QK-G021/22 GSM Remote Controller Manual

Features

- Remote monitoring and control by mobile phone GSM SMS message
- Connects to up to 2 alarm inputs and 3 Relay outputs
- Automatic alarm by SMS message when alarm input is triggered
- Status request and response by SMS
- Remote control of 3 Relay outputs by SMS message
- Automated control of 2 Relay outputs by SMS message (activated by alarm input)
- Scheduled control of 2 Relay outputs by SMS message
- Remote manual override
- Android APP interface
- Monitor and Control through text message input or phone APP
- Up to 4 mobile phones can monitor and control through each unit
- In-built clock for programming the switch state
- Easy to install and configure via SMS or APP (no PC required)
- Compatible with all major 2G SIM networks (Tri-band GSM for use in Europe & USA)

Other specialized units available:
- **G022G** also includes GPS receiver allowing you to track the location of the unit
- **G022P** also includes wireless passive infrared (PIR) motion detector as an additional alarm input

Contents

QUARK-ELEC

1. Set up overview

❖ **You will need:**

SIM card:
- **The SIM must operate on the GSM (2G) network.** Most network providers provide 2G cover, check with your supplier.
- **Credit on the SIM (we recommend automatic top-ups)**
- **The SIM is not PIN protected**
- **The SIM is set to disable voicemail**
- **Avoid SIM cards that deactivate automatically if the SIM is not used often** (If your SIM will do this and if your G021/22 is likely to be unused for long periods of time you will have to send the G021/22 an update request periodically to keep the SIM card active.)

Power supply cable: make sure it is long enough to reach your device in its final location.

Check there is mobile network reception for your SIM card in the location that your device will be installed (you can check by putting the SIM card in a mobile phone)

❖ **Installation:**

1. **Download and install the app** for mobile phones. https://www.quark-elec.com/downloads/apps/

2. **Select G021/22 location:** location must be indoors and not exposed to water or high humidity.

3. **Connect the relay output (if required):** check relay setup for whether you want relays in normal open (NR) or normal closed (NC) position. Think about length of wires needed to connect.

4. **Connect alarm inputs (if required):** alarm inputs must send signal as switches closing circuit to input 1/2 or by sending low voltage signal to input 1/2. Think about length of wires needed to connect.

5. **Insert your SIM into the G021/22 device (make a note of the SIM number first for reference)**

6. **Connect to power:** Check LEDs are working correctly.

Red LED: will flash at 1 second intervals once the system has finished initialization. It will then flash every time it is operating a command

Blue LED: LED will flash blue at start up as it looks for a network signal. Once a signal has been found the LED will flash much slower, every 3 seconds.

7. **Register the main phone number that will control the device within 10 minutes of powering up the G021/22.** Register the main mobile terminal with G021/22 module by texting '**888888**' from your chosen phone to G021/22 SIM card. If registration is successful, the module will reply with "**Your phone has been registered**". If unsuccessful, the module will reply with '**registered disabled'**. If registration is unsuccessful, restart the device and reattempt registration within 10 minutes of powering up the device.

The network LED will flash after registration is completed. You can add up to 3 secondary control mobile phones using text/APP codes (check the manual for full list of text codes).

8. **You can now send commands and receive messages either by text or through the text generating APP.** Remember; the device processes one command at a time. Each command will have a reply to confirm the command has been received and executed. You must wait for a reply message before sending another command.

> **If G022P (PIR version):**
>
> **Batteries:** the PIR device uses a 9.0 volt D-shape battery.
>
> **Location:** Think about location of sensor and whether there is anything in between the PIR sensor and the G021/22. Some obstructions will make the signal weaker for example metal structures and concrete walls.

> **If G022G (GPS version) :**
> **Location:** The GPS antenna cable length is 2 metres.
> The G021/22G device itself must be somewhere indoors and not exposed to a lot of water or high humidity.

(This is an overview only. Familiarize yourself with the manual before installation.)
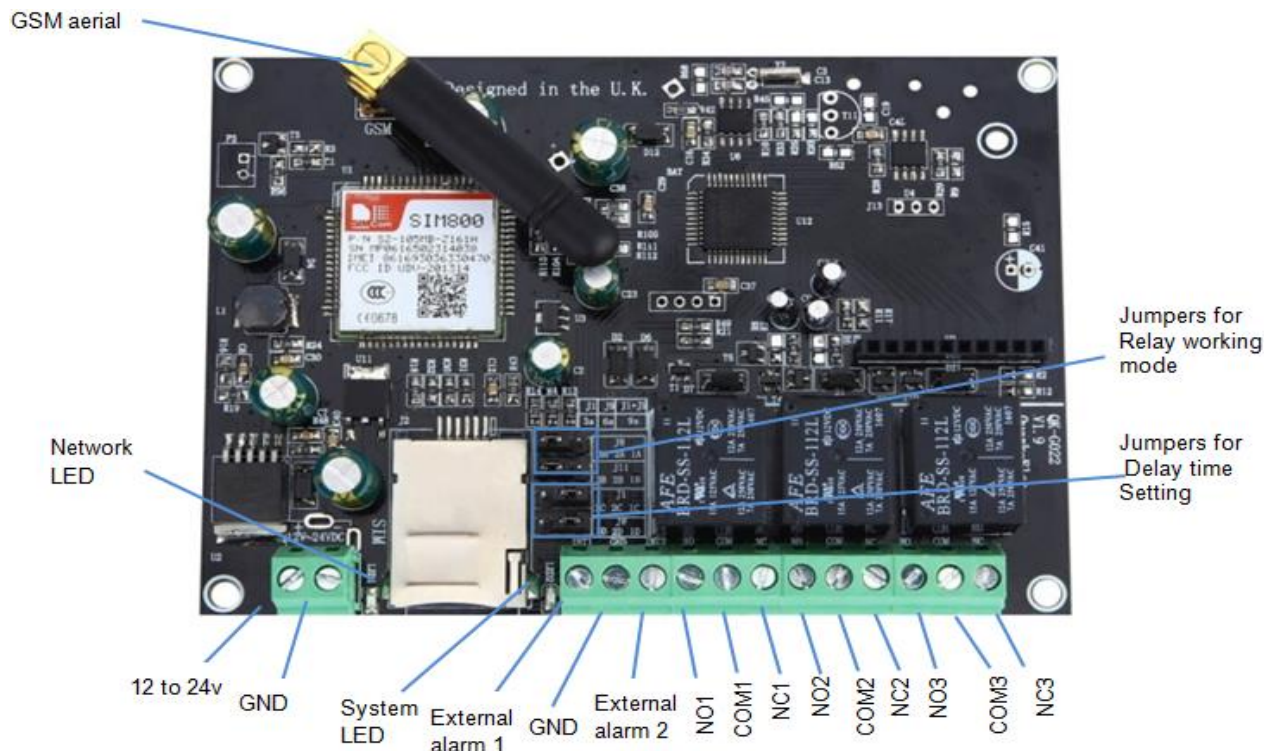
3.   Hardware

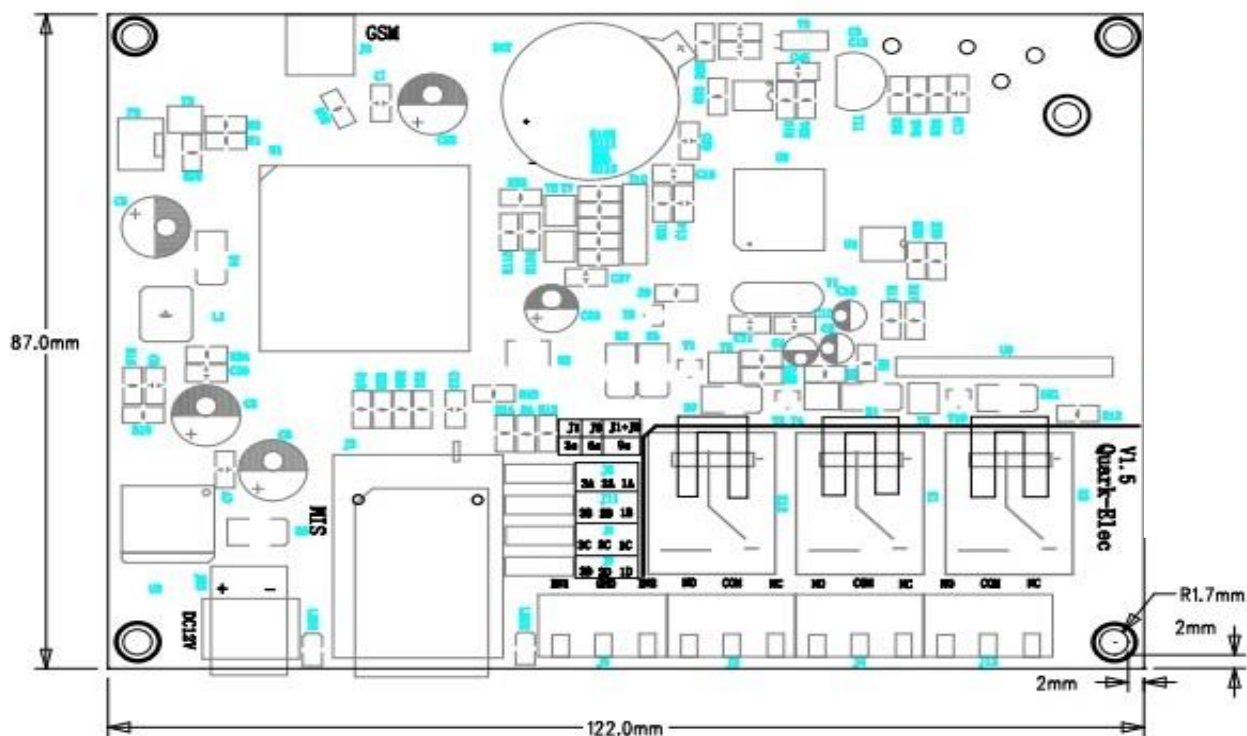Figure 2: General view of the control module (V1.9)

Figure 3: G021 mechanical drawing (V1.5)

4.   Enclosure

The enclosure is made of IP56 Insulation Class 2 plastic. External dimensions: 145 x 90 x 41 mm.
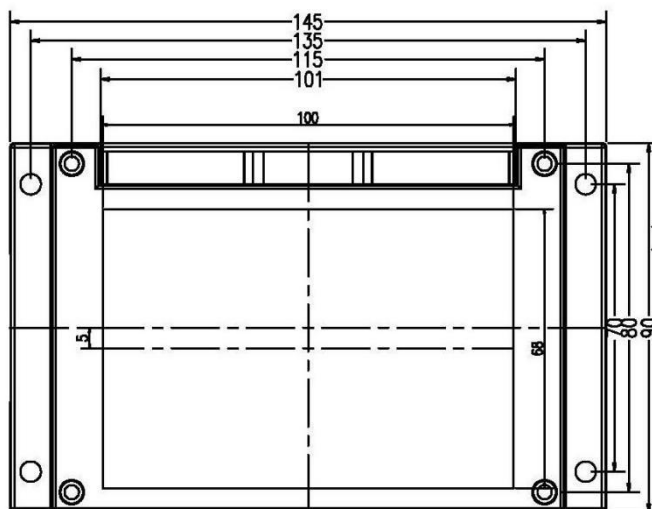

Figure 4: GK-G022 (with enclosure)

Figure 5: Enclosure drawing. Measurements in mm

5. Preparing SIM card

Please ensure:

- **The SIM must operate on the GSM (2G) network.** Most network providers provide 2G cover, check with your supplier.
- **There is credit on the SIM (we recommend automatic top-ups)**
- **The SIM is not PIN protected**
- **The SIM is set to disable voicemail**
- **Avoid SIM cards that deactivate automatically if the SIM is not used often** (usually after 3 months inactivity).If you're SIM will do this and if you're G021/22 is likely to be unused for long periods of time; send the G021/22 an update request periodically to keep the SIM card active.

Register the SIM card; ensure there is sufficient credit on the card for programming confirmation texts to be sent from G021/22 module.

The PIN request option should be disabled from the SIM card before inserting it into the G021/22 module. To check the PIN request status of your SIM card, place the card in an unlocked mobile phone and switch the phone on. If normal calls can be made without entering a PIN number, then it is disabled. Please also make sure voicemail is disabled before inserting the SIM card into the module.

If a 'pay as you go' (PAYG) SIM card is used, it is recommended that users choose to automatically 'Top-Up' when the credit falls below a certain limit. Some PAYG SIM cards will be de-activated by the network if they are not used to make an outgoing voice call or send an SMS text message within a specific period. To prevent this, simply send the G021/22 a text '**DQSJ**' (this can be done through the APP) and G021/22 will reply with the local time by text message. This should be done once a month to keep the SIM card active.

5.1. Insert SIM into the SIM card slot

- **Write down SIM number before inserting into G021/22**
- **The SIM card should be inserted into the SIM card slot before applying the power.**
- **Power Up**

The G021/22 module can be powered by 12V to 24V DC power supply).
Connect a 12V DC power supply to the power screw terminals 1 & 2, ensuring positive is connected to terminal 1 and switch on the power supply.

- **The red power LED** will flash at 1 second intervals once the system has finished initialization.
- **The blue network LED** indicator will initially flash quickly and, once logged onto the network, it will flash more slowly, approximately once every 3 to 4 seconds.

6.   Configuration

The following steps are required to configure G021/22 for first time use:
- Insert the SIM card into controller box
- Power up
- Send '**888888**' as SMS to the G021/22 controller. If successful, the user will receive the message '**Your phone has been registered'**. **This command should be received within the first 600 seconds after powering up G021/22. Otherwise "registered Disabled" message will be sent back to inform the failure of the main SIM registration**. If this happens, turn off the device and start again.
- If additional mobile terminals are required, the operator should send "**BDn**(mobile terminal number)**F**" to the G021/22 controller. The user will receive the message "**Your phone has been registered**". Up to 3 additional terminals can be configured (the main mobile number registered with the device won't show up when "**WHORED**" is sent).The operator is now ready to use G021/22. Details about the SMS command and response messages can be found in chapter 10

You can control the device by either:
- Manually entering the codes by SMS text message
- Using the phone APP (android) interface. Using the APP, you simply select the action you want and the APP formulates and sends the SMS message for you. **This App does not allow you to send messages to your device for free nor does it work over WiFi.**

7.   Status LED's

The device has two working LED's to notify the user of its current operations. The network LED and the system LED. Both these LED's flash depending on their operating status.
- **Network LED –** LED will flash blue at start up as it looks for a network signal. Once a signal has been found the LED will flash much slower, every 3 seconds.
- **System LED -** will flash at 1 second intervals once the system has finished initialization. It will then flash every time it is operating a command

8. Alarm function and digital connection

G021/22 has two external alarm input connectors and various inputs can be connected to them. For example, door/windows sensors, smoke alarms, carbon dioxide detectors, motion sensors, thermostats, temperature/wind detectors, and moisture detectors.
Using these sensors/detectors, G021/22 can be set up as a protection/alarm and response system.

G021/22 external alarm inputs are active when a trigger pulse or a constant level of 0 V is applied.
If the sensor/detectors are triggered (they send the low level signal (0 V) to G021/22); G021/22 will send out an SMS to the registered mobile terminals. Meanwhile, the corresponding relays you set up will also be activated. (Alarm function can be disabled so as not to activate relay or timer; it will still send message to say alarm triggered)

Alarm input port	Corresponding relay number
External alarm 1 (INT1)	Relay 1
External alarm 2 (INT2)	Relay 2
* PIR detector	Relay 3
*Note: the Alarm input function is not supported on Relay 3 on the standard G021/22. However, the wireless PIR detector works with Relay 3 on the G022P variant. (More details can be found in the G022P section).	

There are two typical ways the external alarm inputs can communicate with G021/22. External alarm devices can be used as,

1. Switch
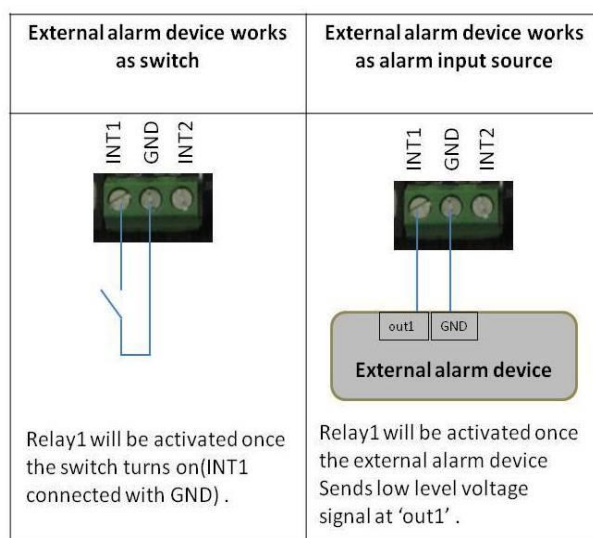2. Alarm input source (low level voltage signal)

Figure 6: External alarm input device connection methods

9. Relay working modes

9.1. Normal open/ normal closed wiring options

The G021/22 is equipped with three digital output relays for connection to equipment to be controlled. The relays can be set up in normal open and normal closed positions. This gives the customer the advantage of having it set as a failsafe if there is a power loss or for timing the relay to open or close with delays.
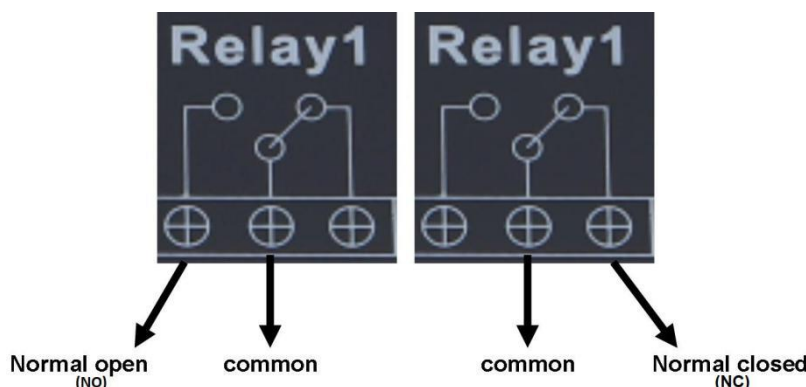
Figure 7: Relay positions

- **Normal open position** – if common and normal open are wired then relay 1 will be off when powered up. To activate relay 1 either a message or a command must be received from the user or from input 1. This activates the relay and closes the circuit turning on the output of relay1.
- **Normal closed position** – if common and normal closed are wired then relay 1 will be active while the G021/22 is powered up. This is for fail safe systems where the power going off in the G021/22 will close relay 1 and activate the output of relay 1.

Remember, the device processes one command at a time. Each command will have a reply to confirm the command has been received and executed. You must wait for a reply message before sending another command. **All SMS text commands must always be sent using CAPITAL letters. Do not add spaces or any other characters.**

9.2. Daily timer setting

Daily timer settings are for Relays 1 and 2. They support a daily timer function to control the actions of the output. This is useful for turning the relays on and off without having to message the device.
The relays will switch to ON/OFF states according to the timer settings. These two relays also support two working modes, self-lock and latching control.

9.3. Self-lock vs. latching mode

The G021/22 allows for two different working modes; self-lock control and latching control. Self-lock allows for the usual function of the relay where a command from the operator or the device to change is needed. If input from an alarm then the relay will stay locked on until the command "**EXTRT**" is sent to the device from the operator (this is also the same for latching mode).

With latching controls the device will return to its normal status after a period of seconds determined by the user. This is useful for output devices that don't need or want to be on for a long time after they have been turned on. For example alarm horns which might only need to be on for 12 seconds to alert the user.

Relay 1 working mode setting
Relay 2 working mode setting
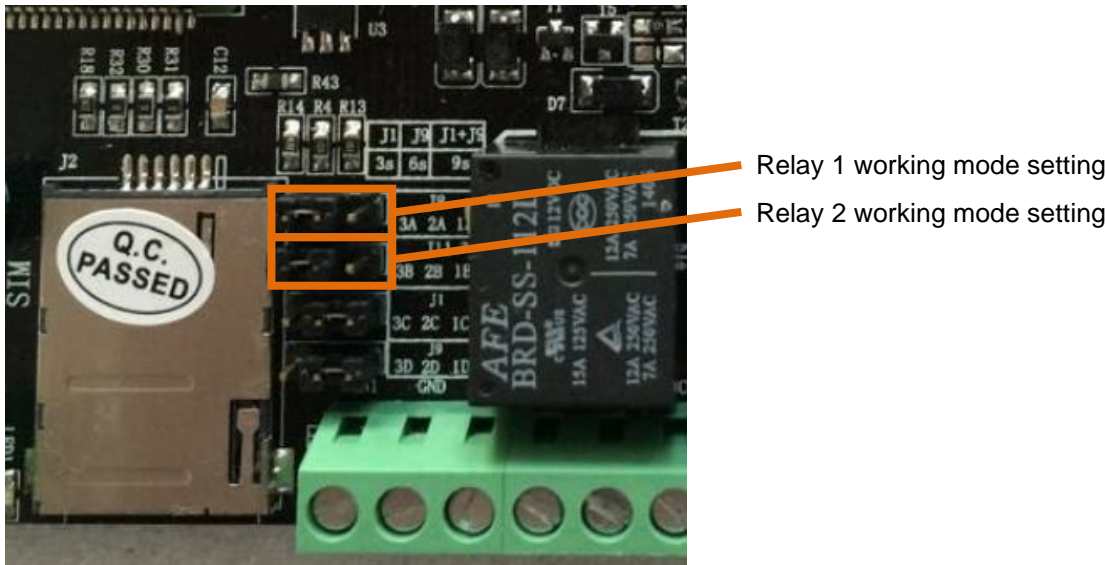
Figure 8: Relay working mode configurations

	Self-lock control – normal operation of relay on or off by command from user or device timer
	Latching control- which means relay go back to normal status after a period of (3, 6, 9 or 12) Seconds.

9.4. Delay time setting on latching mode

Working in latching mode, operators can configure G021/22 with different delay times for Relay 1 and Relay 2 by setting the delay time jumpers.

Delay time settings for Relay 1 and Relay 2
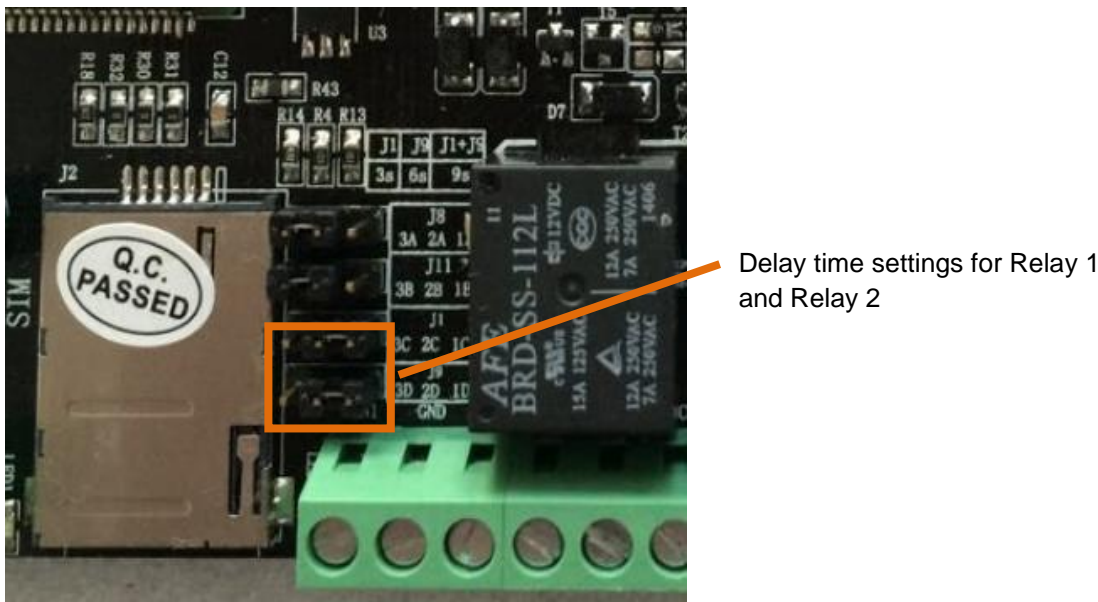
Figure 9: Delay time settings for relays

	Delay time set as:12 seconds
	Delay time set as:9 seconds
	Delay time set as:6 seconds
	Delay time set as: 3 seconds

Hardware versions, G021/22 provide SMS commands in '**ONOFFRnxxx#**' format to support other delay times (from 001 second to 999 seconds).
- 'n' indicates the relay number (1 or 2)
- 'xxx' means the delay times (from 001 to 999 seconds)
More details about this command can be found at chapter 10.

10. APP

The G021/22 APP provides a touch sensitive, user friendly interface.

The app will write the text messages for you and send them from your mobile for operators to control G021/22. The app also allows for up to two G021/22 devices to be controlled from a single mobile operator.
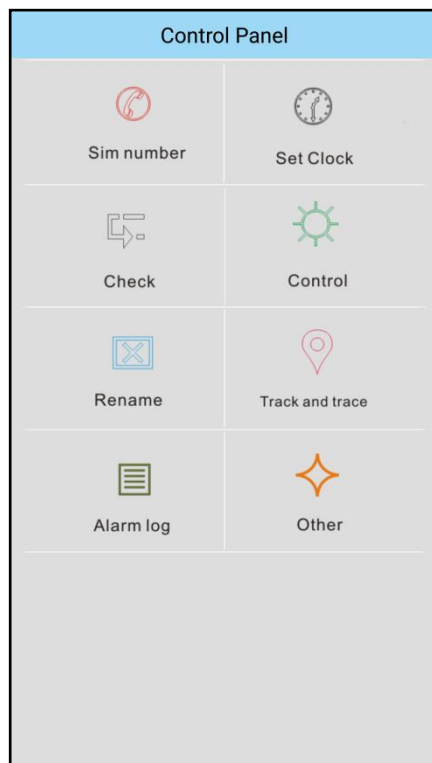
Figure 10: G021/22 APP: home page

The latest Android G021/22 APP can be downloaded from the following link:

https://www.quark-elec.com/product/g021-gsm-sms-remote-controller/

The Android platform should be at least V 2.1 or higher.

Figure 11: APP logo on most android phones

10.1. Setup

After installation, on opening the APP for the first time, users will see the following page for the login process. This login page allows for users to input up to two devices and control them separately:
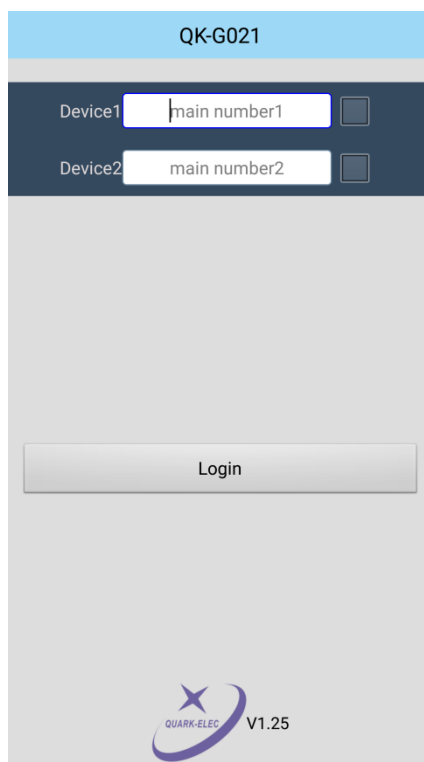
Figure12: Login page

10.2. Set QK controller SIM number

Input the number of the SIM card which is inserted in G021/22. All command SMS messages will be sent to this number via the APP.

Figure 13: Login details successful

Once the SIM card number has been stored, the APP will reply with a successful message shown below the login button. Click the box next to the number you would like to operate the app with.

10.3. Register SIM cards

G021/22 allows one mobile phone to function as the main terminal and up to 3 additional phones to function as control terminals. The following interface allows the operator to register, delete and check the SIM card numbers:

Figure 14: Register SIM card

Figure 15: Register successfully

10.4. Setting the clock on the QK controller

G021/22 can automatically execute actions at the time set by the operator. To do this, the real time clock on the QK controller should be set. This page allows the operator to check and set the time on G021/22. When using this function, the CR2032 battery should be used on the module. On V1.5 or later hardware versions, a solid capacitor is used instead of the CR2032 battery. With a solid capacitor, the real time clock can keep working for at least 12 minutes after power off.

Figure 16: Check the clock on QK controller

Figure 17: Setting clock

10.5. Check relay working mode

G021/22 has three individual relays which support two working modes, namely self-lock and latching control. When working in latching mode, the relay takes active action for a few seconds (depending on the time setting on the jumpers on the board.) and then reverts to normal status. When working in self locking mode, the unit will maintain active status until the next trigger input.
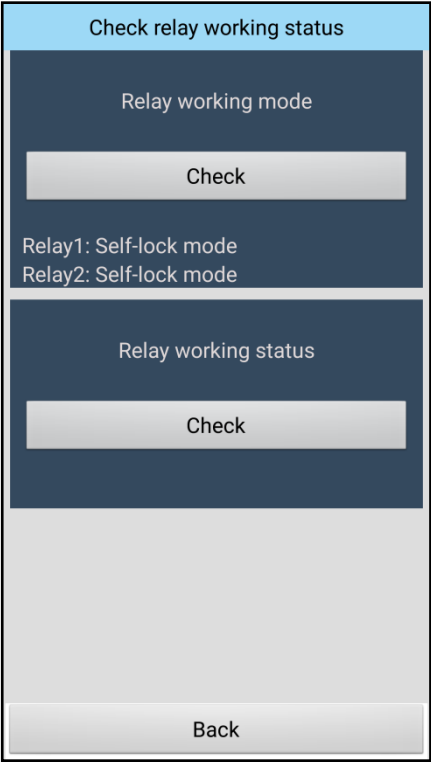
Figure 18: Check relay working mode

G021/22 can also report the relay working status via SMS to the operators.
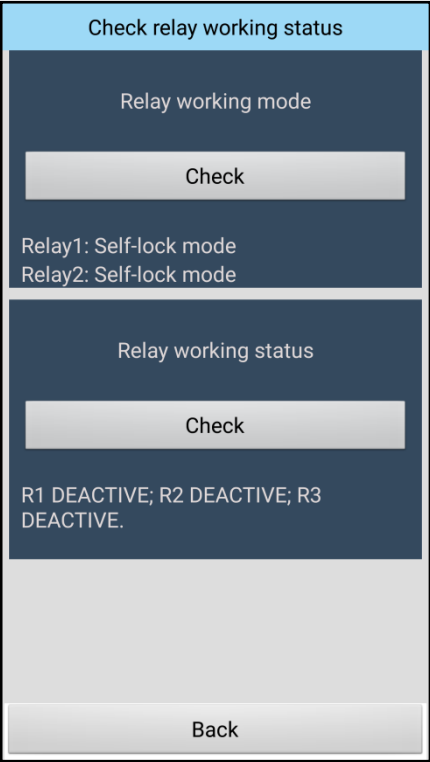
Figure 19: Check relay working status

10.6. Rename control terminals

The control terminals can be renamed as a meaningful name in APP.

Figure 20: Rename control terminals

10.7. Control panel

The control panel provides the main operating interface for turning relays on and off and setting timers.

Figure 21: Control panel interface for relay

The Radio frequency side is for the radio frequency plugs. This page allows them to be turned on and off via the app (RF plug sockets have been discontinued).

Figure 22: Control panel interface for RF plug sockets

10.8. Track and trace

The track and trace function allows for the G022G device to be located using Google maps. The speed and the position information can also be checked on APP for G022G variant (with GPS receiver).

Figure 23: Track and trace

11. Command and response SMS

Remember that all SMS text commands must always be sent using **CAPITAL** letters. Do not add spaces or any other characters.

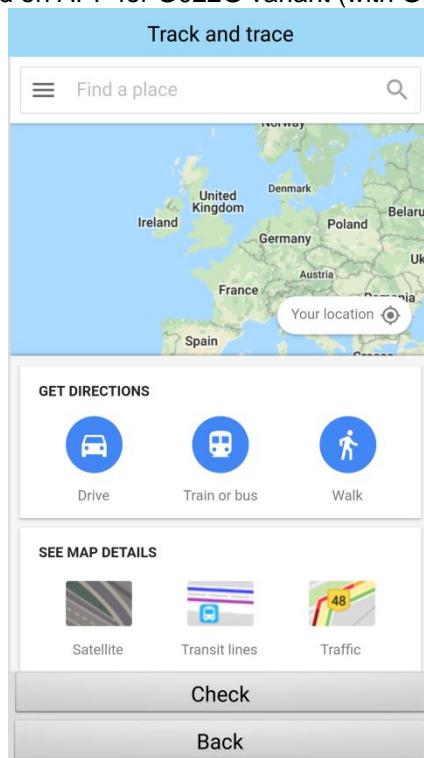| Function	Command	Note
Register SIM cards		
Register main SIM card	**888888**	Register the main mobile terminal with G021 module by sending **' 888888'** to G021/22 model. If registration is successful, the module will reply with ' **Your phone has been registered**.' Each G021/22 module can only have one main registered SIM card number. This message should be received within the first 600 seconds once G021/22 powered up, otherwise ' **registered disabled'** message will be send back to inform the failure of the main SIM registration.
Replace main SIM card	**XGZHM**	The registered main mobile terminal can send ' **XGZHM'** command at any time if a new SIM card needs to be replaced as the main mobile. After G021/22 module receives ' **XGZHM'** , it will allow any mobile terminal to replace the main mobile number by sending ' **888888'** within 600 seconds.
Register additional SIM cards	**BDn(mobile number)F** n=1, 1st additional mobile n=2, 2nd additional mobile n=3, 3rd additional mobile	Once the main mobile terminal is registered with G021/22, another three mobile terminals can be paired with G021/22. For example, by sending " **BD107919157124F"** , the first additional mobile terminal (number is 07919157124) has been paired with G021/22. Similarly, **" BD207909135124F"** means pairing G021/22 with the second additional terminal (whose number is 07909135124). The message ' **Your number n phone has been registered'** will be returned by G021/22, if mobile terminal n is successfully paired.
Delete additional SIM cards	**DELn** n=1, 1st mobile terminal n=2, 2nd mobile terminal n=3, 3rd mobile terminal	The registered SIM cards can be deleted from the authorized SIM list by sending **DELn**. The deleted SIM terminals can no longer control G021/22.
Check registered SIM numbers	**WHORED**	G021/22 will reply with the authorized SIM list in the following format: ' **No.1 SIM is xxxxxxx; No.2 SIM is xxxxxxx; No.3 SIM is xxxxxxx.'**
Switching relay & mode checking		
Switching relay ON	**DKYn** n=1, Relay 1; n=2, Relay 2; n=3, Relay 3.	G021/22 will reply with the relay state information in the following format: ' **Port n ON'** ,---working in self-lock mode ' **Port n has been triggered'** ---working in latching mode Where n is the relay number.
Switching relay OFF	**GBYn** n=1, Relay 1; n=2, Relay 2 n=3, Relay 3.	G021/22 will reply with the relay state information in the following format: ' **Port n OFF'** , ---working in self-lock mode

		' **External triggered, no action'** , ---working in latching mode Where n is the relay number.
Check relay working mode	**RMODE**	G021/22 will reply with the relay working mode information in the following format: ' **MMMM1MMMM2'** , where MMMM could be INCH or SELF. INCH refers to Latching control mode (relay will act for 3 seconds and then revert to the normal position), and SELF refers to Self-lock mode. For example, **INCH1SELF2** means, relay 1 works in Latching control mode and relay 2 works in Self-lock mode.
Check relay working status	**WHOACTIVE**	G021/22 will reply with the relay working status information similar to the following format: ' **R1, R2, R3: ACTIVE; DEACTIVE; ACTIVE.'** Where ACTIVE means the related relay has been triggered (COM port connected to NO port), DEACTIVE means the related relay is on the normal status.
One-off relay switch toggling	**ONOFFRnxxx#** n=1, Relay 1; n=2, Relay 2. xx range from 001 to 999, indicating the delay time in seconds. *From Aug 2018, this command has changed to be ' **ONOFFRnxxx#'** ; this allows the maximum time can be 999 seconds.	For example, by receiving **ONOFFR175#**, the first relay (Relay 1) will be triggered on for 75 seconds and then switched off, whether G021/22 is working in Latching mode or in Self-lock mode. G021/22 will reply with the relay information in the following format: ' **Port 1 is ON and will be OFF 75 seconds afterwards'** . This is a one-off command, only valid for one time action. The APP does not support this command, so the operator should use SMS to send this message.
433 MHz RF module (discontinued)		
Switching RF module ON	**ONRFn** n=1 for 1st RF terminals n=2 for 2nd RF terminals n=3 for 3rd RF terminals n=4 for 4th RF terminals	G021/22 will reply with the relay state information in the following format: ' **RFn socket is ON'** , where n is the RF terminal number.

Switching RF module OFF	**OFFRFn**
	n=1,1st RF terminals;
	n=2, 2nd RF terminals;
	n=3, 3rd RF terminals;
	n=4, 4th RF terminals
		G021/22 will reply with the relay state information in the following format:
		' **RFn socket is OFF'** , where n is the RF terminal number.

Timer		
Set time on 021/022	**SThhmmss#** Where hhmmss is the current time	For example, by sending ' **ST153000#'** , the operator set G021/22 time as 15:30:00. G021/22 will return the message ' **Time setup successful'** to accept this setting. If the operator sends the wrong time format, G021/22 will return the message ' Time setup failed' .
Check the local time on 021/022	**DQSJ**	By sending ' **DQSJ'** , the operator will receive the local time. The message received would be ' **Time at terminal is 12:30:32'** .
Set Switching Relays ON time	**ONnhhmmss** n=1, Relay 1 n=2, Relay 2 hhmmss is the Switch ON time.	For example, by sending ' **ON2163000'** , the operator set Switch Relay 2 ON at 16:30:00. Message as ' **Port 2 will switch ON'** will be returned to operator if the setting successful.

Set Switching Relays OFF time	**OFnhhmmss** n=1, Relay 1 n=2, Relay 2 hhmmss is the Switch OFF time.	For example, by sending **' OF2194500'** , the operator set Switch Relay 2 OFF at 19:45:00. Message as **' Port 2 will switch OFF'** will be reply to operator if the setting successful.
Check the current setting of the timer	**RELAYnTIMER** n=1, Relay 1 n=2, Relay 2	For example, by sending " **RELAY2TIMER"** , the timer setting on reply 2 will be reply to operator. The replied message will be similar as **' Port 2 will switch ON at 12:30;00 and switch OFF at 13:30:00'**
Switch off the Timer setting	**GDSn** n=1, Relay 1 n=2, Relay 2	Message ' Timer on Relay n has switched OFF' will be returned to the operator if the setting is successful; where n is ' **1**' or ' **2**' . Note: The local time will not be affected by switching off the timer.
GPS tracking		
Check the current position of the module	**DQGPS**	Message similar as **' http://maps.google.com/maps?q=51.9617 18,-0.269798'** will be returned to the operator if the setting is successful. By click the replied link message, G021/22 module position will be displayed on Google map.
Monitoring/alarm input		
Releases relay status which is triggered by the external signals.	**EXTRT**	After it has been triggered by the external signals, the related relay will be locked in the normal state. By sending **' EXTRT'** , the relays will be unlocked and available for responding to SMS commands again.
Disable the function of been triggered by external signals.	**EXTGBn** n=1, Relay 1 n=2, Relay 2 n=3, only available for PIRwireless PIR detector (G022P variant)	By sending **' EXTGBn'** , the external alarm input n will be disabled. Message ' Alarm input n has been disabled.' will be returned to the operator if the setting is successful, where n is ' 1' ' 2' or' 3' . By sending ' **EXTRT**' all external alarm inputs will be active. This disable status doesn' t affect by re-powering up the module, only **' EXTRT'** can.
Disable alarm alert message	**EXTGGn** n=1, Relay 1 n=2, Relay 2	By sending ' **EXTGGn'** the alarm notification message will not be sent from controller. When and alarm input is recognised the relay will still function but won' t send a command t the main sim
Enable alarm alert message	**EXTKKn** n=1, Relay 1 n=2, Relay 2	By sending ' **EXTKKn'** the alarm notification message will be sent from controller. When and alarm input is recognised the relay will work and the device will send a confirmation message to the users.
G021/22 has two digital input ports which can be used to monitor external signals. These two external input ports can accept 0 V to 24 V voltage levels. Should the input voltage level be below 1.0 V, the main mobile terminal will receive the warning message ' Port n has been triggered' , where n is the relay number. The relay n will switch to the normal state (NC will be the closed state and NO will be the open state). Sending ' EXTRT' will release the relays and make them available for responding to SMS commands.		

12. Specification

Item	Specification
Frequency bands	Quad-band: GSM850, EGSM 900, DCS1800, PCS1900.
SMS	MT, MO, CB, test and PDU mode
Operating temperature	- 25°C to + 80°C
Storage temperature	- 40°C to +85°C
DC supply	12.0 to 24.0V (+/-5%)
Average supply current (typical quiescent)	40 mA
Maximum supply current (during SMS transceiver activity)	600 mA
GSM receive sensitivity	-107 dBm
GSM transmitting power	Class 4 (2 W) at GSM850, EGSM 900. Class 1 (1 W) at DCS1800, PCS1900.
433 MHz transmitting power	1 W
433 MHz modulation mode	ASK (AM)
RF transmission power	<10 mW
RF emission distance	25 to 50 meters (open air conditions)
Rated current on relay	7A 240 V AC
GPS sensitivity	-162dBm
GPS positional accuracy	+/-53.8 meters
Rated voltage on relay	9 V - 245 V
RF main socket power rating	< 2000 W

For more technical information and enquiries please go to the Quark-elec forum:
https://quark-elec.com/forum/

For sales and purchasing information, please email us at: info@quark-elec.com

13. Specialized units

13.1. Wireless PIR detector (G022P variant)

G022P series controller has a 433 MHz RF receiver module. It can pair with one wireless PIR (passive Infrared sensor motion detector, also called a PIR sensor). Please note that G022P cannot pair with any RF mains sockets.

G022P RF receiver module works at 433.92 MHz and can talk to the paired wireless PIR sensor within 25 meters range in open areas. Once G022P receives an alarm signal from the paired PIR detector, Relay 3 will be activated and locked until '**EXTRT**' has been sent to unlock Relay 3. The main mobile terminal will receive the warning message 'Port 3 has been triggered' at the same time.

The switch sockets are paired and ready to use if they are ordered together with G021/22. However, the operator can always pair or release the pairing by the following steps:

• Switch off the PIR detector.

• Power up G021/22 module, wait at least 60 seconds.

• Using a small flat head screwdriver, press and hold the button on the receiver module. The LED light on the receiver module will turn off. Release the button until the LED light turns on. Once the LED light turns on, the memory on the module has been erased and is ready for pairing.
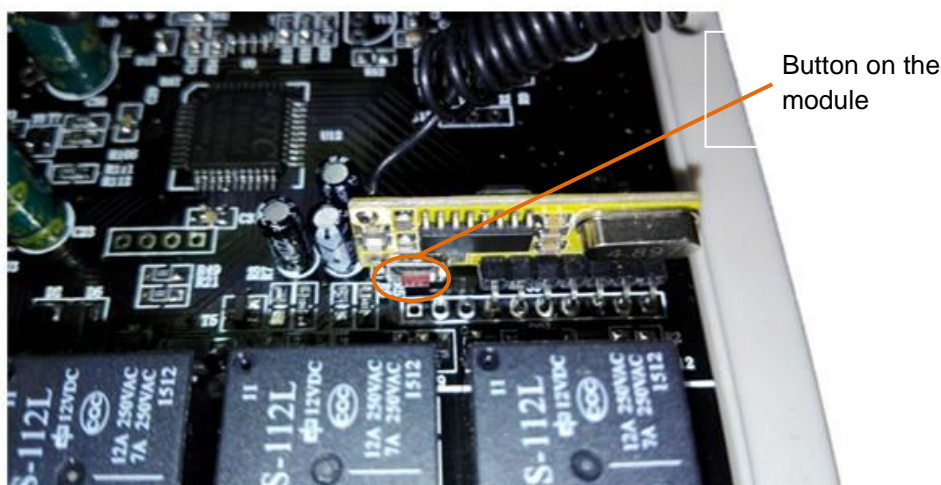

Figure 24: G022P module

• Press the button on the module quickly again. The LED light will turn off again. Now the module is in 'ready-to-pair' mode and will only stay in this status for 10 seconds. During these 10 seconds, switch on the PIR detector with the sensor side facing the operator's body. This allows PIR detector to send a detecting signal. The LED will flash six times when the PIR is paired with the G022P module. If the pairing process could not be completed during 10 second, the operator can press the button again to repeat this step.

• G022P will now be successfully paired with the wireless PIR detector.

To confirm this, restart G022P and hold the wireless PIR detector in the hand (facing the sensor side to the operator's body). After about 10 seconds, a click sound from G022P will be heard. This comes from the Relay3 action triggered by the PIR detector.

Figure 25: Wireless PIR detector

13.2. GPS receiver (G022G variant)

G022G series controller has a build-in high performances GPS receiver module. This GPS receiver accurately provides position, velocity, and time readings as well possessing high sensitivity and tracking capabilities. The receiver supports 38 channels in search mode and 16 channels "all-in-view" tracking.

By sending '**DQGPS**', the registered mobile terminal will receive a message which has the speed of the module and a web link similar like this:

***0.984Km#http://maps.google.com/maps?q=51.961718,-0.269798 .

In the message, 0.984km indicated the moving speed is 0.984km/h. And this link contains the position information of the G022G. Open the link in any web browser, Google map with the position icon will be displayed. The following is an example of the page.
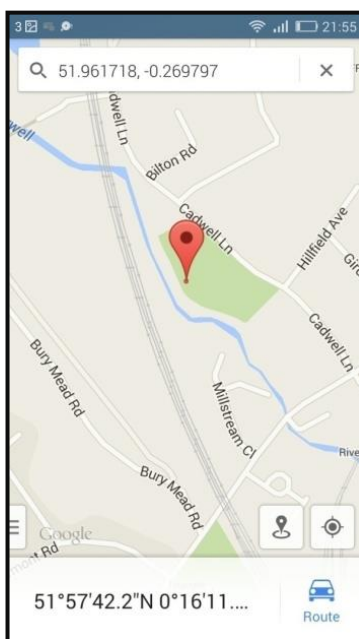

Figure 26: Google map with G021 current position

V2

Order options

Product code	Description
G021	GSM remote control module
G022	G021 with enclosure
G022P	G022 with PIR sensor receiver and one wireless 433 MHz PIR sensor
G022G	G022 with GPS receiver

14. Limited warranty and notices

Quark-elec warrants this product to be free from defects in materials and manufacture for one year from the date of purchase. Quark-elec will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts and labour. The customer is, however, responsible for any transportation costs incurred in returning the unit to Quark-Elec. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs. A returns number must be given before any unit is sent back for repair.
The above does not affect the statutory rights of the consumer.

Disclaimer

It is the user's responsibility to use this product prudently. Neither Quark-, nor their distributors or dealers accept responsibility or liability either to the products user or their estate for any accident, loss, injury or damage whatsoever arising out of the use or of liability to use this product.

Accuracy of this manual

Quark- products may be upgraded from time to time and future versions may therefore not correspond exactly with this manual. The manufacturer of this product disclaims any liability for consequences arising from omissions or inaccuracies in this manual and any other documentation provided with this product.

Document history

Issue	Date	Changes / Comments
1.0	04-10-2013	Initial release
1.39	03-07-2014	Fix a bug: Use ' BD1 (mobile number) F' as the registration of additional mobiles command. Still use ' 5+n(mobile number)F' for 1.0 and 1.1 hardware version.
1.40	30-07-2014	Release G022R433US (US type power sockets)
1.44	12-12-2014	Use ' WHOACTIVE' to replace ' RSTATUS' message to check the relay status.
1.45	03-04-2015	Support ' ONOFFRnxx#' SMS command.
1.47	09-12-2015	Release G022P433 (supports wireless PIR motion detector).
1.48	14-02-2016	Minor changes and corrections
1.49	23-03-2016	Release G022G (supports GPS positioning function).
1.50	17-04-2016	Add ' EXTGBn' command to support disabling the external alarm input function.
1.51	19-11-2017	For command: ONOFFRnxx#, ' xx' has extended to be 01 to 99(the minimum time changes from 3 seconds to 1 second). The main SIM should be registered within the first 300 seconds after powering up G021/22.
1.52	19/06/2018	Add ' XGZHM' to support replacing the main SIM number remotely(new operator should send 88888888 within 600 seconds after the module has received XGZHM from the old main number. Add ' RELAYnTIMER' to support checking the timer setting on relays. Correct error: The command ' OFFnhhmmss' should be ' OFnhhmmss#' . People who use APP will not be affect by this error, however if send SMSmanually, OFFnhhmmss will not work.
2.0	29/10/2018	New 2018 format, change command from 88888888 to 888888.
2.1	30/05/2020	Removal of Apple App references, as no longer supported.

For more technical information and enquiries please go to the Quark-elec forum:
https://quark-elec.com/forum/
For sales and purchasing information, please email us at: info@quark-elec.com

Quark-elec (UK)
Unit 7 the Quadrant
Newark close
Royston, UK
SG8 5HL