

# Custom

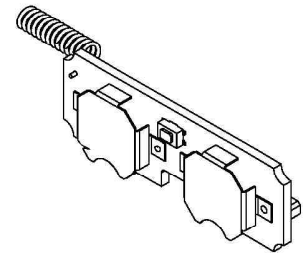


## CM2202N

- **Integrated Sensor Interface**
- **Very Low Current Operation from 2 BR1225 Batteries**
- **Compatible with RFM miniMESH™ Network Protocol**
- **Ready-to-Use Module**

The CM2202N is a 916.5 MHz transmitter module designed to monitor industrial alarm sensors. Communication range in an “open field” environment is typically 100 meters. The CM2202N combines RFM’s very low-current SAW resonator stabilized transmitter technology with low-power microcontroller technology to achieve long battery life. The module is compatible with RFM’s miniMESH™ network protocol, which provides add-on “plug-and-play” multicast mesh network routing. The CM2202N is certified for operation under FCC 15.249 regulations.

## 916.50 MHz Transmitter Module



### Absolute Maximum Ratings

Rating	Value	Units
All Input/Output Pins	-0.3 to +4.0	V
Non-Operating Ambient Temperature Range	-40 to +85	°C

### Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Operating Frequency	$f_o$		916.30		916.70	MHz
Modulation Type				OOK		
Encoded Data RF Transmission Rate				4.8		kb/s
Peak Radiated Field Strength (FCC OP-1)	$E_o$			20,000		$\mu\text{V/m}$
Battery				BR1225		
Digital Input Logic High (Sensor)			.85 VDD		VDD	V
Digital Input Logic Low (Sensor)			0		.15 VDD	V
Operating Ambient Temperature Range	$T_A$		-20		+70	°C

## CM2202N Sensor Transmitter Block Diagram

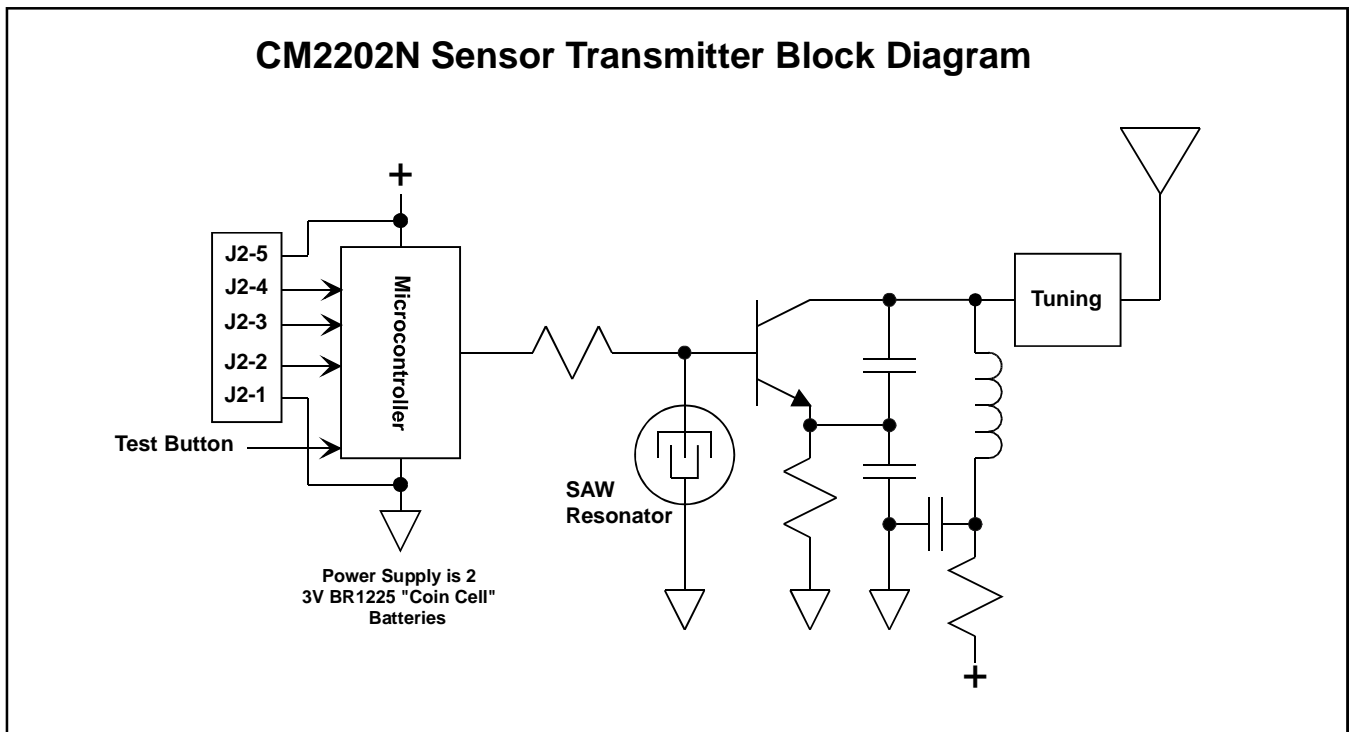


Figure 1

### Theory of Operation

The major components of the CM2202N include an RFM SAW resonator stabilized transmitter and a Microchip PIC12F635 microcontroller. The transmitter operates on a frequency of 916.5 MHz, at a nominal output power of 0.5 mW. The microcontroller generates "heart beat" transmissions periodically, plus an immediate transmission in the event of a sensor alarm or test button activation. The CM2202N is powered by 2 replaceable 3 V BR1225 lithium "coin cell" battery. The CM2202N is compatible with RFM's miniMESH™ network protocol, which provides add-on "plug-and-play" multicast mesh network routing to improve communication range and robustness.

### FCC Labels and Notices

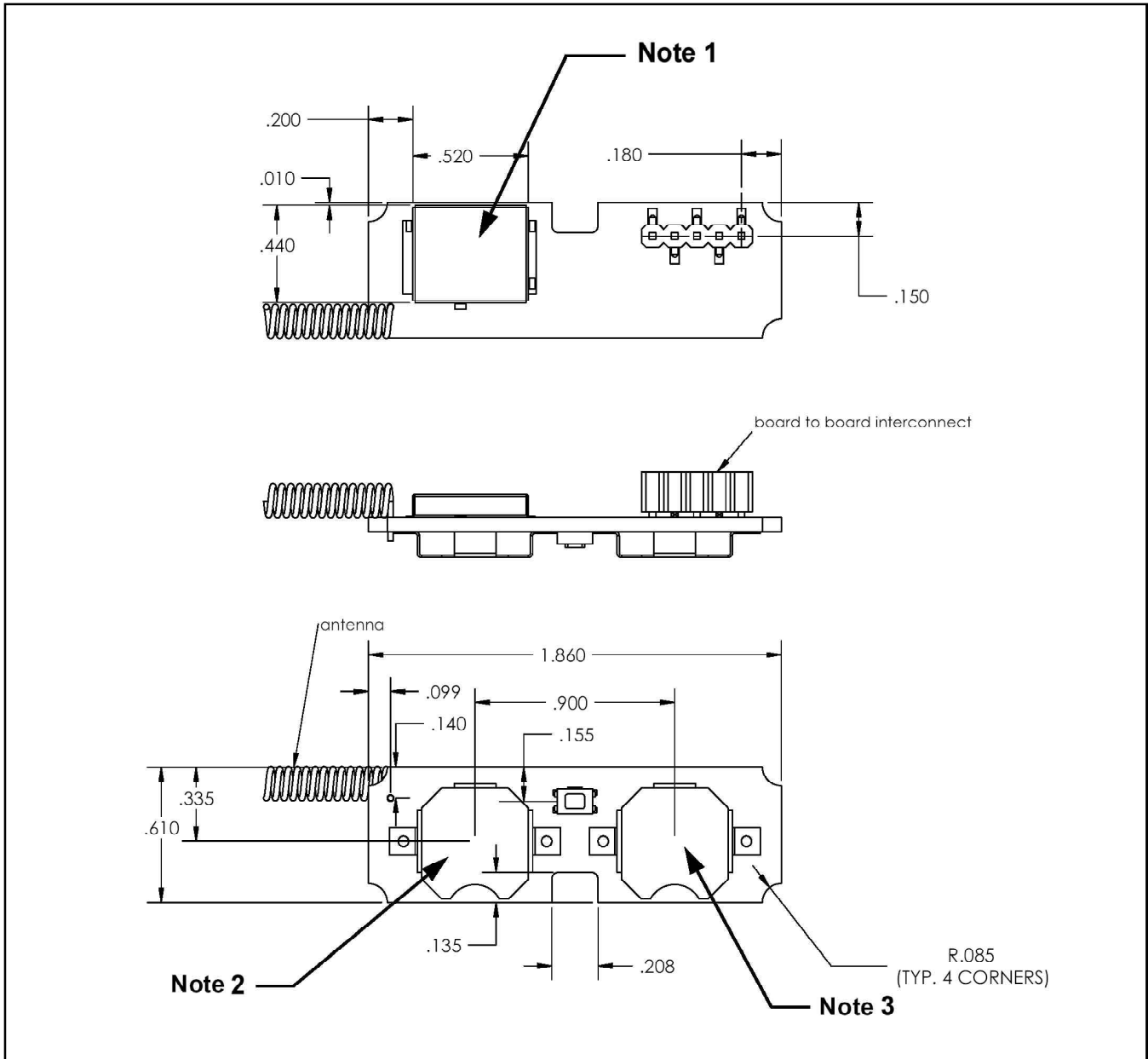
*This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

A clearly visible label is required on the outside of the user's (OEM) enclosure stating that this product contains a CM2202N radio module, FCC ID: TE6-CM2202N.

**WARNING:** This device operates under Part 15 of the FCC rules. Any modification to this device, not expressly authorized by RF Monolithics, Inc., may void the user's authority to operate this device.

## Pin and Pad Descriptions

Pin	Name	Description
J2-1	GND	This pad is the ground return for the external alarm sensor.
J2-2	SENSOR	This pad is a logic input driven by the external alarm sensor.
J2-3	SNR Power	This pad is the +3V power supply for the external alarm sensor.
J2-4	Pclk	This pad is used to program the microcontroller. No connection should be made to it in normal operation.
J2-5	VDD	This pad is used to program the microcontroller. No connection should be made to it in normal operation.



**Figure 2**

Note 1: Laser mark on shield top with FCC ID and made in Philippines.

Note 2: Place label with bar code and alphanumeric serial number.

Note 3: Place label with battery orientation.

Note: Specifications subject to change without notice.

file: CM2202.vp, 031006 rev