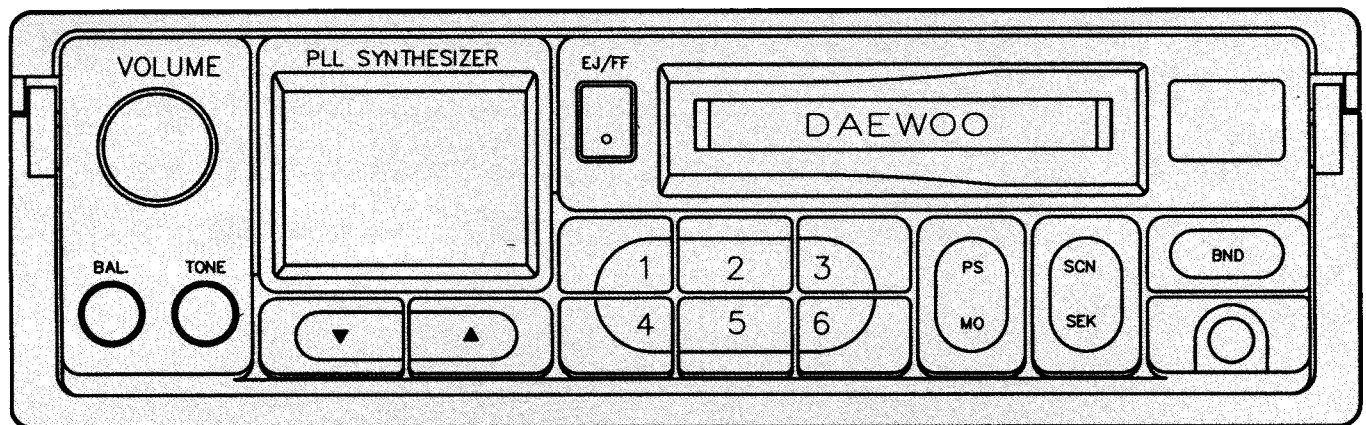


DAEWOO SERVICE MANUAL

SOUND SYSTEM

ELECTRONIC TUNER RADIO FM/MW/LW AUTO STOP CASSETTE PLAYER



PRINTED IN KOREA 1994. AUG.

AKF-7331EV AKF-7333EV

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SPECIFICATIONS

** Audio Section

Maximum output power .. 6 watts per channel into
4 ohms (1 kHz)
Rated output power..... 5 watts per channel into
4 ohms (1 kHz, 10% total
harmonic distortion)
Load impedance..... 4 ohms
Control
TONE 10dB at 6.3kHz

**Tape Section

Track format 4-track/2-channel system
Tape speed 4.75cm/sec
Wow/Flutter 0.15% nominal (WRMS)
Signal to Noise ratio Better than 50dB

**Tuner section

(FM)
Tuning range 87.5 to 108MHz
Usable sensitivity (30dB S/N)
MONO 8dB μ (3.2 μ V/75 ohms)
Signal to noise ratio (at 60dB μ)
..... 60 dB
Frequency response
..... 50 to 12,000Hz - 3dB

(AM)

Tuning range 522 to 1620kHz

Usable sensitivity (20dB S/N)

..... 28dB μ (31.6 μ V / 75 ohms)

(LW) : AKF-7333EV

Tuning range 144 to 281kHz

Usable sensitivity

..... 28dB μ (31.6 μ V / 75 ohms)

**General

Power requirements..... DC 12.0V / Rated: 14.4V
(Usable: 10.8~15.6V)
Negative ground

Current consumption..... 2A Maximum

Dimension (W x H x D).... 188 x 58 x 186mm
7-3/8" x 2-1/4" x 7-5/16"

Chassis size..... 182 x 53 x 153mm
7-3/16" x 2-1/8" x 6"

Weight (Net) 1.5Kg

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

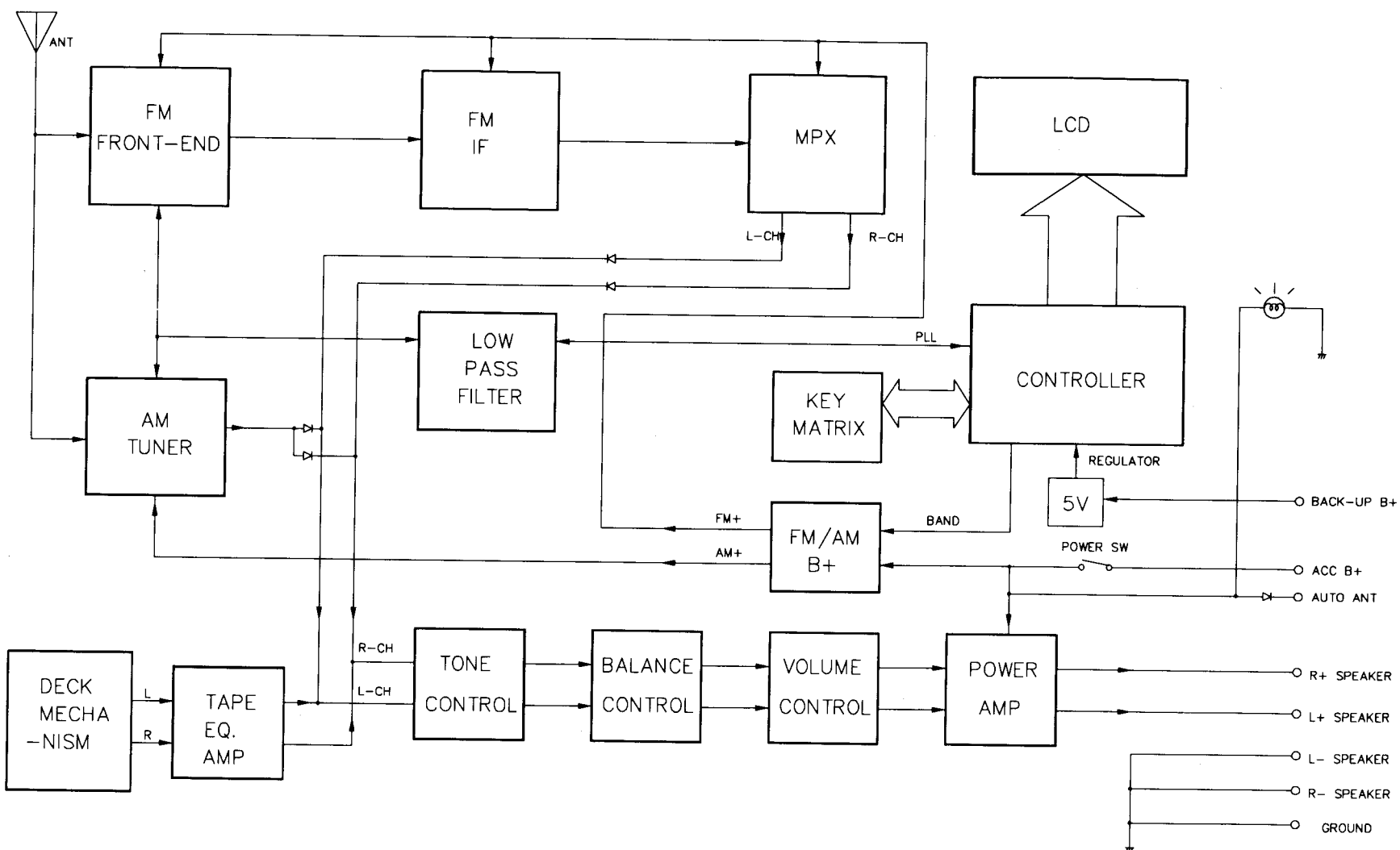
CAUTION

Do Not Use Endless Tapes

If an endless tape is used with this unit, the tape will not be wound up properly inside the cassette shell and, as a result, it will not be possible to use it again.

Also, this unit cannot eject a tape which has been inserted with its reverse side facing up.

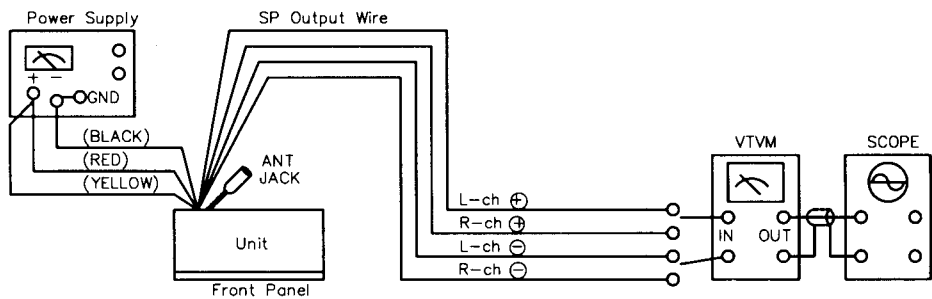
1. BLOCK DIAGRAM



2. ADJUSTMENT

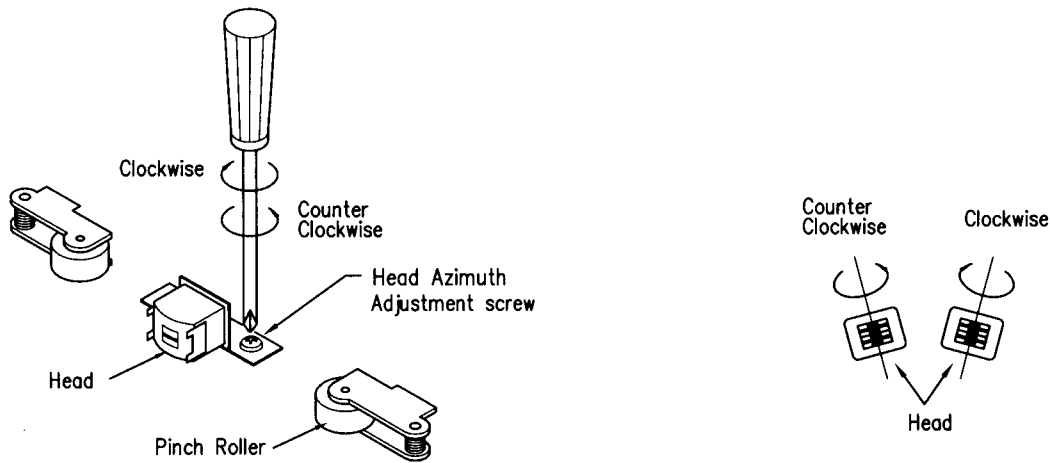
2-1. TAPE ADJUSTMENT

- Note :**
- 1. Clean the playback head before adjustment
 - 2. Prepare the test tape MTT-114 or equivalent
 - 3. Balance Center position. Volume adjusted to 2Volts. , ToneMax position
 - 4. Connections are shown in Fig. 2-1.



[Fig. 2-1]

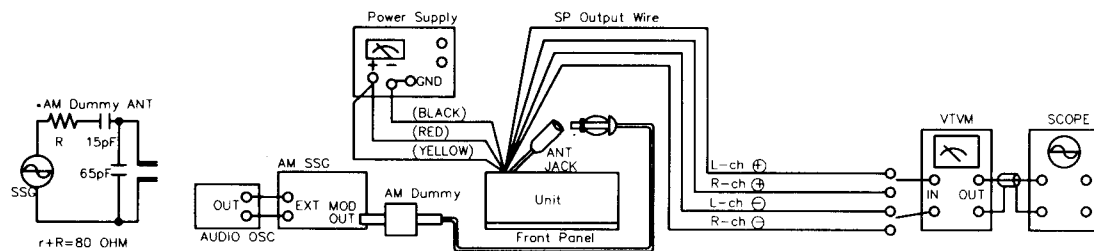
STEP	SUBJECT	INPUT SIGNAL	MEASURE OUTPUT	SETTING	ADJUST POINT	ADJUSTMENT
1	Head azimuth adjustment	MTT-114 or equivalent	L or R CH SP output wire VTVM and scope	Playback	Head Azimuth adjustment screw	Turn the azimuth screw to obtain maximum level (see Fig. 2-2)



[Fig. 2-2]

2-2. AM(MW) ADJUSTMENT

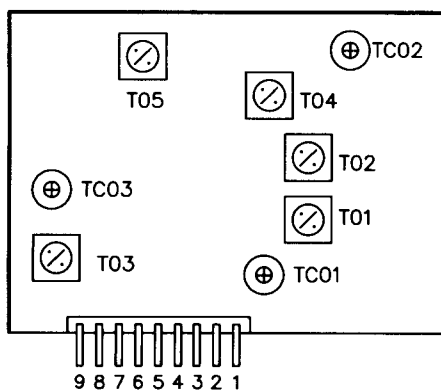
- Note :**
1. BAND-AM(MW)
 2. Balance.....Center position, Tone Max position, Volume adjusted to 2Volts
 3. Connections are shown in Fig. 2-3



[Fig. 2-3]

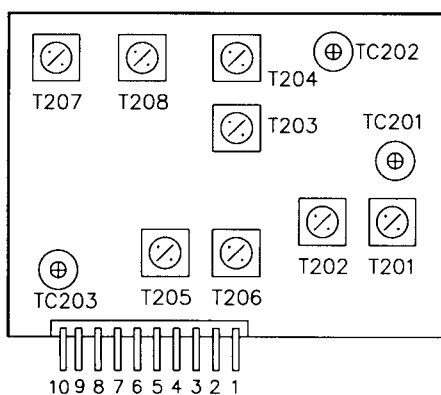
** Frequency Range and Sensitivity adjustment

■ AM(MW) PACK



PIN NO	FUNCTION
1	ANT
2	AGC
3	VT
4	NC
5	GND
6	B+
7	SD
8	OSC
9	OUT

■ AM(MW)/LW PACK



PIN NO	FUNCTION
1	ANT
2	AGC
3	VT
4	NC
5	GND
6	B+
7	SD
8	OSC
9	OUT
10	LW

[Fig. 2-4]

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST POINT	ADJUSTMENT
		FROM	TO			
1	522kHz Tuning adjust	522kHz, ANT input 30dBu, 400Hz (30%, MOD) SSG	ANT jack and GND	L or R CH SP output wire VTVM and Scope	T03 (T205)	Adjust for 1.2V (Fig. 2-4)
2	1620kHz Tuning adjust	1620kHz, ANT input 30dBu, 400Hz (30%, MOD) SSG	ANT jack and GND	The Voltage of VT terminal (pin #3)	TC03 (TC203)	Adjust for 8.0V (Fig.2-4)
3	603kHz Tuning adjust	603kHz, ANT input 30dBu, 400Hz (30%, MOD) SSG	ANT jack and GND	L or R CH SP output wire VTVM and Scope	T01,T02, T04,T05 (T201,203 T207,208)	Adjust for MAX (Fig.2-4)
4	1404kHz Tuning adjust	1404kHz, ANT input 30dBu, 400Hz (30%, MOD) SSG	ANT jack and GND	L or R CH SP output wire VTVM and Scope	TC01,02 (TC201, TC202)	Adjust for MAX (Fig.2-4)
5	208kHz Tuning adjust	208kHz, ANT input 30dBu, 400Hz (30%, MOD) AM SSG	ANT jack and GND	L or R CH SP output wire VTVM and Scope	(T202) (T204) (T206)	Adjust for MAX (Fig.2-4)

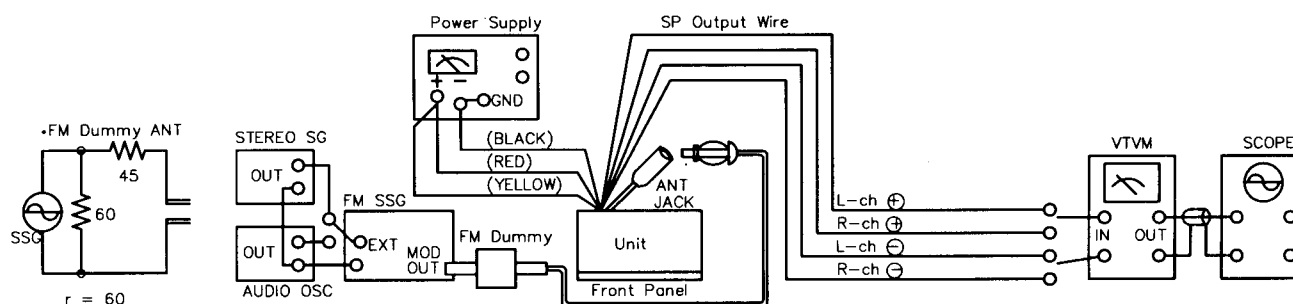
() : LW/MW(FM 3BAND Adjustment)

2-3. FM ADJUSTMENT

Note : 1. BAND - FM

2 Balance..... Center position, Tone Max position, Volume adjusted to 2Volts

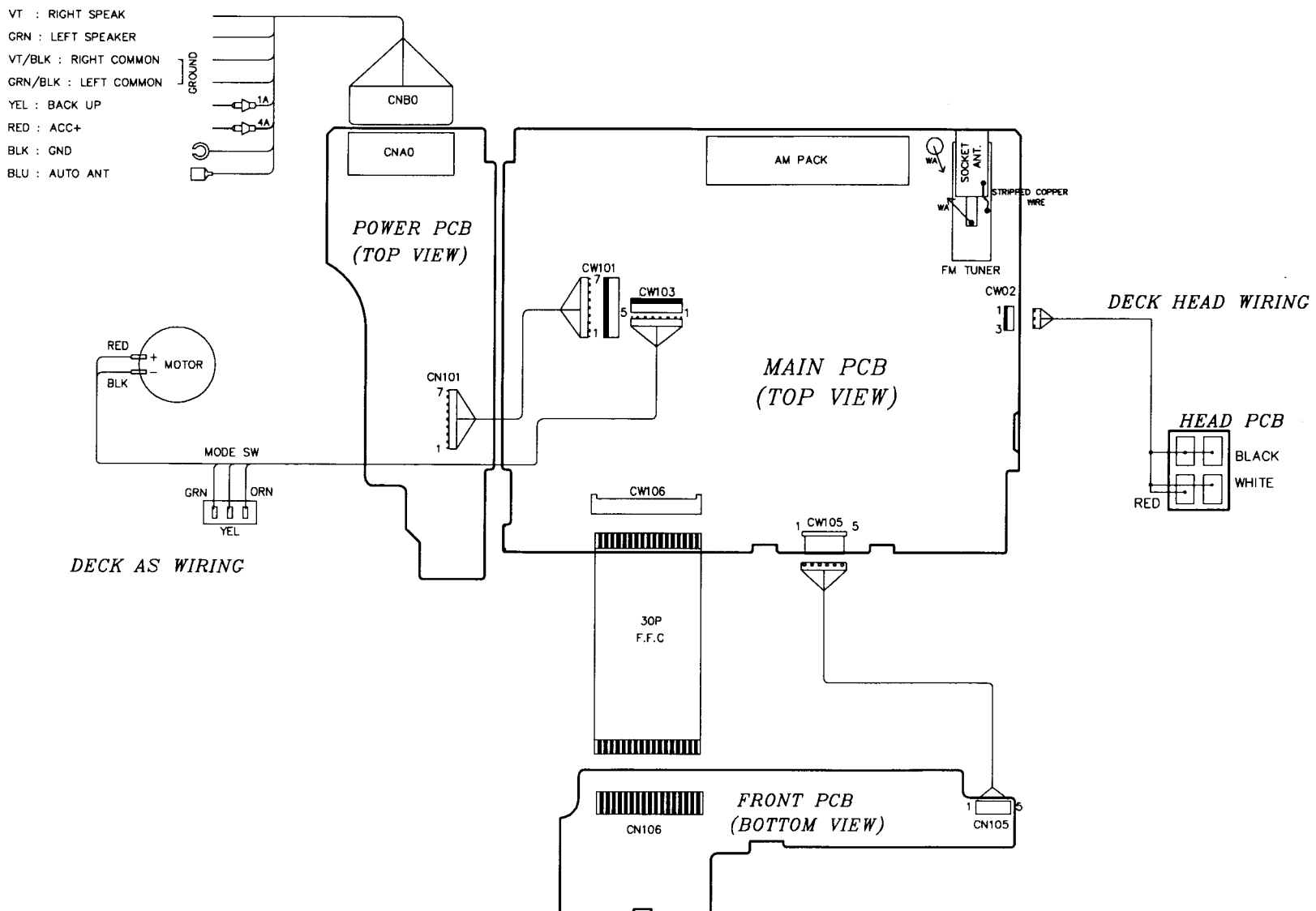
3. Connections are shown in Fig. 2-5



【 Fig. 2-5 】

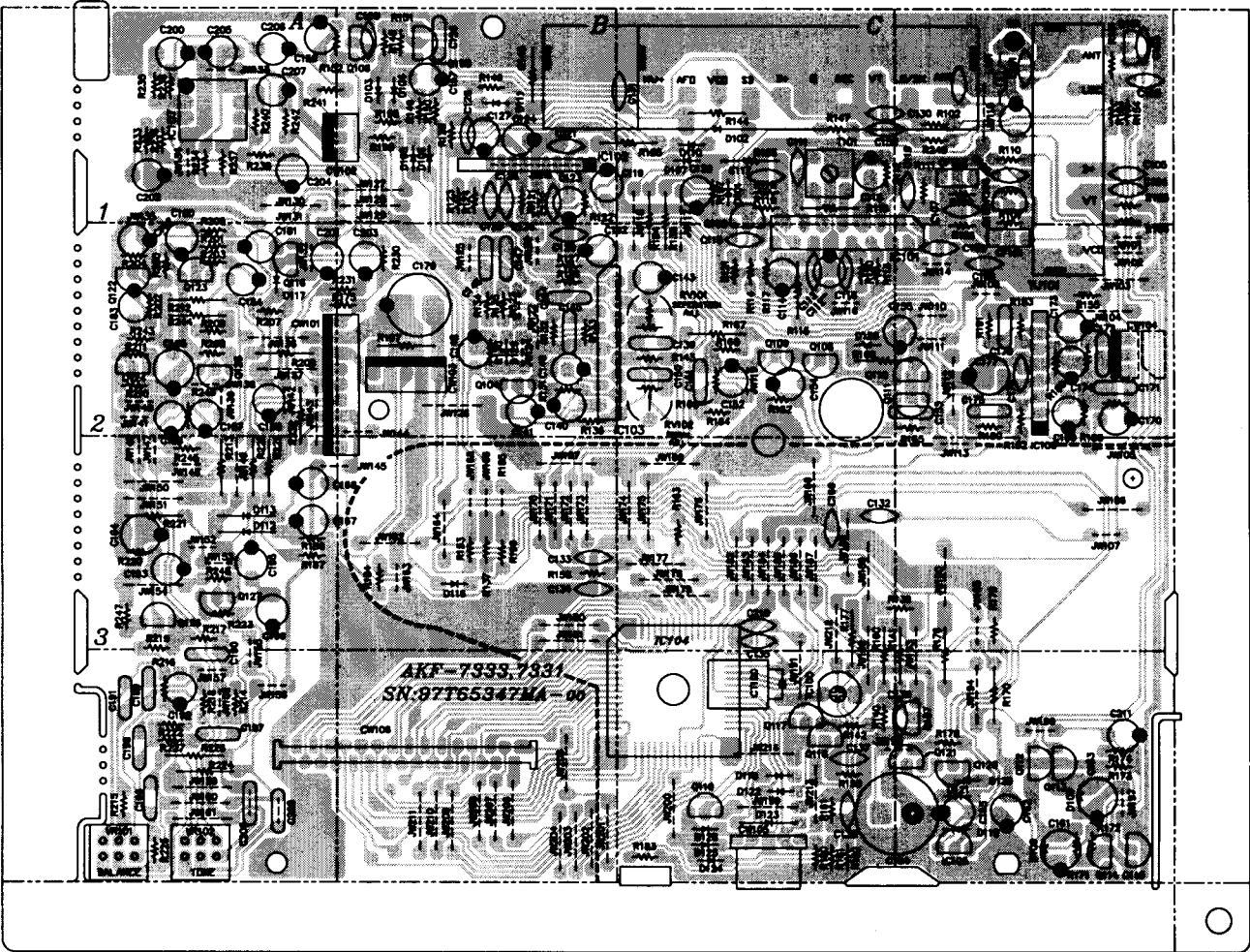
STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST POINT	ADJUSTMENT
		FROM	TO			
1	IF adjust	98.1 MHz, ANT input 60 dBu, 1KHz (30%, MOD) FM SSG	ANT jack and GND	The voltage between pin 7 and pin 13 of IC101	T101	Adjust for $\pm 0.05V$ (MAIN PCB)
2	MPX IC PLL free run Frequency control	98.1 MHz, ANT input 60 dBu, 1KHz (L+R=45% L-R=45% PILOT=10% MOD)	ANT jack and GND	Freq. Counter Indication (IC103 PIN 13 Output Freq.)	RV102	19KHz $\pm$ 50Hz (MAIN PCB)

3. OVERALL WIRING DIAGRAM

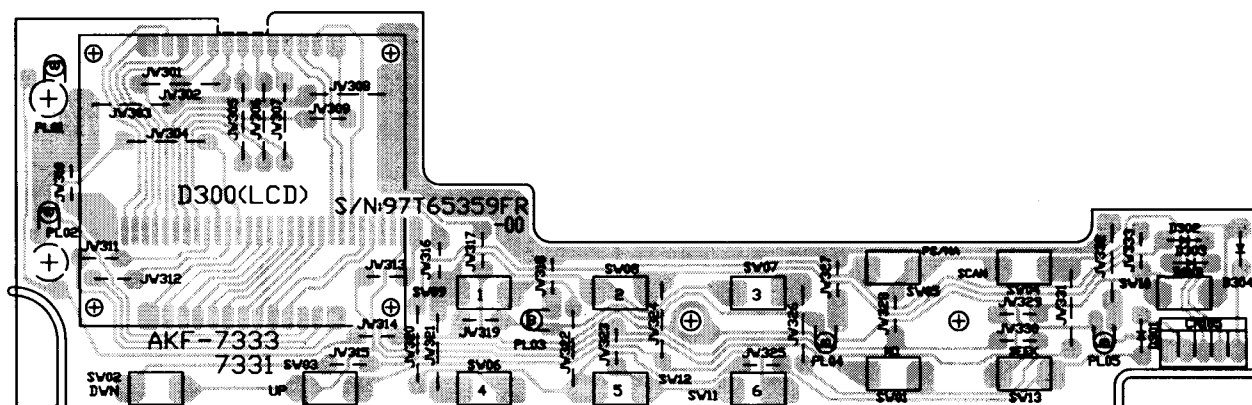


4. PARTS LOCATION ON BOARD

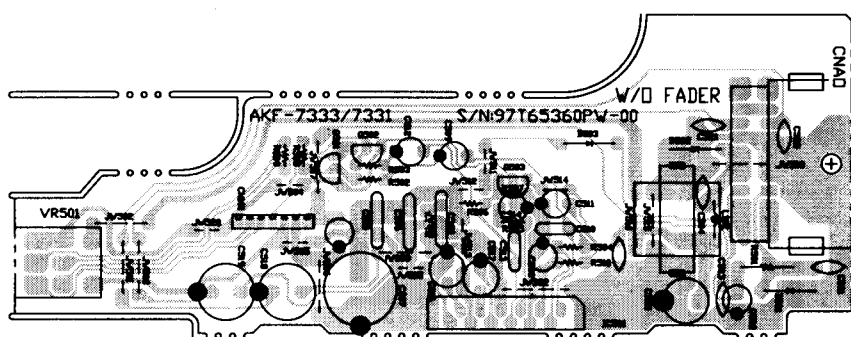
4-1 MAIN PCB (Parts Side)



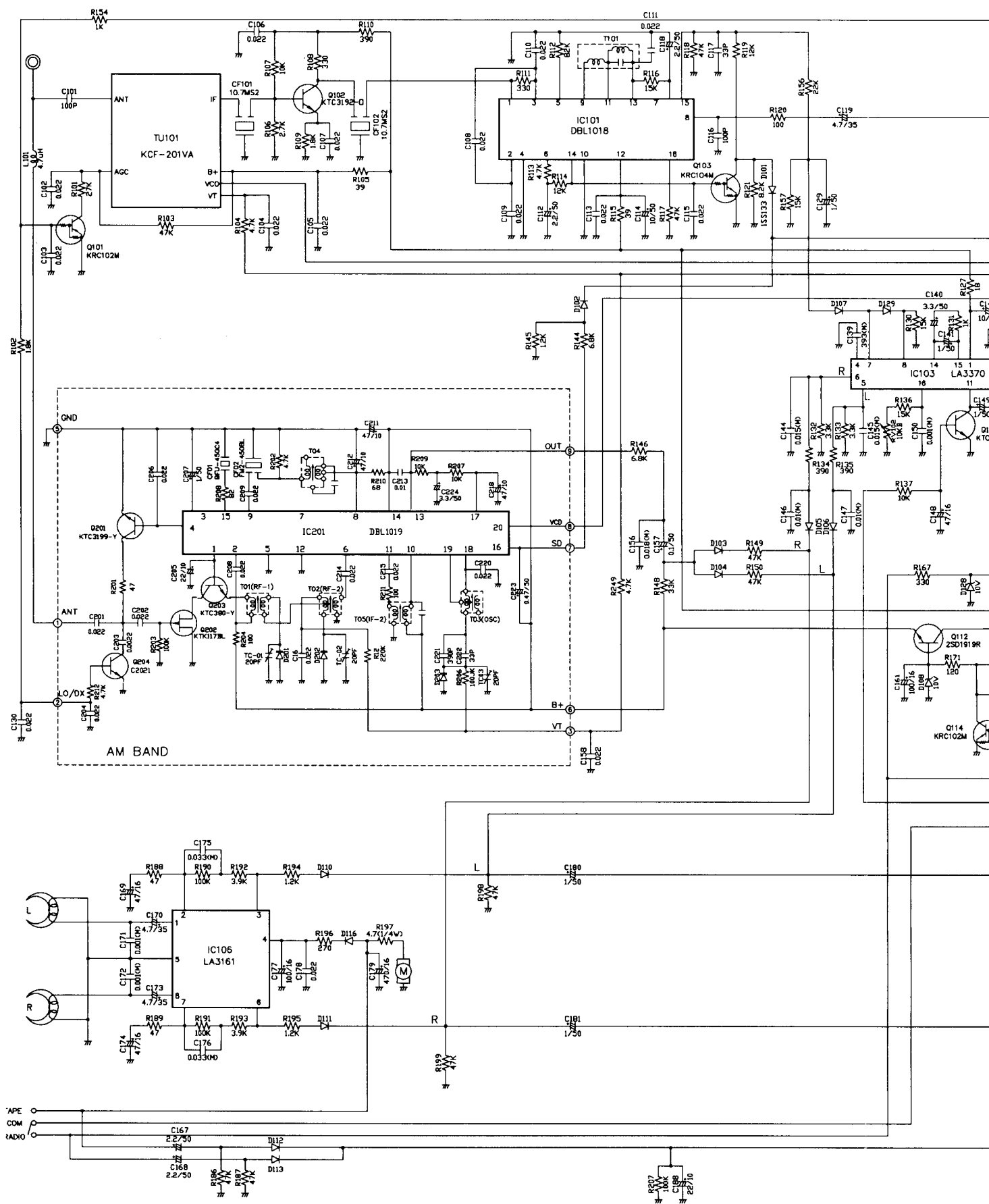
4-2 FRONT PCB (Parts Side)

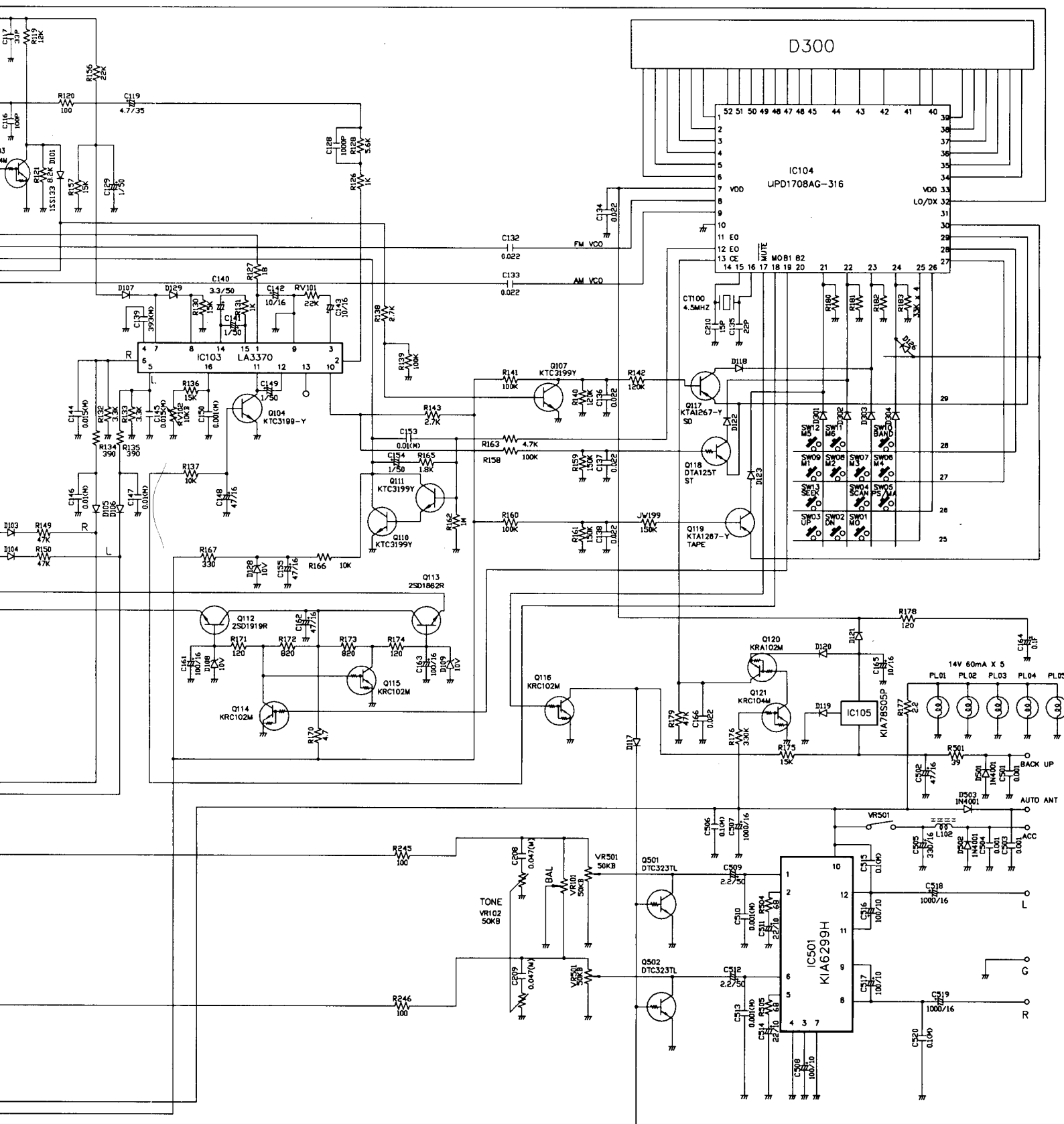


4-3 POWER PCB (Parts Side)



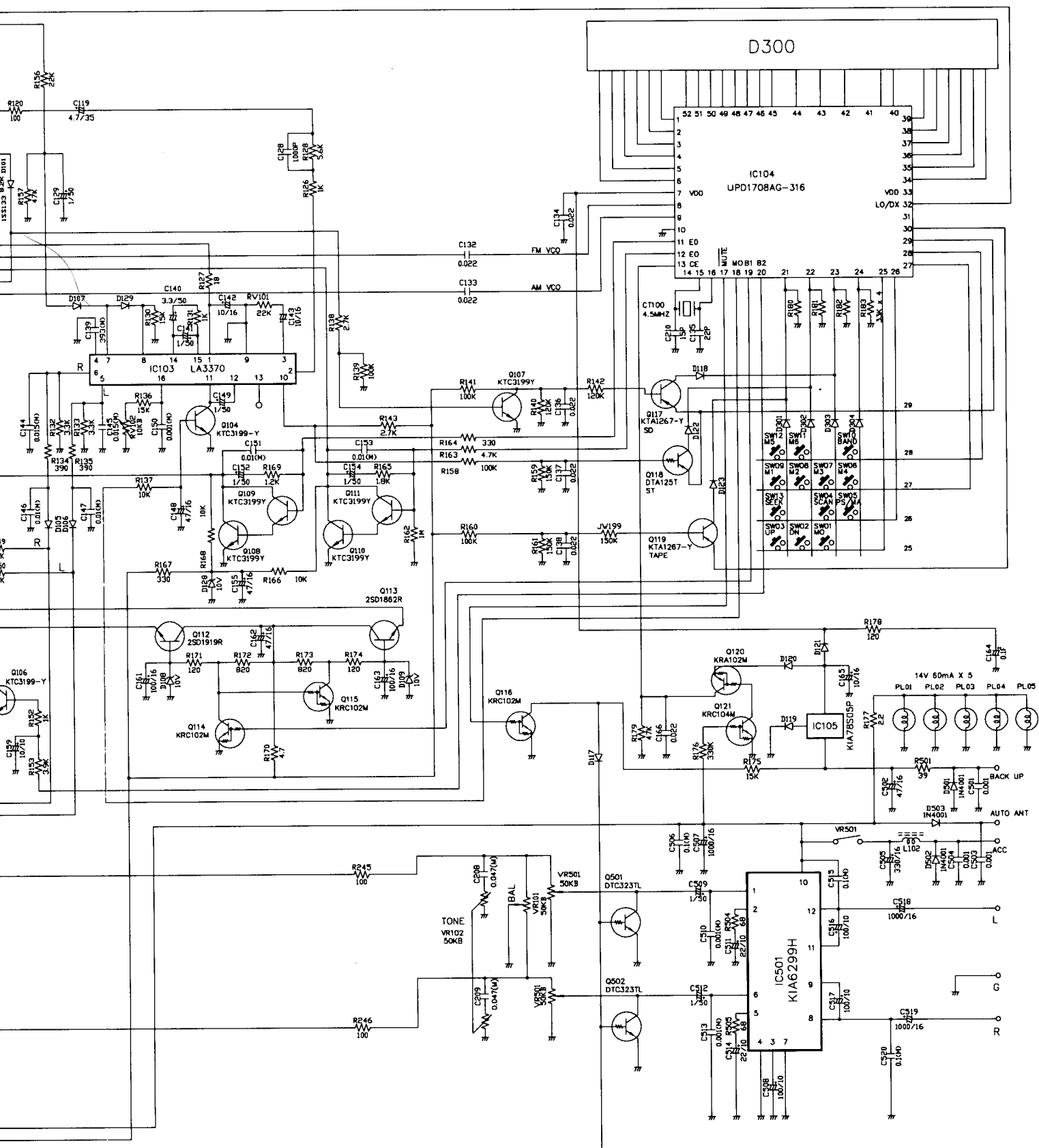
5. SCHEMATIC DIAGRAM
A. AKF-7331EV



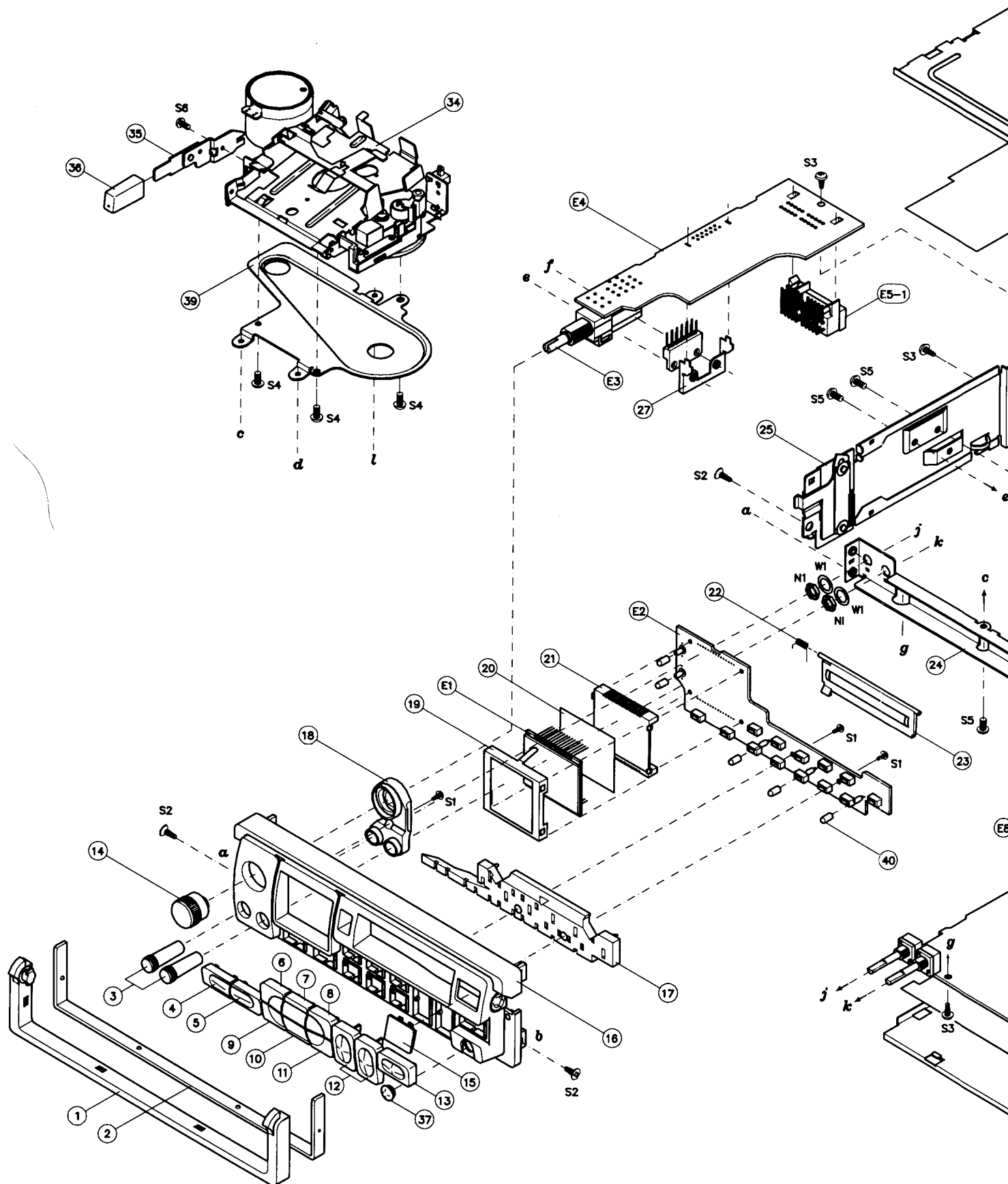


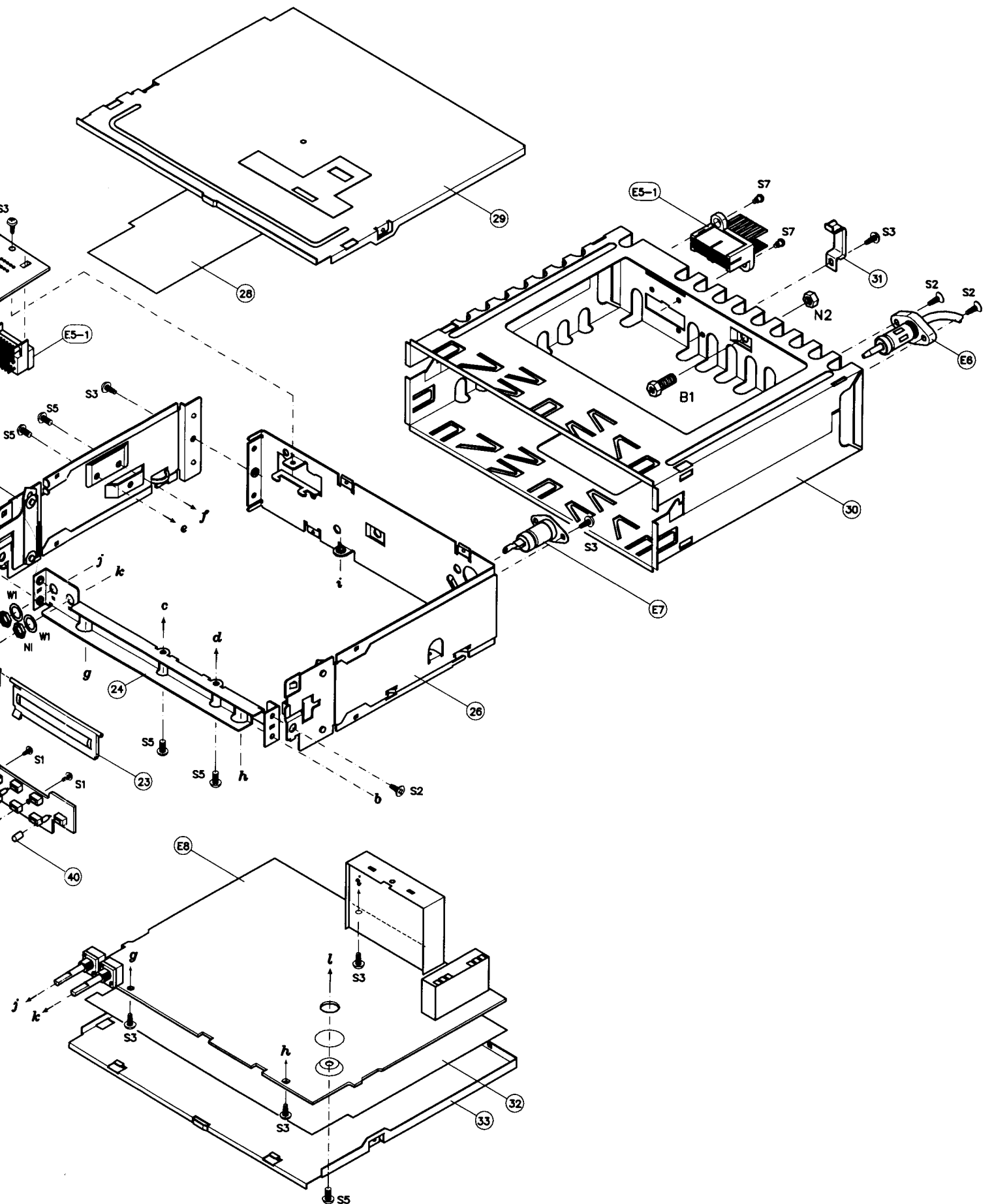
B. AKF-7333EV





6. EXPLODED VIEW AND PARTS LIST
A. EXPLODED VIEW (SET)





AKF-7331/7333EV

PARTS LIST for EXPLODED VIEW (SET)

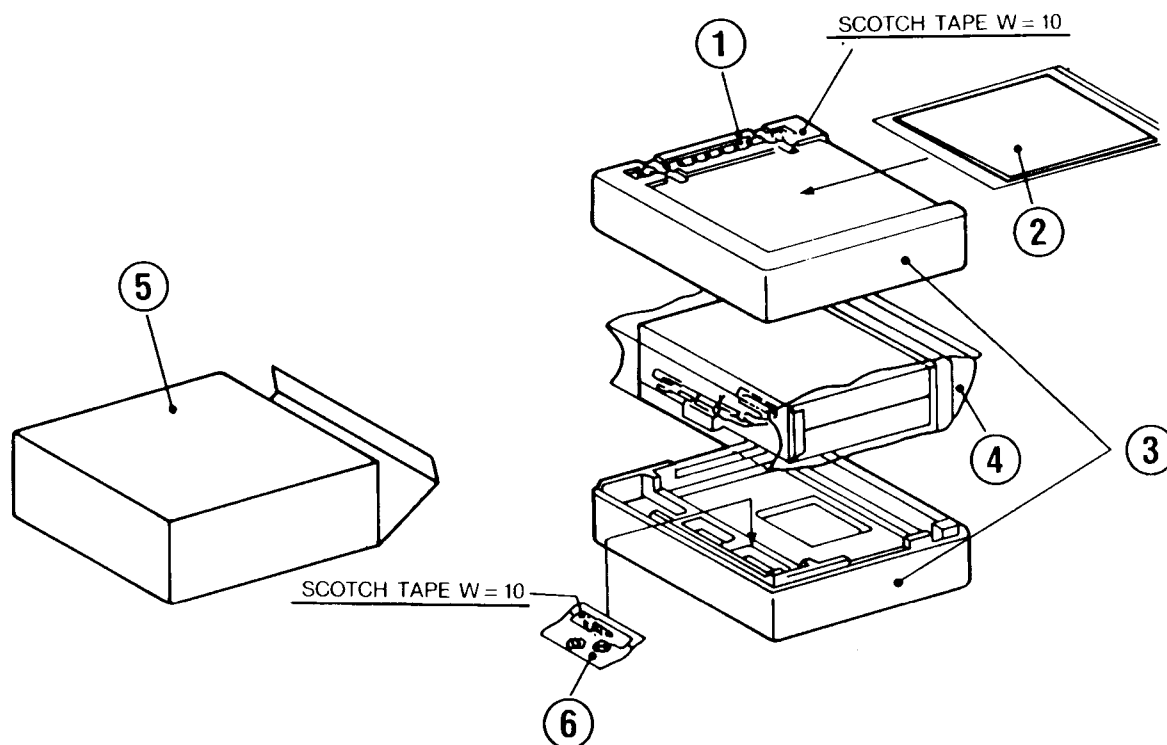
CT	Ref	PART CODE	PART NAME	DESCRIPTION
	1	97T19015GD	HANDLE	ABS XR-401
	2	97T1900910	HANDLE INNER	HSWR T2.0
	3	97T13312GD	KNOB ROTARY T	ABS XR-401
	4	97T13387GD	KNOB TUN DOWN	PC SILK/COAT
	5	97T13388GD	KNOB TUN UP	PC SILK/COAT
	6	97T13389GD	KNOB PRE 1	PC SILK/COAT
	7	97T13390GD	KNOB PRE 2	PC SILK/COAT
	8	97T13391GD	KNOB PRE 3	PC SILK/COAT
	9	97T13392GD	KNOB PRE 4	PC SILK/COAT
	10	97T13393GD	KNOB PRE 5	PC SILK/COAT
	11	97T13394GD	KNOB PRE 6	PC SILK/COAT
	12	97T13395GD	KNOB FUNCTION	PC SILK/COAT
	13	97T13396GD	KNOB BAND	PC SILK/COAT
	14	97T13249GD	KNOB ROATRY	ABS XR-401
	15	97T04168GD	CAP KNOB	ABS XR-401
	16	97T14063GD	ESCUTCHEON	ABS XR-401
	17	97T22093GD	REFLECTION SW	PMMA IH-830
	18	97T2209710	REFLECTION VR	PMMA IH-830
	19	97T0909210	PLATE EARTH	BSS3-H T0.2
	20	97T9601410	SHEET LCD	TREPAL PAPER
	21	97T2204710	REFLECTION LCD	PMMA IH-830
	22	97T3003411	SPRING DOOR	STS-304W ϕ 0.25
	23	97T18033GD	DOOR CASSETTE	PC SILK
	24	97T0613830	CHASSIS FRONT	SECC T1.0
	25	97T0615500	CHASSIS SIDE L AS	SECC T1 W/LEVER
	26	97T0616600	CHASSIS SIDE R AS	SECC T1 W/LEVER
	27	97T2407410	BRACKET IC	SCP1 T0.8 STE
	28	97T0913010	PLATE INSUL TOP	POLYESTER T0.25
	29	97T0419730	COVER TOP	SECC T0.6
	30	97T0416730	CASE DETACHABLE	SECC T0.6

CT	Ref	PART CODE	PART NAME	DESCRIPTION
	31	97T2213300	BRKT CONNECTOR	SECC T0.8
	32	97T0915310	PLATE INSUL	POLYESTER T0.25
	33	97T0419830	COVER BOTTOM	SECC T0.6
	34	97T6004700	DECK MECHANISM	TN-3201NX-219
	35	97T2605500	LEVER AS	SECC
	36	97T13380GD	KNOB PUSH EJECT	ABS HF-380
	37	97T04136GD	COVER JACK	ABS HF-380
	38			
	39	97T2423930	BRKT DECK	SECC T1.0
	40	97T04003--	CAP LAMP	** OPTION
	41			
	42			
	S1	7173200811	SCREW TAPPTITE	TT2 BIN 2X8
	S2	7175300611	SCREW TAPPTITE	TT2 FLT 3X6
	S3	7173300611	SCREW TAPPTITE	TT2 BIN 3X6
	S4	7001300411	SCREW MACHINE	PAN M3X4
	S5	7003300611	SCREW MACHINE	BIN M3X6
	S6	7001260311	SCREW MACHINE	PAN M2.6X3
	S7	97T3103910	SCREW STAY	TT2 BIN 3X4 SM20C
	B1	97T3100310	BOLT HEX	M5X12
	N1	-----	NUT HEX	VR ACCESSORY
	N2	7291500011	NUT HEX	6N-1-5
	W1	-----	WASHER	VR ACCESSORY
	E1	DPD087PB1-	LCD	PD-087-P-B1
	E2	97TC050300	PCB FRONT AS	AKF-7333/7331EV
	E3	5V1503698A	VR ROTARY	JPA126GOON
	E4	97TC050400	PCB POWER AS	AKF-7331/7333EV
	E5	97P6210800	CONN HOUSING	20P MINI TYPE
	E6,7	97T63019A0	JACK ANT	PIG TAIL 165MM
	E8	97TC050200	PCB MAIN AS	AKF-7331/7333EV

7. PACKING ILLUSTRATION AND PARTS LIST

■ PACKING SECTION

CT	Ref.	PART CODE	PART NAME	DESCRIPTION	Q'TY
	ANT2	97T6800400	ANT PLUG JACK	ISO TYPE	1
	CNB0	97T88189B1	CONN AS	20P PLUG MINI W/O L	1
	0001	97T93036GD	LABEL SPEC	STICKER 70X53	1
	0002	97T93086GD	LABEL CONN	STICKER 142X35	1
	00020	97T48020A0	POLY BAG	0.03TX250WX300L SILK	1
	00030	97T48003A0	POLY BAG	0.04TX160WX240	1
	00031	97T95107GD	MANUAL INS	PAPER REF AKF-7333	1
	00040	97T0416730	CASE DETACH	SECC1 T0.6	1
	00045	97T2421330	BRKT CONN	SECC T0.8	1
	00050	97T48008A0	POLY BAG	VINYL 0.03TX45WX50L	1
	00054	97T2401430	BRKT MOUNT	SBHG 1.2T	1
	00060	97T4908300	PAD SNOW AS	EX-PS	1
	00070	97T50102GD	BOX GIFT	AKF-9097	1
	00080	97T50133GD	BOX CARTON	DW-1 REF. DESIGN	1



8. ELECTRICAL PARTS LIST

■ MAIN SECTION

CT	Ref	PART CODE	PART NAME	DESCRIPTION
	T101	5LC229J458	COIL FM DET	292MC-K5046DLF-KR
	L101	5LL479K03K	COIL INDUCTOR	4.7UH K 03 TA 26MM
	CT100	5XEZ4R500E	CRYSTAL QUARTZ	HC-47/U 4.500MHZ 12PF
	D102,112,113,123	DKN4148---	DIODE	KN4148 AUTO 26MM
	D101,103,104,105,106,107 D110,111,116,117,118,119 D120,121,122,129	DKSS133---	DIODE	1SS133 AUTO 26MM
	D108,109,128	DKTZ10B---	DIODE ZENER	MTZ-10 26MM TAPPING
	CF101,102	5PE107MS2A	FILTER CERA	SFE107MS2-A
	IC101	1DBL1018--	IC	DBL1018
	IC103	1LA3370---	IC AUDIO FM MPX	LA-3370
	IC106	1LA3161---	IC AUDIO TAPE EQ	LA-3161
	IC104	176S8AG316	IC CUSTOM	UPD1708AG-316
	IC105	1Z1A78S05P	IC REGULATOR	KIA78S05P (AUTO)
	RV102	RV1417103-	R SEMI FIXED	H10K-5X5-6N-PC-BS
	Q118	TZDTA125TL	TR	DTA125TL
	Q120	TZRA102M--	TR	KRA102M(KEC)
	Q101,114,115,116	TZRC102M--	TR	KRC102M(KEC)
	Q103,121	TZRC104M--	TR	KRC104M AUTO
	Q117,119	TZTA1267Y-	TR	KTA1267Y TAPPING
	Q102	TZTC31920-	TR	KTC3192-0
	Q104,105,106,107,108,109 Q110,111	TZTC3199Y-	TR	KTC-3199Y TAPPING
	Q113	TZ2SD1862R	TR	2SD1862R
	Q112	TZ2SD1919R	TR	2SD1919R
	TU101	97T76008P0	TUNER FM	KCF-201VA
	VR101	5V1503641B	VR ROTARY	V9M(6X5)N25F-3B50K (C.C)
	VR102	5V1503670A	VR ROTARY	V9M(6X5)N-15A 50K A

■ FRONT SECTION

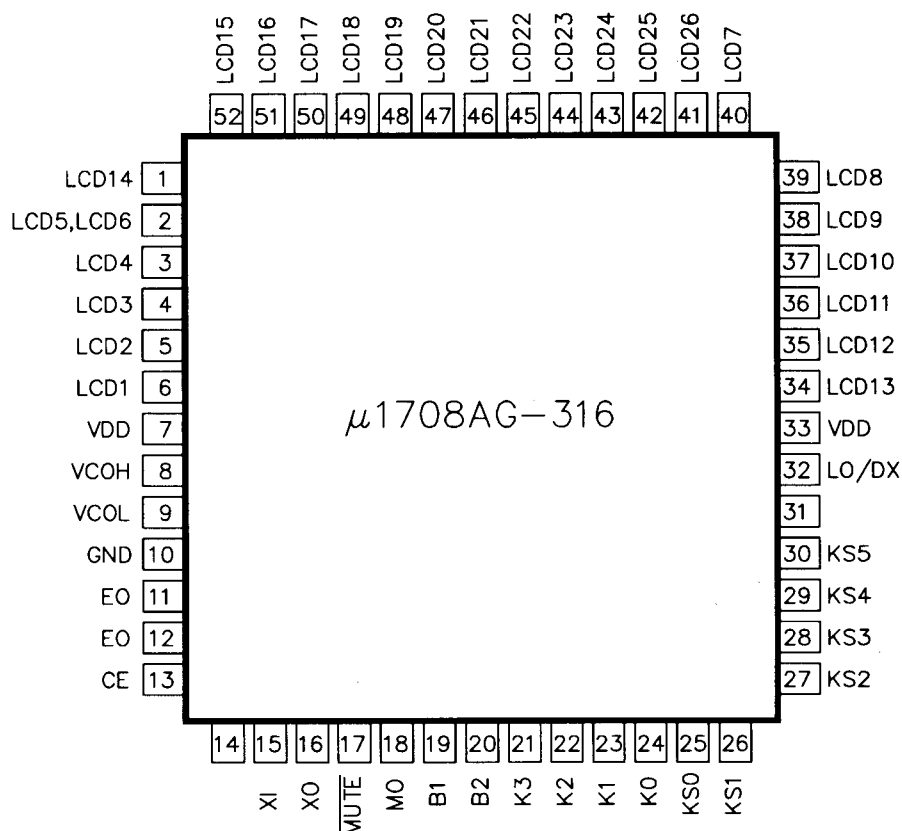
CT	Ref.	PART CODE	PART NAME	DESCRIPTION
	D301,302,303,304	DKSS133---	DIODE	1SS133 AUTO 26MM
	PL01,02,03,04,05	97T82008B0	LAMP	14V 60MA D3.0
	D300	DPD087PB1-	LCD	PD-087-P-B1
	SW01,02,03,04,05,06,07 SW08,09,10,11,12,13	5S50101275	SW TACT	KPT-1107B 1C-1P 200G WH

■ POWER SECTION

CT	Ref.	PART CODE	PART NAME	DESCRIPTION
	D501,502,503	DKN4001A--	DIODE	KN4001A AUTO 26MM
	IC501	1K1A6299H-	IC	KIA6299H
	Q501,502	TZDTC323TL	TR	DTC323TL
	VR501	5V1503698A	VR ROTARY	JPA126GOON 27.5H 15A50K

9. IC BLOCK DIAGRAM

■ UPD1708AG-316 (MICOM)



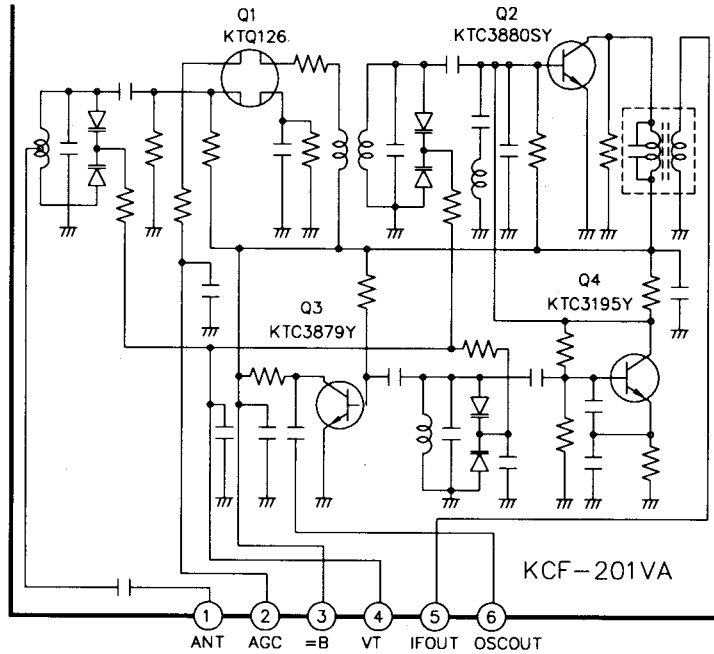
■ PIN DESCRIPTIONS (MI-COM)

(I : Input O : Output)

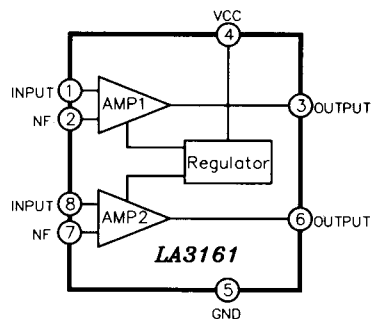
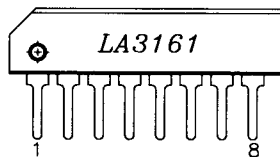
PIN NO	SYMBOL	I/O	DESCRIPTION
1	LCD DRIVER	O	LCD DRIVER PIN
2	"	O	"
3	"	O	"
4	"	O	"
5	"	O	"
6	"	O	"
7	VDD	I	5V $\pm$ 10% DC INPUT
8	VCOH	I	FM LOCAL OSCILATOR INPUT
9	VCOL	I	AM LOCAL OSCILATOR INPUT
10	GND	GROUND	GROUND
11	EO	O	ERROR OUTPUT
12	EO	O	ERROR OUTPUT
13	CE	I	CHIP ENABLE
14	NC	-	NO CONNECTION
15	XI	I	4.5MHz X'TAL CONNECTION
16	XO	O	4.5MHz X'TAL CONNECTION
17	MUTE	O	MUTE OUTPUT(ACTIVE LOW)
18	MO	O	MONO/STEREO CONTROL OUTPUT
19	BAND1	O	BAND CONTROL OUTPUT FM(H),MW(L),LW(L)
20	BAND2	O	BAND CONTROL OUTPUT MW(L) LW(H)
21-24	KEY RETURN SIGNAL INPUT	I	KEY MATRIX RETURN SIGNAL INPUT
25-30	KEY SOURCE	O	KEY MATRIX SOURCE SIGNAL OUTPUT
31			NOT USED
32	LO/DX	O	LOCAL CIRCUIT CONTROL OUTPUT
33	VDD	I	5V $\pm$ 10% DC INPUT
34-52	LCD DRIVER	O	LCD DRIVER PIN

AKF-7331/7333EV

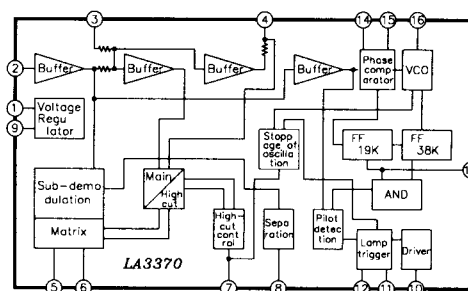
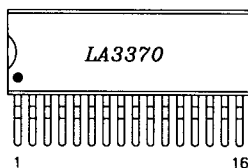
■ KCF-201VA (FM FRONT-END)



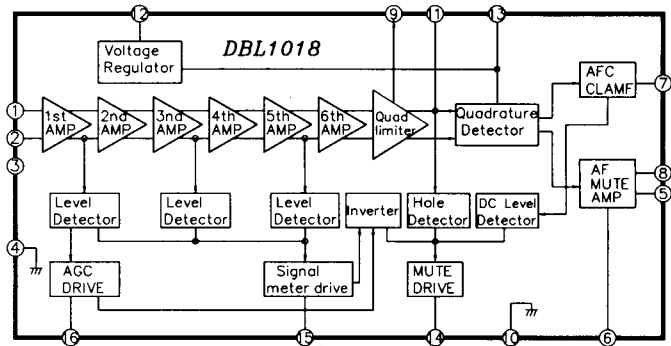
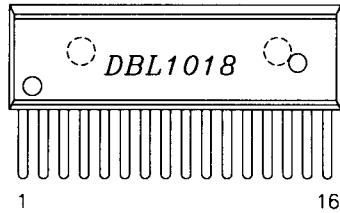
■ LA3161 (TAPE PRE-AMP)



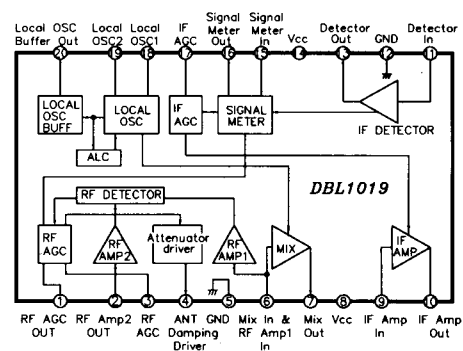
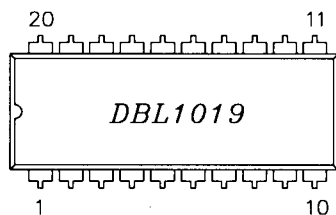
■ LA3370 (AUDIO FM MPX)



■ DBL1018 (FM IF)



■ DBL1019 (AM TUNER)



■ KIA6299H (POWER IC)

