SIM7020 Series

SIMCom NB-IoT Module

15.7mm
17.6mm
2.3mm

SIM7020X
P/N:S2-XXXXX-XXXXX
SN:XXXXXXXXXXXXXX
IMEI:XXXXXXXXXXXXXXX

Multi-Band

NB-IoT

MQTT

LWM2M

Compact Size

FOTA

TCP/UDP

PSM/eDRX

HTTP/SSL

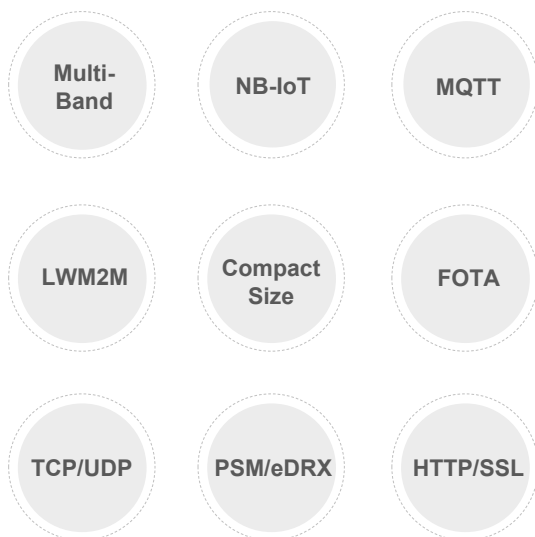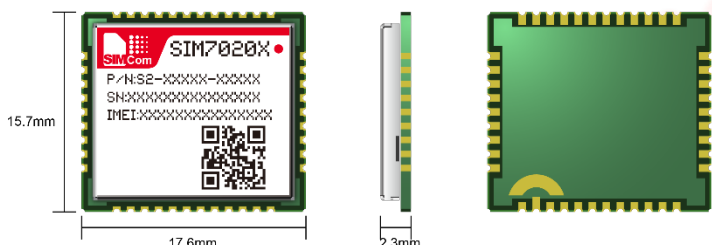## Product Description

The SIM7020 series is the LPWA module which supports wireless communication mode of Cat-NB.

The SIM7020 series adopts LCC[1] form factor and has a compact size of 17.6mm*15.7mm which makes it ideal for compact products design.

The SIM7020 series has powerful expansibility with abundant interfaces including UART, GPIO, I2C etc. The SIM7020 series is designed for applications that need low latency, low throughput data communication in a variety of radio propagation conditions. Due to the unique combination of performance, security and flexibility, this module is ideally suited for M2M applications, such as metering, asset tracking, remote monitoring, E-health etc.

> **NOTE**
>
> 1: The form factor of SIM7020G and SIM7020G R13 is LCC+LGA

Key Benefits

◆ With Power Saving Mode(PSM) and Extended Discontinuous Reception(eDRX), the SIM7020 series can extend battery life up to 10 years

◆ The SIM7020 series provides deeper coverage enhancement compared to GSM

◆ The form factor and AT commands of the SIM7020 series are compatible with SIM800C

Product	SIM7020E	SIM7020E-ND	SIM7020E-D
Form Factor	LCC, 42PIN	LCC, 42PIN	LCC, 42PIN
Dimensions(mm)	17.6*15.7*2.3	17.6*15.7*2.3	17.6*15.7*2.3
Frequency Bands Cat-NB	B1/B3/B5/B8/B20/B28	B1/B3/B5/B8/B20/B28	B1/B3/B5/B8/B20/B28
Temperature	-40℃ ~ +85℃	-40℃ ~ +85℃	-40℃ ~ +85℃

Electrical Features

		SIM7020E	SIM7020E-ND	SIM7020E-D
Supply Voltage Range(V)		2.1~ 3.6	3.0~ 3.6	2.1~ 3.6
Power Consumption	**@PSM(uA)**	3.4	3.4	3.4
	@Sleep(mA)	0.4	0.4	0.4
	@Idle(mA)	5.6	5.6	5.6
	@eDRX=655.36s(uA)	30	30	30

Data Transfer

	SIM7020E	SIM7020E-ND	SIM7020E-D
NB-IoT(kbps)	26.15(DL)/62.5(UL)	26.15(DL)/62.5(UL)	26.15(DL)/62.5(UL)

Software Features

	SIM7020E	SIM7020E-ND	SIM7020E-D
Protocol	TCP/UDP/HTTP/HTTPS/TLS/DTLS/DNS/NTP/PING/LWM2M/COAP/MQTT/MQTTS	TCP/UDP/HTTP/HTTPS/TLS/DTLS/DNS/NTP/PING/LWM2M/COAP/MQTT/MQTTS	TCP/UDP/HTTP/HTTPS/TLS/DTLS/DNS/NTP/PING/LWM2M/COAP/MQTT/MQTTS
FOTA	●	●	●
Embedded AT	●	●	●
Firmware Upgrade	UART/FOTA	UART/FOTA	UART/FOTA

Interfaces

	SIM7020E	SIM7020E-ND	SIM7020E-D
SIM Card	1.8V/3.0V	1.8V/3.0V	1.8V/3.0V
UART	●	●	●
USB	●	●	●
ADC	●	●	●
Embedded SIM	o	o	o

Certification

	SIM7020E	SIM7020E-ND	SIM7020E-D
Regulatory	CE/NCC/IMDA/ATEX/RoHS/REACH	CE/NCC/IMDA/ATEX/RoHS/REACH	CE/NCC/IMDA/ATEX/RoHS/REACH
Carrier	Deutsche Telekom	Deutsche Telekom	Deutsche Telekom

●: support   o: optional   * : on going

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Product		SIM7020G	SIM7020G R13
Form Factor		LCC+LGA, 77PIN	LCC+LGA, 77PIN
Dimensions(mm)		17.6*15.7*2.3	17.6*15.7*2.3
Frequency Bands	Cat-NB	B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/ B20/B25/B26/B28/B66/B70/B71/B85	B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/ B19/B20/B25/B26/B28/B66/B70/B71/B85
Temperature		-40℃ ~ +85℃	-40℃ ~ +85℃
Electrical Features			
Supply Voltage Range(V)		2.1~ 3.6	3.0~ 3.6
Power Consumption	@PSM(uA)	3.4	3.4
	@Sleep(mA)	0.4	0.4
	@Idle(mA)	5.6	5.6
	@eDRX=655.36s(uA)	30	30
Data Transfer			
NB-IoT (kbps)		126(DL)/150(UL)	26.15(DL)/62.5(UL)
Software Features			
Protocol		TCP/UDP/HTTP/HTTPS/TLS/DTLS/DNS/ NTP/PING/LWM2M/COAP/MQTT/MQTTS	TCP/UDP/HTTP/HTTPS/TLS/DTLS/DNS/NTP/ PING/LWM2M/COAP/MQTT/MQTTS
FOTA		●	●
Embedded AT		●	●
Firmware Upgrade		UART/FOTA	UART/FOTA
Interfaces			
SIM Card		1.8V/3.0V	1.8V/3.0V
UART		●	●
USB		●	●
ADC		●	●
Embedded SIM		o	o
Certification			
Regulatory		CE/FCC/GCF/PTCRB/ATEX/RoHS/REACH	CE/FCC/GCF/PTCRB/ATEX/RoHS/REACH
Carrier		Telstra*/Vodafone/Deutsche Telekom	Telstra*/Vodafone/Deutsche Telekom

●: support   o: optional   * : on going