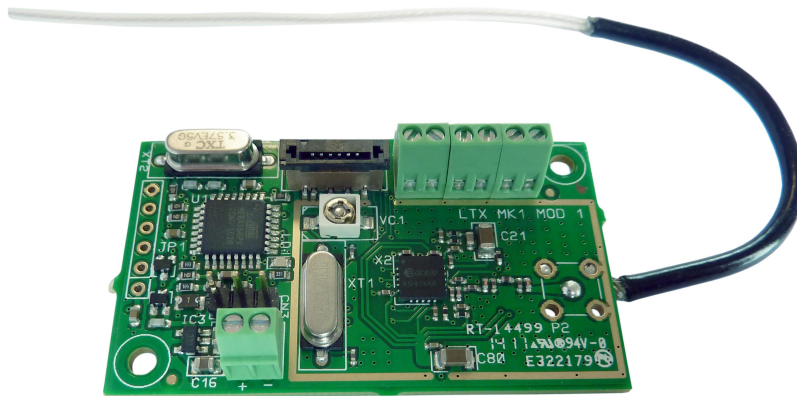


Scope Communications UK Ltd



LTX1 Transmitter

User Manual



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LTX1 Transmitter User Manual

PREFACE

Important Installation Information

It is the purchasers' responsibility to determine the suitability of this equipment and its derivatives for any given application, Scope cannot give specific advice in this manual, as each use will require independent evaluation.

Scope has, wherever possible, employed extra safeguards to monitor the system's performance. Certain system installations, operational requirements or budgets may, however, limit the effectiveness of these safeguards. Again, the suitability of the system for any given application must therefore be decided by the installer and their customer, relative to the application and risk.

Good working practice dictates that a suitable system installation log must be generated, together with a record of the dates when the system has been manually checked, (with the aid of signal strength meters etc.) enabling the system performance to be compared with the original installation data. For UK equipment, Scope has no control of the use and application of the frequencies issued by OFCOM. Some equipment that is licensed may have greater protection than other equipment which is operated on a WT Act License Exempt basis. The supply of this equipment is governed by our standard terms and conditions of sale, which can be found on the reverse of all order acknowledgements*, proforma invoices*, delivery notes, price lists and invoices. Alternatively, these can be provided on request.

* Faxed proforma invoices and quotations refer to "conditions available upon request".

Licence

For the UK, this equipment is intended for use on the 433 and 458 MHz Short Range Device licence exempt radio frequencies and programming has been restricted to these ranges.

For use in the USA, this equipment will require a licence. Consult your dealer for further advice. For further technical rules governing the use of this equipment you should obtain the FCC Rules and Regulations, Title 47 Part 80 to end, including parts 90 and 95 available from the US Gov Printing Office, GPO Book store, FCC Office or www.fcc.gov/oet/info/rules/ .

The FCC ID for this equipment is: **JRNUSAWAVETRACK**

Important Safety Information

Scope products are designed to operate safely when installed and used according to general safety practices. The following requirements should be observed at all times.

Do NOT subject this equipment to:

Mechanical shock

Excessive humidity

Extremes of temperature

Corrosive liquids

This equipment is designed primarily for indoor use in a temperature controlled environment. It must not be used in classified Hazardous Areas, including areas containing explosive or flammable vapours. If in doubt, consult your local product dealer for further information.

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PREFACE

Equipment Applications

It is the user's responsibility to determine the suitability of the Scope products for any given application. Scope, including its subsidiaries and Distributors, cannot provide specific advice within this manual, as each application will require independent evaluation. Common sense dictates that certain applications may require back up systems to cover in the event of mains or equipment failure.

All applications should be thoroughly assessed by the installer in conjunction with the customer so as to minimize risk.

Scope has no control of the use and application of the frequencies issued by the FCC or OFCOM. Some equipment that is individually licensed may have a greater degree of protection than other equipment that is operated on a FCC License Assignment basis. The following information, however, may be of benefit.

Equipment Testing

Range tests should be carried out at least once a week on portable radio equipment, more often when critical criteria apply. This should involve testing the unit past the limit of its required working range.

Good working practice dictates that a suitable system installation log, covering both portable and fixed equipment must be generated, together with a record of the dates when the system has been manually checked and/or serviced, (with the aid of suitable test equipment etc.) enabling the system performance to be compared with the original installation data.

The frequency of the tests required will vary between applications. If portable equipment has been dropped or is worn by a person involved in an accident, the unit should be tested again before re-use.

It must be stressed that the physical range tests are essential and that any construction work or movement of plant or equipment could alter the signalling capability of the unit. Radio equipment, like any other requires servicing from time to time to ensure that it is operating to its optimum performance. It is therefore essential that equipment is inspected and tested by authorized service centres at least once a year.

Literature

Scope Communications UK Ltd, the manufacturer, in conjunction with its distributors operates a policy of continual improvement, and therefore reserve the right to modify or change any specifications without prior notice.

While every possible care has been taken in the preparation of this manual, Scope does not accept any liability for technical or typographical errors or omissions contained herein, nor for incidental or consequential damage arising from the use of this material.

Liability

Scope does not accept liability for any damage or injury, howsoever caused as the result of misuse of this equipment. It is the responsibility of the user to ensure that the equipment is operated in the manner for which it was intended and that it is the correct item of equipment for the required task.

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Warranty

This product is warranted as free from defects of workmanship and materials for a period of one year from the original purchase date. During this time, if there is a defect or malfunction of this product, Scope will, with proof of purchase, repair or replace at its discretion any defective parts, free of charge. This does not include where the adjustments, parts and repair are necessary due to circumstances beyond the control of Scope, including but not limited to fire or other casualty, accident, neglect, abuse, abnormal use or battery leakage damage.

There are no other expressed or implied warranties except as stated herein, and those excluded include those of merchantability and fitness for a particular purpose. In no event will Scope or any of its agents be liable for direct, indirect, special incidental or consequential damages resulting from any defect in the product, even if advised of the possibility of such damages.

The warranties and remedies set forth above are exclusive and in lieu of all others, oral or written, expressed or implied. No Scope distributor, dealer, agent or employee is authorized to make any modification, extension or addition to this warranty. Some states do not allow limitations on how long an implied warranty may last and some states do not allow exclusions or limitation of incidental or consequential damages.

WARNING! SAFETY

**If this product is supplied with an alkaline battery as the power source,
only replace the battery with the correct type and do not attempt to recharge.**

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

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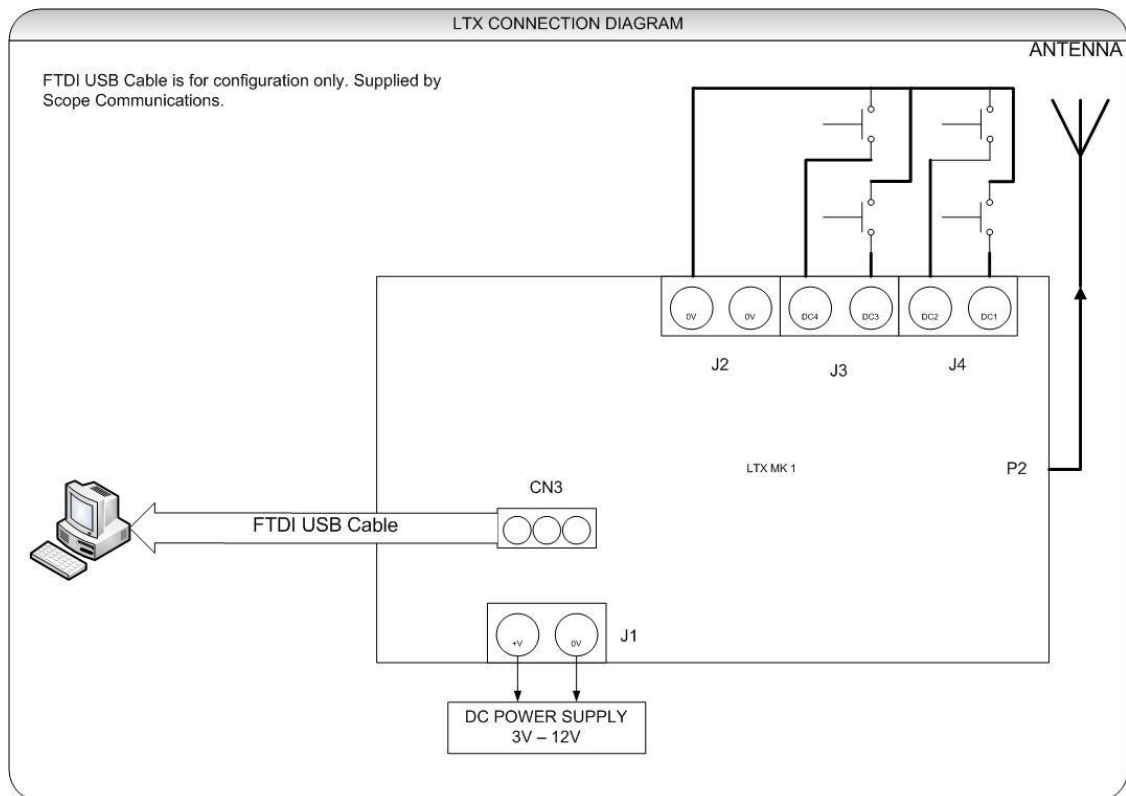


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Introduction

The LTX transmitter is a simple low power (10 mW) short range device transmitter module. It is triggered by 4 volt-free (dry) contacts which send pre-programmed messages to radio pagers and/or fixed receivers.

Configuration



Features

Frequency programmable: 430-470 MHz (USA), 433-466 MHz (Europe).

Power output: 0-10 dBm

4 dry (volt-free) trigger contacts, programmable as Normally Open, Normally Closed or Toggle operation.

Multiple repeat option (programmable) with variable repeat timer.

Test call option (programmable).

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Programmable "Repeat Until Cancel" option available on contacts 1 - 3. Repeat time interval is programmable. Reset function on contact 4 (cancels all repeats).

Configurable trigger messages, 21 characters max per contact.

Configurable Reset message, 21 characters max.

Configurable Low Battery message, 21 characters max.

Configurable Battery Shutdown message, 21 characters max .

Programming via Scope programming cable and PC based application software.

The unit is powered from an external DC source of between 3V and 12V.

Programming Interface

TTL UART compliant interface. Scope TTL/USB Interface cable is required for the LTX unit. Use of other interface modules are not guaranteed to work, may damage the LTX unit and will void all warranties.

Note: Care must be taken when interfaced via the TTL connections. Communications levels MUST NOT exceed 3.3V or damage may occur to the device. Scope will not accept liability if damage occurs from use of a non approved Scope interface.

Non Voltage Contacts

Configurable Message for each Contact (Up to 21 Chars).

Can be configured as Normally Open, Normally Closed or Toggle ⁽¹⁾.

Repeat Enabled (Up to 4 for each event).

Repeat Time can be configured (5 - 255 secs in 5 second steps)

Test Call Repeat Message (Up to 18 Hrs)

Reset Message (Up to 21 chars).

Low Power Message (Up to 21 chars) ⁽²⁾

Power Shutdown Message (Up to 21 chars) ⁽³⁾

Contact Response Time = 30mS Min, 50mS Max (Contacts cannot be used as a fast pulse detector).

(1) Normally Open is recommended for Low Power Long life Applications . On toggle mode no repeats are transmitted.

(2) When a low power event is detected, the Transmitter output power is automatically reduced in order to maintain maximise battery life

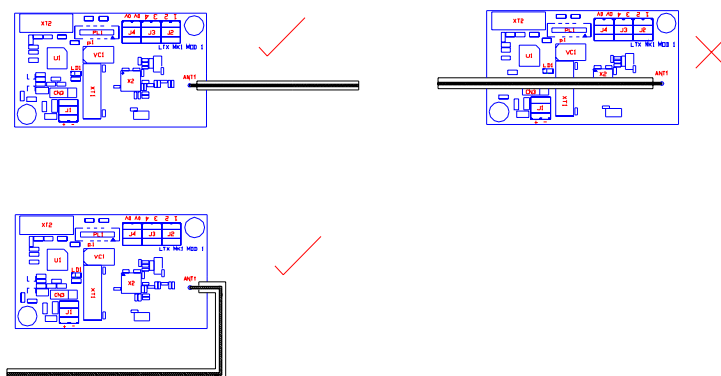
(3) When the power can no longer support the Transmitter, a power shutdown message is transmitted.

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Installation

The LTX board and wire antenna must be mounted in a non-metallic, non-conductive enclosure. Note that some plastic enclosures have a metallic coating applied to the inside for screening purposes, these would be totally unsuitable and would result in severe attenuation or complete loss of signal strength.

See diagram below for positioning of the wire antenna. Care should be taken to avoid strain on the soldered termination and other cables should be kept clear of the antenna. Do NOT attempt to shorten, alter or replace the antenna. This may severely affect performance and will void all warranties and Type Approvals.



Similarly, if using a metal-cased battery such as a PP3 style cell, avoid positioning the battery next to the antenna.

The input trigger cables should be kept as short as possible (< 1mtr) and should not be grouped with any other cabling (especially power, telecom and any data cabling). Ensure that these are volt-free ("dry") contacts only. Applying voltage to these inputs will irreparably damage the LTX unit.

Environment: note that where the transmitter is to be used in a non-temperature controlled environment (e.g. an unheated outbuilding or outside), the enclosure will need to be suitably protected from dust & moisture ingress (at least IP67 rated) and adequately protected to prevent internal condensation, which will otherwise damage the LTX board beyond repair. The operating temperature range of the LTX (see **Specification** section below) must also be observed.

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Some major points to consider when installing equipment:

- 1 Never install transmitters near or adjacent to telephone, public address or data communication lines or overhead power cables.
- 2 Avoid, wherever possible, running the antenna alongside other cables (see LTX mounting diagram) .
- 3 Avoid mounting the transmitter in the immediate vicinity of telephone exchanges or computer equipment.
- 4 Also remember that the performance of the system will be effected by the type of material the unit is mounted on and its surroundings.

The following is a list of materials that this transmitter will be adversely affected by if mounted on or if mounted in close proximity to:

- a) Foil back plasterboard
- b) Metal mesh or wire reinforced glass
- c) Metal sheeting, large mirrors or suspended ceilings
- d) Lift shafts

All of the above can reflect radio waves and thereby reduce the capability of the transmitter to perform its desired functions.

- 6 The LTX circuit board may be harmed by Electrostatic Discharge (ESD). Installers should ensure that adequate anti-static procedures are adhered to at all times during fitting and connection.
- 7 ***Warning!*** Never transmit without the aerial attached to the transmitter
- 8 ***Warning!*** Carefully check the **Configuration** section in this manual prior to installation. Damage caused by incorrect connection is the responsibility of the installer!

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Specification

Power Input 3V to 12V DC

Current Consumption

Transmit (@ 10 mW) < 50mA

Sleep Mode < 20uA

Temperature

Operating -20 to +55 Deg C

Storage -40 to +80 Deg C

Transmitter

Freq Range : 430 - 470 MHz (USA)

 433-466 MHz (Europe)

Frequency Accuracy : +/- 1.0KHz (max) over operating temp range.

Power Output : 10mW max.

Channel Spacing : 12.5KHz.

TX Baud Rate : 512/1200

Transmit Protocol : POCSAG

Comms Baud Rate : 19200

Footprint

54mm (L) x 32mm (W) x 12 mm (H) nominal*

* excluding antenna

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European Compliance

R&TTE directive 1999/5/EC

EMC Directive (89/336/EEC) EN 301 489-1 V1.4.1

Low Voltage Directive (73/23/EEC) EN60950 : 2000

ROHS II Directive 2011/65/EU

Radio parameters (Short Range Devices) ETSI EN 300 220-1 V2.1.1 (2006-04)

Copies of the European Declaration of Conformity covering this product can be obtained from Scope.

USA Compliance

CFR 47 Part 90

FCC ID: JRNUSAWAVETRACK

Note: a permanent label must be affixed to the host product's outer case stating:
"This product contains Transmitter Module FCC ID: JRNUSAWAVETRACK"

Scope's policy is one of continuous development and specifications are subject to change without notice.