FMT-301, FMT-302, FMT-304
27MHz REMOTE CONTROL DIGITAL TRANSMITTER

Features

- Works in the 27MHz band

- Maximum reliability provided by Surface-Mount technology

- High security by 12-way code switch enabling 4096 codes

- Durable plastic case

- 2 Channel (**FMT-302**) and 4 Channel (**FMT-304**) are also available

Application

- A remote control switching device for various uses e.g. garage doors, lights, gates, and automatic telephone dialers

- A personal security alarm activator for home safety or cash carrying businesses e.g. banks, shops, service stations, etc.

- A calling device for the elderly or handicapped

Description

Buzzer indicates the status of the transmitter. To activate the transmitter, simply press the button at the front. Buzzer will be on when the transmitter is activated.

Working in the *27MHz band*, the FMT-301 achieves the highest possible standard of performance by employing a crystal-controlled, frequency modulated radio signal. The microcontroller with the latest *surface-mount technology* provides maximum reliability.

High security against false operation is achieved by a 12-way code switch (part of the digital encoding system) which is used in place of the usual 8 or 10 way systems from other manufactures. This enables the user to select any one of the 4096 codes available. The code can be easily changed at any time.

Operating Distance

An operating distance (in conjunction with our FMR series receivers) of 200 metres is possible.
The operating distance depends upon the receiver antenna and location. An independent test revealed the following ranges:

Range (m)	Receiver Antenna	Receiver Type
40	250mm wire	FMR-… series
Up to 200	ANT27M	FMR-… series

Range tests were done in an open area test site with line-of-sight operation and the receiver antenna wire was fixed vertically, away from any metal objects.
When operating near its range limit, some improvements may be obtained by pointing the transmitter towards the receiver. This is due to its slightly directional properties.

Accessories (available separately)

The case of the transmitter has been designed to accept Elsema's leather covers. The leather covers have a belt clip.

The transmitter is also available without its front label (**N**o **L**abel, FMT-301NL). This enables customers to use their own labels.

Stylish Leather Pouch (LP)	**9V Alkaline Battery (6LR61)**

Pictures are for illustration purpose only; final product may differ

Products in Range

FMT-302 2-channel	**FMT-304** 4-channel
FMT-301NL, FMT-302NL, FMT-304NL No label	

REGULATORY COMPLIANCE STATEMENTS

American Users
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.

FCC Notice
This device 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 device generates, uses, and can radiate radio frequency energy and, if installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, 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 computer and receiver.

- Connect the computer 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.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Canadian Users
This Class [B] digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe [B] respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Users
This information Technology Equipment has been tested and found to comply with the following European directives:
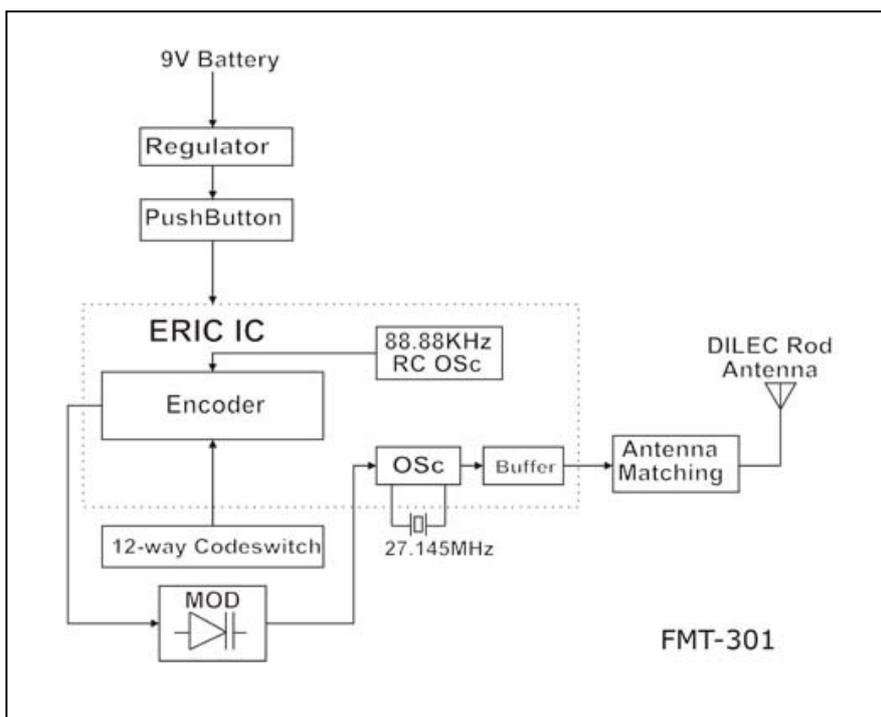
- ETS 300 683
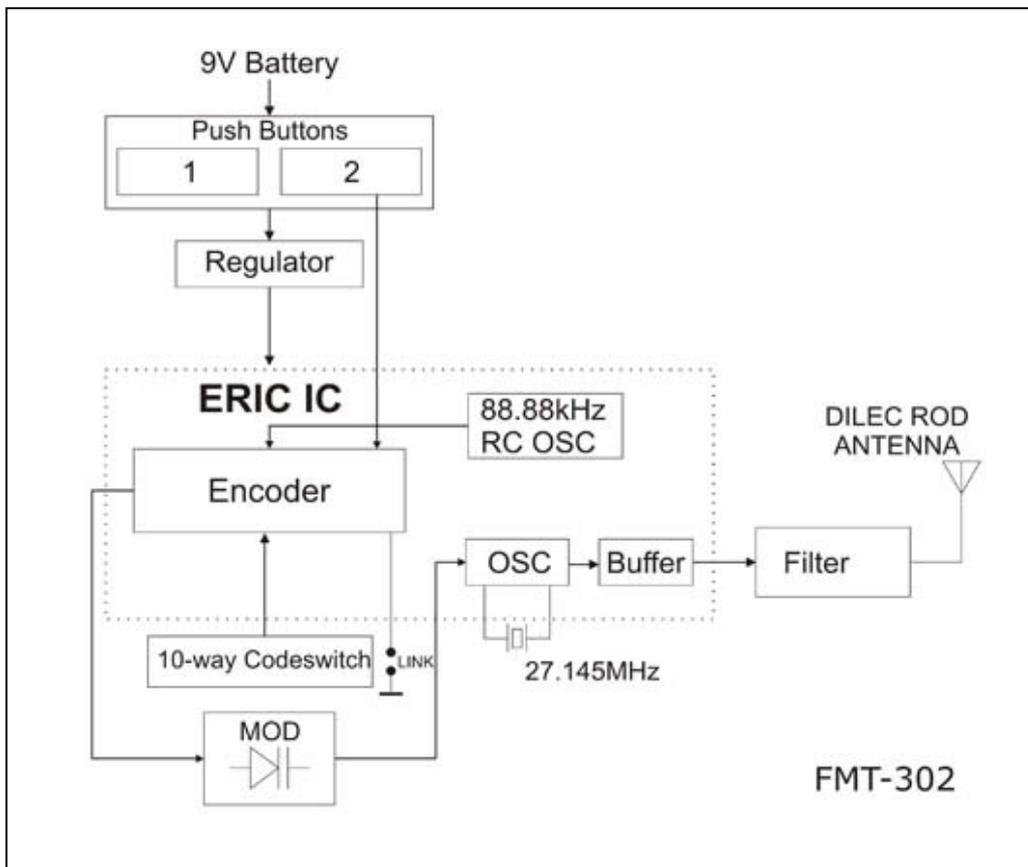- I-ETS 300 220

Australian and New Zealand Users
This device has been tested and found to comply with the limits for a Class [B] digital device, pursuant to the Australian/New Zealand standard AS 4268:2012 set out by the Spectrum Management Agency.
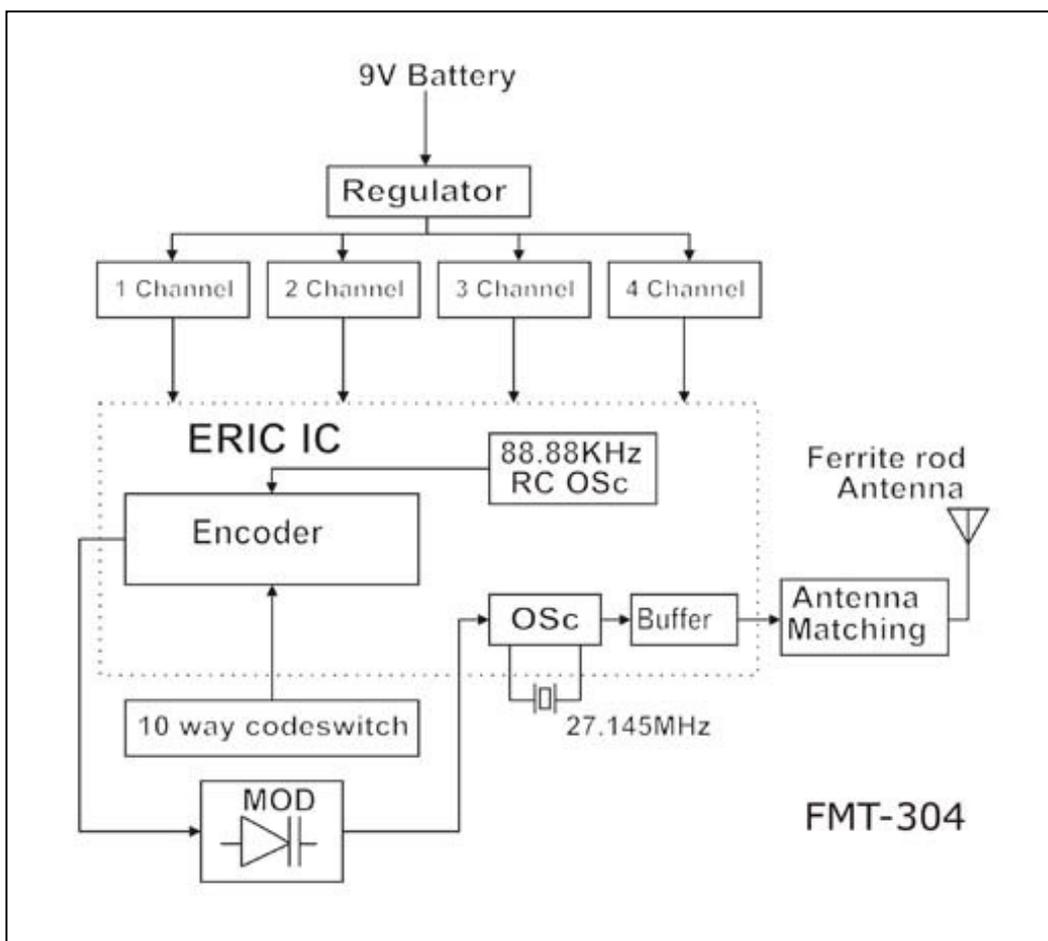
Technical Data

Power Source	9Volt Alkaline Battery
Battery Life	Carbon: 1 year shelf life; Alkaline: 2 years shelf life
Supply Voltage	6-16 VDC (for constant RF-output)
Current Consumption	40mA (typical) at 8Volts DC supply during transmission
Operating Frequency	27.145MHz (Other frequencies available: 27.045, 27.195 & 27.455MHz. NB. 27.455MHz is available for Europe Only)
Carrier Freq. Tolerance	Crystal controlled 30 parts per million (0-50°C)
Radiated Field Strength	70dB uV/m at 3m (±3dB) or 3uW
Antenna	Built-in 50mm proprietary DILEC rod
Type of Emission	Narrow-bandwidth Frequency Modulation (5K00F1D)
Bits per second	926bps
Spurious Transmission	Complies with FCC 15.227 (USA), MPT 1346 pt 4.5 (UK) and ETS 300220 (Europe)
Necessary Bandwidth	±5.0kHz
Digital Coding System	Onboard 12-way coding switch (4096 codes) (FMT-404: 10-way)
Dimension	96 x 55 x 20 mm
Weight	70g (excluding battery)
Useable Operating Range	200m (varies upon receiver antenna & location)
Compatible Receivers	All Elsema type FMR series

Block Diagram

FMT-302

FMT-304

Using FMT-302 and FMT-304

To Use FMT-302 with a 2 channel receiver, and FMT-304 with a 4 channel receiver, just match the 10 way dip switch on the transmitter to the receiver.

Using 2 Different Receivers with FMT-302

FMT-302 can also be used with 2 different single channel receivers e.g. FMR-212.

Make sure the 10 way dip switch on the transmitter board matches the first 10 dip switches on the receiver. Set the receivers dip switch 11 and 12 as described below.

When **Button A** is pressed, dip Switch 11 is transmitted as **"ON"** (Dip switch 11 on the Receiver is up)
When **Button B** is pressed, dip Switch 11 is transmitted as **"OFF"** (Dip switch 11 on the Receiver is down)
When **wire link** is connected (Factory default), dip switch 12 is **"ON"** (Dip switch 12 on the Receiver is up)
When **wire link** is disconnected (cut), dip switch 12 is "**OFF"** (Dip switch 12 on the Receiver is down).
(see picture below for the location of the wire link)

Using 4 Different Receivers with FMT-304
FMT-304 can also be used with 4 different single channel receivers e.g. FMR-212. This can be setup as follows:
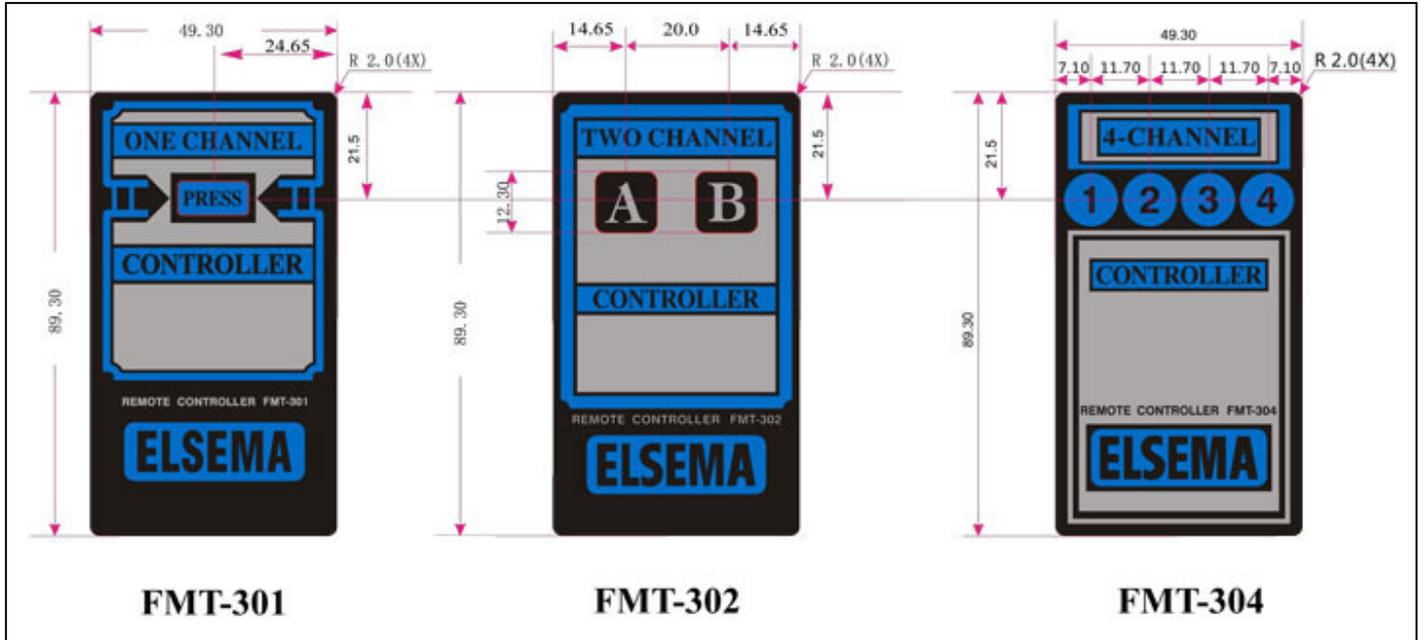
1. Make sure the 10 way dip switch on the transmitter board matches the first 10 dip switches of the receiver.

2. The receivers dip switch 11 and 12 configuration is illustrated below.

The channel coding figure can be found at the back of the battery cover.

Customised labels

The transmitters are available without the front labels. Customers can purchase the FMT-301NL, FMT-302NL, FMT-304NL, which is a hand held transmitter without the front labels. This enables the customers to fit their custom made labels. Details of label dimensions are given below.

Customers who wish to have their own membranes can contact us with their designs on (+61) 2 9609 4668

You can have your own company logo and specific text printed on the lexans. e.g. Up, Down, Right and Left or Start, Stop etc.
The minimum quantity for custom lexan is 10 pieces per order.