

# TELEFUNKEN

---

MANUAL DE SERVICE

TV LCD 32" MODELO TKL3295S

TV LCD 26" MODELO TKL2695S

---

Contents

Contents .....1

Service Manual .....2

1. Product Safety Servicing Guidelines .....2

2. Product Function Specifications .....4

2-1 Product Function .....4

2-2 Specifications .....5

3. Lcd Panel Spec .....6

3-1 General Description .....6

3-2 General Features .....7

4. Block Diagram .....8

4-1 Chassis Block Diagram.....8

4-2 Signal Processing Part.....11

4-3 Power Part .....12

5. Service Mode And Adjustment .....13

5-1 Service Mode .....13

6. Software Updating .....17

6-1、Updating Tool .....17

6-2、Software Updating Operation.....18

7. Explode View .....29

8. Bill Of Materials .....30

9. Troubleshooting .....39

10. Circuit Diagram .....39

# Service Manual

## 1. Product Safety Servicing Guidelines

### WARNING:

Service should not be attempted by anyone unfamiliar with the necessary precaution on this receiver. The following are the necessary precaution to be observed before serving this chassis.

1. Since the power supply circuit of this receiver is directly connected to the AC power line, an Isolation transformer should be used during any dynamic service to avoid possible shock hazard.
2. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as:  
non-metallic control knobs, insulating cover, shields, isolation resistor-capacitor network etc.
3. When replacing parts or circuit boards, disconnect the power cord.
4. When replacing a high wattage resistor (oxide metal film resistor) on the circuit board, keep the resistor (1/2in) away from circuit board.
6. Connection wires must be kept away from components with high voltage or high temperature.
7. If any fuse in this LCD TV receiver is blown, replace it with the FUSE specified in the chassis part list.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

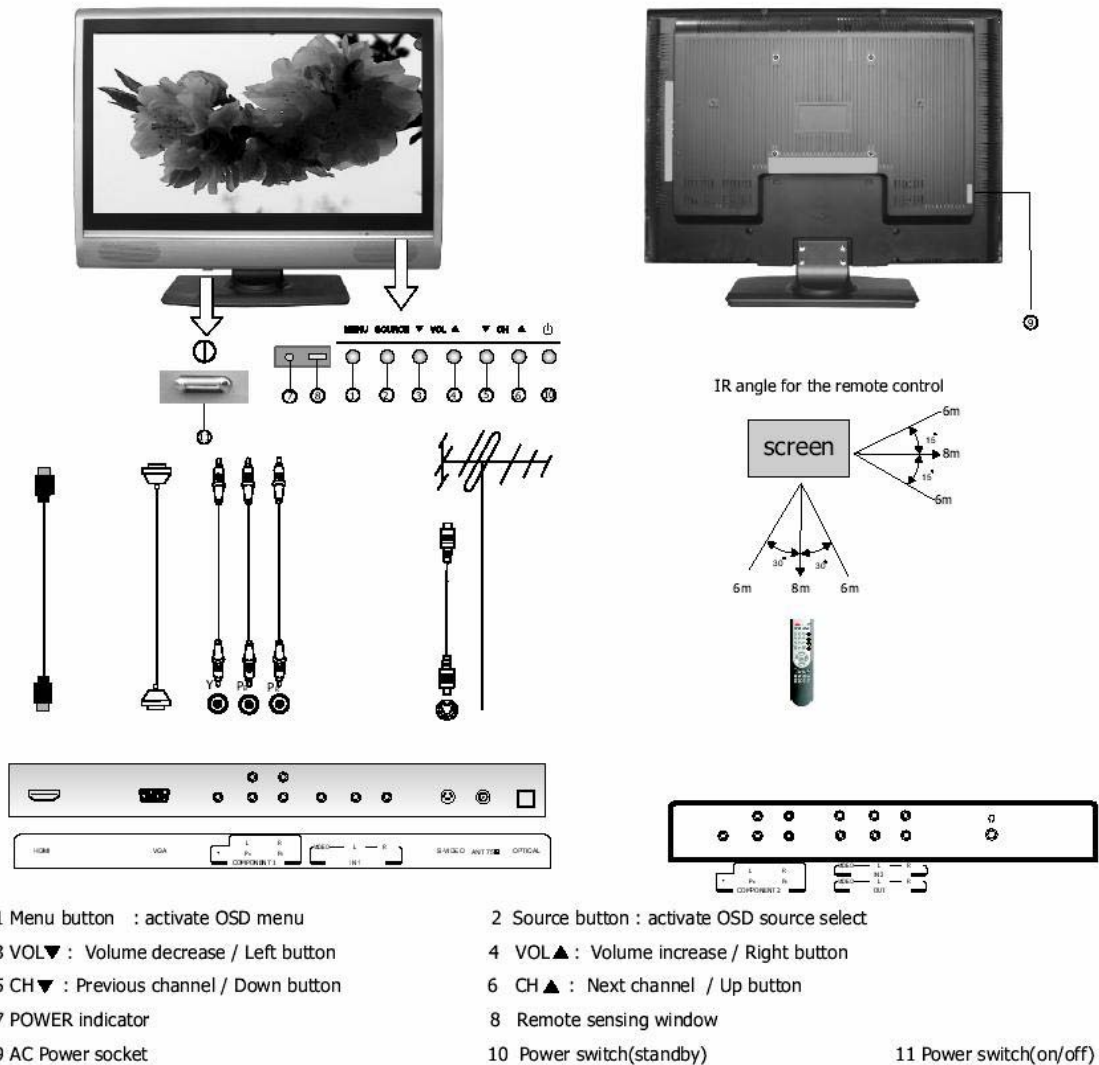


The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the set.

Many electrical and mechanical parts in the chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection. When replacement parts are required, be sure the service technician uses replacement parts specified by us that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock and injury to persons or other hazards. This LCD TV product should be situated away from heat source such as radiation, stoves, or other product that produce heat.

## 2. Product Function and Specifications

### 2-1 Product Function



**Note:** The above figures are for reference only, please refer to the actual units to determine the appearances.

2-2 Specifications

Screen Size:	32-Inch (81 cm) TFT LCD TV
Native Resolution:	1366 x 768 Pixels (corresponding to WXGA)
Colour System:	NTSC-M / PAL-M / PAL-N
Antenna:	75Ω VHF/UHF input
Stereo:	SAP

VIDEO INPUT	Video: 1 Vp-p, negative sync, 75Ω Input
COMPONENT	RCA, 0.7 Vp-p/75Ω input (480I/60Hz, 480P/60Hz, 576I/50Hz, 576P/50Hz, 720P/60Hz, 1080I/50Hz, 1080I/60Hz)
Audio in	RCA Stereo audio input
PC INPUT:	
VGA	15 Pin , Analog RGB signal, 0.7Vp-p, 75Ω input (VGA, SVGA, XGA)
Audio in	RCA Stereo audio input
MONITOR OUT	
Speaker Output	5W+5W
Power Requirement	AC 110 to 250V, 50/60Hz
Power Consumption	165W

Allowable temperature of operation environment  
.....0°C to 40°C

ACCESSORIES	
Operating Instructions	1
Remote Control Unit	1
Power Lead	1
Dry Cell Battery	2

### 3. LCD Panel Spec

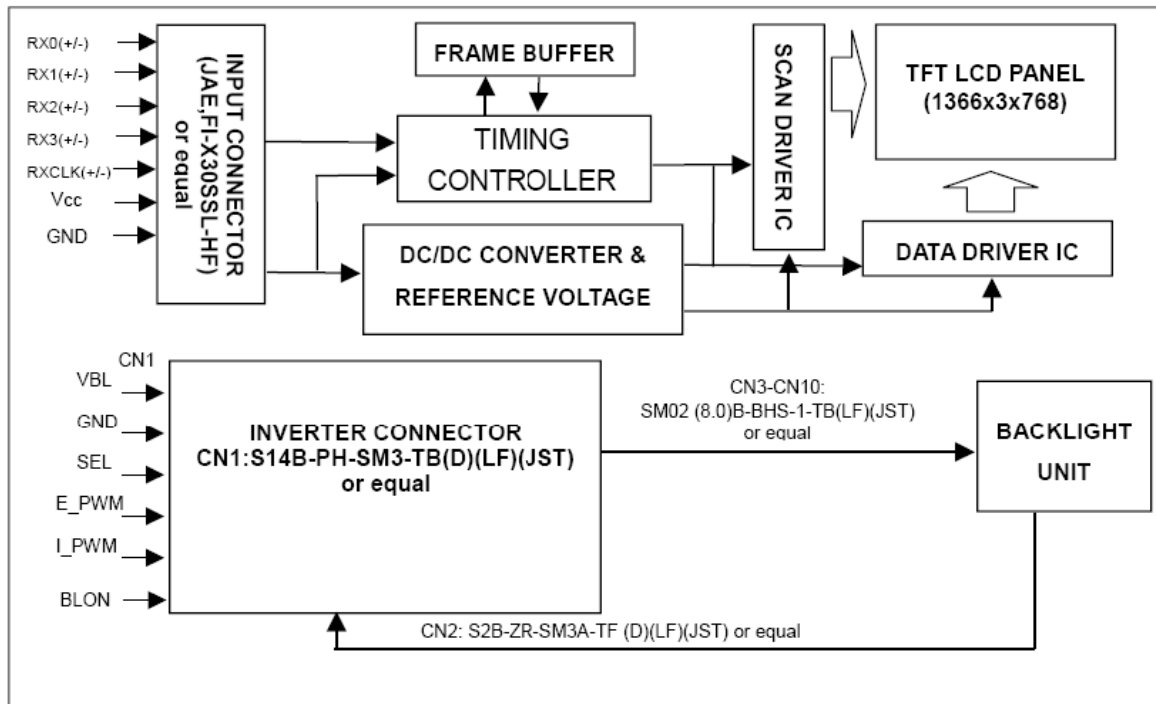
#### 3-1 General Description

LCD3233AM' S LCD Panel is a 32" TFT Liquid Crystal Display module with 16-CCFL Backlight unit and 1ch-LVDS interface. This module supports 1366 x 768 WXGA format and can display true 16.7M colors (8-bit colors).

The inverter module for backlight is built-in.

#### FEATURES

- High brightness (500 nits)
- Ultra-high contrast ratio (800:1)
- Faster response time (gray to gray average 6.5ms)
- High color saturation NTSC 75%
- Ultra wide viewing angle: 176(H)/176(V) (CR>20) with Super MVA technology
- DE (Data Enable) only mode
- LVDS (Low Voltage Differential Signaling) interface
- 180 degree rotation display (option)
- Color reproduction (nature color)

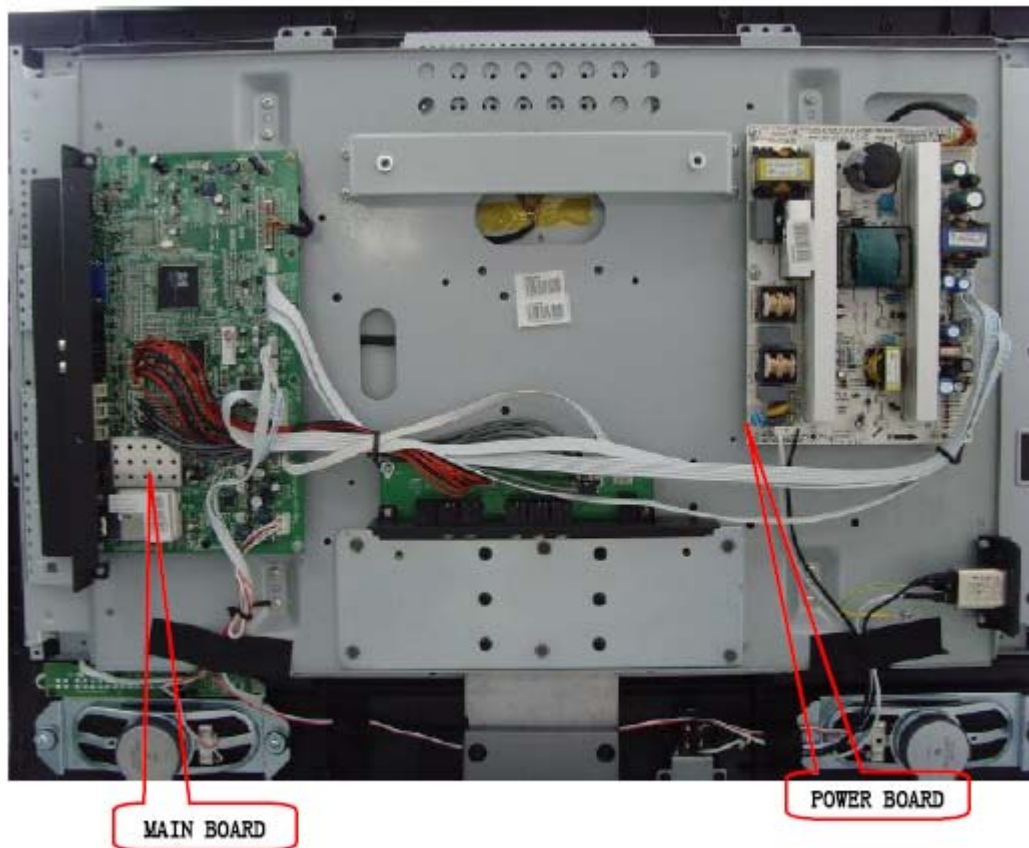


### 3-2 General Features

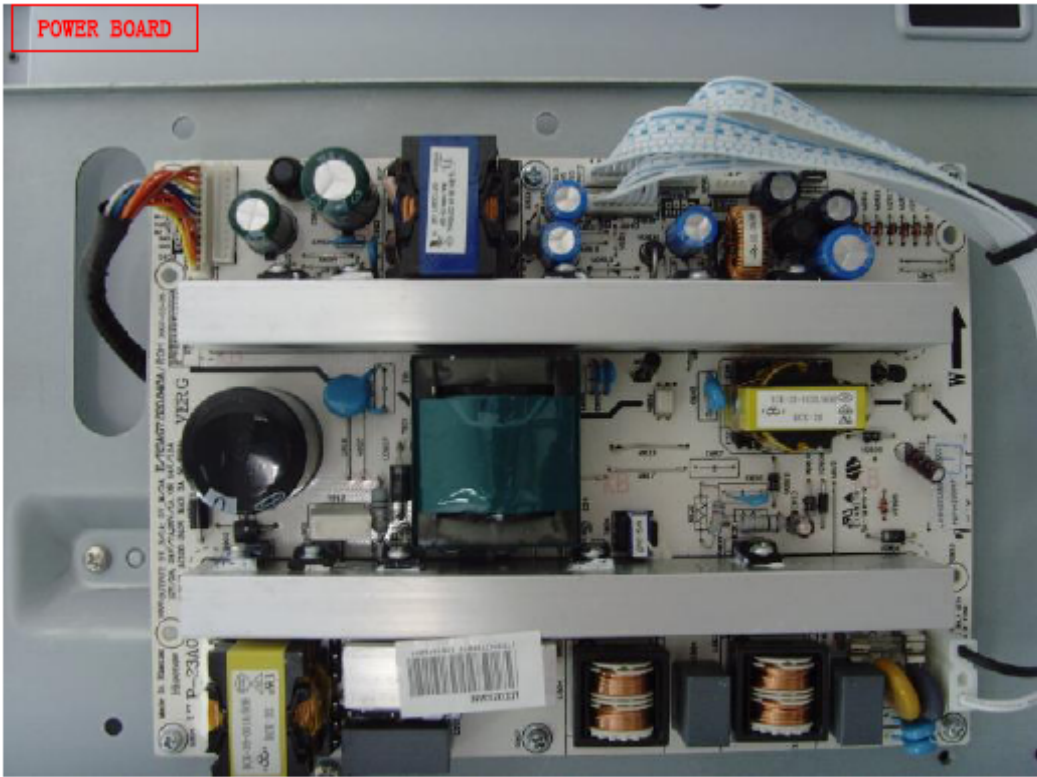
Item	Specification	Unit	Note
Active Area	708.954(H) x 398.592 (V) (32.02" diagonal)	mm	(1)
Bezel Opening Area	714.96 (H) x 404.6 (V)	mm	
Driver Element	a-si TFT active matrix	-	
Pixel Number	1366 x R.G.B. x 768	pixel	
Pixel Pitch (Sub Pixel)	0.1730 (H) x 0.5190 (V)	mm	
Pixel Arrangement	RGB vertical stripe	-	
Display Colors	16.7M	color	
Display Operation Mode	Transmissive mode / Normally black	-	
Surface Treatment	Anti-Glare coating (Haze 25%),Hard coating (3H)	-	

## 4. Block Diagram

### 4-1 Chassis Block Diagram







## 5. Service Mode And Adjustment

### 5-1 Service Mode

Use the remote control, first open MAIN MENU with MENU button, and choose SOUND with the CHANNEL UP/DOWN button, then choose the BALANCE with VOLUME UP/DOWN, In this condition, press 0、5、3、2,you can enter factory menu.

5-1-1、Fac. Menu.

<b>Factory Menu</b>  White Balance Auto Calibration LOGO OSD Language Country Option Factory Init Test Pattern Version:	<b>White Balance</b>  R DRV            10 G DRV           10 B DRV           10 R CUT           137 G CUT           140 B CUT           138 BRIGHT_H       80 CONTRAST_H     80 BRIGHT_L       40 CONTRAST_L     40
<b>Auto Calibration</b>  Auto Color Color Temp.     Standard RED COLOR       137 GREEN COLOR     140 BLUE COLOR       138	<b>LOGO</b>  NULL HISENSE WELCOME

### Option

SOURCE	TV
BRIGHT 0	10
BRIGHT 50	100
BRIGHT 100	135
CONTRAST 0	60
CONTRAST 50	125
CONTRAST 100	155
SATURATION 0	0
SATURATION 50	115
SATURATION 100	155
SHARPNESS 0	0
SHARPNESS 50	16
SHARPNESS 100	32
TOFAC	M
HDMI Cable	Standard

### Factory Init

QingDao  
HuangDao  
Guiyang  
Hungary  
France  
Austria  
CLEAR PROTECTLY  
CLEAR UNPROTECTLY

### Test Pattern

BLUE

### Version

Version:  
LCD3233AM\_R1.00.20070627  
Panel Type:  
LG 32 (1366\*768)  
FLASH :  
PS25LV040

## Design Menu

Picture Mode  
Sound Mode  
Sound Settings  
Power Save  
PIP Option  
EMI  
MOVESHARPNESS

### Picture Mode

Standard	Brightness	50
	Contrast	50
	Colour	20
Bright	Brightness	60
	Contrast	60
	Colour	24
Soft	Brightness	45
	Contrast	45
	Colour	18

### Sound Mode

Standard	120Hz	12
	500Hz	10
	1.5KHz	11
	5KHz	8
	10KHz	15
Music	120Hz	19
	500Hz	11
	1.5KHz	12
	5KHz	14
	10KHz	20
Speech	120Hz	4
	500Hz	10
	1.5KHz	12
	5KHz	7
	10KHz	5

### Sound Settings

VOLUME 0	128
VOLUME 1	79
VOLUME 20	26
VOLUME 40	22
VOLUME 100	5
TVPRE SCALER	4
VOLUME SCALER	0

## 6. Software Updating

### 6-1、Updating Tool

- You can update the software through a special tool (show as below)



## 6-2、Software Updating Operation

1、Connect the Debug board to the TV use VGA interface, then connect the Debug board to the computer, just as the pictures showing.



2. Set the ISP\_TOOL4.3.2.2 -----only for the first time update.  
DLPORTIO.dll and FTD2XX.DLL must be in the same folder

1) Find the folder where the ISP\_TOOL4.3.2.2 lies in.

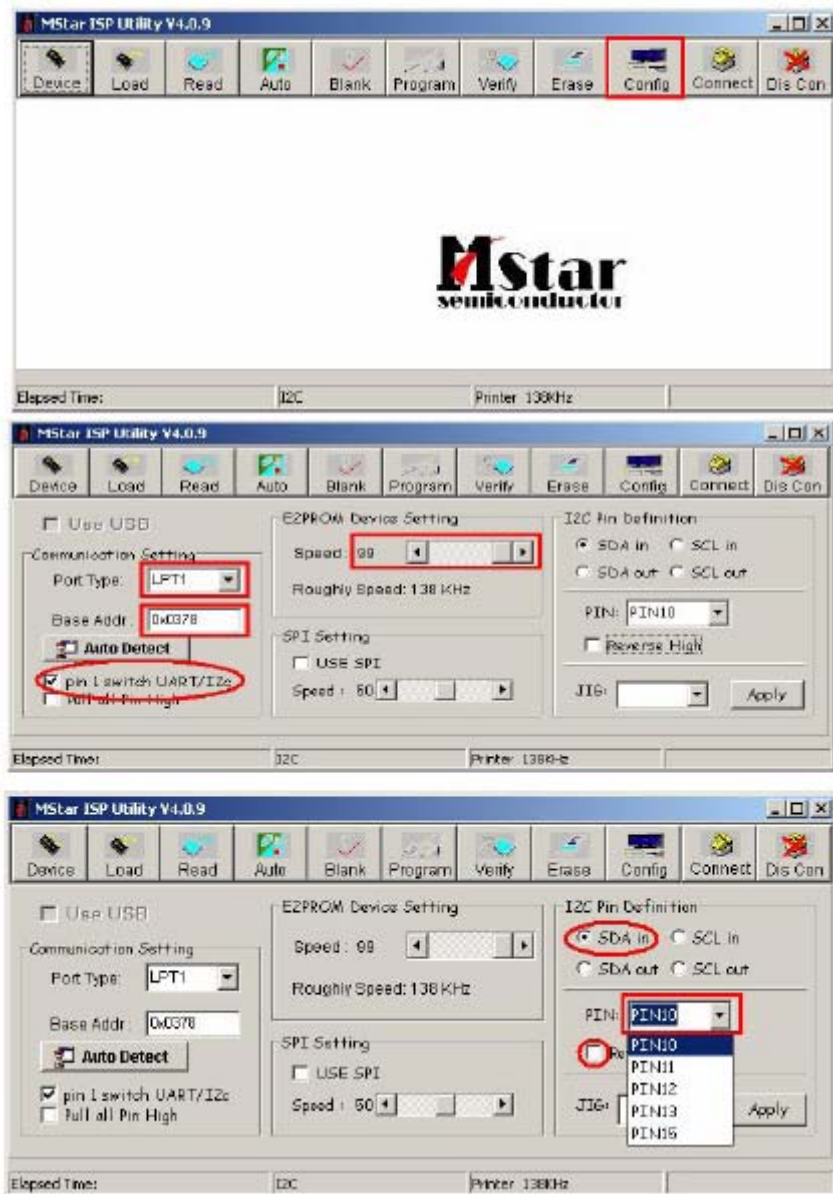
Note: DLPORTIO.dll and FTD2XX.DLL must be in the same folder.



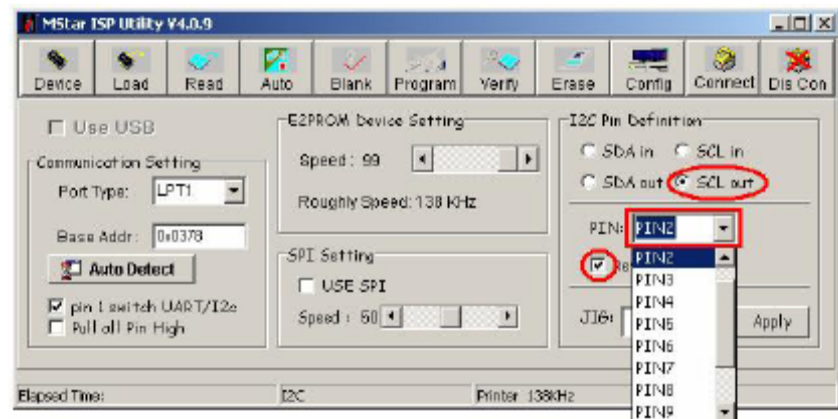
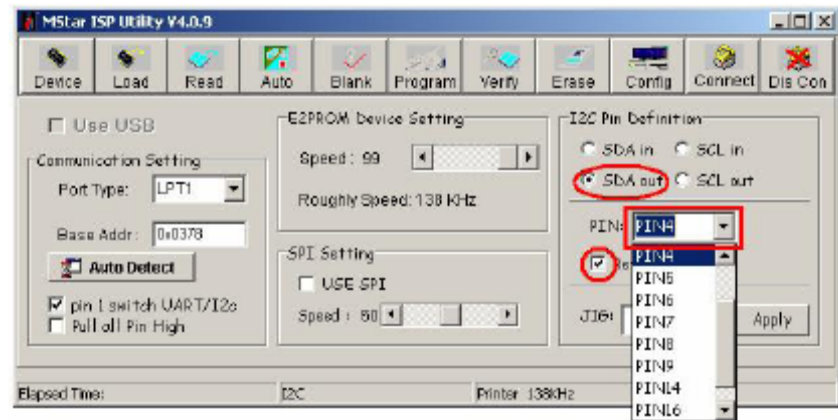
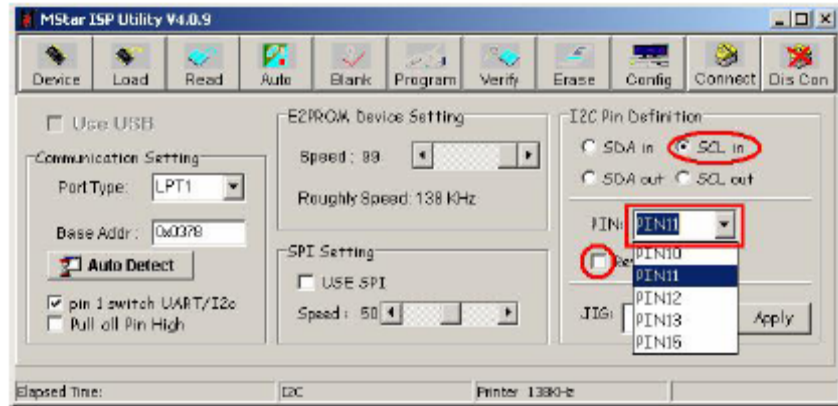
2) Double click the ISP\_TOOL4.3.2.2 icon, and then a dialog will show as below.



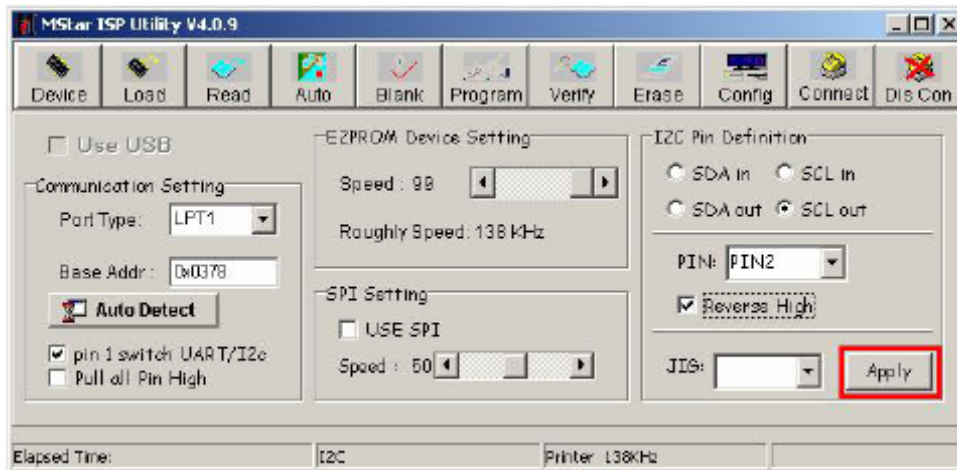
3) Click the Config button. And then a dialog will show as below.  
You should set the Config like what the picture shows.







4) After you have finished all above, you should click the Apply button to complete the configuration.

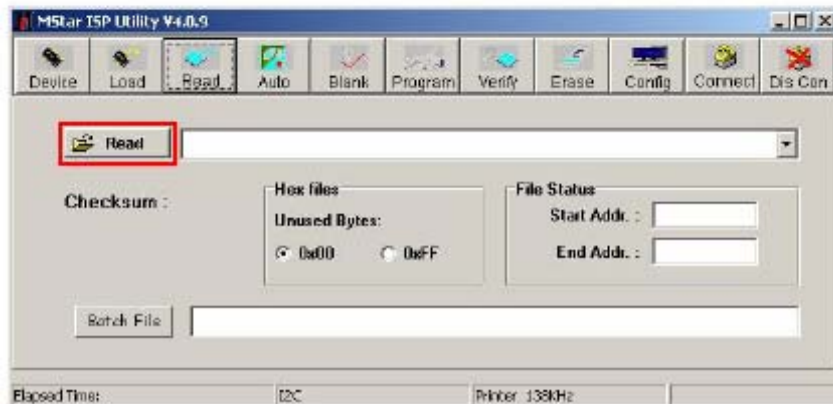


3. Turn on the TV, then we can update.

4. Double click the ISP\_TOOL4.3.2.2icon, and then a dialog will show as below.



5. Click the Read button. And then do as shown below.



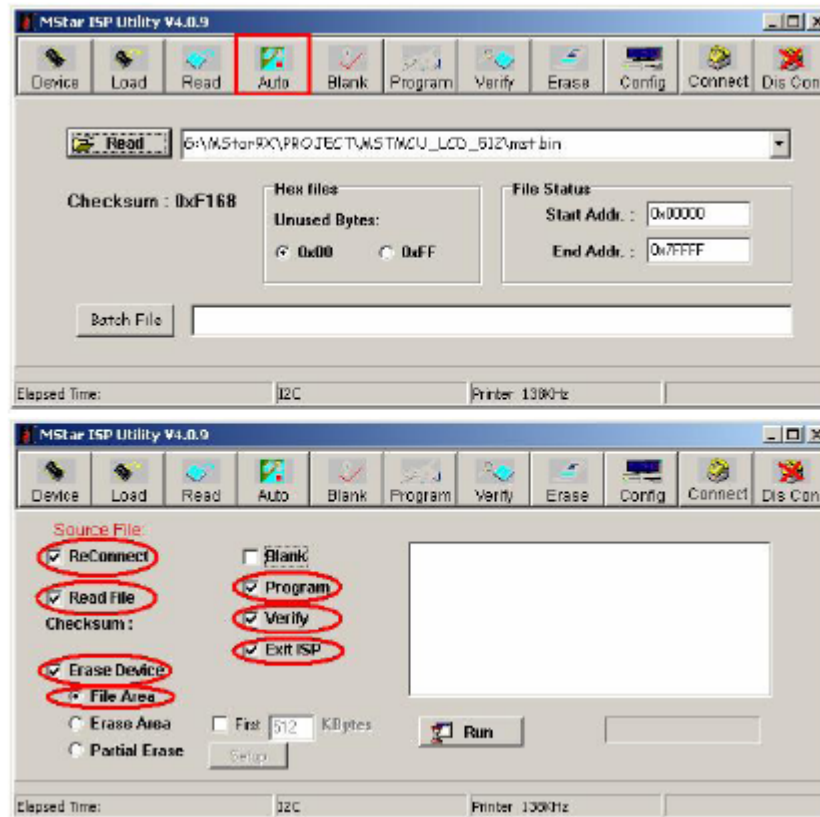
6. Find the update file in your computer.

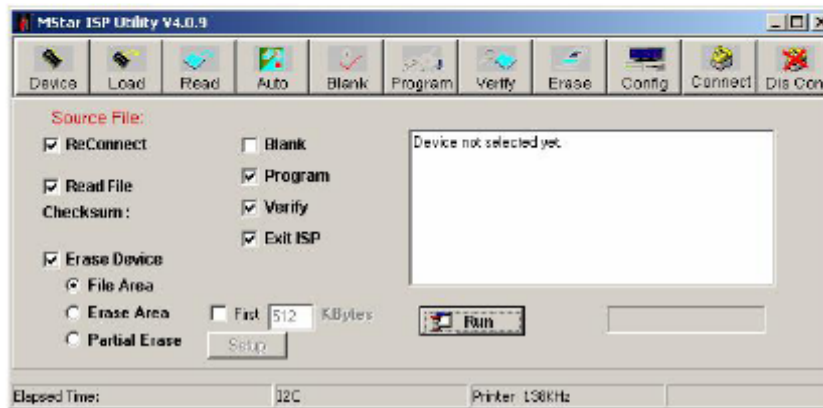
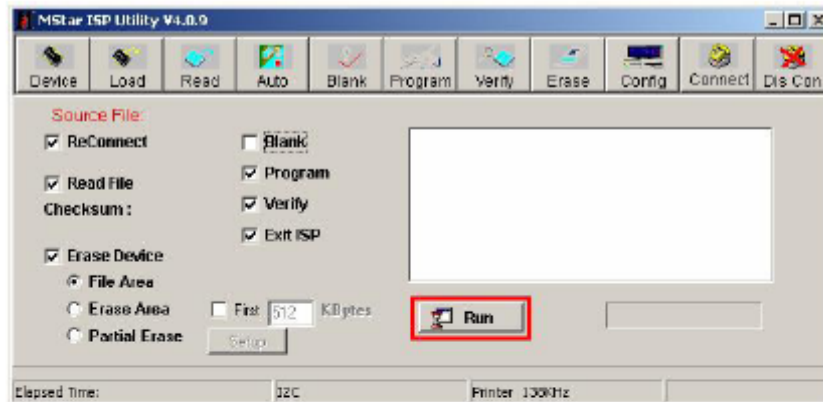


7. Double click the update file. A dialog will show as below.

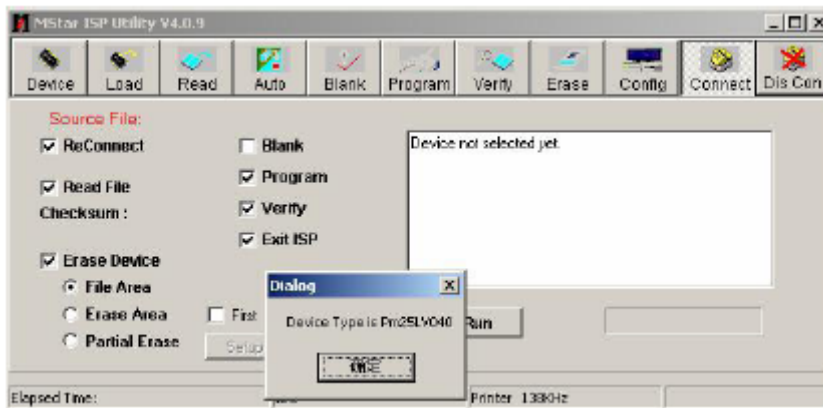


8. Click the Auto button. And then do as shown below.





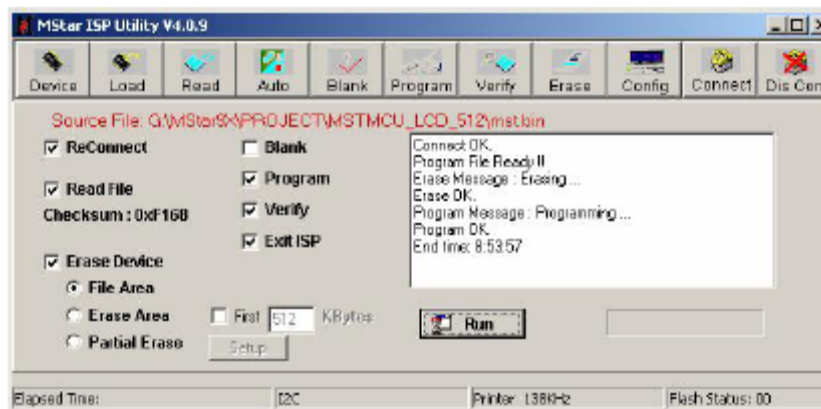
9. Click the Connect button. And then do as shown below.



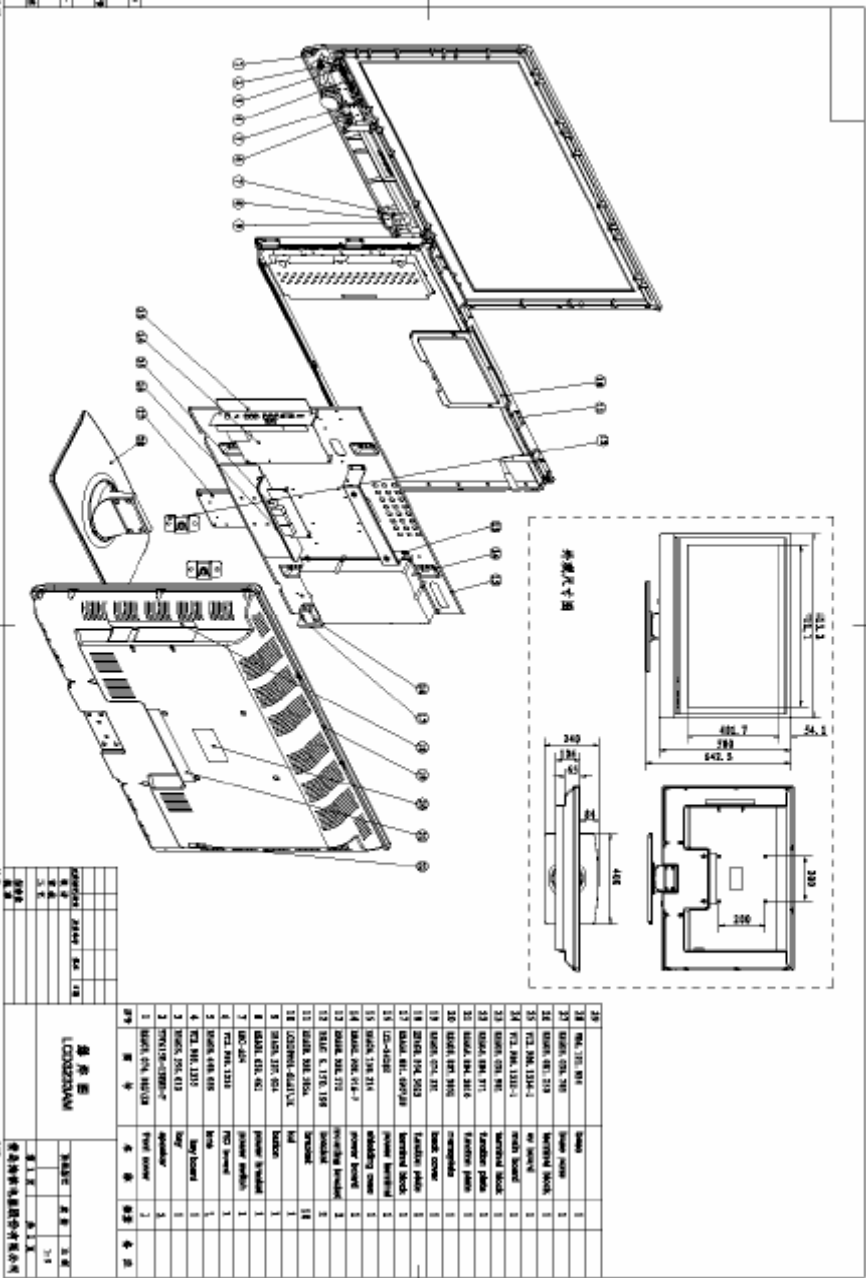
10. Click the Run button.



11. When the update is finished, a dialog will show as below.



7. Explode View





## 8. Bill Of Materials

### MAIN BOARD\WT2.908.1332-1\ROH

CAPACITOR\CD110-16V-470u-M\C3F5\ROH	PC	6	C194 C195 C196 C197 C292 C348
CAPACITOR\CD110-35V-1000u-M\C4F5\ROH	PC	1	C295
INDUCTOR\LGB0606-100u-J\C1F5\ROH	PC	2	L10 L11
IC\CW574CS\UPC574J\V1\ROH	PC	1	D9
SAW FILTER\HS9502\ROH	PC	1	Z1
SAW FILTER\HS3502\ROH	PC	1	Z2
TUNER\FTDC3Y13MH05	PC	1	U4 (EMC)
PLUG\TJC10-3A\ROH	PC	1	XP3
PLUG\TJC10-4A\ROH	PC	1	XP17
PLUG\TJC10-5A\ROH	PC	1	XP4
PLUG\TJC10-8A\ROH	PC	1	XP26 1/8
PLUG\TJC3-4A\ROH	PC	2	XP10 XP24
PLUG\A2600WSO-2X9P\ROH	PC	1	XP1
PLUG\A2600WSO-2X11P\ROH	PC	1	XP2
PLUG\FF-HX19-10\ROH	PC	1	XP15
SOCKET\DR-15A\ROH	PC	1	P3
AV SOCKET\AV5-LYA\ROH	PC	1	XS1
AV SOCKET\AV3-W-Z\ROH	PC	1	XS2
S-SOCKET\S2\ROH	PC	1	XS3
SOCKET\KFO-TX13CB\ROH	PC	1	XS4
PLUG\TJC10-14A\ROH	PC	1	
PCB\RSAG7.820.1037\VER.C	PC	1	
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	7	R87 R88 R462 R463 R490 R288 L1
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	8	R89 R84 R105 R208 R249 R481 R486 R696
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	8	R261 R268 R320 R321 R352 R428 R429 C390
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	8	R459 R467 R468 L12 L13 R657 R5 R9
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	8	L14 L15 L16 L17 L18 L23 L26 C391 R481
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	8	L30 L54 L55 L58 L59 L60 R20 R18
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	8	C42 C76 L78 L79 L28 L24 L27 R486
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	8	L21 L20 L19 R414 L61 R370 R371 L77
RESISTOR\RC0603JR-07-0R0\TP\ROH	PC	8	R46 R47 R353 R298 R634 R635 R120 R697
RESISTOR\RC0603JR-07-10R\TP\ROH	PC	8	R90 R91 R101 R102 R130 R136 R140 R146
RESISTOR\RC0603JR-07-10R\TP\ROH	PC	7	R147 R150 R212 R214 R215 R216 R217
RESISTOR\RC0603JR-07-10R\TP\ROH	PC	8	R326 R342 R327 R328 R384 R434 R29 R31
RESISTOR\RC0603JR-07-10R\TP\ROH	PC	7	R124 R123 R122 R410 R409 R411 R33
RESISTOR\RC0603JR-07-10R\TP\ROH	PC	8	R36 R37 R378 R379 R380 R34 R35 R32
RESISTOR\RC0603JR-07-33R\TP\ROH	PC	1	R491
RESISTOR\RC0603JR-07-47R\TP\ROH	PC	6	R104 R125 R152 R338 R339 R340
RESISTOR\RC0603JR-07-75R\TP\ROH	PC	7	R85 R86 R133 R141 R142 R116 R118
RESISTOR\RC0603JR-07-75R\TP\ROH	PC	8	R143 R144 R145 R148 R149 R151 R334 R335
RESISTOR\RC0603JR-07-75R\TP\ROH	PC	2	R336 R343
RESISTOR\RC0603JR-07-75R\TP\ROH	PC	5	R115 R114 R113 R417 R407
RESISTOR\RC0603JR-07-75R\TP\ROH	PC	6	R406 R405 R496 R497 R498 C392
RESISTOR\RC0603JR-07-100R\TP\ROH	PC	7	R154 R158 R191 R192 R193 R194 R195
RESISTOR\RC0603JR-07-100R\TP\ROH	PC	8	R196 R197 R200 R201 R202 R203 R230 R231
RESISTOR\RC0603JR-07-100R\TP\ROH	PC	8	R222 R224 R225 R232 R255 R269 R350 R351
RESISTOR\RC0603JR-07-100R\TP\ROH	PC	9	R59 R198 R199 R55 R56 R57 R63 R155 R159
RESISTOR\RC0603JR-07-100R\TP\ROH	PC	6	R218 R220 R221 R256 R469 R472
RESISTOR\RC0603JR-07-100R\TP\ROH	PC	4	R38 R39 R40 R489
RESISTOR\RC0603JR-07-150R\TP\ROH	PC	1	R233
RESISTOR\RC0603JR-07-220R\TP\ROH	PC	2	R98 R117
RESISTOR\RC0603JR-07-330R\TP\ROH	PC	5	R82 R134 R337 R418 R112
RESISTOR\RC0603JR-07-390R\TP\ROH	PC	1	R229
RESISTOR\RC0603JR-07-820R\TP\ROH	PC	1	R103
RESISTOR\RC0603JR-07-1K0\TP\ROH	PC	9	R360 R43 R92 R93 R94 R95 R204 R205 R206
RESISTOR\RC0603JR-07-1K0\TP\ROH	PC	8	R207 R209 R210 R211 R251 R258 R311 R323
RESISTOR\RC0603JR-07-1K0\TP\ROH	PC	7	R324 R449 R471 R474 R44 R492
RESISTOR\RC0603JR-07-1K5\TP\ROH	PC	2	C393 C394
RESISTOR\RC0603JR-07-2K0\TP\ROH	PC	1	R361
RESISTOR\RC0603JR-07-2K2\TP\ROH	PC	3	R65 R157 R444
RESISTOR\RC0603JR-07-3K0\TP\ROH	PC	1	R358
RESISTOR\RC0603JR-07-4K7\TP\ROH	PC	8	R68 R69 R70 R71 R457 R184 R185 R186
RESISTOR\RC0603JR-07-4K7\TP\ROH	PC	6	R240 R242 R243 R244 R245 R247
RESISTOR\RC0603JR-07-4K7\TP\ROH	PC	4	R331 R347 R348 R27
RESISTOR\RC0603JR-07-4K7\TP\ROH	PC	5	R349 R442 R446 R453 R454
RESISTOR\RC0603JR-07-5K6\TP\ROH	PC	1	R99
RESISTOR\RC0603JR-07-6K8\TP\ROH	PC	1	R445

RESISTOR\RC0603JR-07-8K2\TP\ROH	PC	4	R227 R228 R415 R416
RESISTOR\RC0603JR-07-10K\TP\ROH	PC	8	R106 R107 R126 R129 R135 R139 R162 R60
RESISTOR\RC0603JR-07-10K\TP\ROH	PC	8	R163 R166 R167 R168 R169 R241 R260 R10
RESISTOR\RC0603JR-07-10K\TP\ROH	PC	8	R272 R275 R319 R354 R355 R359 R470
			R476
RESISTOR\RC0603JR-07-10K\TP\ROH	PC	9	R2 R6 R15 R16 R164 R165 R318 R412 R413
RESISTOR\RC0603JR-07-12K\TP\ROH	PC	7	R110 R111 R127 R128 R137 R138 R76
RESISTOR\RC0603JR-07-12K\TP\ROH	PC	2	R356 R357
RESISTOR\RC0603JR-07-15K\TP\ROH	PC	1	R458
RESISTOR\RC0603JR-07-22K\TP\ROH	PC	7	R11 R13 R61 R62 R171 R174 R250
RESISTOR\RC0603JR-07-22K\TP\ROH	PC	3	R75 R172 R175
RESISTOR\RC0603JR-07-33K\TP\ROH	PC	3	R277 R278 R280
RESISTOR\RC0603JR-07-33K\TP\ROH	PC	1	R281
RESISTOR\RC0603JR-07-47K\TP\ROH	PC	8	R284 R285 R286 R465 R466 R23 R24 R25
RESISTOR\RC0603JR-07-47K\TP\ROH	PC	5	R430 R431 R432 R433 R26
RESISTOR\RC0603JR-07-56K\TP\ROH	PC	2	R279 R282
RESISTOR\RC0603JR-07-100K\TP\ROH	PC	6	R83 R96 R295 R296 R273 R274
RESISTOR\RC0603JR-07-100K\TP\ROH	PC	3	R640 R617 R641
RESISTOR\RC0603JR-07-680K\TP\ROH	PC	1	R97
RESISTOR\RC0603JR-07-1M0\TP\ROH	PC	1	R226
RESISTOR\YC164JR-07-33R\TP\ROH	PC	1	RP18
RESISTOR\YC164JR-07-47R\TP\ROH	PC	1	RP10
RESISTOR\YC164JR-07-100R\TP\ROH	PC	4	RP11 RP12 RP13 RP14
RESISTOR\YC164JR-07-4K7\TP\ROH	PC	8	RP2 RP3 RP4 RP5 RP6 RP7 RP8 RP9
CAPACITOR\CC0603JRNPO9BN180\TP\ROH	PC	1	C360
CAPACITOR\CC0603JRNPO9BN220\TP\ROH	PC	6	C53 C60 C61 C62 C169 C170
CAPACITOR\CC0603JRNPO9BN101\TP\ROH	PC	6	C147 C148 C149 C150 C283 C284
CAPACITOR\CC0603JRNPO9BN391\TP\ROH	PC	5	C68 C171 C220 C225 C227
CAPACITOR\CC0603JRNPO9BN561\TP\ROH	PC	8	C72 C85 C86 C91 C92 C83 C84 C350
CAPACITOR\CC0603JRNPO9BN561\TP\ROH	PC	1	C351
CAPACITOR\CC0603KRX7R9BB102\TP\ROH	PC	6	C40 C64 C88 C277 C279 C67
CAPACITOR\CC0603KRX7R9BB102\TP\ROH	PC	6	C312 C416 C144 C145 C66 C65
CAPACITOR\CC0603KRX7R9BB152\TP\ROH	PC	1	C49
CAPACITOR\CC0603KRX7R9BB103\TP\ROH	PC	8	C43 C44 C45 C46 C47 C48 C152 C154
CAPACITOR\CC0603KRX7R9BB103\TP\ROH	PC	8	C157 C158 C159 C160 C161 C162 C163
			C164
CAPACITOR\CC0603KRX7R9BB103\TP\ROH	PC	6	C165 C166 C167 C414 C155 C156
CAPACITOR\CC0603KRX7R7BB473\TP\ROH	PC	8	C63 C87 C90 C93 C94 C97 C98 C315
CAPACITOR\CC0603KRX7R7BB473\TP\ROH	PC	5	C316 C317 C318 C319 C320
CAPACITOR\CC0603KRX7R7BB473\TP\ROH	PC	6	C383 C382 C384 C378 C379 C380
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	8	C32 C34 C35 C36 C37 C38 C54 C55
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	7	C56 C57 C58 C106 C107 C109 C282
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	8	C110 C111 C112 C113 C114 C115 C116
			C117
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	8	C118 C119 C120 C121 C122 C123 C124
			C125
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	8	C146 C177 C180 C181 C182 C186 C187
			C188
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	8	C189 C190 C191 C192 C200 C201 C205
			C206
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	8	C207 C208 C209 C210 C211 C212 C213
			C214
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	8	C215 C216 C217 C218 C219 C221 C222
			C223
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	8	C224 C226 C228 C229 C230 C231 C232
			C233
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	7	C234 C235 C236 C237 C238 C239 C258
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	3	C291 C308 C309
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	5	C310 C345 C346 C446 C59
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	4	C1 C105 C108 C18
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	3	C20 C22 C24
CAPACITOR\CC0603KRX7R7BB104\TP\ROH	PC	2	C19 C421
CAPACITOR\CC0603KRX7R6BB224\TP\ROH	PC	1	C50
CAPACITOR\CC0603ZRY5V7BB474\TP\ROH	PC	2	C51 C52
CAPACITOR\LMK212BJ225KD-T\TP\JK\ROH	PC	8	C39 C127 C130 C134 C135 C136 C128 C131
CAPACITOR\LMK212BJ225KD-T\TP\JK\ROH	PC	8	C137 C138 C139 C140 C141 C142 C185
			C388
CAPACITOR\LMK212BJ225KD-T\TP\JK\ROH	PC	8	C453 C4 C7 C6 C9 C132 C133 C385
CAPACITOR\LMK212BJ225KD-T\TP\JK\ROH	PC	4	C395 C396 C386 C387
CAPACITOR\LMK212BJ475KG-T\TP\ROH	PC	8	C243 C245 C248 C249 C250 C251 C252
			C253
CAPACITOR\LMK212BJ475KG-T\TP\ROH	PC	7	C254 C333 C356 C357 C358 C178 C179

CAPACITOR\LMK212BJ475KG-T\TP\ROH	PC	5	C417 C274 C275 C450 C451
CAPACITOR\LMK212BJ106MG-T\TPKD-T	PC	6	C344 C349 C353 C354 C355 C33
CAPACITOR\RV3-16V470ME55-R\TP\ROH	PC	4	C330 C332 C352 C326
CAPACITOR\RV3-16V470ME55-R\TP\ROH	PC	5	C183 C257 C327 C328 C329
CAPACITOR\RV2-16V101MF55-R\TP\ROH	PC	6	C443 C444 C448 C449 C422
CAPACITOR\RV2-16V101MF55-R\TP\ROH	PC	8	C184 C240 C241 C246 C247 C255 C256 C445
CAPACITOR\RV3-25V470MF55-R\TP\ROH	PC	1	C307
CAPACITOR\RV2-50V010MD55-R\TP\ROH	PC	2	C334 C342
DIODE\1N4148W\TP\ROH	PC	7	D8 D25 D27 D28 D29 D58 D59
DIODE\1N4148W\TP\ROH	PC	2	D60 D21
DIODE\BAV99LT1\TP\ROH	PC	5	D10 D20 D35 D36 D37
DIODE\BAV70L\TP\JK\ROH	PC	1	D6
DIODE\LM3Z5V6T1G\TP\ROH	PC	5	D3 D4 D11 D30 D33
DIODE\STZ6.2N\TP\JK\ROH	PC	8	D38 D39 D40 D41 D42 D43 D44 D45
DIODE\STZ6.2N\TP\JK\ROH	PC	7	D46 D47 D48 D49 D53 D56 D57
DIODE\STZ6.2N\TP\JK\ROH	PC	5	D16 D15 D14 D55 D18
DIODE\STZ6.2N\TP\JK\ROH	PC	5	D68 D69 D70 D64 D65
DIODE\RB060L-40\TP\JK\ROH	PC	4	D22 D23 D54 D63
TRANSISTOR\MMBT3904LT1\TP\ROH	PC	9	V1 V6 V7 V8 V10 V19 V21 V605 V606
TRANSISTOR\MMBT3904LT1\TP\ROH	PC	9	V20 V23 V28 V31 V34 V35 V36 V23
TRANSISTOR\MMBT3904LT1\TP\ROH	PC	2	V44 V17
TRANSISTOR\MMBT3906LT1\TP\ROH	PC	3	V38 V39 V24
TRANSISTOR\MMBT3906LT1\TP\ROH	PC	2	V16 V29
TRANSISTOR\2N7002\TP\ROH	PC	1	V27
INDUCTOR\BLM18PG181SN1\TP\ROH	PC	8	L3 L5 L6 L7 L34 L36 L37 L38
INDUCTOR\BLM18PG181SN1\TP\ROH	PC	8	L39 L40 L41 L42 L43 L44 L45 L46
INDUCTOR\BLM18PG181SN1\TP\ROH	PC	3	L47 L2 L72
INDUCTOR\BLM31PG121SN1\TP\JK\ROH	PC	5	L33 L48 L73 L74 L75
INDUCTOR\SLF10145T-150M2R2-PF\TP\JK\ROH	PC	1	L65
IC\LD1117A-3.3\AZ1117H-3.3\TP\JKRO	PC	1	N10
IC\AP1520S\TP\JK\ROH	PC	1	N14
IC\SPX1117M3-5\LD1117A-5\TP\JK\ROH	PC	1	U6
IC\LD1117A-3.3\AZ1117H-3.3\TP\JKRO	PC	1	N7
IC\LD1117A-2.5\AZ1117H-2.5\TP\JKROH	PC	1	N8
IC\IRF7314\IRF7314TR\TP\JK\ROH	PC	1	N6
IC\L7808CD2T-TR\TP\JK\ROH	PC	1	N5
IC\TDA9886TS\TP\JK\ROH	PC	1	U5
IC\MST9U89BL-LF\TP\JK	PC	1	U8
IC\HY5DU281622FTP-4\TP\JK	PC	1	U9
IC\EN25B40\EN25F40-100GCP\TP\JK	PC	1	U10
IC\AT24C32N-10SI-2.7\TP\JK\ROH	PC	1	U11
IC\LM833MX\TP\JK\ROH	PC	1	N11
HDMI-PLUG\HMR41-AK5200\ROH471510001	PC	1	P1
IC\CM1213-04MR\TP\JK\ROH	PC	2	N15 N16
IC\24LC02B-I\SN\TP\JK\ROH	PC	1	N13
IC\AT24C04N-10SU-2.7\TP\JK\ROH	PC	1	U12
IC\PACDN044YB5R\TP\JK\ROH	PC	1	U14
IC\CS4344CZ\TP\JK\ROH	PC	1	U7
CERAMIC OSC\JAS14C\TP\ROH	PC	1	Y2
CERAMIC OSC\JAS4K\TP\ROH	PC	1	Y1
IC\74LV4052D\TP\JK\ROH	PC	1	U3
CAPACITOR\CC0805KRX7R9BB104\TP\ROH	PC	4	C616 C621 C637 C639
CAPACITOR\GRM21BR71H474KA88\TP\ROH	PC	2	C618 C638
CAPACITOR\CC0805KRX7R7BB105\TP\ROH	PC	6	C620 C624 C623 C627 C630 C633
CAPACITOR\CC0805KRX7R7BB105\TP\ROH	PC	4	C632 C628 C629 C626
CAPACITOR\CC0603KRX7R9BB103\TP\ROH	PC	1	C636
RESISTOR\RC0603JR-07-22K\TP\ROH	PC	1	R607
RESISTOR\RC0603JR-07-10K\TP\ROH	PC	4	R612 R631 R616 R619
CAPACITOR\RV2-25V221MG10-R\TP\ROH	PC	4	C625 C619 C631 C198
INDUCTOR\SLF10145T-330M1R6-PF\ROH	PC	4	L602 L604 L607 L608
INDUCTOR\BLM31PG121SN1\TP\JK\ROH	PC	3	L603 L605 L606
IC\TPA3101D2\JK\ROH	PC	1	U800
DIODE\RB160M-30TR\TP\JK\ROH	PC	1	D26
CAPACITOR\CC0805KRX7R7BB224\TP\ROH	PC	4	C634 C635 C622 C617
RESISTOR\RC0603JR-07-33K\TP\ROH	PC	1	R161
RESISTOR\RC0603JR-07-4K7\TP\ROH	PC	1	R639
INDUCTOR\BLM31PG121SN1\TP\JK\ROH	PC	1	L32

**POWER BOARD\RSAG2.908.916-7\ROH**

RESISTOR\NTC5D-15\C1F7.5\ROH	PC	1	RT802
RESISTOR\TVR14561KSC4AG9W\ROH	PC	1	RV801
RESISTOR\RY27-2W-2K2-J\R4F7.5	PC	1	R933
RESISTOR\RY26-1W-0R82-J\R3F15\ROH	PC	1	R832
RESISTOR\RY27-2W-0R51-J\R3F15\ROH	PC	1	R822
RESISTOR\RY27-2W-100K-J\R3F15\ROH	PC	1	R835
CAPACITOR\CT81-1KV-B-1000p-K\C1F7.5\ROH	PC	6	C805 C806 C852 C853 C858 C859
CAPACITOR\CT7-AC400V-E-1000p-M\C1F10\ROH	PC	1	(EMC) C840
CAPACITOR\CT7-AC400V-E-2200p-M\C1F10\ROH	PC	1	(EMC) C851
CAPACITOR\CT7-AC400V-B-470p-K\C1F10\ROH	PC	2	(EMC) C801 (EMC) C802
CAPACITOR\MKP62-AC275V-470N-K\C2F15\ROH	PC	2	(EMC) C803 (EMC) C804
CAPACITOR\MKP61-AC250V-1U0-M\V2F22.5\R0	PC	1	C808
CAPACITOR\CD288H-16V-1000U-M\C4F5\ROH	PC	2	C843 C844
CAPACITOR\CD263-25V-1000u-M\C4F5\ROH	PC	3	C862 C864 C865
CAPACITOR\CD288H-35V-2200u-M\C5F7.5\ROH	PC	1	C854
CAPACITOR\CD117H-50V-22u-M\C3F5\ROH	PC	2	C832 C833
CAPACITOR\CD296-450V-150u-M\C5F10\ROH	PC	1	C809
JUMPER\20MM\L1F20\ROH	PC	2	W817 W822
JUMPER\20MM\L1F20\ROH	PC	1	W827
DIODE\5SB60\ROH	PC	1	VB801
DIODE\05W33B\R1F7.5\ROH	PC	1	VZ805
DIODE\1N5929BRL\L2F12.5\JK\ROH	PC	1	VZ808
DIODE\UF4007\L2F12.5\ROH	PC	1	VD818
DIODE\FR104\L2F12.5\ROH	PC	2	VD809 VD810
DIODE\1N5408\L2F15\ROH	PC	1	VD801
DIODE\MUR460G\R3F17.5\JK\ROH	PC	2	VD807 VD808
DIODE\BYC10X-600\JK\ROH	PC	1	VD802
DIODE\1N5822\R4F7.5\ROH	PC	1	VD830
DIODE\MURF1620CTG\JK\ROH	PC	3	VD815 VD816 VD817
DIODE\MBRF2545CTG\JK\ROH	PC	1	VD812
FUSE\618-4A\JK\ROH	PC	1	F801
FUSE SUPPOTER\RSR7.736.0102\ROH	PC	2	
IC\PC817B\HS817B\H11A817B\JK\RO	PC	3	N804 N805 N806
MOS\FQPF10N60C\V2\JK\ROH	PC	2	V805 V806
MOS\FQPF3N80C\V2\JK\ROH	PC	1	V809
MOS\SPA20N60C3\V4A\JK\ROH	PC	1	V801
MOS\NTD4809N-1G\JK\ROH	PC	1	V813
IC\KA431AZ\v1\utct1431\jk\ROH	PC	2	N807 N808
IC\LM2576TV-ADJG\JK\ROH	PC	1	N811
TRANSFORMER\BCT-10B\ROH	PC	1	T804
TRANSFORMER\BCK-28-001D\ROH	PC	1	(EMC) T803
TRANSFORMER\BCK-35-001A\ROH	PC	1	(EMC) L806
TRANSFORMER\LCL-2420H\ROH	PC	2	(EMC) L803 (EMC) L804
INDUCTOR\LEO-21\ROH	PC	2	L808 L811
INDUCTOR\ZZ0008\L2F15\ROH	PC	1	L812
INDUCTOR\L533003\ROH	PC	3	
SCREW\SJ2831-87 ST3X10	PC	8	V805 V806 V809 VD812 VD815 VD816
SCREW\SJ2836-87 M2.5X12\ROH	PC	2	
PLUG\TJC2-3A\ROH	PC	1	XP801
PLUG\TJC10-4A\ROH	PC	1	XP803
PLUG\TJC10-8A\ROH	PC	1	XP808
PLUG\TJC10-14A\ROH	PC	2	XP812 XP809
PLUG\TJC10-12A\ROH	PC	1	XP810
CAPACITOR\CD263-25V-2200u-M\C4F5\ROH	PC	1	C842
CAPACITOR\CD288H-35V-1000u-M\C4F5\ROH	PC	1	C855
INDUCTOR\LCL-12A\ROH	PC	1	L810
RESISTOR\RX27-6-3W-0R15-K\ROH	PC	1	R812
RESISTOR\CT81-2KV-B-470p-K\C1F10\ROH	PC	1	C830
SCREW\SJ2832-87 ST3X12\ROH\STD	PC	1	
TRANSFORMER\SPT4001SZ\ROH	PC	1	(EMC) T801
INDUCTOR\BK-30-01GF\ROH	PC	1	(EMC) L807
RIVET\XRY2.5X3.5BD\JC\ROH	PC	10	E1 E2 E01 E02 E03 E04 E05 E06 E07 E08
RIVET\XRY1.6X2.8BD\JC\ROH	PC	11	E3 E4 E5 E6 E7 E11 E12 E13 E14 E15 E16
RIVET\XRY1.6X2.8BD\JC\ROH	PC	10	E17 E18 E19 E20 E21 E22 E23 E24 E25
			E26
RIVET\XRY1.6X2.8BD\JC\ROH	PC	6	E27 E28 E29 E30 E31 E32
JUMPER\TRX-0.6-I\JC\ROH	PC	3	W838 W809 W837
JUMPER\TRX-0.6-I\JC\ROH	PC	4	W812 W819 W833 W824
JUMPER\TRX-0.6-I\JC\ROH	PC	4	W804 W805 W808 W821
JUMPER\TRX-0.6-I\JC\ROH	PC	5	W831 W811 VD813 W830 W834
JUMPER\TRX-0.6-I\JC\ROH	PC	3	W806 W813 W839

JUMPER\TRX-0.6-I\JC\ROH	PC	2	W826 W836
JUMPER\TRX-0.6-I\JC\ROH	PC	6	W828 W801 W807 W818 W820 W829
JUMPER\TRX-0.6-I\JC\ROH	PC	3	W802 W814 W832
DIODE\05W30A\JC\ROH	PC	1	VZ811
DIODE\05W18B\JC\ROH	PC	1	VZ812
DIODE\1N4148\JC\ROH	PC	3	VD820 VD821 VD822
DIODE\RM11C\JC\ROH	PC	1	VD811
DIODE\05W3.6B\JC\ROH	PC	1	VZ816
DIODE\05W15B\JC\ROH	PC	1	VZ813
JUMPER\TRX-0.6-I\JC\ROH	PC	3	W810 W815 W835
JUMPER\TRX-0.6-I\JC\ROH	PC	2	W803 W841
PCB\E\RAG7.820.848A\ROH\VER.G	PC	1	
RESISTOR\RC0805JR-07-0R0\TP\ROH	PC	4	R807 R861 R885 R928
RESISTOR\RC0805JR-07-5R1\TP\ROH	PC	3	R809 R818 R819
RESISTOR\RC0805JR-07-22R\TP\ROH	PC	5	R823 R829 R845 R849 R850
RESISTOR\RC0805JR-07-68R\TP\ROH	PC	1	R817
RESISTOR\RC0805JR-07-100R\TP\ROH	PC	1	R859
RESISTOR\RC0805JR-07-680R\TP\ROH	PC	1	R858
RESISTOR\RC0805JR-07-820R\TP\ROH	PC	1	R830
RESISTOR\RC0805JR-07-1K0\TP\ROH	PC	6	R847 R852 R857 R864 R915 R916
RESISTOR\RC0805JR-07-1K0\TP\ROH	PC	3	R879 R920 R924
RESISTOR\RC0805JR-07-2K0\TP\ROH	PC	8	R815 R816 R880 R881 R867 R868 R869 R894
RESISTOR\RC0805JR-07-2K4\TP\ROH	PC	2	R855 R856
RESISTOR\RC0805JR-07-2K7\TP\ROH	PC	2	R808 R853
RESISTOR\RC0805JR-07-5K1\TP\ROH	PC	8	R810 R820 R821 R826 R831 R836 R837 R862
RESISTOR\RC0805JR-07-5K6\TP\ROH	PC	2	R882 R900
RESISTOR\RC0805JR-07-10K\TP\ROH	PC	3	R838 R844 R923
RESISTOR\RC0805JR-07-33K\TP\ROH	PC	3	R840 R872 R870
RESISTOR\RC0805JR-07-47K\TP\ROH	PC	1	R883
RESISTOR\RC0805JR-07-51K\TP\ROH	PC	5	R863 R865 R866 R898 R899
RESISTOR\RC0805JR-07-82K\TP\ROH	PC	3	R811 R828 R927
RESISTOR\RC0805JR-07-100K\TP\ROH	PC	5	R839 R893 R911 R913 R922
RESISTOR\RC0805JR-07-200K\TP\ROH	PC	3	R921 R909 R926
RESISTOR\RC0805JR-07-470K\TP\ROH	PC	1	R803
RESISTOR\RC0805JR-07-560K\TP\ROH	PC	1	R806
RESISTOR\RC0805JR-07-680K\TP\ROH	PC	6	R804 R805 R904 R906 R910 R918
RESISTOR\RC0805JR-07-1M0\TP\ROH	PC	6	R801 R802 R813 R843 R905 R925
RESISTOR\RC0805JR-07-2M2\TP\ROH	PC	4	R825 R841 R907 R908
RESISTOR\RC1206JR-07-0R0\TP\ROH	PC	1	R851
RESISTOR\RC1206JR-07-10R\TP\ROH	PC	2	R834 R834A
RESISTOR\RC1206JR-07-27R\TP\ROH	PC	1	R827
RESISTOR\RC1206JR-07-27R\TP\ROH	PC	8	R860 R887 R888 R889 R890 R895 R896 R897
RESISTOR\RC1206JR-07-75R\TP\ROH	PC	2	R833 R833A
RESISTOR\RC1206JR-07-100R\TP\ROH	PC	1	R842
RESISTOR\RC1206JR-07-680K\TP\ROH	PC	3	R901 R902 R903
RESISTOR\RC0805JR-07-20K\TP\ROH	PC	1	R824
CAPACITOR\CC0805JRNPO9BN102\TP\ROH	PC	7	C811 C814 C815 C825 C826 C870 C871
CAPACITOR\CC0805KRX7R9BB222\TP\ROH	PC	1	C856
CAPACITOR\CC0805KRX7R9BB104\TP\ROH	PC	8	C810 C812 C816 C817 C818 C819 C821 C822
CAPACITOR\CC0805KRX7R9BB104\TP\ROH	PC	6	C824 C834 C835 C836 C837 C838
CAPACITOR\CC0805KRX7R9BB104\TP\ROH	PC	2	C875 C883
CAPACITOR\CC0805KRX7R9BB104\TP\ROH	PC	3	C860 C861 C867
CAPACITOR\CC0805ZRY5V9BB224\TP\ROH	PC	1	C850
CAPACITOR\CC0805KKX7R7BB474\TP\ROH	PC	1	C841
CAPACITOR\CC0805KRX7R7BB105\TP\ROH	PC	5	C845 C839 C874 C876 C879
CAPACITOR\CC0805JRNPO9BN101\TP\ROH	PC	1	C820
CAPACITOR\CC0805JRNPO9BN471\TP\ROH	PC	1	C866
CAPACITOR\CC0805KRX7R9BB223\TP\ROH	PC	2	C828 C829
DIODE\MMSZ15T1G\TP\JK\ROH	PC	6	VZ801 VZ802 VZ803 VZ804 VZ806 VZ807
DIODE\MMSZ15T1G\TP\JK\ROH	PC	3	VZ809 VZ810 VZ814
DIODE\1N4148W\TP\ROH	PC	3	VD827 VD828 VD829
DIODE\MBR0520LT1/B0520LW\TP\ROH	PC	3	VD804 VD806 VD823
TRANSISTOR\BCP56-10T1G\TP\JK\ROH	PC	2	V807 V820
TRANSISTOR\BCP53-10T1G\TP\JK\ROH	PC	1	V821
TRANSISTOR\MMBT2222A\TP\ROH	PC	4	V811 V812 V816 V819
TRANSISTOR\MMBT2907ALT1\TP\ROH	PC	7	V803 V804 V808 V810 V817 V822 V823
IC\NCP1207ADR2G\TP\JK\ROH	PC	1	N803
IC\NCP1217AD65R2G\TP\JK\ROH	PC	1	N802

IC\NCP1653ADR2G\TP\JK\ROH	PC	1	N801
CAPACITOR\CC0805KRX7R7BB224\TP\ROH	PC	1	C882

#### TOUCH SWITCH & RC PCB\WT2.908.1333\ROH

TOUCH SWITCH \KAN-C202-5\ROH	PC	5	SWK01 SWK02 SWK03 SWK04 SWK05
TOUCH SWITCH \KAN-C202-5\ROH	PC	2	SWK06 SWK07
DIODE\BT-H643RBW-31\ROH	PC	1	VDR01
IC\HS0038A2\JK\ROH	PC	1	NR01
PLUG\TJC10-3AW\ROH	PC	1	XP01
PLUG\TJC10-5AW\ROH	PC	1	XPR01
PCB\12E\RSAG7.820.981A\986A\VER.B	PC	1	VER.B
RESISTOR\RC0603JR-07-100R\TP\ROH	PC	1	RR14
RESISTOR\RC0603JR-07-470R\TP\ROH	PC	2	RR11 RR12
RESISTOR\RC0603JR-07-1K1\TP\ROH	PC	2	RK04 RK08
RESISTOR\RC0603JR-07-1K5\TP\ROH	PC	2	RK05 RK09
RESISTOR\RC0603JR-07-2K0\TP\ROH	PC	1	RK10
RESISTOR\RC0603JR-07-10K\TP\ROH	PC	4	RR09 RR10 RR13 RR15
TRANSISTOR\MMBT3904LT1\TP\ROH	PC	2	VR01 VR02
CAPACITOR\LMK212BJ475KG-T\TP\ROH	PC	1	CR03
CAPACITOR\LMK212BJ106MG-T\TPKD-T	PC	1	CR02

#### AV PCB\WT2.908.1334-1\ROH

PCB\5RSAG7.820.1030	PC	1	
AV-PLUG\AV5-LYA\ROH	PC	1	XS1
AV-PLUG\AV6-W-2\ROH	PC	1	XS12
EARPHONE\CK3-3.5-3AK\ROH	PC	1	XS3
PLUG\A2600WSO-2X9P\ROH	PC	1	XP1
PLUG\A2600WSO-2X11P\ROH	PC	1	XP2
PLUG\TJC3-4A\ROH	PC	1	XP4

## 9. Troubleshooting

Symptoms	Possible Solutions
TV will not turn on	<ul style="list-style-type: none"> <li>• Make sure the power cord is plugged in, then press &lt;Power&gt;.</li> <li>• The remote control batteries may be dead. Replace the batteries.</li> </ul>
No picture, no sound	<ul style="list-style-type: none"> <li>• Check if you have set the off timer.</li> <li>• Check the antenna/cable connections.</li> <li>• Press [Display] to see if you have select the right signal source.</li> </ul>
No sound, picture OK	<ul style="list-style-type: none"> <li>• The sound may be muted. Press &lt;VOL ^ &gt; on the remote control .</li> <li>• The station may have broadcast difficulties. Try another channel.</li> <li>• Check the speakers cable connections.</li> </ul>
Poor sound, picture OK	<ul style="list-style-type: none"> <li>• The station may have broadcast difficulties. Try another channel.</li> <li>• Check the speakers cable connections.</li> </ul>
Poor picture, sound OK	<ul style="list-style-type: none"> <li>• Check the antenna connections.</li> <li>• The station may have broadcast difficulties. Try another channel.</li> <li>• Adjust the picture from the menu.</li> </ul>
Unable to select a certain channel	<ul style="list-style-type: none"> <li>• The channel may be skipped.</li> </ul>
Poor colour or no colour	<ul style="list-style-type: none"> <li>• The station may have broadcast difficulties. Try another channel.</li> </ul>
The remote control does not operate	<ul style="list-style-type: none"> <li>• There may be an obstruction between the remote control and the remote control sensor.</li> <li>• The batteries may be installed with a wrong polarity.</li> <li>• The remote control batteries may be dead. Replace the batteries.</li> <li>• Check if you have entered Teletext mode. Press &lt;Text&gt; to quit.</li> </ul>
Disorder display at power on	<ul style="list-style-type: none"> <li>• This may be caused by too short interval between power off and on. Unplug the power and restart.</li> </ul>

## 10. Circuit Diagram

