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DE - Hiermit erkläre RF Solutions Limited, dass der Funkanlagentyp in diesem Dokument definiert der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: www.rfsolutions.co.uk

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EN - Hereby, RF Solutions Limited declares that the radio equipment type defined within this document is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.rfsolutions.co.uk

ES - Por la presente, RF Solutions Limited declara que el tipo de equipo radioeléctrico definido dentro de este documento es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: www.rfsolutions.co.uk

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SV - Härmed försäkrar RF Solutions Limited att denna typ av radioutrustning definieras i detta dokument överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: www.rfsolutions.co.uk

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DO NOT Discard with normal waste, please recycle.
ROHS Directive 2011/65/EU and amendment 2015/863/EU
Specifies certain limits for hazardous substances.
WEEE Directive 2012/19/EU
Waste electrical & electronic equipment. This product must be disposed of through a licensed WEEE collection point. RF Solutions Ltd., fulfils its WEEE obligations by membership of an approved compliance scheme. Environment agency number: **WEE/JB0104WV.**



Waste Batteries and Accumulators Directive 2006/66/EC
Where batteries are fitted, before recycling the product, the batteries must be removed and disposed of at a licensed collection point. RF Solutions battery producer number: **BPRN00060.**

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Quick Start Guide

Operation

Press any of the switches to operate.

The Transmitter will auto sleep between operations to save power.

RF Transmit **GREEN** LED operates when Scorpion is transmitting an RF signal.

RF Acknowledge (if configured):

GREEN LED will Flash at high speed to indicate that an acknowledgment **has** successfully been received back from the receiver.

RED LED will Flash at high speed to indicate that an acknowledgment **has not** been received back from the receiver.

Low Battery: If battery requires recharging Low Battery LED illuminates for 3 seconds after each operation.

Recharging the Battery

Remove the Green Overboot and place the transmitter onto a charging pad
SCORPION is compatible with any Qi wireless charger.

When Charging the Battery **RED LED** gives a slow Flash indicates charging is in progress.

When fully charged the **GREEN LED** is illuminated

Note: If the Battery becomes very depleted it can take a few minutes before there is adequate charge to start the RED LED to flash!



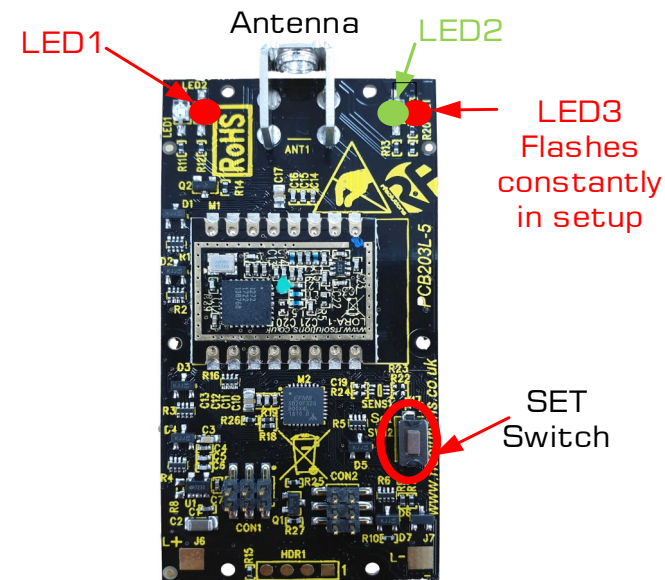


Configuring Modes of Operation

To configure the modes of operation, undo the six enclosure fixing screws to access the internal circuit board.

The SET switch is used to configure the operating modes.

Note: Please also see the Video on our website!



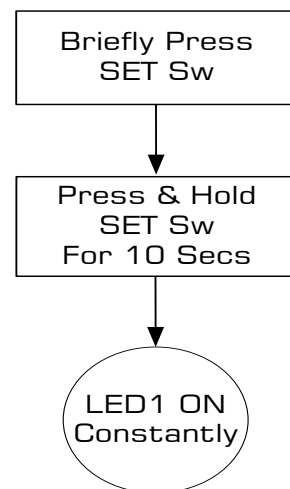
The Following Modes can be configured using the SET Switch

1. **RF Mode** of Transmission (FM or LORA Mode)
2. **Acknowledgment** back from the Receiver
3. Automatic **Watchdog** Transmissions
4. **Continuous** or **State Change** Transmission

SCORPION Transmitters are factory Shipped with the following Settings

RF Transmission	FM
Acknowledgment	OFF
Watchdog	OFF
Transmission Type	Continuous

Restore SCORPION to Factory Default Settings



LED Status

Continuous Transmission		
Operation	GREEN LED	RED LED
Button is briefly pressed	Flashes briefly	No-operation
Button is held Down	Flashes constantly	No-operation
Button is released	Flashes briefly	No-operation



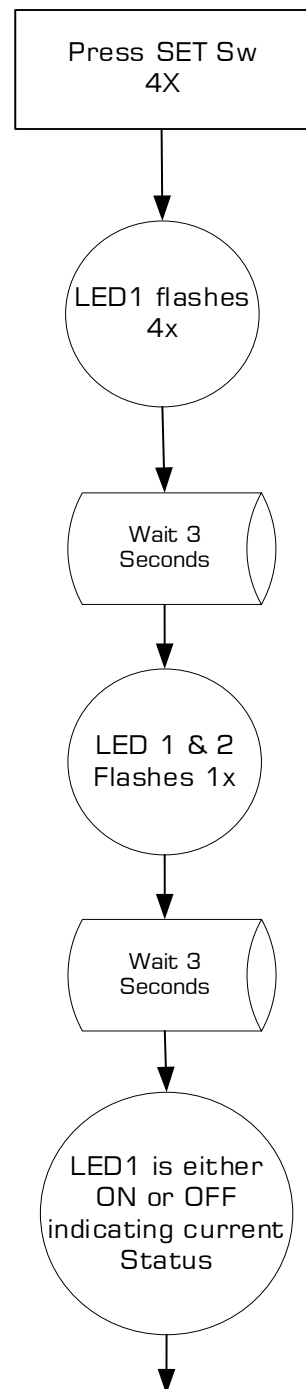
Continuous Transmission Acknowledgement ON		
Operation	GREEN LED	RED LED
Button is briefly pressed	Flashes briefly (TX then RX ack)	Flashes if no Ack received
Button is held Down	Flashes continually (TX then RX ack)	Flashes if no Ack received
Button is released	Flashes briefly (TX then RX ack)	Flashes if no Ack received

State Change Transmission Acknowledgement OFF		
Operation	GREEN LED	RED LED
Button is briefly pressed	Flashes 1X (TX)	No-operation
Button is held Down	No-operation	No-operation
Button is released	Flashes 1X (TX)	No-operation

State Change Transmission Acknowledgement ON		
Operation	GREEN LED	RED LED
Button is briefly pressed & Receiver, ack OK	Flashes (TX then RX ack)	No-operation
Button is briefly pressed & Receiver, NOK	Flashes continually (awaiting Ack)	Flashes to show no Ack received
Button is held Down	Flashes continually (awaiting Ack)	Flashes to show no Ack received
Button is released	Flashes 2 - 5X (TX and RX ack)	Flashes if no Ack received



To Set Continuous or State Change RF Transmissions



When a switch button is operated SCORPION will transmit a "Button Down" RF Transmission.
 When a switch button is released SCORPION will transmit a "Button Up" RF Transmission.

Continuous Transmit

SCORPION repeat transmits "button Down" in short bursts for as long as switch button is pressed.
 If the Acknowledgment is ON the receiver will reply after each RF transmission burst.
 This is ideally suited to momentary operation where the receiver output needs to be active as long as the user presses down a SCORPION Button.

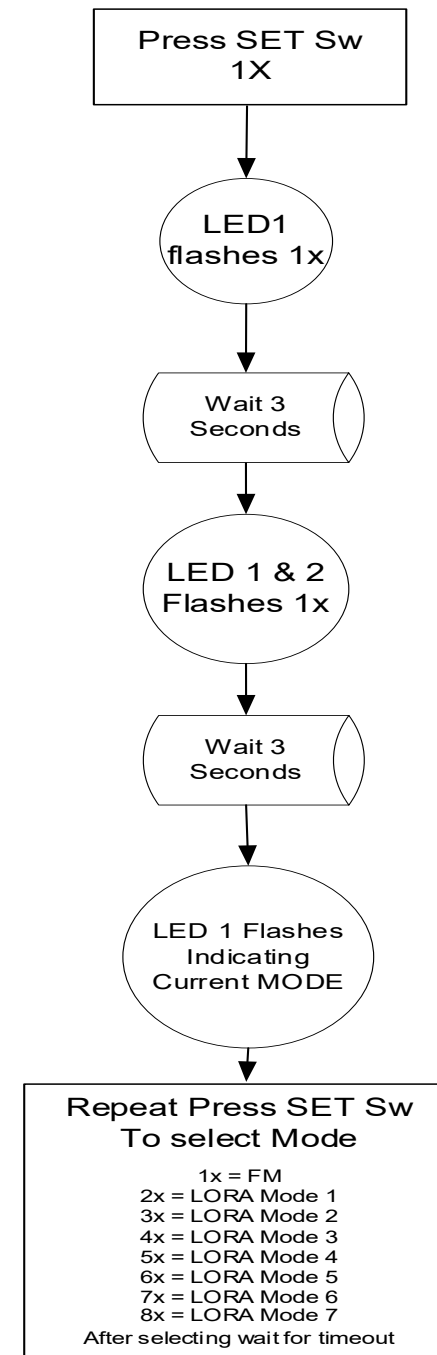
State Change Transmit

SCORPION transmits an RF transmission only when the switch button is pressed or released (i.e. a state change).
 On each of these "state changes" SCORPION transmits up to 4 transmissions, or, "RF packets" (which can be seen by the GREEN LED flashing up to 4 times,
 If the Acknowledgment is ON the receiver will reply immediately.
 After receiving an Acknowledgment the SCORPION will cease sending any remaining of the 4 transmissions.

Repeat Press SET Sw To select
 LED1 OFF: State
 LED1 ON: Continuous
 After selecting wait for timeout



To Set the RF Transmission MODE



This sets the type of RF Transmission.
 Possible options are FM, or LORA Modes 0 - 7
 FM or LORA mode 0 provides the quickest response; from Transmitter switch (Sw) pressed to Receiver Relay output.
 LORA mode 7 provides the longest operating range but with the longest time delay of from button press to receiver relay actuation.

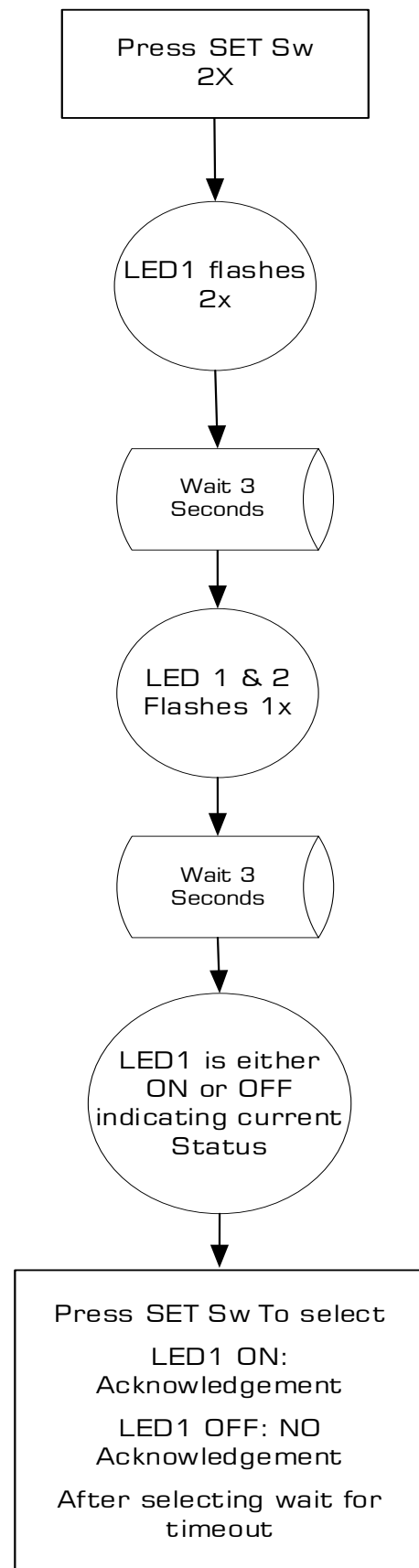
Notes

1. Range is dependant on many factors including the mode of transmission. Range can be reduced by 75% in built up areas with poor antenna, and environmental conditions.
2. Battery life quoted is approximate based on 30 operations per day.

RF Transmission	Mode (No of LED1 Flashes)	Propagation Time from TX to output Activated (approx)	Operations from a Single battery charge
FM	1	20 mS	1Million
LoRa Mode 1	2	20 mS	~550K
LoRa Mode 2	3	40 mS	288K
LoRa Mode 3	4	80 mS	144K
LoRa Mode 4	5	160 mS	72K
LoRa Mode 5	6	320 mS	36K
LoRa Mode 6	7	640 mS	18K
LoRa Mode 7	8	1.28 Secs	~9,000



To Set Acknowledgement Request



Acknowledgement Feature provides the user with LED indication that the receiver has successfully received the transmitters signal.

When activated the SCORPION Transmitter includes an acknowledgement request from the receiver within each radio transmission.

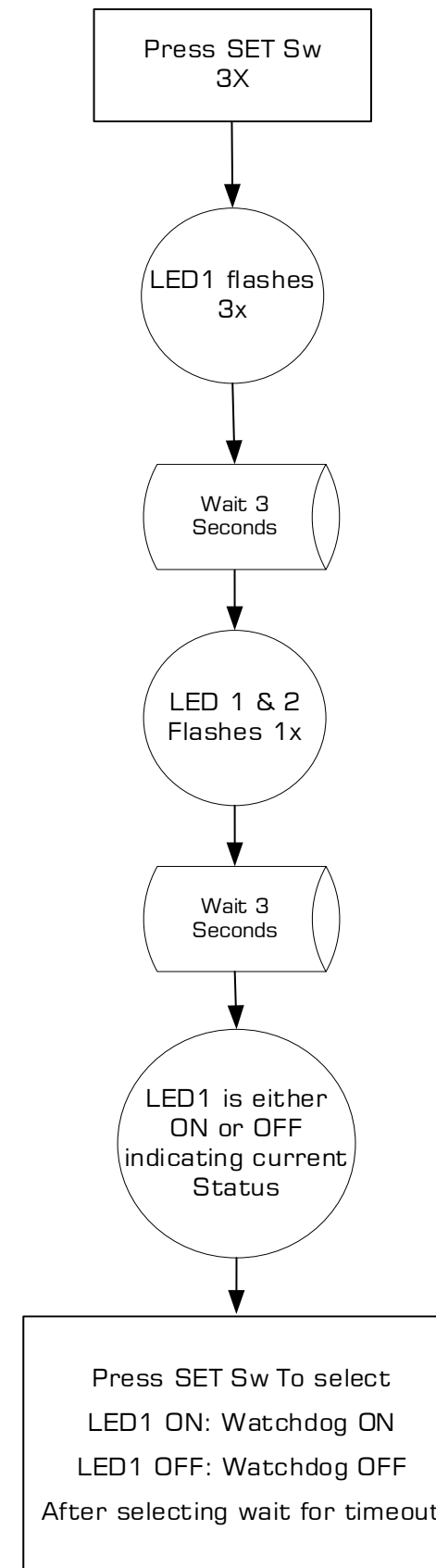
The response from the receiver is indicated on the transmitter via the RED / GREEN LEDs.

RF Acknowledgment from Receiver - Warning!

When Acknowledgement is ON, SCORPION transmitter requests an RF signal back from the receiver. Whilst in theory if an RF signal can be transmitted one way then it can be returned, in practice occasionally the received acknowledgement many not penetrate as well as the SCORPION transmitted signal.



To Set Watchdog Transmissions



If enabled, SCORPION automatically transmits a background "watchdog" RF Signal approx. every ~45 secs.

RF Solutions Receivers with a Watchdog feature will hold a Relay contact "ENERGISED" as long as Watchdog is regularly received confirming the transmitter is in range and the system is operating correctly.

When using Watchdog it may be useful to incorporate a Power Switch to avoid premature battery discharge.

A power switch can be incorporated if this is required please contact our Sales Dept.