

DVD/CD RECEIVER SERVICE MANUAL















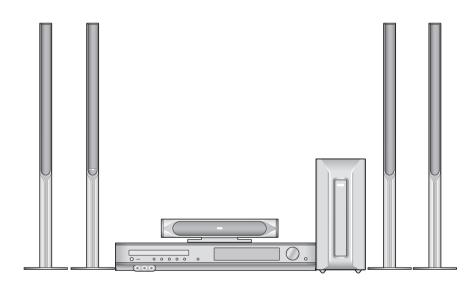








P/N: 3829RDT044U AUGUST, 2004



MODEL: LGDVT418

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SECTION 1. GENERAL

☐ SERVICING PRECAUTIONS

NOTES REGARDING HANDLING OF THE PICK-UP

1. Notes for transport and storage

- 1) The pick-up should always be left in its conductive bag until immediately prior to use.
- 2) The pick-up should never be subjected to external pressure or impact.

Storage in conductive bag





Drop impact

2. Repair notes

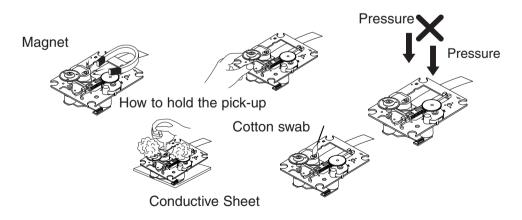
- 1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
- 2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational malfunction and/or damage to the printed-circuit board.
- 3) Each and every pick-up is already individually adjusted to a high degree of precision, and for that reason the adjustment point and installation screws should absolutely never be touched.
- 4) Laser beams may damage the eyes! Absolutely never permit laser beams to enter the eyes! Also NEVER switch ON the power to the laser output part (lens, etc.) of the pick-up if it is damaged.



NEVER look directly at the laser beam, and don't let contact fingers or other exposed skin.

5) Cleaning the lens surface

If there is dust on the lens surface, the dust should be cleaned away by using an air bush (such as used for camera lens). The lens is held by a delicate spring. When cleaning the lens surface, therefore, a cotton swab should be used, taking care not to distort this.



6) Never attempt to disassemble the pick-up.

Spring by excess pressure. If the lens is extremely dirty, apply isopropyl alcohol to the cotton swab. (Do not use any other liquid cleaners, because they will damage the lens.) Take care not to use too much of this alcohol on the swab, and do not allow the alcohol to get inside the pick-up.

NOTES REGARDING COMPACT DISC PLAYER REPAIRS

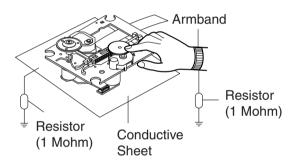
1. Preparations

- 1) Compact disc players incorporate a great many ICs as well as the pick-up (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
- 2) The pick-up is composed of many optical components and other high-precision components. Care must be taken, therefore, to avoid repair or storage where the temperature of humidity is high, where strong magnetism is present, or where there is excessive dust.

2. Notes for repair

- 1) Before replacing a component part, first disconnect the power supply lead wire from the unit
- 2) All equipment, measuring instruments and tools must be grounded.
- 3) The workbench should be covered with a conductive sheet and grounded.

 When removing the laser pick-up from its conductive bag, do not place the pick-up on the bag. (This is because there is the possibility of damage by static electricity.)
- 4) To prevent AC leakage, the metal part of the soldering iron should be grounded.
- 5) Workers should be grounded by an armband (1M Ω)
- 6) Care should be taken not to permit the laser pick-up to come in contact with clothing, in order to prevent static electricity changes in the clothing to escape from the armband.
- 7) The laser beam from the pick-up should NEVER be directly facing the eyes or bare skin.



□ ESD PRECAUTIONS

Electrostatically Sensitive Devices (ESD)

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive Devices (ESD). Examples of typical ESD 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.

- Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off
 any electrostatic charge on your 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 ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
- 3. Use only a grounded-tip soldering iron to solder or unsolder ESD 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 ESD devices.
- 5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.
- 6. Do not remove a replacement ESD device from its protective package until immediately before you are ready to install it. (Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).
- 7. Immediately before removing the protective material from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will by installed.

CAUTION: BE SURE NO POWER IS APPLIED TO THE CHASSIS OR CIRCUIT, AND OBSERVE ALL OTHER SAFETY PRECAUTIONS.

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

CAUTION. GRAPHIC SYMBOLS



THE LIGHTNING FLASH WITH APROWHEAD SYMBOL. WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE SERVICE PERSONNEL TO THE PRESENCE OF IMPORTANT SAFETY INFORMATION IN SERVICE LITERATURE.

□ SPECIFICATIONS

		Power supply	Refer to main label			
(<u>-</u>	Power consumption	Refer to main label			
[General]		Mass	4.4kg			
		External dimensions (W x H x D)	430 x 60 x 350mm			
		Operating conditions	Temperature: 5°C to 35°C, Operation status: Horizontal			
		Operating humidity	5% to 85%			
		Laser	Semiconductor laser, wavelength 650 nm			
[co/ovo]		Signal system	PAL 625/50, NTSC 525/60			
		Frequency response (audio)	150 Hz to 18 kHz			
		Signal-to-noise ratio (audio)	More than 75 dB (1 kHz, NOP -6dB, 20 kHz LPF/A-Filter)			
		Dynamic range (audio)	More than 70 dB			
		Harmonic distortion (audio)	1% (1 kHz, at 1W position) (20 kHz LPF)			
	_	Video input	1.0 V (p-p), 75Ω , negative sync., RCA jack x 2/SCART(TO TV)			
[Video]		Video output	1.0 V (p-p), 75 Ω , negative sync., RCA jack x 1/SCART(TO TV)			
		S-video output	(Y) 1.0 V (p-p), 75 Ω , negative sync., Mini DIN 4-pin x 1			
	_		(C) 0.3 V (p-p), 75Ω			
		Tuning Range	87.5 - 108.0 MHz or	65.0 -74.0 MHz, 87.5	-108.0MHz	
		Intermediate Frequency	10.7 MHz			
er]	EM]	Signal-to Noise Ratio	60dB (Mono)			
[Tuer]		Frequency Response	150 - 8,000 Hz			
	AM]	Tuning Range	522~1,611kHz, 530~1,610kHz			
	▼ ≥	Intermediate Frequency	450 kHz			
_		Stereo mode	90W +90W (6Ω at 1 kHz, THD 10 %)			
		Surround mode	Front: 90W + 90W (THD 10 %)			
	<u>ië</u>	(* Depending on the sound mode	Centre*: 90W			
	딆	settings and the source, there may be no sound output.)	Surround*: 90W + 90W (6Ω at 1 kHz, THD 10 %)			
	[Amplifier]		Subwoofer*: 150W (4Ω at 30 Hz, THD 10 %)			
	_	Inputs	VIDEO 1, VIDEO 2, COAXIAL AUDIO, OPTICAL AUDIO			
		Outputs	S-VIDEO, MONITOR, PHONES: 32Ω ,(1.0 V), COMPONENT(구주향 SCAR		ONENT(구주향 SCART포함	
			Surround Speaker	Centre speaker	Passive Subwoofer	
			(LHS-T6749T)	(LHS-T6749C)	(LHS-T6749W)	
	_	Type	2 Way 2 Speaker	2 Way 2 Speaker	1Way 1Speaker	
	[Speakers]	Impedance	6Ω	6Ω	4Ω	
	<u>\$</u>	Frequency Response	150-20,000 Hz	150 -20,000 Hz	40 - 200 Hz	
	မွ်	Sound Pressure Level	84 dB/W (1m)	84 dB/W (1m)	83 dB/W (1m)	
	<u> </u>	Rated Input Power	90W	90 W	150 W	
	-	Max. Input Power	180 W	180W	300 W	
		Net Dimensions (W x H x D)	70×1200× 72mm	440 × 88 × 77 mm	195 × 398 × 417 mm	
		Net Weight	3.2 kg	1.8kg	7.6kg	
Supplied	• Speakers					

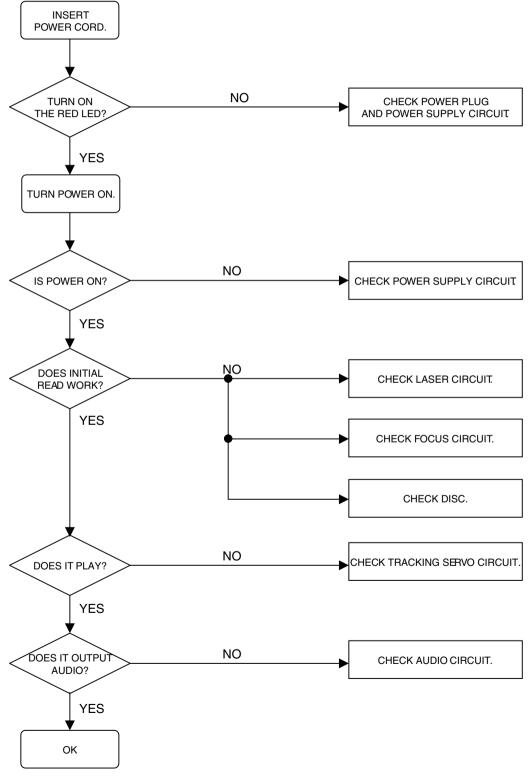
Designs and specifications are subject to change without notice.

MEMO

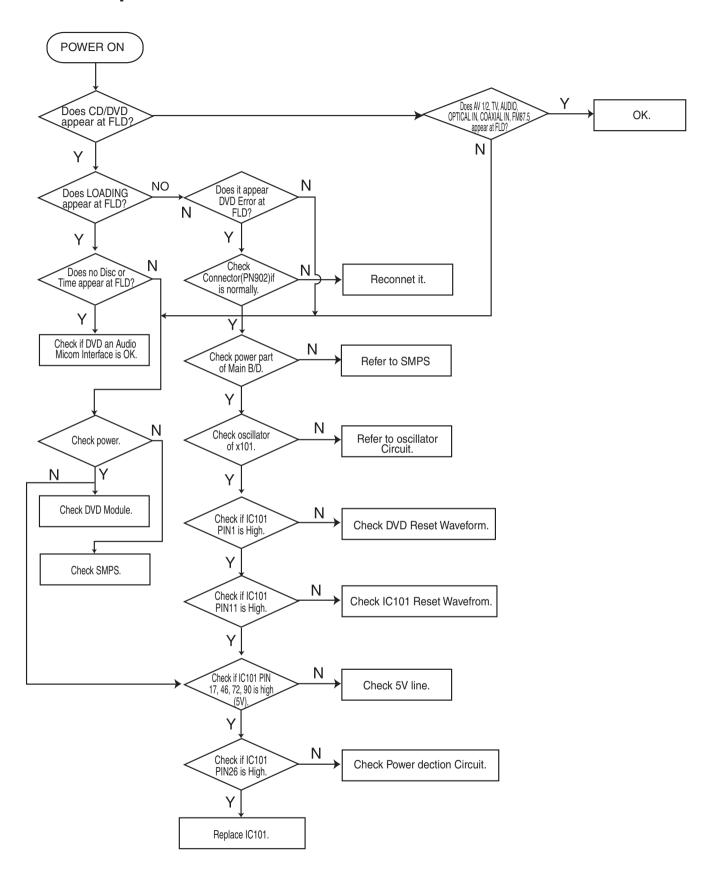
SECTION 2. AUDIO PART

□ ELECTRICAL TROUBLESHOOTING GUIDE

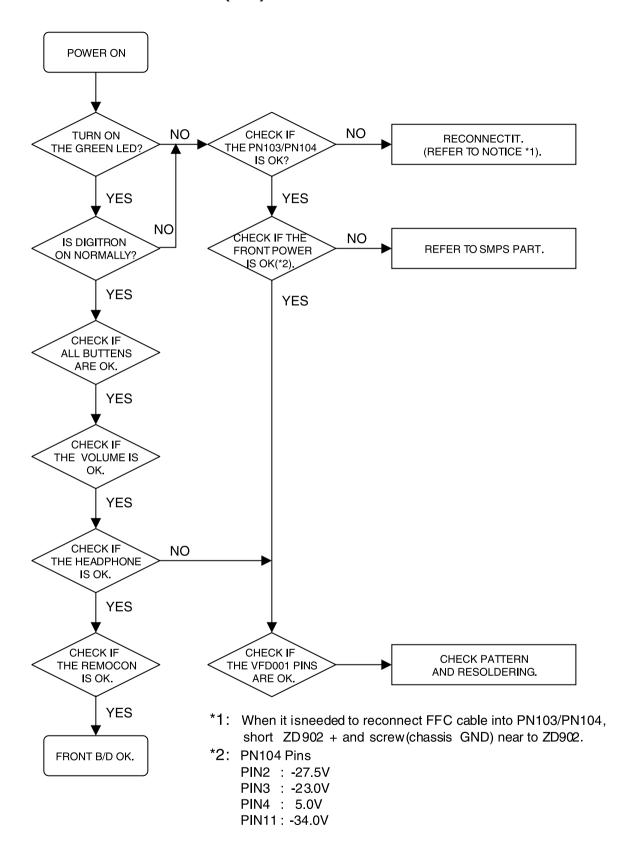
1. Power check flow



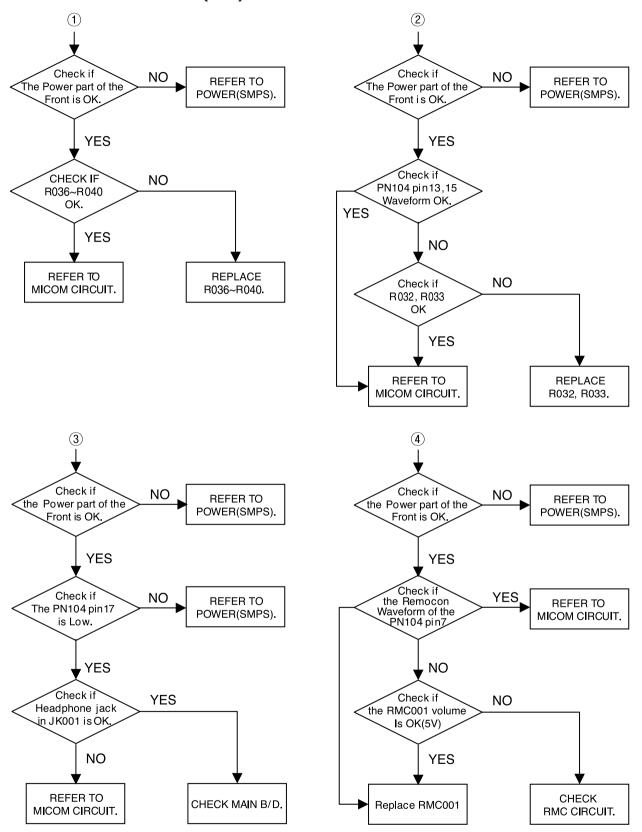
2.AUDIO µ.COM CIRCUIT



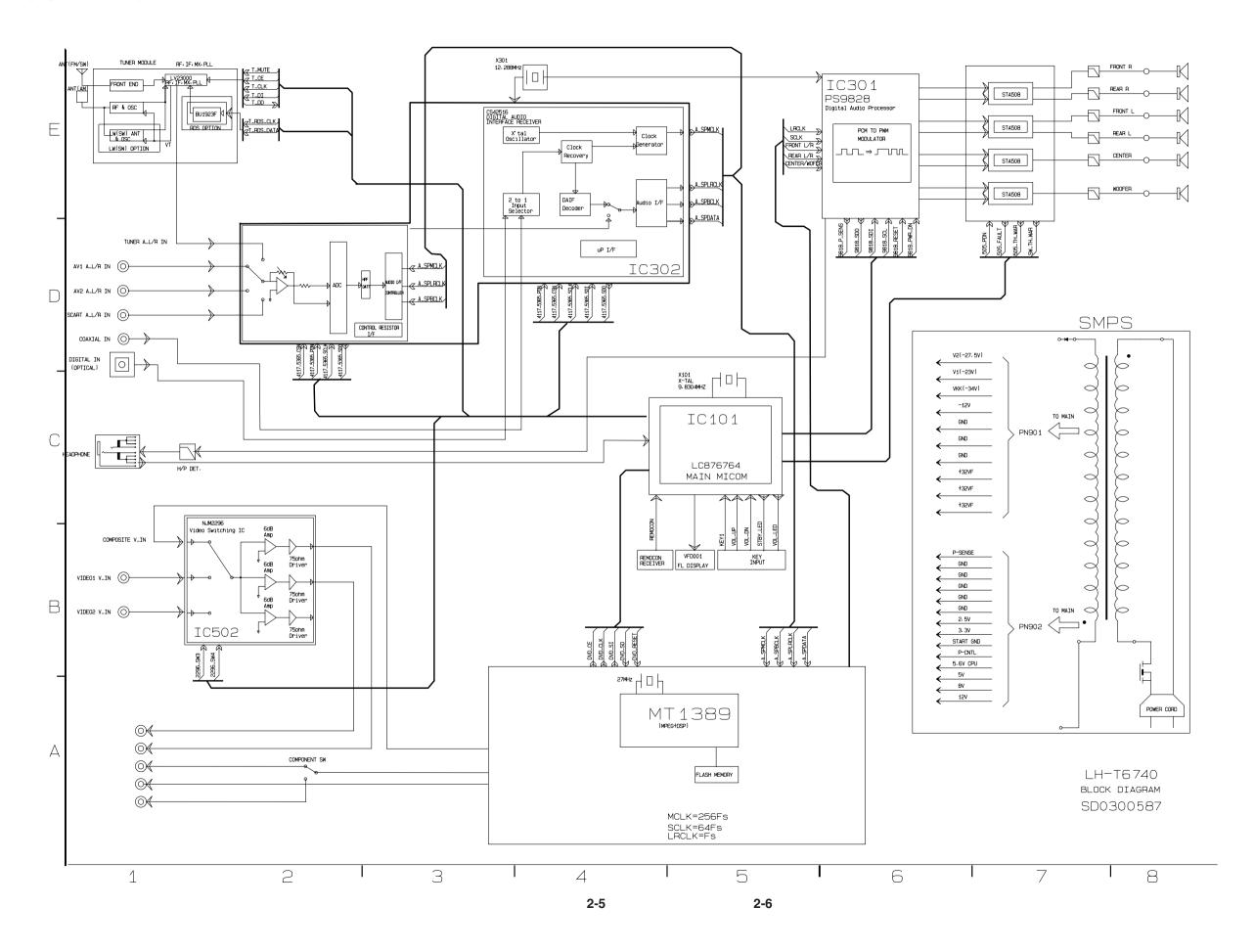
3.FRONT CIRCUIT (1/2)



4.FRONT CIRCUIT (2/2)

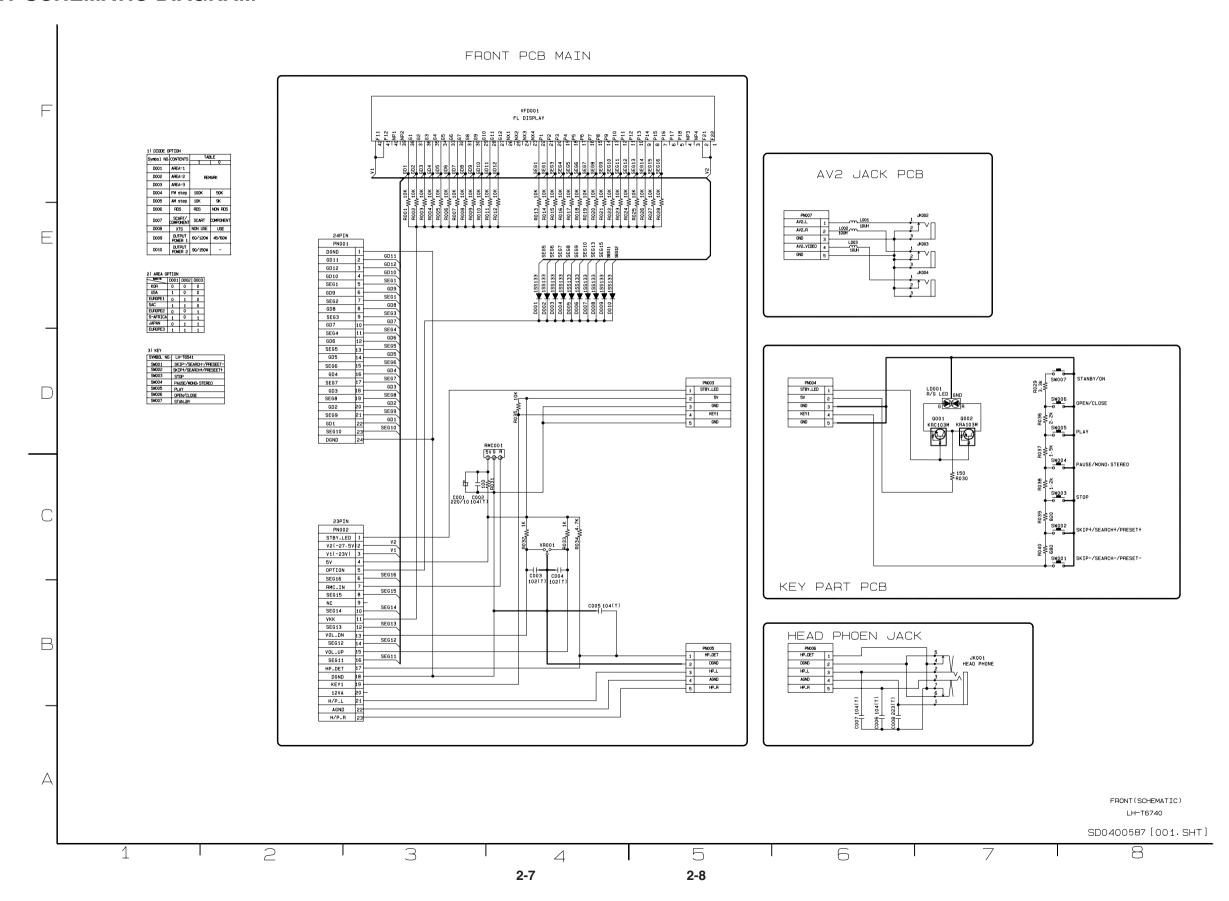


□ BLOCK DIAGRAM

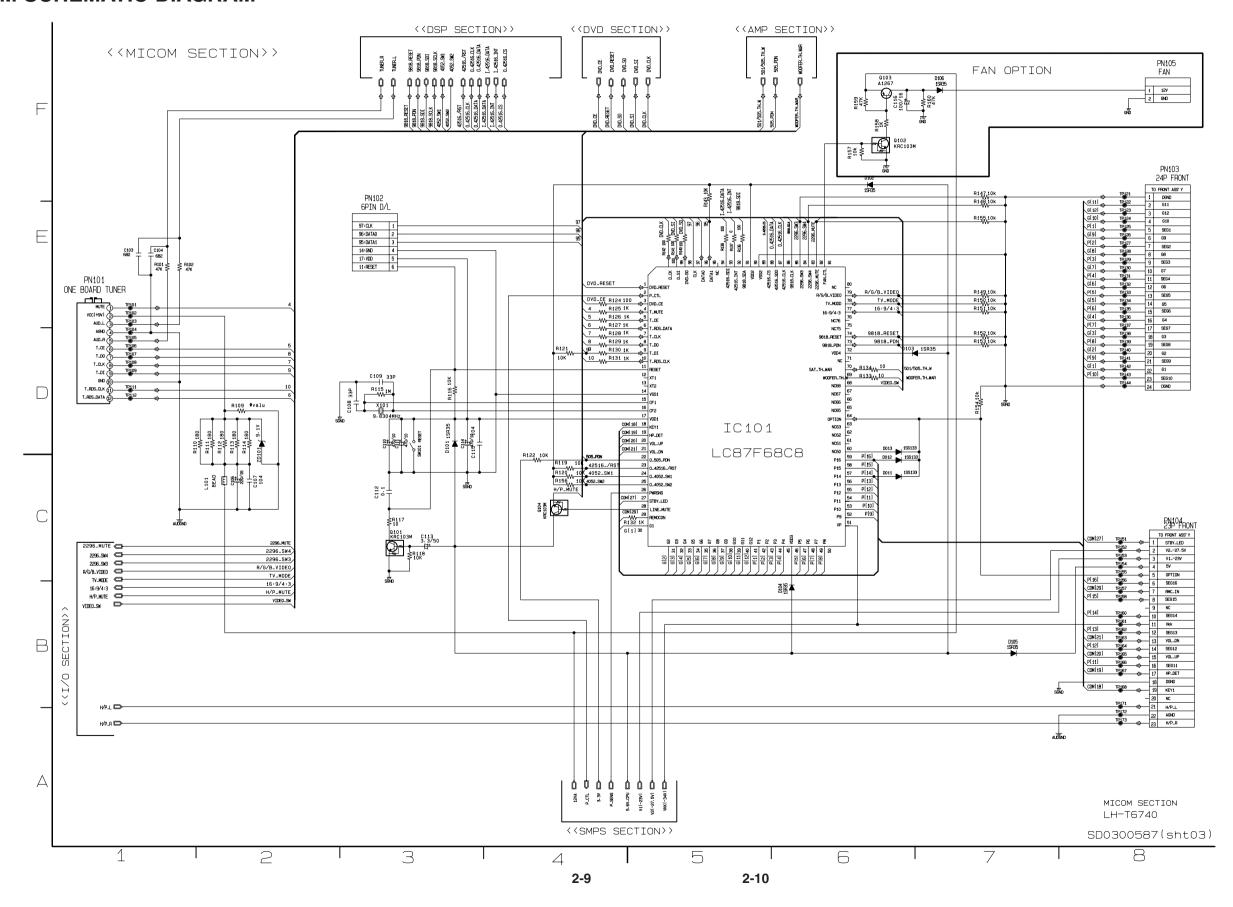


□ SCHEMATIC DIAGRAMS

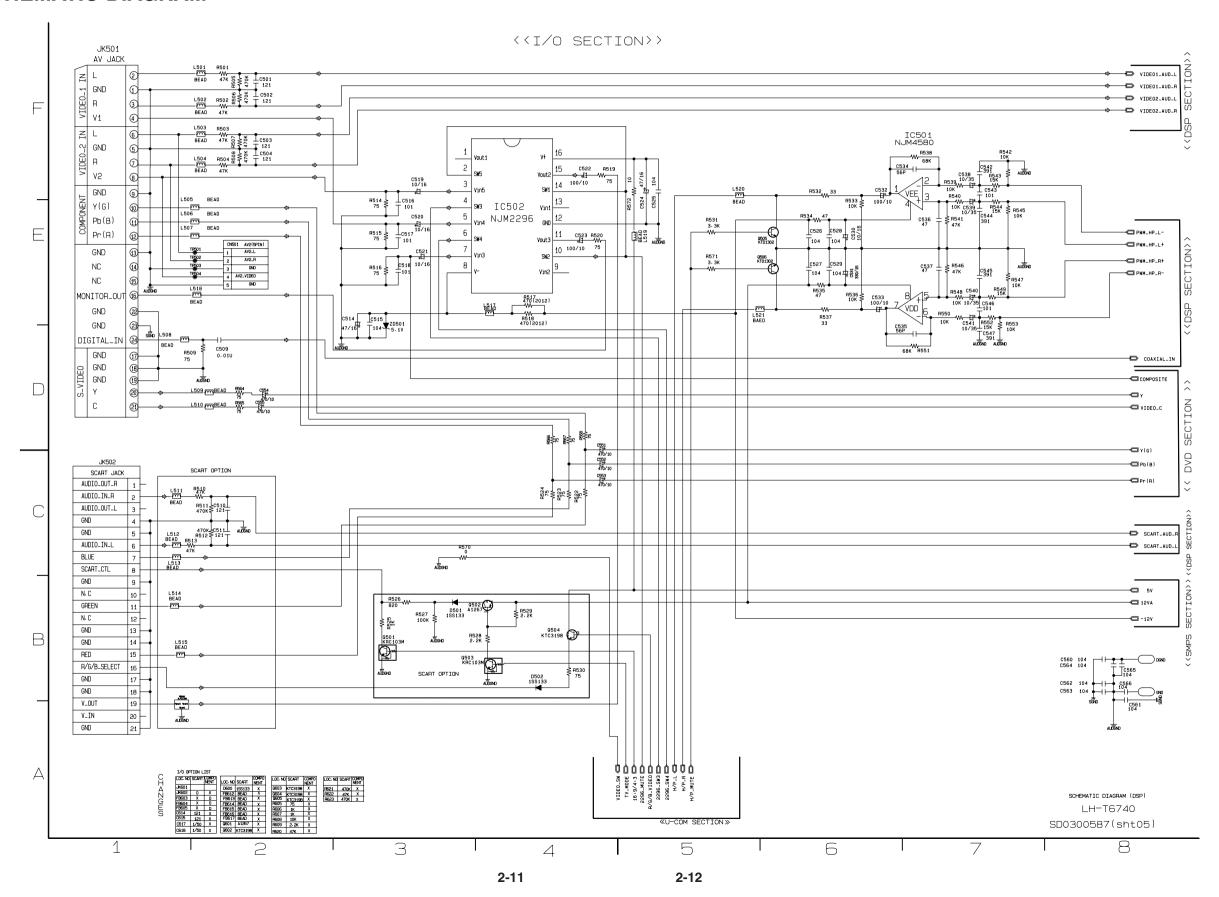
• FRONT SCHEMATIC DIAGRAM



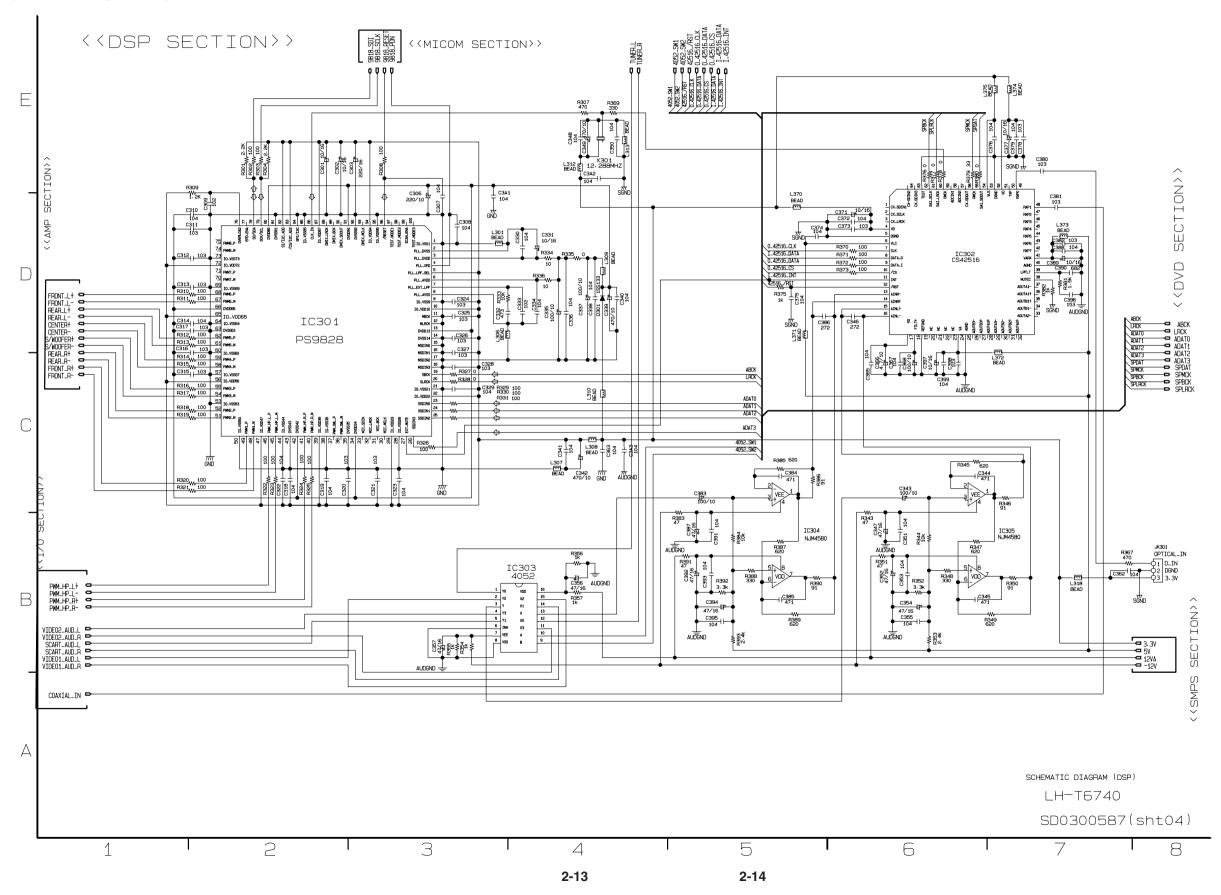
MICOM SCHEMATIC DIAGRAM



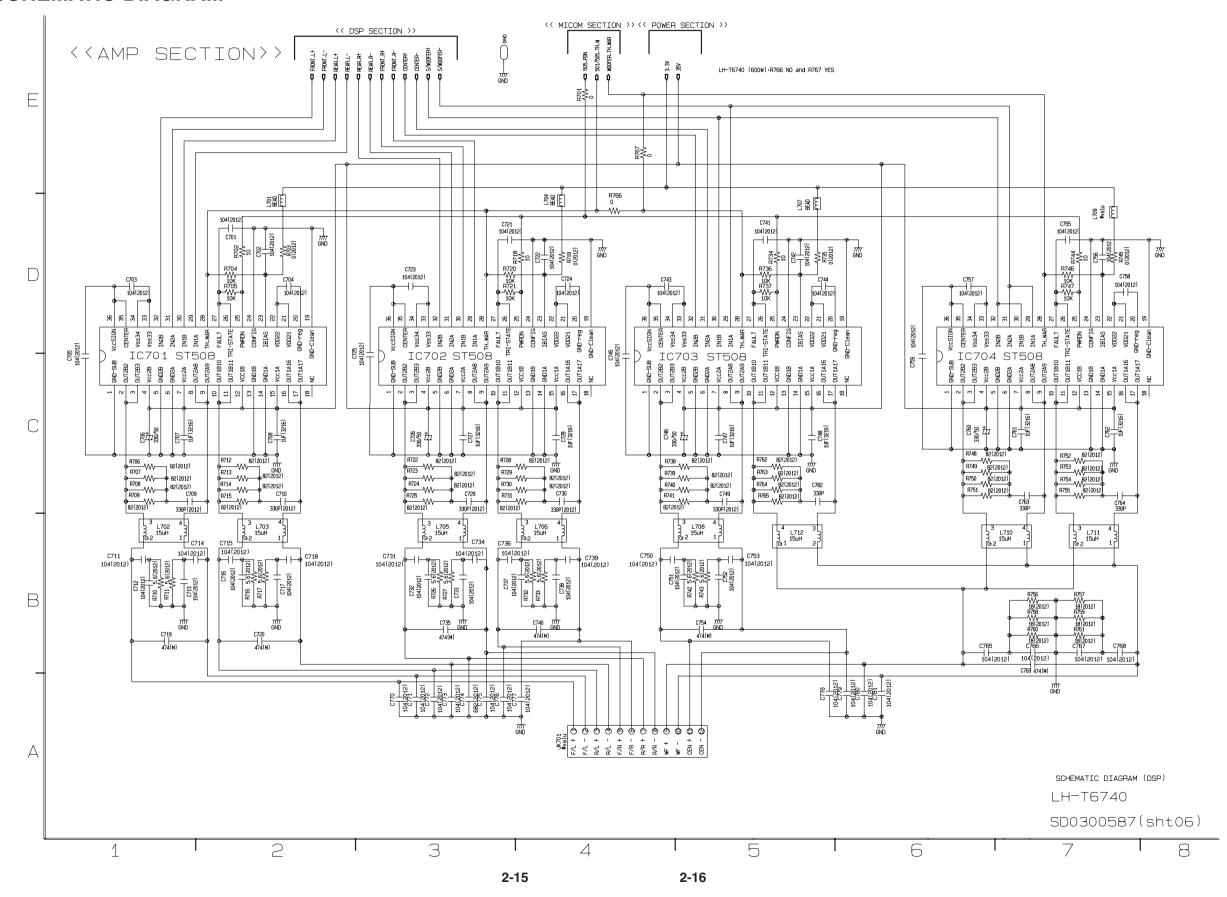
• I//O SCHEMATIC DIAGRAM



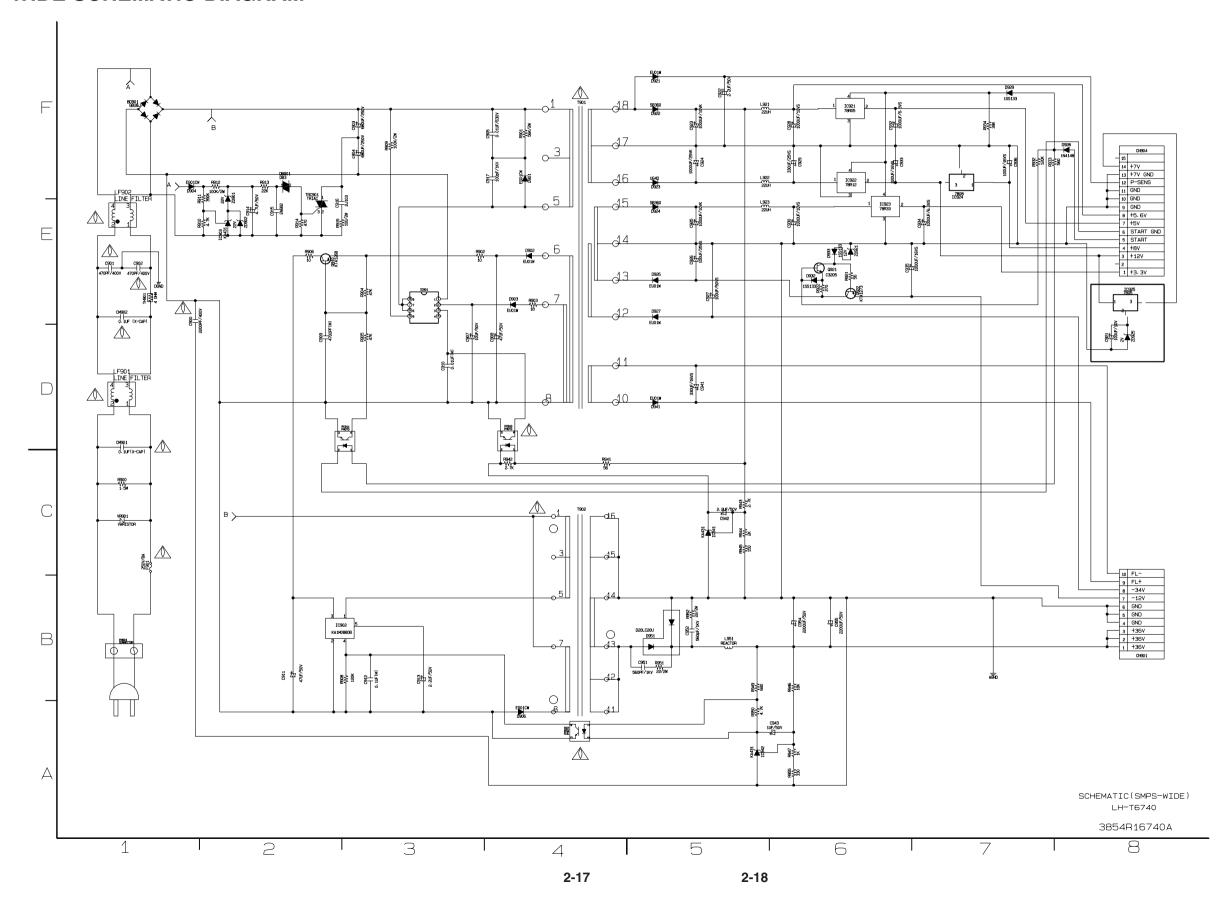
• DSP SCHEMATIC DIAGRAM



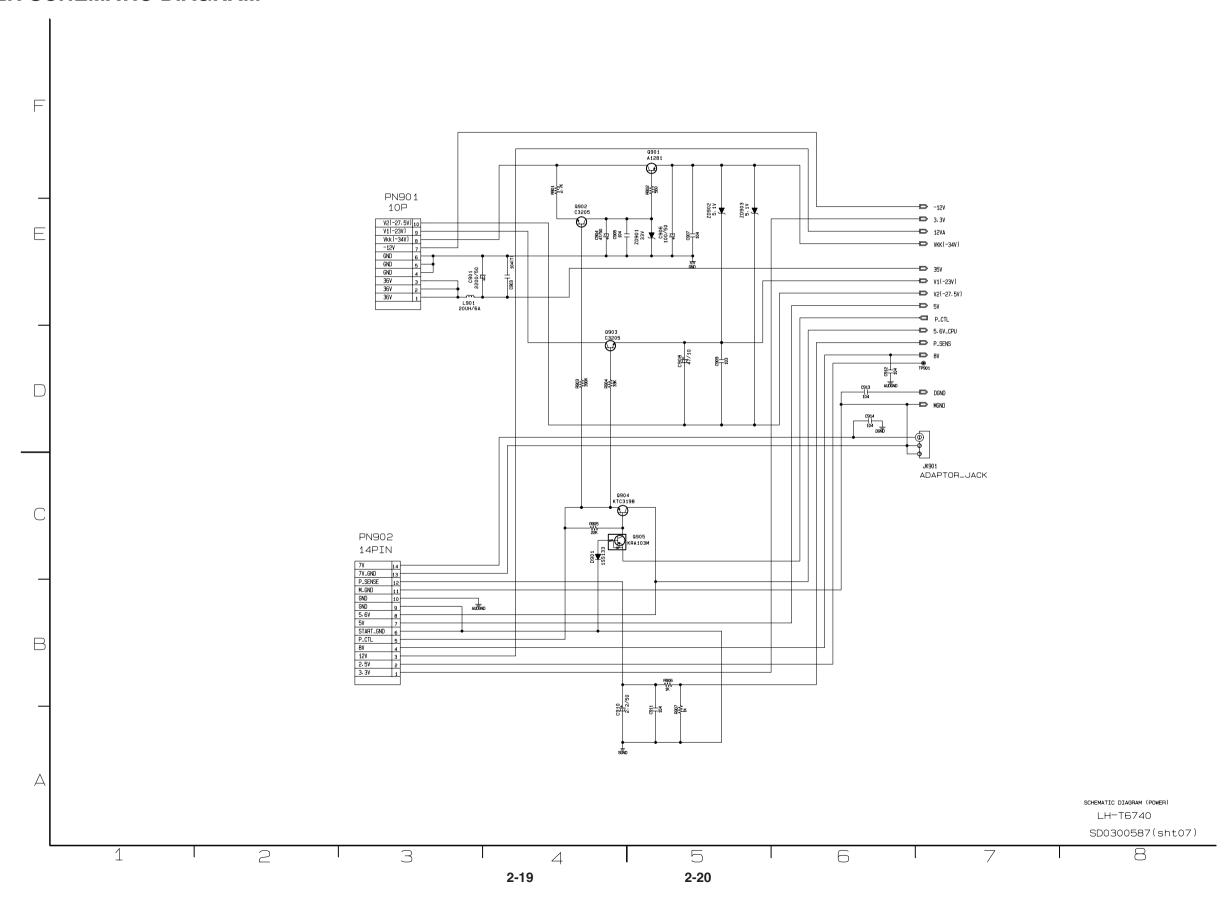
• AMP SCHEMATIC DIAGRAM



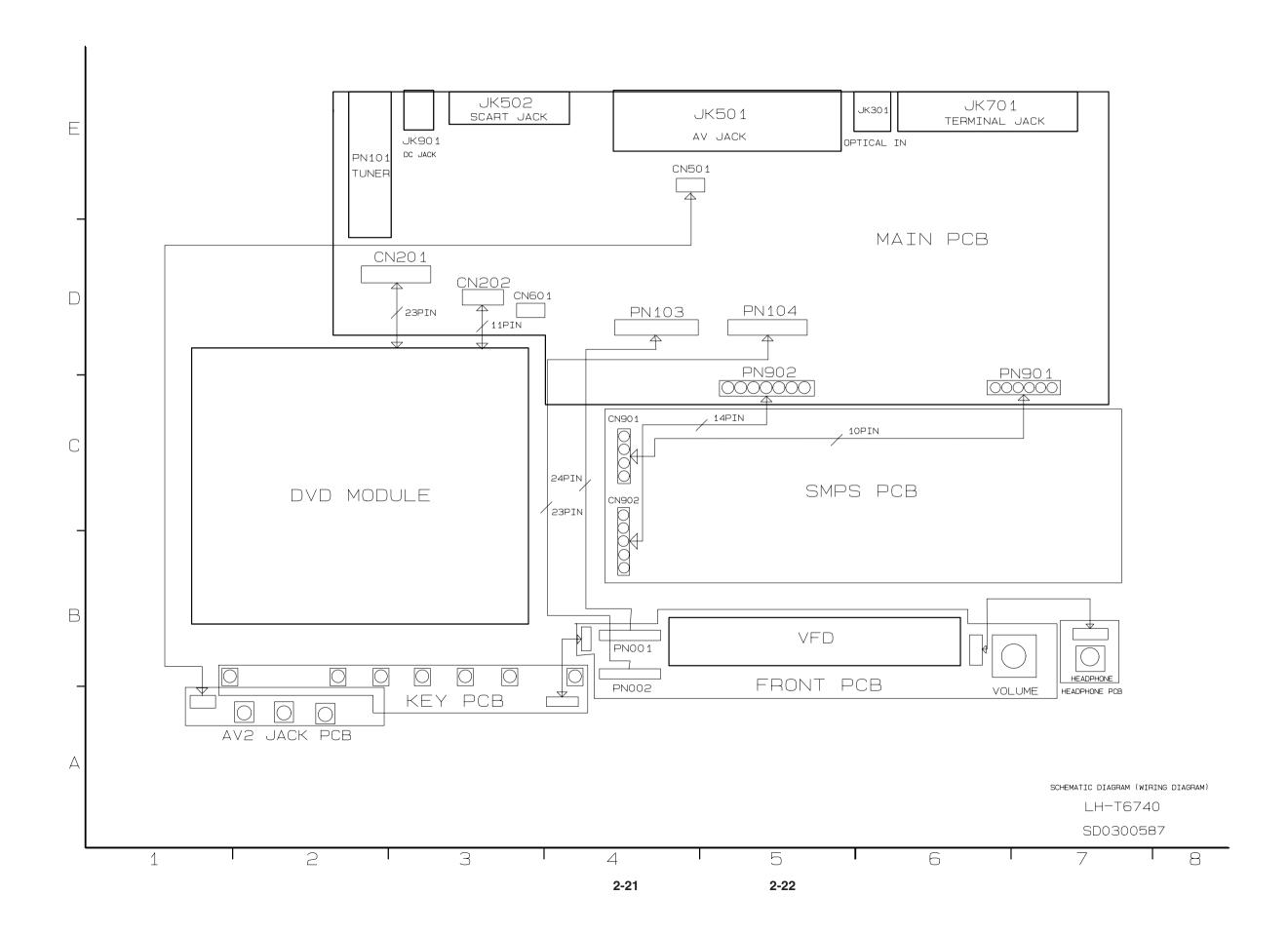
• SMPS-WIDE SCHEMATIC DIAGRAM



• POWER SCHEMATIC DIAGRAM

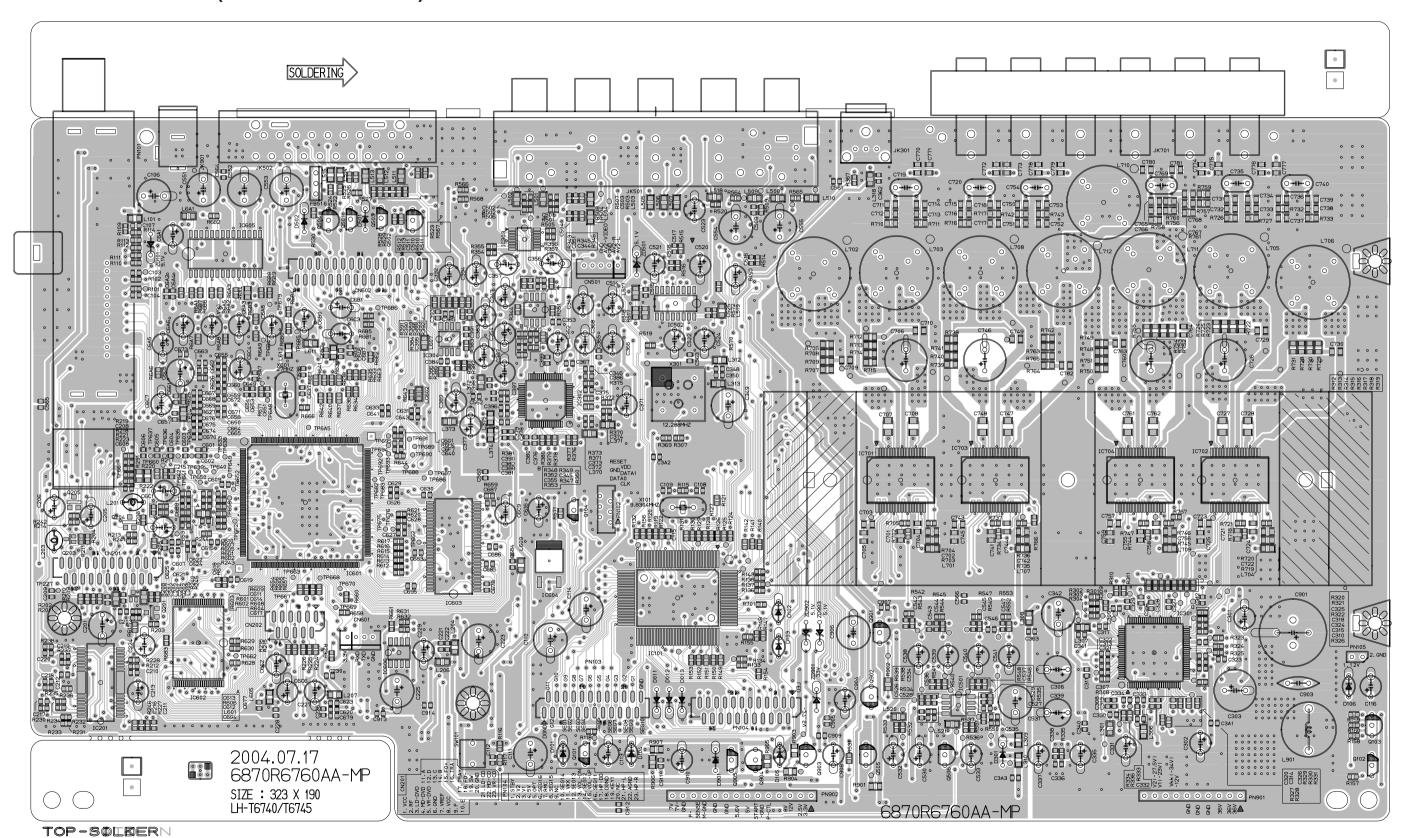


□ WIRING DIAGRAMS



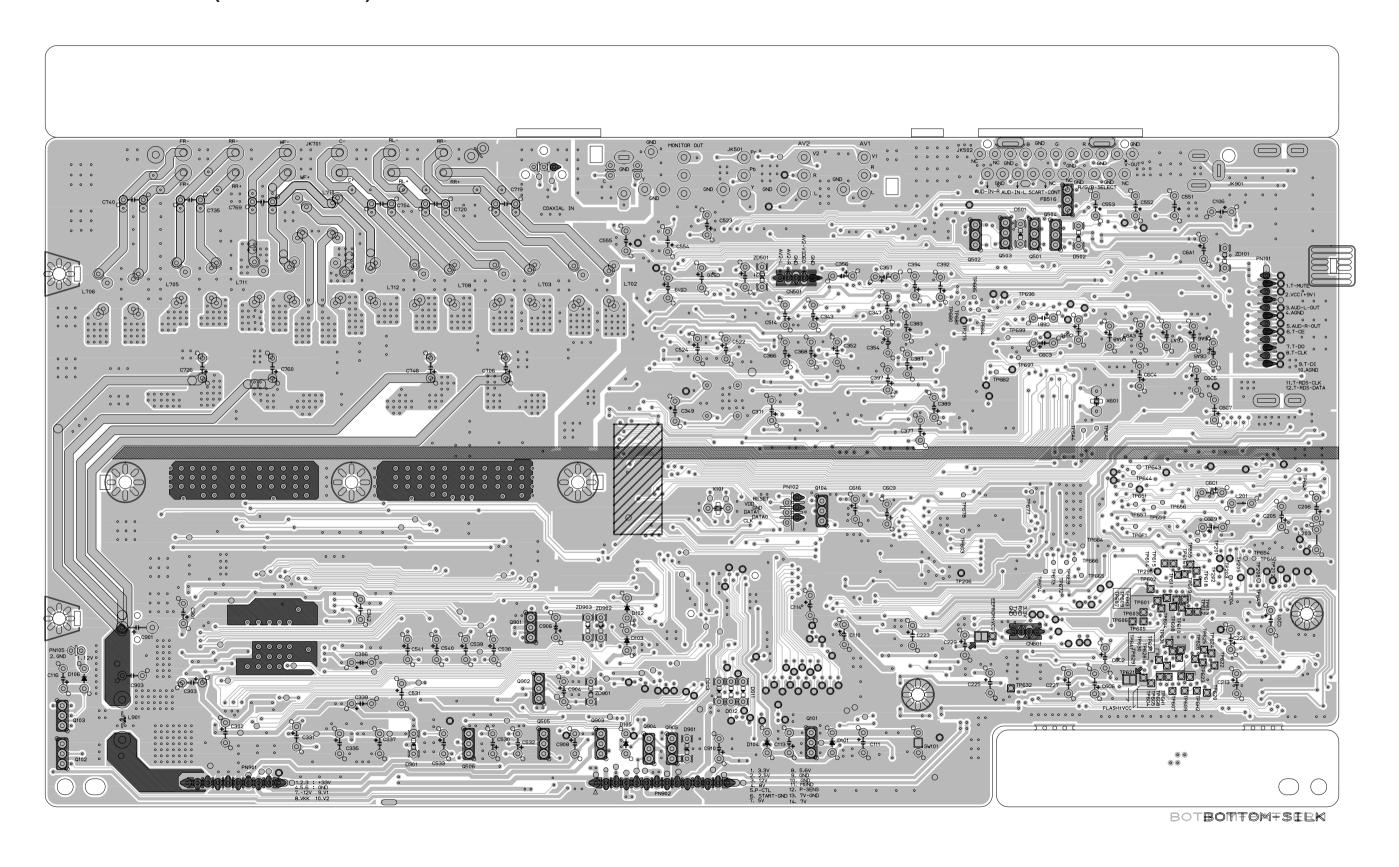
☐ PRINTED CIRCUIT DIAGRAMS

• MAIN P.C. BOARD (COMPONENT SIDE)



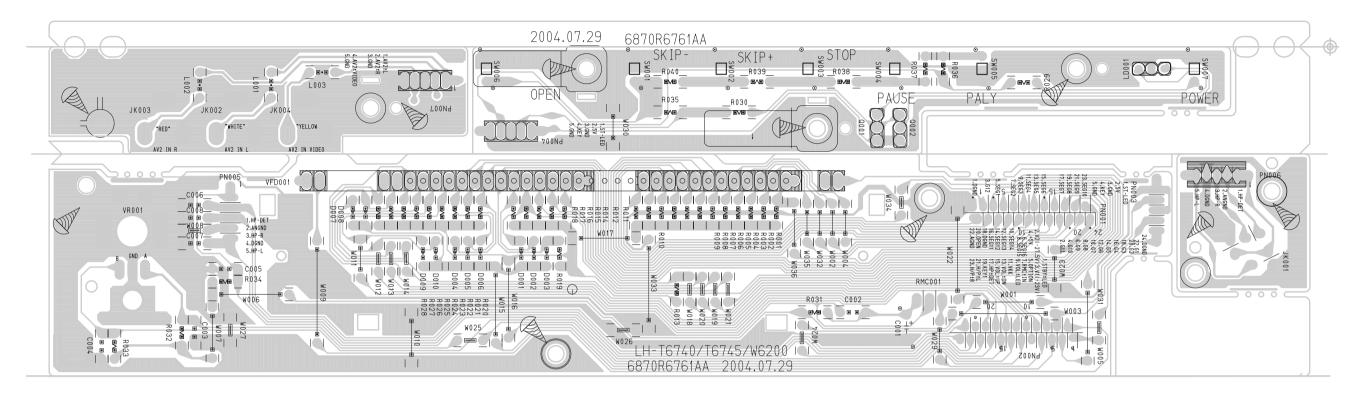
2-23 2-24

• MAIN P.C. BOARD (SOLDER SIDE)

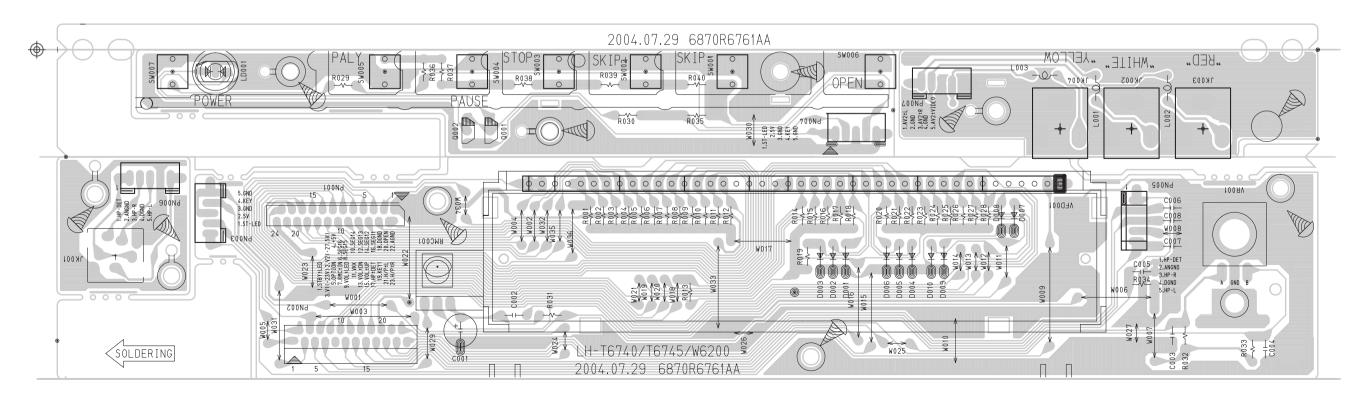


2-25 2-26

• FRONT P.C.BOARD (SOLDER SIDE)

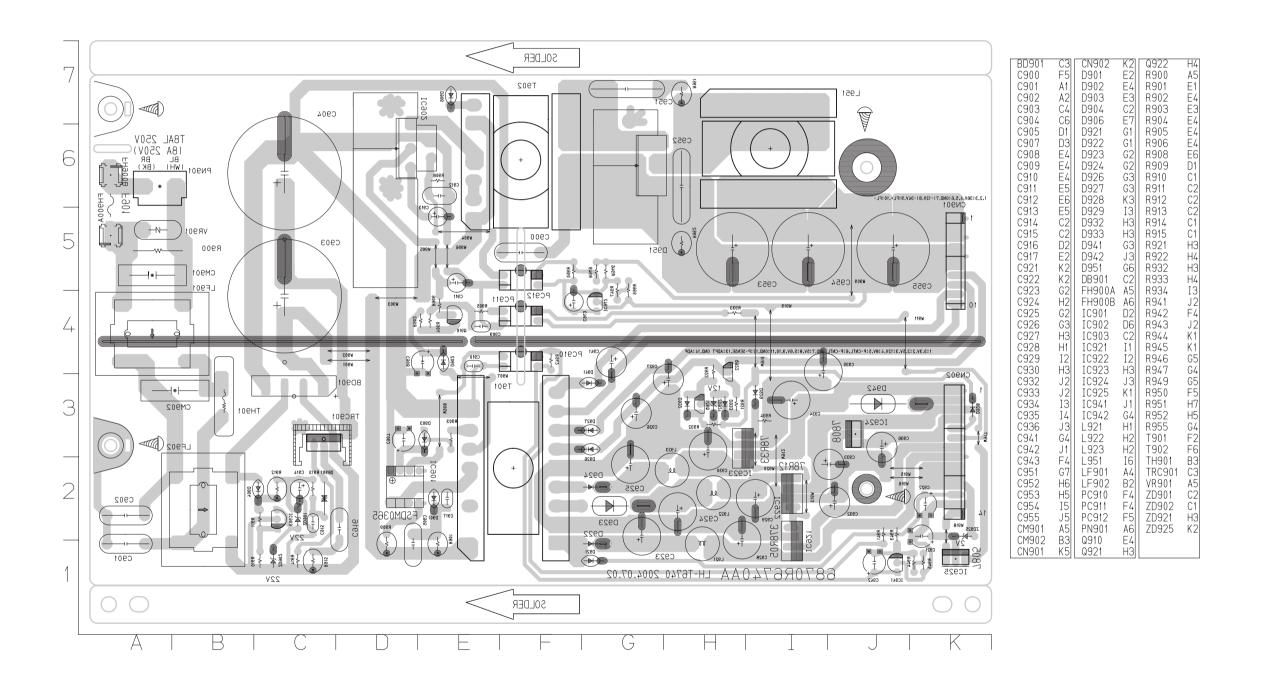


• FRONT P.C.BOARD (COMPONENT SIDE)



2-27 2-28

POWER P.C.BOARD



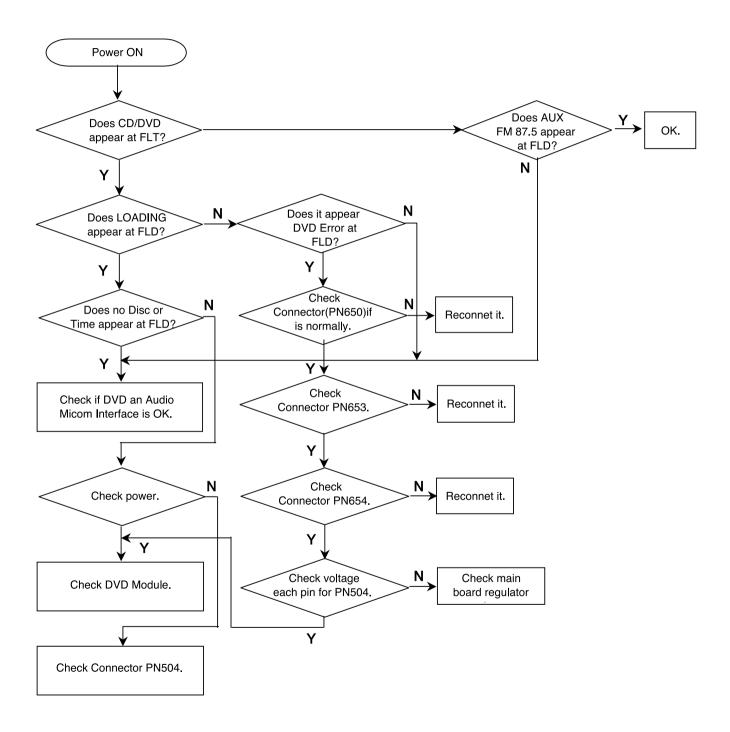
MEMO MEMO

2-31 2-32

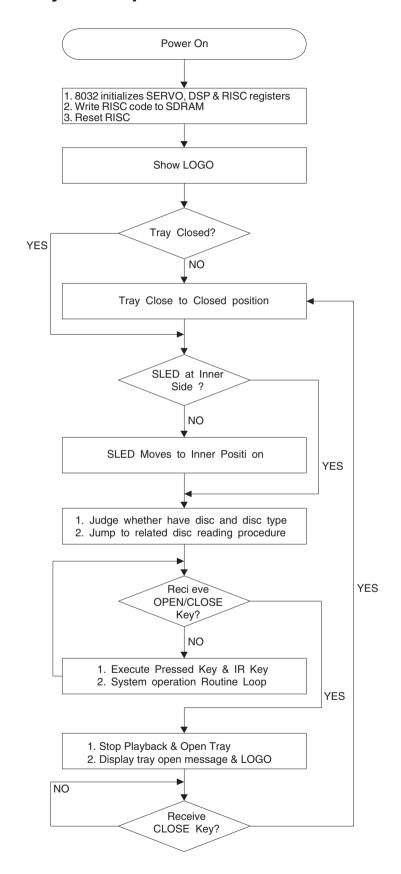
SECTION 3. DVD PART

□ ELECTRICAL TROUBLESHOOTING GUIDE

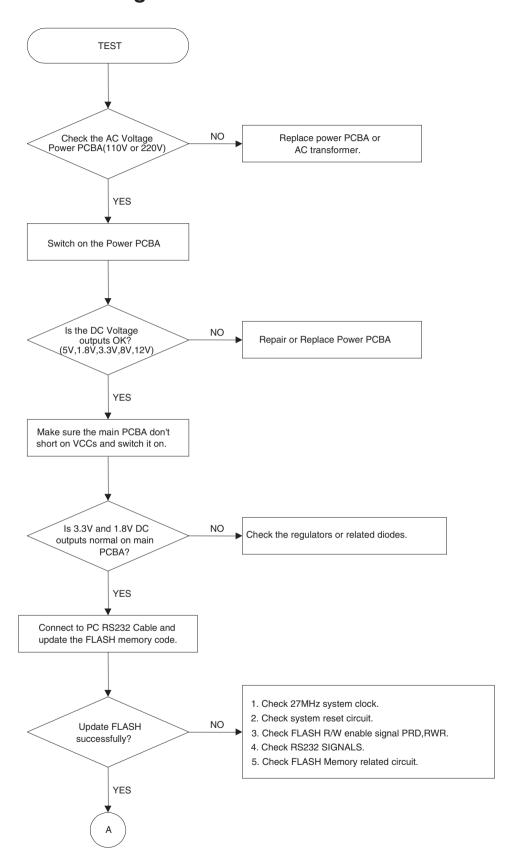
1. Power check flow

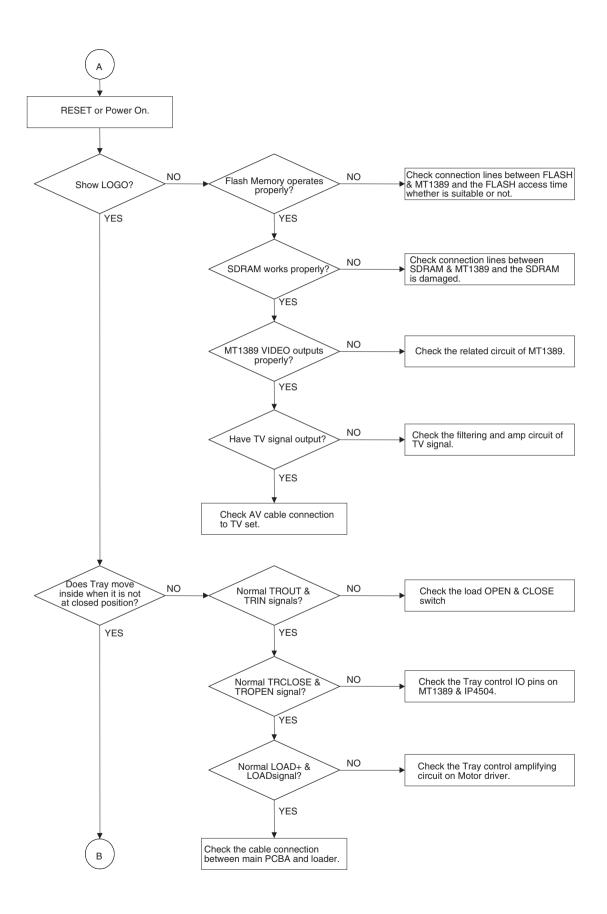


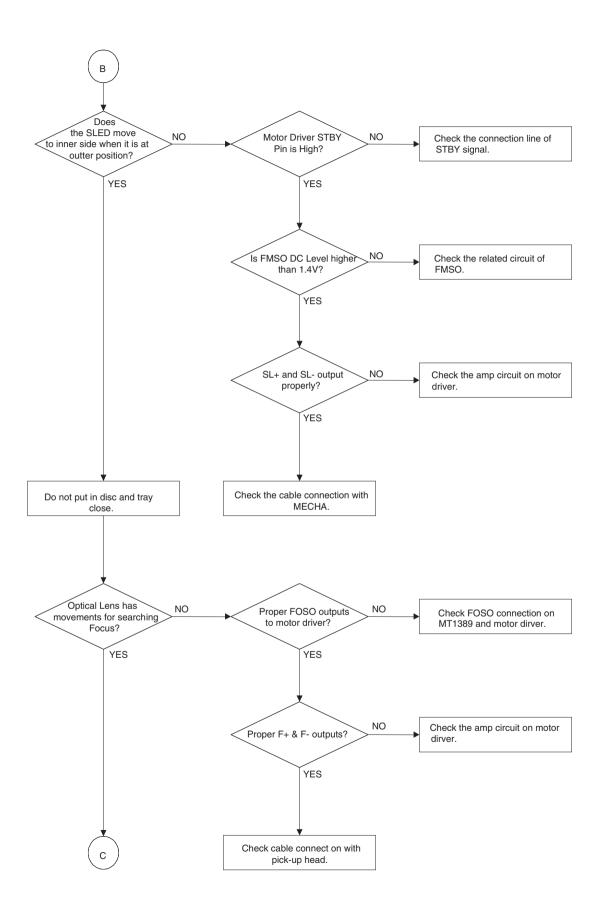
2. System operation flow

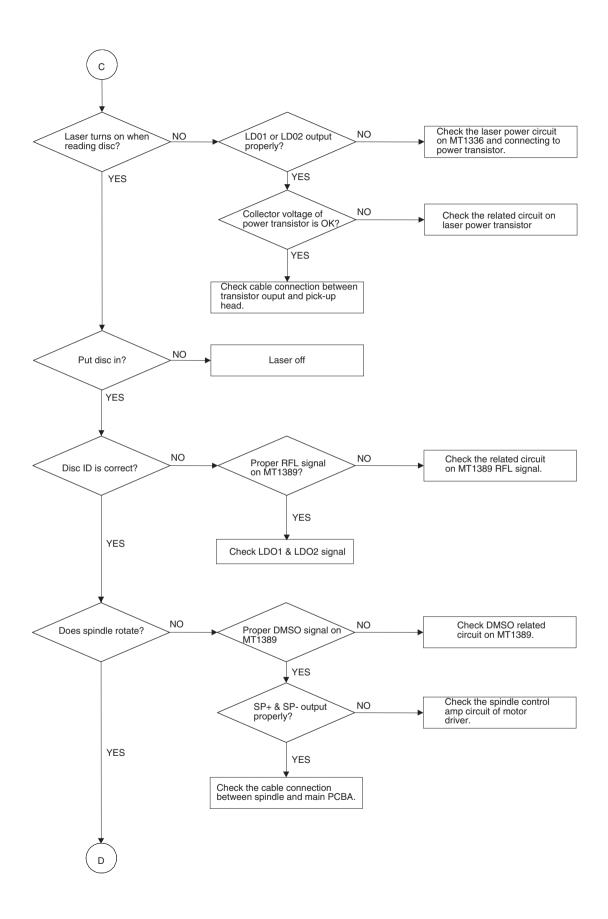


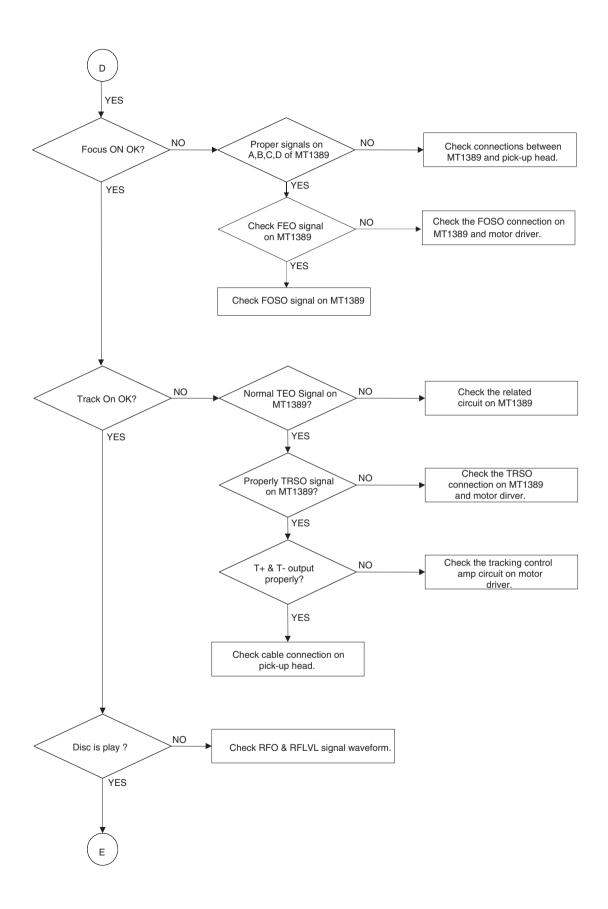
3. Test & debug flow

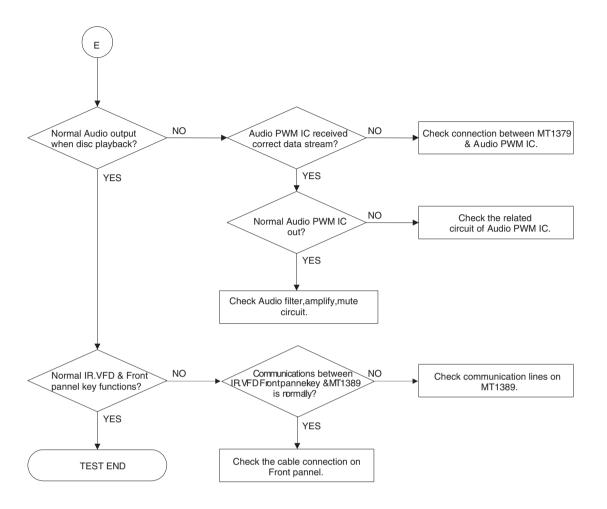












☐ DETAILS AND WAVEFORMS ON SYSTEM TEST AND DEBUGGING

1. SYSTEM 27MHz CLOCK, RESET, FLASH R/W SIGNAL

1) MT1379 main clock is at 27MHz(X501)

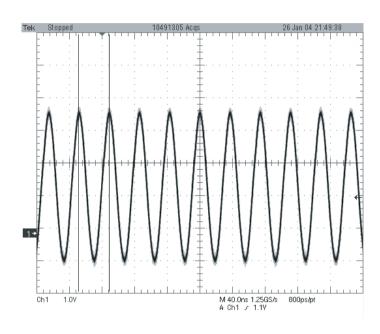


FIG 1-1

2) MT1336 reset is high active

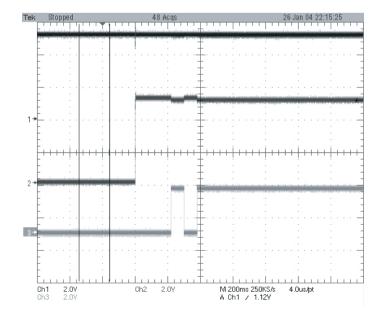


FIG 1-2

3) RS232 waveform during procedure(Downloading)

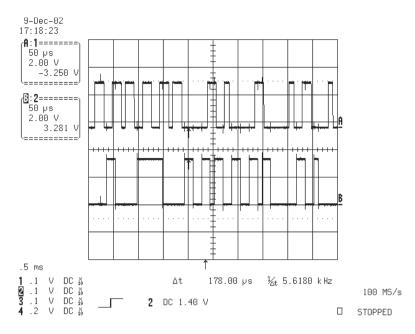


FIG 1-3

4) Flash R/W enable signal during download(Downloading)

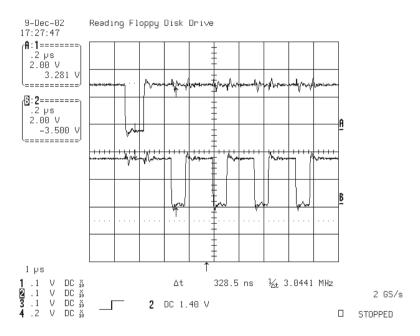


FIG 1-4

2. SDRAM CLOCK

1) MT1379 main clock is at 27MHz(X501)

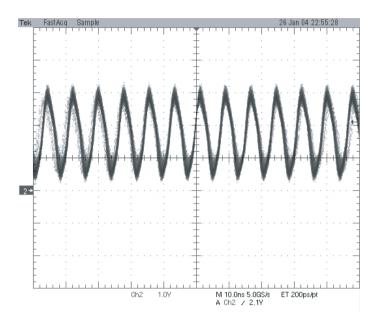
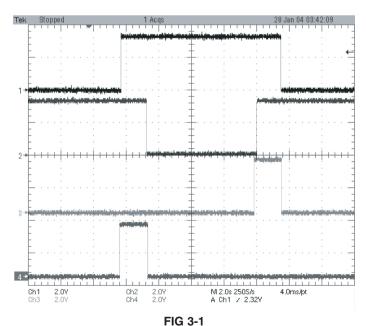
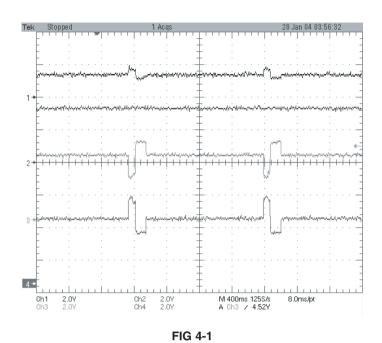


FIG 2-1

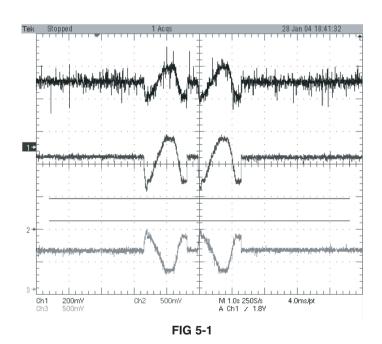
3. TRAY OPEN/CLOSE SIGNAL



4. SLED CONTROL RELATED SIGNAL (NO DISC CONDITION)



5. LENS CONTROL RELATED SIGNAL(NO DISC CONDITION)



6. LASER POWER CONTROL RELATED SIGNAL (NO DISC CONDITION)

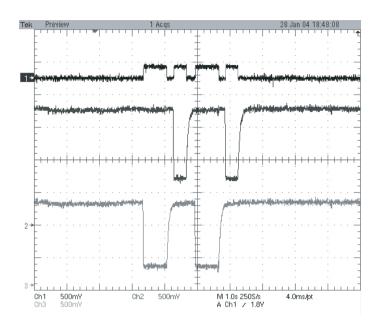


FIG 6-1

7. DISC TYPE JUDGEMENT W VEFORM

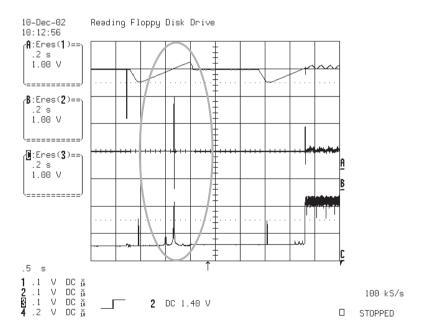


FIG 7-1

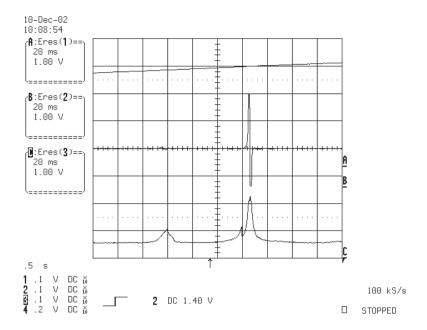


FIG 7-2 (DVD)

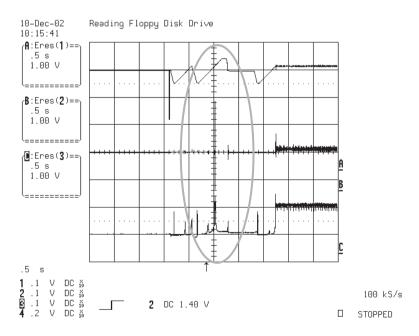


FIG 7-3 (CD)

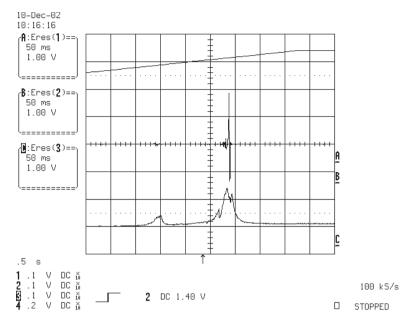


FIG 7-4 (CD)

8. FOCUS ON W VEFORM

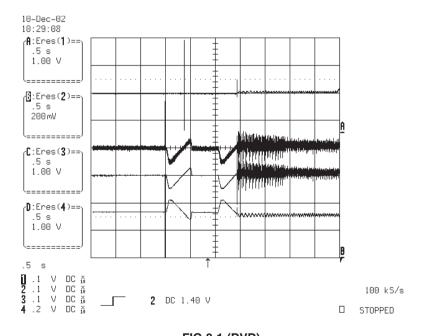


FIG 8-1 (DVD)

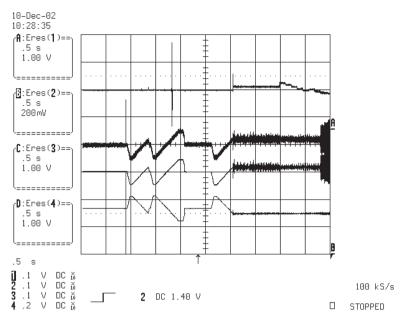


FIG 8-2 (CD)

9. SPINDLE CONTROL W VEFORM (NO DISC CONDITION)

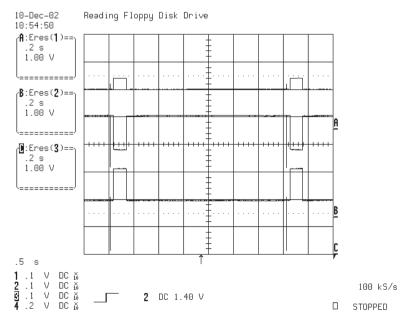


FIG 9-1

10. TRACKING CONTROL RELATED SIGNAL(System checking)

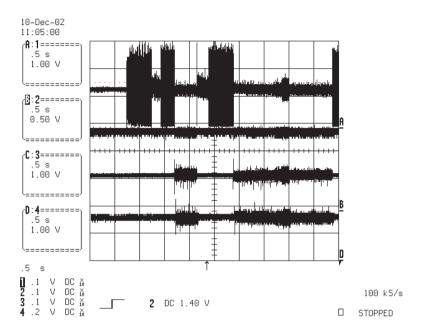


FIG 10-1 (DVD)

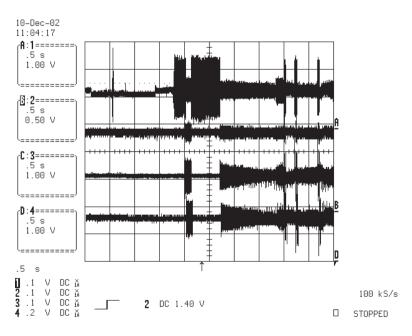
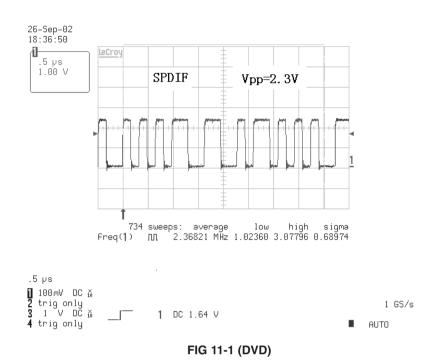


FIG 10-2 (CD)

11. MT1389 AUDIO OPTICAL AND COAXIAL INPUT (SPDIF)



12. MT1389 VIDEO OUTPUT WAVEFORM 1)100%

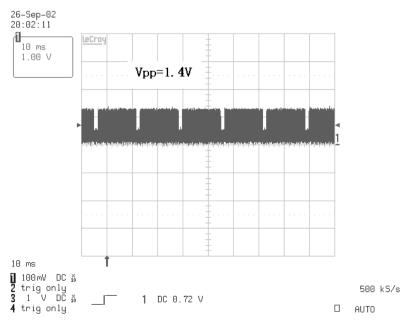
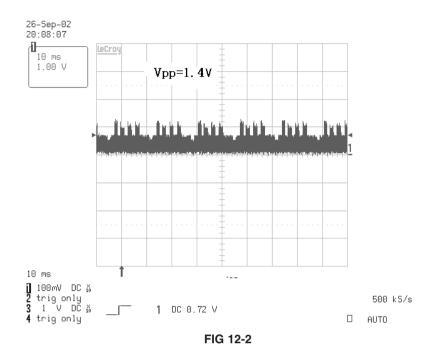
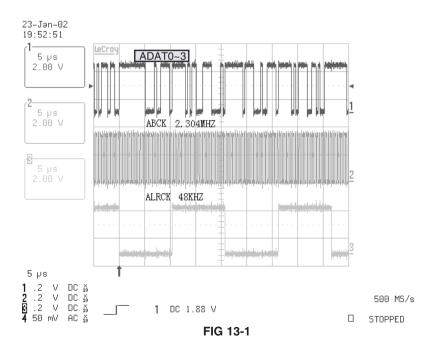


FIG 12-1

2) COMPOSITE VIDEO SIGNAL



13. MT1389 AUDIO OUTPUT TO PWM IC



14. AUDIO OUTPUT FROM PWM IC

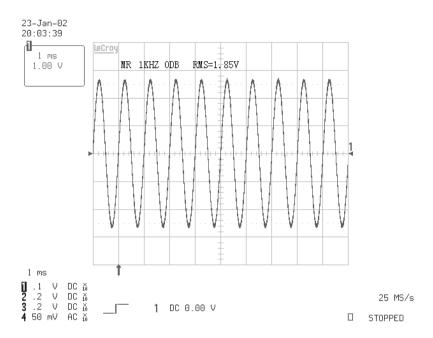
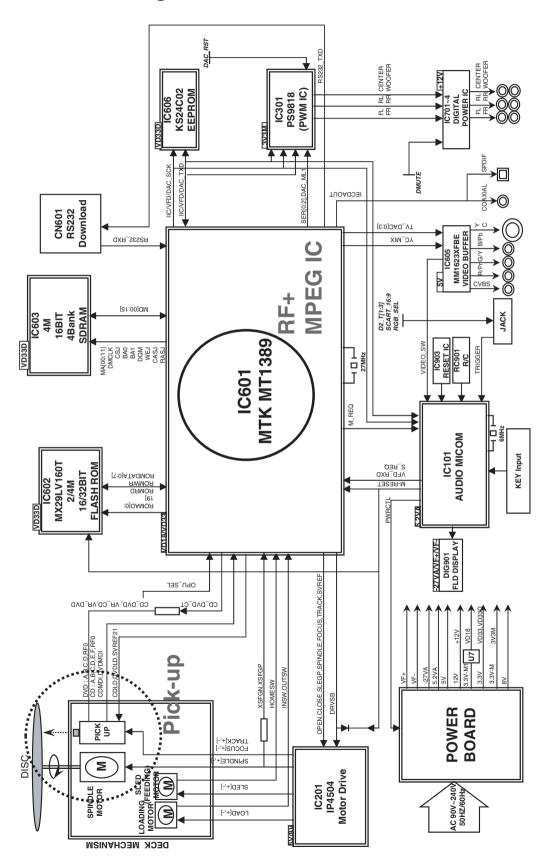


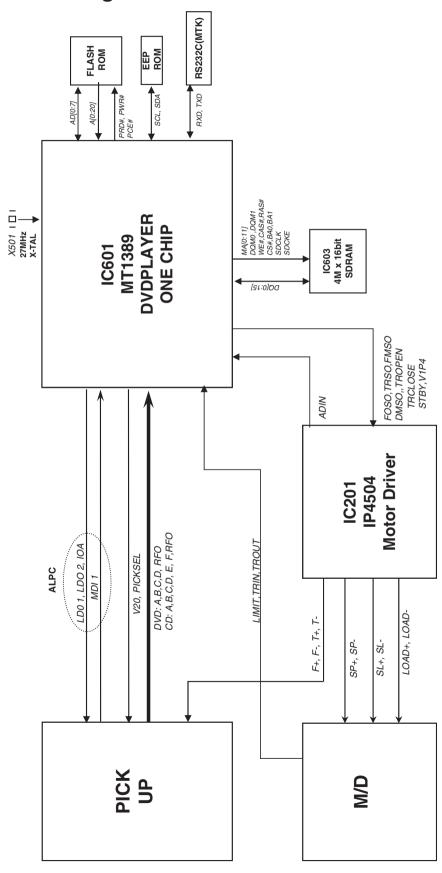
FIG 14-1

□ BLOCK DIAGRAM

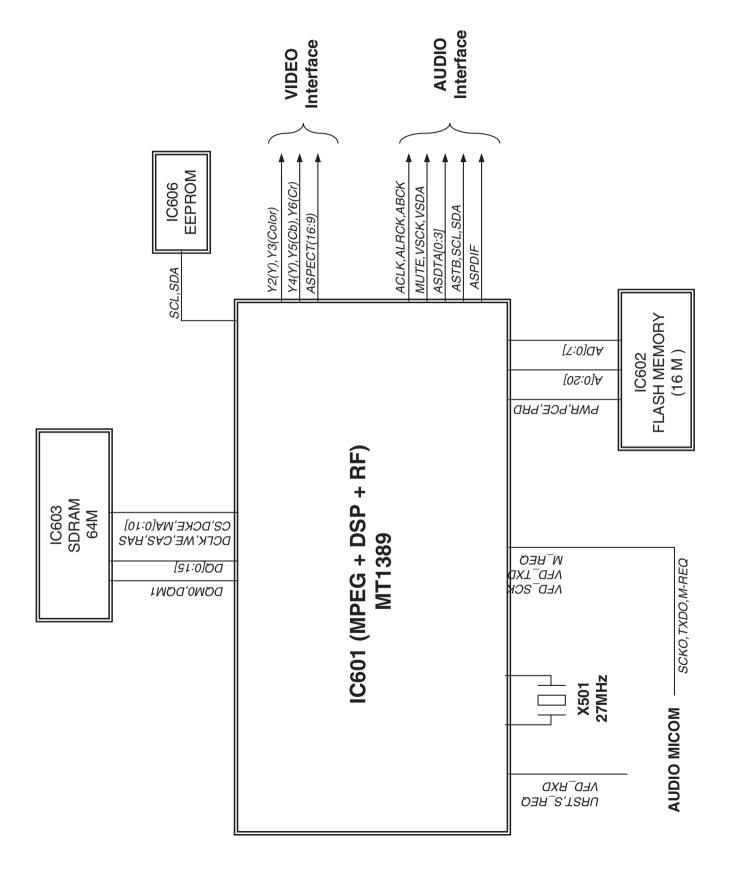
1. Overall Block Diagram



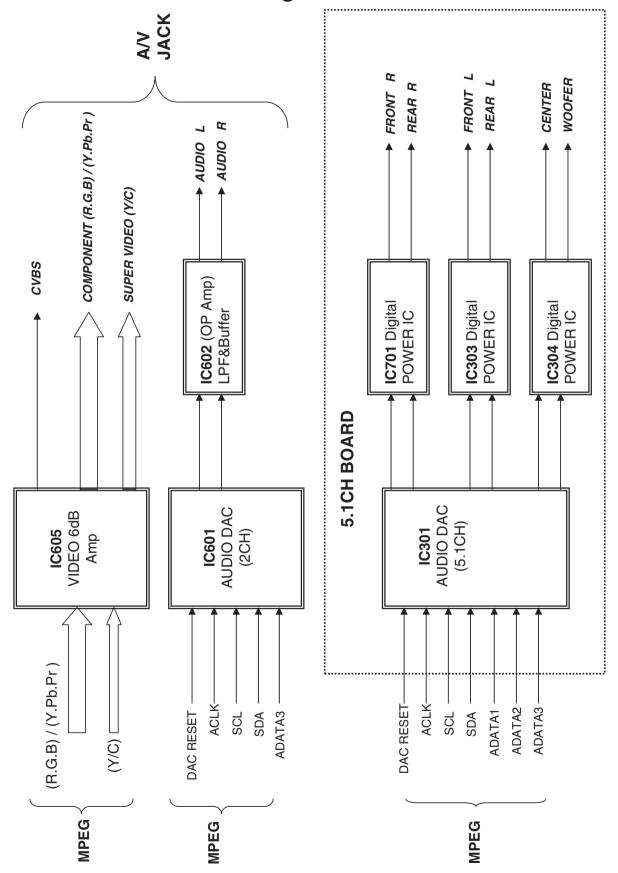
2. SERVO Block Diagram



3. MPEG & MEMORY Block Diagram

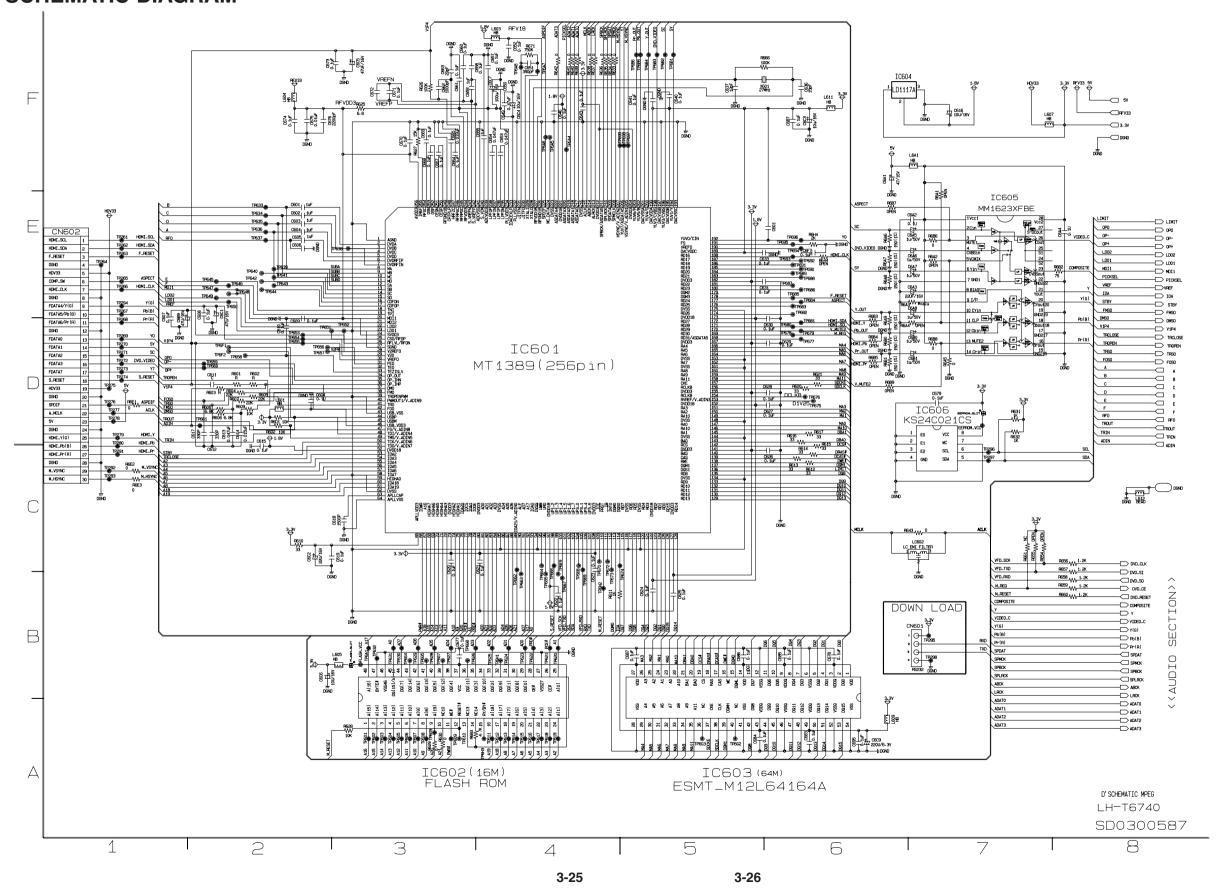


4. VIDEO & AUDIO Block Diagram

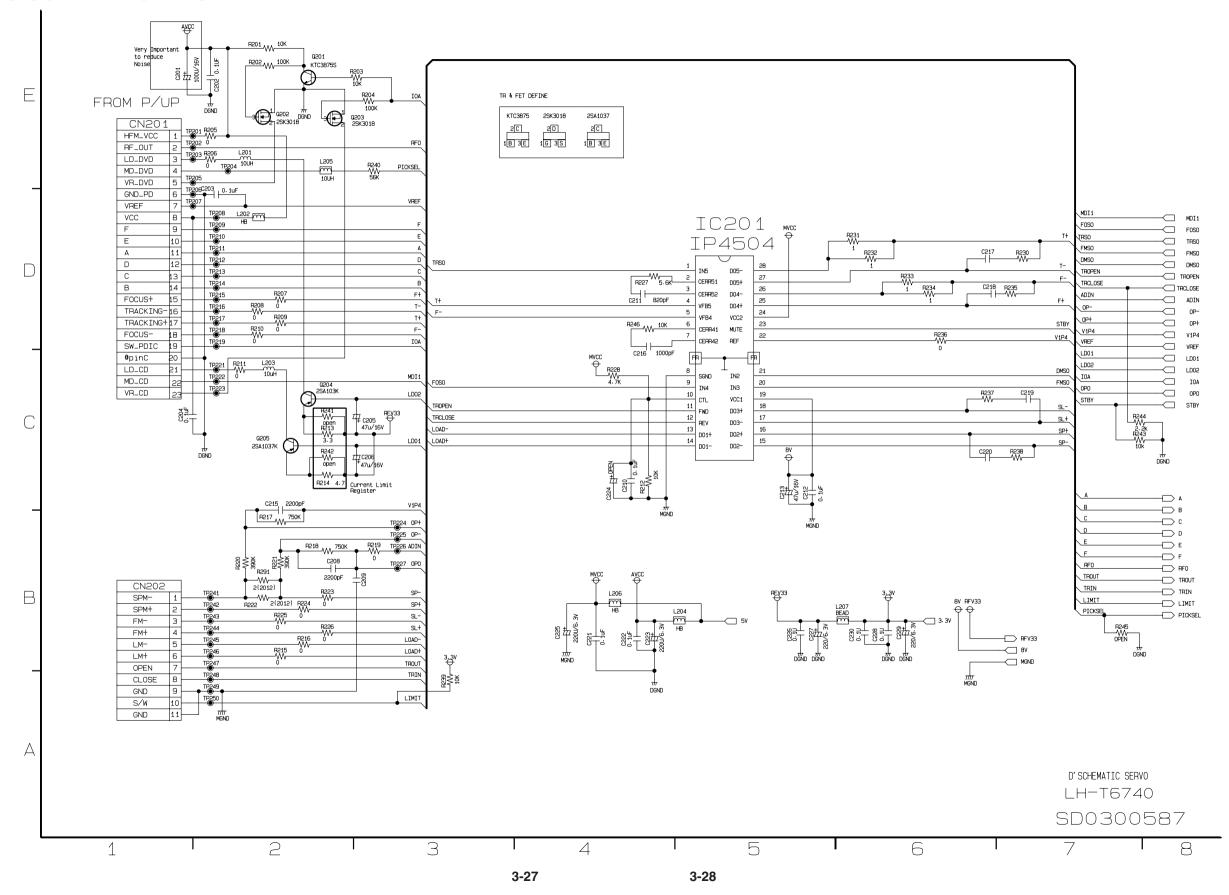


□ DVD PART SCHEMATIC DIAGRAMS

• MPEG SCHEMATIC DIAGRAM



SERVO SCHEMATIC DIAGRAM



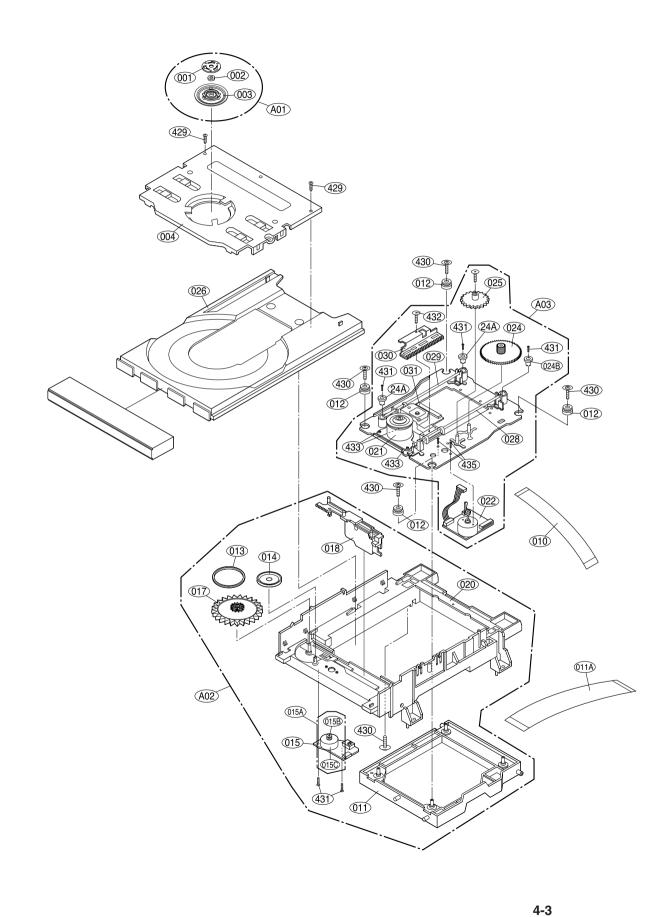
SECTION 4. EXPLODED VIEWS

• CABINET AND MAIN FRAME SECTION

PARTS LIST" in order to look for the part number of each part. **A50** 285 280 **A43A** 284 **A43** 282 288 250 283 281 TU101 322 (A46) **A26 A47** 305 263 262 **A44** 260 261

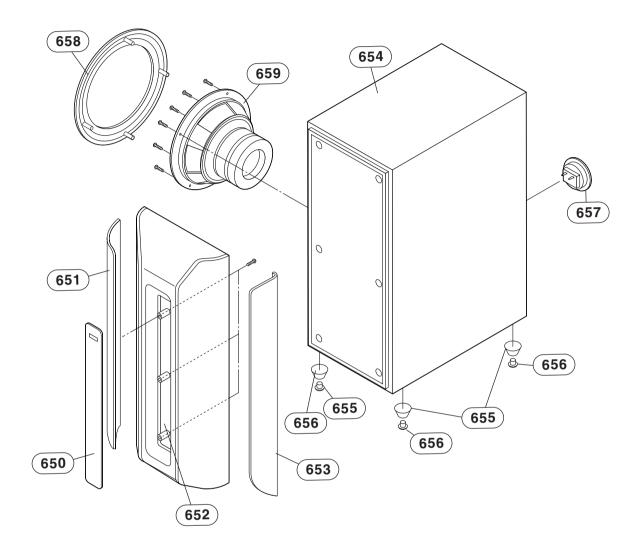
NOTE) Refer to "SECTION 6 REPLACEMENT

• DECK MECHANISM EXPLODED VIEW

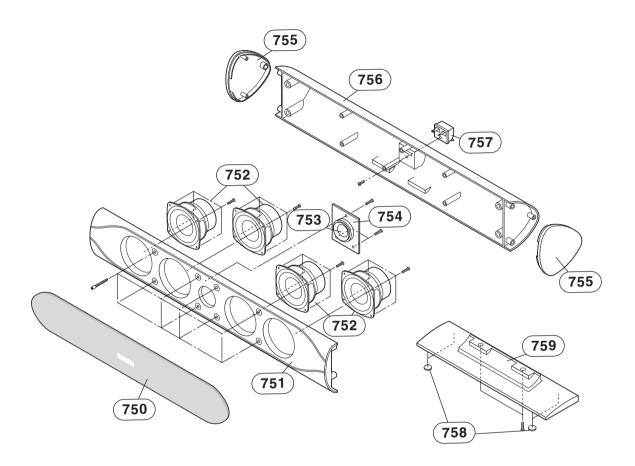


SECTION 5. SPEAKER PART

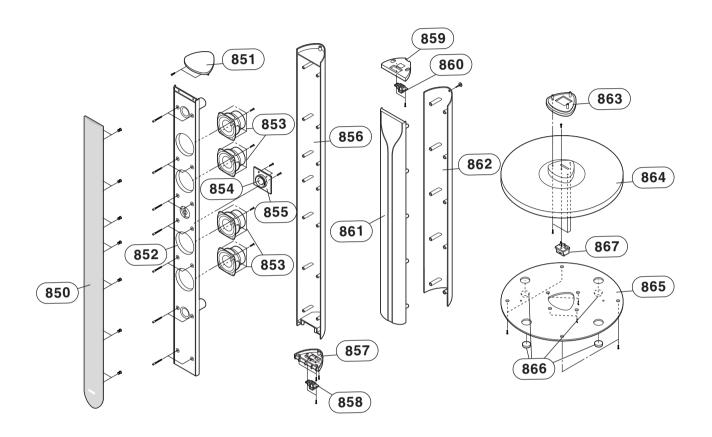
☐ MODEL: LHS-T6749W



☐ MODEL: LHS-T6749C



☐ MODEL: LHS-T6749T



MEMO