

The logo for HOPERF, featuring the word "HOPERF" in a bold, sans-serif font. The letter "H" is red, and the letters "OPERF" are black. A registered trademark symbol (®) is located at the top right of the "F".

**HOPERF**®

The text "Hope Microelectronics" is displayed in a white, bold, sans-serif font, centered within a solid red rectangular background.

**Hope Microelectronics**

**The Leading RF IC supplier of China**

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Version 1.0

1

# Typical application



## Home weather forecast recommendation

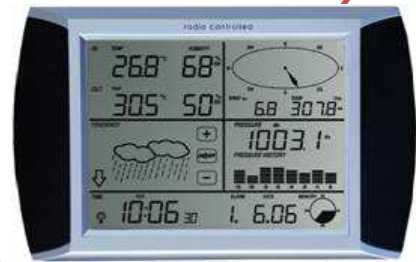
### Recommended Transmitter IC

ASK :  
CMT2110A,CMT2117A  
ASK/FSK/GFSK :  
CMT2113A,CMT2119A



### Recommended Transceiver IC

ASK/FSK/GFSK :  
CMT2300  
RF69



### Recommended Receiver IC

ASK :  
CMT2210A/L,CMT2217A  
ASK/FSK/GFSK :  
CMT2213A,CMT2219A



### Recommended Sensor

High precision pressure  
SENSOR: HP203B HP204

### More relevant industry applications

Digital radio controlled clock

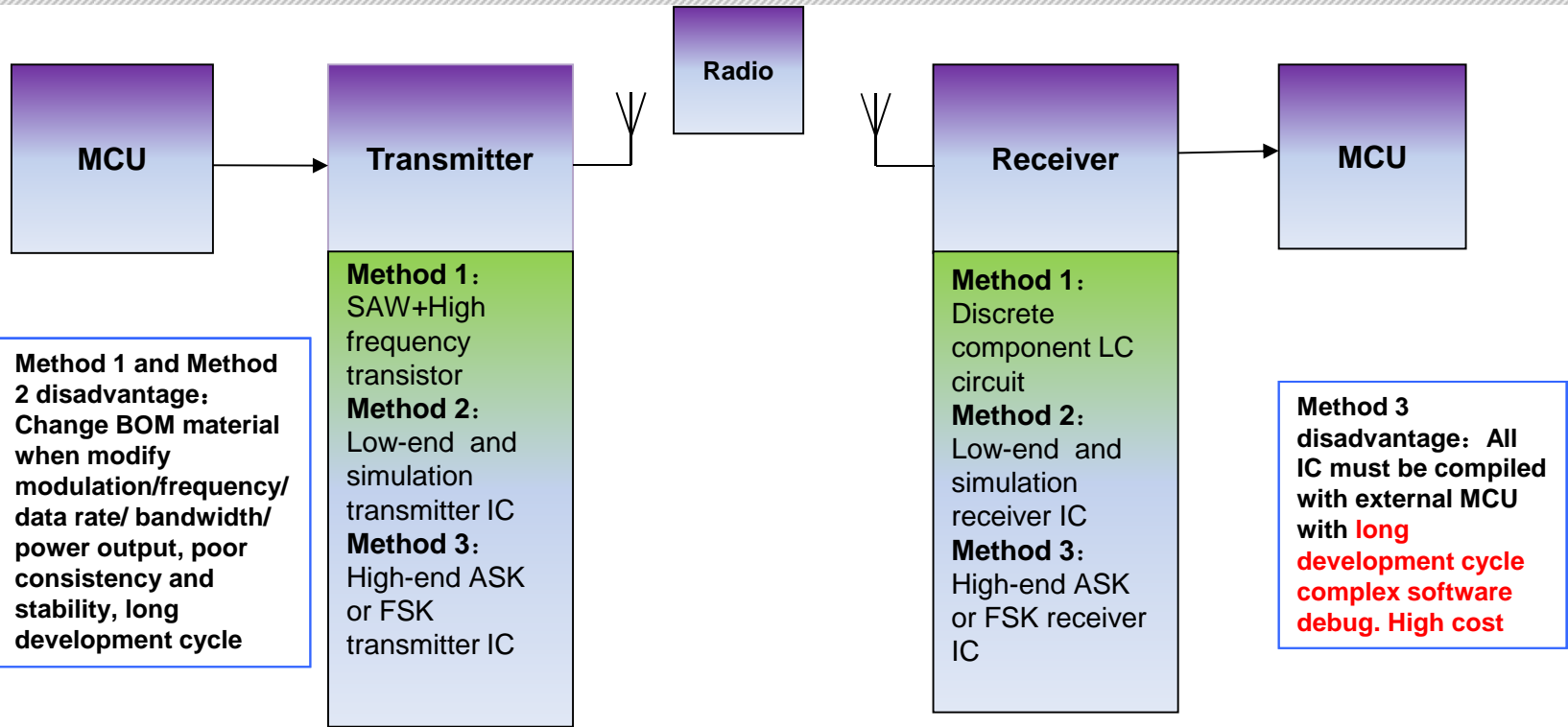
Thermostat

weather glasses

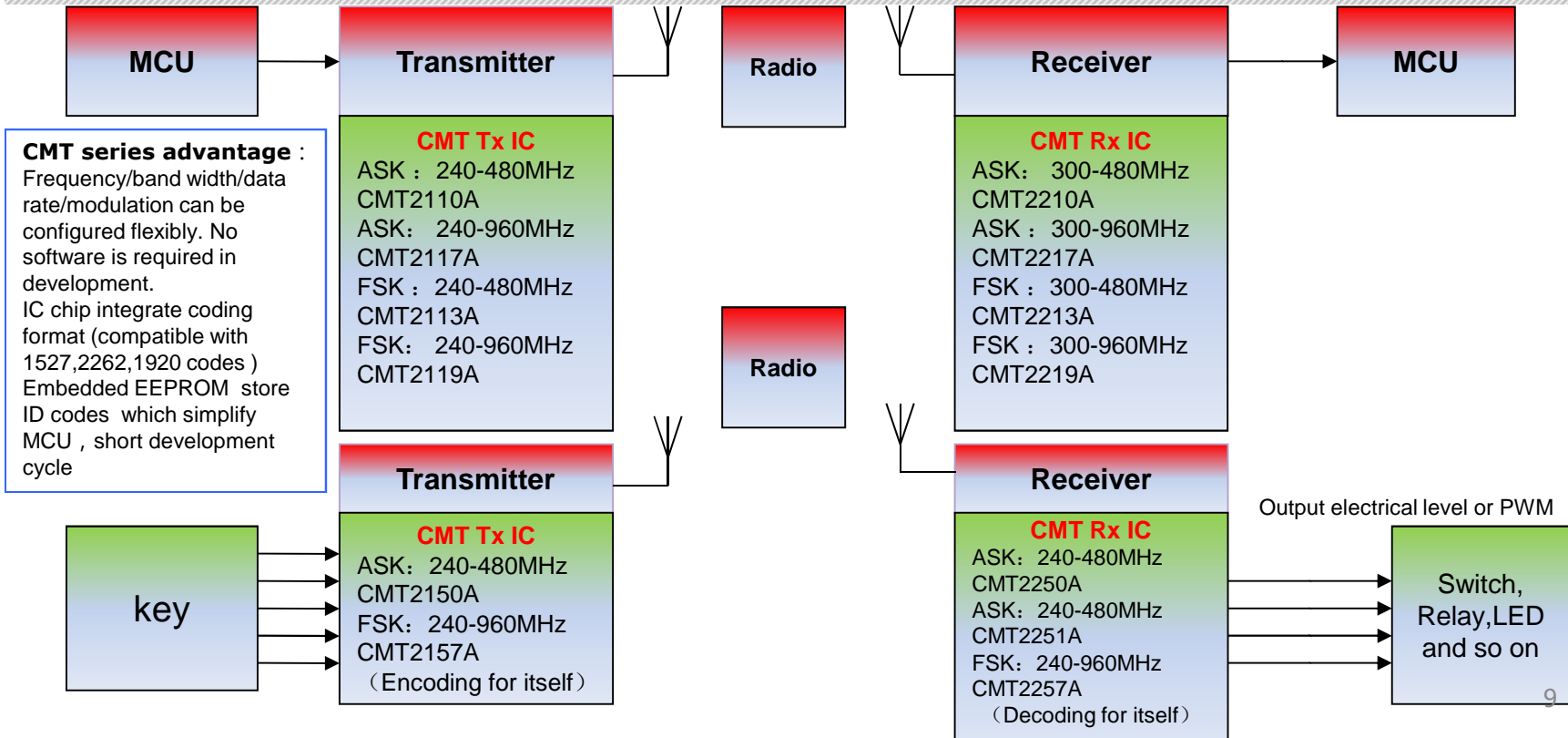
Temperature alarm system and so on

More details: [Http://www.hoperf.com](http://www.hoperf.com)

# Traditional RF Solutions



# Wireless solution of HopeRF



## Advantage of CMT Series

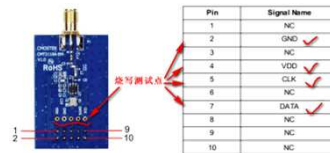
**HOPERF**<sup>®</sup>

- ◆ Frequency/output power/data rate/modulation can be configured flexibly. No software development is required, Greatly shortens the development cycle and simplifies the production.
- ◆ Unique differential antenna design, Perfect for compact size Remote Controller.
- ◆ CMT2150A integrated fixed coding (compatible with 1527/2262/1920,etc), no external MCU is required.
- ◆ CMT2250A integrated fixed decoding, no external MCU is required.
- ◆ Min bandwidth 50kHz, max. link budget up to 127dBm Long communication distance , strong anti-interference ability.
- ◆ Data input, antenna output. No need to change the software, ASK/FSK switched each other easily, easy upgrading from ASK to FSK.
- ◆ CMT series are Pin-to-Pin compatible, All ICs are work with a 26MHz crystal and support any frequency within 300MHz-960MHz. One hardware design is compatible with many CMT series ICs. Simplified BOM helps to reduce the material cost effectively.
- ◆ Embedded EEPROM ( optional ) , storage capacity (Tx:32bytes,Rx64bytes),Save MCU resources, support millions online repetitive programming.
- ◆ Max. output power is 13dBm,which is configurable at 1dBm step. Big Harmonic allowance and will easily pass the approvals.
- ◆ High sensitivity -114dBm, Working current 3.5mA at ASK & 4.2mA at FSK, embedded duty cycle mode to reduce power consumption. Meets the requirements of FCC & ETSI certification( blocking certification 300K)

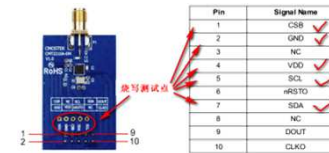
## Development example-easiest development platform

# HOPERF®

**Step 1 : Reserve “burn” spot at PCB Layout stage**

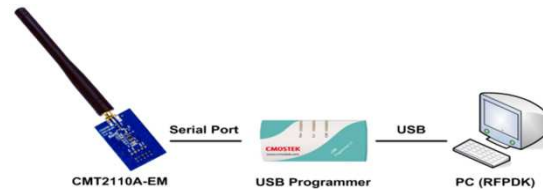


Take Tx CMT2110A as example



Take Rx CMT2210A as example

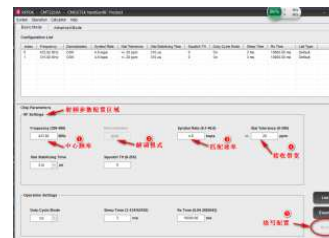
**Step 2: Connect PC with USB programmer**



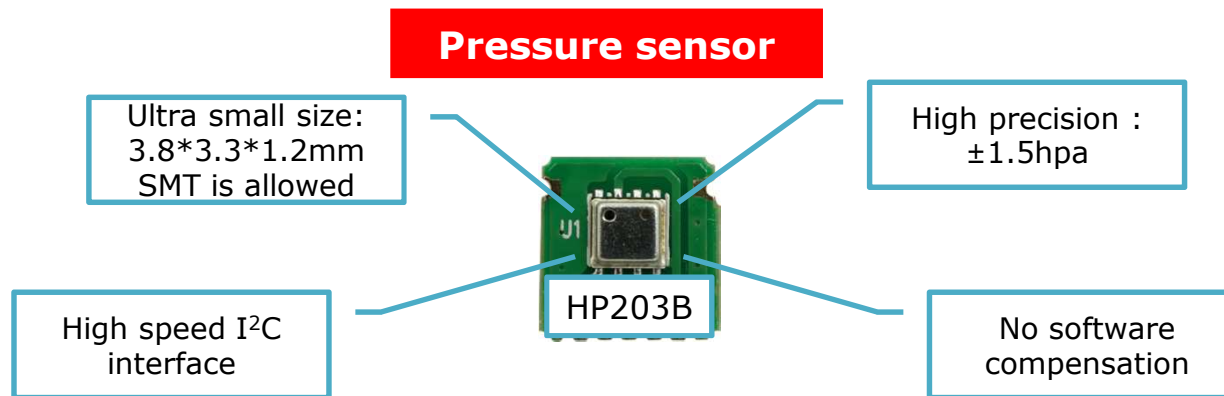
The testing IC is CMT2110A

**Step 3: Open GUI RFPDK to config RF values then click “Burn” , RF IC is configured.**

**RF parameters like frequency/output power / duty cycle can be modified in RFPDK**



Take the configuration of CMT2210A as example



## Description

- ◆ Working voltage : 1.8V -3.6V
- ◆ Embedded altitude/temperature/pressure compensation
- ◆ Use read commands to get compensated values:
  - Pressure: 20-bit means testing value (Pascals)
  - Altitude: 20-bit means testing value ( Meters)
  - Temperature: 20-bit means testing value(°Celsius)
- ◆ ADC sampling rate is configured via commands
- ◆ Interrupt control is programmable
- ◆ Altitude resolution is 0.01m
- ◆ High speed I2C interface, Max speed can be 10Mbits
- ◆ Water proof design

## CMT Series Selection Table

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IC	Model	Modulation	Frequency range	Tx output power	package	Remark	Pairing IC	Corresponding module
Tx IC	CMT2110AW	OOK	240-480MHz	+13dBm	SOT23-6	TWI/Two wire interface	CMT2210AW	RFM110W
	CMT2117AW	OOK	240-960MHz	+13dBm	SOT23-6	TWI/Two wire interface	CMT2217AW	RFM117W
	CMT2119AW	(G)FSK/OOK	240-960MHz	+13dBm	SOT23-6	TWI/registers configuration	CMT2219AW	RFM119W
	CMT2150AW	OOK	240-480MHz	+13dBm	SOP14	Standalone+8 keys	CMT2250AW/ 51AW	NONE
	CMT2157AW	(G)FSK/OOK	240-960MHz	+13dBm	SOP14	Standalone+8 keys	CMT2257AW	NONE
	CMT2180AW	OOK	240-480MHz	+13dBm	SOP14	Soc+4 keys + differential PA	CMT22xxAW	NONE
	CMT2189AW	(G)FSK/OOK	240-960MHz	+13dBm	SOP14	Soc+4 keys + differential PA	CMT22xxAW	NONE



## CMT Series Selection Table

IC	Model	Modulation	Frequency range	sensitivity	package	Remark	Pairing Tx IC	Corresponding module
Rx IC	CMT2210AW	OOK	300-480MHz	-114dBm	QFN16(3*3)	Standalone+1 DATA output	CMT2110AW	RFM210W
	CMT2217AW	OOK	400-960MHz	-116dBm	QFN16(3*3)	Standalone+1 DATA output	CMT2117AW	RFM217W
	CMT2219AW	(G)FSK/OOK	300-960MHz	-116dBm	QFN16(3*3)	4 wire spi+1(DATA) output	CMT2119AW	RFM219W
	CMT2250AW	OOK	300-480MHz	-114dBm	QFN16(3*3) /SOP16/DIP 16	Standalone+4 DATA output	CMT2150AW	NONE
	CMT2251AW	OOK	300-480MHz	-114dBm	QFN16(3*3)	Standalone+1 DATA output(PWM)	CMT2150AW	NONE
TRX IC	CMT2300AW	(G)FSK/OOK	300-960MHz	-120dBm/ +20dBm	QFN16(3*3)	4 wire spi	CMT2300AW	RFM300W

The End

**HOPERF**<sup>®</sup>

**Hope Microelectronics Co.,Ltd**

**The leading manufacturer of IoT sensors and RF products**

**THANKS!**

Your distributor:  
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