

May 2005



SERVICE MANUAL

C 352

**STEREO
AMPLIFIER**

C 352

**STEREO
AMPLIFIER**

ALIGNMENT PROCEDURE (C352)

I. INITIAL ADJUSTMENT (No load connected)

A. OUTPUT OFFSET VOLTAGE

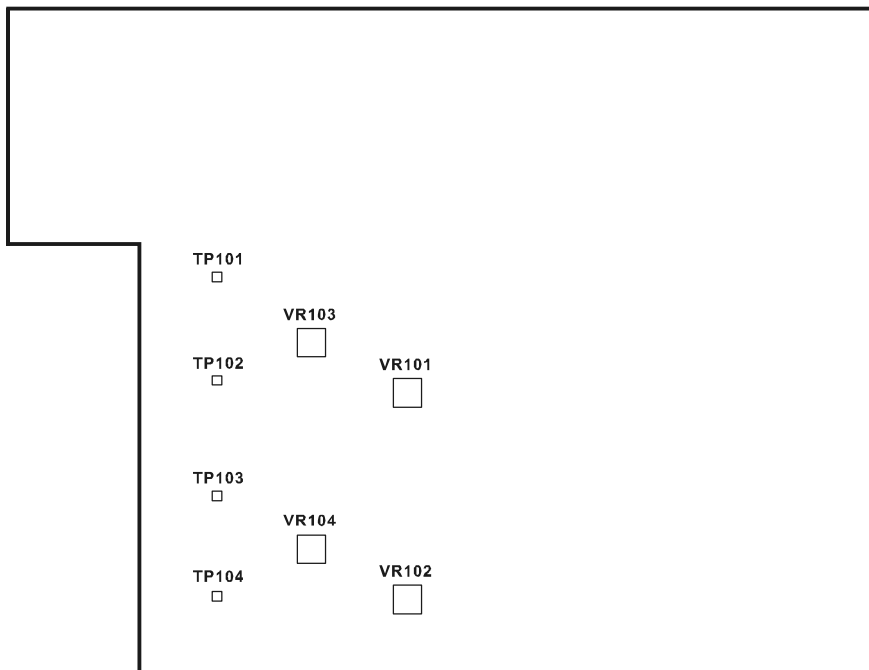
1. Connect a DC Millivoltmeter to L Channel speaker output terminals.
2. Turn unit "ON" and adjust VR101 (100ohms) to get a reading on IC107 Pin 1, which must be <100mV.
3. Connect the DC Millivoltmeter to R Channel speaker output terminals and adjust VR102 (100ohms) to get a reading on IC108 Pin 1, which must be <100mV.

B. IDLING CURRENT

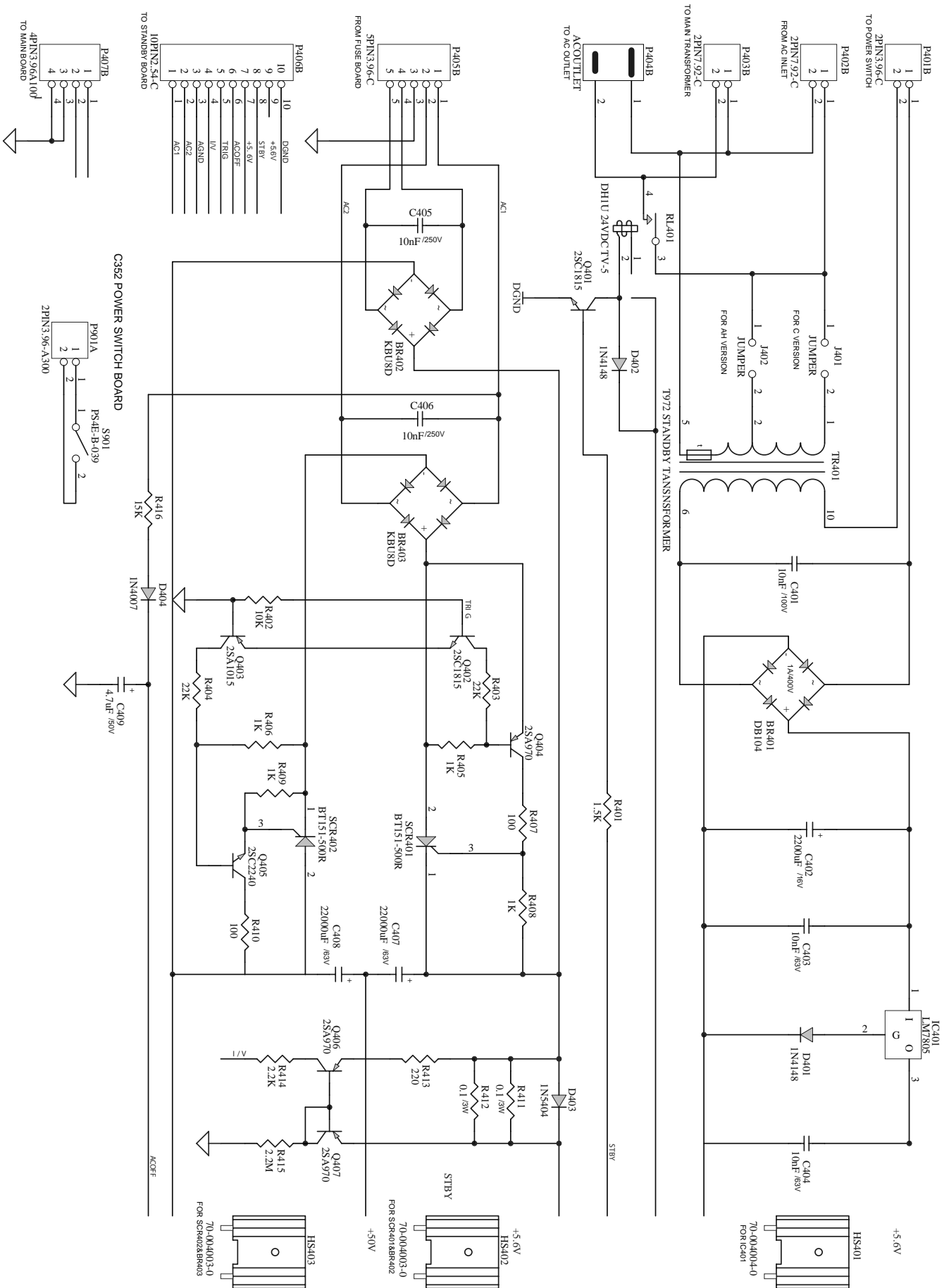
1. Leave power "ON" for a minimum of 5 minutes.
2. Connect a DC Millivoltmeter to TP101 and TP102, then adjust VR103 (300ohms) for 5-6.5mV reading on meter.
3. Connect a DC Millivoltmeter to TP103 and TP104, then adjust VR104 (300ohms) for 5-6.5mV reading on meter.

II. FINAL ADJUSTMENT

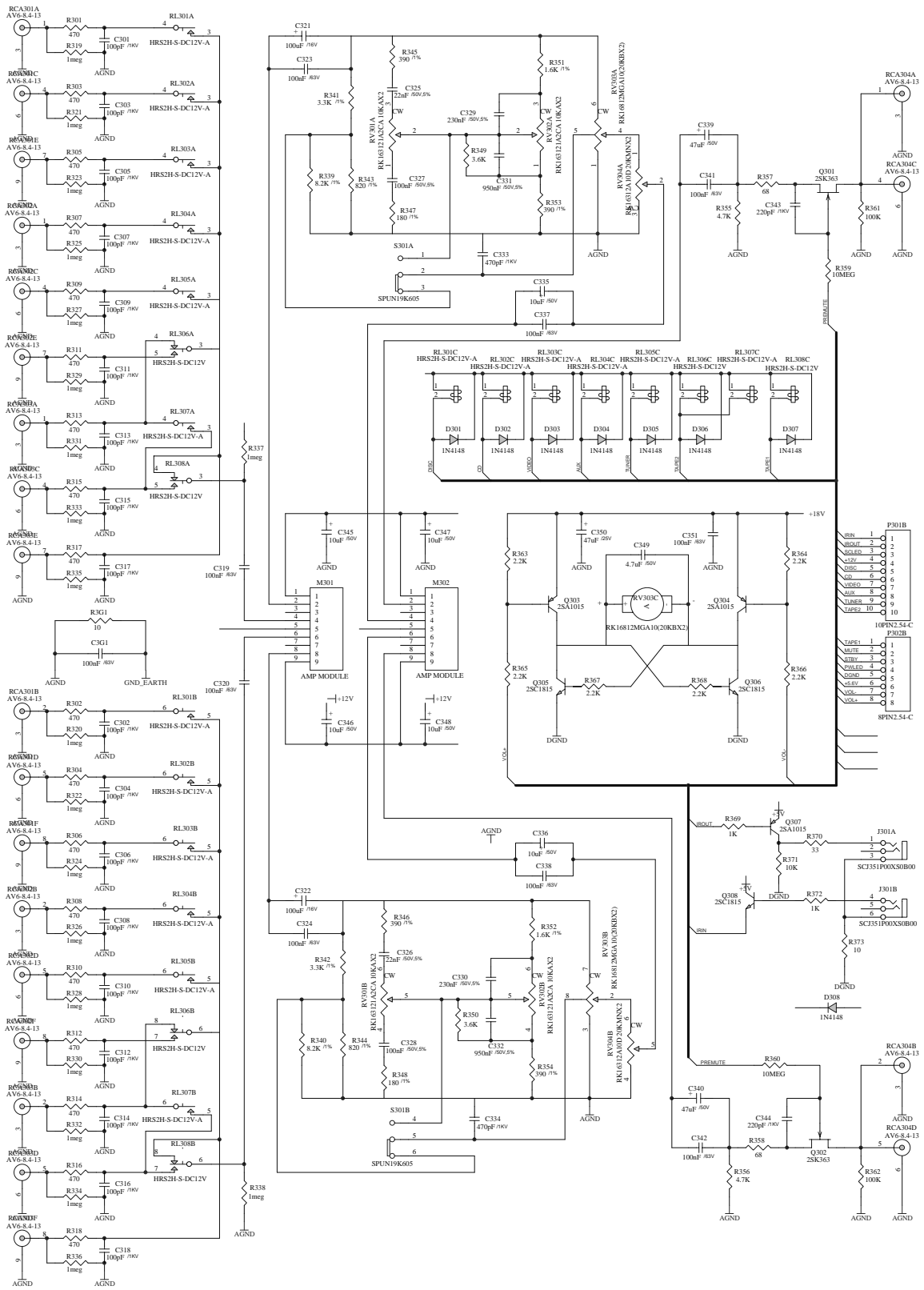
Repeat procedure A and B for offset voltage and idling current alignment respectively.



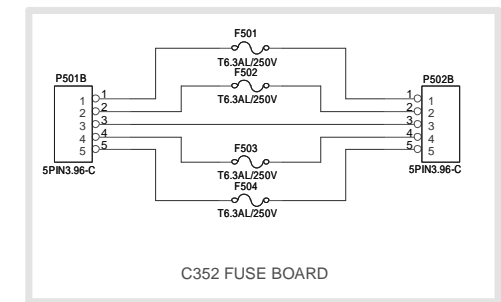
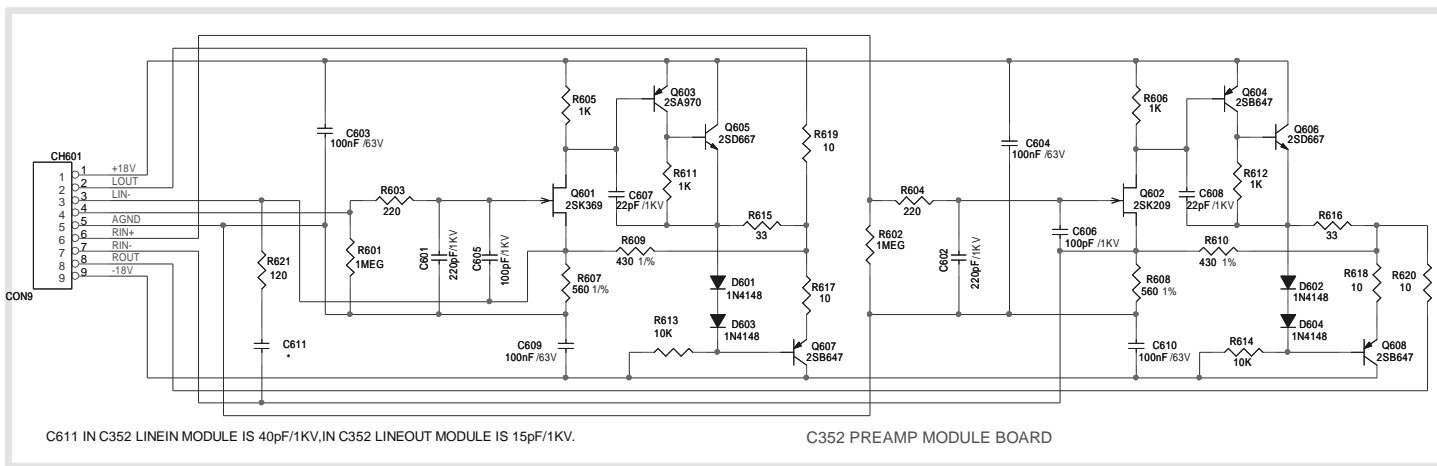
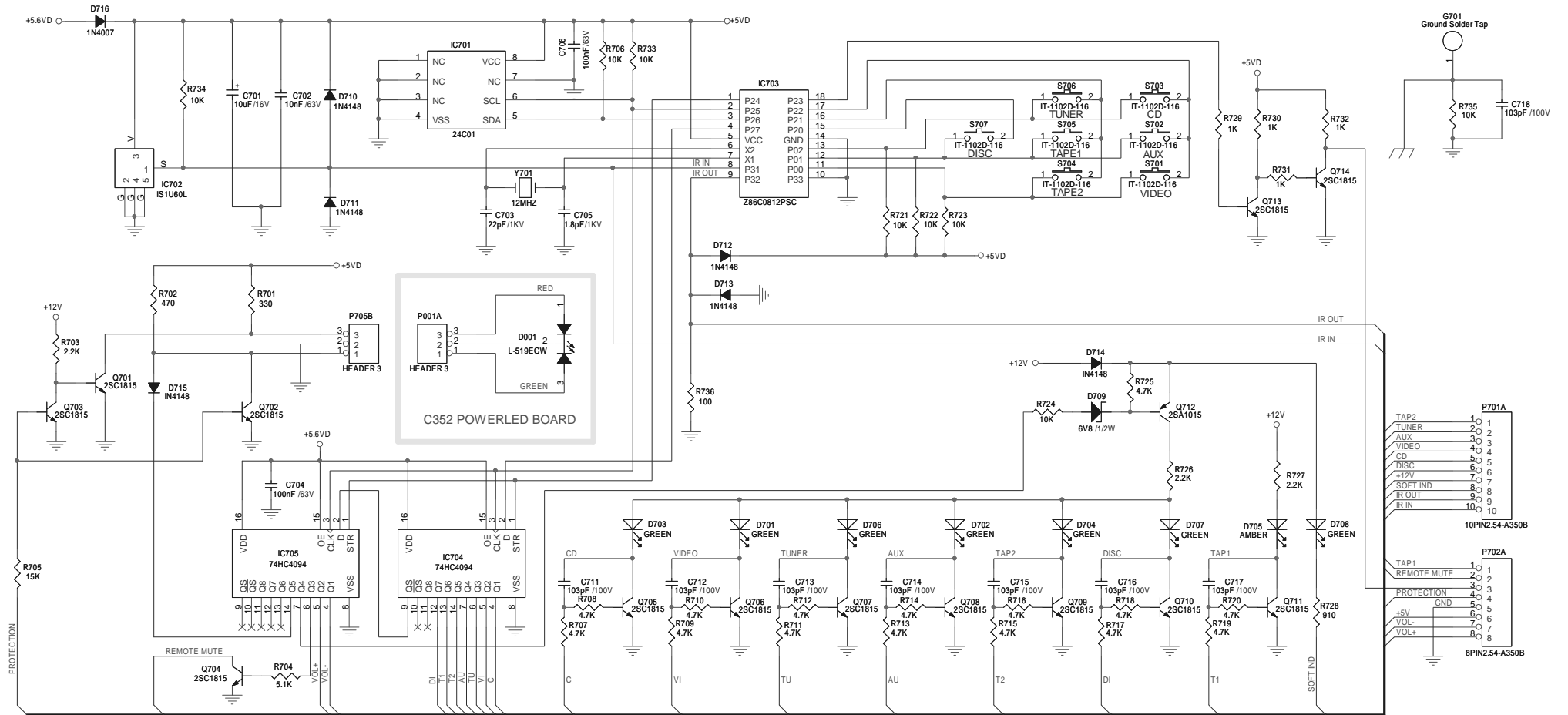
POWER SUPPLY



INPUT & PREAMPLIFIER



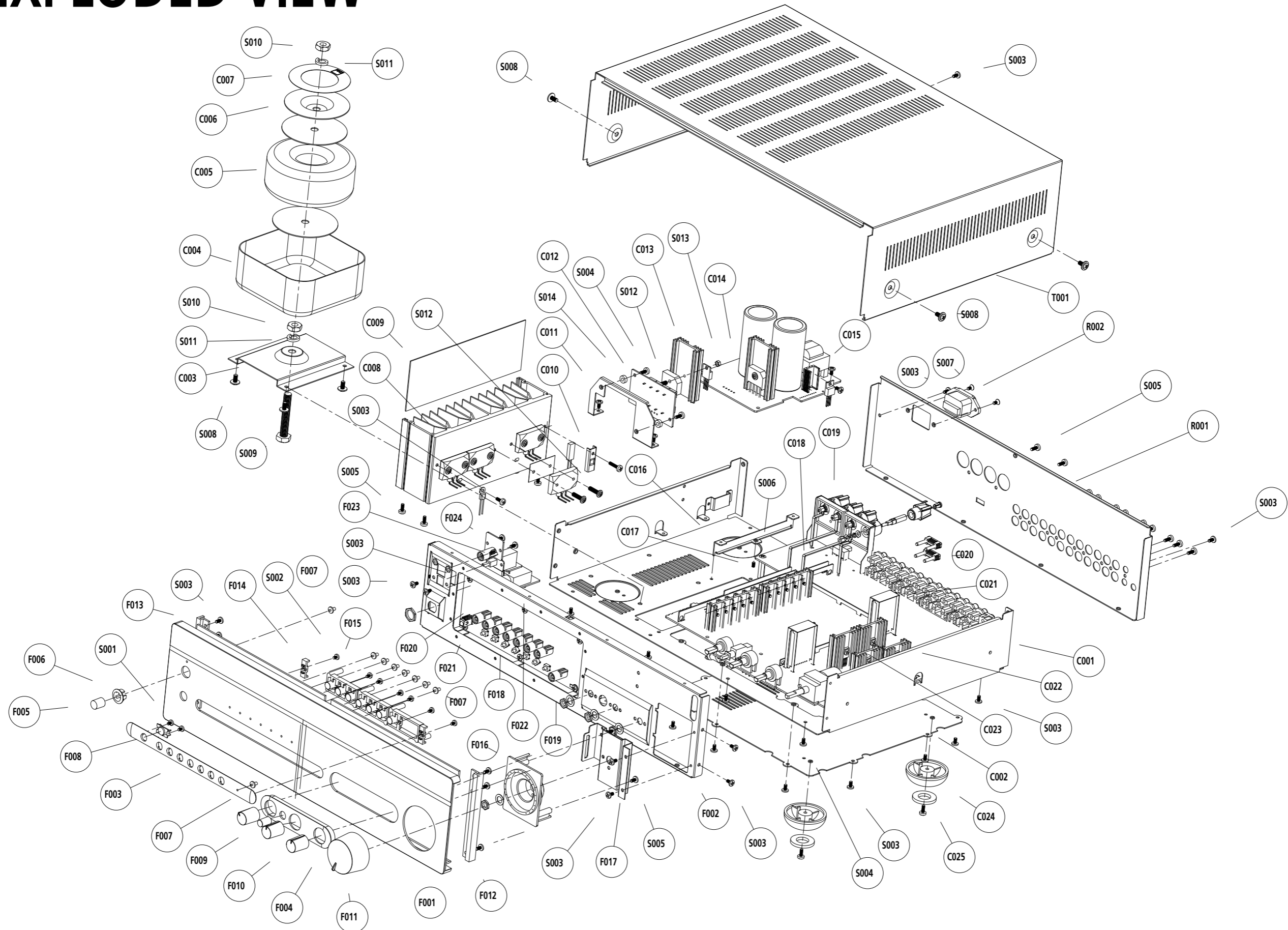
KEYBOARD & LINE IN / OUT MODULES



C611 IN C352 LINEIN MODULE IS 40pF/1KV, IN C352 LINEOUT MODULE IS 15pF/1KV.

C352 PREAMP MODULE BOARD

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

REF. NO	PART NO.	DESCRIPTION	Qty.	REF. NO	PART NO.	DESCRIPTION	Qty.
C001	66-019001-1	Chassis	1	F010	73-014001-1	Tone Knob	3
C002	66-001004-1	Base Cover	1	F011	73-014002-1	Volume Knob	1
C003	66-001010-0	Transformer Bracket	1	F012	67-019005-0	End Cap L	1
C004	67-001011-0	Shielding Box	1		67-038005-0	End Cap L Titanium	1
C005	18-35151-20	Transformer C Version	1	F013	67-019006-0	End Cap R	1
	18-35151-10	Transformer AH Version	1		67-038006-0	End Cap R Titanium	1
C006	66-001008-0	Transformer Disc	1	F014	75-003003-0	Fixing Bracket	2
C007	94-001004-1	Transformer Label	1	F015	74-001002-1	Input Button	3
C008	70-019001-0	Heat Sink 1	1	F016	77-018001-0	Knob Button Bezel	1
C009	70-019004-1	Heatsink Plate	1	F017	67-019007-0	Volume Knob Bracket	1
C010	66-018005-0	Thermal Break Clamper	1	F018	75-005001-0	Sleeve (Same as in C370)	8
C011	66-001012-0	Fuse Board Bracket	1	F019	75-003-002-0	Sleeve (Same as in C160)	1
C012	01-35205-00	Assembled Fuse Board	1	F020	66-005005-0	IR Support	1
C013	70-004003-0	Heatsink Small B	2	F021	01-35203-00	Assembled Key PCB	1
C014	01-35202-00	Assembled Power PCB	1	F022	01-35208-00	Assembled Headphone PCB	1
C015	70-004001-1	Heatsink	1	F023	01-35206-00	Assembled Switch PCB	1
C016	66-019004-0	PCB Support 2	1	F024	01-35207-00	Assembled Power LED PCB	1
C017	75-019001-0	Spacer Support	1				
C018	70-019003-0	Heatsink 3	2	R001	67-019003-0	Rear Panel	1
C019	71-001001-0	Binding Post	1	R002	17-07002-00	AC Inlets	1
C020	30-63200-00	Shorting Plug	2				
C021	66-001011-0	Module Support	2	T001	67-019004-2	Top Cover	1
C022	70-019005-1	Heatsink 4	2		67-038002-1	Top Cover Titanium	1
C023	70-019006-1	Heatsink 5	2	S001	61-082204-6	Self-taping Screw BTPW2.6X4	2
C024	75-010004-1	Foot	4	S002	61-022206-6	Self-taping Screw BTB2.6X6	9
C025	78-001002-0	Foot PAD	4	S003	61-023106-0	Self-taping Screw STB3X6	64
				S004	61-023108-0	Self-taping Screw STB3X8	7
				S005	61-023208-0	Self-taping Screw BTB3X8	19
F001	67-019001-0	Fascia	1	S006	61-023508-0	Machine Screw MB3X8	1
	67-038001-1	Fascia Titanium	1	S007	61-073208-0	Self-taping Screw STO3X8, Black	2
F002	66-019002-1	Subfascia	1	S008	61-084108-0	Self-taping Screw STPW4X8	8
F003	77-001002-1	Input Button Lozenge	1	S009	64-108055-0	Bolt M8X55	1
F004	77-001001-1	Tone Control Lozenge	1	S010	62-010802-0	Nut M8	2
F005	77-001006-1	Power Button	1	S011	63-020820-0	Spring Washer Φ 8	2
F006	77-001007-1	Power Button Bezel	1	S012	61-083515-0	Machine Screw MPW3X15	2
F007	76-003001-0	Led Lens	9	S013	62-010302-0	M3 Nut	2
F008	76-001001-0	IR Lens	1	S014	86-004001-0	Φ 3X3 Plastic Washer	2
F009	74-001001-1	Tone Defeat Button	1				

ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION				
MAIN BOARD						
	16-35201-00	Main Raw PCB				
	01-35201-00	Main PCB with components				
DIODES						
D124	33-50550-00	L-513DG			LED Green	
D308	33-44148-01	1N4148			Switch Diode	
D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D114, D115, D116, D117, D118, D120, D121, D122, D301, D302, D303, D304, D305, D306, D307	33-44148-02	1N4148			Switch Diode	
D123	33-11300-00	13V	1/2W		Diode Zener	
D119	33-11800-00	18V	1/2W		Diode Zener	
D111, D112	33-12000-00	20V	1/2W		Diode Zener	
D113	33-12400-03	24V	1W		Diode Zener	
BR101	33-30142-00	DB104G			Bridge Rectifier	
TRANSISTORS						
Q105, Q106, Q113, Q114, Q115, Q116, Q119, Q120, Q153	31-00970-00	2SA970-GR			Transistor	
Q107, Q108, Q109, Q110, Q111, Q112, Q117, Q118	31-02240-00	2SA2240-GR			Transistor	
Q103, Q104, Q127, Q128, Q151, Q152, Q154, Q156, Q159, Q164, Q305, Q306, Q308	31-01815-00	2SC1815-GR			Transistor	
Q101, Q102, Q121, Q122, Q157, Q161, Q162, Q303, Q304, Q307	31-01015-00	2SA1015-GR			Transistor	
Q139, Q140	31-01295-00	2SA1295-Y			Transistor	
Q141, Q142	31-03264-00	2SC3264-Y			Transistor	
Q123, Q124	31-00647-00	2SB647-ACTZ			Transistor	
Q125, Q126	31-00667-00	2SD667-ACTZ			Transistor	
Q158	31-01220-00	KSA1220AYSTU			Transistor	
Q129, Q130, Q137, Q138	31-01930-00	2SA1930			Transistor	
	or 31-00649-00	or 2SB649-AC			Transistor	
Q131, Q132, Q135, Q136	31-05171-00	2SC5171			Transistor	
	or 31-00669-00	or 2SD669-AC			Transistor	
Q133, Q134, Q155, Q160, Q163	31-02690-00	KSC2690AYSTU			Transistor	
Q301, Q302	31-00363-00	2SK363-GR			MOSFET	
RESISTORS						
R177, R178, R179, R180	07-20479-10	4.7 Ω	1/4W	$\pm 5\%$	Metal Film Resistor	
R113, R114, R115, R116, R373, R3G1	07-20100-00	10 Ω	1/6W	$\pm 5\%$	Metal Film Resistor	
R283	07-20100-10	10 Ω	1/4W	$\pm 5\%$	Metal Film Resistor	
R189, R190	07-20220-00	22 Ω	1/6W	$\pm 5\%$	Metal Film Resistor	
R125, R126, R127, R128, R370, R185, R186, R187, R188	07-20330-00	33 Ω	1/6W	$\pm 5\%$	Metal Film Resistor	
R141, R142	07-20470-00	47 Ω	1/6W	$\pm 5\%$	Metal Film Resistor	
R143, R144	07-28209-00	82 Ω	1/6W	$\pm 1\%$	Metal Film Resistor	
R357, R358	07-20680-00	68 Ω	1/6W	$\pm 5\%$	Metal Film Resistor	

ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			
R119, R120, R121, R122, R137, R138, R139, R140	07-20820-00	82 Ω	1/6W	±5%	Metal Film Resistor
R105, R106, R107, R108, R111, R112	07-20101-00	100 Ω	1/6W	±5%	Metal Film Resistor
R145, R146	07-20101-10	100 Ω	1/4W	±5%	Metal Film Resistor
R347, R348	07-21800-10	180 Ω	1/4W	±1%	Metal Film Resistor
R181, R182	07-20391-00	390 Ω	1/6W	±5%	Metal Film Resistor
R353, R354, R345, R346	07-23900-10	390 Ω	1/4W	±1%	Metal Film Resistor
R103, R104, R183, R184, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R313, R314, R315, R316, R317, R318	07-20471-00	470 Ω	1/6W	±5%	Metal Film Resistor
R239, R240, R241, R242, R243, R244, R247, R248, R249, R250	07-20681-00	680 Ω	1/6W	±5%	Metal Film Resistor
R343, R344	07-28200-10	820 Ω	1/4W	±1%	Metal Film Resistor
R207, R208, R233, R234, R235, R236, R369, R372, R365, R366, R367, R368	07-20102-00	1k Ω	1/6W	±5%	Metal Film Resistor
R351, R352	07-21601-10	1.6k Ω	1/4W	±1%	Metal Film Resistor
R254	07-22201-00	2k2 Ω	1/6W	±1%	Metal Film Resistor
R285	07-20222-00	2k2 Ω	1/6W	±5%	Metal Film Resistor
R341, R342	07-23301-10	3k3 Ω	1/4W	±1%	Metal Film Resistor
R349, R350	07-20362-10	3k6 Ω	1/4W	±5%	Metal Film Resistor
R253	07-24301-00	4k3 Ω	1/6W	±1%	Metal Film Resistor
R252	07-24701-00	4k7 Ω	1/6W	±1%	Metal Film Resistor
R276, R355, R356	07-20472-00	4k7 Ω	1/6W	±5%	Metal Film Resistor
R255	07-25101-00	5k1 Ω	1/6W	±1%	Metal Film Resistor
R274	07-20622-00	6k2 Ω	1/6W	±5%	Metal Film Resistor
R223, R280	07-20682-00	6k8 Ω	1/6W	±5%	Metal Film Resistor
R339, R340	07-28201-10	8k2 Ω	1/4W	±1%	Metal Film Resistor
R169, R170, R171, R172, R173, R174, R175, R176, R277, R279, R256, R371, R363, R364	07-20103-00	10k Ω	1/6W	±5%	Metal Film Resistor
R209, R210	07-20153-00	15k Ω	1/6W	±5%	Metal Film Resistor
R225	07-20153-10	15k Ω	1/4W	±5%	Metal Film Resistor
R109, R110, R217, R218, R224, R278	07-20223-00	22k Ω	1/6W	±5%	Metal Film Resistor
R231, R232	07-20273-00	27k Ω	1/6W	±5%	Metal Film Resistor
R117, R118, R123, R124, R129, R130, R131, R132, R266, R267	07-20393-00	39k Ω	1/6W	±5%	Metal Film Resistor
R147, R148, R269, R271	07-20473-00	47k Ω	1/6W	±5%	Metal Film Resistor
R226, R227, R228, R262	07-20563-00	56k Ω	1/6W	±5%	Metal Film Resistor
R289, R290	07-20563-10	56k Ω	1/4W	±5%	Metal Film Resistor
R149, R150, R151, R152, R257, R259, R260, R264, R265, R272, R273, R361, R362	07-20104-00	100k Ω	1/6W	±5%	Metal Film Resistor
R101, R102, R133, R134, R135, R136, R261, R287, R288	07-20224-00	220k Ω	1/6W	±5%	Metal Film Resistor
R258, R268	07-20334-00	330k Ω	1/6W	±5%	Metal Film Resistor
R270	07-20474-00	470k Ω	1/6W	±5%	Metal Film Resistor
R275	07-20564-00	560k Ω	1/6W	±5%	Metal Film Resistor
R319, R320, R321, R322, R323, R324, R325, R326, R327, R328, R329, R330, R331, R332, R333, R334, R335, R336, R337, R338	07-20105-00	1M Ω	1/6W	±5%	Metal Film Resistor
R359, R360	07-20106-00	10M Ω	1/6W	±5%	Metal Film Resistor

ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			
R213, R214	07-21800-02	180 Ω	1W	±1%	Metal Film Resistor
R211, R212	07-24991-02	4.99k Ω	1W	±1%	Metal Film Resistor
R161, R162, R163, R164	07-50339-00	3.3 Ω	1/4W	±5%	Fusible Resistor
R191, R192, R201, R202	07-50220-00	22 Ω	1/4W	±5%	Fusible Resistor
R193, R194, R199, R200	07-50390-00	39 Ω	1/4W	±5%	Fusible Resistor
R159, R160, R165, R166	07-50331-00	330 Ω	1/4W	±5%	Fusible Resistor
R245, R246	07-50330-02	33 Ω	1/2W	±5%	Fusible Resistor
R282	07-50101-03	100 Ω	1/2W	±5%	Fusible Resistor
R251	07-50220-01	22 Ω	1W	±5%	Fusible Resistor
R153, R154, R155, R156	07-50820-02	82 Ω	1W	±5%	Fusible Resistor
R281	07-50681-02	680 Ω	2W	±5%	Fusible Resistor
R221, R222	07-30109-11	1 Ω	1W	±5%	Metal Oxide Film Resistor
R219, R220	07-30100-01	10 Ω	1W	±5%	Metal Oxide Film Resistor
R229, R230	07-30221-03	220 Ω	2W	±5%	Metal Oxide Film Resistor
R263	07-30471-01	470 Ω	1W	±5%	Metal Oxide Film Resistor
R215, R216	07-20122-01	1.2k Ω	1W	±5%	Metal Oxide Film Resistor
R157, R158, R167, R168	07-30272-02	2.7k Ω	2W	±5%	Metal Oxide Film Resistor
R284	07-30562-01	5.6k Ω	1W	±5%	Metal Oxide Film Resistor
R195, R196, R197, R198	07-40687-05	0.068 Ω	5W	±5%	Cement Resistor
CB101	07-70022-09	ST-22 90C			Thermal Breaker
RT101	07-70471-08	PTH9M04BF471TS2F333			Posistor
POTS					
VR101, VR102	09-02101-00	100 Ω			SEMI POT
VR103, VR104	09-02301-00	300 Ω			SEMI POT
RV304	09-01203-03	RK16312A10D 20KMNX2			POT
RV303	09-01203-05	RK16812MGA10 20KBX2			POT
RV301, RV302	09-01103-01	RK163121A2CA 10KAX2			POT
CAPACTIORS					
C190, C191, C192, C193	26-10451-01	100nF, 0805	50V		SMD Ceramic Capacitor
C115, C116, C117, C118, C162, C163	05-22013-00	22PF	1KV	±10%	Ceramic Capacitor
C301, C302, C303, C304, C305, C306, C307, C308, C309, C310, C311, C312, C313, C314, C315, C316, C317, C318	05-10113-01	100pF	1KV	±10%	Ceramic Capacitor
C127, C128, C129, C130, C343, C344	05-22113-01	220pF	1KV	±10%	Ceramic Capacitor
C105, C106, C179, C180, C181, C182, C183, C333, C334	05-47113-00	470pF	1KV	±10%	Ceramic Capacitor
C145, C146	25-10312-00	10nF, CL23	100V	±10%	Polyester capacitor
C137, C138, C168	25-22361-03	22nF, CL23B	63V	±10%	Polyester capacitor
C325, C326	25-22361-04	22nF, CL23	63V	±5%	Polyester capacitor
C153	25-10422-00	100nF, CL23B	250V	±10%	Polyester capacitor
C319, C320, C323, C324, C337, C338, C341, C342, C351, C171, C172, C3G1	25-10461-00	100nF, CL23B	63V	±10%	Polyester capacitor
C101, C102, C133, C134, C135, C136, C141, C142	25-10412-02	100nF, CL23B	100V	±10%	Polyester capacitor
C327, C328	25-10461-04	100nF, CL23	63V	±5%	Polyester capacitor
C143, C144, C156, C157	25-10412-06	100nF, CL23	100V	±10%	Polyester capacitor
C151	25-22461-01	220nF, CL23B	50V	±10%	Polyester capacitor
C329, C330	25-23461-00	230nF, CL23B	63V	±5%	Polyester capacitor
C177, C178	25-10561-00	1uF, CL233X	63V	±5%	Polyester capacitor
C331, C332	25-95461-00	950nF, CL23B	63V	±5%	Polyester capacitor
C349	06-47951-04	4.7uF, CD71C	50V	±20%	ALU Electrolytic Capacitor

ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
C103, C104, C107, C108, C109, C110, C147, C148, C169, C170, C173, C174, C335, C336, C345, C346, C347, C348	06-10051-00	10uF, CD110 50V ±20% ALU Electrolytic Capacitor
C111, C112, C113, C114	06-22011-00	22uF, CD110 16V ±20% ALU Electrolytic Capacitor
C123, C124, C125, C126, C176, C350	06-47021-00	47uF, CD110 25V ±20% ALU Electrolytic Capacitor
C175	06-47021-01	47uF, CD263 25V ±20% ALU Electrolytic Capacitor
C339, C340	06-47051-00	47uF, CD110 50V ±20% ALU Electrolytic Capacitor
C164, C165, C166, C167	06-47051-02	47uF, CD263 50V ±20% ALU Electrolytic Capacitor
C149, C321, C322	06-10111-00	100uF, CD110 16V ±20% ALU Electrolytic Capacitor
C121, C122	06-22161-00	220uF, CD110 63V ±20% ALU Electrolytic Capacitor
C119, C120, C158, C159, C160, C161	06-22161-01	220uF, CD263 63V ±20% ALU Electrolytic Capacitor
C150	06-33111-02	330uF, CD263 16V ±20% ALU Electrolytic Capacitor
C139, C140	06-22260-00	2200uF, CD110 6.3V ±20% ALU Electrolytic Capacitor
C154, C155	06-22251-00	2200uF, CD110 50V ±20% ALU Electrolytic Capacitor
ICS		
IC106, IC107, IC108	03-00082-00	TL082D IC, Dual OP-AMP
IC101, IC102, IC103, IC104	03-00431-00	TL431-ACL P or KA431-AZTA IC, Regulator
IC105	03-01237-00	UPC1237H IC, Protection
RELAYS		
RL101	12-03201-01	FTR-F1AD024V Relay
RL301, RL302, RL303, RL304, RL305, RL307, RL306, RL308	12-02101-02	JRC-27F/012/S Relay
INDUCTORS		
L105, L106	08-01010-00	1uH Spring Coil
L101, L102, L103, L104	08-02100-01	17uH Inductor
	19-05005-00	Ferrite Bead
Misc		
	32-28042-00	GND-8 Eyelet
J302	17-02001-03	SCJ349P00XS0B0 1 Head Phone Jack
J301	17-02002-00	SCJ351P00XS0B0 0 Head Phone Jack
S301	11-02202-00	SPUN19K605 Push Switch
S101	11-05202-02	SK-22F03-G7 Slide Switch
RCA301, RCA302, RCA303, RCA304	17-01006-00	RCA6A RCA
	71-001001-0	Binding Post
CONNECTORS		
P102B	13-23904-00	4PIN3.96C Housing
P103B	13-22505-00	5PIN2.54C Housing
P101B, P301B	13-22510-00	10PIN2.54C Housing
P302B	13-22508-00	8PIN2.54C Housing
P104A, P104B, P105B	14-35206-00	6PIN2.54-A***B Connector Ribbon
TP101, TP102, TP103, TP104	13-10001-00	TEST-1 (R) TEST POINT
KEY BOARD		
	16-35203-00	Key Raw PCB
	01-35202-00	Key PCB with components
DIODES		
D710, D711, D712, D713, D714, D715	33-44148-02	1N4148 Switch Diode

ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			
D709	33-16809-00	6V8/0.5W			Zener Diode
D716	33-24007-00	1N4007			Rectifier Diode
D701, D702, D703, D704, D706, D707, D708	33-50550-00	L-513DG			LED Green
D705	33-50540-00	L-513AD			LED Amber
TRANSISTORS					
Q701, Q702, Q703, Q704, Q705, Q706, Q707, Q708, Q709, Q710, Q711, Q713, Q714	31-01815-00	2SC1815-GR			Transistor
Q712	31-01015-00	2SA1015-GR			Transistor
CRYSTAL					
Y701	04-11202-00	HC-49U, 12MHz, Cl=20pF, FL=20PPM			Crystal
RESISTORS					
R729, R730, R731, R732	07-20102-00	1k Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R703, R726, R727,	07-20222-00	2k2 Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R708, R710, R712, R714, R715, R716, R718, R719, R720, R725	07-20472-00	4k7 Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R707, R709, R711, R713, R717	07-20472-10	4k7 Ω	1/4W	$\pm 5\%$	Metal Film Resistor
R704	07-20512-00	5k1 Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R706, R721, R722, R723, R724, R733, R734, R735	07-20103-00	10k Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R705	07-20153-00	15k Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R701	07-20331-00	330 Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R702	07-20471-00	470 Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R728	07-20911-00	910 Ω	1/6W	$\pm 5\%$	Metal Film Resistor
R736	07-20101-00	100 Ω	1/6W	$\pm 5\%$	Metal Film Resistor
CAPACITORS					
C705	05-18913-00	1.8pF	1KV	$\pm 10\%$	Ceramic Capacitor
C703	05-22013-00	22pF	1KV	$\pm 10\%$	Ceramic Capacitor
C702, C711, C712, C713, C714, C715, C716, C717, C718	05-10312-00	10nF	100V	+50%-20%	Ceramic Capacitor
C704, C706	25-10461-00	100nF, CL23B	63V	$\pm 10\%$	Polyester capacitor
C701	06-10011-00	10uF, CD110	16V	$\pm 20\%$	ALU Electrolytic Capacitor
ICS					
IC701	03-02401-00	24C01A/24C02/24C 02A/ 24C04/24C04A			IC, EEPROM
IC704, IC705	03-04094-00	CD4094			IC, Shift Register
IC702	03-00038-40 or 03-01701-00	HS0038B4 or GP1UV701QS			IC, IR Receiver
IC703	03-86812-05	Z86E0812PSC			MCU
CONNECTORS					
P701A	14-32010-00	10P2.54-A350B			Connector Ribbon
P702A	14-35008-01	8P2.54-A350B			Connector Ribbon
P703B	13-22503-00	3PIN2.54C			HOUSING
MISC					
S701, S702, S703, S704, S705, S706, S707	11-04101-00	IT-1102D-1160			Tact Switch
	32-28042-00	GND-8			Eyelet

ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION				
	16-35202-00	Power Raw PCB				
	01-35203-00	Power PCB with components				
DIODES						
D401, D402	33-44148-02	1N4148			Switch Diode	
D404	33-24007-00	1N4007			Rectifier Diode	
D403	33-25404-00	1N5404			Rectifier Diode	
SCR401, SCR402	33-60116-00	BT151-500R			Thyristor	
BR401	33-30142-00	DB104			Bridge Rectifier	
BR402, BR403	33-30822-01	KBU8D			Bridge Rectifier	
TRANSISTORS						
Q404, Q406, Q407,	31-00970-00	2SA970-GR			Transistor	
Q405	31-02240-00	2SA2240-GR			Transistor	
Q401, Q402	31-01815-00	2SC1815-GR			Transistor	
Q403	31-01015-00	2SA1015-GR			Transistor	
RESISTORS						
R407, R410	07-20101-00	100 Ω	1/6W	±5%	Metal Film Resistor	
R413	07-20221-00	220 Ω	1/6W	±5%	Metal Film Resistor	
R405, R406, R408, R409	07-20102-00	1K Ω	1/6W	±5%	Metal Film Resistor	
R401	07-20152-00	1K5 Ω	1/6W	±5%	Metal Film Resistor	
R414	07-20222-00	2K2 Ω	1/6W	±5%	Metal Film Resistor	
R402	07-20103-00	10K Ω	1/6W	±5%	Metal Film Resistor	
R416	07-20153-10	15K Ω	1/4W	±5%	Metal Film Resistor	
R403, R404	07-20223-00	22K Ω	1/6W	±5%	Metal Film Resistor	
R415	07-20225-00	2M2 Ω	1/6W	±5%	Metal Film Resistor	
R411	07-40507-03	0.05 Ω	3W	±5%	Cement Resistor	
CAPACITORS						
C401	25-10312-01	10nF, CL23B	100V	±10%	Polyester capacitor	
C403, C404	25-10361-04	10nF, CL23B	63V	±10%	Polyester capacitor	
C405, C406	25-10322-00	10nF, CL21	250V	±10%	Polyester capacitor	
C409	06-47951-05	4.7uF, CD263	50V	±20%	ALU Electrolytic Capacitor	
C411	06-10051-01	10uF, CD263	50V	±20%	ALU Electrolytic Capacitor	
C402	06-22211-02	2200uF, CD263	16V	±20%	ALU Electrolytic Capacitor	
C407, C408	06-22361-01	22000uF, CD294	63V	±20%	ALU Electrolytic Capacitor	
RELAYS						
RL401	12-02101-01	DH1U5VDC TV-8			Relay	
ICS						
IC401	03-07805-00	LM7805CT			IC, Regulator	
CONNECTORS						
P401B	13-23902-00	2PIN3.96C			Housing	
P403B	13-23903-11	2PIN7.92C			Housing	
P402B, P404B (AH Version)	13-23903-01	2PIN7.92C			Housing	
SOLDER TO ACOUTLET(AH Version)	14-35202-00	2PIN7.92A110			Connector Ribbon	
SOLDER TO ACINLET(AH Version)	14-35202-02	2PIN7.92A160			Connector Ribbon	
SOLDER TO ACINLET(C Version)	14-35202-02	2PIN7.92A160			Connector Ribbon	
P407B	14-35204-00	4PIN3.96A***B			Connector Ribbon	
P405B(connect to P502B)	13-23905-02	5PIN3.96C			Housing	
P406B	14-35210-00	10P2.54-A150B			Connector Ribbon	

ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
MISC				
TR401	17-07002-10	JY0647A AC OUTLETS (AH)		
	17-07002-00	3516-T1C02 AC INLETS		
	15-10125-00	AC Cord, AH Version		
	15-10250-00	AC Cord, C Version		
	19-25012-20	Ferrit Ring		
	18-35003-00	TD030-E102D Standby Transformer		
MODULE BOARD				
	16-35204-00	Module Raw PCB		
	01-35204-00	Module PCB with components		
	DIODES			
	D601, D602, D603, D604	33-44148-01	1N4148 Switch Diode	
	TRANSISTORS			
	Q601, Q602	31-00369-00	2SK369-GR MOSFET	
		or 31-00170-00	or 2SK170-BL MOSFET	
	Q603, Q604	31-00970-00	2SA970-GR Transistor	
	Q605, Q606	31-00667-00	2SD667-ACTZ Transistor	
	Q607, Q608	31-00647-00	2SD647-ACTZ Transistor	
	RESISTORS			
	R617, R618, R619, R620	07-20100-00	10 Ω 1/6W ±5% Metal Film Resistor	
	R615, R616	07-20330-00	33 Ω 1/6W ±5% Metal Film Resistor	
	R621	07-20121-10	120 Ω 1/4W ±5% Metal Film Resistor	
	R603, R604	07-20221-00	220 Ω 1/6W ±5% Metal Film Resistor	
	R605, R606, R611, R612	07-20102-00	1k Ω 1/6W ±5% Metal Film Resistor	
	R613, R614	07-20103-00	10k Ω 1/6W ±5% Metal Film Resistor	
	R601, R602	07-20105-00	1M Ω 1/6W ±5% Metal Film Resistor	
	R607, R608	07-25600-01	560 Ω 1/6W ±2% Metal Film Resistor	
	R609, R610	07-24300-00	430 Ω 1/6W ±1% Metal Film Resistor	
	CAPACITORS			
	C603, C604, C609, C610	25-10461-00	100nF, CL23B 63V ±10% Polyester capacitor	
	C601, C602	05-22113-00	220pF 1KV ±10% Ceramic Capacitor	
	C605, C606	05-10113-02	100pF 1KV ±10% Ceramic Capacitor	
	C607, C608	05-22013-01	22pF 1KV ±10% Ceramic Capacitor	
	C611	05-33013-00	33pF 1KV ±10% Ceramic Capacitor	
	CONNECTORS			
	CH601	13-12509-01	9PIN2.54C Housing	
	J601	21-06500-00	L=5mm Link	
	FUSE BOARD			
		16-35205-00	Fuse Raw PCB	
		01-35205-00	Fuse PCB with components	
		FUSES		
		F501, F502, F503, F504	20-12632-00	T6.3AL/250V Fuse
		F501, F502, F503, F504	20-20000-06	LS-PTF-78 or CQ-200C, no cover Fuse Holder
			or 20-20000-00	or HF-004 Fuse Holder
		P501B	13-23905-11	5PIN3.96C Housing
		C352 C	18-35150-20	TD-230-0150E Transformer
C352 AH	18-35151-10	TD-120-0150I Transformer		

ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
SWITCHES BOARD			
MISC S901	16-35206-00	Switch Raw PCB	
	01-35206-00	Switch PCB with components	
	14-35202-01 11-01101-10	2PIN3.96-A350 PS4E-B-039	Connector Ribbon Power Switch
POWER LED BOARD			
MISC D001 P001A	16-35207-00	LED Raw PCB	
	01-35207-00	LED PCB with components	
	33-50525-00 14-35203-00	L-519EGW 3P2.54-A30B	LED, Dual Connector Ribbon
HEAD BOARD			
MISC J801 P801A W801	16-35208-00	Head Raw PCB	
	01-35208-00	Head PCB with components	
	17-02001-00	CK-6.35-06, 9P	Head Phone Jack
	14-35005-01 21-06500-00	5PIN2.54-A370B L=5mm	Connector Ribbon Link
FIX BOARD			
	16-35209-00	Fix Raw PCB	
	01-35200-00	Fix PCB with components	

SERVICE MANUAL

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