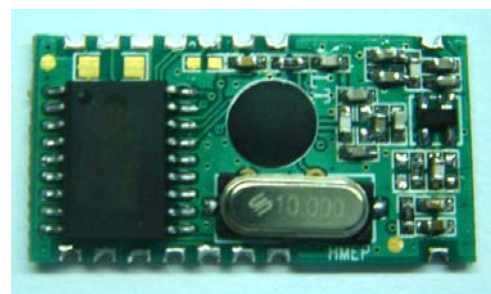# HM-EP

General Introduction

HM-EP is ideal for remote controlling systems. The module is equipped with 6 bit length address code and 4 bits data formats, and the data is FSK modulated for data transmission at the frequency range of 315MHZ，434MHZ，869MHZ，915MHZ.Transmission power up to 15dbm, thus much longer transmitting distance can be reached easily.
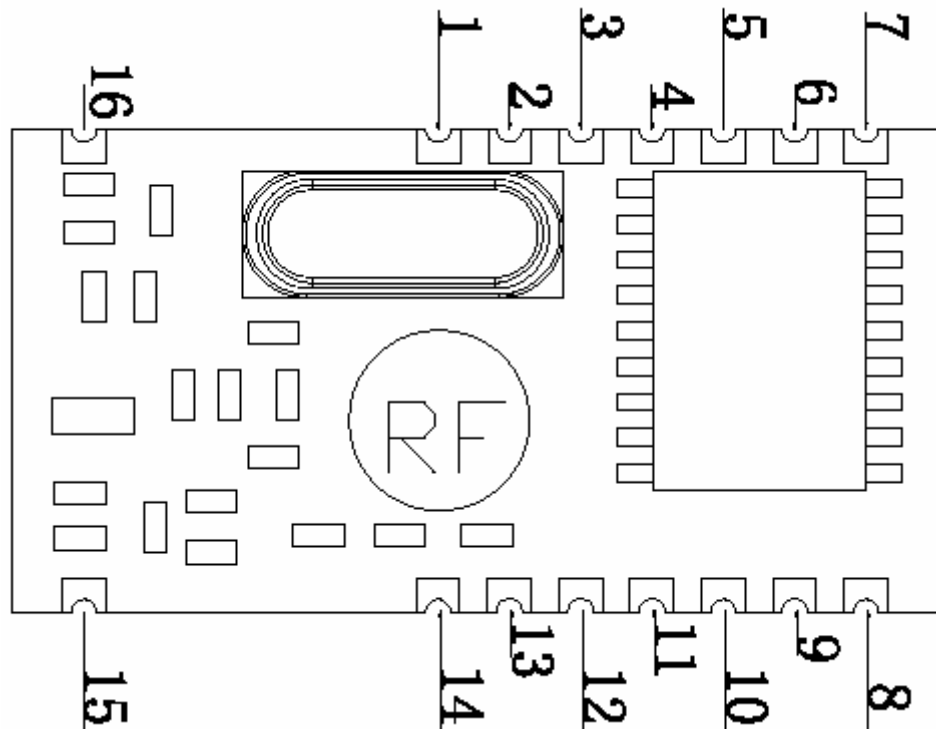
HM-EP

Features:

- low costs, high performance

- very few external components

- 2.2V to 5.4V working voltage

- falling edge on I/O triggers data packets and FSK transmission

- use in conjunction with Hope's HM-D decoding module

- 16 PIN DIP/16 PIN SOP package

Typical Application

- Automobile Door Opener
- Garage Door Opener
- Anti-theft system
- Home Security
- Electrical Home Appliance Control
- wireless Toys
- Other wireless systems

Pin Definition：

Pin	Definition	I/O	Function
1	NC		Not connected
2	A0	I	Address bit 0，with internal pull down
3	A1	I	Address bit 1，with internal pull down
4	A2	I	Address bit 2，with internal pull down
5	A3	I	Address bit 3，with internal pull down
6	A4	I	Address bit 4，with internal pull down
7	A5	I	Address bit 5，with internal pull down
8	NC		Not connected
9	D0	I	Data bit 0，with internal pull up Falling edge trigger transmission
10	D1	I	Data bit 1，with internal pull up Falling edge trigger transmission
11	D2	I	Data bit 2，with internal pull up Falling edge trigger transmission
12	D3	I	Data bit 3，with internal pull up Falling edge trigger transmission
13	GND	I	Power Ground
14	VCC	I	Power VDD
15	ANT		Antenna
16	GND	I	Power Ground

HOPE RF

Absolute Maximum Rating：

Power supply……………………..0.5V -- 6.0V

Input Voltage…….Vss-0.3V -- Vdd+0.3V

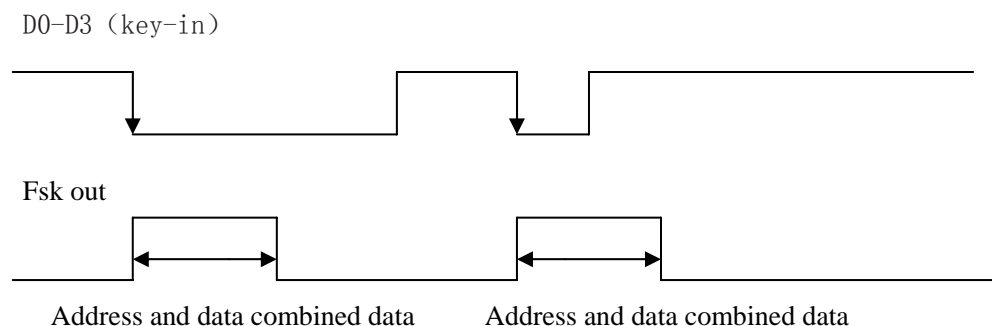Working Temperature………………-40℃ -- 85℃

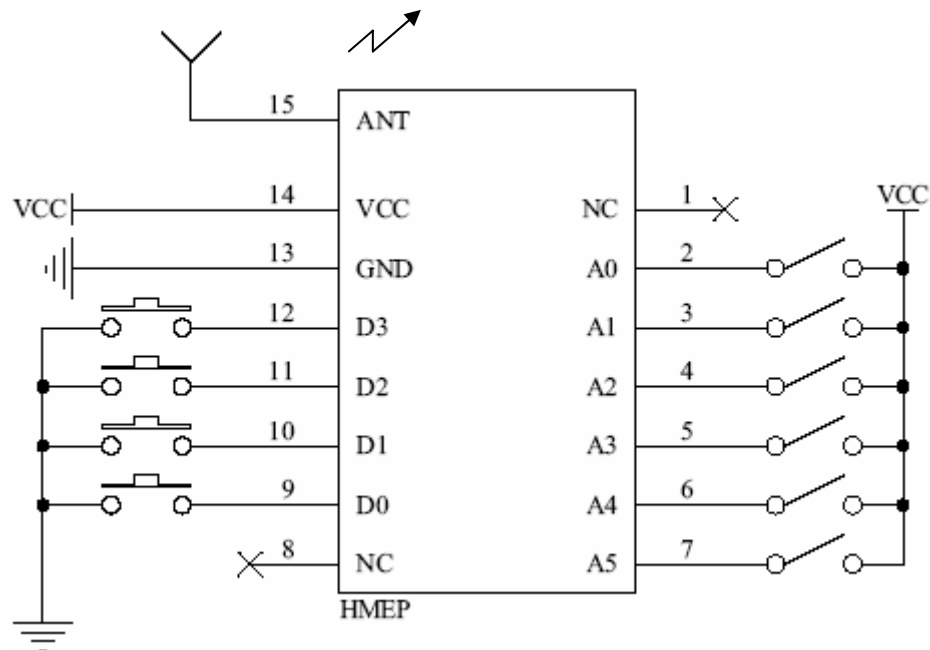Storage Temperature……………..-55℃ -- 125℃

Electrical Characteristic：

T = 25℃

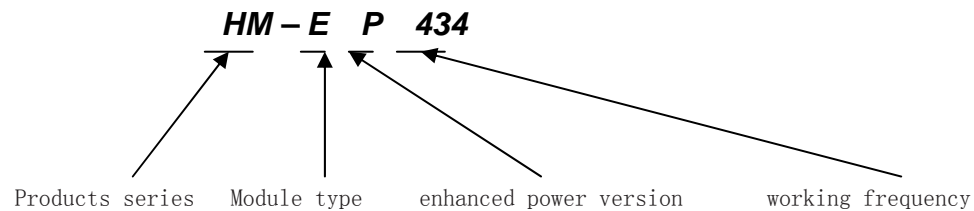| Symbol	Parameter		Minimum	Typical	Maximum	Unit
Vdd	Power supply		2.2		5.4	V
Vih	Input high level	Vdd = 5v	2.0			V
		Vdd = 3v	1.5			
Vil	Input low level	Vdd = 5v			1.0	V
		Vdd = 3v			0.5	
Ifsk	FSK Transmission current (Vdd = 3V)	315MHZ		46		mA
		433MHZ		46		
		868MHZ		48		
		915MHZ		48		
Idd	Standby current（D1-D4 floating,Vdd = 3V）			5		uA
Top	Working temperature range		-35		+80	℃

Function Description：

When there is a falling edge presented on D0-D3 input pin, the module is activated for data transmission. Once the data is transmitted and D0-D3 is   recovered to high level, then the module will enter standby mode, otherwise the FSK will be switched off and the MCU is waiting for D0-D3 to be recovered to high level before entering standby mode.
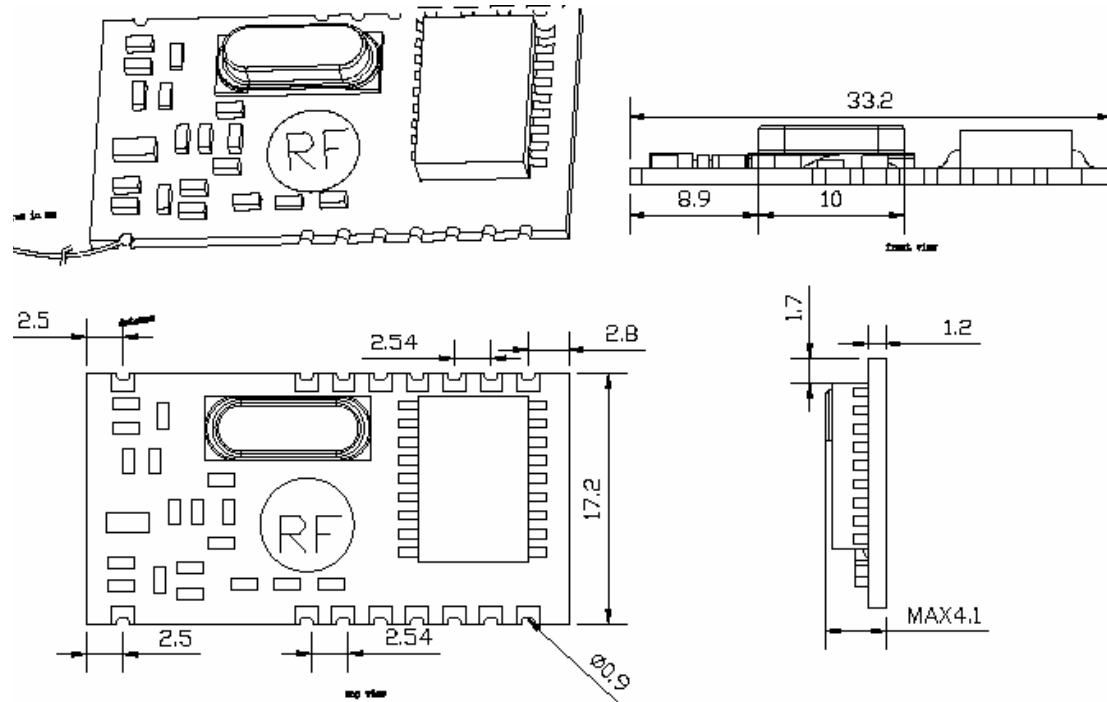
D0-D3（key-in）

Fsk out

Address and data combined data   Address and data combined data

Typical Application Circuit:

Model Definition：

HOPE RF

Mechanical Dimension:

Working Range:

Model	Testing condition	Distance
HM-E315　315MHz	Using HM-D315 as decoding in free open field	>300m
HM-E434　434MHz	Using HM-D434 as decoding in free open field	>600m
HM-E869　869MHz	Using HM-D869 as decoding in free open field	>600m
HM-E915　915MHz	Using HM-D915 as decoding in free open field	>600m

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