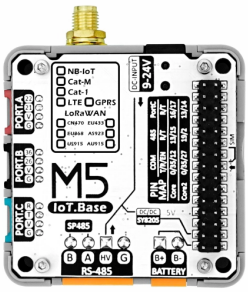
IoT Base CatM

SKU:M119



Description

IoT Base CatM is a functional base specifically designed for IoT data transmission scenarios. It has a built-in `SIM7080G` communication module supporting **CatM** & **NB-IoT** dual modes, **covering most CatM & NB-IoT frequency bands worldwide**, meeting different regional requirements for communication rates / throughput. The base integrates rich interface resources (I2C + UART + GPIO + RS485 + battery power interface) for diverse sensor expansion, and is compatible with industrial standard protocols such as ModBus. It is highly suitable for IoT applications such as remote control, remote monitoring, and telemedicine.

Features

- SIM7080G
  - CatM & NB-IoT dual-mode wireless communication module
  - UART interface / AT command control
  - Global version / multi-band support
  - Card slot specification: MicroSIM
  - Antenna: `SMA` external antenna
  - Module certifications:
    - Softbank/Telec/RoHS/REACH/JATE/Docomo/KDDI/RCM/CE(RED)/GCF
    - Deutsche Telekom/FCC/PTCRB/AT&T/Verizon/T-Mobile/US Cellular/IC
- Base expansion interfaces:
  - 1 x PWR485 (RS485 + DC 12V INPUT)
  - 1 x DC power interface
  - 1 x I2C
  - 1 x GPIO
  - 1 x UART
  - 1 x battery expansion interface

Includes

- 1 x IoT Base CatM
- 1 x SMA Antenna
- 1 x 12V DC Power Adapter (US standard)
- 1 x VH-3.96-2P Terminal
- 1 x VH-3.96-4P Terminal
- 1 x Din-moute Rail Mount Base Plate
- 2 x M3*28 Screws
- 1 x M3 Hex Key

Applications

- Remote control / data acquisition
- Cloud data applications

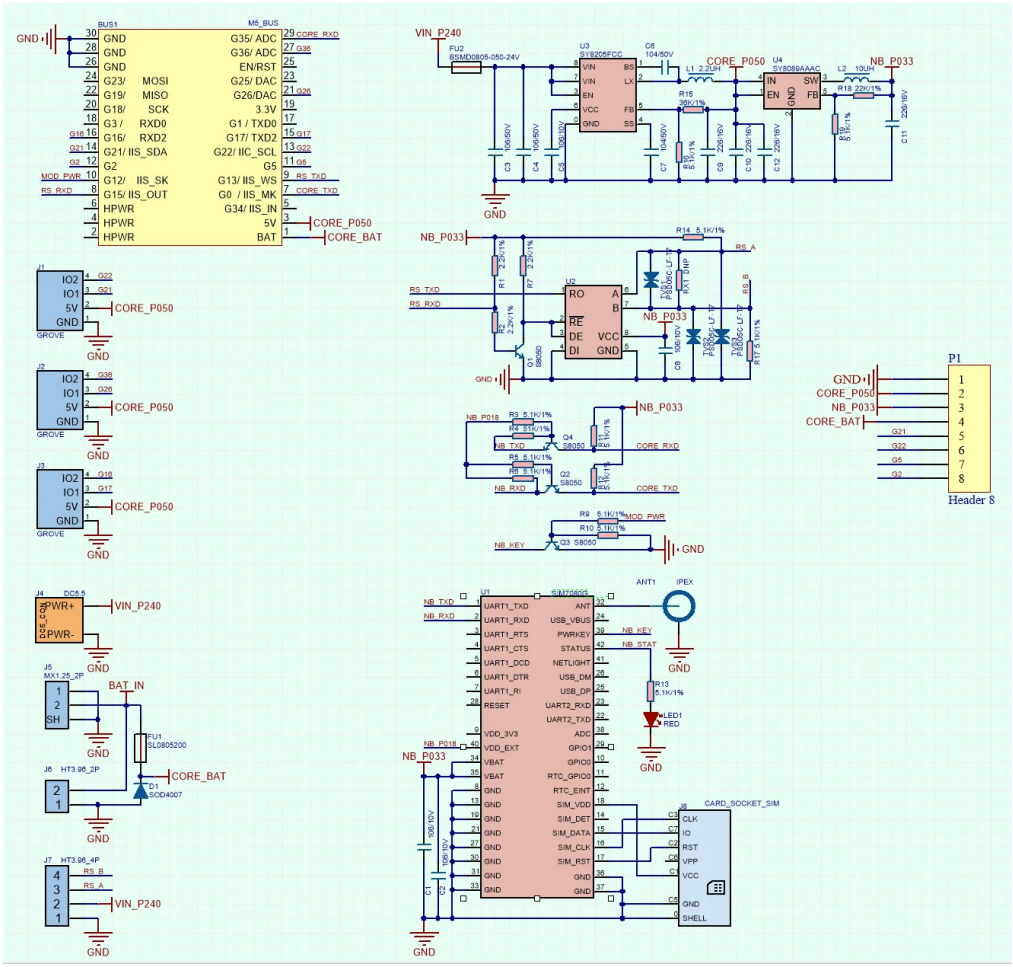
Specifications

Specification	Parameter
Communication Module	SIM7080G, Communication Interface: UART baud 115200 8N1
Supported CAT-M Bands	B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26 /B27/B28/B66/B85
Supported CAT-NB Bands	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B28 /B66/B71/B85
Cat-M Uplink/Downlink Speed	Uplink: 1119Kbps Downlink: 589Kbps
NB-IoT Uplink/Downlink Speed	Uplink: 150Kbps Downlink: 136Kbps
RF Power Class	Class 5 (Typ. 21dbm)
Card Slot Spec	MicroSIM
Supported Protocols	TCP/UDP/HTTP/HTTPS/TLS/DTLS/PING/LWM2M/COAP/MQTT and other communication protocols
Operating Current	42mA (DC interface 12V input, device connected to network)
Interface Specs	I2C/GPIO/UART (HY2.0-4P) RS485(VH-3.96-4P) DC interface (Round DC-IN-TH_DC-0440-2.5A-2.0) Lithium battery interface (HT3.96-2P)
Product Size	80 x 54 x 33mm
Product Weight (Module)	29.4g
Package Size	104.0 x 99.0 x 60.0mm
Gross Weight	153.6g

Certifications

- SIM7080G_AT&T_Certificate_2020
- SIM7080G_GCF_Certificate_2020
- SIM7080G_NCC_2020
- SIM7080G_PTCRB_Certificate_2020
- SIM7080G_RCM_Compliance Certificate_2020
- SIM7080G_T-mobile_Certificate_2021
- SIM7080G_US Cellular_Certificate_2021

Schematics



PinMap

- SIM7080G

M5Core	G0	G35	G12	5V	GND
SIM7080G	RX	TX	PWR	VCC	GND

- RS485

CORE	G15	G13	5V	GND
RS485	TX	RX	VIN	GND

- HY2.0-4P

M5Core	G21	G22	5V	GND
I2C PORT	SDA	SCL	VCC	GND

M5Core	G36	G26	5V	GND
GPIO PORT	ADC	DAC	VCC	GND

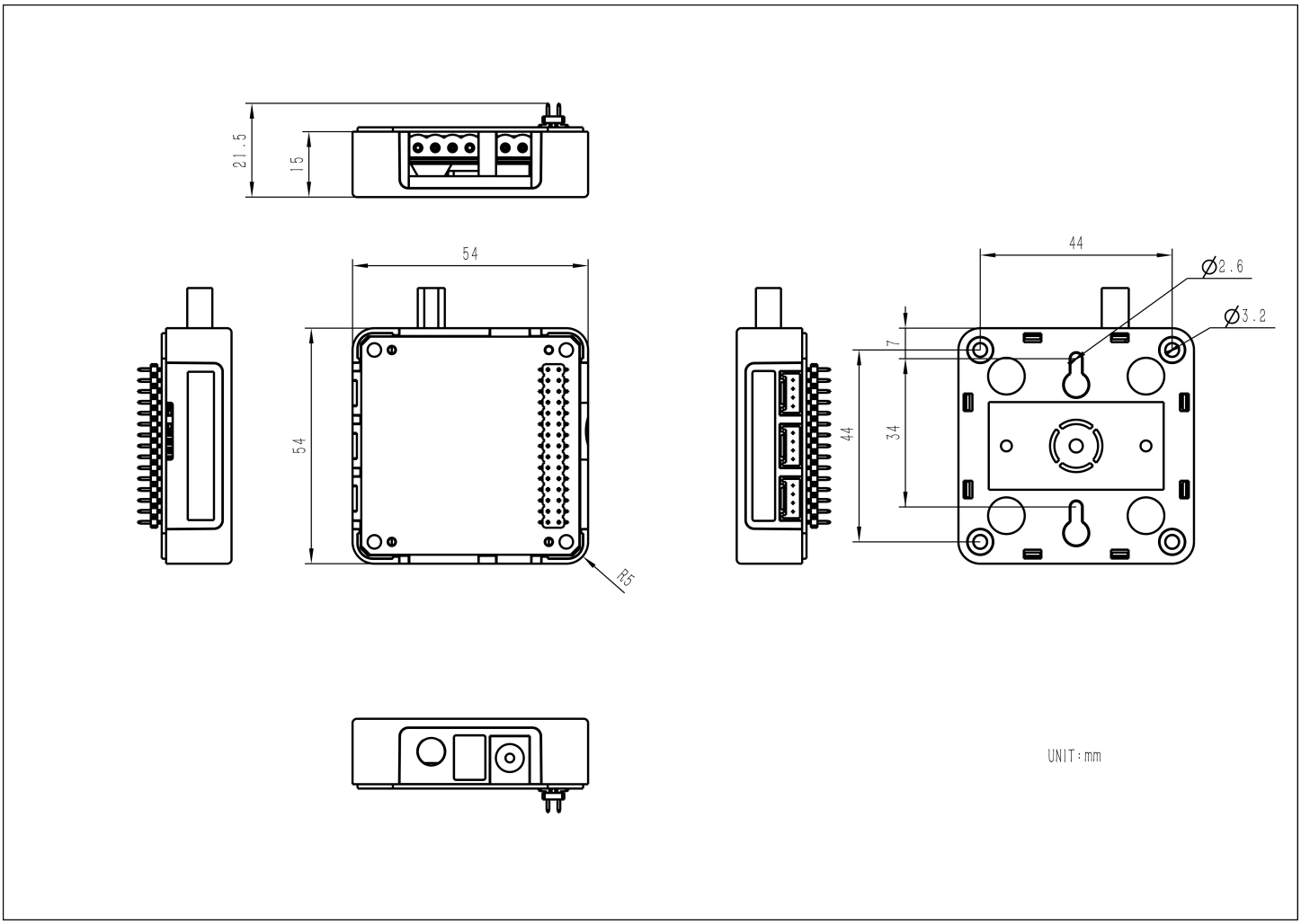
M5Core	G17	G16	5V	GND
UART PORT	TX	RX	VCC	GND

M5-Bus

PIN	LEFT	RIGHT	PIN
GND	1	2	SIM7080G_TX
GND	3	4	PORT.B
GND	5	6	NC
NC	7	8	NC
NC	9	10	PORT.B
NC	11	12	NC
NC	13	14	NC
UART_RX	15	16	UART_TX
I2C_SDA	17	18	I2C_SCL
NC	19	20	NC
MOD PWR	21	22	RS485_TX
RS485_RX	23	24	SIM7080_RX
NC	25	26	NC
NC	27	28	5V
NC	29	30	BAT

Model Size

- IoT Base CatM Model Size PDF



Datasheets

- SIM7070_SIM7080_SIM7090 Series_CTBURST_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_CoAP(S)_Application Note_V1.03
- SIM7070_SIM7080_SIM7090 Series_Email_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_FOTA_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_FS_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_FTP(S)_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_GNSS_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_HTTP(S)_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_Linux_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_Low Power Mode_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_LwM2M_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_MQTT(S)_Application Note_V1.03
- SIM7070_SIM7080_SIM7090 Series_PING_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_SAT_Application Note_V1.02
- SIM7070_SIM7080_SIM7090 Series_SSL_Application Note_V1.00
- SIM7070_SIM7080_SIM7090 Series_TCPUDP(S)_Application Note_V1.03
- SIM7080_Series_SPEC_20200427

Softwares

Arduino

- IoT Base CatM MQTT Example
- IoT Base CatM Modbus Master Example
- IoT Base CatM Modbus Slave Example

UiFlow1

- IoT Base CatM UiFlow1 Docs

Protocol

- SIM7070_SIM7080_SIM7090 Series_AT Command Manual_V1.04