CIRCUIT DESIGN, INC.

Embedded low power radio modem

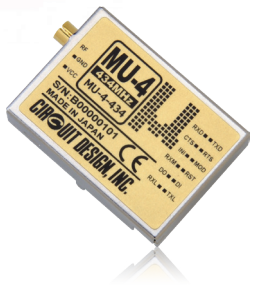
MU-4-434 434 MHz

The MU-4-434 is an embedded radio modem operating in the 434 MHz ISM band designed as the successor to the MU-2-R with improved in-band blocking performance. Dedicated commands, specially designed for wireless application, are provided for building a range of wireless system, from simple control systems to wide network systems. Using the commands, the user can concentrate on designing the application without needing to be aware of the radio protocol and control aspects. Reed-Solomon code is used for forward error correction (FEC) to maintain data integrity and provide highly reliable wireless communication. The MU-4-434 meets the requirements of the European RE Directive and carries the CE mark.

The relay feature allows you to extend the range by using additional units (up to 10 units)

Features

- UART interface with simple command protocol compatible with MU-2-R
- 434 MHz ISM band Pre-programmed 127 channels
- 10 mW / 1 mW power selectable
- Error correction with Reed-Solomon code
- Repeater and auto answer back function
- Target station receive signal and noise level acquisition
- Low power operation, TX 42 mA @3 V
- Optional transparent mode
- RED EN 300 220



Applications

- Telemetry - Environment monitoring, Meter reading, various measuring applications
- Telecontrol - Remote control for industrial equipment
- Security - Various alarm and monitoring systems

General

Parameter	Specification	Remarks
Applicable standard	EN 300 220	
Communication method	Half-duplex	
Emission type	F1D (FSK narrow)	
RF output power	10 mW / 1 mW selectable	Nominal, Contact (50 ohm)
RF bit rate	4,800 bps	
Frequency range	433.2000 to 434.7750 MHz	
Channel spacing	12.5 kHz	
Number of RF channels	127	Channel step 12.5 kHz
Receiver sensitivity	-113 dBm	Transparent mode BER 0.1% error
Operating temperature	-20 to +65 C	The operation distance varies with the temperature conditions
Supply voltage	3.0 to 5.0 V	Absolute max. rate 5.5 V
Supply current	TX: 42 mA RX: 22 mA @ 3 V	10 mW RF out
	TX: 26 mA RX: 22 mA @ 3 V	1 mW RF out
Dimensions	36 x 26 x 8 mm	
Weight	14.5 g	Not including antenna

Reference data

* Effective radio communication speed: About 3,400 bps (Conditions: One-way communication, no error correction, 25 C)
* Range: About 600 m (Conditions: One-way, no error correction, 25 C, line of sight distance, antenna height of 1.5 m, vertical antenna)

Serial interface

Parameter	Specification
Communication method	Serial communication (RS232)
Synchronization	Asynchronous / UART
Data speed	1,200 / 2,400 / 4,800 / 9,600 / 19,200 / 38,400 / 57,600 bps
Flow control	RTS / CTS hardware flow control
Parameter	Data length: 8 bit / Parity: (No, Odd, Even) / Stop bit: 1 or 2

Specifications are subject to change without prior notice

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