

GSM DIALING MODULE FOR REMOTE CONTROL AND EMERGENCY COMMUNICATION

GSM dialing modules are widely used in variety of applications, where remote control and management is required. They are available in two different sets with same functionality and setup:

SMART DIALER set – suitable for home or other automation, for monitoring and security in home and office. It can be used to remote control any electric appliances like air conditioners, heaters, smart home systems and many more.

LIFT DIALER set – suitable for any emergency communication. Especially designed for public lifts and elevators when emergency technical service or support is necessary. It can be used for remotely restart the elevator's main controller.



Device description:

These modules operate via GSM network only and SIM cards from any mobile operator can be used. They can activate an output after incoming voice call or SMS message. They can also initiate a voice call or send an SMS to predefined number after an input is triggering. Many other combinations also can be set, depending on user's preferences.

- Can work with GSM network of any mobile operator.
- Very quick and simplify setup via PC or SMS - they are able to work after single SMS.
- Supports **500** phone numbers for remote control and voice communication.
- Supports **5 main** phone numbers which can be dialed and notified with SMS for events.
- Internal algorithms for automatic redialing of all 5 predefined main numbers.

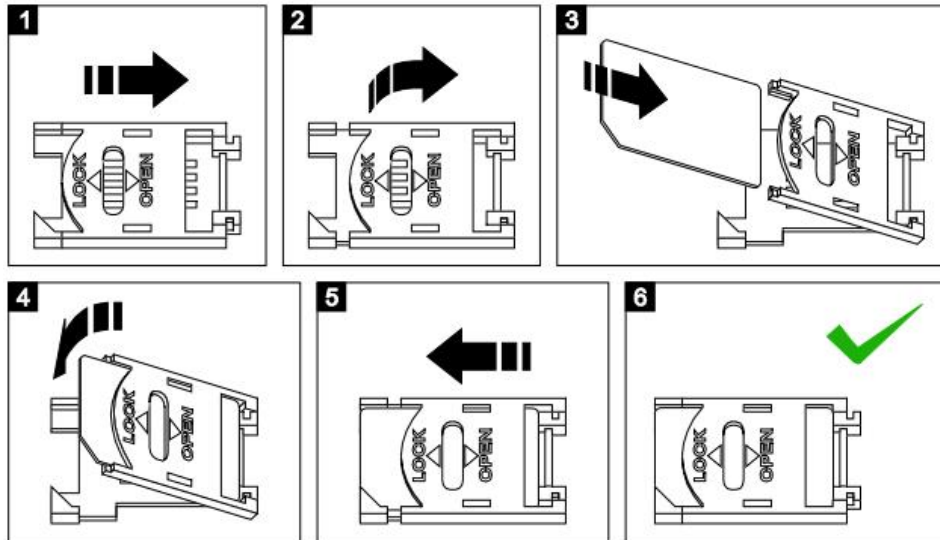
- Two digital inputs are available and when triggered they can initiate a voice call, SMS send or both.
- Separate triggering filter can be set for each input.
- Any alarm system can be connect to dialer's inputs, so the module can notify with voice call or SMS in case of alarms or troubles.
- Two programmable outputs are available at user control. The outputs can be setup in different modes; can be activate with SMS, with voice call or combination of both. Suitable for remote control of external electric devices.
- By connecting one of the outputs to a LED indicator, the status of a voice call can be visualize – dialing, ringing and active call.
- In case of power supply failure, each output keeps its last state and resumes it after power restore.
- SMS message can be send to predefined numbers each time an output is activate. The message can be user customized.
- A dedicated 12VDC power output is available;
- Supports two-way audio communication when connecting additional microphone and speaker.
- Supports remote volume control and microphone adjustment in real time by using DTMF in active voice call.
- Full device state request via SMS.
- GSM signal level tracking for choosing best antenna position.
- SMS notification for power supply state.
- Absolutely free PC configuration tool.

Both SMART DIALER and LIFT DIALER share same functionality. The LIFT DIALER set has in addition:

- Internal LiION battery with charger, which allows it to work after power failure up to 12 hours in standby mode and up to 60 minutes in active voice call.
- The dedicated 12VDC power output will continue to work because of the internal battery.
- Two-way audio communication is directly available in this set because of the integrated speaker and the microphone provided.
- Easy to install and suitable for all kind of lifts and elevators.

Quickstart installation

1. Open the device box and insert the SIM card into the holder as shown in the picture below. Make sure the PIN code was disabled before that. The SIM card have to be with allowed voice and SMS services.



2. Connect the GSM antenna to the module.

3. LIFT DIALER only:

Install a push button (with N.O. contact) for triggering an emergency call and a LED indicator for its status (12V rated or with 1kΩ resistor in serial) inside the lift cabin. Wire the button between terminals **IN1** and **IN2**. Connect the indicator to **+12V OUT** and **LED OUT** terminals (keep in mind its polarity). Connect the microphone to the **MIC-** and **MIC+** terminals. The red wire has to be connect to MIC+ terminal.

4. Connect the power supply to the module. Typical wiring diagrams are available at the bottom of each module's box.

For SMART DIALER: Power up the module from a regulated 12VDC/1A power supply or other suitable power source.

For LIFT DIALER: Power up the module from the cabin's power supply or other suitable power source with the proper voltage range.

5. After powering on the module, it will need up to 1 minute to connect to GSM network. The connection is successful after blinking of module's internal LED is change from fast to slow.

6. To program the **main** (service) number, following SMS have to be sent to the module: **t1,+44xxxxxxxxxx** (where the first part is the country code and the **xxx...** are the digits of the main service number). **For example:** a phone number 0888 123456 shall be sent in SMS as **t1,+44888123456**

7. If the module receives the sent SMS successfully, it will reply you back with confirmation.
8. In order to make a full run test, push and hold the **TEST** button for 3 seconds. The LED indicator will start to blink and the module will start to dial the main number. The test will complete successfully when a call to this number is made.

For LIFT DIALER: The test can be done also with push and hold the connected emergency button for 5 seconds. The connected LED indicator will start to blink and the module will start to dial the main service number. The test will complete successfully when a call to this number is made.

9. **SMART DIALER only:**

To setup the triggering of output 1 after a phone call, the following SMS have to be sent: **call,out,t1** To test this functionality, make a call to the inserted SIM card. The output will change its state and will activate an external relay, if it is connected.

10. Close the device box and mount it on a suitable place.

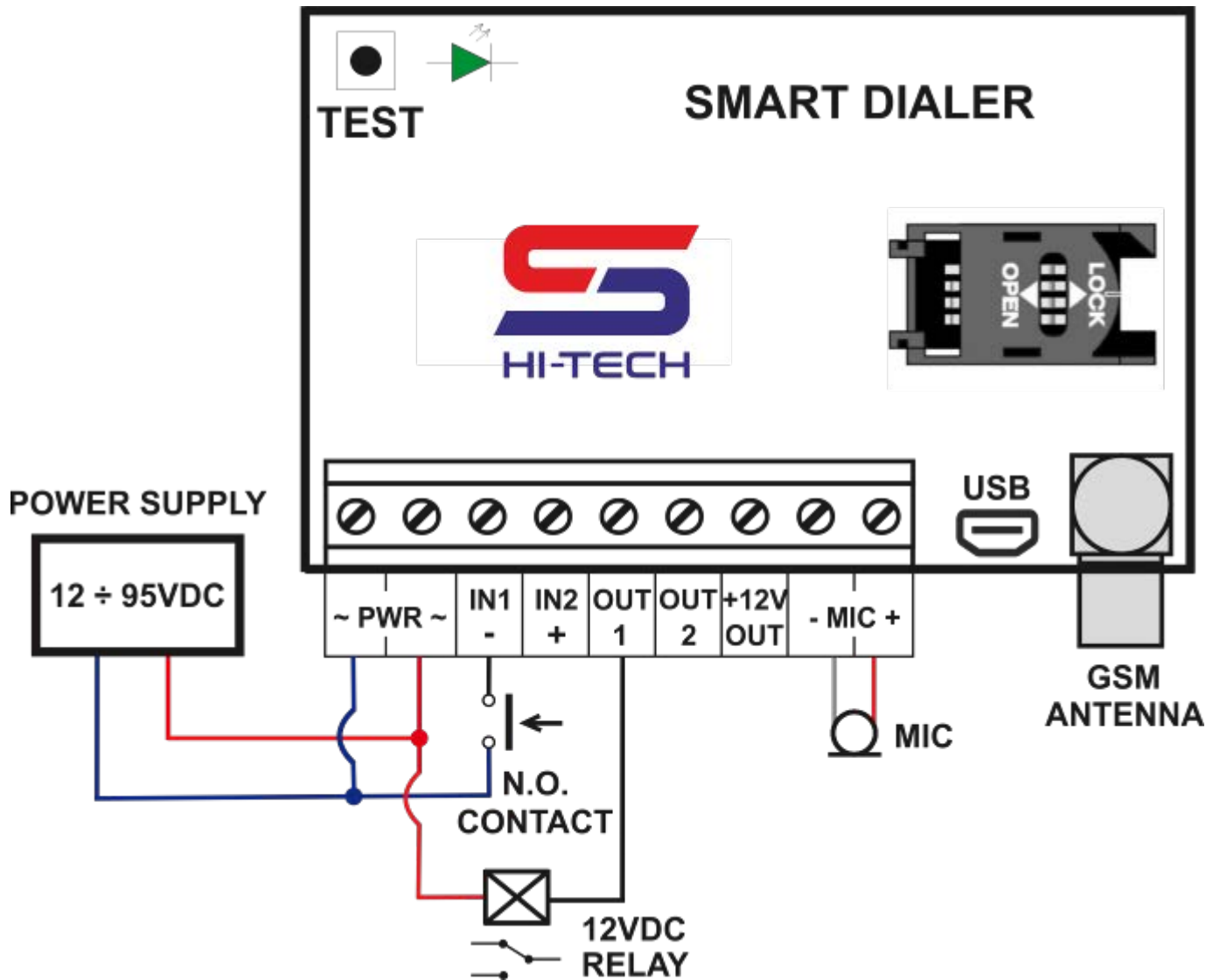
IMPORTANT:

If the SIM card inserted is not allow to send SMS, then you will not be able to receive any replies from the module. As a backup option, the SMS delivery notification can be use. It has to be allow in the sending phone before that.

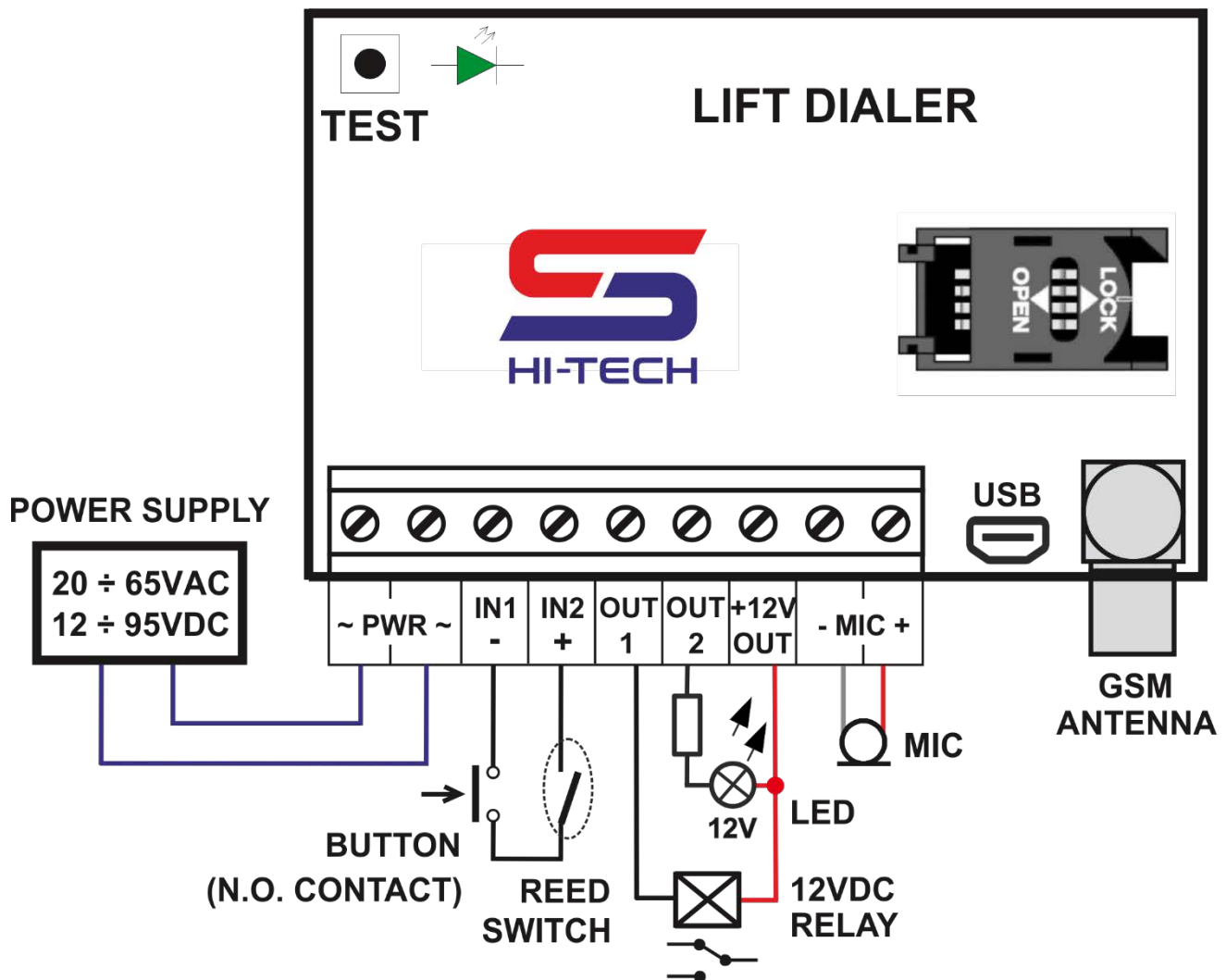
If the main number has not been send correctly or is not available any more, the only way to change or remove it is to reset the module to the factory settings.

TYPICAL WIRING DIAGRAMS

SMART DIALER



LIFT DIALER



This module can be installed behind the cabin's button panel with adhesive tape. The emergency push button and LED indicator have to be installed at the front panel. There must be free space in front of the microphone and the speaker for better acoustics.

Advanced settings

All settings can be done with **SDServiceModule** via PC and a standard micro USB cable. **SDServiceModule** is a completely free programming tool and is available for download from our website: www.smart-hitech.eu

Manual setup via SMS messages to the SIM card inserted into the module is also available. Full description of all SMS setup commands is describe in this document.

Up to 500 phone numbers can be stored in the module. They can control its outputs remotely with voice calls to the SIM card inserted or make a two-way voice call. From these 500 phone numbers, only the first **5** (named as t1, t2, t3, t4, t5) can be dialed or notified by SMS for a predefined event. The phone number entered on the first position (**t1**), is considered as the administrative (or service) one. A setting SMS for **add**, **change** or **remove** any of the other 499 numbers can be send by him only.

With these first 5 phone numbers the module can make two way communication with voice calls and SMS. The voice calls can be with one or two way audio depending on the connected microphone and speaker. SMS notification can be done after an input or output is triggered, or regularly with current module status.

Calling any of the first 5 phone numbers can be done either by triggering one of the inputs or by pressing the built-in **TEST** button (*will call only t1*). The input triggering time can be setup, the factory settings are *1 second* for Input 1 and *3 seconds* for Input 2. Call order starts always with the first number (*t1*). If any of the calling numbers does not answer within 20 seconds, the internal algorithm will proceeds to call the next one in the list. Call redials can be set if all calls are unsuccessful, the factory settings are 2 redials. A call, less than 3 seconds will be repeated. A call more than 3 seconds will end the redial algorithm. During a call, the speaker volume and the microphone sensitivity can be adjust via DTMF codes from the caller's telephone. This is done by pressing the keypad numbers - **1** (Down) and **3** (Up) for the microphone and **7** (Down) and **9** (Up) for the speaker. Pressing the keypad number **5** during a call will activate output 1 (OUT1) for 5 seconds. Various type of devices can be control remotely if an external relay is connect to this output – water pumps and heaters, lighting, air conditioning, etc.

The module's power supply is designed to have wide input range without rectification. In order to drive external loads, a dedicated **12VDC** regulated power output is available. From this power can be supplied an external LED indicators and relays. When internal battery is available, this 12VDC power output will continue to work even if the main power is off. This fact must be take into account, because it will draw the battery quicker than normally.

All outputs are open collector type and connect the loads to ground. Working mode for Output 2 can be change from a standard output to an indicator control output. Its factory set is indicator mode (LED) and is use to visualize the call status via connected LED indicator. It will light constantly when an input is trigger or the TEST button is

pressed. Starting the call to a phone number from the list, will start blinking the LED and will switch to constant light again when the call is answer.

SMS COMMAND LIST

- Only the main number (the administrative one *t1*) can set or change a setting via SMS.
- All SMS commands must be in English and are not case sensitive.
- The phone numbers have to be set in one of the following formats: +44... or 0044...

1. Phone numbers setup

1.1. Main phone number setup

To setup the main number in a factory reset module, a single SMS with the following text have to be send to the SIM card inserted: **t1,+44xxxxxxxxxx** , where xxxxxxxxx is the main number digits

Command	t1,+44xxxxxxxxxx
Example	<i>t1,+44123456789</i>
Answer	<i>Dialer 1. t1 is set successfully.</i>
Description	Set or change the main phone number.

In order to change already set **t1** number, an SMS command with the new phone number have to be send. This SMS have to be send from the old (already set) number.

If the main phone number has not been send correctly or is not available any more, the only way to change or remove it is to reset the module to the factory settings.

1.2. Additional phone numbers setup

Only the main number can add or change the additional phone numbers. The setup SMS commands are:

Command	t2,+44xxxxxxxxxx t3,+44xxxxxxxxxx t4,+44xxxxxxxxxx t5,+44xxxxxxxxxx
Example	<i>t2,+44123123123</i>
Answer	<i>Dialer 1. t2 is set successfully.</i>
Description	Set or change the specified additional phone number

To confirm the successful operation, the module will return an SMS to the specified additional number.

To change an additional phone number, the same SMS command with the new number have to be send. All settings from the old number will transfer to the new one.

The rest of the phone numbers (from t6 to t500) can be set with or without specifying the number position.

To set a phone number with specifying the position is as described so far.

Command	t300,+44xxxxxxxxxx
Example	t300,+44123123123
Answer	Dialer 1. t300 is set successfully.

To set a phone number without specifying its position – the module will save it at the first available position. If there is no empty place, an error message will be send.

Command	t,+44xxxxxxxxxx
Example	t,+44123123123
Answer	Dialer 1. t10 is set successfully. – The phone number was saved on the first available position, which in this case is t10.

REMINDER: All additional phone numbers from **t6** to **t500** cannot be dial from the module and will not receive SMS notification for any change in inputs and outputs.

1.3. Removing additional number

Command	t2,del t3,del t4,del t5,del t100,del
Answer	Dialer 1. The command executed successfully.
Description	Remove the specified additional number from the memory.

Removing a phone number will remove all its settings also. If we want to set a phone number to this position again, all connected parameters have to be set also.

1.4. Requesting numbers from t1 to t5

Command	t?
Description	Requests all phone numbers from t1 to t5. Unused positions are display with blank fields.
Answer	Dialer 1. t1=+44123456789, t2=+44123456789, t3=+44123456789, t4=, t5=

1.5. Requesting numbers from t6 to t500

Command	t?,x
Description	Requests the phone number at position x , where x is a number from 6 to 500.
Example	<i>t?,500</i>
Answer	<i>Dialer 1. t500=+44123456789</i>

2. Incoming call scenarios

How the module response to an incoming call from an authorized number can be set up. **The factory settings are answering to calls from the first 5 numbers and triggering OUT1 if the calls are from the rest 495 numbers.** Other possible options are rejecting the call, triggering one of the outputs or both.

Output 2 will work only if it is set as general output – Trigger and Pulse modes.

2.1. Incoming call scenarios for numbers t1 to t5

Command	call,voice,t1,t2,t3,t4,t5
Description	Sets the module to answer a call from the specified numbers. This is the default setting after factory reset.
Example	<i>call,voice,t1,t2</i> Will answer to calls from t1 and t2.
Command	call,voice?
Description	Requests the settings entered with call,voice,t1,t2,t3,t4,t5
Example	<i>call,voice?</i> Will return an SMS with <i>Dialer1. call,voice,t1,t2,</i>

Command	call,out1,t1,t2,t3,t4,t5
Description	Sets output 1 to activate after a call from the specified numbers.
Example	<i>call,out1,t1,t2,t3</i> Will activate the output 1 after a call from t1, t2 or t3.
Command	call,out1?
Description	Requests the settings entered with call,out1,t1,t2,t3,t4,t5
Example	<i>call,out1?</i> Will return an SMS with <i>Dialer 1. call,out1,t1,t2,t3,</i>

Command	call,voice+out1,t1,t2,t3,t4,t5
Description	Sets the module to answer a call from the specified numbers and to activate output 1.
Example	<i>call,voice+out1,t1</i> Will answer to call from t1 and will activate output 1.

Command	call,voice+out1?
Description	Requests the settings entered with call,voice+out1,t1,t2,t3,t4,t5
Example	<i>call,voice+out1?</i> Will return an SMS with <i>Dialer 1. call,voice+out1,t1,</i>

Command	call,out2,t1,t2,t3,t4,t5
Description	Sets output 2 to activate after a call from the specified numbers.
Example	<i>call,out2,t1,t2,t3</i> Will activate the output 2 after a call from t1, t2 or t3.

Command	call,out2?
Description	Requests the settings entered with call,out2,t1,t2,t3,t4,t5
Example	<i>call,out2?</i> Will return an SMS with <i>Dialer 1. call,out2,t1,t2,t3,</i>

Command	call,voice+out2,t1,t2,t3,t4,t5
Description	Sets the module to answer a call from the specified numbers and to activate output 2.
Example	<i>call,voice+out2,t1</i> Will answer to call from t1 and will activate output 2.

Command	call,voice+out2?
Description	Requests the settings entered with call,voice+out2,t1,t2,t3,t4,t5
Example	<i>call,voice+out2?</i> Will return an SMS with <i>Dialer 1. call,voice+out2,t1,</i>

Command	call,outs,t1,t2,t3,t4,t5
Description	Sets both outputs to activate after a call from the specified numbers.
Example	<i>call,outs,t1,t2,t3</i> Will activate the both outputs after a call from t1, t2 and t3.

Command	call,outs?
Description	Requests the settings entered with call,outs,t1,t2,t3,t4,t5
Example	<i>call,outs?</i> Will return an SMS with <i>Dialer 1. call,outs,t1,</i>

Command	call,voice+outs,t1,t2,t3,t4,t5
Description	Sets the module to answer a call from the specified numbers and to activate both outputs.
Example	<i>call,voice+outs,t1</i> Will answer to a call from t1 and will activate both outputs.

Command	call,voice+outs?
Description	Requests the settings entered with call,voice+outs,t1,t2,t3,t4,t5
Example	<i>call,voice+outs?</i> Will return an SMS with <i>Dialer 1. call,voice+outs,t1,</i>

Each new command for a specified phone number will override its current settings.

Example: If the following sequence of commands has been executed:

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call,voice,t1,t2
call,voice+out1,t1,t2
call,voice+out2,t1,t2
call,outs,t1,t2
```

Then the settings from the last one will be valid for t1 and t2.

2.2. Incoming call scenarios for numbers t6 to t500

It is done the same way as for numbers from t1 to t5. The only limit is that one SMS can assign up to 5 numbers at once.

Command	call,voice,t100,t223,t403,t414,t500 call,out1,t100,t223,t403,t414,t500 call,out2,t100,t223,t403,t414,t500 call,outs,t100,t223,t403,t414,t500 call,voice+out1,t100,t223,t403,t414,t500 call,voice+out2,t100,t223,t403,t414,t500 call,voice+outs,t100,t223,t403,t414,t500
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2.3. Request settings for incoming calls for numbers t6 to t500

Unlike the setup command, where up to 5 numbers can be set, the request command can ask for the settings of **only** one number.

Command	call,t?,x
Description	Requests the settings for incoming call from number with position X .
Example	<i>call,t?,200</i> Can return an SMS with <i>Dialer1. call,outs,t200</i> It means for incoming call from the number at position 200, the module will activate its both outputs.

The factory settings for all these numbers are to activate OUT1 after incoming call.

3. Output settings and control

Both outputs **OUT1** and **OUT2** can be trigger via voice call or SMS. In order to do it the corresponding permissions to the calling numbers have to be set.

Two main work modes can be set for the outputs: **Trigger** and **Pulse**. In **Trigger** mode, each call or SMS from authorized number will change (or invert) the output state. In **Pulse** mode, every call or SMS will activate (turn on) the output for a predefined period. After this period expires, the output will restore (turn off) automatically.

Trigger mode example: The output's current state is turned off. After a voice call from authorized number, the output will activate and will not change until the next time, when a new voice call will turn it off again.

Pulse mode example: The output's current state is turned off. After a voice call from authorized number, the output will activate for 5 seconds. After these 5 seconds, it will turn off. A new voice call will repeat the sequence.

For the second output can be setup additional working mode – driving an external LED indicator. This mode is its default factory set and is use to visualize the call status via a connected LED indicator. Starting a call to a phone number will start blinking the LED. When the call is answer, the LED light will change to constant light.

3.1. Voice call triggering

Command	out1,trigger
Description	Sets the trigger mode for OUT1 when dialed. This is the default setting after factory reset.
Command	out1,pulse,XX
Description	Sets the pulse mode for OUT1 when dialed with ON period XX seconds. Period can be change from 1 ÷ 60 seconds. The default pulse period for OUT1 is 1 second.
Example	<i>out1,pulse,10</i> Will activate the output for 10 seconds and then will turn it off.
Command	out1?
Description	Requests the settings entered with out1,trigger and out1,pulse,XX
Example	<i>out1?</i> Will return an SMS with <i>Dialer 1. out1,trigger</i> and <i>Dialer 1. out1,pulse,10sec</i>

Command	out2,trigger
Description	Sets the trigger mode for OUT2 when dialed. This is the default setting after factory reset.
Command	out2,pulse,XX
Description	Sets the pulse mode for OUT2 when dialed with ON period XX seconds. Period can be change from 1 ÷ 60 seconds. The default pulse period for OUT2 is 3 seconds.

Example	<i>out2,pulse,10</i> Will activate the output for 10 seconds and then will turn it off.
Command	out2?
Description	Requests the settings entered with out2,trigger and out2,pulse,XX
Example	<i>out2?</i> Will return an SMS with <i>Dialer 1. out2,trigger and Dialer 1. out2,pulse,10sec</i>

REMINDER 1: In order to execute the settings for output 2, it has to be set as general-purpose output.

REMINDER 2: If the output has been activated when receiving a new SMS with setup command (**out, trigger** or **out, pulse, XX**), it will turn it off until the next trigger event.

3.2. SMS triggering

The following commands are used to control the outputs via SMS:

Command	setout1,on
Description	Turns on output OUT1 .
Command	setout1,off
Description	Turns off output OUT1 .
Command	setout1,pulse,XX
Description	Turns on output OUT1 for XX seconds.
Example	<i>setout1,pulse,5</i> Will activate output 1 for 5 seconds and then will turn it off.

Command	setout2,on
Description	Turns on output OUT2 .
Command	setout2,off
Description	Turns off output OUT2 .
Command	setout2,pulse,XX
Description	Turns on output OUT2 for XX seconds.
Example	<i>setout2,pulse,5</i> Will activate output 2 for 5 seconds and then will turn it off.

REMINDER: In order to trigger output 2, it has to be set as general-purpose output.

3.3. SMS notification after output state change

The module can be set to send SMS notifications to the 5 main numbers when changing output. The message contains information about the source of triggering.

Command	sms,out1on,t1,t2,t3,t4,t5
Description	Sets the module to send SMS to the specified numbers when changing the OUT1 state.
Example	<i>sms,out1on,t1,t2,t3</i> Will set the module to send SMS to t1, t2 and t3 after OUT1 is changed.
Command	sms,out1on?
Description	Requests the settings entered with sms,outon,t1,t2,t3,t4,t5
Example	<i>sms,out1on?</i> Will return an SMS with <i>Dialer 1. sms,out1on,t1,t2,t3,</i>

Command	sms,out1off,t1,t2,t3,t4,t5
Description	Sets the module to disable sending SMS to the specified numbers when changing the OUT1 state. This is the default setting after factory reset.
Example	<i>sms,out1off,t1,t2,t3</i> Will disable the SMS send to t1, t2 and t3.
Command	sms,out1off?
Description	Requests the settings entered with sms,out1off, t1,t2,t3,t4,t5.
Example	<i>sms,out1off?</i> Will return an SMS with <i>Dialer 1. sms,out1off,t1,t2,t3,</i>

Command	sms,out2on,t1,t2,t3,t4,t5
Description	Sets the module to send SMS to the specified numbers when changing the OUT2 state.
Example	<i>sms,out2on,t1,t2,t3</i> Will set the module to send SMS to t1, t2 and t3 after OUT2 is changed.
Command	sms,out2on?
Description	Requests the settings entered with sms,outon,t1,t2,t3,t4,t5
Example	<i>sms,out2on?</i> Will return an SMS with <i>Dialer 1. sms,out2on,t1,t2,t3,</i>

Command	sms,out2off,t1,t2,t3,t4,t5
Description	Sets the module to disable sending SMS to the specified numbers when changing the OUT2 state. This is the default setting after factory reset.
Example	<i>sms,out2off,t1,t2,t3</i> Will disable the SMS send to t1, t2 and t3.
Command	sms,out2off?

Description	Requests the settings entered with sms,out2off,t1,t2,t3,t4,t5
Example	<i>sms,out2off?</i> Will return an SMS with <i>Dialer 1. sms,out2off,t1,t2,t3,</i>

3.4. Setting the operating mode for Output 2

Command	out2,normal
Description	Sets the OUT2 to operate in Standard (Normal) mode.
Example	<i>out2,normal</i> Will set the OUT2 to work in normal mode.
Command	out2,led
Description	Sets the OUT2 to operate in Indicator (LED) mode. This is the default setting after factory reset.
Example	<i>out2,led</i> Will set the OUT2 to work in indicator mode.
Command	out2mode?
Description	Requests the settings entered with out2,normal and out2,led
Example	<i>out2mode?</i> Will return an SMS with <i>Dialer 1. out2, led mode. or Dialer 1. out2, normal mode.</i>

4. Input settings and control

Two digital inputs are available and after triggering, they can initiate a voice call, SMS send or both actions to the predefined 5 main numbers. Default factory settings for both inputs are to initiate a voice call.

4.1. Outgoing CALL scenarios after input triggering

Command	voice,in1,t1,t2,t3,t4,t5
Description	Sets the module to initiate voice calls to the specified numbers after Input 1 triggering.
Example	<i>voice,in1,t1,t2</i> Will dial t1 and t2 after Input 1 triggering.
Command	voice,in1?
Description	Requests the settings entered with voice,in1,t1,t2,t3,t4,t5
Example	<i>voice,in1?</i> Will return an SMS with <i>voice,in1,t1,t2,</i>

Command	voice,in2,t1,t2,t3,t4,t5
Description	Sets the module to initiate voice calls to the specified numbers after Input 2 triggering.
Example	<i>voice,in2,t1,t3</i> Will dial t1 and t3 after Input 2 triggering.

Command	voice,in2?
Description	Requests the settings entered with voice,in2,t1,t2,t3,t4,t5
Example	<i>voice,in2?</i> Will return an SMS with <i>Dialer 1. voice,in1,t1,t3,</i>

4.2. Outgoing SMS scenarios after input TRIGGERING

Command	sms,in1,t1,t2,t3,t4,t5
Description	Sets the module to send SMS to the specified numbers after Input 1 triggering.
Example	<i>sms,in1,t1,t2</i> Will send SMS to t1 and t2 after Input 1 triggering. <i>Dialer 1. IN1: ON</i>

Command	sms,in1?
Description	Requests the settings entered with sms,in1,t1,t2,t3,t4,t5
Example	<i>sms,in1?</i> Will return an SMS with <i>Dialer 1. sms,in1,t1,t2,</i>

Command	sms,in2,t1,t2,t3,t4,t5
Description	Sets the module to send SMS to the specified numbers after Input 2 triggering.
Example	Will send SMS to t1 and t2 after Input 1 triggering. <i>Dialer 1. IN2: ON</i>

Command	sms,in2?
Description	Requests the settings entered with sms,in2,t1,t2,t3,t4,t5
Example	<i>sms,in2?</i> Will return an SMS with <i>Dialer 1. sms,in2,t1,t2,</i>

4.3. Outgoing SMS scenarios after an input RESTORING

This option is **disable** by default. It can be enable with the following commands:

Command	sms,in1restore,on
Description	Sets the module to send SMS to the specified numbers in sms,in1 command, after Input 1 restoring.
Example	<i>sms,in1restore,on</i> Will send SMS to the specified numbers after Input 1 restoring. <i>Dialer 1. IN1: OFF</i>

Command	sms,in1restore,off
Description	Sets the module to disable sending SMS to the specified numbers in sms,in1 command, after Input 1 restoring. This is the default setting after factory reset.
Example	<i>sms,in1restore,off</i> The module will not send SMS after Input 1 restoring.

Command	sms,in1restore?
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Description	Requests the settings entered with sms,in1restore
Example	<i>sms,in1restore?</i> Will return an SMS with <i>Dialer 1. sms,in1restore,off</i>

Command	sms,in2restore,on
Description	Sets the module to send SMS to the specified numbers in sms,in2 command, after Input 2 restoring.
Example	<i>sms,in2restore,on</i> Will send SMS to the specified numbers after Input 2 restoring. <i>Dialer 1. IN2: OFF</i>

Command	sms,in2restore,off
Description	Sets the module to disable sending SMS to the specified numbers in sms,in2 command, after Input 2 restoring. This is the default setting after factory reset.
Example	<i>sms,in2restore,off</i> The module will not send SMS after Input 2 restoring.

Command	sms,in2restore?
Description	Requests the settings entered with sms,in2restore
Example	<i>sms,in2restore?</i> Will return an SMS with <i>Dialer 1. sms,in2restore,off</i>

4.4. Outgoing CALL+SMS scenarios after an input TRIGGERING

Command	voice+sms,in1,t1,t2,t3,t4,t5
Description	Sets the module to send SMS and initiate voice call to the specified numbers after Input 1 triggering.
Example	<i>voice+sms,in1,t1,t</i> Will send SMS and then initiate voice calls to t1 and t2 after Input 1 triggering.
Command	voice+sms,in1?
Description	Requests settings entered with voice+sms,in1,t1,t2,t3,t4,t5
Example	<i>voice+sms,in1?</i> Will return an SMS with <i>Dialer 1. voice+sms,in1,t1,t2,</i>

Command	voice+sms,in2,t1,t2,t3,t4,t5
Description	Sets the module to send SMS and initiate voice call to the specified numbers after Input 2 triggering.
Example	<i>voice+sms,in2,t1,t2</i> Will send SMS and then initiate voice calls to t1 and t2 after Input 2 triggering.
Command	voice+sms,in2?
Description	Requests settings entered with voice+sms,in2,t1,t2,t3,t4,t5
Example	<i>voice+sms,in2?</i> Will return an SMS with <i>Dialer 1. voice+sms,in2,t1,t2,</i>

4.5. Disable actions after input triggering

Command	none,in1,t1,t2,t3,t4,t5
Description	Turns off the module response to specified numbers after Input 1 triggering.
Example	<i>none,in1,t1,t3</i> After Input 1 is triggered, the device will NOT make a call or send an SMS to t1 and t3.
Command	none,in1?
Description	Requests the settings entered with none,in1,t1,t2,t3,t4,t5
Example	<i>none,in1?</i> Will return an SMS with <i>Dialer 1. none,in1,t1</i>

Command	none,in2,t1,t2,t3,t4,t5
Description	Turns off the module response to specified numbers when Input 2 triggering.
Example	<i>none,in2,t1,t3</i> After Input 2 is triggered, the device will NOT make a call or send SMS to t1 and t3.
Command	none,in2?
Description	Requests the settings entered with none,in2,t1,t2,t3,t4,t5
Example	<i>none,in2?</i> Will return an SMS with <i>Dialer 1. none,in2,t1</i>

4.6. Changing the text (Input name) in the SMS send after input triggering

Command	in1text,xxx
Description	Replace the name of Input 1 with xxx in the SMS sent after Input 1 triggering. Max length – 20 symbols. The default setting after factory reset is IN1.
Example	<i>in1text,Panic button 1</i> Will send the following SMS after Input 1 triggering: <i>Dialer 1. Panic button 1: ON</i>
Command	in1text?
Description	Requests the settings entered with in1text,xxx
Example	<i>in1text?</i> Will return an SMS with <i>Dialer 1. Panic button 1</i>

Command	in2text,xxx
Description	Replace the name of Input 2 with xxx in the SMS sent after Input 2 triggering. Max length – 20 symbols. The default setting after factory reset is IN2.
Example	<i>in2text,Panic button 2</i> Will send the following SMS after Input 2 triggering: <i>Dialer 1. Panic button 2: ON</i>

Command	in2text?
Description	Requests the settings entered with in2text,xxx
Example	<i>in2text?</i> Will return an SMS with <i>Dialer 1. Panic button 2</i>

4.7. Change the input triggering filter period

Command	in1,XX
Description	Sets the triggering filter period for Input 1. Range from 1 ÷ 60 seconds. The default setting after factory reset is 1 second.
Example	<i>in1,5</i> Will trigger Input 1 after connecting it to ground or negative source for minimum 5 seconds.
Command	in1?
Description	Requests the settings entered with in1,XX
Example	<i>in1?</i> Will return an SMS with <i>Dialer 1. in1=5 sec.</i>

Command	in2,XX
Description	Sets the triggering filter period for Input 2. Range from 1 ÷ 60 seconds. The default setting after factory reset is 3 second.
Example	<i>in2,10</i> Will trigger Input 2 after connecting it to the positive power supply or Input 1 for minimum 10 seconds.
Command	in2?
Description	Requests the settings entered with in2,XX
Example	<i>in2?</i> Will return an SMS with <i>Dialer 1. in2=10 sec.</i>

5. Check the current module state

Information about the current state of all inputs, outputs, supply voltage, GSM signal level and device name can be request by SMS.

Command	state?
Description	Requests the current state of all inputs, outputs, power supply, GSM signal strength and device name.
Example	<i>state?</i> Will return an SMS with <i>IN1: OFF, IN2: OFF, OUT1: OFF, OUT2: ON, PowerSupply=24V, Vbat=0V, GSM=68%, Name: Dialer 1.</i>

Current state of OUT2 will be send only if it is set as standard output.

6. Setup module state regular report

Command	report,x
Description	Sets a period (in hours) for automatic report of module current state. Range from 0 to 720 hours. The default setting after factory reset is 0 (disabled).
Example	<i>report,168</i> Will send SMS report with current state every week.
Command	report?
Description	Requests the settings entered with report,x .
Example	<i>report?</i> Will return an SMS with <i>Dialer 1. Report every 12 hours.</i>

7. Setup automatic call redials (if no answer)

Command	retries,X
Description	Sets the number of attempts for redial if there is no answer from dialed numbers. The default setting after factory reset is 2 redials.
Example	<i>retries,1</i> If there is no answer from the dialed numbers, the module will not make redialing.
Command	retries?
Description	Requests the settings entered with retries,X
Example	<i>retries?</i> Will return an SMS with <i>Dialer 1. retries=2</i>

8. Setup maximum call duration

Command	duration,XX
Description	Sets the maximum allowed call duration. When is reached, the module will close the connection automatically. Range from 1 ÷ 60 minutes. The default setting after factory reset is 60 minutes.
Example	<i>duration,20</i> Will set the max call duration to 20 minutes.
Command	duration?
Description	Requests the settings entered with duration,XX
Example	<i>duration?</i> Will return an SMS with <i>Dialer 1. duration=20</i>

9. Setup device name

For each device can be setup a different name. This will avoid any confusion when several modules with same phone numbers are used. The default settings for device name is its serial number. The maximum allowed symbols are 40.

Command	name,XXXXXXXXXXXXXXXXXXXXX
Description	Sets user defined device name. Max length 40 symbols. The default setting after factory reset is module's serial number.
Example	<i>name,Dialer 1</i> Will set the device name to <i>Dialer 1</i> .
Command	name?
Description	Requests the settings entered with name,XXXXXXXXXXXXXXXXXXXXX
Example	<i>name?</i> Will return an SMS with <i>name,Dialer 1</i>

10. Requesting information for device serial number, SIM card ID, hardware and software versions

Command	ver?
Description	Requests device SN, SIM card ID, FW and HW versions
Example	<i>ver?</i> Will return an SMS with <i>Dialer 1. SN: 1234567890; FW: 3.00; HW: 3.00; BL: 1.00; SIM: 12345678901234567890</i>

11. Replies to unauthorized numbers

Replies to unauthorized numbers are supported but this option have to be enable with many precautions. It may lead to a lot of sent SMS and higher playbill to the mobile operator. By default, it is disabled.

Command	acksms,on
Description	Turn ON blocking of the SMS response to unauthorized numbers. This is the default setting after factory reset.
Command	acksms,off
Description	Turn OFF blocking of the SMS response to unauthorized numbers.
Command	acksms?
Description	Requests the settings entered with acksms,on and acksms,off
Example	<i>acksms?</i> Will send an SMS with <i>Dialer 1. acksms,on</i>

The SMS text to unauthorized number is always the same: Not allowed!

12. Dialing mode setup

When more than one phone numbers has to be dial, the internal dialing algorithm can be set to choose from two different modes – **Single response** and **Dial all**.

Command	dialing,single
Description	Sets the dialing mode to Single response . In this mode, the dialing algorithm will finish when a call more than 3 seconds is made to any of the numbers. This is the default setting after factory reset.
Example	<i>dialing,single</i> Will terminate the dialing after the first answer.
Command	dialing,all
Description	Sets the dialing mode to Dial all . In this mode, the dialing algorithm will make a call to all numbers from the list, no matter if there was an answer from any of them.
Example	<i>dialing,all</i> Will dial all phone numbers from the list.
Command	dialing?
Description	Requests the setting entered with dialing
Example	<i>dialing?</i> Will return an SMS with <i>Dialer 1. dialing,single</i>

13. Power supply notification – available with internal battery only

Command	powerreport,X
Description	Allows SMS notification when the external power supply changes. A triggering filter can be set in range from 5 to 180 seconds. When the value is set to 0 (zero), these notifications are disabled. The default setting after factory reset is 0 (disabled).
Example	<i>powerreport,10</i> Will send SMS notification if the external power supply changes and holds for more than 10 seconds. If the power supply changes before the filter time expires, no SMS is send. <i>Dialer 1. Power supply is OFF.</i> <i>Dialer 1. Power supply is ON.</i>
Command	powerreport?
Description	Requests the setting entered for powerreport
Example	<i>powerreport?</i> Will return an SMS with <i>Dialer 1. powerreport,10</i>

14. Device replies after SMS commands

The module will reply with confirmation SMS to a **correctly typed** command sent only by the **authorized** numbers.

After factory reset, the module will reply only to a command for main phone number setup (**t1**).

14.1. Reply to a valid command and successful execution

- When **t1** is setting for the first time.

Example	t1,+44123456789
Reply	t1 will receive: <i>t1 is set successfully.</i>

Each SMS starts with the device name. After factory reset the device name is its Serial Number. For all examples this name will be omit.

- When **t1** setting up an additional number.

Example	t2,+44123456788
Reply	t1 will receive: <i>The command was execute successfully.</i> t2 will receive: <i>t2 is set successfully.</i>

- When setting the **t1** number as additional.

Example	t2,+44123456789
Reply	t1 will receive: <i>t2 is set successfully.</i>

- When **t1** setting up the input trigger filter.

Example	in2,6
Reply	t1 will receive: <i>The command was execute successfully.</i>

- When **t1** setting up the module to initiate voice calls to **t3**, **t4** and **t5** after Input 1 triggering.

Example	voice,in2,t3,t4,t5
Reply	t1 will receive: <i>The command was execute successfully.</i>

14.2. Reply to a valid command with wrong parameters

- When **t1** sends a valid command but its parameter is out of range - in such case, the command will not be set.

Example	in2,61 (<i>Max allowed value is 60 seconds</i>)
Reply	t1 will receive: <i>The parameter of the command is out of range!</i>

- When **t1** sends a valid command but **one** of its parameters is not correct - in such case, only the wrong parameter will not be set.

Example	voice,in2,t3,t4,t501 (<i>t501 is not valid, only t3 and t4 will be set</i>)
Reply	t1 will receive: <i>Wrong parameter: t501. Only correct parameters will be saved!</i>

- When **t1** sends a valid command but all parameters are incorrect - in such case, the command will not be set.

Example	voice,in2,t,ta,t600 (<i>t,ta,t600 are not supported</i>)
Reply	t1 will receive: <i>All parameters are wrong! t,ta,t600</i>

Example	voice,in2,t500 (<i>t500 cannot be dialed</i>)
Reply	<i>All parameters are wrong!</i>

- When **t1** sends a valid command but without parameters - in such case, the command will not be set.

Example	voice,in2, (<i>missing parameters</i>)
Reply	t1 will receive: <i>The command has missing parameters!</i>

14.3. Reply to a valid command and failure execution due to a technical problem

Example	voice,in2,t3,t4,t6
Reply	t1 will receive: <i>There is HW problem!</i>

14.4. Reply to t1 after incorrect command

Example	t501,+44123456789 (<i>t501 is not supported</i>)
Reply	t1 will receive: <i>Unknown command!</i>

14.5. Reply to a valid command from additional number

Example	t1,+44123456789 (<i>t1 is set only by itself</i>)
Reply	The additional number will receive: <i>Not allowed!</i>

14.6. Reply to a valid command for setting an additional phone number but the memory for all 500 positions is already full

Example	t,+44123456789
Reply	<i>Phonebook is full. The new phone number is not saved!</i>

15. Factory reset

In order to reset manually the factory settings to their defaults, the following procedure must be fulfilled:

1. Make wire connection between both inputs (to ensure good contact, the terminal screws must be tightened).
2. Restart the module through the jumper located at the upper corner of the board.
3. After the restart, the internal LED will blink quickly for 2 seconds.
4. Then press and hold the TEST button for 10 seconds.

After these 10 seconds, the LED will light for 5 seconds and the module will restart itself. This means successfully finished procedure of factory reset.

The module will exit the procedure automatically, if the TEST button is not pressed within 10 seconds after the jumper restart.

After completing the factory reset, the default settings will be:

Settings	Description
t1	Empty.
t2	Empty.
t3	Empty.
t4	Empty.
t5	Empty.
t6 ÷ t500	Empty.
call,voice,t1,t2,t3,t4,t5	The module will answer to voice calls from the first 5 numbers.
call,out1,t6...t500	The module will turn on Output 1 after incoming call from numbers t6 to t500 .
out1,trigger	Output 1 will operate in trigger mode after activation.
out2,led	Output 2 will operate in indicator mode.
voice,in1,t1,t2,t3,t4,t5	The module will make voice calls to first 5 numbers after Input 1 triggering.
voice,in2,t1,t2,t3,t4,t5	The module will make voice calls to first 5 numbers after Input 2 triggering.
sms,in1	SMS notification after Input 1 activation is not set.
sms,in1restore,off	SMS notification after Input 1 restore is not set.
in1text,IN1	SMS text for Input 1 triggering is IN1.
in1,1	Input 1 triggering filter is set to 1 second.
sms,in2	SMS notification after Input 2 activation is not set.
sms,in2restore,off	SMS notification after Input 2 restore is not set.
in2,3	Input 2 triggering filter is set to 3 second.

in2text,IN2	SMS text for Input 2 triggering is IN2.
sms,out1off,t1,t2,t3,t4,t5	SMS notification after Output 1 triggering is disabled.
sms,out2off,t1,t2,t3,t4,t5	SMS notification after Output 2 triggering is disabled.
acksms,on	SMS response to unauthorized numbers is disabled.
retries,2	Automatic call redials is set to 2 times.
duration,60	Maximum call duration is set to 60 minutes.
dialing,single	Dialing mode is set to Single response.
powerreport,0	SMS notification for external power change is disabled.
report,0	Automatic report for device current status is off.
name,0123456789	Device name is its serial number.

Technical parameters

Power supply	12 ÷ 95VDC or 20 ÷ 65VAC
Digital inputs	1 negative input (15VDCmax) 1 positive input (95VDCmax)
Digital outputs	2 outputs (open collector type, 1A max)
Regulated power output	Vout = 12VDC, I _{max} = 60mA
Internal battery (LIFT DIALER)	300mAh LiION battery (provides power up to 12 hours in standby mode and up to 60 minutes in active voice call)
Microphone input	1 input, external
Speaker output	1 output, internal, 1W max
GSM module	850/900/1800/1900MHz
Consumption in STANDBY mode	up to 15mA @12VDC
Consumption in ACTIVE mode	up to 130mA @12VDC
Operating temperature	-40 °C ÷ +85 °C
Weight SMART DIALER	90g
Weight LIFT DIALER	98g
Dimensions	74mm x 64mm x 28mm

SMART DIALER package set

Smart Dialer	1pcs. in plastic box
GSM antenna	1pcs. (length 3m)

LIFT DIALER package set

Lift Dialer	1pcs. in plastic box
GSM antenna	1pcs. (length 3m)
LiION battery	1pcs. (300mAh, pre-installed internally)
Microphone	1pcs. (length 1m)
Speaker	1pcs. (1W, pre-installed internally)

LIST OF ALL SMS COMMANDS

Command	Description
t1,+44xxxxxxxxxx	Set/change the number of the main phone number t1
t2,+44xxxxxxxxxx	Set/change the additional number t2
t3,+44xxxxxxxxxx	Set/change the additional number t3 .
t4,+44xxxxxxxxxx	Set/change the additional number t4
t5,+44xxxxxxxxxx	Set/change the additional number t5
t,+44xxxxxxxxxx	Add additional phone number to the first available position after t5
t2,del	Removes the additional phone number t2 and all its settings
t3,del	Removes the additional phone number t3 and all its settings
t4,del	Removes the additional phone number t4 and all its settings
t5,del	Removes the additional phone number t4 and all its settings
t?	Requests all phone numbers from t1 to t5
t?,x	Requests the phone number at position X
call,voice,t1,t2,t3,t4,t5 call,voice,t6,...,t500	Sets the module to answer an incoming call from the specified numbers
call,voice?	Requests the settings entered with call,voice,t1,t2,t3,t4,t5
call,out1,t1,t2,t3,t4,t5 call,out1,t6,...,t500	Sets the module to activate Output 2 after incoming voice call from the specified numbers
call,out1?	Requests the settings entered with call,out1,t1,t2,t3,t4,t5
call,voice+out1,t1,t2,t3,t4,t5 call,voice+out1,t6,...,t500	Sets the module to answer a call from the specified numbers and to activate Output 1
call,voice+out1?	Requests the settings entered with call,voice+out1,t1,t2,t3,t4,t5
out1,trigger	Sets trigger mode to Output 1
out1,pulse,xx	Sets pulse mode to Output 1 and its period
out1?	Requests the settings entered with out1,trigger and out1,pulse,XX
call,out2,t1,t2,t3,t4,t5 call,out2,t6,...,t500	Sets the module to activate Output 2 after incoming voice call from the specified numbers
call,out2?	Requests the settings entered with call,out2,t1,t2,t3,t4,t5

call,voice+out2,t1,t2,t3,t4,t5 call,voice+out2,t6,...,t500	Sets the module to answer a call from the specified numbers and to activate Output 2
call,voice+out2?	Requests the settings entered with call,voice+out2,t1,t2,t3,t4,t5
call,outs,t1,t2,t3,t4,t5 call,outs,t6,...,t500	Sets the module to activate both outputs after incoming voice call from the specified numbers
call,outs?	Requests the settings entered with call,outs,t1,t2,t3,t4,t5
call,voice+outs,t1,t2,t3,t4,t5 call,voice+outs,t6,...,t500	Sets the module to answer a call from the specified numbers and to activate both outputs
call,voice+outs?	Requests the settings entered with call,voice+outs,t1,t2,t3,t4,t5
call,t?,x	Requests the settings for incoming call for the number at position X
setout1,on	Turn on Output 1 via SMS
setout1,off	Turn off Output 1 via SMS
setout1,pulse,XX	Turn on Output 1 for the specified period via SMS
out2,trigger	Sets trigger mode for Output 2
out2,pulse,xx	Sets pulse mode and its period for Out 2
out2?	Requests the settings entered with out2,trigger and out2,pulse,XX
out2,normal	Sets standard output mode for Out 2
out2,led	Sets indicator mode for Out 2
out2mode?	Requests the settings entered with out2,normal and out2,led
setout2,on	Turn on Output 2 via SMS
setout2,off	Turn off Output 2 via SMS
setout2,pulse,XX	Turn on Output 2 for the specified period via SMS
voice,in1,t1,t2,t3,t4,t5	Sets the module to initiate voice calls to the specified numbers after Input 1 triggering
voice,in1?	Requests the settings entered with voice,in1,t1,t2,t3,t4,t5
voice,in2,t1,t2,t3,t4,t5	Sets the module to initiate voice calls to the specified numbers after Input 2 triggering
voice,in2?	Requests the settings entered with voice,in2,t1,t2,t3,t4,t5
in1text,xxx	Changes the SMS text for Input 1
in1text?	Requests the settings entered with in1text,xxx
in2text,xxx	Changes the SMS text for Input 2

in2text?	Requests the settings entered with in2text,xxx
sms,in1,t1,t2,t3,t4,t5	Sets the module to send SMS to the specified numbers after Input 1 triggering
sms,in1?	Requests the settings entered with sms,in1,t1,t2,t3,t4,t5
sms,in2,t1,t2,t3,t4,t5	Sets the module to send SMS to the specified numbers after Input 2 triggering
sms,in2?	Requests the settings entered with sms,in2,t1,t2,t3,t4,t5
sms,in1restore,on	Sets the module to send SMS to specified numbers after Input 1 restore
sms,in1restore,off	Disables the module to send SMS to specified numbers after Input 1 restore
sms,in1restore?	Requests the settings entered with the upper two commands
sms,in2restore,on	Sets the module to send SMS to specified numbers after Input 2 restore
sms,in2restore,off	Disables the module to send SMS to specified numbers after Input 2 restore
sms,in2restore?	Requests the settings entered with the upper two commands
in1,XX	Sets the input triggering filter for Input 1
in1?	Requests the settings entered with in1,XX
in2,XX	Sets the input triggering filter for Input 2
in2?	Requests the settings entered with in2,XX
voice+sms,in1,t1,t2,t3,t4,t5	Sets the module to initiate voice calls and SMS to the specified numbers after Input 1 triggering
voice+sms,in1?	Requests the settings entered with voice+sms,in2,t1,t2,t3,t4,t5
voice+sms,in2,t1,t2,t3,t4,t5	Sets the module to initiate voice calls and SMS to the specified numbers after Input 2 triggering
voice+sms,in2?	Requests the settings entered with voice+sms,in2,t1,t2,t3,t4,t5
none,in1,t1,t2,t3,t4,t5	Turns off the module response to specified numbers after Input 1 triggering
none,in1?	Requests the settings entered with none,in1
none,in2,t1,t2,t3,t4,t5	Turns off the module response to specified numbers after Input 2 triggering
none,in2?	Requests the settings entered with none,in2
sms,out1on,t1,t2,t3,t4,t5	Sets the module to send SMS to the specified numbers when OUT1 changes

sms,out1on?	Requests the settings entered with sms,out1on,t1,t2,t3,t4,t5
sms,out1off,t1,t2,t3,t4,t5	Disables SMS send to the specified numbers when OUT1 changes
sms,out1off?	Requests the settings entered with sms,out1off,t1,t2,t3,t4,t5
sms,out2on,t1,t2,t3,t4,t5	Sets the module to send SMS to the specified numbers when OUT2 changes
sms,out2on?	Requests the settings entered with sms,out2on,t1,t2,t3,t4,t5
sms,out2off,t1,t2,t3,t4,t5	Disables SMS send to the specified numbers when OUT1 changes
sms,out2off?	Requests the settings entered with sms,out2off,t1,t2,t3,t4,t5
state?	Requests the state of all inputs and outputs, power supply and GSM signal level
report,x	Sets the automatic report interval
report?	Requests the settings entered with report,x
retries,X	Sets the number of automatic call redials
retries?	Requests the settings entered with retries,X
duration,XX	Sets the maximum call duration in minutes
duration?	Requests the settings entered with duration,XX
dialing,single	Sets the dialing mode to Single response
dialing,all	Sets the dialing mode to Dial all
dialing?	Requests the settings entered with dialing
acksms,on	Turn ON blocking of the SMS response to unauthorized numbers
acksms,off	Turn OFF blocking of the SMS response to unauthorized numbers
acksms?	Requests the settings entered with acksms,on and acksms,off
powerreport,X	Sets SMS notification for external power change and its triggering filter in seconds
powerreport?	Requests the settings entered with powerreport,X
name,XXXXXXXXXX	Sets user defined device name
name?	Requests the settings entered with name,XXXXXXXXXX
ver?	Requests module's serial number and versions