

R2705

27.195MHz FSK Radio Data Receiver

Features

- Receives digital data
- Baud rates 300 - 2400bps
- Low cost, small size, low current consumption

Application

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



Description

The R2705 is a radio data receiver to receive digital data. Baud rates of 300 to 2400 bps can be received (Can be used to 4800bps with reduced sensitivity). The low cost, small size, low current consumption makes it ideal for various applications.

Technical Data

Supply Voltage	4.5 - 5.5 VDC Absolute maximum 6.5VDC.
Current Consumption	3.5mA
Receiver Type	Dual Conversion Superheterodyne
Receiving Freq	27.195MHz (Other freq available on 27.045, 27.145, & 27.455MHz. The 27.455 freq is not available for Australia)
Oscillation System	VCO with 10ppm Crystal Controlled reference Oscillator
Operating Temperature Range	-5 to 50°C
IF Freq	10.7 MHz and 455KHz
Selectivity	-6dB at ±5kHz -20dB at ±6kHz
Sensitivity	Better than -107dBm or 1µV
Type of Demodulation	Frequency Shift Keying. (FSK)
Occupied Band Width	25KHz at -20dB.
Baud Rate	2400 bps with 50% duty cycle (Can be used to 4800bps with reduced sensitivity)
Data Output Level	0-5V
Frequency Response	150 to 2400 Hz with 50% duty cycle (Other duty cycles will degrade sensitivity)
Dimension	39 x 25 x 12mm
Weight	13 grams
Usable Transmitter	FMT-2712 Data Transmitter
Antenna	50 ohms, 27MHz Antenna

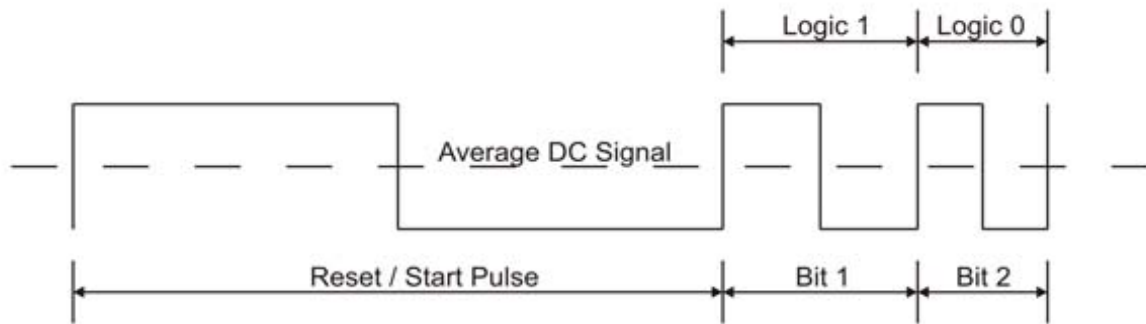
Connection



R2705 Data Format

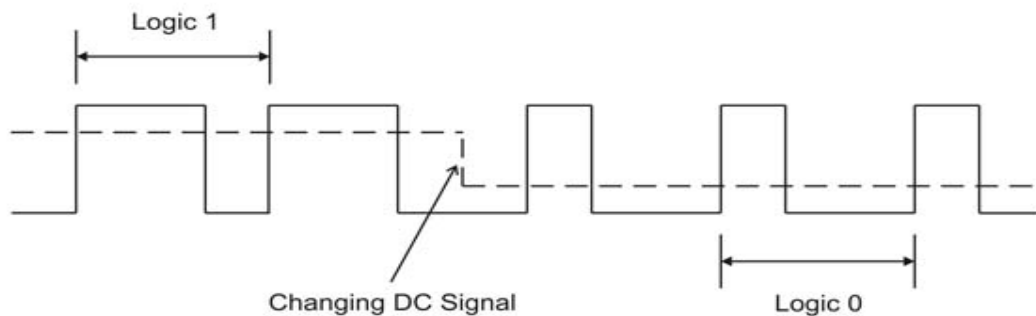
It is important to input the correct data format otherwise the receiver will have a lower sensitivity which will result in a reduced transmission range.

The R2705 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 : If 66/33 format is to be used the R2705E module is recommended.



*Only 50/50 duty cycle data is suitable for the R2705 receiver.

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