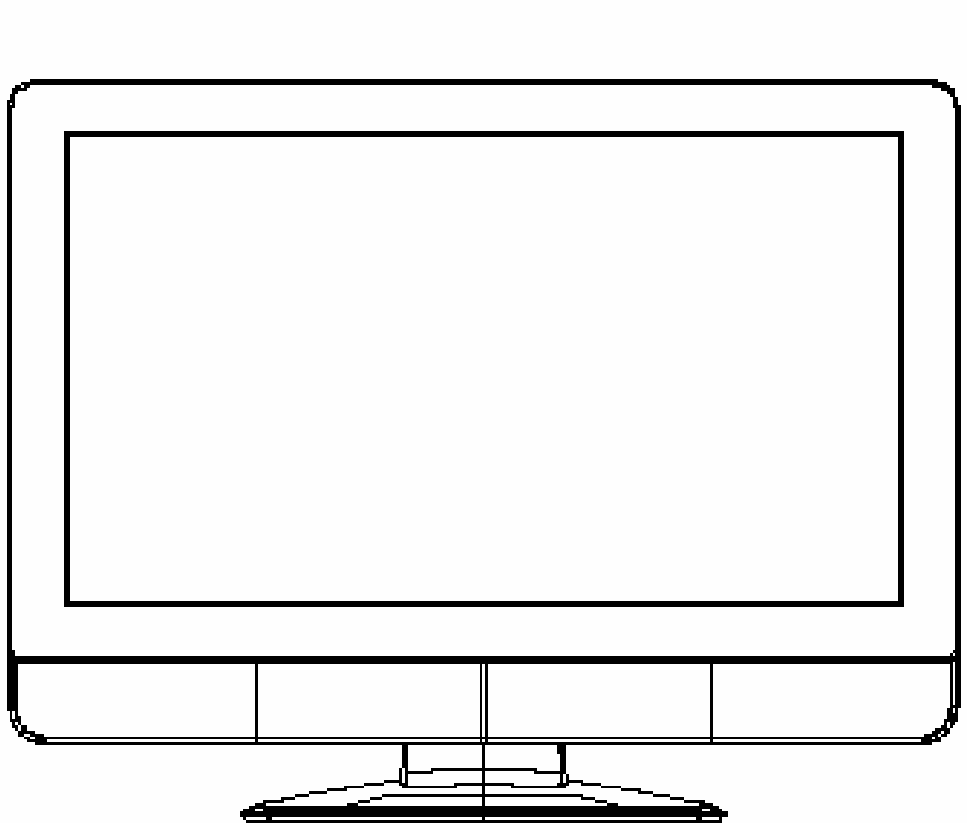
Service Manual



Model #: VIZIO VW32L HDTV10A

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Top Confidential

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FCC INFORMATION
This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

FCC WARNING
To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to Amtrak products will void the user's authority to operate this device. Thus VINC Will not be held responsible for the product and its safety.

CE CERTIFICATION
This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

SAFETY CAUTION
Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

Chapter 1 Features

1. Built in TV channel selector for TV viewing

2. Connectable to PC's analog RGB port

3. Built in HDTV, composite video, HDMI

4. Built in auto adjust function for automatic adjument of screen display

5. Smoothing function enables display of smooth texts and graphics even if image withresolution lower than 1366x768 is magnified

6. Advanced video functions for personal favor.

7. Power saving to reduce power consumption too less than 3W

8. On Screen Display: user can define display mode (i.e. color, brightness, contrast, sharpness, backlight), sound setting, TV channel program, aspect and gamma or reset all setting.

Chapter 2 Specification

1. TFT-LCD CHARACTERISTICS

Model Name: LPL LC320WX3-SLA1 (Vendor: LG. Philips LCD Co., Ltd)
Size: 3702inch
Display Size: 31.51 inches (800.4mm) diagonal
Outline Dimension: 760.0 mm (H) x 450.8 mm (V) x 51.6 mm (D) (Typ.)
Pixel Pitch: 170.25um x 510.75umm x RGB
Pixel Format: 1366 horiz. By 768 vert. Pixels RGB strip arrangement
Display Operating Mode: Transmissive mode, normally Black
Surface Treatment: Hard Coating (3H) ,Anti-glare treatment of the front polarizer.

2. TFT-LCD OPTICAL CHARACTERISTICS

Contrast ratio: 1.CR : 1000(Typ) 2. CR WITH AI : 2000(Typ)
Surface Luminance, White: 400 cd/m2 (Typ)
Luminance Variation, δ =1.3 (Max)
Response Time = 6 mx (Max=10mx)
Viewing Angle (CR>10)
Left: 89°typ.
Right: 89°typ.
Top: 89°typ.
Bottom: 89°typ.

3. Input Connectors

1 x RF Connector for internal ATSC/QAM/NTSC Hybrid Tune
2x HDMI with HDCP plus Stereo Audio (RCA)
2x Component YPbPr plus Stereo Audio
1x RGB PC(WXGA) plus Stereo Audio
1x Composite Video plus stereo Audio

4. POWER SUPPLY

Input Voltage Level: 100~240 Vac, 50/ 60 Hz
Power Consumption: 180W MAXPower OFF: to less than 3W MAX

5. Speaker

Output 10W (max) X2

6. ENVIRONMENT

5-1. Operating Temperature: 5c~35c (Ambient)

5-2. Operating Humidity: Ta= 35 °C, 90%RH (Non-condensing)

5-3. Operating Altitude: 0 - 14,000 feet (4267.2m)(Non-Operating)

7. DIMENSIONS (Physical dimension)

Width: 760.0mm. +/- 20 mm

Depth: 51.6 mm +/- 20 mm

Height: 450.0 mm +/- 20 mm

8. WEIGHT (Physical weight)

a. Net: 19.12

b. Gross: 23.81

Precaution

Please pay attention to the followings when you use this TFT LCD module.

1. OPERATING PRECAUTIONS

(1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage :
V=±200mV(Over and under shoot voltage)

(2) Response time depends on the temperature. (In lower temperature, it becomes longer.)

(3) Brightness depends on the temperature. (In lower temperature, it becomes lower.)And in lower temperature, response time (required time that brightness is stable after turned on) becomes longer.

(4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.

(5) When fixed patterns are displayed for a long time, remnant image is likely to occur.

(6) Module has high frequency circuits. System manufacturers shall do sufficient suppression to the electromagnetic interference. Grounding and shielding methods may be important to minimize the interference.

2. HANDLING PRECAUTIONS FOR PROTECTION

(1) The protection film is attached to the bezel with a small masking tape. When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.

(2) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the bezel after the protection film is peeled off.

(3) You can remove the glue easily. When the glue remains on the bezel surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.

Chapter 3 On Screen Display

On Screen Display (OSD) is a friendly interface providing the function adjusting in our system. Customers could operate it only by few buttons. There is the introduction of the OSD.

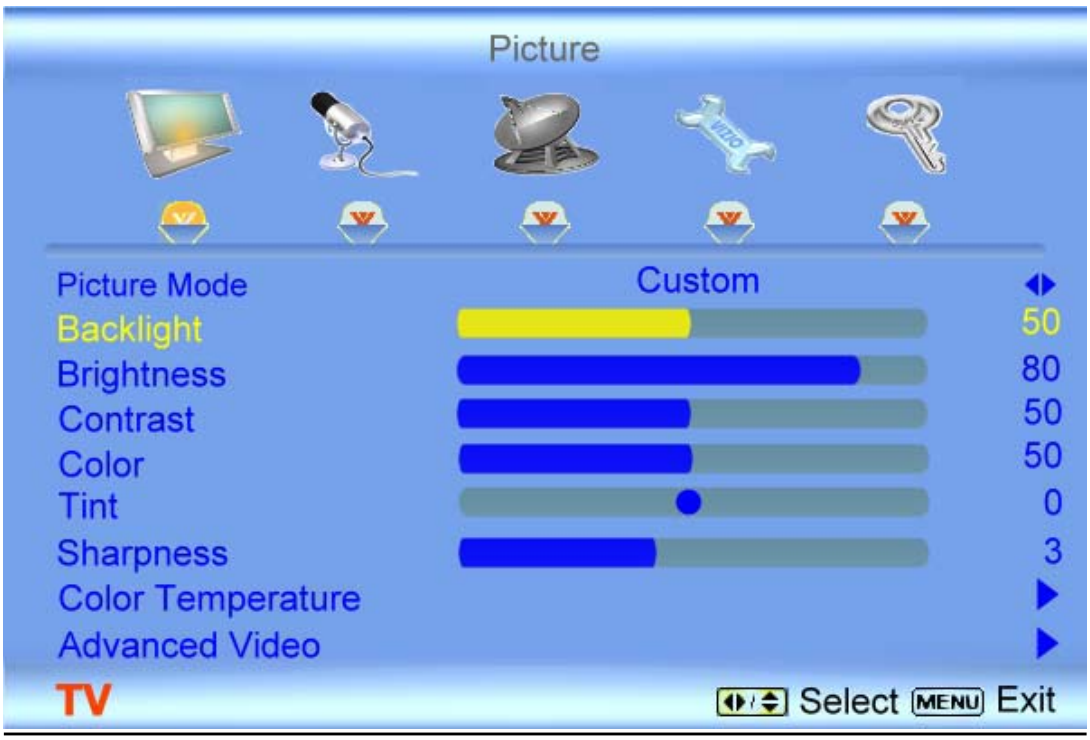
Main unit button

MENU	OK
CH ▲	↑
CH ▼	↓
VOL +	←
VOL -	→
Input	

[MENU]

“MENU” button could star the OSD which could adjust the performance and set up the setting between the different input sources. There are the structures.

TV Source



A. **Picture**：(**Bold: Default**)

a. Picture Mode (Standard/Movie /Game / **Custom**)

b. Backlight (0~100, **90**)

c. Contrast (0~100, **50**)

d. Brightness (0~100, **50**)

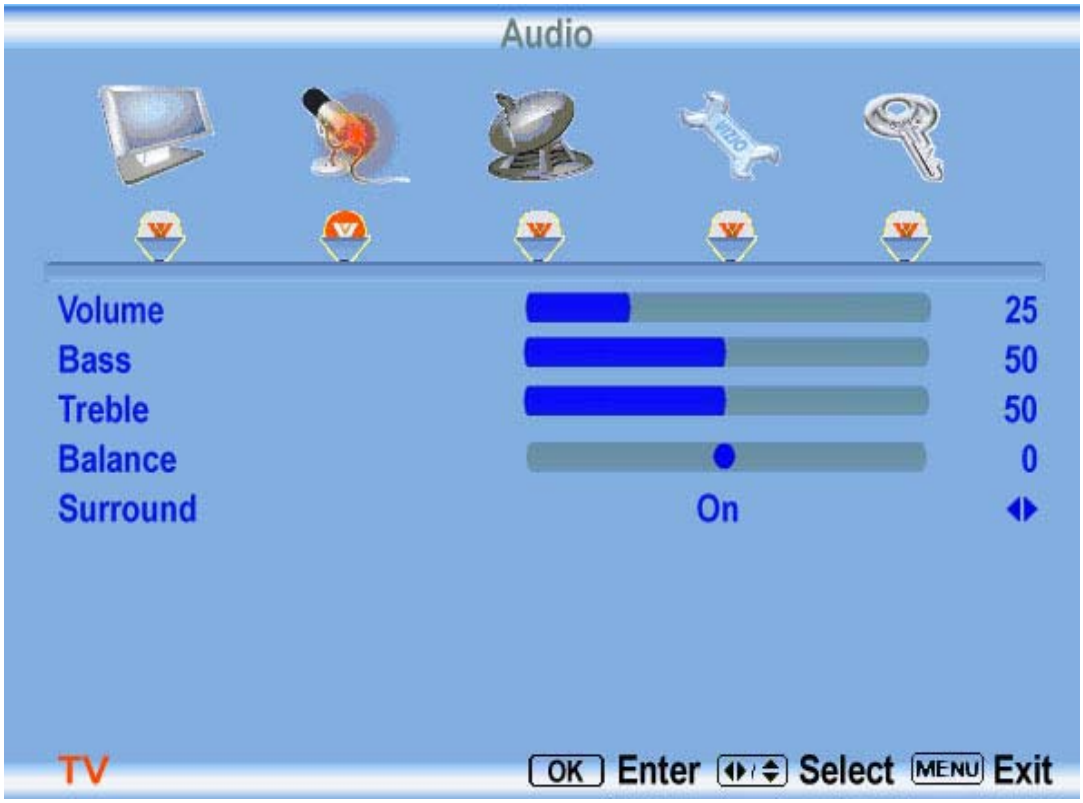
e. Color (saturation)(0~100, **50**)

f. Tint (hue) (-32~32, **0**)

g. Sharpness (0~7, **4**)

h. Color Temperature (**Cool**/Normal/Warm/Custom)

B. **Audio**：(**Bold: Default**)



a. Volume (0~100, **25**)

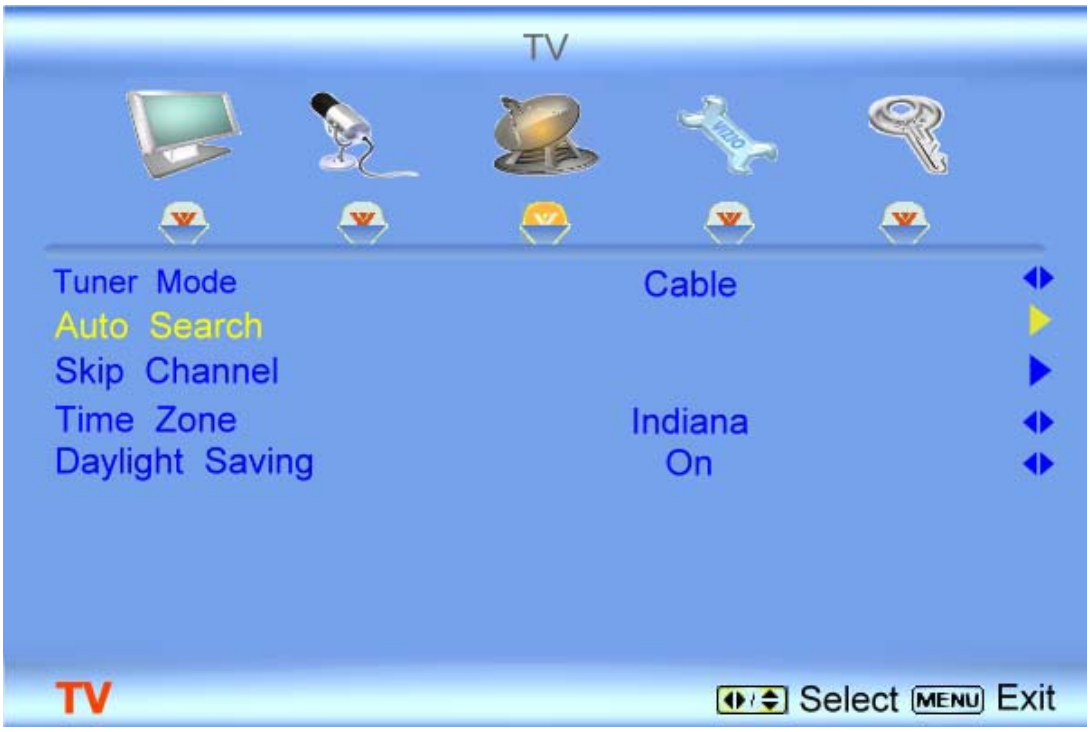
b. Bass (0~100, **50**)

c. Treble (0~100, **50**)

d. Balance (-50~50, **0**)

e. Surround (**ON**/OFF)

C. **TV**：(**Bold: Default**)



a. Tuner Mode (**Cable**/Air)

b. Auto Search

c. Skip Channel

d. Time Zone (Eastern/Indiana/Central/Mountain/Arizona/Pacific/Alaska/Hawaii)

e. Daylight Saving(On/Off)

D. **Setup**：(**Bold: Default**)

a. Language **(English**/ Français / Espaňol)

b. Sleep Timer (**OFF**/30Min/60Min/90Min/120Min)

c. Analog CC (**OFF**/CC1~4)

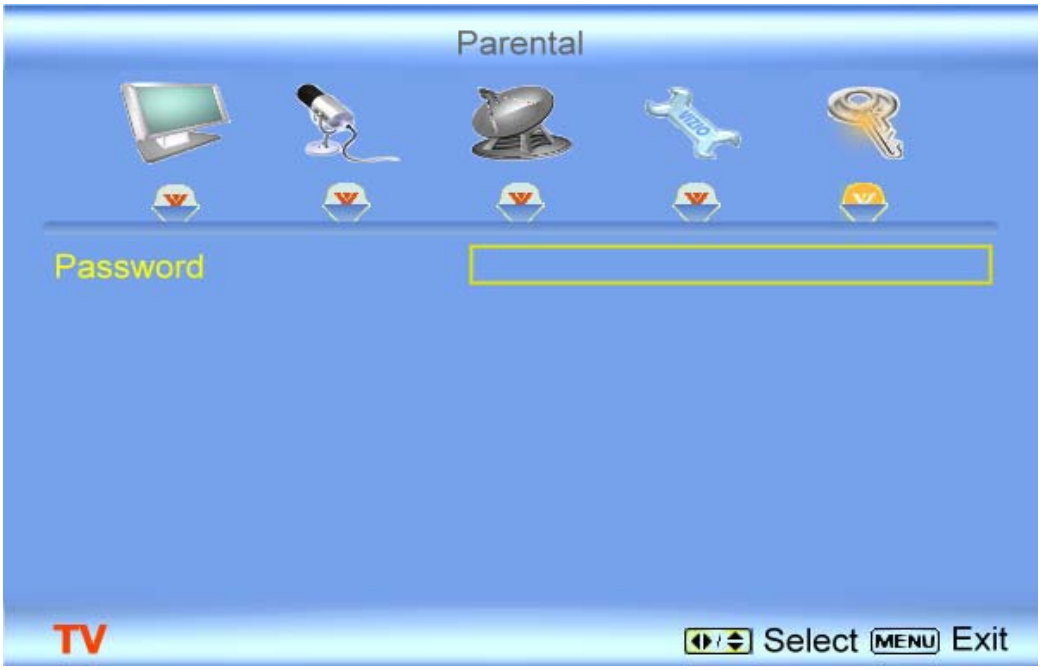
d. Digital CC (**OFF**/Service1~6)

e. Digital CC Style

1. Caption Style (As Broadcaster/Custom)
2. Size (**Large**/Small/Medium)
3. Font Color (**White**/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
4. Font Opacity (**Solid**/Translucent/Transparent)
5. Background Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/**Black**)
6. Background Opacity (**Solid**/Translucent/Transparent)
7. Window Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/**Black**)
8. Window Opacity (Solid/Translucent/**Transparent**)

g. Rest All Setting (OK/**Cancel**)

E. **Parental**：(**Bold: Default**)



Password (**Default => 0000**)

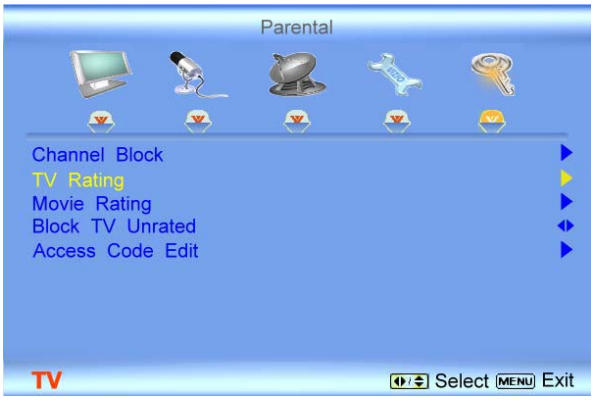
a. Cannel Block

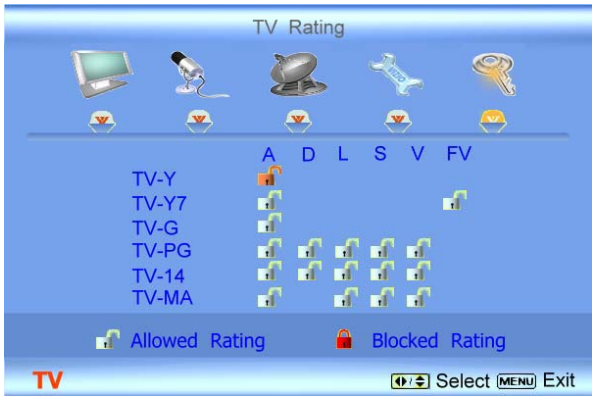
b. TV Rating

c. Move Rating

d. Block Unrated TV (**NO**/Yes)

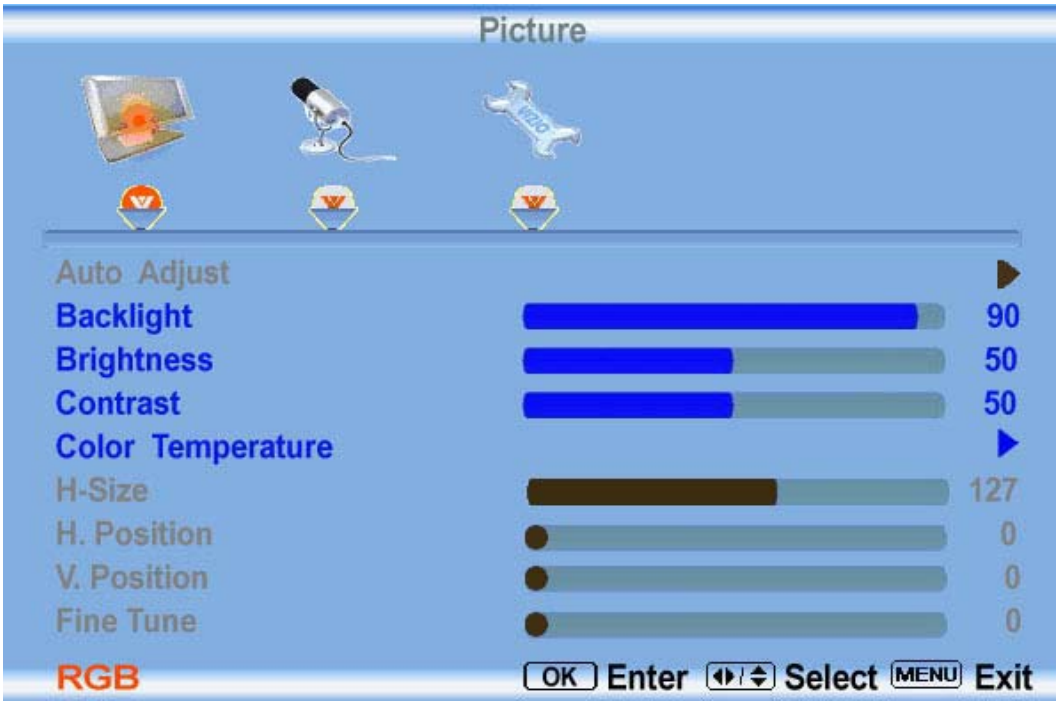
e. Access Code Edit





RGB Mode

A. Picture Adjust：(**Bold: Default**)



a. Auto Adjust

b. Backlight (0~100, **90**)

c. Contrast (0~100, **50**)

d. Brightness (0~100, **50**)

e. Color Temperature (6500/**9300**/Custom)

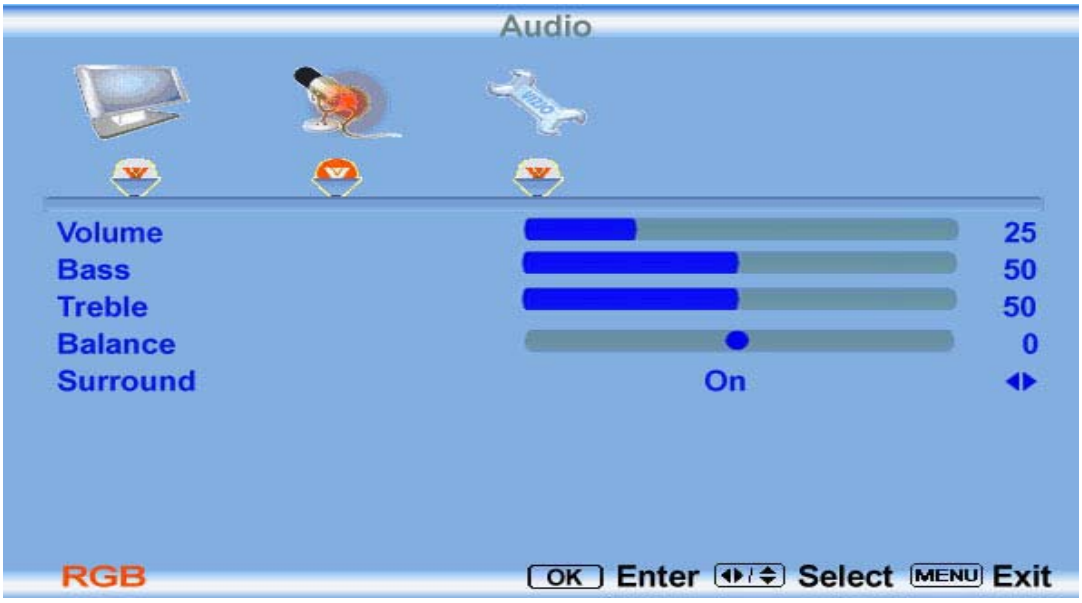
f. H-Size (0~255, **127**)

g. H-Position (0~100, **0**

h. V-Position (0~100, **0**

i. Fine Tune (0~31, **0**

B. **Audio**：(**Bold: Default**)



a. Volume (0~100, **25**)

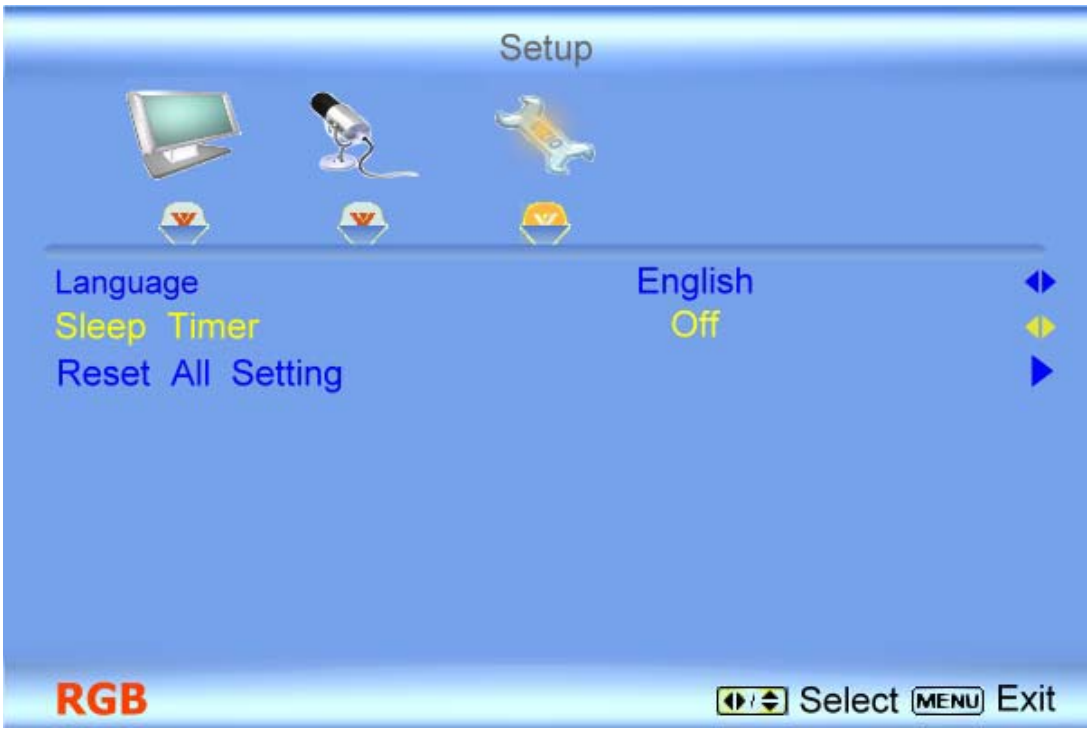
b. Bass (0~100, **50**)

c. Treble (0~100, **50**)

d. Balance (-50~50, **0**)

e. Surround (**ON**/OFF)

D. **Setup**：(**Bold: Default**)



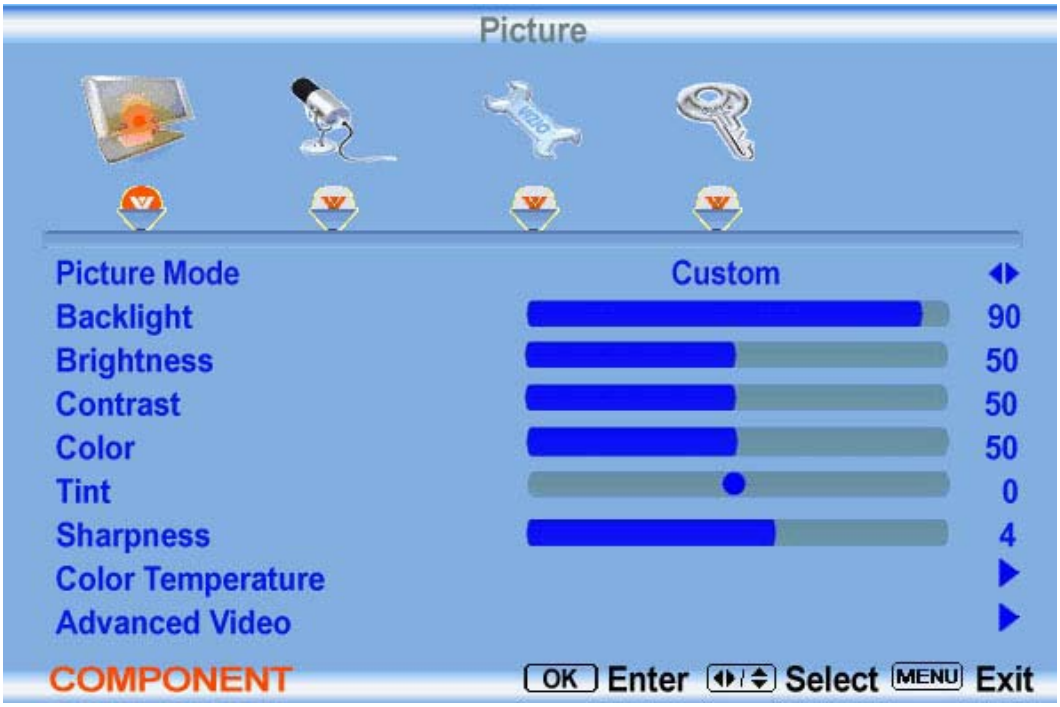
a. Language (**Englis**h/ Français / Espaňol)

b. Sleep Timer (**OFF**/30Min/60Min/90Min/120Min)

c. Rest All Setting (OK/**Cancel**)

AV / COMPONENT MODE

A. **Picture**：(**Bold: Default**)



a. Picture Mode (Standard/Movie /Game / **Custom**)

b. Backlight (0~100, **90**)

c. Contrast (0~100, **50**)

d. Brightness (0~100, **50**)

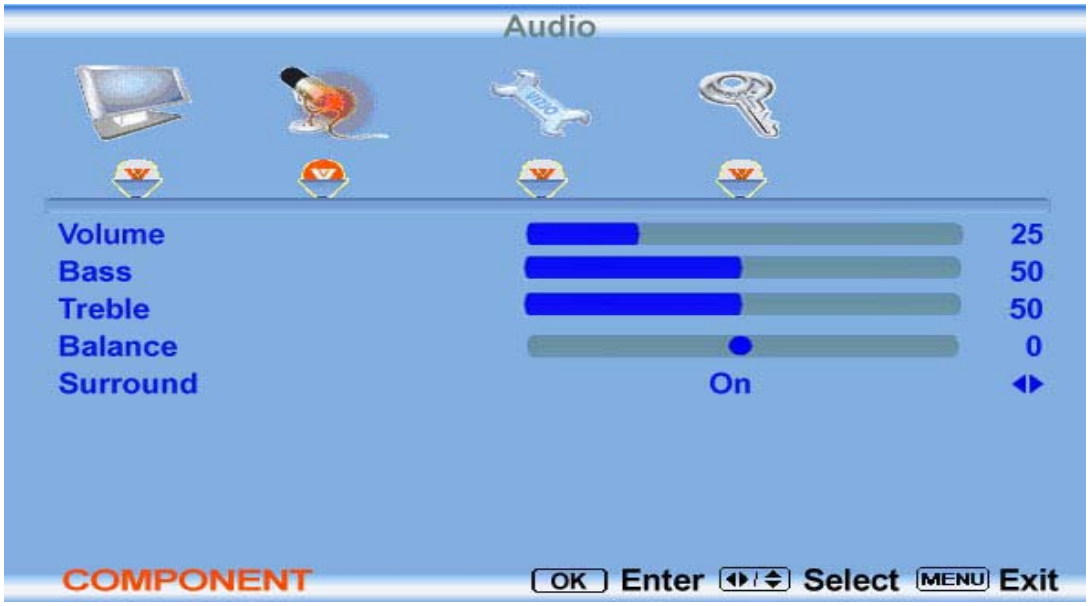
e. Color (saturation)(0~100, **50**)

f. Tint (hue) (-32~32, **0**)

g. Sharpness (0~7, **4**)

h. Color Temperature (**Cool**/Normal/Warm/Custom)

B. **Audio**：(**Bold: Default**)



a. Volume (0~100, **25**)

b. Bass (0~100, **50**)

c. Treble (0~100, **50**)

d. Balance (-50~50, **0**)

e. Surround (**ON**/OFF)

C. **Setup**：(**Bold: Default**)

a. Language (**Englis**h/ Français / Espaňol)

b. Sleep Timer (**OFF**/30Min/60Min/90Min/120Min)

c. Analog CC (**OFF**/CC1~4/TT1~4)

d. Digital CC (**OFF**/CC1~4/Service1~6)

e. Digital CC Style

1. Caption Style (As Broadcaster/Custom)
2. Size (**Large**/Small/Medium)
3. Font Color (**White**/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
4. Font Opacity (**Solid**/Translucent/Transparent)
5. Background Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/**Black**)
6. Background Opacity (**Solid**/Translucent/Transparent)
7. Window Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/**Black**)
8. Window Opacity (Solid/Translucent/**Transparent**)

g. Rest All Setting (OK/Cancel)

D. **Parental**：(**Bold: Default**)

Password (**Default => 0000**)

a. Cannel Block

b. TV Rating

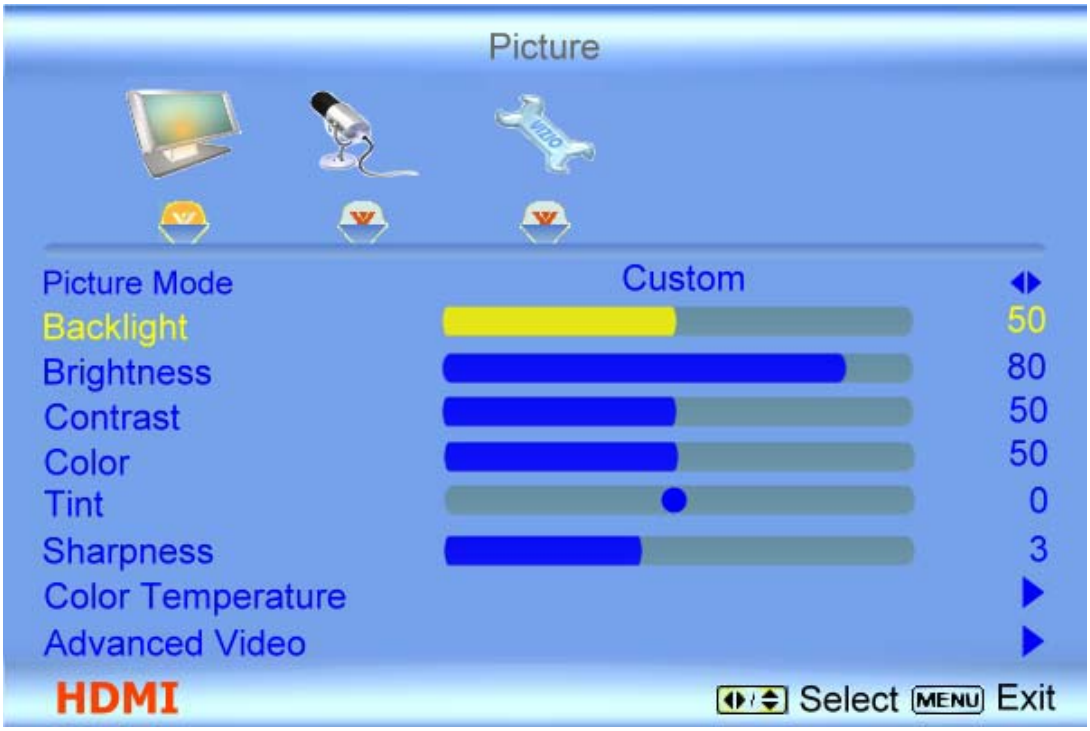
c. Move Rating

d. Block Unrated TV (**NO**/Yes)

e. Access Code Edit

HDMI MODE

A. **Picture**：(**Bold: Default**)



a. Picture Mode (Standard/Movie /Game / **Custom**)

b. Backlight (0~100, **90**)

c. Contrast (0~100, **50**)

d. Brightness (0~100, **50**)

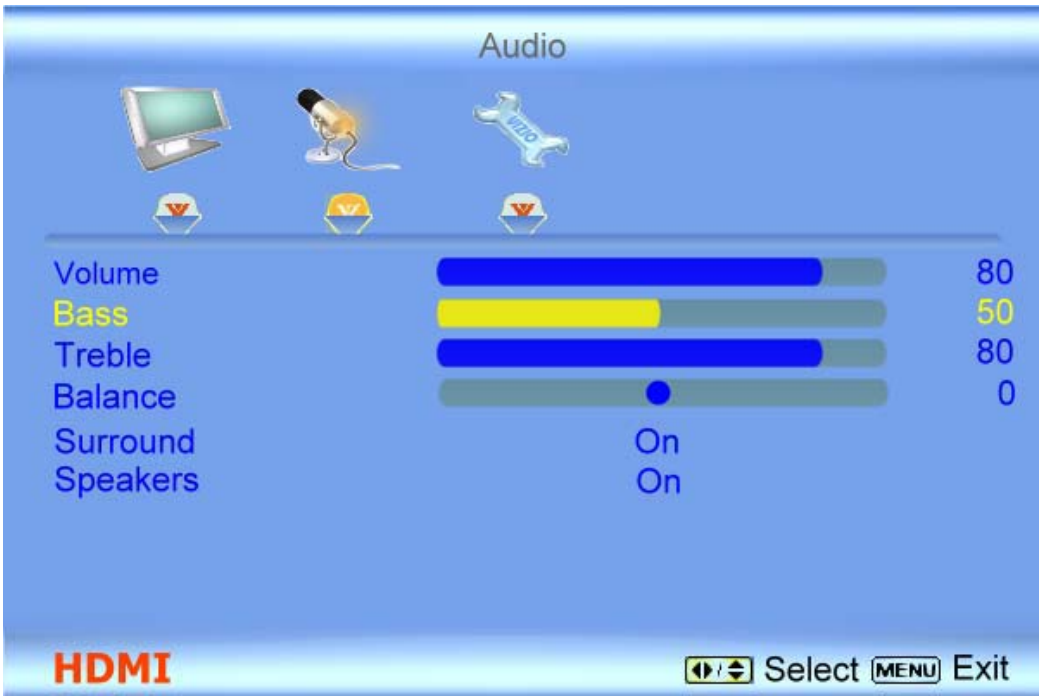
e. Color (saturation)(0~100, **50**)

f. Tint (hue) (-32~32, **0**)

g. Sharpness (0~7, **4**)

h. Color Temperature (**Cool**/Normal/Warm/Custom)

B. **Audio**：(**Bold: Default**)



a. Volume (0~100, **25**)

b. Bass (0~100, **50**)

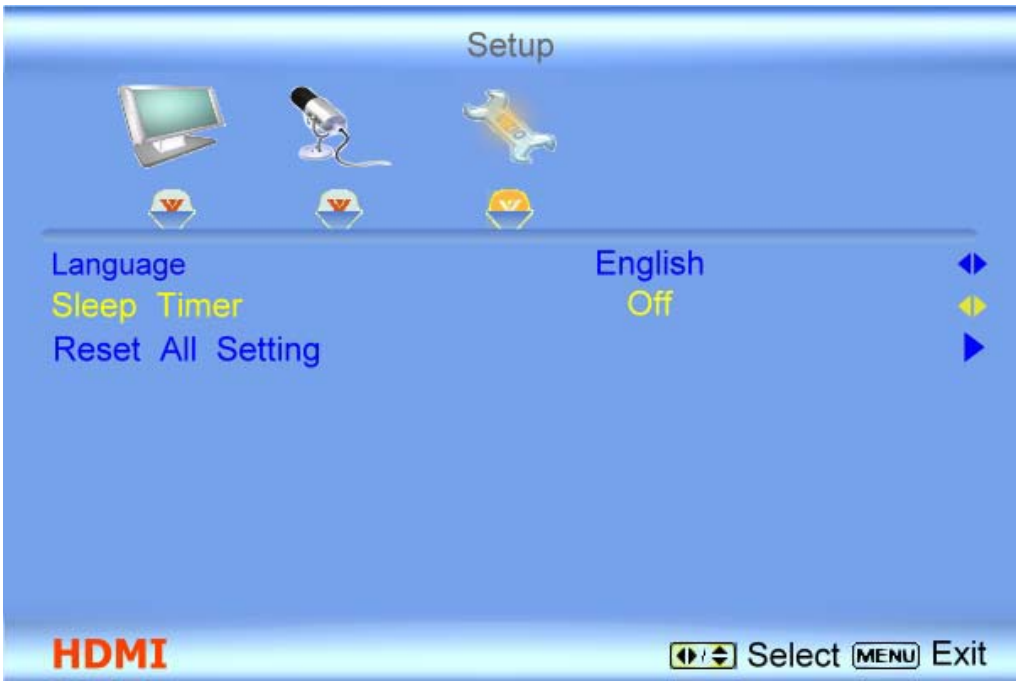
c. Treble (0~100, **50**)

d. Balance (-50~50, **0**)

e. Surround (**ON**/OFF)

f. Speakers (**ON**/OFF)

C. **Setup**：(**Bold: Default**)



a. Language (**Englis**h/ Français / Espaňol)

b. Sleep Timer (**OFF**/30Min/60Min/90Min/120Min)

c. Analog CC (**OFF**/CC1~4/TT1~4)

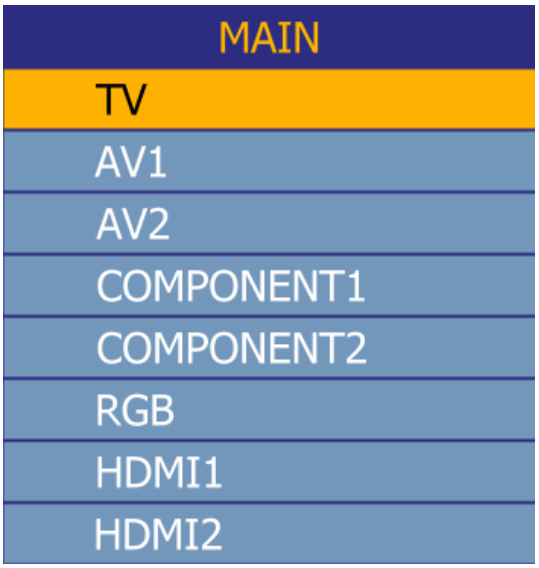
d. Digital CC (**OFF**/CC1~4/Service1~6)

e. Digital CC Style

g. Rest All Setting (OK/**Cancel**)

[INPUT]

“INPUT” could supply an interface providing a list. The list shows input sources and provides the choices of different sources. The list includes items as below:



A. **TV**: Analog TV or digital TV
B. **AV1**, **AV2**: Composite (AV) signal
C. **Component1**, **Component2**: Color difference (YPbPr) video signals.
D. **RGB**: Video Graphics Array (VGA) or D-sub video signals.
E. **HDMI1**, **HDMI2**: High Definition Multimedia Interface (HDMI) multimedia signals.

[INFO]

“INFO” button could show an information bar which displays the information about the input signal on our LCD TV.

Chapter4 Factory preset timings

This timing chart is already preset for the TFT LCD analog & digital display monitors.

Resolution	Refresh rate	Horizontal Frequency	Vertical Frequency	Horizontal Polarity	Vertical Polarity	Pixel Rate
640x480	60Hz	31.5kHz	59.94Hz	N	N	25.175
640x480	75Hz	37.5kHz	75.00Hz	N	N	31.500
800X600	60Hz	37.9kHz	60.317Hz	P	P	40.000
800x600	75Hz	46.9kHz	75.00Hz	P	P	49.500
800X600	85Hz	53.7kHz	85.06Hz	P	P	56.250
1024x768	60Hz	48.4kHz	60.01Hz	N	N	65.000
1024X768	75Hz	60.0kHz	75.03Hz	P	P	78.750
720x400	70Hz	31.46kHz	70.08Hz	N	P	28.320
1366X768	60	47.7KHZ	60.00HZ	P	N	85.500

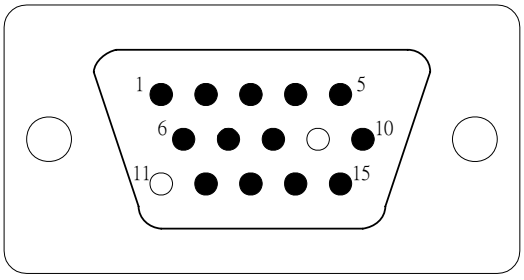
Remark: P: positive N: negative

Chapter5 Pin Assignment

Video Graphics Array (VGA) connector pin assignment

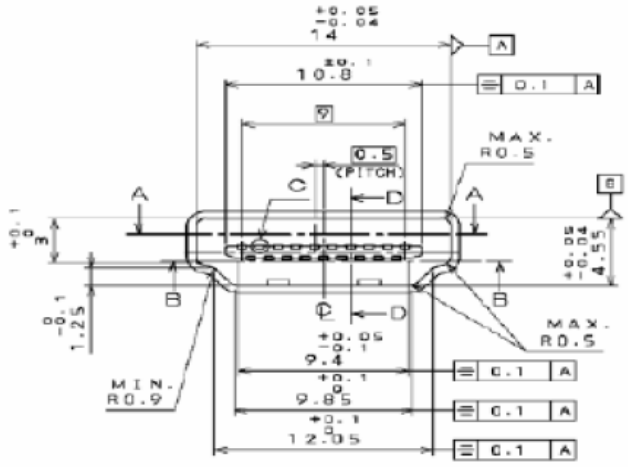
The TFT LCD analog display monitors use a 15 Pin Mini D-Sub connector as video input source.

Pin	Description
1	Red
2	Green
3	Blue
4	Ground
5	Ground
6	R-Ground
7	G-Ground
8	B-Ground
9	+5V for DDC
10	Ground
11	No Connection
12	(SDA)
13	H-Sync (Composite Sync)
14	V-Sync
15	(SCL)

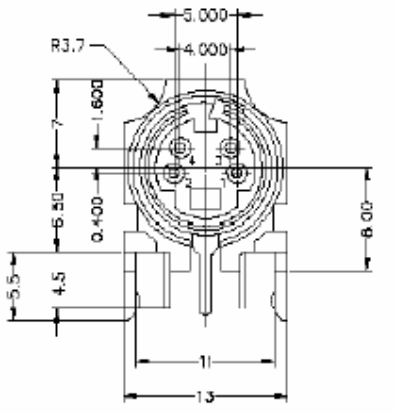


High Definition Multimedia Interface (HDMI) connector pin assignment

PIN	SIGNAL ASSIGNMENT
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2-
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1-
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0-
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock-
13	CEC
14	Reserved (N.C on device)
15	SCL
16	SDA
17	DDC/CEC Ground
18	+5V Power
19	Hot Plug Detect



Four-Pin mini DIN S-Video Connector pin assignment



1, 2 = GND
3 = Luminance (Y)
4 = Chrominance(C)

Signal Specification

F-Type TV RF connector

a. Signal Level 60dBμV typical

b. System: NTSC

c. Frequency: 55~801MHz (NTSC)

PC connector 15 pin male D-sub connector

a. Pin Assignment Refer to Section 2.3.10

b. Signal Level Video (R, G, B): Analog 0.7Vp-p/75Ω
Sync (H, V): TTL level

c. Sync Type TTL (Separate / Composite) or Sync. On Green

d. Sync polarity Positive or Negative

e. Video Amplitude RGB: 0.7Vp-p

f. Frequency H: support to 30K~70KHz
V: support to 50~85Hz
Pixel Clock: support to 110MHz

Four-Pin mini DIN S-Video

a. Pin Assignment refer to S-Video connector pin assignment

b. Signal Level Video (Y): Analog 0.1Vp-p/75Ω

Video (C): Analog 0.286p-p/75

Sync (H+V): 0.3V below Video (Y)

c. Frequency H: 15.734KHz V: 60Hz (NTSC)

Signal Level Video (Y) : Analog 0.1Vp-p/75Ω

Video (C) : Analog 0.286p-p/75Ω

Sync (H+V): 0.3V below Video (Y)

Frequency: H: 15.734Khz V: 60HZ (NTSC)

HDMI Signal:

a. Pin Assignment Refer to HDNI Pin Assignment

b. Type A

c. Polarity Positive or Negative

d. Frequency

H: 15.734KHz V: 60Hz (NTSC-480i)

H: 31KHz V: 60Hz (NTSC-480p)

H: 45KHz V: 60Hz (NTSC-720p)

H: 33KHz V: 60Hz (NTSC-1080i)

Component signal

a. Frequency H: 15.734KHz V: 60Hz (NTSC-480i)

H: 31KHz V: 60Hz (NTSC-480p)

H: 45KHz V: 60Hz (NTSC-720p)

H: 33KHz V: 60Hz (NTSC-1080i)

b. Signal level Y: 1Vp-p Pb: ±0.350Vp-p Pr: ±0.350Vp-p

c. Impedance 75Ω

Chapter6 Main Board I/o Connections

J1 CONNECTION [Main BD to Power BD]

Pin	Description
1	“POWRSW_ON/OFF”
2	“+12V”
3	“+12V”
4	“+12V”
5	“+12V”
6	“GND”
7	“GND”
8	“GND”
9	“5VSB”
10	“5VSB”
11	“5VSB”
12	“PWM_DIM”
13	“BL ON/OFF”

J2 CONNECTION [Main BD to display BD]

Pin	Description
1	“AMBER”
2	“WHITE”
3	“5VSB”
4	“5VSB”
5	“IR”
6	“GND”
7	“GND”
8	“KEYPAD-ADC1”
9	“KEYPAD-ADC2”
10	“DV33SB”

J6 CONNECTOR [Main BD to Speaker]

Pin	Description
1	“R+”
2	“R-”
3	“L-”
4	“L+”

Chapter 7 Theory of Circuit Operation

The route of D-SUB 15pin input

An RGB (analog) signal is inputted the D-SUB 15pin to the *MT5371* which transfers it to a digital signal by the A/D converter. Then MT5371 generates a Low Voltage Differential Signal (LVDS) for display device.

The route of HDMI CON input

A HDMI (digital) signal is inputted the HDMI 1&2 CON to the *PI3HDMI412FT-AZHE* switch. The passing signal is processed with the MT5371. Then MT5371 generates a LVDS for display device.

The route of HDTV & Component input

HDTV & Component signal is inputted to the MT5371. After processing, MT5371 generates a LVDS for display device. The audio signal is inputted *MT8291E*. After processing, MT8291E transmits the signal to *TDA8946AJ*, an audio amplifier. Then, the amplified signal is the output audio signal.

The route of Video 1,2,3 & S-Video input

The Video 1,2 and S-Video signal is inputted to the MT5371.After processing, MT5371 generates a LVDS for display device. The audio signal is inputted MT8291E. After processing, MT8291E transmits the signal to TDA8946AJ, an audio amplifier. Then, the amplified signal is the output audio signal.

The route of TV input

TV signal is demodulated by the tuner then the demodulating signal is divided into two parts, video and audio signal. The video signal is processed by MT5371 then MT5371 generates a LVDS for display device. The audio signal is transmitted in the route named SIF. The SIF signal is demodulated and decoded by MT5371. The decoded analog signal is transferred into I2S, which is digital signal, by MT5371. The I2S signal is inputted and transferred into analog signal by MT8291E. After processing, MT8291E transmits the signal to TDA8946AJ, an audio amplifier. Then, the amplified signal is the output audio signal.

The route of DTV input

DTV signal demodulated by the tuner then the demodulating signal is divided into two parts, video and audio signal. The video signal is decoding by *MT5112*. The decoded signal, as the format of MPEG4, is transmitted to and processed by MT5371. Also, MT5371 generates a LVDS for display device. The audio signal is transmitted in the route named FAT-IN. The FAT-IN signal is demodulated and decoded by MT5371. The decoded analog signal is transferred into I2S, which is digital signal, by MT5371. The I2S signal is inputted and transferred into analog signal by MT8291E. After processing, MT8291E transmits the signal to TDA8946AJ, an audio amplifier. Then, the amplified signal is the output audio signal.

The operation of keypad

There are 7 keys to control and to select the function of VW37. Also, there is a LED back light under the logo “VIZIO” to indicate the status of operation (Orange => STANDBY, White => ON). They are “Power, ▼▲, + -, Input, MENU”.

MT5371

Ⅰ. GENERAL DESCRIPTION

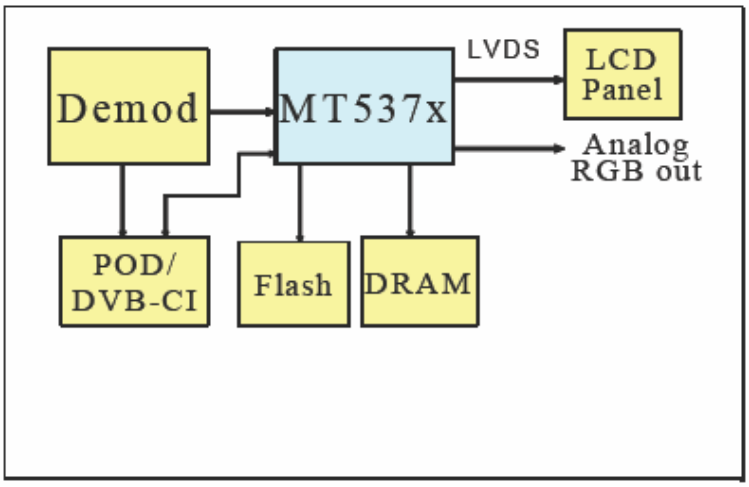
The **MediaTek MT5371** consists of a DTV backend decoder and a TV controller and offers high integration for advanced applications in main stream integrated digital television market. The MT5371 combines a transport de-multiplexer, a high definition MPEG-2 video decoder, an AC3 audio decoder, an LVDS transmitter, and an NTSC/PAL/SECAM video decoder with a 3D comb filter. The MT5371 enables consumer electronics manufactures to build high quality, feature-rich DTVs.

World-Leading Video Technology: The MT5371 includes MediaTek’s proprietary de-interlacing technology, the MDDiTM solution to generate very smooth picture quality for motions. A 3D comb filter added to the video decoder recovers great detail for still pictures. The special color processing technology provides natural colors and true studio quality graphics.

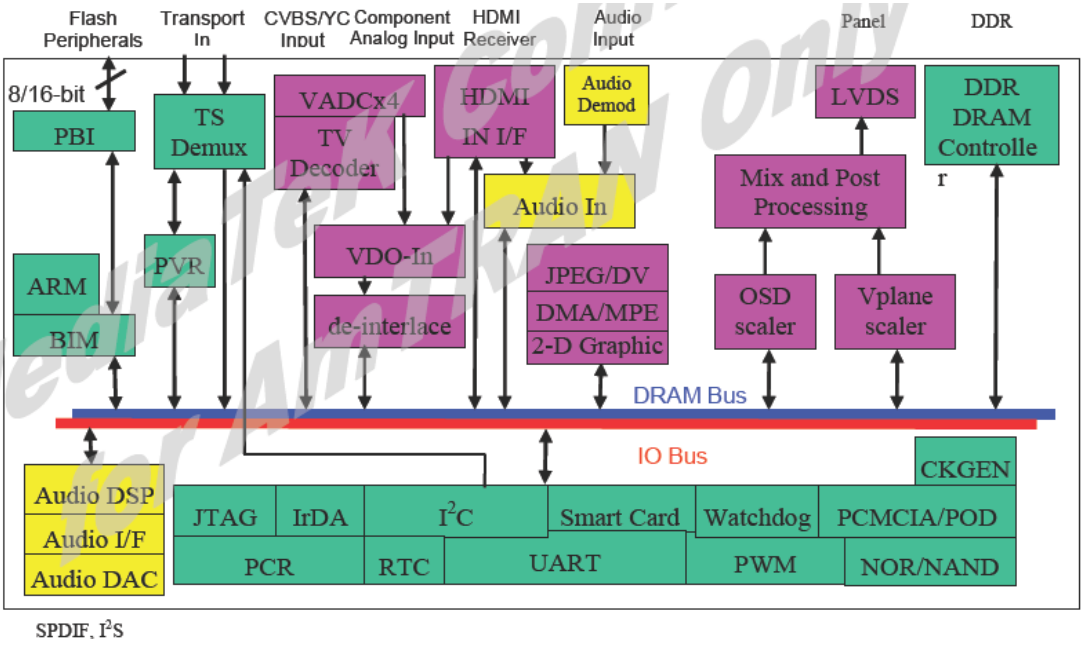
Rich Features for High Value Products: Additional features of iDTVs for the MT5371 release are the abilities to support the HDMI receiver, PIP/POP functionalities, memory cards and DV decoding.

Reliable Analog Technology: The MT5371 integrates high speed VGA ADC, high resolution Video/Audio ADC, 90db Audio DACs. The MT5371 provides very fine quality for the iDTV markets.

System Block Diagram



Functional Block Diagram



Ⅱ. Features of MT5371

1. Key Features:

1. A transport de-multiplexer
2. An MPEG-2 video decoder
3. An AC3 audio decoder
4. A 3D comb TV decoder
5. PIP/POP mode
6. An HDMI receiver
7. A set of three VGA ADCs

2. Host CPU:

1. ARM 926
2. 16K I-Cache and 16K D-Cache
3. 8K Data TCM and 8K Instruction TCM
4. JTAG ICE interface
5. Watch Dog timers
6. Built-in CPI analyzer

3. Transport De-multiplexer:

1. Supports one independent transport stream input
2. Supports serial / parallel interfaces for transport stream input
3. Supports ATSC, DVB, and MPEG2 transport stream inputs
4. Programmable sync detection
5. Supports DES/3-DES/DVB/Multi-2 de-scramblers
6. Up to 8 PIDs even/odd keys for descrambling
7. Supports 32 PID filters and 32 section filters
8. Supports positive/negative/mask section filtering

4. MPEG-2/JPEG Decoder:

1. Supports one MPEG-2 HD decoder
2. MPEG compliant with DV, MP@ML, MP@HL and MPEG-1 video standards
3. JPEG decode base-line or progressive JPEG file

5. 2D Graphics:

1. Supports multiple color modes
2. Point, horizontal/vertical line primitive drawings
3. Rectangle fill and gradient fill functions
4. Bitblt with transparent, alpha blending, alpha composition and stretch
5. Font rendering by color expansion
6. YCbCr to RGB color space transfer
7. Supports off-line scaler

6. OSD Plane:

1. Three linking list OSD with multiple color modes
2. Two OSD with scaler
3. Square size, 32x32 or 64x64 pixel, hardware cursor

7. Video Plane:

1. Supports clip
2. Flesh tone management
3. Gamma/anti-Gamma correction
4. Color Transient Improvement (CTI)
5. 2D peaking
6. Saturation/hue adjustment
7. Brightness and contrast adjustment
8. Black level extender
9. White peak level limiter
10. Adaptive Luma/Chroma management
11. Automatic detection of films or video sources
12. 3:2/2:2 pull down source detection
13. SD/HD advanced motion adaptive de-interlacing with excellent low angle
14. Arbitrary ratio vertical/horizontal scaling of video, from 1/32X to 32X
15. Advanced linear and non-linear panoramic scaling.
16. Programmable zoom viewer
17. Progressive scan output
18. Supports alpha blending
19. Picture-in-Picture (PIP)
20. Picture-Outside-Picture (POP)
21. Dithering processing for flat panel display
22. Frame rate conversion, 50Hz to 75Hz
23. Supports mirror and upside down video outputs
24. Supports 480i/ 576i/ 480p /576p/ 720p/ 1080i/ 1080p output forma

8. LVDS:

1. One 10-bit channel or dual 6/8-bit channel
2. Built-in spread spectrum for EMI performance
3. Supports 6/8/10-bit format output
4. Programmable panel timing output

9. CVBS In:

1. On-chip 54MHz 10-bit video ADC
2. Supports PAL (B,G,D,H,M,N,I,Nc), PAL(Nc), PAL, NTSC, NTSC-4.43 and SECAM
3. Macrovision detection
4. NTSC/PAL support 3D Motion Adaptive comb filter and SECAM supports 2D comb filter
5. Built-in Motion Adaptive 3D Noise Reduction
6. VBI data slicer for CC/TT decoding
7. Supports four CVBS channels and two S-Video channels

10. CVBS Bypass:

1. Supports CVBS/S-Video bypass to Pin TP2
2. ATSC/DVB could not output to CVBS

11. VGA In:

1. Supports VGA input up to UXGA 150MHz
2. Supports full VESA standards

12. Component Video In:

1. Supports two component video inputs
2. Supports 480i/480p/576i/576p/720p/1080i/1080P, 1080P up to 60Hz

13. Digital Video-In Interface:

One 8-bit digital video-in interface for MT5371

14. Audio line In Interface:

1-bit data (two channel)

15. HDMI Receiver:

1. HDMI1.1
2. DVI 1.0
3. EIA/CEA-861B
4. HDCP 1.1
5. Supports up to 1080P 60Hz source

16. TV audio demodulator:

1. Supports BTSC/EIA-J/A2/NICAM/PAL, FM/SECAM world wild formats
2. Standard auto detection
3. Stereo demodulation, SAP demodulation
4. Noise reduction
5. Mode selection (Main/SAP/Stereo)
6. Pink noise and white noise generators
7. Equalizer
8. Sub-woofer/Bass enhancement
9. Noise auto mute
10. 3D surround processing include virtual surround
11. Audio and video lip synchronization
12. Supports reverberation

17. Audio DAC:

Four on-chip audio DACs support R/L channels and subwoofer outputs

18. DRAM Controller:

1. Supports 64Mb to 1Gb DDR DRAM devices
2. Configurable 16/32-bit data bus for MT5371
3. Supports DDR1-333, DDR1-400, DDR2-533, DDR2-667 JEDEC specification compliant SDRAM

19. Audio DSP:

1. Supports Dolby Digital AC-3 decoding (ATSC)
2. MPEG-1 layer I/II decoding (DVB)
3. MPEG-2 AAC decoding (Japan)
4. DV audio decoding
5. MP3 decoding
6. Dolby Pro-logic II
7. Audio output: 7.1ch + 2ch (down mix)
8. Pink noise and white noise generators
9. Equalizer
10. Bass management
11. 3D-surround processing with virtual surround
12. Audio and video lip synchronization
13. Supports reverberation
14. Automatic volume control
15. One SPDIF out
16. 5-bit data (10-channel) I2S out interface up to 24-bit resolution per channel

20. Peripherals:

1. Two UARTs with a transmitter and a receiver FIFO, one of them has a hardware flow control
2. Three serial interfaces, one is the master for general purposes, one is the master for the HDMI key, and the remaining one is the slave for the HDMI EDID data
4. Three PWMs
5. IR blaster and receiver
6. Real-time clock and watchdog controller
7. Smart Card reader
8. PCMCIA/POD/CI interfaces
9. Supports three NOR flash or one NOR and one NAND flash
10. Supports CableCARD host control bus

21. IC Outline:

1. The MT5371 is delivered in 588-ball BGA package
2. 3.3V/1.2V and 2.5V for DDR1; 1.8V for DDR2

Ⅲ. Electrical Characteristics

1. Absolute Maximum Rating

Symbol	Parameters	Value	Unit
IOVDD	3.3V supply voltage	-0.5 to 4.6	V
CVDD	1.2V supply voltage	-0.5 to 1.8	V
AVDD33	3.3V Analog supply voltage	-0.5 to 4.6	V
AVDD15	1.5V Analog supply voltage	-0.5 to 1.8	V
RVDD25	DDR1 supply voltage	-0.5 to 3.5	V
RVDD18	DDR2 supply voltage	-0.5 to 3.5	V
VIN(3.3V)	Input Voltage(3.3V IO)	VSS-1.0 to 3.63	V
VIN(5V tolerance)	Input Voltage(5V tolerance IO)	VSS-1.0 to 5.5	V
Vout	Output Voltage	-0.3 to VDD3+0.3	V
Ts	Storage Temperature	-40 to 150	C
Ta	Ambient Temperature	0 to 70	C

2. DC Characteristics

Symbol	Parameters	Min	Typical	Max	Unit
IOVDD	3.3V supply voltage	2.97	3.3	3.63	V
CVDD	1.2V supply voltage	1.08	1.2	1.32	V
AVDD	Analog supply voltage	2.97	3.3	3.63	V
VIH(3.3V)	3.3V input voltage high	2.0			V
VIL(3.3V)	3.3V input voltage low			0.8	V
VOH(3.3V)	3.3V output voltage high	2.4			
VOL(3.3V)	3.3V output voltage low			0.4	
VIH(3/5V)	3/5V tolerance input voltage high	2.0			V
VIL(3/5V)	3/5V tolerance input voltage low			0.8	V
VOH(3/5V)	3/5V tolerance output voltage high	2.4			V
VOL(3/5V)	3/5V tolerance output voltage low			0.4	V
Tj	Junction operation temperature	-40	25	125	C
PD(estimate)	Power dissapation		3		W
Pdown	Power down mode		2		mW

3. DDR1 ELECTRICAL Characteristics and DC Operating Condition

Symbol	Parameters	Min	Typical	Max	Unit
RVDD25(DDR333)	DDR I/O supply voltage for DDR266 or DDR333	2.3	2.5	2.7	V
RVDD25(DDR400)	DDR I/O supply voltage for DDR400	2.5	2.6	2.7	V
DVREF	DDR I/O reference voltage	0.49*RVDD	0.5*RVDD	0.51*RVDD	V
VTT	DDR I/O termination voltage	VREF-0.04	VREF	VREF+0.04	V
VIH	DDR input voltage high	VREF+0.15		RVDD+0.3	V
VIL	DDR input voltage low	-0.3		VREF-0.15	V

4. DDR1 AC Operating Condition

Symbol	Parameters	Min	Typical	Max	Unit
VIH	Input high voltage, DQ, DQS	DVREF+0.31			V
VIL	Input low voltage, DQ, DQS			DVREF-0.31	V
Vslew	Input minimum slew rate	1.0			V/ns
Vswing	Input maximum swing			1.5	V

5. DDR2 ELECTRICAL Characteristics and DC Operating Condition

Symbol	Parameters	Min	Typical	Max	Unit
RVDD	DDR I/O supply voltage for DDR400	1.7	1.8	1.9	V
DVREF	DDR I/O reference voltage	0.49*RVDD	0.5*RVDD	0.51*RVDD	V
VTT	DDR I/O termination voltage	VREF-0.04	VREF	VREF+0.04	V
VIH	DDR input voltage high	VREF+0.125		RVDD+0.3	V
VIL	DDR input voltage low	-0.3		VREF-0.125	V

6. DDR2 AC Operating Condition

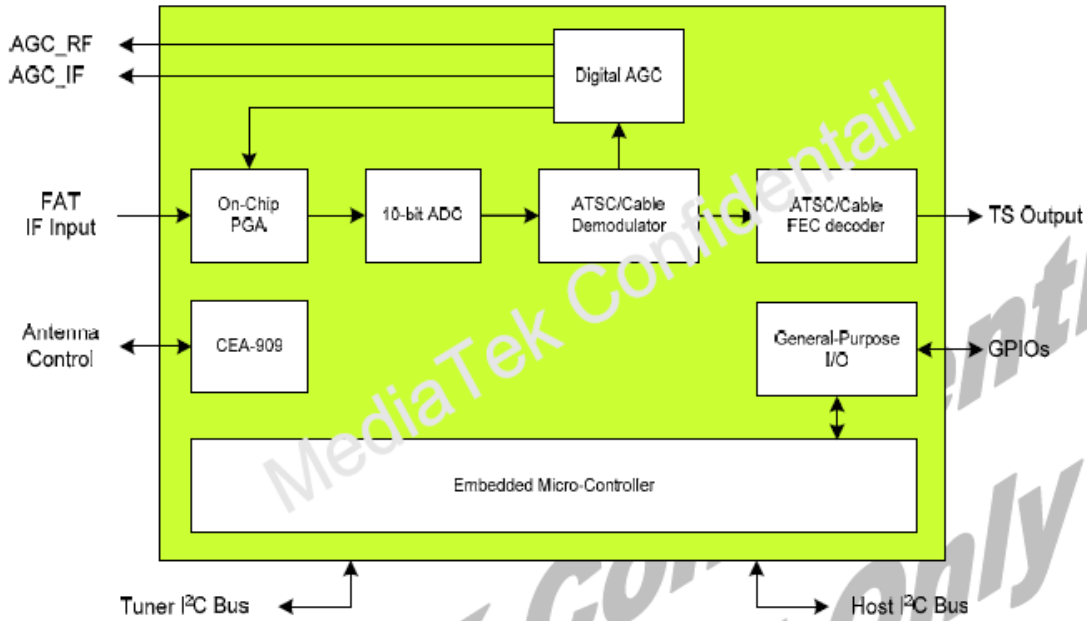
Symbol	Parameters	Min	Typical	Max	Unit
VIH(400, 533)	Input high voltage, DQ, DQS	DVREF+0.25			V
VIL(400, 533)	Input low voltage, DQ, DQS			DVREF-0.25	V
VIH(667, 800)	Input high voltage, DQ, DQS	DVREF+0.20			V
VIL(667, 800)	Input low voltage, DQ, DQS			DVREF-0.20	V
Vslew	Input minimum slew rate	1.0			V/ns
Vswing	Input maximum swing			1.0	V

MT5112

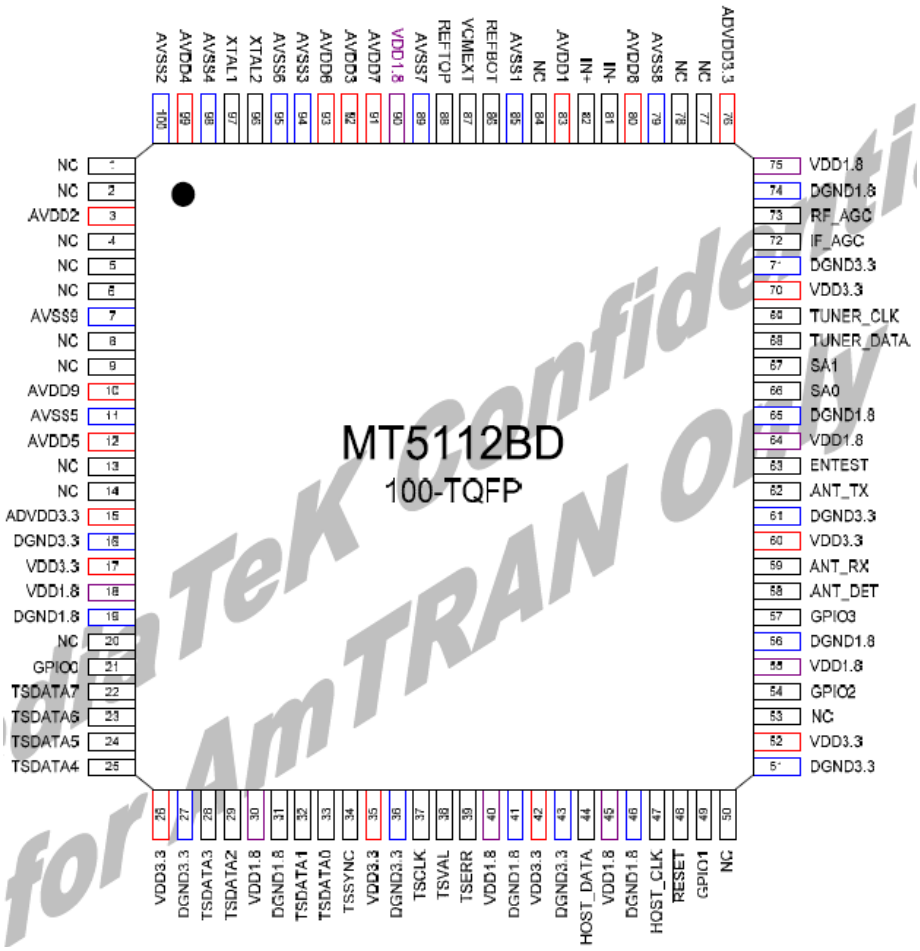
1. GENERAL DESCRIPTION

The MT5112BD is a highly integrated single-chip for digital terrestrial HDTV and digital cable TV de-modulation. The chip is designed specifically for the digital terrestrial HDTV and CATV receivers, and is fully compliant with ATSC A/53, SCTE DVS-031, and ITU J.83 Annex B standards.

FUNCTIONAL BLOCK DIAGRAM



PIN ASSIGNMENT



PIN DESCRIPTION

For FAT Applications

Pin Numbers	Symbol	Type	Description
Transport Stream			
22, 23, 24, 25, 28, 29, 32, 33	TSDATA[7:0]	O	TS data output
34	TSSYNC	O	TS packet start signal
38	TSVAL	O	TS output valid signal
37	TSCLK	O	TS output clock
39	TSERR	O	TS packet error indicator
Analog Signal			
82	IN+	I	Analog differential IF input
81	IN-	I	
88	REFTOP	O	ADC reference top voltage. Decouple with a capacitor to AVSS
86	REFBOT	O	ADC reference bottom voltage. Decouple with a capacitor to AVSS
87	VCMEXT	O	ADC common mode voltage
Antenna Interface			
62	ANT_TX	O	CEA-909 antenna control: transmit data
58	ANT_DET	I	CEA-909 antenna control: detection signal
59	ANT_RX	I	CEA-909 antenna control: receive data
Clock Generation			
97	XTAL1	I	25MHz crystal input
96	XTAL2	I	
Clock Generation			
97	XTAL1	I	25MHz crystal input
96	XTAL2	I	
Control Signals			
47	HOST_CLK	I	Host processor serial clock input, 5 volt compatible
44	HOST_DATA	I/O	Host processor serial data pin, 5 volt compatible
69	TUNER_CLK	O	Tuner serial clock output, 5 volt compatible
68	TUNER_DATA	I/O	Tuner serial data pin, 5 volt compatible
72	IF_AGC	O	IF AGC output
73	RF_AGC	O	RF AGC output
48	RESET	I	Power reset pin, low active
66	SA0	I	Chip slave address selection pin, tie to VDD3.3 or DGND
67	SA1	I	Chip slave address selection pin, tie to VDD3.3 or DGND
Power Supply			
17, 26, 35, 42, 52, 60, 70	VDD3.3	P	Digital power supply, tie to 3.3V
18, 30, 40, 45, 55, 64, 75	VDD1.8	P	Digital power supply, tie to 1.8V
16, 19, 27, 31, 36, 41, 43, 46, 51, 56, 61, 63, 65, 71, 74	DGND	P	Digital ground, tie to digital ground plane
3, 10, 12, 80, 83, 91, 92, 93, 99	AVDD	P	Analog power supply, tie to 3.3V
7, 11, 79, 85, 89, 94, 95, 98, 100	AVSS	P	Analog ground, tie to analog ground plane
15, 76	ADVDD3.3	P	Digital power supply for analog component, tie to 3.3V
90	AVDD1.8	P	Digital power supply for analog component, tie to 1.8V
General-Purpose I/O			
57, 54, 49, 21	GPIO[3:0]	I/O	General-Purpose I/Os

2. 8-VSB and Clear-QAM Reception

MT5112BD contains a 10-bit A/D converter, an 8-VSB/QAM demodulator, followed by a trellis-code de-modulation (TCM) decoder and a Reed-Solomon forward error correction (FEC) decoder. Moreover, an embedded 8-bit microprocessor intelligently handles the acquisition and tracking to ensure the best receiving performance under various channel conditions. The microprocessor communicates with the external host controller via an I2C-compatible interface, and also provides direct control to the RF tuner via another I2C-compatible interface.

MT5112BD accepts the tuner IF output centered at 44MHz or 43.75MHz, or the low IF signals from a down-converter. With good adjacent channel immunity, additional IF SAW filters for adjacent channel rejection can be saved. An on-chip programmable gain-controlled amplifier (PGA) is designed to provide extra signal gain when the tuner output level is low. The amplified IF signal is then sample and digitized for further demodulation process.

MT5112BD keeps A/D input power level at a desired level so as to maximize the received SNR. It measures the power level of the digitized samples and provide two signals (both sigma-delta encoded; one delayed and one non-delayed) for front-end gain control purpose. The signals is low-pass filtered before connected to tuner or IF gain stages.

For the 8-VSB reception, the carrier frequency offset is estimated and compensated by a fully digital synchronizer. It also controls the rate conversion in the digital re-sampling device by estimating the sampling frequency offset; hence no external VCXO is required. The digital synchronizer simultaneously offers very wide frequency acquisition range and stable tracking capability. This makes MT5112BD robust work under severe impairment conditions.

The MT5112BD is equipped with a powerful equalizer for mitigating the multi-path effects due to terrestrial propagation of 8-VSB signals. The delicate equalizer design makes the MT5112BD boast its ability for strong echo cancellation. With this powerful equalizer, the MT5112BD can not only easily pass the tests of A74 equalization mask, ATTC channel ensembles, CRC channel ensembles, but also provide superior capability of live signal receptions.

For cable signal reception, the MT5112BD adopts the fully digital modules for timing and carrier synchronization, with no external VCXO required. Specially designed carrier synchronization module enables the MT5112BD passing the OpenCable ATP burst and phase noise tests, while maintaining excellent reception performance under normal reception conditions.

The MT5112BD also utilizes a powerful equalizer for performing channel equalization in cable environments. The MT5112BD equipped with this powerful equalizer can easily pass the SCTE channel tests and offer stable and excellent live signal receptions.

The following FEC decoder corrects most of the errors by the concatenation of the TCM and Reed-Solomon decoders with an in-between de-interleaver. Specifically for the digital cable TV reception, the MT5112BD first detects and aligns de-puncturing timing of the received sequence before TCM decoding. Besides, two synchronization circuits are each inserted before the de-interleaver and after the Reed-Solomon decoder to automatically delineate the FEC frames and transport stream packets respectively. An on-chip error rate estimator can simultaneously monitor the receiving qualities at the three stages: the equalizer output, the TCM decoder, and the transport stream packets. At the last stage, the MT5112BD incorporates a buffer to smooth out the uneven arrival time of transport stream packets. The chip finally outputs the smoothed decoded MPEG-2 transport stream packets in either the serial or parallel transport stream format.

In addition to the demodulation of HDTV signal, MT5112BD provides the capability to remove narrow-band interference such as the co-channel NTSC signal and CW tones which generally exists in broadcast environment.
To achieve the best reception, an antenna control interface compliant with EIA/CEA-909 is equipped into the MT5112BD to configure the antenna parameters. Both the unidirectional mode A and the bi-directional mode B operation schemes are supported.

3. FEATURES

1. Compliant with ATSC digital television standard
2. Supports SCTE DVS-031 and ITU J.83 Annex B digital CATV standard
3. Accepts direct IF (44 MHz or 43.75MHz) and low IF (5.38MHz)
4. Differential IF input with programmable input signal level: 0.5Vpp to 2Vpp
5. NTSC interference rejection capability
6. Compensate echo up to -35 to +60*us* range for terrestrial HDTV reception
7. Pass all Brazil fading channel ensembles
8. Meet all ATSC/A74 requirements.
9. On-chip programmable gain amplifier
10. 25MHz crystal for clock generation
11. Excellent adjacent and co-channel rejection capability, only single SAW is required
12. Full-digital timing recovery, no VCXO is required
13. Full-digital frequency offset recovery with wide acquisition range ±1MHz for ATSC and ±250kHz for CATV reception
14. Dual digital AGC controls for IF and RF respectively
15. MPEG-2 transport stream output in parallel or serial format
16. On-chip error rate estimators for TS packets, TCM decoder, and equalizer
17. EIA/CEA-909 antenna interface, both mode A and mode B are supported
18. Controlled by I2C interface
19. Supports sleep mode to save power consumption
20. Core power supply: 1.8V, peripheral power supply: 3.3V
21. 100-TQFP with lead free package

MT8291E

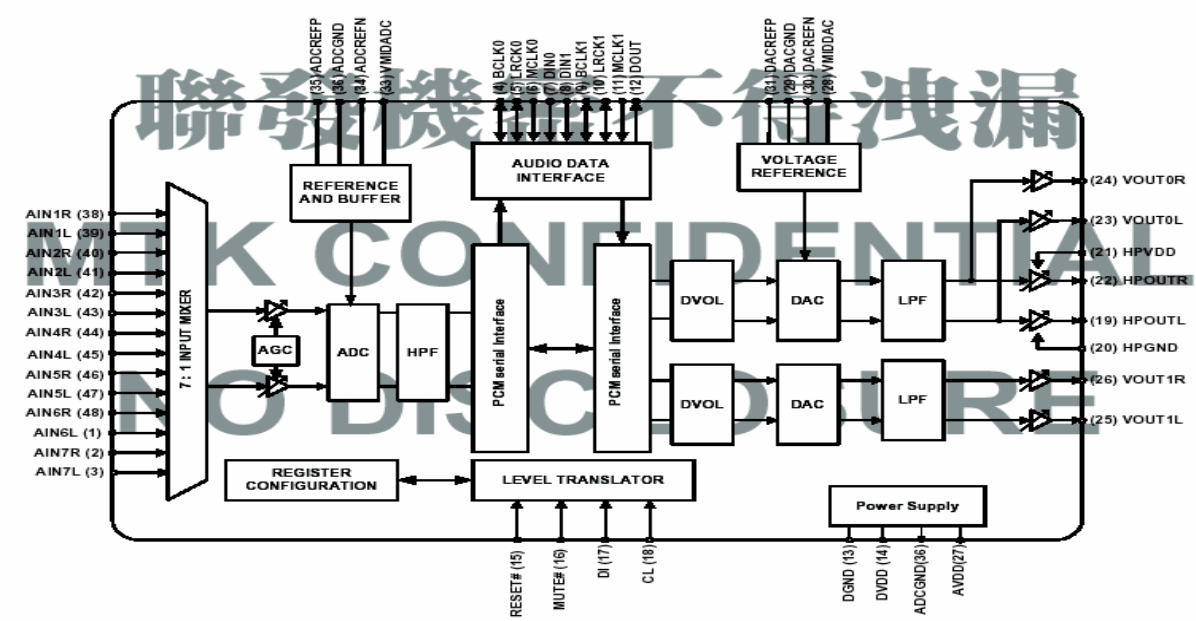
1. Overview

The MT8291E is a highly integrated stereo audio codec The MT8291E performs stereo analog-to-digital and two digital-to-analog conversions with single-ended analog voltage input and output. It's up to 24-bits serial values at sample rates up to 192 kHz.

A 7:1 stereo input multiplexer and an automatic level control are included. The PGA is available for line inputs and provides gain/attenuation of 21dB in 0.5 steps.

Two DAC outputs reach 2Vrms in a 12V supply environment including a headphone, two left/right line outputs with volume gain/attenuation from -127 dB to +12 dB and digital de-emphasis function. Sampled data is transmitted through the serial audio interface at various rates from 32 KHz to 192 KHz. For audio clock applications, the MT8291E supports master, slave modes and three data formats in the serial interface. Two individual sets if I^2S ports including three clocks and digital data for each simultaneously support different sample rates for the ADC and DACs and then output from DAC1 and DAC2 independently.

2. BLOCK DIAGRAM



3. Key Features

1. 48-pin LQFP package
2. 2 Vrms DAC output
3. MUTE and RESET function
4. 7-channel input multiplexer with ADC programmable gain amplifier's (PGA's) gain from +21 dB to -21dB in 0.5dB step
5. Two individual sets of I^2S ports simultaneously support different sample rates for the ADC and DACs and then outputs from DAC1 and DAC2 independently

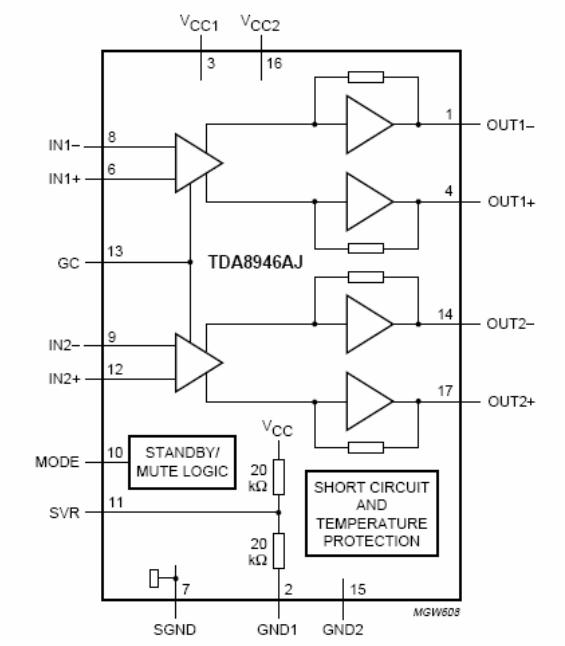
4. Features List

1. 24-bit Sigma-Delta ADC and DAC
2. Allows 2Vrms input swing into ADC part
3. ADC up to 96 kHz sampling rates
4. 90 dB ADC dynamic range
5. Automatic Gain Control(AGC)
6. 90 dB DAC dynamic range
7. DAC up to 192 KHz sampling rates
8. Two channels of ADC and four independent channels of DACs (two L/R line outputs and a headphone output)

TDA8946

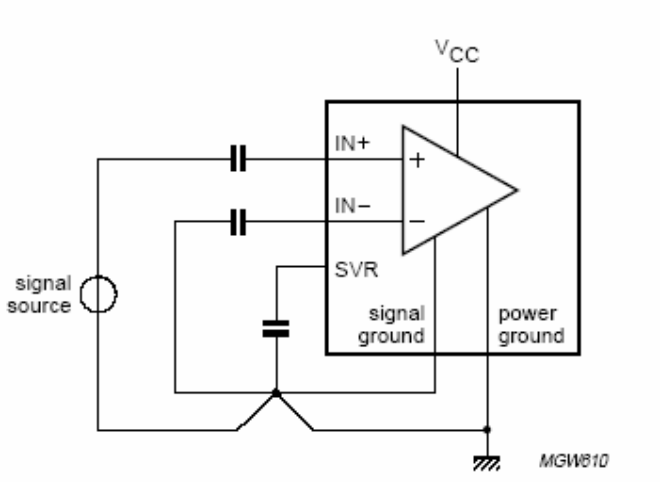
In L32 TV the TDA8946AJ is a dual-channel audio power amplifier with DC gain control. It has an output power of 2 ． 10 W at an 8 ． load and a 12 V supply.

Block diagram



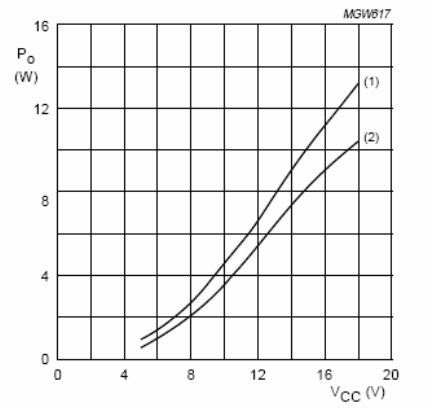
1. Input configuration

The TDA8946AJ inputs can be driven symmetrical (floating) as well as asymmetrical. In the asymmetrical mode one input pin is connected via a capacitor to the signal source and the other input is connected to the signal ground. The signal ground should be as close as possible to the SVR (electrolytic) capacitor ground. Note that the DC level of the input pins is half of the supply voltage VCC, so coupling capacitors for both pins are necessary



2. Output power measurement

The output power as a function of the supply voltage is measured on the output pins at THD = 10%,in the L32 LCD TV Vcc=12V so we can see as shown in the following figure output about 7W.



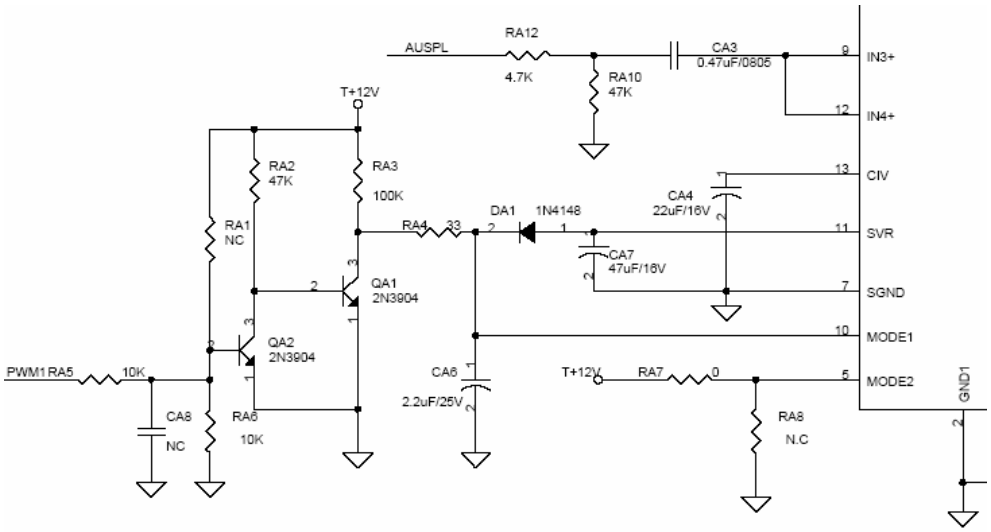
R_L = 8 Ω
(1) THD = 10%
(2) THD = 1%

3. Mode selection

In the L32 LCD TV TDA8946AJ has two functional modes, which can be selected by applying the proper DC voltage to pin MODE.

1. Mute — In this mode the amplifier is DC-biased but not operational (no audio output). This allows the input coupling capacitors to be charged to avoid pop-noise. The device is in mute mode when 3.5 V < VMODE < (VCC − 1.5 V).

2. Operating — In this mode the amplifier is operating normally. The operating mode is activated at VMODE<1.0V.



Flash: MX29LV320CTTC

The MX29LV320AT/B is a 32-mega bit Flash memory organized as 4M bytes of 8 bits and 2M words of 16 bits. MXIC's Flash memories offer the most cost-effective and reliable read/write non-volatile random access memory.

The MX29LV320AT/B is packaged in 48-pin TSOP and 48-ball CSP. It is designed to be reprogrammed and erased in system or in standard EPROM programmers. The standard MX29LV320AT/B offers access time as fast as 70ns, allowing operation of high-speed microprocessors without wait states. To eliminate bus contention, the MX29LV320AT/B has separate chip enable (CE) and output enable (OE) controls.

MXIC's Flash memories augment EPROM functionality with in-circuit electrical erasure and programming. The MX29LV320AT/B uses a command register to manage this functionality. MXIC Flash technology reliably stores memory contents even after 100,000 erase and program cycles.

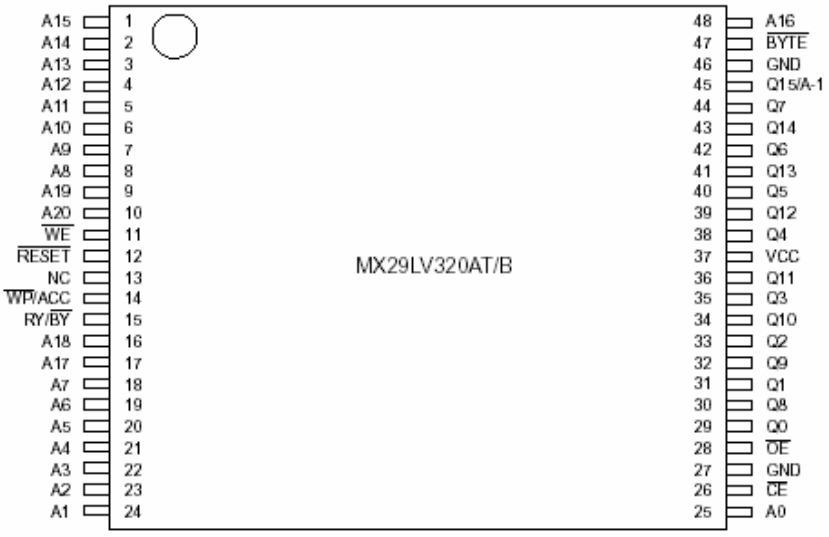
The MXIC cell is designed to optimize the erase and program mechanisms. In addition, the combination of advanced tunnel oxide processing and low internal electric fields for erase and programming operations produces reliable cycling.

The MX29LV320AT/B uses a 2.7V to 3.6V VCC supply to perform the High Reliability Erase and auto Program/Erase algorithms.

The highest degree of latch-up protection is achieved with MXIC's proprietary non-epi process. Latch-up protection is proved for stresses up to 100 milliamperes on address and data pin from -1V to VCC + 1V.

PIN CONFIGURATION

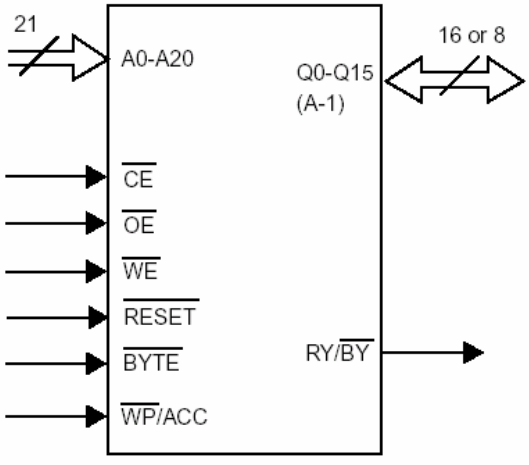
48 TSOP



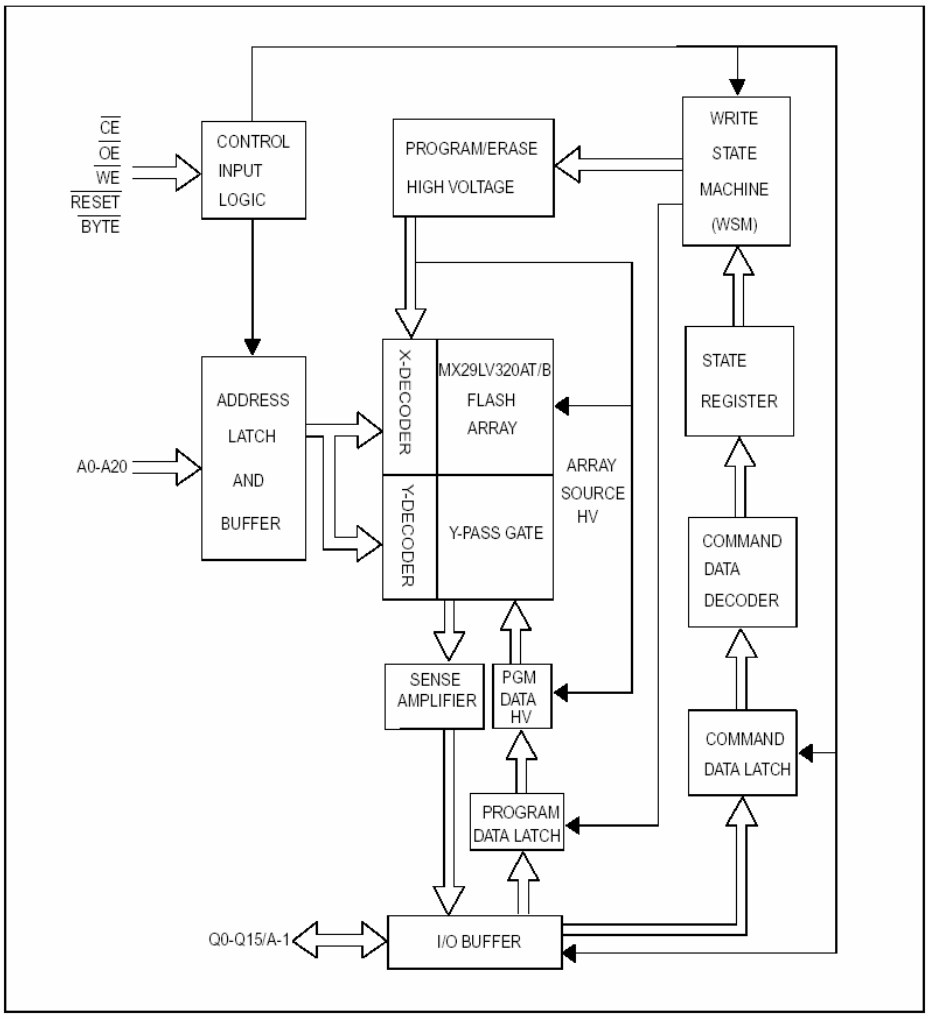
PIN DESCRIPTION

SYMBOL	PIN NAME
A0~A20	Address Input
Q0~Q14	15 Data Inputs/Outputs
Q15/A-1	Q15(Data Input/Output, word mode) A-1(LSB Address Input, byte mode)
$\overline{CE}$	Chip Enable Input
$\overline{WE}$	Write Enable Input
$\overline{OE}$	Output Enable Input
$\overline{BYTE}$	Word/Byte Selection Input
$\overline{RESET}$	Hardware Reset Pin, Active Low
RY/$\overline{BY}$	Read/Busy Output
VCC	3.0 volt-only single power supply
$\overline{WP}$/ACC	Hardware Write Protect/Acceleration Pin
GND	Device Ground
NC	Pin Not Connected Internally

LOGIC SYMBOL



BLOCK DIAGRAM



BUS OPERATION--1

Operation	$\overline{CE}$	$\overline{OE}$	$\overline{WE}$	RESET	$\overline{WP}$/ACC	Addresses (Note 2)	Q0~Q7	Q8 ~ Q15	
								$\overline{Byte}$=VIH	$\overline{Byte}$=VIL
Read	L	L	H	H	L/H	A_{IN}	D_{OUT}	D_{OUT}	Q8-A14 =High-Z Q15=A-1
Write (Note 1)	L	H	L	H	Note 3	A_{IN}	D_{IN}	D_{IN}	
Accelerate Program	L	H	L	H	V_{HH}	A_{IN}	D_{IN}	D_{IN}	
Standby	VCC ± 0.3V	X	X	VCC ± 0.3V	H	X	High-Z	High-Z	High-Z
Output Disable	L	H	H	H	L/H	X	High-Z	High-Z	High-Z
Reset	X	X	X	L	L/H	X	High-Z	High-Z	High-Z
Sector Group Protect (Note 2)	L	H	L	V_{ID}	L/H	Sector Addresses, A6=L, A1=H, A0=L	D_{IN}, D_{OUT}	X	X
Chip Unprotect (Note 2)	L	H	L	V_{ID}	Note 3	Sector Addresses, A6=H, A1=H, A0=L	D_{IN}, D_{OUT}	X	X
Temporary Sector Group Unprotect	X	X	X	V_{ID}	Note 3	A_{IN}	D_{IN}	D_{IN}	High-Z

Legend:

L=Logic LOW=VIL, H=Logic High=VIH, VID=12.0 0.5V, VHH=11.5-12.5V, X=Don't Care, AIN=Address IN, DIN=Data IN,DOUT=Data OUT

Notes:

1. When the WP/ACC pin is at VHH, the device enters the accelerated program mode. See "Accelerated Program Operations" for more information.
2. The sector group protect and chip unprotect functions may also be implemented via programming equipment. See the "Sector Group Protection and Chip Unprotection" section.
3. If WP/ACC=VIL, the two outermost boot sectors remain protected. If WP/ACC=VIH, the two outermost boot sector protection depends on whether they were last protected or unprotected using the method described in "Sector/Sector Block Protection and Unprotection". If WP/ACC=VHH, all sectors will be unprotected.
4. DIN or Dout as required by command sequence, data polling, or sector protection algorithm.
5. Address are A20:A0 in word mode (BYTE=VIH), A20:A-1 in byte mode (BYTE=VIL).

BUS OPERATION--2

Operation	$\overline{CE}$	$\overline{OE}$	$\overline{WE}$	A20 to A12	A11 to A10	A9	A8 to A7	A6	A5 to A2	A1	A0	Q0-Q7	Q8-Q15
Read Silicon ID Manufacturer Code	L	L	H	X	X	V_{ID}	X	L	X	L	L	C2H	X
Read Silicon ID MX29LV320AT	L	L	H	X	X	V_{ID}	X	L	X	L	H	A7H	22h(word)
													X (byte)
Read Silicon ID MX29LV320AB	L	L	H	X	X	V_{ID}	X	L	X	L	H	A8H	22h(word)
													X (byte)
Sector Protect Verification	L	L	H	SA	X	V_{ID}	X	L	X	H	L	01h(1), or 00h	X
Security Sector Indicater Bit (Q7)	L	L	H	X	X	V_{ID}	X	L	X	H	H	99h(2), or 19h	X

Notes:

1.Code=00h means unprotected, or code=01h protected.

2.Code=99 means factory locked, or code=19h not factory locked.

WRITE COMMANDS/COMMAND SEQUENCES

To program data to the device or erase sectors of memory , the system must drive WE and CE to VIL, and OE to VIH.An erase operation can erase one sector, multiple sectors , or the entire device. A "sector address" consists of the address bits required to uniquely select a sector. Writing specific address and data commands or sequences into the command register initiates device operations. Table A defines the valid register command sequences. Writing incorrect address and data values or writing them in the improper sequence resets the device to reading array data. Section has details on erasing a sector or the entire chip, or suspending/resuming the erase operation.

After the system writes the Automatic Select command sequence, the device enters the Automatic Select mode. The system can then read Automatic Select codes from the internal register (which is separate from the memory array) on Q7-Q0. Standard read cycle timings apply in this mode. Refer to the Automatic Select Mode and Automatic Select Command Sequence section for more information.ICC2 in the DC Characteristics table represents the active current specification for the write mode. The "AC Characteristics" section contains timing specification table and timing diagrams for write operations.

TABLE A. MX29LV320AT/B COMMAND DEFINITIONS

Command		Bus	First Bus Cycle		Second Bus Cycle		Third Bus Cycle		Fourth Bus Cycle		Fifth Bus Cycle		Sixth Bus Cycle	
		Cycles	Addr	Data	Addr	Data	Addr	Data	Addr	Data	Addr	Data	Addr	Data
Read(Note 5)		1	RA	RD										
Reset(Note 4)		1	XXX	F0										
Automatic Select(Note 5)														
Manufacturer ID	Word	4	555	AA	2AA	55	555	90	X00	C2H				
	Byte	4	AAA	AA	555	55	AAA	90	X00	C2H				
Device ID	Word	4	555	AA	2AA	55	555	90	X01	ID				
	Byte	4	AAA	AA	555	55	AAA	90	X02					
Security Sector Factory	Word	4	555	AA	2AA	55	555	90	X03	99/19				
Protect Verify (Note 6)	Byte	4	AAA	AA	555	55	AAA	90	X06					
Sector Protect Verify	Word	4	555	AA	2AA	55	555	90	(SA)X02	00/01				
(Note 7)	Byte	4	AAA	AA	555	55	AAA	90	(SA)X04					
Enter Security Sector	Word	3	555	AA	2AA	55	555	88						
Region	Byte	3	AAA	AA	555	55	AAA	88						
Exit Security Sector	Word	4	555	AA	2AA	55	555	90	XXX	00				
	Byte	4	AAA	AA	555	55	AAA	90	XXX	00				
Program	Word	4	555	AA	2AA	55	555	A0	PA	PD				
	Byte	4	AAA	AA	555	55	AAA	A0	PA	PD				
Chip Erase	Word	6	555	AA	2AA	55	555	80	555	AA	2AA	55	555	10
	Byte	6	AAA	AA	555	55	AAA	80	AAA	AA	555	55	AAA	10
Sector Erase	Word	6	555	AA	2AA	55	555	80	555	AA	2AA	55	SA	30
	Byte	6	AAA	AA	555	55	AAA	80	AAA	AA	555	55	SA	30
CFI Query (Note 8)	Word	1	55	98										
	Byte	1	AA	98										
Erase Suspend(Note 9)		1	SA	B0										
Erase Resume(Note 10)		1	SA	30										

Legend:

X=Don't care
RA=Address of the memory location to be read.
RD=Data read from location RA during read operation.
PA=Address of the memory location to be programmed.
Addresses are latched on the falling edge of the WE or CE pulse.
PD=Data to be programmed at location PA. Data is latched on the rising edge of WE or CE pulse.
SA=Address of the sector to be erased or verified. Address bits A20-A12 uniquely select any sector.
ID=22A7h(Top), 22A8h(Bottom)

Notes:

1. All values are in hexadecimal.
2. Except when reading array or Automatic Select data, all bus cycles are write operation.
3. The Reset command is required to return to the read mode when the device is in the Automatic Select mode or if Q5 goes high.
4. The fourth cycle of the Automatic Select command sequence is a read cycle.
5. The data is 99h for factory locked and 19h for not factory locked.
6. The data is 00h for an unprotected sector/sector block and 01h for a protected sector/sector block. In the third cycle of the command sequence, address bit A20=0 to verify sectors 0~31, A20=1 to verify sectors 32~70 for Top Boot device.

7. Command is valid when device is ready to read array data or when device is in Automatic Select mode.
8. The system may read and program functions in non-erasing sectors, or enter the Automatic Select mode, when in the erase Suspend mode. The Erase Suspend command is valid only during a sector erase operation.
9. The Erase Resume command is valid only during the Erase Suspend mode.

STANDBY MODE

MX29LV320AT/B can be set into Standby mode with two different approaches. One is using both CE and RESET pins and the other one is using RESET pin only.

When using both pins of CE and RESET, a CMOS Standby mode is achieved with both pins held at Vcc ±0.3V. Under this condition, the current consumed is less than 0.2uA (typ.). If both of the CE and RESET are held at VIH, but not within the range of VCC ± 0.3V, the device will still be in the standby mode, but the standby current will be larger. During Auto Algorithm operation, Vcc active current (ICC2) is required even CE = "H" until the operation is completed. The device can be read with standard access time (tCE) from either of these standby modes.

When using only RESET, a CMOS standby mode is achieved with RESET input held at Vss ± 0.3V, Under this condition the current is consumed less than 1uA (typ.). Once the RESET pin is taken high, the device is back to active without recovery delay.In the standby mode the outputs are in the high impedance state, independent of the OE input.MX29LV320AT/B is capable to provide the Automatic Standby Mode to restrain power consumption during readout of data. This mode can be used effectively with an application requested low power consumption such as handy terminals.

To active this mode, MX29LV320AT/B automatically switch themselves to low power mode when MX29LV320AT/B addresses remain stable during access time of tACC+30ns. It is not necessary to control CE, WE, and OE on the mode. Under the mode, the current consumed is typically 0.2uA (CMOS level).

RESET OPERATION

01The RESET pin provides a hardware method of resetting the device to reading array data. When the RESET pin is driven low for at least a period of tRP, the device immediately terminates any operation in progress, tristates all output pins, and ignores all read/write commands for the duration of the RESET pulse. The device also resets the internal state machine to reading array data.

The operation that was interrupted should be reinitiated once the device is ready to accept another command sequence, to ensure data integrity.

Current is reduced for the duration of the RESET pulse. When RESET is held at VSS 0.3V, the device draws CMOS standby current (ICC4). If RESET is held at VIL but not within VSS 0.3V, the standby current will be greater.The RESET pin may be tied to system reset circuitry. A system reset would that also reset the Flash memory, enabling the system to read the boot-up firm-ware from the Flash memory.

If RESET is asserted during a program or erase operation, the RY/BY pin remains a "0" (busy) until the internal reset operation is complete, which requires a time of tREADY (during Embedded Algorithms). The system can thus monitor RY/BY to determine whether the reset operation is complete. If RESET is asserted when a program or erase operation is not executing (RY/BY pin is "1"), the reset operation is completed within a time of tREADY (not during Embedded Algorithms). The system can read data tRH after the RESET pin returns to VIH. Refer to the AC Characteristics tables for RESET parameters and to Figure 14 for the timing diagram.

WRITE PROTECT (WP)

The write protect function provides a hardware method to protect boot sectors without using VID.

If the system asserts VIL on the WP/ACC pin, the device disables program and erase functions in the two "outermost" 8 Kbyte boot sectors independently of whether those sectors were protected or unprotected using the method described in Sector/Sector Group Protection and Chip Unprotection". The two outermost 8 Kbyte boot sectors are the two sectors containing the lowest addresses in a bottom-boot-configured device, or the two sectors containing the highest addresses in a top-boot-configured device.

If the system asserts VIH on the WP/ACC pin, the device reverts to whether the two outermost 8K Byte boot sectors were last set to be protected or unprotected. That is, sector protection or unprotection for these two sectors depends on whether they were last protected or unprotected using the method described in "Sector/Sector Group Protection and Chip Unprotection".

Note that the WP/ACC pin must not be left floating or unconnected; inconsistent behavior of the device may result.

SOFTWARE COMMAND DEFINITIONS :

Device operations are selected by writing specific address and data sequences into the command register. Writing incorrect address and data values or writing them in the improper sequence will reset the device to the read mode. Table 3 defines the valid register command sequences. Note that the Erase Suspend (B0H) and Erase Resume (30H) commands are valid only while the Sector Erase operation is in progress. Either of the two reset command sequences will reset the device (whenapplicable).

All addresses are latched on the falling edge of WE or CE, whichever happens later. All data are latched on rising edge of WE or CE, whichever happens first.

WRITE OPERATION STATUS

The device provides several bits to determine the status of a write operation: Q2, Q3, Q5, Q6, Q7, and RY/BY.Table B and the following subsections describe the functions of these bits. Q7, RY/BY, and Q6 each offer a method for determining whether a program or erase operation is complete or in progress. These three bits are discussed first.

Table B. Write Operation Status

	Status		Q7 Note1	Q6	Q5 Note2	Q3	Q2	RY/$\overline{BY}$
In Progress	Byte/Word Program in Auto Program Algorithm		$\overline{Q7}$	Toggle	0	N/A	No Toggle	0
	Auto Erase Algorithm		0	Toggle	0	1	Toggle	0
	Erase Suspended Mode	Erase Suspend Read (Erase Suspended Sector)	1	No Toggle	0	N/A	Toggle	1
		Erase Suspend Read (Non-Erase Suspended Sector)	Data	Data	Data	Data	Data	1
		Erase Suspend Program	$\overline{Q7}$	Toggle	0	N/A	N/A	0
Exceeded Time Limits	Byte/Word Program in Auto Program Algorithm		$\overline{Q7}$	Toggle	1	N/A	No Toggle	0
	Auto Erase Algorithm		0	Toggle	1	1	Toggle	0
	Erase Suspend Program		$\overline{Q7}$	Toggle	1	N/A	N/A	0

Notes:

1.Performing successive read operations from the erase-suspended sector will cause Q2 to toggle.

2.Performing successive read operations from any address will cause Q6 to toggle.

3.Reading the byte/word address being programmed while in the erase-suspend program mode will indicate logic "1" at the Q2 bit.
However, successive reads from the erase-suspended sector will cause Q2 to toggle.

Fig C. COMMAND WRITE OPERATION

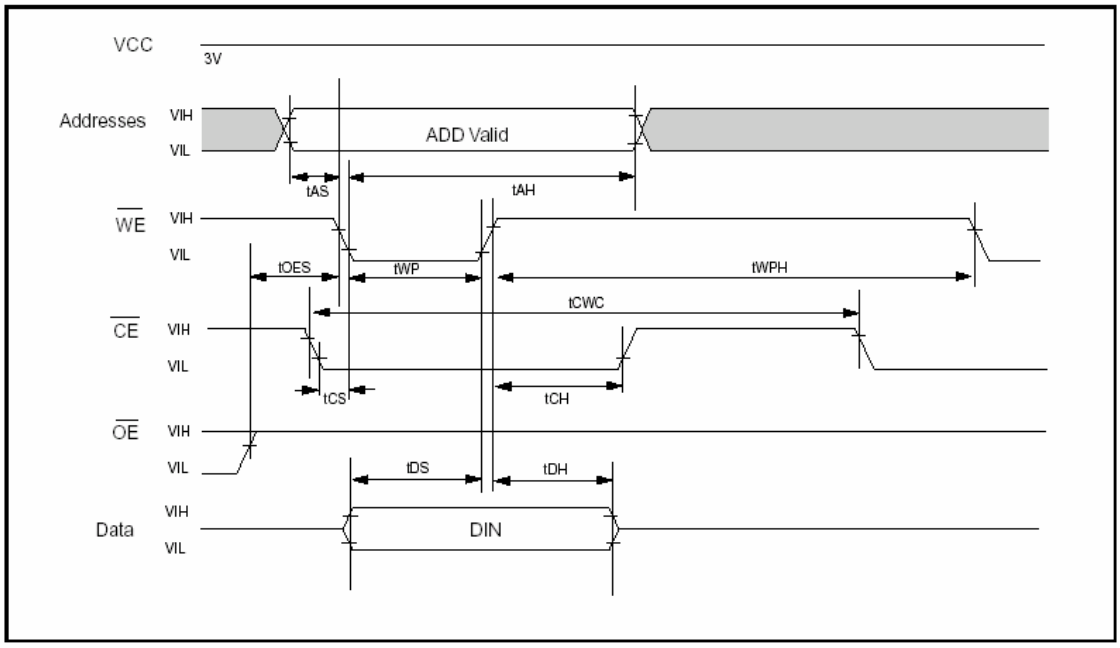
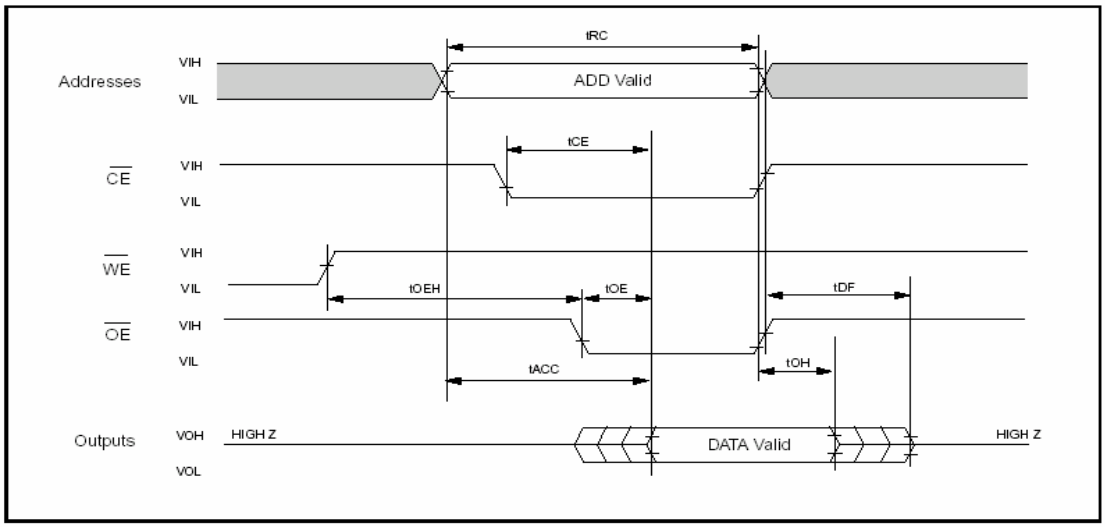


Fig D. READ TIMING WAVEFORMS

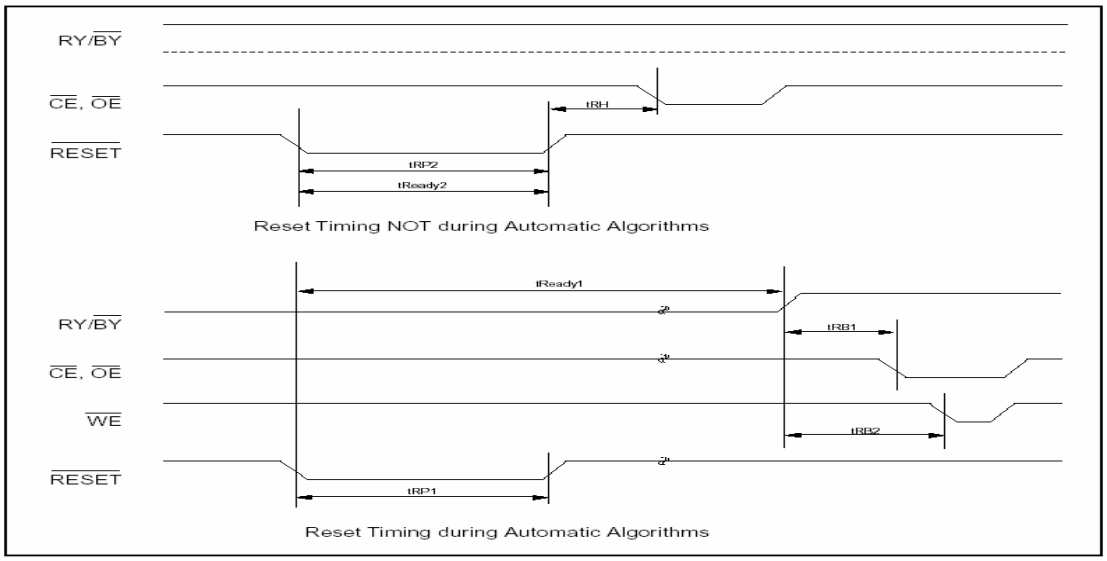


AC CHARACTERISTICS

Parameter	Description	Test Setup	All Speed Options	Unit
tREADY1	$\overline{\text{RESET}}$ PIN Low (During Automatic Algorithms) to Read or Write (See Note)	MAX	20	us
tREADY2	$\overline{\text{RESET}}$ PIN Low (NOT During Automatic Algorithms) to Read or Write (See Note)	MAX	500	ns
tRP1	$\overline{\text{RESET}}$ Pulse Width (During Automatic Algorithms)	MIN	10	us
tRP2	$\overline{\text{RESET}}$ Pulse Width (NOT During Automatic Algorithms)	MIN	500	ns
tRH	$\overline{\text{RESET}}$ High Time Before Read(See Note)	MIN	70	ns
tRB1	RY/$\overline{\text{BY}}$ Recovery Time(to $\overline{\text{CE}}$, $\overline{\text{OE}}$ go low)	MIN	0	ns
tRB2	RY/$\overline{\text{BY}}$ Recovery Time(to $\overline{\text{WE}}$ go low)	MIN	50	ns

Note:Not 100% tested

Fig E. RESET TIMING WAVEFORM



DRAM: (NT5DS16M16CS)

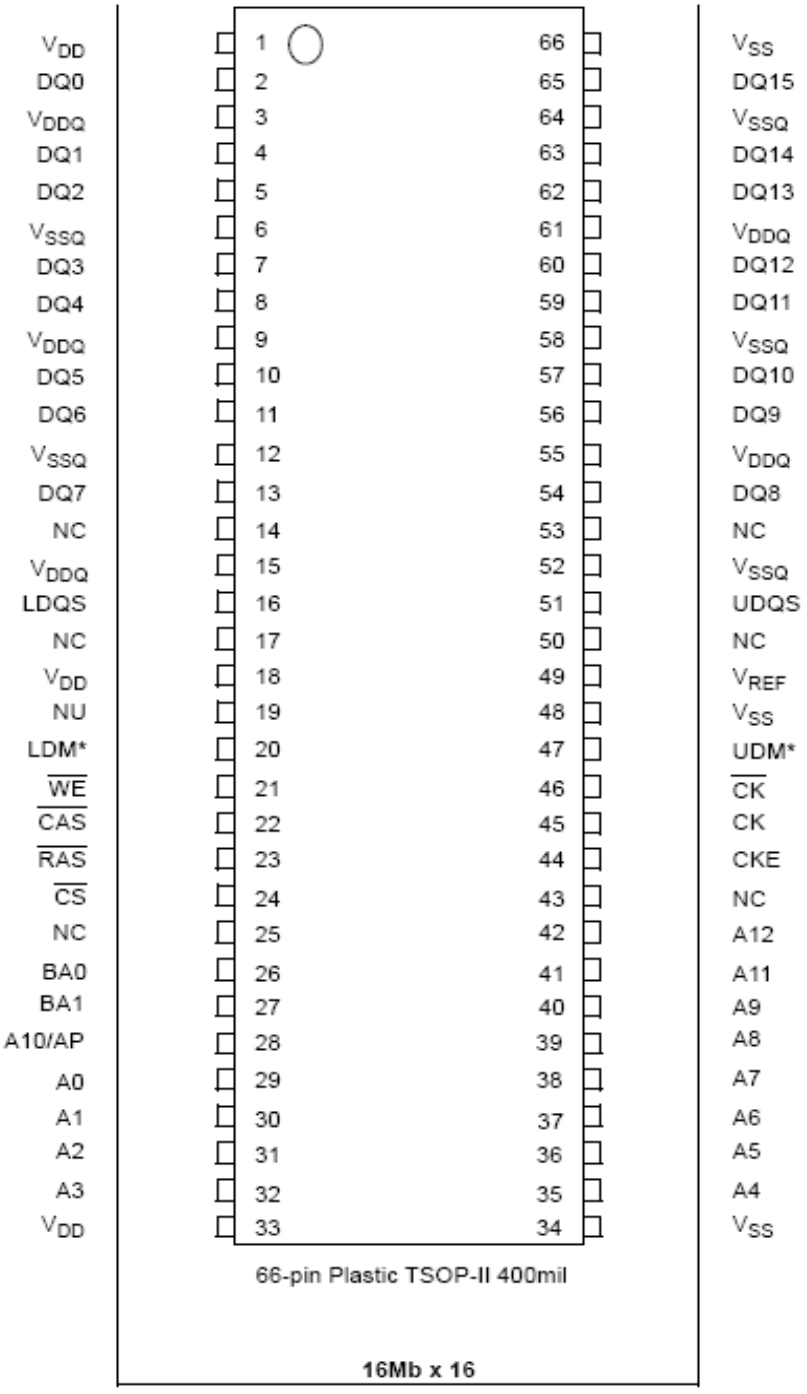
The 256Mb DDR SDRAM is a high-speed CMOS, dynamic random-access memory containing 268, 435, 456 bits. The 256Mb DDR SDRAM is internally configured as a quad-bank DRAM.

The 256Mb DDR SDRAM uses a double-data-rate architecture to achieve high-speed operation. The double-data-rate architecture
is essentially a *2n* prefetch architecture, with an interface designed to transfer two data words per clock cycle at the I/O pins. A single read or write access for the 256Mb DDR SDRAM consists of a single *2n*-bit wide, one clock cycle data transfer at
the internal DRAM core and two corresponding n-bit wide, one-half clock cycle data transfers at the I/O pins.

Read and write accesses to the DDR SDRAM are burst oriented; accesses start at a selected location and continue for a programmed number of locations in a programmed sequence. Accesses begin with the registration of an Active command, which is then followed by a Read or Write command. The address bits registered coincident with the Active command are used to select the bank and row to be accessed (BA0, BA1 select the bank; A0-A12 select the row). The address bits registered coincident with the Read or Write command are used to select the starting column location for the burst access.

Prior to normal operation, the DDR SDRAM must be initialized. The following sections provide detailed information covering device initialization, register definition, command descriptions and device operation.

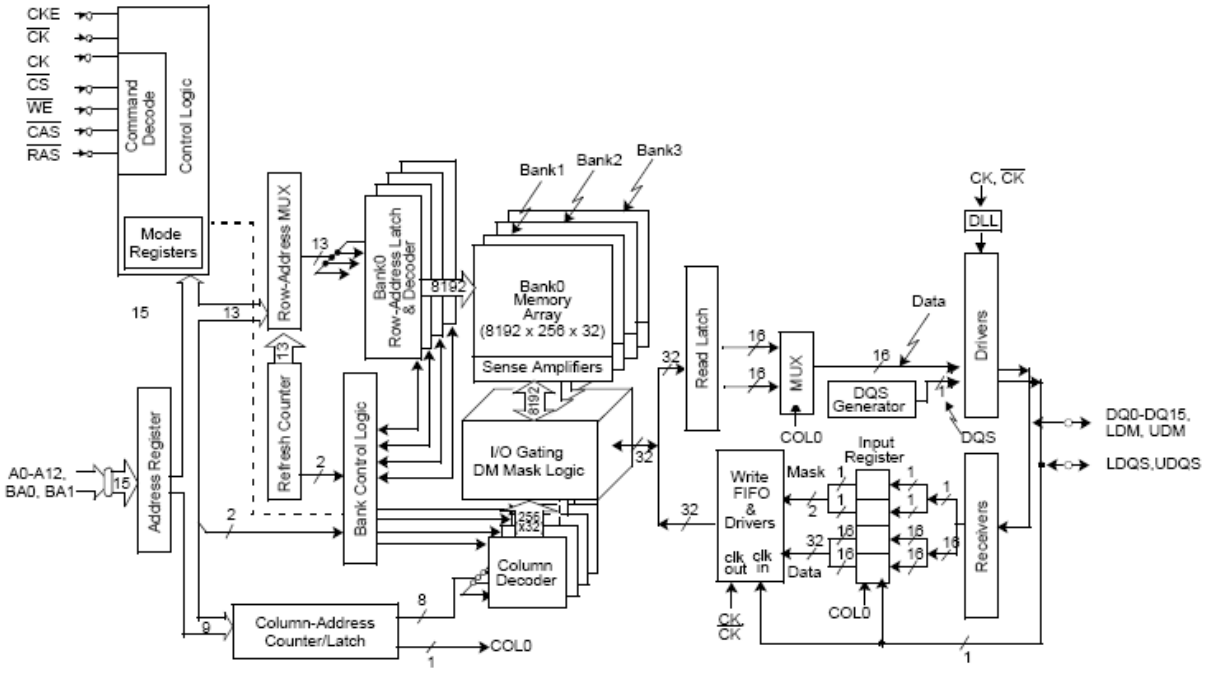
1. Pin Configuration



2. Input/Output Functional Description

Symbol	Type	Function
CK, $\overline{CK}$	Input	**Clock:** CK and CK are differential clock inputs. All address and control input signals are sampled on the crossing of the positive edge of CK and negative edge of $\overline{CK}$. Output (read) data is referenced to the crossings of CK and $\overline{CK}$ (both directions of crossing).
CKE, CKE0, CKE1	Input	**Clock Enable:** CKE HIGH activates, and CKE Low deactivates, internal clock signals and device input buffers and output drivers. Taking CKE Low provides Precharge Power Down and Self Refresh operation (all banks idle), or Active Power Down (row Active in any bank). CKE is synchronous for power down entry and exit, and for self refresh entry. CKE is asynchronous for self refresh exit. CKE must be maintained high throughout read and write accesses. Input buffers, excluding CK, $\overline{CK}$ and CKE are disabled during Power Down. Input buffers, excluding CKE, are disabled during self refresh. The standard pinout includes one CKE pin. Optional pinouts might include CKE1 on a different pin, in addition to CKE0, to facilitate independent power down control of stacked devices.
$\overline{CS}$, $\overline{CS0}$, $\overline{CS1}$	Input	**Chip Select:** All commands are masked when $\overline{CS}$ is registered high. $\overline{CS}$ provides for external bank selection on systems with multiple banks. $\overline{CS}$ is considered part of the command code. The standard pinout includes one $\overline{CS}$ pin. Optional pinouts might include $\overline{CS1}$ on a different pin, in addition to $\overline{CS0}$, to allow upper or lower deck selection on stacked devices.
$\overline{RAS}$, $\overline{CAS}$, $\overline{WE}$	Input	**Command Inputs:** $\overline{RAS}$, $\overline{CAS}$ and $\overline{WE}$ (along with $\overline{CS}$) define the command being entered.
DM	Input	**Input Data Mask:** DM is an input mask signal for write data. Input data is masked when DM is sampled high coincident with that input data during a Write access. DM is sampled on both edges of DQS. Although DM pins are input only, the DM loading matches the DQ and DQS loading. During a Read, DM can be driven high, low, or floated.
BA0, BA1	Input	**Bank Address Inputs:** BA0 and BA1 define to which bank an Active, Read, Write or Precharge command is being applied. BA0 and BA1 also determines if the mode register or extended mode register is to be accessed during a MRS or EMRS cycle.
A0 - A12	Input	**Address Inputs:** Provide the row address for Active commands, and the column address and Auto Precharge bit for Read/Write commands, to select one location out of the memory array in the respective bank. A10 is sampled during a Precharge command to determine whether the Precharge applies to one bank (A10 low) or all banks (A10 high). If only one bank is to be precharged, the bank is selected by BA0, BA1. The address inputs also provide the op-code during a Mode Register Set command.
DQ	Input/Output	**Data Input/Output:** Data bus.
DQS, LDQS, UDQS	Input/Output	**Data Strobe:** Output with read data, input with write data. Edge-aligned with read data, centered in write data. Used to capture write data. For the x16, LDQS corresponds to the data on DQ0-DQ7; UDQS corresponds to the data on DQ8-DQ15
NC		**No Connect:** No internal electrical connection is present.
NU		Electrical connection is present. Should not be connected at second level of assembly.
V_{DDQ}	Supply	**DQ Power Supply:** 2.5V ± 0.2V.
V_{SSQ}	Supply	**DQ Ground**
V_{DD}	Supply	**Power Supply:** 2.5V ± 0.2V.
V_{SS}	Supply	**Ground**
V_{REF}	Supply	**SSTL_2 reference voltage:** (V_{DDQ} / 2) ± 1%.

3. Block Diagram



Note: This Functional Block Diagram is intended to facilitate user understanding of the operation of the device; it does not represent an actual circuit implementation.

Note: DM is a unidirectional signal (input only), but is internally loaded to match the load of the bidirectional DQ and DQS signals.

4. Initialization

Only one of the following two conditions must be met.

• No power sequencing is specified during power up or power down given the following criteria:

VDD and VDDQ are driven from a single power converter output

VTT meets the specification

A minimum resistance of 42 ohms limits the input current from the VTT supply into any pin and VREF tracks VDDQ /2 or The following relationships must be followed:

VDDQ is driven after or with VDD such that VDDQ < VDD + 0.3V

VTT is driven after or with VDDQ such that VTT < VDDQ + 0.3V

VREF is driven after or with VDDQ such that VREF < VDDQ + 0.3V

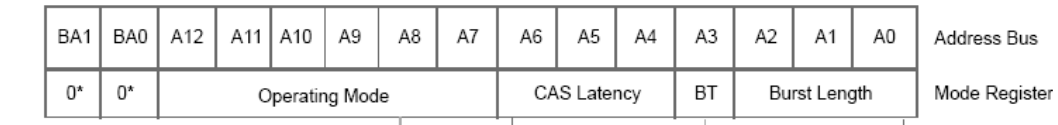
The DQ and DQS outputs are in the High-Z state, where they remain until driven in normal operation (by a read access). After all power supply and reference voltages are stable, and the clock is stable, the DDR SDRAM requires a 200µs delay prior to applying an executable command.

Once the 200µs delay has been satisfied, a Deselect or NOP command should be applied, and CKE must be brought HIGH. Following the NOP command, a Precharge ALL command must be applied. Next a Mode Register Set command must be issued for the Extended Mode Register, to enable the DLL, then a Mode Register Set command must be issued for the Mode Register, to reset the DLL, and to program the operating parameters. 200 clock cycles are required between the DLL reset and any read command.

A Precharge ALL command should be applied, placing the device in the “all banks idle” state Once in the idle state, two auto refresh cycles must be performed. Additionally, a Mode Register Set command for the Mode Register, with the reset DLL bit deactivated (i.e. to program operating parameters without resetting the DLL) must be performed. Following these cycles, the DDR SDRAM is ready for normal operation.

DDR SDRAM’s may be reinitialized at any time during normal operation by asserting a valid MRS command to either the base or extended mode registers without affecting the contents of the memory array. The contents of either the mode register or extended mode register can be modified at any valid time during device operation without affecting the state of the internal address refresh counters used for device refresh.

5. Register Definition



BA1	BA0	A12	A11	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1	A0	
0*	0*	Operating Mode						CAS Latency			BT	Burst Length			Mode Register

A12 - A9	A8	A7	A6 - A0	Operating Mode
0	0	0	Valid	Normal operation Do not reset DLL
0	1	0	Valid	Normal operation in DLL Reset
0	0	1	VS**	Vendor-Specific Test Mode
–	–	–		Reserved

A3	Burst Type
0	Sequential
1	Interleave

CAS Latency

A6	A5	A4	Latency
0	0	0	Reserved
0	0	1	Reserved
0	1	0	2
0	1	1	3 (Option)
1	0	0	Reserved
1	0	1	1.5 (Option)
1	1	0	2.5
1	1	1	Reserved

Burst Length

A2	A1	A0	Burst Length
0	0	0	Reserved
0	0	1	2
0	1	0	4
0	1	1	8
1	0	0	Reserved
1	0	1	Reserved
1	1	0	Reserved
1	1	1	Reserved

VS** Vendor Specific

* BA0 and BA1 must be 0, 0 to select the Mode Register (vs. the Extended Mode Register).

6. Burst Definition

Burst Length	Starting Column Address			Order of Accesses Within a Burst	
	A2	A1	A0	Type = Sequential	Type = Interleaved
2			0	0-1	0-1
			1	1-0	1-0
4		0	0	0-1-2-3	0-1-2-3
		0	1	1-2-3-0	1-0-3-2
		1	0	2-3-0-1	2-3-0-1
		1	1	3-0-1-2	3-2-1-0
8	0	0	0	0-1-2-3-4-5-6-7	0-1-2-3-4-5-6-7
	0	0	1	1-2-3-4-5-6-7-0	1-0-3-2-5-4-7-6
	0	1	0	2-3-4-5-6-7-0-1	2-3-0-1-6-7-4-5
	0	1	1	3-4-5-6-7-0-1-2	3-2-1-0-7-6-5-4
	1	0	0	4-5-6-7-0-1-2-3	4-5-6-7-0-1-2-3
	1	0	1	5-6-7-0-1-2-3-4	5-4-7-6-1-0-3-2
	1	1	0	6-7-0-1-2-3-4-5	6-7-4-5-2-3-0-1
	1	1	1	7-0-1-2-3-4-5-6	7-6-5-4-3-2-1-0

Notes:

1. For a burst length of two, A1-A i selects the two-data-element block; A0 selects the first access within the block.
2. For a burst length of four, A2-A i selects the four-data-element block; A0-A1 selects the first access within the block.
3. For a burst length of eight, A3-A i selects the eight-data- element block; A0-A2 selects the first access within the block.
4. Whenever a boundary of the block is reached within a given sequence above, the following access wraps within the block.

Burst Type

Accesses within a given burst may be programmed to be either sequential or interleaved; this is referred to as the burst type and is selected via bit A3. The ordering of accesses within a burst is determined by the burst length, the burst type and the starting column address, as shown in *Burst Definition* on page 11.

Read Latency

The Read latency, or CAS latency, is the delay, in clock cycles, between the registration of a Read command and the availability of the first burst of output data. The latency can be programmed 2 or 2.5 clocks.

If a Read command is registered at clock edge n, and the latency is *m* clocks, the data is available nominally coincident with clock edge *n* + m. Reserved states should not be used as unknown operation or incompatibility with future versions may result.

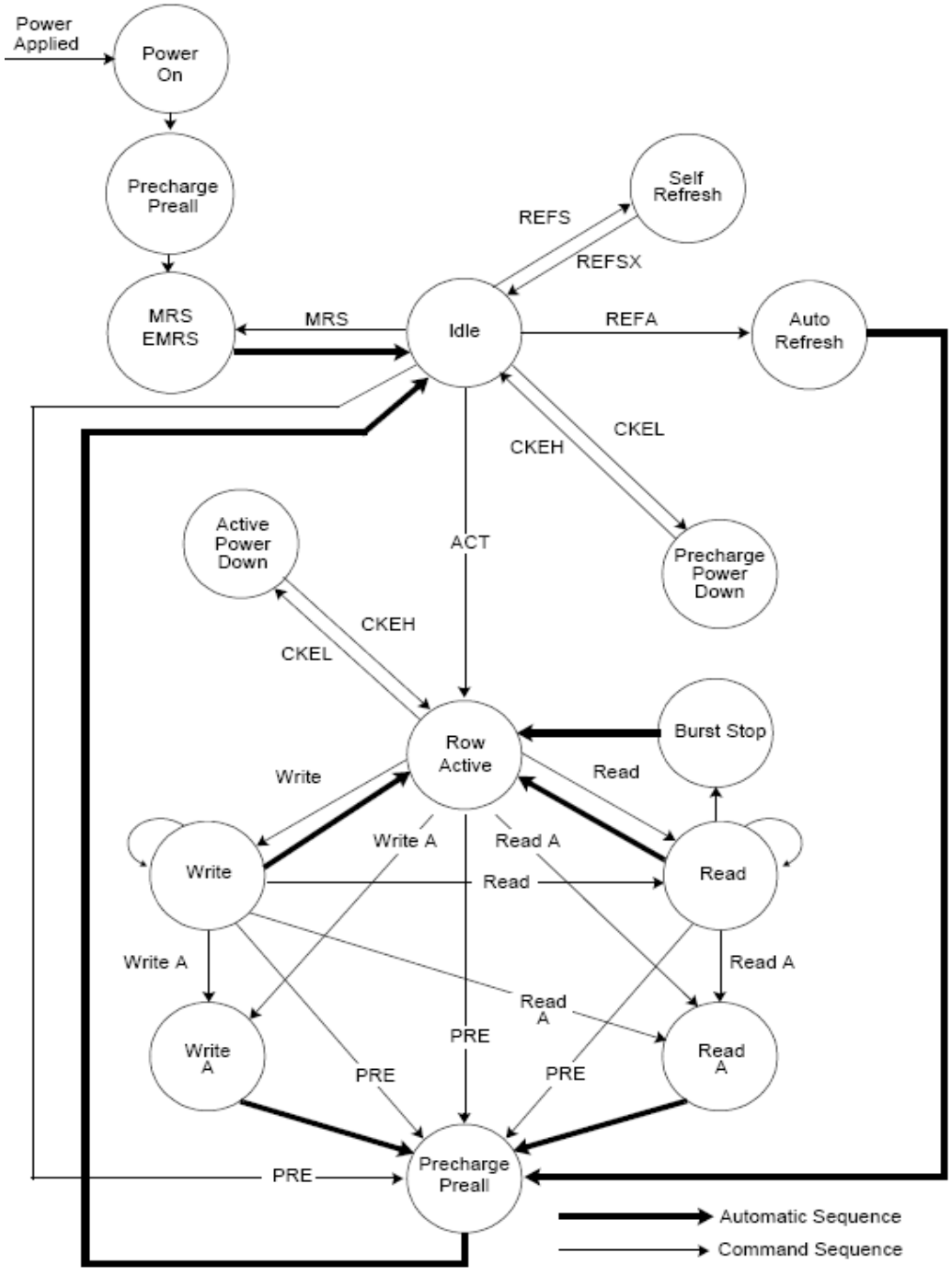
Operating Mode

The normal operating mode is selected by issuing a Mode Register Set Command with bits A7-A12 to zero, and bits A0-A6 set to the desired values. A DLL reset is initiated by issuing a Mode Register Set command with bits A7 and A9-A12 each set to zero, bit A8 set to one, and bits A0-A6 set to the desired values. A Mode Register Set command issued to reset the DLL should always be followed by a Mode Register Set command to select normal operating mode. All other combinations of values for A7-A12 are reserved for future use and/or test modes. Test modes and reserved states should not be used as unknown operation or incompatibility with future versions may result.

DLL Enable/Disable

The DLL must be enabled for normal operation. DLL enable is required during power up initialization, and upon returning to normal operation after having disabled the DLL for the purpose of debug or evaluation. The DLL is automatically disabled when entering self refresh operation and is automatically re-enabled upon exit of self refresh operation. Any time the DLL is enabled, 200 clock cycles must occur to allow time for the internal clock to lock to the externally applied clock before a Read command can be issued. This is the reason for introducing timing parameter tXSRD for DDR SDRAM's (Exit Self Refresh to Read Command). Non- Read commands can be issued 2 clocks after the DLL is enabled via the EMRS command (tMRD) or 10 clocks after the DLL is enabled via self refresh exit command (tXSNR, Exit Self Refresh to Non-Read Command).

7. Simplified State Diagram



PREALL = Precharge All Banks
MRS = Mode Register Set
EMRS = Extended Mode Register Set
REFS = Enter Self Refresh
REFSX = Exit Self Refresh
REFA = Auto Refresh

CKEL = Enter Power Down
CKEH = Exit Power Down
ACT = Active
Write A = Write with Autoprecharge
Read A = Read with Autoprecharge
PRE = Precharge

8. Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{IN}, V_{OUT}	Voltage on I/O pins relative to V_{SS}	−0.5 to V_{DDQ}+ 0.5	V
V_{IN}	Voltage on Inputs relative to V_{SS}	−0.5 to +3.6	V
V_{DD}	Voltage on V_{DD} supply relative to V_{SS}	−0.5 to +3.6	V
V_{DDQ}	Voltage on V_{DDQ} supply relative to V_{SS}	−0.5 to +3.6	V
T_A	Operating Temperature (Ambient)	0 to +70	°C
T_{STG}	Storage Temperature (Plastic)	−55 to +150	°C
P_D	Power Dissipation	1.0	W
I_{OUT}	Short Circuit Output Current	50	mA

Note: Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only, and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

9. Capacitance

Parameter	Symbol	Min.	Max.	Units	Notes
Input Capacitance: CK, $\overline{CK}$	CI_1	2.0	3.0	pF	1
Delta Input Capacitance: CK, $\overline{CK}$	delta CI_1		0.25	pF	1
Input Capacitance: All other input-only pins (except DM)	CI_2	2.0	3.0	pF	1
Delta Input Capacitance: All other input-only pins (except DM)	delta CI_2		0.5	pF	1
Input/Output Capacitance: DQ, DQS, DM	C_{IO}	4.0	5.0	pF	1, 2
Delta Input/Output Capacitance: DQ, DQS, DM	delta C_{IO}		0.5	pF	1

1. V_{DDQ} = V_{DD} = 2.5V ± 0.2V (minimum range to maximum range), f = 100MHz, T_A = 25°C, VO_{DC} = $V_{DDQ/2}$, $VO_{Peak\text{-}Peak}$ = 0.2V.
2. Although DM is an input-only pin, the input capacitance of this pin must model the input capacitance of the DQ and DQS pins. This is required to match input propagation times of DQ, DQS and DM in the system.

10. DC Electrical Characteristics and Operating Conditions

(0°C £ TA £ 70×C; VDDQ = 2.5V ± 0.2V, VDD = + 2.5V ± 0.2V, see AC Characteristics)

Symbol	Parameter	Min	Max	Units	Notes
V_{DD}	Supply Voltage	2.3	2.7	V	1
V_{DDQ}	I/O Supply Voltage	2.3	2.7	V	1
V_{SS}, V_{SSQ}	Supply Voltage I/O Supply Voltage	0	0	V	
V_{REF}	I/O Reference Voltage	0.49 x V_{DDQ}	0.51 x V_{DDQ}	V	1, 2
V_{TT}	I/O Termination Voltage (System)	V_{REF} – 0.04	V_{REF} + 0.04	V	1, 3
$V_{IH(DC)}$	Input High (Logic1) Voltage	V_{REF} + 0.15	V_{DDQ} + 0.3	V	1
$V_{IL(DC)}$	Input Low (Logic0) Voltage	– 0.3	V_{REF} – 0.15	V	1
$V_{IN(DC)}$	Input Voltage Level, CK and $\overline{CK}$ Inputs	– 0.3	V_{DDQ} + 0.3	V	1
$V_{ID(DC)}$	Input Differential Voltage, CK and $\overline{CK}$ Inputs	0.30	V_{DDQ} + 0.6	V	1, 4
$V_{IX(DC)}$	Input Crossing Point Voltage, CK and $\overline{CK}$ Inputs	0.30	V_{DDQ} + 0.6	V	1, 4
VI_{Ratio}	V-I Matching Pullup Current to Pulldown Current Ratio	0.71	1.4		5
I_I	Input Leakage Current Any input 0V ≤ V_{IN} ≤ V_{DD}; (All other pins not under test = 0V)	– 5	5	µA	1
I_{OZ}	Output Leakage Current (DQs are disabled; 0V ≤ V_{out} ≤ V_{DDQ}	– 5	5	µA	1
I_{OH}	Output Current: Nominal Strength Driver High current (V_{OUT}= V_{DDQ} -0.373V, min V_{REF}, min V_{TT}) Low current (V_{OUT}= 0.373V, max V_{REF}, max V_{TT})	– 16.8		mA	1
I_{OL}		16.8			

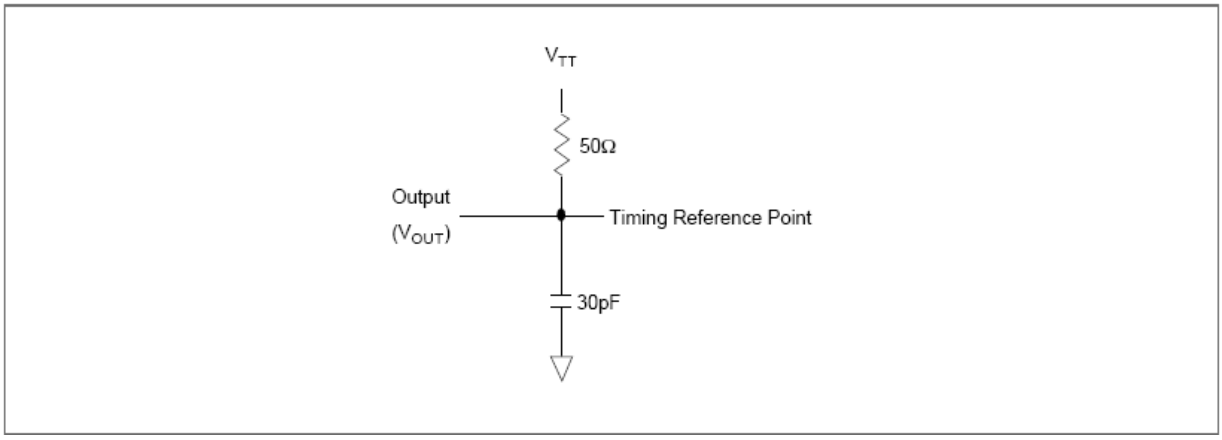
Symbol	Parameter	Min	Max	Units	Notes
I_{OHW}	Output Current: Half- Strength Driver High current (V_{OUT}= V_{DDQ} -0.763V, min V_{REF}, min V_{TT}) Low current (V_{OUT}= 0.763V, max V_{REF}, max V_{TT})	– 9.0		mA	1
I_{OLW}		9.0			

1. Inputs are not recognized as valid until V_{REF} stabilizes.
2. V_{REF} is expected to be equal to 0.5 V_{DDQ} of the transmitting device, and to track variations in the DC level of the same. Peak-to-peak noise on V_{REF} may not exceed ± 2% of the DC value.
3. V_{TT} is not applied directly to the device. V_{TT} is a system supply for signal termination resistors, is expected to be set equal to V_{REF}, and must track variations in the DC level of V_{REF}.
4. V_{ID} is the magnitude of the difference between the input level on CK and the input level on $\overline{CK}$.
5. The ratio of the pullup current to the pulldown current is specified for the same temperature and voltage, over the entire temperature and voltage range, for device drain to source voltages for 0.25 volts to 1.0 volts. For a given output, it represents the maximum difference between pullup and pulldown drivers due to process variation.

11. AC Characteristics

1. All voltages referenced to VSS.
2. Tests for AC timing, IDD, and electrical, AC and DC characteristics, may be conducted at nominal reference/supply voltage levels, but the related specifications and device operation are guaranteed for the full voltage range specified.
3. Outputs measured with equivalent load. Refer to the AC Output Load Circuit below.
4. AC timing and IDD tests may use a VIL to VIH swing of up to 1.5V in the test environment, but input timing is still referenced to VREF (or to the crossing point for CK, CK), and parameter specifications are guaranteed for the specified AC input levels under normal use conditions. The minimum slew rate for the input signals is 1V/ns in the range between VIL(AC) and VIH(AC).
5. The AC and DC input level specifications are as defined in the SSTL_2 Standard (i.e. the receiver effectively switches as a result of the signal crossing the AC input level, and remains in that state as long as the signal does not ring back above (below) the DC input low (high) level.

AC Output Load Circuit Diagrams



AC Input Operating Conditions

(0 °C ≤ TA ≤ 70 °C; VDDQ = VDD = 2.5V ± 0.2V (DDR333); VDDQ = VDD = 2.6V ± 0.1V (DDR400); See AC Characteristics)

Symbol	Parameter/Condition	Min	Max	Unit	Notes
$V_{IH(AC)}$	Input High (Logic 1) Voltage, DQ, DQS, and DM Signals	V_{REF} + 0.31		V	1, 2
$V_{IL(AC)}$	Input Low (Logic 0) Voltage, DQ, DQS, and DM Signals		V_{REF} – 0.31	V	1, 2
$V_{ID(AC)}$	Input Differential Voltage, CK and $\overline{CK}$ Inputs	0.62	V_{DDQ} + 0.6	V	1, 2, 3
$V_{IX(AC)}$	Input Crossing Point Voltage, CK and $\overline{CK}$ Inputs	0.5*V_{DDQ} – 0.2	0.5*V_{DDQ} + 0.2	V	1, 2, 4

1. Input slew rate = 1V/ns.
2. Inputs are not recognized as valid until V_{REF} stabilizes.
3. V_{ID} is the magnitude of the difference between the input level on CK and the input level on $\overline{CK}$.
4. The value of V_{IX} is expected to equal 0.5*V_{DDQ} of the transmitting device and must track variations in the DC level of the same.

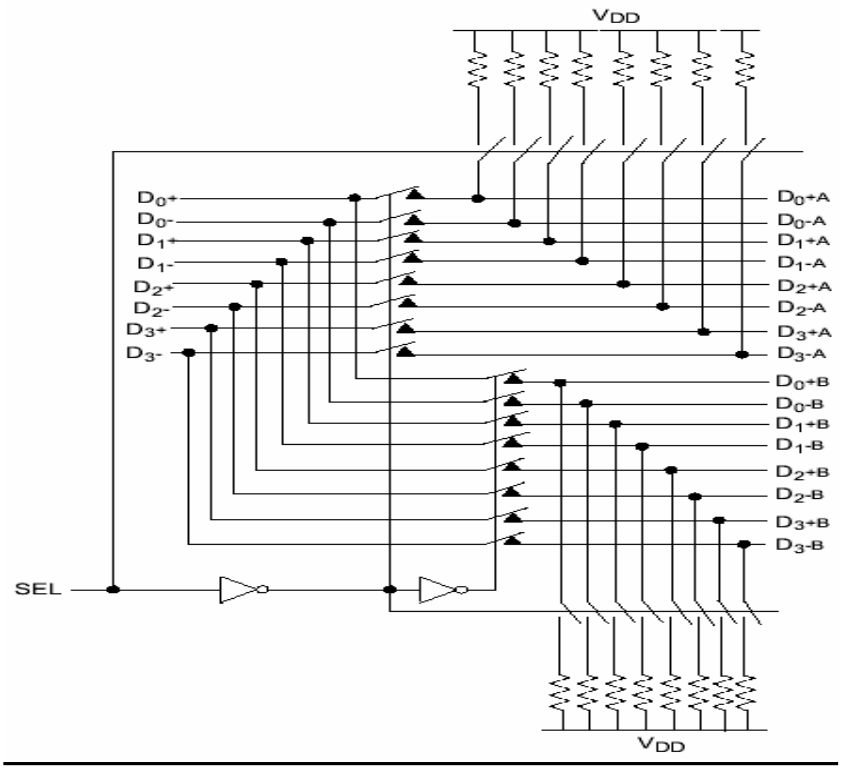
PI3HDMI412FT

Pericom Semiconductor's PI3HDMI series of switch circuits are targeted for high-resolution video networks that are based on DVI/HDMI standards, and TMDS signal processing. ThePI3HDMI412FT-A is an 8- to 4-Channel Mux/DeMux Switch. The device multiplexes differential signals to one of two corresponding outputs. The switch is bidirectional and offers little or no attenuation of the high-speed signals at the outputs. It is designed for low bit-to-bit skew and high channel-to-channel noise isolation.

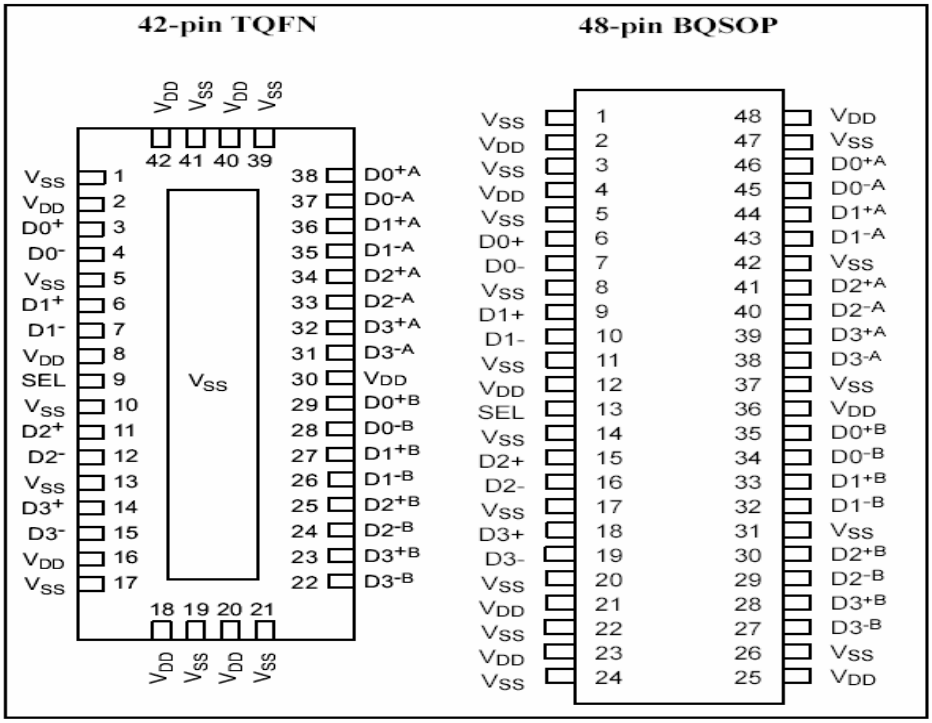
The allowable data rate of 5.0Gbps provides the resolution required by the next generation HDTV and PC graphics. Three differential channels are used for data (video signals for DVI or audio/video signals for HDMI), and one differential channel is used for Clock for decoding the TMDS signals at the outputs.

Because of its passive bidirectional feature, this switch can be used either at the video drivers side or at the receiver side. For PC graphics applications, the device sits at the drivers side to switch between multiple display units such as PC LCD monitor, projector, TV, etc. For consumer video applications, the device sits at the receiver end to switch between the sources components such as DVD, D-VHS, STB, etc.

Block Diagram



Pin Description



Pin # (BQSOP)	Pin # (TQFN)	Pin Name	Description
2, 4, 12, 21, 23, 25, 36, 48	2, 8, 16, 18, 20, 30, 40, 42	V_{DD}	+ Power supply 3.30V
1, 3, 5, 8, 11, 14, 17, 20, 22, 24, 26, 31, 37, 42, 47	1, 5, 10, 13, 17, 19, 21, 39, 41	V_{SS}	- Power supply
13	9	SEL	Select pin, see truth table
6, 7, 9, 10, 15, 16, 18, 19, 27-30, 32-35, 38-41, 43-36	3, 4, 6, 7, 11, 12, 14, 15, 22-29, 31-38	$Dx^{+/-x}$ + $CLK^{+/-x}$	Data + Clk bits for TMDS signal

Maximum Ratings

Storage Temperature.....–65°C to +150°C
Supply Voltage to V_{SS} Potential.....–0.5V to +2.5V
DC Input Voltage .....0V to V_{DD}+0.5V
DC Output Current.....120mA

DC Power Supply Characteristics

Paramenter	Description	Min.	Max.	Units
V_{DD}	Positive Power Supply	3.0	3.6	V
V_{SS}	Negative Power Supply	1.5	1.6	V

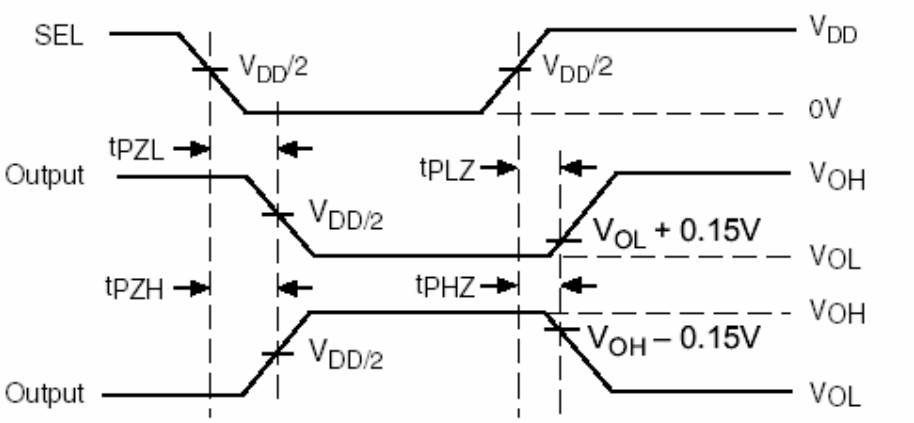
Power Supply Characteristics

Parameters	Description	Test Conditions(1)	Min.	Typ.(2)	Max.	Units
I_{CC}	Quiescent Power Supply Current	V_{DD} = Max., V_{IN} = V_{DD} or V_{SS}		200		µA

Notes:

1. For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for the applicable device type.
2. Typical values are at TA = 25°C ambient and maximum loading.

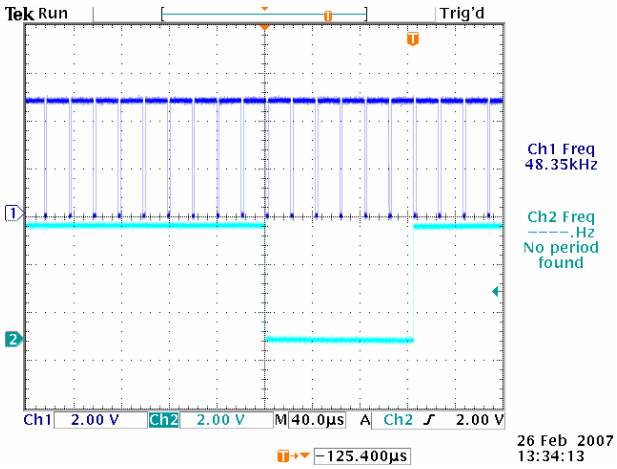
Switching Waveforms



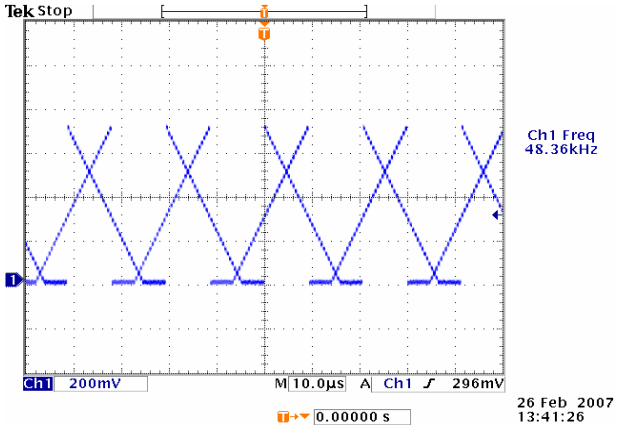
Chapter8 Waveforms

PC MODE(1024X768 60HZ)

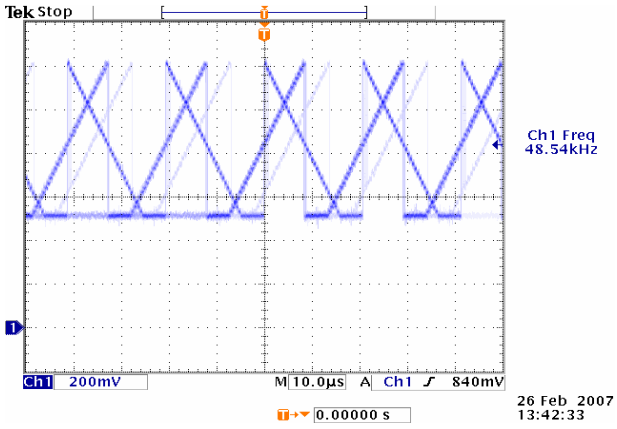
CH1 H-sync (R209); CH2 V-sync (R213)



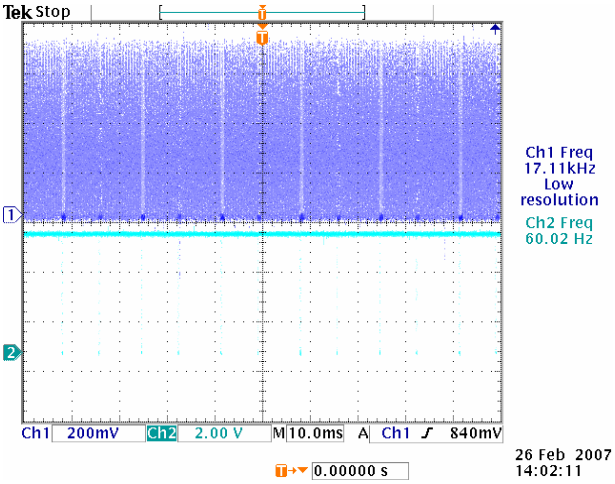
CH1 GREEN (R195)



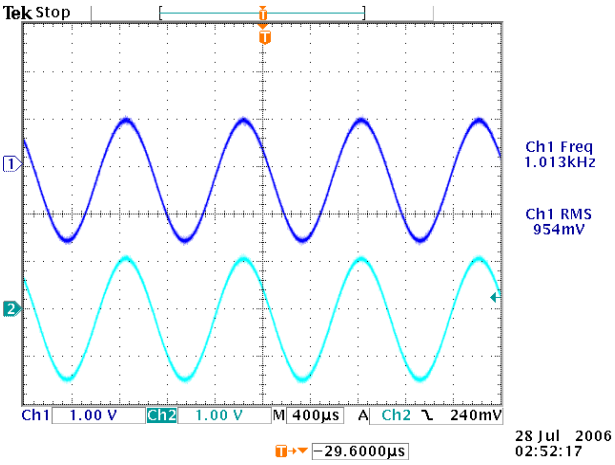
CH1 GP (C89)



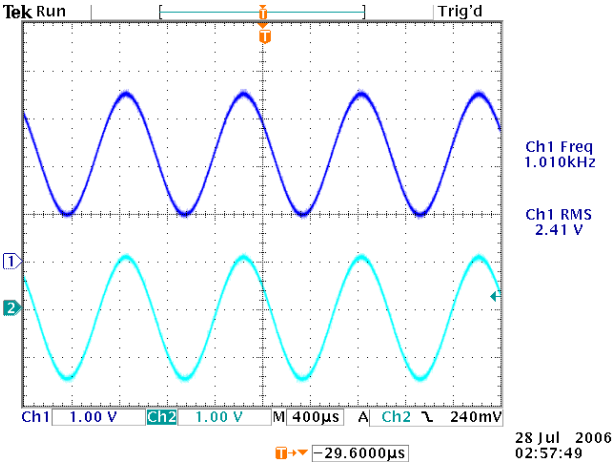
CH1 GREEN # (R195); CH2 VGAVSYNC (R213)



CH1 VGAL_IN (R208); CH2 VGAR_IN (R207) [Audio]

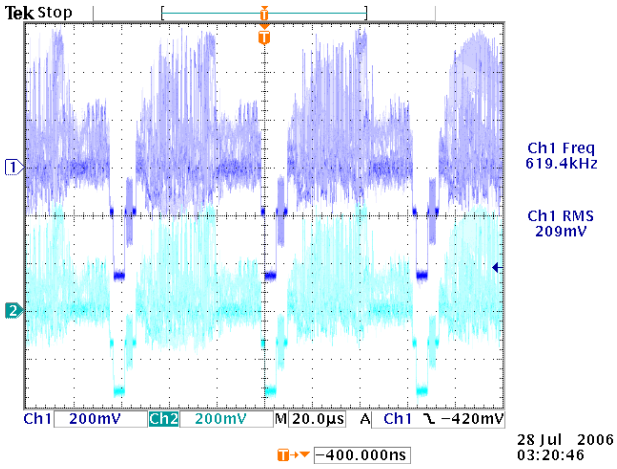


CH1 VGAL_IN (CE56+) ; VGAL_IN (CE56-)

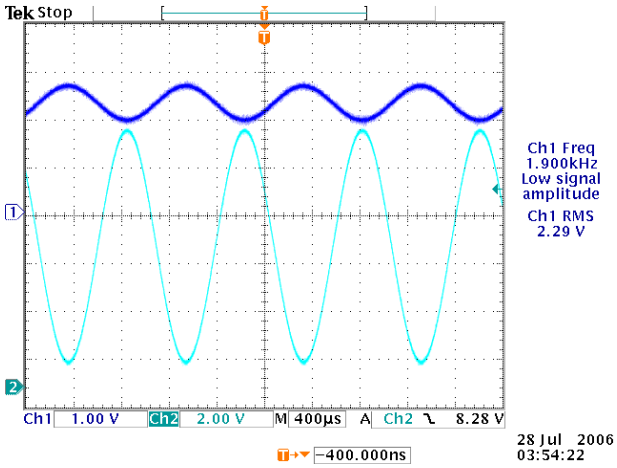


AV&TV MODE (AV1/AV2/TV) VIDEO

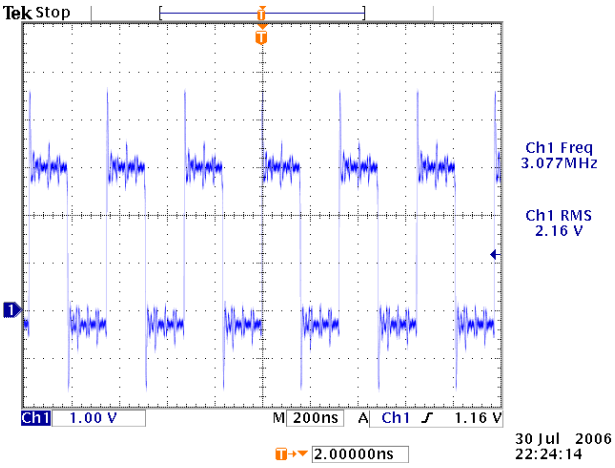
CH1 CVBS2 (R146); CH2 AV2CVBS (C52)



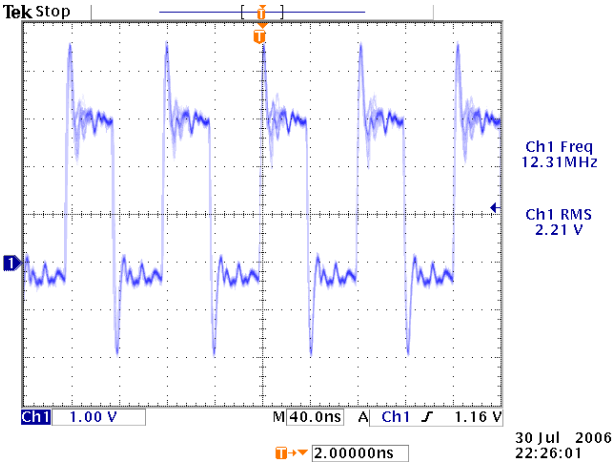
CH1 A01AUXL (R335);CH2 OUT2+ (J6 PIN4)



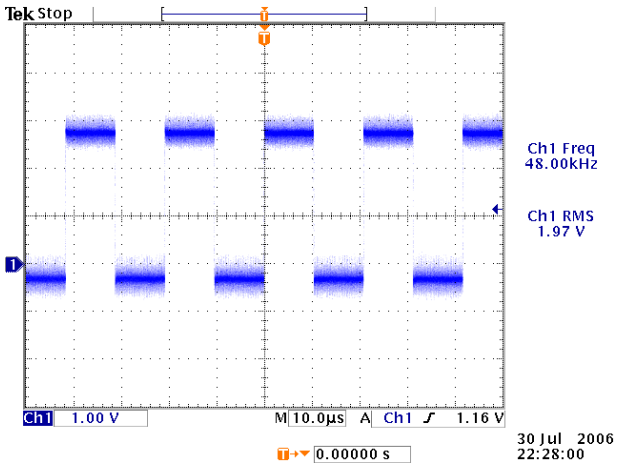
CH1 DACBCLK (U28 PIN4);



CH1 DACMCLK (U28 PIN5);

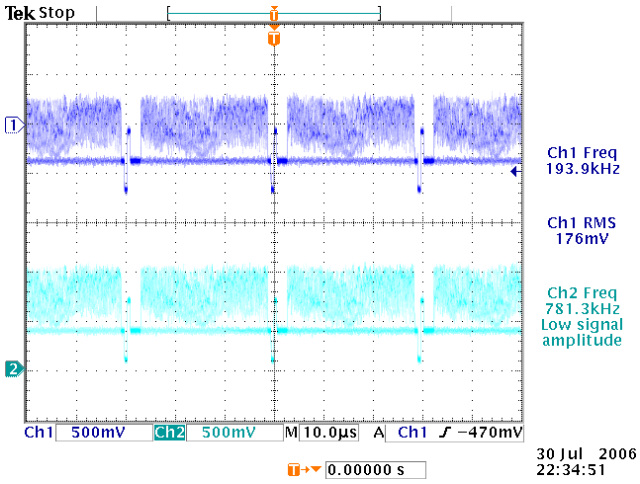


CH1 DACLRCK (U28 PIN7)

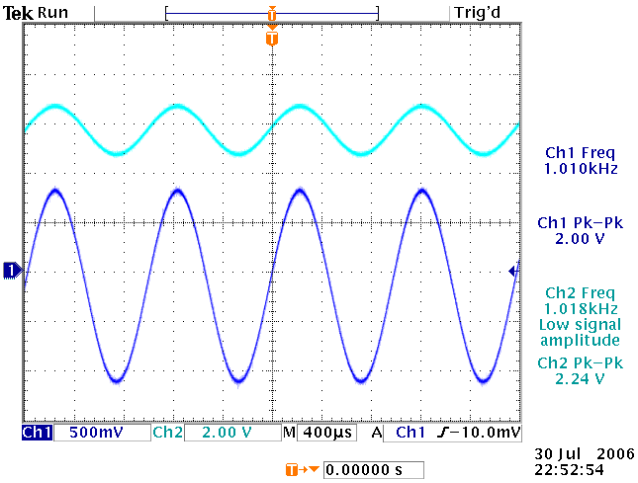


COMPONENT MODE (COMPONENT 1/2)

CH1 Y1_IN (R180); CH2 Y1P (C77)

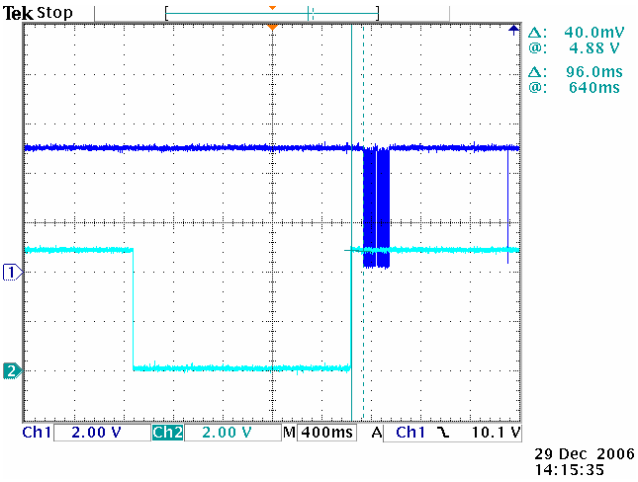


CH1CR1_IN (R190) CH2 PR1P (U27 PIN11)



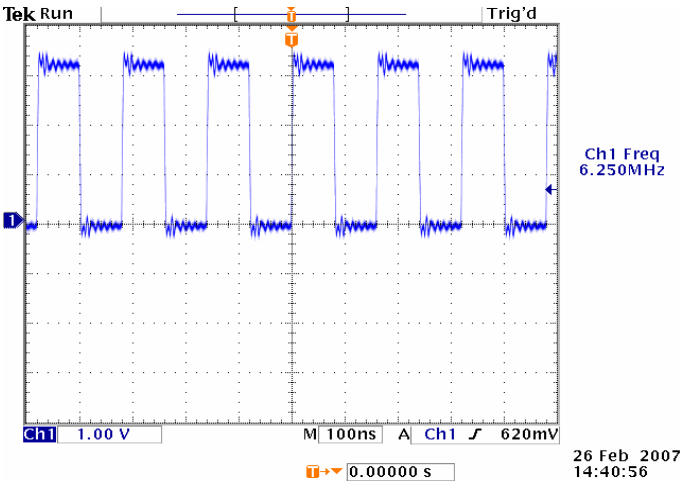
HDMI 1&2

CH1 HDMIDDCSCL_0(R235) ; CH2 HDMICAB0 (Q8 PIN3)

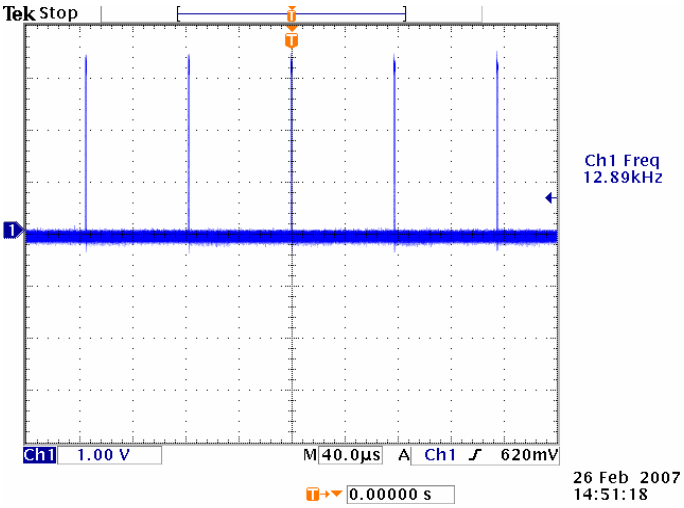


DTV HD

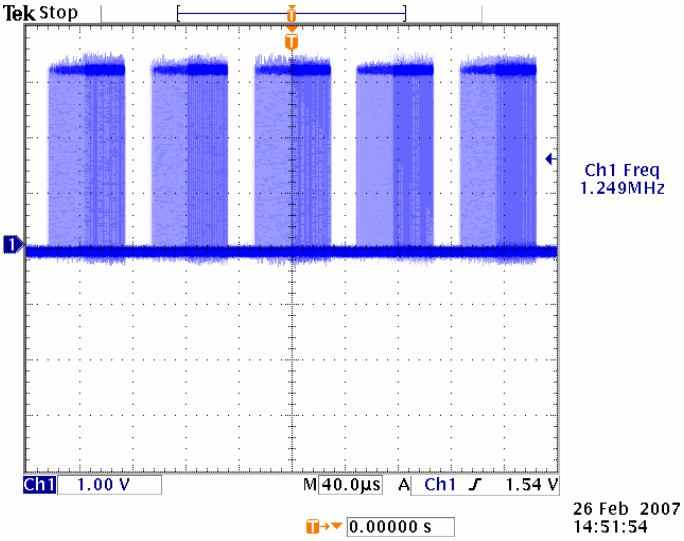
CH1 TS0CLK (U13 PIN37)



CH1 TS0SYNC (U13 PIN34)

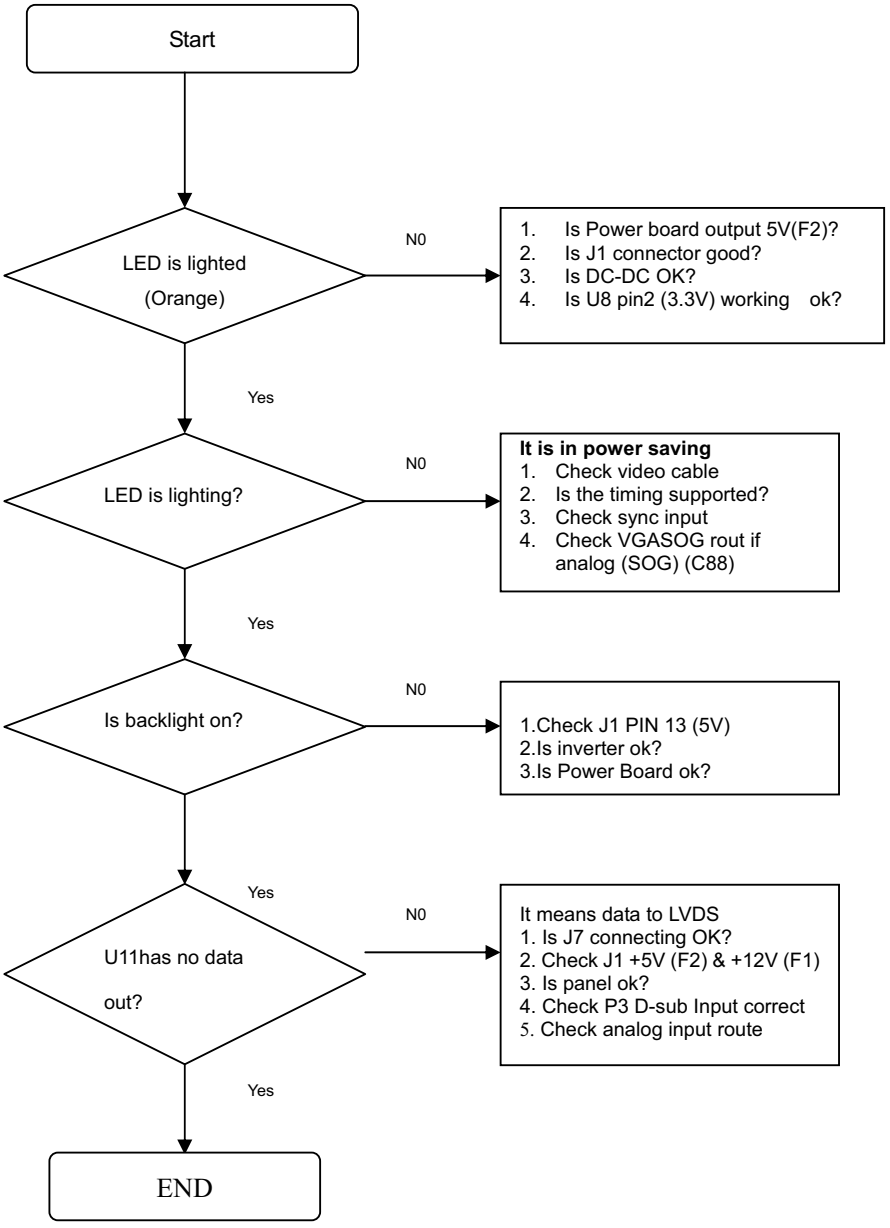


CH1 TS0DATA7 (U13 PIN22)

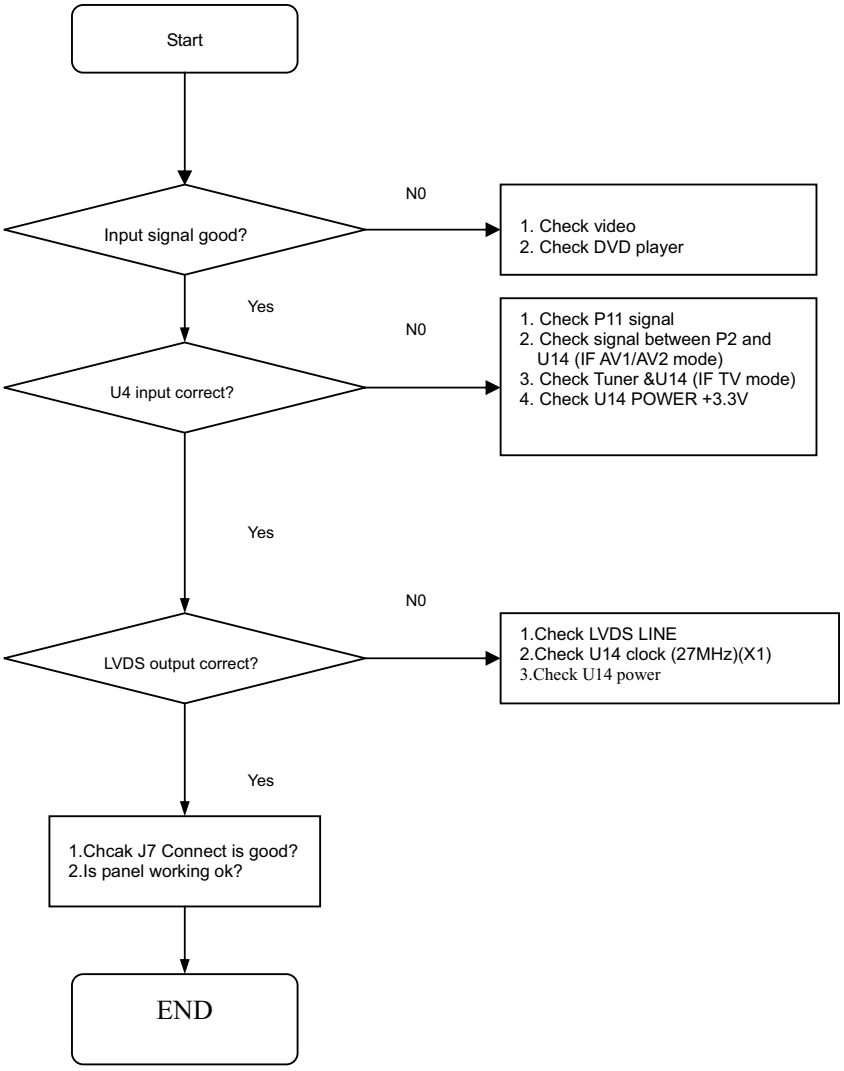


Chapter 9 Trouble shooting

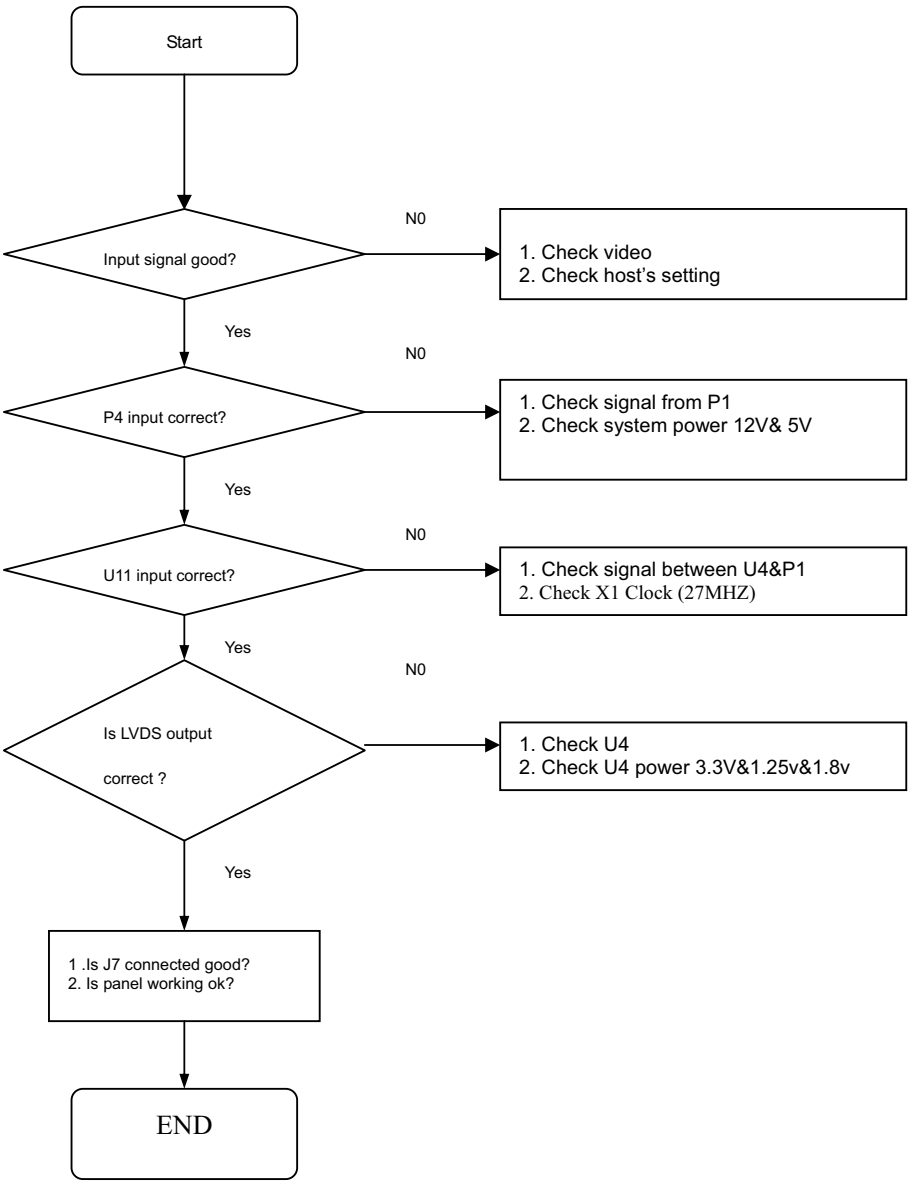
MONITOR DISPLAY NOTHING (PC MODE)



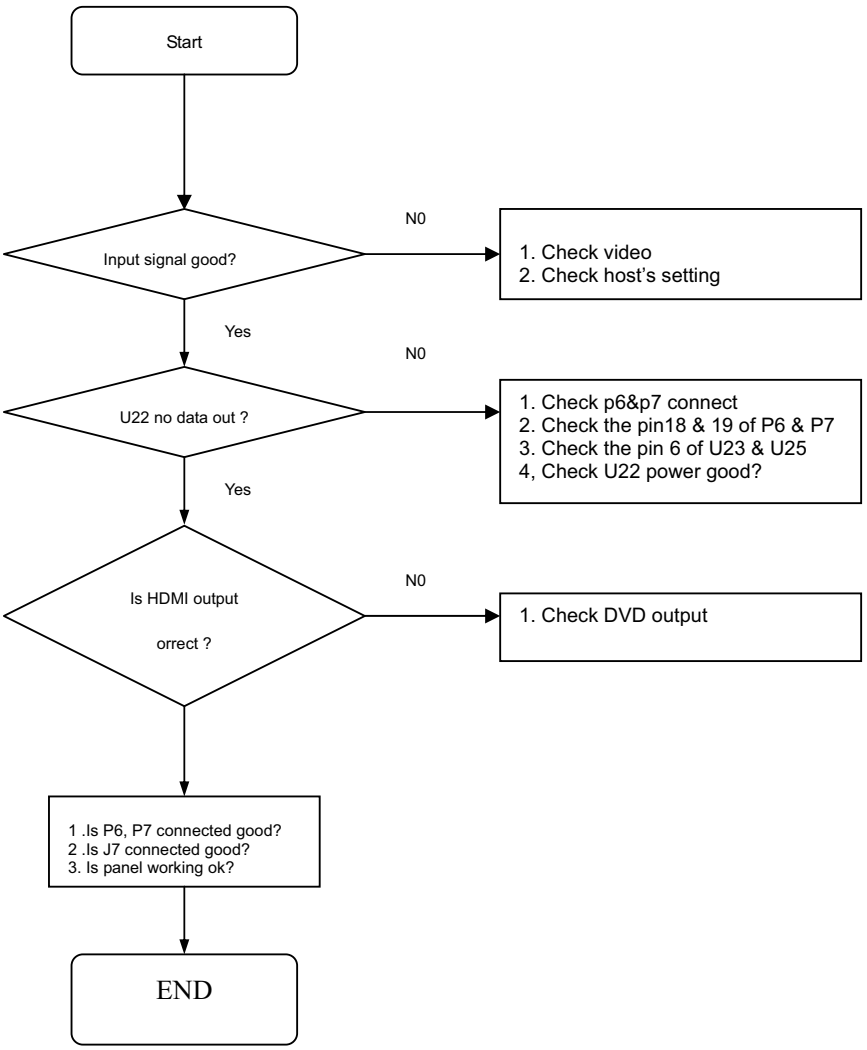
(TV, COMPOSITE) IS NOT DISPLAY CORRECTLY



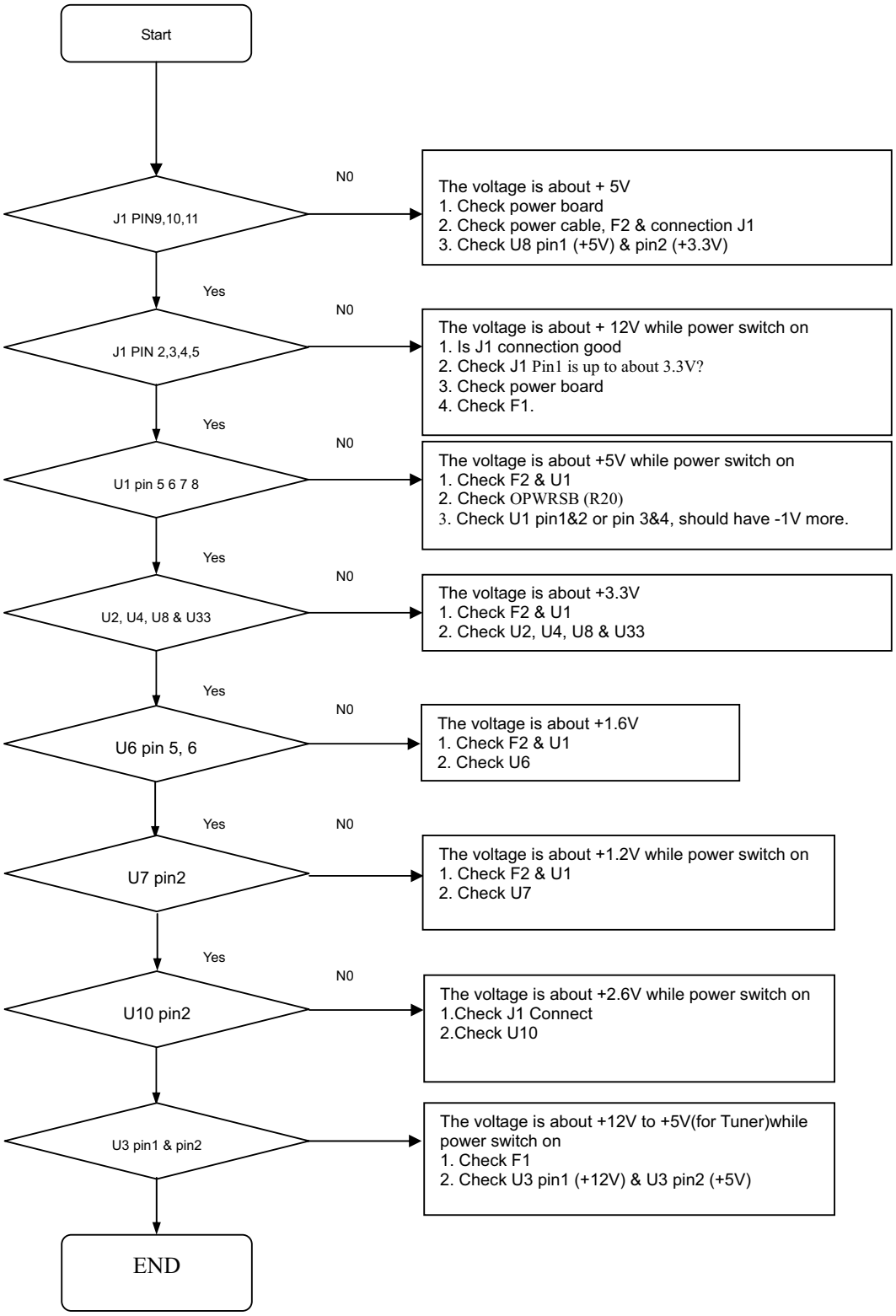
(COMPONENT1, 2) IS NOT DISPLAY CORRECTLY



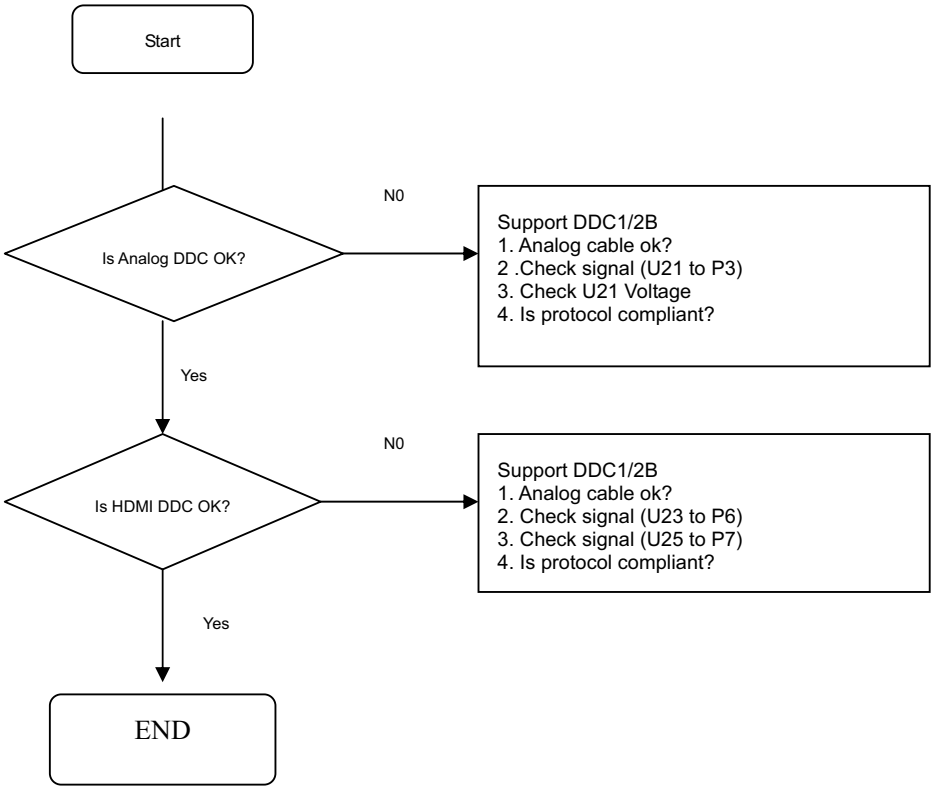
(HDMI1, 2) IS NOT DISPLAY CORRECTLY



TROUBLE OF DC-DC CONVERTER

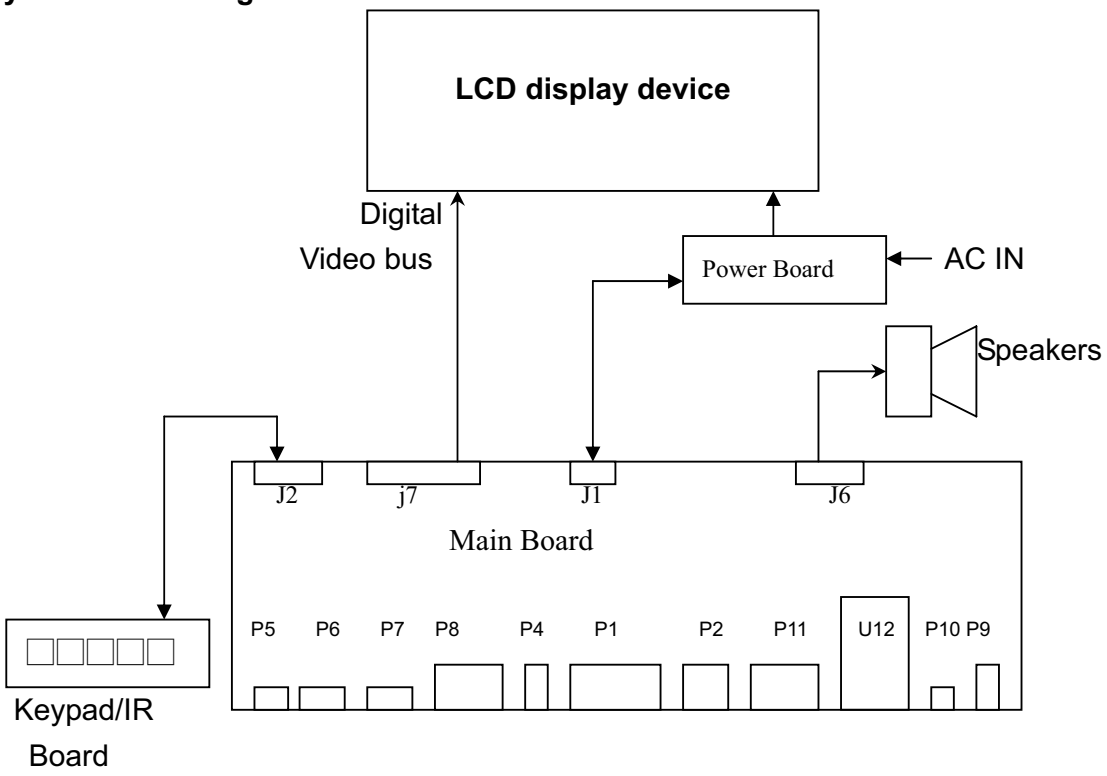


TROUBLE OF EDID READING



Chapter 10 Block Diagram

System Block Diagram



Our LCD TV system works at the AC power supplying 100V~240V AC +/- 10% @ 50/60 HZ. The Main Board is supported power by the Power Board, which converts the AC source to the DC 5V & 12V& 24Vsource. The 5V is the system stand-by energy, and the 12V works when we start our system. Indicating LED back light shows the state of our system by its light colors. “Orange” means stand-by, or “White” means working. The 24V supports energy for the inverter, which keeps the LCD back light module stable.

Our LCD TV system, VW37L HDTV 10A, supports different kinds of multi-media formats. They are 1x RF (ATSC/QAM/NTSC), Composite Video , Analog RGB, Component YPbPr, HDMI1.1 with HDCP . As shown in the figure “main board block diagram”, MT5371 processes video signals and audio signals and MT8291E processes audio signals. MT5371 is also a LVDS generator. The processed video signals are transmitted to panel terminal as LVDS format.

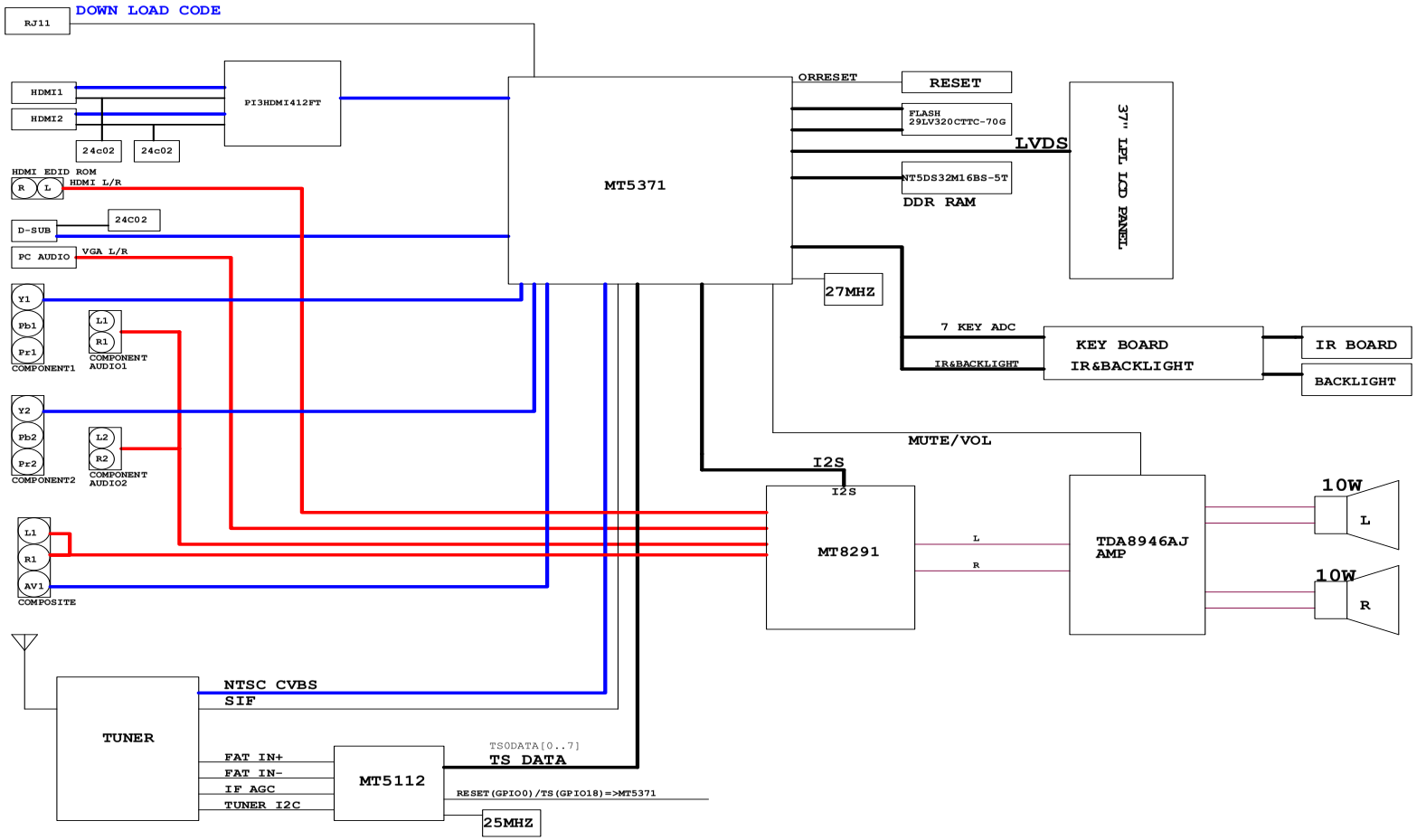
The analog video signals (composite, Analog RGB, and YPbPr) are transmitted to MT5371 directly. Their stereo audio signals are transmitted to MT8291E, some of these audio signals might pass a switch (U22).

The RF signals include analog and digital TV signals. Two kinds of signals are processed by two kinds of ways. We introduce the processing way of analog signals, then digitals is similar they. First of all, analog signals are processed by MT5371. The processed signals are divided into two parts, video and audio. Video signals are converted as LVDS and transmitted to the panel terminal. MT8291E processes the processing audio signals, and transmits these signals to audio amplifier. Digital signals are processed by MT5112, a demodulator, firstly. After demodulating, they are processed as the same way as analog signals.

The two ports of HDMI signals pass a HDMI signal switch (PI3HDMI412FT-A). MT5371 processes HDMI signals directly, then transform video signal to LVDS and audio signal to I2S. LVDS are transmitted to LCD device, and I2S signals to U22 . The passing signals are processed as other audio signals.

Main broad block diagram shows the routes of these signals in our system.

Main Board Block Diagram



Chapter 11 Spare Parts List

PART NO	DESCRIPTION	LOC	QTY	REMARK
0185-1302-0073	FUSE 125V/3A SMD (R451003) LF	F1,F2	2	
0220-7020-0130	SW TACT 6*6mm 180' 160g SFKHHAM2525 L-F	SW1,SW2, SW3,SW4,SW5,SW6,SW7	7	
0286-2700-0024	OSC 27MHz 25ppm 3.3V SMD VCXO	X1	1	
0304-1000-0113	CONN HDMI 19P 90' SMD With Flange (392M19-H58) L-F	P6,P7	2	
0320-4000-0142	POWER CORD 110V UL/CSA 1800mm BLK N.M. (VINC)		1	
0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	Q1,Q10,Q16,Q17,Q18,Q19, Q2,Q21,Q22,Q24,Q26,Q3,Q 4,Q5,Q8,Q9	16	
0410-5000-5710	TRANSISTOR MMBT3906LT1G SOT-23 L-F	Q12,Q14,Q23,Q25	4	
0420-1005-4601	POWER MOS IRF7316TRPBF SMD 8PIN LF	U1,U32	2	
0430-3004-3011	IC AT24C16AN-10SU-2.7 SO-8 L-F	U17	1	
0430-3039-4645	IC MX29LV320CTTC-70G 48PIN TSOP LF	U16	1	
0430-3039-6011	IC AT24C02BN-10SU-1.8 8Pin SOIC L-F	U21,U23,U25	3	
0430-6005-7056	IC LDO 1A 1.5V KIA1117S15 SMD 3PIN SOT-223 LF	U9	1	
0430-6006-1079	IC LDO AP1084KLA ADJ TO-263-3L LF	U10	1	
0430-6009-1051	IC AMC1117SKF-ADJ SMD 3PIN SOT-223 LF	U2,U33,U7,U8	4	
0430-6010-9028	IC G2996F1Uf 8PIN SOP-8(FD) LF	U20	1	
0430-6015-5079	IC STEP DOWN CONVERTER AP1513SA SOP 8PIN LF	U5,U6	2	
0430-6015-6099	IC RESET STL8110GCL438 4.38V SOT-23 3PIN LF	U15	1	
0430-6015-8079	IC DC/DC CONVERTER AP1522WA SOT23-5 5PIN LF	U34	1	
0430-7031-9603	IC DDR 16Mx16 NT5DS16M16CS-5T 66PIN TSOPII LF	U18	1	
0430-7043-1999	IC DEMODULATOR MT5112BD LQFP 100PIN LF	U13	1	
0430-7043-5092	IC SWITCH PI5C3257QE QSOP 16PIN LF	U24	1	
0430-7045-0999	IC AUDIO CODEC MT8291E-L LQFP 48PIN LF	U28	1	
0430-7045-4692	IC HDMI SW 2-1 PI3HDMI412FT-AZHE TQFN 42PIN LF	U22	1	
0451-1250-1066	WAFER 1.25mm 10P 90' DIP KINK (M240110R) L-F	CON1	1	
0602-3000-0020	Battery Zn-Carbon 1.5V AA		2	
0980-0304-9150	Remote control 66700ABA2-038-R LF		1	
0980-0700-0071	LED BACKLIGHT 18*50 LYSB-4916W/SY-E 400mm		1	
1801-0124-3020	FRONT BEZEL (VW32L HDTV10A)(ABS,Piano BLK) ASS'Y		1	
1801-0214-9020	REAR COVER (VW32L HDTV10A)(ABS,BLK) ASS'Y		1	
1925-1000-3800	EPS FOAM_TL (VW32L HDTV10A)		1	

PART NO	DESCRIPTION	LOC	QTY	REMARK
1925-1000-3810	EPS FOAM_TR (VW32L HDTV10A)		1	
1925-1000-3820	EPS FOAM_BL (VW32L HDTV10A)		1	
1925-1000-3830	EPS FOAM_BR (VW32L HDTV10A)		1	
1925-1100-0230	PE BAG 320*230*0.04T		2	
1925-1100-0280	PE BAG (180W*290L*0.04t)(PE-LD)(ACC.-1)		1	
1925-1100-2320	PE BAG (VX32L HDTV)		1	
1925-1200-7080	ACCESSARY BOX (330W*230D*50H)		1	
1925-1200-9500	CARTON TRAY (VW32L HDTV10A)		1	
1925-1200-9540	CARTON VIZIO VW32L HDTV10A		1	
1925-1300-7080	Brochure VIZIO Series		1	
1925-1300-8200	QUICK START GUIDE VIZIO VW32L HDTV10A		1	
1925-1300-8210	MANUAL VIZIO VW32L HDTV10A		1	
1925-1400-2710	Register CARD/VIZIO L15		1	
1925-1400-3410	Warranty & Repair Sheet VIZIO		1	
1925-1900-0610	CARTON JOINT (TM-32V)		4	
1936-1100-9040	B/C LBL VIZIO VW32L HDTV10A		1	
1936-1300-1550	SERIAL NO.LBL byd:sign		1	
1936-1600-1180	TECHNOLOGY LOGO LBL VIZIO VX20L/32/37 HDTV		1	
1947-1200-0310	ACETATE CLOTH TAPE (醋酸布膠帶) 27*75mm		1	
1947-1200-0400	ACETATE CLOTH TAPE (醋酸布膠帶) 20*45mm		20	
1947-1200-0820	ACETATE CLOTH TAPE (醋酸布膠帶) 60*45mm		2	
1947-1200-1560	FILAMENT TAPE (TIBON 25wide)		0.7	
1947-1200-3680	ACETATE CLOTH TAPE (醋酸布膠帶) 40*80mm		1	
1947-1200-3870	MYLAR (18.0*28.0*0.6t)(VX32L)		1	
1947-1200-3900	SPONGE (22.0L*55.0W*0.6t)		6	
1947-1700-0050	SHIELDING AL. TAPE (50.0*40.0)		1	
1947-1700-0130	SHIELDING AL.TAPE (70.0*50.0)		1	
1947-1800-0030	GASKET BLOCK (10W*17H*60L)		9	
1947-1800-0080	GASKET BLOCK (17*34*25mm) (773GT)		2	
1947-1800-0370	GASKET BLOCK (5.5H*10.0W*30.0Lmm)		1	
1947-1800-0460	GASKET BLOCK (3.0H*10.0W*100.0L mm)		2	
1947-1800-0490	GASKET BLOCK (12L*10W*2.5Hmm) HOLE 6 φ		1	
1947-1900-0030	HEATPATH (25x14mm)		1	
3632-0012-0156	DISPLAY BD ASS'Y VX32L HDTV		1	
3632-0142-0150	MAIN BD ASS'Y VW32L HDTV10A		1	
3642-0022-0189	IR BD ASS'Y GV42L HDTV		1	

Chapter 12 Complete Parts List

9632-8500-4053 LCD TV MONITOR 32" VW32L HDTV10A_LPL (ABS, BLK)

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			3632-0082-0312	PACKING ASS'Y VW32L HDTV10A	1	
2			3632-0092-0331	PANEL ASS'Y VW32L HDTV10A_LPL (ABS, BLK)	1	

3632-0082-0312 PACKING ASS'Y VW32L HDTV10A

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			1701-0800-4070	REAR PLATE VIZIO VW32L HDTV10A	1	
2			1925-1000-3800	EPS FOAM_TL (VW32L HDTV10A)	1	
3			1925-1000-3810	EPS FOAM_TR (VW32L HDTV10A)	1	
4			1925-1000-3820	EPS FOAM_BL (VW32L HDTV10A)	1	
5			1925-1000-3830	EPS FOAM_BR (VW32L HDTV10A)	1	
6			1925-1100-2320	PE BAG (VX32L HDTV)	1	
7			1925-1200-9500	CARTON TRAY (VW32L HDTV10A)	1	
8			1925-1200-9540	CARTON VIZIO VW32L HDTV10A	1	
9			1925-1900-0610	CARTON JOINT (TM-32V)	4	
10			1936-1100-9041	B/C LBL VIZIO VW32L HDTV10A	1	
11			1936-1300-1550	SERIAL NO.LBL byd:sign	1	
12			1936-1600-1180	TECHNOLOGY LOGO LBL VIZIO VX20L/32/37	1	
13			1947-1200-1560	FILAMENT TAPE (TIBON 25wide)	0.7	
14			3632-0062-0393	ACCESSARY ASS'Y VW32L HDTV10A	1	

3632-0092-0331 PANEL ASS'Y VW32L HDTV10A_LPL (ABS, BLK)

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			0211-0320-1461	LCD MODULE 32.0" LC320WX3-SLA1	1	
2			0260-0000-0221	AC INLET +VHR5P 1617#22 500mm 1015#18	1	
3			0335-1008-0920	SPK 10W 8ohm(154.7*62.3) 870/570mm (L,R) LF	1	
4	SS		0335-1008-0160	SPEAKER 10W 8ohm(126*56*55) +Wire		
5			0460-1004-0330	WH PH4P-PH4P 1061#26 130mm LF	1	
6			0460-3010-0191	WH A1251H02-10P/A1251H02-10P 1571#28	1	
7			0460-3430-1000	WH P240430/FI-X30H 20276#30 220mm+ 吸波材	1	
8			0460-4012-0020	WH A2543H12P-PH12P 1007#24 300mm	1	
9			0460-4012-0170	WH A2543H00-12P/A2001H02-12P 1007#24	1	
10			0460-4013-0070	WH A2543H13P-PH13P 1007#24 350mm CORE	1	
11			0500-0507-0240	POWER BD ASS'Y DPS-199AP L-F	1	
12			0950-0000-0010	License: Dolbly-AC3 Two-Channel Dolby Digital	1	
13			0950-0000-0020	License: MPEG-LA Consumer Products	1	
14			0950-0000-0030	License: HDMI	1	
15			0960-0000-0100	SOFTWARE MTK HDCP KEY w/mask CODE	1	
16			0980-0700-0071	LED BACKLIGHT 18*50 LYSB-4916W/SY-E 400mm	1	
17			1701-0524-8010	BASE (VW32L)(ABS 94-HB,T52013)	1	
18			1701-1000-0430	BASE FOOT (TM-32V)	6	
19			1701-1500-0690	WIRE SADDLE (CH-14)	2	
20			1701-1500-1660	SPACER SUPPORT (DCB-6.5)	1	
21			1701-1935-0010	SIDE JACK COVER (VW32L_LG)(ABS	1	
22			1712-0100-4590	HEAT SINK FIX MTEAL (TM-30A)	1	
23			1712-0101-0590	WALL MOUNT SUPPORT (VX32L)	4	
24			1712-0101-0620	BRACKET FOR AC SOCKET (VX32L HDTV)	1	
25			1712-0101-1150	BKT FOR SUPPORT (VX32L)	2	
26			1712-0101-1160	CHASSIS (VX32L_LG)	1	
27			1712-0101-1170	PANEL HOLDER_L (VX32L_LG)	1	
28			1712-0101-1180	PANEL HOLDER_R (VX32L_LG)	1	
29			1712-0101-1360	MAIN SHIELD (VW32L HDTV10A)	1	
30			1712-0400-1920	HEAT SINK (VX37L HDTV)	1	
31			1720-0003-0620	MAC. SCREW-MB M3.0*6.0L,Ni	20	
32			1720-0004-1050	MAC. SCREW-MB M4.0*10.0L, BLK-Ni	11	
33			1720-1204-0820	MAC. SCREW-MPGW M4.0*8.0L,Ni	1	
34			1720-1503-0620	MAC.SCREW-MPSWF M3.0*6.0L Ni	18	
35			1720-1504-0820	MAC. SCREW-MPSWF M4.0*8.0L,NI	16	
36			1720-3003-0820	MAC.SCREW-MF M3.0*8.0L,NI	2	
37			1720-7344-0820	MAC. SCREW-MHSW #4-40*8.0L,Ni	2	
38			1721-0003-0820	TAP. SCREW-TB #3.0*8.0L,NI	8	
39			1721-0004-0820	TAP. SCREW-TP #4.0*8.0L,NI	15	
40			1721-0004-1650	TAP. SCREW-TP #4.0*16.0L, BLK-Ni	14	
41			1721-4104-1220	TAP. SCREW-TRF #4.0*12.0L,Ni	6	
42			1801-0124-3020	FRONT BEZEL (VW32L HDTV10A)(ABS,Piano	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
43			1801-0214-9020	REAR COVER (VW32L HDTV10A)(ABS,BLK)	1	
44			1947-1200-0310	ACETATE CLOTH TAPE (醋酸布膠帶) 27*75mm	1	
45			1947-1200-0400	ACETATE CLOTH TAPE (醋酸布膠帶) 20*45mm	20	
46			1947-1200-0820	ACETATE CLOTH TAPE (醋酸布膠帶) 60*45mm	2	
47			1947-1200-3680	ACETATE CLOTH TAPE (醋酸布膠帶) 40*80mm	1	
48			1947-1200-3870	MYLAR (18.0*28.0*0.6t)(VX32L)	1	
49			1947-1200-3900	SPONGE (22.0L*55.0W*0.6t)	6	
50			1947-1700-0050	SHIELDING AL. TAPE (50.0*40.0)	1	
51			1947-1700-0130	SHIELDING AL.TAPE (70.0*50.0)	1	
52			1947-1800-0030	GASKET BLOCK (10W*17H*60L)	9	
53			1947-1800-0080	GASKET BLOCK (17*34*25mm) (773GT)	2	
54			1947-1800-0370	GASKET BLOCK (5.5H*10.0W*30.0Lmm)	1	
55			1947-1800-0460	GASKET BLOCK (3.0H*10.0W*100.0L mm)	2	
56			1947-1800-0490	GASKET BLOCK (12L*10W*2.5Hmm) HOLE 6 φ	1	
57			1947-1900-0030	HEATPATH (25x14mm)	1	
58			3632-0012-0156	DISPLAY BD ASS'Y VX32L HDTV	1	
59			3632-0142-0150	MAIN BD ASS'Y VW32L HDTV10A (HDCP)	1	
60			3642-0022-0189	IR BD ASS'Y GV42L HDTV	1	

3632-0012-0156 DISPLAY BD ASS'Y VX32L HDTV

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			363200120156M	DISPLAY BD ASS'Y VX32L HDTV MI	1	
2			363200120156S	DISPLAY BD ASS'Y VX32L HDTV SMD	1	

3632-0062-0393 ACCESSARY ASS'Y VW32L HDTV10A

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			0320-4000-0142	POWER CORD 110V UL/CSA 1800mm BLK N.M.	1	
2			0602-3000-0020	Battery Zn-Carbon 1.5V AA	2	
3			0980-0304-9150	Remote control 66700ABA2-038-R LF	1	
4			1925-1100-0230	PE BAG 320*230*0.04T	2	
5			1925-1100-0280	PE BAG (180W*290L*0.04t)(PE-LD)(ACC.-1)	1	
6			1925-1200-7080	ACCESSARY BOX (330W*230D*50H)	1	
7			1925-1300-7081	Brochure VIZIO Series	1	
8			1925-1300-8200	QUICK START GUIDE VIZIO VW32L HDTV10A	1	
9			1925-1300-8210	MANUAL VIZIO VW32L HDTV10A	1	
10			1925-1400-2711	Register CARD VIZIO Series	1	
11			1925-1400-3410	Warranty & Repair Sheet VIZIO	1	

3632-0142-0150 MAIN BD ASS'Y VW32L HDTV10A (HDCP)

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			363201420150A	MAIN BD ASS'Y VW32L HDTV10A AI	1	
2			363201420150M	MAIN BD ASS'Y VW32L HDTV10A MI	1	
3			363201420150S	MAIN BD ASS'Y VW32L HDTV10A SMD	1	

3642-0022-0189 IR BD ASS'Y GV42L HDTV

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			364200220189M	IR BD ASS'Y GV42L HDTV MI	1	
2			364200220189S	IR BD ASS'Y GV42L HDTV SMD	1	

363200120156M DISPLAY BD ASS'Y VX32L HDTV MI

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1		CON1	0451-1250-1066	WAFER 1.25mm 10P 90' DIP KINK (M240110R) L-F	1	
2	SS		0451-1250-1063	WAFER 1.25mm 10P 90' KINK (A1251WR0-10P)		
3		CON3	0451-1250-0366	WAFER 1.25mm 3P 90' DIP KINK (M24013R) L-F	1	
4	SS		0451-1250-0363	WAFER 1.25mm 3P 90' KINK (A1251WR0-3P) L-F		
5		J2	0451-2000-0466	WAFER 2.0mm 4P 90' DIP KINK (M24264R) L-F	1	
6	SS		0451-2003-0463	WAFER 2.00mm 4P 90' KINK (A2001WR2-4P) L-F		
7		SW1	0220-7020-0130	SW TACT 6*6mm 180' 160g SFKHHAM2525 L-F	1	
8		SW2	0220-7020-0130	SW TACT 6*6mm 180' 160g SFKHHAM2525 L-F	1	
9		SW3	0220-7020-0130	SW TACT 6*6mm 180' 160g SFKHHAM2525 L-F	1	
10		SW4	0220-7020-0130	SW TACT 6*6mm 180' 160g SFKHHAM2525 L-F	1	
11		SW5	0220-7020-0130	SW TACT 6*6mm 180' 160g SFKHHAM2525 L-F	1	
12		SW6	0220-7020-0130	SW TACT 6*6mm 180' 160g SFKHHAM2525 L-F	1	
13		SW7	0220-7020-0130	SW TACT 6*6mm 180' 160g SFKHHAM2525 L-F	1	

363200120156S DISPLAY BD ASS'Y VX32L HDTV SMD

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			0174-1770-1791	PCB DISPLAY BD K1 150*25*1.6t (VX32L	1	
2		CD1	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
3	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
4		CD2	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
5	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
6		CD3	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
7	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
8		CD4	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
9	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
10		RD1	0130-0000-1859	RES. CF 0.0ohm 1/8W J 1206	1	
11		RD10	0130-0000-1859	RES. CF 0.0ohm 1/8W J 1206	1	
12		RD11	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
13		RD12	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
14		RD13	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
15		RD14	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
16		RD15	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
17		RD16	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
18		RD17	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
19		RD2	0130-2401-1654	RES. CF 2.4 Kohm 1/16W J 0402	1	
20		RD3	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
21		RD4	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
22		RD5	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
23		RD6	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
24		RD7	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
25		RD8	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	

363201420150A MAIN BD ASS'Y VW32L HDTV10A AI

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1		CE1	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
2		CE11	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
3		CE125	0103-1330-1211	E/C VT 33uF 16V 105'C F-T (5*11mm)	1	
4		CE13	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
5		CE14	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
6		CE16	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
7		CE17	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	
8		CE18	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
9		CE19	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	
10		CE2	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
11		CE20	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
12		CE21	0103-1221-1211	E/C VZ 220uF 16V 105'C F-T (6.3*11mm)	1	
13		CE22	0103-1221-1211	E/C VZ 220uF 16V 105'C F-T (6.3*11mm)	1	
14		CE23	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
15		CE24	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	
16		CE25	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
17		CE26	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
18		CE27	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
19		CE3	0103-1220-1511	E/C VT 22uF 50V 105'C F-T (5*11mm)	1	
20		CE31	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	
21		CE32	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
22		CE33	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
23		CE34	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
24		CE35	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
25		CE36	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
26		CE37	0103-1471-1211	E/C VZ 470uF 16V 105'C F-T (8*11.5mm)	1	
27		CE38	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	
28		CE4	0103-1220-1511	E/C VT 22uF 50V 105'C F-T (5*11mm)	1	
29		CE40	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
30		CE41	0103-1221-1211	E/C VZ 220uF 16V 105'C F-T (6.3*11mm)	1	
31		CE42	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	
32		CE43	0103-1221-1211	E/C VZ 220uF 16V 105'C F-T (6.3*11mm)	1	
33		CE45	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
34		CE46	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	
35		CE47	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
36		CE49	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
37		CE5	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
38		CE51	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
39		CE52	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
40		CE53	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
41		CE54	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
42		CE55	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
43		CE56	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
44		CE6	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
45		CE62	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
46		CE64	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
47		CE66	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
48		CE7	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
49		CE72	0103-1101-1211	E/C VZ 100uF 16V 105'C F-T (5*11mm)	1	
50		CE75	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
51		CE79	0103-1331-1211	E/C VT 330uF 16V 105'C F-T (8*11.5mm)	1	
52		CE8	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
53		CE88	0103-1220-1511	E/C VT 22uF 50V 105'C F-T (5*11mm)	1	
54		CE89	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
55		CE90	0103-1220-1511	E/C VT 22uF 50V 105'C F-T (5*11mm)	1	
56		CE91	0103-1221-1311	E/C VT 220uF 25V 105'C F-T (8*11.5mm)	1	
57		C159	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
58		C161	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
59		C33	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
60		C34	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	
61		C38	0103-1100-1511	E/C VT 10uF 50V 105'C F-T (5*11mm)	1	

363201420150M MAIN BD ASS'Y VW32L HDTV10A MI

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1		CE12	0103-6471-1312	E/C HF 470uF 25V 105'C (10*16mm)	1	
2		CE15	0103-6471-1312	E/C HF 470uF 25V 105'C (10*16mm)	1	
3		CE87	0103-6102-1212	E/C HF 1000uF 16V 105'C F (10*20)	1	
4		J1	0451-2000-1366	WAFER 2.0mm 13P 90' DIP KINK (M242613R) L-F	1	
5	SS		0451-2003-1363	WAFER 2.00mm 13P 90' KINK (A2001WR2-13P)		
6		J2	0451-1250-1066	WAFER 1.25mm 10P 90' DIP KINK (M240110R) L-F	1	
7	SS		0451-1250-1063	WAFER 1.25mm 10P 90' KINK (A1251WR0-10P)		
8		J6	0451-2500-0446	WAFER 2.5mm 4P 90' DIP KINK (M241854R) L-F	1	
9	SS		0451-2500-0443	WAFER 2.50mm 4P 90' KINK (A2501WR2-4P) L-F		
10		L11	0361-2022-0030	COIL CHOKE 22UH 2.9A 11*12 DIP	1	
11		L68	0370-0000-1011	FERRITE CORE RH 3.5X6X1.0(W)X2 L-F	1	
12		L8	0361-2022-0030	COIL CHOKE 22UH 2.9A 11*12 DIP	1	
13		P1	0302-9060-0020	RCA JACK 2ROW 6I/O (G-B-R)	1	
14		P11	0302-9030-0114	RCA JACK 1ROW 3I/O (Y-W-R) L-F	1	
15		P2	0302-9040-0011	RCA JACK 2ROW 4I/O 90' (W-R) (MKC21-4313N)	1	
16		P3	0300-1205-3151	D-SUB FEMALE 90' 15P 3ROW	1	
17		P4	0302-0350-0012	PHONE JACK 3.5 φ 5P 90' +SHIELD L-F	1	
18		P5	0202-6000-0003	RJ11 6P6C Gray UNDER CONTACT L-F	1	
19		P8	0302-9020-0114	RCA JACK 2ROW 2I/O (W-R) L-F	1	
20		U12	0980-0103-3060	MODULE TUNER DTVS205CH201A L-F	1	
21		U3	0430-6011-3210	IC MC7805CTG 3PIN TO-220 LF	1	
22	SS		0430-6011-3204	IC LM7805CT TO-220 3PIN LF		
23	SS		0430-6011-3242	IC REGULATOR AZ7805T-E1 TO-220 3PIN LF		
24		U31	0430-4013-3109	IC TDA8946AJ 17PIN DIP LF	1	
25		Y1	0280-2500-0012	X'TAL 25MHZ 49/US 30PPM 20PF LF	1	

363201420150S MAIN BD ASS'Y VW32L HDTV10A SMD

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			363201420150B	MAIN BD ASS'Y VW32L HDTV10A SMD BOT	1	
2			363201420150T	MAIN BD ASS'Y VW32L HDTV10A SMD TOP	1	

364200220189M IR BD ASS'Y GV42L HDTV MI

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1		JR1	0451-2000-0466	WAFER 2.0mm 4P 90' DIP KINK (M24264R) L-F	1	
2	SS		0451-2003-0463	WAFER 2.00mm 4P 90' KINK (A2001WR2-4P) L-F		
3		UR1	0980-0200-2130	MODULE. IR RECEIVER (FM-6038LM-5AN)	1	
4		UR1S	1701-1500-0360	IR HOLDER (TM-15A)	1	

364200220189S IR BD ASS'Y GV42L HDTV SMD

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			0171-1671-0501	PCB IR BD FR4 66.5*12*1.6t D (GV42L	1	
2		CR2	0111-3106-1614	C/M Multi. 10uF 16V X7R K 1206	1	
3	SS		0111-3106-1114	C/M MULTI 10uF 10V X7R K 1206		
4	SS		0112-3106-1614	C/M MULTI 10uF 16V X7R 1206		
5	SS		0115-7106-1614	C/M MULTI 10uF 16V X7R 1206		
6		CR3	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
7	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
8		LR1	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
9		RR1	0130-4709-1654	RES. CF 47ohm 1/16W J 0402	1	
10		RR2	0130-4709-1654	RES. CF 47ohm 1/16W J 0402	1	
11		ZDR1	0400-0881-5012	ZENER 8.85~9.23V UDZSTE-179.1B 1/5W	1	

363201420150B MAIN BD ASS'Y VW32L HDTV10A SMD BOT

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1		CB102	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
2	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
3		CB103	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
4	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
5		CB104	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
6	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
7		CB105	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
8	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
9		CB106	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
10	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
11		CB107	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
12	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
13		CB108	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
14	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
15		CB112	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
16	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
17		CB114	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
18	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
19		CB115	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
20	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
21		CB116	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
22	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
23		CB117	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
24	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
25		CB118	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
26	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
27		CB12	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
28	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
29		CB126	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
30	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
31		CB13	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
32	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
33		CB130	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
34	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
35		CB136	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
36	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
37		CB137	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
38	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
39		CB138	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
40	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
41		CB139	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
42	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
43		CB140	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
44	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
45		CB141	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
46	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
47		CB142	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
48	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
49		CB149	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
50	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
51		CB150	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
52	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
53		CB151	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
54	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
55		CB152	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
56	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
57		CB153	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
58	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
59		CB154	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
60	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
61		CB156	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
62	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
63		CB157	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
64	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
65		CB158	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
66	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
67		CB159	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
68	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
69		CB160	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
70	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
71		CB161	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
72	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
73		CB162	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
74	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
75		CB163	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
76	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
77		CB164	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
78	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
79		CB165	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
80	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
81		CB175	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
82	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
83		CB215	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
84	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
85		CB216	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
86	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
87		CB217	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
88	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
89		CB218	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
90	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
91		CB219	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
92	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
93		CB220	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
94	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
95		CB221	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
96	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
97		CB222	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
98	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
99		CB223	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
100	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
101		CB233	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
102	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
103		CB235	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
104	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
105		CB240	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
106	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
107		CB241	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
108	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
109		CB242	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
110	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
111		CB243	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
112	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
113		CB244	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
114	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
115		CB249	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
116	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
117		CB250	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
118	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
119		CB39	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
120	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
121		CB40	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
122	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
123		CB46	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
124	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
125		CB47	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
126	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
127		CB48	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
128	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
129		CB49	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
130	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
131		CB50	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
132	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
133		CB51	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
134	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
135		CB52	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
136	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
137		CB53	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
138	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
139		CB54	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
140	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
141		CB57	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
142	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
143		CB58	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
144	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
145		CB59	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
146	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
147		CB60	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
148	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
149		CB61	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
150	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
151		CB62	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
152	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
153		CB63	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
154	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
155		CB64	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
156	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
157		CB65	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
158	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
159		CB66	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
160	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
161		CB67	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
162	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
163		CB68	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
164	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
165		CB70	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
166	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
167		CB71	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
168	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
169		CB72	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
170	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
171		CB73	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
172	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
173		CB75	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
174	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
175		CB77	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
176	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
177		CB78	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
178	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
179		CB79	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
180	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
181		CB82	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
182	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
183		CB83	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
184	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
185		CB84	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
186	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
187		CB85	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
188	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
189		CB86	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
190	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
191		CB87	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
192	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
193		CB90	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
194	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
195		CB93	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
196	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
197		CB94	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
198	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
199		CB95	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
200	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
201		CB97	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
202	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
203		CB98	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
204	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
205		C132	0111-3106-1114	C/M MULTI 10uF 10V X7R K 1206	1	
206	SS		0112-3106-1114	C/M Multi. 10UF 10V X7R 1206		
207		C2	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
208	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
209		C20	0111-3104-5166	C/M MULTI 0.1UF 50V X7R J 0603	1	
210	SS		0112-3104-5166	C/M Muitl. 0.1uF 50V X7R J 0603		
211		C23	0111-3104-5166	C/M MULTI 0.1UF 50V X7R J 0603	1	
212	SS		0112-3104-5166	C/M Muitl. 0.1uF 50V X7R J 0603		
213		C26	0111-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805	1	
214	SS		0112-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805		
215		C27	0111-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805	1	
216	SS		0112-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805		
217		C28	0111-3106-1114	C/M MULTI 10uF 10V X7R K 1206	1	
218	SS		0112-3106-1114	C/M Multi. 10UF 10V X7R 1206		
219		C31	0111-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805	1	
220	SS		0112-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805		
221		D10	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
222	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
223	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
224		L13	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
225		L30	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
226		L33	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
227		L38	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
228		L42	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
229		L43	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
230		L49	0370-0000-6452	CHIP BEAD CORE 80ohm	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
231		R100	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
232		R101	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
233		R102	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
234		R149	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
235		R277	0130-2202-1654	RES. CF 22Kohm 1/16W J 0402	1	
236		R278	0130-2202-1654	RES. CF 22Kohm 1/16W J 0402	1	
237		R287	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
238		R327	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
239		R390	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
240		R391	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
241		R407	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
242		R591	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	

363201420150T MAIN BD ASS'Y VW32L HDTV10A SMD TOP

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
1			0171-2272-2292	PCB MAIN BD FR4 340*140 1.6t 4M (VX408)(1:1)	1	
2		CB1	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
3	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
4		CB110	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
5	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
6		CB120	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
7	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
8		CB124	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
9	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
10		CB125	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
11	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
12		CB127	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
13	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
14		CB128	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
15	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
16		CB129	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
17	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
18		CB131	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
19	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
20		CB132	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
21	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
22		CB133	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
23	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
24		CB134	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
25	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
26		CB135	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
27	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
28		CB143	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
29	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
30		CB15	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
31	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
32		CB155	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
33	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
34		CB16	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
35	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
36		CB17	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
37	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
38		CB171	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
39	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
40		CB172	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
41	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
42		CB173	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
43	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
44		CB174	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
45	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
46		CB176	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
47	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
48		CB177	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
49	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
50		CB178	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
51	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
52		CB179	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
53	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
54		CB18	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
55	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
56		CB180	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
57	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
58		CB181	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
59	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
60		CB183	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
61	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
62		CB184	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
63	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
64		CB185	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
65	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
66		CB187	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
67	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
68		CB188	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
69	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
70		CB189	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
71	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
72		CB19	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
73	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
74		CB190	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
75	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
76		CB191	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
77	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
78		CB192	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
79	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
80		CB196	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
81	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
82		CB198	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
83	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
84		CB199	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
85	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
86		CB2	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
87	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
88		CB20	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
89	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
90		CB200	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
91	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
92		CB202	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
93	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
94		CB203	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
95	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
96		CB204	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
97	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
98		CB205	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
99	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
100		CB206	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
101	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
102		CB207	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
103	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
104		CB208	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
105	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
106		CB209	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
107	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
108		CB21	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
109	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
110		CB210	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
111	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
112		CB211	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
113	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
114		CB224	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
115	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
116		CB225	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
117	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
118		CB226	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
119	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
120		CB227	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
121	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
122		CB228	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
123	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
124		CB229	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
125	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
126		CB230	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
127	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
128		CB231	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
129	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
130		CB236	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
131	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
132		CB237	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
133	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
134		CB238	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
135	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
136		CB239	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
137	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
138		CB24	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
139	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
140		CB247	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
141	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
142		CB248	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
143	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
144		CB25	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
145	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
146		CB251	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
147	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
148		CB26	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
149	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
150		CB27	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
151	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
152		CB28	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
153	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
154		CB29	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
155	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
156		CB3	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
157	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
158		CB30	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
159	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
160		CB31	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
161	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
162		CB32	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
163	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
164		CB33	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
165	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
166		CB34	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
167	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
168		CB35	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
169	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
170		CB36	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
171	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
172		CB37	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
173	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
174		CB38	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
175	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
176		CB4	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
177	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
178		CB41	0111-3104-5166	C/M MULTI 0.1UF 50V X7R J 0603	1	
179	SS		0112-3104-5166	C/M Muitl. 0.1uF 50V X7R J 0603		
180		CB42	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
181	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
182		CB43	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
183	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
184		CB44	0111-3104-5166	C/M MULTI 0.1UF 50V X7R J 0603	1	
185	SS		0112-3104-5166	C/M Muitl. 0.1uF 50V X7R J 0603		
186		CB45	0111-3104-5166	C/M MULTI 0.1UF 50V X7R J 0603	1	
187	SS		0112-3104-5166	C/M Muitl. 0.1uF 50V X7R J 0603		
188		CB5	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
189	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
190		CB55	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
191	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
192		CB56	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
193	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
194		CB69	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
195	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
196		CB74	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
197	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
198		CB76	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
199	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
200		CB80	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
201	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
202		CB81	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
203	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
204		CB88	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
205	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
206		CB89	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
207	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
208		CB96	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
209	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
210		CB99	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
211	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
212		C1	0111-3105-1615	C/M MULTI. 1.0uF 16V X7R 0805	1	
213	SS		0112-3105-1615	C/M MULTI 1.0uF 16V X7R 0805		
214		C10	0111-3470-5107	C/M Multi. 47pF 50V NPO 0402	1	
215	SS		0112-3470-5107	C/M Multi. 47PF 50V NPO J 0402		
216		C100	0111-3220-5107	C/M Multi. 22PF 50V NPO J 0402	1	
217	SS		0112-3220-5107	C/M Multi. 22PF 50V NPO J 0402		
218		C101	0111-3220-5107	C/M Multi. 22PF 50V NPO J 0402	1	
219	SS		0112-3220-5107	C/M Multi. 22PF 50V NPO J 0402		
220		C104	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
221	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
222		C105	0111-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805	1	
223	SS		0112-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805		
224		C106	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
225	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
226		C107	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
227	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
228		C108	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
229	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
230		C118	0111-3474-1636	C/M Multi. 0.47uF 16V Y5V 0603	1	

231	SS		0112-3474-1636	C/M Multi. 0.47uF 16V Y5V 0603 L-F	
232		C119	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1
233	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402	
234		C121	0111-3224-2516	C/M Multi. 0.22uF 25V X7R 0603	1
235	SS		0112-3224-2516	C/M Multi. 0.22uF 25V X7R 0603	
236		C122	0111-3474-1636	C/M Multi. 0.47uF 16V Y5V 0603	1
237	SS		0112-3474-1636	C/M Multi. 0.47uF 16V Y5V 0603 L-F	
238		C123	0111-3474-1636	C/M Multi. 0.47uF 16V Y5V 0603	1
239	SS		0112-3474-1636	C/M Multi. 0.47uF 16V Y5V 0603 L-F	
240		C124	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1
241	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402	
242		C126	0111-3474-1636	C/M Multi. 0.47uF 16V Y5V 0603	1
243	SS		0112-3474-1636	C/M Multi. 0.47uF 16V Y5V 0603 L-F	
244		C127	0111-3224-2516	C/M Multi. 0.22uF 25V X7R 0603	1
245	SS		0112-3224-2516	C/M Multi. 0.22uF 25V X7R 0603	
246		C128	0111-3224-2516	C/M Multi. 0.22uF 25V X7R 0603	1
247	SS		0112-3224-2516	C/M Multi. 0.22uF 25V X7R 0603	
248		C129	0111-3224-2516	C/M Multi. 0.22uF 25V X7R 0603	1
249	SS		0112-3224-2516	C/M Multi. 0.22uF 25V X7R 0603	
250		C13	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1
251	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	
252		C130	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1
253	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	
254		C131	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1
255	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	
256		C14	0111-3569-5107	C/M Multi. 5.6pF 50V NPO 0402	1
257	SS		0112-3569-5107	C/M Multi. 5.6pF 50V NPO 0402	
258		C15	0111-3150-5107	C/M Multi. 15PF 50V NPO 0402	1
259	SS		0112-3150-5107	C/M Multi. 15PF 50V NPO 0402	
260		C157	0111-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805	1
261	SS		0112-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805	
262		C158	0111-3106-1114	C/M MULTI 10uF 10V X7R K 1206	1
263	SS		0112-3106-1114	C/M Multi. 10UF 10V X7R 1206	
264		C16	0111-3473-2517	C/M Multi. 0.047uF 25V X7R 0402	1
265	SS		0112-3473-2517	C/M Multi. 0.047uF 25V X7R 0402	
266		C17	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1
267	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	
268		C19	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1
269	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	
270		C207	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1
271	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	
272		C21	0111-3104-5166	C/M MULTI 0.1UF 50V X7R J 0603	1
273	SS		0112-3104-5166	C/M Muitl. 0.1uF 50V X7R J 0603	
274		C22	0111-3106-1114	C/M MULTI 10uF 10V X7R K 1206	1
275	SS		0112-3106-1114	C/M Multi. 10UF 10V X7R 1206	
276		C24	0111-3180-5107	C/M Multi. 18PF 50V NPO 0402	1
277	SS		0112-3180-5107	C/M Multi. 18PF 50V NPO 0402	
278		C25	0111-3180-5107	C/M Multi. 18PF 50V NPO 0402	1

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
279	SS		0112-3180-5107	C/M Multi. 18PF 50V NPO 0402		
280		C29	0111-3106-1114	C/M MULTI 10uF 10V X7R K 1206	1	
281	SS		0112-3106-1114	C/M Multi. 10UF 10V X7R 1206		
282		C30	0111-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805	1	
283	SS		0112-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805		
284		C32	0111-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805	1	
285	SS		0112-3475-1135	C/M MULTI 4.7uF 10V Y5V 0805		
286		C37	0111-3104-1617	C/M Multi. 0.1uF 16V X7R 0402	1	
287	SS		0112-3104-1617	C/M Multi. 0.1uF 16V X7R 0402		
288		C40	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
289	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
290		C41	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
291	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
292		C42	0111-3470-5107	C/M Multi. 47pF 50V NPO 0402	1	
293	SS		0112-3470-5107	C/M Multi. 47PF 50V NPO J 0402		
294		C44	0111-3220-5107	C/M Multi. 22PF 50V NPO J 0402	1	
295	SS		0112-3220-5107	C/M Multi. 22PF 50V NPO J 0402		
296		C46	0111-3220-5107	C/M Multi. 22PF 50V NPO J 0402	1	
297	SS		0112-3220-5107	C/M Multi. 22PF 50V NPO J 0402		
298		C47	0111-3220-5107	C/M Multi. 22PF 50V NPO J 0402	1	
299	SS		0112-3220-5107	C/M Multi. 22PF 50V NPO J 0402		
300		C48	0111-3473-2517	C/M Multi. 0.047uF 25V X7R 0402	1	
301	SS		0112-3473-2517	C/M Multi. 0.047uF 25V X7R 0402		
302		C49	0111-3470-5107	C/M Multi. 47pF 50V NPO 0402	1	
303	SS		0112-3470-5107	C/M Multi. 47PF 50V NPO J 0402		
304		C50	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
305	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
306		C51	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
307	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
308		C6	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
309	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
310		C64	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
311	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
312		C65	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
313	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
314		C66	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
315	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
316		C67	0111-3150-5107	C/M Multi. 15PF 50V NPO 0402	1	
317	SS		0112-3150-5107	C/M Multi. 15PF 50V NPO 0402		
318		C68	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
319	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
320		C69	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
321	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
322		C70	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
323	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
324		C71	0111-3150-5107	C/M Multi. 15PF 50V NPO 0402	1	
325	SS		0112-3150-5107	C/M Multi. 15PF 50V NPO 0402		

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
326		C72	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
327	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
328		C73	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
329	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
330		C74	0111-3150-5107	C/M Multi. 15PF 50V NPO 0402	1	
331	SS		0112-3150-5107	C/M Multi. 15PF 50V NPO 0402		
332		C75	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
333	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
334		C76	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
335	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
336		C77	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
337	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
338		C78	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
339	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
340		C79	0111-3150-5107	C/M Multi. 15PF 50V NPO 0402	1	
341	SS		0112-3150-5107	C/M Multi. 15PF 50V NPO 0402		
342		C80	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
343	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
344		C81	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
345	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
346		C82	0111-3150-5107	C/M Multi. 15PF 50V NPO 0402	1	
347	SS		0112-3150-5107	C/M Multi. 15PF 50V NPO 0402		
348		C83	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
349	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
350		C84	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
351	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
352		C85	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
353	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
354		C86	0111-3150-5107	C/M Multi. 15PF 50V NPO 0402	1	
355	SS		0112-3150-5107	C/M Multi. 15PF 50V NPO 0402		
356		C87	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
357	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
358		C88	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
359	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
360		C89	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
361	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
362		C9	0111-3473-2517	C/M Multi. 0.047uF 25V X7R 0402	1	
363	SS		0112-3473-2517	C/M Multi. 0.047uF 25V X7R 0402		
364		C90	0111-3509-5107	C/M Multi. 5PF 50V NPO 0402	1	
365	SS		0112-3509-5107	C/M Multi. 5PF 50V COG 0402 L-F		
366		C91	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
367	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
368		C92	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
369	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
370		C93	0111-3509-5107	C/M Multi. 5PF 50V NPO 0402	1	
371	SS		0112-3509-5107	C/M Multi. 5PF 50V COG 0402 L-F		
372		C94	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
373	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
374		C95	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
375	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
376		C96	0111-3509-5107	C/M Multi. 5PF 50V NPO 0402	1	
377	SS		0112-3509-5107	C/M Multi. 5PF 50V COG 0402 L-F		
378		C97	0111-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402	1	
379	SS		0112-3103-1617	C/M Multi. 0.01uF 16V X7R K 0402		
380		C98	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
381	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
382		C99	0111-3102-5117	C/M MULTI 1000PF 50V X7R 0402	1	
383	SS		0112-3102-5117	C/M Multi. 1000PF 50V X7R 0402		
384		D13	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
385	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
386	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
387		D14	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
388	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
389	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
390		D30	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
391	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
392	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
393		D32	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
394	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
395	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
396		D4	0390-6005-5293	SCHOTTKY DIODE 3A 40V B340A-13-F SMA L-F	1	
397		D42	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
398	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
399	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
400		D45	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
401	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
402	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
403		D5	0390-6005-2103	SCHOTTKY DIODE 0.5A/40V MBR0540T1G	1	
404		D50	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
405	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
406	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
407		D51	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
408	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
409	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
410		D52	0390-6005-5293	SCHOTTKY DIODE 3A 40V B340A-13-F SMA L-F	1	
411		D53	0390-6005-5293	SCHOTTKY DIODE 3A 40V B340A-13-F SMA L-F	1	
412		D54	0390-6005-5293	SCHOTTKY DIODE 3A 40V B340A-13-F SMA L-F	1	
413		D9	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
414	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
415	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
416		D94	0390-5004-2343	GEN. DIODE LL4148WP SMD 1206 L-F	1	
417	SS		0390-3006-7353	DIODE FAST 0.3A 100V LL4148 LL-34 LF		
418	SS		0390-5004-2223	GEN. DIODE RLS4148NTE-11 SMD L-F		
419		F1	0185-1302-0073	FUSE 125V/3A SMD (R451003) LF	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
420		F2	0185-1302-0073	FUSE 125V/3A SMD (R451003) LF	1	
421		J7	0302-2000-2306	CONN MALE R/A 30P SMD (MS240430G) L-F	1	
422		L12	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
423		L14	0130-0000-1858	RES. CF 0.0ohm 1/8W J 0805	1	
424		L16	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
425		L2	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
426		L21	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
427		L22	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
428		L26	0360-1000-0420	POWER INDUCTOR L:10uH 1.44A 5.8x5.2mm	1	
429		L28	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
430		L29	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
431		L31	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
432		L32	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
433		L34	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
434		L35	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
435		L36	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
436		L37	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
437		L39	0360-1000-0430	POWER INDUCTOR L:150uH 400mA 5.8x5.2mm	1	
438		L4	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
439		L40	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
440		L41	0360-1000-0430	POWER INDUCTOR L:150uH 400mA 5.8x5.2mm	1	
441		L44	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
442		L5	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
443		L50	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
444		L51	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
445		L52	0370-2022-9620	CHIP COIL 2.2uH 15mA 0603 LF	1	
446		L53	0370-2022-9620	CHIP COIL 2.2uH 15mA 0603 LF	1	
447		L54	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
448		L56	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
449		L58	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
450		L60	0370-0000-6452	CHIP BEAD CORE 80ohm	1	
451		L64	0370-0001-4282	CHIP BEAD 80ohm 6A 0805 (GB201212K800TM)	1	
452		L7	0370-0001-4282	CHIP BEAD 80ohm 6A 0805 (GB201212K800TM)	1	
453		L74	0130-0000-1858	RES. CF 0.0ohm 1/8W J 0805	1	
454		L9	0370-0001-4282	CHIP BEAD 80ohm 6A 0805 (GB201212K800TM)	1	
455		P6	0304-1000-0113	CONN HDMI 19P 90' SMD With Flange	1	
456		P7	0304-1000-0113	CONN HDMI 19P 90' SMD With Flange	1	
457		Q1	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
458	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
459		Q10	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
460	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
461		Q12	0410-5000-5710	TRANSISTOR MMBT3906LT1G SOT-23 L-F	1	
462	SS		0410-5000-5711	TRANSISTOR PMBS3906 SMD LF		
463		Q14	0410-5000-5710	TRANSISTOR MMBT3906LT1G SOT-23 L-F	1	
464	SS		0410-5000-5711	TRANSISTOR PMBS3906 SMD LF		
465		Q16	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
466	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
467		Q17	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
468	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
469		Q18	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
470	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
471		Q19	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
472	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
473		Q2	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
474	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
475		Q21	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
476	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
477		Q22	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
478	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
479		Q23	0410-5000-5710	TRANSISTOR MMBT3906LT1G SOT-23 L-F	1	
480	SS		0410-5000-5711	TRANSISTOR PMBS3906 SMD LF		
481		Q24	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
482	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
483		Q25	0410-5000-5710	TRANSISTOR MMBT3906LT1G SOT-23 L-F	1	
484	SS		0410-5000-5711	TRANSISTOR PMBS3906 SMD LF		
485		Q26	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
486	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
487		Q3	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
488	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
489		Q4	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
490	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
491		Q5	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
492	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
493		Q8	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
494	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
495		Q9	0410-5000-5610	TRANSISTOR MMBT3904LT1G SOT-23 L-F	1	
496	SS		0410-5000-5611	TRANSISTOR PMBS3904 SMD T LF		
497		RN10	0141-2209-3851	ARRAY RES. A(X) 22ohm 4R J 8P	1	
498		RN11	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
499		RN12	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
500		RN13	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
501		RN14	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
502		RN15	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
503		RN16	0141-4709-3851	ARRAY RES. A(X) 47ohm 4R J 8P	1	
504		RN17	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
505		RN18	0141-4709-3851	ARRAY RES. A(X) 47ohm 4R J 8P	1	
506		RN19	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
507		RN20	0141-4709-3851	ARRAY RES. A(X) 47ohm 4R J 8P	1	
508		RN21	0141-4709-3851	ARRAY RES. A(X) 47ohm 4R J 8P	1	
509		RN22	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
510		RN23	0141-7509-3851	ARRAY RES. A(X) 75ohm 4R J 8P	1	
511		RN6	0141-2209-3851	ARRAY RES. A(X) 22ohm 4R J 8P	1	
512		RN7	0141-2209-3851	ARRAY RES. A(X) 22ohm 4R J 8P	1	
513		RN8	0141-2209-3851	ARRAY RES. A(X) 22ohm 4R J 8P	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
514		RN9	0141-2209-3851	ARRAY RES. A(X) 22ohm 4R J 8P	1	
515		RP23	0141-3309-3851	ARRAY RES. A(X) 33ohm 4R J 8P	1	
516		RP24	0141-3309-3851	ARRAY RES. A(X) 33ohm 4R J 8P	1	
517		RP3	0141-3309-3851	ARRAY RES. A(X) 33ohm 4R J 8P	1	
518		RP4	0141-3309-3851	ARRAY RES. A(X) 33ohm 4R J 8P	1	
519		RP5	0141-3309-3851	ARRAY RES. A(X) 33ohm 4R J 8P	1	
520		R1	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
521		R10	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
522		R103	0130-5109-1654	RES. CF 51ohm 1/16W J 0402	1	
523		R104	0130-3309-1654	RES. CF 33ohm 1/16W J 0402	1	
524		R106	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
525		R109	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
526		R11	0130-3302-1654	RES. CF 33Kohm 1/16W J 0402	1	
527		R110	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
528		R112	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
529		R113	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
530		R114	0130-4709-1654	RES. CF 47ohm 1/16W J 0402	1	
531		R115	0130-4709-1654	RES. CF 47ohm 1/16W J 0402	1	
532		R116	0130-4709-1654	RES. CF 47ohm 1/16W J 0402	1	
533		R117	0130-4709-1654	RES. CF 47ohm 1/16W J 0402	1	
534		R12	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
535		R123	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
536		R124	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
537		R125	0130-2209-1654	RES. CF 22ohm 1/16W J 0402	1	
538		R127	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
539		R128	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
540		R129	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
541		R13	0130-1800-1654	RES. CF 180ohm 1/16W J 0402	1	
542		R130	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
543		R133	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
544		R134	0130-2209-1654	RES. CF 22ohm 1/16W J 0402	1	
545		R135	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
546		R136	0130-2209-1654	RES. CF 22ohm 1/16W J 0402	1	
547		R14	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
548		R140	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
549		R141	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
550		R142	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
551		R143	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
552		R144	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
553		R145	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
554		R15	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
555		R16	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
556		R164	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
557		R165	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
558		R166	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
559		R167	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
560		R168	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
561		R169	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
562		R17	0130-4703-1654	RES. CF 470Kohm 1/16W J 0402	1	
563		R170	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
564		R171	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
565		R172	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
566		R173	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
567		R174	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
568		R175	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
569		R176	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
570		R177	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
571		R178	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
572		R179	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
573		R180	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
574		R181	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
575		R182	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
576		R183	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
577		R184	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
578		R185	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
579		R186	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
580		R187	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
581		R188	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
582		R189	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
583		R190	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
584		R191	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
585		R192	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
586		R193	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
587		R194	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
588		R195	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
589		R196	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
590		R197	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
591		R198	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
592		R199	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
593		R2	0130-5600-1654	RES. CF 560ohm 1/16W J 0402	1	
594		R20	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
595		R200	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
596		R201	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
597		R202	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
598		R203	0370-0001-4773	CHIP BEAD CORE 80ohm (MCB1608H800GA) LF	1	
599		R204	0130-6809-1654	RES. CF 68 ohm 1/16W J 0402	1	
600		R205	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	
601		R206	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
602		R207	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
603		R208	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
604		R209	0131-5110-1614	RES. MF 511 ohm 1/16W F 0402	1	
605		R21	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
606		R210	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
607		R211	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
608		R212	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
609		R213	0131-5110-1614	RES. MF 511 ohm 1/16W F 0402	1	
610		R214	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
611		R215	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
612		R216	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
613		R217	0130-2002-1654	RES. CF 20Kohm 1/16W J 0402	1	
614		R218	0130-3309-1654	RES. CF 33ohm 1/16W J 0402	1	
615		R220	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
616		R221	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
617		R222	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
618		R223	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
619		R224	0130-3300-1654	RES. CF 330ohm 1/16W J 0402	1	
620		R225	0130-3300-1654	RES. CF 330ohm 1/16W J 0402	1	
621		R23	0130-5600-1654	RES. CF 560ohm 1/16W J 0402	1	
622		R235	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
623		R236	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
624		R237	0130-2002-1654	RES. CF 20Kohm 1/16W J 0402	1	
625		R238	0130-3309-1654	RES. CF 33ohm 1/16W J 0402	1	
626		R239	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
627		R24	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
628		R241	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
629		R242	0130-1501-1654	RES. CF 1.5Kohm 1/16W J 0402	1	
630		R243	0130-1801-1654	RES. CF 1.8Kohm 1/16W J 0402	1	
631		R245	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
632		R246	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
633		R247	0130-2002-1654	RES. CF 20Kohm 1/16W J 0402	1	
634		R248	0130-3309-1654	RES. CF 33ohm 1/16W J 0402	1	
635		R249	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
636		R25	0130-1801-1654	RES. CF 1.8Kohm 1/16W J 0402	1	
637		R251	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
638		R254	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
639		R255	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
640		R257	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
641		R259	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
642		R26	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
643		R260	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
644		R261	0130-2002-1654	RES. CF 20Kohm 1/16W J 0402	1	
645		R262	0130-2002-1654	RES. CF 20Kohm 1/16W J 0402	1	
646		R263	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
647		R264	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
648		R265	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
649		R266	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
650		R269	0130-3309-1654	RES. CF 33ohm 1/16W J 0402	1	
651		R27	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
652		R270	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
653		R271	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
654		R272	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
655		R279	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
656		R28	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
657		R280	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
658		R281	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
659		R282	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
660		R283	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
661		R284	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
662		R289	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
663		R290	0131-3402-1614	RES. MF 34Kohm 1/16W F 0402 L-F	1	
664		R293	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
665		R294	0130-6802-1654	RES. CF 68Kohm 1/16W J 0402	1	
666		R295	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
667		R296	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
668		R298	0130-2702-1654	RES. CF 27Kohm 1/16W J 0402	1	
669		R3	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
670		R30	0130-1800-1654	RES. CF 180ohm 1/16W J 0402	1	
671		R304	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
672		R309	0130-3001-1654	RES. CF 3 Kohm 1/16W J 0402	1	
673		R31	0130-1100-1654	RES. CF 110ohm 1/16W J 0402	1	
674		R310	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
675		R315	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
676		R32	0130-1100-1654	RES. CF 110ohm 1/16W J 0402	1	
677		R321	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
678		R33	0130-1800-1654	RES. CF 180ohm 1/16W J 0402	1	
679		R331	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
680		R333	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
681		R334	0130-3908-1858	RES. CF 3.9ohm 1/8W J 0805	1	
682		R335	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
683		R336	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
684		R337	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
685		R338	0130-3908-1858	RES. CF 3.9ohm 1/8W J 0805	1	
686		R340	0130-3908-1858	RES. CF 3.9ohm 1/8W J 0805	1	
687		R341	0130-3908-1858	RES. CF 3.9ohm 1/8W J 0805	1	
688		R342	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
689		R343	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
690		R345	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
691		R35	0130-1201-1654	RES. CF 1.2Kohm 1/16W J 0402	1	
692		R350	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
693		R352	0130-0000-1858	RES. CF 0.0ohm 1/8W J 0805	1	
694		R354	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
695		R357	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
696		R358	0130-4703-1654	RES. CF 470Kohm 1/16W J 0402	1	
697		R359	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
698		R360	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
699		R361	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
700		R362	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
701		R364	0130-7509-1654	RES. CF 75ohm 1/16W J 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
702		R37	0130-2001-1654	RES CF 2Kohm 1/16W J 0402	1	
703		R371	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
704		R372	0130-4700-1654	RES. CF 470ohm 1/16W J 0402	1	
705		R373	0130-2002-1654	RES. CF 20Kohm 1/16W J 0402	1	
706		R375	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
707		R38	0130-3001-1654	RES. CF 3 Kohm 1/16W J 0402	1	
708		R384	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
709		R385	0130-4703-1654	RES. CF 470Kohm 1/16W J 0402	1	
710		R386	0130-4703-1654	RES. CF 470Kohm 1/16W J 0402	1	
711		R387	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
712		R39	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
713		R4	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
714		R40	0130-1100-1654	RES. CF 110ohm 1/16W J 0402	1	
715		R406	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
716		R41	0130-1003-1654	RES. CF 100Kohm 1/16W J 0402	1	
717		R413	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
718		R415	0130-1003-1654	RES. CF 100Kohm 1/16W J 0402	1	
719		R416	0130-1003-1654	RES. CF 100Kohm 1/16W J 0402	1	
720		R417	0130-2202-1654	RES. CF 22Kohm 1/16W J 0402	1	
721		R418	0130-2202-1654	RES. CF 22Kohm 1/16W J 0402	1	
722		R419	0130-2202-1654	RES. CF 22Kohm 1/16W J 0402	1	
723		R42	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
724		R420	0130-2202-1654	RES. CF 22Kohm 1/16W J 0402	1	
725		R43	0130-1200-1654	RES. CF 120ohm 1/16W J 0402	1	
726		R44	0130-1100-1654	RES. CF 110ohm 1/16W J 0402	1	
727		R45	0130-1800-1654	RES. CF 180ohm 1/16W J 0402	1	
728		R47	0130-1003-1654	RES. CF 100Kohm 1/16W J 0402	1	
729		R48	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
730		R49	0130-3001-1654	RES. CF 3 Kohm 1/16W J 0402	1	
731		R5	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
732		R50	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
733		R51	0131-2208-1614	RES. MF 2.2 ohm 1/16W F 0402	1	
734		R52	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
735		R53	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
736		R54	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
737		R55	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
738		R56	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
739		R57	0130-1003-1654	RES. CF 100Kohm 1/16W J 0402	1	
740		R58	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
741		R589	0130-4700-1654	RES. CF 470ohm 1/16W J 0402	1	
742		R59	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
743		R590	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
744		R60	0130-2203-1654	RES. CF 220Kohm 1/16W J 0402	1	
745		R62	0130-1000-1654	RES. CF 100ohm 1/16W J 0402	1	
746		R63	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
747		R64	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
748		R65	0130-1003-1654	RES. CF 100Kohm 1/16W J 0402	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
749		R66	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
750		R68	0131-6341-1614	RES. MF 6.34 Kohm 1/16W F 0402	1	
751		R69	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
752		R7	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
753		R70	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
754		R71	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
755		R72	0130-1004-1654	RES. CF 1Mohm 1/16W J 0402	1	
756		R73	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
757		R74	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
758		R75	0130-1001-1654	RES. CF 1Kohm 1/16W J 0402	1	
759		R78	0130-5600-1654	RES. CF 560ohm 1/16W J 0402	1	
760		R8	0130-4702-1654	RES. CF 47Kohm 1/16W J 0402	1	
761		R83	0130-4709-1654	RES. CF 47ohm 1/16W J 0402	1	
762		R85	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
763		R9	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
764		R91	0130-1002-1654	RES. CF 10Kohm 1/16W J 0402	1	
765		R96	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
766		R97	0130-4701-1654	RES. CF 4.7Kohm 1/16W J 0402	1	
767		R98	0130-8201-1654	RES. CF 8.2Kohm 1/16W J 0402	1	
768		R99	0130-0000-1654	RES. CF 0ohm 1/16W J 0402	1	
769		U1	0420-1005-4601	POWER MOS IRF7316TRPBF SMD 8PIN LF	1	
770	SS		0420-2004-9629	MOSFET P-CH 5A 30V AP4953GM SO-8 LF		
771		U10	0430-6006-1079	IC LDO AP1084KLA ADJ TO-263-3L LF	1	
772		U13	0430-7043-1999	IC DEMODULATOR MT5112BD LQFP 100PIN LF	1	
773		U14	0430-7045-7999	IC SCALER MT5371AG-L BGA 588PIN LF	1	
774		U15	0430-6015-6099	IC RESET STL8110GCL438 4.38V SOT-23 3PIN	1	
775		U16	0430-3039-4645	IC MX29LV320CTTC-70G 48PIN TSOP LF	1	
776	SS		0430-3039-4648	IC FLASH 32M EN29LV320T-70TCP TSOP 48PIN		
777		U17	0430-3004-3011	IC AT24C16AN-10SU-2.7 SO-8 L-F	1	
778		U18	0430-7031-9603	IC DDR 16Mx16 NT5DS16M16CS-5T 66PIN	1	
779		U2	0430-6009-1051	IC AMC1117SKF-ADJ SMD 3PIN SOT-223 LF	1	
780		U20	0430-6010-9028	IC G2996F1Uf 8PIN SOP-8(FD) LF	1	
781		U21	0430-3039-6011	IC AT24C02BN-10SU-1.8 8Pin SOIC L-F	1	
782		U22	0430-7045-4692	IC HDMI SW 2-1 PI3HDMI412FT-AZHE TQFN	1	
783		U23	0430-3039-6011	IC AT24C02BN-10SU-1.8 8Pin SOIC L-F	1	
784		U24	0430-7043-5092	IC SWITCH PI5C3257QE QSOP 16PIN LF	1	
785	SS		0430-3039-9046	IC ADG3257BRQZ-REEL7 16PIN QSOP LF		
786		U25	0430-3039-6011	IC AT24C02BN-10SU-1.8 8Pin SOIC L-F	1	
787		U28	0430-7045-0999	IC AUDIO CODEC MT8291E-L LQFP 48PIN LF	1	
788		U32	0420-1005-4601	POWER MOS IRF7316TRPBF SMD 8PIN LF	1	
789	SS		0420-2004-9629	MOSFET P-CH 5A 30V AP4953GM SO-8 LF		
790		U33	0430-6009-1051	IC AMC1117SKF-ADJ SMD 3PIN SOT-223 LF	1	
791		U34	0430-6015-8079	IC DC/DC CONVERTER AP1522WA SOT23-5 5PIN	1	
792		U5	0430-6015-5079	IC STEP DOWN CONVERTER AP1513SA SOP	1	
793		U6	0430-6015-5079	IC STEP DOWN CONVERTER AP1513SA SOP	1	
794		U7	0430-6009-1051	IC AMC1117SKF-ADJ SMD 3PIN SOT-223 LF	1	
795		U8	0430-6009-1051	IC AMC1117SKF-ADJ SMD 3PIN SOT-223 LF	1	

ITEM	M/S	LOCATION	PART NO.	DESCRPTION	QTY	REMARK
796		U9	0430-6005-7056	IC LDO 1A 1.5V KIA1117S15 SMD 3PIN SOT-223	1	
797		X1	0286-2700-0024	OSC 27MHz 25ppm 3.3V SMD VCXO	1	