B1/B2/B3/B4/B5/B8/B9/B19
GNSS			Beidou/GPS/GLONASS/Galileo/QZSS	Beidou/GPS/GLONASS/Galileo/QZSS
Temperature			-30°C ~ +70°C (Extended temperature: -40°C ~ +85°C)	-30°C ~ +70°C (Extended temperature: -40°C ~ +85°C)
Electrical Features				
Supply Voltge Range			3.1V~ 4.4V, 3.3V(typ)	3.1V~ 4.4V, 3.3V(typ)
Power Consumption (sleep)(mA)			TBD	TBD
Data Transfer				
LTE CAT 6			300Mbps(DL)/50Mbps (UL)	300Mbps(DL)/50Mbps (UL)
LTE CAT 12				
Software Features				
Protocol			TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS / HTTP/HTTPS/DNS*	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS / HTTP/HTTPS/DNS*
TLS			SSL3.0/TLS1.0/TLS1.2	SSL3.0/TLS1.0/TLS1.2
FOTA			•	•
Android RIL			Android 6/7/8/9	Android 6/7/8/9
USB Driver			Microsoft Windows2000/XP/Vista/Win7/Win8/Win10/Linux /Android	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux /Android
Firmware Upgrade			USB/FOTA	USB/FOTA
Interface				
USB3.0			1	1
PCIE			1	1
PCM			1	1
GPIO			1	1
I2C			1	1
Antenna			5	3
Certification				
Certification			FCC/CE(RED)/RoHS/REACH/PTCRB*/GCF	FCC/CE(RED)/RoHS/REACH/PTCRB*/GCF
Typical Applications			Video Surveillance, Gateway, Industrail PDA, Router	

o : Optional * : Under Developing/On-going/Planning

| LTE-A Module

Technology		LTE CAT6	
Product		A7908E/SA-M2	A7908E/SA
Picture			
Form Factor		M.2	LGA
Dimensions(mm)		42.0*30.0*2.3	39.5*37.0*2.8
Weight(g)		6.1±0.1	6.1±0.1
Frequency Bands	- E(Europe/Africa/Australia/Southeast Asia)	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B38/B40/B41/B42*/B43* WCDMA: B1/B5/B8	LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B38/B40/B41/B42*/B43* WCDMA: B1/B5/B8
	-SA(New Zealand/Australia/South America)	LTE-FDD: B2/B4/B5/B7/B8/B28/B66 LTE-TDD: B38/B40/B42*/B43* WCDMA: B2/B4/B5	LTE-FDD: B2/B4/B5/B7/B8/B28/B66 LTE-TDD: B38/B40/B42*/B43* WCDMA: B2/B4/B5
	-G(Global)		
GNSS		NA	NA
Temperature		-30°C ~ +70°C (Extended temperature: -40°C ~ +85°C)	-30°C ~ +70°C (Extended temprature: -40°C ~ +85°C)
Electrical Features			
Supply Voltge Range		3.3 ~ 4.3V	3.3 ~ 4.3V
Power Consumption (sleep)(mA)			
Data Transfer			
LTE CAT 6		300Mbps(DL)/50Mbps(UL)	300Mbps(DL)/50Mbps(UL)
LTE CAT 12		NA	NA
Software Features			
Protocol		TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/HTTP/HTTPS/MQTTs/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/HTTP/HTTPS/MQTTs/DNS
TLS		SSL3.0	SSL3.0
FOTA		•	•
Android RIL		Android 6/7/8/9	Android 6/7/8/9
USB Driver		Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10 /Linux /Android	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10 /Linux /Android
Firmware Upgrade		USB	USB
Interface			
USB3.0		•	•
PCIE		•	•
PCM		•	•
GPIO		•	•
I2C		•	•
Antenna		•	•
Certification			
Certification		ROHS*/Anatel*/REACH*/CE*/UKCA*/RCM*	ROHS*/REACH*/Anatel/CE*/UKCA*/RCM*
Typical Applications		Video Surveillance, Gateway, Industrail PDA, Router	

o : Optional * : Under Developing/On-going/Planning

| Automotive Module

Technology		5G+C-V2X	ITS AP
Product		SIM8800(CE/E)	SIM8150
Picture			
Form Factor		LGA, 524PIN	LGA , 208PIN
Dimensions(mm)		53*54.5*3.45	33.0 *33.5* 3.3
Weight(g)		TBD	TBD
Frequency Bands		CE: 5G FDD: n1/n3/n8/n28 5G TDD: n41/n77/n78/n79 LTE-FDD: B1/B3/B5/B7/B8 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B8 GSM: 900/1800MHz C-V2X-B47 E: 5G FDD: n1/n3/n8/n20/n28 5G TDD: n41/n78/n79 LTE-FDD: B1/B3/B5/B7/B8/B20/B28/B32 LTE-TDD: B38/B40/B41/B42 WCDMA: B1/B3/B5/B6/B8 GSM: 900/1800 MHz C-V2X-B47	N/A
GNSS		GPS/ GLONASS/ BeiDou/ Galileo/QZSS	N/A
Bluetooth		BT5.2(with BT module)	N/A
Temperature		-40 C ~ +85 C	-40 C ~ +85 C
Electrical Features			
Supply Voltage Range		3.3V~ 4.3V	3.3V~4.3V
Power Consumption (sleep)(mA)		3mA@WCDMA DRX~2.56s 2.14mA@LTE-FDD DRX~2.56s 2.14mA@LTE-TDD DRX~2.56s 3.5mA@NR-FDD DRX~2.56s 3.5mA@NR-TDD DRX~2.56s	TBD
Data Transfer			
GPRS Slot		class 12	N/A
5G(Gbps)		2.4Gbps (DL)/ 550 Mbps (UL)	N/A
LTE(Mbps)		LTE-FDD: 1.6 Gbps (DL)/ 200 Mbps (UL) LTE-TDD: 1.4 Gbps (DL)/ 120 Mbps (UL)	N/A
WCDMA/HSPA/HSPA+(Mbps)		DC-HSDPA: MAX 42 Mbps HSUPA: MAX 5.76 Mbps WCDMA: MAX 384 kbps (DL/UL)	N/A
TD-SCDMA(Mbps)		/	N/A
CDMA EV-DO(Mbps)		/	N/A
EDGE(Kbps)		296(DL)/236.8(UL)	N/A
Software Features			
Protocol		TCP/ UDP/ PPP/ PING/ FTP(S)/ HTTP(S)/ SMTP/ SSL/ TLS/ MMS/ NTP/ FILE/ QMI	N/A
eCall		•	N/A
Open Linux		•	•
Multi-APN		•	N/A
SDIO		•	•
UART2		•	•
FOTA		•	N/A
Temperature Control		•	N/A
TLS		•	N/A
File System		•	N/A
Audio Record/Play		•	N/A
TTS		•	N/A
DTMF		•	N/A
LBS		•	N/A
ECM		•	N/A
QMI_WWAN Driver		•	N/A
RIL Driver		Android 6.0/7.0/8.0/9.0/10.0	N/A
Security		SELinux/Trustzone/Secure boot	•
Routing policy		5G,WIFI and Ethernet port	N/A
USB Driver		Microsoft Windows/2000/XP/Vista/Win7/Win8/Win10/ Linux /Android	N/A
NDIS/RNDIS		•	N/A
Embedded AT		•	N/A
Firmware Upgrade		USB /FOTA	USB
Wi-Fi		2.4G/5G	N/A
Interfaces			
		N/A	N/A
RGMII		10M/100M/1000M base-T1/Tx	10M/100M/1000M base-T1/Tx
UART		3*UART	•
USB		1*2.0/3.1	1*2.0/3.1; 1* USB2.0 only for debug
ADC		2*ADC	2*ADC
OTG		•	N/A
HSIC		•	N/A
PCIE		•	•
PCM		1	N/A
Analog Audio		o	N/A
GPIO		11*GPIO	10*GPIO
SDIO		•	•
SD Card		SD card(1.8V or 3.0V)	SD3.0
SPI		1*SPI	2*SPI
I2C		1*I2C	2*I2C
Antenna		4*Main&1*2*V2X&1*GNSS&2*DSDA	N/A
Certification			
Certification		CE: 3C*/SRRC*/CTA*/RoHS*/REACH* E: CE(RED)*/RoHS*/REACH*	RoHS*/REACH*
Typical Applications		Vehicle Tracking, OBD,Vehicle DVR, T-BOX	

o : Optional * : Under Developing/On-going/Planning

| Automotive Module

Technology	4G		
Product	A7805X(E/C)	SIM7805X(CE/E/SA)	SIM7800X(CE/E)
Picture			
Form Factor	LGA, 299PIN	LGA, 299PIN	LGA, 282 PIN
Dimensions(mm)	33.0*37.5*3.0	33.0*37.5*2.95	34.0*40.0*3.1
Weight(g)	8.0±0.1	8.0±0.1	7.8±0.1
Frequency Bands	C: LTE FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B8 GSM: 900/1800MHz E: TDD-LTE: B38/B40/B41 FDD-LTE: B1/B3/B5/B7/B8/B20/B28 UMTS/HSPA+ B1/B5/B8 GSM/GPRS/EDGE 900/1800 MHz	CE: LTE FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B8 TD-SCDMA B34/B39 CDMA: BC1 CS8 900/1800 MHz E: TDD-LTE: B38/B40/B41 FDD-LTE: B1/B3/B5/B7/B8/B20/B28 UMTS/HSPA+ B1/B5/B8 GSM/GPRS/EDGE 900/1800 MHz SA-TDD-LTE B40 FDD-LTE FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66 UMTS/HSPA+ B1/B2/B4/B5/B8 GSM/GPRS/EDGE 850/900/1800/1900MHz	CE-LTE-FDD: B1/B3/B5/B8 LTE-TDD: B38/B39/B40/B41 WCDMA: B1/B8 TD-SCDMA-B34/B39 CDMA-BC0 GSM: 900/1800 MHz E-LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800 MHz
GNSS	GPS/GLONASS/Beidou	BeiDou/GPS/GLONASS/Galileo/QZSS	BeiDou/GPS/GLONASS/Galileo/QZSS
Bluetooth	BT 4.2(with EWN-8821CSB1AA)	BT4.2(with W55)	BLE4.2(with W59)
Temperature	-40 C ~ +85 C	-40 C ~ +85 C	-40 C ~ +85 C
Electrical Features			
Supply Voltge Range	3.3V~4.3V	3.3V~4.3V	3.3V~ 4.3V
Power Consumption (sleep)(mA)	1.29mA@GSM DRX =9 1.52mA@WCDMA PF=256 1.35mA@LTE-FDD PF=256	1.8mA@GSM.BS_PA_MFRMS=2 3.3mA@WCDMA, DRX=9 1.84mA@LTE-FDD	1.8mA@GSM.BS_PA_MFRMS=2 3.3mA@WCDMA, DRX=9: 1.84mA@LTE-FDD
Data Transfer			
GPRS Slot	class 12	class 12	class 12
5G(Gbps)	N/A	N/A	N/A
LTE(Mbps)	LTE CAT 4: 150 (DL)/50(UL)	LTE CAT 4: 150 (DL)/50(UL)	LTE CAT 4: 150 (DL)/50(UL)
WCDMA/HSPA/HSPA+(Mbps)	21.1(DL)/5.76(UL)	42.2(DL)/11.5(UL)	42.2(DL)/11.5(UL)
TD-SCDMA(Mbps)	N/A	2.8(DL)/2.2(UL)	2.8(DL)/2.2(UL)
CDMA EV-DO(Mbps)	N/A	3.1(DL)/1.8(UL)	3.1(DL)/1.8(UL)
EDGE(Kbps)	296(DL)/236.8(UL)	296(DL)/236.8(UL)	296(DL)/236.8(UL)
Software Features			
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS / HTTP/HTTPS/DNS	TCP/UDP/PPP/PING/FTP(S)/HTTP(S)/SMTP/ SSL/TLS/MMS/NTP/DTMF*/FILE/QMI	TCP/IP/IPV4/IPV6/MultiPDP/FTP/FTPS/HTTP/ HTTPS/DNS/SMTP/SMTPS/NTP/PING/SSL
eCall	●	●	●
Open Linux	● (Open WRT)	●	●
Multi-APN	●	●	●
SDIO	●	●	●
UART2	●	●	●
FOTA	●	●	●
Temperature Control	●	●	●
TLS	●	●	●
File System	●	●	●
Audio Record/Play	●	●	●
TTS	○	●	●
DTMF	○	●	●
LBS	●	●	●
ECM	●	●	●
QMI_WWAN Driver	N/A	●	●
RIL Driver	Android 6.0/7.0/8.0/9.0/10.0	Android 6.0/7.0/8.0/9.0/10.0	Android 6.0/7.0/8.0/9.0/10.0
Security	SELinux/Trustzone/Secure boot	SELinux/Trustzone/Secure boot	SELinux/Trustzone/Secure boot
Routing policy	4G,WIFI and Ethernet port	4G,WIFI and Ethernet port	4G,WIFI and Ethernet port
USB Driver	Microsoft Windows 7/8/10/Linux/Android	Microsoft Windows 7/8/10/Linux/Android	Microsoft Windows2000/X- P/Vista/Win7/Win8/Win10/ Linux /Android
NDIS/RNDIS	●	●	●
Embedded AT	○	●	●
Firmware Upgrade	USB /FOTA	USB /FOTA	USB /FOTA
Wi-Fi	2.4G/5G(with EWN-8821CSB1AA)	2.4G/5G(with W55)	2.4G/5G(with W59)
Interfaces			
SGMII	N/A	10M/100M/100M Ethernet	10M/100M/1000M base-T1/Tx
RGMII	●	N/A	N/A
UART	3*UART	4*UART	3*UART
USB	1*2.0	1*2.0	1*2.0
ADC	3*ADC	3*ADC	3*ADC
OTG	●	●	●
HSIC	N/A	●	●
PCIE	N/A	N/A	N/A
PCM	1*12S	1	1*12S
Analog Audio	●	○	○
GPIO	8*GPIO	8*GPIO	5*GPIO
SDIO	2*SDIO	1*SDIO	SDIO3.0 (200MHz Max)
SD Card	SD3.0	SD3.0	SD3.0 (128G Max)
SPI	1*SPI	2*SPI(configured via UART)	1*SPI
I2C	2*I2C	1*I2C	1*I2C
Antenna	1*Main&1*Diversity&1*GNSS	1*Main&1*Diversity&1*GNSS	1*Main&1*Diversity&1*GNSS
Certification			
Certification	CE: CCC/ TA/CTA*/RoHS*/REACH* E:CE(RED)*/RoHS/REACH	CE: CCC/ TA/CTA*/RoHS*/REACH* E:CE(RED)*/RoHS/REACH	CE: 3C/SRRC/CTA*/RoHS*/REACH E: CE(RED)*/RoHS/REACH
Typical Applications Vehicle Tracking, OBD,Vehicle DVR, T-BOX			

○ : Optional * : Under Developing/On-going/Planning

| Smart Module

Technology	Smart Module
Product	SIM9650L-W
Picture	
Form Factor	LGA 636PIN
Dimensions(mm)	42.5*56.5*2.95
Weight(g)	15±0.1
Frequency Bands	WIFI 6E(2.4G/5G, 2x2 MU MIMO, 802.11 a/b/g/n/ac/ax) BT 5.X
GNSS	
WLAN	WIFI 6E(2.4G/5G, 2x2 MU MIMO, 802.11 a/b/g/n/ac/ax)
CPU	QCS6490 ,Octa ARM V-8 cores up to 2.7GHz
GPU	Adreno 643 GPU at 812MHz
Memory	8GB LPDDR4 RAM +128GB UFS Flash
Supply Voltage Range	3.5V~ 4.4V
Temperature	-30 C ~ +75 C
Data Transfer	
LTE(Mbps)	
WCDMA/HSPA/HSPA+(Mbps)	
TD-SCDMA(Mbps)	
CDMA EV-DO(Mbps)	
CDMA 1xRTT(Kbps)	
GPRS(Kbps)	
EDGE(Kbps)	
Media	
Display	4-lane MIPI_DSI, DP over USB Type-C FHD 2520*1200 60fps
Camera	MIPI_CSI*4 Support 3 or 4 Cameras Up to 27MP@24 fps with 3* ISP
Video Performance	Encode: 4K@30 H.264/H.265 Decode: 4K@60 H.264/H.265/VP9 Wireless display(decode + encode): 1080p60 D +1080p60 E or 4K30 D + 1080p30 E
Analog Audio	2 Digit MIC
Audio Codec	EVRC, EVRC-B, EVRC-WB, G.711, G.729, PCM,EVS; GSM-FR, GSM-EFR, GSM-HR; AMR-NB, AMR-WB, QCELP
Interfaces	
PCIe	*1, 2-lane PCIe Gen 3. NVMe
UART	*2
USB	USB3.1/2.0/Type-C/OTG
UIM	*1
GPIO	35
SD Card	●
SPI	●
I2C	*8
ADC	*4
Motor Drive	●
WLED Sink	●
Flash Drive	●
Antenna	Wi-Fi/BT
Software Features	
Operating System	Android 14
USB Driver	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux
Bluetooth	BT 5.x BLE
Dual LCD	●
DSDS	●
Charge Function	●
Firmware Upgrade	USB/OTA/TF card
Certification	
Certification	RoHS*/REACH*/CE(RED)*
Typical Applications POS, Security, Networking, Telematics,Retail	

○ : Optional * : Under Developing/On-going/Planning

| Smart Module

Technology	Smart Module	
Product	SIM8905X(C/E/A-R2)	SIM8400CE/EU
Picture		
Form Factor	LCC+LGA 210PIN	LCC+LGA 168PIN
Dimensions(mm)	40.5*40.5*2.8	30*40*2.65
Weight(g)	10.6±0.1	9.6±0.1
Frequency Bands	CE (China) LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B5/B8 TD-SCDMA:B34/B39 EVDO/CDMA:BC0 EDGE/GPRS/GSM: 850/900/1800 MHz A/NA(North America) LTE-FDD: B2/B4/B5/B7/B12/B13/B17/B25/B26 LTE-TDD: B41 E (Europe/Middle East/Africa/Korea/Thailand) LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900 MHz W: 2.4G/5G, 802.11 b/g/n/a BT4.1	CE (China) LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B5/B8 EDGE/GPRS/GSM: 900/1800 MHz EU (Europe/Middle East/Africa/Korea/Thailand) LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800 MHz
GNSS	BeiDou/GPS/GLONASS	BeiDou/GPS/GLONASS
WLAN	2.4G/5G, 802.11 b/g/n/a	2.4G 802.11 b/g/n
CPU	MSM8909, Quad ARM Cortex-A7 cores up to 1.1GHz	SL8521E, Dual Arm Cortex-A53 cores up to 1.3GHz
GPU		Mali T820 MP1 at 384MHz
Memory	1GB LPDDR3 RAM +8GB eMMC Flash	4GB eMMC + 2GB LPDDR2
Supply Voltge Range	3.4V~ 4.4V	3.4V~ 4.4V
Temperature	-35°C ~ +75°C	-35°C ~ +75 C
Data Transfer		
LTE(Mbps)	LTE CAT 4 - 150(DL)/50(UL)	LTE CAT 4 - 150(DL)/50(UL)
WCDMAHSPA/HSPA+(Mbps)	42.2(DL)/5.76(UL)	21(DL)/11(UL)
TD-SCDMA(Mbps)	2.8(DL)/2.2(UL)	
CDMA EV-DO(Mbps)	3.1(DL)/1.8(UL)	
CDMA 1xRTT(Kbps)	153.6(DL)/153.6(UL)	
GPRS(Kbps)	Max 107(DL)/85.6(UL)	Max 107(DL)/85.6(UL)
EDGE(Kbps)	Max 296(DL)/236.8(UL)	Max 296(DL)/236.8(UL)
Media		
Display	4-lane MIPI_DSI HD(720P), 60fps	SPI port supports QVGA 320*240 Max MIPI port supports VGA 800*480 Max
Camera	MIPI_CSI * 2 Primary camera: 2-lane MIPI_CSI, up to 8MP Secondary camera: 1-lane MIPI_CSI, up to 5MP	MIPI_CSI *1 up to 5MP
Video Performance	Encode: H.264 BP/MP – 720p, 30 fps; MPEG-4 SP/H.263 P0 – WVGA, 30 fps; VP8 –WVGA, 30 fps; Decode: H.264 BP/MP/HP – 1080p, 30 fps; MPEG-4 SP/ASP –1080p, 30 fps; DivX 4x/5x/6x –1080p, 30 fps; H.263 P0 – WVGA, 30 fps; VP8 –1080p, 30 fps; (HEVC) H.265 MP 8 bit –1080p, 30 fps;	Encode: 720p 30fps(H.264,MPEG4) Decode: 720p 30fps(H.264,MPEG4,H263,VP8)
Analog Audio	2 Inputs &3 Outputs	3 Inputs &3 Outputs
Audio Codec	G711; Raw PCM; QCELP; EVRC; EVRC-B; EVRC-WB; AMR-NB; AMR-WB; GSM-EFR; GSM-FR; GSM-HR MP3; AAC; AAC+, eAAC; AMR-NB; ARM-WB; G.711、WMA 9/10 Pro	Support MP3/AAC/AAC+/ AMR-NB/AMR WB/PCM/ADPCM decoding Audio recording codec support MP3/AMR/ACC format
Interfaces		
UART	*2	*3
USB	USB2.0	USB2.0
UIM	*2	*2
GPIO	At Least 21*GPIO	At Least 40*GPIO
SD Card	●	●
SPI	●	●
I2C	*3	*1
ADC	*1	*2
Motor Drive	*1	*1
WLED Sink		
Flash Drive		
Antenna	Main&Diversity&GNSS&Wi-Fi/BT	Main&Diversity&GNSS&Wi-Fi/BT
Software Features		
Operating System	Android 5.1/7.1/8.1/Linux 3.18	Linux(Yocto)
USB Driver	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux
Bluetooth	BT 2.1+EDR/3.0/4.1 LE	BT 4.2
Dual LCD		
DSDS	●	●
Charge Function	●	●
Firmware Upgrade	USB/OTA/TF card	USB/OTA/TF card
Certification		
Certification	A-R2:RoHS/REACH/FCC/PTCRB E:RoHS/REACH/CE(RED)	RoHS/REACH/CE
Typical Applications	POS, Security, Networking, Telematics,Retail	

○ : Optional * : Under Developing/On-going/Planning

| Smart Module

Technology	Smart Module	
Product	SIM8500E/CE	SIM8502X(CE/EA/SA)
Picture	 	 
Form Factor	LCC+LGA 286PIN	LCC+LGA 286PIN
Dimensions(mm)	40.5*40.5*2.85	40.5*40.5*2.85
Weight(g)	10.6±0.1	10.6±0.1
Frequency Bands	CE (China) LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 UMTS/HSDPA/HSPA+: B1/B5/B8 EDGE/GPRS/GSM: 900/1800 MHz E (Europe/Middle East/Africa/Korea/Thailand) LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900 MHz	CE (China) LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 UMTS/HSDPA/HSPA+: B1/B5/B8 EDGE/GPRS/GSM: 900/1800 MHz EA (Europe/Middle East/Africa/Korea/Thailand) LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900 MHz SA (New Zealand/Australia/South America) LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66 LTE-TDD: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900 MHz
GNSS	BeiDou/GPS/GLONASS	BeiDou/GPS/GLONASS
WLAN	2.4G 802.11 b/g/n(a,ac Optional)	2.4G/5G, 802.11a/b/g/n/ac
CPU	SL8541E, Quad ARM Cortex-A53 cores up to 1.4GHz	SL8541E, Quad ARM Cortex-A53 cores up to 1.4GHz
GPU	Mali-T820 MP1 GPU at 680 MHz	Mali-T820 MP1 GPU at 680 MHz
Memory	1GB LPDDR3 RAM +8GB eMMC Flash	1GB LPDDR3 RAM +8GB eMMC Flash
Supply Voltge Range	3.5V~ 4.2V	3.5V~ 4.2V
Temperature	-35 C ~ +75 C	-35 C ~ +75 C
Data Transfer		
LTE(Mbps)	LTE CAT 4 - 150(DL)/50(UL)	LTE CAT 4 - 150(DL)/50(UL)
WCDMAHSPA/HSPA+(Mbps)	21(DL)/11(UL)	21(DL)/11(UL)
TD-SCDMA(Mbps)		
CDMA EV-DO(Mbps)		
CDMA 1xRTT(Kbps)		
GPRS(Kbps)	Max 107(DL)/85.6(UL)	Max 107(DL)/85.6(UL)
EDGE(Kbps)	Max 296(DL)/236.8(UL)	Max 296(DL)/236.8(UL)
Media		
Display	4-lane MIPI_DSI HD(720P), 60fps	4-lane MIPI_DSI HD(720P), 60fps
Camera	MIPI_CSI * 2 Primary camera: : 4-lane MIPI_CSI, up to 13MP Secondary camera: 4-lane MIPI_CSI, up to 8MP	MIPI_CSI * 2 Primary camera: : 4-lane MIPI_CSI, up to 13MP Secondary camera: 4-lane MIPI_CSI, up to 8MP
Video Performance	Encode: 1080p 30fps(H.264,MPEG4,H.263) Decode: 1080p 30fps(H.264,MPEG4,VP8)	Encode: 1080p 30fps(H.264,MPEG4,H.263) Decode: 1080p 30fps(H.264,MPEG4,VP8)
Analog Audio	3 Inputs &3 Outputs	3 Inputs &3 Outputs
Audio Codec	Voice Codec: GSM-FR、GSM-EFR、GSM-HR; AMR-NB、AMR-WB; EVS-NB、EVS-WB、EVS-SWB Audio Codec: MP3 AAC、AAC+ AMR-NB	Voice Codec: GSM-FR、GSM-EFR、GSM-HR; AMR-NB、AMR-WB; EVS-NB、EVS-WB、EVS-SWB Audio Codec: MP3 AAC、AAC+ AMR-NB
Interfaces		
UART	*2	*2
USB	USB2.0	USB2.0
UIM	*2	*2
GPIO	At Least 25*GPIO	At Least 25*GPIO
SD Card	●	●
SPI	●	●
I2C	*4	*4
ADC	*1	*1
Motor Drive	*1	*1
WLED Sink		
Flash Drive		
Antenna	Main&Diversity&GNSS&Wi-Fi/BT	Main&Diversity&GNSS&Wi-Fi/BT
Software Features		
Operating System	Android 10	Android 10
USB Driver	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux
Bluetooth	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE
Dual LCD		
DSDS	●	●
Charge Function	●	●
Firmware Upgrade	USB/OTA/TF card	USB/OTA/TF card
Certification		
Certification	RoHS/REACH/CCC/CE	RoHS*/REACH*/CCC*/CE
Typical Applications	POS, Security, Networking, Telematics,Retail	

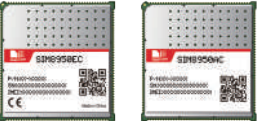
○ : Optional * : Under Developing/On-going/Planning

| Smart Module

Technology	Smart Module	
Product	SIM8580X(CE/EA)	SIM6600X(CE/EA)
Picture		
Form Factor	LCC+LGA 344PIN	LCC+LGA 286PIN
Dimensions(mm)	44.1*45.6*2.9	40.5*40.5*2.85
Weight(g)	12.0±0.1	10.6±0.1
Frequency Bands	CE (China) LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 UMTS/HSDPA/HSPA+: B1/B5/B8 GSM: 900/1800MHz EA (Europe/Middle East/Africa/Korea/Thailand) LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 850/900/1800 MHz	CE (China) LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 UMTS/HSDPA/HSPA+: B1/B8 EDGE/GPRS/GSM: 900/1800 MHz EA (Europe/Middle East/Africa/Korea/Thailand) LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900
GNSS	BeiDou/GPS/GLONASS	BeiDou/GPS/GLONASS
WLAN	2.4G/5G, 802.11a/b/g/n/ac	2.4G/5G, 802.11a/b/g/n/ac
CPU	SL8581E, Octa ARM Cortex-A55 cores up to 1.6GHz.	MTK8766,Quad ARM Cortex-A53 cores up to 2.0GHz
GPU	PowerVR Fentale GE8322 at 550 MHz	GE8300 GPU at 660MHz
Memory	2GB LPDDR4 RAM +16GB eMMC Flash	2GB LPDDR3 RAM +16GB eMMC Flash
Supply Voltge Range	3.5V~ 4.2V	3.4V~ 4.4V
Temperature	-35 C ~ +75 C	-35 C ~ +75 C
Data Transfer		
LTE(Mbps)	LTE CAT 4 - 150(DL)/50(UL)	LTE CAT 4 - 150(DL)/50(UL)
WCDMA/HSPA/HSPA+(Mbps)	21(DL)/11(UL)	42.2(DL)/5.76(UL)
TD-SCDMA(Mbps)		
CDMA EV-DO(Mbps)		
CDMA 1xRTT(Kbps)		
GPRS(Kbps)	Max 107(DL)/85.6(UL)	Max 107(DL)/85.6(UL)
EDGE(Kbps)	Max 296(DL)/236.8(UL)	Max 296(DL)/236.8(UL)
Media		
Display	4-lane MIPI_DSI FHD 2160*1080 60fps	4-lane MIPI_DSI HD+(1280*800), 60fps
Camera	MIPI_CSI * 3 Primary camera:: 4-lane MIPI_CSI, up to16MP Secondary camera: : 4-lane MIPI_CSI, up to16MP	MIPI_CSI * 2 Primary camera: 4-lane MIPI_CSI, up to 13MP Secondary camera: 4-lane MIPI_CSI, up to 8MP
Video Performance	Encode: 1080p60, H.264, H.265, VP8 Decode: 1080p60, H.264, H.265, VP8, VP9 Wireless Display (Encode+Decode) : 1080p60 Dec + 1080p30 Enc	Encode: 1080p 30fps(H.264) Decode: 1080p 30fps(H.264,MPEG4,VP9,HEVC) -- Encode+Decode: 1080p 30 fps + 720p 30 fps
Analog Audio	3 Inputs &3 Outputs	3 Inputs &3 Outputs
Audio Codec	G711;QCELP;EVRC;EVRC-B、 EVRC-WB;AMR-NB、 AMR-WB;GSM-EFT、 GSM-FT、 GSM-HR	Voice codec: AMR FR, AMR HR, AMR-WB, EVS_WB, FR,HR,EFR Audio encode: AMR-NB, AMR-WB,AAC,OGG,ADPCM Audio decode: WAV, MP3, MP2, AAC, AMR-NB, AMR-WB, MIDI, Vorbis, APE, AAC-plus v1, v2; FLAC, WMA, ADPCM
Interfaces		
UART	*4	*2
USB	*2 USB 2.0	USB2.0
UIM	*2	*2
GPIO	At Least 40*GPIO	At Least 25*GPIO
SD Card	●	●
SPI	●	●
I2C	*5	*5
ADC	*1	*1
Motor Drive	*1	*1
WLED Sink	●	
Flash Drive	●	
Antenna	Main&Diversity&GNSS&Wi-Fi/BT	Main&Diversity&GNSS&Wi-Fi/BT
Software Features		
Operating System	Android 10	Android 11
USB Driver	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux
Bluetooth	BT 5.0	BT 5.0
Dual LCD		
DSDS	●	●
Charge Function	●	●
Firmware Upgrade	USB/OTA/TF card	USB/OTA/TF card
Certification		
Certification	RoHS/REACH/CCC*/CE*	RoHS*/REACH*/CCC*/CE*
Typical Applications	POS, Security, Networking, Telematics,Retail	

○:Optional *: Under Developing/On-going/Planning

| Smart Module

Technology	Smart Module	
Product	SIM8950X(EC/AC)	SIM8970X (CE/EU/NA/W)
Picture		
Form Factor	LCC+LGA 232PIN	LCC+LGA 344PIN
Dimensions(mm)	44.1*45.6*2.8	44.1*45.6*2.85
Weight(g)	12.5±0.1	12.5±0.1
Frequency Bands	AC (North America) LTE-FDD: B2/B4/B5/B12/B13/B14/B25/B26 LTE-TDD: B41 WCDMA: B2/B4/B5 EDGE/GPRS/GSM: 850/1900 MHz EC (Europe/Middle East/Africa/Korea/Thailand) LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800 MHz W: 2.4G/5G, 802.11a/b/g/n/ac BT4.2	CE (China) LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B8 TD-SCDMA:B34/B39 EDGE/GPRS/GSM: 900/1800 MHz NA (North America) LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B66/B71 LTE-TDD: B41 WCDMA: B2/B4/B5 EU (Europe/Middle East/Africa/Korea/Thailand) LTE-FDD: B1/B3/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800 MHz W: 2.4G/5G, 802.11a/b/g/n/ac BT5.0
GNSS	BeiDou/GPS/GLONASS	BeiDou/GPS/GLONASS
WLAN	2.4G/5G, 802.11a/b/g/n/ac	2.4G/5G, 802.11a/b/g/n/ac
CPU	SDM450 ,Octa ARM Cortex-A53 cores up to 1.8GHz	QCM6125 ,Octa ARM V-8 cores up to 2.0GHz
GPU	Adreno 506 GPU at 680MHz	Adreno 610 GPU at 950MHz
Memory	2GB LPDDR3 RAM +16GB eMMC Flash	4GB LPDDR4 RAM +64GB eMMC Flash
Supply Voltage Range	3.4V~ 4.4V	3.5V~ 4.4V
Temperature	-35 C ~ +75 C	-30 C ~ +75 C
Data Transfer		
LTE(Mbps)	LTE CAT 4 - 150(DL)/50(UL)	LTE CAT 6 - 300(DL)/50(UL)
WCDMA/HSPA/HSPA+(Mbps)	42.2(DL)/5.76(UL)	42.2(DL)/5.76(UL)
TD-SCDMA(Mbps)		
CDMA EV-DO(Mbps)		
CDMA 1xRTT(Kbps)		
GPRS(Kbps)	Max 107(DL)/85.6(UL)	Max 107(DL)/85.6(UL)
EDGE(Kbps)	Max 296(DL)/236.8(UL)	Max 296(DL)/236.8(UL)
Media		
Display	4-lane MIPI_DSI * 2 FHD 1920*1200 60fps	4-lane MIPI_DSI, DP over USB Type-C FHD 2520*1080 60fps
Camera	MIPI_CSI * 2 Primary camera: 4-lane MIPI_CSI, up to 21MP Secondary camera: 2-lane MIPI_CSI, up to 8MP	MIPI_CSI*3 Support 3 or 4 Cameras Up to 25MP with Dual ISPs
Video Performance	Encode: 1080p60, H.264, H.265, VP8 Decode: 1080p60, H.264, H.265, VP8, VP9 Wireless Display (Decode+Encode) : 1080p60 Dec + 1080p30 Enc	Encode: 4K30 HEVC/H264/VP8/MPEG4 Decode: 4K30 8-bit: H.264/VP8/VP9 4K30 10-bit: HEVC Wireless display(decode + encode): 4Kp30 Dec + 1080p30 Enc
Analog Audio	2 Inputs &4 Outputs	3 Inputs &4 Outputs
Audio Codec	G711;QCELP;EVRC;EVRC-B、 EVRC-WB;AMR-NB、 AMR-WB;GSM-EFT、 GSM-FT、 GSM-HR	G.711, G.729A/AB; EVRC, EVRC-B, EVRC-WB; AMR-NB, AMR-WB, AMR-eAMR, AMR-BeAMR; GSM-EFR/-FR/-HR; MP3; AAC; He-AAC v1, v2; WMA 9/Pro; Dolby AC-3, eAC-3, DTS-HD, FLAC, APE, ALAC, AIFF
Interfaces		
UART	*4	*6
USB	USB3.0/2.0/Type-C/OTG	USB3.1/2.0/Type-C/OTG
UIM	*2	*2
GPIO	At Least 22*GPIO	At Least 40*GPIO
SD Card	●	●
SPI	●	●
I2C	*3	*9
ADC	*1	*2
Motor Drive	○	●
WLED Sink	○	●
Flash Drive	○	●
Antenna	Main&Diversity&GNSS&Wi-Fi/BT	Main&Diversity&GNSS&Wi-Fi/BT
Software Features		
Operating System	Android 7.1/8.1/9.1/10.1	Android 10/11/13
USB Driver	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux
Bluetooth	BT 2.1+EDR/3.0/4.1 LE/4.2 BLE	BT 5.x BLE
Dual LCD	●	●
DSDS	●	●
Charge Function	○	●
Firmware Upgrade	USB/OTA/TF card	USB/OTA/TF card
Certification		
Certification	RoHS/REACH/CE(RED)	EU:RoHS/REACH/CE(RED) CE:CCC
Typical Applications	POS, Security, Networking, Telematics,Retail	

○:Optional *: Under Developing/On-going/Planning

| Smart Module

Technology	Smart Module	
Product	SIM8918X(CE/EA/NA/SA/JP/W)	
Picture		
Form Factor	LCC+LGA 286PIN	
Dimensions(mm)	40.5*40.5*2.8	
Weight(g)	10.5±0.1	
Frequency Bands	CE (China)	EA (Europe/Middle East/Africa/Korea/Thailand)
	LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B8 EDGE/GPRS/GSM: 900/1800 MHz	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 WCDMA: B1/B2/B4/B5/B8 GSM: 850/900/1800/1900 MHz
	NA (North America)	SA (New Zealand/Australia/South America)
	LTE-FDD: B2/B4/B5/B7/B12/B13/B17/B25/B26/B66/B71 LTE-TDD: B41 WCDMA: B2/B4/B5	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66 LTE-TDD: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900 MHz
GNSS	JP (Japan)	W
	LTE-FDD: B1/B3/B8/B18/B19/B26/B28 LTE-TDD: B41	2.4G/5G, 802.11a/b/g/n/ac BT5.0
	BeiDou/GPS/GLONASS	
	2.4G/5G, 802.11a/b/g/n/ac	
WLAN	QCM2290 ,Quad ARM Cortex-A53 cores up to 2.0GHz	
CPU	Adreno 702 GPU at 845MHz	
GPU	2GB LPDDR4 RAM +16GB eMMC Flash	
Memory	3.4V~ 4.4V	
Supply Voltge Range	-35 C ~ +75 C	
Temperature		
Data Transfer		
LTE(Mbps)	LTE CAT 4 - 150(DL)/50(UL)	
WCDMA/HSPA/HSPA+(Mbps)	42.2(DL)/5.76(UL)	
TD-SCDMA(Mbps)		
CDMA EV-DO(Mbps)		
CDMA 1xRTT(Kbps)		
GPRS(Kbps)	Max 107(DL)/85.6(UL)	
EDGE(Kbps)	Max 296(DL)/236.8(UL)	
Media		
Display	4-lane MIPI_DSI HD(720P), 60fps	
Camera	MIPI_CSI * 2 Primary camera: 4-lane MIPI_CSI, up to 13MP Secondary camera: 4-lane MIPI_CSI, up to 13MP	
Video Performance	Encode:	
	1080p 30 fps (H.264)	
	Decode:	
	1080p 30 fps(HEVC,H.264 and VP8)	
Analog Audio	Encode+Decode:	1080p 30 fps + 720p 30 fps
	3 Inputs &3 Outputs	
Audio Codec	EVS, EVRC, EVRC-B, EVRC-WB G.711 and G.729A/AB GSM-FR, GSM-EFR, and GSM-HR AMR-NB and AMR-WB MP3; AAC; HE AAC v1, v2; FLAC; APE; ALAC; AIF	-
Interfaces		
UART	*3	
USB	USB3.1/2.0/Type-C/OTG	
UIM	*2	
GPIO	At Least 25*GPIO	
SD Card	●	
SPI	*2	
I2C	*10	
ADC	*1	
Motor Drive	*1	
WLED Sink		
Flash Drive		
Antenna	Main&Diversity&GNSS&Wi-Fi/BT	
Software Features		
Operating System	Android 11/12	
USB Driver	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux	
Bluetooth	BT5.0	
Dual LCD		
DSDS	●	
Charge Function	●	
Firmware Upgrade	USB/OTA/TF card	
Certification		
Certification	RoHS/REACH/CE(RED)/UKCA/FCC/IC/Jate&Telec	
Typical Applications	POS, Security, Networking, Telematics,Retail	

○ : Optional * : Under Developing/On-going/Planning

| LTE Module

Technology	LTE CAT4		
Product	A7608SA-H	A7602E-H	A7606E-H
Picture			
Form Factor	LCC+LGA, 172PIN		
Dimensions(mm)	30.0*30.0*2.5		
Weight(g)	4.6±0.1		
Frequency Bands	-A(North America(AT&T)		
	-V(North America (Verizon))		
	-E(Europe/Middle East/Africa)	LTE-FDD: B1/B3/B5/B7/B8/B20/B28* LTE-TDD: B38/B40/B41 UMTS/HSPA+ B1/B5*/B8 GSM/GPRS/EDGE:900/1800 MHz	LTE-FDD: B1/B3/B5/B7/B8/B20/B28* LTE-TDD: B38/B40/B41 UMTS/HSPA+ B1/B5/B8 GSM/GPRS/EDGE:900/1800 MHz
	-SA(New Zealand /Australia/South America)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B20/B28/B66 LTE-TDD: B38/B40/B41 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900MHz	
GNSS	~JC/JE(Japan)		
	-G(Global)		
	-NA(North America)		
GNSS	○	○	○
Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-40°C ~ +85°C
Electrical Features			
Supply Voltage Range	3.4V~ 4.2V	3.4V~ 4.2V	3.4V~ 4.2V
Power Consumption(mA)	2.8@GSM,BS_PA_MFRMS=2 3.3@WCDMA, DRX=9 2.5@LTE	2.8@GSM,BS_PA_MFRMS=2 3.3@WCDMA, DRX=9 2.5@LTE	2.9@GSM,BS_PA_MFRMS=2 2.7@WCDMA, DRX=9 3.0@LTE
Data Transfer			
LTE(Mbps)	150(DL)/50(UL)	150(DL)/50(UL)	150(DL)/50(UL)
WCDMA/HSPA+(Mbps)	21(DL)/5.76(UL)	21(DL)/5.76(UL)	21(DL)/5.76(UL)
GPRS/EDGE(Kbps)	236.8(DL)/236.8(UL)	236.8(DL)/236.8(UL)	236.8(DL)/236.8(UL)
SMS	●	●	●
Software Features			
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/DNS
TLS	●	●	●
File System	●	●	●
Audio Record/Play	●	●	●
TTS	○	○	○
DTMF	●	●	●
LBS	●	●	●
FOTA	●	●	●
Jamming Detection			
Android RIL	Android 6.0/7.0/8.0/9.0/10.0/11.0/12.0	Android 6.0/7.0/8.0/9.0/10.0/11.0/12.0	Android 6.0/7.0/8.0/9.0/10.0/11.0/12.0
USB Driver	Microsoft Windows 7/8/10 Linux/Android	Microsoft Windows 7/8/10 Linux/Android	Microsoft Windows 7/8/10 Linux/Android
WWAN	●	●	●
ECM	●	●	●
MBIM	●	●	●
NDIS			
Embedded AT	○	○	○
Firmware Upgrade	USB/FOTA	USB/FOTA	USB/FOTA
Interfaces			
SIM Card	1.8V/3.0V	1.8V/3.0V	1.8V/3.0V
UART	●	●	●
USB	●	●	●
PCM	○	○	○
Mic/Reciever	●	●	●
ADC	●	●	●
GPIO	●	●	●
SD Card	●	●	●
SPI	●	●	●
I2C	●	●	●
Diversity Receiver	○	○	○
Certification			
Certification	SA:Anatel/FCC/RoHS/REACH	E:CE(RED)/RCM/RoHS/REACH/UKCA/ Deutsche Telekom	CE*/RoHS*/REACH*
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart Meters,Router,Gateway		

○ : Optional * : Under Developing/On-going/Planning

| LTE Module

Technology	LTE CAT4	
Product	SIM7600X-H	
Picture		
Form Factor	LCC, 87PIN	
Dimensions(mm)	30.0*30.0*2.9	
Weight(g)	5.7±0.1	
Frequency Bands	-A(North America(AT&T)	
	-V(North America (Verizon))	
	-E(Europe/Middle East/Africa/Korea /Thailand)	LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800MHz
	-SA(New Zealand /Australia/South America)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66 LTE-TDD: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900MHz
	-JC/JE(Japan)	JC: LTE-FDD: B1/B3/B8/B18/B19/B26
	-G(Global)	LTE-FDD:B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28/B66 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: 850/900/1800/1900MHz
GNSS	-NA(North America)	LTE-FDD: B2/B4/B5/B12/B13/B14/B25/B26/ B66/B71 LTE-TDD: B41
	GNSS	◦
	Temperature	-40°C ~ +85°C
	Electrical Features	
	Supply Volte Range	3.4V~ 4.2V
	Power Consumption(mA)	2.8@GSM,BS_PA_MFRMS=2 3.3@WCDMA, DRX=9 2.3@LTE
Data Transfer		
	LTE(Mbps)	150(DL)/50(UL)
	WCDMA/HSPA+(Mbps)	42(DL)/5.76(UL)
	GPRS/EDGE(Kbps)	296(DL)/236.8(UL)
	SMS	●
	Software Features	
Protocol	Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/SMTP/SMTPS/DNS
	TLS	●
	File System	●
	Audio Record/Play	◦
	TTS	◦
	DTMF	◦
LBS	LBS	●
	FOTA	●
	Jamming Detection	●
	Android RIL	Android6.0/7.0/8.0/9.0/10.0/11.0/12.0
	USB Driver	Microsoft Windows 7/8/10 Linux/Android
WWAN	WWAN	●
	ECM	●
	MBIM	Win8/Win10
	NDIS	Linux/Windows 7/8/10
	Embedded AT	◦
	Firmware Upgrade	USB/FOTA
Interfaces		
	SIM Card	1.8V/3.0V
	UART	●
	USB	●
	PCM	◦
	ADC	●
GPIO	GPIO	●
	SD Card	●
	SPI	◦
	I2C	●
	Diversity Receiver	●
Certification		
	Certification	E: RoHS/REACH/NCC/IMDA/CE(RED)/UKCA/GCF/Deutsche Telekom/Vodafone*/NBTC JC: RoHS/REACH/JATE/Telec/Docomo/KDDI/Softbank SA: RoHS/REACH/NCC/RCM/CE(RED)/OCD(Anatel)/FCC NA: RoHS/REACH/FCC/IC/GCF/PTCRB/AT&T/Verizon/T-Mobile/US Cellular/Rogers* G: RoHS/REACH/CE(RED)/FCC/IC/CCC/SRRC/JATE/Telec/KC/IMDA/RCM/CASA/FAC*/Anatel/UKCA/NBTC/GCF/PTCRB /Deutsche Telekom/AT&T/ Verizon/T-Mobile/US Cellular/Telstra/Orange
	Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart Meters

◦ : Optional * : Under Developing/On-going/Planning

| LTE Module

Technology	LTE CAT1	
Product	SIM7600X	SIM7500X
Picture		
Form Factor	LCC, 87PIN	LGA, 56PIN
Dimensions(mm)	30.0*30.0*2.9	24.0*27.0*2.75
Weight(g)	5.7±0.1	4.0±0.1
Frequency Bands	-A(North America(AT&T)	LTE-FDD: B2/B4/B12 WCDMA: B2/B5
	-V(North America (Verizon))	
	-E(Europe/Middle East/Africa/Korea /Thailand)	LTE-FDD: B1/B3/B7/B8/B20 WCDMA: B1/B8 GSM: 900/1800MHz
	-SA(New Zealand /Australia/South America)	LTE-FDD: B1/B3/B5/B7/B8/B28 WCDMA: B1/B5
	-JC/JE(Japan)	JC: LTE-FDD: B1/B18/B19/B26 JE: LTE-FDD: B1/B3/B8
	-G(Global)	LTE-FDD:B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/ B19/B20/B25/B26/B28/B66 LTE-TDD: B34/B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: 850/900/1800/1900MHz
GNSS	-NA(North America)	LTE-FDD: B2/B4/B5/B12/B13/B14/B25/ B26/B66/B71 LTE-TDD: B41
	GNSS	◦
	Temperature	-40°C ~ +85°C
	Electrical Features	
	Supply Vltge Range	3.4V~ 4.2V
	Power Consumption(mA)	2.8@GSM,BS_PA_MFRMS=2 3.3@WCDMA, DRX=9 2.3@LTE
Data Transfer		
LTE(Mbps)	10(DL)/5(UL)	10(DL)/5(UL)
WCDMA/HSPA+(Mbps)	42(DL)/5.76(UL)	42(DL)/5.76(UL)
GPRS/EDGE(Kbps)	296(DL)/236.8(UL)	296(DL)/236.8(UL)
SMS	●	●
Software Features		
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/DNS
TLS	●	●
File System	●	●
Audio Record/Play	◦	◦
TTS	◦	◦
DTMF	◦	◦
LBS	●	●
FOTA	●	●
Jamming Detection	●	●
Android RIL	Android6.0/7.0/8.0/9.0/10.0	Android6.0/7.0/8.0/9.0/10.0
USB Driver	Microsoft Windows 7/8/10 Linux/Android	Microsoft Windows 7/8/10 Linux/Android
WWAN	●	●
ECM	●	●
MBIM	Win8/Win10	Win8/Win10
NDIS	Linux/Windows 7/8/10	Linux/Windows 7/8/10
Embedded AT		
Firmware Upgrade	USB/FOTA	USB/FOTA
Interfaces		
SIM Card	1.8V/3.0V	1.8V/3.0V
UART	●	●
USB	●	●
PCM	◦	◦
ADC	●	●
GPIO	●	●
SD Card	●	
SPI	◦	
I2C	●	●
Diversity Receiver	●	●
Certification		
Certification	E: RoHS/REACH/KC/IMDA/CE(RED)/UKCA/GCF/Deutsche Telekom /Vodafone*/Orange SA: RoHS/REACH/NCC/RCM/Telstra/CE(RED)/GCF/OCD(Anatel) NA: RoHS/REACH/FCC/IC/GCF/PTCRB/AT&T/Verizon/T-Mobile/US Cellular G: RoHS/REACH/CE(RED)/FCC/IC/CCC/SRRC/JATE/Telec/IMDA/RCM/ICASA /FAC*/Anatel/UKCA/GCF/PTCRB/Deutsche Telekom/ AT&T/Verizon/T-Mobile/ US Cellular/Orange	A: RoHS/REACH/FCC/PTCRB/AT&T/IC/Rogers E: RoHS/REACH/SRRC/CE(RED)/Deutsche Telekom JC: RoHS/REACH/Telec/JATE/DoCoMo/KDDI JE:RoHS/REACH/Telec/JATE/Softbank SA: RoHS/REACH/RCM/Telstra/CE(RED)/NCC
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart Meters	

◦ : Optional * : Under Developing/On-going/Planning

| LTE Module

Technology	LTE CAT1		
Product	A7676E	A7602E	SIM7672X(E NA G)
Picture			 
Form Factor	LCC+LGA, 124PIN	LCC+LGA,119PIN	LCC+LGA, 124PIN
Dimensions(mm)	24.0*24.0*2.4	30.0*30.0*2.5	24.0*24.0*2.4
Weight(g)	2.8±0.1	4.6±0.1	2.8±0.1
Frequency Bands	-A(North America(AT&T)		
	-V(North America (Verizon))		
	-E(Europe/Middle East/Africa)	LTE-FDD:B1/B3/B8/B20/B31/B72 GSM/GPRS/EDGE:900/1800MHz	LTE-FDD:B1/B3/B5/B7/B8/B20 GSM/GPRS/EDGE:900/1800MHz
	-SA(New Zealand /Australia/South America)		
	-JC/JE(Japan)		
	-G(Global)		LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/ B14*/B18/B19/B20/B25/B26/B28/B66/B71* LTE-TDD: B34/B38/B39/B40/B41
	-NA(North America)		LTE-FDD: B2/B4/B5/B12/B13/B66
GNSS		○	○
Temperature	-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃
Electrical Features			
Supply Voltge Range	3.4V~ 4.2V	3.4V~ 4.2V	3.4V~ 4.2V
Power Consumption(mA)	2.5@GSM,BS_PA_MFRMS=2 1.5@LTE	2.5@GSM,BS_PA_MFRMS=2 1.5@LTE	1.2@LTE
Data Transfer			
LTE(Mbps)	10(DL)/5(UL)	10(DL)/5(UL)	10(DL)/5(UL)
WCDMA/HSPA+(Mbps)			
GPRS/EDGE(Kbps)	236.8(DL)/236.8(UL)	236.8(DL)/236.8(UL)	
SMS	●	●	
Software Features			
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS /HTTP HTTP/HTTPS/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS /HTTP/ HTTPS/DNS
TLS	●	●	●
File System	●	●	●
Audio Record/Play	○	○	
TTS	○	○	
DTMF	○	○	
LBS	●	●	●
FOTA	●	●	●
Jamming Detection		○	●
Android RIL	Android6.0/7.0/8.0/9.0/10.0	Android6.0/7.0/8.0/9.0/10.0	Android6.0/7.0/8.0/9.0/10.0
USB Driver	Microsoft Windows 7/8/10 Linux/Android	Microsoft Windows 7/8/10 Linux/Android	Microsoft Windows 7/8/10 Linux/Android
WWAN	●	●	●
ECM	●	●	●
MBIM			
NDIS			
Embedded AT	○	○	○
Firmware Upgrade	USB/FOTA	USB/FOTA	USB/FOTA
Interfaces			
SIM Card	1.8V/3.0V	1.8V/3.0V	1.8V/3.0V
UART	●	●	●
USB	●	●	●
PCM	○	○	●
Mic/Reciever	●	●	
ADC	●	●	●
GPIO	●	●	●
SD Card			
SPI	●	●	
I2C	●	●	●
Diversity Receiver			
Certification			
Certification	E:RoHS/REACH/CE(RED)	E: RoHS/REACH/CE(RED)/Deutsche Telekom	E:RoHS/REACH/CE(RED)/RCM*/GCF* NA:RoHS/REACH/FCC/CE(RED)/GCF/IC/PTCRB G:CCC*/CTA*/SRRC*/FCC/CE(RED)/RoSH/REACH/ GCF/PTCRB/RCM*/IC/TELEC/JATE/NCC*/KC/ AT&T/Verizon*/T-Mobile
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart Meters,Router,Gateway		

○ : Optional * : Under Developing/On-going/Planning

| LTE Module

Technology	LTE CAT1		
Product	A7672X(E S SA G)	A7682E	A7683E
Picture	 		
Form Factor	LCC+LGA, 124PIN	LGA, 85PIN	LGA, 85PIN
Dimensions(mm)	24.0*24.0*2.4	19.6*19.6*2.4	15.6*17.6*2.4
Weight(g)	2.8±0.1	1.9±0.1	1.4±0.1
Frequency Bands	-A(North America(AT&T)		
	-V(North America (Verizon))		
	-E(Europe/Middle East/Africa)	LTE-FDD: B1/B3/B5/B7/B8/B20/B28* GSM/GPRS/EDGE: 900/1800 MHz	LTE-FDD: B1/B3/B5/B7/B8/B20 GSM/GPRS/EDGE: 900/1800 MHz
	-SA(New Zealand /Australia/South America)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66 GSM: 850/900/1800/1900 MHz	
	-S(Vitnam/India)	LTE-FDD: B1/B3/B5/B8/ LTE-TDD: B34/B38/B39/B40/B41 GSM: 900/1800 MHz	
	-JC/JE(Japan)		
	-G(Global)	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/ B17/B18/B19/B20/B25/B26/B28/B66 LTE-TDD: B34/B38/B39/B40/B41 GSM: 850/900/1800/1900MHz	
GNSS	○		●
Temperature	-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃
Electrical Features			
Supply Voltge Range	3.4V~ 4.2V	3.4V~ 4.2V	3.4V~ 4.2V
Power Consumption(mA)	2.5@GSM,BS_PA_MFRMS=2 1.5@LTE	2.5@GSM,BS_PA_MFRMS=2 1.5@LTE	1.5@LTE
Data Transfer			
LTE(Mbps)	10(DL)/5(UL)	10(DL)/5(UL)	10(DL)/5(UL)
WCDMA/HSPA+(Mbps)			
GPRS/EDGE(Kbps)	236.8(DL)/236.8(UL)	236.8(DL)/236.8(UL)	
SMS	●	●	●
Software Features			
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS / HTTP/HTTPS/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS /HTTP/ HTTPS/DNS
TLS	●	●	●
File System	●	●	●
Audio Record/Play	○	○	○
TTS	○	○	○
DTMF	○	○	○
LBS	●	●	●
FOTA	●	●	●
Jamming Detection	○	○	○
Android RIL	Android6.0/7.0/8.0/9.0/10.0	Android6.0/7.0/8.0/9.0/10.0	Android6.0/7.0/8.0/9.0/10.0
USB Driver	Microsoft Windows 7/8/10 Linux/Android	Microsoft Windows 7/8/10 Linux/Android	Microsoft Windows 7/8/10 Linux/Android
WWAN	●	●	●
ECM	●	●	●
MBIM			
NDIS			
Embedded AT	○	○	○
Firmware Upgrade	USB/FOTA	USB/FOTA	USB/FOTA
Interfaces			
SIM Card	1.8V/3.0V	1.8V/3.0V	1.8V/3.0V
UART	●	●	●
USB	●	●	●
PCM	○	○	○
Mic/Reciever	●	●	●
ADC	●	●	●
GPIO	●	●	●
SD Card			
SPI	●		
I2C	●	●	●
Diversity Receiver			
Certification			
Certification	E:RoHS/REACH/CE(RED) SA:RoHS/REACH/RCM/CE(RED)/FCC/Anatel* G:CCC*/CTA*/SRRC*/FCC/CE(RED)/ RoSH/REACH	RoHS/REACH/CE(RED)	RoHS/REACH/CE(RED)/Anatel*
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart Meters,Router,Gateway		

○ : Optional * : Under Developing/On-going/Planning

| LTE Module

Technology	LTE CAT1
Product	A7663E
Picture	
Form Factor	LGA, 85PIN
Dimensions(mm)	19.6*19.6*2.4
Weight(g)	1.9±0.1
Frequency Bands	-A(North America(AT&T)
	-V(North America (Verizon))
	-E(Europe/Middle East/Africa/Korea /Thailand)
	LTE-FDD: B1/B3/B5/B7/B8/B20/B28
	-SA(New Zealand /Australia/South America)
	-JC/JE(Japan)
	-G(Global)
GNSS	•
	Temperature -40°C ~ +85°C
Electrical Features	
Supply Voltge Range	3.4V~ 4.2V
Power Consumption(mA)	1.5@LTE
Data Transfer	
LTE(Mbps)	10(DL)/5(UL)
WCDMA/HSPA+(Mbps)	
GPRS/EDGE(Kbps)	
SMS	•
Software Features	
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS /HTTP/HTTPS/DNS
TLS	•
File System	•
Audio Record/Play	○
TTS	○
DTMF	○
LBS	•
FOTA	•
Jamming Detection	○
Android RIL	Android6.0/7.0/8.0/9.0/10.0
USB Driver	Microsoft Windows 7/8/10 Linux/Android
WWAN	•
ECM	•
MBIM	
NDIS	
Embedded AT	○
Firmware Upgrade	USB/FOTA
Interfaces	
SIM Card	1.8V/3.0V
UART	•
USB	•
PCM	○
ADC	•
GPIO	•
SD Card	
SPI	
I2C	•
Diversity Receiver	
Certification	
Certification	RoHS/REACH/CE(RED)/Anatel*
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart Meters

○ : Optional * : Under Developing/On-going/Planning

| LTE Module

Technology	LTE CAT1
Product	A7673 (E/SA)
Picture	
Form Factor	LCC+LGA, 134PIN
Dimensions(mm)	24.0*24.0*2.4
Weight(g)	2.8±0.1
Frequency Bands	-A(North America(AT&T)
	-V(North America (Verizon))
	-E(Europe/Middle East/Africa/Korea /Thailand)
	LTE-FDD: B1/B3/B5/B7/B8/B20/B28
	-SA(New Zealand /Australia/South America)
	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66
	-JC/JE(Japan)
GNSS	○
	Temperature -40°C ~ +85°C
Electrical Features	
Supply Voltge Range	3.4V~ 4.2V
Power Consumption(mA)	1.5@LTE
Data Transfer	
LTE(Mbps)	10(DL)/5(UL)
WCDMA/HSPA+(Mbps)	
GPRS/EDGE(Kbps)	
SMS	•
Software Features	
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS /HTTP/HTTPS/DNS
TLS	•
File System	•
Audio Record/Play	○
TTS	•
DTMF	•
LBS	•
FOTA	•
Jamming Detection	○
Android RIL	Android6.0/7.0/8.0/9.0/10.0
USB Driver	Microsoft Windows 7/8/10 Linux/Android
WWAN	•
ECM	•
MBIM	
NDIS	
Embedded AT	○
Firmware Upgrade	USB/FOTA
Interfaces	
SIM Card	1.8V/3.0V
UART	•
USB	•
PCM	○
ADC	•
GPIO	•
SD Card	
SPI	
I2C	•
Diversity Receiver	
Certification	
Certification	RoHS/REACH/CE(RED)/Anatel*
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart Meters

○ : Optional * : Under Developing/On-going/Planning

|3G Module

Technology	3G
Product	A5360G
Picture	
Form Factor	LCC+LGA, 163PIN
Dimensions(mm)	30.0*30.0*2.5
Weight(g)	4.6±0.1
Frequency Bands	-A(North America(AT&T)
	-V(North America (Verizon))
	-E(Europe/Middle East/Africa/Korea /Thailand)
	-SA(New Zealand /Australia/South America)
	-JC/JE(Japan)
	-G(Global)
	WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900MHz
	-NA(North America)
GNSS	
Temperature	-40°C ~ +85°C
Electrical Features	
Supply Voltge Range	3.4V~ 4.2V
Power Consumption(mA)	2.8@GSM,BS_PA_MFRMS=2 3.3@WCDMA, DRX=9
Data Transfer	
WCDMA/HSPA+(Mbps)	21(DL)/5.76(UL)
GPRS/EDGE(Kbps)	236.8(DL)/236.8(UL)
SMS	●
Software Features	
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS/ HTTP/HTTPS/DNS
TLS	●
File System	●
Audio Record/Play	●
TTS	○
DTMF	●
LBS	●
FOTA	●
Jamming Detection	
Android RIL	Android6.0/7.0/8.0/9.0/10.0
USB Driver	Microsoft Windows 7/8/10 Linux/Android
WWAN	●
ECM	●
MBIM	●
NDIS	
Embedded AT	
Firmware Upgrade	USB/FOTA
Interfaces	
SIM Card	1.8V/3.0V
UART	●
USB	●
PCM	○
ADC	●
GPIO	●
SD Card	●
SPI	●
I2C	●
Diversity Receiver	
Certification	
Certification	
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart Meters,Router,Gateway

○ : Optional * : Under Developing/On-going/Planning

| GSM/GPRS Module

Technology	GSM/GPRS		
Product	SIM800C	SIM800F	SIM800C-DS
Picture			
Form Factor	LCC, 42PIN	LCC, 68PIN	LCC& LGA, 77PIN
Dimensions(mm)	17.6*15.7*2.3	24.0*24.0*3.0	17.6*15.7*2.3
Weight(g)	1.3±0.1	3.1±0.1	1.3±0.1
Frequency Bands	GSM: 850/900/1800/1900MHz	GSM: 850/900/1800/1900MHz	GSM: 850/900/1800/1900MHz
Bluetooth	BT 3.0	BT 3.0	BT 3.0
GNSS			
Temperature	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C
Electrical Features			
Supply Voltage Range	3.4V~4.4V	3.4V~4.4V	3.4V~4.4V
Power Consumption(mA)	1.50@GSM, DRX=2 0.90@GSM, DRX=9	1.30@GSM, DRX=2 0.85@GSM, DRX=9	1.60@GSM, DRX=2 0.93@GSM, DRX=9
Data Transfer			
GPRS Slot	Class 10/12	Class 10/12	Class 10/12
Data Rate(kbps)	85.6 (DL&UL)	85.6 (DL&UL)	85.6 (DL&UL)
Software Features			
Protocols	TCP/UDP/HTTP/FTP/ POP3/SMTP/PPP	TCP/UDP/HTTP/FTP/ POP3/SMTP/PPP	TCP/UDP/HTTP/FTP/ POP3/SMTP/PPP
MMS	●	●	●
TLS	○	○	○
Audio Record/Play	●	●	●
TTS	○	○	○
DTMF	●	●	●
LBS	○	○	○
Jamming Detection	●	●	●
Network Scanning	●	●	●
MUX	●	●	●
Embedded AT	○	○	○
Firmware Upgrade	USB/UART	USB/UART	USB/UART
Specifications for Voice			
Speech Codec Modes	AMR/HR/FR/EFR	AMR/HR/FR/EFR	AMR/HR/FR/EFR
Echo Arithmetic	AEC/EES	AEC/EES	AEC/EES
Interfaces			
UART	●	●	●
USB	●	●	●
SIM Card	1.8V/3.0V	1.8V/3.0V	1.8V/3.0V
PCM		○	○
Analog Audio	1 Input&1 Output	1 Input&1 Output	1 Input&1 Output
ADC	●	●	●
GPIO	At Least 2*GPIO	At Least 3*GPIO	At Least 4*GPIO
SD	●	●	●
SPI		○	○
I2C		●	●
Certification			
Certification	RoHS/REACH/CCC/CTA/SRRC/Mobile/ Unicom/RCM/CE(RED)/GCF/BQB(Bluetooth)/ TIM/Deutsche Telekom/ICASA/FCC/OCD(Anatel)	RoHS/REACH/CE(RED)/GCF/Orange/ICASA/FCC	CE(RED)/RoHS/REACH
Typical Applications	Telematics,Fleet Management,Smart Meters,Security,RMAC		

○ : Optional * : Under Developing/On-going/Planning

| GSM/GPRS Module

Technology	GSM/GPRS	
Product	SIM868	SIM868E
Picture		
Form Factor	LCC&LGA,77PIN	LCC&LGA,77PIN
Dimensions(mm)	17.6*15.7*2.3	17.6*15.7*2.3
Weight(g)	1.5±0.1	1.5±0.1
Frequency Bands	GSM: 850/900/1800/1900MHz	GSM: 850/900/1800/1900MHz
Bluetooth	BT 3.0	BT 3.0&4.0
GNSS	BeiDou/GPS/GLONASS	BeiDou/GPS/GLONASS
Temperature	-40°C~+85°C	-40°C ~ +85°C
Electrical Features		
Supply Voltge Range	3.4V~4.4V	3.4V~4.4V
Power Consumption(mA)	1.42@GSM, DRX=2 0.86@GSM, DRX=9	1.42@GSM, DRX=2 0.86@GSM, DRX=9
Data Transfer		
GPRS Slot	Class 10/12	Class 10/12
Data Rate(kbps)	85.6 (DL&UL)	85.6 (DL&UL)
Software Features		
Protocols	TCP/UDP/HTTP/FTP/ POP3/SMTP/PPP	TCP/UDP/HTTP/FTP/ POP3/SMTP/PPP
MMS	●	●
TLS	○	○
Audio Record/Play	●	●
TTS	○	○
DTMF	●	●
LBS	○	○
Jamming Detection	●	●
Network Scanning	●	●
MUX	●	●
Embedded AT	○	○
Firmware Upgrade	USB/UART	USB/UART
Specifications for Voice		
Speech Codec Modes	AMR/HR/FR/EFR	AMR/HR/FR/EFR
Echo Arithmetic	AEC/EES	AEC/EES
Interfaces		
UART	●	●
USB	●	●
SIM Card	1.8V/3.0V	1.8V/3.0V
PCM	○	○
Analog Audio	1 Input&2 Output	1 Input&2 Output
ADC	●	●
GPIO	At Least 4*GPIO	At Least 4*GPIO
SD	●	●
SPI	○	○
I2C	●	●
Certification		
Certification	RoHS/REACH/CCC/CTA/SRRC/Mobile/ CE(RED)/GCF*/Deutsche Telekom/ICASA/FCC	BQB(Bluetooth)/CE(RED)/Deutsche Telekom/ RoHS/REACH/TIM
Typical Applications	Telematics,Fleet Management,Smart Meters,Security,RMAC	

○: Optional *: Under Developing/On-going/Planning

| GNSS Module

Technology	GNSS		
Product	SIM66MD	SIM66MD(R)	SIM66D(R)
Picture			
Form Factor	LCC, 18PIN	LCC, 18PIN	LCC, 24PIN
Dimensions(mm)	9.7*10.1*2.5	9.7*10.1*2.5	16.0*12.2*2.4
Weight(g)	0.5	0.5	1
Temperature	-40 C ~+85 C	-40 C ~+85 C	-40 C ~+85 C
Electrical Features			
Supply Voltage Range	2.1~4.0V	2.1~4.0V	2.7~3.6V
I/O Voltage	Vin-0.3V	Vin-0.3V	3.3V
Power Consumption	Acquisition	25mA	10mA
	Tracking	25mA	10mA
	Sleep	NC	NC
	Backup	60uA	1uA
GNSS			
GNSS	L1: GPS/Beidou/GLONASS/Galileo/QZSS L5: GPS/Beidou/ Galileo/QZSS/NavIC	L1: GPS/Beidou/GLONASS/Galileo/QZSS L5: GPS/Beidou/ Galileo/QZSS/NavIC	L1: GPS/Beidou/GLONASS/Galileo/QZSS L5: GPS/Beidou/ Galileo/QZSS/NavIC
A-GPS	●	●	●
Channel Number	L1:75+L5:60	L1:75+L5:60	L1:75+L5:60
SBAS	WAAS/EGNOS/GAGAN/MSAS/SDCM	WAAS/EGNOS/GAGAN/MSAS/SDCM	WAAS/EGNOS/GAGAN/MSAS/SDCM
Sensitivity	Tracking	-166 dBm	-166 dBm
	Cold Start	-150 dBm	-150 dBm
	Reacquisition	-156 dBm	-156 dBm
TTFF (Time to First Fix)	Cold Start	25s	25s
	Warm Start	25s	25s
	Hot Start	<1s	<1s
Accuracy	Position	<1.5m CEP	<5cm CEP
	Velocity	0.1m/s	0.1m/s
Max Update Rate	10Hz	10Hz	10Hz
Baud Rate(default)	115200	115200	115200
Jamming Detection	●	●	●
Anti-jamming	●	●	●
Built-in LNA	●	●	●
RTK		●	●
Interfaces			
UART	●	●	●
Reset	●	●	●
Time Pulse	●	●	●
Digital I/O	●	●	●
Antenna			
Antenna Type	Active/passive	Active/passive	Active/passive
Antenna Power	External or internal	External or internal	External or internal
Certification			
Certification	RoHS*/REACH*/CE(RED)*	RoHS/REACH/CE(RED)	RoHS/REACH/CE(RED)
Typical Applications	Pet Tracking, Asset Tracking		

○: Optional *: Under Developing/On-going/Planning

| GNSS Module

Technology		GNSS		
Product		SIM68AD	SIM68D	SIM68I
Picture				
Form Factor		LCC, 24PIN	LCC, 24PIN	LCC, 24PIN
Dimensions(mm)		16.0*12.2*2.4	16.0*12.2*2.4	16.0*12.2*2.4
Weight(g)		1	1	1
Temperature		-40℃~+85℃	-40℃~+85℃	-40℃~+85℃
Electrical Features				
Supply Voltage Range		2.8~4.3V	2.8~4.5V	2.8~4.5V
I/O Voltage		2.8V/1.8V	2.8V/1.8V	2.8V/1.8V
Power Consumption	Acquisition	30mA	30mA	30mA
	Tracking	32mA	32mA	32mA
	Sleep	340uA	340uA	340uA
	Backup	50uA	50uA	50uA
GNSS				
GNSS		L1: GPS/Beidou/GLONASS/Galileo/QZSS L5: GPS/Beidou/ Galileo/QZSS	L1: GPS/Beidou/GLONASS/Galileo/QZSS L5: GPS/Beidou/ Galileo/QZSS	L1: GPS/Beidou/GLONASS/Galileo L5: NavIC
A-GPS		●	●	●
Channel Number		L1:75+L5:60	L1:75+L5:60	L1:75+L5:7
SBAS		WAAS/EGNOS/GAGAN/MSAS/SDCM	WAAS/EGNOS/GAGAN/MSAS/SDCM	WAAS/EGNOS/GAGAN/MSAS/SDCM
Sensitivity	Tracking	-165 dBm	-165 dBm	-165 dBm
	Cold Start	-148 dBm	-148 dBm	-148 dBm
	Reacquisition	-160 dBm	-160 dBm	-160 dBm
TTFF (Time to First Fix)	Cold Start	27s	27s	27s
	Warm Start	24s	24s	24s
	Hot Start	<1s	<1s	<1s
Accuracy	Position	<1.5m CEP	<1.5m CEP	<1.5m CEP
	Velocity	0.1m/s	0.1m/s	0.1m/s
Max Update Rate		1Hz	10Hz	10Hz
Baud Rate(default)		115200	115200	115200
Jamming Detection		●	●	●
Anti-jamming		●	●	●
Built-in LNA		●	●	●
DR		●		
Interfaces				
UART		●	●	●
Reset		●	●	●
Time Pulse		●	●	●
Digital I/O		●	●	●
Antenna				
Antenna Type		Active/passive	Active/passive	Active/passive
Antenna Power		External or internal	External or internal	External or internal
Certification				
Certification		RoHS*/REACH*/CE(RED)*	RoHS/REACH/CE(RED)/UKCA	RoHS/REACH/CE(RED)*
Typical Applications		Pet Tracking, Asset Tracking		

o: Optional *: Under Developing/On-going/Planning

| GNSS Module

Technology		GNSS		
Product		SIM68MD	SIM68M	SIM66M
Picture				
Form Factor		LCC, 18PIN	LCC, 18PIN	LCC, 18PIN
Dimensions(mm)		9.7*10.1*2.5	9.7*10.1*2.5	9.7*10.1*2.5
Weight(g)		0.5	0.5	0.5
Temperature		-40℃~+85℃	-40℃~+85℃	-40℃~+85℃
Electrical Features				
Supply Voltge Range		2.8~4.3V	2.8~4.3V	3.2~4.0V
I/O Voltage		2.8V/1.8V	2.8V	Vin-0.3V
Power Consumption	Acquisition	30mA	25mA	27mA
	Tracking	32mA	21mA	28mA
	Sleep	340uA	340μA	NC
	Backup	50uA	14μA	78uA
GNSS				
GNSS		L1: GPS/Beidou/GLONASS/Galileo/QZSS L5: GPS/Beidou/ Galileo/QZSS	GPS/GLONASS/Galileo/QZSS	GPS/GLONASS
A-GPS		●	●	●
Channel Number		L1:75+L5:60	33 Track/99 Acq	46 Track/64 Acq
SBAS		WAAS/EGNOS/GAGAN/MSAS/SDCM	WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS
Sensitivity	Tracking	-157 dBm	-165 dBm	-160 dBm
	Cold Start	-141 dBm	-148 dBm	-147 dBm
	Reacquisition	-151 dBm	-160 dBm	-158 dBm
TTFF (Time to First Fix)	Cold Start	27s	28s	29s
	Warm Start	24s	26s	24s
	Hot Start	<1s	<1s	<1s
Accuracy	Position	<1.5m CEP	<2.5m CEP	<2.5m CEP
	Velocity	0.1m/s	0.1m/s	0.1m/s
Max Update Rate		10Hz	10Hz	1Hz
Baud Rate(default)		115200	9600/115200	9600/115200
Jamming Detection		●	●	●
Anti-jamming		●	●	●
Built-in LNA			●	●
Interfaces				
UART		●	●	●
Reset		●	●	●
Time Pulse		●	●	●
Digital I/O		●	●	●
Antenna				
Antenna Type		Active/passive	Active/passive	Active/passive
Antenna Power		External or internal	External or internal	External or internal
Certification				
Certification		RoHS*/REACH*/CE(RED)*	RoHS/REACH/CE(RED)/ Deutsche Telekom	RoHS/REACH/CE(RED)/UKCA
Typical Applications		Pet Tracking, Asset Tracking		

o: Optional *: Under Developing/On-going/Planning

| GNSS Module

Technology		GNSS		
Product		SIM33EAU	SIM33ELA	SIM32ELA
Picture				
Form Factor		LCC, 16PIN	LCC, 31PIN	LCC, 31PIN
Dimensions(mm)		22.0*22.0*7.5	14.0*9.6*2.15	14.0*9.6*2.15
Weight(g)		8.5	0.5	0.5
Temperature		-40℃~+85℃	-40℃~+85℃	-40℃~+85℃
Electrical Features				
Supply Voltage Range		2.8~4.3V	2.8~4.3V	2.8~4.3V
I/O Voltage		2.8V	2.8V	2.8V
Power Consumption	Acquisition	38mA	25mA	13mA
	Tracking	32mA	20mA	13mA
	Sleep	520μA	320μA	210uA
	Backup	13μA	14μA	15μA
GNSS				
GNSS		GPS/GLONASS/Galileo/QZSS	GPS/GLONASS/Galileo/QZSS	GPS/GLONASS/BEIDOU/Galileo/QZSS
A-GPS		●	●	●
Channel Number		33 Track/99 Acq	33 Track/99 Acq	47
SBAS		WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS
Sensitivity	Tracking	-165 dBm	-165 dBm	-166 dBm
	Cold Start	-146 dBm	-147 dBm	-148 dBm
	Reacquisition	-160 dBm	-160 dBm	-158 dBm
TTFF (Time to First Fix)	Cold Start	31s	28s	20s
	Warm Start	26s	26s	20s
	Hot Start	<1s	<1s	<1s
Accuracy	Position	<2.5m CEP	<2.5m CEP	<2m CEP
	Velocity	0.1m/s	0.1m/s	0.1m/s
Max Update Rate		10Hz	10Hz	10Hz
Baud Rate(default)		9600/115200	9600/115200	115200
Jamming Detection		●	●	●
Anti-jamming		●	●	●
Built-in LNA		●	●	●
Interfaces				
UART		●	●	●
Reset				●
Time Pulse		●	●	●
Digital I/O		●	●	●
Antenna				
Antenna Type		Passive	Passive	Passive
Antenna Power		Internal	Internal	Internal
Certification				
Certification		RoHS/REACH/CE(RED)	RoHS/REACH/CE(RED)/ Deutsche Telekom	RoHS/REACH/CE(RED)/UKCA
Typical Applications		Pet Tracking, Asset Tracking		

o: Optional * : Under Developing/On-going/Planning

| GNSS Module

Technology		GNSS		
Product		SIM65M	SIM65M(U)	SIM65M(W)
Picture				
Form Factor		LCC, 18PIN	LCC, 18PIN	LCC, 18PIN
Dimensions(mm)		9.7*10.1*2.5	9.7*10.1*2.5	9.7*10.1*2.5
Weight(g)		0.5	0.5	0.5
Temperature		-40℃~+85℃	-40℃~+85℃	-40℃~+85℃
Electrical Features				
Supply Voltage Range		2.8~4.3V	3.0~4.3V	1.75~1.95V
I/O Voltage		2.8V	3.0V	1.8V
Power Consumption	Acquisition	12mA	11mA	15mA
	Tracking	12mA	11mA	15mA
	Sleep	210uA	210uA	210uA
	Backup	15μA	15μA	15μA
GNSS				
GNSS		GPS/GLONASS/BEIDOU/Galileo/QZSS	GPS/GLONASS/BEIDOU/Galileo/QZSS	GPS/GLONASS/BEIDOU/Galileo/QZSS
A-GPS		●	●	●
Channel Number		47	47	47
SBAS		WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS
Sensitivity	Tracking	-166 dBm	-166 dBm	-166 dBm
	Cold Start	-147 dBm	-147 dBm	-147 dBm
	Reacquisition	-158 dBm	-158 dBm	-158 dBm
TTFF (Time to First Fix)	Cold Start	30s	30s	30s
	Warm Start	25s	25s	25s
	Hot Start	<1s	<1s	<1s
Accuracy	Position	<2m CEP	<2m CEP	<2m CEP
	Velocity	0.1m/s	0.1m/s	0.1m/s
Max Update Rate		10Hz	10Hz	10Hz
Baud Rate(default)		115200	115200	115200
Jamming Detection		●	●	●
Anti-jamming		●	●	●
Built-in LNA		●	●	●
Interfaces				
UART		●	●	●
Reset		●	●	●
Time Pulse		●	●	●
Digital I/O		●	●	●
Antenna				
Antenna Type		Active/passive	Active/passive	Active/passive
Antenna Power		External or internal	External or internal	External or internal
Certification				
Certification		RoHS/REACH/CE(RED)/UKCA	RoHS/REACH/CE(RED)/UKCA	RoHS/REACH/CE(RED)/UKCA
Typical Applications		Pet Tracking, Asset Tracking		

o: Optional * : Under Developing/On-going/Planning

| Wi-Fi Module

Technology	Wi-Fi	
Product	W58	W59
Picture		
Form Factor	LCC, 32PIN	LCC, 40PIN
Dimensions(mm)	16.6 *13.0*2.1	16.0 *18.3*2.3
Weight(g)	1.0	1.2
Bluetooth	BT 3.0& BLE4.1	BT 3.0& BLE4.2
Temperature	-40°C ~ +85°C	-40°C ~ +85°C
General Features		
Frequency band	2.412 ~ 2.484 GHz 5.15~5.35GHz,5.47~5.85MHz	2.412 ~ 2.484 GHz 5.17~5.825GHz
Supply Voltage	3.2V~ 3.4V	3.2V~ 3.4V
WLAN Standard	IEEE 802.11 b/g/n/ac	IEEE 802.11a/b/g/n/ac
Modulation Mode	SSSS,CCK, OFDM,BPSK,QPSK,16QAM,64QAM,256QAM	SSSS/CCK/OFDM/BPSK/QPSK/16QAM/64QAM/256QAM
Encryption Mode	WEP/TKIP/AES/WPA-PSK/WPA2-PSK	WEP/TKIP/AES/WPA-PSK/WPA2-PSK
AP (Max Access Point)	30	30
Operator Mode	AP/STA	AP/STA
BT Protocol	SPP(BT 4.0)/GATT(BLE 4.1)	SPP(BT 3.0)/GATT(BLE 4.1)
Data Rate		
802.11b (Mbps)	Max. 11	Max. 11
802.11g (Mbps)	Max. 54	Max. 54
802.11n_HT20 (Mbps)	Max. 65	Max. 65
802.11n_HT40 (Mbps)	Max. 135	Max. 135
802.11ac_HT40 (Mbps)	Max. 200	Max. 200
802.11ac_HT80 (Mbps)	Max. 433.3	Max. 433.3
802.11ax_HT80 (Mbps)		
BT 4.1 (Mbps)	Max. 24	Max. 24
Transmitting Power		
802.11b/11Mbps	18dBm	17.75dBm
802.11g/54Mbps	15dBm	TBD
802.11n_HT20/65Mbps	15dBm	16dBm
802.11n_HT40/135Mbps	14dBm	15.78dBm
Rx Sensitivity		
802.11b/1Mbps	-95dBm	TBD
802.11b/11Mbps	-94dBm	TBD
802.11g/6Mbps	-91dBm	TBD
802.11g/54Mbps	-78dBm	TBD
802.11n_HT20 MCS0	-90dBm	TBD
802.11n_HT40 MCS7	-75dBm	TBD
Interfaces		
SDIO 3.0	*1	*1
UART	*1	*1
LTE coexistence	*2	*2
BT_EN	*1	*1
WLAN_EN	*1	*1
Antenna	WiFi & BT Antenna	WiFi & BT Antenna *2
Certification		
Certification	CE(RED)/FCC/RCM/Anatel/RoHS/REACH	RoHS*/REACH*/CE(RED)*
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart City, Smart Health, Router,Gateway	

o: Optional *: Under Developing/On-going/Planning

W58: Must be working together with SIM7600X-H.

W59: Must be working together with SIM7800E

| Wi-Fi Module

Technology	Wi-Fi		
Product	W80	W82	W74
Picture			
Form Factor	LCC+LGA, 90PIN	LCC+LGA, 90PIN	LCC+LGA, 90PIN
Dimensions(mm)	17.0 *24.0*2.9	17.0 *24.0*2.9	17.0 *24.0*2.6
Weight(g)	2.1	2.1	2.1
Bluetooth	BT 5.1&BLE5.0	BT 5.2&BLE5.0	BT 5.0&BLE5.0
Temperature	-40°C ~ +85°C	-40°C ~ +85°C	-30 C to +70 C
General Features			
Frequency band	2.412 ~ 2.484 GHz 5.17~5.825GHz	2.412 ~ 2.484 GHz 5.17~5.825GHz	2.412 ~ 2.484 GHz 5.17~5.825GHz
Supply Voltage	3.3V ~ 4.25V	3.3V ~ 4.25V	3.3V ~ 4.25V
WLAN Standard	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac/ax	IEEE 802.11a/b/g/n/ac
Modulation Mode	CCK, BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM	CCK, BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM	CCK, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Encryption Mode	WPA3	WPA3	WPA3
AP (Max Access Point)	30	30	30
Operator Mode	AP/STA	AP/STA	AP/STA
BT Protocol	SPP(BT 3.0)/GATT(BLE 4.1)	SPP(BT 3.0)/GATT(BLE 4.1)	SPP(BT 3.0)/GATT(BLE 4.1)
Data Rate			
802.11b (Mbps)			
802.11g (Mbps)			
802.11n_HT20 (Mbps)			
802.11n_HT40 (Mbps)			
802.11ac_HT40 (Mbps)			
802.11ac_HT80 (Mbps)			
802.11ax_HT80 (Mbps)	Max.1.775Gbps	Max.3.6Gbps	
BT 4.1 (Mbps)		Max. 2Mbps	Max. 2Mbps
Transmitting Power			
802.11b/11Mbps	TBD	TBD	TBD
802.11g/54Mbps	TBD	TBD	TBD
802.11n_HT20/65Mbps	TBD	TBD	TBD
802.11n_HT40/135Mbps	TBD	TBD	TBD
Rx Sensitivity			
802.11b/1Mbps	TBD	TBD	TBD
802.11b/11Mbps	TBD	TBD	TBD
802.11g/6Mbps	TBD	TBD	TBD
802.11g/54Mbps		TBD	TBD
802.11n_HT20 MCS0	TBD	TBD	TBD
802.11n_HT40 MCS7	TBD	TBD	TBD
Interfaces			
SDIO 3.0			
UART	*1	*1	*1
LTE coexistence	*2	*2	*2
BT_EN	*1	*1	*1
WLAN_EN	*1	*1	*1
Antenna	WiFi & BT Antenna *2	WiFi & BT Antenna *2	WiFi & BT Antenna *2
Certification			
Certification	CE(RED)/RoHS*/REACH*	RoHS*/REACH*/CE(RED)/FCC*	RoHS*/REACH*/CE(RED)*
Typical Applications	Fleet Management,Telematics,Security,Tracking,Agriculture,Smart City, Smart Health, Router,Gateway		

o: Optional *: Under Developing/On-going/Planning

W82: Must be working together with SIM8260X

W80: Must be working together with SIM8200G.

W74: Must be working together with SIM7906X/SIM7912X