



# MODULES FOR A CONNECTED WORLD



## SIMCom Wireless Solutions Limited

Add: Building B, SIM Technology Building, No.633 Jinzhong Road,  
Changning District, Shanghai P.R.China 200335  
Tel: +86 021-31575100  
Email: simcom@simcom.com  
Web: www.simcom.com

### Contact Us

Sales Support : overseas-sales@simcom.com    Technical Support: support@simcom.com    Market & Media: simcom@simcom.com



Web:  
www.simcom.com



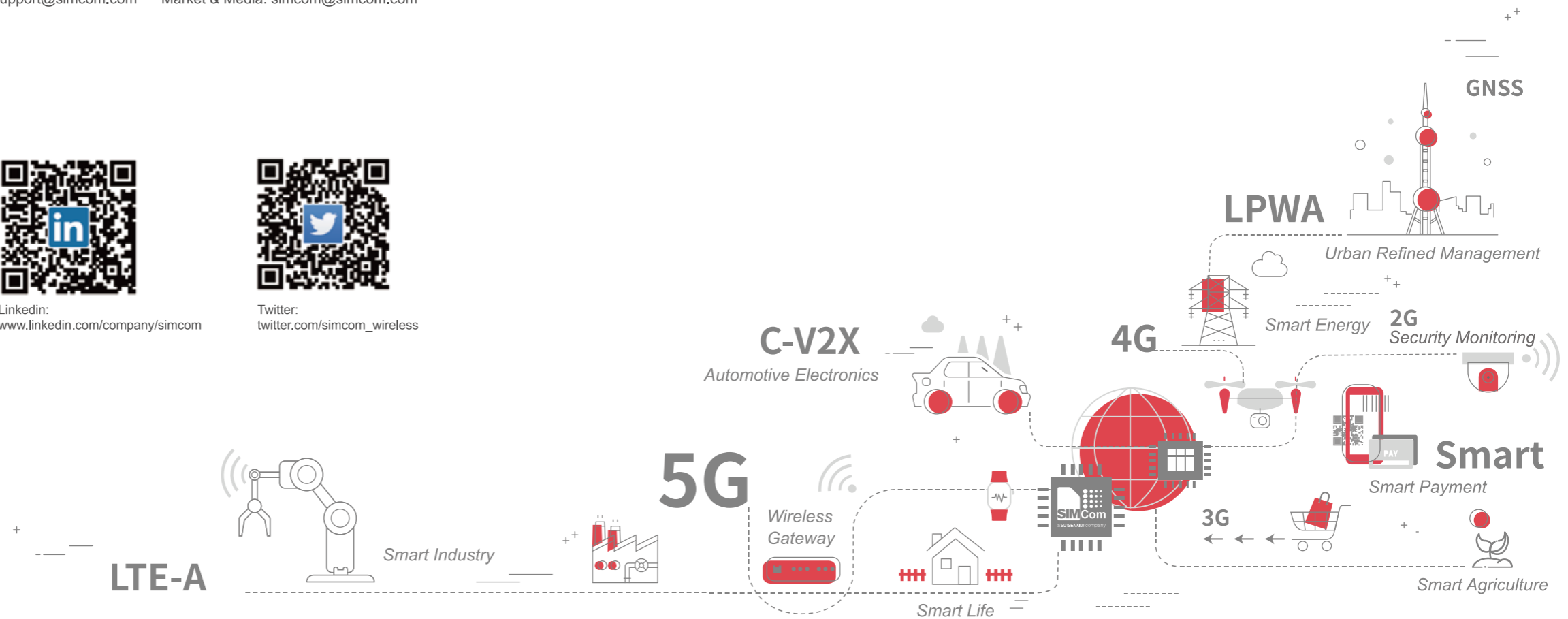
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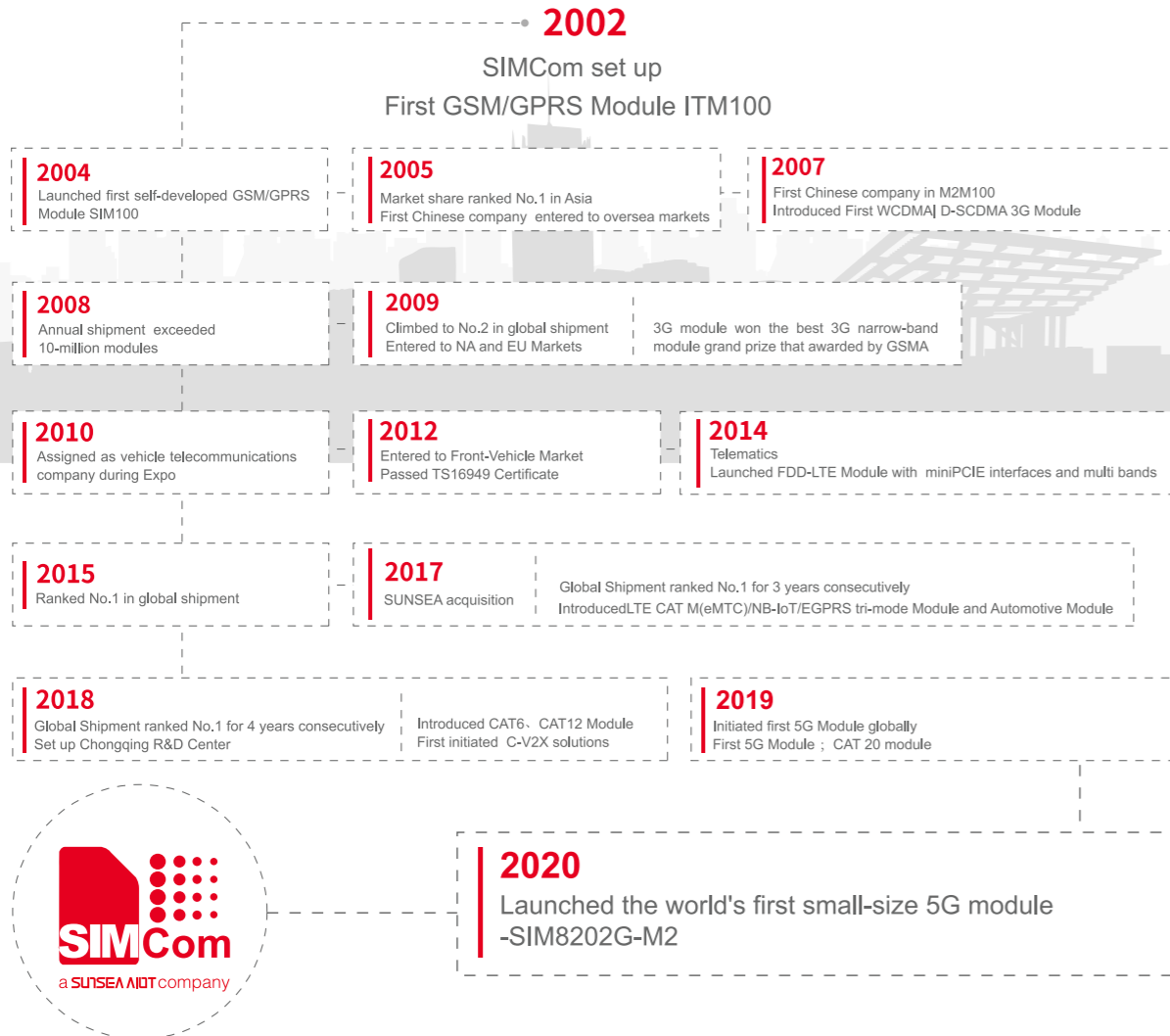
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### About SIMCom

SIMCom Wireless Solutions Limited, holding subsidiary of SUNSEA AIOT (002313.SZ), is a global leading Machine-to-Machine (M2M) 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-M(CAT-M1), NB-IoT, 3G, 2G, and GPS/GLON-ASS/BEIDOU satellite positioning technology.

SIMCom insists on providing high-quality modules and industry solutions. With 18 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	5G (Sub 6G)			5G (Sub 6G & mmWave)	
Product	SIM8202G-M2	SIM8200EA-M2	SIM8200G	SIM8300G-M2	
Picture					
Form Factor	M.2	M.2	LGA	M.2	
Dimensions(mm)	30.0*42.0*2.3	30.0*52.0*2.3	41.0*43.6*2.8	30.0*52.0*3.65	
Weight(g)	6.8g±0.2	8.3g±0.2	11.17g±0.2	11.76g±0.2	
Mode	NSA/SA	NSA/SA	NSA/SA	NSA/SA	
Frequency Bands	5G NR (Sub6G)	n1,n2,n3,n5,n7,n8,n12,n20,n28,n38,n40,n41,n66,n71,n77,n78,n79	n1,n2,n3,n5,n7,n8,n12,n20,n25,n28,n40,n41,n66,n71,n77,n78,n79*	n1,n2,n3,n5,n7,n8,n12,n20,n25,n28,n40,n41,n66,n71,n77,n78,n79	
	5G NR (mmWave)			n257/n258/n260/261	
	LTE-FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B66/B71	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B66/B71	B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B66/B71
	LTE-TDD	B34/B38/B39/B40/B41/B42/B43/B48	B34/B38/B39/B40/B41/B42/B43/B48	B34/B38/B39/B40/B41/B42/B43/B48	B34/B38/B39/B40/B41/B42/B43/B46/B48
WCDMA	B1/B2/B3/B4/B5/B8	B1/B2/B3/B4/B5/B8	B1/B2/B3/B4/B5/B8	B1/B2/B3/B4/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)	GPS/GLONASS/BeiDou (Dedicated GNSS L1 and L5)	
Temperature	-30°C ~ +70°C	-30°C ~ +70°C	-30°C ~ +70°C	-30°C ~ +70°C	
<b>Electrical Features</b>					
Supply Voltage Range	3.135 ~ 4.4V	3.135 ~ 4.4V	3.3V~ 4.4V	3.135 ~ 4.4V	
Power Consumption (sleep)(mA)	<5mA	<5mA	<5mA	TBD	
<b>Data Transfer</b>					
mmWave				7Gbps(DL)/3Gbps (UL)	
Sub-6G	2.4Gbps(DL)/1Gbps (UL)	2.4Gbps(DL)/500Mbps (UL) <i>(optional up to 4Gbps DL)</i>	2.4Gbps(DL)/1Gbps (UL) <i>(optional up to 4Gbps DL)</i>	4Gbps(DL)/1Gbps (UL)	
LTE CAT 20+	1Gbps(DL)/200Mbps (UL)	1Gbps(DL)/200Mbps (UL) <i>(optional up to 2Gbps DL)</i>	1Gbps(DL)/200Mbps (UL) <i>(optional up to 2Gbps DL)</i>	2Gbps(DL)/200Mbps (UL)	
<b>Software Features</b>					
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTPS/HTTPS/MQTT/S/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTPS/HTTPS/MQTT/S/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTPS/HTTPS/MQTT/S/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/FTPS/HTTPS/MQTT/S/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	
<b>Interface</b>					
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	●	●	●	●	
RGMI	●	●	●	●	
SDIO3.0	●	●	●	●	
PMI	●	●	●	●	
ADC	●	●	●	●	
Antenna	*4	*6	*8	*14	
<b>Certification</b>					
Certification	RoHS/REACH/CCC/CTA/SRRC/JATE/Telec/RCM/GCF/CE(RED)*	RoHS/REACH/CCC/CTA/SRRC/RCM/GCF/CE(RED)*	RoHS/REACH/CCC/CTA/SRRC/JATE/Telec/RCM/GCF/CE(RED)*	RoHS/REACH/JATE/Telec/GCF/FC/PTCRB/IC/CE(RED)*	
<b>Typical Applications</b>					
CPE, MIFI, PC, Gateway, Router, UAV					





\*: Under Development

## | LPWA Module

Technology	CAT-M&NB-IoT&GSM		CAT-M & NB-IoT	
Product	SIM7000X	SIM7070X	SIM7080G	SIM7090G
Picture				
Form Factor	LCC, 68PIN	LCC ,68PIN	LCC+LGA,77PIN	LGA, 77PIN
Dimensions(mm)	24.0*24.0*2.6	24*24*2.3	17.6*15.7*2.4	14.8*12.8*2.0
Weight(g)	3.0	2.9	1.2	1.4
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/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 GSM: 850/900/1800/1900MHz	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/B31/B66/B85 GSM/GPRS:850/900/1800/1900MHz	CAT-NB2/CAT.M1: 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/B27/B28/B39/B66/B71/B85	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
GNSS	o	o	o	o
Temperature	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C
<b>Electrical Features</b>				
Supply Volge Range	3.0V~ 4.3V	3.0V-4.6V	2.7V-4.8V	2.7V-4.8V
Power Consumption	PSM	9uA@PSM	3.2uA@PSM	3.2uA@PSM
	Sleep	1.2mA@ LTE	0.8mA	0.8mA
	Max Power	138mA@ B5	114mA@ B5	114mA@ B5
Network Registration Time(s)	12(Preferred band)	12(Preferred band)	12(Preferred band)	12(Preferred band)
Receive Sensitivity	-108dB@eMTC; -126dB@NB-IoT 15KHz	-108dB@eMTC -126dB@NB-IoT15KHz	-108dB@eMTC-126dB@NB-IoT15KHz	-108dB@eMTC-126dB@NB-IoT15KHz
<b>Data Transfer</b>				
LTE CAT.NB (Kbps)	34(DL)/66(UL)	136(DL)/150(UL)	136(DL)/150(UL)	127(DL)/158.5(UL)
LTE CAT.M1(Kbps)	300(DL)/375(UL)	589(DL)/1119(UL)	589(DL)/1119(UL)	589(DL)/1119(UL)
EDGE(Kbps)	236.8(DL)/236.8(UL)	236.8(DL)/236.8(UL)		
GPRS(Kbps)	85.6(DL)/85.6(UL)	85.6(DL)/85.6(UL)		
SMS	•	•	•	•
<b>Software Features</b>				
Protocols	TCP/UDP/LWM2M/COAP /MQTT/FTP/HTTP/TLS/DTLS/NTP	TCP/UDP/HTTP/HTTPS/TLS/DTLS/ PING/LWM2M/COAP/MQTT	TCP/UDP/HTTP/HTTPS/TLS/DTLS/ PING/LWM2M/COAP/MQTT	TCP/UDP/HTTP/HTTPS/TLS/DTLS/ PING/LWM2M/COAP/MQTT
VoLTE	•	•	•	•
GSM Voice	•	•	•	•
Embedded AT	•	•	•	•
FOTA	•	•	•	•
TLS	•	•	•	•
USB Driver	Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux	Microsoft Windows 2000/XP/Vista/ Win7/Win8/Win10/Linux		
Firmware Upgrade	USB/FOTA	USB/FOTA	USB/FOTA	USB/FOTA
<b>Interfaces</b>				
UART	Full Function Uart	•	•	•
	Flow Control Uart	•	•	•
USB	•	•	•	•
PCM	•	•	•	o
Status Indicator	•	•	•	•
GPIO	•	•	•	•
SPI	o	•	•	•
I2C	•	•	•	•
<b>Certification</b>				
Certification	A: RoHS/REACH/GCF/FCC/PTCRB/ AT&T/Verizon/GCF/IC/Rogers* E: RoHS/REACH/IMDA/RCM/Telstra/ CE(RED)/GCF/ Deutsche Telekom/ Vodafone* JC: RoHS/REACH/Telec/JATE/DoCoMo/ KDDI G: RoHS/REACH/CCC/RCM/CE(RED)/ GCF/Deutsche Telekom/FCC/IC/Anatel	E: RoHS/REACH/CE(RED)/FCC*/ Anatel* G: RoHS/REACH/JATE/Telec/RCM/ CE(RED)/GCF/Orange*/TIM*/ Deutsche Telekom/Telefonica*/ Vodafone*/FCC/PTCRB/AT&T/ Verizon*/T-mobile/US Cellular*/IC	RoHS/REACH/JATE/Telec/DoCoMo*/ KDDI*/Softbank/RCM/CE(RED)/GCF/ Deutsche Telekom/FCC/PTCRB/AT&T/ Verizon*/T-mobile/US Cellular*/IC	RoHS/REACH/JATE/Telec/RCM/ CE(RED)/GCF/FCC/PTCRB/ AT&T/Verizon*/T-mobile*/ US Cellular*/IC
Typical Applications	Home Security and Automation, Telematics, Smart Meters, Vending, Fleet Management, Asset Tracking			

o : Optional  
\* : Under Development



## | LPWA Module

Technology	NB-IoT&GNSS	NB-IoT		
Product	SIM7060G	SIM7060R	SIM7020E	SIM7020G
Picture				
Form Factor	LCC, 68PIN	LCC ,68PIN	LCC, 42PIN	LCC+LGA, 77PIN
Dimensions(mm)	24.0*24.0*2.6	24*24*2.6	17.6*15.7*2.3	17.6*15.7*2.3
Weight(g)	3.0	3.0	1.3	1.3
Frequency Bands(MHz)	- A (North America) - E(Europe/Africa/Australia/Southeast Asia) - JC(Japan) - G(Global)		CAT.NB1: B1/B3/B5/B8/B20/B28	CAT.NB2: B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B26/B28/B66/B70/B85*
GNSS	•			
Temperature	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C
<b>Electrical Features</b>				
Supply Voltage Range	2.1V-3.6V	2.1V-3.6V	2.1V-3.6V	2.1V-3.6V
Power Consumption	PSM	3.4uA@PSM	3.4uA@PSM	3.4uA@PSM
	Sleep	0.4mA	0.4mA	0.4mA
	Max Power	114mA@ B5	114mA@ B5	114mA@ B5
Network Registration Time(s)	12(Preferred band)	12(Preferred band)	12(Preferred band)	12(Preferred band)
Receive Sensitivity	-126dB@NB-IoT 15KHz	-126dB@NB-IoT 15KHz	-126dB@NB-IoT 15KHz	-126dB@NB-IoT 15KHz
<b>Data Transfer</b>				
LTE CAT.NB (Kbps)	26.15(DL)/62.5(UL)	26.15(DL)/62.5(UL)	26.15(DL)/62.5(UL)	136(DL)/150(UL)
LTE CAT.M1(Kbps)				
EDGE(Kbps)				
GPRS(Kbps)				
SMS	•	•	•	•
<b>Software Features</b>				
Protocols	TCP/UDP/LWM2M/COAP/MQTT/ HTTP/HTTPS/TLS/DTLS/DNS/NTP/ PING	TCP/UDP/LWM2M/COAP/MQTT/ HTTP/HTTPS/TLS/DTLS/DNS/NTP/ PING	TCP/UDP/LWM2M/COAP/MQTT /HTTP/HTTPS/TLS/DTLS/DNS/NTP/ PING	TCP/UDP/LWM2M/COAP/MQTT/ HTTP/HTTPS/TLS/DTLS/DNS/NTP/ PING
VoLTE				
GSM Voice				
Embedded AT	•	•	•	•
FOTA	•	•	•	•
TLS	•	•	•	•
USB Driver				
Firmware Upgrade	UART/FOTA	UART/FOTA	UART/FOTA	UART/FOTA
<b>Interfaces</b>				
UART	Full Function Uart	•	•	•
	Flow Control Uart	•	•	•
USB	•	•	•	•
PCM				
Status Indicator	•	•	•	•
GPIO	•	•	•	•
SPI				
I2C				
<b>Certification</b>				
Certification	CE(RED)*	CE(RED)*	RoHS/REACH/IMDA/CE(RED)/ ATEX/TIM/Deutsche Telekom/Vodafone	RoHS/REACH/RCM/Telstra/ CE(RED)/GCF/ATEX/TIM*/ Deutsche Telekom/Vodafone/FCC/ PTCRM/T-mobile/IC
Typical Applications	Home Security and Automation, Telematics, Smart Meters, Vending, Fleet Management, Asset Tracking			

o : Optional  
\* : Under Development



## LTE-A Module

Technology	LTE CAT12	LTE CAT6	
Product	SIM7912G-M2	A7906E-M2	
Picture			
Form Factor	M.2	M.2	
Dimensions(mm)	42.0*30.0*2.3	42.0*30.0*2.3	
Weight(g)	6.1	6.1	
Frequency	LTE - FDD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66	B1/B3/B5/B7/B8/B20/B28/B32
	LTE - TDD	B38/B39/B40/B41	B38/B40/B41
	DL 2XCA	B1+B3/B5/B18/B19/B20/B26;B2+B2/B4/B5/B12/B13/B17/B29/B30/B66;B3+B3/B5/B7/B8/B19/B20/B28;B4+B4/B5/B12/B13/B17/B29/B30;B5+B7/B30/B66;B7+B7/B20/B28;B12+B30;B13+B66;B20+BB32;B29+B30;B38+B38;B40+B40;B41+B41;B66+B66	B1+B1/B5/B8/B20;B3+B3/B5/B7/B8/B20/B28;B7+B5/B7/B8/B20/B28;B20+B32;B38+B38;B40+B40;B41+B41;(Note:B32 is only for secondary component carrier)
	DL 3XCA	DL inter-band 3CA: B1+B3+B7;B1+B3+B19;B1+B3+B20;B2+B4+B5;B2+B4+B13;B2+B5+B30;B2+B12+B30;B2+B29+B30;B3+B7+B20;B3+B7+B28;B4+B5+B30;B4+B12+B30;B4+B29+B30;B5+B66+B2;B13+B66+B2	N/A
	UL 2XCA	DL 2 contiguous plus inter-band 3CA: B2+B2+B5;B2+B2+B13;B3+B3+B7;B3+B7+B7;B3+B3+B20;B4+B4+B5;B4+B4+B13;B5+B66+B66;B13+B66+B66;B66+B66+B2;B66+B66+B66	N/A
WCDMA	B1/B2/B3/B4/B5/B8/B19	B1/B3/B5/B8	
GNSS	Beidou/GPS/GLONASS		
Temperature	-30°C ~ +70°C	-30°C ~ +70°C	
<b>Electrical Features</b>			
Supply Voltage Range	3.135V~ 4.4V, 3.3V(typ)	3.1V~ 4.4V, Typ: 3.3V	
Power Consumption (sleep)(mA)	3.0	TBD	
<b>Data Transfer</b>			
LTE CAT 6		300Mbps(DL)/50Mbps (UL)	
LTE CAT 12	600Mbps(DL)/75Mbps (UL)		
<b>Software Features</b>			
Protocol	TCP/IP/IPV4/IPV6/Multi-PDP/FTP/FTPS / HTTP/HTTPS/DNS	TCP/IP/IPV4/IPV6/Multi-PDP/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/FOTA		
<b>Interface</b>			
USB3.0	*1	*1	
PCIE	*1	*1	
PCM	*1	*1	
GPIO	*1	*1	
I2C	*1	*1	
Antenna	*3	*3	
<b>Certification</b>			
Certification	RoHS/REACH/JATE/Telec/RCM/CE(RED)	CCC/CTA/SRRC/CE(RED)*	
<b>Typical Applications</b>	Video Surveillance, Gateway, Industrial PDA, Router		

\* : Under Development

## LTE-A Module



Technology	LTE CAT6			
Product	SIM7906SA-M2	SIM7906E-M2	SIM7906E-PCIE	
Picture				
Form Factor	M.2	M.2	miniPCIE	
Dimensions(mm)	42.0*30.0*2.3	42.0*30.0*2.3	30.0*51.0*4.3	
Weight(g)	6.1	6.1	6.0	
Frequency	LTE - FDD	B1/B2/B3/B4/B5/B7/B12/B17/B26/B27/B28/B66	B1/B3/B5/B7/B8/B20/B28/B32	B1/B3/B5/B7/B8/B20/B28/B32
	LTE - TDD	B38/B41	B38/B40/B41	B38/B39/B40/B41
	DL 2XCA	B1+B1/B5/B28;B2+B2/B5/B28;B3+B3/B5/B28;B4+B4/B5/B7/B27/B28;B5+B7/B38/B41/B66;B7+B7/B28;B12+B66;B26+B38/B41;B28+B28/B66;B38+B38;B41+B41;B66+B66;	B1+B1/B5/B8/B20/B28;B3+B3/B5/B7/B8/B20/B28;B7+B5/B7/B8/B20/B28;B20+B32;B38+B38;B40+B40;B41+B41;(Note:B32 is only for secondary component carrier)	B1+B1/B5/B8/B20/B28;B3+B3/B5/B7/B8/B20/B28;B7+B5/B7/B8/B20/B28;B20+B32;B38+B38;B39+B39;B40+B40;B41+B41;(Note:B32 is only for secondary component carrier)
	DL 3XCA	N/A	N/A	N/A
	UL 2XCA	N/A	N/A	N/A
WCDMA		B1/B2/B4/B5	B1/B3/B5/B8	B1/B3/B5/B8
GNSS		Beidou/GPS/GLONASS/Galileo/QZSS	Beidou/GPS/GLONASS	Beidou/GPS/GLONASS/Galileo/QZSS
Temperature		-30°C ~ +70°C	-30°C ~ +70°C	-30°C ~ +70°C
<b>Electrical Features</b>				
Supply Voltage Range		3.135V~ 4.4V, 3.7V(typ)	3.135V~ 4.4V, 3.3V(typ)	3.1V~ 4.4V, Typ: 3.3V
Power Consumption (sleep)(mA)		2.4	2.4	2.4
<b>Data Transfer</b>				
LTE CAT 6		300Mbps(DL)/75Mbps (UL)	300Mbps(DL)/75Mbps (UL)	300Mbps(DL)/75Mbps (UL)
LTE CAT 12				
<b>Software Features</b>				
Protocol		TCP/IP/IPV4/IPV6/Multi-PDP/DNS	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	SSL3.0/TLS1.0/TLS1.2
FOTA		•	•	•
Android RIL		Android 6/7/8/9	Android 2.3/4.0/5.0/6.0/7.0	Android 6/7/8/9
USB Driver		Microsoft Windows 2000/XP/Vista/Win7/Win8/Win10/Linux /Android	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	USB/FOTA
<b>Interface</b>				
USB3.0		*1	*1	*1
PCIE		*1	*1	*1
PCM		*1	*1	*1
GPIO		*1	*1	*1
I2C		*1	*1	*1
Antenna		*3	*3	*3
<b>Certification</b>				
Certification		RoHS/REACH/RCM*	RoHS/REACH/RCM/CE(RED)	RoHS/REACH/RCM*/CE(RED)*
<b>Typical Applications</b>	Video Surveillance, Gateway, Industrial PDA, Router			

\* : Under Development







## Smart Module

Technology	Smart Module	
Product	SIM8905X	SIM8950X
Picture		
Form Factor	LCC+LGA 210PIN	LCC+LGA 210PIN
Dimensions(mm)	40.5*40.5*2.8	44.1*45.6*2.8
Weight(g)	10.6	12.5
Frequency Bands	-A(North America) LTE-FDD: B2/B4/B5/B7/B12/B13/B17/B25/B26 LTE-TDD: B41 WCDMA: B1/B2/B4/B5/B8 EDGE/GPRS/GSM: 850/900/1900 MHz	LTE-FDD: B2/B4/B5/B7/B12/B13/B14/B25/B26 LTE-TDD: B41 WCDMA: B2/B4/B5 EDGE/GPRS/GSM: 850/1900 MHz
Frequency Bands	-E(Europe) LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900 MHz	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/5G, 802.11a/b/g/n/ac
Application Processor	Quad ARM Cortex-A7 cores up to 1.1 GHz	Octa ARM Cortex-A53 cores up to 1.8GHz
Memory	1GB LPDDR3 RAM +8GB eMMC Flash	2GB LPDDR3 RAM +16GB eMMC Flash
Supply Voltage Range	3.4V~ 4.4V	3.4V~ 4.4V
Temperature	-35°C ~ +75°C	-25°C ~ +75°C
<b>Data Transfer</b>		
LTE(Mbps)	LTE CAT 4 - 150(DL)/50(UL)	LTE CAT 4 - 150(DL)/50(UL)
WCDMA/HSPA/HSPA+(Mbps)	42.2(DL)/5.76(UL)	42.2(DL)/5.76(UL)
TD-SCDMA(Mbps)	2.8(DL)/2.2(UL)	2.8(DL)/2.2(UL)
CDMA EV-DO(Mbps)	3.1(DL)/1.8(UL)	3.1(DL)/1.8(UL)
CDMA 1xRTT(Kbps)	153.6(DL)/153.6(UL)	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)
<b>Media</b>		
Display	4-lane MIPI_DSI HD(720P), 60fps	4-lane MIPI_DSI * 2 FHD 1920*1200 60fps
Camera	MIPI_CSI * 2 Primary camera: 2-lane MIPI_CSI, up to 8MP Secondary camera: 1-lane MIPI_CSI, up to 5MP	MIPI_CSI * 2 Primary camera: 4-lane MIPI_CSI, up to 21MP Secondary camera: 2-lane MIPI_CSI, up to 8MP
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: 1080p60, H.264, H.265, VP8 Decode: 1080p60, H.264, H.265, VP8, VP9 Wireless Display (Decode+Encode) : 1080p60 Dec + 1080p30 Enc
Analog Audio	2 Inputs&3 Outputs	2 Inputs &4 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	G711;QCELP;EVRC;EVRC-B; EVRC-WB; AMR-NB; AMR-WB;GSM-EFT; GSM-FT; GSM-HR
<b>Interfaces</b>		
UART	*2	*4
USB	USB2.0	USB3.0/2.0/Type-C/OTG
UIM	*2	*2
GPIO	At Least 21*GPIO	At Least 22*GPIO
SD Card	•	•
SPI	•	•
I2C	*3	*3
ADC	*1	*1
Motor Drive	*1	○
WLED Sink		○
Flash Drive		○
Antenna	Main&Diversity&GNSS&Wi-Fi/BT ANT	Main&Diversity&GNSS&Wi-Fi/BT
<b>Software Features</b>		
Operating System	Android 5.1/7.1/8.1/Linux 4.9	Android 7.1/8.1
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 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
<b>Certification</b>		
Certification	A: RoHS/REACH/FCC/PTCRB/IC/AT&T E: RoHS/REACH/CE(RED)	RoHS/REACH/CE(RED)
<b>Typical Applications</b>	POS, Security, Networking, Telematics, Retail	


○ : Optional \* : Under Development

## Automotive Module

Technology	LTE CAT4	C-V2X
Product	SIM7800E	SIM8100
Picture		
Form Factor	LGA, 282 PIN	LGA, 189 PIN
Dimensions(mm)	34.0*40.0*3.1	30.0*32.0*2.75
Weight(g)	7.8g±0.2	5.8
Frequency Bands	LTE-FDD: B1/B3/B5/B7/B8/B20 LTE-TDD: B38/B40/B41 WCDMA: B1/B5/B8 GSM: 900/1800 MHz	B47, B46D
GNSS	BeiDou/GPS/GLONASS/Galileo/QZSS	BeiDou/GPS/GLONASS/Galileo
Bluetooth	BLE4.2(with W59)	N/A
Temperature	-40 C ~ +85 C	-40 C ~ +85 C
<b>Electrical Features</b>		
Supply Voltage Range	3.3V~ 4.3V	4.75V~ 5.25V
Power Consumption (sleep)(mA)	1.8mA@GSM,BS_PA_MFRMS=2 3.3mA@WCDMA, DRX=9 1.84mA@LTE-FDD	TBD
<b>Data Transfer</b>		
GPRS Slot	class 12	
LTE(Mbps)	LTE CAT 4: 150 (DL)/50(UL)	
WCDMA/HSPA/HSPA+(Mbps)	42.2(DL)/11.5(UL)	
TD-SCDMA(Mbps)	2.8(DL)/2.2(UL)	
CDMA EV-DO(Mbps)	3.1(DL)/1.8(UL)	
EDGE(Kbps)	236.8(DL)/236.8(UL)	
<b>Software Features</b>		
Protocol	TCP/IP/IPV4/IPV6/MultiPDP/FTP/FTPS/HTTP/ HTTPS/DNS/SMTP/SMTPS/NTP/PING/SSL	PC5
eCall	•	N/A
Open Linux	•	N/A
Multi-APN	•	N/A
SDIO	•	N/A
UART2	•	N/A
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 2.3/4.0/5.0/6.0/7.0	N/A
Security	SELinux/Trustzone/Secure boot	N/A
Routing policy	4G,WIFI and Ethernet port	N/A
Android RIL	Android 2.4/4.0/5.0/6.0/7.0	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	N/A
Wi-Fi	2.4G/5G(with W59)	N/A
<b>Interfaces</b>		
SGMII	10M/100M/1000M Ethernet	N/A
UART	3*UART	2*UART
USB	1*2.0	1*3.0, 1*2.0
ADC	3*ADC	N/A
OTG	•	N/A
HSIC	•	N/A
PCIe		PCIe Gen 2 (PCIe GEN1 compatible)
PCM	1*12S	N/A
Analog Audio	○	N/A
GPIO	5*GPIO	•
SDIO	SDIO3.0 (200MHz Max)	N/A
SD Card	SD3.0 (128G Max)	8-bit EMMC 4.51 at up to 100MHz SDR(1.8V) or 4-bit dual voltage SD 3.0 up to 50MHz DDR(1.8/2.85V), 1-bit or 4-bit SD card up to 200MHz SDR mode.
SPI	1*SPI	1*SPI
I2C	1*I2C	N/A
Antenna	1*Main&1*Diversity&1*GNSS	2*V2X&1*GNSS
<b>Certification</b>		
Certification	RoHS/REACH/CE(RED)*	
<b>Typical Applications</b>	Vehicle Tracking, OBD,Vehicle DVR, T-BOX	

○ : Optional \* : Under Development




## WCDMA/HSPA/HSPA+ Module

Technology	WCDMA/HSDPA
Product	SIM5320X
Picture	
Form Factor	LCC, 80PIN
Dimensions(mm)	30.0*30.0*2.9
Weight(g)	5.6
Frequency Bands	-A(North America) WCDMA: B2/B5 GSM: 850/900/1800/1900MHz -E(China/Europe) WCDMA: B1/B8 GSM: 850/900/1800/1900MHz -JE (Japan) WCDMA: B1/B8 GSM: 850/900/1800/1900MHz -J(South Asia/Australia) WCDMA: B1/B5(B6) GSM: 850/900/1800/1900MHz
GNSS	GPS
Temperature	-40°C ~ +85°C
<b>Electrical Features</b>	
Supply Voltage Range	3.4V~4.2V
Power Consumption(mA)	2.3@GSM, DRX=9 2.7@WCDMA, DRX=8
<b>Data Transfer</b>	
WCDMA/HSPA/HSPA+	3.6Mbps(DL) 384Kbps(UL)
GPRS (Kbps)	85.6(DL)/85.6(UL)
EDGE (Kbps)	236.8(DL)/236.8(UL)
SMS	●
CSD	●
<b>Software Features</b>	
Protocol	TCP/IP/FTP/FTPS/HTTP/HTTPS/SMTP/DNS
eCall	
MMS	●
TLS	●
File System	●
Audio Record/Play	
TTS	
DTMF	○
LBS	●
FOTA	●
Jamming Detection	●
Network Scanning	●
Android RIL	Android 2.4/4.0/5.0/6.0/7.0
USB Driver	Microsoft Windows 2000/XP/Vista/Win7/Win8/ Win10/ Linux /Android
Embedded AT	●
Firmware Upgrade	USB
<b>Interfaces</b>	
UART	●
USB	●
SIM	1.8V/3.0V
PCM	○
ADC	●
GPIO	At Least 7*GPIO
SD 卡	
SPI	●
I2C	●
<b>Certification</b>	
Certification	A: RoHS/REACH/RCM/FCC/PTCRB/AT&T/IC/Rogers E: RoHS/REACH/CCC/IMDA*/RCM/CE(RED)/GCF/Orange/TIM/Deutsche Telekom/Vodafone/ICASA J: RoHS/REACH/Telec/JATE/Docomo/RCM JE: RoHS/REACH/Telec/JATE/Softbank

Typical Applications Telematics, Fleet Management, Tracking, Smart Meters, Security, RMAC

○: Optional \* : Under Development




## GSM/GPRS Module

Technology	GSM/GPRS		
Product	SIM800C	SIM800F	SIM800H
Picture			
Form Factor	LCC, 42PIN	LCC, 68PIN	LGA, 88PIN
Dimensions(mm)	17.6*15.7*2.3	24.0*24.0*3.0	17.8*15.8*2.4
Weight(g)	1.3	3.1	1.35
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
<b>Electrical Features</b>			
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	1.50@GSM, DRX=2 0.90@GSM, DRX=9
<b>Data Transfer</b>			
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)
<b>Software Features</b>			
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
<b>Specifications for Voice</b>			
Speech Codec Modes	AMR/HR/FR/EFR	AMR/HR/FR/EFR	AMR/HR/FR/EFR
Echo Arithmetic	AEC/EES	AEC/EES	AEC/EES
<b>Interfaces</b>			
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 3*GPIO
SD	●	●	●
SPI	○	○	○
I2C	●	●	●
<b>Certification</b>			
Certification	RoHS/REACH/CCC/CTA/SRRC/CMCC/ China Unicom/RCM/CE(RED)/GCF/TIM/ Deutsche Telekom/ICASA/FCC/Anatel/BQB	RoHS/REACH/CCC/CTA/SRRC/CMCC/CE(RED)/ GCF/Orange/ICASA/FCC	RoHS/REACH/CCC/RCM/CE(RED)/GCF/Orange/ ICASA/FCC/PTCRB/Anatel

Typical Applications Telematics, Fleet Management, Smart Meters, Security, RMAC

○: Optional \* : Under Development





## GSM/GPRS Module

Technology	GSM/GPRS	GSM/GPRS&GNSS	
Product	SIM800C-DS	SIM868	SIM868E
Picture			
Form Factor	LCC& LGA, 77PIN	LCC&LGA,77PIN	LCC&LGA,77PIN
Dimensions(mm)	17.6*15.7*2.3	17.6*15.7*2.3	17.6*15.7*2.3
Weight(g)	1.3	1.5	1.5
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&4.0
GNSS		BeiDou/GPS/GLONASS	BeiDou/GPS/GLONASS
Temperature	-40°C~+85°C	-40°C~+85°C	-40°C ~ +85°C
<b>Electrical Features</b>			
Supply Voltage Range	3.4V~4.4V	3.4V~4.4V	3.4V~ 4.4V
Power Consumption(mA)	1.60@GSM, DRX=2 0.93@GSM, DRX=9		1.42@GSM, DRX=2 0.86@GSM, DRX=9
<b>Data Transfer</b>			
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)
<b>Software Features</b>			
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
<b>Specifications for Voice</b>			
Speech Codec Modes	AMR/HR/FR/EFR	AMR/HR/FR/EFR	AMR/HR/FR/EFR
Echo Arithmetic	AEC/EES	AEC/EES	AEC/EES
<b>Interfaces</b>			
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&2 Output	1 Input&2 Output
ADC	•	•	•
GPIO	At Least 4*GPIO	At Least 4*GPIO	At Least 4*GPIO
SD卡	•	•	•
SPI	○	○	○
I2C	•	•	•
<b>Certification</b>			
Certification	CE/RoHS/REACH	RoHS/REACH/CCC/CTA/SRRC/CMCC/ CE(RE)/GCF/Deutsche Telekom/ICASA/FCC	CE/RoHS/REACH/BQB/Deutsche Telekom

Typical Applications Telematics, Fleet Management, Smart Meters, Security, RMAC

○: Optional \* : Under Development





## GNSS Module

Technology	GNSS			
Product	SIM28M	SIM28ML	SIM68M	SIM68ML
Picture				
Form Factor	LCC, 18PIN	LCC, 18PIN	LCC, 18PIN	LCC, 18PIN
Dimensions(mm)	9.7*10.1*2.5	9.7*10.1*2.5	10.1*9.7*2.5	9.7*10.1*2.5
Weight(g)	0.5	0.5	0.5	0.5
Temperature	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C
<b>Electrical Features</b>				
Supply Voltage Range	2.8~4.3V	2.8~4.3V	2.8~4.3V	2.8~4.3V
I/O Voltage	2.8V	2.8V	2.8V	2.8V
Power Consumption	Acquisition	17mA	17mA	25mA
	Tracking	16mA	16mA	21mA
	Sleep	150µA	150µA	340µA
	Backup	8µA	8µA	14µA
<b>GNSS</b>				
GNSS	GPS	GPS	GPS/GLONASS/Galileo/QZSS	GPS/GLONASS/Galileo/QZSS
A-GPS	•		•	•
Channel Number	22 Track/66 Acq	22 Track/66 Acq	33 Track/99 Acq	33 Track/99 Acq
SBAS	WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS
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	32s	32s	28s
	Warm Start	30s	30s	26s
	Hot Start	<1s	<1s	<1s
Accuracy	Position	<2.5m CEP	<2.5m CEP	<2.5m CEP
	Velocity	0.1m/s	0.1m/s	0.1m/s
Max Update Rate	10Hz	5Hz	10Hz	10Hz
Baud Rate(default)	9600/115200	9600/115200	9600/115200	9600/115200
Jamming Detection	•		•	•
Anti-jamming	•	•	•	•
Built-in LNA	•	•	•	•
<b>Interfaces</b>				
UART	•	•	•	•
Reset	•	•	•	•
Time Pulse	•	•	•	•
Digital I/O	•	•	•	•
<b>Antenna</b>				
Antenna Type	Active/passive	Active/passive	Active/passive	Active/passive
Antenna Power	External or internal	External or internal	External or internal	External or internal
<b>Certification</b>				
Certification	RoHS/REACH/CE(RE)	RoHS/REACH/CE(RE)	RoHS/REACH/CE(RE)	RoHS/REACH/CE(RE)
<b>Typical Applications</b>	Pet Tracking, Asset Tracking			

○: Optional \* : Under Development







## GNSS Module

Technology	GNSS			
Product	SIM33ELA	SIM68E	SIM68D	SIM68I
Picture				
Form Factor	LCC, 31PIN	LCC, 22PIN	LCC, 24PIN	LCC, 24PIN
Dimensions(mm)	14.0*9.6*2.15	13.0*15.0*2.3	16*12.2*2.4	16*12.2*2.4
Weight(g)	0.5	0.5	1	1
Temperature	-40°C~+85°C	-40°C~+85°C	-40°C ~ +85°C	-40°C ~ +85°C
<b>Electrical Features</b>				
Supply Voltage Range	2.8~4.3V	2.8~4.3V	2.8~4.5V	2.8~4.5V
I/O Voltage	2.8V	2.8V	2.8V	2.8V
Power Consumption	Acquisition	25mA	25mA	32mA
	Tracking	20mA	20mA	23mA
	Sleep	320μA	340μA	353uA
	Backup	14μA	14μA	78uA
<b>GNSS</b>				
GNSS	GPS/GLONASS/Galileo/QZSS	GPS/GLONASS/Galileo/QZSS	L1: GPS/Beidou/GLONASS/ Galileo/QZSS L5: GPS/Beidou/Galileo/QZSS/	L1: GPS/Beidou/GLONASS/Galileo L5: NavIC
A-GPS	●	●	●	●
Channel Number	33 Track/99 Acq	33 Track/99 Acq	L1:75+L5:60	L1:75+L5:7
SBAS	WAAS/EGNOS/GAGAN/MSAS	WAAS, EGNOS, GAGAN,MSAS	WAAS/EGNOS/GAGAN/MSAS/ SDCM	WAAS/EGNOS/GAGAN/MSAS/ SDCM
Sensitivity	Tracking	-165 dBm	-165 dBm	-165 dBm
	Cold Start	-147 dBm	-148 dBm	-148 dBm
	Reacquisition	-160 dBm	-160 dBm	TBD
TTFF (Time to First Fix)	Cold Start	28s	28s	TBD
	Warm Start	26s	26s	24s
	Hot Start	<1s	<1s	<1s
Accuracy	Position	<2.5m CEP	<2.5m CEP	<1m CEP
	Velocity	0.1m/s	0.1m/s	TBD
Max Update Rate	10Hz	10Hz	10Hz	10Hz
Baud Rate(default)	9600/115200	9600/115200	9600/115200	9600/115200
Jamming Detection	●	●	●	●
Anti-jamming	●	●	●	●
Built-in LNA	●	●	●	●
<b>Interfaces</b>				
UART	●	●	●	●
Reset	●	●	●	●
Time Pulse	●	●	●	●
Digital I/O	●	●	●	●
<b>Antenna</b>				
Antenna Type	Passive	Active/passive	Active/passive	Active/passive
Antenna Power	Internal	Internal	External or internal	External or internal
<b>Certification</b>				
Certification	RoHS/REACH/CE(RE D)	RoHS/REACH/CE(RE D)	RoHS*/REACH*/CE(RE D)*	RoHS*/REACH*/CE(RE D)*
Typical Applications	Pet Tracking, Asset Tracking			




o: Optional \* : Under Development

## GNSS Module

Technology	GNSS			
Product	SIM33EAU	SIM39EAU	SIM39EA	SIM39EAR
Picture				
Form Factor	LCC, 16PIN	LCC, 16PIN	LCC, 13PIN	LCC, 13PIN
Dimensions(mm)	22.0*22.0*7.5	22.0*22.0*7.5	16.0*16.0*6.2	16.0*16.0*6.2
Weight(g)	8.5	8.5	5.8	5.8
Temperature	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C	-40°C~+85°C
<b>Electrical Features</b>				
Supply Voltage Range	2.8~4.3V	2.8~4.3V	2.8~4.3V	2.8~4.3V
I/O Voltage	2.8V	2.8V	2.8V	2.8V
Power Consumption	Acquisition	38mA	27mA	32mA
	Tracking	32mA	24mA	27mA
	Sleep	520μA	24μA	400μA
	Backup	13μA		8μA
<b>GNSS</b>				
GNSS	GPS/GLONASS/Galileo/QZSS	GPS	GPS	GPS
A-GPS	●	●	●	●
Channel Number	33 Track/99 Acq	22 Track/66 Acq	22 Track/66 Acq	22 Track/66 Acq
SBAS	WAAS/EGNOS/GAGAN/MSAS	WAAS, EGNOS, GAGAN,MSAS	WAAS/EGNOS/GAGAN/MSAS	WAAS/EGNOS/GAGAN/MSAS
Sensitivity	Tracking	-165 dBm	-165 dBm	-165 dBm
	Cold Start	-146 dBm	-147 dBm	-147 dBm
	Reacquisition	-160 dBm	-160 dBm	-160 dBm
TTFF (Time to First Fix)	Cold Start	31s	32s	32s
	Warm Start	26s	30s	30s
	Hot Start	<1s	<1s	<1s
Accuracy	Position	<2.5m CEP	2.5m CEP	<2.5m CEP
	Velocity	0.1m/s	0.1m/s	0.1m/s
Max Update Rate	10Hz	10Hz	10Hz	10Hz
Baud Rate(default)	9600/115200	9600/115200	9600/115200	9600/115200
Jamming Detection	●	●	●	●
Anti-jamming	●	●	●	●
Built-in LNA	●	●	●	●
<b>Interfaces</b>				
UART	●	●	●	●
Reset	●	●	●	●
Time Pulse	●	●	●	●
Digital I/O	●	●	●	●
<b>Antenna</b>				
Antenna Type	Passive	Passive	Passive	Passive
Antenna Power	Internal	Internal	Internal	Internal
<b>Certification</b>				
Certification	RoHS/REACH/CE(RE D)	RoHS/REACH/CE(RE D)	RoHS/REACH/CE(RE D)	RoHS/REACH/CE(RE D)*
Typical Applications	Pet Tracking, Asset Tracking			

o: Optional \* : Under Development

## Wi-Fi Module

Technology	Wi-Fi		
Product	W58	W59	W80
Picture			
Form Factor	LCC, 32PIN	LCC, 40PIN	LCC+LGA, 90PIN
Dimensions(mm)	16.6 *13.0*2.1	16.0 *18.3*2.3	17.0 *24*2.9
Weight(g)	1.0	1.2	TBD
Bluetooth	BT 3.0& BLE4.1	BT 3.0& BLE4.2	BT 5.1&BLE5.0
Temperature	-40°C to +85°C	-40°C to +85°C	-40°C ~ +85°C
<b>General Features</b>			
Frequency band	2.412 ~ 2.484 GHz	2.412 ~ 2.484 GHz 5.17~5.825GHz	2.412 ~ 2.484 GHz 5.17~5.825GHz
Supply Voltage	3.2V~ 3.4V	3.2V~ 3.4V	3.3V ~ 4.25V
WLAN Standard	IEEE 802.11 b/g/n	IEEE 802.11a/b/g/n/ac	IEEE 802.11a/b/g/n/ac/ax
Modulation Mode	CCK/BPSK/QPSK/16QAM/64QAM	DSSS/CCK/OFDM/BPSK/QPSK/16QAM/64QAM/256QAM	CCK/BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM
Encryption Mode	WEP/TKIP/AES/WPA-PSK/WPA2-PSK	WEP/TKIP/AES/WPA-PSK/WPA2-PSK	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)
<b>Data Rate</b>			
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	
802.11ac_HT80 (Mbps)		Max. 433.3Mbps	
802.11ax_HT80 (Mbps)			Max.1.775Gbps
BT 4.1 (Mbps)	Max. 24	Max. 24	
<b>Transmitting Power</b>			
802.11b/11Mbps	18dBm	TBD	TBD
802.11g/54Mbps	15dBm	TBD	TBD
802.11n_HT20/65Mbps	15dBm	TBD	TBD
802.11n_HT40/135Mbps	14dBm	TBD	TBD
<b>Rx Sensitivity</b>			
802.11b/1Mbps	-95dBm	TBD	TBD
802.11b/11Mbps	-94dBm	TBD	TBD
802.11g/6Mbps	-91dBm	TBD	TBD
802.11g/54Mbps	-78dBm	TBD	TBD
802.11n_HT20 MCS0	-90dBm	TBD	TBD
802.11n_HT40 MCS7	-75dBm	TBD	TBD
<b>Interfaces</b>			
SDIO 3.0	*1	*1	
UART	*1	*1	*1
LTE coexistence	*2	*2	*2
BT_EN	*1	*1	*1
WLAN_EN	*1	*1	*1
Antenna	WiFi & BT Antenna	WiFi & BT Antenna *2	WiFi & BT Antenna *2
<b>Certification</b>			
Certification	CE*/RoHS*/REACH*		
<b>Typical Applications</b>	Fleet Management, Telematics, Security, Tracking, Agriculture, Smart City, Smart Health, Router, Gateway		

o: Optional \* : Under Development  
W58: Must be worked together with SIM7600X-H.  
W59: Must be worked together with SIM7800E.  
W80: Must be worked together with SIM8200G.

## Headquarters

www.simcom.com



Tel

+86 021-31575100



Email

simcom@simcom.com



Add

Building B, SIM Technology Building,  
No.633 Jinzhong Road, Changning District,  
Shanghai P.R.China 200335



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