



3Km Range LoRa Remote Control

Features

- Systems supplied 'ready to Go'
- FSK/ FHSS LoRa Spread Spectrum
- FSK upto 500m Range
- FHSS LoRa upto 3Km (2 miles) Range
- LoRa Mode 1 to 4
- Map any Tx Switch to Any RX O/P
- CE Compliant (EU) & FCC Certified (USA)

Transmitter

- Waterproof to IP67
- Powered from 3 x AAA Batteries
- LED Acknowledgment Back from Rx
- Continuous / State change Transmit

Receiver

- 6-32Vac/dc Supply
- 4 x Relay Changeover Contacts Rated
- 4A @ 230Vac
- Outputs Momentary or Latching
- Optional Rx Acknowledge back to Transmitter
- Waterproof to IP68
- 2 x Cable Gland Entry 7-10mm



Intended Use

- Clay Pigeon Releases
- Industrial Lighting
- Gates / Roller Shutter Doors

Description:

RADIOTRAP system is designed for continuous operation 365 days of the year. Each receiver has four independent changeover relay outputs which can easily be paired with individual switches from one or many transmitters. Building a bespoke control system is easy with any of the transmitters.

RADIOTRAP LoRa Remote Control



Part Numbers



Part Number	Description
RADIOTRAP-4S1	1 Channel System (Tx and Rx)
RADIOTRAP-4S4	4 Channel System (Tx and Rx)
RADIOTRAP-4R4	4 Channel Receiver only

Additional Transmitters



Part Number	Description
RADIOTRAP-4T1	1 Switch
RADIOTRAP-4T2	2 Switch
RADIOTRAP-4T3	3 Switch 1, 2, 3
RADIOTRAP-4T4	4 Switch
RADIOTRAP-4T16	8 + Shift Key / 16 Function

RADIOTRAP LoRa Remote Control



Part Numbers for Clay Release Systems



Part Number	Description
RADIOTRAP-4S1	1 channel System
RADIOTRAP-4S1PRM	1ch System Prewired for Promatic (Hirschman)
RADIOTRAP-4S1LAP	1ch System Prewired for Laporte



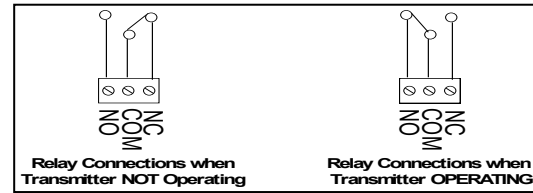
Part Number	Description
RADIOTRAP-4S3SPORT	Sporting System (TX & 2 x RX's)
RADIOTRAP-4S3SPORTPRM	Sporting System (TX & 2 x RX's) Promatic

RADIOTRAP LoRa Remote Control



Relay Outputs:

The receiver provides 4 changeover relay contacts each capable of switching up to 1KW (5A @ 230V). Each relay is independent controlled and isolated.



Technical specifications

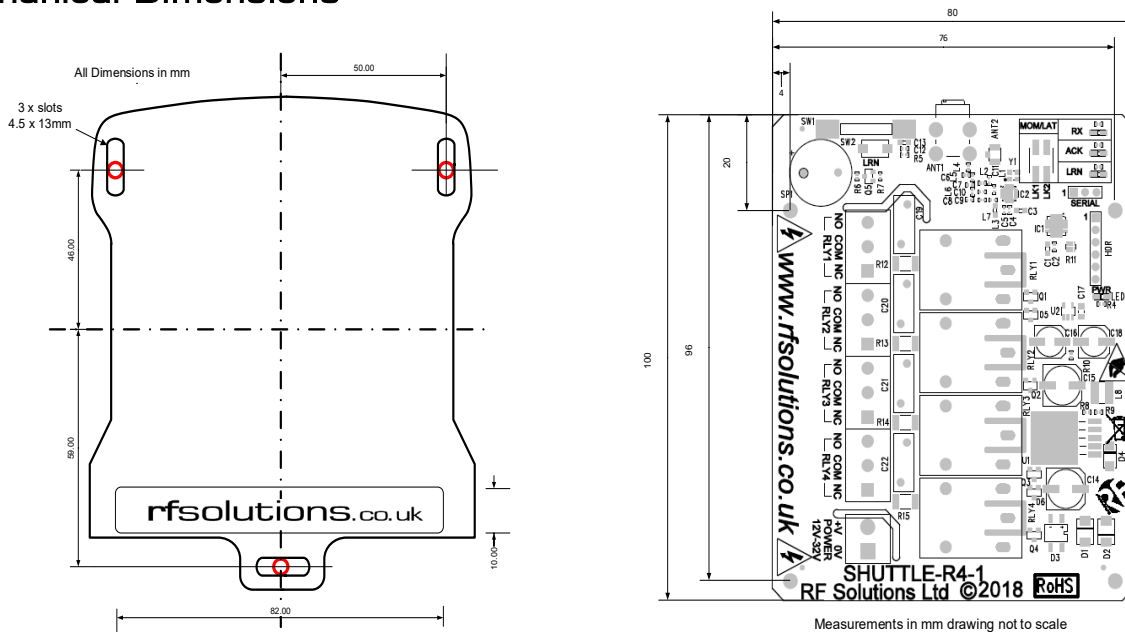
Transmitter	Enclosure Rating:	IP67
	Battery Type:	3 x AAA (supplied)
	Battery Life:	2 years @ approx. 50 1/2second presses p/day
	Dimensions:	90 x 54 x 27 mm

Electrical Characteristics	Min	Typical	Max	Units
Supply Voltage		4.5		V
Supply Current		17		mA
Frequency:		433.92		MHz
RF Output Power (ERP)	-		+10	dBm

Receiver	Enclosure Rating:	IP68
	Dimensions:	130 x 112 x 42 mm (not including antenna)
	Operating Temp	-10 to +50° Celsius

Electrical Characteristics	Min	Typical	Max	Units
Supply Voltage for Low Voltage version	6		32	Vdc or ac
Relay Rating		5	12	A
Supply Current : Quiescent All (4) relays operating*		25 140		mA
Time delay from Tx on Switch to Rx Relay operation		22		mS
Time delay from Tx sw relax to Rx Relay release		25		mS

Mechanical Dimensions



RADIOTRAP LoRa Remote Control



RADIOTRAP Transmitter and Receiver are Tested to IP68:

IP = Ingress Protection

6 = Protection against dust

8 = Protection against water.

To achieve this rating, both Transmitter and Receiver enclosures have;

- Neoprene Gaskets fitted
- All Screws have neoprene O rings
- The Transmitter membrane employs a high adhesive permanent 3M gasket

Test Process

1. The unit under test was filled with French Chalk
2. Then attach the unit to a brick
3. Then dropped into a tank of water 1metre depth



4. After the designated time, the Unit was removed and checked for water within the ingress.
5. The IP68 test requires the unit remain dry after 30mins,
6. In our test the unit remained dry after 24 hours within the water tank

Conclusion

Whilst we continually strive to make our products weather hardy, other than resin potting, there is no such thing as Water"Proof", particularly where there is a removable battery cover.

Please Note:

Water ingress is not covered under RF Solutions warranty.

The above is merely a test to show a degree of robustness' It is not invincible! and we advise protecting your asset from exposure to harsh environments where possible.

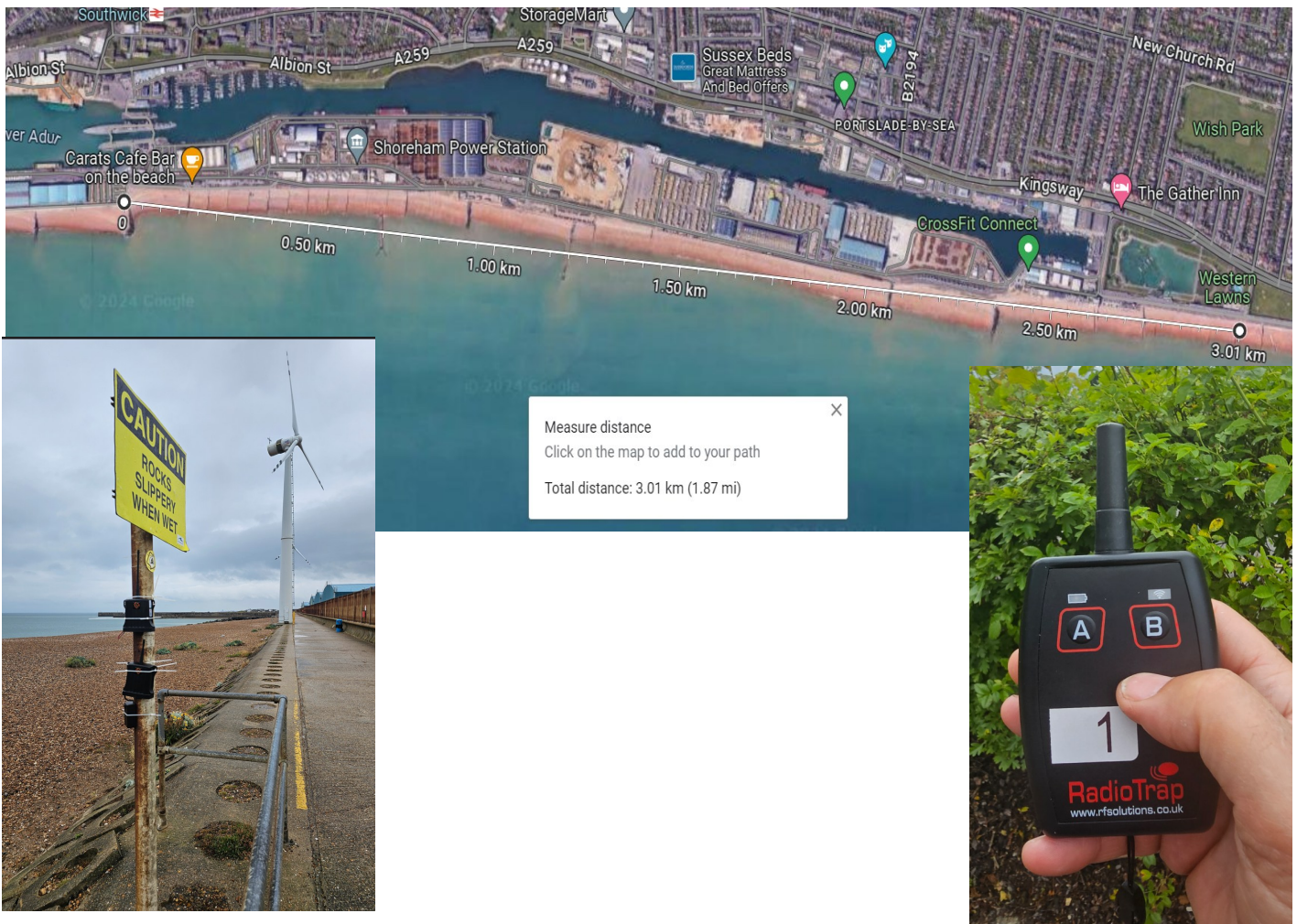
Range Test Notes

Our Range Testing was conducted on the seafront of Brighton, East Sussex. providing an open Line of Sight. (ideal conditions)

1. The System was set to LoRa Mode 4 with "Acknowledgment Activated"
2. The Receiver was attached to a Pole ~1.7metres from the Ground (see photo).
3. Weather Conditions Warm, wet, Drizzle, 18°C (typical England!)
4. The transmitter was carried along the seafront whilst repeatedly operated.
5. After the "Transmit Signal" was activated the "Acknowledgment Signal" back from the Receiver was monitored to confirm a successful two way signal.
6. The system exhibited signal failures along the test in particular when not in line of sight
7. Just over 3KM range was achieved, the system was becoming reliant on holding the transmitter above head height and vertically upwards

Note Thus is a "Line of Sight" Test, Obstacles such as buildings will reduce the signal and the operating range, The range can be significantly reduced depending on the materials that reduce / attenuate the RF signal. Metal blocks RF! Glass, metal backed insulation, are significant attenuators along with earth banks.

Whilst a lower carrier frequency has a lower field path loss, the 433MHz transmitters are power limited by ~50% of the 868/918 products and therefore will not provide the same operating range.



RADIOTRAP LoRa Remote Control



RF EXPOSURE STATEMENT

This equipment complies with the FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

SUPPLIER'S DECLARATION OF CONFORMITY

This Declaration of Conformity is hereby issued according to Chapter 1, Subpart A, Part 2 of Title 47 of the code of Federal Regulations by:

RF Solutions Limited
William Alexander House
William Way
Burgess Hill
West Sussex
RH15 9AG
United Kingdom
Contains FCC ID: RADIOTRAP-4T16
Complies with FCC Part 15.247



Trade Name	Model
RF Solutions RADIOTRAP	RADIOTRAP-4T1 RADIOTRAP-4T2 RADIOTRAP-4T3 RADIOTRAP-4T4 RADIOTRAP-4T8 RADIOTRAP-4T16

RADIOTRAP LoRa Remote Control



Product Revision Change History			
Part	ECN / Date	New Revision	Change / Fix
RADIOTRAP-4S1	397 8/7/24	3	Update to Impedance matching network to improve the operating range
RADIOTRAP-4S3		3	
RADIOTRAP-4S4		3	
RADIOTRAP-4R4		3	

Product Revision Change History RADIOTRAP Transmitters			
Part	ECN / Date	New Revision	Change / Fix
RADIOTRAP Transmitters	N/A Jun 2022	2	Initial Product Launch
RADIOTRAP Transmitters	406 15/7/25	3	Update to Impedance matching network

RF Solutions Ltd. Recycling Notice

Meets the following EC Directives:

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 Producer Registration 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

Disclaimer:

Whilst the information in this document is believed to be correct at the time of issue, RF Solutions Ltd does not accept any liability whatsoever for its accuracy, adequacy or completeness. No express or implied warranty or representation is given relating to the information contained in this document. RF Solutions Ltd reserves the right to make changes and improvements to the product(s) described herein without notice. Buyers and other users should determine for themselves the suitability of any such information or products for their own particular requirements or specification(s). RF Solutions Ltd shall not be liable for any loss or damage caused as a result of user's own determination of how to deploy or use RF Solutions Ltd's products. Use of RF Solutions Ltd products or components in life support and/or safety applications is not authorised except with express written approval. No licences are created, implicitly or otherwise, under any of RF Solutions Ltd's intellectual property rights. Liability for loss or damage resulting or caused by reliance on the information contained herein or from the use of the product (including liability resulting from negligence or where RF Solutions Ltd was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict RF Solutions Ltd's liability for death or personal injury resulting from its negligence.

RF Solutions Ltd

William Alexander House, William Way, Burgess Hill, West Sussex, RH15 9AG

Sales: +44 (0)1444 227900 | Support: +44 (0)1444 227909

www.rfsolutions.co.uk