



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

**GENERAL DESCRIPTION 功能敘述**

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.

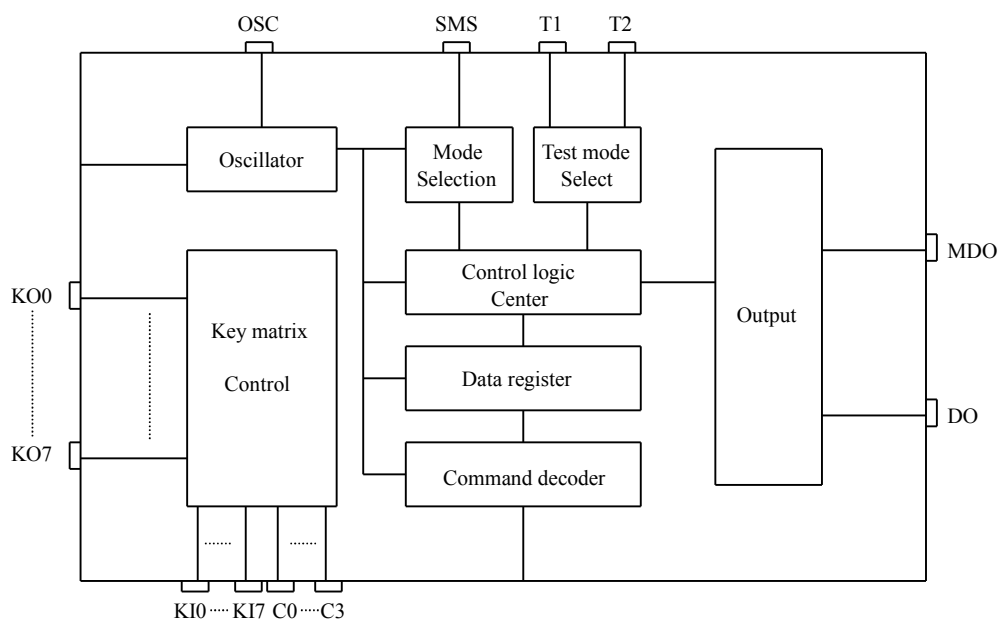
**FEATURES 產品特長**

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

**APPLICATIONS 產品應用**

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

**BLOCK DIAGRAM 功能方塊圖**



\*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 )



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

**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**

(V<sub>DD</sub>=3V unless otherwise specified)

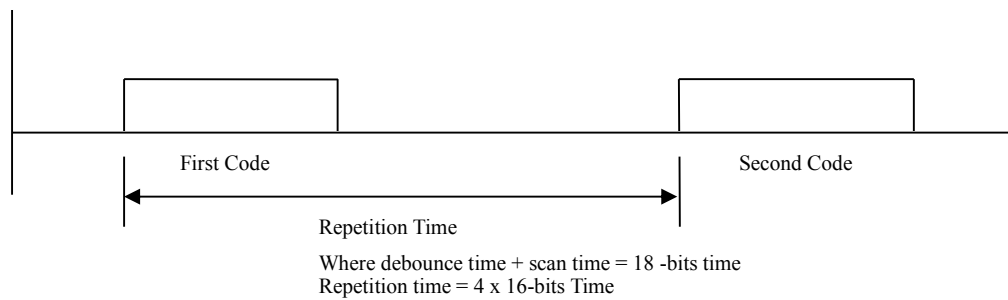
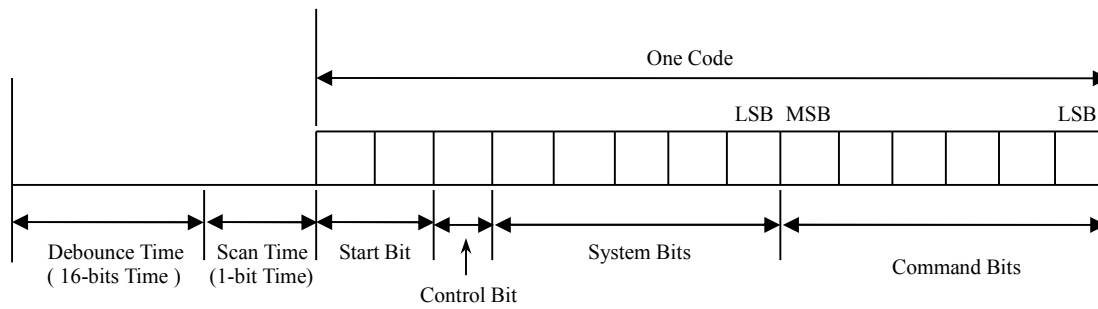
Characteristics	Sym.	Min.	Typ.	Max.	Unit	REMARKS
Operating Voltage	V <sub>DD</sub>	2	3	5.5	V	
Quiescent Current	I <sub>OP</sub>	—	0.1	5	μA	No load
Operating Current	I <sub>SB</sub>	—	0.1	0.5	mA	@V <sub>DS</sub> =1.2V
Output Drive Current	I <sub>SB</sub>	—	2	—	mA	@V <sub>DS</sub> =1.2V
Input Voltage	V <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	F <sub>osc</sub>	—	455	—	KHz	External±30%



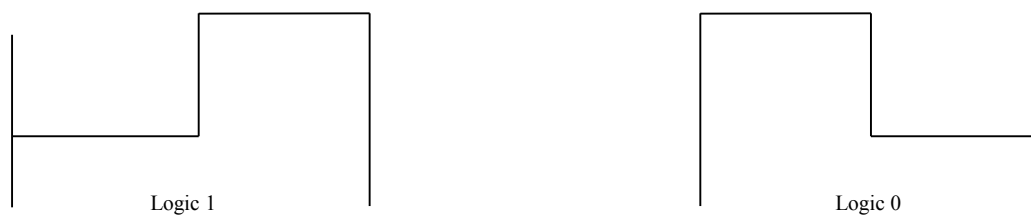
**IR TV/VCD TRANSMITTER  
IR CONTROL IC**

**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.



(2) Bi phase code



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



IR TV/VCD TRANSMITTER  
IR CONTROL IC

COMMAND MATRIX DATA CODE

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



IR TV/VCD TRANSMITTER  
IR CONTROL IC

COMMAND MATRIX DATA CODE

Code No.	C-LINE										KO-LINE										SYSTEM BITS											
37	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	1	0	0	1	1	0
38					●																						1	0	0	1	1	1
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



IR TV/VCD TRANSMITTER  
IR CONTROL IC

SYSTEM MATRIX DATA CODE

Code No.	C-LINE				KO-LINE								SYSTEM BITS					
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



IR TV/VCD TRANSMITTER  
IR CONTROL IC

APPLICATION DIAGRAM 參考電路圖

