SIM7080G_TE Kit User Guide Manual

LPWA Module

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1 Introduction

This document describes the interface and usage of the SIM7080G-TE kit. With the help of this document, customers can quickly use the SIM7080G-TE Kit.

This document applies to the following product models and TE:

Table 1: SIM7080G-TE compatible module models

PCB	Module
8VC000-SIM7080G-TE_V1.03	SIM7080G

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2 Assessment Kit

2.1 SIM7080G-TE Assessment kit

SIM7080G-TE assessment kits are listed as follows. Please confirm all accessories are complete.

1) SIM7080G-TE board
2) GSM\WCDMA\LTE Antenna
3) Micro USB cable
4) 5V DC power adapter
5) GNSS Antenna

SIM7080G-TE assessment kits are shown in the following figure:

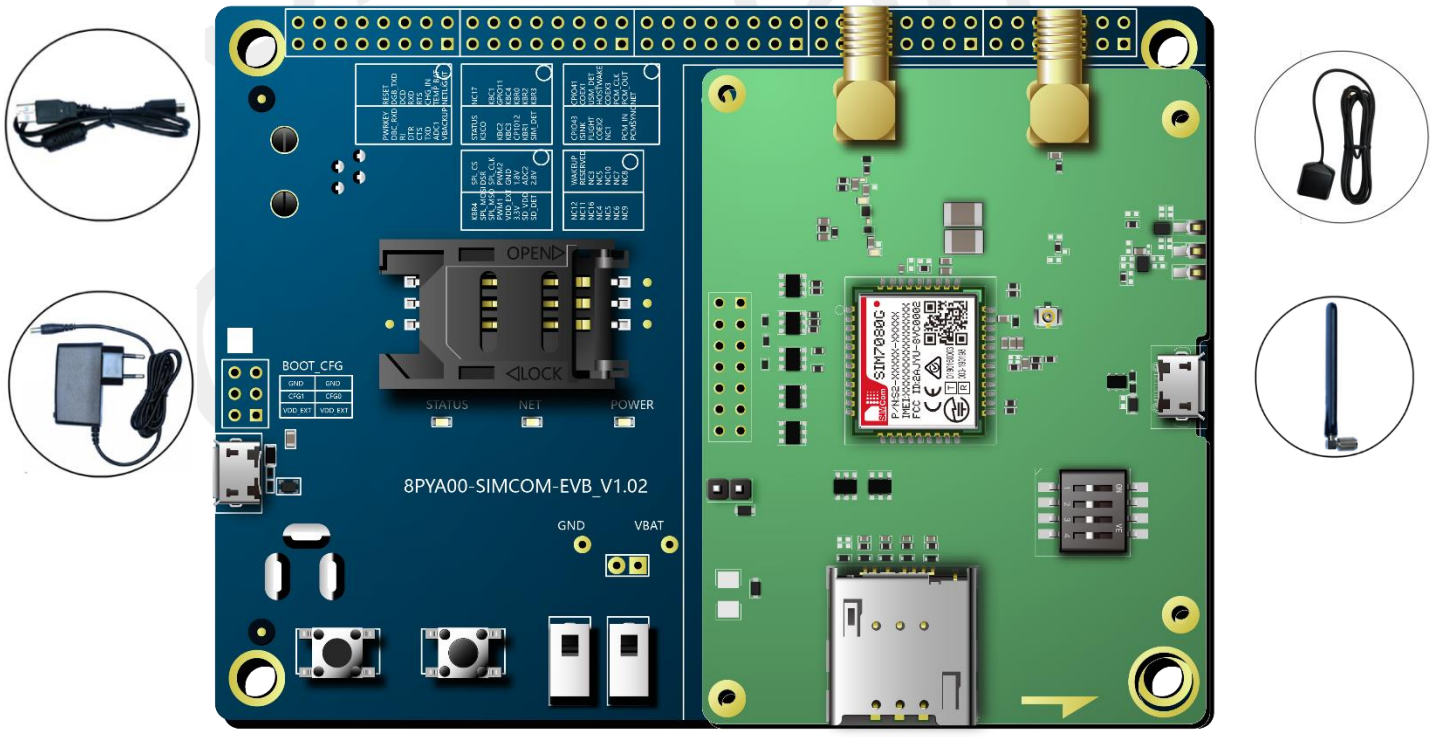

Figure 1: SIM7080G-TE Assessment Kits

Table 2: SIM7080G-TE Assessment Kits

EVB Assessment kits	Quantity
SIM7080G-TE	1
5V/2A DC power adapter	1
Micro USB cable	1
GNSS Antenna	1
GSM\WCDMA \LTE Antenna	1

2.2 Top and Bottom Views of SIM7080G-TE

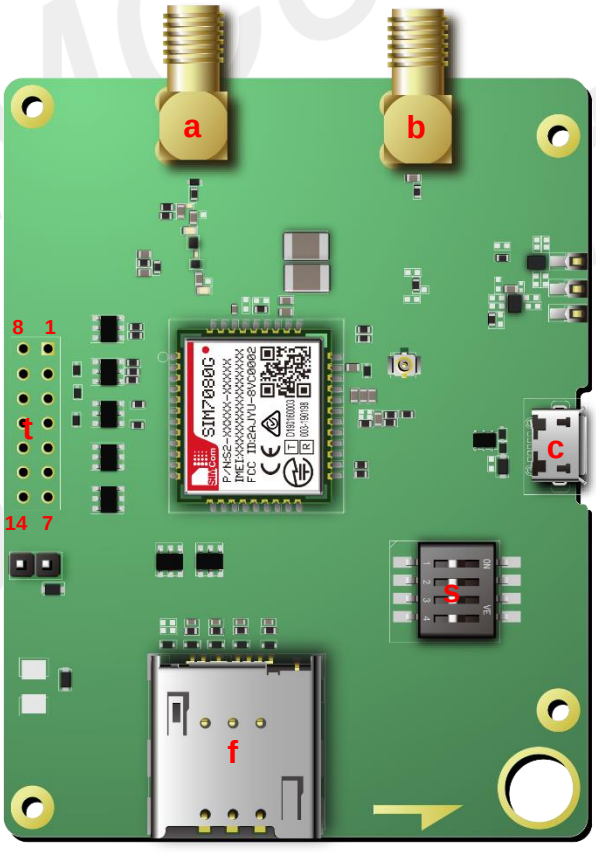

Figure 2: The top view of SIM7080-TE

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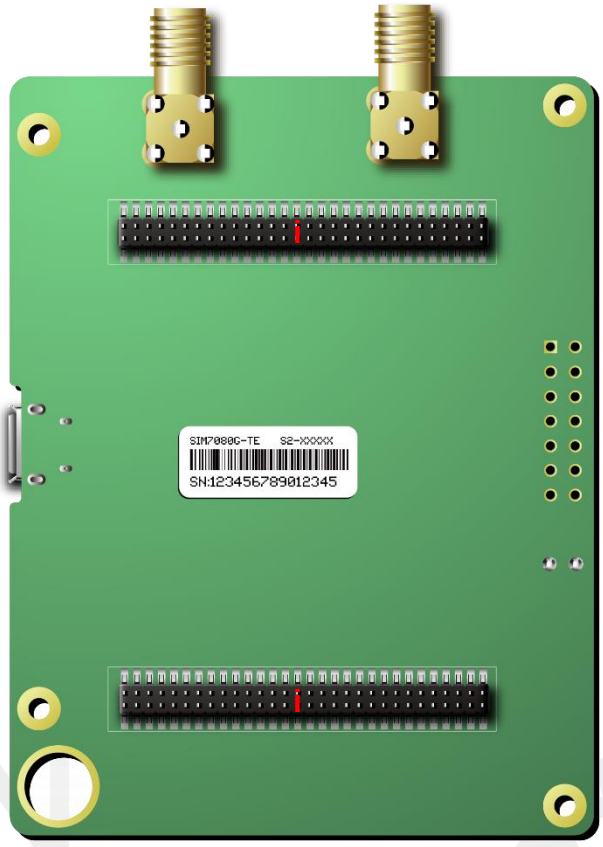

Figure 3: The bottom view of SIM7080-TE

Table 3: SIM7080G-TE Description

Attachment Label	Description
a	GPS Antenna Connector
b	MAIN Antenna Connector
c	USB 2.0 used for SIM7080G
f	SIM Card Holder
s	Switch
t	Test point
i	Connector (Connect to SIMCOM-EVB)

Table 4: The test points on the SIM7080G-TE

No.	PIN Name	Description
l	J105_PIN_1	GND
	J105_PIN_2	PWRKEY
	J105_PIN_3	RESET
	J105_PIN_4	ADC
	J105_PIN_5	1PPS

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I	J105_PIN_6	GPS_TXD
	J105_PIN_7	GPS_RXD
	J105_PIN_8	VDD_EXT
	J105_PIN_9	FORCE_USB_BOOT
	J105_PIN_10	UART1_DTR
	J105_PIN_11	UART3_TXD
	J105_PIN_12	UART3_RXD
	J105_PIN_13	UART1_TXD
	J105_PIN_14	UART1_RXD

2.3 TE and SIMCOM-EVB Accessory

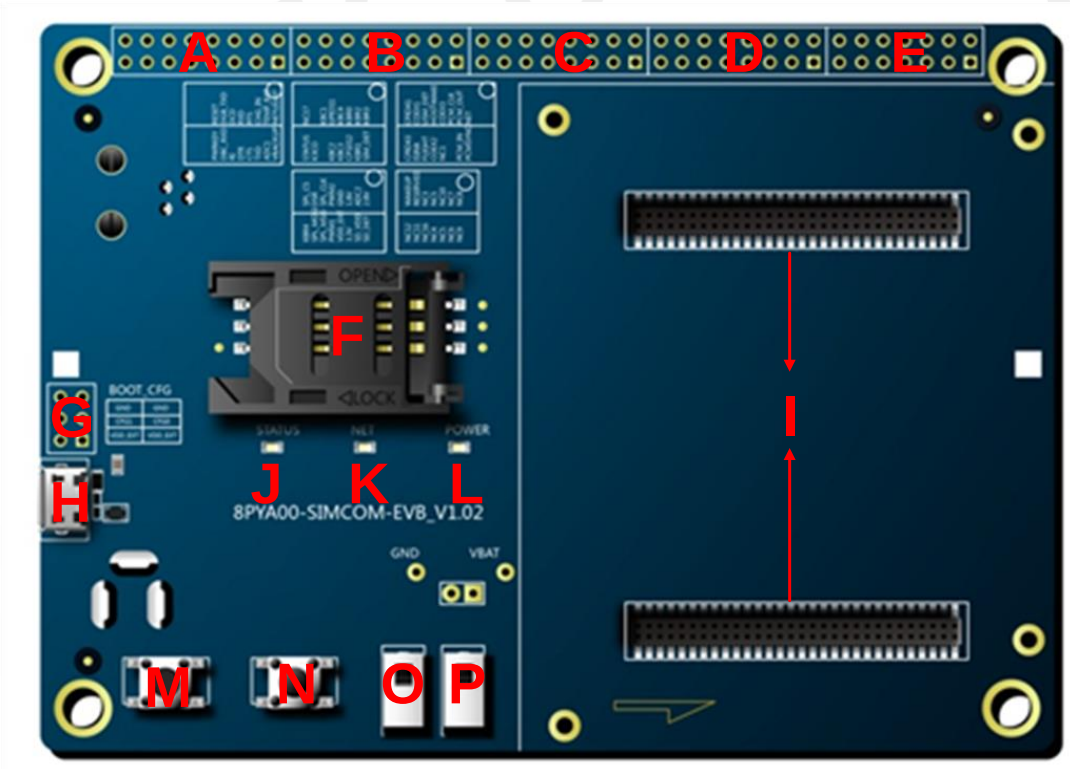

Figure 4: The TOP view of SIMCOM-EVB

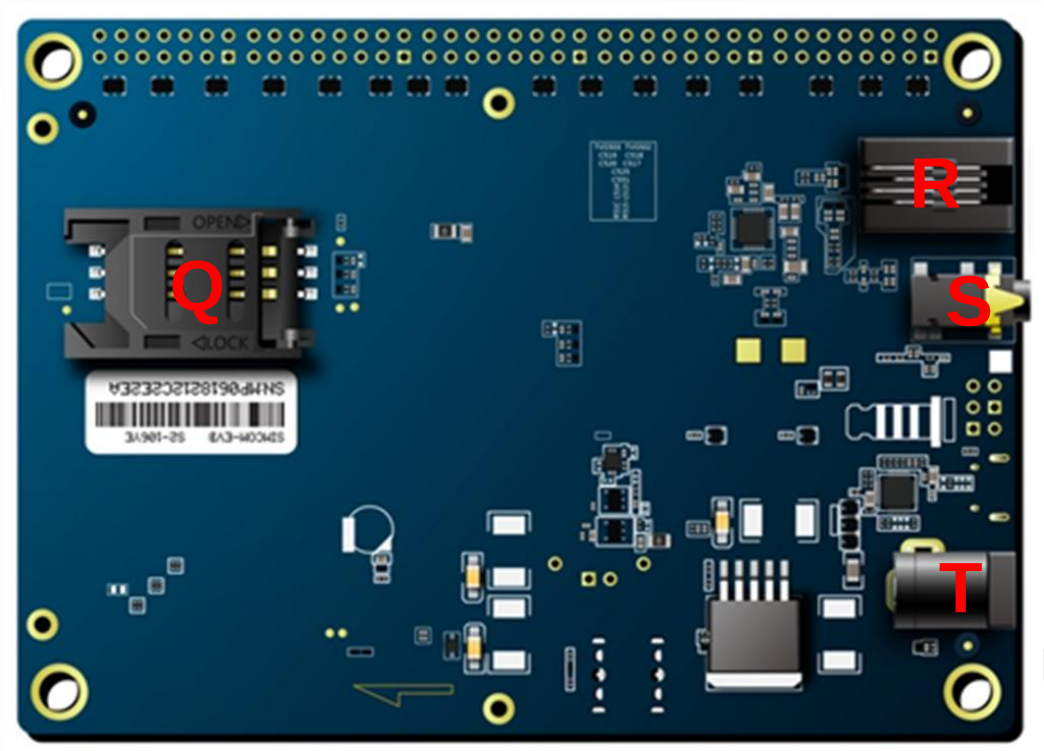

Figure 5: The BOTTOM view of SIMCOM-EVB

Table 5: The test points on the SIMCOM-EVB

No.	PIN Name	Description	No.	PIN Name	Description
A	J301_PIN_1	PWRKEY	D	J304_PIN_12	PCM_CLK
	J301_PIN_2	RESET		J304_PIN_13	PCM_IN
	J301_PIN_3	DBG/UART3_RX		J304_PIN_14	PCM_OUT
	J301_PIN_4	DBG/UART3_TX		J304_PIN_15	PCM_SYNC
	J301_PIN_5	UART1_RI		J304_PIN_X	NC
	J301_PIN_6	UART1_DCD	E	J305_PIN_1	GPIO_7
	J301_PIN_7	UART1_DTR		J305_PIN_3	GPIO_6
	J301_PIN_8	UART1_RXD		J305_PIN_5	GPIO_5
	J301_PIN_9	UART1_CTS		J305_PIN_8	GPIO_11
	J301_PIN_10	UART1_RTS		J305_PIN_10	GPIO_10
	J301_PIN_11	UART1_TXD		J305_PIN_11	GPIO_2
	J301_PIN_12	NC		J305_PIN_13	GPIO_1
	J301_PIN_13	ADC1		J305_PIN_14	GPIO_8
	J301_PIN_14	NC		J305_PIN_X	NC
	J301_PIN_15	VRTC	F	J202	Main sim slot
	J301_PIN_16	NETLIGHT	G	J401_2	USB BOOT
B	J302_PIN_1	STATUS		J401_5	NC
	J302_PIN_15	SIM_DET	H	J204	USB-2-UART

	J302_PIN_X	NC	I	J101 / J102	To TE board
C	J303_PIN_2	SPI_CS	J	D402	Status LED
	J303_PIN_3	SPI_MOSI	K	D401	Network LED
	J303_PIN_5	SPI_MISO	L	D201	Power LED
	J303_PIN_6	SPI_CLK	M	SW401	PWRKEY
	J303_PIN_7	PWM1	N	SW402	Reset
	J303_PIN_8	PWM2	O	S201	Power switch
	J303_PIN_9	VDD_EXT	P	S401	RF switch
	J303_PIN_10	GND	Q	J203	sim slot (n/a)
	J303_PIN_12	VCC_1V8	R	J502	Audio jack
	J303_PIN_x	NC	S	X501	Audio jack
			T	J103	+5V DC input

NOTE

The figures above are the effect diagrams of the module, for reference only. Please refer to the actual product for appearance.

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3 Operation Procedures

3.1 Accessory installation

Install the necessary accessories and perform functional tests.

1) Install the SIM7080G-TE to the EVB board, pay attention to the installation direction to prevent short circuit;
2) Insert SIM card before powering up;
3) Install the LTE antenna and GNSS antenna as follow;
4) Insert the 5V DC power supply to the “T” position of the EVB board.
5) Insert micro-USB to “c”.
6) The switch “s” is OFF by default, and the corresponding switch is turn on when needed to fulfill the functions.

The specific functions of the switch are as follows.

Figure 6: Switch on SIM7080G-TE

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Table 6: Description of the switch “s” function

Switch No.	Function
1	After turning on the switch, can view the SIM7080G power-on log through the SIMCOM-EVB's Standard port
2	
3	\
4	

The picture of TE board installed on EVB board is shown below.

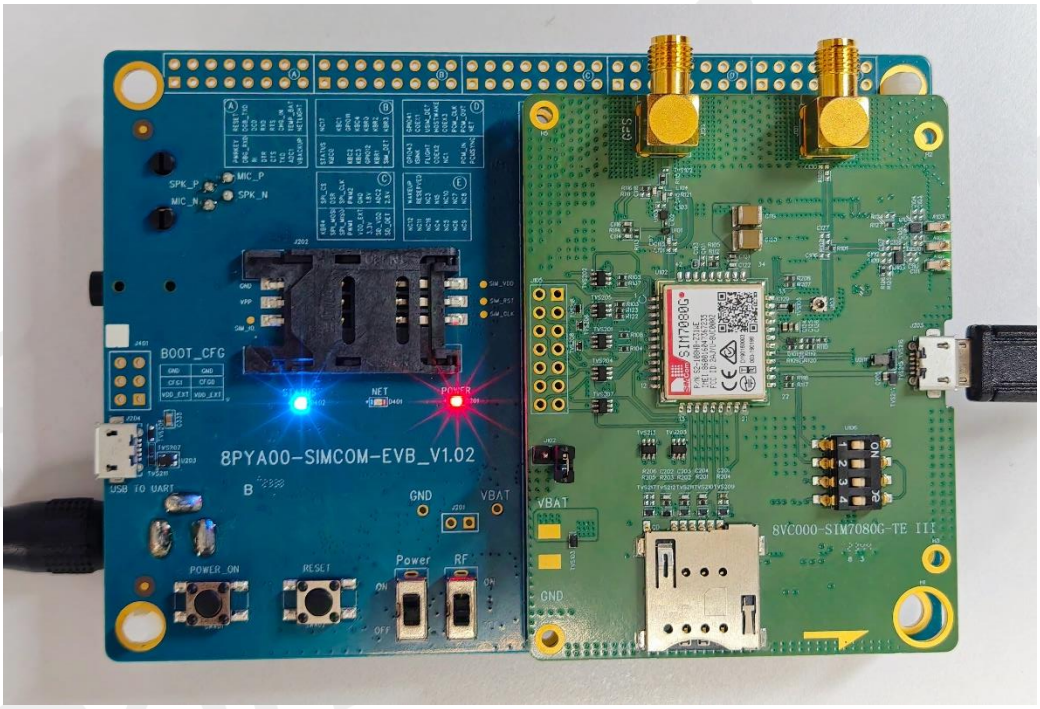

Figure 7: SIM7080G on SIM7080G-TE

3.2 TE Board Used for SIM7080G

3.2.1 Power ON/OFF

The module power on procedure is shown in the following:

(1) Please confirm the EVB board O (S201) and P (S401) is **OFF** status.
(2) Connect the DC adapter.
(3) Pull the O (S201) and the P (S401) to **ON** state, the L (D201) will be lighted.
(4) Press the M (SW401) button, hold it for at least 1s, then release it, and the module is turned on. The J (STATUS) light will be lighted all the time, if the module registered the net, the K (NET) light will be lighted flash, if no registered the net, the J (NET) light will be lighted all the time.

Power off the module by pull the O (S201) and the P (S401) to off state, after the module save the data and the module will be power off automatic and all lights will be extinguished. Also can power off by AT command, when the module is in power on state. For more details, please refer to **SIM7080G_AT Command Manual**.

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3.2.2 Driver Installation

When the USB is plugged into the PC and the TE is connected as shown, there should be several SimTechSIM7080 devices listed under Other Devices in the Device Manager, as shown in the figure below.

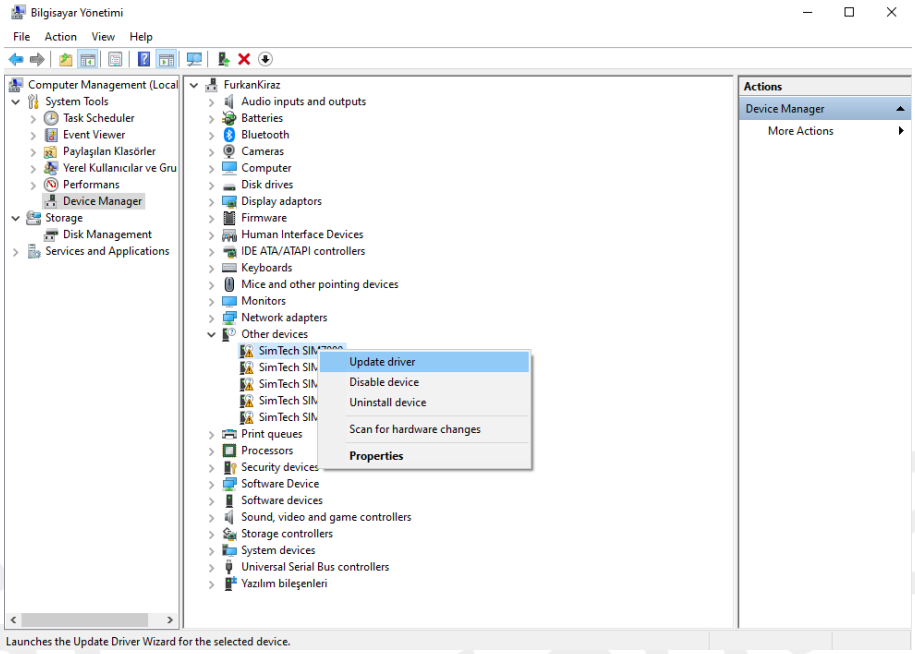

Figure 8: SIM7080 Devices Recognized by the Operating System

Browse your computer for driver software, manually search for and point to the driver "SIM7070 _ SIM7080 _SIM7090 Series Windows USB Driver_V1.00", and then click “Next”

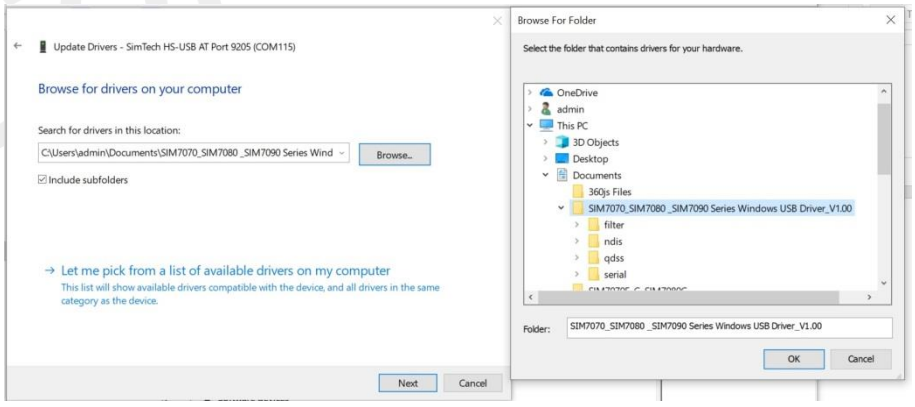

Figure 9: Install SIM7080 Drivers

After installing the driver sequentially, the interface is displayed as follows.

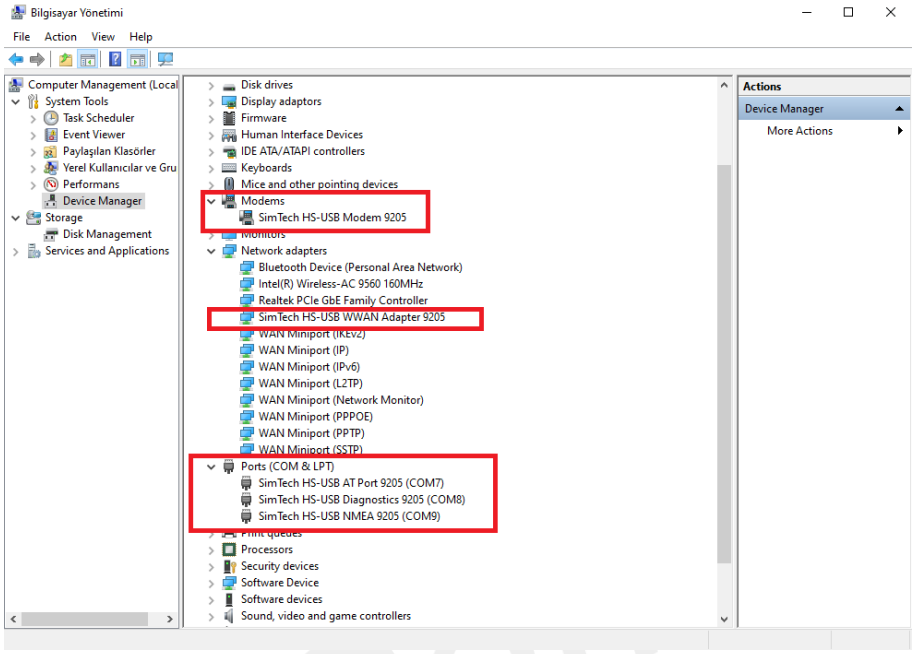

Figure 10: SIM7080's all Drivers

Table 7: USB Port Description

USB Ports	Description
SimTech HS-USB AT Port 9205	AT Command Communication Port
SimTech HS-USB Diagnostics 9205	Software Debug and FW Update Port
SimTech HS-USB NMEA 9205	GNSS NMEA Output Port

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3.2.3 Firmware Update

The firmware update process of the SIM7080G module is as follows.

Before updating the firmware, please contact the SIMCom technical support team and the supplier to obtain the correct firmware upgrade file and tools.

(1). Select module platform and firmware path.

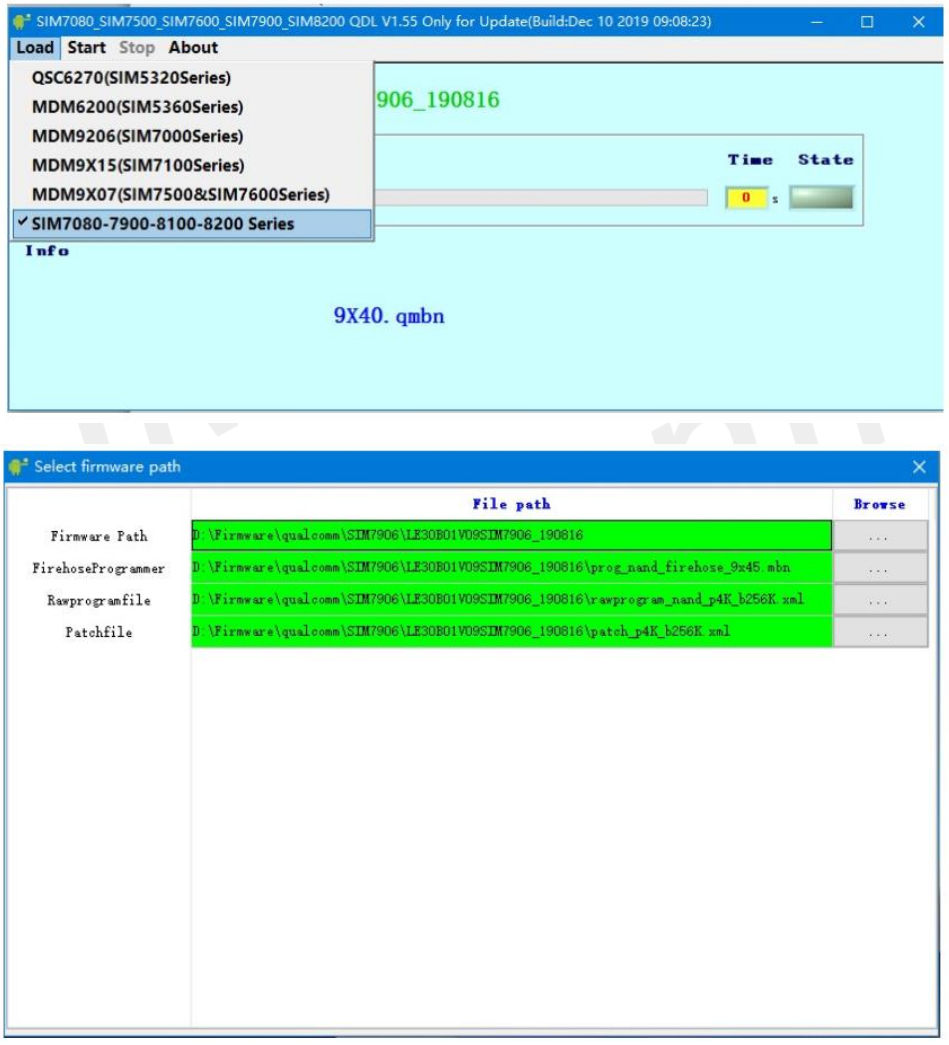

Figure 11: Select module platform and firmware path.

2. Click start button, and then power the module, the tool will automatically detect the module port and start to download

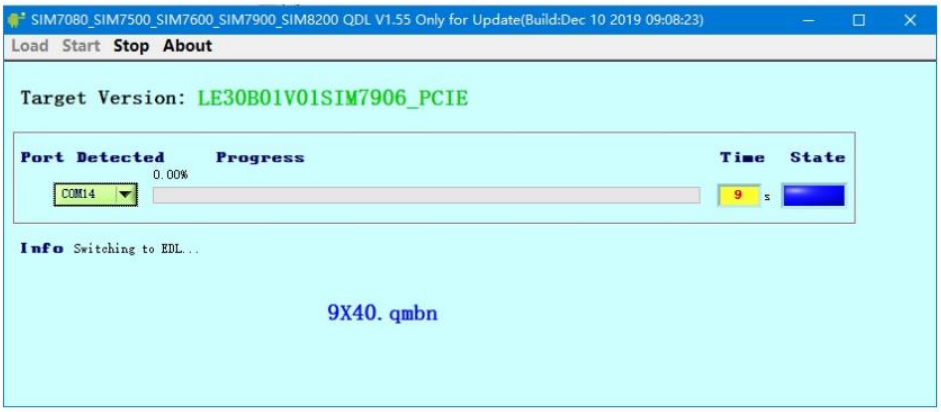

Figure 12: start to download

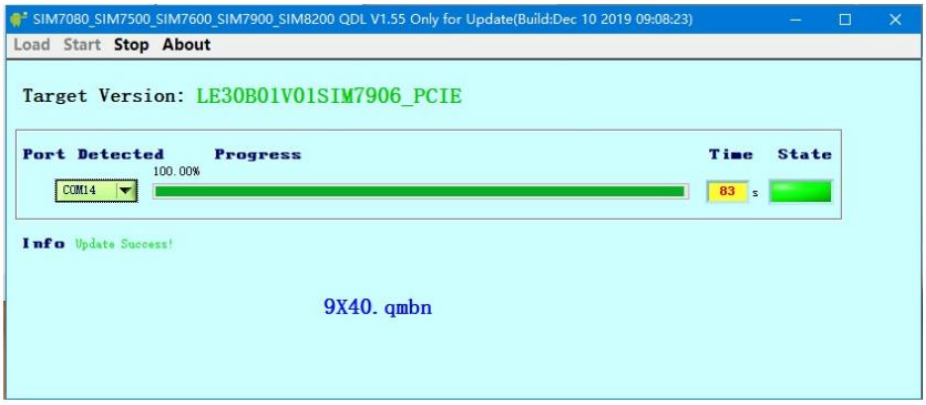

Figure 13: download success

3.3 AT Command Communication

Module supports a variety of common baud rates. For temporary modification of baud rate, please refer to the command “AT+IPR”.

Table 8: The factory default baud rate

Module	Default Baudrate
SIM7080G	Adaptive Baud Rate

Table 9: UART baud rate support

UART baud rate support	Default Baudrate
Serial communication fix baud rate	4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600
Serial communication auto baud rate	2400,4800, 9600, 19200, 38400, 57600, 115200

Common methods of using serial port baud rate commands:

Table 10: UART baud rate support

UART common baud rate operation	Related command
Query the current baud rate	AT+IPR?
Query module supports baud rate	AT+IPR=?
Set temporary baud rate to 9600	AT+IPR=9600