

Mobilogix

MT4201

Theory of operation:

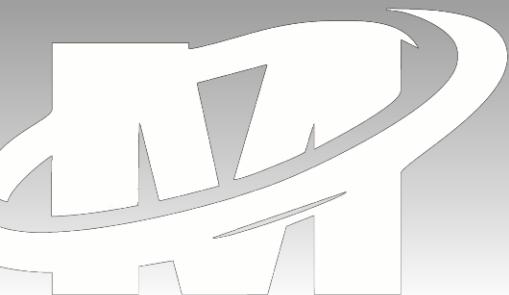
This is an asset tracker equipped with LTE CAT-M1/NB2, GNSS, Accelerometer, and BLE capabilities.

The device will remain in a sleep mode while in a stationary position. The device can wake up from either of the following scenarios.

In scenario 1, the device will wake up and go into a “Stolen Mode”, meaning the device has been moved without authorized consent from the home server. In this mode the tracker will begin broadcasting location and sensor information to home server, so the correct actions can be taken to retrieve the stolen device.

In scenario 2, the device obtains authorized consent to be moved and goes into a “Trip” mode. In this mode the device logs and broadcasts sensor and location information so the users trip can later be analyzed. After the user has deactivated the tracker via the LTE CAT-M1/NB2 network or BLE, the device will go back into a sleep mode to conserve power.

The device will draw, majority of its power from the trackers host asset, this is a much larger supply. However, there will be a smaller onboard Li-Po battery attached to the tracker, just in case the host’s supply runs out. There is no physical on/off switch on this device. Once it is connected to a supply it will begin to run, unless, a BLE or cellular command gives the tracker a shutdown command.



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● Accessory

There is the component list:

- 1: MT4201
- 2: harness + extension cable
- 3: screw, 4 or 5 pcs
- 4: SIM card (may have):

MT4201E



MT4201C

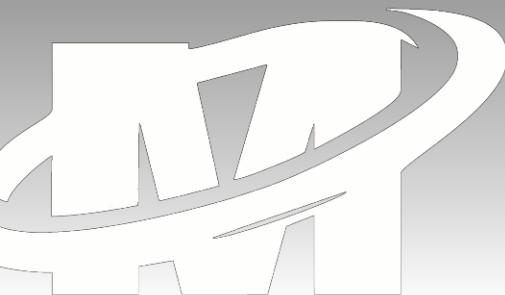


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Installation

Before installation

1: please open encloser



2: insert SIM card



Config device

There are 3 ways to config the device, such as SMS, APP, and over backend, at here, show you how to use APP to config the device.

Notice: Due to MBX APP not available, so, we use third party APP

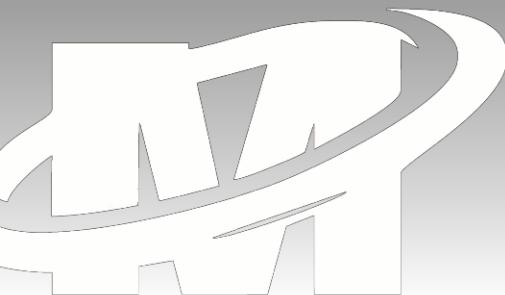
- 4.1 Open your BLE APP and scan device
- 4.2 Find the right device by MAC address
- 4.3 connect with the device
- 4.4 APP will enumerate all the character, here is an example

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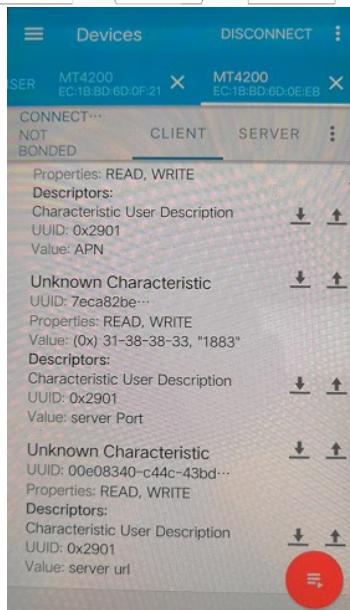


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Key items

The APN (username, password), server URL (and Port) we need config at first, otherwise, device can not make connection established.

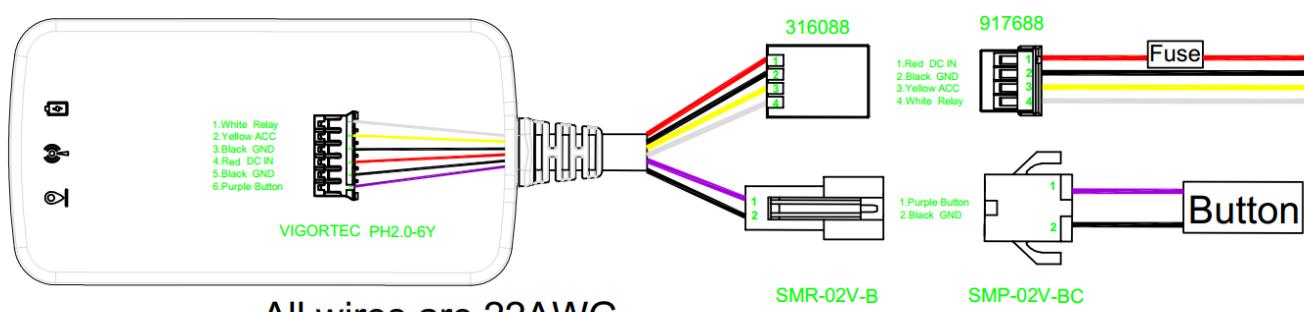
Notice:

- 1: in the DVT sample, default APN is: mobilogix1.telefonica.com
- 2: in the DVT sample, default URL is: mbxiotfusion.mobilogix.com:1883 (DEV server)
- 3: for demo purpose, the URL should point to staging server, for mass production, the URL should point to production server, please talk with cloud team to check the server is ready or not when you do a demo

● Installation

1: interface definition

MT4201E

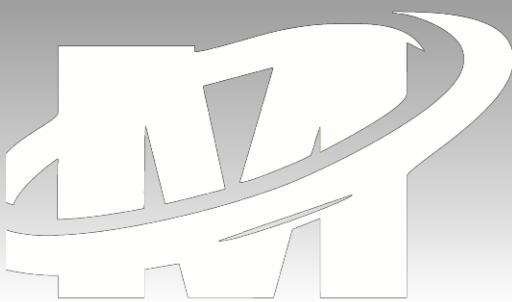


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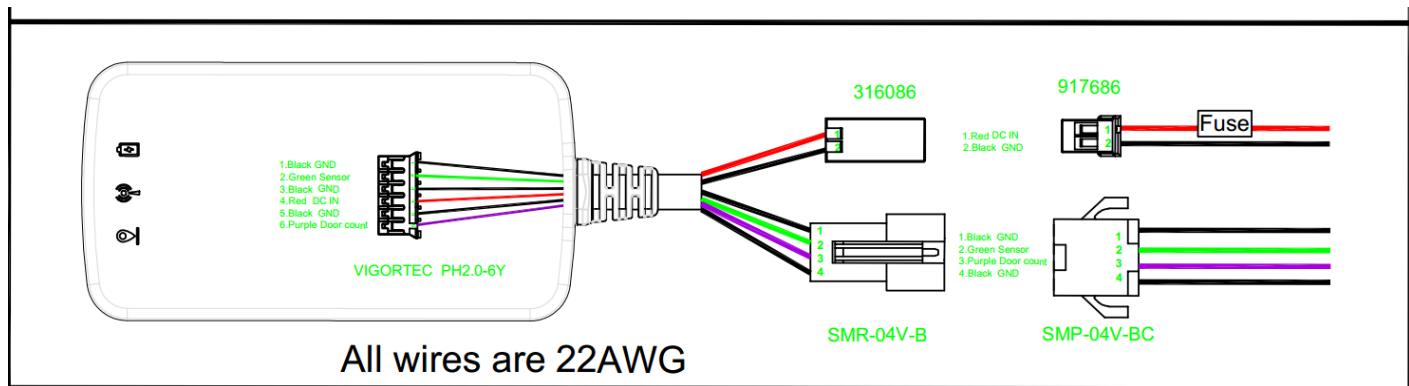
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MT4201C



Power ON

- When battery is connected, the device automatically powers on. The device does not have a button or power switch. The MT4201E&MT4201C Asset Tracking Device will be mounted on top of a host device, which will supply power to charge the internal battery.

Power OFF

- When the MT4201E&MT4201C Asset Tracking Device is in an idle state, it enters into its lowest power consumption state, or low power mode.

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Hardware Components and Specifications

Item	Description	Comment
Cat-M1/NB2	LTE-FDD: B1/B2/B3/B4/B5/B8/B12/ B13/B18/ B19/B20 B25/B26*/B27/B28/B66/B71/B85 LTE-TDD: B1/B2/B3/B4/B5/B8/B12/ B13/B18/ B19/B20 B25/B26*/B28/B66/B71/B85	BG95
	EGPRS: 850/900/1800/1900MHz	BG95
GNSS	GPS/GLONASS/BeiDou/Galileo/QZSS	BG95
BLE	Bluetooth5.0	EFR32BG13
SIM Card	Nano SIM Card	
Acceleration Sensor	Triaxial, low-g acceleration sensor	BMI160
OneWire Communication	To external sensor, such as DS18B20 and ID tag	Only MT4201C
Ignition Input	This signal can be as high as battery level	
Relay Driver	driving relay recommended.	Only MT4201E
LEDs	Charging Indicator(Red): charging status. LTE indicator(Green): registration status. GNSS indicator(Blue): position capturing	
Battery	1000mAh	
Charging Current	400mA	
Optional External Device	Bluetooth Sensor: BTM250	Beacon/Temperature/Environmental Sensor
Upgrade	FOTA	
Operating Temperature	0°C to 45°C(charging battery) -20°C to 60°C(discharging battery)	

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FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least **20 cm** from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and consider removing the no-collocation statement.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution!

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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Canada Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- 1) L'appareil ne doit pas produire de brouillage;
- 2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de rf.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of **20** centimeters between the radiator and your body.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.