

ONKYO SERVICE MANUAL

Infrared Wireless Remote Controlled Stereo Amplifier MODEL A-8048V

UD	120V AC, 60Hz
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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

TABLE OF CONTENTS

Item	Page
Specifications	2
Block diagram	3
Precautions	4
Circuit description	5
Exploded view	6
Exploded view parts list	7
Front panel facilities	7
Printed circuit board parts list	8
System connections	10
Packing procedures	11
IC block diagram	12
Printed circuit board view	17
Schematic diagram	19



SPECIFICATIONS

Power Output:	105 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20Hz to 20kHz, with no more than 0.09% THD
Total Harmonic Distortion:	0.09% at 105 watts
IM Distortion:	0.09% at 105 watts
Damping Factor:	40 at 8 ohms
Frequency Response:	15 – 30,000 Hz $\pm$ 1 dB
Sensitivity and Impedance:	Phono: 2.5 mV/50 kohms Tape Play: 150 mV/50 kohms Tape Rec: 150 mV/3.5 kohms (phono)
Phono Overload:	150 mV RMS at 1 kHz, 0.09% THD
Bass Control:	$\pm$ 8 dB at 100 Hz
Treble Control:	$\pm$ 8 dB at 10,000 Hz

Remote Control Transmitter RC-48A

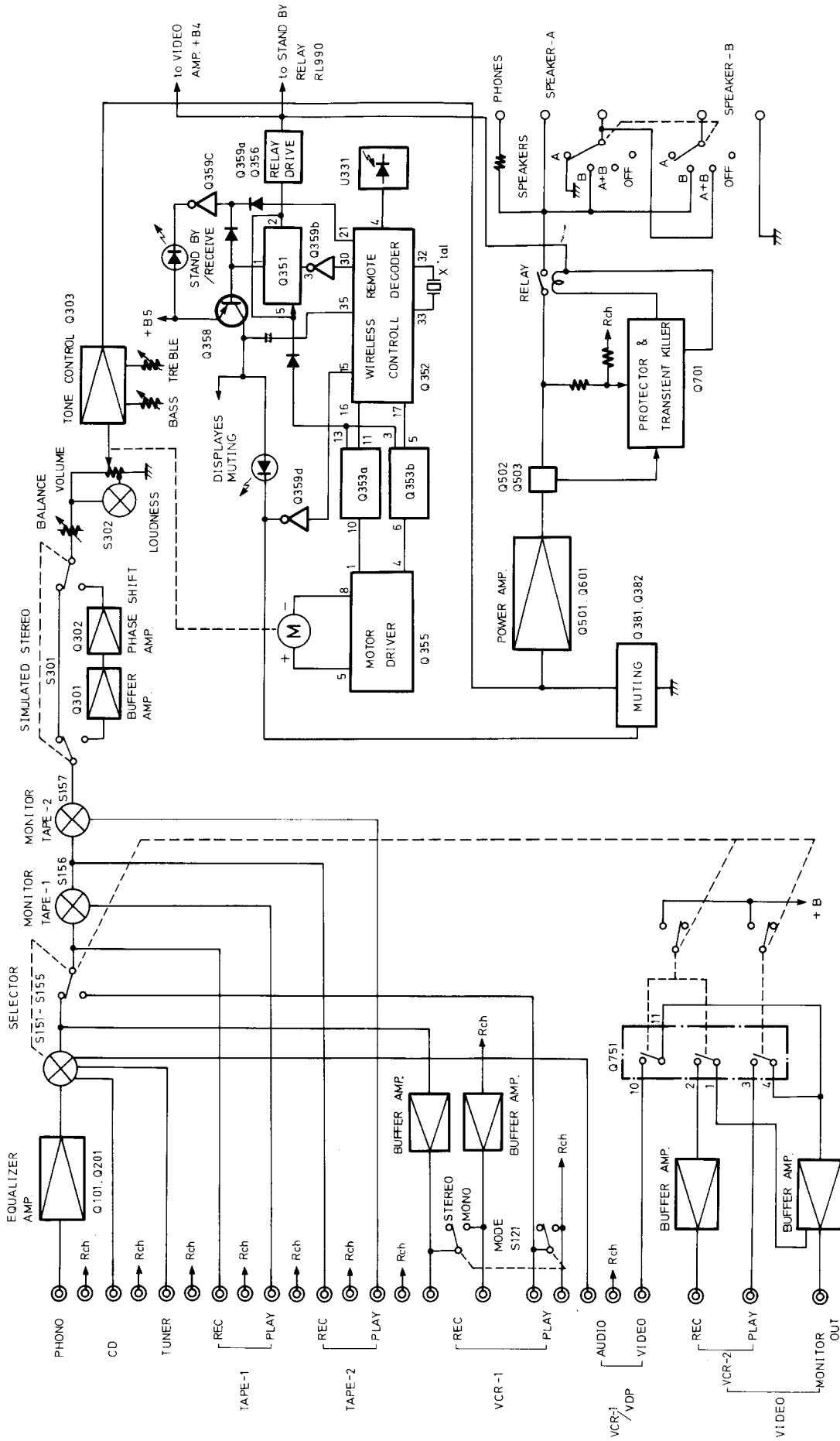
Transmitter:	Infrared
Signal range:	Approx. 5 meters, 16 ft. 4"
Power supply:	Two "AA" batteries (1.5 V $\times$ 2)
Dimensions (W $\times$ H $\times$ D):	40 $\times$ 18 $\times$ 145 mm 1-1/2" $\times$ 1/4" $\times$ 5-5/8"
Weight:	90 grams, 3.2 oz. (including batteries)
Signal to Noise Ratio:	Phono: 75 dB (IHFA-202, 5 mV input, 1 watt output) Tape Play: 80 dB (IHF A-202, 0.5V input, 1 watt output)
Loudness Control:	+6 dB at 70 Hz, +5 dB at 10 kHz
Audio Muting:	–20 dB

General

Power Supply:	AC 120V, 60Hz
Dimensions (W $\times$ H $\times$ D):	435 $\times$ 112 $\times$ 279 mm 17-1/8" $\times$ 4-7/16" $\times$ 10-15/16"
Weight:	7.8 kg. (17.2 lbs.)

Specifications and features are subject to change without notice.

BLOCK DIAGRAM



PRECAUTIONS

1. Replacing the fuses

For continued protection against risk fire, replace only with same type and same rating fuse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F901	252052	7A(ST-6), Primary fuse

2. Insulation resistance measurement

Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel. Specifications; More than 10 MΩ at 500V.

3. Remote controller batteries

The remote controller is powered by two batteries. Before using this unit for the first time, insert the two batteries (included) as shown in the diagram.

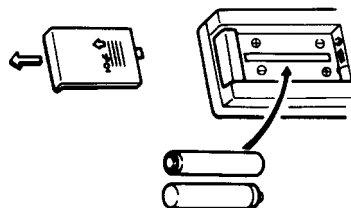
The remote controller has no on/off switch. Average battery life is one year. This period may be shorter depending on the frequency of use and environment (temperature and humidity) in which the remote controller is used.

If the remote controller does not operate even though front panel controls function normally, the batteries should be replaced. Use only batteries listed in the following chart.

Type	Voltage	Size
Manganese	1.5V	AA R6 UM-3

NOTE:

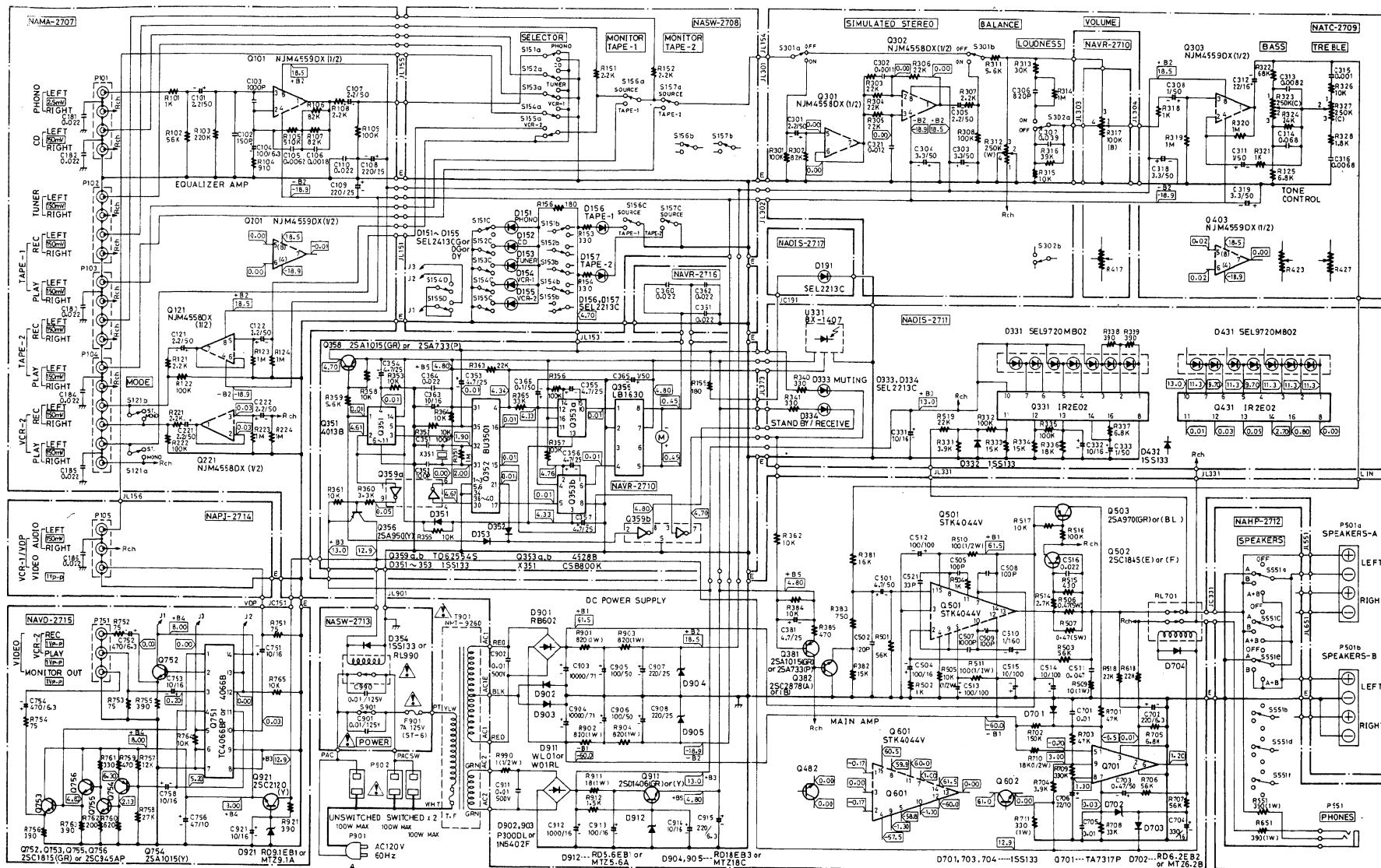
1. The battery life is influenced by the way they are used, temperature, humidity and many other factors. On the average, they should last for about one year.
2. Do not leave an expired battery in the case as it may leak or damage the battery case.
3. When inserting the batteries, be sure the (+) and (-) ends are properly aligned.
4. Do not use nickel-cadmium (rechargeable) batteries.
5. Do not use one specified (manganese) battery and one alkaline battery at the same time.
6. Replace both batteries at once; do not use one old and one new battery together.



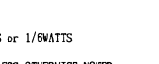
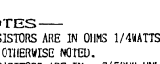
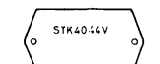
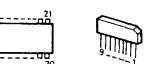
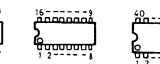
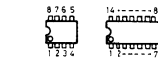
SERVICE NOTE

When the volume knob is installed, the LED lead wire is wrapped one turn around the center shaft of the knob. The remainder is arranged so that excessive force will not be applied when the knob is turned, and the knob is inserted.

SCHEMATIC DIAGRAM



NO.	FUNCTION	POSITION
S501	POWER	OFF ON
S151	SELECTOR	PHONO CD TAPE-1 TAPE-2
S155	MONITOR	TAPE-1 TAPE-2
S156	MONITOR	TAPE-1 TAPE-2
S157	MONITOR	TAPE-1 TAPE-2
S301	SIMULATED STEREO	OFF ON
S302	LOUDNESS	OFF ON
S121	VCR-2 MODE	STEREO MONO



- NOTES
- ALL RESISTORS ARE IN OHMS 1/4WATT or 1/2WATT UNLESS OTHERWISE NOTED.
 - ALL CAPACITORS ARE IN μF /50V UNLESS OTHERWISE NOTED.
 - ELECTROLYTIC CAPACITORS ARE IN μF /V.
 - ALL DIODES ARE 1N5133 UNLESS OTHERWISE NOTED.
 - VOLTAGE MEASURED WITH V.T.V.M. IS DC VOLTAGE (NO INPUT SIGNAL).
 - THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
 - CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

ONKYO CORPORATION

CIRCUIT DESCRIPTION

Remote Control Circuit

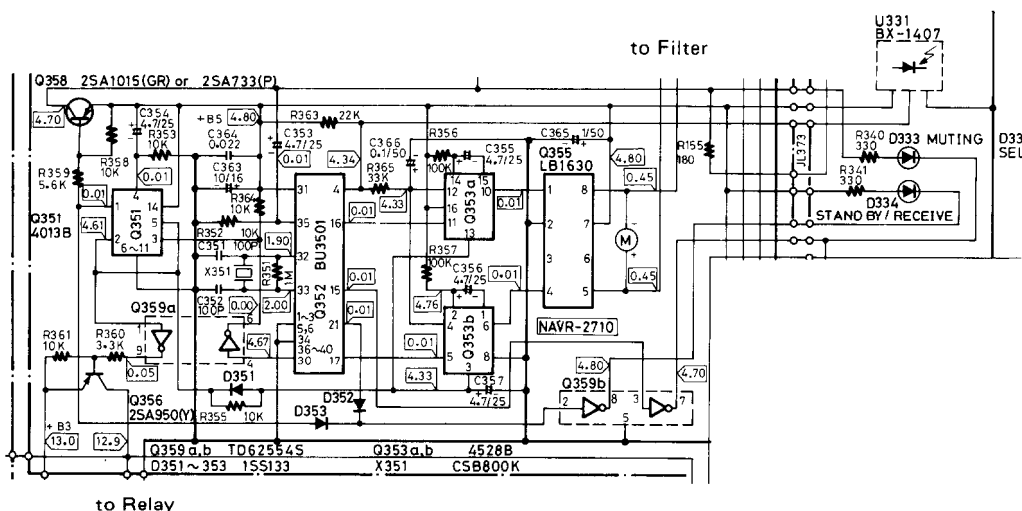
The A-8048V remote control circuit controls standby, receive, muting and volume. When the amp power supply is turned on, the flip-flop IC Q351 is initialized by a reset pulse which is sent to pin 4 of Q351. Pin 4 of Q351 then becomes "L" level, transistor Q358 is turned on, decoder Q352 is reset and the display LEDs light (normal operation).

When pin 2 of Q351 is "H" level, transistor Q356 is turned on, standby relay RL990 is turned on and power is supplied to the switched AC outlets.

When the remote control power is turned off, the signal received by photoreceptor element U331 is input to pin 4 of decoder Q352. This signal changes pin 30 of Q352 to "L" and level pin 3 of Q351 to "H" level. As a result, pin 1 becomes "H" and pin 2 becomes "L". Consequently, Q358 is turned off so all of the display LEDs are turned off. At the same time, pin 2 of Q351 becomes "L" level so both Q359 and Q356 are turned off, standby relay RL990 is turned off, and power is no longer supplied to the SWITCHED AC OUTLETS terminals, turning off any equipment which is connected (standby status). Also, pins 3 and 13 of Q353a and Q353b become "L" level when pin 2 of Q351 becomes "L", locking the motor-drive circuit so it does not operate. When the remote control power supply is turned on, the signal input to photoreceptor element U331 is input to pin 35 of decoder Q352 to reset this IC. Consequently, the status is the same as if the amp power supply were turned on, so operation begins.

When remote control muting is used, the signal received causes a toggle signal to be generated at pin 15 of Q352 each time the operating button is pressed. When the pin 15 signal is at "H" level, Q381 and Q382 are turned on when Q359b is turned on, and the power amp input is attenuated -20dB. When the pin 15 signal is "L", Q359b, Q381 and Q382 are all turned off, the power amp input operates normally. When the remote control Volume Down is operated, the received signal is input to pin 4 of decoder Q352 and "H" is output from pin 16 while Remote Control is pressed. This signal outputs a 150ms pulse to pin 10 when the trigger pulse from pin 12 of multivibrator Q353 rises. This signal causes motor driver Q355 to turn the volume motor. To increase the volume with the remote control, the signal received is input to the same pin 4 of decoder Q352. This causes "H" to be output from pin 17 while remote control is pressed. This causes a 150ms pulse to be output to pin 6 when the trigger pulse at pin 4 of multivibrator Q353 rises. This signal causes motor driver Q355 to turn the volume motor.

When any of the above are input to the remote control, a pulse signal is generated at pin 21 of Q352, goes through Q359b and instantaneously lights standby LED D333. When operation is in standby status, pin 1 of Q351 is "H", so Q359b is turned on and standby D333 lights steady.

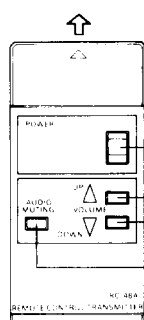
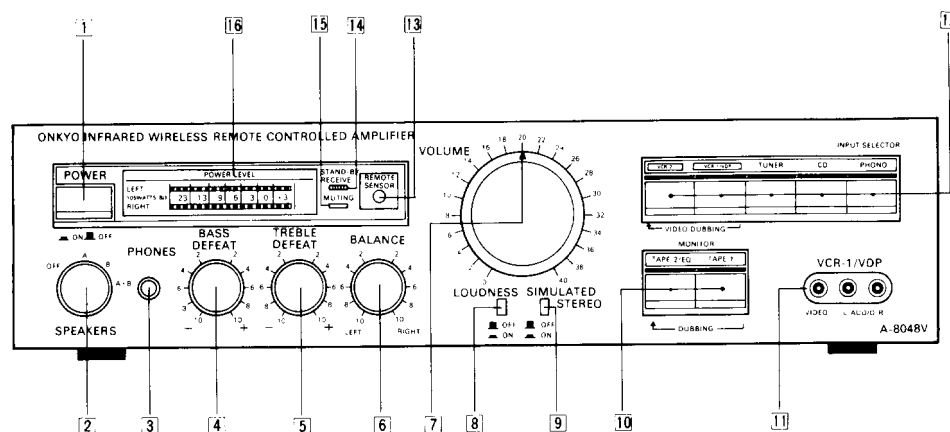




CHASSIS-EXPLODED VIEW PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
A1	27110289A	Front bracket	△P901	253123 or	AS-UC-6 #18; Power supply cable or
A2	27115193-1	Side bracket		253136 or	AS-UC-6 #18; Power supply cable or
A3	27130404-1	Bracket (PT)		253140	AS-UC-6 #18; Power supply cable
A6	27160191A	Radiator	△P902	25050293	NSCT-6P120, AC outlet
A7	27141020B	Bracket (HE)	U1	17808507-1	NAMA-2707-1, Equalizer & power
A8	27141077	Bracket (S)			amplifier pc board ass'y
A10	27120890	Back panel	U2	17808508-1	NASW-2708-1, Selector/Monitor
A11	27300750	Bushing (cable)			switch pc board ass'y
A14	27190472A	Holder (POW)	U3	17808509-1	NATC-2709-1, Tone controle circuit
A18	838430080	3TTB+8P(BC), Tapping screw			pc board ass'y
A19	834430068	3TTS+6B(BC), Tapping screw	U4	17808510-1	NAVR-2710-1, Volume controle pc
A25	82143006	3P+6FN(BC), Screw			board ass'y
A26	800509	Pin	U5	17808511-1	NADIS-2711-1, Display LED pc board
A500	17808121	Front panel ass'y			ass'y
A503	27262414	Plate (POW)	U6	17808512-1	NAHP-2712-1, Speaker switch pc
A506	27262415	Plate (T)			board ass'y
A510	28184295	Top cover	U7	17808513-1	NASW-2713-1, Stand-by relay pc
A511	834430068	3TTS+6B(BC), Tapping screw			board ass'y
A601	27170208-1	Bottom board	U8	17808514-1	NAPJ-2714-1, VCR-1 input terminal
A602	27175028	Bottom leg			pc board ass'y
A603	834430088	3TTS+6B(BC), Tapping screw	U9	17808515-1	NAVD-2715-1, Video switch circuit
A825	28322620A	Knob ass'y, VOL			pc board ass'y
A831	28322621A	Knob ass'y, SP	U10	17808516-1	NAVR-2716-1, Nois filter circuit pc
A835	28322622A	Knob, TONE			board ass'y
A836	28321905B	Knob, POW	U11	17808517-1	NADIS-2717-1, LED pc board ass'y
A837	28322623A	Knob, PUSH			
Q501,Q601	222051	STK-4044V, IC	NOTE: THE COMPONENTS IDENTIFIED BY MARK △ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.		
△T901	2300124	NPT-926D, Power transformer			
△F901	252052	7A(ST-6), Primary fuse			

FRONT PANEL FACILITIES



- Power Switch (POWER) ON/OFF
- Speaker Selector (SPEAKERS) OFF, A, B, A+B
- Headphone Jack (PHONES)
- Bass Control (BASS)
- Treble Control (TREBLE)
- Balance Control (BALANCE)
- Volume Control and Indicator (VOLUME)
- Loudness Control (LOUDNESS) ON/OFF
- Simulated Stereo (SIMULATED STEREO) ON/OFF
- Tape Monitor Switch and Indicator (MONITOR) TAPE-1, TAPE-2/EQ
- VCR or Video Disc Player Input Jack (VCR-1/VDP)
- Input Selector Switches and Indicators (INPUT SELECTOR)
Audio Selector
PHONO, CD, TUNER
Video Selectors (Control audio and video signals)
VCR-1/VDP, VCR-2
- Remote Control Sensor
- Stand-By Receive Indicator
- Muting Indicator
- Power Level
- Power Key
- Volume UP-DOWN Key UP, DOWN
- Audio Muting Key

PRINTED CIRCUIT BOARD—PARTS LIST

EQUALIZER & POWER AMPLIFIER PC BOARD (NAMA-2707-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q101,Q201	222534	NJM4559DX
Q121,Q221	222502	NJM4558DX
Q701	222584	TA7317P
	Transistors	
Q381	2210803 or 2211455	2SA733(P) or 2SA1015(GR)
Q382,Q482	2212285 or 2212286	2SC2878(A) or 2SC2878(B)
Q502,Q602	2211732 or 2211733	2SC1845(F) or 2SC1845(E)
Q503	2211395 or 2211396	2SA970(GR) or 2SA970(BL)
Q911	2201404 or 2201405	2SD1406(Y) or 2SD1406(GR)
	Diodes	
D701	223163	1SS133
D702	2243162 or 2239492	MTZ6.2B or RD6.2EB2
D703,D704	223163	1SS133
D901	223898	RB602
D902,D903	22380003 or 223897	1N5402F or P-300DL
D904,D905	2243273 or 2239713	MTZ18C or RD18EB3
D911	223890 or 223862	W01RL or WL01
D912	2243151 or 2239471	MTZ5.6A or RD5.6EB1
	Capacitors	
C101,C201	354780229	2.2 μ F, 50V, Elect.
C104,C204	354721019	100 μ F, 6.3V, Elect.
C105,C205	371126224	6200 pF, 50V, Mylar
C106,C206	371121824	1800 pF, 50V, Mylar
C107,C207	354780229	2.2 μ F, 50V, Elect.
C108,C109	354752219	220 μ F, 25V, Elect.
C121,C221	354780229	2.2 μ F, 50V, Elect.
C122,C222	354780229	2.2 μ F, 50V, Elect.
C181	379122235	0.022 μ F, 50V, Film (DEW)
C381	354750479	4.7 μ F, 25V, Elect.
C501,C601	3500093	4.7 μ F, 50V, Elect.
C504,C604	354741019	100 μ F, 16V, Elect.
C510,C610	3500094	1 μ F, 160V, Elect.
C511,C611	371124734	0.047 μ F, 50V, Mylar
C512,C513	354791019	100 μ F, 100V, Elect.
C612,C613	354791019	100 μ F, 100V, Elect.
C514,C515	354791009	10 μ F, 100V, Elect.
C614,C615	354791009	10 μ F, 100V, Elect.
C702	354722219	220 μ F, 6.3V, Elect.
C703	354784799	0.47 μ F, 50V, Elect.
C704	354743319	330 μ F, 16V, Elect.
C706	354742209	220 μ F, 16V, Elect.
Q501,Q601	222051	STK4044V

C903,C904	3504191	10000 μ F, 71V, Elect.
C905,C906	354781019	100 μ F, 50V, Elect.
C907,C908	391252219	220 μ F, 25V, Elect.(MUSE)
C912,C913	354741029	1000 μ F, 16V, Elect.
C914	354741009	10 μ F, 16V, Elect.
C915	354722219	220 μ F, 6.3V, Elect.
	Resistors	
R505,R605	442521034	10 k Ω , 1/2W, Metal oxide film
R506,R507	4000080	0.47 Ω , 5W, Metal plate
R509,R609	441621004	10 Ω , 1W, Metal oxide film
R510,R511	442521014	100 Ω , 1/2W, Metal oxide film
R606,R607	4000080	0.47 Ω , 5W, Metal plate
R610,R611	442521014	100 Ω , 1/2W, Metal oxide film
R710	442521834	18 k Ω , 1/2W, Metal oxide film
R711	441623314	330 Ω , 1W, Metal oxide film
R901 ~ R904	441628214	820 Ω , 1W, Metal oxide film
R911	441621804	18 Ω , 1W, Metal oxide film
R990	442520104	1 Ω , 1/2W, Metal oxide film
	Relay	
RL701	25065275	NRL-2P5A-DC12-38
	Terminals	
P101 ~ P103	25045171	NPJ-4PDBL65
P104	25045191	NPJ-6PDBL75
P501	25060093	NTM-8PDML34
	Slide switch	
S121	25065286	NSS-22112

SELECTOR/MONITOR SWITCH PC BOARD (NASW-2708-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D151 ~ D155	225137CG or 225137DG or 225137DY	SEL2413CG, LED or SEL2413DG, LED or SEL2413DY, LED
D156,D157	225141	SEL2213C, LED
	Switches	
S151 ~ (S155)	25035532	NPS-542-L494
S156,(S157)	25035533	NPS-242-L495
	Holders	
	27190476A	(LED-5)
	27190477A	(LED-2)

TONE CONTROLE CIRCUIT PC BOARD (NATC-2709-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q301,(Q302)	222502	NJM4558DX
Q303,Q403	222534	NJM4559DX
	Capacitors	
C301	354780229	2.2 μ F, 50V, Elect.
C302	371121124	1100 pF, 50V, Mylar

C303,C304	354780339	3.3 μ F, 50V, Elect.
C305	354780229	2.2 μ F, 50V, Elect.
C307	371123934	0.039 μ F, 50V, Mylar
C308,C311	354780109	1 μ F, 50V, Elect.
C312,C412	354742209	22 μ F, 16V, Elect.
C313,C413	371128224	82 pF, 50V, Mylar
C314,C414	371126834	0.068 μ F, 50V, Mylar
C315,C415	371121024	0.001 μ F, 50V, Mylar
C316,C416	371126824	6800 pF, 50V, Mylar
C318,C319	354780339	3.3 μ F, 50V, Elect.
C321	371121234	0.012 μ F, 50V, Mylar
C407	371123934	0.039 μ F, 50V, Mylar
C408,C411	354780109	1 μ F, 50V, Elect.

Resistors		
R312,(R412)	5104192	N16RHC250KW25Z, Variable resistor
R323,(R423)	5104191	N16RGHC250KC25Z, Variable resistor
R327,(R427)	5104191	N16RGHC250KC25Z, Variable resistor

Switch		
S301,(S302)	25035534	NPS-222-L496

VOLUME CONTROLE PC BOARD (NAVR-2710-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
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ICs		
Q351	222840131	4013B
Q352	222938	BU3501
Q353	222850281	4528B
Q355	222963	LB1630
Q359	222919	TD62554S

Transistors		
Q356	2211504	2SA950(Y)
Q358	2210803 or 2211455	2SA733(P) or 2SA1015(GR)

Diodes		
D351~ D353	223163	1SS133

Ceramic resonator		
X351	3010092	CSB800K

Capacitors		
C353~ C357	354750479	4.7 μ F, 25V, Elect.
C363	354741009	10 μ F, 16V, Elect.
C365	354780109	1 μ F, 50V, Elect.
C366	354781099	0.1 μ F, 50V, Elect.
C368	354780339	3.3 μ F, 50V, Elect.

Resistors		
R317,(R417)	5104190A	N16RGL100KBT20, Variable resistor

Sockets		
	25050267	NSCT-3P95
	25050270	NSCT-6P98
	25050268	NSCT-4P96

DISPLAY LED PC BOARD (NADIS-2711-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
Q331,Q431	222623	IR2E02
Diodes		
D331,D431	225221	SEL9720MB02, LED
D332,D432	223163	1SS133
D333,D334	225141	SEL2213C, LED

Capacitors		
C331,C332,C432	353741009	10 μ F, 16V, Elect.
C333,C433	353780109	1 μ F, 50V, Elect.

Holder		
	27190475A	Holder (LED)

SPEAKER SWITCH PC BOARD (NAHP-2712-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Resistors		
R551,R651	441623914	390 Ω , 1W, Metal oxide film
Switch		
S551	25030284	NRSF-164-15SS
Jack		
P551	25045183	HLJ4318-01-3020
Socket		
	25050267	NSCT-3P95

STAND BY RELAY PC BOARD (NASW-2713-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Diode		
D354	223163	1SS133
Capacitors		
C901,C990	3500065A	0.01 μ F, AC 400V/125V, IS
Switch		
S901	25035398	NPS-111-L362P
Relay		
RL990	25065269	NRL-1P5A-DC12-36
Fuse holder		
F901a	250113	SN5051

VCR-1 INPUT TERMINAL PC BOARD (NAPJ-2714-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
Terminal		
P105	25045206	NPJ-3PDYE086

VIDEO SWITCH CIRCUIT PC BOARD (NAVD-2715-1) PARTS LIST

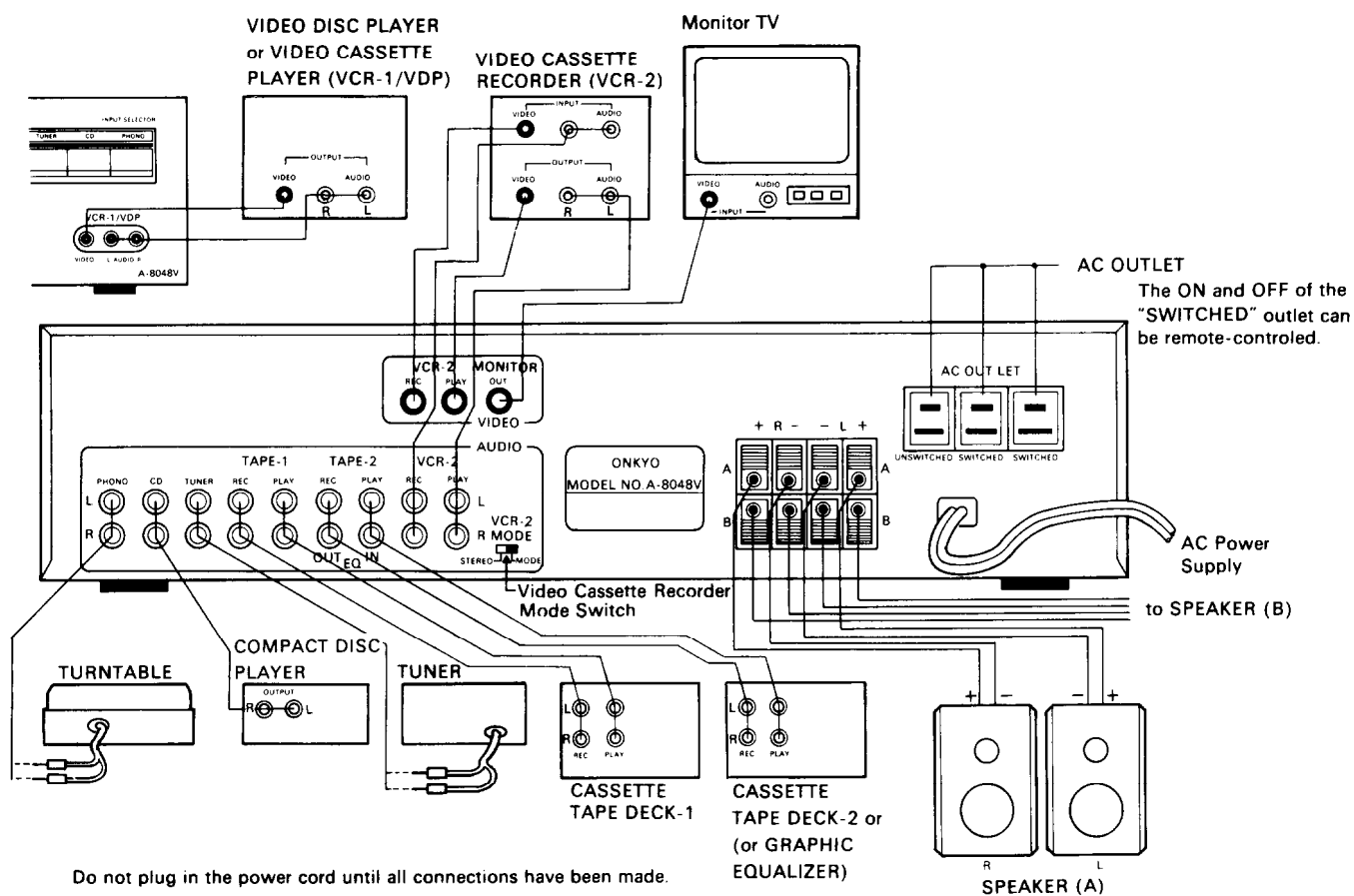
CIRCUIT NO.	PART NO.	DESCRIPTION
Q751	ICs	
	222575 or 222840661	TC4066BP or 4066B
Q752,Q753	Transistors	
	2211255 or 2210746	2SC1815GR or 2SC945A-P
Q754	2211454	2SA1015Y
Q755,Q756	2211255 or 2210746	2SC1815GR or 2SC945A-P
	2211164	2SC2120Y
Q921	Diode	
D921	2243201 or 2239571	MTZ9.1A or RD9.1EB1
	Capacitors	
C751,C753	354741009	10 μ F, 16V, Elect.
C758,C921		
C752,C754	354724719	470 μ F, 6.3V, Elect.
C756	354734709	47 μ F, 10V, Elect.

P751	Terminal 25045205	NPJ-3PDYE085
	Socket 25050267	NSCT-3P95

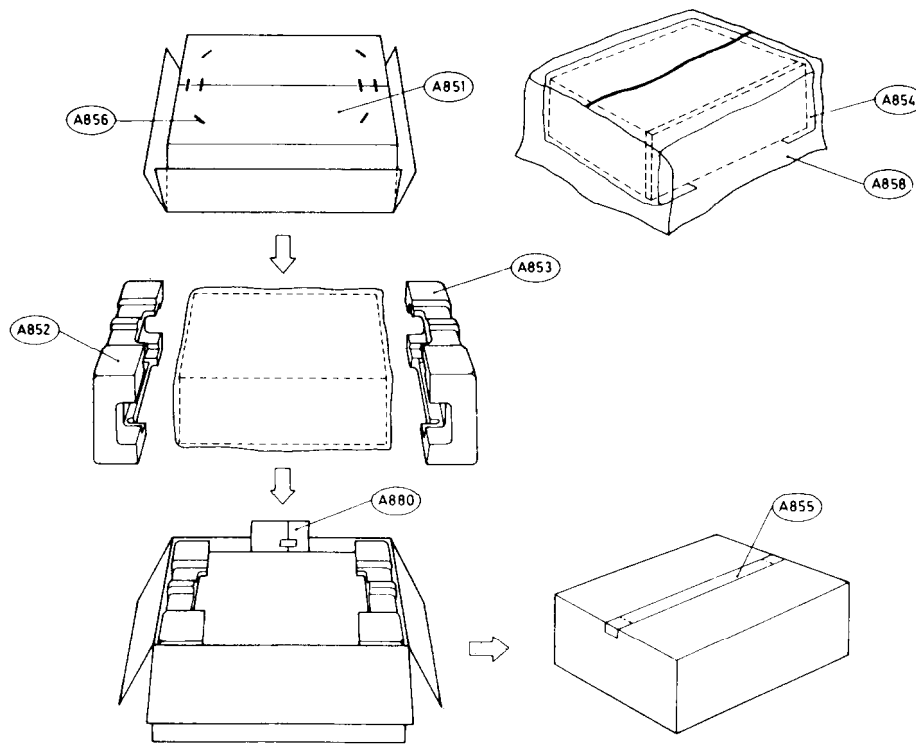
LED PC BOARD (NADIS-2717-1) PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
D191	Diode	
	225141	SEL2213C, LED
	Socket	
	2000566	NSAS-4P522
	Holder	
	27190478A	Holder (PC)

SYSTEM CONNECTIONS



PACKING PROCEDURES



REF. NO.	PART NO.	DESCRIPTION
A851	29051344	Master carton box
A852	29091019A	Pad, left
A853	29091020A	Pad, right
A854	29095012-1	Protection sheet
A855	260012	Damplon tape
A856	282301	Sealing hook
A858	29100063	750 x 580, Poly bag
A880	Accessory bag ass'y	
	29341027	Instruction manual
	29365006-7	Warranty card [U]
	29358002D	Service station list [U]
	29360778	Label (Frash) [U]
	29100006A	350 x 250, Poly bag
	241069A	RC-48A, Remote controle unit
	3010054	UM-3, Battery

NOTE

[U]: Only U.S.A. model