GSM-GPS click

From MikroElektonika Documentation

GSM-GPS click carries a SIM808 module that combines GSM/GPRS and GPS into a single device. Ideal for remote tracking devices in any shape or form.

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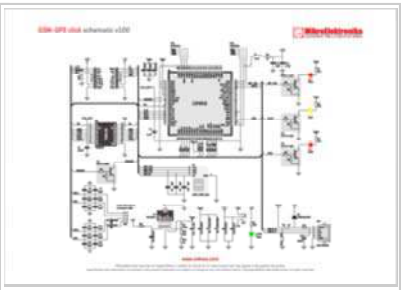
IC/Module	SIMCO (http://simcom.ee/documents/SIM808/SIM808%20SPEC_V1507.pdf)
Interface	UART, STAT, PWRKEY, RTS, RI, CTS
Power supply	3.3V, 5V
Website	www.mikroe.com/click/gsm-gps (http://www.mikroe.com/click/gsm-gps)

Features and usage notes



Schematic also available in PDF (http://cdn-docs.mikroe.com/images/2/20/GSM-GPS_click_schematic_v100.pdf)

The high-performance GSM/GPRS engine works on quad-band GSM frequencies: 850, EGSM 900, DCS 1800, PCS 1900 MHz. The GPS has a 1 second TTF (Time To First Fix) from a hot star and tracking sensitivity of -165 dBm.

The board has two antenna connectors, one for GSM the other for GPS. The bottom side has a SIM card slot and a Micro USB connector for interfacing with a PC.

GSM-GPS click communicates with the target board MCU through mikroBUS™ UART interface, with additional functionality provided by STAT, PWRKEY, RTS, RS, and CTS. Beside the mikroBUS™, the board has additional pins for connecting speakers and a microphone to the GSM engine.

GSM-GPS click uses either a 3.3V or 5V power supply.

The following are the most importrant features of the GPRS module:

Quad-band 850/900/1800/1900MHz

•GPRS multi-slot class 12/10 •GPRS mobile station class B

•Compliant to GSM phase 2/2+ – Class 4 (2 W @ 850/900MHz)

– Class 1 (1 W @ 1800/1900MHz)

•Dimensions: 24*24*2.6mm

•Weight: 3.3g •Control via AT commands (3GPP TS 27.007, 27.005 and SIMCOM enhanced AT Commands) •Supply voltage range 3.4 ~ 4.4V

•Low power consumption

•Operation temperature:-40℃ ~85℃

Specification for GPS

•Sensitivity

-Tracking: -165 dBm

-Cold starts : -148 dBm

•Time-To-First-Fix

-Cold starts: 32s (typ.)

-Hot starts: <1s

-Warm starts: 3s

•Accuracy

-Horizontal position : <2.5m CEP

Specifications for GPRS Data

•GPRS class 12: max. 85.6 kbps (downlink/uplink)

•PBCCH support

•Coding schemes CS 1, 2, 3, 4

•PPP-stack

•USSD

Specifications for SMS via GSM/GPRS

•Point to point MO and MT

•SMS cell broadcast

•Text and PDU mode

Programming

This code snippet sends an SMS message with current GPS position coordinates.

```
void gsm_act_send_info()
{
    char tmp[ 60 ] = { 0 };
    char msg[ 160 ] = { 0 };
    strcpy( tmp, "AT+CMGS=" );
    strcat( tmp, tmp_num );
    strcpy( msg, "LAT : " );
    strcat( msg, latitude );
    strcat( msg, "\r\nLON : " );
    strcat( msg, longitude );
    strcat( msg, "\r\nALT : " );
    strcat( msg, altitude );
    at_cmd( tmp );
    at_cmd_addition( msg );
}
```

Code examples that demonstrate the usage of GSM-GPS click with MikroElektronika hardware, written for mikroC for ARM, AVR, FT90x, PIC and PIC32 are available on Libstock (http://libstock.mikroe.com/projects/view/1892/gsm-gps-click).

Resources

- GSM-GPS click example on Libstock (http://libstock.mikroe.com/projects/view/1892/gsm-gps-click)

- Vendor's data sheet (http://simcom.ee/documents/SIM808/SIM808%20SPEC_V1507.pdf)

- mikroBUS standard specifications (http://download.mikroe.com/documents/standards/mikrobus/mikrobus-standard-specification-v200.pdf)