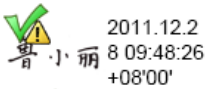
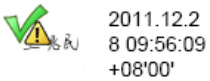
V1.3

TV CONTROL BOARD SPECIFICATION

MODEL: T.VST29.02B (Asia)

Part Number: MST-12011123

AUTHOR: 

CHECKED BY: 

RECHECKED BY: 

APPROVED BY: 

PUBLISHED DATE: 2011-12-28

CONTENT

REVISION HISTORY

VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.3	2012.01.11	T.VST29.02B 11496	3	Modify the max storage channels, comb filter and deinterlace in part2.	Linda
V1.2	2011.12.27	T.VST29.02B 11496	2, 3	Add instruction about chipset TSUMV39LU in part1, part2 and part3.	Linda
V1.1	2011.12.21	T.VST29.02B 11496	2, 4	Modify the board picture in part 2; Modify the PCB dimensions in part 4.	Linda
V1.0	2011.11.16	T.VST29.02A 11451	All	First issued.	Linda

1.GENERAL DESCRIPTION

T.VST29.02B is an analog TV control board, which is suitable for Asia-Pacific and Middle-East market. It can support less than 26 inch LCD/LED panels which resolution is up to 1920×1080.

Chipset TSUMV29LU and **TSUMV39LU** are pin to pin.

With **chipset TSUMV29LU**, T.VST29.02B's USB slot can only used for updating software.

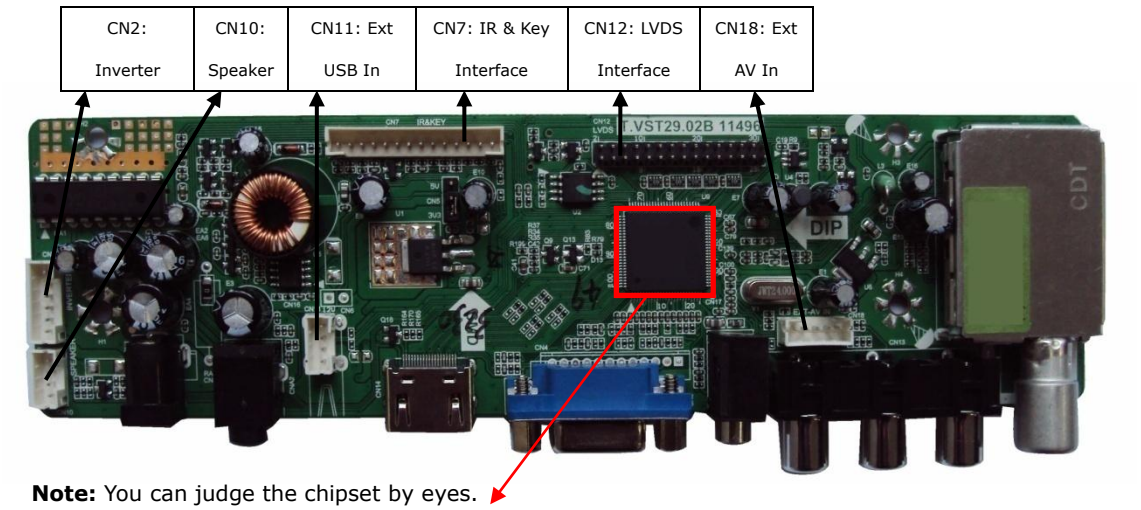
With **TSUMV39LU**, USB slot can be used for updating software and playing multimedia, such as MP3 and JPEG.

2. FUNCTION LAYOUT

The picture is for a reference only, the actual item is the standard.

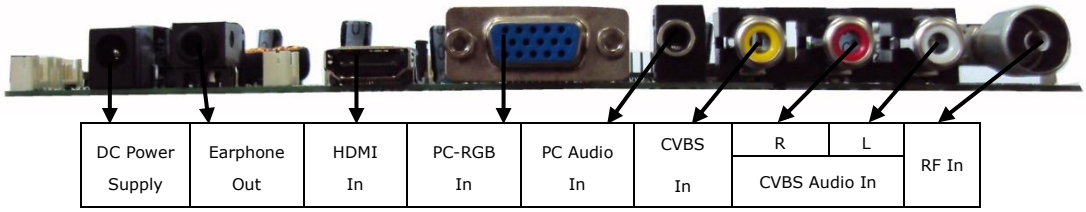
The optional connectors and terminals are marked with "*".

TOP VIEW OF T.VST29.02B



Note: You can judge the chipset by eyes.

FRONT VIEW OF T.VST29.02B



3. FEATURES

CHIPSET	TSUMV29LU/TSUMV39LU		
MARKET AREA	Asia-Pacific, Middle-East		
OSD LANGUAGE	English, French, German, Italian, Spanish, Portuguese, Russian(optional)		
PANEL	Panel Type	LCD/LED	
	Interface	Single/Dual LVDS	
	Max Resolution	1920×1080	
VIDEO INPUT	TV	Receiving Range	48.25MHz ~ 863.25MHz
		Input impedance	75Ω

		Video System	PAL, SECAM
		Sound System	B/G, D/K, I
		Max Storage Channels	199CH
	PC-RGB	Format	Up to 1920×1080@60Hz
	CVBS	Video System	PAL/NTSC/SECAM
		Video level	1.0 V_{P-P}±5%
	HDMI	480i, 480p, 576i, 576p, 720p, 1080i, 1080p	
AUDIO INPUT	PC Audio	Earphone Input	0.2 ~ 2.0 V_{RMS}
	CVBS	L/R RCA Input	0.2 ~ 2.0 V_{RMS}
AUDIO OUTPUT	Frequency Response	100Hz~15KHz @±3dB (1KHz reference signal)	
	Max Output power	2x3W(4Ω)THD+N<10%@1KHz (Power Supply: 12V, Audio Input: 0.5V_{RMS})	
POWER	Requirement	12V DC/12V(built in)	
	To Panel	3.3V, 5V,12V	
	Management	Standby Power Consumption < 1W(Board Only)	
COMB FILTER	2D (TSUMV29LU) /3D（(TSUMV39LU)		
DEINTERLACE	2D (TSUMV29LU) /3D（(TSUMV39LU)		
KEY FUNCTION	MENU, CH+, CH-, VOL+, VOL-, INPUT, POWER		
EXPANDABLE FUNCTION	--		

MULTI MEDIA (MUSIC/PHOTO) PLAYBACK FORMAT

(Only for *TSUMV39LU*)

Multimedia Categories	File Extension	Decoder	Notes
Music	*.mp3	MPEG 1 layer I,II,III MPEG 2 layer III MPEG 2.5 layer III	--
Photo	*.jpg	baseline	**Max Image:** 4992 x 3328 (16M)
		baseline Thumbnail	**Max Image Width:** 1920x8(15360)
		Progressive	**Max Image:** 1240 x 944 (1M)

Note:

File system: FAT16/32.

Licenses involved in specifications above are supposed to be obtained by customers themselves.

SUBSTITUTABLE PRIMARY MATERIALS

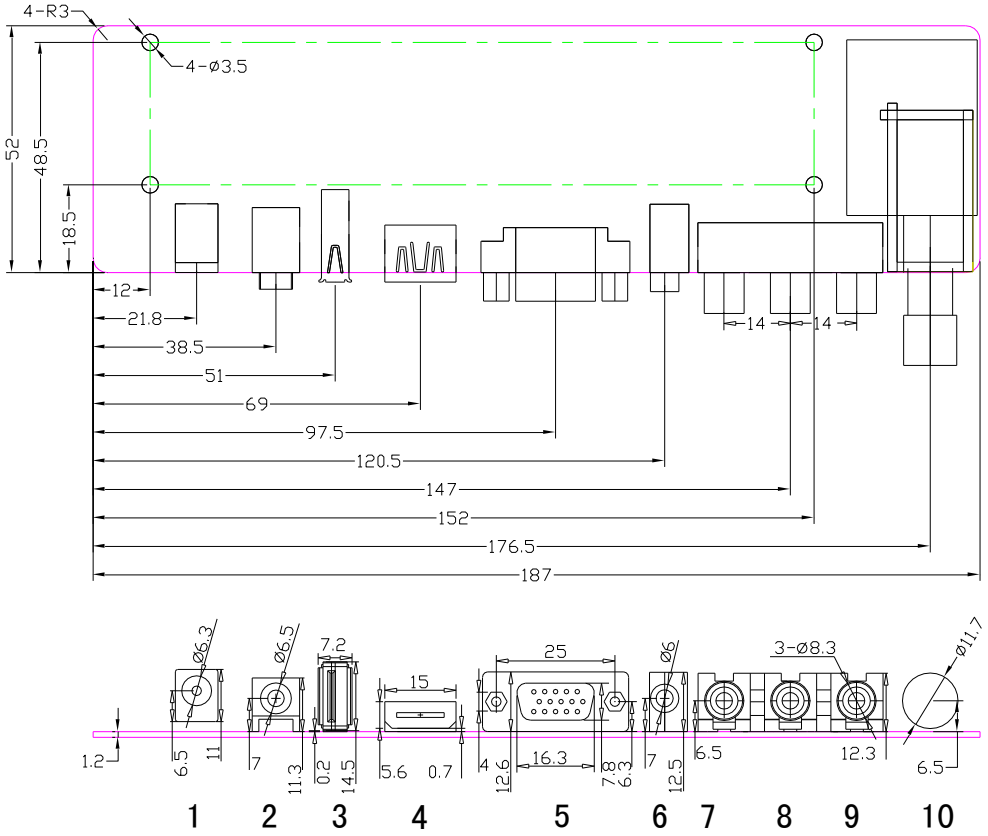
The table is for reference only, the actual item is the standard.

NAME	TYPE	BRAND	BACKUP TYPE	BACKUP BRAND
TUNER	CDT-3SP512-36	CDT	AFT7/W040G	Qiingjia
FLASH	GD25Q16BSIG (16M bits)	GIGA	W25Q16BVSSIG	Winbond
AMPLIFIER	YD1517P	YD	TDA1517P	NXP

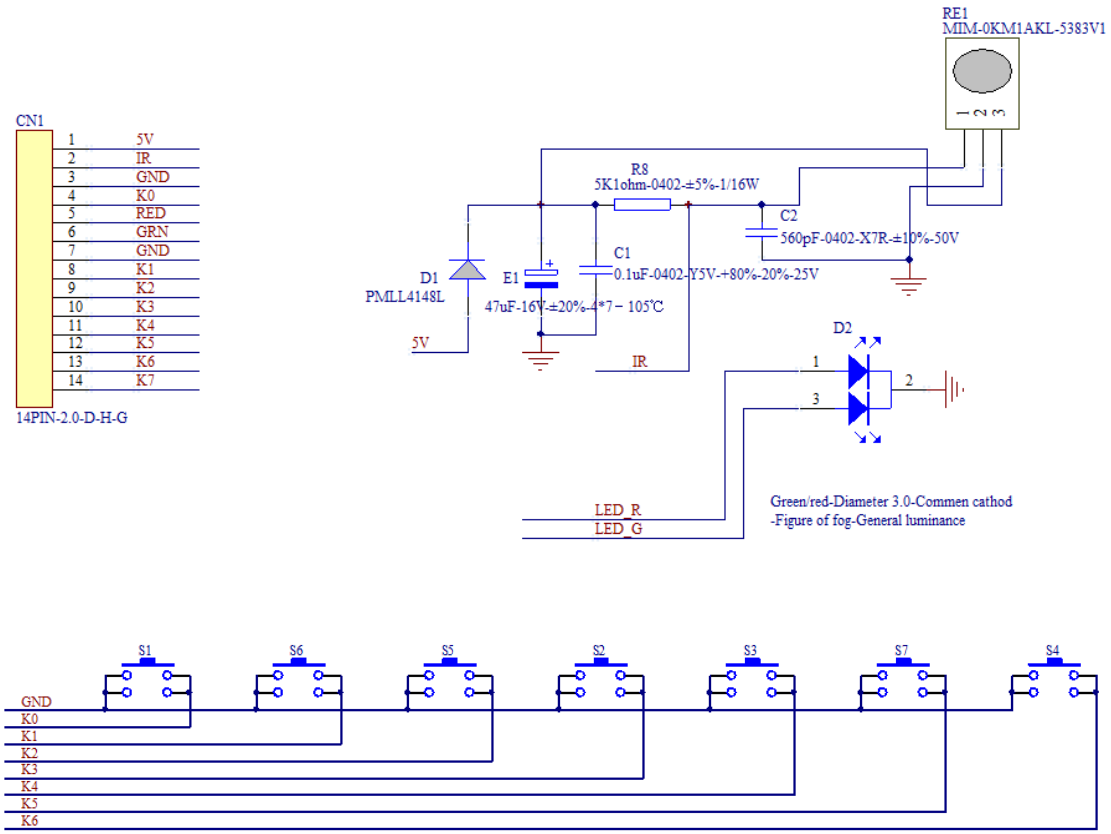
4. PCB DIMENSIONS

The size of T.VST29.02B is 187mm(L)*52mm(W)*18mm(H).

Ver.	V1.1
NO.	Description
1	DC IN
2	EARPHONE OUT
3	USB IN
4	HDMI IN
5	VGA IN
6	PC AUDIO IN
7	CVBS IN
8	CVBS-R IN
9	CVBS-L IN
10	RF IN



5. SCHEMATICS OF IR BOARD & KEY BOARD



Note: The dividing resistor which is corresponding to the power key must be zero(equivalent to the voltage is zero). Otherwise, the board will not work.

6. INTERFACE DEFINITION

The optional connectors are marked with "*".

◆ CN2(6PIN/2.0): INVERTER CONNECTOR

NO.	SYMBOL	DESCRIPTION
1	12V	+12V DC Power Supply
2	12V	
3	BLO	Back-Light ON/OFF Control for Panel
4	ADJ	Brightness Adjustment for Panel
5	GND	Ground
6	GND	

◆ CN7(14PIN/2.0): IR & KEY BOARD CONNECTOR

NO.	SYMBOL	DESCRIPTION
1	5V	+5V DC Power Supply
2	IR	IR Receiver
3	GND	Ground
4	K0	Key0

NO.	SYMBOL	DESCRIPTION
5	RED	Red Indicator
6	GRN	Green Indicator
7	GND	Ground
8	K1	Key1
9	K2	Key2
10	K3	Key3
11	K4	Key4
12	K5	Key5
13	K6	Key6
14	K7	Key7(Reserved)

◆ CN10(4PIN/2.0): SPEAKER CONNECTOR

NO.	SYMBOL	DESCRIPTION
1	LO	Audio Left Channel Output
2	GND	Ground
3	GND	
4	RO	Audio Right Channel Output

◆ CN12(2×15PIN/2.0): LVDS INTERFACECONNECTOR

NO.	SYMBOL	DESCRIPTION
1	VSEL	Power Supply for Panel
2	VSEL	
3	VSEL	
4	GND	Ground
5	GND	
6	GND	
7	TXO0-	LVDS ODD 0- Signal
8	TXO0+	LVDS ODD 0+ Signal
9	TXO1-	LVDS ODD 1- Signal
10	TXO1+	LVDS ODD 1+ Signal
11	TXO2-	LVDS ODD 2- Signal
12	TXO2+	LVDS ODD 2+ Signal
13	GND	Ground
14	GND	
15	TXOC-	LVDS ODD Clock- Signal
16	TXOC+	LVDS ODD Clock+ Signal
17	TXO3-	LVDS ODD 3- Signal
18	TXO3+	LVDS ODD 3+ Signal
19	TXE0-	LVDS EVEN 0- Signal
20	TXE0+	LVDS EVEN 0+ Signal
21	TXE1-	LVDS EVEN 1- Signal
22	TXE1+	LVDS EVEN 1+ Signal
23	TXE2-	LVDS EVEN 2- Signal

NO.	SYMBOL	DESCRIPTION
24	TXE2+	LVDS EVEN 2+ Signal
25	GND	Ground
26	GND	
27	TXEC-	LVDS EVEN Clock- Signal
28	TXEC+	LVDS EVEN Clock+ Signal
29	TXE3-	LVDS EVEN 3- Signal
30	TXE3+	LVDS EVEN 3+ Signal

7. CONFIGURATION & GENERAL PRECAUTIONS

- **Relative humidity: ≤ 80%.**
- **Storage temperature: -10~60°C.**
- **Operation temperature: 0~40°C.**
- **Protect the board from static electricity in case of damage to the IC.**
- **Keep the board away from conductor when it is working.**
- **Don’t push or pull the connectors when the board is working.**
- **Don’t press , distort or disassemble the board.**
- **Clean the board with soft dry cloth when it’s dirty.**
- **Don’t wire in the board to power supply before panel is correctly connected.**