

客户名称/CUSTOMER:
客户代码/CUSTOMER CODE:



承 认 书

PRODUCT SPECIFICATION

Multi-Purpose LCD TV Control Board

产品名称/DESCRIPTION: TSUX9 V3.0

客户型号/CUSTOMER MODEL:

承制方型号/MANUFACTURER MODEL: TSUX9 V3.0

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
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RECORD OF REVISIONS

REVISION NO.	DATE	PAGE	DESCRIPTION

1. GENERAL DESCRIPTION

TSUX9 V3.0 is a multi-purpose LCD controller, it is suitable for the Asia market. It is designed to support FULL HD LCD panel.

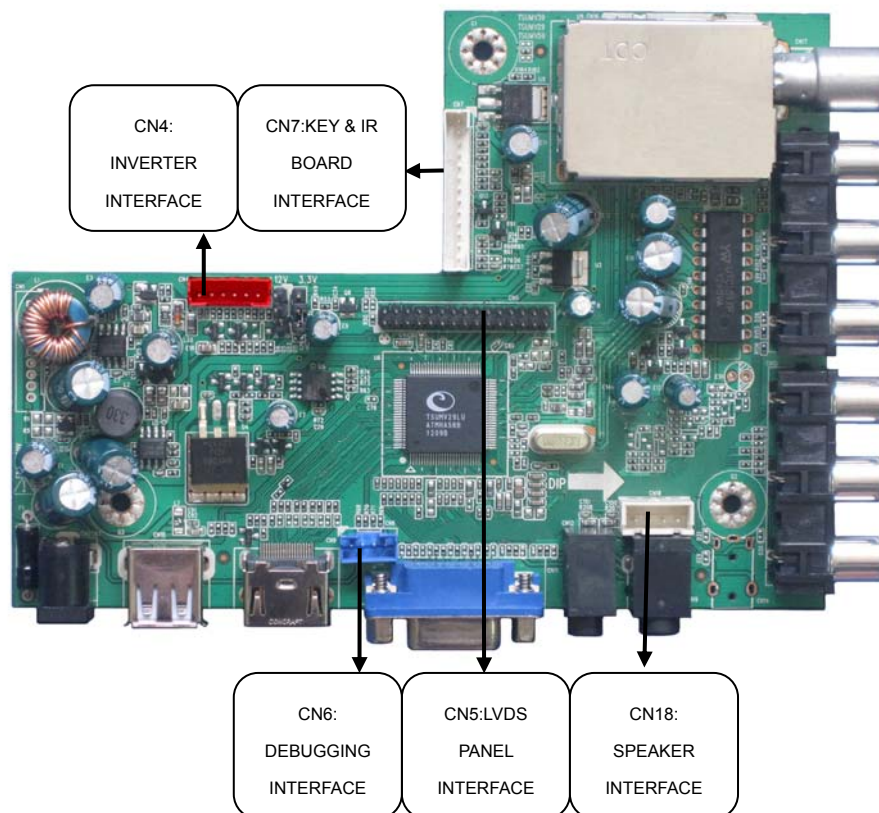
TSUX9 V3.0 can support PC-RGB, HDMI, YPBPR, AV, USB, VGA, TV signal input. It can also support AV and Earphone output.

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.

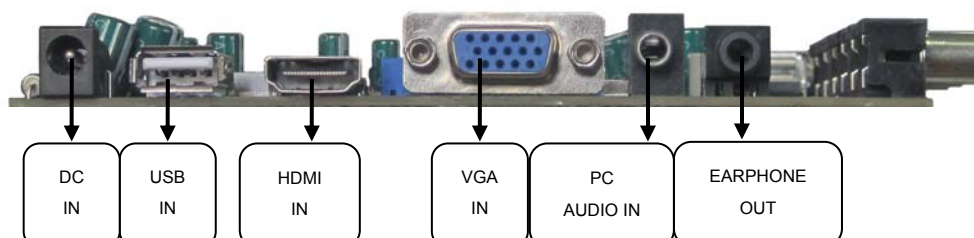
2. FUNCTION LAYOUT

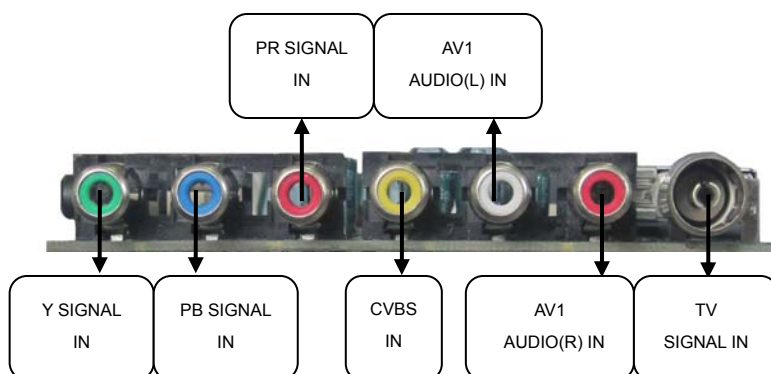
The following all pictures are a reference only. Please take the actual objects as a standard.

Elevation of TSUX9 V3.0



Side Elevation of TSUX9 V3.0





3. FEATURES

Below you will find the detailed feature.

CHIPSET	TSUMV29/TSUMV39/TSUMV59		
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	5V,5VS,12V or only 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 (Only applied to TSUMV29&TSUMV39)
TXT			YES (Only applied to TSUMV59)
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
		YPBPR Input	3RCA terminal green color,blue color,red color
		YPBPR Audio Input	2RCA terminal white color, red color
		AV Audio Input	
		USB	1 USB terminal
	Output	To Panel	Double LVDS 30PIN/2.0 jack
		Earphone Output	1earphone terminal black color
		AV Output	1earphone terminal yellow 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: 640*480
	Baseline JPEG	Max Resolution: 8192*8192
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

NOTE:Below USB functions are only applied to TSUV59.

MEDIA	FILE EXTENSION	
Picture	JPEG、BMP、PNG	.jpg、.bmp、.png
Movie	MPEG1、MPEG2、MPEG4、H264、RM、RMVB、MOV、MJPEG、VC1、Divx、FLV	.avi、.mpg、.dat、.vob、.div、.mov、.mkv、.rm、.rmvb、.mp4、.mjpeg、.ts、.trp、.wmv、.asf、.flv
Music	WMA、MP3、M4A、AAC	.wma、.mp3、.m4a

FILE TYPE\THE RELEVANT PARAMETERS	RESOLUTION	COMPRESSION OPTION	SUPPORT BOUNDARIES
JPEG	15360*8640	Progressive JPEG	Resolution Only Support 1024*768
		Baseline("standard")	Support
		Baseline Optimized	Support
BMP	9600*6400	homochromatism	Support
		16color	Support
		256color	Support
		16bit	Support
		24bit	Support
		32bit	Support
PNG	9600*6400	No interlacing	Support

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

4. INTERFACE DEFINITION

CN4 (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	Black-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

CN5 (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	RX00-	LVDS ODD 0- Signal
8	RX00+	LVDS ODD 0+ Signal
9	RX01-	LVDS ODD 1- Signal
10	RX01+	LVDS ODD 1+ Signal
11	RX02-	LVDS ODD 2- Signal
12	RX02+	LVDS ODD 2+ Signal
13	GND	Ground
14	GND	
15	RXOC-	LVDS ODD Clock- Signal
16	RXOC+	LVDS ODD Clock+ Signal
17	RX03-	LVDS ODD 3- Signal
18	RX03+	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

CN6 (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

CN7 (9PIN/2.0) KEY & IR BOARD INTERFACE

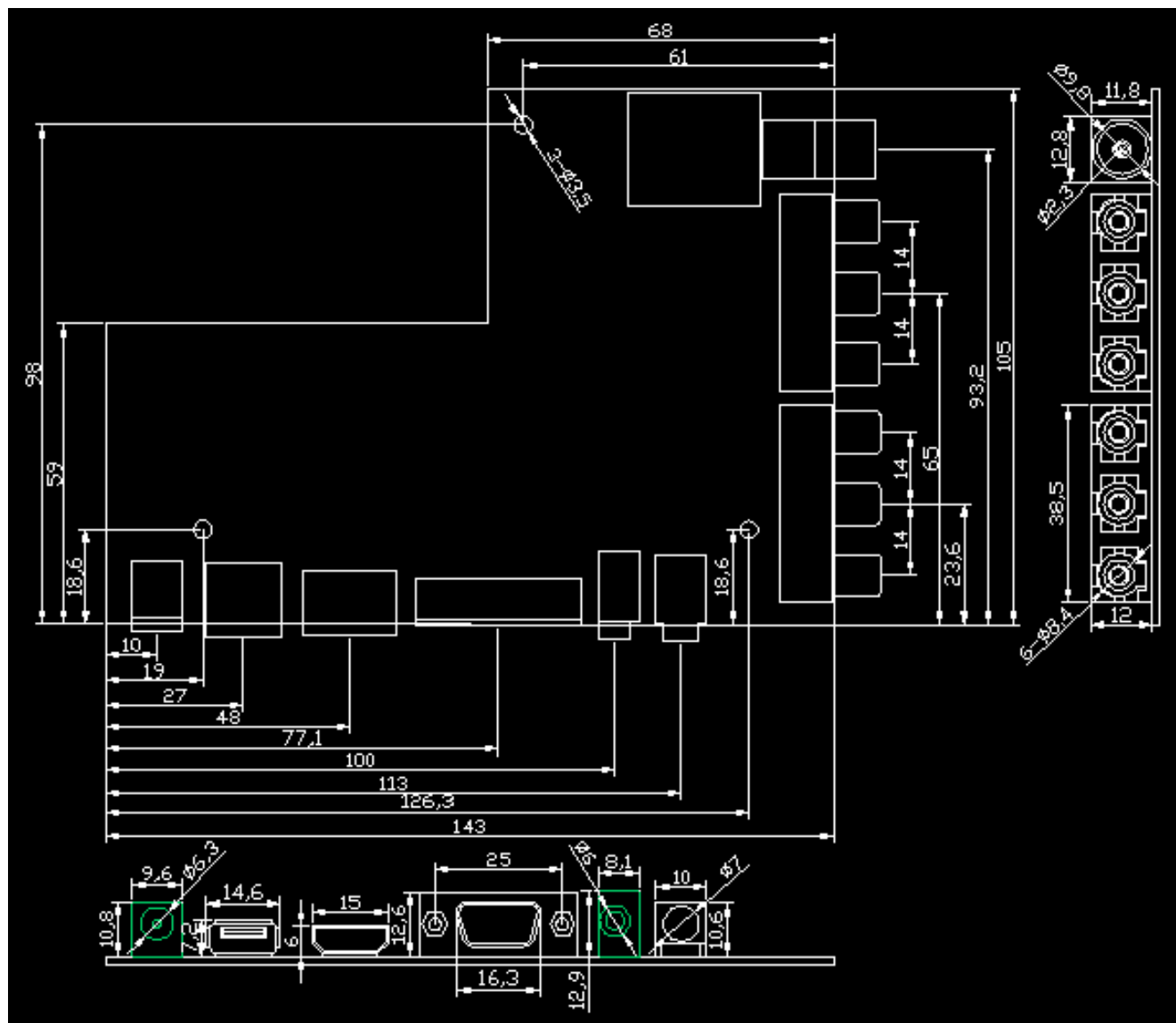
NO.	SYMBOL	DESCRIPTION
1	CH-	CH- key
2	CH+	CH+ Key
3	MENU	MENU Key
4	AV/SEL	AV/SEL Key
5	VOL-	VOL- Key
6	VOL+	VOL+ Key
7	GND	Ground
8	LED_G	Green indicator
9	LED_R	Red indicator
10	ON/OFF	ON/OFF key
11	GND	Ground
12	IR_IN	Remote receiver
13	VCC_IR	+5V DC power supply

CN18 (4PIN/2.54) SPEAKER INTERFACE

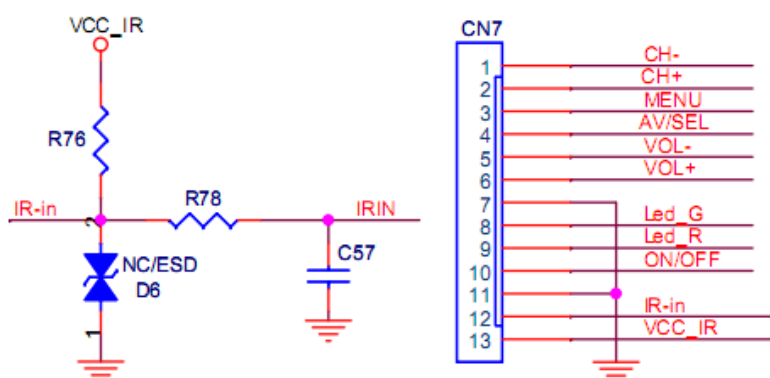
NO.	SYMBOL	DESCRIPTION
1	AMP_R	Right audio channel out
2	GND	Ground
3	GND	Ground
4	AMP_L	Left audio channel out

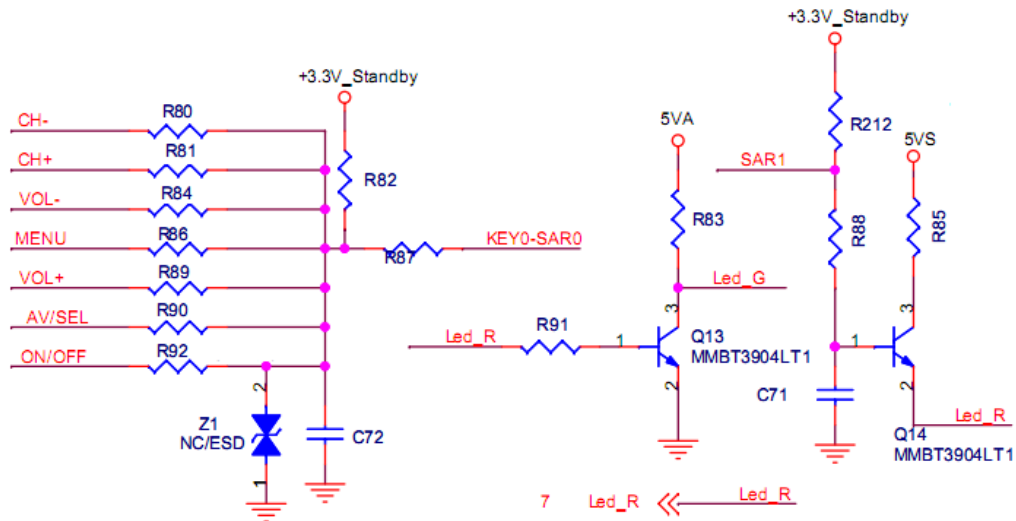
5. CONTROLLER DIMENSIONS

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 : $\leq 80\%$
- Storage temperature:-10~ +60℃
- Operation temperature:0~ +40℃