

SERVICE MANUAL

FISHER

CA-2100

STEREO AMPLIFIER



WORLD LEADER IN HIGH QUALITY STEREO

SPECIFICATIONS

POWER AMPLIFIER SECTION

Minimum continuous RMS sine wave power per channel from 40 to 20,000 Hz with less than 0.8% total harmonic distortion into 4 ohm and 8 ohm loads.

CONTROL AMPLIFIER SECTION

Sensitivity for rated power (at 8 ohm, 1KHz)

Phono	2.5mV
AUX. Tuner	150mV
Tape 1. 2	150mV

Hum & Noise below rated power (Volume Max.)

Phono	65dB
AUX. Tuner	85dB
Tape 1. 2	85dB

Frequency Response

Phono	RIAA	30Hz-15KHz	±1dB
AUX		20Hz-20KHz	±1dB
Tape 1. 2		20Hz-20KHz	±1dB

Maximum Input Signal (at 1KHz 1% THD)

Phono to RCDR	180mV
AUX. Tuner to SPKR	150mV
Tape 1. 2 to SPKR	150mV

Input Impedance Values (at 1KHz)

Phono	50K ohm
AUX. Tuner	50K ohm
Tape 1. 2	50K ohm

Volume Control

Tracking error 0 to 40dB Att.	3dB
Attenuation at 50% rotation	17dB
Maximum attenuation	98dB

Bass Control Range (at 100Hz)

Treble Control Range (at 10KHz)

Loudness Contour (at 30dB Volume attenuation)

100Hz	+8dB
10KHz	+3dB

ADJUSTMENT OF THE MAIN AMP P.C. BOARD

BEFORE ADJUSTMENT

1. Disconnect the PRE OUT/MAIN IN connector.
2. After the power switch is turned ON, allow a few minutes before making adjustment, to be sure of the most stable operation.
3. Connect dummy load resistors (8 ohms) to the speaker terminals.
4. Use a DC V.T.V.M. (Input impedance: More than 50K ohms/V)

(A) MID-POINT POTENTIAL ADJUSTMENT

Set the voltage between the speaker terminal and ground (Chassis) to $0V \pm 0.01V$ with VR 01 (VR 02).

(B) IDLING CURRENT ADJUSTMENT

Adjust VR 03 (VR 04) for an idling current of 35mA. Measure the voltage at both sides of R91 (94) resistor (0.47 ohms) and adjust VR 03 (VR 04) to indicate $0.018V \pm 0.001V$.

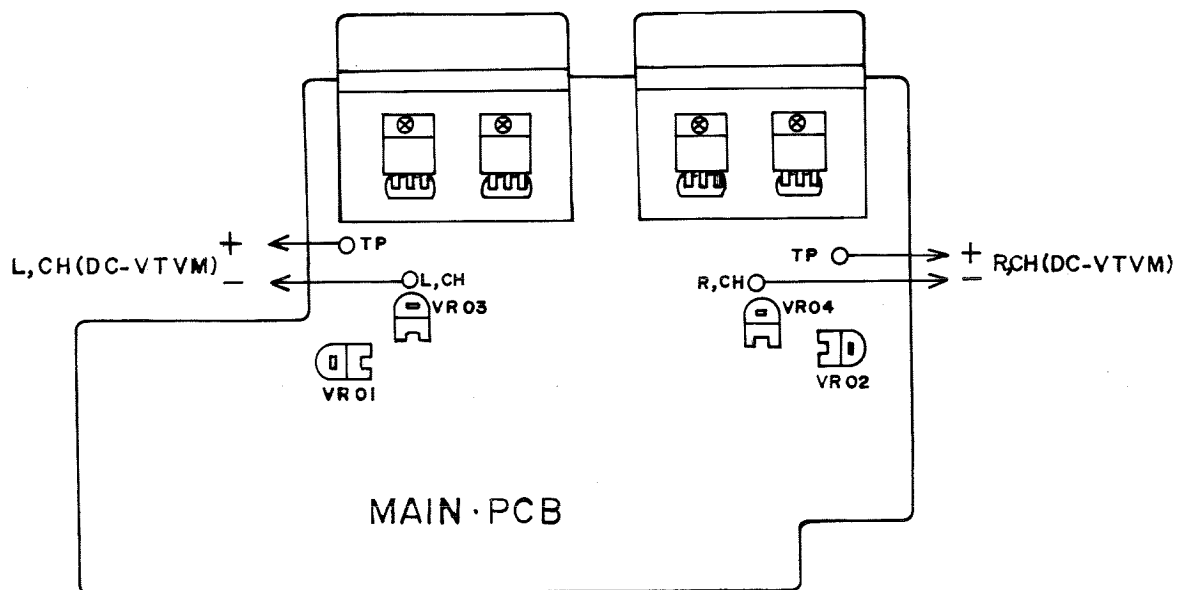
Note: Polarity of Emitter of Q23 (Q26) is (+).

Mid-point is (-).

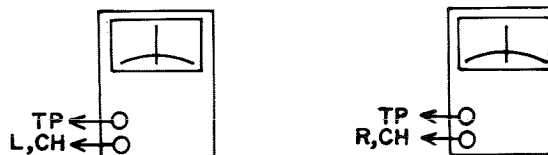
(C) Repeat steps A and B for optimum results.

Note: a. Turn the semi-fixed variable resistor slowly during adjustment.

b. Be careful of the polarity of each measurement point.

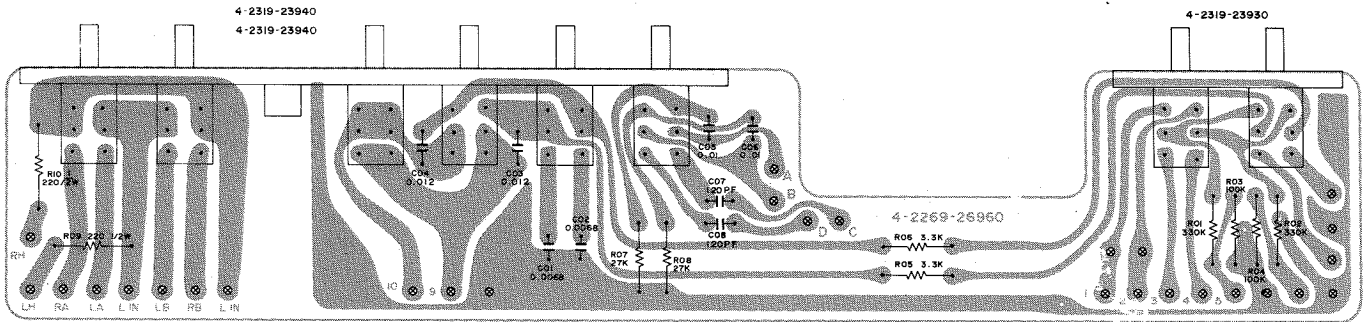


DC-VTVM

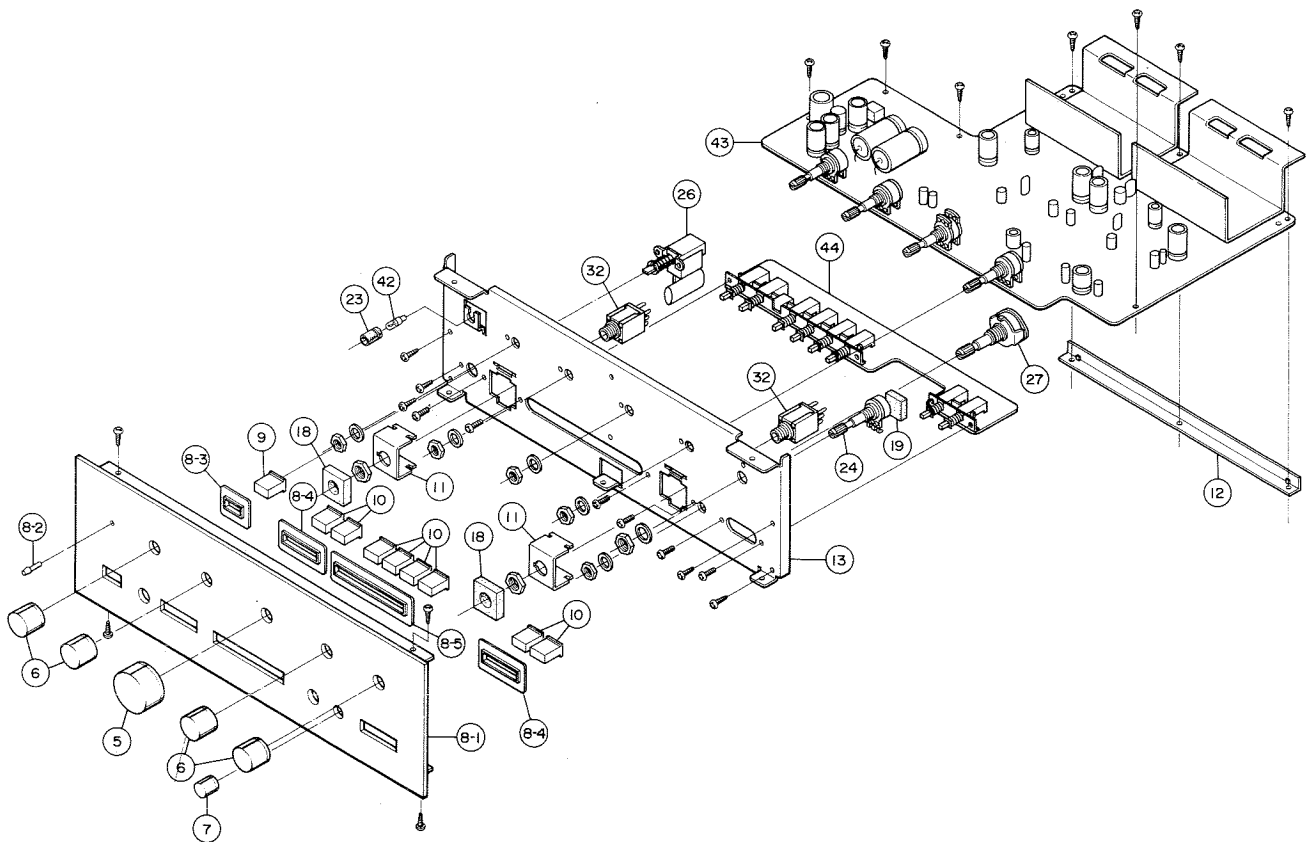
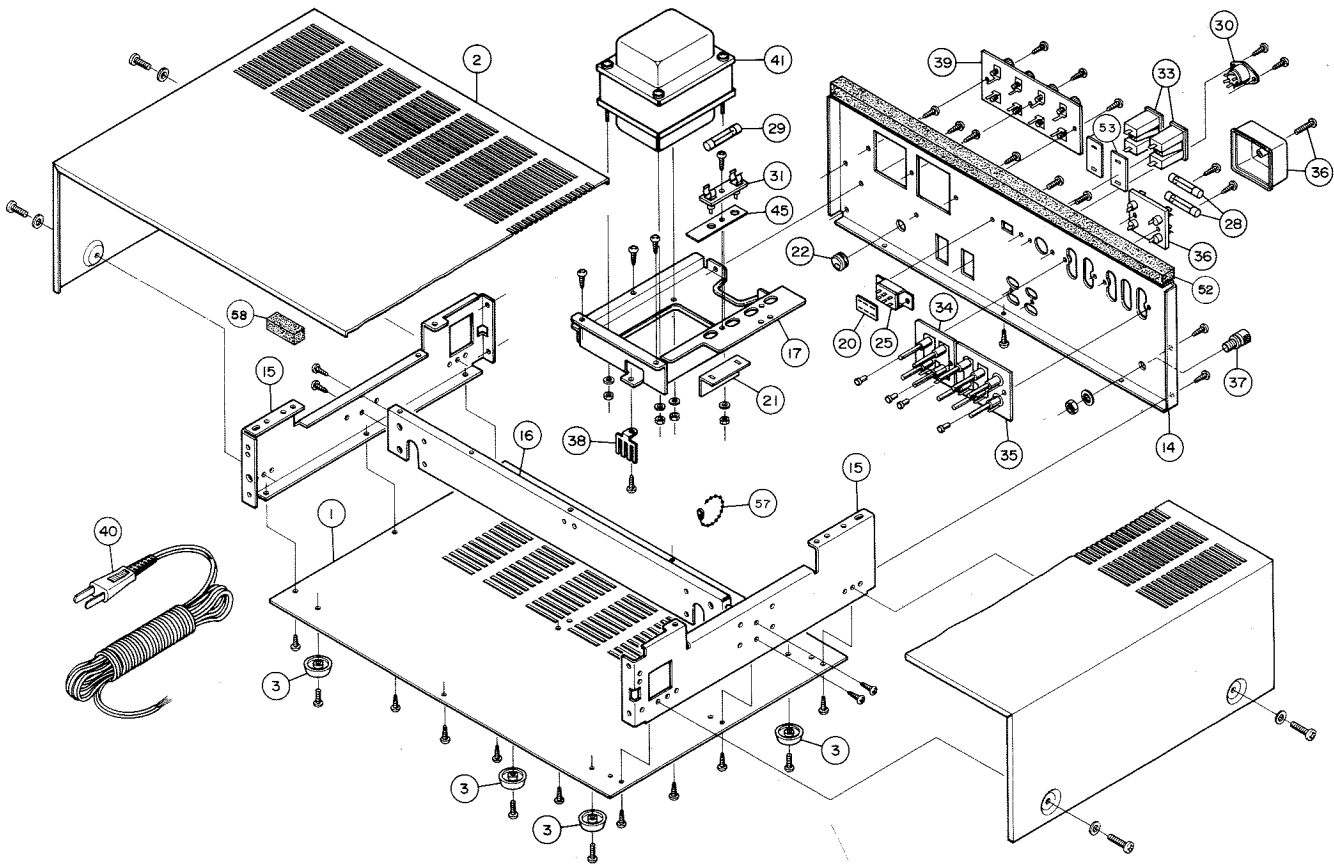


PARTS LIST

Ref. No.	Part No.	Description
PB1310400162903 SWITCH P.C. BOARD ASSEMBLY		
S1,2 S3-8	SP4231923930 SP4231923940	Switch, Tape Monitor Switch, Speaker, Filter, Mode, Loud.
C07,C08	CK22350-4	Cap. Cer. 220pf 50V 10%
C03,C04	CY22335-10	Cap. Mylar 0.012MF 50V 10%
C05,C06	CY22335-1	Cap. Mylar 0.01MF 50V 20%
C01,C02	CY22335-9	Cap. Mylar 0.0068MF 50V 20%
R03,R04	RF25DC104J	Res. Dep. Carb. 100K ohms 5% 1/4W
R07,R08	RF25DC273J	Res. Dep. Carb. 27K ohms 5% 1/4W
R05,R06	RF25DC332J	Res. Dep. Carb. 3.3K ohms 5% 1/4W
R01,R02	RF25DC334J	Res. Dep. Carb. 330K ohms 5% 1/4W
R09,R10	RC20BF221J	Res. 220 ohms 1/2W 10%



EXPLODED VIEW



PARTS LIST

Ref. No.	Part No.	Description
CHASSIS		
1	1312110515402	Bottom Cover
2	1312141013301	Top Cover
3	1312180112900	Leg
5	EK1310100131301	Knob Assembly, Volume
6	EK1310100131402	Knob Assembly, Function, Balance, Bass, Treble
7	1310100131501	Knob Assembly, Mic. Level
8	1310101619903	Dress Panel Assembly
9	EK1312160134800	Knob, Power Switch
10	EK1312160134900	Knob, Push Switch
ELECTRICAL PARTS		
24	RV4222924650	Variable Resistor 20K
25	SS4231922520	Switch Slide, Mic. Mixing
26	SP4231923900	Switch, Power
27	SR4231924040	Switch, Function
28	FL51313-35	Fuse 2 Amp 250V Slo-Blo (Spkrs)
29	FL51313-3	Fuse 1 Amp 125V Slo-Blo (Power)
31	EA4235921062	Fuse Holder, AC Power
32	JK4235921670	Jack, Mic, Input - Headphone
36	EA4235922030	Fuse Holder, Spkr Protector
40	WR2740241	Power Cord
41	TD4251923354	Power Transformer
42	LM4612920219	Lamp, Pilot 6.3V, 80mA
C05	C50575-4	Cap. Mylar 0.33MF 50V ±20%
C01-C02	CK22348-1	Cap. Cer. 0.05MF 50V +80 -20%
C04	CK22359-1	Cap. Cer. 0.01MF 500V +100 -0%
30	J20807	Din Connector, Tape 2
33	JK4235921960	AC Outlet
34	JK4235922010	Rear Access. Jack 4P, Tape 1
35	JK4235922022	Rear Access. Jack 6P, Inputs
39	ET4237921470	Speaker Connecting Terminals
PB1310400162802 Main PC Board Assembly		
VR01,02	RV4222924210	Variable Resistor, 1K, Center Voltage
VR03,04	RV4222924220	Variable Resistor, 500 ohm IDLE ADJUST.
VR05	RP4222924660	Variable Resistor 250K (Balance)
VR06	RP4222924670	Variable Resistor 250Kx2 (Volume)
VR07,08	RP4222924680	Variable Resistor 50Kx2 (Tone)
C29,C30	CE1252615	Cap. Elect. 4.7MF 25V
C45,C46	CE0252221	Cap. Elect. 10MF 10V
C11,C12, C33,C34, C51,C52, C53	CE1252331	Cap. Elect. 100MF 10V
C58	CE22342-12	Cap. Elect. 100MF 16V
C49,C50	CE22342-11	Cap. Elect. 100MF 25V
C80	CE22342-6	Cap. Elect. 22MF 25V
C41,C42, C43,C44, C64,C70	CE1252633	Cap. Elect. 330MF 25V
C35,C36	CE22342-1	Cap. Elect. 0.47MF 50V
C73,C74	CE22342-7	Cap. Elect. 47MF 35V
C68,C69	CEC1ERT-478A--	Cap. Elect. 4700MF 25V
C19,C20	CL22305-14	Cap. Tant. 4.7MF 50V ±20%
C01,C02, C13,C14	CS22340-5	Cap. Sint. Alum. 1MF 25V ±20%
C39,C40, C57		
C62	CS22340-2	Cap. Sint. Alum. 0.22MF 25V ±20%
C47,C48	CK22344-9	Cap. Cer. 15pf 50V 10%
C53,C54	CK22347-3	Cap. Cer. 150pf 50V 10%
C56	CK22350-5	Cap. Cer. 270pf 50V 10%
C09,C10	CK22344-21	Cap. Cer. 35pf 50V 10%
C71,C72		
C61	CK0242011	Cap. Cer. 50pf 50V 10%
C05,C06	CY22335-10	Cap. Mylar 0.012MF 50V 10%
C21,C22	CY22335-7	Cap. Mylar 0.0033MF 50V 10%
C07,C08, C60	CY22335-8	Cap. Mylar 0.004MF 50V ±20%

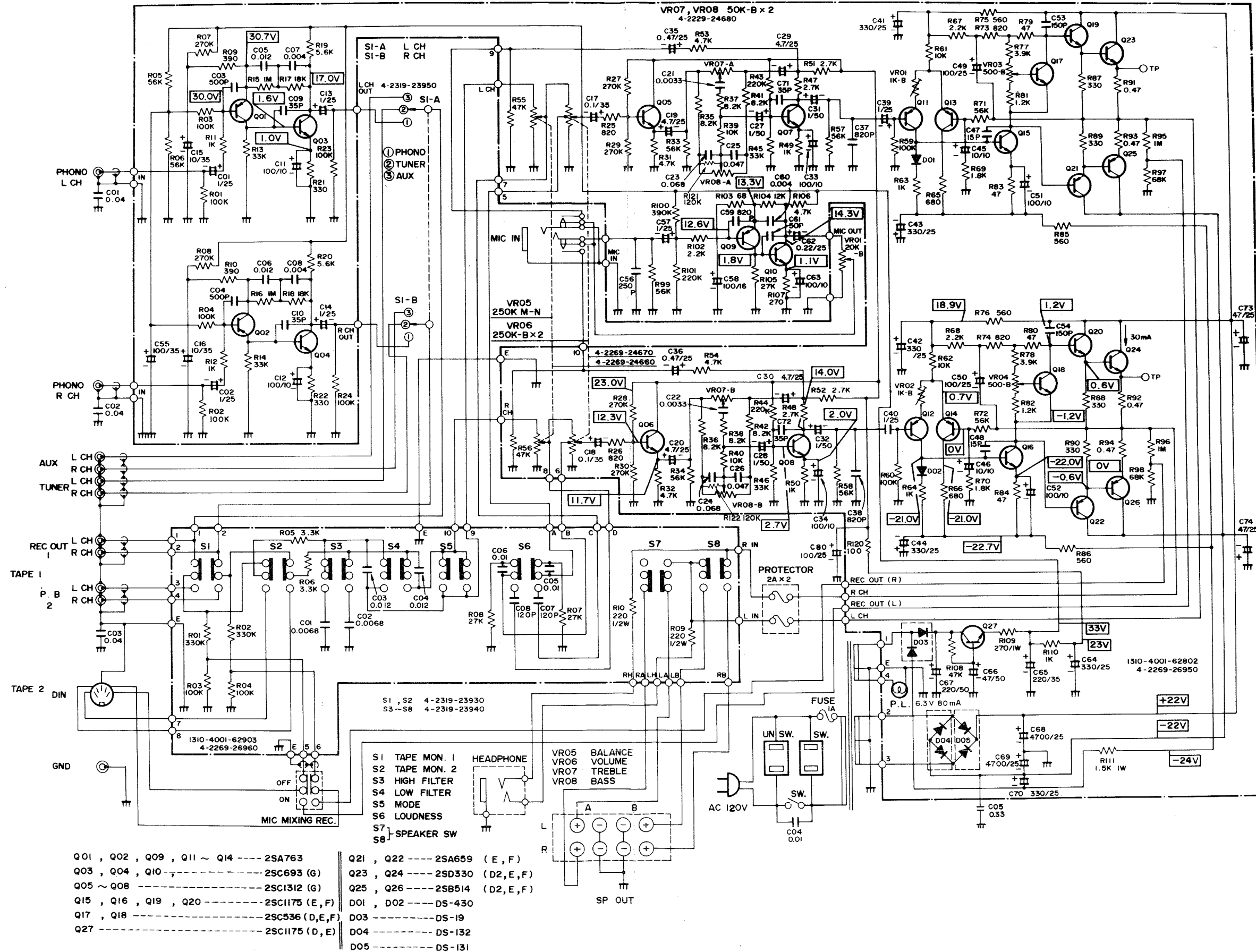
Ref. No.	Part No.	Description
PB1310400162802 Main PC Board Assembly		
C25,C26	CY22335-22	Cap. Mylar 0.047MF 50V ±20%
C23,C24	CY22335-16	Cap. Mylar 0.068MF 50V ±20%
C27,C28, C31,C32	CE22342-2	Cap. Elect. 1MF 50V ±20%
C67	CE22342-26	Cap. Elect. 220MF 50V ±20%
C66	CE1252825	Cap. Elect. 47MF 50V ±20%
C03,C04	CK22350-8	Cap. Cer. 470pf 50V 10%
C37,C38, C59	CK22347-12	Cap. Cer. 820pf 50V 10%
C55	CE22342-10	Cap. Elect. 100MF 35V 10%
C65	CE22342-20	Cap. Elect. 220MF 35V 10%
C17,C18	CL22305-7	Cap. Tant. 0.1MF 35V 20%
C15,C16	CE22342-28	Cap. Elect. 10MF 35V 20%
R120	RF25DC101J	Res. Dep. Carb. 100 ohms 5% 1/4W
R11,R12, R49,R50, R63,R64, R110	RF25DC102J	Res. Dep. Carb. 1K ohms 5% 1/4W
R39,R40, R61,R62	RF25DC103J	Res. Dep. Carb. 10K ohms 5% 1/4W
R01,R02, R03,R04, R23,R24, R59,R60	RF25DC104J	Res. Dep. Carb. 100K ohms 5% 1/4W
R15,R16, R95,R96	RF25DC105J	Res. Dep. Carb. 1M ohms 5% 1/4W
R81,R82	RF25DC122J	Res. Dep. Carb. 1.2K ohms 5% 1/4W
R104	RF25DC123J	Res. Dep. Carb. 12K ohms 5% 1/4W
R69,R70	RF25DC182J	Res. Dep. Carb. 1.8K ohms 5% 1/4W
R17,R18	RF25DC183J	Res. Dep. Carb. 18K ohms 5% 1/4W
R67,R68, R102	RF25DC222J	Res. Dep. Carb. 2.2K ohms 5% 1/4W
R43,R44, R101	RF25DC224J	Res. Dep. Carb. 220K ohms 5% 1/4W
R107	RF25DC271J	Res. Dep. Carb. 270 ohms 5% 1/4W
R47,R48, R51,R52	RF25DC272J	Res. Dep. Carb. 2.7K ohm 5% 1/4W
R105	RF25DC273J	Res. Dep. Carb. 27K ohms 5% 1/4W
R07,R08, R27,R28, R29,R30	RF25DC274J	Res. Dep. Carb. 270K ohms 5% 1/4W
R21,R22, R87,R88, R89,R90	RF25DC331J	Res. Dep. Carb. 330 ohms 5% 1/4W
R13,R14, R45,R46	RF25DC333J	Res. Dep. Carb. 33K ohms 5% 1/4W
R09,R10	RF25DC391J	Res. Dep. Carb. 390 ohms 5% 1/4W
R77,R78	RF25DC392J	Res. Dep. Carb. 3.9K ohms 5% 1/4W
R100	RF25DC394J	Res. Dep. Carb. 390K ohms 5% 1/4W
R79,R80, R83,R84	RF25DC470J	Res. Dep. Carb. 47 ohms 5% 1/4W
R31,R32, R53,R54, R106	RF25DC472J	Res. Dep. Carb. 4.7K ohms 5% 1/4W
R55,R56, R108	RF25DC473J	Res. Dep. Carb. 47K ohms 5% 1/4W
R75,R76, R85,R86	RF25DC561J	Res. Dep. Carb. 560 ohms 5% 1/4W
R19,R20	RF25DC562J	Res. Dep. Carb. 5.6K ohms 5% 1/4W
R05,R06, R33,R34, R57,R58, R71,R72, R99	RF25DC563J	Res. Dep. Carb. 56K ohms 5% 1/4W
R103	RF25DC680J	Res. Dep. Carb. 68 ohms 5% 1/4W
R65,R66	RF25DC681J	Res. Dep. Carb. 680 ohms 5% 1/4W

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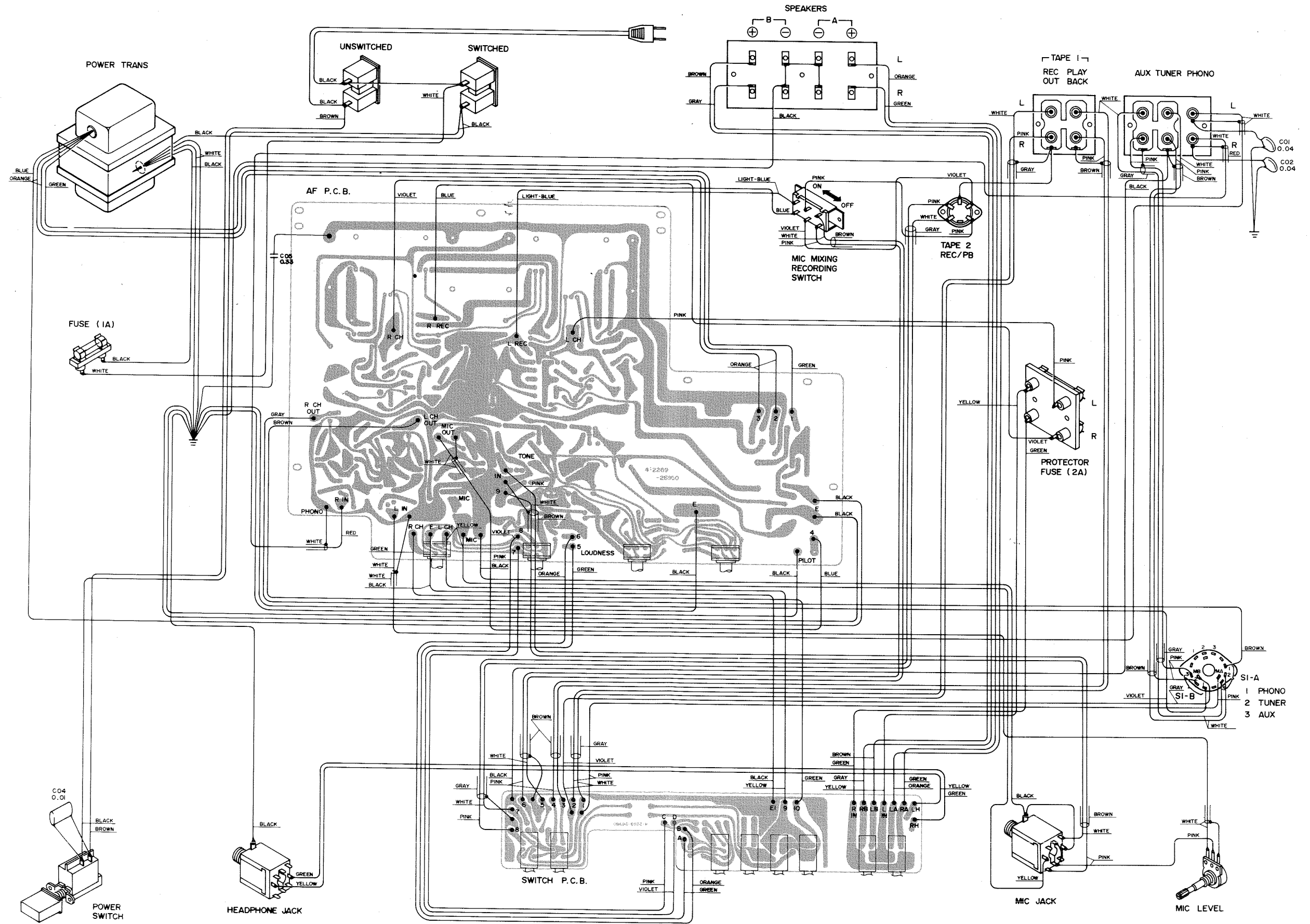
Ref. No.	Part No.	Description
PB1310400162802 Main PC Board Assembly		
R97,R98	RF25DC683J	Res. Dep. Carb. 68K ohms 5% 1/4W
R25,R26, R73,R74	RF25DC821J	Res. Dep. Carb. 820 ohms 5% 1/4W
R35,R36, R37,R38, R41,R42	RF25DC822J	Res. Dep. Carb. 8.2K ohms 5% 1/4W
R91,R92, R93,R94	R2HZPKR47A	Res. 0.47 ohms 1/2W 10%
R111	R3AXPK152A	Res. 1.5K ohms 1W 10%
R109	RW200W271J	Res. 270 ohms 1W 10%
Q01,Q02, Q09,Q11, Q12,Q13, Q14	TR2SA763	Transistor 2SA763

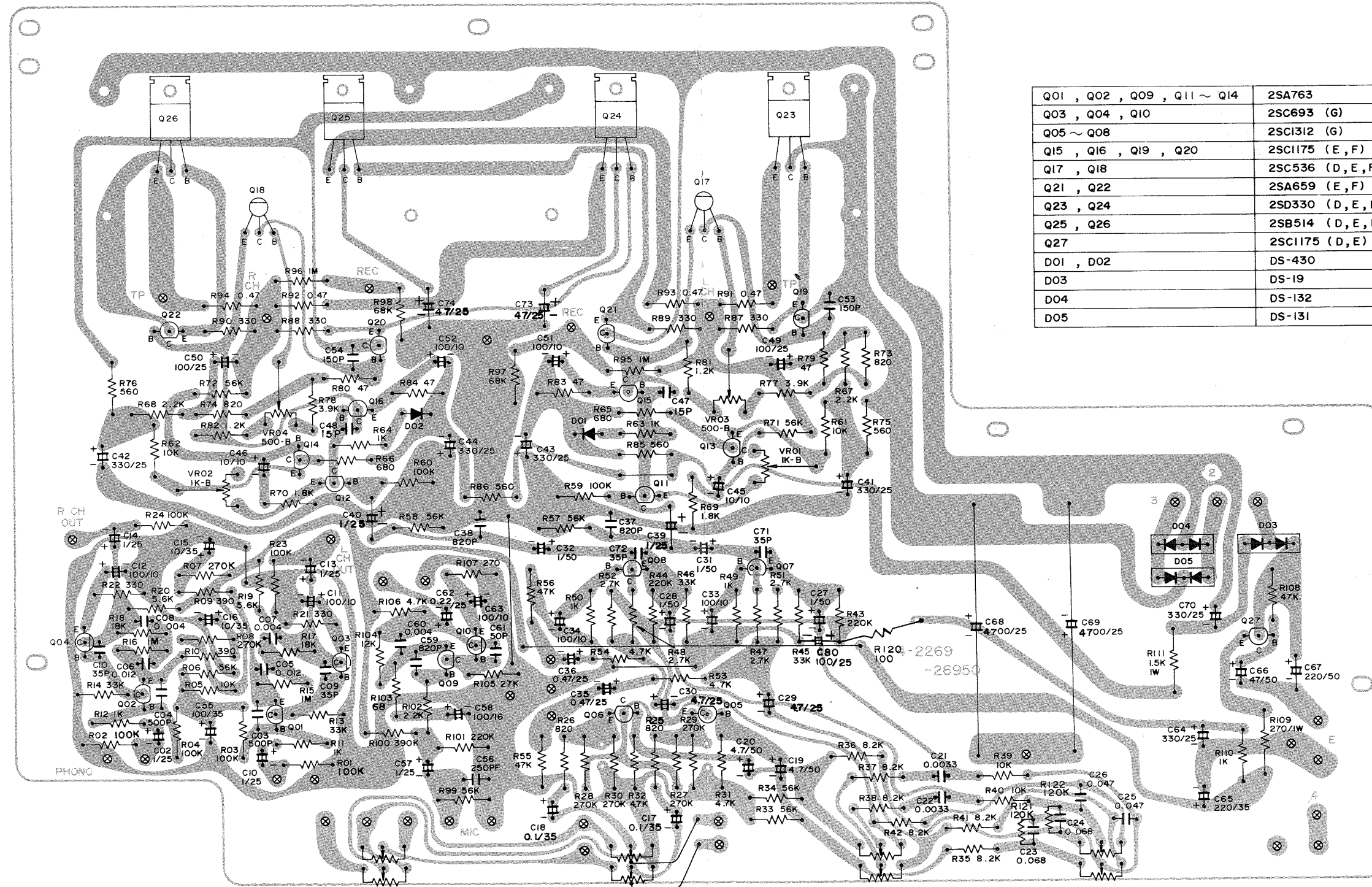
Ref. No.	Part No.	Description
PB1310400162802 Main PC Board Assembly		
Q05,Q06, Q07,Q08	TR2SC1312F	Transistor 2SC1312F
D03	TRDS19	Diode DS 19
D05	TRDS131	Diode DS 131
D04	TRDS132	Diode DS 132
Q03,Q04, Q10	TR2SC693F	Transistor 2SC693F
Q17,Q18	TR2SC536D	Transistor 2SC536D
Q25,Q26	TR2SB514D	Transistor 2SB514D
Q27	TR2SC1175D	Transistor 2SC1175D
Q15,Q16, Q19,Q20	TR2SC1175E	Transistor 2SC1175E
Q21,Q22	TR2SA659E	Transistor 2SA659E
Q23,Q24	TR2SD330E	Transistor 2SD330E
D01,D02	TRDS430	Diode DS 430

SCHEMATIC DIAGRAM



WIRING DIAGRAM





Q01 , Q02 , Q09 , Q11 ~ Q14	2SA763
Q03 , Q04 , Q10	2SC693 (G)
Q05 ~ Q08	2SC1312 (G)
Q15 , Q16 , Q19 , Q20	2SC1175 (E, F)
Q17 , Q18	2SC536 (D, E, F)
Q21 , Q22	2SA659 (E, F)
Q23 , Q24	2SD330 (D, E, F)
Q25 , Q26	2SB514 (D, E, F)
Q27	2SC1175 (D, E)
D01 , D02	DS-430
D03	DS-19
D04	DS-132
D05	DS-131

BALANCE 250KMN
4-2229-24660

VOLUME 250K-B x 2
4-2229-24670

TREBLE 50K-B x 2
4-2229-24680

BASS 50K-B x 2
4-2229-24660



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