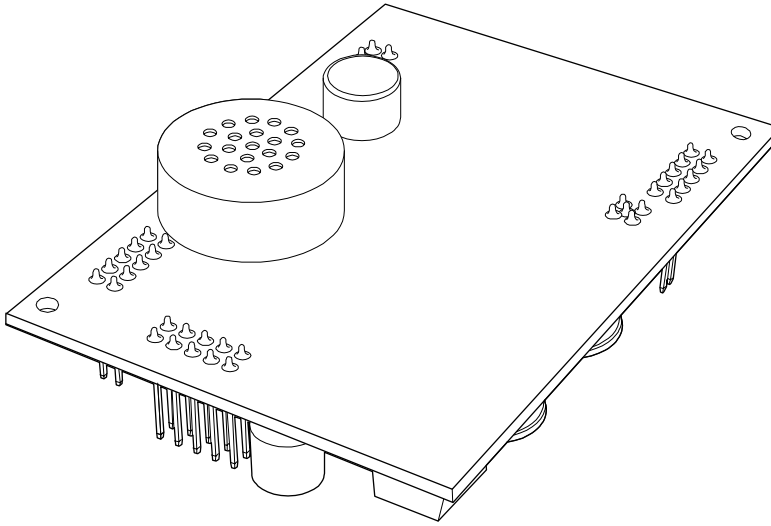
i-gsm02

GSM Module



Installation and Programming Guide

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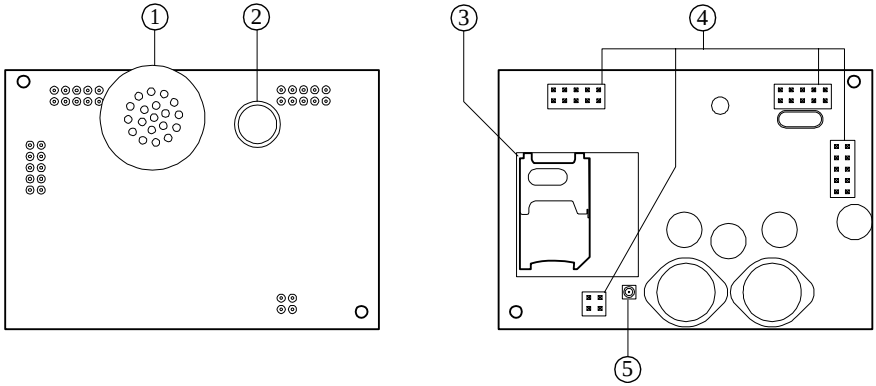
This manual applies to software used in the i-on40 control unit with version 2.xx.xx software.

Introduction

The i-gsm02 module is designed to fit on the i-on40 control unit. The i-gsm02 allows the control unit to report alarms over the mobile telephone network using either recorded speech messages, or SMS (Short Message Service) texts. The

Figure 1 shows the main features of the module.



Top
1. Speaker
2. Microphone

Bottom
3. Sim card holder
4. Connector pins
5. Aerial socket

Figure 1. i-gsm02 Module

Installation

Preparation

Before installing the i-gsm02, please consider the type of network account and the physical location of the unit and its antenna.

Choosing a network account

Avoid using a pay as you go account. If you must, then be aware that the i-gsm02 cannot warn you of low credit. Set up regular top-ups for the account or manage it through the internet (if the provider gives you that option).

Note: This module is not currently compatible with 3G sim cards.

Siting the antenna

Before installing the unit you must decide on a suitable location for the antenna. Site the antenna so that it can receive a good signal from the phone network. Note that the supplied antenna lead is 3m long.

Place the antenna:

As high as possible.

As far away from the control unit as possible.

At least 1 metre from any metalwork (pipes, cabinets, cabling, cement reinforcing bars, metallic coated glass).

Vertically (see Figure 2).

So that the lead runs horizontally from the antenna for at least 250mm.

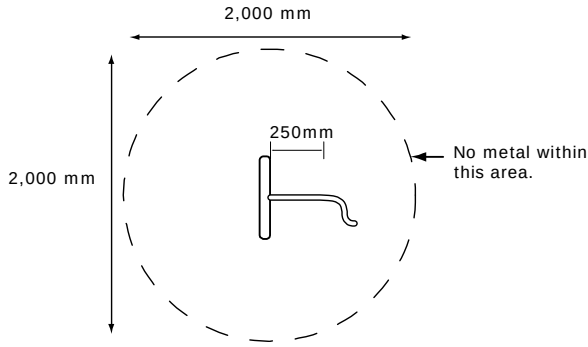


Figure 2. Aerial Positioning

Checking network signal strength

There are three ways to check the network signal strength at your installation:

1. Use the i-gsm02. You can temporarily fit the SIM card and antenna to the i-gsm02 and fit the i-gsm02 module to the i-on40. **Caution:** Follow the instructions in “Fitting the Module” on page .

You can then register the SIM card (see page 7). However, you should be aware that unless the SIM is registered, the i-on40 will report the strength of the strongest network signal. *This may be an emergency network.* (In the UK, all networks must provide access

to any mobile phone for emergency calls.) Check that the i-gsm02 SIM is registered before checking the signal strength.

Caution: If you must remove the i-gsm02 module: a) remove all power from the control unit, both mains and battery, b) take care not to bend the pins.

2. You can use your mobile phone, provided that it is registered with the same network as the SIM (Subscriber Identity Module) card that you intend to fit to the i-gsm02. If your phone reports at least two bars of signal at the site of the i-gsm02 antenna then the i-gsm02 should be able to work on that network.

NOTE: When testing the signal strength you must hold your phone in the exact location of the i-gsm02 antenna.
If you decide that a location has a good signal, then you must fit the centre rib of the i-gsm02 antenna within 20mm of the spot occupied by your phone. (The signal wavelength is so short, that moving 80mm can change the signal strength markedly. This may not matter with a strong signal, but with a weak signal it could mean that the i-gsm02 will not register.)

3. If your phone does not work on the same network as the SIM you intend to install in the i-gsm02, then, provided your phone is not locked, you can put the i-gsm02 SIM in your phone, and test for network signal strength as described in step 1. Ensure that you can make a call from the chosen position, it is not enough to rely on the signal strength indication.

Once you have completed testing you must remember to shut down your phone in the recommended manner before extracting the i-gsm02 SIM. If you remove power abruptly (for example by taking the phone battery out) the SIM card may not have time to de-register from the network, and some networks may lock out the SIM for several hours.

Note: Do not lock the SIM card with a PIN (the i-gsm02 will not let you key in a PIN for the card).

Dealing with poor signal strength

If the signal strength is poor, either:

Find a better antenna position.

Change the network provider.

Fitting the Module

Note: Do not fit the i-gsm02 OR its antenna until you have confirmed that there is adequate network signal strength.

1. Remove mains power from the i-on40 end station.
2. **Caution:** Open the end station lid and disconnect the battery.
3. Pass the plug end of the antenna lead from outside the end station case through one of the cable entry holes into the interior and connect the antenna lead plug to the i-gsm02 (see Figure 3).

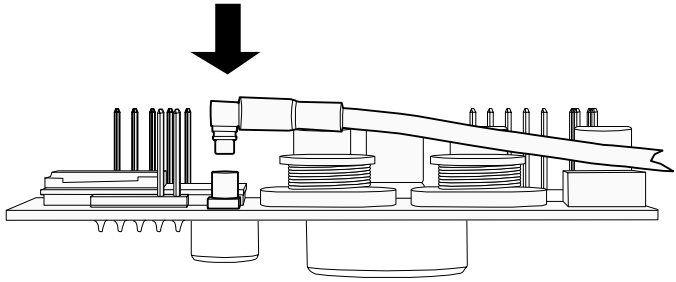


Figure 3. Connect the Aerial

4. Fit the SIM card (see Figure 4). Ensure that you fit the SIM card in the correct orientation.

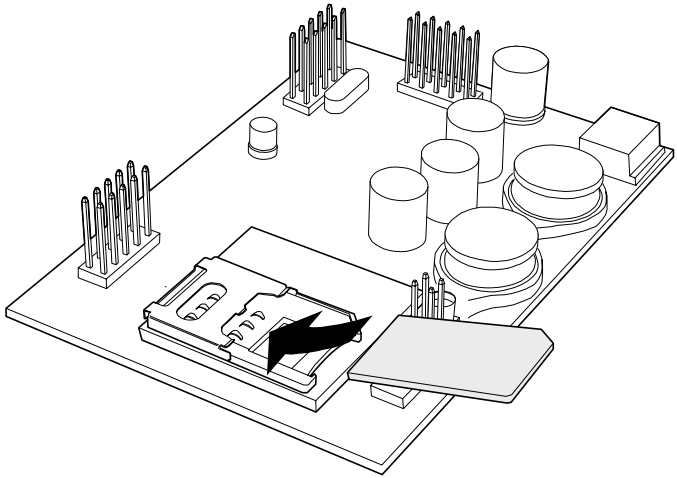


Figure 4. Fit a SIM Card

5. Fit the i-gsm02 to the plug on module sockets (see Figure 5). Take care not to unseat the antenna lead connector. Do not use excessive force when seating the module.

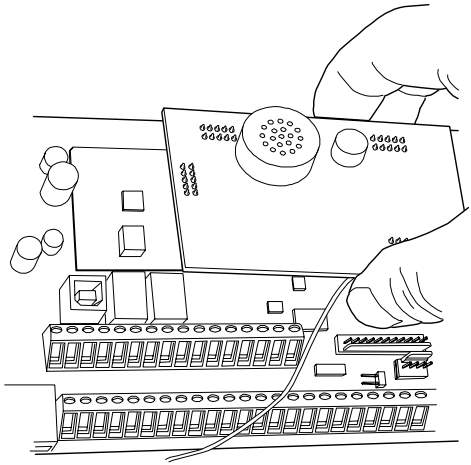


Figure 5. Fitting i-gsm02 Module

6. Using the supplied surface wipe, clean the area onto which you intend to stick the antenna. Remove the backing paper on the glued side of the antenna. Fix the antenna onto the cleaned surface. *Note: The adhesive on the antenna is fast acting. You will not be able to reposition the antenna once you have put it in place.*
7. Reconnect the battery. (The control unit will not start.)

Registering a SIM Card

Once you have fitted the i-gsm02 module and its SIM card, you must register the SIM card with the service provider. To do this you must make a telephone call from the i-on40 control unit via the newly installed i-gsm02 module.

7. Apply mains power to the i-on40 unit.
8. From standby, enter the Installer code, then use the scroll keys (▲ or ▼) to display the Test menu:

   Press ✔ to select. The screen will show the first option: Test Messages.

9. Press ▲ or press ▼ to show:
   GSM Phone Utils.
10. Press ✔ to select. The screen will show the first option: Make Call.
11. Use the scroll keys (▲ or ▼) and then ✔, to select the following options:

Make Call	Allows you to enter a number and make a call via the GSM link. The i-on40 will act like a hands free mobile phone. You can use the * and # keys as you would on a normal phone.
Signal Strength	If the level is low you may need to reposition the control unit, or seek another service provider.
GSM Number	(This may not appear if you are using Vodafone as a service provider.) Note this number down so that you can supply it when registering your SIM card.
IMEI Number	You should note this number down as you will need to provide it when you register your SIM card with certain service providers.

12. Select the Make Call option.
13. Dial the appropriate telephone number for registering the SIM card as shown in the instruction leaflets for the card.

Note that the i-on40 cannot support the text message response service calls using the * and # keys. You must call the service provider manually and either register with a human operator, or navigate an automated answering service. Once the phone call is established you can use the * and # keys as you would on a normal phone.

If the control unit is having difficulty registering, the keypad display may show one of the following error codes:

"Not Reg."	Not registered, gsm module is not searching for a new operator
"Reg. Home"	Registered, home network ("Reg. Home" gets replaced with operator name when available)

"Searching..."	Not registered, gsm module is searching for a new operator
"Reg. Denied"	Registration denied
"Reg. Unknown"	Unknown
"Reg. Roam"	Registered, roaming ("Reg. Roam" gets replaced with '*' and operator name when available)

The exact details of registering your SIM card differ for each provider.

O2

Note that 02 print the SIM serial number and the GSM telephone number on the packing for the SIM card.

To register an 02 SIM dial 248 and follow the instructions given by the automatic answering service.

T-Mobile

T-Mobile print the GSM telephone number, PIN number and PUK (unlock number) on the sheet carrying the SIM card and top up card.

To register a T-Mobile SIM dial 150 and follow the instructions given by the automatic answering service.

If you have several mobile phones fix the sticky label provided showing the GSM number to the top up card.

Orange

Make sure you have the GSM module's IMEI number to hand. You will also need the SIM card serial number which is printed on the SIM card.

You will need to provide a password and the four digit code to identify yourself in the future. Choose them before making the call and write them down in the booklet.

To register an Orange SIM dial 0800 079 0006. A human operator will reply.

While registering your SIM, the operator will provide you with your GSM number. Make sure you note this number on the top up card.

Vodafone

To register a Vodafone SIM dial 2345 and follow the instructions given by the automatic answering service. During the instructions you will be given your GSM number. Make sure that you note this number down on the back of the top up card.

Using Top Up Cards

Avoid using a pay as you go account. If you must, then be aware that the i-gsm02 cannot warn you of low credit. Set up regular top-ups for the account or manage it through the internet (if the provider gives you that option).

Various service providers supply top up cards with their SIMs. Part of the registration procedure is to link the top up card with the SIM. The cards contain just enough credit to allow you to make the registration call. Once you have finished this process you will need to supply more credit to the top up card. You should do this immediately.

While registering, make sure that you write the phone number of the GSM module down on the top up card.

The table below provides spaces for you record the relevant information about your GSM installation.

IMEI No.

SIM Card Serial No.

GSM No.

Top Up Card No.

Other Programming

For details on programming the i-gsm02 please refer to the *i-on40 Programming Reference*. All the options necessary for programming the module are in the Installer Menu under the Communications option.

Note: The control unit hides the Communications – Speech Dialler and Communications – ARC Reporting options if there is no i-gsm02 fitted.

Recording Voice Messages

The microphone for recording speech messages is on the i-gsm02 module, as well as a small speaker that allows you to playback the messages.

If you intend to record speech messages, and the user's keypad is already fixed at some distance from the central station, you can temporarily enable the control unit tamper switch to act as a record/playback control as follows:

14. Start with the end station lid off and the tamper switch open.
15. At the keypad go into the *Installer Menu - Communications - Speech Dialler - Messages*, set the *Use Lid Tamper* option to Yes, and press ✔.
16. At the control unit hold down the tamper switch. When the red Record/Playback LED on the i-gsm02 glows recite your message.
17. Release the tamper switch.
18. Pulse the tamper switch briefly.

    The i-gsm02 plays back your recording.
19. Go back to the keypad and press ✘ to leave "Use Lid Tamper" mode.

Finishing the Physical Installation

Once programming is complete:

20. If you enabled the control unit tamper switch to control speech recording and playback then leave the *Use Lid Tamper* option. (If you do not do this then the speech dialler will record the room sounds over your message as soon as you close the tamper switch.)
21. Re-fit the lid of the end station.
32. Test the module using the options in the *Installer Menu - Test* option.

NOTES:

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