客户名称/CUSTOMER：
客户代码/CUSTOMER CODE：

TOP-TECH

承 认 书

PRODUCT SPECIFICATION
Multi-Purpose LCD TV Control Board

产品名称/DESCRIPTION：   TSUX9 V5.0

客户型号/CUSTOMER MODEL：

承制方型号/MANUFACTURER MODEL：   TSUX9 V5.0

日 期/DATE：   2012/03/14

客户确认/**CUSTOMER APPROVED**

采购部 PURCHING	品管部 QC	研发部 RD	签章

承制方确认/**MANUFACTURER**

拟制 DRAWING	审核 CHECKED	批准 RATIFY	签章
2012-03-14	2012.3.14	2012-03-14	

承 制 方：深圳市鼎科实业有限公司

 MANUFACTURER：Shen Zhen Top-Tech Industrial CO. LTD

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1. GENERAL DESCRIPTION

TSUX9 V5.0 is a multi-purpose LCD controller, it is suitable Asia market.It is designed to support FULL HD LCD panel.

TSUX9 V5.0 can support PC-RGB,HDMI/S-Video(Option),AV/YPBPR(Option),USB,VGA, TV signal input.It can also support Earphone output.

Note: The specification of the board includes the description of all functions. Therefore,our clients can select the functions which they require to produce the board.But the specification can be introduced universally.
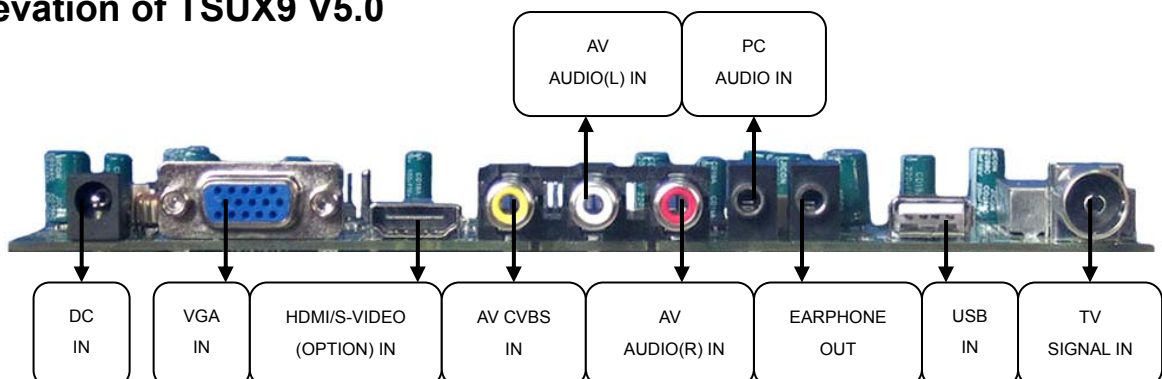
2. FUNCTION LAYOUT

The following all pictures are a reference only. Please take the actual objects as a standard.

Elevation of TSUX9 V5.0
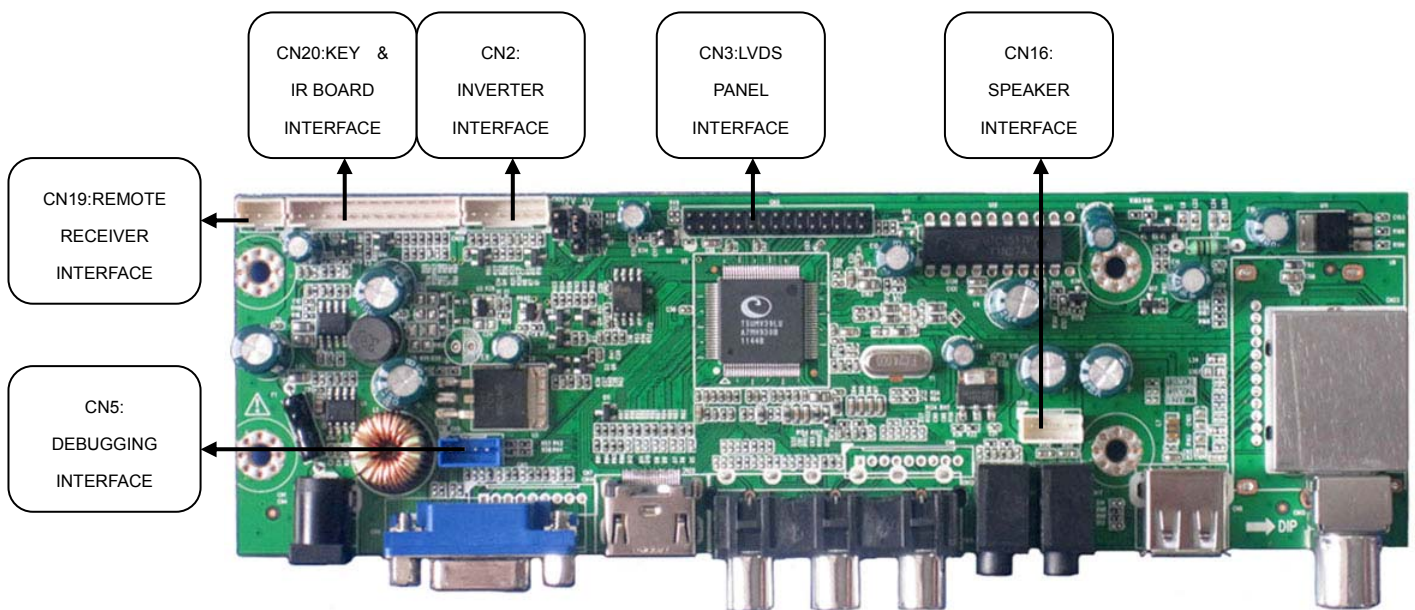
Side Elevation of TSUX9 V5.0

3. FEATURES

Below you will find the detailed feature.

CHIPSET	TSUMV29/TSUMV39			
MARKET AREA	Asia			
OSD LANGUAGE	English,Chinese,(French,Spanish,Polish,Portuguese,Italian,German,Dutch,Russian)(Option)			
VIDEO INPUT	TV	VIDEO SYSTEM	PAL/SECAM,NTSC(Option)	
		SOUND SYSTEM	BG ,DK ,I, M	
		RECEIVE CHANNEL	ATV:127	
	CVBS	1.0Vp-p +/-5%		
	YPbPr / YCbCr	480i、480p、576i、576p、720p、1080i、1080p		
	PC-RGB	Format	Up to 1920*1080@60HZ	
		Color	16bit, 24bit, 32bit	
	HDMI	480i、480p、576i、576p、720p、1080i、1080p		
POWER	Build-in power supply	12V (Option)		
	To panel	3.3V,5V,12V		
	DC Adapter	12V Input		
	Manage	Low power consumable mode: standby≤0.5W		
AUDIO INPUT	AV Audio Input	Left and right audio input		
	PC-RGB	YES		
EXPANSION FUNCTION	USB	YES		
PANEL RESOLUTIONS	Support up to 8-bit dual LVDS FULL HD panel interface			
KEY FUNCTIONS	CH-,CH+,MENU,VOL-,VOL+,AV/SEL,ON/OFF			
AUDIO OUTPUT	2*2 W @ 8Ω			
COMB FILTER	3D,2D (V29)			
DE-INTERLACE	3D			
WEAK SIGNAL ENHANCEMENT		YES		
NOISE REDUCTION		2D		
A2, BTSC		YES		
TERMINALS	Input	TV Input	1 IEC 75 Ω	
		PC-RGB Input	1D-SUB 15PIN terminal blue color	
		HDMI Input	1HDMI terminal	
		CVBS Input	1RCA terminal yellow color	
		AV Audio Input	2RCA terminal white color, red color	
		USB	1 USB terminal	

	Output	To Panel	Double LVDS 30PIN/2.0 jack
		Earphone Output	1earphone terminal black color

USB MULTIMEDIA PLAYBACK FORMAT

Note:TSUV29 only support USB upgrade.Below USB functions are applied to TSUV39.

MEDIA	FILE EXTENSION	
Picture	JPEG、BMP、PNG	.jpg、.bmp、.png
Music	WMA、MP3	.wma、.mp3

FILE TYPE\THE RELEVANT PARAMETERS	COMPRESSION OPTION	SUPPORT BOUNDARIES
JPEG	Progressive JPEG	Max Resolution: 8192*8192
	Baseline JPEG	Max Resolution: 640*480
BMP	----	Max Resolution:8192*8192 Pixel Depth:1/4/8/16/24/32 bpp
PNG	No interlacing	Max Resolution: 8192*6400
	Interlaced	Max Resolution: 800*600

*Realize that only when you gain the copyright of the corresponding USB functions，can the above-mentioned USB functions be used.

4. INTERFACE DEFINITION

CN2 (6PIN/2.0) INVERTER INTERFACE

NO.	SYMBOL	DESCRIPTION	ELECTRIC CHARACTER
1	GND	Ground	---
2	GND		
3	PB-ADJUST	Brightness adjustment	0-5V adjustable
4	PB-ON/OFF	Back-light ON/OFF control	5V，1K ohm output impedance
5	12V	+12V DC Power supply	INVERTER Power Supply

| 6 | 12V | +12V DC Power supply | INVERTER   Power Supply |

CN3 (2*15PIN/2.0) LVDS PANEL INTERFACE

NO.	SYMBOL	DESCRIPTION
1	LCDPWR	Power for panel
2	CT	mode pin for panel
3	LCDPWR	Power for panel
4	GND	Ground
5	GND	
6	GND	
7	RXO0-	LVDS ODD 0- Signal
8	RXO0+	LVDS ODD 0+ Signal
9	RXO1-	LVDS ODD 1- Signal
10	RXO1+	LVDS ODD 1+ Signal
11	RXO2-	LVDS ODD 2- Signal
12	RXO2+	LVDS ODD 2+ Signal
13	GND	Ground
14	GND	
15	RXOC-	LVDS ODD Clock- Signal
16	RXOC+	LVDS ODD Clock+ Signal
17	RXO3-	LVDS ODD 3- Signal
18	RXO3+	LVDS ODD 3+ Signal
19	RXE0-	LVDS EVEN 0- Signal
20	RXE0+	LVDS EVEN 0+ Signal
21	RXE1-	LVDS EVEN 1- Signal
22	RXE1+	LVDS EVEN 1+ Signal
23	RXE2-	LVDS EVEN 2- Signal
24	RXE2+	LVDS EVEN 2+ Signal
25	GND	Ground
26	GND	
27	RXEC-	LVDS EVEN Clock- Signal
28	RXEC+	LVDS EVEN Clock+ Signal
29	RXE3-	LVDS EVEN 3- Signal
30	RXE3+	LVDS EVEN 3+ Signal

CN5 (4PIN/2.0) DEBUGGING INTERFACE

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	UART_TX	Transmit data
3	UART_RX	Receive data

4	5VS	+5V Power supply

CN16 (4PIN/2.54) SPEAKER INTERFACE

NO.	SYMBOL	DESCRIPTION
1	AMP_R	Right audio channel out
2	GND	Ground
3	GND	Ground
4	AMP_L	Left audio channel out

CN19 (3PIN/2.0) REMOTE RECEIVER INTERFACE

NO.	SYMBOL	DESCRIPTION
1	IR_IN	Remote receiver
2	GND	Ground
3	VCC_IR	+5V DC power supply

CN20 (13PIN/2.0) KEY & IR BOARD INTERFACE

NO.	SYMBOL	DESCRIPTION
1	CH-	CH- key
2	CH+	CH+ Key
3	MENU	MENU Key
4	AV/SEL	AV/SEL Key
5	VOL-	VOL- Key
6	VOL+	VOL+ Key
7	GND	Ground
8	LED_G	Green indicator
9	LED_R	Red indicator
10	ON/OFF	ON/OFF key
11	GND	Ground
12	IR_IN	Remote receiver
13	VCC_IR	+5V DC power supply

5. CONTROLLER DIMENSIONS

The dimension is identical to the actual objects.But maybe exist the slight error of measures about 1%.It is allowed in design.
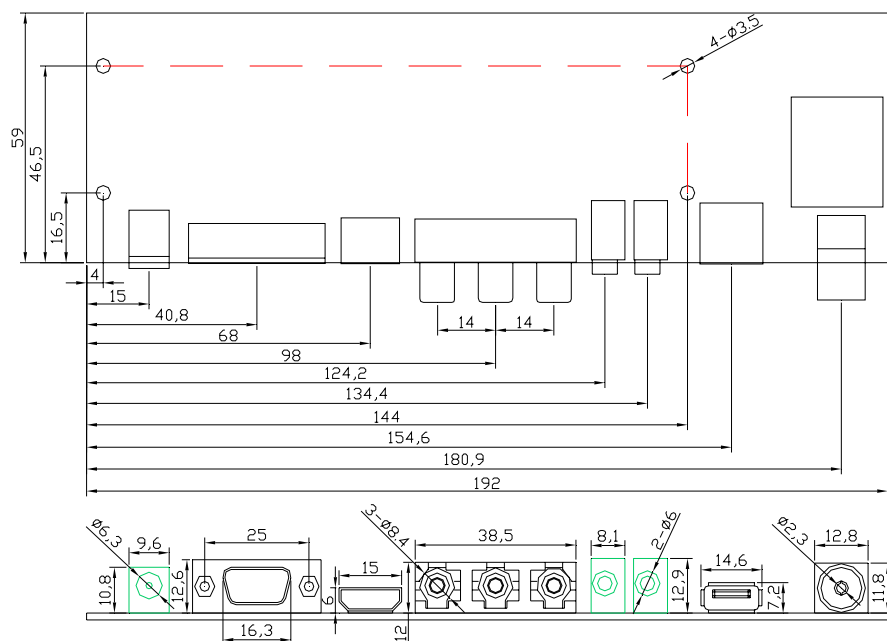
6. KEY & IR BOARD SYSTEM SCHEMATIC
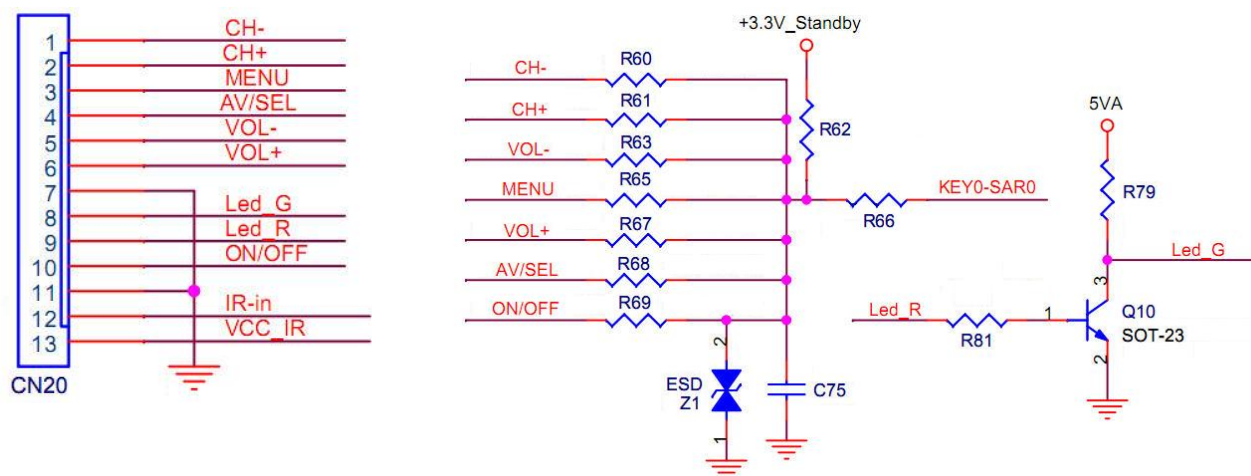
7. OPERATION REQUIREMENT

- **Do not pressed and distorted.**
- **Keep away from static and water.**
- **Relative humidity : ≤ 80%**
- **Storage temperature:-10~ +60℃**
- **Operation temperature:0~ +40℃**