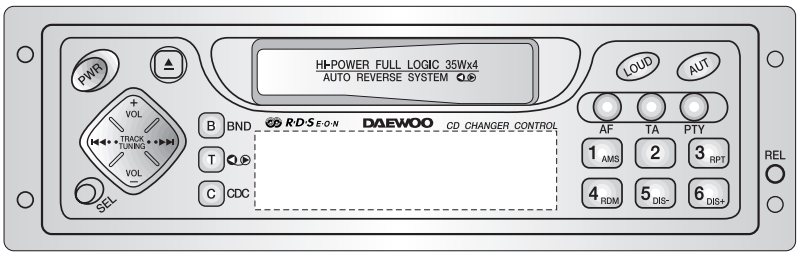
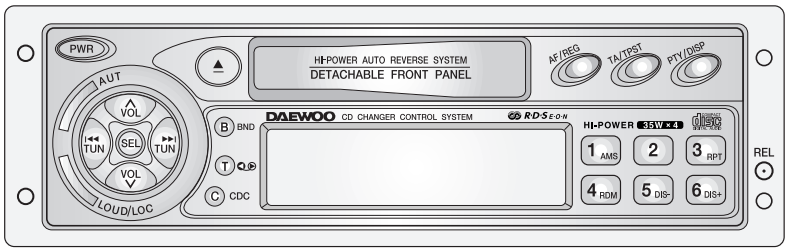
S/M No : AKF0305EF1

Service Manual

Car Audio Basic, RDS & OIRT Band

MODEL : AKF-0305 Series
AKF-0315 Series





- 4-Channel High Power (35W x 4Ch)
- Electronic Tuning
- Electronic Volume/Bass/Treble/Balance/Fader Controls
- Auto Memory/Preset Scan
- Repeat/Random/Intro Scan
- Loudness Controls
- Local/DX Switch
- Detachable Face for Anti-Theft

DAEWOO ELECTRONICS CO., LTD

http://svc.dwe.co.kr Mar. 2000

TABLE OF CONTENTS

1. PRODUCT SPECIFICATIONS

■ AUDIO SECTION

Maximum output power	: 35watts per channel into 4 ohms.
Load impedance	: 4 ohms
Total harmonic distortion	: Less than 10% at 12 watts
Frequency response	: 100Hz(± 3dB), 10kHz(-5 ± 3dB)
Control Bass/Treble	: 10 ± 3dB at 100Hz/10kHz

■ TAPE SECTION

Track format	: 2-track / 2-channel system
Tape speed	: 4.8cm/sec
Wow / Flutter	: 0.35%max. (WRMS)
Frequency response normal (LH)tape	: 63Hz to 10kHz

■ TUNER SECTION

(FM)	Tuning range	: 87.5 to 108MHz 87.5 to 107.9 at U.S.A
	Usable Sensitivity(MONO)	: 12dBuV(4uV / 75ohms)
	Signal to noise ratio (at 60dBu)	: More than 50dB
(MW)	Tuning range	: 522 to 1620kHz at Europe 530 to 1710kHz at U.S.A
	Usable Sensitivity	: 30dBuV
(LW)	Tuning range	: 144 to 288kHz
	Usable Sensitivity	: 40dBuV

■ GENERAL

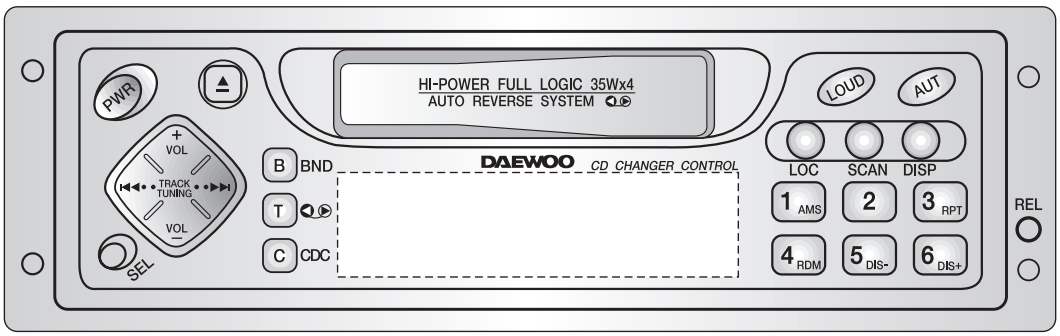
Power requirements	: DC 12.0V / Rated : 14.4V (Usable : 10.8 ~15.6V) Negative ground
Current consumption	: 10A Maximum
Dimension (W x H x D)	: 178 x 50 x 156 mm
Weight(Net)	: 1.75 kg

Design and specifications are subject to changes for improvements without notice.

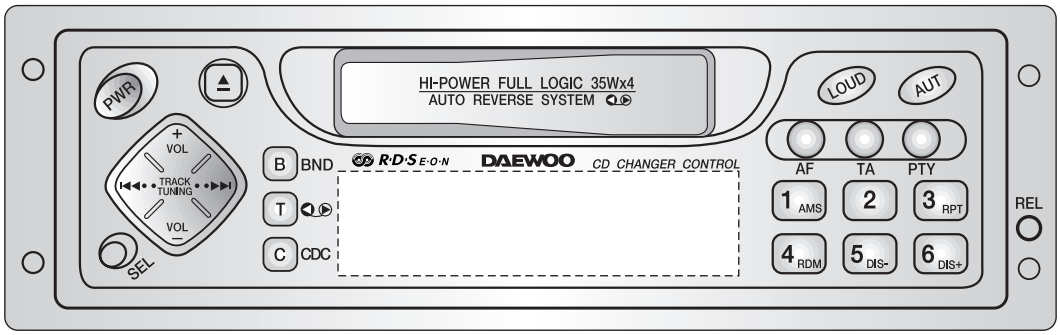
2. LINE DRAWING

2-1. AKF-0305 Front Side

■ BASIC

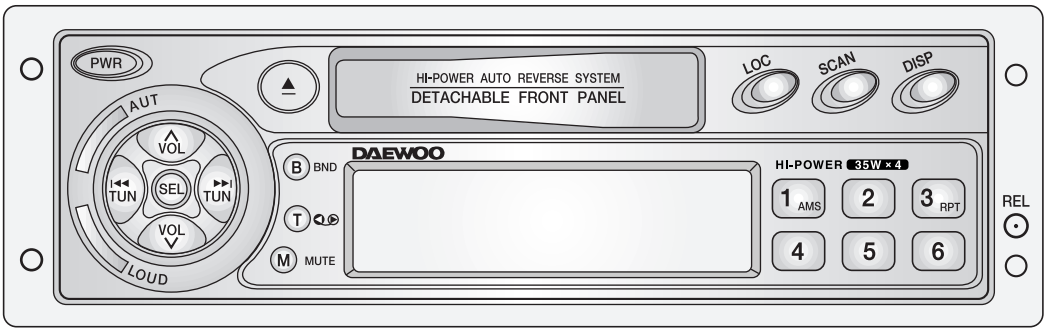


■ RDS

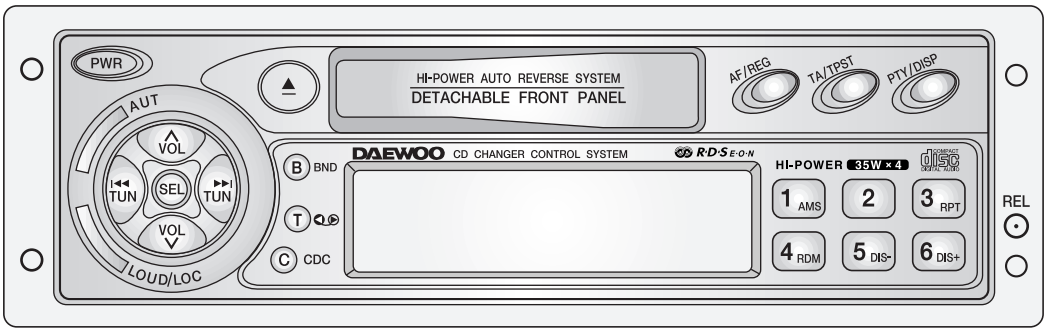


2-2. AKF-0315 Front Side

■ BASIC

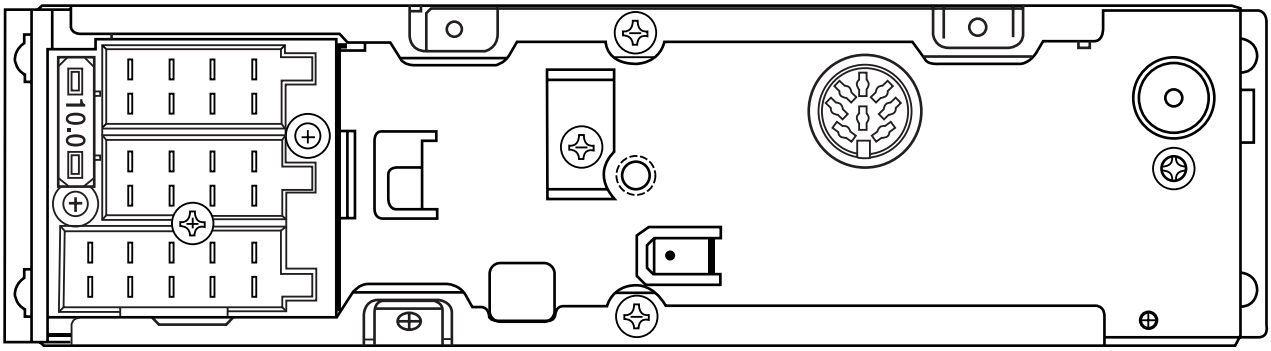


■ RDS

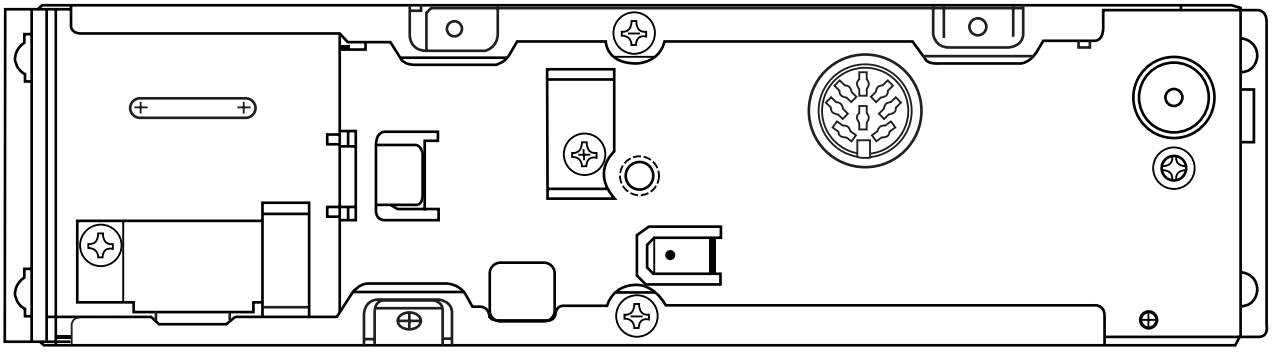


2-3. REAR SIDE

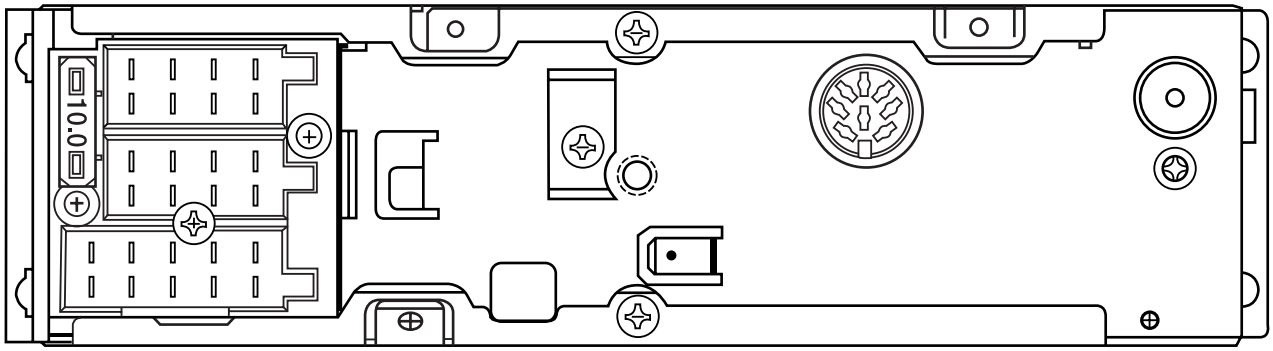
■ BASIC MODEL



■ RDS MODEL

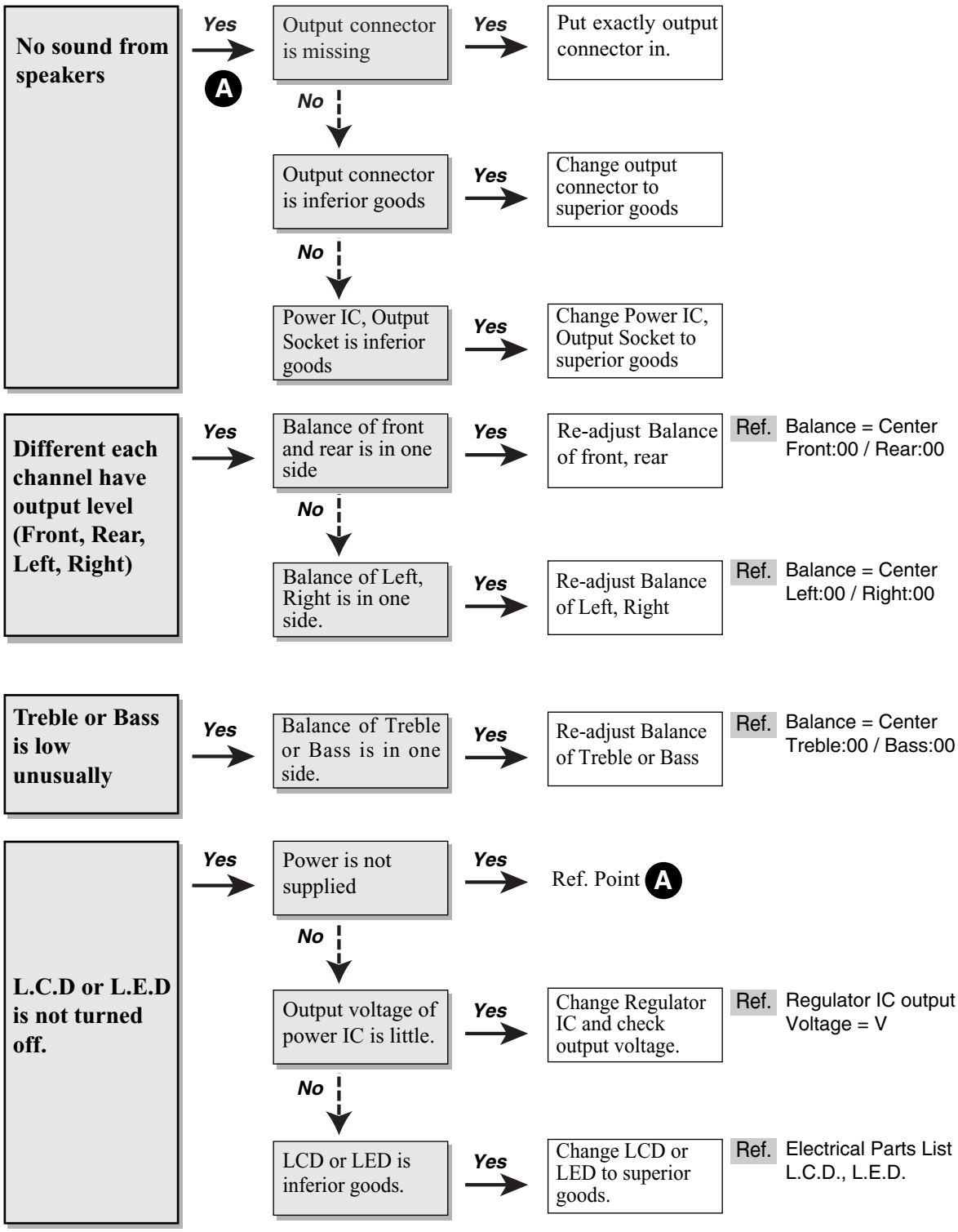


■ RDS+CD CHANGER MODEL

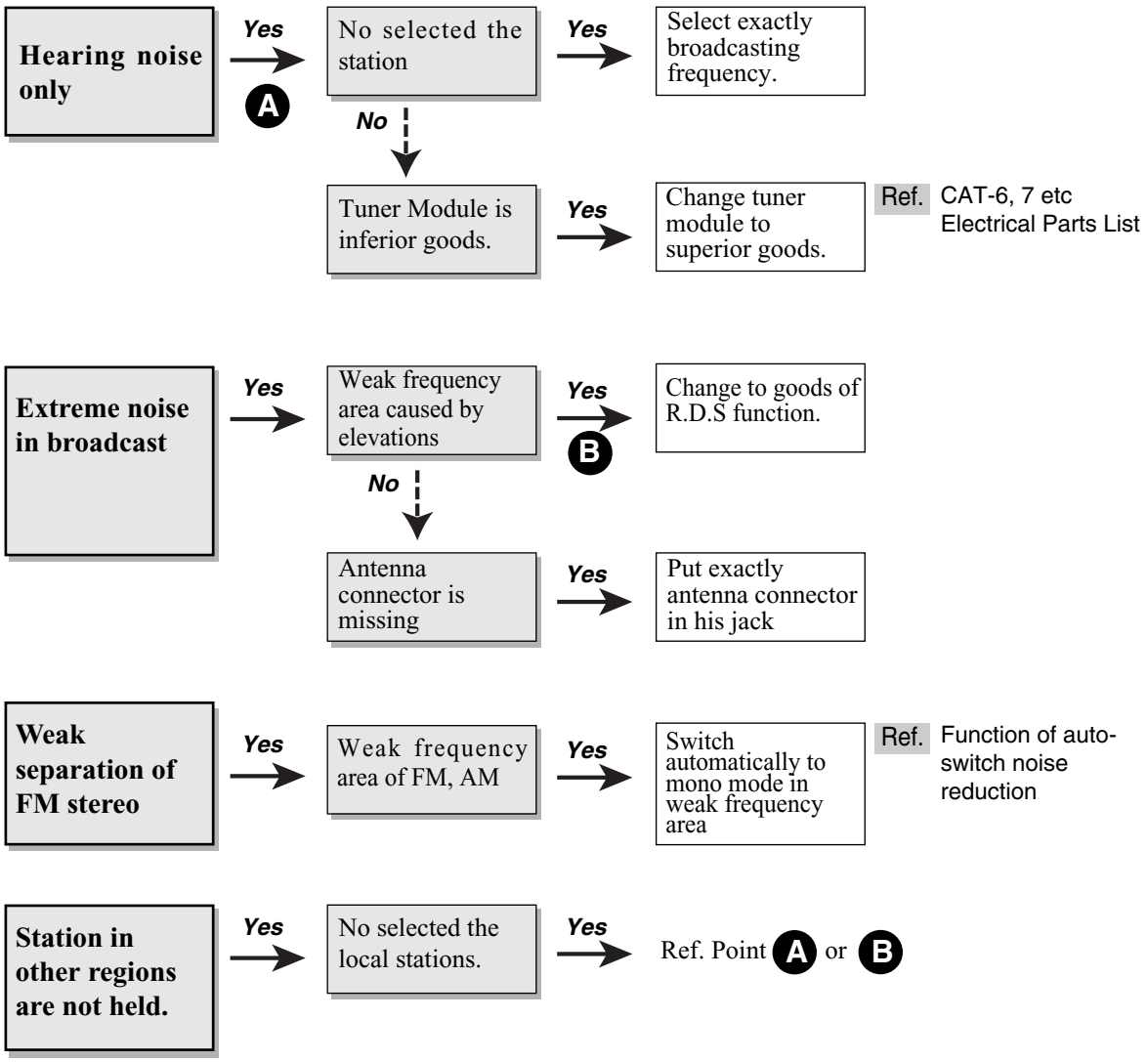


3. EMERGENCY TROUBLE SHOOT

3-1. General Function



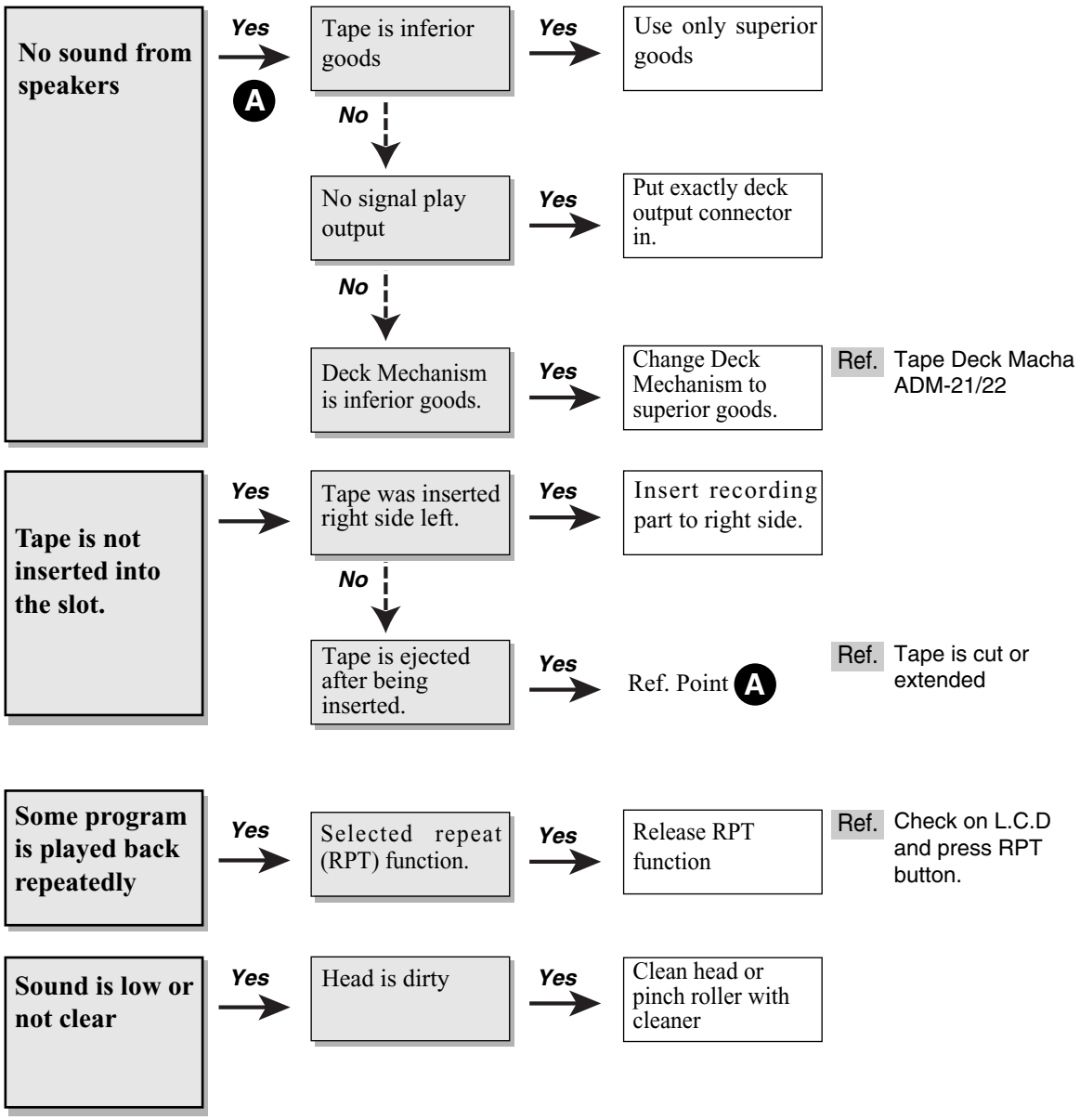
3-2. Tuner Function



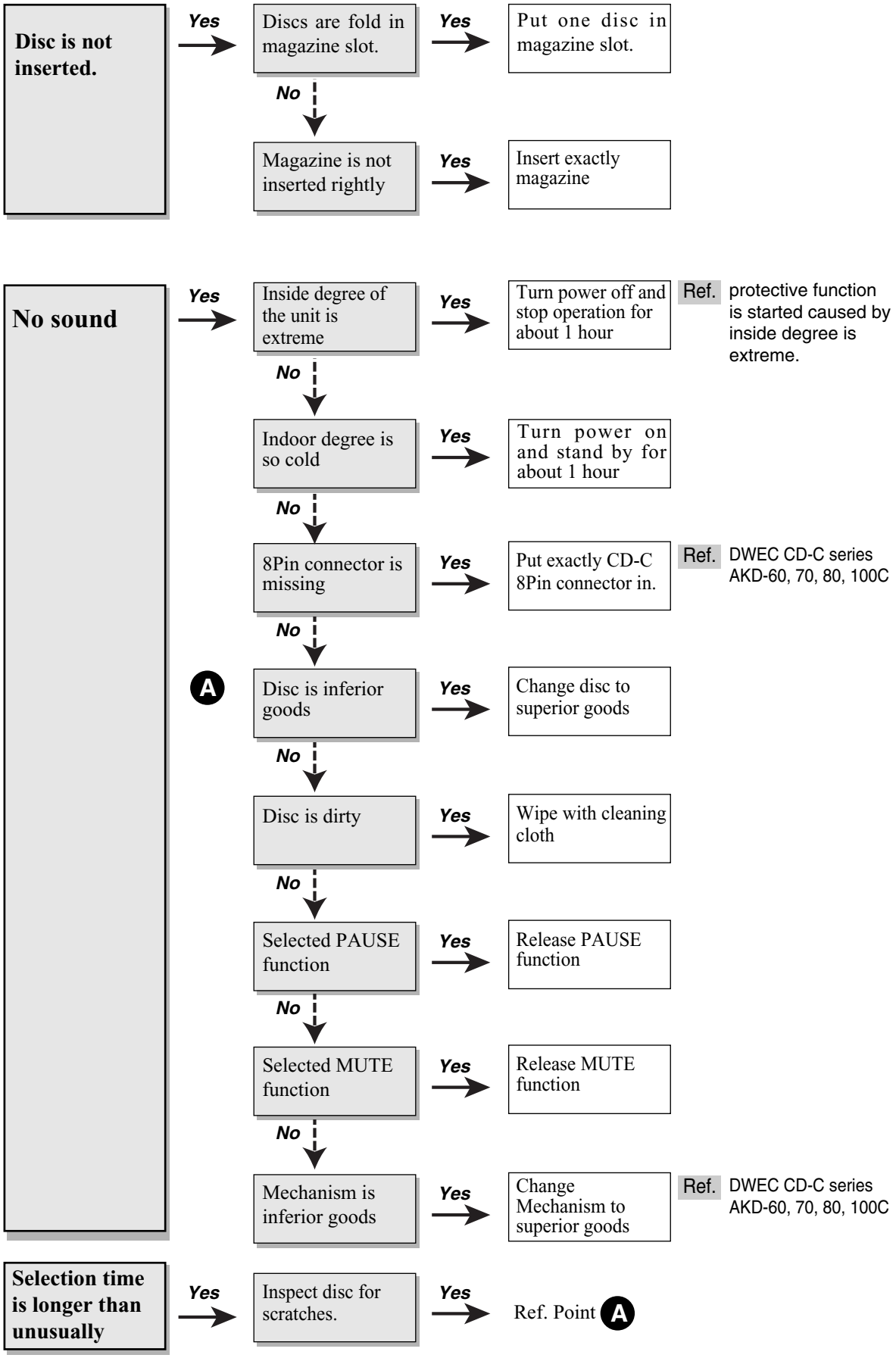
R1 In case of located Glass Antenna, check if heat wire is cut or not in rear window.

R1 Check Antenna connector part.

3-3. Tape Function



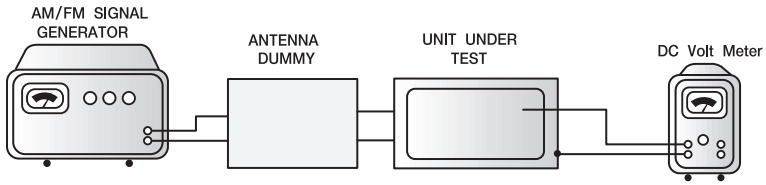
3-4. CDC Function



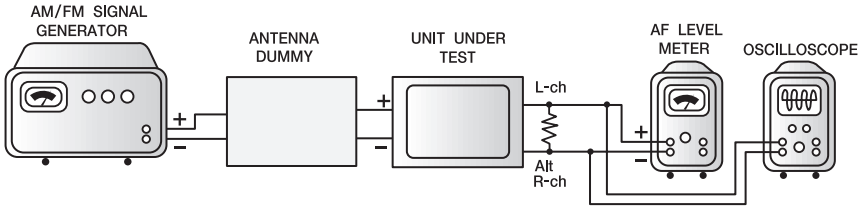
4. ADJUSTMENTS

4-1. EQUIPMENTS CONNECTIONS

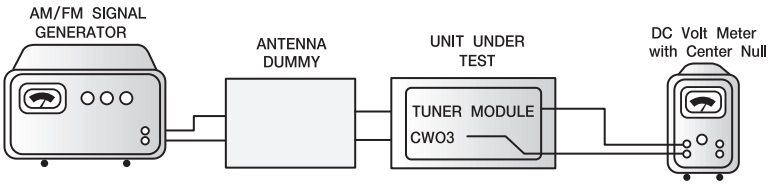
【Fig.1】



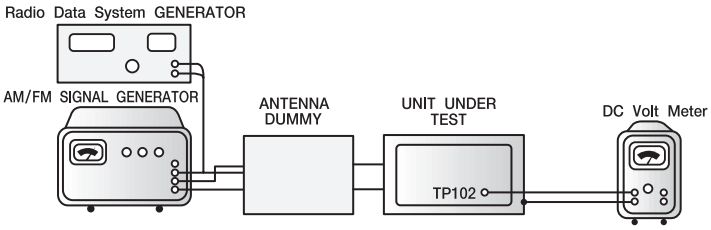
【Fig.2】



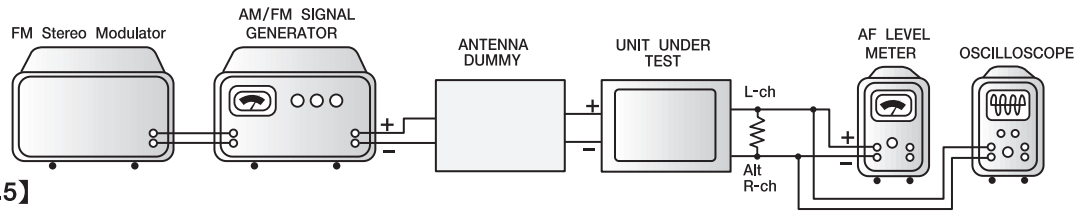
【Fig.3】



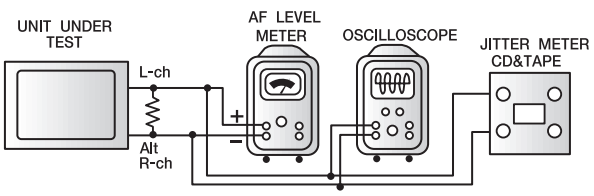
【Fig.4】



【Fig.5】

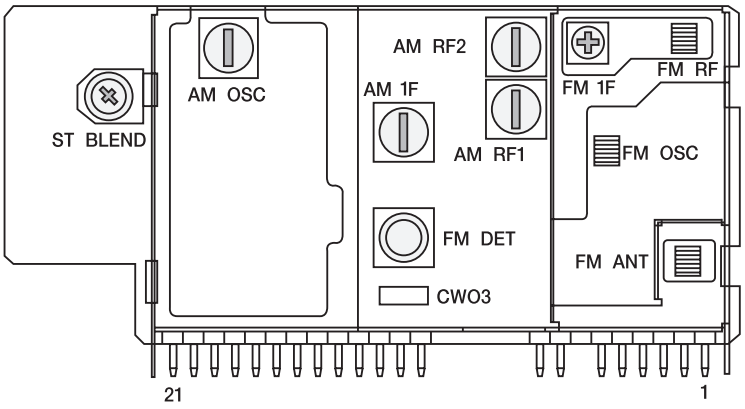


【Fig.6】

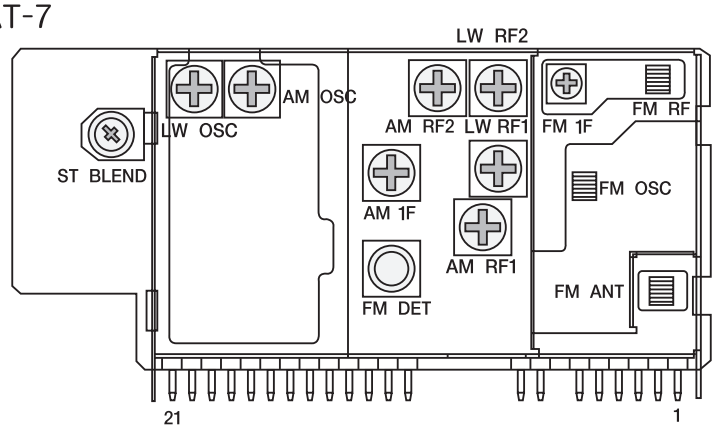


4-2. TUNER MODULE ADJUSTMENT LOCATIONS

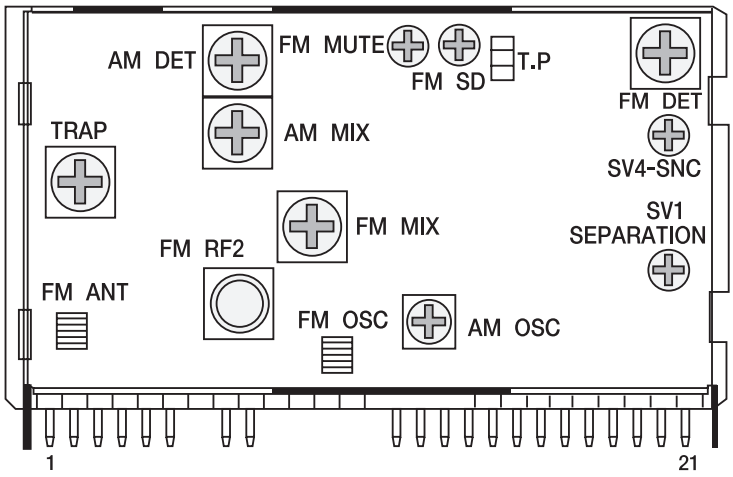
■ CAT-6



■ CAT-7



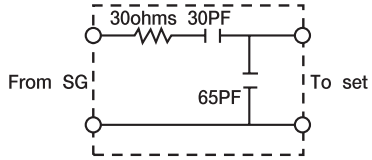
■ CET-6038AFL



【 Fig. 7 】

4-3. AM (MW/LW) ADJUSTMENT METHOD

1. Dummy Antenna Circuit



2. Location of Adjustment Points

Refer to Adjustment Location Page

3. Control Setting

Power Switch ..... ON
Band Switch ..... AM
Other ..... OFF

Balance/Fader Control ..... Mech. Center
Treble/Bass Control ..... Mech. Center

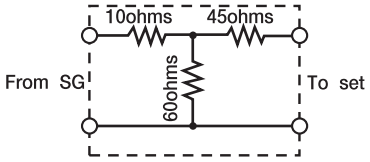
4. Adjustment Procedure

STEP	DESCRIPTION	CONNECTION	ANTENNA SIGNAL	DIAL CONTROL	ADJUSTMENT
1	Band Covering	Figure 1	522KHz 60dBu Mod 1000Hz 30%	522KHz	Adjust AM OSC for 1.2-1.35V(VT) Fig.7
2	RF-Tracking	Figure 2	603KHz 30dBu Mod 1000Hz 30%	603KHz	Adjust AM RF1 and AM RF2 for maximum output Fig.7
3	RF-Tracking	Figure 2	1404KHz 30dBu Mod 1000Hz 30%	1404KHz	Adjust AM RF1 and AM RF2 for maximum output Fig.7
4	LW Band Covering	Figure 1	144KHz 60dBu Mod 1000Hz 30%	144KHz	Adjust LW OSC for 1.2-1.35V(VT) Fig.7
5	LW-Tracking	Figure 2	220KHz 60dBu Mod 1000Hz 30%	220KHz	Adjust LW RF1 and LW RF2 for maximum output Fig.7

NOTE: When it is U.S.A band instead of 522, 603, 999, 1404kHz is 530, 600, 1000, 1400kHz

4-4. FM ADJUSTMENT METHOD

1. Dummy Antenna Circuit



2. Location of Adjustment Points

Refer to Adjustment Location Page

3. Control Setting

Power Switch ..... ON
Band Switch ..... FM
Other ..... OFF

Balance/Fader Control ..... Mech. Center
Treble/Bass Control ..... Mech. Center

4. Adjustment Procedure

STEP	DESCRIPTION	CONNECTION	ANTENNA SIGNAL	DIAL CONTROL	ADJUSTMENT
1	IF (Zero Volt)	Figure 3	98.1MHz 60dBuV No Modulation	98.1MHz	Adjust FM DET for 0V ± 0.03V Fig.7
4	RDS Receiving estimation level	Figure 4	98.1MHz 42dBuV Mod. 1kHz 30% Mono	98.1MHz	Adjust RV 108 Page7. Tuner PC Board for2.7V=20mV at TP102(IC401 pin 66)
5	Stereo Separation	Figure 5	98.1MHz 60dBuV Mod. 1kHz 30% Stereo Left at Right ch.	98.1MHz	Adjust MPX SEP Fig.7 for maximum separation Left and Right ch.
6	SNC	Figure 5	98.1MHz 35dBuV Mod. 1kHz 30% Stereo Left at Right ch.	98.1MHz	Adjust Stereo Blend Fig.7 1dB separation between Left and Right ch.

4-5. TAPE ADJUSTMENT METHOD

NOTE : 1. Clean the playback head before adjustment
2. Prepare the test tape MTT-114 or equivalent
3. Balance, Fader, Bass & Treble ....Center position. Volume adjusted to 2Volts.

STEP	DESCRIPTION	TEST TAPE	CONNECTION	TEST POINT	ADJUSTMENT POINT	ADJUSTMENT
1	Head azimuth adjustment	MTT-114N or equivalent	Figure 6	Speaker Output	Head azimuth adjustment screw	Turn the azimuth screw to obtain maximum level
2	Tape Speed	MTT-114N or equivalent	Figure 6	Speaker Output	Tape Speed adjustment	Adjust for 3010-3020Hz

Note :

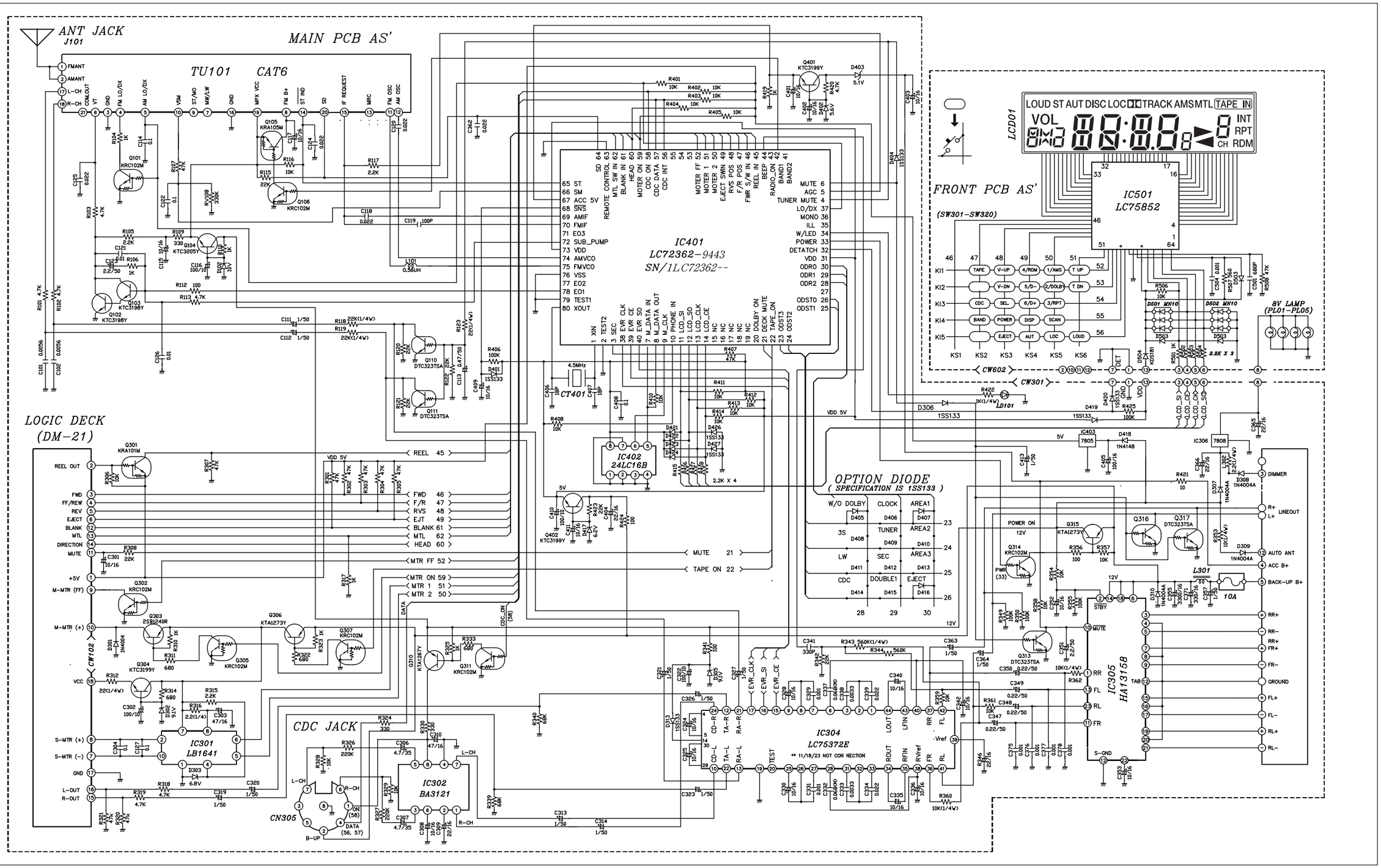
dBu	uV	dBu	uV
17	5.0	33	44.6
16	6.31	35	56.2
30	31.6	45	178

NOTE : Antenna signal is used.

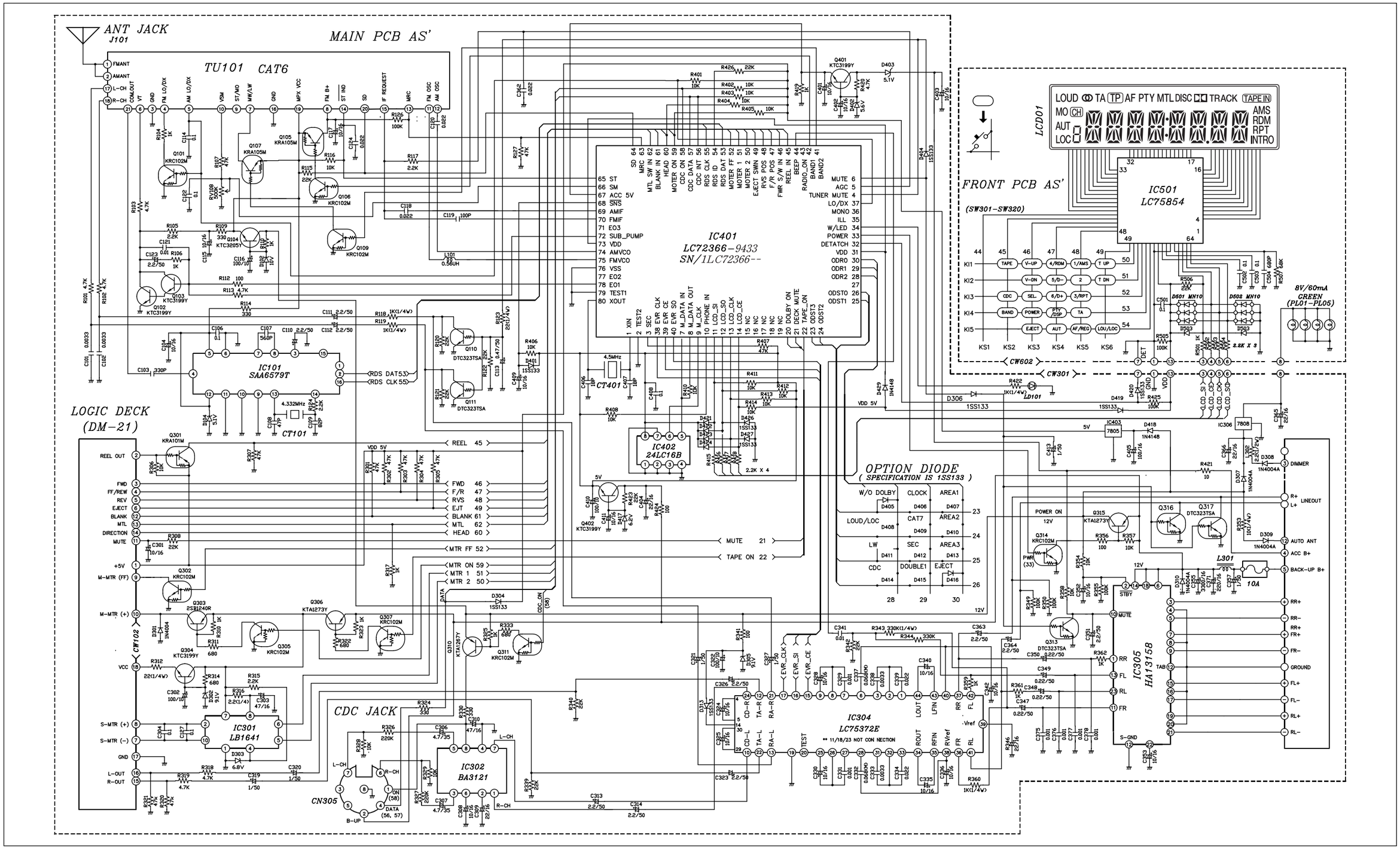
1. For Signal Generator with readings in EMF(Open type) add 12dB (6dB for the "Dummy" and 6dB for EMF-reading).
2. For Signal Generator with reading in dBm add 6 dB for "Dummy"

5. SCHEMATIC DIAGRAMS

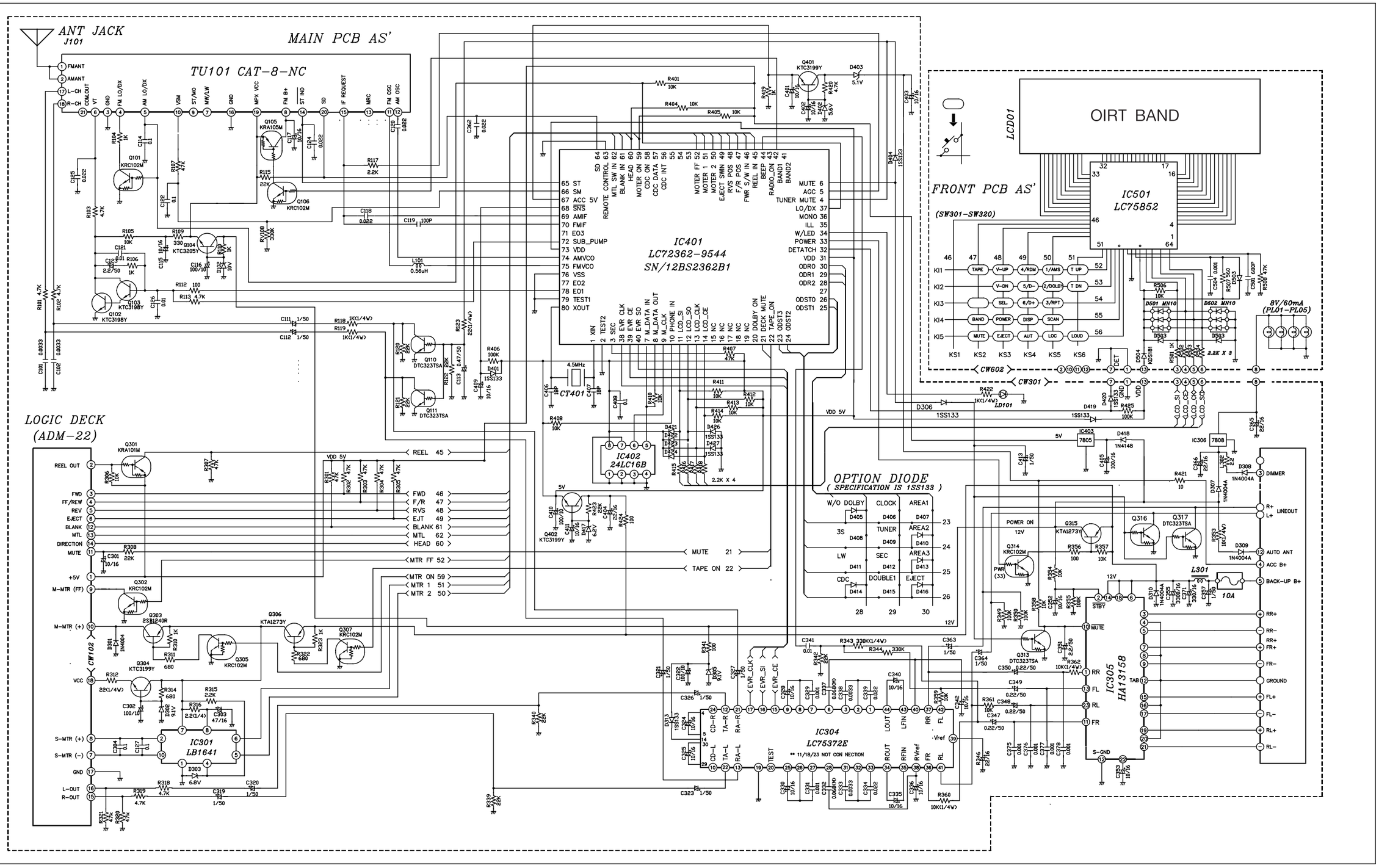
5-1. BASIC Series AKF-0305 / AKF-0315



5-2. RDS Series AKF-0305 / AKF-0315



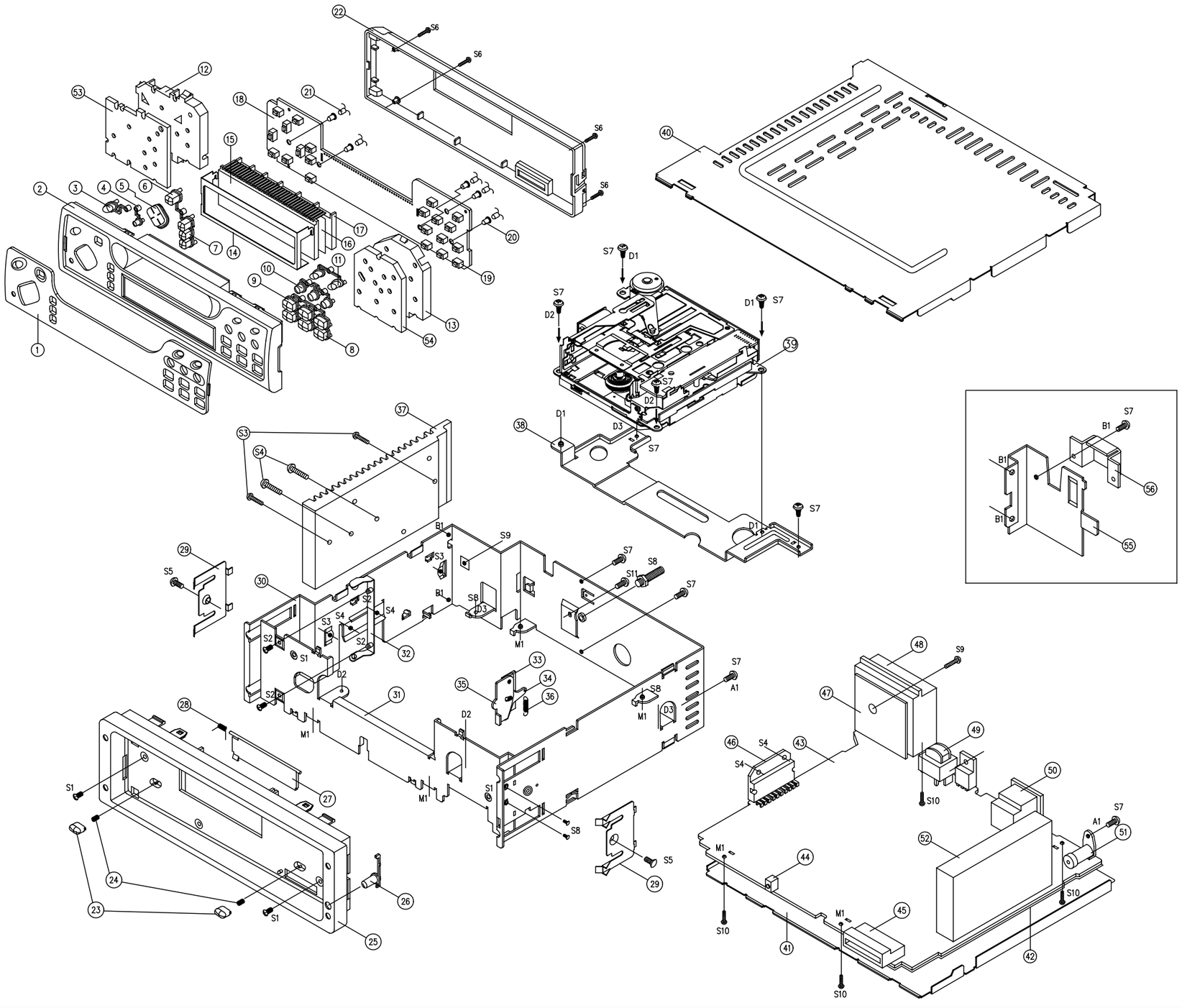
5-3. OIRT Series AKF-0305 / AKF-0315



Size:A3

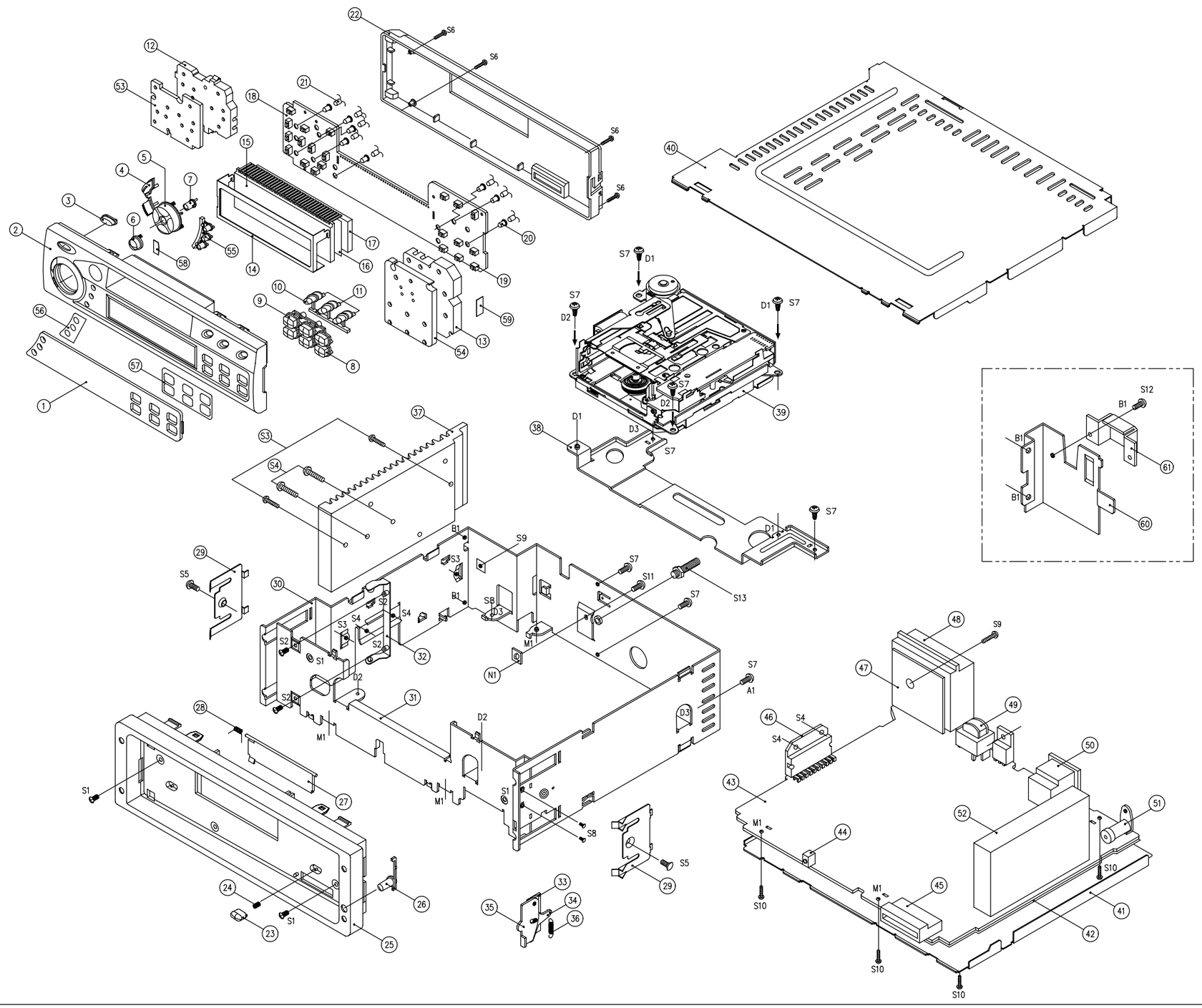
7. OVERALL EXPLODED VIEW & PARTS LIST

7-1. AKF-0305 Basic, RDS



S1	7173260612	SCREW TAPTITE	2	TT2 BIN 2.6x6 MFZN BK	
S2	7001260411	SCREW MACHINE	2	PAN 2.6x4 MFZN	
S3	7173301011	SCREW TAPTITE	2	TT2 BIN 3x10 MFZN	
S4	7173301211	SCREW TAPTITE	2	TT2 BIN 3x12 MFZN	
S5	7175300611	SCREW TAPTITE	2	TT2 FLT 3x6 MFZN	
S6	7173201212	SCREW TAPTITE	4	TT2 BIN 2x12 MFZN BK	
S7	7173300611	SCREW TAPTITE	7	TT2 BIN 3x6 MFZN BK	
S8	7173200612	SCREW TAPTITE	2	TT2 BIN 2X6 MFZN BK	
S9	7173301211	SCREW TAPTITE	1	TT2 BIN 3x12 MFZN	
S10	97T3103610	SCREW LOCK	4	TT2 BIN 3x6 MFZN W/LOCK	
S11	7003300811	SCREW MACHINE	1	BIN 3x8 MFZN	
S12	7372300211	NUT SQUARE	1	4N-2-3 MFZN	
56	97T2430530	BRKT CONN	1	SECC T=1.0	
55	97T2441700	BRKT CONN	1	SECC T=1.0	
55					
54	97T4223100	CUSHION KNOB-B	1	SPONGE T=3.0	
53	97T4223000	CUSHION KNOB-A	1	SPONGE T=3.0	
52	97T7607401	TUNER FM/MW/LW	1	CAT-3(HES-310) WO/COVER	
51	97T6363000	JACK ANTENNA	1	PCB TYPE	
50	97T6304000	SOCKET DIN	1	PCB TYPE 8PIN DIN	
49	5LC301PA18	COIL CHOCK	1	37x1x5.2 300uh p ei-19mm	
48	97T8839200	CONN AS	1	ISO 26P WITH 10A FUSE	
47	97T655950C0	PCB ISO	1	40x38xT1.6	
46	1HA13158A-	IC AUDIO POWER	1	HA13158A	
45	97T621250A0	CONN DETECHABLE	1	FP.S-12-3.2-GG	
44	DLT6311S4-	LED	1	LT6331-S4 RED WITH HOLDER	
43	97T65592MA	PCB MAIN	1	330x190/2 T=1.6	
42	97T0926200	PLATE INSULATION	1	PE T0.25	
41	97T0432900	COVER BOTTOM	1	SECC T=0.6	
40	97T0432800	COVER TOP	1	SECC T=0.6	
39	97T6008200	DECK MECHANISM	1	ADM-21	
38	97T2440500	BRKT DECK	1	SECC T=1.0	
37	97T4407700	HEAT SINK	1	AL-6063 ANODIZING	BLACK
36	97T3013300	SPRING HOOK	1	STS-304	
35	97T2608300	HOOK LEVER-C	1	PC(LEXAN-121)	GRAY
34	97T2608200	HOOK LEVER-B	1	PC(LEXAN-121)	GRAY
33	97T2608100	HOOK LEVER-A	1	PC(LEXAN-121)	GRAY
32	97T2606010	HOOK-B	1	STSP T=0.4	
31	97T0627700	CHASSIS FRONT	1	SECC T=1.0	
30	97T0627600	CHASSIS MAIN	1	SECC T=1.0	
29	97T3010400	SPRING RETAIN	2	STS-304 T=0.4	
28	97T3005610	SPRING DOOR	1	STS-304W PI 2.4xD0.25x7	
27	97T1805100	CASSETTE DOOR	1	PC(LEXAN-121)	
26	97T13A6500	KNOB RELEASE	1	ABS(XR-404)	GRAY
25	97T1413200	ESCUTCHEON	1	ABS(XR-404)	GRAY
24	97T3012100	SPRING PULL	2	SUS-304 PI 0.35	
23	97T1393010	KNOB PULL	2	ABS(XR-404)	GRAY
22	97T0208300	CABINET BACK	1	PC(LEXAN-121)	
21	97T82L0DE4	LAMP PILOT	1	14V 40MA D3.0 0.13	
20	97T0420530	CAP LAMP	5	SILICON RUBBER	
19	5S50101Z02	SW TACT	21	IC-IP SK0C10918A 260g	
18	97T65592FR	PCB FRONT	1	190x163/4 T=1.6	
17	9T72221700	REFLECTION LCD	1	ACRYL(IH-830H)	
16	9T79605800	SHEET LCD	1	TREPAL PAPER D112	
15	97T0L1160P	LCD	1	TTD-1464UPTDPN	
14	97T0433000	COVER LCD	1	ET T=0.4	
13	9T72221600	REFLECTION SW-B	1	ACRYL(IH-830H)	
12	9T72221500	REFLECTION SW-A	1	ACRYL(IH-830H)	
11	97T13A5700	KNOB SCAN	1	PC(LEXAN-121)	
10	97T13A5900	KNOB FUNCTION-B	1	PC(LEXAN-121)	
9	97T13A6200	KNOB PRESET-A	1	PC(LEXAN-121)	
8	97T13A6100	KNOB PRESET-A	1	PC(LEXAN-121)	
7	97T13A5800	KNOB FUNCTION-A	1	PC(LEXAN-121)	
6	97T13A6300	KNOB EJECT	1	PC(LEXAN-121)	
5	97T13A6000	KNOB VOLUME	1	PC(LEXAN-121)	
4	97T13A6400	KNOB MODE	1	ABS(XR-404)	GRAY
3	97T13A5600	KNOB POWER	1	PC(LEXAN-121)	
2	97T0108200	CABINET FRONT	1	ABS(XR-404)	GRAY
1	97T1607800	WINDOW LCD	1	ACRYL(IH-830H)	
No.	PART CODE	PART NAME	QTY	DESCRIPTION	REMARK

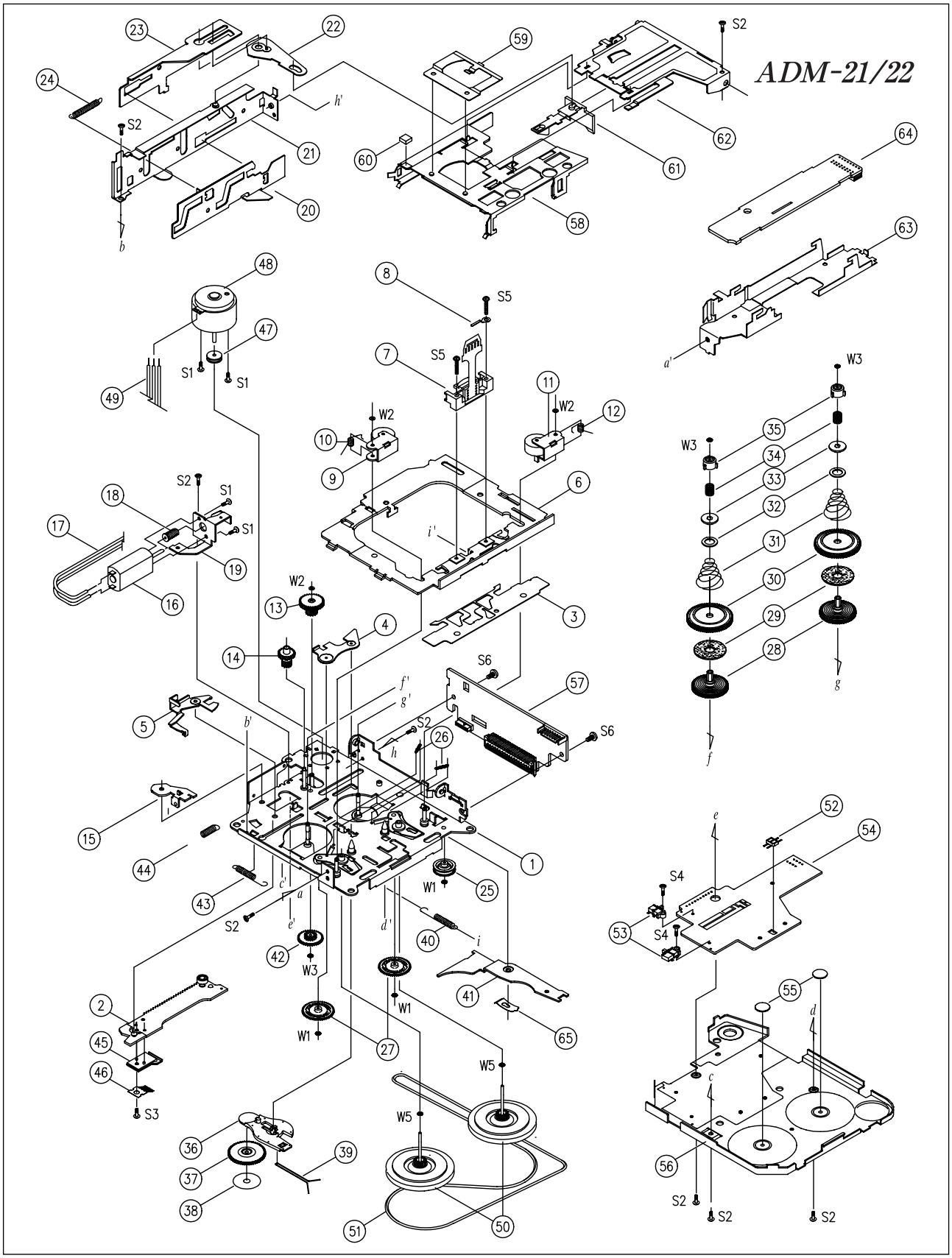
7-2. AKF-0315 Basic, RDS



NO.	PART CODE	PART NAME	Q'ty	DESCRIPTION	REMARK
N1	7372300211	NUT SQUARE	1	4N-2-3 MFZN	
S13	97T3104900	BOLT HEX	1	SM20C M5X(3+2+10) MFZN	
S12	7173300611	SCREW TAPTITE	1	TT2 BIN 3x6 MFZN BK	OPTION
S11	7003300811	SCREW MACHINE	1	BIN 3x8 MFZN	
S10	97T3103610	SCREW LOCK	4	TT2 BIN 3x6 MFZN W/LOCK	
S9	7173301211	SCREW TAPTITE	1	TT2 BIN 3x12 MFZN	
S8	7173200612	SCREW TAPTITE	2	TT2 BIN 2X6 MFZN BK	
S7	7173300611	SCREW TAPTITE	7	TT2 BIN 3x6 MFZN BK	
S6	7173201212	SCREW TAPTITE	4	TT2 BIN 2x12 MFZN BK	
S5	7175300611	SCREW TAPTITE	2	TT2 FLT 3x6 MFZN	
S4	7173301211	SCREW TAPTITE	2	TT2 BIN 3x12 MFZN	
S3	7173301011	SCREW TAPTITE	2	TT2 BIN 3x10 MFZN	
S2	7001260411	SCREW MACHINE	2	PAN 2.6x4 MFZN	
S1	7173260612	SCREW TAPTITE	2	TT2 BIN 2.6x6 MFZN BK	
61	97T2430530	BRKT CONN	1	SECC T=1.0	OPTION
60	97T2441700	BRKT CONN	1	SECC T=1.0	OPTION
59	97T9344400	LABEL LAMP	1	PE T=0.1	
58	97T9346600	LABEL LAMP	1	PE T=0.1	
57	97T9608000	SHEET WINDOW B	1	DOUBLE TAPE T=0.16	
56	97T9607900	SHEET WINDOW A	1	DOUBLE TAPE T=0.16	
55	97T13C5200	KNOB BAND	1	PC(LEXAN-121)	Laser Cut
54	97T4224900	CUSHION KNOB B	1	SPONGE T=3.0	
53	97T4224800	CUSHION KNOB A	1	SPONGE T=3.0	
52	97T7607401	TUNER FM/MW/LW	1	CAT-3(HES-310) WO/COVER	
51	97T6363000	JACK ANTENNA	1	PCB TYPE	
50	97T6304000	SOCKET DIN	1	PCB TYPE 8PIN DIN	
49	5LC301PA18	COIL CHOCK	1	37x1x5.2 300uh p ei-19mm	
48	97T8839200	CONN AS	1	ISO 26P WITH 10A FUSE	
47	97T65595C0	PCB ISO	1	40x38xT1.6	
46	1HA13158A-	IC AUDIO POWER	1	HA13158A	
45	97T621250A0	CONN DETECHABLE	1	FP.S-12-3.2-GG	
44	DLT6311S4-	LED	1	LT6331-S4 RED WITH HOLDER	
43	97T65592MA	PCB MAIN	1	330x190/2 T=1.6	
42	97T0926200	PLATE INSULATION	1	PE T0.25	
41	97T0432900	COVER BOTTOM	1	SECC T=0.6	
40	97T0432800	COVER TOP	1	SECC T=0.6	
39	97T6008200	DECK MECHANISM	1	ADM-21	
38	97T2440500	BRKT DECK	1	SECC T=1.0	
37	97T4407700	HEAT SINK	1	AL-6063 ANODIZING	BLACK
36	97T3013300	SPRING HOOK	1	STS-304	
35	97T2608300	HOOK LEVER-C	1	PC(LEXAN-121)	GRAY
34	97T2608200	HOOK LEVER-B	1	PC(LEXAN-121)	GRAY
33	97T2608100	HOOK LEVER-A	1	PC(LEXAN-121)	GRAY
32	97T2606010	HOOK-B	1	STSP T=0.4	
31	97T0627700	CHASSIS FRONT	1	SECC T=1.0	
30	97T0627600	CHASSIS MAIN	1	SECC T=1.0	
29	97T3010400	SPRING RETAIN	2	STS-304 T=0.4	
28	97T3005610	SPRING DOOR	1	STS-304W PI 2.4xD0.25x7	
27	97T1805100	CASSETTE DOOR	1	PC(LEXAN-121)	
26	97T13A6500	KNOB RELEASE	1	ABS(XR-404)	GRAY
25	97T1413200	ESCUTCHEON	1	ABS(XR-404)	GRAY
24	97T3012100	SPRING PULL	1	SUS-304 PI 0.35	
23	97T1393010	KNOB PULL	1	ABS(XR-404)	GRAY
22	97T0208300	CABINET BACK	1	PC(LEXAN-121)	
21-2	97T82L0DE4	LAMP PILOT	14	14V 40MA D3.0 0.13	DUAL Co
21-1	97T82L0DE4	LAMP PILOT	8	14V 40MA D3.0 0.13	ONE Co.
20-2	97T0420530	CAP LAMP	8	SILICON RUBBER	DUAL Co
20-1	97T0420530	CAP LAMP	8	SILICON RUBBER	ONE Co.
19	5S50101Z02	SW TACT	21	IC-IP SK0C10918A 260g	
18	97T65930FR	PCB FRONT	1	190x163/4 T=1.6	
17	97T2224900	REFLECTION LCD	1	ACRYL(IH-830H)	Clear
16	97T9605800	SHEET LCD	1	TREPAL PAPER D112	
15-2	97T0L1160P	LCD	1	TTD-1464UPTDPN	RDS Mo.
15-1	97T0L1320P	LCD	1	TTD-1869UPTDPN	Basic Mo.
14	97T0436300	COVER LCD	1	ET T=0.3	
13	97T2224800	REFLECTION SW B	1	ACRYL(IH-830H)	Clear
12	97T2224700	REFLECTION SW A	1	ACRYL(IH-830H)	Clear
11	97T13C5800	KNOB INNER	3	PC(LEXAN-121)	Milky
10	97T13C5500	KNOB FUNCTION	1	PC(LEXAN-121)	Light Blue
9	97T13C5300	KNOB PRESET A	1	PC(LEXAN-121)	Laser Cut
8	97T13C5400	KNOB PRESET B	1	PC(LEXAN-121)	Laser Cut
7	97T13C5100	KNOB SEL	1	PC(LEXAN-121)	Light Blue
6	97T13C5600	KNOB EJECT	1	PC(LEXAN-121)	Laser Cut
5	97T13C4900	KNOB VOLUME	1	PC(LEXAN-121)	Laser Cut
4	97T13C5700	KNOB AUT	1	ABS(XR-404)	Light Blue
3	97T13C5000	KNOB POWER	1	PC(LEXAN-121)	Laser Cut
2	97T0110100	CABINET FRONT	1	ABS(XR-404)	Silk Screen
1	97T1609000	WINDOW LCD	1	ACRYL(IH-830H)	Silk Screen

8. DECK MECHANISM EXPLODED VIEW & PARTS LIST

8-1. EXPLODED VIEW (ADM-21)



8-2. PARTS LIST

No	PART CODE	PART NAME	DESCRIPTION
1	97YM002600	CHASSIS MAIN SUB AS	ADM-22 FULL LOGIC DECK
2	97YM002900	LEVER GEAR LOAD AS	ADM-22 FULL LOGIC DECK
3	97Y0900800	PLATE REVERSE	SUS-304 1/2H T0.4
4	97Y2100400	ARM EJ CAM	EGSAFC45R T0.8
5	97Y2101000	ARM TAPE SELECT	EGSAFC45R T0.8
6	97Y0900200	PLATE HEAD	EGSAFC45R T0.8
7	97Y8000300	HEAD AS	HEAD+FPC
8	97Y6400100	TERMINAL EARTH	ET T0.2
9	97YM003200	ARM PINCH R AS	ADM-22 FULL LOGIC DECK
10	97Y3000400	SPRING PINCH ARM (R)	SWP-B PI0.65 TORS
11	97YM003100	ARM PINCH F AS	ADM-22 FULL LOGIC DECK
12	97Y3000300	SPRING PINCH ARM (F)	SWP-B PI0.65 TORS
13	97Y2700400	GEAR REDUCTION	POM DURACON M90-44 (N)
14	97Y2700800	GEAR WORM WHEEL	POM DURACON OL-10 (N)
15	97Y2100500	ARM IN SW	EGSAFC45R T0.8
16	97Y8100200	MOTOR SUB	FF-050SH-11190
17	WP-7021563	WIRE RIBBON	AWG28 2P
18	97Y2700700	GEAR WORM	POM DURACON M90-44 (N)
19	97Y2400200	BRACKET MOTOR	EGSAFC45R T0.8
20	97Y2700900	CAM EJECT	EGSAFC45R T0.8
21	97YM003400	BRACKET L AS	ADM-22 FULL LOGIC DECK
22	97YM003500	ARM TAPE CATCH A AS	ADM-22 FULL LOGIC DECK
23	97Y2101400	ARM TAPE CATCH (B)	EGSAFC45R T0.8
24	97Y3000800	SPRING TAPE CATCH ARM	SWP-B PI0.65 EXTN
25	97Y3700100	PULLEY IDLE	POM DURACON ES-5
26	97Y3000900	SPRING TU ARM	SUS-403WPB PI0.2 EXTN
27	97Y2700600	GEAR TU	POM DURACON OL-10 (N)
28	97Y2900200	REEL SPINDLE	POM DELRIN-500 (N)
29	97Y4100100	FELT REEL	FELT PI5.6XPI18XT0.8
30	97Y2700500	GEAR REEL	POM DELRIN-500 (N)
31	97Y3000600	SPRING REEL	SUS-304WPB PI0.7 CONE
32	97Y3100100	WASHER REEL	PS PI4.0XPI18.0XT0.4
33	97Y4000100	BUSHING REEL	POM DURACON M90-44 (N)
34	97Y3000500	SPRING REEL CAP	SUS-304WPB PI0.3 COMP
35	97Y0400100	CAP REEL	POM DURACON M90-44 (N)
36	97Y2101500	ARM DETECT GEAR	POM DURACON M90-44 (N)
37	97Y2701200	GEAR DETECT	POM DURACON M90-44 (BK)

No	PART CODE	PART NAME	DESCRIPTION
38	97Y9300200	LABEL REFLECTION	ALS T0.05 PI15.8
39	97Y3001100	SPRING DETECT ARM	SWP-B PI0.4
40	97Y3001200	SPRING HEAD PLATE	AWP-B PI0.4 EXTN
41	97Y0900400	PLATE REVERSE B	EGSAFC45R T0.8
42	97Y2700100	GEAR POWER	SMF5030
43	97Y3001300	SPRING SELECT ARM	SUS-304WPB PI0.25 EXTN
44	97Y3001000	SPRING IN SW ARM	SUS-304WPB PI0.25 EXTN
45	97Y0400200	COVER BRUSH	POM DURACON M90-44 (BK)
46	97Y3300100	BRUSH CONTROL	GNP T0.1
47	97Y3700700	PULLEY MOTOR	MBSBM
48	97Y8100300	MOTOR MAIN	MC15U3LDCN
49	WP-7030803	WIRE RIBBON	AWG28 3P
50	97Y2900400	FLYWHEEL AS	ZDC2/C2700/SUS-420J2
51	97Y5500200	BELT MAIN	EPDM PI120.3XT1
52	1SPI31525-	IC PHOTO REFLECTOR	SPI-315-25
53	5S40101A19	SW PUSH	SW-110 1C-1P NORMAL OPEN
54	97Y6500700	PCB REFLECTOR A	XPC 78X57XT0.8
55	97Y3900100	POLYSLIDER FLYWHEEL	PS PI8.0XT0.3
56	97Y0900100	PLATE BOTTOM	EGSAFC45R T0.6
57	97YC000500	PCB CONNECTION AS	ADM-22 FULL LOGIC DECK
58	97Y2300100	HOLDER CASSETTE	EGSAFC45R T0.8
59	97Y0900700	PLATE SPG CASS HOLD	SUS-304WPB T0.2
60	97Y4200100	CUSHION HOLDER	EVA 6.5X6.5XT1.0
61	97Y2600100	HOOK TAPE	POM DURACON M90-44 (N)
62	97Y2101300	HANGER CASSETTE	EGSAFC45R T0.8
63	97Y2400300	BRACKET PCB	SECC-E T0.8
64	97YC000600	PCB EQ AS	ADM-22 FULL LOGIC DECK
65	97Y5700100	STOPPER REV PLT B	SUS-304 T0.2
S1	7003200211	SCREW MACHINE	BIN M2X2.5 MFZN
S2	7273200311	SCREW TAPTITE	TT3 BIN 2X3 MFZN
S3	7273200411	SCREW TAPTITE	TT3 BIN 2X3.5 MFZN
S4	7273170511	SCREW TAPTITE	TT3 BIN 1.7X5 MFZN
S5	7273201011	SCREW TAPTITE	TT3 BIN 2X10 MFZN
S6	7173260611	SCREW TAPTITE	TT2 BIN 2.6X6 MFZN
W1	97Y3900200	POLYSLIDER WASHER	PS PI1.2XPI3.2XT0.25
W2	97Y3900300	POLYSLIDER WASHER	PS PI1.5XPI3.2XT0.25
W3	97Y3900600	POLYSLIDER WASHER	PS PI1.5XPI3.2XT0.4
W4	97Y3900500	POLYSLIDER WASHER	PS PI2XPI4XT0.4
W5	97Y3900700	POLYSLIDER WASHER	PS PI1.9XPI3.2XT0.25

9. PARTS LIST

CAUTION Ⓡ **is a recommendable part for essential stock.**

9-1. MAIN SECTION

Ref	PART NO.	DESCRIPTION
IC101	1SAA6579T-	IC AUDIO SAA6579T (RDS Demodulator)
IC301	1LB1641---	IC DRIVER LB1641
IC302	1BA3121---	IC ISOLATION BA-3121 (When it is CD Changer)
IC304	1LC75372E-	IC CHIP EVR LC75372E MFP36S
IC305	1HA13158A-	IC AUDIO POWER HA13158A
Ⓡ IC306	1K1A7808P-	IC REGULATOR KIA 7808P TO-220AB
Ⓡ IC401	1LC72366-- 1LC72362--	IC CHIP CUSTOM LC72366-9433, W/RDS Version LC72362-9443, W/O RDS Version
IC402	124LC16BSQ	IC CHIP EEPROM 24LC16B-1/SN
Ⓡ IC403	1Z1A78S05P	IC REGULATOR KIA78S05P AUTO
J101	97T6366900	JACK ANT ANT. J-020-03
Ⓡ LD101	DLT6311S4-	LED LT6311-S4 RED WITH HOLDER
L301	5LC301PA18	COIL CHOKE 37 x 1 x 5.2 300UH P EI-19MM
RV108	RV1417504-	R SEMI FIXED H500K-5 x 5-6N-PC-BS
Ⓡ TU001	97T7609100 PNFCMBJV00	TUNER MODULE CET-6048 FM/MW/LW *OIRT BAND TUNER FM 1-CHIP AS CAT-7-NC
W01, W13	W144RD1017	WIRE LEAD AWG26 7/0. 16 RD 10-100-10
CT102	5XJZ4R332D	CRYSTAL QUARTZ HC-49/S 4.332MHZ 25PPM
CT401	5XJZ4R500E	CRYSTAL QUARTZ HC-49/S 4.5MHZ 30PPM
D102	DKTZ10B---	DIODE ZENER MTZ-10V 26MM TAPPING
D102	DKTZ9R1B--	DIODE ZENER MTZ-9.1V AUTO 26MM *OIRT BAND
D104, D403	DKTZ5R1B--	DIODE ZENER MTZ-5.1V AUTO 26MM
D301, D307, D308 D309, D310	DKN4004A--	DIODE KN4004A AUTO 26MM
D302, D305	DKTZ9R1B--	DIODE ZENER MTZ-9.1V AUTO 26MM
D303	DKTZ6R8B--	DIODE ZENER MTZ-6.8V AUTO 26MM
D304, D306, D313 D401, D404, D405 D409, D410, D411 D413, D416, D419 D420, D421, D422 D423, D424, D426 D427	DKSS133---	DIODE 1SS133 AUTO 26MM
D402	DKTZ5R6B--	DIODE ZENER MTZ-5.6V AUTO 26MM
D417	DKTZ6R2B--	DIODE ZENER MTZ-6.2V AUTO 26MM
D418, D429	DKN4148---	DIODE KN4148 AUTO 26MM
L101	5LL568K02K	COIL INDUCTOR 0.56UH K 02 TA 26MM *Option
Ⓡ Q101, Q106, Q109 Q302, Q305, Q307 Q311, Q314	TZRC102M--	TR KRC102M (KEC)
Ⓡ Q102, Q103, Q304 Q401, Q402	TZTC3199Y-	TR KTC-3199Y TAPPING

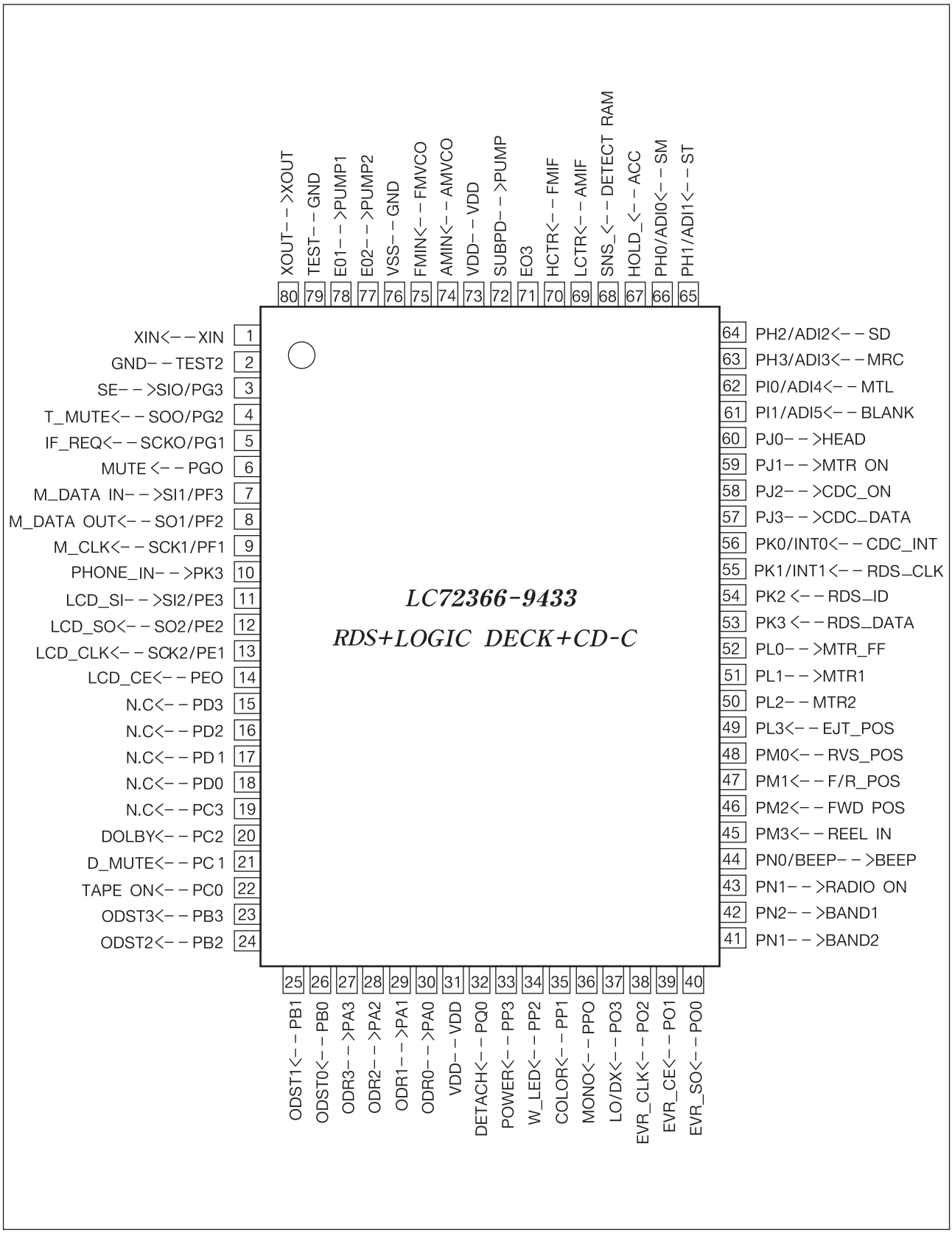
Ref	PART NO.	DESCRIPTION
Ⓡ Q104	TZTC3205Y-	TR KTC3205Y (2236Y)
Ⓡ Q105, Q107	TZRA105M--	TR KTA-105M
Q110, Q111, Q313 Q316, A317	TZDTC323TS	TR DTC323TSA SPT
Ⓡ Q301	TZRA101M--	TR KRA 101M AUTO (2201)
Q303	TZ2SB1240R	TR 2SB1240R
Ⓡ Q306, Q315	TZTA1273Y-	TR KTA1273Y (966Y)
Ⓡ Q310	TZTA1267Y-	TR KTA1267Y TAPPING

9-2. FRONT SECTION

Ref	PART NO.	DESCRIPTION
IC501	1LC75854E- 1LC75852--	IC DRIVER LC75854E QIP64E, with RDS Version LC75852, W/O RDS Version
Ⓡ LCD	97T0L1160P 97T0L1320P	LCD TTD-1464UPTDPN with RDS Version TTD-1869UPTDPN, W/O RDS Version
PL01 ~ PL05	97T82L0D86	LAMP PILOT 8V 60MA D3. 2 0. 08
SW01	5S50101Z02	SW TACT 1C-1P SKQC10918B 260G
SW02	5S51120CK1	SW TACT 1C-1P KPT-1107BC 200G
D501 ~ D504	D1MN10---B	DIODE CHIP 1MN10

10. FUNCTION OF MICOM IC

10-1. PIN CONFIGURATION (TOP VIEW) : RDS MODEL ONLY



10-2. PIN DESCRIPTION

PIN	PIN NAME	DESCRIPTION	I/O
1 80	XIN XOUT	4.5MHz CRYSTAL	I O
78 77	E01 E02	PHASE COMPARISON OUTPUT PORT If the frequency of the partial oscillation is higher than the basic frequency, these output high, lower than the basic frequency, output low. Otherwise, these are high-z that those frequencies correspond.	O O
71	E03	AM 2 nd CHARGE PUMP OUTPUT PORT. (AM FREQUENCY : 90kHz)	O
76 73 31	VSS VDD VDD	CAN BE SUPPLIED UP TO 6.5V	-- -- --
75	FMIN	FM VCO INPUT (the signal of the partial oscillation) * INPUT RANGE : 0.07~1.5 Vrms	I
74	AMIN	AM VCO INPUT (the signal of the partial oscillation) * INPUT RANGE : 0.07~1.5 Vrms	I
72	SUBPD	Outputs the pll lock up signal to lock up the pll frequency in high speed.	O
70	HCTR	FM IF COUNT INPUT * INPUT RANGE : 10.7MHz ± 30kHz, Vpp=0.07~1.5Vrms	I
69	LCTR	AM IF COUNT INPUT * INPUT RANGE : 450kHz ± 1kHz (AM) : 450kHz ± 0.37kHz (LW) * Vpp = 0.07 ~1.5Vrms	I
68	SNS_	To check if the memory state is normal on the back-up mode. The application circuit is illustrated on the note of back pages.	I
67	HOLD_	To check if it is back-up mode(LOW) or normal operation state(HIGH), but it display clock depending on the clock option.	I
79	TEST1 TEST2	Connect to ground.	-- --
51 50	PL1 PL2	Dm-21 loading motor control port. MTR1 MTR2 LOADING : HIGH LOW EJECT : LOW HIGH STOP : LOW LOW	O O

PIN	PIN NAME	DESCRIPTION	I/O
59 52	PJ1 PL0	DM-21 MAIN MOTOR CONTROL PORT. MTR_ON MTR_FF PLAY : HIGH LOW FF/REW : HIGH HIGH STOP : LOW LOW	O O
53 54 55	PK3 PK2 INT1	INPUT DATUM FROM THE RDS DEMODULATOR IC THE TIMING CHART OF DATA IS ILLUSTRATED ON BACK PAGES.	I I I
11 12 13 14	PE3/SI2 PE2/SO2 PE1/SCK2 PE0	KEY & LCD DRIVER IC INTERFACE PORTS	I O O O
21	PC1	DECK EQ IC MUTE ADJUST PORT.	O
40 38 39	PO0 PO2 PO1	EVR IC INTERFACE PORTS.	O O O
27 28 29 30	PA3 PA2 PA1 PA0	OPTION DIODE MATRIX INPUT.	I I I I
23 24 25 26	PB3 PB2 PB1 PB0	OPTION DIODE MATRIX OUTPUT.	O O O O
7 8 9	PF3 PF2 PF1	RDS DATA MEMORY EEPROM CONTROL PORT.	I O O
63	PF3	MULTI-PATH INPUT PORT. * INPUT RANGE : 0.6~0.9V	I
35	PP1	LCD BACK-LIGHTING COLOR CONTROL PORT RESET : COLOR ---> LOW TWO KEY IN : COLOR CHANGE	O

● KEY MATRIX TABLE

RETURN / SOURCE	KI 1 (50)	KI 2 (51)	KI 3 (52)	KI 4 (53)	KI 5 (54)
KS 6 (49)	T. UP	T. DOWN	SEEK UP	LOC	LOUD/LOC
KS 5 (48)	M1 (AMS)	M2 (DOLBY)	M3 (RPT)	TA/TA_STBY	AF/REG
KS 4 (47)	M4 (SHUF)	M5 (DISC DOWN)	M6 (DISC UP)	PTY(DISP)	ATP
KS 3 (46)	VOL UP	VOL DOWN	SELECTOR	POWER ON/OFF	TAPE EJECT
KS 2 (45)	TAPE/PGM	---	CDC/PAUSE AUX	RADIO/BAND (LANG)	MUTE
KS 1 (44)	---	---	SEEK DOWN	MONO	---

● KEY MATRIX TABLE

SOURCE / RETURN	ODST 3 (PB3, 23PIN)	ODST 2 (PB2, 24PIN)	ODST 1 (PB1, 25PIN)	ODST 0 (PB0, 26PIN)
ODR 3 (PA3, 27PIN)	---	---	---	---
ODR 2 (PA2, 28PIN)	DOUBLE 2 (D405)	LOUD/LOC (D408)	LW ENABLE (D411)	CDC/AUX IN (D414)
ODR 1 (PA1, 29PIN)	CLOCK (D406)	TUNER 1,2 (D409)	---	DOUBLE 1 (D415)
ODR 0 (PA0, 30PIN)	AREA 1 (D407)	AREA 2 (D410)	AREA 3 (D413)	---

● DIODE MATRIX DESCRIPTIONS

-LW select (D411)
0 : LW BAND DISABLE
1 : LW BAND ENABLE

-CLOCK USE select (D406)
0 : CLOCK ENABLE
1 : CLOCK DISABLE

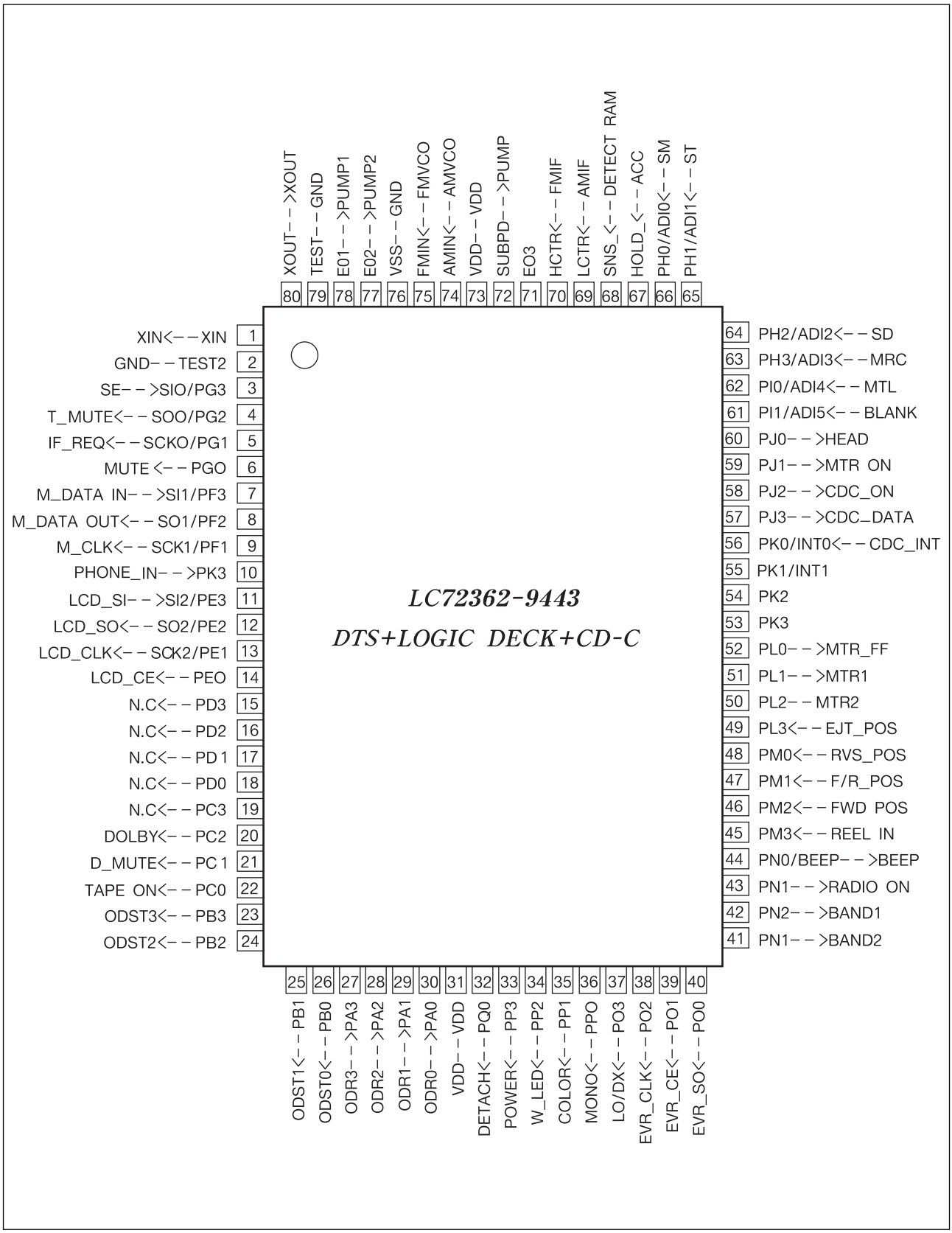
-LOUD/LOC USE select(D408)
0 : LOUD/LOCAL KEY DOUBLE FUNCTION
1 : LOUD KEY ONLY

-TUNER 1,2 select (D409)
0 : CAT6 or CAT7 TUNER ⟶ See page 13
1 : CET6038AFL TUNER

-DOUBLE 1,2 (D415. D405)select

DOUBLE 1 (D415)	DOUBLE 2 (D405)	MEMORY 1	MEMORY 2
0	0	AMS	DOLBY
0	1	AMS	---

10-3. PIN CONFIGURATION (TOP VIEW) : NON RDS MODEL ONLY



10-4. PIN DESCRIPTION

PIN	PIN NAME	DESCRIPTION	I/O
1 80	XIN XOUT	4.5MHz CRYSTAL	I O
78	E01 E02	PHASE COMPARISON OUTPUT PORT If the frequency of the partial oscillation is higher than the basic frequency, these output high, lower than the basic frequency, output low. Otherwise, these are high-z that those frequencies correspond.	O O
71	E03	AM 2 nd CHARGE PUMP OUTPUT PORT. (AM FREQUENCY : 90kHz)	O
76 73 31	VSS VDD VDD	CAN BE SUPPLIED UP TO 6.5V	-- -- --
75	FMIN	FM VCO INPUT (the signal of the partial oscillation) * INPUT RANGE : 0.07~1.5 Vrms	I
74	AMIN	AM VCO INPUT (the signal of the partial oscillation) * INPUT RANGE : 0.07~1.5 Vrms	I
72	SUBPD	Outputs the pll lock up signal to lock up the pll frequency in high speed.	O
70	HCTR	FM IF COUNT INPUT * INPUT RANGE : 10.7MHz ± 30kHz, Vpp=0.07~1.5Vrms	I
69	LCTR	AM IF COUNT INPUT * INPUT RANGE : 450kHz ± 1kHz (AM) : 450kHz ± 0.37kHz (LW) * Vpp = 0.07~1.5Vrms	I
68	SNS_	To check if the memory state is normal on the back-up mode. The application circuit is illustrated on the note of back pages.	I
67	HOLD_	To check if it is back-up mode(LOW) or normal operation state(HIGH), but it display clock depending on the clock option.	I
79	TEST1 TEST2	Connect to ground.	-- --
51 50	PL1 PL2	Dm-21 loading motor control port. MTR1 MTR2 LOADING : HIGH LOW EJECT : LOW HIGH STOP : LOW LOW	O O

PIN	PIN NAME	DESCRIPTION	I/O
59 52	PJ1 PL0	DM-21 MAIN MOTOR CONTROL PORT. MTR_ON MTR_FF PLAY : HIGH LOW FF/REW : HIGH HIGH STOP : LOW LOW	O O
11 12 13 14	PE3/SI2 PE2/SO2 PE1/SCK2 PE0	KEY & LCD DRIVER IC INTERFACE PORTS	I O O O
21	PC1	DECK EQ IC MUTE ADJUST PORT.	O
40 38 39	PO0 PO2 PO1	EVR IC INTERFACE PORTS.	O O O
27 28 29 30	PA3 PA2 PA1 PA0	OPTION DIODE MATRIX INPUT.	I I I I
23 24 25 26	PB3 PB2 PB1 PB0	OPTION DIODE MATRIX OUTPUT.	O O O O
7 8 9	PF3 PF2 PF1	SECURITY MEMORY EEPROM CONTROL PORT.	I O O
63	PF3/ADI3	REMOCON INPUT PORT.	I
35	PP1	LCD BACK-LIGHTING COLOR CONTROL PORT RESET : COLOR ---> LOW TWO KEY IN : COLOR CHANGE	O

● KEY MATRIX TABLE

RETURN / SOURCE	KI 1 (52)	KI 2 (53)	KI 3 (54)	KI 4 (55)	KI 5 (56)
KS 6 (51)	T. UP	T. DOWN	SEEK UP	---	LOUD
KS 5 (50)	M1 (AMS)	M2 (DOLBY)	M3 (RPT)	SCAN	LOC
KS 4 (49)	M4 (SHUF)	M5 (DISC DOWN)	M6 (DISC UP)	DISP	ATP
KS 3 (48)	VOL UP	VOL DOWN	SELECTOR	POWER ON/OFF	TAPE EJECT
KS 2 (47)	TAPE/PGM	---	CDC/PAUSE AUX	RADIO/BAND	MUTE
KS 1 (46)	---	---	SEEK DOWN	MONO	---

● OPTION DIODE TABLE

SOURCE / RETURN	ODST 3 (PB3, 23PIN)	ODST 2 (PB2, 24PIN)	ODST 1 (PB1, 25PIN)	ODST 0 (PB0, 26PIN)
ODR 3 (PA3, 27PIN)	---	---	---	---
ODR 2 (PA2, 28PIN)	DOUBLE 2 (D405)	---	LW ENABLE (D411)	CDC/AUX IN (D414)
ODR 1 (PA1, 29PIN)	CLOCK (D406)	TUNER 1,2 (D409)	---	DOUBLE 1 (D415)
ODR 0 (PA0, 30PIN)	AREA 1 (D407)	AREA 2 (D410)	AREA 3 (D413)	---

● DIODE MATRIX DESCRIPTIONS

-LW select (D411)
0 : LW BAND DISABLE
1 : LW BAND ENABLE

-CLOCK USE select (D406)
0 : CLOCK ENABLE
1 : CLOCK DISABLE

-LOUD/LOC USE select(D408)
0 : LOUD/LOCAL KEY DOUBLE FUNCTION
1 : LOUD KEY ONLY

-TUNER 1,2 select (D409)
0 : CAT6 or CAT7 TUNER ⟶ See page 13
1 : CET6038AFL TUNER

-DOUBLE 1,2 (D415. D405)select

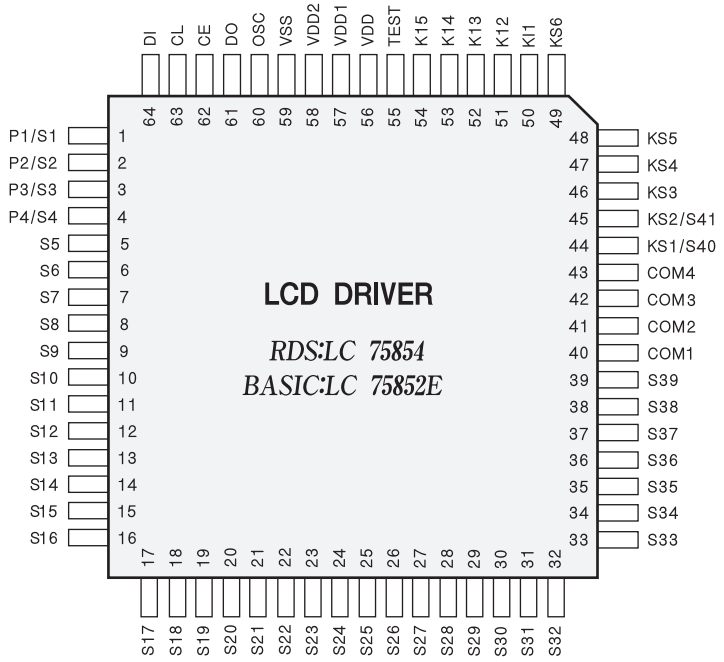
DOUBLE 1 (D415)	DOUBLE 2 (D405)	MEMORY 1	MEMORY 2
0	0	AMS	DOLBY
0	1	AMS	---

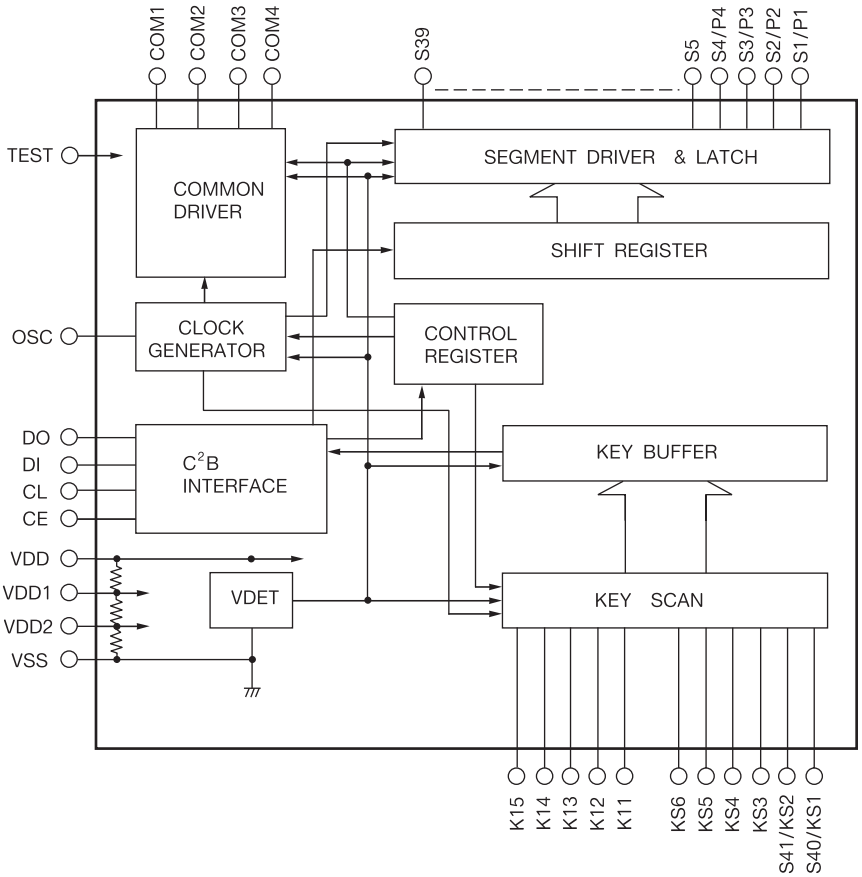
● AREA 1, 2, 3

DIODE / AREA	AREA1 (D407)	AREA2 (D410)	AREA3 (D416)
EUROPE	1	1	1
CHINA	0	0	1
USA1	0	0	0
USA2	1	0	0
Australia Middle East	0	1	0
OIRT	0	1	1

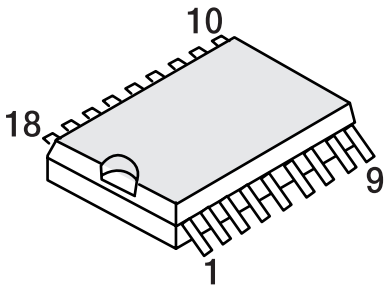
11. IC BLOCK DIAGRAM

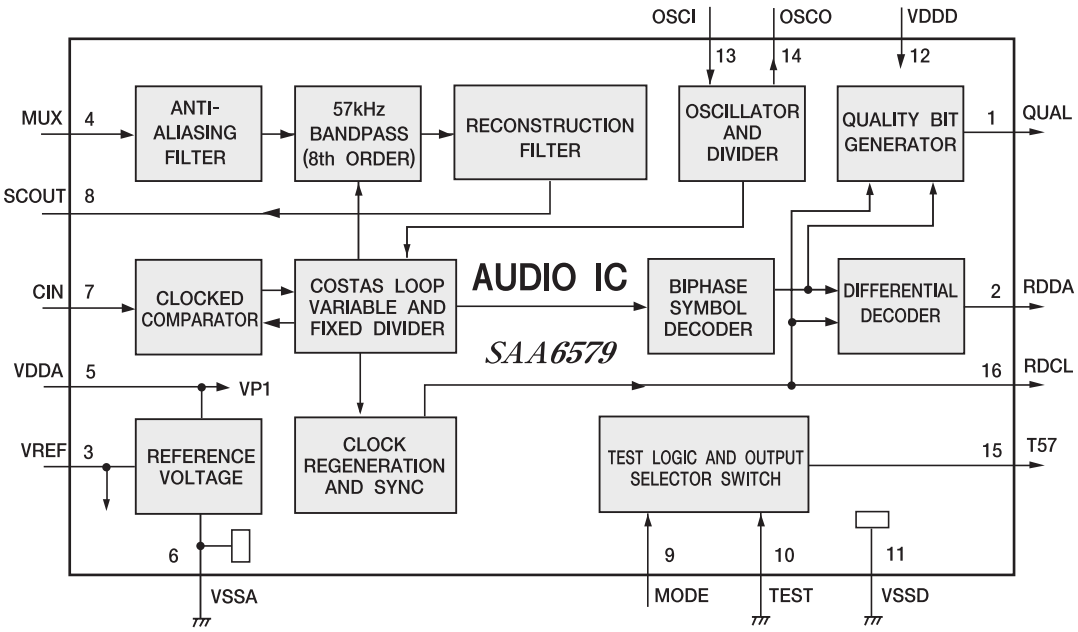
11-1. LC75854/LC75852 (IC LCD DRIVER) : IC501



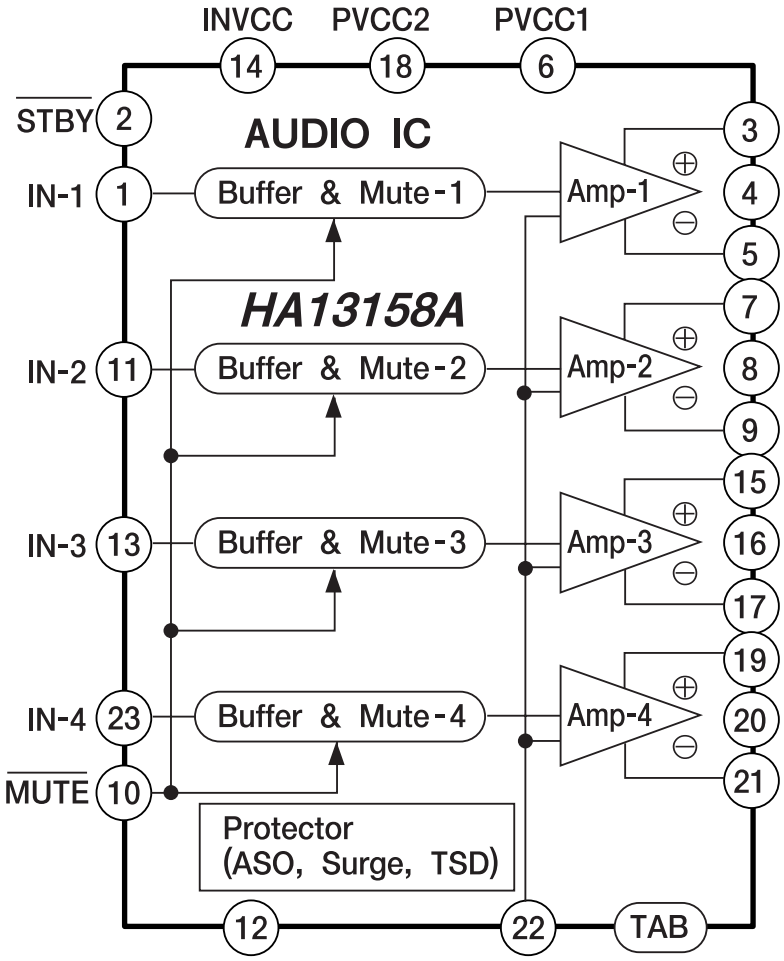


11-2. SAA6579T (IC AUDIO) : IC101

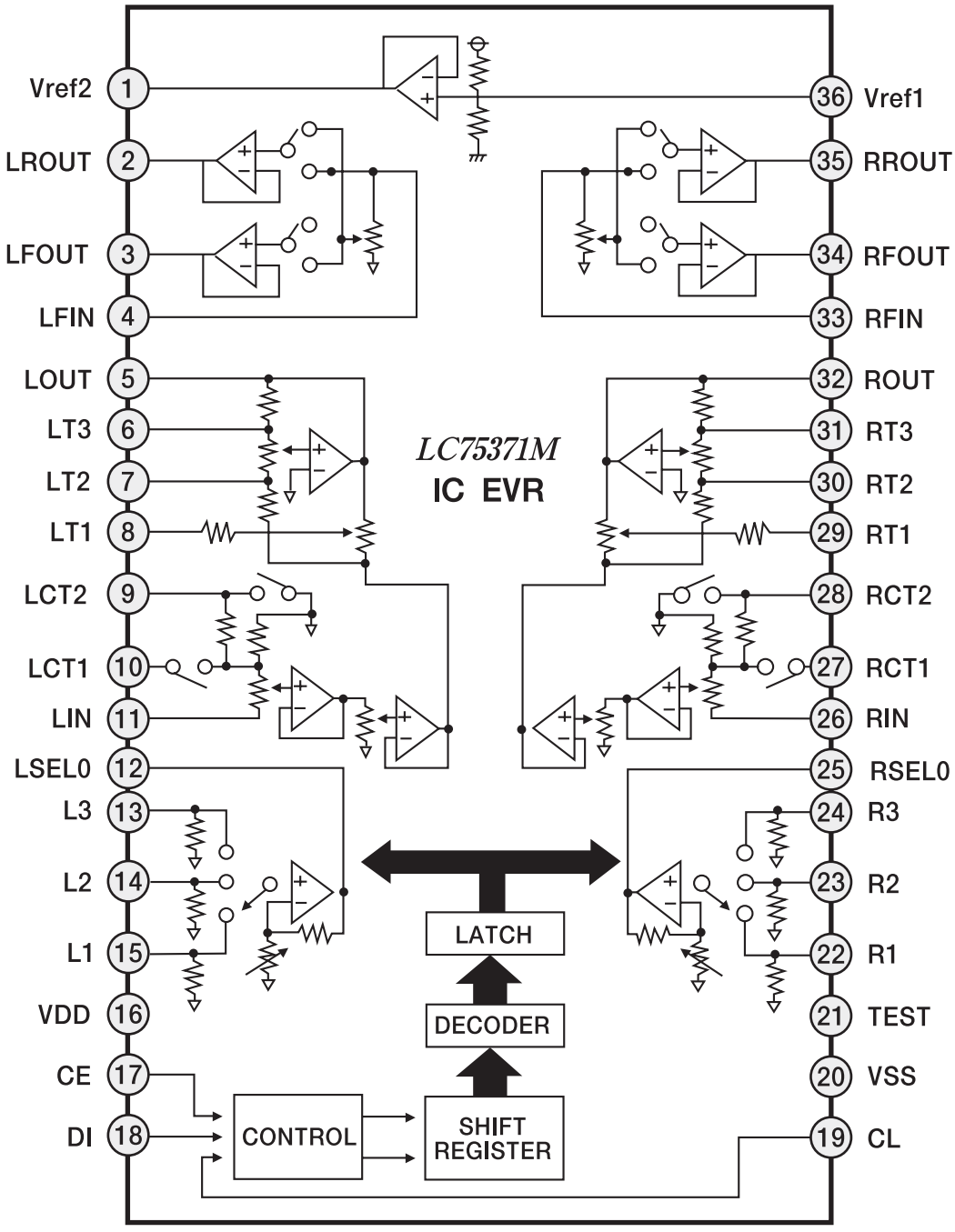




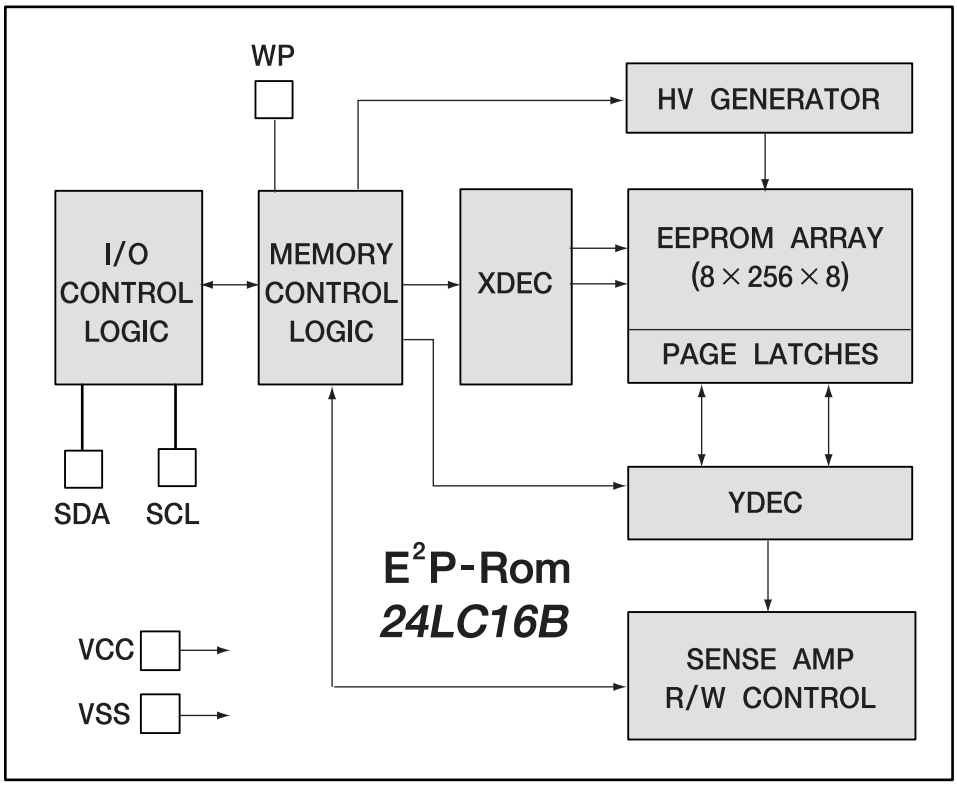
11-3. HA13158A (IC AUDIO POWER) : IC305



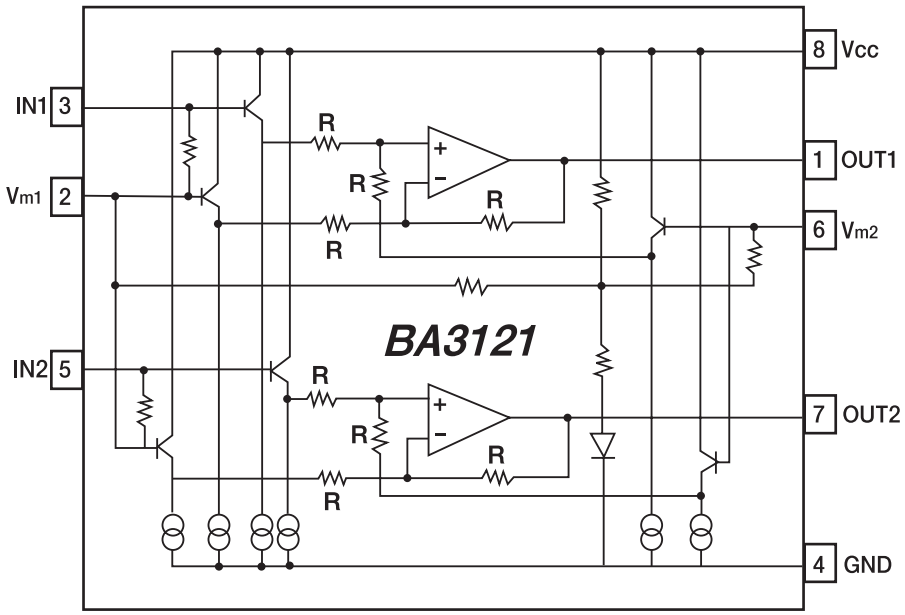
11-4. LC75371M (IC EVR)



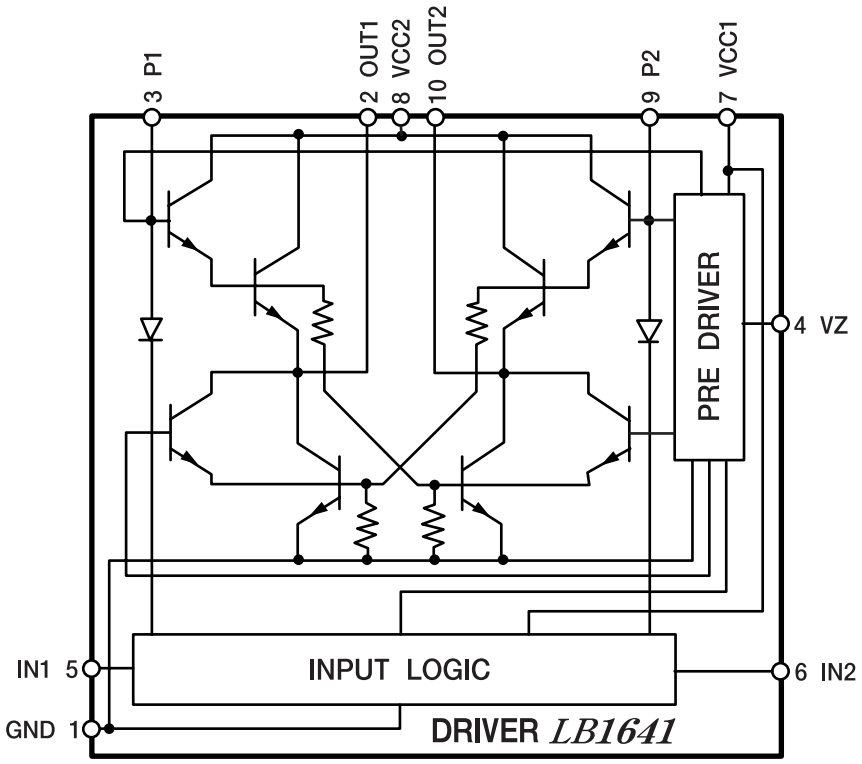
11-5. 24LC16B (IC EEPROM) : IC402



11-6. BA3121 (IC ISOLATOR) : IC302



11-7. LB1641 (DRIVER) : IC301



12. LIQUID CRYSTAL DISPLAY

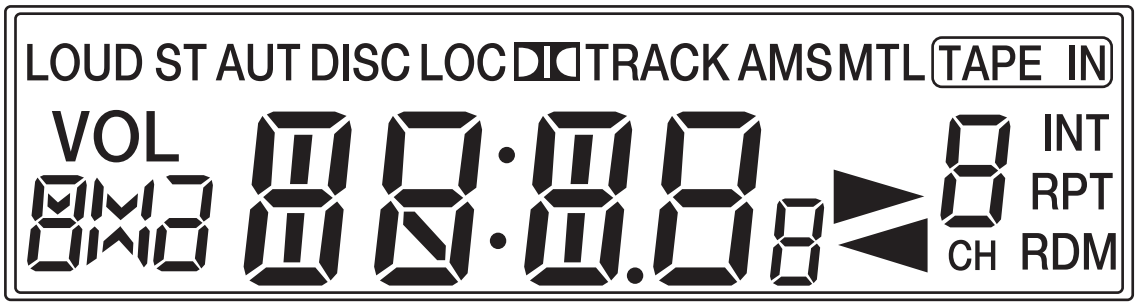
12-1. RDS ONLY

IC NO	6	4	5	7	39	38	37	36	35	34	33	30	34	32	29
LCD NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COM1	DOLBY	9B	9H	9A	RPT	8B	8H	8A	RDM	7B	7H	7A	---	6B	6H
COM2	MTL	9I	9G	9O	9F	8I	8G	8O	8F	7I	7G	7O	7F	6I	6G
COM3	AMS	9C	9K	9L	9N	8C	8K	8L	8N	7C	7K	7L	7N	6C	6K
COM4	TAPE IN	INTRO	9D	9M	9E	TRACK	8D	8M	8E	DOT	7D	7M	7E	DISC	6D

IC NO	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14
LCD NO.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
COM1	6A	PTY	5B	5H	5A	---	4B	4H	4A	---	3B	3H	3A	TA	2B
COM2	6O	6F	5I	5G	5O	5F	4I	4G	4O	4F	3I	3G	3O	3F	2I
COM3	6L	6N	5C	5K	5L	5N	4C	4K	4L	4N	3C	3K	3L	3N	2C
COM4	6M	6E	□ □	5D	5M	5E	AF	4D	4M	4E	TP	3D	3M	3E	---

IC NO	13	12	11	10	9	8	40	41	42	43
LCD NO.	31	32	33	34	35	36	37	38	39	40
COM1	2H	2A	◯◯	1D	LOC	LOUD	COM1	---	---	---
COM2	2G	2O	2F	1C	1E	MO	---	COM2	---	---
COM3	2K	2L	2N	1G	1F	CH	---	---	COM3	---
COM4	2D	2M	2E	1B	1A	AUT	---	---	---	COM4

12-2. BASIC ONLY



IC NO	1	2	3	4	5	6	7	8	9	10	13	14	15	16	17
LCD NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COM1	LOUD	AUT	1A,1G	1H	1B	2B,2C 2E,2F	2D	LOC	3B	3A,3D 3G	4A	4G	4C	4B	5A
COM2	ST	DISC TRACK	1E,1F	1D	1C	2A	VOL	○ ○	3C	3E	4F	4E	4D	4H	5F

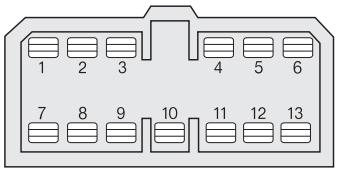
IC NO	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
LCD NO.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
COM1	5G	5C	5B	6A	6G	6C	6B	7A	7G	7C	7B	8A	8G	8C	8B
COM2	5E	5D	5H	6F	6E	6D	6H	7F	7E	7D	P	8F	8E	8D	▷

IC NO	33	34	35	36	37	38	39	40	44	45
LCD NO.	31	32	33	34	35	36	37	38	39	40
COM1	9A	9G	9C	9B	CH	INT	TAPE IN	AMS	COM1	---
COM2	9F	9E	9D	◁	CH	RPT	MTL	DOLBY	---	COM2

13. OUTPUT CONNECTOR DESCRIPTIONS

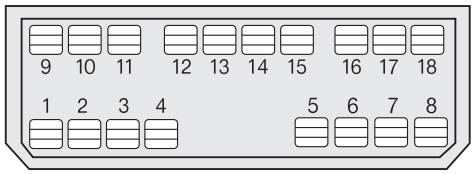
OUTPUT CONNECTORS

13PIN CONNECTOR



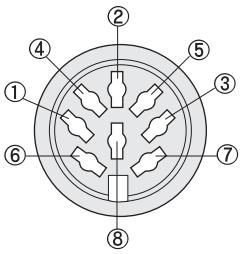
1	REAR LEFT SP(-)	8	REAR RIGHT SP(+)
2	REAR RIGHT SP(-)	9	NEGATIVE GROUND
3	AUTO ANT	10	RIGHT (ILLUMINATION)
4	ACC B(+)POWER	11	BATTERY B+(BACK-UP)
5	FRONT RIGHT SP(+)	12	FRONT RIGHT SP(-)
6	FRONT LEFT SP(+)	13	FRONT LEFT SP(-)
7	REAR LEFT SP(+)		

18PIN CONNECTOR



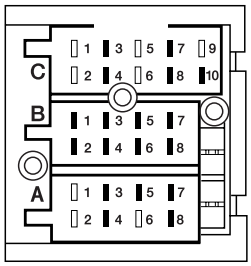
1	FRONT R-CH SP(+)	10	REAR R-CH SP(-)
2	REAR R-CH SP(+)	11	ILLUMINATION (-)
3	ILLUMINATION(+)	12	AUTO ANT. B+
4	ACC. B(+)	13	NO CONNECTION
5	BACK UP B+	14	GROUND
6	NO CONNECTION	15	NO CONNECTION
7	REAR L-CH SP(+)	16	NO CONNECTION
8	FRONT L-CH SP(+)	17	REAR L-CH SP(-)
9	FRONT R-CH SP(-)	18	FRONT L-CH SP(-)

8PIN CONNECTOR



1	CDC-ON
2	BACK-UP B+
3	NO CONNECTION
4	DATA
5	GROUND
6	R-CH
7	L-CH
8	SIGNAL GROUND

26PIN ISO CONNECTOR



A

4. yellow...back-up
   dc+12v
5. blue...remote
   dc+12v(power ant)
6. Dimmer(option)
7. red...power supply
8. black...ground

B

1. vilot...rear right(+)
2. vilot/black...rear right(-)
3. gray.../front right(+)
4. gray/black...front right(-)
5. white...front left(+)
6. white/black...front left(-)
7. green...rear left(+)
8. green/black...rear left(-)

C

C OTHERS
5. black...ground
6. orange...12v preamp(+)
8. red...preamp R-ch
10. white...preamp L-ch