

The **MobilCom-7** GSM communicator unit is a security device that can be connected to any fire alarm center or burglary alarm center. It is capable of transmitting different alarm center initiated reports to both landline numbers and GSM numbers too. The module has been designed for DTMF Contact ID type communication and reports in real-time as a landline substitute device. The GSM communicator is constantly monitoring the presence and activity of the telephone line, instantly switching to GSM mode if necessary. The module has an SMS input, enabling it to be configured to send customized SMS-s to a configured telephone number in case of appropriate contact - the Forced GSM and Forced Line inputs allow the module to be switched to either GSM or phone modes regardless of the line status (e.g. through the alarm center's PGM output). Each GSM communicator function is configurable separately via SMS.

### 1. How the GSM communicator works:

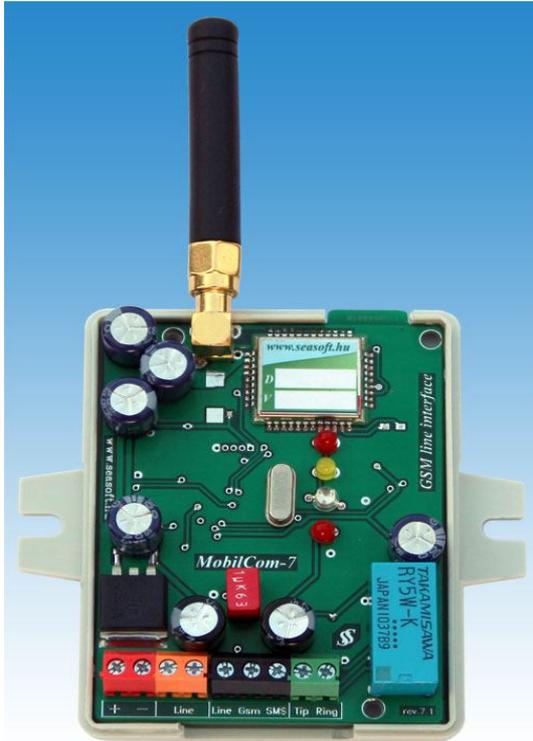
The GSM communicator is designed also to be placed in the alarm center's enclosure with its magnetic antenna on top of the metal box. The GSM communicator requires **12-15Vdc** voltage - and it is suggested to be connected into the burglary or fire alarm center's **12V** battery connection, due to the increased power demand during communication. The **MobilCom-7** GSM dialer has 3-input pair connections: a two point **12-15Vdc** supply input, a public telephone line port, an SMS-trigger input, a Tip-Ring connector, and the industrial GSM modem with SMA auxiliary antenna input. The interface has been designed specifically for different alarm centers, thus it fills the specific bandwidth requirements and it is equipped with noise filtering functionality required by DTMF type data transfers. The interface has been designed for one-way communication, (only for reports) therefore it cannot receive external phone calls. For the same reason, it is not capable of downloading alarm center configurations via GSM line, while mobile and landline calls can be initiated via the device. The SMS input has dual role: in the case of alarm, it can send an SMS to the user's phone or it can be configured to send a **ContactID** message via SMS to the central monitoring system. The service provider may send an SMS to the GSM communicator - e.g. in the case of using a prepaid card, the carrier will provide credit balance information.



This is the reason why the GSM communicator forwards every incoming SMS to the previously given participant (i.e. for a specified user or the user of a central monitoring system). Enabling and disabling this function can also be configured via SMS. The **MobilCom-7** GSM communicator landline substitute device normally communicates via telephone line and it switches to GSM line only in the case of absence of line voltage. At present we manufacture the **MobilCom-7** GSM dialer also without enclosure, thus we suggest to use the panel only into alarm centers and not using it as a standalone unit.

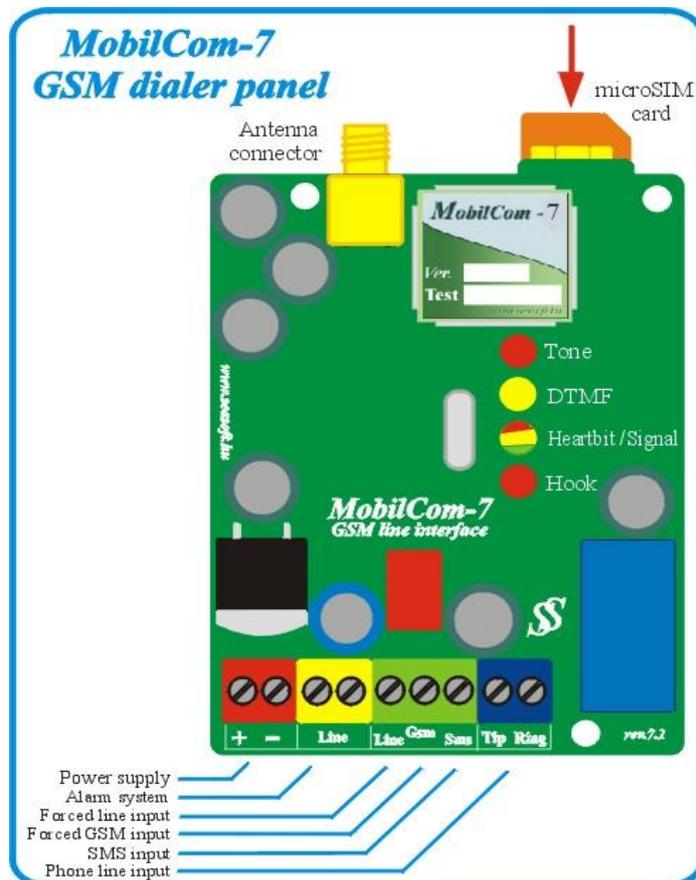
## 2. Wiring of the MobilCom-7 GSM communicator interface module:

According to the picture below, the interface has the following connection points and different colored LED signal diodes. The power input marked with "+" and "-" requires polarity dependent



power supply labeled on board, which must be between **12-15Vdc**. The Phone line and Tip-Ring inputs are polarity-independent. The mode-switch inputs of the SMS, GSM and phone line can be activated by switching the power input to its negative (ground) point, so usually it is directed by the PGM output of the central alarm center. The module does continuous phone line tests. When it cannot detect the voltage in the phone line in **2 minutes** after the test, it switches to GSM mode. When the user switches the to **Forced Line** input, the module will always use phone line, and when switches to **Forced GSM**, the module will always use the GSM line. If the user activates the **Forced SMS** input a pre-configured SMS will be sent to the configured phone number. The connection of the aerial is very easy; it has to be connected into the **SMA** input. Place the aerial a little farther from the module by providing the appropriate signal strength. The increased noise or interference level of the GSM due to a wrong positioning of the antenna can disturb communication.

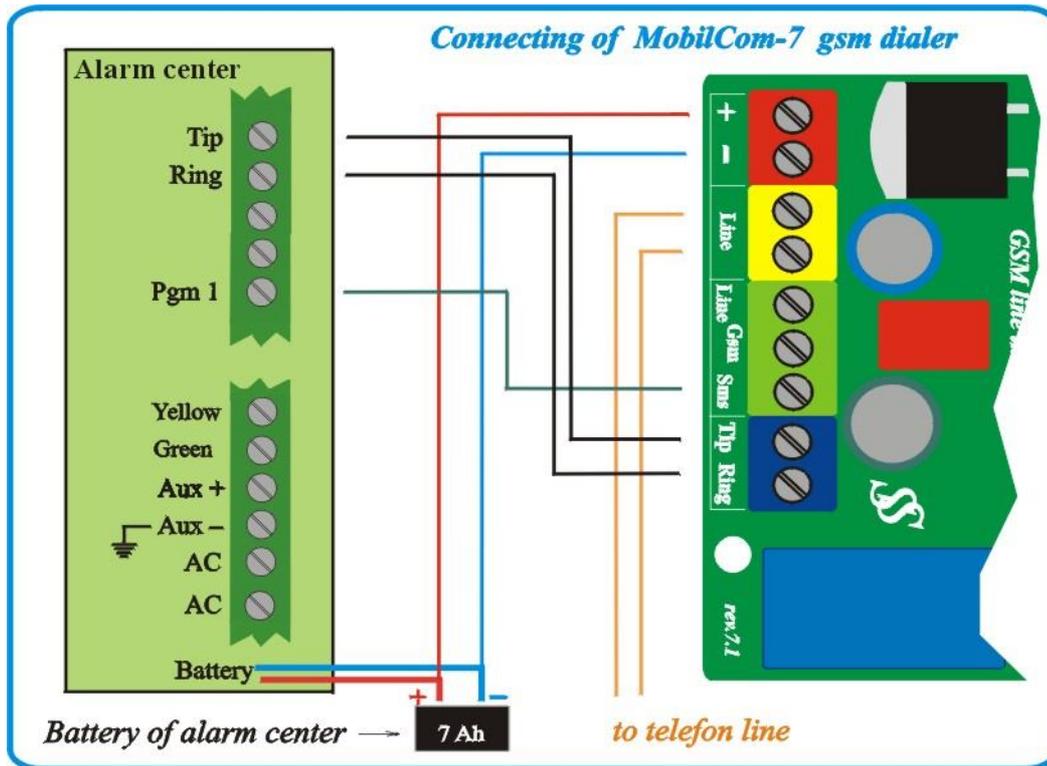
The GSM aerial has to be connected to the module before turning it on, because the GSM module might get damaged when used without a connected aerial.



### Connectors of MobilCom-7 interface

- Above:**
- Aerial input
  - microSIM card socket
- Below:**
- Power input
  - Telephone line input
  - Forced Line input
  - Forced SMS starter input
  - Forced GSM input
  - Alarm center tip-ring points

### 3. Installing the MobilCom-7 communicator:



- ✓ Connect the GSM dialer modul to the alarm center as it is shown above
- ✓ Turn off the SIM PIN code request from the SIM card using a regular GSM phone.
- ✓ Insert the SIM-card into the card slot of the GSM transmitter module.
- ✓ After the connection of the aerial, please connect the module and power it up, then nnect it to the alarm center and to the telephone line.
- ✓ Wait until the module connects automatically to the network about in 1 minute, and the colored Hbit led turns to green and starts blinking slowly. The number of blinking also indicates the quality of the signal.
- ✓ Send the configuration SMS-s from a GSM phone in the order described above, and always wait for the response SMS.
- ✓ After receiving the last SMS, the module will be operational and it can be tested

### 4. Other facts:

Regarding to the device functionality, GSM networks and the specialty of GSM voice calls and SMS-s, the module requires further remarks:

- ✓ The device can be operated with any microSIM card
- ✓ The received unknown SMS-s, including the ones sent from the carrier (including the balance check SMS) are forwarded to the first telephone number, if the first telephone number is specified in the configuration.
- ✓ If a pre-paid SIM card is used and the balance reaches zero, the device can remain operational however it cannot send further SMS-s or initiate calls. In this case it is advised to regularly check the balance of the card.

- ✓ All members of the **MobilCom** family can operate only with SIM cards that are not protected with PIN codes. Please note that the SIM PIN is not equal to the module PIN number.
- ✓ Before device use, the PIN code has to be removed from the SIM card.
- ✓ By using pre-paid SIM card, showing the caller ID must be enabled. This can be performed by contacting the carrier's customer service.
- ✓ Call-forwarding and SMS reminders about missed calls sent by the carrier must be disabled on the SIM card.
- ✓ The alarm center is recommended to be configured for Contact ID communication. When using other types of communications, the data transfer is unreliable. When the signal is good enough, the reliability of the GSM communication is as secure as the communication on conventional telephone line.
- ✓ The dialing can be only Dtmf type. The pulse-based dialing is not working.
- ✓ The dialed number in alarm center has to be configured in full length international format: e.g. "+" **Country\_code** xxxxxxxx,etc. (similar format as this hungarian number: +36 30 255 7688)
- ✓ The interface module can initiate calls in GSM mode, but it cannot receive external calls, because it doesn't have any call indicator.

## 5. SMS orders for the configuration of the module:

In case of using the SMS input (optional) of **MobilCom-7** communicator there are required SMS orders that have to be sent to the GSM module in the following order, one after the other:

1. **!!1234C36309888000** **PIN code** of device is **1234** (this is not the SIM card PIN code!)  
**C** means the setting of the SMS center  
**36309888000** - number of the SIM center in international format
2. **!!1234T36305010125** **PIN code** of device is **1234**, **T** order is the user's phone number, which is 363095010125 in international format
3. **!!1234U9876** **PIN code** of device is **1234**, **U** order means the change of the PIN code by the user, the new PIN code of the device here, for example, will be 9876.
4. **!!1234X1** **PIN code** of device is **1234**, **X** order is the turning off (0) or on (1) of the SMS sending, if connected **0V** (ground) to this input
5. **!!1234ST-Burglary** **PIN code** of device is **1234**, **ST** is the order to change the SMS text, where Burglary will be the new SMS
6. **!!1234S?** **PIN code** of device is **1234**, **S?** queries the SMS text.  
*Answer Sms e.g.:* ST-Burglary, where Burglary is the content of the new SMS
7. **!!1234M1** **PIN code** of device is **1234**,  
**M1** is the order to forward the SMS to the programmed phone number, where the forwarding can be turned off (0) and on (1).
8. **!!1234R** **PIN code** of device is **1234**, **R** is the order to query the settings  
*Answer Sms e.g.:* **U:1234\_C:36309888000\_T:36305010125\_X0\_M1**  
where:  
**U** - user, **C** - SMS central number, **T** - user's phone number,  
**X** -SMS sending, **M** means the SMS forwarding

## 5. Explanation status of LEDs on top side

On the upper right part of the GSM interface panel in order to indicate the status of the device, there are red, green-red, white and yellow LED diodes with their following functions:

<b>Blue colored "Tone" LED:</b>		
Continuously:	It turns on for a few hundred milliseconds when the GSM communicator gives a sign to the central station to start the communication (so called Handshake). It turns also on when the central station gives a sign for a short time after receiving a succesfull data pack (so called Kiss-off)	
<b>Yellow colored "Dtmf" LED:</b>		
Blinking:	It turns on for a short time when dialing, when data-transfer of the alarm center is active, or when any number is sent. The dialing, the flow and even the attempt of communication can be checked this way.	
<b>Bi-Color "Hbit" LED:</b>		
Blinking green	“Heartbeat” (indicates signal strength): The green blinking refers to the strength of cellular signal. Less-frequent blinking indicates weaker signal, more frequent blinking refers to stronger signal; according to the followings:	
	1 blink, pause:	weak signal; the device might completely lose signal and disconnect from network. It is worth to consider re-locating the device.
	2 blinks, pause:	weak signal; the device can restart which results in ~30 seconds of outage in operation.
	3 blinks, pause:	moderate signal; the device can operate stable.
	4 blinks, pause:	strong signal; the device can operate stable.
	5 blinks, pause:	maximum signal strength, the device can operate stable.
Red-green fast blinking:	<ul style="list-style-type: none"> <li>- the GSM module cannot find network, or</li> <li>- the signal strength is not enough for operation, or</li> <li>- faulty antenna, or</li> <li>- SIM card error, or the SIM card is not entitled for voice calls, or</li> <li>- SIM card is locked with PIN code</li> </ul>	
<b>Red colored "Hook" LED:</b>		
Continuously:	During the communication the "hook is on" for a longer time. It is lighting when the alarm system starts to communicate and it is in the active part of communication.	

## Specifications :

Power supply:	<b>12–15 Vdc</b>	GSM type:	<b>2 band industrial GSM</b>
Standby current:	below <b>30 mA</b>	Band:	<b>900/1800MHz</b>
Mean current:	<b>70 mA</b>	Communication:	<b>DTMF Contact ID</b>
Max. current:	<b>290 mA</b>	Dial:	<b>DTMF in international format</b>
Tip-Ring voltage:	min. <b>12 Vdc</b>	Dial tone appr.:	<b>360Hz</b>
Panel size:	<b>71 mm x 51 mm</b>		

*SeaSoft Ltd - 2016*