



**IR TV/VCD TRANSMITTER  
IR CONTROL IC**

**GENERAL DESCRIPTION 功能叙述**

The M3010 is a remote control transmitter ASIC for TV, VTR, etc.. There are supports 32 systems. Each system has a maximum of 64 commands. Thus can provide up to a total of 2,48 commands.

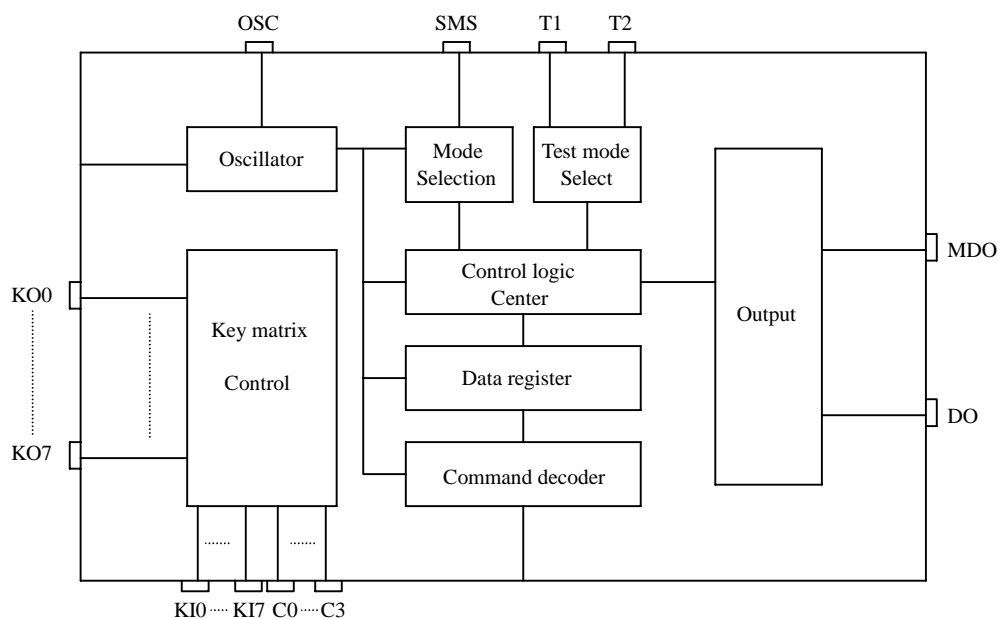
**FEATURES 产品特长**

- Pin compatible with SAA3010
- Bi-phase transmission technique
- Do with a 38 KHz carries for IR

**APPLICATIONS 产品应用**

- Audio equipment, TV, VTR, cassette desks etc..

**BLOCK DIAGRAM 功能方块图**



\*All specs and applications shown above subject to change without prior notice.  
( 以上电路及规格仅供参考,本公司得径行修正 )



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**ABSOLUTE MAXIMUM RATING**

(TA=25°C)

Parameter	Rating	Unit
Supply Voltage	-0.3 to 6	V
Input Voltage	-0.2~V <sub>DD</sub> +0.2	V
Operating Temperature	0 to 60	°C
Storage Temperature	-25 to +125	°C

**ELECTRICAL CHARACTERISTICS**

( VDD=3V unless otherwise specified )

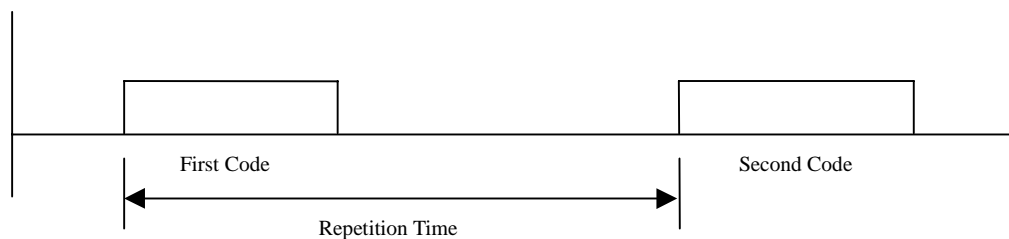
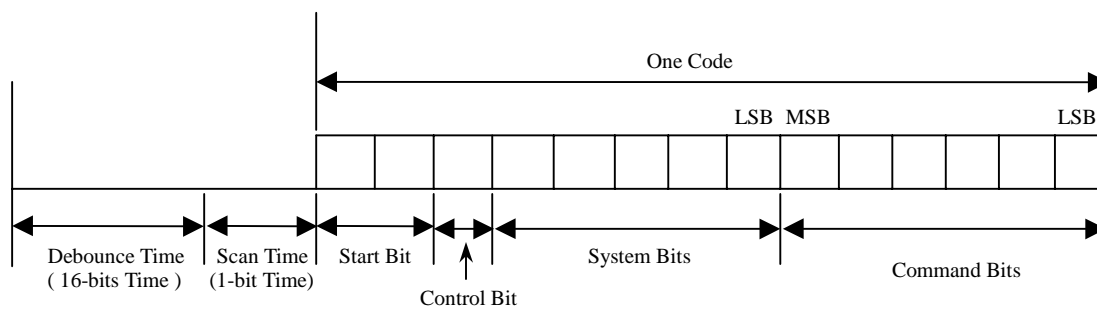
Characteristics	Sym.	Min.	Typ.	Max.	Unit	REMARKS
Operating Voltage	V <sub>DD</sub>	2	3	5.5	V	
Quiescent Current	I <sub>OP</sub>	—	0.1	5	μ A	No load
Operating Current	I <sub>SB</sub>	—	0.1	0.5	mA	@V <sub>DS</sub> =1.2V
Output Drive Current	I <sub>SB</sub>	—	2	—	mA	@V <sub>DS</sub> =1.2V
Input Voltage	V <sub>IH</sub>	V <sub>DD</sub> -0.2	V <sub>DD</sub>	V <sub>DD</sub>	V	
	V <sub>IL</sub>	V <sub>SS</sub>	V <sub>SS</sub>	V <sub>SS</sub> +0.2		
Oscillator Frequency	Fosc	—	455	—	KHz	External ± 30%



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### CODE FORMAT

(1) The transmission code consists of 1.5 start bits ( 2 x logic 1 ), 1 control bit, 5 system bits, and 6 command bit.



Where debounce time + scan time = 18 -bits time  
Repetition time = 4 x 16-bits Time

(2) Bi phase code



$$1 \text{ bit time} = 3 \times 2^8 \times T_{osc} = 1.688 \text{ ms ( Typ. } T_{osc} = \frac{1}{455 \text{ KHz}} \text{ )}$$



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COMMAND MATRIX DATA CODE

Code No.	C-LINE							KO-LINE							SYSTEM BITS							
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	5	4	3	2	1	0
0	●								●								0	0	0	0	0	0
1	●									●							0	0	0	0	0	1
2	●										●						0	0	0	0	1	0
3	●											●					0	0	0	0	1	1
4	●												●				0	0	0	1	0	0
5	●													●			0	0	0	1	0	1
6	●														●		0	0	0	1	1	0
7	●															●	0	0	0	1	1	1
8		●							●								0	0	1	0	0	0
9		●								●							0	0	1	0	0	1
10		●									●						0	0	1	0	1	0
11		●										●					0	0	1	0	1	1
12		●											●				0	0	1	1	0	0
13		●												●			0	0	1	1	0	1
14		●													●		0	0	1	1	1	0
15		●														●	0	0	1	1	1	1
16			●						●								0	1	0	0	0	0
17			●							●							0	1	0	0	0	1
18			●								●						0	1	0	0	1	0
19			●									●					0	1	0	0	1	1
20			●										●				0	1	0	1	0	0
21			●											●			0	1	0	1	0	1
22			●												●		0	1	0	1	1	0
23			●													●	0	1	0	1	1	1
24				●					●								0	1	1	0	0	0
25				●						●							0	1	1	0	0	1
26				●							●						0	1	1	0	1	0
27				●								●					0	1	1	0	1	1
28				●									●				0	1	1	1	0	0
29				●										●			0	1	1	1	0	1
30				●											●		0	1	1	1	1	0
31				●												●	0	1	1	1	1	1
32					●				●								1	0	0	0	0	0
33					●					●							1	0	0	0	0	1
34					●						●						1	0	0	0	1	0
35					●							●					1	0	0	0	1	1
36					●								●				1	0	0	1	0	0



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COMMAND MATRIX DATA CODE

Code No.	C-LINE							KO-LINE							SYSTEM BITS							
	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7	5	4	3	2	1	0
37					●									●			1	0	0	1	0	1
38					●										●		1	0	0	1	1	0
39					●										●		1	0	0	1	1	1
40						●		●									1	0	1	0	0	0
41						●			●								1	0	1	0	0	1
42						●				●							1	0	1	0	1	0
43						●					●						1	0	1	0	1	1
44						●						●					1	0	1	1	0	0
45						●							●				1	0	1	1	0	1
46						●								●			1	0	1	1	1	0
47						●									●		1	0	1	1	1	1
48							●	●									1	1	0	0	0	0
49							●		●								1	1	0	0	0	1
50							●			●							1	1	0	0	1	0
51							●				●						1		0	0	1	1
52							●					●					1	1	0	1	0	0
53							●						●				1	1	0	1	0	1
54							●							●			1	1	0	1	1	0
55							●								●		1	1	0	1	1	1
56								●	●								1	1	1	0	0	0
57								●		●							1	1	1	0	0	1
58								●			●						1	1	1	0	1	0
59								●				●					1	1	1	0	1	1
60								●					●				1	1	1	1	0	0
61								●						●			1	1	1	1	0	1
62								●							●		1	1	1	1	1	0
63								●							●		1	1	1	1	1	1



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SYSTEM MATRIX DATA CODE

Code No.	C-LINE				KO-LINE								SYSTEM BITS				
	0	1	2	3	0	1	2	3	4	5	6	7	4	3	2	1	0
0	●				●								0	0	0	0	0
1	●					●							0	0	0	0	1
2	●						●						0	0	0	1	0
3	●							●					0	0	0	1	1
4	●								●				0	0	1	0	0
5	●									●			0	0	1	0	1
6	●										●		0	0	1	1	0
7	●	●										●	0	0	1	1	1
8		●			●								0	1	0	0	0
9		●				●							0	1	0	0	1
10		●					●						0	1	0	1	0
11		●						●					0	1	0	1	1
12		●							●				0	1	1	0	0
13		●								●			0	1	1	0	1
14		●									●		0	1	1	1	0
15		●										●	0	1	1	1	1
16			●		●								1	0	0	0	0
17			●			●							1	0	0	0	1
18			●				●						1	0	0	1	0
19			●					●					1	0	0	1	1
20			●						●				1	0	1	0	0
21			●							●			1	0	1	0	1
22			●								●		1	0	1	1	0
23			●									●	1	0	1	1	1
24				●	●								1	1	0	0	0
25				●		●							1	1	0	0	1
26				●			●						1	1	0	1	0
27				●				●					1	1	0	1	1
28				●					●				1	1	1	0	0
29				●						●			1	1	1	0	1
30				●							●		1	1	1	1	0
31				●								●	1	1	1	1	1



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APPLICATION DIAGRAM 参考电路图

