

# Contents

<b>1</b>	<b>Installers guide</b>	<b>2</b>
1.1	Wireless connectivity	2
1.2	Secure out of the box	2
1.3	qkGate unit startup, power-on	2
1.4	Electrical wiring	3
1.5	Electrical specifications	3
1.6	Blue LED flash codes	3
1.7	Factory default settings	3
1.8	End-user documents	6
<b>2</b>	<b>Software configuration</b>	<b>7</b>
2.1	Data security	7
2.2	WEB User Interface	7
2.3	Access and configuration	8
<b>3</b>	<b>433 mHz configuration</b>	<b>11</b>
3.1	FOB configuration, 433 mHz	12
3.1.1	Pairing	12
3.1.2	Un-Pairing	12
3.2	FOB/Zapper testing	13
3.2.1	Known working generic FOBs	13
<b>4</b>	<b>..more..</b>	<b>15</b>
4.1	Cautions	15
4.2	Warranty	15
4.3	Site Survey	16
4.3.1	Radio Survey	16
4.4	References	16

## Following are the steps for the gate installer to connect the qkGate unit to a gate automation;

- Select an install site** Select an installation site. The install site should have a clear line of sight to the point where the End-User plans to trigger the gate automation. The wireless range is approximately 10 meters, it may be longer or shorter depending on the mobile device used and the position of the qkGate unit. Cable runs for power and signalling have been tested up to 10 meters using CAT-5e cable. Electrical specifications for the qkGate unit are available in table 1.1
- qkGate unit Install** Install and connect the equipment. The qkGate unit should have power (9V0 - 23V0 DC) and a connection to the gate automation trip circuit. It may take up to 10 seconds before you see any activity on the LEDs. You should expect to see a BLUE LED on the qkGate unit when it is powered, detail on the LED flash patterns are available in figure 1.2 A wiring schematic is available in figure 1.1.
- Wireless Access** Once powered on the qkGate unit acts as a WiFi base station. Connect your mobile device (phone, tablet etc) to the WiFi network on the qkGate unit. Factory default settings for the connection are provided on the back of the qkGate unit. Refer to figure 1.3 for an example, the settings on each qkGate unit are unique and secure. When your mobile device makes a WiFi connection (SSID and PASSWORD) to the the gate automation should trigger. You can expect to see 4 RED LEDs and all 4 relays will activate on the qkGate unit.
- Configuration** It is not required to make any configuration changes to the qkGate unit, however the option exists. Configuration changes can be made using the WEB Server and User Interface on the qkGate unit, you do not need an internet connection. Connect to the WiFi network using your mobile device and access the user and admin WEB Pages.
- End-user access** You can access the WEB GUI from the browser on your mobile device. Any mobile device with access to the WiFi network on the qkGate unit can access the WEB GUI. The URL is <http://192.168.4.1/home>. Details on the WEB GUI are available in figure 2.1
- Admin access** You can access the administrator WEB GUI from the browser on your mobile device. You will need to access to the WiFi network on the qkGate unit, and you will also need the admin username and password to login. The URL is <http://192.168.4.1/home>
- Handover** Pass the end-user and configuration documents, including the configuration cards to the end-user. A list of the documents provided with the qkGate unit is available in table 1.2.
- 433 mHz Sender** The qkGate unit supports the use of 433 mHz FOB and Zappers, refer to section 3.1.1 for pairing and un-pairing details.

# Chapter 1

## Installers guide

### 1.1 Wireless connectivity

User your mobile device (phone, tablet, Laptop PC etc) to connect to the Wireless network on **qkGate** unit.

Detail for the Wireless network on each **qkGate** unit is unique and provided in the documents and on the back plate of each **qkGate** unit. If your **qkGate** unit has been updated to new settings and you are unable to access you can restore using the Factory Reset option.

To access features on your **qkGate** unit;

1. Connect to the Wireless network using the WiFi configuration software on your mobile device (SSID and Wireless password).
2. if necessary you can connect to the WEB Server on **qkGate** unit using a WEB Browser on your mobile device at <http://192.168.4.1> to make changes to the advanced settings on the **qkGate** unit but this should not be required. Admin access to the **qkGate** unit is required to make and save advanced configuration options, this requires the username and password provided with the **qkGate** unit.

### 1.2 Secure out of the box

Each **qkGate** unit ships with unique settings (node name, username, password etc.), and as a result is secure out of the box.

### 1.3 **qkGate** unit startup, power-on

When the **qkGate** unit starts for the first time it will be fully operational and running in AUTO mode.

The **qkGate** unit will advertise a 802.11 WiFi network on the ISM 2.4 GHz wireless band.

To connect to the 802.11 WiFi network use the configuration detail on the appropriate configuration card (1.2). You can enter the configuration by hand or you can scan the QR Code to

automate the process. You may need to install a QR Code reader APP onto the mobile device to make QR Code scanning work.

Any appropriately configured mobile device in range of the **qkGate** unit will trigger the gate automation.

The WEB User Interface can be used to set the **qkGate** unit into manual mode. When the **qkGate** unit is in MANUAL mode it will not activate the gate automation over the mobile network interface. The **qkGate** unit should be switched over the AUTO mode for normal operation.

You can use the buttons on the face plate to switch between AUTO/MANUAL, [2.2](#) You can also switch mode to AUTO/MANUAL from the WEB UI, [2.1](#)

## 1.4 Electrical wiring

Installation and wiring should be undertaken by a qualified engineer. A cabling schematic is shown in [1.1](#).

Low voltage cabling between the **qkGate** unit and the Gate Automation has no special requirements, CAT-5e cable has been tested up to 10m and found to work well. Refer to table [1.1](#) for cable size and permitted electrical loading.

Wiring should be appropriate for the voltage used, for the expected load and for any environmental conditions expected (sun, rain etc).

Cable runs should be ducted and appropriate for the environment, outside installations should be sealed such that they are watertight etc.

If using a sealer, only use non acid based compounds. During the curing process some sealer are known to release acid fumes and may damage electrical and other components.

## 1.5 Electrical specifications

Electrical and environmental specifications for the **qkGate** unit are available in table [1.1](#)

## 1.6 Blue LED flash codes

The **qkGate** unit faceplate has a number of LEDs, 4 RED which show the state of the relay contacts, and 1 BLUE LED which shows the current status of the **qkGate** unit. The blue LED is also used for 433 MHz FOB configuration and during this process it will flash RED.

A reference guide for the BLUE LED flash codes is provided in figure [1.2](#)

Once power is applied it takes approximately 10 seconds to start and for the blue LED to reflect the current status for the **qkGate** unit.

## 1.7 Factory default settings

The factory default settings for the **qkGate** unit are recorded in the configuration documents provided with your **qkGate** unit. The factory default settings are also provided on the rear of the

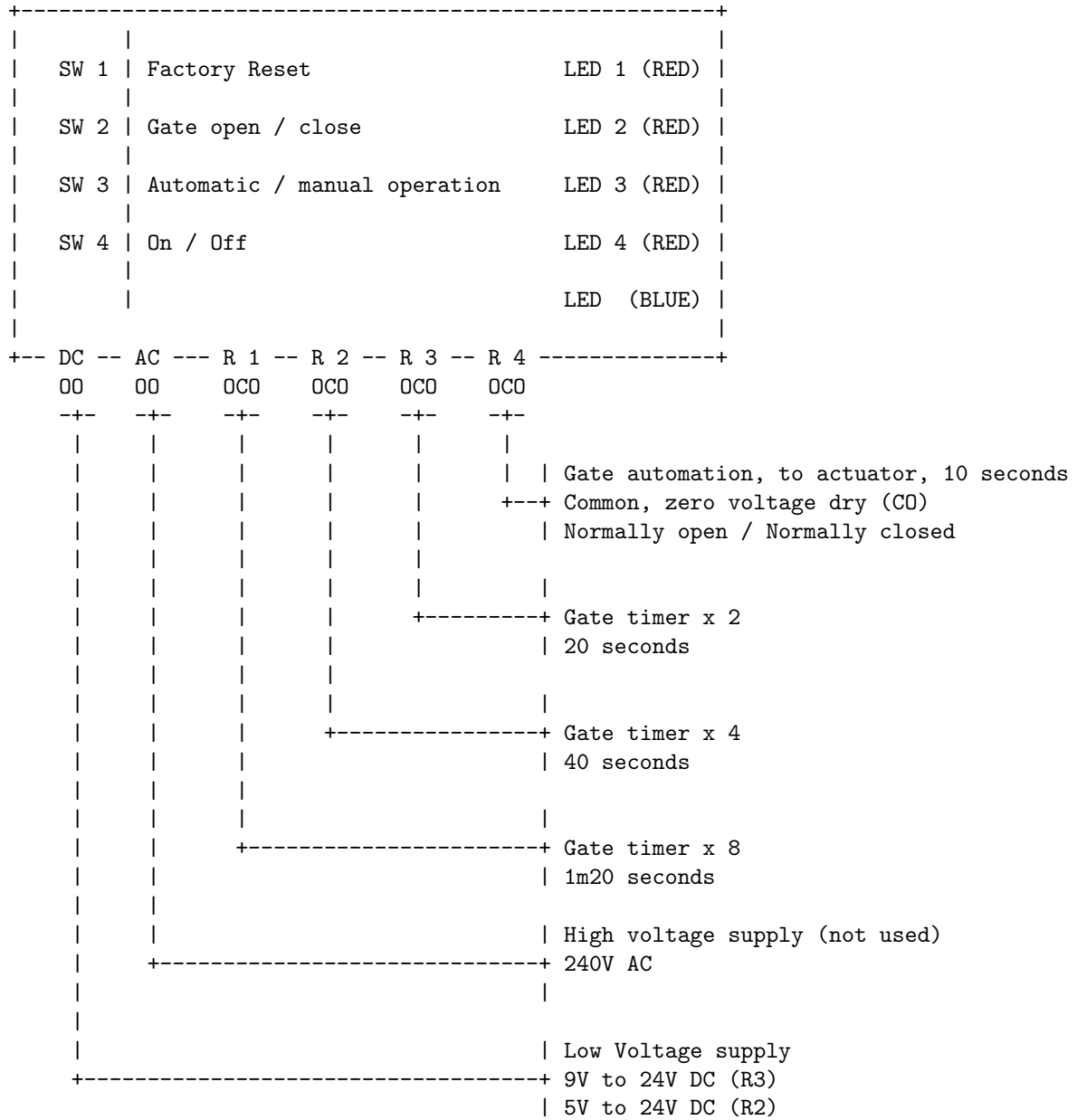


Figure 1.1: Wiring

Voltage Range	100 to 240V AC at 50/60Hz 9 to 23V DC
Max. Load	10A / 2200W for each relay 40A / 8800W Total
Gang	4
Wire diameter	0.5 to 1.5mm 24 to 14 AWG
Wireless Frequency	ISM 2.4GHz
Wireless Standard	IEEE802.11 b/g/n 2.4GHz
Security Mechanism	WPA/WPA2
Encryption type	WEP/TKIP/AES
Enclosure Material	PC V0
Package size	145 (W) * 90 (D) * 34 (H) (mm)
Operating Temperature	-10°C to 40°C
Operating Humidity	5% to 95%RH, Non-condensing
Certification	CE, FCC, ROHS

Table 1.1: electrical and environmental specifications

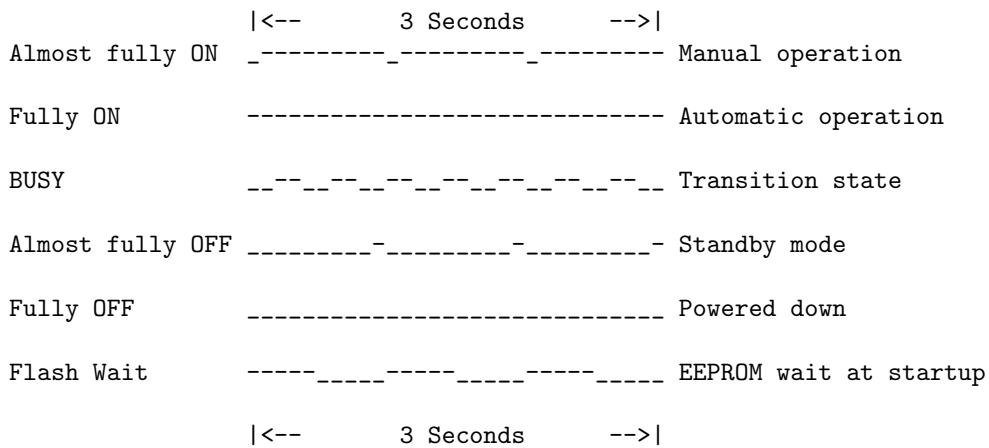


Figure 1.2: Blue LED codes

Copyright © 2021 JMBradshaw@protonmail.com, all rights reserved. This device includes pre release (beta) software, the device is provided for testing and without warranty.

WEB Login		WiFi Access	
Username	Password	SSID	WiFi key
admin	rHk4eFHV	Nefw37NR	C9UCcRbw
SN : 10450022FE		REV : T-3.4-JMB-4-gac472ba	

At the conclusion of your testing, please return this equipment to V93 Y7V7

Figure 1.3: Factory default settings

Document	Description
<b>Configuration Cards</b>	
Front panel access, hardware switch settings	Describing the use and functionality of the front panel
Wireless access, factory default settings	Configuration for access to the <b>qkGate</b> unit from your mobile device, You can share this configuration with other end-users, it will open and close your gate.
WEB Browser Admin access, factory default settings	This information is confidential. This document has the username, password and other information related to admin access to the <b>qkGate</b> unit. You should keep this document safe. If you want to make changes to the <b>qkGate</b> unit or you do a factory reset you will need this information.
<b>Documents</b>	
Installers Guide	
End-User Guide	

Table 1.2: Documents

**qkGate** unit. See figure 1.3

If your **qkGate** unit has been paired with a 433 mHz FOB this configuration will not be changed by a factory reset. To remove a FOB from the **qkGate** configuration see section 3.1.

Each **qkGate** unit is shipped from the factory with unique settings, the settings in this document are for example only and will not work in your **qkGate** unit.

If you wish to connect to the Wireless network or access the WEB Server on the **qkGate** unit, use the settings provided with your **qkGate** unit in the configuration documents. If the settings have been updated you should use the new settings. If you are unable to access the **qkGate** unit using the factory default settings and also the new settings you can reset the **qkGate** unit to its factory default settings using the buttons on the faceplate. 1.3

## 1.8 End-user documents

The **qkGate** unit has been provided with 3 credit card sized configuration documents. The configuration cards along with all other documents should be given to the end-user.

The document package provided with the **qkGate** unit includes the documents listed in table 1.2.

## Chapter 2

# Software configuration

### 2.1 Data security

The data connection between your mobile device and the **qkGate** unit is encrypted by the 802.11 WiFi security protocol. Any data transfer is secure.

Your privacy and security are important, and they are protected by the following;

- The **qkGate** unit does not have a connection to the Internet.
- The WEB Browser on your mobile device will not have access to the Internet via the **qkGate** unit.
- The **qkGate** unit is hardwired to use a private, non-routing IP address, even if the **qkGate** unit is CONNECTED TO THE INTERNET it is not accessible to hosts on the Internet network.
- Devices on the internet will not have access to the **qkGate** unit unless they access the **qkGate** unit through the 802.11 WiFi connection and the mobile network on your mobile device.
- The **qkGate** unit does not use or store your personal information.
- The **qkGate** unit does not record or create access logs.

These features are in place by design, and are in place so that your privacy is assured.

### 2.2 WEB User Interface

The WEB User Interface on the **qkGate** unit can be used by the end-user and the administrator.

The end-user can use the interface to open and close the gate. Please refer to the WEB User Interface in figure [2.1](#).

The administrator can use the interface to personalize the **qkGate** unit, change the username and password etc. Administrator access requires the use of a username and password. Please refer to the WEB User Interface in figure [2.1](#).



Function	Description
Open/Close	Open and close the gate.
Auto/Manual	Switch the <b>qkGate</b> unit between automatic and manual mode.
Restart	Restart the <b>qkGate</b> unit, only available when the administrator is logged into the WEB UI.
Admin Access	Login to the administrator WEB GUI. Username and Password protected.

Table 2.1: WEB UI button settings

Faceplate	Relay	Description
SW-1		<b>Factory reset.</b> The <b>qkGate</b> unit will reset to factory default settings. Refer to section 1.7 for further information on the <b>qkGate</b> units configuration following a factory reset.
SW-2	Relay 4	<b>Open/Close.</b> In AUTO mode the gate will open, time-out and close. If the <b>qkGate</b> unit is in MANUAL mode the button will switch the gate to OPEN or CLOSE and the gate will remain in place for the next button press.
SW-3		<b>AUTO/MANUAL.</b> Switch the <b>qkGate</b> unit between auto and run mode.
SW-4		<b>STANDBY/RUN.</b> Switch the <b>qkGate</b> unit between run and standby. In STANDBY mode the <b>qkGate</b> unit will not respond to mobile devices, and the WEB Page UI will not be available. If the <b>qkGate</b> unit has been paired with a 433 FOB or Zapper it will respond to the appropriate Zapper.

Table 2.2: Faceplate button settings, RUN

Please refer to the WEB User Interface in figure 2.1.

The configuration information reflect the settings of the **qkGate** unit when it left the factory.

These settings can be customized using the WEB UI. The **qkGate** unit can be reset to factory default using the buttons on the faceplate. The factory default settings are also encoded on a plate to the rear of the **qkGate** unit. See figure 1.3.

## 2.3 Access and configuration

The configuration documents will allow the end-user to configure their mobile device to use the **qkGate** unit and to activate the gate automation. The configuration documents also provide access to the User Interface (WEB Page UI) on the **qkGate** unit.

To access the **qkGate** unit;

- Connect your mobile device to the 802.11 WiFi network advertised by the **qkGate** unit. Details for the connection are available in the configuration documents provided with the **qkGate** unit.

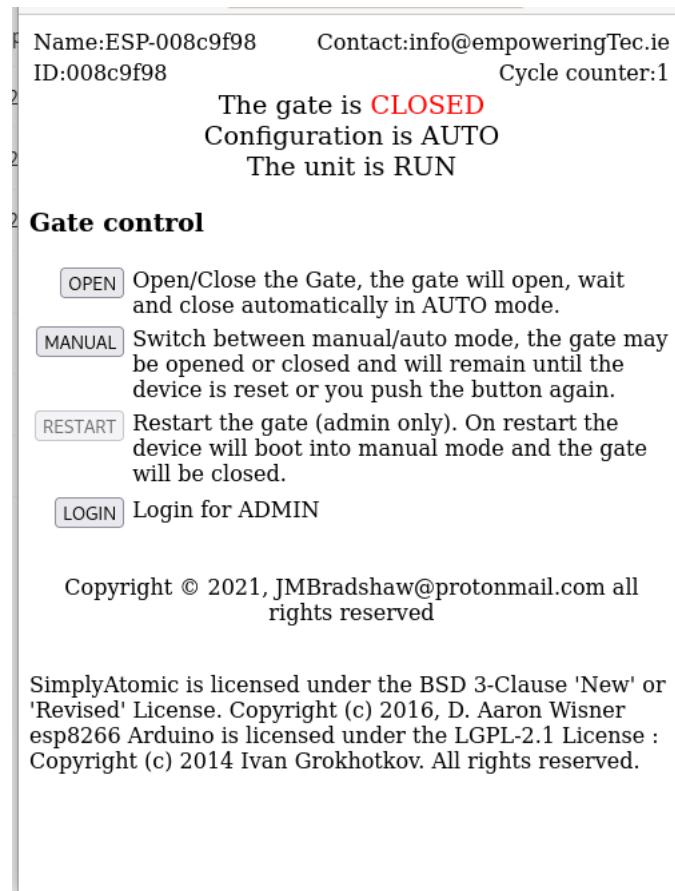


Figure 2.1: WEB User interface

- Start a WEB Browser on your mobile device. It may be necessary to disconnect from the mobile data network for this step.
- Connect to the WEB User Interface on the **qkGate** unit, if you need to change the settings log in to the admin account using the username and password provided in the configuration documents.

## End-User access

End-users will not normally be required to use the WEB User Interface, when a appropriately configured mobile device comes into range of the **qkGate** unit the gate automation will activate causing the gate to open.

<http://192.168.4.1/home>

The end-user mobile device can be setup using the documentation provided with the **qkGate** unit. See table 1.2 for information on the documents provided.

## Admin login

Admin access to the UI requires a username and password, for factory default settings this information is recorded in the configuration documents and on the back of the **qkGate** unit.

End-users who have admin access to the WEB UI can customize the settings on the **qkGate** unit, they can change the username, password and other parameters.

Access to the WEB UI is using a WEB Browser on the mobile device when it is connected to the **qkGate** unit Wireless network. You will need in range of the **qkGate** unit for a relabel Wireless connection.

<http://192.168.4.1/home>

Any changes made using the WEB User Interface will be removed if the **qkGate** unit is factory reset. See table 1.2 for information on the documents provided. Admin access settings are also recorded on the back of the **qkGate** unit. See figure 1.3 for information on factory settings.

## Chapter 3

# 433 mHz configuration

The **qkGate** unit is provided with limited support for 433 mHz FOBs/Zappers. Each of the 4 relays can be configured separately but only channel two (OPEN/CLOSE) should be paired for normal operation. We have undertaken testing with a limited number of FOBs/Zappers, the result of this testing is in table [3.2](#).

The **qkGate** unit can be paired to generic and to some product specific FOB's using the pairing process in [3.1.1](#) and [3.1.2](#).

The paired configuration is written to permanent storage on the **qkGate** unit and will survive both power and factory reset.

The 433 mHz interface is separate from the WiFi interface and the two act on the **qkGate** hardware their own. If you are using both the ISM 2.4 mHz and the 433 mHz wireless FOBs you should check that for your use case the two do not do anything unexpected.

To use a FOB with the **qkGate** unit the **qkGate** unit and the FOB must be paired. The Pairing process can be undertaken at any time the **qkGate** unit is powered, it is recommended that the **qkGate** unit should be in STANDBY when you undertake any FOB/Zapper pairing.

Please be aware that during the pairing process relays on the **qkGate** unit may be activated and that this may have unexpected results, especially if the gate automation is connected and powered.

When the **qkGate** unit is in STANDBY, pairing a channel with a 433 mHz sender will drive the related relay. If you pair channel 4 the **qkGate** unit will wake from STANDBY and will return to STANDBY each time you press the paired button.

When the **qkGate** unit is in RUN, pairing a channel and activating the 433 mHz sender is the same as pressing the button on the face plate. Button activities are listed in [2.2](#), we do not recommend pairing channel 4, the STANDBY button or channel 1, the factory reset button with a 433 mHz or FOB or Zapper. For example, pairing channel 2 this activates the OPEN/CLOSE cycle on the gate in the same way as if you pressed the button on the face plate.

Faceplate	433 mHz	Relay	Description
SW-1	Channel 1	Relay 1	Energise/De-energise relay 1 FACTORY RESET
SW-2	Channel 2	Relay 2	Energise/De-energise relay 2 OPEN/CLOSE
SW-3	Channel 3	Relay 3	Energise/De-energise relay 3 AUTO-MATIC/MANUAL operation
SW-4	Channel 4	Relay 4	Switch the qkGate unit between STANDBY and RUN. Energise/De-energise relay 4

Table 3.1: 433 channel settings, STANDBY

## 3.1 FOB configuration, 433 mHz

For normal operation you should only pair any sender to Channel 2, which will drive the Open/Close function. The remaining channels should be left as is.

### 3.1.1 Pairing

Before beginning the pairing process you should have the 433 mHz FOB (sender) and also have identified the relay port on the qkGate unit to be paired.

To begin the pairing process on the qkGate unit;

1. Place the qkGate unit in STANDBY mode, press button 4 on the faceplate. The blue LED will go almost fully off, refer to figure 1.2 for the LED codes.
2. Select, press and hold the channel button to be paired for 3 seconds.
3. The blue LED should flash RED once.
4. At this point you should release the button.
5. On the FOB (sender) press the button to be paired.
6. Once the button on the FOB has been paired with the relay channel you will see the blue LED flash red once.
7. Remove and reconnect the power to the qkGate unit, it will take at least 10 seconds to restart. At this point the Pairing process is complete
8. Pressing the paired button on the FOB should activate/deactivate the connected relay

The paired configuration is written to permanent storage on the qkGate unit and will survive both power and factory reset.

The 433 mHz interface is separate from the WiFi interface and the two act on their own. If you are using both the ISM 2.4 mHz and the 433 mHz wireless you should check that for In your use case the two do not do anything unexpected.

### 3.1.2 Un-Pairing

To remove a FOB from the configuration (un-pairing) you will need access to both the qkGate unit and the FOB to be un-paired.

Begin the un-pairing process on the qkGate unit;

1. Place the qkGate unit in STANDBY mode, press button 4 on the faceplate. The blue LED will go almost fully off, refer to figure 1.2 for the LED codes.
2. Select, press and hold the channel button to be un-paired for 5 seconds. During this time, at 3 seconds, the blue LED will flash red once, continue to hold the button for the full 5 seconds.
3. The blue LED should flash RED twice.
4. At this point you should release the button.
5. Once the button on the FOB has been un-paired with the relay channel you will see the blue LED flash RED.
6. On the FOB (sender) press the button to the un-paired.
7. At this point the un-Pairing process is complete
8. Remove and reconnect the power to the qkGate unit, it will take at least 10 seconds to restart.
9. Pressing the un-paired button on the FOB should not affect any of the relay ports on the qkGate unit.

## 3.2 FOB/Zapper testing

up to 4 FOB codes can be saved into each channel

The results of our testing are available in table 3.2.

### 3.2.1 Known working generic FOBs

Tested and known working generic FOBs

- KAM KAM000124-AB, 4 channel
- A5B-62D3-01 ZN257356, 4 channel

We also tested and found working the following branded FOBs

- Ditec GOL4C, 4 channel branded FOB.
- ROGER E80/TX52R/2, 2 channel branded FOB.

Test	MAKE	Model	SN	C-1	C-2	C-3	C-4
A-1	DEA	GT12B	672639	O	O	O	O
A-2	FAAC	XR4 433 RC	787456	O	O	O	O
A-3	KAM	KAM000124-AB		*	*	*	*
A-4	A5B-62D3-01	ZN257356		*	*	*	*
A-5	SEA	TypeSMART		O	O	-	-
A-6	NICE	ON1E ON2E ON4E ON9E		O	O	-	-
B-1	ROGER	E80/TX52R/2	SG3DP	*	*	-	-
B-2	ROGER	E80/TX52R/2	SG3DP	*	*	-	-
C-1	DEA	GT12	672635	O	O	O	O
C-2	Ditec	GOL4C		*	*	*	*
-: Not used, the FOB did not have a button for this channel *: Worked, the FOB was setup and activated the channel on the qkGate unit O: Did not work, unable to activate the channel							

Table 3.2: 433 mHz FOB Testing

# Chapter 4

## ..more..

### 4.1 Cautions

- High voltage is exposed when the covers are removed.
- High voltage installation pose a risk to life, remove power to the **qkGate** unit and any connected gate automation before servicing.
- The connected gates may start to move unexpectedly even of the **qkGate** unit is powered down.
- Moving parts may pose a risk to life, remove power to the gate controller before servicing.

### 4.2 Warranty

The **qkGate** unit is warranted if it is being used as intended by the manufacturer, any other use is not covered under this Warranty.

- Water ingress will void Warranty.
- Exceeding electrical limits will void Warranty.
- Installation should be undertaken by a qualified engineer.

In the event that you have lost the access codes for a factory reset **qkGate** unit please inspect the back of the **qkGate** unit, find the plate and recover the settings from there. [1.3](#)

If this information can not be recovered you can return the **qkGate** unit along with proof of ownership (receipts/invoices) for replacement.

If the **qkGate** unit is in Warranty it will be replaced free of charge.

Please note that the replacement **qkGate** unit will have a new set of factory default settings, we can not recover the settings from the old **qkGate** unit.

Damaged **qkGate** units will not be replaced under Warranty , replacement **qkGate** units are available on our WEB Site.



dBm	State	description
-30 dBm		Max achievable Wireless signal strength. The client can only be a few feet from the AP to achieve this. Not typical or desirable in the real world.
-67 dBm	Very Good	Minimum signal strength for applications that require very reliable, timely delivery of data packets. VoIP/VoWiFi, streaming video
-70 dBm	Okay	Minimum signal strength for reliable packet delivery. Email, WEB etc
-80 dBm	Not Good	Minimum signal strength for basic connectivity. Packet delivery may be unreliable and connection times may take longer.
-90 dBm	Unusable	Approaching or drowning in the noise floor. Any connectivity is highly unlikely.

Table 4.1: Wireless signal strength for 802.11 networks

Transport fees belong to the sender, you should expect to have to pay to send the qkGate unit back for repair or replacement. We will take any costs related to the delivery of the qkGate unit to you. This excludes any customs, duty, tariff or taxes.

## 4.3 Site Survey

### 4.3.1 Radio Survey

The qkGate unit uses the ISM 2.4 GHz band for radio communications. It also uses the 802.11 WiFi protocol for mobile device authentication. The qkGate unit should have clear line of sight to the point where you expect the end-user will trigger the gate. You can use the detail in table 4.1 to assess the signal strength for your installation.

Mobile application tools for both Android and ios are available, these tools can be used to survey the local Wireless environment in the event of Wireless access issues. Table 4.1 provides a list of 802.11 WiFi wireless signal strengths, you can use this as a guide for any radio survey.

## 4.4 References

Additional information on the qkGate hardware is available from the OEM manufacturers WEB Site and the links below. Please note that the software on the qkGate unit has been replaced, and any information on software for OEM features will not work.

- [Unit Specification](#)
- [Installation Guide](#)
- [User Manual](#)
- [Technical Data Sheet PC-V0](#)
- [RFC-3330 : Special-Use IPv4 Addresses](#)
- [RFC-1918 : Address Allocation for Private Internets](#)