

T15105

151.600MHz, 100mw Radio Data Transmitter

Features

- Transmits FSK digital data
- Baud rates 40 - 4800bps
- Long range - 5km
- Low cost, small size, low current consumption

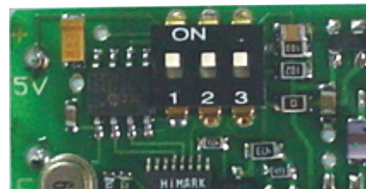
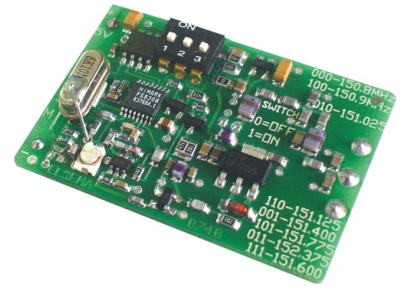
Application

- Telecommand Systems
- Security Systems
- Alarms
- Radio Data Communications
- Commercial / Industrial Telemetry

Description

The T15105 is a radio data transmitter to transmit FSK digital data. Baud rates of 40 to 4800 bps can be transmitted to an operating range of 5 Kilometres in line of sight. The low cost, small size, wide operating voltage combined with low current consumption makes it ideal for various applications.

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”). Below is a table with the Dipswitch settings and the frequencies.



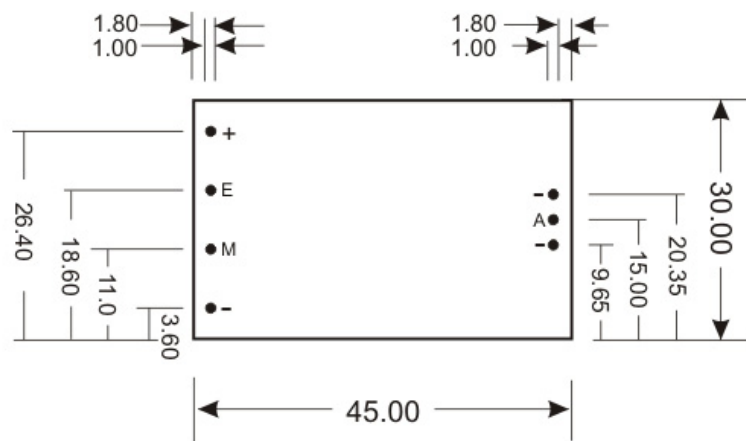
Frequency	1	2	3
151.600 MHz	On	On	On
152.375 MHz	Off	On	On
151.775 MHz	On	Off	On
151.400 MHz	Off	Off	On
151.175MHz	On	On	Off
151.025 MHz	Off	On	Off
150.900 MHz	On	Off	Off
150.825 MHz	Off	Off	Off

Technical Data

Supply Voltage	4.5 - 5.5 VDC Absolute maximum 6.5VDC.
Current Consumption	80mA when enabled,(transmitting) Less than 1uA when disabled.
Enable Voltage/Current	5V MAX, 50uA.
Operating Frequency	151.6MHz (8 selectable frequencies. See table above)
Oscillation System	VCO with 10ppm Crystal Controlled reference Oscillator
Operating Temperature Range	-5 to 50°C
RF Power Output	100mW into 50 ohms.
Data Input Level	Data should swing close to ground and +5 volts
Baud Rate	40 - 4800bps
Antenna	Any 151MHz, 50 ohms Antenna
Type of Emission	Narrow-band-width Frequency Modulation.
Frequency Deviation	+/- 5kHz.
Harmonics	Less than -40dBm (100nW)
Weight	8 grams
Compatible Receiver	R15105

Dimensions

Dimensions of T15105

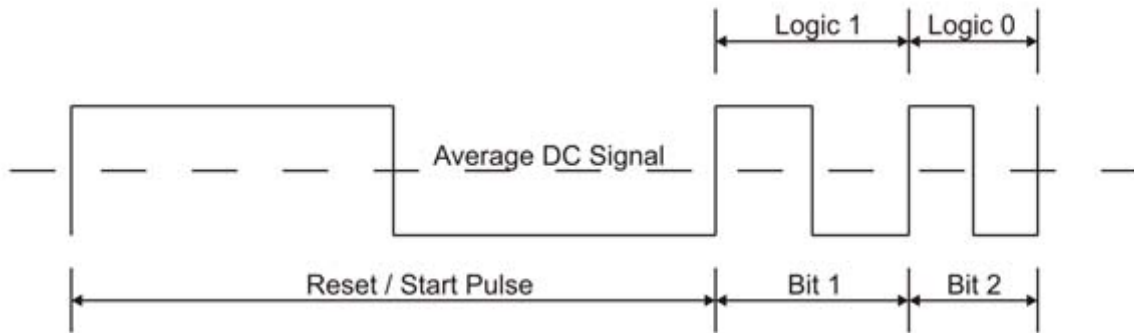


All dimensions are in mm

T15105 Data Format*

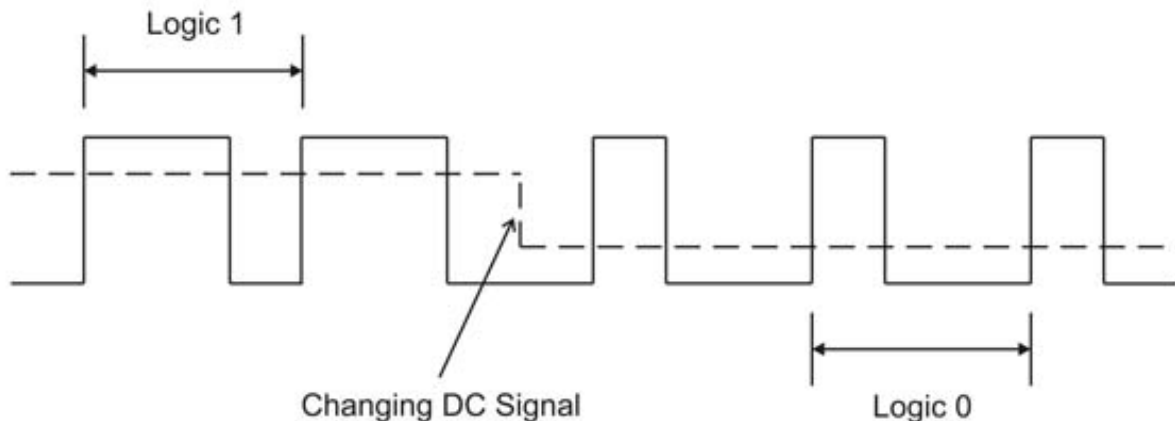
It is important to input the correct data format into the transmitter otherwise the receiver will have a lower sensitivity which will result in a reduced transmission range.

The R15105 receiver data slicer is set for 50/50-duty cycle, therefore the “data in” should have a 50/50-duty cycle. The 50/50-duty cycle data can be pulse-width modulated to transmit resets 0's or 1's. See diagram below:



A 50/50-duty cycle will have an average DC signal resulting in a constant reference for the data slicer. Users should use pulse-width modulation to transmit data with logic 1's or 0's.

If a different duty cycle is used, for example 66/33 (Manchester format) the data slicer in the receiver will try to adjust itself to the average DC signal. Since this average DC signal is changing with different data bits this will result in a constantly changing reference for the data slicer, resulting in lower sensitivity. See diagram below :



*Only 50/50 duty cycle data is suitable for the T15105 transmitter and R15105 receiver.

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