

ORDER NO. RRV2143

STEREO POWER AMPLIFIER

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks	
Туре	M-IS21	rower Requirement	Remains	
KUCXJ	0	AC120V		

One

- This product is a component of a system.
 For the accessories, instruction manuals etc., refer to the service manuals RRV2149 for XC-IS21MD and RRV2148 for XC-IS21T.
- This product does not function properly when independent; to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.

Component	Sys	System		Remarks
Component	IS-21MD	IS-21T	Service Manual	Remarks
CD MD TUNER	XC-IS21MD		RRV2149	
CD TUNER DECK		XC-IS21T	RRV2148	
STEREO POWER AMPLIFIER	M-IS21	M-IS21	RRV2143	This Service Manual
SPEAKER SYSTEM	S-IS21	S-IS21	RRV2141	

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols - (fast operating fuse) and/or - (slow operating fuse) on PCB indicate that replacement

parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou - (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

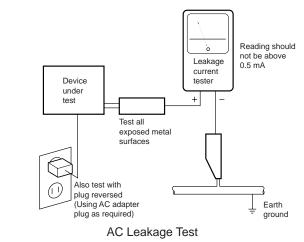
- (FOR USA MODEL ONLY) -

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURN-ING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a \triangle on the schematics and on the parts list in this Service Manual.

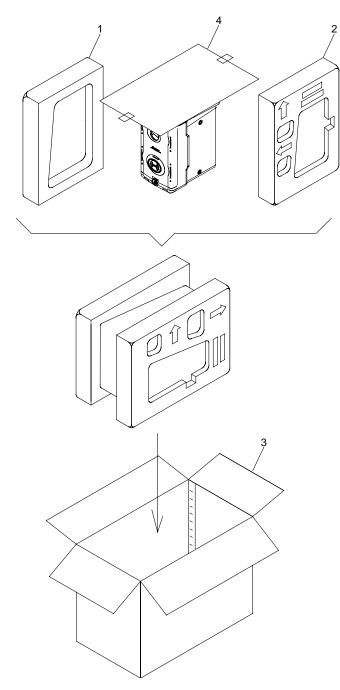
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

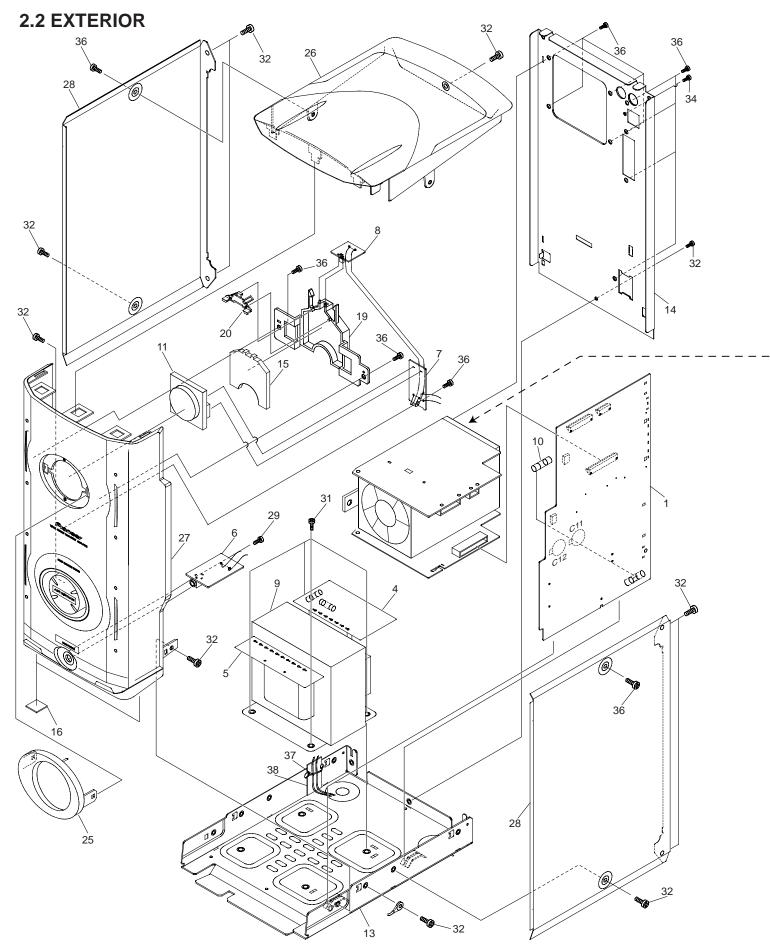
- NOTES: Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 The A mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ∇ mark on product are used for disassembly.

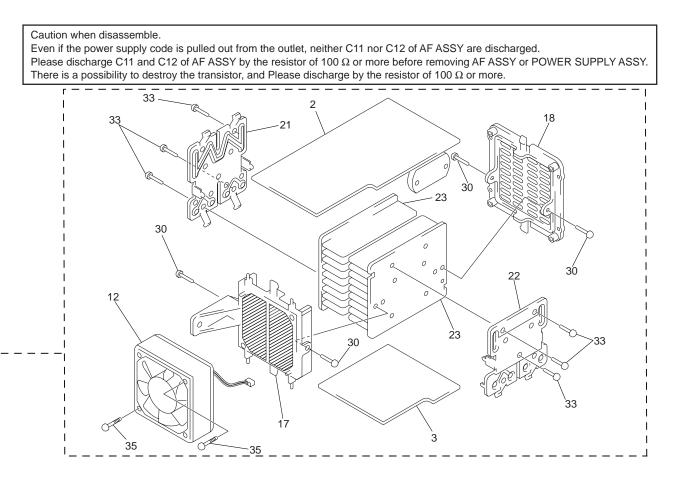
2.1 PACKING



PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	Side Pad AL	AHA7238
	2	Side Pad AR	AHA7239
	3	Packing Case AMP MY	AHD7748
	4	Packing Sheet	AHG7053





• EXTERIOR PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	AF Assy	AWU7343		21	Holder	ANG7009
	2	AMP Assy	AWU7342		22	Power PAC Holder	ANG7109
	3	POWER SUPPLY Assy	AWU7344		23	Heat Sink	ANH7058
NSP	4	PRIMARY Assy	AWU7348		24	• • • • •	
NSP	5	SECONDARY Assy	AWU7350		25	Escutcheon A	AAK7617
	6	HP Assy	AWU7352		26	Top Panel	AAN7192
	7	METER Assy	AWU7353		27	Front Panel A	AMB7564
	8	METER CONNECT Assy	AWU7356		28	Side Bonnet	ANE7242
	9	Power Transformer	ATS7250		29	Screw With Washer	ABA1005
\triangle	10	Fuse (FU1 : 5A)	REK1067		30	Screw	ABA1021
	11	VU Meter	AAW7002		31	Screw	FBT40P060FZK
	12	DC FAN Motor	AXM7003		32	Screw	BBZ30P080FMC
NSP	13	Chassis A	ANA7086		33	Screw	BBZ30P180FMC
	14	Rear Panel	ANC7824		34	Screw	BMZ30P060FZK
	15	Lens A	AAK7614		35	Screw	BPZ30P350FZK
	16	Rubber Sheet	AEB1111		36	Screw	VPZ30P080FMC
	17	Mold A	AMR7005		37	Binder	ZCA-SKB90BK
	18	Mold B	AMR7006	NSP	38	BIND Assy	AWU7349
	19	Lens Holder A	AMR7245			-	
	20	Refrector	AMR7248				

Caution :

Be careful when No.10 Fuse(FU1:5A) is exchanged.

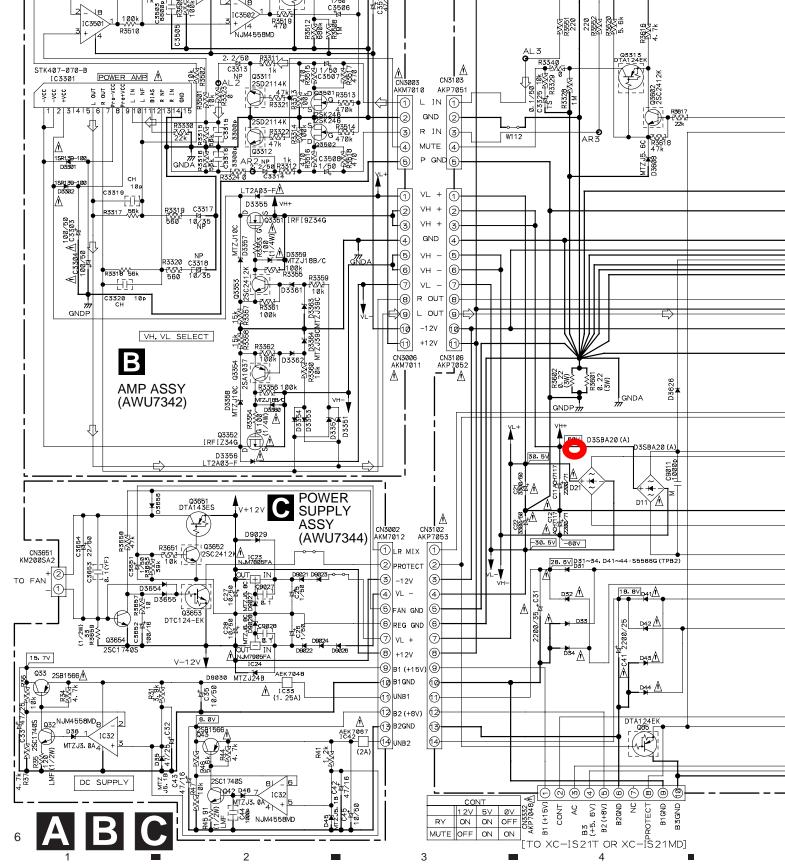
Please remove No.32 Screw of Rear Panel, remove No.1 AF Assy backward with No.14 Rear Panel, and exchange No.10 Fuse(FU1:5A). (Fuse Caution is displayed in SIDE B of No.1 AF Assy.)

3. SCHEMATIC DIAGRAM

2

3.1 AF, AMP, POWER SUPPLY, PRIMARY, SECONDARY, HP, METER and METER **CONNECT ASSYS** R I N [FROM XC-IS21T OR XC-IS21MD] GND JA3333 RKB1041 8 C3504 6800p R3506 R3520 52520 100k CLIP DETECT 1C3501 \mathbf{f} D3502 R3504 6-14 6-8100k STBY Q3503 DTA124EK CHASSIS GND 47/25 C3502 10 5 IC3502 7 NJM4558MD 47/25 C3502 Tk 47/25 C3501 R3503 11 PVV F7075 R3509 + 1∕50 C3506 68885 88885 2 -\18 **₩**85 18 103502

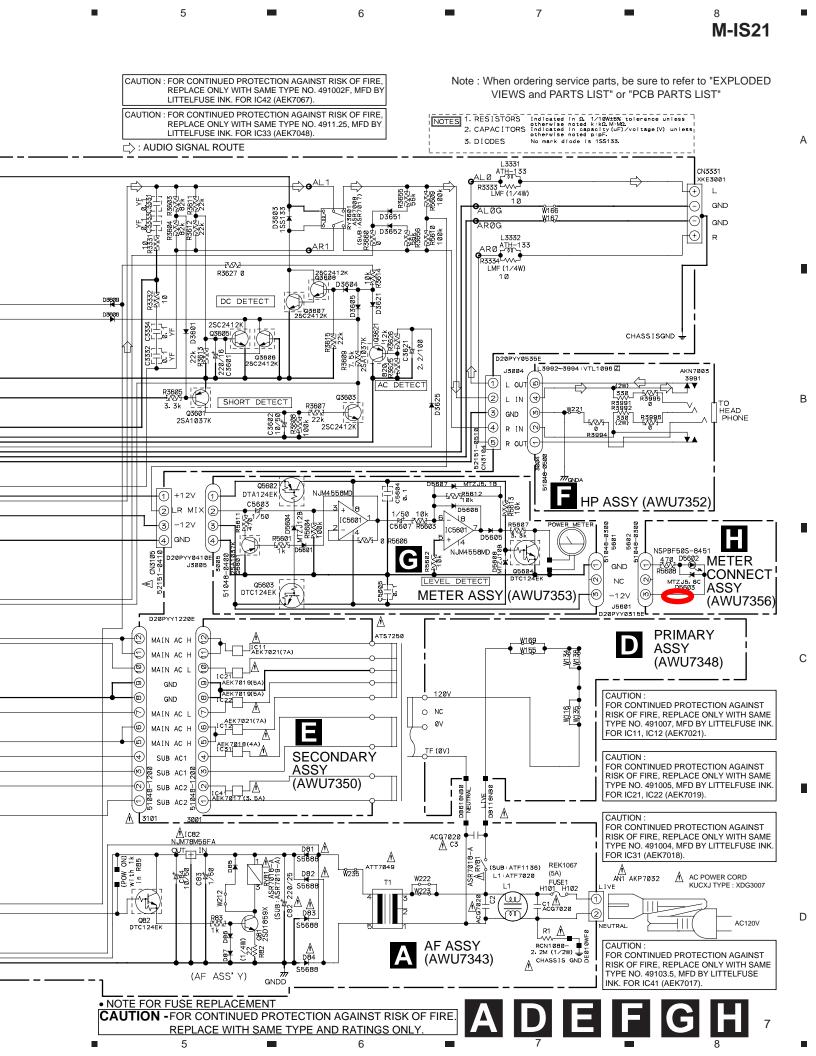
3



С

В

D



А

В

С

D

8

1

4. PCB CONNECTION DIAGRAM

2

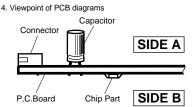
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.

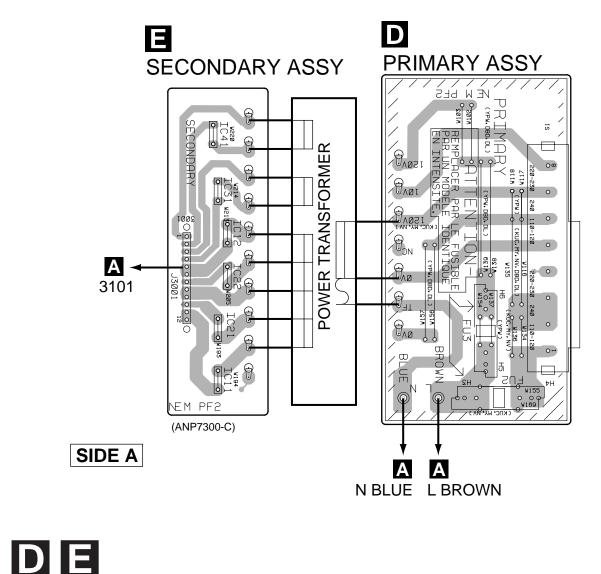
- 2. A comparison between the main parts of PCB and schematic diagrams is shown below.
- Symbol in Schematic Diagrams Symbol in PCB Diagrams Part Name E B ç 0 0 0 B C E Transistor ဝိ Transistor with resistor G D 000 Field effect transistor DGS 000/0000 Resistor array ş ≷ 3-terminal 000 regulator
- The parts mounted on this PCB include all necessary parts for several destination.
 For further information for respective destinations, be sure to check with the schematic diagram.

3

4

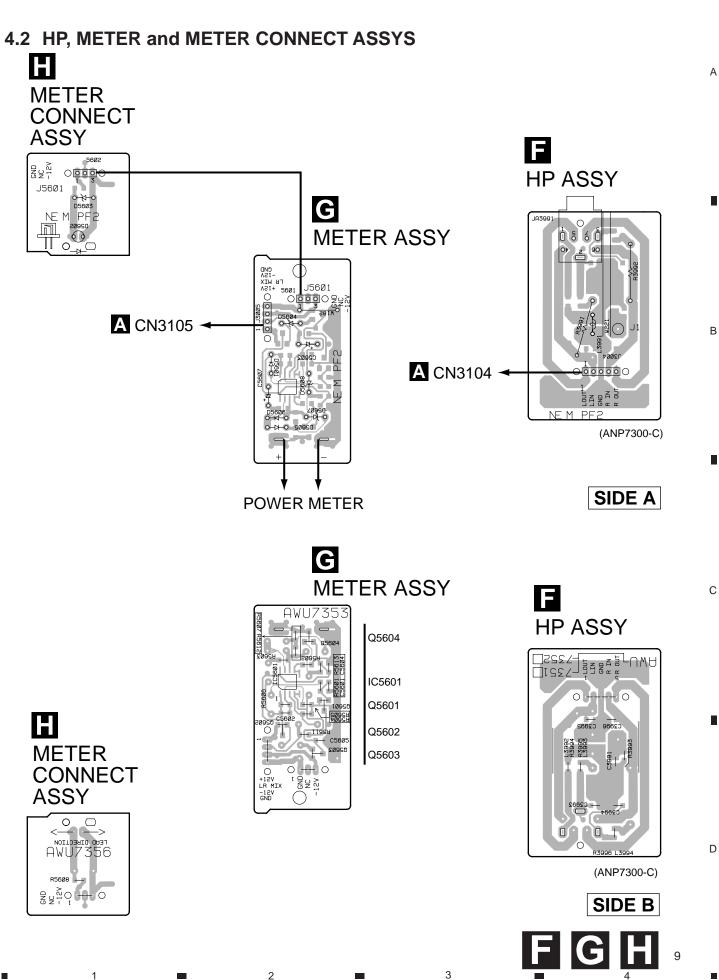


4.1 PRIMARY and SECONDARY ASSYS



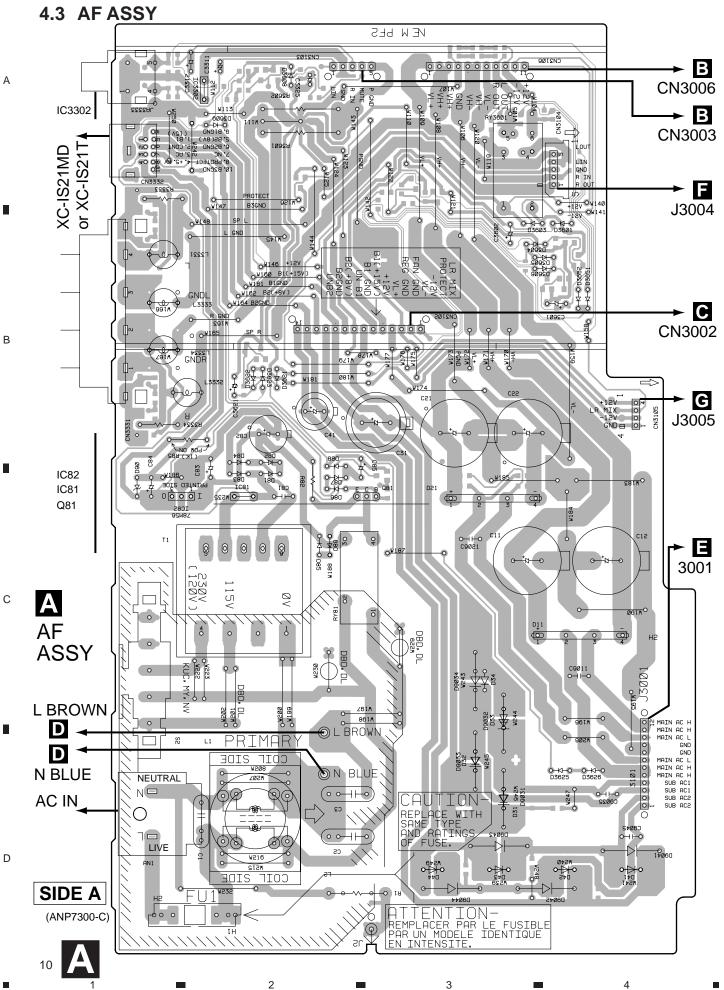
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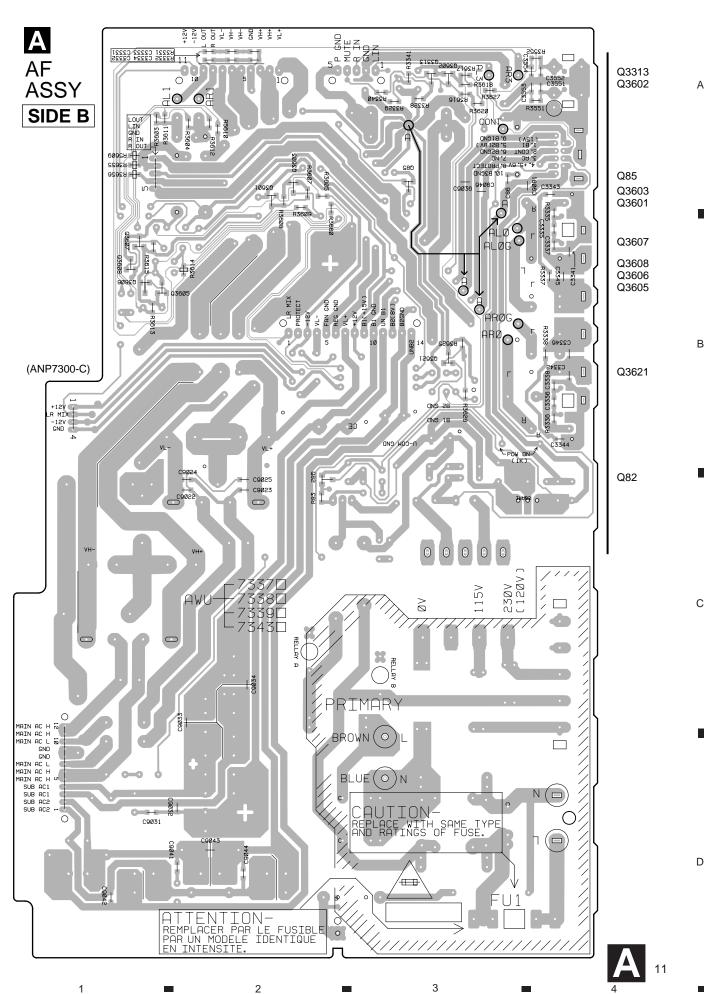
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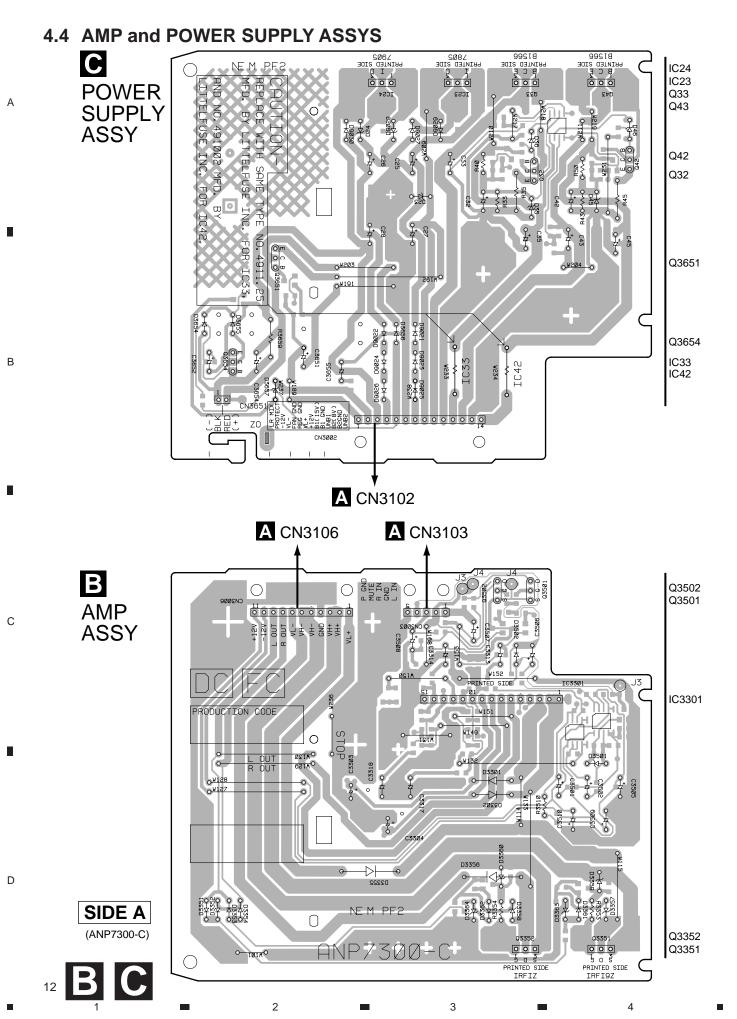
M-IS21

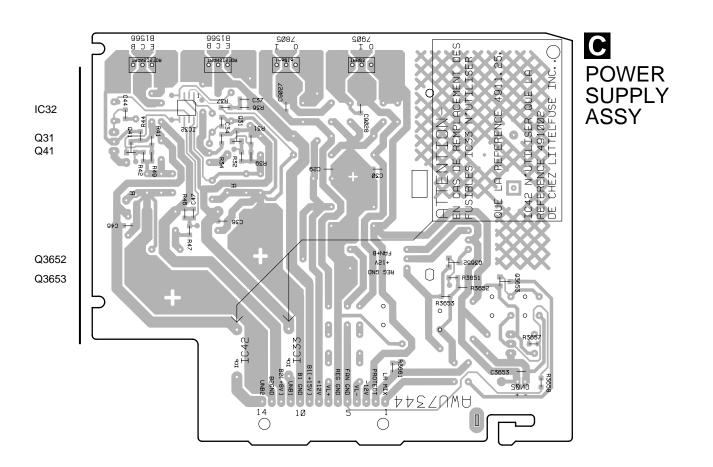
M-IS21





M-IS21





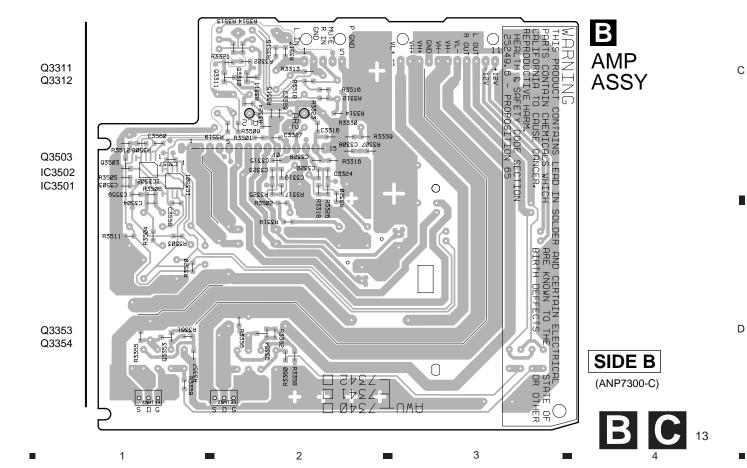
4

M-IS21

А

В

2



5. PCB PARTS LIST

NOTES: • Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List. • The A mark found on some component parts indicates the importance of the safety factor of the part.

- Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560	-	$56 \times 10^1 \rightarrow 561$	RD1/4PU561J		
47k	→	$47 \times 10^3 \rightarrow 473$	<i>RD1/4PU</i> <u>473</u> J		
0.5	→	R50	RN2H <u>R</u> 50К		
1	→	1R0	<i>RS1P1R0K</i>		
<i>Ex.2</i> When there are 3 effective digits (such as in high precision metal film resistors).					

 $5.62k \rightarrow 562 \times 10^{1} \rightarrow 5621 \dots RN1/4PC[5][6][2][1]F$

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	IST OF	ASSEMBLIES		\wedge	C82		CEAT221M25
NSP	MAIN AS		AWK7515	$\overline{\mathbb{A}}$	C41		CEAT222M25
NOF			AWU7343	$\overline{\mathbb{A}}$	C31		CEAT222M35
				~~~	C3621		CEAT2R2M2A
	- AMP		AWU7342	$\wedge$	C21, C2	2	CEAT332M50
NOD		ER SUPPLY ASSY	AWU7344	<u> </u>	021, 02	-	OLAT JJZINJU
NSP		IARY ASSY	AWU7348		C3325		CEATR10M50
NSP		ONDARY ASSY	AWU7350		C3331–(	2224	CKSQYF104Z50
	- HP A		AWU7352		C3331-0	55554	CQMA102K2E
		ERASSY	AWU7353		09011		GQINATUZNZE
	- MET	ER CONNECT ASSY	AWU7356	DEOL	OTODO		
Λ				RESI	STORS	0140/4/0101	DOMAGO
A	AF AS	5 Y				2MΩ/ 1/2W)	RCN1080
SEM	ICONDU	CTORS			R3333, F	3334	RD1/4LMF100J
		orono			R82	22222	RD1/4PU220J
$\wedge$	IC82	0001	NJM78M56FA		R3601, F		RS3LMFR22J
	Q3601, C		2SA1037K		Other Re	esistors	RS1/10S
		3603, Q3605–Q3608	2SC2412K				
	Q81		2SD1859X	OTH	ERS		
	Q3313, C	185	DTA124EK	$\square$	3101	12P CABLE HOLDER	51048-1200
	-			$\overline{\mathbb{A}}$		4PJUMPER CONNECTOR	52151-0410
	Q82		DTC124EK			2P PIN JACK	AKB7043
	,	3603–D3606, D3609, D3621		$\wedge$		10P SOCKET	AKP7048
		3626, D3651, D3652	1SS133	$\overline{\mathbb{A}}$		5P SOCKET	AKP7051
	D85–D87		1SS133	~~~	0110100		
$\Delta$	D11, D21		D3SBA20(A)	$\wedge$	CN3106	11P SOCKET	AKP7052
				$\overline{\mathbb{A}}$		14P SOCKET	AKP7053
	D3608		MTZJ5.6C	~~~		FUSE CLIP	AKR7001
$\triangle$	D31–D34	, D41–D44	S5566G(TPB2)	$\wedge$	AN1	AC INLET 1P	AKP7032
$\wedge$	D81–D84		S5688G	7:3	J3001	JUMPER WIRE	D20PYY1220E
COIL	S AND F	ILTERS			CN3331	4P SPEAKER TERMINAL	XKE3001
	L1	LINE FILTER	ATF7020				
	L3331, L3	3332 (1µH)	ATH-133				
				B	AMP	ASSY	
IRA	NSFORM	IERS		SEM		ICTORS	
$\triangle$	T1	STANDBY TRANSFORMER	ATT7049	SEIVI			
					IC3501,I	C3502	NJM4558MD
SWI	<b>ICHES A</b>	ND RELAYS		$\square$	IC3301		STK407-070B
• • • • •		SP RELAY/12V	ASR7008		Q3354		2SA1037K
$\Lambda$	RY81	SF KELAI/12V	ASR7008 ASR7018		Q3353		2SC2412K
2:2	RIOI		ASKIUIO		Q3311, (	23312	2SD2114K
CAP	ACITORS	5			Q3501, (	03502	2SK246
-			ACC7020		Q3503		DTA124EK
		(10000pF/AC250V)	ACG7020	$\wedge$	Q3351		IRFI9Z34G
$\square$		(2200µF/71v)	ACH7117	$\Delta$	Q3352		IRFIZ34G
	C3602, C	84	CEAT100M50	$\Lambda$	D3301, [	13302	1SR139-100
	C83		CEAT1R0M50	<u> </u>	D0001, L	5000Z	1011139-100
	C3601		CEAT221M16				

## **M-IS21**

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
		3354, D3361, D3362	1SS133	RESI	STOR	6	
$\Delta$	D3355, D		LT2A03		R35		RD1/2LMF121J
	D3357, D		MTZJ10C		R45		RD1/2LMF910J
$\square$	D3359, D D3363, D		MTZJ18B MTZJ39C		R3659		RD1/2PM330J
	D3303, D	3304	WI12339C		Other F	Resistors	RS1/10S
CAPA	ACITORS	-		отн	ERS		
	C3319, C		CCSQCH100D50		CN300	2 14P PLUG	AKM7012
	C3317, C C3313, C		CEANP100M35 CEANP2R2M50				
$\wedge$	C3303, C		CEATI01M50				
<u></u>	C3506–C		CEAT1R0M50	D	PRIN	IARY ASSY	
	C3501, C	3502, C3509, C3510	CEAT470M25		PRIMA	RY assembly has no service	part.
	C3315, C		CKSQYB332K50				
	C3503, C		CKSQYB682K50		~ ~ ~		
				E		ONDARY ASSY	
RESI	STORS			SEM		UCTORS	
	R3353, R	3354	RD1/4PU101J	$\triangle$	IC41	PROTECTOR(3.5A)	AEK7017
	R3510	aiatara	RD1/4PU104J		IC31	PROTECTOR(4A)	AEK7018
	Other Re	SISIOIS	RS1/10S	$\Lambda$	IC21, I		AEK7019
отн	-00			<u> </u>	юп, к	C12 PROTECTOR(7A)	AEK7021
				отн	EDG		
$\mathbb{A}$		5P PLUG 11P PLUG	AKM7010 AKM7011	UTH			51040 1000
243	0113000				3001	12P CABLE HOLDER	51048-1200
		ER SUPPLY ASSY		F		SSY	
						1991	
SEMI	CONDU	CTORS		RESI	STOR	5	
$\triangle$		PROTECTOR(1.25A)	AEK7048		R3991,	R3992	RS2LMF331J
$\triangle$		PROTECTOR(2A)	AEK7067		Other F	Resistors	RS1/10S□□□J
٨	IC32 IC23		NJM4558MD NJM7805FA				
$\Lambda$	IC23 IC24		NJM7905FA	OTH	ERS		
~~~	1024				3004	5P CABLE HOLDER	51048-0500
Δ	Q33, Q43	3	2SB1566		3991	MINI JACK	AKN7003
	Q32, Q36	654, Q42	2SC1740S		J3004	5P JUMPER WIRE	D20PYY0535E
	Q3652		2SC2412K				
	Q3651		DTA143ES				
	Q3653		DTC124EK	G		ER ASSY	
	D3654–D	3656, D9021–D9024, D9026	1SS133	SEM	COND	UCTORS	
	D9029		1SS133		IC5601		NJM4558MD
	D9030		MTZJ24B		Q5601		2SA1037K
	D36, D46		MTZJ3.0B		Q5602	Q5604	DTA124EK DTC124EK
	D35, D45	•	MTZJ5.1B			D5605, D5606	1SS133
	D9027, D	9028	MTZJ6.8C		D0001,	D3000, D3000	100100
	2002.,2				D5608		MTZJ10B
CAP	ACITORS	3			D5604		MTZJ12B
2. 11 /		, C35, C45	CEAT100M50		D5607		MTZJ5.1B
	C3652	, 200, 010	CEAT101M16				
	C25, C26	i, C3651	CEAT1R0M50	CAP	ACITO	RS	
	C3654		CEAT220M35		C5603,	C5607	CEAT1R0M50
	C42, C43		CEAT470M16		C5604,	C5605	CKSQYF104Z50
	C32, C33	i -	CEAT470M25	RESI	STOR	6	
	C44	0007 00000	CKSQYB102K50		All Res	istors	RS1/10S
	C3653, C	9027, C9028	CKSQYF104Z50				

M-IS21

Mark	No.	Description	Part No.		
OTHE	ERS				
	5601	3P CABLE HOLDER	51048-0300		
	3005	4P CABLE HOLDER	51048-0400		
	J3005	4P JUMPER WIRE	D20PYY0410E		
m					
METER CONNECT ASSY					
SEMICONDUCTORS					

D5603	MTZJ5.6C
D5602	NSPBF50S-8451

RESISTORS

All Resistors

OTHERS

5602	3P CABLE HOLDER
J5601	3P JUMPER WIRE

51048-0300 D20PYY0315E

RS1/10S

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION 7.1 SINGLE OPERATION METHOD

Single operation method and inputlevel.

The procedure and the input level of a single operation are shown below.

1. R85 are shorted by $1k\Omega$.

2. A point of the figure below in four places is connected.

GND is not common because it is independent with chassis GND (GND of the amplifier), B1GND, B2GND, and B3GND. The potential of B1GND, B2GND, and B3GND is done by connecting A point in four places as well as chassis GND.

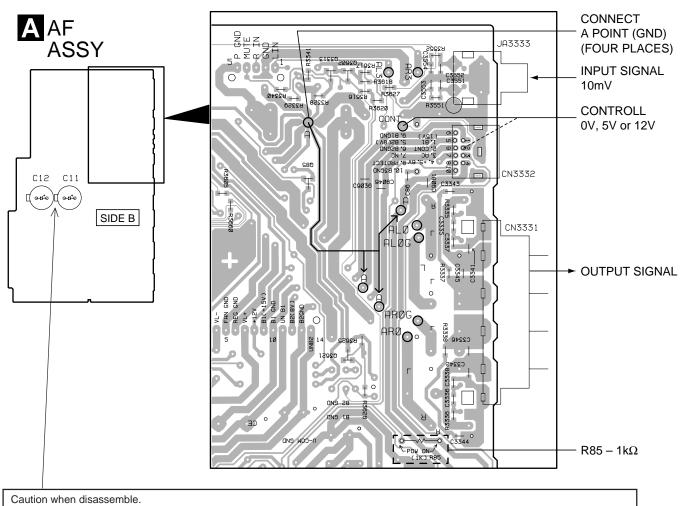
2. The power supply of the product is turned on.

3. the terminal CONT (2 pin of CN3332) are controlled respectively by the following voltages.

	CONT			
	12V	5V	0V	
RY	ON	ON	OFF	
MUTE	OFF	ON	ON	

4. The signal of 10mV is input from input terminal (JA3333), and the output is confirmed with speaker terminal (CN3331).

Note : If the music signal is input directly to input terminal (JA3333) with CD PLAYER etc., the output becomes a large volume because there are 40dB GAIN of the amplifier.



Even if the power supply code is pulled out from the outlet, neither C11 nor C12 of AF ASSY are discharged. Please discharge C11 and C12 of AF ASSY by the resistor of 100 Ω or more before removing AF ASSY or POWER SUPPLY ASSY. There is a possibility to destroy the transistor, and Please discharge by the resistor of 100 Ω or more.

8. PANEL FACILITIES AND SPECIFICATIONS

PANEL FACILITIES



32 POWER OUTPUT METER

33 PHONES jack

• SPECIFICATIONS

Amplifier Section

Continuous average power output of 55 watts* per channel, min., at 6 ohms, from 60 Hz to 15,000 Hz with no more than 1.0 %** total harmonic distortion.

- * Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.
- ** Measured by Audio Spectrum Analyzer.

Micellaneous

Power Requirements	AC120 V, 60 Hz
Power Consumption	120 W, 160 VA
Power Consumption in stand	by mode 1 W
Dimensions:	
Power Amplifier	150 (W) x 300 (H) x 233 (D) mm
5-7/	8 (W) x 11-13/16 (H) x 9-3/16 (D) in.
Weight:	
Power Amplifier	4.0 kg (8 lb 13 oz)

NOTE:

Specifications and design subject to possible modification without notice, due to improvements.