

1. General Description

The MDT75C271 is an OTP Encoder using CMOS technology. It has a maximum of 20 bits addressing code providing up to one million codes. It can reduce any code collision and unauthorized code scanning possibilities.

2. Features

- CMOS technology.
- Low standby current : 1.0 uA.
- Wide range of Operating Voltage : Vdd = 4.5V ~ 12V.
- Up to 4 data pins.
- Total 1048576 address codes.
- Built-in RC oscillator with single external resistor.
- Available in DIP and SOP package.
- Automatically enter sleep mode if press button over 6 ~ 10 sec

3. Pin Assignment

MDT75C271P / 75C271S

8 pin DIP / SOP

OSCR	1	8	K3
Vdd	2	7	K2
Vss	3	6	K1
TXD	4	5	K0

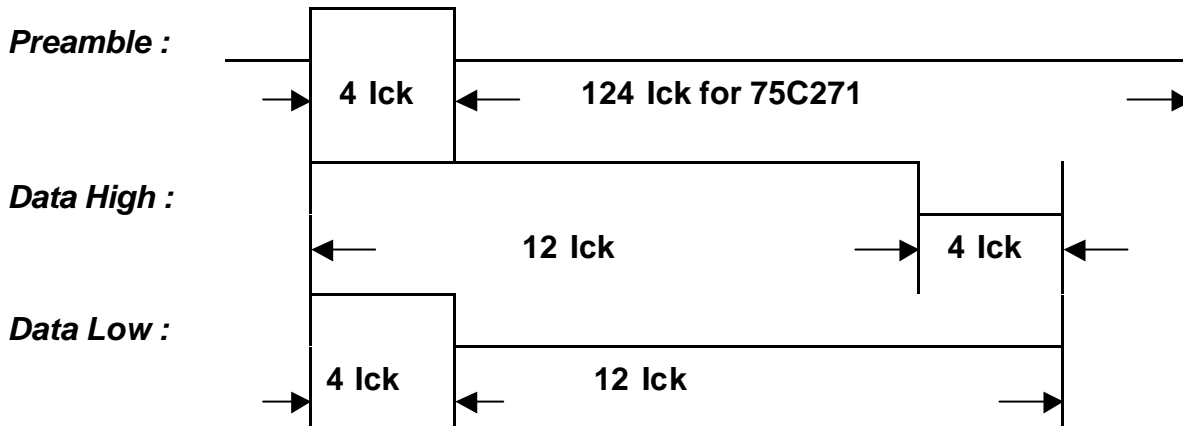
4. Pin Function Description

Symbol	I/O	Function Description
OSCR	I	Connect a resistor to Vdd to adjust internal RC freq.
Vdd		Positive power supply 4.5V ~ 12 V.
Vss		Ground.
TXD	O	Data output pin.
K0	I	Data input with pull low Resistor.
K1	I	Data input with pull low Resistor.
K2	I	Data input with pull low Resistor.
K3	I	Data input with pull low Resistor.

5. Output Data Reporting

Output data frame

Preamble	C0 ~ C19 (1048576 address codes)	D0	D1	D2	D3
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Note : 1 lck = 8 OSC clocks

6. Key 0 ~ 3 combination 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

7. Absolute Maximum Rating

Symbol	Parameter	Conditions	Rating	Unit
Vdd	Supply Voltage		-0.3 ~ 13	V
Vi	Input Voltage		-0.3 ~ Vdd+0.3	V
Vo	Output Voltage		-0.3 ~ Vdd+0.3	V
Tst	Storage Temp.		-40 ~ 125	
Top	Operating Temp.		-20 ~ 70	
Pdis	Max. Power dissipation	Vdd = 12V	300	mW

8. DC Electrical Characteristics (T_A=0 to 70 °C)

Symbol	Parameters	Conditions	Min.	Typ.	Max.	Unit
Vdd	Operating Voltage		4.5	5	12	V
I _{sb}	Stand by current	Vdd = 12V, OSC stop K0 ~ K3 = Low Output Unloaded		1.0	3.0	µA
I _{op}	Operating current	Vdd =12V		0.5	1.0	mA
I _{oh}	Source current	Vdd =12V, Voh = 6V	4.5			mA
I _{ol}	Sink Current	Vdd =12V, Vol = 6V	4.5			mA
F _{op}	Operating Freq	Vdd=10V, Rext=390K ohm		80K		HZ

9. External oscillator resistor selection table (Vdd=11V)

Rext (ohm)	Freq. (Hz)	Operating Current
510 K	65.0 K	443 µA
470 K	65.0 K	444 µA
430 K	72.7 K	445 µA
390 K	79.6 K	447 µA
360 K	82.9 K	449 µA
330 K	90.4 K	451 µA

10. Application circuit

