zenith

SERVICE MANUAL

Product Type:	LCD TV
Chassis:	ML-024A
Manual Series:	
Manual Part #:	
Model Line:	
Product Year:	2002

Model Series:

L15V26C
L15V24S

CONTENTS

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

Printed in Korea

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 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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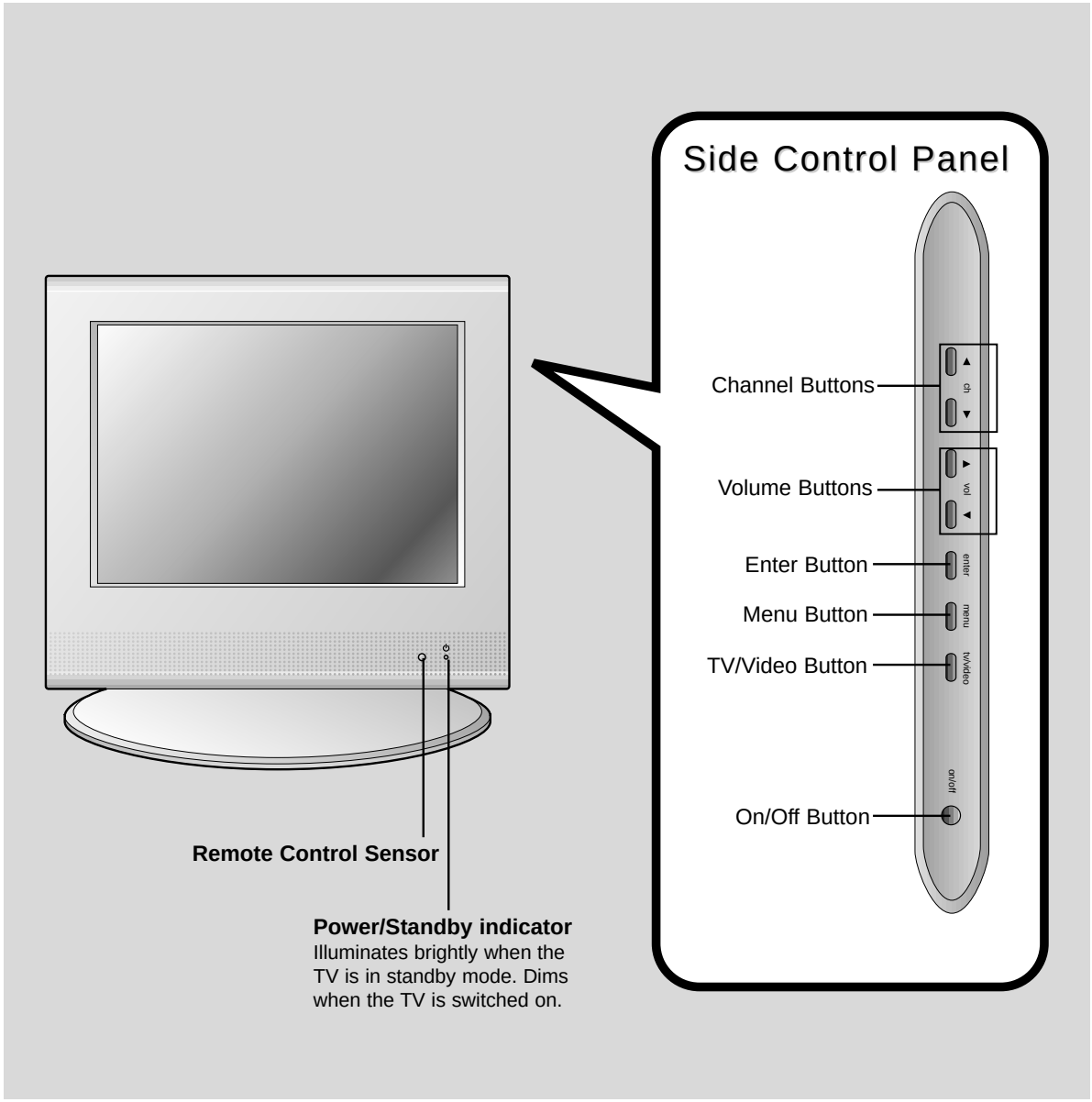
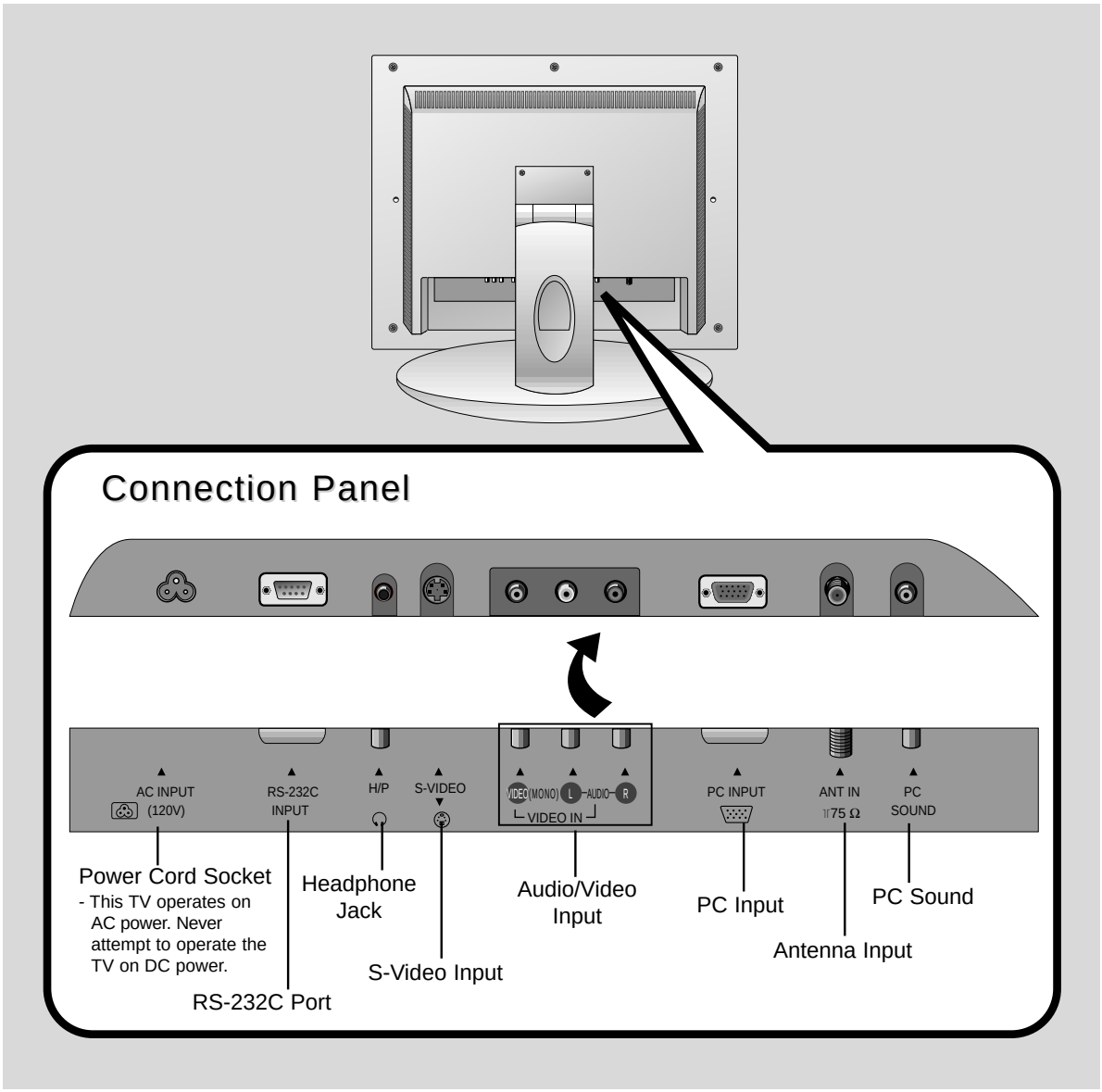
DESCRIPTION OF CONTROLS

Front of the TV **L15V24S**



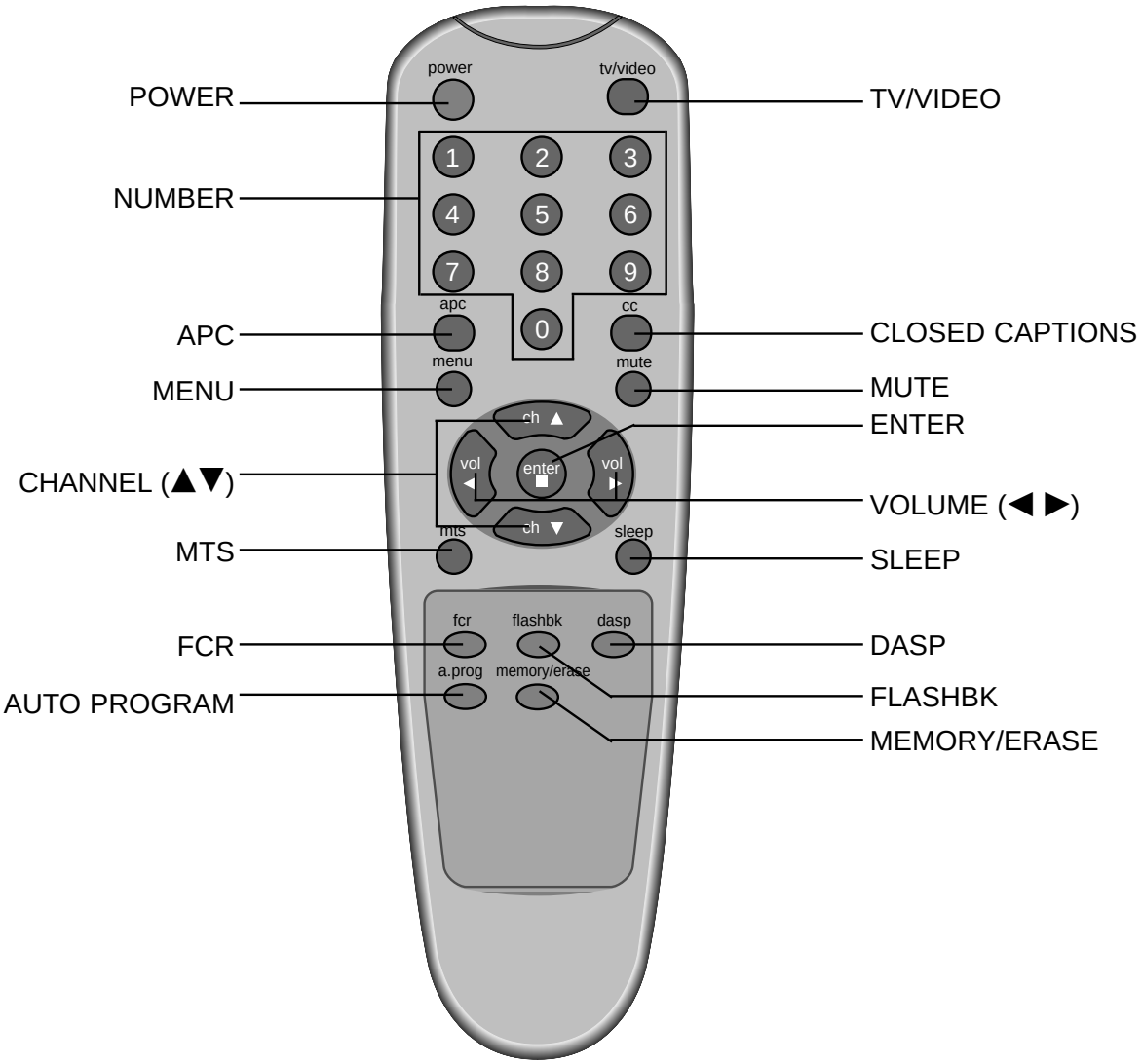
DESCRIPTION OF CONTROLS

Back of the TV



DESCRIPTION OF CONTROLS

Remote Control Buttons

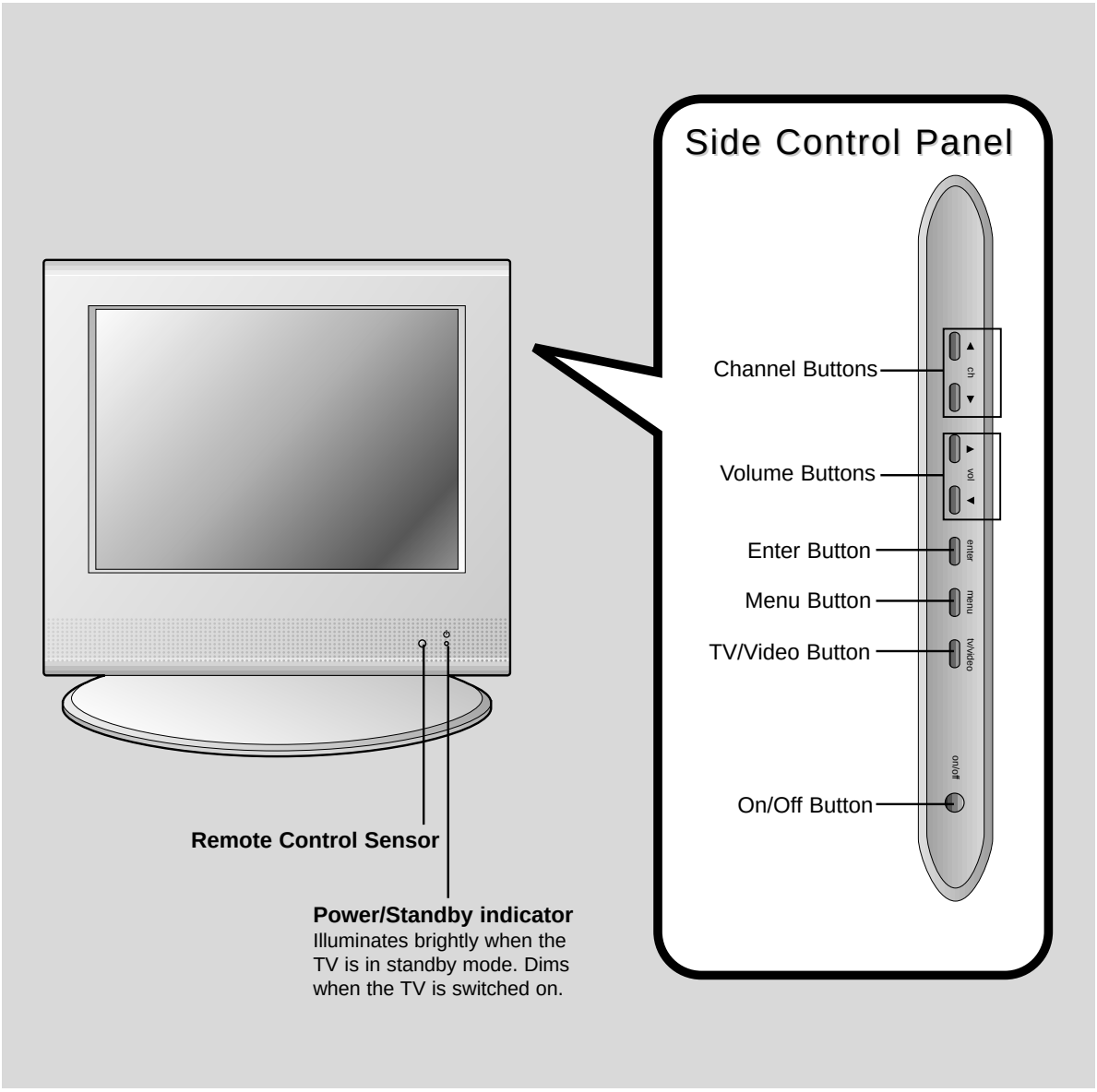


l Press the FLASHBK button to view the last program you were watching.

DESCRIPTION OF CONTROLS

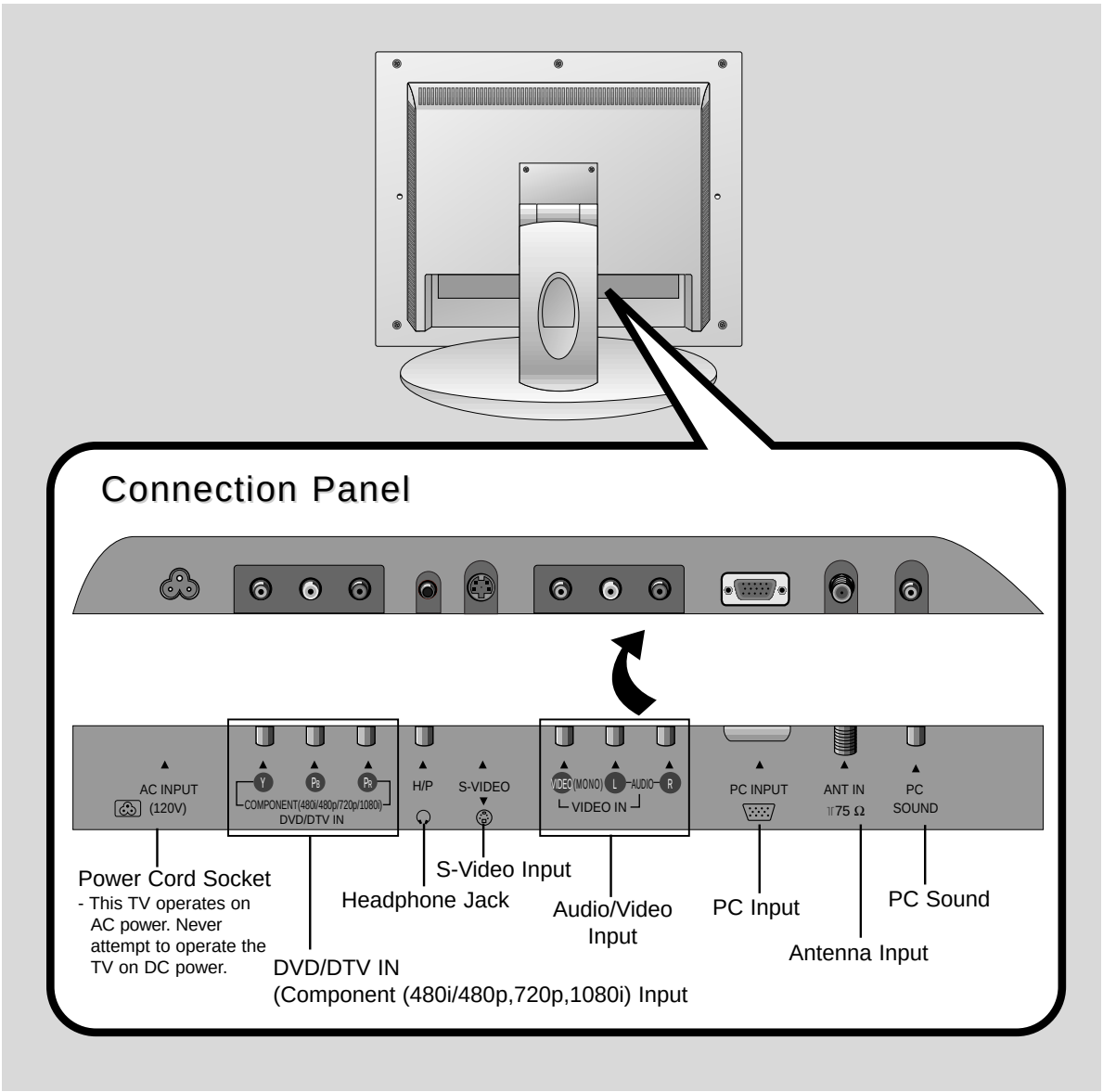
Front of the TV

L15V26C



DESCRIPTION OF CONTROLS

Back of the TV



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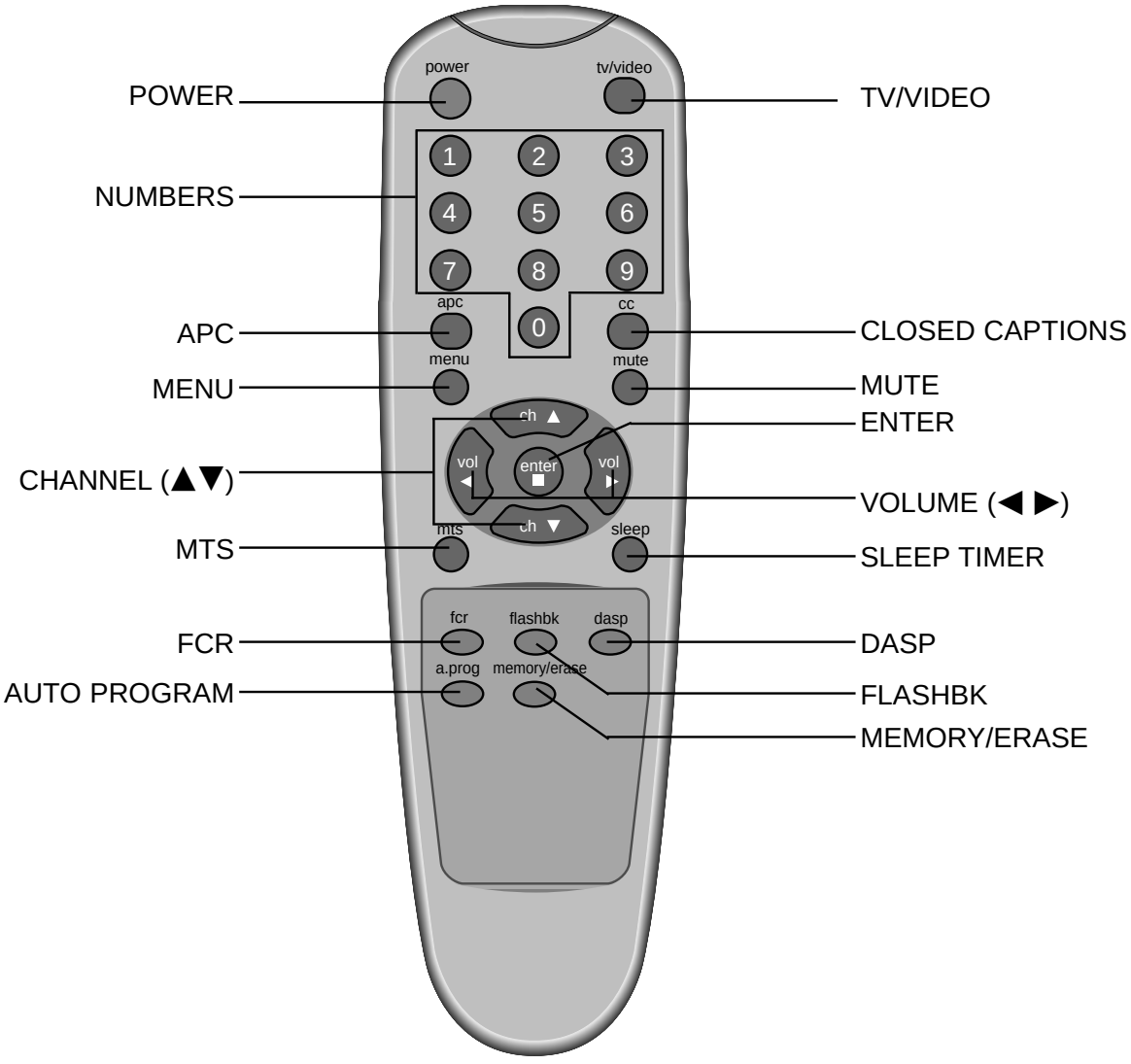
Remote Control Buttons



- Press the FLASHBK button to view the last program you were watching.

SPECIFICATIONS

Model	L15V24S
Horizontal size (inches)	15.2
Height (inches)	14.5
Thickness (inches)	7
Weight (pounds)	16
Power requirements	AC 120V, 60Hz
Television system	NTSC
Television channels	VHF : 2 ~ 13, UHF : 14 ~ 69 Cable : 1 ~ 125
Tube	LCD Panel
Power consumption	45 W
External antenna impedance	75 Ω
Audio output	1 W + 1 W
Speaker outputs	8 Ω X 2
External input ports	Power cord socket 1 RS-232C input port 1 S-VIDEO input 1 Headphone jack 1 Video/Audio input set 1 PC input jack 1 PC sound jack 1 Antenna input 1
Power supply cord set	Standard North America three wire earth-grounding with flexible cord SJT type or higher type.

CAUTION: If replacement becomes necessary, replace it with an exact duplicate. Contact any Zenith authorized service center.

SPECIFICATIONS

Displayable Monitor Output Format Specifications

MODE	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
VGA	640x400	37.9KHz	85Hz
	640x480	31.5KHz	60Hz
	640x480	35.0KHz	67Hz
	640x480	37.9KHz	72Hz
	640x480	37.5KHz	75Hz
	640x480	43.3KHz	85Hz
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

Notes:

a. For optimum picture quality, use standard XGA (1024x768) computer output at a 60Hz refresh rate. Using other formats (i.e.: VGA, SVGA, etc) or refresh rates may result in reduced picture quality. (To change the computer video output format, please refer to the operating manual for the computer you are using).

b. If the message “OUT OF RANGE” appears on the screen, adjust the PC output to a format listed in the ‘Displayable Monitor Output Format Specifications' chart above.

c. The synchronization input form for Horizontal and Vertical frequencies is separate.

DPM (Display Power Management) mode

When the PC is in the power saving mode, the monitor automatically switches to DPM mode.

SPECIFICATIONS

Model	L15V26C
Horizontal size (inches)	15.2
Height (inches)	14.5
Depth (inches)	7
Weight (pounds)	16
Power requirements	AC 120V, 60Hz
Television system	NTSC
Television channels	VHF : 2 ~ 13, UHF : 14 ~ 69 Cable : 1 ~ 125
Tube	LCD Panel
Power consumption	45 W
External antenna impedance	75 Ω
Audio output	1 W + 1 W
Speaker outputs	8 Ω X 2
External input ports	Power cord socket 1 Component (480i/480p/720p/1080i) input 1 set S-VIDEO input 1 Headphone jack 1 Video/Audio input set 1 PC input jack 1 PC sound jack 1 Antenna input 1
Power supply cord set	Standard North America three wire earth-grounding with flexible cord SJT type or higher type.

CAUTION: If replacement becomes necessary, replace it with an exact duplicate. Contact any Zenith authorized service center.

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VGA	640x400	37.9KHz	85Hz
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	800x600	48.1KHz	72Hz
	800x600	46.9KHz	75Hz
	800x600	53.7KHz	85Hz
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DPM (Display Power Management) mode

When the PC is in the power saving mode, the monitor automatically switches to DPM mode.

ADJUSTMENT INSTRUCTION

1. Application Object

This instruction is for the application to the LCD TV/Monitor, ML-024A.

2. Notes

(1) This LCD TV has power within set. Connect the power correctly, then start the 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.
- Condition of Line Test : Standard color signal - 65±1dBuV

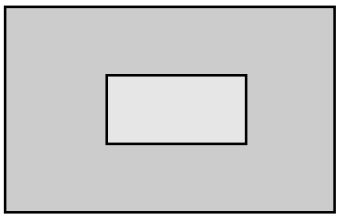
3. PC Mode Adjustment

3-1. Required Test Equipment

(1) Window Pattern which satisfied with VESA Spec. or pattern which has White-Black signal simultaneously.
(2) Remote control for adjustment

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 of PC Input Jack(D-Sub).
(3) Confirm the XGA(1024x768) Window Pattern or signal(White-Black) using the 801-GF/GD, VG819.
(4) Use the IN-START Key on R/C for adjustment to enter the PC adjustment mode.
(5) Example of adjustment screen.



<Fig. 1>

(6) Enter into the adjustment mode as <Fig. 1> and select the cursor(red letters) to "RGBSE ▶" with the channel key on R/C for adjustment.
(7) Press the Volume ▶ on R/C for adjustment.
(8) At this time the adjustment starts automatically changing the number in order of RO --> GO --> BO --> RD --> GD --> BD.
Finally, when the number of BD is changed the adjustment is completed.
(9) Press the MENU or EXIT key to come out of the adjustment mode.

4. Option

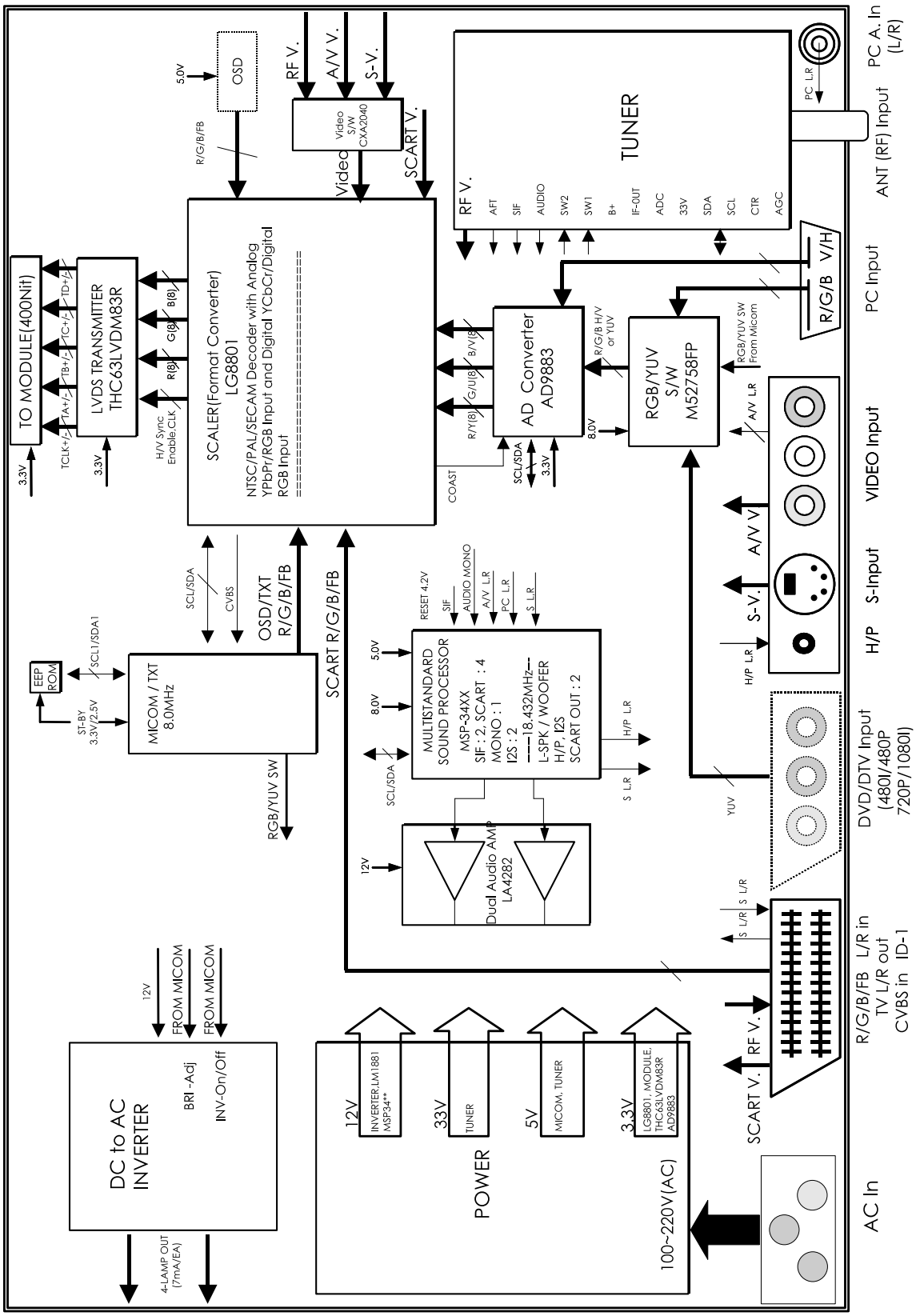
No.	Item	Specification	Remark
1	COMPO	0	Component input mode 0 : not ready 1 : ready
2	3SYS	0	Video input applicable system 0 : NTSC-M(North America) 1 : NTSC-M & PAL-M/N multi(South America)
3	LGCON	0	RS232C Protocol 0 : MPI Protocol(Zenith program) 1 : LG Protocol(LG program)
4	MPIOS	0	RS232C Protocol OSD display 0 : non display OSD 1 : display OSD
5	BLUEB	1	No - signal Video mode 0 : Black-Back 1 : Blue-Back
6	RLOCK	0	RS232C Protocol 0 : Remocon Lock 1: Remocon Unlock

5. RS232C(RMS Only)

(1) Use the Untweasted 232C Cable
(2) Use the PC program which is sent by Zenith
(3) 232C Protocol

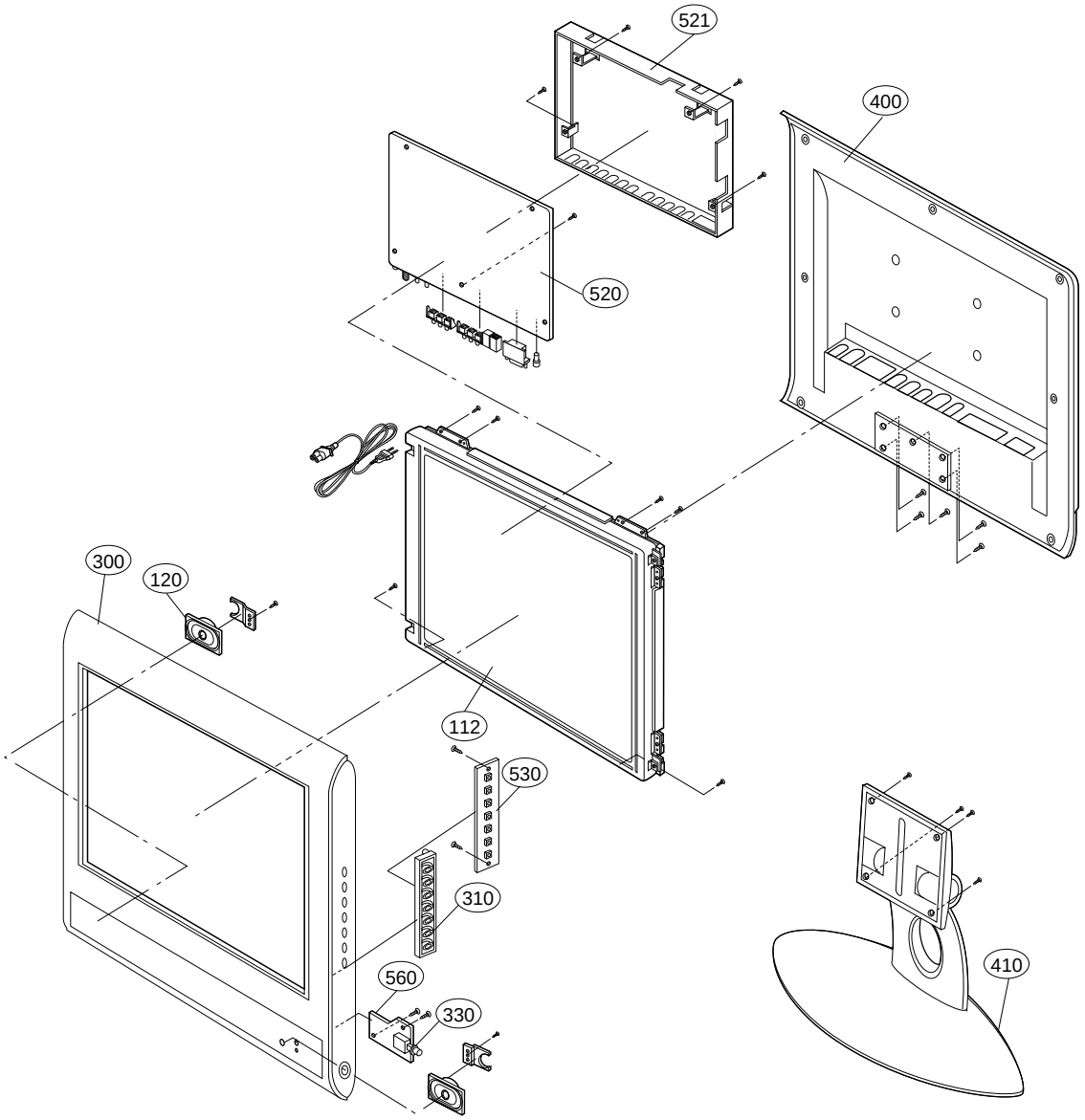
No.		Command	Remark
1	Power On	E110F1	Turn the set on.
2	Power Off	E111F2	Turn the set off.
3	Volume Up	E10AEB	Volume up 1 level
4	Volume Down	E10BEC	Volume down 1 level
5	Volume Direct Access	EAXXYY	Select desired volume data directly. XX : desired volume value(HEX) YY : check Sum of EA and XX
6	Set Volume Limit	EBXXYY	Set the range of adjustable volume value XX : adjustment data of volume value YY : check Sum of E1 and XX
7	Direct Channel Select	E4XXYY	Select channel with number keys. E4 : Direct Channel command XX : channel data want to change YY : check Sum of E4 and XX
8	Poll/Front Panel Lockout	A0A0	Front/Remocon Key Lock command A0 : Key Lock command(Both Local and Remocon keys) A0 ; Check Sum
9	Poll/Front Panel Unlockout	B0B0	Front/Remocon Key Lock command B0 : Key Unlock command(Both Local and Remocon keys) B0 : Check Sum
10	Status Read Back	ABWWXXYY	Read present status of set Data Bytel(XX) Bit Description 0~5 Volume data(hex. 0~3F) 6 signal status(1=Good, 0=Bad) 7 Power status(1=On, 0=Off) Data Byte2(YY) Bit Description 0~7 Channel Number (Same with direct Channel)

BLOCK DIAGRAM



NOTES

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

No.	Part No.		Description
	L15V24S	L15V26C	
112	6304FLP006C	6304FLP006C	LCD MODULE,LC151X01-C3M2 LG PHILPS TFT COLOR NON
120	6400VA0017A	6400VA0017A	SPEAKER,GENERAL T401SX-095K14 LG C&D 8 OHM 1.0/1.5W
300	3091V00443A	3091V00443B	CABINET ASSEMBLY
310	5020V00552K	5020V00552J	BUTTON,CONTROL 7KEY
330	5020V00553H	5020V00553G	BUTTON,POWER 1KEY
400	3809V00300A	3809V00300B	BACK COVER ASSEMBLY
410	4811V00029A	4811V00029C	BRACKET ASSEMBLY,MAIN
520	6871VMMB86A	6871VMMN53A	PCB ASSEMBLY,MAIN ML-024A RMS
521	4950V00101A	4950V00101A	METAL,MAIN FRAME METAL RN-15LA50
530	6871VSMA12A	6871VSMA12A	PCB ASSEMBLY,SUB CONT
560	6871VSMN38A	6871VSMN38B	PCB ASSEMBLY,SUB PSW ML024A POWER

REPLACEMENT PARTS LIST

For Capacitor & Resistors, the charactors at 2nd and 3rd digit in the P/No. means as follows;
CC, CX, CK, CN : Ceramic
CQ : Polyestor
CE : Electrolytic
RD : Carbon Film
RS : Metal Oxide Film
RN : Metal Film
RF : Fusible

RUN DATE : 2002.11.22

LOCA. NO	PART NO	DESCRIPTION
IC		
IC1	0IMCRTH001A	THC63LVDM83R 56P
IC100	0IZZVC0037A	SDA555X 52P ST UMICOM
IC101	0IAL241610B	AT24C16A10PI2.7 8PIN DIP
IC102	0IFA752700A	KA75270Z 3 TP RESET IC
IC301	0IMCRMI006A	M52758FP 36PIN
IC351	0IMCRFA010A	KA7809R, FAIRCHILD 2P
IC352	0ISO204000A	32P,QFP BK IIC BUS VIDEO S/W
IC501	0IMCRTW001A	LG8801 TECHWELL 160PQFP
IC502	0ICTMMO004A	SC786108DWR2 16 R/TP OSD
IC51	0ITK118100B	TK11840L 8P SOT23L
IC52	0IMCRRH005A	UM6K1N ROHM 6P SOT363
IC53	0IMCRRH005A	UM6K1N ROHM 6P SOT363
IC601	0IMCRMN014A	MSP3440G QA B8 V3
IC602	0ISA428200A	LA4282 12S AUDIO AMP
IC603	0IKE704200J	KIA7042AF SOT89 TP 4.2V
IC604	0IMCRFA009A	KA78M08RTM, FAIRCHILD 2P
IC701	0IMCRFA017A	KA3883C FAIRCHILD 8 SOP
IC702	0IMCRFA007A	KA431Z FAIRCHILD 3DIP
IC703	0IMCRFA016A	KA78RH33 FAIRCHILD 2P
IC704	0IKE780500P	KIA78L05BP(AT) 3P 5V,150MA
IC707	0IMCRFA016A	KA78RH33 FAIRCHILD 2P
IC707	0IMCRKE006B	KIA278R33PI KEC TO220IS 4P
IC708	0IKE780500Q	KIA7805API 3P TO220
IC709	0IKE780500Q	KIA7805API 3P TO220
IC710	0IKE780500Q	KIA7805API 3P TO220
IC801	0IMCRAD002A	AD9883A ANALOG DEVICE 80P
IC901	0IAL242110A	AT24C2110SI2.5 8P,SOP TP 1K EEPROM
IC902	0IDS232000A	DS232AS 16P,SOP TP RS232
PC1	0ILI817000G	LTV817MVB 4P,DIP BK PHOTO COU
PC2	0ILI817000G	LTV817MVB 4P,DIP BK PHOTO COU
Q101	0IFA270000A	2N7000TA TO92, 3P
Q102	0IFA270000A	2N7000TA TO92, 3P
Q54	0IMCRRH004A	UMY1N ROHM 5P SOT353
TRANSISTOR		
IC2	0TF492509AA	FET,SI4925DY TP TEMIC 30V 6.1A SO8
IC705	0TF492509AA	FET,SI4925DY TP TEMIC 30V 6.1A SO8
IC706	0TF492509AA	FET,SI4925DY TP TEMIC 30V 6.1A SO8
Q1	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q100	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q1101	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q1102	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q1103	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q200	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q201	0TR387500AA	CHIP 2SC3875S(ALY) KEC

LOCA. NO	PART NO	DESCRIPTION
Q202	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q351	0TR150400BA	CHIP 2SA1504S(ASY) KEC
Q353	0TR150400BA	CHIP 2SA1504S(ASY) KEC
Q403	0TR150400BA	CHIP 2SA1504S(ASY) KEC
Q406	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q502	0TR150400BA	CHIP 2SA1504S(ASY) KEC
Q51	0TRKE80021A	KTC5103D KEC R/TP DPAK 60V 5A
Q510	0TR150400BA	CHIP 2SA1504S(ASY) KEC
Q52	0TRKE80021A	KTC5103D KEC R/TP DPAK 60V 5A
Q53	0TFVI80034A	SUD45P0315 VISHAY R/TP TO252 30V 13A
Q55	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q56	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q57	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q651	0TR150400BA	CHIP 2SA1504S(ASY) KEC
Q701	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q702	0TR150400BA	CHIP 2SA1504S(ASY) KEC
Q703	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q704	0TFFC10007A	FQPF12N60 FAIRCHILD ST TO220 600V 10.5A
Q705	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q801	0TR387500AA	CHIP 2SC3875S(ALY) KEC
Q802	0TR150400BA	CHIP 2SA1504S(ASY) KEC
DIODE		
D100	0DD181009AB	KDS181 TP KEC 85V 300MA
D51	0DD181009AB	KDS181 TP KEC 85V 300MA
D52	0DD181009AB	KDS181 TP KEC 85V 300MA
D53	0DD181009AB	KDS181 TP KEC 85V 300MA
D54	0DD181009AB	KDS181 TP KEC 85V 300MA
D55	0DRDI00028B	B350A DIODES R/TP SMA 35V 3A
D56	0DRDI00028B	B350A DIODES R/TP SMA 35V 3A
D57	0DD181009AB	KDS181 TP KEC 85V 300MA
D601	0DD181009AB	KDS181 TP KEC 85V 300MA
D602	0DD181009AB	KDS181 TP KEC 85V 300MA
D701	0DB260000AA	G2SBA60 BK G.I 600V 1.5A 60A 5UA
D702	0DD100009AM	EU1ZV(1) TP SANKEN
D703	0DD140009AA	EK14 V(1) TP SANKEN E/EOTMD 40V
D703	0DR060009AA	TVR06J DO41 600V 0.6A
D704	0DD100009AM	EU1ZV(1) TP SANKEN
D706	0DR060009AA	TVR06J DO41 600V 0.6A
D707	0DRSD00091A	SF20JC10 100V 20A 200A .SEC 0.7MA
D709	0DRSD00091A	SF20JC10 100V 20A 200A .SEC 0.7MA
LED1	0DL200000CA	LED,SAM5670(DL2LRG) BK YGREEN
ZD202	0DZRM00178A	ZENERS,UDZS TE17 5.1B
ZD203	0DZRM00178A	ZENERS,UDZS TE17 5.1B
ZD400	0DZ330009BA	ZENER,HZT33(TP) HITACHI
ZD701	0DZ180009AG	ZENERS,MTZJ18B

REPLACEMENT PARTS LIST

LOCA. NO	PART NO	DESCRIPTION
ZD702	0DZ150009AD	ZENERS,MTZJ15B
ZD703	0DZ820009AH	ZENERS,MTZJ8.2B
CAPACITOR		
C10	0CE227DF618	220UF STD 16V M FL TP5
C101	0CE107BF618	100UF KME 16V M FL TP5
C113	0CE107BF618	100UF KME 16V M FL TP5
C128	0CE227BH618	220UF KME 25V M FL TP5
C13	0CE227DF618	220UF STD 16V M FL TP5
C209	0CE476DF618	47UF STD 16V M FL TP5
C211	0CE106DF618	10UF STD 16V M FL TP5
C215	0CE106DF618	10UF STD 16V M FL TP5
C216	0CE106DF618	10UF STD 16V M FL TP5
C289	0CE104DK618	0.1000UF STD 50V M
C302	0CE476DF618	47UF STD 16V M FL TP5
C315	0CE476DF618	47UF STD 16V M FL TP5
C317	0CE476DF618	47UF STD 16V M FL TP5
C331	0CE107DF618	100UF STD 16V M FL TP5
C351	0CE227DF618	220UF STD 16V M FL TP5
C353	0CE475DK618	4.7UF STD 50V 20% FL TP 5
C353	0CE106DF618	10UF STD 16V M FL TP5
C354	0CE476DF618	47UF STD 16V M FL TP5
C356	0CE106DF618	10UF STD 16V M FL TP5
C357	0CE106DF618	10UF STD 16V M FL TP5
C362	0CE107DF618	100UF STD 16V M FL TP5
C364	0CE336DF618	33UF STD 16V M FL TP5
C380	0CE105DK618	1UF STD 50V M FL TP5
C381	0CE106DF618	10UF STD 16V M FL TP5
C403	0CE476DH618	47UF STD 25V 20% FL TP 5
C404	0CE108DD618	1000UF STD 10V M FL TP5
C408	0CE106DK618	10UF STD 50V M FL TP5
C412	0CE105DK618	1UF STD 50V M FL TP5
C499	0CE476DF618	47UF STD 16V M FL TP5
C501	0CE107DF618	100UF STD 16V M FL TP5
C51	0CF2241N5AA	0.22UF D 100V 10%
C523	0CE104DK618	0.1000UF STD 50V M FL TP5
C526	0CE107DF618	100UF STD 16V M FL TP5
C541	0CE107DF618	100UF STD 16V M FL TP5
C547	0CE104DK618	0.1000UF STD 50V M FL TP5
C55	0CF2241N5AA	0.22UF D 100V 10%
C581	0CE107DF618	100UF STD 16V M FL TP5
C60	0CK105DF64A	1UF 2012 16V 20% R/TP F(Y5V)
C601	0CE477BF618	470UF KME 16V M FL TP5
C602	0CE477BF618	470UF KME 16V M FL TP5
C605	0CE107BF618	100UF KME 16V M FL TP5
C613	0CE106DF618	10UF STD 16V M FL TP5
C614	0CE106DF618	10UF STD 16V M FL TP5
C616	0CE107DF618	100UF STD 16V M FL TP5
C617	0CE107BF618	100UF KME 16V M FL TP5

LOCA. NO	PART NO	DESCRIPTION
C62	0CK105DF64A	1UF 2012 16V 20%
C620	0CE335DK618	3.3UF STD 50V 20% FL TP 5
C621	0CE107BF618	100UF KME 16V M FL TP5
C626	0CK224DF56A	220000PF 2012 16V 10%
C627	0CK224DF56A	220000PF 2012 16V 10%
C629	0CE107DF618	100UF STD 16V M FL TP5
C633	0CE107DF618	100UF STD 16V M FL TP5
C643	0CE476BF618	47UF KME TYPE 16V 20%
C646	0CE225DK618	2.2UF STD 50V 20% FL TP 5
C647	0CE225BK618	2.2UF KME TYPE 50V 20%
C647	0CE225DK618	2.2UF STD 50V 20%
C648	0CQ1031N509	0.01U 100V K
C649	0CQ1031N509	0.01U 100V K POLY TP
C651	0CE107BH618	100UF KME 25V M FL TP5
C652	0CE107BF618	100UF KME 16V M FL TP5
C652	0CE107DF618	100UF STD 16V M FL TP5
C654	0CE476BF618	47UF KME TYPE 16V 20%
C67	0CE337ZF638	330UF SEP 16V 20%
C69	0CE107BH618	100UF KME 25V M
C698	0CK224DF56A	220000PF 2012 16V 10%
C699	0CK224DF56A	220000PF 2012 16V 10%
C700	181-091D	DEHR33A102KN2A 1000PF 1KV 10%,10%
C701	0CQZVBK002C	A.C 275V 0.22UF K (S=22.5)
C702	0CQZVBK002A	A.C 275V 0.1UF M (S=15)
C703	181-120N	1000PF 4KV M E
C704	181-120N	1000PF 4KV M E
C706	0CE476BK618	47UF KME 50V M FL TP5
C706	0CE4772J618	470UF KMF 35V 20%
C707	0CE1272U610	120UF KMF 400V 20%
C708	181-091D	DEHR33A102KN2A 1000PF 1KV 10%,10%
C709	181-091U	R 220PF 2KV 10%,10%
C717	181-091D	DEHR33A102KN2A 1000PF 1KV 10%,10%
C718	181-091D	DEHR33A102KN2A 1000PF 1KV 10%,10%
C719	0CE227DK618	220UF STD 50V M FL TP5
C720	181-091D	DEHR33A102KN2A 1000PF 1KV 10%,10%
C721	0CE4772J618	470UF KMF 35V 20%
C722	0CE477BF618	470UF KME 16V M
C723	0CE477BF618	470UF KME 16V M
C725	0CE4772J618	470UF KMF 35V 20%
C726	0CE477BF618	470UF KME 16V M FL TP5
C730	0CE4772J618	470UF KMF 35V 20%
C731	0CE477BF618	470UF KME 16V M FL TP5
C732	0CE4772J618	470UF KMF 35V 20% TP 5 FL
C733	181-120K	2200PF 4KV M E FMTW LEAD 4.5
C734	0CE4772J618	470UF KMF 35V 20% TP 5 FL
C735	0CE477BF618	470UF KME 16V M FL TP5
C736	0CE4772J618	470UF KMF 35V 20% TP 5 FL
C777	181-091D	DEHR33A102KN2A 1000PF 1KV 10%,10%
C799	0CE107BF618	100UF KME 16V M FL TP5

REPLACEMENT PARTS LIST

LOCA. NO	PART NO	DESCRIPTION
C810	0CK823DK56A	82000PF 2012 50V 10%
C832	0CE107DF618	100UF STD 16V M FL TP5
C970	0CE476DD618	47UF STD 10V 20% FL TP 5
FUSE & JACK		
F701	0FT3151B51B	FUSE,SLOW BLOW 3150MA 250V
JA201	6612VCH003B	JACK,PHONE H=6.5 STEREO 1P W/O S/W WHITE
RJ201	6613V00008F	JACK ASSY,E/P(ST)+SVHS+3P H6.5 GOLD COLOR
RJ202	6612VJH008D	JACK,RCA PJ6063D DVD IN 3P
COIL & TRANSFORMER		
L401	0LA0272K139	INDUCTOR,27UH K
L51	6140VR0004A	COIL,ENERGY RECOVERY TOKO
L52	6140VR0004A	COIL,ENERGY RECOVERY TOKO
T51	6170VH0001A	TRANSFORMER,INVERTER 969HGK003 8.985UH
T52	6170VH0001A	TRANSFORMER,INVERTER 969HGK003 8.985UH
T701	6170VMCA47A	TRANSFORMER,SMPS[COIL] EER3016 510UH
RESISTOR		
F704	0RP0020J809	0.02 OHM 1 W 20% TA52
FR704	0RP0020J809	0.02 OHM 1 W 20% TA52
L502	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
L503	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
L504	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
L505	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
L506	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
L507	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
L518	0RRZVTA001A	MNR14E0AJ101 R OHM 100 OHM 5%
R200	0RD1000H609	100 OHM 1/2 W 5.00% TA52
R201	0RD1000H609	100 OHM 1/2 W 5.00% TA52
R51	0RS6800J607	680 OHM 1 W 5.00% TA62
R54	0RS6800J607	680 OHM 1 W 5.00% TA62
R69	0RN1302F409	13K OHM 1/6 W 1.00% TA52
R70	0RN4701F409	4.7K OHM 1/6 W 1.00% TA52
R701	0RS5602K619	56K OHM 2 W 5.00% TR
R702	0RKZVTA001C	8.2M OHM 1/2 W 5%
R703	0RKZVTA001K	0.47M OHM 1/2 W 5%
R704	0RS5602K619	56K OHM 2 W 5.00% TR
R705	0RS5602K619	56K OHM 2 W 5.00% TR
R707	0RD3303H609	330K OHM 1/2 W 5.00% TA52
R71	0RN4701F409	4.7K OHM 1/6 W 1.00% TA52
R711	0RS5602K619	56K OHM 2 W 5.00% TR
R712	0RD6803H609	680K OHM 1/2 W 5.00% TA52
R715	180-A01R	2 W RW ROUND G 0.39 TA31(63)
R727	0RD0472H609	47 OHM 1/2 W 5.00% TA52
R728	0RD0472H609	47 OHM 1/2 W 5.00% TA52
SWITCH		
SW1101	140-313A	SWITCH,TACT 2LEAD 100G(TA)

LOCA. NO	PART NO	DESCRIPTION
SW1101	140-275B	SWITCH,PUSH JDPB21NA 30V 0.3A
SW1102	140-313A	SWITCH,TACT 2LEAD 100G(TA) 5V 0.001A
SW1103	140-313A	SWITCH,TACT 2LEAD 100G(TA) 5V 0.001A
SW1104	140-313A	SWITCH,TACT 2LEAD 100G(TA) 5V 0.001A
SW1105	140-313A	SWITCH,TACT 2LEAD 100G(TA) 5V 0.001A
SW1106	140-313A	SWITCH,TACT 2LEAD 100G(TA) 5V 0.001A
SW1107	140-313A	SWITCH,TACT 2LEAD 100G(TA) 5V 0.001A
FILTER & CRYSTAL		
L1	6210TCE001G	FILTER,EMC HH1M3216501
L1	6210TCE001G	FILTER,EMC HH1M3216501
L101	6210TCE001G	FILTER,EMC HH1M3216501
L102	6210TCE001G	FILTER,EMC HH1M3216501
L119	6210TCE001A	FILTER,EMC HB1S2012080JT
L199	6210TCE001G	FILTER,EMC HH1M3216501
L200	6210TCE001A	FILTER,EMC HB1S2012080JT
L201	6210TCE001A	FILTER,EMC HB1S2012080JT
L202	6210TCE001A	FILTER,EMC HB1S2012080JT
L204	6210TCE001A	FILTER,EMC HB1S2012080JT
L205	6210TCE001A	FILTER,EMC HB1S2012080JT
L206	6210TCE001G	FILTER,EMC HH1M3216501
L213	6210TCE001G	FILTER,EMC HH1M3216501
L214	6210TCE001G	FILTER,EMC HH1M3216501
L298	6210TCE001A	FILTER,EMC HB1S2012080JT
L299	6210TCE001A	FILTER,EMC HB1S2012080JT
L313	6210TCE001G	FILTER,EMC HH1M3216501
L351	6210TCE001G	FILTER,EMC HH1M3216501
L400	6210TCE001G	FILTER,EMC HH1M3216501
L402	6210TCE001G	FILTER,EMC HH1M3216501
L501	6210TCE001G	FILTER,EMC HH1M3216501
L501	6210TCE001G	FILTER,EMC HH1M3216501
L502	6210VC0004A	FILTER,EMC BK3216 4S600
L503	6210VC0004A	FILTER,EMC BK3216 4S600
L504	6210VC0004A	FILTER,EMC BK3216 4S600
L505	6210VC0004A	FILTER,EMC BK3216 4S600
L506	6210VC0004A	FILTER,EMC BK3216 4S600
L507	6210VC0004A	FILTER,EMC BK3216 4S600
L515	6210TCE001G	FILTER,EMC HH1M3216501
L516	6210VC0004A	FILTER,EMC BK3216 4S600
L517	6210TCE001G	FILTER,EMC HH1M3216501
L580	6210TCE001A	FILTER,EMC HB1S2012080JT
L600	6210TCE001G	FILTER,EMC HH1M3216501
L601	6210TCE001G	FILTER,EMC HH1M3216501
L602	6210TCE001G	FILTER,EMC HH1M3216501
L603	6210TCE001G	FILTER,EMC HH1M3216501
L801	6210TCE001G	FILTER,EMC HH1M3216501
L802	6210TCE001G	FILTER,EMC HH1M3216501
L803	6210TCE001G	FILTER,EMC HH1M3216501
L99	6210TCE001G	FILTER,EMC HH1M3216501

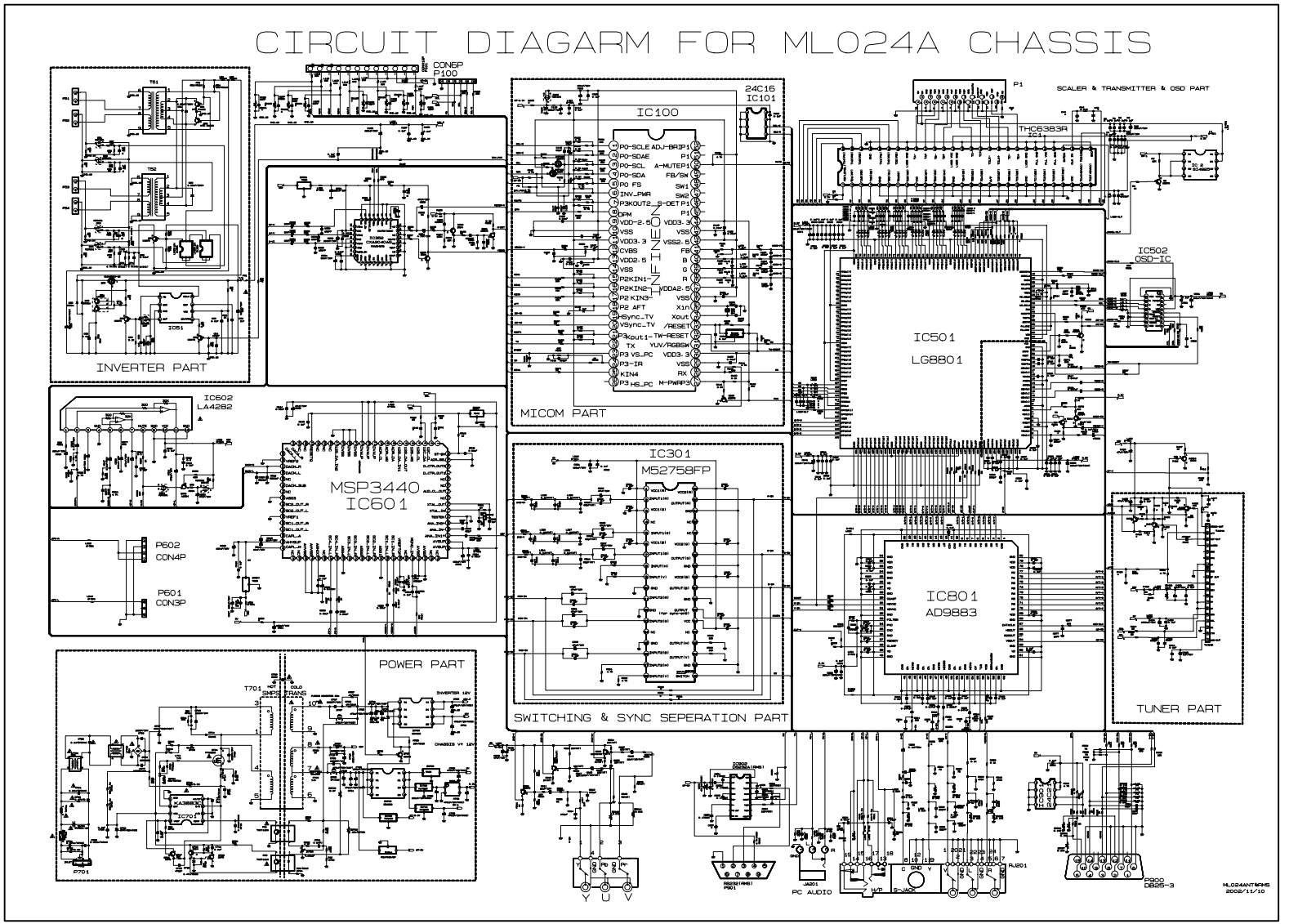
REPLACEMENT PARTS LIST

LOCA. NO	PART NO	DESCRIPTION
LF701	6200JB8008N	FILTER,EMC SMC BK OR 14*7*7.5H, 38MH
LF702	6200JB8008N	FILTER,EMC SMC BK OR 14*7*7.5H, 38MH
Z100	156-A01L	RESONATOR,CRYSTAL HC49U 6.000MHZ 30PPM
Z500	156-A02X	RESONATOR,CRYSTAL HC49U 27.000MHZ 25PPM
Z600	156-A02M	RESONATOR,CRYSTAL HC49U 18.432MHZ 30PPM
	MISCELLANEOUS	
P1101	6631V20014E	CONNECTOR ASSEMBLY,12P 2.0MM
P1102	387-A07B	CONNECTOR ASSEMBLY,7P 2.5MM
P401A	6700VNF019E	TUNER,TAFHH001P LG NTSC FS
P701	6620VZ0002A	SOCKET ,DRAWING IS7007 ISHENG AC SOCKET
P900	6630G15E215	CONNECTOR ,DSUB KSD 15P 2.29MM KCNDS30054
P901	6630GZ00509	CONNECTOR ,DSUB KSD 9P SPECIAL FEMALE
PA1101	6726VV0006D	REMOTE CONTROLLER RECEIVER,38.0KHZ
TH701	163-048D	THERMISTOR,KL15L2R5 +/ 15% 125V
TU401	6700VNF019E	TUNER,TAFHH001P LG NTSC FS
VA701	164-003K	VARISTOR,SVC621D14A 620V 0%
	ACCESSORIES	
A1	3828VA0359A	MANUAL,OWNERS ML024A RU15LA51 ZENITH EN
"	3828VA0359B	MANUAL,OWNERS ML024A RU15LA50 ZENITH EN
A2	6710V00082M	REMOTE CONTROLLER,ML024A W/O TXT
A3	6410VUH007A	POWER CORD,SP305+IS034 SVT18AWG*3C
A4	6851V00004D	CABLE ASSEMBLY,AUDIO TO AUDIO
A5	6866VA9001A	CONNECTOR ,DSUB 29909C,AT,L1830

LOCA. NO	PART NO	DESCRIPTION


zenith

CIRCUIT DIAGARM FOR ML024A CHASSIS



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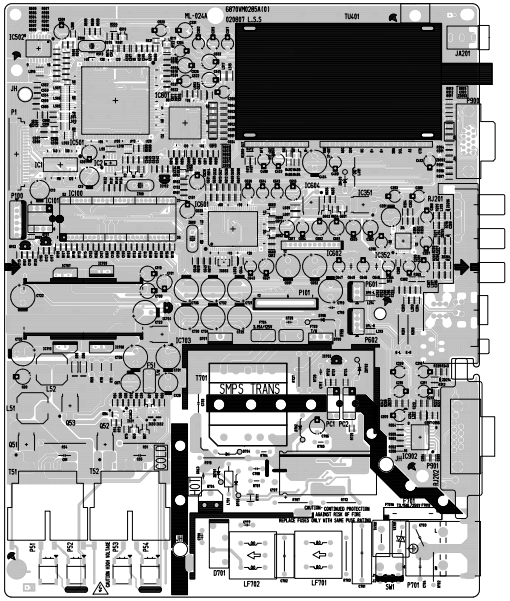

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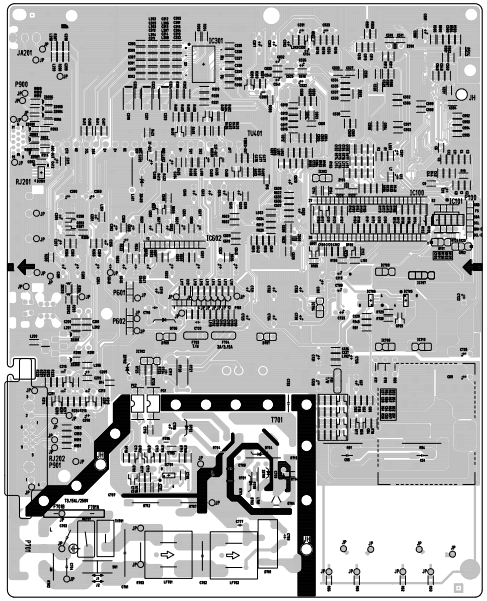
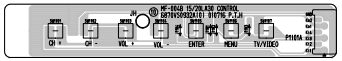


CONTROL



POWER