一華半導體股份有限公司
MOSDESIGN SEMICONDUCTOR CORP.

2^{20} OTP ENCODER

GENERAL DESCRIPTION

The M320EB is a 2^{20} services of encoder pair with M320D utilizing CMOS LSI design for use in remote control system. The M320EB is design by a one-time programmable process. They decide the transmission word of M320EB that compose of 4 data bits, 20 address bits. A transmission word of the M320EB is transmitted on the DO pin via an RF transmission medium upon receipt of a trigger signal.
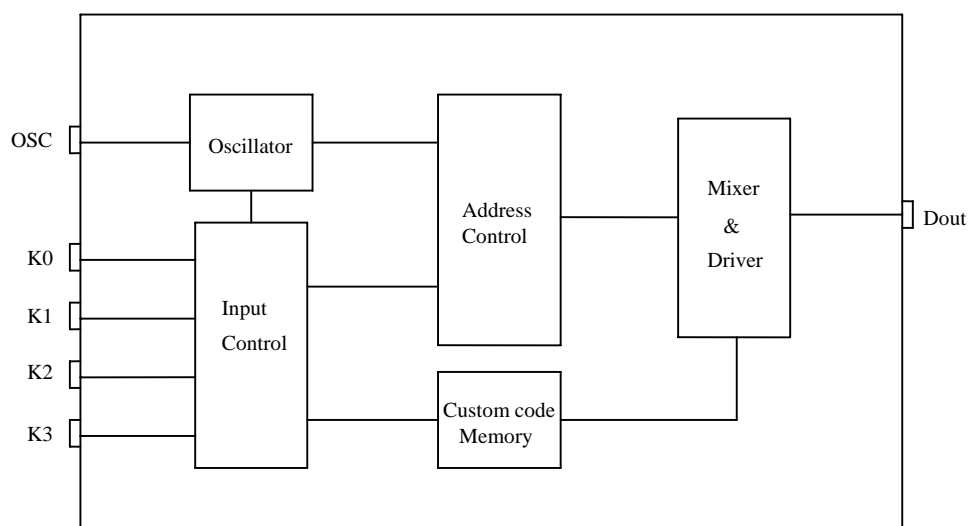
FEATURES

· 4 direct data input pins, Up to 15 data combination.

· 12 seconds auto transmission out off to reduce power consumption.

· Up to 2^{20} (1,048,576) address codes.

· An external oscillation resister.

· One-time programmable process.

· Available in SOP or DIP package.

APPLICATIONS

· Burglar alarm system, car door controllers, car alarm system, home/office security system…etc.

BLOCK DIAGRAM

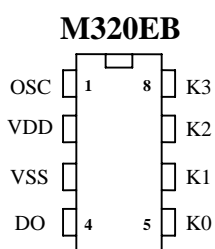# 2^{20} OTP ENCODER

ABSOLUT MAXIMUM RATING

Parameter	Rating	Unit
Supply Voltage	2.4 to 12	V
Input Voltage	$-0.7 \sim V_{DD} +0.3$	V
Operating Temperature	-20 to 70	℃
Storage Temperature	-55 to +125	℃

ELECTRICAL CHARACTERISTICS

Characteristics	Sym.	Min.	Typ.	Max.	Unit	REMARKS
Operating Voltage	V_{DD}	2.4	—	12	V	
Operating Current	I_{OP}	—	0.3	—	mA	No load
Quiescent Current	I_{SB}	—	1	3	μA	@V_{DS}=1.2V
Input Voltage	V_{IH}	$0.7V_{DD}$	—	V_{DD}	V	
	V_{IL}	0	—	$0.3V_{DD}$		
Output Current	I_O	—	2	—	mA	
Oscillator Frequency	Fosc	—	80	—	KHz	External±30%, Rosc=300KΩ

PIN DESCRIPTION

M320EB

```
OSC  [ 1      8 ]  K3
VDD  [          ]  K2
VSS  [          ]  K1
DO   [ 4      5 ]  K0
```

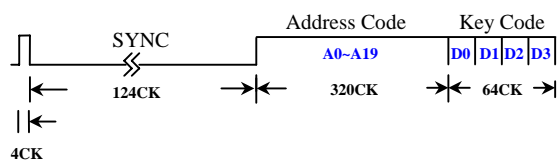| NO.	Name	I/O	Description
1	OSC	I	Oscillator input pin
2	VDD	—	Positive power supply
3	VSS	—	Negative power supply (GND)
4	DO	O	Encoder data serial transmission output
5	K0	I	Input pin D0 setting and transmission output
6	K1	I	Input pin D1 setting and transmission output
7	K2	I	Input pin D2 setting and transmission output
8	K3	I	Input pin D3 setting and transmission output

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CODE FORMAT

(1) Bit format

DEFINITE：1CK= 8 OSC CLKS WIDTH

(2) Output Data Frame

(3) K0~K3 Combination Table

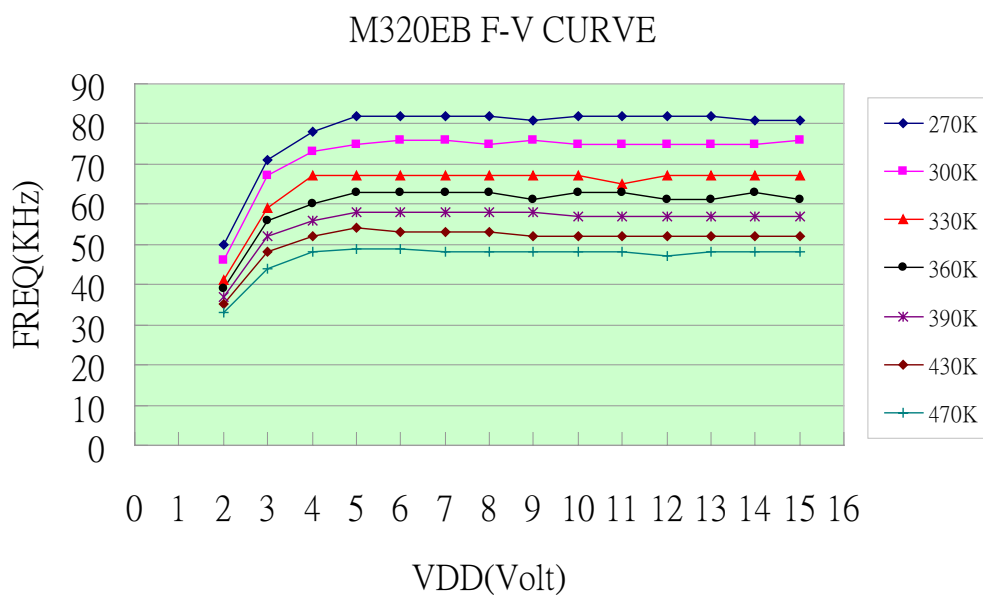| KEY				DATA			
K3	K2	K1	K0	D3	D2	D1	D0
0	0	0	1	0	0	0	1
0	0	1	0	0	0	1	0
0	0	1	1	0	0	1	1
0	1	0	0	0	1	0	0
0	1	0	1	0	1	0	1
0	1	1	0	0	1	1	0
0	1	1	1	0	1	1	1
1	0	0	0	1	0	0	0
1	0	0	1	1	0	0	1
1	0	1	0	1	0	1	0
1	0	1	1	1	0	1	1
1	1	0	0	1	1	0	0
1	1	0	1	1	1	0	1
1	1	1	0	1	1	1	0
1	1	1	1	1	1	1	1

Note：1 = VDD

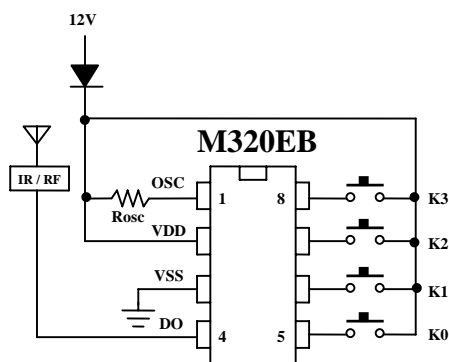0 = VSS

2^{20} OTP ENCODER

SINGLE RESISTOR OSCILLATOR

The typical oscillator frequency with various resistor values for M320EB is given below：

Encoder (M320EB) Oscillator Frequency

M320EB F-V CURVE

APPLICATION DIAGRAM

*All specs and applications shown above subject to change without prior notice.
（ 以上電路及規格僅供參考,本公司得逕行修正 ）