zenith

SERVICE MANUAL

Product Type: DVD/CD RECEIVER
Chassis: 6721RJ0381A
Manual Series: DVT412
Manual Part #: 3829RAT107B
Model Line: E
Product Year: 2004

Model Series:

DVT412

CONTENTS

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SECTION 1. GENERAL

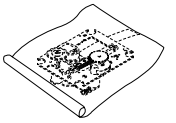
❑ SERVICING PRECAUTIONS

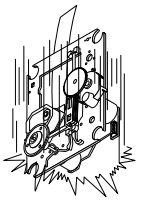
NOTES REGARDING HANDLING OF THE PICK-UP

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

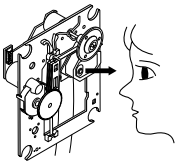




Drop impact

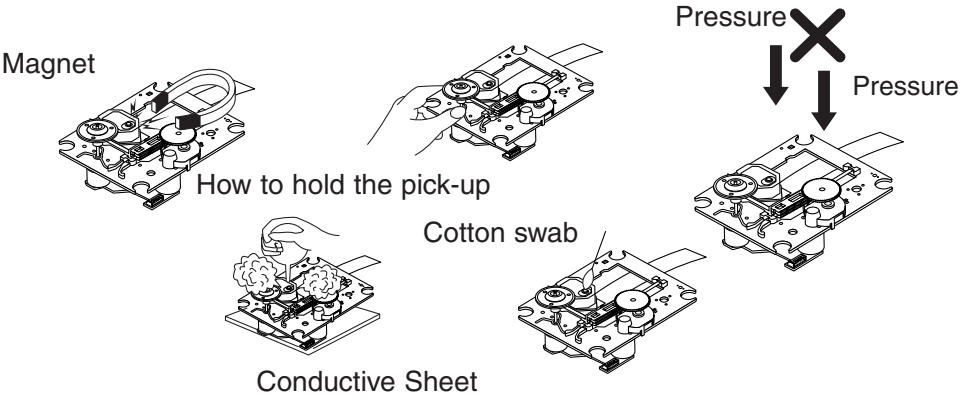
2. Repair notes

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.

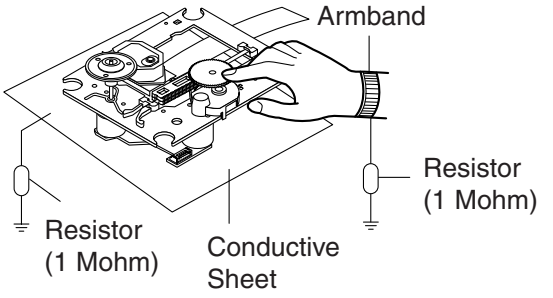
NOTES REGARDING COMPACT DISC PLAYER REPAIRS

1. Preparations

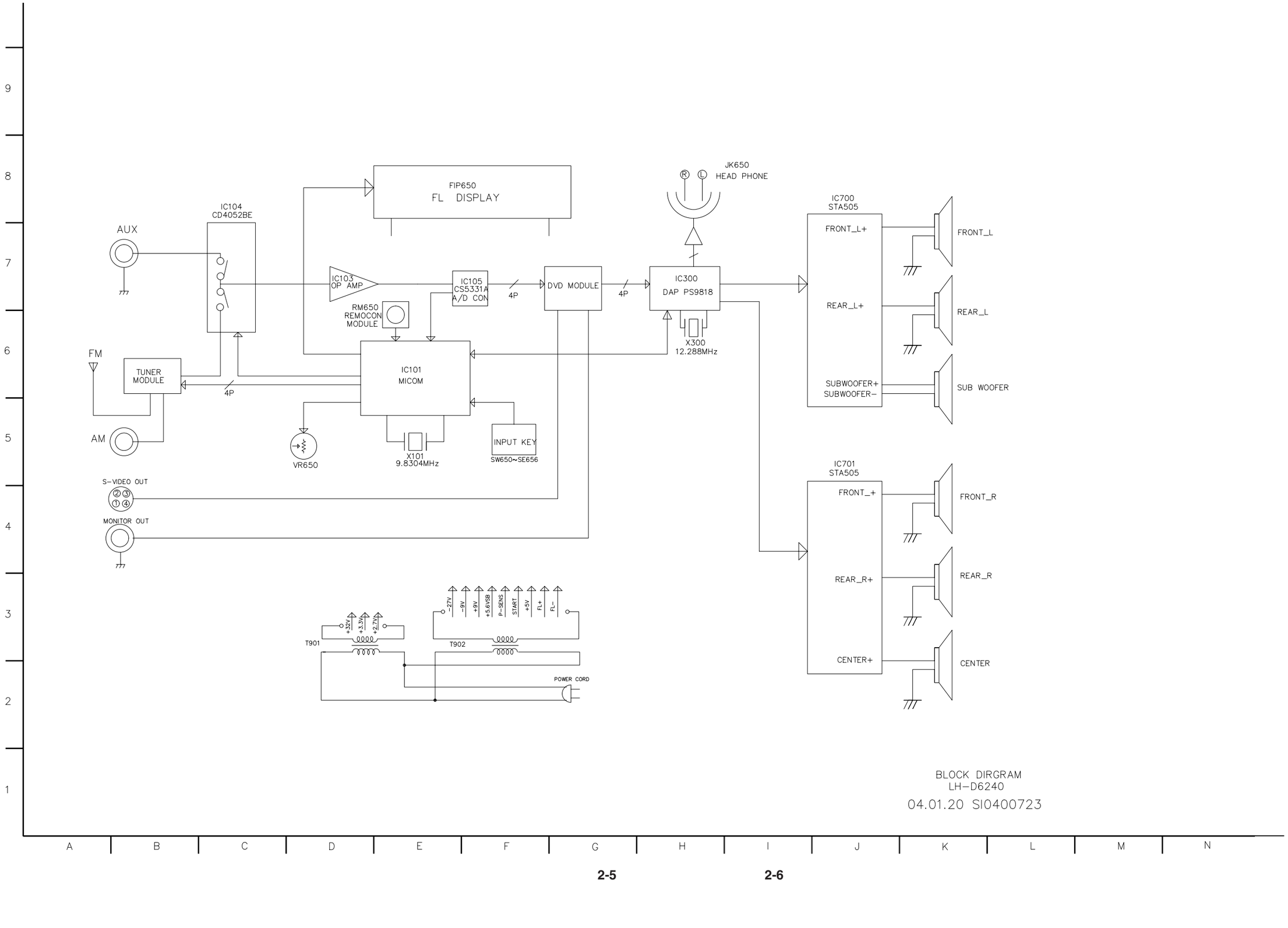
1) Compact disc players incorporate a great many ICs as well as the pick-up (laser diode). These components are sensitive to, and easily affected by, static electricity. If such static electricity is high voltage, components can be damaged, and for that reason components should be handled with care.
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.



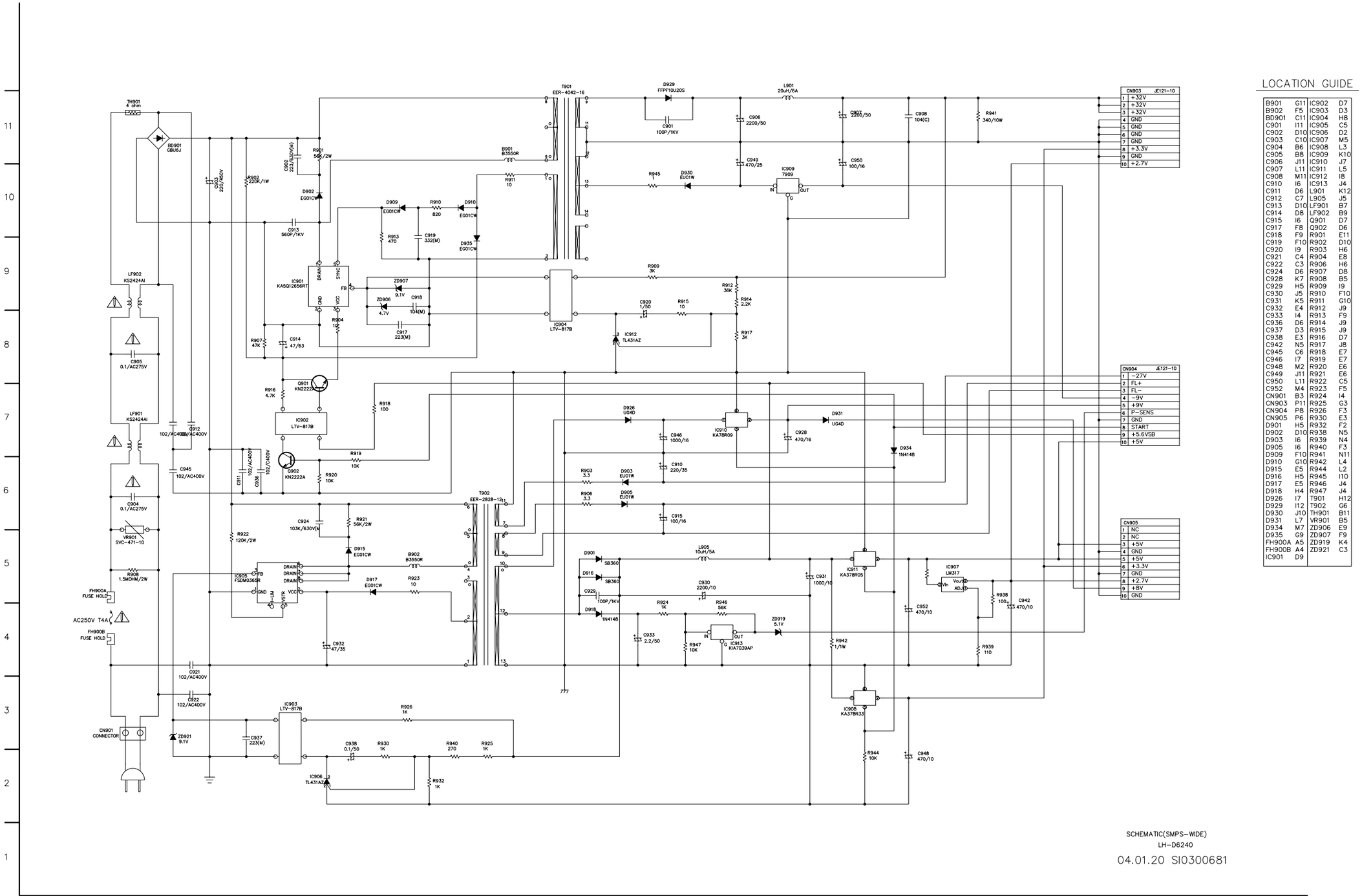
❑ BLOCK DIAGRAM



BLOCK DIRGRAM
LH-D6240
04.01.20 SI0400723

❑ SCHEMATIC DIAGRAMS

• POWER (SMPS) SCHEMATIC DIAGRAM

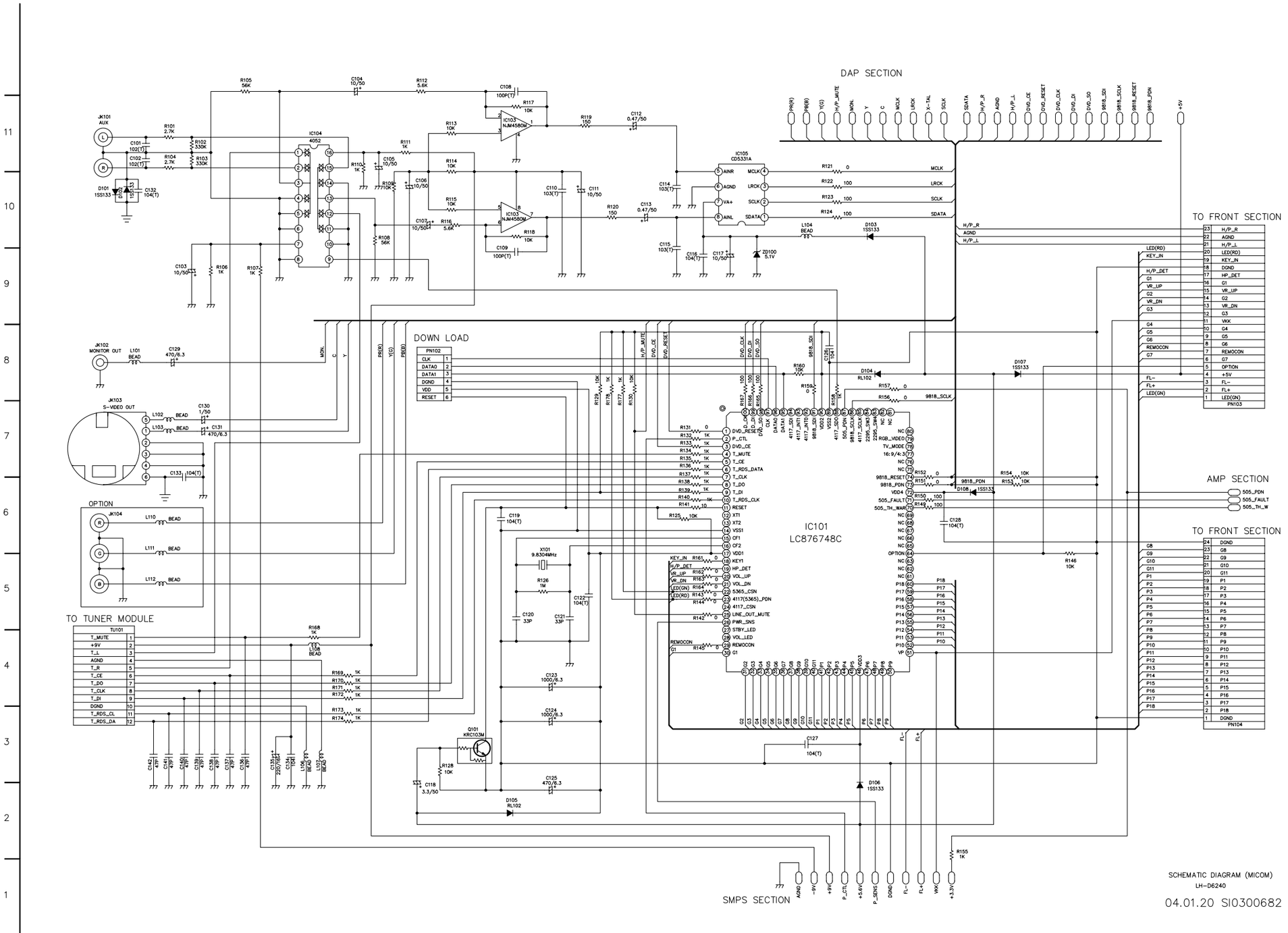


LOCATION GUIDE

B901	G11	IC902	D7
B902	F5	IC903	D3
BD901	C11	IC904	H8
C901	I11	IC905	C5
C902	D10	IC906	D2
C903	C10	IC907	M5
C904	B6	IC908	L3
C905	B8	IC909	K10
C906	J11	IC910	J7
C907	L11	IC911	L5
C908	M11	IC912	I8
C910	I6	IC913	J4
C911	D6	L901	K12
C912	C7	L905	J5
C913	D10	LF901	B7
C914	D8	LF902	B9
C915	I6	Q901	D7
C917	F8	Q902	D6
C918	F9	R901	E11
C919	F10	R902	D10
C920	I9	R903	H6
C921	C4	R904	E8
C922	C3	R906	H6
C924	D6	R907	D8
C928	K7	R908	B5
C929	H5	R909	I9
C930	J5	R910	F10
C931	K5	R911	G10
C932	E4	R912	J9
C933	I4	R913	F9
C936	D6	R914	J9
C937	D3	R915	J9
C938	E3	R916	D7
C942	N5	R917	J8
C945	C6	R918	E7
C946	I7	R919	E7
C948	M2	R920	E6
C949	J11	R921	E6
C950	L11	R922	C5
C952	M4	R923	F5
CN901	B3	R924	I4
CN903	P11	R925	G3
CN904	P8	R926	F3
CN905	P6	R930	E3
D901	H5	R932	F2
D902	D10	R938	N5
D903	I6	R939	N4
D905	I6	R940	F3
D909	F10	R941	N11
D910	G10	R942	L4
D915	E5	R944	L2
D916	H5	R945	I10
D917	E5	R946	J4
D918	H4	R947	J4
D926	I7	T901	H12
D929	I12	T902	G6
D930	J10	TH901	B11
D931	L7	VR901	B5
D934	M7	ZD906	E9
D935	G9	ZD907	F9
FH900A	A5	ZD919	K4
FH900B	A4	ZD921	C3
IC901	D9		

SCHEMATIC(SMPS-WIDE)
LH-D6240
04.01.20 SI0300681

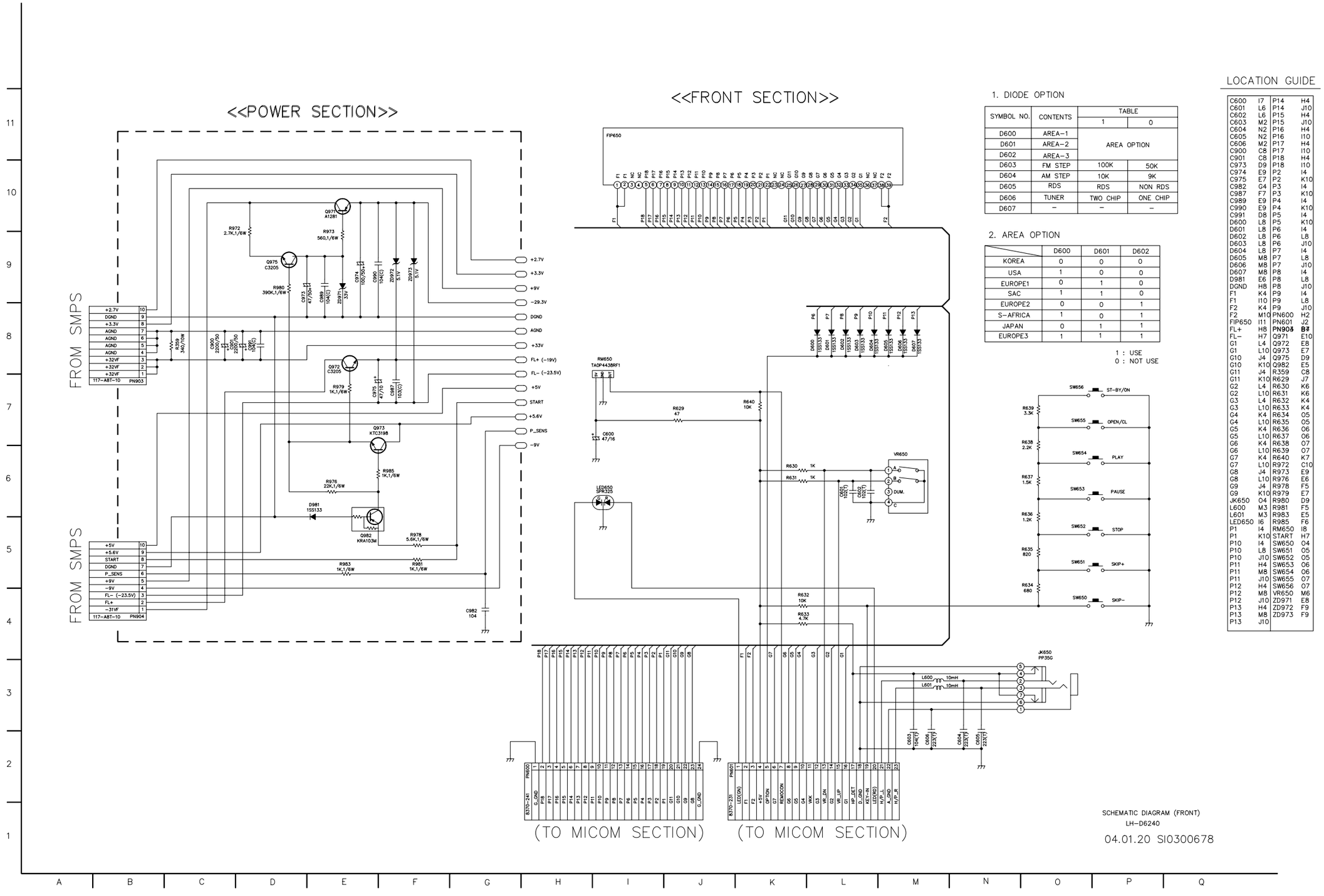
• µ-COM SCHEMATIC DIAGRAM



LOCATION GUIDE

C101	B11	P1	K3	R153	M7
C102	B11	P1	O5	R154	M7
C103	C9	P10	M4	R155	M2
C104	E12	P10	O4	R156	L8
C105	E11	P11	M5	R157	L8
C106	F10	P11	O4	R158	K8
C107	F10	P12	M5	R159	K8
C108	G12	P12	O4	R160	K8
C109	G10	P13	M5	R161	I6
C110	G10	P13	O4	R162	I5
C111	H10	P14	M5	R163	I5
C112	I11	P14	O4	R164	I5
C113	I10	P15	M5	R165	J8
C114	I10	P15	O4	R166	J8
C115	I10	P16	M5	R167	J8
C116	I10	P16	O4	R168	D5
C117	J10	P17	M5	R169	E4
C118	F3	P17	O4	R170	E4
C119	G6	P18	M5	R171	E4
C120	G5	P18	O4	R172	E4
C121	H5	P2	K3	R173	E4
C122	H5	P2	O5	R174	E3
C123	G4	P3	K3	R177	H8
C124	G4	P3	O5	R178	H8
C125	G3	P4	K3	SCLK	M11
C126	K8	P4	O5	SCLK	L10
C127	K3	P5	K3	SDATA	M11
C128	M6	P5	O5	SDATA	L10
C129	B8	P6	L3	TU101	B5
C130	C8	P6	O5	X-TAL	L11
C131	C7	P7	L3	X101	G6
C132	B10	P7	O5	ZD100	J10
C133	B7	P8	L3		
C134	D3	P8	O5		
C135	D3	P9	L3		
C136	C3	P9	O4		
C137	C3	PN102	P8		
C138	C3	PN103	P8		
C139	C3	PN104	P3		
C140	C3	Q101	F3		
C141	B3	R101	B11		
C142	B3	R102	C11		
D101	B10	R103	C11		
D102	B10	R104	B11		
D103	L10	R105	C12		
D104	L8	R106	C9		
D105	G2	R107	C9		
D106	L3	R108	E10		
D107	N8	R109	E10		
D108	M6	R110	E11		
G1	I4	R111	E11		
G1	O9	R112	F12		
G10	K3	R113	F11		
G10	O5	R114	F11		
G11	K3	R115	F10		
G11	O5	R116	F10		
G2	J3	R117	G11		
G2	O9	R118	G10		
G3	J3	R119	H11		
G3	O9	R120	H10		
G4	J3	R121	K11		
G4	O9	R122	K10		
G5	J3	R123	K10		
G5	O8	R124	K10		
G6	J3	R125	I6		
G6	O8	R126	G5		
G7	J3	R128	F3		
G7	O8	R129	H8		
G8	K3	R130	I8		
G8	O6	R131	I7		
G9	K3	R132	I7		
IC101	K6	R133	I7		
IC103	G11	R134	I7		
IC104	D11	R135	I7		
IC105	J11	R136	I7		
JK101	B11	R137	I7		
JK102	A8	R138	I7		
JK103	B8	R139	I6		
JK104	B6	R140	I6		
L101	B8	R141	I6		
L102	B7	R142	I5		
L103	B7	R143	I5		
L104	K10	R144	I5		
L106	D3	R145	I4		
L107	D3	R146	N5		
L108	D4	R149	L6		
L110	B6	R150	L6		
L111	B6	R151	L7		
L112	B5	R152	L7		

• FRONT & POWER(2nd) SCHEMATIC DIAGRAM



1. DIODE OPTION

SYMBOL NO.	CONTENTS	TABLE	
		1	0
D600	AREA-1	AREA OPTION	
D601	AREA-2		
D602	AREA-3		
D603	FM STEP	100K	50K
D604	AM STEP	10K	9K
D605	RDS	RDS	NON RDS
D606	TUNER	TWO CHIP	ONE CHIP
D607	-	-	-

2. AREA OPTION

	D600	D601	D602
KOREA	0	0	0
USA	1	0	0
EUROPE1	0	1	0
SAC	1	1	0
EUROPE2	0	0	1
S-AFRICA	1	0	1
JAPAN	0	1	1
EUROPE3	1	1	1

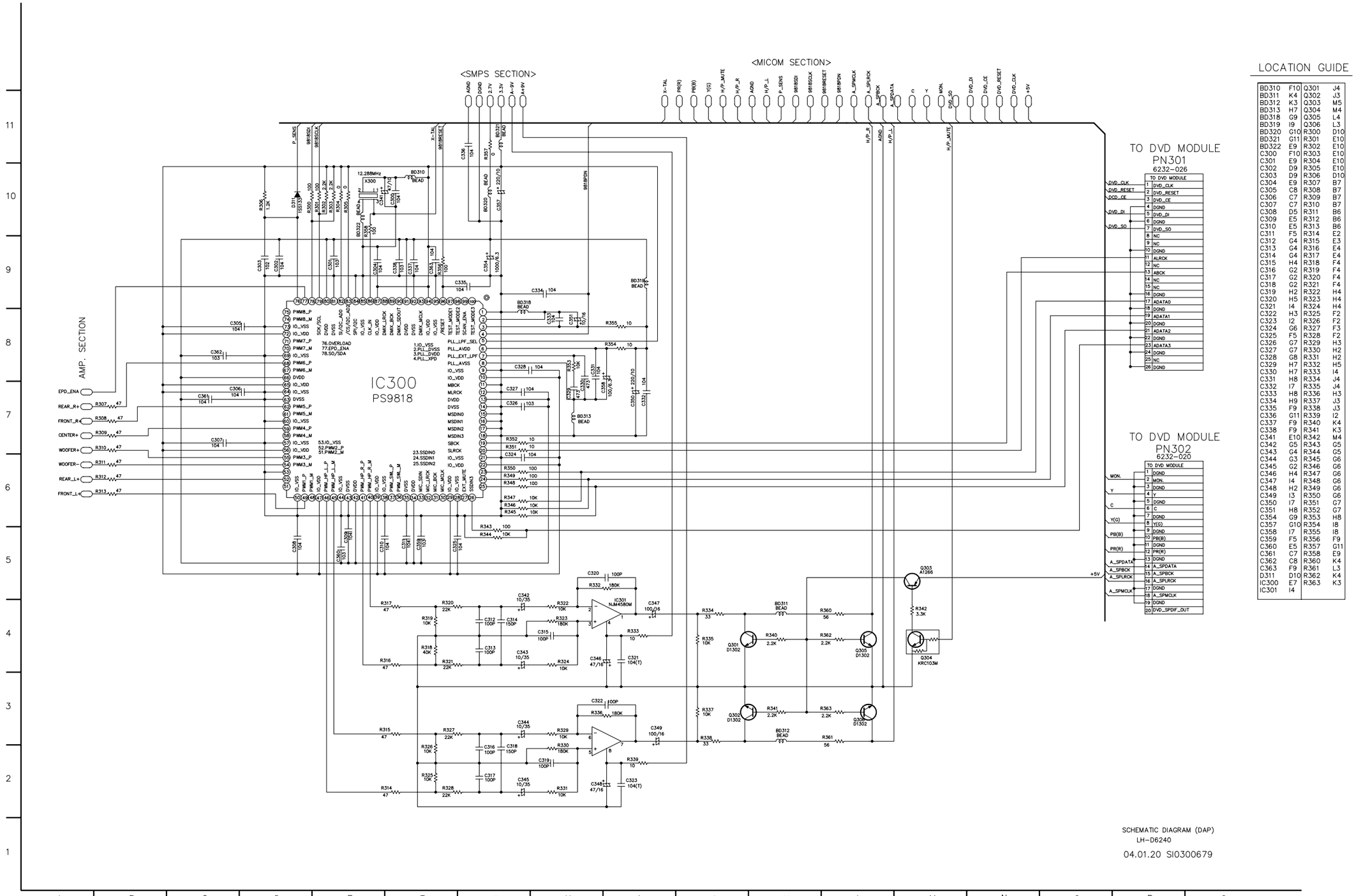
1 : USE
0 : NOT USE

LOCATION GUIDE

C600	I7	P14	H4
C601	L6	P14	J10
C602	L6	P15	H4
C603	M2	P15	J10
C604	N2	P16	H4
C605	N2	P16	I10
C606	M2	P17	H4
C900	C8	P17	I10
C901	C8	P18	H4
C973	D9	P18	I10
C974	E9	P2	I4
C975	E7	P2	K10
C982	G4	P3	I4
C987	F7	P3	K10
C989	E9	P4	I4
C990	E9	P4	K10
C991	D8	P5	I4
D600	L8	P5	K10
D601	L8	P6	I4
D602	L8	P6	L8
D603	L8	P6	J10
D604	L8	P7	I4
D605	M8	P7	L8
D606	M8	P7	J10
D607	M8	P8	I4
D981	E6	P8	L8
DGND	H8	P8	J10
F1	K4	P9	I4
F1	I10	P9	L8
F2	K4	P9	J10
F2	M10	PN600	H2
FIP650	I11	PN601	J2
FL+	H8	**PN904**	**B2**
FL-	H7	Q971	E10
G1	L4	Q972	E8
G1	L10	Q973	E7
G10	J4	Q975	D9
G10	K10	Q982	E5
G11	J4	R359	C8
G11	K10	R629	J7
G2	L4	R630	K6
G2	L10	R631	K6
G3	L4	R632	K4
G3	L10	R633	K4
G4	K4	R634	O5
G4	L10	R635	O5
G5	K4	R636	O6
G5	L10	R637	O6
G6	K4	R638	O7
G6	L10	R639	O7
G7	K4	R640	K7
G7	L10	R972	C10
G8	J4	R973	E9
G8	L10	R976	E6
G9	J4	R978	F5
G9	K10	R979	E7
JK650	O4	R980	D9
L600	M3	R981	F5
L601	M3	R983	E5
LED650	I6	R985	F6
P1	I4	RM650	I8
P1	K10	START	H7
P10	I4	SW650	O4
P10	L8	SW651	O5
P10	J10	SW652	O5
P11	H4	SW653	O6
P11	M8	SW654	O6
P11	J10	SW655	O7
P12	H4	SW656	O7
P12	M8	VR650	M6
P12	J10	ZD971	E8
P13	H4	ZD972	F9
P13	M8	ZD973	F9
P13	J10		

SCHEMATIC DIAGRAM (FRONT)
LH-D6240
04.01.20 SI0300678

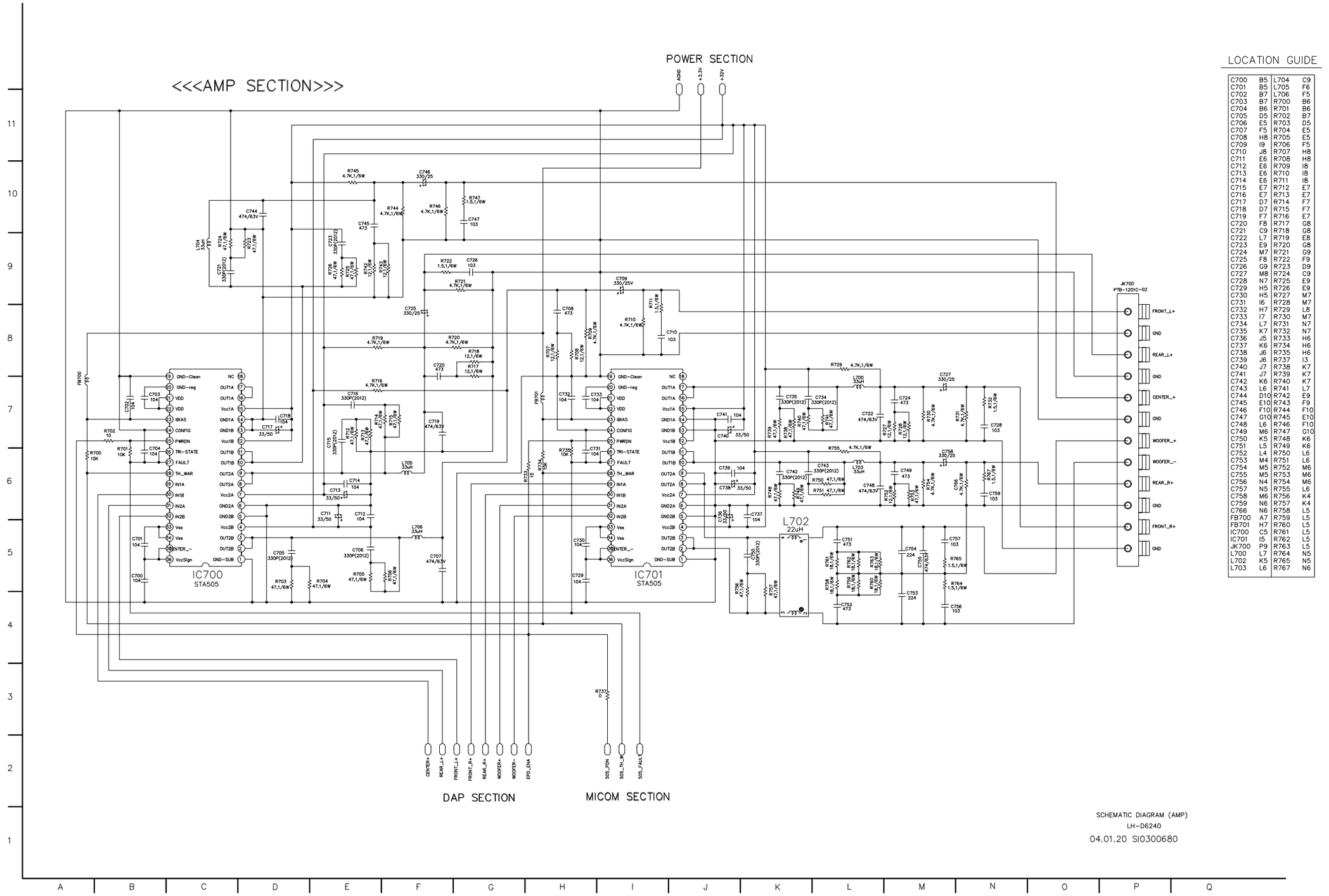
• DAP SCHEMATIC DIAGRAM



LOCATION GUIDE

BD310	F10	Q301	J4
BD311	K4	Q302	J3
BD312	K3	Q303	M5
BD313	H7	Q304	M4
BD318	G9	Q305	L4
BD319	I9	Q306	L3
BD320	G10	R300	D10
BD321	G11	R301	E10
BD322	E9	R302	E10
C300	F10	R303	E10
C301	E9	R304	E10
C302	D9	R305	E10
C303	D9	R306	D10
C304	E9	R307	B7
C305	C8	R308	B7
C306	C7	R309	B7
C307	C7	R310	B7
C308	D5	R311	B6
C309	E5	R312	B6
C310	E5	R313	B6
C311	F5	R314	E2
C312	G4	R315	E3
C313	G4	R316	E4
C314	G4	R317	E4
C315	H4	R318	F4
C316	G2	R319	F4
C317	G2	R320	F4
C318	G2	R321	F4
C319	H2	R322	H4
C320	H5	R323	H4
C321	I4	R324	H4
C322	H3	R325	F2
C323	I2	R326	F2
C324	G6	R327	F3
C325	F5	R328	F2
C326	G7	R329	H3
C327	G7	R330	H2
C328	G8	R331	H2
C329	H7	R332	H5
C330	H7	R333	I4
C331	H8	R334	J4
C332	I7	R335	J4
C333	H8	R336	H3
C334	H9	R337	J3
C335	F9	R338	J3
C336	G11	R339	I2
C337	F9	R340	K4
C338	F9	R341	K3
C341	E10	R342	M4
C342	G5	R343	G5
C343	G4	R344	G5
C344	G3	R345	G6
C345	G2	R346	G6
C346	H4	R347	G6
C347	I4	R348	G6
C348	H2	R349	G6
C349	I3	R350	G6
C350	I7	R351	G7
C351	H8	R352	G7
C354	G9	R353	H8
C357	G10	R354	I8
C358	I7	R355	I8
C359	F5	R356	F9
C360	E5	R357	G11
C361	C7	R358	E9
C362	C8	R360	K4
C363	F9	R361	L3
D311	D10	R362	K4
IC300	E7	R363	K3
IC301	I4		

• AMP SCHEMATIC DIAGRAM

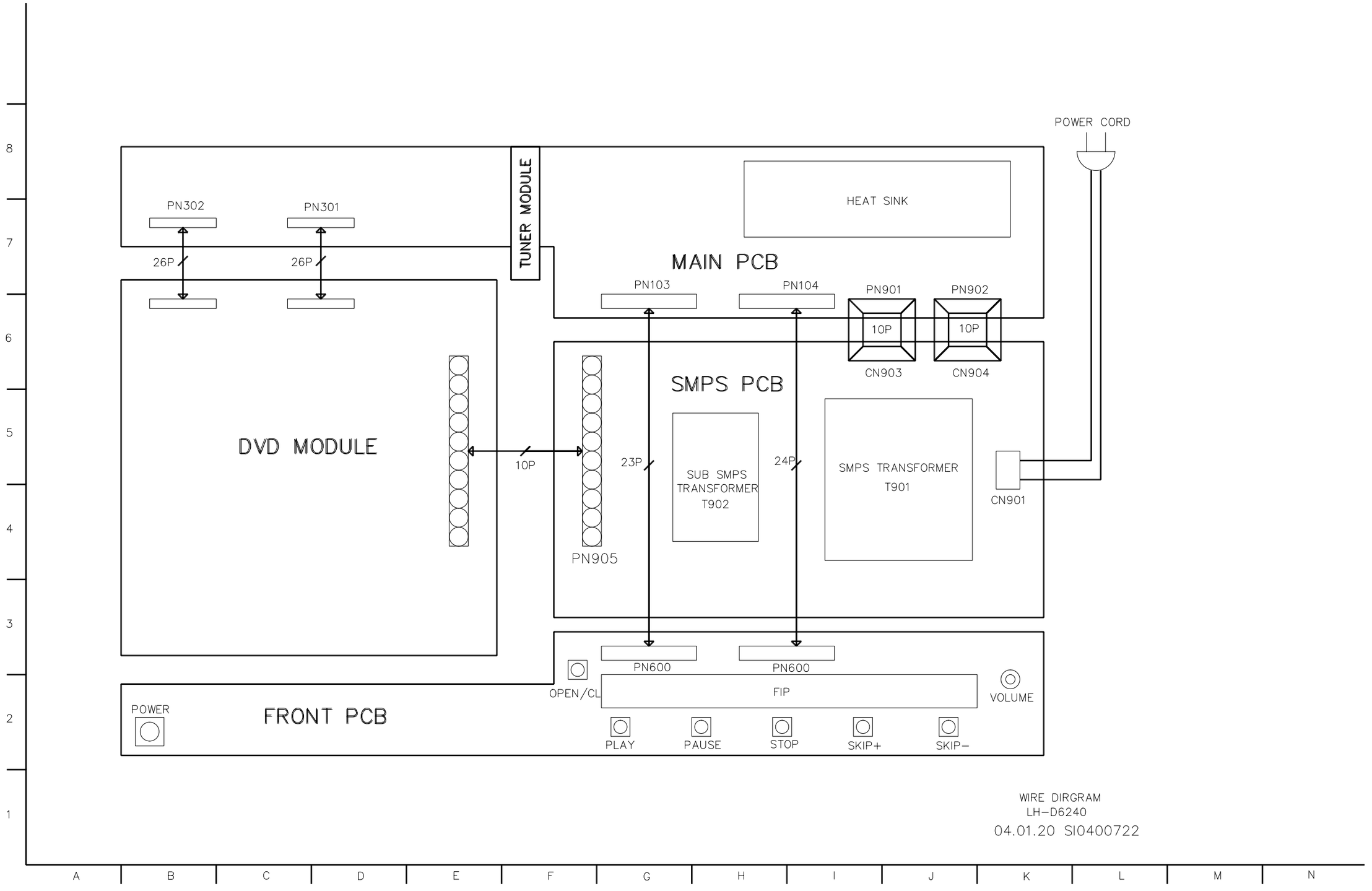


LOCATION GUIDE

C700	B5	L704	C9
C701	B5	L705	F6
C702	B7	L706	F5
C703	B7	R700	B6
C704	B6	R701	B6
C705	D5	R702	B7
C706	E5	R703	D5
C707	F5	R704	E5
C708	H8	R705	E5
C709	I9	R706	F5
C710	J8	R707	H8
C711	E6	R708	H8
C712	E6	R709	I8
C713	E6	R710	I8
C714	E6	R711	I8
C715	E7	R712	E7
C716	E7	R713	E7
C717	D7	R714	F7
C718	D7	R715	F7
C719	F7	R716	E7
C720	F8	R717	G8
C721	C9	R718	G8
C722	L7	R719	E8
C723	E9	R720	G8
C724	M7	R721	G9
C725	F8	R722	F9
C726	G9	R723	D9
C727	M8	R724	C9
C728	N7	R725	E9
C729	H5	R726	E9
C730	H5	R727	M7
C731	I6	R728	M7
C732	H7	R729	L8
C733	I7	R730	M7
C734	L7	R731	N7
C735	K7	R732	N7
C736	J5	R733	H6
C737	K6	R734	H6
C738	J6	R735	H6
C739	J6	R737	I3
C740	J7	R738	K7
C741	J7	R739	K7
C742	K6	R740	K7
C743	L6	R741	L7
C744	D10	R742	E9
C745	E10	R743	F9
C746	F10	R744	F10
C747	G10	R745	E10
C748	L6	R746	F10
C749	M6	R747	G10
C750	K5	R748	K6
C751	L5	R749	K6
C752	L4	R750	L6
C753	M4	R751	L6
C754	M5	R752	M6
C755	M5	R753	M6
C756	N4	R754	M6
C757	N5	R755	L6
C758	M6	R756	K4
C759	N6	R757	K4
C766	N6	R758	L5
FB700	A7	R759	L5
FB701	H7	R760	L5
IC700	C5	R761	L5
IC701	I5	R762	L5
JK700	P9	R763	L5
L700	L7	R764	N5
L702	K5	R765	N5
L703	L6	R767	N6

SCHEMATIC DIAGRAM (AMP)
LH-D6240
04.01.20 SI0300680

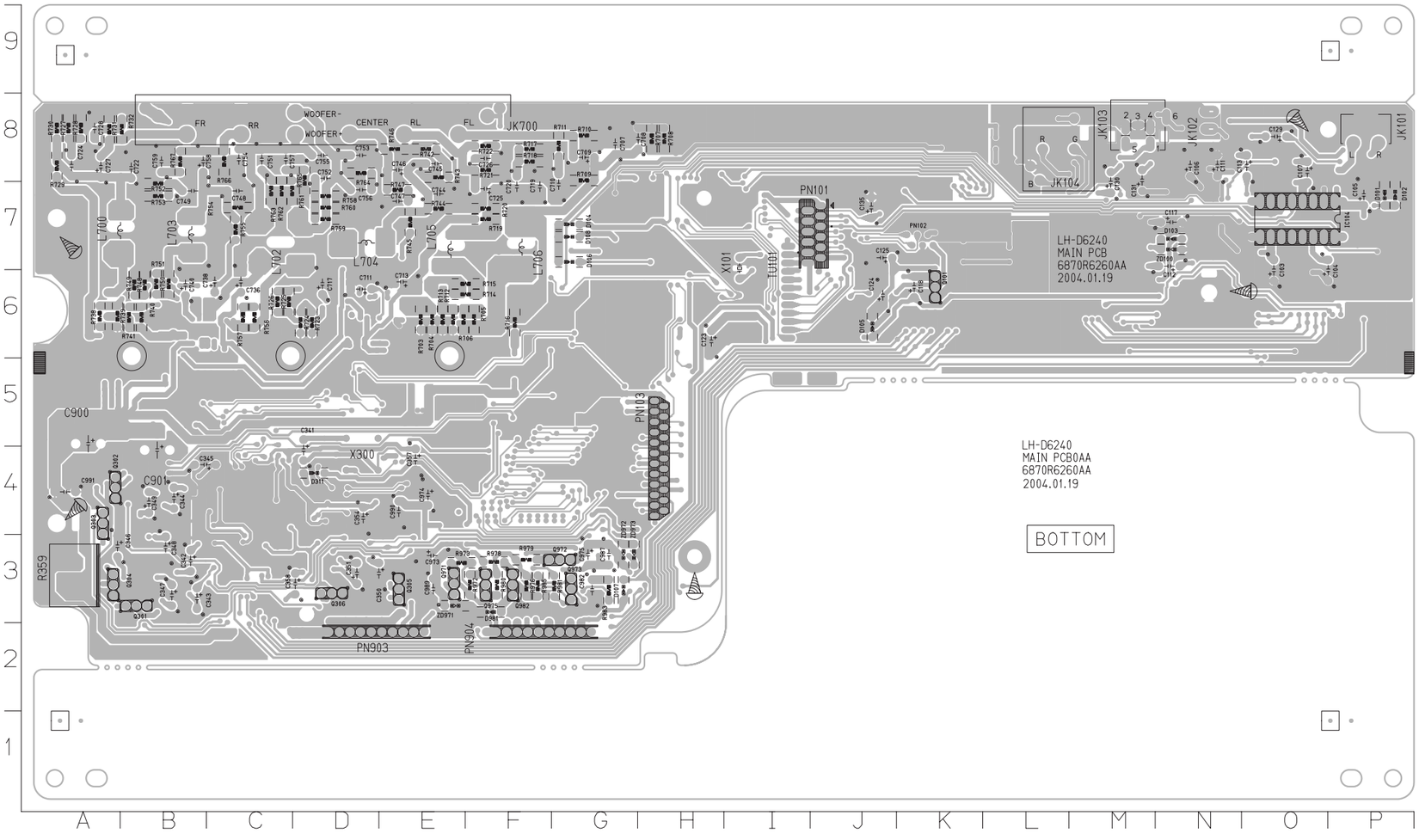
❑ WIRING DIAGRAM



WIRE DIRGRAM
LH-D6240
04.01.20 SI0400722

❑ PRINTED CIRCUIT BOARD DIAGRAMS

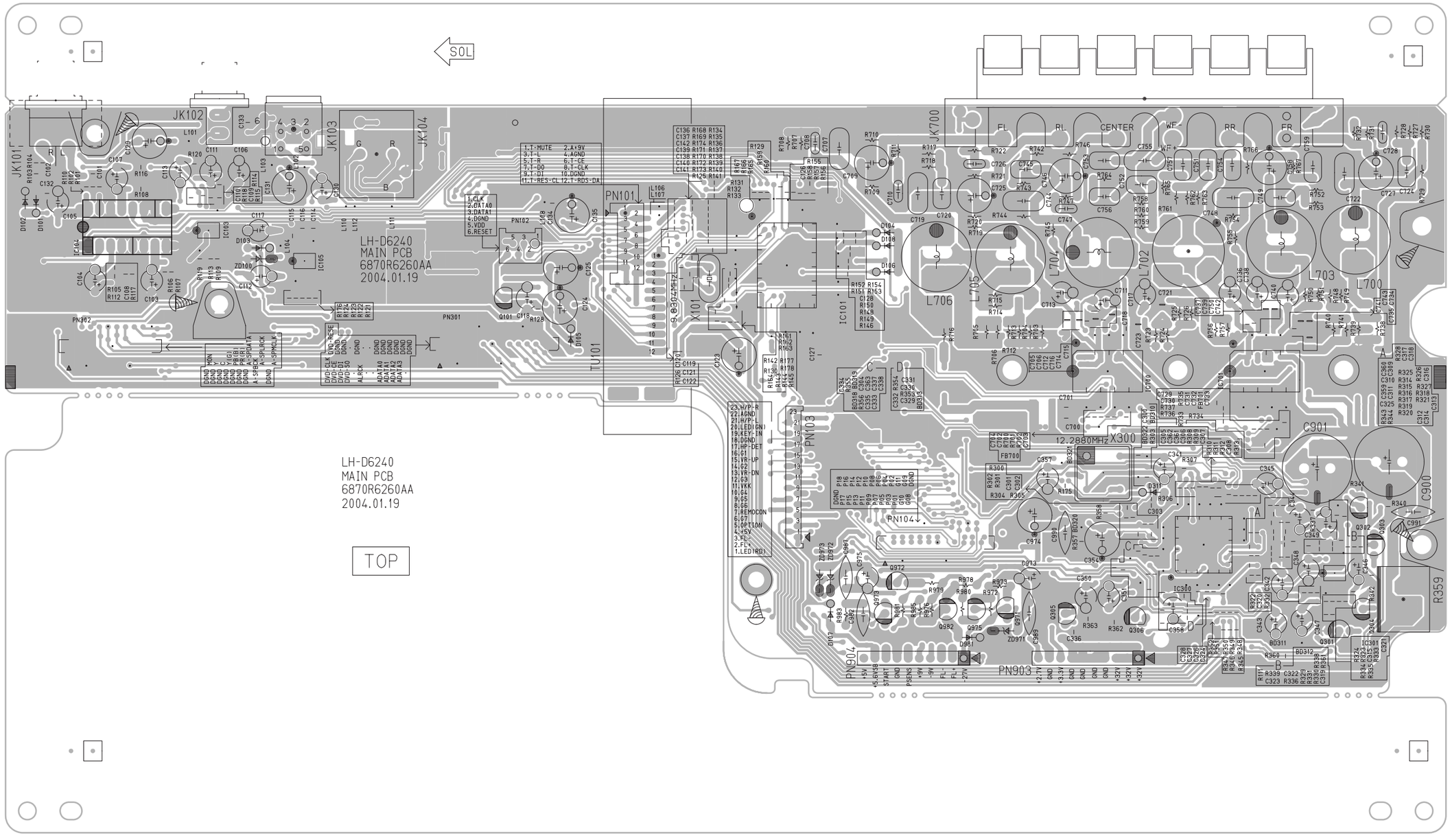
• MAIN P.C. BOARD DIAGRAM (SOLDER SIDE)



BD310	D5	C307	C4	C707	G8	C982	G3	Q304	A3	R153	G7
BD311	B3	C308	C4	C708	H8	C987	G3	Q305	E3	R154	G7
BD312	B4	C309	C4	C709	G8	C989	E3	Q306	D3	R155	H8
BD313	C3	C310	C4	C710	G7	C990	E4	Q971	E3	R156	H7
BD318	D3	C311	C4	C711	D6	C991	A4	Q972	G3	R157	H7
BD319	D3	C312	B3	C712	D6	D101	P7	Q973	G3	R158	H7
BD320	E4	C313	B4	C713	E6	D102	P7	Q975	F3	R159	H8
BD321	E5	C314	B3	C714	D6	D103	N7	Q982	F3	R160	H7
BD322	D4	C315	B3	C715	D6	D104	G7	R101	08	R161	H7
C101	P8	C316	B4	C716	D6	D105	J6	R102	P8	R162	H7
C102	P8	C317	B4	C717	D6	D106	G7	R103	P8	R163	H6
C103	06	C318	B4	C718	D6	D107	G3	R104	P8	R164	16
C104	P6	C319	A4	C719	F7	D108	G7	R105	07	R165	H7
C105	P7	C320	B3	C720	F7	D311	D4	R106	07	R166	H7
C106	N8	C321	B3	C721	D6	D981	F3	R107	07	R167	H7
C107	08	C322	B4	C722	B8	FB700	D5	R108	07	R168	I7
C108	07	C323	B4	C723	D6	FB701	B5	R109	N7	R169	I7
C109	N7	C324	C3	C724	A8	IC101	H7	R110	P8	R170	I7
C110	N7	C325	C3	C725	F7	IC103	N7	R111	B4	R171	I7
C111	N8	C326	C3	C726	F8	IC104	P7	R112	07	R172	I7
C112	N7	C327	C3	C727	A8	IC105	M7	R113	N7	R173	I7
C113	08	C328	C3	C728	A8	IC300	C4	R114	N8	R174	I7
C114	M7	C329	C3	C729	C5	IC301	B3	R115	N7	R175	E4
C115	M7	C330	C3	C730	C5	IC700	D6	R116	08	R176	M6
C116	M7	C331	C3	C731	C5	IC701	C6	R117	07	R177	H6
C117	N7	C332	D3	C732	B5	JK101	P8	R118	N7	R178	H6
C118	K6	C333	D3	C733	B5	JK102	N8	R119	N7	R300	D4
C119	I7	C334	D3	C734	B6	JK103	M8	R120	N8	R301	D4
C120	I7	C335	D3	C735	B6	JK104	L8	R121	M6	R302	D4
C121	I7	C336	E3	C736	C6	JK700	D8	R122	M6	R303	D4
C122	I6	C337	D4	C737	C6	L101	N8	R123	M6	R304	D4
C123	H6	C338	D4	C738	C6	L102	M8	R124	M6	R305	D4
C124	J6	C341	D4	C739	C6	L103	N8	R125	I7	R306	D4
C125	J7	C342	B3	C740	B6	L104	M7	R126	I7	R307	C4
C126	H7	C343	B3	C741	B6	L106	I7	R128	K6	R308	C4
C127	G6	C344	B4	C742	B6	L107	I7	R129	H8	R309	C4
C128	G7	C345	B4	C743	B6	L108	K7	R130	I6	R310	C4
C129	08	C346	A3	C744	E7	L110	M7	R131	I8	R311	C4
C130	M7	C347	B3	C745	E8	L111	L7	R132	I7	R312	C4
C131	M8	C348	B3	C746	E8	L112	M7	R133	I7	R313	C4
C132	P7	C349	B4	C747	E7	L700	B7	R134	I7	R314	B4
C133	N8	C350	E3	C748	C7	L702	C7	R135	I7	R315	B4
C134	J7	C351	D3	C749	B7	L703	B7	R136	I7	R316	B4
C135	J7	C354	D4	C750	C6	L704	D7	R137	I7	R317	B4
C136	I7	C357	E4	C751	C8	L705	E7	R138	I7	R318	B4
C137	I7	C358	D3	C752	D8	L706	F7	R139	I7	R319	B4
C138	I7	C359	C4	C753	D8	PN101	J7	R140	I7	R320	B3
C139	I7	C360	C4	C754	C8	PN102	K7	R141	I7	R321	B4
C140	I7	C361	C4	C755	D8	PN103	H4	R142	I6	R322	B3
C141	I7	C362	C4	C756	D7	PN104	F4	R143	I6	R323	B3
C142	I7	C363	D4	C757	C8	PN301	K6	R144	H6	R324	B3
C300	D5	C700	E5	C758	B8	PN302	06	R145	H6	R325	B4
C301	D4	C701	E5	C759	B8	PN903	D2	R146	G7	R326	B4
C302	D4	C702	D5	C900	A5	PN904	F2	R148	G7	R327	B4
C303	D4	C703	D5	C901	B4	Q101	K6	R149	G7	R328	B4
C304	D4	C704	D5	C973	E3	Q301	B3	R150	G7	R329	B4
C305	C4	C705	E6	C974	E4	Q302	A4	R151	G7	R330	B4
C306	C4	C706	E6	C975	G3	Q303	A4	R152	G7	R331	B4

R332	B3	R726	C6
R333	B3	R727	A8
R334	B3	R728	A8
R335	B3	R729	A8
R336	B4	R730	A8
R337	B4	R731	A8
R338	B4	R732	B8
R339	B4	R733	C5
R340	A4	R734	C5
R341	A4	R735	C5
R342	A3	R736	C5
R343	C3	R737	C5
R344	C3	R738	A6
R345	C3	R739	A6
R346	C3	R740	B6
R347	C3	R741	B6
R348	C3	R742	E8
R349	C3	R743	E8
R350	C3	R744	E7
R351	C3	R745	E7
R352	C3	R746	E8
R353	C3	R747	E7
R354	D3	R748	B6
R355	D3	R749	B6
R356	D3	R750	B6
R357	E4	R751	B6
R358	D4	R752	B7
R359	A3	R753	B7
R360	B2	R754	C7
R361	B4	R755	C7
R362	D3	R756	C6
R363	D3	R757	C6
R700	D5	R758	D7
R701	D5	R759	D7
R702	D5	R760	D7
R703	E6	R761	C7
R704	E6	R762	C7
R705	F6	R763	C7
R706	E6	R764	D8
R707	H8	R765	D8
R708	H8	R766	C8
R709	G8	R767	B8
R710	G8	R972	F3
R711	G8	R973	E3
R712	E6	R976	F3
R713	E6	R978	F3
R714	F6	R979	F3
R715	F6	R980	F3
R716	F6	R981	G3
R717	F8	R983	G3
R718	F8	R985	F3
R719	F7	TU101	I7
R720	F7	X101	I7
R721	F8	X300	D4
R722	F8	ZD100	N7
R723	D6	ZD971	E3
R724	D6	ZD972	G3
R725	C6	ZD973	G3

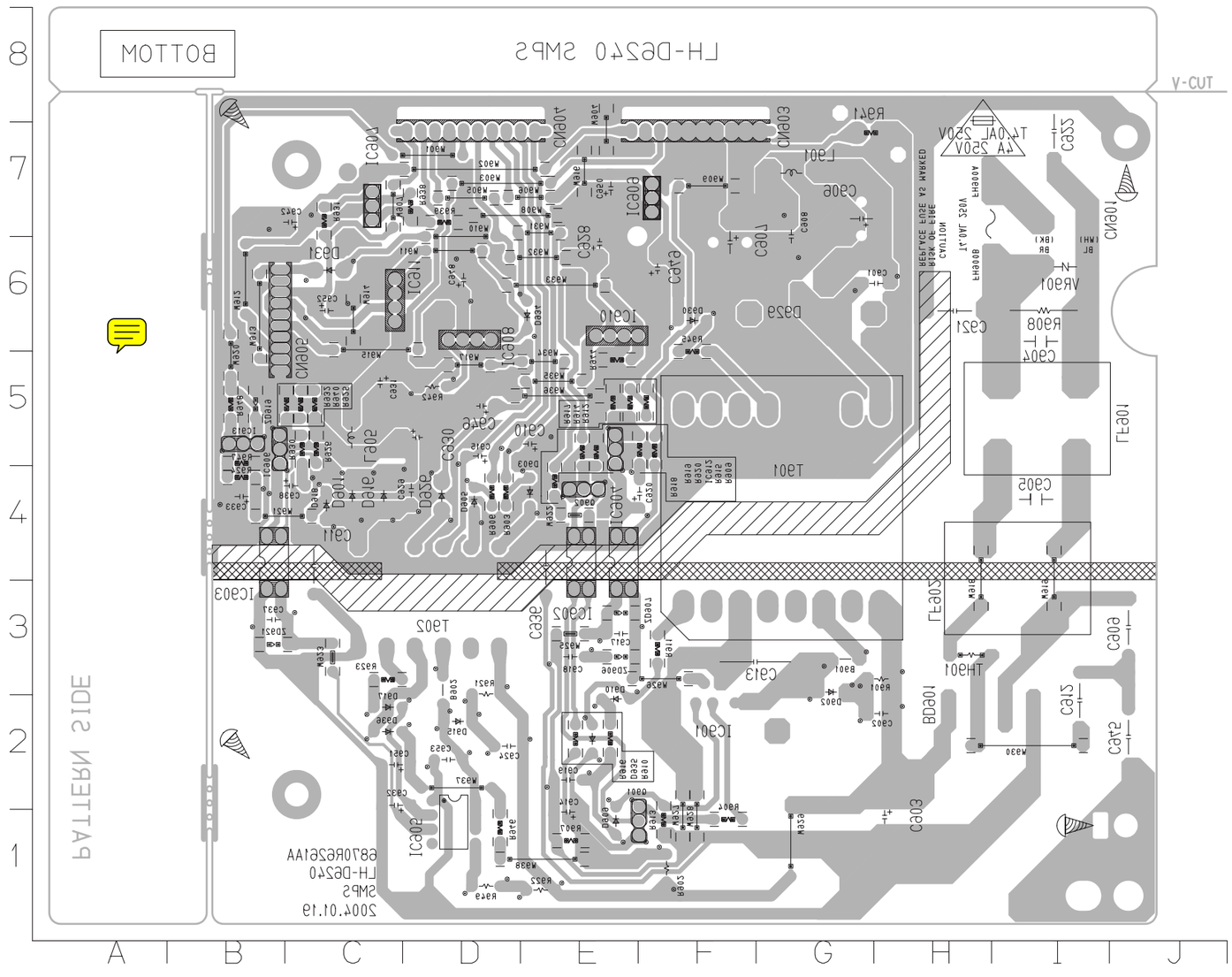
• MAIN P.C. BOARD DIAGRAM (COMPONENT SIDE)



LH-D6240
MAIN PCB
6870R6260AA
2004.01.19

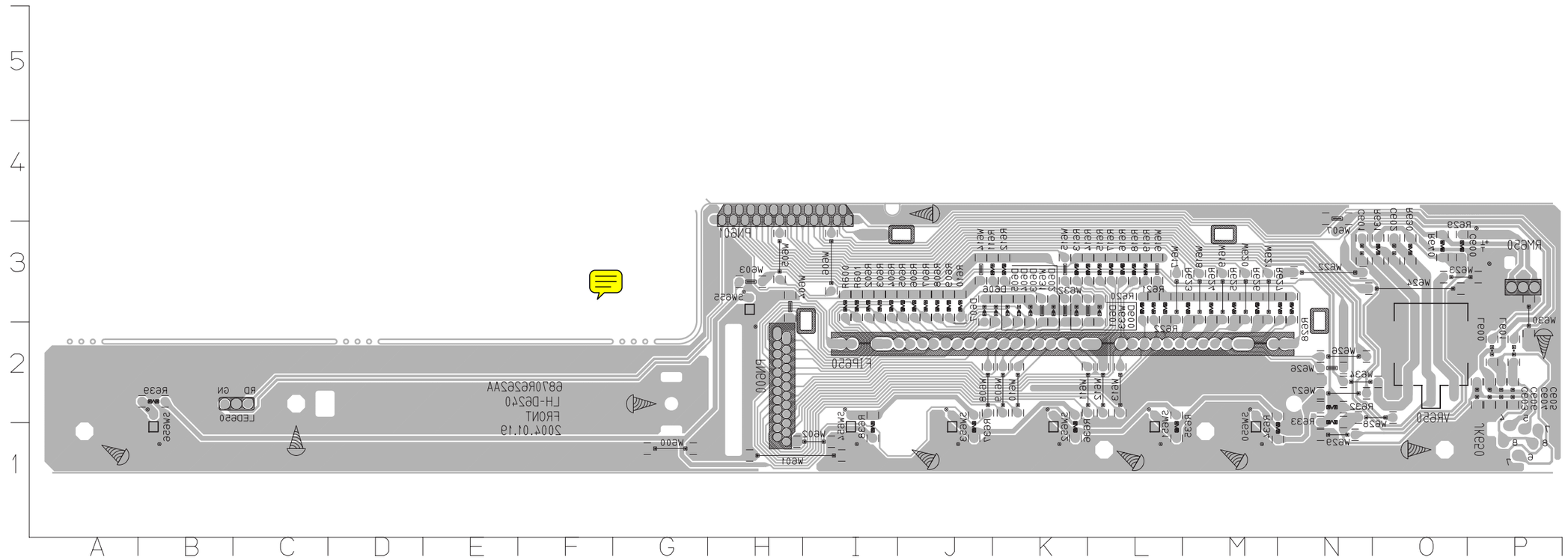
TOP

• POWER(SMPS) P.C. BOARD (SOLDER SIDE)



B901	G3	CN903	E7	R904	F1
B902	D3	CN904	D7	R906	D4
BD901	H3	CN905	B6	R907	E1
C901	H6	D901	C4	R908	I6
C902	H2	D902	G3	R909	F5
C903	H1	D903	E4	R910	E2
C904	I6	D905	D4	R911	F3
C905	I4	D909	E1	R912	F5
C906	G7	D910	E2	R913	F1
C907	F6	D915	D2	R914	E5
C908	G6	D916	C4	R915	F5
C909	J3	D917	C2	R916	E2
C910	E5	D918	C4	R917	E5
C911	C4	D926	D4	R918	E4
C912	I2	D929	G6	R919	E5
C913	F3	D930	F6	R920	E5
C914	E1	D931	C6	R921	D3
C915	D5	D934	E6	R922	E1
C917	E3	D935	E2	R923	C3
C918	E3	D936	C2	R924	B4
C919	E2	FH900A	H7	R925	C5
C920	F4	FH900B	H6	R926	C5
C921	H6	IC901	F2	R930	C5
C922	I7	IC902	E4	R931	C7
C924	D2	IC903	B4	R932	C5
C928	E6	IC904	E4	R938	D7
C929	D4	IC905	D2	R939	D7
C930	D5	IC906	B5	R940	C5
C931	C5	IC907	C7	R941	G7
C932	C2	IC908	D6	R942	D5
C933	B4	IC909	F7	R944	E5
C936	E4	IC910	E6	R945	F5
C937	B3	IC911	C6	R946	D1
C938	C4	IC912	E5	R947	B5
C942	C7	IC913	B5	R948	B5
C945	J2	L901	G7	R949	D1
C946	D5	L905	C5	T901	F3
C948	D6	LF901	I5	T902	C3
C949	F6	LF902	I4	TH901	H3
C950	E7	Q901	F1	VR901	I6
C951	C2	Q902	E4	ZD906	E3
C952	C6	R901	H3	ZD907	E3
C953	D2	R902	F1	ZD919	B5
CN901	I7	R903	D4	ZD921	B3

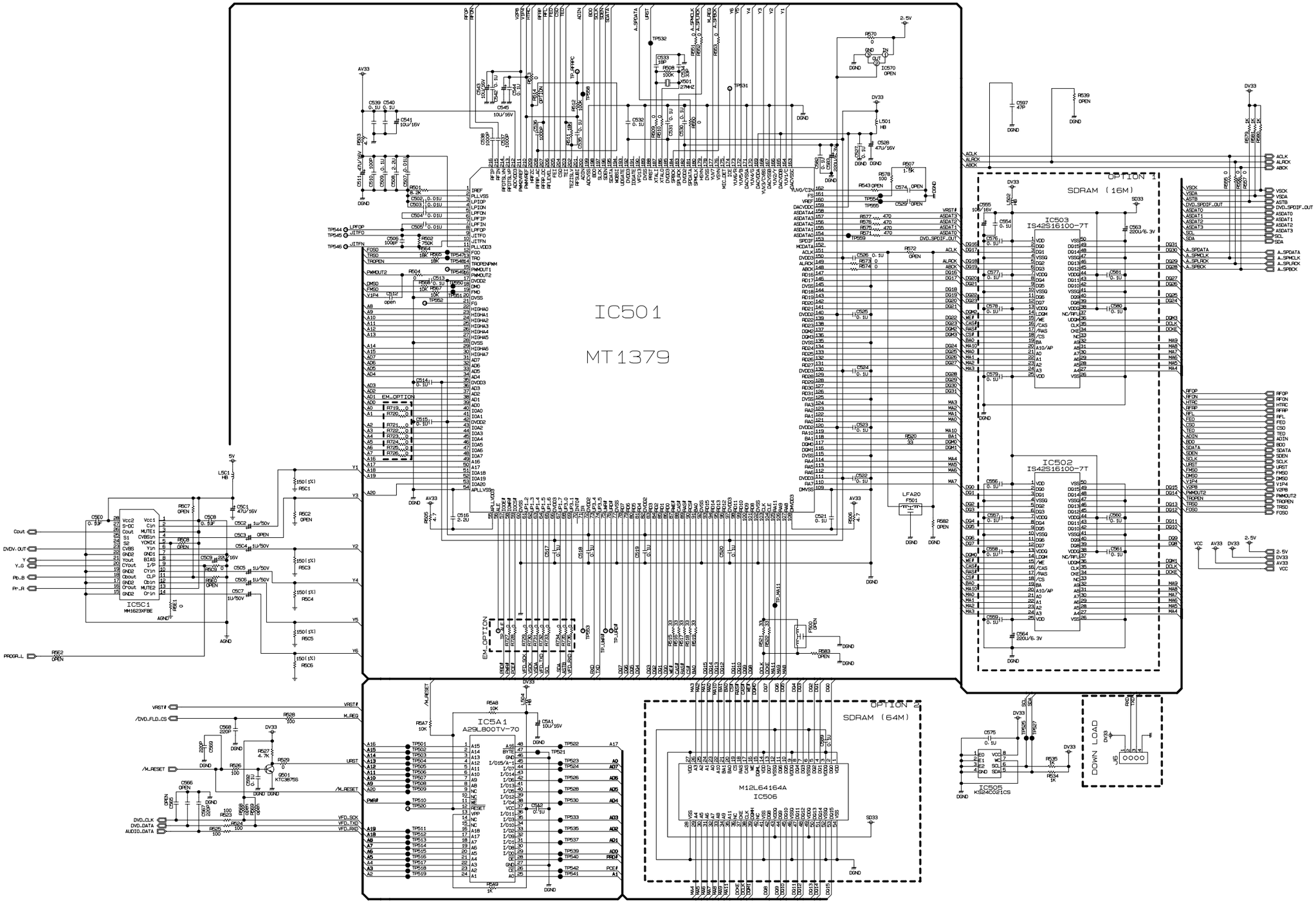
• FRONT P.C. BOARD DIAGRAM (SOLDER SIDE)



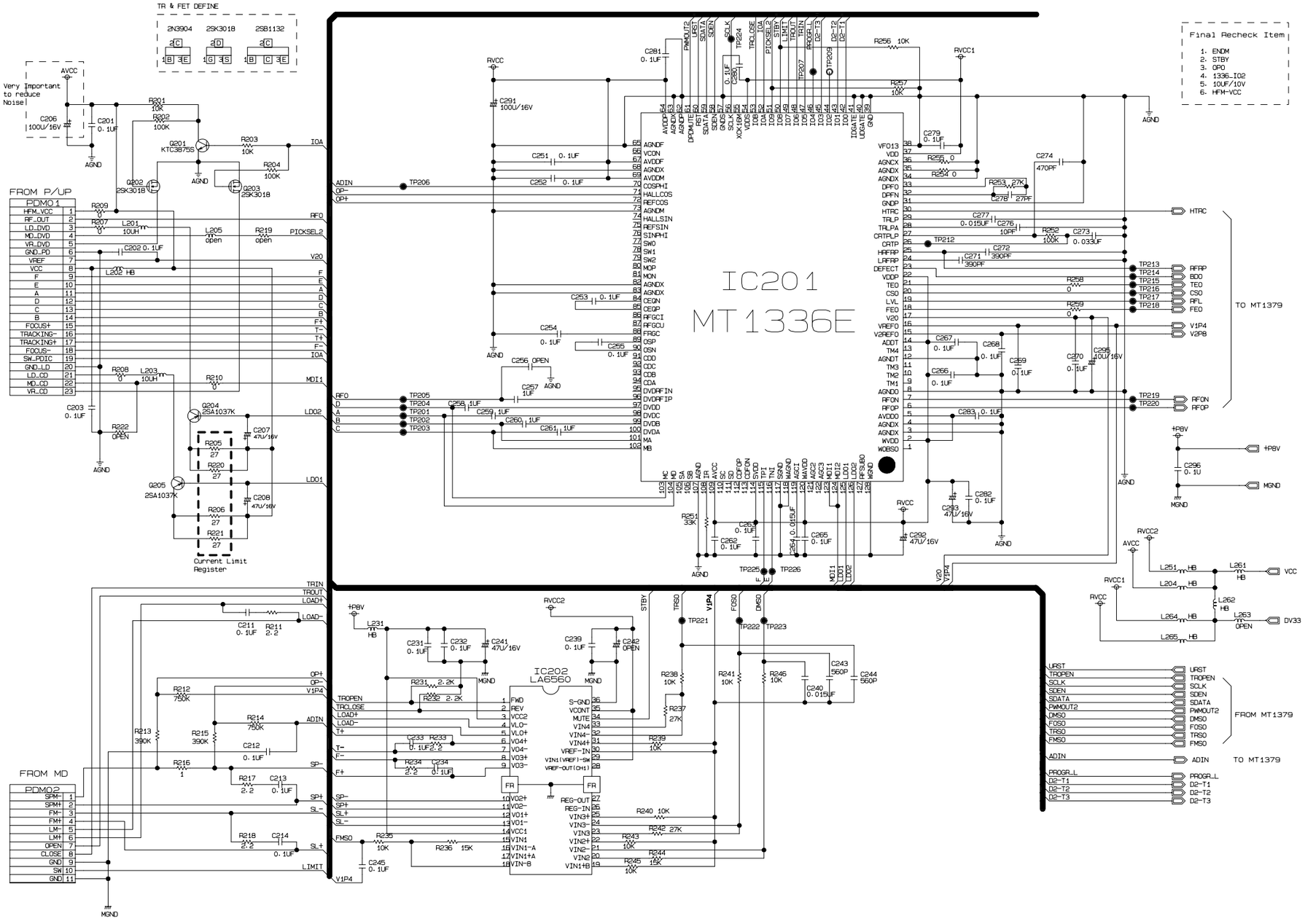
C600	P3	R614	L3
C601	N3	R615	L3
C602	O3	R616	L3
C603	P2	R617	L3
C604	P2	R618	L3
C605	P2	R619	L3
C606	P2	R620	L3
D600	L3	R621	L3
D601	K3	R622	L3
D602	K3	R623	M3
D603	K3	R624	M3
D604	K3	R625	M3
D605	K3	R626	M3
D606	K3	R627	N3
D607	J3	R628	N3
FIP650	I2	R629	O3
JK650	P1	R630	O3
L600	P2	R631	O3
L601	P2	R632	N2
LED650	C2	R633	N2
PN600	H1	R634	N1
PN601	I4	R635	L1
R600	I3	R636	K1
R601	I3	R637	J1
R602	I3	R638	I1
R603	I3	R639	B2
R604	I3	R640	O3
R605	J3	RM650	P3
R606	J3	SW650	M1
R607	J3	SW651	L1
R608	J3	SW652	K1
R609	J3	SW653	J1
R610	J3	SW654	I1
R611	K3	SW655	H3
R612	K3	SW656	B1
R613	K3	VR650	O2

❑ DVD PART SCHEMATIC DIAGRAMS

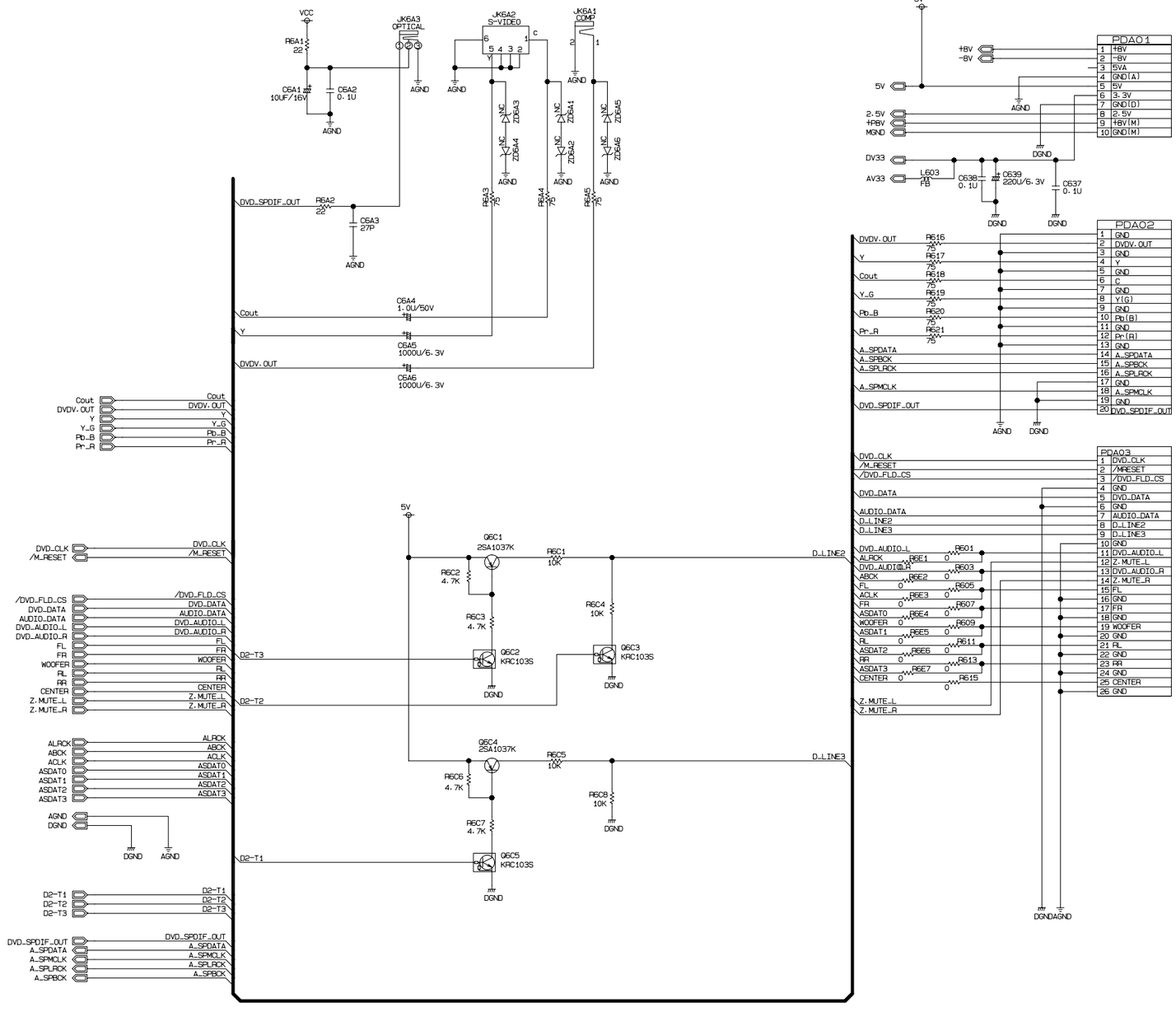
• MPEG SCHEMATIC DIAGRAM



• SERVO SCHEMATIC DIAGRAM



• AUDIO SCHEMATIC DIAGRAM

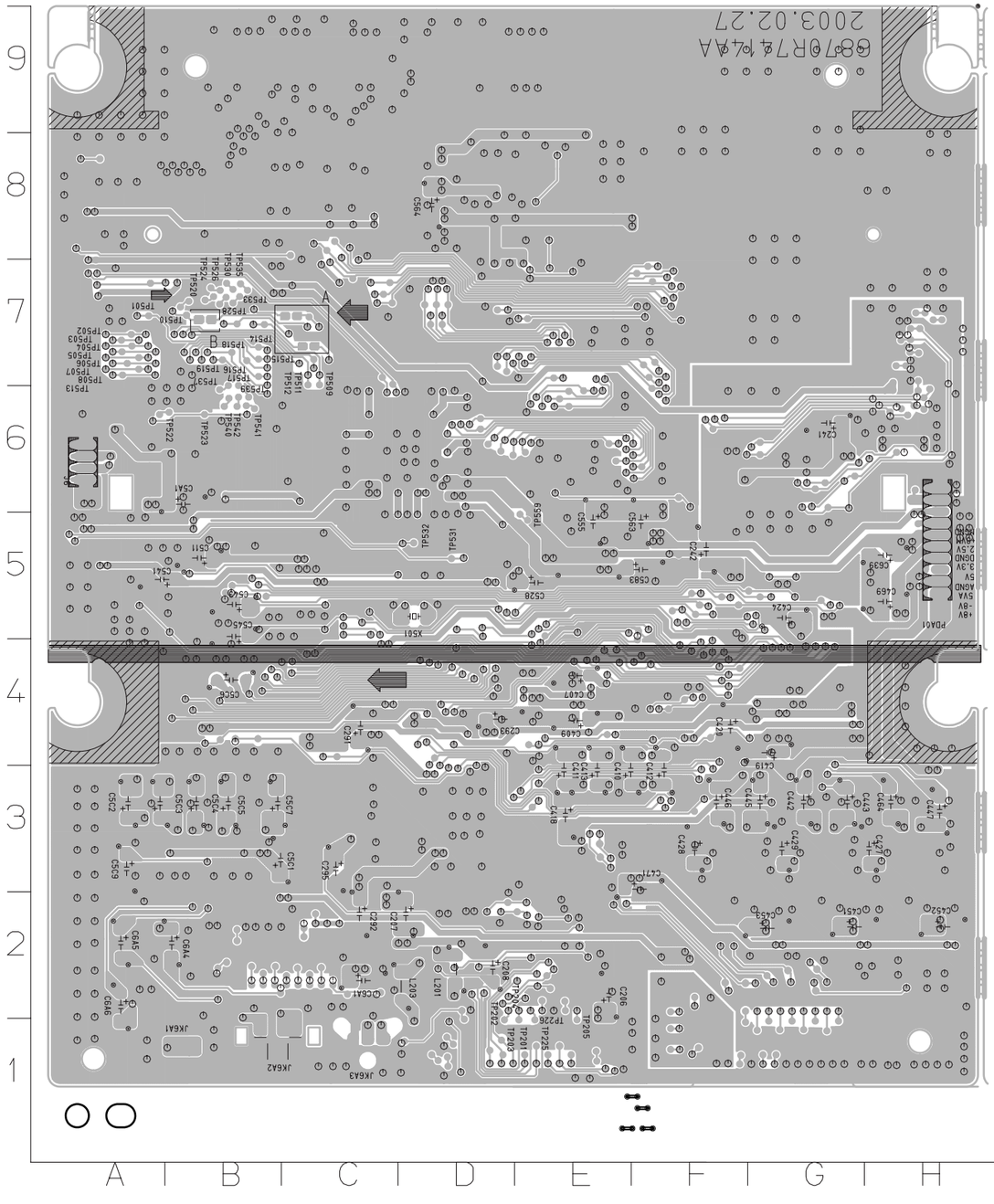


❑ VOLTAGE SHEET (IC& TR)

	IC201(MT1336E)		IC202(MOTOR)		IC401(CS4391)		IC402(AMP)		IC5C1(MM1623XFBE)		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						

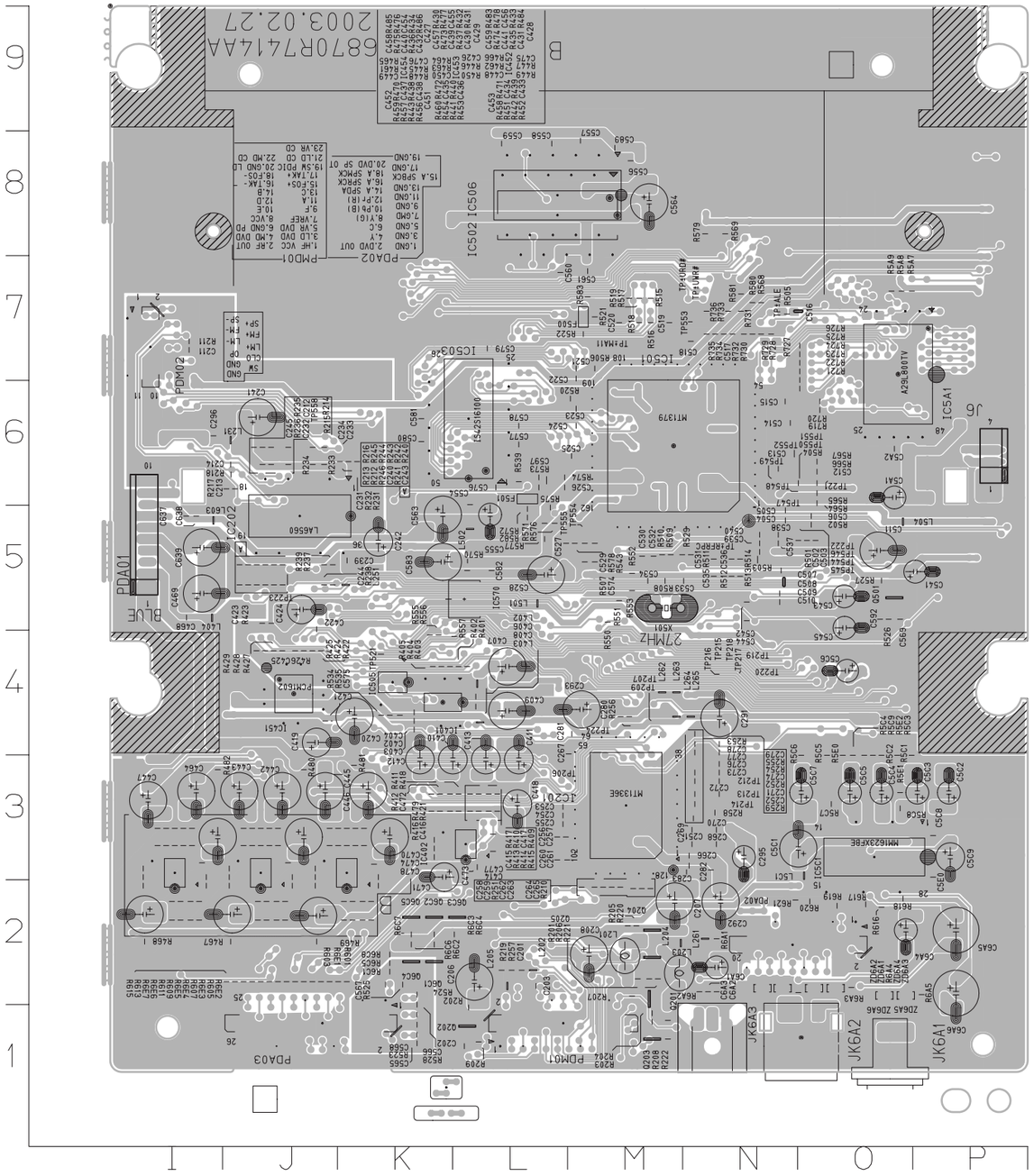
❑ PRINTED CIRCUIT DIAGRAM

• 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)

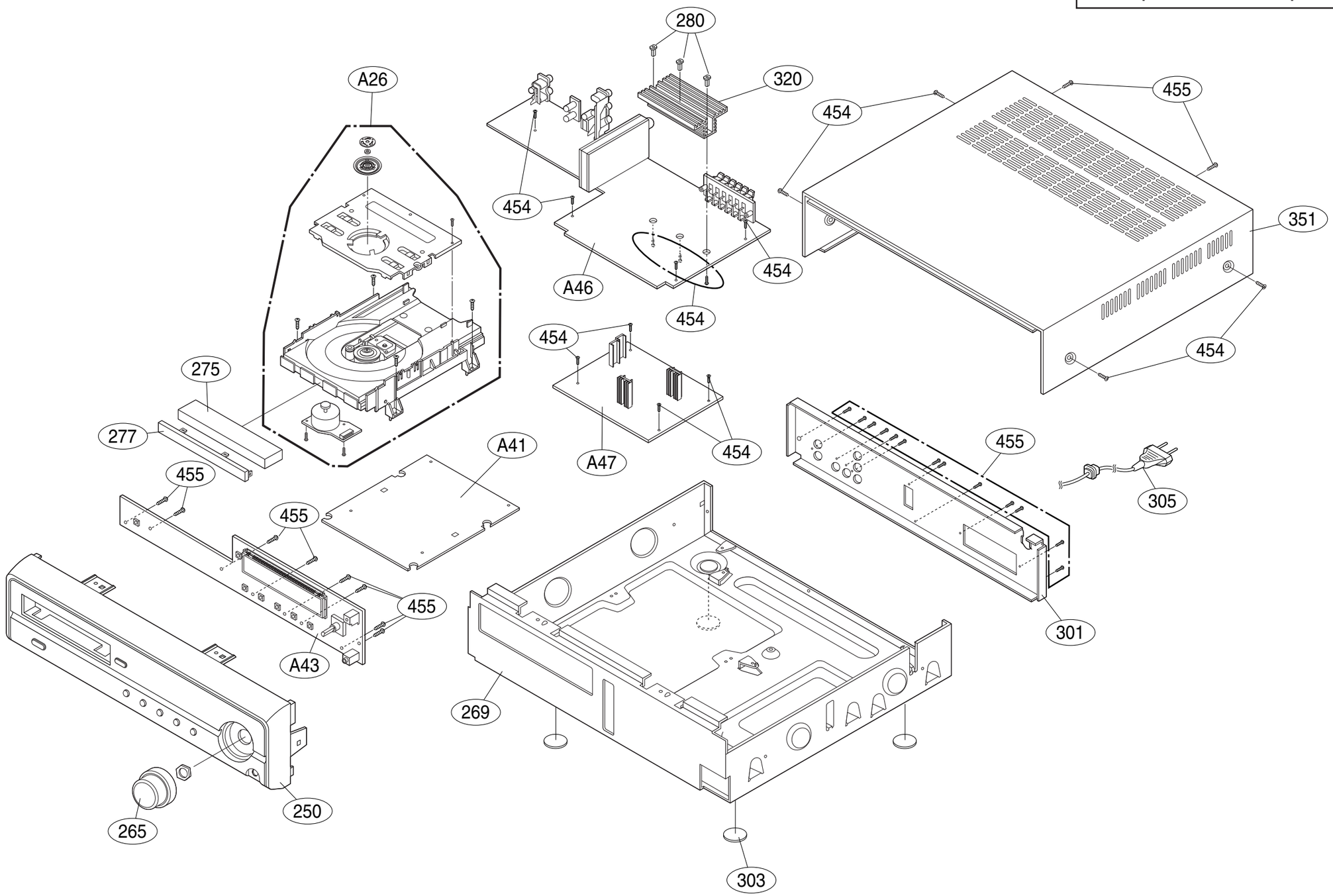


C201	L2	C409	L4	C504	N5	C581	K6	L501	L5	R256	M4	R468	I2	R569	N8	R719	06
C202	L1	C410	L3	C505	N5	C582	L5	L502	L5	R257	L2	R469	J2	R570	L5	R720	06
C203	L2	C411	L3	C506	05	C583	K5	L504	05	R258	N3	R470	I2	R571	L5	R721	06
C206	L2	C412	K3	C507	N5	C589	M8	L5C1	03	R259	N3	R471	K2	R572	L5	R722	06
C207	M2	C413	L3	C508	N5	C592	05	L603	I5	R401	L4	R472	J2	R573	L6	R723	07
C208	M2	C414	L3	C509	N5	C597	L6	PDA01	I5	R402	L4	R473	J3	R574	L6	R724	07
C211	I7	C415	L3	C510	N5	C5A1	06	PDA02	N2	R403	K4	R474	K3	R575	L5	R725	07
C212	J6	C416	L3	C511	05	C5A2	06	PDA03	J1	R404	K4	R475	I3	R576	L5	R726	07
C213	J6	C417	L3	C512	06	C5C1	03	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	03	Q202	L1	R411	K3	R479	K3	R580	N7	R730	N7
C233	J6	C421	J4	C516	07	C5C5	03	Q203	M1	R412	K3	R480	J3	R581	N7	R731	N7
C234	J6	C422	J5	C517	N7	C5C6	04	Q204	M2	R413	L3	R481	K3	R582	L5	R732	N7
C239	K5	C423	J5	C518	N7	C5C7	03	Q205	M2	R414	L3	R482	I3	R583	M7	R733	N7
C240	J5	C424	J5	C519	M7	C5C8	P3	Q501	05	R415	L3	R483	J3	R5A7	07	R734	N7
C241	J6	C425	J4	C520	M7	C5C9	P3	Q6C1	K2	R416	K3	R484	K3	R5A8	07	R735	N7
C242	K5	C426	J3	C521	M7	C5E0	P3	Q6C2	K2	R417	L3	R485	I3	R5A9	07	R736	N7
C243	J5	C427	I3	C522	M7	C637	I5	Q6C3	L2	R418	L3	R486	I3	R5C1	03	TP206	M3
C244	J5	C428	K3	C523	M6	C638	I5	Q6C4	K2	R421	K3	R501	05	R5C2	03	TP207	M4
C245	J6	C429	J3	C524	M6	C639	I5	Q6C5	K2	R422	J4	R502	05	R5C3	03	TP209	M4
C251	N3	C430	J3	C525	M6	C6A1	N2	R201	M2	R423	J5	R503	N5	R5C4	03	TP212	N3
C252	N3	C431	K3	C526	L6	C6A2	N2	R202	L1	R424	J4	R504	06	R5C5	03	TP213	N3
C253	L3	C432	I3	C527	L5	C6A3	N2	R203	M1	R425	J4	R505	N7	R5C6	03	TP214	N3
C254	L3	C433	K2	C528	L5	C6A4	02	R204	M1	R426	J4	R506	M7	R5C7	03	TP215	N4
C255	L3	C434	K2	C529	M5	C6A5	P2	R205	M2	R427	J4	R507	M5	R5C8	03	TP216	N4
C256	L3	C435	J2	C530	M5	C6A6	P2	R206	M2	R428	J4	R508	M5	R5C9	03	TP217	N4
C257	L3	C436	J2	C531	N5	F500	M7	R207	M2	R429	J4	R509	M5	R5E0	03	TP218	N4
C258	M2	C437	I2	C532	M5	F501	L6	R208	M1	R430	J3	R510	M5	R5E1	03	TP219	N4
C259	M2	C438	I2	C533	N5	IC201	M3	R209	L1	R431	J3	R511	N5	R5E2	03	TP220	N4
C260	L3	C439	J3	C534	M5	IC202	J5	R210	M2	R432	J3	R512	N5	R601	K2	TP221	06
C261	L3	C440	I3	C535	N5	IC401	K4	R211	I7	R433	K3	R513	N5	R603	J2	TP222	05
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	05
C266	N3	C446	K3	C540	N5	IC454	I3	R216	J5	R438	I2	R518	M7	R613	J2	TP545	05
C267	M4	C447	I3	C541	P5	IC501	M6	R217	J6	R439	K2	R519	M7	R615	J2	TP546	05
C268	N3	C448	J2	C542	N5	IC502	L8	R218	J6	R440	J2	R520	M6	R616	02	TP547	N6
C269	N3	C449	I2	C543	05	IC503	L6	R219	L2	R441	J2	R521	M7	R617	02	TP548	06
C270	N3	C450	J2	C544	N5	IC505	K4	R220	M2	R442	K2	R522	M7	R618	02	TP549	N6
C271	N3	C451	J2	C545	05	IC506	L8	R221	M2	R443	I2	R523	K1	R619	02	TP550	06
C272	N3	C452	I2	C554	L6	IC570	L5	R222	M1	R445	I3	R524	K2	R620	02	TP551	06
C273	N3	C453	J2	C555	L5	IC5A1	07	R231	K6	R446	J3	R525	K2	R621	N2	TP552	N6
C274	N3	C454	I3	C556	M8	IC5C1	03	R232	K6	R447	K3	R526	05	R6A1	N2	TP553	N7
C276	N3	C455	J3	C557	M8	J6	P6	R233	J6	R448	I2	R527	05	R6A2	N2	TP554	M5
C277	N3	C456	K3	C558	L8	JK6A1	01	R234	J6	R449	K2	R528	K1	R6A3	02	TP555	M5
C278	N4	C457	J3	C559	L8	JK6A2	01	R235	J6	R450	J2	R529	M5	R6A4	02	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	05	L261	N2	R244	J5	R460	J2	R555	K4	R6C8	K2	ZD6A3	02
C296	I6	C474	K3	C574	M5	L262	M4	R245	J5	R461	I3	R556	K4	R6E1	K2	ZD6A4	02
C402	K4	C475	K3	C575	K4	L263	M4	R246	J5	R462	J3	R557	L4	R6E2	J2	ZD6A5	02
C403	K4	C476	I3	C576	L6	L264	M4	R251	M2	R463	J3	R564	06	R6E3	J2	ZD6A6	02
C404	K4	C477	L3	C577	L6	L265	N4	R252	N3	R464	J3	R565	06	R6E4	J2		
C406	L4	C478	K3	C578	L6	L402	L4	R253	N4	R465	I3	R566	06	R6E5	J2		
C407	L4	C502	05	C579	L7	L403	L4	R254	N4	R466	J3	R567	06	R6E6	J2		
C408	L4	C503	05	C580	K6	L404	I5	R255	N4	R467	J2	R568	N7	R6E7	J2		

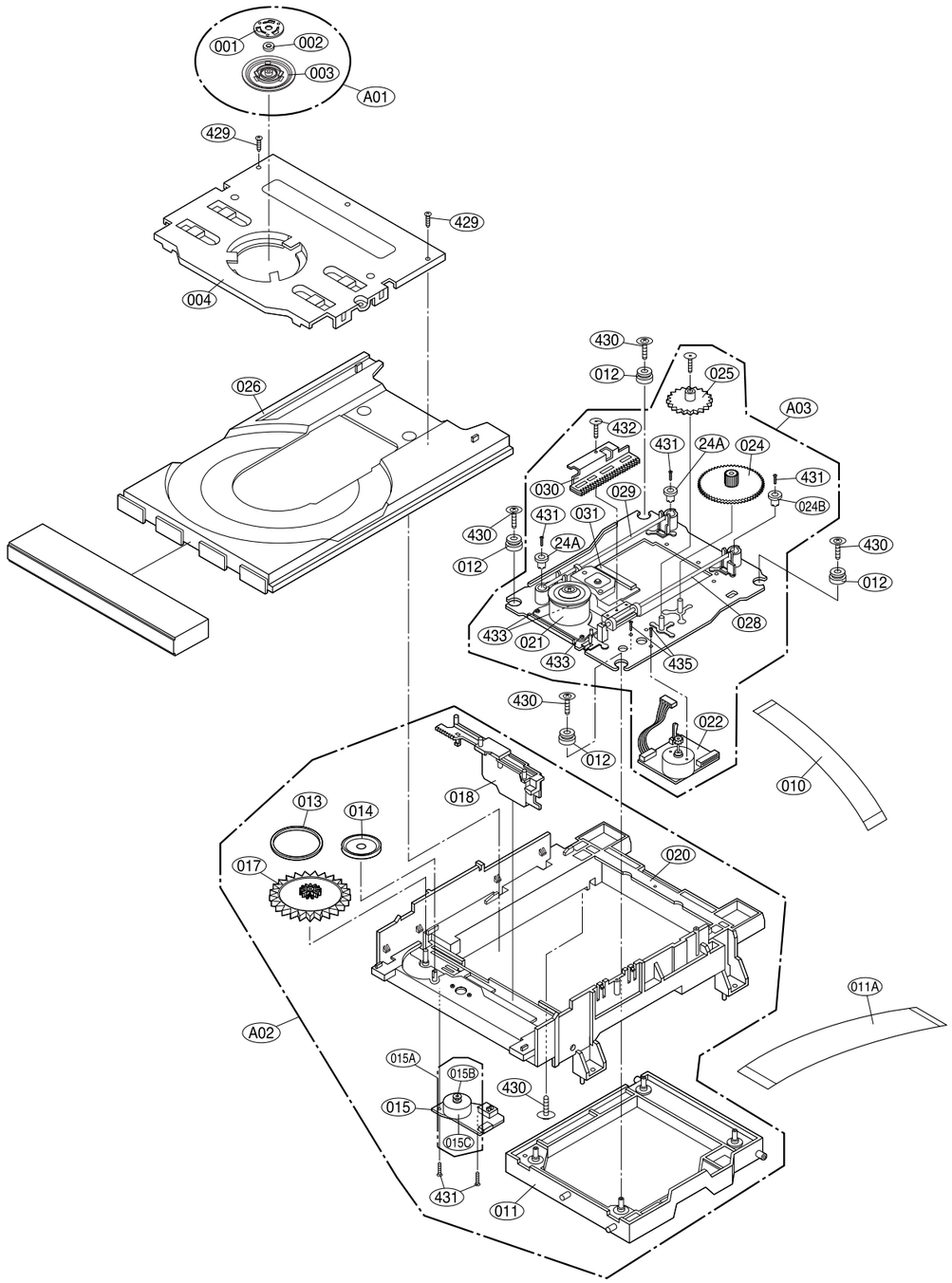
SECTION 4. EXPLODED VIEWS

❑ 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



LOCA.NO.	PART NO	DESCRIPTION	SPECIFICATION
A26	6721RJ0381A	DECK ASSEMBLY,AUDIO	DECK/MECHA DP-7A-HZ
A01	4861R-0016D	CLAMP ASSEMBLY	DECK/MECHA DISC DP-7C(7A) -HZ
A02	3041R-M018A	BASE ASSEMBLY	MAIN DP-7A-HZ
A03	3041R-M016D	BASE ASSEMBLY	SLED DP-7C(7A) -HZ
003	4860R-0021A	CLAMP	UPPER DP7
004	4930R-0402A	HOLDER	CLAMP DP-7A
010	6850R-GK12A	CABLE,FLAT	P=1.0 FFC UL2896(0.05X0.65) 11
011	3210R-M002A	FRAME	UP/DOWN MOLD DP7C
011A	6850R-JW14B	CABLE,FLAT	P=1.0 FFC UL2896(0.035X0.7) 23
012	5040R-0075D	RUBBER	DAMPER DP7 (YAMAUCHI 30)
013	4400R-0006B	BELT	DECK/MECHA DP2-5, DP7C,DP7A OT
014	4470R-0055A	GEAR	PULLEY
015	6871RJ4415A	PWB(PCB) ASSEMBLY,JACK(AUDIO)	PWB(PCB) TOTAL LOADING-HZ
015A	4681R-1023G	MOTOR ASSEMBLY	DECK/MECHA LOADING-HZ
015B	4560R-0008A	PULLEY	MOTOR
015C	4680R-E010A	MOTOR(MECH)	FEEDING BCZ3B51 SANKYO FOR DP7
017	4470R-0056A	GEAR	LOADING
018	4974R-0023A	GUIDE	UP/DOWN
020	3040R-D001A	BASE	MAIN MOLD DP-7AUDIO
021	4680R-C011A	MOTOR(MECH)	SPINDLE JCL9B68 SANKYO FOR COM
022	4681R-0034D	MOTOR ASSEMBLY	DECK/MECHA FEEDING DP-7C(7A) -
024	4470R-0131A	GEAR	PINION DP7C
024A	5006R-0044A	CAP	SKEW-T DP7C
024B	5006R-0043A	CAP	SKEW DP7C
025	4470R-0130A	GEAR	MIDDLE DP7C
026	3390R-0012A	TRAY	DISC(DP-5RM MULTI)
028	4370R-0082B	SHAFT	DECK/MECHA PU R DP-7C OTHER
029	4370R-0082A	SHAFT	PU DP-7C
030	4471R-0013D	GEAR ASSEMBLY	DECK/MECHA RACK DP-7C(7A) -HZ
031	6716DPH005A	PICK UP,DVD	PVR-502W MITSUMI PLAYER H/HIGH
429	1SZZR-0012A	SCREW	B-TITE
430	1SZZH-1003A	SCREW	+ D2.0 6MM SWRCH16A/NIY 4.5MM
431	1SZZH-1007B	SCREW,DRAWING	+ D2.0 6MM SWRCH16A/ZNBK 4MM 1
432	1SZZR-0023B	SCREW,DRAWING	+ 1 D1.7 L6.0 SWRCH16A/FZY RAC
433	1SZZR-0050A	SCREW,DRAWING	+ 1 D2.0 L4.5 SWRCH16A/ZNY S-T
435	1SZZR-0011A	SCREW	MACHINE

MEMO

MEMO

❑ 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 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.

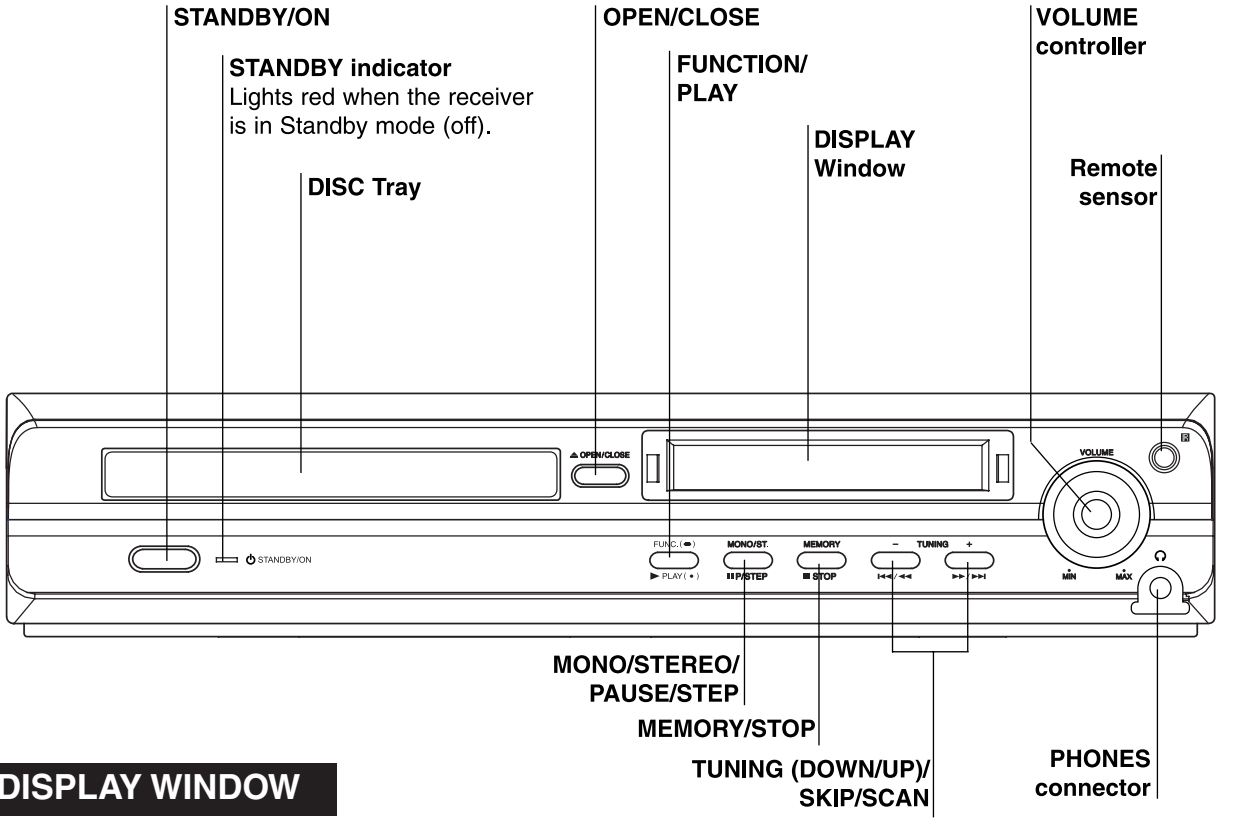
❑ SPECIFICATIONS

[General]	Power supply	Refer to main label	
	Power consumption	Refer to main label	
	Mass	3.8 kg	
	External dimensions (W x H x D)	360 x 75 x 314 mm	
	Operating conditions	Temperature: 5°C to 35°C, Operation status: Horizontal	
	Operating humidity	5% to 85%	
[CD/DVD]	Laser	Semiconductor laser, wavelength 650 nm	
	Signal system	PAL 625/50, NTSC 525/60	
	Frequency response (audio)	200 Hz to 18 kHz	
	Signal-to-noise ratio (audio)	More than 70 dB (1 kHz, NOP, 20 kHz LPF/A-Filter)	
	Dynamic range (audio)	More than 65 dB	
	Harmonic distortion (audio)	1.0 % (1 kHz, at 12W position) (20 kHz LPF/A-Filter)	
[Video]	Video output	1.0 V (p-p), 75Ω, negative sync., RCA jack	
	S-video output	(Y) 1.0 V (p-p), 75Ω, negative sync., Mini DIN 4-pin x 1 (C) 0.3 V (p-p), 75Ω	
[Tuer] [FM]	Tuning Range	87.5 - 108.0 MHz or 65.0 - 74.0 MHz, 87.5 - 108.0 MHz	
	Intermediate Frequency	10.7 MHz	
	Signal-to Noise Ratio	55 dB (Mono)	
	Frequency Response	150 - 10,000 Hz	
[Tuer] AM [MW]	Tuning Range	522 - 1,611 kHz or 530 - 1,610 kHz	
	Intermediate Frequency	450 kHz	
[Amplifier]	Stereo mode	25W + 25W (6Ω at 1 kHz, THD 10 %)	
	Surround mode **(* Depending on the sound mode settings and the source, there may be no sound output.)**	Front: 25W + 25W (THD 10 %) Centre*: 25W Surround*: 25W + 25W (6Ω at 1 kHz, THD 10 %) Subwoofer*: 60W (8Ω at 30 Hz, THD 10 %)	
	Outputs	S-VIDEO MONITOR PHONES: (32Ω, 20mW)	
[Speakers]		**Satellite Speaker (LHS-D6245T)**	**Passive Subwoofer (LHS-D6245W)**
	Type	1 Way 1 Speaker	1 Way 1 Speaker
	Impedance	6Ω	8Ω
	Frequency Response	140 - 20,000 Hz	60 - 1,500 Hz
	Sound Pressure Level	81 dB/W (1m)	80 dB/W (1m)
	Rated Input Power	25W	60W
	Max. Input Power	50W	120W
	Net Dimensions (W x H x D)	90 x 138.5 x 100 mm	160 x 350 x 345 mm
	Net Weight	0.89 kg	4.5 kg
[Supplied Accessories]	• Speakers .....6 • Remote control .....1 • AM loop antenna .....1 • SCART-RCA Adapter 1	• Speaker cables .....5 • Batteries (AAA) .....2 • FM antenna .....1 • Video cable 1	

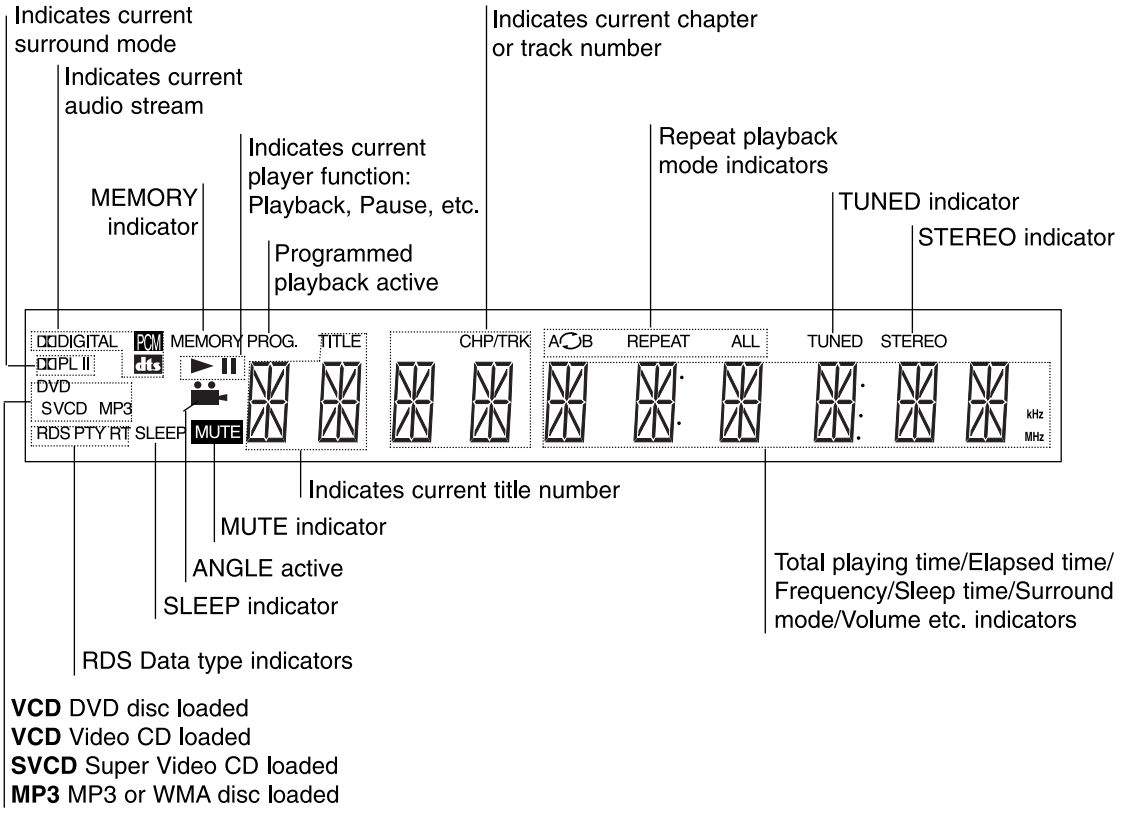
Designs and specifications are subject to change without notice.

❑ LOCATION OF CUSTOMER CONTROLS

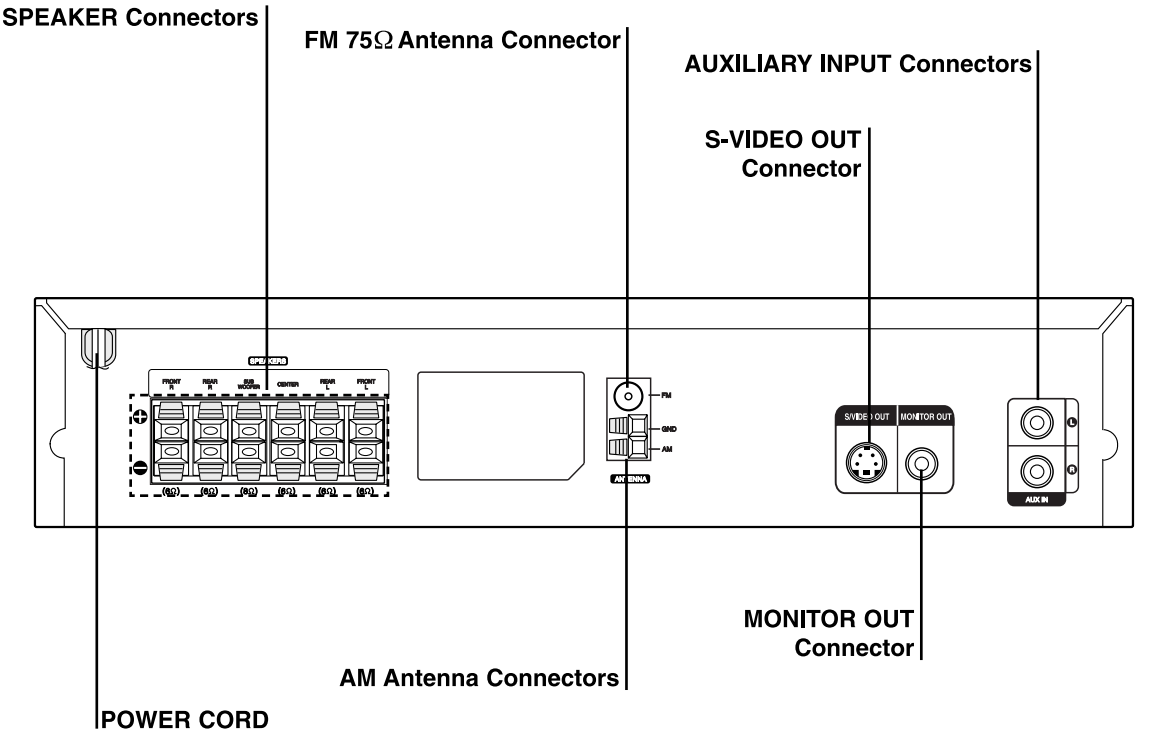
FRONT PANEL



DISPLAY WINDOW



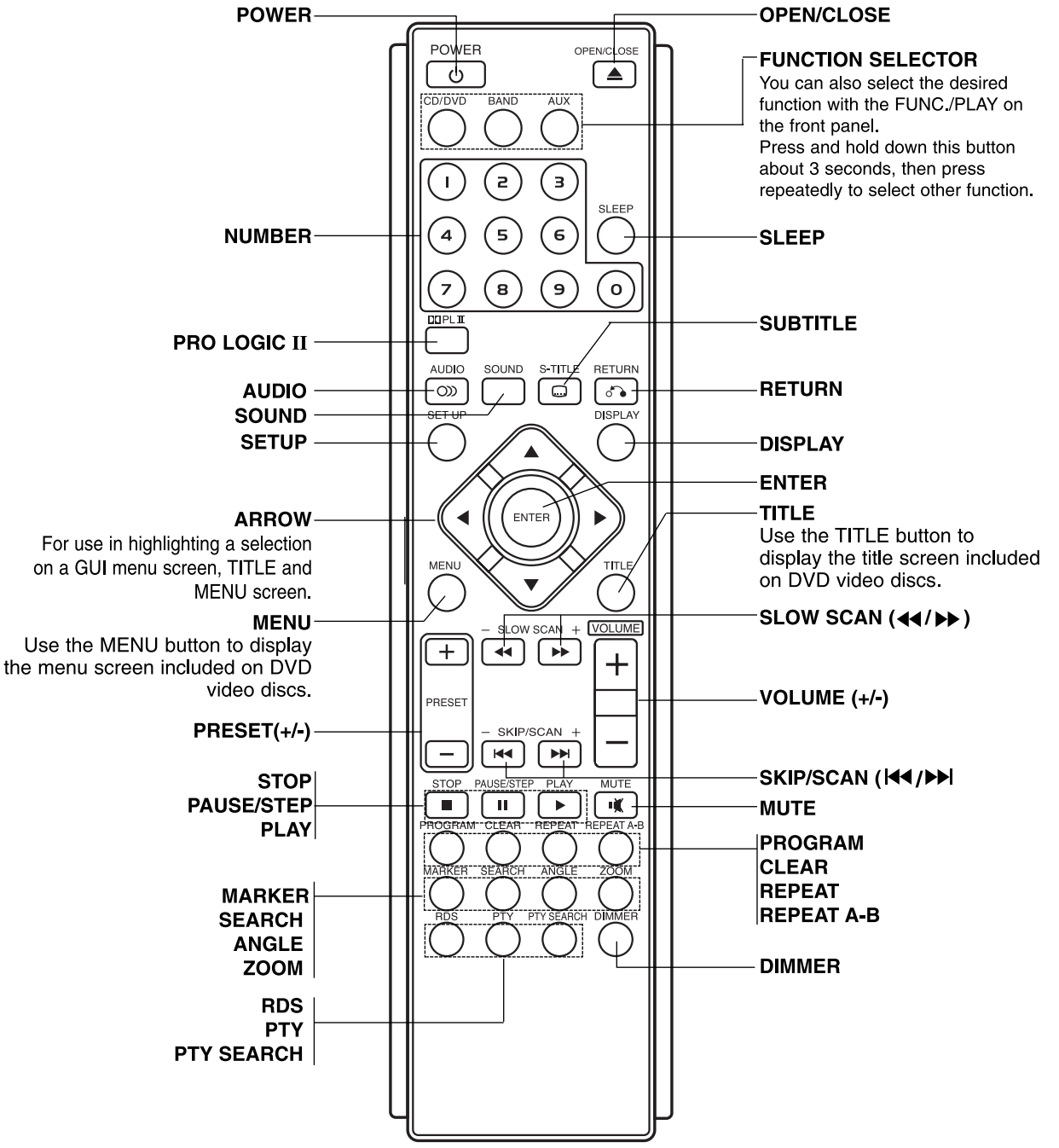
REAR PANEL



⚠

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

Remote Control

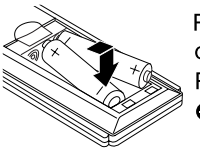


Remote Control Operation Range

Point the remote control at the remote sensor and press the buttons.

- **Distance:** About 23 ft (7 m) from the front of the remote sensor
- **Angle:** About 30° in each direction in front of the remote sensor

Remote control battery installation



Remove the battery cover on the rear of the remote control, and insert two R03 (size AAA) batteries with ⊕ and ⊖ aligned correctly.

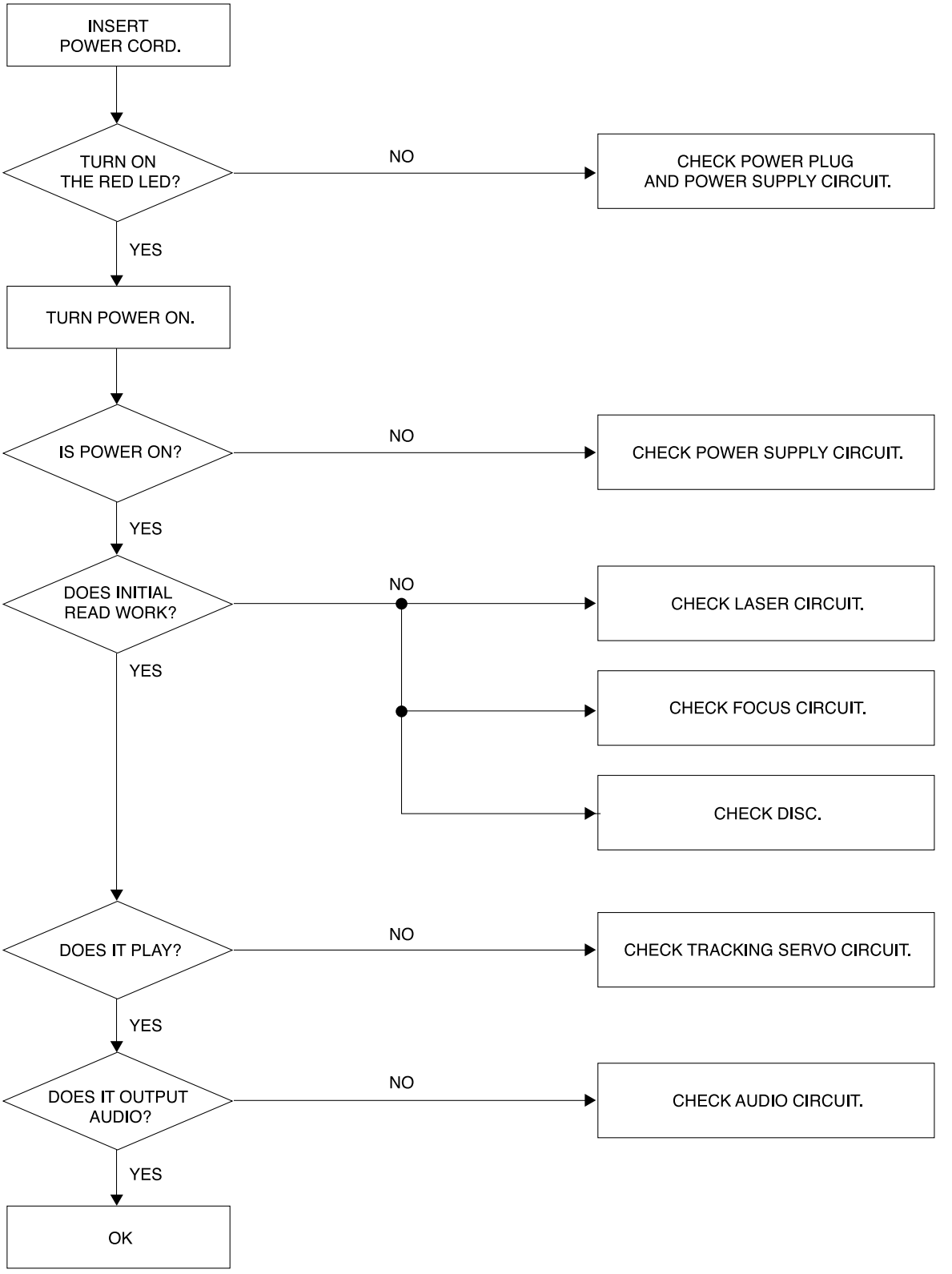
⚠ Caution

Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.).

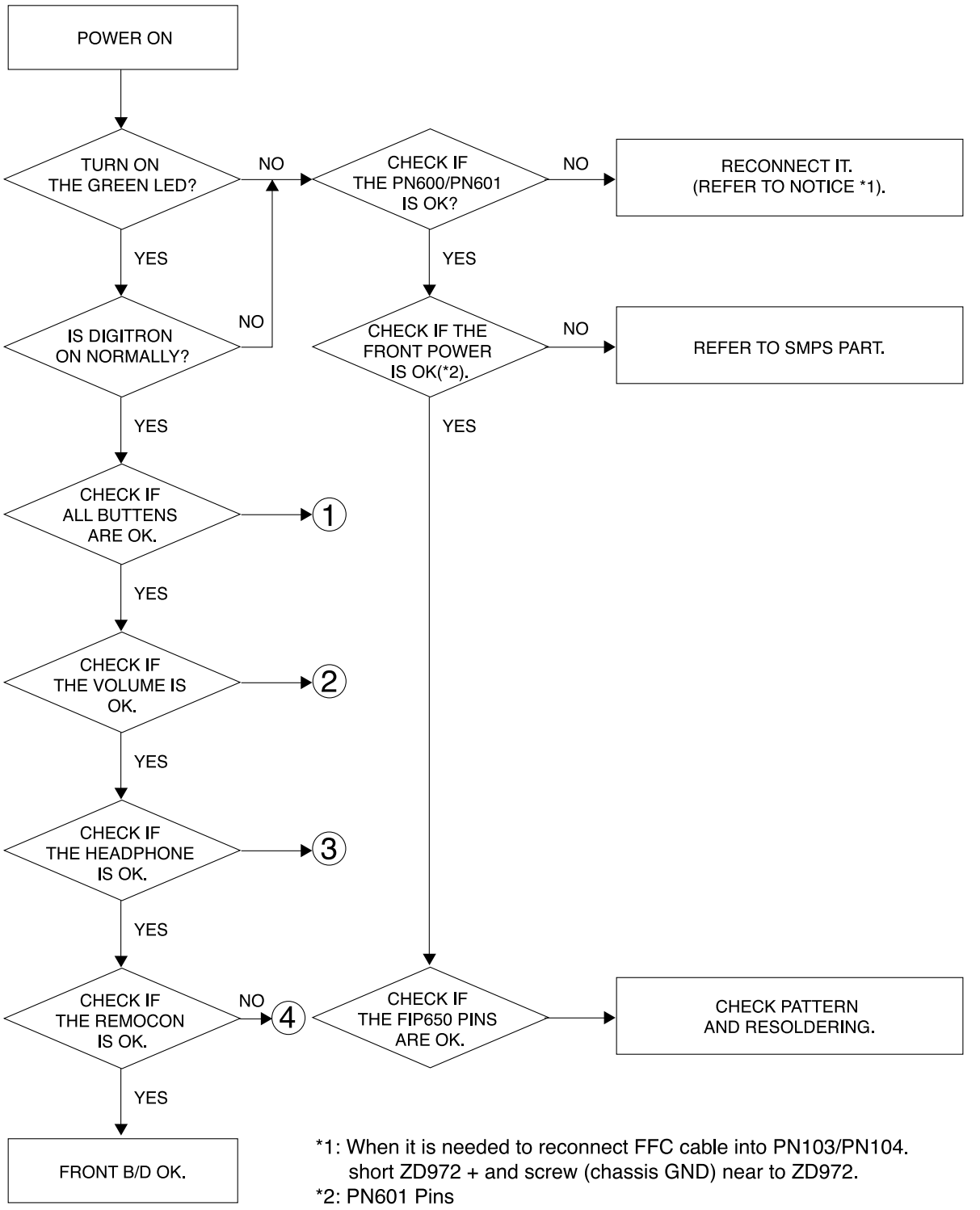
SECTION 2. AUDIO PART

❑ AUDIO TROUBLESHOOTING GUIDE

1. POWER SUPPUY CIRCUIT



2. FRONT CIRCUIT (1/2)

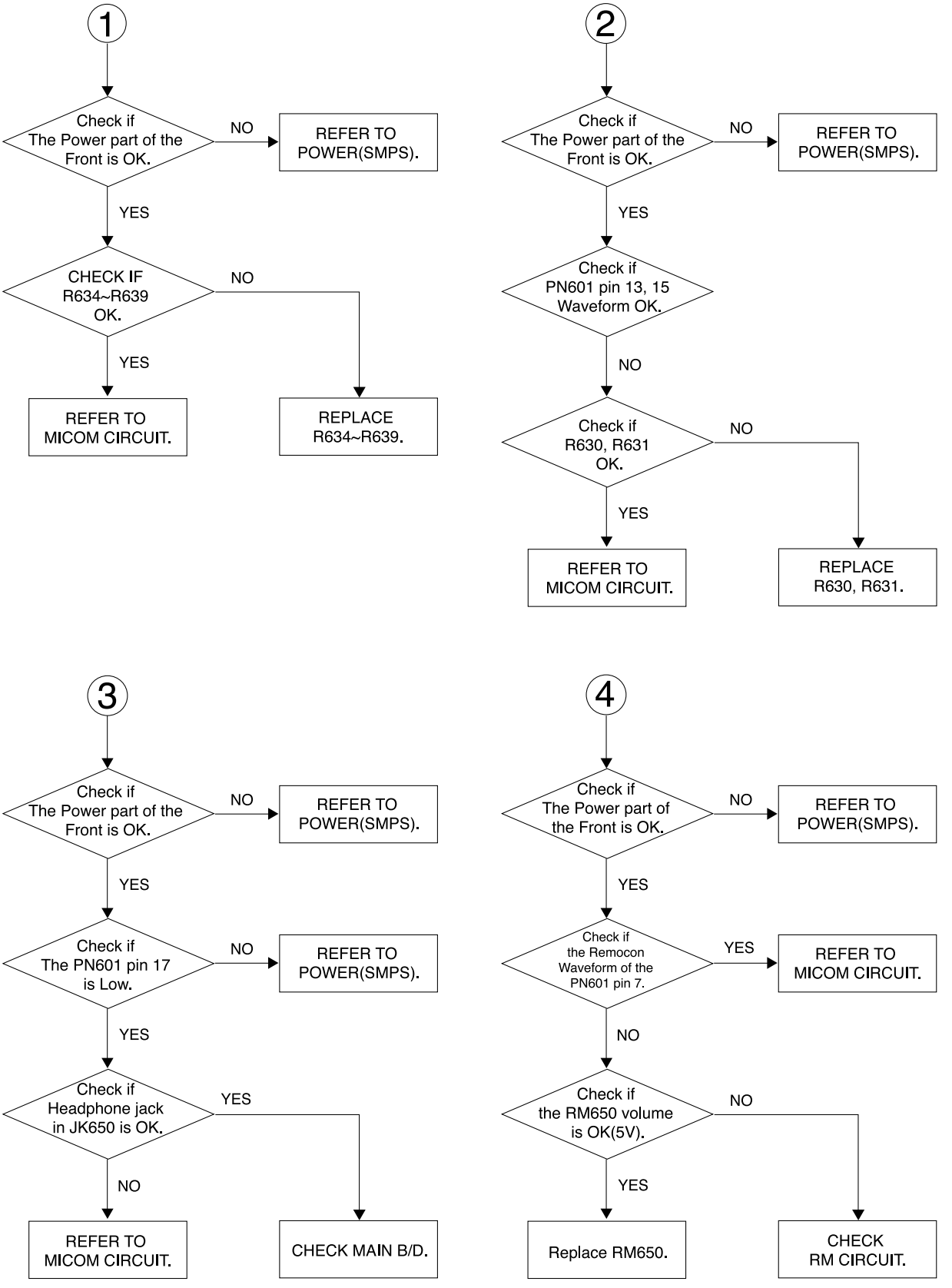


*1: When it is needed to reconnect FFC cable into PN103/PN104.
short ZD972 + and screw (chassis GND) near to ZD972.

*2: PN601 Pins

PIN1	:	1.9V
PIN2	:	-23.0V
PIN3	:	-27.5V
PIN4	:	5.0V
PIN11	:	-34.0V

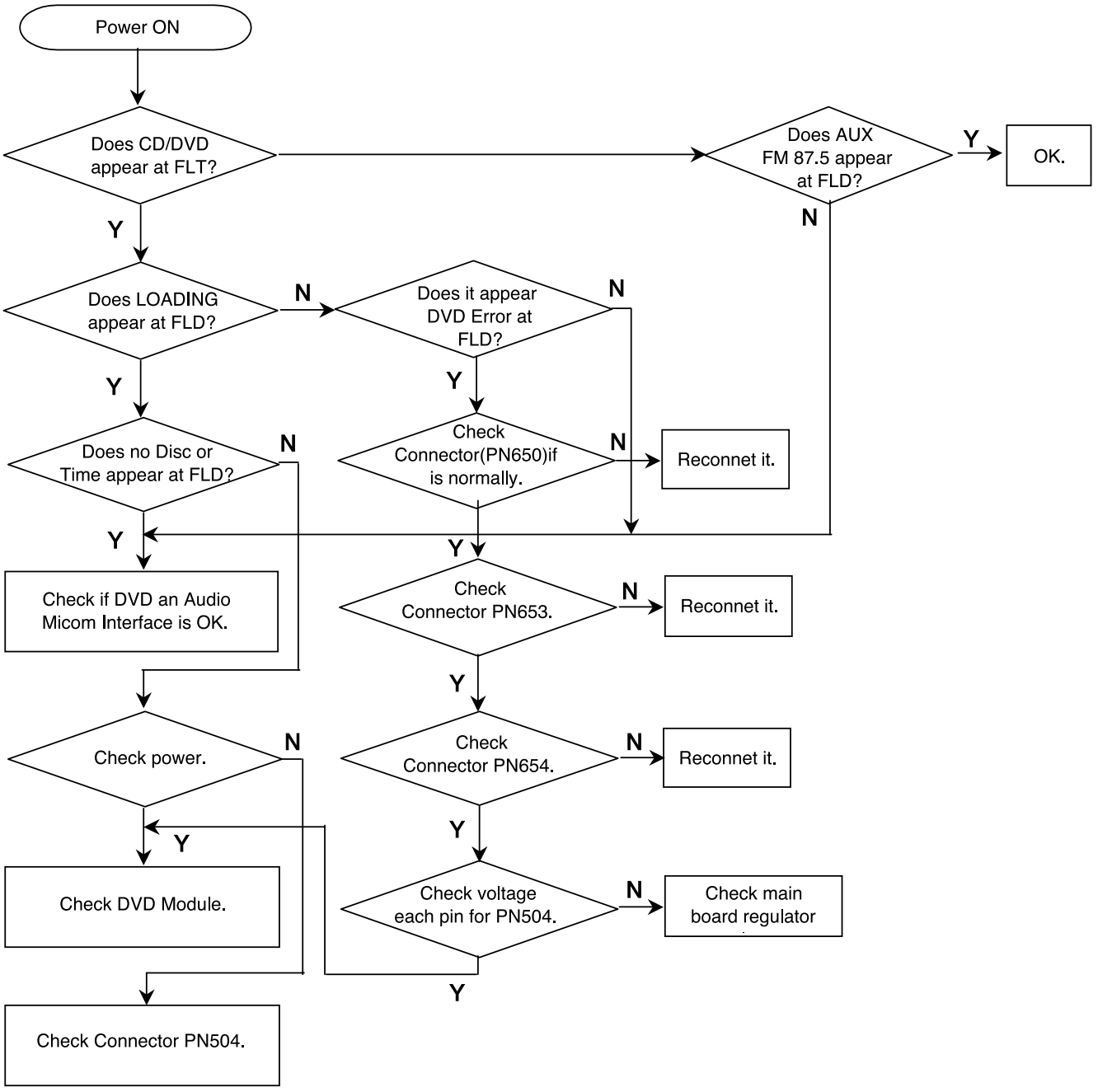
3. FRONT CIRCUIT (2/2)



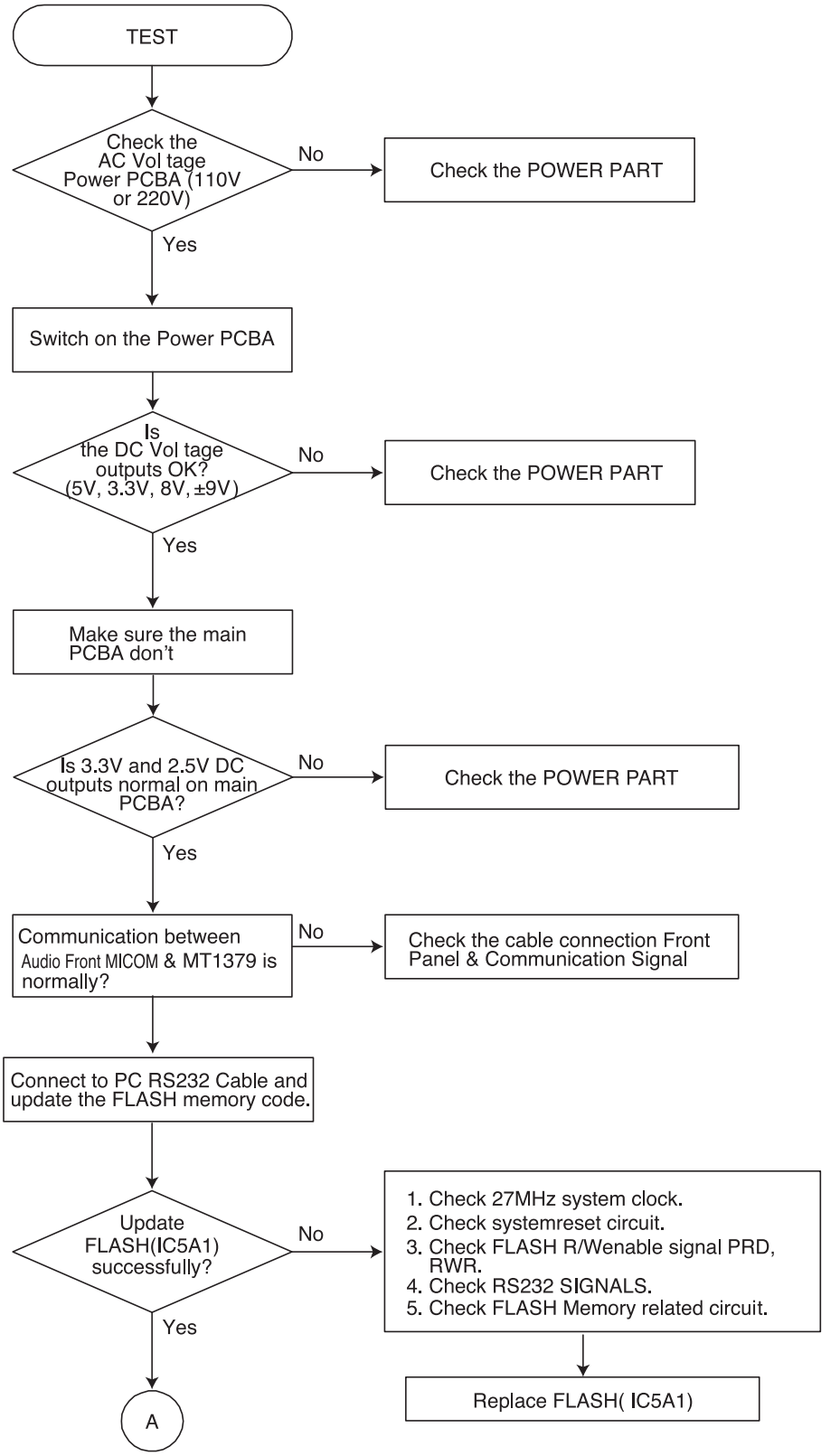
MEMO

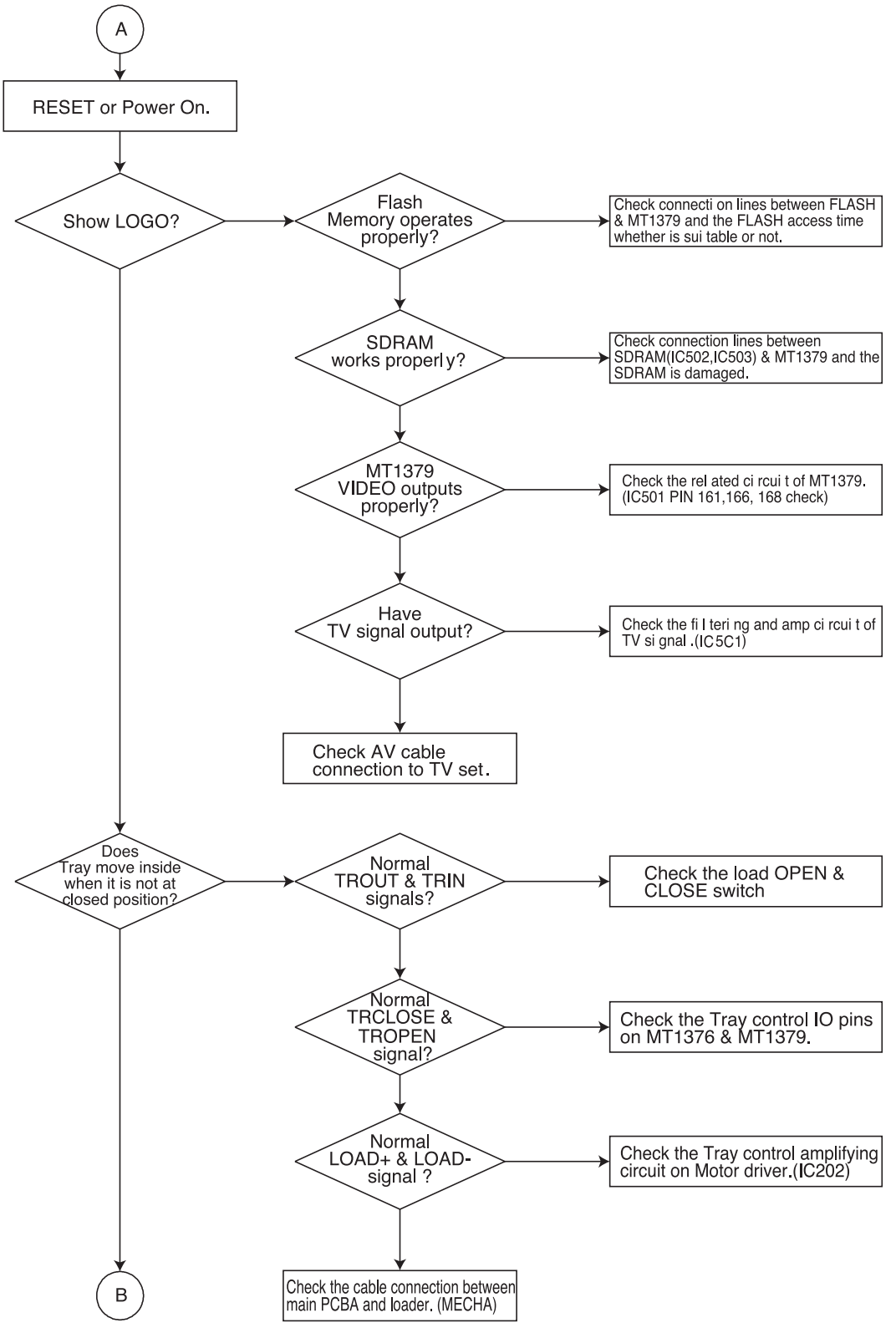
SECTION 3. DVD PART
DVD TROUBLESHOOTING GUIDE

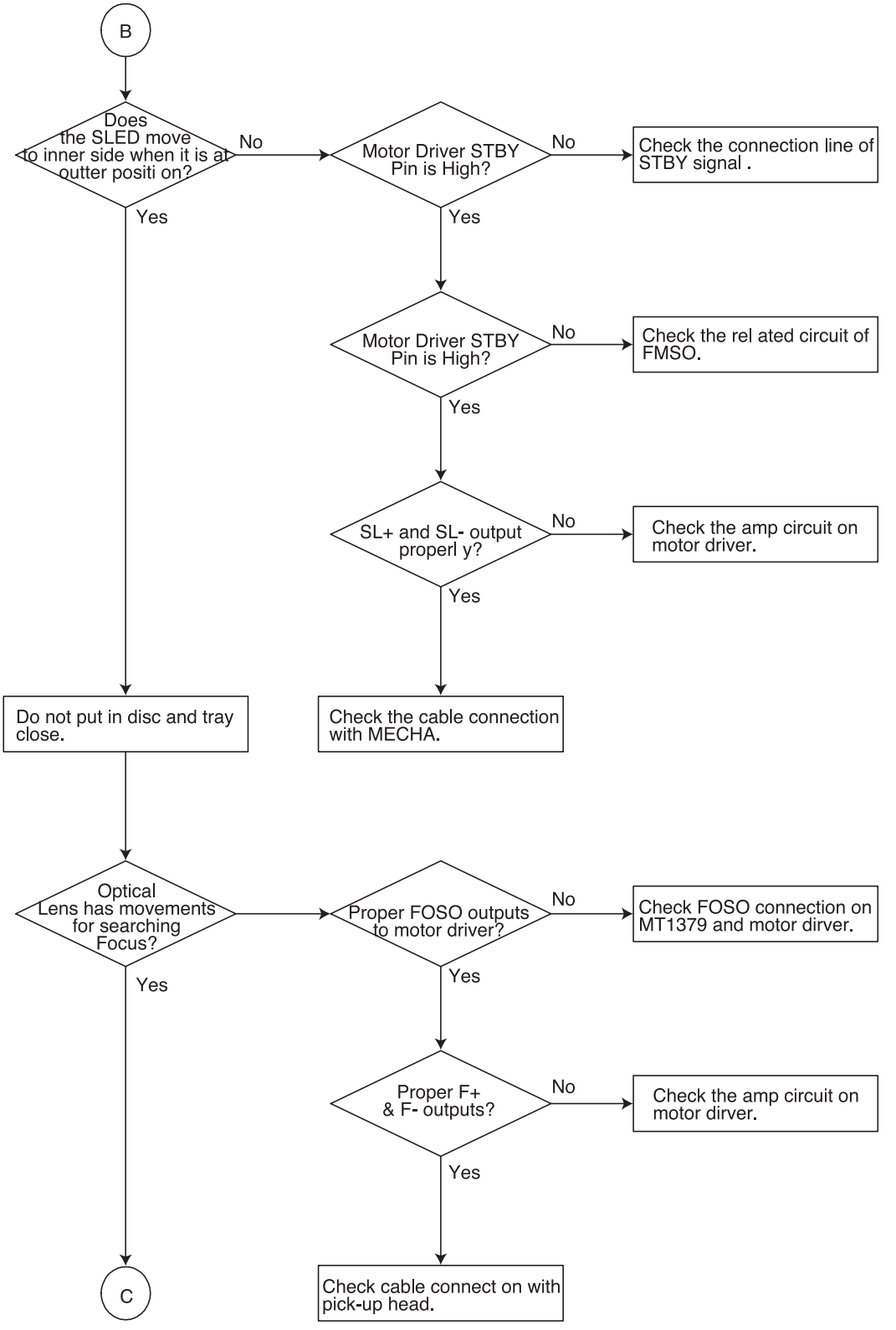
1. Power check flow

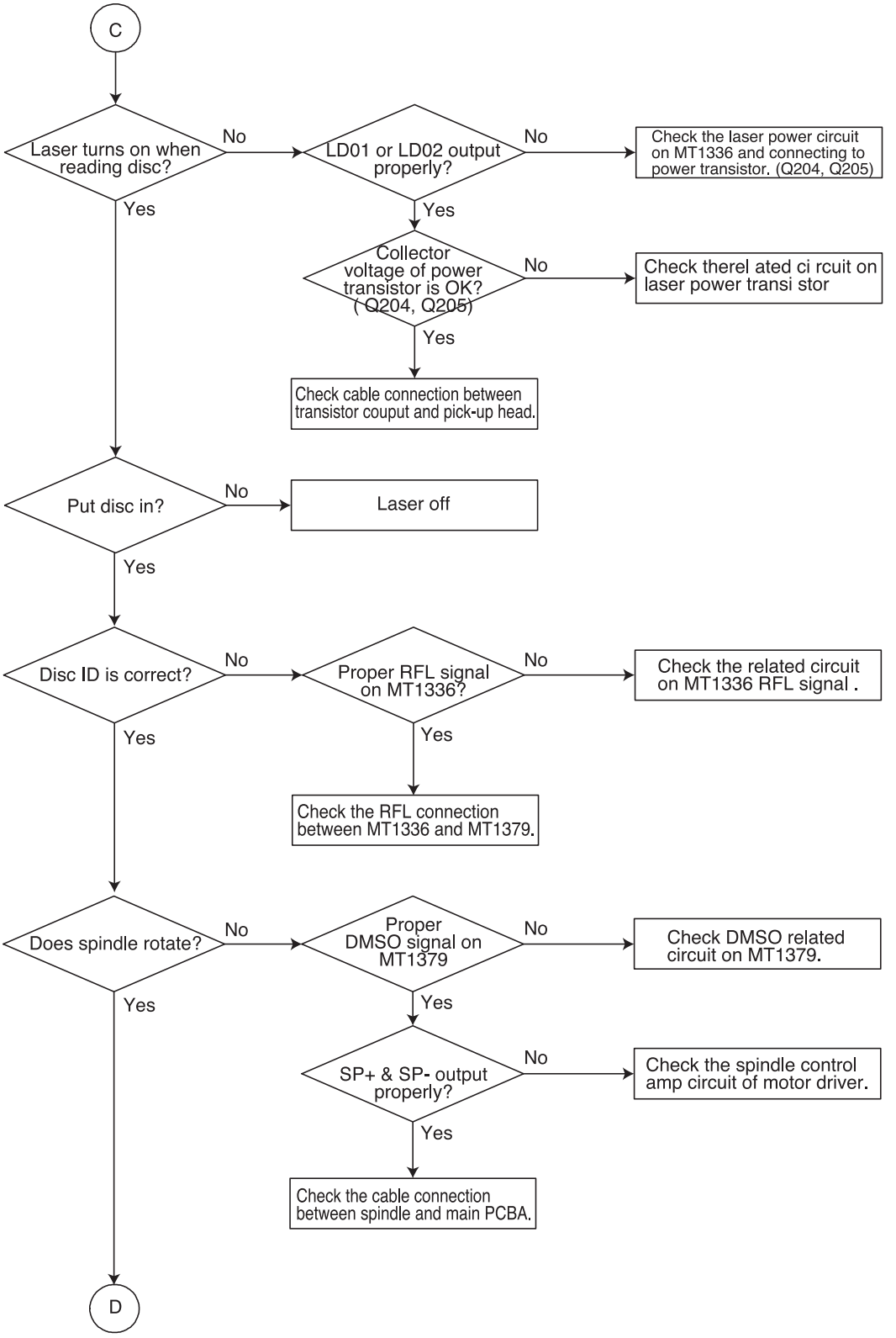


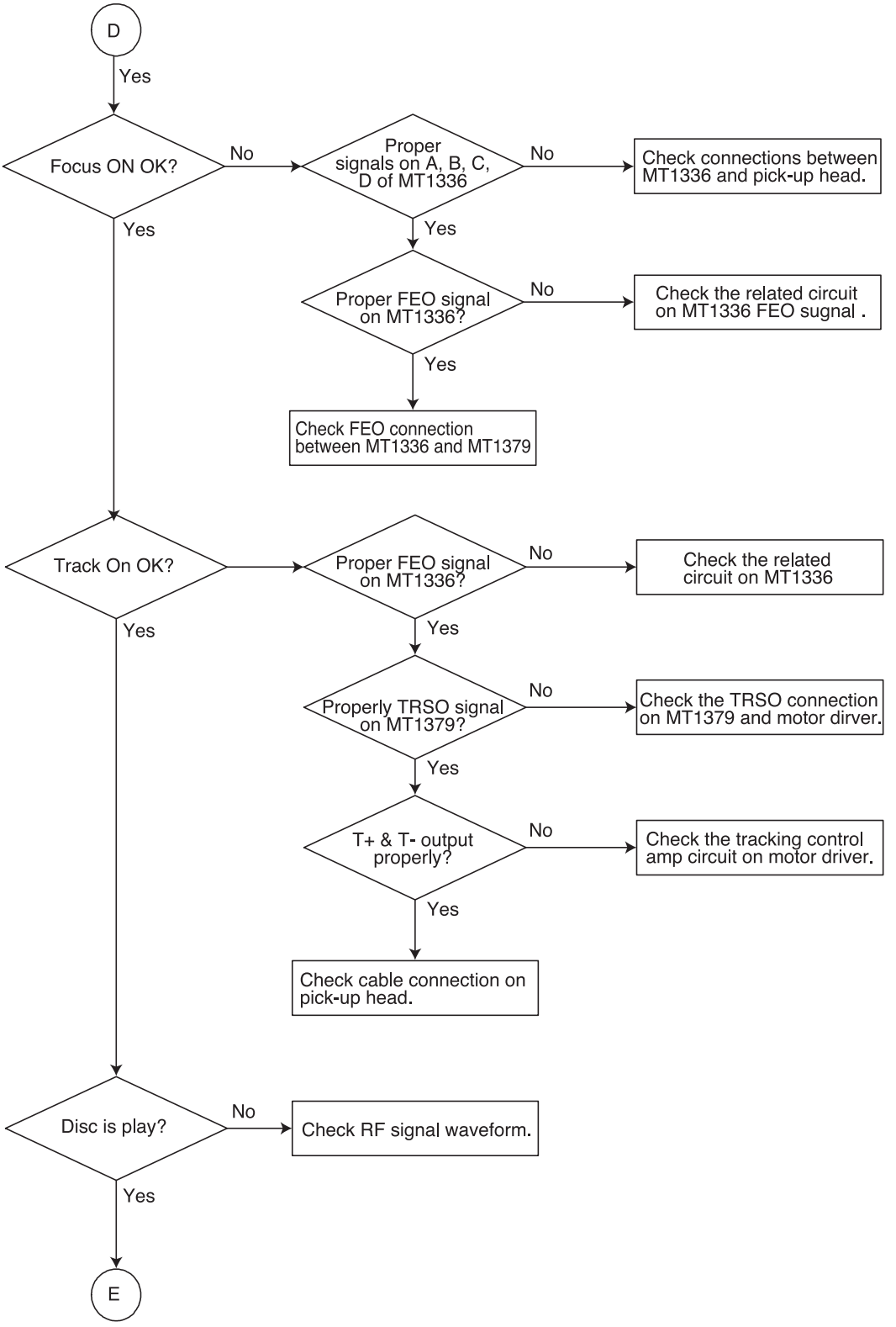
2. Test & debug flow

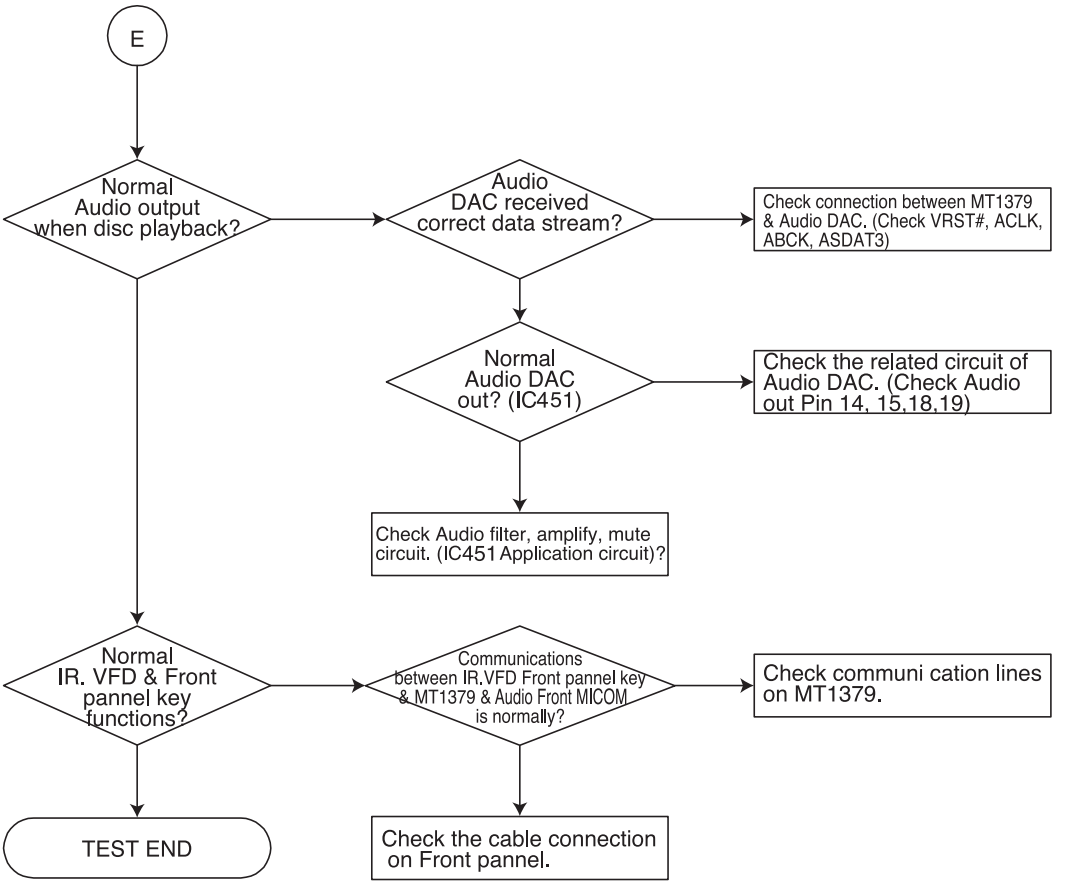



A
RESET or Power On.
Show LOGO?
Flash Memory operates properly?
Check connecti on lines between FLASH & MT1379 and the FLASH access time whether is sui table or not.
SDRAM works properl y?
Check connection lines between SDRAM(IC502,IC503) & MT1379 and the SDRAM is damaged.
MT1379 VIDEO outputs properly?
Check the rel ated ci rcui t of MT1379. (IC501 PIN 161,166, 168 check)
Have TV signal output?
Check the fi l teri ng and amp ci rcui t of TV si gnal .(IC5C1)
Check AV cable connection to TV set.
Does Tray move inside when it is not at closed position?
Normal TROUT & TRIN signals?
Check the load OPEN & CLOSE switch
Normal TRCLOSE & TROPEN signal?
Check the Tray control IO pins on MT1376 & MT1379.
Normal LOAD+ & LOAD- signal ?
Check the Tray control amplifying circuit on Motor driver.(IC202)
Check the cable connection between main PCBA and loader. (MECHA)
B


B
Does the SLED move to inner side when it is at outter positi on?
No
Yes
Motor Driver STBY Pin is High?
No
Check the connection line of STBY signal .
Yes
Motor Driver STBY Pin is High?
No
Check the rel ated circuit of FMSO.
Yes
SL+ and SL- output properl y?
No
Check the amp circuit on motor driver.
Yes
Do not put in disc and tray close.
Check the cable connection with MECHA.
Optical Lens has movements for searching Focus?
Yes
Proper FOSO outputs to motor driver?
No
Check FOSO connection on MT1379 and motor dirver.
Yes
Proper F+ & F- outputs?
No
Check the amp circuit on motor dirver.
Yes
C
Check cable connect on with pick-up head.


C
Laser turns on when reading disc?
No
LD01 or LD02 output properly?
No
Check the laser power circuit on MT1336 and connecting to power transistor. (Q204, Q205)
Yes
Yes
Collector voltage of power transistor is OK? (Q204, Q205)
No
Check therel ated ci rcuit on laser power transi stor
Yes
Check cable connection between transistor couput and pick-up head.
Put disc in?
No
Laser off
Yes
Disc ID is correct?
No
Proper RFL signal on MT1336?
No
Check the related circuit on MT1336 RFL signal .
Yes
Yes
Check the RFL connection between MT1336 and MT1379.
Does spindle rotate?
No
Proper DMSO signal on MT1379
No
Check DMSO related circuit on MT1379.
Yes
Yes
SP+ & SP- output properly?
No
Check the spindle control amp circuit of motor driver.
Yes
Check the cable connection between spindle and main PCBA.
D


D
Yes
Focus ON OK?
No
Proper signals on A, B, C, D of MT1336
No
Check connections between MT1336 and pick-up head.
Yes
Yes
Proper FEO signal on MT1336?
No
Check the related circuit on MT1336 FEO sugnal .
Yes
Check FEO connection between MT1336 and MT1379
Track On OK?
Proper FEO signal on MT1336?
No
Check the related circuit on MT1336
Yes
Yes
Properly TRSO signal on MT1379?
No
Check the TRSO connection on MT1379 and motor dirver.
Yes
T+ & T- output properly?
No
Check the tracking control amp circuit on motor driver.
Yes
Check cable connection on pick-up head.
Disc is play?
No
Check RF signal waveform.
Yes
E


E
Normal Audio output when disc playback?
Audio DAC received correct data stream?
Check connection between MT1379 & Audio DAC. (Check VRST#, ACLK, ABCK, ASDAT3)
Normal Audio DAC out? (IC451)
Check the related circuit of Audio DAC. (Check Audio out Pin 14, 15,18,19)
Check Audio filter, amplify, mute circuit. (IC451 Application circuit)?
Normal IR. VFD & Front pannel key functions?
Communications between IR.VFD Front pannel key & MT1379 & Audio Front MICOM is normally?
Check communi cation lines on MT1379.
TEST END
Check the cable connection on Front pannel.

❑ 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)

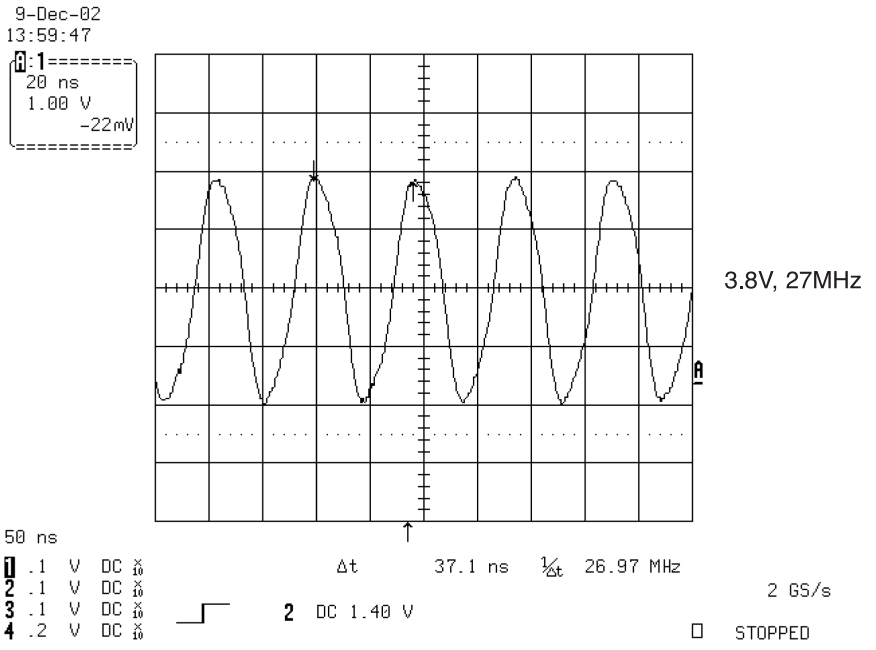


FIG 1-1

2) MT1336 reset is high active

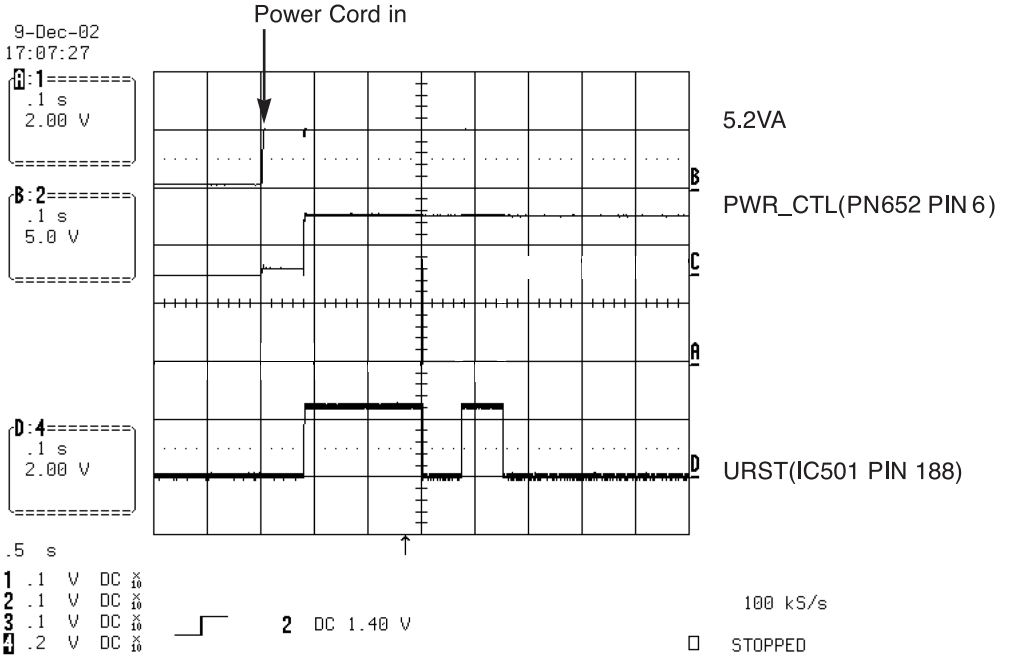


FIG 1-2

3) RS232 waveform during procedure(Downloading)

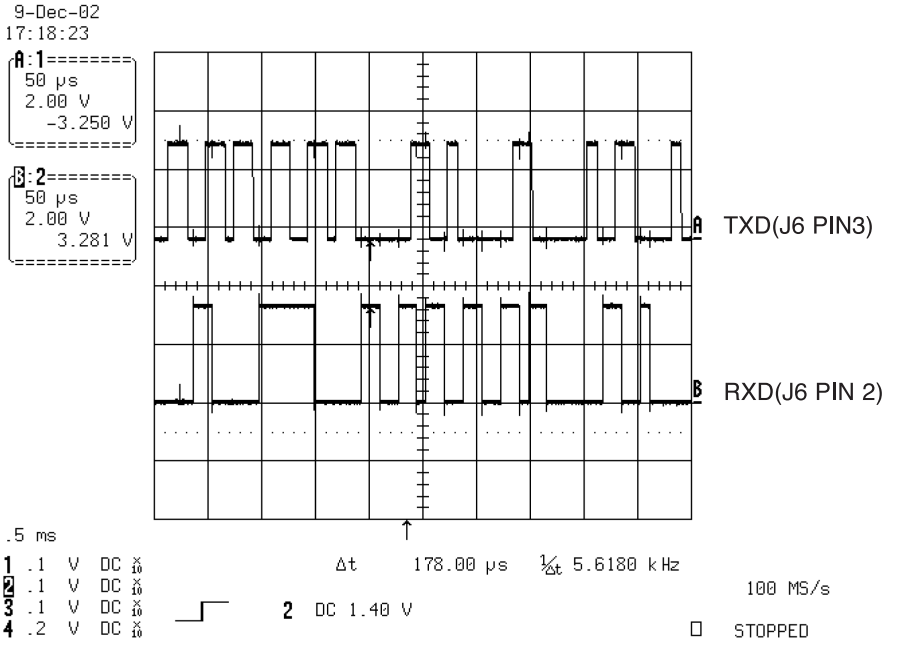


FIG 1-3

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

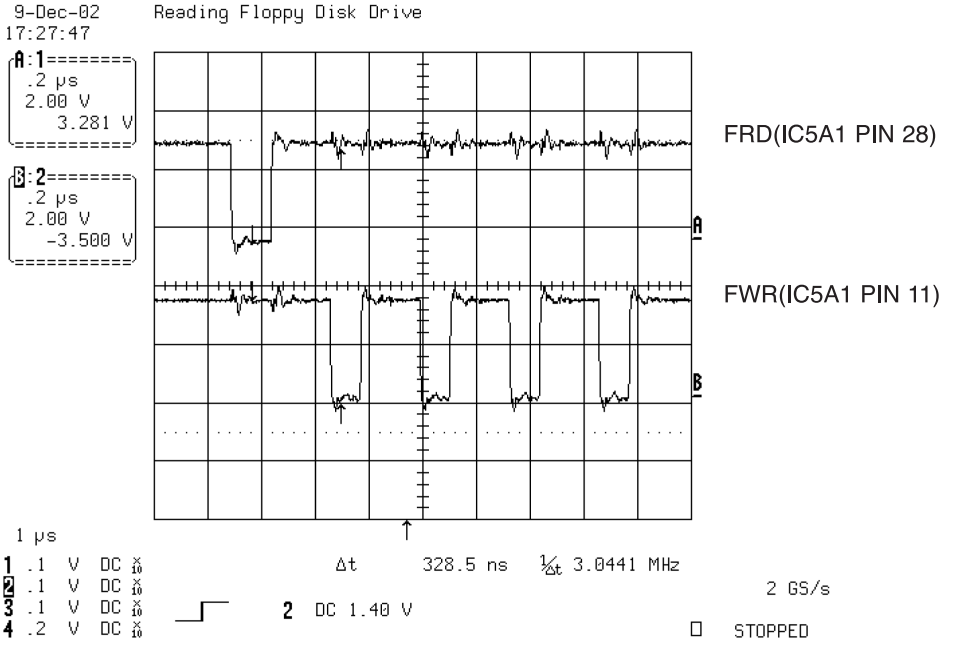


FIG 1-4

2. SDRAM CLOCK

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

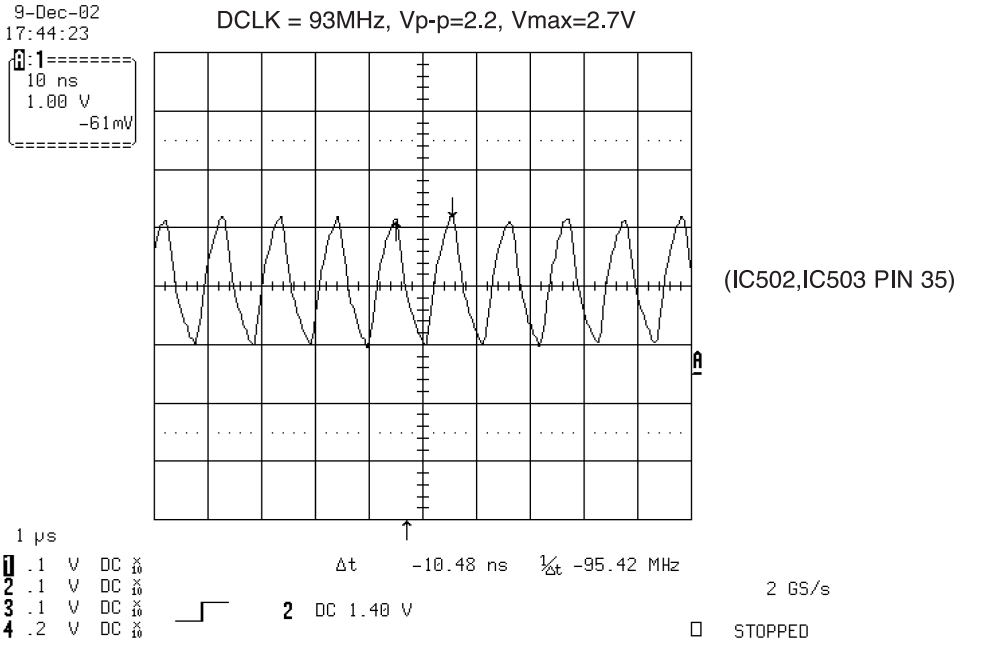


FIG 2-1

3. TRAY OPEN/CLOSE SIGNAL

1) Tray open/close waveform

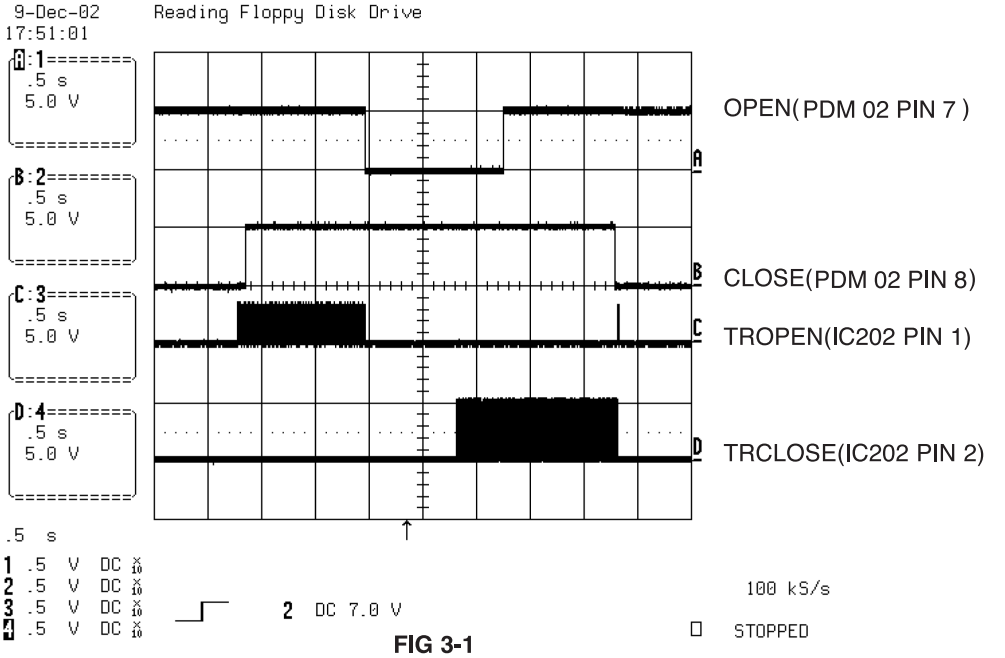


FIG 3-1

2) Tray close waveform

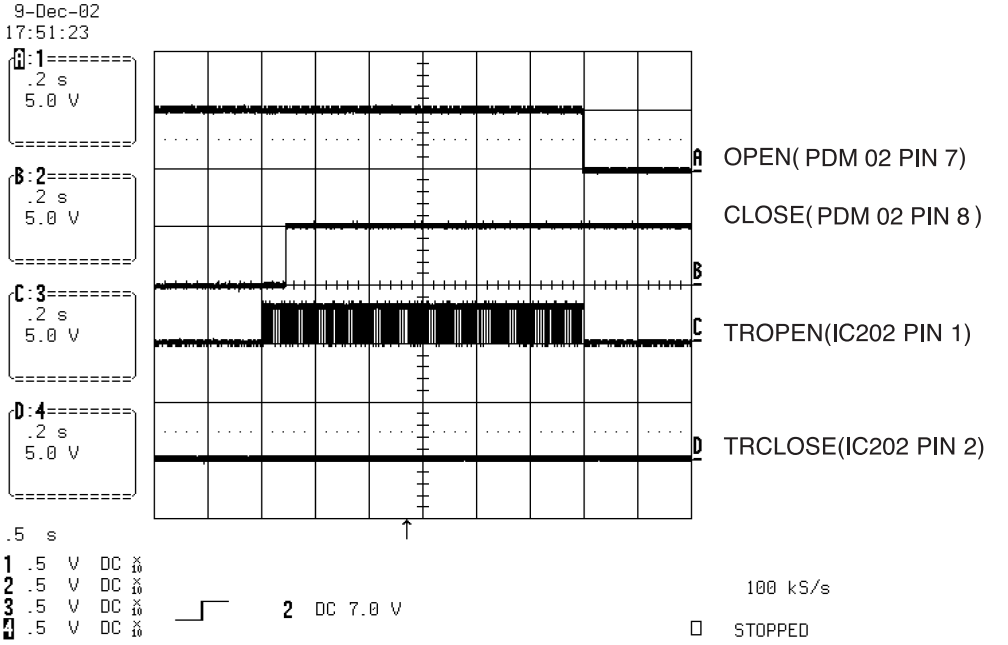


FIG 3-2

3) Tray open waveform

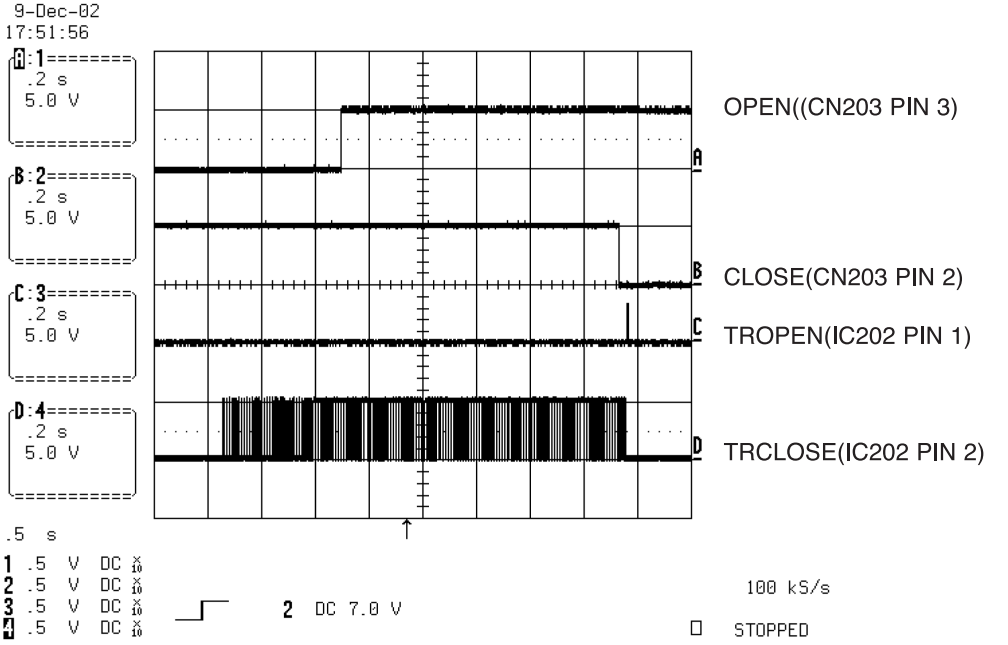
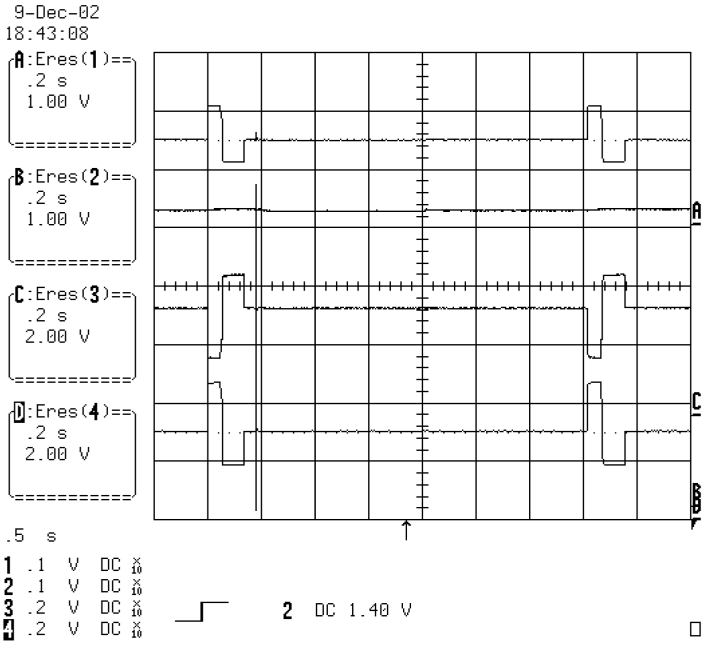


FIG 3-3

4. SLED CONTROL RELATED SIGNAL (NO DISC CONDITION)



FMSO(2.0V/1.4V/1.0V)
(IC501 PIN 19)

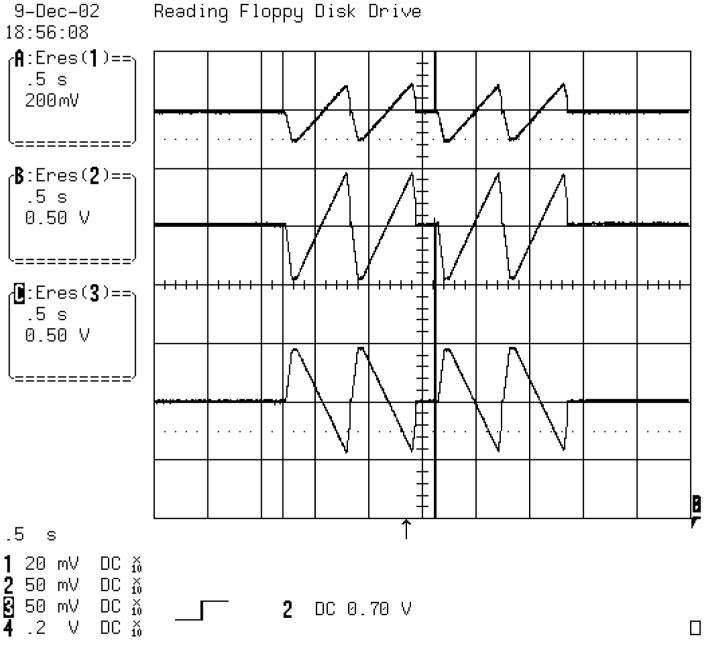
STBY(5V) – (IC201 PIN 50)

SL+(4.7V/3.6V/1.9V)
(IC202 PIN 12)

SL-(5.3V/3.7V/2.5V)
(IC202 PIN 13)

FIG 4-1

5. LENS CONTROL RELATED SIGNAL(NO DISC CONDITION)



FOSO(1.5V/1.4V/1.3V)
(IC501 PIN 12)

F+(4.0V/3.6V/3.2V)
(IC202 PIN 9)

F-(4.0V/3.6V/3.2V)
(IC202 PIN 8)

FIG 5-1

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

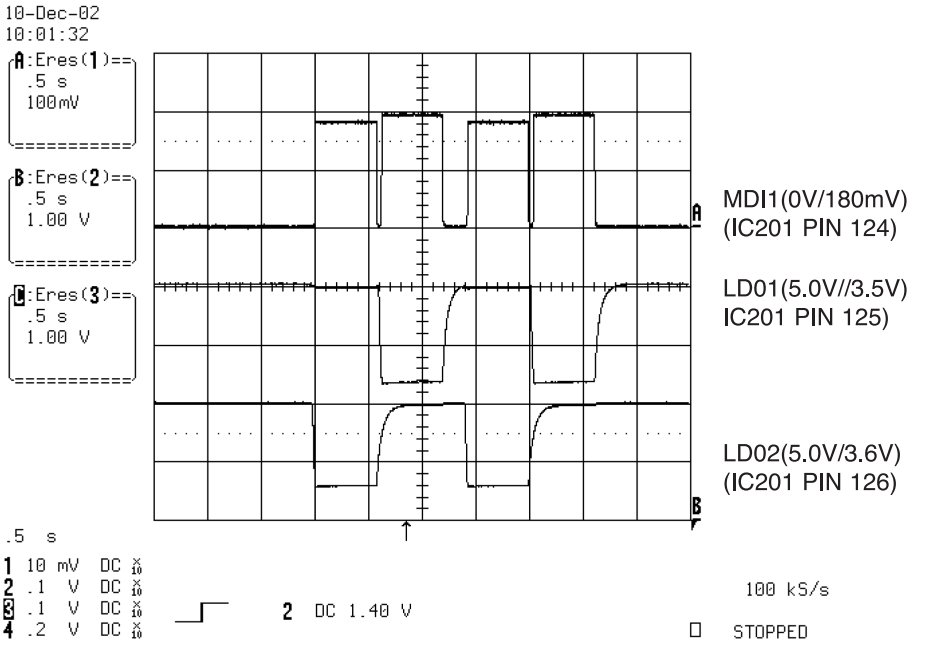


FIG 6-1

7. DISC TYPE JUDGEMENT WAVEFORM

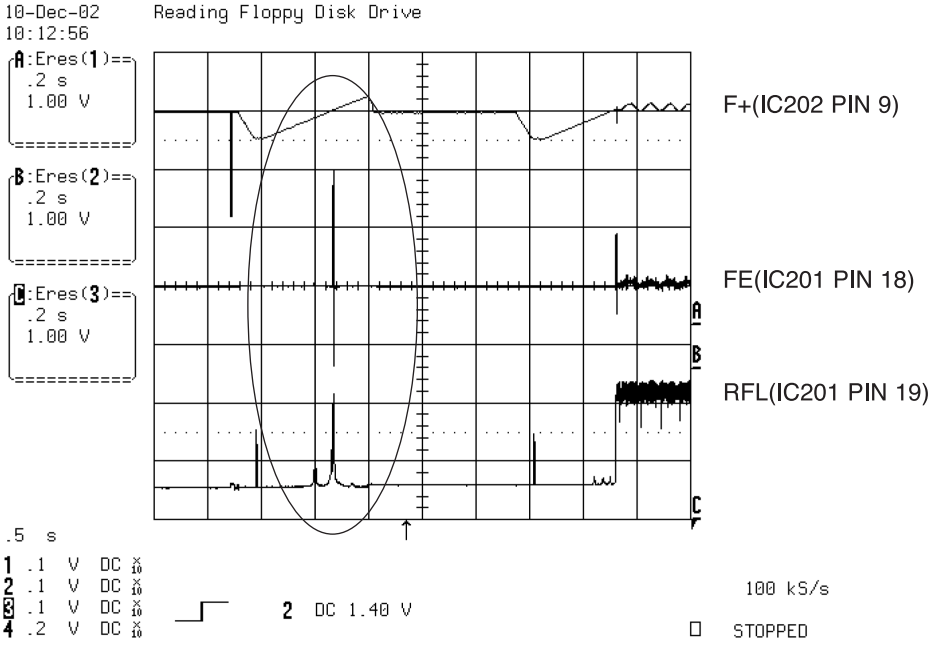


FIG 7-1 (DVD)

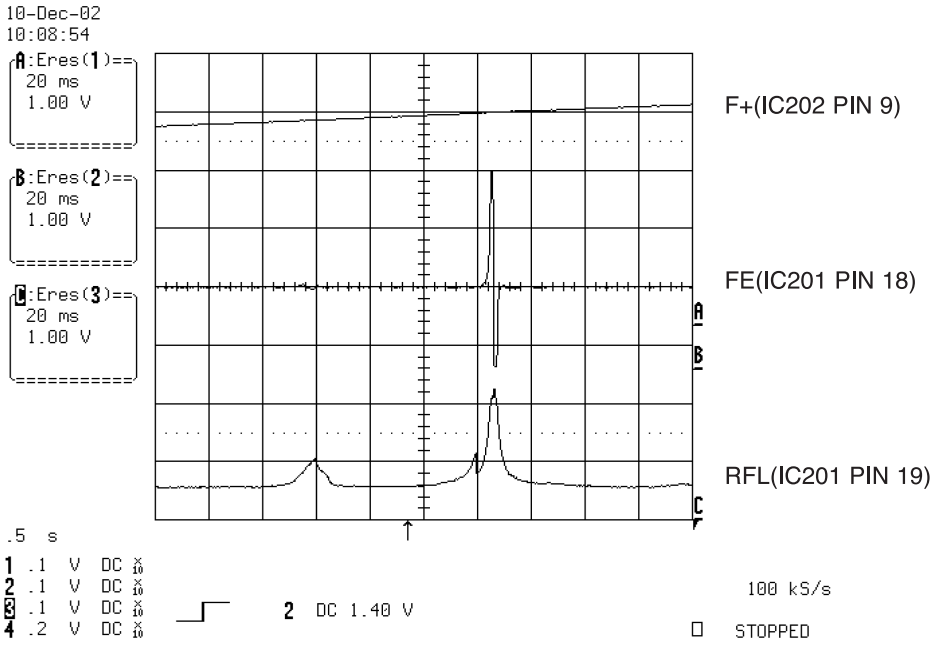


FIG 7-2 (DVD)

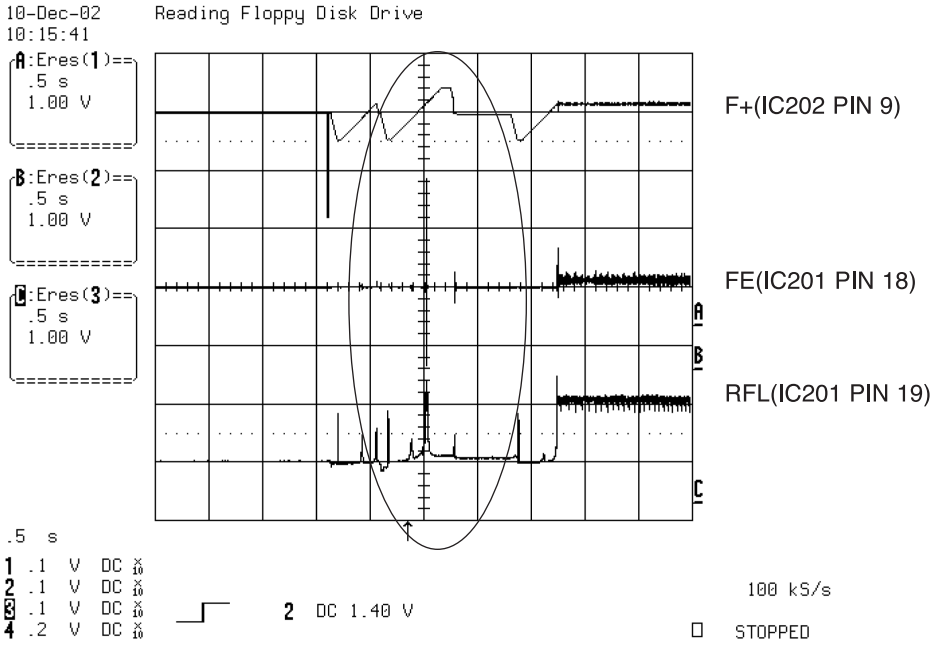


FIG 7-3 (CD)

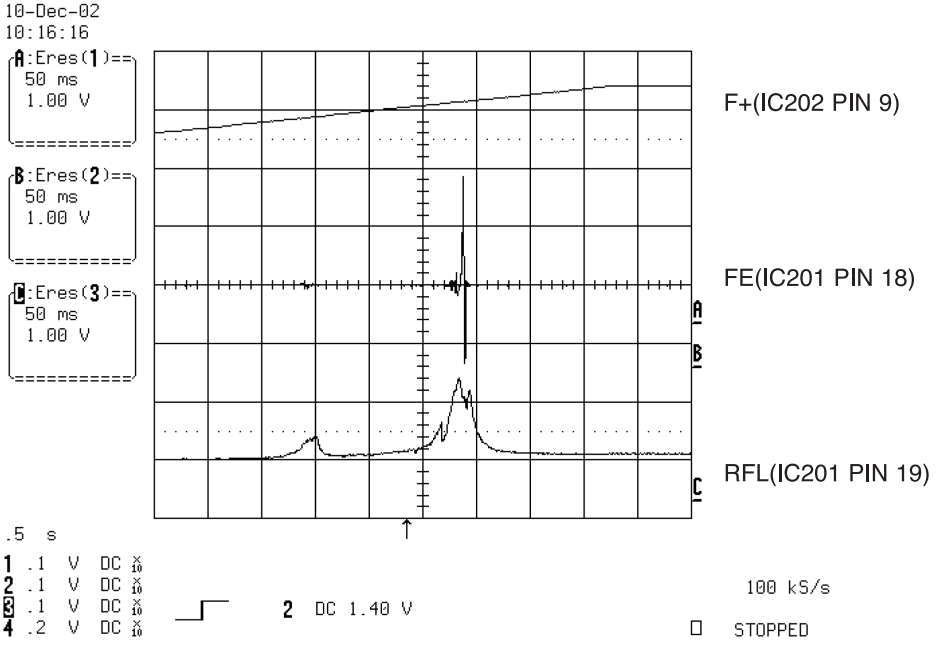


FIG 7-4 (CD)

8. FOCUS ON WAVEFORM

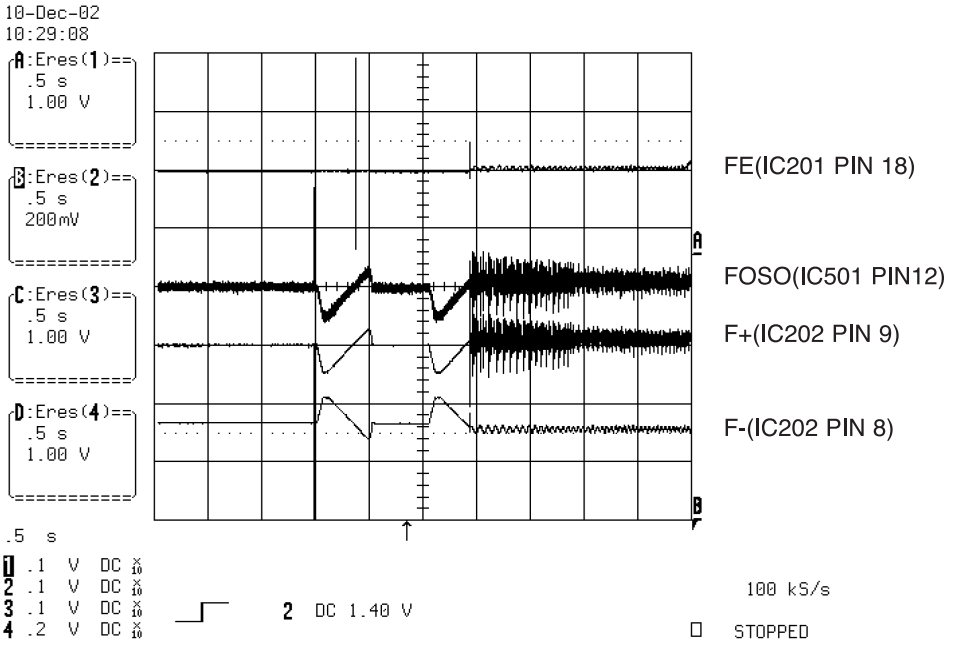


FIG 8-1 (DVD)

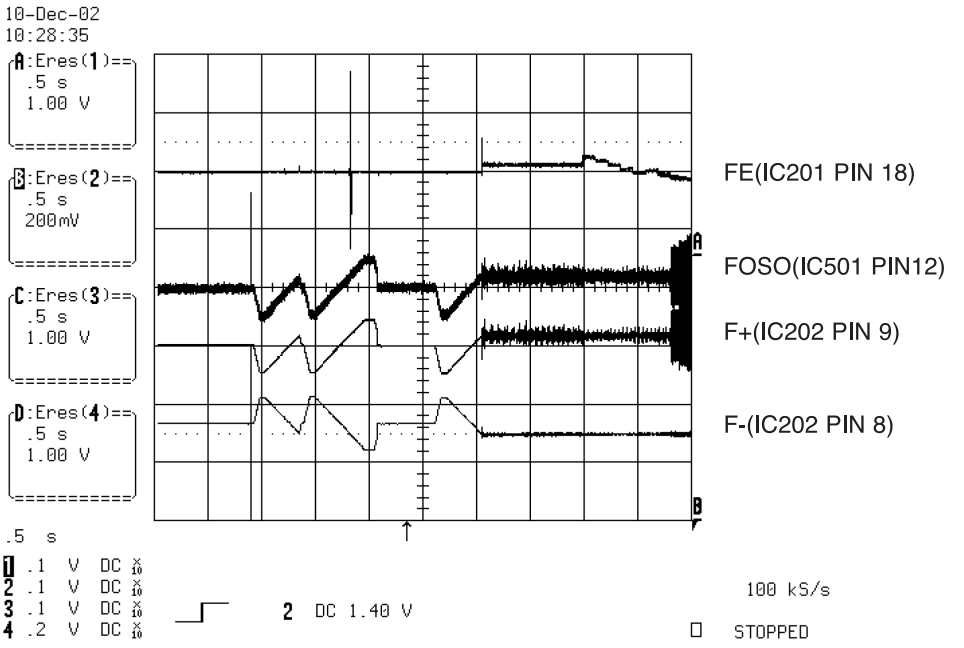


FIG 8-2 (CD)

9. SPINDLE CONTROL WAVEFORM (NO DISC CONDITION)

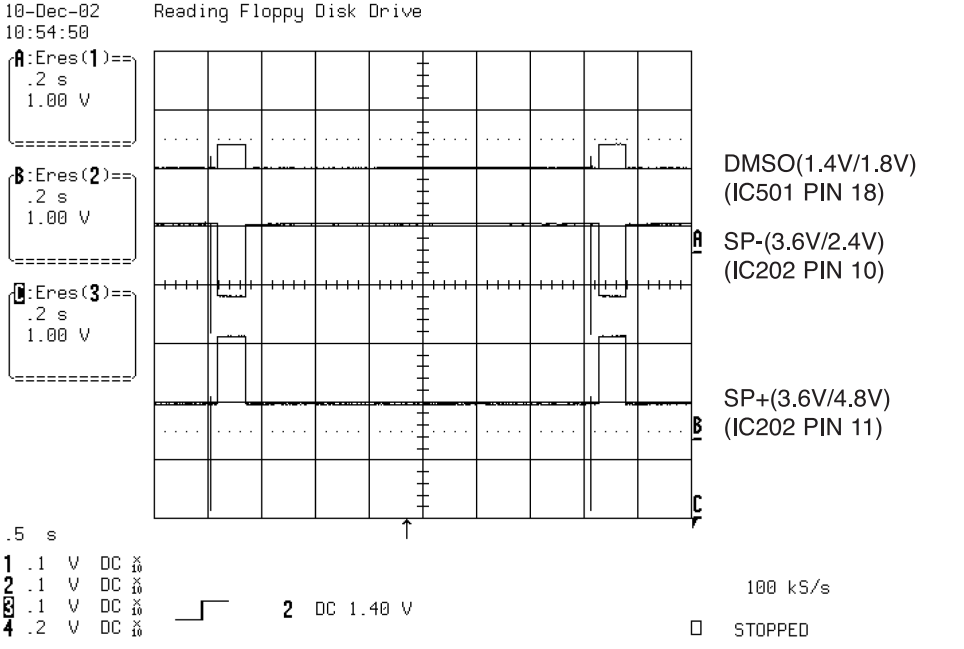


FIG 9-1

10. TRACKING CONTROL RELATED SIGNAL(System checking)

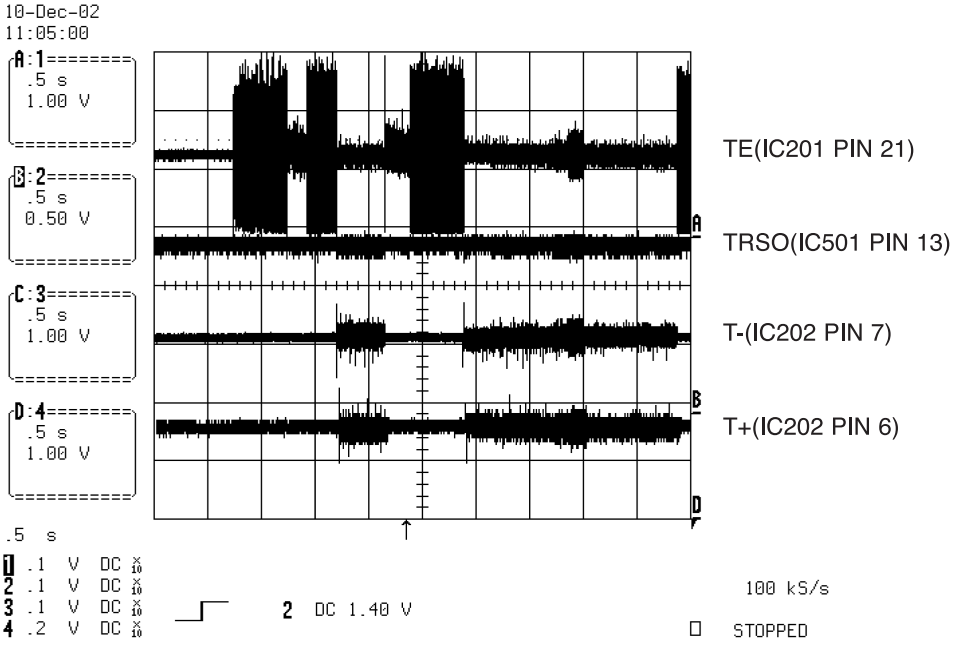


FIG 10-1(DVD)

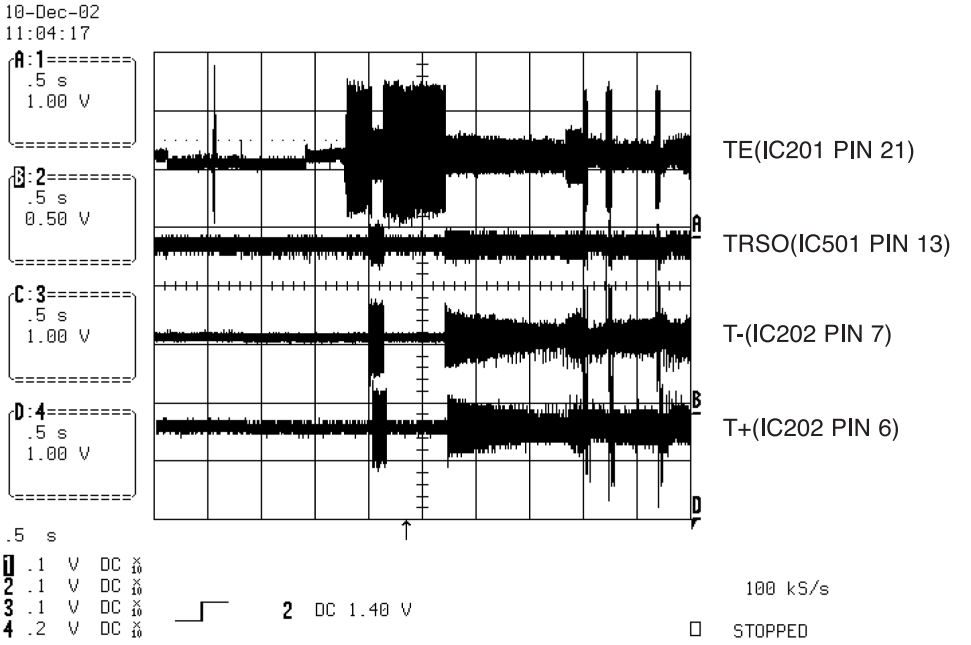


FIG 10-2(CD)

11. RF WAVEFORM

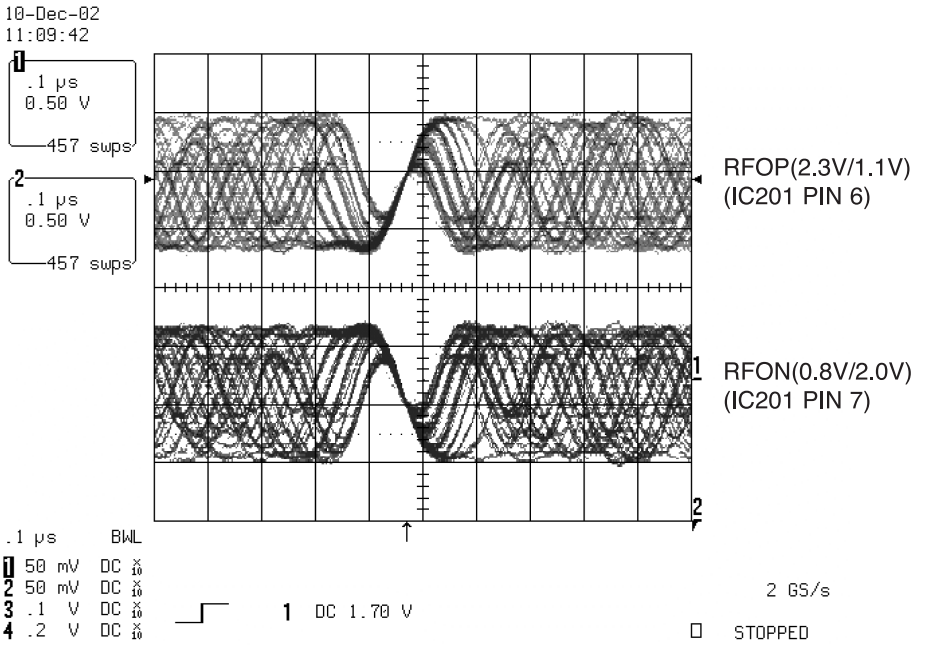


FIG 11-1

12. MT1379 AUDIO OPTICAL AND COAXIAL OUTPUT (ASPDIF)

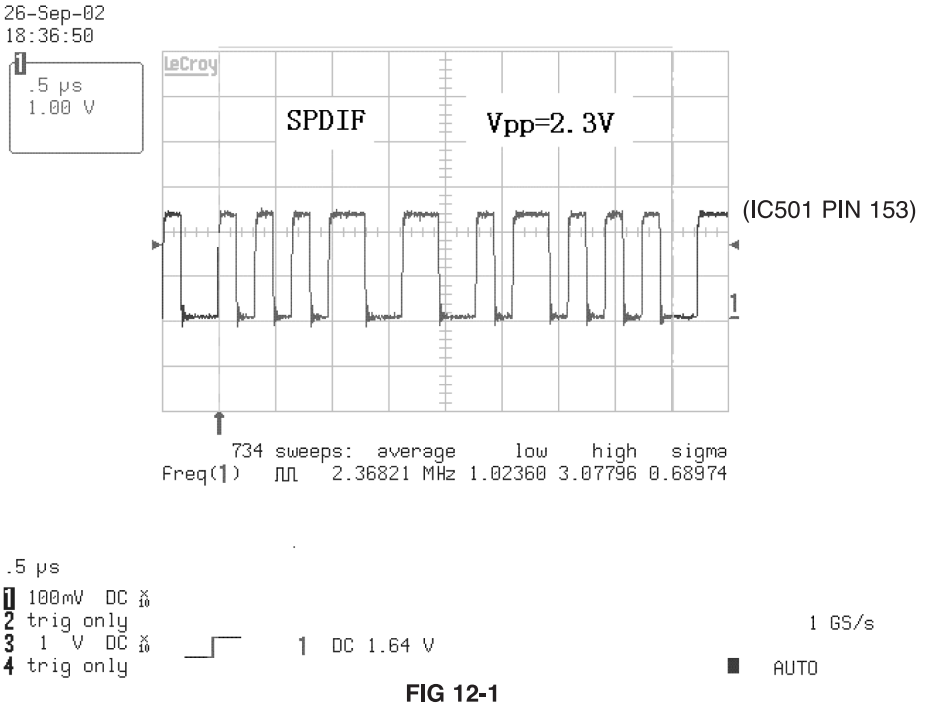
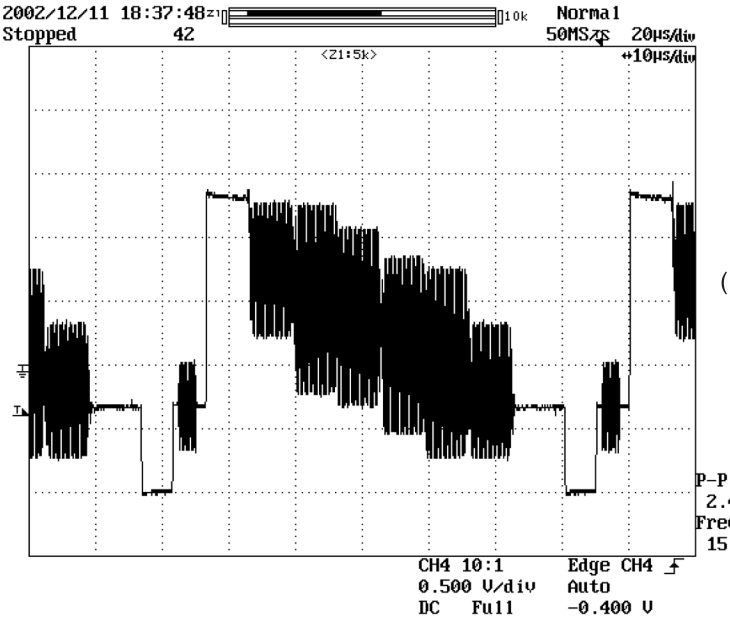


FIG 12-1

13. MT1379 VIDEO OUTPUT WAVEFORM

1) Full colorbar signal(CVBS)

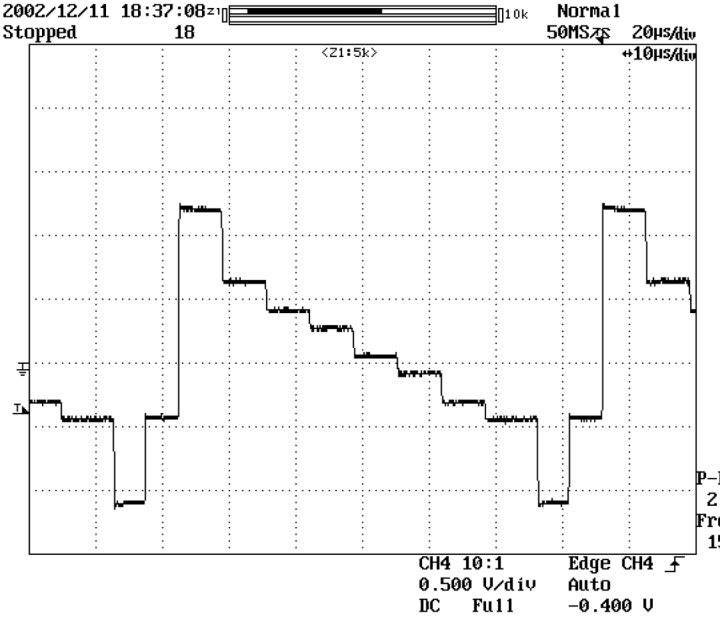
DCLK = 93MHz, Vp-p=2.2, Vmax=2.7V



(IC5C1 PIN 23)

FIG 13-1

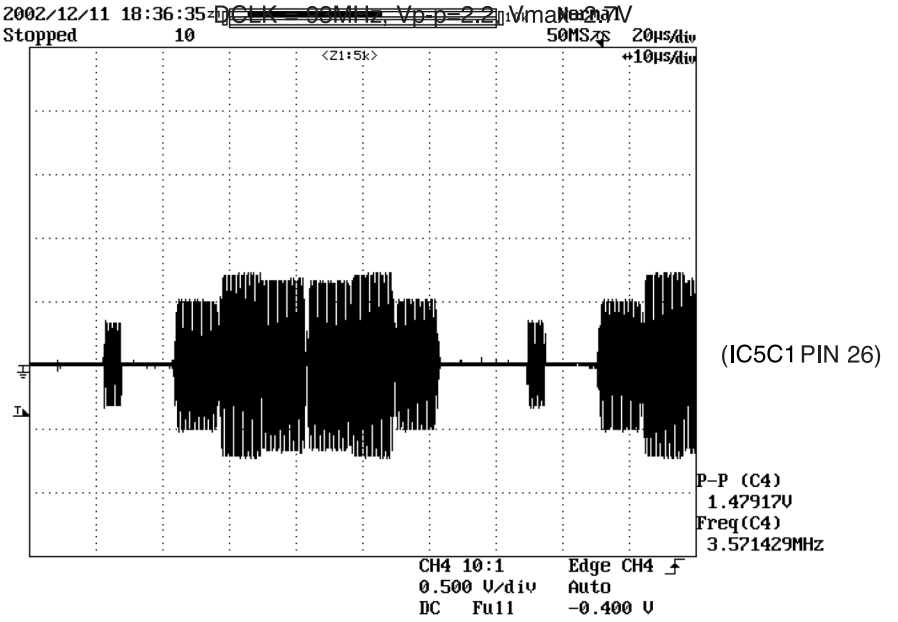
2) Y



(IC5C1 PIN 21)

FIG 13-2

3) C

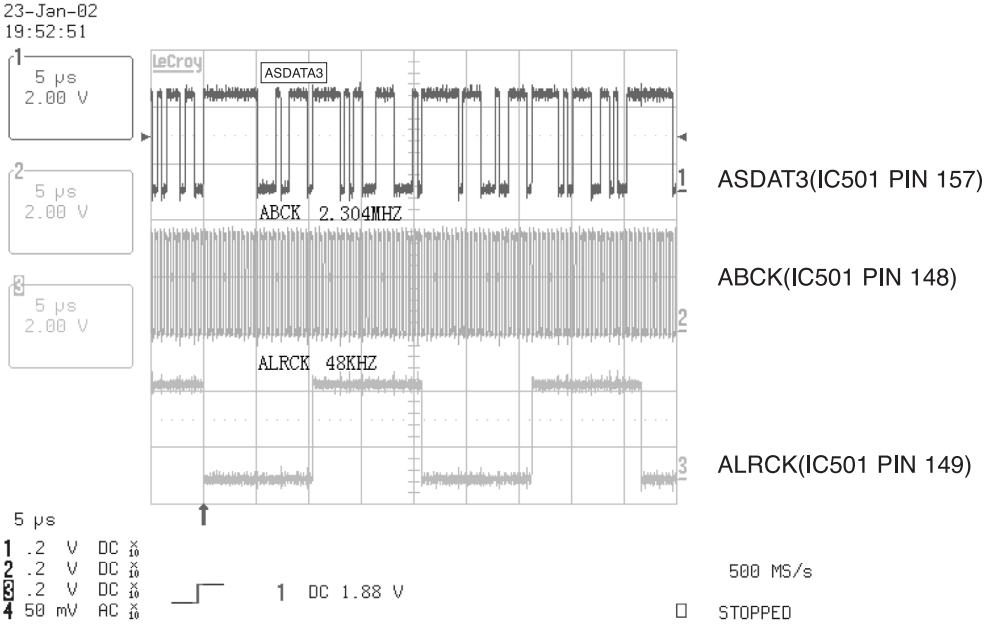


(IC5C1 PIN 26)

FIG 13-3

14. AUDIO OUTPUT FORM AUDIO DAC

1) Audio related Signal



ASDAT3(IC501 PIN 157)

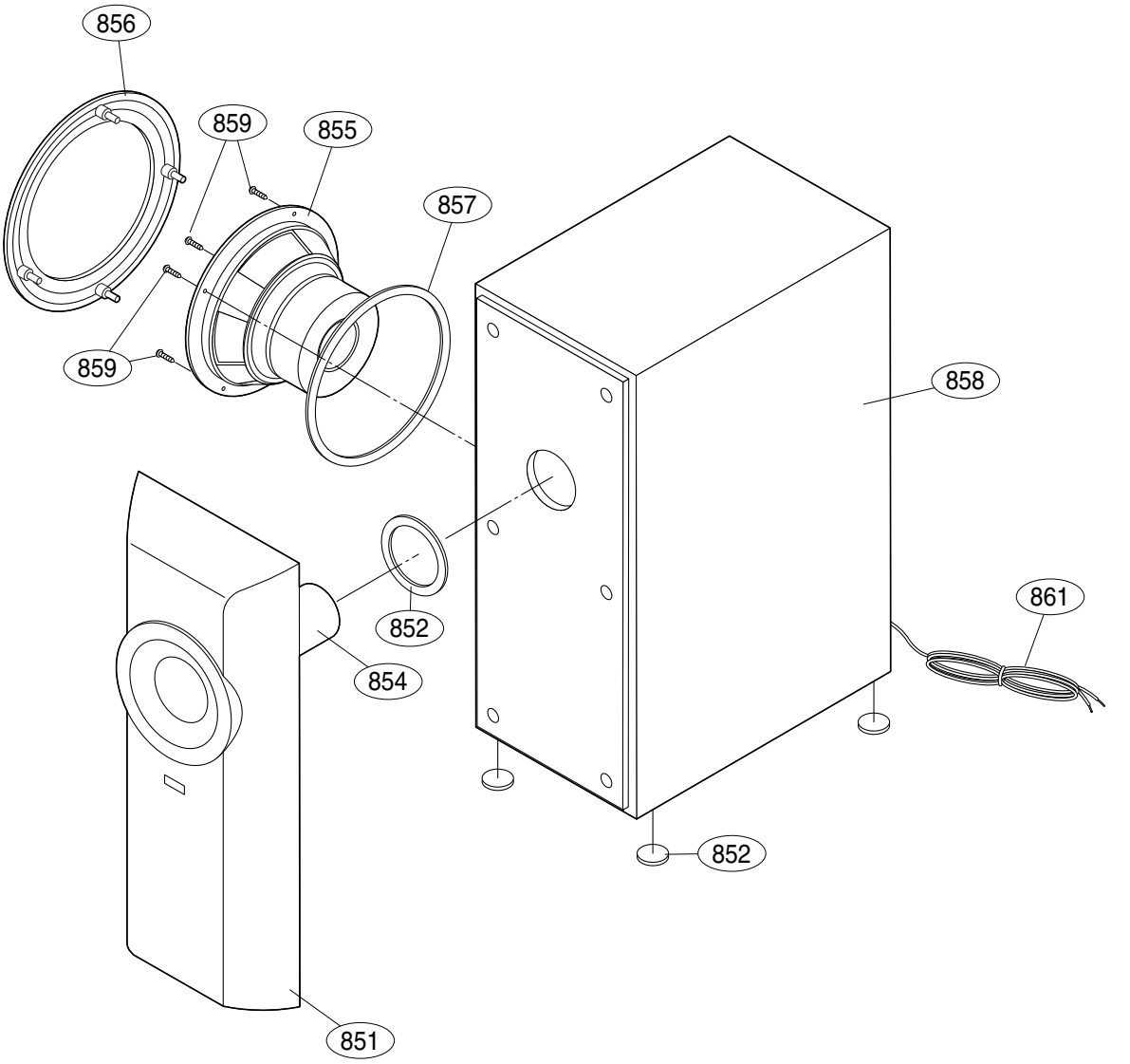
ABCK(IC501 PIN 148)

ALRCK(IC501 PIN 149)

FIG 14-1

SECTION 5. SPEAKER SECTION

❑ MODEL : LHS-D6245W



❑ MODEL : LHS-D6245T