



General Description

ZT202 is RS232 type Europe market universal remote control IC. It can control 8 devices at most , includes TV, VCR, Satellite receiver, Cable TV converter, CD, VCD, DVD, HIFI, Tape....

Features

- Single chip 8-bit micro-controller
- Operating voltage:2.2V to 5.5V
- Operating current:1.0mA to 5.1mA
- Standby current: 1uA to 3uA
- Low power dissipation
- Ambient operating temperature:0 to +70
- Storage temperature:-55 to +150
- Total 56 keys design(P0.0-P0.7 x P1.0-P1.6)
- Resonator at 3.58M HZ
- For TV , VCR, Satellite receiver, Cable TV converter, VCD, CD, DVD, Tape, HiFi ...
- Serial RS232 protocol baudrate selecting options.
- TV has TV1 and TV2 two different data groups.
- VCR1 VCR2 same data device includes VCD and VCR
- CBL1 CBL2 same data device includes satellite receiver and cable TV converter.
- AUX1 AUX2 same data device includes CD, TAPE, DVD,HIFI.

Pin Description

Pin	Function
Vdd	Positive power pin
OSCO	Resonator pin(3.58M)
OSCI	Resonator pin(3.58M)
GND	Ground pin
/RES	System reset pin(Low active)
TEST	For test mode only
P0.0	Write data by serial
P0.1	
P0.2	
P0.3	
P0.4	Read data by serial
P0.5	
P0.6	
P0.7	
Pin	Function
P1.0	Baud rate setting bit0
P1.1	Baud rate setting bit1
P1.2	Baud rate setting bit2

P1.3	Baud rate setting bit3
P1.4	
P1.5	
P1.6	
P1.7	IR LED output pin
AGND	Ground pin
SPK1	DAC1 output(unused)
AVdd	Positive power pin
SPK2	DAC2 output(LED display pin)



Absolute Maximum Rating

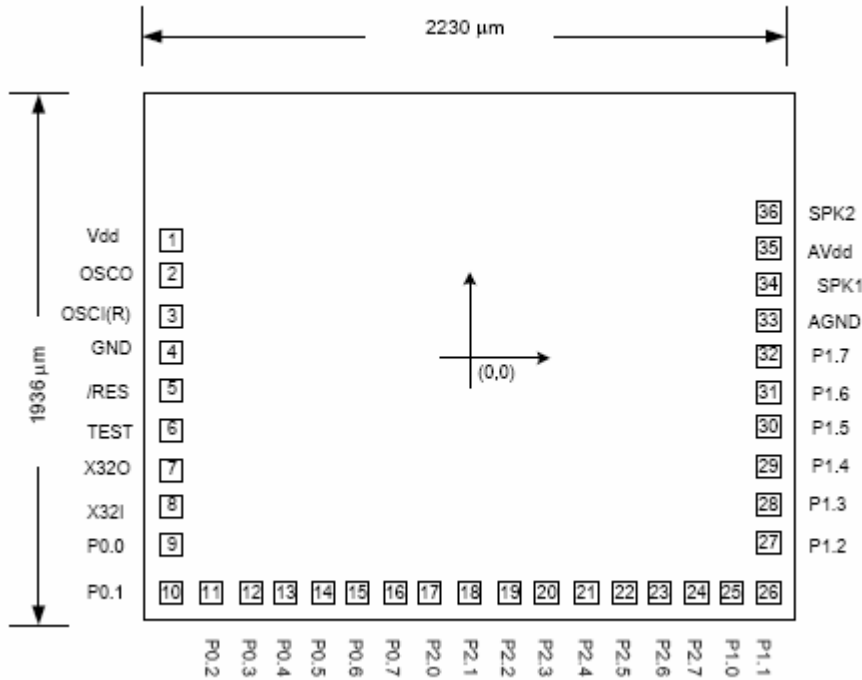
PARAMETER	RATING	UNIT
Supply Voltage to Ground	-0.3 to +5.0	V
Applied Voltage	-0.3 to +5.0	V
Power Dissipation	60	mW
Ambient OP Temperature	0 to +70	
Storage Temperature	-55 to +150	

DC Characteristics

Parameter	Min.	TYP.	Min.	Unit
OP.Voltage	2.4		5.5	V
OP.Current		1.3	5.1	mA
Standby Current		1	3	uA
DAC output current		3.67		mA
Input High Voltage	0.8Vdd		Vdd	
Input Low Voltage	0		0.2Vdd	

AC Characteristics

Parameter	Min.	TYP.	Min.	Unit
CPU op. Frequency		3.58		MHZ
POR duration	10	15	50	mS



Note:

- (1) Dice Format IC dimension: 2230um(W) x 1930um(H)
- (2) Substrate connect to ground(GND)
- (3) Bonding should start from GND pin

(Unit: μm)

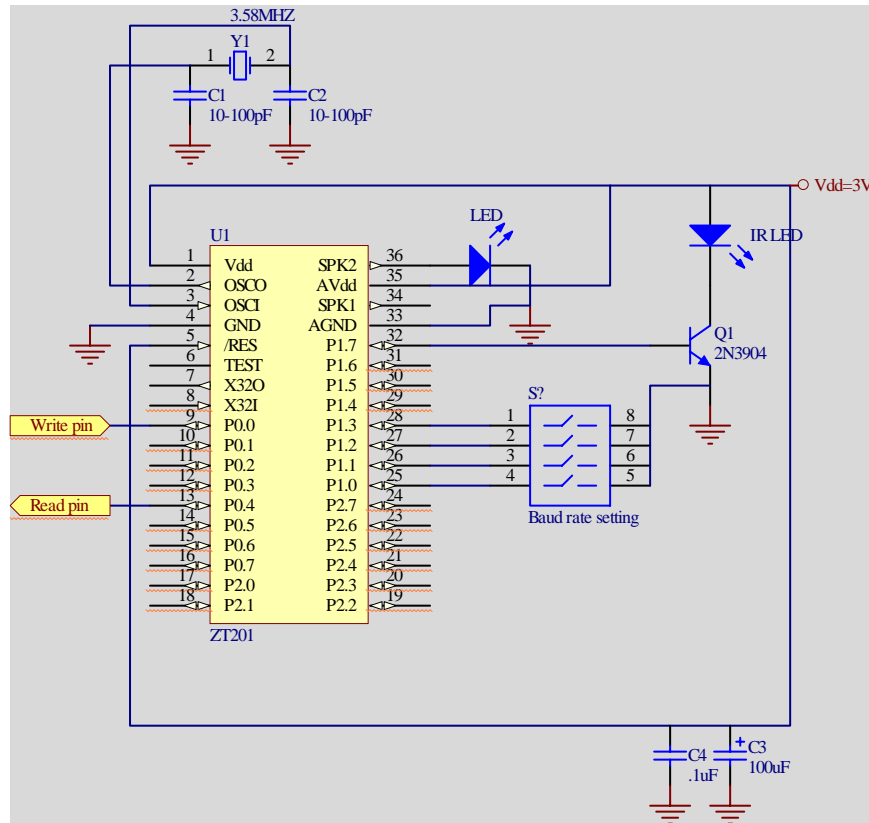
Pad	Name	X	Y	Pad	Name	X	Y
1	VDD	-1005.00	323.35	21	NC	375.00	-858.00
2	OSCO	-1005.00	198.35	22	NC	500.00	-858.00
3	OSCI	-1005.00	73.35	23	NC	625.00	-858.00
4	GND	-1005.00	-51.65	24	NC	750.00	-858.00
5	/RES	-1005.00	-176.65	25	P1.0	875.00	-858.00
6	TEST	-1005.00	-301.65	26	P1.1	1005.00	-858.00
7	NC	-1005.00	-426.65	27	P1.2	1005.00	-697.85
8	NC	-1005.00	-551.65	28	P1.3	1005.00	-572.85
9	P0.0	-1005.00	-676.65	29	P1.4	1005.00	-447.85
10	P0.1	-1005.00	-858.00	30	P1.5	1005.00	-322.85
11	P0.2	-875.00	-858.00	31	P1.6	1005.00	-197.85
12	P0.3	-750.00	-858.00	32	P1.7	1005.00	-72.85
13	P0.4	-625.00	-858.00	33	AGND	1005.00	52.15
14	P0.5	-500.00	-858.00	34	SPK1	1005.00	177.15
15	P0.6	-375.00	-858.00	35	AVDD	1005.00	317.00
16	P0.7	-250.00	-858.00	36	SPK2	1005.00	442.00
17	NC	-125.00	-858.00				
18	NC	0.00	-858.00				
19	NC	125.00	-858.00				
20	NC	250.00	-858.00				

Note: 1. Substrate connected to ground (GND)

2. Bonding should start from GND pin



Universal Remote Control Application circuit



Baudrate setting by switch(all open=9600BPS)




Key functions:

Device Key: (Device Key No sending any IR signal)

Key Name	Device Name	Max Code Number
1	TV1	255
2	VCR1	197
3	CBL1	153
4	AUX1	246
5	TV2	114
6	VCR2	197
7	CBL2	153
8	AUX2	246

Key functions: (for TV and CBL)

Key Name	TV(CBL)	Function Description
9	POWER	POWER
10	CH+	Channel Up
11	CH-	Channel Down
12	0/10	
13	1	
14	2	
15	3	
16	4	
17	5	
18	6	
19	7	
20	8	
21	9	
22	→ •	
23	MUTE	
24	VOL+	
25	VOL-	
26	CH*P/C	
27	Pr<>	
28	→ • ←	
29	 i	TEXT Index
30		TEXT ON



31		TEXT X
32	Memo	
33		TEXT Q
34		TEXT OFF
35		Red
36		Green
37		Yellow
38		Blue
39	11/1-	
40	12/2-	
41		TEXT Hold page
42		TEXT TP
43		Contrast +
44		Contrast -
45		Brightness +
46		Brightness -
47		Color +
48		Color -
49		Last Page
50		Next Page
51		Release Hold Page

Key functions: (for VCR and AUX)

Key Name	VCR(AUX)	Function Description
9	POWER	POWER
10	CH+	Channel Up
11	CH-	Channel Down
12	0/10	
13	1	
14	2	
15	3	
16	4	
17	5	
18	6	
19	7	
20	8	



21	9	
22	→ ·	
23	MUTE	
24	VOL+	
25	VOL-	
26	CH*P/C	
27	Pr<>	
28	→ · ←	
29	◀	
30		PAUSE
31	↗ ▶	
32	Memo	
33	●	RECORD
34	▶▶▶	Fast Forward
35	■	Red
36	■	Green
37	■	Yellow
38	■	Blue
39	11/1-	
40	12/2-	
41	■	STOP
42	▶	
43	◐ +	Contrast +
44	◑ -	Contrast -
45	☀ +	Brightness +
46	☀ -	Brightness -
47	◐ +	Color +
48	◑ -	Color -
49	◀▶	Backward
50	▶▶	Forward
51	▶	PLAY



Key Code(2 bytes)	SETUP functions	Function
61 nnn	SETUP TV1 nnn	3 digit number setting TV1
62 nnn	SETUP VCR1 nnn	3 digit number setting VCR1
63 nnn	SETUP CBL1 nnn	3 digit number setting CBL1
64 nnn	SETUP AUX1 nnn	3 digit number setting AUX1
65 nnn	SETUP TV2 nnn	3 digit number setting TV2
66 nnn	SETUP VCR2 nnn	3 digit number setting VCR2
67 nnn	SETUP CBL2 nnn	3 digit number setting CBL2
68 nnn	SETUP AUX2 nnn	3 digit number setting AUX2
70 61(or 62...68)	61(TV1)62(VCR1)63(CBL1)	AUTO SCAN TV1(61) VCR1(62)
71	SETUP+1	Display 1 st code number
72	SETUP+2	Display 2 nd code number
73	SETUP+3	Display 3 rd code number



Handshaking Flowchart

