RePhone Geo Kit

SKU 113060003

- Powered by Xadow GSM+BLE
- Slim and small modules
- High sensitivity
- Low power consumption
- Stackable, chainable and sewable with other Xadow Modules

Description

Tracking things down with the RePhone Geo Kit!

The combination of Xadow GSM+BLE and Xadow GPS v2 is what makes RePhone Geo Kit brilliant. The kit can fulfill your GPS based project easily and excellently. It allows you to obtain the real-time geographic position, altitude, travelling speed and time information at any time, and all-weather conditions, through GSM network (SMS). Also as a bonus, the Xadow GSM Breakout can provides you more possibilities hacking electronics.

Features

- Slim and small modules
- Powered by Xadow GSM+BLE
- High sensitivity
- Low power consumption
- Various rich-featured add-on modules for function extension
- Stackable, chainable and sewable with other Xadow Modules

Specification

- Core Module: Xadow GSM+BLE
- Microcontroller: MT2502
- MCU Core: 32-bit ARM7EJ-STM RISC processor
- RAM: 4MB
- Flash Memory: 16MB
- Power Supply: 3.3 – 4.2V
- Power Consumption: 20mW/30mW/52mW @ standby(no radio)/standby(GSM)/standby(BT)
- Quad-band: 850/900/1800/1900 MHz
- GPRS: Class 12 modem
- Clock Speed: 260 MHz
- Connector: 35 PIN Connector & 11 PIN Connector for Xadow, SMD Female JST battery connector
- Interfaces: External ports for LCD, camera, I2C, SPI, UART, and GPIOs etc.
- Dimension: 25.37mm X 20.30mm / 1'' X 0.8''

Part List

- Xadow GSM+BLE * 1
- Xadow GPS v2 * 1
- Xadow GSM Breakout * 1
- FPC Cable 35 PIN * 2
- FPC Cable 11 PIN * 2
- Battery 520mAh * 1
- User Guide * 1

RePhone Geo Kit

Introduction

Xadow GSM Breakout   Xadow GSM+BLE   Xadow GPS v2

The combination of GSM module and GPS module is what makes RePhone Geo Kit brilliant. The kit allows you to obtain the real-time geographic position, altitude, travelling speed and time information at any time, and all-weather conditions, through GSM network (SMS). Also as a bonus, the Xadow GSM Breakout can provides you more possibilities hacking electronics.

Specification

Xadow GSM+BLE

For more info about this module please check on **Xadow GSM+BLE Wiki Page**.

Microcontroller	MT2502
MCU Core	32-bit ARM7EJ-STM RISC processor
RAM	4 MB
Flash Memory	16 MB
Power Supply	3.3 ~ 4.2V(no SIM)/3.5 ~ 4.2V(with SIM)
Power Consumption	20mW/30mW/52mW @ standby(no radio)/standby(GSM)/standby(BT)
Quad-band	850/900/1800/1900 MHz
GPRS	Class 12 modem
Clock Speed	260 MHz
Connectors	35 PIN Connector & 11 PIN Connector for Xadow Modules; JST 1.0 Connector for the battery
Interfaces	LCD, Audio, I2C, SPI, UART, and GPIOs etc
Dimensions	25.37mm × 20.30mm / 1" × 0.8"

Xadow GPS v2

For more info about this module please check on **Xadow GPS v2 Wiki Page**.

Microcontroller	Kinetis KL02
Core	ARM® 32-bit Cortex® -M0+CPU

Power Supply	3.3 ~ 6 V (via breakout pins)
Flash	32 KB
SRAM	4 KB
Clock Speed	48 MHz
Power Consumption	18mA@Tracking, 21mA@Acquisition
Power Saving	Typ. 3mA@AlwaysLocateTM, 7uA@Backup Mode, 180uA@Standby Mode
Channel	22(Tracking) / 66 (Acquisition)
Update Rate	1Hz(Default), up to 10Hz
Horizontal Position Accuracy	<2.5m CEP
Velocity Accuracy	<0.1m/s
Maximum Velocity	Max.515m/s
Cold/warm start with EASYTM	215s/5s
Acquisition Sensitivity	-145dBm
Tracking Sensitivity	-163dBm
Operating Temperature	-40℃ to 85℃

Protocols	NMEA 0183/PMTK
Antenna Type	Chip antenna
Interface	Interface with Xadow GSM+BLE through I2C (7-bit address 0x05)
Dimensions	25.37mm X 20.30mm / 1" × 0.8"

Xadow GSM Breakout

For more info about this module please check on **Xadow GSM Breakout Wiki Page**.

Dimensions	25.37mm × 20.30mm / 1" × 0.8"

Module Connection

The Xadow GSM+BLE integrates a Xadow 36 Pin connector and a Xadow 11 Pin connector. As the image shows here, if needed, you can connect the Xadow GSM+BLE to Xadow GSM breakout with a Xadow 36 Pin cable, but do bear in mind that the cable has to be inserted **firmly** and **flat**, and most importantly, **keep the 'TOP' side upwards**. The Xadow 11 Pin connector have much more flexible design, you can connect the Xadow GPS v2 and the mainboard with a Xadow 11 Pin ribbon cable in whatever way you want, again just make sure cable is firmly inserted.

Run a GPS Testing Code

Firstly you need to follow the instructions in the **Arduino IDE for RePhone Kit** to download the Arduino IDE for RePhone Kit as well as install the drivers. Then copy the following GPS testing code to your Arduino IDE for RePhone. Choose the **board as "RePhone"** and **download it with the "MTK USB Debug Port"**.

```cpp
#include <LGPS.h>
#include <stdio.h>

void setup()
{
    Serial.begin(115200);
    Serial.print("GPS test.\r\n");
}

void loop()
{
    unsigned char *utc_date_time = 0;
    char buffer[50] = {0,};

    if(LGPS.check_online())
    {
        utc_date_time = LGPS.get_utc_date_time();
        sprintf(buffer, "GPS UTC:%d-%d-%d  %d:%d:%d\r\n", utc_date_time[0], utc_date_time[1],
utc_date_time[2], utc_date_time[3], utc_date_time[4],utc_date_time[5]);
        Serial.print(buffer);

        sprintf(buffer, "GPS status is %c\r\n", LGPS.get_status());
        Serial.print(buffer);

        sprintf(buffer, "GPS latitude is %c:%f\r\n", LGPS.get_ns(), LGPS.get_latitude());
        Serial.print(buffer);

        sprintf(buffer, "GPS longitude is %c:%f\r\n", LGPS.get_ew(), LGPS.get_longitude());
        Serial.print(buffer);

        sprintf(buffer, "GPS speed is %f\r\n", LGPS.get_speed());
        Serial.print(buffer);

        sprintf(buffer, "GPS course is %f\r\n", LGPS.get_course());
        Serial.print(buffer);

        sprintf(buffer, "GPS position fix is %c\r\n", LGPS.get_position_fix());
        Serial.print(buffer);

        sprintf(buffer, "GPS sate used is %d\r\n", LGPS.get_sate_used());
        Serial.print(buffer);

        sprintf(buffer, "GPS altitude is %f\r\n", LGPS.get_altitude());
```

```
        Serial.print(buffer);

        sprintf(buffer, "GPS mode is %c\r\n", LGPS.get_mode());
        Serial.print(buffer);

        sprintf(buffer, "GPS mode2 is %c\r\n", LGPS.get_mode2());
        Serial.print(buffer);
    }
    delay(1000);
}
```

Please be noted that: To obtain a better signal strength, you should put the GPS module outside the window/house in a open space. Also, after initiated the first time, it might take a while before it tracks down the satellites.

Now **change the Port to MTK USB Modern Port(it's very important to so)**, you should be abe to see the GPS info on the Serial monitor.
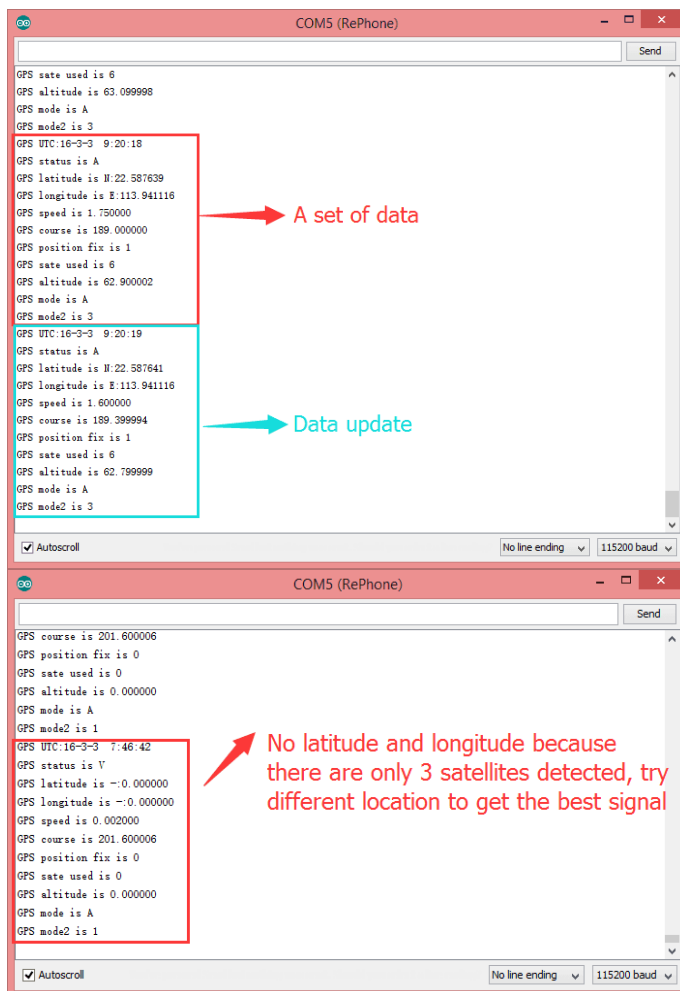
More Example Code

Playing with some example code would a good start if you are heading into some even more interesting project.

1. Simply setup your **sketchbook location** in the **preference** as where you install the Arduino IDE for RePhone, then you'll be able to see the example codes.
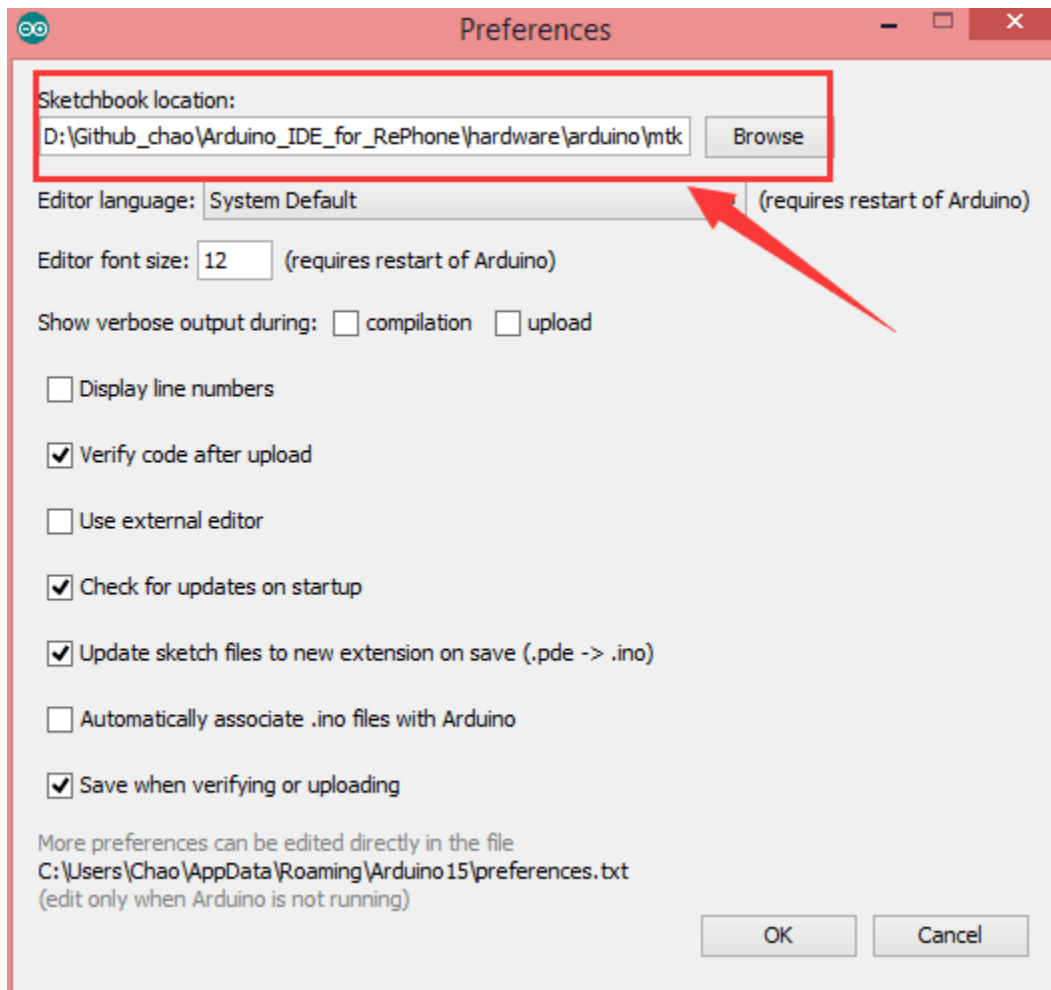
1. You may find the Arduino example coded manually for all the RePhone modules in the following path:

   Arduino_IDE_for_RePhone-master\hardware\arduino\mtk\libraries

Name	Date modified	Type
LAudio	11/4/2015 5:28 PM	File folder
LBattery	11/4/2015 5:28 PM	File folder
LBT	11/4/2015 5:28 PM	File folder
LCFile	11/4/2015 5:28 PM	File folder
LCheckSIM	11/4/2015 5:28 PM	File folder
LDateTime	11/4/2015 5:28 PM	File folder
LDisplay	11/4/2015 5:28 PM	File folder
LGPS	11/4/2015 5:28 PM	File folder
LGSM	11/20/2015 11:10 ...	File folder
LGTouch	11/4/2015 5:28 PM	File folder
LLedMatrix	11/4/2015 5:28 PM	File folder
LMotor	11/4/2015 5:28 PM	File folder
LNFC	11/4/2015 5:28 PM	File folder
LSensorHub	11/4/2015 5:28 PM	File folder
LWS2812	11/4/2015 5:28 PM	File folder
SPI	11/4/2015 5:28 PM	File folder
Wire	11/4/2015 5:28 PM	File folder

RePhone Community

Join
RePhone Community

To Seek & Make
To Care & Share

We've been looking for a better place where our backers (RePhone Users) can sit together, warmly and comfortably, have conversations about RePhone, discuss technical problems, share ideas/projects, and give feedback on the modules' development in the future. And then here we go, the RePhone Community.

Now join us in the RePhone Community! Together we seek answers, make interesting stuff, care about each other, and share our experiences.

Frequently Asked Questions

Some frequently asked questions in RePhone Community are collected and answered to the topic **"Frequently Asked Questions of RePhone (FAQ)"** , the topic will be kept updating whenever a new FAQ comes out.

Resources

Please go the Wiki page Xadow GPS v2 for more info.

Help us make it better

Thank you for choosing Seeed. A couple of months ago we initiated a project to improve our documentation system. What you are looking at now is the first edition of the new documentation system. Comparing to the old one, here is the progresses that we made:

- Replaced the old documentation system with a new one that was developed from Mkdocs, a more widely used and cooler tool to develop documentation system.
- Integrated the documentation system with our official website, now you can go to Bazaar and other section like Forum and Community more conveniently.
- Reviewed and rewrote documents for hundreds of products for the system's first edition, and will continue migrate documents from old wiki to the new one.

An easy-to-use instruction is as important as the product itself. We are expecting this new system will improve your experience when using Seeed's products. However since this is the first edition, there are still many things need to improve, if you have any suggestions or findings, you are most welcome to submit the amended version as our contributor or give us suggestions in the survey below, Please don't forget to leave your email address so that we can reply.

Happy hacking