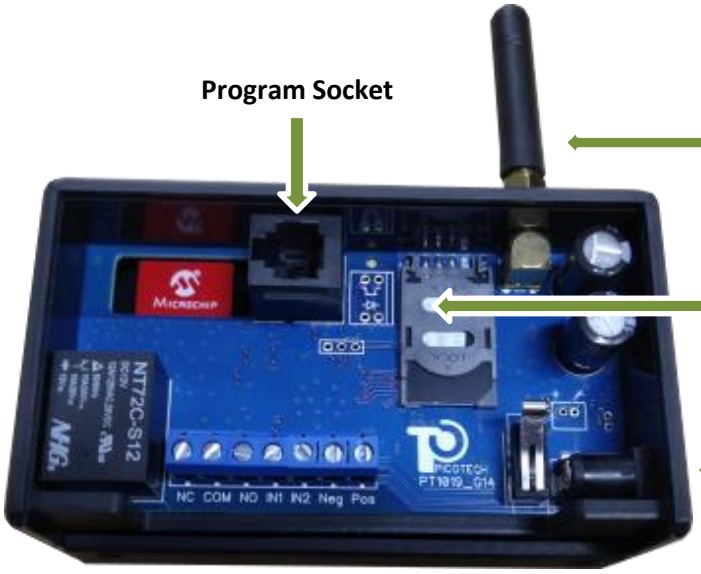
GSM Module User Guide

Features

- Full Kwêbeam system control via SMS
- Optional Built-in backup battery
- Two Programmable inputs
- Relay output (10A / 28V DC)



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1 Quick Setup

1.1 Important SIM card notes

- The GSM unit accepts a standard GSM SIM card from any network. The SIM card may be prepaid or on contract. If the SIM Card is purchased as part of a prepaid plan, ensure that the card is loaded with sufficient airtime.

- Data or SMS bundles on a prepaid SIM will expire (normally valid for 30 days only). It is recommended to activate automatic recuring renewals for Data and SMS bundles, else, make sure sufficient airtime is loaded for prepaid SIM cards

- If there is no billable event on the prepaid sim card for a long period (typically 3 months), the card will be deactivated by the network & the sim becomes useless.

- The average data usage in APP mode (SMS notifications disabled) is less than 30MB per month. This is the most cost-effective mode when using the GSM unit.

- If SMS notifications are enabled, the SMS notification will be sent to all the numbers stored on the GSM unit, e.g., if 4 numbers are stored on the unit & the cost for one SMS is 50 cents, the total cost for a single SMS notification will be 4 x 50 cents. If SMS notifications are desired, it is recommended to enable SMS notification for specific events only, e.g., SMS notifications for Alarm events only.

1.2 Verify SIM Card

Install the SIM card into a normal cellular phone to verify the following.

- Make sure the SIM PIN is disabled.
- Ensure that Caller Identity is enabled when using contract SIM cards. The calling number must be displayed when calling the SIM number.
- Verify that you can send a SMS.

1.3 Install the SIM card in the GSM unit

Slide the front cover open & insert the SIM in the SIM Holder as illustrated below.

1.Push SIM door backwards then open the SIM door

2.Insert SIM from the Top

3.Close the SIM door then push to the front to lock the door

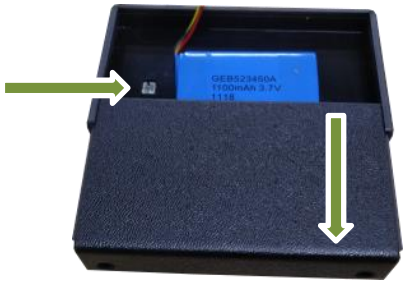
1.4 Connect the antenna

Screw the Antenna to the SMA connector until finger-tight.

1.5 Connect the backup battery (Optional)

Slide the back cover open & connect the internal backup battery.

Battery connector



1.6 Connect the 12V power supply

The GSM can be powered using the 12V wall adapter or by connecting an existing 12V supply to the terminal blocks. The LED will illuminate for approximately 8 seconds after power is connected.

1.7 Verify Network Status

The LED will flash every 3 seconds if successfully connected to a GSM network.

- 1 short flash every 3 seconds indicates Poor signal strength
- 2 short flashes every 3 seconds indicates Fair signal strength
- 3 short flashes every 3 seconds indicates Good signal strength

1.8 SMS your number to the GSM SIM number

AddControlNumber 2782*******

Note: The number format must have a **'27'** prefix & **NOT '0'**.

Note: The first control number must be entered while the enclosure lid is open.

The LED will illuminate for 3 seconds when the message is successfully received. A confirmation SMS will be sent if the command was successful.

1.9 Store the USSD code for receiving the airtime balance

SMS the text "ATC" followed by the balance inquiry short code for the specific Network operator (e.g. ATC*135*502# when using a Vodacom prepaid SIM card)

1.10 Call Test

Call the GSM SIM number. The GSM unit will "drop" any incoming call. If the Calling number is recognized as a Control Number, the current Alarm state will be toggled. A confirmation SMS with the new alarm state will be sent to all CONTROL numbers. If the Air-Time Code (see point 1.7) was successfully updated, the available balance will also be included in the "Alarm On" confirmation message.

1.11 Add GSM module to the KwêBeam system

- Make sure Led  on the Kwêbeam keypad is off. If not press & hold  to switch off.
- Connect the Keypad to the Programming Socket with the supplied cable.
- Press 

to show the current Zone.
- Select **Zone 1 – 9**
- Press & Hold 

to save the ZONE.
- LED 

will illuminate to indicate successful pairing.

Note: The GSM can also be programmed as **ZONE 9**. All Keypads & Sensors must be reprogrammed if the GSM Module is programmed as **ZONE 9** (See Kwêbeam_User_Manual).

The unit is now ready to operate as a Kwêbeam GSM module

2 SMS Commands & Notifications

The Kwêbeam GSM module is managed entirely by SMS commands which are NOT case sensitive & can only be sent from cell phone numbers saved as Control Numbers. Simply SMS any of the configuration commands below to the GSM SIM card number.

Note: The module will accept commands from ANY cell number while the enclosure lid is open.

A maximum of 10 Cell phone numbers can be stored in the following 2 categories:

- **Control Numbers:** Full system Control & receive all SMS Notifications.
- **SMS Numbers:** Receive Alarm and Panic SMS Notifications only.
- A number can be saved as a SMS OR Control number, **NOT both**.

2.1 SMS configuration commands

1. **AddControlNumber**
   e.g.: AddControlNumber 27820504458
   Note: The first control number must be entered while the enclosure lid is open.
2. **AddSMSNumber**
   e.g.: AddSMSNumber 27820504458
   Note: A number can be saved as a **SMS OR Control** number, not both.
3. **DeleteNumber**
   e.g.: DeleteNumber 27820504458
4. **DeleteAllNumber**
   All Stored Numbers will be deleted.
   Note: The first control number must be re-entered while the enclosure lid is open.
5. **ATC**
   Store the “Short Code” for receiving the airtime balance.
   SMS the text “ATC” followed by the balance inquiry short code for the specific Network operator (e.g. **ATC*135*502#** when using a Vodacom prepaid SIM card)
6. **Status**
   The module will reply with the GSM Signal strength & Alarm status. If the optional backup battery is connected the reply message will also include the charge level & Mains power status.
7. **GetNumbers**
   GSM will reply with all stored Control & SMS Numbers
8. **Airtime**
   The command ATC (Air Time Code) must first be entered (one time only) before the GSM module will reply with the available balance.

2.2 Alarm Control Commands

9. **AlarmOn**
   ALL Kwêbeam Zones will be armed. A confirmation SMS with the new alarm state will be sent to all CONTROL numbers. The Airtime Balance will be included in the confirmation SMS if a valid ATC (Air Time Code) is entered.
10. **AlarmOff**
    Disarm the Kwêbeam system. A confirmation SMS with the new alarm state will be sent to all CONTROL numbers.
11. **Panic**
    Trigger all beam sirens.
12. **ZoneOff**
    e.g.: ZoneOff 1. Zone 1 will be ignored while the system is armed. A confirmation SMS will be sent to the calling number.
13. **ZoneOn**
    e.g.: ZoneOn 1. Zone 1 will be armed. A confirmation SMS will be sent to the calling number.
    Note: All zones will be activated with command AlarmOn
14. **Kwebeams**
    GSM will reply with all the commands.
15. **ZN**
    Link an optional ZONE NAME with the zone number, e.g. ZN 1 Pool
    Note: The zone description must not exceed 14 characters.
16. **ADL1**
    Link an optional Address Line 1 to the GSM module. This address will be included in all Notification SMS's, e.g. ADL1 John
    Note: The address description must not exceed 14 characters.
17. **ADL2**
    Link an optional Address Line 2 to the GSM module. This address will be included in all Notification SMS's, e.g. ADL2 Unit 3
    Note: The address description must not exceed 14 characters.
18. **ADL3**
    Link an optional Address Line 3 to the GSM module. This address will be included in all Notification SMS's, e.g. ADL3 Magg str.
    Note: The address description must not exceed 14 characters.

A Confirmation SMS will be sent to the calling number after successful execution of the following commands: AddControlNumber, AddSMSNumber, DeleteNumber, DeleteAllNumbers, ATC, ZN, ADL1, ADL2, ADL3

2.3 SMS Event Notifications

1. **Mains power Failure**
   Notify all CONTROL numbers of a power failure.
2. **Mains power Restore**
   Notify all CONTROL numbers of power restore.
3. **Sensor Battery Low**
   Notify all CONTROL numbers of a low battery condition on a sensor.
4. **Tamper**
   Notify all CONTROL numbers of a Tamper condition on a sensor.
5. **Alarm**
   Notify all CONTROL & SMS numbers of an Alarm condition on a sensor.
6. **Panic**
   Notify all CONTROL & SMS numbers of a Panic condition.
7. **GSM Battery Low (If connected)**
   Notify all CONTROL numbers that the GSM battery is low. Only the GSM functionality will shut down until power is restored. During this period the module still functions as a Kwêbeam repeater & interface unit.

3 Calling the GSM module

The GSM unit will “drop” any incoming call. If the Calling number is recognized as a CONTROL number, the current Alarm state will be toggled. A confirmation SMS with the new alarm state will be sent to all CONTROL numbers.

The GSM module will include the Airtime Balance in the confirmation SMS when the system is armed. A valid ATC (Airtime Code) must be entered for this feature.

Note: Any sensor can audibly indicate the ‘On/Off’ status of the system (One siren beep = ON, Two siren beeps = OFF). See “Kwêbeams_User_Manual” for sensor programming instructions.

4 Disable SMS Notifications when armed from the Keypad

The GSM module can be programmed NOT to send SMS notification when armed from the Keypad. SMS notifications will ONLY be sent when armed from the GSM module.

- Make sure Led on the Kwêbeam keypad is off. If not press & hold to switch off.
- Connect the Keypad to the Programming Socket with the supplied cable.
- Press P3 BATTERY to show the current Selection.
    - Key 6 on: SMS alarm notification when armed from Keypad or GSM unit.
    - Key 6 off: SMS alarm notification **ONLY** when armed from GSM unit.
- Press & hold P3 BATTERY to save the setting.

5 Mounting the Module

The module can be wall mounted or placed on any flat surface with the antenna facing upwards.

1 Unscrew the two bottom screws and slide the Back lid open

2 Press the knockout holes through with a screwdriver and mount the Back Plate with supplied fasteners.

3 Slide the enclosure over the back lid and fasten the two bottom screws.

6 Wiring Diagrams

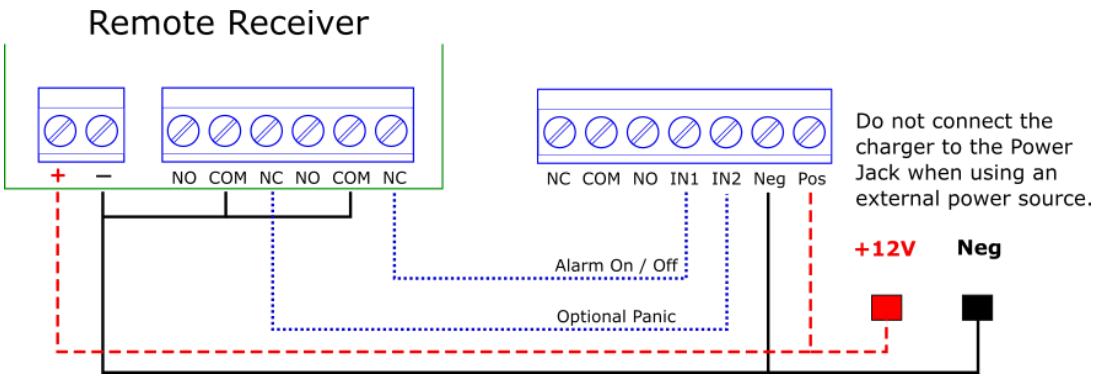
This section is only required to integrate optional external devices.
Note: Do Not connect the charger to the Power jack when using an external power source.

6.1 Remote receiver to Arm/Disarm the Kwêbeam system

- Make sure the system is NOT armed.
- Connect the Keypad to the Programming Socket with the supplied cable.
- Press 

to show the current Settings.
- Make sure the following keys are selected**: 2, 4, 5, 7**
- Press & hold 

to save the Settings.
- A second long “beep” will indicate a successful save.



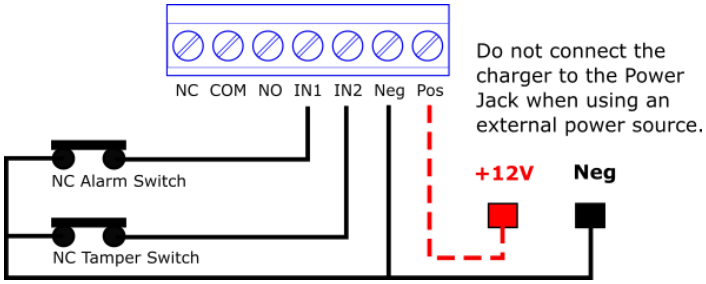
- Note: Set the outputs on the remote receiver to toggle mode (latch momentarily).
- IN2 will sound all built-in sirens for 20 seconds when pulsed. This input is optional and can be left unconnected if not needed.

6.2 Connecting switches to monitor Alarm and Tamper signals

- Make sure the system is NOT armed.
- Connect the Keypad to the Programming Socket with the supplied cable.
- Press 

to show the current Settings.
- Make sure the following keys are selected**: 3, 4, 5**
- Press & hold 

to save the Settings.
- A second long “beep” will indicate a successful save.



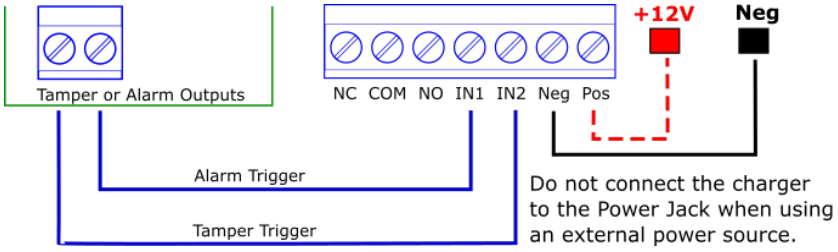
IN1 will report an Alarm signal if the switch opens while the system is armed.
IN2 will report a Tamper signal if the switch opens (irrespective of the alarm status)

6.3 Monitor external devices for Alarm and Tamper signals

- Make sure the system is NOT armed.
- Connect the Keypad to the Programming Socket with the supplied cable.
- Press 

to show the current Settings.
- Make sure the following keys are selected**: 3, 4, 5**
- Press & hold 

to save the Settings.
- A second long “beep” will indicate a successful save.



IN1 will report an alarm signal if the input changes from a **Low to High** state while the system is armed. IN1 can also be programmed to report an alarm signal if the input changes from a **High to Low** state. Disable key **4** if a **High to Low** trigger is required.

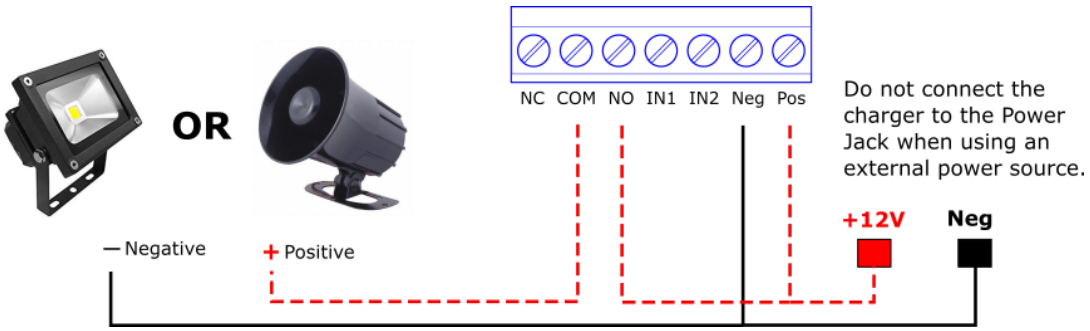
IN2 will report a Tamper signal if the input changes from a **Low to High** state

6.4 Installing a Siren or LED Spotlight

- Make sure the system is NOT armed.
- Connect the Keypad to the Programming Socket with the supplied cable.
- Press 

to show the current Settings.
- Make sure the following keys are selected**: 2, 4, 5**
- Press & hold 

to save the Settings.
- A second long “beep” will indicate a successful save.



6.5 Changing the ON delay of the relay output

- Press 

to show the current delay for the relay output.
- Press key 1 – 8 to select the new ON delay:

1 = 1 second	5 = 1 minute
2 = 2 seconds	6 = 2 minutes
3 = 10 seconds	7 = 3 minutes
4 = 30 seconds	8 = 5 minutes

- Press & hold 

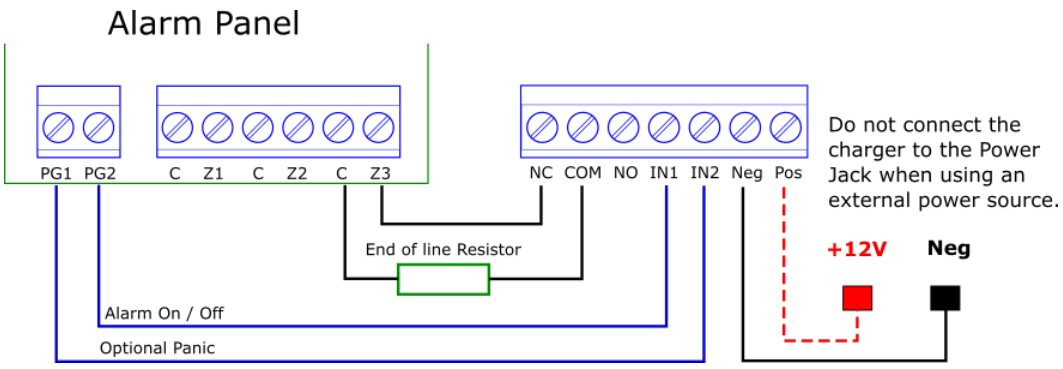
to save the new setting.
- A second long “beep” will indicate a successful save.

6.6 Wiring the Kwêbeam system to an existing alarm panel

- Make sure the system is NOT armed.
- Connect the Keypad to the Programming Socket with the supplied cable.
- Press 

to show the current Settings.
- Make sure the following keys are selected**: 1, 4, 5, 7**
- Press & hold 

to save the Settings.
- A second long “beep” will indicate a successful save.



IN1 must be latched in a **High** state for the system to be armed. IN1 can also be programmed to arm the system while the input is **Low** (Select keys **1, 5, 7** under option **P3**).

IN2 will sound all built-in sirens for 20 seconds when pulsed. This input is optional and can be left unconnected if not needed.

7 Input & Output configuration options

- Make sure the system is NOT armed.
- Connect the Keypad to the Programming Port with the supplied cable.

7.1 Changing the ON delay of the relay output

- Press 

to show the current delay for the relay output.
- Press key 1 – 8 to select the new ON delay:

1 = 1 second	5 = 1 minute
2 = 2 seconds	6 = 2 minutes
3 = 10 seconds	7 = 3 minutes
5 = 30 seconds	8 = 5 minutes

- Press & hold 

to save the new setting.
- A second long “beep” will indicate a successful save.

7.2 Changing INPUT & OUTPUT settings

- Press 

to show current selection.
- Press key 1 – 3 to program a function for IN1.
  - Key 1 – Arm / Disarm with a latched input.
  - Key 2 – Arm / Disarm with a pulsed input.
  - Key 3 – Send an alarm signal when the input is pulsed.
- Key **4, 5, 6, 7 & 8** can be selected / deselected for the desired application.

Key **4 on**: IN1 triggers when the state changes from **Low to High**
Key **4 off**: IN1 triggers when the state changes from **High to Low**

Key **5 on**: The output relay is enabled when the system is armed from a keypad or any external device connected to IN1.
Key **5 off**: The output relay is **ONLY** enabled when armed from an external device connected to the IN1.

Key **6 on**: SMS alarm notification when armed from Keypad or GSM unit.
Key **6 off**: SMS alarm notification **ONLY** when armed from GSM unit.

Key **7 on**: When IN2 changes from a **Low to High** state all built-in Sirens will sound for 20 seconds.
Key **7 off**: IN2 will report a Tamper signal when the input changes from a **Low to High** state (irrespective of the alarm status)

Key **8 on**: An incoming call from a Control Number will activate the relay.
Key **8 off**: An incoming call from a Control Number will Arm/Disarm the kwêbeam system.

- Press & hold 

to save the new settings.
- A second long “beep” will indicate a successful save.