zenith

SERVICE MANUAL

Product Type:	LCD TV
Chassis:	ML-027B
Manual Part #:	3828VD0140D
Model Line:	
Product Year:	2003

Model Series:

L17W36DVD

CONTENTS

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Zenith Electronics Corporation
201 James Record Road
Huntsville, Alabama 35824-1513

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PRODUCT SAFETY

IMPORTANT SAFETY NOTICE

This manual was prepared for use only by properly trained audiovisual 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 Isolation 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's 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: 1-877-993-6484

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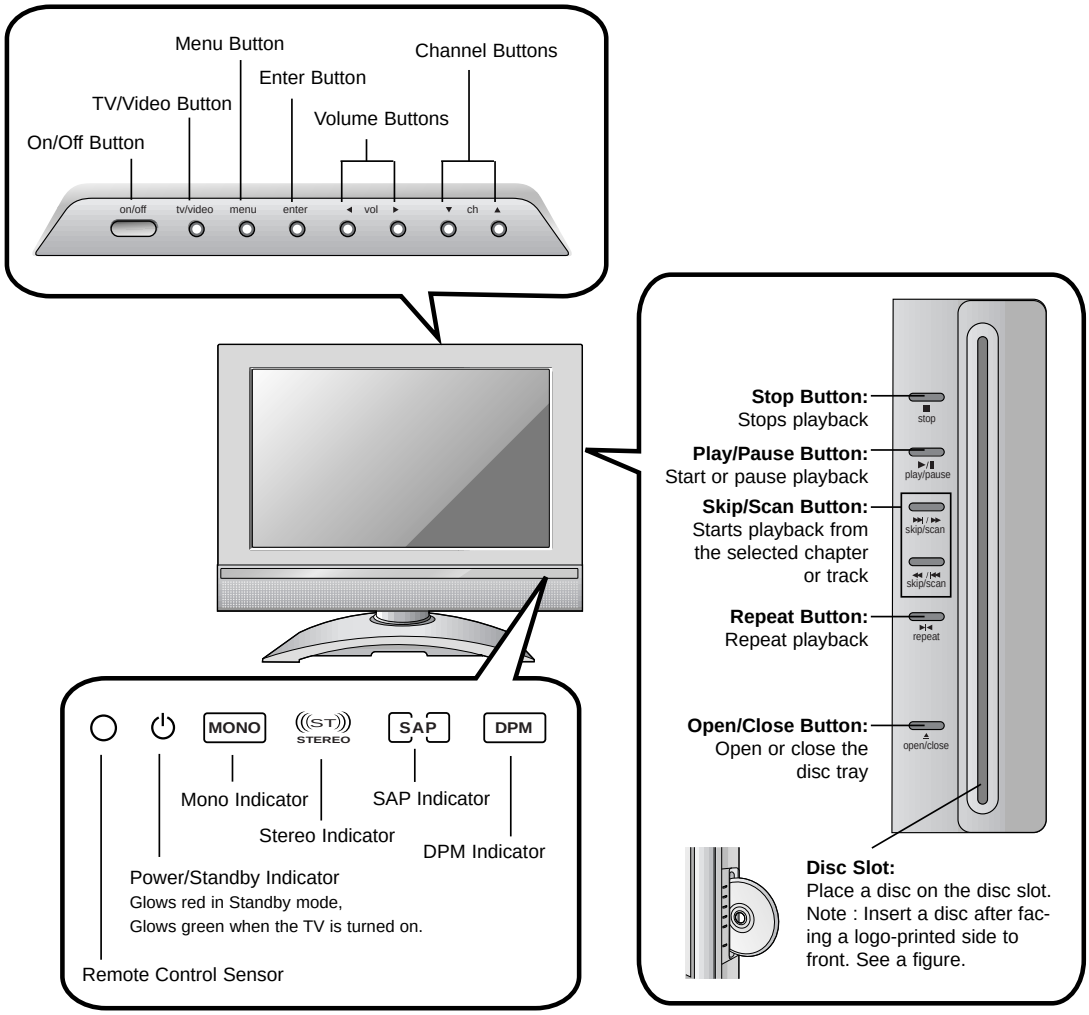
SPECIFICATIONS

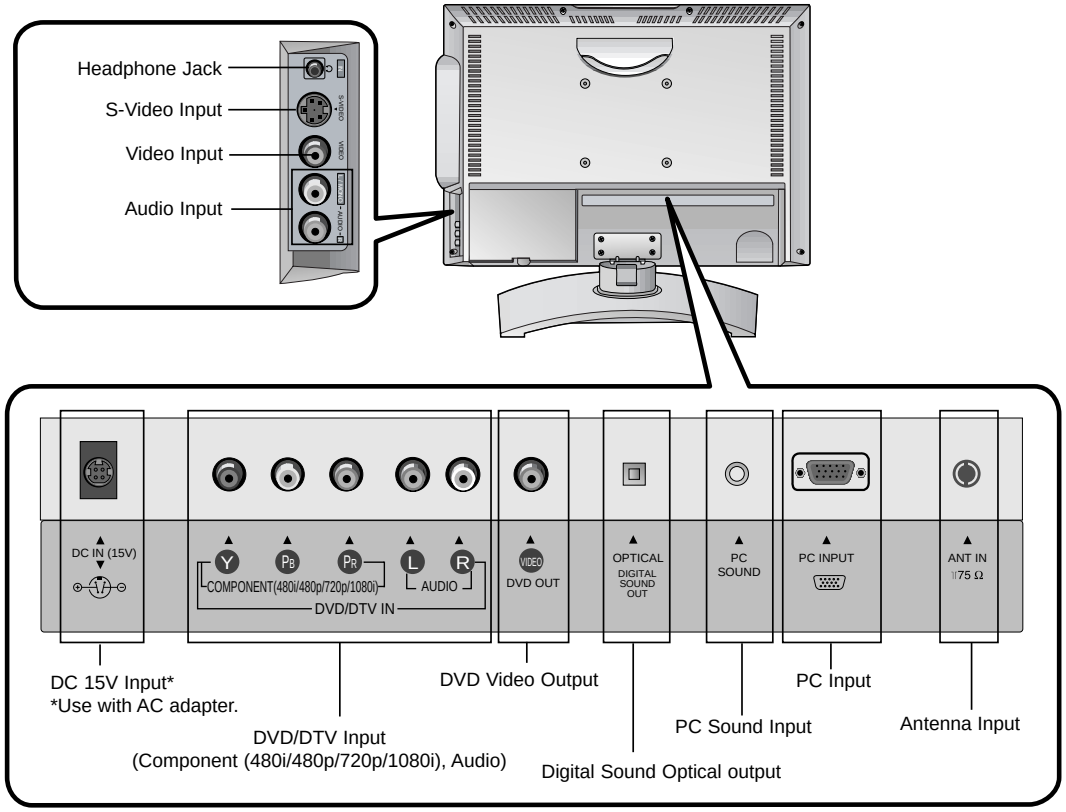
MODEL	L17W36DVD
Power Requirements*	DC15V/4.5A
Adapter (AC to DC Power)	In: AC 100-240V ~ 1.6A-0.7A, 50/60Hz Out: DC 15V, 4.5A * For use only with Model No. SAD7015SE AC Adapter, manufactured by H & E CO., LTD.
Television System	NTSC
Television Channels	VHF: 2 ~ 13, UHF: 14 ~ 69, Cable: 01 ~ 125
Television Screen	LCD Panel
External Antenna Impedance	75 Ω
Audio Output	3 W + 3 W

DESCRIPTION OF CONTROLS

Controls

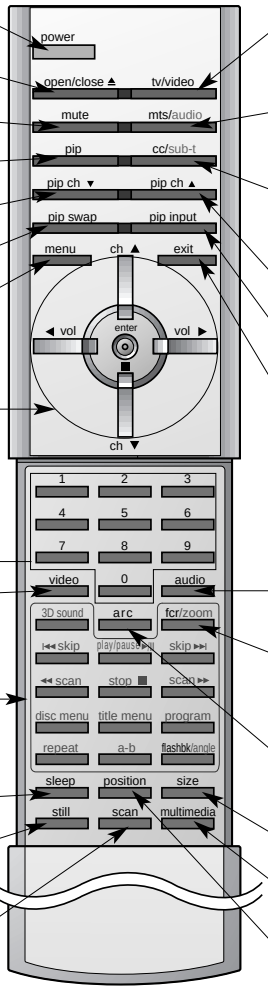


Connection Options



Remote Control Key Functions

- When using the remote control, aim it at the remote control sensor on the TV.



POWER
Switches the TV between ON and STANDBY.

OPEN/CLOSE
Opens or closes the disc slot.

MUTE
Use to turn the sound on or off temporarily.

PIP
Selects PIP or Double window mode.

PIP CH ▼
Tunes to next lower PIP channel.

PIP SWAP
Exchanges the sub/main images.

MENU
Displays the main menu on the screen.

ENTER

CH ▲ / ▼ (Channel button)
Selects available channels found with EZ scan.

VOL ◄ / ► (Volume button)
Decreases/increases the sound level.

NUMBER buttons

VIDEO
Selects a factory preset picture according to the room.

DVD BUTTON
Controls the DVD player. For further details, see the 'DVD Operation' section.

SLEEP
Sets the Sleep Timer.

STILL
Freezes the currently-viewed picture. Sub picture is frozen in PIP/Twin picture mode.

SCAN

TV/VIDEO
Selects: **TV**, **Video**, **S-Video**, **DVD**, **Component**, or **RGB-PC** mode.

MTS/AUDIO
Selects MTS sound: Mono, Stereo, or SAP.
Changes the AUDIO during DVD playback.

CC/SUB-T
Selects closed caption options: Off, EZ Mute, or On.
Changes the subtitle language during DVD playback.

PIP CH ▲
Tunes to next higher PIP channel.

PIP INPUT
Selects the input source for the sub picture.

EXIT
Clears all on-screen displays and returns to TV viewing from any menu.

AUDIO
Selects the sound appropriate for the program's character.

FCR/ZOOM
Press this button to return to the last channel you were watching.
Changes the picture size during DVD playback.

ARC
Changes the aspect ratio.

SIZE
Changes the sub picture size.

MULTIMEDIA
Selects: **TV**, **DVD**, **Component**, or **RGB-PC** mode.

POSITION
Changes the sub picture position.

ADJUSTMENT INSTRUCTIONS

1. Application Object

This instruction is for the application to the LCD TV.

2. Notes

(1) This set uses an adapter, so connect the adapter and the set correctly before adjustment.
(2) The adjustment must be performed under the correct sequence.
(3) The adjustment must be performed in the circumstance of 25±5°C of temperature and 65±10% of relative humidity if there is no specific designation.
(4) The input voltage of the receiver must keep 100~220V, 50/60Hz in adjusting.
(5) The set must be operated for 15 minutes preliminarily before adjustment if there is no specific designation.

※ 'Heat Run' must be performed with the full white signal or TV noise signal in the internal part of the set.
※ The time for 'Heat Run' can be changed owing to production plan.

3. PC Input Mode Adjustment

3-1. Required Test Equipment

(1) MSPG-925LTH or A pattern generator ;Gray pattern of 16 tones
(2) A adjustment communicator.

3-2. Preparation for Adjustment

(1) Perform 'Heat Run' for more than 15 minutes in white pattern.
(2) Connect the signal of pattern generator with LCD TV.

3-3. Auto Gray Adjustment

(1) Apply the gray signal of XGA(1024X768) 16 tones by using MSPG-925LTH.
(2) In Service menu mode,adjust the Auto gay from 0 to 1 by using Vol(+) button.

4. Position Adjustment

Mode	VGA-60	VGA-67	VGA-75	VGA-85	SVGA-56	SVGA-60	SVGA-72	SVGA-75	SVGA-
H_Display	640	640	640	640	800	800	800	800	85800
V_Display	480	480	480	480	600	600	600	600	600
V_Frequency	60	67	75	82	56	60	72	75	85
H_Total	800	864	840	832	1024	1056	1040	1056	1048
H_Blanking	160	224	200	192	224	256	240	256	248
H_Sync	96	64	64	56	72	128	120	80	64
H_Polarity	NEG.	NEG.	NEG	NEG	POS	POS	POS	POS	POS
H_Vp	48	96	120	80	128	88	64	160	152
H_Fp	16	64	16	56	24	40	56	16	32
H-Freq[KHz]	31.469	35.0	37.5	43.269	35.156	37.879	48.077	46.875	53.674
/Clk[MHz]	25.175	30.24	31.5	36.0	36.0	40.0	50.0	49.5	56.25
V_Total	525	525	500	509	62.5	628	666	625	631
V_Blanking	45	45	20	29	25	28	66	25	31
V_Sync	2	3	3	3	2	4	6	3	3
V_Polarity	NEG	NEG	NEG	NEG	POS	POS	POS	POS	POS
V_Bp	33	39	16	25	22	23	23	21	27
V_Fp	10	3	1	1	1	1	37	1	1

Mode	XGA-60	XGA-70	XGA-75	XGA-85	WXGA-50	WXGA-60
H_Display	1024	1024	1024	1024	1280	1280
V_Display	768	768	768	768	768	768
V_Frequency	60	70	75	82	50	60
H_Total	1344	1328	1312	1376	1648	1680
H_Blanking	320	304	288	352	368	400
H_Sync	136	136	96	96	128	136
H_Polarity	NEG	NEG	POS	POS	NEG	NEG
H_Vp	136	144	176	208	184	200
H_Fp	160	24	16	48	56	64
H-Freq[KHz]	48.363	56.476	60.023	68.677	39.518	47.693
/Clk[MHz]	65.0	75.0	78.75	84.997	65.125	80.125
V_Total	806	806	800	808	791	795
V_Blanking	38	38	32	40	23	27
V_Sync	6	6	3	3	7	7
V_Polarity	NEG	NEG	POS	POS	POS	POS
V_Bp	29	29	28	36	15	19
V_Fp	3	3	1	1	1	1

5. EDID (The Extended Display Identification Data)

EDID Table

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	00	FF	FF	FF	FF	FF	FF	00	30	E5	D7	3A	01	00	00	00
10	00	0B	01	01	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	01	01	10	0E	01	01	01	01	01	01	01	01
40	01	01	01	01	01	01	01	01	F9	15	01	01	01	01	01	01
50	01	01	01	01	01	01	01	01	01	01	64	19	00	40	41	00
60	26	30	18	88	36	00	0E	C3	10	00	00	1E	00	00	00	FD
70	00	32	55	1E	46	0D	00	0A	20	20	20	20	20	20	00	C8

TROUBLESHOOTING

1. General Features

No.	Symptom	Cause	Check Point
1	No screen	Input error of inverter connector	1) Bend the pin legs of P1 connector -> recheck them 2) Check and repair F804.
		P704 connector slipping out	1) Check and fix P704 connector 2) Check and fix the components at P704 LCD module and at main board. 3) Check Pin21.
		Cracked components and soldering at tuner board	Check and repair tuner board and main board
2	Dark screen	1) Defective LCD lamp 2) Defective inverter 3) Input error for inverter	1) Replace the LCD lamp 2) Replace the inverter 3) Check the connector input.

2. PC Mode

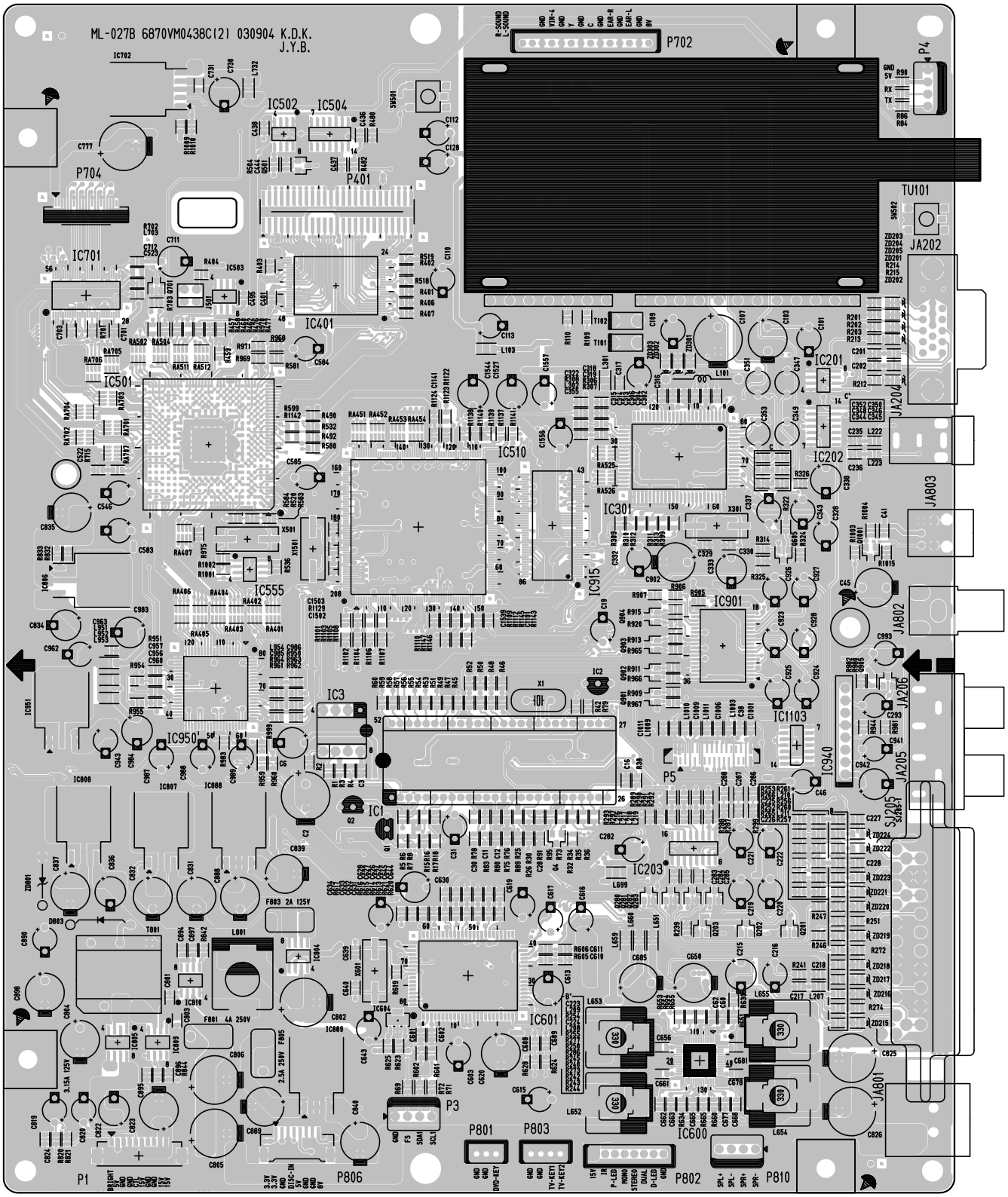
No.	Symptom	Cause	Check Point
1	Screen noise	Clock or phase being not able to be adjusted.	1) Resettig is needed according to the video card of each PC. 2) Horizontal noise : adjust phase until no horizontal noise occurres. 3) Vertical noise : adjust clock in menu until no vertical noise occurres.
2	Screen position error	Screen position error horizontally or vertically	1) Activate the Auto Configure in the Menu. 2) Adjust horizontal and vertical position until the screen displayes normally.
3	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
1	No sound - Speaker - Earphone	Defective Reset IC of IC604. Defective MSP3411 of IC601. Defective B+(8V,5V) of IC603.	1) Check volume and speaker. - Sound comes out only when being inputted into Audio L/R. 2) Check after replacing IC604. 3) Replace IC601. 4) Check and replace B+ of IC603.
2	Video color beat noise	Earphone shield case being touched.	Check the mould of shield and SJ209, Replace shield case.
		Soldering IC301 and IC510.	Re-soldering

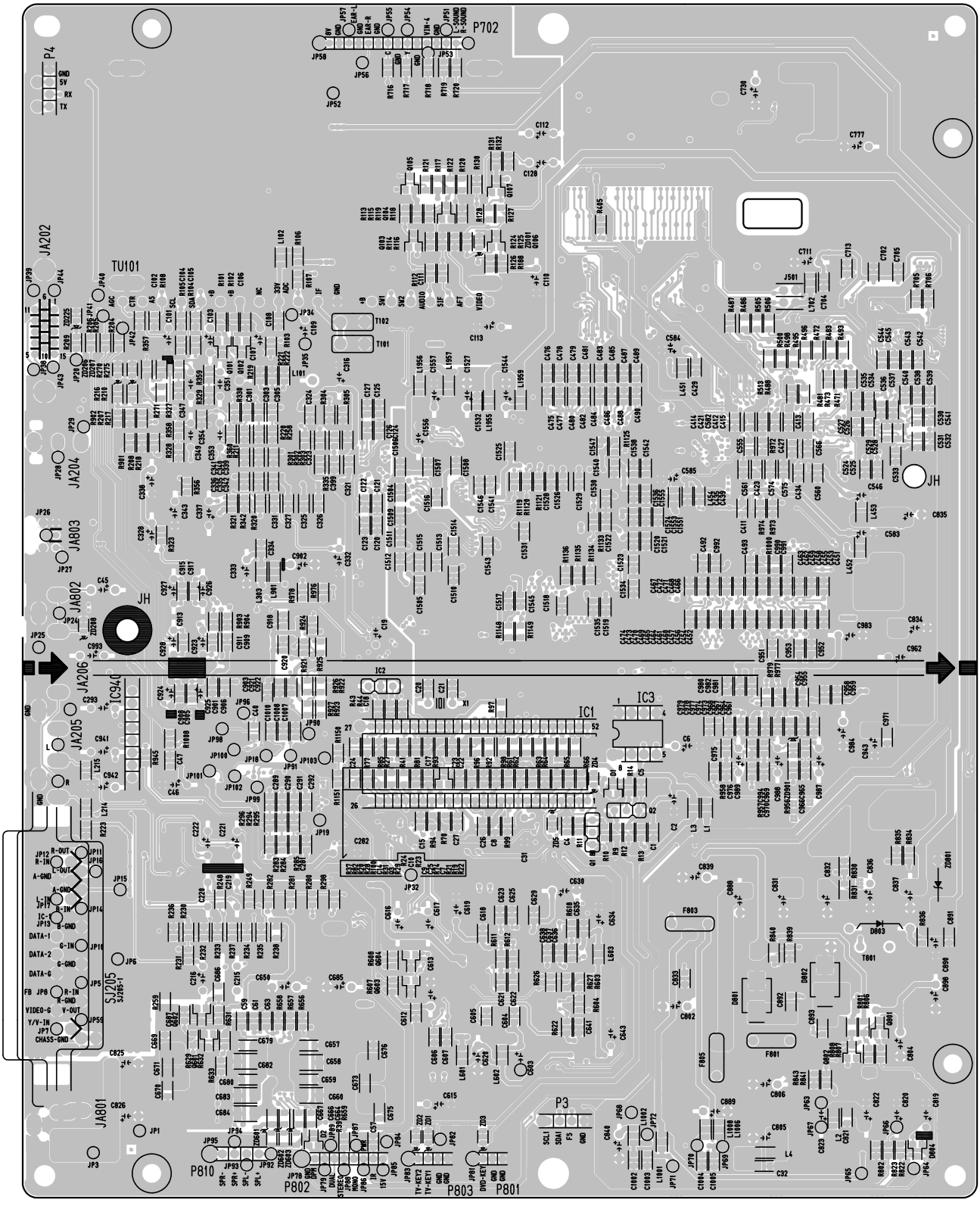
PRINTED CIRCUIT BOARD

MAIN(TOP)



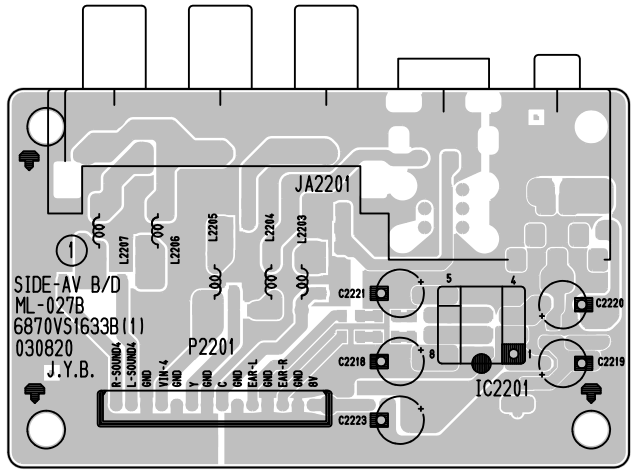
PRINTED CIRCUIT BOARD

MAIN(BOTTOM)

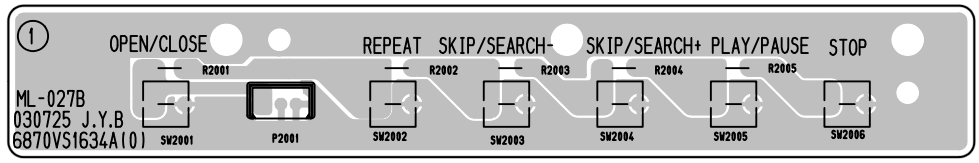


PRINTED CIRCUIT BOARD

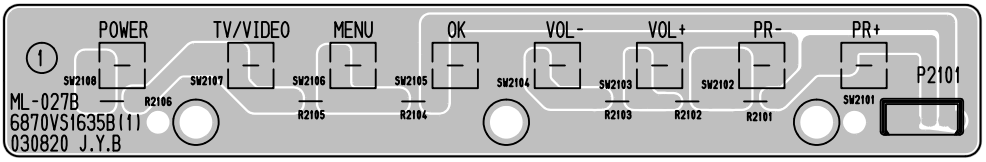
SIDE AV



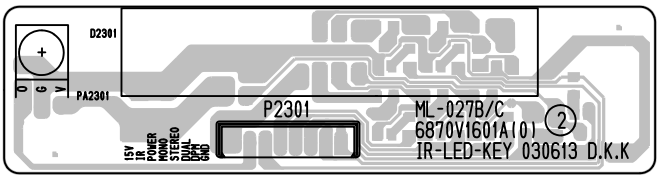
DVD CONTROL



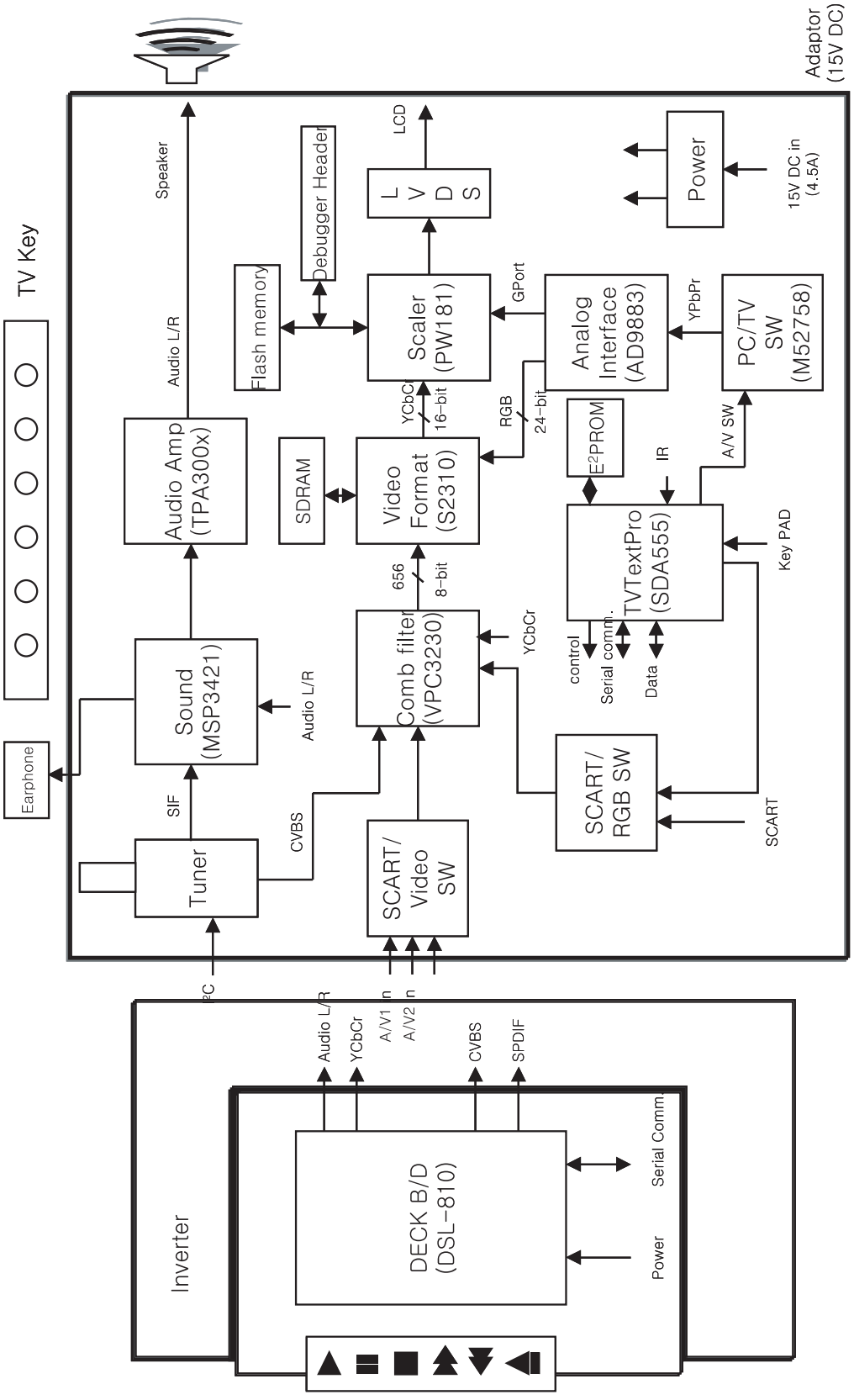
TV CONTROL



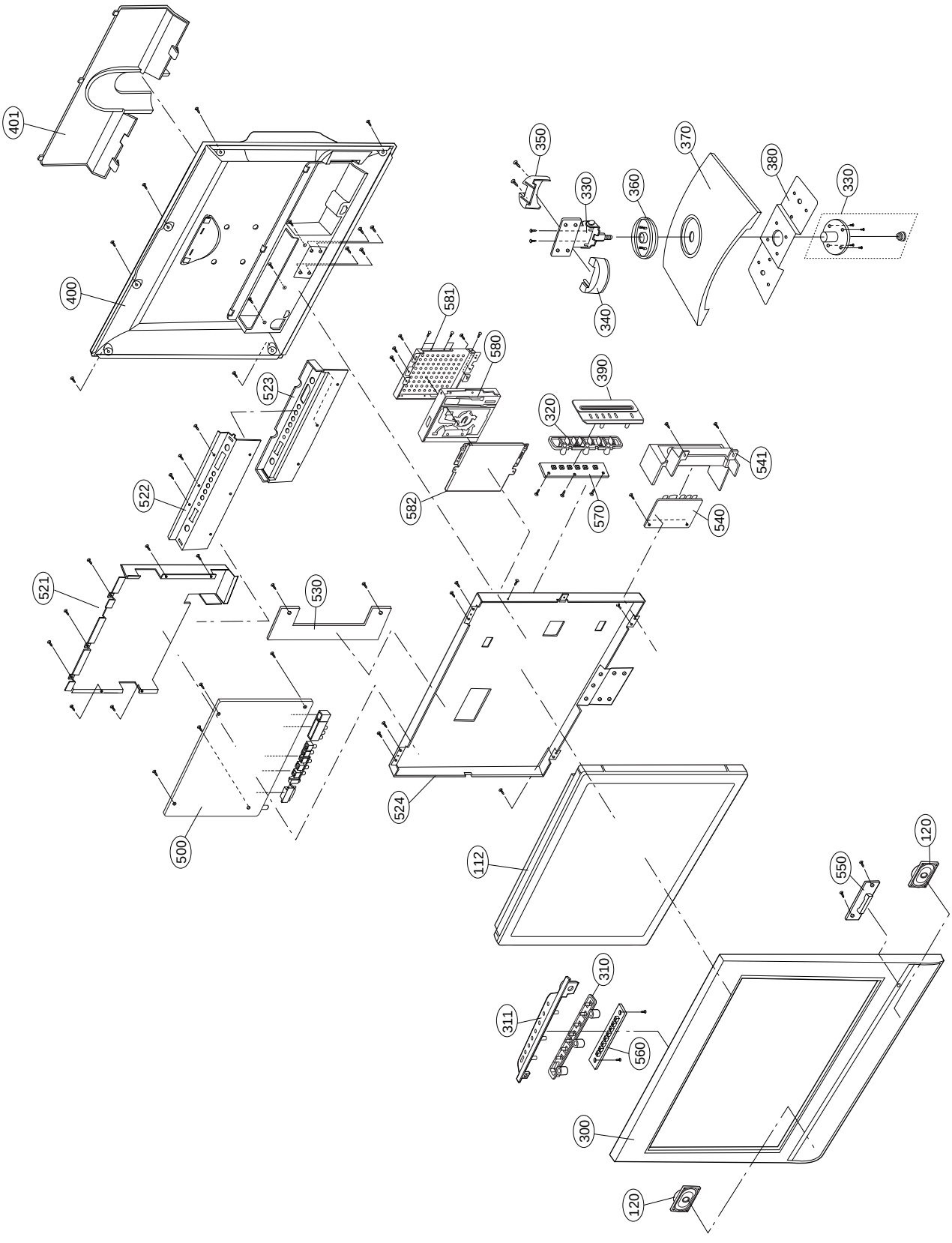
LED



BLOCK DIAGRAM



EXPLODED VIEW



EXPLODED VIEW PARTS LIST

No.	PART NO.	DESCRIPTION
112	6306V17001A	LCD,LC171W03-A4 LG PHILPS TFT COLOR TFT LCD MODULE
120	6400GKTX01A	SPEAKER,FULLRANGE F1527C-6428 8OHM 7/12W 83DB
300	3091V00535C	CABINET ASSEMBLY,KU-17LZ21 NON ML027B
310	5020V00798A	BUTTON,CONTROL 17LZ20 ABS 8KEY NON
311	4810V00836A	BRACKET,CONTROL 17LZ20 NON NON NON
320	5020V00799A	BUTTON,CONTROL 17LZ21 ABS NON NON
330	4950V00157A	METAL,STAND NON HINGE ASSY_15LA60
340	4810V00777A	BRACKET,STAND 15LA60 ML012B NON HINGE FRONT
350	4810V00778A	BRACKET,STAND 15LA60 ML012B NON HINGE COVER
360	4810V00776A	BRACKET,DECO 15LA60 ML012B NON STAND DECO.
370	4810V00779E	BRACKET,STAND RU-17LZ20 NON ABS, HF-380 .
380	4950V00135A	METAL,STAND NON BASE, 15LA60
390	4810V00837B	BRACKET,CONTROL KU-17LZ21 ML027B HIPS 60HR FOR DVD
400	3809V00371D	BACK COVER ASSEMBLY,KU-17LZ21 ML-027B NON WITH DVD
401	3550V00335A	COVER,REAR AV 17LZ20 ABS, HF-380 NON
500	6871VMMQ91A	PCB ASSEMBLY,MAIN ML-027B MANUAL ASSY
521	4950V00168B	METAL,SHIELD NON FOR DVD
522	4950V00191A	METAL,SHIELD ET KZ-17LZ21
523	4810V00896B	BRACKET,REAR AV KU-17LZ21 ML027B HIPS 40AF .
524	4950V00167F	METAL,FRAME EGI
530	6633VA0003V	INVERTER ASSEMBLY,15V NON ECT 6LAMP 03T VE FRONTEC
540	6871VSMW84A	PCB ASSEMBLY,SUB A/V ML027B KZ-17LZ21 SIDE A/V MANUAL
541	4810V00838K	BRACKET,SIDE AV KU-17LZ21 ML027B HIPS 40AF .
550	6871VSMX76A	PCB ASSEMBLY,SUB LED ML027B KU-17LZ21 INDEX MANUAL
560	6871VSMW86B	PCB ASSEMBLY,SUB CTL ML027B KU-17LZ21 TV CONTROL MANUAL
570	6871VSMW85B	PCB ASSEMBLY,SUB CTL ML027B KU-17LZ21 DVD CONTROL MANUAL
580	4405V00002B	DVD-ROM,DSV-810-MMA-BBE22 NEW VERSION DVS KOREA
581	4950V00200B	METAL,SHIELD EGI DVD TOP PRESS
582	4950V00201B	METAL,SHIELD EGI DVD BOTTOM PRESS

REPLACEMENT PARTS LIST

For Capacitors & Resistors, the 2nd and 3rd digits in the P/No. designate;
CC, CX, CK, CN : Ceramic
CQ : Polyestor
CE : Electrolytic
RD : Carbon Film
RS : Metal Oxide Film
RN : Metal Film
RF : Fusible

RUN DATE : 2003.12.3

LOCA. NO	PART NO	DESCRIPTION
IC		
IC1	0IZZVC0107A	M37136EFSP DIP 52P ST
IC1103	0IMCRFA021A	74VHCU04MX 14P SOP TP HEX INVERTER
IC2	0IFA754207A	KA75420ZTA 3P,TO92 TP 42V RESET IC
IC201	0IAL242110A	AT24C2110SI25 8P,SOP TP 1K EEPROM
IC202	0IMCRFA022A	74F14SC 14P SOIC R/TP SCHMITT TRIGGER IC
IC2201	0ISG282200A	TDA2822M 8D DUAL AUDIO AMP(1W)
IC3	0IAL241610B	AT24C16A10PI27 8PIN DIP ST EEPROM NON
IC301	0IIT323000E	VPC3230D C5 80P VIDEO PROCESSOR
IC401	0IIN298003A	COPY TE28F800B3TA90 48TSOP BK 8M
IC501	0IMCRPW001B	PW181(133MHZ) PIXELWORKS 352PBGA
IC502	0IMCRTI020A	TLC7733ID 8P SOP R/TP DTYPE 33V
IC503	0IMCRAL006A	AT24C16AN10SI27 8P SOIC R/TP EEPROM
IC504	0IMCRTI002A	SN74HCT32D 16P R/TP QUADRUPLE2INPUT
IC510	0IMCRGN001B	FLI2310BC 208P PQFP TRAY DIGITAL VIDEO
IC555	0IMCRPU001A	P2781A PULSE CORE SO 8 PIN
IC600	0IMCRTI022D	TPA3004D2 48P 9WSTEREO AUDIO AMP
IC601	0IMCRMN012A	MSP4450G QA B8 80P MULTI SOUND
IC604	0IKE704200J	KIA7042AF SOT89 TP 42V
IC701	0IMCRTH001A	THC63LVDM83R 56P TRANSMITTER IC
IC702	0IMCRNS007B	LM2941S 5P TO263 R/TP 12V
IC806	0IMCRNS007C	LMS1587CSADJ 3P TO263 R/TP 15V
IC807	0IMCRNS007C	LMS1587CSADJ 3P TO263 R/TP 15V
IC808	0IMCRNS007C	LMS1587CSADJ 3P TO263 R/TP 15V
IC809	0IMCRMZ001A	MP1583DN 8P TSOP R/TP DCDC CONVERTER
IC810	0IMCRMZ001A	MP1583DN 8P TSOP R/TP DCDC CONVERTER
IC888	0IMCRNS007A	LM2940S 8V 3P TO263 R/TP REGULATOR
IC889	0IMCRNS007A	LM2940S 8V 3P TO263 R/TP REGULATOR
IC901	0IMCRMI006A	M52758FP MITSUBISHI 36PIN
IC915	0IMMRHY033A	HY57V643220C(L)T6 HYNIX 86P 64M
IC940	0ISA701600A	LA7016 8S ANALOG S/W
IC950	0IMCRAD002A	AD9883AKST110 ANALOG DEVICE 80P
IC951	0IMCRNS007E	LMS1587CS33 3P TO263 R/TP 33V
TRANSISTOR		
IC804	0TFVI80005A	VISHAY SI4963DY R/TP SO8 20V 62A
IC805	0TF492509AA	SI4925DY TP TEMIC 30V 61A SO8
Q1001	0TR150400BA	CHIP 2SA1504S(ASY) KEC
Q1002	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q104	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q107	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q201	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q202	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q203	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q2201	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q3	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q4	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q601	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q602	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q605	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q701	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q801	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q802	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q905	0TR387500AA	CHIP 2SC3875S(ALY) KEC
DIODE		
D1	0DD181009AB	KDS181 TP KEC 85V 300MA
D2	0DD181009AB	KDS181 TP KEC 85V 300MA
D801	0DR340009AA	MBRS340 40V 3A 80A 2MA
D802	0DR340009AA	MBRS340 40V 3A 80A 2MA
D803	0DD100009AM	EU1ZV(1) TP SANKEN
D804	0DD181009AB	KDS181 TP KEC 85V 300MA
ZD1	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD2	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD201	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD202	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD203	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD204	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD205	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD206	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD207	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD208	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD215	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD217	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD218	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD219	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD220	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD2201	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD2202	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD2204	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD2205	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD2206	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD221	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD222	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD225	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD3	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD301	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD302	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD303	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD4	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD5	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD601	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD602	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD603	0DZRM00178A	ZENERS,UDZS TE17 51B
ZD801	0DZ330009BA	ZENERS,ZENER HZT33

REPLACEMENT PARTS LIST

LOCA. NO	PART NO	DESCRIPTION
ZD901	0DZRM00178A	ZENERS,UDZS TE17 51B
CAPACITOR		
C107	0CE108DD618	1000UF STD 10V M
C109	0CE106DK618	10UF STD 50V M
C110	0CE476DF618	47UF STD 16V M
C112	0CE476DF618	47UF STD 16V M
C113	0CE107DF618	100UF STD 16V M
C128	0CE106DF618	10UF STD 16V M
C1527	0CE107DF618	100UF STD 16V M
C1544	0CE107DF618	100UF STD 16V M
C1556	0CE107DF618	100UF STD 16V M
C1557	0CE107DF618	100UF STD 16V M
C19	0CE106DF618	10UF STD 16V M
C2	0CE687DD618	680UF STD 10V 20%
C216	0CE106DF618	10UF STD 16V M
C219	0CE106DF618	10UF STD 16V M
C220	0CE106DF618	10UF STD 16V M
C2209	0CK225DFK4A	22UF 2012 16V 20%,20%
C2210	0CK225DFK4A	22UF 2012 16V 20%,20%
C2212	0CK225DFK4A	22UF 2012 16V 20%,20%
C2213	0CK225DFK4A	22UF 2012 16V 20%,20%
C2214	0CK225DFK4A	22UF 2012 16V 20%,20%
C2215	0CK225DFK4A	22UF 2012 16V 20%,20%
C2218	0CE107DF618	100UF STD 16V M
C2219	0CE107DF618	100UF STD 16V M
C2220	0CE107DF618	100UF STD 16V M
C2221	0CE107DF618	100UF STD 16V M
C2223	0CE107DF618	100UF STD 16V M
C293	0CE106DK618	10UF STD 50V M
C301	0CK224DF56A	220000PF 2012 16V 10%
C302	0CK224DF56A	220000PF 2012 16V 10%
C303	0CK224DF56A	220000PF 2012 16V 10%
C304	0CK224DF56A	220000PF 2012 16V 10%
C305	0CK224DF56A	220000PF 2012 16V 10%
C306	0CK224DF56A	220000PF 2012 16V 10%
C31	0CE105DK618	1UF STD 50V M
C315	0CK224DF56A	220000PF 2012 16V 10%
C316	0CE107DF618	100UF STD 16V M
C328	0CE106DF618	10UF STD 16V M
C332	0CE476DF618	47UF STD 16V M
C333	0CE107DF618	100UF STD 16V M
C336	0CK224DF56A	220000PF 2012 16V 10%
C337	0CE226DF618	22UF STD 16V M
C338	0CE107DF618	100UF STD 16V M
C341	0CK224DF56A	220000PF 2012 16V 10%
C343	0CE476DF618	47UF STD 16V M
C347	0CE105CK636	1UF SHL,SD 50V M FM5 BP(D) TP
C349	0CE105CK636	1UF SHL,SD 50V M FM5 BP(D) TP
C351	0CE105CK636	1UF SHL,SD 50V M FM5 BP(D) TP
C353	0CE105CK636	1UF SHL,SD 50V M FM5 BP(D) TP

LOCA. NO	PART NO	DESCRIPTION
C45	0CE477DD618	470UF STD 10V M
C46	0CE476DD618	47UF STD 10V 20%
C546	0CE107DF618	100UF STD 16V M
C583	0CE107DF618	100UF STD 16V M
C584	0CE107DF618	100UF STD 16V M
C585	0CE107DF618	100UF STD 16V M
C59	0CK105DF64A	1UF 2012 16V 20%
C6	0CE107DF618	100UF STD 16V M
C60	0CK105DF64A	1UF 2012 16V 20%
C603	0CE476DF618	47UF STD 16V M
C61	0CK105DF64A	1UF 2012 16V 20%
C613	0CE107DF618	100UF STD 16V M
C616	0CE106DF618	10UF STD 16V M
C617	0CE106DF618	10UF STD 16V M
C619	0CE335DK618	33UF STD 50V 20%
C62	0CK105DF64A	1UF 2012 16V 20%
C620	0CE227DH618	220UF STD 25V M
C620	0CE477DD618	470UF STD 10V M
C621	0CK224DF56A	220000PF 2012 16V 10%
C622	0CK224DF56A	220000PF 2012 16V 10%
C624	0CK224DF56A	220000PF 2012 16V 10%
C626	0CK224DF56A	220000PF 2012 16V 10%
C627	0CK224DF56A	220000PF 2012 16V 10%
C627	0CK105DF64A	1UF 2012 16V 20%
C628	0CK105DF64A	1UF 2012 16V 20%
C628	0CK224DF56A	220000PF 2012 16V 10%
C63	0CK105DF64A	1UF 2012 16V 20%
C630	0CE107DF618	100UF STD 16V M
C634	0CE107DF618	100UF STD 16V M
C643	0CE476DF618	47UF STD 16V M
C644	0CK224DF56A	220000PF 2012 16V 10%
C645	0CK224DF56A	220000PF 2012 16V 10%
C650	0CE227DH618	220UF STD 25V M
C658	0CN475FH67A	47UF 3225 25V 20%
C660	0CN475FH67A	47UF 3225 25V 20%
C662	0CK105DF64A	1UF 2012 16V 20%
C665	0CK105DF64A	1UF 2012 16V 20%
C666	0CK105DF64A	1UF 2012 16V 20%
C668	0CK105DF64A	1UF 2012 16V 20%
C677	0CK105DF64A	1UF 2012 16V 20%
C682	0CN475FH67A	47UF 3225 25V 20%
C683	0CN475FH67A	47UF 3225 25V 20%
C684	0CN475FH67A	47UF 3225 25V 20%
C685	0CE227DH618	220UF STD 25V M
C687	0CK105DF64A	1UF 2012 16V 20%
C711	0CE107DF618	100UF STD 16V M
C730	0CE107DH618	100UF STD 25V M
C777	0CE477DF618	470UF STD 16V 20%
C802	0CE108DD618	1000UF STD 10V M
C804	0CE477DD618	470UF STD 10V M
C805	0CE477DH618	470UF STD 25V M

REPLACEMENT PARTS LIST

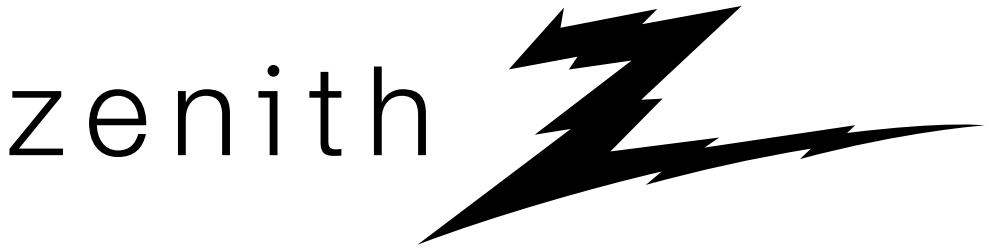
LOCA. NO	PART NO	DESCRIPTION
C806	0CE477DH618	470UF STD 25V M
C819	0CE106DF618	10UF STD 16V M
C820	0CE474DK618	04700UF STD 50V M
C822	0CE107DH618	100UF STD 25V M
C823	0CE227DH618	220UF STD 25V M
C825	0CE477DH618	470UF STD 25V M
C826	0CE477DH618	470UF STD 25V M
C831	0CE227DH618	220UF STD 25V M
C831	0CE477DD618	470UF STD 10V M
C831	0CE476DD618	47UF STD 10V 20%
C832	0CE477DD618	470UF STD 10V M
C834	0CE227DD618	220UF STD 10V M
C834	0CE476DD618	47UF STD 10V 20%
C835	0CE477DD618	470UF STD 10V M
C836	0CE227DD618	220UF STD 10V M
C836	0CE476DD618	47UF STD 10V 20%
C837	0CE477DD618	470UF STD 10V M
C839	0CE477DF618	470UF STD 16V 20%
C840	0CE477DF618	470UF STD 16V 20%
C888	0CE227DH618	220UF STD 25V M
C889	0CE227DH618	220UF STD 25V M
C890	0CE106DK618	10UF STD 50V M
C898	0CE477DD618	470UF STD 10V M
C902	0CE227DD618	220UF STD 10V M
C923	0CE476DF618	47UF STD 16V M
C924	0CE476DF618	47UF STD 16V M
C925	0CE476DF618	47UF STD 16V M
C926	0CE476DF618	47UF STD 16V M
C927	0CE476DF618	47UF STD 16V M
C928	0CE476DF618	47UF STD 16V M
C941	0CE106DK618	10UF STD 50V M
C942	0CE107DF618	100UF STD 16V M
C943	0CE107DF618	100UF STD 16V M
C956	0CK823DK56A	82000PF 2012 50V 10%
C962	0CE107DF618	100UF STD 16V M
C983	0CE107DF618	100UF STD 16V M
C984	0CE107DF618	100UF STD 16V M
C987	0CE476DF618	47UF STD 16V M
C988	0CE476DF618	47UF STD 16V M
C989	0CE476DF618	47UF STD 16V M
C993	0CE106DF618	10UF STD 16V M
FUSE		
F801	0FS4001B84B	FUSE,SLOW BLOW 0FS 4000MA 250V
F803	0FT2001A86B	FUSE,SLOW BLOW 2000MA 125V
F805	0FT2001A86B	FUSE,SLOW BLOW 2000MA 125V
F805	0FS2501B84B	FUSE,SLOW BLOW 2500MA 250V
JACK		
JA204	6612VCH003B	JACK,PHONE PEJ012C H=65 STEREO 1P
JA205	380-336E	JACK,RCA WA6013E 1P

LOCA. NO	PART NO	DESCRIPTION
JA206	380-336F	JACK,RCA WA6013E 1P
JA2201	6613V00008F	JACK ASSEMBLY,PMJ014F E/P(ST)+SVHS+3P
JA801	6612VAH001C	JACK,PHONE DC003 4PIN POWER JACK
JA802	380-336B	JACK,RCA PJ601332 PARK A/V 1P
JA803	6612BBBHN4C	JACK,DIN TOTX179 TOSHIBA P
SJ205	6612VJH008D	JACK,RCA PJ6063D DVD IN 3P
COIL & TRANSFORMER		
L101	0LA0102K139	INDUCTOR,10UH K
L2203	0LA0331K119	INDUCTOR,33UH K
L2204	0LA0331K119	INDUCTOR,33UH K
L2206	0LA0472K119	INDUCTOR,47UH K
L2207	0LA0472K119	INDUCTOR,47UH K
L2208	0LA1000K119	INDUCTOR,100UH K
L2209	0LA1000K119	INDUCTOR,100UH K
L652	6140VR0008A	COIL,SLF12575T330M4R7 33UH
L653	6140VR0008A	COIL,SLF12575T330M4R7 33UH
L654	6140VR0008A	COIL,SLF12575T330M4R7 33UH
L655	6140VR0008A	COIL,SLF12575T330M4R7 33UH
L801	6140VR0008B	COIL,SLF12575T150M3R2 15UH
T801	6170VMCA57B	TRANSFORMER,SMPS[COIL] EPC1716 15UH
CONNECTOR		
JA202	6630G15E215	CONNECTOR,DSUB KSD 15P 229MM
P2001	6631V20041H	CONNECTOR ASSEMBLY,3P 20MM
P2201	6631V20040J	CONNECTOR ASSEMBLY,14P 20MM
P2301	6631V20010F	CONNECTOR ASSEMBLY,8P 20MM
RESISTOR		
L2205	0RD0752F609	75 OHM 1/6 W 500%
R2001	0RD6800F609	680 OHM 1/6 W 5%
R2002	0RD9100F609	910 OHM 1/6 W 500%
R2003	0RD1201F609	12K OHM 1/6 W 5%
R2004	0RD1801F609	18K OHM 1/6 W 500%
R2005	0RD2401F609	24K OHM 1/6 W 500%
R2101	0RD6800F609	680 OHM 1/6 W 5%
R2102	0RD9100F609	910 OHM 1/6 W 500%
R2103	0RD1601F609	16K OHM 1/6 W 500%
R2104	0RD6800F609	680 OHM 1/6 W 5%
R2105	0RD9100F609	910 OHM 1/6 W 500%
R2106	0RD1601F609	16K OHM 1/6 W 500%
RA401	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA402	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA403	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA404	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA405	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA406	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA407	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA451	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA452	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA453	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%

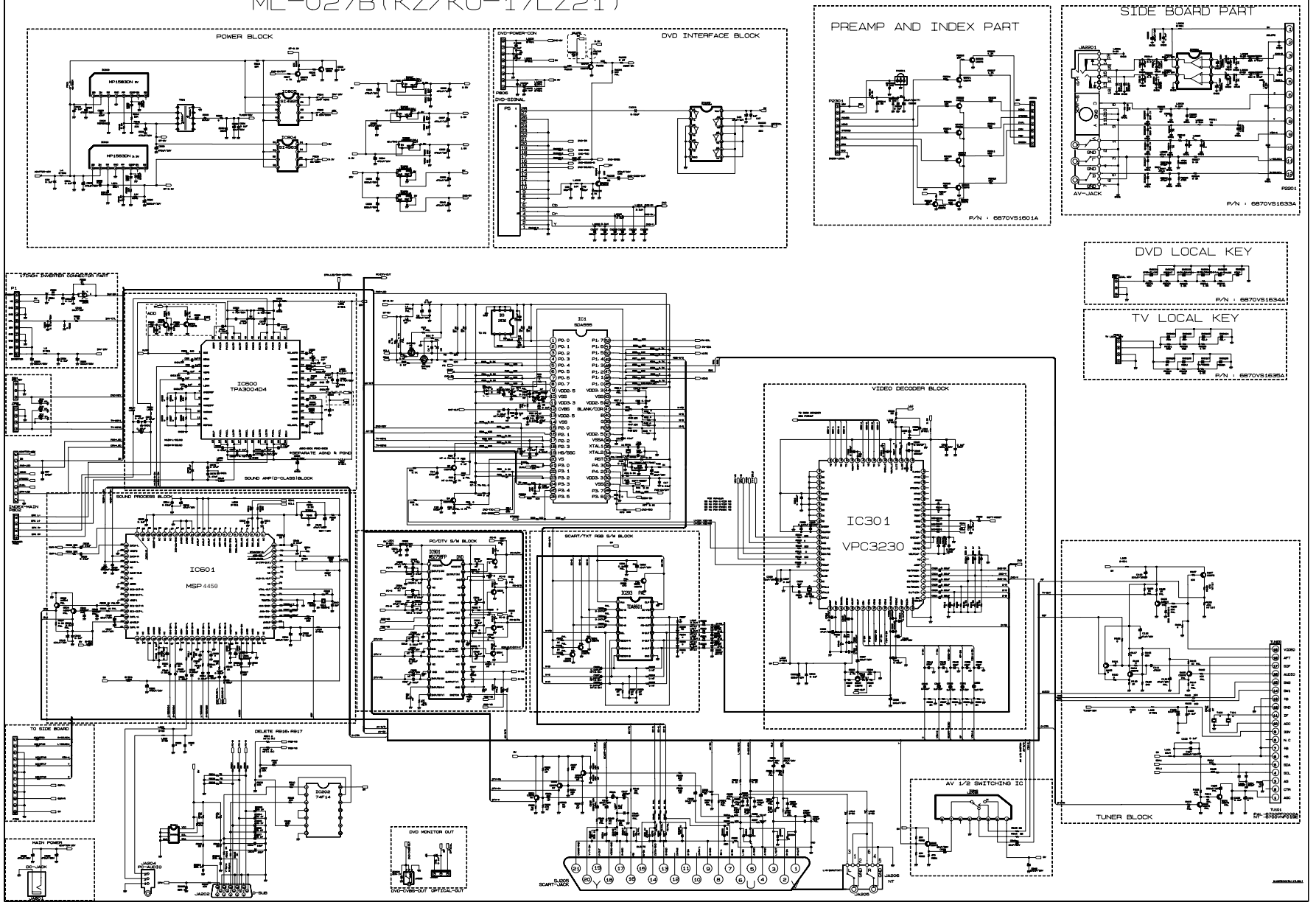
REPLACEMENT PARTS LIST

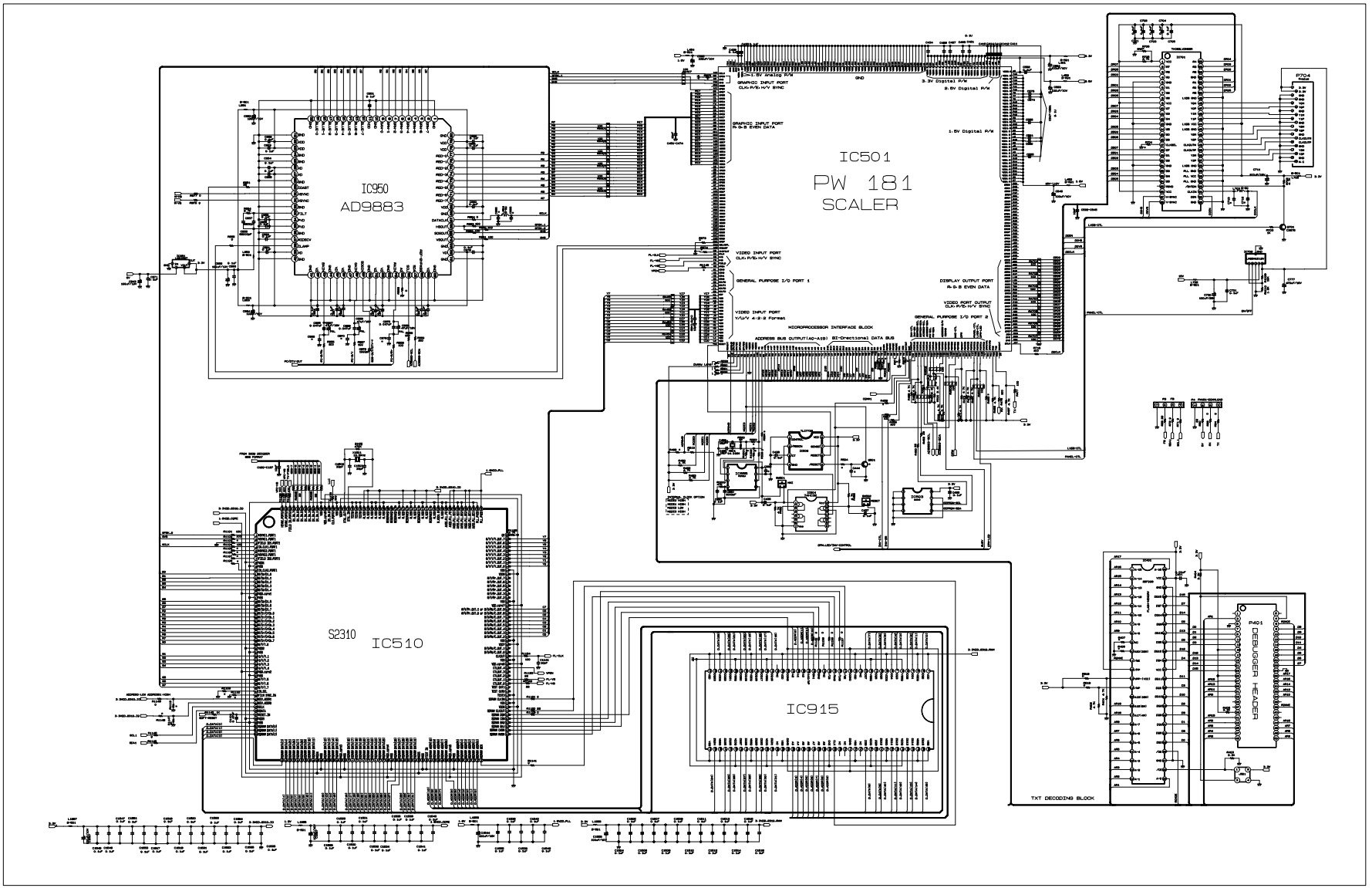
LOCA. NO	PART NO	DESCRIPTION
RA454	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA502	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA504	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA511	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA512	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA525	0RRZVTA001D	22 OHM 1 / 16 W 1608 5%
RA526	0RRZVTA001D	22 OHM 1 / 16 W 1608 5%
RA701	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA702	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA703	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA704	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA705	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA706	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
RA707	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
SWITCH		
SW2001	140-313B	SWITCH,TACT 2LEAD 160G
SW2002	140-313B	SWITCH,TACT 2LEAD 160G
SW2003	140-313B	SWITCH,TACT 2LEAD 160G
SW2004	140-313B	SWITCH,TACT 2LEAD 160G
SW2005	140-313B	SWITCH,TACT 2LEAD 160G
SW2006	140-313B	SWITCH,TACT 2LEAD 160G
SW2101	140-313B	SWITCH,TACT 2LEAD 160G
SW2102	140-313B	SWITCH,TACT 2LEAD 160G
SW2103	140-313B	SWITCH,TACT 2LEAD 160G
SW2104	140-313B	SWITCH,TACT 2LEAD 160G
SW2105	140-313B	SWITCH,TACT 2LEAD 160G
SW2106	140-313B	SWITCH,TACT 2LEAD 160G
SW2107	140-313B	SWITCH,TACT 2LEAD 160G
SW2108	140-313B	SWITCH,TACT 2LEAD 160G
SW501	6600VR1004A	SWITCH,TACT SKHMPW 5P
SW502	6600VR1004A	SWITCH,TACT SKHMPW 5P
FILTER & CRYSTAL		
L1001	6210TCE001G	FILTER,EMC HH1M3216501
L1002	6210TCE001G	FILTER,EMC HH1M3216501
L1006	6210TCE001G	FILTER,EMC HH1M3216501
L1008	6210TCE001G	FILTER,EMC HH1M3216501
L102	6210TCE001G	FILTER,EMC HH1M3216501
L103	6210TCE001G	FILTER,EMC HH1M3216501
L1955	6210TCE001G	FILTER,EMC HH1M3216501
L1956	6210TCE001G	FILTER,EMC HH1M3216501
L1957	6210TCE001G	FILTER,EMC HH1M3216501
L1959	6210TCE001G	FILTER,EMC HH1M3216501
L2	6210TCE001G	FILTER,EMC HH1M3216501
L214	6210TCE001A	FILTER,EMC HB1S2012080JT
L215	6210TCE001A	FILTER,EMC HB1S2012080JT
L2201	6210TCE001A	FILTER,EMC HB1S2012080JT
L2202	6210TCE001G	FILTER,EMC HH1M3216501
L2210	6210TCE001A	FILTER,EMC HB1S2012080JT
L222	6210TCE001A	FILTER,EMC HB1S2012080JT

LOCA. NO	PART NO	DESCRIPTION
L223	6210TCE001A	FILTER,EMC HB1S2012080JT
L3	6210TCE001G	FILTER,EMC HH1M3216501
L301	6210TCE001G	FILTER,EMC HH1M3216501
L302	6210TCE001A	FILTER,EMC HB1S2012080JT
L303	6210TCE001G	FILTER,EMC HH1M3216501
L4	6210TCE001G	FILTER,EMC HH1M3216501
L451	6210TCE001G	FILTER,EMC HH1M3216501
L452	6210TCE001G	FILTER,EMC HH1M3216501
L453	6210TCE001G	FILTER,EMC HH1M3216501
L454	6210TCE001G	FILTER,EMC HH1M3216501
L601	6210TCE001G	FILTER,EMC HH1M3216501
L602	6210TCE001G	FILTER,EMC HH1M3216501
L603	6210TCE001G	FILTER,EMC HH1M3216501
L651	6210TCE001G	FILTER,EMC HH1M3216501
L659	6210TCE001G	FILTER,EMC HH1M3216501
L660	6210TCE001G	FILTER,EMC HH1M3216501
L699	6210TCE001G	FILTER,EMC HH1M3216501
L702	6210TCE001G	FILTER,EMC HH1M3216501
L703	6210TCE001A	FILTER,EMC HB1S2012080JT
L732	6210TCE001G	FILTER,EMC HH1M3216501
L802	6210TCE001G	FILTER,EMC HH1M3216501
L901	6210TCE001G	FILTER,EMC HH1M3216501
L951	6210TCE001G	FILTER,EMC HH1M3216501
L952	6210TCE001G	FILTER,EMC HH1M3216501
L953	6210TCE001G	FILTER,EMC HH1M3216501
L954	6210TCE001A	FILTER,EMC HB1S2012080JT
X1	156-A01P	RESONATOR,CRYSTAL HC49U 8000MHZ
X1501	6202VDT002J	RESONATOR,CRYSTAL SX1 13500000MHZ
X301	6202VDT002E	RESONATOR,CRYSTAL SX1SMD 20250000HZ
X501	6202VDT002B	RESONATOR,CRYSTAL SX1 SC143MHZ
X601	6202VDT002H	RESONATOR,CRYSTAL SX1 18432000MHZ
MISCELLANEOUS		
PA2301	6726VV0006D	REMOTE CONTROLLER RECEIVER,380KHZ
TU101	6700VNF019E	TUNER,TAFHH001P LG NTSC FS
ACCESSORIES		
A1	3828VA0387F	MANUAL,OWNERS ML027B ZENITH
A2	6710V00122E	REMOTE CONTROLLER,DVD
A3	6410VUH003A	POWER CORD,PS204001 VOLEX UL/CSA 1800MM
A4	6634B00043J	ADAPTER,ACDC SAD7015SE 15V 45A
A5	6851V00004D	CABLE ASSEMBLY,AUDIO TO AUDIO 2000MM
A6	6866VA9001A	CONNECTOR,DSUB 29909C,AT,L1830


zenith

ML-027B(KZ/KU-17LZ21)




IC950
AD9883
IC501
PW 181
SCALER
S2310
IC510
IC915
P704
P401
DEBUGGER HEADER
TXT DECODING BLOCK