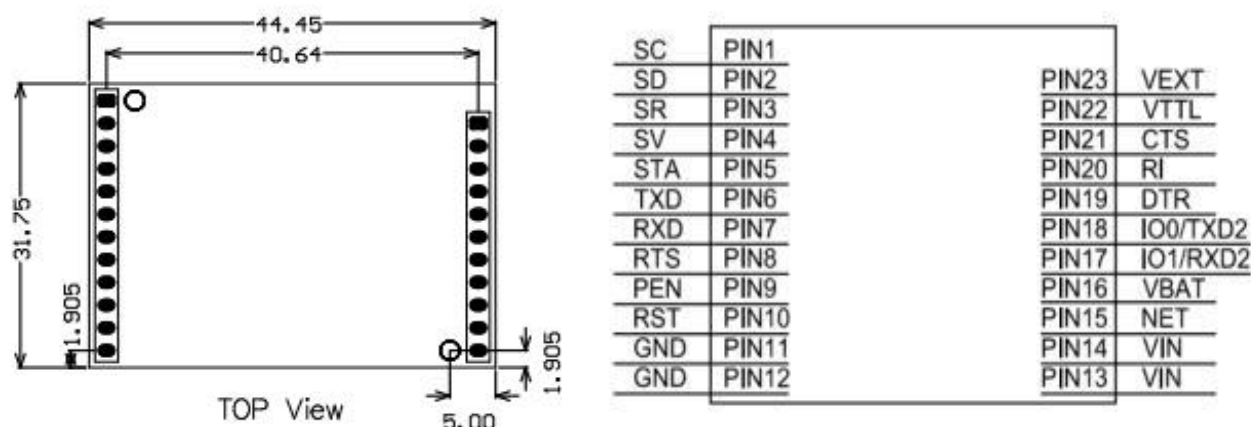


DD-29&32SPECIFICATION

制式	型号	制式	型号	制式	型号	
CAT1	EC200MCNLF-I03-SNDA	CAT4	EC200ACNDA-N06-GW	Qualcomm Overseas Version CAT1	EC21KLFA-512-SKT	EC25AUTLFB-512-SNAS
	EC200MCNLE-I05-SNDA		EC200ACNLE-N05-SNNSA		EC21AFC-512-STD	EC25AFFA-512-SGAS
	EC200UCNLC-N05-SNNSA2		EC200DCNLB-D08-SNDA		EC21AUVFA-512-STD	EC25AUXGR-128-SGNS
	EC200UCNAD-N05-SNNSA		EC200ACNGA-N06-SGNSA		EC21AUTFB-512-STD	EC25AFC-512-STD
	EC200NLAA-N05-SNNSA		EC200DCNBA-D08-SGND		EC21JFA-512-DJC	EC25AUFA-512-STD6
	EC200GCNGD-I03-SGND		EC200DEULM-D08-SNDA		EC21JFA-512-STD	EC25AUTFA-512-STD
	EC200GCNLF-I05-SNDA		EC200AEUAC-D10-UNASA		EC21AUFA-512-STD	EC25EFK-512-STD
	EC200GCNLC-I03-SNDA		EC200AAUAC-D10-XGD		EC21JFB-512-SGAS	EC25JFA-512-STD
	EC200UEUAC-N05-SNNSA		EC200AAUAA-D09-UNASA		EC21EFK-512-STD2	EC25EUGA-512-SGNS
	EC200GCNLE-I03-SNNSA		EC200ACNAA-D09-UNASA		EC21AUGC-128-SGNS	EC25AGB-512-SGAS
	EC200GCNLD-I03-SNNSA		EC200AEUHF-N06-TNET		EC21AFA-512-STD6	EC25AFFD-512-SGAS
	EC200UAUAC-N05-SNNSA		EC200ACNHA-N06-SNNSA		EC21VFA-512-STD	EC25VFA-512-STD
	EC200NCNAA-N05-SH		EC200ACNLA-N06-SNNSA		EC21EUGATEA-512-SGNS	EC25AFXGA-128-SW
	EC200MCNLA-I05-SNDA		EC200AAUHA-N06-SNNSA		EC21JFA-512-DCM	EC25JLFA-512-STD
	EC200MCNLC-I03-SNDA		EC200ACNDA-N06-SNNSA		EC21AFA-512-STD2	EC25EFA-512-KR
	EC200MCNGB-I05-SGND		EC200AEUHA-N06-SNNSA		EC21JFA-512-STDJC	EC25JFA-512-STDJC
	EC200NCNLA-N05-SNNSA		EC200AAUAC-D10-UNASA		EC21VFC-512-STD	EC25EFA-512-STD
	EC200UCNLC-N05-SNNSA		EC20CEFASG-256-SGNS		EC21EUGA-512-SGNS	EC25AFXGA-128-SGAS
	EC200SEUAA-N06-SNNSA3	Qualcomm China Version CAT4	EC20CEFRSG-256-SGNS	Qualcomm Overseas Version CAT4	EC21VDFA-512-STD	EC25EUGB-512-SGNS
	EC200NCNAA-N05-SNNSA		EC20CEHB-128-GWE		EC21ECGR-128-SNNS	EC25VFC-512-STD
	EC200UCNAA-N05-SGNSA		EC20CEHB-128-GWD40		EC21EFK-512-STD	EC25JLFA-512-STDJC
	EC200UCNAB-N05-SNNSA		EC20CEFILG-128-SGNS		EC21KLFA-512-KT	EC25EXGD-128-SNNS
	EC200NCNAB-N06-SNNSA		EC20CEFAG-512-SGNSQ		EC21EFA-512-STD	EC25AFXDGA-128-SGAS
	EC200UEUAA-N05-SGNSA		EC20CEHCLG-128-AUD		EC21AUXGR-128-SGNS	EC25AFXGQ-128-SGAS
	EC200UCNLB-N05-SNNSA		EC20CEFHGL-128-SNNS		EC21AFA-512-STD	EC25EXGC-128-SNNS
	EC200SEUAA-N06-SNNSA		EC20CEFRG-512-SGNS		EC21EUXGR-128-SGNS	EC25AFFDQ-512-SGAS
	EC200UCNAC-N05-SNNSA		EC20CEHCLG-128-SNNS		EG25GLD-128-SGNS	EC25EFA-512-SKT
	EC200UCNLA-N05-SGNSA		EC20CEHB-128-GWG		EG25GLGA-128-SGNS	EC25ECGR-128-SNNS
	EC200UAUAA-N05-SGNSA		EC20CEHB-128-GWD		EG25GGC-128-SGNS	EC25AUGC-128-SGNS
	EC200NCNAC-N05-SNNSA		EC20CEHDLG-128-SNNS		EG25GGD-256-SGNS	EC25ADLFA-512-STD
	EC200UAUAB-N05-SNNSA		EC20CEFRG-512-SGNSQ		EG25GGB-256-SGNS	EC25AFXDGQ-128-SGAS
	EC200UEUAB-N05-SNNSA		EC20CEFAG-512-SGNSX		EC25VDFA-512-SGAS	EC25EUGA-512-SGNS6
	EC200NCNGB-N06-CGNSA		EC20CEFALG-128-SGNS		EC25AUXGB-256-SGNS	
	EC200SAUAA-N06-SNNSA		EC20CEFAG-512-SGNS		EC25EUXGR-128-SGNS	
			EC20CEHB-128-GWC		EC25AFA-512-STD	
CAT4	EC200ACNLB-N06-SNNSA	Qualcomm Overseas Version CAT1	EG21GGB-128-SGNS		EC25AUFA-512-STD	
	EC200DCNLA-D08-SNDA		EC21ADLFA-512-STD		EC25AFFAQ-512-SGAS	
	EC200AAUAB-D10-UNASA		EC21KLFA-512-KR		EC25ECGR-128-SNNS6	
	EC200AEUAB-D10-UNASA					

★CoreBoardSize:



引脚序号表

序号	NAME	Description	序号	NAME	Description
1	SC:		13	VIN:	Supports 5V-18V wide voltage input
2	SD:		14	VIN:	Supports 5V-18V wide voltage input
3	SR:		15	NET:	
4	SV:		16	VBAT:	
5	STA:		17	IO1 (RX1) :	
6	TXD:	Send data pin	18	IO1 (RX2) :	
7	RXD:	receivedata pin	19	DTR:	
8	RTS:		20	RI:	
9	PEN:	On board power enable pin	21	CTS:	
10	RST:		22	VTTL:	
11	GND:	ground connection	23	VEXT:	
12	GND:	ground connection			

PCBA Pin Description: total 23 pins, with 12 pins on the left and 11 pins on the right

When using, usually need to use five pins: VIN, GND, TXD, RXD, PEN. When the other pins are not in use, they will be suspended for processing.

Double row pin description

1. PIN1-PIN4:

SIM card interface pins are designed for users who need external SIM cards and must be suspended when not in use.

SV: SIM card power output;

SR: SIM card reset;
SD: SIM card data I/O;
SC: SIM card clock;

Attention: For users who need an external SIM card, please refer to the corresponding official hardware design manual.

PIN5:(STA)

STA: Running status indication. After the module is turned on and in a normal working state, this pin will output a high level. Users can determine whether the module is in a working state by the level of this pin, which is generally not used and can be suspended.

PIN6-PIN7:

TXD: Send data pin

RXD:receive data pin

Connection method: cross over

The communication pin of the core board is at TTL level, so communication with the core board must use TTL level, and cannot be debugged using a USB to 232 circuit.

Note:

(1) The corresponding serial port driver must be installed on the computer, or computer cannot recognize serial port device. If not installed, can consult the seller for a driver, or you can use computer's driver wizard or Master Lu to test and install the USBIC chip driver yourself.

(2) When using USB to TTL module to test the core board, should make sure that module shares ground with the power supply, otherwise communication may not be normal.

(3) module factory default is adaptive baud rate mode, in which the module can automatically detect and adapt to the baud rate of the host application. Commonly used baud rates include 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200bps, etc.

Beginners suggest using 115200 for testing first, users can also set a fixed baud rate for the core board. For specific AT commands, please refer to the corresponding AT command manual.

(4) Before connecting to the core board, please make that the USB to TTL module sends and receives data normally. Short circuit RXD and TXD, then plug them into the USB port of the computer, use the serial debugging assistant to send data, and observe whether the receiving data window displays the data just sent. If it can be received, it indicates that the serial port is transmitting and receiving data normally. Otherwise, it indicates that the module has poor contact or is damaged.

PIN8: (RTS)

RTS: This signal sent from terminal (DTE) to the module (DCE), valid at low levels, indicating that the module is allowed to send data; At high electricity levels, Prohibit the module from sending data, generally not used, can be suspended.

PIN9:(PEN)

PEN: On board power enable pin, high enable, low disable, default to enable state, not suspended. This pin can be used for the module's Switch on or reset the machine. The core board has integrated a power on self start circuit. recommended that users add this pin during design to control the reset and restart of the core board in abnormal states

Note:

a. If VBAT is used for power supply, this pin will fail.

-
- b. When writing a program, if use this pin , it needs to be configured as an open drain output mode, otherwise it will be invalid.
- c. When power supply VCC equal to 5V, the PEN can be directly connected to the GPIO (open drain mode) of the MCU. PEN is low battery level, power turned off, The core board shuts down.
- d. When power supply VCC higher than 5V, recommended to add a transistor driver. At this time, the Module_EN high level, power off, core board Shutdown. As shown in Figure 2.2.5-1:

PIN10:(RST)

RST: Module reset pin. When resetting, set the RST pin high and pull it low. generally not used, can be suspended in the air

PIN11 PIN12: (GND)

GND: DC power input negative pin. Two GND pins can be connected arbitrarily.

PIN13-PIN14: (VIN)

VIN: DC power input positive pin, supporting 5V-18V wide voltage input. Two VIN pins can be connected arbitrarily.

PIN15: (NET)

NET: External network status indicator, can be suspended.

PIN16: (VBAT)

VBAT: This pin is directly connected to the power pin of the core module. When powered by VIN, the VBAT pin outputs 4.0V;

When the VIN pin is not used for power supply, the VBAT pin can be directly used to power the core module, with an input voltage range of 3.3~4.2V, typical values

3.8V, power supply cannot exceed the maximum voltage, and is generally used for battery power supply. No need to hang in the air.

PIN17-PIN18:

Core module GPIO pin.

IO0 (TX2): Universal input/output port, multiplexed as UART2_TXD.

IO1 (RX2): Universal input/output port, multiplexed as UART2_RXD.

Note: These two pins are only useful when developed based on the internal MCU of the module. The original factory is generally not open to users and can be suspended.

PIN19:(DTR)

DTR: Control module sleep and wake-up. When sets "AT+CSCLK=1", if module in standby mode and DTR pin pulled to high level, module will automatically enter sleep mode after 1 second. At this time, serial port function cannot communicate normally. Pulling down low DTR in this mode can Wake up module. In the "AT+CSCLK=0" mode, pulling up DTR pin will not have any impact, normal communication of the serial port function will not be affected. Generally not used, can be suspended.

PIN20:(RI)

RI: This pin can serve as an interrupt to wake up the host. This function needs to be enabled through the AT command "AT+CFGRI=1" to take effect. RI usually maintains high level output, generally not used, can be suspended.

After enabling RI function, when receiving short message or URC report, RI will output a 120ms low-level pulse.



The level change on the RI shown above (SMS, URC)

When voice call received, RI will become low level output, the level on the RI will only return to high level after voice call is answered or hung up



The level change on the RI shown above (voice call in)

PIN21: (CTS)

CTS: This signal sent by terminal module (DCE) to terminal (DTE), the low level is valid, indicating that the terminal is allowed to send data; When High level, prohibited for the terminal to send data, which is generally not used and can be suspended.

PIN22: (VTTL)

VTTL: The external power input of the level conversion circuit should be consistent with the high level voltage of the connected TTL pin. When connecting to an MCU, it is usually connected to the VCC power supply of the MCU.

Note: When there is garbled code during serial communication, please connect this pin and do not use it to hover.

PIN23: (VEXT)

VEXT: Core module power output pin, can be used for level conversion circuits, generally not used, can be suspended.

Test instructions

(1) Generally, only VIN, GND, TXD, and RXD are required for testing, as shown below :



(2) In project applications, recommended to add PEN control pins. When core board communication is abnormal, reset can be achieved through this pin; When communication interval is long, core board can be turned on and off through this pin to reduce power consumption. Please refer to the methods provided in Section 2.2.5 of Chapter 2 when using.

Note: When the remaining pins are not in use, they should be suspended for handling.

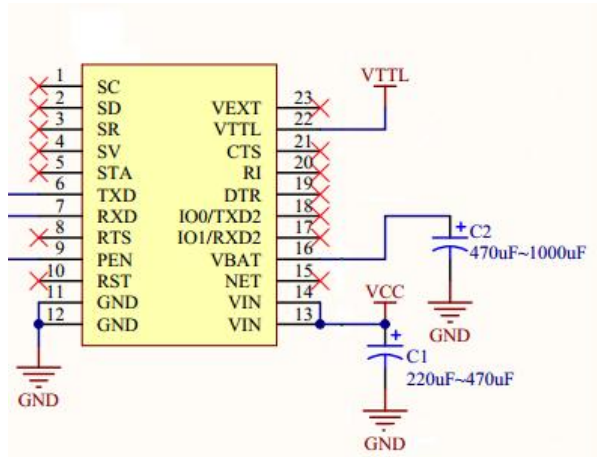
Power supply

(1) The power supply range of the core board is 5V

18V. core board burst mode (such as during network registration) has peak flow consumption of up to 2A, external power supply power should be greater than 10W.

Note: When power supply does not reach 10W, recommended to connect a 470uF~1000uF capacitor between VIN and GND, VBAT and GND respectively.

As shown below



(2) Some computers have insufficient power supply capabilities through USB interface, so users can directly use computer's USB interface to power core board, may lead to frequent restarts of core board. recommended users connect an external power supply to the core board (note common grounding).

(3) When inserting a SIM card, users must pay attention to the direction of SIM card, with corners facing outward. If the card inserted in wrong direction, core board cannot read the card



(4) please connect the antenna Before testing and make sure that signal quality greater than 18 during data communication, otherwise network communication may be unstable.

Testing

For users who using core board for the first time, please first connect core board with a USB to TTL module for communication testing. Test all AT commands required for project according to the communication process, ensure no problems, then write program for testing. This can avoid many problems and shorten the project cycle. The AT command operation document can be consulted with the corresponding sales representative. For the use of the AT command, please refer to the AT command manual and corresponding official application documents.

Test AT command for simple detection of whether the function board is working properly: AT+CGMR query module information, AT+CPIN? Query card reading, AT+CSQ test signal value: If signal value is less than 10, 99 or above, network injection can be done. However, if signal is unstable, recommended to ensure that signal value is greater than 18, 99. AT+CGATT? Query whether to register: Reply 1. Successfully registered. The above instructions have returned to normal, proving that the interaction between the module and the PC is normal. You can proceed with subsequent communication process testing.