

iSocket® 3G

User Manual

English
For all countries





www.isocket3g.com

ENGLISH

Thank you for choosing iSocket®. Please take a few minutes to read through these operating instructions carefully before using the product so that you can get full advantage of the functionality and get maximum enjoyment from it. Pay special attention to the safety instructions in Chapter 2! Incorrect use could affect your guarantee or jeopardise health or property. We reserve the right to make design changes on the device and its software without prior notice. Deviations not mentioned in this instruction might exist in the software, which is considered acceptable and not considered a defect. The latest version of these instructions can be found on our website www.isocketsystems.com. Be sure to read the terms of warranty before using the device, so that you do not to lose your rights under the guarantee as a result of improper operation (Chapter 17). You agree with the terms of warranty and limitation of liability described in Chapter 17 when you purchase this product. Please keep these operating instructions in a safe place for easy access when needed. We hope you thoroughly enjoy using your iSocket.

NOTE!

- The software supplied with this product is the exclusive property of iSocket Systems. As an end-user you are granted a non-exclusive license to use this software solely in combination with the device on which it is installed and with which it is supplied. The license is non-transferable and you do not have the rights to grant sublicenses.
- Your iSocket device has a unique feature iSocket® Online 24/7 that gets the device back online even after a break in the cellular network. However the device needs a strong cellular signal in the area - it has an internal antenna and may not operate efficiently if the signal in your area is weak. Ensure that you have a strong network before using the device. Do not put metal or other conductive objects near the device - this may cause signal loss. This product is designed for home and office use only.
- This product uses a Lithium-ion battery and MUST NOT be used outside the specified temperature! Please refer to technical information (Chapter 15) for detailed information about operating conditions and read the safety instruction (Chapter 2) carefully.
- If you wish to use the iSocket® Power Notifier feature (power failure / power restored alerts), plug in the device for 20 hours before use. This will charge the built-in battery.
- If you use a prepaid card you might be need to activate it first with your cell phone network provider.
- You can set correct date/time on the device with command DATE+/-. See details in Chapter 9.

You can add additional numbers for alerts with command ADDALERTNUM – see Chapter 5.3

Content

1. Device Description

iSocket® 3G is the world's first 3G smart plug that notifies about **power outages** and **temperature changes** on remote sites directly to a cell phone via modern 3G networks, without using cloud connections - to eliminate delay or possible failure and make such notification reliable. iSocket 3G does not require Wi-Fi or any other Internet connection at the remote site, but a cellular network – either GSM or 3G (HSDPA) from operators such as T-Mobile, AT&T, Rogers, Bell, Telus, Telstra, Optus, Vodafone and many others worldwide.

Features. While prompt notifications are the main features of iSocket 3G, it has plenty of other features on its software. Among them are a smart thermostat and remote reboot by a call. For example, you can reboot your router when it hangs remotely and even do it free of charge - see Chapter 4.2 and 6.2 for configuration. You will find a list of almost all features in this user manual. For developers who want to use API we recommend you check our website www.isocket3g.com for updates and subscribe to our newsletter - go to http://isocket.me/sub. The information from this user manual will also be useful for developers.

Temperature monitoring (OPTIONAL). With an optional precision external sensor connected to iSocket 3G you can measure the temperature of almost any element: air, water, oil, solid surfaces, etc. Information about temperature will be sent to your cell phone. iSocket will notify you when the temperature rises beyond, or falls below specified levels. iSocket has a thermostat that turns equipment on and off according to your settings. The unique features of iSocket[®] Smart Software allow you to create an advanced temperature monitoring system.

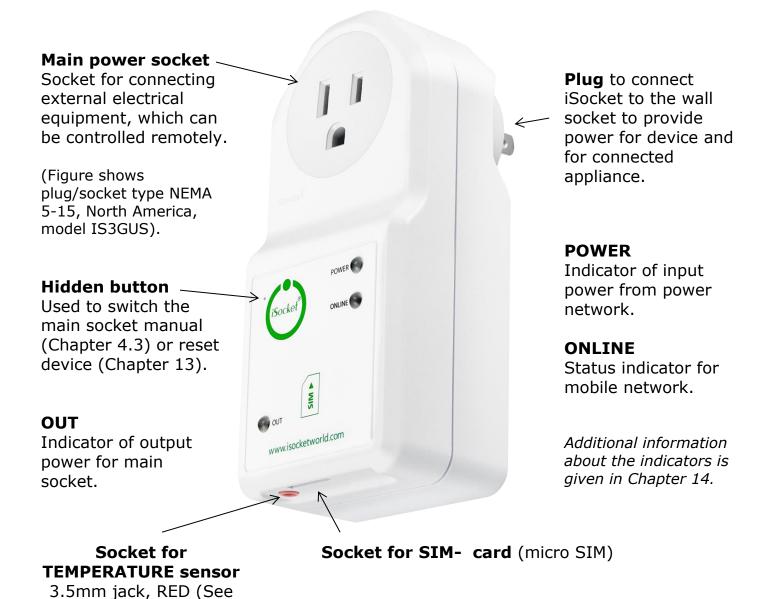
How to manage iSocket 3G. This smart plug is controlled remotely by text messages and therefore can be managed from any cell phone – either smartphones or "classical" cell phones from any manufacturer. While pure texting mode is the best way to go right from the box, iSocket 3G has an API developed by iSocket Systems that enables third parties to build any apps and services around this product. iSocket Systems will also provide simple apps to work with iSocket 3G – see http://isocket.me/apps for details.

No fees. iSocket Systems do not charge monthly fees! You pay once for the equipment - up front - and you are then free to buy a SIM card from any provider you like or use prepaid SIM cards. We provide some advice on suitable SIM cards for different countries – please visit https://www.isocket3g.com/faq/. We also plan to sell devices with SIM cards in the future. When using prepaid cards without monthly fees the cost of ownership will be minimal.

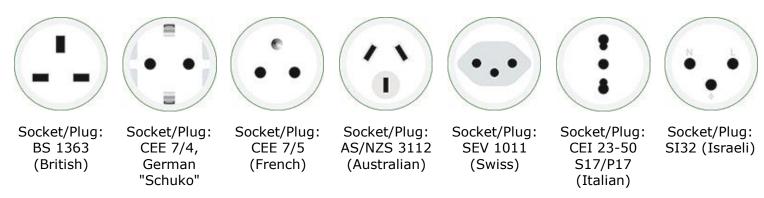
Security. iSocket 3G has been designed with rigid security in mind. We protect your device from unwanted intrusion – see Chapter 5 for details. Using cellular network technology instead of a Wi-Fi connection raises the level of security significantly

Remote update. This new iSocket supports FOTA (Firmware Over The Air). If your SIM card provides a data connection, you can update remote firmware very simply – see Chapter 13. Please note, the SIM card will be charged for traffic as per rates of your SIM card provider. The traffic is just a few kilobytes. Ensure there is uninterrupted power to your iSocket during a firmware update.

For more information about the technical characteristics of iSocket 3G see Chapter 15 and also visit www.isocket3g.com



Pictures below describe the plugs and sockets of other models.



Chapter 7)

2. Safety Instructions

This appliance complies with accepted technological standards with regard to safety. Nevertheless, as manufacturers we consider it our obligation to make you aware of the following safety information. To ensure years of trouble-free enjoyment, and to maintain your quarantee, please note the following.

- Never carry out repairs yourself! There are no serviceable parts in the device.
- The operating voltage of the appliance and the mains voltage as well as the type of current must match (see the rating plate on the underside of the appliance).
- Only plug into a correctly installed earthed mains socket.
- Provide easy access for a maintenance or emergency disconnection.
- Do not connect this device to another one similar device.
- The device is not intended for direct plug-in equipment, which are not equipped with a plug. External equipment that connects to the device must have a cord with appropriate plug.
- Some devices are supplied with their own switch, which needs to be disconnected before they are unplugged. Do not use this product with such devices - it cannot disable the switch of a remote device.
- Do not use external equipment with a faulty plug!

 Do not connect to appliances which cannot be left unattended (e.g. certain heaters)!
- Do not exceed power load limit and other electrical parameters specified in the technical characteristics. Check the power of the connected device!
- The device is intended only for domestic private non-commercial use. Do not use in emergency environments: e.g. military, hospitals etc!
- This product is not designed for safe disconnection of the controlled equipment from power network; the device is not equipped with a residual-current device (RCD). Make sure that your home electrical network meets safety standards.
- The product is designed for indoor use in dry area. Do not use it in wet or chemically aggressive environments! For example, do not use it in the bathroom. It is also not designed for industrial operation in aggressive environments.
- Do not use this device if the casing is damaged!
- Do not shake or drop the product. This could cause damage!
- Keep away from direct sunlight.
- Keep out of reach of children!
- Block access to the management and set-up of the device to unauthorised users (Chapter 5).
- Read additional safety information in Chapter 17.



iSocket Systems hereby declares that this iSocket 3G complies with the essential requirements and other relevant provisions of Directive 1999/5/EC.



At the end of the product's useful life, please dispose of it at appropriate collection points provided in your country.



NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no quarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: reorient or relocate the receiving antenna by reorienting or relocating the equipment; increase the separation between the equipment and receiver; connect the equipment into an outlet on a circuit different from that to which the receiver is connected; consult the dealer or an experienced radio/TV technician for help. Any changes / modifications not approved by the responsible party could void the user's authority to operate the equipment. This equipment must be installed to provide a separation distance of at least 20 cm from all persons. The equipment contains transmitter module FCC ID: UDV-1103022011008 located inside the equipment on the printed circuit board of the modem.

Safety Instructions for the Battery

This unit use a Li-ion battery. The safety instruction does not tell you how to maintain the battery, because this battery is installed inside the unit. It is strictly prohibited to replace the battery yourself - an authorised specialist must be consulted. However this safety instruction does describe the care of units using a Li-ion battery.

Read all the safety information and instructions. Failure to comply with the safety information and instructions may cause fire and / or serious injury.

We pay a great deal of attention to the design of every battery to ensure that we supply you with batteries which offer maximum durability and safety. Despite all the safety precautions, caution must always be exercised when handling devices with batteries. Studies have shown that incorrect use and poor care are the main causes of the damage caused by batteries. The following points must be obeyed at all times to ensure safe use:

- Don't throw battery or device with battery into an open fire. There is a risk of explosion!
- Always comply with the storage conditions (see Chapter 15)! Don't keep the device
 with its battery in places where the temperature is liable to reach levels outside
 those specified. In particular, do not leave the device in a car that is parked in
 sunshine.
- If the battery suffers overloading and/or overheating, the integrated protective cutoff will switch off the charging/discharging for safety reasons. If this happens you
 will not be able to get a power failure alert. Using the battery at temperatures
 outside those specified in the technical information (Chapter 15) will cause chemical
 damage and may cause a fire.
- In the event of incorrect use, fluid may escape from the battery. Avoid contact with this fluid. If you touch it by mistake, rinse the affected area with water. If you get the fluid in your eyes, seek medical advice. Stop using the device if fluid is coming from it!
- Li-ion batteries are subject to a natural ageing process. The battery must absolutely be replaced when its capacity falls just 80% from the capacity as new. A weak, old battery is no longer capable of meeting the high power requirements and therefore poses a safety risk.
- Exhaustive discharge will damage the battery. The most common cause of exhaustive discharge is lengthy storage or non-use of a partly discharged battery. Don't allow the device to be stored for a long time without use. Never use a batterydriven device if you suspect that the last time the battery was charged was more than 12 months ago. There is a high probability that the battery has already suffered dangerous damage (exhaustive discharge).



Rechargeable batteries contain materials that are potentially harmful to the environment. Batteries may not be disposed of with normal domestic waste. You should dispose of used batteries at your local collection point.

3. Quick Start

Quick Start comprises three simple steps:

Step 1. Install SIM card.

You need to fit a micro SIM card from a GSM or 3G operator into the unit. If you use a prepaid card you might need to activate it first with an unlocked cell phone. Please see our advice for sim cards here http://isocket.me/prepaid

Install SIM card into the special slot and push until fixed (you will hear a click). SIM card orientation is shown on the front side of the device. Do not insert or eject the SIM card on a running device! Switch off the device before you insert or eject SIM card. Do not use SIM cards that contain messages! Remove all messages from the SIM card. Do not use SIM cards with NFC chip embedded in a SIM (chip for payments from mobile phone).

NOTE! You must disable PIN-code authorisation for the SIM card! You can only disable PIN authorisation by using mobile phone that support micro SIM card. Insert the SIM card into mobile phone and disable PIN usage using the phone menu. You can find more information in the manual for the phone or ask assistance from the shop, where you purchased the card. If you have forgotten to disable the PIN-code the ONLINE indicator will light constantly and the POWER indicator will signal this by specific blinks (see Chapter 14). The POWER and OUT indicators will blink specifically (see Chapter 14) when the SIM card is not inserted correctly or is damaged.

Step 2. Apply power to the device.

Connect iSocket to a wall socket. POWER and OUT indicators blink three times simultaneously. If everything is functioning correctly the POWER indicator will be a constant green light. The ONLINE indicator is lit constantly during the network search, blinks every second when the network has been found, or blinks more often during data exchange (e.g. during firmware update). More information about the indicators in Chapter 14.

Step 3. Execute your first command and make yourself the main user.

Your device with iSocket[®] Smart Software has the unique feature "Make Me Boss!". Send SMS-command *MAKEMEBOSS* to the phone number of the SIM card installed in the unit and it will automatically assign the phone number from which you have sent it as the number for all types of alerts and will also enable protection by the list of phone numbers and will add the number to the list.

NOTE! Make sure that you don't use the "hide my number" option for the number from which you execute the command. If the system cannot recognise the number it will not add it to the number for alerts and to the security list. Alternatively you can use the methods of adding these numbers which is described in Chapter 5.1 (for security numbers) and 5.3 (for alert numbers).

First test.

The device is now ready to work! You can carry out a simple test. Connect an appliance to the iSocket, e.g. a desk lamp (don't forget to turn on the lamp switch). Send the message **ON** to the SIM card number and the lamp will switch on. Remove the iSocket from the wall-socket. You will soon get a power failure alert! Your iSocket 3G is now ready to work and secure. Read more about all features and advanced configurations in the following Chapters.

4. Managing the iSocket Device

You can manage the device directly by text commands, by phone call, via apps or manually. This new iSocket also supports Multi Texting Mode. For management via apps please see http://isocket.me/apps

4.1 Managing by Text Commands

Commands are sent in form of SMS messages to the SIM card number of the iSocket. Messages have the following syntax:

COMMAND

(for example, STATUS).

If a password was configured (see Chapter 5), then you must use following syntax:

passwordCOMMAND (for example, **12345STATUS**), where 12345 is a password set by the command PASSWORD=12345 (more details in Chapter 5).

NOTE! Commands are not case sensitive. "STATUS", "status" or "Status" will all be processed in the same way.

There are three types of commands on device:

1. Configuration commands (marked "Conf" in the tables).

These commands configure some parameters on the device and usually (not always) have the syntax *COMMAND=VALUE*, so they have symbol "=" after the command name. The configuration can only be performed within 30 minutes after device has been powered on or after the last configuration command has been received. If you try to configure device after 30 minutes, then you will get the message "*command – Time for configuration expired!*" (only if ERROR=ON - see Chapter 6). To disable this limitation you must configure security on device – see Chapter 5. **Settings are stored in non-volatile memory and are not lost when power is off.** Each configuration command has a default value. This is the value that was installed at the factory (for details see Chapter 13).

2. Information commands (marked "Inf" in the tables).

These commands inform you about different statuses of the device or about other corresponding statuses, so they have information nature. If a command has a question mark at the end (COMMAND?), then this command will inform you about current value of the parameter, which has the same name as the command. These commands are available at any time. Should a configuration command have different values these will all be seen in response to the information command associated with this configuration command. The values will be comma-separated and the current active value will be indicated in parentheses. For example, you send the information command "COMMAND?". In response you will get the reply "COMMAND=VALUE1, (VALUE2)". This means that the current active value is "VALUE2", and "VALUE1" is another value acceptable for this command. This syntax is made for your convenience - you do not need to refer to the manual each time when to remember all possible values. They will be given in the response. The first value in the response is the factory default value (see Chapter 13).

3. Control and management commands (marked "Ctrl" in the tables).

Used to control the iSocket device - perform some active action. They are not limited by configuration window and can be used at any time.

You will get a response after sending the commands. This can be disabled if desired (see Chapter 6). If you make a mistake in the command and send an incorrect command, you will receive a message "COMMAND - No such command exists on the device!" (Only if ERROR=ON - see Chapter 6). If a command longer than 30 characters was sent, it will be deleted without any response notifications.

The list of simple commands for management and configuration is shown in the following table. The real response may differ from those indicated in the table, depending on the

command. For default settings please see Chapter 13.

Turn on main power socket Turn of main power socket Turn of main power socket Turn on main power socket Turn on main power socket Turn on main power socket for 30 seconds. Maximum value is 65500 seconds. Turn off main power socket for 30 seconds. Maximum value is 65500 seconds. Restart (return to the same status after a certain period of time) main socket. Time for restart set by RESTARTIME. RESTARTTIME -5 Configures time (in seconds) for RESTART command. Values 1-600 seconds. RESTARTTIME? Informs about RESTARTTIME value Send a pulse to relay. The duration of the pulse can be configured by command PULSETIME. By default this is 2 seconds. This operation works similarly to the RESTART operation. So, if main socket was turned off it will be turned on for a 2 seconds and then turned off. And if the socket was initially turned on, then after this action it will be turned off for 2 seconds and then turned on again. So this pulse can be used as a pushbutton to start and stop, for example, magnetic starters or to open a gate. Values 1-600 seconds. PULSETIME=2 Configures time (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Values 1-600 seconds. PULSETIME (in seconds) for PULSE command. Value	Command	Description	Response	Туре
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TEMP: 70F (21C)		temperature, network and time		
			Time: y/m/d,h:m:s	
	TEMPERATURE		TEMPERATURE: 70F (21C)	Ctrl
Chapter 7.				
	RUNTIME			Ctrl
turned on (since last restart or power on). If you y/m/d,h:m:s			y/m/d,h:m:s	
turn on the main socket manually before the				
correct date was installed on the device, the				
start-up time of the device will not be				
recorded correctly.		recorded correctly.		

4.2 Managing by Phone Call

The main socket for external electrical equipment can also be managed by cell or landline phone. For example, you can call to the phone number of the SIM card in the device and

the equipment connected to the device (e.g. router) will be restarted. After a call to iSocket the action occurs immediately. The action must be pre-configured. There is no action configured by default. Keep in mind that you are not able to configure the active actions if the security number list (Chapter 5.1) is not configured. This is because the password protection is not available for calls, so anyone can call to the SIM card number if there is no security numbers list protection and this call may cause unwanted reboot. Accordingly, if you are going to disable the security numbers list protection, then the option *RING* goes into the value "*NOACTION*" automatically. However, you can allow anyone access to the active action by call using the command *RINGPUBLIC=ON*. This will allow any number - even landline phones or phone numbers that cannot be recognized - to perform an action by calling the iSocket. This will not affect other security settings (Chapter 5).

In response to the activating call the device will send you a message. You can configure a call response instead of an SMS. Read more about this in Chapter 6.2. The following table indicates which actions can be pre-configured.

Command	Description	Response	Туре
RING=SWITCH	Switching (changing status to negative) main power socket by phone call	RING=SWITCH - OK SECLIST is not active!	Conf
RING=RESTART	Restart (return to the same status after a certain period of time) main socket by phone call. Time for restart set by RESTARTTIME.	RING=RESTART - OK SECLIST is not active!	Conf
RING=PULSE	Send a pulse to a relay by phone call. The duration of the pulse can be configured by command PULSETIME.	RING=PULSE - OK	Conf
RING=ON	Turn on main power socket by phone call	RING=ON - OK	Conf
RING=OFF	Turn off main power socket by phone call	RING=OFF - OK	Conf
RING=NOACTION	Ignore phone calls	RING=NOACTION - OK	Conf
RING?	Informs what action configured	RING=(NOACTION), RESTART,SWITCH	Inf
RINGPUBLIC=ON	Allows one of the above actions for any number. It will ignore security list settings configured in Chapter 5. Use this setting only if you understand the consequences!	RINGPUBLIC=ON - OK	Conf
RINGPUBLIC=OFF	Does not allow any action for unauthorized numbers. The defaultt factory setting. Recommended!	RINGPUBLIC=OFF - OK	Conf
RINGPUBLIC?	Informs about RINGPUBLIC value	RINGPUBLIC=(OFF),ON	Inf

4.3 Manual Managing

The main power socket can be managed manually. You can switch it manually by a hidden button which is on the front panel next to the logo. The button can be activated with a suitable thin mechanic tool. Pressing this button switches the main power socket to a negative value. So, if it was turned off, it will be turned on and vice versa.

4.4 Multi Texting Mode

If you want to send several commands at once, you may use a semi-colon ";" between commands. Do NOT use spaces. This syntax allows you to save credit and time by using only one message. This syntax is also designed for developers. Commands will be executed one by one in the order they are written. You should understand all features of the device well before you start to benefit from the Multi Texting Mode.

Example: MAKEMEBOSS; RING=RESTART; RESTARTTIME=5

Would you like to see more features? You are welcome to send us your feedback: http://isocket.me/feedback

5. Security & Notifications Settings

Block access to iSocket management for unauthorised users! If there are no security settings, then anyone who knows the phone number of the SIM card will be able to manage the device and deplete the card's credit - which is not advisable! The device uses two methods of protection against unauthorised access:

- Only allowing access to authorised phone numbers
- Authentication by password

Both methods can be used separately or together. In the first method the device ignores SMS-commands and calls from numbers that are not listed. The list can contain up to 10 numbers. The second method involves the use of individual 5-characters password. This password must be typed before the SMS-commands without any space or special characters as shown here:

passwordCOMMAND (for example, **12abcSTATUS**), where *12abc* is a password set by the command *PASSWORD=12abc* (more details below).

5.1 Security Numbers List Settings

The security list allows you to configure up to 10 numbers and up to 17 digits for one phone number. By default, the security list is disabled and does not contain any numbers. The first number can be added in a simple way by executing command *MAKEMEBOSS* - see introduction to this feature in the "Quick Start" (Chapter 3, Step 3). However all the next numbers must be added using the command *ADDSECNUM*, described in the table below, because all the next numbers from which you try to execute the *MAKEMEBOSS* command will already be treated as non-authorised.

IMPORTANT NOTE! We recommend you always add telephone numbers in international format (with country code), without spaces or hyphens. This will ensure safe and reliable operation. See examples below.

Example of how to add/remove the number to/from the security list:

ADDSECNUM+12125555555 / DELSECNUM+12125555555

Here 1 is the United States country code, 212 is the city code for New York and 5555555 is a 7-digit local number.

For this new iSocket you can add a number with access limited to only Ctrl and Inf commands. Such a number will not be allowed to configure the device. Add "LIMITED" to the end of the number for such limitation.

For example: **ADDSECNUM+1212555555Limited**

Note! If you add a number to the list when the list is not activated, the protection will be disabled. Do not forget after adding number to activate security list by command

SECLIST=ON. If you deleted all the numbers by command DELSECNUMALL, the protection will be disabled automatically (SECLIST=OFF became active).

IMPORTANT NOTE! Make sure that you don't use the "hide my number" option. All numbers that the system does not recognise are considered to be unauthorised numbers.

Below is a list of commands for the security list settings.

Command	Description	Response	Type
MAKEMEBOSS	This will add the number from which you send message to the list and will enable security list (SECLIST=ON will be active), also it will add your number for all types of other alerts (Chapter 7.3, 8.1 and 10)	Your phone number has been assigned for all types of alerts and was added to security list which has been activated	Conf
ADDSECNUMyour_number	Add new number to security list. Use international format (with country code) without spaces or hypens – see examples above.	+12125555555 added (secnum)	Conf
ADDSECNUMnumberLIMITED	Add a new number with limited access. This number will not have access to configuration commands.	+3589555555 added (limited secnum)	
DELSECNUMyour_number	Delete specific number from security list	+1212555555 removed (secnum)	Conf
DELSECNUMALL	Delete all numbers from the list	DELSECNUMALL - OK	Conf
SECNUMBERS	Request for security list numbers	SECNUMBERs +12125555555, 358955555555 (limited)	Inf
SECLIST=ON	Activate security list	SECLIST=ON - OK	Conf
SECLIST=OFF	Disable security list	SECLIST=OFF - OK	Conf
SECLIST?	Information about security list activation	SECLIST=OFF,(ON)	Inf

NOTE! We suggest that you always use security list protection, even if you use password protection. Chapter 6.3 lists more reasons for this.

5.2 Password Protection

The following table shows how to set a password for managing access. The password must consist of 5 characters. Do not use a simple combination of numbers for a password! Password 12345, 11111, abcde and other such passwords are not secure! **NOTE! Don't forget to add the old password before the command PASSWORD=x if you are going to remove password protection or update the password.**

Command	Description	Response	Type
PASSWORD=12abc	Set password 12abc	PASSWORD=**** - OK	Conf
PASSWORD=NO	Disable password	PASSWORD=NO - OK	Conf

5.3 Configuration of the Numbers for Alerts

Before enabling different alerting (Chapter 7.3, 8.1 and 10) you must setup at least one number for alerts. There are few optional ways to setup this number. One is the feature "Make me boss!" (see introduction in the "Quick Start", Chapter 3, Step 3 and more in Chapter 5.1). Another option is the feature "Alert me!" – send the command **ALERTME** from the number which you want to be the number for alerts and the system will

automatically assign the phone number from which you have sent it as the number for all types of alerts. You can send *ALERTME* from any number which is included on the security list and is not the limited number (see Chapter 5.1). You can also use the command *ADDALERTNUM* to add a number for alerts manually (see description in the table below).

NOTE! Make sure that you don't use the "hide my number" option for the number from which you execute the command ALERTME and make sure that the number is in the security list and is not the limited number. If the system cannot recognise the number or if the number is not authorised it will not add it to the number for alerts.

Command	Description	Response	Type
ALERTME	This will automatically add the number from which you send the message to the list for all types of alerts.	Your phone number has been assigned for all types of alerts!	Conf
ADDALERTNUMyour_number	Set the number for alerts manually. Instructions how to add a number are similar to those given in Chapter 5.1 (see examples there). We strongly recommend that you always add numbers in international format (with country code). This will ensure reliable alerting on any network.	+12125555555 added (alertnum)	Conf
DELALERTNUMyour_number	Remove number from list	+12125555555 removed (alertnum)	Conf
DELALERTNUMALL	Remove all numbers	DELALERTNUMALL - OK	Conf
ALERTNUMBERS	Information about numbers	ALERTNUMBERs: +12125555555	Inf

NOTE! Do not keep wrong or non-existent numbers on the list! Ignoring this advice will delay alerts to good numbers. Do not keep numbers in local format in the list, use only the international format (with country code).

6. Command Confirmation

It is important to confirm that the command was executed successfully. For this purpose we have implemented notifications of each executed command. If you wish to receive execution confirmations the setting "hide my number" should NOT be activated on the phone from which you are sending messages or making calls to iSocket.

6.1 Confirmation of SMS-commands

If you activate this notification, you will be informed about each command execution. It is the default setting, but you can disable these notifications to save the cost of SIM card messages.

Command	Description	Response	Type
SMSCONFIRM=ON	Response messages to SMS-commands will	SMSCONFIRM=ON - OK	Conf
	be sent		
SMSCONFIRM=OFF	Do not send response messages to SMS-	SMSCONFIRM=OFF - OK	Conf
	command		
SMSCONFIRM?	Information about SMSCONFIRM configuration	SMSCONFIRM=ON,(OFF)	Inf

The next commands are not affected by the SMSCONFIRM setting due to the specific nature of the commands: STATUS, TEMPERATURE, RUNTIME, CREDIT, DEVINFO, DATE and all information commands ("Inf").

6.2 Free of Charge Confirmation by Call Back

When managing by phone call, your command will be also confirmed by return SMS, but you can configure the device to call back to the mobile phone instead of sending SMS. In this case iSocket will call to your phone within about 15 seconds and then ring off (hang up). So, SIM card credit will not be spent. This allows you to perform reboot or switch operations free of charge! If you pick up the phone, iSocket will drop the call and you will receive an SMS notification about the command that has been executed. This is convenient if you forgot which command was configured for call action and/or want to see the result of a call.

Note! Confirmation by call is not sent to the numbers for alerting, but to the number from which you called to the device. Make sure the device can see your number (do not use "hide my number" option).

Command	Description	Response	Type
RINGCONFIRM=SMS	Send response SMS after call to	RINGCONFIRMTYPE=SMS - OK	Conf
	device		
RINGCONFIRM=CALL	iSocket call back to your phone	RINGCONFIRMTYPE=CALL - OK	Conf
	within 15 seconds and then hang-up		
RINGCONFIRM=OFF	Don't notify results after phone call	RINGCONFIRM=OFF - OK	Conf
	to the device		
RINGCONFIRM?	Information about RINGCONFIRM	RINGCONFIRM=(SMS),CALL,OFF	Inf
	configuration		

6.3 Incorrect Commands, Later Configuration and Commands from Unauthorised Users

If an incorrect command was sent to the device (typo mistake, for example), you will get the "command - No such command exists on the device!" response. If you have password protection, but forgot to specify it before command (see Chapter 5.2), you will get the "Invalid access password!" response. If you are trying to assign an invalid value to the configuration command, you get the message "Incorrect value!". You will get "Time for configuration is expired (Conf)!" response when you try to send a configuration command after the configuration time is up (see Chapter 4). If an unexpected error occurred during the command execution you will get the message "Execute error!". You can disable all the above error messages by setting options ERROR=OFF.

If the security list was configured (see Chapter 5.1) and someone tries to execute a command no response will be received until you install SMSCONFIRMUNAUTH=ON. If you set "ON" value for this parameter, then unauthorised numbers will receive the message "Access deny!" in response to an attempt to execute any command. We do not recommend you to set "ON" value for this option, because unauthorised users who know the phone number of the SIM card can deplete the card's credit with such response messages. Therefore, we also strongly suggest using protection with security list (Chapter 5.1), and not just password protection! This is due to the fact that a command typed without a password is considered an incorrect command and the illegal sender will receive "command - No such command exists on the device!" in response. And he can also deplete SIM card credits by such responses.

Generally, it should be noted that the *ERROR=OFF* command disables all reports about errors and later configuration for all senders. By default, this option is set to "*ON*", so that during the familiarisation period you can get all responses about errors and will not be confused when there is no response from the device. Once you are familiar with the device,

you can then disable the error message responses. In the beginning however, we strongly recommend configuring the list of allowed numbers (Chapter 5.1) and keeping the option *SMSCONFIRMUNAUTH*, which is set to *OFF* by default.

Command	Description	Response	Туре
ERROR=ON	Activates sending of information SMS for each received SMS command, which was not executed due to any error.	ERROR=ON - OK	Conf
ERROR=OFF	Disable the error messages responses	ERROR=OFF - OK	Conf
ERROR?	Information about ERROR configuration	ERROR =(ON),OFF	Inf
SMSCONFIRMUNAUTH=ON	Send reports (errors, not permitted, time out) to unauthorized numbers	SMSCONFIRMUNAUTH =ON - OK	Conf
SMSCONFIRMUNAUTH=OFF	Don't send reports to unauthorized numbers	SMSCONFIRMUNAUTH =OFF - OK	Conf
SMSCONFIRMUNAUTH?	Information about SMSCONFIRMUNAUTH configuration	SMSCONFIRMUNAUTH =(OFF),ON	Inf

7. Measurement and Control of Temperature

iSocket 3G supports one external digital temperature sensor that can measure the temperature of different elements (air, liquid, solid, etc) from -67F (-55C) to 248F (120C) with an accuracy of ± 0.5 °C. You can buy sensors with different lengths of cable from us. The sensor must be connected to the **RED** 3.5mm jack socket on the rear of device.



Short sensor to measure temperature near a device. Can be a good option if you want to monitor the temperature just inside a room. No messy cables. **(Model: ITS00J).**

Sensor with long cable, e.g. 10ft (3m). This sensor can be a good option to measure the temperature outside. The probe is weatherproof and has a "wingnut" for screwing. This sensor is also a good option if iSocket is located close to the heating system, which may affect temperature measurements. Long cable will allow you to install the sensor far from the source of heating, and then you can measure the temperature at precisely the point you want: e.g. ceiling, floor or in the middle of room. (Model: ITS30J). This sensor can be used for measuring the temperature of water, but this is not recommended please consider Temperature Sensor Pro for these purposes. For heavy-duty conditions such as a fish tank with salt water or a boiler that heats up to 212F (100C), or oil, the Temperature Sensor Pro with IP68 protection class will be the best solution. (Model: ITS30JPRO).



IMPORTANT NOTE! Do not insert or remove the temperature sensor on a running device! Switch off the device before you insert or remove the temperature sensor.

Do NOT apply excessive force! - This will damage the jack!



NOTE! Check that the sensor is inserted all the way into the 3.5mm red jack socket right to the very end. You must ensure that there is no gap between the connector of the sensor and the jack socket. Do NOT apply excessive force!

This will damage the jack! If insertion of the sensor feels stiff, gently ease it in rotating it clockwise then counter clockwise.

7.1 Thermometer, Temperature Calibration & Display Format

The external temperature sensor measures the temperature of the environment in the particular area where it is installed and iSocket can provide this information via SMS or API. Information about the temperature will be available immediately the sensor is connected to iSocket. Our sensors are quite precise, but you may want to calibrate the value for some reason. We provide this option with the command *TEMPCAL*.

Temperature display format or temperature related configurations are available in Fahrenheit and Celsius. The preferable format can be configured by the command *TEMPINFO*. This command may have the following values:

- **F** temperature will be displayed in Fahrenheit without symbol "F", e.g. 50 (common for USA);
- **CC** temperature will be displayed in Celsius with symbol "C", e.g. 10C (common for most other countries);
- FC temperature information will be provided both in F and C in the following format: 50F (10C);
- **CF** temperature information will be provided both in C and F in the following format: 10C (50F);
- FF temperature will be displayed in Fahrenheit with symbol "F", e.g. 50F;
- **C** temperature will be displayed in Celsius without symbol "C", e.g. 10.

If *TEMPINFO* is configured to **F**, **FC** or **FF** then all temperature related setting that you attempt to set to the device without any temperature symbol will be treated as if you were configuring them in Fahrenheit. E.g. *TEMPCAL=2* will be treated as though you wish to set 2F. If *TEMPINFO* is configured to **CC**, **CF** or **C** then the device will accept the value as if you were setting them in Celsius. We would recommend that you either configure a suitable *TEMPINFO* value for you or always set the temperature values with symbol F or C, e.g. *TEMPCAL=2F* or *TEMPCAL=2C*.

The following table describes how to use the above commands.

Command	Description	Response	Туре
TEMPERATURE	Informs about temperature and temperature rise/fall thresholds (Chapter 7.3)	TEMPERATURE: 70F (21C), t-rise: off, t-fall: 32F (0C)	Ctrl
TEMPCAL=2F	Changes calibration constant. Values from -36F	TEMPCAL=2F (1C) - OK	Conf
or	to 36F or from -20C to 20C.		
TEMPCAL=1C			
TEMPINFO=CC	Sets how to display the temperature	TEMPINFO=CC - OK	Conf
or	information. See all values and other important		
TEMPINFO=F	information above in this chapter.		

7.2 iSocket Smart Thermostat with Energy Saving & Equipment-Friendly Mode

iSocket® Smart Software has an advanced thermostat feature that allows you to control both heating and cooling systems with a wide choice of settings and be very simple in the same time. The thermostat feature allows you to control the main power socket and change it depending on the pre-configured "switch-off" temperature. The interval between temperature readings from sensors is one minute.

NOTE! When the thermostat function is in operation it will override any other attempts to change the status of the main power socket. The thermostat has the highest priority since this is the only logical behavior. If you wish to control the socket manually you have to disable the thermostat. When you disable the thermostat, the relay remains in the status it had just before you disabled the function, because the device does not know why you are disabling the thermostat, or what status of the power socket you wish to have after that. You would need to switch the socket on or off depending what you require.

Example of heating system control. A typical example of temperature control would be heating activation in remote area if the temperature drops below 50F (10C). The following settings must be used: *THERMOSTAT=HEATING, SWITCHOFFTEMP=50F* (or *SWITCHOFFTEMP=10C), THERMOSTATON*. With these settings the thermostat will keep the temperature in the range of about 50F (10C). This means that as soon as the room is heated up to 50F (10C) the main socket is turned off. If the current temperature in the room is over 50F (10C) the main socket does not turn on until the temperature drops below 50F (10C).

Example of cooling system control. Another example is air conditioning activation when the temperature exceeds 72F (22C): *THERMOSTAT=COOLING, SWITCHOFFTEMP=72F* (or SWITCHOFFTEMP=22C), THERMOSTATON. This means that as soon as the room is cooled to 72F (22C) the main socket is turned off. If current temperature in the room is less than 72F (22C) the main socket does not turn on until the temperature rises above 22C (72F).

Energy Saving and Equipment-Friendly Mode (ESEFM)

Some cooling or heating systems do not like being switched too often while the thermostat is working. For that purpose we have implemented a deviation value *TEMPGAP* (hysteresis) that is 2F or 1C by default, but can be changed by up to 36F or 20C.

Example of cooling system control with ESEFM. If you want to cool down a room for example a wine cellar - to 50F (10C), but you can accept a temperature of up to 57F (14C) in that room, you can set the deviation (*TEMPGAP*) to 7F (or 4C). In this case, the cooling equipment will switch less often. The cooling system will be turned on after the temperature exceeds 57F (14C) and will turn off when the temperature drops to 50F (10C). The next time the cooling will switch on again is when the temperature exceeds 57F (14C). Thus in the range 50F-57F (10C-14C) no switching occurs, which is positive for the relay of the iSocket as well as your cooling equipment, and may save energy.

Example of heating system control with ESEFM. If you wish to maintain the temperature on the site - for example a greenhouse - at 82F (28C) by heating, but you accept that the temperature may drop to 75F (24C), the settings are as follows. THERMOSTAT=HEATING, SWITCHOFFTEMP=82F (or SWITCHOFFTEMP=28C),

TEMPGAP=7F (or TEMPGAP=4C). In this case, the thermostat will operate in heating mode with less switching and will maintain the temperature in the region of 75F-82F (24C-28C). The heater will be activated at 75F (24C) and will be turned off at 82F (28C). The next time the heating will only be activated when the temperature falls to 75F (24C).

NOTE! You save energy when there are no abrupt changes of the temperature or frequent changes beyond the specified range on the controlled site. The value of *TEMPGAP* must be calculated individually for each individual case.

Useful note. When you configure the thermostat you usually need to execute 4 SMS commands or less. You may use Multi Texting Mode to execute them in one message – see Chapter 4.4. for details.

iSocket Smart Thermostat also supports the configuration of so-called profiles through a scheduler – you may change the *SWITCHOFFTEMP* setting at a particular time of day. Please see details in Chapter 10.

Command	Description	Response	Туре
THERMOSTATON	Activate thermostat	Thermostat function is working now. Mode: Heating Switch-off temperature: 50F (10C)	Ctrl
THERMOSTATOFF	Disables thermostat. Please note, disabling of the thermostat will not change the relay status.	Thermostat function was disabled! The relay remains in the same status.	Ctrl
THERMOSTAT= HEATING	Set the condition of thermostat. Use this value if heating system is connected to device	THERMOSTAT=HEATING - OK Switch-off temperature: 50F (10C) Thermostat: Enabled	Conf
THERMOSTAT= COOLING	Set the condition of thermostat. Use this value if cooling system is connected to device	THERMOSTAT=COOLING - OK Switch-off temperature: 72F (22C) Thermostat function: Enabled	Conf
SWITCHOFFTEMP=10C or SWITCHOFFTEMP=50F	off the main socket when thermostat enabled. Values from -67F to 248F, or from -55C to 120C. Do not forget to type F (means Fahrenheits) or C (means Celsius) after the value. Only integer values must	SWITCHOFFTEMP=50F (10C) - OK Mode: Cooling Thermostat function: Disabled	Conf
THERMOSTAT?	be used! Information about thermostat configuration	Thermostat function: Disabled Mode: Cooling Switch-off temperature: 50F (10C)	Inf
TEMPGAP=5F or TEMPGAP=3C	Sets the deviation for the thermostat – see description above in this Chapter. Values from 1F to 30F or from 1C to 20C. It is set to 2F (1C) by default.	TEMPGAP=5F (3C) - OK	Conf

Do you particularly agree, or disagree with anything in our software? Give us your opinion: http://isocket.me/feedback

- 7.3 Temperature Monitoring Notifications, iSocket® Temperature Notifier Before enabling alerts you must set up at least one number for alerts see Chapter 5.3. There are several type of alerts related to temperature in iSocket Smart Software installed on your iSocket 3G: switch-off alert (SWITCHOFFALERT), temperature fall alert (TFALLALERT), temperature rise alert (TRISEALERT), and alert when temperature sensor has failed (TSENSFAILALERT).
- •SWITCHOFFALERT enable SMS sending when "switch-off" temperature is reached and a relay was therefore deactivated. This just allows you to know that main power socket was switched off and shows at which temperature this happened. This feature is related with thermostat and works only if thermostat is enabled. Note! It will send an alert every time the "switch-off" temperature was reached, so this event could be too often during the work of thermostat. We do not recommend to enable this alert!
- •TSENSFAILALERT send alert if some temperature sensor has failed or a reading problem occurred on an active temperature sensor. Only one alert will be sent until you change something in thermostat settings and some new failure occurred. If a temperature sensor has failed, then the thermostat will remain activated, but will not operate.

NOTE! These two types of alert are related to the thermostat and work only if thermostat is enabled. We do **NOT** recommend to enable *SWITCHOFFALERT*!

Command	Description	Response	Type
SWITCHOFFALERT=ON	Enable SMS sending when	SWITCHOFFALERT=ON - OK	Conf
	SWITCHOFFTEMP is reached and main		
	socket is therefore deactivated.		
	Works only if thermostat is		
	enabled.		
SWITCHOFFALERT=OFF	Disable above alert	SWITCHOFFALERT=OFF - OK	Conf
SWITCHOFFALERT?	Show current settings for	SWITCHOFFALERT=(OFF),ON	Inf
	SWITCHOFFALERT		
TSENSFAILALERT=ON	Enable sending alerts if some	TSENSFAILALERT=ON - OK	Conf
	temperature sensor failed.		
TSENSFAILALERT=OFF	Disable failed alerts	TSENSFAILALERT=OFF - OK	Conf
TSENSFAILALERT?	Show current settings of	TSENSFAILALERT	Inf
	TSENSFAILALERT	=(ON),OFF	
TRISEALERT=35C	Set the temperature at which you	TRISEALERT=96F (35C) -	Conf
	should receive a temperature rise	OK	
or	alert. Values from -67F to 248F or		
	from 55C to 120C. Do not forget to		
TRISEALERT=96F	type F (means Fahrenheits) or C		
	(means Celsius) after value. Only		
	integer values must be used!		
TRISEALERT=OFF	Disable temperature rise alert	TRISEALERT=OFF - OK	Conf
TRISEALERT?	Show current settings for TRISEALERT	TRISEALERT=96F (35C)	Inf
TFALLALERT=15C	Set the temperature at which you	TFALLALERT=60F (15C) - OK	Conf
	should receive a temperature fall		
or	alert. Values from -67F to 248F or		
	from 55C to 120C. Do not forget to		
TFALLALERT=60F	type F (means Fahrenheits) or C		
	(means Celsius) after value. Only		
	integer values must be used!		
TFALLALERT=OFF	Disable temperature fall alert	TFALLALERT=OFF - OK	Conf
TFALLALERT?	Show current settings for TFALLALERT	TFALLALERT=60F (15C)	Inf

IMPORTANT NOTE! When a thermostat was deactivated because of temperature sensor failure or when you disable a thermostat manually, the relay will remain in the same condition as it was just before thermostat was disabled. This means that disabling the thermostat won't change the previous status of relay and you must do it yourself if you need to.

iSocket® **Temperature Notifier** - a feature of the iSocket device which notifies you in the event of the room temperature falling below (**TFALLALERT**) or rising above (**TRISEALERT**) critical levels. This is another type of temperature alert which your iSocket can provide for you. This feature does not affect the thermostat and can work independently. This feature is not related to output, but to temperature sensors connected to the unit. If you need to know when the temperature drops below the specified level, set **TFALLALERT**. If you need to know when the temperature exceeds the specified value, set **TRISEALERT**.

You will get temperature fall/rise notification when temperature fall below or rise above 2F or 1C from configured values.

8. Power Outage & Power Restore Alerts

The new iSocket 3G was primarily designed for power outage notification and this feature was totally redesigned for this new iSocket model. It now has a number of useful settings.

8.1 iSocket® Power Notifier & BALET Feature

iSocket® **Power Notifier** - the feature of iSocket 3G that notifies you if power has failed or is restored on a remote site. Your iSocket is equipped with a high quality Li-ion rechargeable battery with excess capacity unlike other cheap products with weak batteries or an unreliable supercapacitor. Using such a battery ensures that the customer will receive a power failure notification even in the event of a break in the cellular network. The iSocket Smart Software is able to detect a break and wait for a signal before sending the power failure message. The high quality battery allows a delay. As soon as the message is sent the device will shut down. The battery will be charged later, when device is powered again.

"Be Always Alerted" (BALET) – this feature ensures that you won't miss a power "failure" or "restore" notification. BALET comprises two main features – the ability to set up a delay for power failure detection, which is set to zero by default (means "no delay", or report almost any interruption of the power supply) and the ability to notify you by call. iSocket will call you figuratively speaking, "be aware" once the power has failed or been restored. By default, notification by SMS only is configured. We would not recommend only configuring a call notification, because if your number is busy or unavailable you will not be notified – see "Notification cycle logic" below. Use notification either by both SMS and call or only SMS. See more options in the following table.

NOTE! With PFAILDELAY set to zero you will probably detect even small flickers. However, we can't guarantee this, because it will depend on your environment and how fast the capacitors are discharged, but in most cases it will detect about 200ms interruptions. If you don't want to detect such short interruptions we would recommend that you change this setting to 1 or 2 seconds.

If power failure/restore alerts are disabled then the PFAILDELAY setting decides the delay for turning off the iSocket. So basically, this setting decides the delay for when to treat a power interruption as a power failure event.

Command	Description	Response	Type
POWERALERT=SMS	Notification about power failure and power restoring by text message	POWERALERT=SMS - OK	Conf
POWERALERT=CALL	Notification about power failure and power restoring by call	POWERALERT=CALL - OK	Conf
POWERALERT=BOTH	Notification about power failure and power restoring by both text message and call	POWERALERT=BOTH - OK	Conf
POWERALERT=CALLFAIL	Notification about power failure by call, but about power restoration by text message	POWERALERT=CALLFAIL - OK	
POWERALERT=OFF	Do not send power failure/restore alerts	POWERALERT=OFF - OK	Conf
POWERALERT?	Information about POWERALERT setting	POWERALERT=(SMS), CALL,BOTH,CALLFAIL,OFF	Inf
PFAILDELAY=2	Sets the delay before considering a power interruption as a power failure event. See more above in this Chapter. Values from 0 to 90 seconds, increment 0.1.	PFAILDELAY=2 - OK	Conf
PFAILDELAY?	Information about PFAILDELAY setting	PFAILDELAY=2	Inf
LASTTEMP=ON	This will allow to see current temperature in the power failure message if you have a sensor.	LASTTEMP=ON - OK	Conf
LASTTEMP=OFF	Don't show temperature info in the power failure message	LASTTEMP=OFF - OK	Conf
LASTTEMP?	Info about LASTTEMP settings	LASTTEMP=ON,(OFF)	Inf

NOTE! To enable such notifications you must setup at least one number for alerts (see Chapter 5.3). Place the most important numbers for notifications at the beginning of the list. Read below to understand the reason.

Notification cycle logic. If you have configured notification by SMS the device will send messages to all numbers and then will shut down waiting for power restoration. No settings will be lost no matter how long power was interrupted for. Once power is restored it will notify all numbers by SMS again. If your number was not available at the moment the message was sent, you will receive that message later from the mobile operator's pool. iSocket sends messages to the cellular network and then shuts down. Messages are stored on your operator's network.

If call alerts are configured, the device will call your number directly within about 15 seconds. If you answer (pick up the handset) within these 15 seconds, the device will drop that call and will try to reach the next number on the list. If you don't answer or if you drop the call yourself, after 15 seconds the device will try to reach the next number on the list. The device will only try to call each number once. The call-notification cycle is considered complete as soon as all numbers are called. The device will shut down after that. If no numbers were available you will miss the alert. Therefore we would not recommend that you only use call alerting unless you have arranged for a service provider who is always available to pick up the call and action it accordingly.

If you have configured notification by both calls and SMS then the device will first send messages to all numbers on the list and will then start the call cycle. This ensures that all numbers are notified even in the unlikely case of the battery not having the capacity to notify all numbers by call.

- 21 -

NOTE! Do not keep wrong or non-existent numbers on the list! This will delay alerts to good numbers.

Note for developers. If you are a developer and you want to build a service around this feature we provide power failure/restore information via API immediately when the event occurs and you may decide how to work with that data, how many users to notify, when and how.

8.2 Equipment-Friendly Power Restore Mode

Some equipment requires manual intervention when power has been interrupted. For example, some servers need attention from an administrator when it is powered back on again after power interruption. iSocket remembers the previous state of the power to connected equipment by default, and will return to this state when power is restored – which means it will either keep your equipment turned on or off depending on the status before the interruption. Soon after power restoration, the thermostat will start working again (if it was enabled) and the relay will follow its logic. This is the most suitable configuration for standard equipment. However, if the equipment connected to iSocket needs your manual attention before it is turned on again, you would need to set POWERSTATE=OFF. Finally, if you always need to turn on the power to connected equipment after power interruption, you would have to set POWERSTATE=ON.

NOTE! This setting is not affected by the PFAILDELAY setting (see above), because this feature is designed for a different purpose – for equipment-friendly power restoration mode. That is why the main power socket always follows the setting of POWERSTATE – every time mains power supply fails – and will ignore PFAILDELAY settings. Be very careful if your equipment requires manual intervention and you set POWERSTATE=OFF together with a high value for PFAILDELAY. In that case there could be a situation when you get the power to your equipment switched off without any notification! We recommend that you keep PFAILDELAY=0 in that case.

Command	Description	Response	Туре
POWERSTATE=	The main power socket remembers its state	POWERSTATE=	Conf
REMEMBER	and returns to it after the resumption of	REMEMBER – OK	
	power supply to the device.		
POWERSTATE=ON	The main power socket always turns on	POWERSTATE=ON - OK	Conf
	when resuming power supply to the device		
POWERSTATE=OFF	Main power socket is always turned off when	POWERSTATE=OFF - OK	Conf
	resuming power supply to the device		
POWERSTATE?	Information about POWERSTATE	POWERSTATE=	Inf
	configuration	(REMEMBER), ON, OFF	

9. Date and Time

Date and time are used to configure the scheduler (Chapter 10). It can also be seen in different responses. The device automatically sets the date/time as soon as you start to use it. Automatic date/time settings are based on the SIM card providers's network. If for some reason at the beginning of the operation an incorrect date or time was set you can change it manually. Usually the best way to do this is to use **DATE+-** command for offset the time. The device saves date and time settings for several hours after a power failure.

Command	Description	Response	Туре
DATA+-hh:mm	Offsets the time for a certain value.	DATE-5 - OK	Conf
	Examples: DATE-5 or DATE+2:30		

DATESMS	This message sets date/time based on time	DATE yy/mm/dd,	Conf
	taken from the SIM card providers's network.	hh:mm:ss+zz - OK	
DATE=yy/mm/dd,h	Fully manual configuration of the date and time	DATE=yy/mm/dd,	Conf
h:mm:ss+zz	zz – is GMT time zone (currently is not	hh:mm:ss+zz - OK	
	supported, can be omitted)		
	hh must be in 24h format (e.g. 15 for 3pm)		
DATE	Request for actual date and time in device	DATE yy/mm/dd,	Ctrl
		hh:mm:ss+zz	

Would you like to see more features or is there something in our software or documentation that you dislike? You are welcome to send us your feedback! http://isocket.me/feedback

10. Scheduler

The main power socket can be controlled in the automatic mode, based on pre-scheduled rules. Some other commands could be executed at pre-defined intervals. For example, enable/disable thermostat function or regularly send status of the device. Information about statuses is sent to the alert numbers – see Chapter 5.3 for configuration. The schedule accepts a maximum of 20 rules.

Command	Description	Response	Type
SCHEDULER+hh:	This command adds a new rule for a specified	SCHEDULER+hh:mm,day,	Ctrl
mm,day,action	time	action – OK	
SCHEDULER-	Delete record for configured time and day	SCHEDULER-hh:mm,day	Ctrl
hh:mm,day		- OK	
SCHEDULER-ALL	Remove all tasks	SCHEDULER-ALL - OK	Ctrl
SCHEDULERS	Request for scheduler configuration	Tasks:	Inf
		11:59,*,TON	
		6:00pm,MON,INF	

^{* -} any day, Mon - Monday, Tue - Tuesday, Wed - Wednesday, Thu - Thursday, Fri - Friday, Sat - Saturday, Sun - Sunday

NOTE! The scheduler supports both 12h and 24h formats. You can set the time in either format, e.g. 6:05pm or 18.05 means the same. Display format will depend on your *TEMPINFO* setting. If your preferable format is set to Fahrenheit, then display format for the scheduler will be 12h, otherwise 24h – see Chapter 7.1 for details about *TEMPINFO* settings.

Actions:

ON - Turn on main power socket

OFF - Turn off main power socket

INF - Send status of iSocket (STATUS command execute)

TON - Thermostat function activation

TOFF - Thermostat function deactivation

RESTART - Restart main power socket (RESTART command execute)

PULSE - Send a pulse to relay (PULSE command execute)

SOT=xxC or SOT=xxF - Set "Switch-off" temperature (see Chapter 7.2) in Fahrenheit or Celsius

Examples:

SCHEDULER+8:00,*,ON SCHEDULER+9:00,Mon,TON SCHEDULER+5:00pm,Sat,INF SCHEDULER+7:00am,*,SOT=68F SCHEDULER+7:00,*,SOT=20C Turn on main power socket every day at 8:00 Activate thermostat function every Monday at 9:00 Send status of iSocket every Saturday at 5pm (17:00) Set "switch-off" temperature to 68F every day at 7am Set "switch-off" temperature to 20C every day at 7.00

iSocket Smart Thermostat Profiles

With this unique iSocket Smart Thermostat feature you can maintain different temperatures on a remote site depending on the day and time, automatically. For example, you can configure iSocket to support a lower temperature at night and heat the room up to the desired temperature just before your arrival. Say you want to maintain 64F (18C) every night after 6pm (18.00), but you want to heat the room up to 73F (23C) until 8 o'clock in the morning every day except weekends and support this temperature till night-time. Even that complex setup is possible if you add the following rules to the scheduler:

SCHEDULER+6:00pm,*,SOT=64F SCHEDULER+7:00am,*,SOT=73F SCHEDULER+7:01am,Sat,SOT=64F SCHEDULER+7:01am,Sun,SOT=64F

Let's look at this example. Every day at 6pm (18.00) we set the "switch-off" temperature to 64F, but every day at 7am (7.00) we override this to 73F. Why not at 8am (8.00)? We suppose the room will heat up to the desired temperature in one hour. Because we don't want to heat the room at weekends we override the temperature to 64F again just one minute later after it was set to 73F – on Saturday and Sunday only. For Celsius the logic is the same, just use values in Celsius with "C" at the end. Provided the thermostat function is enabled, the thermostat is configured for heating mode and the temperature sensor is functioning properly - see Chapter 7 for details.

11. Credit Information and Subscription Management (experimental)

NOTE! Correct operation of these experimental features cannot be guaranteed. We reserve the right to remove these features in future versions of devices. The absence or incorrect function of these features on your device will not be covered by warranty.

You can get SIM card credit information. Not all operators provide such service. With prepaid cards this service is usually available. For the monthly mobile subscriptions it is usually not available. You can also activate some UMS codes remotely.

Command	Description	Response	Type
CREDITUMS=*X#	To install UMS code for balance check. For	CREDITUMS =*100# -	Conf
	ex., CREDITUMS=*100#. Ask UMS code	OK	
	from your mobile operator		
CREDITUMS=NO	Remove UMS code for balance from memory	CREDITUMS =NO - OK	Conf
CREDITUMS?	Information about CREDITUMS settings	CREDITUMS: *100#	Inf
CREDIT	Information about balance (CREDITUMS	Response from mobile	Ctrl
	must be pre-installed)	operator	
SIMCARD*X#	To manage your subscription by UMS codes	Response from operator	Conf

12. Identification, Device Information & My Power Guru

Business customers with several locations can configure each individual iSocket with a unique ID and use this ID as an identifier on their service pool. The ID must have a maximum of 8 characters – only latin characters and numbers are allowed. You may store the ID on the device permanently and enable or disable the display of this ID with an additional setting.

My Power Guru

Latest revisions of iSocket 3G can be connected to My Power Guru service for advanced power monitoring and other features. Please visit www.mypowerguru.com or contact us for details.

Command	Description	Response	Type
ID=123456ab	Sets the ID. Maximum 8 characters. ID is stored in non-volatile memory once configured.	ID=123456ab - OK	Conf
ID?	Shows current ID settings	ID: 123456ab	Inf
IDSHOW=ON	Enables display of ID at the end of each	IDSHOW=ON - OK	Conf
	message		
IDSHOW=OFF	Do not show ID at the end of messages	IDSHOW=ON - OK	Conf
IDSHOW?	Informs about IDSHOW settings	IDSHOW=ON,(OFF) - OK	Inf
IMEISHOW=ON	The IMEI number of the device will be included at the end of each SMS from the device.	IMEISHOW=ON - OK	Conf
IMEISHOW=OFF	Do not show IMEI	IMEISHOW=OFF - OK	Conf
IMEISHOW?	Informs about IMEISHOW settings	IMEISHOW=(OFF),ON	Inf
DEVINFO	Reports information about the device include serial number, firmware version, etc. Please provide this information every time you contact technical support.	iSocket 3G S/N: 12345678987654321 FW: v1.0.0 (c) iSocket Systems	Ctrl

13. Original Factory Settings & Remote Update

Each new device has pre-configured factory settings. These are the so-called default values. These settings are described below. The device can be returned back to these default values at any time. The reset button is positioned on the front panel next to the logo (see Chapter 1). To reset the device, press this button with a suitable thin object, hold it for about 5 seconds until the POWER and OUT indicators start blinking simultaneously. Then release the button and the reset procedure will start. Reset will take about 5 seconds or less. Then the device will restart - the POWER and OUT indicators blink 3 times and the device starts to search the network. Your device is now returned to the original factory configuration.

NOTE! All your personal settings will be erased during this reset procedure.

Default factory setting

Main socket is switched off Scheduler is empty Thermostat is not activated ID is emtpy RESTARTIME=10 PULSETIME=2 RING=NOACTION RINGPUBLIC=OFF SECLIST=OFF PASSWORD=NO SMSCONFIRM=ON RINGCONFIRM=SMS ERROR=ON SMSCONFIRMUNAUTH=OFF CREDITUMS=NO IDSHOW=OFF IMEISHOW=OFF POWERALERT=SMS PFAILDELAY=1 POWERSTATE=REMEMBER TEMPINFO=FC
THERMOSTAT=HEATING
SWITCHOFFTEMP=50F(10C)
TEMPGAP=2F(1C)
TEMPCAL=0F(0C)
SWITCHOFFALERT=OFF
TSENSFAILALERT=OFF
TRISEALERT=OFF
TFALLALERT=OFF
TSENSFAILALERT=OFF
TSENSFAILALERT=OFF
LASTTEMP=OFF

Remote Firmware Update

This new iSocket supports FOTA (Firmware Over The Air). Make sure that your SIM card provider allows data on your SIM card. Firmware update will not use a lot of data traffic - just a few kilobytes. Ensure that power to iSocket will not be interrupted during the remote update. Only update the firmware if have found a malfunction or if you know that we have released new features. Downgrade of firmware is not supported. NOTE! We do not guarantee that the server for the update will always be available. We don't publish new firmware often, because the device is well tested. This is why we do not support the update

server continually online. If your iSocket cannot connect to the server, please try later or contact us if you think that your iSocket requires updating. Begin the update procedure by simply texting the command *FWUPDATE* to iSocket. **You might need to configure APN if your provider will not support automatic configuration – contact us for details.**

14. LED Indicators

The LED positions were described in Chapter 1. Below we list possible LED modes.

POWER (green)

Lights constantly Input power to device is OK

Blinks 4 times per second then lights SIM card is missed or incorrect placed

2 seconds

ONLINE (blue)

Lights constantly Not logged to the network yet – either searching, or poor signal,

or SIM card problem

Blinks every second Logged to the cellular network

Blinks fast Data exchange (e.g. during firmware update or working via API

with a remote server)

OUT (red)

No light Main power socket is turned off Lights constantly Main power socket is turned on

Blinks very fast (4 times per second) A possible hardware error – see the behavior of other indicators

POWER and **OUT** blink 3 times

together only once

This blinking indicates that the firmware has started and usually you will see it only once after powering up the device or after a

remote firmware update

POWER and **OUT** blink together 4

times per second then light 2

seconds

SIM card problem (PIN protection is enabled, no communication

with SIM card, wrong or bad SIM card)

POWER and **OUT** blinks alternately iSocket is upgrading firmware after you have sent FWUPDATE to

it. Do not switch off the power! Just wait

15. Technical Data

Product	iSocket 3G
Available	Socket/Plug: NEMA 5-15 (North America) - Model Number: IS3GUS
Socket/Plug	Socket/Plug: AS/NZS 3112 (Australian) - Model Number: IS3GAU
	Socket/Plug: BS 1363 (British) - Model Number: IS3GUK
	Socket/Plug: CEE 7/4 ("Schuko") - Model Number: IS3GEU
	Socket/Plug: CEE 7/5 (French) - Model Number: IS3GFR
	Socket/Plug: CEI 23-50 S17/P17 (Italian) - Model Number: IS3GIT
	Socket/Plug: SEV 1011 (Swiss) - Model Number: IS3GCH
	Socket/Plug: SI32 (Israeli) - Model Number: IS3GIL
Power Input	100-240VAC, 50-60Hz
Consumption	Stand-by power <1W, Green Power
Output Relay	Max. switching 16A/250VAC, protected by 15A fuse. Turn on/off or restart of
	120VAC/240VAC appliances by sms or call.
Hidden button	For manual switching of main relay and for reset to factory defaults.
Input for	Mini-jack 3.5mm connector on the rear of the device, RED color. Only sensors from the
Temperature	original manufacturer are supported. Sensors are weather-proof or water-proof,
Sensor	measurement limits from -67F (-55C) to 248F (120C). ± 0.5 °C accuracy from -10°C to
	+85°C.
Temperature	Thermometer and thermostat features, temperature measurement provided by SMS,
control	turn on/off equipment by thermostat's settings. iSocket® Temperature Notifier –
	send temperature rise/fall notifications.
Indicators	POWER green, ONLINE blue, OUT red

Built-in	Li-ion or Li-po high quality batteries with excess capacity cater for signal delays in the
rechargeable	event of a break in the cellular network before sending the power failure alert. Charging
battery	from internal charger about 20 hours if totally discharged. iSocket® Power Notifier –
-	power failure/restore alerts.
SIM socket	Micro SIM, push-push type, plug-in SIM card 1.8/3V, contract or prepaid (PAYG) SIM
	cards
Mobile	Built-in antenna
Network	
	iSocket® Online 24/7 – gets the device back online even after a break in the mobile
	network
	Model IS3GUS:
	Quad-Band GSM/GPRS/EDGE (2G) 850/900/1800/1900MHz
	Dual-Band UMTS/HSDPA (3G) 850/1900MHz
	Models IS3GAU, IS3GUK, IS3GEU, IS3GFR, IS3GIT, IS3GCH, IS3GIL:
	Quad-Band GSM/GPRS/EDGE (2G) 850/900/1800/1900MHz
	Dual-Band UMTS/HSDPA (3G) 900/2100MHz
Scheduler	Scheduling the following functions to be executed at a particular time: turn on/off,
Scriedulei	restart or pulse relay, activation/deactivation of thermostat, sending status with
	temperature information, configuring "switch-off" temperature.
Security	Password, phone number list, limited configuration interval.
Operation	Operation conditions: Indoors, dry conditions, 14F – 104F (-10C – +40C)
conditions,	Store conditions: -22F - 122F (-30C - +50C)
Store	Important notes! While the product can operate at low temperatures (below 0C/32F)
conditions	this is not supported due to the technical specification for most SIM cards. A SIM card is
	not supplied with the device and is therefore not a part of the device. You must not turn
	on the device when the temperature falls below 0C/32F - the device must be already
	turned on at this moment, and then the heat from the electronics will compensate for
	the low ambient temperature. You must not turn on the device if there has been an
	abrupt change of conditions from cold to warm or vice versa. Please wait a few hours to
	stabilise conditions before turning on the device.
Weight /	Net/Gross: 258g (0.56lb) / 410g (0.9lb)
Dimensions	Temperature sensors: ITS00J 7g (0.24oz), ITS30J 72g (2.5oz)
	Product dimensions (approx.) LxWxH: 65x45x140 mm
	Packaging (LxWxH): 170x115x80 mm
	Shipping weight: 500g (1.1lb)

16. Troubleshooting

Please read the safety instructions carefully (Chapter 2) as well as the warranty terms (Chapter 17). You may not repair the device yourself. Here are descriptions of the possible problems and their rectification. Only the simplest problems are mentioned. More information can be found on the website www.isocketsystems.com. Some of the described situations may not be a malfunction. If you are unable to eliminate any problem yourself, then, during the warranty service, you can take the device to the store from which you bought it. Post warranty service is provided by the manufacturer or authorised service centres if such exist. Some advice can be given by e-mail. When contacting sure to specify the device model, firmware version and network signal quality report (you can check these by texting *DEVINFO* to iSocket).

Please read Chapter 14 for information about the indicators. Indicators can signal different faults.

We recommend that you also check our FAQ http://isocket.me/faq

Possible malfunction: No lights on indicators after iSocket switched into a wall outlet. **Possible solution:** Make sure that the wall outlet is functioning and that power is available.

Possible malfunction: The device is plugged into a wall outlet, the POWER indicator is on, but the device does not accept any commands.

Possible solution: Make sure that all indicators are correctly lit (see Chapter 14), the SIM card is inserted correctly, PIN-code authorisation is removed on the SIM card and cellular network is available.

Possible malfunction: The device attached to the main socket will not turn on, although the main socket itself is working.

Possible solution: Check whether the connected device functions and whether its own switch is turned on

Possible malfunction: Command was sent, but no response and nothing happens.

Possible solution: The iSocket could have lost contact with cellular network or there is no electricity in the home network. If you're away from the device and cannot verify the existence of electricity or cellular signal in the home network you can carry out a simple test. Try to call to the device's number. If this works, you will hear a ringing tone instead of a "subscriber not available" signal (only if RING=NOACTION). If you are sure that the device is online, you need to look for other possible problems. One possibility is that the phone number from which you send a message is unauthorised and therefore you will not receive any messages and no action will be carried out (Chapter 5.1). A mistake in writing the command could have occurred and error suppression could have been set (ERROR=OFF). In this case you would not know if you had made a mistake in the command. Check your outgoing messages to see what command was sent and check that it was written correctly, according to the manual. Read about other potential problems below.

Possible malfunction: The OUT indicator reports an error (blinking 4 times per second)

Possible solution: If the OUT indicator blinks 4 times per second, even only occasionally (e.g. at the start of the device), it is likely that there is some problem with the SIM card. Check that the SIM card in the device doesn't contain any data (such as stored phone numbers and messages). If the SIM card has data on it then clean it using your cell-phone. Also try using another SIM card. If the OUT indicator is blinking constantly and the blue ONLINE indicator is always off, there is probably a problem with the power of the module. Contact the service department or technical support.

Possible malfunction: The phone from which device was controlled has been lost, but the number was recorded in the list of allowed numbers. So you cannot control the device any longer.

Possible solution: The device must be reset to the factory defaults and set again with another phone. (Chapter 13).

Possible malfunction: The device is behaving strangely – e.g. no response to commands.

Possible solution: Try to reset to factory default and configure the device again (Chapter 13). You can also check that the SIM card in the device doesn't contain any data (such as stored phone numbers and messages). If the SIM card has data on it then clean it using your cell-phone.

Possible malfunction: The device doesn't send power failure / power restore alerts.

Possible solution: Make sure that the number for alerts is installed properly (see Chapter 5.3). Lithiumion batteries are subject to a natural ageing process. When the capacity falls below a critical value you will not be able to receive the power failure alerts. If this happens during the warranty period you have the right to get a replacement battery for your product. If you use the device outside the specified temperature range this can also be the reason for not receiving power failure alerts.

17. Limits of Warranty and Liability

These Warranty and Liability Terms ("terms") are subject to change without notice. Current terms are available from https://www.isocketsystems.com/warranty/. The warranty terms below apply to customers who purchase products directly from iSocket Systems for personal use. Warranty terms for products purchased from dealers may be different. Contact the dealer who sold you the product for details. Our products are subjected to stringent final quality inspection. iSocket Systems quarantees that your device is free from material and production defects. iSocket Systems will not be liable for any direct or indirect material loss to the owner or other persons caused by use of this device. This warranty only covers production defects. The rights and benefits under this guarantee are additional to your statutory rights which are not affected by this guarantee. If your device produces any of the defects mentioned above within a period of 12 months after purchase (for some countries 2 or 3 years extended warranty is available - check our website), iSocket Systems offers, at its discretion, either a free-of-charge repair or exchange. The guarantee applies only for you as the original end customer. It does not apply to damage to fragile components such as the housing, damage caused by improper use, culpable damage, damage caused by breakage, heat, water or acts of God, damage caused by unauthorised tampering with the device or exposure to chemicals, damage caused by overloading in the house power network. The life cycle of the relays depends on how often it is turned on and off, but iSocket Systems guarantees its function at least during the warranty period. Any replacement hardware product will be warranted for the remainder of the original warranty period, or thirty (30) days, whichever is longer or for any additional period of time that may be applicable in your jurisdiction (on condition that the device was purchased through an authorised channel). iSocket Systems does not guarantee the preservation of personal settings on the device after its repair. Repair or replacement may involve the use of functionally equivalent new or used parts. Replaced parts become the property of iSocket Systems. The warranty will be lost if safety instructions not complied with (see Chapter 2) when using the device, and if the conditions of use were violated. iSocket Systems disclaims any responsibility for damage to health or property suffered as a result of using this device and failure to comply with safety instructions. Improper use, disassembling or product modification causes warranty loss. iSocket Systems does not quarantee that this product will provide uninterrupted operation of the controlled equipment; this device is not an uninterruptible power supply (UPS). This product is not designed for safe disconnection of the controlled equipment from power network; the device is not equipped with a residual-current device (RCD). Correct function of the switching function all that is guaranteed. Alarm features in this device, as well as functions related to temperature control, are optional and cannot be considered as a substitute for professional systems. iSocket Systems assumes no liability for damage to property in connection with the operation of these functions. The ability to send different types of alerts depends on the mobile network and other factors. iSocket Systems provides the best technological solutions to perform these operations successfully, but iSocket Systems do not allow use of the device for purposes related to life support and assumes no liability for damage to property, loss of profit or any other loss in connection with the operation of device. The maximum liability is limited by the cost of device in a case of its failure. iSocket Systems provides protection against unauthorised access to the device, but gives no guarantees regarding the impossibility of such access and is not responsible for the consequences of such lack of access. iSocket Systems reserves the right to modify the device and its software without further notice. Differences in the software not covered in these instructions are acceptable and not considered as defects and cannot be a matter for warranty service. Releasing new software, including new functions, is not an excuse for its replacement under warranty terms and can be done for an additional fee. Illegal use of remote listening option and the illegal extraction of information is a violation of the law in most countries. Before using this function consult with a lawyer. iSocket Systems categorically prohibits the use of this device for unlawful purposes and is not responsible for illegal use of the device. Please make sure that mobile network is available in the area. Bad coverage is not a warranty matter. Please ensure that mobile phones are permitted in the area before operating the unit (eg, hospitals, petrol stations, etc.). If the use of a mobile phone is forbidden, do not use the device, as it can have negative influence to other electronic systems. iSocket Systems will not be responsible for changes in mobile operators' networks if they for example cancel a service, reduce performance, change network settings or shut down a network, which is required for operation of the device. If the device stops operating due to any changes on mobile network it may not be considered as warranty case. To get warranty service, you must provide proof of payment and this guarantee. The guarantee must be duly filled in and must specify the serial number of the device, if it does not contradict the legislation of the country where product was legitimately purchased.

18. Contacts, Support, News & Social Networks

The latest information about **iSocket 3G** can be found on the website www.isocket3g.com and **The World of iSocket** website, which is the online catalog for all iSocket products www.isocketworld.com.

For technical support please visit **Support Resources** on our corporate website www.isocketsystems.com.

You may also ask short questions via our official Twitter https://twitter.com/isocketworld or Facebook https://www.facebook.com/isocketworld

We would love to see pictures of your iSocket applications! Please don't hesitate to post them our Facebook page.

Follow the company on LinkedIn https://www.linkedin.com/company/isocket-systems or add us to your circles on Google+ https://plus.google.com/+iSocket

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If you are a developer, see our new project www.cecohome.com and join our professional group on LinkedIn https://www.linkedin.com/groups/8405025 and Google Community https://plus.google.com/communities/113010550250951727963

Finally, subscribe to a suitable mail list to get fresh updates on your product http://isocket.me/sub We hate spam!

Thank you for choosing iSocket from a true European manufacturer!

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