



# INSTALLER REFERENCE GUIDE

Rev 1.0



## RF160 2 Channel SMART RF Wireless Output Module - 433MHz



# RF160 - 2CH SMART RF OUTPUT MODULE - 433MHZ

The 2 Channel SMART RF Wireless Output Module, is an advanced 433MHz RF transceiver with 2 independently controllable relay outputs. Output functionality is configured via panel programming, and any number of RF outputs can be used, up to the maximum number of outputs supported on the panel.

The panel must be fitted with one or more RF120 and/or RF121 Smart RF Receivers (V2.51 or higher).

The unit is compact enough that it can easily fit inside a gate controller cabinet or can be mounted easily to most surfaces. The wide operating voltage 9 to 28 volts AC/DC makes it easy to power from third-party controllers or power supplies.

The 2-Way communication protocol is encrypted with rolling code and anti substitution technology making the RF160 an ideal choice for controlling gates, garage doors, lights or security systems.

## Box Contents

The RF160 box contains the following parts.

- 2 Channel SMART RF Stand Alone Controller
- 1 x Antenna Instruction Sheet

## Compatible Keyfobs

RF110 Smart 5 Button Keyfob

RF110FK - Colour Facia Kit One Of Each Colour (Red, Blue, Green, Orange, Black, Grey, Yellow)



Figure 1: RF110 Smart 5 Button Keyfob

## Mounting Considerations:

- The receiver should be mounted in a location at least 2 metres from other receivers.

- The receiver should be mounted on a vertical surface with at least 30cm clearance from metal objects.
- Avoid mounting the receiver in areas with significant metal or electrical wiring.
- Avoid mounting the receiver in areas where it may be exposed to moisture or high humidity.
- Reception distances are generally improved with higher mounting locations and with no metal objects near the unit.
- If range is not achievable due to environmental or specification limitations then look at relocating the unit to a more appropriate location.

## Receiver Operation

The RF160 will turn on the green RX LED to indicate the unit is powered and it will blink off each time a signal is received. Each time a Keyfob button is pressed the corresponding relay will operate and a confirmation signal is sent to the Keyfob to indicate a successful 2 way transaction. When button RLY1 or RLY2 are triggered manually they operate the corresponding relay to allow you to test your connections and device your operating.

**WARNING** always be sure to check that there is no objects in the way when operating an automatic device as this could cause damage or injury to a person.

## Relay Programming

Before configuring RF outputs, the control panel needs to be communicating to an existing Digiflex Smart RF LAN receiver (refer to both the control panel and Smart RF receiver installation manuals for further information).

You need to configure an output at the control panel from the available event types provided - refer to the control panel installation manual for further information.

Each relay on the RF160 follows a single control panel output when the event occurs.

## Configuring Output At Control Panel - Example

The example below will configure an output to operate a garage door controller (in this example using output 6).

MENU 4-1-0 Output Name < Garage Door >

MENU 4-1-1 Event Type < 60 = Door >

MENU 4-1-2 Event Assignment < 01 = Door 1 Name >

MENU 4-1-3 Output Polarity < 04 = Open, 1 Shot Low >

MENU 4-1-4 Output Time Parameter < 001 Second >

## RF Outputs

Solution 6000 control panels with firmware version 2.53.18 and later now have the ability to add/delete and test RF outputs when using Digiflex Smart RF Receivers (PN: RF120 and/or RF121) via the following menu's.

MENU 4-3-0 Add RF Device

MENU 4-3-1 Delete RF Device

MENU 4-3-2 Test RF Device

### Add RF Device

Outputs > RF Output

Add RF Device

**I** MENU 4-3-0

This menu allows the installer to learn relay 1 and/or relay 2 of the RF160 module to operate an output configured at the control panel.

- 1) Press [MENU] + [4] + [3] + [0] and use the up and down arrows to highlight the output in the list, then press [OK].

```
Op1 External Siren
Op2 Strobe Light
Op3 Smoke Sensor PWR
Press ▲▼ OK or MENU
```

- 2) The keypad will display the current RF160 ID.

```
Enter Device ID Op6
Garage Door
0000000000
Press OK or MENU
```

- 3) To learn the device RF ID, press and hold both relay buttons on the RF160 module for 2 seconds or until you see the RF and PGM indicators flash.

```
Enter Device ID Op6
Garage Door
0F9105130_
Press OK or MENU
```

- 4) Press [OK] to save and continue or press [MENU] to exit without saving.

```
Relay 1
Relay 2
Exit
Press ▲▼ OK or MENU
```

- 5) Select Relay 1 to use relay 1 or select Relay 2 to use relay 2 of the RF160 module, then press [OK] to save and exit or press [MENU] to exit without saving.

### Delete RF Device

This menu allows the installer to delete a relay on the RF160 module. This menu does not delete the actual output configuration set at the control panel.

Outputs > RF Output

Delete RF Device

**I** MENU 4-3-1

This menu allows the installer to delete relay 1 and/or relay 2 of the RF160 module.

- 1) Press [MENU] + [4] + [3] + [1] and use the up and down arrows to highlight the output in the list, then press [OK].

```
Op1 External Siren
Op2 Strobe Light
Op3 Smoke Sensor PWR
Press ▲▼ OK or MENU
```

- 2) The keypad will display the current RF160 ID.

```
Delete Device ID Op6
Garage Door
0F9105130 Relay1
Press OK or MENU
```

- 3) Press [OK] to delete and exit or press [MENU] to exit without saving.

```
Relay 1
Relay 2
Exit
Press ▲▼ OK or MENU
```

### Defaulting The RF160 Module

This function allows an installer to delete parameters stored in the RF160 module including the RF Site ID. You will need to do this if you are relocating the unit to another system.

To default, first power the unit, then press and hold both relay buttons down until the Green RF and Red PGM indicators flash rapidly, then release the buttons and the unit will have defaulted. (Approximately 10 seconds).

## Test RF Device

Outputs > RF Output

Test RF Device

**I** MENU 4-3-2

This menu allows the installer to test RF160 module output for signal level.

- 1) Press [MENU] + [4] + [3] + [2] and use the up and down arrows to highlight the output in the list, then press [OK].

```
Op1 External Siren
Op2 Strobe Light
Op3 Smoke Sensor PWR
Press ▲▼ OK or MENU
```

- 2) The keypad will display the current RF160 ID.

```
Op6 Garage Door
Waiting for Trigger!
Press OK or MENU
```

- 3) Press and hold both relay buttons on the RF160 module to transmit a packet (signal).

```
Op6 Garage Door
Rx3 Packets=001 v2.02
Signal Good <247>
Press OK or MENU
```

- 4) Press [OK] or press [MENU] to exit.

The keypad will display the receiver address that received the packet (signal) from the RF160, the packet count, the firmware of the RF160 and the signal strength.

## Receiver LED Indicators

The RF160 2 Channel SMART RF Wireless Output Module includes RED and GREEN LED indicators which provide visual feedback during system operation. See Table 3 for information on the indicator colours and meanings.

LED Indicators			
Lable	LED Colour	Purpose	Meaning
RLY1	Red	RLY1 Operation / Programing	Turns on when the relay is operated.
RLY2	Red	RLY2 Operation / Programing	Turns on when the relay is operated.
RF	Green	Packet Receive / Transmit / Power	Indicates power on the module and receive/transmit data packets.
PGM	Red	Programing Mode	Blinks each time the system is polled by the control panel.

Table 3: RF160 Device LED's

Devices > RF Devices

RF Site Key

**I** MENU 6-2-9

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The RF Site Key is used to lock Smart RF devices to a specific site or panel. Once a device is registered to a site, it is locked to the RF Site ID and cannot be learned or operated on any other site.

To re-learn an RF160 module onto a different site with a different RF Site ID, you must first default the module using the default procedure. To default a battery powered Smart RF device, you need to remove the battery from the device.

The factory default RF Site Key is the serial number of the control panel. The key is 8 characters long and includes all preceeding zeros. e.g. 00123456.

When upgrading older panel firmware, the RF Site ID is not changed, and will need to be programmed if required. You should always set the RF Site ID before learning any Smart RF devices, and we recommend using the panel serial number as the key.



*The RF Site Key is similar to the password used in a Wi-Fi network. If you changed the password after you have enrolled all your Wi-Fi devices, they will stop working and will need to be re-enrolled.*

*Smart RF devices operate on a similar principle and therefore you should check and set the RF Site ID before enrolling devices to avoid his situation.*

**Connection Diagram**

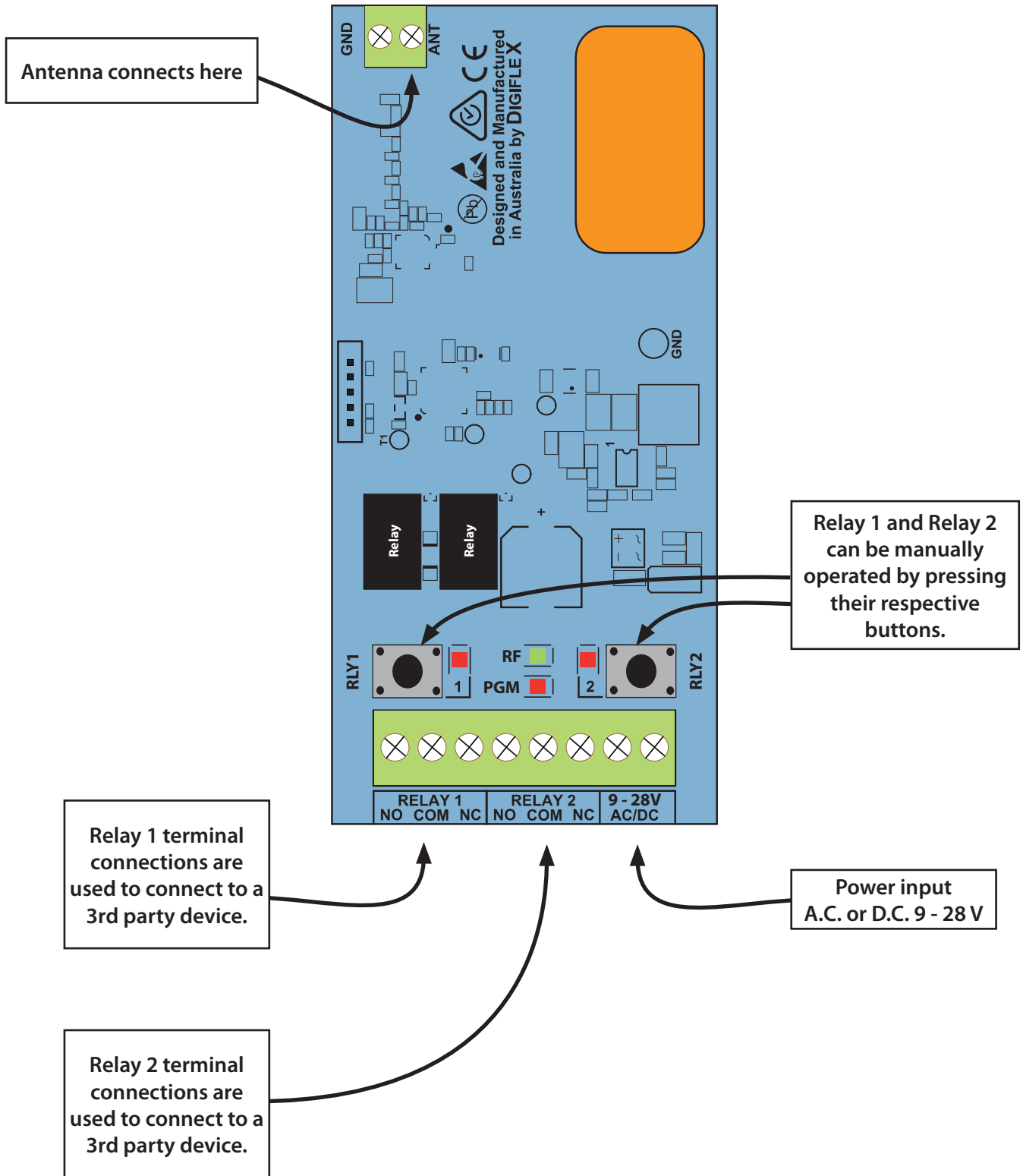
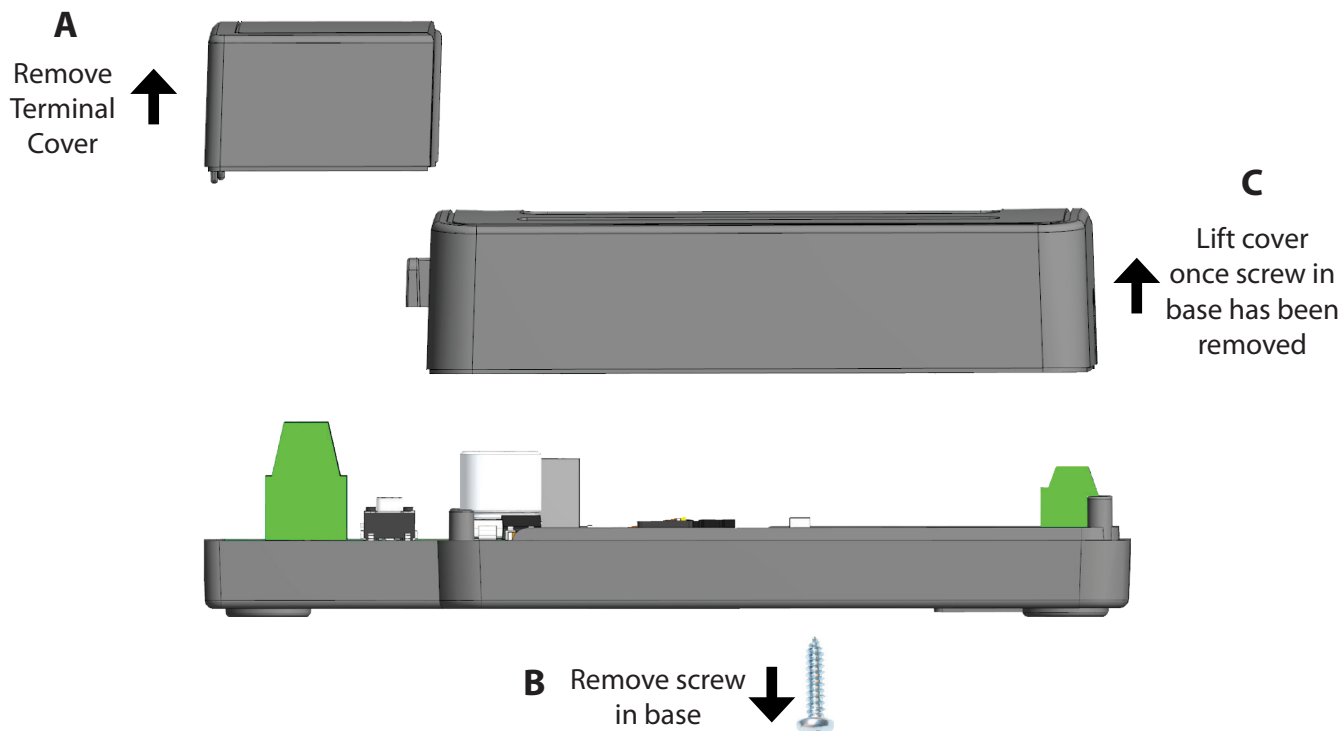


Figure 2: RF160 Connection Diagram



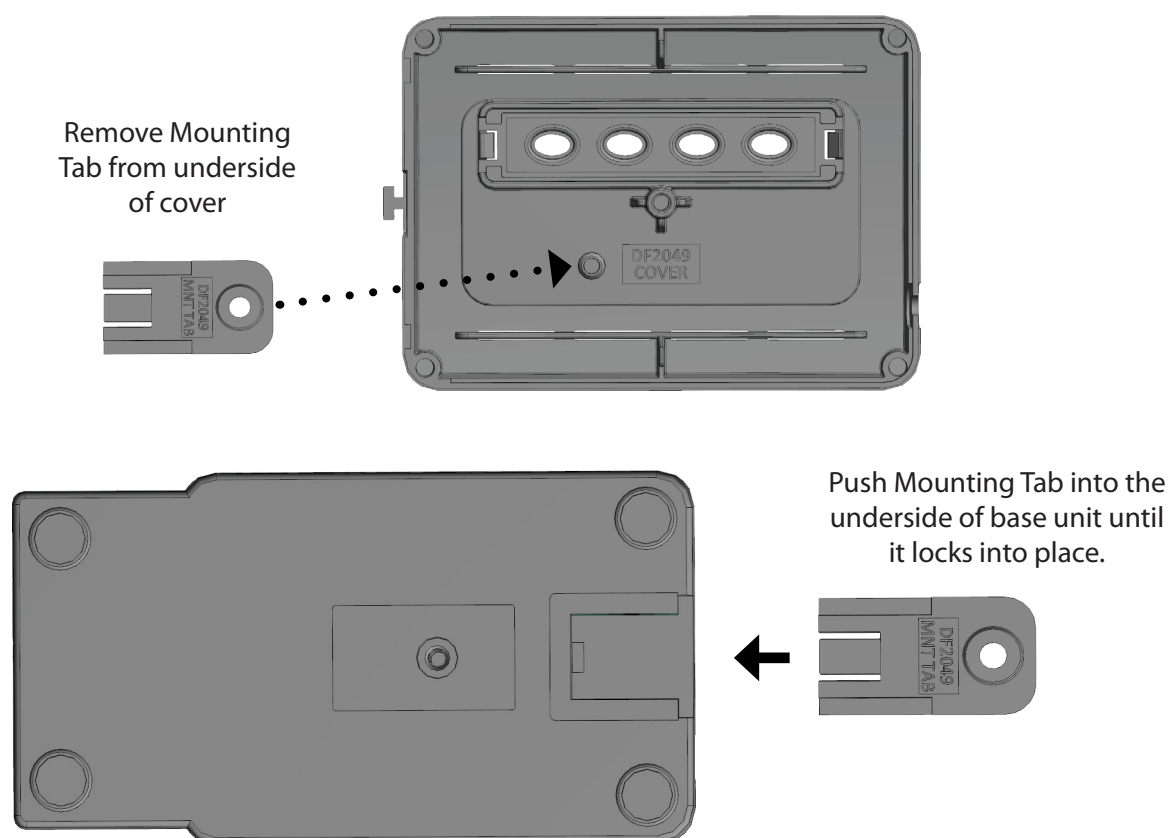
## **RF160 Housing**

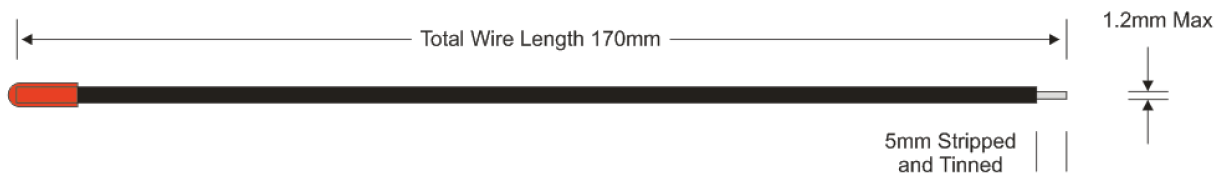
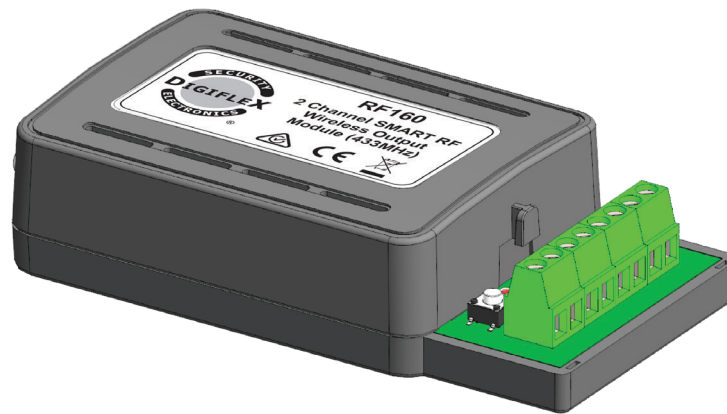
The RF160 is housed in 3 piece plastic enclosure comprising a base plate , top cover and a terminal cover. The top cover is fixed to the base using a Phillips head screw. The top cover needs to be removed to install the wire antenna. The terminal cover is a press fit allowing easy removal. Once the wiring and programming has been completed the cover should be reinstalled to help prevent the ingress of insects and other debris.



## **Wall Mounting**

A wall mounting tab is located on the inside of the top cover should you wish to locate the unit on a wall or other structure. Once removed from the cover the tab slides and locks into the base plate as shown below.





## RF160 Specifications

**Part Number:** RF160 - 2 Channel SMART RF Wireless Output Module - 433MHz

**Operating Voltage:** 9-28V A.C. / D.C. (70mA @ 12V D.C.)

**Frequency:** 433.42 MHz

**Compatibility:** Vision-X, Solution 6000 (V2.53.18 or higher)

**Dimensions:** 114mm (W) 128mm (W with Mounting Tab), 62mm(D), 28mm(H)

**Environment:** 0° to 49°C Indoors

**Fixing Method:** Using mounting screws fix unit on a vertical surface in portrait orientation.

**Relay Outputs:** Contact Rating 1A @30V D.C.

**Warranty:** 3 years from date of manufacture (return to base).



In the interest of ongoing product development this document is subject to change without notice.



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