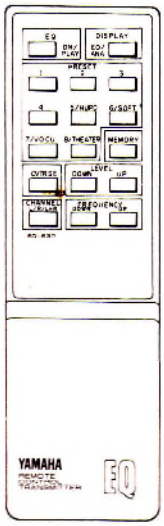
# STEREO GRAPHIC EQUALIZER

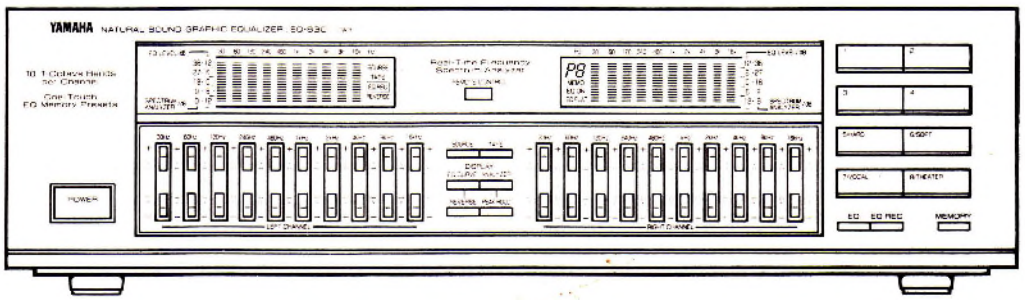
# EQ-630

## SERVICE MANUAL



## ■ FRONT PANEL





Remote Control Transmitter

### IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherant to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

**IMPORTANT:** Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

## ■ CONTENTS




100263

YAMAHA

YAMAHA CORPORATION HAMAMATSU, JAPAN

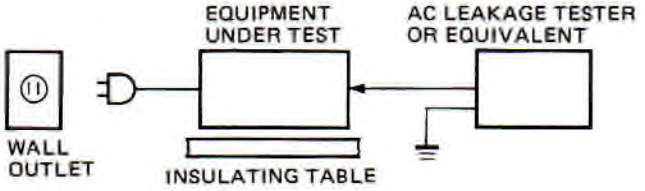
3.7k-142 Printed in Japan '89.5

## ■ TO SERVICE PERSONNEL

1. Critical Components Information.
   Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

2. Leakage Current Measurement (For 120V Model Only).
   When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.






## ■ SPECIFICATIONS

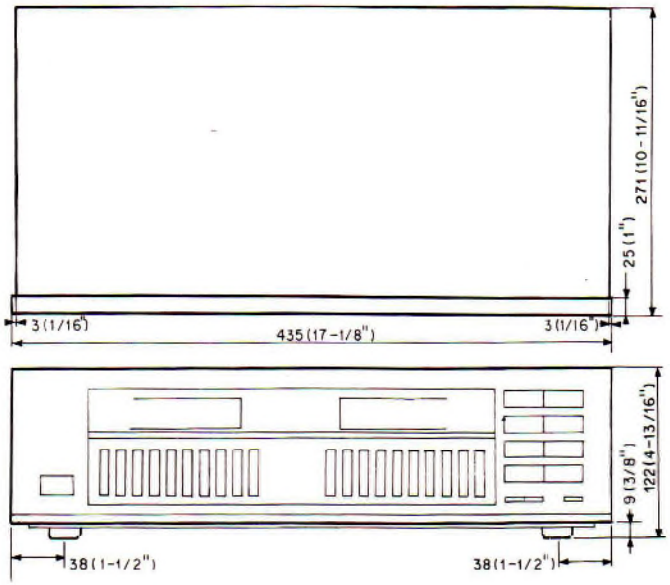
**Max. Output Voltage**
**(1 kHz, 0.1% T.H.D)** ..... 7V
**Rated Output Voltage** ..... 1V
**Max. Input Voltage**
**(1 kHz)** ..... 7V
**Rated Input Voltage** ..... 1V
**Input Impedance** ..... 47 k-ohms
**Frequency Response** ..... 10 Hz – 50 kHz, -1 dB
**Center Frequencies** ..... 30 Hz, 60 Hz, 120 Hz, 240 Hz, 480 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz,
**Equalizer Control Range** ..... ±12 dB
**Signal-to-Noise Ratio (IHF A Network)**
**At 1V output** ..... 105 dB/1V
**Total Harmonic Distortion**
**(20 Hz ~ 20 kHz, 1V output)** ..... Less than 0.006%

**Power Requirements**
**General model** ..... 110/120/220/240V, 50/60 Hz
**Europe model** ..... 220V, 50 Hz
**Australia and U.K. models** ..... 240V, 50 Hz
**U.S.A. and Canada models** ..... 120V, 60 Hz
**Power Consumption** ..... 10W
**Dimensions (W x H x D)** ..... 435 x 122 x 271 mm
(17-1/8" x 4-13/16" x 10-11/16")
**Weight** ..... 3.5 kg (7 lbs. 11 oz.)
**Accessories** ..... Pin plug cords (2)
Remote control transmitter (1)
Dry battery size "AA" (R06) type (2)
Power cord (1)

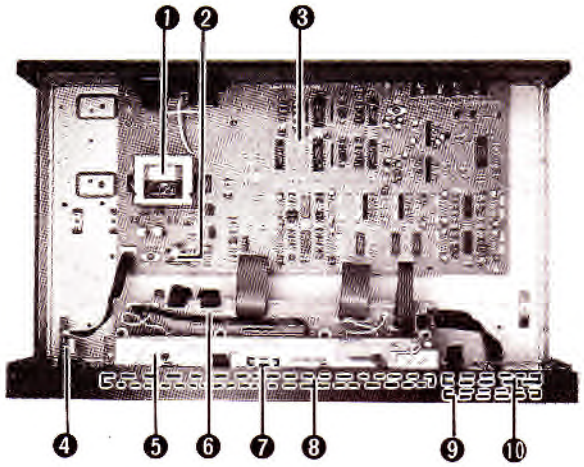
* Specifications subject to change without notice.

(U) .... U.S.A. model (B) ..... British model
(C) .... Canadian model (G) ..... European model
(A) .... Australian model (R) ..... General model

## ■ DIMENSIONS



## ■ INTERNAL VIEW

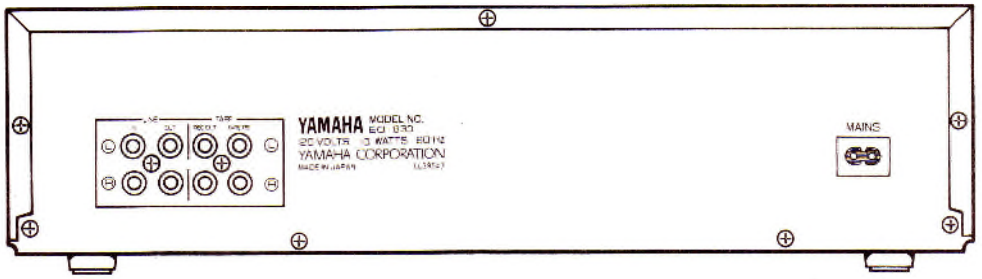


❶ Power Transformer
❷ Lithium Battery (Memory)
❸ Main Circuit Board
❹ Panel Circuit Board (7)
❺ Panel Circuit Board (2)
❻ Panel Circuit Board (1)
❼ Panel Circuit Board (6)
❽ Panel Circuit Board (3)
❾ Panel Circuit Board (5) :Bottom Side
❿ Panel Circuit Board (4) :Top Side

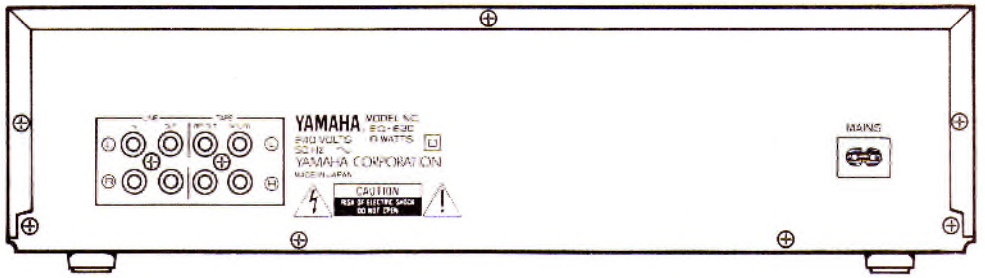


## ■ REAR PANELS

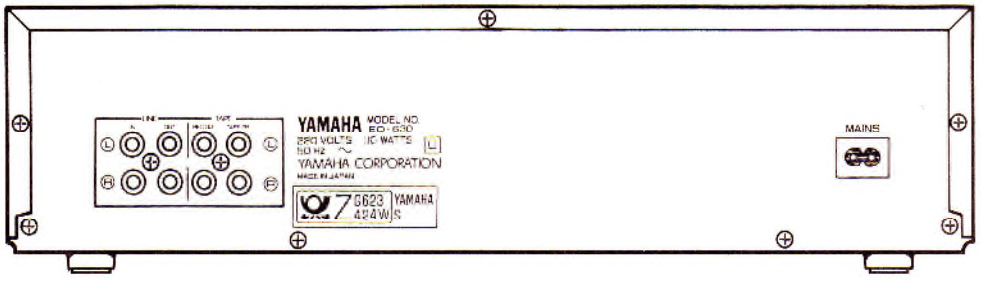
- U, C models



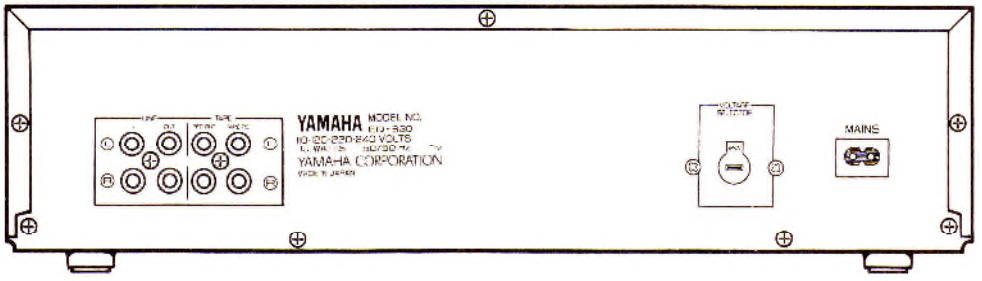

- A, B models




- G model




- R model



## ■ LITHIUM BATTERY

This product uses a lithium battery for memory back-up.
WARNING: Lithium batteries are dangerous because they can be exploded by improper handling. Observe the following precautions when handling or replacing lithium batteries.

- Leave lithium battery replacement to qualified service personnel.
- Always replace with batteries of the same type.
- When installing on the PC board, solder using the connection terminals provided on the battery cells. Never solder directly to the cells. Perform the soldering as quickly as possible.
- Never reverse the battery polarities when installing.
- Do not short the batteries.
- Do not attempt to recharge these batteries.
- Do not disassemble the batteries.
- Never heat batteries or throw them into fire.

*English*

WARNING!
Lithium batteries. Explosion danger.
Change of batteries must only be done by qualified personnel and as described in the service manual.

*Swedish*

LITIUMBATTERI.
Bör endast bytas av servicepersonal.
Explosionsfara vid felaktig hantering.

*Danish*

ADVARSEL!
Lithiumbatterier. Eksplosionsfare.
Udskiftning må kun foretages af en sagkyndig og som beskrevet i servicemanualen.

*Finnish*

VAROITUS!
Lithiumparisto. Räjähdysvaara.
Pariston saa vaihtaa ainoastaan alan ammattimies.

## ■ DISASSEMBLY PROCEDURES (Remove parts in disassembly order as numbered)

**1. Removal of Top Cover**

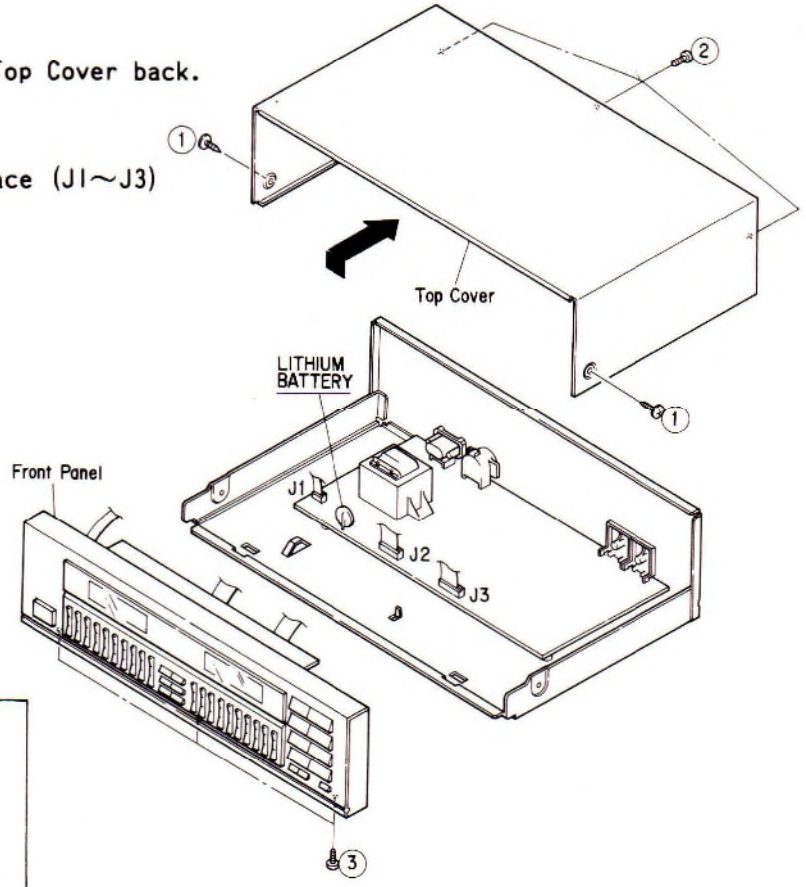
a. Remove 2 screws ① in Fig. 1
b. Remove 3 screws ② and slide the Top Cover back.

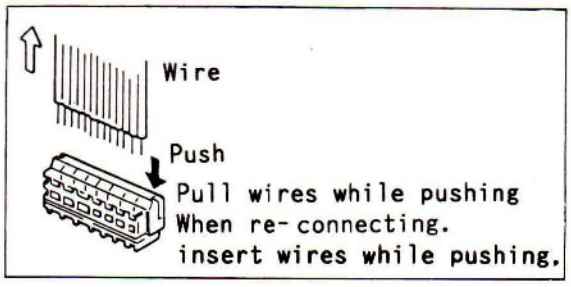
**2. Removal of Front Panel**

a. Remove 3 screws ③ in Fig. 1
b. Remove connectors located at 3 place (J1~J3) and pull the Front Panel forward.

**● LITHIUM BATTERY REPLACEMENT**

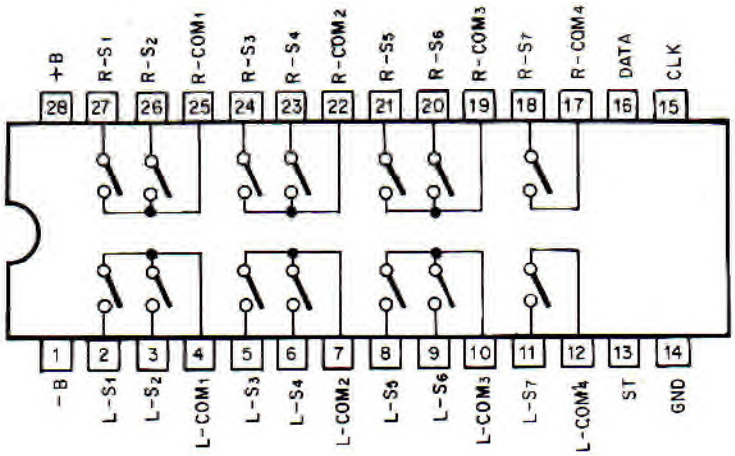
**Note)** Due to the danger of explosion it is only allowed to use a battery of the same type and manufacturer when it has to be shifted.



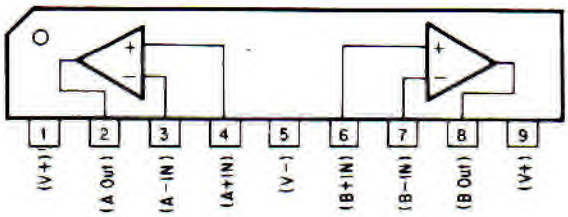



## ■ IC BLOCK

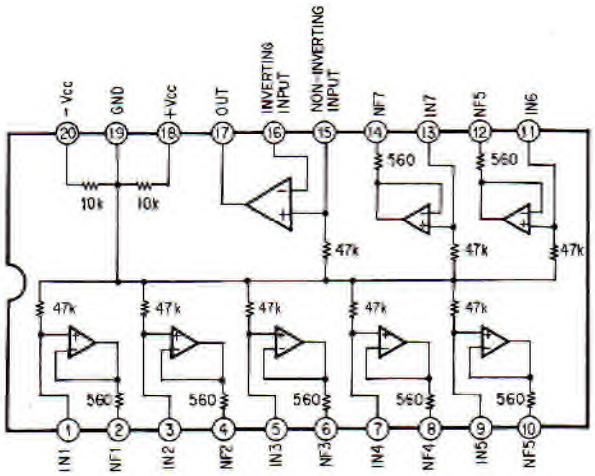
IC1 : TC9162N (Analog Switch Array)



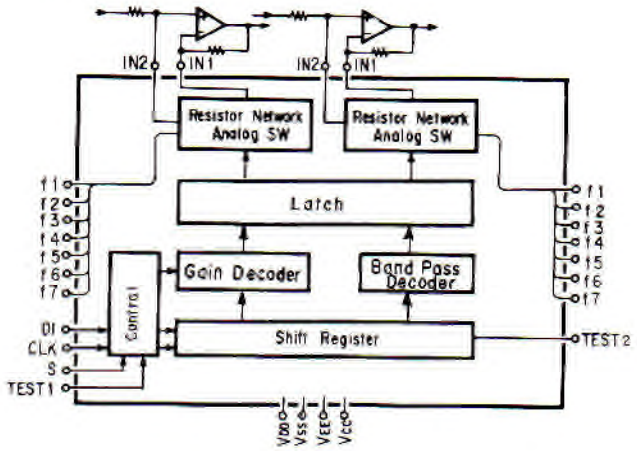

IC2,8~10 : NJM4558SD
(Operational Amplifier)



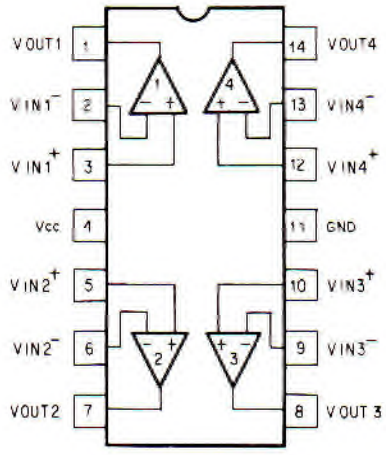

IC3,4,7 : AN7337
(Hi-Fi 7-Band G.E IC)



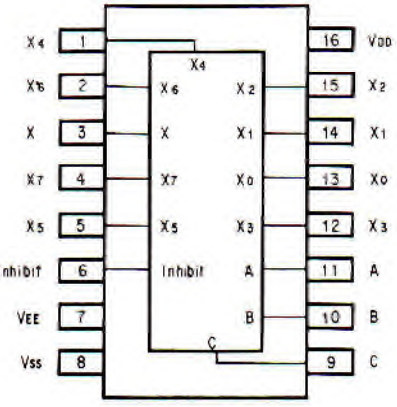

IC5,6 : NJU7305L
(Graphic Equalizer Electronic variable resistor)




IC11 ~14 : LA6324N
(Quad Ope-Amp)



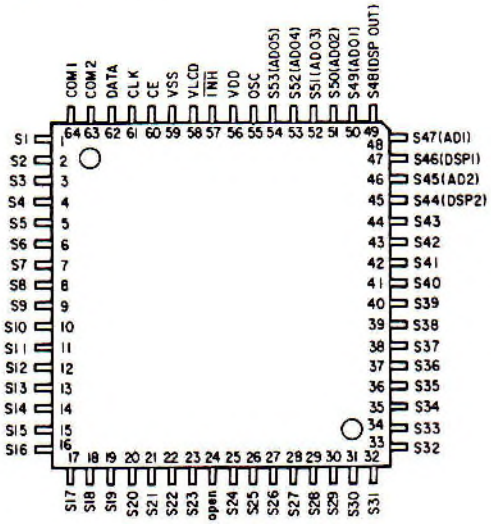

IC15 ~17 : MN4051BD
(8-channel Analog Multiplexer Demultiplexer)

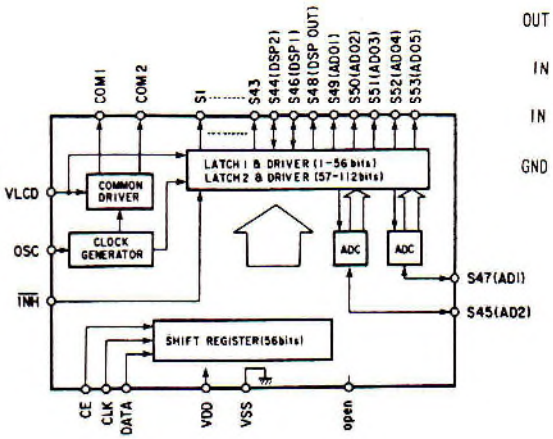



### FUNCTION TABLE

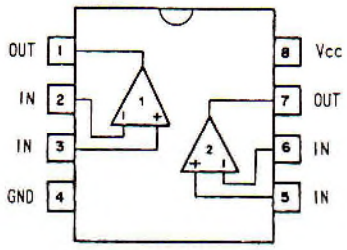
| Control Input | | | ON SW. |
|---|---|---|---|
| C | B | A | |
| 0 | 0 | 0 | $X_0$ |
| 0 | 0 | 1 | $X_1$ |
| 0 | 1 | 0 | $X_2$ |
| 0 | 1 | 1 | $X_3$ |
| 1 | 0 | 0 | $X_4$ |
| 1 | 0 | 1 | $X_5$ |
| 1 | 1 | 0 | $X_6$ |
| 1 | 1 | 1 | $X_7$ |
| × | × | × | — |

## IC402 ~404 : LC7582B
(LCD Driver)

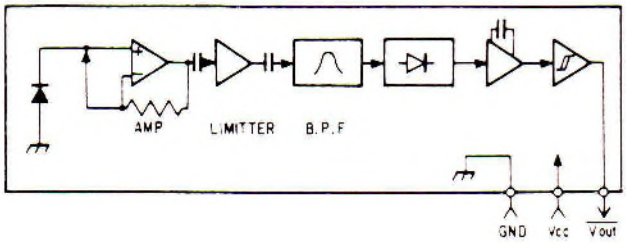


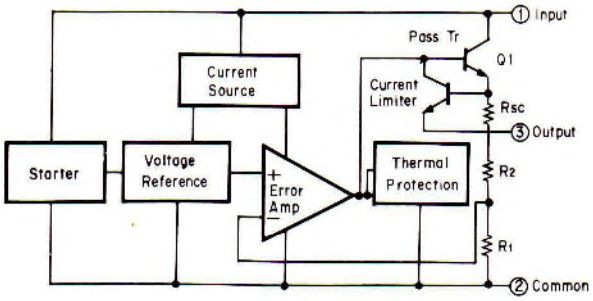

## IC405 : μPC393



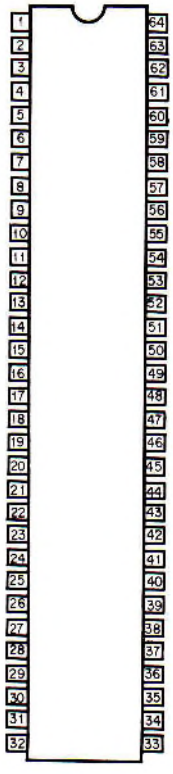

## IC406 : GP1U521X
(Remote Control Receptor Unit)




## IC18 : AN78N05
(3-Terminal Voltage Regulater)




## IC401 : HD61408DS
(4-Bit ICHIP MC)



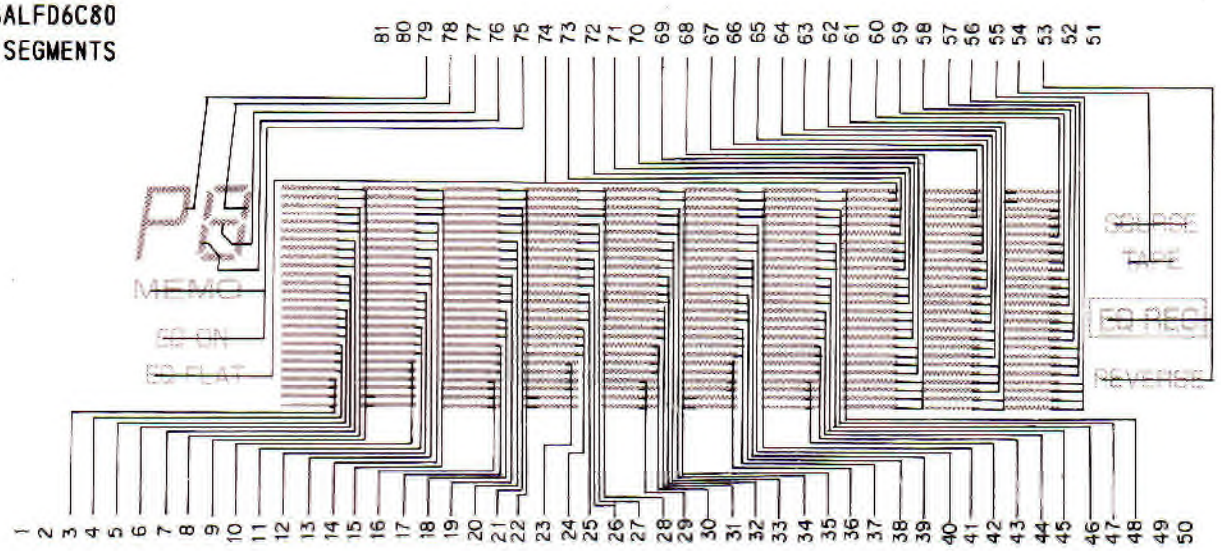
| Function | I/O | Pin Name | Pin No. | Pin No. | Pin Name | I/O | Function |
|---|---|---|---|---|---|---|---|
| MULTIPLEXER CS Rch | I O | DII | 1 | 64 | DI0 | I O | Electronic VR Rch CS |
| NC | I O | DI2 | 2 | 63 | D9 | I O | Electronic VR Lch CS |
| MULTIPLEXER CS L&Rch | I O | DI3 | 3 | 62 | D8 | I O | Electronic VR DATA |
| MULTIPLEXER CS Lch | I O | DI4 | 4 | 61 | D7 | I O | LC7582 $\overline{INH}$ |
| Electronic VR CLK | I O | DI5 | 5 | 60 | D6 | I O | LC7582 DATA |
| MULTIPLEXER DATA A | I O | R00 | 6 | 59 | D5 | I O | LC7582 CLK |
| MULTIPLEXER DATA B | I O | R01 | 7 | 58 | D4 | I O | LC7582 CE (Rch) |
| MULTIPLEXER DATA C | I O | R02 | 8 | 57 | D3 | i o | LC7582 CE (L & Rch) |
| NC | I O | R03 | 9 | 56 | D2 | i o | LC7582 CE (Lch) |
| TC9162 CLK | I O | R10 | 10 | 55 | DI | i o | Key Output f1 |
| TC9162 DATA | I O | R11 | 11 | 54 | D0 | i o | Key Output f2 |
| TC9162 STB | I O | R12 | 12 | 53 | GND | i | GND |
| NC | I O | R13 | 13 | 52 | OSC 2 | i | OSC |
| NC | I O | R20 | 14 | 51 | OSC 1 | i | OSC |
| NC | I O | R21 | 15 | 50 | TEST | i | 5V |
| NC | I O | R22 | 16 | 49 | RESET | i | RESET |
| NC | I O | R23 | 17 | 48 | R93 | i | GND |
| A/D IN | I | RA0 | 18 | 47 | R92 | i | KEY Input(Function) |
| GND | I | RA1/Vdis | 19 | 46 | R91 | i | KEY Input Lch UP |
| Power OFF(Second) | i o | R30 | 20 | 45 | R90 | i | KEY Input Lch DOWN |
| Muting | i o | R31 | 21 | 44 | R83 | o | KEY Output f3 |
| Power OFF(Primary):INT0 | i o | R32/INT0 | 22 | 43 | R82 | o | KEY Output f4 |
| Remote Control Input | i o | R33/INT1 | 23 | 42 | R81 | o | KEY Output f5 |
| 8-bit A/D 0(LSB) | i o | R50 | 24 | 41 | R80 | o | KEY Output f6 |
| 8-bit A/D 1 | i o | R51 | 25 | 40 | R73 | o | KEY Output f7 |
| 8-bit A/D 2 | i o | R52 | 26 | 39 | R72 | o | KEY Output f8 |
| 8-bit A/D 3 | i o | R53 | 27 | 38 | R71 | o | KEY Output f9 |
| 8-bit A/D 4 | o | R60 | 28 | 37 | R70 | o | KEY Output f10 |
| 8-bit A/D 5 | o | R61 | 29 | 36 | R43 | i o | GND |
| 8-bit A/D 6 | o | R62 | 30 | 35 | R42/SO | i o | KEY Input (Function) |
| 8-bit A/D 7 (MSB) | o | R63 | 31 | 34 | R41/SI | i o | KEY Input Rch UP |
| 5V | i | Vcc | 32 | 33 | R40/SCK | i o | KEY Input Rch DOWN |

Note) I ... High Voltage Input
O ... High Voltage Output
i ... Standerd Input
o ... Standerd Output

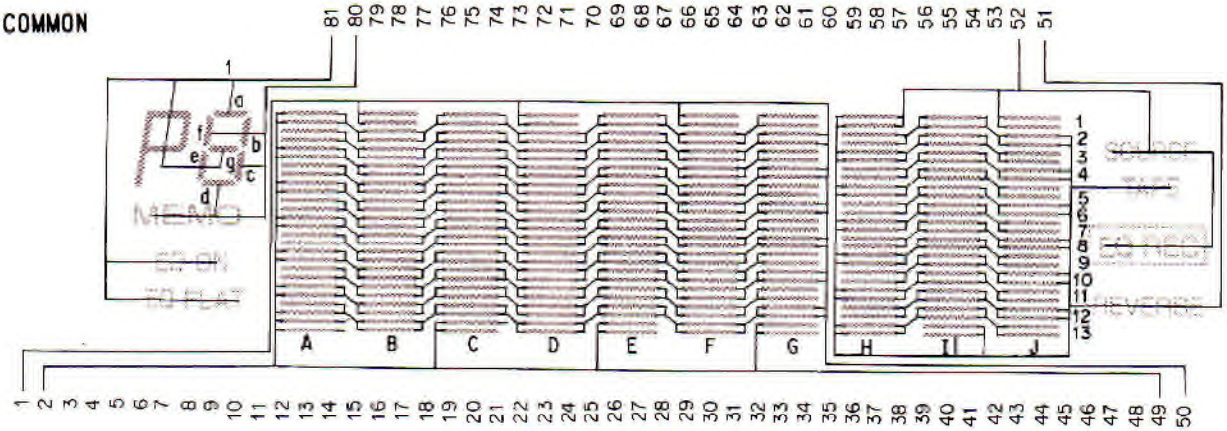
## ■ DISPLAY Pin Connection

LCD : PSALFD6C80

SEGMENTS




COMMON

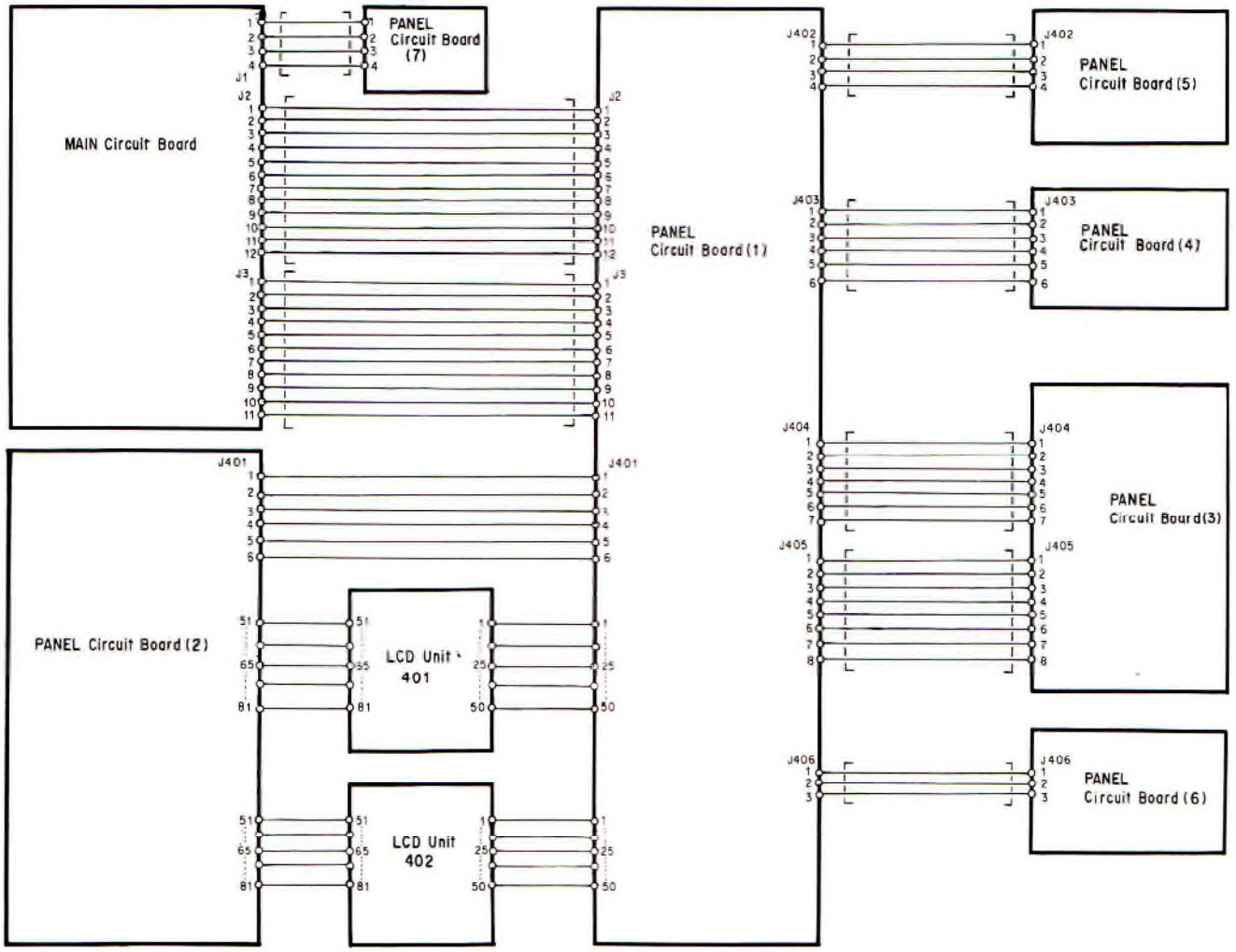



| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COM 1 | - | COM | A13 | A11 | A9 | A7 | A5 | A3 | A1 | B12 | B10 | B8 | B6 | B4 | B2 | C13 | C11 | C9 | C7 | C5 | C3 | C1 | D12 | D10 | D8 | D6 | D4 | D2 |
| COM 2 | COM | - | A12 | A10 | A8 | A6 | A4 | A2 | B13 | B11 | B9 | B7 | B5 | B3 | B1 | C12 | C10 | C8 | C6 | C4 | C2 | D13 | D11 | D9 | D7 | D5 | D3 | D1 |
| COM 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| COM 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| No. | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COM 1 | E13 | E11 | E9 | E7 | E5 | E3 | E1 | F12 | F10 | F8 | F6 | F4 | F2 | G13 | G11 | G9 | G7 | G5 | G3 | G1 | COM | - | - | - | - | - | - | - |
| COM 2 | E12 | E10 | E8 | E6 | E4 | E2 | F13 | F11 | F9 | F7 | F5 | F3 | F1 | G12 | G10 | G8 | G6 | G4 | G2 | - | - | COM | - | - | - | - | - | - |
| COM 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | COM | EQ REC | SOURCE | J13 | J11 |
| COM 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | COM | - | REVERSE | TAPE | J12 | J10 |

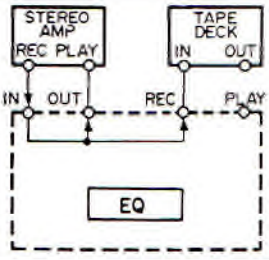
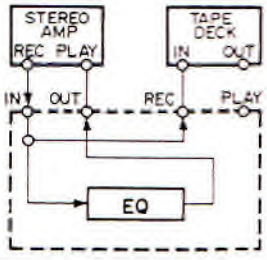
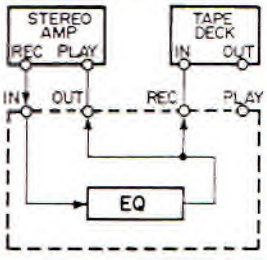
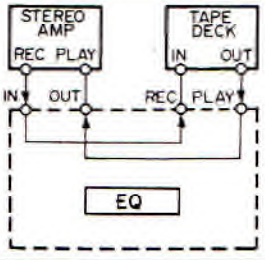
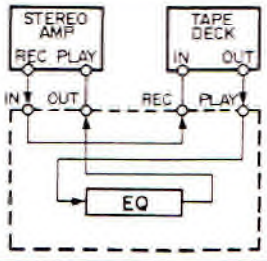
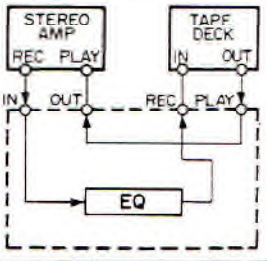
| No. | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COM 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| COM 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| COM 3 | J9 | J7 | J5 | J3 | J1 | I12 | I10 | I8 | I6 | I4 | I2 | H13 | H11 | H9 | H7 | H5 | H3 | H1 | MEMO | Id | Ic | Ib | If | COM | - |
| COM 4 | J8 | J6 | J4 | J2 | I13 | I11 | I9 | I7 | I5 | I3 | I1 | H12 | H10 | H8 | H6 | H4 | H2 | EQ FLAT | EQ ON | Ie | Ig | Ia | P | - | COM |

## ■ WIRING

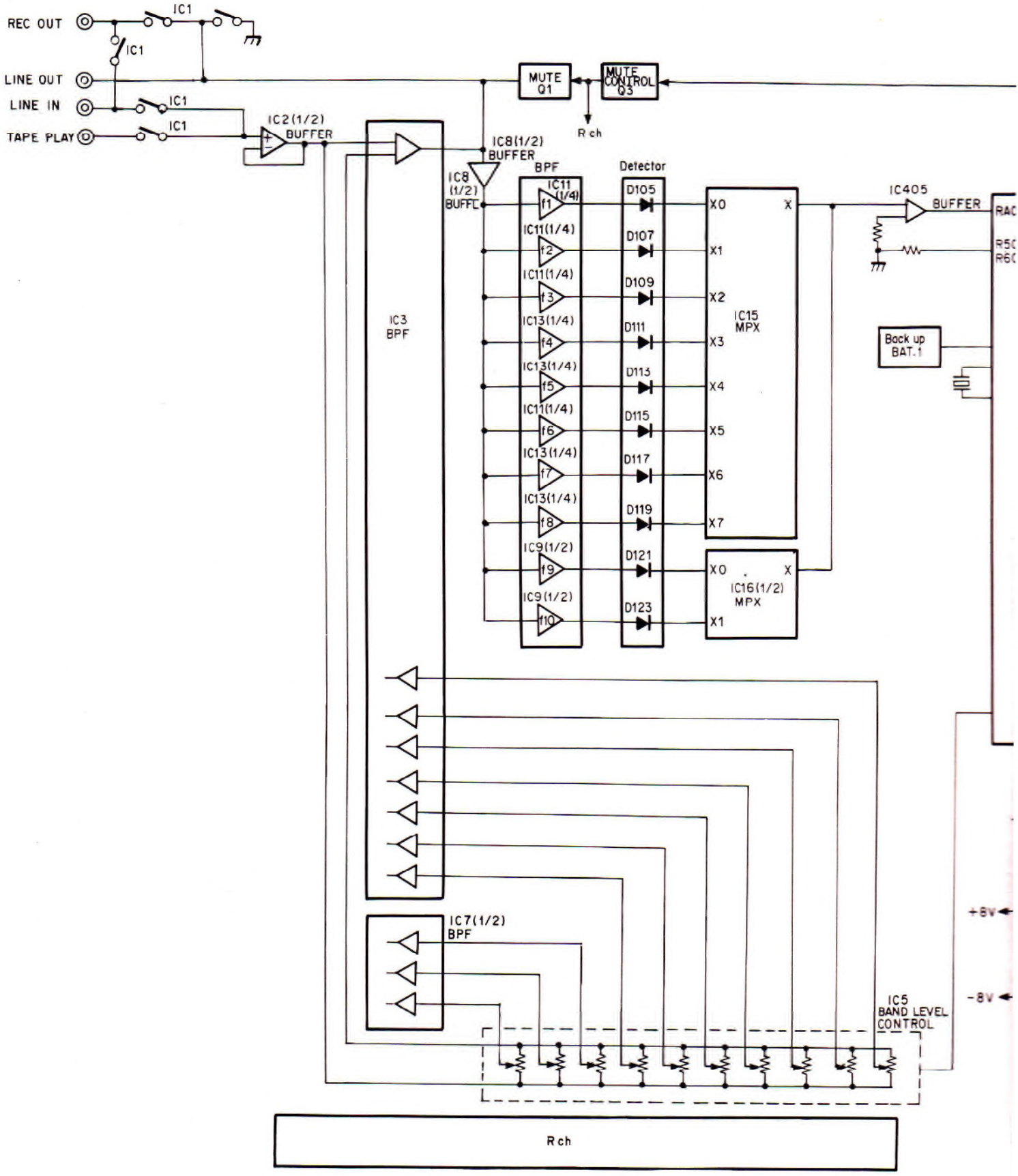


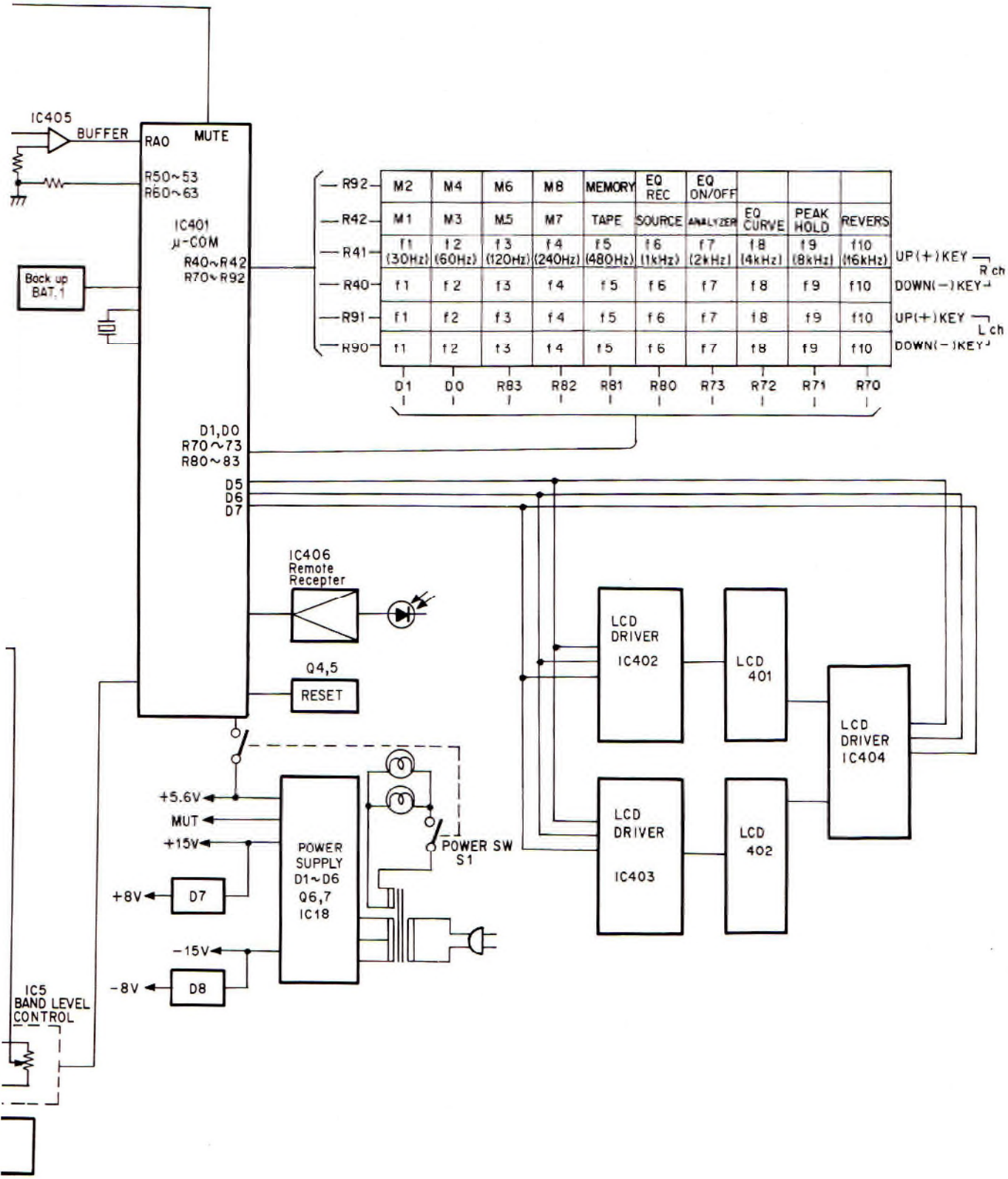

## ■ DESCRIPTION OF OPERATIONS

(Relationship of Switches)

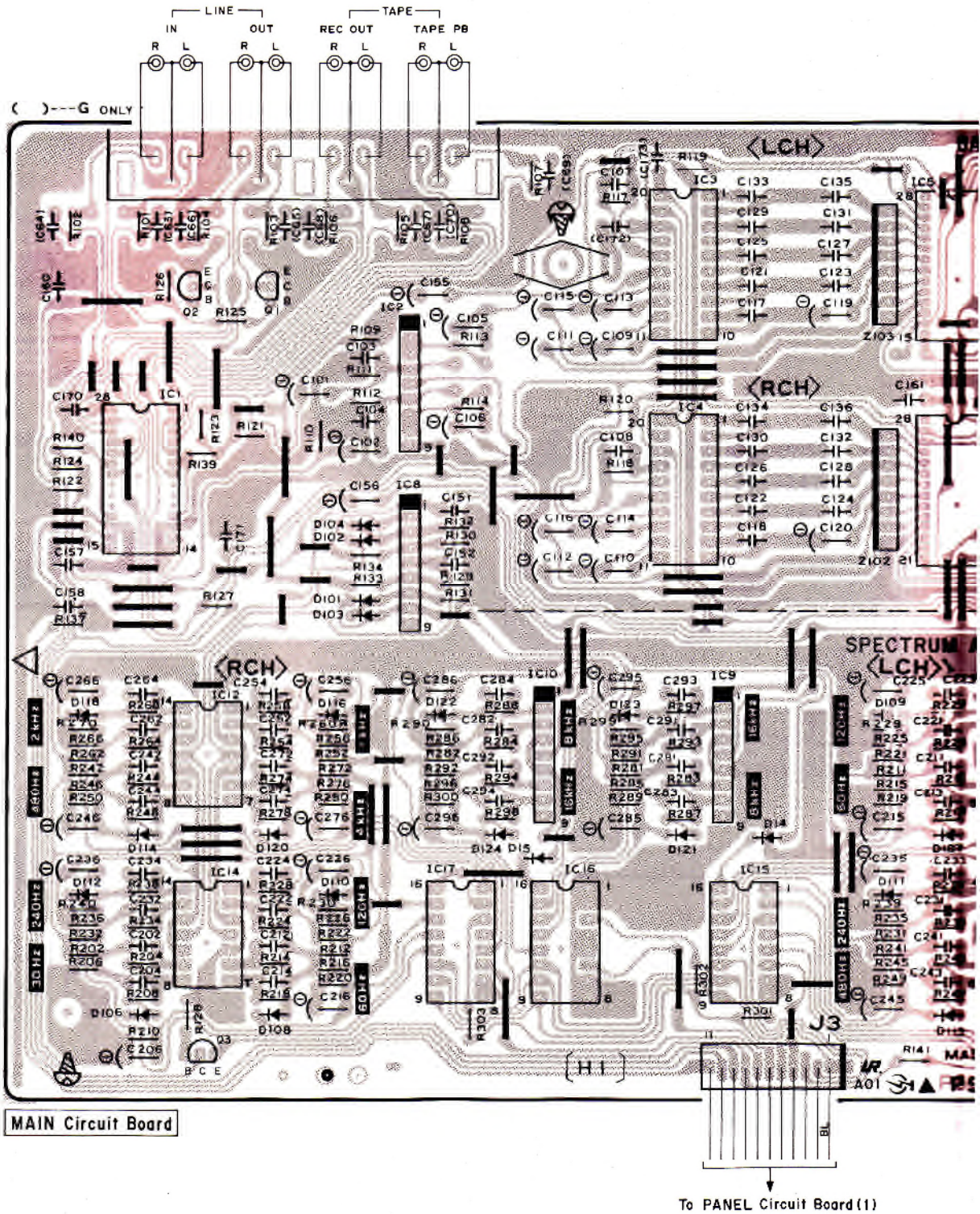
| EQ switch | | OFF | ON | |
|---|---|---|---|---|
| EQ REC switch | | OFF or ON | OFF | ON |
| TAPE MONITOR switch | OFF |  |  |  |
| | ON |  |  |  |

## ■ BLOCK DIAGRAM

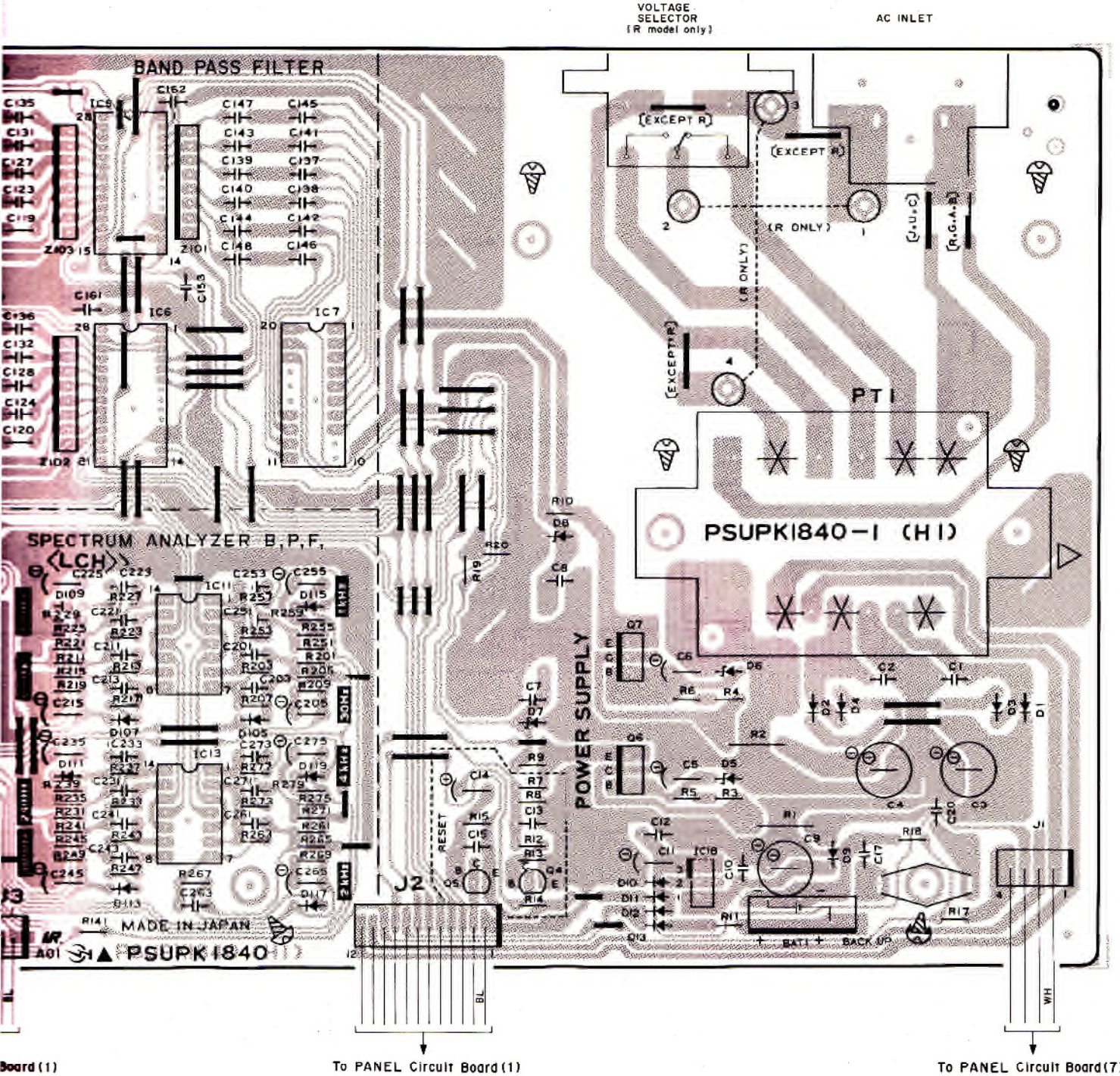



IC405
BUFFER
RA0
MUTE
R50~53
R60~63
IC401
μ-COM
R40~R42
R70~R92
Back up
BAT. 1
R92
R42
R41
R40
R91
R90
M2
M4
M6
M8
MEMORY
EQ REC
EQ ON/OFF
M1
M3
M5
M7
TAPE
SOURCE
ANALYZER
EQ CURVE
PEAK HOLD
REVERS
f1 (30Hz)
f2 (60Hz)
f3 (120Hz)
f4 (240Hz)
f5 (480Hz)
f6 (1kHz)
f7 (2kHz)
f8 (4kHz)
f9 (8kHz)
f10 (16kHz)
UP(+)KEY
DOWN(−)KEY
R ch
L ch
D1
D0
R83
R82
R81
R80
R73
R72
R71
R70
D1,D0
R70~73
R80~83
D5
D6
D7
IC406
Remote
Recepter
Q4,5
RESET
LCD DRIVER IC402
LCD 401
LCD DRIVER IC404
LCD DRIVER IC403
LCD 402
+5.6V
MUT
+15V
+8V
D7
−15V
−8V
D8
POWER SUPPLY D1~D6 Q6,7 IC18
POWER SW S1
IC5
BAND LEVEL CONTROL

## ■ PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面：Component Side

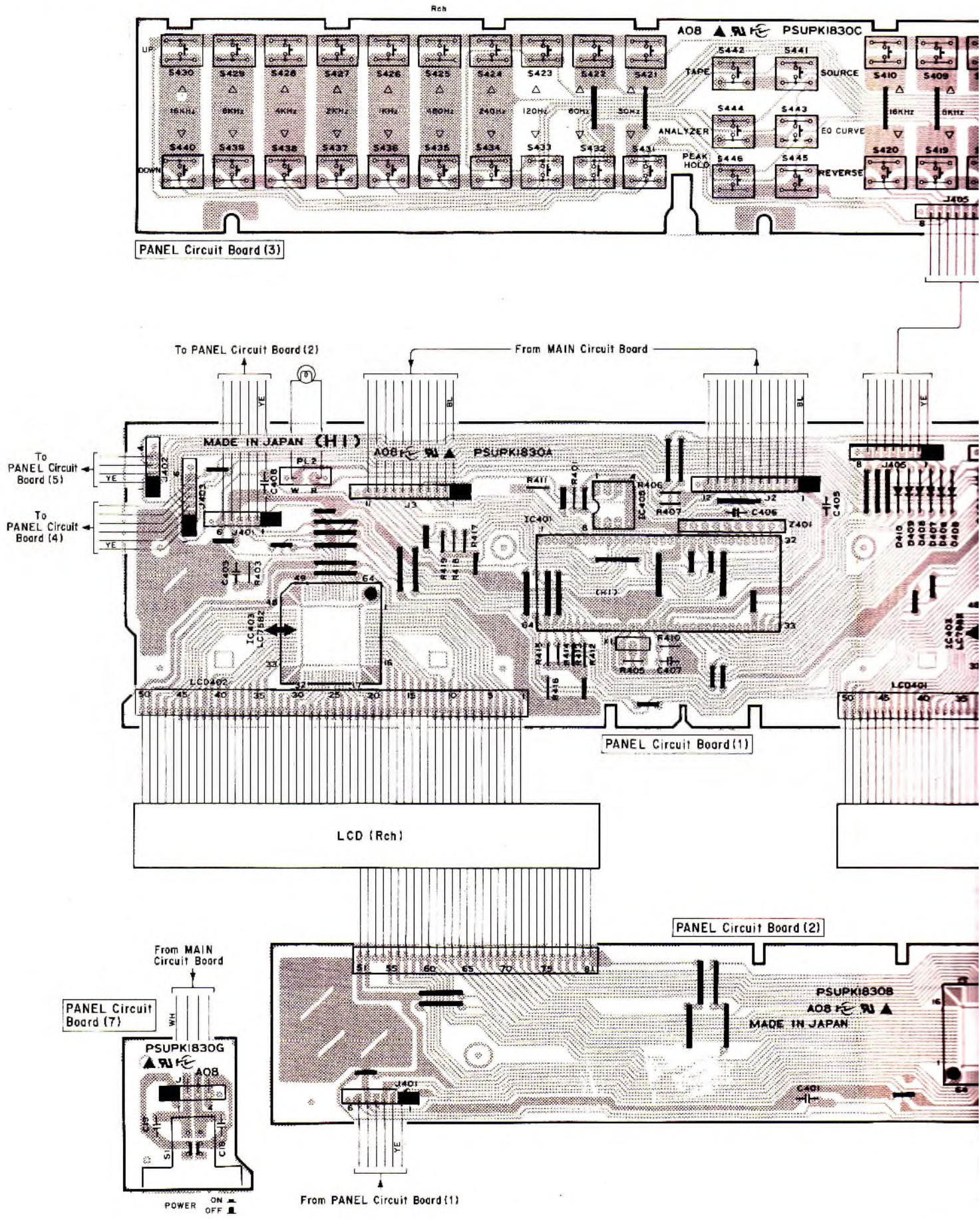


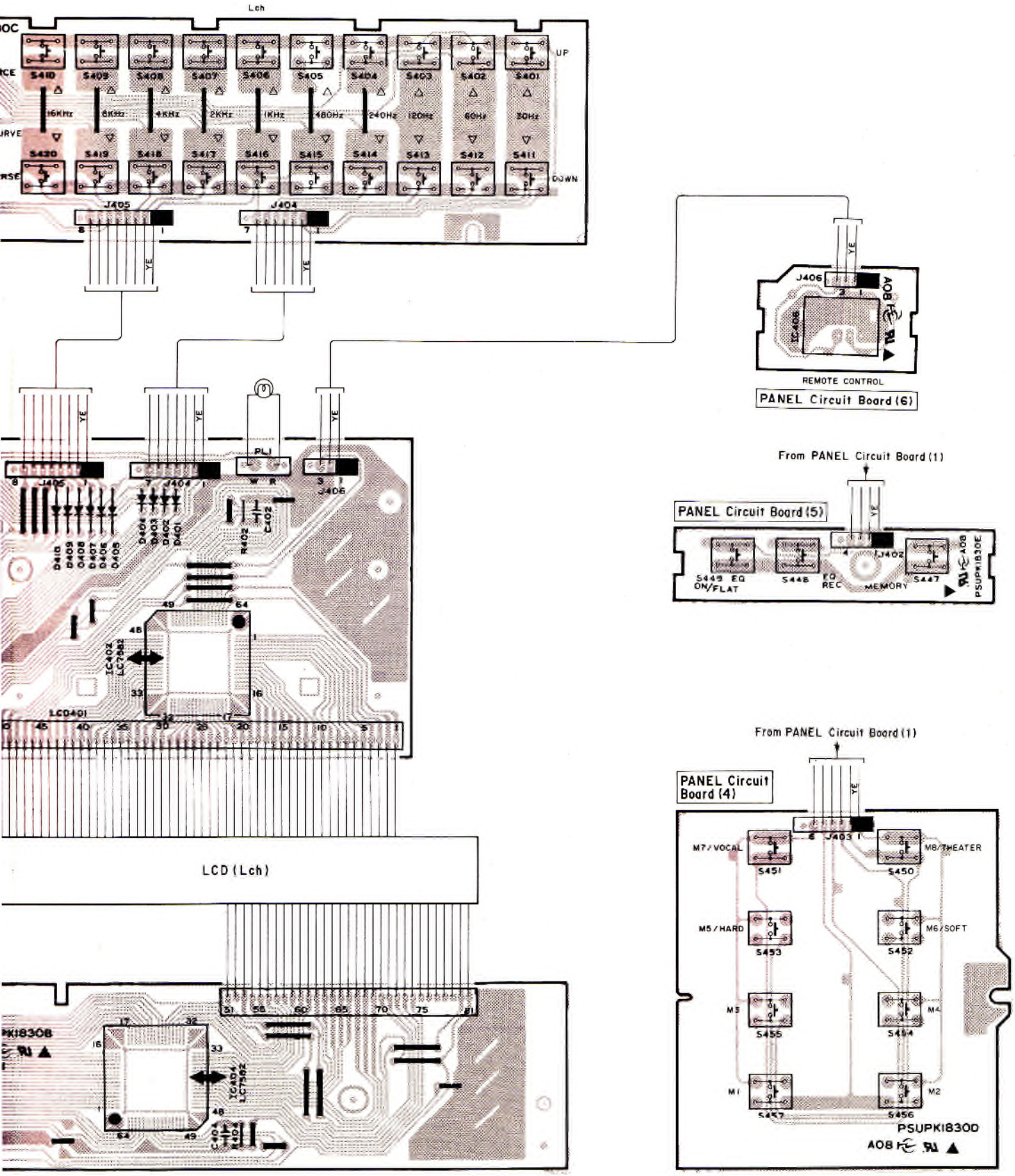

MAIN Circuit Board


VOLTAGE SELECTOR (R model only)
AC INLET
BAND PASS FILTER
SPECTRUM ANALYZER B.P.F. <LCH>
POWER SUPPLY
PTI
PSUPK1840-1 (H1)
PSUPK1840
MADE IN JAPAN
(EXCEPT R)
(R ONLY)
RESET
BAT1
BACK UP
J2
To PANEL Circuit Board (1)
To PANEL Circuit Board (7)

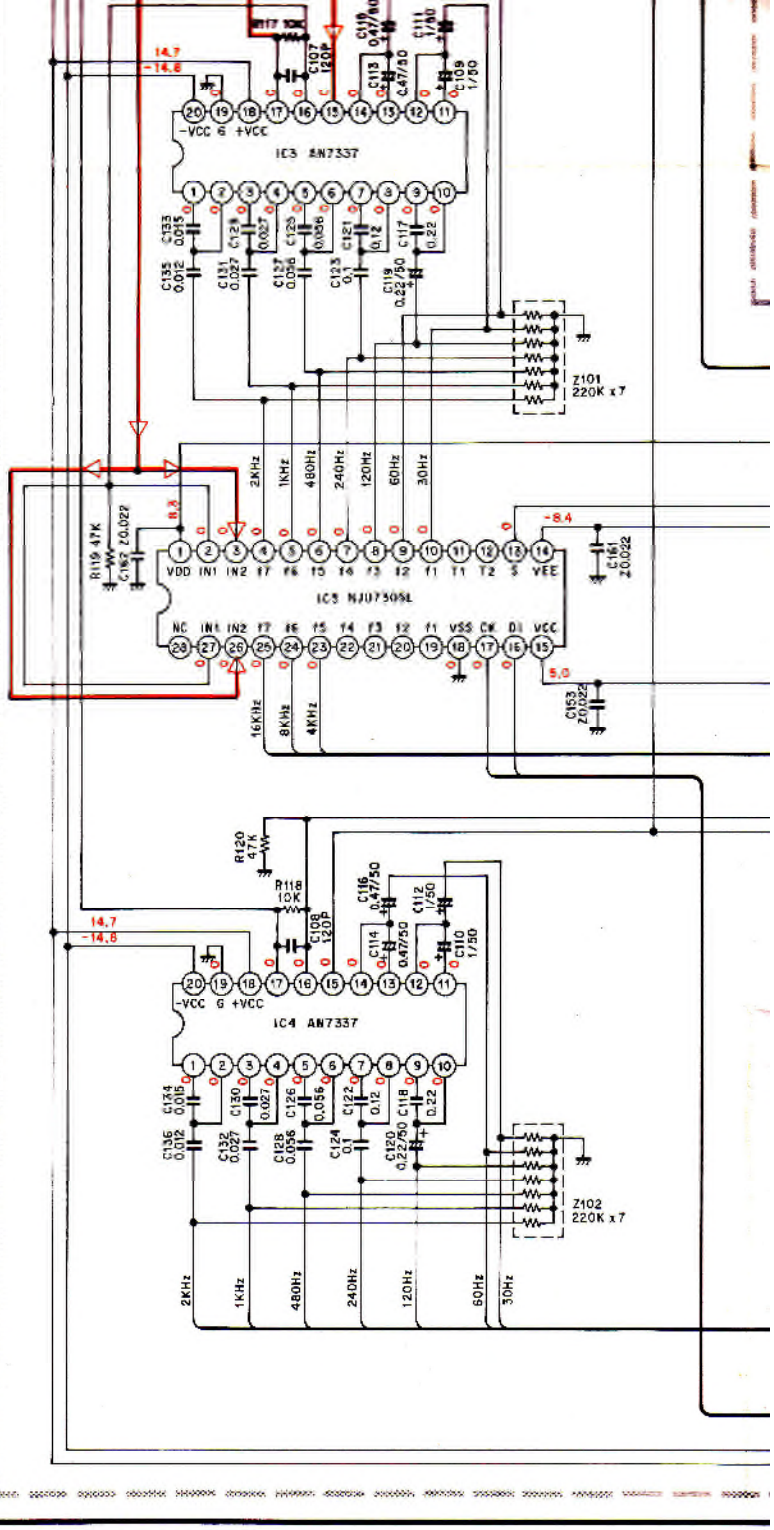
EQ-630

## ■ PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面：Component Side

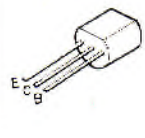



Lch
UP
DOWN
S410
S409
S408
S407
S406
S405
S404
S403
S402
S401
16KHz
8KHz
4KHz
2KHz
1KHz
480Hz
240Hz
120Hz
60Hz
30Hz
S420
S419
S418
S417
S416
S415
S414
S413
S412
S411
J405
J404
YE
REMOTE CONTROL
PANEL Circuit Board (6)
From PANEL Circuit Board (1)
PANEL Circuit Board (5)
S449 EQ ON/FLAT
S448 EQ REC
MEMORY
S447
PSUPKI830E
PLJ
D410
D409
D408
D407
D406
D405
D404
D403
D402
D401
R402
C402
IC402 LC7982
LCD401
LCD (Lch)
PSUPKI830B
IC401 LC7982
C401
R401
From PANEL Circuit Board (1)
PANEL Circuit Board (4)
M7/VOCAL
M8/THEATER
S451
S450
M5/HARD
M6/SOFT
S453
S452
M3
M4
S455
S454
M1
M2
S457
S456
PSUPKI830D

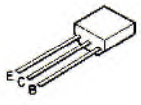
| | |
|---|---|
| IC5,6 | NJU7305 |
| IC11~14 | LA6324N |
| IC15~17 | NJU40518P<br>or MN4051B<br>or HD14051BP<br>or BU4051B |
| IC18 | HA17805<br>or uPC78M05H<br>or AN78N05 |
| Q1,2 | 2SC2878<br>or 2SD1915ST |
| Q3 | 2SA933<br>or 2SA1309 |
| Q4 | 2SC1740<br>or 2SC3311 |
| Q5 | DTA114TSTP<br>or UN4115 |
| Q6 | 2SD2012<br>or 2SD1762 |
| Q7 | 2SB1375<br>or 2SB1185 |
| D1~4,9 | RLIN4003-N02 |
| D5,6 | HZS15-3TD<br>or MA4150M |
| D7,8 | HZS9A2TD<br>or MA4082M |
| D10~15,<br>101~124 | ISS119-04<br>or ISS178 |
| BAT 1 | SUMM2CC200<br>or CR2032/1VC |



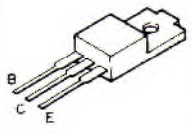

## ■ PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODE AND ICS.



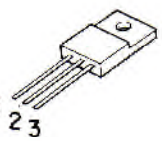

2SC2878A




2SA1309
2SC3311
UN4215 (DTA114)

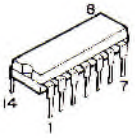



2SD2012
2SB1375




AN78N05

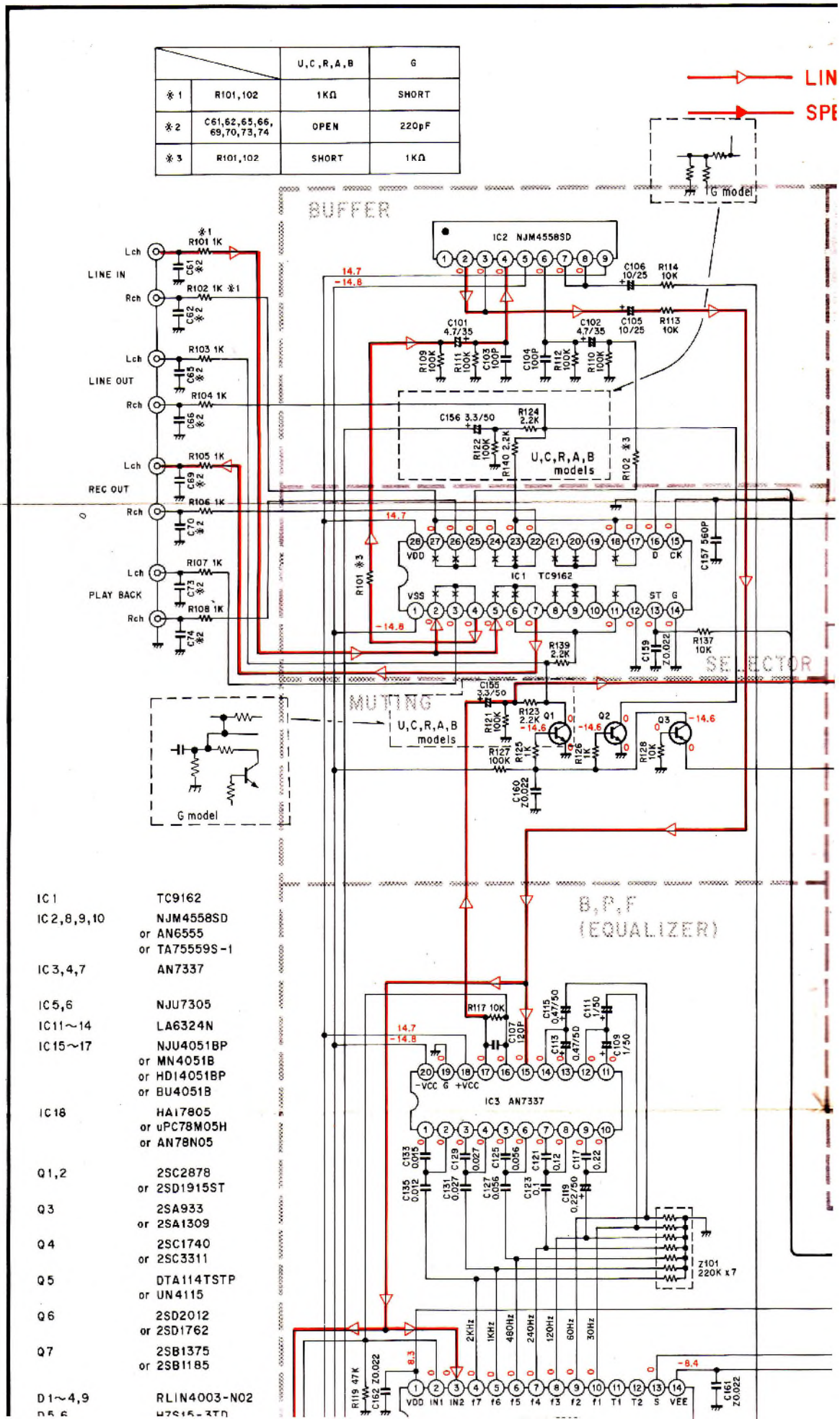

μPC393

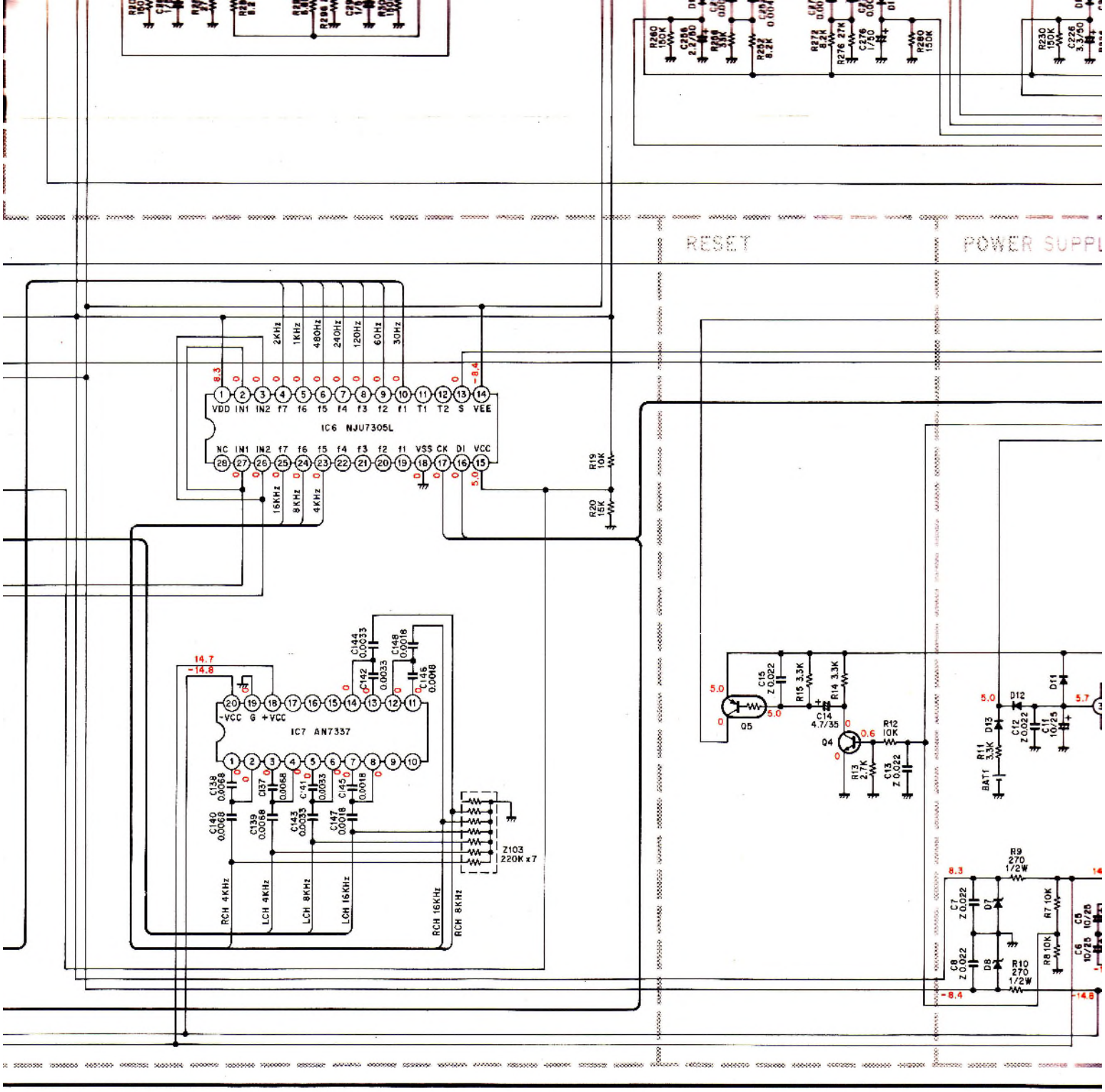


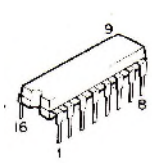
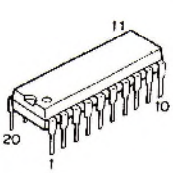
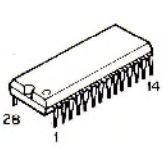
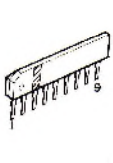
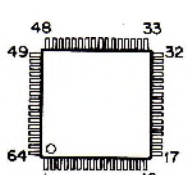
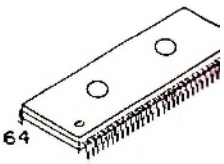

LA6324N

MN4

# ■ SCHEMATIC DIAGRAM



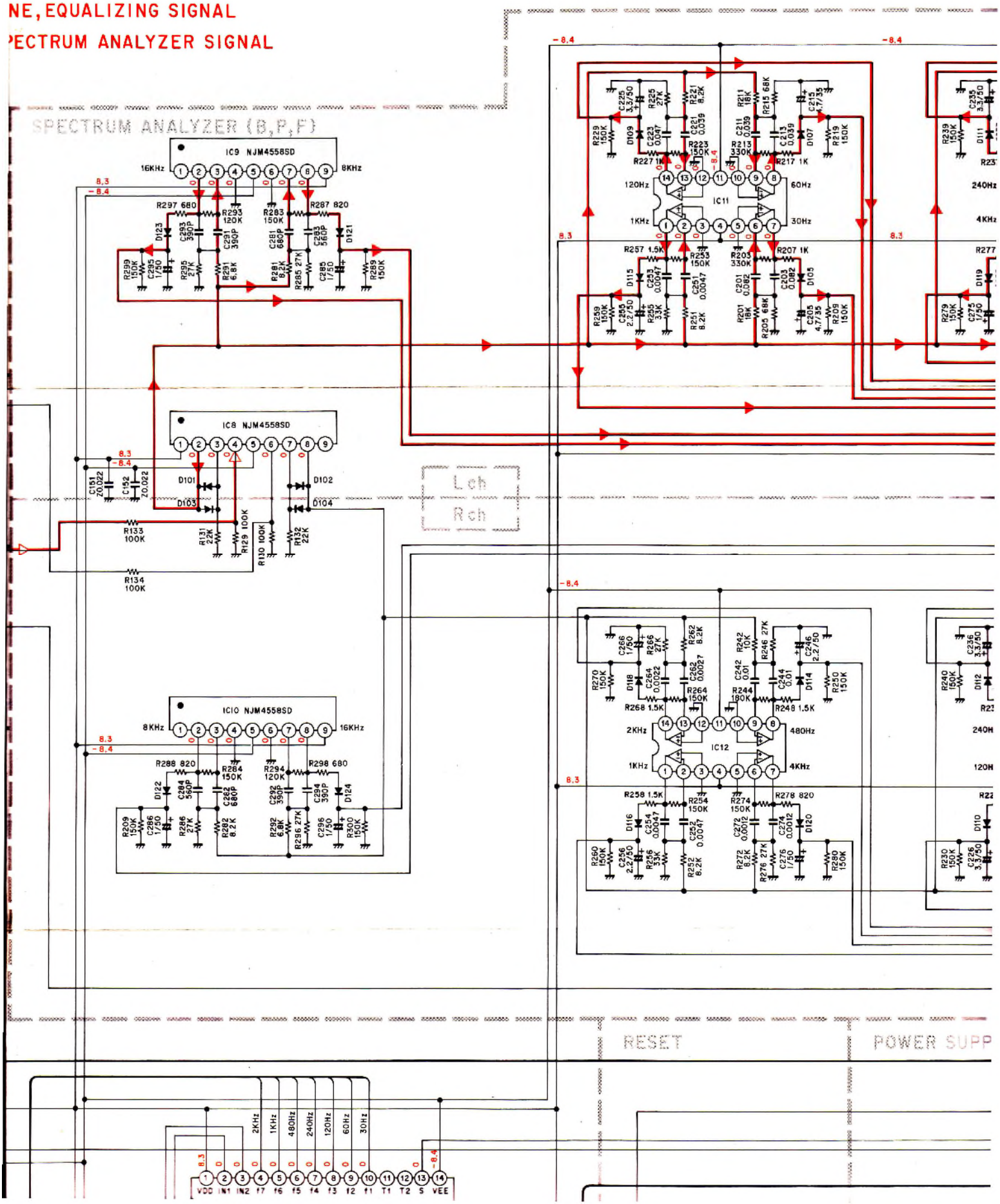


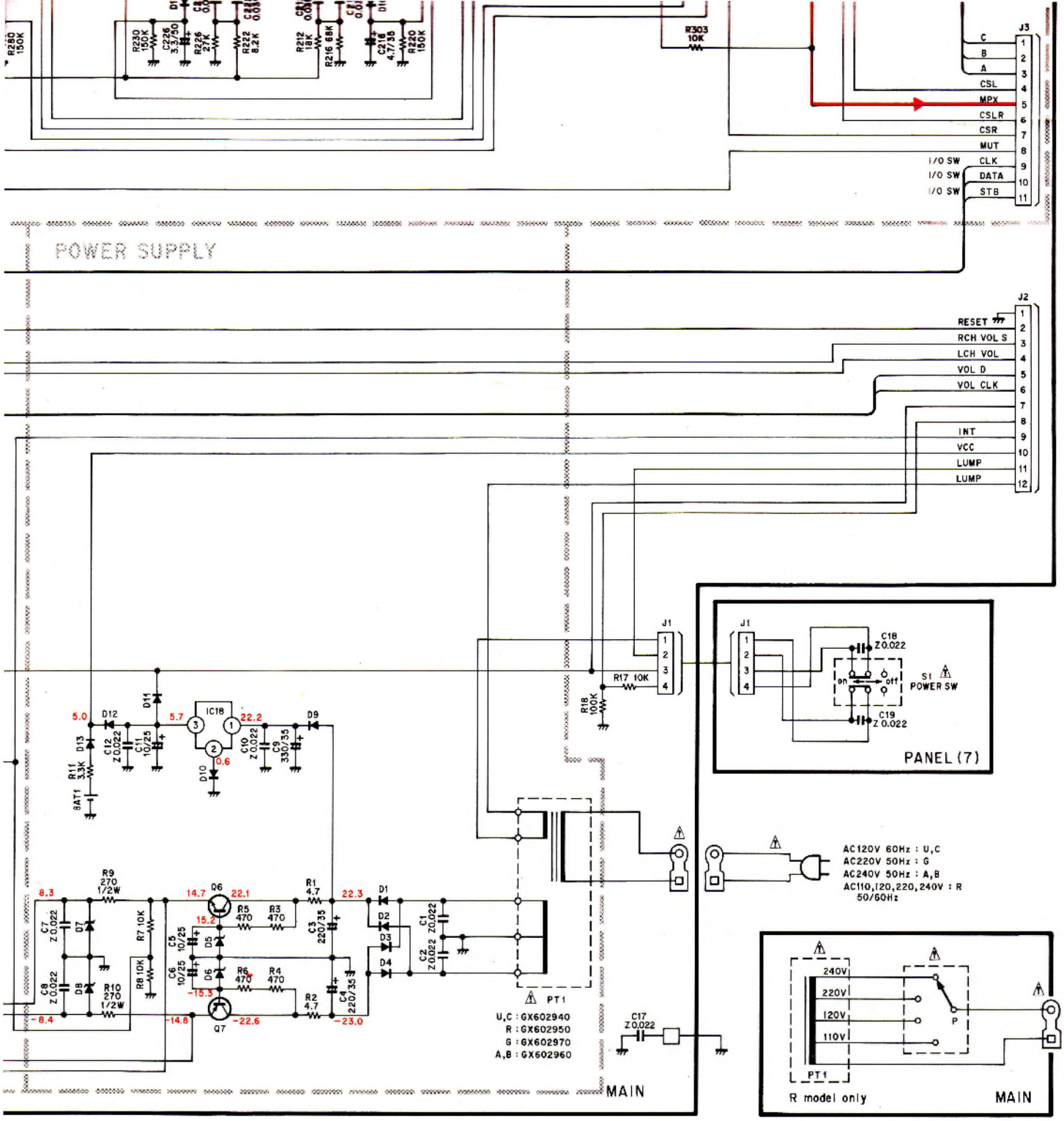

| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| N4051B | AN7337 | TC9162N<br>NJU7305 | NJM4558DS | LC7582B | HD614080S |

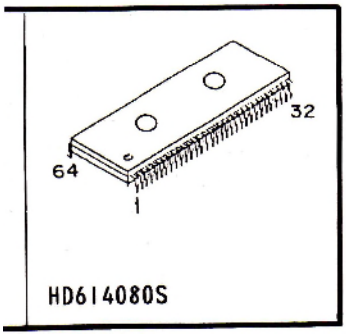
E F G H

NE, EQUALIZING SIGNAL

ECTRUM ANALYZER SIGNAL



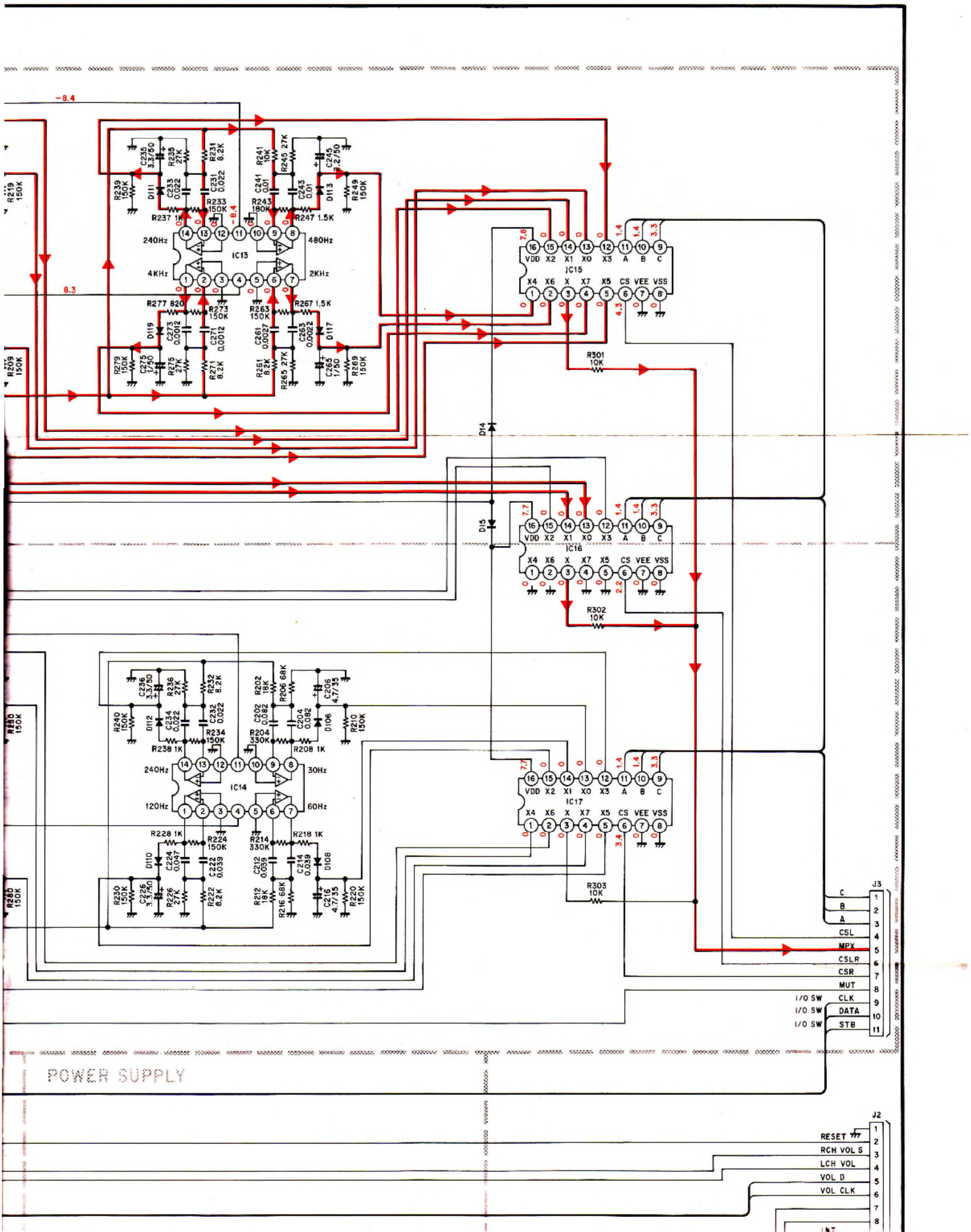


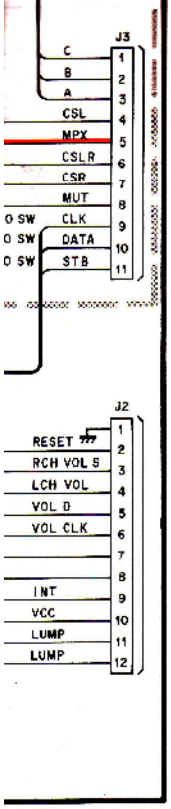



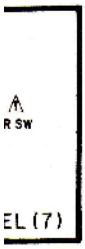

**CAUTION**

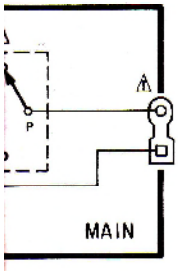
- Components having sp
  replaced with parts ha
- * All voltages are measur
- * Schematic diagram is s

H I J K L


IC13
IC14
IC15
IC16
IC17
240Hz
480Hz
4KHz
2KHz
120Hz
30Hz
60Hz
R301 10K
R302 10K
R303 10K
D14
D15
J3
C
B
A
CSL
MPX
CSLR
CSR
MUT
I/O SW CLK
I/O SW DATA
I/O SW STB
POWER SUPPLY
J2
RESET
RCH VOL S
LCH VOL
VOL D
VOL CLK

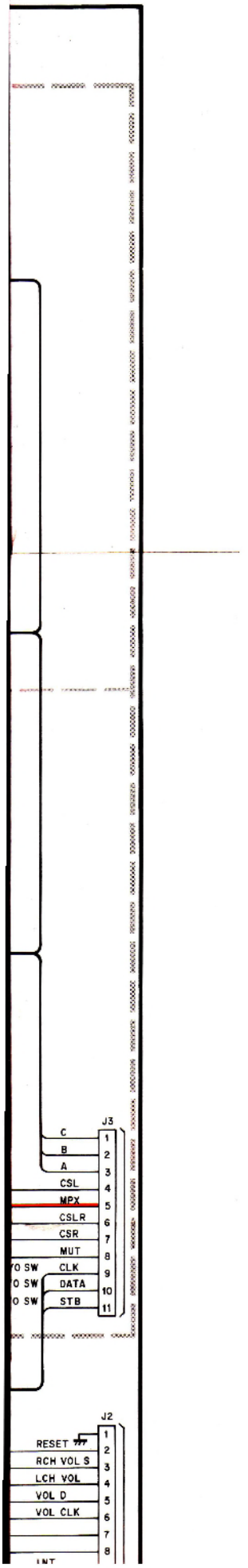


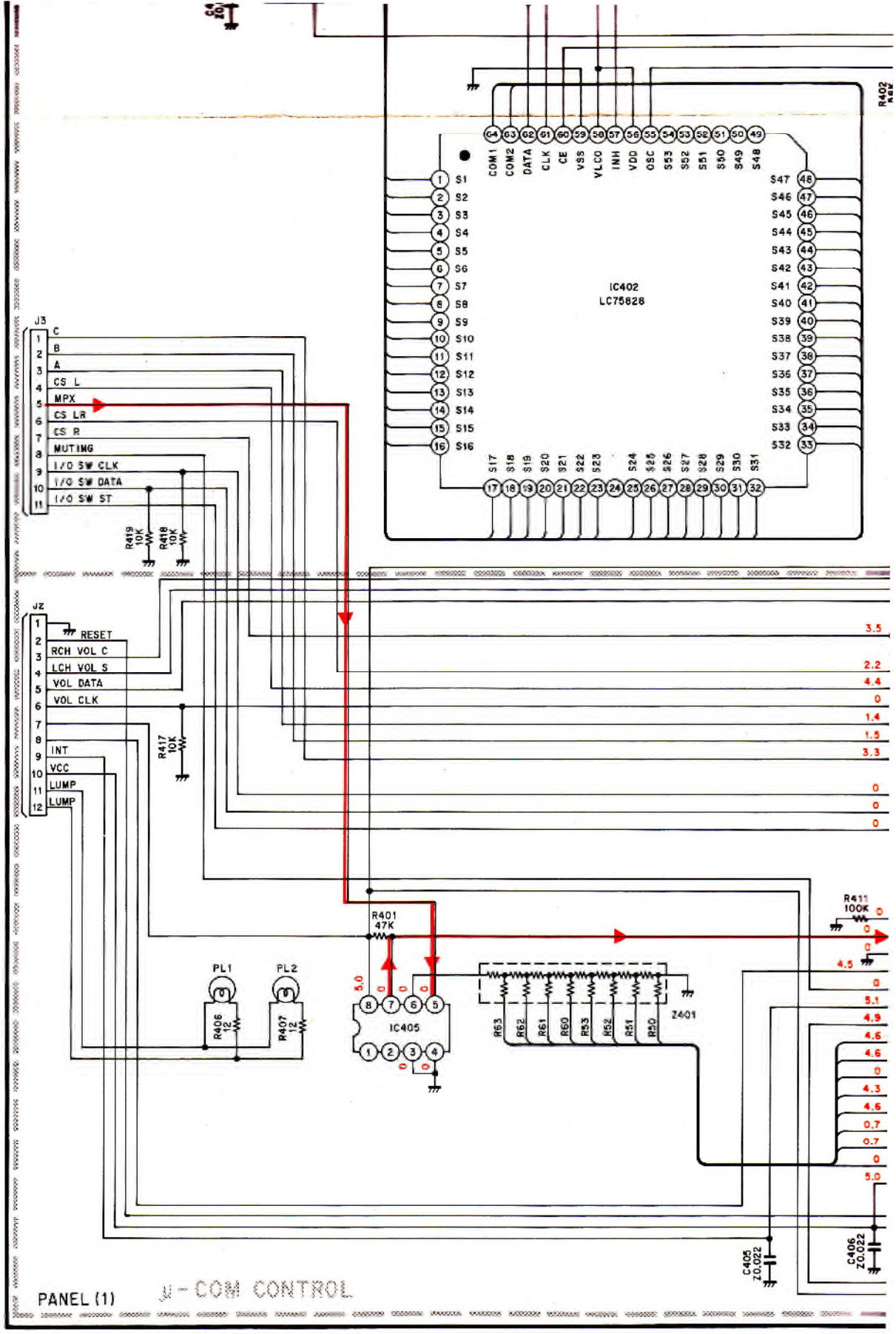




**UTION**

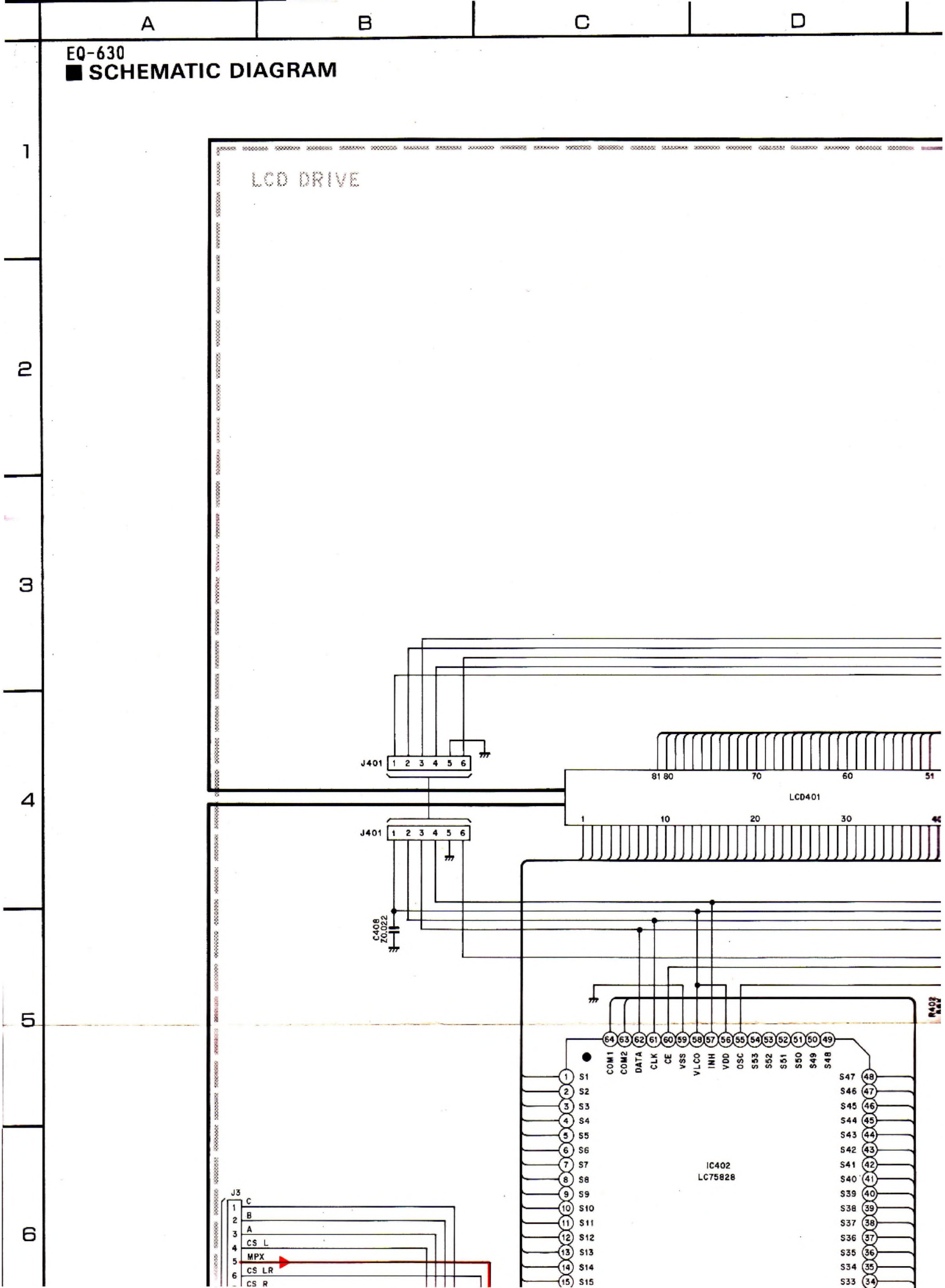
Components having special characteristics are marked ⚠ and must be eplaced with parts having specifications equal to those originally installed.
ll voltages are measured with a 10MΩ/V DC electric volt meter.
chematic diagram is subject to change without notice.

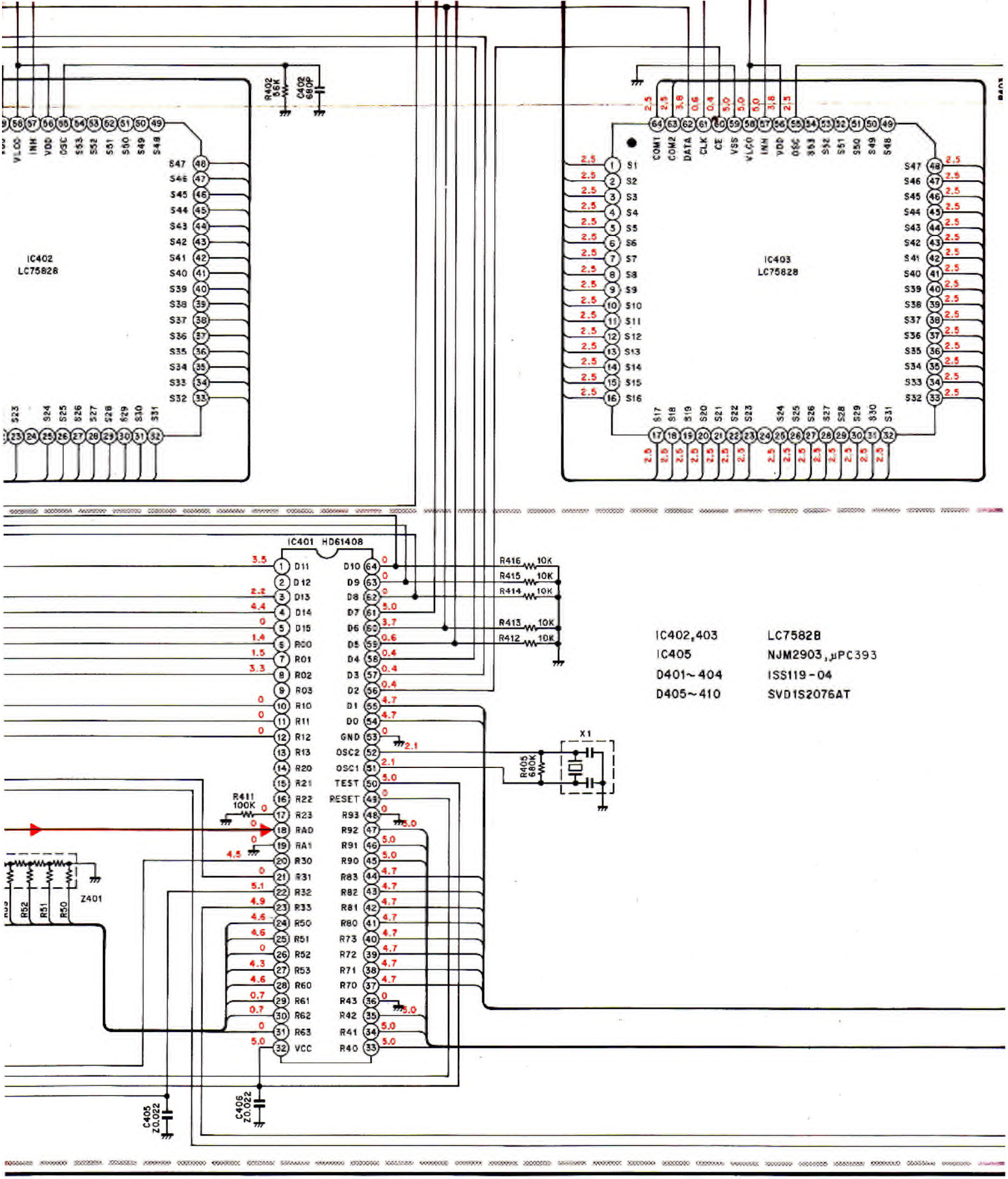

J3
C 1
B 2
A 3
CSL 4
MPX 5
CSLR 6
CSR 7
MUT 8
CLK 9
DATA 10
STB 11
J2
RESET 1
RCH VOL S 2
LCH VOL 3
VOL D 4
VOL CLK 5
6
7
8

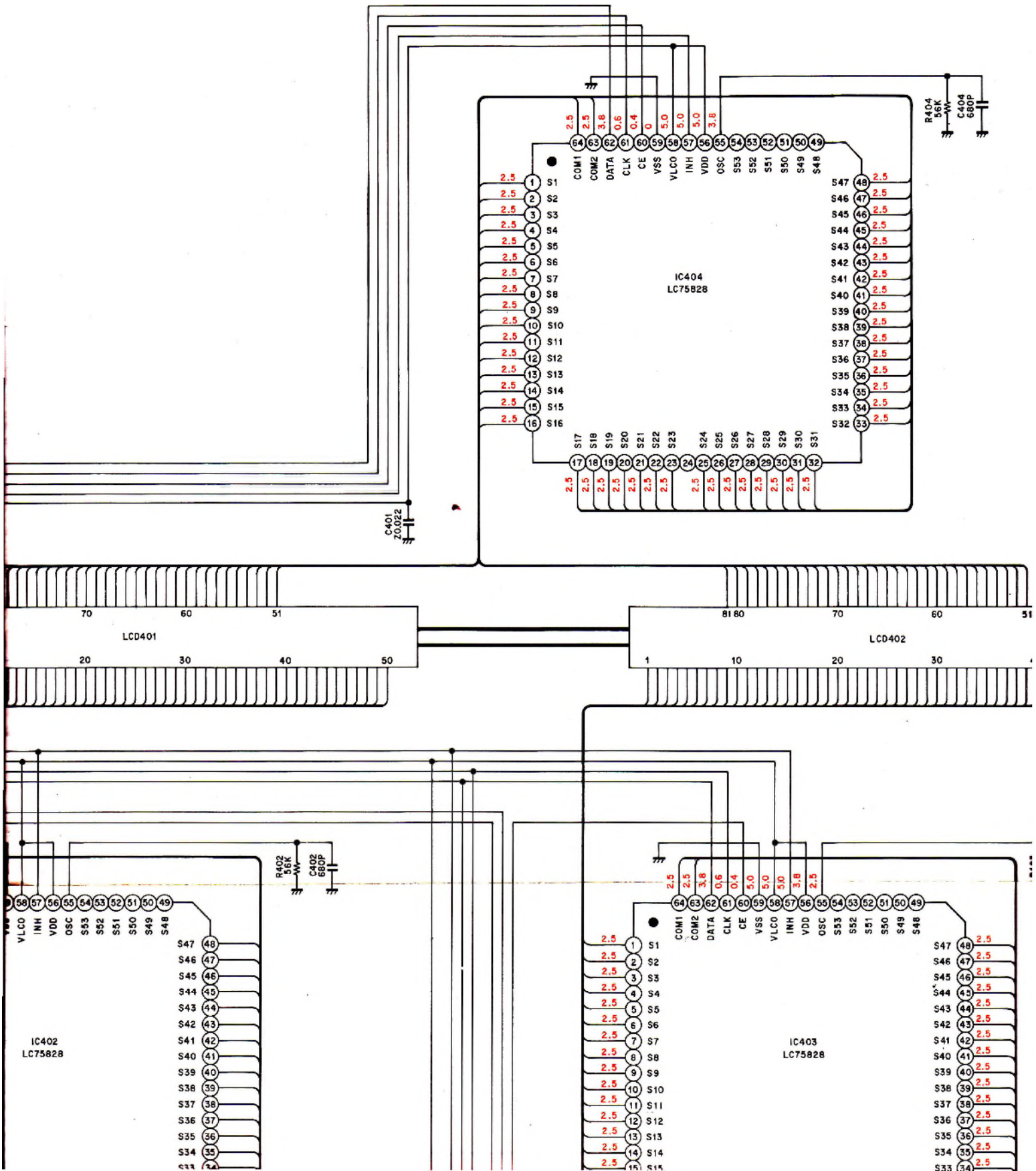

IC402
LC75828
J3
C
B
A
CS L
MPX
CS LR
CS R
MUTING
I/O SW CLK
I/O SW DATA
I/O SW ST
R419 10K
R418 10K
J2
RESET
RCH VOL C
LCH VOL S
VOL DATA
VOL CLK
R417 10K
INT
VCC
LUMP
LUMP
R401 47K
PL1
PL2
R406 12
R407 12
IC405
Z401
R63
R62
R61
R60
R53
R52
R51
R50
R411 100K
C405 Z0.022
C406 Z0.022
PANEL (1)
μ-COM CONTROL

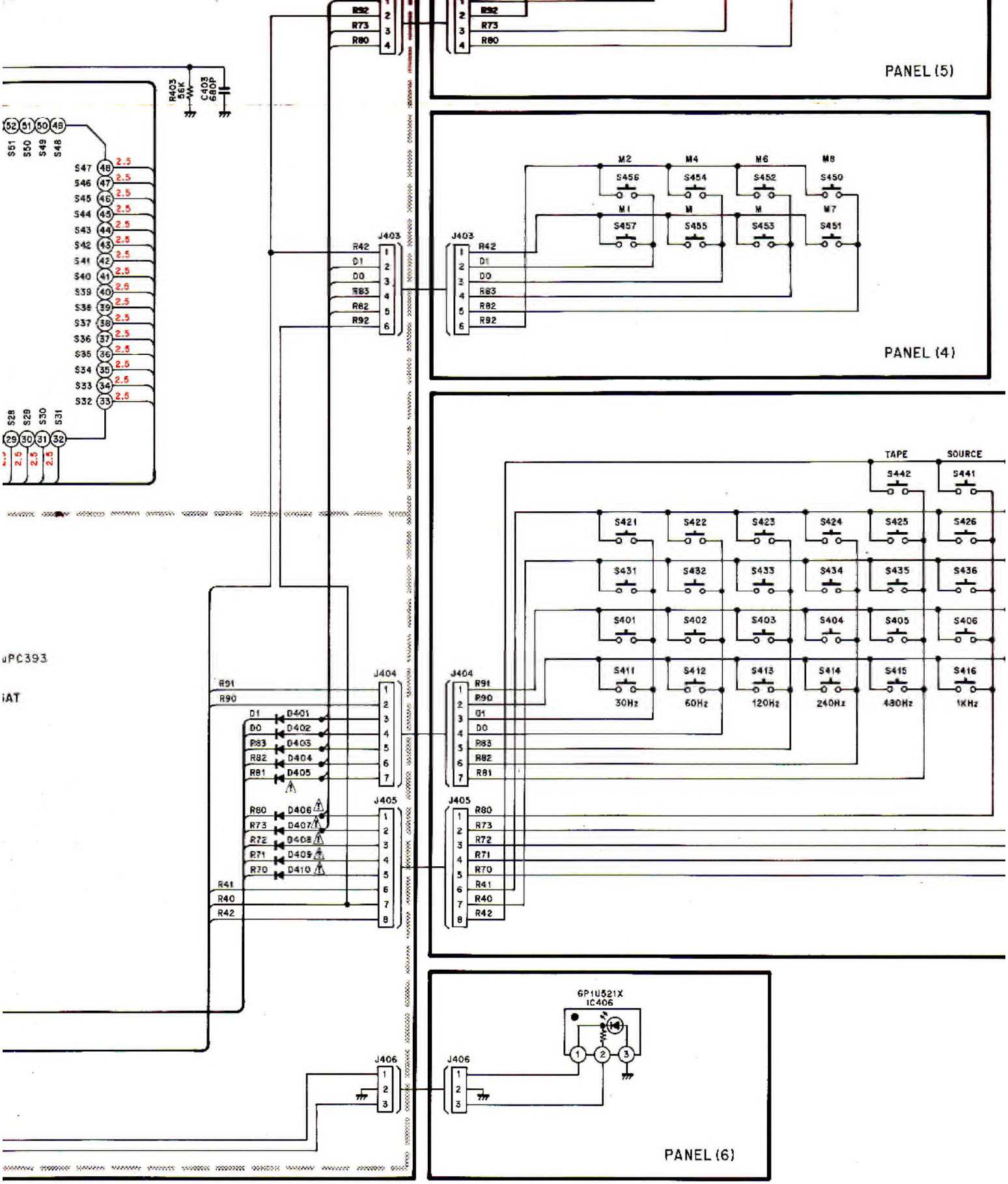
EQ-630

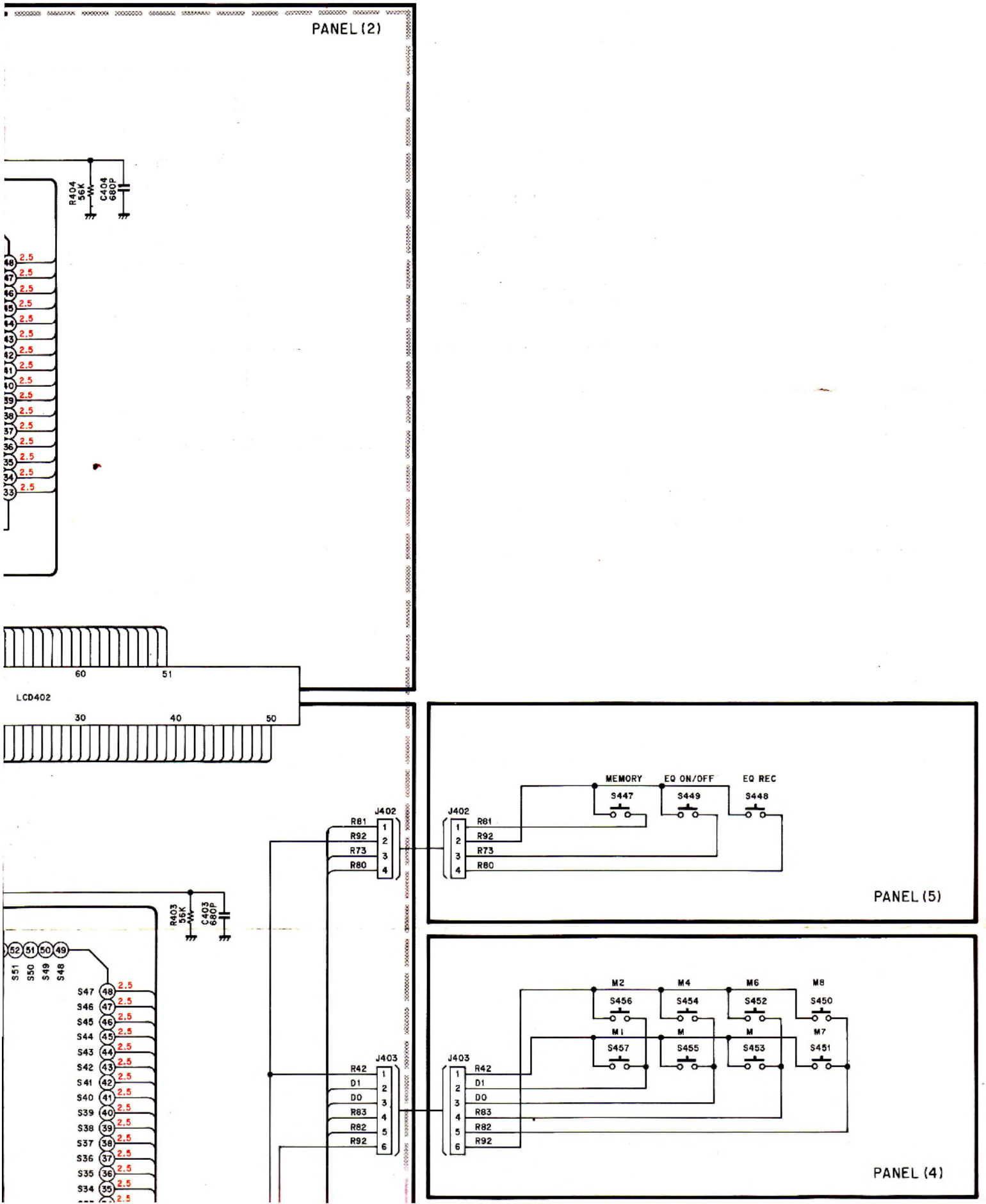
# ■ SCHEMATIC DIAGRAM




IC402
LC75828
IC403
LC75828
IC401 HD61408
R402 68K
C402 680P
R416 10K
R415 10K
R414 10K
R413 10K
R412 10K
R411 100K
R405 680K
X1
Z401
R52
R51
R50
C405 Z0.022
C406 Z0.022
IC402,403 LC75828
IC405 NJM2903,μPC393
D401~404 ISS119-04
D405~410 SVD1S2076AT

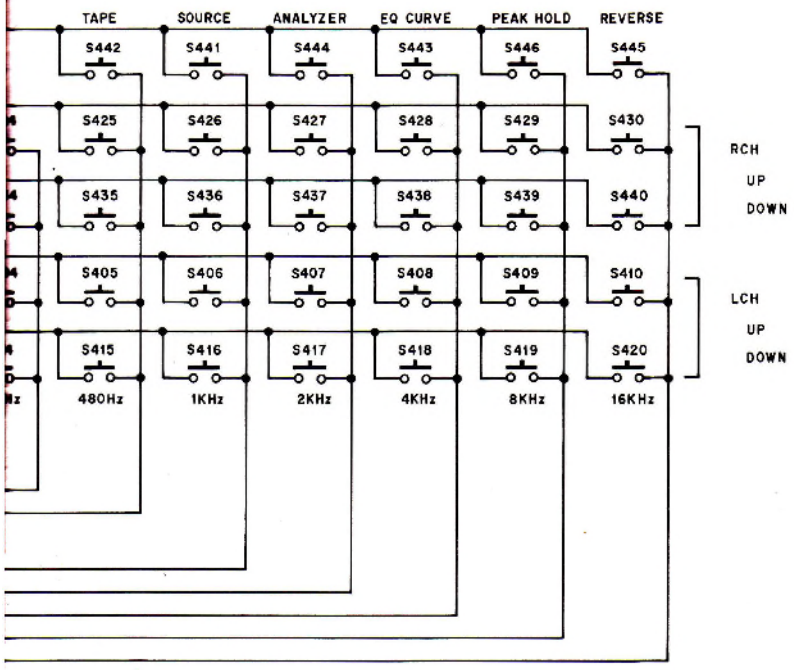

IC404
LC75828
IC402
LC75828
IC403
LC75828
LCD401
LCD402
R404
56K
C404
680P
R402
56K
C402
680P
C401
Z0.022
COM1
COM2
DATA
CLK
CE
VSS
VLCO
INH
VDD
OSC
S53
S52
S51
S50
S49
S48


PANEL (5)
PANEL (4)
PANEL (6)
R403 56K
C403 680P
J403
J404
J405
J406
R42
D1
D0
R83
R82
R92
R73
R80
M2
M4
M6
M8
M1
M
M
M7
S456
S454
S452
S450
S457
S455
S453
S451
TAPE
SOURCE
S442
S441
S421
S422
S423
S424
S425
S426
S431
S432
S433
S434
S435
S436
S401
S402
S403
S404
S405
S406
S411
S412
S413
S414
S415
S416
30Hz
60Hz
120Hz
240Hz
480Hz
1KHz
R91
R90
R81
D401
D402
D403
D404
D405
R80
R73
R72
R71
R70
D406
D407
D408
D409
D410
R41
R40
R42
6P1U521X
IC406
S47
S46
S45
S44
S43
S42
S41
S40
S39
S38
S37
S36
S35
S34
S33
S32
2.5


PANEL (2)
R404 56K 1W
C404 680P
R403 56K 1W
C403 680P
LCD402
60
51
30
40
50
J402
R81
R92
R73
R80
J403
R42
D1
DO
R83
R82
R92
MEMORY
EQ ON/OFF
EQ REC
S447
S449
S448
PANEL (5)
M2
M4
M6
M8
M1
M
M
M7
S456
S454
S452
S450
S457
S455
S453
S451
PANEL (4)
S51
S50
S49
S48
S47
S46
S45
S44
S43
S42
S41
S40
S39
S38
S37
S36
S35
S34
2.5

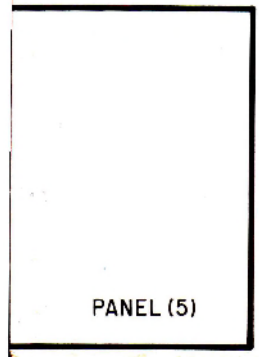
PANEL (5)

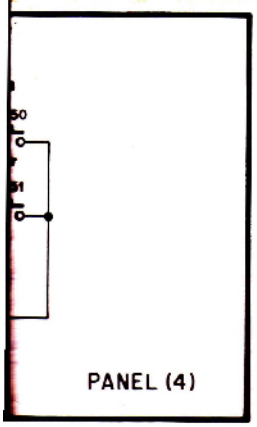
PANEL (4)




PANEL (3)

| K | L | M | N | |
|---|---|---|---|---|



# PARTS LIST

## ■ ELECTRICAL PARTS

■ **WARNING**

Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors 1/4 W are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to the last Page.

| | Ref. No. | Part No. | Description | | 部品名 | Remarks/Markets | Common Model | | ランク | |
|---|---|---|---|---|---|---|---|---|---|---|
| ※ | | ***NX 60 45 30*** | ***Main Circuit Board*** | | メインシート | U,C | | PSXPK414 | | |
| ※ | | ***NX 60 45 40*** | 〃 | | 〃 | R | | PSXPK415 | | |
| ※ | | ***NX 60 45 50*** | 〃 | | 〃 | A | | PSXPK416 | | |
| ※ | | ***NX 60 45 60*** | 〃 | | 〃 | G | | PSXPK417 | | |
| ※ | | ***NX 60 45 70*** | 〃 | | 〃 | B | | PSXPK420 | | |
| | | FG 21 21 00 | Ceramic Cap. | 100pF 50V | セラコン | C103,104 | | | | |
| | | FG 21 21 20 | 〃 | 120pF 50V | 〃 | C107,108 | | | | |
| | | FG 21 21 80 | 〃 | 180pF 50V | 〃 | C158 | | | | |
| | | FG 21 22 20 | 〃 | 220pF 50V | 〃 | C61,62,65,66,69,70,73,74G | | | | |
| | | FG 21 23 90 | 〃 | 390pF 50F | 〃 | C291～294 | | | | |
| | | FG 11 25 60 | 〃 | 560pF 50V | 〃 | C157,283,284 | | | | |
| | | FG 21 26 80 | 〃 | 680pF 50V | 〃 | C281,282 | | | | |
| | | FG 24 42 20 | 〃 | 0.022μF 50V | 〃 | C1,2,7,8,10,12,13,15,17,151～153,160～162 | | | | |
| | | Fi 22 42 20 | 〃 | 0.022μF 25V | 円筒型セラコン | C18,19 | | | | |
| | | UJ 14 71 00 | Electrolytic Cap. | 10μF 25V | ケミコン | C5,6,11,105,106 | | | | |
| | | UJ 15 64 70 | 〃 | 4.7μF 35V | 〃 | C14,101,102,205,206,215,216 | | | | |
| | | UJ 15 82 20 | 〃 | 220μF 35V | 〃 | C3,4 | | | | |
| | | UJ 45 83 30 | 〃 | 330μF 35V | 〃 | C9 | | | | |
| | | UJ 16 52 20 | 〃 | 0.22μF 50V | 〃 | C119,120 | | | | |
| | | UJ 16 54 70 | 〃 | 0.47μF 50V | 〃 | C113～116 | | | | |
| | | UJ 16 61 00 | 〃 | 1μF 50V | 〃 | C109～112,265,266,275,276,285,286,295,296 | | | | |
| | | UJ 16 62 20 | 〃 | 2.2μF 50V | 〃 | C245,246,255,256 | | | | |
| | | UJ 46 63 30 | 〃 | 3.3μF 50V | 〃 | C155,156,225,226,235,236 | | | | |
| | | UA 25 31 80 | Mylar Cap. | 1800pF 50V | マイラーコン | C145～148 | | | | |
| | | UA 25 33 30 | 〃 | 3300pF 50V | 〃 | C141～144 | | | | |
| | | UA 25 36 80 | 〃 | 6800pF 50V | 〃 | C137～140 | | | | |
| | | UA 25 41 00 | 〃 | 0.01μF 50V | 〃 | C123,124 | | | | |
| | | UA 25 41 20 | 〃 | 0.012μF 50V | 〃 | C135,136 | | | | |
| | | UA 25 41 50 | 〃 | 0.015μF 50V | 〃 | C133,134 | | | | |
| | | UA 25 42 70 | 〃 | 0.027μF 50V | 〃 | C129～132 | | | | |
| | | UA 25 45 60 | 〃 | 0.056μF 50V | 〃 | C125～128 | | | | |
| ※ | | FX 60 42 70 | Semi Conductive Ceramic Cap. | 1200pF 25V | 半導体セラコン | C271～274 | | ECFTD122KXL | | |
| | | FS 78 32 20 | 〃 | 2200pF 25V | 〃 | C263,264 | | | | |
| ※ | | FX 60 42 60 | 〃 | 2700pF 25V | 〃 | C261,262 | | ECFTD272KXL | | |
| | | FX 60 11 60 | 〃 | 4700pF 50V | 〃 | C251～254 | | ECFTD472KXL | | |
| | | FS 68 41 00 | 〃 | 0.01μF 25V | 〃 | C241～244 | | | | |
| | | FS 68 42 20 | 〃 | 0.022μF 25V | 〃 | C231～234 | | | | |
| | | FS 68 43 90 | 〃 | 0.039μF 25V | 〃 | C211～214,221,222 | | | | |
| | | FX 60 08 70 | 〃 | 0.047μF 50V | 〃 | C223,224 | | ECFTD473KXL | | |
| | | FS 68 48 20 | 〃 | 0.082μF 25V | 〃 | C201～204 | | | | |
| | | FX 60 35 60 | TF Cap. | 0.12μF 50V | TF コン | C121,122 | | ECVQ1H124JZ3 | | |
| ※ | | FX 60 42 50 | 〃 | 0.27μF 50V | 〃 | C117,118 | | ECVQ1H274JZ | | |
| | | | | | | | | | | |
| | | HX 60 21 50 | Resistor Array | 220kΩ×8 | 集合抵抗 | Z101～103 | | | | |
| | | | | | | | | | | |
| | | GX 60 29 40 | Power Transformer | | 電源トランス | TI U,C | | PSLTK5K23 | | ⚠ |
| | | GX 60 29 50 | 〃 | | 〃 | TI R | | PSLTK5K24 | | ⚠ |
| ※ | | GX 60 29 70 | 〃 | | 〃 | TI G | | PSLTK5K25 | | ⚠ |
| | | GX 60 29 60 | 〃 | | 〃 | TI A,B | | PSLTK5K26 | | ⚠ |
| | | | | | | | | | | |
| | | iX 60 42 00 | Transistor | 2SC2878A | トランジスター | Q1,2 | | | | |
| ※ | | iX 61 38 70 | 〃 | 2SA1309(Q,R,S) | 〃 | Q3 | | | | |

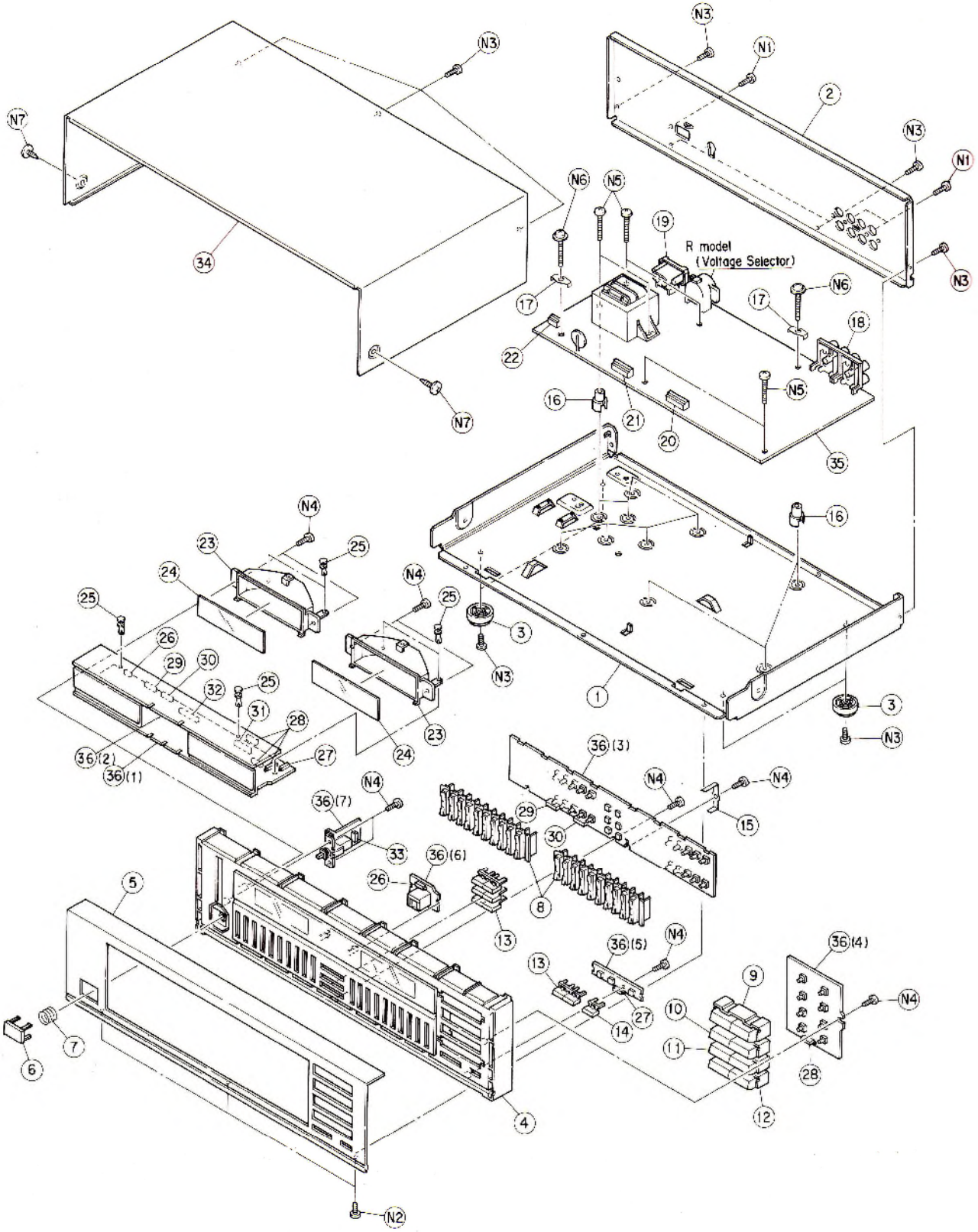
※ New Parts (新規部品)

| | Ref. No. | Part No. | Description | 部品名 | Remarks/Markets | Common Model | | ランク |
|---|---|---|---|---|---|---|---|---|
| | | iX 61 37 90 | Transistor | 2SC3311A(Q) | トランジスター | Q4 | | | |
| ※ | | iX 61 38 80 | 〃 | UN4215 | 〃 | Q5 | | | |
| | | iX 61 28 70 | 〃 | 2SD2012 | 〃 | Q6 | | | |
| ※ | | iX 61 38 90 | Transistor | 2SB1375 | トランジスター | Q7 | | | |
| | | | | | | | | | |
| ※ | | iX 61 38 30 | IC | TC9162N | I C | IC1 | | | |
| | | iX 61 37 00 | 〃 | NJM4558SD | 〃 | IC2,8～10 | | | |
| ※ | | iX 61 38 40 | 〃 | AN7337 | 〃 | IC3,4,7 | | | |
| | | iX 61 37 10 | 〃 | NJU7305L | 〃 | IC5,6 | | | |
| | | iX 61 03 80 | 〃 | LA6324N | 〃 | IC11～14 | | | |
| | | iX 60 93 20 | 〃 | MN4051B | 〃 | IC15～17 | | | |
| | | XA 50 70 01 | 〃 | AN78N05 | 〃 | IC18 | | | |
| | | | | | | | | | |
| | | iX 61 05 40 | Diode | 1N4003 | ダイオード | D1～4,9 | | | |
| | | iX 60 94 00 | 〃 | MA4150M | 〃 | D5,6 | | | |
| ※ | | iX 61 39 00 | 〃 | MA4082 | 〃 | D7,8 | | | |
| | | iX 61 05 30 | 〃 | 1SS178TPA7 | 〃 | D10～15,101～124 | | | |
| | | | | | | | | | |
| | | XX 69 40 20 | Resonator | | 発振器 | X1 | | EFOFC4004A3 | |
| | | | | | | | | | |
| ※ | | JX 60 04 60 | Lamp | | ランプ | PL1,2 | | XAMK4B | |
| | | | | | | | | | |
| | | PX 60 02 00 | Battery | SUMM2CC200 | リチウム電池 | BAT1 | | | |
| | | | | | | | | | |
| | | KX 60 17 60 | Switch,Power | | 電源スイッチ | S1 | | PSSHK90 | ⚠ |
| | | KX 60 06 40 | Voltage Selector | | 電圧切換器 | S2 R | | PSSRK26 | ⚠ |
| | | | | | | | | | |
| | | | | | | | | | |
| ※ | | NX 60 45 80 | | | パネルシート | Black | | PSXPK418 | |
| ※ | | NX 60 45 20 | 〃 | | 〃 | Titan | | PSXPX426 | |
| ※ | | FX 60 42 80 | Ceramic Cap. | 680pF 50V | 円筒型セラコン | C402～404 | | ECBT1H681KB | |
| | | F1 22 42 20 | 〃 | 0.022μF 25V | 〃 | C401,405～408 | | | |
| | | | | | | | | | |
| | | HX 60 21 60 | Resistor Array | 7.9MΩ×10 | 集合抵抗 | Z401 | | | |
| | | | | | | | | | |
| ※ | | iX 61 38 50 | IC | HD614080SD23 | I C | IC401 | | | |
| | | iX 61 37 30 | 〃 | LC7582B | 〃 | IC402～404 | | | |
| | | iX 61 37 50 | 〃 | μPC393 | 〃 | IC405 | | | ⚠ |
| ※ | | iX 61 38 60 | Remote Control Receptor | GP1U521X | 〃 | IC406 | | | |
| | | | | | | | | | |
| | | iX 61 05 30 | Diode | 1SS178TPA7 | ダイオード | D401～404 | | | |
| ※ | | iX 61 39 10 | 〃 | SVD1S2076AT | 〃 | D405～410 | | | ⚠ |
| | | | | | | | | | |
| ※ | | PX 60 04 40 | LCD | PSAL8056MJP | L C D | LCD401,402 Black | | | |
| ※ | | PX 60 06 00 | 〃 | | 〃 | 〃 Titan | | | |
| | | | | | | | | | |
| | | XX 69 40 60 | Switch | EVQQAC04B | スイッチ | S401～409 | | | |
| ※ | | KX 60 17 70 | 〃 | EVQPAE07K | 〃 | S410～457 | | | |

※ New Parts (新規部品)

EQ-630

## ■ EXPLODED VIEW



## ■ EXPLODED VIEW PARTS

| | Ref. No. | Part No. | Description | | 部品名 | Remarks/Markets | Common Model | | ランク |
|---|---|---|---|---|---|---|---|---|---|
| ※ | 1 | AX-60-47-50 | Bottom Cover | | ボトムカバー | | | SKUK162-3 | |
| ※ | 2 | AX-60-47-60 | Rear Panel | | リヤパネル | R | | PSGPK550-1A | |
| ※ | 〃 | AX-60-47-70 | 〃 | | 〃 | U,C | | PSGPK550B | |
| ※ | 〃 | AX-60-47-80 | 〃 | | 〃 | A,B | | PSGPK550C | |
| ※ | 〃 | AX-60-47-90 | 〃 | | 〃 | G | | PSGPK550D | |
| | 3 | XX-69-42-90 | Leg | | 脚 | | | SKL227-5 | |
| ※ | 4 | NX-60-37-50 | Front Panel | | フロントパネル | Black | | PSGEQ630-KJ | |
| ※ | 〃 | NX-60-45-10 | 〃 | | 〃 | Titan | | PSGWK540TA | |
| ※ | 5 | AX-60-48-00 | Front Grille | | フロントブリル | Black | | PSGEQ630-KJ1 | |
| ※ | 〃 | CX-60-93-50 | 〃 | | 〃 | Titan | | PSGXEQ630-7U | |
| | 6 | CB-63-51-30 | Button,Power | | 電源ボタン | Black | | | |
| ※ | 〃 | VF-60-47-00 | 〃 | | 〃 | Titan | | | |
| | 7 | XX-69-42-30 | Spring | | バネ | | | PSUS33 | |
| ※ | 8 | CX-60-72-10 | Button | | ボタン | UP/DOWN Black | | PSBCK85 | |
| ※ | 〃 | CX-60-93-60 | 〃 | | 〃 | Titan | | PSBCK85-1 | |
| ※ | 9 | CX-60-72-20 | Button(A),Preset | | プリセットボタン(A) | Black | | PSBC55A | |
| ※ | 〃 | CX-60-93-70 | 〃 〃 | | 〃 | Titan | | PSBC55-1A | |
| ※ | 10 | CX-60-72-30 | 〃 (B) 〃 | | 〃 (B) | Black | | PSBC56A | |
| ※ | 〃 | CX-60-93-80 | 〃 〃 | | 〃 | Titan | | PSBC56-1A | |
| ※ | 11 | CX-60-72-40 | 〃 (C) 〃 | | 〃 (C) | Black | | PSBC57A | |
| ※ | 〃 | CX-60-93-90 | 〃 〃 | | 〃 | Titan | | PSBC57-1A | |
| ※ | 12 | CX-60-72-50 | 〃 (D) 〃 | | 〃 (D) | Black | | PSBC58A | |
| ※ | 〃 | CX-60-94-00 | 〃 〃 | | 〃 | Titan | | PSBC58-1A | |
| | 13 | VD-37-04-00 | Knob,Function | | ツマミ | Black | | | |
| ※ | 〃 | VF-60-44-00 | 〃 | | 〃 | Titan | | | |
| | 14 | VD-37-07-00 | 〃 | | 〃 | Black | | | |
| ※ | 〃 | VF-60-43-00 | 〃 | | 〃 | Titan | | | |
| | 15 | XX-69-44-60 | Spring | | バネ | | | PSUS34 | |
| | 16 | CX-60-14-50 | Spacer | | スペーサー | | | SHE187-K | |
| ※ | 17 | AX-60-48-20 | Terminal,Ground | | アース端子 | | | SNE55-1 | |
| ※ | 18 | LX-60-20-80 | Jack | | 入出力端子板 | | | SJF3057-13NA | |
| | 19 | LX-60-19-80 | AC Inlet | | AC インレット | U.C.A | | SJSD16 | ⚠ |
| | 〃 | LX-60-20-00 | 〃 | | 〃 | R.G.B | | SJS9236 | ⚠ |
| ※ | 20 | LX-60-20-90 | Connector | 11P | コネクター | | | SJSD1105 | |
| ※ | 21 | LX-60-21-00 | 〃 | 12P | 〃 | | | SJSD1205 | |
| | 22 | XX-69-45-50 | 〃 | 4P | 〃 | | | SJT30440LX-V | |
| ※ | 23 | CX-60-72-60 | Lamp Case | | ランプケース | | | PSMPK9 | |
| ※ | 24 | CX-60-72-70 | Sheet | | 拡散シート | | | PSDUK25 | |
| ※ | 25 | CX-60-72-80 | Holder | | ナイラッチ | | | SHR415 | |
| ※ | 26 | LX-60-21-20 | Socket | 3P | ソケット | | | SJSK90303DS | |
| ※ | 27 | LX-60-21-30 | 〃 | 4P | 〃 | | | SJSK90403DS | |
| | 28 | LX-60-20-20 | 〃 | 6P | 〃 | | | SJSK90603DS | |
| | 29 | LX-60-20-30 | 〃 | 7P | 〃 | | | SJSK90703DS | |
| | 30 | LX-60-20-70 | 〃 | 8P | 〃 | | | SJSK90803DS | |
| ※ | 31 | LX-60-21-40 | 〃 | 11P | 〃 | | | SJSK91103DS | |
| ※ | 32 | LX-60-21-50 | 〃 | 12P | 〃 | | | SJSK91203DS | |
| | 33 | XX-69-45-10 | 〃 | 4P | 〃 | | | SJS50471DS | |
| ※ | 34 | AX-60-48-30 | Top Cover | | トップカバー | Black | | SKCK150KY2 | |
| ※ | 〃 | AX-60-59-90 | 〃 | | 〃 | Titan | | SKCK150T | |
| ※ | 35 | NX-60-45-30 | Main Circuit Board | | メインシート | U,C | | PSXPK414 | |
| ※ | 〃 | NX-60-45-40 | 〃 | | 〃 | R | | PSXPK415 | |
| ※ | 〃 | NX-60-45-50 | 〃 | | 〃 | A | | PSXPK416 | |

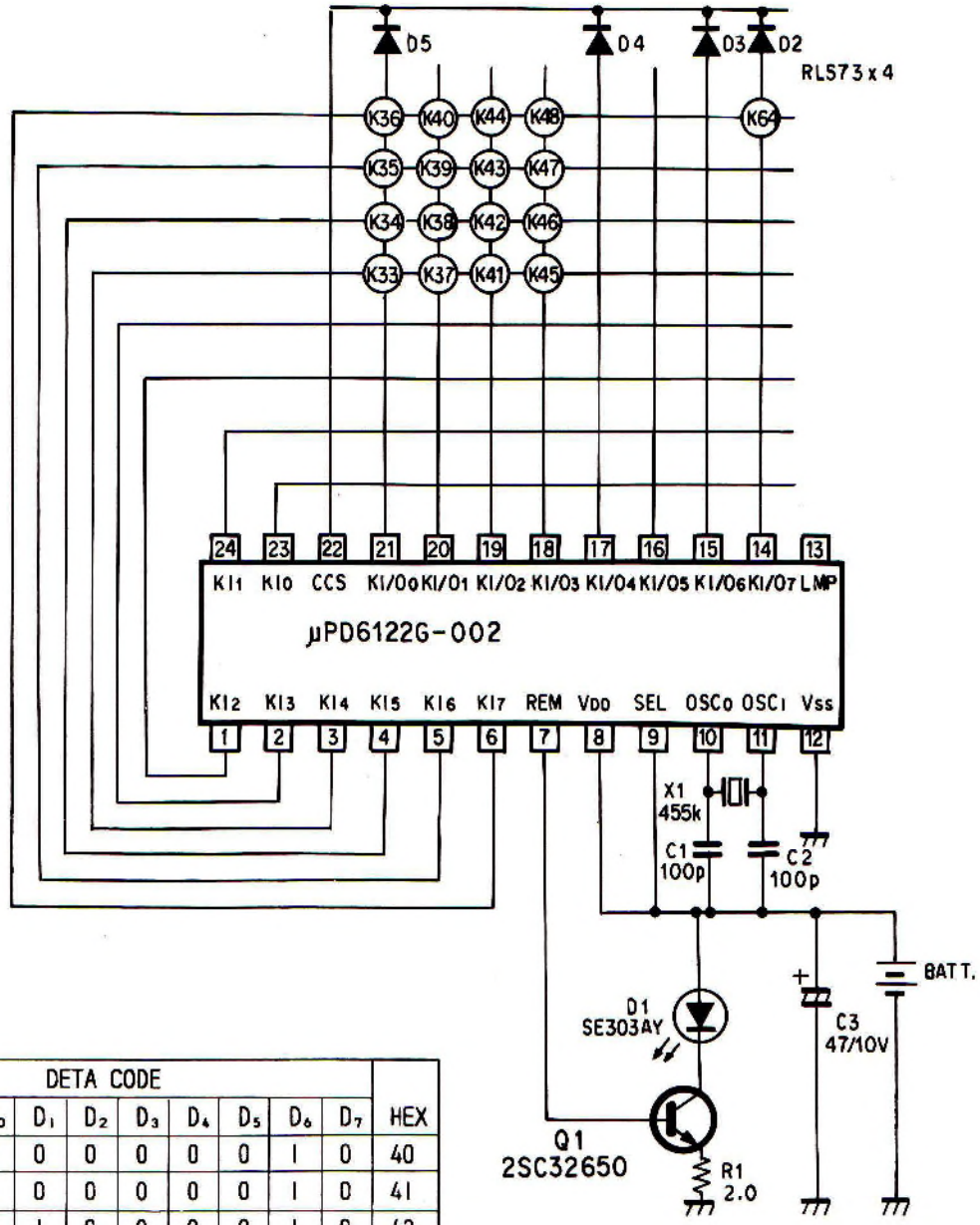
※ New Parts (新規部品)

| | Ref. No. | Part No. | Description | | 部品名 | Remarks/Markets | Common Model | | ランク | |
|---|---|---|---|---|---|---|---|---|---|---|
| ※ | 35 | NX 60 45 60 | Main Circuit Board | | メインシート | G | | PSXPK417 | | |
| ※ | 〃 | NX 60 45 70 | 〃 | | 〃 | B | | PSXPK420 | | |
| ※ | 36 | NX 60 45 80 | Panel Circuit Board | | パネルシート | Black | | PSXPK418 | | |
| ※ | 〃 | NX 60 45 20 | 〃 | | 〃 | Titan | | PSXPX426 | | |
| | N1 | EX 60 03 10 | Binding Head Tapping Screw | 3×8 FCRM3-BI | バインドタッピングネジ(Pタイト) | | | XTB3+8GFZ | | |
| | N2 | EI 33 00 86 | Binding Head Tapping Screw | 3×8 FCRM3-BI | バインドタッピングネジ | | | XTBS3+8JFZ1 | | |
| | N3 | EI 33 00 86 | Binding Head Tapping Screw | 3×8 FCRM3-BI | バインドタッピングネジ | PACK | | XTB3+8JFZ | | |
| | N4 | EK 09 30 20 | 〃 | 3×8 ZMC2-Y | バインドタッピングネジ(Pタイト) | | | XTB3+8G | | |
| | N5 | EK 03 00 40 | BW Head Tapping Screw | 3×20 ZMC2-Y | BWヘッドタッピングネジ | | | XTW3+20T | | |
| ※ | N6 | AX 60 54 20 | Special Screw | 3×20 ZMC2-Y | ネジ | | | XTBS3+20F1 | | |
| ※ | N7 | AX 60 59 80 | Special Screw | | ネジ | Black | | SNE2129-1 | | |
| ※ | 〃 | AX 60 60 00 | 〃 | | 〃 | Titan | | SNEK2129 | | |
| | | | Accessories | | 付属品 | | | | | △ |
| | | MX 60 04 80 | AC Power Cord | | 電源コード | G | | SFDAC05E03 | | △ |
| | | XX 69 28 40 | 〃 | | 〃 | B | | SFDAC05G02 | | △ |
| | | MX 60 10 00 | 〃 | | 〃 | C | | SJA172 | | △ |
| | | MX 60 10 10 | 〃 | | 〃 | A | | SJA173 | | △ |
| | | MX 60 10 20 | 〃 | | 〃 | U | | SJA175-1T | | △ |
| ※ | | MX 60 10 40 | 〃 | | 〃 | R | | SJA185 | | △ |
| | | MX 60 09 80 | Output Cord | | 出力コード | | | SJPK2202 | | |
| ※ | | PX 60 05 90 | Remote Control Transmitter | | リモコントランスミッター | | | PRAKK1 | | |
| | | | Dry Cell | AA,R06 | 単3乾電池 | | | | | |

※ New Parts (新規部品)

EQ-630

## ■ REMOTE CONTROL TRANSMITTER




| KEY NO. | FUNCTION | DETA CODE | | | | | | | | HEX |
|---|---|---|---|---|---|---|---|---|---|---|
| | | $D_0$ | $D_1$ | $D_2$ | $D_3$ | $D_4$ | $D_5$ | $D_6$ | $D_7$ | |
| 33 | PRESET 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 40 |
| 34 | PRESET 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 41 |
| 35 | PRESET 3 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 42 |
| 36 | PRESET 4 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 43 |
| 37 | PRESET 5 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 44 |
| 38 | PRESET 6 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 45 |
| 39 | PRESET 7 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 46 |
| 40 | PRESET 8 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 47 |
| 41 | F.UP | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 48 |
| 42 | F.DOWN | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 49 |
| 43 | LEVEL UP | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 4A |
| 44 | LEVEL DOWN | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 4B |
| 45 | MEMORY | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 4C |
| 46 | EQ.ON/OFF | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 4D |
| 47 | DISPLAY EQ/ANA | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 4E |
| 48 | CHANNEL L/R/L+R | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 4F |
| 64 | REVERSE | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 5F |

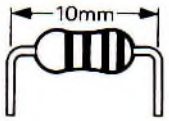
COSTOM CODE : D1 (HEX)

# Parts List for Carbon Resistor

| Value | 1/4W Type Part No. | 1/6W Type Part No. | Value | 1/4W Type Part No. | 1/6W Type Part No. |
|---|---|---|---|---|---|
| 1.0 Ω | HJ353100 | HF853100 | 12KΩ | HJ357120 | HF857120 |
| 1.8 〃 | HJ353180 | ※ | 15 〃 | HJ357150 | HF857150 |
| 2.2 〃 | HJ353220 | HF853220 | 18 〃 | HJ357180 | HF857180 |
| 3.3 〃 | HJ353330 | HF853330 | 22 〃 | HJ357220 | HF857220 |
| 4.7 〃 | HJ353470 | HF853470 | 27 〃 | HJ357270 | HF857270 |
| 5.6 〃 | HJ353560 | HF853560 | 33 〃 | HJ357330 | HF857330 |
| 10 〃 | HJ354100 | HF854100 | 39 〃 | HJ357390 | HF857390 |
| 15 〃 | HJ354150 | HF854150 | 47 〃 | HJ357470 | HF857470 |
| 22 〃 | HJ354220 | HF854220 | 56 〃 | HJ357560 | HF857560 |
| 27 〃 | HJ354270 | HF854270 | 68 〃 | HJ357680 | HF857680 |
| 33 〃 | HJ354330 | HF854330 | 82 〃 | HJ357820 | HF857820 |
| 39 〃 | HJ354390 | HF854390 | 91 〃 | HJ357910 | HF857910 |
| 47 〃 | HJ354470 | HF854470 | 100 〃 | HJ358100 | HF858100 |
| 56 〃 | HJ354560 | HF854560 | 120 〃 | HJ358120 | HF858120 |
| 68 〃 | HJ354680 | HF854680 | 150 〃 | HJ358150 | HF858150 |
| 82 〃 | HJ354820 | HF854820 | 180 〃 | HJ358180 | HF858180 |
| 100 〃 | HJ355100 | HF855100 | 220 〃 | HJ358220 | HF858220 |
| 110 〃 | HJ355110 | HF855110 | 270 〃 | HJ358270 | HF858270 |
| 120 〃 | HJ355120 | HF855120 | 330 〃 | HJ358330 | HF858330 |
| 150 〃 | HJ355150 | HF855150 | 390 〃 | HJ358390 | HF858390 |
| 160 〃 | HJ355160 | ※ | 470 〃 | HJ358470 | HF858470 |
| 180 〃 | HJ355180 | HF855180 | 560 〃 | HJ358560 | HF858560 |
| 220 〃 | HJ355220 | HF855220 | 680 〃 | HJ358680 | HF858680 |
| 270 〃 | HJ355270 | HF855270 | 820 〃 | HJ358820 | HF858820 |
| 330 〃 | HJ355330 | HF855330 | 1.0MΩ | HJ359100 | HF859100 |
| 390 〃 | HJ355390 | HF855390 | 1.2 〃 | HJ359120 | ※ |
| 470 〃 | HJ355470 | HF855470 | 1.5 〃 | HJ359150 | HF859150 |
| 510 〃 | ※ | HF855510 | 1.8 〃 | HJ359180 | HF859180 |
| 560 〃 | HJ355560 | HF855560 | 2.2 〃 | HJ359220 | HF859220 |
| 680 〃 | HJ355680 | HF855680 | 3.3 〃 | HJ359330 | HF859330 |
| 820 〃 | HJ355820 | HF855820 | 3.9 〃 | HJ359390 | ※ |
| 910 〃 | HJ355910 | HF855910 | 4.7 〃 | HJ359470 | HF859470 |
| 1.0KΩ | HJ356100 | HF856100 | | | |
| 1.2 〃 | HJ356120 | HF856120 | | | |
| 1.5 〃 | HJ356150 | HF856150 | | | |
| 1.8 〃 | HJ356180 | HF856180 | | | |
| 2.0 〃 | HJ356200 | HF856200 | | | |
| 2.2 〃 | HJ356220 | HF856220 | | | |
| 2.4 〃 | HJ356240 | HF856240 | | | |
| 2.7 〃 | HJ356270 | HF856270 | | | |
| 3.0 〃 | HJ356300 | HF856300 | | | |
| 3.3 〃 | HJ356330 | HF856330 | | | |
| 3.6 〃 | HJ356360 | HF856360 | | | |
| 3.9 〃 | HJ356390 | HF856390 | | | |
| 4.7 〃 | HJ356470 | HF856470 | | | |
| 5.1 〃 | HJ356510 | HF856510 | | | |
| 5.6 〃 | HJ356560 | HF856560 | | | |
| 6.8 〃 | HJ356680 | HF856680 | | | |
| 8.2 〃 | HJ356820 | HF856820 | | | |
| 9.1 〃 | HJ356910 | HF856910 | | | |
| 10 〃 | HJ357100 | HF857100 | | | |

1/4W Type

HJ35○○○○




1/6W Type

HF85○○○○

# EQ-630

EQ-630

YAMAHA

# YAMAHA TECHNICAL BULLETIN
## ELECTRONICS CORPORATION, USA

6722 ORANGETHORPE AVENUE, BUENA PARK, CALIFORNIA 90620 · MAIL ADDRESS: P.O. BOX 6660, BUENA PARK, CALIFORNIA 90622 · PHONE: (714) 522-9105

No.: 135H
Effective Date: September 27, 1989

MODEL: EQ-630/Ti STEREO GRAPHIC EQUALIZER

SERIAL NUMBERS AFFECTED: Units under Serial Number MA99------
(released before September 26, 1989)*

FUNCTIONS AFFECTED: MEMORY BACK-UP BATTERY

TYPE OF CHANGE

| MANDATORY | OPTIONAL | FOR INFO ONLY |
|---|---|---|
| X | | |

(This modification is to be performed on all store-stock and customer-units not already modified by YAMAHA or an authorized YAMAHA Preferred Customer Service Center.)

SYMPTOM: When the AC-mains power is disconnected, the unit "forgets" any user-set equalization curves.

CAUSE: The 3 volt lithium memory back-up battery has failed due to excess current-drain whenever the AC-mains power is disconnected.

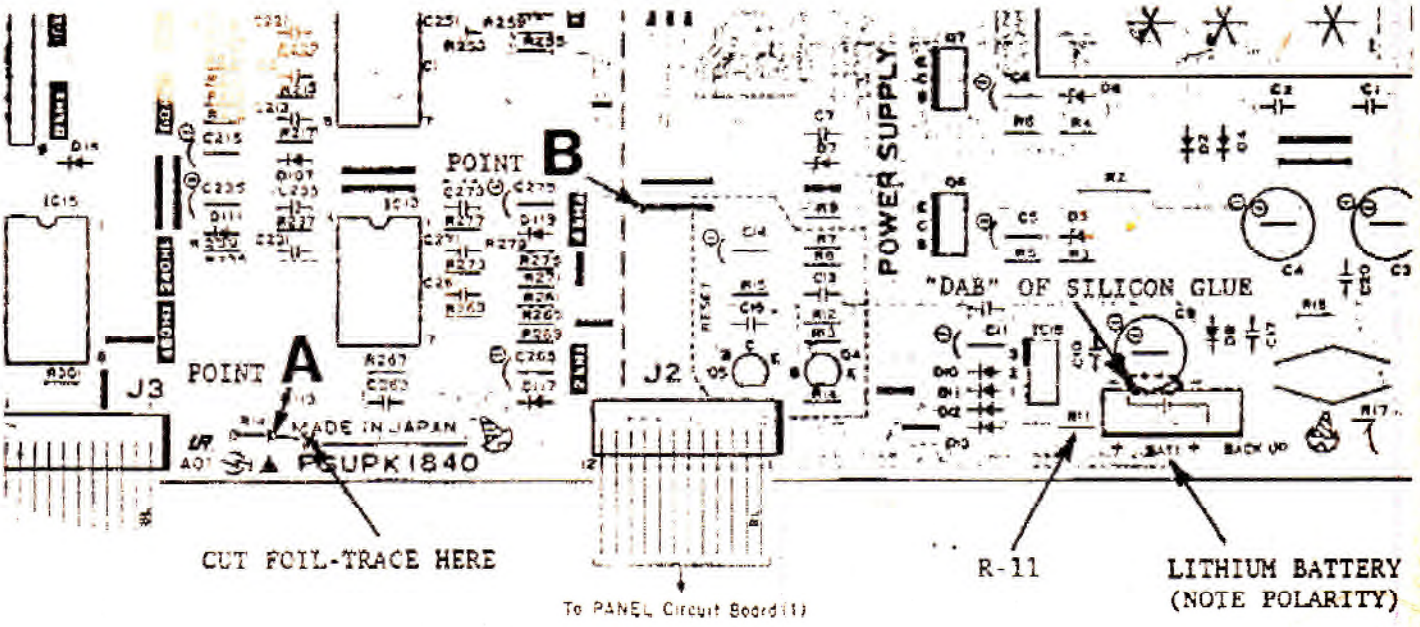
SOLUTION: Modify the memory back-up circuit to reduce current-draw, then remove and replace the lithium battery (as described on the reverse side of this bulletin).

*NOTE: All units released after September 26, 1989, include this modification. Any units modified by YAMAHA before this date have a green mark next to the Serial Number and a gold Q.C.-sticker on the carton-box.

(See reverse side for procedure to modify the memory back-up circuit and replace the lithium battery.)

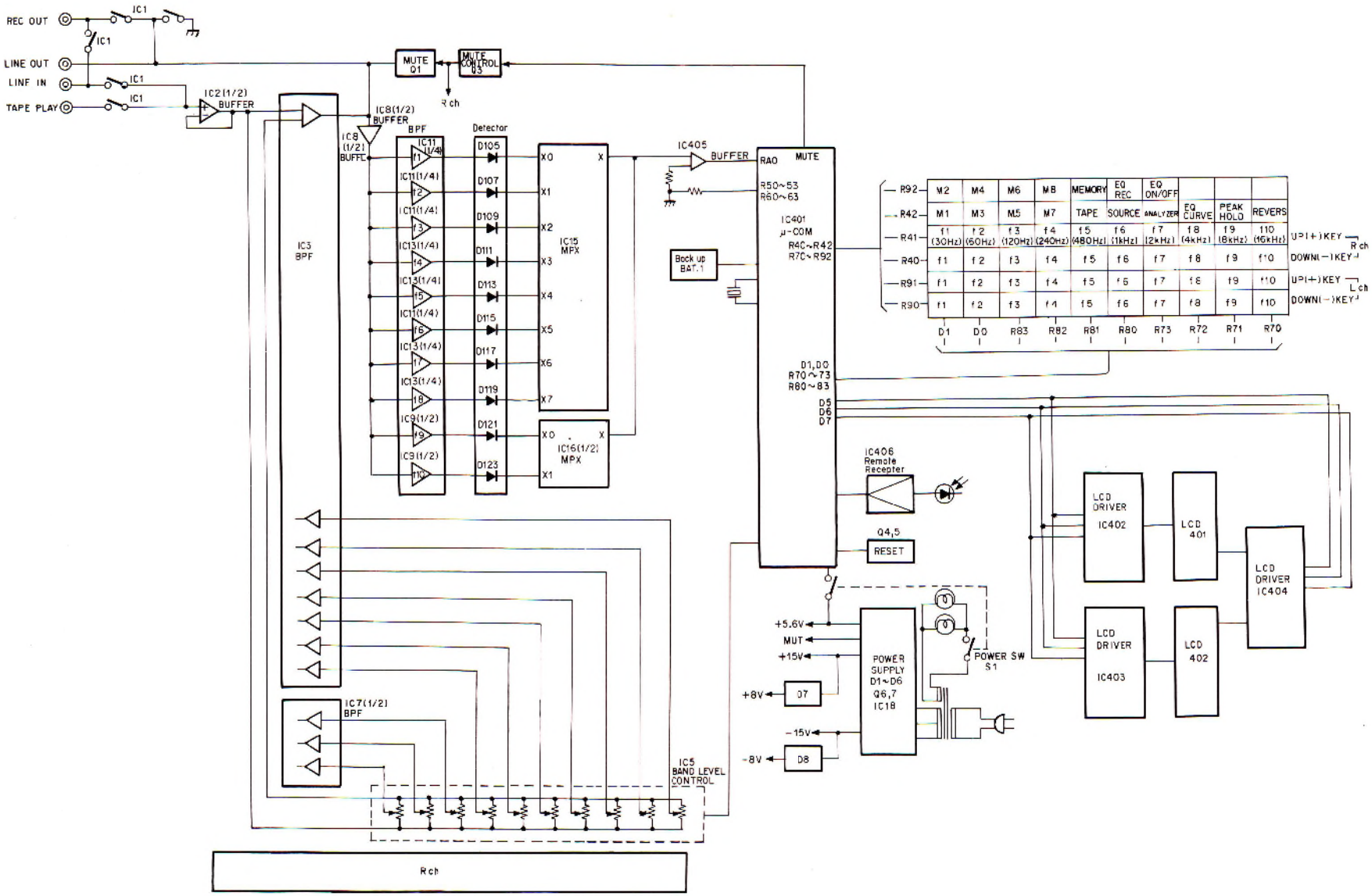
# MEMORY BACK-UP BATTERY MODIFICATION PROCEDURE

1. With the unit unplugged, remove 5 cabinet screws and lift off top cover. Remove 3 screws securing the LINE and TAPE connectors and the AC INLET to the rear panel. Remove 7 screws securing the MAIN CIRCUIT BOARD to the chassis' bottom panel. (NOTE: the 2 printed circuit board GROUND LUGS use shoulder-type machine-thread screws; the other 5 screws are self-tapping.)
2. Lift the MAIN CIRCUIT BOARD for access to its foil side (use care to protect the front panel's top edge). Cut the foil-trace near R-141, just above the "P" in "PSUPK1840" (the PCB identification number) at the junction of R-141 and D-12, and replace "BAT1" with a new Lithium Battery, [illegible] P/N PX600200, as shown below:

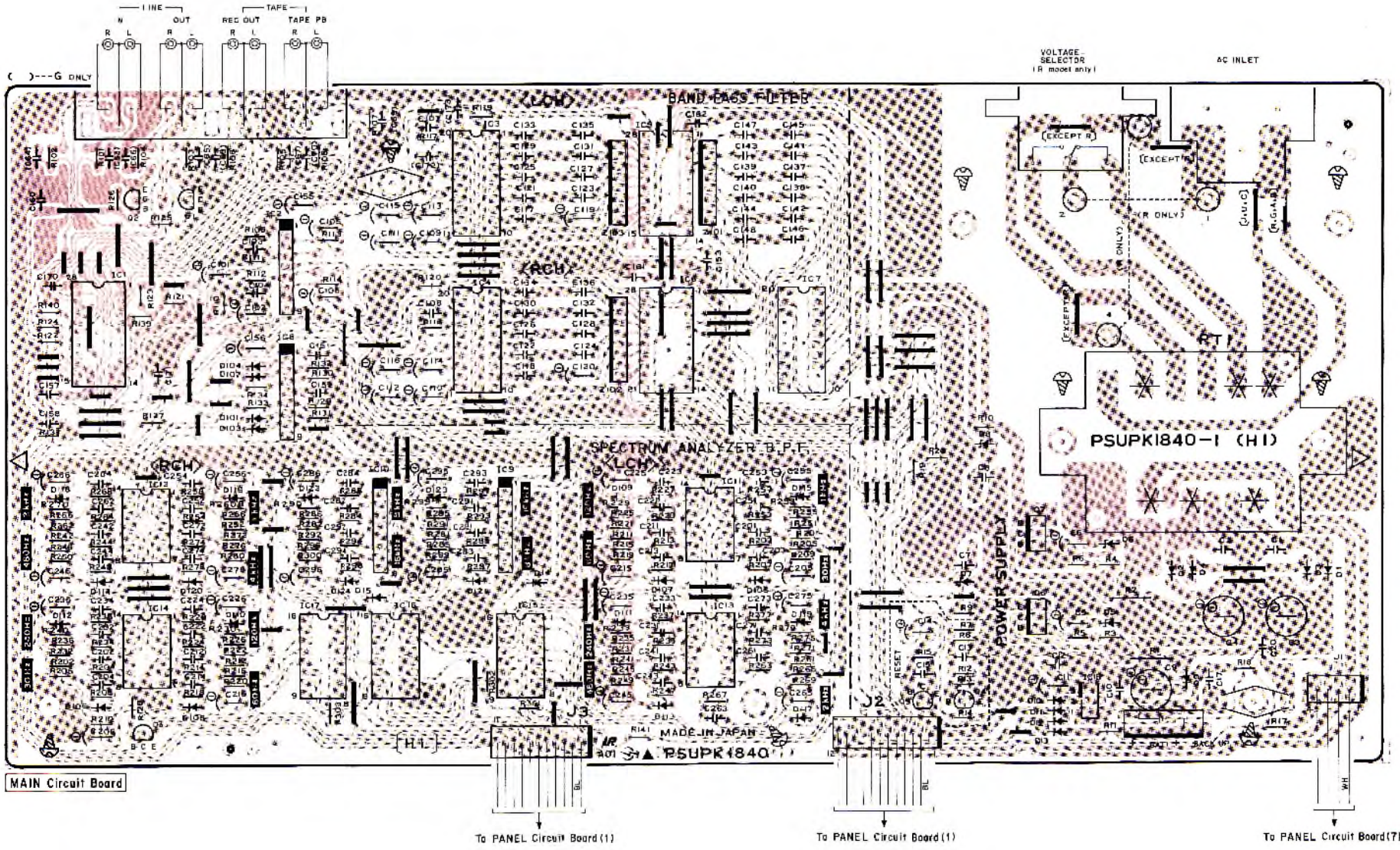



3. Reinstall the MAIN CIRCUIT BOARD by installing the 3 screws which secure the LINE and TAPE connectors and AC INLET to the rear panel, then the shoulder-type machine-thread screws at the 2 printed circuit board GROUNDING LUGS, and the remaining 5 self-tapping screws.
4. Solder a 3 inch, approx. 18 gauge, insulated jumper-wire between R-141 and D-11 (between points "A" and "B" on the above diagram) on the component-side of the MAIN PRINTED CIRCUIT BOARD. Apply a "dab" of silicon glue (Radio Shack part number 64-2314 or equivalent) at the end of the jumper-wire near R-141. Apply another "dab" of silicon glue between BAT1 and C-9 (the 330µ Fd./35V capacitor adjacent to the new Lithium Battery).
5. With the unit still unplugged, use at least a 3 1/2 digit D.V.M. with a minimum of 10Meg ohms input resistance to confirm ...
   a. The voltage-drop across the two ends of R-11 (the 3.3K ohm resistor near BAT1) is approx. 0.01 milli-Volts (equivelant to 0.003µ Amp), and
   b. The voltage measured from either end of R-11 to chassis-ground is approx. 3.2 Volts.
6. Reinstall the top cover, apply AC-mains power and verify normal operation to complete this procedure.

## ■ BLOCK DIAGRAM

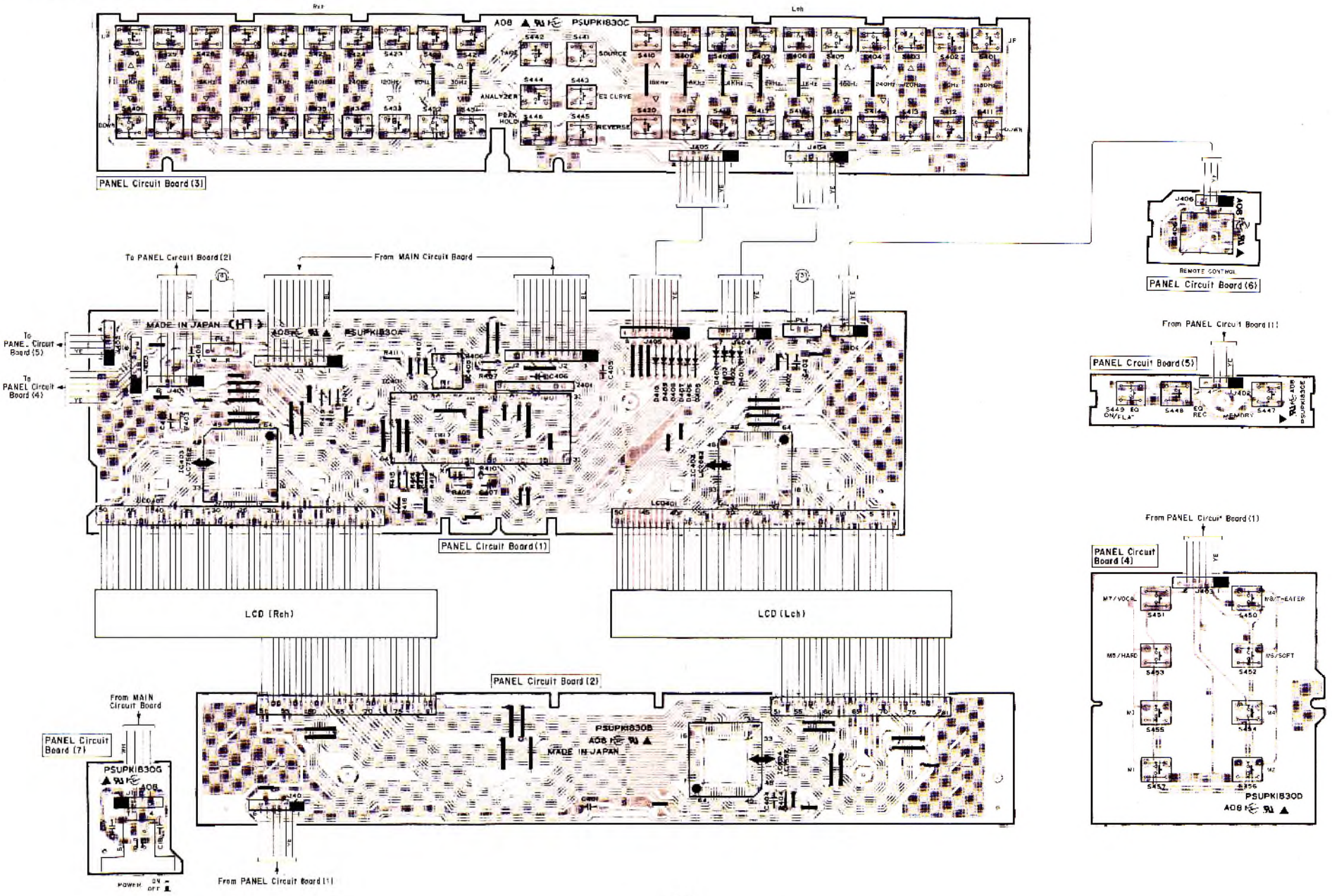


## ■ PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side

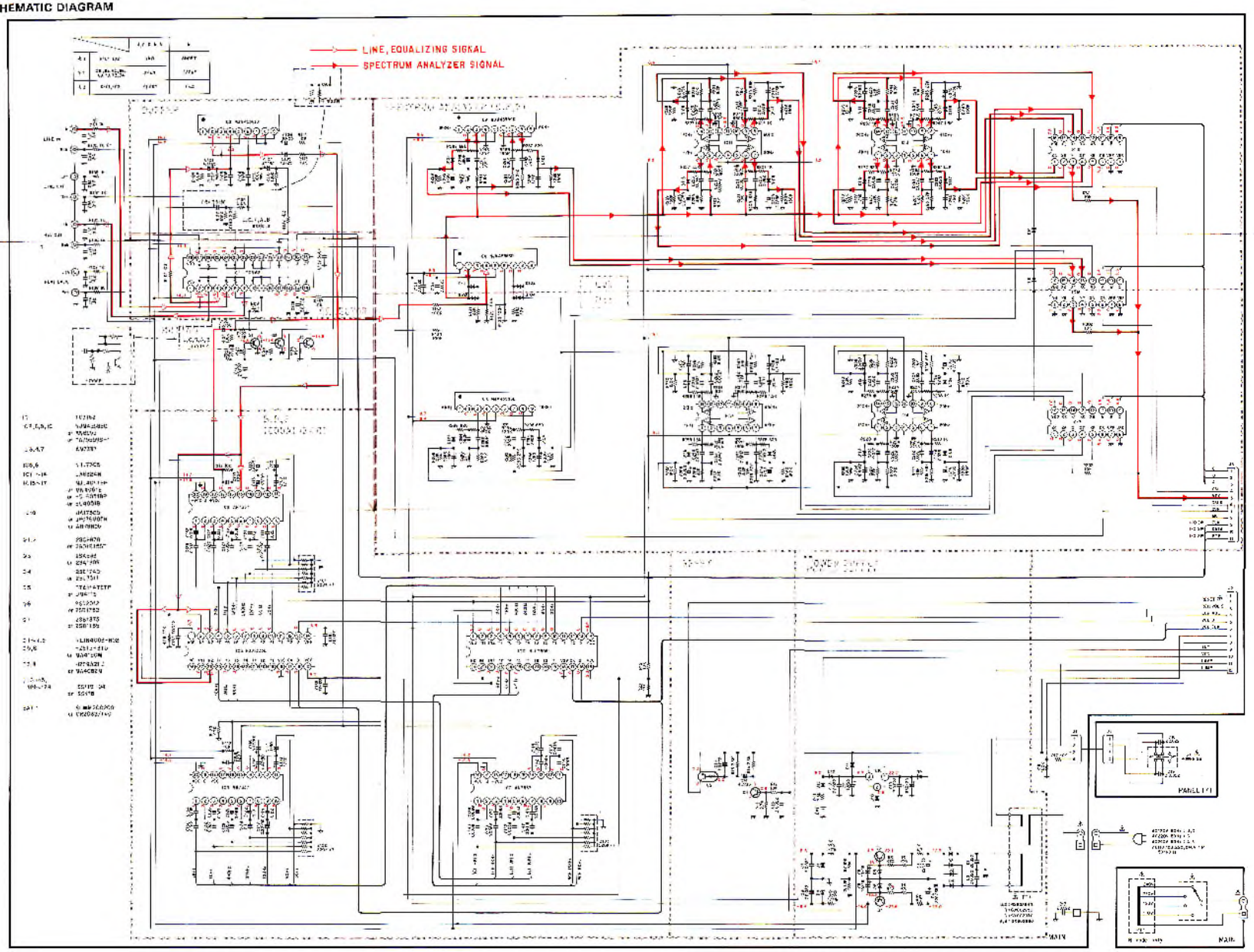


EQ-630

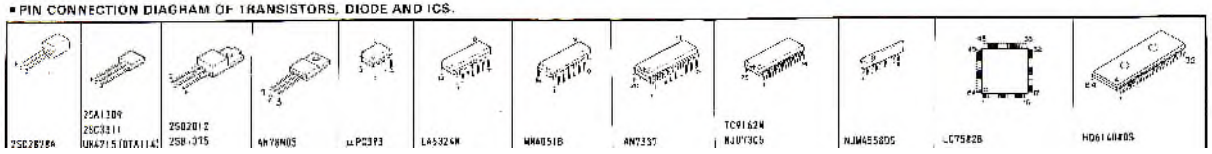
## ■ PRINTED CIRCUIT BOARD (Pattern Side) (Note) 文字面 : Component Side



## ■ SCHEMATIC DIAGRAM




## ■ PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODE AND ICS.




**CAUTION**

- Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
- All voltages are measured with a 10MΩ/V DC electric volt meter.
- Schematic diagram is subject to change without notice.

## ■ SCHEMATIC DIAGRAM