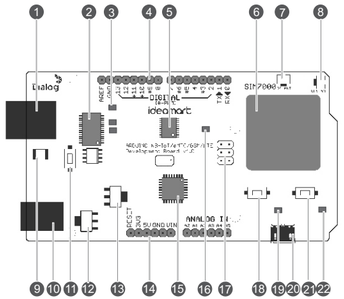
1 Getting to know the development board



1	USB Port	Programing USB port for ATMEL Chip PC driver may be required Use Arduino USB cable or USB printer wire to connect with PC
2	FTDI	FTDI USB to Serial Converter FT232RL chip
3	LED2	User programable LED
4	PIN Headers	Programable PIN headers to connect with micro controller. (Diagram 2 for more details)
5	Level Shifter	1.8V to 5V voltage level shifter
6	SIM7000	SIM7000 NB-IOT/eMTC/GSM/LTE Modem and GNSS Receiver
7	RF Antenna	RF mobile network antenna port for SIM7000 (u.fL)
8	GPS Antenna	GPS signal antenna port for SIM7000 (u.fL)
9	PPTC	PPTC resettable fuse for USB input over current protection (max 500mA)
10	DC Input	2.1mm 7-12V DC power input
11	RESET	ATMEGA328P micro controller reset button
12	3.3V Regulator	LM1117 3.3V low dropout linear regulator (max 800mA)
13	5V Regulator	LM1117 5V low dropout linear regulator (max 800mA)
14	PIN Headers	PIN headers to connect with micro controller. (Diagram 2 for more details)
15	ATMEGA328P	ATMEGA328P micro controller
16	Power LED	Power indicator LED
17	ICSP Header	ICSP Header for Arduino programming
18	Modem Reset	SIM7000 modem hardware reset button
19	STAT LED	SIM7000 modem STAT LED indicator
20	Modem USB	SIM7000 modem USB port - firmware upgrade - Modem debug
21	PWR KEY	SIM7000 modem power key - Press 1.5sec to power up/down
22	Net Light	Network status indicator LED

2 What you should know about the board

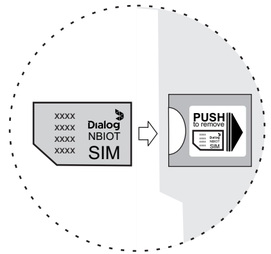
- ATMEGA328P µCU with FTDI USB to serial converter
- Same pinout as Arduino UNO
- Compatible with any Arduino UNO shield
- Programable with Arduino IDE
- NB-IoT/GSM/LTE/eMTC enabled SIM7000C/SIM7000E module onboard
- Separate USB interface for SIM7000 module
- GNSS (GPS,GLONASS and BeiDou/Compass, Galileo, QZSS) enabled

Separate USB interface can only be used for SIM7000 debug and firmware upgrades

- SIM7000C FDD-LTE B1/B3/B5/B8
- SIM7000E Tri-Band FDD-LTE B3/B8/B20/B28
- GSM/GPRS/EDGE 900/1800 MHz
- GNSS (GPS,GLONASS and BeiDou/Compass, Galileo, QZSS)
- LTE CAT-M1(eMTC) Uplink up to 375kbps, Downlink up to 300kbps
- NB-IoT Uplink up to 66kbps, Downlink up to 34kbps
- EDGE Class Uplink up to 236.8Kbps, Downlink up to 236.8Kbps
- GPRS Uplink up to 85.6Kbps, Downlink up to 85.6Kbps

3 Lets start

- Insert Micro SIM to sim slot
- for NB-IOT, eMTC, you need LTE enabled sim

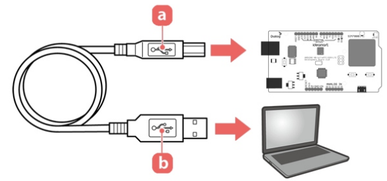


NB-IOT / eMTC should available in your area
Your SIM should be allowed to connect to NB-IOT network

- Connect your u.fL connector of GSM/LTE antenna to board
- Connect GPS antenna to board

4 Connect to the computer

connect Ideamart Board to computer using usb cable

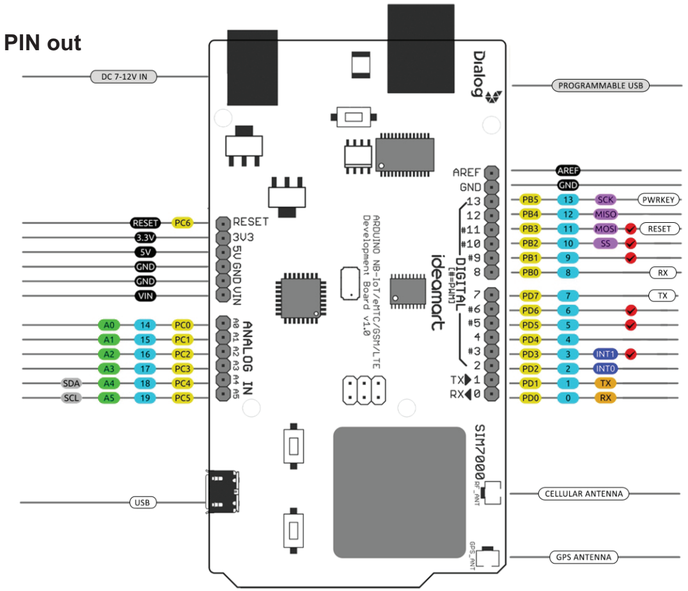


your may need to install drivers for your computer.
Download drivers from
http://go.ideamart.io/NBIOTDevBoard

Download SDK and program with your favorite Arduino IDE

Download SDK from
http://go.ideamart.io/NBIOTDevBoard

5 Board PIN out



AVR DIGITAL ANALOG POWER SERIAL SPI I2C PWM INTERRUPT SIM7000

6 Useful AT Commands

AT	Check AT command
AT+CREG?	Network Registration
AT+COPS=?	Returns a list of quadruplets AT+COPS=1,1,"41302" for register on Dialog
AT+CCLK?	Clock Execution Command
AT+CSQ	Signal Quality Report

NB-IOT Specific Commands

AT+CGNSPWR=1	GNSS ON
AT+CGNSINF	GNSS navigation information
AT+CMNB=?	Preferred selection between CAT-M and NB-IoT
AT+CBANDCF G=?	Config CAT-M Or NB-IOT Band
AT+CGNAPN=?	Get Network APN in CAT-M Or NB-IOT

More Information/Sample and all you need info can be found at
http://go.ideamart.io/NBIOTDevBoard

Dialog IOT Platform
http://portal.iot.ideamart.io

Dialog Smartlife app
http://go.ideamart.io/smartlife

QUICK START GUIDE

Ideamart NB-IoT/eMTC/GSM/LTE Development Board

Version 1.0

Dialog ideamart ideas that reach