

FMT15101E, FMT15102E, FMT15104E, FMT15108E (Enclosed version) FMT15108 (No Case version)

1, 2, 4, 8-Channel 151MHz Transmitter

Features

- Long range – up to 5km.
- 100mW Transmitter with current consumption of 85mA
- Not affected by Natural or man-made electrical interference
- Specially programmed micro-controller
- Simultaneous channel transmission is possible; i.e. more than one channel can be activated at a time.

Application

- Pump Control
- Long distance panic button
- On/Off applications in agricultural devices
- Security alarm
- Basic Telemetry eg. Water level indication

Description

The FMT151... has a transmission power of 100mW with a current consumption of only 85mA. It gives a controlled range of up to 5km. The controlled operation can be any electronic or electrical operated device when used with the FMR151... series of receivers

The channels are activated via screw type terminals onto which the user can connect reed switches, toggle switches, push buttons or any form of normally open (NO) contact.

The transmitter uses a frequency of 151MHz and a modulation type of Narrow Band Width FM which makes it suitable for industrial applications where you would have a high level of electrical interference. This transmitter is not affected by man made or electrical interference. This makes FMT151... an ideal choice for use in heavy industrial environment.

Each transmitter button is individually transmitted to the receiver making it possible to do simultaneous channel transmission. This means that up to 8 different functions can be done at the same time. Each button can operate any FMR151... series receivers making it possible to transmit each button to different single channel receivers or to multi channel receivers

The transmitter uses a specially programmed micro-controller which ensures the highest reliability, low standby current consumption (10uA) and greater flexibility. The greater flexibility allows customers to contact Elsema and request custom written software for special functions.

External supply connection and SO239 antenna socket is provided with the transmitter.



Compatible Products








Receivers:

- FMR15101 1-Channel Receiver with Relay Output
- FMR15101240 1-Channel Receiver with 240VAC Supply and with Relay Output
- FMR15102 2-Channel Receiver with Relay Output
- FMR15102240 2-Channel, Receiver with 240VAC Supply and with 2-Relay Outputs
- FMR15104 4-Channel Receiver with 4-Relay Outputs
- FMR15104240 4-Channel, Receiver with 240VAC Supply and with 4-Relay Outputs
- FMR15108 8-Channel Receiver with 8 Open Collector Outputs
- FMR1510812R 8-Channel Receiver with 12VAC or DC Supply and with 8-Relay Outputs
- FMR1510824R 8-Channel Receiver with 24VAC or DC Supply and with 8-Relay Outputs

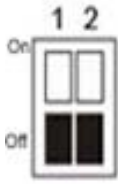
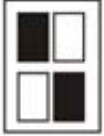
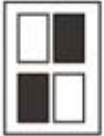

Antenna:

- ANT151M - 1m 151MHz Antenna

Products in the Range

| | | | |
|---|---|--|--|
|  |  |  |  |
| <p>FMT15101E – 1 channel</p> | <p>FMT15102E – 2 channel</p> | <p>FMT15104E – 4 channel</p> | <p>FMT15108E – 8 channel</p> |
|  |  |  | |
| <p>FMT15108 – 1-8 channel (No Case version)</p> | <p>FMT15104H – 4 channel</p> | <p>FMT15108H – 8 channel</p> | |

Transmitter Modes

| | |
|--|---|
|  | <p><i>Off Delay 2 – 62 seconds</i> Transmitter will transmit a 1.5 second transmission burst and then stop for the "off delay" time selected. The "off delay" time is user selectable between 2 to 62 seconds by adjusting trimpot on the transmitter board. If the inputs change during the "off delay" period, the new code will be transmitted immediately. When the "off delay" time lapses, transmitter will transmit another burst. The transmitter will cycle (transmission and off delay) indefinitely, if at least one input is ON and supply is connected.</p> |
|  | <p><i>Off Delay 1 – 10 minutes</i> Same as mode 1 except the "off delay" is user selectable between 1 to 10 minutes.</p> |
|  | <p><i>Continuous Transmission*</i> Transmitter will transmit continuously, if at least one input is activated and supply is connected. A transmission limit of five minutes is used to comply with local radio regulations. To activate a receiver longer than 5 minutes, use a delay off feature in the receiver (FMR15101) and transmitter. The delay off feature in the receiver needs to be set <u>more</u> than the transmitter. This ensures that the transmitter keeps resetting the off delay in the receiver.</p> |
|  | <p><i>1.5 – 10 seconds one burst transmission</i> Transmitter will transmit one burst and then go to standby or sleep mode. Adjusting the trimpot will vary the burst length. When the input is changed and supply is connected, transmitter will transmit one new burst of the new code.</p> |
| <p>Sleep mode (10 uA) is activated when all inputs are OFF; this applies to all four modes</p> | |

(Grey illustrates the position of the DIP switches)

- Refer to the website for further details. <https://www.elsema.com/contitrans.htm>

Coding Instructions

The 12 way dip switch on the transmitter sets the 12 bit unique code for the system. This has to be matched to that on the receiver.

Apart from the 12 way dip switch there will be a additional dip switch depending upon the transmitter type:

- A single channel Transmitter will have a 3 way dip switch
- 2-channel transmitter will have a 2 way dip switch
- 4-channel transmitter will have a 1 way dip switch
- 8-channel transmitter will not have any DIP switch (for channel selection) It only has a 12-way dipswitch for coding. The channels are determined by the 8 inputs.

This dip switch on the right side of the 12 way dip switch denotes the channel. These are denoted as below for the different transmitters.

FMT15101

With 3-way DIP switch and single input

FMT15102

With 2-way DIP switch and 2-inputs

| SW1 3 | SW1 4 | SW15 | Output |
|----------|----------|------|--------|
| OFF | OFF | OFF | CH1 |
| OFF | OFF | ON | CH2 |
| OFF | ON | OFF | CH3 |
| OFF | ON | ON | CH4 |
| ON | OFF | OFF | CH5 |
| ON | OFF | ON | CH6 |
| ON | ON | OFF | CH7 |
| ON | ON | ON | CH8 |

| SW13 | SW14 | Output 1 | Output 2 |
|------|------|----------|----------|
| OFF | OFF | CH1 | CH2 |
| OFF | ON | CH3 | CH4 |
| ON | OFF | CH5 | CH6 |
| ON | ON | CH7 | CH8 |

FMT15104

With 1-way DIP switch and 4-inputs

| SW13 | Output 1 | Output 2 | Output 3 | Output 4 |
|------|----------|----------|----------|----------|
| OFF | CH1 | CH2 | CH3 | CH4 |
| ON | CH5 | CH6 | CH7 | CH8 |

Generally, to use a 2-channel transmitter with a 2-channel receiver match all the 14 DIP switch (12-way+2-way).

To use a 2-channel transmitter to control 2 single channel receivers, match the first 14 DIP switch. The receiver with the 15th DIP switch OFF is Ch1 and the 15th DIP switch ON is Ch2.

To use a 2-channel receiver with 2 single channel transmitters, match the first 14 DIP switches. The transmitter with Sw15 OFF it will activate Ch1 on the receiver and the transmitter with Sw15 ON will activate Ch2 on the receiver.

Operating Frequency

There are 7 selectable frequencies available. This is achieved by setting the 3-way dipswitch. The default setting is for 151.6MHz (All 3 dipswitches "ON"). Following is a table with the Dipswitch settings and the corresponding frequencies.

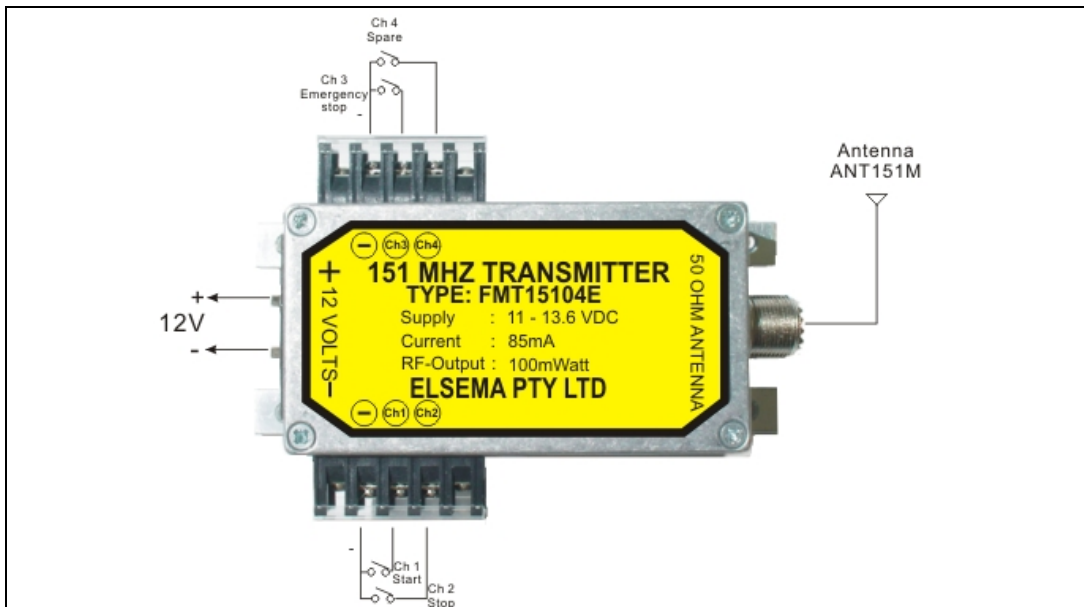
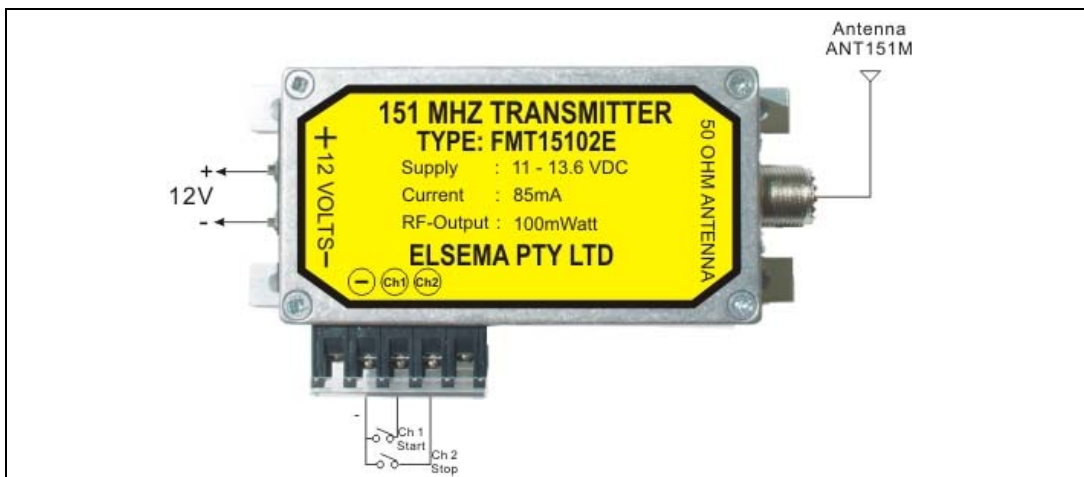
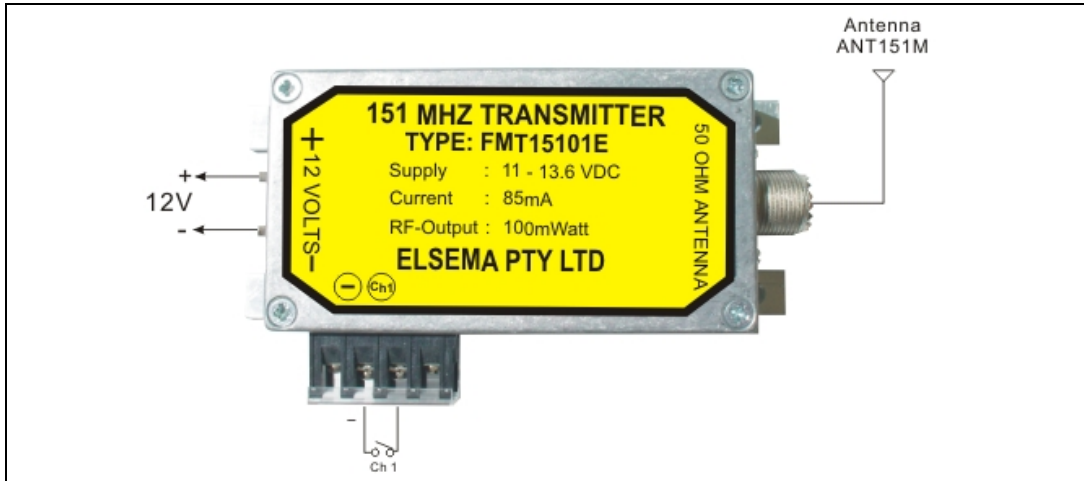


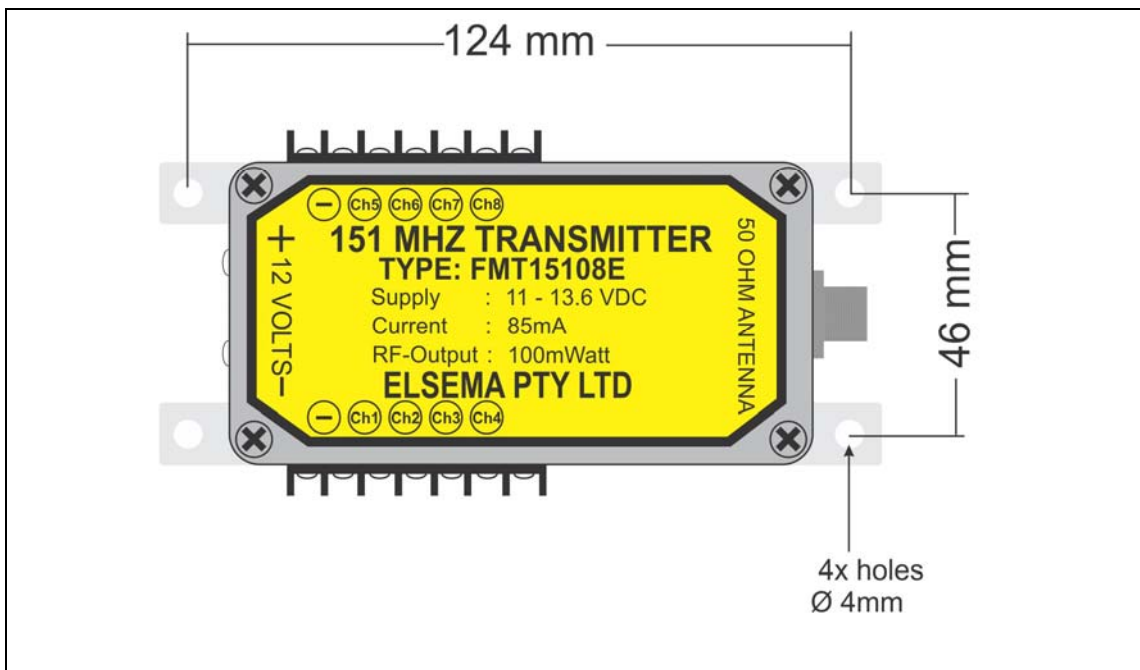
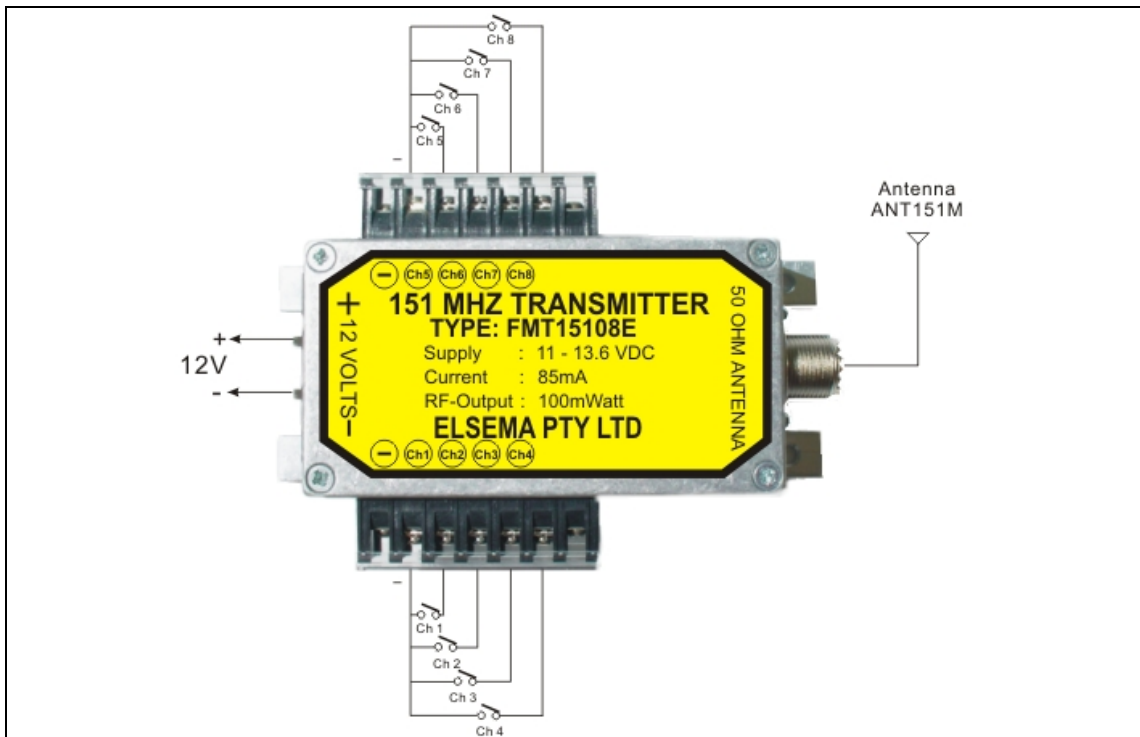
| Frequency | 1 | 2 | 3 |
|-------------|-----|-----|-----|
| 151.600 MHz | On | On | On |
| 152.375 MHz | Off | On | On |
| 151.775 MHz | On | Off | On |
| 151.400 MHz | Off | Off | On |
| 151.175MHz | On | On | Off |
| 151.025 MHz | Off | On | Off |
| 150.900 MHz | On | Off | Off |
| 150.825 MHz | Off | Off | Off |

Technical Data

| | | |
|-----------------------------|---|---|
| Power Supply | 11 to 13.6 VDC (for constant RF-Output), screw type terminal. Absolute maximum 14VDC. | |
| Current Consumption | Nominal 85mA at 12VDC supply (Transmitting) Nominal 12mA on standby (10uA on sleep mode, all inputs off) | |
| Operating Frequency | 151.6MHz (8 selectable frequencies. See table above) | |
| Operating Temperature Range | 0 - 50°C | |
| Type of Emission | Narrow-band-width Frequency Modulation | |
| R.F. Output Power | 100mW, into 50 ohms SO239 socket | |
| Baud Rate | 40 to 4800bps. | |
| Digital Coding System | On-board 12-way Code Switch | |
| Antenna | SO239 socket is provided. Optimum performance use Elsema ANT151M antenna | |
| Dimension | 90 X 56 X 15 mm (PCB Assembly) | 140 X 60 X 34 mm (Enclosed). |
| Mounting Hole Size | 4.00 mm or 5/32 " (PCB Assembly) | 4.76 mm or 3/16" |
| Mounting Hole Spacing | Length 76 mm (3.00") Width 45 mm (1.77") (PCB Assembly) | Length 125 mm (4.92") Width 45 mm (1.77") (Enclosed). |
| Weight | 85 grams (PCB Assembly) | 225 grams (Enclosed). |
| Useable Operating Range | Up to 5000 meters, depending on installation and type of antenna used. Recommended Antenna is Elsema ANT151M | |
| Compatible Receivers | All Elsema type FMR-151... series | |

Wiring Diagrams





Manufactured by

Elsema Pty Ltd
 31 Tarlington Place, Smithfield
 NSW 2164
 Ph: 02 9609 4668
 Fax: 02 9725 2663
 Website: <http://www.elsema.com>

Distributed by

