



## LX2240B-1 User's Guide

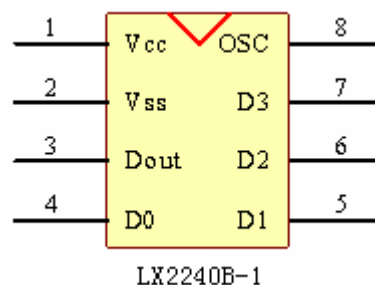
### Description

LX2240B-1 is designed by CMOS technology, can storage ISN and study code beforehand, it is decoded by software; ISN has 20bit can storage 1048576 for combination, this can reduce any code collision.

### Main Features

- 1 . low power consumption quiescent current  $< 1\mu\text{A}$  ;
- 2 . operating voltage  $V_{cc}=2.4 - 13.0\text{V}$ ;
- 3 . input four key-press through combination, that can assemble 15 key-press mostly;
- 4 . single oscillator circuit, need one external resistor only.
- 5 . small volume 8 package by SOP , it is perfect upgrade product of LX2260;
- 6 . it is compatible with PT2240B absolutely.

### Pin Configuration



### Pin Description

Sign	Description	Pin	I / O
Vcc	Positive Power Supply	1	
Vss	Negative Power Supply	2	
TXD	Code output pin	3	O
D0	Key-press input pin, contain pull-down resistor	4	I
D1	Key-press input pin, contain pull-down resistor	5	I
D2	Key-press input pin, contain pull-down resistor	6	I
D3	Key-press input pin, contain pull-down resistor	7	I
OSC	Oscillator circuitry input pin, connect resistor to power supply	8	I



## Limit parameter

Sign	Parameter	Conditon	Scope	Unit
Vcc	Supply voltage		-0.3~15	V
VI	Input voltage		-0.3~Vcc+ 0.3	V
VO	Output voltage		-0.3~Vcc+ 0.3	V
Tst	Storage temperature		-40 ~125	°C
Top	Operating temperature		-20 ~70	°C
Pdis	Most power consumption	Vcc = 12V (empty)	24	mW

## Electric characteristic

Parameter	Condition	Sign	Least	Type	Most	Unit
Operating voltage		Vcc	2.4	12	15	V
Quiescent current	Vcc = 12V, OSC stop , OutPut Unloaded	Isb			1.0	uA
Operating current	Vcc = 12V , one key-press input (one contact Vcc)	Iop		0.5	1.0	mA
Driven pull current	Vcc = 12V, Voh = 6V	Ioh	5			mA
Driven sink current	Vcc = 12V, Vol = 6V	Iol	3			mA
Operating frequency		Fop		80K		Hz

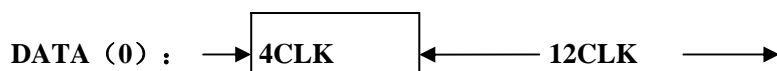
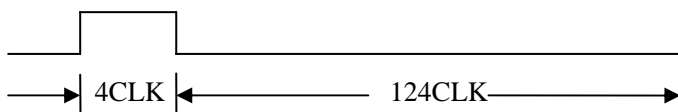
## Output Code format

ISN C0~C19 (1 million group)	D0	D1	D2	D3	Synchronization code
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Complete format of 1 frame code



synchronization code:



Definition: 1 CLK=8 OSC CLOCK

### Oscillator resistor and 1 bit data width(TD) corresponding table

	12V	10V	8V	5V
150K	0.935	0.95	0.975	1.045
160K	0.985	1.005	1.03	1.095
180K	1.135	1.15	1.175	1.255
200K	1.22	1.25	1.255	1.33
220K	1.315	1.34	1.375	1.45
240K	1.435	1.45	1.49	1.55
270K	1.6	1.63	1.675	1.76
300K	1.785	1.81	1.84	1.93
330K	1.94	1.96	1.99	2.095
360K	2.17	2.2	2.23	2.345
390K	2.25	2.275	2.3	2.4



The oscillator resistor replace relation of LX2240B-1与PT2240B (for reference only):

PT2240B	LX2240B-1
3.3M	240K
3.0M	220K
2.7M	220K
2.0M	160K
1.5M	120K

**K0~K3 key-press combination and output relation table**

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



## Application Circuitry Diagram

