R433E

433.920 MHz ASK RADIO DATA RECEIVER

Features

- Receives digital data
- Baud rates 300 - 4800bps
- Low cost, small size, low current consumption

Application

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

Description

The R433E is a radio data receiver to receive digital data. Baud rates of 300 to 4800 bps can be received. The low cost, small size, wide operating voltage combined with low current consumption makes it ideal for various applications.

The receiver is available with a plastic case or as a **Printed Circuit Board** assembly only The PCB assembly only is called **R433.** The Printed Circuit Board assembly allows OEM manufactures to integrate the receiver with their own products.

R433

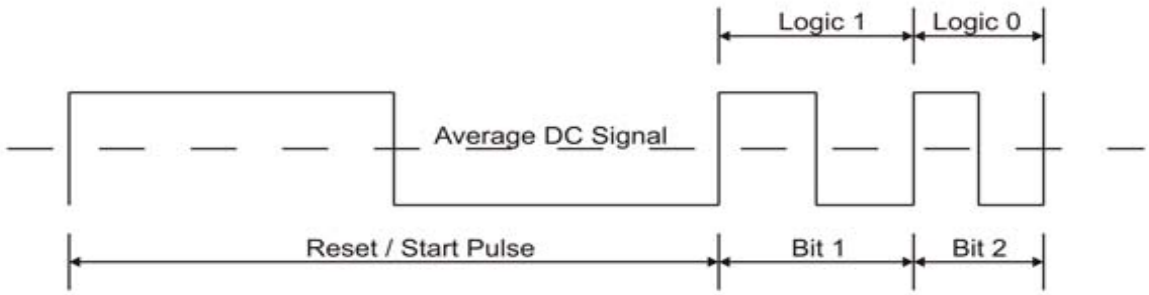
Technical Data

Supply Voltage	8.0 to 28.0 Volts DC.
Current Consumption	14mA
Receiver Type	Single Conversion Superheterodyne
Receiving Freq	433.920MHz
Oscillation System	VCO with 10ppm Crystal Controlled reference Oscillator
Operating Temperature Range	-5 to 50°C
IF Freq	320KHz
Selectivity	-3dB at ±20kHz
Sensitivity	Better than -107dBm or 1µV
Type of Demodulation	Amplitude Shift Keying. (ASK)
Baud Rate	300 to 4800 bps with 50% duty cycle
Data Output Level	0-5V
Frequency Response	150 to 2400 Hz with 50% duty cycle (Other duty cycles

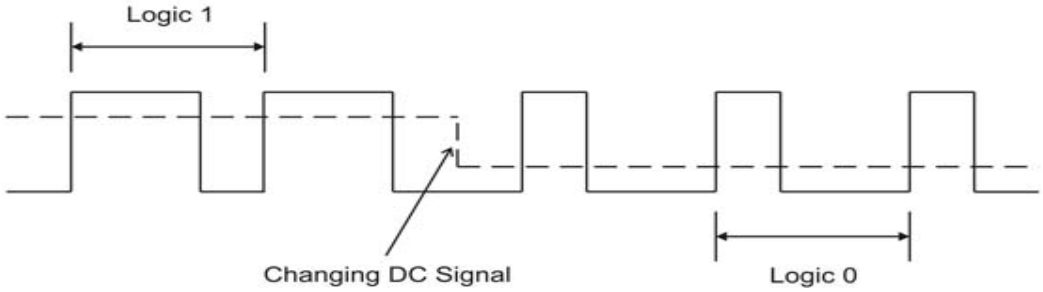
	will degrade sensitivity)
Connections	Supply & Data Out: 3- way screw type terminal block (R433 without case); 4-pole Mic socket (R433E with case).
Mounting Bracket	Brass bracket suitable to clamp onto Antenna pole
Dimension	115 x 80 x 58mm excluding Antenna & mounting bracket
Weight	200g excluding Antenna & mounting bracket
Usable Transmitter	T433 Data Transmitter
Antenna	50 ohms, 433MHz Antenna

R433E 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 R433E 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 T433 transmitter and R433 receiver.

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