ELEDUS
eletronic and education

GSM Communication Device

GComun

User Manual

Contents

Safety Precautions

For safety reasons, please do not disassemble, repair or modify the product. If you have any problems, please contact an authorized service center. Do not expose the device to moisture, water or direct sunshine; strong vibrations or shocks may lead to damage or malfunction. Keep children away from the communication device, its accessory and packing material. For correct operation, please read the enclosed User Manual carefully.

Do not use GCDC12 power cord for charging batteries.

DECLARATION OF CONFORMITY

The device complies to the following regulations and standards: EN 60950-1:2006+A11:2009+A1:2010

EN 62311:2008, EN301489-1 V 1.8.1, EN301489-7 V1.3.1, EN301511 V9.0.2

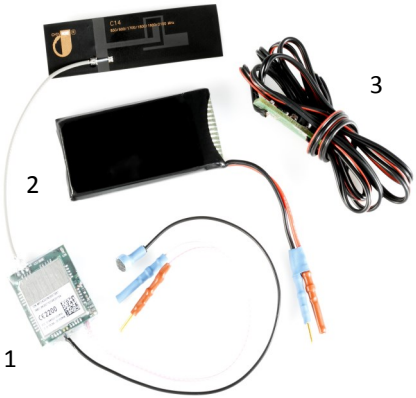
DISPOSAL AND RECYCLING INFORMATION

The device, its accessory or battery should not be disposed with other household wastes. At the end of the service life, please dispose of the individual parts at a local collection point.

Contents of Package

Before the first use, check the contents of the package and make sure all parts are present:

1 Module & antenna
2 Battery
3 Power cord
4 User Manual



About the Product

GComun GSM Communication Device is a mini module designed for one-way or two-way communication via GSM networks. The module is equipped with a sound detector that enables a call initialization or SMS notification. Due to provided switchable digital filters, ambient disturbances can be easily eliminated. All changes in the setting of the module can be done via SMS messages.

GComun GSM Communication Device can be used e.g. for the protection of your property, as an electronic babysitter or as a communication module in elevators or any units that require remote communication.

Device Functions

Integrated photodiode for ambient light control.

The communication is initiated by an outer sound stimulus or by making a call to micro SIM card inside the module.

The module receives calls only from the preset numbers.

The owner is warned via SMS in case of a call from other than preset numbers.

The module's setting is protected by user's password.

The sensitivity of sound sensor can be adjusted via an SMS message.

The service mode enables detection level adjustments.

Microphone volume can be adjusted via an SMS message.

Active filters can be switched via an SMS massage.

The device is compatible with loudspeakers with max output of 700mW (same output as handsfree mode of telephones) or speakers with external amplifier (basically unlimited output).

Device First Use

Micro SIM Card

For the correct function of the device, a micro SIM card must be inserted. Before putting the card into the device, please make sure no PIN code is needed. This can be tested by inserting the micro SIM card into any mobile phone.

Micro SIM card installation: Insert the side with angled corner, contacts facing the printed circuit.

Power Supply

Connect the device to a power supply source (we recommend to use the delivered battery). The input voltage range is 3.7V-4.2V. Recommended/optimum voltage input is 4V. While using GC-DC12 power cord, the voltage input range is 9V-14.5V.

After connecting the power supply, LED diode on the bottom side of the communicator will flash once and after few seconds the communicator automatically selects the network. At this step, set the module via an SMS message.

Device check battery capacity every 10 minutes. If capacity lower than 25% is detected, device will inform you via SMS.

While using the supplied power cord, be sure to follow the correct voltage polarity.

DO NOT CONFUSE POSITIVE (+/RED) AND NEGATIVE (–/BLACK) CONDUCTOR AND DO NOT USE POWER SUPPLY WITH A VOLTAGE OVER 4.2V.

This will prevent permanent damage to the device!

Do not use GCDC12 cable for charging the battery!

Basic Setting

Set telephone numbers "For outgoing calls" that the communicator shall use for sending replies.

Perform the basic setting of the communicator by sending SMS in the following format:

„123456 N +420123456789"

Replace the sequence of numbers "+420123456789" with a phone number (including the international country code) that the communicator shall dial and use for sending SMS messages. After few minutes you will receive a confirmation SMS about the new setting of the phone number: „New outgoing number: +420123456789".

After setting the phone number for outgoing calls and messages, change the password and set other parameters of the communicator.

Check the setting of microphone amplification and detection level parameters in conditions in which the communicator shall be used.

It is recommended to set sound detection as the last parameter.

Factory Setting

Parameter	Setting
Password	123456
Number for outgoing calls	No number set
Number for incoming calls	No number set
Microphone amplification	4
Type of notification for sound detection	By calling
Sound detection level & dead time	0 a 0
Sound filter	Off
Microphone	Two-wire
Light detection	Off

Communicator Setting

The device setting is performed by sending an SMS message in the correct form to the phone number of micro SIM card inside the communicator.

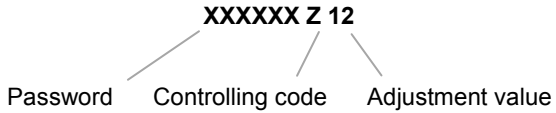
The first part of each SMS command must consist of 6-digit password by which the device is protected from unauthorized changes in setting.

After setting the password, please adjust the selected parameter by inserting the controlling code according to the table in chapter Adjustable Parameters.

If you do not receive the confirmation SMS message, the module is not working or has lost signal and the setting may be unsuccessful.

For about 30 seconds since sending the SMS the module cannot receive calls.

The structure of the SMS message must always be:



Communicator Setting

The setting of GComun device via SMS enables the adjustment of the following parameters:

1 6-digit password

2 Up to 3 phone numbers for incoming calls

3 Phone number for outgoing calls

4 Microphone amplification

5 Type of notification for sound detection (by calling or SMS)

6 Sound detection level & dead time

7 Sound filter

8 Compatibility with two-wire microphone and three-wire microphone (with external power source)

9 Light detection notification

Configuration Parameters

Parameter	Control. code	Value format	Value range	Function Description
Password	P	123456	000000 - 999999	Choose any 6-digit password as the first part of the command. Successful setting is confirmed via SMS with the new password.
Number for outgoing call	N	+420123456789		Phone number to which the communicator calls or sends massages. The adjustment is confirmed via SMS with the new phone number.
Number for incoming calls 1	I1	+420123456789		Enter up to 3 phone numbers from which it will be possible to make a call to the communicator. Calls from the set number(s) will automatically be answered by the communicator. The adjustment is confirmed via SMS with the new phone number.
Number for incoming calls 2	I2			
Number for incoming calls 3	I3			
Microphone amplification	G	Numeric value	1 - 6	Adjustment of the inner amplifier in the range from 1 to 6. Number 1 means the smallest and number 5 the biggest amplification. Number 6 is a function for automatic volume control and while calling the level automatically adjusts according to the intensity of ambient noise. The adjustment is confirmed via SMS with the new value.
Type of sound detection notification	D	Capital letter	C/S	After detecting sound in the surrounding the device can make a call or send SMS to the set number. C – after detecting sound the device makes a call S – after detecting sound the device sends SMS

Configuration Parameters

Configuration Parameters

Parameter	Control. code	Value format	Value range
Sound detection level & dead time	T	Numeric value: 01 01 *S*	00 - 10 00 - 90

Configuration Parameters

Function Description
The communicator is equipped with an integrated detector of the ambient sound volume that, if certain sound level is exceeded, automatically initiates a call to the phone number for outgoing calls. Setting is always confirmed via SMS containing the new value. This parameter has two values and a service mode option. **The first value represents the noise level adjustment in range of 00-10. The value must be set in 2-digit format.** – Level 00 means the detector is off. Value 01 represents the smallest sensitivity (detection of really strong noise), while value 10 means that the detector is most sensitive (recognizing weak sounds). – For the detection of human voice in silent environment value 05-08 is recommended. **The second value is the time for which the module ignores sound impulses since the last detection. The value must be set in 2-digit format.** Dead time is adjustable in the range of 0-90 minutes. After this time interval, the module starts to detect sound and make calls (or send SMS) to the preset number again. **Service Mode (S)** For the detector sensitivity verification, please write letter “S” at the end of the code (SMS shall have the following form: 123456 T 07 10 S). In this mode the device does not make a call and the exceeding of sound level is signalized by a single flash of the LED diode on the module. In case the value is set correctly, it is necessary to send a massage with the setting again, without the letter S (SMS: 123456 T 07 10).

Configuration Parameters

Parameter	Control. code	Value format	Value range	Function Description
Sound filter	F	Numeric value	0 - 2	The current version of the device is equipped with two implemented sound filters. 0 - sound filter off 1 - sound filter suitable for use in car 2 - sound filter suitable for use in interior
Microphone type	M	Numeric value	2/3	The device enables the connection of two microphone types. The device setting must be adjusted to the type of microphone. 2 - two-wire electret microphone (standard part of the package) 3 - three-wire microphone (VCC, SIG, GND)
Light detection	L	Numeric value	0/1	The device also has an inbuilt light detector that can be switched on or off. 0- light detection switched off 1 - light detection switched on After detecting light the communicator sends a notifying SMS and the detector turns off automatically. To turn on the detector again, it is necessary to send the setting again.
Setting report	R			Reporting the current setting of the device via SMS.
Device reset	Reset			Reset to factory setting. The device immediately sends SMS with the actual setting.

Configuration Parameters

Configuration Parameters

Parameter	Control. code	Value format	Value range	Function Description
Call end	E	Numeric value	000 - 900	After switching on this function the call ends after a preset time interval. The interval is set in seconds. 000 - switched off 900 - maximum value (900 seconds)
Automatic call	C	Numeric value	0/1	If this function is activated, device will call to outgoing number immediately after power on. 0 - Function is deactivated 1 - Function is activated
Get battery status	B			Get battery status. SMS report contains percentage value of battery actual capacity and voltage level in millivolts.
Get signal strength	S			Get signal strength. SMS report contains information about RSSI and BER.
Get IMEI	Q			Get IMEI. SMS contains IMEI of GSM communication module
Get information about BTS	O			Get information about BTS. SMS report contains MMC, MNC, LAC, CELLID. First and second values are with decade base. Third and fourth values are with hexadecimal base.

Configuration Parameters

Technical Specification

Power supply	4V battery or supplied power cord (9-14.5V)
GSM bands	850 MHz / 900 MHz / 1800 MHz / 1900 MHz
Power consumption	Max. 150mA while calling 20mA in idle mode
Antenna	Flexi strip (with self-adhesive layer)
Dimensions	26 mm x 29 mm x 7 mm
SIM card	Micro SIM - compatible with any operator
Battery	Li-Pol, 350 mAh / 1200 mAh / 2400 mAh

Troubleshooting

Communicator is not available – If the communicator is unavailable, disconnect and reconnect the battery. If problems still occur, disconnect the battery, take out the micro SIM card, insert the micro SIM card again and reconnect the battery.

Communicator requires PIN code – Insert the micro SIM card of the communicator into any mobile phone and disable the PIN code requirement for the device connection.

Communicator has no signal – Test signal strength in the environment via any device with a display.

Change in communicator's setting is not followed by confirmation SMS – You may be located in the environment without signal. Test the strength of signal in the environment via any device with a display.

No sound can be heard after dialing the device – Check the microphone setting and turn up the volume of the device if necessary.

LED diode flashes every 5-10 seconds – The module cannot log into the network. Check the signal strength and make sure the micro SIM card is inserted.

Notes

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