Features

- Operating voltage: 3.0V~5.5V
- Operating current:
  - 0.5μA (Typ.) @5V, Deep Sleep Mode
  - 3.2mA(Typ.) @5V, RX Mode, 433.92MHz
- RX sensitivity: @5V, 25°C (433.92MHz)
  - 10Ksps: -112dBm (Typ.)
- Maximum operating input power: 10dBm@RF-in, BER=0.1%
- Modulation: OOK
- Symbol rate: 1~20Ksps
- Interface: 8-pin, Span=2.54mm straight hole
- Size: 43.0mm (L)×10.5mm(W)×5.2mm(H)
- Operating temperature: -40°C~85°C

General Description

The BM2302-3x-1 is an ultra-low power consumption, high-performance and low-cost Sub-1GHz Low-IF OOK receiving module whose design is based on the BC2302A/BC2302B devices. The module supports wireless applications in the 315, 433, 868 and 915MHz frequency bands and can be easily accessed using a 2-wire I²C interface. The symbol rate is in a range of 1Kbps to 20Ksps. The receiving sensitivity can be up to -112dBm.

Selection Table

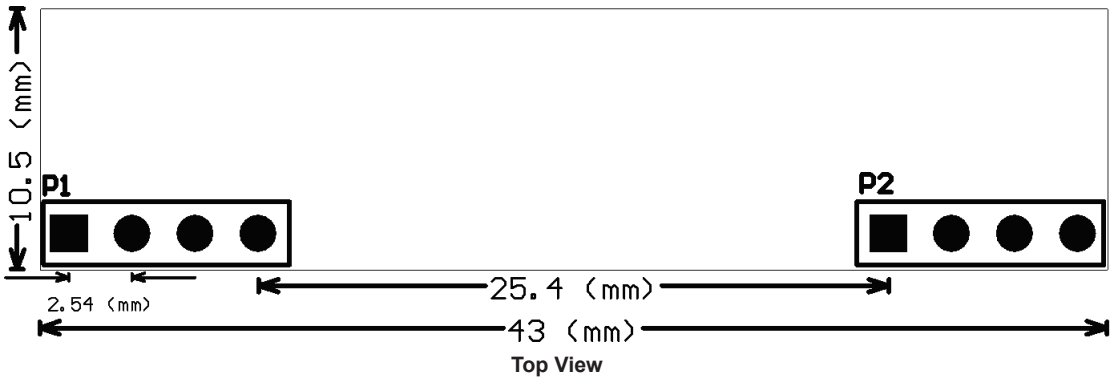
Part Number	Frequency Band
BM2302-33-1	315MHz
BM2302-34-1	433MHz
BM2302-38-1	868MHz
BM2302-39-1	915MHz

Pin Definition

Pin No.	Pin Name	Type	Function Description
1	ANT	AI	RF LNA input
2	GND	P	Ground
3	GND	P	Ground
4	VDD	P	Digital and analog power
5	VDD	P	Digital and analog power
6	SD/SCL	DI	SD: RX mode Shut-down control, should be pulled low in RX Mode SCL: I²C clock input line in Configuration Mode
7	DO/SDA	DI/DO	DO: Demodulated data output in RX Mode SDA: I²C data line in Configuration Mode
8	GND	P	Ground

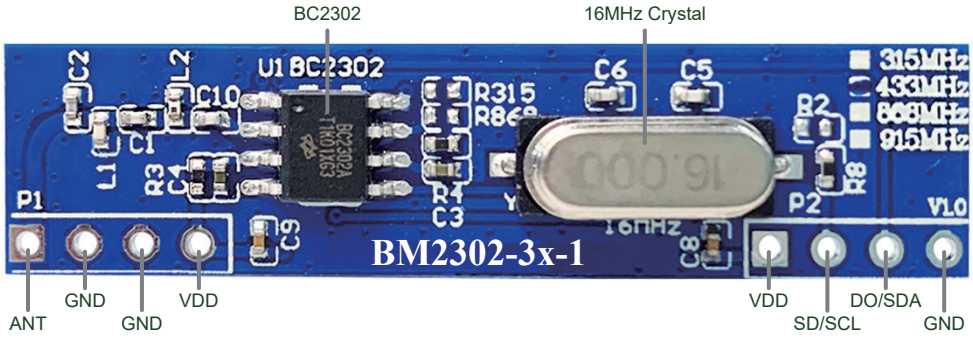
Legend: AI=Analog input; DI=Digital input; O=Digital output; P=Power.

Module Dimension Drawing



Top View

Module Figure



43.0mm(L) × 10.5mm(W)

Two Layer PCB

Bill of Material (433.92MHz)

Item	Comp.	Description	Size	Value	Tol.	Part Number
1	C1	NPO ceramic capacitor	0402	2.7pF	±0.25pF	—
2	C3	X5R ceramic capacitor	0402	1μF	±10%	—
3	C4	X5R ceramic capacitor	0402	1μF	±10%	—
4	C5	NPO ceramic capacitor	0402	22pF	±5%	—
5	C6	NPO ceramic capacitor	0402	22pF	±5%	—
6	C8	X7R ceramic capacitor	0402	10nF	±10%	—
7	C9	X7R ceramic capacitor	0402	10nF	±10%	—
8	C10	NPO ceramic capacitor	0402	100pF	±5%	—
9	C2	NPO ceramic capacitor	0402	9.1pF	±0.5pF	—
10	L1	Inductor	0402	39nH	—	MURATA：LQG15HS27NJ02D
11	L2	Inductor	0402	27nH	—	MURATA：LQG15HS27NJ02D
12	R2	Resistor	0402	N.C.	—	Auto-RX Mode
13	R3	Resistor	0402	10R	—	—
14	R4	Resistor	0402	10R	—	—
15	R8	Resistor	0402	0R	—	—
16	R315	Resistor	0402	N.C.	—	Select RF Band 315MHz (BC2302A/B)
17	R868	Resistor	0402	N.C.	—	Select RF Band 868MHz (BC2302B)
18	U1	IC	8NSOP-EP	BC2302A/B	—	BESTCOMM
19	Y1	Crystal	49US_SMD	16MHz	—	±20ppm，CL16pF