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# SECTION 1. GENERAL PART

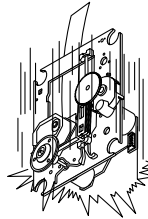
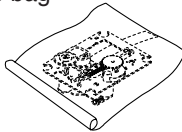
## ❑ SERVICING PRECAUTIONS

### 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.

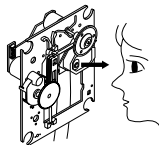
Storage in conductive bag



Drop impact

#### 2. Repair notes

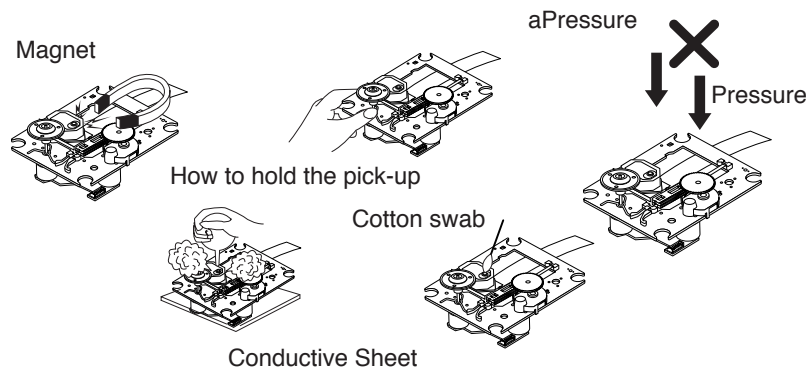
- 1) The pick-up incorporates a strong magnet, and so should never be brought close to magnetic materials.
- 2) The pick-up should always be handled correctly and carefully, taking care to avoid external pressure and impact. If it is subjected to strong pressure or impact, the result may be an operational 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.

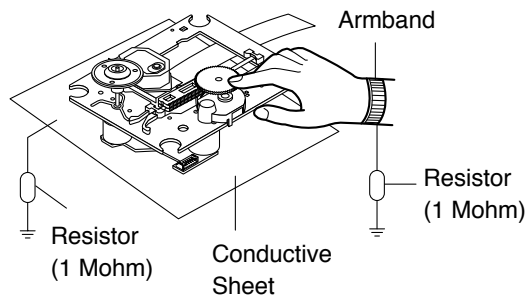
# NOTES REGARDING COMPACT DISC PLAYER REPAIRS

## 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 $\Omega$ )
- 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.

1. 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 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 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).

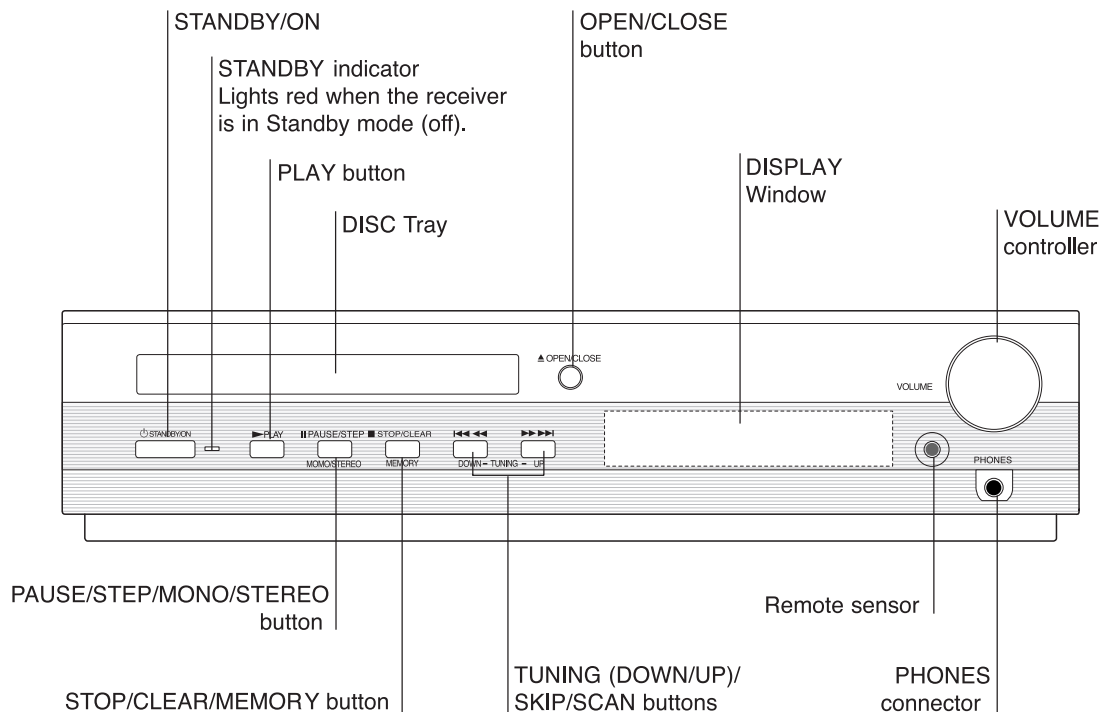
## CAUTION. GRAPHIC SYMBOLS

	THE LIGHTNING FLASH WITH APOWHEAD 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.

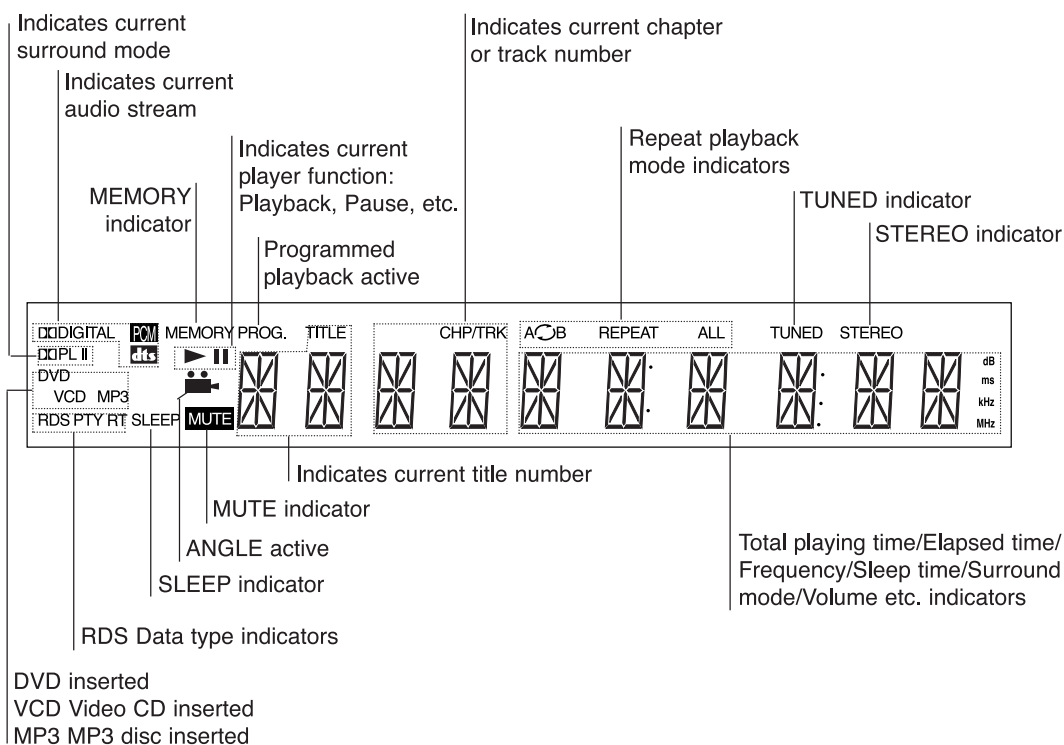


# LOCATION OF CUSTOMER CONTROLS

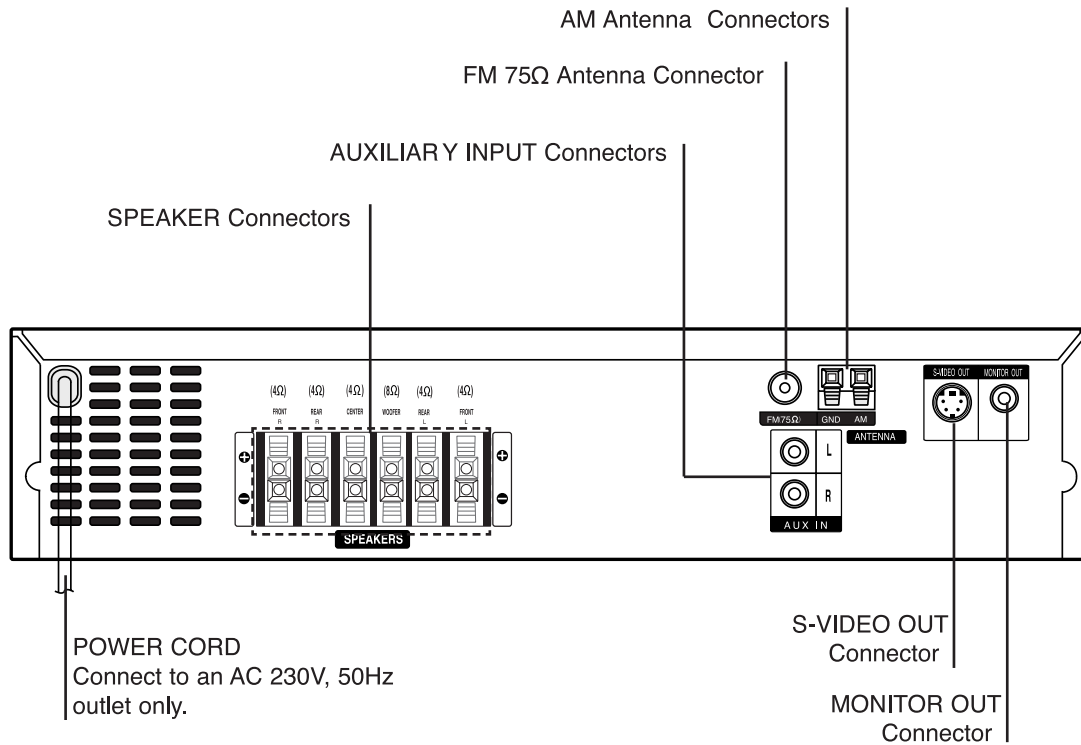
## FRONT PANEL



## DISPLAY WINDOW



## REAR PANEL

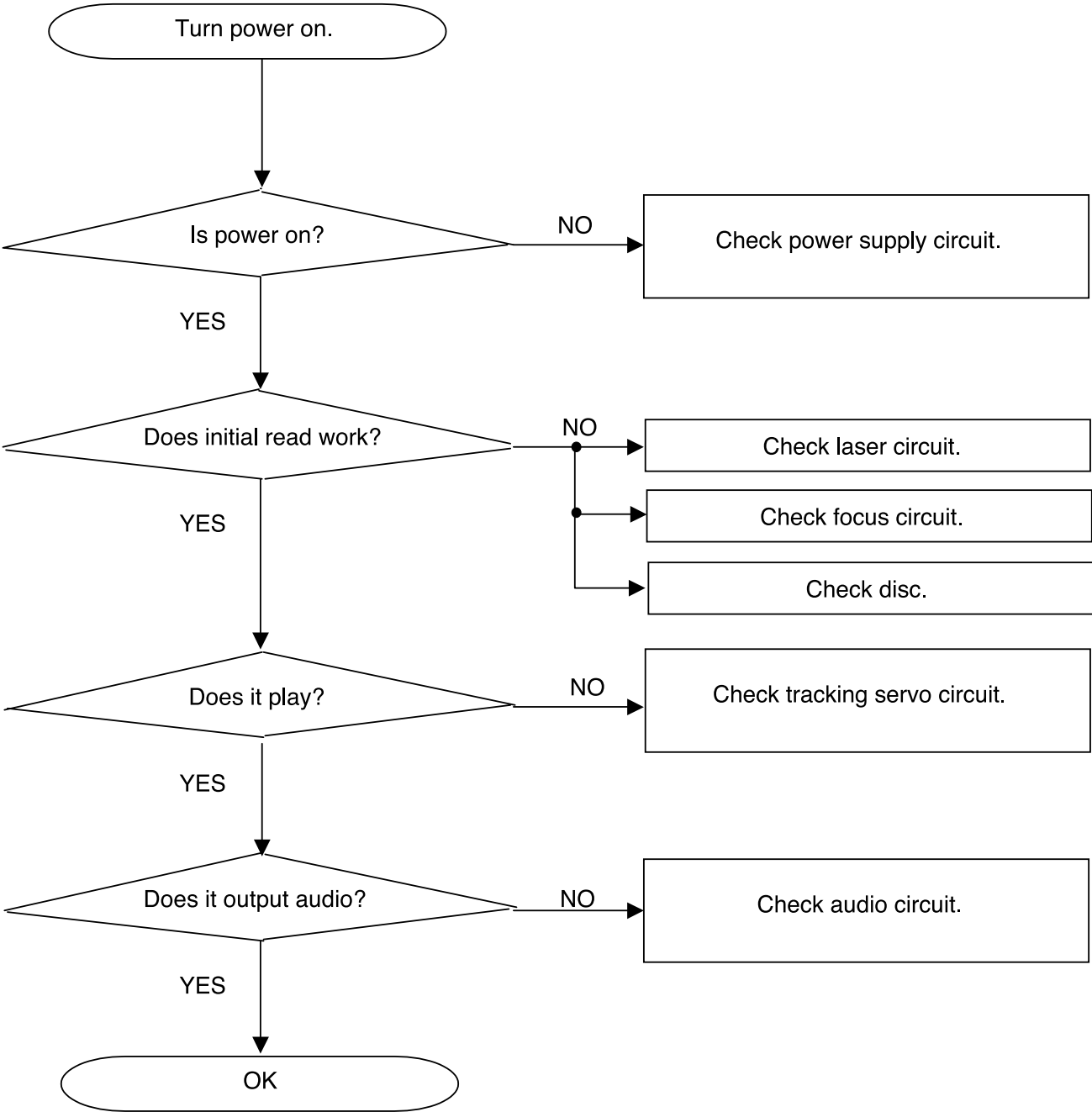


Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.

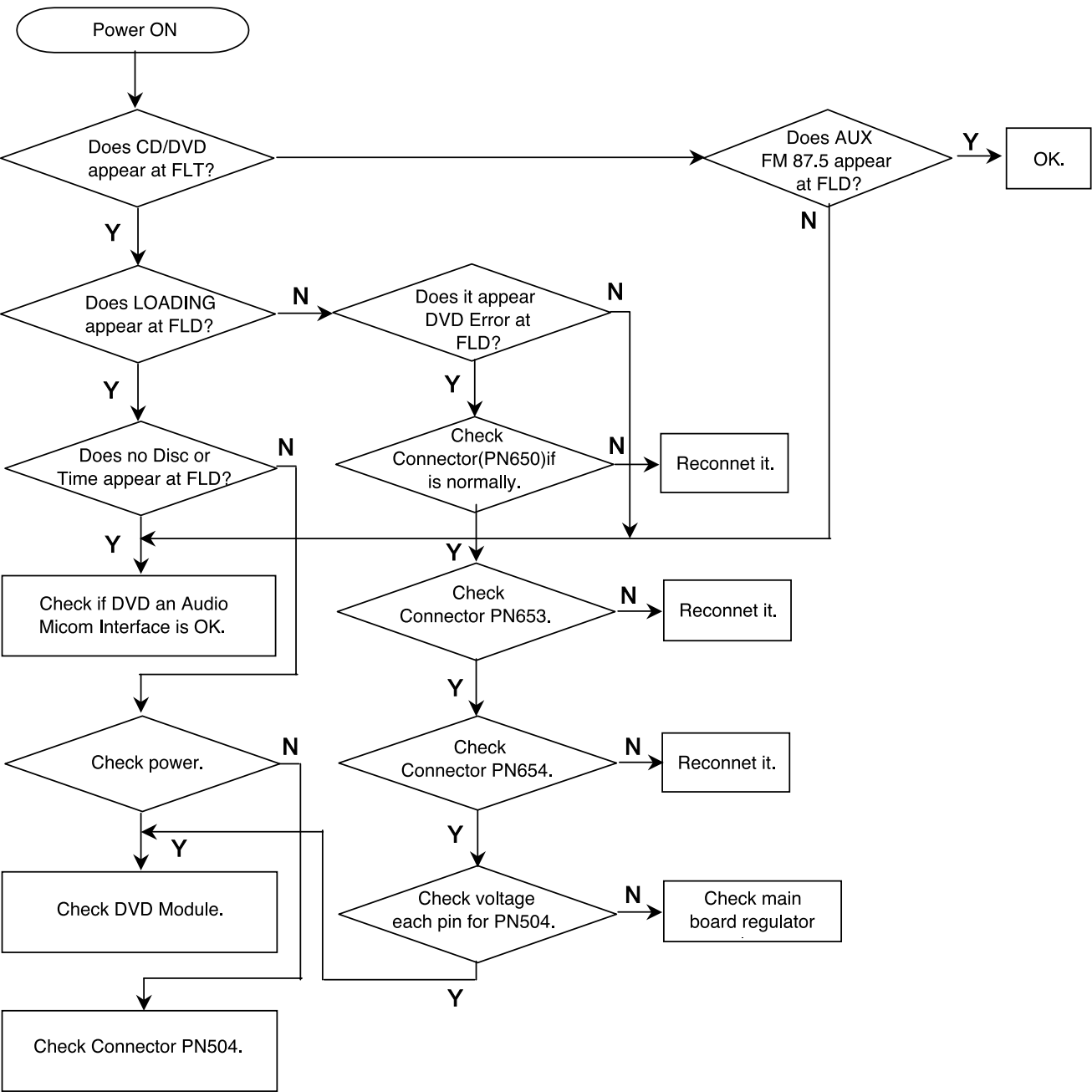
# SECTION 3. ELECTRICAL

## TROUBLESHOOTING GUIDE

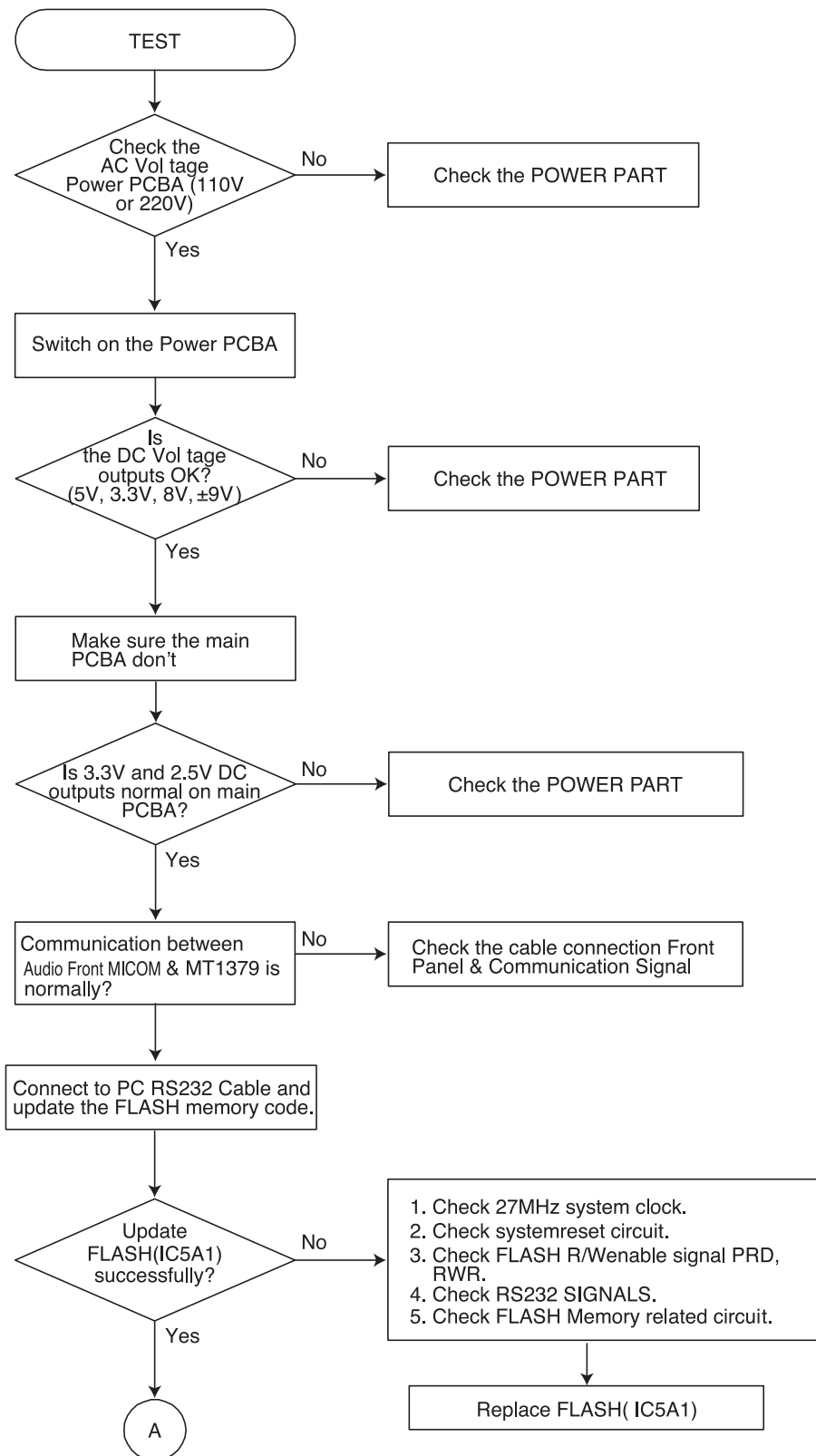
### 1. System check flow

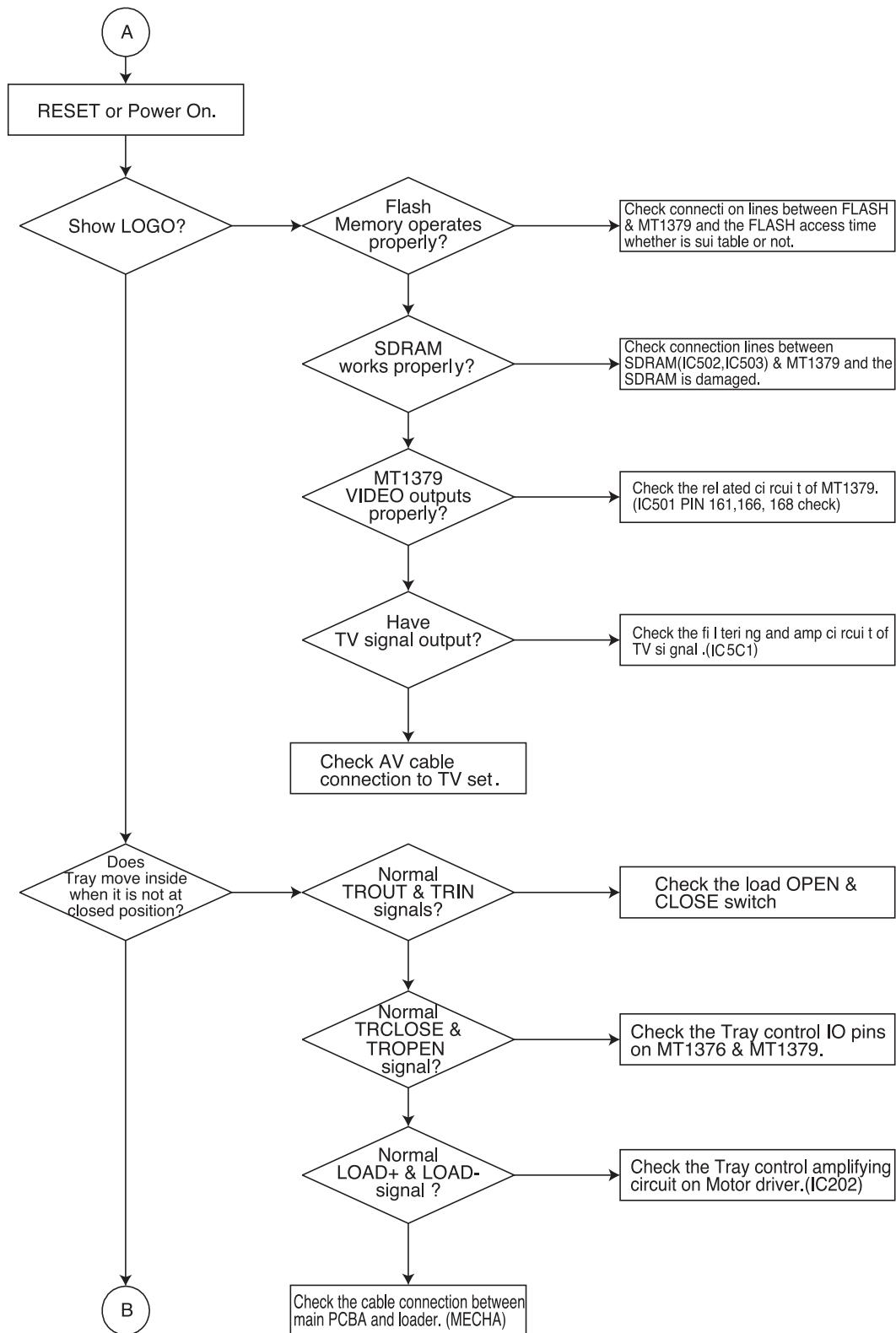


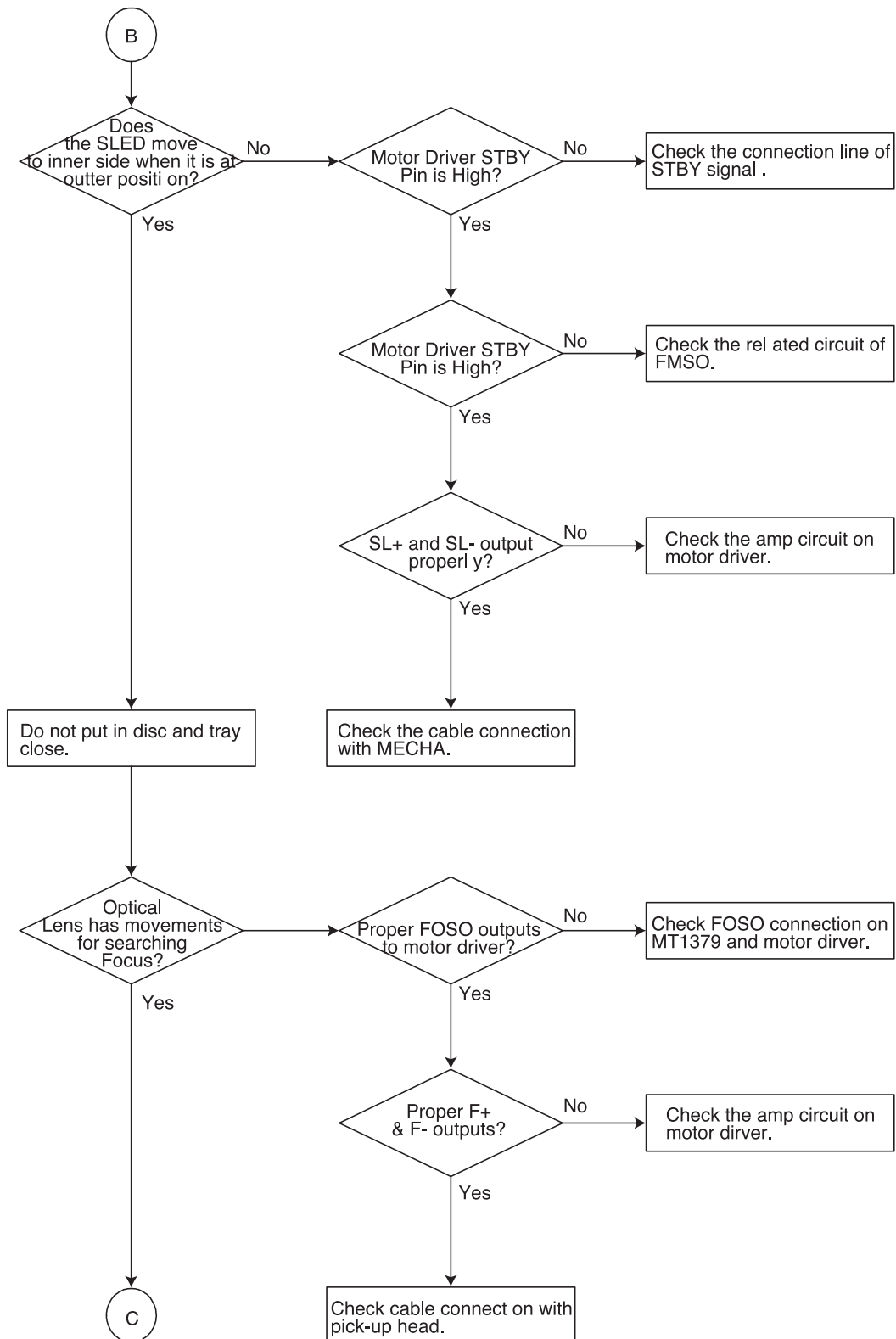
## 2. Power check flow

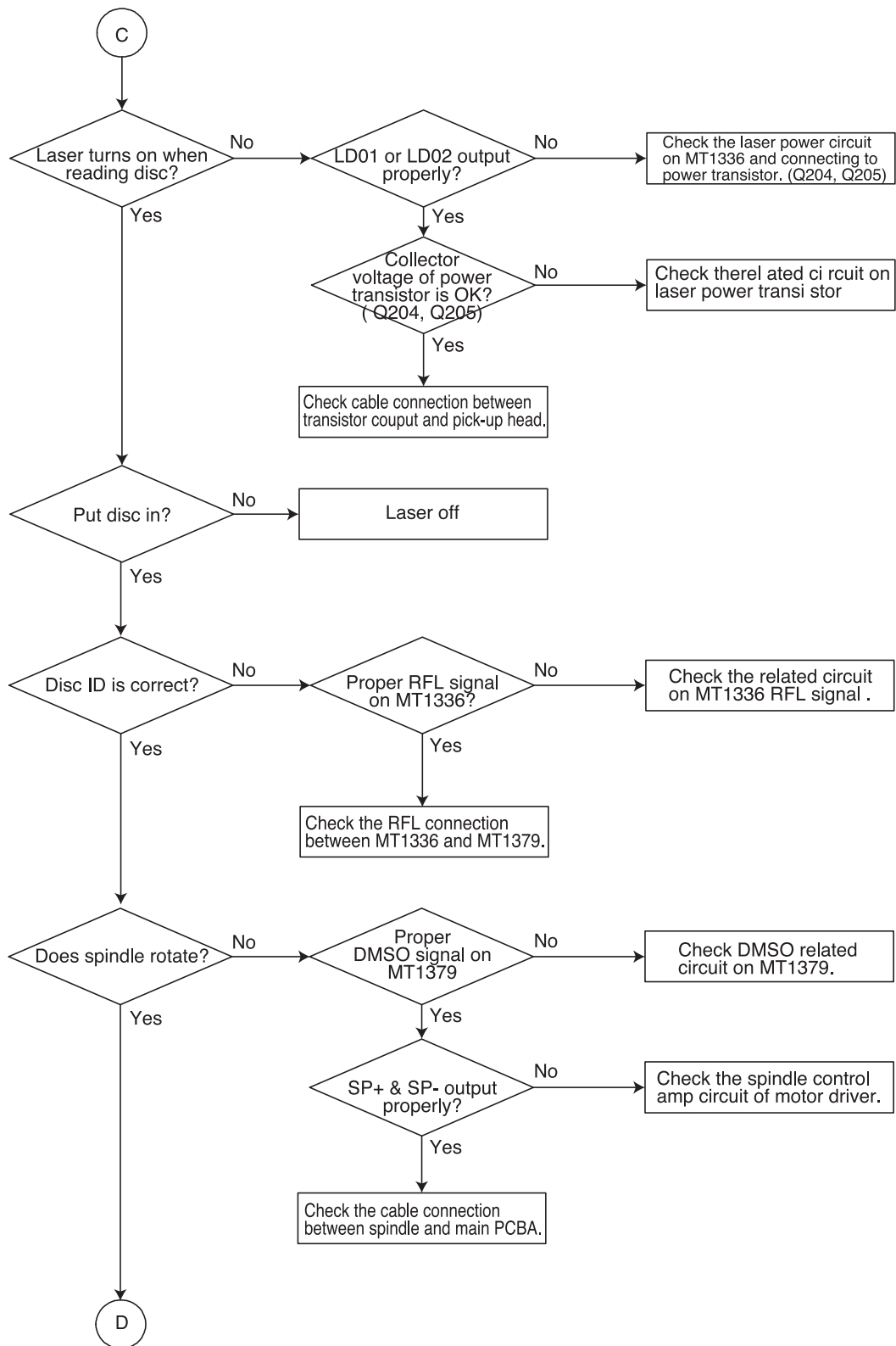


### 3. Test & debug flow

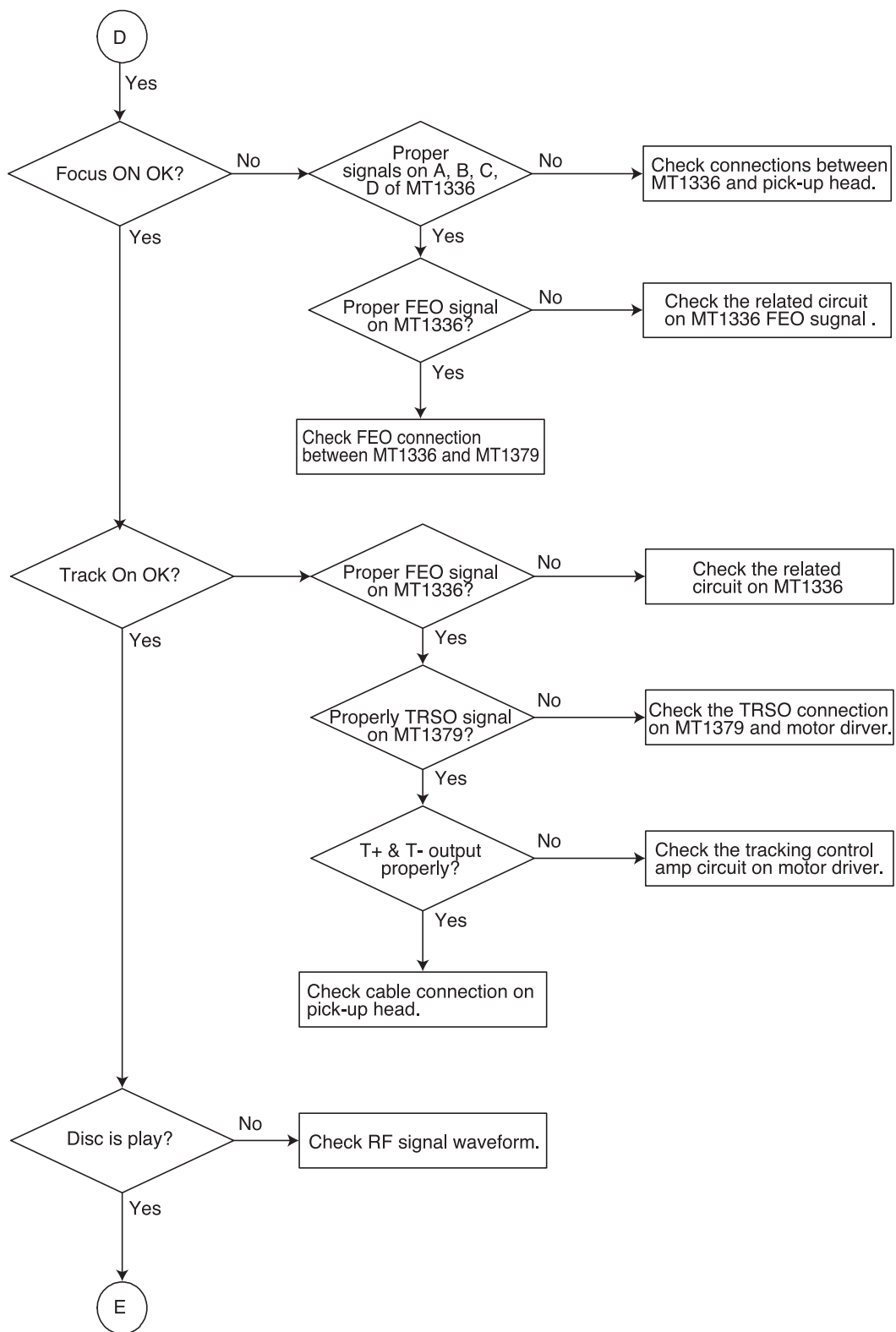


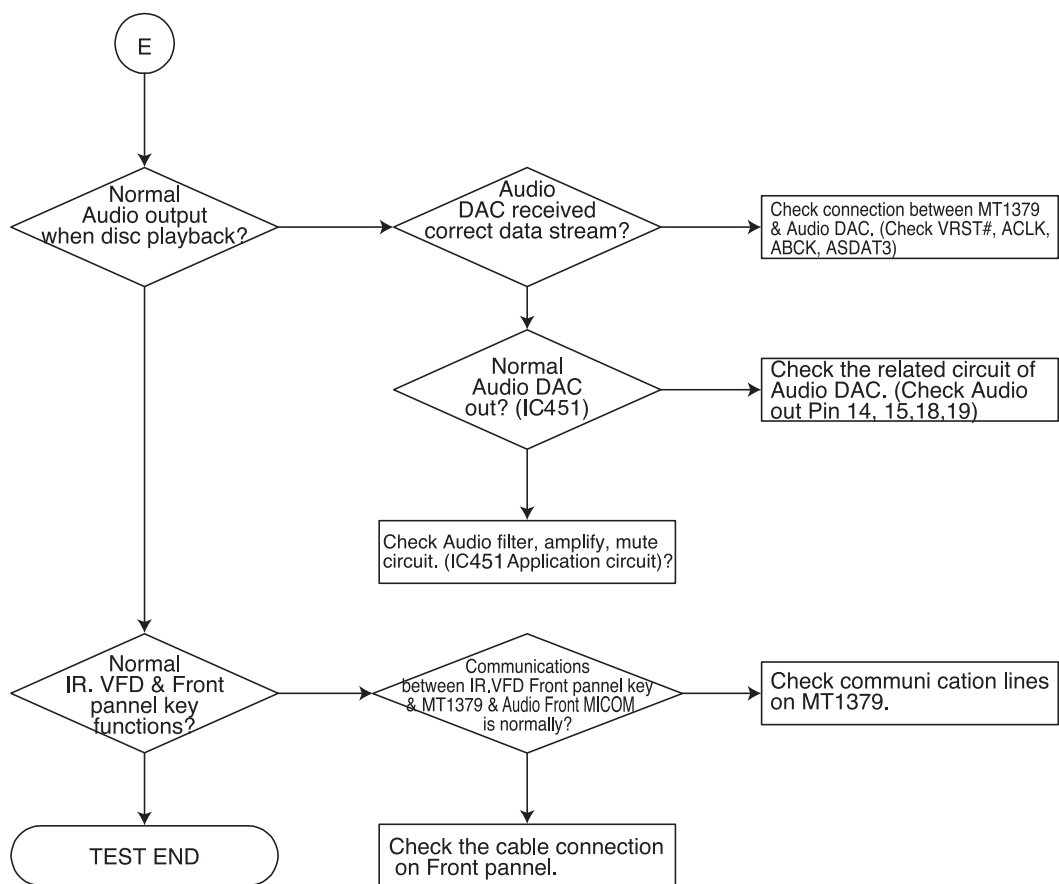












# ❑ DETAILS AND WAVEFORMS ON SYSTEM TEST AND DEBUGGING

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

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

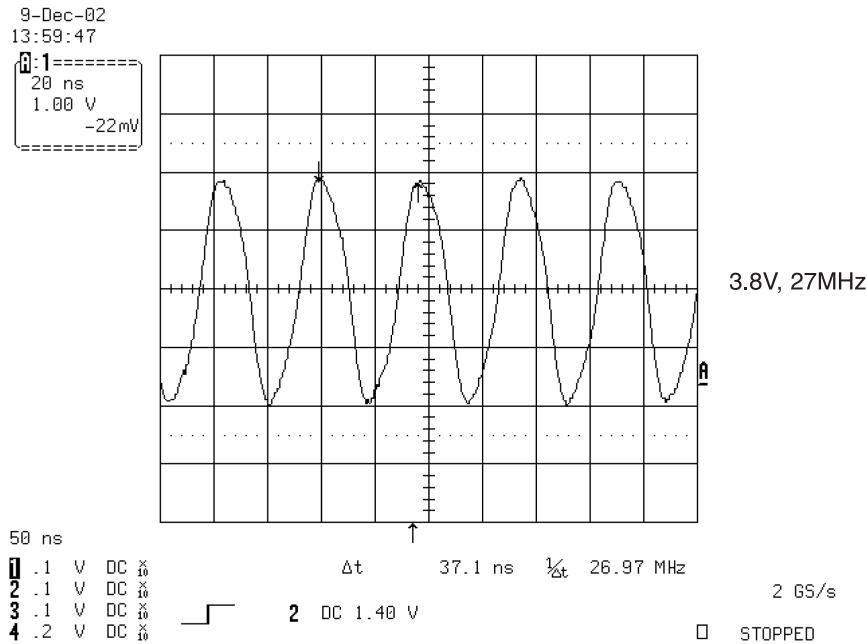


FIG 1-1

### 2) MT1336 reset is high active

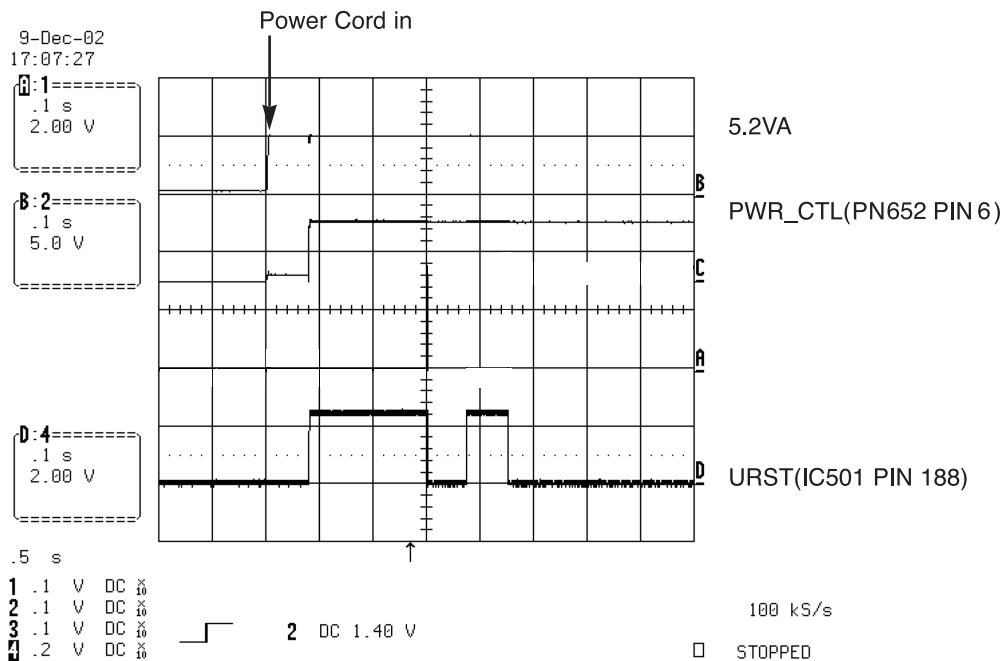


FIG 1-2

### 3) RS232 waveform during procedure(Downloading)

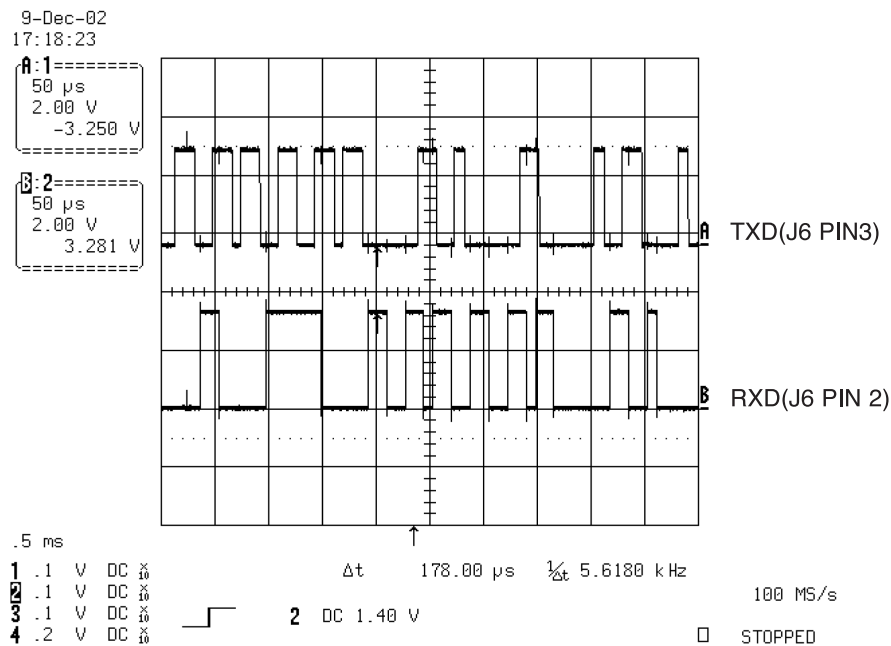


FIG 1-3

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

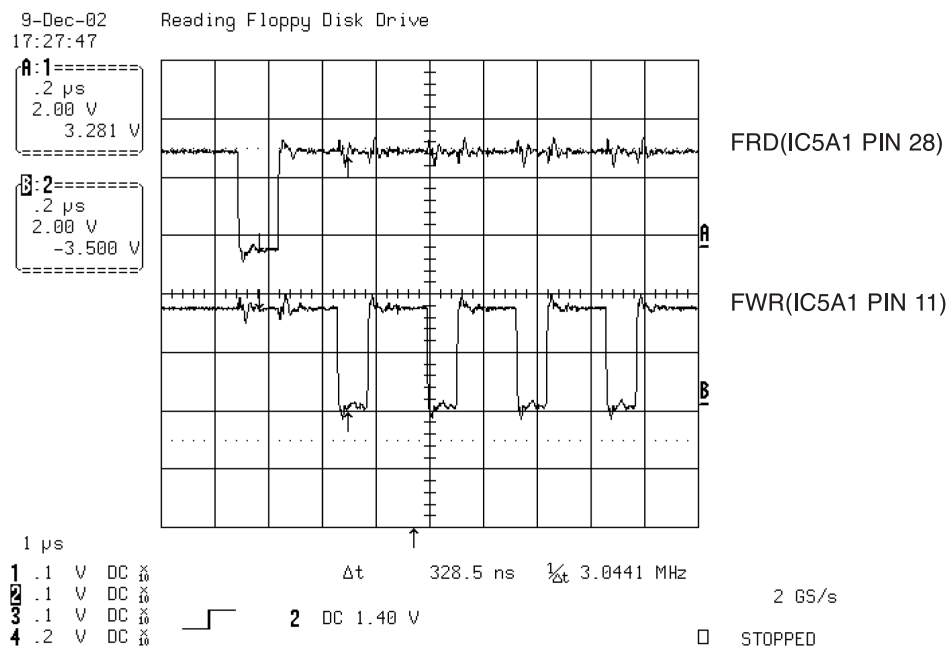


FIG 1-4

## 2. SDRAM CLOCK

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

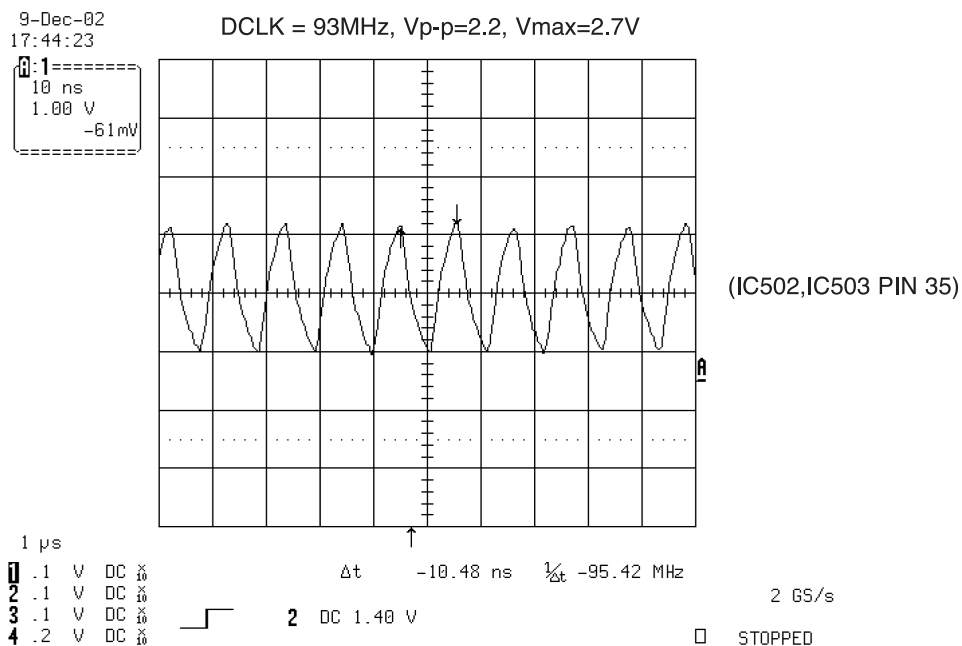


FIG 2-1

## 3. TRAY OPEN/CLOSE SIGNAL

### 1) Tray open/close waveform

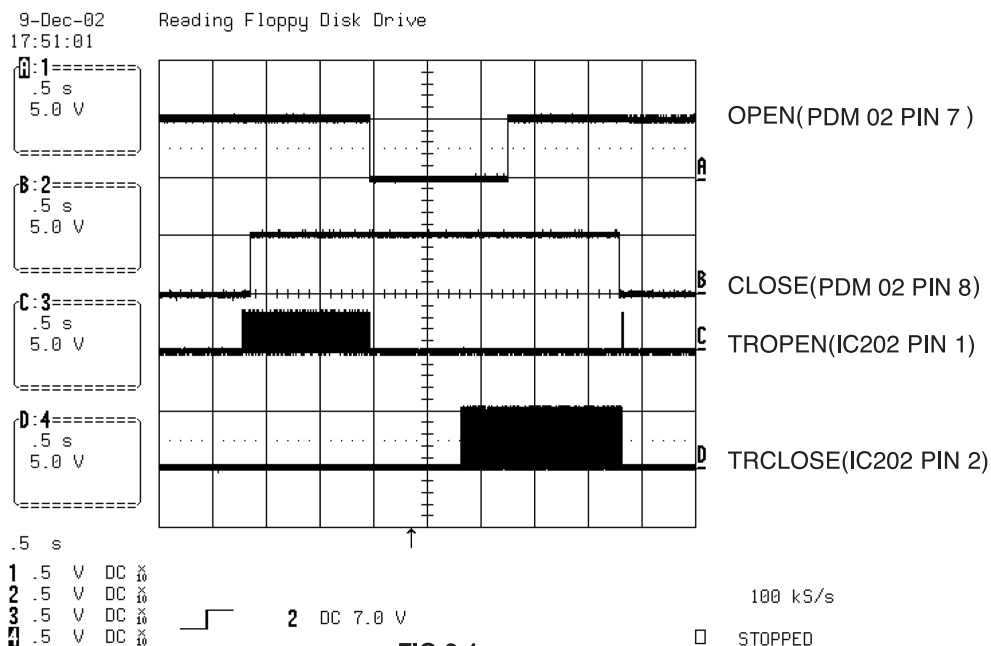


FIG 3-1

## 2) Tray close waveform

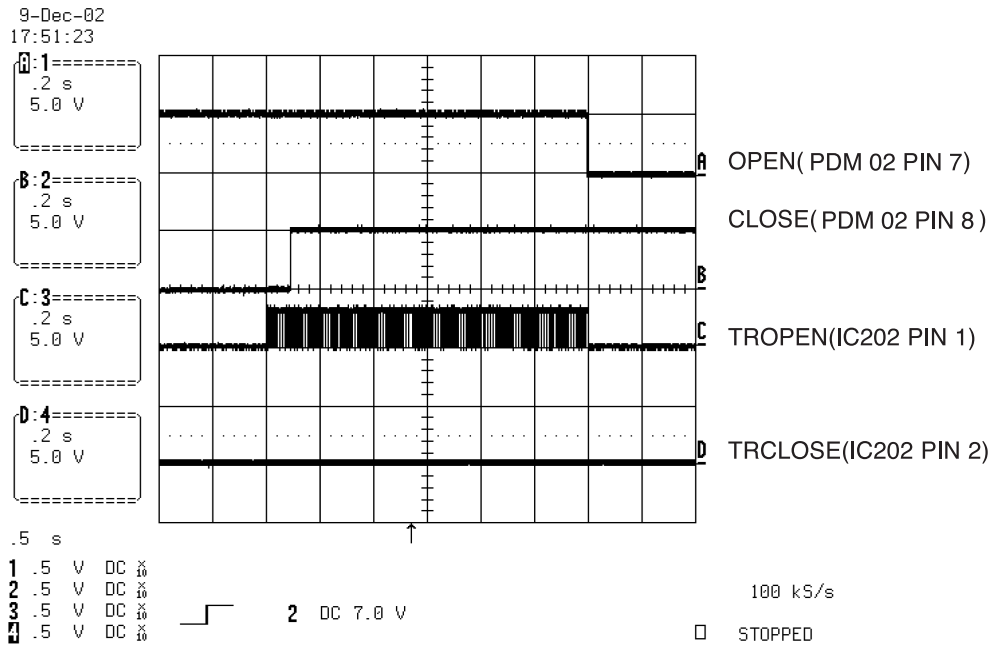


FIG 3-2

## 3) Tray open waveform

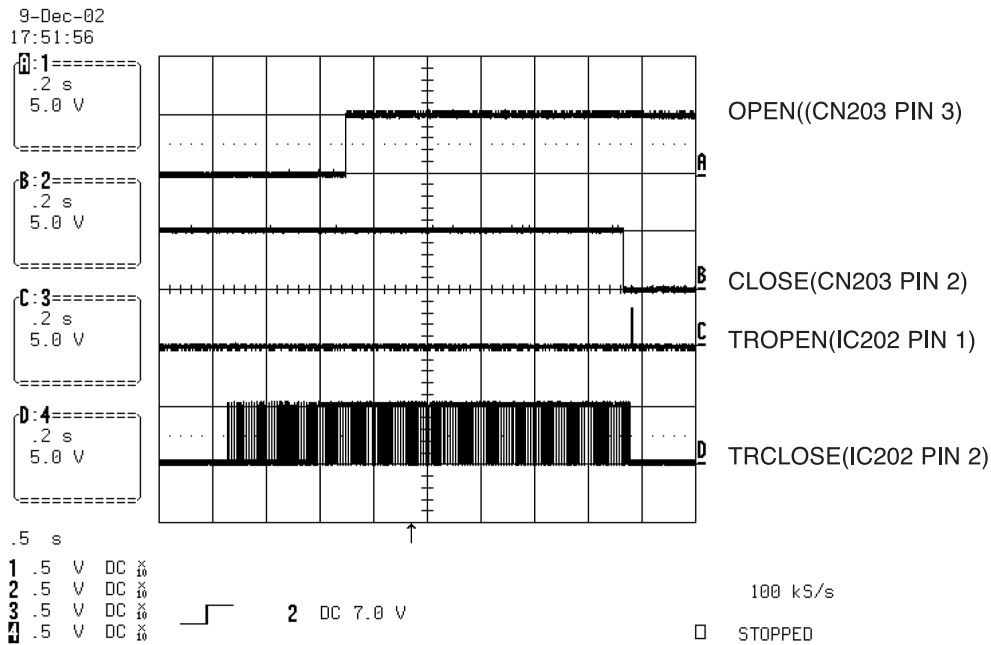


FIG 3-3

## 4. SLED CONTROL RELATED SIGNAL (NO DISC CONDITION)

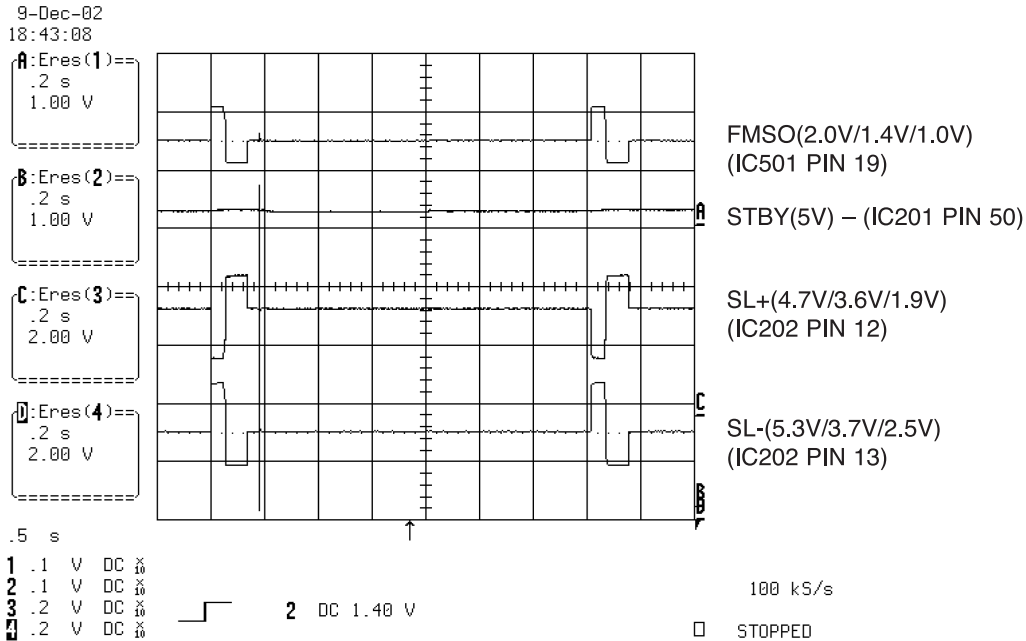


FIG 4-1

## 5. LENS CONTROL RELATED SIGNAL(NO DISC CONDITION)

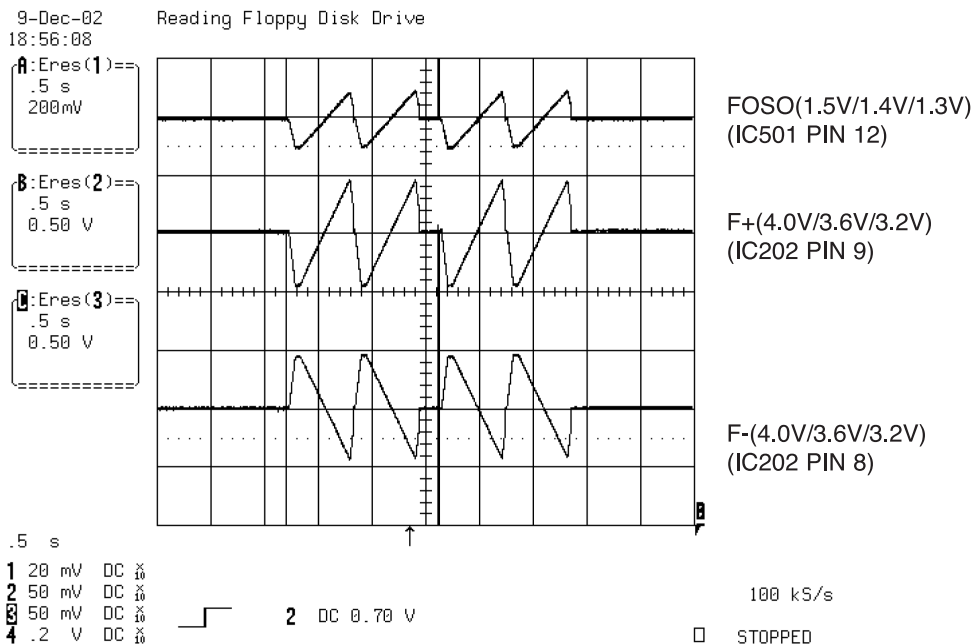


FIG 5-1

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

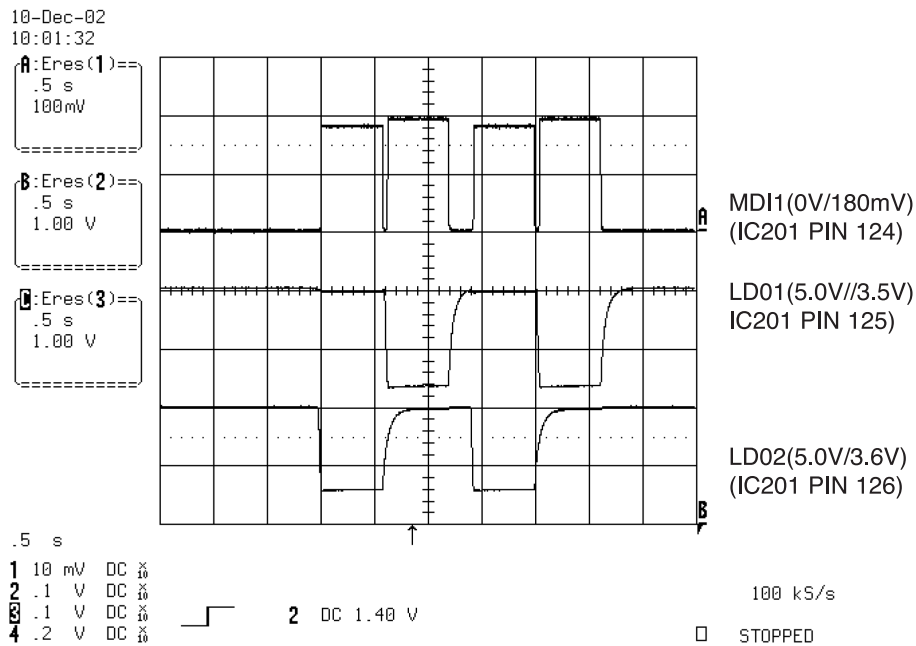


FIG 6-1

## 7. DISC TYPE JUDGEMENT WAVEFORM

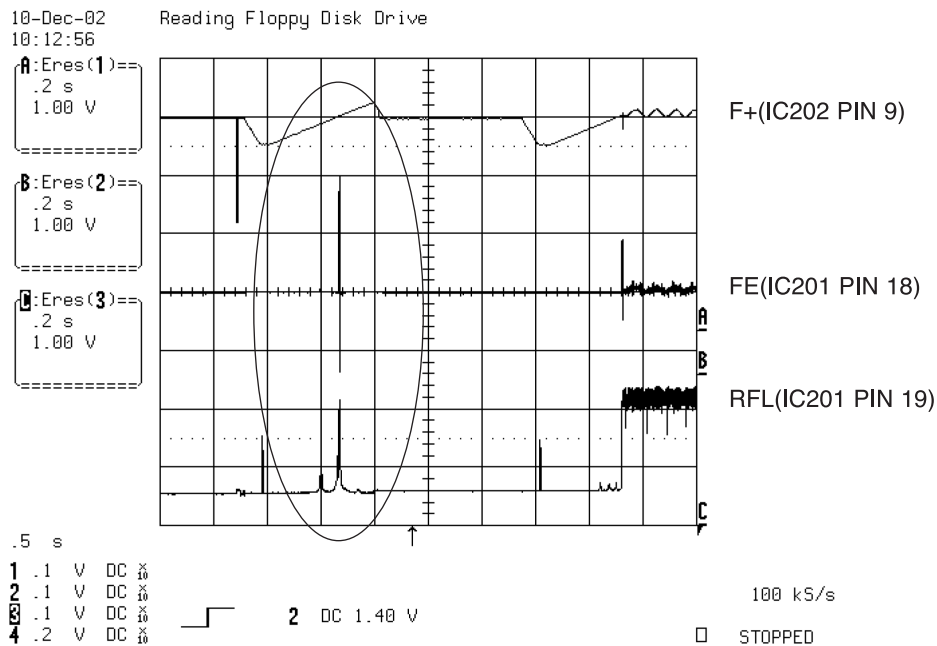


FIG 7-1 (DVD)



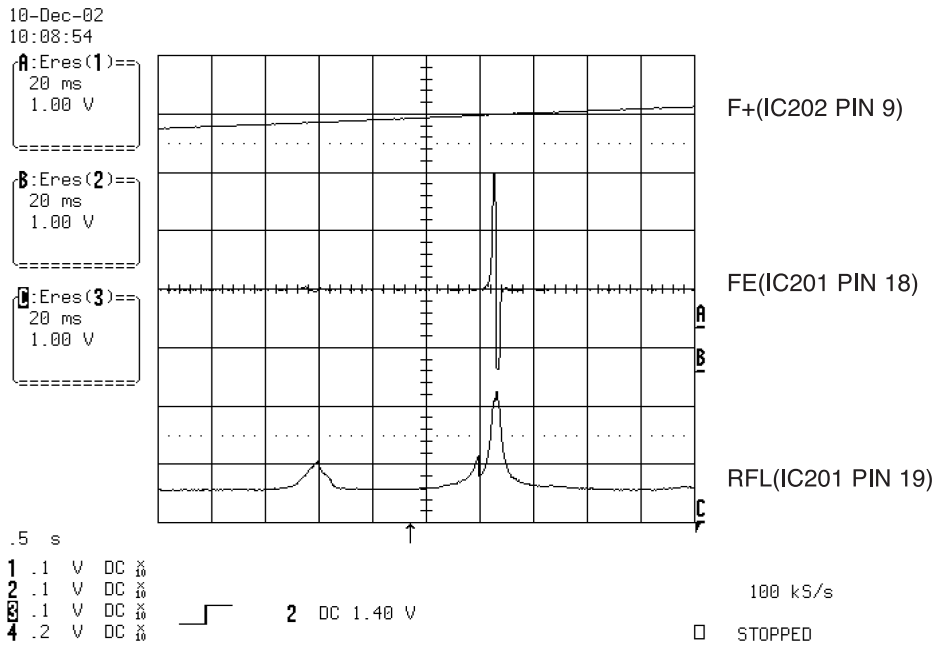


FIG 7-2 (DVD)

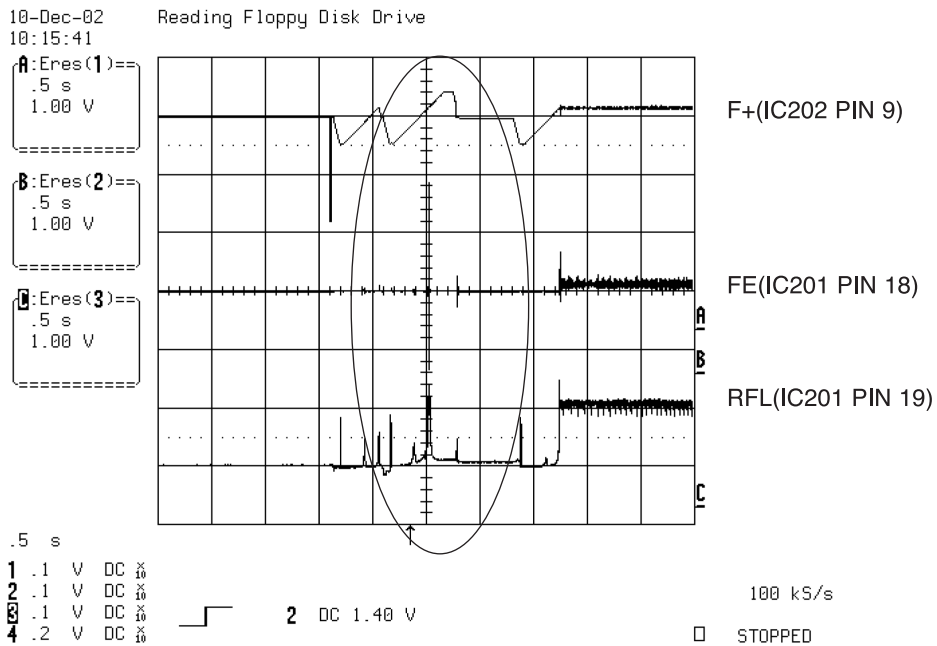


FIG 7-3 (CD)

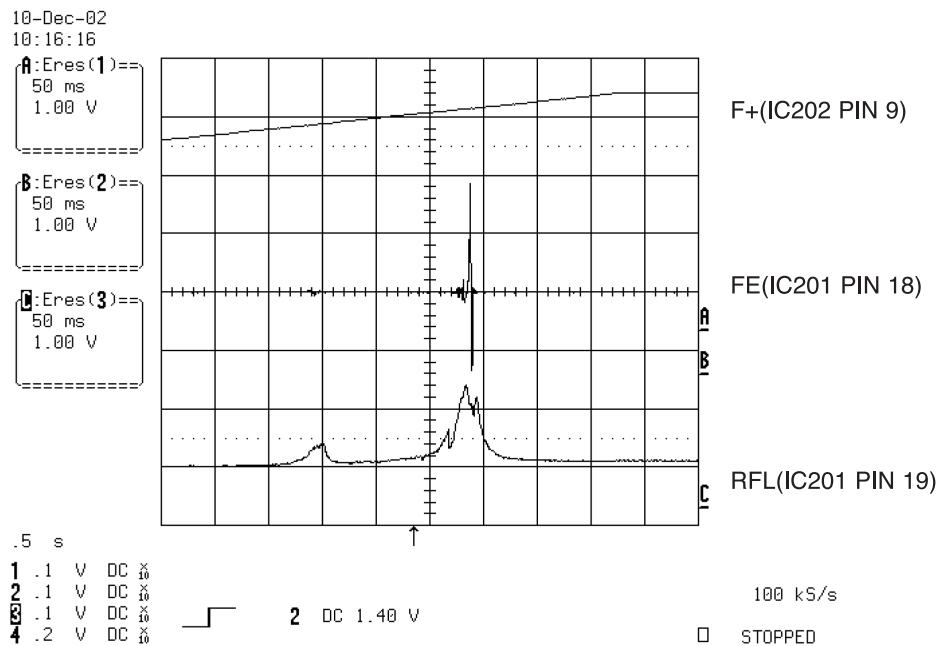


FIG 7-4 (CD)

## 8. FOCUS ON WAVEFORM

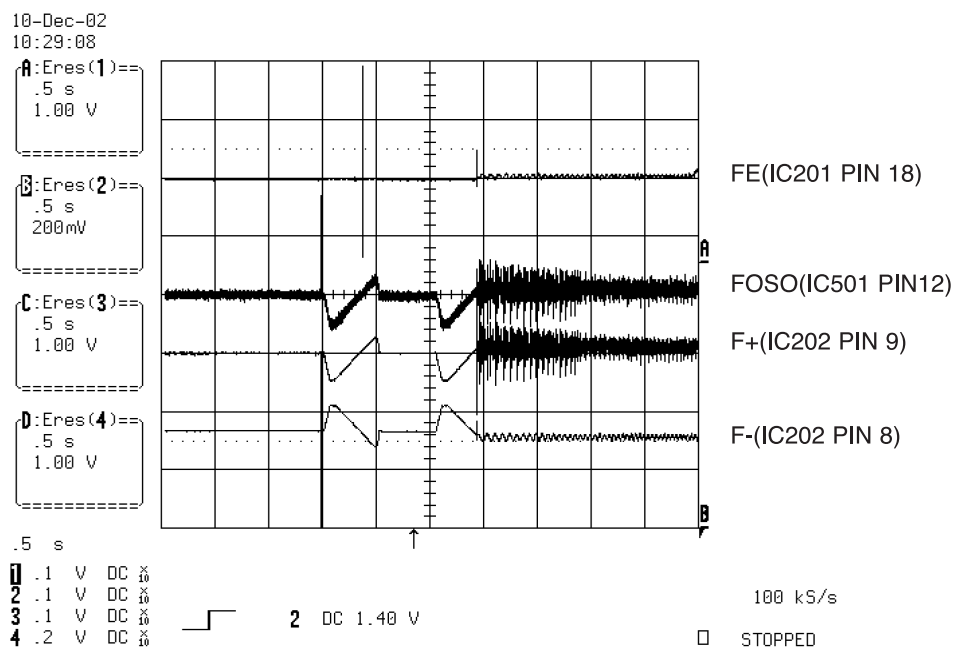


FIG 8-1 (DVD)

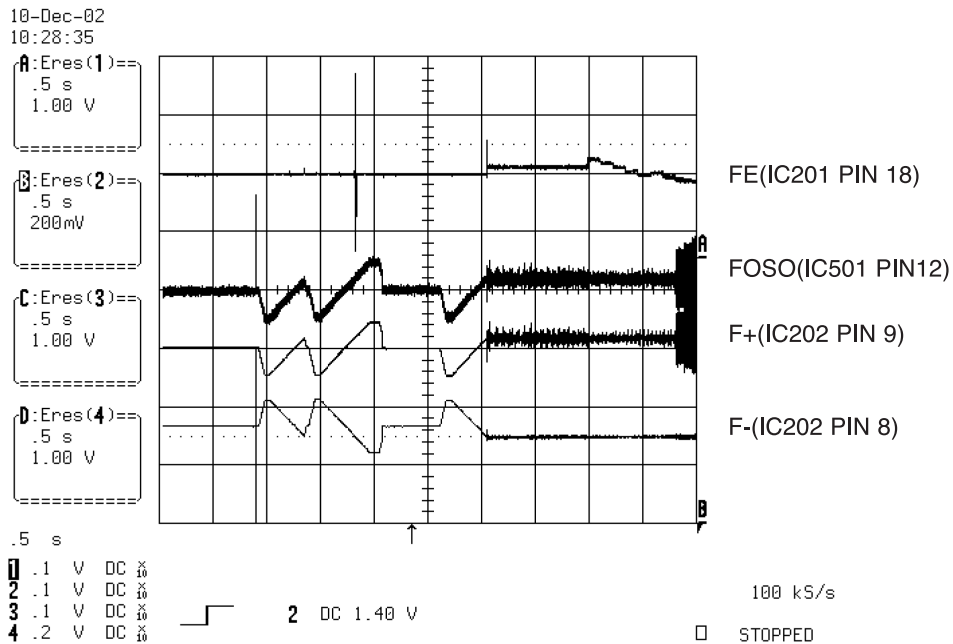


FIG 8-2 (CD)

## 9. SPINDLE CONTROL WAVEFORM (NO DISC CONDITION)

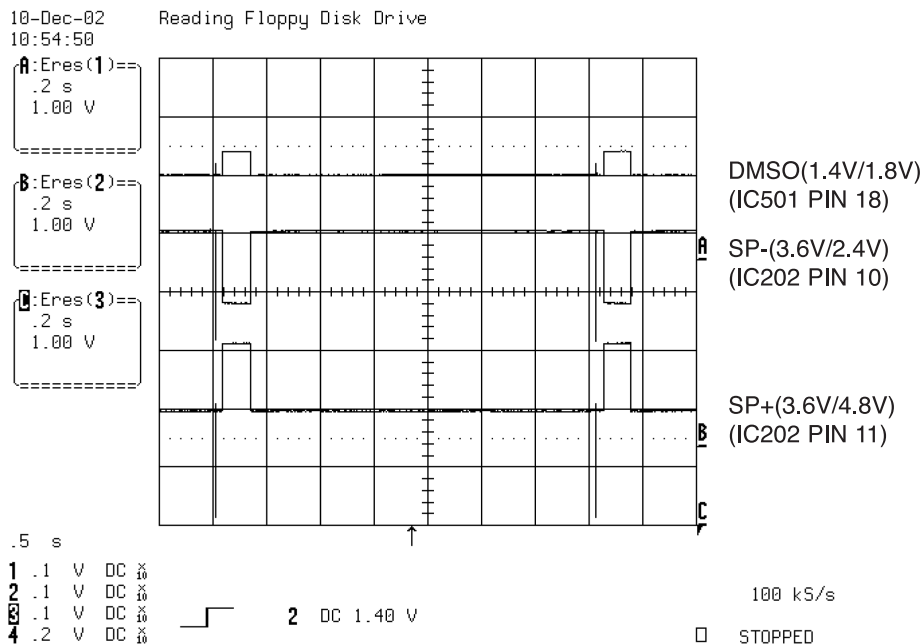


FIG 9-1

## 10. TRACKING CONTROL RELATED SIGNAL(System checking)

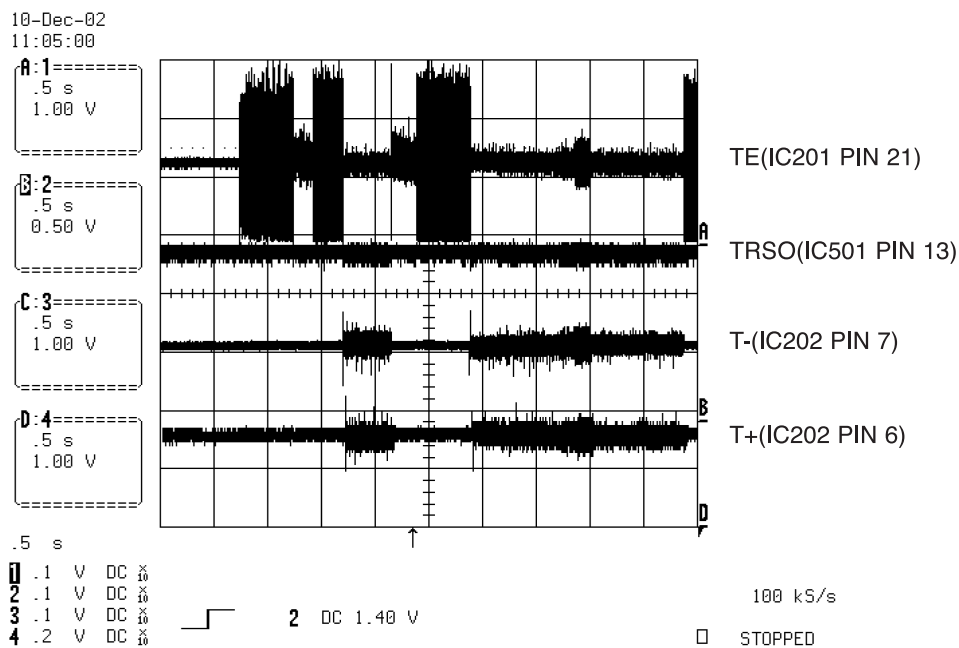


FIG 10-1(DVD)

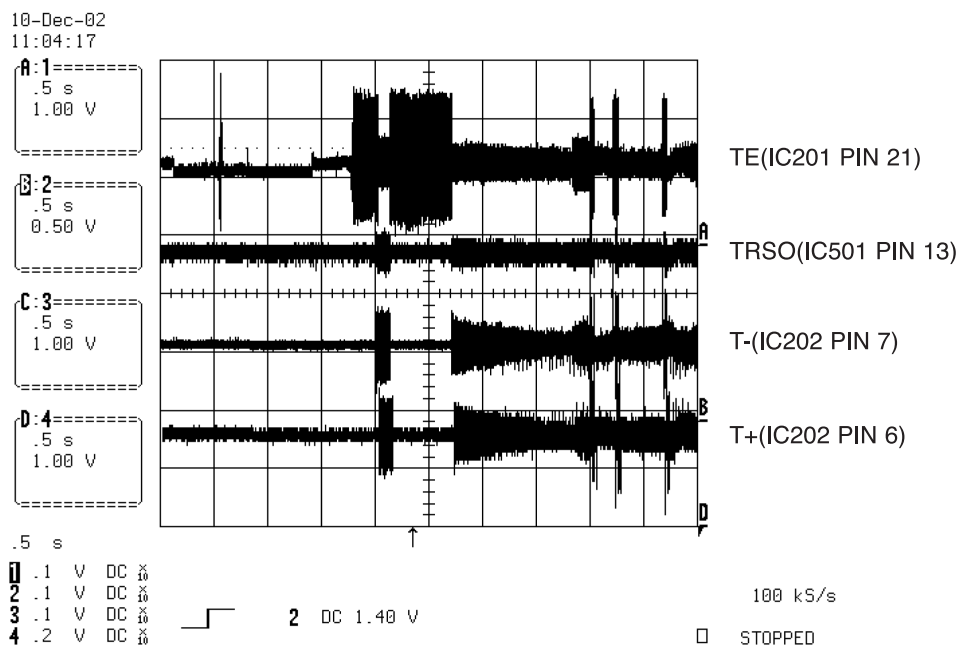


FIG 10-2(CD)

## 11. RF WAVEFORM

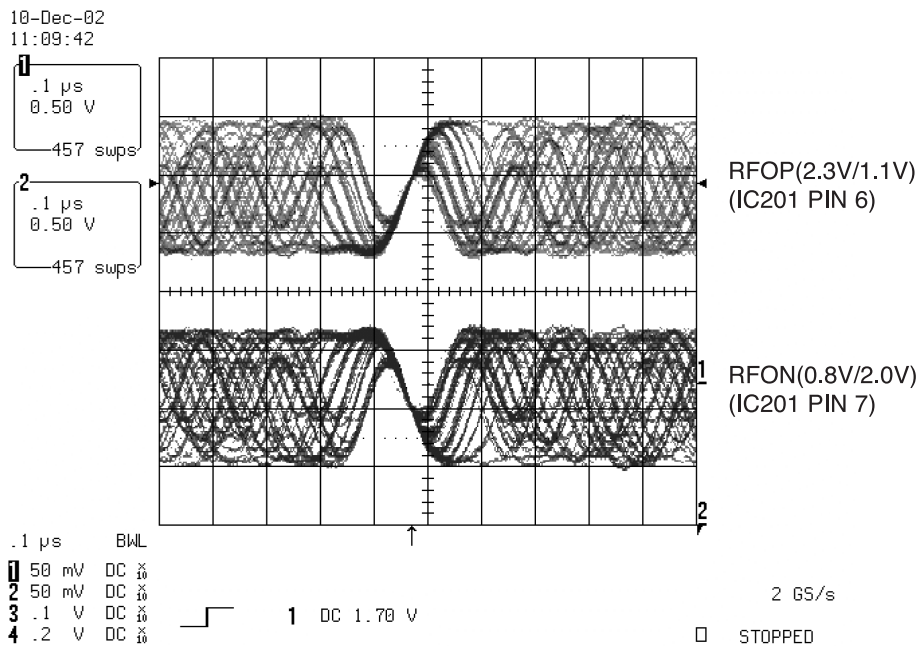


FIG 11-1

## 12. MT1379 AUDIO OPTICAL AND COAXIAL OUTPUT (ASPDIF)

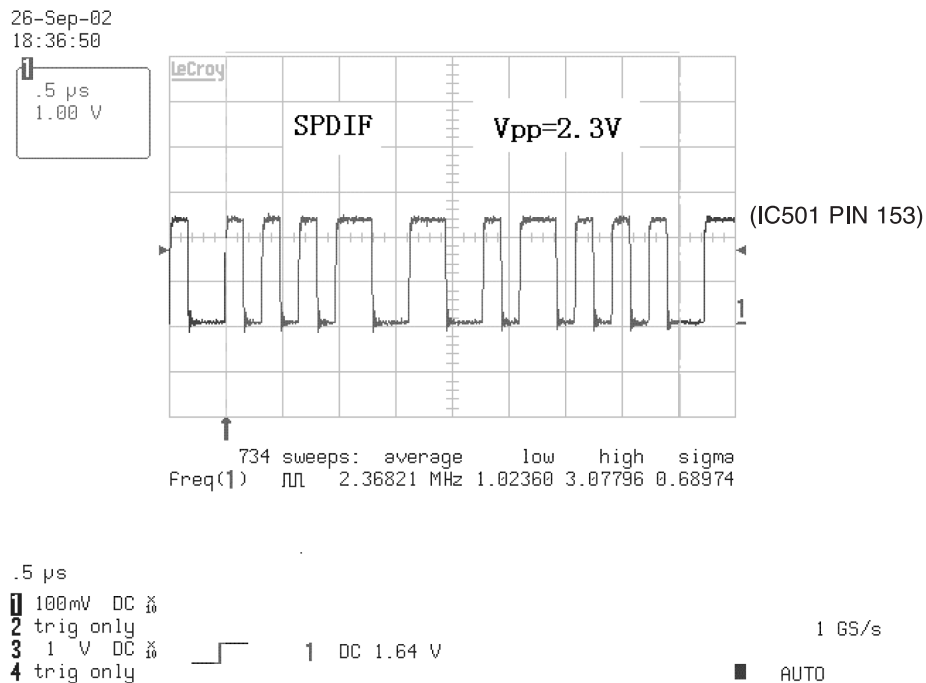


FIG 12-1

# 13. MT1379 VIDEO OUTPUT WAVEFORM

## 1) Full colorbar signal(CVBS)

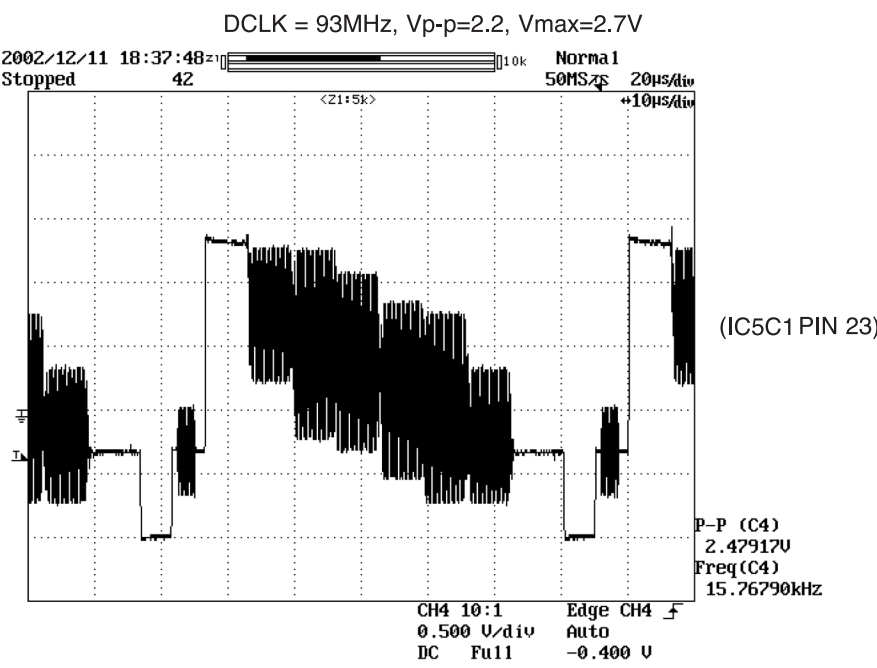


FIG 13-1

## 2) Y

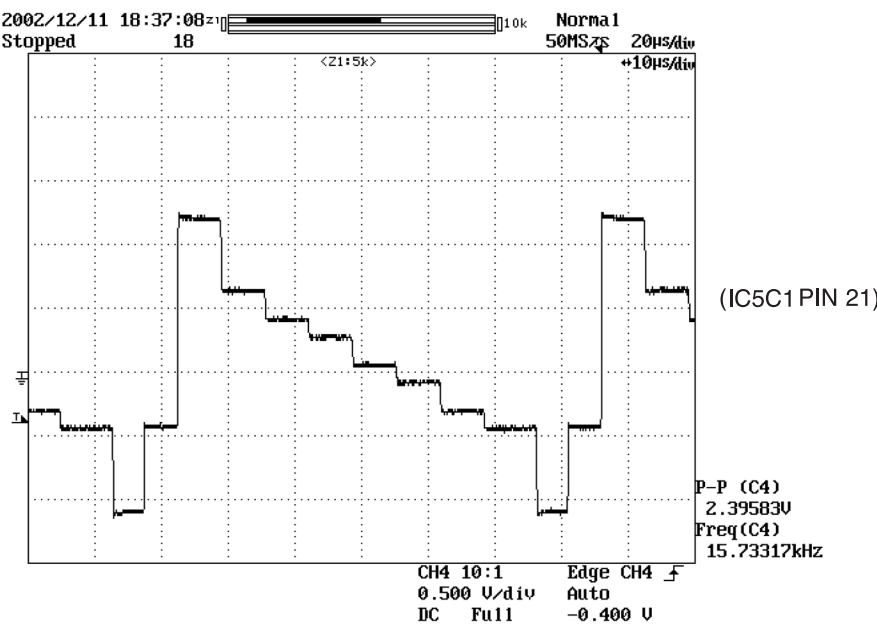


FIG 13-2

### 3) C

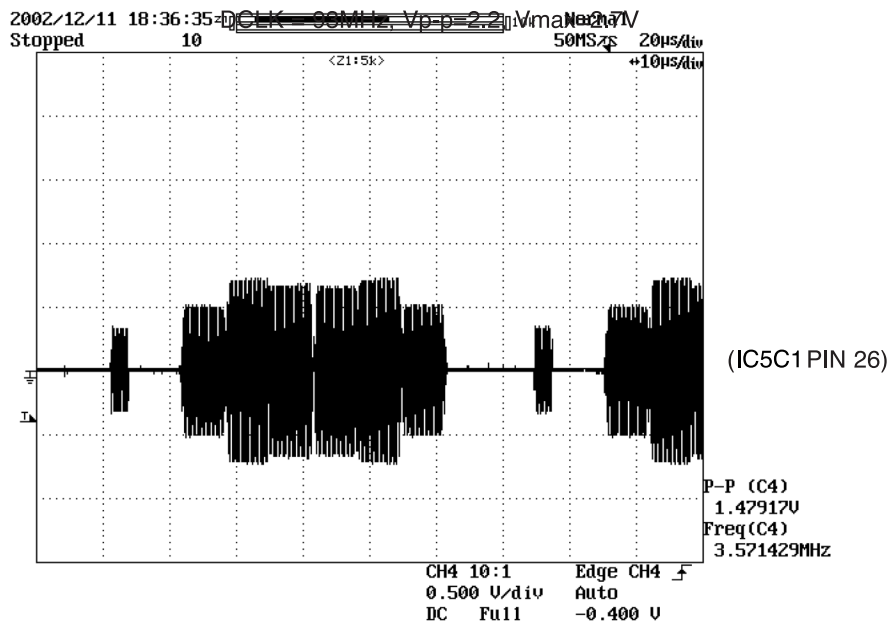


FIG 13-3

## 14. AUDIO OUTPUT FORM AUDIO DAC

### 1) Audio related Signal

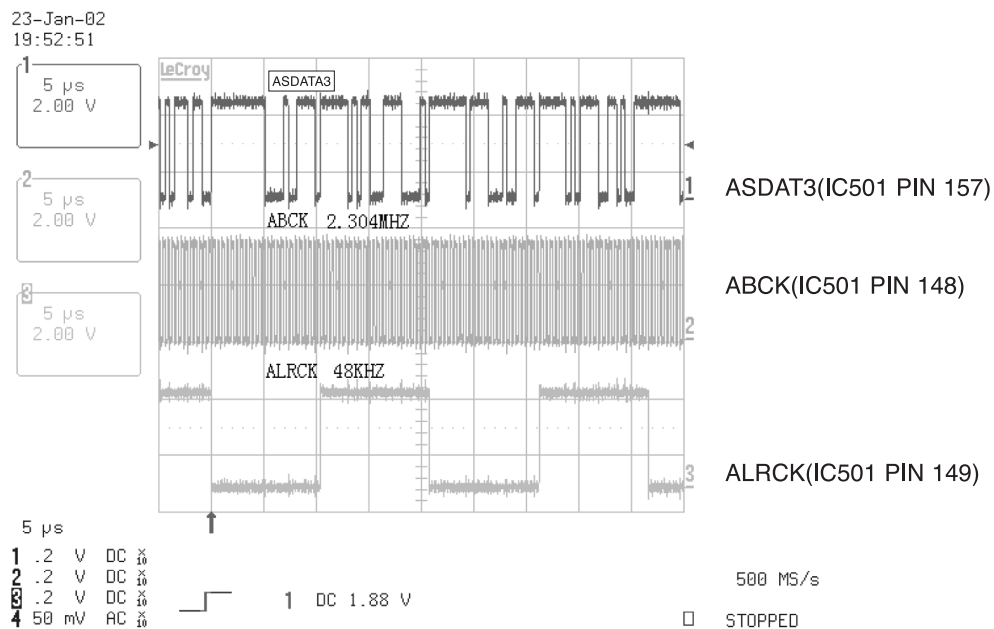
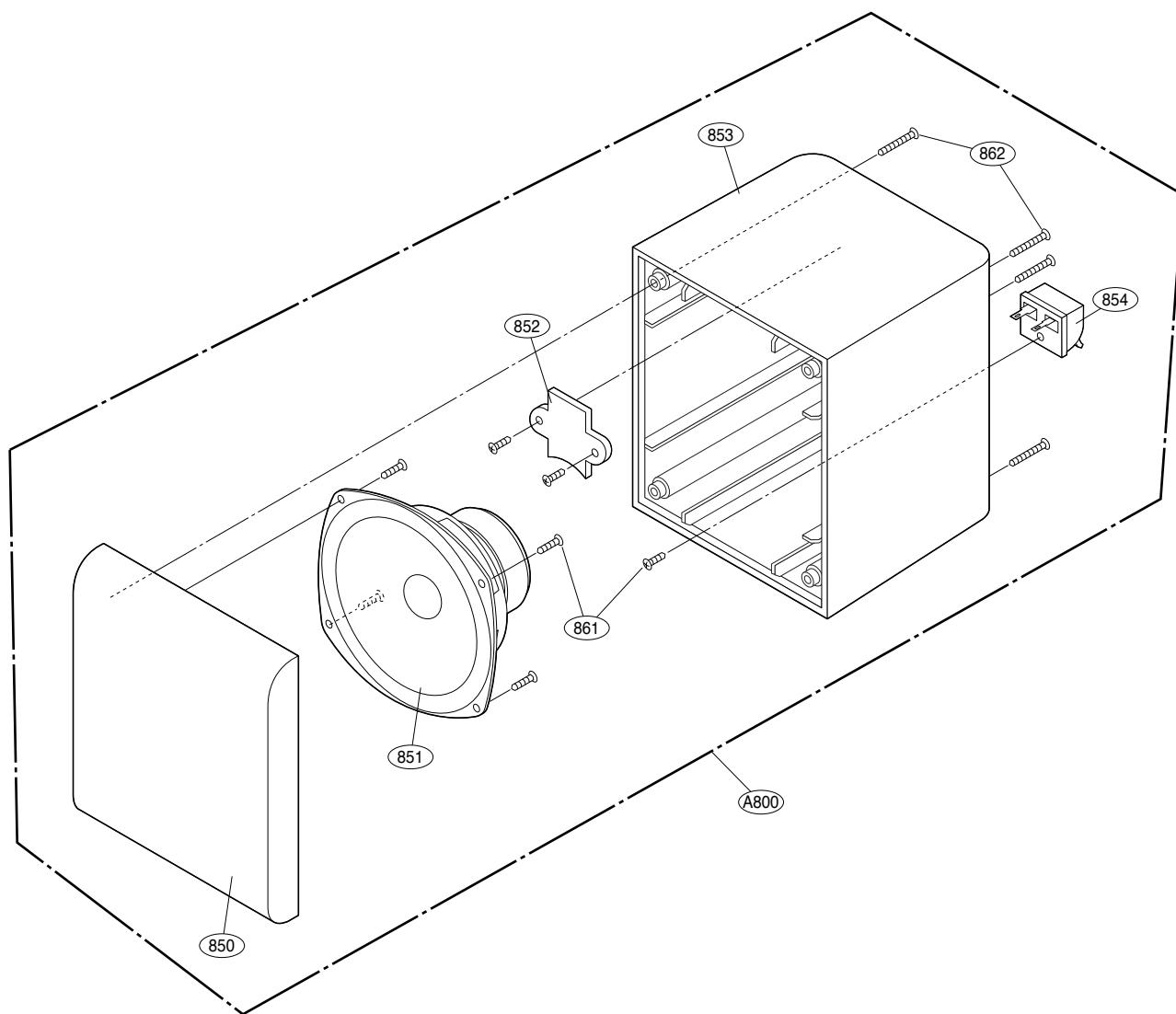


FIG 14-1

# SECTION 5. SPEAKER PART

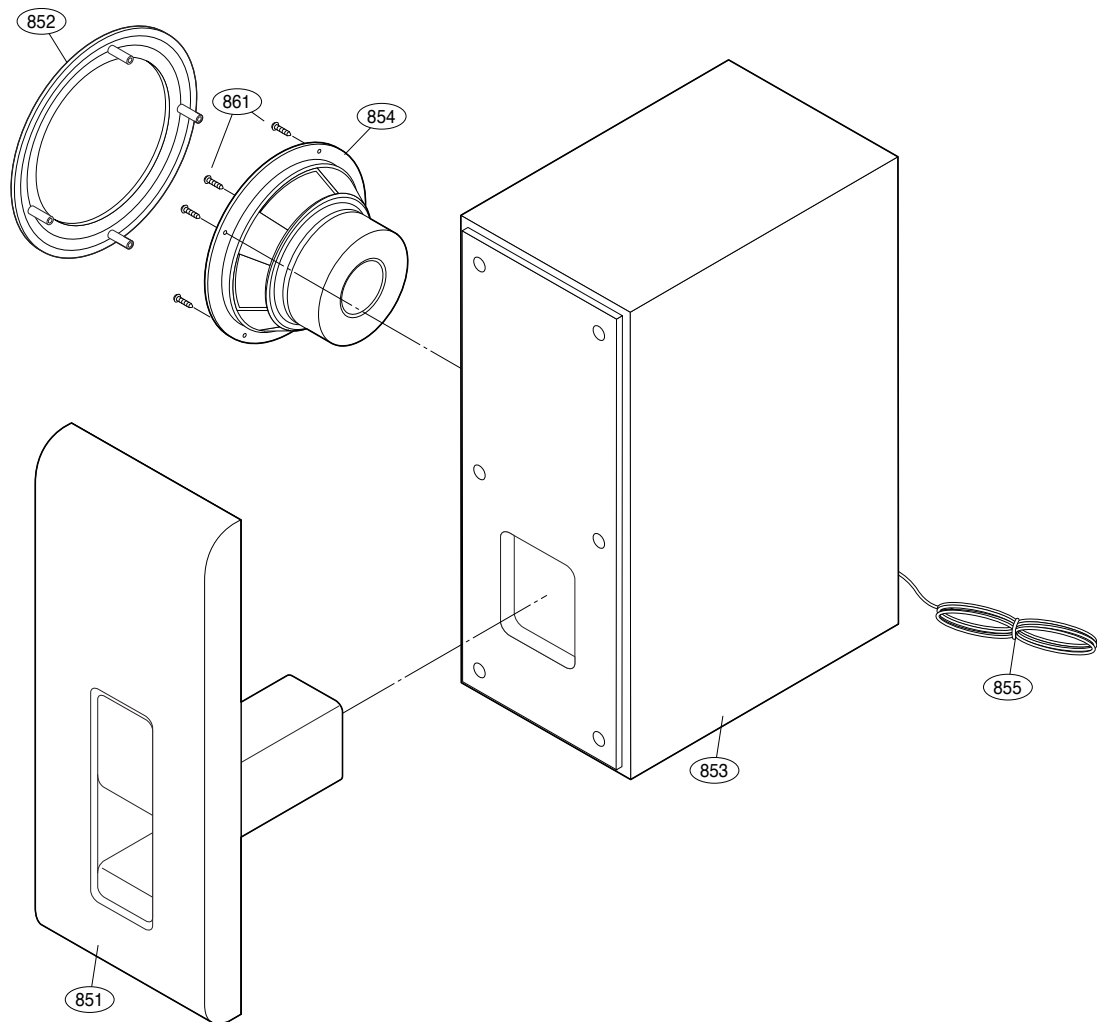
□ MODEL: LHS-D6230T





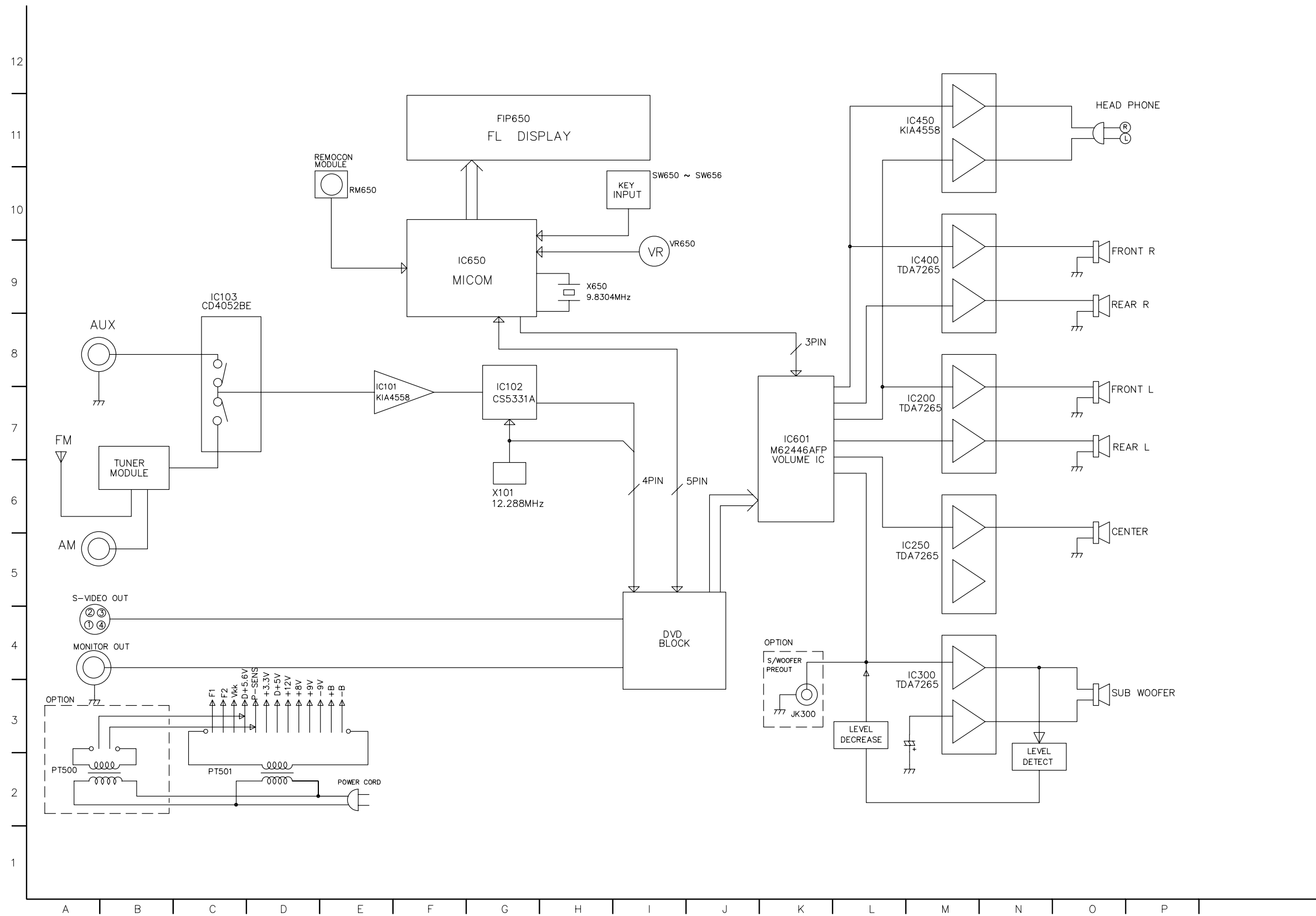
# SECTION 5. SPEAKER PART

□ MODEL: LHS-D6230W



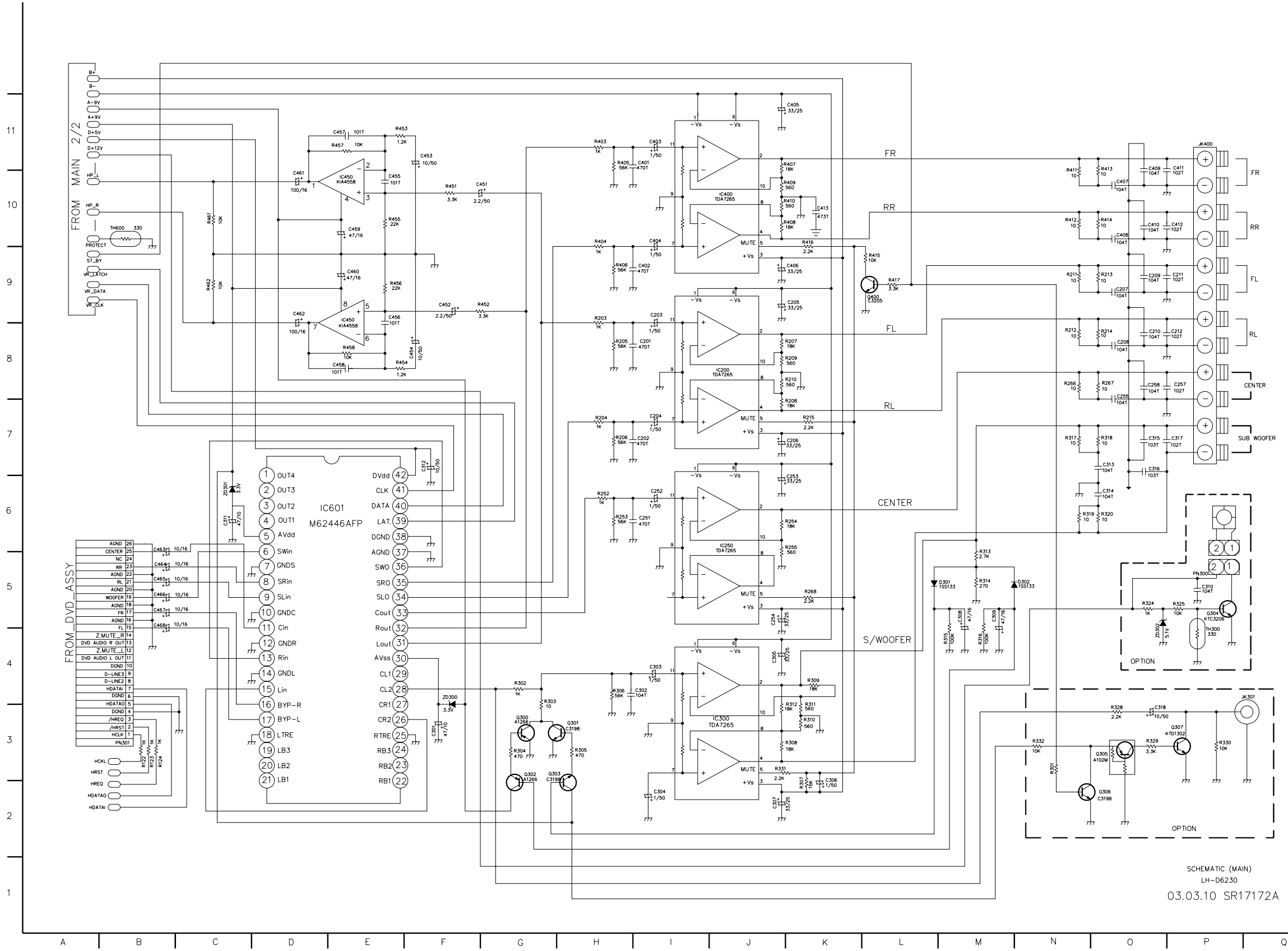
# SECTION 2. AUDIO PART

## □ BLOCK DIAGRAM



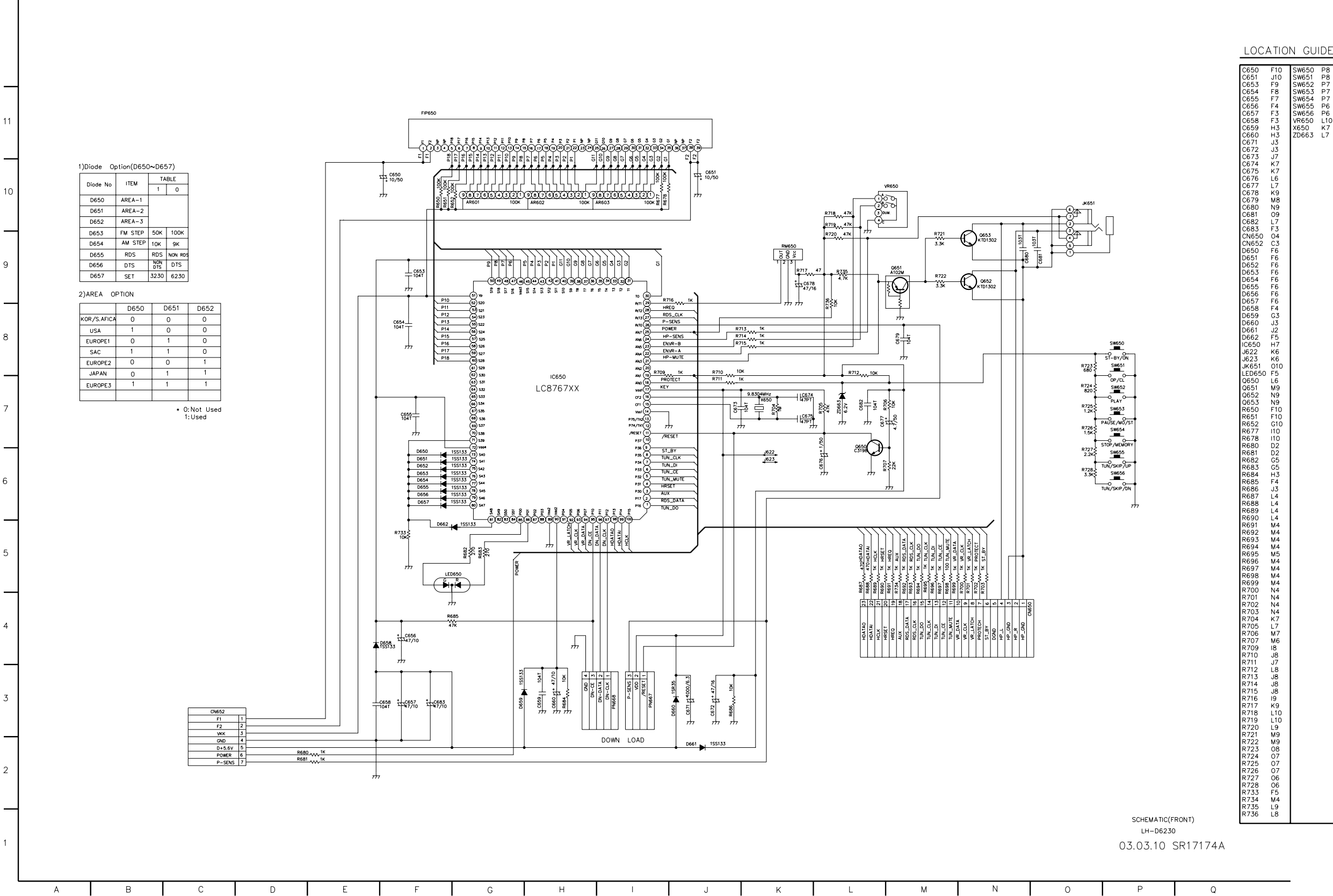
❑ SCHEMATIC DIAGRAMS

• MAIN SCHEMATIC DIAGRAM



LOCATION GUIDE			
C201	I8	R213	O9
C202	I7	R214	O8
C203	I9	R215	K7
C204	I7	R252	H6
C205	K9	R253	H6
C206	K7	R254	K6
C207	O9	R255	K6
C208	O8	R266	N8
C209	O9	R267	O8
C210	O8	R268	K5
C211	P9	R301	N3
C212	P8	R302	G4
C251	I6	R303	G4
C252	I6	R304	G3
C253	K6	R305	H3
C254	J5	R306	H4
C255	O8	R307	K2
C257	P8	R308	K3
C258	O8	R309	K4
C301	F3	R310	K3
C302	I4	R311	K3
C303	I4	R312	K3
C304	I2	R313	M5
C305	J4	R314	M5
C306	K2	R315	M4
C307	J2	R316	M4
C308	M5	R317	N7
C309	M5	R318	O7
C310	P5	R319	N6
C311	C6	R320	O6
C312	F7	R324	O5
C313	O7	R325	P5
C314	O6	R328	O3
C315	O7	R329	O3
C316	O7	R330	P3
C317	P7	R331	J3
C318	O3	R332	N3
C401	I11	R403	H11
C402	I9	R404	H10
C403	I11	R405	H11
C404	I10	R406	H9
C405	K11	R407	J11
C406	K9	R408	J10
C407	O10	R409	J10
C408	O10	R410	J10
C409	O11	R411	N10
C410	O10	R412	N10
C411	P11	R413	O10
C412	P10	R414	O10
C413	K10	R415	L9
C451	F10	R416	K10
C452	F9	R417	L9
C453	F11	R451	F10
C454	F8	R452	F9
C455	E10	R453	E11
C456	E9	R454	E8
C457	E11	R455	E10
C458	E8	R456	E9
C459	E10	R457	E11
C460	E9	R458	E8
C461	D10	R461	C10
C462	B6	R462	C9
C463	B5	ZD300	F4
C464	B5	ZD301	C6
C465	B5	ZD302	O4
C466	B5		
C467	B5		
C468	B5		
D301	M5		
D302	N5		
IC200	J6		
IC250	J6		
IC300	J3		
IC400	J10		
IC450	E10		
IC601	D6		
JK301	P4		
JK400	P11		
O300	G3		
O301	H3		
O302	G3		
O303	G3		
O304	P5		
O305	O3		
O306	O2		
O307	P3		
O400	L9		
R122	B3		
R123	B3		
R124	B3		
R203	H9		
R204	H7		
R205	H8		
R206	H7		
R207	K8		
R208	K7		
R209	K8		
R210	K8		
R211	N9		
R212	N8		

• FRONT SCHEMATIC DIAGRAM



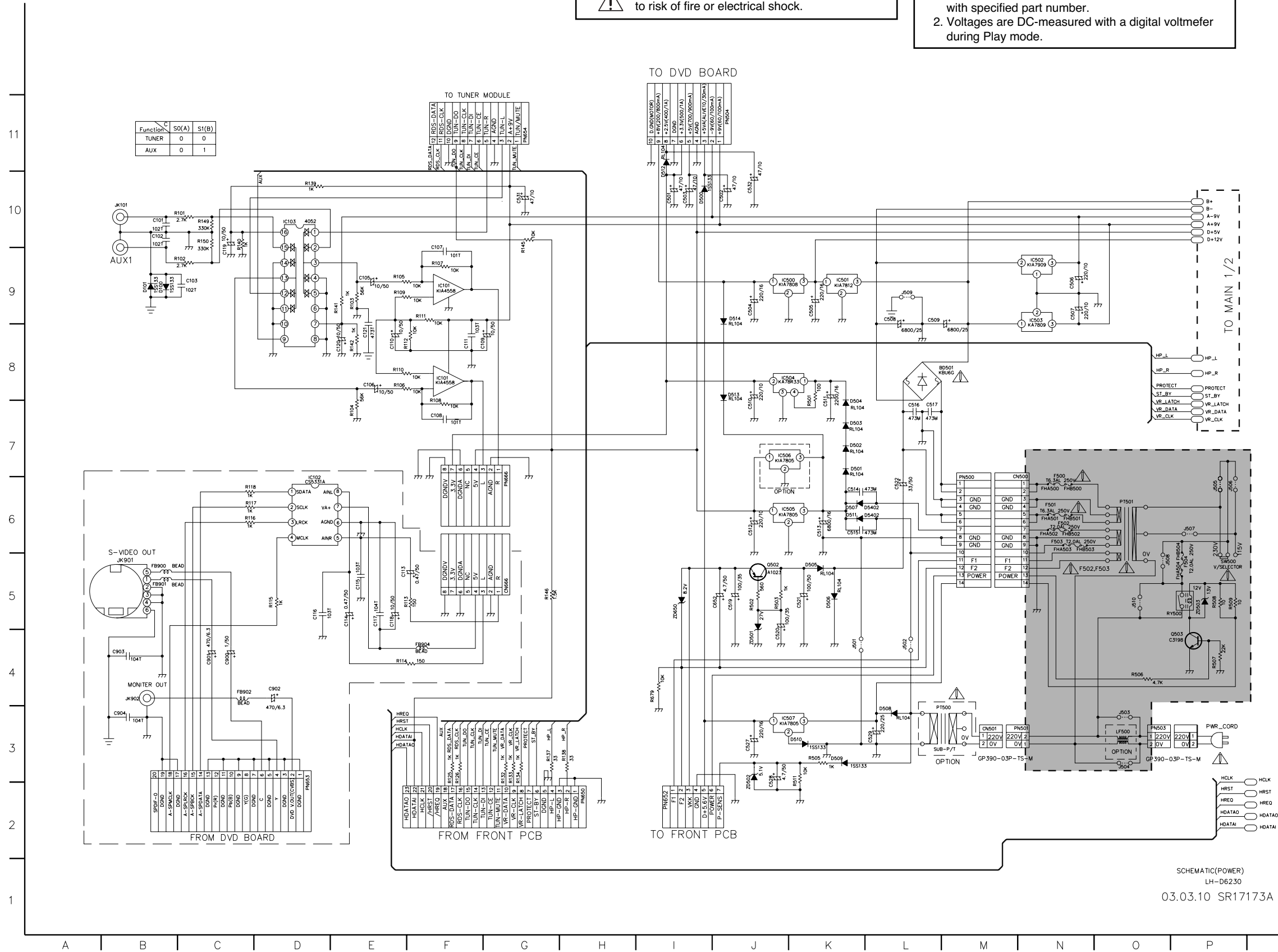
## • POWER SCHEMATIC DIAGRAM



Parts that are shaded are critical With respect to risk of fire or electrical shock.

1.9  
v

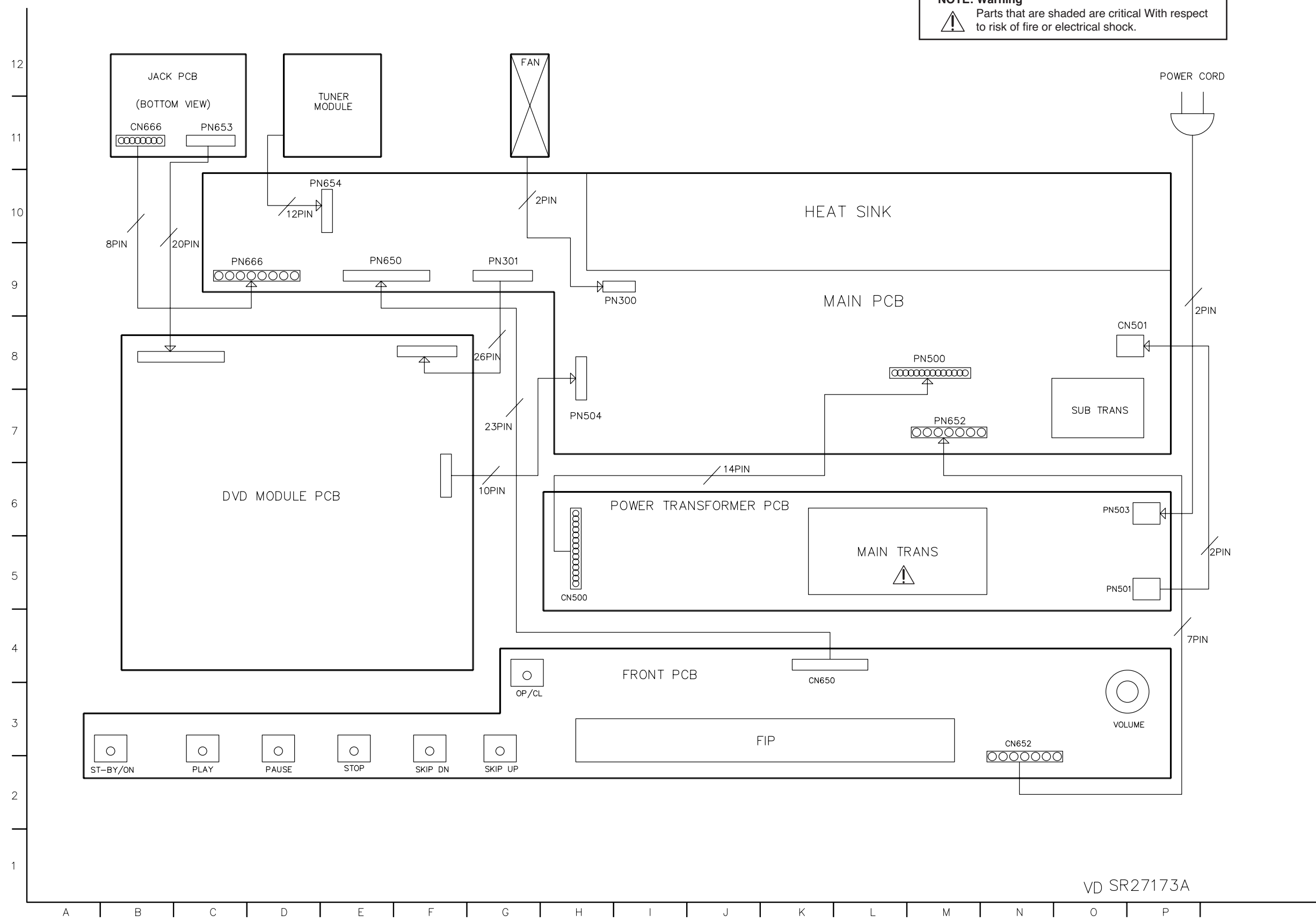
1. Shaded(■) parts are critical for safety. Replace only with specified part number.
2. Voltages are DC-measured with a digital voltmeter during Play mode.



LOCATION GUIDE				
B0501	L8	JK901	B5	
C101	B10	JK902	B4	
C102	B10	LF500	O3	
C103	C9	PN500	M6	
C105	E9	PN501	M3	
C106	E8	PN503	O3	
C107	F9	PN504	J11	
C108	F7	PN650	H2	
C109	F8	PN652	I2	
C110	F8	PN653	D11	
C111	F9	PN654	G2	
C112	F3	PN666	O6	
C114	E5	PT500	L3	
C115	E5	PT501	O6	
C116	O5	Q502	J5	
C117	E5	Q503	P4	
C118	E5	R101	B10	
C119	C9	R102	B9	
C120	E8	R103	E9	
C121	E8	R104	E7	
C500	I10	R105	E9	
C502	J10	R106	E8	
C503	I10	R107	F9	
C504	J9	R108	F7	
C505	K9	R109	E9	
C506	N9	R110	E8	
C507	N9	R111	F9	
C508	L9	R112	F8	
C509	L9	R113	F5	
C510	J7	R114	E4	
C511	K7	R115	D5	
C512	J6	R116	O6	
C513	K6	R117	C6	
C514	K6	R118	O6	
C515	K6	R125	F2	
C516	L7	R126	F2	
C517	L7	R132	G2	
C519	J5	R133	G2	
C520	J4	R134	G2	
C521	K5	R137	G3	
C522	L6	R138	H3	
C523	J3	R139	D10	
C529	L3	R141	E9	
C530	L10	R142	E8	
C532	J10	R145	G9	
C652	J5	R146	O5	
C900	C4	R149	C10	
C901	C4	R150	C10	
C902	B4	R501	K7	
C903	B4	R502	J5	
C904	B3	R503	J5	
CN500	M6	R505	K3	
CN501	M3	R506	O4	
CN666	O5	R507	P4	
D101	B9	R508	P5	
D101	B9	R509	P5	
D500	I10	R511	K2	
D501	K7	R519	I4	
D502	K7	SW600	P5	
D503	K7	Z501	J4	
D504	K7	Z502	J2	
D505	K5	ZD503	P5	
D506	K5	ZD650	I5	
D507	K6			
D508	L3			
D509	L3			
D510	K3			
D511	K6			
D512	I10			
D513	J8			
D514	J9			
D515	J9			
F501	N6			
F502	N6			
F503	N6			
F504	P5			
F505	P5			
F506	P6			
F507	P6			
F508	O5			
F509	L9			
F510	O5			
JK101	B10			

❑ WIRING DIAGRAM

**NOTE: Warning**  
⚠ Parts that are shaded are critical With respect to risk of fire or electrical shock.



## ❑ VOLTAGE SHEET (IC&TR)

LOC.	PART	PIN NUM.	STOP	DVD PLAY
IC650	LC8767XX	1	0	0
		2	0	0
		3	0	0
		4	4.54	4.54
		5	0	0
		6	0	0
		7	5	5
		8	0	0
		9	4.7	4.7
		10	X	X
		11	4.84	4.84
		12	X	X
		13	X	X
		14	0	0
		15	2.34	2.34
		16	2.45	2.45
		17	4.86	4.86
		18	4.84	4.84
		19	0.57	0.57
		20	X	X
		21	1.65	1.65
		22	4.88	4.88
		23	4.88	4.88
		24	0	0
		25	2.2	2.2
		26	4.37	4.37
		27	0	0
		28	2.77	2.77
		29	4.83	4.83
		30	-25.2	-25.2
		31	-25.2	-25.2
		32	-25.2	-25.2
		33	-25.2	-25.2
		34	-25.2	-25.2
		35	-25.2	-25.2
		36	-25.2	-25.2
		37	-25.2	-25.2
		38	-25.2	-25.2
		39	0	0
		40	-25.2	-25.2
		41	-9.52	-9.52
		42	-15.3	-15.3
		43	-9.4	-9.4
		44	-18.1	-18.1
		45	-24.2	-24.2
		46	4.9	4.9
		47	-18.1	-18.1
		48	-15.3	-15.3
		49	-24.1	-27
		50	-24.1	-24.1
		51	-27.5	-27.5
		52	-26.6	-27

LOC.	PART	PIN NUM.	STOP	DVD PLAY
		53	-15.1	-15.2
		54	-26.7	-27
		55	-26.7	-27
		56	-26.7	-27
		57	-17.7	-18
		58	-26.7	-27
		59	-26.7	-27
		60	-26.7	-27
		61	X	X
		62	X	X
		63	X	X
		64	X	X
		65	X	X
		66	X	X
		67	X	X
		68	X	X
		69	X	X
		70	X	X
		71	0	0
		72	4.9	4.9
		73	0	0
		74	0	0
		75	0	0
		76	0	0
		77	0	0
		78	0	0
		79	0	0
		80	0	0
		81	0	0
		82	X	X
		83	X	X
		84	X	X
		85	3.8	3.8
		86	0	0
		87	X	X
		88	X	X
		89	0	0
		90	4.86	4.85
		91	X	X
		92	0	0
		93	0	0
		94	0	0
		95	4.86	4.86
		96	0.75	0.75
		97	0.75	0.75
		98	4.5	4.5
		99	4.9	4.9
		100	2.5	2.5

LOC.	PART	PIN NUM.	STOP	DVD PLAY
IC500	KIA7808	1	11.9	11.9
		2	0	0
		3	8	8
IC501	KIA7812	1	18.4	18.4
		2	0	0
		3	11.9	11.9
IC502	KIA7909	1	0	0
		2	-18.6	-18.6
		3	-9	-9
IC503	KA7809	1	18.4	18.4
		2	0	0
		3	9	9
IC504	KA78R33	1	8.4	8.4
		2	3.3	3.3
		3	0	0
		4	8.4	8.4
IC505	KIA7805	1	10.3	10.3
		2	0	0
		3	5	5
IC507	KIA7805	1	5.6	5.6
		2	0.6	0.6
		3	10.6	10.6
D507	D5402	ANODE	-0.2	-0.2
		CATHODE	10.5	10.5
D511	D5402	ANODE	-0.2	-0.2
		CATHODE	10.5	10.5
BD501	KBU6G	1	-18.6	-18.6
		2	0	0
		3	0	0
		4	18.4	18.4
IC101	KIA4558	1	4.5	4.5
		2	4.5	4.5
		3	4.5	4.5
		4	0	0
		5	4.5	4.5
		6	4.5	4.5
		7	4.5	4.5
		8	9	9
IC102	CS5331A	1	1.4	1.4
		2	1.6	1.6
		3	1.6	1.6
		4	1.5	1.5
		5	2.2	2.2
		6	0	0
		7	5	5
		8	2.2	2.2
IC103	4052	1	0	0
		2	0	0
		3	0	0
		4	0	0
		5	0	0
		6	0	0

LOC.	PART	PIN NUM.	STOP	DVD PLAY
		7	-4.5	-4.5
		8	0	0
		9	0	0
		10	0	0
		11	0	0
		12	0	0
		13	0	0
		14	0	0
		15	0	0
		16	4.5	4.5
IC450	KIA4558	1	0	0
		2	0	0
		3	0	0
		4	-9	-9
		5	0	0
		6	0	0
		7	0	0
		8	9	9
IC601	M60446AFP	5	5.2	5.2
		30	-5.3	-5.3
		42	5	5
IC200	TDA7265	1	-18.7	-18.7
		2	0	0
		3	18.6	18.6
		4	0	0
		5	9.3	9.3
		6	-18.6	-18.6
		7	0	0
		8	0	0
		9	0	0
		10	0	0
		11	0	0
IC250	TDA7265	1	-18.7	-18.7
		2	0	0
		3	18.6	18.6
		4	0	0
		5	9.3	9.3
		6	-18.6	-18.6
		7	0	0
		8	0	0
		9	0	0
		10	0	0
		11	0	0
IC300	TDA7265	1	-18.7	-18.7
		2	0	0
		3	18.6	18.6
		4	0	0
		5	9.3	9.3
		6	-18.6	-18.6
		7	0	0
		8	0	0
		9	0	0
		10	0	0
		11	0	0

LOC.	PART	PIN NUM.	STOP	DVD PLAY
IC400	TDA7265	1	-18.7	-18.7
		2	0	0
		3	18.6	18.6
		4	0	0
		5	9.3	9.3
		6	-18.6	-18.6
		7	0	0
		8	0	0
		9	0	0
		10	0	0
		11	0	0



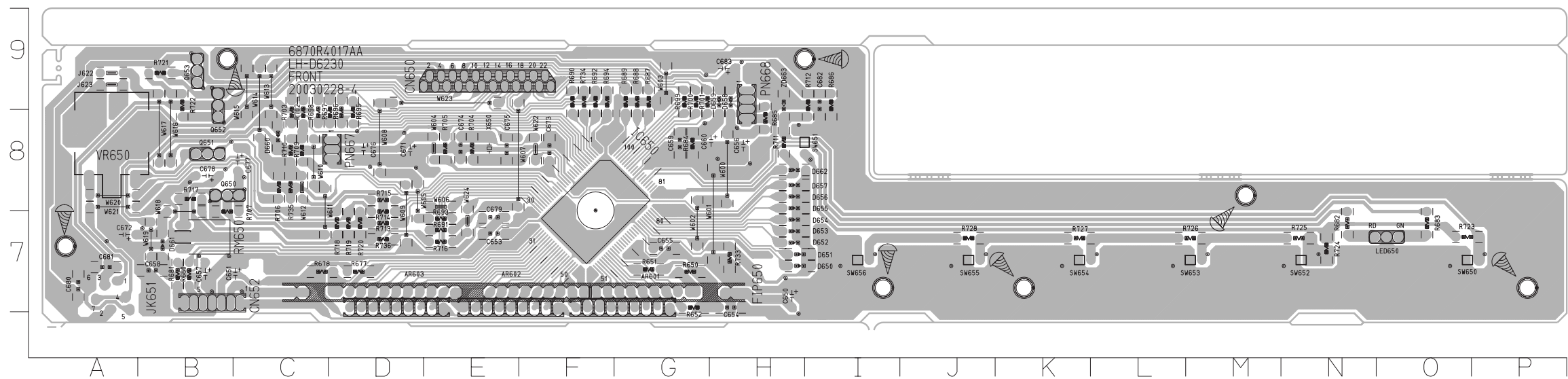
• MAIN/POWER/JACK P.C BOARD (SOLDER SIDE)



2-18

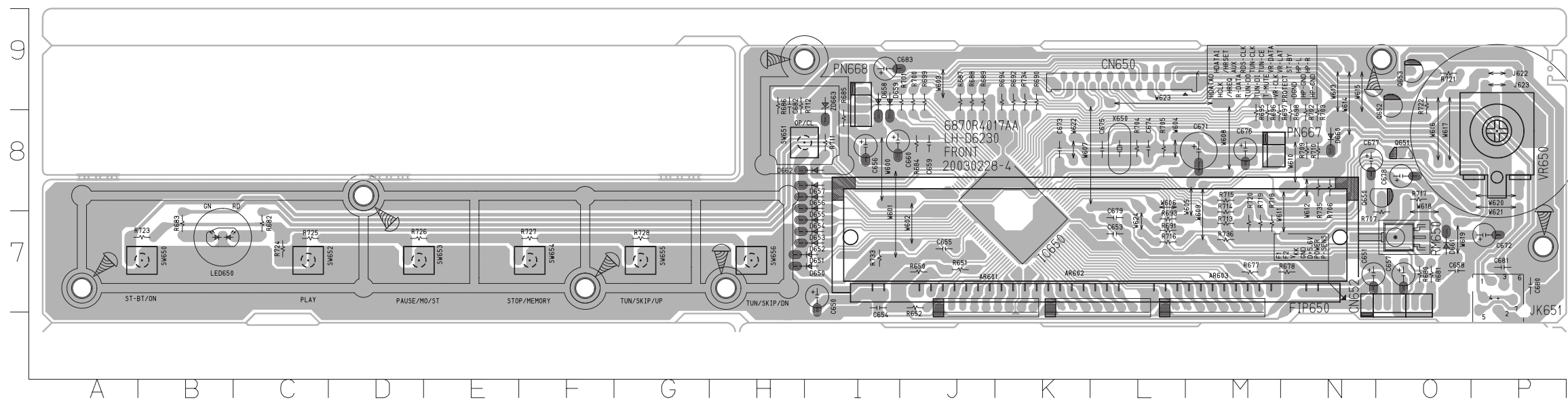


• FRONT P.C. BOARD (SOLDER SIDE)



IC650 F7

• FRONT P.C. BOARD (COMPONENT SIDE)

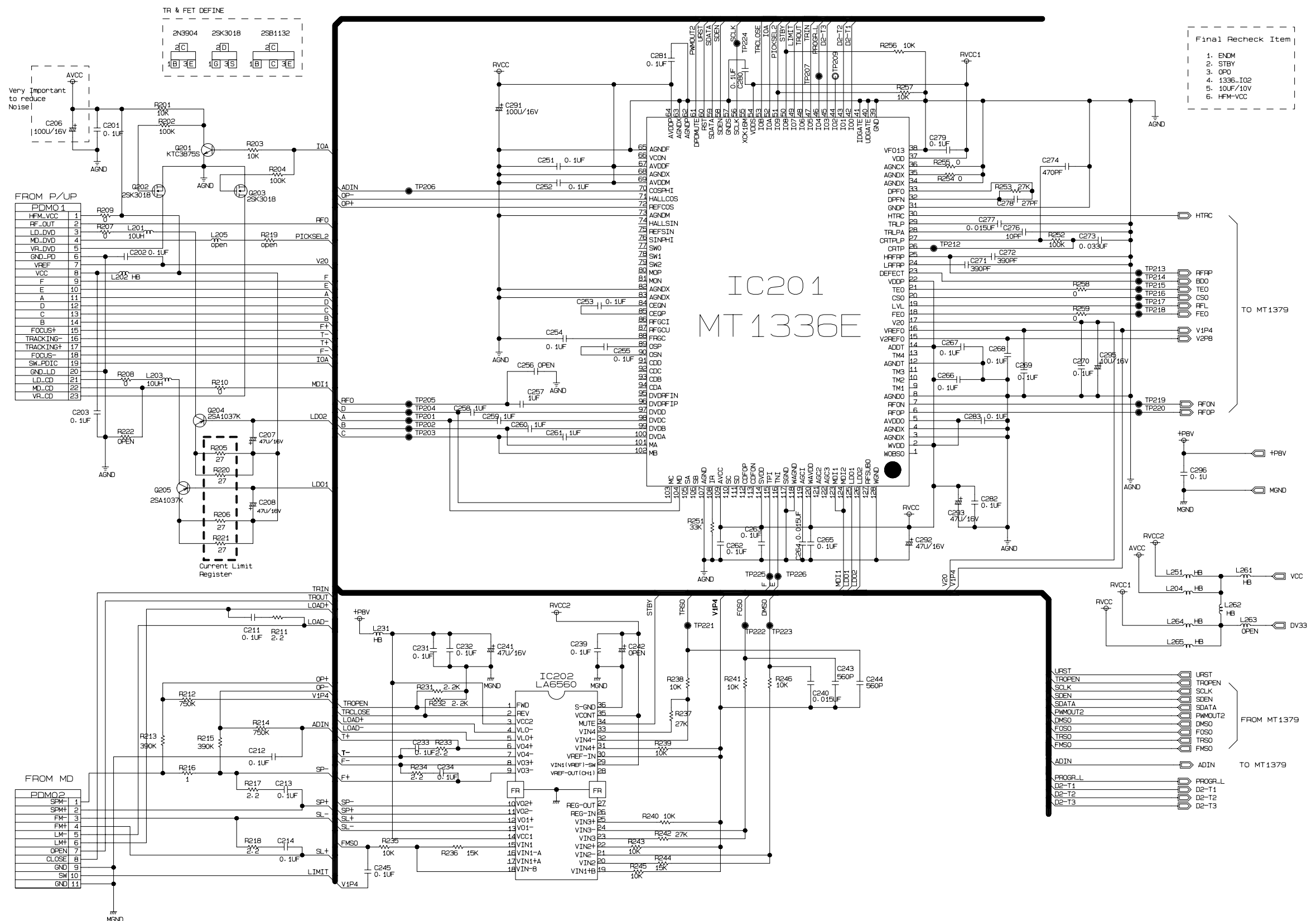


AR601	J7	R683	B7
AR602	K7	R684	J8
AR603	L7	R685	I8
C650	I7	R686	H9
C651	N7	R687	J9
C653	L7	R688	J9
C654	I7	R689	J9
C655	J7	R690	K9
C656	I8	R691	L7
C657	O7	R692	K9
C658	O7	R693	L7
C659	J8	R694	K9
C660	I8	R695	M8
C671	M8	R696	M8
C672	P7	R697	M8
C673	K8	R698	N8
C674	L8	R699	J9
C675	L8	R700	J9
C676	M8	R701	J9
C677	N8	R702	N8
C678	O8	R703	N8
C679	L7	R704	L8
C680	P7	R705	L8
C681	P7	R706	N8
C682	H9	R707	O7
C683	I9	R709	N8
CN650	K9	R710	N8
CN652	N7	R711	I8
D650	I7	R712	H9
D651	I7	R713	M7
D652	I7	R714	M7
D653	I7	R715	M8
D654	I7	R716	L7
D655	I8	R717	O8
D656	I8	R718	M7
D657	I8	R719	M7
D658	I9	R720	M7
D659	I9	R721	O9
D660	N8	R722	O9
D661	O7	R723	B7
D662	I8	R724	C7
FIP650	N7	R725	C7
J622	P9	R726	D7
J623	P9	R727	F7
JK651	P7	R728	G7
LED650	B7	R733	I7
PN667	M8	R734	K9
PN668	I9	R735	N8
Q650	O8	R736	M7
Q651	O8	RM650	O7
Q652	O9	SW650	B7
Q653	O9	SW651	I8
R650	J7	SW652	C7
R651	J7	SW653	D7
R652	J7	SW654	F7
R677	M7	SW655	G7
R678	N7	SW656	H7
R680	O7	VR650	P8
R681	O7	X650	L8
R682	C7	ZD663	I9

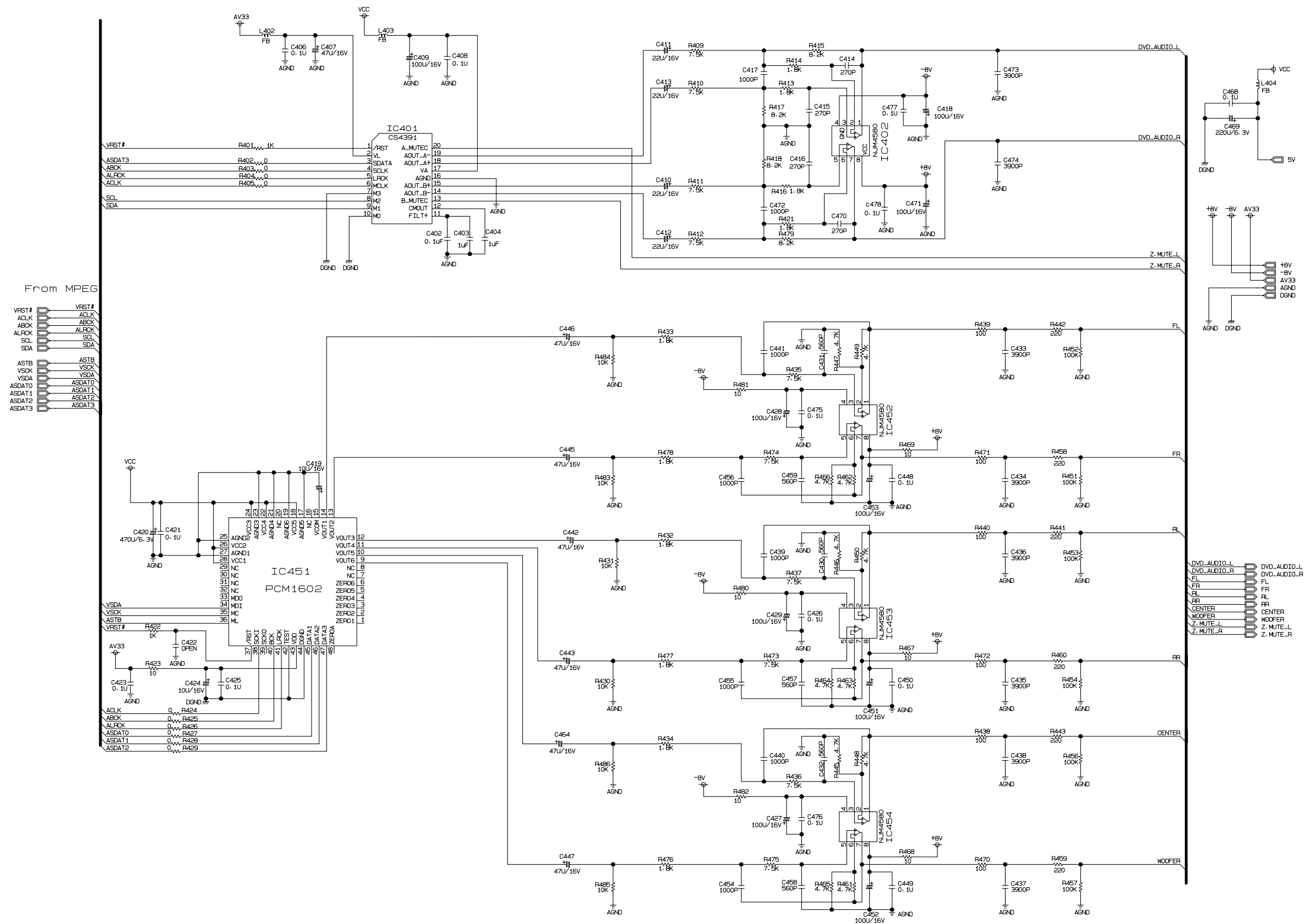
- **MPEG SCHEMATIC DIAGRAM**



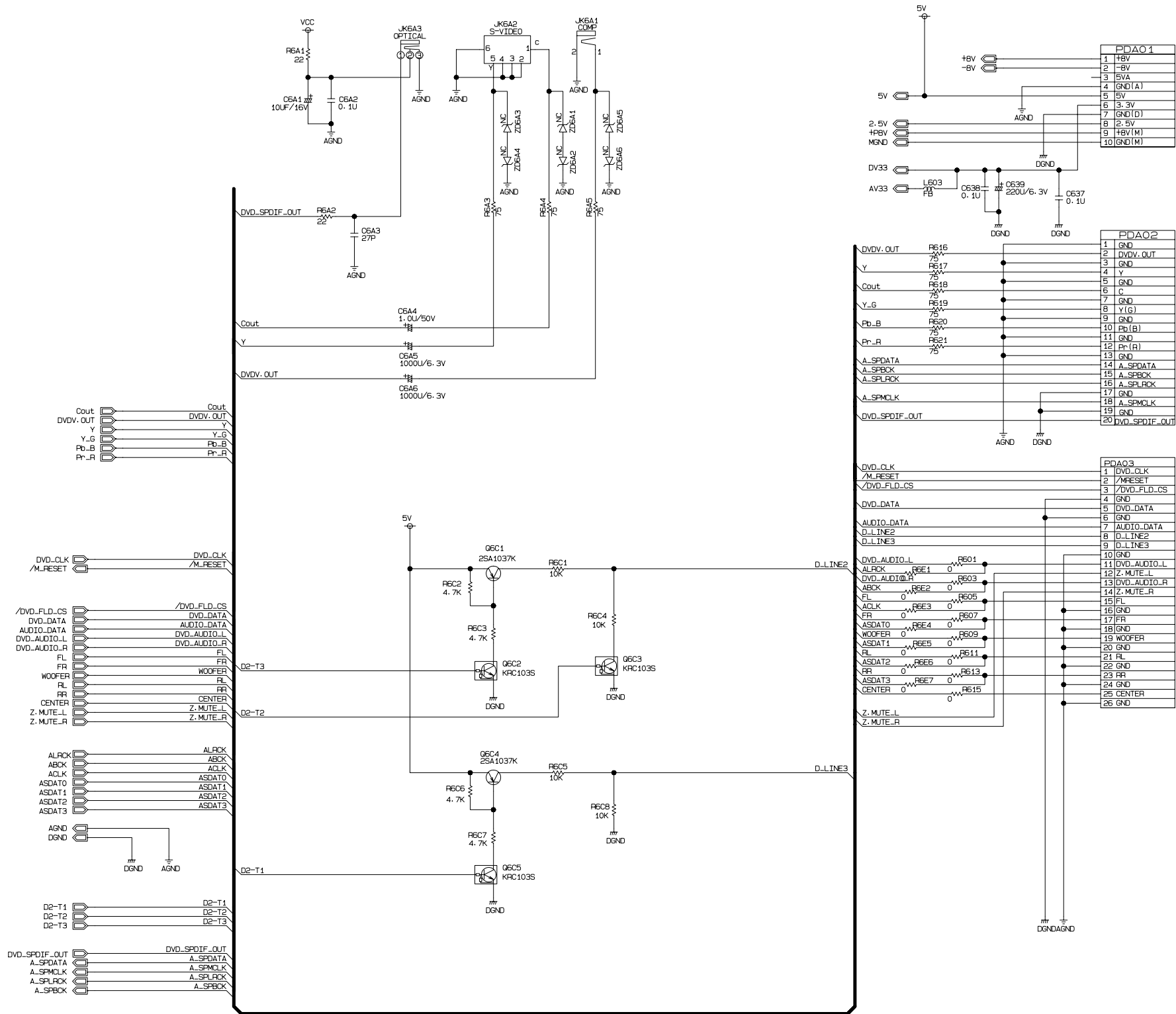
• SERVO SCHEMATIC DIAGRAM



• AUDIO SCHEMATIC DIAGRAM



• INTERFACE SCHEMATIC DIAGRAM



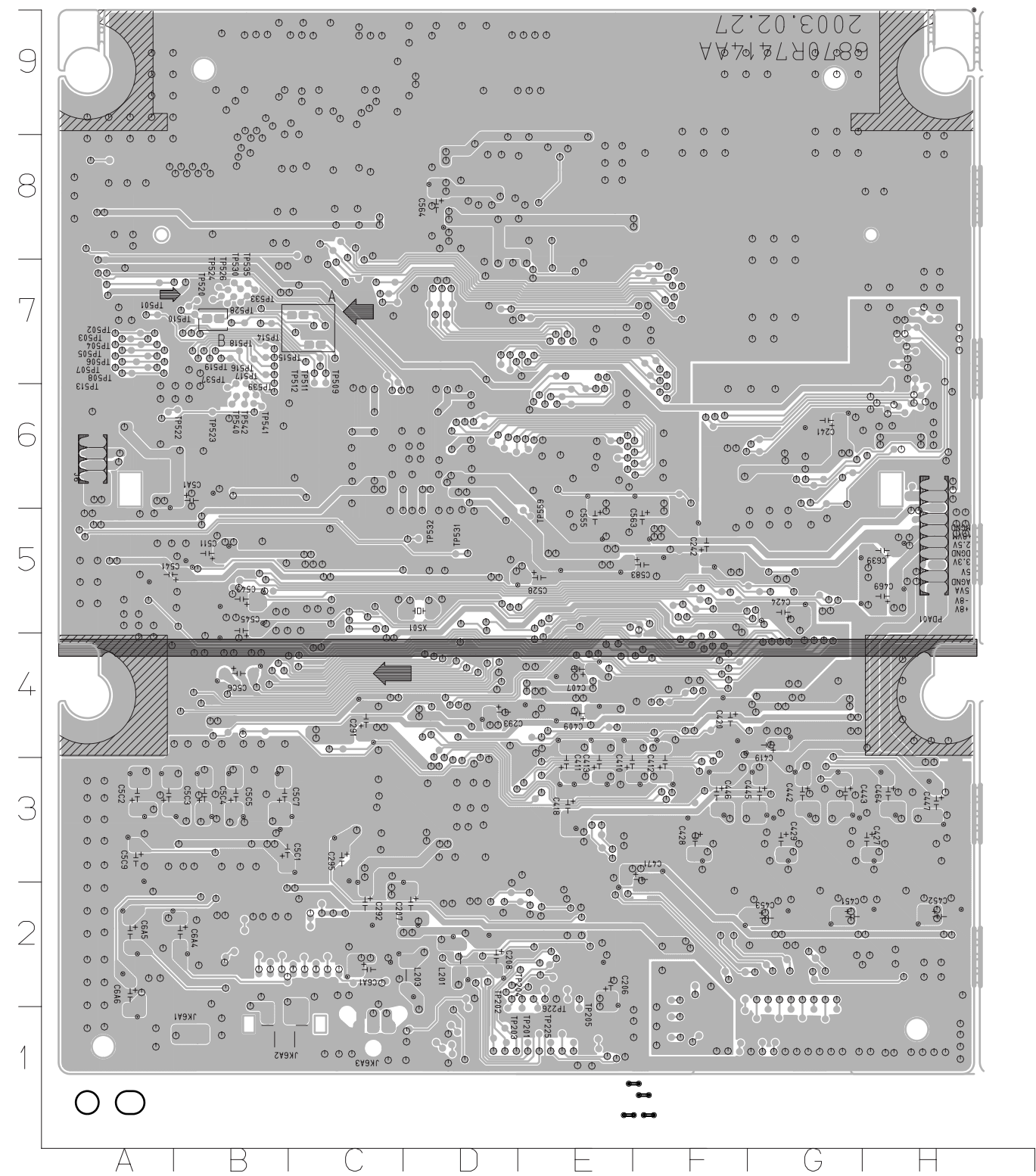
❑ VOLTAGE SHEET (IC&TR)

	IC201(MT1336E)		IC202(MOTOR)		IC401(CS4391)		IC402(AMP)		IC5C1(MM1823XFB)		IC501(MT1379)		IC502(SDRAM)		IC505(EEPROM)		IC510(BUFFER)	
PIN	STOP	PLAY	STOP	PLAY	STOP	PLAY	STOP	PLAY	STOP	PLAY	STOP	PLAY	STOP	PLAY	STOP	PLAY	STOP	PLAY
1	1.03	2.99	0	0	3.28	3.29	5.52	5.49	5.09	5.08	1.22	1.22	3.27	3.28	0	0	0	0
2	5.11	5.08	0	0	3.28	3.28	5.52	5.48	2.43	2.42	0	0	1.18	1.26	0	0	2.59	2.55
3	0	0	8.04	8.01	0	1.65	5.51	5.47	5.09	5.08	0.96	0.9	1.1	1.52	0	0	0	0
4	0	0	0.12	0.06	1.63	1.64	0	0	1.45	0	2	2.06	0	0	0	0	2.59	2.56
5	5.11	5.07	0	0.06	1.64	1.65	5.51	5.48	0	0	0	1.51	0.66	1.07	3.28	3.29	0	0
6	0	1.95	3.64	3.69	1.59	1.61	5.51	5.48	1.45	1.69	1.48	1.47	0.85	1.12	3.28	3.29	3.24	3.23
7	0	0	3.62	3.61	0	0	5.52	5.47	0	0	0	1.56	3.27	3.28	0	0	0	0
8	0	0	3.64	3.53	3.28	0	12.03	12.03	2.47	2.46	3.2	1.52	0.51	0.97	3.28	3.29	0.14	0.08
9	5.11	0	3.6	3.76	3.28	3.29			0	0	0.12	0.06	3.06	0			0	0
10	5.11	5.08	3.62	2.43	0	0			1.14	1.76	0.12	0.06	0	0			0	0
11	5.11	5.08	3.63	4.85	5.01	5.01			0	0	3.25	3.25	0.06	0.98			0.15	0.09
12	0	0	3.62	3.72	2.31	2.31			2.42	2.42	1.41	1.49	3.18	0.87			0	0
13	5.11	0	3.64	3.57	4.96	0			5.09	5.08	1.41	1.41	3.27	3.28			0.15	0.08
14	5.11	5.08	8.04	8.01	1.42	2.41			2.43	2.42	0	0	2.94	2.56			5.19	5.19
15	2.84	2.81	1.45	1.48	2.4	2.39			0	0	1.42	1.42	0.47	0.42			0.14	0.09
16	1.45	1.43	0.27	1.39	0	0			2.49	2.47	3.3	0	2.93	3.01			5.25	5.24
17	2.08	2.07	0.29	1.32	5.11	5.09			0	0	2.53	2.53	3.21	3.22			0.15	0.08
18	1.37	1.42	1.45	1.43	2.41	2.41			2.48	2.47	1.42	2.27	2.87	2.95			5.23	5.23
19	0.69	2.3	1.45	1.43	2.43	2.43			0	0	1.42	1.39	0.15	1.32			0	0
20	2.4	0	1.45	0.82	0	0			1.18	2.3	0	0	0	0.05			5.25	5.25
21	2.35	0	1.45	1.43					1.76	2.17	2.61	2.58	3.09	1.32				
22	5.11	5.08	1.45	1.43					0	0	0.75	1.46	3.09	1.32				
23	0	0	1.47	1.37					1.76	2.24	2.83	1	3.09	1.32				
24	2.59	3.2	1.45	1.43					0	0	1.9	0.89	3.09	1.33				
25	0.19	1.88	1.45	1.43					0	0	1.72	0.39	3.27	3.29				
26	1.58	0	0.95	0.91					0	0	0.68	0.31	0	0				
27	2.56	3.13	0	0					0.06	0.05	2.84	3.16	0.15	1.36				
28	2	2.01	1.45	1.43					5.09	0	0	0	1.84	2.36				
29	2	2.06	5.15	5.11							2.85	0.66	1	2.32				
30	2.96	1.52	1.45	1.43							1.83	0.49	0.54	1.75				
31	0	0	1.45	1.43							0.91	1.39	0.06	0.06				
32	0.06	2.07	1.45	1.43							1.43	1.2	0.05	0.06				
33	0.07	2.07	1.46	1.45							1.51	1.57	0	0				
34	0	0	5.08	5.06							1.51	1.43	0.73	1.26				
35	0	0	5.15	5.11							3.3	3.29	1.48	1.55				
36	0	0	0	0							0.81	1.26	2.91	2.53				
37	5.13	0									1.45	1.02	0.07	0				
38	0	0									1.82	1.6	3.27	3.28				
39	0	0									1.2	1.5	1.06	1.05				
40	0	0									2	2.06	0.47	0.98				
41	0	0									2.17	1.95	0	0				
42	5.12	5.09									2.53	2.52	0	0.6				
43	5.12	5.09									1.96	1.9	1.12	1.24				
44	5.12	5.09									1.79	1.9	3.27	3.28				
45	5.12	5.09									0.8	1.72	1.21	0.99				
46	5.12	5.09									0.8	1.96	1.31	1.34				
47	0	0									0.8	1.84	0	0				
48	5.12	5.09									3.3	2.63	1.43	1.44				
49	5.12	0									0	0.13	0.88	1.01				
50	5.08	5.06									0	0.07	0	0				
51	5.09	5.07									0	0						
52	5.1	0									0	0						
53	0	0									0	0						
54	5.13	0									0	0						
55	0.09	0.2									3.25	3.27						
56	1.61	0									1.21	1.18						
57	0	0									0	0						
58	0	0									3.29	3.29						
59	0	0									0	0						
60	0	0									0	0						
61	3.28	0									2.59	2.57						
62	0	0									2.58	2.58						
63	0	0									0	0						
64	0	0									2.59	2.56						
65	0	0									3.29	3.29						
66	0.26	0									3.3	3.29						
67	5.12	5.08									3.29	3.29						
68	0	0									2.57	2.56						
69	5.12	0									5.19	5.18						
70	3.21	2.03									2.59	2.57						
71	3.46	2.2									0.12	0.08						
72	2.81	0									2.53	2.52						
73	0	0									2.59	2.57						
74	0.21	0.09									3.29	3.29						
75	0.22	0									2.61	2.61						
76	0	0.1									3.27	3.24						
77	0.21	0.09									0	0						
78	0.23	0.09									0.94	1.04						
79	0.21	0.08									0.78	1.06						
80	0.23	0.08									0.89	1.15						



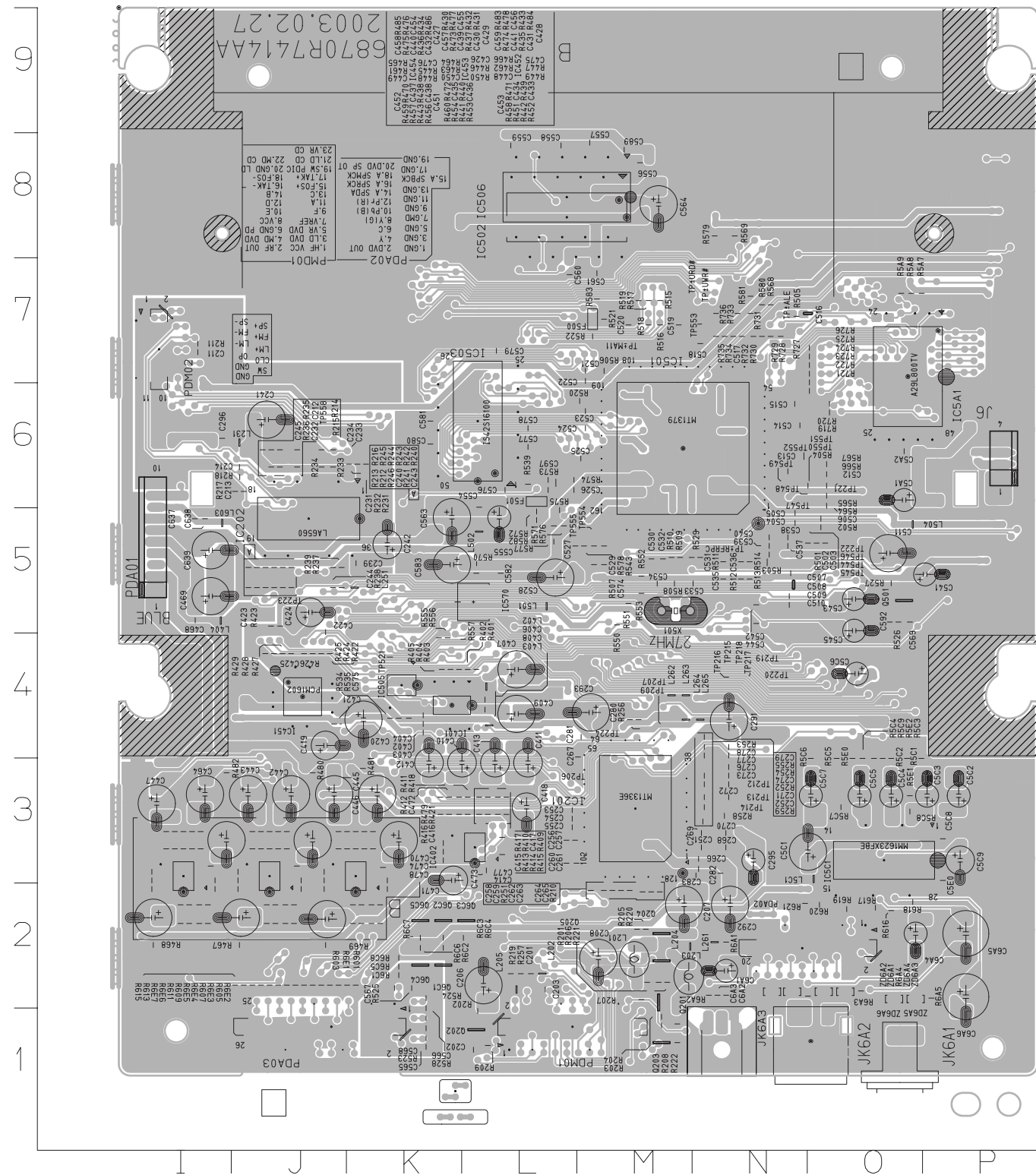
❑ PRINTED CIRCUIT DIAGRAM

• DVD P.C. BOARD(SOLDER SIDE)



TP201	E1
TP202	D1
TP203	D1
TP204	E1
TP205	E1
TP225	E1
TP226	E1
TP501	A7
TP502	A7
TP503	A7
TP504	A7
TP505	A7
TP506	A7
TP507	A7
TP508	A7
TP509	C7
TP510	B7
TP511	C7
TP512	C7
TP513	A7
TP514	B7
TP515	B7
TP516	B7
TP517	B7
TP518	B7
TP519	B7
TP520	B7
TP522	B6
TP523	B6
TP524	B7
TP525	F4
TP526	B7
TP527	F4
TP528	B7
TP530	B7
TP531	D5
TP532	D5
TP533	B7
TP535	B7
TP537	B6
TP539	B6
TP540	B6
TP541	B6
TP542	B6
TP559	E5

• DVD P.C. BOARD (COMPONENT SIDE)

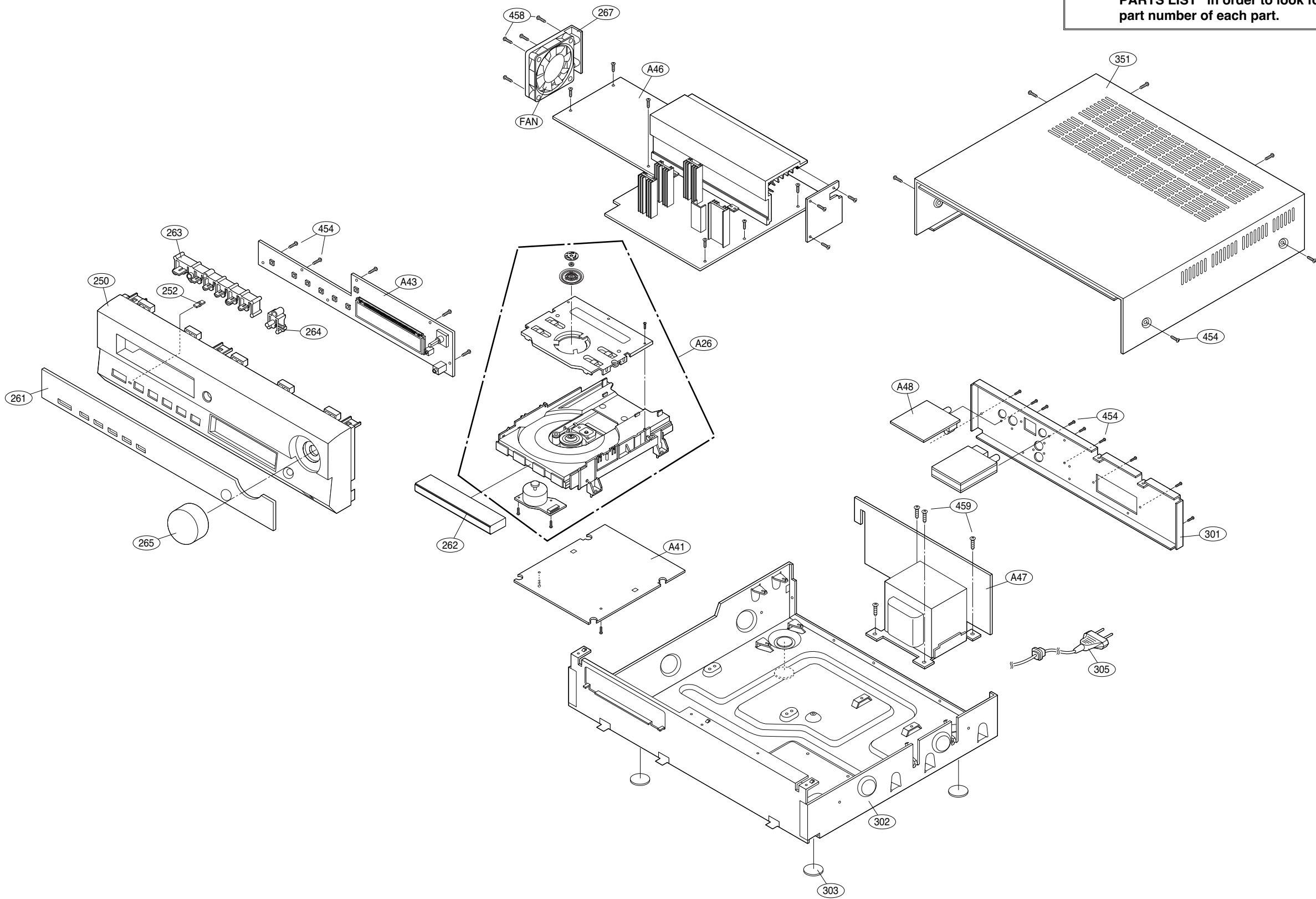


C201	L2	C409	L4	C504	N5	C581	K6	L501	L5	R256	M4	R468	I2	R569	N8	R719	O6
C202	L1	C410	L3	C505	N5	C582	L5	L502	L5	R257	L2	R469	J2	R570	L5	R720	O6
C203	L2	C411	L3	C506	O5	C583	K5	L504	O5	R258	N3	R470	I2	R571	L5	R721	O6
C206	L2	C412	K3	C507	N5	C589	M8	L5C1	O3	R259	N3	R471	K2	R572	L5	R722	O6
C207	M2	C413	L3	C508	N5	C592	O5	L603	I5	R401	L4	R472	J2	R573	L6	R723	O7
C208	M2	C414	L3	C509	N5	C597	L6	PDA01	I5	R402	L4	R473	J3	R574	L6	R724	O7
C211	I7	C415	L3	C510	N5	C5A1	O6	PDA02	N2	R403	K4	R474	K3	R575	L5	R725	O7
C212	J6	C416	L3	C511	O5	C5A2	O6	PDA03	J1	R404	K4	R475	I3	R576	L5	R726	O7
C213	J6	C417	L3	C512	O6	C5C1	O3	PDM01	L1	R405	K4	R476	I3	R577	L5	R727	N7
C214	J6	C418	L3	C513	N6	C5C2	P3	PDM02	I7	R409	L3	R477	J3	R578	M5	R728	N7
C231	K6	C419	J4	C514	N6	C5C3	P3	Q201	M2	R410	L3	R478	K3	R579	N8	R729	N7
C232	J6	C420	K4	C515	N6	C5C4	O3	Q202	L1	R411	K3	R479	K3	R580	N7	R730	N7
C233	J6	C421	J4	C516	O7	C5C5	O3	Q203	M1	R412	K3	R480	J3	R581	N7	R731	N7
C234	J6	C422	J5	C517	N7	C5C6	O4	Q204	M2	R413	L3	R481	K3	R582	L5	R732	N7
C239	K5	C423	J5	C518	N7	C5C7	O3	Q205	M2	R414	L3	R482	I3	R583	M7	R733	N7
C240	J5	C424	J5	C519	M7	C5C8	P3	Q501	O5	R415	L3	R483	J3	R5A7	O7	R734	N7
C241	J6	C425	J4	C520	M7	C5C9	P3	Q6C1	K2	R416	K3	R484	K3	R5A8	O7	R735	N7
C242	K5	C426	J3	C521	M7	C5E0	P3	Q6C2	K2	R417	L3	R485	I3	R5A9	O7	R736	N7
C243	J5	C427	I3	C522	M7	C637	I5	Q6C3	L2	R418	L3	R486	I3	R5C1	O3	TP206	M3
C244	J5	C428	K3	C523	M6	C638	I5	Q6C4	K2	R421	K3	R501	O5	R5C2	O3	TP207	M4
C245	J6	C429	J3	C524	M6	C639	I5	Q6C5	K2	R422	J4	R502	O5	R5C3	O3	TP209	M4
C251	N3	C430	J3	C525	M6	C6A1	N2	R201	M2	R423	J5	R503	N5	R5C4	O3	TP212	N3
C252	N3	C431	K3	C526	L6	C6A2	N2	R202	L1	R424	J4	R504	O6	R5C5	O3	TP213	N3
C253	L3	C432	I3	C527	L5	C6A3	N2	R203	M1	R425	J4	R505	N7	R5C6	O3	TP214	N3
C254	L3	C433	K2	C528	L5	C6A4	O2	R204	M1	R426	J4	R506	M7	R5C7	O3	TP215	N4
C255	L3	C434	K2	C529	M5	C6A5	P2	R205	M2	R427	J4	R507	M5	R5C8	O3	TP216	N4
C256	L3	C435	J2	C530	M5	C6A6	P2	R206	M2	R428	J4	R508	M5	R5C9	O3	TP217	N4
C257	L3	C436	J2	C531	N5	F500	M7	R207	M2	R429	J4	R509	M5	R5E0	O3	TP218	N4
C258	M2	C437	I2	C532	M5	F501	L6	R208	M1	R430	J3	R510	M5	R5E1	O3	TP219	N4
C259	M2	C438	I2	C533	N5	IC201	M3	R209	L1	R431	J3	R511	N5	R5E2	O3	TP220	N4
C260	L3	C439	J3	C534	M5	IC202	J5	R210	M2	R432	J3	R512	N5	R601	K2	TP221	O6
C261	L3	C440	I3	C535	N5	IC401	K4	R211	I7	R433	K3	R513	N5	R603	J2	TP222	O5
C262	M2	C441	K3	C536	N5	IC402	L3	R212	J5	R434	I3	R514	N5	R605	J2	TP223	J5
C263	M2	C442	J3	C537	N5	IC451	J4	R213	J5	R435	K3	R515	M7	R607	J2	TP224	M4
C264	M2	C443	J3	C538	N5	IC452	K3	R214	J6	R436	I3	R516	M7	R609	J2	TP521	K4
C265	M2	C445	J3	C539	N5	IC453	J3	R215	J6	R437	J3	R517	M7	R611	J2	TP544	O5
C266	N3	C446	K3	C540	N5	IC454	I3	R216	J5	R438	I2	R518	M7	R613	J2	TP545	O5
C267	M4	C447	I3	C541	P5	IC501	M6	R217	J6	R439	K2	R519	M7	R615	J2	TP546	O5
C268	N3	C448	J2	C542	N5	IC502	L8	R218	J6	R440	J2	R520	M6	R616	O2	TP547	N6
C269	N3	C449	I2	C543	O5	IC503	L6	R219	L2	R441	J2	R521	M7	R617	O2	TP548	O6
C270	N3	C450	J2	C544	N5	IC505	K4	R220	M2	R442	K2	R522	M7	R618	O2	TP549	N6
C271	N3	C451	J2	C545	O5	IC506	L8	R221	M2	R443	I2	R523	K1	R619	O2	TP550	O6
C272	N3	C452	I2	C554	L6	IC570	L5	R222	M1	R445	I3	R524	K2	R620	O2	TP551	O6
C273	N3	C453	J2	C555	L5	IC5A1	O7	R231	K6	R446	J3	R525	K2	R621	N2	TP552	N6
C274	N3	C454	I3	C556	M8	IC5C1	O3	R232	K6	R447	K3	R526	O5	R6A1	N2	TP553	N7
C276	N3	C455	J3	C557	M8	J6	P6	R233	J6	R448	I2	R527	O5	R6A2	N2	TP554	M5
C277	N3	C456	K3	C558	L8	JK6A1	O1	R234	J6	R449	K2	R528	K1	R6A3	O2	TP555	M5
C278	N4	C457	J3	C559	L8	JK6A2	O1	R235	J6	R450	J2	R529	M5	R6A4	O2	TP558	J6
C279	N4	C458	I3	C560	L7	JK6A3	N1	R236	J6	R451	K2	R534	K4	R6A5	P2	TP±ALE	N7
C280	M4	C459	J3	C561	M7	L201	M2	R237	J5	R452	K2	R535	K4	R6C1	K2	TP±MA11	M7
C281	M4	C464	I3	C563	K5	L202	L2	R238	J5	R453	J2	R539	L6	R6C2	K2	TP±RFRP	N5
C282	N3	C468	I5	C564	M8	L203	M2	R239	J5	R454	J2	R543	M5	R6C3	K2	TP±URD	N7
C283	N3	C469	I5	C565	K1	L204	M2	R240	J5	R456	I2	R550	M5	R6C4	L2	TP±UWR	N7
C291	N4	C470	K3	C566	K1	L205	L2	R241	J5	R457	I2	R551	M5	R6C5	K2	X501	M5
C292	N2	C471	K3	C567	K2	L231	J6	R242	J5	R458	K2	R552	M5	R6C6	K2	ZD6A1	N2
C293	M4	C472	K3	C568	K1	L251	K5	R243	J5	R459	I2	R553	M5	R6C7	K2	ZD6A2	N2
C295	N3	C473	L3	C569	O5	L261	N2	R244	J5	R460	J2	R555	K4	R6C8	K2	ZD6A3	O2
C296	I6	C474	K3	C574	M5	L262	M4	R245	J5	R461	I3	R556	K4	R6E1	K2	ZD6A4	O2
C402	K4	C475	K3	C575	K4	L263	M4	R246	J5	R462	J3	R557	L4	R6E2	J2	ZD6A5	O2
C403	K4	C476	I3	C576	L6	L264	M4	R251	M2	R463	J3	R564	O6	R6E3	J2	ZD6A6	O2
C404	K4	C477	L3	C577	L6	L265	N4	R252	N3	R464	J3	R565	O6	R6E4	J2		
C406	L4	C478	K3	C578	L6	L402	L4	R253	N4	R465	I3	R566	O6	R6E5	J2		
C407	L4	C502	O5	C579	L7	L403	L4	R254	N4	R466	J3	R567	O6	R6E6	J2		
C408	L4	C503	O5	C580	K6	L404	I5	R255	N4	R467	J2	R568	N7	R6E7	J2		

# SECTION 4. EXPLODED VIEWS

## • CABINET AND MAIN FRAME SECTION

NOTE) Refer to “SECTION 6 REPLACEMENT PARTS LIST” in order to look for the part number of each part.



• Deck Mechanism Exploded View

