zenith

SERVICE MANUAL

Product Type:	LCD TV
Chassis:	ML-012A
Manual Series:	CM154
Manual Part #:	923-03489
Model Line:	E
Product Year:	2002

Model Series:

L15V26

CONTENTS

Published June 2002
by Technical Publications
Zenith Electronics Corporation
201 James Record Road
Huntsville, Alabama 35824-1513

Printed in U.S.A.

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PRODUCT SAFETY

IMPORTANT SAFETY NOTICE

This manual was prepared for use only by properly trained audio-visual service technicians. When servicing this product, under no circumstances should the original design be modified or altered without permission from Zenith Electronics Corporation. All components should be replaced only with types identical to those in the original circuit and their physical location, wiring, and lead dress must conform to original layout upon completion of repairs. If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it only with the factory specified fuse type and rating. When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB. Always keep wires away from high voltage or high temperature parts.

Special components are also used to prevent shock and fire hazard. These components are indicated by the letter "x" included in their component designators and are required to maintain safe performance. No deviations are allowed without prior approval by Zenith Electronics Corporation. Service work should be performed only after you are thoroughly familiar with these safety checks and servicing guidelines.

Circuit diagrams may occasionally differ from the actual circuit used. This way, implementation of the latest safety and performance improvement changes into the set is not delayed until the new service literature is printed.

CAUTION: Do not attempt to modify this product in any way. Never perform customized installations without manufacturer's approval. Unauthorized modifications will not only void the warranty, but may lead to property damage or user injury.

GENERAL GUIDANCE

An lsolation Transformer should always be used during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating to protect against personal injury from electrical shocks. It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

Before returning the receiver to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

LEAKAGE CURRENT COLD CHECK (ANTENNA COLD CHECK)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc. If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ. When the exposed metal has no return path to the chassis the reading must be infinite. Any other abnormality that exists must be corrected before the receiver is returned to the customer.

ELECTROSTATICALLY SENSITIVE DEVICES

Some semiconductor (solid-state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on the body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as an ESD mat, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charge sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil, or comparable conductive material.)

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise, seemingly harmless motion, such as the brushing together of your clothing or the lifting of your foot from a carpeted floor, can generate static electricity sufficient to damage an ES device.)

REGULATORY INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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 the equipment and receiver; Connect the equipment into an outlet on a circuit different from that to which the receiver is connected; Consult the dealer or an experienced radio/TV technician for help.

The responsible party for this device's compliance is:

Zenith Electronics Corporation
201 James Record Road
Huntsville, AL 35824, USA
Digital TV Hotline: 1-800-243-0000

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GENERAL INFO

SERVICE/WARRANTY

This model is a Factory Service Repair model (in and out of warranty) and is covered by a one year limited warranty. For service, the end user should call 1-800-984-9349 for complete shipping and handling instructions (or call 1-877-9ZENITH). Refer to the last page of the opguide for more information.

FEATURES

15.1" HDTV/PC MONITOR

Truly Flat LCD screen delivers razor sharp images

BUILT IN NTSC TUNER

Accepts cable/antenna, HDTV, satellite dish, and NTSC video sources

PC TO TV AT THE TOUCH OF A BUTTON

Innovative technology provides unsurpassed versatility

1024 X 768 RESOLUTION

High resolution format produces extremely detailed imagery

350:1 HIGH CONTRAST RATIO

LCD technology emits sharp contrast between light and dark images

430 CD/M2 HIGH BRIGHTNESS

Renders an incredibly bright picture, even in light-drenched environments

140 X 120 DEGREES VIEWING ANGLE

Allows for distortion-free viewing from almost any angle

HI-RES COMPONENT, RGB, S-VIDEO, RF, AV INPUTS

Multiple inputs for DVD players, VCRs, computers, and video game systems

4H DIGITAL COMB FILTER

Accurately separates color data (chroma, or C) from black and white data (lumina, or Y) to produce improved color images and picture quality.

PICTURE IN PICTURE (PIP)

Watch two channels at once on the same TV. Imposes a full color “inset picture” in a corner of the main picture.

DIGITAL PROGRESSIVE SCAN

Lines of video data are processed faster and sequentially, a significant improvement on the old “interlacing” method. This allows the TV to display crisp, clear images when receiving data from a DVD player or other video sources requiring more bandwidth.

NTSC TUNER

Accepts standard United States broadcast video signals as designated by the National Television Standards Committee.

HI-RES COMPONENT VIDEO

Delivers the highest quality picture by breaking down video data into three separate signals—red, blue and luminance—before the data is sent to the television.

PARENTAL CONTROL W/V-CHIP

Programmable feature that uses the US standard content advisory system to exclude viewing of specific programs or program types.

SPECIFICATIONS

CABINET

W x H x D (Monitor)	15.3" x 15.2" x 6.9"
Weight	11.7 lbs.
Dimensions with Packaging	
W x H x D	19.0" x 19.5" x 10.1"
Weight	16.5
UPC Code	4464200392 0
Finish	Silver Gray

VIDEO

Screen Size	15.1"
Flat	Yes
Resolution Display	1024 x 768 (XGA)
Color Depth	16M (8-Bit)
Aspect Ratio	4:3
Contrast Ratio	350:1
Brightness	430 cd/m2
High Drive Video Watts.	50W
Viewing Angle	140° x 120°
Tuning System	NTSC-M
Comb Filter	4H Digital
Digital Progressive Scan	Yes
Black/white level	Yes

AUDIO

On Screen Equalizer.	Yes
Gradual Volume Increase	Yes
Mono/Stereo/MTS/SAP	Yes
Bass/Treble/Balance	Only
Total Audio (Watts)	1W
Auto Volume Leveler	Yes

SPECIAL FEATURES

- Picture In Picture (PIP) ..... Yes
- DRP (Digital Reality Processor) ..... Yes
- Soft-Touch ..... Yes
- LTI (Luminance Transient Improvement) ..... Yes
- Tri-lingual Menus ..... English, French, Spanish
- Auto Programming ..... Yes
- Parental Control w/V-Chip ..... Yes
- Auto Picture ..... Yes
- Auto Sleep (Power/Off) ..... Yes
- On/Off Timer ..... Yes
- Flashback ..... Yes
- CC ..... Yes
- CC When Mute ..... Yes
- Auto Power on and Last Source Memory ..... Yes

REMOTE CONTROL

- Transmitter ..... Yes
- Model Number ML-012A
- Transmitter Finish ..... Off-White

REQUIRED APPROVALS

- UL, C-UL, NOM ..... UL, C-UL, FCC (B)

SERVICE/LIMITED WARRANTY

- Warranty: Parts/Labor. ..... 1 Year/1 Year
- MTBF (Approx.) ..... 30K Hours
- Life Expectancy ..... 30K Hours

COMPUTER CONNECTION

Set the monitor output resolution on the PC before connecting to the TV (see table). Connect the TV to the PC with a PC cable (VGA cable). Connect the PC audio output to the TV's PC SOUND input.

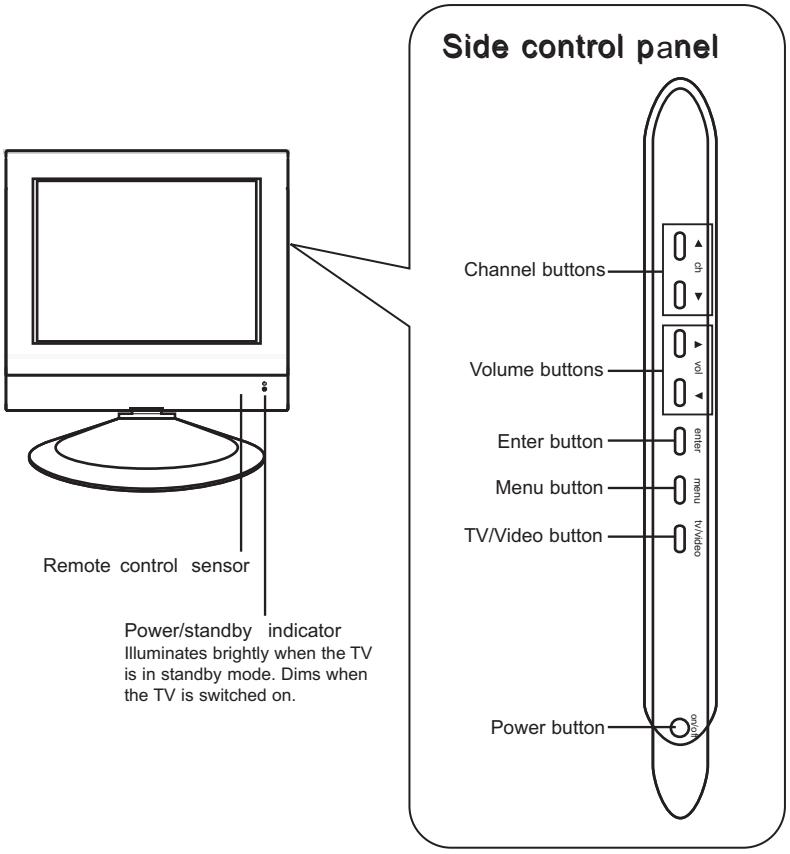
After setup, be sure to set TV to PC source. Turn on the PC/Computer. Turn the TV on and use tv/video button to select RGB-PC as the source.

The TV has been pre-adjusted to use XGA1024x768, 60Hz format. If possible, use one of the XGA formats to obtain the best image quality for your TV/LCD monitor. If set up under other resolutions, a distorted picture may appear on the screen. If set to Vertical frequency 85Hz, some noise can be seen when PIP is on. In this case, set the Vertical frequency to 60Hz. If the message "OUT OF RANGE" appears on the screen, adjust the PC output to a format listed in the chart.

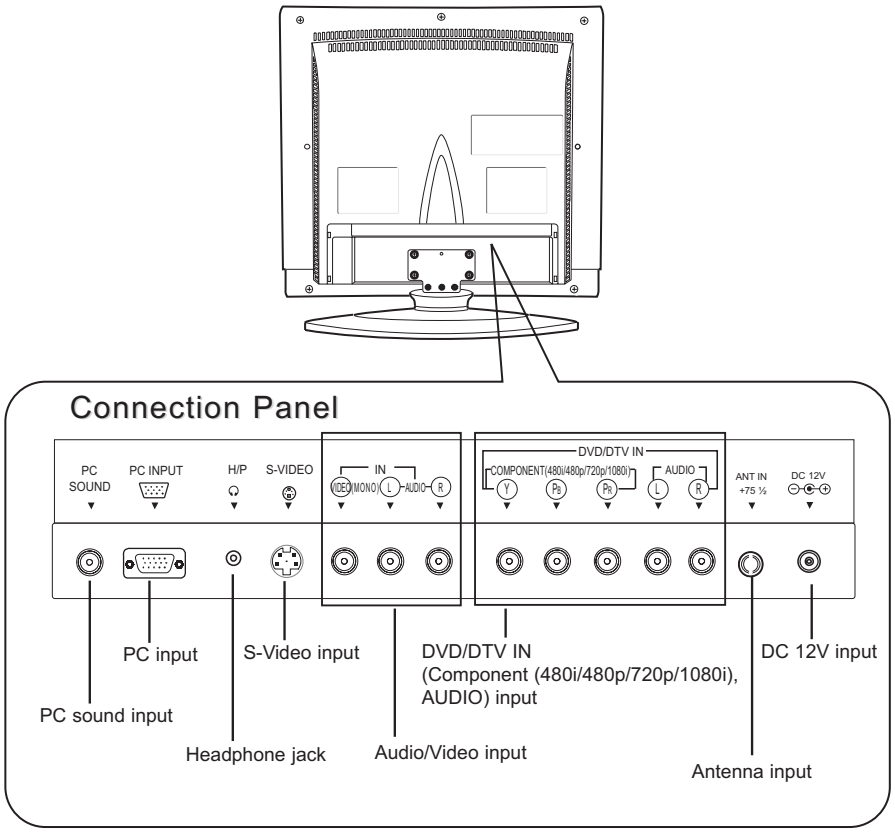
Note: When the PC is in the power saving mode, to also save energy, the monitor automatically switches to DPM mode.

Computer Video Modes			
Mode	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (KHz)
VGA	640x400	31.5KHz	70Hz
	640x400	37.9KHz	85Hz
	640x480	31.5KHz	60Hz
	640x480	35.0KHz	67Hz
	640x480	37.9KHz	72Hz
	640x480	37.5KHz	75Hz
	640x480	43.3KHz	85Hz
	720x400	31.5KHz	70Hz
SVGA	800x600	35.2KHz	56Hz
	800x600	37.9KHz	60Hz
	800x600	48.1KHz	72Hz
	800x600	46.9KHz	75Hz
	800x600	53.7KHz	85Hz
(MAC)	832x624	49.7KHz	75Hz
XGA	1024x768	48.4KHz	60Hz
	1024x768	56.5KHz	70Hz
	1024x768	60.2KHz	75Hz
	1024x768	68.67KHz	85Hz

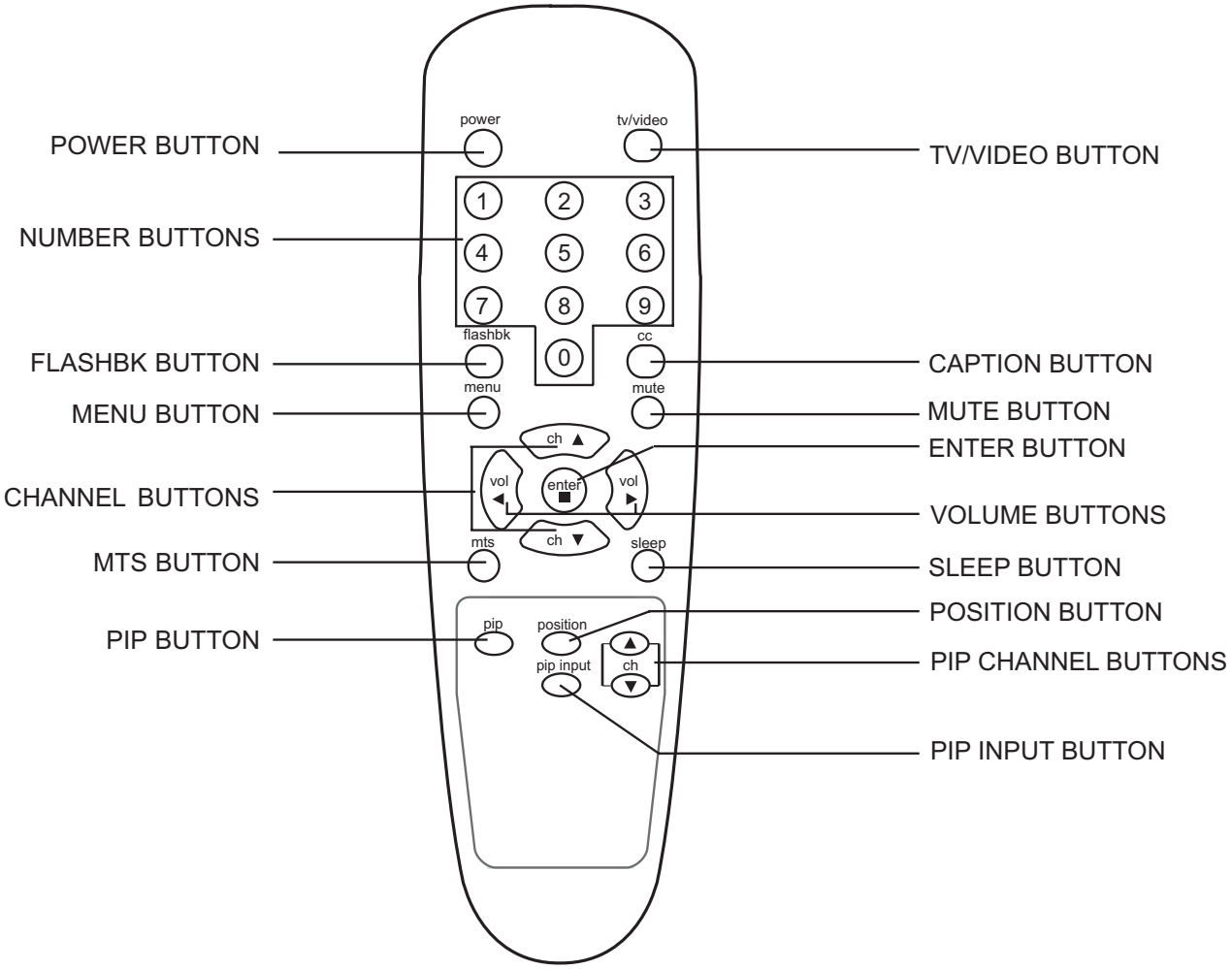
FRONT VIEW



BACK VIEW



REMOTE CONTROL



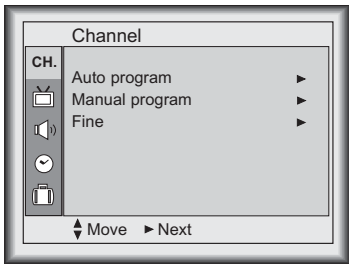
USER MENUS

Press the menu button repeatedly to display the available menus. Use the channel up/down buttons to select a menu option.

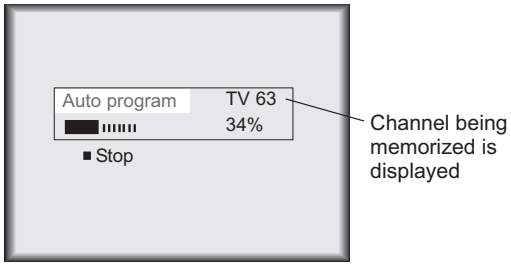
CHANNEL

AUTO PROGRAM

For Auto program to work, the programming source must be connected to the TV and the TV must be receiving programming signals either over-the-air or from a cable-type service provider.



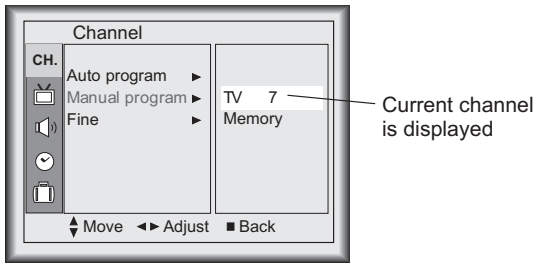
UUse the menu button to select the Channel menu. Press the volume up and then use the channel up/down buttons to select the Auto program option. Press the volume down button to begin the channel search. Wait for auto program to complete the channel search cycle before choosing a channel. The TV scans for over-the-air channels and then channels provided by a cable service.



When the channel search is complete, use the channel up/down buttons to review the memorized channels. If you press the enter button in auto programming, the search will stop and only channels programed up to that point will be saved. Auto programming can only memorize the channels which are being received at that time.

ADD/DELETE CHANNELS

You can select Memory (to add the channel) or Erase (to delete the channel from memory). In the channel menu, press the volume up and use the channel up/down buttons to select the Manual program option.

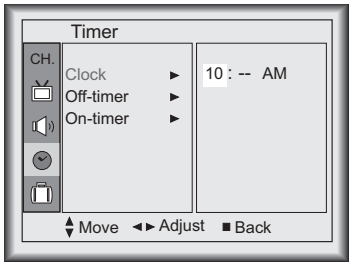


The current channel number is displayed. Press the volume down button and then press the volume up/down buttons to select a channel you want to add to memory or erase. Each time you press the volume up/down buttons, you toggle between Memory and Erase. After pressing enter, the current channel is added to Memory or Erased from the channel list.

TIMER

CLOCK

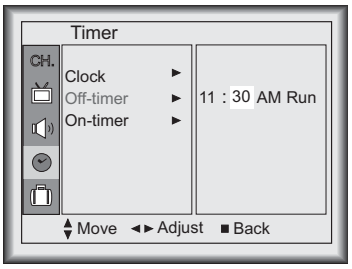
In the Timer menu, press the volume up and then use the channel up/down buttons to select the Clock option. Press the volume up and then use the channel up/down buttons to set the current hour.



Press volume up and use the channel up/down buttons to set the current minute. The clock starts when you press the enter button.

OFF TIMER

Timer function operates only if current time has been already set. Off-timer function overrides the on-timer function if they are set to the same time.

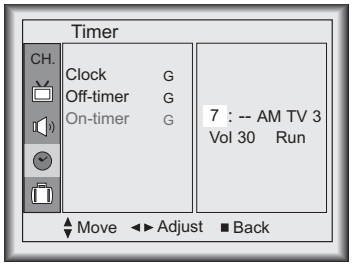


Press the volume up and then use the channel up/down buttons to select the off timer option. Press volume up and use the channel up/down buttons to set the turn off hour. Press the volume up and use the channel up/down buttons to set the minutes.

Use the volume up button to select Hold or Run. Hold means the off Timer feature is not active and Run means it is. The timer starts when you press the Enter button.

ON TIMER

This timer function operates only if current time has been already set. In the Timer menu, press the volume up and then use the channel up/down buttons to select the on timer option. Press the volume up and then use the channel up/down buttons to set the hour.



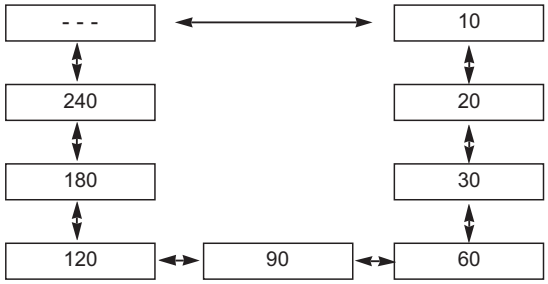
Press the volume up and then the channel up/down buttons to select minute you want to set. Press the volume up button and then use the channel up/down buttons to select the channel at turn-on. Press the volume up button and then use the channel up/down buttons to select the volume you want.

Use the volume up button to select Hold or Run. Hold means the on Timer feature is not active and Run means it is. The timer starts when you press the Enter button.

If the on-timer function is active (Run), the current channel will change to the set channel when the on-timer is activated. Unless a button is pressed within three hours after the TV is turned on by the on-timer function, the TV will automatically turn off. The TV must be in standby mode for the on timer to work.

SLEEP TIMER

Use the sleep button to set the sleep timer. Each press of the sleep button changes the setting as shown below. Sleep timer turns the TV off at the preset time. To cancel sleep time setting, press the sleep button repeatedly to select [—]. The screen display of SLEEP appears on the screen for 20 seconds prior to TV turn off.

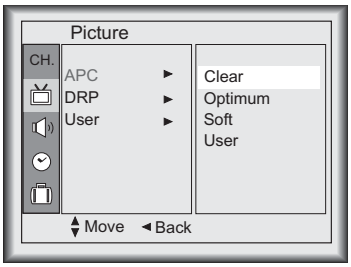


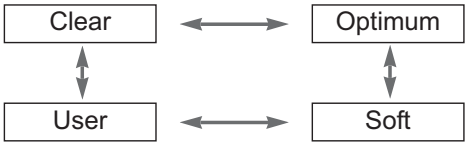
When the sleep time you want is displayed on the screen, don't press the sleep button again. To check the remaining sleep time, press the sleep button once. To change sleep time setting, press the sleep button repeatedly to select time setting you want. If you turn the TV off after setting the sleep timer, the setting will be erased.

VIDEO

APC (AUTO PICTURE CONTROL)

APC adjusts the TV to the best picture appearance. Use the menu button to select the Picture menu. Press the volume up and then use the channel up/down buttons to select the APC option.



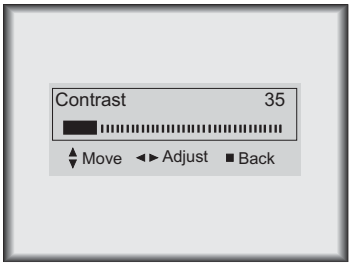


DRP (DIGITAL REALITY PICTURE)

DRP improves picture outline in dark areas. While in the Picture menu, press the volume up and then use the channel up/down buttons to select the DRP option. Press the volume up and then use the channel up/down buttons to select Clear or Soft. Press the enter button to select and exit.

MANUAL PICTURE CONTROL

While in the Picture menu, press the volume up and then use the channel up/down buttons to select the User option. Press the volume up and then use the channel up/down buttons to select a picture option to adjust.



Press the volume up and then use the volume up/down buttons to make appropriate adjustments. Use the channel up/down button to select other options. Contrast, Brightness, Sharpness, and Color are adjustable from 0 to 100. Tint is adjustable from Red 50 to Green 50. Press the enter button to select.

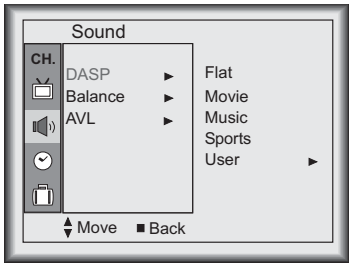
FINE TUNING

This function adjusts the picture's stability and condition when it is poor. While in the Picture menu, press the volume up and then use the channel up/down buttons to select the Fine option. Press the volume up and then use the volume up/down buttons to adjust the picture appearance to your preference. Press the enter button to select.

SOUND

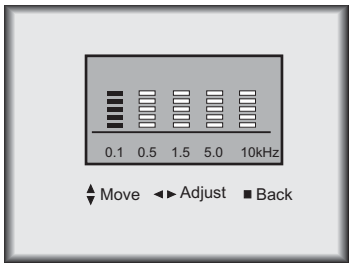
DASP

This function selects the sound appropriate to the program being viewed. While in the Sound menu, press volume up and then use the channel up/down buttons to select the DASP option. Press volume up and use the channel up/down buttons to select the desired setting for the sound. Each press of channel up/down button changes the setting to Flat, Movie, User, Sports, or Music.



EQUALIZER ADJUSTMENTS

While in the Sound menu, press the volume up and then use the channel up/down buttons to select the DASP option. Press volume up and then use the channel up/down buttons to select the User option. Press the volume up button, then use the volume up/down buttons to select the band you want to adjust and then use the channel up/down buttons to adjust the band level.

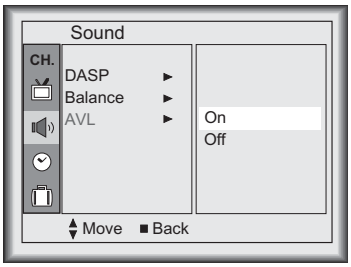


BALANCE

While in the Sound menu, press the volume up and then use the channel up/down buttons to select the Balance option. Press the volume up and then use the volume up/down buttons to adjust the balance. Balance is adjustable from Left 50 to Right 50.

AVL (AUTO VOLUME LEVELER)

AVL maintains an equal volume level automatically, even if the channel is changed. While in the Sound menu, press the volume up and then use the channel up/down buttons to select the AVL option. Press the volume up and then use the channel up/down buttons to select on or off.



SAP (SECOND AUDIO PROGRAM)

SAP contains the secondary language signal. Use the menu button to select the menu shown. Use the channel up/down button to select the MTS option. Each press of volume up/down buttons changes the audio mode. Press the enter button to select and exit.

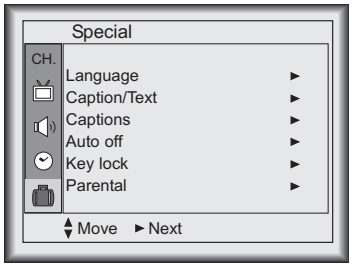
MUTE

Mute toggles the sound on and off. Press mute on the remote to mute the sound. To restore sound, press the mute button or volume up/down buttons. When sound is restored, current volume level is displayed on the screen.

SPECIAL

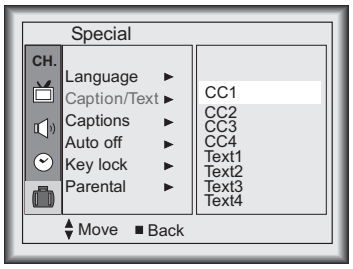
LANGUAGE

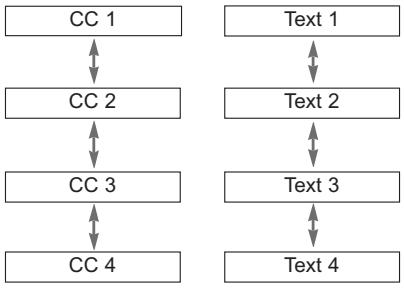
While in the Special menu, press volume up and then use the channel up/down buttons to select the Language option. Press volume up and then use the channel up/down buttons to select a language for the menus. Each press of channel up/down buttons changes the screen display to English, Spanish, or French. Press the enter button to select.



CLOSED CAPTIONING

Closed captioning shows the audio portion of a television program in written words which appear on the television screen in a form similar to subtitles. Closed captions allow viewers to read the dialogue and narration of television programs. Captions are the subtitles of the dialogue and narration of television programs. For prerecorded programs, program dialogue can be arranged into captions in advance.





Not all TV broadcasts include closed caption signals. Sometimes TV stations broadcast four different caption signals on the same channel. By selecting From CC1 to CC4, you can choose which signal you view. CC1 is usually the signal with the captions, while another mode might show demonstration or programming information.

While in the Special menu, press the channel up/down buttons to select the Caption/Text option. Each time you press the volume up/down buttons the caption mode is changed. Press the enter button to accept and exit. This TV is programmed to remember the caption/text mode it was last set to, when the power is turned off.

Press the enter button o accept and exit. This TV is programmed to remember the caption/text mode it was last set to, when you turn the POWER off.

PARENTAL CONTROL

The Parental Control Function (V-Chip) is used to block program viewing based on the ratings sent by the broadcast station. The default setting is to allow all programs to be viewed. Viewing can be blocked by the type of program and by the categories chosen to be blocked. It is also possible to block all program viewing for a time period. To use the Parental Control Function, the following must be set.

1. Ratings and categories to be blocked.
2. Number of hours to lock the television viewing control
3. Set a password
4. Enable the lock

BLOCKING SETUP

Use the channel up/down buttons to select the Parental Ctl option. Press the volume down button. Age block and Content block options also have sub-menus to set the type of blocking and rating. Use the channel up/down buttons to select the types of blocking to be set. Use the volume up/down buttons to select the types of ratings to block. MPAA, Age, and/or Content block may be set.

Press the menu button to return from the Age Block or Content Blk options. Use the channel up/down buttons to select the Set Hours option. Use the volume up/down buttons to set the number of hours for the blocking (Up to 99).

Use the channel up/down buttons to select the Set Password option. Enter a four digit password. Enter it again when requested. A new password may be chosen each time blocking is set up. Press the channel up/down buttons to select the Lock on/off option. Press the volume up/down buttons to turn the lock On. Press the menu button to save the blocking setups and exit.

V-CHIP RATINGS

Most television programs and television movies can be blocked by TV Rating and/or Individual Categories. Movies that have been shown at the theaters or direct-to-video movies use the Movie Rating System(MPAA) only.

Movies Ratings:

* Unblocked
* G - General audience
* PG - Parental guidance suggested
* PG-13 - 13 years and older
* R - Restricted

* NC-17 - 17 years and older
* X - Adult

General TV Ratings:

* Unblocked
* TV-G - General audience
* TV-PG - Parental guidance suggested
* TV-14 - 14 years and older
* TV-MA - Mature audience

Children TV Ratings:

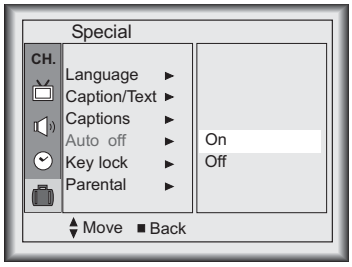
* Unblocked
* TV-Y - youth
* TV-Y7 - youth, 7 years and older

Content Categories:

* Dialog - sexual dialogue (applies to TV-PG, TV-14)
* Language - adult language (applies to TV-PG, TV-14, TV-MA)
* Sex scenes - sexual situations (applies to TV-PG, TV-14, TV-MA)
* Violence (applies to TV-PG, TV-14 and Above, TV-MA)
* F Violence - fantasy violence (applies only to TV-Y7)
* No Rating (blocks all viewing)

AUTO OFF

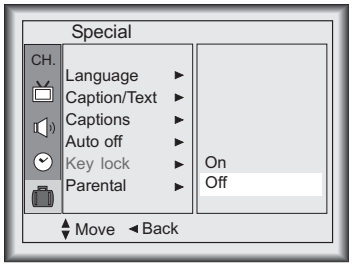
If there is no input signal, Auto Off will switch the TV to standby mode automatically after 10 minutes. Use the menu button to select the Special menu. Press the volume up and then use the channel up/down buttons to select the Auto off option. Press the volume up and then use the channel up/down buttons to select on or off. Each press of channel up/down buttons toggles between on and off.



KEY LOCK

The TV can be set up so that it can only be used with the remote control. Press the volume up and then use the channel up/down buttons to select the Key lock option. Press the volume up and then use the channel up/down buttons to select on or off.

Each press of channel up/down buttons toggles between on and off. This TV will remember which option it was last set to even if you turn the TV off.



SERVICING

TROUBLESHOOTING

1. General Features

No.	Symptom	Cause	Check Point
1	Button doesn't function	1) Broken components and soldering of them 2) P2 connector error	1) Check button with eyes Check and repair soldering 2) Check and repair the P2 connector
2	No screen	Input error of inverter connector	1) Bend the pin legs of P1 connector -> recheck them 2) Check and repair the IC804,805 SI4925
		P902 and Pin 21 connector being slipped out	1) Check and fix P902 connector 2) Check and fix the components at P902 LCD module and at main board. 3) Check Pin21.
		Cracked components and soldering at tuner board	1) Check and repair tuner board and main board 2) Solder Q102.
3	Dark screen	1) Defective LCD lamp 2) Defective inverter 3) Input error of inverter connector	1) Replace the inverter 2) Replace the LCD lamp 3) Check the connector input.

2. PC Mode

No.	Symptom	Cause	Check Point
4	Screen noise	Clock or phase being not able to be adjusted	1) Resettig is needed according to the video card of each PC 2) Horizontal noise : adjust phase until no horizontal noise occurres 3) Vertical noise : adjust clock in menu until no vertical noise occurres
5	Screen position error	Screen position error horizontally or vertically	1) Play the Auto Configure in Menu. 2) Adjust horizontal and vertical position until the screen displayes normally
6	Color beat noise	Soldering D-SUB Jack of JA202 and IC202.	Recheck and repair JA202,IC202

3. TV and external input

No.	Symptom	Cause	Check Point
7	No sound - Speaker - Earphone	Defective Reset IC of IC603 Defective MSP3440G of IC601 Defective B+(8V,5V) of IC604,605.	1) Check volume and speaker - Sound comes out only when being inputted into Audio L/R 2) Check after replacing IC603 3) Replace IC601 4) Check and replace B+ of IC604,605.
8	Video color beat noise	Earphone shield case being touched	Check the mold of shield and JA203, Replace shield case
		Soldering IC301 and IC912	Re-soldering

ADJUSTMENTS

Notes:

(1) This set uses an AC adapter, so connect the adapter and the set correctly before adjustment.

(2) The adjustment must be performed in the correct sequence.

(3) The adjustment must be performed in the circumstance of 25+/-5C of temperature and 65+/-10% of relative humidity.

(4) The input voltage of the receiver must keep 100~220V, 50/60Hz during adjustment.

(5) The set must be operated for 30 minutes before adjustment. Heat Run must be performed with the full white signal or TV noise signal.

PC INPUT MODE ADJUSTMENT

REQUIRED TEST EQUIPMENT

(1) A pattern generator with Gray Pattern of 16(11) tones.

(2) A Service remote control.

PREPARATION FOR ADJUSTMENT

(1) Perform Heat Run for more than 30 minutes with a white pattern.

(2) Connect the signal from a pattern generator with LCD TV of PC Input Jack(D-Sub).

AUTO GRAY ADJUSTMENT

(1) Apply the gray signal of XGA (1024X768) 16 tones (H: 31-214 Pattern, V: 60-84 Pattern) apply the gray signal of Pattern Generator 16(11) tones.

(2) In SVC Menu mode, adjust the Auto gray from 0 to 1 by using Volume + Key.

EDID (The Extended Display Identification Data)

	0	1	2	3	4	5	6	7	8	9	0A	0B	0C	0D	0E	0F
0	0	FF	FF	FF	FF	FF	FF	0	30	E5	D7	3A	1	0	0	0
10	0	0B	1	1	78	1F	17	70	E8	C3	A0	A3	54	4C	97	24
20	14	50	54	BF	E8	80	31	59	3B	D9	45	59	61	59	71	59
30	81	40	81	80	1	1	10	0E	1	1	1	1	1	1	1	1
40	1	1	1	1	1	1	1	1	F9	15	1	1	1	1	1	1
50	1	1	1	1	1	1	1	1	1	1	64	19	0	40	41	0
60	26	30	18	88	36	0	0E	C3	10	0	0	1E	0	0	0	FD
70	0	32	55	1E	46	0D	0	0A	20	20	20	20	20	20	0	C8

VIDEO MODE SETTINGS

Timing of Mode Table * H[dot]/V[line]								
Mode	VGA-60	VGA-67	VGA-72	VGA-75	VGA-85	SVGA-56	SVGA-60	SVGA-72
H_Total	800	864	832	840	832	1024	1056	1040
H_Display	640	640	656	640	640	800	800	800
H_Blanking	160	224	176	200	192	224	256	240
H_Sync	96	64	40	64	56	72	128	120
H Polarity	NEG.	NEG.	NEG.	NEG.	NEG.	POS	POS	POS
H_Bp	48	96	120	120	80	128	88	64
H_Fp	16	64	16	16	56	24	40	56
H-Freq[KHz]	31.469	35	37.861	37.5	43.269	35.156	37.879	48.077
/Clk[MHz]	25.175	30.24	31.5	31.5	36	36	40	50
V_Total	525	525	520	500	509	625	628	666
V_Display	480	480	496	480	480	600	600	600
V_Blanking	45	45	24	20	29	25	28	66
V_Sync	2	3	3	3	3	2	4	6
V Polarity	NEG	NEG	NEG	NEG	NEG	POS	POS	POS
V_Bp	33	39	20	16	25	22	23	23
V_Fp	10	3	1	1	1	1	1	37

Mode	SVGA-75	SVGA-85	XGA-60	XGA-70	XGA-75	MAC-75	XGA-85	VGA350-70
H_Total	1056	1048	1344	1328	1312	1152	1376	800
H_Display	800	800	1024	1024	1024	832	1024	640
H_Blanking	256	248	320	304	288	320	352	160
H_Sync	80	64	136	136	96	64	96	96
H Polarity	POS	POS	NEG		POS	NEG	POS	POS
H_Bp	160	152	136	144	176	224	208	48
H_Fp	16	32	160	24	16	32	48	16
H-Freq[KHz]	46.875	53.674	48.363	56.476	60.023	49.725	68.677	31.468
/Clk[MHz]	49.5	56.25	65	75	78.75	57.283	84.997	25.17
V_Total	625	631	806	806	800	667	808	449
V_Display	600	600	768	768	768	624	768	350
V_Blanking	25	31	38	38	32	43	40	99
V_Sync	3	3	6	6	3	3	3	2
V Polarity	POS	POS	NEG	NEG	POS	NEG	POS	NEG
V_Bp	21	27	29	29	28	39	36	60
V_Fp	1	1	3	3	1	1	1	37

Mode	VGA350-85	VGA400-70	VGA400-85
H_Total	832	800	832
H_Display	640	640	640
H_Blanking	192	160	192
H_Sync	64	96	64
H Polarity	POG	NEG	NEG
H_Bp	96	48	96
H_Fp	32	16	32
H-Freq[KHz]	37.86	31.46	37.86
/Clk[MHz]	31.47	25.17	31.5
V_Total	445	449	445
V_Display	350	400	400
V_Blanking	95	49	45
V_Sync	3	2	3
V Polarity	NEG	POS	POS
V_Bp	60	35	41
V_Fp	32	12	1

ADJUSTMENT OPTIONS

5. Option1 data(200PR~A2 ST:1bit,SYS:2bit)

OPTION Data	200PR	TEXT	I/II SV	TOP	SCART	A2 ST	SYS
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
2	0	0	0	0	0	0	2
3	0	0	0	0	0	0	3
4	0	0	0	0	0	1	0
5	0	0	0	0	0	1	1
6	0	0	0	0	0	1	2
7	0	0	0	0	0	1	3
8	0	0	0	0	1	0	0
9	0	0	0	0	1	0	1
10	0	0	0	0	1	0	2
11	0	0	0	0	1	0	3
12	0	0	0	0	1	1	0
13	0	0	0	0	1	1	1
14	0	0	0	0	1	1	2
15	0	0	0	0	1	1	3
16	0	0	0	1	0	0	0
17	0	0	0	1	0	0	1
18	0	0	0	1	0	0	2
19	0	0	0	1	0	0	3
20	0	0	0	1	0	1	0
21	0	0	0	1	0	1	1
22	0	0	0	1	0	1	2
23	0	0	0	1	0	1	3
24	0	0	0	1	1	0	0
25	0	0	0	1	1	0	1
26	0	0	0	1	1	0	2
27	0	0	0	1	1	0	3
28	0	0	0	1	1	1	0
29	0	0	0	1	1	1	1
30	0	0	0	1	1	1	2
31	0	0	0	1	1	1	3

OPTION Data	200PR	TEXT	I/II SV	TOP	SCART	A2 ST	SYS
32	0	0	1	0	0	0	0
33	0	0	1	0	0	0	1
34	0	0	1	0	0	0	2
35	0	0	1	0	0	0	3
36	0	0	1	0	0	1	0
37	0	0	1	0	0	1	1
38	0	0	1	0	0	1	2
39	0	0	1	0	0	1	3
40	0	0	1	0	1	0	0
41	0	0	1	0	1	0	1
42	0	0	1	0	1	0	2
43	0	0	1	0	1	0	3
44	0	0	1	0	1	1	0
45	0	0	1	0	1	1	1
46	0	0	1	0	1	1	2
47	0	0	1	0	1	1	3
48	0	0	1	1	0	0	0
49	0	0	1	1	0	0	1
50	0	0	1	1	0	0	2
51	0	0	1	1	0	0	3
52	0	0	1	1	0	1	0
53	0	0	1	1	0	1	1
54	0	0	1	1	0	1	2
55	0	0	1	1	0	1	3
56	0	0	1	1	1	0	0
57	0	0	1	1	1	0	1
58	0	0	1	1	1	0	2
59	0	0	1	1	1	0	3
60	0	0	1	1	1	1	0
61	0	0	1	1	1	1	1
62	0	0	1	1	1	1	2
63	0	0	1	1	1	1	3

OPTION Data	200PR	TEXT	I/II SV	TOP	SCART	A2 ST	SYS
64	0	1	0	0	0	0	0
65	0	1	0	0	0	0	1
66	0	1	0	0	0	0	2
67	0	1	0	0	0	0	3
68	0	1	0	0	0	1	0
69	0	1	0	0	0	1	1
70	0	1	0	0	0	1	2
71	0	1	0	0	0	1	3
72	0	1	0	0	1	0	0
73	0	1	0	0	1	0	1
74	0	1	0	0	1	0	2
75	0	1	0	0	1	0	3
76	0	1	0	0	1	1	0
77	0	1	0	0	1	1	1
78	0	1	0	0	1	1	2
79	0	1	0	0	1	1	3
80	0	1	0	1	0	0	0
81	0	1	0	1	0	0	1
82	0	1	0	1	0	0	2
83	0	1	0	1	0	0	3
84	0	1	0	1	0	1	0
85	0	1	0	1	0	1	1
86	0	1	0	1	0	1	2
87	0	1	0	1	0	1	3
88	0	1	0	1	1	0	0
89	0	1	0	1	1	0	1
90	0	1	0	1	1	0	2
91	0	1	0	1	1	0	3
92	0	1	0	1	1	1	0
93	0	1	0	1	1	1	1
94	0	1	0	1	1	1	2
95	0	1	0	1	1	1	3
96	0	1	1	0	0	0	0
97	0	1	1	0	0	0	1
98	0	1	1	0	0	0	2
99	0	1	1	0	0	0	3
100	0	1	1	0	0	1	0
101	0	1	1	0	0	1	1
102	0	1	1	0	0	1	2
103	0	1	1	0	0	1	3
104	0	1	1	0	1	0	0
105	0	1	1	0	1	0	1
106	0	1	1	0	1	0	2
107	0	1	1	0	1	0	3
108	0	1	1	0	1	1	0
109	0	1	1	0	1	1	1

OPTION Data	200PR	TEXT	I/II SV	TOP	SCART	A2 ST	SYS
110	0	1	1	0	1	1	2
111	0	1	1	0	1	1	3
112	0	1	1	1	0	0	0
113	0	1	1	1	0	0	1
114	0	1	1	1	0	0	2
115	0	1	1	1	0	0	3
116	0	1	1	1	0	1	0
117	0	1	1	1	0	1	1
118	0	1	1	1	0	1	2
119	0	1	1	1	0	1	3
120	0	1	1	1	1	0	0
121	0	1	1	1	1	0	1
122	0	1	1	1	1	0	2
123	0	1	1	1	1	0	3
124	0	1	1	1	1	1	0
125	0	1	1	1	1	1	1
126	0	1	1	1	1	1	2
127	0	1	1	1	1	1	3
128	1	0	0	0	0	0	0
129	1	0	0	0	0	0	1
130	1	0	0	0	0	0	2
131	1	0	0	0	0	0	3
132	1	0	0	0	0	1	0
133	1	0	0	0	0	1	1
134	1	0	0	0	0	1	2
135	1	0	0	0	0	1	3
136	1	0	0	0	1	0	0
137	1	0	0	0	1	0	1
138	1	0	0	0	1	0	2
139	1	0	0	0	1	0	3
140	1	0	0	0	1	1	0
141	1	0	0	0	1	1	1
142	1	0	0	0	1	1	2
143	1	0	0	0	1	1	3
144	1	0	0	1	0	0	0
145	1	0	0	1	0	0	1
146	1	0	0	1	0	0	2
147	1	0	0	1	0	0	3
148	1	0	0	1	0	1	0
149	1	0	0	1	0	1	1
150	1	0	0	1	0	1	2
151	1	0	0	1	0	1	3
152	1	0	0	1	1	0	0
153	1	0	0	1	1	0	1
154	1	0	0	1	1	0	2
155	1	0	0	1	1	0	3

OPTION Data	200PR	TEXT	I/II SV	TOP	SCART	A2 ST	SYS
156	1	0	0	1	1	1	0
157	1	0	0	1	1	1	1
158	1	0	0	1	1	1	2
159	1	0	0	1	1	1	3
160	1	0	1	0	0	0	0
161	1	0	1	0	0	0	1
162	1	0	1	0	0	0	2
163	1	0	1	0	0	0	3
164	1	0	1	0	0	1	0
165	1	0	1	0	0	1	1
166	1	0	1	0	0	1	2
167	1	0	1	0	0	1	3
168	1	0	1	0	1	0	0
169	1	0	1	0	1	0	1
170	1	0	1	0	1	0	2
171	1	0	1	0	1	0	3
172	1	0	1	0	1	1	0
173	1	0	1	0	1	1	1
174	1	0	1	0	1	1	2
175	1	0	1	0	1	1	3
176	1	0	1	1	0	0	0
177	1	0	1	1	0	0	1
178	1	0	1	1	0	0	2
179	1	0	1	1	0	0	3
180	1	0	1	1	0	1	0
181	1	0	1	1	0	1	1
182	1	0	1	1	0	1	2
183	1	0	1	1	0	1	3
184	1	0	1	1	1	0	0
185	1	0	1	1	1	0	1
186	1	0	1	1	1	0	2
187	1	0	1	1	1	0	3
188	1	0	1	1	1	1	0
189	1	0	1	1	1	1	1
190	1	0	1	1	1	1	2
191	1	0	1	1	1	1	3
192	1	1	0	0	0	0	0
193	1	1	0	0	0	0	1
194	1	1	0	0	0	0	2
195	1	1	0	0	0	0	3
196	1	1	0	0	0	1	0
197	1	1	0	0	0	1	1
198	1	1	0	0	0	1	2
199	1	1	0	0	0	1	3
200	1	1	0	0	1	0	0
201	1	1	0	0	1	0	1

OPTION Data	200PR	TEXT	I/II SV	TOP	SCART	A2 ST	SYS
202	01	1	0	0	1	0	2
203	1	1	0	0	1	0	3
204	1	1	0	0	1	1	0
205	1	1	0	0	1	1	1
206	1	1	0	0	1	1	2
207	1	1	0	0	1	1	3
208	1	1	0	1	0	0	0
209	1	1	0	1	0	0	1
210	1	1	0	1	0	0	2
211	1	1	0	1	0	0	3
212	1	1	0	1	0	1	0
213	1	1	0	1	0	1	1
214	1	1	0	1	0	1	2
215	1	1	0	1	0	1	3
216	1	1	0	1	1	0	0
217	1	1	0	1	1	0	1
218	1	1	0	1	1	0	2
219	1	1	0	1	1	0	3
220	1	1	0	1	1	1	0
221	1	1	0	1	1	1	1
222	1	1	0	1	1	1	2
223	1	1	0	1	1	1	3
224	1	1	1	0	0	0	0
225	1	1	1	0	0	0	1
226	1	1	1	0	0	0	2
227	1	1	1	0	0	0	3
228	1	1	1	0	0	1	0
229	1	1	1	0	0	1	1
230	1	1	1	0	0	1	2
231	1	1	1	0	0	1	3
232	1	1	1	0	1	0	0
233	1	1	1	0	1	0	1
234	1	1	1	0	1	0	2
235	1	1	1	0	1	0	3
236	1	1	1	0	1	1	0
237	1	1	1	0	1	1	1
238	1	1	1	0	1	1	2
239	1	1	1	0	1	1	3
240	1	1	1	1	0	0	0
241	1	1	1	1	0	0	1
242	1	1	1	1	0	0	2
243	1	1	1	1	0	0	3
244	1	1	1	1	0	1	0
245	1	1	1	1	0	1	1
246	1	1	1	1	0	1	2
247	1	1	1	1	0	1	3

OPTION Data	200PR	TEXT	I/II SV	TOP	SCART	A2 ST	SYS
248	1	1	1	1	1	0	0
249	1	1	1	1	1	0	1
250	1	1	1	1	1	0	2
251	1	1	1	1	1	0	3
252	1	1	1	1	1	1	0
253	1	1	1	1	1	1	1
254	1	1	1	1	1	1	2
255	1	1	1	1	1	1	3

6. Option2 data(ACMS~BBACK:1bit,LANG:3bit)

OPTION Data	ACMS	VOL	HIDEV
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1

7. Option3 data(IIC AFT~CH+AU:1bit)

OPTION Data	IIC AFT	MD SAVE	MONO	CH+AUS
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

PARTS

This model is a Factory Service Repair model (in and out of warranty) and is covered by a one year warranty. For service, the end user should call 1-800-984-9349 for complete shipping and handling instructions (or call 1-877-9ZENITH). Refer to the last page of the opguide for more information.

Parts contact information:

Voice: 1-888-3-ZENITH

Fax: 1-888-6-ZENITH

Mail: Zenith National Parts
201 James Record Road
Huntsville, AL 35824-1513

MODEL PARTS

No.	PART NO.	DESCRIPTION
1	3091V00A15G	CABINET ASSEMBLY,ZENITH
2	6400VA0017A	SPEAKER,GENERAL T401SX-095K14 LG C&D 8 OHM 1.0
3	4950V00067A	METAL,SPEAKER HOLDER (L,R)
4	6304FLP006A	LCD,LC151X01-A3 LG PHILPS TFT COLO
5	6871VSMA12A	PCB ASSEMBLY,CONT
6	5020V00552H	BUTTON,ZENITH SET
7	6871VSMA13D	PCB ASSEMBLY,POWER ML-012A RU-15LA31
8	5020V00553E	BUTTON,ZENITH(#39) SET
9	6871VMM804E	PCB ASSEMBLY,MAIN ML-012A
10	4950V00059E	METAL,MAIN BRACKET SECC
11	6633VA0003G	INVERTER ASSY,12VOLT .VOLT ECT
12	4950V00063B	METAL,HINGE FIXER SUS304 15LA30
13	4811V00015D	BRACKET ASSEMBLY,SUB ABS ZENITH
14	3809V00273M	BACK COVER ASSEMBLY,ZENITH
15	3581V00033A	DOOR ASSEMBLY

COMPONENT PARTS

No.	PART NO.	DESCRIPTION
C101	0CE476DH618	CAP, ELECTRO, 47UF STD 25V 20%
C105	0CE106DK618	CAP, ELECTRO, 10UF STD 50V 20%
C107	0CE108DD618	CAP, ELECTRO, 1000UF STD 10V 20%
C1101	0CE107DD618	CAP, ELECTRO, 100UF STD 10V 20%
C113	0CE105DK618	CAP, ELECTRO, 1UF STD 50V 20%
C115	0CE107DF618	CAP, ELECTRO, 100UF STD 16V 20%
C17	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C20	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C209	0CE225VK6DC	CAP, ELEC, 2.2UF MV 50V 20% R/T
C21	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C214	0CE476SF6DC	CAP, ELECTRO, 47UF MVG 16V 20%
C217	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C220	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C221	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C24	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C25	0CE227VF6DC	CAP, ELEC, 220UF MV 16V 20% R/T
C302	0CE476SF6DC	CAP, ELECTRO, 47UF MVG 16V 20%
C323	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C331	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C332	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C333	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C334	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C335	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C336	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C347	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C354	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C361	0CE105CK636	CAP, ELECTRO, 1UF SHL,SD 50V 20% FM5 BP(D) TP
C362	0CE105CK636	CAP, ELECTRO, 1UF SHL,SD 50V 20% FM5 BP(D) TP
C363	0CE105CK636	CAP, ELECTRO, 1UF SHL,SD 50V 20% FM5 BP(D) TP
C364	0CE105CK636	CAP, ELECTRO, 1UF SHL,SD 50V 20% FM5 BP(D) TP
C365	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C406	0CE476SF6DC	CAP, ELECTRO, 47UF MVG 16V 20%
C418	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C438	0CE476SF6DC	CAP, ELECTRO, 47UF MVG 16V 20%
C475	0CE476SF6DC	CAP, ELECTRO, 47UF MVG 16V 20%
C476	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C486	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C489	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C494	0CE476SF6DC	CAP, ELECTRO, 47UF MVG 16V 20%
C495	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C60	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C60	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C610	0CE107DF618	CAP, ELECTRO, 100UF STD 16V 20%
C614	0CE107DF618	CAP, ELECTRO, 100UF STD 16V 20%
C618	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C619	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C620	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C621	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C622	0CE476DF618	CAP, ELECTRO, 47UF STD 16V 20%
C63	0CE476SF6DC	CAP, ELECTRO, 47UF MVG 16V 20%
C631	0CE106DF618	CAP, ELECTRO, 10UF STD 16V 20%
C632	0CE106DF618	CAP, ELECTRO, 10UF STD 16V 20%
C633	0CE335DK618	CAP, ELECTRO, 3.3UF STD 50V 20%
C635	0CE107DF618	CAP, ELECTRO, 100UF STD 16V 20%
C638	0CE107DF618	CAP, ELECTRO, 100UF STD 16V 20%
C639	0CE107DF618	CAP, ELECTRO, 100UF STD 16V 20%
C640	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C643	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C644	0CE107DF618	CAP, ELECTRO, 100UF STD 16V 20%
C645	0CE107DH618	CAP, ELECTRO, 100UF STD 25V 20%
C647	0CE225DK618	CAP, ELECTRO, 2.2UF STD 50V 20%
C648	0CE225DK618	CAP, ELECTRO, 2.2UF STD 50V 20%
C649	0CQ1031N509	CAP, FILM, 0.01UF D 100V 10% PE TP5

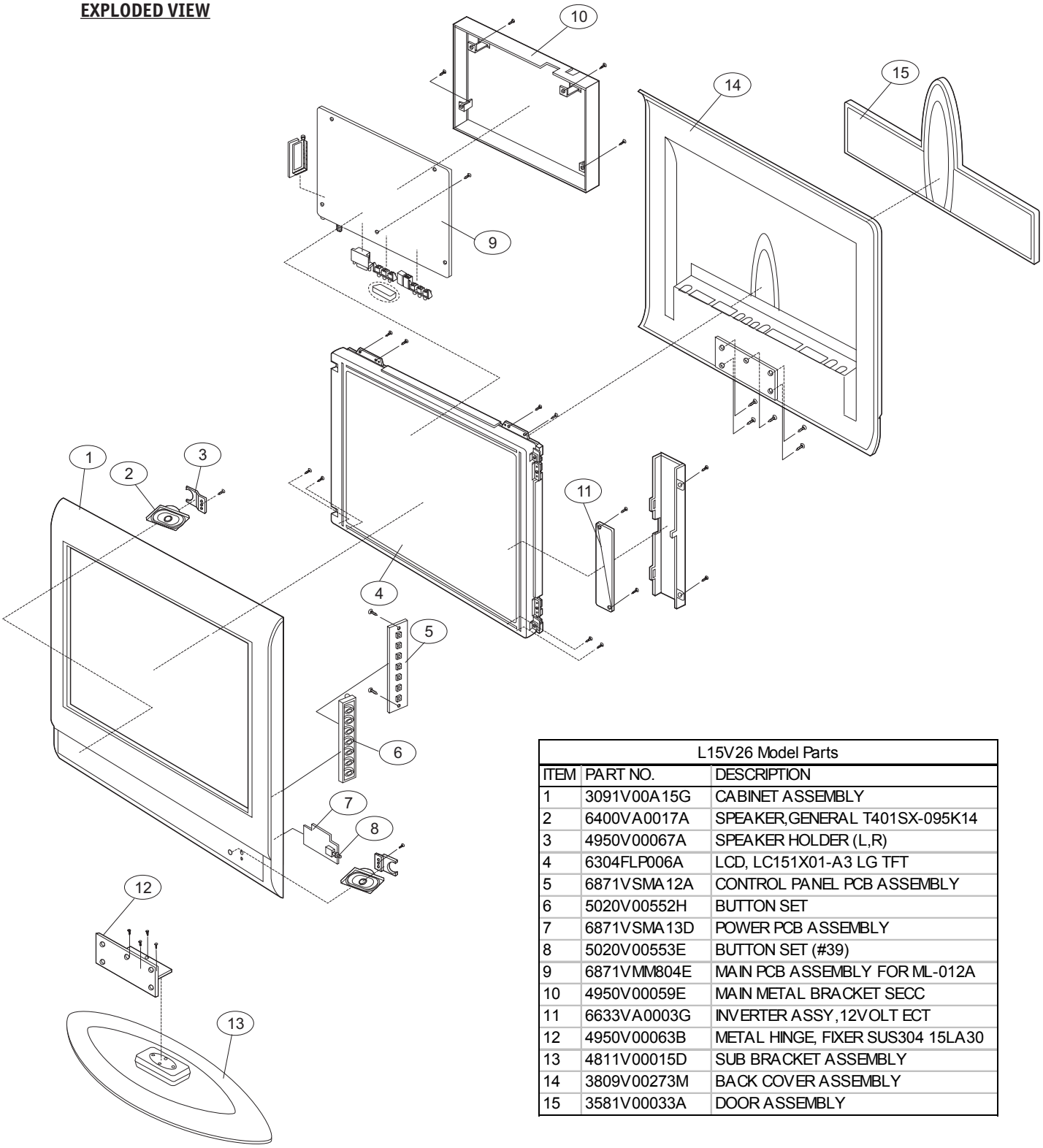
C650	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C651	0CE476DF618	CAP, ELECTRO, 47UF STD 16V 20%
C652	0CQ1031N509	CAP, FILM, 0.01UF D 100V 10% PE TP5
C653	0CE107DF618	CAP, ELECTRO, 100UF STD 16V 20%
C654	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C655	0CK224DF56A	CAP, CERAMIC(HDE), 220000PF 2012 16V 10%
C69	0CE105VK6DC	CAP, ELEC, 1UF MV 50V 20%
C801	0CE476DK618	CAP, ELECTRO, 47UF STD 50V 20%
C802	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C803	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C804	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C805	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C806	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C807	0CE477DF618	CAP, ELECTRO, 470UF STD 16V 20%
C808	0CE227DH618	CAP, ELECTRO, 220UF STD 25V 20%
C814	0CE107DH618	CAP, ELECTRO, 100UF STD 25V 20%
C815	0CE107DH618	CAP, ELECTRO, 100UF STD 25V 20%
C817	0CE475DK618	CAP, ELECTRO, 4.7UF STD 50V 20%
C902	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C904	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C906	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C909	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C911	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C915	0CE106SF6DC	CAP, ELECTRO, 10UF MVG 16V 20%
C935	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
C970	0CE107SF6DC	CAP, ELECTRO, 100UF MVG 16V 20%
D1	0DD181009AB	DIODE,SWITCHING, KDS181
D2	0DD181009AB	DIODE,SWITCHING, KDS181
D601	0DD181009AB	DIODE,SWITCHING, KDS181
D602	0DD181009AB	DIODE,SWITCHING, KDS181
D801	0DD181009AB	DIODE,SWITCHING, KDS181
D802	0DD181009AB	DIODE,SWITCHING, KDS181
D805	0DD181009AB	DIODE,SWITCHING, KDS181
F101	0FS630OB84B	FUSE,SLOW BLOW,630MA 250
F102	131-096F	FUSE,FAST BLOW, MICRO 125V 2.5A
F501	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501
IC1	0IZZVC0031E	IC,DRAWING, M37136EFSP 52P ST ML
IC2	0IAL241600B	IC,ATMEL, AT24C16
IC201	0IAL242110A	IC,ATMEL, AT24C21-10SI-2.5 8P
IC202	0IPH740800M	IC,PHILIPS, 74F08D 14P SOIC
IC3	0IFA752700A	IC,FAIRCHILD, KA75270Z MC-007
IC301	0IIT323000D	IC,ITT, VPC3230D QA B4 80P Q
IC302	0IHY100100A	IC,HYUNDAI, LGTV1001 64P QFP BK PROG. H-FILTER
IC4	0IMCRNS002A	IC,MICRO, LM1881M NATIONAL SEM
IC601	0IMCRMN014A	IC,MICRO, MSP3440G QA B8 V3 MI
IC602	0ISA428200A	IC,SANYO, LA4282 12S 2CHX10W AUDIO AMP
IC603	0IKE704200J	IC,KEC, KIA7042AF SOT-89 TP 4.2V VOLTAGE DETECTOR
IC604	0IMCRFA009A	IC,MICRO CONTROLLER, KA78M08RTM, FAIRCHIL
IC605	0IMCRFA008A	IC,MICRO CONTROLLER, KA78M05RTM, FAIRCHIL
IC801	0ITC786000A	IC,TEMIC, SI786 28SSOP DUAL-OUTPUT POWER CONTR.
IC802	0TFVI80001A	TRANSISTOR,FETS, VISHAY SI4808DY
IC803	0TFVI80001A	TRANSISTOR,FETS, VISHAY SI4808DY
IC804	0TF492509AA	TRANSISTOR,FETS, SI4925DY TEMIC 30V 6.1A
IC805	0TF492509AA	TRANSISTOR,FETS, SI4925DY TEMIC 30V 6.1A
IC901	0IMCRG2004A	IC,MICRO, JAGASM SAGE 352BALL
IC902	0IPH806520A	IC,PHILIPS, 80C652 40 PLCC ST 8-
IC903	0IPH743730E	IC,PHILIPS, 74HCT373D 20SOP
IC904	0IZZVC0029E	IC,DRAWING, M27C512_10F1 DIP BK
IC905	0ISS416162B	IC,SAMSUNG, K4S161622D-TC80, 512K*16BIT*2B
IC906	0ISS416162B	IC,SAMSUNG, K4S161622D-TC80, 512K*16BIT*2B
IC907	0IPH740400G	IC,PHILIPS, 74HC04D HEX INVERTER 14P,SOP TP
IC908	0IAL241610A	IC,ATMEL, AT24C16N-10SI 8P SOIC ST EEPROM
IC909	0ILT176425A	IC,LINEAR TECHNOLOGY, LT1764EQ-2.5 5PIN
IC912	0IPRPS5001A	IC,PERIPHERALS, SII140A SILICON IMAG
IC913	0TF492509AA	TRANSISTOR,FETS, SI4925DY TP TEMIC 30V 6.1A SO-8
JA2016612VAH001A		JACK,HEADPHONE, HEC3900-010110 HOSIDEN DC (7) BK LN-15A1(NF-99LA)
JA2026630VGA001B		CONNECTOR (CIRC),D-SUB, 68114-1522 MOLEX-KOR 15PIN 2.29MM
JA2036613V00008F		JACK ASSY, PMJ014F PARK ELEC E/
JA2046612VJH008D		JACK,RCA, PJ6063D PARKELEC DVD
JA205A		380-336E JACK,RCA, WA6013E PARKELEC RCA
JA205B		380-336F JACK,RCA, WA6013E PARKELEC RCA
JA2066612VCH003B		JACK,PHONE, PEJ012C PARK ELEC H=6.5
L1	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L101	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L102	0LA0272K139	INDUCTOR,AXIAL LEAD, 27UH 10% A 4.0 X 10.5
L103	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L104	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L11010	LA0222K119	INDUCTOR,AXIAL LEAD, 22UH 10% A 2.3 X 3.4
L201	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L202	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L204	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L205	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L206	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L207	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L215	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L216	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L276	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT

		CERATEC 2012MM
L277	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L3	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L301	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L302	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L303	6210TCE001A	FILTER(CIRC),EMC, HB-1S2012-080JT CERATEC 2012MM
L304	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L4	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L601	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L602	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L603	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L604	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L801	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L802	6140VB0004B	COIL,CHOKE, 26UH 1UEWPHY 22.5TURN YL-9N 0.4
L803	6140VB0004A	COIL,CHOKE, 9.5UH 1UEWPHY 13.5TURN YL-9N 0.5
L804	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L805	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L901	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L902	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L904	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L905	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L908	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L911	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L913	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L914	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L915	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L916	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L917	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
L925	6210TCE001G	FILTER(CIRC),EMC, HH-1M3216-501 CERATEC 3216MM
LD1101		0DL112100ABLED, SM3411(DL-11S2GN1) BK Y-GREEN -
PA1101		6726VV0006D REMOTE RECEIVER, TSOP48380N1 TEMIC 38.0KHZ
Q102	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q1101		0TR150400BATRANSISTOR,BIPOLARS, CHIP 2SA1504S
Q204	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q205	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q206	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q207	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q208	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q209	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q210	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q3	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q301	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q5	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q605	0TR150400BA	TRANSISTOR,BIPOLARS, CHIP 2SA1504S
Q801	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q901	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q903	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
Q904	0TR387500AA	TRANSISTOR,BIPOLARS, CHIP 2SC3875S
R219	0RD1200H609	RESISTOR, CARBON FILM, 120 OHM 1/2 W 5%
R219	0RD1200H609	RESISTOR, CARBON FILM, 120 OHM 1/2 W 5%
R220	0RD1200H609	RESISTOR, CARBON FILM, 120 OHM 1/2 W 5%
R625	0RD1200H609	RESISTOR, CARBON FILM, 120 OHM 1/2 W 5%
R803	0RHZVTA001A	RESISTOR,DRAWING, 0.025 OHM 1W 2% 2512
R805	0RHZVTA001A	RESISTOR,DRAWING, 0.025 OHM 1W 2% 2512
RA901		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA902		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA903		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA904		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA905		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA906		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA907		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA908		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA909		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA910		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA911		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA912		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA926		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA927		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA928		0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA929		0RRZVTA001A RESISTOR,DRAWING,

	MNR-14-E0A-J-101 100OHM 5%
RA930	0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
RA931	0RRZVTA001A RESISTOR,DRAWING, MNR-14-E0A-J-101 100OHM 5%
SW1101	140-313A SWITCH,TACT, TACT 2LEAD 100G(TA) 5V 0.001A HOR.
SW1101	6600VM1001A SWITCH,PUSH, SDKLA1 ALPS UL/CSA 250V 5A VERT.
SW1102	140-313A SWITCH,TACT, TACT 2LEAD 100G(TA) 5V 0.001A HOR.
SW1103	140-313A SWITCH,TACT, TACT 2LEAD 100G(TA) 5V 0.001A HOR.
SW1104	140-313A SWITCH,TACT, TACT 2LEAD 100G(TA) 5V 0.001A HOR.
SW1105	140-313A SWITCH,TACT, TACT 2LEAD 100G(TA) 5V 0.001A HOR.
SW1106	140-313A SWITCH,TACT, TACT 2LEAD 100G(TA) 5V 0.001A HOR.
SW1107	140-313A SWITCH,TACT, TACT 2LEAD 100G(TA) 5V 0.001A HOR.
T801 6170VTCA30A	TRANSFORMER,COIL, EPC 13-Z 320UH DC-DC CONV.
TU101	6700VNF019E TUNER, TAFH-H001P LG NTSC F
X1 156-A01P	RESONATOR,CRYSTAL, HC49U SUNNY RADIAL 8.000MHZ 30PPM 16PF
X301 6202VDT002E	RESONATOR,CRYSTAL, SX-1SMD SUNNY RADIAL 20250000HZ 30PPM 16PF
X601 156-A02M	RESONATOR,CRYSTAL, HC49U KJE RADIAL 18.432MHZ 30PPM 10PF BK
X901 6202VDT002B	RESONATOR,CRYSTAL, SX-1SMD SUNNY RADIAL 14.318MHZ 30PPM 16PF TP
ZD1010DZ330009BA	DIODE,ZENERS, ZENER HZT33 TAPING
ZD2110DZRM00178A	DIODE,ZENERS, UDZS TE-17 5.1B ROHM

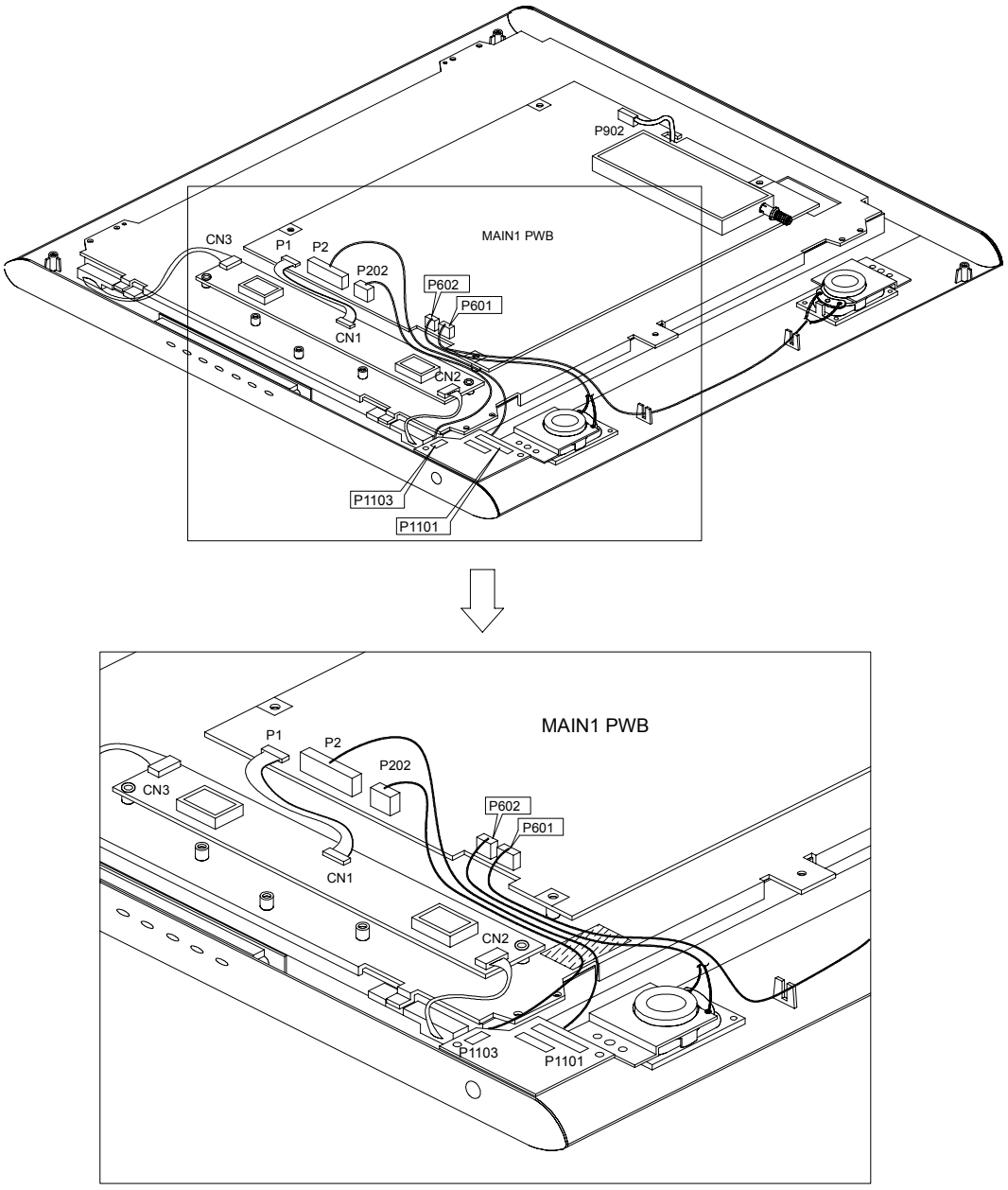
DIAGRAMS

EXPLODED VIEW



L15V26 Model Parts		
ITEM	PART NO.	DESCRIPTION
1	3091V00A15G	CABINET ASSEMBLY
2	6400VA0017A	SPEAKER,GENERAL T401SX-095K14
3	4950V00067A	SPEAKER HOLDER (L,R)
4	6304FLP006A	LCD, LC151X01-A3 LG TFT
5	6871VSMA12A	CONTROL PANEL PCB ASSEMBLY
6	5020V00552H	BUTTON SET
7	6871VSMA13D	POWER PCB ASSEMBLY
8	5020V00553E	BUTTON SET (#39)
9	6871VMM804E	MAIN PCB ASSEMBLY FOR ML-012A
10	4950V00059E	MAIN METAL BRACKET SECC
11	6633VA0003G	INVERTER ASSY,12VOLT ECT
12	4950V00063B	METAL HINGE, FIXER SUS304 15LA30
13	4811V00015D	SUB BRACKET ASSEMBLY
14	3809V00273M	BACK COVER ASSEMBLY
15	3581V00033A	DOOR ASSEMBLY

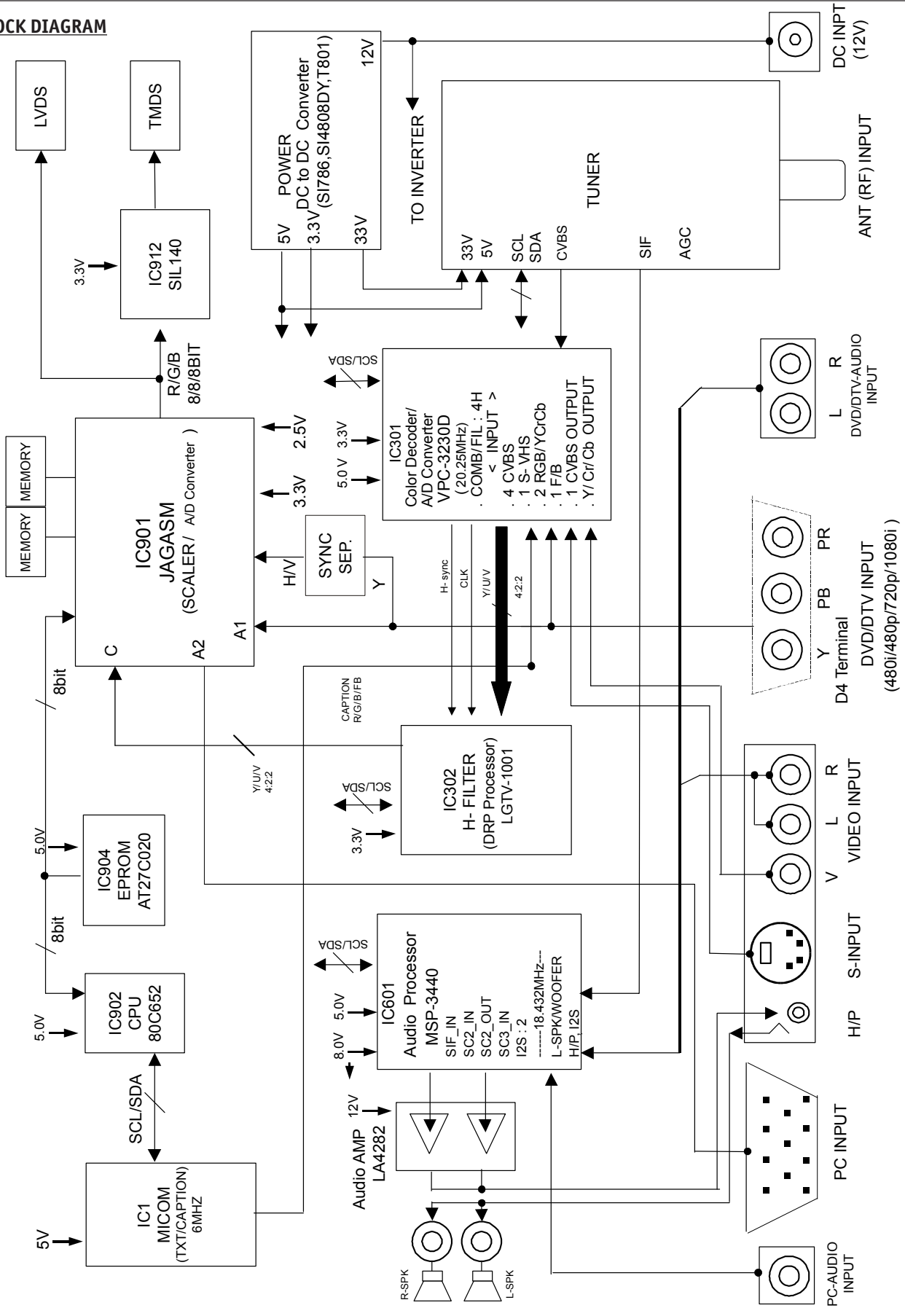
WIRING DIAGRAM



CONNECTOR

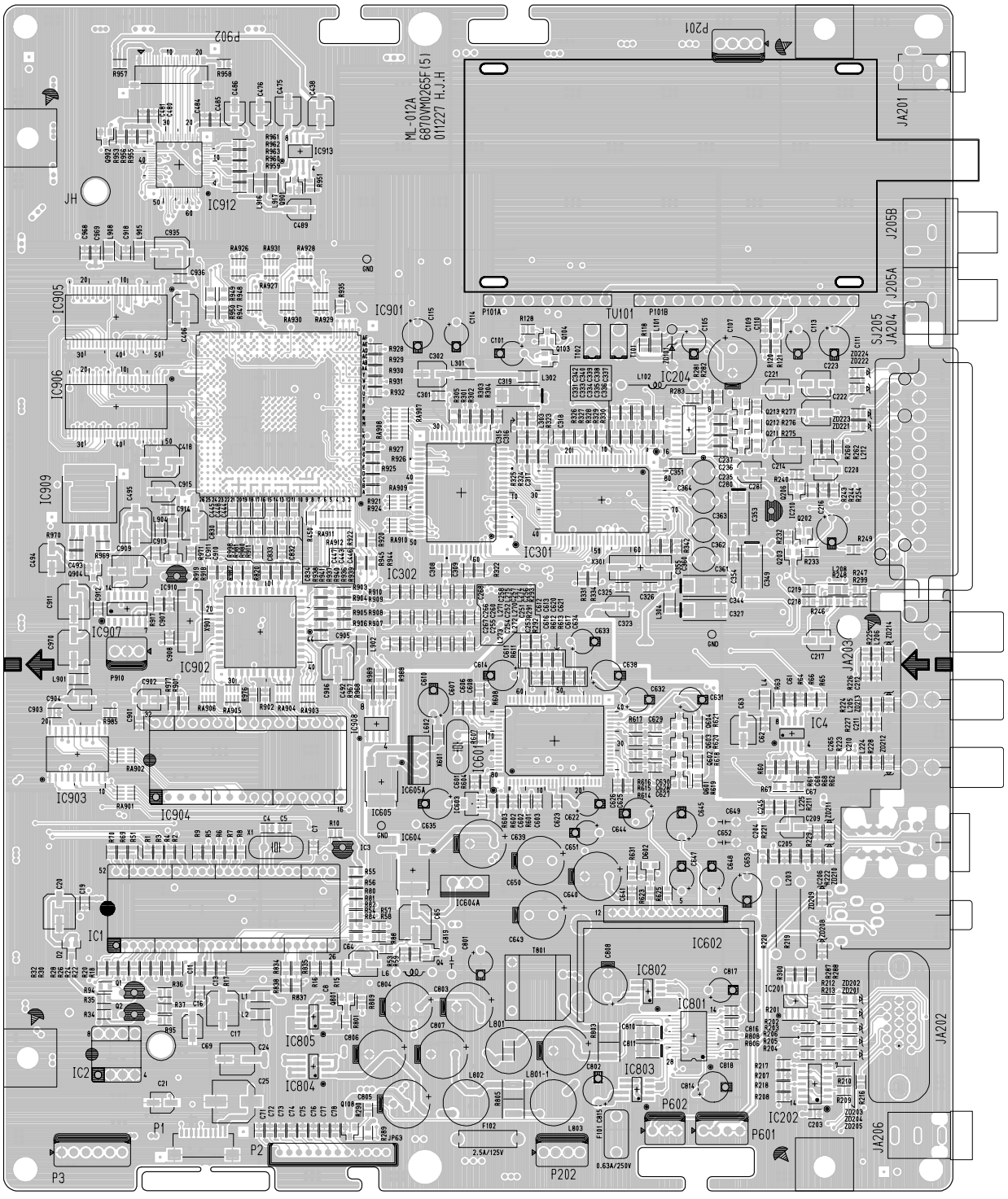
LCD MODULE 3P ---> INVERTER PCB CN2
LCD MODULE 3P ---> INVERTER PCB CN3
POWER S/W PCB P1103 --> MAIN PCB P202
POWER S/W PCB P1101 --> MAIN PCB P2
INVERTER ASSY CN1 --> MAIN PCB P1
SPEAKER (3P) --> MAIN PCB P602
SPEAKER (4P) --> MAIN PCB P601

BLOCK DIAGRAM

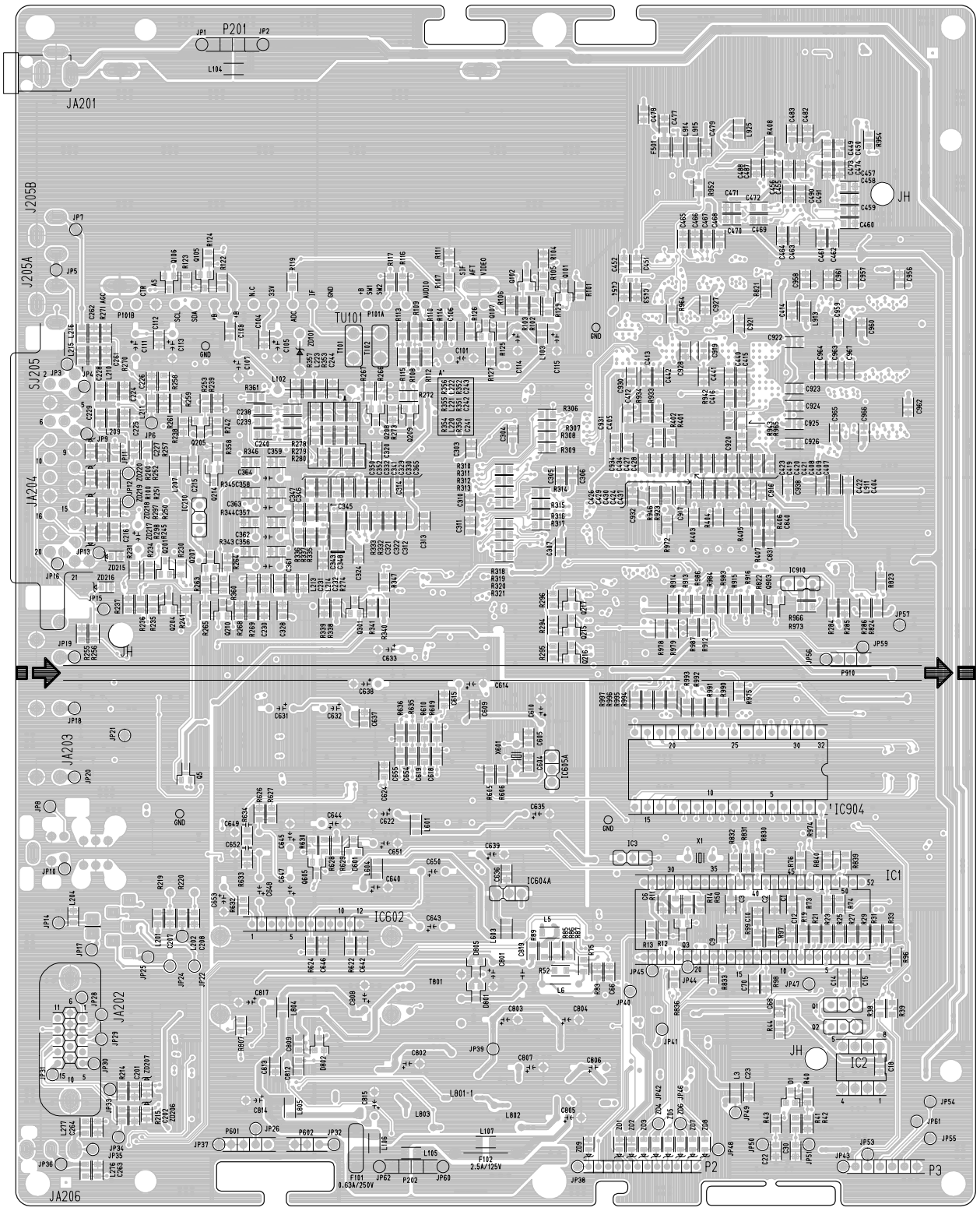


PCB LAYOUTS

MAIN PCB LAYOUT TOP

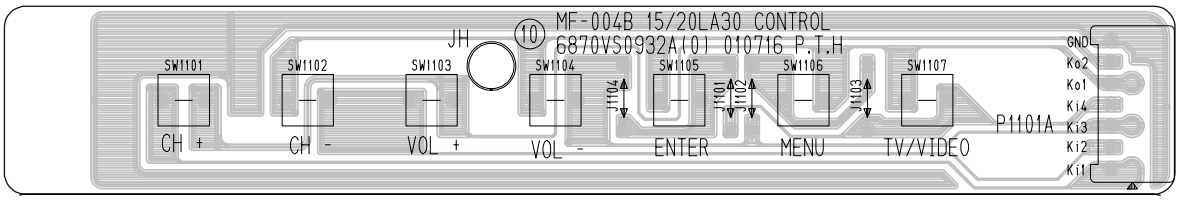


MAIN PCB LAYOUT BOTTOM

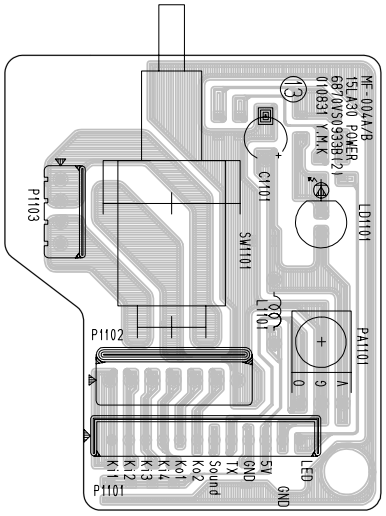


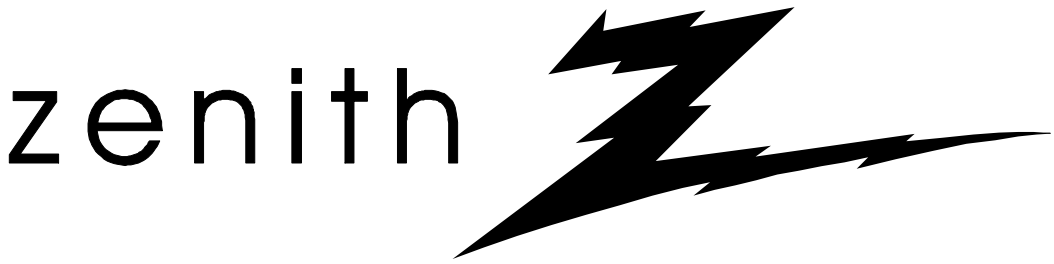
PCB LAYOUTS

CONTROL PANEL PCB LAYOUT

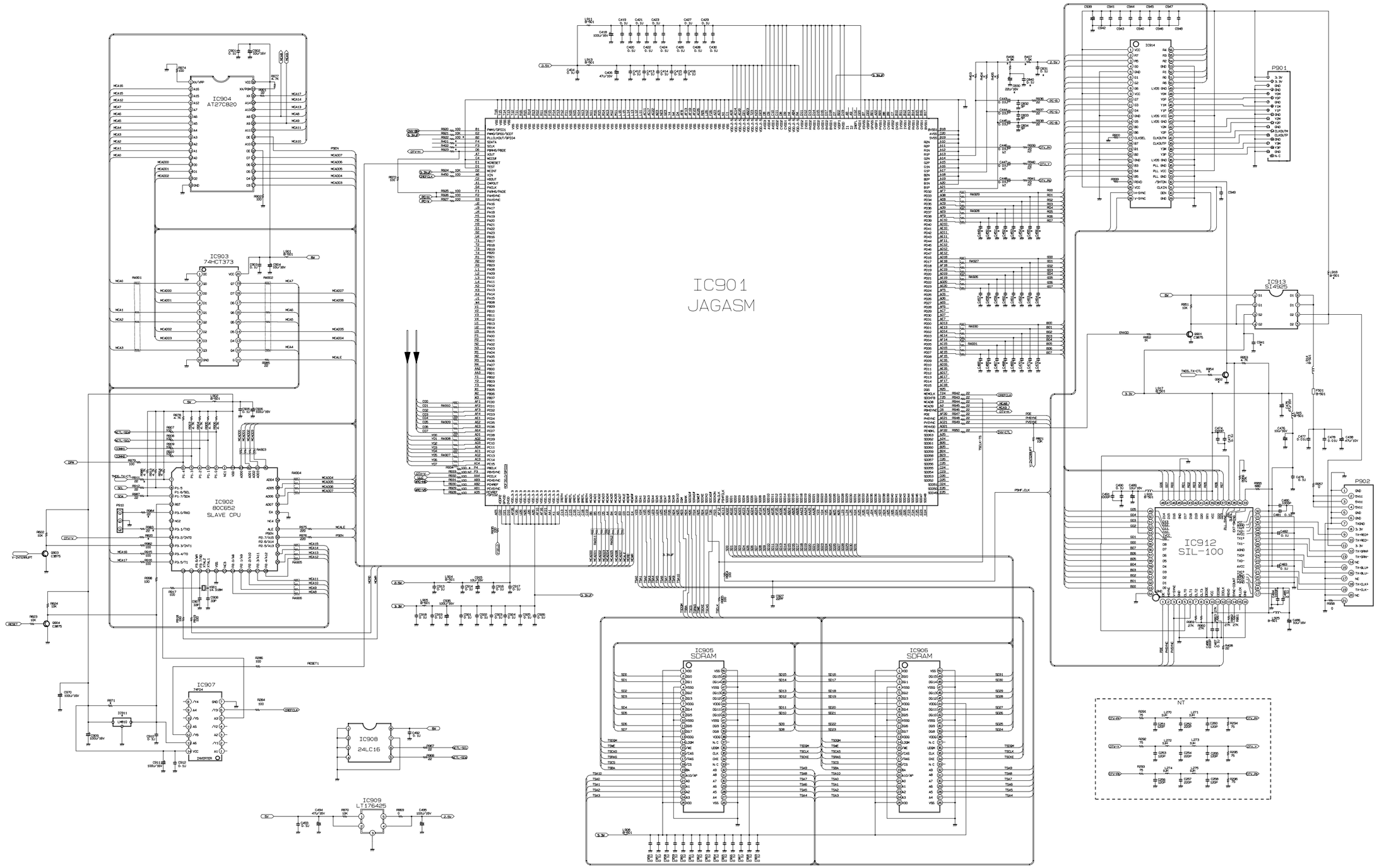


POWER SWITCH PCB LAYOUT




zenith

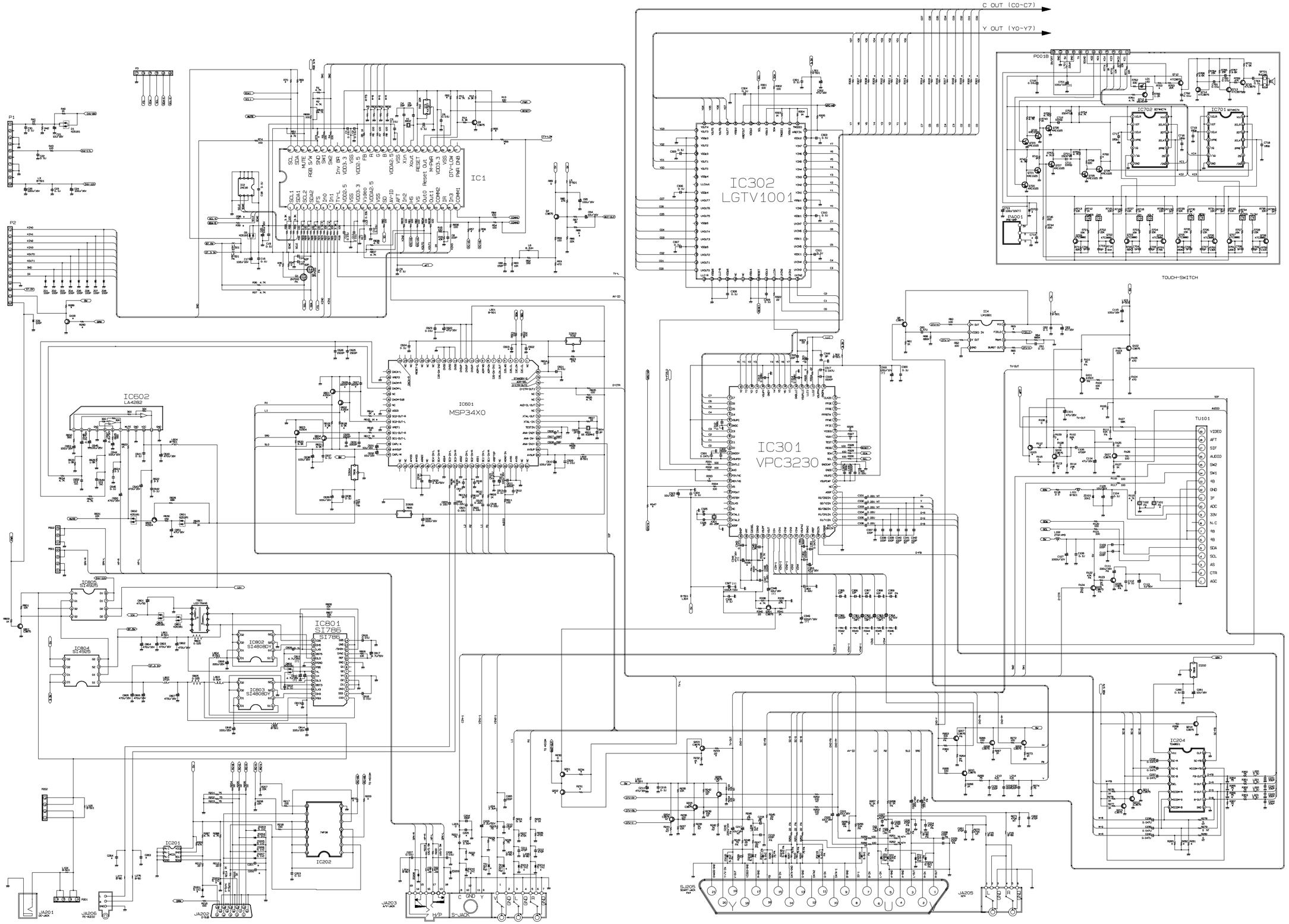
L15V26 Main Micro Circuit 1/2



L15V26 Signal Circuit 2/2

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

G — F — E — D — C — B — A



CRITICAL SAFETY COMPONENTS ARE IDENTIFIED BY THE SYMBOL ⚠.
REPLACE ONLY WITH PART NUMBERS SPECIFIED.

NOTE: WAVEFORMS AND VOLTAGES WERE MEASURED AT 120VAC,
CHANNEL 5, AND NSTC COLOR BARS.