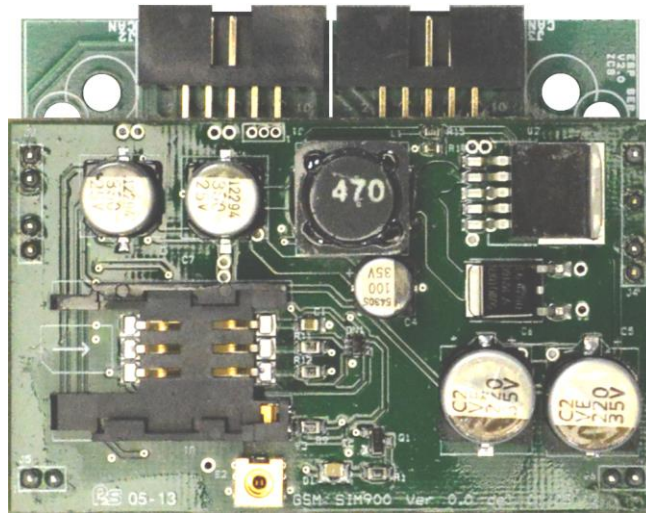


GPRS MODULE

Daily report and Error Message



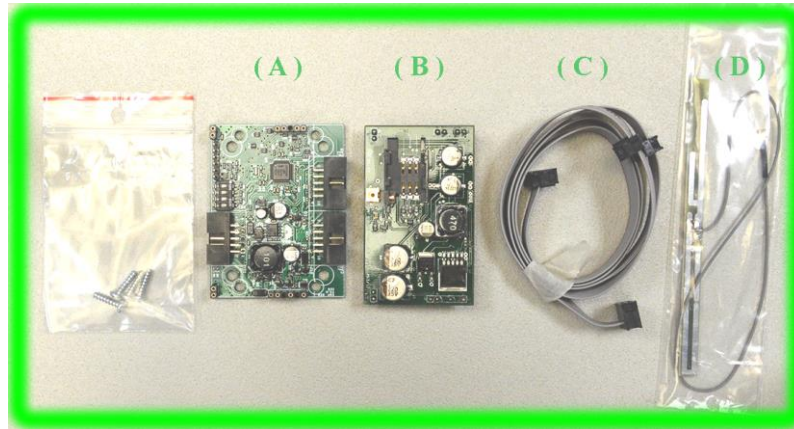
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GENERAL INFORMATION

The GSM module consists in:

- (A) - 1 expansion card "ESP SER"
- (B) - 1 GSM/GPRS "GSM SIM900" module for operators on 850MHz or 900MHz or 1800MH or 1900MHz.
- (C) - 1 flat cable (10 pins)
- (D) - 1 quad-band SMA antenna



The requirements for a proper work are:

- The software version of the robot to manage the GSM module is the one following **r.13960** of 24-09-2012. Please update the robot if necessary.
- Phone SIM Card. **Do not use USIM, Mini SIM, Micro SIM, Nano SIM.**
- Phone contracts with a telephone operator transmitting on one of these frequencies or 900MHz or 850MHz or 1900MHz 1800MH or 1900MHz. Should the received signal be of low quality, for greater security in the transmission of the message, it is better to enable or check if the National Roaming has been enabled.

The module currently provided is a prototype and so it is not industrialized. This means that it has some faults that will be implemented during the mass production.

The known problems to which it is necessary to pay attention are the following:



DANGER - ATTENTION

Connect the expansion card to the GPRS module with the battery disconnected. It is not sufficient to press the OFF button. If the battery is not disconnected when the flat connects to the module, the microprocessor gets damaged straight away. Always disconnect the battery from the mother board before removing the module.



DANGER - ATTENTION

Handle with care both the antenna and the coaxial cable. The coax cable must not be bent at a sharp angle, on the contrary it must be fixed with wide curves.

INSTALLATION

PRE-REQUISITES CHECK

Before installing the GSM module, it is necessary:

- Check the pre-requisites described in the "GENERAL INFORMATION" section,
- Check the right work of the SIM.
 - o Install the SIM Card in a mobile phone
 - o Remove any request for when turning on.
 - o Try and send a SMS text.

INSTALLATION OF THE MODULE

Follow the procedure here below:

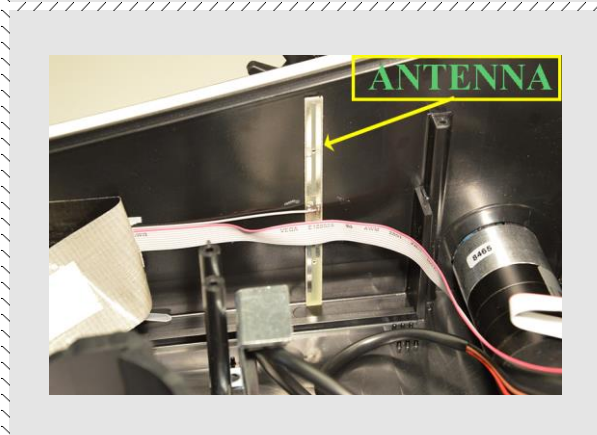
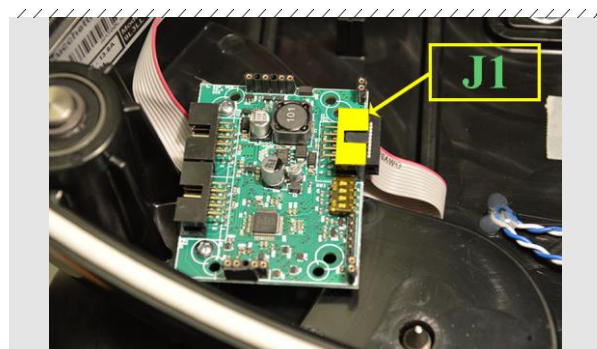
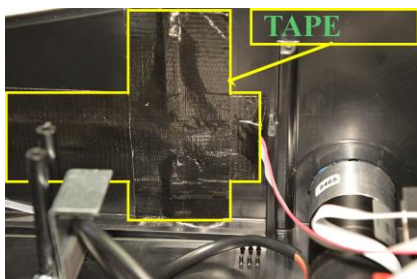
- Open the cover of the Ambrogio Robot L300
- **Disconnect the battery from the mother board**



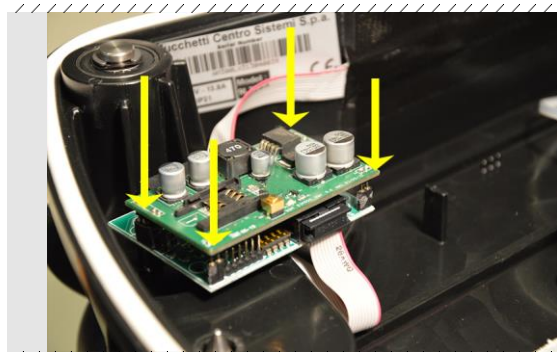
DANGER - ATTENTION

Connect the expansion card to the GPRS module with the battery detached. Pressing the OFF button is not enough. If the battery is not detached, when the flat connects to the module, the microprocessor gets damaged straight away. Always disconnect the battery from the mother board before removing the module.

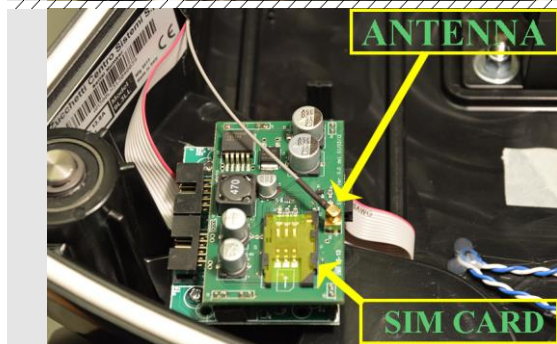
- Mount the expansion card placing it on the two pins as shown in the picture.
- Connect the Flat cable to the J1 connector of the expansion card, as shown in the picture, paying attention to the right direction.
- Fix the antenna, in the points shown in the picture. The antenna is supplied with the fixing tape. We recommend to add adhesive tape to sustain the cable that reaches the antenna and the flat linking the device to the display of the robot.



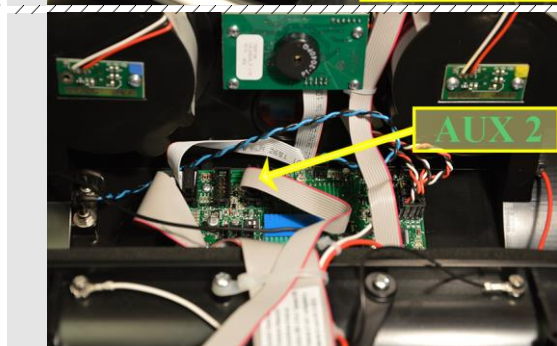
- Connect the GPRS/GSM module to the expansion card.



- Connect the antenna coax cable to the GPRS/GSM module, as shown in the picture.
- Insert an activated SIM card in the proper slot of the GPRS/GSM module.



- Connect the flat cable to the AUX2 connector placed on the display, paying attention to the right direction.
- **Connect the battery to the mother board.**
- Fix the flat cable and the coax so as not to interfere neither with other wirings nor with the chassis. The coax (both the connection one and that of the antenna) must not be crushed or badly bent.
- Close the chassis.



CHECK OF FUNCTIONING OF THE GSM MODULE

Switch on the robot and configure the phone number to which you will receive the daily report as well as any error messages.

- Switch on the robot and enter the service menu – Test GSM. The intensity of the GSM signal will be displayed.

Robot -> Service menu
Robot -> Test GSM
Display -> ON -xxdBm

CONFIGURATION

- Switch on the robot and enter the user menu. Select Setting-SMS Alert.

Setting
SMS Alert

- Select the first phone number that will receive the SMS.

SMS Alert
Phone 1

- With the key + or – select an empty value and press ENTER.

Phone 1
-

- With the key + or – select any single number and confirm with ENTER. By pressing ENTER on the empty value, the whole number will be memorised. If needed, also set a second phone number.

Phone 1
3489891448

- Activate the SMS Alert-Daily Report option if you want to receive a daily SMS with the info about the work of your robot.
- If this option is not enabled, you will only receive SMS when the robot is blocked.

SMS Alert
Daily Report (Enabled, Disabled)

To check if everything is correctly functioning, enable the Daily SMS Alert, start up the robot in a way that the working time ends just few minutes after the current time. Wait for the robot to enter the recharging base. After few minutes you should receive an SMS.

Example:

- Current Robot time 16:00
- Set the working time 1 : 15:50-16:05
- Set the working time 2 : 00:00-00:00
- Start up the robot

FUNCTIONING

Please read carefully through the user manual before first use.

If the robot blocks during the working cycle, an SMS will be sent to the selected numbers, showing the text displayed on the Robot. For example:

***** STOP *****
Bump Error
Tue 16:57 BUMP03

If the Daily Report option is activated, the robot sends automatically an SMS to the selected numbers in the following cases:

- The robot is in his recharging base.
- It is a working day.
- The time of the last working cycle has passed.

In any case, the robot sends no more than a report a day. The report provides the following data:

- Total working time of the day.
- Day and time of starting of the next working cycle.
- The percentage of the mowed area.
- The Rain indication in case the robot detected it during the day.