

Low-Cost 860 – 960 MHz OOK Stand Alone RF Receiver

Features

- Embedded EEPROM
 - Very Easy Development with RFPDK
 - All Features Programmable
- Frequency Range: 860 to 960 MHz
- OOK Demodulation
- Symbol Rate: 1.2 to 30 ksps
- Sensitivity: -109 dBm at 9.6 ksps, 0.1% BER
- 3-wire SPI Interface for EEPROM Programming
- Stand-Alone, No External MCU Control Required
- Configurable Duty-Cycle Operation Mode
- Supply Voltage: 1.8 to 3.6 V
- Low Power Consumption: 6 mA
- Low Sleep Current
 - 60 nA when Sleep Timer Off
 - 440 nA when Sleep Timer On
- RoHS Compliant
- 16-pin QFN 3x3 Package

Descriptions

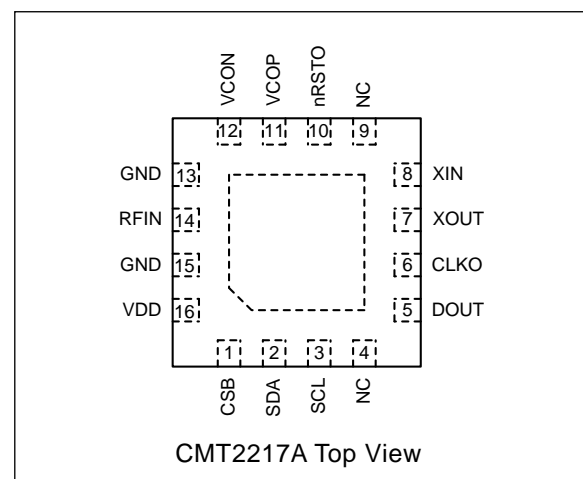
The CMT2217A is an ultra low power, high performance, low-cost (OOK stand-alone RF receiver for various 860 to 960 MHz wireless applications. It is part of the CMOSTEK NextGenRF™ family, which includes a complete line of transmitters, receivers and transceivers. An embedded EEPROM allows the frequency, symbol rate and other features to be programmed into the device using the CMOSTEK USB Programmer and RFPDK. Alternatively, in stock products of 868/915 MHz are available for immediate demands with no need of EEPROM programming. The CMT2217A operates from a supply voltage of 1.8 V to 3.6 V, when it is always on, it consumes only 6 mA current while achieving -109 dBm receiving sensitivity (@9.6 ksps symbol rate). It consumes even less power when working in duty-cycle operation mode via the built-in sleep timer. The device provides demodulated data, power-on reset output as well as a system clock output for use by an external microcontroller or decoder. CMT2217A receiver together with the CMT2117A transmitter enables an ultra low cost RF link.

Applications

- Low-Cost Consumer Electronics Applications
- Home and Building Automation
- Infrared Receiver Replacements
- Industrial Monitoring and Controls
- Remote Automated Meter Reading
- Remote Lighting Control System
- Wireless Alarm and Security Systems
- Remote Keyless Entry (RKE)

Ordering Information

Part Number	Frequency	Package	MOQ
CMT2217A-EQR	Random	QFN16	5,000 pcs
CMT2217A-EQR8	868.00 MHz	QFN16	5,000 pcs
CMT2217A-EQR9	915.00 MHz	QFN16	5,000 pcs



Typical Application

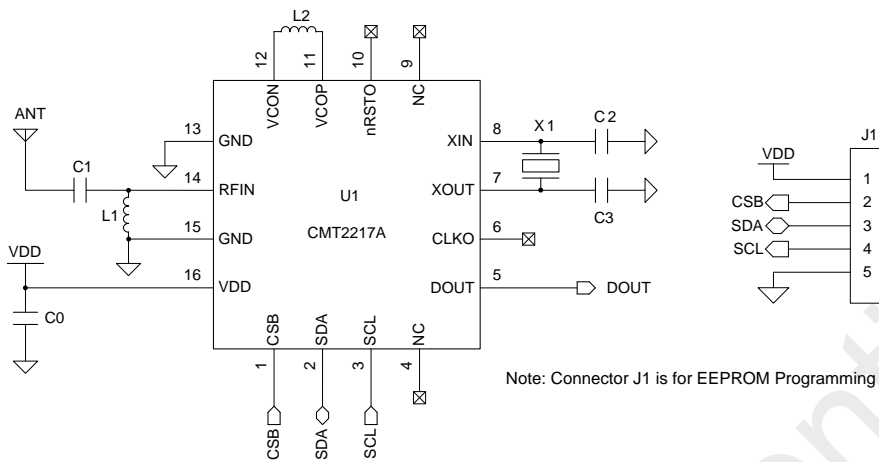


Figure 1. CMT2217A Typical Application Schematic

Table 1. BOM of 868 MHz Typical Application

Designator	Descriptions	Value	Unit	Manufacturer
U1	CMT2217A, low-cost 860 – 960 MHz FSK stand-alone RF receiver		-	CMOSTEK
L1	±5%, 0603 multi-layer chip inductor	6.8	nH	Murata LQG18
L2	±5%, 0603 multi-layer chip inductor	3.3	nH	Murata LQG18
C1	±0.25 pF, 0402 NP0, 50 V	2.7	pF	Murata GRM15
C0	±20%, 0402 X7R, 25 V	0.1	uF	Murata GRM15
C2, C3	±5%, 0402 NP0, 50 V	15	pF	Murata GRM15
X1	±20 ppm, SMD32*25 mm, crystal	26	MHz	EPSON

Table 2. CMT2217A Pin Descriptions

Pin Number	Name	I/O	Descriptions
1	CSB	I	3-wire SPI chip select input for EEPROM programming
2	SDA	IO	3-wire SPI data input and output for EEPROM programming
3	SCL	I	3-wire SPI clock input for EEPROM programming
4,9	NC	NA	Not connected, leave floating
5	DOUT	O	Received data output
6	CLKO	O	Programmable clock output to drive an external MCU
7	XOUT	O	Crystal oscillator output
8	XIN	I	Crystal oscillator input or external reference clock input
10	nRSTO	O	Active-low power-on-reset output to reset an external MCU
11	VCOP	IO	VCO tank, connected to an external inductor
12	VCON		
13, 15	GND	I	Ground
14	RFIN	I	RF signal input to the LNA
16	VDD	I	Power supply input

Package Outline

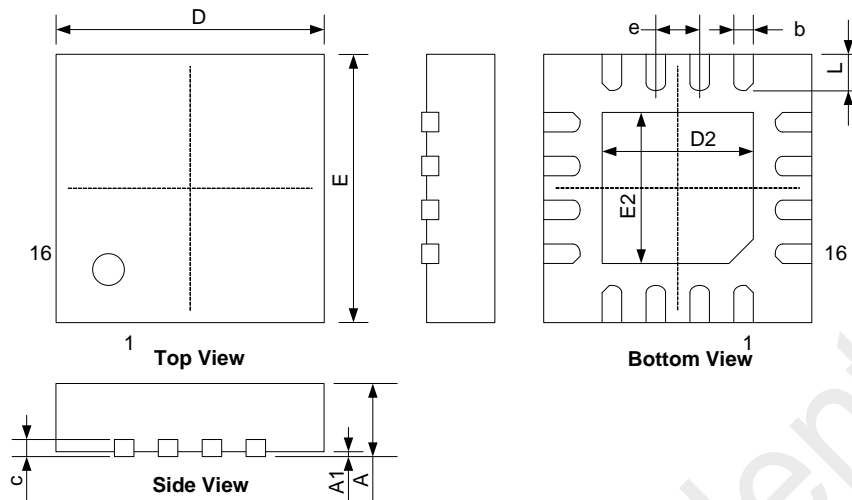


Figure 3. 16-Pin QFN 3x3 Package

Table 3. 16-Pin QFN 3x3 Package Dimensions

Symbol	Size (millimeters)	
	Min	Max
A	0.7	0.8
A1	-	0.05
b	0.18	0.30
c	0.18	0.25
D	2.90	3.10
D2	1.55	1.75
e	0.50 BSC	
E	2.90	3.10
E2	1.55	1.75
L	0.35	0.45