

# GsmPir

COMPACT GSM  
PASSIVE INFRARED MOTION DETECTOR

**SIMOnly™ CONFIGURATION**



## EN USER GUIDE

1017.20.00 GsmPir

- MAIN UNIT
- WALL BRACKET / HOLDER
- SMA ANTENNA
- WALL PLUG POWER SUPPLY
- MICRO USB CABLE



### DECLARATION OF CONFORMITY

**Company identification:** Manufacturer: Contrive, Srl  
Via Enrico Fermi 18 24040 Suisio Italy

**Product identification:** Brand: Contrive  
Equipment name: GsmPir  
Equipment type: GSM Alarm System

We declare on our sole responsibility, that the product described above is in compliance with the essential requirements of the following Directives:

- **R&TTE Directive 1995/5/EC:**  
EN 301 511 GSM900/1800 essential requirements for mobile stations
- **EMC Directive:**  
EN 301 489-1 Electromagnetic compatibility  
EN 301 489-7 ElectroMagnetic compatibility and Radio spectrum Matters  
Specific conditions for mobile and portable radio and ancillary equipments
- **LVD Directive 2006/95/EC:**  
EN 60950-1 Safety of information technology equipment

and all tests were carried out

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Shenzhen, 518055 P.R. CHINA

RATESTA testing laboratory  
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Suisio, Italy March 21, 2010

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## SAFETY INFORMATION

- Do not install this unit near medical devices like pacemakers or hearing aids. This unit may interfere with the operation of these devices.
- Switch off this unit when flying. Secure it so that it cannot be switched on inadvertently.
- Do not install this unit near petrol stations, fuel depots, chemical plants or blasting operations when this unit can disturb the operation of technical equipment.
- Interference can occur if this unit is used near televisions, radios or personal computers.
- If the device has been stored in a cold environment, then condensation can occur. Before starting operations, the device must be absolutely dry. Thus, an acclimatization period of at least three hours must be observed.
- In order to avoid possible damage, we recommend that you only use the specified accessories. These have been tested and shown to work well with this unit.

This device should be installed only by qualified personnel. Carefully read the instruction manual in its entirety and keep it safe for future reference. It is essential to know the information and comply with the instructions given in the manual to ensure the fitting is installed, used and serviced correctly and safely.

This RF unit is not designed for and intended to be used in portable applications (within 20 cm or 8 inches of the body of the user) and such uses are strictly prohibited.

This unit is not authorised for use as critical component in life-support devices or systems unless a specific written agreement has been given.

If incorrectly installed in a vehicle, the operation of GSM device could interfere with the correct functioning of vehicle electronics. Verification of the protection of vehicle electronics should form a part of the installation.

No complex software or hardware system is perfect. Bugs are always present in a system of any size.

In order to prevent danger to life or property, it is the responsibility of the system designer to incorporate redundant protective mechanism appropriate to the risk involved.

All units are 100% functionally tested. Specifications are based on characterisation of tested sample units rather than testing over temperature and voltage each unit.

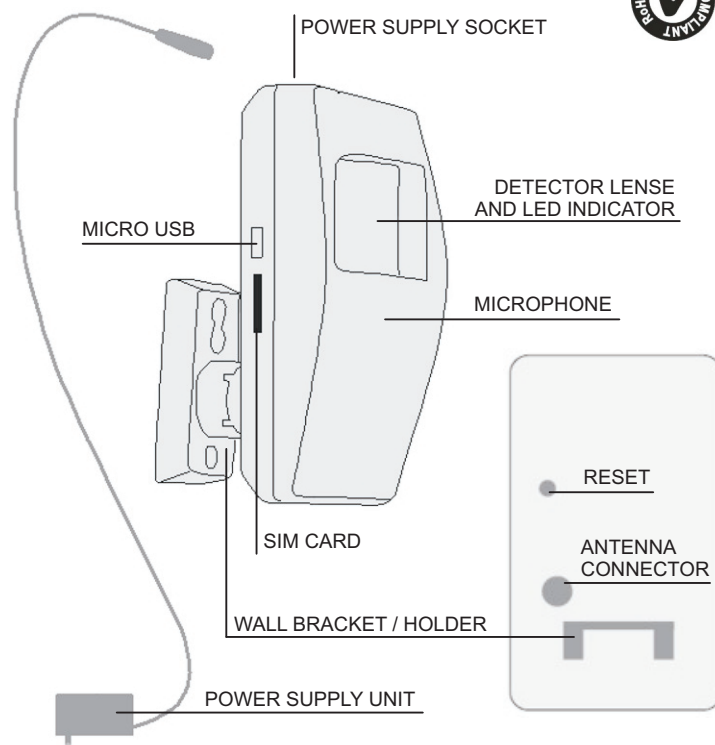
Contrive disclaims all liability for damage to the fitting or to other property or persons deriving from installation, use and maintenance that have not been carried out in conformity with this instruction manual, which must always accompany the fitting.

## PRODUCT DESCRIPTION

GsmPir is a stand alone, microcontroller based, security system for protection of houses, garages, cottages, country homes and other buildings by means of enhanced features available through GSM network.

The system can be used in following applications:

- Intrusion alert
- Mains power supply status
- Remote listening by means of built in microphone



To restart the unit, push and hold for 8" the reset button: the led will blink 5 times.

## PRODUCT FEATURES

Dual band EGSM900 and GSM1800 for data, sms and voice applications.

Full Type Approved and compliant with ETSI GSM Phase 2+

Output power: Class 4 ( 2W @ 900 MHz )  
Class 1 ( 1W @ 1800 MHz )

Power supply: 15 V DC ±10% - 500 mA MAX  
3.5 mm plug

Battery: NiMH rechargeable 8,4V - 200 mAh

Temperature: operating -10 to 40°C  
storage and transport -10 to 75°C

Relative humidity: operating 25 to 85% NON CONDENSING

Overall dimensions: mm 60 x 104 x 33 ( W x H x D ) UL94 -V0

Weight: 140 g WITHOUT POWER SUPPLY UNIT

Detection range: 10 meters - 90°

This device is powered by a rechargeable backup battery, already installed. To switch off GsmPir, unplug the external power supply and disconnect the battery connector which is accessed by opening device frame cover. To avoid fire or explosion hazards replace only with approved back-up batteries. Special care must be taken connecting positive and negative battery terminals.

External power supply can be connected to AC mains protected with automatic 2-pole circuit breaker (having more than 3mm gap between open contacts) capable of disconnecting circuit in the event of short circuit or over-current condition. Electrical socket from which the system is powered must be in an easily accessible place.

The power supply unit must meet the demands placed on SELV [1] circuits in accordance with EN60950. Any additional device connected to GsmPir must be powered by a SELV power supply unit.

[1] Safety Extremely Low Voltage

## ANTENNA

When the antenna is fitted directly on the RF interface, implemented as a 50Ω SMA female coaxial jack, it will be protected against tampering by the unit itself.

It's anyway possible to use a remote dual-band antenna but remember that an unprotected cable could be cutted, and it will be impossible to receive commands and send alerts. The antenna must fulfil the requirements given below:

Frequency TX	880 to 915 MHz	1710 to 1785 MHz
Frequency RX	925 to 960 MHz	1805 to 1880 MHz
Impedance	50 ohms	
VSWR	RX max	1.5 : 1
	TX max	1.5 : 1
Polarization	Linear	
Typical gain	0 dBi in one direction at Least	

## OPERATION

GsmPir works within GSM networks. When the unit is not registered on the network, the SIM is missing or a wrong PIN code is provided, the red LED indicator located on the lense will blink once a second.

Before to operate GsmPir it is necessary to configure at least few parameters, this can be done very easily by means of SIMOnly procedure described on this document. GsmPir is armed or disarmed by SMS or a call from any telephone (landline, cordless or mobile). Depending on the settings, an incoming call from registered users can:

- Drop the call (no cost), arm/disarm the surveillance and ringback to user only if the system has been armed.
- Answer the call and inform about the status of the surveillance by means of tones (3 high tones means armed, a single low tone means disarmed). The call remains open if the audio listening option is enabled.

When system is armed there is a programmable delay before activation, meant for leaving premises. Red LED indicator will start to blink twice a second informing that exit timeout has been engaged and user must leave the room. The red light goes off upon timeout delay expiration and system is engaged.

When detector is disarmed and motion is detected, LED will be turned on shortly. When detector is armed LED is OFF (no attention attraction). When the device is disarmed, LED starts to blink.

GsmPir can issue a phone call to a single recipient once a specific event occur:

- Human movement detected while armed.
- Main power supply failure.
- Main power supply restored.

GsmPir can send SMS messages to several recipients once a specific event occur:

- Human movement detected while armed.
- Main power supply failure.
- Main power supply restored.
- Surveillance is armed or disarmed
- Low battery level

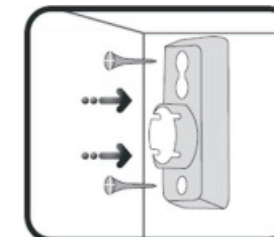
Unsuccessful calls and/or SMS will be retried up to 10 times. To prevent massive calls and/or SMS, GsmPir will consider only power supply failures longer than 20 seconds and power supply restore only after 2 minutes. If the intrusion is detected continuously, GsmPir will send alerts at 10 minutes interval.

Registered users can operate GsmPir also by means of SMS commands. Calls and SMS coming from unknown telephone numbers will be ignored. The configuration can be modified from remote by means of SMS providing the right password (remote configuration is disabled if no password is defined).

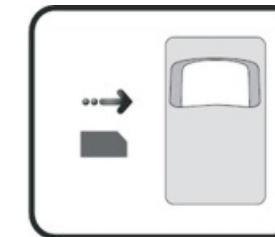
## INSTALLATION

This unit should be installed indoor. Choose a suitable position where the unit can detect intruders. To prevent false alarms:

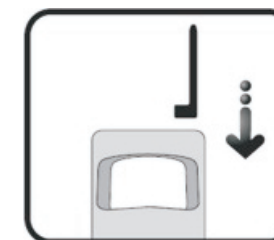
- Don't face sunshine, windows, metal walls or any cold/hot body directly.
- Don't install near hot bodies and avoid high temperature fluctuations.
- Don't install on a unstable base.
- Keep a reasonable clearance from shielding metal object.
- Keep the lenses clean, avoiding dust accumulation.



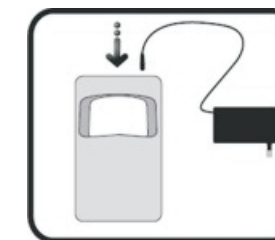
FIX THE WALL BRACKET HOLDER TO THE WALL



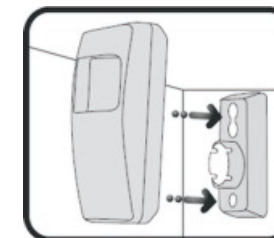
INSERT THE SIM CARD WITH PIN CODE DISABLED



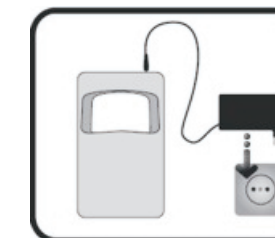
CONNECT THE ANTENNA TO SMA CONNECTOR



PLUG IN THE POWER SUPPLY CONNECTOR



SLIDE THE UNIT INTO THE BRACKET / HOLDER



PLUG POWER SUPPLY UNIT INTO WALL MAIN SOCKET

After inserting SIM card push it in until you hear a click, to lock the card in the slot. If you do not hear a click, check if you inserted SIM card correctly. Do not use excessive force.

To remove SIM card from the slot push it in. You should hear the click again and SIM card should come out from the slot.

The system starts in 1-2 minutes. When LED is off, move your hand in front of GsmPir lense and watch the system detecting motion and turning on LED for few seconds. If LED indicator is blinking (once a second), could be that SIM card is not inserted properly or PIN code has not been disabled.

## CARE AND MAINTENANCE

Your GsmPir is the product of advanced engineering, design and craftsmanship and should be treated with care. The suggestion below will help you to enjoy this product for many years.

- Do not expose the unit to any extreme environment where the temperature or humidity are out of operating range.
- Do not use or store the unit in dusty or dirty areas. Its moving parts (SIM holder or lenses for example) can be damaged.
- Do not use chemical cleaning agent on the unit or the SIM card.
- Do not attempt to disassemble the unit or remove any part or label. There are no user serviceable parts inside.
- Do not expose the unit to water, rain or spilt beverages. It is not waterproof.
- Do not abuse the unit by dropping, knocking or violently shaking it. Rough handling can damage it.
- Do not place the unit alongside computer discs, credit or travel cards or other magnetic media. The information contained on these devices may be affected.
- This unit is under your responsibility. Please treat it with care respecting all local regulations. It is not a toy. Therefore, keep it in a safe place at all times and out of the reach of children.
- Treat the SIM card with the same care as your credit card: do not bend or scratch or expose it to static electricity.
- Try to remember your unlock and PIN codes. Become familiar with and use the security features to block unauthorised use and theft.

Do contact an authorized service center in the unlikely event of a fault in the unit.



## REPLACING BACKUP BATTERY

The newer NiMH batteries are less harmful to the environment and have a longer life, that largely depends on temperature and frequency of main power failures; used in normal condition can last more than 2 years. To change the battery:

- Unplug power supply from mains power.
- Remove GsmPir from holder.
- Unplug power supply connector.
- Remove screw located on the back side of GsmPir.
- Open GsmPir enclosure.
- Carefully remove back-up battery.
- With one hand holding back-up battery, unplug battery connector.
- Replace battery. Use battery type as specified in technical specifications.
- Repeat all steps in reverse order.



Recycling options available in your area should be considered when disposing replaced batteries. Do not dispose of in fire.

## SMS CONTROL

GsmPir can be operated also by means of SMS.

Some specific commands are available to registered users only:

?	Status request
ON	Arm surveillance
OFF	Disarm surveillance
ON?	Arm surveillance and status request
OFF?	Disarm surveillance and status request
SIM	Copy the SIM card phonebook into USB memory a file named <code>config.bak</code> is created into mass memory storage

## SMS MESSAGES

Following a typical SMS issued on status request:

Living room	Zone name		
ALARM	Alarm status	ALARM	Normal
Armed	Surveillance status	Armed	Disarmed
Main OK	Main power supply status	Main OK	Main KO
Sensitivity 15	PIR sensitivity	20...99	
Battery 80%	Battery level	10...99	
GSM 60%	GSM signal strength	10...99	
Vodafone	GSM network operator		

All unavailable values will be reported ??

When the unit is supplied from main power supply no battery status is given.

When human movement is detected while armed, GsmPir issues the following SMS to all recipients associated with such event:

Living room	Zone name (if defined)
ALARM	

When surveillance is armed, GsmPir issues the following SMS to all recipients associated with such event:

Living room	Zone name (if defined)
Armed	

When surveillance is disarmed, GsmPir issues the following SMS to all recipients associated with such event:

Living room	Zone name (if defined)
Disarmed	

When main power supply is missing (for more than 20 seconds), GsmPir issues the following SMS to all recipients associated with such event:

Living room	Zone name (if defined)
BATT 50%	Battery level
Main KO	

When main power supply is restored (for more than 2 minutes), GsmPir issues the following SMS to all recipients associated with such event:

Living room	Zone name (if defined)
Main OK	

When the embedded battery is about to get discharged, GsmPir issues the following SMS to all recipients associated with such event:

Living room	Zone name (if defined)
BATT <25%	Battery level

Messages will be sent in the selected language.

## SIMonly™ CONFIGURATION

Users and options are stored into the SIM card.

### QUICK START

- Insert the SIM card into any mobile phone or SIM card reader/writer.
- Disable PIN code protection, could be reactivated later by the device itself.
- Select SIM card phonebook and add a new contact or edit an existing one, usually up to 250 are available.



**i** SMS delivery failure is usually less than 1% but you must keep in mind that a message could not arrive and you cannot complain with your operator for this. **GsmPir deletes any pending SMS at power-on.**

## RECIPIENTS

GsmPir issues several alerts on event.

Enter the telephone number of designated recipient for calls or SMS in the phone number field, it's better to use international format.

PHONE NUMBER	NAME	ALARM CALL
+447878....	AC:Phil	Max 14 characters

The unit can make a single call when an alarm is detected. Store the recipient's name with a trailing `AC:` in the name field. When this parameter is stored more than once, only the first entry read from SIM card will be considered.

When the recipient answer the call the unit will give some alert tones, if the MIC LISTENING is enabled instead of making tones the audio channel is open.

PHONE NUMBER	NAME	POWERFAIL CALL
+448798....	FC:John	Max 14 characters

The unit can make a call on main power supply failure. Store the recipient's name with a trailing `FC:` in the name field. When this parameter is stored more than once, only the first entry read from SIM card will be considered.

To avoid unwanted alerts, power supply failure shorter than 20 seconds are ignored.

PHONE NUMBER	NAME	POWERGOOD CALL
+448798....	PC:John	Max 14 characters

The unit can make a call on main power supply restore. Store the recipient's name with a trailing `PC:` in the name field. When this parameter is stored more than once, only the first entry read from SIM card will be considered.

To avoid unwanted alerts, power supply restore shorter than 2 minutes are ignored.

PHONE NUMBER	NAME	ALARM SMS
+448798....	AS:John	Max 14 characters
+445621....	AS:Sandra	Max 14 characters
+447878....	AS:Phil	Max 14 characters

The unit can send one or more SMS when an alarm is detected. Store the recipient's name with a trailing `AS:` in the name field. This parameter can be stored several times, an SMS will be sent to every stored recipient number.

PHONE NUMBER	NAME	SYSTEM ARMED SMS
+448798....	SA:John	Max 14 characters
+445621....	SA:Sandra	Max 14 characters
+447878....	SA:Phil	Max 14 characters

The unit can send one or more SMS when surveillance is armed. Store the recipient's name with a trailing `SA:` in the name field. This parameter can be stored several times, an SMS will be sent to every stored recipient number.

PHONE NUMBER	NAME	SYSTEM DISARMED SMS
+448798....	SD:John	Max 14 characters
+445621....	SD:Sandra	Max 14 characters
+447878....	SD:Phil	Max 14 characters

The unit can send one or more SMS when surveillance is disarmed. Store the recipient's name with a trailing `SD:` in the name field. This parameter can be stored several times, an SMS will be sent to every stored recipient number.

PHONE NUMBER	NAME	LOW BATTERY SMS
+448798....	Y:John	Max 14 characters
+445621....	Y:Sandra	Max 14 characters

The unit can send one or more SMS when the battery falls below 25%. Store the recipient's name with a trailing `Y:` in the name field. This parameter can be stored several times, an SMS will be sent to every stored recipient number.

PHONE NUMBER	NAME	POWERFAIL SMS
+448798....	FS:John	Max 14 characters
+445621....	FS:Sandra	Max 14 characters

The unit can send one or more SMS when a main power failure is detected. Store the recipient's name with a trailing `FS:` in the name field. This parameter can be stored several times, an SMS will be sent to every stored recipient number.

PHONE NUMBER	NAME	POWERGOOD SMS
+448798....	PS:John	Max 14 characters
+445621....	PS:Sandra	Max 14 characters

The unit can send one or more SMS when the main power failure is restored. Store the recipient's name with a trailing `PS:` in the name field. This parameter can be stored several times, an SMS will be sent to every stored recipient number.

PHONE NUMBER	NAME	SMS FORWARDING
+448798....	R:John	Max 14 characters

Any incoming SMS not recognized as a command could be routed (redirected) to a specific destination. Store the recipient's name with a trailing `R:` in the name field.

Forwarded SMS, converted to uppercase, will include the sender's phone number. When this parameter is stored more than once, only the first entry read from SIM card will be considered.

## CONFIGURATION PARAMETERS

Operational parameters are stored into the SIM card phonebook.

For those parameters it's enough to store the NAME field, the PHONE NUMBER field may be left blank or filled with a dummy value that will be ignored.

When a parameter is missing, GsmPir works with default value.

PHONE NUMBER	NAME	LANGUAGE
Don't care	I:IT	ITALIAN
	I:EN	ENGLISH
	I:FR	FRANCAIS
	I:DE	DEUTSCH
	I:ES	ESPAÑOL
	I:RU	RUSSIAN
	I:LT	LITHUANIAN

Default language is ITALIAN. If you want to set ENGLISH, store `I:EN` anywhere into the SIM card phonebook, if this parameter is stored more than once, only the first entry read from SIM card will be considered.

PHONE NUMBER	NAME	ZONE IDENTIFIER
Don't care	Z:text	Max 14 characters

Storing `Z:Living Room` every SMS sent by GsmPir will include *Living Room* like trailing text to identify the sender of the message.

No identifier will be shown into SMS sent out when this entry is missing.

When this parameter is stored more than once, only the first entry read from SIM card will be considered.

PHONE NUMBER	NAME	SIM CARD PIN
Don't care	V:XXXX	0000...9999

The SIM card must be inserted without PIN verify. If you want to protect a SIM whose PIN code is 1234, store `V:1234` anywhere into the SIM card phonebook.

GsmPir will activate PIN protection if this parameter is found.

Of course the PIN code must be the one provided by Operators (you may also change the default one using any mobile phone).

When this parameter is stored more than once, only the first entry read from SIM card will be considered.

PHONE NUMBER	NAME	PIR SENSITIVITY
Don't care	SY:XX	10...120

Default PIR detector sensitivity is 40 (equivalent approx to 10 meters range) and could be changed from 10 (highest) to 120 (lowest).

When this parameter is missing the unit will operate factory default sensitivity.

When this parameter is stored more than once, only the first entry read from SIM card will be considered.

PHONE NUMBER	NAME	EXIT TIMEOUT
Don't care	X:XXX	0...999

Default arming delay after activation is 15 seconds, you may change this value in the range 0...999 seconds. Store `X:120` if you want to set the exit delay to 2 minutes.

When this parameter is missing the unit will operate 15 seconds, factory default.

When this parameter is stored more than once, only the first entry read from SIM card will be considered.

PHONE NUMBER	NAME	CALL BEHAVIOUR
Don't care	C:A	Arm/disarm mode
	C:S	Status mode

Select the behavior of GsmPir at incoming calls from registered users.

Store `C:A` if you want to arm and disarm the surveillance when GsmPir receives a call from a registered user.

Store `C:S` to return a tone reporting the current status at every call from registered users. Enable the MIC LISTENING option if you want to hear from local microphone.

When this parameter is missing the unit will operate ARM/DISARM mode. When this parameter is stored more than once, only the first entry read from SIM card will be considered.

PHONE NUMBER	NAME	AUTORESET
Don't care	K:XXX	1...250

The unit can occasionally get disconnected from the network.

Store `K:024` if you want to periodically restart the unit every 24 hours, this interval can be set within the range 1...250 hours.

When this parameter is stored more than once, only the first entry read from SIM card will be considered, missing this parameter the unit will work continuously without periodical reset.

PHONE NUMBER	NAME	MIC LISTENING
Don't care	ML:0	Listening disabled
	ML:1	Listening enabled

Store `ML:1` if you want to enable the environmental listening when a recipient answers to an alarm call or a registered user calls GsmPir (previously set to Call behaviour: status mode).

Listening is disabled missing this parameter, when stored more than once, only the first entry read from SIM card will be considered.

## USERS

Users can control the device by means of free calls or SMS.

At least one user must be stored to operate the unit.

To add new user, simply store a new phonebook entry. Enter the telephone number to be recognized in the phone number field, it's better to use international format.

PHONE NUMBER	NAME	USER
+441234....	U:Mark	Max 14 characters
+445645....	U:Mary	Max 14 characters
+592789....	U:Andrea	Max 14 characters
+448798....	U:John	Max 14 characters
+447878....	U:Phil	Max 14 characters

## REMOTE CONFIGURATION

The whole SIM card phonebook could be edited from remote by means of SMS issued from any phone number, providing a password that must be previously stored into the SIM card phonebook. Case insensitive.

If the password is missing no remote editing will be possible.

Once defined, the password itself could be changed from remote.

PHONE NUMBER	NAME	PASSWORD
Don't care	W:....	Max 14 characters

Store `W:Goofy14` if you want to use the password: *Goofy14*.

To add a SIM card entry, send an SMS:

PWD, +NAME, PHN	PWD + NAME PHN	password means ADD name field phone field
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Example:

Goofy14, +U:Mary, +445645....	Add Mary to users
Goofy14, +K:24	Set autoreset to 24 hours

To remove a SIM card entry:

PWD, -NAME	PWD - NAME	password means REMOVE name field
------------	------------	----------------------------------

Example:

Goofy14, -U:Sue	Delete user Sue
Goofy14, -AC:Antony	Delete recipient Antony

All entries starting with the given name will be deleted: the first SMS of the example above will delete all users beginning with Sue, thus if a SueAnn exist, she will be deleted too.

Specifying the field identifier only, all relevant entries will be removed:

Example:

Goofy14, -U:	Delete all users
Goofy14, -Y:	Delete low battery recipient (1)

GsmPir will ringback the sender to confirm successful editing.

No ringback if there are errors (configuration discarded).

## USB LINK

GsmPir can be connected to any Personal Computer by means of a micro USB cable (provided) and will be recognized as a mass memory device. A freeware utility is available if you want to manage your configuration through USB link.



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

To prevent possible harm to human health and/or the environment, the product must be disposed on in an approved and environmentally safe recycling process.



For further information on how to dispose of this product correctly, contact the system supplier, or the local authority responsible for waste disposal in your area.

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