

# RF4463F30 High Power wireless transceiver module

## 1. Description

RF4463F30 adopts Silicon Lab Si4463 RF chip, which is a highly integrated wireless ISM band transceiver chip. Extremely high receive sensitivity (-126 dBm) and +30 dBm output power ensure that the covering of the range and improve the data link performance. Built-in antenna diversity and the hopping function can be used to aggressively improve the performance.



## 2. Features

- Frequency Range: 433/470/868/915 (Customizable 142-1050 MHz)
- Sensitivity up to -126 dBm
- Maximum output power: +30dBm
- 10mA@receiver status
- Data transfer rate: 0.1-1000 kbps
- (G)FSK, 4(G)FSK, (G)MSK
- 1.8-3.6 V Power supply
- Ultra-low consumption shutdown mode
- Digital received signal strength indicator (RSSI)
- Timed wake-up function
- The antenna automatically match and two-way switch control
- Configurable packet structure
- Preamble detection
- 64/128byte transmit and receive data register (FIFO)
- Low-power detection
- Temperature sensor and 8-bit analog-to-digital converters
- Operating Temperature Range: -40 ~ + 85 °C
- Integrated voltage regulator
- Frequency hopping
- Power-on reset function
- Built-in crystal adjustment function

## 3. Application

- Remote control
- Remote meter reading
- Home security alarm and remote keyless entry
- industrial control
- home automation remote sensing
- individual data records

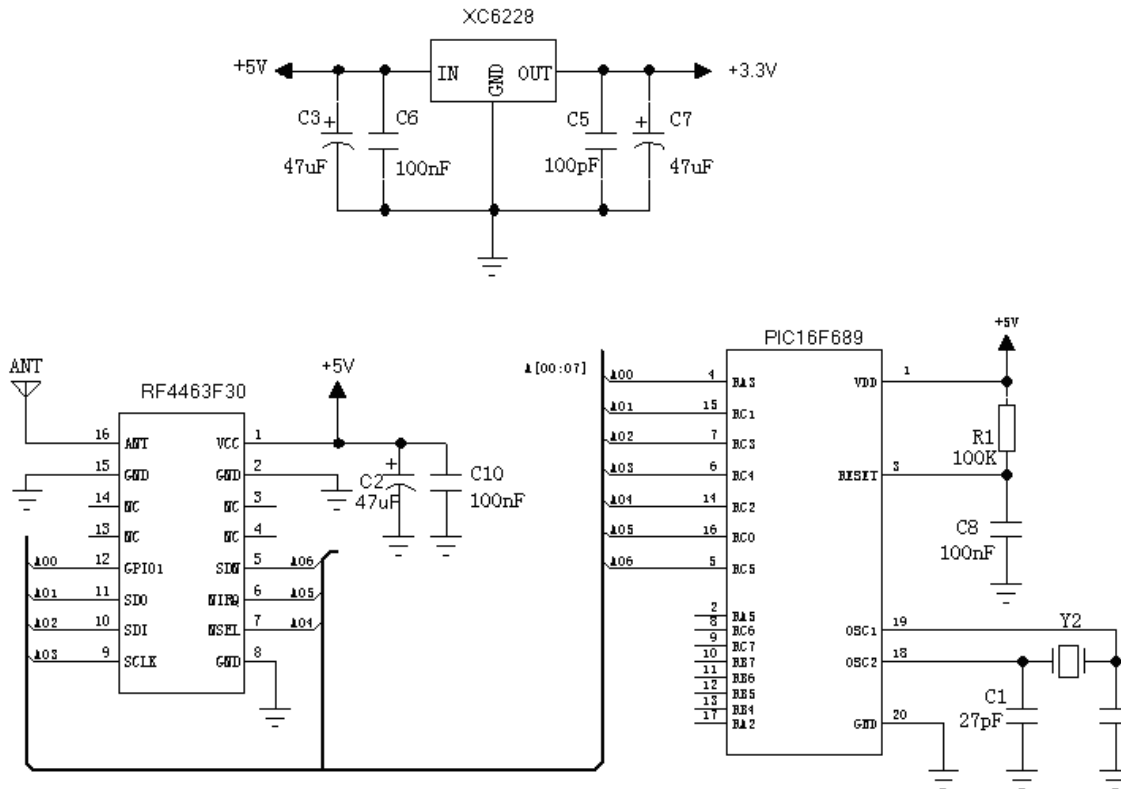
- toys control
- sensor network
- tire pressure monitoring
- health monitoring
- wireless PC peripherals
- tag reading and writing

#### 4. Electrical Specifications

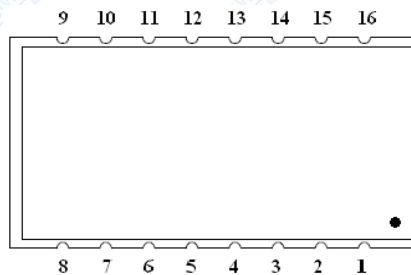
Note: the following parameters is VCC = 5 v, with 50 ohm copper axis test instrumentation.

Parameter	Min	Typ	Max	Unite	Condition
<b>Working condition</b>					
Working voltage range	3.3	5	6.5	V	
Temperature voltage	-40		85	°C	
<b>Current consumption</b>					
Receiving current		13.5		mA	Low sensitivity mode
Receiving current		10		mA	High sensitivity mode
Transmitting current		540	580	mA	V <sub>cc</sub> =5v, Tx=30dBm
Sleep current		<2	3	uA	
<b>parameter</b>					
Frequency range	410	433	450	MHZ	@433MHZ
	470	490	510	MHZ	@470MHZ
	863	868	873	MHZ	@868MHZ
Modulation rate	0.1		1000	Kbps	FSK
Output power range	29.5	30	31	dBm	433MHz, VCC = 5V
Receiving sensitivity	-125	-126		dBm	433MHz@data=600bps,Fdev=3kHz

#### 5. Schematic



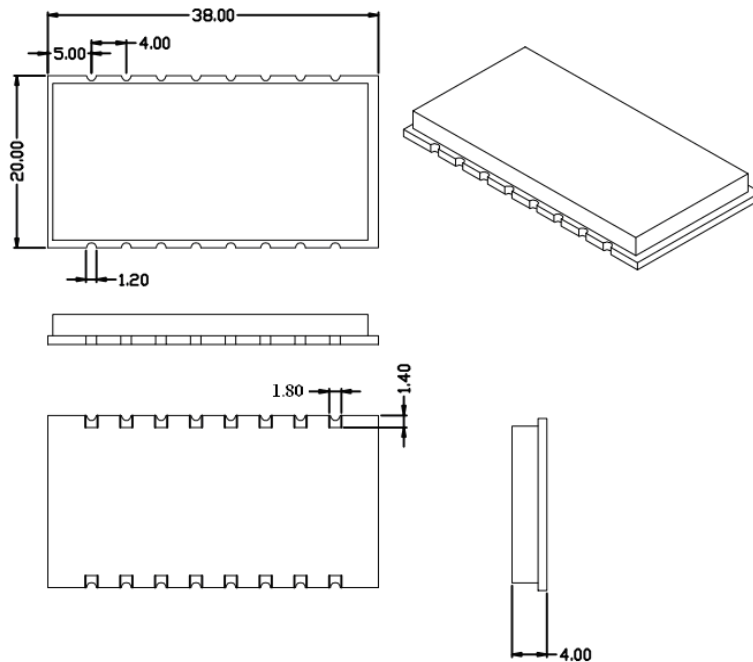
## 6. Pinout



Pin Number	Pin Definitions	Description
1	VCC	Positive power supply
2	GND	Connected to power ground
3,4	NC	Vacant, not connected
5	SDN	Digital input. When SDN = 1, module will be completely shut down and the register values will be lost.
6	nIRQ	General Microcontroller Interrupt Status output. When the module exhibits anyone of the Interrupt,Events the nIRQ pin will be set low=0. Please see the Control Logic registers section for more information  on the Interrupt Events. The Microcontroller can then determine the state of the interrupt by reading a corresponding SPI Interrupt Status Registers, Address 03h and 04h. No external resistor pull-up is required, but it may be desirable if multiple interrupt lines are connected.

7	nSEL	Serial Interface Select input. 0– VDD 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.
8/	GND	Connected to power ground
9	SCLK	Serial Clock input. 0– V digital input. This pin provides the serial data clock function for the 4-line serial data bus. Data is clocked into the Si4430/31/32 on positive edge transitions.
10	SDI	Serial Data input. 0– V digital input. This pin provides the serial data stream for the 4-line serial data bus.
11	SDO	0– VDD digital output that provides a serial readback function of the internal control registers.
12	GPIO2	General Purpose Digital I/O that may be configured through the registers to perform various functions including: Microcontroller Clock Output, FIFO status, POR, Wake-Up timer, Low Battery Detect, TRSW, 8 GPIO_1 I/O AntDiversity control, etc. See the SPI GPIO Configuration Registers, Address 0Bh, 0Ch, and 0Dh for 9 GPIO_2 I/O more information.
13,14	NC	Not connected
15	GND	Connected to power ground
16	ANT	From 50 ohm coaxial antenna

## 7. Mechanical dimensions



## 8. Products Ordering Information

RF4463F30-433

Module Model

Frequency

For example:

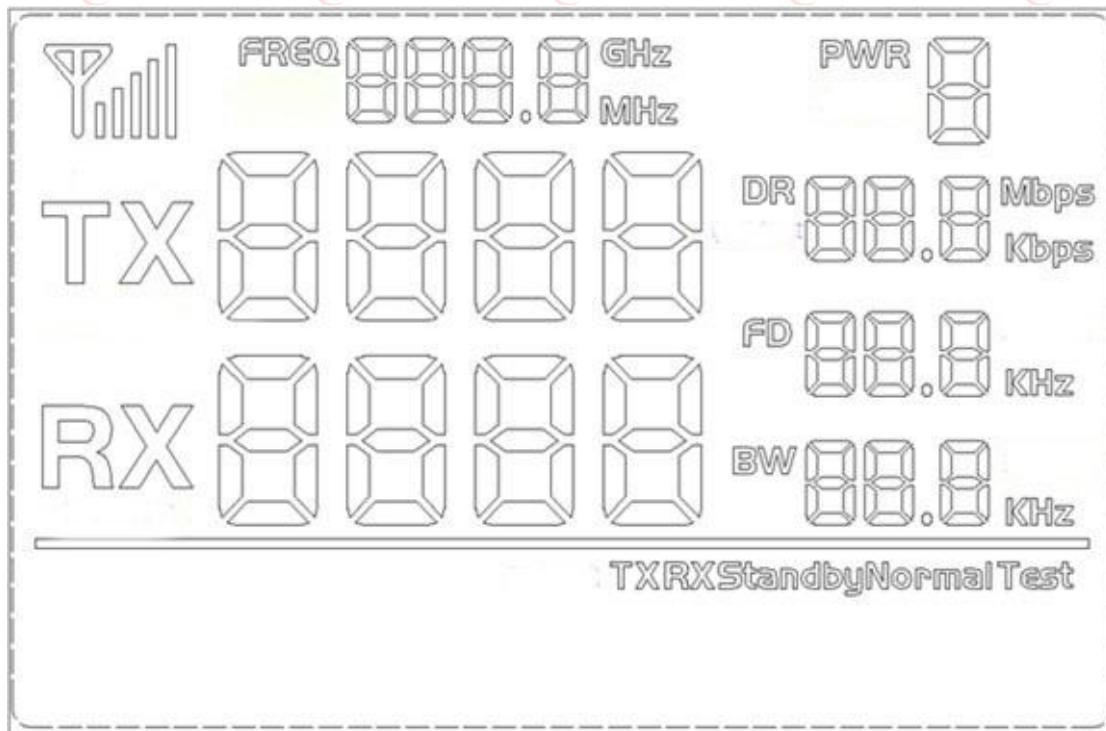
a) If the customer needs a patch module small crystal 433MHZ band module that order model: RF4463F30-433

**Appendix:**

Module equipped with standard DEMO demo program, debugging, for customers to test distance. As shown in the following illustration:



The board of DEMO LCD display interface as shown below:



Users can set the button transceiver frequency, transmitter power, wireless transmission module, serial number rate of transmission rate, the serial data bits, stop bits, parity bit parameters.

➤ Work mode:

- 1) Transmitting mode: Send data packets period ( In setup mode, not to send data packets );
- 2) Reception mode: Enter the receiving mode after power up. Receive data packets and send to the serial ports.
- 3) Regular transmitting mode: the modules continuously transmit;
- 4) Regular receive mode: module is often receive state (not forwarding data);
- 5) Sleep mode: data transmission module in the standby state.

➤ Button operation

1) SET Button

Press enter setup mode, such as the setting of the last one parameter, then press jump set mode.

2) UP /Down Button

In setup mode, changes corresponding to the set parameters by these bottoms

Note: The data transmission module with FLASH inside, all the parameters set can be saved automatically evenr power-off.