

GPS2GSM

Board Revision 1.0

Hardware Reference



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1 INTRODUCTION

This document describes the hardware components of the GPS2GSM board. For further information about the individual components of this product you may follow the links from our website at <http://www.dilnetpc.com>. Our website contains a lot of technical information, which will be updated in regular periods.

1.1 Safety Guidelines

Please read the following safety guidelines carefully! In case of property or personal damage by not paying attention to this document and/or by incorrect handling, we do not assume liability. In such cases any warranty claim expires.



ATTENTION: Observe precautions for handling – electrostatic sensitive device!

- Discharge yourself before you work with the device, e.g. by touching a heater of metal, to avoid damages.
- Stay grounded while working with the device to avoid damage through electrostatic discharge.

1.2 Conventions

Convention	Usage
bold	Important terms
<i>italic</i>	Filenames, user inputs and command lines
monospace	Pathnames, internet addresses and program code

Table 1: Conventions used in this Document

1.3 Block Diagram

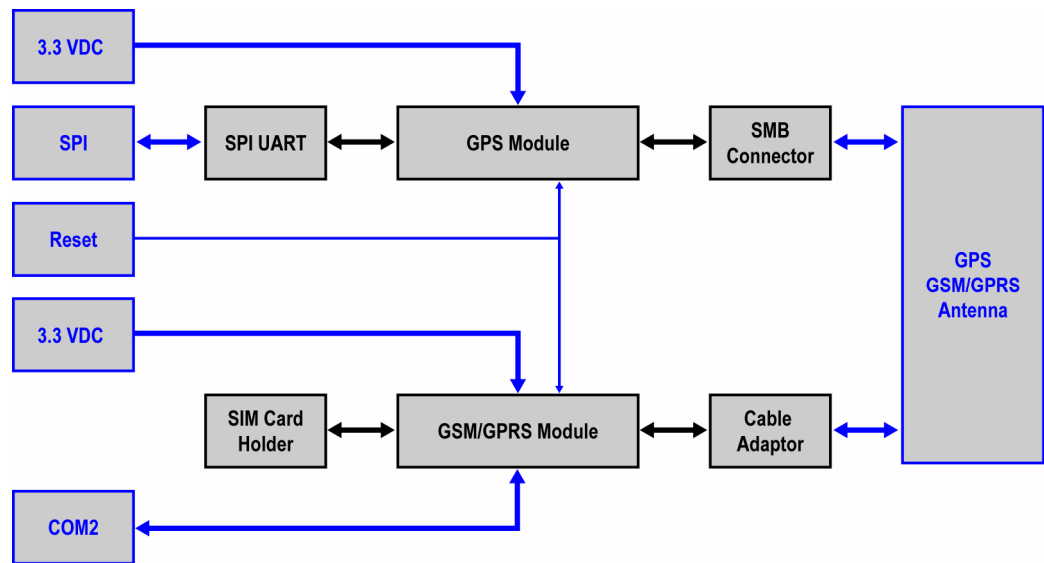


Figure 1: Block diagram of GPS2GSM board

1.4 Features and Technical Data

GPS2GSM Board	
Serial Ports	1 x RS232 (TTL)
SPI	✓
LEDs	1 x GPS active, 1 x GSM/GPRS active
Reset Input	✓
SIM Card Holder	✓
GPS Module	JCOM JGR-SC3-MS
GSM/GPRS Module	Motorola G24
Power	3.3 Volt DC / 1000 mA
Size	140.2 mm x 60 mm
DIL/NetPC	DNP/5280
RoHS	✓

Table 2: Features of GPS2GSM board

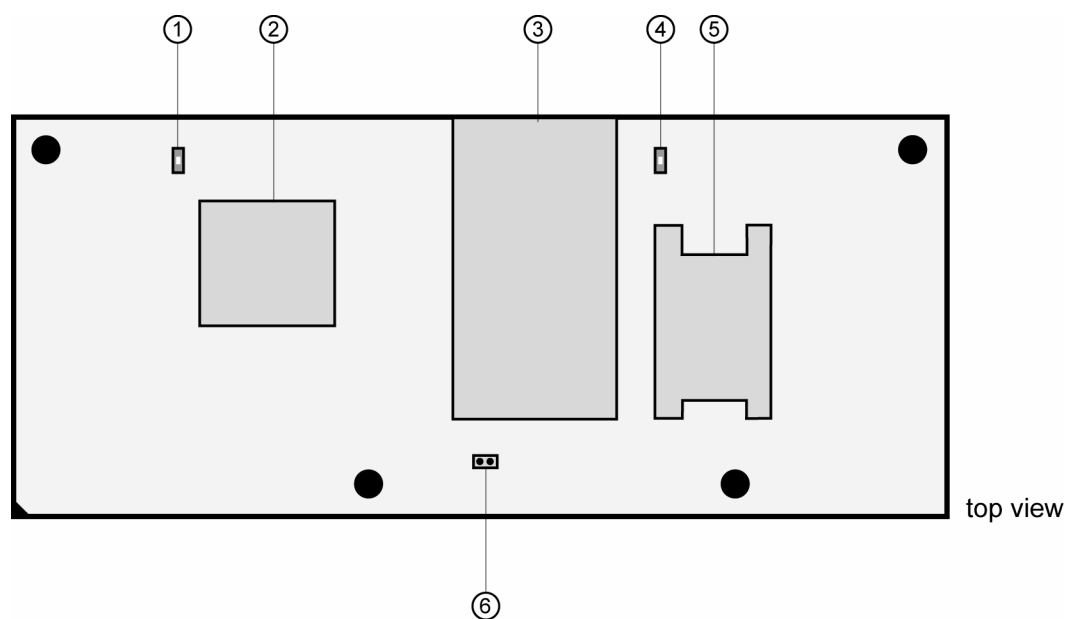
GPS Module	
GPS Architecture	SiRFstar III
Antenna	External
Accuracy	< 10 m 3D RMS
Cold Start Time	60 seconds typ.
Warm Start Time	40 seconds typ.
Hot Start Time	< 1 second typ.
NMEA 0183 Data Output	9600 bps
NMEA Data Records	GGA, GSA, GSV, RMC
NMEA Data Update Rate	Adjustable
Connection to MCU	Via SPI UART
RoHS	✓

Table 3: Features of GPS module

GSM Module	
GSM Modem	Motorola G24
Antenna	External
Connection to MCU	Via COM2
Quad Band	850 / 900 / 1800 / 1900 MHz
GPRS Multi-Slot	Class 10 (4 Down / 2 Up / 5 Total)
SIM Card Holder	Internal
Coding Scheme	CS1-CS4
CSD	Max. 14.4 Kbps
SMS	MO/MT text and PDU operating modes
Fax	Class 1
AT Command Set	GSM 07.05, GSM 07.07, GSM 07.10
AT Command Expansions	Motorola-specific
RoHS	✓

Table 4: Features of GSM module

2 BOARD LAYOUT



- ① D2 - GPS active LED
- ② IC4 - GPS module
- ③ J1 - GSM/GPRS module

- ④ D1 - GSM/GPRS active LED
- ⑤ J2 - SIM card holder
- ⑥ JP1 - RTS/CTS loop jumper

Figure 2: Board layout GPS2GSM board

3 PINOUTS

3.1 SIM Card Holder – J2

Pin	Name	Function
1	SIMVCC	SIM Card VCC
2	SIMRES	SIM Card Reset
3	SIMCLK	SIM Card Clock
4	SIMGND	SIM Card Ground
5	---	Not Connected
6	SIMDAT	SIM Card Data

Table 5: Pinout SIM card holder



3.2 RTS/CTS Loop Jumper – JP1

The default setting of JP1 is set.

JP1 activates the RTS/CTS loop. For further information please refer to the datasheet of the GSM/GPRS module.

4 MECHANICAL DIMENSIONS

All length dimensions have a tolerance of 0.5 mm. The drillings are suitable for M3 screws.

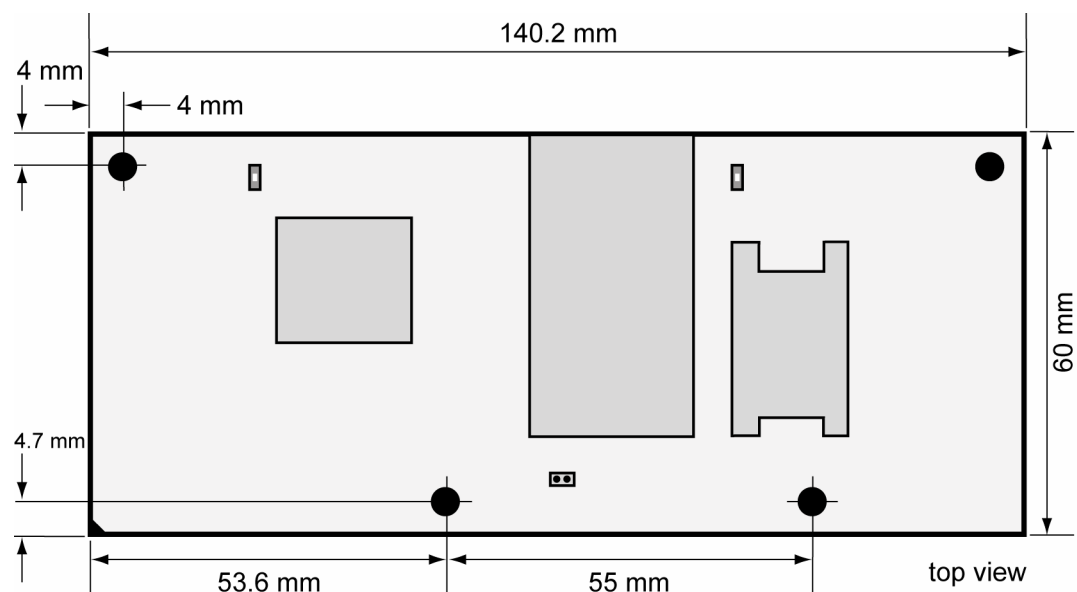


Figure 3: Mechanical dimensions of GPS2GSM board

5 HELPFUL LITERATURE

- DIL/NetPC DNP/5280 hardware reference manual
- Evaluation Board DNP/EVA6 hardware reference manual
- First Steps Starter Kit DNP/SK14
- First Steps Starter Kit DNP/SK16
- First Steps Starter Kit DNP/SK21
- First Steps Starter Kit DNP/SK24
- First Steps Starter Kit DNP/SK26
- Datasheet GSM/GPRS module: Motorola G24 hardware description, revision D
- Datasheet GPS module: JCOM JGR-SC3-MS (Jnavi) datasheet

CONTACT

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For actual information about the GPS2GSM board visit us at www.dilnetpc.com.

DOCUMENT HISTORY

Revision	Date	Remarks	Name
1.0	2007-07-26	first version	WBU
1.1	2007-08-27	technical data for GSM and GPS module added	WBU

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