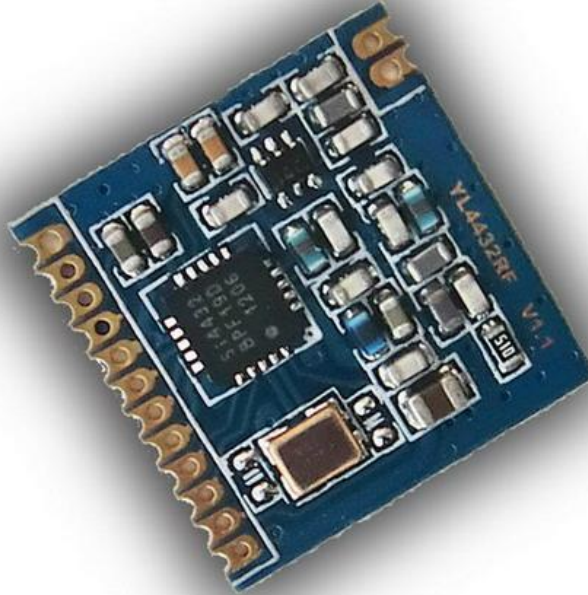


SEM-YL-4432G 100mW Transceiver Module User Manual V1.0



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Description

Semitron's SEM-YL-4432G are highly integrated wireless ISM transceiver module. Very low receive sensitivity (-121dBm/1200bps), coupled with industry leading +20dBm output power ensures extended range and improved link performance. Built-in antenna diversity and support for frequency hopping can be used to further extend range and enhance performance.

Features

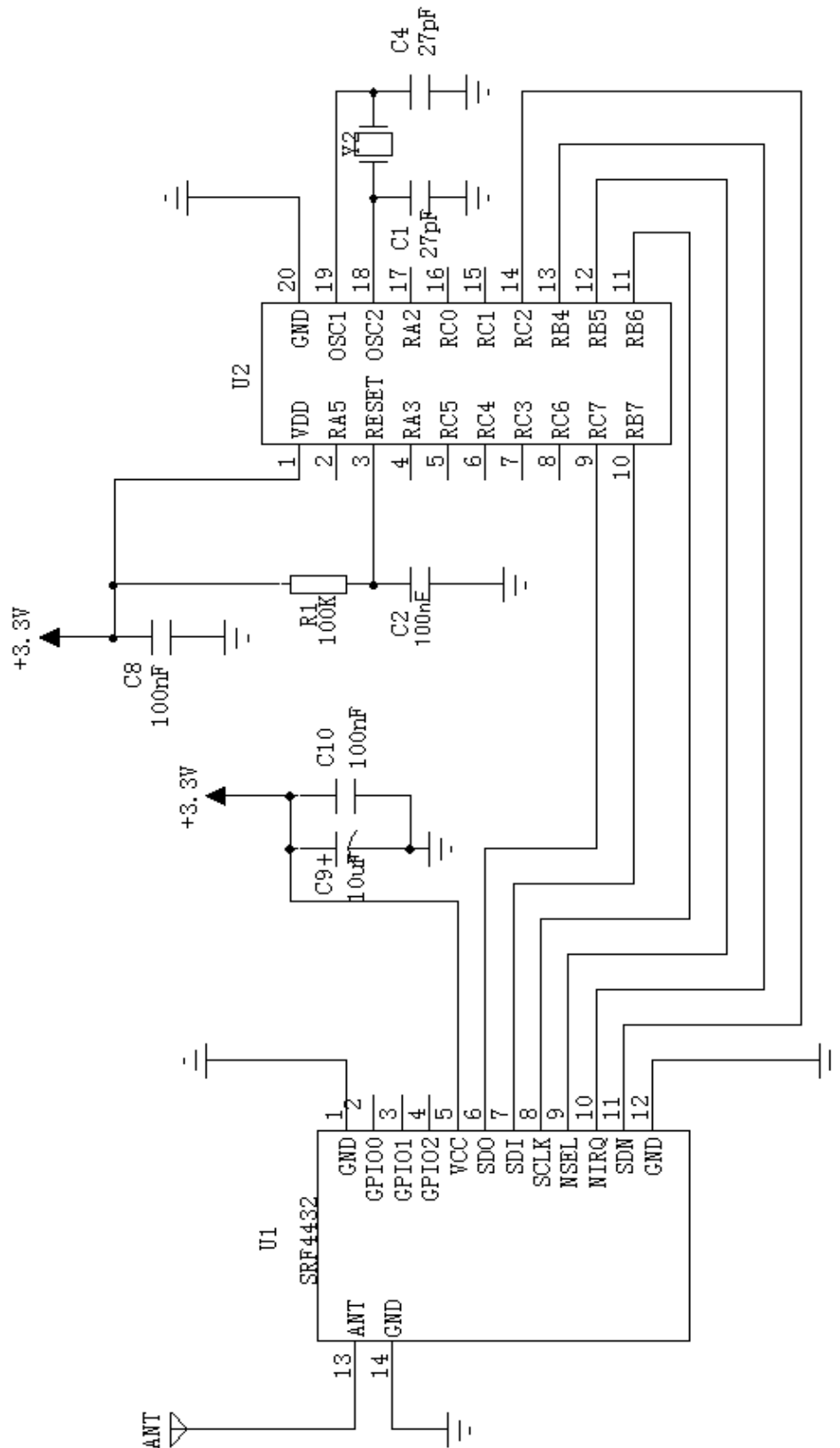
- Frequency Range: 433 MHz
(other frequencies need to be customized)
- Sensitivity = -121 dBm at 1200bps
- Max output power:20dBm
- 85mA@+20dBm transmit
- Data Rate = 0.123 to 256 kbps
- FSK,GFSK and OOK modulation
- Power Supply = 1.8 to 3.6 V
- Ultra low power shutdown mode
- Digital RSSI
- Wake-up timer
- Auto-frequency calibration (AFC)
- Configurable packet handler
- Antenna diversity and TR switch control
- Preamble detector
- TX and RX 64 byte FIFOs
- Low battery detector
- Temperature sensor and 8-bit ADC
- -40 to +85 °C temperature range
- Integrated voltage regulators
- Frequency hopping capability
- Power-on-reset (POR)
- On-chip crystal tuning

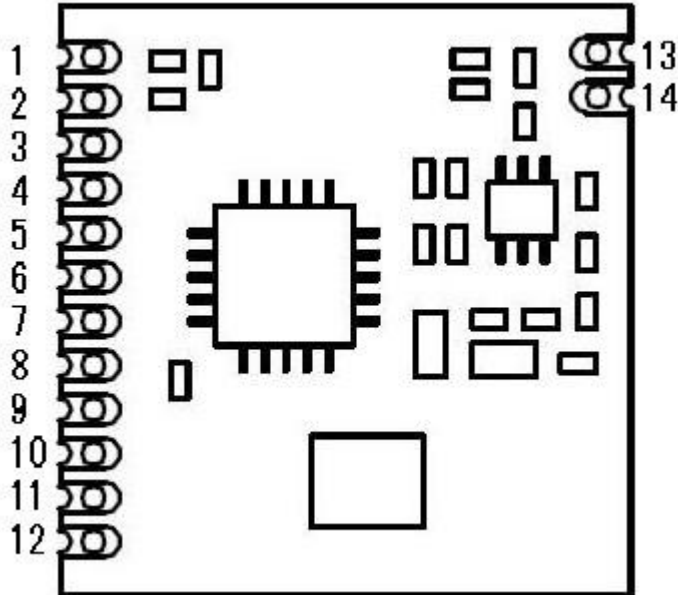
Applications

- Remote control
- Telemetry
- Home security & alarm
- Home automation
- Remote keyless entry
- Industrial control
- Toy control
- Personal data logging
- Remote meter reading
- Sensor networks
- Tire pressure monitoring
- Health monitors
- Wireless PC peripherals
- Tag readers

Characteristics

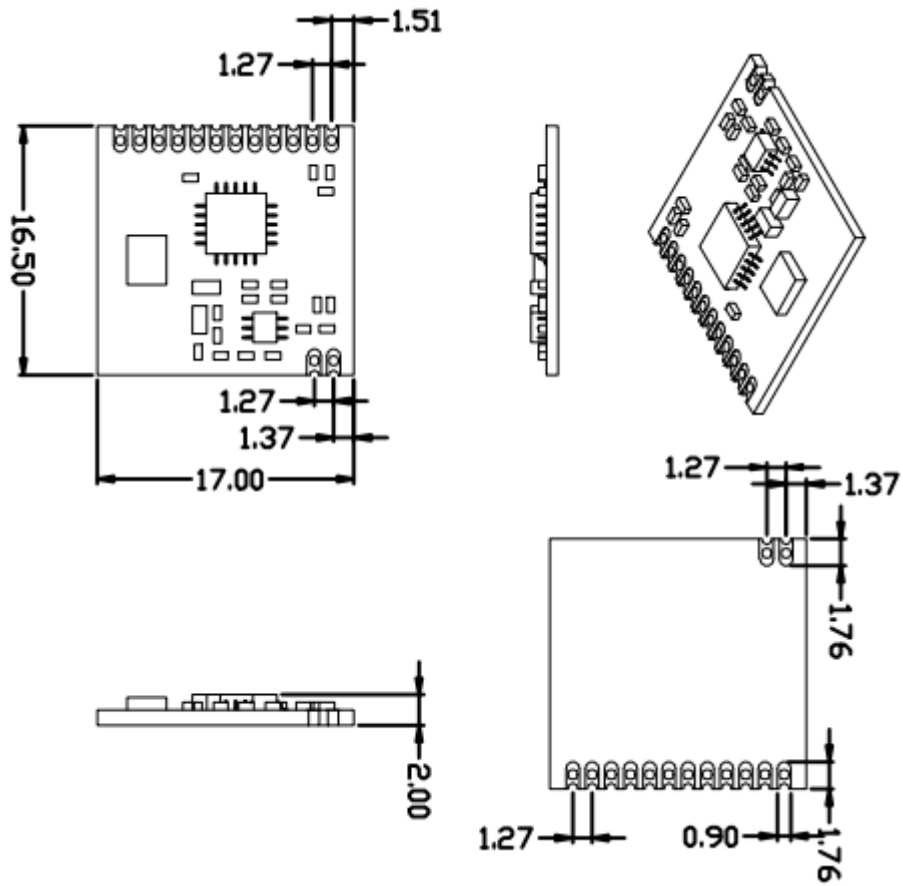
| Parameter | Min | Tye | Max | Units | Conditions |
|----------------------------|-------|------|-----|-------|--------------------------|
| Operating Condition | | | | | |
| Supply Voltage Range | 1.8 | 3.3 | 3.6 | V | — |
| Operating Temperature | -20 | — | 85 | °C | — |
| DC Characteristics | | | | | |
| Rx Mode Current | — | 18.5 | — | mA | — |
| Tx Mode Current | — | 85 | — | mA | @20dBm |
| Sleep Mode Current | — | <1 | — | uA | — |
| RF Parameter | | | | | |
| Frequency range | 428 | 433 | 438 | MHZ | @433MHZ |
| Modulation rate | 0.123 | — | 256 | Kbps | FSK |
| Output power range | 0 | — | 20 | dBm | — |
| Sensitivity | — | -121 | — | dBm | @data=1.2kbps,Fdev=30kHz |

Typical Application Circuit


Pin Descriptions


| Pin | Pin Name | Descriptions |
|-----|----------|--|
| 1 | GND | Ground. |
| 2 | GPIO0 | Connected module's Tx pin internal, Tx status is high, Rx is low. |
| 3 | GPIO1 | Connected module's Rx pin internal, Rx status is high, Tx is low. |
| 4 | GPIO2 | Connect to chip's GPIO2 pin. |
| 5 | VCC | Connect positive power supply at 3.3V. |
| 6 | SDO | 0~VDD V digital output that provides a serial readback function of the internal control registers. |
| 7 | SDI | Serial data input. 0~VDD V digital input. This pin provides the serial data stream for the 4-line serial data bus. |
| 8 | SCLK | Serial clock input. 0~VDD V digital input. This pin provides the serial data clock function for the 4-line serial data bus. |
| 9 | nSEL | Serial interface select input. 0~VDD V digital input. This pin provides the Select/Enable function for the 4-line serial data bus. The signal is also used to signify burst read/write mode. |
| 10 | nIRQ | Interrupt output pin. |
| 11 | SDN | Shut down input pin. 0~VDD V digital input. SDN should be = 0 in all modes except Shutdown mode. When SDN=1 the chip will be completely shutdown and the contents of the registers will be lost. |
| 12 | GND | Ground. |
| 13 | ANT | Connected 50OHM coaxial antenna. |
| 14 | GND | Ground. |

Mechanical Dimension



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