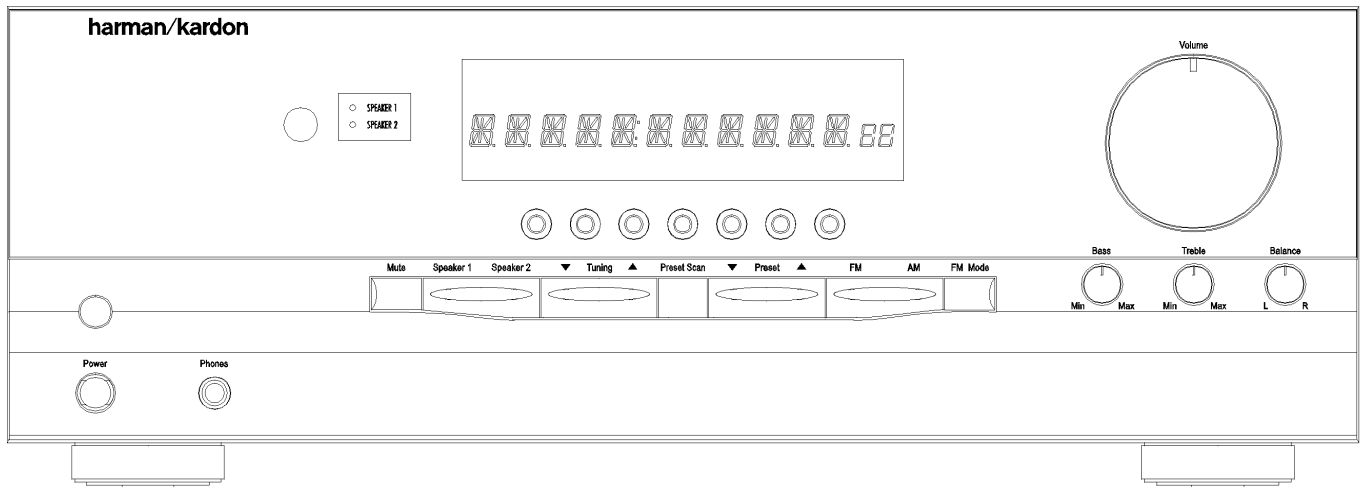


harman/kardon

# hk3370/3470

STEREO RECEIVER

# PRELIMINARY SERVICE MANUAL



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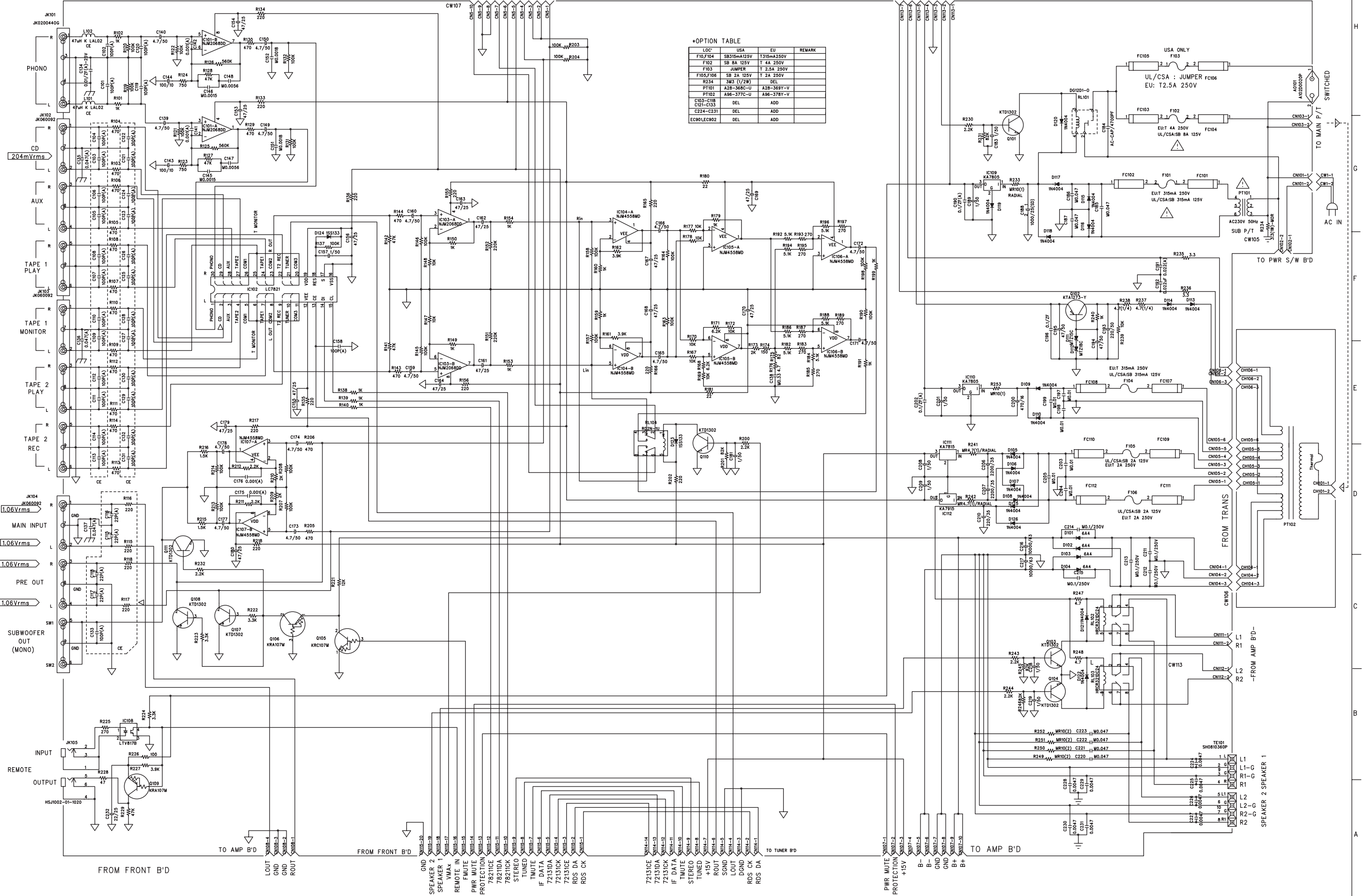
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harman/kardon, Inc.  
250 Crossways Park Dr.  
Woodbury, New York 11797

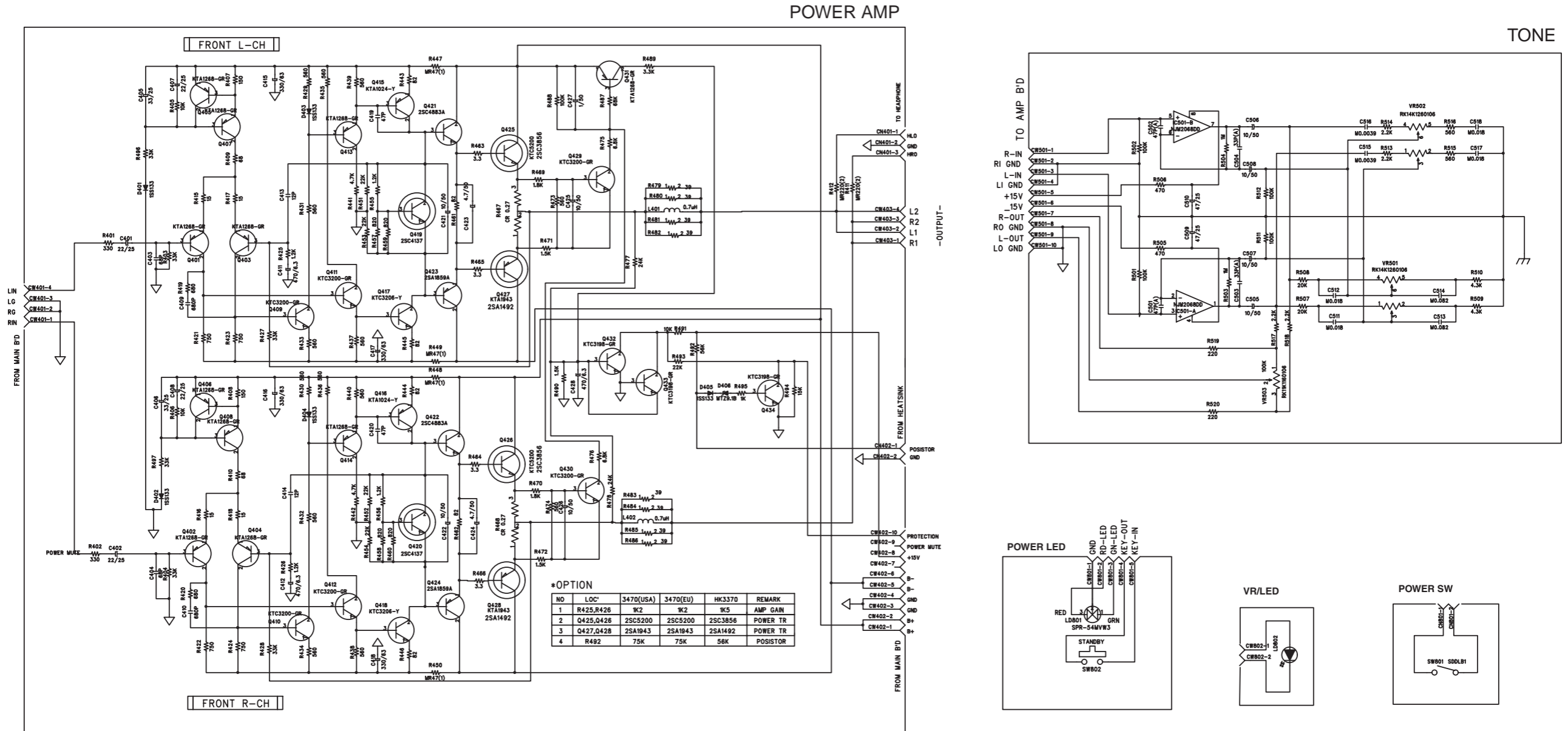
# SCHEMATIC DIAGRAM MAIN

**+OPTION TABLE**

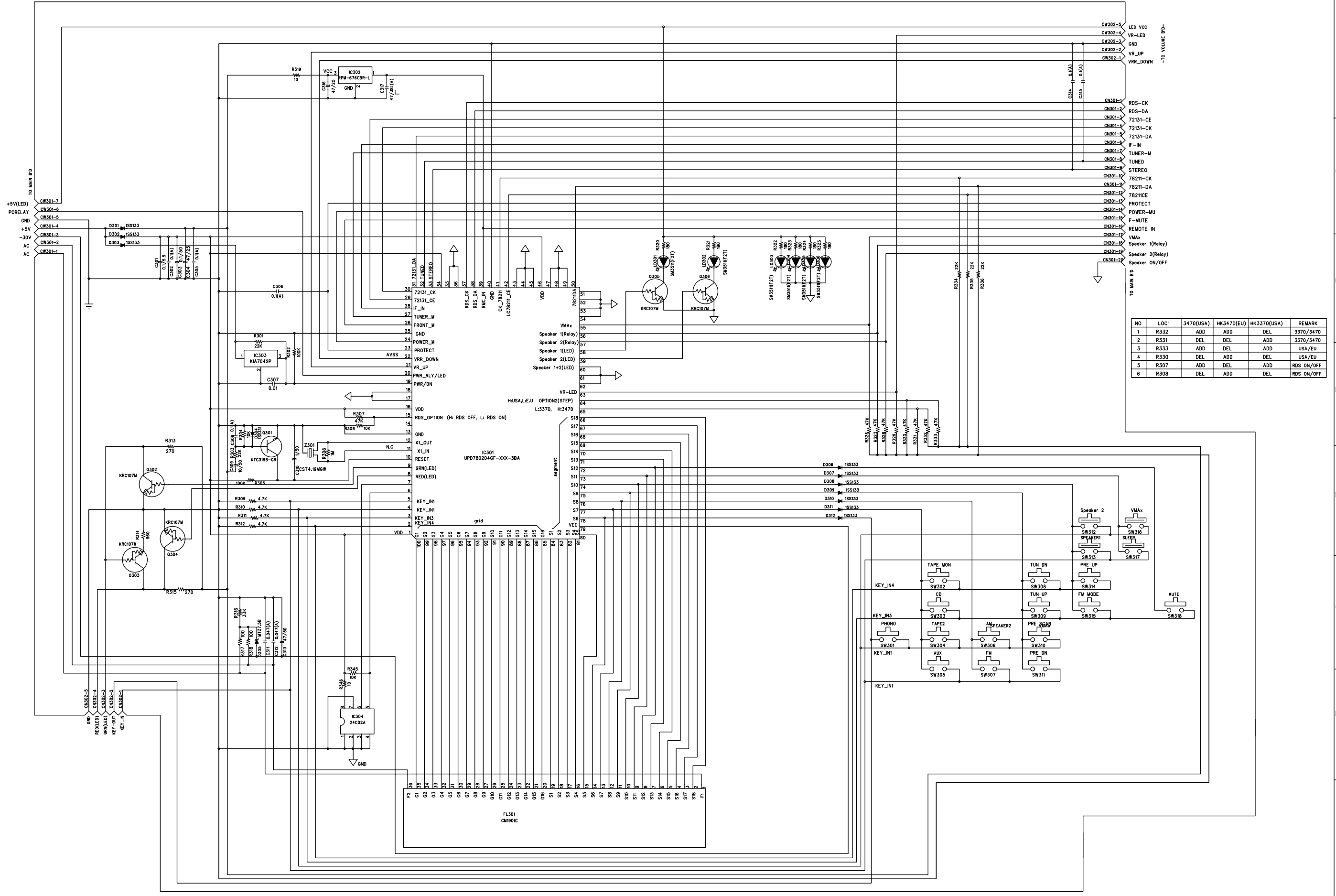
LOC	USA	EU	REMARK
F10,F104	SB315A125V	T315A250V	
F102	SB 8A 125V	T 4A 250V	
F103	JUMPER	T 2.5A 250V	
F105,F106	SB 2A 125V	T 2A 250V	
R234	3M3 (1/2W)	DEL	
PT101	A28-369C-U	A28-369T-V	
PT102	A36-377C-U	A36-378V-V	
C103-C118	DEL	ADD	
C121-C133	DEL	ADD	
C224-C231	DEL	ADD	
EC90LEC902	DEL	ADD	



# SCHEMATIC DIAGRAM AMP/TONE/ETC.



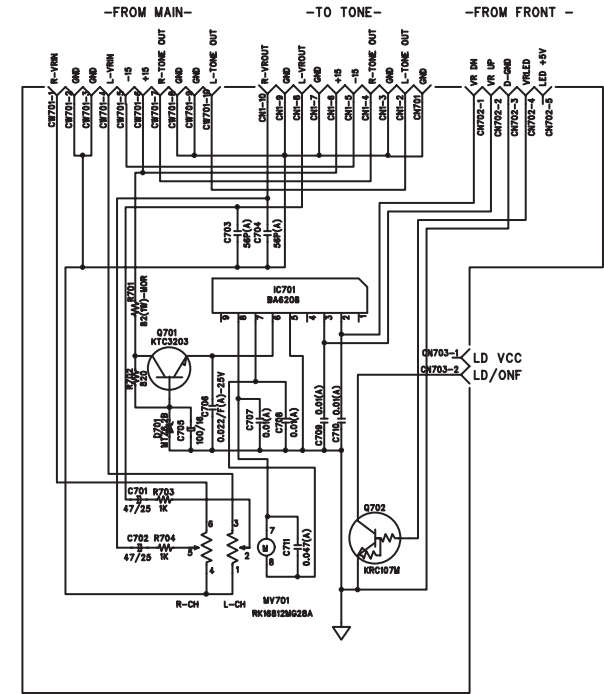
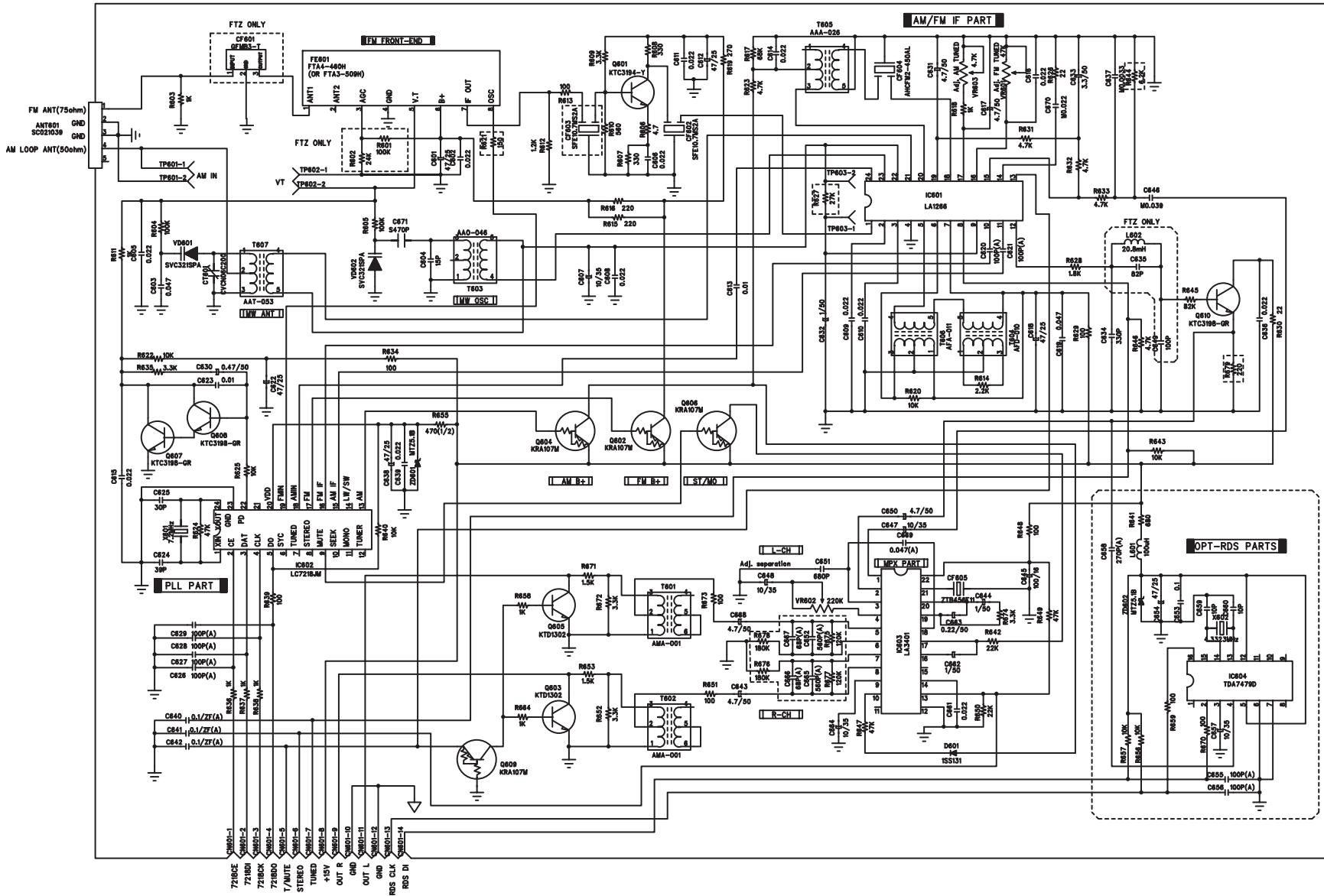
**SCHEMATIC DIAGRAM  
FRONT**



NO	LOC'	3470(USA)	HK3470(EU)	HK3370(USA)	REMARK
1	R332	ADD	ADD	DEL	3370/3470
2	R331	DEL	DEL	ADD	3370/3470
3	R333	ADD	DEL	ADD	USA/EU
4	R330	DEL	ADD	DEL	USA/EU
5	R307	ADD	DEL	ADD	RDS ON/OFF
6	R308	DEL	ADD	DEL	RDS ON/OFF

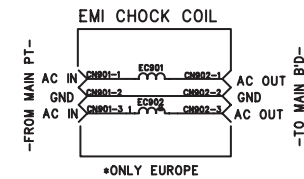
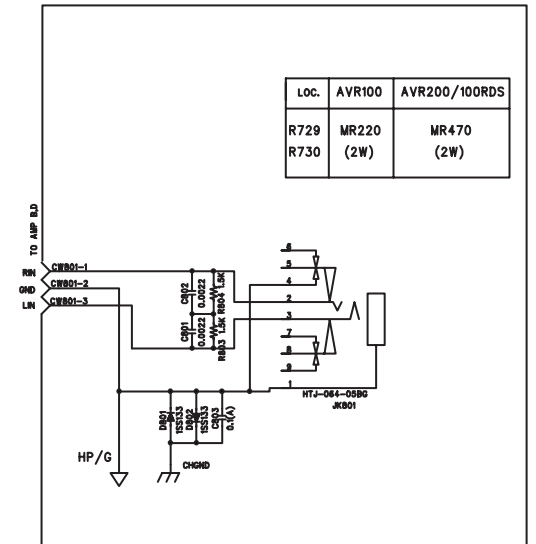
SCHEMATIC DIAGRAM  
TUNER/VR/HP

TUNER



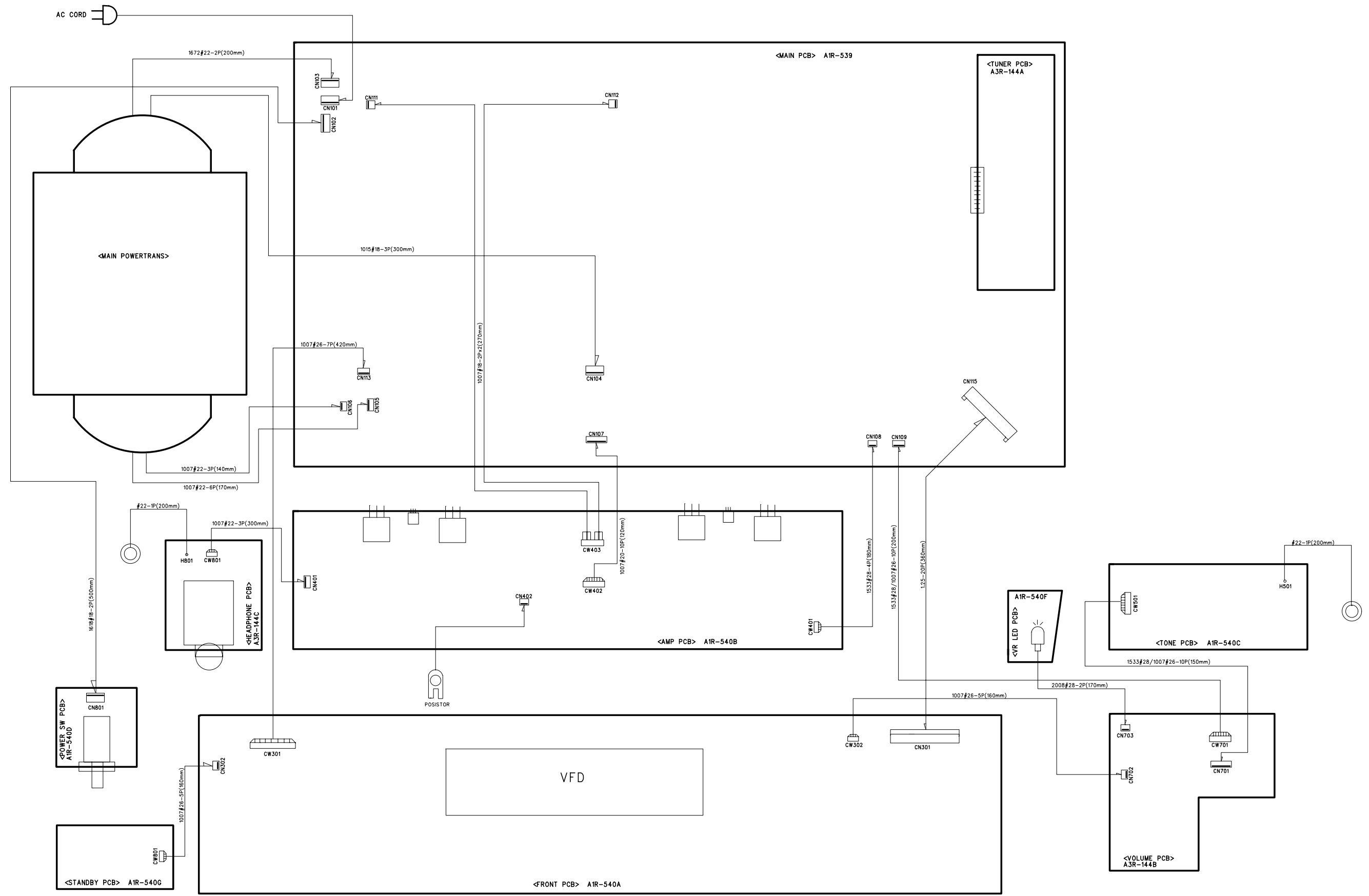
LOC NO	USA	EU
ANT801	SC0210	SC0210
CF601	X	O
JW16	O	X
FE601	FTA3-509HA	FTA4-460H
JW17	O	X
R602	X	O
R601		
C635	X	O
C649	X	O
R644	6.2K	1.5K
L602	X	O
JW1	O	X
R675	120K	220K
R677		
C652	560P(A)	220P(A)
C665		
C666	68P(A)	10P(A)
R676	180K	270K
R678		
R627	27K	47K
R621	470	150
CF603	SFE 10.7MS2A	SFE 10.7MJA
RDS	X	O

HEAD PHONE



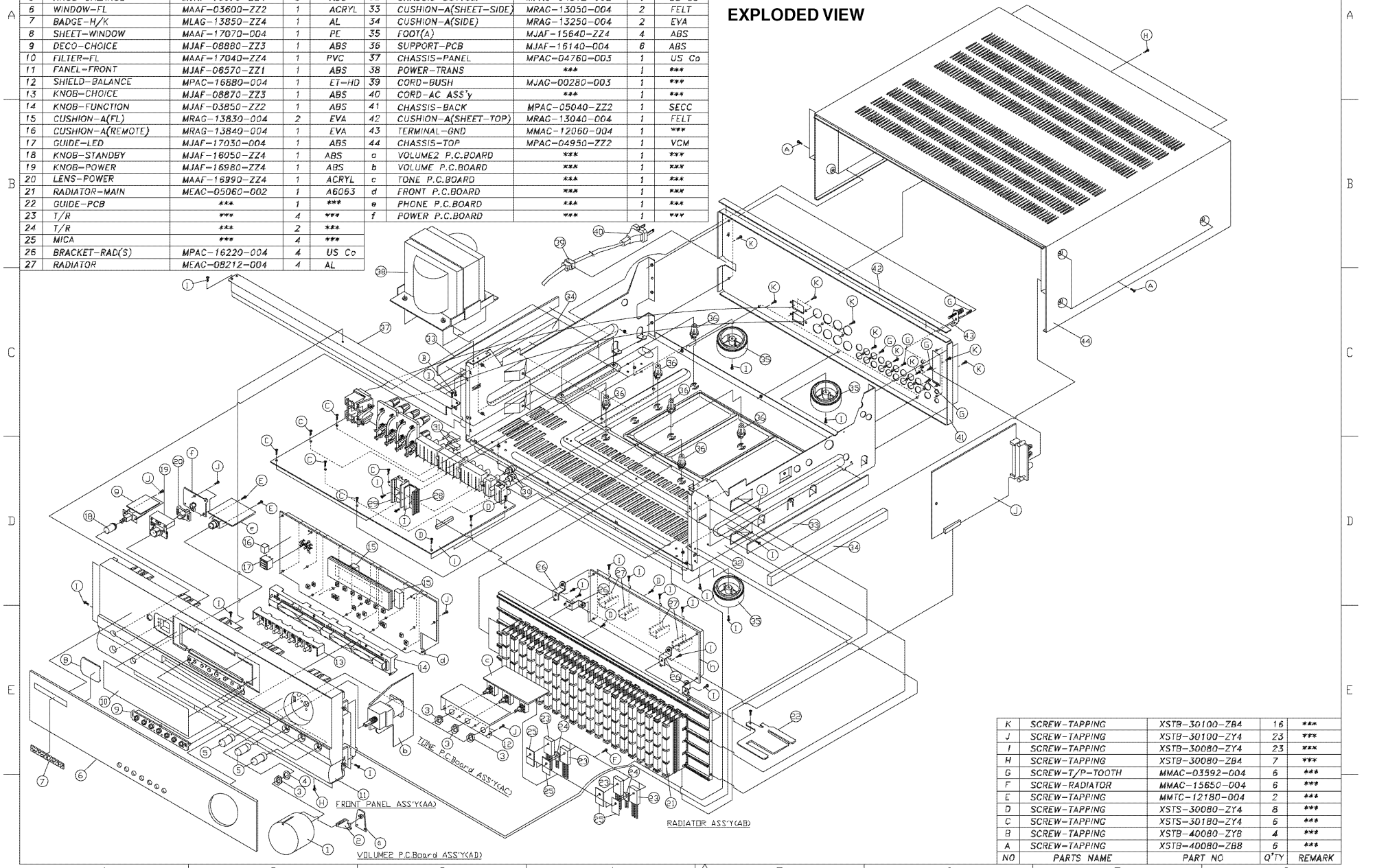
\*ONLY EUROPE

# 12. WIRING DIAGRAM



1	2	3	4	5	6	7	8		
NO	PARTS NAME	PART NO	Q'TY	REMARK	NO	PARTS NAME	PART NO	Q'TY	REMARK
1	KNOB-VOLUME	MJAF-16100-ZZ4	1	ABS	28	RADIATOR-TR	MEAC-08215-004	1	AL
2	LENS-VOLUME	MAAF-16130-ZZ3	1	ACRYL	29	HEAT-SINK(TR)	MEAC-12693-004	1	AL
3	NUT	***	4	***	30	PLUG-RCA	PLRC-00020-S30	2	***
4	WASHER	***	1	***	31	JACK-CONNECT	MMAC-17070-004	2	***
5	KNOB-BALANCE	MJAF-16070-ZZ4	3	ABS	32	CHASSIS-BOTTOM	MPAC-04812-002	1	US Co
6	WINDOW-FL	MAAF-03600-ZZ2	1	ACRYL	33	CUSHION-A(SHEET-SIDE)	MRAG-13050-004	2	FELT
7	BADGE-H/K	MLAG-13850-ZZ4	1	AL	34	CUSHION-A(SIDE)	MRAG-13250-004	2	EVA
8	SHEET-WINDOW	MAAF-17070-004	1	PE	35	FOOT(A)	MJAF-15640-ZZ4	4	ABS
9	DECO-CHOICE	MJAF-08880-ZZ3	1	ABS	36	SUPPORT-PCB	MJAF-16140-004	6	ABS
10	FILTER-FL	MAAF-17040-ZZ4	1	PVC	37	CHASSIS-PANEL	MPAC-04760-003	1	US Co
11	PANEL-FRONT	MJAF-06570-ZZ1	1	ABS	38	POWER-TRANS	***	1	***
12	SHIELD-BALANCE	MPAC-16880-004	1	ET-HD	39	CORD-BUSH	MJAC-00280-003	1	***
13	KNOB-CHOICE	MJAF-08870-ZZ3	1	ABS	40	CORD-AC ASS'y	***	1	***
14	KNOB-FUNCTION	MJAF-03850-ZZ2	1	ABS	41	CHASSIS-BACK	MPAC-05040-ZZ2	1	SECC
15	CUSHION-A(FL)	MRAG-13830-004	2	EVA	42	CUSHION-A(SHEET-TOP)	MRAG-13040-004	1	FELT
16	CUSHION-A(REMOTE)	MRAG-13840-004	1	EVA	43	TERMINAL-GND	MMAC-12060-004	1	***
17	GUIDE-LED	MJAF-17030-004	1	ABS	44	CHASSIS-TOP	MPAC-04950-ZZ2	1	VCM
18	KNOB-STANDBY	MJAF-16950-ZZ4	1	ABS	a	VOLUME2 P.C.BOARD	***	1	***
19	KNOB-POWER	MJAF-16980-ZZ4	1	ABS	b	VOLUME P.C.BOARD	***	1	***
20	LENS-POWER	MAAF-16990-ZZ4	1	ACRYL	c	TONE P.C.BOARD	***	1	***
21	RADIATOR-MAIN	MEAC-05060-002	1	AL	d	FRONT P.C.BOARD	***	1	***
22	GUIDE-PCB	***	1	***	e	PHONE P.C.BOARD	***	1	***
23	T/R	***	4	***	f	POWER P.C.BOARD	***	1	***
24	T/R	***	2	***					
25	MICA	***	4	***					
26	BRACKET-RAD(S)	MPAC-16220-004	4	US Co					
27	RADIATOR	MEAC-08212-004	4	AL					

EXPLODED VIEW

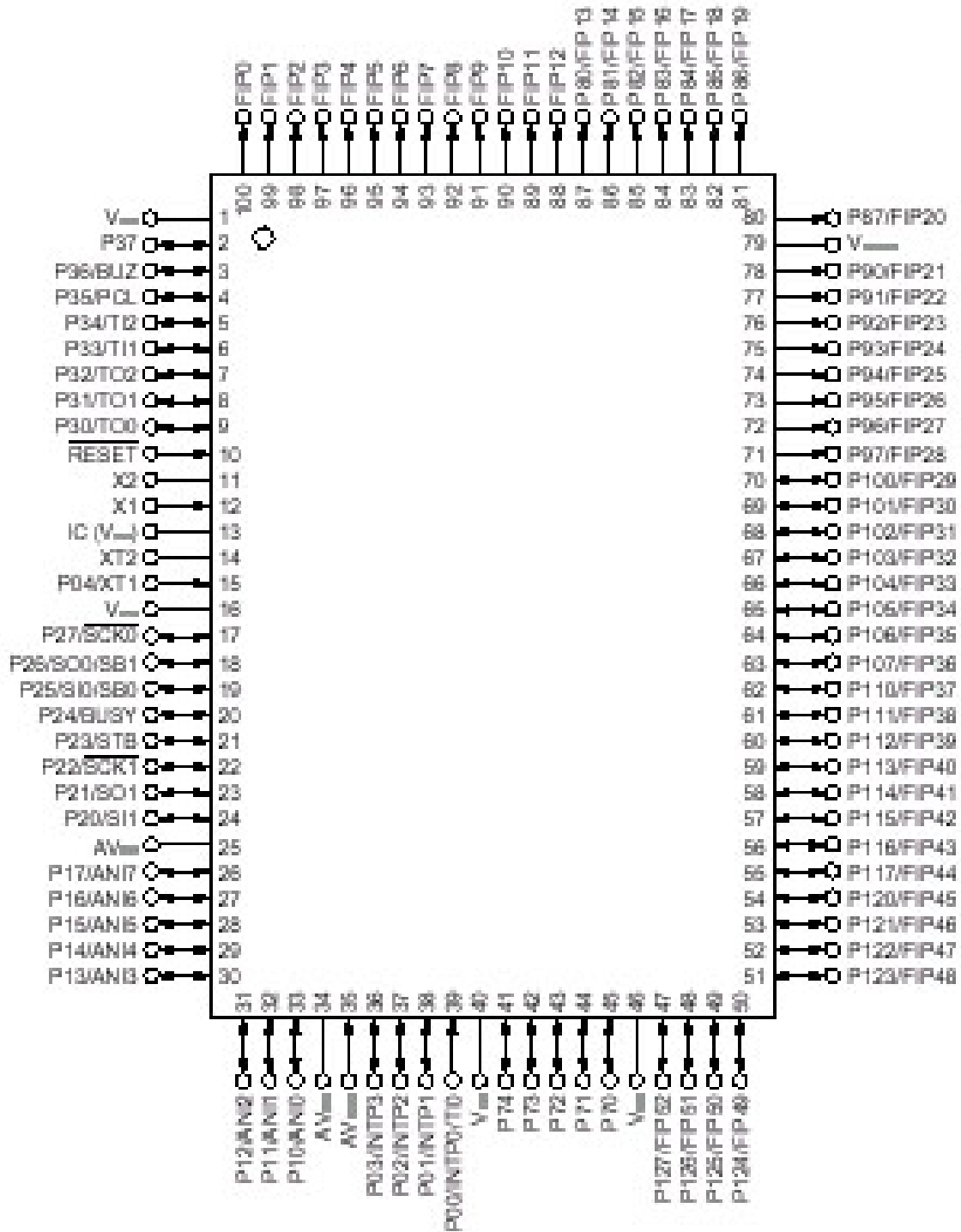


K	SCREW-TAPPING	XSTB-30100-ZB4	16	***
J	SCREW-TAPPING	XSTB-30100-ZY4	23	***
I	SCREW-TAPPING	XSTB-30080-ZY4	23	***
H	SCREW-TAPPING	XSTB-30080-ZB4	7	***
G	SCREW-T/P-TOOTH	MMAC-03592-004	6	***
F	SCREW-RADIATOR	MMAC-15650-004	6	***
E	SCREW-TAPPING	MMTC-12180-004	2	***
D	SCREW-TAPPING	XSTS-30080-ZY4	8	***
C	SCREW-TAPPING	XSTS-30180-ZY4	6	***
B	SCREW-TAPPING	XSTB-40080-ZYB	4	***
A	SCREW-TAPPING	XSTB-40080-ZB8	6	***
NO	PARTS NAME	PART NO	Q'TY	REMARK

### 3. Circuit Description

CPU(IC401) :uPD780204GF

#### 1. Pin Configuration





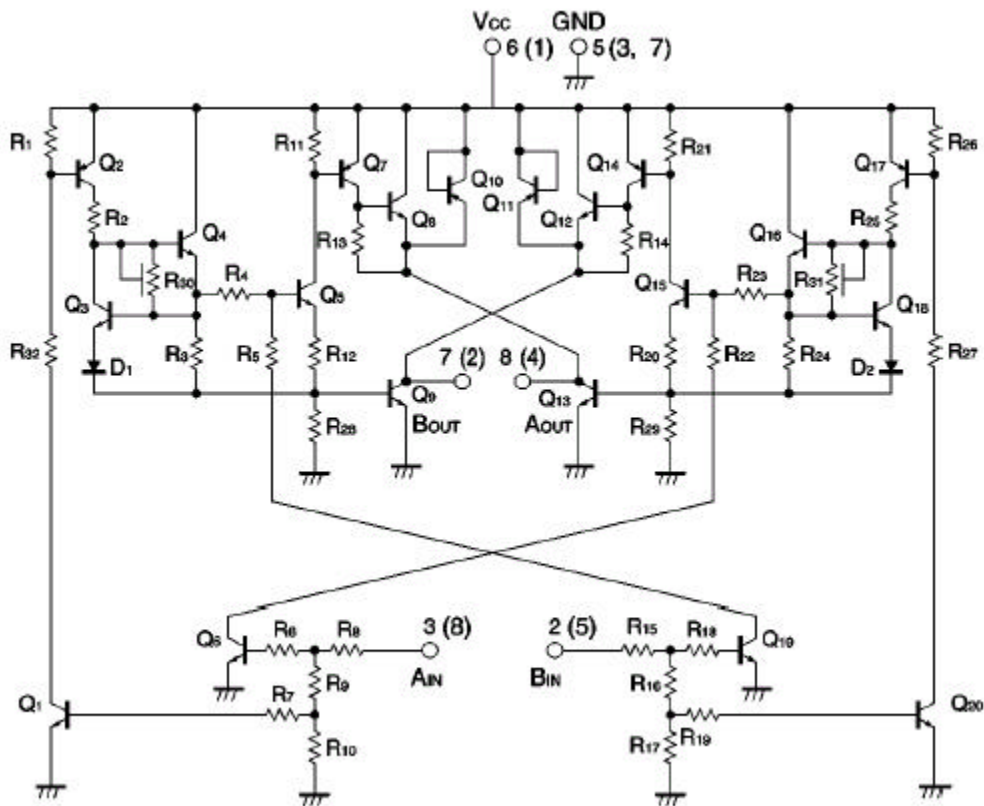
## 2. Pin Description

## uPD780204GF QFP Type

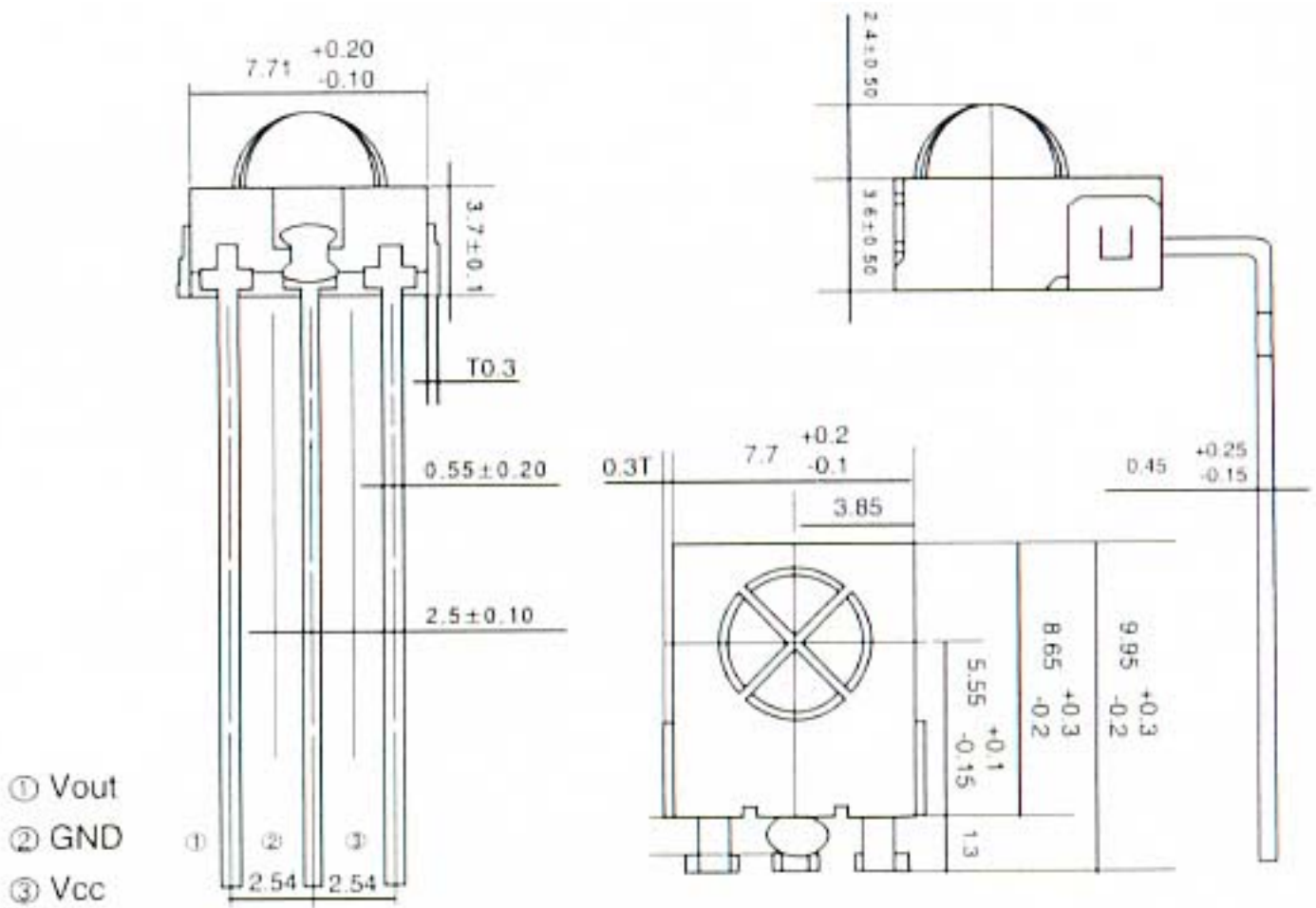
Pin No.	Pin Name	I/O	ACTIVE	PORT NAME	REMARK
1	Vdd	-	H	+5V	System power supply
2	P37	I	H	KR4	Key read 4
3	P36	I	H	KR3	Key read 3
4	P35	I	H	KR2	Key read 2
5	P34	I	H	KR1	Key read 1
6	P33	-	-	-	Not used
7	P32	-	-	-	Not used
8	P31	O	H/L	PWR_LED(RED)	L:AMBER L:GREEN H:RED
9	P30	O	H/L	PWR_LED(GRN)	L:STBY H:OPER L:PROT
10	RESET	I	L	System reset	Low reset
11	X2	-	-	OSC	Main system osc.
12	X1	I	-	OSC	-
13	Vpp	-	-	Connected to Vss	
14	XT2	-	-	-	Not used
15	P04/XT1	I	H/L	OPT_RDS	Rds on/off
16	Vdd	-	H	+5V	System power supply
17	P27	-	-	-	Not used
18	P26	-	-	-	Not used
19	P25	I	L	PWR_DOWN	Detect power off
20	P24	O	H	PWR_RLY	Power Relay on/off
21	P23	O	H	VR_UP	Volume up
22	P22	O	H	VR_DOWN	Volume Down
23	P21	I	L	PROTECT	Detect protection
24	P20	O	H	PWR_MUTE	Power Mute
25	AVss	-	L	GND	Analog ground
26	P17	O	H	PRE_MUTE	Pre mute
27	P16	O	H	TUNER_MUTE	Tuner mute
28	P15	I	H/L	IF_IN	IF conter in
29	P15	O	H	PLL CE	
30	P13	O	H	PLL CLOCK	
31	P12	O	H/L	PLL DATA	
32	P11	I	L	TUNED	Tuned in on : L
33	P10	I	L	STEREO	Stereo in on : L
34	Avdd	-	H	+5V	Analog power supply
35	Avref	-	L	GND	
36	P03	-	-	-	Not used
37	INTP2	I	L	RDS CLK	Rds clock in
38	P01	I	H	RDS DATA	Rds data in
39	P00	I	L	REMOCON IN	Remocon data in
40	Vss	-	L	GND	Ground
41	P74	O	H/L	78211 CLK	
42	P73	O	H/L	78211 CE	
43	P72	-	-	-	Not used
44	P71	-	-	-	Not used
45	P70	-	-	-	Not used
46	Vdd	-	H	+5V	

Pin No.	Pin Name	I/O	ACTIVE	PORT NAME	REMARK
47	P127	-	-		Not used
48	P127	-	-		Not used
49	P125	-	-		Not used
50	P124	O	H/L	78211 DATA	
51	P123	-	-		Not used
52	P122	-	-		Not used
53	P121	-	-		Not used
54	P120	-	-		Not used
55	P117	O	H	VMAX	VMAx on/off
56	P116	O	H	SPK1_RLY	Speaker1 relay on/off
57	P115	O	H	SPK2_RLY	Speaker2 relay on/off
58	P114	O	H	SPK1_LED	Speaker1 led on/off
59	P113	O	H	SPK2_LED	Speaker2 led on/off
60	P112	O	H	SPK12_LED	Speaker1/2 led on/off
61	P111	-	-		
62	P110	-	-		
63	P107	O	H	VR_LED	Volume led on/off
64	P106	I	H/L	OPT_STEP	L:E.U. , H:USA
65	P105	I	H/L	OPT_3400/3700	L:3400, H:3370
66	FIP33	O	H	S18	FIP segment output
67	FIP32	O	H	S17	FIP segment output
68	FIP31	O	H	S16	FIP segment output
69	FIP30	O	H	S15	FIP segment output
70	FIP29	O	H	S14	FIP segment output
71	FIP28	O	H	S13	FIP segment output
72	FIP27	O	H	S12	FIP segment output
73	FIP26	O	H	S11	FIP segment output
74	FIP25	O	H	S10	FIP segment output
75	FIP24	O	H	S9	FIP segment output
76	FIP23	O	H	S8	FIP segment output
77	FIP22	O	H	S7	FIP segment output
78	FIP21	O	H	S6	FIP segment output
79	Vload	-	-	Vload	FIP DRIVER VOLTAGE
80	FIP20	O	H	S5	FIP segment output
81	FIP19	O	H	S4	FIP segment output
82	FIP18	O	H	S3	FIP segment output
83	FIP17	O	H	S2	FIP segment output
84	FIP16	O	H	S1	FIP segment output
85	FIP15	O	H	G16	FIP grid output
86	FIP14	O	H	G15	FIP grid output
87	FIP13	O	H	G14	FIP grid output
88	FIP12	O	H	G13	FIP grid output
89	FIP11	O	H	G12	FIP grid output
90	FIP10	O	H	G11	FIP grid output
91	FIP9	O	H	G10	FIP grid output
92	FIP8	O	H	G9	FIP grid output
93	FIP7	O	H	G8	FIP grid output
94	FIP6	O	H	G7	FIP grid output
95	FIP5	O	H	G6	FIP grid output

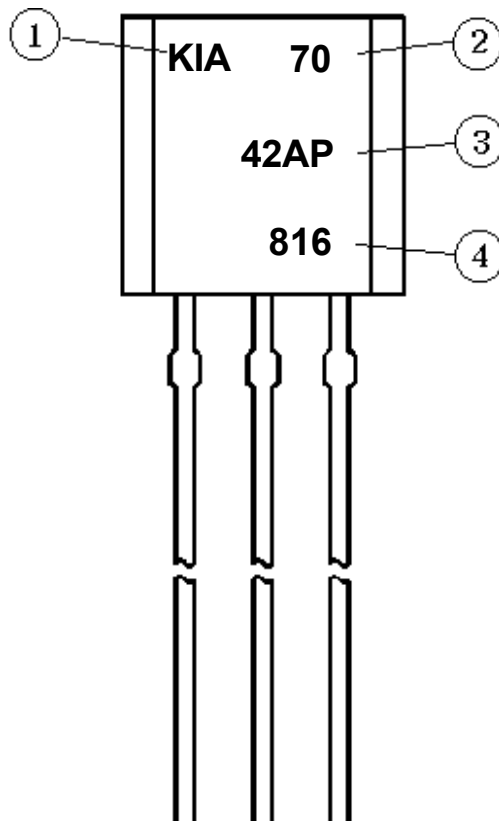
IC 701 : BA6208



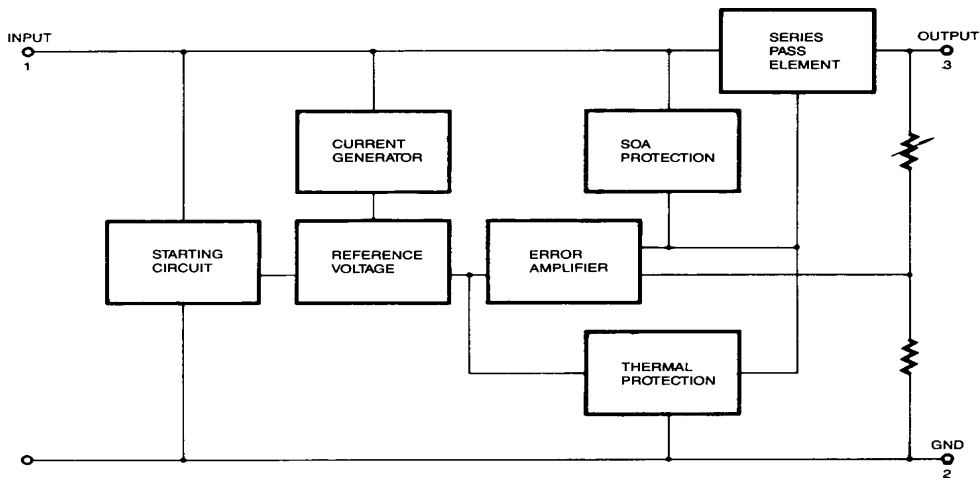
IC 302 : HI-M602HO



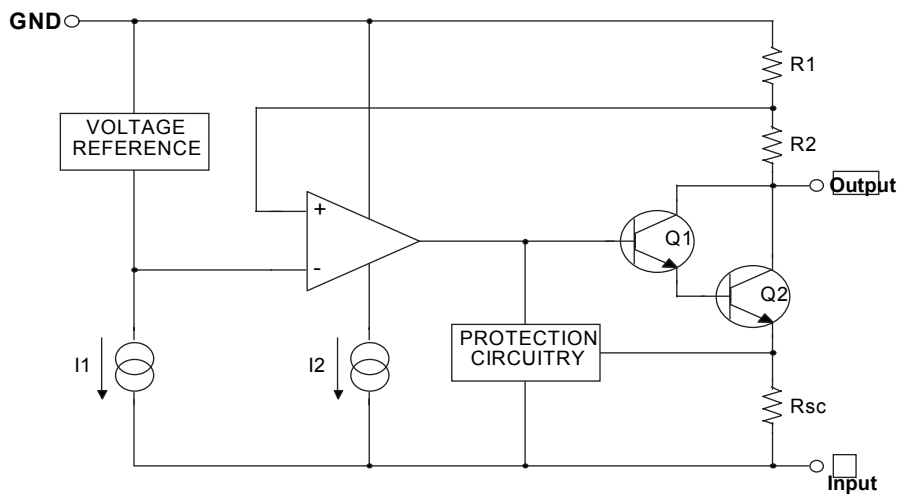
IC 303 : KIA7042AP



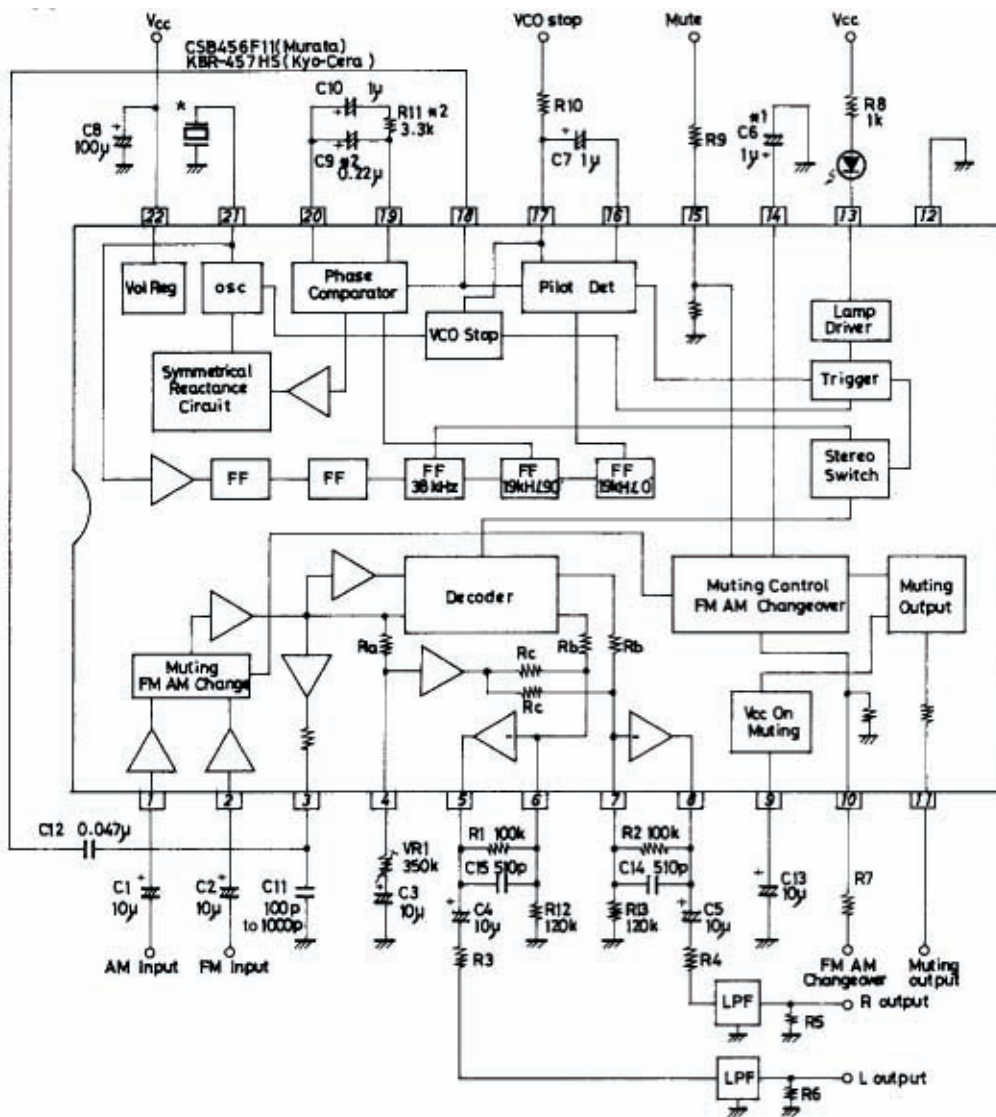
IC 111 : KA78XX



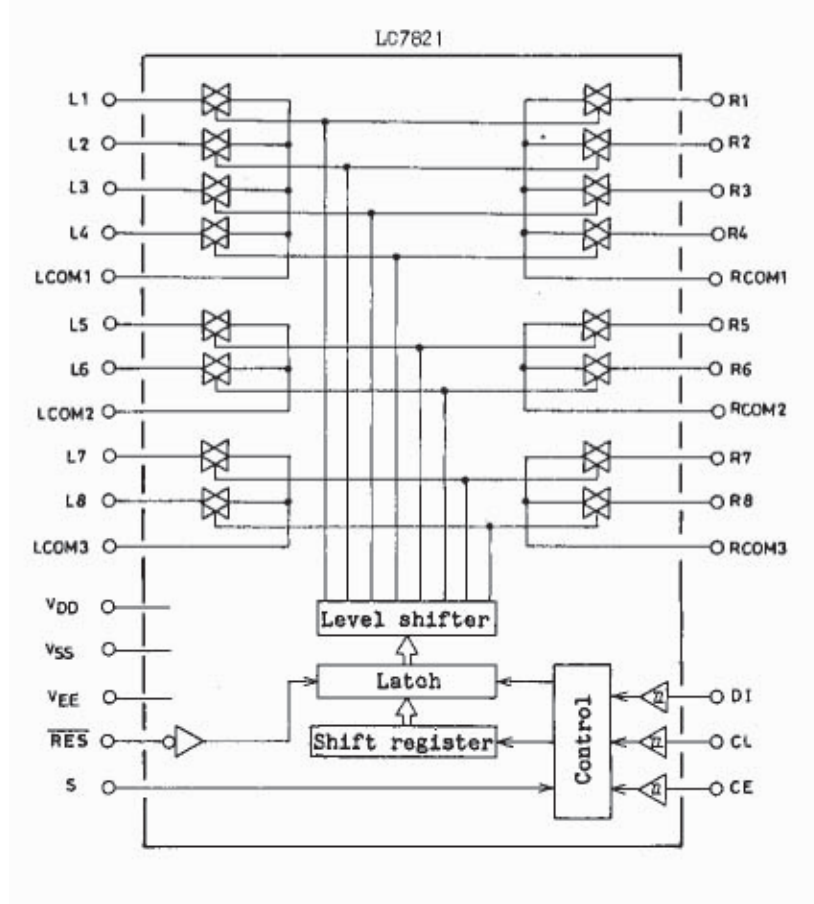
IC 112 : KA79XX



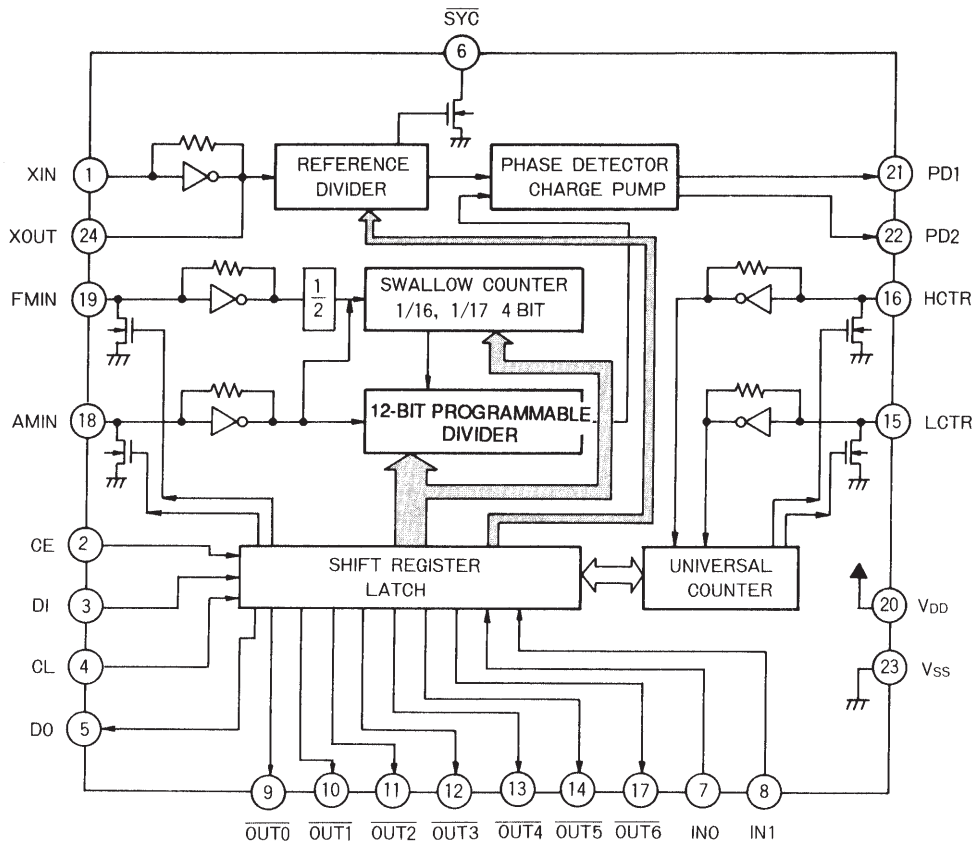
IC 603 : LA3401



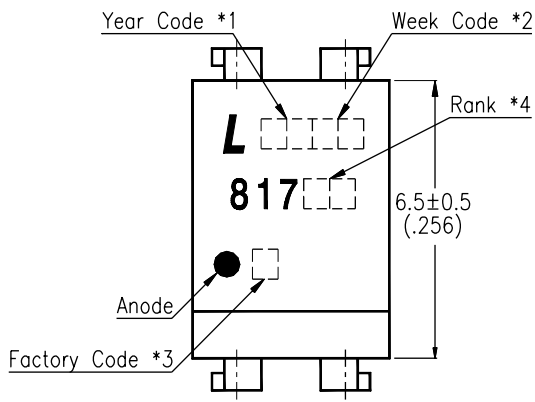
IC 102 : LC7821



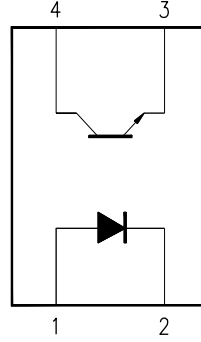
IC 602 : LC7218JM



IC 108 : LTV817B

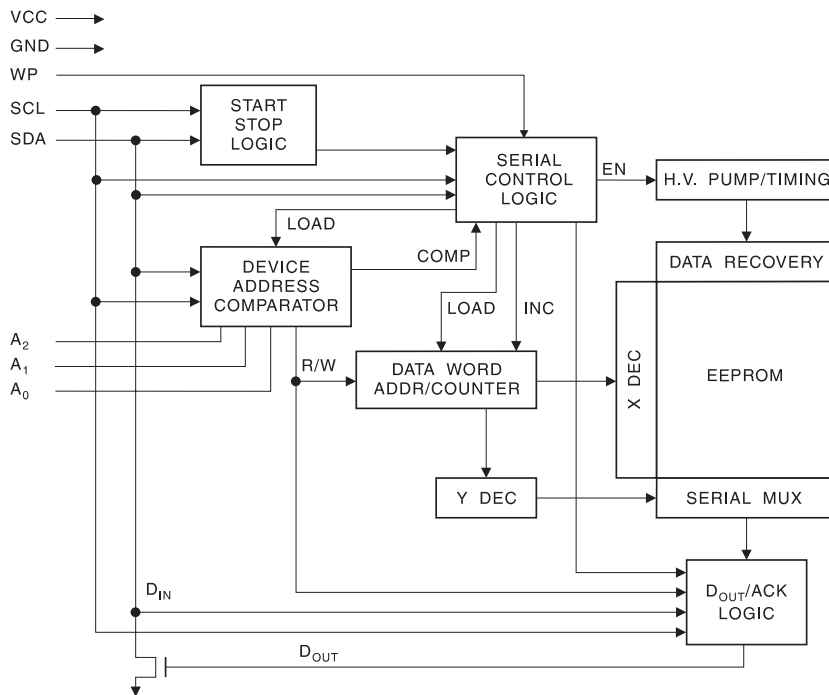


Pin No. and Internal connection diagram



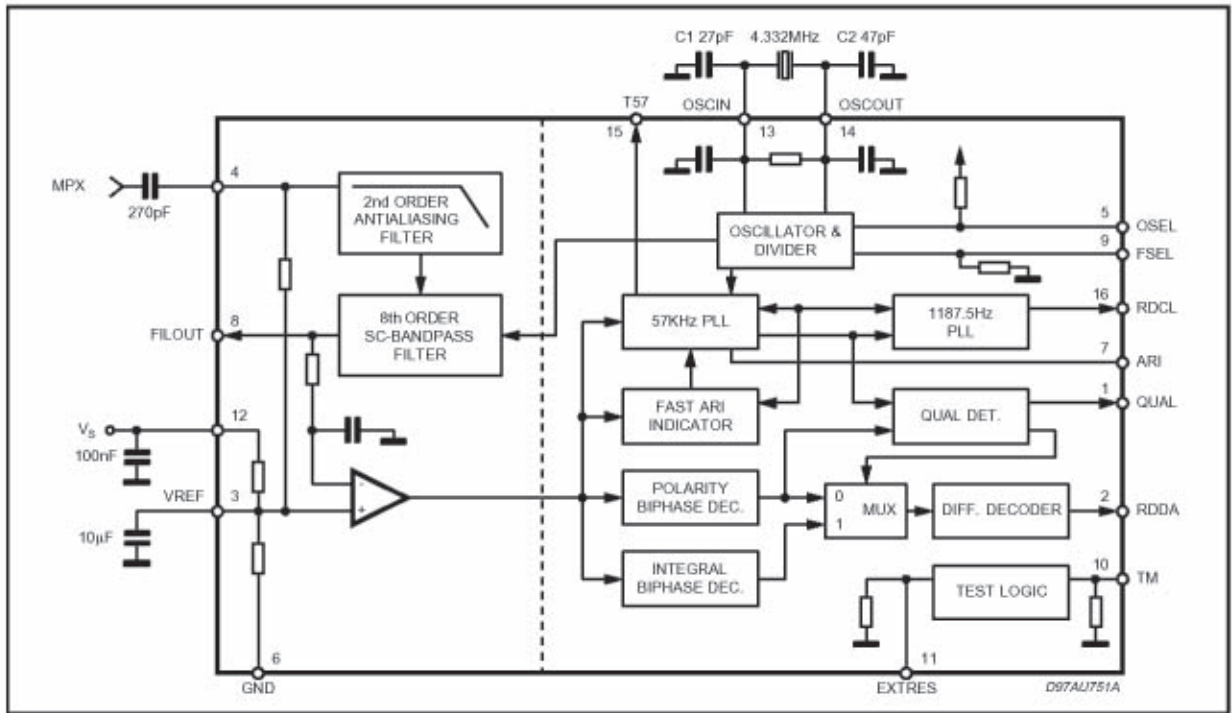
- 1. Anode
- 2. Cathode
- 3. Emitter
- 4. Collector

IC 304 : BR24C04

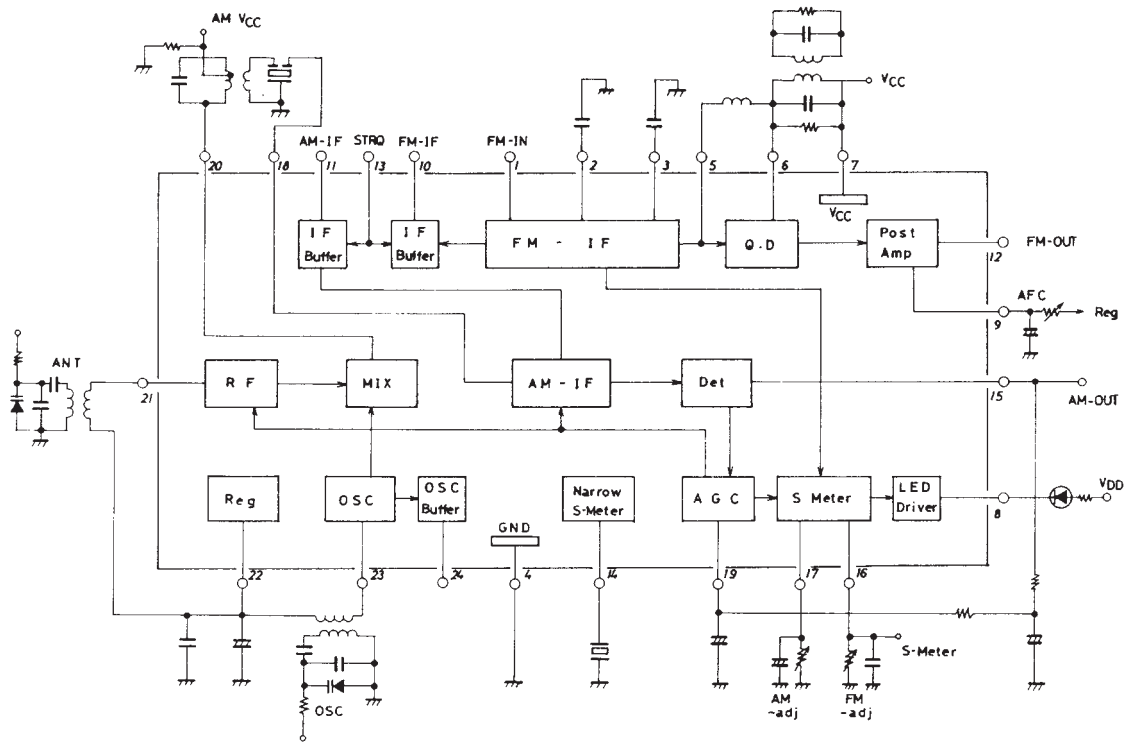




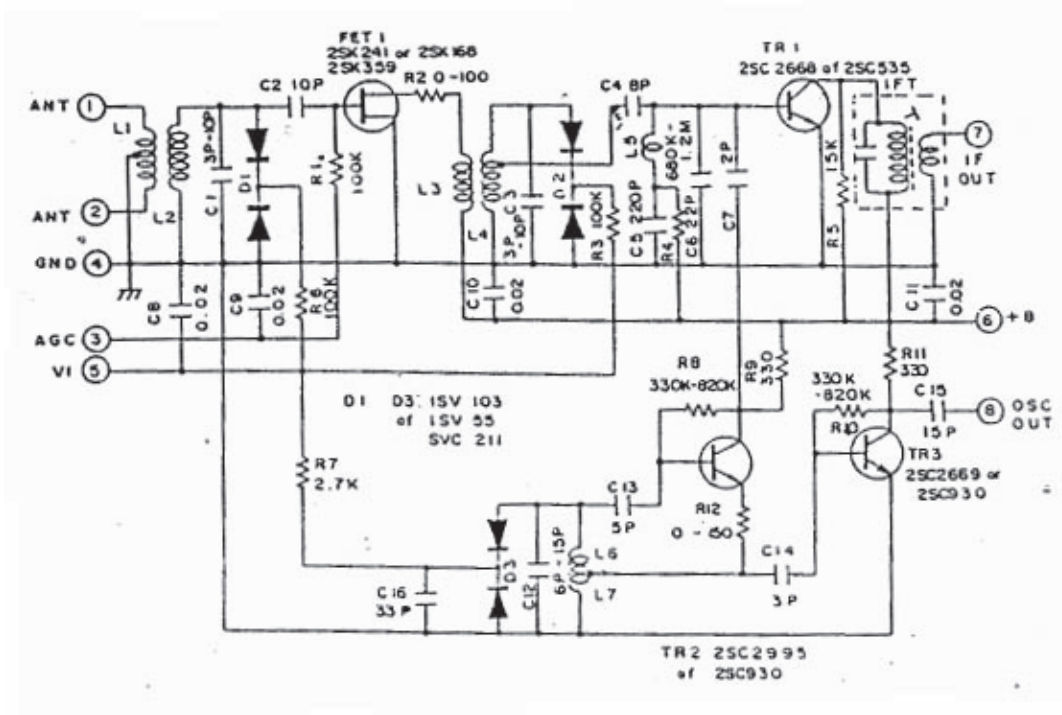
IC 604 : TDA7479D



IC 601 : LA1266 AM/FM IF



Front End : FE601 (FTA3-509HA) U.S.A. Version



Front End : FE601 (FTA4-460H) E.U. Version

