

<https://play.google.com/store/apps/details?id=ua.com.glab.easygsm>



**Notification device
easyGSM v5.16
(Communicator)
Installation and user guide**

Lviv, 2017

Review of functions

- Programming without a computer.
- Possibility to program using SMS.
- Automatical recording of programming template.
- Error indication while programming and working.
- Cellular network signal strength indication.
- 4 potential inputs.
- 1 virtual input for arming/disarming.
- 2 «open collector» type outputs, each of them can work in one of five modes.
- Possibility to use as a security central.
- Call programming to four user phone numbers with sound notification about an alarm on all inputs.
- Programmed text SMS to four user phone numbers about changes in the state of 5 inputs.
- Unification of events that are in the buffer for transmission to user, in one SMS message.
- Unification of events that are in the buffer for transmission to user, in one call.
- Automated and «on request» account balance check. Possibility to disable the balance check.
- Real-time clock.
- Possibility of remote arming/disarming and output management.
- Programmable «life pulse» transmit time.
- User notification of «power off» by transmitting a text SMS message in 15 minutes after power was restored.
- User notification of supply voltage drop (two thresholds).

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Purpose

EasyGSM communicator is an universal device of user notification using sound (call) and (or) text (SMS). External view of the device is shown on **figure 1**.



Figure 1. Device external view

Specifications

Performance characteristics

Quantity of inputs	4+1 virtual
Quantity of «open collector» type outputs	2
SIM card standard that is supported	GSM
Method of user notification	Sound and text
Max. quantity of user phone numbers	4
Quantity of working modes	3
Status request using SMS command	Yes
Status request using phone call	Yes
Control using DTMF	Yes
Quantity of user phone call attempts	Programmable
Remote check of SIM card balance	Yes
Automatical check of SIM card balance	Yes
Cyrillic alphabet in SMS	No
Quantity of possible SMS messages (up to 14 characters)	18
Real-time clock	Yes
Power on ready time, seconds, not more than	30

Electrical specifications

Name	Parameter	Unit	Value
Device supply voltage	U_{pwrdc}	V	+10...+15
Max. current consumption	I_{pwrmax}	mA	1000
Current consumption in stand-by mode, around	I_{pwravg}	mA	80
Max. voltage of log. «1» at the inputs I1 – I4	$U1_{max}$	V	$U_{pwrdc}+1$
Min. voltage of log. «1» at the inputs I1 – I4	$U1_{min}$	V	$U_{pwrdc}*0,75$
Max. voltage of log. «0» at the inputs I1 – I4	$U0_{max}$	V	$U_{pwrdc}*0,25$
Min. voltage of log. «1» at the inputs I1 – I4	$U0_{min}$	V	0
Max. load current on OK1 and OK2 outputs (not protected)	I_{okmax}	mA	100
Max. allowed DC voltage on OK1 and OK2 outputs	U_{okmax}	V	30

GSM modem

Frequency range	GSM 850/EGSM 900/ DCS 1800/ PCS1900, automatic selection
GSM class	Small MS
Transmitter power	Class 4 (2W) at EGSM900/GSM850 Class 1 (1W) at DCS1800/PCS1900
SIM interface	Support SIM card: 1,8V, 3V

Work preparation, connection and programming

What will be needed?

To install the **easyGSM** communicator (further in text – the device) you will need the following:

- an active SIM card (miniSIM format) from any GSM operator with at least 5 UAH on account;
- stabilized DC power supply (not less than 1000 mA load current) with 10 to 15 V output voltage.

First of all activate your SIM card (if it is new). To do so, insert the SIM card in your cell phone and call either number of your choice.

If the card is old, make sure that it has been activated.

Next, you need to cancel the PIN request when the phone is turned on. See the instruction for your cell phone.

Make sure the SIM card account is not empty. The method of checking the balance (service number) depends on your operator.

ATTENTION!

If the SIM card was exploited before, make sure that you have all entries from the SIM card phone book saved in your cell phone, because the first 42 SIM card phone book entries will be DELETED.

Antenna connection.

Connect the antenna to the SMA connector of the device (as shown on **figure 2**)

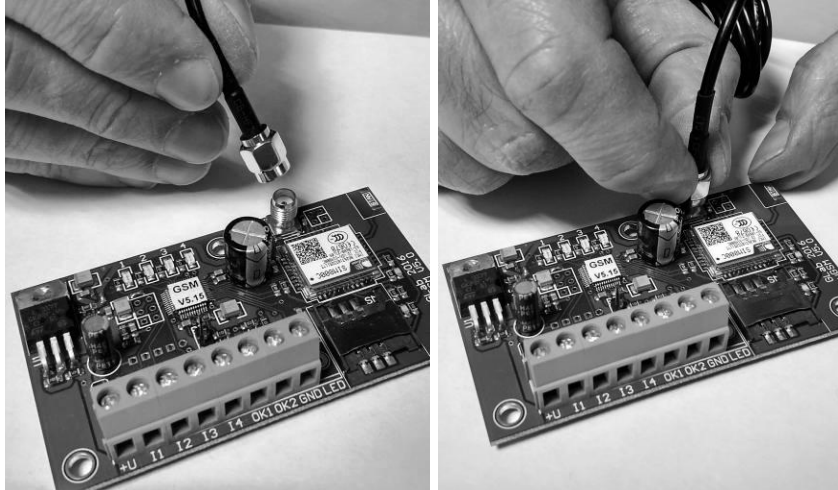


Figure 2. Antenna connection.

ATTENTION!

Turning on the device without the GSM antenna causes the GSM module SIM800C to malfunction. Note that the manufacturer's warranty does not apply to the GSM module.

ATTENTION!

Do not leave the antenna inside a metal box (for example the security alarm box). Never stick the cellular antenna to metal or magnetic surfaces. It causes a significant loss in sensitivity of the receiver, a heavy load on the transmitter and malfunctions in the GSM module after continued work in such mode.

SIM card installation.

Insert the SIM card into the device as shown on **figure 3**.

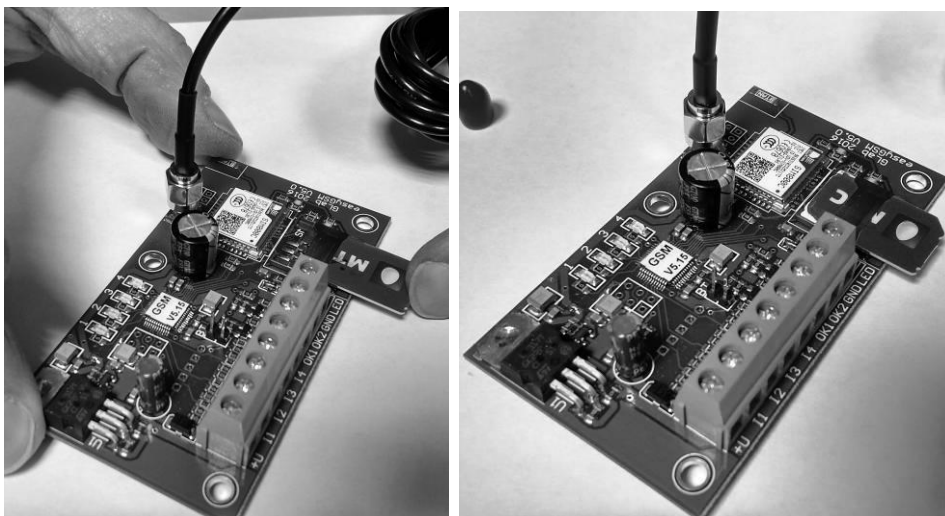


Figure 3. SIM card installation.

Power supply connection.

The device requires a stabilized power supply with DC voltage from 10 to 15 V and load current that is not less than 1000 mA. The power supply clamp «+» is connected to the device clamp «+U» and the clamp «-» to the clamp «GND» accordingly.

The schematic for connecting the device to the security central and the list of signals transmitted can be found in section **Factory settings** and in **Appendix 2**.

ATTENTION!

If you plan to use the same power supply for additional equipment, (sensors, siren, relay etc.) you should choose a more powerful supply module.

Programming via Android application.

The simplest way to program the device is using the easyGSM application (See link and QR code on the cover of this guide). Instructions on using the program are located in easyGSM appendix. In order to program the device you need to open the application on any Android smartphone, enter the device's SIM card phone number and a name for this device. Choose your settings (See the guide on using the application). Then, set the "BT" jumper and power the device. If the device registered in a cellular network successfully, it will switch to programming mode from the "easyGSM" application (See section **LED indication**). Remove the "BT" jumper. Afterwards, you need to send ALL of the settings to the device. When program receives confirmation of all messages delivered successfully, it will inform you that programming is finished. The device will reboot.

ATTENTION!

The device is kept in the programming mode from «easyGSM» application only for 10 minutes. It is recommended to enter all settings in the application first and only then power the device.

ATTENTION!

The device with jumper «BT» set writes in cell "GB001" the phone number, from which it received the SMS message with settings. It is the phone number of the device's administrator.

Programming via editing the SIM card phone book.

If you do not have an Android smartphone, this programming method is for you. For programming convenience an automatic recording of necessary for the device to work entries is possible straight to SIM card phone book.

In order to record a template you need to delete an entry named «GB001» from the SIM card phone book (if the card has already been used in the device), install the SIM card with removed PIN request into the device and power the device.

In around 30 seconds the red LED «4» will light up – the template has been recorded into the SIM card phone book. Turn off the power, remove the SIM card. See section **LED indication** for more specific information on LED indication.

Further programming involves editing the SIM card phone book entries from cell №1 to №41. Before programming, please read this manual to the end, choose a mode convenient for you and fill in the **table 12** from *Appendix 3 – Table of settings*.

Using your cell phone, change the template for the device to work in your hardware configuration.

ATTENTION!

DO NOT delete entries from the SIM card phone book! If you accidentally deleted any entry from the SIM card phone book, you would have to write the template once again.

ATTENTION!

Some models of cell phones (usually smartphones) add service indexes to entries in the SIM card phone book. Unfortunately, editing the template with such models is impossible. You will have to use another cell phone.

Remote programming.

If the Android phone number is stored inside the “GB001” cell, it is possible to change settings of the device remotely (except for cell “GB001” with the device administrator’s phone number). To do so, you need to open the «easyGSM» application, choose «device management» option, and then select the required device. Apply the necessary setting changes and send them to the device.

User notification programming.

Inside the cells from GB005 to GB008 it is possible to program what text and/or sound messages will the users from 1 to 4 receive. GB005 – user №1, GB006 – user №2, GB007 – user №3, GB008 – user №4 (see Table 1).

Table 1. User notifications (values in cells from GB005 to GB008).

Field number	Default value	Description
1(left)	0	User notification about events on I1 input. «1» - enabled, «0» - disabled.
2	0	User notification about events on I2 input. «1» - enabled, «0» - disabled.
3	0	User notification about events on I3 input. «1» - enabled, «0» - disabled.
4	0	User notification about events on I4 input. «1» - enabled, «0» - disabled.
5	0	User notification about events on I5 input. «1» - enabled, «0» - disabled.
6	0	User notification about supply voltage drop. See section «Programming of supply power analyzer» below. «1» - enabled, «0» - disabled.
7	0	User notification about lack of funds on account. «1» - enabled, «0» - disabled.
8	0	User notification about device reboot (power off). «1» - enabled, «0» - disabled.
9(right)	0	«Life pulse» transmission to user. «1» - enabled, «0» - disabled.

Input response time programming.

In the GB014 cell you can program the reaction time of inputs I1-I4. Possible cell values are displayed in the **Table 10**. The reaction time is a time in hundreds of milliseconds, during which the device will not react to logical level change on its input.

Programming of supply power analyzer.

For convenient exploitation in security alarm systems, the user can enable the intelligent supply power analyzer of the device («1» in the GB011 cell). This allows the user to get information about power outages and accumulator discharge without using the device's inputs. This works as follows: if the supply voltage during minimum 3 minutes is less than specified in cell 40, the device will send an SMS* from cell 36. If the supply voltage during minimum 3 minutes is less than specified in cell 41, the device will send an SMS* from cell 38. When the supply voltage during minimum 3 minutes is more than specified in cells 40 and 41, the device will send an SMS* from cells 37 and 39 accordingly.

*Only if the cells GB005-GB008 have «1» written in the appropriate field.

Connecting the inputs.

It is possible to connect the device inputs to «open collector» type outputs, which are commutated to ground, and «dry contact» type commutation devices (relay, buttons).

The scheme of possible connections of the device inputs in modes **0, 1 and 2** is displayed in **appendix 2**.

Connecting the outputs.

The device outputs are of «open collector» type and commute to ground. The example of possible connections of the OK1 and OK2 outputs is displayed in **appendix 2**.

ATTENTION!

*The device outputs have limited loaded capability. Output current **MUST NOT EXCEED 100mA!** It means that the output can not control the siren (for example) without using an additional relay.*

Priorities in working mode.

SMS message transmission has the highest priority, because this procedure takes less time than user phone calls. After the messages have been sent, the device will switch to user calling mode. The number of unsuccessful calls to each user is limited to three (by default). You can change the number of attempts by entering a new value for cell GB009. If the user accepts the incoming call from the device and listens to the audio message, the attempt is considered successful. In all other cases the attempt is considered unsuccessful.

ATTENTION!

*Even if quantity of «phone call» events in the buffer is more than one, the device will call one user phone number only **ONCE**.*

LED indication.

LED indication of the device works in **three modes** (see **figure 4**).

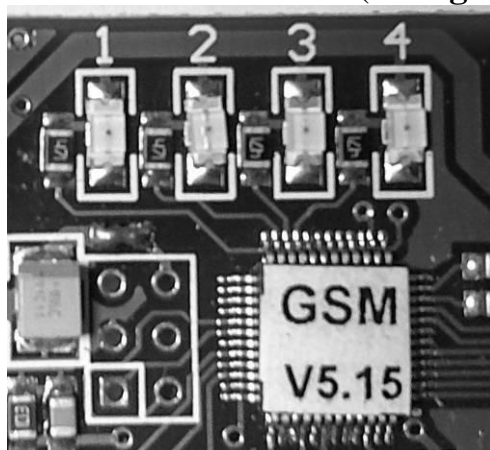


Figure 4. Indicating light-emitting diodes.

Mode 1– error indication (red LED «4» glows constantly).

This mode is often used while the device is turning on to inform the user of the device's inability to work properly. The yellow LED «3» shows the error code (see **Table 2**). The green LEDs «1» and «2» show the number of the first entry in the SIM card phone book, where a mistake is found. For example, if LED «1» blinks 3 times in a row after a pause and LED «2» blinks 2 times in a row after a pause, it means that the error is in entry №23 in the phone book (see **Tables 10 and 11**).

Table 2. Error codes of the device.

<i>LED «3», number of impulses</i>	<i>Error description</i>
1	Error in the phone book entry. Read the error code and correct the according entry.
2	SIM card error. Clear all the SIM card contacts or replace the card.
3	PIN code error. Turn off the PIN code request in the security settings.
4	No connection to the GSM modem. Contact the manufacturer's service.

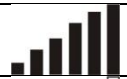

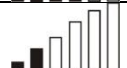

ATTENTION!

The device indicates errors only for 30 seconds. Afterwards the device will reboot the GSM modem and perform another attempt to enter the working mode.

Mode 2 (red LED «4» blinks or does not glow) – **working mode**.

In this mode red LED «4» can blink in case there is no coverage of the cellular network, or the existing network is not sufficient for the normal operation of the device. The yellow LED «3» is used to indicate GSM modem operation mode. If the LED «3» blinks 1 time per second, it means that the modem is being registered in the network of the GSM operator. The LED «3» blinks 1 time per 3 seconds – modem has successfully registered in the network. If the LED «3» blinks often, it means that the device is telephoning one of programmed user phone numbers. The green LEDs «2», «1» and the red LED «4» are used to display signal strength of the cellular network operator. Approximate signal level values are displayed in **Table 3**.

Table 3. Approximate level values of the cellular network operator signal.

<i>LED</i>			<i>Level</i>	<i>Notes</i>
<i>«2»</i>	<i>«1»</i>	<i>«4»</i>		
glows	glows	does not glow		Maximum signal strength.
does not glow	glows	does not glow		At about 50% signal strength. Enough for normal device operation.
does not glow	blinks	does not glow		Signal strength is not enough for normal device operation. External antenna is needed.
does not glow	does not glow	blinks		The device does not operate. External antenna is needed.

Mode 3 – indication of device programming via the easyGSM application (LEDs turn on alternately in «running light» mode) .

The device enters this mode upon receiving SMS from easyGSM program (only if the smartphone with the program installed has the same phone number that is written in GB001 cell), or upon powering the device while previously setting the “BT” jumper.

Operating modes.

Operating modes of the device are programmed in the GB010 phone book entry. The device can work in three independent modes (see **Table 4**).

In **operating mode 0** all of the device's inputs are equal, user phone calls and SMS messaging are done without analyzing the other input's state and without delays. An example of connection to the Satel CA-64 security central is displayed in **appendix 2**.

Operating mode 1 – inputs I1- I4 operate in security alarm mode.

Inputs I1- I3 are the security alarm zones.

Input I4 is used for security arming/disarming.

If the operating mode 1 is used and input I4 is in logical «1» state (security disarmed), the device will not react to input I1 – I3 state changes. If the input I4 is in logical «0» state (security armed), the device is in «armed» mode. During the first 20 seconds (default setting) after arming, the device does not react to violations in the security alarm zones (inputs I1-I3). This is a delay to exit. Input I1 is a so called «delay zone». The device will not react to violation in this zone during the first 20 seconds (if the device is «armed»). In case «disarm» - input I4 logical state change to «1» did not happen during that time, the device will enter the calling and SMS messaging mode. If a logical level «0» (alarm) occurs on any other input (I2 or I3), the device immediately enters the calling and SMS messaging mode.

When the device is in security alarm mode, it is recommended to use the outputs OK1 and OK2 as following: OK1 – mode 3 (see **Table 5**), OK2 – mode 4 (see **Table 5**).

Operating mode 2 – inputs I1- I5 operate in security alarm mode.

Inputs I1- I4 are the security alarm zones.

Virtual input I5 is used for security arming/disarming.

If the operating mode 2 is used and input I5 is in logical «1» state (security disarmed), the device will not react to input I1 – I4 state changes. If the input I5 is in logical «0» state (security armed), the device is in «armed» mode. During the first 20 seconds (default setting) after arming, the device does not react to violations in the security alarm zones (inputs I1-I4). This is a delay to exit. Input I1 is a so called «delay zone». The device will not react to violation in this zone during the first 20 seconds (if the device is «armed»). In case «disarm» - input I5 logical state change to «1» did not happen during that time, the device will enter the calling and SMS messaging mode. If a logical level «0» (alarm) occurs on any other input (I2, I3 or I4) the device immediately enters the calling and SMS messaging mode.

To arm the device you need to call the device SIM card's number (from any user phone number that is programmed in the device's SIM card) and enter the password, written in the GB023 cell (see **Table 10** and section **DTMF commands to control the device**) plus “#” symbol. The same should be done to disarm the device.

When the device is in security alarm mode, it is recommended to use the outputs OK1 and OK2 as following: OK1 – mode 3 (see **Table 5**), OK2 – mode 4 (see **Table 5**).

Table 4. Operating modes of the device.

<i>Cell №4 (GB010) value</i>	<i>Operating mode description</i>
0	Freely programmable operating mode. All inputs are equal. All outputs can be used in either mode.
1	Security alarm mode (see the description above).
2	Security alarm mode with virtual input for security arming (see the description above).

Working modes of outputs.

Every output of the device has 5 independent working modes (see **Table 5**).

Table 5. Working modes of outputs «OK1» or «OK2».

<i>Cell №11 (GB019), or №12 (GB020) value</i>	<i>Working mode description</i>
0	The according output works in monostable mode. The output can be activated or deactivated with SMS command. See the command format in section «Output OK1, OK2 management».
1	The according output works in bistable mode. The output can be activated for up to 99 seconds with SMS command. See the command format in section «Output OK1, OK2 management».
2	Indication of cellular network absence.
3	External indicating LED management in security alarm mode (see Table 6).
4	Siren's external relay management in security alarm mode. Siren's relay is switched on for 30 seconds in case of an alarm.

When using either output in working mode «3» you need to connect the external indicating LED (see **Appendix 2**). Light transmissions of this LED are shown in **Table 6**.

Table 6. «OK1» or «OK2» indication in the security alarm mode (working mode «3» of outputs).

<i>LED indication</i>	<i>Status</i>
Does not glow	Disarmed, no zone violations.
Glow for 0,1 second, does not glow for 0,7 second	Disarmed, one or more zones are violated.
Glow	Armed, no alarms.
Glow for 0,7 second, does not glow for 0,1 second	Armed, indicating an active alarm.
Glow for 0,2 second, does not glow for 0,2 second	The device is entering armed mode. Delay to exit is active, no violated zones.
Glow for 0,1 second, does not glow for 0,7 second	The device is entering armed mode. Delay to exit is active, one or more zones are violated. It is needed to disarm the device and eliminate the zone violations.

SMS command format and incoming call processing

Setting the real-time clock.

After the first successful turn on of the device and also after a complete power off, it is recommended set up a clock. To do so, send an SMS with any English alphabet symbol from either programmed user phone numbers to the SIM card phone number. This is necessary, for example, in order for the «life pulse» to arrive at the time you programmed, as well as for you to receive text SMS with real time and date of events. If you did not send such SMS, in 15 minutes after powering the device you would receive SMS with a reminder*:

SYSTEM RESTARTED. PLEASE SET TIME. 03/01/01 12:15:21+00

*Only if the cells GB005-GB008 have «1» set in the according field.

This is also necessary to inform the user about a complete power off of the device (for example due to a prolonged industrial power shutdown).

Note: time synchronization takes place whenever a SMS is received from users with phone numbers programmed in SIM card.

Device status request.

To receive a text SMS with the current device status, send an **empty** (or a gap) SMS to the SIM card phone number.

Also you can receive a text SMS with the current device status by calling the device's number and entering a proper DTMF command (see section **DTMF commands to control the device**).

The device will send you an SMS of the following form:

I1-4 1111

OK1-2 00

Balance 26.99uah, bonus 0.00uah

09/03/14 16:40:41+08

The first line indicates the state of the inputs I1-I4. «0» - logical 0, «1» - logical 1.

The second line indicates the state of the OK1 and OK2 outputs. «0» - not active, «1» - active.

The third line shows the account balance of the device.

The fourth line is a date and time in format: yy/mm/dd hh:mm:ss+tz. In this example: the 14th of March, 2009, 16 hours 40 minutes 41 seconds, time zone +8.

ATTENTION!

The third line (the account balance) can be absent. This is not a device error but the operator not responding to USSD request. Also if the cell GB013 value is "#####", the device will send a message "Balance check is disabled!" in the third line.

Output OK1, OK2 management.

The text SMS messages with «XX YY» commands are used to manage outputs. Alternatively, you can use DTMF commands of output control (see section **DTMF**

commands to control the device). The list of text SMS commands is shown in **Tables 7 and 8**.

There can be several commands in the message body, which must be separated by a gap.

Table 7. SMS commands for output management in mode «0». Monostable mode.

<i>Command (XX YY)</i>	<i>Description</i>
10	Deactivate the OK1 output
11	Activate the OK1 output
20	Deactivate the OK2 output
21	Activate the OK2 output

Table 8. SMS commands for output management in mode «1». Bistable mode.

<i>Command (XXX YYY)</i>	<i>Description</i>
1XX	Activate the OK1 output for XX seconds* **
2YY	Activate the OK2 output for YY seconds* **

* Maximum time for the output to be active is 99 seconds.

** If XX or YY equal 00, the output will be activated for minimum 2 seconds.

ATTENTION!

The device ignores incorrect commands or commands which contain Cyrillic letters in the message body.

Furthermore, remote output management is possible only in 0 and 1 working modes of outputs.

«Life pulse» SMS messages.

In the SIM card phone book cell №12 (GB012) a time of SMS message transmission with the so called «life pulse» can be programmed. Receiving this SMS ensures you that the device is operating (see **Table 10 and 11**). If the settings were default and you programmed the real-time clock, then at 12:00 you would receive an SMS of the following form*:

PULSE

Balance 26.99uah, bonus 0.00uah

09/03/14 12:00:21+08

* Only if the cells GB005-GB008 have «1» set in the according field.

Besides ensuring that your device is working, you will be able to see the device SIM card's balance.

ATTENTION!

The second line (the account balance) can be absent. This is not a device error but the operator not responding to USSD request. Also if the cell GB013 value is "#####", the device will send a message "Balance check is disabled!" in the third line.

DTMF commands to control the device.

To use the DTMF commands call the device SIM card phone number (from either user phone number, programmed in the device's SIM card) and enter the command from the keyboard. The list of commands is shown in **Table 9**.

Table 9. DTMF commands to control the outputs.

<i>Command (*XX YY#)</i>	<i>Description</i>
*10#	Deactivate the OK1 output *
*11#	Activate the OK1 output *
*20#	Deactivate the OK2 output *
*21#	Activate the OK2 output *
*1XX#	Activate the OK1 output for XX seconds **
*2YY#	Activate the OK2 output for YY seconds **
*8#	Reboot the device
*9#	Receive the input and output status of the device
XXXX#	Security arm/disarm***

*monostable mode

**bistable mode

***Only in operating mode №2 (see **Table 4**)

The device accompanies each received command with an audio message. All the audio messages are listed below:

Long tonal signal of 0,8 seconds duration – there is a mistake in the command (command not recognized by the device).

Two short tonal signals – the command execution is confirmed.

Three short tonal signals – the device was successfully armed.

Five short tonal signals – the device was successfully disarmed.

Manufacturer's recommendations

- Do not leave the antenna inside a metal security alarm box – it causes the SIM800C module to malfunction;
- Do not stick the cellular antenna to metal surfaces (including security alarm boxes) – it causes the incorrect operation of module SIM800C;
- To power the device, use conductors with a cross section not less than 0,5mm²;
- Please, do not use the Cyrillic alphabet when editing the SIM card phone book, otherwise the device will not operate;
- It is strongly recommended to write all the phone numbers (including the number of the centralized security control panel) in the international format (+380XXXXXXXXX) – this will free you from many problems;
- If the cellular GSM network coverage is insufficient at the device installation site, you can buy a GSM antenna with a longer cable (3-5 meters) and SMA connector;
- Despite of the device being protected from the reverse polarity connection to the power supply, be careful when attaching the power supply, check the connections (+ and -) closely;
- Manual entry to the SIM card cell with a specific number (for example after deletion by mistake) is possible only on some models of cell phones, so if your cell phone does not have such function, you will have to write the whole template into the SIM card once again;

- Using a power module with an accumulator to power the device is not obligatory, but recommended, as it will allow the device to work offline for some time and save the real-time clock settings.

Factory settings

The template format, which should be written to the SIM card phone book, is shown in the **Tables 10 and 11**.

Table 10.

<i>Cell number</i>	<i>Name</i>	<i>№</i>	<i>Note</i>
01	GB001	+000000000000	Phone number of user №1, must be programmed ¹
02	GB002	+000000000000	Phone number of user №2, if not programmed, calls and SMS messaging will be disabled ¹
03	GB003	+000000000000	Phone number of user №3, if not programmed, calls and SMS messaging will be disabled ¹
04	GB004	+000000000000	Phone number of user №4, if not programmed, calls and SMS messaging will be disabled ¹
05	GB005	000000000	Notifications for user №1. Left to right: I1-I5 – events at the inputs I1-I5; Low power – transmission of SMS when supply voltage drops below the thresholds, specified in cell 40 and 41; Money – transmission of SMS about a lack of funds on account; Reboot - transmission of SMS about the device reboot; LifePulse - transmission of the «life pulse» SMS. «1» - Enable, «0» - Disable.
06	GB006	000000000	Notifications for user №2. The same, as for user №1 (see GB005).
07	GB007	000000000	Notifications for user №3. The same, as for user №1 (see GB005).
08	GB008	000000000	Notifications for user №4. The same, as for user №1 (see GB005).
09	GB009	3	Number of unsuccessful calling attempts.
10	GB010	0	Operating mode (see Table 4).
11	GB011	0	Power supply analysis. Threshold values for supply voltage are programmed in the cells 40 and 41. «1» - enabled, «0» - disabled.
12	GB012	12	Transmission time programming for «life pulse» message. Day time in hours, when the SMS with the text from the cell № 34 and the account balance is transmitted. Entering value «00» will disable the SMS transmission.
13	GB013	*111#	A number for automatic (or on request) balance check – depends on your operator and must be programmed. (see Appendix 1: Service numbers of the GSM operators). ##### - balance check is disabled.
14	GB014	02020202	Inputs I1-I4 reaction time. Left – I1(first two numbers), right – I4(last two numbers). Specified in hundreds of milliseconds. Possible values range from 01 to 99 (100 msec. to 9,9 sec.).
15	GB015	00000	User voice calling when logical level «0» occurs at the inputs I1-I5. 1 – calling enabled, 0 – calling disabled. Left – I1, right – I5. In this case no phone calls will be made upon input transition to logical «0».
16	GB016	00000	User voice calling when logical level «1» occurs at the inputs I1-I5. 1 – calling enabled, 0 – calling disabled. Left – I1, right – I5. In this case no phone calls will be made upon input transition to logical «0».

<i>Cell number</i>	<i>Name</i>	<i>№</i>	<i>Note</i>
17	GB017	00000	User text SMS messaging when logical level «0» occurs at the inputs I1-I5. 1 – messaging enabled, 0 – messaging disabled. Left – I1, right – I5. In this case no messages will be sent upon input transition to logical «0».
18	GB018	00000	User text SMS messaging when logical level «1» occurs at the inputs I1-I5. 1 – messaging enabled, 0 – messaging disabled. Left – I1, right – I5. In this case no messages will be sent upon input transition to logical «0».
19	GB019	0	Working mode of output «OK1». See Table 5 . In this case monostable remote controlled mode.
20	GB020	1	Working mode of output «OK2». See Table 5 . In this case bistable remote controlled mode.
21	GB021	0000	Inversion of inputs I1-I4. 1 – logical input state is inverted, 0 – inversion disabled. Left – I1, right – I4. In this case logical input state is not inverted.
22	GB022	2020	Alarm delay to enter (first two numbers) and to exit (last two numbers). Possible values range from 00 to 99.
23	GB023	1234	Password for arming/disarming (for managing the virtual input I5).

Table 11.

<i>Cell number</i>	<i>№</i>	<i>Name</i>	<i>Note</i>
24	000024	Z1 ALARM	SMS text when logical «0» occurs at the I1 input ³
25	000025	Z2 ALARM	SMS text when logical «0» occurs at the I2 input ³
26	000026	Z3 ALARM	SMS text when logical «0» occurs at the I3 input ³
27	000027	Z4 ALARM	SMS text when logical «0» occurs at the I4 input ³
28	000028	ARM	SMS text when logical «0» occurs at the I5 input ³
29	000029	Z1 RESTORE	SMS text when logical «1» occurs at the I1 input ³
30	000030	Z2 RESTORE	SMS text when logical «1» occurs at the I2 input ³
31	000031	Z3 RESTORE	SMS text when logical «1» occurs at the I3 input ³
32	000032	Z4 RESTORE	SMS text when logical «1» occurs at the I4 input ³
33	000033	DISARM	SMS text when logical «1» occurs at the I5 input ³
34	000034	PULSE	SMS text for «life pulse» (entry GB012) ³
35	000035	MONEY < 5 UAH	SMS text for the account balance being less than 5 uah. ³
36	000036	AC FAIL	SMS text for the supply voltage drop less than specified in entry №000040 ³
37	000037	AC RESTORE	SMS text for the supply voltage raise more than specified in entry №000040 ³
38	000038	ACC DISCHARGE	SMS text for the accumulator voltage drop less than specified in entry №000041 ³
39	000039	ACC OK	SMS text for the accumulator voltage raise more than specified in entry №000041 ³
40	000040	11.8	Minimum voltage threshold for power supply. Two digits, a dot and a digit. Voltage in Volts.
41	000041	10.5	Minimum voltage threshold for accumulator supply. Two digits, a dot and a digit. Voltage in Volts.
42	000042	ERROR 000	Service cell №42 for convenience of the installer, here a number of entry with first encountered error in the phone book is written. For example, if the phone number of the user №1 is not programmed, the cell value will change to «ERROR 001».

¹ If the user's phone number equals «+000000000000», the phone is considered not programmed. It is recommended to write all the phone numbers in the international format, because not all operators support direct dialing of a city number.

³ The SMS text (the name in the SIM card phone book) is limited to 17 signs. Cyrillic alphabet is not allowed when programming the device. If the number of SMS events in the buffer is more than one, the device will combine a maximum number of those events (depends on the programmed length) into one SMS message.

In **Tables 10** and **11** the SIM card phone book values highlighted in italics (for example «*PULSE*») can be edited by user. The other values (not in italics) should not be edited.

Warranty

ATTENTION! The manufacturer of the product is liable only within the limits of the warranty obligation for the operation of the device itself and is not responsible for the installation quality of the device, the coverage and service of the GSM operator, the quality of the radio signal, etc.

The manufacturer is not responsible for any accident, caused by the use of the device by both the owner and the third party.

All responsibility for using the device falls on the user. The manufacturer is liable for warranty repair of the device during 12 month starting from the time the product was sold. The warranty does not apply to devices that are out of order due to the user's fault, in particular in case of the exploitation and installation rules violation, in case of the damaged warranty seals, in case of mechanical damage presence, as well as in case of malfunctions, caused by lightning strike, short circuit in the network and so on. Also the warranty does not apply to the SIM800C module which is a part of the device.

Scope of delivery

1.EasyGSM communicator	1 pcs.
2.ADA0068 antenna	1 pcs.
3.Mounting racks	3 pcs.
4.Jumper	1 pcs.
5.Installation and user guide	1 pcs.

Appendix 1: Service numbers of the GSM operators.

The SIM card balance checking service numbers for the Ukrainian cellular network operators are shown below. Your operator number must be written to the entry №6 (GB013) of the phone book.

Kyivstar GSM	*111#
lifecell:)	*111#
Vodafone	*111#
MTC	*101#
Balance check disabled	#####

Appendix 2: Examples of the device connection.

The examples of device connection to different external hardware and in different operating modes are displayed below.

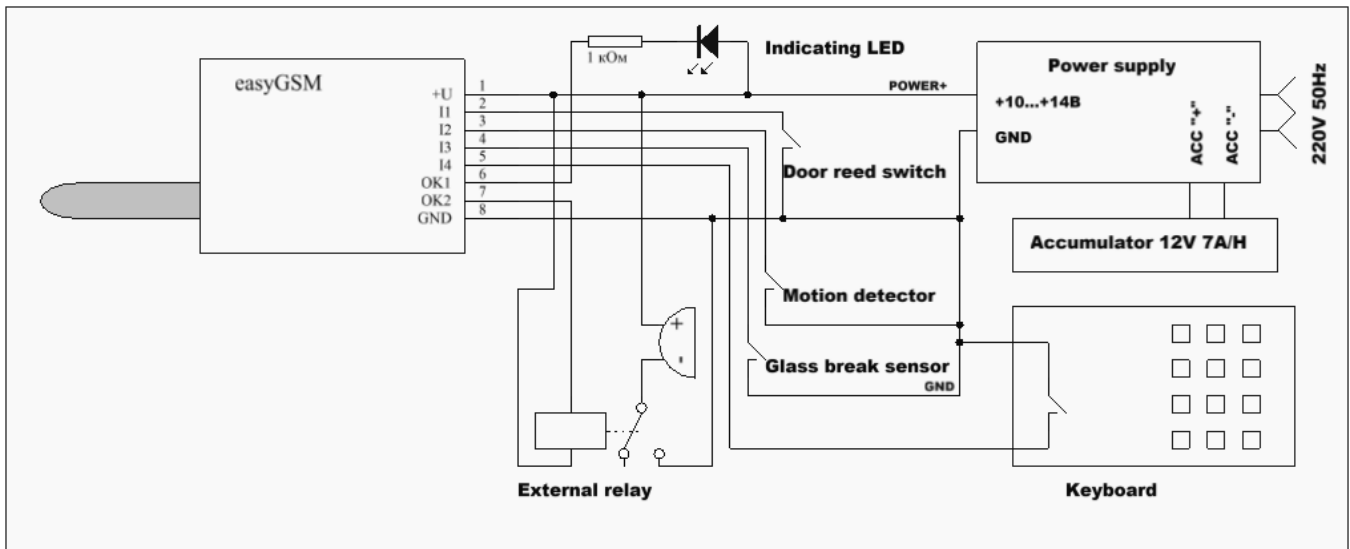


Figure 5. An example of the easyGSM connection as a 3-zone security alarm with the external keyboard-encoder.

Minimal list of necessary changes to the device's phone book template:

GB001: phone number of the user 1. (+380XXXXXXXXXX)

GB005: 11111111(I1-I5, Low power, Money, Reboot, Life Pulse.)

GB010: 1 – security alarm mode.

GB015: 11100; GB017: 00010; GB018: 00010; GB019: 3; GB020: 4;

000027: ARMED

000032: DISARMED

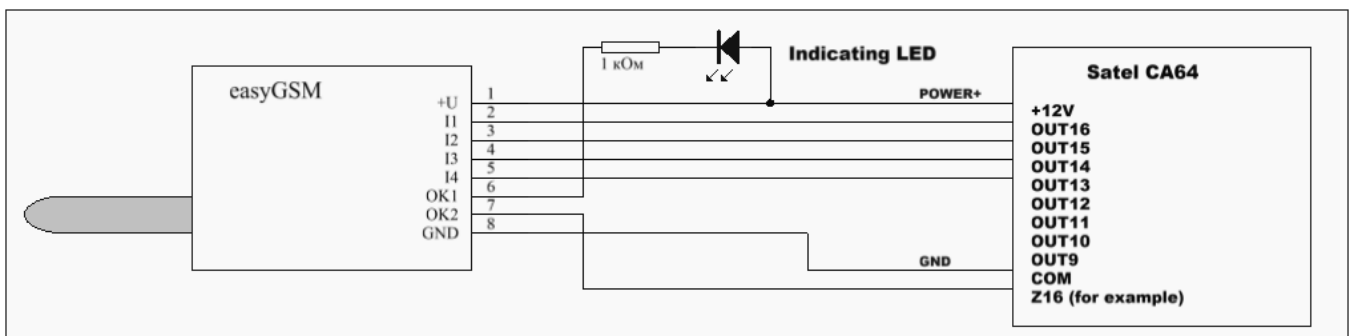


Figure 6. An example of the easyGSM connection as a 4-zone communicator for security alarm Satel CA64.

Minimal list of necessary changes to the device's phone book template:

GB001: phone number of the user 1. (+380XXXXXXXXXX)

GB019: 0 or 1; GB0202: 2;

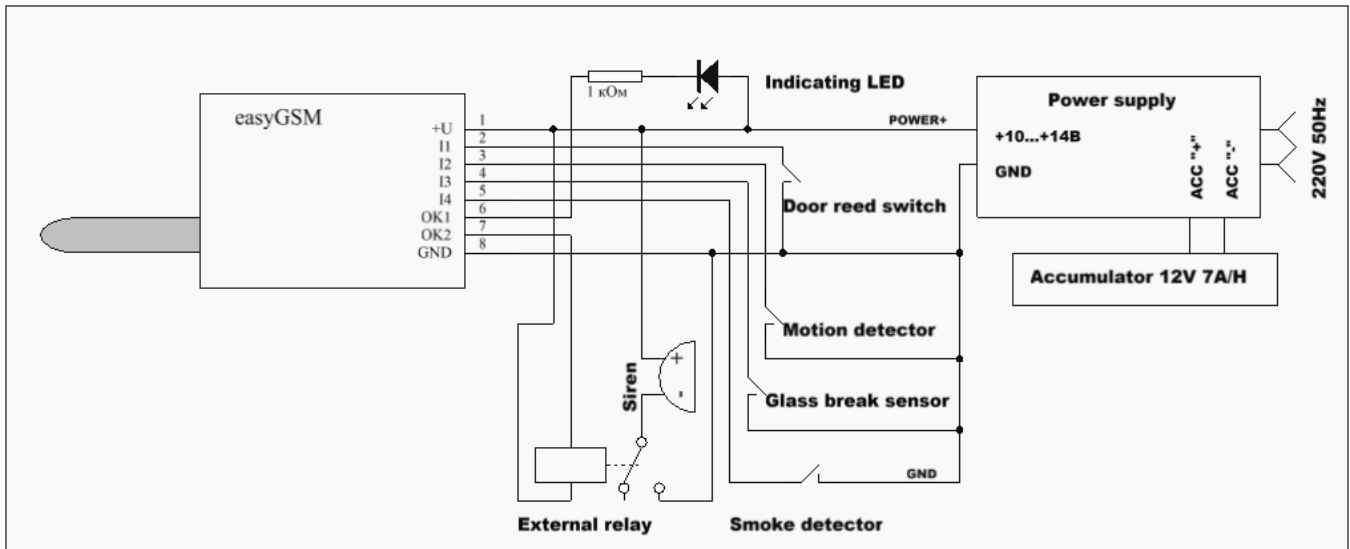


Figure 7. An example of the easyGSM connection as a 4-zone security alarm without the external keyboard-encoder.

Minimal list of necessary changes to the device's phone book template:

GB001: phone number of the user 1. (+380XXXXXXXXXX)

GB005: 11111111(I1-I5, Low power, Money, Reboot, Life Pulse.)

GB010: 2 – Security alarm mode with virtual input used for arming/disarming.

GB015: 11110; GB017: 00001; GB018: 00001; GB019: 3; GB020: 4;

000028: ARMED

000033: DISARMED

Appendix 3: Table of settings

For your convenience you can write to **Table 11** values that differ from the factory settings.

Table 12.

Name/№ of entry	Value	Note
GB001		
GB002		
GB003		
GB004		
GB005		
GB006		
GB007		
GB008		
GB009		
GB010		
GB011		
GB012		
GB013		
GB014		
GB015		
GB016		
GB017		
GB018		
GB019		
GB020		
GB021		
GB022		
GB023		
000024		
000025		
000026		
000027		
000028		
000029		
000030		
000031		
000032		
000033		
000034		
000035		
000036		
000037		
000038		
000039		
000040		
000041		
000042		