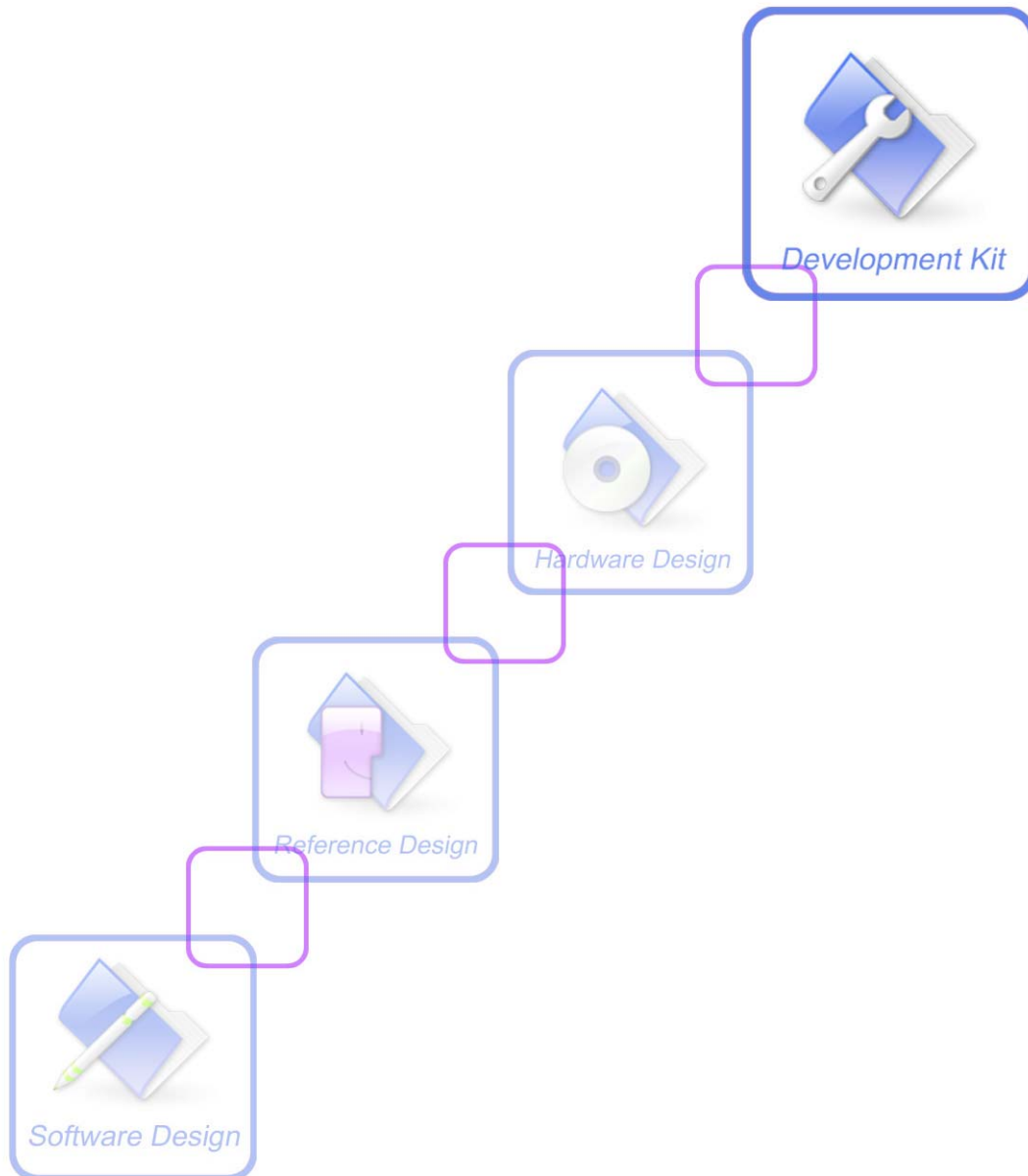




Development Kit Manual

SIM20-TE_UGD_V1.01

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1 Safety precautions

Read Carefully

Please make sure that the use of this product is allowed in the country and in the environment required. The use of this product may be dangerous and has to be avoided in the following areas:

Where, it can interfere with other electronic devices in environments such as hospitals, airports, aircrafts, etc.

Where there is risk of explosion such as gasoline stations, oil refineries, etc

It is responsibility for the user to enforce the country regulation and the specific environment regulation.

Do not disassemble the product; any mark of tampering will compromise the warranty validity. We recommend the following instructions of the hardware user guide for a correct wiring of the product. The product has to be provided with a stabilized voltage source and the wiring has to be conformed to the security and fire prevention regulations.

The system integrator is responsible for the functioning of the final product; therefore, care has to be taken to the external components of the module, as well as of any project or installation issue, because the risk of disturbing the wireless communication networks or external devices having impact on the SIM20 module. Should there be any doubt, please refer to the technical documentation and the regulations in force.

2 Acronyms and Abbreviations

Table 1: Acronyms and abbreviations

Abbreviation	Description
AC	Alternating Current
ADC	Analog-to-Digital Converter
DC	Direct Current
I/O	Input/Output
LED	Light Emitting Diode
LDO	Low Dropout Linear Regulators
MCU	Micro Controller Unit
SPI	Serial Peripheral Interface
USB	Universal Serial Bus
Li-Ion	Lithium-Ion
PCB	Printed Circuit Board
UART	Universal Asynchronous Receiver & Transmitter
NC	Not Connect
RF	Radio Frequency
IIC	Inter-Integrated Circuit
SRD	Short Range Devices

3 Scope of the user's guide

This document provides the usage of SIM20-TE-A/SIM20-TE-B/SIM20-TE-C, users can get useful information about the SIM20-TE quickly through this document.

This document is subject to change without notice at any time.

4 TE Overview

4.1 Contents of the kit

Development equipment is provided as the following table. Please check the contents of the SIM20 kit. If anything is missing, please contact the supplier.



Figure 1: Contents of the SIM20 kit

Table 2: Contents of the kit

Part NO.	Description	Quantity
1	SIM20-TE	1
2	USB cable	1
3	Antenna	1

4.2 General Description

SIMCOM supplies the SIM20 kit to assist the designer, during the developing project phase, to develop applications based upon the wireless modules.

The SIM20 kit provides a fully functional solution for a complete data application.

4.2.1 Block Diagram

The SIM20 kit can be split into several functional blocks depending on the implemented function, as the following Figure 2.

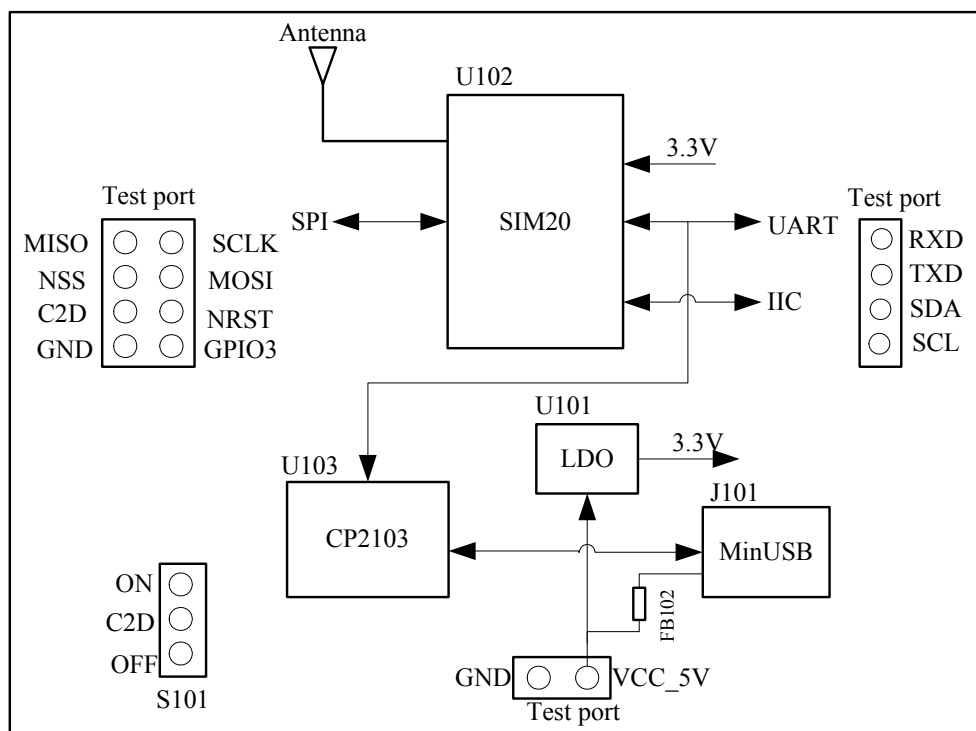


Figure 2: Block diagram

This development kit can be used for data application, and the SIM20 module interface features as following:

- UART interface
- IIC interface (reserved)
- SPI interface (reserved)

Note:

If users want to use IIC or SPI interface, please contact the supplier.

4.2.2 Mechanical feature

- Sizes 39*42*10 mm
- Operating temperature range: -20°C to +60°C
- Storage temperature: -40°C to +85°C

The placement of the TE is shown as the following figure:

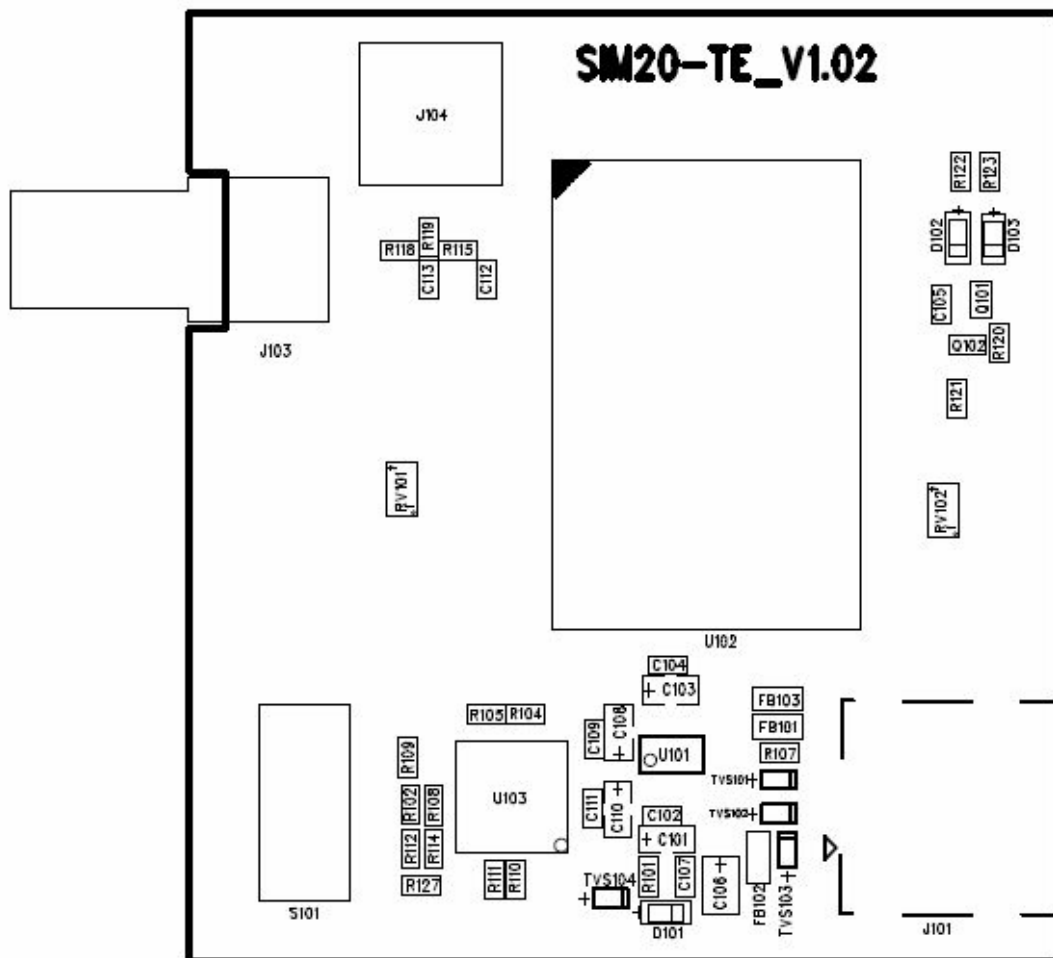


Figure 3: TE placement

5 Accessory Interface

This chapter describes the hardware interfaces:

- USB interface
- UART interface
- IIC interface (reserved)
- SPI interface (reserved)

5.1 USB Interface

There is one Mini-USB receptacle on SIM20-TE. We can connect the TE board and PC by a USB cable (Mini-USB plug to USB plug). The power supply to the TE board is from PC through USB cable. But PC must be installed CP2103 driver, because PC communicates with the TE board via CP2103 (USB to UART chip).

Note:

If the TE board is powered via VCC_5V, the element FB102 on the TE board should be removed.

5.2 UART Interface

The signal pins used in this interface are TXD and RXD. The main UART interface default supports 115200bps.

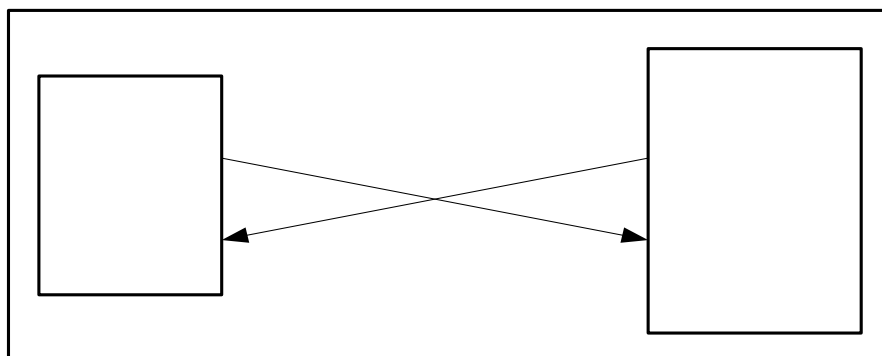


Figure 4: UART interface

In addition, peripheral equipment can be connected through test ports on the TE board.

5.3 IIC Interface

IIC interface is reserved.

5.4 SPI Interface

SPI interface is reserved.

5.5 Man and Machine Interface

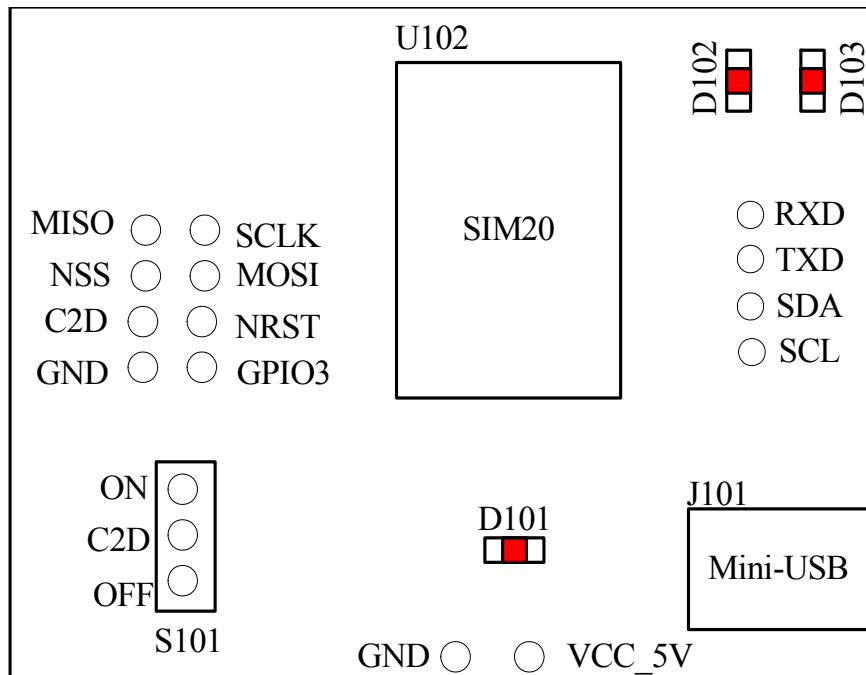


Figure 5: Man and machine interface

There are three LED indicators, one switch and test interface on the TE board.

5.5.1 LED indicators and switch

D101: Power indicator.

D102: It is connected to SDA pad of SIM20 module (default GPIO, indicate sending data.).

D103: It is connected to SCK pad of SIM20 module (default GPIO, indicate receiving data).

S101: It is connected to C2D pad of SIM20 module, switch status and function as following:

Table 3: Switch status and function

Switch status	Function description
ON	Data mode
OFF	Command mode

5.5.2 Test interface

Table 4: Test interface description

Test ports	Function description
VCC_5V	Power supply to the TE board
GND	Ground
RXD	SIM20 module send data
TXD	SIM20 module receive data
SDA	Sending data control/ IIC data (reserved)
SCL	Receiving data control/ IIC clock (reserved)
MISO	SPI master in slave out
MOSI	SPI master out slave in
SCLK	SPI clock
NSS	SPI slave selected output signal
C2D	Command mode and Data mode control
NRST	Reset input
GPIO3	GPIO is controlled by CP2103 (reserved)

Note:

Test ports can be used for signal status detection and redevelopment by users. But if users want to use it to do redevelopment, please make sure that the signal of the TE board is not crosstalk with the external signal.

5.5.3 Operating indication

- 1、 Connecting the TE board and PC through USB cable
- 2、 Users can configure GPIO of CP2103 to control SIM20 module by Port configuration tool

Table 5: GPIO interface description

GPIO	Function description
GPIO.0	GPIO.0=1 LDO enable, power supply to SIM20 module is on GPIO.0=0 LDO disable, power supply to SIM20 module is off
GPIO.1	GPIO.1=1 Reset signal is disable GPIO.1=0 SIM20 module will be reset by driving this pin low for at least 15 μ s
GPIO.2	GPIO.2=1 SIM20 module will be data mode GPIO.2=0 SIM20 module will be command mode
GPIO.3	Reserved

- 3、 UART interface can be used to update program when C2D is driven low .

Note:

Please note priority when switch S101 and GPIO.2 of CP2103 are used at the same time, the following table shows the priority.

Table 6: Working mode of SIM20 module

Switch status	GPIO.2	C2D
OFF	GPIO.2=0	C2D=0 (Command mode)
	GPIO.2=1	
ON	GPIO.2=0	C2D=0 (Command mode)
	GPIO.2=1	C2D=1 (Data mode)

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