Watchguard™

GSMBU-PRO GSM

IMPORTANT

BEFORE SETTING UP GPRS, PLEASE CHECK WITH YOUR GPRS PROVIDER TO OBTAIN COST OF THE SERVICE.

N 517

Installer's Guide

V 1.2

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LIMITED WARRANTY

RhinoCo Technology. (Seller) warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for twelve months (12) from the date of original purchase. Sellers obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labour, any part which is proved not in compliance with Sellers specifications or proves defective in materials or workmanship under normal use and service. Seller shall have no obligation under this Limited Warranty or otherwise if the product is altered or improperly repaired or serviced by anyone other than Seller.

*For Warranty Service: *Return transportation prepaid with a copy of your purchase receipt and contact details to: RhinoCo Technology, 9 Hannabus Place McGraths Hill NSW 2756 Australia.

Seller has no obligation to attend the buyer's location to retrieve the goods or make repairs onsite.

There are no warranties, expressed or implied, of merchant ability, or fitness for a particular purpose or otherwise, which extend beyond the description on the face hereof. In no case shall seller be liable to anyone for any consequential or incidental damages for breach of this or any other warranty, express or implied, or upon any other basis of liability whatsoever, even the loss or damage is caused by its own negligence or fault.

Seller does not represent that the products it sells may not be compromised or circumvented; that the products will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the products will in all cases provide adequate warning or protection. Customer understands that a properly installed and maintained alarm system may only reduce the risk of a burglary, robbery, or fire without warning, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result.

Consequently, seller shall have no liability for any personal injury; property damage or other loss based on a claim the product failed to give any warning. However, if seller is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regard less of cause or origin, seller's maximum liability shall not in any case exceed the purchase price of the product, which shall be the complete and exclusive remedy against seller.

This warranty replaces any previous warranties and is the only warranty made by the Seller on this product. No increase or alteration, written or verbal, of the obligations of this Limited Warranty is authorised.

NOTES

INTRODUCTION

Thank you for purchasing the 'GSMBU-PRO'.

This product complies with Australian security regulations and has undergone rigorous tests to offer you and your client a flexibility personal security system. This manual will explain the operational and installation process of the 'GSMBU-PRO'. Please read it thoroughly before operating the product.

FEATURES

- Backup line function, in case of failure in the PSTN it simulates a two-way PSTN to the devices.
- Device is capable of automatically making calls through the GSM and PSTN.
- Triple security for PSTN failure detection:
  - If the PSTN voltage is lower than 18.2V
  - If there is no valid dial tone.
  - If after dialling the PBX digit, there is no dial tone.
- Ring generator.
- Call divert function.
- Redial function with key '#'.
- Pulse and DTMF dialling supported.
- Four main outputs, which can be activated by options, zones detection or SMS.
- Four input zones
- Possibility of temperature sensor of 1% in RT1.
- Programming through a DTMF phone.
- Programming with JR E-LIGHT locally or remotely using the CSD data channel of GSM network.
- Speech dialler to 2 phone numbers.
- Receiver station reporting, 4 phones
  - Own and captured events
- SMS services
  - SMS up to 5 phones, by alarm triggered in a zone, phone line failure, low battery and periodic test.
  - Remote control using SMS (Outputs On /Off)
  - State SMS
  - Programming with SMS.
  - Local receiving of Contact ID reports in order to resend them to SMS Central stations
- Up to 8 zones with wireless receiver, and works as a control panel controlled from a phone.

TECHNICAL FEATURES

Power Supply:		12.16VDC 500mA
Mean consumption[1]		
	Main board:	40 mA
	GSM module	15 mA
RFL:	Normal:	2K2Ω.
Outputs	O1:	ground / 300mA
Dimensions:	High:	19,5 cm.
	Wide:	15,5 cm.
	Depth:	6,5 cm.
	Weight:	2 Kg.

[1] In order to obtain the total consumption you must add the partial consumptions of the devices that shape your system.

REGULATIONS

This product has been designed to meet all security, health and technical requirements. It meets the following European standards:

89/336/ CEE	Electromagnetic compatibility
73/23 CEE	Low Voltage directive
93/68 CEE	Modification of 73/23/CEE.
EN 50 131	Requirements for Intrusion Security Systems
EN 50 136-1	Alarm transmission Systems
TBR21	PSTN Access

This product is designed to be used in residential, commercial and light industrial environments.

The equipment conforms to environmental grade 2 of the EN-51313-1 norm.

Installation conditions

The following installation conditions are to be met when installing the product. Failure to meet the requirement may void your warranty:

- This metallic chassis is connected to the power supply ground and, the power supply ground to the circuit ground.
- The wire length between the RS-232 circuit pins and the communication interface with the Computer must not be longer than 1 m.
- All the board inputs/outputs (zones, keypads, outputs...) have been connected using shielded wire
- The correct functioning of this equipment is assured only in case that the devices connected to the GSMBU-PRO agree the TBR21 regulations.

Legal notice

This device uses GSM technology powered by a Sony Ericsson module, as with any technology it is not perfect and the use of jammers the GSM communication functions of this device may be disabled temporarily.

BOARD CONNECTIONS

An ideal place for installation will be one with access to the following:

- Electric plug
- Ground connection.
- Telephone line input.

LINE – Connect the PSTN.

PHONE – Connect the devices to which the GSMBU-PRO is to provide a backup line.

12Vi – Power supply input, 12.15Vdc 1A.

GND – Signal and power ground.

CN1 – Serial communication connector with the JR EXPRES **RSA, RSB** – RS485 bus Serial communication, same functions as CN1.

Z1,Z2,Z3,Z4 – EOL alarm zone inputs (2K2 resistor), it will detect when the loop opens or closes to ground, it can be connected to sirens or PGM outputs of all control panels in the market. The alarm of these inputs can also trigger the Receiver station and SMS communicators.

O1,O2,O3,O4 – Open collector outputs, will drive 0V when activated and up to 300mA current, it can be activated when there is alarm in zone inputs, by SMS remote control or by options programming (fail of GSM signal, phone line cutting etc, only for O3, O4).

GSM antenna installation

The 'GSMBU-PRO' box has a FME connector where the GSM antenna is to be connected. Before installing, look for a place with ideal signal strength as errors can occur communicating to the receiver station or static noise may be heard if the signal strength drops below 40%.

To avoid interference, try to mount all the wiring in a way that all the cables rest under the radiation plane of the GSM antenna.

SIM Start-Up

The following steps are to be taken to ensure that the GSM system will function properly.

- Start the GSMBU-PRO without the SIM card.
- Enter in programming.
- Program the PIN code in address [449]
- Program the service centre address in address [413] if SMS functions are required.
- Switch power off.
- Place the SIM in the SIM holder. Take care and refer to the mounting instructions in the wiring diagram.
- Start the GSMBU-PRO. Wait 1 minute for GSM to come on line. GSM should work properly.
- If the GSM do not work, please check if the connections are correct and the GSM signal strength is adequate.

When the GSMBU-PRO comes on line, the D13 led will flash shortly, at an interval of every 4 seconds.

There is also the possibility of free the PIN of the SIM and program the SCA from a mobile phone, this way the addresses 449 and 413 won't have to be programmed.

Reducing GSM buzzing.

The nature of time division transmission used in GSM networks will generate some characteristic buzzing in audio circuits such as those of the control panel. The buzzing will be louder as the GSM signal drops. The GSMBU-PRO is resistant to such interference by design, however if you use the circuits for the listen-in function, you'll have to install an external antenna as far away from the microphones as it is possible.

All wiring should be kept as short as possible under the radiation plane of the GSM antenna, also the use of shielded twisted pair is highly recommended to minimise interference.

FUNCTIONAL DESCRIPTION

IMPORTANT

The GSMBU-PRO is a high performance device, giving you a two-way backup phone line in case of landline failure. Providing it has ring generator, it will also be very useful in such installations where there is no fixed phone line.

LED OPERATION

The LEDs of the GSMBU-PRO indicate:

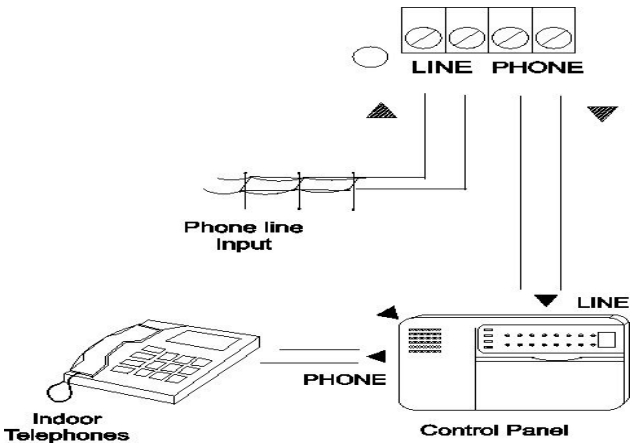
LED	OFF	Flashing	ON	Blinking
D9	PSTN Failure	PSTN Ok	Active line	Ring
D8	GSM not available	Online	Active GSM	SMS / GPRS
D14	No power Supply	Disarmed, battery Ok	Armed, Battery Ok	Low battery

* If there is single flash of D8, it means that the GSM is online. 2 flashes indicate that there is also GPRS signal.
* The cadence of the D8 flash will indicate the RF signal strength as:
· Flash every 8 sec : RF signal 1 to 39%
· Flash every 4 sec : RF signal 40 to 79%
· Flash every 2 sec : RF signal 80 to 100%

After powering on the GSMBU-PRO please wait till it is connected to a GSM network before making a call.

BACKUP-LINE FUNCTION.

First, connect the PSTN to the [LINE] connector. **Do not install any device before the GSMBU-PRO on the line as the seizure of the line will be interpreted as a sabotage**, resulting in the sending of a SMS or call to the Receiver Station. Next, following the order in the wiring diagram, connect the control panel and the interior phones of the house.



The detection of PSTN failure in the network works in three ways:

- By voltage - If the voltage of PSTN falls below 18.2V
- Even with correct voltage, if there is no valid dial tone, the calls will be diverted through GSM
- Or after dialling the PBX digit in a PBX, there is no valid dial tone[2], the call will also be diverted through GSM.

In these cases, the GSMBU-PRO will generate a virtual PSTN to the devices connected to the PHONE connector and the calls will be diverted through the GSM network. The users or the Control panel should not see any difference between the real PSTN and the virtual PSTN.

[2] Due to congestion or sabotage.

When the virtual phone line is being used, the users or the Control panel will be able to dial using pulse or DTMF dialling. If the user from an internal phone presses '#', GSMBU-PRO will redial the last number.

GSM CALL DIVERT

Even with a functioning PSTN, calls can be divert to GSM in following instances:

1. If the first dialled digit of the phone is equal to the lower digit of address [453], the call will be divert to GSM network.
2. You can also select the GSM line by dialling a prefix before the phone number. This digit should be the higher digit of the address [453]. After dialling this number, you must wait for dial tone before continue dialling. For example; if you program a '0' prefix, you should dial; 0 (pause) 934948440. This will divert the call through the GSM line to the phone number 934948449.

All divert functions will be disabled if there is no GSM signal.

WORKING WITHOUT A REAL PSTN.

In an event where there is no PSTN, the GSMBU-PRO will generate a virtual PSTN with full functionality to make and receive calls. This means, that internal phones will ring when the GSM module receives a call when attached to the **built-in Phone Ringer.**

CAPTURING CONTACT ID / 4+2 CALLS.

The capture of calls is a procedure where GSMBU-PRO will relay calls to the central station (monitoring station) in a way that it will be the GSMBU-PRO which will receive the Contact ID / Ademco Slow reports of the panel. Once the event is recorded, the GSMBU-PRO will consider them as a trigger event and will report them to the Central Station or send alerts via SMS. The recorded reports will recall the original subscriber and contact ID code of the panel.

The GSMBU-PRO will record calls in the following situations:

- Capture in case of PSTN failure: If PSTN is available, the calls will be directed via PSTN. But if PSTN fails, the calls will be recorded and automatically set to transmit via available GSM lines once configured properly at address [400] or [401] and have configured working modes 1 or 3.
- Capture always: This will set the panel to divert to GSM in all cases, no matter there is PSTN or not. To set this configuration, the number the panel dials must be programmed in address [412] of GSMBU-PRO.

4+2 – The 4+2 reports, once recorded will be converted to CID protocol automatically.

WORKING MODES

The working modes will modulate the behaviour of the device when the PSTN fails in the following manner:

- Enabling the capture of calls to the Central Station in transparent mode over GSM (virtue PSTN)
- Enabling / Disabling the ability to make calls to unregistered numbers. (This will inhibit the users from making private calls through GSM. Ideal for corporative SIM cards)

For this purpose, program address 450:

Mode	Calls to Central Station	Private calls
0	GSM Transparent mode	Enabled
1	Contact ID/4+2 capture	Enabled
2	GSM Transparent mode	Disabled
3	Contact ID/4+2 capture	Disabled

REPORTING OPTIONS

There are multiples ways of configuring the GSMBU-PRO's reporting function.

STANDARD

This is the default mode, and does not need any programming. If there is PSTN availability, all the calls will be directed through the PSTN. Where the PSTN fails, all the calls will be made virtually with the GSM line.

In this mode, the control panel will be able to transmit using any protocol to Central Station. It is recommended to use the Contact ID.

The main problem for this setting is that the PSTN can be "emulated" using a PSTN simulator. In such a situation the reporting to Central Station will fail.

FORCED GSM.

In this mode at least two Central station phone numbers must be programmed in the control panel, and will use the prefix digit of the GSMBU-PRO in address [453]. If the GSMBU-PRO detects a failure in PSTN it will divert to GSM in the first instance. The difference being the response when the GSMBU-PRO detects the PSTN.

The first Central Station number dialled from the panel will be through the PSTN. If after 2 attempts the panel cannot send the events, it will try to dial the second number. This second phone number will need to be programmed with the GSM force digit [451] as a prefix to enable the GSM network.

If there is a failure in the GSM network the force divert function will be disabled and will be diverted to the PSTN.

This mode will prevent failure in an event of a falsified PSTN.

DUAL MODE

In this mode you must program at least two Central station phone numbers in the control panel, and use the capture contact function. If the GSMBU-PRO detects the failure of the PSTN, it will act as in the first instance sending the call through GSM. The difference is in the behaviour when the GSMBU-PRO detects the PSTN.

The first Central Station phone dialled from the panel will be through the PSTN, if after 2 attempts and the panel cannot send the events, it will try to dial the second number. This second phone number will also be programmed in the GSMBU-PRO as an SMS number, so the process of dialling will activate the capture contact feature. The GSMBU-PRO will record the events of the panel and send them to the Central Station and SMS programmed numbers.

If there is a failure in the GSM network, the capture contact function will be disabled, and calls will be made through PSTN.

This mode will solve a disruption by means of a falsified PSTN.

This mode will only work properly with the Contact ID protocol.

You can also configure the system to capture the first Central Station call when there is no PSTN, by programming this number to the GSMBU-PRO as a Central Station number, and activating working modes 1 or 3 in address [450].

ALWAYS CAPTURE

In this mode the control panel will only attempt to dial a phone number that is programmed in the GSMBU-PRO as SMS number 5 in address [412], so all attempts will be recorded. The GSMBU-PRO will receive the events of the panel and will send them to the Central Station and programmed SMS numbers.

This working mode is ideal if it is only desired for GSM communication to SMS Central Stations or use GPRS.

If there is a lack of GSM signal, the capture function will be disabled.

DOWNLOAD

The GSMBU-PRO is configurable through the Rhino-E-LIGHT software, this communication can be established locally or remotely.

LOCAL DOWNLOAD

Communication is done via the LPC-232/LCP-USB interface, and connecting this interface to CN1 of the GSMBU-PRO.

REMOTE DOWNLOAD

This communication is established through the GSM network using GSM data communication (CSD). A GM29 GSM modem is needed with the computer. This remote connection can be achieved with a direct connection or with call-back connection.

Methods:

Direct CSD connection

The Rhino E-LIGHT will generate a data call to the GSMBU-PRO. When receiving this call, the GSMBU-PRO will try to pick (depending on programming) up and establish a digital communication at 9600 bps.

The GSMBU-PRO will pick up the digital call if:

1. If the incoming call restriction feature has been programmed (Add 454, opt 2) to pick up from a designated analogue number [404] or a CSD call-back number [405].
2. If the incoming call restriction feature has not been programmed, the GSMBU-PRO will pick up all digital incoming calls, and establish a digital communication provided there is a valid installer's code.

Call-back connection.

This communication will be free to the installer when using the call-back feature in Rhino E-LIGHT. The software will generate a voice call to the GSMBU-PRO whereupon making one ring the call will cut. Once receiving this call, the GSMBU-PRO will not pick up and will authenticate the source address as a download CSD number [405] [3]. Then the GSMBU-PRO will make a data call to the Rhino E-LIGHT software which will pick up and establish a connection.

These features require a GM29 GSM MODEM and Rhino E-LIGHT version 3.0 and above.

[3] Only CSD download phone can do digital call-back.

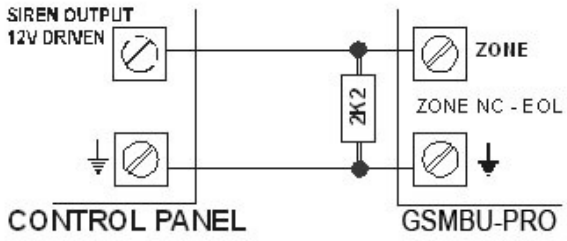
INPUT AND OUTPUT

INPUT ZONES

The GSMBU-PRO has four zone inputs that are fully programmable (NO/NC/EOL). Detection in these zone(s) will trigger the outputs of the board to send forward alerts of the detection (Receiver Station / SMS).

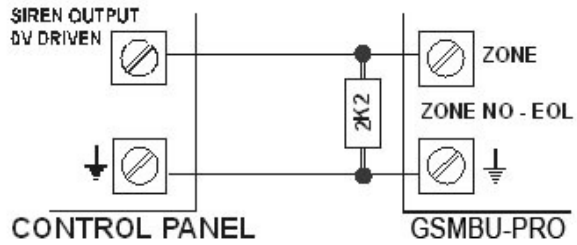
These input zones can be armed or disarmed (capable of being 24hr zone). To arm / disarm, the user code number 1 from a telephone connected on [PHONE] terminals (see "control of the device") must be entered. By default, factory settings have these input zones set as disarmed.

Connecting the zones input to a 12V driven output.



In order to trigger the alarm of the input zone when activating a 12V output use the next wiring diagram. The zone must be programmed as NC / EOL.

Connecting the zone input to a 0V driven output.



In order to trigger the alarm of the zone input when activating a 0V output, use the next wiring diagram. The zone must be programmed as NO-RFL.

ZONE 1 AS KEY.

By configuring the options in address [301,] zone 1 can be programmed as a key switch and can work in two ways:

- **Pulsing:** The key must change state in order to arm/disarm. (NC-NO-NC or NO-NC-NO)
- **Latching**: This mode will depend on zone 1 programming.

Zone prog.	Key position	State
Zone NO	Key in NO	Disarmed
Zone NC	Key in NC	Disarmed
Zone NO	Key in NC	Armed
Zone NC	Key in NO	Armed

OUPUTS

The GSMBU-PRO has four open connector outputs with bipolar transistor capable providing a maximum current of 300mA. They are fully programmable in terms of working mode and timing.

These outputs can be activated when a zone input becomes armed, by remote SMS control or adjusting the settings under 'options'. (The activation of outputs via 'options' only applies to outputs OUT3 and OUT4)

The outputs can work as monostable (time limited alarm from 1 to 254 time units), bi-stable (indefinite alarm time until disarmed- if time programming is 255), or as an input follower (alarm for the duration of the input being activated - timer programming is 0). So when one input activates, the response of the device will depend on the timing options below:

- If the output timer is set to monostable (1 to 254 time units), the zone will remain in alarm while the output is activated, so at the end of the set time period if the zones no longer detect an intrusion, it will reset the alarm. However, if it is still detecting an intrusion, the alarm will only be reset once the detection is neutralised and the set time elapses.
- If the output timers 255 units (bi-stable), the output and the alarm will continue indefinitely until it is deactivated the output by SMS control, local control or by disarming the device. Once the output is deactivated, an alarm restore report will be generated.
- If the output is programmed with 0 units (input-follower), the output will be activated while the zone is in detection, once the detection ceases, the output deactivates and the alarm will be reset.

CONTROL OF THE DEVICE

The programming of the arming / disarming of the zones must be done from a DTMF phone attached to the [PHONE] terminals of the device. In order to enter into control model press the [*][4] key, the dial tone will disappear; a beep will be heard indicating that the GSMBU-PRO is entering control mode. The panel's state will be played with corresponding voice message.

Once in control you will be able to:

Arm / Disarm the equipment.

Once in Control mode of the device.

< cccc > + #

Enter in (< cccc>) the installer's code. The system will enter into programming. Programming of the unit is detailed on page 13.

If < cccc> is the Arming / Disarming code, the zones of the device will be armed / disarmed. The new state will be given via a voice message.

Night arming function.

< cccc > + *

After entering this function, the panel will be armed (new state will be give using a corresponding voice message) and zones in address [604] will be bypassed.

Recording / playing voice messages

In order to record voice messages into the system, enter the digits corresponding to the message index and then press '*'. The system should respond with a beep after which you must voice clearly the message to be recorded. Once the message has been said, wait until you hear two beeps that will indicate the end of message recording.

To play the message, enter the digits corresponding to the message index and then press '#'.

[4] It can be set to enter a valid user code before '*' by programming.

nn	**+**	**#**	*Plays the message 'nn'*
nn	**+**	*****	*Records the message 'nn'*

The message index is:

Index	Message	Time
00	Head message	8 sec.
01	Zone 1	4 sec.
02	Zone 2	4 sec.
03	Zone 3	4 sec.
04	Zone 4	4 sec.
09	Armed / Activated	2 sec.
10	Disarmed / Deactivated	2 sec.
11	"OUT1"	3 sec.
12	"OUT2"	3 sec.
13	"OUT3"	3 sec.
14	"OUT4"	3 sec.
16	Mains supply message (reserved)	3 sec.
17	Battery message	3 sec.
18	Failure or Error message	3 sec

Activate / Deactivate the outputs

Press **[*]**, and then **[output nº]**, the device will play the corresponding output message, plus the message of output state ("Activated or Deactivated"). If you want to change the state, press **[#]**, otherwise wait 5 seconds.

*****	**+**	***Nº***	*State Message*	**+**	**#**

After this, the system will play the new status message.

Checking the state of the system.

If you press the keys [*+7], the system will play the beep sequence corresponding to the state of the input zones, allowing you to check at anytime if the device is armed or disarmed.

The arming / disarming, can also be done using SMS

Checking the state of the zones.

By pressing [***+8]**, the device will play the voice message corresponding to the zones that are in detection mode.

PHONE SECTION

Subscriber code

Based on the identifying nº of the Panel, the Central Receiver is able to determine the owner (client) of the incoming event. There can be up to 4 subscriber codes, one per area. It is necessary to program subscriber codes to allow receiver and SMS report functions.

PHONE TEST

The Test is a periodic report sent to the Receiver Station or via SMS in order to check the status of the communication line. Is necessary to program the following:

Phone Test Report

Event that tests the connection to the Central Receiver.

Cadence time of Phone Test

Time that can lapse between tests is programmable from1 to 255 hours.

If the programmed option is 'NO fixed Test', the test is only sent if inbetween tests there haven't been any communication.

Beginning time of Phone Test

To activate phone test for the first-time, you must program the time. This should be the set as the time left til the first test is to be sent. It is limited between 1 to 255 hours.

Minute of Test Realisation

Indicates which minute that the phone test is to be carried out. It is programmable from 1 to 59 minutes. Enter "00" to set minute exactly on an hour mark.

So that the Phone Test is consistent with the date and the hour settings of the Central Receiver when it receives the test, the date and hour must also be calibrated in the Panel.

Event Limiter

This feature will limit the number of events that can be generated and reported in one hour. This way repetitive failures or alarm will not flood the receiver station. Default factory setting is 255.

Delay of Report

This delay only applies when there is a phone line failure. If before the delay time elapses the phone line is detected as being restored, the failure and the restoral resports will not be sent to receiver station.

Address 101, default factory setting is 030

PHONE REPORTS

The report refers to past events in the Control Panel that were sent to the Receiver Station via PSTN or SMS. In order to send a report, it must be programmed with a different data than "F". The report settings changes in function depending on the active protocol that is applied, i.e. if it is 4+2 or Contact ID.

In order to send a Contact ID report you only need to program a data different from "F" since the Contact ID protocol has a predefined code for each event. However for 4+2, you'll have to consult with the Receiver Station for the code corresponding to each event.

The difference between the two settings in terms of the report generated is that need 1 digit programming or 2 digits. The events with zone/user/area information are composed in 4+2 with a single digit plus the number of zone/user/area, but others such as Phone Test require two digits to be defined.

Every event in the system has an ON event and an OFF (restoring) event. In 1 digit programming, the restore digit is programmed in the same address, whereas for 2 digits reports, the restore event is programmed to a different address.

Zone Alarm

It is sent when alarm (robbery, fire, hold-up…) is triggered in any zone. The 'On' trigger for this event is programmed in low digit and is selectable for each zone, while the Alarm restore ('OFF') event is the low digit of address [567], common for all zones.

User Arming/Disarming

Sends when arming or disarming with a user code. It is composed of the report code + the user nº that

has carried out the operation. At address 577, the high digits send the Arming code while the low digit sends the Disarming code.

Phone line failure

Will be sent if the GSMBU-PRO detects that the PSTN is cut or there is a failure in GSM network. The call will be carried out the alternative way. For both failures, program address [586] (both digits must be programmed).

Phone line Restore

Will be sent if the Panel detects that the phone line connection has been restored. This report will be sent if address [594] is programmed.

Low battery/ Battery restore

The Low battery Report is sent when the battery voltage is less than 11V. The battery restore report will be sent 30 seconds after the voltage becomes greater than 11V.

For the GSMBU-PRO, the report means that there is low power supply.

CENTRAL STATION

The GSMBU-PRO is capable of sending events to 2 receiver station phone numbers with the Contact Id protocol[5] using GSM lines[6]. The GSMBU-PRO is capable of sending itself to receiver station for alarm being triggered in one of its input zones, the periodic phone tests, the phone line failures, and low battery tests[7].

PRIVATE PHONES COMMUNICATOR

The private phones communicator is capable of sending voice messages to two numbers for:

- Alarm trigger of the detection zones.
- Arming / Disarming messages.
- Failure and restoring of low battery. To indicate the failure, the message will send an "Error message" + "Battery message". Once the battery is restored, an "Arming message"+"Battery message" will be sent.

The messages are recordable from telephone

It is important to configure the automatic answering machine of your mobile to pick up at a nominated number of rings. Always configure a high number of message repetitions as the delay between answering machine picking up and answering machine beginning recording can be up to 20 seconds.

The working mode for the communicator is configurable as:

Mode: Calls Once

The communicator will call and reproduce the messages to the first number that picks up and won't continue calling any other phone number.

This mode is set to "0" at address 306

Mode: Calls All

The communicator calls to all the programmed phones numbers and replays the messages.

This cycle repeats a set amount of times as it is programmed to do so regardless if the call is answered or not.

Mode: Security Redial

The voice communicator calls and replays the message to the phones that picks-up and only recalls to the telephones that haven't picked up.

GSMBU-PRO will repeats this operation until all the phones that are programmed picks up the call and listen to the message.

Sends the ID message

Send the ID message before the zones messages, the purpose is to identify the unit that is calling.

Delay when calling to private phones

In an event a report had been sent to the Receiver Station and then to private phones, the delay in address [425] will be applied. By default the setting is set to 255 seconds. In case that there is trouble communicating to the Control Station, the private phone calls will not be delayed.

[5] It is possible to use other protocols, but Contact ID is preferred when reporting through GSM network.

[6] It cannot send the reports using PSTN.

[7] If voltage applied to GSMBACKUPDIALER falls under 11V.

DECISION TABLE OF GSMBU-PRO WHEN MAKING CALLS.

This table shows the decision algorithm that the GSMBU-PRO will apply in case that it has to make a call to private phones or Receiver Station, or any associated device connected to the PHONE terminals. Depending on the availability of PSTN and GSM signals, the GSMBU-PRO will respond as follows:

PSTN STATE	**PSTN OK**	**PSTN OK**	**FAILURE OF PSTN**
GSM STATE	**GSM OK**	**FAILURE OF GSM**	**GSM OK**
CASE 1: The associated device is making a call to a registered phone in GSMBU-PRO[8].	GSMBU-PRO will make the call through the GSM network and the associated device through the PSTN.	GSMBU-PRO will wait till the current call ends but if this call lasts for more than 120 seconds the GSMBU-PRO will cut the current call and call through the PSTN.	GSMBU-PRO will wait till the current call ends, unless this call lasts for more than 120 seconds, in which case the GSMBU-PRO will cut the current call and call through GSM.
CASE 2: The associated device is making a call to an unregistered phone or the line is simply unavailable.	GSMBU-PRO will call through the GSM network and the associated device through the PSTN.	GSMBU-PRO will cut the current call and call through the PSTN	GSMBU-PRO will cut the current call and make its call through GSM
CASE 3: The associated device is programming or in control of the GSMBU-PRO-.	GSMBU-PRO will wait till the programming or control state to end before begin making the call	GSMBU-PRO will wait till the programming or control state to end before it begins making the call	GSMBU-PRO will wait till the programming or control state to end before it begins making the call

If both lines have failures, the GSMBU-PRO will try both.

[8] Example: the control panel is calling the Receiver station to report events.

SMS COMMUNICATOR

GSMBU-PRO is capable of sending SMS to up to 5 numbers in cases where zone alarms are triggered, for periodic phone tests, phone line failures, and low battery warnings[9]

The events can be sent in digital format (to receiver station) or in text format (to private phones. This feature can be selected for each phone number.

When more than one event must be sent to a certain phone number, the system will send a SMS with a maximum of 120 characters. If more events must still be sent, a new SMS message will be created.

The format of a SMS text event is the next:

<DATE><INSTALLATION ALIAS>#<SUBSCRIBER>
<EVENT ALIAS> <ZONE / USER ALIAS> <HOUR>

Ex:v*"21/06/02 calabria 52-54 John-934948440 #9876 Fire alarm kitchen 08:45:02 #9876 disarming John 09:00:03"*

The alias in the messages can be changed using the RHINO E-LIGHT software. The factory default aliases are:

Zones :	zonex	Ex : zone1
User:	userx	Ex : user1
Outputs:	outx	Ex : out1
Areas:	area:	Ex : area1

The alias of events can also be changed to allow multiple languages in the SMS message.

The alias of installation is blank by default.

TEST OR STATE SMS

A Test / State SMS will be sent to those GSM phones that have the phone test report assigned and to the phones that have executed a tele-control SMS. This SMS gives information about the state of the GSMBU-PRO.

The Test/State technical information is in the following format:

Zm: 0001 (Zones of the GSMBU-PRO)

OUTS: 1101 (Out 1 is the first digit, Out 4 the last one)
1= Activated :: 0 = Standby

AREAS: 0 1= Armed :: 0 = Disarmed
E=Entry Path :: X =Exit path.

HOUR : 08:45:02

DATE : 21/06/02

V12V: 14,3V *Input voltage to the GSMBU-PRO*

TEMP: 25.1C° *Temperature measured in RT1*

PHLINE:1 *1=Ok, 0 = Fail in phone line*

TEST:024h *(hours to do the phone test*

GSMRF: 25 % *GSM signal strength*

SMS REMOTE CONTROL

The GSMBU-PRO will allow remote control of its outputs and state using SMS messages from any mobile phone[10]. The format for a tele-control message will be:

"USER CODE ITEM1=ACTION1 ITEM2=ACTION2 ITEM3=ACTION3 ITEM4=ACTION4 "

USER CODE : Any valid user code of the Control Panel , no blank spaces will be allowed before the digits, if it is desired to control Outputs, the this user code must be the Master user code. This code will be used to authenticate, it won't arm/disarm the Control Panel.

ITEM=ACTION, These are the commands that will be executed.

Also the format ITEM: ACTION is allowed.

ITEM	Format	Possible actions.
User Alias	Text	On – Arms Off – Disarms
User Code	4 digits	On – Arms Off – Disarms
Output Alias	Text	On – Activates Off – Deactivates
Area Alias	Text	On – Arms Off – Disarms

Let's have a look to an example with Outputs / relays.

"1234 heater=on pump=off"

User example

"1234 3345=on john=off"

IMPORTANT:

- In a tele-control message you can set up to 4 "ITEM=ACTION". If there are any errors then the message will be ignored and the sequence of commands aborted.
- The alias names can only be one word without blank spaces typed in lower case letters.
- Send all tele-control messages using lower case letters.
- After the execution of a tele-control SMS, the Control Panel will reply with a Test/State message to the phone that sent the tele-control SMS.
- In order to safeguard the system from intrusion, it is recommended to set calling line restrictions. This way, only SMS coming from registered phones will be accepted.
- In order to enable the activation of Output, these must have "Enables tele-control" set in its working mode.

SMS PROGRAMMING

See the programming section.

[9] If voltage applied to CVGSM-PRO falls under 11V.

[10] When there is no restriction applied to incoming calls

PROGRAMMING GSMBU-PRO FROM A DTMF PHONE

Enter in programming:

In order to set the programming, first disconnect the PSTN from [LINE] terminal and wait until the phone line failure (green LED) as shown on D12 is not longer flashing, after that pick up the phone and press:

[*] + [Installer's code] + [#]

When you pick up you'll hear the dial tone, pressing [*] and a beep will be heard.

The installer's factory default code is: **[0011]**

If the code is correct, you'll hear a melody to confirm:

Quit programming:

Press on a DTMF phone:

[*] + [#]

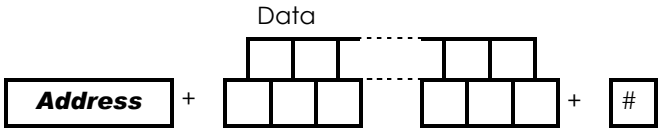
After a few seconds the relay will activate, indicating programming mode has been exited, at this point the phone can be hung up.

The GSMBU-PRO will also exit programming after 1 minute without pressing a key, once out of programming a dial tone will be heard.

Programming data in the addresses:

To program:

- Set the address to program.
- Next, enter the data.
- Finally, confirm by pressing [#].



The data to introduce can be one or several digits

Programming the Address.

Three digits of address must be pressed, each digit you type, you should hear a single beep acknowledging the entry. Once you enter the third digit you'll hear a melody indicating the correct entry of the address

If the address entered is wrong, you'll hear an error tone sequence indicating the error, after that you'll have to enter the address again.

You may abort an entry by pressing [#], allowing you to enter a new address.

Programming the data:

Once you hear the melody confirming a correct address was entered, type in the data and press [#] to validate them. Once done, you'll hear a melody and the data will be programmed.

If it is need to enter hexadecimal data, use the table below.

Letter	A	B	C	D	E	F
Press	[*] [0]	[*] [1]	[*] [2]	[*] [3]	[*] [4]	[*] [5]

Factory default.

To reset values to factory defaults, simply enter address [9FF], this will reset the values and will quit setup.

Recovering factory codes

In case you don't remember the installer's or On/Off code, you can reset them to factory by:

1. Pick up a DTMF phone.
2. Press the key '*', the device will enter into control mode.
3. Press the key '9' for 3 seconds. (Two beeps will be heard)
4. The codes will be reset to factory values

PROGRAMMING THE GSMBU-PRO USING SMS.

SECURITY

To ensure the security of the programming through SMS, it is recommended to configure the equipment with the CLI restriction feature. This way only a registered phone number will be able to conduct programming via SMS.

PROGRAMMING SMS FORMAT

The generic format is:

***<code># <address>=<data># <address>=<data>#....**

If you entered the option 1 in address [302] then you must put code before '*' as:

<code>*<code># <address>=<data># <address>=<data>#....

It is possible to program as many addresses as can be fitted into a SMS, e.g of installer's programming will be:(0011 is the installer's code)

- `*0011# 400=D934948440# 413=34607003110# 414=02#`

This message has set three addresses. Once the commands are executed, the GSMBU-PRO will return the following message acknowledging the SMS:

- "3 ITEMS PROGRAMMED"

We can also set with an assigned GSM alias, e.g:

- `*0011# F04=marina#`

This will set the alias, and will return a message such " 1 ITEM PROGRAMMED "

Let's see a message with an error.

- `*0011# 001=1234# 956=3#` (The 956 address is erroneous)
- "1 ITEMS PROGRAMMED" (Only one command has been programmed, the second has failed!!!)

Once the SMS scanner detects an error, it will abort the scan of the rest of the message.

FACTORY RESET

To reset to default factory settings, send:

- `*0011 9FF`
- GSMNU-PRO will reply - "1 ITEM PROGRAMMED"

PROGRAMMING TABLES

PROGRAMMING INSTALLER CODE

Installer's code	000					
		0	0	1	1	
ON/OFF Code	001					
		1	1	1	1	

Used to arm / disarm the zone input of GSMBU-PRO

OUTPUT PROGRAMMING

Zones assigned to OUT1

605	1	2	3	4	5	6	7	8
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Activation of timer

212			
	0	6	0

Working mode for OUT1	200	**1**	2	3	4	***5***	6	7	8

1) If selected will set to open in standby, otherwise it will give 0V.
2) Selects pulsing activation mode
3) Selects timer in minutes, otherwise it will set timer in seconds.
4) If already activated and triggered again, it will restart the timer.
6) Activates supervised wireless output.
7) OUT1 will be associated with OUT1 of central control panel
8) Enables the remote control from Keypad / DTMF / SMS.

Zones assigned to OUT2

606	1	2	3	4	5	6	7	8
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Activation of timer

213			
	0	6	0

Working mode for OUT2	201	**1**	2	3	4	***5***	6	7	8

1) If selected will set to open in standby, otherwise it will give 0V.
2) Selects pulsing activation mode
3) Selects timer in minutes, otherwise it will timer in seconds.
4) If already activated and triggered again, it will restart the timer.
6) Activates supervised wireless output.
7) OUT2 will be associated with OUT2 of centrum control panel
8) Enables the remote control from Keypad / DTMF / SMS.

Zones assigned to OUT3

607	1	2	3	4	5	6	7	8
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Activation of timer

214			
	0	6	0

Working mode for OUT3	202	**1**	2	3	4	***5***	6	7	8

1) If selected will set to open in standby, otherwise it will give 0V.
2) Selects pulsing activation mode
3) Selects timer in minutes, otherwise it will timer in seconds.
4) If already activated and triggered again, it will restart the timer.
6) Activates supervised wireless output.
7) OUT3 will be associated with PGM1 of centrum control panel
8) Enables the remote control from Keypad / DTMF / SMS.

Zones assigned to OUT4

608	1	2	3	4	5	6	7	8
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Activation of timer

215			
	0	6	0

Working mode for OUT4	203	**1**	2	3	4	***5***	6	7	8

1) If selected will set to open in standby, otherwise it will give 0V.
2) Selects pulsing activation mode
3) Selects timer in minutes, otherwise it will timer in seconds.
4) If already activated and triggered again, it will restart the timer.
6) Activates supervised wireless output.
7) OUT4 will be associated with PGM2 of centrum control panel
8) Enables the remote control from Keypad / DTMF / SMS.

OUTPUT SCHEDULES.

The option number 8 in the calendar of all schedules means that the output will be triggered at the beginning and at the end of the interval.

Schedule O1, init hour A	216	h h m m	Activ.Hour format hh:mm
Schedule O1, final hour A	217	h h m m	Deactivate Hour format hh:mm
Calendar of Schedule 1.A	218	1 2 3 4 5 6 7 8	Select 1= Monday 7 = Sunday
Schedule O1, init hour B	219	h h m m	Activate Hour format hh:mm
Schedule O1 final hour B	220	h h m m	Deactivate Hour. format hh:mm
Calendar of Schedule 1.B	221	1 2 3 4 5 6 7 8	Select a=Monday 7=Sunday
Schedule O2, init hour A	222	h h m m	Activate Hour format hh:mm
Schedule O2, final hour A	223	h h m m	Deactivate Hour format hh:mm
Calendar of Schedule 2.A	224	1 2 3 4 5 6 7 8	Select 1= Monday 7 =Sunday
Schedule O2, init hour B	225	h h m m	Activate Hour format hh:mm
Schedule O2 final hour B	226	h h m m	Deactivate Hour format hh:mm
Calendar of Schedule 2.B	227	1 2 3 4 5 6 7 8	Select 1=Monday, 7 = Sunday
Schedule O3, init hour A	228	h h m m	Activate Hour format hh:mm
Schedule O3, final hour A	229	h h m m	Deactivate Hour format hh:mm
Calendar of Schedule 3.A	230	1 2 3 4 5 6 7 8	Select= Monday 7 = Sunday
Schedule O3, init hour B	231	h h m m	Activate Hour format hh:mm
Schedule O3, final hour B	232	h h m m	Deactivate Hour format hh:mm
Calendar of Schedule 3.B	233	1 2 3 4 5 6 7 8	Select 1= Monday 7 = Sunday
Schedule O4, init hour A	234	h h m m	Activate Hour format hh:mm
Schedule O4, final hour A	235	h h m m	Deactivate Hour format hh:mm
Calendar of Schedule 4.A	236	1 2 3 4 5 6 7 8	Select 1= Monday 7 = Sunday
Schedule O4, init hour B	237	h h m m	Activate Hour format hh:mm
Schedule O4, final hour B	238	h h m m	Deactivate Hour format hh:mm
Calendar of Schedule 4.B	239	1 2 3 4 5 6 7 8	Select 1= Monday 7=Sunday 8 = Output triggers at the beginning and end of the interval.

ZONES PROGRAMMING

NO Zones	600	1	2	3	4	5	6	7	8	
EOL resistor zones	601	1	2	3	4	5	6	7	8	
		✓	✓	✓	✓	✓	✓	✓	✓	
Slow sensibility	602	1	2	3	4	5	6	7	8	*Will select timer in minutes, default in 100ms*
24h zones	603	1	2	3	4	5	6	7	8	
Night arming function.	604	1	2	3	4	5	6	7	8	*These zones will be bypassed when doing the night arming function.*
Activating OUT1	605	1	2	3	4	5	6	7	8	
Activating OUT2	606	1	2	3	4	5	6	7	8	
Activating OUT3	607	1	2	3	4	5	6	7	8	
Activating OUT4	608	1	2	3	4	5	6	7	8	
Analogue Zones	609	1	2	3	4	5	6	7	8	*Reserved.*
Entry / Exit zones	610	1	2	3	4	5	6	7	8	

Entry Time				**Exit Time**			
105				106			
Sec.	0	3	0	Sec.	0	4	0

Counts in units of 100ms

Zone 1 timer	611	0	0	5
Zone 2 timer	612	0	0	5
Zone 3 timer	613	0	0	5
Zone 4 timer	614	0	0	5

500ms from factory

OPTIONS PROGRAMMING

Options 1) Kernel Options

301	**1**	**2**	**3**	**4**	5	6	7	**8**

5) OUT1 will remain activated while the device is armed. (deactivated when not)
6) Selects latching key switch working mode, otherwise it will be pulsing.
7) Configures the zone 1 as key switch.

Options 2) Rings and Phone options

302	1	2	3	**4**	5	**6**	**7**	**8**

1) Code + * is required in order to enter programming / control from a phone.
2) Cancels redial functions when pressing '#' key.
3) Selects PBX ring type for incoming GSM calls.
5) Activates ring sequence when the entry time is activated.

Options 3) OUT3 OPTIONS

303	1	2	3	4	**5**	**6**	**7**	**8**

1) Activates OUT3 in case of failure of the IP TEST report to Central Station.
2) Activates OUT3 when detecting a failure in the fixed phone line.
3) Activates OUT3 when fails to report to central station.
4) Activates OUT3 when there is lack of GSM signal or other GSM failure.

Options 4) OUT4 OPTIONS

304	1	2	3	4	5	**6**	**7**	8

1) Activates OUT4 in case of failure of the IP TEST report to Central Station.
2) Activates OUT4 when detecting a failure in the fixed phone line.
3) Activates OUT4 when fails to report to central station.
4) Activates OUT4 when there is lack of GSM signal or other GSM failure.
5) Enables over-the-air download from GSM,GPRS to CN1/RS485 channel.

Options 5) Phone options

305	**1**	2	3	**4**	5	**6**	7	**8**

2) Not fixed periodic phone test.
3) reserved
5) The timer of phone test will only count if the system is armed.
7) The addresses 442,444,457,459,461,463 will work with zones or with areas

Options 6) Speech dialler options

306	1	2	3	**4**	**5**	**6**	**7**	**8**

1) Speech dialler mode: Calls all
2) Speech dialler mode: Security redial
3) Sends the ID message

COMMUNICATION SPEED PROGRAMMING

At this address, you'll be able to configure the baud rate for RS485 and GSM serial channels.

Baud Rate

053	RS485	GSM
	0	0

Speed table:

0 Default speed for the channel.
1 1200 bps
2 2400 bps
3 4800 bps
4 9600 bps
5 19200 bps
6 38400 bps
7 57600 bps
8 115200 bps

CENTRAL STATION PHONES PROGRAMMING

	Receiver Station Phones		Phone attempts			Format/ Protocol		
Phone 1	400	The phone numbers can have up to 28 digits None	414	0 F	F	418	F	F
Phone 2	401	 None	415	0 F	F	419	F	F
Phone 3	402	 None	416	0 F	F	420	F	F
Phone 4	403	 None	417	0 F	F	421	F	F

Special parameters

A	Makes a delay of 2 sec, before continue dialling
B	**Defines the phone as an IP address**
C	**Dials using pulses, otherwise as DTMF**
D	Checks Dial Tone
E	Uses GSM channel by default if available, otherwise PSTN
EE	Uses CSD data channel in order to send events

If the data to program are letters, use the table:

Letter	A	B	C	D	E	F
Type	[*] [0]	[*] [1]	[*] [2]	[*] [3]	[*] [4]	[*] [5]

Format	
0 = Tone 1400 · 4/2	
1 = Tone 2300 · 4/2	
8 = JR IP uses reduced format	
Protocol	
0 = Ademco DTMF	5 = Universal
1 = Ademco Slow	6 = Silent Knight
2 = Sescoa	7 = Contact Id.
3 = Radionics	8..E = Reserved
4 = Radionics Fast	F = Null

Event limiter per hour | 433 | 2 5 5 |

Limits the number of events that can be generated in one hour.

Always program the phone attempts and Format/Protocol as they come un-programmed by default and will not call

Sending options for Receiver station phone 1 | 441 | 1 | 2 | 3 | 4 | 5 | 6 | **7** | 8 |

1) Sends Alarms and their restoration.
2) Sends arming / disarming events.
3) Sends bypass of zones and their restoration
4) Sends zones failures and their restoration
5) Sends Sirens failures, mains fault, low battery and restoration
6) Sends the Test report
8) Sends the event, even if it has already been sent

Areas/Zones that send to Phone 1 | 442 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Sending options for Receiver station phone 2 | 443 | 1 | 2 | 3 | 4 | 5 | 6 | **7** | 8 |

1) Sends Alarms and their restoration
2) Sends arming / disarming events.
3) Sends bypass of zones and their restoration
4) Sends zones failures and their restoration
5) Sends Sirens failures, mains fault, low battery and restoration
6) Sends the Test report
8) Sends the event, even if it has already been sent

Areas/Zones that send to Phone 2 | 444 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Sending options for Receiver station phone 3 | 445 | 1 | 2 | 3 | 4 | 5 | 6 | **7** | 8 |

1) Sends Alarms and their restoration
2) Sends arming / disarming events.
3) Sends bypass of zones and their restoration
4) Sends zones failures and their restoration
5) Sends Sirens failures, mains fault, low battery and restoration
6) Sends the Test report
8) Sends the event, even if it has already been sent

Areas/Zones that send to Phone 3 | 446 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Sending options for Receiver station phone 4 | 447 | 1 | 2 | 3 | 4 | 5 | 6 | **7** | 8 |

1) Sends Alarms and their restoration
2) Sends arming / disarming events.
3) Sends bypass of zones and their restoration
4) Sends zones failures and their restoration
5) Sends Sirens failures, mains fault, low battery and restoration
6) Sends the Test report
8) Sends the event, even if it has already been sent

Areas/Zones that send to Phone 4	448	1	2	3	4	5	6	7	8

REPORT DELAY

Delay before sending a Phone Line failure (SMS and Receiver station). The delivery will be cancelled if the line restores before the delay concludes

101			
Sec	0	3	0

-- From 0 to 255 seconds

REPORT TIMEOUT

Maximum time that a report will be keep in the report queue (SMS and Receiver Station) in case that all communication channels are unavailable. If any channel restores before the timeout concludes, the reports that are in queue will be sent.

440			
min	2	5	5

-- *From 10 to 255 minutes*

Don't program less than 10 minutes

Analogue Download call-back phone

Phone | 404 | | None

If you receive a digital call from this phone, it will pick up and will try to establish digital download session

In this address you can also register the call-back number of the control panel, so in case of working with restricted incoming calls, this number will be accepted

---

Digital download phone (CSD)

Phone | 405 | | None

If you receive a digital call from this phone, it will pick up and will try to establish digital download session

If you receive an analogue call from this phone, it will generate a digital call-back to the Computer

---

Private Phones, speech messages | **Sending Options** | **Zones that send.**

Phone 1 | 406 | None | 470 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | All | 471 | 1 | 2 | 3 | 4 | All

Phone 2 | 407 | None | 472 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | All | 473 | 1 | 2 | 3 | 4 | All

Sending options for private phones

47x | 1 | 2 | **3** | **4** | 5 | 6 | 7 | **8**

1) Sends alarm message of zones
2) Sends Arming / Disarming (plays the arming / disarming) message
5) Sends the Mains failure message and its restoration
6) Send the low battery message and battery restore message
7) Sends speech Test (Sends current state of system)

Zones that send to private phones

47x | 1 | 2 | 3 | 4 | **5** | **6** | **7** | **8**

1) Sends alarms of zone 1
2) Sends alarms of zone 2
3) Sends alarms of zone 3
4) Sends alarms of zone 4

104			
	0	0	3

Message repetitions

424	0	
	F	F

Call attempts

425			
	2	5	5

Delay between call to Receiver Station and to private phones.

SUBSCRIBER CODES PROGRAMMING

Area 1 Subscriber code | 426 | F F F F

SIA Subscriber extension | 432 | F F

Subscriber codes must be programmed in order to enable Receiver Station and SMS reporting.

Most important two digits of a SIA subscriber code which is 6 digits long.

PHONE TEST PROGRAMMING

Telephone Test Report | 591 | F F

In order to generate a Manual Test:
** From RHINO E-LIGHT*
** Once in programming from a DTFM Phone, press '#' key during 3 seconds*

Test cadence time | 102 | Hours 1 2 0 -- *Cadence in hours*

Test cadence time | 107 | Days 0 0 0 -- *Cadence in days*

Cadence= 102+107

Hours for next phone test | 434 | Minutes 0 0 0 -- *Hours left for the next phone test*

Days for next phone test | 435 | Days 0 0 0 -- *Days left to the next phone test*

REPORT BASE ZONE

Report Base Zone	049	0			
		0	0	0	0

This number will be added to the "number of event" field of contact ID reports generated in the GSMBU-PRO. This way GSMBU-PRO's own events can be distinguished from the panel's ones.[11]

PROGRAMMING DATE AND HOUR

This programming will only be possible from a DTMF Phone, as it will be not be necessary when GSMBU-PRO is working with Central Control Panel, as it will take the date hour setting of the master control panel.

DATE	115							E
Example 16/08/01	115	1	6	0	8	0	0	E

HOUR	116							E
Example: 10:45	116	1	0	4	5	0	0	E

REPORTS PROGRAMMING

The reports must be programmed in order to send corresponding events to Receiver Station or SMS, this report map is independent from the one of the control panel.

Zone 1	501	Av	Al
		F	F
Zone 2	502		
		F	F
Zone 3	503		
		F	F
Zone 4	504		
		F	F
Zone 5	505		
		F	F
Zone 6	506		
		F	F
Zone 7	507		
		F	F
Zone 8	508		
		F	F

Rest / Zone Tamper	565	Rest	Tam
		F	F
Failure Rest / Alarm Rest	567	Fai. R	Al R
		F	F
Burglary near alarm	570	-	Near
		F	F
Wireless Tx fail or RF receiver jamming.	571	Rest	Fail.
		F	F
Wireless Tx low battery	572	Rest	L Bat
		F	F
" OUT " and 12V failures	574	Rest	Fail
		F	F
Expansion module fail	575	Rest	Fail
		F	F
Arming / Disarming of user	577	Arm	Disarm
		F	F
Arming / Disarming of Areas	578	Arm	Disarm
		F	F

Phone line failure	586		
		F	F
Mains failure	587		
		F	F
Mains Restore	588		
		F	F
Low Battery	589		
		F	F
Low Battery Restore	590		
		F	F
Phone Test	591		
		F	F
Phone Line restore	594		
		F	F

Mains fail. report delay	100			
		0	0	0

EXTENDED CONTACT ID CODES.

Zone Alarm

0	Standard Codes
1	Perimeter robbery
2	Interior Robbery
3	Gas detector
4	Refrigeration
5	Heater System
8	High temperature
9	Low temperature
A	Air flow
B	Low water level
C	Pump Activated
D	Fire pull

Zone Failure

0	Sensor failure
1	Fire loop
2	Generic tamper.[12]
3	Pump failure
4	Siren 1
5	Siren 2
8	Module failure
9	Module tamper
A	Phone Line failure
B	Wireless transmitter failure
C	Repeater failure
D	Communicating events

[11] If value is 0100, then alarm of zone 1 of CVGSM will be reported as zone 101.

[12] For wall and box tampers.

6	Water flood	E	Medical emergency	6	Open loop	E	Detector masking
7	Glass broken	F	**Disables reporting**	7	Shorted loop	F	**Disables reporting**

REMOTE CONTROL OF OUPUTS BY LOST CALL OF SMS PHONES

Outputs to activate		O1	O2	O3	O4	R	R	R	Op
SMS Phone 1	615	1	2	3	4	5	6	7	8
SMS Phone 2	616	1	2	3	4	5	6	7	8
SMS Phone 3	617	1	2	3	4	5	6	7	8
SMS Phone 4	618	1	2	3	4	5	6	7	8
SMS Phone 5	619	1	2	3	4	5	6	7	8

The 8'th option will disable the return of the test message if the GSMBU-PRO only receives a single ring.

GSM/SMS COMMUNICATOR PROGRAMMING

PIN CODE	449					F F F F
Mode / PBX digit	450	m	d			0 F
GSM digits	451					F F
Audio volume	452	2	7			F F
Divert digits	453	d	d			F F
SMS Limiter	466					2 5 5

Program before installing the sim Card !!

m: working mode, refer to page n° 5.
d : Digit used when dialling through a PBX, disabled using GSM
For certain countries, not available in Europe

Tx volume and Rx volume de Rx, ***PROGRAM WITH DATA EQUAL TO 27.***

d1: By dialling this before the phone number, you'll select GSM line.
d2: if the dialled number begins with this digit, the call will be divert through GSM.

Limits the maximum number of SMS that can be sent in one day.

SMS Status options.

467	1	2	3	4	5	6	7	8

1) SMS phone 1 has technical SMS state otherwise it will have user friendly state.
2) SMS phone 2 has technical SMS state otherwise it will have user friendly state.
3) SMS phone 3 has technical SMS test otherwise it will have user friendly state.
4) SMS phone 4 has technical SMS test otherwise it will have user friendly state
5) SMS phone 5 has technical SMS test otherwise it will have user friendly state
6) Unregistered phones will have technical SMS test otherwise they will have user friendly SMS test
7) State SMS only returns info about the last controlled items.

GSM Communicator Options

454	1	2	3	4	5	6	7	8

1) When sending the periodic phone test, code 603 will be used instead of 602
2) Only enables pick up of SMS, Download and Receiver Station calling parties
3) Cancels PSTN failure detection for lack of dial tone
4) Codified SMS uses SIA protocol instead of Contact ID (default)
5) Inserts the Subscriber code in the SMS
6) Sends only one report per SMS (compatibility with certain SMS Stations)
7) The periodic test in text mode, sends the alias of address [**FD3**]
8) Reserved

GSM State	455	R	G	R	F	Q	Q

Read Only

RG= Registered / not registered in network (01 / 00) **RF**= Rf signal power. **QQ** = Signal quality in % (Hexa)

SMS PHONES PROGRAMMING

IMPORTANT: The SMS phones must be always be programmed with international dialling codes, eg. for Australia, always put 61 before the phone number, but if AA Is inserted before the phone digits, the number will be considered as national prefix. Or If AB is inserted before phone digits, the number will be considered as private number prefix.
IMPORTANT: In order for the messages to be sent, you must program the phone reports of the events you like to send with subscriber codes.

	SMS Phones		Sending Options		Areas that send	
Phone 1	408	None	456	1 2 3 4 5 6 7 8	457	1 2 3 4 5 6 7 8
Phone 2	409	None	458	1 2 3 4 5 6 7 8	459	1 2 3 4 5 6 7 8
Phone 3	410	None	460	1 2 3 4 5 6 7 8	461	1 2 3 4 5 6 7 8
Phone 4	411	None	462	1 2 3 4 5 6 7 8	463	1 2 3 4 5 6 7 8
Phone 5	412	CAPTURE ALWAYS PHONE None	464	1 2 3 4 5 6 7 8	465	1 2 3 4 5 6 7 8
SCA	413	SMS SERVICE CENTER ADDRESS None				

SMS Sending Options	4xx	1	2	3	4	5	6	**7**	8

1) Sends Alarms and alarm restoration
2) Sends arming / disarming events
3) Sends bypass of zones and its restoration
4) Sends zone s failures and its restoration
5) Sends Sirens failures, mains fault, low battery and restoration
6) Sends the Test report
7) Inserts the Installation alias message that identifies the installation
8) Uses codified report format (SIA or Contact ID) instead of text

Areas that send	4xx	1	2	3	4	**5**	**6**	7	8

1) Sends events of area 1 / zone 1.
2) Sends events of area 2 / zone 2.
3) Sends events of area 3 / zone 3.
4) Sends events of area 4 / zone 4.
7) Sends the event, even if it has been sent to other SMS phone or Receiver Station
8) If receives lost call (1 ring only) from this phone, returns a Test / State SMS

GSM ALIAS PROGRAMMING

The alias can be as much 16 characters long in lower case letters and without blank spaces.

INSTALLATION AND USER

Type	*Add*	*Factory Default*
Installation alias, line 1	F00	" "
Installation alias, line 2	F01	" "
Installation alias, line 3	F02	" "
GPRS user alias	F03	" "
User 1 alias	F04	"user1 "
©User 2 Alias	F05	"user2 "
©User 3 Alias	F06	"user3 "
©User 4 Alias	F07	"user4 "
©User 5 Alias	F08	"user5 "
©User 6 Alias	F09	"user6 "
©User 7 Alias	F0A	"user7 "
©User 8 Alias	F0B	"user8 "
©User 9 Alias	F0C	"user9 "
©User 10 Alias	F0D	"user10 "
©User 11 Alias	F0E	"user11 "
©User 12 Alias	F0F	"user12 "
©User 13 Alias	F10	"user13 "
©User 14 Alias	F11	"user14 "
©User 15 Alias	F12	"user15 "
©User 16 Alias	F13	"user16 "
©Alias Scenario 1	F14	"scenario1 "
©Alias Scenario 2	F15	"scenario2 "
©Alias Scenario 3	F16	"scenario3 "
©Alias Scenario 4	F17	"scenario4 "
©Alias Scenario 5	F18	"scenario5 "
©Alias Scenario 6	F19	"scenario6 "
©Alias Scenario 7	F1A	"scenario7 "
©Alias Scenario 8	F1B	"scenario8 "
Alias GPRS Password	F1C	" "

ZONES,OUTPUTS,RELAYS AND AREAS

Type	*Add*	*Factory Default*
Alias Zone 1	F1D	"zone1 "
Alias Zone 2	F1E	"zone2 "
Alias Zone 3	F1F	"zone3 "
Alias Zone 4	F20	"zone4 "
©Alias Zone 5	F21	"zone5 "
©Alias Zone 6	F22	"zone6 "
©Alias Zone 7	F23	"zone7 "
©Alias Zone 8	F24	"zone8 "
©Alias Zone 9	F25	"zone9 "
©Alias Zone 10	F26	"zone10 "
©Alias Zone 11	F27	"zone11 "
©Alias Zone 12	F28	"zone12 "
©Alias Zone 13	F29	"zone13 "
©Alias Zone 14	F2A	"zone14 "
©Alias Zone 15	F2B	"zone15 "
©Alias Zone 16	F2C	"zone16 "
Alias OUT1	F5D	"output1 "
Alias OUT2	F5E	"output2 "
Alias OUT3 / PGM1	F5F	"pgm1 "
Alias OUT4 / PGM2	F60	"pgm2 "
©Alias Relay1	F61	"relay1 "
©Alias Relay2	F62	"relay2 "
©Alias Relay3	F63	"relay3 "
©Alias Relay4	F64	"relay4 "
Alias Area 1	F79	"area1 "
©Alias Area 2	F7A	"area2 "
©Alias Area 3	F7B	"area3 "
©Alias Area 4	F7C	"area4 "
Alias GPRS APN	F7F	" "

PROGRAMMING THE EVENT ALIASES

If you want to change the text of the events in Contact ID, you can program the addresses shown below, the text of the events is limited to 16 chars.

F80	'Medical Urgency '	F9E	'Low Gas Level '	FBC	'Sensor Tamper '	FDA	'Output ON '
F81	'Fire Alarm '	F9F	'High Temperature'	FBD	'Disarming '	FDB	'Handshake Fail '
F82	'Smoke Detector '	FA0	'Low Temperature '	FBE	'User Disarming '	FDC	'Zone Sentinel '
F83	'Combustion '	FA1	'Loss of Air Flow'	FBF	'Automatic Disarm'	FDD	'Invalid Date/Hour'
F84	'Water Flow '	FA2	'Low Water Pressure'	FC0	'Cancel Disarming'	FDE	'Relay ON '
F85	'Heat Sensor '	FA3	'Low CO2 Level '	FC1	'Remote Disarming'	FDF	'RF Rx. Jamming '
F86	'Fire Pull '	FA4	'Gate Valve Sensor'	FC2	'Quick Disarming '	FE0	'Telco 2 failure '
F87	'Near Alarm-Fire '	FA5	'Low Water Level '	FC3	'Key Disarming '		
F88	'Panic '	FA6	'Pump Activated '	FC4	'Access Control '		
F89	'Duress '	FA7	'Pump Failure '	FC5	'Access Denied '		
F8A	'Silent Panic '	FA8	'System Trouble '	FC6	'Access Gained '		
F8B	'Burglary '	FA9	'AC Fail '	FC7	'Siren 1 Disabled'		
F8C	'Perimeter Alarm '	FAA	'Low Battery '	FC8	'Siren 2 Disabled'		
F8D	'Indoor Burglary '	FAB	'System Reset '	FC9	'Alarm Relay Dis.'		
F8E	'24 HOUR Alarm '	FAC	'Program Change '	FCA	'Perimeter Sys Dis.'		
F8F	'Entry/Exit Alarm'	FAD	'Batt Test Fail '	FCB	'Communication Disable'		
F90	'Day Alarm '	FAE	'Siren Relay Fail'	FCC	'Dialler Disabled '		
F91	'Outdoor Burglary '	FAF	'Bell 1 Failure '	FCD	'Wireless Tx Dis.'		
F92	'Tamper '	FB0	'Bell 2 Failure '	FCE	'Zone Bypass '		
F93	'Near alarm '	FB1	'Module Failure '	FCF	'Fire Bypass '		
F94	'General Alarm '	FB2	'Repeater Failure'	FD0	'24h Bypass '		
F95	'Pollin Loop OPEN'	FB3	'Prn Out Of Paper'	FD1	'Burglar Bypass '		
F96	'Pollin Loop CLOS'	FB4	'Printer Off Line'	FD2	'Manual Test '		
F97	'Exp Mod Fail '	FB5	'Perimeter Sys Av'	FD3	'Phone Test '		
F98	'Exp Mod Tamper '	FB6	'Sensor Masking '	FD4	'Wireless Test '		
F99	'Gas Alarm '	FB7	'Phone Line Fail '	FD5	'Fire Test '		
F9A	'Freezer Alarm '	FB8	'Wireless Tx Fail'	FD6	'Listen In Active'		
F9B	'Heat Sys Alarm '	FB9	'RF Tx Low Batt '	FD7	'Walk Test Mode '		
F9C	'Water Leakage '	FBA	'Fire Loop Fail '	FD8	'Date/Time Set '		
F9D	'Glass Break '	FBB	'Sensor Trouble '	FD9	'Date Change '		

ASCII CHART

The GSM alias can be programmed via SMS without need for this table, but if you have to program them from keypad of a phone, the next table must be used for each char.

code	car	code	char	code	char
20	space	40	@	60	`
21	!	41	A	61	a
22	"	42	B	62	b
23	#	43	C	63	c
24	$	44	D	64	d
25	%	45	E	65	e
26	&	46	F	66	f
27	‘	47	G	67	g
28	(	48	H	68	h
29	)	49	I	69	i
2A	*	4A	J	6A	j
2B	+	4B	K	6B	k
2C	,	4C	L	6C	l
2D	-	4D	M	6D	m
2E	.	4E	N	6E	n
2F	/	4F	O	6F	o
30	0	50	P	70	p
31	1	51	Q	71	q
32	2	52	R	72	r
33	3	53	S	73	s
34	4	54	T	74	t
35	5	55	U	75	u
36	6	56	V	76	V
37	7	57	W	77	W
38	8	58	X	78	X
39	9	59	Y	79	Y
3A	:	5A	Z	7A	Z
3B	;	5B	[	7B	{
3C	<	5C	\	7C	|
3D	=	5D	]	7D	}
3E	>	5E	^	7E	~
3F	?	5F	_	7F	DEL

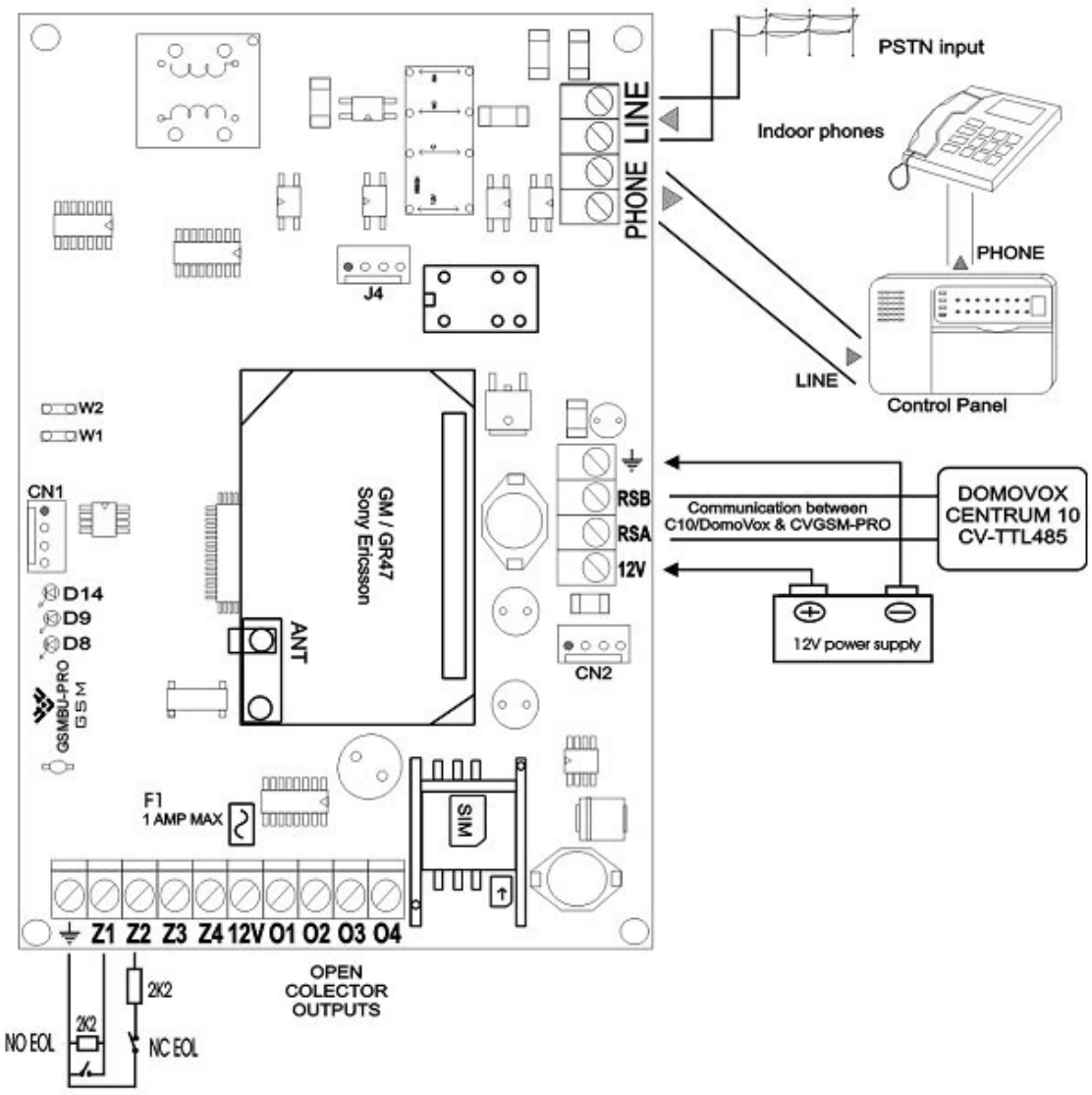
Eg: To program the alias of user number 1, (address F04) with the name ‘marina’, type in keypad:

F04 6 D 6 1 7 2 6 9 6 E 6 1 ↵

Where:

6D = ‘m’
61 = ‘a’
72 = ‘r’
69 = ‘i’
6E = ‘n’
61 = ‘a’

WIRING DIAGRAM OF GSMBU-PRO



NOTE: The GSMBU-PRO can be power supplied from 12V

RhinoCo Technology ™

9 Hannabus Place
McGraths Hill, NSW, Australia

www.rhino.com.au
sales@rhino.com.au

Tel. + 61(02) 4577 4708
Fax + 61(02) 4577 4885