artion

Installation & Operation MANUAL

Version 1.51

GSM
backup communication module

CONTENTS

1. GENERAL DESCRIPTION

artion device of **Paradox Hellas S.A.** brings into the world security market much more than just a back-up device for security applications.

The general idea of a GSM back-up device for Burglar Alarm Systems, until now, has been to "take over" the communication between the alarm system and a designated destination, most commonly a Central Alarm Receiving Station, whenever there is a communication failure between them through the Fixed Telephony Network.

artion supports all the DTMF communication formats used for this purpose (CID, Ademco Express, etc).

artion is fully programmable via specially designed software, the **artion Configuration Utility**. Additionally, a special software called **Observer** can provide the central alarm receiving station with the power to monitor the correct operation of every installed **artion** with no cost.

When **artion** is initially connected, it starts monitoring the existance of the PSTN telephone line and also connects to the GSM network. The supervision and checking of the fixed communication line is continuous. Whenever the PSTN connection is lost, it restores the communication with the central receiving station through the GSM network.

It can send predefined SMSs up to 8 different recipients, when all the efforts to establish communication with the Central Alarm Receiving Station have failed.

It accepts user definable SMS commands to trigger up to two different PGM outputs (e.g. to activate/deactivate air conditioning, central heating, lights etc), and sends back SMS replies for confirmation.

Its sleek design, conbining both external looks and durability, along with the wealth of external light indicators simplify installation and use.

It uses standard SIM cards (used for mobile phones), which must be provided by a GSM network provider. **artion** is supplied in two different versions: one covers countries operating in GSM frequencies of 900/1800 MHz (Europe, South America etc.) and the other covers mainly U.S. and Canada networks operating in GSM bands of 800/1900 MHz.

Each **artion** device has its own serial number and a unique IMEI number allocated by the GSM Association.
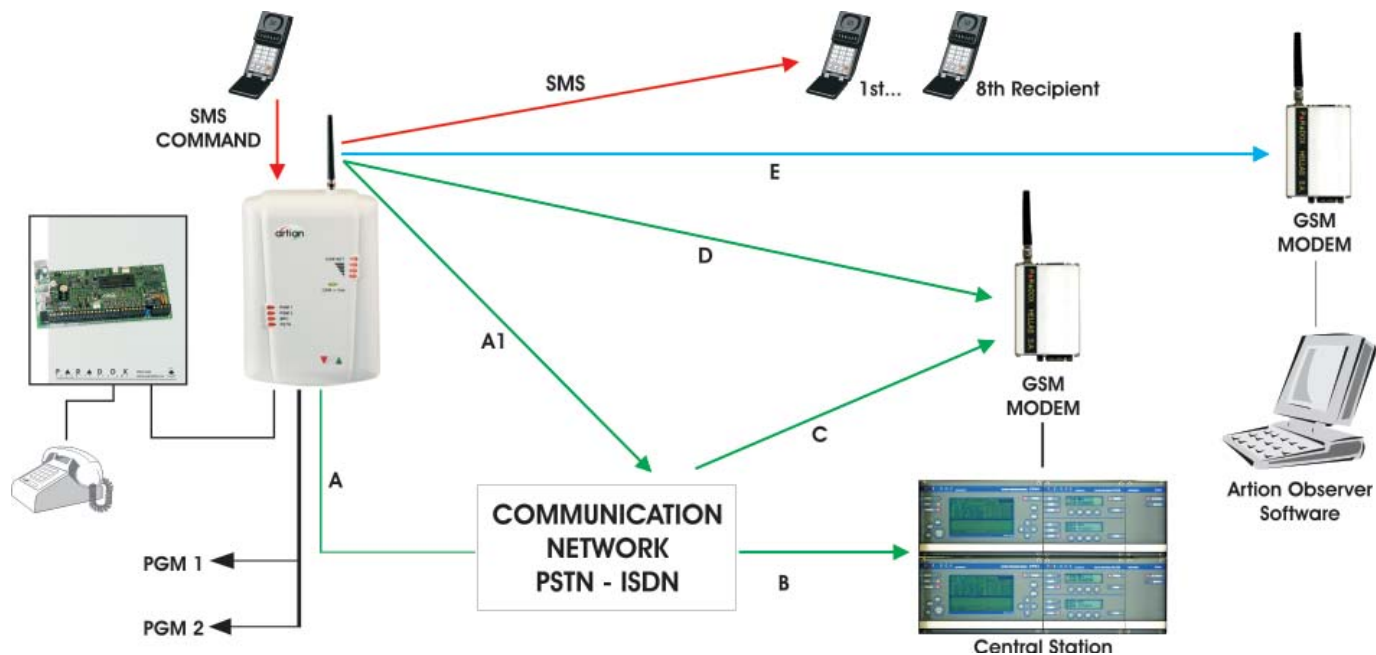
Figure 2-1

Communication Scenarios

- **The connection between artion and Fixed Telephony Network (F.T.N.) is lost – no voltage on the line**

  As can be seen in Figure 2-1, when the connection between artion and F.T.N. (connection A) is lost, **artion** restores communication with the F.T.N. (establishing GSM to PSTN connection route A1 to B).

  In case that events must be sent to the Central Alarm Receiving Station, the alarm control panel, through **artion**, calls the fixed network number of the central station and sends the events in the selected communication format.

- **The fixed line appears operational (there is voltage on the line), but communication is impossible. Detection of faulty PSTN line from successive call retries**

  In case that voltage exists on the fixed line but communication is impossible (e.g. disconnection due to unpaid bill etc), **artion** establishes communication through the GSM network (route A1 to B). This is done by observing a number of succesive calls in a short period of time. The GSM network remains the active communication channel for a preprogrammed time period.

  This feature is targeted towards high security installations (dedicated PSTN line). If the feature is activated due to human use of the PSTN line, the GSM redirection can be canceled by dialing "99".

- **The connection between the Central Alarm Receiving Station (C.A.R.S.) and Fixed Line Network is lost**

  In the case that the receiving station has lost connection to the PSTN network, **artion** can route the call through its PSTN connection (route A to C) to a GSM gateway at the station (GSM hardware required at receiving end).

  In the case of total PSTN failure, **artion** uses GSM to GSM communication, thus restoring connection to the central station (connection D).

- **Central Alarm Receiving Station (C.A.R.S.) is "down" (not operating)**

  If **artion** does not receive a "handshake" from C.A.R.S. even when it calls its GSM number, it sends a pre-defined SMS to certain pre-selected GSM numbers (e.g. the owner of the system or the security officer). The maximum number of these recipients is 8. One of **artion**'s TSMS inputs is triggered by a PGM output of the alarm control panel that has been programmed to be activated when communication failure occurs.

Remote Operations

- **Activating/Deactivating PGM1, PGM2 outputs**

  artion accepts SMS commands that activate/deactivate two PGM outputs (PGM1 and PGM2). They can be used to control through relays, electric or electronic devices (air conditioning, central heating, lights etc). Activation or deactivation of the PGM outputs is automatically confirmed by an SMS reply to the mobile phone number that sent the command.

- **Remote Arming/Disarming with SMS**

  A unique feature of **artion** is its capability to arm or disarm the alarm system with an SMS sent remotely by the user. **artion** replies to the sender of the SMS with an armed/disarmed confirmation SMS. PGM1 is used for driving a keyswitch zone, and TSMS1 is driven by the control panel indicating its armed/disarmed state.

3. QUICK START GUIDE

3.1 Typical installation

artion is an easy to install device, operating in a plug and play fashion, especially if its standard function as a GSM back-up system is required. Following the steps below the installer can easily connect **artion** to the alarm control panel providing the alarm system with an alternative way of communication with the central alarm receiving station in case of PSTN failure. See Figure 3-1 for a typical connection diagram.

The following steps are required for a minimal setup:

1. Remove SIM card's PIN request using a mobile phone.
2. Place SIM card to **artion**'s SIM holder.
3. Connect the PSTN line to **artion**'s TIP and RING (LINE IN).
4. Connect **artion**'s T and R (LINE OUT) to alarm control panel's TIP and RING.
5. Connect **artion**'s inputs – and + (12V DC IN) to control panel's auxiliary supply outputs – and +.
6. Apply power to the alarm control panel.

On completion of step 6 and after about 5 seconds the installer must see the "GSM NET" LED blinking slowly. After about 25 seconds (time varies on GSM network provider) the "MPC" LED will start blinking and signal level indication will appear at the "GSM LEVEL" LEDs. If any of these indications fail to appear, the installer must refer to the Troubleshooting section of this document, and if the problem remains unsolved, Technical Support must be contacted.

Upon completion of the above procedure it is recommended to replace the default device password with a user preferred one for security purposes (Section 6.4.1).

Figure 3-1: Connection Diagram

Typical connection: red and green lines only

Remote arming/disarming of the alarm control panel (with SMS): red, green and blue lines

Like all radio emitting devices, artion may cause interference.

Experiment to find a position with minimum interference.

■ power
■ telephone signals
■ PGMs, other

3.2 Reset artion to default settings

The steps below must be followed to reset the device at its default settings (device password 0000, SMS replies for TSMS activation and advanced features inactive, etc):

1) Power off.
2) Place jumper at the pins shown in Figure 3-2.
3) Power on.
4) Wait until connection to the GSM network is established (indication of signal level appears to the GSM signal LEDS).
5) Power off.
6) Remove jumper.
7) Power on.

Figure 3-2: Reset pins

Alternatively, one can reset artion to its factory defaults either by sending the SMS of section 6.4.2 or by using the artion Configuration software.
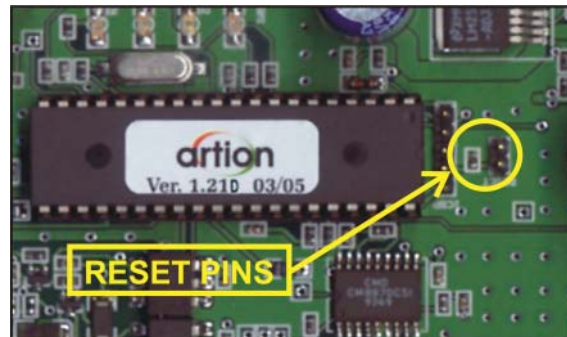
⬤ = ON

◯ = OFF

☼ = BLINKING

GSM NET

◯	NO POWER
⬤	NO GSM NETWORK
☼ SLOW 2 sec	GSM READY
☼ FAST 1 sec	GSM IN USE (CALL)

| GSM SIGNAL LEVEL	1	2	3	4	5
LEDS	◯ ◯ ⬤	◯ ☼ ⬤	◯ ⬤ ⬤	☼ ⬤ ⬤	⬤ ⬤ ⬤

PGM OUTPUT STATUS:
⬤ ACTIVE
◯ INACTIVE

⬤
◯ MALFUNCTION
☼ NORMAL OPERATION

◯ PSTN NOT PRESENT
⬤ PSTN PRESENT
☼ PSTN IN USE

PGM 1
PGM 2
MPC
PSTN

GSM in Use

◯ GSM INACTIVE
⬤ GSM CALL UNDERWAY

artion

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5. FEATURES QUICK REFERENCE

Programmable Inputs ⟶ Section 6.1

- SMS recipients for TSMS input ⟶ Section 6.1.1 pg. 13
- SMS text for TSMS input ⟶ Sections 6.1.2 and 6.1.3 pg. 13

Programmable Outputs ⟶ Section 6.2

- PGMs activation/deactivation with SMS command ⟶ Sections 6.2.1 and 6.2.2 pg. 14
- Set SMS command text for PGMs ⟶ Section 6.2.3 and 6.2.4 pg. 15
- Set response text for PGM operations ⟶ Sections 6.2.5 and 6.2.6 pg. 16

Advanced Features ⟶ Section 6.3

- CALLBACK: Calls at regular intervals to a pre-programmed phone number.
  - Set CALLBACK phone number ⟶ Section 6.3.1 pg. 17
  - Set CALLBACK interval and advanced options ⟶ Section 6.3.2 pg. 17
- Remote arming/disarming of the alarm control panel (with SMS)
  - Setup and connections ⟶ Section 6.3.3 pg. 18
  - SMS commands for arming/disarming ⟶ Section 6.3.4 pg. 19
- Successive PSTN calls monitor (PSTN fault indication) ⟶ Section 6.3.5 pg. 19
- Presence of PSTN/GSM lines. Notification with SMS or PGM ⟶ Section 6.3.6 pg. 20

Information and operation utilities ⟶ Section 6.4

- Set the device password ⟶ Section 6.4.1 pg. 21
- Reset all parameters to factory defaults with an SMS ⟶ Section 6.4.2 pg. 21
- Retrieve firmware version and unique IMEI number ⟶ Section 6.4.3 pg. 21
- Retrieve log of events ⟶ Section 6.4.4 pg. 22
- Force restart with SMS ⟶ Section 6.4.5 pg. 23

artion can be programmed by sending programming SMS messages to the **artion** device. The installer may program each feature at a time or multiple features simultaneously by a single SMS. The groups of features that can be programmed with one message are described at the end of this section. The available programming messages are described below:

6.1. Programmable Inputs
6.1.1 Entering an SMS recipient in memory (max 8)
SMS:
##N1#<PIN>#<PHONE NUMBER>
##N2#<PIN>#<PHONE NUMBER>

..
##N8#<PIN>#<PHONE NUMBER>
Parameter Description:
<PIN> is the current device password of **artion**
<PHONE NUMBER> is the mobile phone number to be set as SMS recipient

To remove an SMS recipient from memory the SMS ##N<x>#<PIN>#* must be sent, e.g. ##N2#0000#* to remove the second recipient.

Example:
##N1#0000#693614343434
Example Description:
Number 697514343434 will be set as the first recipient.

6.1.2 Input activation SMS
SMS:
##T1ON#<PIN>#<TEXT MSG FOR TSMS1 ON>
##T2ON#<PIN>#<TEXT MSG FOR TSMS2 ON>
Parameter Description:
<PIN> is the current device password of **artion**
<TEXT MSG FOR TSMS ON> is the message that will be sent to the recipients when TSMS input is activated (driven low).

Example:
 ##T1ON#0000#INPUT 1 IS ACTIVE
Example Description:
 When TSMS1 is activated the recipients will receive an SMS stating INPUT 1 IS ACTIVE.

If SMS sending for input (TSMS) activation is required, at least one recipient must be set for valid operation.

6.1.3 Input deactivation SMS
SMS:
 ##T1OFF#<PIN>#<TEXT MSG FOR TSMS1 OFF>
 ##T2OFF#<PIN>#<TEXT MSG FOR TSMS2 OFF>
Parameter Description:
 <PIN> is the current device password of **artion**
 <TEXT MSG FOR TSMS OFF> is the message that will be sent to the recipients when TSMS input is deactivated (left floating).
Example:
 ##T1OFF#0000#INPUT 1 IS INACTIVE
Example Description:
 When TSMS1 is deactivated the recipients will receive an SMS stating INPUT 1 IS INACTIVE

If SMS sending for input (TSMS) deactivation is required, at least one recipient must be set for valid operation.

6.2. Programmable Outputs
6.2.1 Default PGM activation commands
SMS:
 *<PIN>#ON1
 *<PIN>#ON2
Parameter Description:
 <PIN> is the current device password of **artion**
Example:
 *0000#ON1
 *0000#ON2
Example Description:
 Default commands for PGM1 and PGM2 activation, respectively

6.2.2 Default PGM deactivation commands
  SMS:
  *<PIN>#OFF1
  *<PIN>#OFF2
Parameter Description:
  <PIN> is the current device password of **artion**
Example:
  *0000#OFF1
  *0000#OFF2
Example Description:
  Default commands for PGM1 and PGM2 deactivation respectively

6.2.3 Set PGM activation command text
  SMS:
  ##MON*1#<PIN>#<NEW ON COMMAND>
  ##MON*2#<PIN>#<NEW ON COMMAND>
Parameter Description:
  <PIN> is the current device password of **artion**
  <NEW ON COMMAND> is user defined command text for PGM output activation
Example:
  ##MON*1#0000#HEATER ON
  ##MON*2#0000#LIGHTS ON
Example Description:
  PGM1 will be activated by sending the command *0000#HEATER ON
  PGM2 will be activated by sending the command *0000#LIGHTS ON

6.2.4 Set PGM deactivation command text
  SMS:
  ##MOFF1#<PIN>#<NEW OFF COMMAND>
  ##MOFF2#<PIN>#<NEW OFF COMMAND>
Parameter Description:
  <PIN> is the current device password of **artion**
  <NEW OFF COMMAND> is user defined command text for PGM output deactivation

Example:
 ##MOFF1#0000#HEATER OFF
 ##MOFF2#0000#LIGHTS OFF
Example Description:
 PGM1 will be deactivated by sending the command *0000#HEATER OFF
 PGM2 will be deactivated by sending the command *0000#LIGHTS OFF

6.2.5 Response to PGM activation
SMS:
 ##RON*1#<PIN>#<NEW ON RESPONSE>
 ##RON*2#<PIN>#<NEW ON RESPONSE>
Parameter Description:
 <PIN> is the current device password of **artion**
 <NEW ON RESPONSE> is user defined response for successful PGM activation. **artion** will send an SMS with <NEW ON RESPONSE> when it successfully activates its PGM output.
Example:
 ##RON*1#0000#HEATER IS ON
 ##RON*2#0000#LIGHTS ARE ON
Example Description:
 When PGM1 activation command is sent, **artion** activates PGM1 (drives it low) and sends back to sender an SMS stating HEATER IS ON.
 When PGM2 activation command is sent, **artion** activates PGM2 (drives it low) and sends back to sender an SMS stating LIGHTS ARE ON.

6.2.6 Response to PGM deactivation
SMS:
 ##ROFF1#<PIN>#<NEW OFF RESPONSE>
 ##ROFF2#<PIN>#<NEW OFF RESPONSE>
Parameter Description:
 <PIN> is the current device password of **artion**
 <NEW OFF RESPONSE> is user defined response for successful PGM deactivation. **artion** will send an SMS with <NEW OFF RESPONSE> when it successfully deactivates its PGM output.
Example:
 ##MON*1#0000#HEATER IS OFF

##MON*2#0000#LIGHTS ARE OFF

Example Description:

When PGM1 deactivation command is sent, **artion** deactivates PGM1 (leaves it floating) and sends back to sender an SMS stating HEATER IS OFF.

When PGM2 deactivation command is sent, **artion** deactivates PGM2 (leaves it floating) and sends back to sender an SMS stating LIGHTS ARE OFF.

6.3. Advanced Features

6.3.1 CALLBACK phone number

SMS:

##CALLBACK#<PIN>#<PHONE NUMBER>

Parameter Description:

<PIN> is the current device password of **artion**

<PHONE NUMBER> is the phone number that will receive regular calls from **artion**

Example:

##CALLBACK#0000#6975143434

Example Description:

Number 6975143434 will be receiving short incoming calls from **artion**

6.3.2 Set CALLBACK interval and advanced options

SMS:

##INTERVAL CALLBACK#<PIN>#<INTERVAL:min>#HANG UP DELAY:0.5sec>#<USER INITIATED CALLBACK>

Parameter Description:

<PIN> is the current device password of **artion**

Calls the <PHONE NUMBER> every <INTERVAL> minutes. Waits for <HANG UP DELAY> half seconds and then hangs up. <USER INITIATED CALLBACK> is 0 or 1. If set to 1, when the user calls **artion**, **artion** rejects the call and calls back the <PHONE NUMBER>.

If the <INTERVAL> is set to 0 the callback function is disabled.

The last two parameters are optional. If not defined they will be considered 0.

Example:

##INTERVAL CALLBACK#0000#5#3#1

##INTERVAL CALLBACK#0000#5#3

##INTERVAL CALLBACK#0000#5

Example Description:
The first example sets artion to call the defined phone number every 5 minutes, wait for 1.5 sec (3x0.5sec) before hanging up, and to make user initiated callbacks.

6.3.3 Remote alarm arming/disarming
SMS:
##ARM#<PIN>#<PULSE TIME:sec>#<CHECK TIME:sec>#<LOCAL ARM MASK>
Parameter Description:
<PIN> is the current device password of **artion**

Uses PGM1 output and TSMS1 input for controlling an alarm system through the *<PIN>##ALARMON and *<PIN>##ALARMOFF SMS commands. PGM1 operates in a keyswitch style arming, and TSMS1 is driven by an alarm output indicating the armed/disarmed state of the alarm. See Figure 3-1 for connection diagram. The alarm system must be programmed accordingly.

<PULSE TIME> is the time in seconds that the PGM1 output will be held low (shorted to ground) in order to arm the alarm (for momentary operation). <PULSE TIME> must be 0, if a latched operation is needed (PGM1 will remain low until a disarming is executed).

<CHECK TIME> is the time in seconds that **artion** will wait before checking the success of the operation; the TSMS1 input will be checked for the expected state and an SMS message will be sent to the phone number that gave the arm/disarm command notifying for success or failure of the operation. <CHECK TIME> must be slightly longer than the output delay time of the alarm system.

<LOCAL ARM MASK> can take the values 0, 1, 2 or 3. It controls the notification that will be sent to the last phone number that armed the alarm, when a similar operation is done from a local keypad (or from any other means of arming/disarming the alarm system). The meaning of the four values is as follows:

0	Do not send any notification of local operation
1	Send notification when local arming takes place
2	Send notification when local disarming takes place
3	Send notification of both arming and disarming

To disable the remote arming function, set the <CHECK TIME> to 0.

When this feature is active the fixed arming command *<PIN>##ALARMON has to be sent to arm the alarm system and the respective disarming command *<PIN>##ALARMOFF to disarm the system.

Example:
##ARM#0000#2#30#3

Example Description:
If an arming or disarming SMS command is sent, **artion** initially checks (through its TSMS1) the state of the alarm control panel and if change of state is needed, it activates its PGM1 output for 3 seconds to arm or disarm the control panel. **artion** then waits for 50 seconds before reading its TSMS1 input to confirm successful operation and sends a confirmation SMS. If the state of the control panel changes by any other means, the sender of the last arming SMS command will be notified.

6.3.4 SMS commands for remote arming/disarming

SMS:

*<PIN>##ALARMON
*<PIN>##ALARMOFF

Parameter Description:
<PIN> is the current device password of **artion**

Example:
*0000##ALARMON
*0000##ALARMOFF

Example Description:
If the feature of remote arming/disarming is active, the command SMS of the first example is sent to arm the alarm system and the command SMS of the second example is sent to disarm the system.

6.3.5 Successive PSTN calls monitor (PSTN fault indication)

SMS:

##LINEMON#<PIN>#<IDLE TIME:sec>#<RETRIES>#<RESET TIME:sec>

Parameter Description:
<PIN> is the current device password of **artion**
When enabled **artion** monitors the PSTN line for successive calls. If a number of calls matching <RETRIES> are detected with less than <IDLE TIME> between the ON-HOOK of the one and OFF-HOOK of the next, the GSM line is used for the next calls. PSTN is reactivated after <RESET TIME> seconds.
When on GSM, PSTN line can be reactivated before <RESET TIME> seconds by dialing number 99 from a telephone device on **artion**.

Example:

##LINEMON#0000#30#3#300

Example Description:

Artion will consider two calls through PSTN that the end of the first is less than 30 seconds from the begining of the second as two successive unsuccessful tries. When it counts three such tries it will switch over to GSM for the next call even though voltage exists on PSTN line. It will automatically switch back to PSTN line after 300 seconds (5 minutes).

6.3.6 Presence of PSTN/GSM lines (Notification with SMS or PGMs)

SMS:

##STATUS#<PIN>#<PGM1_FLAG>#<PGM2_FLAG>#<SMS_FOR_LOST_LINE>#<SMS_FOR_RESTORED_LINE>

Parameter Description:

<PIN> is the current device password of **artion**

The parameters below can each take the values of 0, 1, 2 or 3. The meaning of each value is described in the table below.

<PGM1_FLAG> defines the action for PGM1 output. PGM1 is activated (driven low) when the selected line(s) (see table below) is lost. PGM1 is automatically deactivated (driven high) when the selected line is restored.

<PGM2_FLAG> defines the action for PGM2 output. PGM2 is activated (driven low) when the selected line(s) (see table below) is lost. PGM2 is automatically deactivated (driven high) when the selected line is restored.

<SMS_FOR_LOST_LINE> defines the SMS message that will be sent in case of PSTN line failure. This parameter can only take values 0 or 2 (see table below), because SMS cannot be sent over a lost GSM line. When the PSTN line is lost the SMS "PSTN LINE LOST" is sent to all the recipients.

0	Do not notify
1	Notify for GSM line
2	Notify for PSTN
3	Notify for either GSM or PSTN

If the remote alarm arming/disarming operation is active the line status operation does not affect PGM1.
If one of the parameters <SMS_FLAG_FOR_LOST_LINE> and <SMS_FOR_RESTORED_LINE> is set to a value other than 0, at least one recipient must be set for valid operation.

Example:

##STATUS#0000#1#2#2#3

Example Description:

The SMS in the example sets **artion** to activate PGM1 when GSM line is lost, to activate PGM2 when PSTN line is lost, to send an SMS when PSTN is lost and to send an SMS when PSTN or GSM line is restored.

6.4. Information and operation utilities

6.4.1 Setting the device password

SMS:

##PIN#<CURRENT PIN>*<NEW PIN NUMBER>

Parameter Description:

<CURRENT PIN> is the current device password of **artion**

<NEW PIN NUMBER> is the new device password

Example:

##PIN#0000*1234

Example Description:

New device password 1234 will replace current device password 0000

6.4.2 Restoring factory defaults with an SMS

SMS:

##DELFLASH#<PIN>

Parameter Description:

<PIN> is the current device password of **artion**

Example:

##DELFLASH#0000

Example Description:

The SMS above will erase all settings from the non volatile memory restoring the device to its factory settings. The event log will not be erased.

6.4.3 Retrieving firmware version and IMEI number

SMS:

INFO*<PIN>

Parameter Description:

<PIN> is the current device password of **artion**

Example:

INFO*0000

Example Description:

The sender of the above SMS will receive a message from **artion** stating its firmware version and its unique IMEI number.

6.4.4 Retrieving log of events

SMS:

LOG*<PIN>

Parameter Description:

<PIN> is the current device password of **artion**

The log is a series of characters. Each characters corresponds to an event. The first character in the sequence represents the most recent event. The meaning of each character is as follows:

1	Successful Power up
2	Reset due to SIM fault
3	Reset due to network errors
4	Reset due to failure at startup (SIM - network etc.)
5	Reset with SMS (user)
6	Delete flash from rs232 or SMS (user)
7	Delete flash with jumper on power up
8	Reset due to ERROR 515 (network error)
L	GSM has lost connection to the network
F	GSM has connected to the network
C	Failure for 4 tries to communicate during callback (Busy Line)
S	SMS storage found full and erased

Example:

LOG*0000

Example Description:

The sender of the above SMS will receive a message from **artion** containing its log of events

6.4.5 Restarting artion with an SMS
SMS:
  RST*<PIN>
Parameter Description:
 <PIN> is the current device password of **artion**
 The GSM module on **artion** is remotely forced to restart.
Example:
 RST*0000
Example Description:
 The SMS above forces **artion** to restart.

6.5. Groups of Commands that can be sent in a single message

To reduce the cost from SMS sending during the programming operation multiple commands can be sent in a single SMS.
Programming all the recipients in one SMS can be done with:
SMS: ##N#<PIN>#<tel no1>#<tel no2>#<tel no3>#<tel no4>#<tel no5>#<tel no6>#<tel no7>#<tel no8>

Programming all commands for activating/deactivating outputs PGM1 and PGM2:
SMS: ##M#<PIN>#<text for on1># <text for off1>#<text for on 2>#<text for off2>

Programming all replies for activation/deactivation of outputs PGM1 and PGM2:
SMS: ##R#<PIN>#<text for reply on ON1>#<text for reply on OFF1>#<text for reply on ON2>#<text for reply on OFF2>

Programming all replies for changes in TSMS1 and TSMS2 inputs:
SMS: ##T#<PIN>#<text for TSMS1 on>#<text for TSMS1 off>#<text for TSMS2 on>#<text for TSMS2 off>

artion Configuration Software

artion Observer Software

CONFIGURATION

The settings described in section 6 can be also applied to **artion** from a PC, locally or remotely, using **artion Configuration** software.

The software follows exactly the same procedure as when the installer sends SMS from a mobile phone. In order for **artion Configuration** software to communicate with **artion** remotely, the PC must be equipped with a special GSM modem (connected via RS232).

By using a special RS232 module (supplied separately – **artion** connector board) connected to a PC, the programming of an **artion** device can be locally done avoiding any configuration cost. In this case the software automatically recognises the type of

connection and transfers all the programming settings to **artion** through the RS232 port without sending any SMS. This feature enables the installer to pre-program **artion** devices at his/her own work place without cost.

OBSERVER

"**artion Observer**" software gives the central alarm receiving station the ability to monitor the correct operation of every installed artion at no cost.

This software has been developed especially for applications where high security systems are installed as in Banks, Customs, Government buildings etc.

The "**artion Observer**" software works in conjunction with the CALLBACK feature of **artion** device (refer to sections 6.3.1. and 6.3.2). The software runs on a PC that is connected with a special GSM modem, which MUST support caller ID. **artion** calls the number of the GSM modem, and its number and time of call are recorded by the software. If an **artion** device fails to report "live" status, the user of the software is notified with a visual or sound indication.

Contact technical support for details on obtaining the above software free of charge.

TROUBLESHOOTING

On power up the "GSM NET" LED remains constantly on
- Check that SIM card's PIN request is disabled using a mobile phone
- If SIM card's PIN request is disabled and problem continues do the following
- Remove power supply and battery
- Remove SIM card
- Clean SIM holder's contacts using a pencil eraser
- Re-place SIM card and apply power

On power up the "GSM NET" LED remains off
- The 3A fuse is probably blown
- Remove box lid and check the fuse fault LED with power supply on. This LED can be seen through the glass of the fuse
- If fuse LED is on, the fuse needs replacement
- If after replacing, the fuse blows again contact Technical Support

If you receive the messages below:
- "WRONG PIN NUMBER"
    - The SMS sent by user contained wrong device password
    - Check device password and resend SMS
    - If device password has been forgotten, reset **artion** at its default settings (pg. 10)
- "UNIDENTIFIED CONFIGURATION COMMAND WAS ENTERED"
    - Erroneous programming SMS was sent
    - Check programming SMS and send it again
- "COMMAND NOT FOUND"
    - Erroneous command SMS was sent
    - Check command SMS and send it again
    - If the same message is returned do the following
    - Check if the feature related to the command has been previously activated
    - For example, the feature of section 6.3.3 needs to be activated before sending the SMS command of section 6.3.4
- "INVALID PHONE NUMBER PLEASE CHECK AND TRY AGAIN"
    - This message is returned when the CALLBACK phone number or the Recipient phone number sent was invalid
    - Check that phone number is complete and does not contain any letters before resending the SMS

- "INVALID MEMORY POSITION FOR RECIPIENT NUMBER. ALLOWED POSITIONS FROM 1 TO 8"
    - This message is related to the programming SMS: **##N<x>#<PIN>#<PHONE NUMBER>**
    - It is returned when in place of parameter <x> a number different than 1,2,3,4,5,6,7 or 8 is sent

TEST PROCEDURE

- Connect PSTN line at LINE IN of **artion**
- Connect a telephone device at LINE OUT
- Apply power and wait for start up
- Measure voltage at 12V DC IN with a multimeter. It must be between 11 to 14 Volts
- Check that voltage at LINE IN is equal to voltage at LINE OUT
- Check that the "PSTN" LED is ON
- Pick up the handset of the connected phone device and check that "PSTN" LED flashes
- Disconnect PSTN line from LINE IN
- Check that voltage at LINE OUT is between 46 to 50 Volts
- Pick up the handset and check that "GSM In Use" LED is ON and that you hear a continuous dial tone
- Place a Phone call using the connected telephone device and check for good sound quality and absence of TDMA noise (the distinctive interference noise of GSM phones)

APPENDIX A: CONFIGURATION AND COMMAND SMS OF ARTION

Programmable Inputs

DESCRIPTION	SMS
Recipient 1	##N1#<PIN>#<PHONENUMBER>
Recipient 2	##N2#<PIN>#<PHONE NUMBER>
Recipient 3	##N3#<PIN>#<PHONE NUMBER>
Recipient 4	##N4#<PIN>#<PHONE NUMBER>
Recipient 5	##N5#<PIN>#<PHONE NUMBER>
Recipient 6	##N6#<PIN>#<PHONE NUMBER>
Recipient 7	##N7#<PIN>#<PHONE NUMBER>
Recipient 8	##N8#<PIN>#<PHONE NUMBER>
TSMS1 ON	##T1ON#<PIN>#<TEXT MSG FOR TSMS1 ON>
TSMS1 OFF	##T1OFF#<PIN>#<TEXT MSG FOR TSMS1 OFF>
TSMS2 ON	##T2ON#<PIN>#<TEXT MSG FOR TSMS2 ON>
TSMS2 OFF	##T2OFF#<PIN>#<TEXT MSG FOR TSMS2 OFF>

Programmable Outputs

DESCRIPTION	SMS
Default PGM1 activation	*<PIN>#ON1
Default PGM1 deactivation	*<PIN>#OFF1
Default PGM2 activation	*<PIN>#ON2
Default PGM2 deactivation	*<PIN>#OFF2
Change default PGM1 activation	##MON*1#<PIN>#<NEW ON COMMAND>
Change default PGM1 deactivation	##MOFF1#<PIN>#<NEW OFF COMMAND>
Change default PGM2 activation	##MON*2#<PIN>#<NEW ON COMMAND>
Change default PGM2 deactivation	##MOFF2#<PIN>#<NEW OFF COMMAND>
Change the reply for successful PGM1 activation	##RON*1#<PIN>#<NEW ON RESPONSE>
Change the reply for successful PGM1 deactivationChange the reply for successful PGM2 activation	##ROFF1#<PIN>#<NEW OFF RESPONSE>
	##RON*2#<PIN>#<NEW ON RESPONSE>
Change the reply for successful PGM2 deactivation	##ROFF2#<PIN>#<NEW OFF RESPONSE>

Advanced Features

DESCRIPTION	SMS
CALLBACK Phone No.	##CALLBACK#<PIN>#<PHONE NUMBER>
Set CALLBACK time interval and advanced options	##INTERVAL CALLBACK#<PIN>#<INTERVAL:min>#HANG UP DELAY:0.5sec> #<USER INITIATED CALLBACK>
Remote alarm arming/disarming	##ARM#<PIN>#<PULSE TIME:sec>#<CHECK TIME:sec#<LOCAL ARM MASK>
Command to remotely arm	*<PIN>##ALARMON
Command to remotely disarm	*<PIN>##ALARMOFF
Detection of lost PSTN line from unsuccessful call retries	##LINEMON#<PIN>#<IDLE TIME:sec>#<RETRIES>#<RESET TIME:sec>
Line Presence notification	##STATUS#<PIN>#<PGM1_FLAG>#<PGM2_FLAG>#<SMS_FOR_LOST_ LINE>#<SMS_FOR_RESTORED_LINE>

Information and Operation Utilities

DESCRIPTION	SMS
Change device password	##PIN#<CURRENT PIN>*<NEW PIN NUMBER>
Restore factory defaults	##DELFLASH#<PIN>
Retrieve firmware and IMEI number	INFO*<PIN>
Retrieve log of events	LOG*<PIN>
Restart artion with SMS	RST*<PIN>

NOTES

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