SIM800C Module

SIM 800C Module is a complete Quad-band GSM/GPRS solution in a SMT type, which can be embedded in the customer applications.

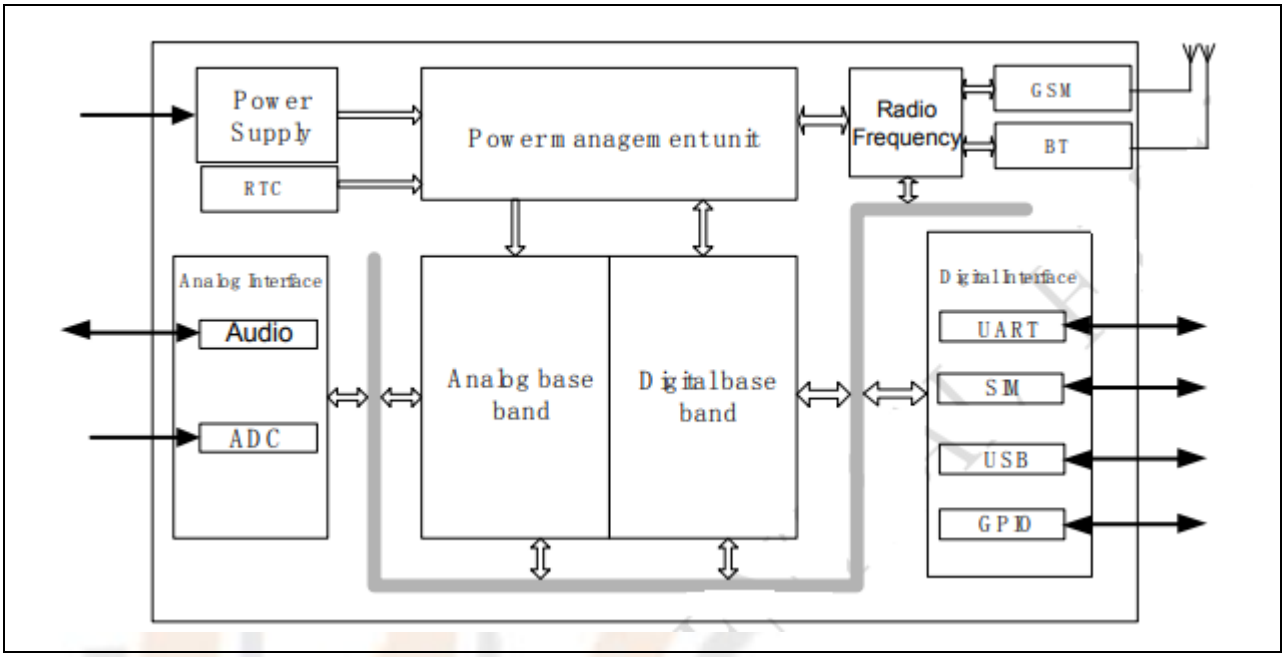
These modules are sub-system of the Internet-of-everything hardware. SIM800C supports Quad-band 850/900/1800/1900MHz, it can transmit Voice, SMS and data information with low power consumption. With tiny size of 17.6*15.7*2.3mm, it can smoothly fit into slim and compact demands of customer design.

SPECIFICATIONS:

GSM	850,900,1800 and 1900MHz
FLASH	SIM800C (24Mbit) SIM800C32 (32Mbit)
RAM	32Mbit
Power supply	3.4V ~4.4V
Power saving	Typical power consumption in sleep mode is 0.88mA (BS-PA-MFRMS=9)

Frequency bands	Quad-band: GSM 850, EGSM 900, DCS 1800, PCS 1900. SIM800C can search the 4 frequency bands automatically. The frequency bands can also be set by AT command "AT+CBAND".
	Compliant to GSM Phase 2/2+
Transmitting power	Class 4 (2W) at GSM 850 and EGSM 900
	Class 1 (1W) at DCS 1800 and PCS 1900
GPRS connectivity	GPRS multi-slot class 12（default）
	GPRS multi-slot class 1~12 (option)
Temperature range	Normal operation: -40°C ~ +85°C
	Storage temperature -45°C ~ +90°C
Data GPRS	GPRS data downlink transfer: max. 85.6 kbps
	GPRS data uplink transfer: max. 85.6 kbps
	Coding scheme: CS-1, CS-2, CS-3 and CS-4
	PAP protocol for PPP connect
	Integrate the TCP/IP protocol.
	Support Packet Broadcast Control Channel (PBCCH)
USSD	Unstructured Supplementary Services Data (USSD) support
SMS	MT, MO, CB, Text and PDU mode
	SMS storage: SIM card

FUNCTIONAL DESCRIPTION:



The following figure shows a functional diagram of SIM800C:

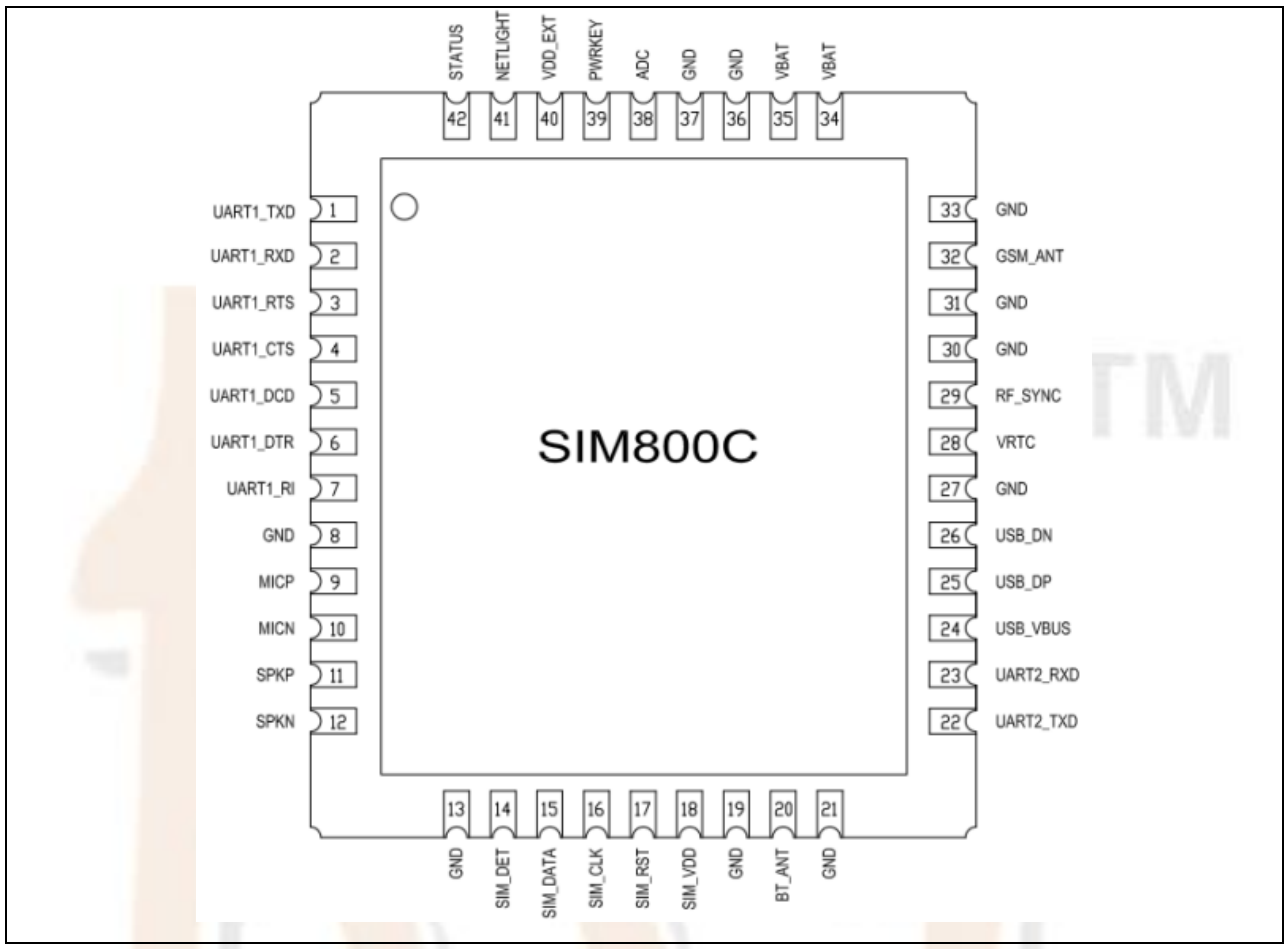
- GSM baseband
- GSM RF
- Antenna interface
- Other interface

Operating Modes:

Modes	Functions	
Normal operation	GSM/GPRS SLEEP	Module will automatically go into sleep mode if the conditions of sleep mode are enabling and there aren't on air and hardware interrupt (such as GPIO interrupt or data on serial port). In this case, the current consumption

		of module will reduce to the minimal level. In sleep mode, the module can still receive paging message and SMS.
	GSM IDLE	Software is active. Module is registered to the GSM network, and the module is ready to communicate
	GSM TALK	Connection between two subscribers is in progress. In this case, the power consumption depends on network settings such as DTX off/on, FR/EFR/HR, hopping sequences, antenna.
	GPRS STANDBY	Module is ready for GPRS data transfer, but no data is currently sent or received. In this case, power consumption depends on network settings and GPRS configuration.
	GPRS DATA	There is GPRS data transfer (PPP or TCP or UDP) in progress. In this case, power consumption is related with network settings (e.g. power control level); uplink/downlink data rates and GPRS configuration (e.g. used multi-slot settings).
Power off	Normal power off by sending AT command “AT+CPOWD=1” or using the PWRKEY. The power management unit shuts down the power supply for the baseband part of the module. Software is not active. The serial port is not accessible. Power supply (connected to VBAT) remains applied.	
Minimum functionality mode	AT command “AT+CFUN” can be used to set the module to a minimum functionality mode without removing the power supply. In this mode, the RF part of the module will not work or the SIM card will not be accessible, or both RF part and SIM card will be closed, and the serial port is still accessible. The power consumption in this mode is lower than normal mode.	

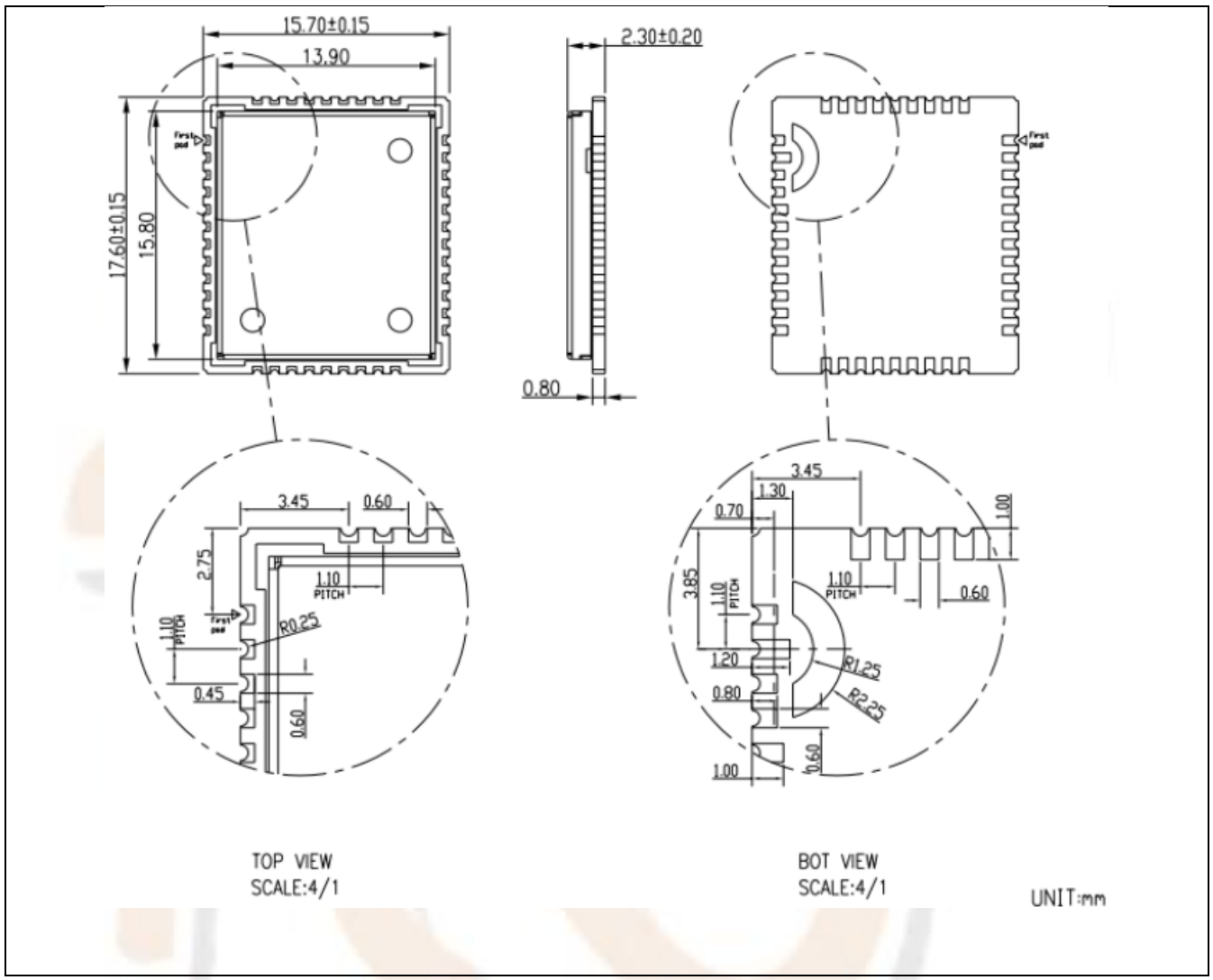
PIN FUNCTION:



Pin No	Pin Name	I/O	Description
Power supply			
34,35	VBAT	I	Power supply
28	VRTC	I/O	Power supply for RTC
40	VDD_EXT	O	2.8V power output
8,13,19,21,27,30, 31,33,36,37	GND	-	Ground
Power on/down			
39	PWRKEY	I	PWRKEY should be pulled low at least 1 second and then released to power on/down the module.
Audio interfaces			
9	MICP	I	Differential audio

10	MICN		input
11	SPKP	O	Differential audio output
12	SPKN		
GPIO			
41	NETLIGHT	O	Network status
42	STATUS	O	Power on status
Serial port			
6	UART1_DTR	I	Data terminal ready
7	UART1_RI	O	Ring indicator
5	UART1_DCD	O	Data carrier detect
4	UART1_CTS	O	Clear to send
3	UART1_RTS	I	Request to send
1	UART1_TXD	O	Transmit data
2	UART1_RXD	I	Receive data
22	UART2_TXD	O	Transmit data
23	UART2_RXD	I	Receive data
Debug interface			
24	USB_VBUS	I	Debug and download
25	USB_DP	I/O	
26	USB_DN	I/O	
ADC			
38	ADC	I	10bit general analog to digital converter
SIM card interface			
18	SIM_VDD	O	Voltage supply for SIM card. Support 1.8V or 3V SIM card
15	SIM_DATA	I/O	SIM data input/output
16	SIM_CLK	O	SIM clock
17	SIM_RST	O	SIM reset
14	SIM_DET	I	SIM card detection
Antenna interface			
32	GSM_ANT	I/O	Connect GSM antenna
20	BT_ANT	I/O	Connect Bluetooth antenna
Synchronizing signal of RF			
29	RF_SYNC	O	Synchronizing signal of RF

DIMENSION:



PACKAGE INCLUDES:

1x SIM800C Module