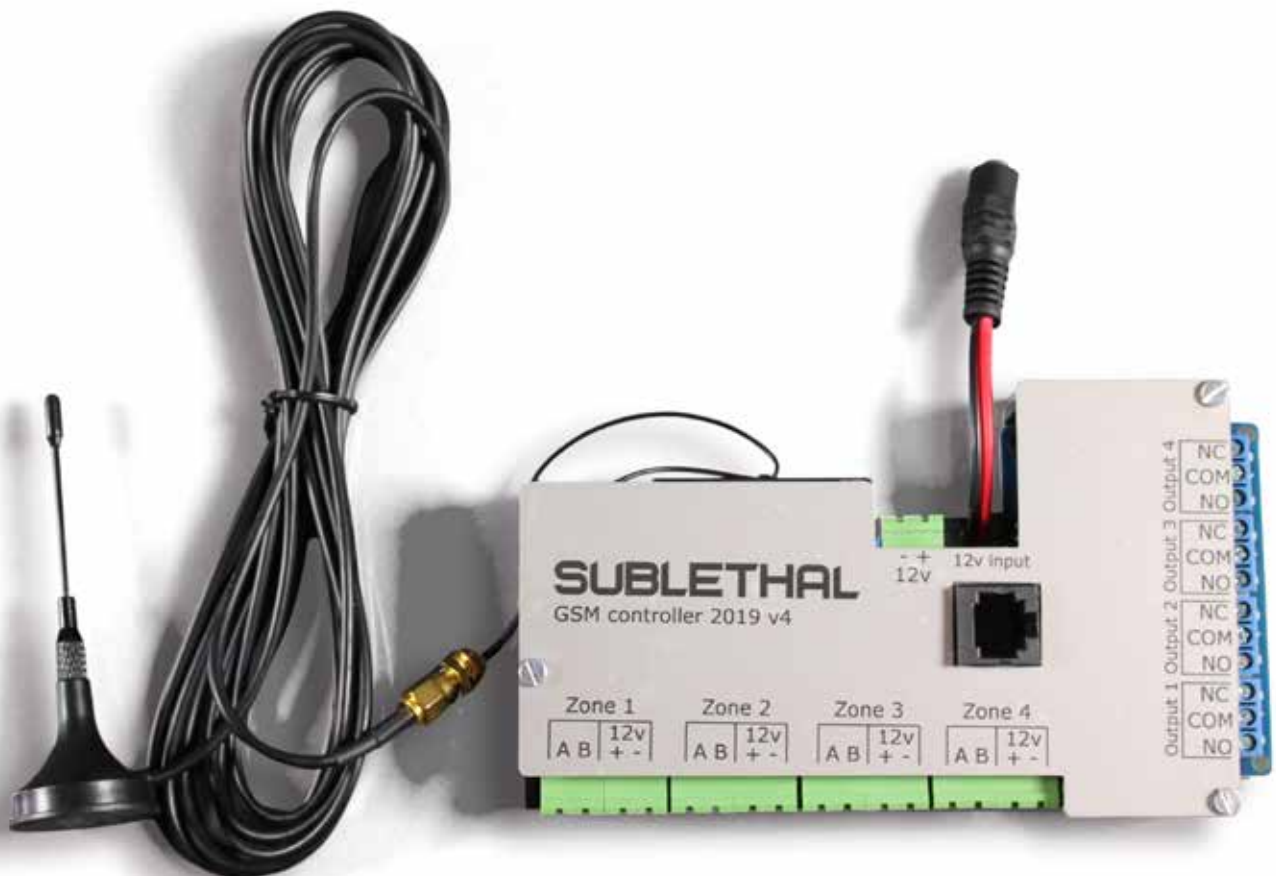


# SUBLETHAL

## SUBLETHAL GSM CONTROLLER

2019 V4

### USER MANUAL



[WWW.SUBLETHAL.CO.ZA](http://WWW.SUBLETHAL.CO.ZA)

## INTRODUCTION

The GSM Controller allows a person with only a cellphone (GSM communications) to receive SMS alerts, control the Sublethal Remote Gun system, control 4 outputs, and receive information about the system.

## FEATURES

### ALARM ZONES

The GSM Controller has 4 alarm zones which send an SMS to the users when a zone is triggered. A zone could have sensors such as PIR sensors, beams, door sensor, panic button, etc.

### USERS

2 cellphone numbers (2 users) can be saved to the GSM Controller (Part# 1). The GSM Controller will only answer calls from those 2 cellphone numbers. Both users will receive an SMS when the Alarm is on and an alarm zone is triggered. The pin code is different for each user. The saved pin codes and cellphone numbers do NOT reset on power down.

### REMOTE GUN CONTROL

The GSM Controller is specifically build to control Sublethal Remote Guns. Moving left, right, up, down and shoot can be controlled from a cellphone.

To save on time, the Sublethal GSM Controller can save preset positions, with one button press the Remote Gun will point in a preset position.

### TYPICAL OPERATION

- Alarm is triggered, sends an SMS to the users
- A user calls the GSM Controller
- The GSM Controller answers with a "beep"
- User enters 4 digit pin code
- The GSM Controller confirms with another "beep"
- User enters commands like "4" (move left) or "5" (shoot)

### RELAY OUTPUTS

The GSM Controller has 4 Relay Outputs for devices such as a siren, flood light, pepper spray, automatic gate, sprinklers, smoke generator, water pump, etc.

### VIDEO

The Sublethal GSM Controller does not have a video feed and is only used for control. For a video feed an off-site monitoring system must be installed and used from a smart phone or control room or other internet connection. By combining the Sublethal GSM Controller and off-site CCTV the user will have an early warning system with a video feed and the ability to warn and/or fight off criminals remotely from almost anywhere in the world.

### STAND ALONE OPERATION

The GSM Controller does NOT require a Sublethal Remote Gun to operate and can be used as a stand alone device with pepper spray systems, sirens, flood lights and other devices without the Sublethal Remote Gun.

## TYPICAL APPLICATIONS (FOR USE WITH SUBLETHAL REMOTE GUN)

- Farms: protect equipment while away, perimeter protection, stock theft, fight off intruders
- Augment off-site monitoring to fight off intruders, respond in seconds rather than minutes.
- Protect mine equipment, pipelines, transformers, cables in remote areas
- Protect factory stock, machinery and vehicles
- Protect a shop and stock during the night
- Protect solar panel arrays
- Protect cellphone tower batteries
- Protect server room, high value storage, safe room, gun safe
- Augment existing security personnel capability for in high risk situations such as strikes, riots, organised crime
- Protect a home and valuables while on holiday
- Protect remote infrastructure, pump houses, valve chambers

### **Not recommended for:**

- Protecting cars or other goods that can be damaged by the Remote Gun bullets
- Areas where children play

## COMPATIBILITY

- The GSM Controller is mechanically and electrically compatible with all Sublethal systems. For Sublethal Remote Guns built before 1 September 2019 a software upgrade is needed on the PCBs.
- The GSM Controller can be used with multiple HIDs (hand controllers)
- The GSM Controller can be located on the Remote Gun or inside the building. The antenna must not be in a closed metal box (Faraday cage).
- The GSM Controller can be controlled from any touch tone phone, including “dumb” phones and “smart” phones.

## PARTS IN THE BOX

QUANTITY	PART	DESCRIPTION
1	<b>Part# 1</b>	Sublethal GSM Controller 2019 v41
1	<b>Part# 2</b>	Antenna, magnetic base, 3m cable (10ft)1
1	<b>Part# 3</b>	12v power to Ethernet power cable (only used when not connected to a Sublethal Remote Gun)1
1	<b>Part# 4</b>	4 way Ethernet adaptor (not always required)1
1	<b>Part# 5</b>	Ethernet cable, 1m to 2m (3ft to 6ft) long (not always required)1
1	<b>Part# 6</b>	12v DC plug 2.1mm (not always required)1
1	<b>Part# 7</b>	Quick reference guide1
1	<b>Part# 8</b>	Power cable, 1m (not always required)

### PARTS NOT INCLUDED:

- a SIM card (Micro SIM, 12 x 15mm).
- If using the GSM Controller without the Sublethal Remote Gun, a 12v 2A power supply is required.



# INSTALLATION

## Overview of the installation process

- Buy Sublethal GSM Controller, ensure that all parts are in the box
- Tools required
- Save the users and pin codes
- Relay outputs
- Remote Gun commands
- Inputs and alarm zones
- Site consideration and placement
- Install the Sublethal GSM Controller
- Alternative installation options
- Test system
- Handover

## TOOLS REQUIRED

1. 3mm flat screwdriver
2. If installing the Sublethal GSM Controller (Part# 1) inside a Remote Gun that has been mounted, then use **scaffolding** or a **cherry picker** and working at height personal protective equipment. A size 13 (metric) spanner may be useful.
3. A 12v 2A power supply is useful but not required.

## SAVE THE 2 USERS AND PIN CODES

**Video:** [www.sublethal.co.za/help](http://www.sublethal.co.za/help)

1. Insert a SIM card (Micro SIM, 12 x 15mm) into the SIM card holder. Ensure that there is credit on the SIM card.
2. Disconnect the Ethernet plug from the GSM Controller (Part# 1).
3. Open the top cover (stainless steel) of the GSM Controller (Part# 1).
4. Hold down one of the push button inside the GSM Controller (Part# 1).
5. Connect the Ethernet plug to the GSM Controller (Part# 1).
6. **Wait for 15 seconds**, then release the push button.
7. Call the SIM card number. The first call that is received will be saved to memory as a user.
8. When the GSM Controller (Part# 1) answers the call, there will be a loud “beep”. Immediately key in your 4 digit pin code.
9. If the GSM Controller (Part# 1) “beeps” again, then it has recorded your pin code. End the call, then test if it has recorded your cell number and pin code correctly (see section: TEST SYSTEM). If there are any problems, start from step 1 above.

**Repeat steps 4 to 9 for the second users’ phone number using the other push button on the GSM Controller (Part# 1).**

## RELAY OUTPUTS

There are 4 Relay Outputs on the GSM Controller (Part# 1), Output 1 to Output 4. Each Output is a relay that can be activated individually for a siren, flood light, pepper spray dispenser, automatic gate, sprinklers, smoke dispenser, etc. Each Output is rated at 10A 250V AC.

Relay Output 1 can be selected individually using key presses:	*	2
Relay Output 2 can be selected individually using key presses:	*	3
Relay Output 3 can be selected individually using key presses:	*	4
Relay Output 4 can be selected individually using key presses:	*	6

\*2, \*3, \*4 toggle the state of the output. So \*2 would switch relay output on, \*2 again would switch relay output off. \*6 is momentary for 3 seconds. So \*6 would switch on Relay Output 4 for 3 seconds, then switch it off. This is best for activating a short burst siren, panic signal to radio alarm or automatic gate signal.

A confirmation is given each time that a relay changes state. 2 tones means ON, 3 tones means OFF.

When the Ethernet cable is disconnected or power is lost, all relays are reset to off.

## REMOTE GUN COMMANDS

Left / Right/ Up/ Down/ Shoot

Call the GSM Controller (Part# 1), key in your pin code, then press a key on a cellphone to give the Sublethal Gun commands.

The commands are:

5	= shoot
2	= move up
8	= move down
4	= move left
6	= move right
1	= move left fast
3	= move right fast
7	= move to preset 7
0	= move to preset 0
9	= move to preset 9



Holding the key down counts as one key press. So holding down "2" will result in the Remote Gun only moving up a little only once.

The Remote Gun will queue the commands, so if the users presses "6" 10 times, then press "4" 10 times, then the gun will first move right 10 times, then move left 10 times.

If the reception is poor, then the gun may not always receive the command (the Remote Gun cannot hear the commands), so the user may need to press the same command a few times.

The Remote Gun will have difficulty "hearing" commands when the user is in a very noisy environment. It may help to cover the cellphone microphone while dialling commands.

## REMOTE GUN PRESETS

Cellphone keys **7, 0, 9** are reserved for presets. Selecting a preset will point the gun to a coordinate that has been preset by the user. A site is likely to have known vulnerabilities or likely points to be defended. The gun can be programmed with 3 “presets” to save time.

Presets can be programmed over the air; there is no need to access the GSM Controller (Part# 1) physically.

### To program the presets:

Call the GSM Controller (Part# 1), enter your pin code					
Move the gun using the normal controls (1,2,3,4,6,8)					
Press:	#	7	#	7	saves the coordinate as <b>preset 7</b> or
Press:	#	0	#	0	saves the coordinate as <b>preset 0</b> or
Press:	#	9	#	9	saves the coordinate as <b>preset 9</b>

Only 3 presets are available.

The shoot command cannot be programmed as a preset.

### To make the gun move to a preset:

Press:	7	for <b>preset 7</b> or
Press:	0	for <b>preset 0</b> or
Press:	9	for <b>preset 9</b>

## INPUTS AND ALARM ZONES

There are 4 inputs, Zone 1 to Zone 4, on the GSM Controller (Part# 1). Each zone can be connected to a PIR sensor, beams, door switches, reed switches, etc. Each zone conveniently has a 12v 0.5A supply.

**CAUTION!** Connecting a wire between the 12v + and - will cause a short circuit and may damage the GSM Controller (Part# 1). The connectors for an alarm zone sensor inputs A/B are the same as the connectors for 12v +/- and can be confused.

To disable a Zone, connect a wire from A to B for that Zone.

For any of the Zones, when the connection between A and B is broken (disconnected), then that Zone is triggered. If the alarm is active, then an SMS will be sent to the users notifying them of the triggered Zone.

No resistors are required to connect the inputs.

To activate or deactivate the alarm, call the GSM Controller (Part# 1), enter your pin code, then

Turn on alarm with key press	*	1	a confirmation tone is given
Turn off alarm with key press	*	0	a confirmation tone is given

When the Ethernet cable is removed or the power is off, then the alarm resets to off.

## SITE CONSIDERATION AND PLACEMENT

1. The antenna (Part# 2) must get cellphone signal, the antenna is supplied with a 3m (9.8 ft) cable. The signal strength can be tested, see section on "Testing".
2. The antenna (Part# 2) has a magnetic base and will attach to most parts of the Sublethal Remote Gun. The antenna must be on the outside of the Remote Gun.
3. The Sublethal GSM Controller (Part# 1) is not weather proof and must be shielded from the weather.
4. The Sublethal GSM Controller (Part# 1) can be installed in the Sublethal Remote Gun or inside the building where a hand controller is used. The easiest place to locate the GSM Controller (Part# 1) is in the battery box.
5. The Sublethal GSM Controller (Part# 1) does not require a Sublethal Hand Controller to be connected to the system.

## INSTALL THE GSM CONTROLLER IN THE SUBLETHAL REMOTE GUN BATTERY BOX

### 1. Power connection:

Connect power to the Power Board (green board in the arm) using power cable (Part# 8) or using the 12v DC plug 2.1mm (Part# 6), red is positive, black is negative/ground, connected directly to the battery.

### 2. Communications connection:

Connect GSM Controller to the Power Board (green board in the arm) using Ethernet cable (Part# 5).

Note: 12v power should be connected before the Ethernet cable.

## ALTERNATIVE INSTALLATION OPTIONS

### CABLING OPTIONS (OPTIONAL)

Where there is no cellphone reception at the Remote Gun, it may be necessary to connect the Sublethal GSM Controller (Part# 1) to the Sublethal Remote Gun via a cable. 2 cables must be connected between the Sublethal Remote Gun and the Sublethal GSM Controller (Part# 1):

1. **Ethernet cable.** A straight wired (normal) ethernet cable, preferably shielded CAT6 can be used. The shorter the cable the better. Avoid installing cables longer than 30m (100ft).
2. **Power cable.** Cabtyre or twinflex cable 2 core 0.5mm<sup>2</sup> (AWG#20) for 12v power. Avoid installing cables longer than 30m (100ft).  
Ensure that the cables to the Sublethal GSM Controller (Part# 1) cannot be cut or interfered with.

### INSTALLING THE SUBLETHAL GSM CONTROLLER INDOORS (OPTIONAL)

#### 1. Power connection:

Connect power to any 12v 2A power supply (not supplied).

#### 2. Communications connection:

Connect the GSM Controller to the 30m (100ft) Ethernet cable from the Sublethal Remote Gun.

### INSTALL THE SUBLETHAL GSM CONTROLLER STAND-ALONE (OPTIONAL, NO REMOTE GUN)

#### 1. Power connection:

Connect 12v power using the 12v DC plug 2.1mm (Part# 6). Red is positive, black is negative/ground. Any 12v 2A power supply (not supplied) will work.

Use the 12v power to Ethernet power cable (part# 3) to connect the 12v output to the Ethernet port.

#### 2. Communications connection:

None required when there is no remote gun connected.



## MULTIPLE CONTROL DEVICES (OPTIONAL)

If you are using more than 2 control device (eg. 1 Sublethal GSM Controller and 2 Sublethal Hand Controllers), then you will need:

- 4 way Ethernet adaptor (Part# 4)
- Ethernet cable, 1m (Part# 5)
- Ethernet cable (not supplied) cut to size depending on the cabling requirements.

## TEST SYSTEM

### TO TEST THE GSM CONTROLLER DO THE FOLLOWING:

Call the GSM Controller
Enter the pin code

### TEST PRESETS

Preset 1, press:	<b>7</b>
Preset 2, press:	<b>0</b>
Preset 3, press:	<b>9</b>

### TEST MOVEMENT

Up, press:	<b>2</b>
Down, press:	<b>8</b>
Left, press:	<b>4</b>
Right press:	<b>6</b>
Fast left, press:	<b>1</b>
Fast right, press:	<b>3</b>

### TEST SHOOTING

Point the Remote Gun in a safe direction, then press:	<b>5</b>
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### TEST RELAYS

Relay 1, press	*	<b>2</b>
Relay 2, press	*	<b>3</b>
Relay 3, press	*	<b>4</b>
Relay 4, press	*	<b>6</b>

### TEST ALARM INPUTS

Alarm on, press:	*	<b>1</b>
Trigger an alarm zone.		
Check the SMS that is received		
Alarm off, press:	*	<b>0</b>

### TEST STATUS REPORT

Press:	*	<b>9</b>
Check the SMS that is received		

## HANDOVER

Ensure that the user has the following information:

- The SIM card cellphone number
- The GSM Controller commands
- The installer's contact details