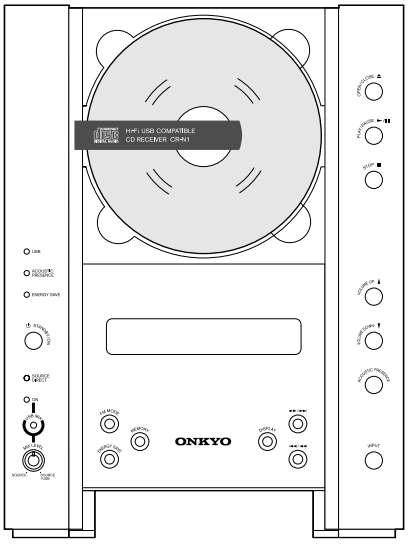
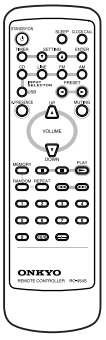
Ref. No. 3687
092001

ONKYO® SERVICE MANUAL

CD RECEIVER

MODEL CR-N1





RC-454S

Silver and Titanium model

(S)MDD,(S)MDT	120V AC, 60Hz
(T)MPP,(S)MPA	230-240V AC, 50Hz
(S)MGT,(S)MGR,(S)MGQ	220-230V AC, 50/60Hz

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 PART 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.

ONKYO®

IMAGINATIVE SIGHT & SOUND

SPECIFICATIONS-1

Amplier

Power output (U.S. & Canadian models)	2 x 6.5 watts min., RMS at 8 ohms, 50 Hz–20 kHz, with no more than 0.6% total harmonic distortion (FTC)
	2 x 9.5 watts min., RMS at 4 ohms, 50 Hz–20 kHz, with no more than 0.8% total harmonic distortion (FTC)
	2 x 15 watts at 4 ohms (EIAJ)
Power output (Other models)	2 x 10 watts at 4 ohms, 1 kHz (DIN)
	2 x 8.5 watts at 6 ohms, 1 kHz (DIN)
	2 x 7 watts at 8 ohms, 1 kHz (DIN)
	2 x 6.5 watts min., RMS at 8 ohms, 1 kHz, no more than 0.6% THD (FTC rating)
	2 x 15 watts at 4 ohms (EIAJ)
Dynamic power	2 x 15 watts at 4 ohms
	2 x 9 watts at 8 ohms
Total harmonic distortion	0.4% at 5 watts output into 4 ohms, 1 kHz
IM distortion	0.4% at 5 watts output into 4 ohms, 1 kHz
Damping factor	25 at 4 ohms
	50 at 8 ohms
LINE IN sensitivity and impedance	500 mV, 47k ohms
Frequency response	10 Hz–20 kHz, +3/–3 dB
Acoustic presence	1: +6.0 dB at 80 Hz 2: +10.0 dB at 80 Hz
Signal to noise ratio	95 dB (IHF-A)
Muting	–50 dB

CD Player

Signal readout system	Optical non-contact
Reading rotation	Approx. 500–200 rpm (constant linear velocity)
Linear velocity	1.2–1.4 m/s
Error correction system	Cross interleave Reed Solomon code
D/A converter	1 bit
Digital lter	352.8 kHz, 8-times oversampling
Number of channels	2 (stereo)
Frequency response	5 Hz–20 kHz
Wow & utter	Below threshold of measurability

USB

Connection method	USB (Universal Serial Bus) Ver 1.1
Sampling rate (input)	32/44.1/48 kHz compatible
Frequency response	5 Hz–20 kHz

SPECIFICATIONS-2

Tuner

Tuning range	FM		87.9–107.9 MHz (200 kHz steps) (U.S. & Canadian model)
			87.5–108.00 MHz (50 kHz steps) (Other area models)
	AM		530–1710 kHz (10 kHz steps) (U.S. & Canadian model)
			522–1611 kHz (9 kHz steps) (European & Australian models)
			531–1602 kHz (9 kHz steps) (Asian models)
Usable sensitivity	FM	Mono	11.2 dBf, 1.0 µV (75 ohms IHF)
			11.2 dBf, 0.9 µV (75 ohms DIN)
		Stereo	17.2 dBf, 2.0 µV (75 ohms IHF)
			17.2 dBf, 23.0 µV (75 ohms DIN)
	AM		30 µV
50 dB quieting sensitivity	FM	Mono	17.2 dBf, 2.0 µV (75 ohms)
		Stereo	37.2 dBf, 20.0 µV (75 ohms)
Capture ratio	FM		2.0 dB
Image rejection ratio	FM		40 dB (U.S. & Canadian model)
			85 dB (Other area models)
	AM		40 dB
IF rejection ratio	FM		90 dB
	AM		40 dB
Signal to noise ratio	FM	Mono	73 dB, IHF
		Stereo	67 dB, IHF
	AM		40 dB
Selectivity	FM		50 dB DIN (±300 kHz at 40 kHz deviation)
AM suppression ratio			50 dB
Harmonic distortion	FM	Mono	0.2%
		Stereo	0.3%
	AM		0.7%
Frequency response	FM		30 Hz–15.0 kHz (±1.5 dB)
Stereo separation	FM		35 dB at 1 kHz 25 dB at 100 Hz–10.0 kHz
Stereo threshold	FM		17.2 dBf, 2.0 µV (75 ohms)

General

Power supply	AC 120 V, 60 Hz, 39 W (U.S. & Canadian model, some Asian models)
	AC 230 V, 50 Hz, 32 W (European model)
	AC 220 V, 50/60 Hz, 32 W (Other area models)
Dimensions (W x H x D)	203 x 270 x 234 mm
	8" x 10-5/8" x 9-3/16"
Weight	4.2 kg (9.3 lbs)

Specications and features are subject to change without notice.
Power supply and voltage specications depend on where the unit is purchased.

SERVICE PROCEDURES

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

SERVICE WARNING : DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY.

IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

Laser Diode Properties

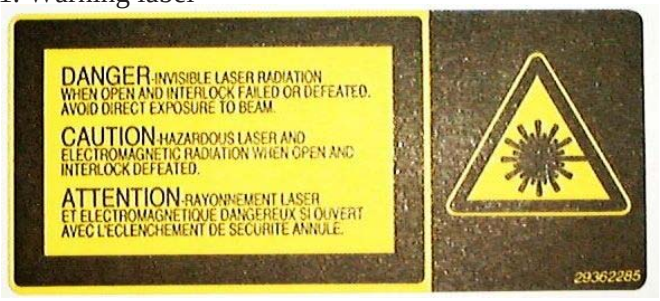
Material: GaAS/GaALAs
Wavelength: 790nm
Laser output: max. 0.5mW*
Emission Duration: continuous

*This output is the value measured at a distance about 1.8mm from the objective lens surface on the Optical Pick-up Block.

LASER WARNING LABEL

The label shown below are affixed.

1. Warning label



2. Class 1 label

SERVICE PROCEDURE

1. Replacing the fuses

This symbol located near the fuse indicates that the fuse used is show operating type, For continued protection against fire hazard, replace with same type fuse , For fuse rating, refer to the marking adjest to the symbol.

Ce symbole indique que le fusible utilise est e lent. Pour une protection permanente, n'utiliser que des fusibles de meme type. Ce demier est indique la qu le present symbol est apposre.

REF.NO.	PART NO.		DESCRIPTION
F901	252083 or	⚠	0.4A-SE-EAWK
	252233 or	⚠	400MA-SE-TL250V or
	252267	⚠	400MA-SE-TL250V <PP,GT,PA,GQ,GR>
	252157 or	⚠	1.25A-UL/T-237 or
	252251	⚠	1.25A-T/UL-ST2, Fuse <DD,DT>

NOTE:
<DD> : USA and Canadian model only
<PP> : European model only
<PA> : Australian model only
<DT> : Taiwanese model only
<GT> : Asian model only
<GR> : Chinese model only
<GQ> : Hong kong model only

2. Safety-check out

(Only U.S.A. model)
After correcting the original service problem perform the follwing safety check before releasing the set to the customer
Connect the insulating-resistance tester between the plug of power supply cord and terminal GND on the back panel.
Specifications: More than 10Mohm at 500V

3. To initialize the unit

1. Press and the hold down the **VOLUME DOWN** button , then press the **DISPLAY** button.
2. After " All lighting " is displayed, the preset memory and each mode stored in the memory, are initialized and will return to the factory settings.
3. Press the **STANDBY/ON** button.
4. Unplug the AC plug from the wall outlet.

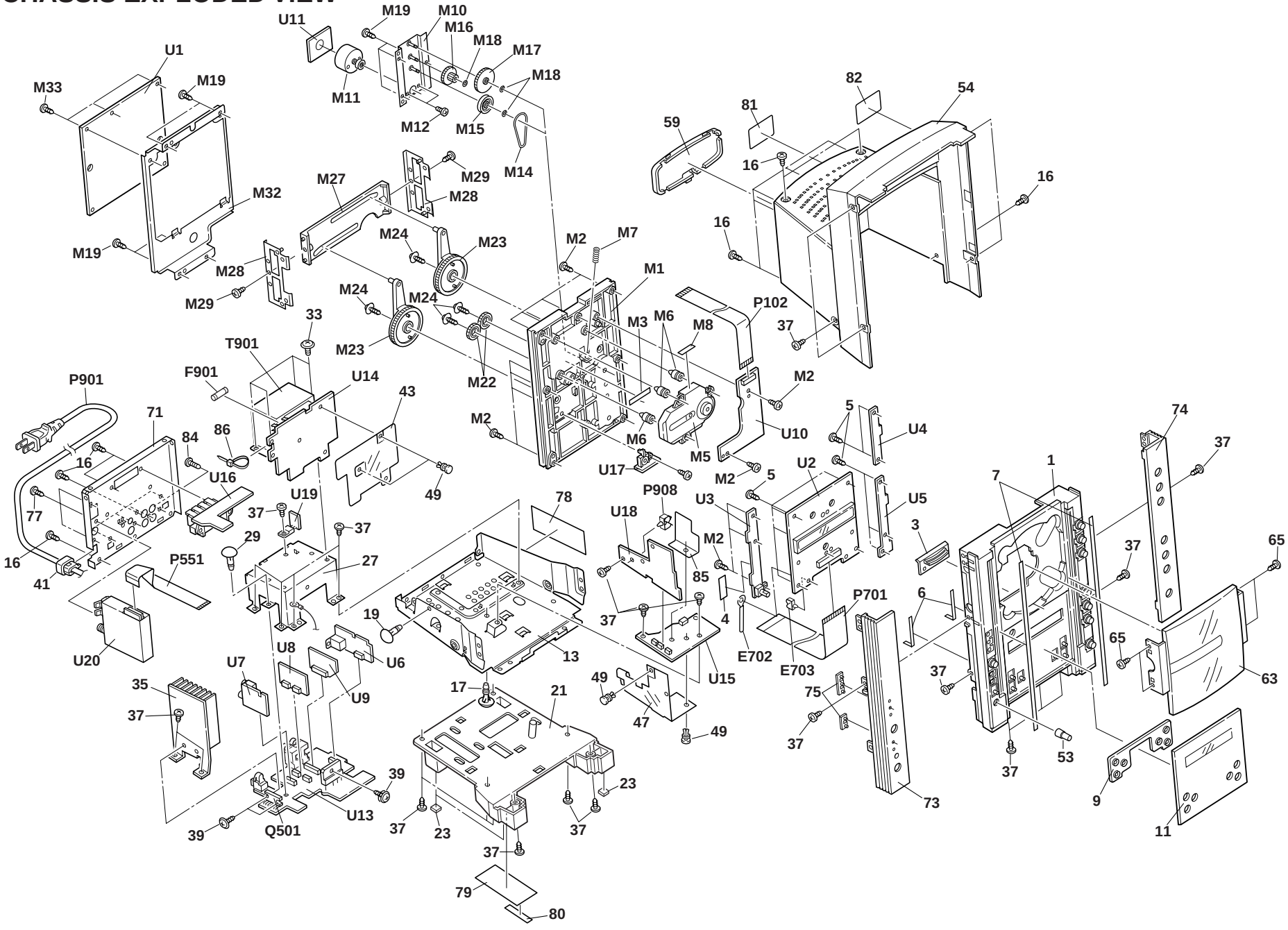
4. Notes at the connecting the measuring instrument to the unit.

The power amplifier circuit of this unit is BTL system.
Therefore, in case check the output of speaker terminal, take care not to connect the ground of the unit with the minus terminal of speaker.

5. Changing the AM band step

Refer to "**SCHEMATIC DIAGRAM-1**"

CHASSIS EXPLODED VIEW



EXPLODED VIEW PARTS LIST-1

REF. NO.	PART NO.		DESCRIPTION
1	27111223A		Front bracket
3	28198926		Facet, CD
4	28141446		Cushion, BU
5	838426088		2.6TTB+8B(BC), Self tapping screw
6	29110157		Tape, CU
7	27262664		Plate, F <S>
	27262665		Plate, F <T>
9	27268044		Guide, DIS
11	28191931		Clear plate
13	27100404		Chassis
16	838430088		3TTB+8B(BC), Self tapping screw
17	27190266		KGLS-12RF, holder
19	27191156		KGLS-5RT, holder
21	27175390		Leg, base
23	28141468		Cushion
27	27130867		Bracket, PT
29	27190503A		KGLS-8RF, holder
33	830440069		4TTC+6C(BC), Self tapping screw
35	27160487		Heat sink
37	838130088		3TTB+8B, Self tapping screw
39	801433		3SMS8W.SW+14B(BC), Self tapping screw
41	27300750	⚠	Bushing, #2271
43	28175273A		Isolated plate, AC
47	28175275		Isolated plate, PT
49	880009		Plastic rivet, NRP-345
51	29110082		Tape, CROSS-8U
53	28325938		Knob, USB
54	28184828		Cover AS
59	28184812		Cover, R
63	28148495A		Door AS, WINDOW
65	833126047		2.6TTP+4S, Pan head screw
71	27122870		Rear panel
73	27212328		Front panel, L <S>
	27212330		Front panel, L <T>
74	27212329		Front panel, R <S>
	27212331		Front panel, R <T>
75	28198927		Facet, USB
77	838430068		3TTB+6B(BC), Self tapping screw
78	29362285	⚠	Label
79	29362929	⚠	Spec label <PP,PA>
	29362930	⚠	Spec label <DT>
	29362931	⚠	Spec label <GT,GQ>
	29363020	⚠	Spec label <GR>
	29362928	⚠	Spec label <DD>
80	29362926A		Label, EAN <GT,PA,GQ,GR,DT>
	29362927A		Label, EAN <PP>
81	29362939	⚠	Label, Warning
82	29360687	⚠	Label <PP,GT,PA,GQ,GR>
84	838430107		3TTB+10S(BC), Self tapping screw
85	28175278		Isolated plate, A <PP,GT,PA,GQ,GR>
86	260208		Binder, UL
88	29362938		Label, UD <DD>
89	29361786		Label <GT,GQ>
E703	27190540-1		Hoder, CLAMP
F901	252083 or	⚠	0.4A-SE-EAWK
	252233 or	⚠	400MA-SE-TL250V or
	252267	⚠	400MA-SE-TL250V, Fuse <PP,GT,PA,GQ,GR>
	252157 or	⚠	1.25A-UL/T-237 or
	252251	⚠	1.25A-T/UL-ST2, Fuse <DD,DT>
P102	204423022		NCFC4-23022, Flaxible flat cable
P551	2047151522		NCFC7-151522, Flaxible flat cable
P701	2045401512		NCFC5-401512, Flaxible flat cable
P901	253193HIT or	⚠	AS-CEE or
	253195MAR	⚠	AS CEE, Power supply cord <PP,GT>
	253197HIT	⚠	AS-SAA, Power supply cord <,PA>
	253198HIT	⚠	AS-BS, Power supply cord <GQ>
	253267KAW or	⚠	AS-CCEE or
	253285HIT or	⚠	AS-CCEE or
	253286VOL	⚠	AS-CCEE, Power supply cord <GR>
	253279HIT	⚠	AS-UC-2#18 or
	253280VOL	⚠	AS-UC-2#18, Power supply cord <DD,DT>

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<S> : Silver model only
<T> : Titanium model only

EXPLODED VIEW PARTS LIST-2

REF. NO.	PART NO.		DESCRIPTION
P908	27190432		UA-0, holder
Q501	22241679		TDA8563AQ, IC
T901	2301541	⚠	NPT-1423D, Power transfomer <DD,DT>
	2301542	⚠	NPT-1423P, Power transfomer <PP,PA>
	2301543	⚠	NPT-1423G, Power transfomer <GT,GQ,GR>
U1	1A909580-1A		NADG-7280-1A, Microprocessor & CD PC board ass'y <DD>
	1A909580-1B		NADG-7280-1B, Microprocessor & CD PC board ass'y <PP>
	1A909580-1C		NADG-7280-1C, Microprocessor & CD PC board ass'y <DT>
	1A909580-1E		NADG-7280-1E, Microprocessor & CD PC board ass'y <PA,GQ,GR>
	1A909580-1F		NADG-7280-1F, Microprocessor & CD PC board ass'y <GT>
U2	1A909581-1A		NADIS-7281-1A, Display PC board ass'y <DD>
	1A909581-1B		NADIS-7281-1B, Display PC board ass'y <PP>
	1A909581-1C		NADIS-7281-1C, Display PC board ass'y <DT>
	1A909581-1E		NADIS-7281-1E, Display PC board ass'y <PA,GQ,GR>
	1A909581-1F		NADIS-7281-1F, Display PC board ass'y <GT>
U3	1A909582-1A		NADIS-7282-1A, USB mix volume PC board ass'y <DD>
	1A909582-1B		NADIS-7282-1B, USB mix volume PC board ass'y <PP>
	1A909582-1C		NADIS-7282-1C, USB mix volume PC board ass'y <DT>
	1A909582-1E		NADIS-7282-1E, USB mix volume PC board ass'y <PA,GQ,GR>
	1A909582-1F		NADIS-7282-1F, USB mix volume PC board ass'y <GT>
U4	1A909583-1A		NASW-7283-1A, CD control switch PC board ass'y <DD>
	1A909583-1B		NASW-7283-1B, CD control switch PC board ass'y <PP>
	1A909583-1C		NASW-7283-1C, CD control switch PC board ass'y <DT>
	1A909583-1E		NASW-7283-1E, CD control switch PC board ass'y <PA,GQ,GR>
	1A909583-1F		NASW-7283-1F, CD control switch PC board ass'y <GT>
U5	1A909584-1A		NASW-7284-1A, Audio control switch PC board ass'y <DD>
	1A909584-1B		NASW-7284-1B, Audio control switch PC board ass'y <PP>
	1A909584-1C		NASW-7284-1C, Audio control switch PC board ass'y <DT>
	1A909584-1E		NASW-7284-1E, Audio control switch PC board ass'y <PA,GQ,GR>
	1A909584-1F		NASW-7284-1F, Audio control switch PC board ass'y <GT>
U6	1A909585-1A		NAAF-7285-1A, D/A Converter PC board ass'y <DD>
	1A909585-1B		NAAF-7285-1B, D/A Converter PC board ass'y <PP>
	1A909585-1C		NAAF-7285-1C, D/A Converter PC board ass'y <DT>
	1A909585-1E		NAAF-7285-1E, D/A Converter PC board ass'y <PA,GQ,GR>
	1A909585-1F		NAAF-7285-1F, D/A Converter PC board ass'y <GT>

REF. NO.	PART NO.	DESCRIPTION
U7	1A909586-1A	NAAF-7286-1A, Headphone jack PC board ass'y <DD>
	1A909586-1B	NAAF-7286-1B, Headphone jack PC board ass'y <PP>
	1A909586-1C	NAAF-7286-1C, Headphone jack PC board ass'y <DT>
	1A909586-1E	NAAF-7286-1E, Headphone jack PC board ass'y <PA,GQ,GR>
	1A909586-1F	NAAF-7286-1F, Headphone jack PC board ass'y <GT>
U8	1A909587-1A	NAAF-7287-1A, Acoustic presence PC board ass'y <DD>
	1A909587-1B	NAAF-7287-1B, Acoustic presence PC board ass'y <PP>
	1A909587-1C	NAAF-7287-1C, Acoustic presence PC board ass'y <DT>
	1A909587-1E	NAAF-7287-1E, Acoustic presence PC board ass'y <PA,GQ,GR>
	1A909587-1F	NAAF-7287-1F, Acoustic presence PC board ass'y <GT>
U9	1A909588-1A	NAAF-7288-1A, USB mixing PC board ass'y <DD>
	1A909588-1B	NAAF-7288-1B, USB mixing PC board ass'y <PP>
	1A909588-1C	NAAF-7288-1C, USB mixing PC board ass'y <DT>
	1A909588-1E	NAAF-7288-1E, USB mixing PC board ass'y <PA,GQ,GR>
	1A909588-1F	NAAF-7288-1F, USB mixing PC board ass'y <GT>
U10	1A909589-1A	NAETC-7289-1A, CD mechanism connector PC board ass'y <DD>
	1A909589-1B	NAETC-7289-1B, CD mechanism connector PC board ass'y <PP>
	1A909589-1C	NAETC-7289-1C, CD mechanism connector PC board ass'y <DT>
	1A909589-1E	NAETC-7289-1E, CD mechanism connector PC board ass'y <PA,GQ,GR>
	1A909589-1F	NAETC-7289-1F, CD mechanism connector PC board ass'y <GT>
U11	1A909590-1A	NAETC-7290-1A, Open/close motor PC board ass'y <DD>
	1A909590-1B	NAETC-7290-1B, Open/close motor PC board ass'y <PP>
	1A909590-1C	NAETC-7290-1C, Open/close motor PC board ass'y <DT>
	1A909590-1E	NAETC-7290-1E, Open/close motor PC board ass'y <PA,GQ,GR>
	1A909590-1F	NAETC-7290-1F, Open/close motor PC board ass'y <GT>
U13	1A909592-1A	NAAF-7292-1A, Amplifier PC board ass'y <DD>
	1A909592-1B	NAAF-7292-1B, Amplifier PC board ass'y <PP>
	1A909592-1C	NAAF-7292-1C, Amplifier PC board ass'y <DT>
	1A909592-1E	NAAF-7292-1E, Amplifier PC board ass'y <PA>
	1A909592-1F	NAAF-7292-1F, Amplifier PC board ass'y <GT,GQ,GR>

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EXPLODED VIEW PARTS LIST-3

REF. NO.	PART NO.	DESCRIPTION
U14	1A909593-1A	NAPS-7293-1A, Power supply PC board ass'y <DD>
	1A909593-1B	NAPS-7293-1B, Power supply PC board ass'y <PP>
	1A909593-1C	NAPS-7293-1C, Power supply PC board ass'y <DT>
	1A909593-1E	NAPS-7293-1E, Power supply PC board ass'y <PA>
	1A909593-1F	NAPS-7293-1F, Power supply PC board ass'y <GT,GQ,GR>
U15	1A909594-1A	NAPS-7294-1A, Standby transformer PC board ass'y <DD>
	1A909594-1B	NAPS-7294-1B, Standby transformer PC board ass'y <PP>
	1A909594-1C	NAPS-7294-1C, Standby transformer PC board ass'y <DT>
	1A909594-1E	NAPS-7294-1E, Standby transformer PC board ass'y <PA>
	1A909594-1F	NAPS-7294-1F, Standby transformer PC board ass'y <GT,GQ,GR>
U16	1A909595-1A	NAETC-7295-1A, Speaker terminal PC board ass'y <DD>
	1A909595-1B	NAETC-7295-1B, Speaker terminal PC board ass'y <PP>
	1A909595-1C	NAETC-7295-1C, Speaker terminal PC board ass'y <DT>
	1A909595-1E	NAETC-7295-1E, Speaker terminal PC board ass'y <PA>
	1A909595-1F	NAETC-7295-1F, Speaker terminal PC board ass'y <GT,GQ,GR>
U17	1A909596-1A	NAETC-7296-1A, Open/close detection switch PC board ass'y <DD>
	1A909596-1B	NAETC-7296-1B, Open/close detection switch PC board ass'y <PP>
	1A909596-1C	NAETC-7296-1C, Open/close detection switch PC board ass'y <DT>
	1A909596-1E	NAETC-7296-1E, Open/close detection switch PC board ass'y <PA>
	1A909596-1F	NAETC-7296-1F, Open/close detection switch PC board ass'y <GT,GQ,GR>
U18	1A909533-1A	NAPS-7333-1A, Primary PC board ass'y <DD>
	1A909533-1B	NAPS-7333-1B, Primary PC board ass'y <PP>
	1A909533-1C	NAPS-7333-1C, Primary PC board ass'y <DT>
	1A909533-1E	NAPS-7333-1E, Primary PC board ass'y <PA>
	1A909533-1F	NAPS-7333-1F, Primary PC board ass'y <GT,GQ,GR>
U19	1A909534-1A	NAPS-7334-1A, Regulator PC board ass'y <DD>
	1A909534-1B	NAPS-7334-1B, Regulator PC board ass'y <PP>
	1A909534-1C	NAPS-7334-1C, Regulator PC board ass'y <DT>
	1A909534-1E	NAPS-7334-1E, Regulator PC board ass'y <PA>
	1A909534-1F	NAPS-7334-1F, Regulator PC board ass'y <GT,GQ,GR>
U20	240134	TFCE1U114A, Tuner unit <DD>
	240135	TFCE1E512A, Tuer unit <PP,GT,PA,GT,GR,DT>

REF. NO.	PART NO.	DESCRIPTION
M1	24802050A	Chassis, MECHA
M3	29110023	DF tape, W6
M5	24800048	DA23R, Mechanism unit
M7	24820057A	Spring, MECHA
M8	29110082	Tape, CROSS-8U
M10	24840156	Bracket AS, M
M11	1A909602	Motor Ass'y
M13	24810084	Pulley
M14	24816037	RBR belt, I
M15	24810083	Gear, PULLEY
M16	24810080	Gear, A
M17	24810081	Gear, B
M27	24840152	Slider, A
M32	24840151	Bracket , PC
M12	833126047	2.6TTP+4S, Pan head screw
M22	24810082	Gear, C
M23	24810079	Gear, ARM
M28	24840154	Slider AS, B
M29	838130088	3TTB+8B, Self tapping screw
M2	838426088	2.6TTB+8B(BC), Self tapping screw
M6	24818048A	Insulator
M18	24834040	Washer, B
M19	838130088	3TTB+8B, Self tapping screw
M33	838130068	3TTB+6B, Self tapping screw
M24	24840111	Special screw

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<GQ> : Hong kong model only
<S> : Silver model only
<T> : Titanium model only

PRINTED CIRCUIT BOARD PARTS LIST-1

U1

MICROPROCESSOR & CD PC BOARD (NADG-7280-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q101	22241661R3	CXA2542AQ
Q103	22241663R2 or 22241728R2	LA6570 or LA6576
Q151	22241662R3	CXD3009Q
Q152	22241664R2	TC7SET08F
Q302,Q955	222780053R2JR or 22278005FR2	NJM78L05UA or MPC29L05
Q554	22241297R2	BU1923F <PP>
Q701	22241693R3	MPD78045FGF-132-3B9
Q702	222740077R2TO	TC74HCT7007AF
Q958	22241637	NJM2374AD
Q961	22278033ENE	MPC29M33HF
	Transistors	
Q102,Q959	2214384R2	2SA1182-Y
Q181,Q182	2214402R2 or 2214401R2	2SC3326-B or 2SC3326-A
Q183,Q553	2214540R2 or 2216230R2	RN2403 or KRA103S
Q551,Q552	2214402R2 or 2214401R2	2SC3326-B or 2SC3326-A
Q555	2213144R2 or 2213145R2	2SC2712-Y or 2SC2712-GR <PP>
Q703,Q704	2214470R2 or 2216190R2	RN1402 or KRC102S
Q957,Q960,Q963	2214470R2 or 2216190R2	RN1402 or KRC102S
Q959	2214383R2	2SA1182-O
Q962	2216530R2	TPC8106-H, Transistor
	Diodes	
D101,D501	223269R2 or 223234R2	1SS355 or 1SS352
D102,D103	223272R2	CRS08
D104	223210R2	U1BC44
D703	224490510R2	UDZ5.1B
D955,D958	223269R2 or 223234R2	1SS355 or 1SS352
D956,D961	223272R2	CRS08
D959,D960, D962	223269R2 or 223234R2	1SS355 or 1SS352
	Crystals	
X151	3010308	HC-49/U0316.9344M
X551	3010321	HC-49/U034.332MHz <PP>
X701	3010261	HC-49/U03 4.19M10P
	Coils	
L101	231237K100R2	NCH-1475, Choke coil
L151	230956R2	BK1608LM252-T, EMI filter
L152	230921R2	BLM21B222SPT, EMI filter
L955	231304L221	NCH-1583L221, Choke coil
	Capacitors	
C105	354780479	CE04W50V-4.7uF, Elect.
C108	354742209	CE04W16V-22uF, Elect.
C109,C958	354780339	CE04W50V-3.3uF, Elect.
C116	354741019	CE04W16V-100uF, Elect.
C124,C125,C966	354741009	CE04W16V-10uF, Elect.
C126,C130	354721019	CE04W6.3V-100uF, Elect.
C128,C129,C161	354722219	CE04W6.3V-220uF, Elect.
C155	354784799	CE04W50V-0.47uF, Elect.
C163,C965	354724719	CE04W6.3V-470uF, Elect.
C185,C186	354782209	CE04W50V-22uF, Elect.
C187,C960	354780229	CE04W50V-2.2uF, Elect.
C312,C967	354722219	CE04W6.3V-220uF, Elect.
C551	355742209	CE04W16V-22uF, Elect.
C553,C554	354780339	CE04W50V-3.3uF, Elect.
C559	354721019	CE04W6.3V-100uF, Elect.<PP>
C560	354780229	CE04W50V-2.2uF, Elect. <PP>
C703	3060016	NTC-30P14, Trimming(clock adj.)
C705,C713,C956	354721019	CE04W6.3V-100uF, Elect.
C708,C710	354784709	CE04W50V-47uF, Elect.
C955	354744719	CE04W16V-470uF, Elect.
C961	3000078	DX-5R5L104, Super capacitor
C963	354751019	CE04W25V-100uF, Elect.
	Resistors	
R170	5210262	N06HR10KBC, Trimming(focus gain adj.)
R957	453532294	RNU1/2WCJ-R22J, Metal oxide
R963,R964	443522214	RS1/2WBJ-221J,Metal oxide
	Sockets	
P102B	25052360	NSCT-23P2257
P551A	25052211	NSCT-15P2108
P701A	25052377	NSCT-40P2274
	Plugs	
P103A	25055146	NPLG-2P130
P105	25055038	NPLG-2P29
P106	25056009	NPLG-4P0959
P151A	25055441	NPLG-3P423
P342C,P343D,P351A	25055444	NPLG-6P426
P951,P952	25055154	NPLG-10P138

U2

DISPLAY PC BOARD (NADIS-7281-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	FL tube	
Q751	212222	10-BT-167GNYK
	Remote sensor	
U751	241340	SPS-450-1E
	Transistors	
Q752,Q753	2214470R2 or 2216190R2	RN1402 or KRC102S
	LEDs	
D751,D752	225382R2	SEC1E01C
	Capacitor	
C753	353721019	CE04W6.3V-100uF, Elect.
	Push switches	
S751-S755,S758	25035699	NPS-111-S662
	Sockets	
P701B	25052377	NSCT-40P2274
P752A	2009990688UL	NSAS-4P0956
	Plug	
P751A	25055371	NPLG-7P354

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PRINTED CIRCUIT BOARD PARTS LIST-2

U3

USB MIX.VOLUME PC BOARD (NADIS-7282-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q754	2214470R2 or	RN1402 or
	2216190R2	KRC102S
	LEDs	
D753,D756	225400R2	SEC1803C
D754,D755	225399R2	SEC1403C
D757	225398R2	SEC1203C
	Resistors	
R345	5112487	N09RGL20K3B15F, USB mix. level
	Push switches	
S756,S757	25035699	NPS-111-S662
	Sockets	
P341B	2009990685UL	NSAS-12P0952
P751B	2002E391415UL	NSAS-14P0954

U4

CD CONTROL SWITCH PC BOARD (NASW-7283-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Push switches	
S759-S761	25035699	NPS-111-S662
	Socket	
P753	2009990687UL	NSAS-6P0955

U5

AUDIO CONTROL SWITCH PC BOARD (NASW-7284-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Push switches	
S762-S765	25035699	NPS-111-S662

U6

D/A CONTROL PC BOARD (NAAF-7284-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q301	22241553R2	PCM2702E
Q307	22278033BR2JR	NJU7200U33
Q321	22240608R1	NJM2100M
	Transistors	
Q303	2216350R2 or	KRA107S or
	2216360R2	RN2407
Q304	2214490R2 or	RN1404 or
	2216210R2	KRC104S
Q305	2214470R2 or	RN1402 or
	2216190R2	KRC102S
Q306	2214540R2 or	RN2403 or
	2216230R2	KRA103S
Q323,Q324	2215410R2	RN1441
	Crystal	
X301	3010339	HC49/U0312.000MHz
	Coils	
L301L304,L305	230949R2	BLM21P221SG, EMI filter
L302,L303	230947R2	BLM21B221SB, EMI filter
L321,L322,L323	230949R2	BLM21P221SG, EMI filter
	Capacitors	
C307	354744709	CE04W16V-47uF, Elect.
C308,C311	354722219	CE04W6.3V-220uF, Elect.
C310	355744709	CE04W16V-47uF, Elect.
C313	355721019	CE04W6.3V-100uF, Elect.
C314	355741009	CE04W16V-10uF, Elect.
C321,C322	354781009	CE04W50V-10uF, Elect.
C327,C328	355742209	CE04W16V-22uF, Elect.
	Sockets	
P301	25052282	NSCT-4P2179, USB Terminal
P302B	25051231	NSCT-6P1021

U7

HEADPHONE JACK PC BOARD (NAAF-7286-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q521	22241383R2	NJM4565M-D
	Transistors	
Q523-Q526	2215410R2	RN1441
	Capacitors	
C525,C526	355721019	CE04W6.3V-100uF, Elect.
C527,C528	355742209	CE04W16V-22uF, Elect.
	Jacks	
P521	25045667	LGS6506-0200C, Phones
P522	25045567	NPJ-1PDBL382, Subwoofer preout
	Socket	
P523B	25051233	NSCT-8P1023

U8

ACOUSTIC PRESENCE PC BOARD (NAAF-7287-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q405	22241383R2	NJM4565M-D
	Transistors	
Q407-Q410	2211945	2SK246-GR
	Diodes	
D401-D404	223234R2 or	1SS352 or
	223269R2	1SS355
	Capacitors	
C423,C424	355784799	CE04W50V-0.47uF, Elect.
C425,C426	374721044	ECQ-V50V-104J, Plastic
C427,C428	374722234	ECQ-B50V-223J, Plastic
C431,C432	355742209	CE04W16V-22uF, Elect.
	Sockets	
P401B	25051230	NSCT-5P1020
P402B	25051231	NSCT-6P1021

U9

USB MIXING PC BOARD (NAAF-7288-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q371-Q373	22241554R2	NJM4565V
Q401	22241220R2	TC9459F

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PRINTED CIRCUIT BOARD PARTS LIST-3

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C375,C376	355742209	CE04W16V-22uF, Elect.
C377,C378	355744709	CE04W16V-47uF, Elect.
C379,C380	355742209	CE04W16V-22uF, Elect.
C401,C402	355742209	CE04W16V-22uF, Elect.
	Socket	
P371B	25051237	NSCT-12P1027

U10

CD MECHANISM CONNECTOR PC BOARD (NAETC-7289-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Socket	
P101A	25052353	NSCT-16P2250
P102A	25052360	NSCT-23P2257
	Plugs	
P104A	25055366	NPLG-2P349
P107A	25056081R2	NPLG-6P1031

U11

OPEN/CLOSE MOTOR PC BOARD (NAETC-7290-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
P103B	2002E390415	NSAS-4P0867, Socket

U13

AMPLIFIER PC BOARD (NAAF-7292-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Photo coupler	
Q152	24120076	JFJ1000
	ICs	
Q341,Q403	22241383R2	NJM4565M-D
Q351	22241666R2	TC9273F-008
	Transistors	
Q411,Q412	2215410R2	RN1441
Q441	2214530R2	RN2402
Q507,Q510,Q513	2216340R2 or	KRC107S or
	2216260R2	RN1407
Q508	2216230R2 or	KRA103S or
	2214540R2	RN2403
Q509,Q514	2216175R2 or	KTC3875-GR or
	2213145R2	2SC2712-GR
	Diodes	
D901	22380038F or	RBV602 or
	22380274F	RS603M-B42
D511	224490510R2 or	UDZ5.1B or
	224550510R2	UDZS5.1B
	Capacitors	
C343,C344	355742209	CE04W16V-22uF, Elect.
C407,C408	355762209	CE04W35V-22uF, Elect.
C409,C410	374721044	ECQ-V50V-104J, Plastic
C441,C442	355780229	CE04W50V-2.2uF, Elect.
C503,C504	355781009	CE04W50V-10uF, Elect.
C511	354754719	CE04W25V-470uF, Elect.
C512	354781009	CE04W50V-10uF, Elect.
C693	354721019	CE04W6.3V-100uF, Elect.
C907	374723344	ECQ-V50V-334J, Plastic
C908	394054727S	CE04W25V-4700uF(RS), Elect.
C917,C918	354742219	CE04W16V-220uF, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Jack	
P352	25045303 or	NPJ-4PDBL162 or
	25045575	NPJ-4PDRW389
	Sockets	
JL501A	25051108	NSCT-4P895
JL901B	25050268	NSCT-4P96
JL921A	25051088	NSCT-4P875
P151A	2009990524UL	NSAS-6P0687
P341A	2009990685UL	NSAS-12P0952
P351B	2009990686UL	NSAS-12P0953
P951A	2002392015	NSAS-20P0178
P952A	2002322015	NSAS-20P0279
	Plugs	
JL902B	25055627	NPLG-6P589
P302A,P402A	25055702	NPLG-6P658
P371A	25055708	NPLG-12P664
P401A	25055701	NPLG-5P657
P523A	25055704	NPLG-8P660

U14

POWER SUPPLY BOARD (NAPS-7293-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.		DESCRIPTION
	ICs		
Q902	222790125JRC or		NJM79M12FA or
	222790125MIT or		M5F79M12L or
	222790125NEC		MPC79M12HF
	Transistor		
Q903	2211455 or		2SA1015-GR or
	2215975		KTA1266-GR
	Diodes		
D902,D903	22380032 or		1SR139-100 or
	22380035 or		GP104003E or
	22380260		RL1N4003
D904	224492700R2		UDZ27B
D905-D908	22380260 or		RL1N4003 or
	22380032 or		1SR139-100 or
	22380035		GP104003E
	Capacitors		
C905,C906	374723344		ECQ-V50V-334J, Plastic
C909	354761019		CE04W35V-100uF, Elect.
C910	354784709		CE04W50V-47uF, Elect.
C911	354780479		CE04W50V-4.7uF, Elect.
C913,C914	394054717S		CE04W25V-470uF(RS), Elect.
C915,C916	355741019		CE04W16V-100uF, Elect.
	Resistors		
R901,R902	453532294		RNU1/2WCJ-R22, Metal oxide
R903	453530224		RNU1/2WCJ-2R2, Metal oxide
R904	443523324		RS1/2WBJ-324J, Metal oxide
R905	443522204		RS1/2WBJ-220J, Metal oxide
R907	453530334		RNU1/2WCJ-3R3, Metal oxide
	Sockets		
F901A,F901B	25052133	⚠	NSCT-1P2031, Fuse holder
JL901A	25051108		NSCT-4P895
JL902A	25051090		NSCT-6P877
JL903A	25051087		NSCT-3P874
	Fuse label		
F901C	29361919		T400MAL250V <PP,PA,GT,GR,GQ>

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PRINTED CIRCUIT BOARD PARTS LIST-4

U15

STANDBY TRANSFORMER PC BOARD (NAPS-7294-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistor	
Q921	2213640 or	DTC123JS or
	2215830	KRC105M
	Diodes	
D921-D924	22380260 or	RL1N4003 or
	22380032 or	1SR139-100 or
	22380035	
D926,D927	223234R2 or	1SS352 or
	223269R2	1SS355
D928	224490510R2 or	UDZ5.1B or
	224550510R2	UDZS5.1B
	Transformer	
T921	2301464 ⚠	NPT-1398D <DD,DT>
	2301465 ⚠	NPT-1398G <GT,GR,GQ>
	2301539 ⚠	NPT-1398P <PP,PA>
	Capacitors	
C922	354743319	CE04W16V-330uF, Elect.
C924	354781009	CE04W50V-10uF, Elect.
	Resistors	
R911	431533355 ⚠	RC1/2GFKUL-335K, Solid <DD,DT>
R921	443528204	RS1/2WBJ-820, Metal oxide
R922,R923	443522214	RS1/2WBJ-221J, Metal oxide
	Plugs	
JL921B	25055625	NPLG-4P587
P904A-P906A	25055804	NPLG-4P760

U16

SPEAKER TERMINAL PC BOARD (NAETC-7295-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Coils	
L505-L508	231209S	S-0.4A
	Resistors	
R505-R508	453530824	RNU1/2WCJ-8R2, Metal oxide
	Socket	
JL501B	25051108	NSCT-4P895
	Terminal	
P501	25060299	NTM-4PDML230, Speakers <PP,DT,PA,GT,GR,GQ>
	25060313	NTM-4PDML244, Speakers <DD>

U17

OPEN/CLOSE PC BOARD (NAETC-7296-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Lever switch	
S101	25065491	NMS-1223, Open/close detector
	Socket	
P104B	2002A390410	NSAS-4P0894

U18

PRIMARY PC BOARD (NAPS-7333-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diode	
D925	223234R2 or	1SS352 or
	223269R2	1SS355
	Coil	
L901	231252 ⚠	NCH-3489 or
	231287 ⚠	NCH-3567, Choke coil
	Capacitors	
C901	3500196S ⚠	RE275V-103M, IS capacitor
C902	3300030S ⚠	DE1307E472M-KH, IS capacitor
	Relay	
RL901	25065603 or ⚠	NRL-1P5A-DC9-152 or
	25065601 ⚠	NRL-1P5A-DC9-150
	Sockets	
P904B-P906B	25051526	NSCT-4P1313
	Plug	
P901A	25055676 ⚠	NPLG-2P632

U19

REGULATOR PC BOARD (NAPS-7334-1A/1B/1C/1E/1F)

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q901	222780125JRC or	NJM78M12FA or
	222780125MIT or	M5F78M12L or
	222780125NEC	MPC78M12HF
	Capacitor	
C920	354780229	CE04W50V-2.2uF, Elect.
	Socket	
JL903B	25051087	NSCT-3P874

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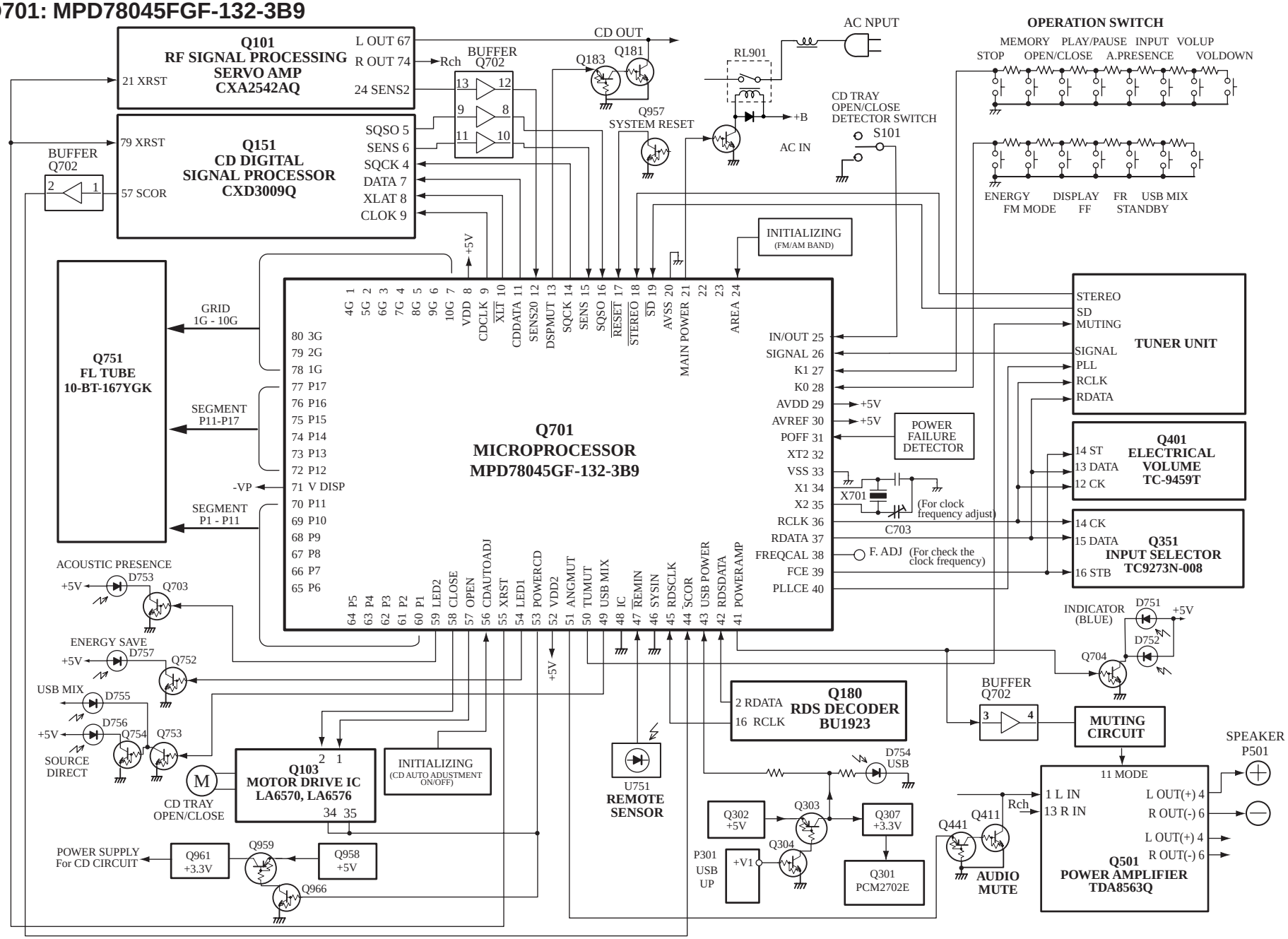
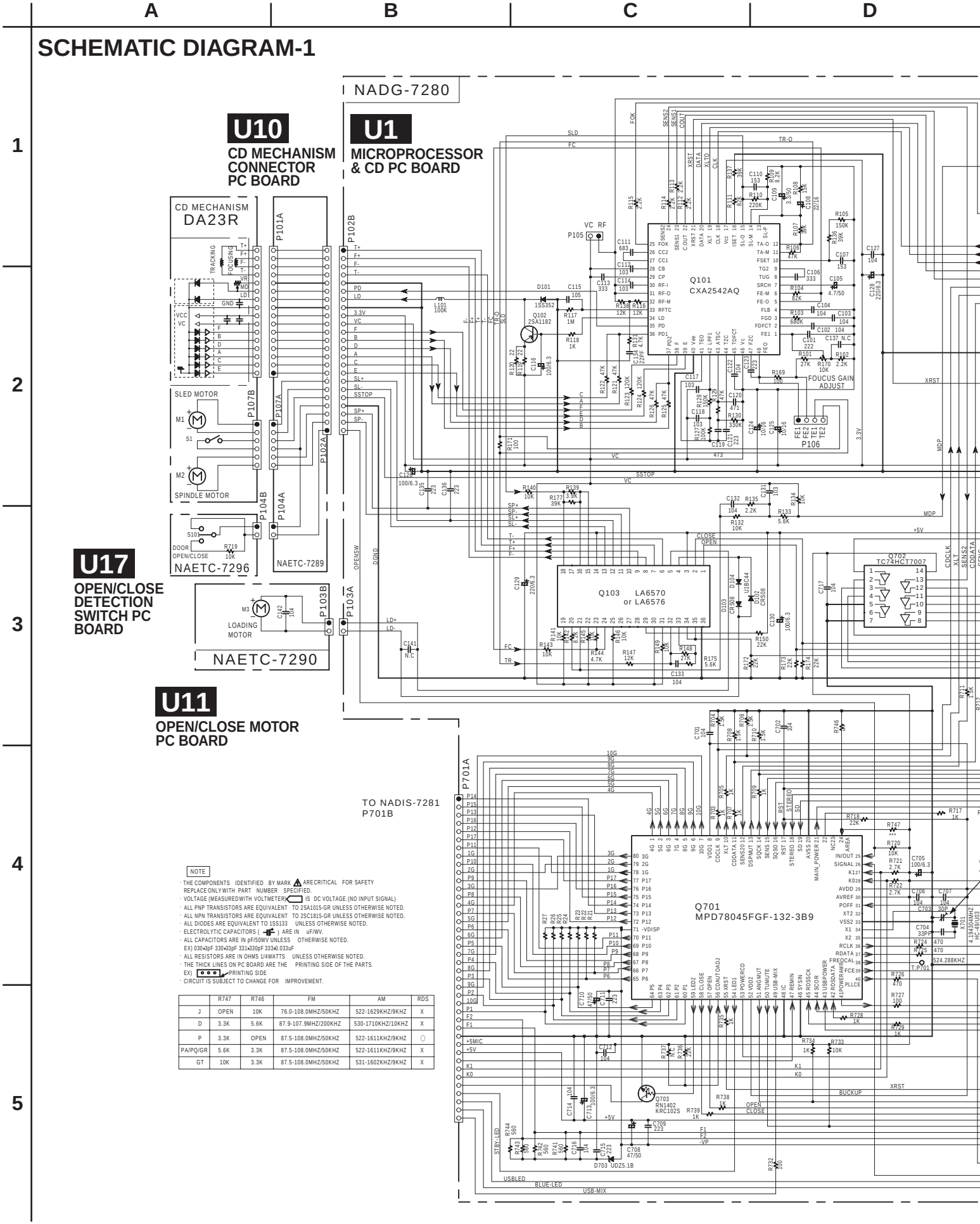
MICROPROCESSOR CONNECTION DIAGRAM

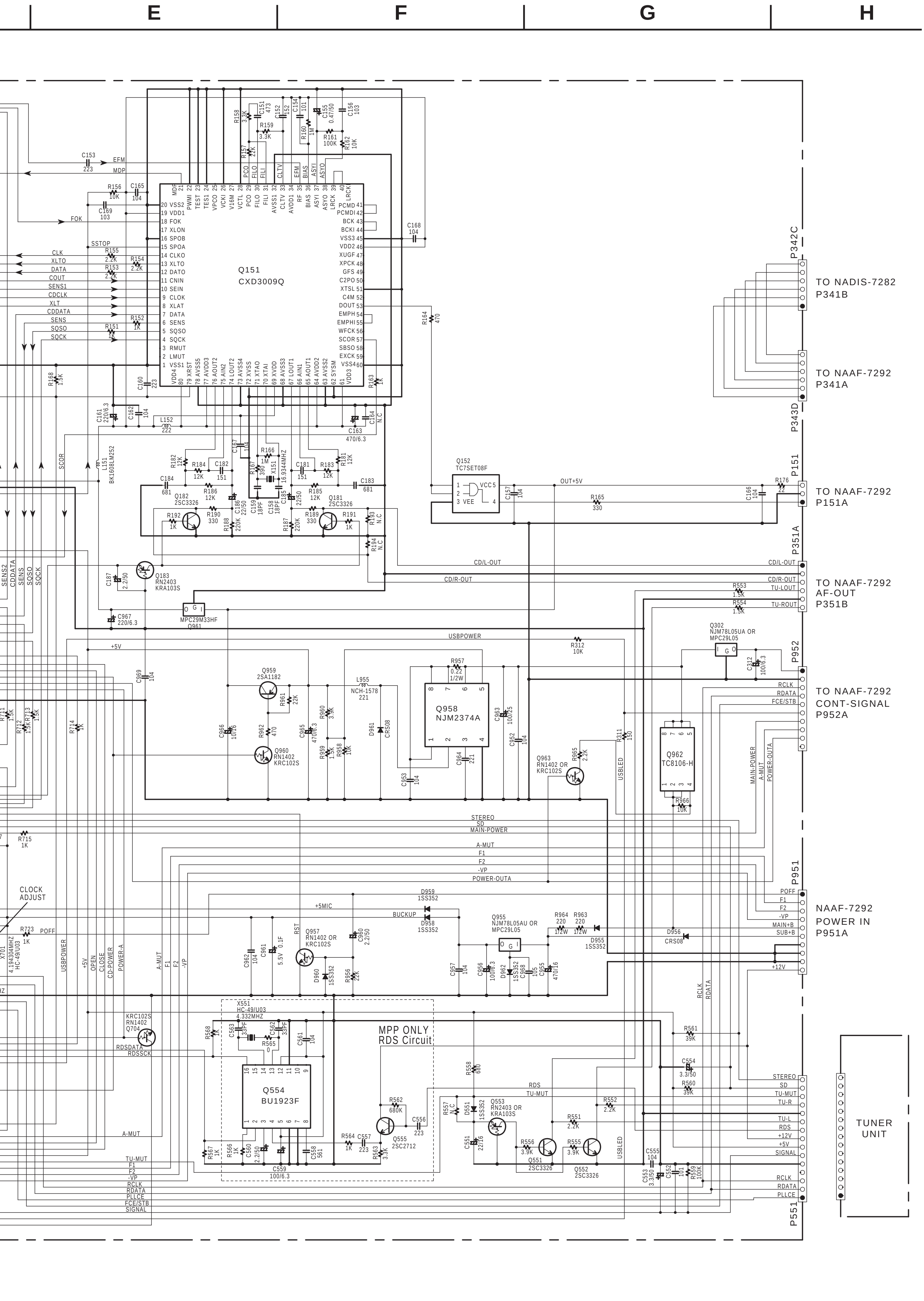
Q701: MPD78045FGF-132-3B9



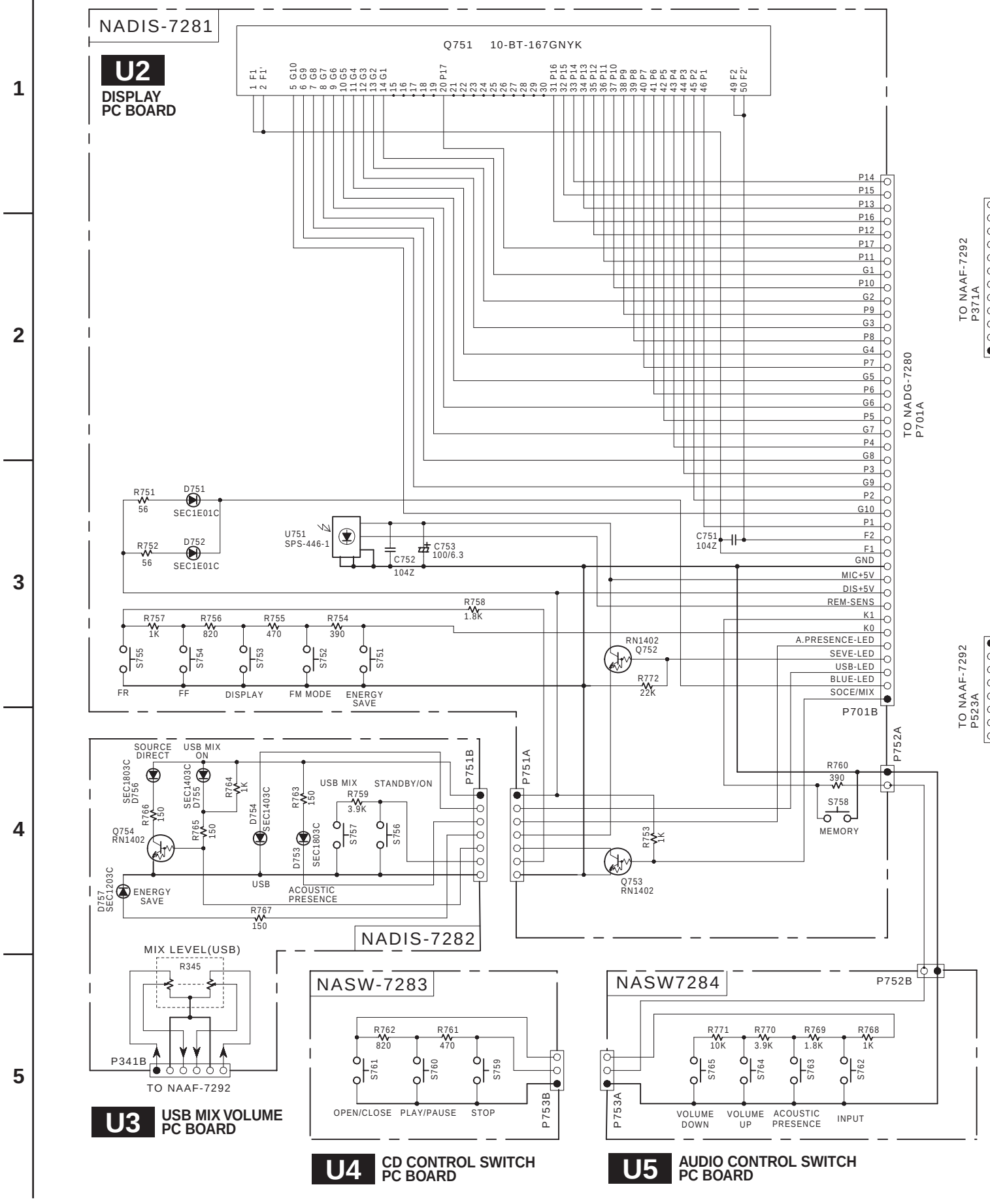
SCHEMATIC DIAGRAM-1



	R747	R746	FM	AM	RDS
J	OPEN	10K	76.0-108.0MHZ/50KHZ	522-1629KHZ/9KHZ	X
D	3.3K	5.6K	87.9-107.9MHZ/200KHZ	530-1710KHZ/10KHZ	X
P	3.3K	OPEN	87.5-108.0MHZ/50KHZ	522-1611KHZ/9KHZ	○
PA/PQ/GR	5.6K	3.3K	87.5-108.0MHZ/50KHZ	522-1611KHZ/9KHZ	X
GT	10K	3.3K	87.5-108.0MHZ/50KHZ	531-1602KHZ/9KHZ	X

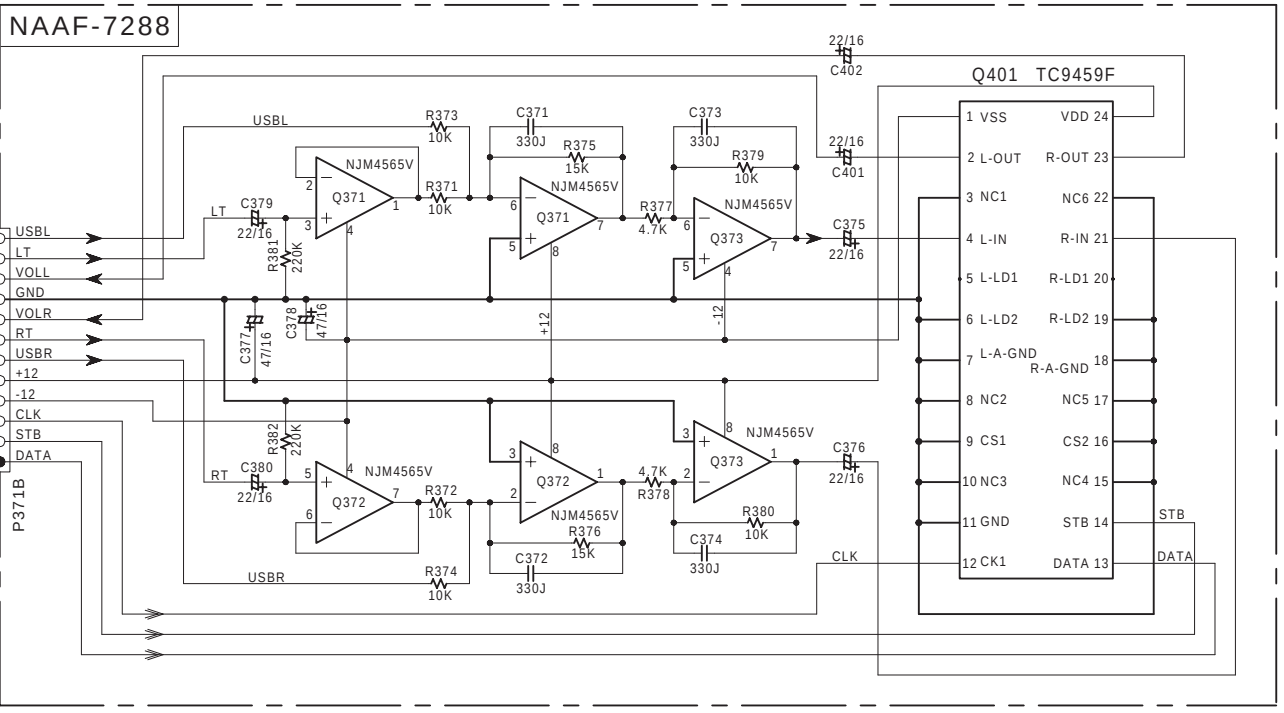

E
F
G
H
Q151
CXD3009Q
Q152
TC7SET08F
Q958
NJM2374A
Q962
TC8106-H
Q554
BU1923F
MPP ONLY
RDS Circuit
TO NADIS-7282
P341B
TO NAAF-7292
P341A
TO NAAF-7292
P151A
TO NAAF-7292
AF-OUT
P351B
TO NAAF-7292
CONT-SIGNAL
P952A
NAAF-7292
POWER IN
P951A
TUNER
UNIT
CLOCK
ADJUST

SCHEMATIC DIAGRAM-2

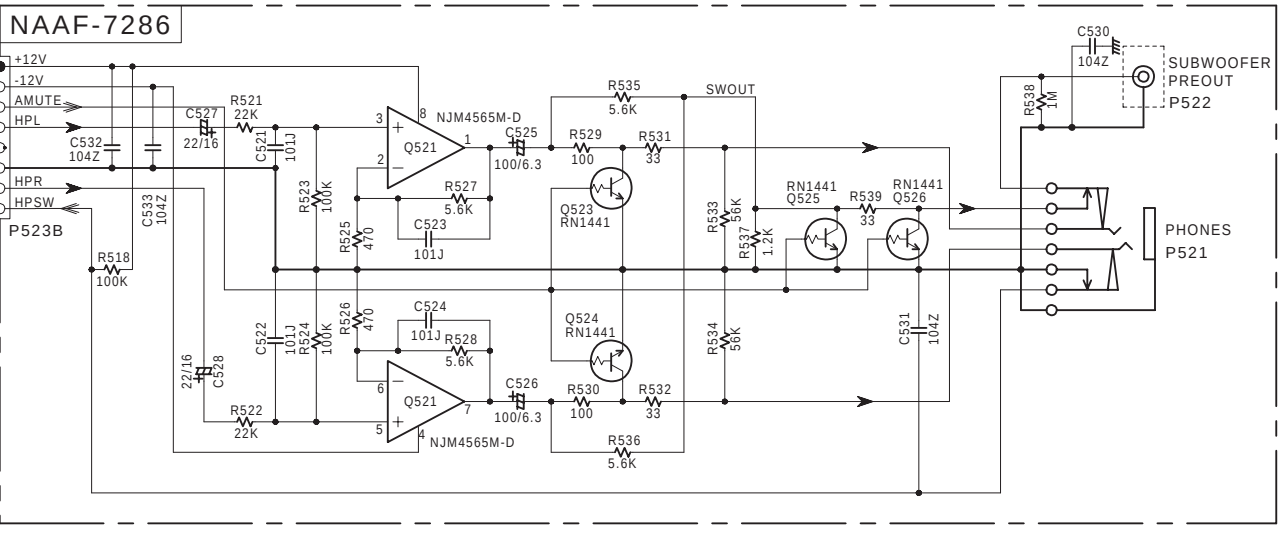


E F G H

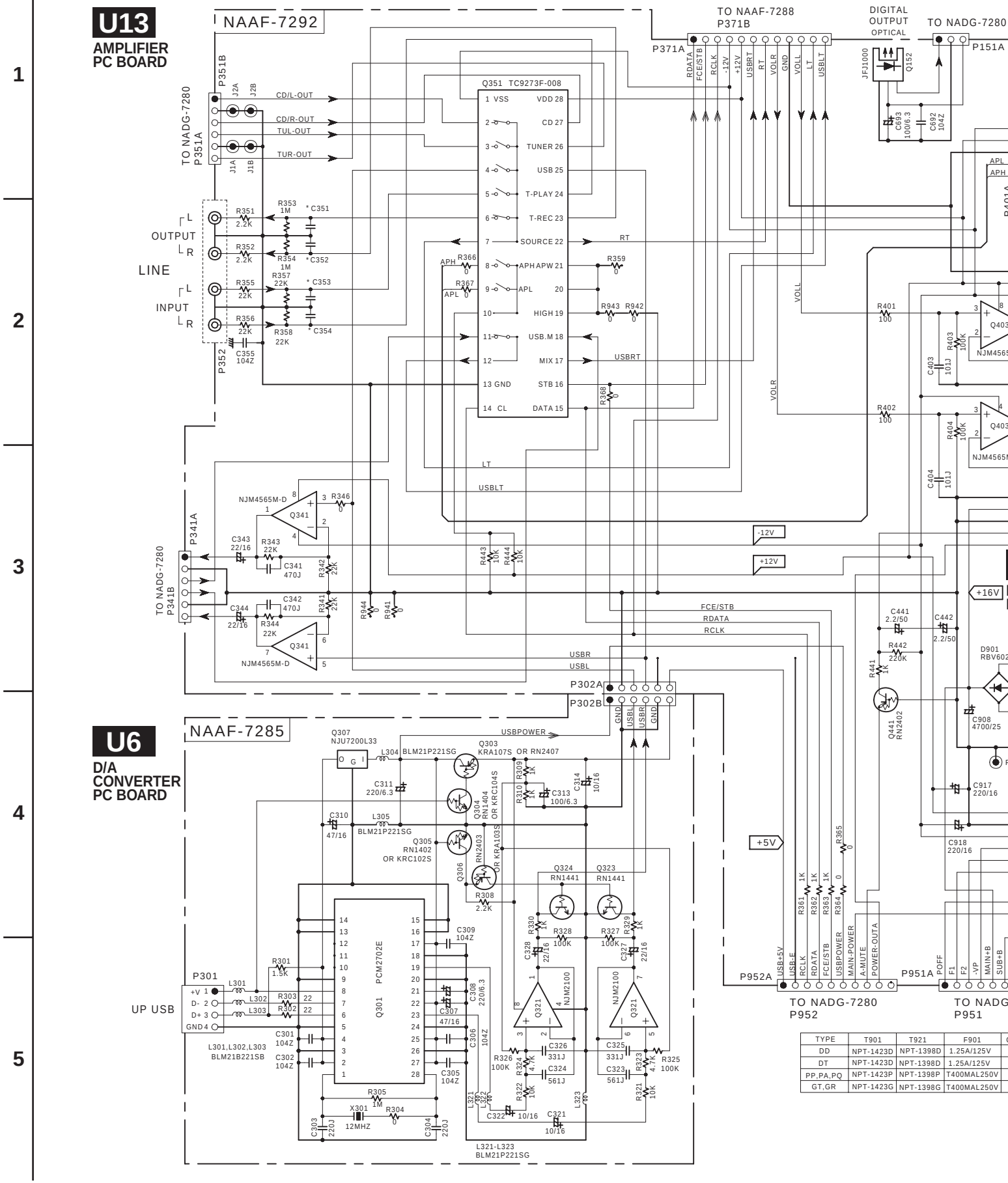
U9 USB MIXING PC BOARD



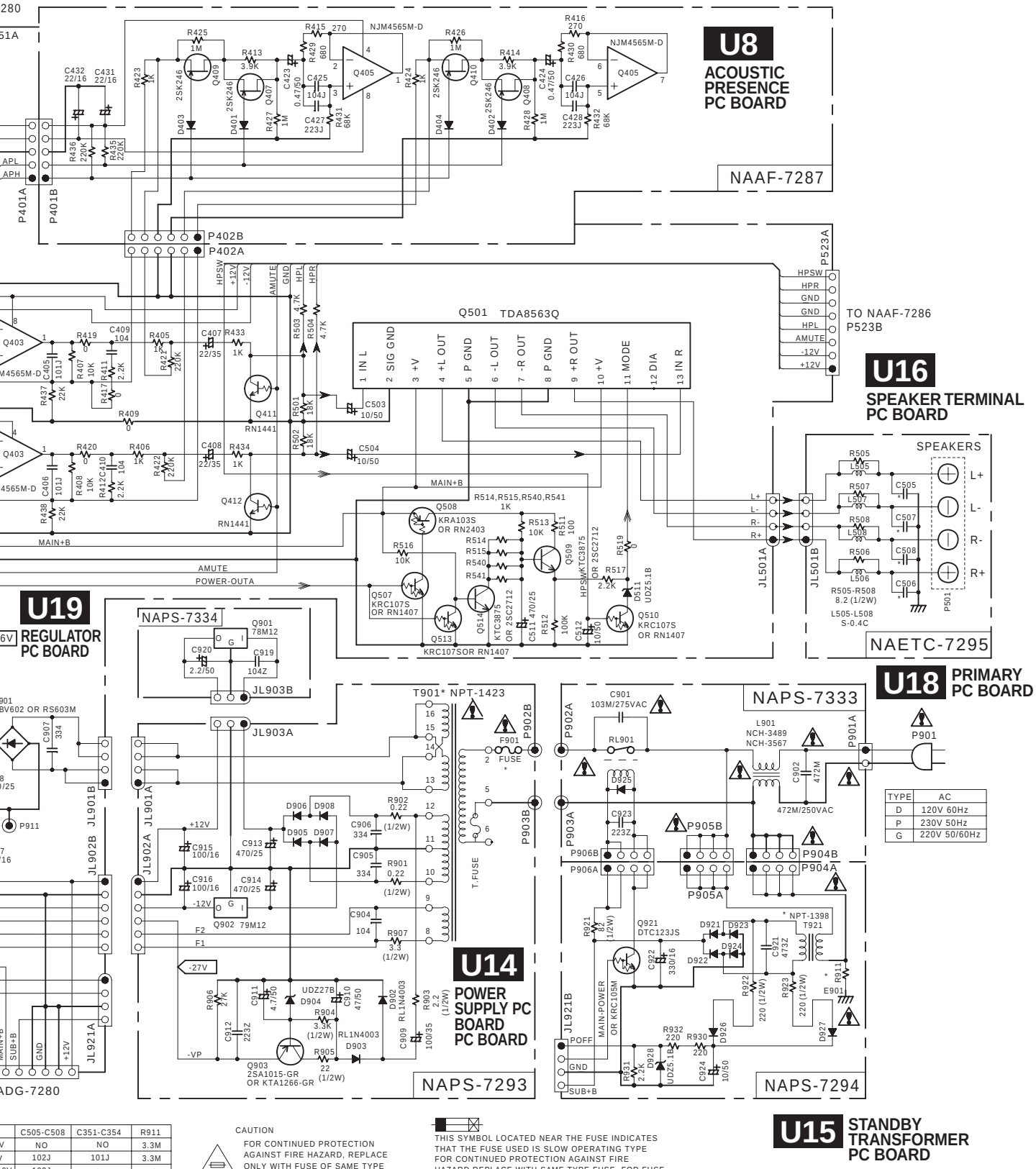
U7 HEADPHONE JACK PC BOARD



SCHEMATIC DIAGRAM-3



E F G H



TYPE	AC
D	120V 60Hz
P	230V 50Hz
G	220V 50/60Hz

	C505-C508	C351-C354	R911
V	NO	NO	3.3M
V	102J	101J	3.3M
0V	102J	101J	NO
0V	102J	101J	NO

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING INDICATED.

THIS SYMBOL LOCATED NEAR THE FUSE INDICATES THAT THE FUSE USED IS SLOW OPERATING TYPE FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,REPLACE WITH SAME TYPE FUSE. FOR FUSE RATING REFER TO THE MARKING ADJACENT TO THE SYMBOL

ATTENTION
AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE ET CALIBRATION COMME INDIQUE.

CE SYMBOLE INDIQUE QUE LE FUSIBLE UTLISE EST E LENT. POUR UNE PROTECTION PERMANENTE,N'UTILISER QUE DES FUSIBLES DE MEME TYPE. CE DARNIER EST INDIQUE LA QU LE PRESENT SYMBOL EST APPOSE.

SCHEMATIC DIAGRAM-1

NADG-7280

U10
CD MECHANISM CONNECTOR PC BOARD

CD MECHANISM DA23R

NAETC-7296

NAETC-7289

U1
MICROPROCESSOR & CD PC BOARD

Q101 CXA2542AQ

Q151 CXD3009Q

Q103 LA6570 or LA6576

Q702 TC74HCT7007

Q701 MPD78045FGF-132-3B9

Q554 BU1923F

FOCUS GAIN ADJUST

CLOCK ADJUST

MPP ONLY RDS Circuit

TO NADIS-7281 P701B

TO NADIS-7282 P341B

TO NAAF-7292 P341A

TO NAAF-7292 P151A

TO NAAF-7292 AF-OUT P351B

TO NAAF-7292 CONT-SIGNAL P952A

NAAF-7292 POWER IN P951A

TUNER UNIT

U17
OPEN/CLOSE DETECTION SWITCH PC BOARD

NAETC-7290

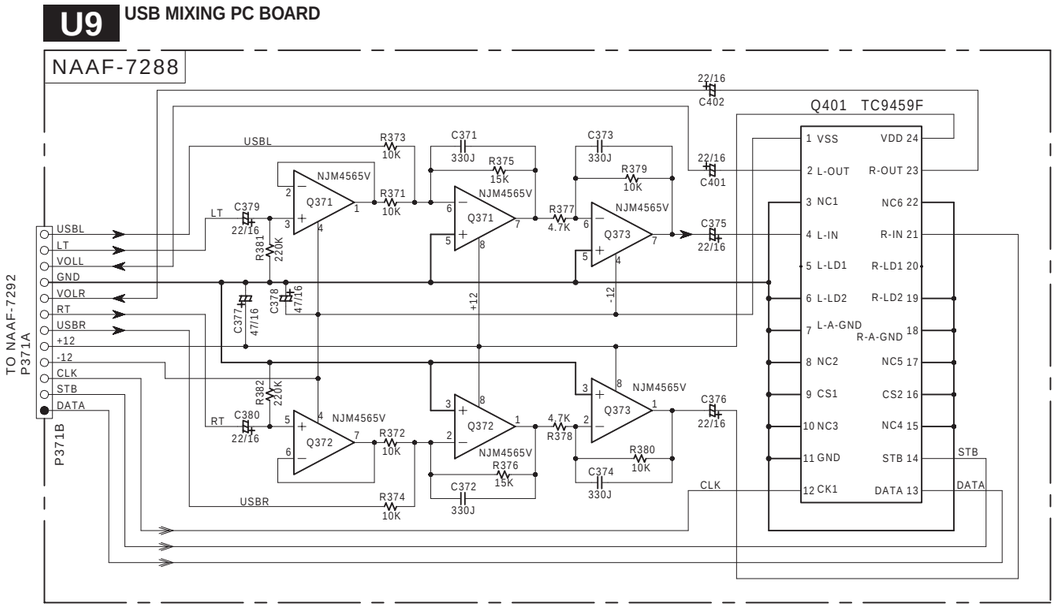
U11
OPEN/CLOSE MOTOR PC BOARD

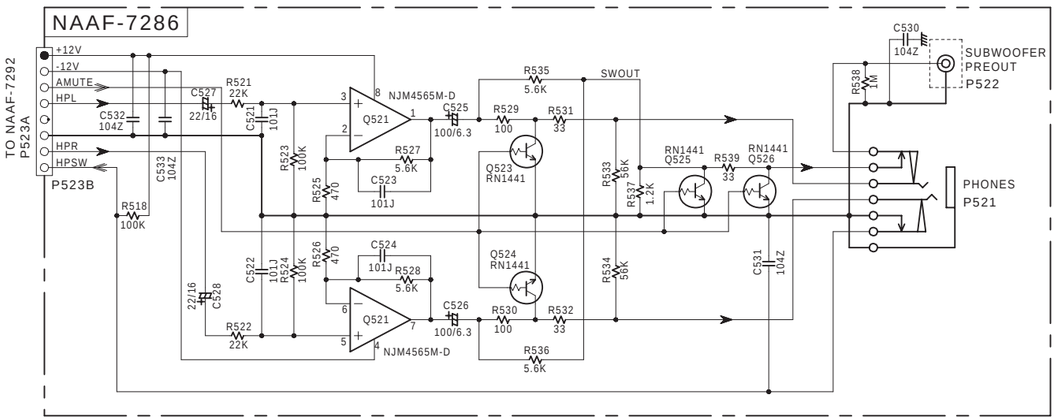
NOTE

- THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER (IS DC VOLTAGE.(NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS ( ) ARE IN uF/WV.
- ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED. EX) 030=3pF 330=33pF 331=330pF 333=0.033uF
- ALL RESISTORS ARE IN OHMS 1/4WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS. EX) PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

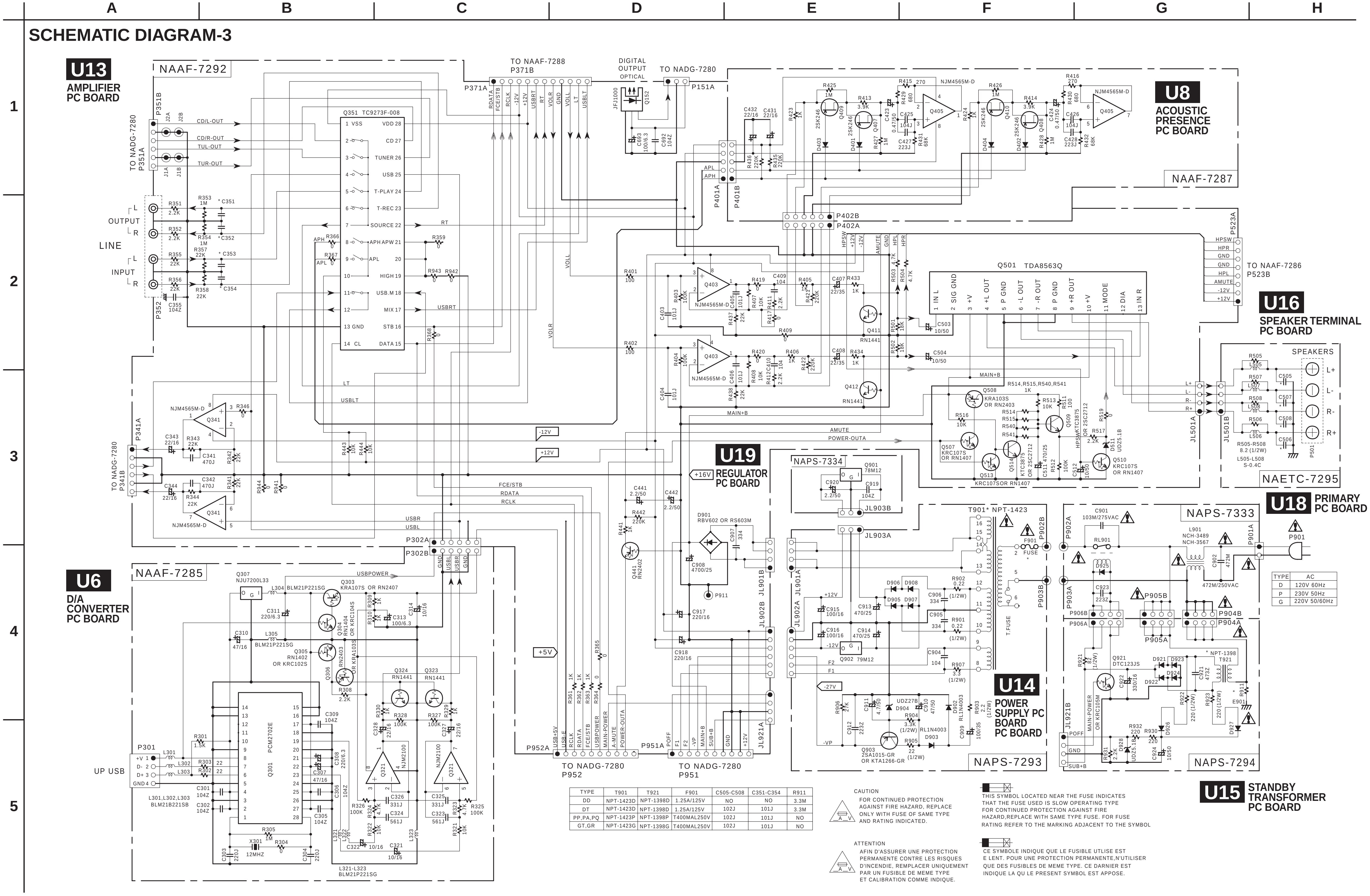
	R747	R746	FM	AM	RDS
J	OPEN	10K	76.0-108.0MHZ/50KHZ	522-1629KHZ/9KHZ	X
D	3.3K	5.6K	87.9-107.9MHZ/200KHZ	530-1710KHZ/10KHZ	X
P	3.3K	OPEN	87.5-108.0MHZ/50KHZ	522-1611KHZ/9KHZ	○
PA/PQ/GR	5.6K	3.3K	87.5-108.0MHZ/50KHZ	522-1611KHZ/9KHZ	X
GT	10K	3.3K	87.5-108.0MHZ/50KHZ	531-1602KHZ/9KHZ	X

SCHEMATIC DIAGRAM-2





SCHEMATIC DIAGRAM-3



TYPE	AC
D	120V 60Hz
P	230V 50Hz
G	220V 50/60Hz

TYPE	T901	T921	F901	C505-C508	C351-C354	R911
DD	NPT-1423D	NPT-1398D	1.25A/125V	NO	NO	3.3M
DT	NPT-1423D	NPT-1398D	1.25A/125V	102J	101J	3.3M
PP,PA,PQ	NPT-1423P	NPT-1398P	T400MAL250V	102J	101J	NO
GT,GR	NPT-1423G	NPT-1398G	T400MAL250V	102J	101J	NO

CAUTION

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING INDICATED.

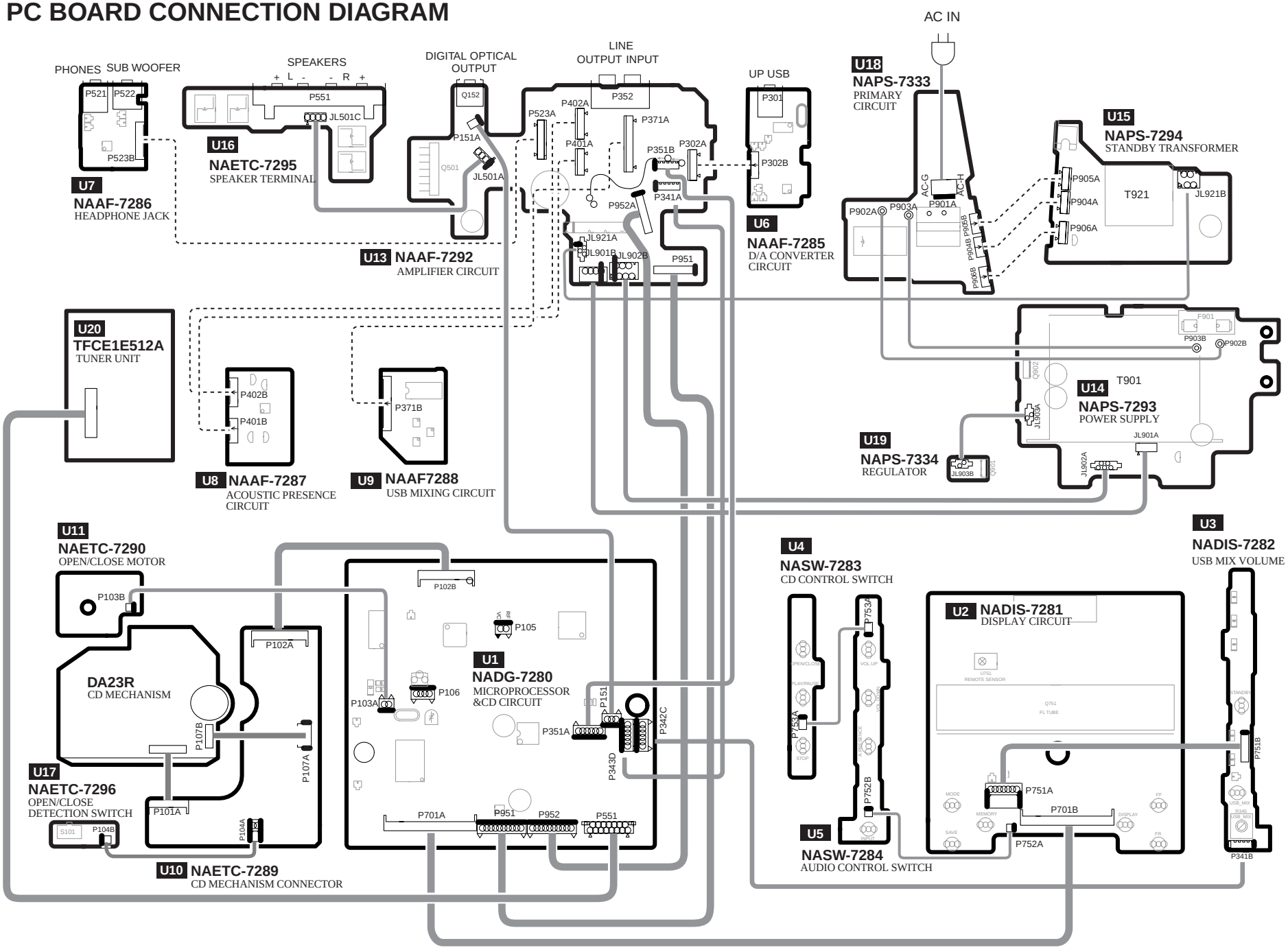
ATTENTION

AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE ET CALIBRATION COMME INDIQUE.

THIS SYMBOL LOCATED NEAR THE FUSE INDICATES THAT THE FUSE USED IS SLOW OPERATING TYPE FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,REPLACE WITH SAME TYPE FUSE. FOR FUSE RATING REFER TO THE MARKING ADJACENT TO THE SYMBOL

CE SYMBOLE INDIQUE QUE LE FUSIBLE UTLISE EST E LENT. POUR UNE PROTECTION PERMANENTE,N'UTILISER QUE DES FUSIBLES DE MEME TYPE. CE DARNIER EST INDIQUE LA QU LE PRESENT SYMBOL EST APPOSE.

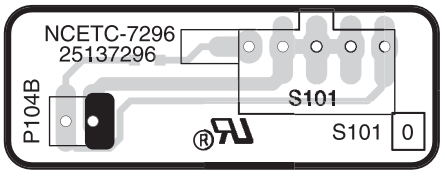
PC BOARD CONNECTION DIAGRAM



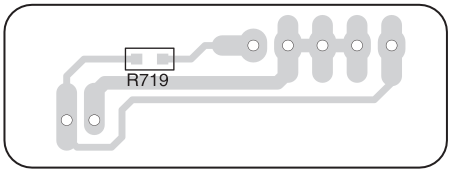
PRINTED CIRCUIT BOARD VIEWS-1

U17 OPEN/CLOSE DETECTION SWITCH PC BOARD (NAETC-7296)

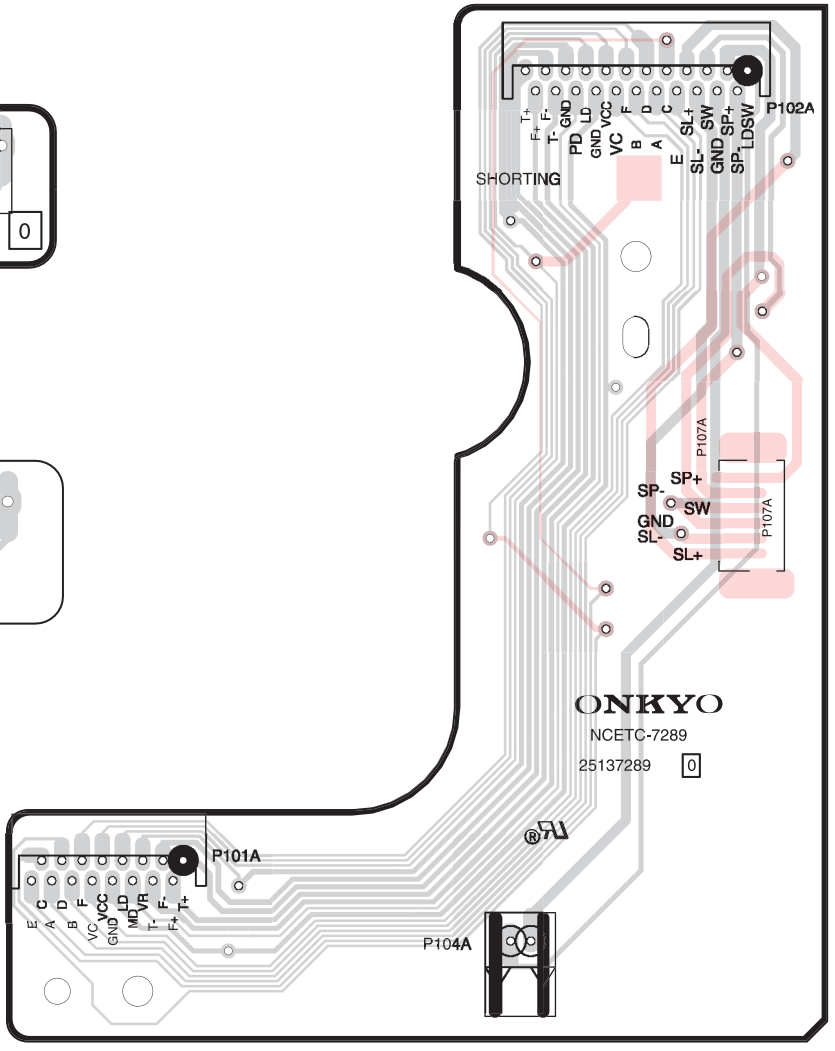
Component side



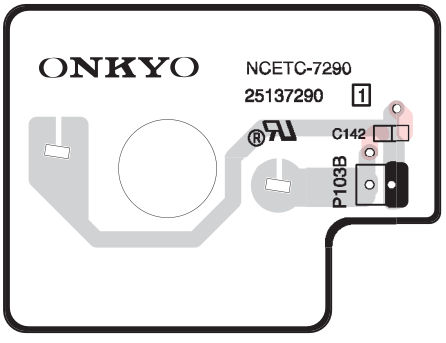
Soldering side



U10 CD MECHANISM CONNECTOR PC BOARD (NAETC-7289)

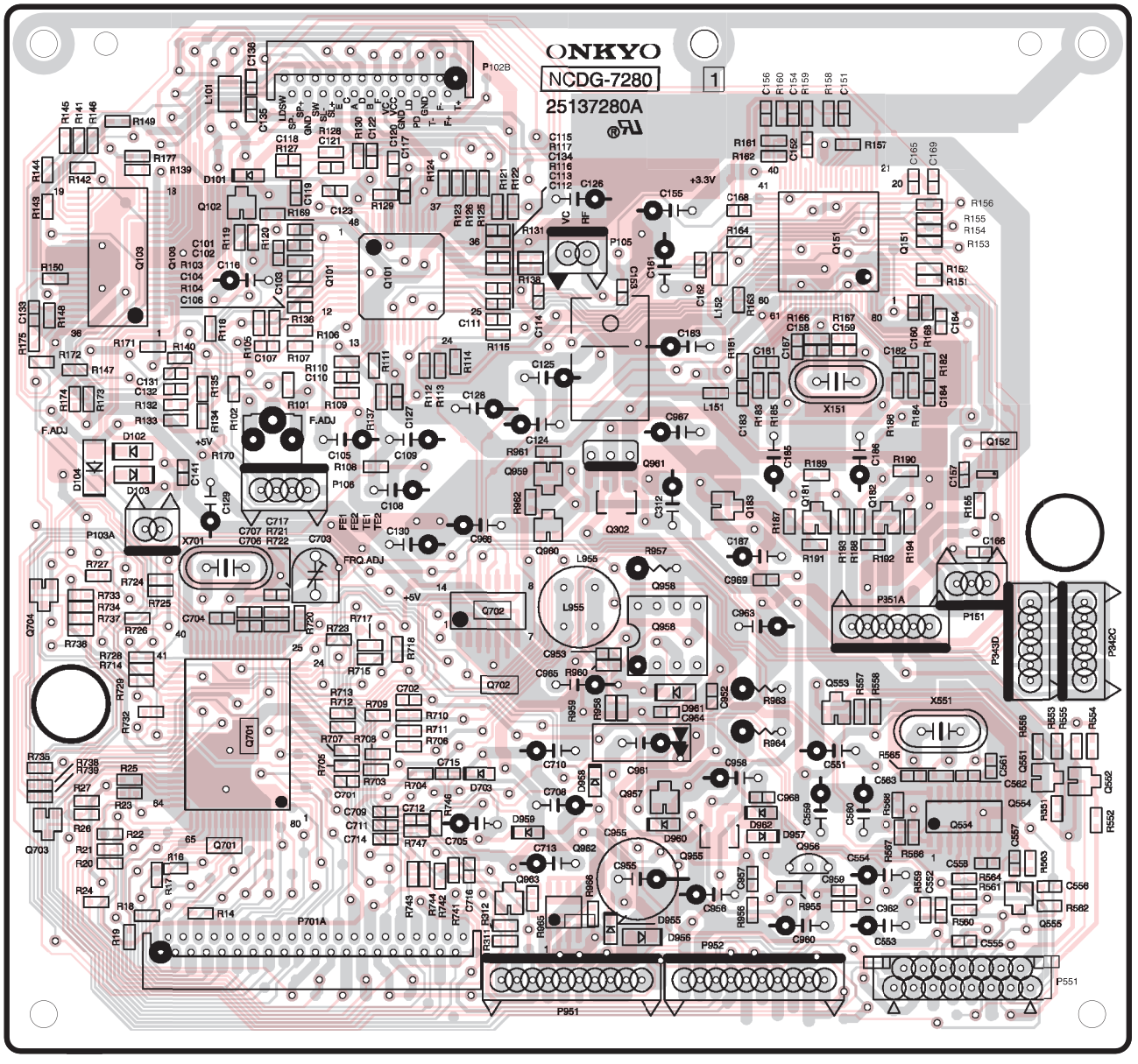


U11 OPEN/CLOSE MOTOR PC BOARD (NAETC-7290)



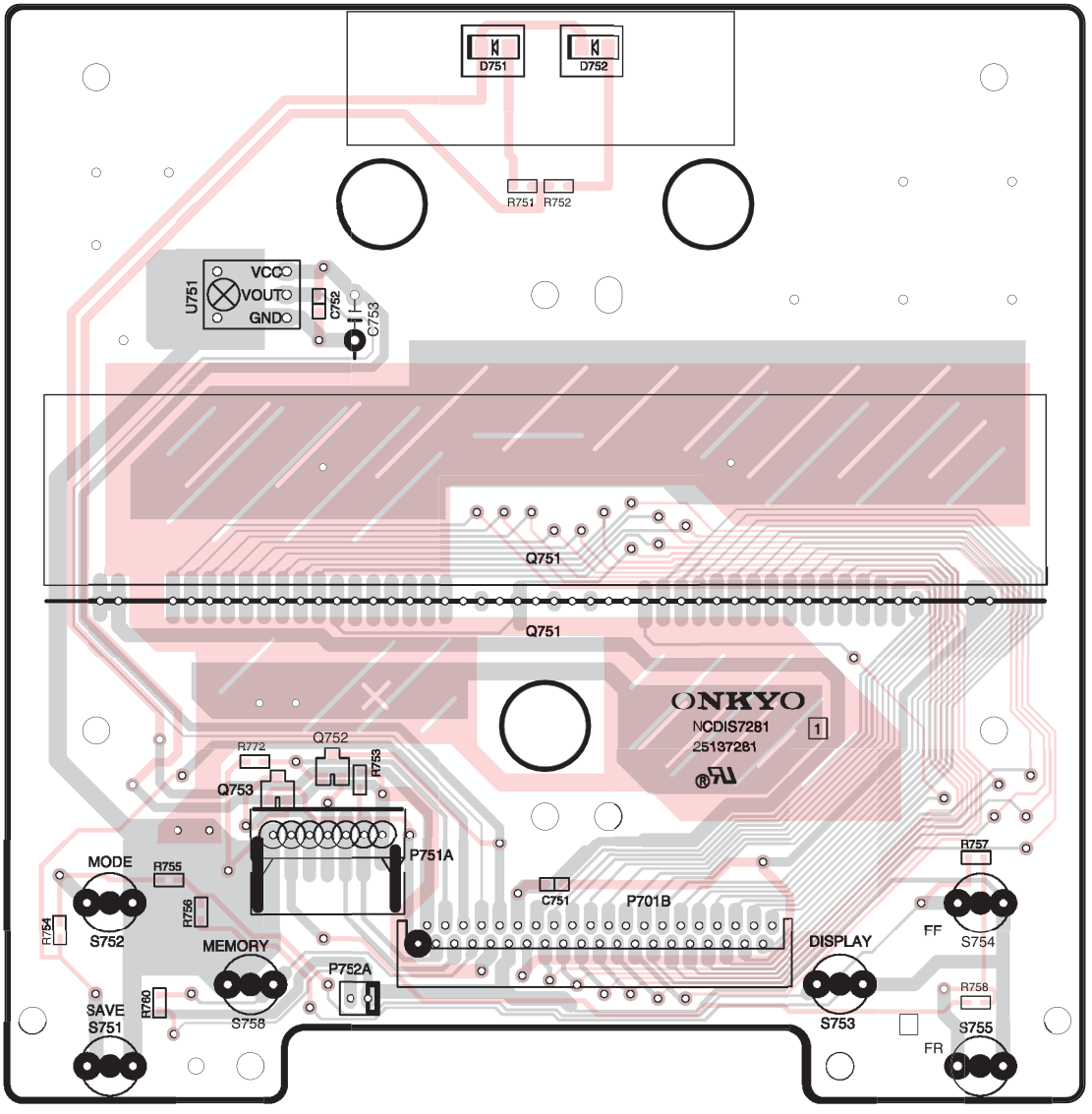
PRINTED CIRCUIT BOARD VIEWS-1

U1 MICROPROCESSOR & CD PC BOARD (NADG-7280)

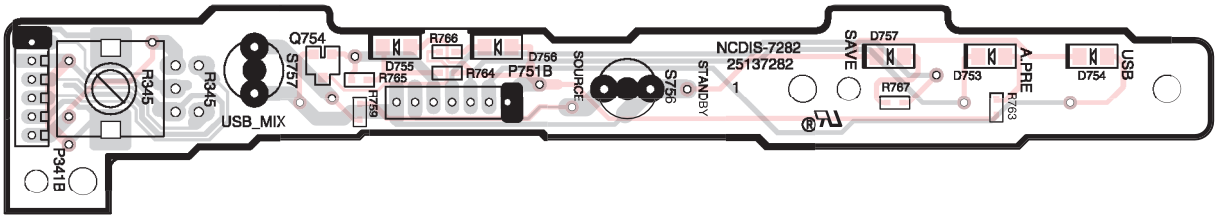


PRINTED CIRCUIT BOARD VIEWS-2

U2 DISPLAY PC BOARD (NADIS-7281)

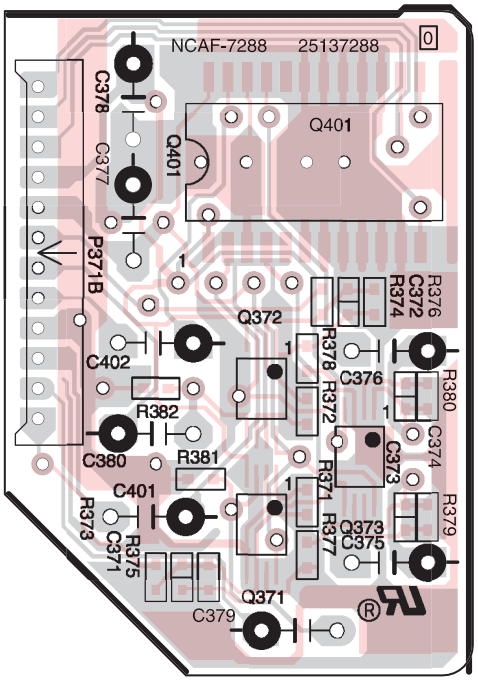


U3 USB MIX VOLUME PC BOARD (NADIS-7282)

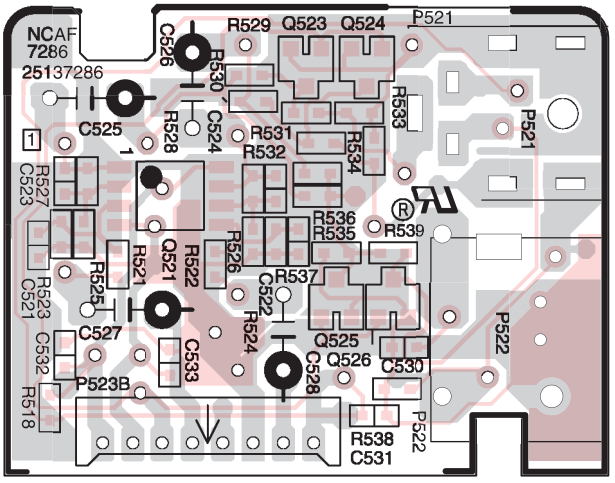


PRINTED CIRCUIT BOARD VIEWS-2

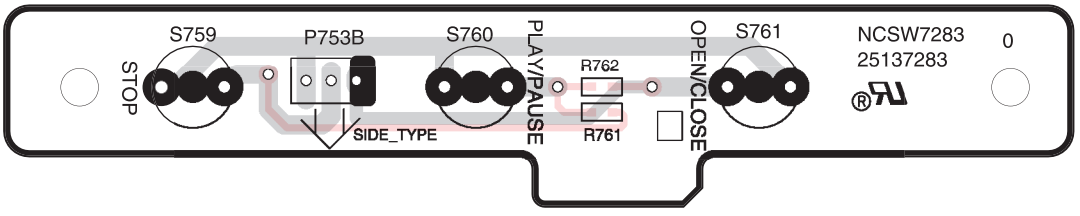
U9 USB MIXING PC BOARD (NAAF-7288)



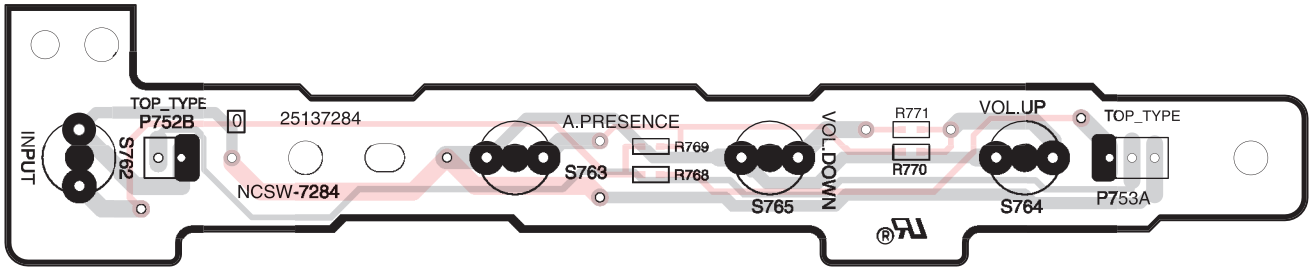
U7 HEADPHONE JACK PC BOARD (NAAF-7286)



U4 CD CONTROL SWITCH PC BOARD (NASW-7283)



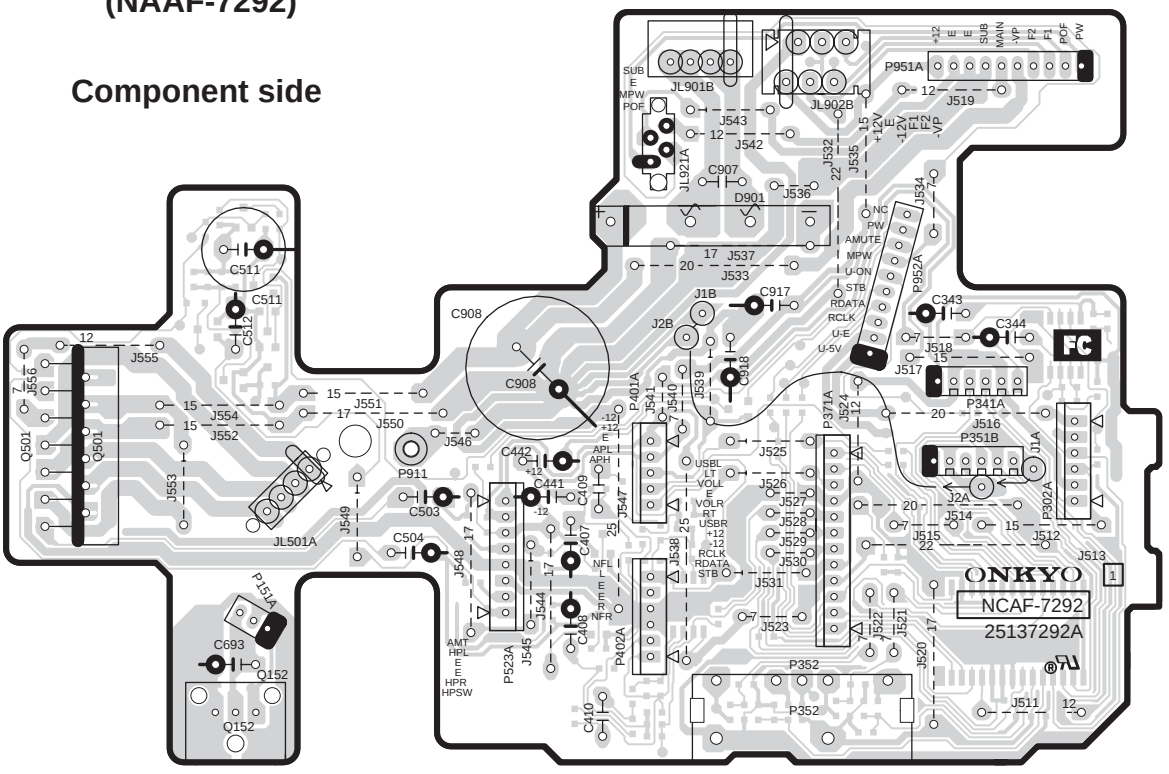
U5 AUDIO CONTROL SWITCH PC BOARD (NASW-7284)



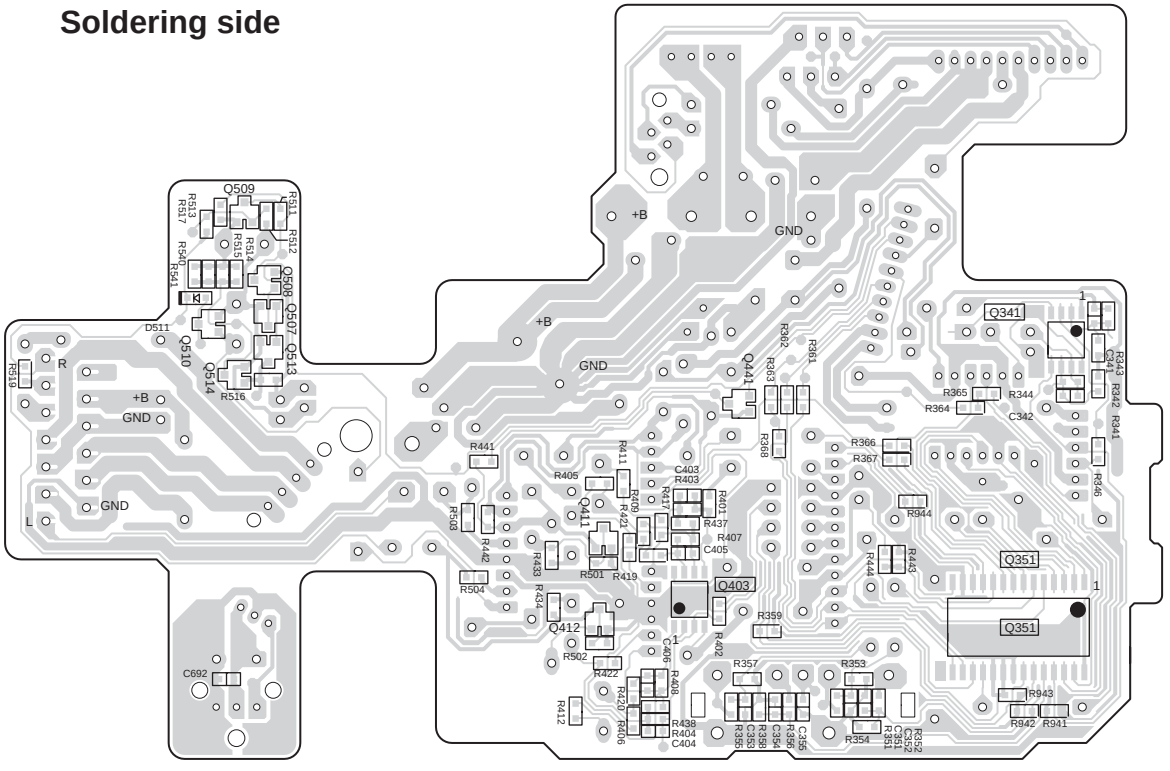
PRINTED CIRCUIT BOARD VIEWS-3

U13 AMPLIFIER PC BOARD (NAAF-7292)

Component side



Soldering side

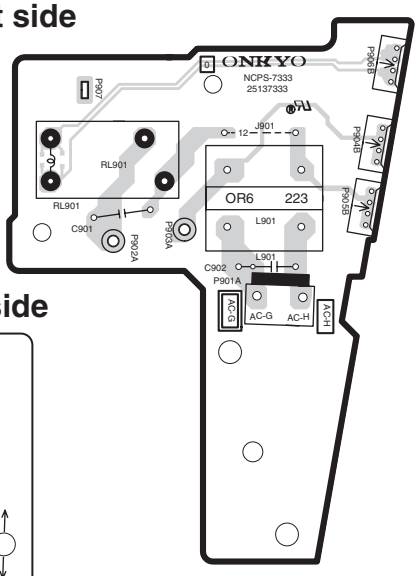


A B C D

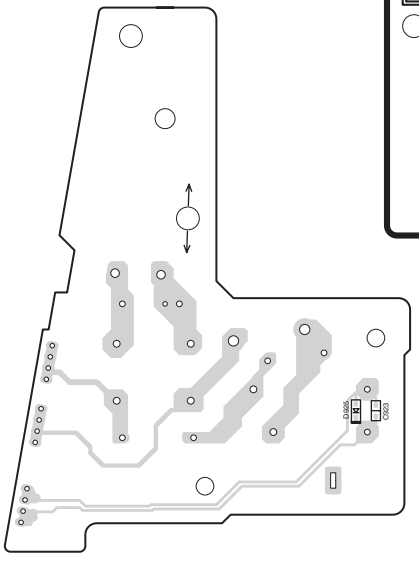
PRINTED CIRCUIT BOARD VIEWS-4

U18 PRIMARY PC BOARD (NAPS-7333)

Component side

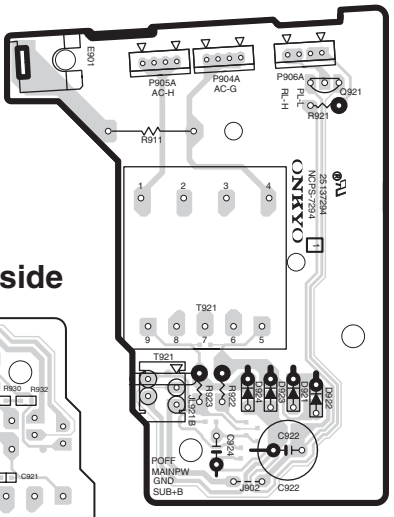


Soldering side

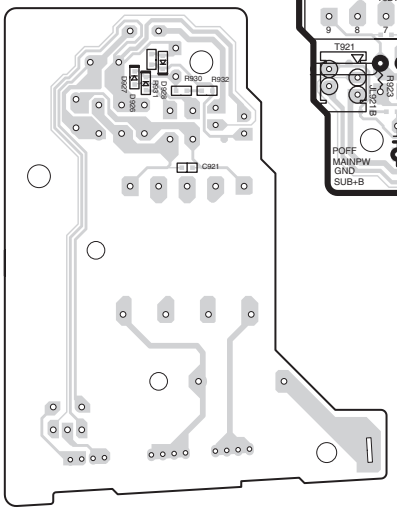


U15 STANDBY TRANSFORMER PC BOARD (NAPS-7294)

Component side

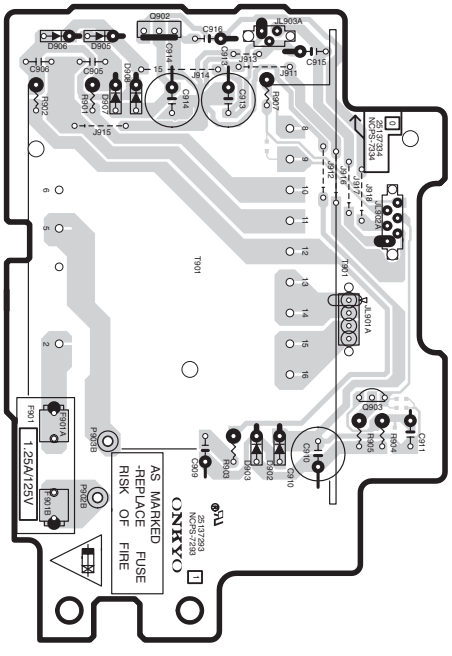


Soldering side

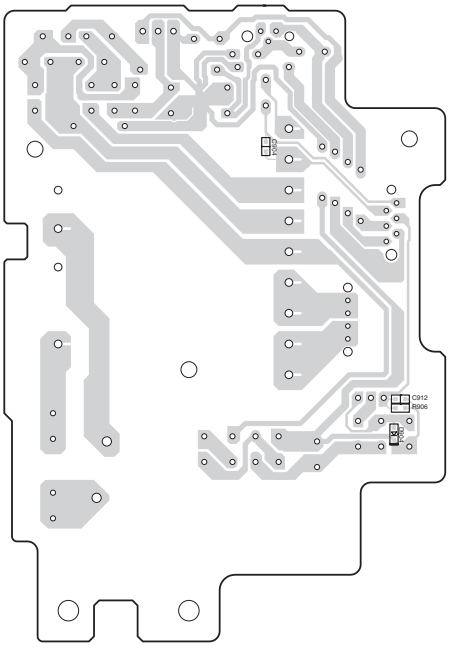


U14 POWER SUPPLY PC BOARD (NAPS-7293)

Component side

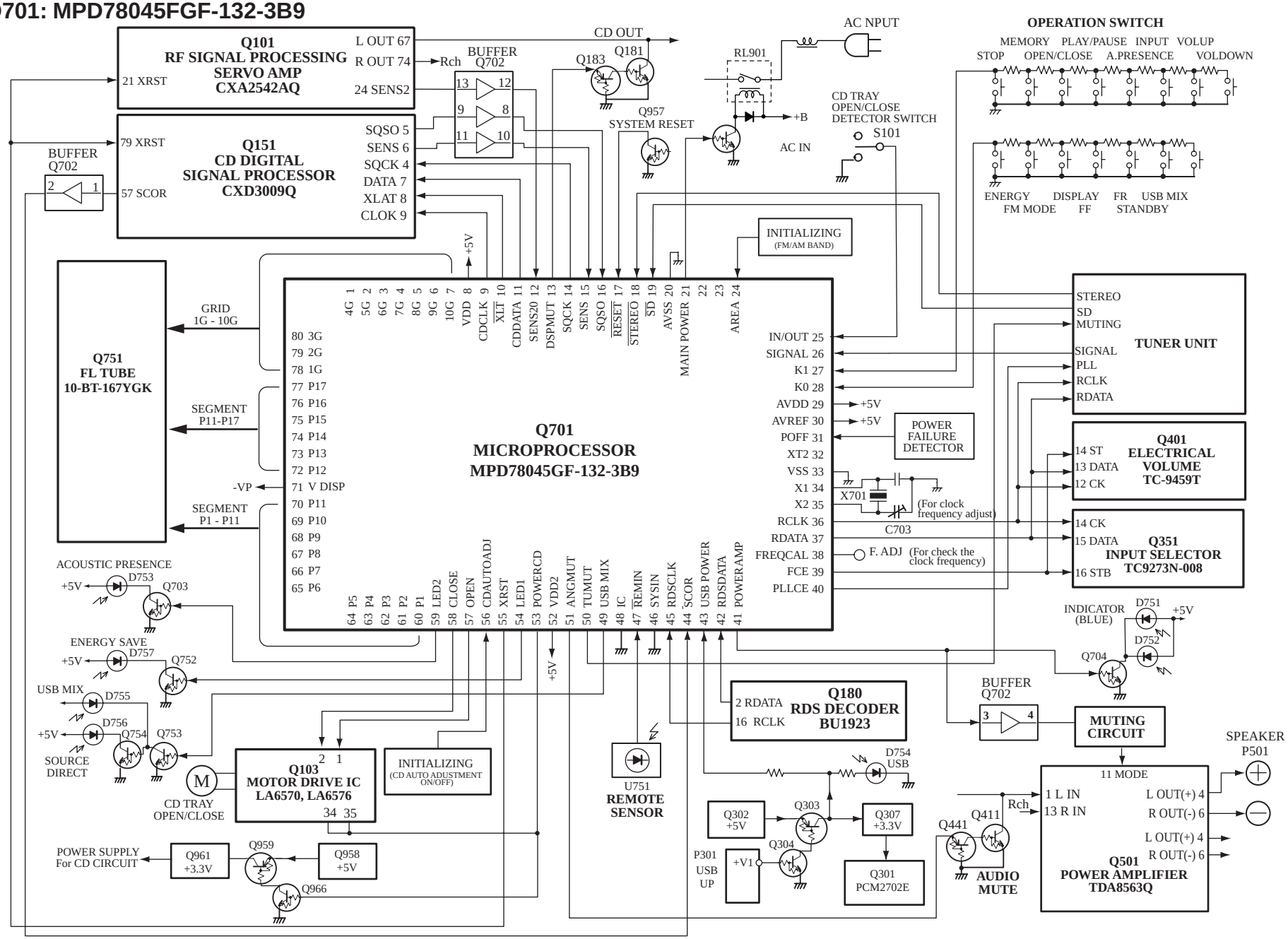


Soldering side



MICROPROCESSOR CONNECTION DIAGRAM

Q701: MPD78045FGF-132-3B9



MICROPROCESSOR TERMINAL DESCRIPTION

Q701: MPD78045GF-132-3B9

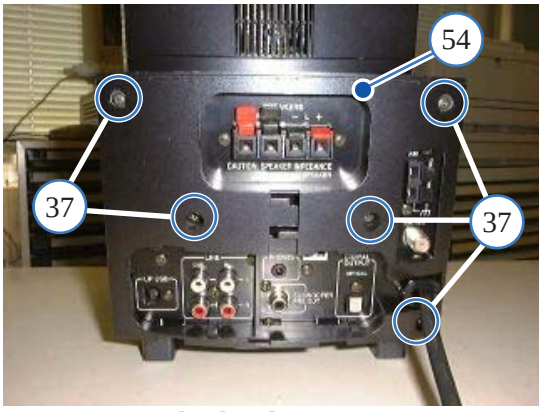
PIN NO.	FUNCTION	I/O	DESCRIPTION	PIN NO.	FUNCTION	I/O	DESCRIPTION
1	4G	O	Output pin for controlling grid of FL tube. 4G - 10G	41	POWERAMP	O	Output pin for controlling power amplifier. H = ON, L = OFF
2	5G	O		42	RDSDATA	I	Input pin of data from RDS demodulator IC.
3	6G	O		43	USB POWER	I	Input pin of power supply from USB.
4	7G	O		44	SCOR	I	Input pin of sub code frame detected signal from the signal processing IC.
5	8G	O		45	RDSCLK	I	Input pin of clock form RDS demodulator IC.
6	9G	O		46	SYSIN		No use.
7	10G	O		47	REMIN	I	Input pin of control signal from remote sensor.
8	VDD		Power supply pin. (+5V)	48	IC		No use.
9	CDCLK	O	Output pin of clock for transmission of command to signal processing IC.	49	USB MIX	O	Output pin for controlling USB indicator H=MIX, L=SOURCE
10	XLT	O	Output pin of latch for transmission of command to signal processing IC.	50	TUMUT	O	Output pin for controlling muting circuit of tuner output.
11	CDDATA	O	Output pin of data for transmission of command to signal processing IC.	51	ANGMUT	O	Output pin for controlling muting circuit of amplifier input signal.
12	SENS20	I	Input pin of the SENS signal from CD servo IC.	52	VDD2		Power supply pin. (+5V)
13	DSPMUT	O	Output pin of muting signal for CD output.	53	POWERCD	O	Output pin for controlling power supply of CD circuit.
14	SQCK	O	Output pin of clock for CD sub code reading to signal processing IC.	54	LED1	O	Output pin for controlling ENERGY SAVE indicator
15	SENS	I	Input pin of SENS signal from signal processing IC.	55	XRST	O	Output pin of reset signal for signal processing IC.
16	SQSO	I	Input pin of CD sub code from signal processing IC.	56	CD AUTOADJ	I	Input pin for initial setting of CD adjustment state.
17	RESET	I	Input pin for system reset.	57	OPEN	O	Output pin for controlling of CD door.
18	STEREO	I	Input pin of the detection signal of FM stereo.	58	CLOSE	O	
19	SD	I	Input pin of the detection signal of signal strength.	59	LED2	O	Output pin for controlling ACOUSTIC PRESENCE indicator.
20	AVSS		Ground pin of A/D converter.	60	P1	O	Output pin for controlling segment of FL tube. P1 - P11
21	MAIN POWER	O	Output pin for controlling main power supply. H = ON, L = OFF	61	P2	O	
22	NU	O	No use.	62	P3	O	
23	NU	O	No use.	63	P4	O	
24	AREA	I	Input pin for initial setting of the destination	64	P5	O	
25	IN/OUT	I	Input pin for detecting opening-and-closing state of CD door.	65	P6	O	
26	SIGNAL	I	Input pin of signal level for automatic memory.	66	P7	O	
27	K1	I	Input pin of key operation state.	67	P8	O	
28	K0	I	Input pin of key operation state.	68	P9	O	
29	AVDD		Power supply pin. (+5V)	69	P10	O	
30	AVREF		Reference voltage input pin for A/D converter (+5V).	70	P11	O	
31	POFF	I	Input pin for detection of power failure state.	71	V DISP	O	Power supply pin for FL tube.
32	XT2	O	No use.	72	P12	O	Output pin for controlling segment of FL tube. P12 - P17
33	VSS		Ground pin.	73	P13	O	
34	X1		Input pin for oscillation circuits of system clock.	74	P14	O	
35	X2		Output pin for oscillation circuits of system clock.	75	P15	O	
36	RCLK	O	Output pin of clock for controlling function switch IC.	76	P16	O	
37	RDATA	O	Output pin of data for controlling function switch IC.	77	P17	O	
38	FREQCAL	O	Output pin of frequency for clock adjustment.	78	1G	O	Output pin for controlling grid of FL tube. 1G - 3G
39	FCE	O	Output pin of latch for controlling function switch IC.	79	2G	O	
40	PLLCE	O	Output pin of latch for controlling PLL IC.	80	3G	O	

DISASSEMBLING PROCEDURES-1

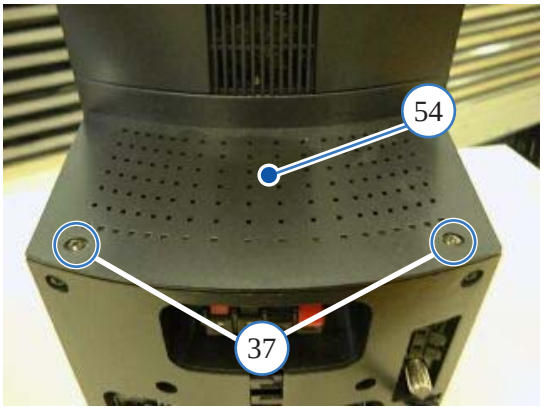
SPARATE OF UNIT

The number of ( ) in the explanatory note and ◯in the figure shows Ref. No. of the exploded view.

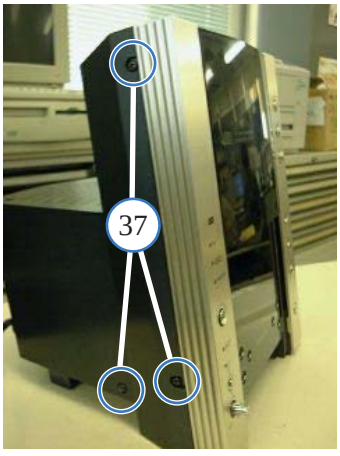
1 Remove the 13 screws (37) and remove the cover AS (54).



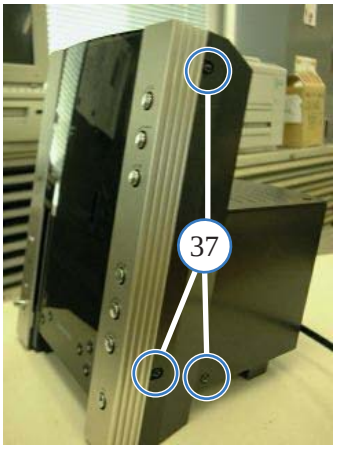
back side view



back side view

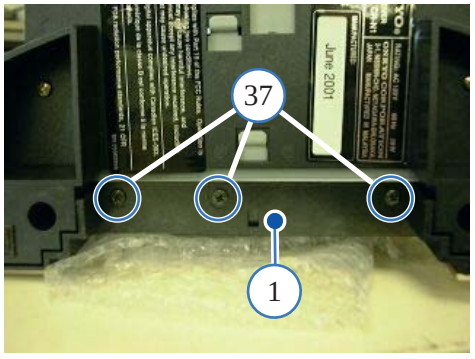


left side view

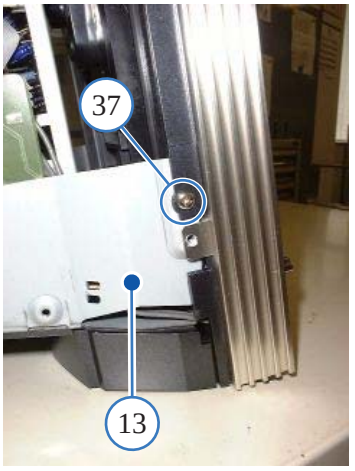


right side view

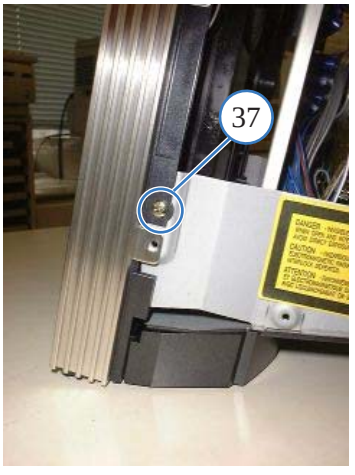
2 Remove the 5 screws of the place which is fixing the front bracket (1) and chassis (13).



bottom view



left side view



right side view

DISASSEMBLING PROCEDURES-3

CAUTION OF REPLACEMENT OF PICKUP UNIT

The laser diode in the optical pickup block is so sensitive to static electricity, surge current and etc., that the components are liable to be broken down or its reliability remarkably deteriorated.

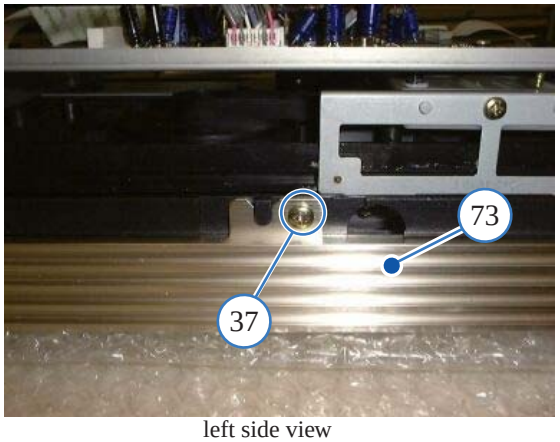
During repair, carefully take the following precautions. (The following precautions are included in the service parts.)

PRECAUTIONS

1. Ground for the work-desk.
   Place a conductive sheet such as a sheet of copper (with impedance lower than 10Mohm) on the work-desk and place the set on the conductive sheet so that the chassis can be grounded.
2. Grounding for the test equipments and tools.
   Test equipments and toolings should be grounded in order that their ground level is the same the ground of the power source.
3. Grounding for the human body.
   Be sure to put on a wrist-strap for grounding whose other end is grounded.
   Be particularly careful when the workers wear synthetic fiber clothes, or air is dry.
4. Select a soldering iron that permits no leakage and have the tip of the iron well-grounded.
5. Do not check the laser diode terminals with the probe of a circuit tester or oscilloscope.

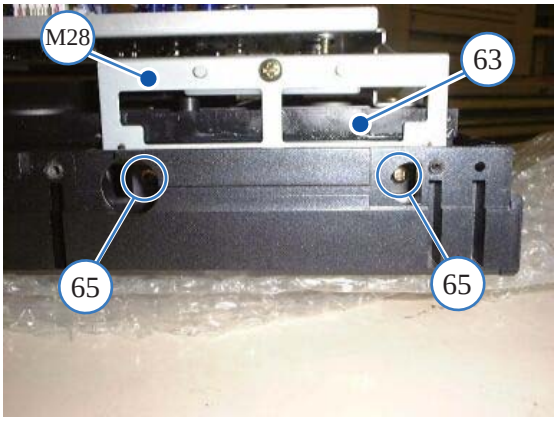
REPLACEMENT OF PICKUP UNIT

1 Remove the 2 screws (37) and remove the front panel L (73) and front panel R(74) form front bracket.



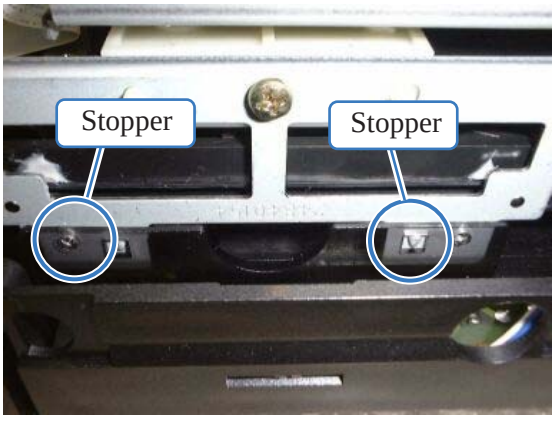
left side view
Right side is the same as left side.

2 Remove the 4 screws (65) of the place which is fixing the door assy (63) and the slider assy(M28).

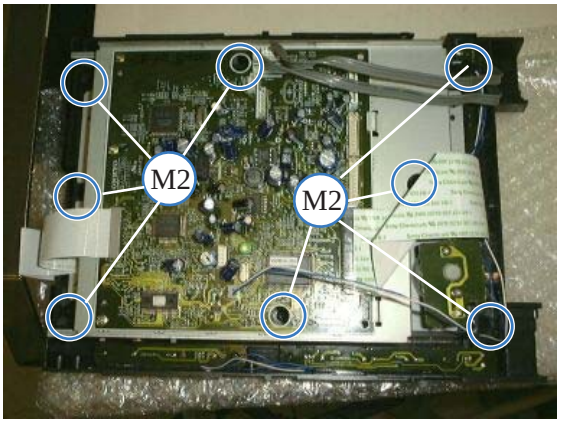


left side view
Right side is the same as left side.

3 Remove the door assy (63) from the front part.
Door assy is being fixed to slider assy by the stopper.



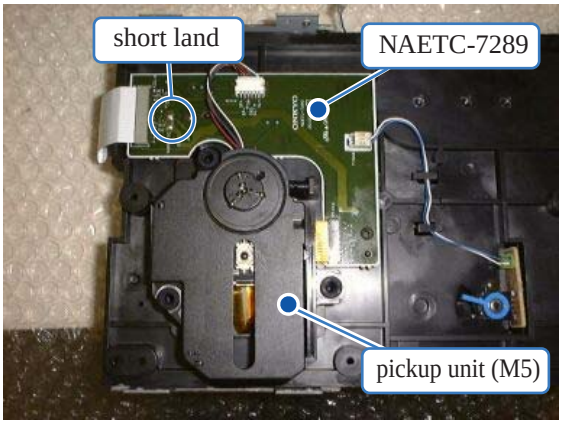
4 Remove the 8 screws (M2) and remove the CD mechenism part from the front part.



DISASSEMBLING PROCEDURES-4

REPLACEMENT OF PICKUP UNIT

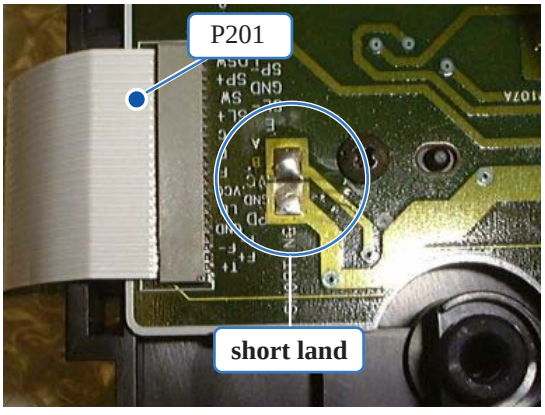
CD mechanism part



front side view

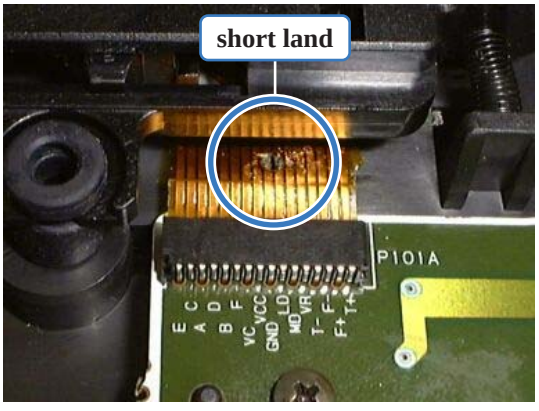
5 Short circuit with solder the short land on the NAETC-7289

[NOTE]
When disconnect the flat cable (P201) from the NAETC-7289, surely short circuit. before disconnect the flat cable.



6 Short circuit with solder the short land on the pickup unit.

[NOTE]
When disconnect the flat cable of pickup unit from NAETC-7289, surely short circuit before disconnect the flat cable.



7 Replacement the pickup unit.

8 Connect the flat cable of pickup unit to NAETC-7289.

9 Connect the flat cable (P201) to the NAETC-7289.

10 Delete the solder of short land on the pickup unit.

11 Delete the solder of short land on the NAETC-7298.

12 Next work

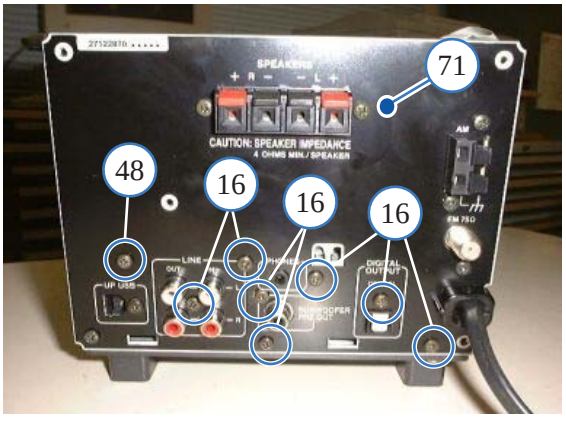
Refer to **REPLACEMENT OF PICKUP UNIT**

4 → **3** → **2** → **1**

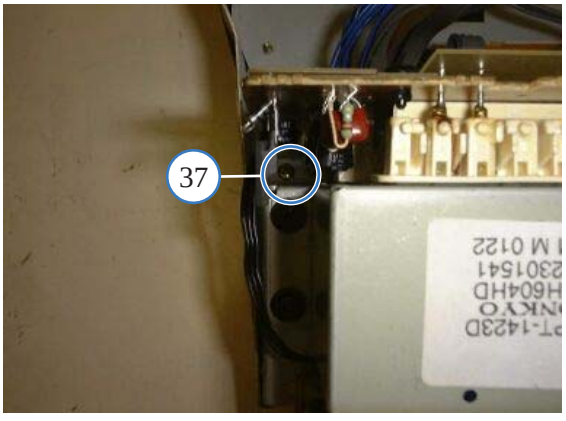
DISASSEMBLING PROCEDURES-5

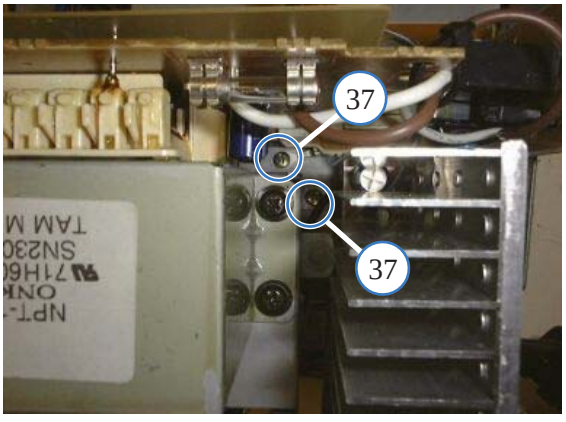
DISASSEMBLING OF MAIN PART

1 Remove the 9 screws (16, 84) and remove the rear panel (71) from the cassis (13).

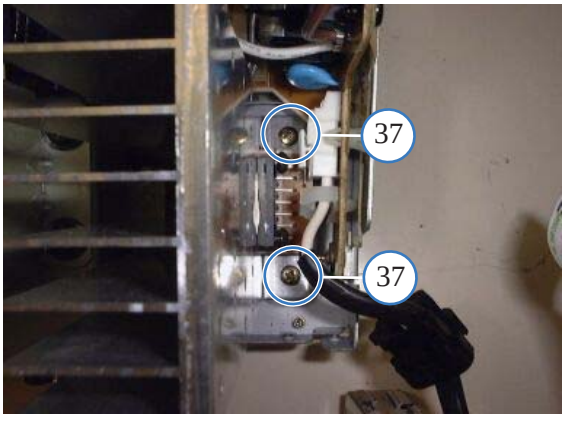


2 Remove the 3 screws (37).

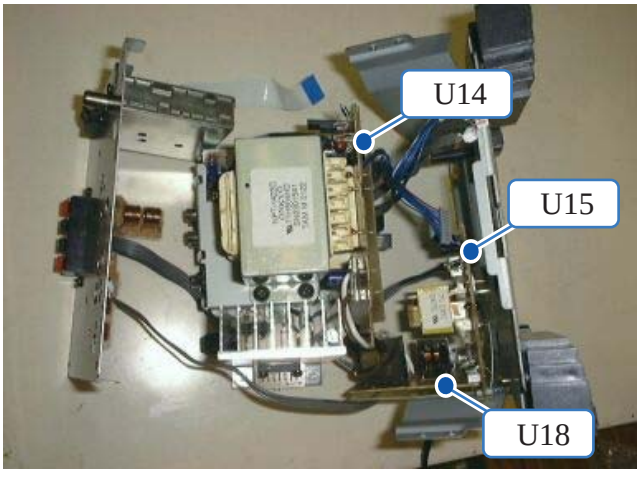




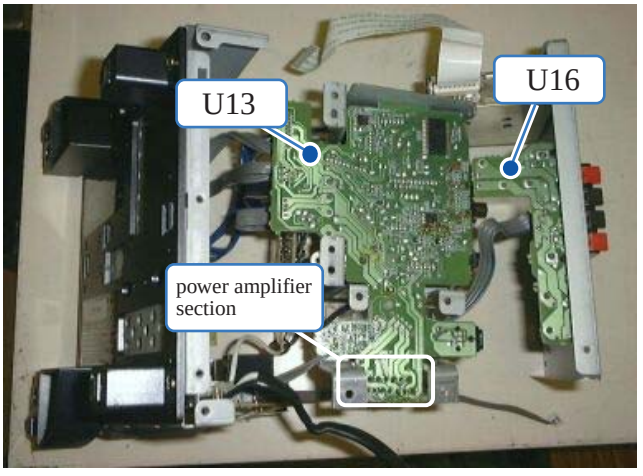
3 Remove the 2 screws (37).



Disassembled view



Top view



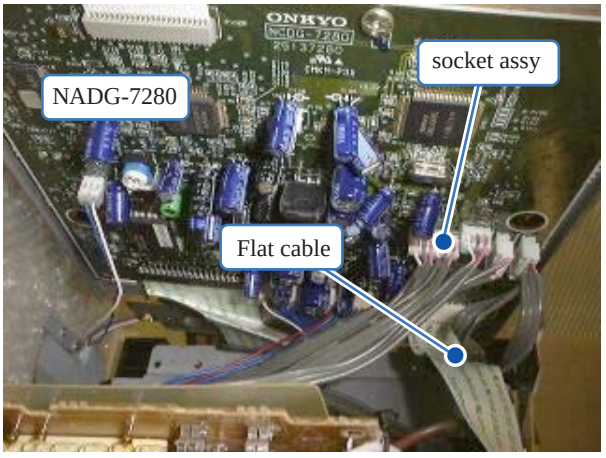
Bottom side view

DISASSEMBLING PROCEDURES-2

SPARATE OF UNIT

3 Disconnect the six sockets assy and the flat cable which are connected to NADG-7280.

flat cable
Circuit No. P551
socket assy
Circuit No.
P151,P351A, P343,
P951, P952



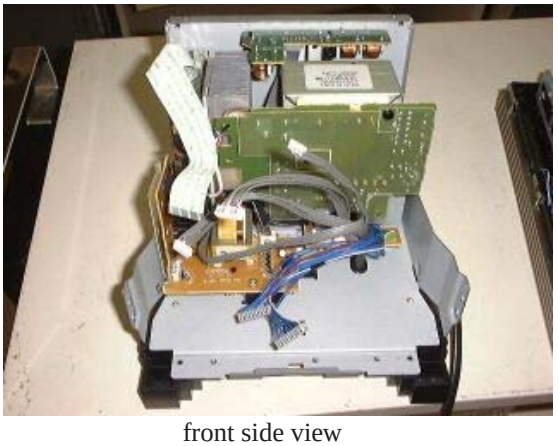
4 Divide the unit into the front part and the main part.

front part

front side view

back side view

main part



front side view

back side view

5 Next work.

Replacement the pickup unit.
Refer to "**REPLACEMENT OF PICKUP**"

Replacement the CD mechanical parts.

Replacement other parts.

6 Next work.

Replacement the power amplifier IC.

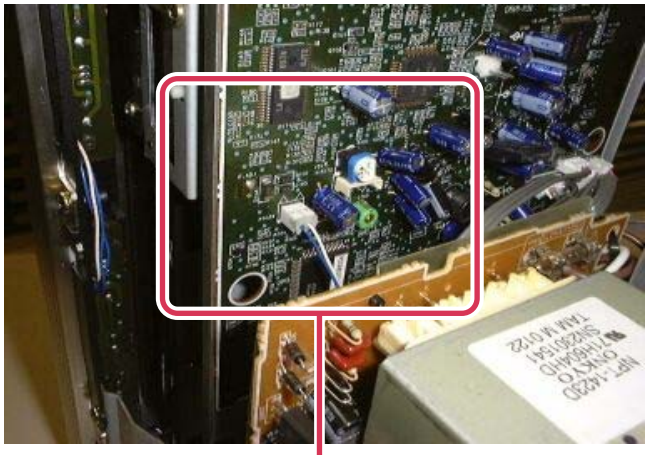
Replacement the relay.

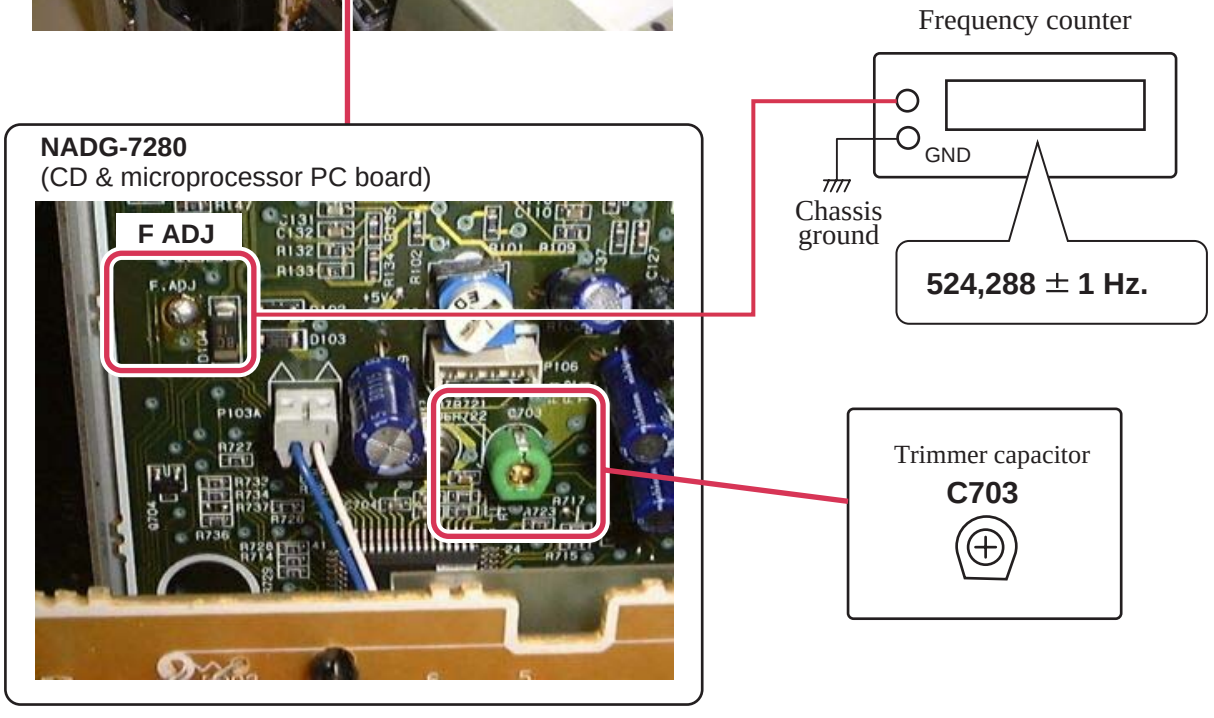
Replacement other parts.
Refer to "**DISASSEMBLING OF MAIN PART**"

ADJUSTMENT PROCEDURES-1

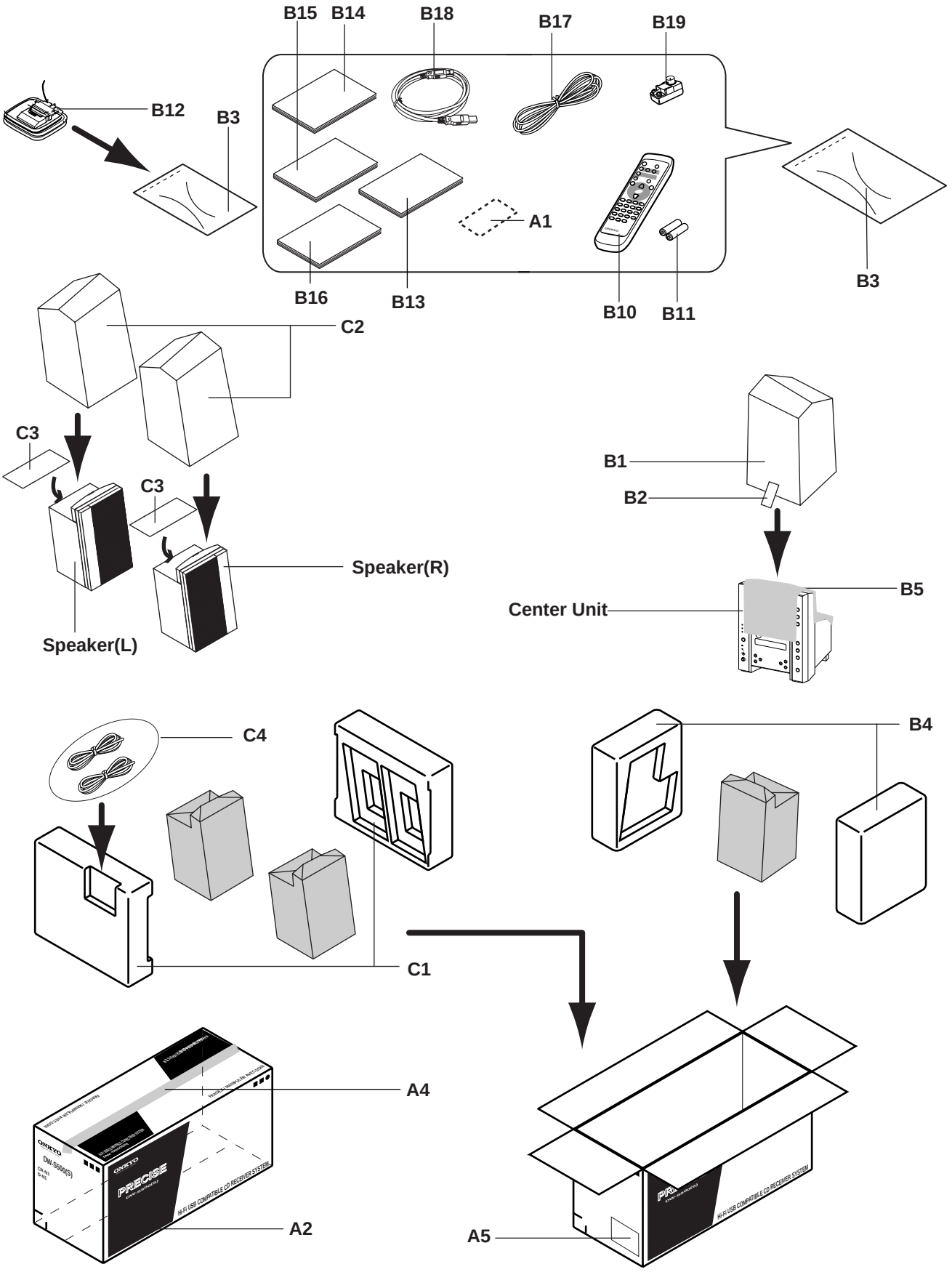
CLOCK FREQUENCY ADJUSTMENT

1. Remove the top cover.
2. Connect the frequency counter to the **F ADJ** (test point) on the **NADG-7280**
3. While hold down **VOLUME DOWN** key, press **DISPLAY** key to set the test mode.
   (All segments on FL tube light on)
4. Adjust the trimmer capacitor **C703** on **NADG-7280** so that the reading of frequency counter becomes **524,288 ± 1 Hz.**





PACKING PROCEDURES



ADJUSTMENT PROCEDURES-2

CD ADJUSTMENT

Focus gain adjustment

Preparation

Set the trimming resistors **R101** to center.

Focus gain adjustment

1. Set the output of the audio oscillator to 1kHz and 1~1.5VP-P
2. Connect the oscilloscope and audio oscillator as shown below. (Refer to **Fig-1**)
3. Load the test disc **YEDS-18** on the tray and play the **track 2.**
4. Adjust the trimming resistor **R101** so that the signal of channel 2 on the oscilloscope becomes 1.25 times of channel 1. (Refer to **Fig-2**)
5. Remove to the oscilloscope and audio oscillator.

Fig-1

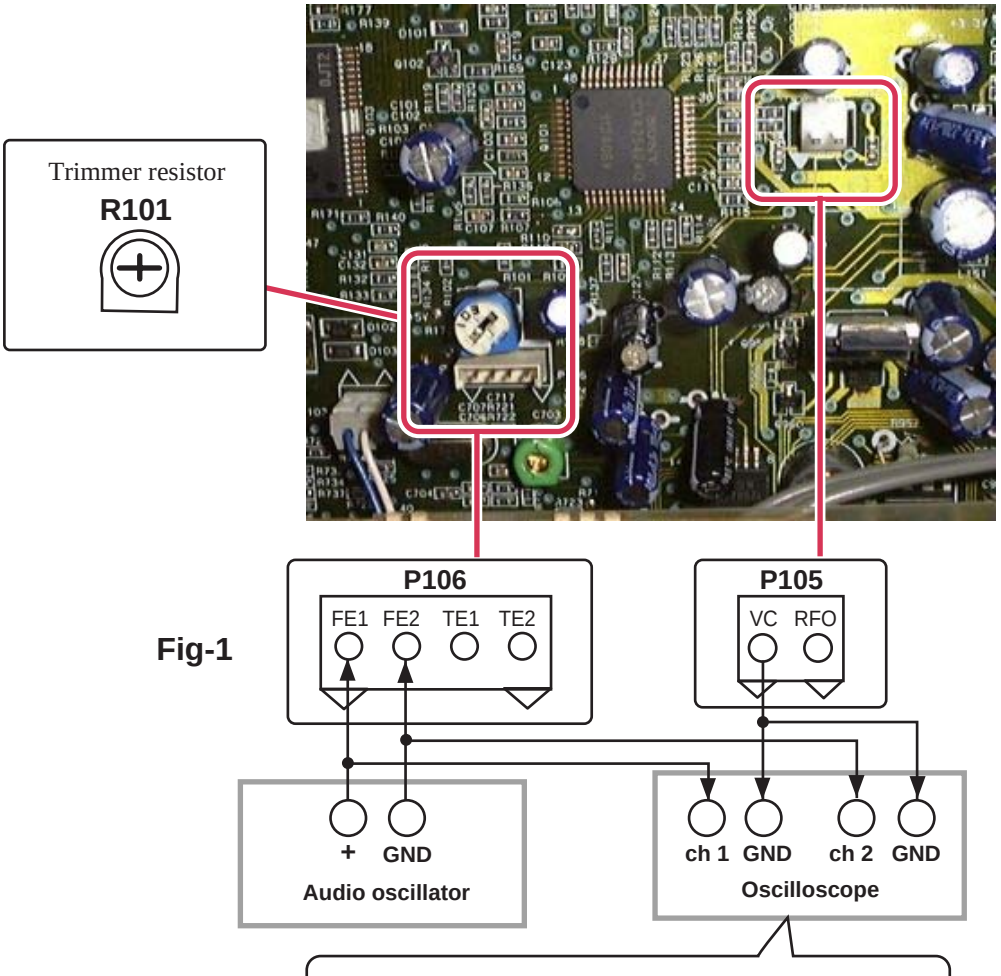
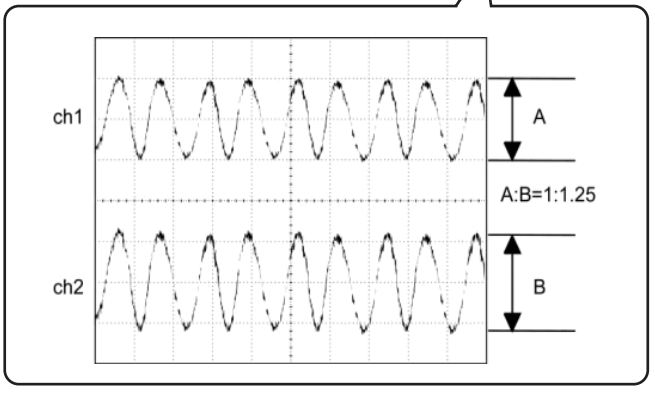


Fig-2



ADJUSTMENT PROCEDURES-3

CAUTION IN THE CASE OF SPEAKER OUTPUT CHECK

The power amplifier circuit of CR-N1 is BTL system.
Therefore, in case you check speaker output, should be careful of the following point.

1. Don't connect the minus side of speaker terminal, and ground of the unit (**Fig-1**).
2. Don't connect the ground side of oscilloscope to the ground of the unit (**Fig-2**).
3. Don't connect the minus side of left channel speaker output , and he minus side of right channel speaker output (**Fig-3**).

Protection of power amplifier operates and the waveform is not outputted normally.

Fig-1

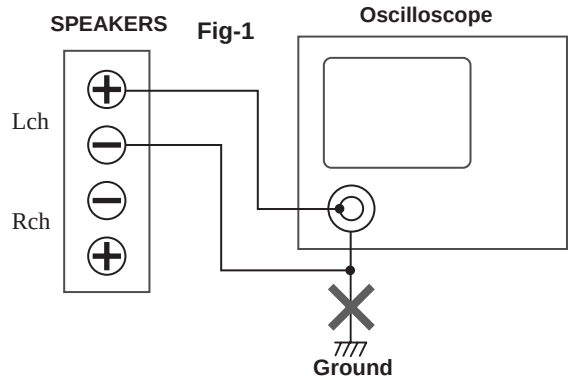


Fig-2

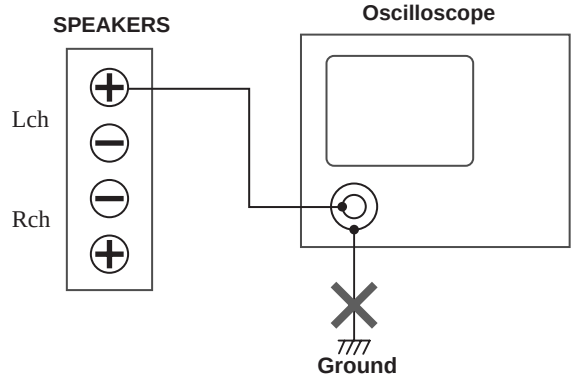
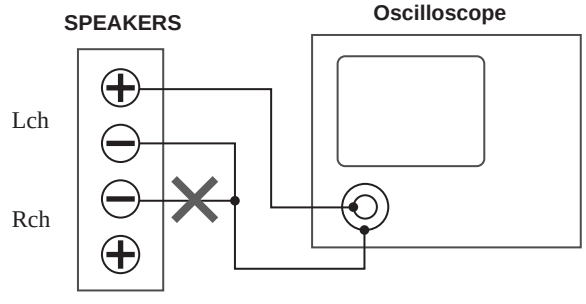


Fig-3



PACKING PARTS LIST

REF NO.	PART NO.	DESCRIPTION	DESTINATION							
			DW-S500	HS-N1(T)	HS-N1(S)					
			DD	PP	PA	DT	GR	GQ	GT	DD
A1	29365090	Warranty card	O	X	X	X	X	X	X	X
A2	29053810	Carton	X	X	O	O	O	O	O	X
	29053809	Carton	X	O	X	X	X	X	X	O
	29053808	Carton	O	X	X	X	X	X	X	O
A3	282301	Staple	O	O	O	O	O	O	O	O
A4	29110098	Tape	O	O	O	O	O	O	O	O
A5	29362925A	UPC Label	O	X	X	X	X	X	X	X
	29362965A	UPC Label	X	X	X	X	X	X	X	O
	29362960A	EAN Label	X	O	X	X	X	X	X	X
B1	29100037-1A	Poly bag (650 x 500)	O	O	O	O	O	O	O	O
B2	29110149	Tape	O	O	O	O	O	O	O	O
B3	29100097-1A	Poly bag (350 x 250)	O	O	O	O	O	O	O	O
B4	29092005	Pad ass'y	O	O	O	O	O	O	O	O
B5	29095906	Protection sheet	O	O	O	O	O	O	O	O
B10	24140454A	Remote controller,RC-454S	O	O	O	O	O	O	O	O
B11	3010054	Battery,UM-3	O	O	O	O	O	O	O	O
B12	232140	Antena coil,NMA-3057	O	O	O	O	O	O	O	O
B13	29343196	Instruction manual,E	O	O	O	O	O	O	O	O
B14	29343199	Instruction manual,CT	X	X	X	O	X	X	O	X
	29343258	Instruction manual,CS	X	X	X	X	O	O	X	X
B15	29343197	Instruction manual,U3FSI	X	O	X	X	X	X	X	X
B16	29343198	Instruction manual,U3GSWD	X	O	X	X	X	X	X	X
B17	292142	FM Antenna ass'y	O	X	X	O	X	X	X	O
	292115	FM Antenna ass'y	X	O	O	X	O	O	O	X
B18	2010402	Cord ass'y,USB Cable(A-B)	O	X	X	X	X	X	X	O
B19	25065462	FM Adaptor,YAE21-0237	X	X	O	O	O	O	O	X
C1	404-D-N1	Pad	O	O	O	O	O	O	O	O
C2	434-NS-300	Protection bag,0.5tx440x320	O	O	O	O	O	O	O	O
C3	434-ANS-300	Protection sheet,1tx200x60	O	O	O	O	O	O	O	O
C4	610-PD-N1	Speaker cable	O	O	O	O	O	O	O	O

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