

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

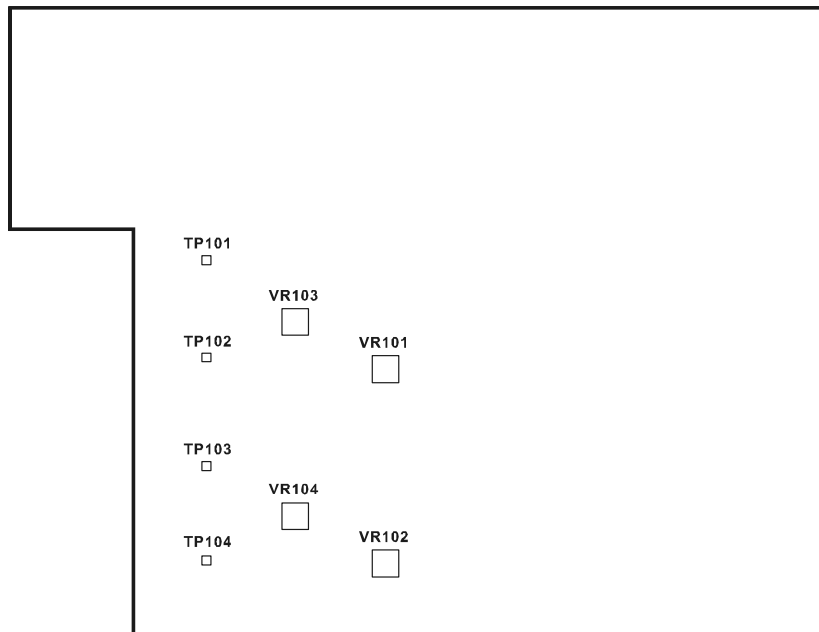
1. Connect a DC Millivoltmeter to L Channel speaker output terminals.
2. Turn unit "ON" and adjust VR101 (100ohms) to get a reading on IC107 Pin 1, which must be <100mV.
3. Connect the DC Millivoltmeter to R Channel speaker output terminals and adjust VR102 (100ohms) to get a reading on IC108 Pin 1,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

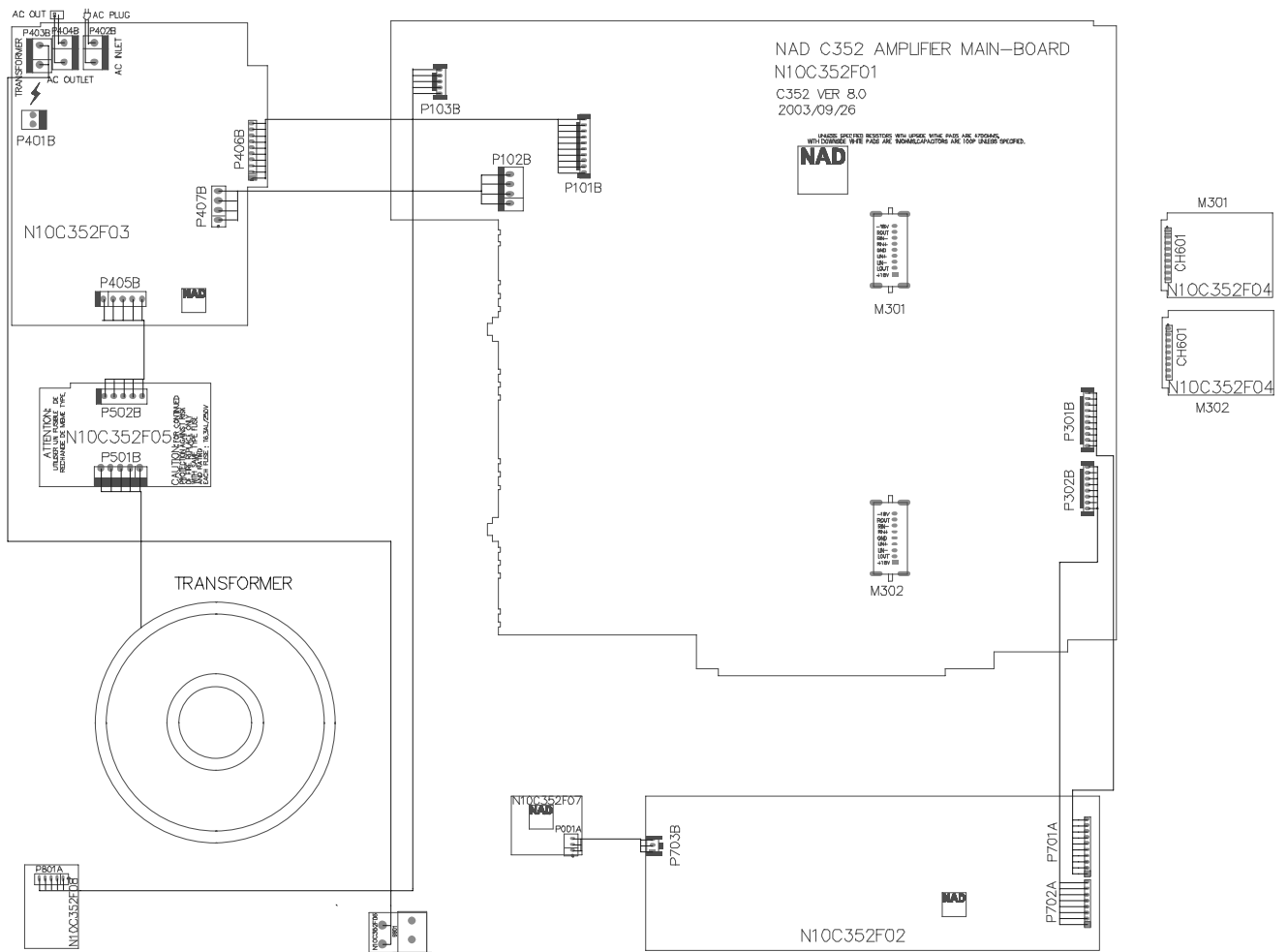
#### B. IDLING CURRENT

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.

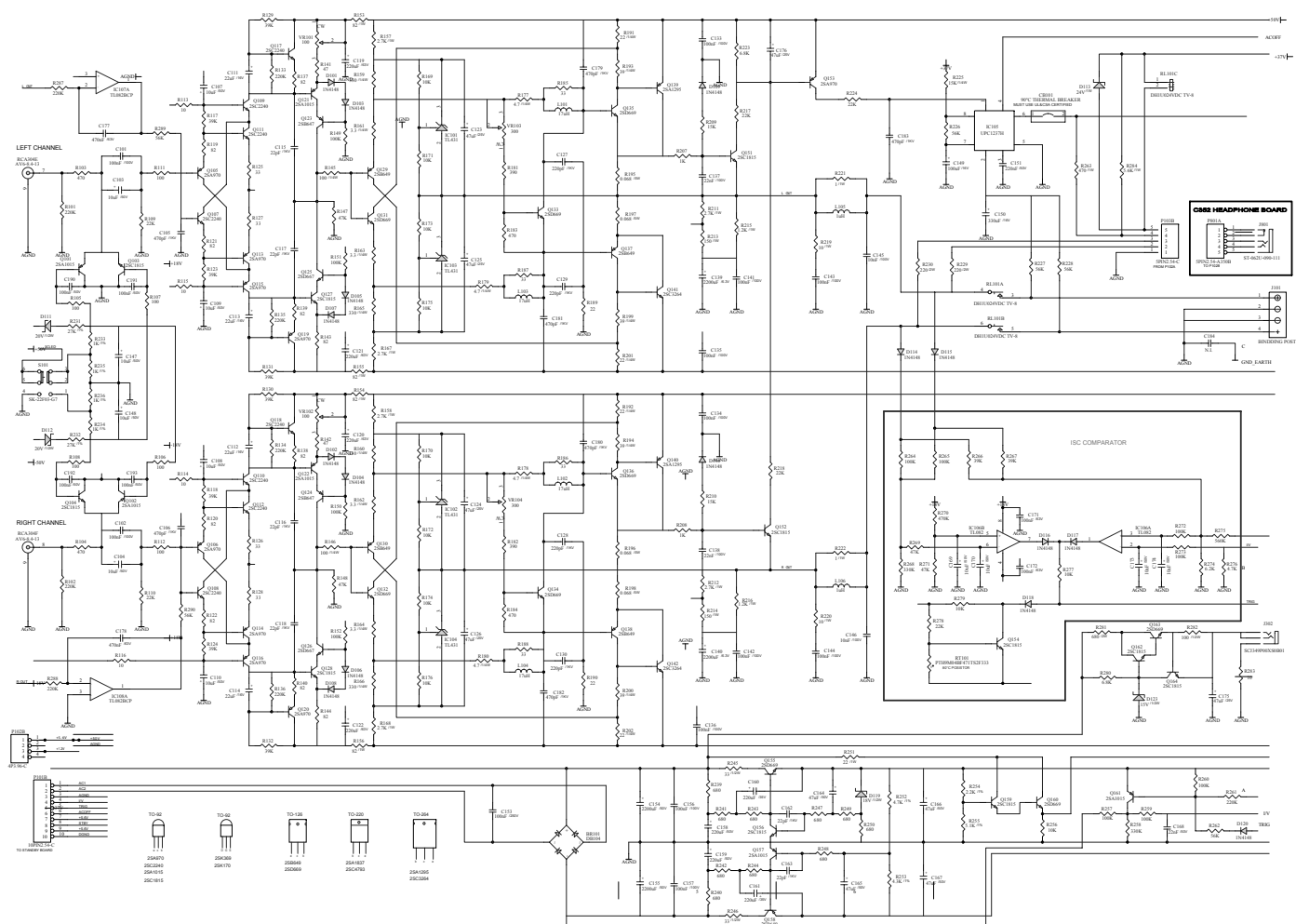




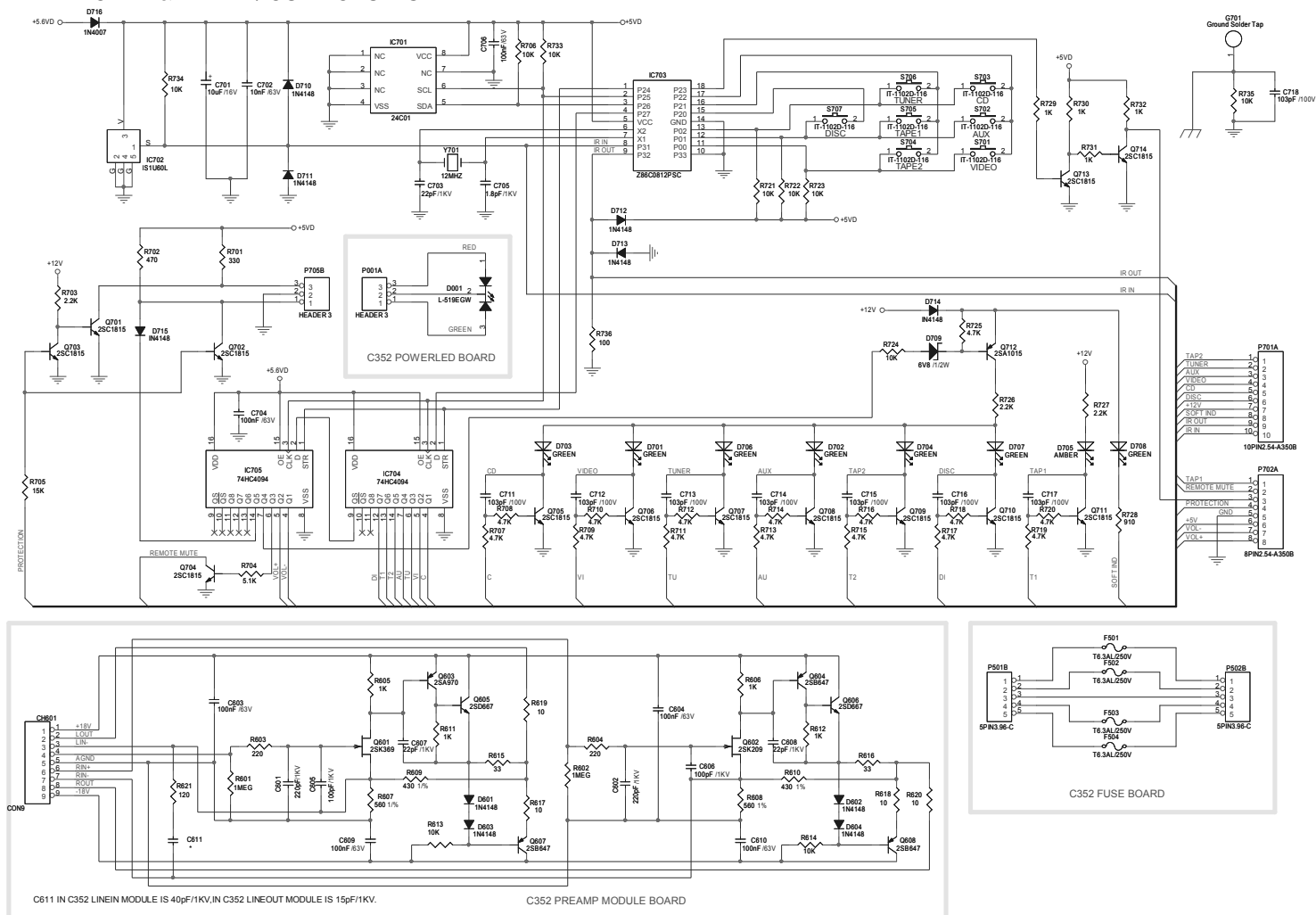




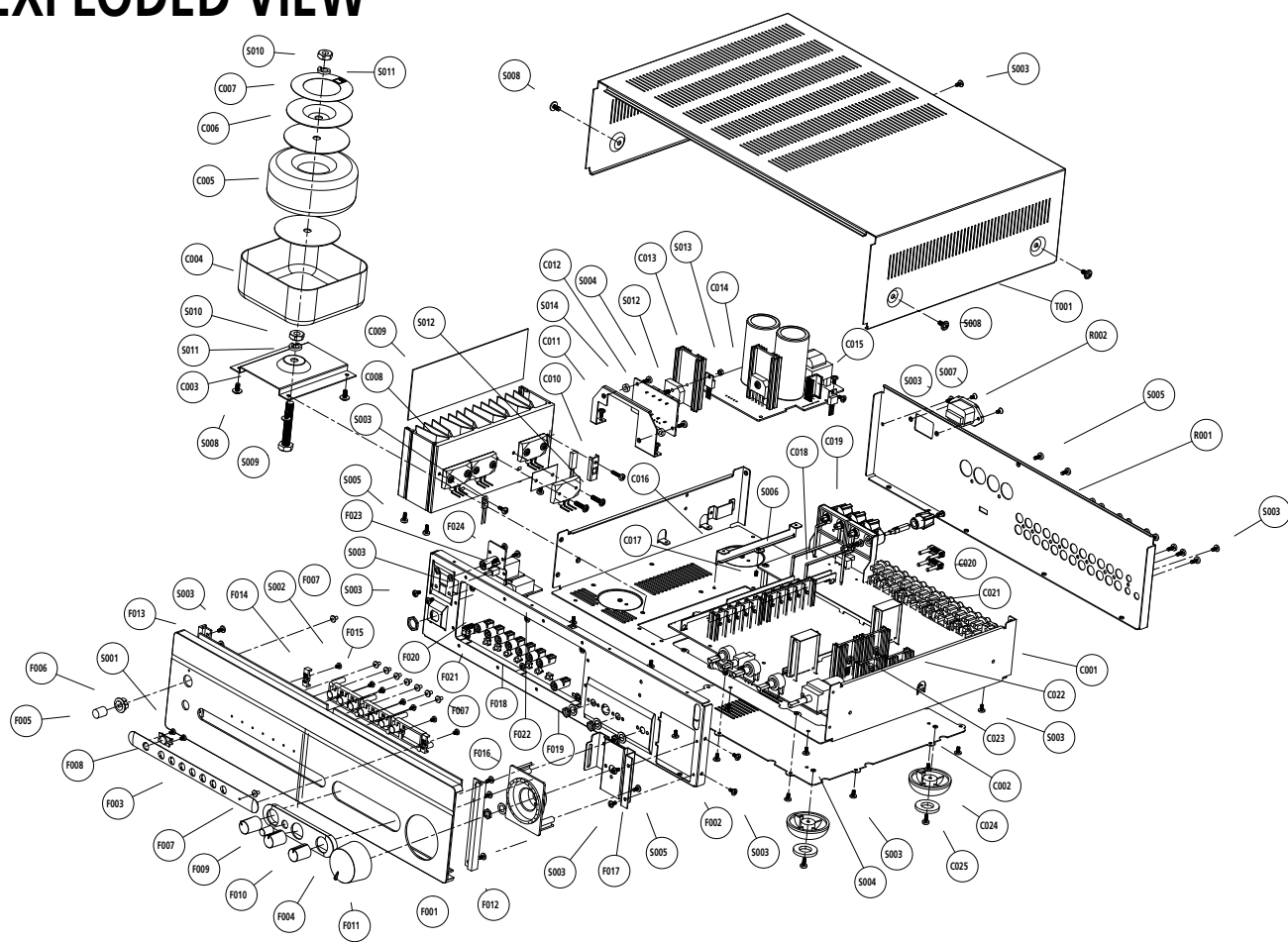
# POWER AMPLIFIER AND PROTECT



## KEYBOARD & LINE IN / OUT MODULES



# 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 $\Phi$ 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	$\Phi$ 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	±5%	Metal Film Resistor	
R113, R114, R115, R116, R373, R3G1	07-20100-00	10 Ω	1/6W	±5%	Metal Film Resistor	
R283	07-20100-10	10 Ω	1/4W	±5%	Metal Film Resistor	
R189, R190	07-20220-00	22 Ω	1/6W	±5%	Metal Film Resistor	
R125, R126, R127, R128, R370, R185, R186, R187, R188	07-20330-00	33 Ω	1/6W	±5%	Metal Film Resistor	
R141, R142	07-20470-00	47 Ω	1/6W	±5%	Metal Film Resistor	
R143, R144	07-28209-00	82 Ω	1/6W	±1%	Metal Film Resistor	
R357, R358	07-20680-00	68 Ω	1/6W	±5%	Metal Film Resistor	

## ELECTRICAL PARTS LIST

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

## ELECTRICAL PARTS LIST

REF. NO.	PART NO.	DESCRIPTION			
R213, R214	07-21800-02	180 $\Omega$	1W	$\pm 1\%$	Metal Film Resistor
R211, R212	07-24991-02	4.99k $\Omega$	1W	$\pm 1\%$	Metal Film Resistor
R161, R162, R163, R164	07-50339-00	3.3 $\Omega$	1/4W	$\pm 5\%$	Fusible Resistor
R191, R192, R201, R202	07-50220-00	22 $\Omega$	1/4W	$\pm 5\%$	Fusible Resistor
R193, R194, R199, R200	07-50390-00	39 $\Omega$	1/4W	$\pm 5\%$	Fusible Resistor
R159, R160, R165, R166	07-50331-00	330 $\Omega$	1/4W	$\pm 5\%$	Fusible Resistor
R245, R246	07-50330-02	33 $\Omega$	1/2W	$\pm 5\%$	Fusible Resistor
R282	07-50101-03	100 $\Omega$	1/2W	$\pm 5\%$	Fusible Resistor
R251	07-50220-01	22 $\Omega$	1W	$\pm 5\%$	Fusible Resistor
R153, R154, R155, R156	07-50820-02	82 $\Omega$	1W	$\pm 5\%$	Fusible Resistor
R281	07-50681-02	680 $\Omega$	2W	$\pm 5\%$	Fusible Resistor
R221, R222	07-30109-11	1 $\Omega$	1W	$\pm 5\%$	Metal Oxide Film Resistor
R219, R220	07-30100-01	10 $\Omega$	1W	$\pm 5\%$	Metal Oxide Film Resistor
R229, R230	07-30221-03	220 $\Omega$	2W	$\pm 5\%$	Metal Oxide Film Resistor
R263	07-30471-01	470 $\Omega$	1W	$\pm 5\%$	Metal Oxide Film Resistor
R215, R216	07-20122-01	1.2k $\Omega$	1W	$\pm 5\%$	Metal Oxide Film Resistor
R157, R158, R167, R168	07-30272-02	2.7k $\Omega$	2W	$\pm 5\%$	Metal Oxide Film Resistor
R284	07-30562-01	5.6k $\Omega$	1W	$\pm 5\%$	Metal Oxide Film Resistor
R195, R196, R197, R198	07-40687-05	0.068 $\Omega$	5W	$\pm 5\%$	Cement Resistor
CB101	07-70022-09	ST-22 90C			Thermal Breaker
RT101	07-70471-08	PTH9M04BF471TS2F333			Posistor
<b>POTS</b>					
VR101, VR102	09-02101-00	100 $\Omega$			SEMI POT
VR103, VR104	09-02301-00	300 $\Omega$			SEMI POT
RV304	09-01203-03	RK16312A10D 20KMNX2			POT
RV303	09-01203-05	RK16812MGA10 20KBX2			POT
RV301, RV302	09-01103-01	RK163121A2CA 10KAX2			POT
<b>CAPACTIORS</b>					
C190, C191, C192, C193	26-10451-01	100nF, 0805	50V		SMD Ceramic Capacitor
C115, C116, C117, C118, C162, C163	05-22013-00	22PF	1KV	$\pm 10\%$	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	$\pm 10\%$	Ceramic Capacitor
C127, C128, C129, C130, C343, C344	05-22113-01	220pF	1KV	$\pm 10\%$	Ceramic Capacitor
C105, C106, C179, C180, C181, C182, C183, C333, C334	05-47113-00	470pF	1KV	$\pm 10\%$	Ceramic Capacitor
C145, C146	25-10312-00	10nF, CL23	100V	$\pm 10\%$	Polyester capacitor
C137, C138, C168	25-22361-03	22nF, CL23B	63V	$\pm 10\%$	Polyester capacitor
C325, C326	25-22361-04	22nF, CL23	63V	$\pm 5\%$	Polyester capacitor
C153	25-10422-00	100nF, CL23B	250V	$\pm 10\%$	Polyester capacitor
C319, C320, C323, C324, C337, C338, C341, C342, C351, C171, C172, C3G1	25-10461-00	100nF, CL23B	63V	$\pm 10\%$	Polyester capacitor
C101, C102, C133, C134, C135, C136, C141, C142	25-10412-02	100nF, CL23B	100V	$\pm 10\%$	Polyester capacitor
C327, C328	25-10461-04	100nF, CL23	63V	$\pm 5\%$	Polyester capacitor
C143, C144, C156, C157	25-10412-06	100nF, CL23	100V	$\pm 10\%$	Polyester capacitor
C151	25-22461-01	220nF, CL23B	50V	$\pm 10\%$	Polyester capacitor
C329, C330	25-23461-00	230nF, CL23B	63V	$\pm 5\%$	Polyester capacitor
C177, C178	25-10561-00	1uF, CL233X	63V	$\pm 5\%$	Polyester capacitor
C331, C332	25-95461-00	950nF, CL23B	63V	$\pm 5\%$	Polyester capacitor
C349	06-47951-04	4.7uF, CD71C	50V	$\pm 20\%$	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
<b>ICS</b>					
IC106, IC107, IC108	03-00082-00	TL082D			IC, Dual OP-AMP
IC101, IC102, IC103, IC104	03-00431-00	TL431-ACLP or KA431-AZTA			IC, Regulator
IC105	03-01237-00	UPC1237H			IC, Protection
<b>RELAYS</b>					
RL101	12-03201-01	FTR-F1AD024V			Relay
RL301, RL302, RL303, RL304, RL305, RL307, RL306, RL308	12-02101-02	JRC-27F/012/S			Relay
<b>INDUCTORS</b>					
L105, L106	08-01010-00	1uH			Spring Coil
L101, L102, L103, L104	08-02100-01	17uH			Inductor
	19-05005-00				Ferrite Bead
<b>Misc</b>					
	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
<b>CONNECTORS</b>					
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
<b>KEY BOARD</b>					
	16-35203-00	Key Raw PCB			
	01-35202-00	Key PCB with components			
<b>DIODES</b>					
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
<b>TRANSISTORS</b>					
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
<b>CRYSTAL</b>					
Y701	04-11202-00	HC-49U, 12MHz, CI=20pF, FL=20PPM			Crystal
<b>RESISTORS</b>					
R729, R730, R731, R732	07-20102-00	1k $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R703, R726, R727,	07-20222-00	2k2 $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R708, R710, R712, R714, R715, R716, R718, R719, R720, R725	07-20472-00	4k7 $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R707, R709, R711, R713, R717	07-20472-10	4k7 $\Omega$	1/4W	$\pm 5\%$	Metal Film Resistor
R704	07-20512-00	5k1 $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R706, R721, R722, R723, R724, R733, R734, R735	07-20103-00	10k $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R705	07-20153-00	15k $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R701	07-20331-00	330 $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R702	07-20471-00	470 $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R728	07-20911-00	910 $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
R736	07-20101-00	100 $\Omega$	1/6W	$\pm 5\%$	Metal Film Resistor
<b>CAPACTIORS</b>					
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
<b>ICS</b>					
IC701	03-02401-00	24C01A/24C02/24C02A/ 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			IC, IR Receiver MCU
<b>CONNECTORS</b>					
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
<b>MISC</b>					
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				
<b>DIODES</b>						
D401, D402	33-44148-02	1N4148			Switch Diode	ODES
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	
<b>TRANSISTORS</b>						
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	
<b>RESISTORS</b>						
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	
<b>CAPACTIORS</b>						
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	
<b>RELAYS</b>						
RL401	12-02101-01	DH1U5VDC TV-8			Relay	
<b>ICS</b>						
IC401	03-07805-00	LM7805CT			IC, Regulator	
<b>CONNECTORS</b>						
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	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				
	TR401	18-35003-00	TD030-E102D	Standby Transformer			
MODULE BOARD							
DIODES D601, D602, D603, D604  TRANSISTORS Q601, Q602  Q603, Q604 Q605, Q606 Q607, Q608  RESISTORS R617, R618, R619, R620 R615, R616 R621 R603, R604 R605, R606, R611, R612 R613, R614 R601, R602 R607, R608 R609, R610  CAPACTIORS C603, C604, C609, C610 C601, C602 C605, C606 C607, C608 C611  CONNECTORS CH601 J601	16-35204-00	Module Raw PCB					
	01-35204-00	Module PCB with components					
	33-44148-01	1N4148	Switch Diode				
	31-00369-00	2SK369-GR	MOSFET				
	or 31-00170-00	or 2SK170-BL	MOSFET				
	31-00970-00	2SA970-GR	Transistor				
	31-00667-00	2SD667-ACTZ	Transistor				
	31-00647-00	2SD647-ACTZ	Transistor				
	07-20100-00	10 Ω	1/6W	±5%	Metal Film Resistor		
	07-20330-00	33 Ω	1/6W	±5%	Metal Film Resistor		
	07-20121-10	120 Ω	1/4W	±5%	Metal Film Resistor		
	07-20221-00	220 Ω	1/6W	±5%	Metal Film Resistor		
	07-20102-00	1k Ω	1/6W	±5%	Metal Film Resistor		
	07-20103-00	10k Ω	1/6W	±5%	Metal Film Resistor		
	07-20105-00	1M Ω	1/6W	±5%	Metal Film Resistor		
	07-25600-01	560 Ω	1/6W	±2%	Metal Film Resistor		
	07-24300-00	430 Ω	1/6W	±1%	Metal Film Resistor		
	25-10461-00	100nF, CL23B	63V	±10%	Polyester capacitor		
	05-22113-00	220pF	1KV	±10%	Ceramic Capacitor		
	05-10113-02	100pF	1KV	±10%	Ceramic Capacitor		
	05-22013-01	22pF	1KV	±10%	Ceramic Capacitor		
	05-33013-00	33pF	1KV	±10%	Ceramic Capacitor		
	13-12509-01	9PIN2.54C	Housing				
	21-06500-00	L=5mm	Link				
	FUSE BOARD						
	FUSES F501, F502, F503, F504  F501, F502, F503, F504  P501B C352 C C352 AH	16-35205-00	Fuse Raw PCB				
		01-35205-00	Fuse PCB with components				
		20-12632-00	T6.3AL/250V	Fuse			
		20-20000-06	LS-PTF-78 or CQ-200C, no cover	Fuse Holder			
		or 20-20000-00	or HF-004	Fuse Holder			
		13-23905-11	5PIN3.96C	Housing			
		18-35150-20	TD-230-0150E	Transformer			
18-35151-10		TD-120-0150I	Transformer				

## ELECTRICAL PARTS LIST

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

# SERVICE MANUAL

## C 352

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