FMR-201

27MHz FM Receiver with Open Collector Output.

Features

- Crystal Controlled
- Low supply voltage, highest reliability, low power drain
- Single Channel Receiver

Description

The FMR-201 is a **crystal controlled** single channel receiver, comprising of receiving, decoding and open collector output sections. A specially designed LARGE SCALE INTEGRATED CIRCUIT (LSI) is employed in the decoder section, which ensures operation at low supply voltage, highest reliability, associated with very low power drain.

The receiver works on a **digitally encoded** 27 MHz frequency modulated (FM) signal. It may be used in an application that requires the 27MHz receiver to be mounted on a printed circuit board.

If the code of the input signal (from a transmitter) matches the setting of the coding switch on the receiver (up to **4096 combinations**), an output is obtained i.e. the open collector is switched to ground.

Connection to the receiver is via a **six-way female connector**. The male connector can be soldered onto any type of printed circuit board, requiring a 27 MHz receiver. The male connector is available as a Nylon 6-way male low profile connector, part number 6WLP or high profile connector part number 6WHP. See design dimensions page for more details.

A proper 27 MHz CB-Antenna will give a reliable control range of up to 200 metres, when used with **Elsema's FMT-301, FMT-302 and FMT-304** transmitters. If a CB-Antenna is used, the shield of the cable must be connected to the "minus terminal". .

The default mode is in **momentary mode**, i.e. the output transistor is only activated while the correct signal is received. When a flip/flop mode (toggling the output every correct incoming signal) is required the flip/flop link should be soldered into the receiver. In flip/flop mode, the output transistor is on at the initial "power-up".

Care must be taken, not to bring a receiver near strong magnetic fields, such as DC-Motors, speakers, magnets for reed switches, transformers etc. as it would magnetise the coils and may cause severe de-tuning.

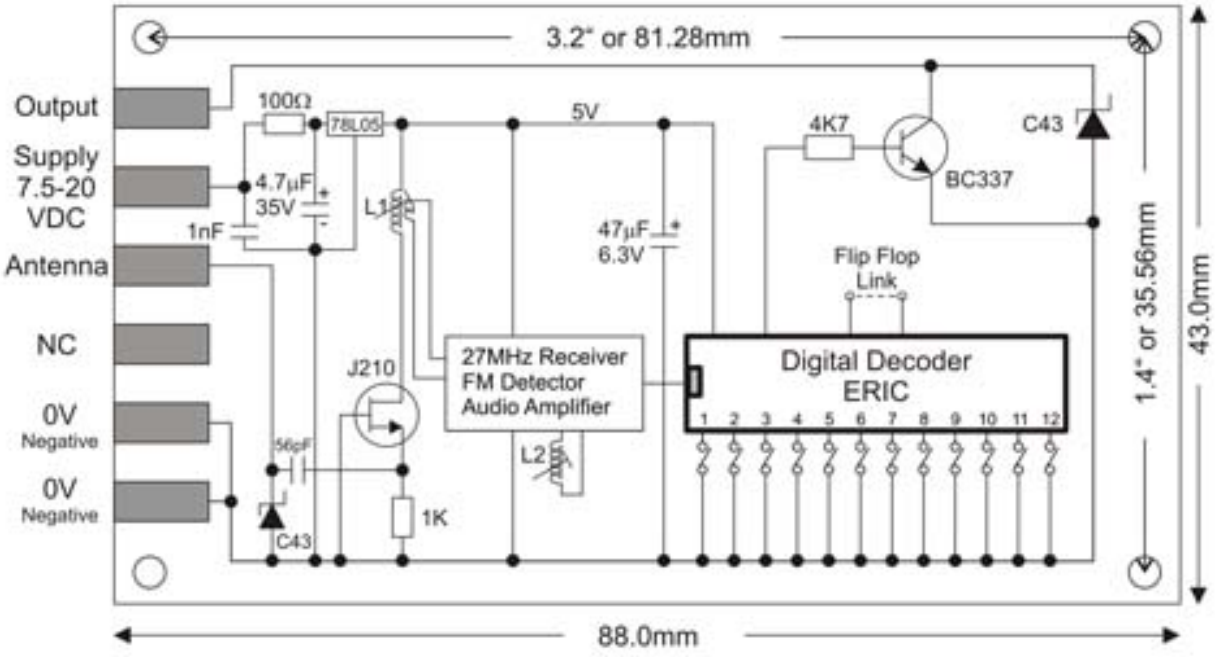
Technical Data

Supply Voltage	7.5 to 20V DC, absolute maximum +30VDC.
Current Consumption	10mA stand by.
Receiving Freq	27.145 MHz (Other frequencies available on 27.045, 27.195 and 27.455 MHz. The 27.455 frequency is not available for Australia).
Type of Crystal	26.690 MHz, 3rd overtone, 20 pf, 30ppm at 0 to 50°C.
Operating Temperature Range	-5 to 50°C
IF Freq	455 KHz
Selectivity	At least -40 dB at + - 10 KHz.
Sensitivity	Better than 1µV (For transistor to switch on).
Type of Demodulation	Narrow-band-width Frequency Modulation (FM).
Decoding System	On board 12-way coding switch (4096 Digital Channels).
Band Width	+ - 2.5 KHz
Outputs	Transistor output Maximum-switching 100mA/40VDC. Transistor is normally “OFF”, it switches “ON” if correct code is received. Joining “AL” tracks on copper side of Printed Circuit Board will change Output from “Momentary” to “Alternating”
Connections	6-way female connector type. Male connector is soldered to a PCB
Antenna	50 ohms, 27 MHz CB-Antenna or piece of approximately 300 mm long wire for short range applications.
Dimensions	88 X 43 X 15 mm
Mounting hole size	3.97 mm or 5/32"
Weight	28.5 grams
Mounting Hole Spacing	Length 81.28 mm (3.2") Width 35.56 mm (1.4")
Useable Transmitters	A All Elsema type FMT-... series

Note

- All inputs and outputs are protected against possible transients or static charges.
- If antenna is a piece of wire, install away from metal parts.
- Keep coils L1 and L2 away from magnetic components such as speakers, motors, transformers etc
- Do not change factory tuning of L1 and L2 coils

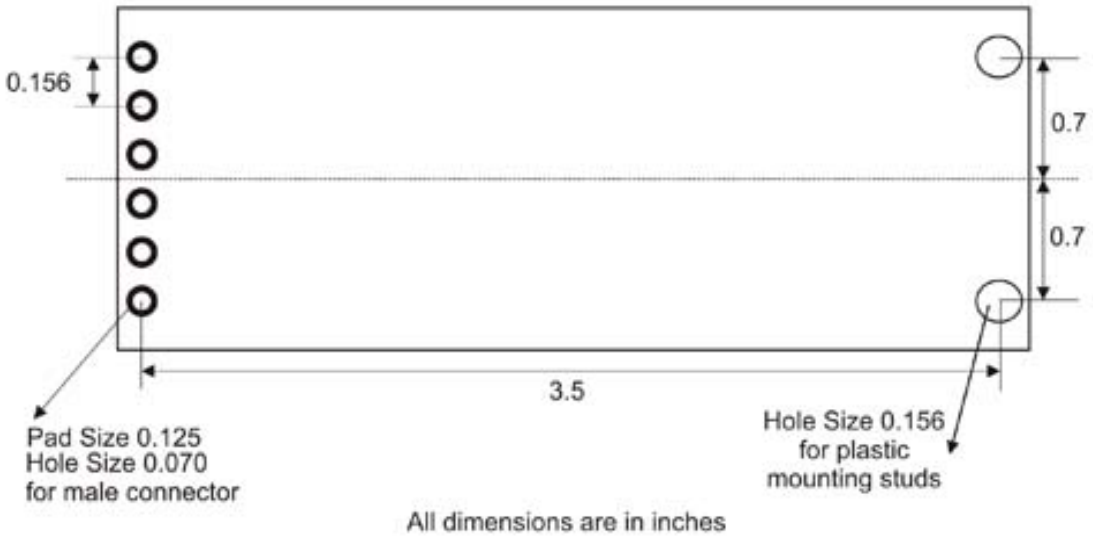
FMR-201 CIRCUIT DIAGRAM AND CONNECTIONS



Connections are drawn as "View to Component Side"

DESIGN DIMENSIONS

The dimensions below show the position the male connector and mounting studs should be when designing the FMR-201 receiver onto a printed circuit board.



Manufactured by

Elsema Pty Ltd
3/10 Hume Rd, Smithfield
NSW 2164
Ph: 02 9609 4668
Fax: 02 9725 2663
Website: http://www.elsema.com