



**GM**Techtronics



SINGLE CHANNEL GSM SWITCH

**GMT-RC01**

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# Safety instructions

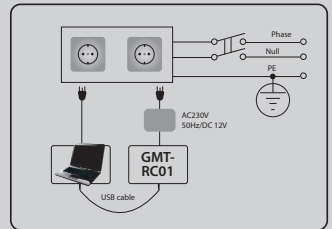
Please read and follow these safety guidelines in order to maintain safety of operators and people around:

- Single channel GSM switch GMT-RC01 (later referenced as system) contains a radio transceiver operating in GSM900, GSM850, GSM1900 and GSM1800 bands.
- Don't use the system where it can interfere with other devices and cause any potential danger.
- Don't mount the system next to medical equipment or devices, if they require so.
- Don't use the system in hazardous environment.
- Don't use the system with medical devices.
- Don't expose the system to high humidity, chemical environment or mechanical impacts.
- Don't attempt to personally repair the system.

Any system repairs must be carried out only by qualified, safety aware engineer

The system must be powered by 12V  $\overline{\text{---}}$  200mA max power supply which must be approved by LST EN 60950-1 standard and be easily accessible nearby the device. When connecting the power supply to the system, switching the terminals places is forbidden.

External power supply can be connected to AC mains only inside installation room with automatic 2-pole circuit breaker capable of disconnecting circuit in the event of short circuit or over-current condition. Open circuit breaker must have a gap between connections of more than 3mm and the disconnection current 5A.



Main power must be disconnected before any installation or maintenance work starts. The system installation or maintenance must not be done during severe electrical storm conditions.

Any additional devices linked to the system (computer, sensors, relays etc.) must be approved by LST EN 60950-1 standard.

The system is fully turned off by disconnecting 2-pole switch off device of the external power supply or any other linked device that the system is powered from.

If you use I security class computer for setting the parameters it must be connected to earth.

Fuse F1 model MINISMDC050F 0.5A. Blown fuse cannot be replaced by the user and the replacement fuses have to be exactly the same as indicated by the manufacturer.



The WEEE (Waste Electrical and Electronic Equipment) marking on this product or its documentation indicates that in the EU the product must not be disposed of together with household waste.



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# 1. General Information

## 1.1 Function

GMT-RC01 is a microcontroller based device used to control automatic gates, road barriers or to remotely turn on an electronic device over the GSM network.

Examples of using the system:

- Controlling road barriers in yards, blocks of flats or offices
- Opening automatic gates
- Turning on an electronic device for a specified period. E. g., aquarium lighting, turning on the pump, watering, controls heating in residential or commercial premises (HVAC)
- Turning on any electrical circuit or switch on lighting
- Turning on any electric device controlled with using ON/OFF function
- Rebooting "frozen" system, e. g., computer network or server.

## 1.2 Operation Description

Automatic controller system GMT-RC01 works over the GSM network. For example, Gates are opened or any other electronic appliances are turned on by a free phone call. The call is automatically rejected once it recognises a programmed User or Administrator calling number.

On calling the phone number of the system, it checks whether the caller is recorded in the database. If it is saved in the system, the relay is turned on for a specified period. The system will ignore incoming requests from an unknown telephone number or an SMS message with a wrong password.

## 1.3 Technical Specifications

### Electrical, mechanical and other specifications

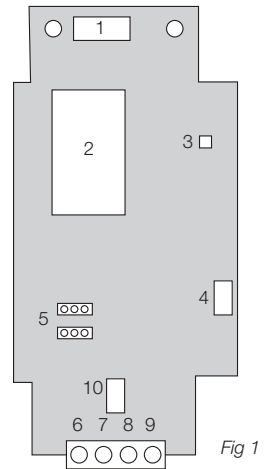
Supply voltage	12V --- 200mA max
Current used in standby mode	Less than 50mA
GSM modem frequency	900/850/1800/1900 MHz
Number of outputs	1
Output type	NO (relay contact)
Relay output maximum commutating values	24V --- 1A / 24V 50Hz ~0,5A
Dimensions	90x110x40mm
Operating temperature range	-20...+55°C(-30...+55°C with limitations)
Enclosure IP rating	IP65
Number of administrators	5
Number of users	200

## 1.4 Connector and LED Indicators Functionality

### Short Explanation or main parts

1. PCB mounted GSM antennae (mounted on rear of
2. SIM card holder
3. Signal and Power LED (mounted on rear of PCB)
4. Mini USB connector for PC software programming
5. Manufacturing jumpers. DO NOT USE UNLESS INSTRUCTED
6. 0v power input
7. 12V power input
8. Relay output common
9. Relay output normally open
10. Fuse F1 (mounted on rear of PCB)

Network LED Flash	Meaning
Off	No Network connection or power to unit
Flash every 3 seconds	Poor network connection
Flash every 1 second	Medium network coverage
Flash several times a second	Good network coverage
Constantly on	Excellent network coverage



## 1.5 System Installation

**BEFORE BEGINNING PLEASE ENSURE THAT YOUR SIM CARD HAS THE VOICE MAIL AND PIN CODE DISABLED AND ALSO HAS SIGNAL IN THE LOCATION YOU ARE FITTING THE UNIT**

1. Place SIM card in the holder but make sure that SIM card PIN code and voice mail are disabled (PIN code can be disabled by putting SIM card into mobile phone and following proper menus. Voice mail is disabled by contacting your service provider).
2. Connect the 12V DC power as indicated on circuit board and in fig 1
3. Connect the relay output to the equipment you wish to control (relay is open circuit going closed on activation) 24V  $\bar{\text{---}}$  1A / 24V 50Hz  $\sim$ 0,5A
4. Power up the device
5. The device will start in less than a minute. LED indicator will flash indicating connection to GSM network. (please refer to above guide)



### 2.3.3 Deletion of Administrator Numbers

To erase a particular or several administrator numbers send an SMS message with the numbers to be deleted:

```
XXXX_NR2:DEL_NR3:DEL_NR4:DEL_NR5:DEL
```

The system will not allow erasing of the first number NR1. It can only be modified.

## 2.4 How to programme Open Access by Sending Messages from Any Phone Number

The system is set so that the relay of the unit can be controlled only by the users entered on the system. However, it is possible turning on a special mode the relay can be turned on by any caller calling to the SIM card number of the device.

To turn on this mode send the following SMS message:

```
XXXX_ALLNUM:ON
```

How to programme Secure Access, send the following SMS message:

```
XXXX_ALLNUM:OFF
```

## 2.5 User Numbers

The system GMT-RC01 allows up to 200 different mobile numbers which will have access to controlling the gates by a phone call. The gates can also be controlled by administrators.

**All numbers must be entered starting with international country code, e. g. national code for UK is 44**, the plus sign is not necessary. Numbers without the international code are not allowed.

The numbers can be added or deleted only by administrator numbers.

### 2.5.1 Saving User Numbers

Send SMS message with the following text:

```
XXXX_N:44111111111_441111111112_441111111113
```

Ones should be replaced with required user numbers. Up to 10 numbers at a time can be entered sending an SMS message. To enter more numbers, send another SMS message with another 10. The ten numbers don't have to be entered in sequential order right away e.g. you can enter one number. After saving 200 user numbers you will not be able to enter any further numbers until you delete some of the existing numbers.

### 2.5.2 Verification of User Numbers

To learn if a particular user number is programmed in the system send the following SMS message:

```
XXXX_T:441111111111
```

Ones should be replaced with the number which you want to check if it is entered in the system.

To see all numbers entered send the following SMS message:

```
XXXX_GETALLNUMBERS
```

**ATTENTION:** Unit will send 10 numbers per message so you will receive 20 messages

### 2.5.3 Deletion of User Numbers

To delete a particular or several user numbers send an SMS message with the numbers to be deleted:

```
XXXX_D:447807111111_447807111112
```

Ones should be replaced with user numbers. Up to 10 numbers can be deleted sending an SMS message. To enter more numbers, send another analogous SMS message. The numbers don't have to be deleted in sequential order right away. e.g. use can delete only one number.

To delete all numbers except administrators send the following SMS message

```
XXXX_D:ALL
```

## 2.6 Configuring Output Impulse Duration

The relay output can be programmed to activate for a timed pulse or toggle. The timed pulse can be either 0.5s, 1s, 3s or 4s. For 0.5s pulse send the following message (factory default)

```
XXXX_TIMER:1
```

**For 1s** pulse sends the following message

```
XXXX_TIMER:2
```

**For 2s** pulse send the following message

```
XXXX_TIMER:3
```

**For 3s** pulse send the following message

```
XXXX_TIMER:4
```

**For 5s** pulse send the following message

```
XXXX_TIMER:5
```

**For relay** toggle send the following message

```
XXXX_TIMER:6
```

## 2.7 Activating call back acknowledgement

The system has the facility to Call Back the authorised number as an acknowledgement to a relay activation. This will only respond to numbers on the user list and Admin numbers.

Please Note: The call back facility does not work in the open access mode.

To turn on this mode send the following message:

```
XXXX_CALLBACK:ON
```

To turn off this mode send the following message

```
XXXX_CALLBACK:OFF
```

## 2.8 Setting date and Time

It is important to set correct date and time so that the system can send reports at specified times.

Date and time can be set by sending the following format SMS message:  
where YYYY means year; MN - month; DD - day; HO - hour; MI - minutes

```
XXXX_YYYY.MN.DD_HO:MI
```

E.g XXXX\_2011.07.12\_10:30

## 2.9 Programming periodic test text

The GMT-RC01 can any time be inquired regarding the signal strength and the unit status.

Send the following message:

```
XXXX_INFO
```

The unit can also send this message automatically at sets periods. This will enable PAYG Sim cards to remain active and not cut off by the networks.



These Parameters can be configured by sending the following SMS message:

XXXX\_INFO:PP.VV

PP-message period in days, valid values(00-30) VV- time of day when message is sent, valid values (00-23)

E.g. XXXX\_INFO:01.10 means a status message will be sent to all admin numbers every day at 10:00 am

E.g. XXXX\_INFO:30.23 means a status message will be sent every 30 days at 23:00

## 2.10 Activating the output via SMS

The output relay of the GMT-RC01 can be switched on or off via SMS. This is done by sending the following texts:

XXXX\_C1:ON

This will switch the relay ON

XXXX\_C1:OFF

This will switch the relay OFF

# 3. Device Programming via GMT-RC01 Config Tool

## 3.1 GMT-RC01 Config Tool configuration software

To configure the system easily and quickly as well as use more system capabilities use configuration program GMT-RC01 ConfigTool which can be downloaded from our website [www.gmtelectronics.co.uk](http://www.gmtelectronics.co.uk). The programming instructions are also available from the website.

# 4. Appendix

## 4.1 Technical Support

Indication	Possible reason
Indicator is off or not blinking	<ul style="list-style-type: none"><li>• no external power supply</li><li>• circuit not properly connected</li><li>• blown fuse</li><li>• no network signal</li><li>• SIM card is not inserted</li><li>• PIN code hasn't been disabled</li><li>• Sim card not active</li></ul>
System does not send any SMS messages	<ul style="list-style-type: none"><li>• SIM card account depleted</li><li>• incorrect SIM central number</li><li>• no network signal</li><li>• admin number is not programmed in user list</li></ul>
Received SMS message "Incorrect Format"	<ul style="list-style-type: none"><li>• incorrect syntax</li><li>• extra space symbol left in SMS message</li></ul>

## 4.2 Restoring Default Parameters

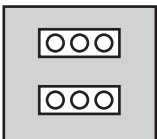


Fig 2

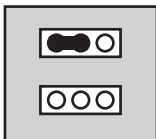


Fig 3

### To restore default parameters:

1. Disconnect power supply
2. Short circuit (connect) connectors R2D (see F3)
3. Connect power supply for 5 seconds
4. Disconnect power supply
5. Disconnect connectors R2D (see F2)
6. Connect power supply

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