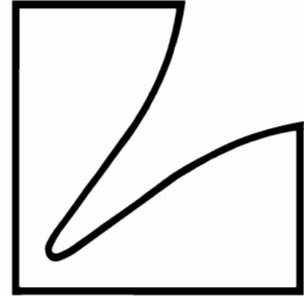


# SERVICE MANUAL



Graphic Frequency Equalizer

# G-1111



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# Specifications

## EQUALIZER SECTION

- NOTES:** 1) Output readings are taken across a non-reactive load (47k ohms).  
 2) Generator impedance should be 600 ohms.  
 3) All frequency controls should be in flat position except Control Range measurement, Hum and Noise measurement and the range under measurement for Control Frequency Accuracy check.

Frequency Response (0.775V Input)	10Hz – 30kHz	+0.5dB –1dB
Control Frequency Accuracy (0.775V Output)		
31Hz/62Hz/125Hz/250Hz/500Hz/1kHz/2kHz		±15%
4kHz/8kHz/16kHz		±10%
Control Range (0.775V Input)		+13±1.5dB –13±1.5dB
Harmonic Distortion (1V Output, 20Hz – 20kHz)		0.04%
Hum and Noise Ratio (1V Output, Input=Shorted, Output=A Weighted)		85dB
Dynamic Range (47k ohm load, 0.5% THD at 1kHz)		9V/rms
Total Gain		±1dB
Input Impedance (at 1kHz)		47k ohm
Output Impedance (at 1kHz)		1k ohm
Intermodulation Distortion (1V Output, 70Hz/7kHz=4/1 ratio)		0.04%
Hum and Noise (All controls are MAX)		2mV
Channel Separation (4.7k ohm terminated, at 1kHz, 0.775V input)		55dB
Crosstalk between Functions (at 1kHz, 0.775V input)		45dB

## ANALYZER SECTION

Display Frequency Accuracy		±15%
Display Frequency Response at MAIN (31Hz – 16kHz, 1kHz=0dB, 18dB LED ON)		±4dB
Meter Tolerance at 1kHz (LED ON)		±4dB
Input Sensitivity at MAIN IN (18dB LED ON)		100mV
Power Supply	120V AC, 60Hz (For UQ/UC models) 100-120V AC, 60Hz and 220-240V AC, 50Hz (For AD models)	
Power Consumption		25W
Semiconductors	8 IC's, 49 Transistors, 26 Diodes, 3 Zener Diodes and 4 LEDs	
Dimensions	438 (W) × 234 (D) × 76 (H) mm	
Weight (Net)		3.0kg

# Parts Locations

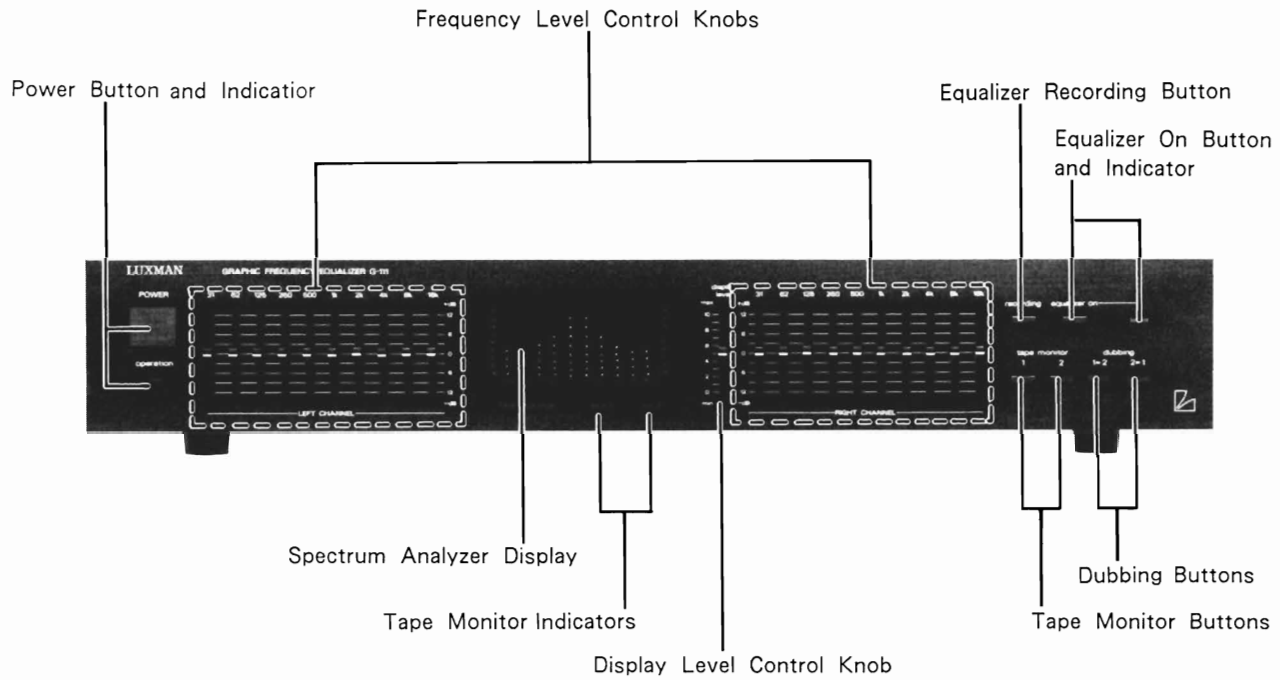


Figure 1

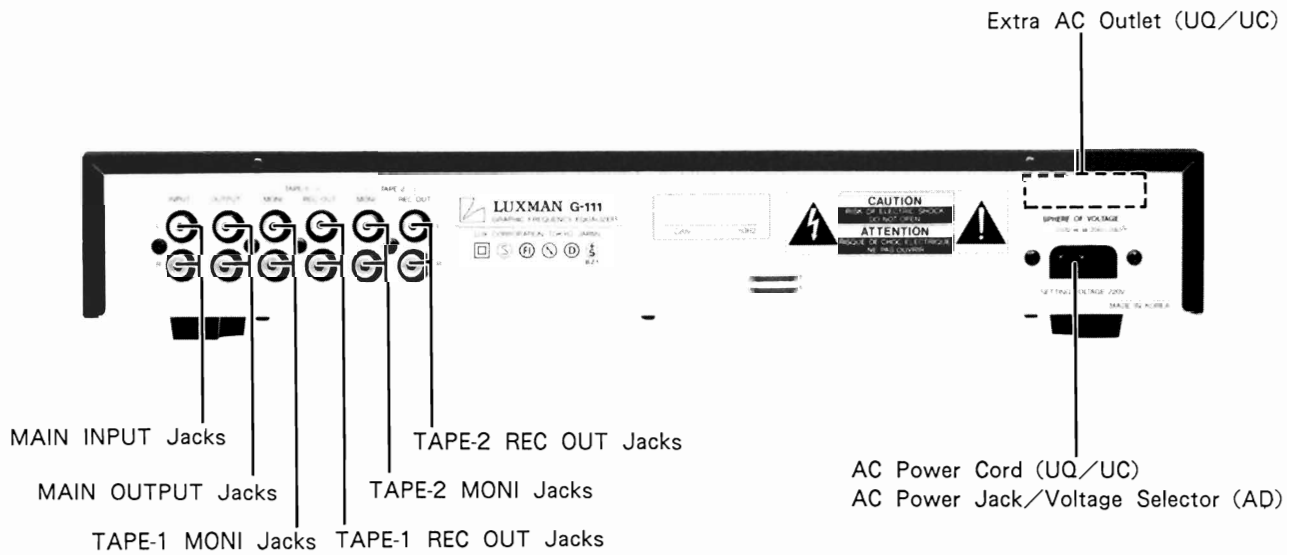
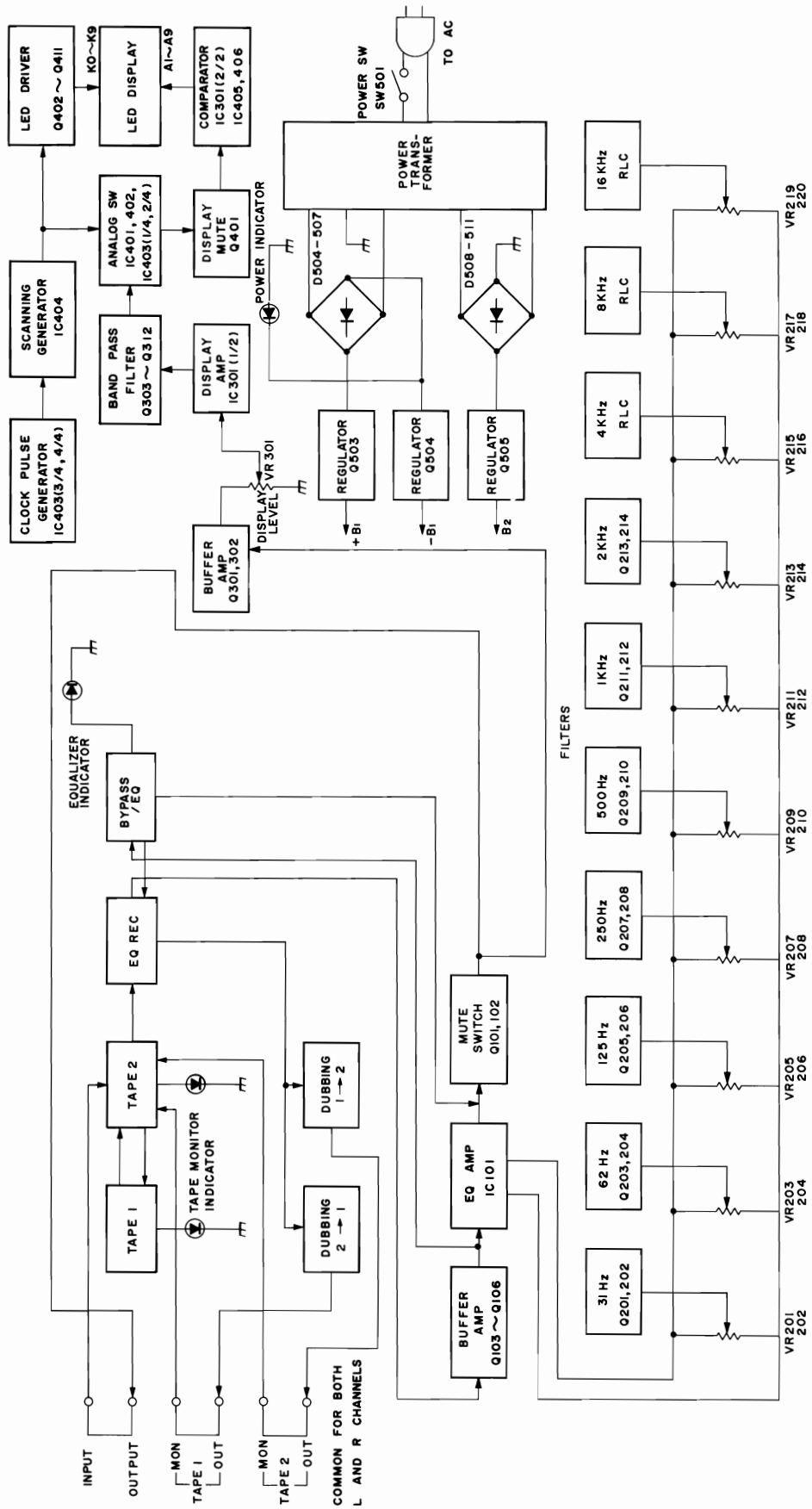
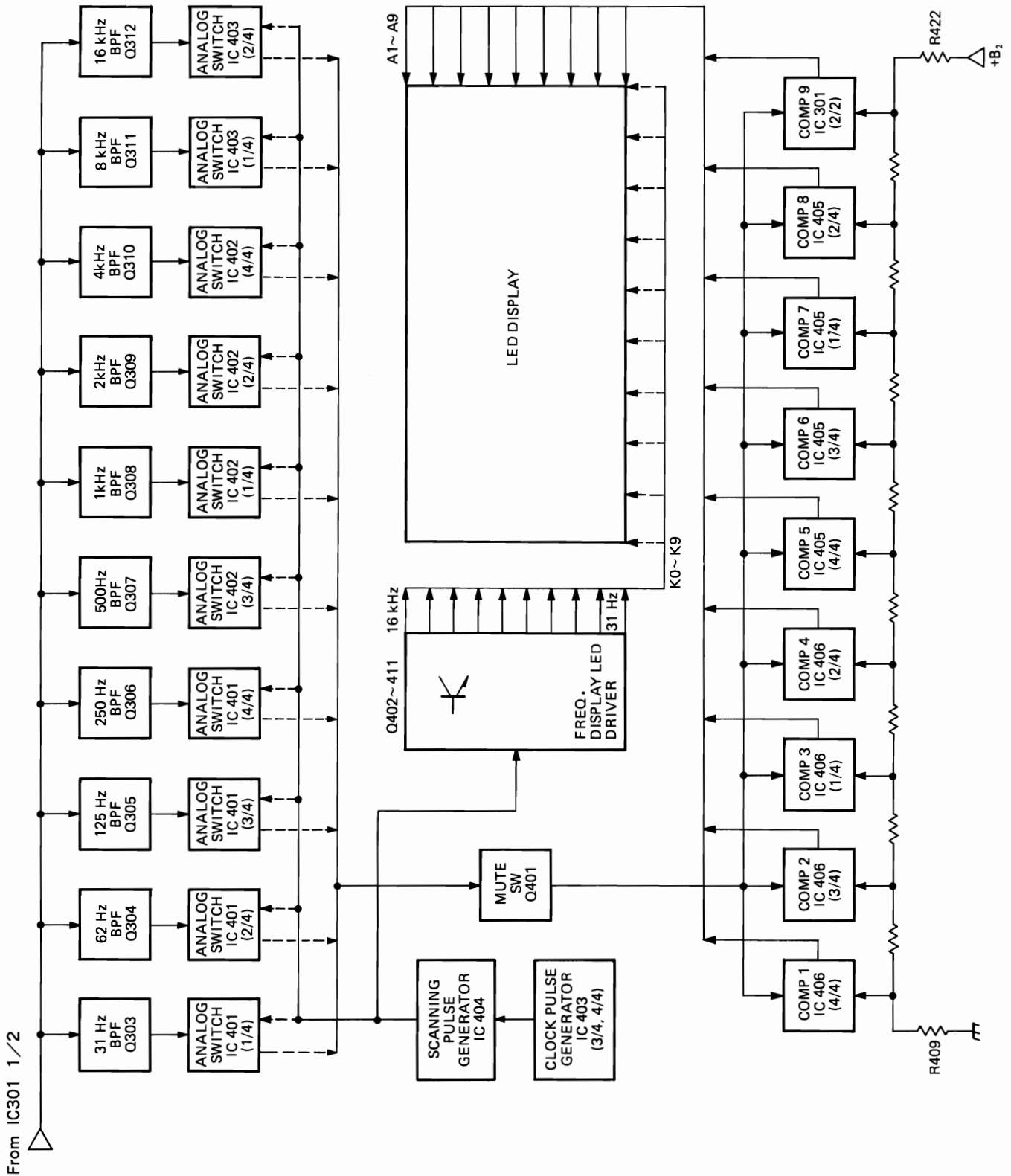


Figure 2

# Block Diagram (1/2)

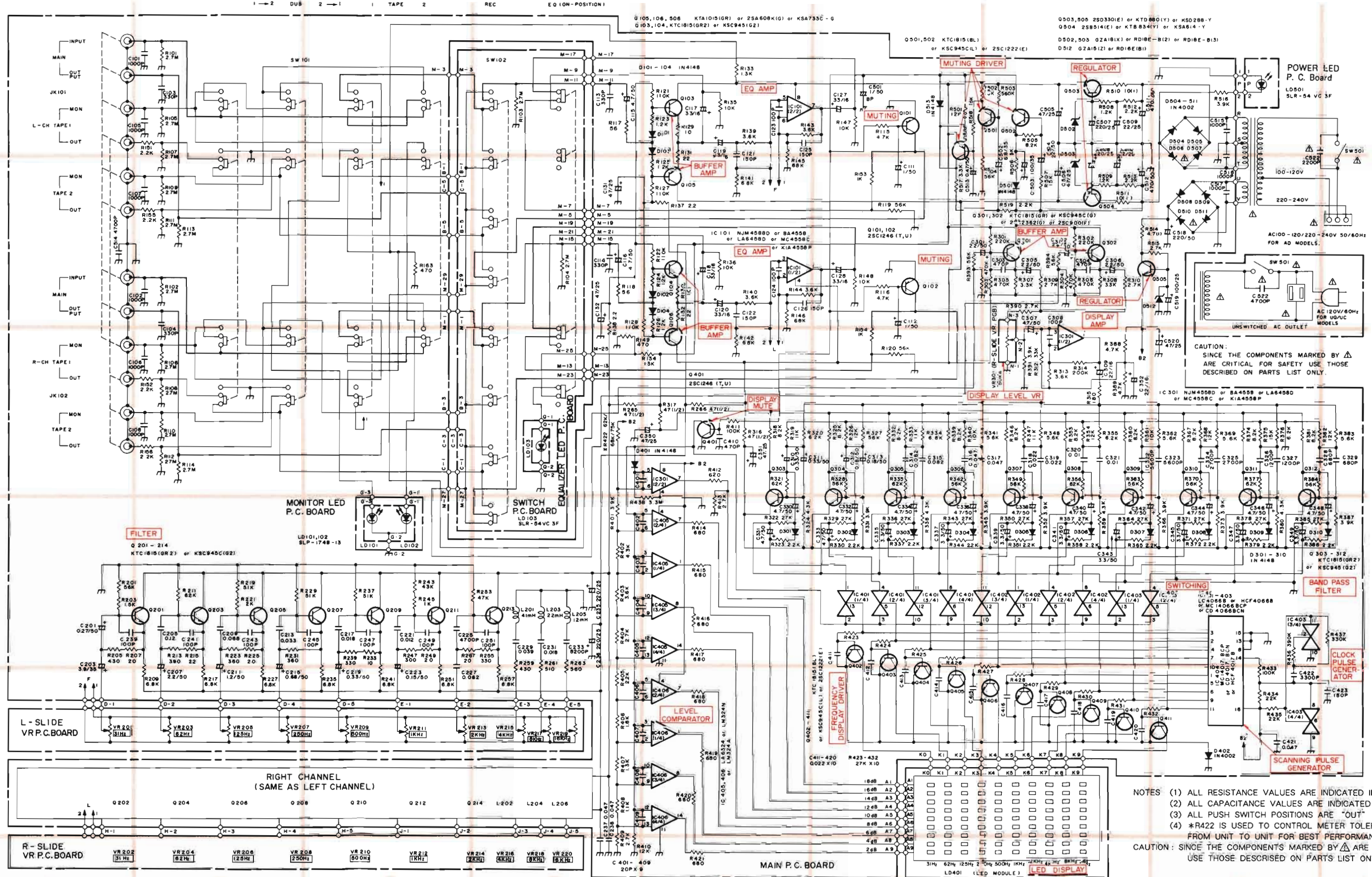


# Block Diagram (2/2)



# Schematic Diagram

IC	IC301(1,2)												IC405		IC406		IC101		IC401		IC101		IC402		IC301(1,2)		IC403(1/4, 2/4)		IC404		IC403(3/4, 4/4)									
TRANSISTOR (Q)	Q201	Q203	Q204	Q205	Q207	Q208	Q209	Q210	Q211	Q212	Q213	Q214	Q103	Q104	Q401	Q303	Q304	Q402	Q403	Q404	Q305	Q306	Q307	Q308	Q309	Q310	Q311	Q312	Q501	Q502	Q503	Q504	Q505	Q506	Q507	Q508	Q509	Q510	Q511	Q512

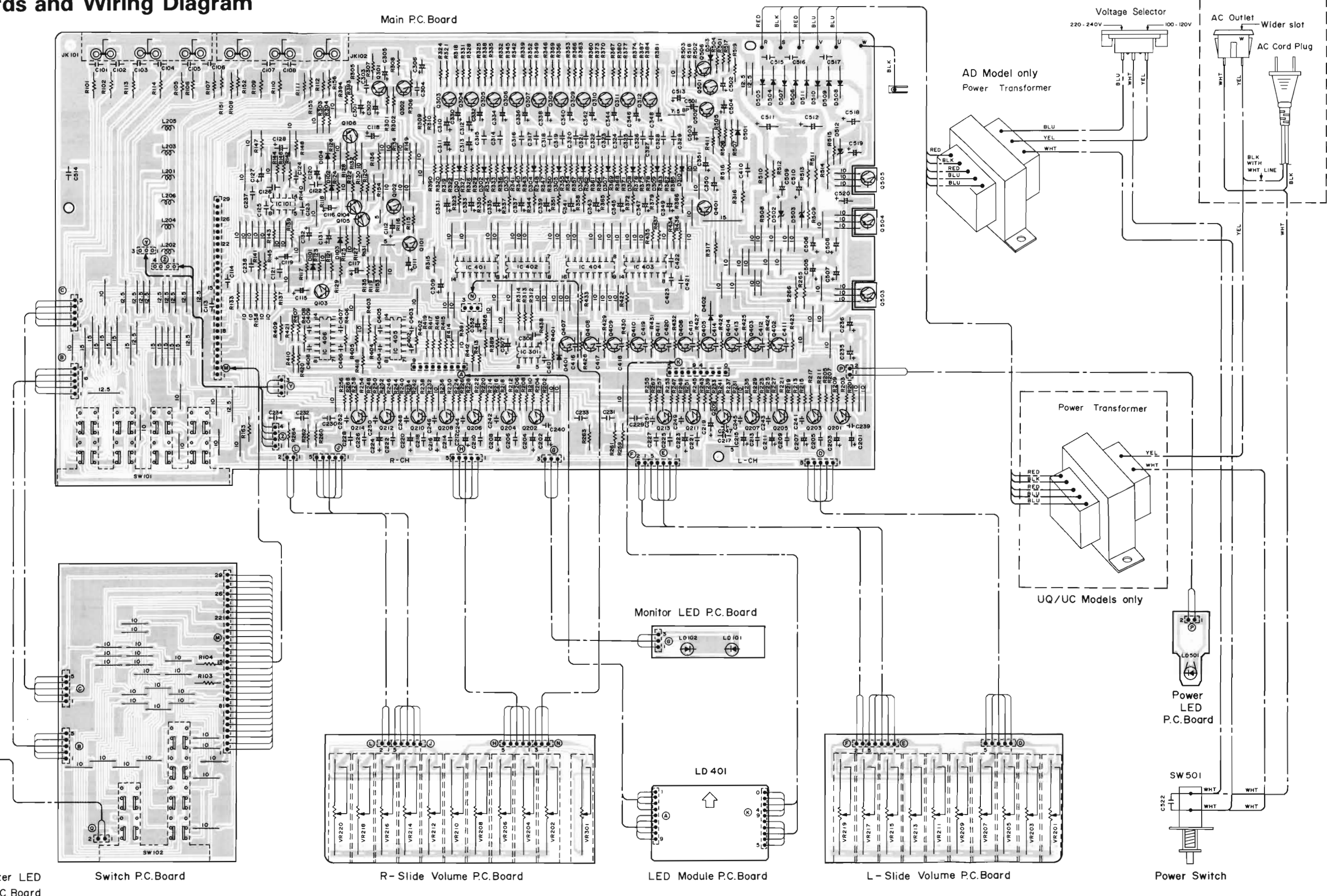


IC 101	1 0V	2 0V	3 0V	4 -17.2V	5 0V	6 7.1V	7 0V	8 8.7V	9 0V	10 0V	11 7.1V	12 7.1V	13 1.5V	14 15V
IC 403	1 0V	2 0V	3 0V	4 0V	5 1.5V	6 7.1V	7 0V	8 8.7V	9 0V	10 0V	11 7.1V	12 7.1V	13 1.5V	14 15V
IC 301	1 7.5V	2 7.5V	3 7.5V	4 0V	5 0V	6 0V	7 0V	8 0V	9 0V	10 0V	11 7.1V	12 7.1V	13 1.5V	14 15V
IC 404	1 1.5V	2 1.5V	3 1.5V	4 1.5V	5 1.5V	6 1.5V	7 0V	8 0V	9 0V	10 0V	11 1.5V	12 7.4V	13 1.5V	14 15V
IC 401	1 0V	2 0V	3 0V	4 0V	5 1.5V	6 1.5V	7 0V	8 0V	9 0V	10 0V	11 1.5V	12 7.4V	13 1.5V	14 15V
IC 405	1 0V	2 2.5V	3 0V	4 15V	5 0V	6 2.2V	7 0V	8 0V	9 1.9V	10 0V	11 0V	12 0V	13 1.5V	14 15V
IC 402	1 0V	2 0V	3 0V	4 0V	5 1.5V	6 1.5V	7 0V	8 0V	9 0V	10 0V	11 0V	12 0V	13 1.5V	14 15V
IC 406	1 0V	2 0.8V	3 0V	4 15V	5 0V	6 1.1V	7 0V	8 0V	9 0.6V	10 0V	11 0V	12 0V	13 0.4V	14 0V

Measuring Conditions  
 • Power Supply Voltage : 110V/50Hz AC  
 • No Signal Input  
 • Switch Positions : All OFF  
 • Volume Control : Center  
 • Display Level : MIN.

NOTES (1) ALL RESISTANCE VALUES ARE INDICATED IN "OHM" (K=10<sup>3</sup> OHM, M=10<sup>6</sup> OHM)  
 (2) ALL CAPACITANCE VALUES ARE INDICATED IN "μF" (P=10<sup>-6</sup> μF)  
 (3) ALL PUSH SWITCH POSITIONS ARE "OUT" POSITION EXCEPT EQ SWITCH  
 (4) \*R422 IS USED TO CONTROL METER TOLERANCE OF LED DISPLAY. THE VALUE MAY VARY FROM UNIT TO UNIT FOR BEST PERFORMANCE (68K, 62K OR 75K OHMS)  
 CAUTION: SINCE THE COMPONENTS MARKED BY Δ ARE CRITICAL FOR SAFETY, USE THOSE DESCRIBED ON PARTS LIST ONLY.

# Parts Layout on P.C. Boards and Wiring Diagram



NOTE :C129, C130, R157 and R158 are not used in the circuit.  
(Neglect them printed on the P. C. Boards for the units with serial numbers from 80510001 to 80511000.  
To short C129 and C130, jumpers are used for these P. C. Boards.)

- BLU ..... Blue
- GRN ..... Green
- BLK ..... Black
- GRY ..... Gray
- WHT ..... White
- RED ..... Red
- BRN ..... Brown
- ORG ..... Orange
- YEL ..... Yellow
- PNK ..... Pink
- VIO ..... Violet
- GRN/WHT ..... Green/White
- GRY/WHT ..... Gray/White
- GRY/YEL ..... Gray/Yellow
- GRN/YEL ..... Green/Yellow
- SHLD ..... Shield



# Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list. Please confirm them by schematic diagram.

Capacitor : uF = microfarads, pF = picofarads

Abbreviations					Symbol No.	Part No.	Description		
RES. = Resistor					CAP. = Capacitor				
C.F. = Carbon Film					E.L.Y. = Electrolytic				
M.F. = Metal Film					CER. = Ceramic				
M.O. = Metal Oxide Film					MYL. = Mylar				
M.P. = Metal Plate					TAN. = Tantalum				
TR. = Transistor					POLY. = Polystyrol				
TRANS. = Transformer					PP. = Polypropylene				
CP. = Chip					PLT. = Polyethylene				
Symbol No.	Part No.	Description							
Main P. C. Board									
IC's									
IC101	51T52383F01	NJM4558D			Q306	48E04784S02	KTC1815 (GR2)		
IC301	51T52383F01	NJM4558D			Q307	48E04784S02	KTC1815 (GR2)		
IC401	51T60576F01	LC4066B			Q308	48E04784S02	KTC1815 (GR2)		
IC402	51T60576F01	LC4066B			Q309	48E04784S02	KTC1815 (GR2)		
IC403	51T60576F01	LC4066B			Q310	48E04784S02	KTC1815 (GR2)		
IC404	51E05081S01	MC14017BCP			Q311	48E04784S02	KTC1815 (GR2)		
IC405	51E05082S01	LA6324			Q312	48E04784S02	KTC1815 (GR2)		
IC406	51E05082S01	LA6324			Q401	48E05117S01	2SA1246		
Transistors									
Q101	48E05117S01	2SA1246			Q402	48E04784S03	KTC1815 (BL)		
Q102	48E05117S01	2SA1246			Q403	48E04784S03	KTC1815 (BL)		
Q103	48E04784S02	KTC1815 (GR2)			Q404	48E04784S03	KTC1815 (BL)		
Q104	48E04784S02	KTC1815 (GR2)			Q405	48E04784S03	KTC1815 (BL)		
Q105	48E04785S02	KTA1015 (GR)			Q406	48E04784S03	KTC1815 (BL)		
Q106	48E04785S02	KTA1015 (GR)			Q407	48E04784S03	KTC1815 (BL)		
Q201	48E04784S02	KTC1815 (GR2)			Q408	48E04784S03	KTC1815 (BL)		
Q202	48E04784S02	KTC1815 (GR2)			Q409	48E04784S03	KTC1815 (BL)		
Q203	48E04784S02	KTC1815 (GR2)			Q410	48E04784S03	KTC1815 (BL)		
Q204	48E04784S02	KTC1815 (GR2)			Q411	48E04784S03	KTC1815 (BL)		
Q205	48E04784S02	KTC1815 (GR2)			Q501	48E04784S03	KTC1815 (BL)		
Q206	48E04784S02	KTC1815 (GR2)			Q502	48E04784S03	KTC1815 (BL)		
Q207	48E04784S02	KTC1815 (GR2)			Q503	48E05083S01	2SD330 (E)		
Q208	48E04784S02	KTC1815 (GR2)			Q504	48E05084S01	2SB514 (E)		
Q209	48E04784S02	KTC1815 (GR2)			Q505	48E05083S01	2SD330 (E)		
Q210	48E04784S02	KTC1815 (GR2)			Q506	48E04785S02	KTA1015 (GR)		
Q211	48E04784S02	KTC1815 (GR2)							
Q212	48E04784S02	KTC1815 (GR2)							
Q213	48E04784S02	KTC1815 (GR2)							
Q214	48E04784S02	KTC1815 (GR2)							
Q301	48E04784S01	KTC1815 (GR)							
Q302	48E04784S01	KTC1815 (GR)							
Q303	48E04784S02	KTC1815 (GR2)							
Q304	48E04784S02	KTC1815 (GR2)							
Q305	48E04784S02	KTC1815 (GR2)							
Diodes									
					D101	48E04616S01	1N4148		
					D102	48E04616S01	1N4148		
					D103	48E04616S01	1N4148		
					D104	48E04616S01	1N4148		
					D301	48E04616S01	1N4148		
					D302	48E04616S01	1N4148		
					D303	48E04616S01	1N4148		
					D304	48E04616S01	1N4148		
					D305	48E04616S01	1N4148		
					D306	48E04616S01	1N4148		
					D307	48E04616S01	1N4148		
					D308	48E04616S01	1N4148		
					D309	48E04616S01	1N4148		
					D310	48E04616S01	1N4148		
					D401	48E04616S01	1N4148		
					D402	48S40477U02	1N4002		
					D501	48E04616S01	1N4148		
					D502	48E01752S02	Zener, GZA18 (X)		
					D503	48E01752S02	Zener, GZA18 (X)		
					D504	48S40477U02	1N4002		

Symbol No.	Part No.	Description			Symbol No.	Part No.	Description		
D505	48S40477U02	1N4002			C123	21E05091S03	CER., 100pF		
D506	48S40477U02	1N4002			C124	21E05091S03	CER., 100pF		
D507	48S40477U02	1N4002			C125	21E05091S02	CER., 150pF		
D508	48S40477U02	1N4002			C126	21E05091S02	CER., 150pF		
D509	48S40477U02	1N4002			C127	23E04625S04	ELY., 33 $\mu$ F/16V		
D510	48S40477U02	1N4002			C128	23E04625S04	ELY., 33 $\mu$ F/16V		
D511	48S40477U02	1N4002			C131	23E04627S01	ELY., 47 $\mu$ F/25V		
D512	48E01750S02	Zener, GZA15, Rank : Z			C132	23E04627S01	ELY., 47 $\mu$ F/25V		
D513	48E04616S01	1N4148			C201*	23E05093S01	ELY., 0.27 $\mu$ F/50V		
					C202*	23E05093S01	ELY., 0.27 $\mu$ F/50V		
<b>Inductors</b>					C203*	23E05094S01	ELY., 3.9 $\mu$ F/35V		
L201	24E05085S01	41mH			C204*	23E05094S01	ELY., 3.9 $\mu$ F/35V		
L202	24E05085S01	41mH			C205	08E04626S04	MYL., 0.12 $\mu$ F		
L203	24E05086S01	22mH			C206	08E04626S04	MYL., 0.12 $\mu$ F		
L204	24E05086S01	22mH			C207*	23E05093S02	ELY., 2.2 $\mu$ F/50V		
L205	24E05087S01	12mH			C208*	23E05093S02	ELY., 2.2 $\mu$ F/50V		
L206	24E05087S01	12mH			C209	08E04626S05	MYL., 0.068 $\mu$ F		
<b>Jacks/Switch</b>					C210	08E04626S05	MYL., 0.068 $\mu$ F		
JK101	09E05088S01	RCA Jack			C211*	23E05093S03	ELY., 1.2 $\mu$ F/50V		
JK102	09E05088S01	RCA Jack			C212*	23E05093S03	ELY., 1.2 $\mu$ F/50V		
SW101	40E05089S01	Push Switch			C213	08E04626S18	MYL., 0.033 $\mu$ F		
<b>Capacitors</b>					C214	08E04626S18	MYL., 0.033 $\mu$ F		
C101	21E05090S01	CER., 1000pF			C215*	23E05093S10	ELY., 0.68 $\mu$ F/50V		
C102	21E05090S01	CER., 1000pF			C216*	23E05093S10	ELY., 0.68 $\mu$ F/50V		
C103	21E05091S01	CER., 330pF			C217	08E04626S07	MYL., 0.018 $\mu$ F		
C104	21E05091S01	CER., 330pF			C218	08E04626S07	MYL., 0.018 $\mu$ F		
C105	21E05090S01	CER., 1000pF			C219*	23E05093S05	ELY., 0.33 $\mu$ F/50V		
C106	21E05090S01	CER., 1000pF			C220*	23E05093S05	ELY., 0.33 $\mu$ F/50V		
C107	21E05090S01	CER., 1000pF			C221	08E04626S08	MYL., 0.012 $\mu$ F		
C108	21E05090S01	CER., 1000pF			C222	08E04626S08	MYL., 0.012 $\mu$ F		
C111	23E04624S04	ELY., 1 $\mu$ F/50V			C223*	23E05093S06	ELY., 0.15 $\mu$ F/50V		
C112	23E04624S04	ELY., 1 $\mu$ F/50V			C224*	23E05093S06	ELY., 0.15 $\mu$ F/50V		
C113	21E05091S01	CER., 330pF			C225	08E04626S09	MYL., 4700pF		
C114	21E05091S01	CER., 330pF			C226	08E04626S09	MYL., 4700pF		
C115	23E04624S06	ELY., 4.7 $\mu$ F/50V			C227	08E04626S10	MYL., 0.082 $\mu$ F		
C116	23E04624S06	ELY., 4.7 $\mu$ F/50V			C228	08E04626S10	MYL., 0.082 $\mu$ F		
C117	23E04625S04	ELY., 33 $\mu$ F/16V			C229	08E04626S06	MYL., 0.039 $\mu$ F		
C118	23E04625S04	ELY., 33 $\mu$ F/16V			C230	08E04626S06	MYL., 0.039 $\mu$ F		
C119	23E04625S04	ELY., 33 $\mu$ F/16V			C231	08E04626S07	MYL., 0.018 $\mu$ F		
C120	23E04625S04	ELY., 33 $\mu$ F/16V			C232	08E04626S07	MYL., 0.018 $\mu$ F		
C121	21E05091S02	CER., 150pF			C233	08E04626S11	MYL., 8200pF		
C122	21E05091S02	CER., 150pF			C234	08E04626S11	MYL., 8200pF		
					C235	23E04627S03	ELY., 220 $\mu$ F/25V		
					C236	23E04627S03	ELY., 220 $\mu$ F/25V		
					C237	21E05092S01	CER., 0.047 $\mu$ F		
					C238	21E05092S01	CER., 0.047 $\mu$ F		
					C239	21E05091S03	CER., 100pF		
					C240	21E05091S03	CER., 100pF		
					C241	21E05091S03	CER., 100pF		
					C242	21E05091S03	CER., 100pF		

NOTE : The electrolytic capacitors with \* marks are low noise (low leakage) type.

Symbol No.	Part No.	Description			Symbol No.	Part No.	Description		
C243	21E05091S03	CER., 100pF			C341	23E04624S05	ELY., 3.3 $\mu$ F/50V		
C244	21E05091S03	CER., 100pF			C342	23E04624S06	ELY., 4.7 $\mu$ F/50V		
C245	21E05091S03	CER., 100pF			C343	23E04624S05	ELY., 3.3 $\mu$ F/50V		
C246	21E05091S03	CER., 100pF			C344	23E04624S06	ELY., 4.7 $\mu$ F/50V		
C247	21E05091S03	CER., 100pF			C345	23E04624S05	ELY., 3.3 $\mu$ F/50V		
C248	21E05091S03	CER., 100pF			C346	23E04624S06	ELY., 4.7 $\mu$ F/50V		
C249	21E05091S03	CER., 100pF			C347	23E04624S05	ELY., 3.3 $\mu$ F/50V		
C250	21E05091S03	CER., 100pF			C348	23E04624S06	ELY., 4.7 $\mu$ F/50V		
C251	21E05091S03	CER., 100pF			C349	23E04624S05	ELY., 3.3 $\mu$ F/50V		
C252	21E05091S03	CER., 100pF			C350	23E04627S01	ELY., 47 $\mu$ F/25V		
C301	23E04624S01	ELY., 2.2 $\mu$ F/50V			C351	23E04627S01	ELY., 47 $\mu$ F/25V		
C302	23E04624S01	ELY., 2.2 $\mu$ F/50V			C352	23E04625S06	ELY., 22 $\mu$ F/16V		
C303	21E05091S04	CER., 470pF			C401	21E04734S02	CER., 20pF		
C304	21E05091S04	CER., 470pF			C402	21E04734S02	CER., 20pF		
C305	23E04624S01	ELY., 2.2 $\mu$ F/50V			C403	21E04734S02	CER., 20pF		
C306	23E04624S01	ELY., 2.2 $\mu$ F/50V			C404	21E04734S02	CER., 20pF		
C307	23E04624S06	ELY., 4.7 $\mu$ F/50V			C405	21E04734S02	CER., 20pF		
C308	21E05091S03	CER., 100pF			C406	21E04734S02	CER., 20pF		
C309	23E04625S06	ELY., 22 $\mu$ F/16V			C407	21E04734S02	CER., 20pF		
C310*	23E05093S05	ELY., 0.33 $\mu$ F/50V			C408	21E04734S02	CER., 20pF		
C311*	23E05093S05	ELY., 0.33 $\mu$ F/50V			C409	21E04734S02	CER., 20pF		
C312*	23E05093S07	ELY., 0.18 $\mu$ F/50V			C410	21E05091S04	CER., 470pF		
C313*	23E05093S07	ELY., 0.18 $\mu$ F/50V			C411	21E05092S02	CER., 0.022 $\mu$ F		
C314	08E04626S10	MYL., 0.082 $\mu$ F			C412	21E05092S02	CER., 0.022 $\mu$ F		
C315	08E04626S10	MYL., 0.082 $\mu$ F			C413	21E05092S02	CER., 0.022 $\mu$ F		
C316	08E04626S03	MYL., 0.047 $\mu$ F			C414	21E05092S02	CER., 0.022 $\mu$ F		
C317	08E04626S03	MYL., 0.047 $\mu$ F			C415	21E05092S02	CER., 0.022 $\mu$ F		
C318	08E04626S12	MYL., 0.022 $\mu$ F			C416	21E05092S02	CER., 0.022 $\mu$ F		
C319	08E04626S12	MYL., 0.022 $\mu$ F			C417	21E05092S02	CER., 0.022 $\mu$ F		
C320	08E04626S13	MYL., 0.01 $\mu$ F			C418	21E05092S02	CER., 0.022 $\mu$ F		
C321	08E04626S13	MYL., 0.01 $\mu$ F			C419	21E05092S02	CER., 0.022 $\mu$ F		
C322	08E04626S14	MYL., 5600pF			C420	21E05092S02	CER., 0.022 $\mu$ F		
C323	08E04626S14	MYL., 5600pF			C421	21E05092S01	CER., 0.047 $\mu$ F		
C324	08E04626S15	MYL., 2700pF			C422	08E04626S17	MYL., 3300pF		
C325	08E04626S15	MYL., 2700pF			C423	21E05091S07	CER., 180pF		
C326	08E04626S16	MYL., 1200pF			C501	23E05118S01	ELY., 1 $\mu$ F/50V Bi-polar		
C327	08E04626S16	MYL., 1200pF			C502*	23E05094S02	ELY., 6.8 $\mu$ F/35V		
C328	21E05091S05	CER., 680pF			C503	23E05095S01	ELY., 100 $\mu$ F/35V		
C329	21E05091S05	CER., 680pF			C504*	23E05093S09	ELY., 2.2 $\mu$ F/50V		
C330	23E04624S06	ELY., 4.7 $\mu$ F/50V			C505	23E04627S01	ELY., 47 $\mu$ F/25V		
C331	23E04624S06	ELY., 4.7 $\mu$ F/50V			C506	23E04627S01	ELY., 47 $\mu$ F/25V		
C332	23E04624S06	ELY., 4.7 $\mu$ F/50V			C507	23E04627S03	ELY., 220 $\mu$ F/25V		
C333	23E04624S06	ELY., 4.7 $\mu$ F/50V			C508	23E04627S03	ELY., 220 $\mu$ F/25V		
C334	23E04624S06	ELY., 4.7 $\mu$ F/50V			C509	23E04627S02	ELY., 22 $\mu$ F/25V		
C335	23E04624S05	ELY., 3.3 $\mu$ F/50V			C510	23E04627S02	ELY., 22 $\mu$ F/25V		
C336	23E04624S06	ELY., 4.7 $\mu$ F/50V			C511	23E04624S07	ELY., 470 $\mu$ F/50V		
C337	23E04624S06	ELY., 3.3 $\mu$ F/50V			C512	23E04624S07	ELY., 470 $\mu$ F/50V		
C338	23E04624S06	ELY., 4.7 $\mu$ F/50V			C513	23E05093S11	ELY., 0.47 $\mu$ F/50V		
C339	23E04624S05	ELY., 3.3 $\mu$ F/50V			C514	08E04626S09	MYL., 4700pF		
C340	23E04624S06	ELY., 4.7 $\mu$ F/50V			C515	21E05090S01	CER., 1000pF		

NOTE : The electrolytic capacitors with \* marks are low noise (low leakage) type.

Symbol No.	Part No.	Description			Symbol No.	Part No.	Description		
C516	21E05090S01	CER., 1000pF			VR212	18E05097S01	Slide		
C517	21E05090S01	CER., 1000pF			VR214	18E05097S01	Slide		
C518	23E04624S08	ELY., 220 $\mu$ F/50V			VR216	18E05097S01	Slide		
C519	23E04627S04	ELY., 100 $\mu$ F/25V			VR218	18E05097S01	Slide		
C520	23E04627S01	ELY., 47 $\mu$ F/25V			VR220	18E05097S01	Slide		
<b>Resistors</b>					<b>Power LED P. C. Board</b>				
R265	06E04641S03	C.F., 47 ohm 1/2W			<b>LED</b>				
R266	06E04641S03	C.F., 47 ohm 1/2W			LD501	48E04648S01	Red, SLR-54		
R316	06E04641S03	C.F., 47 ohm 1/2W			<b>Equalizer LED P. C. Board</b>				
R317	06E04641S03	C.F., 47 ohm 1/2W			<b>LED</b>				
R510	06E04639S02	M.O., 10 ohm 1W			LD103	48E04648S01	Red, SLR-54 VC3F		
R511	06E04639S02	M.O., 10 ohm 1W			<b>Monitor LED P. C. Board</b>				
R514	06E04639S05	M.O., 4.7 ohm 1W			<b>LEDs</b>				
<b>Switch P. C. Board</b>					LD101	48E05099S01	Red, SLP-174B-13		
<b>Switch</b>					LD102	48E05099S01	Red, SLP-174B-13		
SW102	40E05096S01	Switch, Push			<b>Miscellaneous</b>				
<b>L-Slide VR P. C. Board</b>					<b>Line Capacitors/Power Switch/LED Module</b>				
<b>Variable Resistors</b>					<input type="radio"/> C522	08E04663S03	Capacitor, Line 2200pF AD		
VR201	18E05097S01	Slide			<input type="triangle"/> C522	08E04663S02	Capacitor, Line 4700pF UQ		
VR203	18E05097S01	Slide			<input type="checkbox"/> C522	08E04663S02	Capacitor, Line 4700pF UC		
VR205	18E05097S01	Slide			SW501	40E05070S01	Switch, Power		
VR207	18E05097S01	Slide			LD401	48E05100S01	Module, LED		
VR209	18E05097S01	Slide			<b>Variable Resistors</b>				
VR211	18E05097S01	Slide			VR202	18E05097S01	Slide		
VR213	18E05097S01	Slide			VR204	18E05097S01	Slide		
VR215	18E05097S01	Slide			VR206	18E05097S01	Slide		
VR217	18E05097S01	Slide			VR208	18E05097S01	Slide		
VR219	18E05097S01	Slide			VR210	18E05097S01	Slide		
<b>R-Slide VR P. C. Board</b>					<b>Variable Resistors</b>				
<b>Variable Resistors</b>					<b>Variable Resistors</b>				
VR202	18E05097S01	Slide			<b>Variable Resistors</b>				
VR204	18E05097S01	Slide			<b>Variable Resistors</b>				
VR206	18E05097S01	Slide			<b>Variable Resistors</b>				
VR208	18E05097S01	Slide			<b>Variable Resistors</b>				
VR210	18E05097S01	Slide			<b>Variable Resistors</b>				

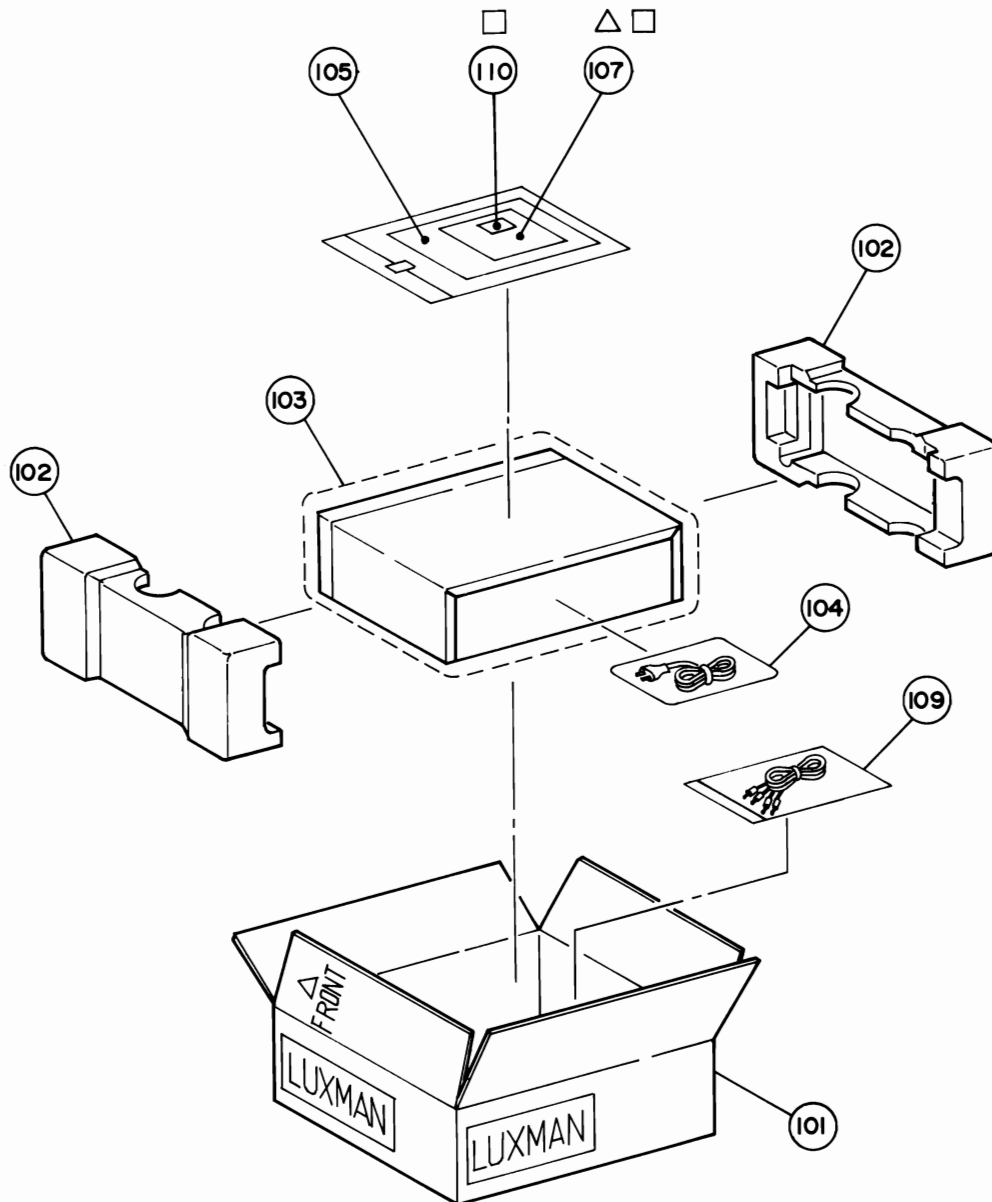
Notes :  : For West Germany model only (AD),  : For Canadian model only (UQ),  
 : For North American model only (UC), Others : Common.

## Packing Assembly Parts List

Symbol No.	Part No.	Description			Symbol No.	Part No.	Description		
○	101	56E05077S01	Carton, Packing		△	105	68P94789F13	Owner's Manual	
	102	56E05078S01	Box, Snow		□	105	68P96552F19	Owner's Manual	
	103	56E05079S01	Bag, Polyethylene		△	107	68P44370P63	Card, Warranty	
	104	56E05080S01	Bag, Polyethylene		□	107	68P44370P66	Card, Warranty	
○	105	68P94789F13	Owner's Manual			109	28E04778S01	Cord, Patch	
					□	110	68R57674F01	Card	

Notes : ○ : For West Germany model only (AD), △ : For Canadian model only (UQ),  
 □ : For North American model only (UC), Others : Common.

## Packing Method View



# Cabinet Assembly Parts List

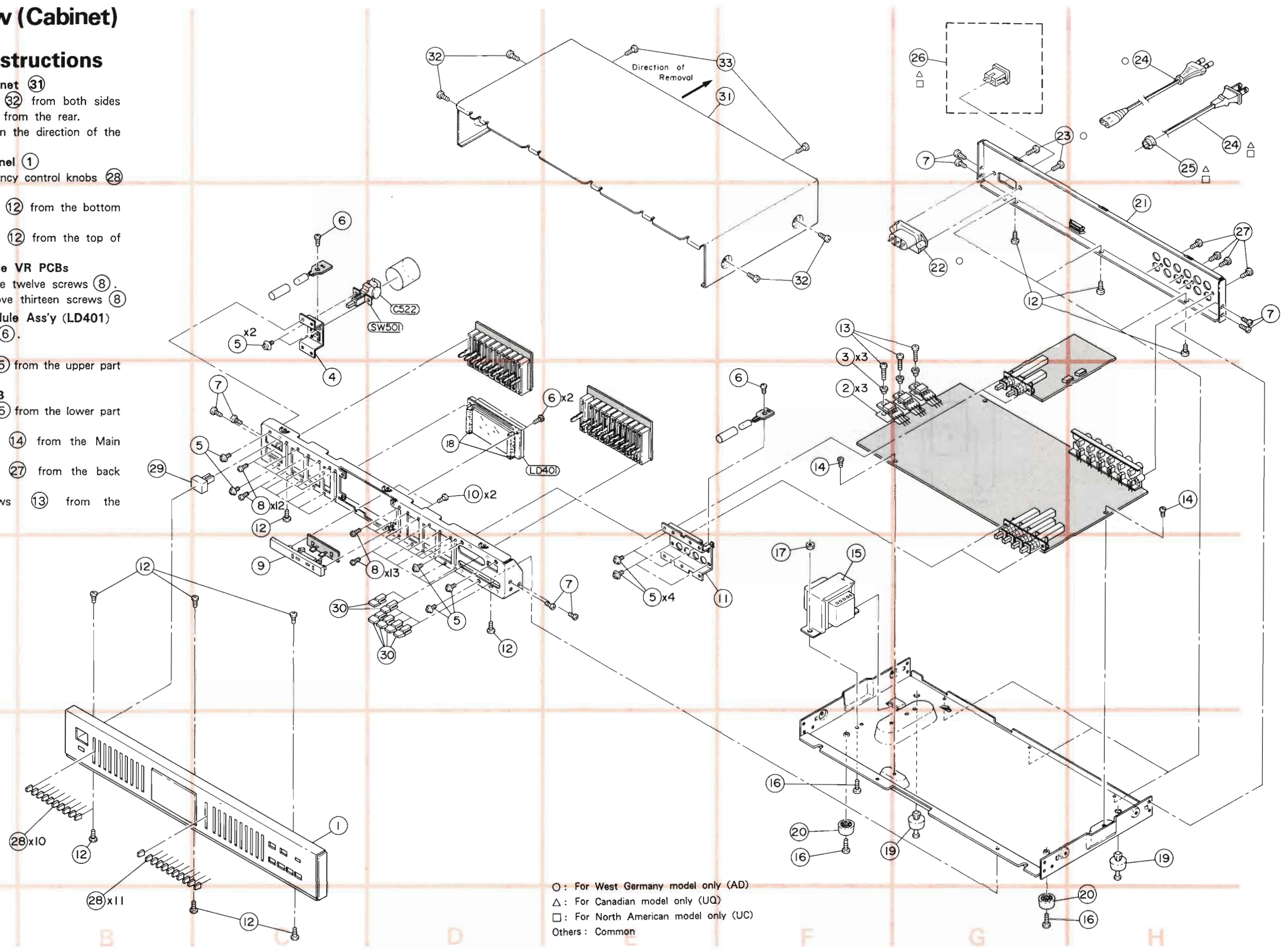
Symbol No.	Index	Part No.	Description			Symbol No.	Index	Part No.	Description		
	1	5-C	01E05061S01	ASSY., Front Panel							
	2	3-F	14E05062S01	Sheet, Insulation							
	3	2-F	43E05063S01	Grommet							
	4	3-C	07E05064S01	Holder, Power SW							
	5		03E04705S02	Screw, F-Lock (M3 × 5)							
	6		03E04775S02	Screw (M3 × 6)							
	7		03E04704S04	Screw, Taptite (M3 × 6)							
	8		03E04775S03	Screw (M2 × 4)							
	9	4-C	43E05065S01	Holder, LED							
	10	3-D	03E05066S01	Screw, Taptite (M3 × 6)							
	11	4-F	07E05067S01	Holder, Push Switch							
	12		03E04701S02	Screw, Taptite (M3 × 6)							
	13	2-F	03E04702S03	Screw, Taptite (M3 × 8)							
	14		03E04704S01	Screw, Taptite (M3 × 8)							
○	15	4-F	25E05068S01	Transformer, Power							
□	15	4-F	25E05068S02	Transformer, Power							
△	15	4-F	25E05068S03	Transformer, Power							
	16		03E04702S02	Screw, Taptite (M4 × 10)							
	17	4-F	02E05069S01	Nut, 4N-1							
	18	3-D	75E05101S01	Cushion							
	19		75E04678S01	Foot, Back							
	20		75E05071S01	Foot, Front							
○	21	2-H	15E05072S01	Panel, Back							
△	21	2-H	15E05072S02	Panel, Back							
□	21	2-H	15E05072S02	Panel, Back							
○	22	2-G	09E04774S01	Selector, Voltage							
○	23	1-G	03E04775S01	Screw (M3 × 8)							
○	24	1-H	28E05073S01	Cord, AC							
△	24	1-H	28E05074S01	Cord, AC							
□	24	1-H	28E05074S01	Cord, AC							
△	25	1-H	43E04688S02	Bushing, Cord							
□	25	1-H	43E04688S02	Bushing, Cord							
△	26	1-G	09E04685S01	Outlet, AC							
□	26	1-G	09E04685S01	Outlet, AC							
	27	2-H	03E04701S01	Screw, Taptite, (M3 × 8)							
	28		36E05075S01	Knob, Slide VR							
	29	3-B	36E04673S01	Knob, Power SW							
	30		36E04672S01	Knob, Push SW							
	31	1-F	15E05076S01	Cabinet, Top							
	32		03E04702S01	Screw, Taptite (M4 × 8)							
	33	1-F	03E04702S04	Screw, Taptite (M3 × 8)							

Notes : ○ : For West Germany model only (AD), △ : For Canadian model only (UQ),  
□ : For North American model only (UC), Others : Common.

# Exploded View (Cabinet)

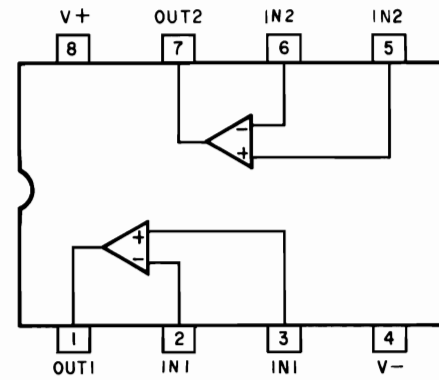
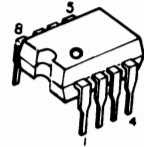
## Disassembly Instructions

- 1. Removal of Top Cabinet (31)**
  - (1) Remove four screws (32) from both sides and two screws (33) from the rear.
  - (2) Pull out the cabinet in the direction of the arrow as shown.
- 2. Removal of Front Panel (1)**
  - (1) Remove all the frequency control knobs (28) by pulling them out.
  - (2) Remove three screws (12) from the bottom of the front panel.
  - (3) Remove three screws (12) from the top of the front panel.
- 3. Removal of L/R Slide VR PCBs**
  - (1) Left channel: Remove twelve screws (8).
  - (2) Right channel: Remove thirteen screws (8).
- 4. Removal of LED Module Ass'y (LD401)**
  - (1) Remove two screws (6).
- 5. Removal of SW PCB**
  - (1) Remove two screws (5) from the upper part of the holder (11).
- 6. Removal of Main PCB**
  - (1) Remove two screws (5) from the lower part of the holder (11).
  - (2) Remove two screws (14) from the Main PCB.
  - (3) Remove four screws (27) from the back panel (21).
  - (4) Remove three screws (13) from the transistors.

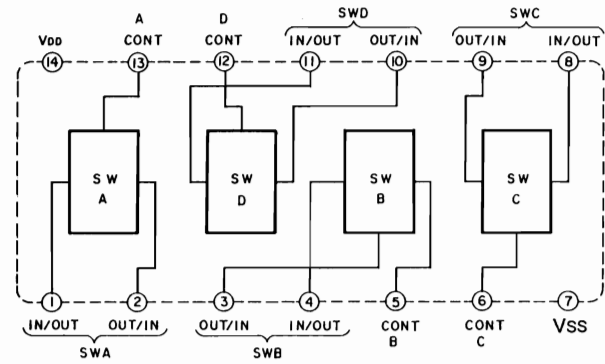
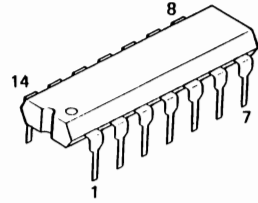


# Semi-Conductor Lead Identifications

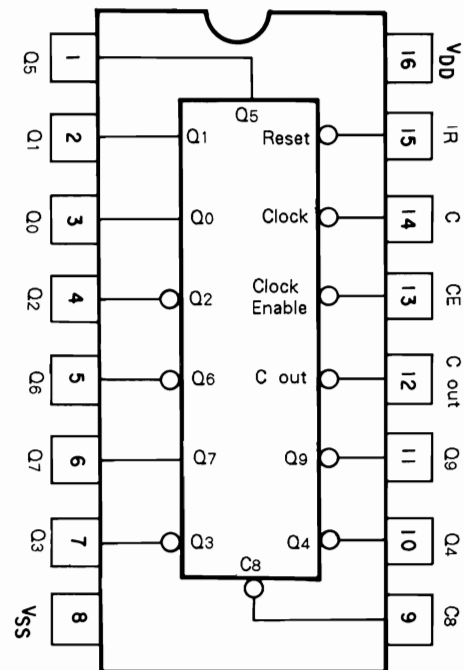
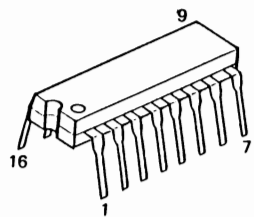
NJM4558D : IC101, 301



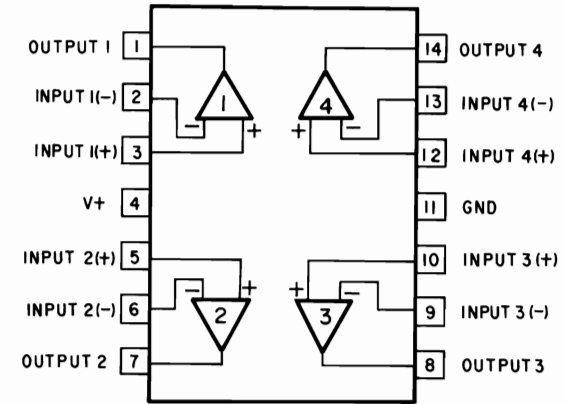
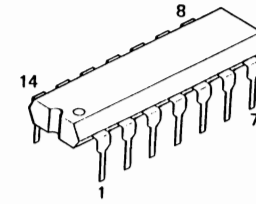
LC4066B : IC401, 402, 403



MC14017BCP : IC404



LA6324 : IC405, 406



- 2SA1246 (T) : Q101, 102, 401
- KTA1015 (GR) : Q105, 106, 506
- KTC1815 (GR2) : Q103, 104, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312
- KTC1815 (GR) : Q301, 302
- KTC1815 (BL) : Q402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 501, 502



- 2SD330 (E) : Q503, 505
- 2SB514 (E) : Q504





**- inside back cover -**



# **LUX CORPORATION, JAPAN**

1-8, 1-Chome, Nishigotanda, Shinagawa-ku, Tokyo 141 Japan  
Phone: 03-493-4381 Facsimile: 03-494-8426

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