

FMTR151R

151MHz, 100mW Transceiver

Features

- Half-duplex radio data module
- 100mW Power Output
- 300 - 4800 bauds data rates

Application

- Long distance mobile applications
- Wireless communications
- Radio remote controls
- Telemetry or wireless security systems

Description

The FMTR151R transceiver is a 151MHz **half-duplex** radio data module. With a RF power output of **100mW** combined with its light weight and compact size, makes it suitable for long distance mobile applications. Applications such as wireless communications, radio remote controls, telemetry or wireless security systems is most suitable for the FMTR151R transceiver.

Data rates from 300 to 4800 bauds can be transmitted and received.

Transmit Mode

When the enable pin is high (+5Volts) the transceiver goes to transmit mode. In transmit mode, when an input signal (Data) is fed to the TX Data pin a FM modulated signal is transmitted directly through the antenna output terminal (Sh A Sh) block. A suitable 151MHz antenna should be connected to this terminal block. We recommend the Elsema ANT151, 151MHz antenna.

Transmit mode should be disable (TX enable pin to 0 Volts) to avoid unnecessary transmission if no data is on TX Data pin. This also enables the receiver which puts the transceiver into the receive mode.

For technical specifications on the transmitter refer to the **T15105** radio data module.

Receive Mode

When the transmitter is disabled the receiver will receive signals. This can be from another FMTR151R transceiver or any other FM modulated signal that matches the carrier signal.

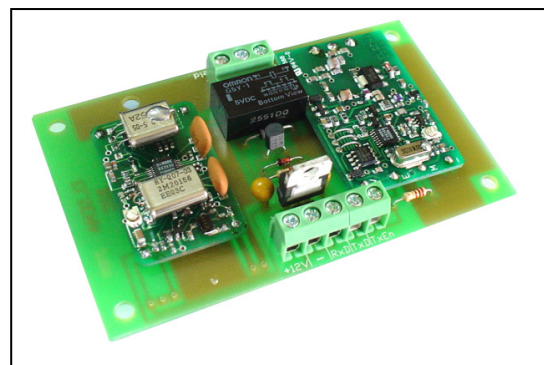
For reception a suitable antenna must be connected to the antenna terminal block. Transmitter output and receiver input uses the same antenna terminal. We recommend the Elsema ANT151, 151MHz antenna.

For technical specifications on the receiver refer to the **R15105** receiver.

Operating Distance

Up to 5000m, depending on installation and type of antenna used. Recommended Antenna is Elsema **ANT151**.

(Range tests were done in an open area test site with line-of-sight operation and no interference. The receiver antenna wire was fixed vertically, away from any metal objects.)



Compatibility

All Elsema type 151MHz FMR-... series:

- FMR-15101
- FMR-15102
- FMR-15104
- FMR-15101240
- FMR-15102240
- FMR-15108
- FMR1510812R
- FMR1510824R

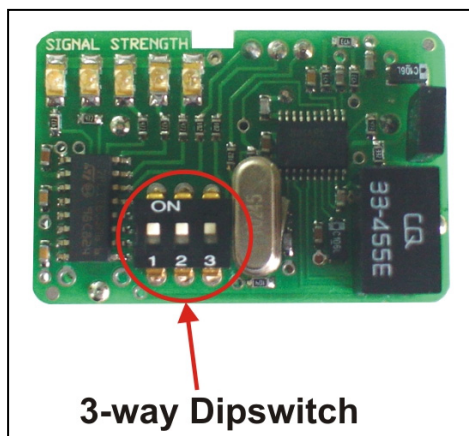
Signal Strength Indicator

The 151MHz receivers have five blue LED's on the board. The table below indicates the level of the valid transmitted signal.

5 LED's on	-70dBm	Very Strong signal	Very Reliable operating conditions
4 LED's on	-75dBm	Very Strong signal	Very Reliable operating conditions
3 LED's on	-80dBm	Very Strong signal	Very Reliable operating conditions
2 LED's on	-90dBm	Strong signal	Very Reliable operating conditions
1 LED on	-100dBm	Good signal	Reliable operating conditions

Noise Strength Indicator

If more than 1 led is "ON" without a valid transmission, this indicates that there is noise on the frequency selected. Change the **3-way dipswitch** on the **receiver module** to select a different frequency. Following is a table with the Dipswitch settings and the corresponding frequencies.

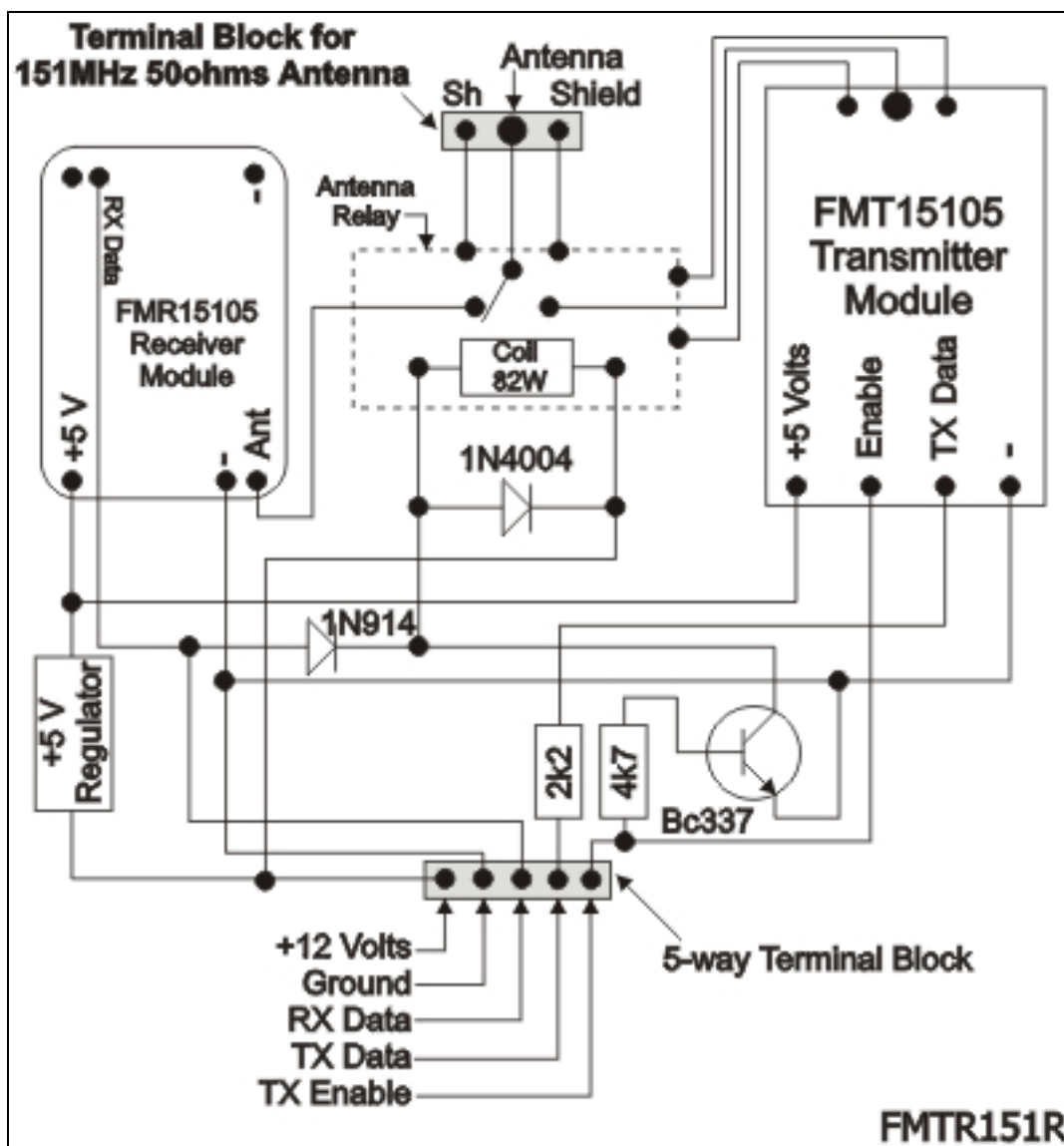


Frequency	1	2	3
151.600 MHz	On	On	On
152.375 MHz	Off	On	On
151.775 MHz	On	Off	On
151.400 MHz	Off	Off	On
151.175MHz	On	On	Off
151.025 MHz	Off	On	Off
150.900 MHz	On	Off	Off
150.825 MHz	Off	Off	Off

Technical Data

Supply Voltage	11-13.6VDC (for constant RF-Output), screw type terminal block. Do not use AC supply.
Current Consumption	Transmitting: 120mA Receiving: 20mA
Operating Frequency	151.6MHz (8 selectable frequencies. See table above)
Carrier Freq Tolerance	Crystal controlled, 30 parts per million (0-50 deg C)
RF Power Output	Typical 100mW, into 50 Ohms
Antenna	Terminal Connection provided. Optimum performance use Elsema ANT151 antenna. A piece of 1m wire will give an operating range up to 100m. Use longer wire for better results.
Transmitter Data Input Level	0-5V
Receiver Data Input Level	0-5V (22kOhms source)
Dimension	100 x 61 x 20mm
Weight	54g
Mounting Hole Size	3.97mm or 5/32"
Useable Operating Range	Up to 5000m, depending on installation and type of antenna used. Recommended Antenna is Elsema ANT151

Block Diagram



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