

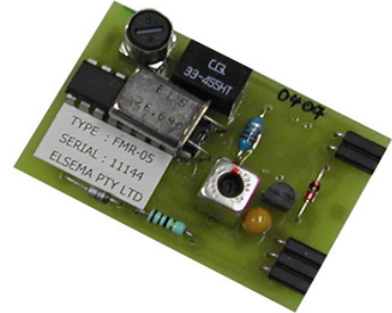
FMR-05

27MHz FM Receiver for Manchester Data Format

The FMR-05 is a 27MHz FM receiver module with data output. Its small size, low voltage and current operation make it ideal for various applications in sites where radio remote controls are operated.

Applications include

- Telecommand Systems
- Security Systems
- Alarms
- Radio data communications
- Commercial/industrial telemetry



The FMR-05 and the FMT-2712 can be combined to form a transceiver. This is possible by using Elsema's FMTR-27 printed circuit board.

Technical Note

The data output pin toggles randomly (1msec noise) on the receiver when no carrier is received. This presents a problem when the decoding on the data pin decodes this noise as data. It is not possible to stop this noise since the receiver is constantly checking the noise for a valid data. To solve this problem you should start to decode the data, on the receiver, after a valid start pulse is decoded. This valid start pulse should be a minimum 70ms long pulse. Since the noise is made up of pulses less than 70ms the decoding only decodes valid data. The transmitter will have to transmit the start pulse.

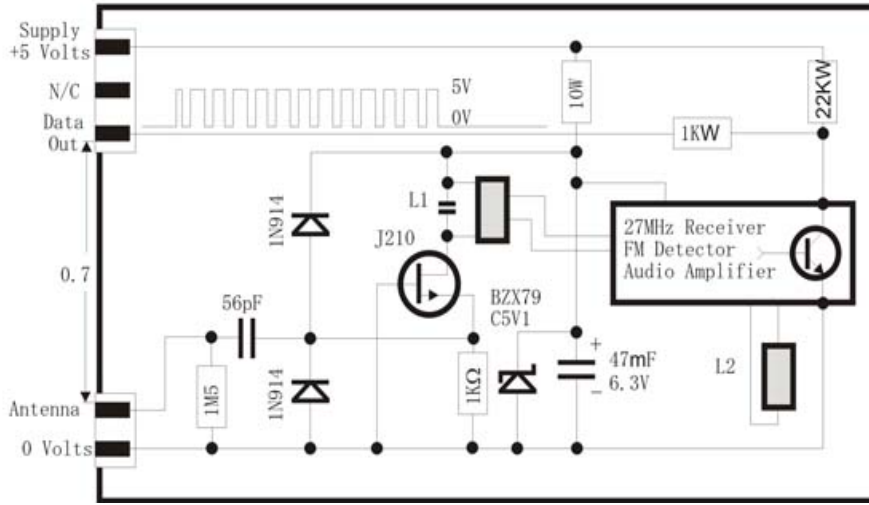
RX-Data Slicer is set for Elsema Remote Control Signal (Average 66%L-33%H). Other duty cycles may need an increase of the 22Kohms in the FMR-05. This 22Kohms is located to the left of the 10Kohm SMD (looking from the SMD side). Other recommended values are 27 or 33Kohms.

NB: Care should be taken that a data signal of 66/33% duty cycle is used.

TECHNICAL DATA

Supply Voltage	4.75 to 5.25 Volts DC
Current Consumption	5mA at 5 Volts DC.
Receiving Freq	27.145MHz (Other frequencies available: 27.045, 27.195 & 27.455MHz. NB. 27.455MHz is available for Europe Only)
Oscillation System	VCO with 10ppm Crystal Controlled reference Oscillator
Operating Temperature Range	-5 to 50°C
IF Freq	455KHz
Selectivity	At least -40 dB at + - 10 KHz.
Sensitivity	Better than -107dBm or 1µV
Type of Demodulation	Narrow-band-width Frequency Modulation (FM).
Occupied Band Width	+ - 2.5KHz
Baud Rate	300-2400bps with 66/33% duty cycle (other duty cycles will degrade sensitivity)
Data Output Level	Open collector (Digital)
Connections	1mm socket 0.1" spacing.
Dimension	50 X 33 X 15 mm
Weight	14 grams
Usable Transmitter	All Elsema type FMT-... series and KEY-3.. series
Antenna	Elsema's ANT27MHz series antennas or piece of approximately 300 mm long wire for short range applications.

CIRCUIT DIAGRAM AND PIN CONNECTIONS



Manufactured by

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