

NAD **SERVICE**
MANUAL

MONITOR SERIES

7600

AM/FM RECEIVER

Contents

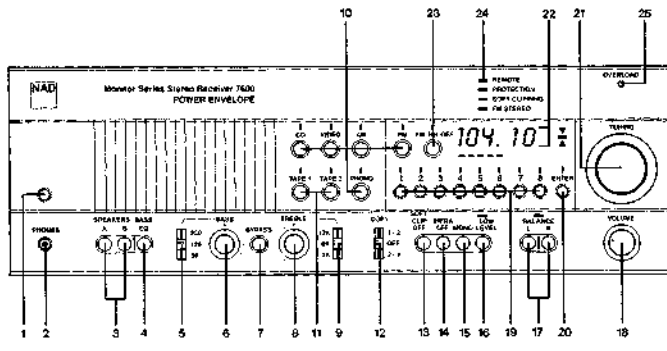
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Version List

- [A] : USA Version
- [A1] : CANADA Version
- [B] : U.K. Version
- [B1] : AUSTRALIA/N Z. Version
- [C] : EUROPE & OTHERS Version
- [C1] : W.GERMANY Version

FRONT PANEL

- | | | | | |
|---------------------|------------------------|------------------------------|------------------------|------------------------|
| 1. Power | 8. Bass | 11. Tape 1, Tape 2 (Monitor) | 16. Low Level | 21. Tuning |
| 2. Phono | 7. Tone Control Bypass | 12. Tape Copy | 17. Balance Left/Right | 22. Tuning Display |
| 3. Speaker Selector | 6. Treble | 13. Soft Clipping Off | 18. Volume | 23. FM NR Off |
| 4. Bass EQ | 9. Table Range | 14. Infrasonic Filter Off | 19. Presets | 24. Status Indication |
| 5. Bass Range | 10. Input Selector | 15. Mono | 20. Memory Erase | 25. Overload Indicator |

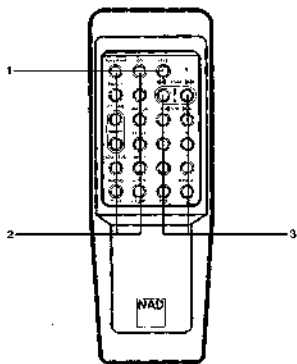
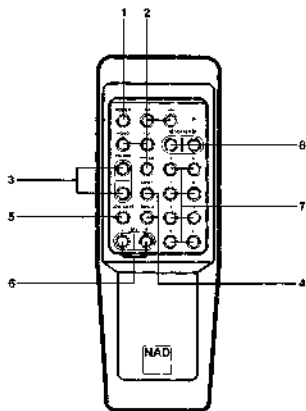


REMOTE CONTROL

- | | |
|-----------------------------|--------------------------|
| 1. Power | 5. Low Level |
| 2. Input Selector | 6. Balance Left/Right |
| 3. Volume Up/Down | 7. Station Presets |
| 4. Tape 1, Tape 2 (Monitor) | 8. Tuning Search Up/Down |

UNIPED REMOTE CONTROL

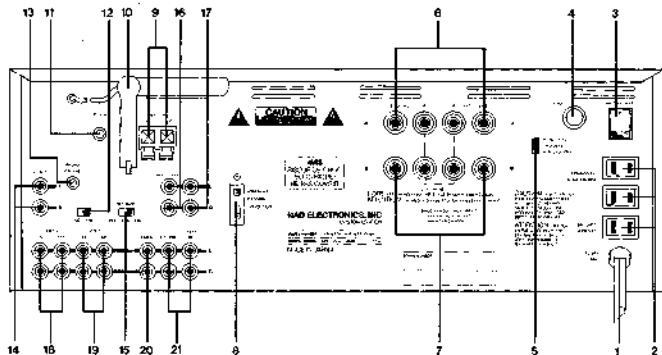
- | | |
|----------------------------|----------------------|
| 1. Mode Selection | 3. Station Selection |
| 2. Signal Source Selection | CD Tracks |
| Volume | Tape Ejectors |
| Playback Controls | |



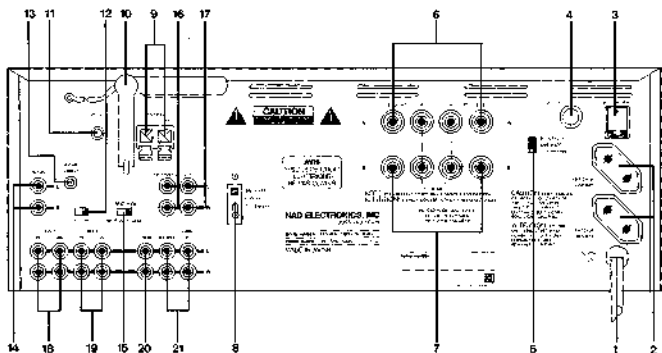
REAR PANEL (For A, A1 Version)

- | | | |
|------------------------|-------------------------|----------------------------------|
| 1. AC Line Cord. | 8. Bridging | 15. Phono Capacitance (MM only). |
| 2. AC Outlets | 9. AM Antenna Terminals | 16. Video Sound Input |
| 3. Master Power Switch | 10. AM Ryd Antenna | 17. CD Input |
| 4. AC Fuse | 11. FM Antenna Input | 18. Tape 1 Input/Output |
| 5. Speaker Impedance | 12. MM/MC | 19. Tape 2 Input/Output |
| 6. Speakers A. | 13. Phono Ground | 20. Left Input |
| 7. Speakers B. | 14. Phono Input | 21. Preamp Out, Normal In. |

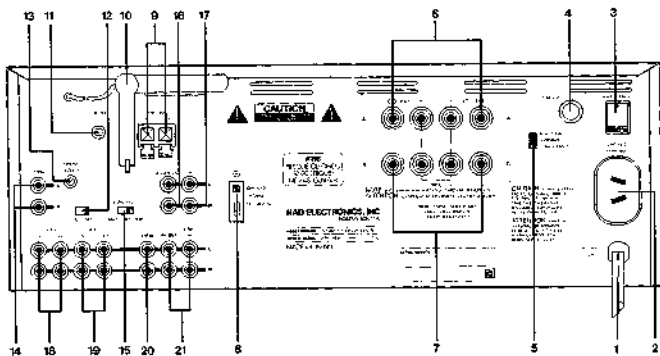
CAUTION
 Do not connect
 the input of this unit
 unless the correct
 impedance is
 selected. Failure
 to do so may
 damage the unit.
 See the manual
 for more details.



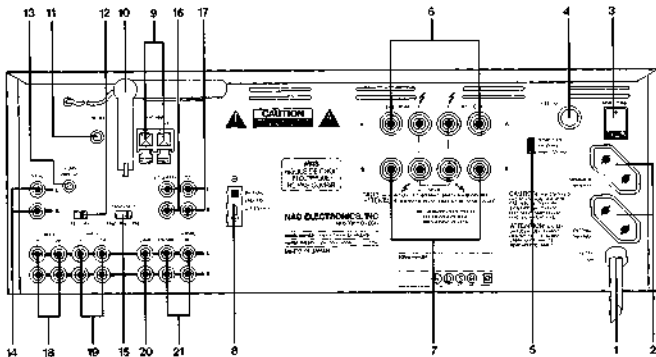
(For B Version)



(For S1 Version)



(For C. C1 Version)



SPECIFICATIONS

FEATURES

A. CONTROLS AND SWITCHES

- | | | |
|--------------------------------------|-------------------|---------------------|
| 1. Function Selector switch | : CD/VIDEO/PHONO/ | Sensor type |
| | FM/AM | |
| 2. Tuning control | : Up/Down | Rotary type |
| 3. Volume control | : Min/Max | Rotary type |
| 4. Low Level switch | : On/Off | Push type |
| 5. Enter switch | : On | Sensor type |
| 6. Preset switch (1-8) | : On | Sensor type |
| 7. Mono switch | : Stereo/Mono | Push type |
| 8. Bass control | : Min/Max | Rotary type |
| 9. Treble control | : Min/Max | Rotary type |
| 10. Tone Bypass switch | : On/Off | Push type |
| 11. Tape Monitor switch | : Tape 1/Tape 2 | Sensor type |
| 12. Dubbing switch | : 1—2/Off2—1 | Lever type |
| 13. Speaker Selector switch | : A/B | Push type |
| 14. Bass EQ switch | : On/Off | Push type |
| 15. Balance control | : Left/Right | Sensor type |
| 16. FM NR Off switch | : On/Off | Sensor type |
| 17. AC Power switch | : On/Off | Sensor type |
| 18. Soft Clipping switch | : On/Off | Push type |
| 19. Infrasonic switch | : On/Off | Push type |
| 20. Bass Turnover switch | : 250/120/60Hz | Lever type |
| 21. Treble Turnover switch | : 12k/6k/Hz | Lever type |
| 22. FM De-Emphasis switch | : 75/50 µsec | Slide type (Inside) |
| 23. Scan Step switch | : AM 9/10kHz | Slide type (Inside) |
| 24. PHONO switch | : MC/MM | Slide type (Rear) |
| 25. PHONO Capacitance Loading switch | : 100/200/300 pF | Slide type (Rear) |
| 26. Bridging switch | : Stereo/Mono | Slide type (Rear) |
| 27. Speaker Impedance switch | : 4/8Ω | Slide type (Rear) |
| 28. Master Power switch | : On/Off | Rocker type (Rear) |

B. EXTERNAL CONNECTIONS

- | | |
|--------------------------------|---|
| 1. AM antenna | : 2 p terminal |
| 2. FM antenna | : 75Ω F-type coaxial terminal |
| 3. Phone Input (L/R) | : RCA type pin jack (2p) |
| 4. Lab input (L/R) | : RCA type pin jack (2p) |
| 5. CD input (L/R) | : RCA type pin jack (2p) |
| 6. Video input (L/R) | : RCA type pin jack (2p) |
| 7. Tape monitor input (L/R) ×2 | : RCA type pin jack (4p) |
| 8. Pre output (L/R) | : RCA type pin jack (2p) |
| 9. Normal input (L/R) | : RCA type pin jack (2P) |
| 10. Recording output (L/R) ×2 | : RCA type pin jack (4p) |
| 11. AC Line cord | : UL type |
| 12. Speaker system A | : Army type binding post for banana plug
[A][A1][B][B1]
not for banana plug [C][C1] |
| 13. Speaker system B | : Army type binding post for banana plug
[A][A1][B][B1]
not for banana plug [C][C1] |

C. OUTPUT LOAD

- | | |
|---------------------|---------|
| 1. Speaker output | : 8Ω/4Ω |
| 2. Headphone output | : 8Ω |
| 3. Recording output | : 10kΩ |

D. AC POWER SUPPLY

- | | |
|-------------|---------|
| : 120V/60Hz | [A][A1] |
| : 240V/50Hz | [B][B1] |
| : 220V/50Hz | [C][C1] |

E. REMOTE CONTROL TRANSMITTER

- | | | |
|-----------------------------|-----------------------|-------------|
| 1. Volume control | : Up/Down | Sensor type |
| 2. Power switch | : On/Off | Sensor type |
| 3. Memory switch (1-8) | : On | Sensor type |
| 4. Search | : Up/Down | Sensor type |
| 5. Low Level | : On/Off | Sensor type |
| 6. Tape | : Tape 1/Tape 2 | Sensor type |
| 7. Function Selector switch | : PHONO/CD/VIDEO/ | Sensor type |
| | FM/AM | |
| 8. Power supply | : UM3 × 2 | |
| 9. Size | : W=60 H=180 D=36(mm) | |

F. UNIFIED REMOTE CONTROL TRANSMITTER

- | | | |
|--------------------------------|------------------------|-------------|
| 1. Volume control | : Up/Down | Sensor type |
| 2. Power switch | : On/Off | Sensor type |
| 3. Low Level | : On/Off | Sensor type |
| 4. Tuner Amp. (Mode Selector) | : On | Sensor type |
| 4-1. Band Selector | : AM/FM | Sensor type |
| 4-2. Memory switch (1-8) | : On | Sensor type |
| 4-3. Frequency control | : Up/Down | Sensor type |
| 5. CD (Mode/Function Selector) | : On | Sensor type |
| 5-1. Scan | : Up/Down | Sensor type |
| 5-2. Skip | : Up/Down | Sensor type |
| 5-3. Play | : On | Sensor type |
| 5-4. Pause | : On | Sensor type |
| 5-5. Stop | : On | Sensor type |
| 6. Tape (Mode Selector) | : On | Sensor type |
| 6-1. FF | : On | Sensor type |
| 6-2. Rew | : On | Sensor type |
| 6-3. Play | : On | Sensor type |
| 6-4. Pause | : On | Sensor type |
| 6-5. Stop | : On | Sensor type |
| 6-6. Rec | : On | Sensor type |
| 7. Other Function Selector | : PHONO/VIDEO | |
| 8. Tape | : Tape 1/Tape 2 | |
| 9. Power supply | : UM3 × 2 | |
| 10. Size | : W=60 H=180 D=36 (mm) | |

G. DIMENSIONS AND NET WEIGHT

- | | |
|---------------|-------------------------|
| 1. Dimensions | : W=436 H=150 D=422(mm) |
| 2. Net Weight | : 16.5kg |

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ELECTRICAL SPECIFICATION

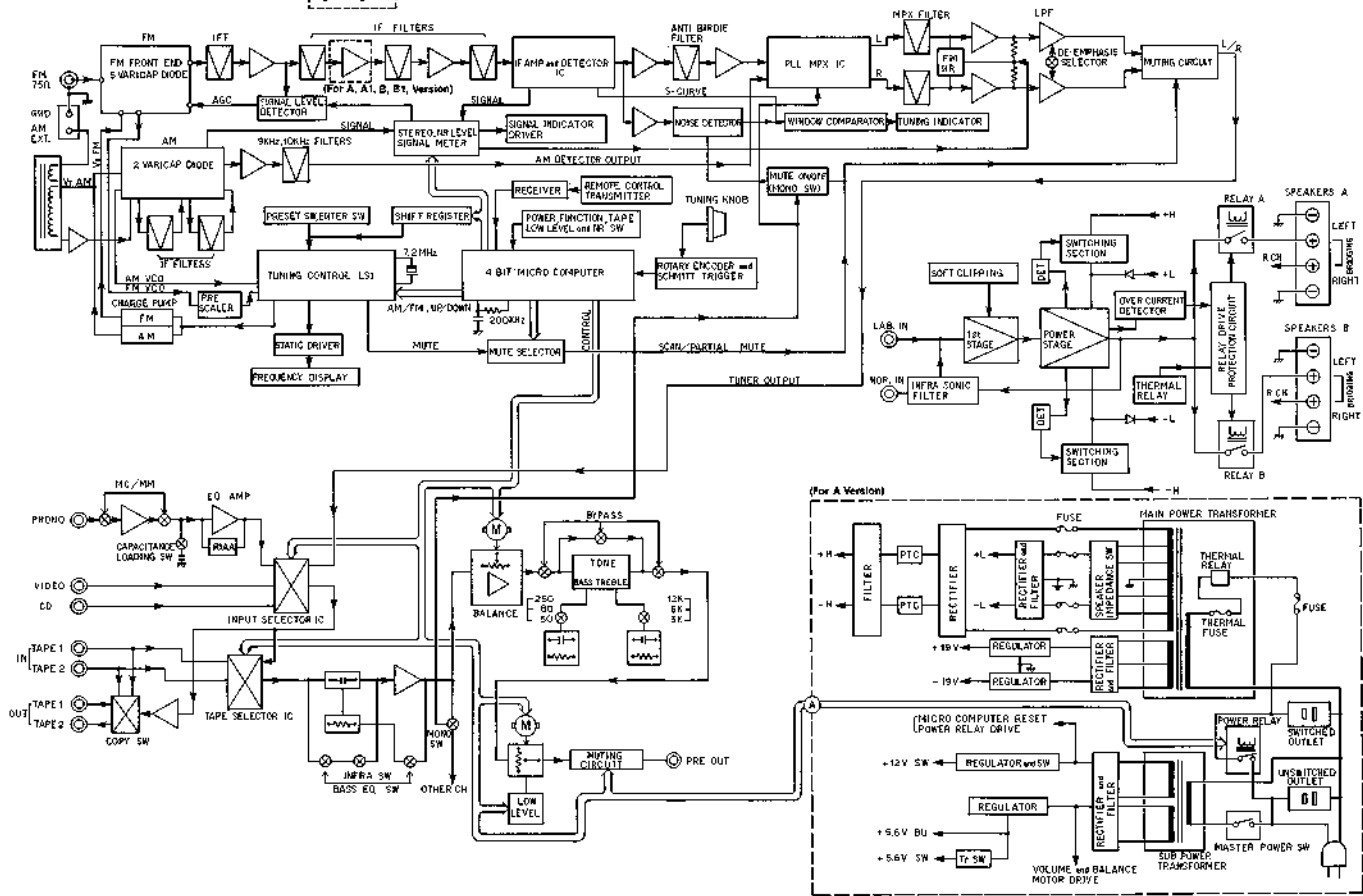
	Nominal	Limit	Unit	
A. AM Section, at 1000 kHz [A][A1] 999 kHz [B][B1][C][C1]				
1. 20 dB quieting sensitivity	20	400	$\mu\text{V/m}$	
2. Selectivity at S/N 20 dB input ± 10 kHz [A][A1] ± 9 kHz [B][B1][C][C1]	55	90	dB	
3. IF rejection ratio	65	90	dB	
4. Image rejection ratio	40	95	dB	
B. FM Section (at 98 MHz)				
1. IHF (usable) sensitivity	0.9(10.3)	1.4(14.2)	$\mu\text{V}(\text{dB})$	[A][A1][B][B1]
	1.12(12.2)	1.79(18.3)	$\mu\text{V}(\text{dB})$	[C]
	1.58(15.2)	2.51(19.3)	$\mu\text{V}(\text{dB})$	[B][B1]
	1.1(12.2)	1.8(16.4)	$\mu\text{V}(\text{dB})$	[C]
2. 60 dB quieting sensitivity	1.41(14.2)	2.24(18.3)	$\mu\text{V}(\text{dB})$	[B][B1]
	1.68(15.2)	2.51(19.3)	$\mu\text{V}(\text{dB})$	[C]
	2.0(17.3)	3.16(21.3)	$\mu\text{V}(\text{dB})$	[B][B1]
3. S/N ratio at 65 dB input	85	79	dB	[A][A1]
	84	78	dB	[B][B1][C][C1]
4. Frequency response ± 0.5 range at 65 dB input	20-15K	30-12K	Hz	
5. Capture ratio	1.5	2.5	dB	[A][A1][B][B1]
	5.0	8.0	dB	[C][C1]
6. Alternate channel selectivity	80	76	dB	
7. Image response ratio at 90 MHz		>110	dB	
8. IP response ratio at 90 MHz		>110	dB	
9. AM suppression at 65 dB input	62	56	dB	
10. Adjacent channel selectivity	27	22	dB	[C][C1]
C. FM MPX Section (at 98 MHz)				
1. Stereo 60 dB quieting Sensitivity				
FM NR ON	14(34.2)	20(37.2)	$\mu\text{V}(\text{dB})$	[A][A1]
	15.8(35.3)	22.4(38.3)	$\mu\text{V}(\text{dB})$	[B][B1]
	17.8(38.3)	25.1(39.3)	$\mu\text{V}(\text{dB})$	[C]
	22.4(38.3)	31.6(41.2)	$\mu\text{V}(\text{dB})$	[C]
FM NR OFF	50(45.2)	70(48.2)	$\mu\text{V}(\text{dB})$	[A][A1]
	63(47.3)	85(50.3)	$\mu\text{V}(\text{dB})$	[B][B1]
	66.3(46.3)	79.5(49.3)	$\mu\text{V}(\text{dB})$	[C]
	70.8(48.3)	100(51.2)	$\mu\text{V}(\text{dB})$	[C]
2. S/N ratio, at 85 dB input	80	78	dB	[A][A1]
	79	75	dB	[B][B1][C][C1]
3. SCA rejection		>70	dB	
D. Audio Section				
Preamplifier Section				
1. Input impedance at 1 kHz			Ω	
Phono MC [C=1000 pF]	100	$\pm 10\%$	K Ω	
Phono MM [C=100, 200, 320 pF]	47	$\pm 10\%$	K Ω	
CD, Tape 1/2, Video	47	$\pm 20\%$	K Ω	
2. Sensitivity for rated power			mV	
Phono (MM/MMC)	2.5(5.15)	± 2 dB	mV	
CD, Tape 1/2, Video	150	± 2 dB	mV	
3. Max input signal at clipping level (measured at tape out) 1% THD (1 kHz)			mV	
Phono (MM/MMC)	100(12)	160(16)	V	
CD, Tape 1/2, Video	6	6	V	
4. Frequency response from 20 Hz-20 kHz	± 0.3	± 0.8	dB	
CD, Tape 1/2, Video				
5. S/N ratio (Speaker Out at 1W)			dB	
A-Weighted				
Phono MM (5 mV input & 1 K Ω shorted)	85	78	dB	
Phono MC (500 μV input & 100 Ω shorted)	78	76	dB	
CD, Tape 1/2, Video (input 1 K Ω shorted)	94	88	dB	
Flat				
Phono MC (500 μV input & shorted)	58	65	dB	[A][A1][B][B1][C]
CD	65	63	dB	[C]
6. Tone control response			dB	
Bass, at 250 Hz, 120 Hz, 50 Hz	± 12	$\pm 12 \pm 2$	dB	
Treble, at 12 kHz, 6 kHz, 3 kHz	± 12	$\pm 12 \pm 2$	dB	
7. Interscanner filter at 11 Hz (12 dB/Oct)	-3	-3 ± 2	dB	
8. Channel isolation at VFR maximum	0	± 1	dB	
9. PhonoEQ, (RIAA) response (measured at tape out) RIAA			dB	
MC, from 20 Hz to 20 kHz	± 0.3	± 0.8	dB	
MM, from 20 Hz to 20 kHz	± 0.3	± 0.8	dB	

	Nominal	Limit	Unit
10. Output impedance			
Pre out	900		Ω
Tape 1/2 out	1		K Ω [A][A1][B][B1][C]
	3.2		K Ω [C1]
11. Speaker Equalization (Bass EQ.)			
at 60 Hz	+3	± 2	dB
at 37 Hz	+6	± 2	dB
at 10 kHz	70	66	dB
12. Cross talk at 10 kHz			
Poweramplifier section			
1. Power output from 20 Hz to 20 kHz rated THD (0.05%)			
Both channels driven, 8 Ω load		more than 160	W
2. Total harmonic distortion from 20 Hz to 20 kHz at rated power			
at 20 Hz, 1 kHz and 20 kHz		less than 0.05	%
3. Clipping Power, 8 / 4 Ω load	160/200	160/190	W
Input: Video			
Output: 1% THD, 1 kHz continuous Both CH. Driven			
4. Dynamic Power (Both CH. Driven), 8 / 4 Ω load			
Input: Video Output: Clipping point, 1 kHz 20 ms IFF dynamic wave	400/500	350/440	W
5. IM Distortion (Both CH. Driven), 8 Ω load			
Input: Video 80 Hz - 7000 Hz = 4 : 1		less than 0.05	%
Output: From 250 ohm to 160 W			
6. Frequency response (Output 1 W)			
Input: LAB in 20-20000 Hz		± 0.5	dB
Input: Nor in 14 Hz and 40 kHz	-3	-3 ± 1.5	dB
Damping factor at 50 Hz, 8 Ω load	120	100	
7. Input impedance			
at 50 Hz, 8 Ω load		more than 20	K Ω
8. Soft clipping level (When switched in just at onset of clipping), 8 / 4 Ω load			
	-0.5	-0.5 ± 0.4	dB
9. Peak short term (1 msec.) O/P current			
at 50 Hz, 8 Ω load	50	45	A
10. Input Sensitivity (Output 160 W), 8 Ω load	1	1 ± 1 dB	V
12. T.H.D. (Output: No load (60V))		less than 1	%

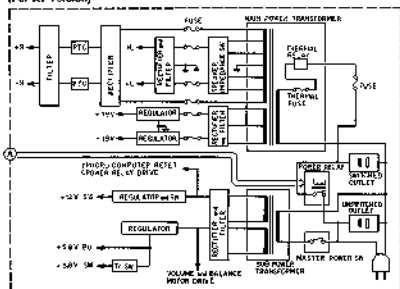
Specifications and design are subject to change without notice.

BLOCK DIAGRAM

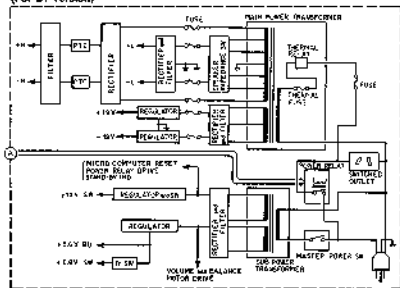
(For G, G1 Version)



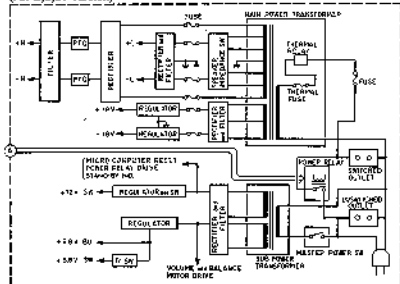
(For A1 Version)



(For B1 Version)



(For B,C,C1 Version)



ALIGNMENT PROCEDURES

Amplifier

Condition

1. SPEAKER IMPEDANCE SW (Rear Panel): 4- Ω (NORMAL)
2. SPEAKER Selector: A position
3. SPEAKER A load: 6 Ω dummy

IDLING

1. Set the VOLUME control to minimum.
2. No input.
3. Preheat more than 15 minutes.
4. Connect the DC digital volt meter to TP601 (L)/TP602 (R).
5. Adjust SVR603 (L)/SVR604 (R) for $7.5 \pm 0.5mV$

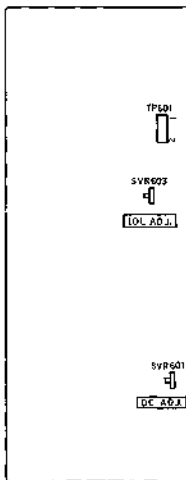
OFFSET VOLTAGE

1. Set the VOLUME control to minimum
2. No input.
3. Connect the DC digital volt meter to the SPEAKER TERMINAL A (L/R).
4. Adjust SVR601 (L)/SVR602 (R) for between $-5mV$ and $+5mV$.

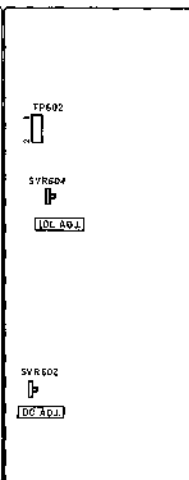
L/R OUTPUT BALANCE

1. Set the VOLUME control to maximum
2. Connect the audio generator to both channels of VIDEO.
3. Set the Mono switch and the LOW LEVEL SW to OFF position.
4. Set the input frequency to 1kHz and 3V at the Left CH of SPEAKER OUTPUT.
5. Adjust SVR501 for $3V \pm 0.1dB$ at the right CH

ML P.C.Board



MR P.C.Board

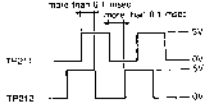


SV P.C.Board



Tuner ENCODER LEVEL

1. Connect the dual trace oscilloscope to the test point TP21/TP22. Monitor the rotary encoder output.
2. Adjust SVR01 until the overlap part of output waveform is more than 0.1 msec. at the test point TP21 & TP22 when turn as fast as possible the tuning knob.



AM

- Condition**
1. Tuning method: Tuning indicator ON or the output is maximum.
 2. Modulation: 400Hz, 30%.
 3. Generator output: IRE Loop antenna 24" (60cm) spring.
 4. Preheat. More than 1 minute.

TUNING VOLTAGE

1. No input.
2. Connect the DC digital voltmeter to the test point TP101 and GND.
3. Set the tuner frequency to F1 kHz.
4. Adjust TC102 for 305±0.1V.
5. Set the tuner frequency to F2 kHz.
6. Adjust T101 for 1.6±0.05V.

IF

1. Set the tuner frequency to the point of non-interference.
2. Connect the output of IF sweep generator to the test point TP102 through 10kΩ dummy and set the frequency to 450±0.5kHz.
3. Connect the input of IF sweep generator to the test point TP103 through a 10kΩ cap.
4. Adjust T102/T103 for flat and maximum output.

TRACKING

1. Set the tuner frequency to F3 kHz.
2. Connect the output of signal generator to IRE Loop and set the frequency to F3 kHz.
3. Connect the ACVM to TAPE OUT jacks.
4. Adjust TC101 for maximum output.
5. Change the tuner frequency to F4 kHz.
6. Adjust the Bar antenna for maximum output.

SIGNAL METER

1. Set the tuner frequency to F5 kHz.
2. Set the input level in 84dBm.
3. Adjust SVR101 until the signal indicators fully light up.

MUTING LEVEL

1. Set the input level to 48dBm.
2. Short TP141 to ground.
3. Adjust SVR102 until the tuning indicator lights up.

AM Frequency table

	A, A1	B, B1	C, C1
F1	77.0	171.0	
F2	52.0	52.2	
F3	140.6	140.4	
F4	60.0	60.3	
F5	102.0	99.9	

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FM

Condition

1. Tuning method: Tuning indicator ON
2. Generator: Mono -1kHz, 75kHz dev Stereo-1kHz, 75kHz dev, pilot 9%
3. TAPE OUT level: 100 mV resistor shunted by 1000pF Capacitor.
4. Input level: 85dB unless otherwise noticed.
5. De-Emphasis switch(SV061): 75µs Position.
6. Preheat more than 1 minute.

TUNING VOLTAGE

1. Connect the DC digital voltmeter to TP001 and GND.
2. Set the tuner frequency to 87.50MHz.
3. Adjust CGC-L (Front end) for 3.6±0.2V.
4. Change the tuner frequency from 87.50MHz to 108.00MHz
5. Check for 39.0±0.1V

V.G.C.D

1. Connect the frequency counter to TP003.
2. Set the tuner frequency to 98.00MHz.
3. Adjust TC201 for 108.700MHz±3kHz.

IF

1. Connect the ACVM and the distortion meter to TAPE OUT jacks.
2. Connect the DC digital voltmeter to TP002.
3. Set the tuner frequency to 98.00MHz
4. Set the input level to 14 dB.
5. Set the Mono switch to ON position. (Pilot mute OFF)
6. Adjust IFT (Front end) and T001 for minimum distortion.
7. Change the input level in 65dB.
8. Adjust T002 (PBI) for between -20mV and -20mV.
9. Adjust T002 (SEC) for minimum distortion.

TRACKING

1. Set the tuner frequency to 105.00MHz.
2. Set the input level to 14 dB.
3. Adjust ANT-TC1, 2, 3 and 4 (Front end) for minimum distortion or maximum output.
4. Change the tuner frequency to 80.00MHz
5. Adjust ANT-1, 2, 3 and 4 (Front end) for minimum distortion or maximum output.

SIGNAL METER

1. Set the input level to 71.3dB.
2. Adjust SVR141 until the topmost of signal indicators light up.

STEREO LEVEL

1. Set the tuner frequency to 98.00MHz.
2. Set the input level to 24.3dB.
3. Set the Mono switch to OFF position.
4. Adjust SVR142 until the STEREO indicator lights up.

SEPARATION

1. Set the input level to 65dB.
2. Connect the ACVM to TAPE OUT jacks
3. Adjust SVR051 for best separation.

PILOT LEAK LEVEL

1. Change the modulation to pilot only.
2. Adjust T0101 (LJ)T062 (R) for minimum leak level.

L/R OUTPUT LEVEL

1. Change the modulation from stereo to mono.
2. Adjust SVR052 until the right CH level is the same as the left CH level.

SCAN STOP LEVEL

1. Set the input level to 12 dB.
2. Connect the DC voltmeter to the cathode of D152 or D153
3. Adjust SVR001 until the voltage changes 5V from 0V

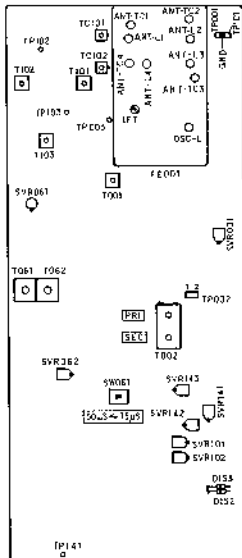
FM NR LEVEL

1. Set the input level to 13 dB.
2. Change the modulation from mono to stereo.
3. Connect the ACVM to TAPE OUT jacks.
4. Adjust SVR143 for 60dB S/N in Stereo.

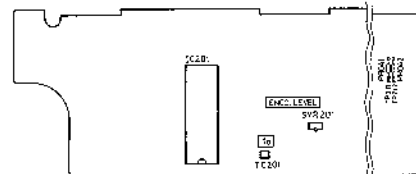
FM Input Level table

	A, A1	B, B1	C, C1	D1
V1	8.3-10.3	8.3-10.3	12.3-15.3	12.3-15.3
V2	29.3	29.3	27.3	27.3
V3	34.3	35.3	36.3	38.3

TIM P.C.Board

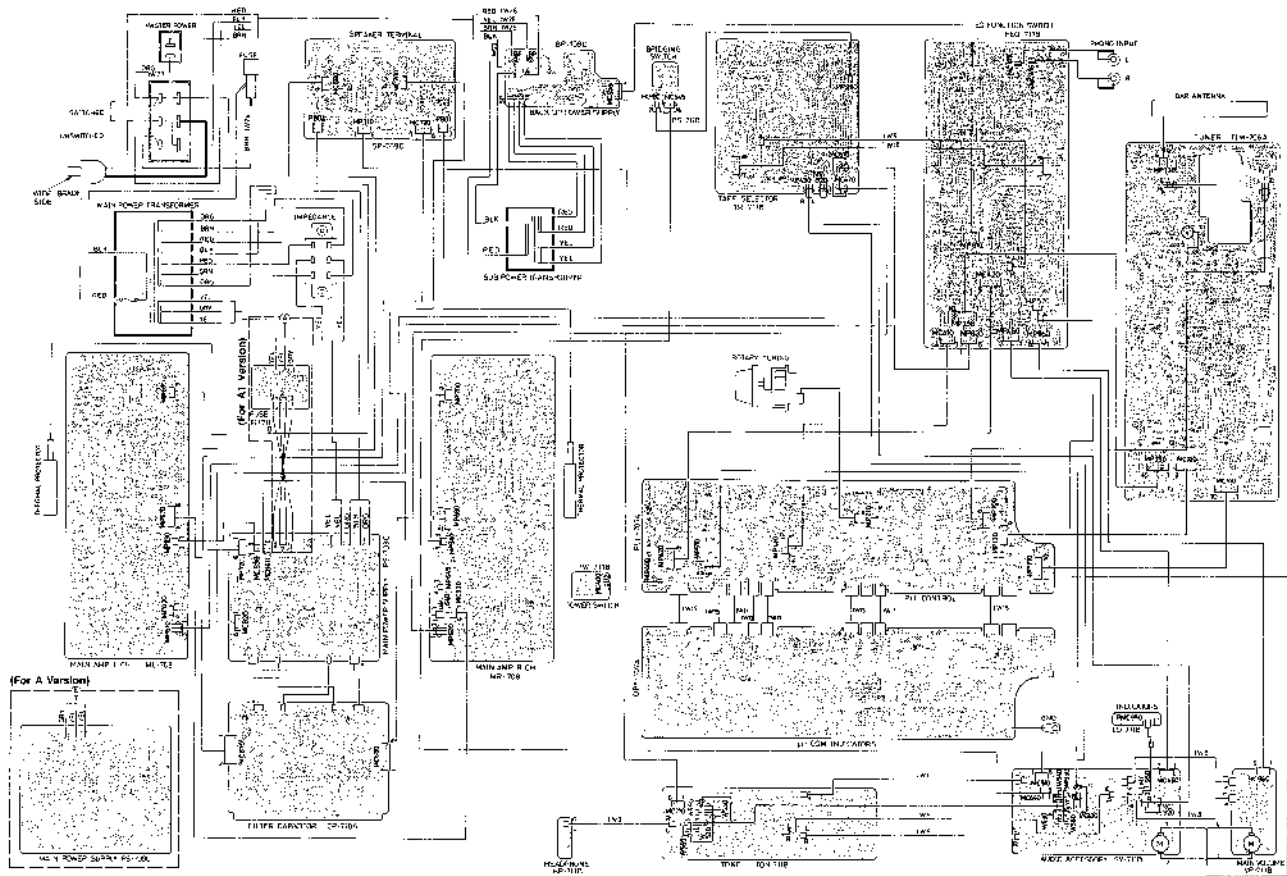


PLL P.C.Board

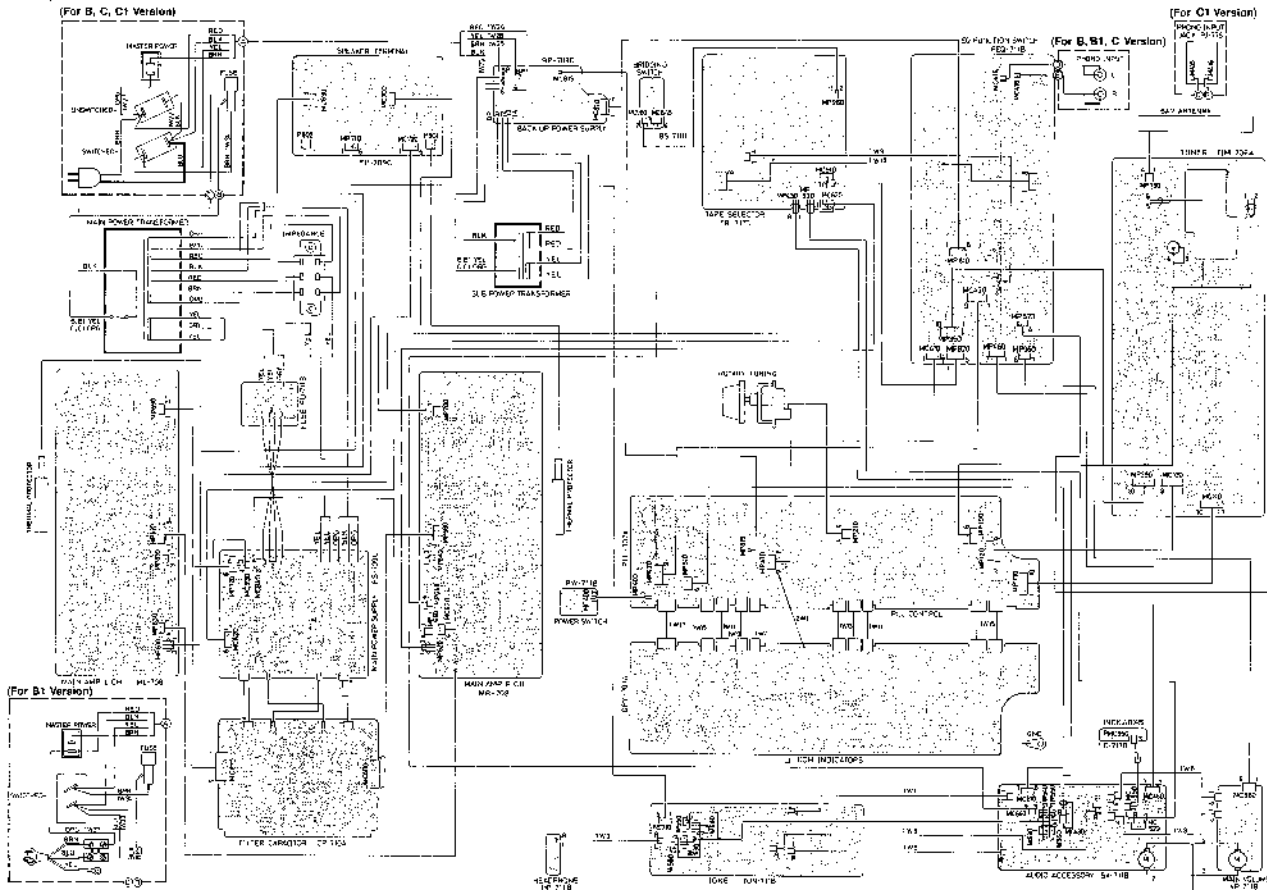


WIRING DIAGRAM (Component side)

(For A,A1 Version)

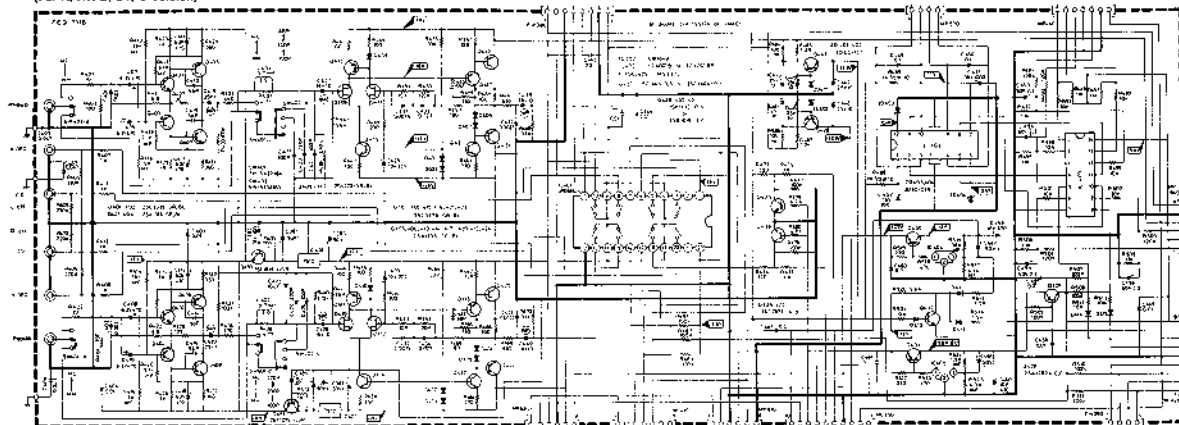


(For B, B1, C, C1 Version)

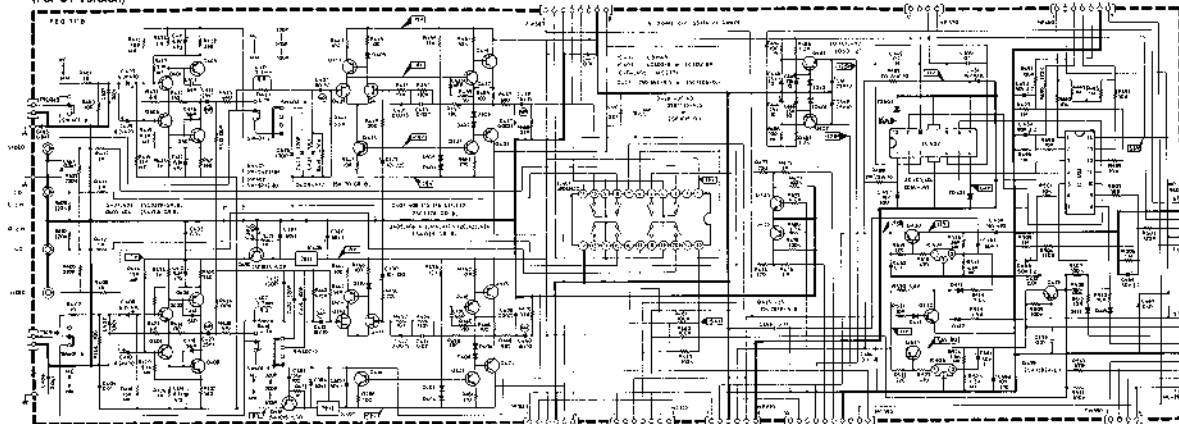


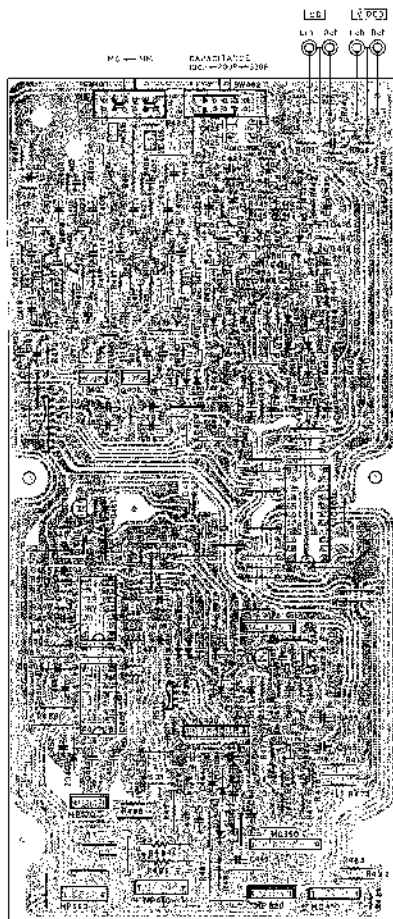
**SCHEMATIC AND PCB LAYOUT (Foil side)
EO Function Switch (FEQ-PCB)**

(For A, A1, B, B1, C Version)

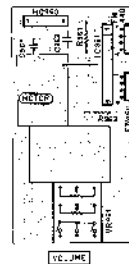
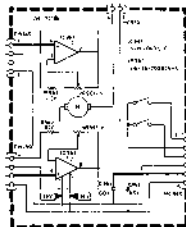


(For C1 Version)

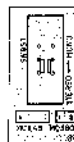




Main Volume (VR-PCB)



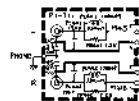
Bridging Switch (BS-PCB)



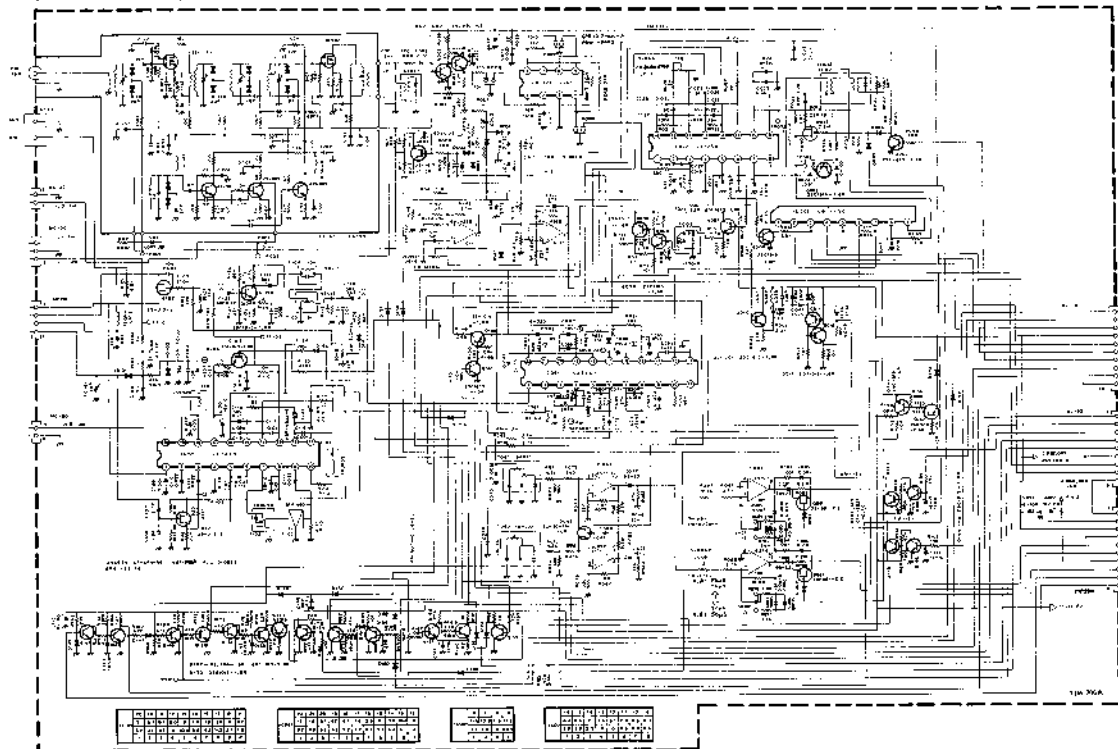
Power Switch (PW-PCB)

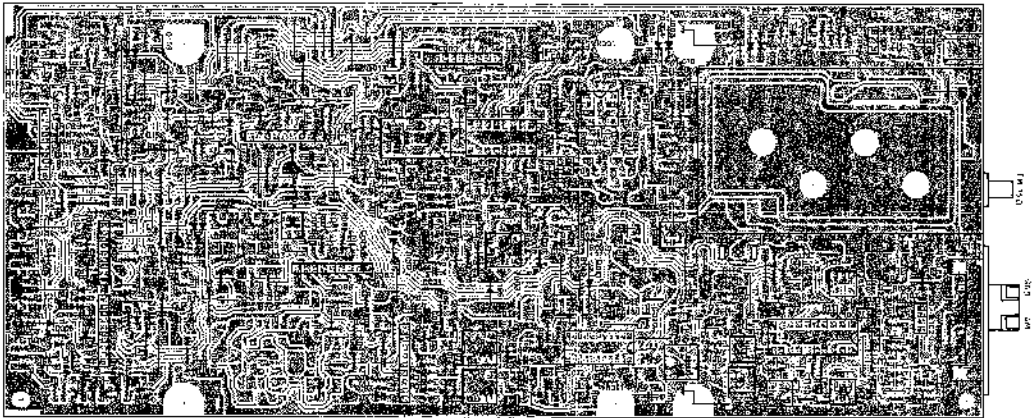


Phono Input Jack (PJ-PCB) (For C1 Version)

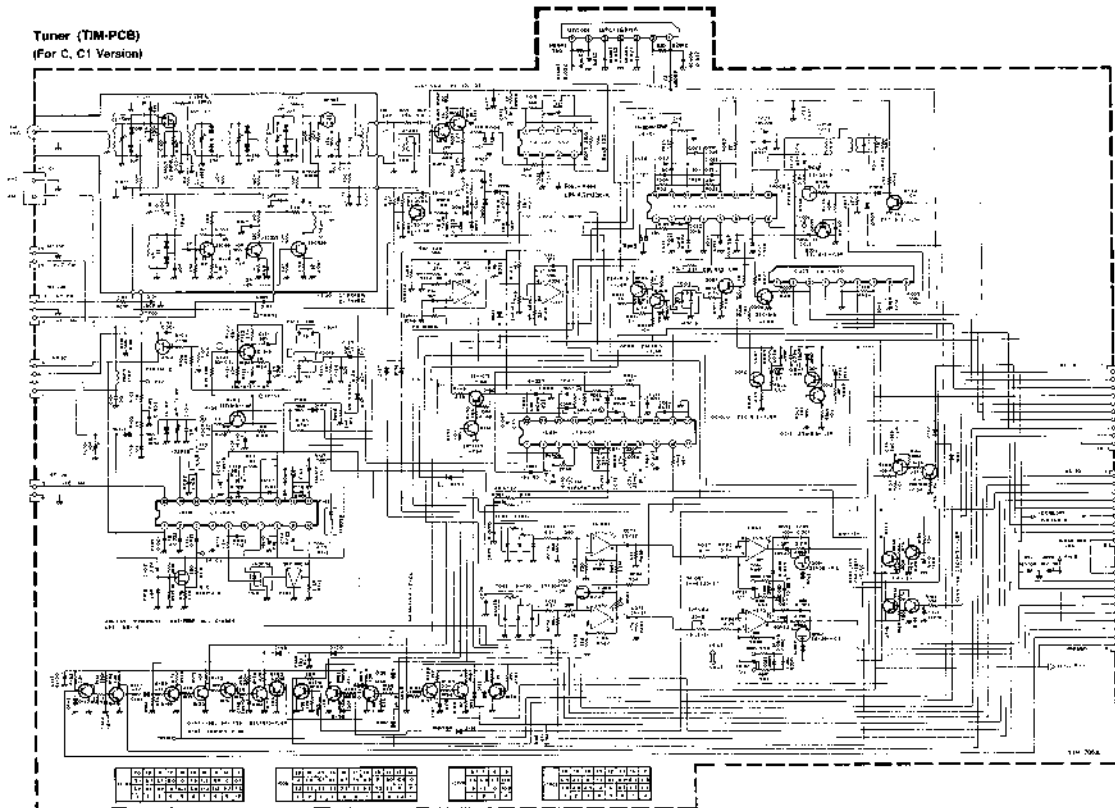


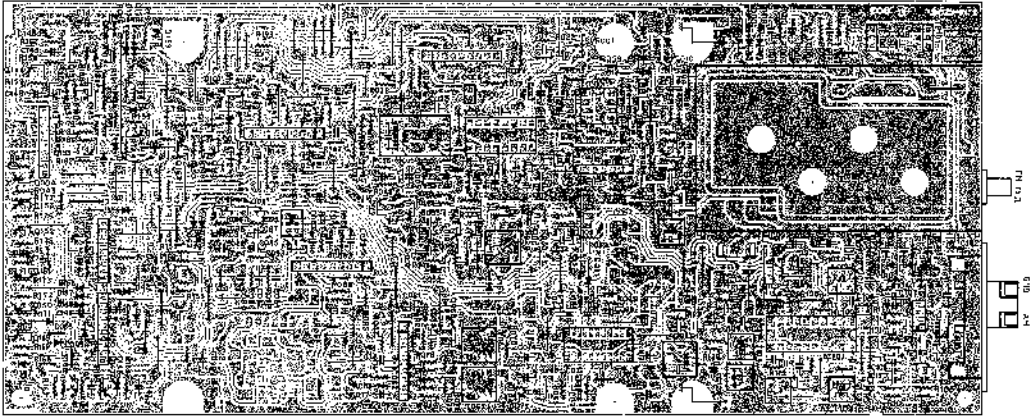
Tuner (TIM-PCB)
 (For A, A1, B, B1 Version)



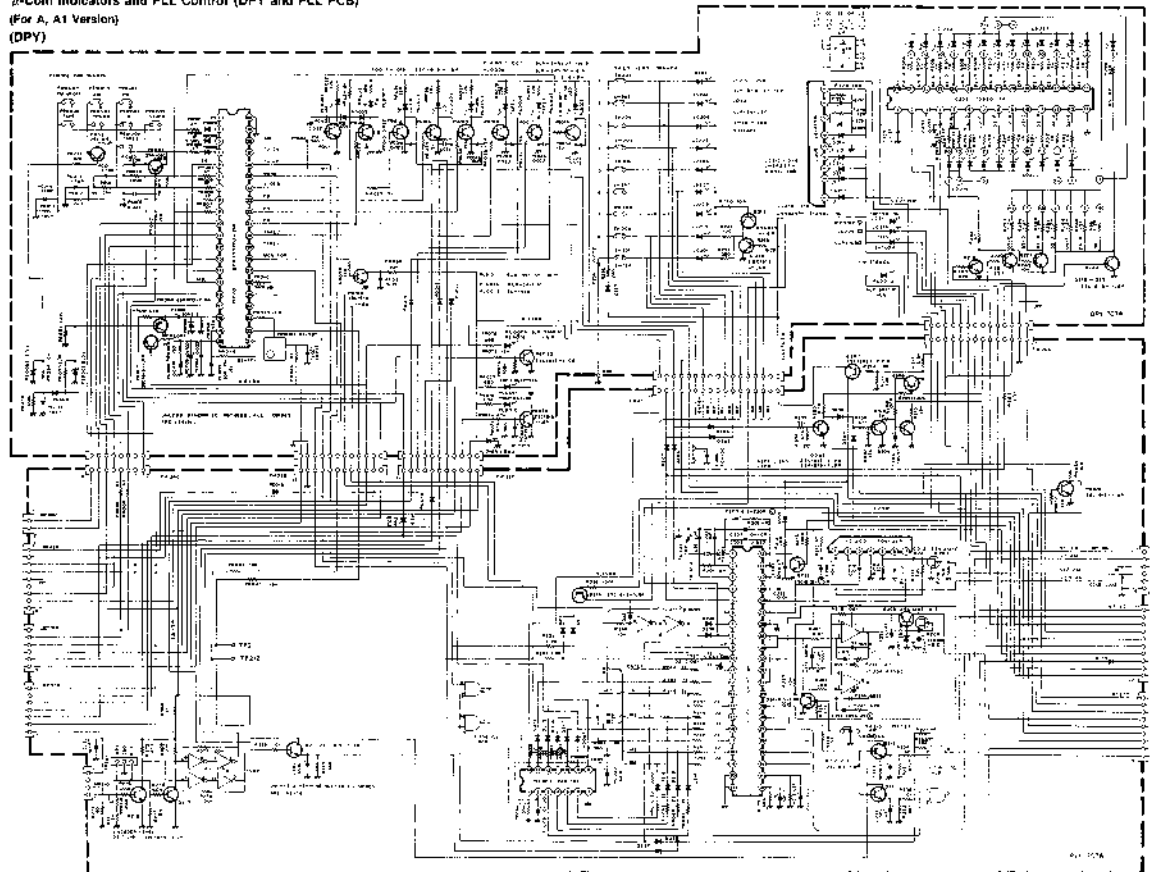


Tuner (T1M-PCB)
(For C, C1 Version)



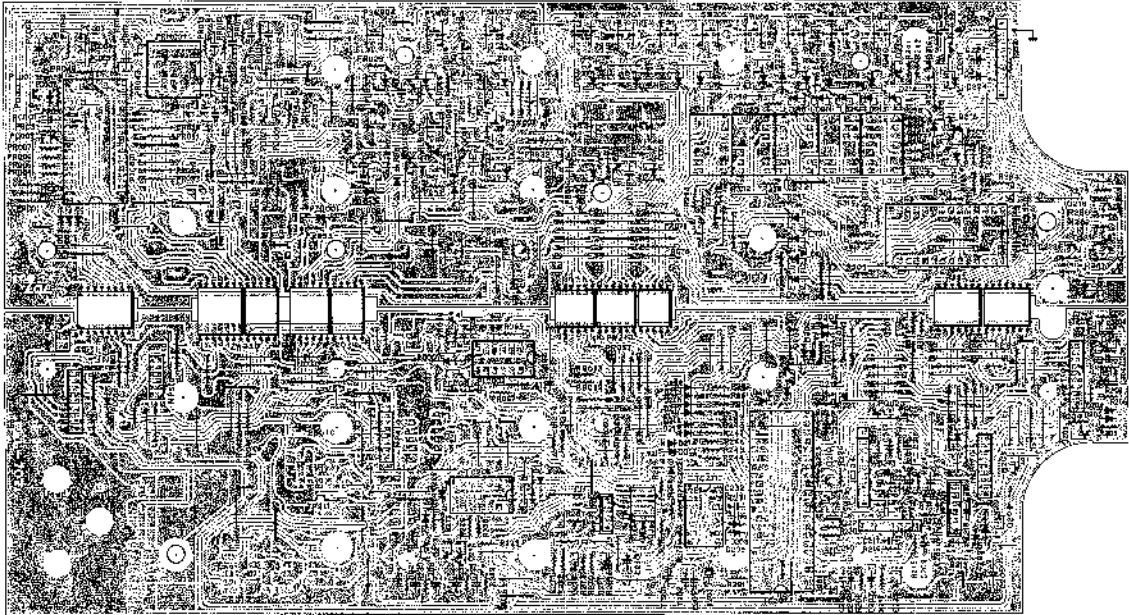


μ-Com Indicators and PLL Control (DPY and PLL PCB)
(For A, A1 Version)
(DPY)



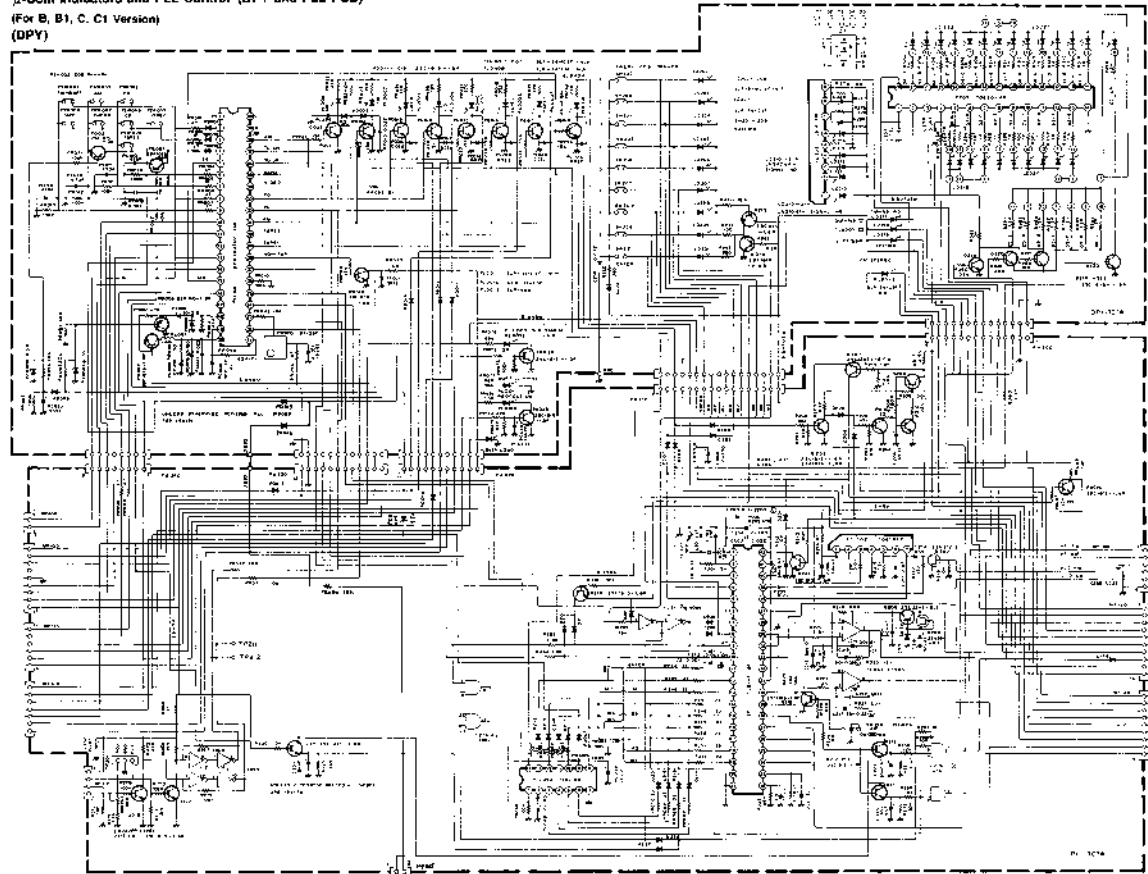
(PLL)

(DPY)



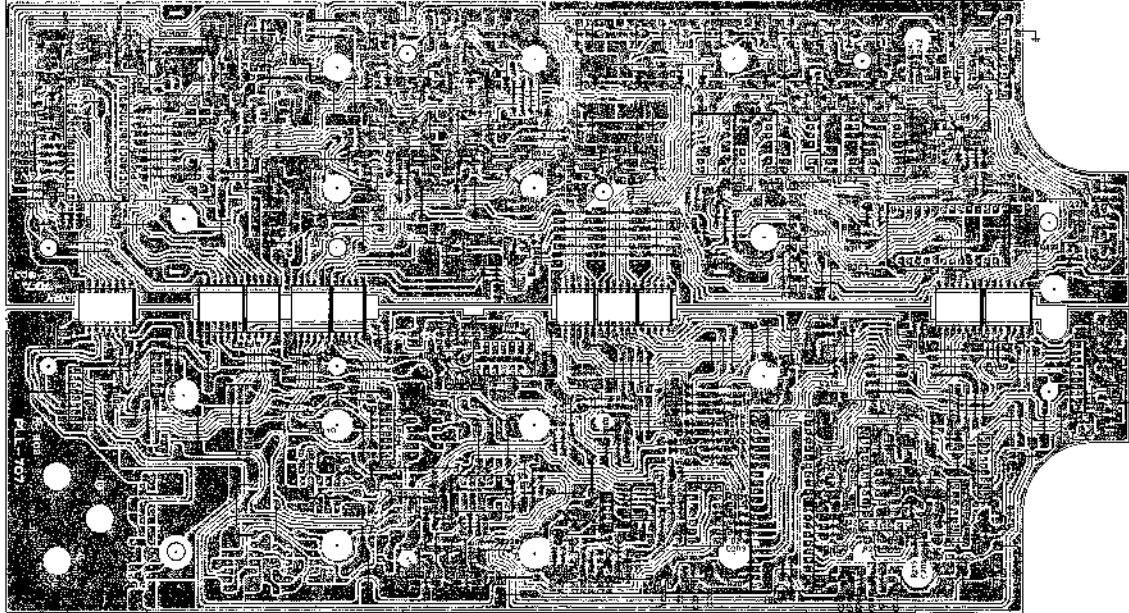
(PLL)

μ -Com Indicators and PLL Control (DPY and PLL PCB)
(For B, B1, C, C1 Version)
(DPY)



(PLL)

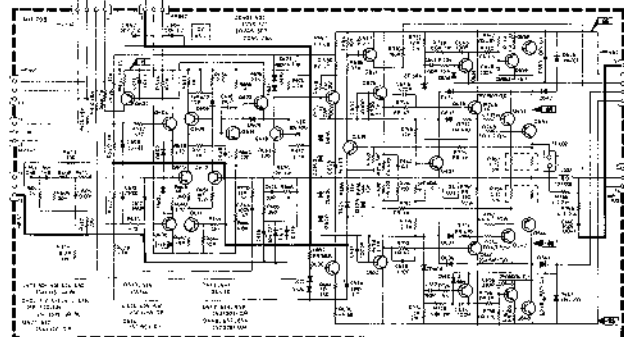
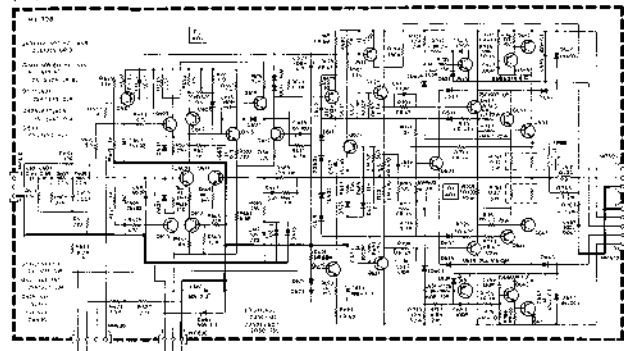
(DPY)



(PLL)

Main Amp L ch and R ch (ML and MR PCB)
 (For A, A1 Version)

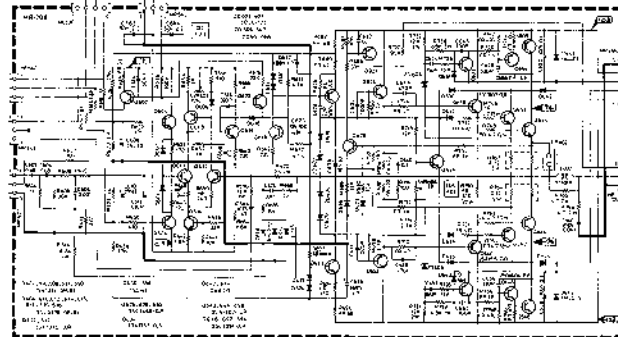
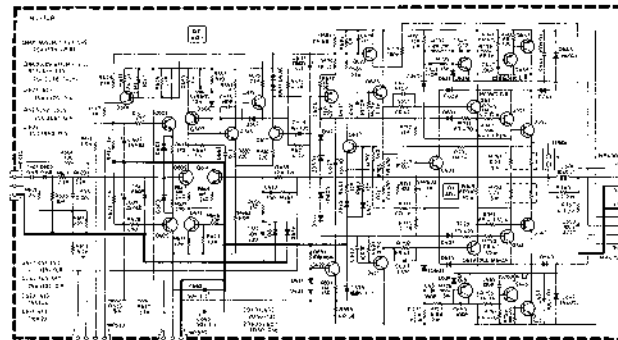
(ML)



(MR)

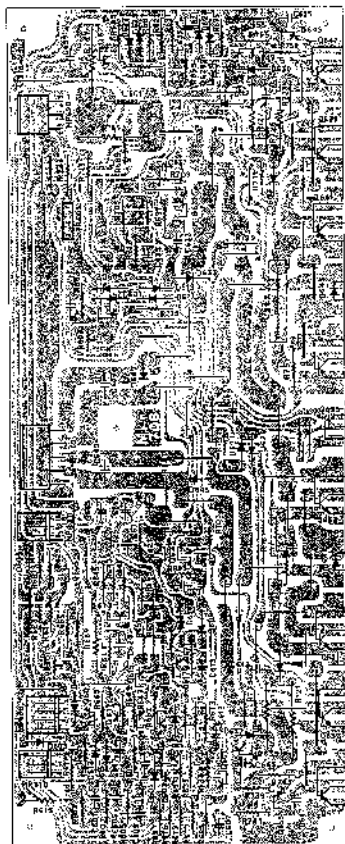
(For B, B1, C, C1 Version)

(ML)

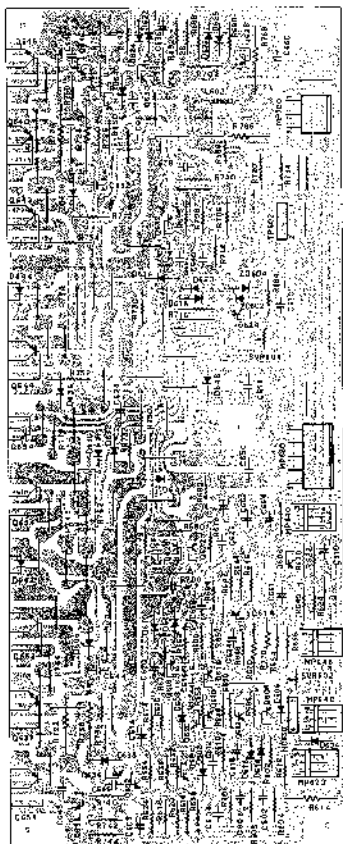


(MR)

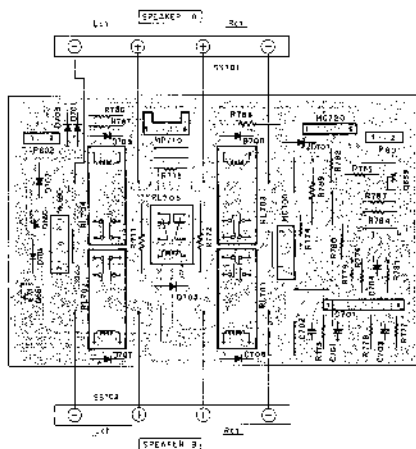
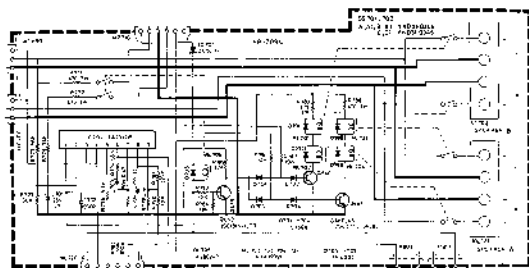
(ML)



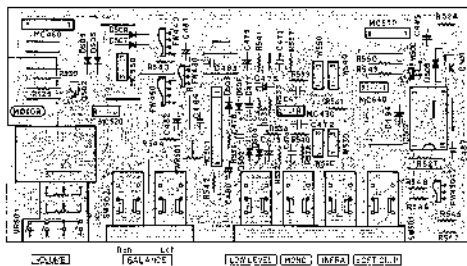
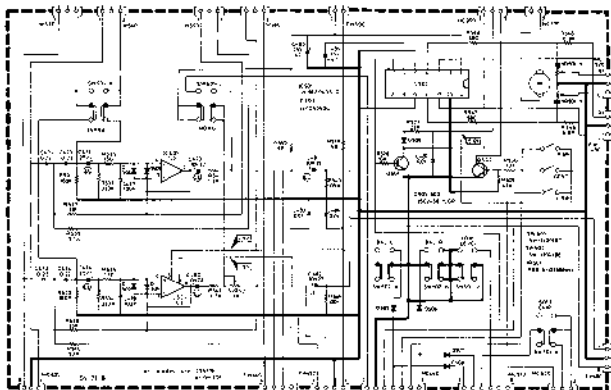
(MR)



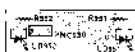
Speaker Terminal (SP-PCB)



Audio Accessory (5V-PCB)

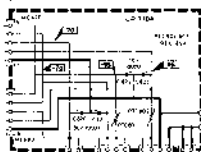


Indicators (LD-PCB)

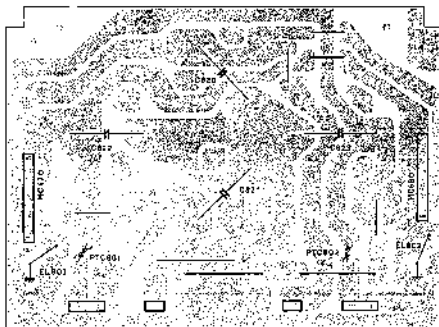
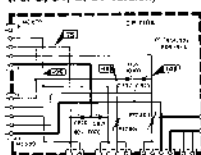


Filter Capacitor (CP-PCB)

(For A, A1 Version)

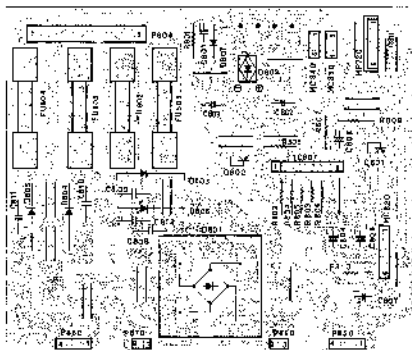
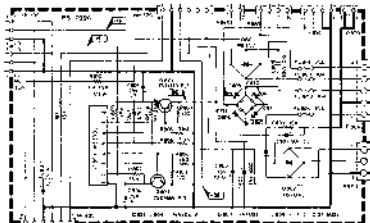


(For B, B1, C, C1 Version)

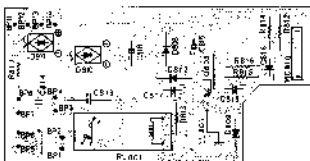
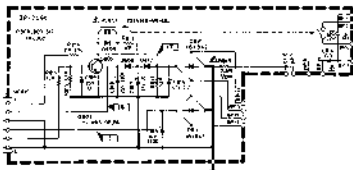


Main Power Supply (PS-PCB)

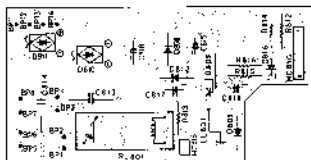
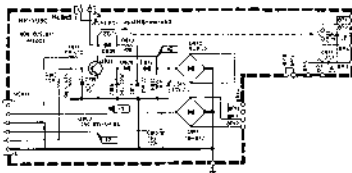
(For A1 Version)



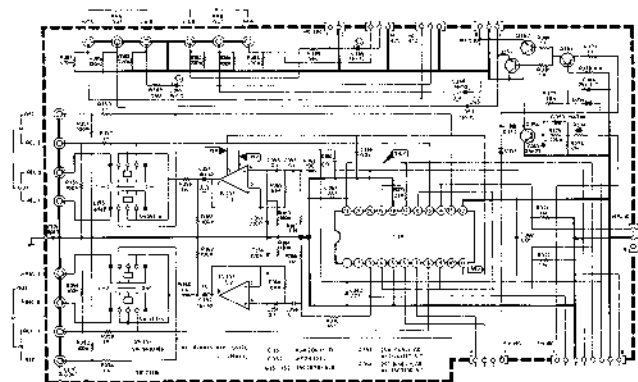
Back Up Power Supply (BP-PCB)
(For A, A1 Version)



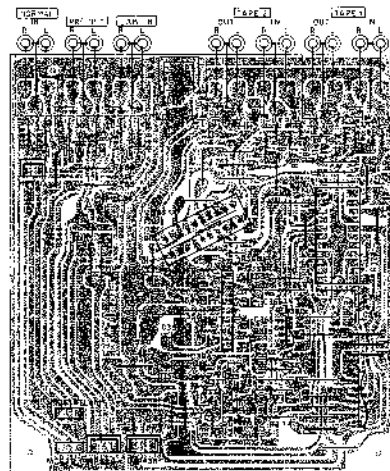
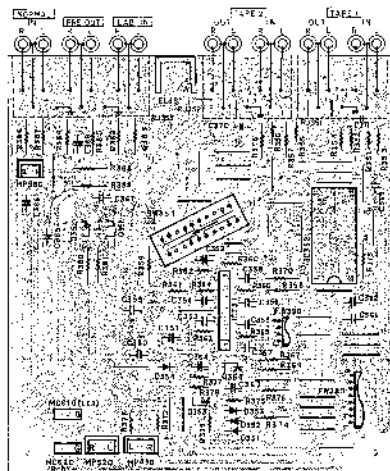
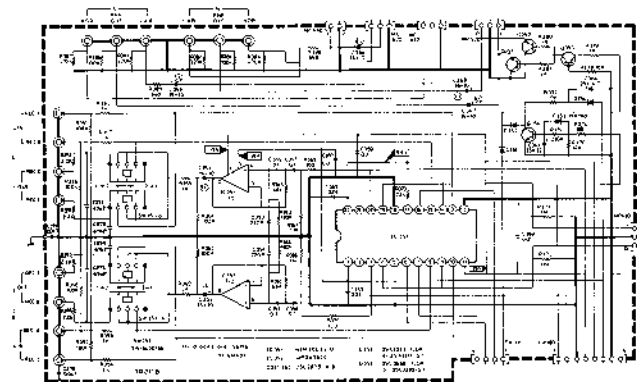
(For B, B1, C, C1 Version)



Tape Selector (TR-PCB)
 (For A, A1, B, B1, C Version)



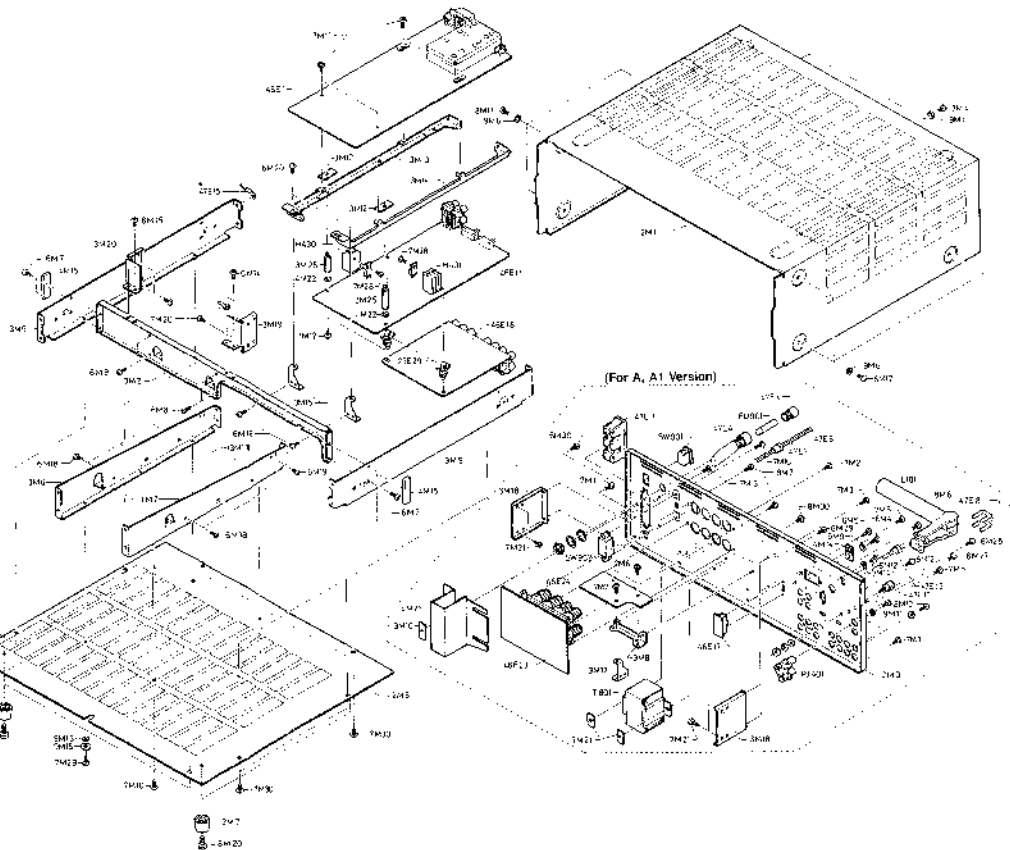
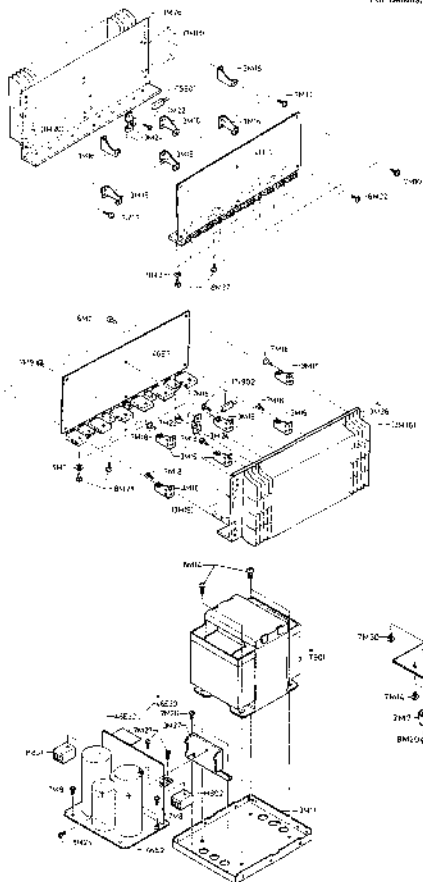
(For C1 Version)



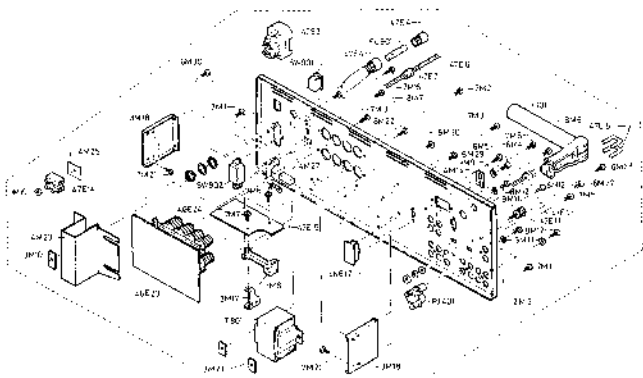
EXPLODED VIEW

Rear Panel and Chassis

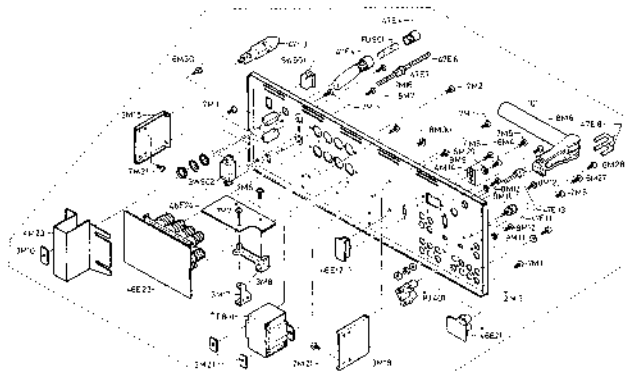
* Parts marked with * vary according to destinations.
For details, refer to the classified parts list



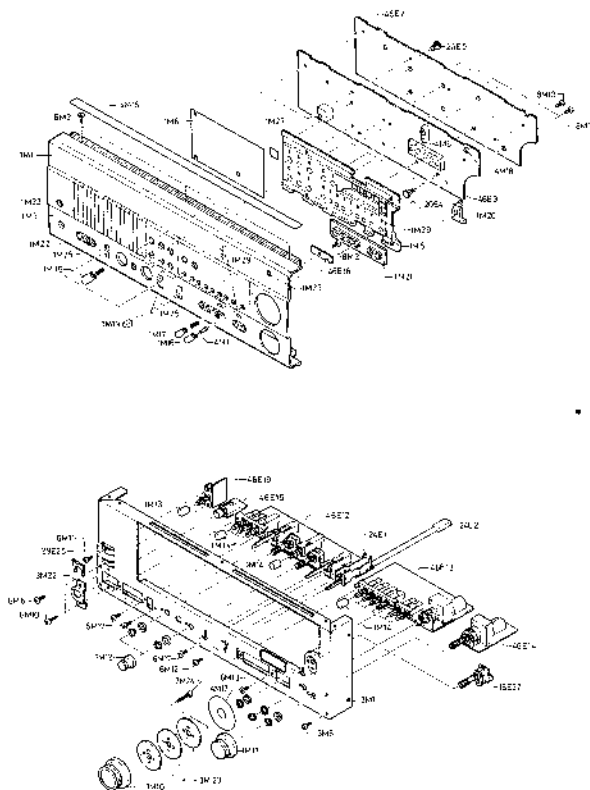
(For B1 Version)



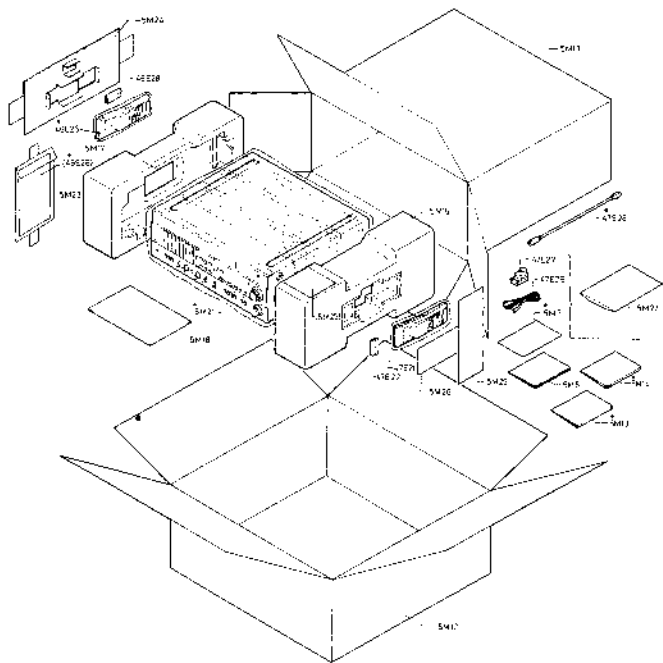
(For B, C, C1 Version)



Front Panel



Packing



MAIN BOARD PCB ASSY

REF. NO.	QTY	PART NO.	DESCRIPTION
P.C. BOARD			
43418	1	VM-7110	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
43419	1	VM20435-P	IC
CAPACITORS			
43420	2	MC70512Y-002	CERAMIC CAPACITOR
RESISTORS			
43421	1	KL157110J	CARBON RESISTOR
43422	1	KL165771J	CARBON RESISTOR
43423	1	12420-20390MA5	RELAY POTENTIAL WINDER
MISCELLANEOUS			
43424	1	SL-145	JUMP WIRE
43425	1	MC90-423	MICRO SOCKET ASSY

MICROPHONE PCB ASSY

REF. NO.	QTY	PART NO.	DESCRIPTION
P.C. BOARD			
43426	1	MP-7110	PRINTED CIRCUIT BOARD
MISCELLANEOUS			
43427	1	HL0504-EL-210	MIC JACK

MISCELLANEOUS PCB ASSY

REF. NO.	QTY	PART NO.	DESCRIPTION
P.C. BOARD			
43428	1	LD 7110	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
43429	1	SLR-540CF-044	LED
43430	1	SLR-540CF-047	LED
RESISTORS			
43431	2	KL15709J	CARBON RESISTOR
MISCELLANEOUS			
43432	1	PC01-810	MICRO SOCKET ASSY

MISCELLANEOUS SWITCH PCB ASSY

REF. NO.	QTY	PART NO.	DESCRIPTION
P.C. BOARD			
43433	1	SW-7110	PRINTED CIRCUIT BOARD
SWITCHES			
43434	1	SW027	SLIDE SWITCH
MISCELLANEOUS			
43435	1	MU02-001	MICRO SOCKET ASSY
43436	1	MU04-018	MICRO SOCKET

TAP SELECTOR PCB ASSY

REF. NO.	QTY	PART NO.	DESCRIPTION
P.C. BOARD			
43437	1	TS-7110	PRINTED CIRCUIT BOARD
SEMICONDUCTORS			
43438	2	155874	DIODE
43439	1	155875	DIODE
43440	1	155876	DIODE
RESISTORS			
43441	2	24C2670-A10	TRANSISTOR
43442	2	24C2670-F10	TRANSISTOR
43443	1	25C2658-V400	TRANSISTOR
MISCELLANEOUS			
43444	1	W476435-0	IC
43445	2	UPD6462C	IC
CAPACITORS			
43446	2	LL-1010100M	LOW LEAK ELECTROLYTIC CAP.
43447	2	MC70512Z-002	CERAMIC CAPACITOR
43448	1	PC01H104J2	METALLIZED FILM CAPACITOR
43449	1	MC40510J303	CERAMIC CAPACITOR
43450	1	W4-254725M	ELECTROLYTIC CAPACITOR
43451	1	MS-231100M	ELECTROLYTIC CAPACITOR
43452	1	LL-1011010M	LOW LEAK ELECTROLYTIC CAP.
43453	1	MC70512Y-002	CERAMIC CAPACITOR
43454	2	MC15110F-A15	CERAMIC CAPACITOR

REF. NO.	QTY	PART NO.	DESCRIPTION
SWITCHES			
43455	1	SW-15010A	SLIDE SWITCH
MISCELLANEOUS			
43456	1	M1059	2ND LUG
43457	2	W30-C-A	TERMINAL CAP
43458	1	W70-C-A	TERMINAL CAP
43459	2	W050-A	PC4 JACK W/P
43460	2	W010-BAAA	PC4 JACK W/P
43461	53	W0-100	JUMP WIRE
43462	6	AT-785	JUMP WIRE
43463	1	MC09-832	MICRO SOCKET ASSY
43464	1	MC09-833	MICRO SOCKET ASSY

POWER SWITCH PCB ASSY

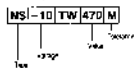
REF. NO.	QTY	PART NO.	DESCRIPTION
P.C. BOARD			
43465	1	PS-7110	PRINTED CIRCUIT BOARD
SWITCHES			
43466	1	SW-11010A	PUSH SWITCH
MISCELLANEOUS			
43467	1	MC02-030	MICRO SOCKET ASSY

UTILITY PANEL

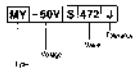
REF. NO.	QTY	PART NO.	DESCRIPTION
MISCELLANEOUS			
43468	2	0312200V2-D-E	SOLDER PLATED WIRE
43469	1	012300013-D-D	SOLDER PLATED WIRE
43470	1	072520001-D-S	SOLDER PLATED WIRE
43471	2	U1-100015	GLASS TUBE
43472	1	U1-31010	UL TYPE FUSE
43473	1	U1-400015	UL TYPE FUSE
43474	2	U1-400015	UL TYPE FUSE
43475	1	U1-1040006	SHIMMABLE TUBE
43476	21	W5342	TAP-UNUSUAL FACED
43477	3	W5355	TAPE SERIAL NO.
43478	1	W5313	ANT CAUTION LABEL
43479	1	W4199	LABEL FUSE
43480	1	W4247	LABEL SAFETY/SHOCK HAZARD FLASH
43481	1	W4248	LABEL/POWER INFO
43482	1	W4252	PROTECTION SHEET
43483	1	W4251	SAFETY INSTRUCTION SHEET
43484	1	W40673A	CAUTION SHEET-POLARIZED MOUNT
43485	32	W4-3	COR CLAMP
43486	1	W4-2167	COR CLAMP

Capacitors Description

• Electrolytic



• Mylar - Styrol



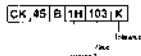
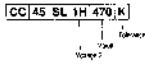
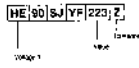
• Electrolytic

Type	Voltage	Value	Tolerance
LL Low Leak	10; 10V	R47 0.47 μ F	K +10%
NP Non-Pole	50; 50V	4R7 4.7 μ F	M +20%
NS Standard	63V	471 47 μ F	K
		472 470 μ F	
		473 4700 μ F	

• Mylar - Styrol

Type	Voltage	Value	Tolerance
MY Mylar	25V 25V	472 4.7 μ F	G \pm 2%
ST Styrol	125V 125V	470 47 μ F	J -5%
		471 470 μ F	K +10%
		472 4700 μ F	M +20%
		473 4700 μ F	
		474 3.4 μ F	
		1000F-0.001F	

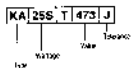
• Ceramic



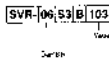
Type	Voltage-1	Voltage-2	Value	Tolerance
HC	25V 1C	25V	4R7 4.7 μ F	C \pm 0.25 μ F
HE	50V 1H	50V	470 4.7 μ F	D \pm 0.5 μ F
JH	100V 2H	50V	47 470 μ F	F \pm 1 μ F
HK	250V		472 4700 μ F	J \pm 5%
HM	500V		473 0.047 μ F	K \pm 10%
			474 3.4 μ F	M \pm 20%
			1000F-2000F	L \pm 80-10%

Resistors Description

• Fixed

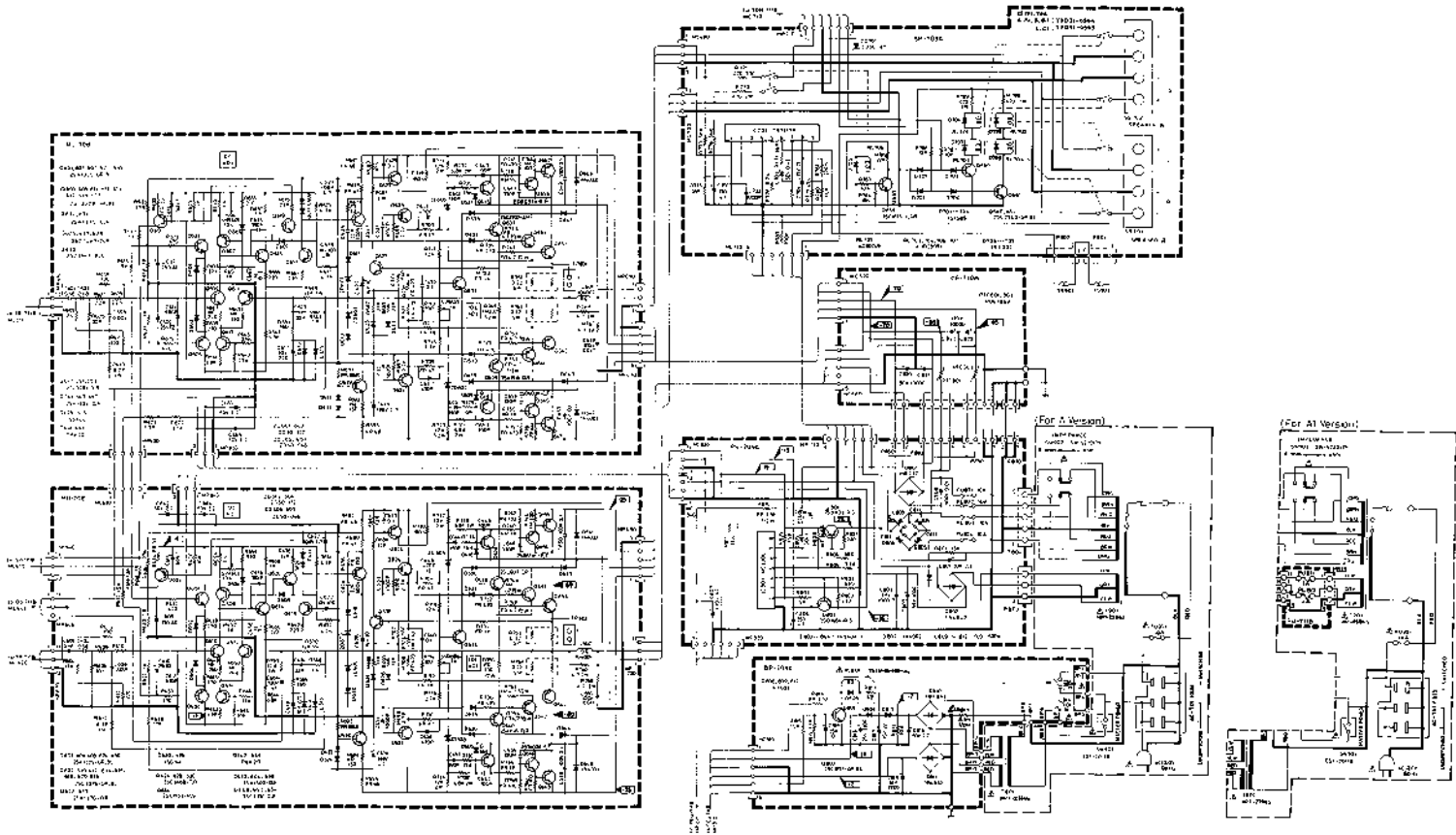


• Semi-Variable

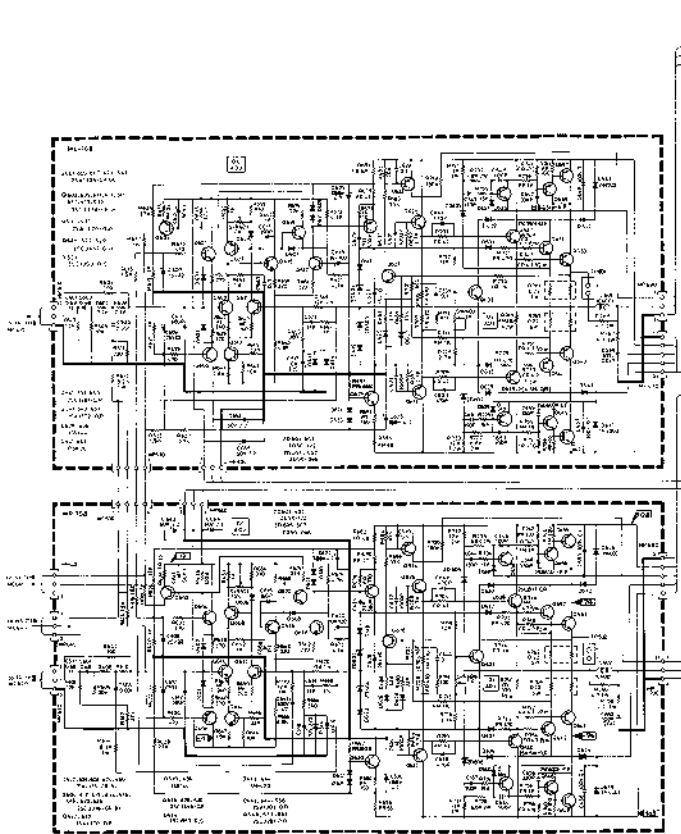


Type	Power	Voltage	Value	Tolerance	Distance
GE Cement Core	2W 2W	R4	0.47 μ F	M \pm 20%	56 56
FR Flame Proof	10W 10W	4R	4.7 μ F	K \pm 10%	16 16
KA Carbon	5S 16W	4R	4.7 μ F	J \pm 5%	16 16
WF Reta Film	25S 16W	4R	4.7 μ F	J \pm 5%	
RF	1.5W 25S	1R	1.02 4.7 μ F	J \pm 5%	
SA Wire Wound	5S 12W	4R	4.7 μ F	D \pm 0.5%	
	5X 12W	4R	4.7 μ F		
	5W 1W	4R	4.7 μ F		

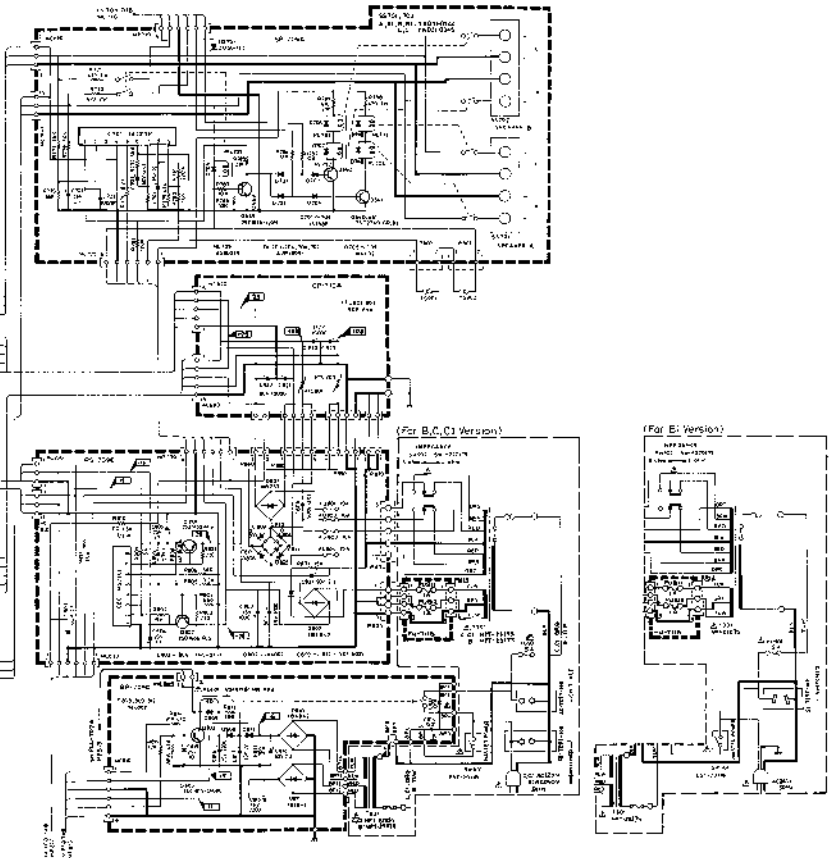
Main Amp and Power Supply (For A, A1 Version)



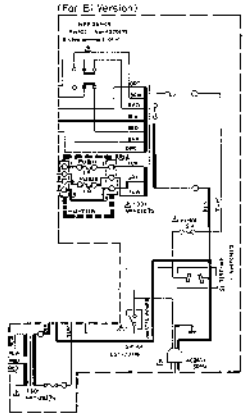
(For B, B1, C, C1 Version)



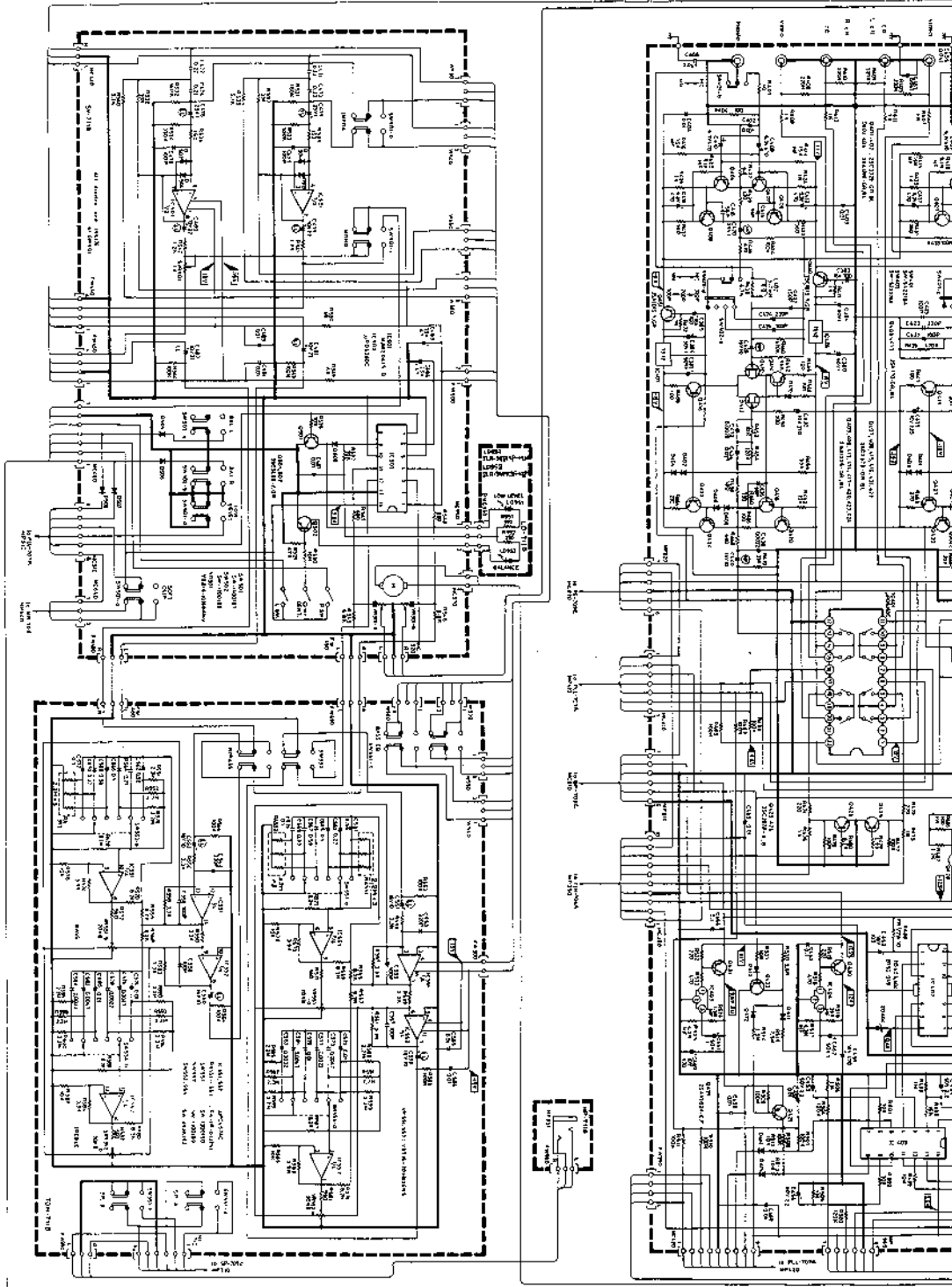
71

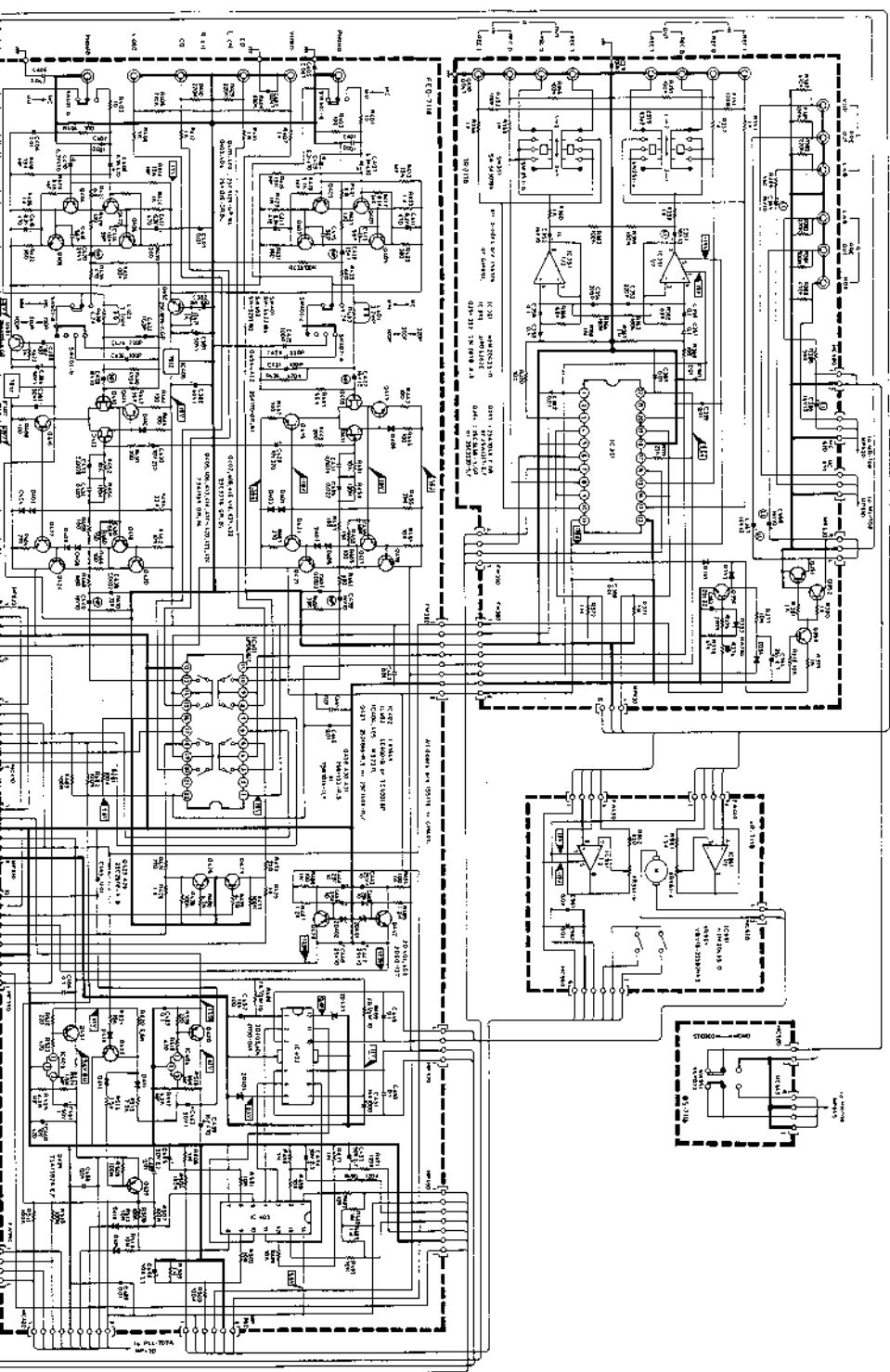


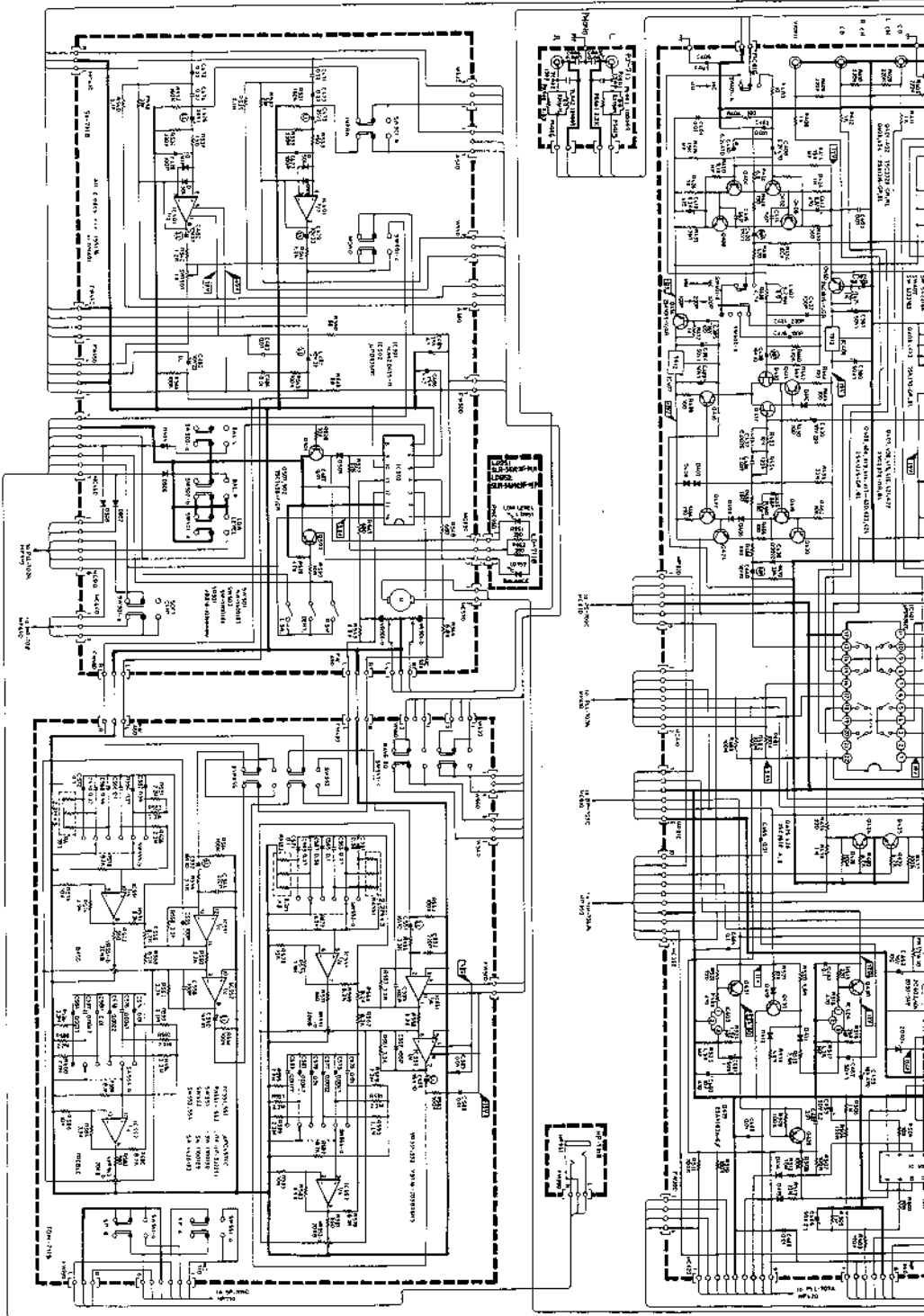
72

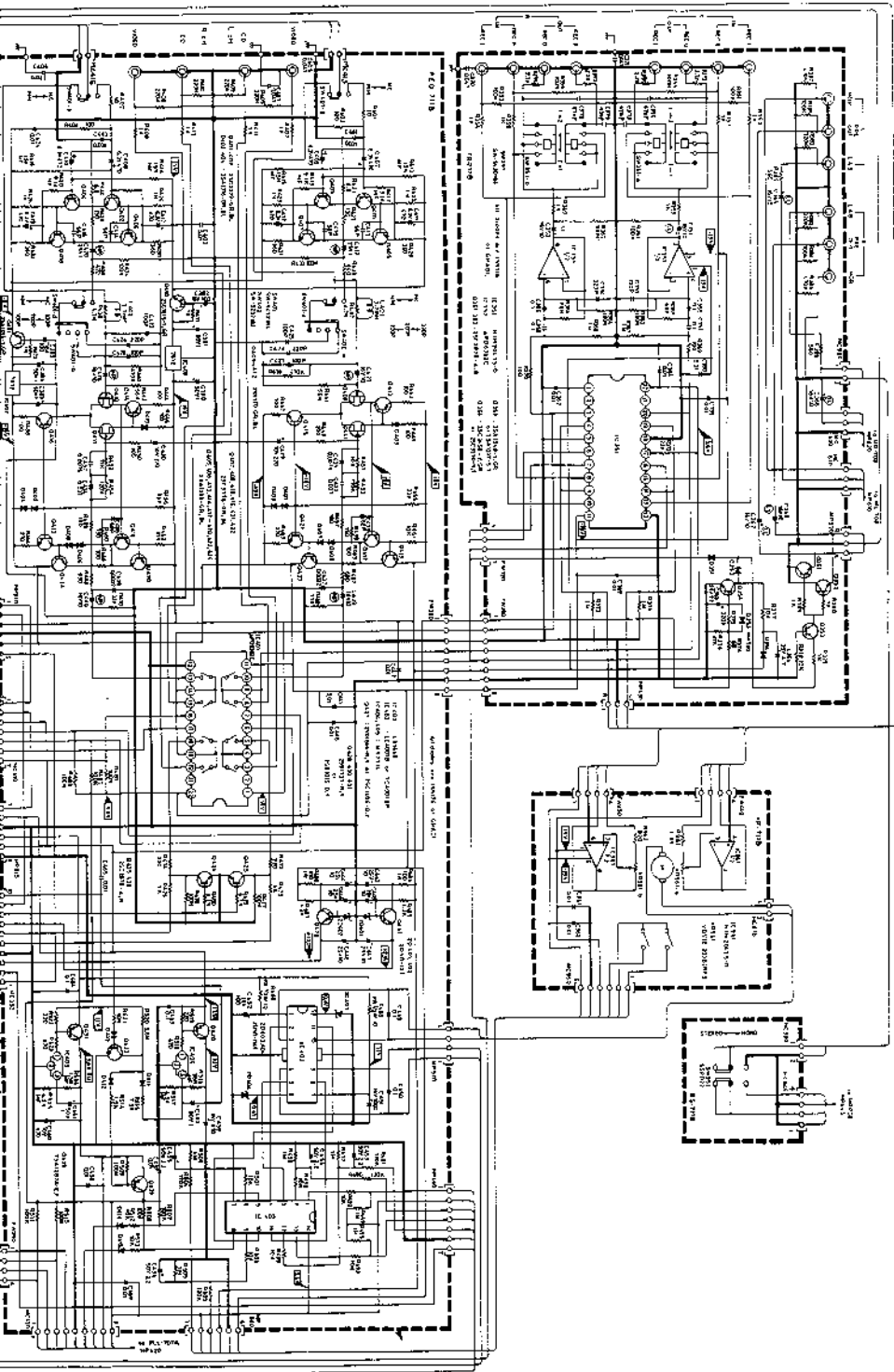


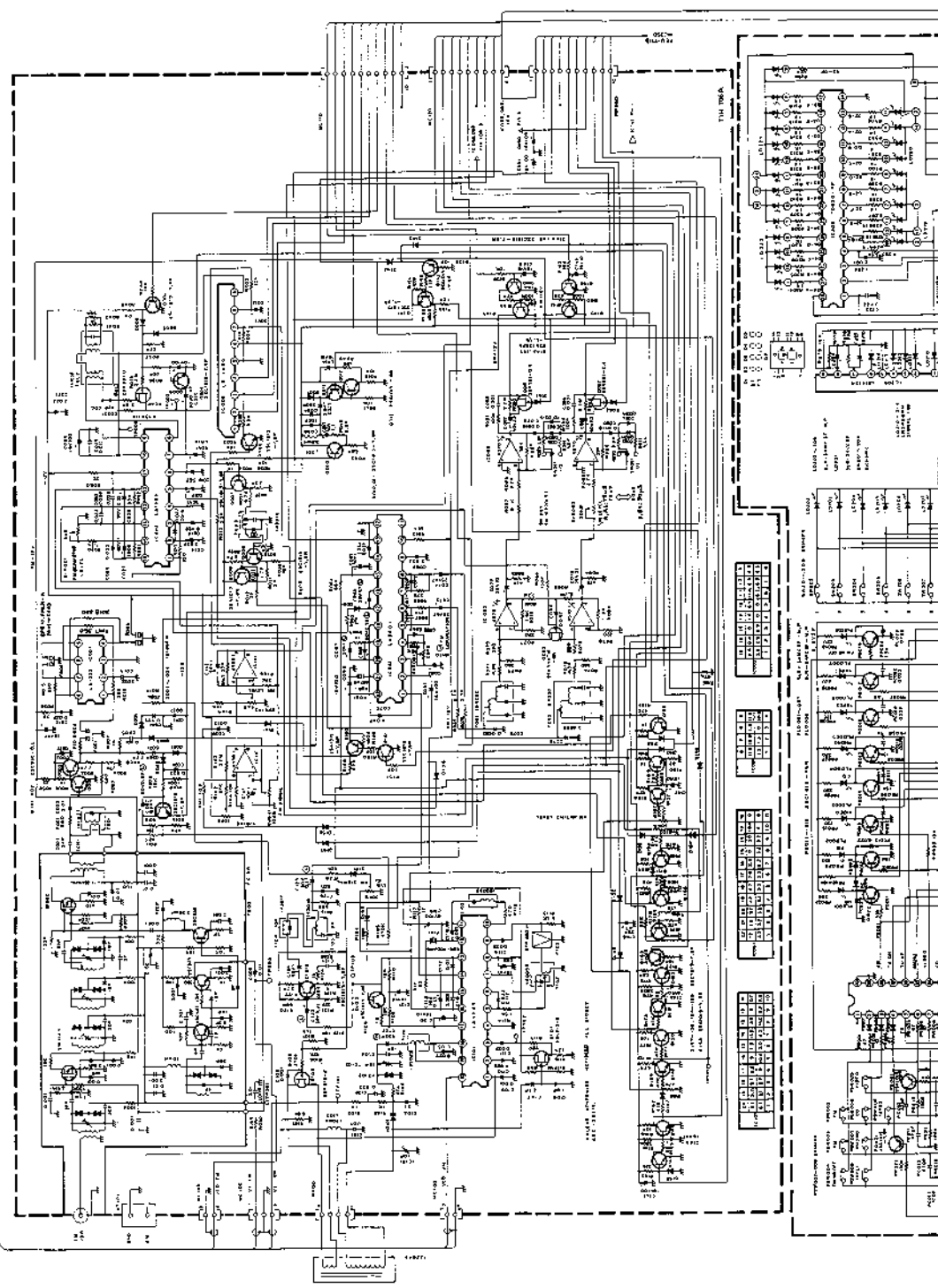
(For E1 Version)

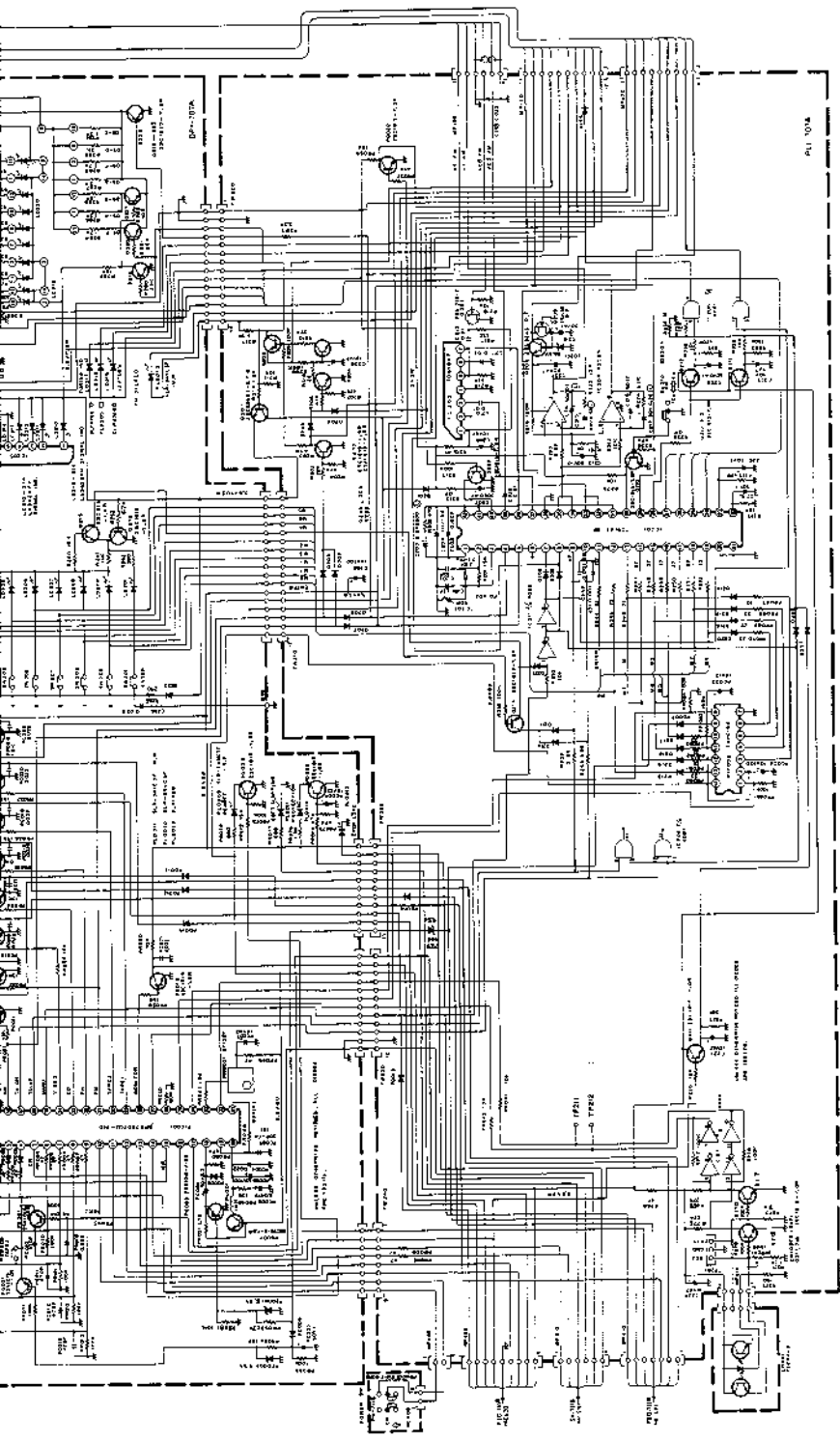




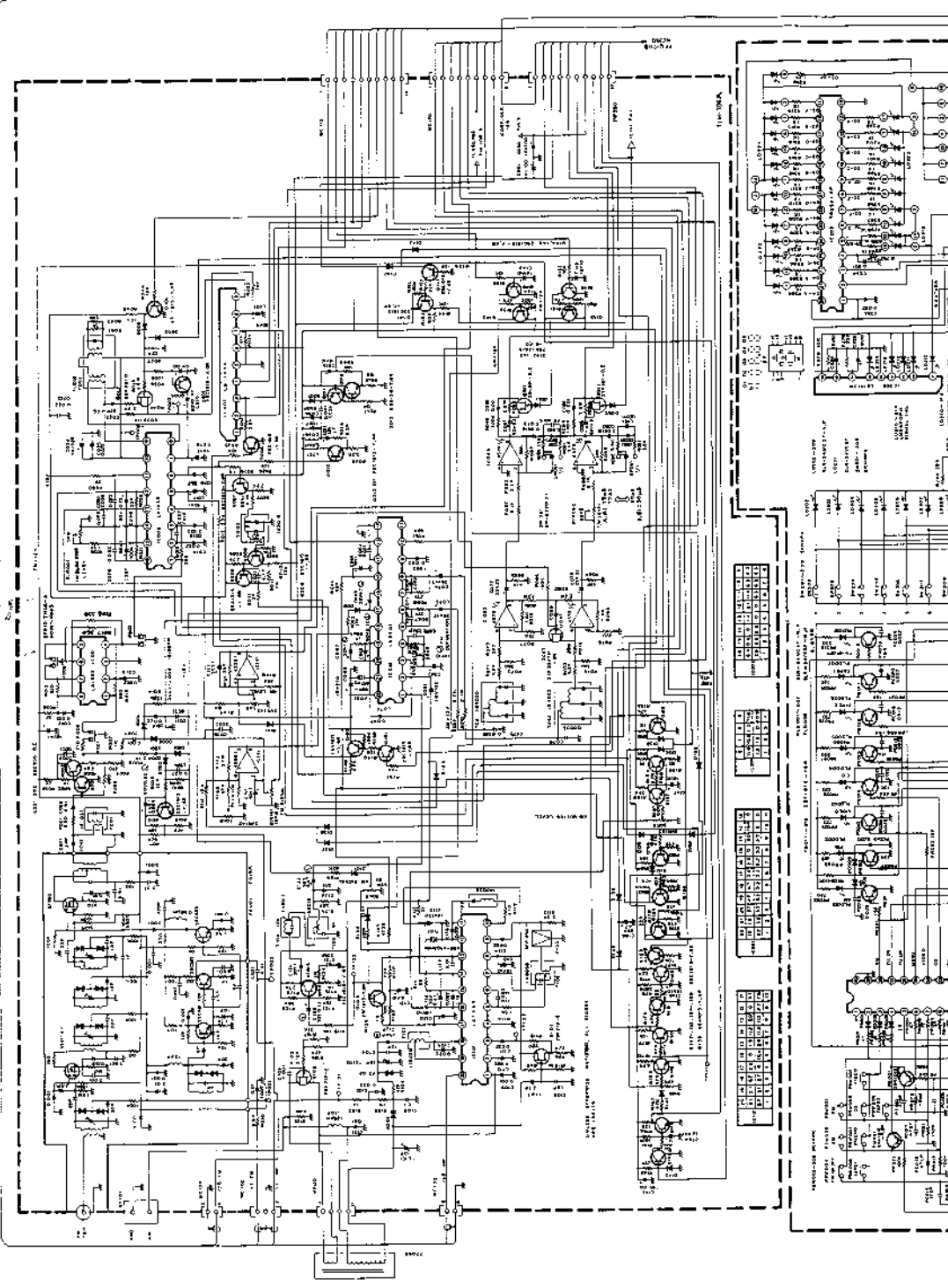


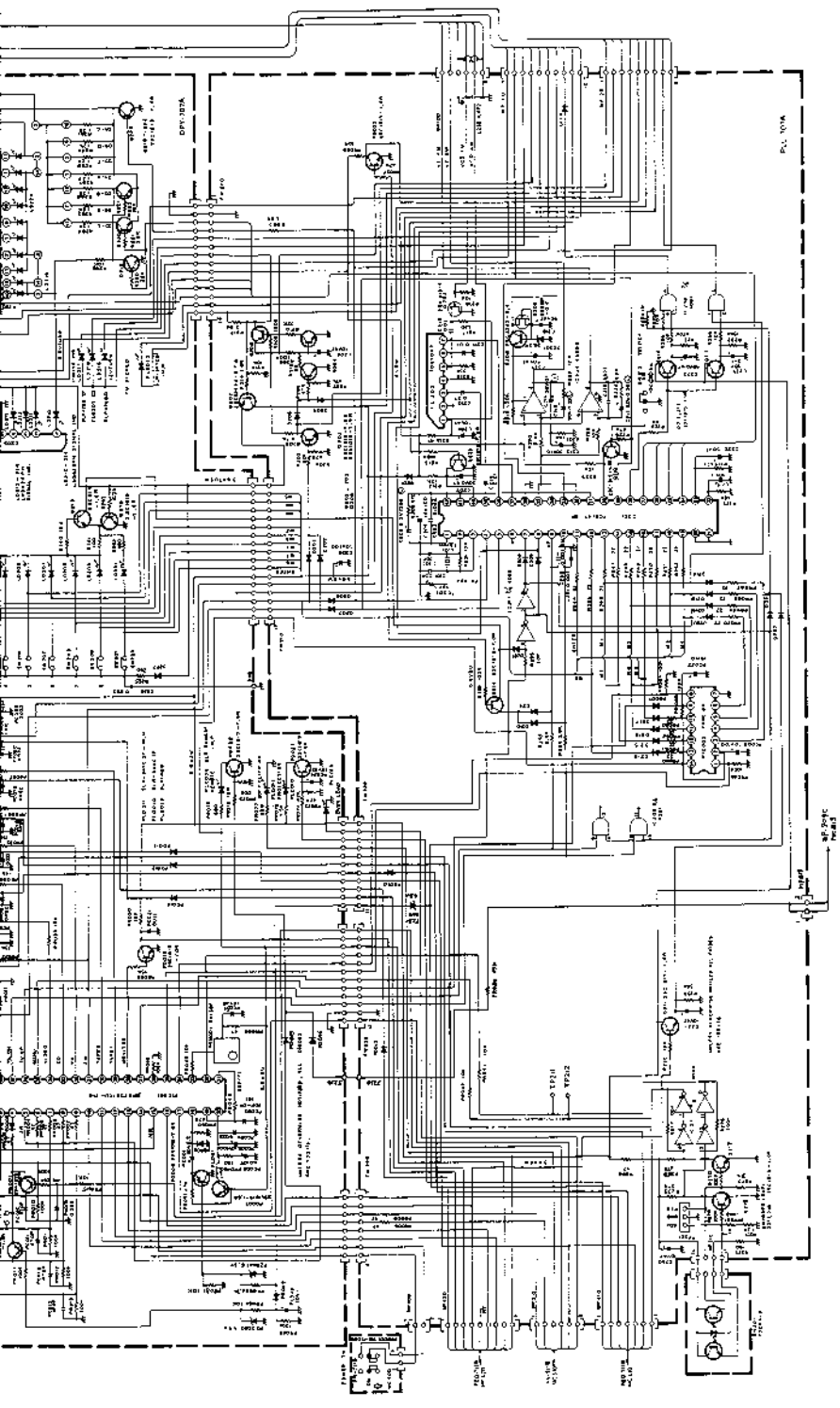






4-11-54





Tuner
(For C-1 Version)

