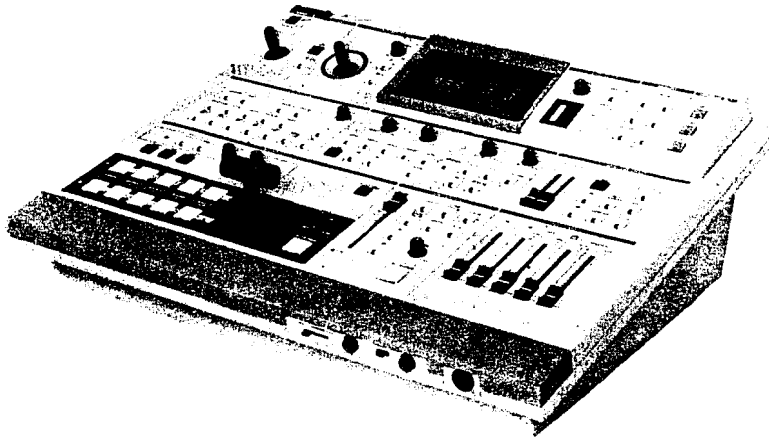


# Service Manual

## Production Mixer WJ-MX50







### SPECIFICATIONS

Source Input :	× 4 (SOURCE 1/2/3/4)
Composite Video Input :	1.0 Vp-p/75 Ohms, PAL signal, BNC × 4
S-Video Input :	Y signal; 1.0 Vp-p/75 Ohms, C signal; 0.3 Vp-p/75 Ohms, Mini DIN 4 connector × 4
Audio Input :	SOURCE 1/2; XLR-type × 2, +4 dBm/600 ohms (Balanced), Left and Right. SOURCE 3/4; Pin-jack × 2, -6 dBs/20 Kohms (Unbalanced), Left and Right.
Auxiliary Audio Input :	× 2 (Aux1/2) -6dBs/20 Kohms, Pin-jack (Unbalanced), Left and Right
Microphone Input :	-60 dBv/600 ohms, unbalanced, tip-ring-sleeve type phone jack × 1
External Camera Input :	1.0 Vp-p/75 ohms, PAL composite signal, BNC × 1 Y signal; 1.0 Vp-p/75 ohms, C signal; 0.3 Vp-p/75 ohms, Mini DIN 4 connector × 1
GPI Input :	Make-contact, BNC × 1
Character (TITLE) Input :	10-pin connector × 1 for optional Character Generator WV-KB12A, WJ-KB15, WJ-KB50.
Program Output :	× 2 (PROGRAM OUT 1/2)
Composite Video Output :	1.0 Vp-p/75 ohms PAL signal, BNC × 2
S-Video Output :	Y signal; 1.0 Vp-p/75 ohms, C signal: 0.3 Vp-p/75 ohms, Mini DIN 4 connector × 2
Audio Output :	PROGRAM OUT 1; XLR-type × 1, +4dBs/47 ohms (Balanced), Left and Right. PROGRAM OUT 2; Pin-jack × 1, -6dBs/47 ohms (Unbalanced), Left and Right.
Preview Output :	1.0 Vp-p/75 ohms, PAL composite signal, BNC × 1.
Black Burst Output :	Sync 0.3 Vp-p/75 ohms, Burst 0.3 Vp-p/75 ohms PAL signal, BNC × 1.
Advance Sync Output :	4 Vp-p/75 ohms, BNC × 2
Advance Reference Output :	Sync 0.3 Vp-p/75 ohms, Burst 0.3 Vp-p/75 ohms, BNC × 2
Headphone Output :	-20 dBv - -80 dBv, 8 ohms unbalanced, tip-ring-sleeve type phone jack × 1.

# Panasonic

Digital Effects :	Nega, Mosaic, Mono, Paint, Still, Strobe, Multi, Trail, A/V Synchro, Frame
Matte Colours :	Colour Bar, White, Yellow, Cyan, Green, Magenta, Red, Blue, Black.
Wipe Patterns :	287 Patterns
Joystick Control :	Positioner, Colour Correction.
Audio Mixer :	A-bus, B-bus, AUX-1, AUX-2, Mic, Master.
Others :	Audio-Follow, Auto-Take, Auto-Fade, Memory, Special Mode.
Video Sampling :	4 : 1 : 1, Y = 14.3 MHz (936 fH), 8-bit component
Frequency Range :	Sync; 15.625 KHz $\pm$ 300 Hz
	SC; 4.433619 MHz $\pm$ 40 Hz
Frequency Responce :	Y/C signal; 4.5 MHz (at -3dB)
	Composite Video Signal; 4.5 MHz (at -3dB)
	Audio; 20 - 20 KHz (at -3 dB)
Gain :	Unity (Video)
S/N (Typical) :	56 dB (S-Video), 50 dB (Composite), 70dB (Audio at 1 KHz)
Differential Gain :	$\pm 5^\circ$ (Composite)
Differential Phase :	$\pm 5\%$ (Composite)
Power Source :	220 - 240V AC 50 Hz
Power Consumption :	Operation mode; Approximately 45W
	Stand-by mode; Approximately 5W
Ambient Operating Temperature :	0 - 40°C
Ambient Operating Humidity :	Less than 90%
Dimensions :	480 (W) $\times$ 164 (H) $\times$ 396 (D) mm
Wight :	6.8 Kg

Weight and dimensions indicated above are approximate.  
Specifications are subject to change without notice.

 <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>CAUTION</b>        RISK OF ELECTRIC SHOCK        DO NOT OPEN     </div>  <p><b>CAUTION:</b>        TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>	 <p>This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.</p>  <p>This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.</p>
--	---

### IMPORTANT SAFETY NOTICE

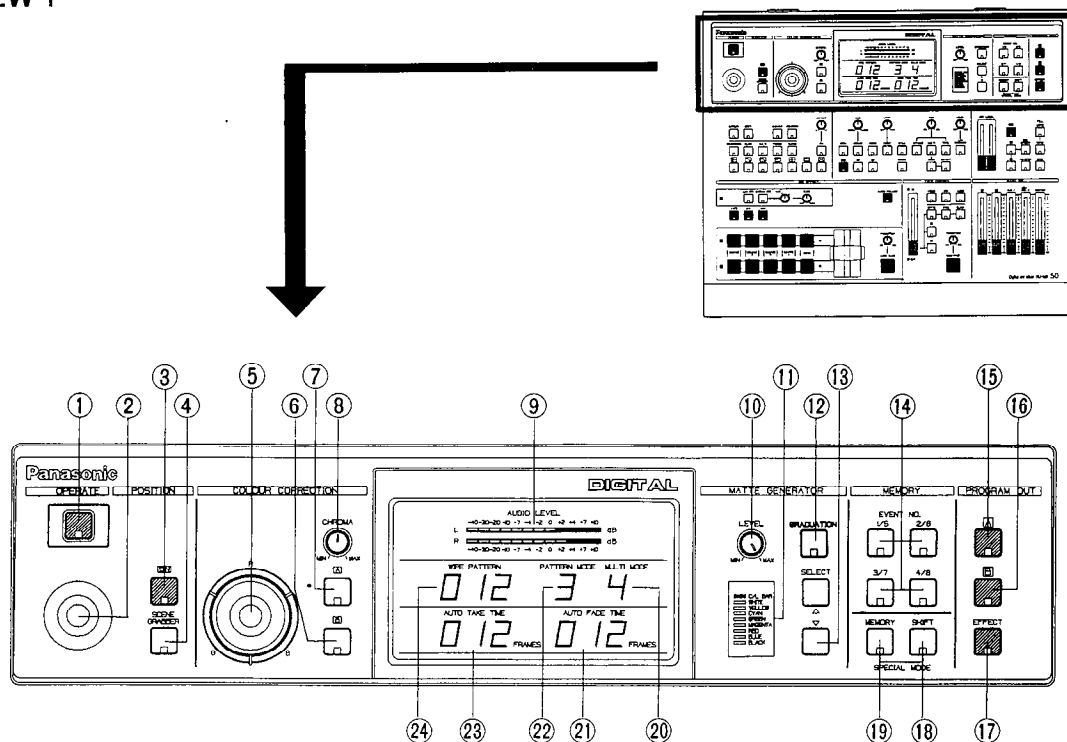
There are special components used in this equipment which are important for safety. These parts are indicated by the "⚠" mark on the schematic diagram and the replacement parts list. It is essential that these critical parts should be replaced with manufacture's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacture.

## CONTENTS

Major Operating Controls and Their Functions .....	3
Adjustment Procedure .....	14
Location of Test Point and Adjusting Controls .....	22
Chip Components .....	23
Wiring Diagram .....	25
Block Diagram	
Meter board .....	26
Power board .....	27
Analog board .....	28
Digital board .....	30
Switch board .....	31
Audio board .....	32
Schematic Diagram	
Analog board .....	33
Digital board .....	37
Audio board .....	38
Meter-1 board .....	41
Switch board .....	42
power board .....	46
Meter-2 board .....	47
Rear board .....	49
Conductor View	
Analog board .....	35
Digital board .....	36
Audio board .....	39
Meter-1 board .....	41
Switch board .....	43
Power board .....	45
Meter-2 board .....	48
Rear board .....	50
Exploded View .....	51
Replacement Parts List .....	52

# MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

## ■ TOP VIEW 1



### 1. Power ON/OFF Button (OPERATE)

Press this button to turn on the power of the unit. The LED on this button lights and the following LEDs light up at the same time. C/L BAR on the Matte Colour Indicator (11), Effect-Out Button (17), One-Way Button (27), Straight Wipe Button (70), Effect ON/OFF Button (59), Effect-A Button (58), Repeat Effect Button (54), DSK-A Button (45), Matte Button (47), Wipe Select Button (74), Source 1 on A-bus Button (102), Source 2 on B-Bus Button (101), Audio Follow ON/OFF Button (79) and Black Fade Button (85). These LED's light up only when the Reset ON/OFF Switch (109) is turned on.

#### Notes :

1. The Main Power Switch (in back) (131) must be on before the Power ON/OFF Button (1) is pressed
2. When the Editing Controller AG-A800 is used with WJ-MX50, the power of AG-A800 should be off first to turn off the power of WJ-MX50. The power of WJ-MX50 can not be turned off by-itself.

### 2. Positioner Joystick

The position of the wipe pattern as selected using the Square Wipe Button (60) can be freely set using this Joystick control.

### 3. Positioner ON/OFF Button (ON)

This button must be pressed to operate the Positioner Joystick (2).

### 4. Scene Grabber ON/OFF Button (SCENE GRABBER)

The scene wiped by the Square Wipe Button (60) will be grabbed by pressing this button. The position of this area can then be changed by operating the Positioner Joystick (2).

### 5. RGB Control

This Joystick Control permits you to balance or change the hue from the images of the Source Video Signal (either A or B) by moving its position. When this Controller is positioned at centre, it generates the original colour of the Source Video Signal.

### 6. Colour - B Button (B)

Colour correction can be made on the B - bus Source Video Signal by pressing this button. When you press it once, the LED starts blinking, the chroma level can be changed by using the Chroma Level Control (8). When you press a second time, the LED is continuously turned on, the hue can be changed by using the RGB Control (5) in addition to the chroma level by using the Chroma Level Control (8).

### 7. Colour - A Button (A)

Colour correction can be made on the A - bus Source Video Signal by pressing this button. When you press it once, the LED starts blinking, the chroma level can be changed by using the Chroma Level Control (8). When you press a second time, the LED is continuously turned on, the hue can be changed by using the RGB Control (5) in addition to the chroma level by using the Chroma Level Control (8).

### 8. Chroma Level Control (CHROMA)

This Control adjusts the colour level of the images from the Source Video Signal. When this Control is set to the centre position, it generates the original colour level of the Source Video Signal.

#### Note :

The noise may be recorded on tape when this control is adjusted to the MAX with excessive colour input signal.



#### 9. Audio Level Indicator (AUDIO LEVEL)

This Indicator indicates the audio output level of the Program Out 1 Audio Output Connector (135) and the Program Out 2 Audio Output Jacks (134).

#### 10. Matte Colour Control (LEVEL)

The colour displayed on the Matte Colour Indicator (11) can be adjusted with this control except C/L BAR.

#### 11. Matte Colour Indicator

The Matte Colour selected by the Matte Colour Selectors (13) is shown by the appropriate LED.

#### 12. Graduation Button (GRADUATION)

When this button is pressed, the Matte colour of the upper portion on the screen is less intense and gradually increases to that of the lower portion of the screen.

#### 13. Matte Colour Selectors (SELECT)

Any one of 9 Matte Colours - Colour Bar, White, Yellow, Cyan, Green, Magenta, Red, Blue and Black - can be selected by repeatedly pressing either of these buttons. When the SELECT ( $\Delta$ ) button is pressed, the colour indicated on the Matte Colour Indicator (11) changes from lower to upper. The Black will be selected after the Colour Bar. When the SELECT ( $\nabla$ ) button is pressed, the reverse procedure takes place.

#### 14. Event Number Buttons (EVENT NO)

These buttons are used to memorize the present status of all functions settings on the unit. Also this button can be used with the Auto Take Button (97) to recall the memorized status. Each button has 2 memories (by using Shift Button (18)). Up to 8 memories are available with these 4 buttons.

##### Note :

Refer to the Shift Button (18) and the Memory Set Button (19) for selection of preset memory settings.

#### 15. Program Out - A Button (A)

When this button is pressed, the A - bus source signals which is given Effect by the DIGITAL EFFECT function, COLOUR CORRECTION function, SCENE GRABBER function, COMPRESSION function or SLIDE function is provided at the Program Output connectors.

##### Note :

If the MATTE on the A - bus is pressed, the A - bus button will begin blinking automatically to show you which button was selected before.

#### 16. Program Out - B Button (B)

When this button is pressed, the B - bus source signals which is given Effect by the DIGITAL EFFECT function, COLOUR CORRECTION function, SCENE GRABBER function, COMPRESSION function or SLIDE function is provided at the Program Output connectors.

##### Note :

If the MATTE on the B - bus is pressed, the B - bus button will begin blinking automatically to show you which button was selected before.

#### 17. Effect - Out Button (EFFECT)

When this button is pressed, the final video signal - whether it is effected or not - will be provided at the Program Output connector.

#### 18. Shift Button (SHIFT)

This button will be used when the Event Number Buttons (14) numbered 5 to 8 are required. However, in case this button is pressed with the Memory Set Button (19) simultaneously, the unit then enters the Special Mode (SPECIAL MODE).

##### Notice :

In the Special Mode, the LED on the Shift Button (18) goes off and the one on the Memory Set Button (19) starts blinking.

#### 19. Memory Set Button (MEMORY)

This button has 2 functions. In order to activate the Event Number Buttons (14) to memorize the current status of the unit, press the Memory Set Button (19) prior to the Event Number Buttons (14). In case this button is pressed with the Shift Button (18) simultaneously (as mentioned previously), the unit enters the Special Mode.

##### Notice :

In Special Mode, the LED on the Shift Button (18) goes off and the one on the Memory Set Button (19) starts blinking.

#### 20. Multi Mode Indicator (MULTI MODE)

The number displayed on this indicator shows the mode of the pattern by pressing the Multi Wipe Button (67). From 0 to 6 will be indicated.

#### 21. Auto Fade Time Indicator (AUTO FADE TIME)

The number on the indicator shows the fading time by picture frame when adjusting the Auto Fade Transition Control (91).

From 0 to 510 will be indicated for every 2 frames.

#### 22. Pattern Mode Indicator (PATTERN MODE)

The number on this indicator shows the pattern mode which is pressed and selected from the Wipe Pattern Select Buttons number (60), (61), (62), (64), (66), (68) or (70).

From 1 to 4 will be indicated.

#### 23. Auto Take Time Indicator (AUTO TAKE TIME)

The number on this indicator shows the Auto Take Time by picture frame when adjusting the Auto Take Transition Control (98).

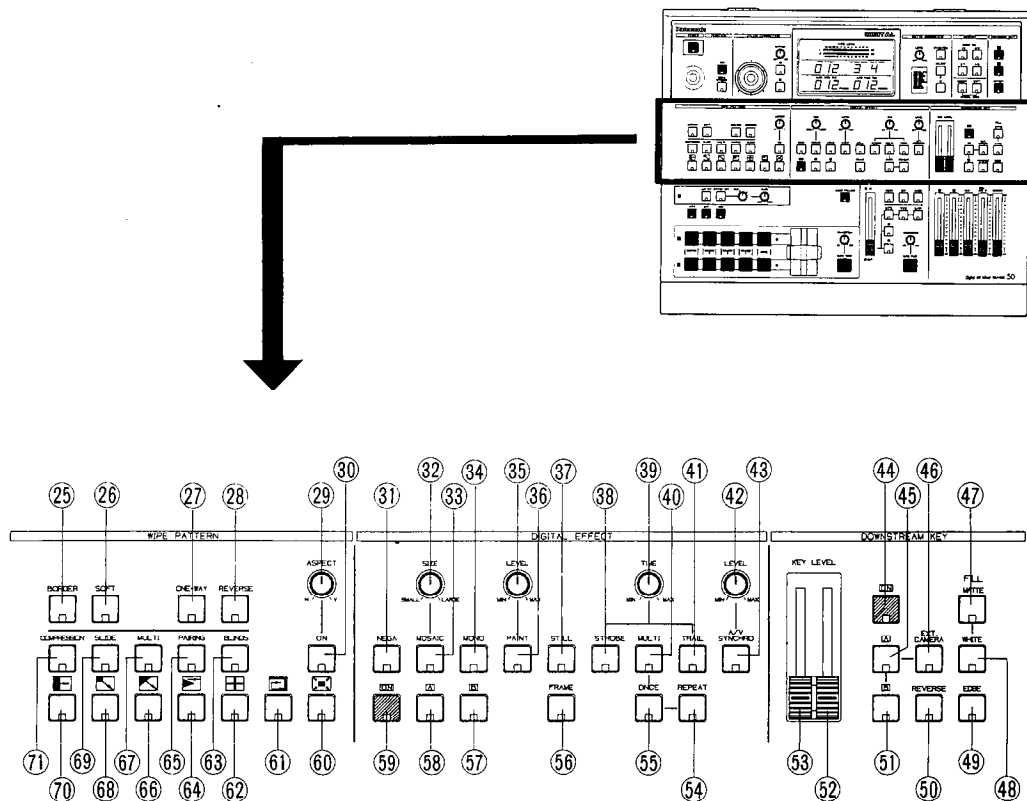
From 0 to 510 will be indicated for every 2 frames.

#### 24. Wipe Pattern Number Indicator (WIPE PATTERN)

The number on this indicator shows the wipe pattern which is generated by the combinations of the Wipe Pattern Select Buttons number (60), (61), (62), (64), (66), (68) or (70), and Modify Buttons number (63), (65), (67), (69) or (71).

Any possible combination from 1 to 255 will be indicated.

## ■ TOP VIEW 2



### 25. Border Button (BORDER)

This button is used for selecting a border wipe edge. Pressing this button once selects a narrow border. Pressing this button a second time selects a wide border. The colour of the border is applied from the complementary colour of selected Matte Colour.

### 26. Soft Button (SOFT)

This button is used for making the faint border wipe edge. Pressing this button once selects a narrow soft border. Pressing this button a second time selects a wide soft border. No colour is available.

### 27. One - Way Button (ONE - WAY)

When this button is pressed, the wiping scene moves one way everytime by changing the Mix/Wipe Lever (99). Without using this function, the wiping scene moves alternately by changing the Mix/Wipe Lever (99).

### 28. Reverse Button (REVERSE)

When this button is pressed, the movement of the wiped scene will be reversed compared without pressing this button.

### 29. Aspect Control (ASPECT)

The aspect ratio, used only when the Square Wipe Button (60) is selected, can be changed by adjusting this control. To use this function, the Aspect ON/OFF Button (30) must be ON.

#### Note :

The black area will be shown along the image on the video monitor when the Compression function is used with it.

### 30. Aspect ON/OFF Button (ON)

In case the Aspect function is required, this button must first be pressed.

### 31. Negative Button (NEGA)

The on-screen image can be transposed to look like a negative of the visual image by pressing this button.

### 32. Mosaic Size Control (SIZE)

The size of the pieces of the mosaic pattern can be adjusted by twisting this control.

### 33. Mosaic Button (MOSAIC)

By adding small squares in mosaic-like patterns a design or blurred image can be created. The size of the mosaic squares can be changed by using the Mosaic Size Control (32).

### 34. Mono Colour Button (MONO)

When this button is pressed, the Source Video Signal becomes a monochrome scene. This function has a priority to the Colour Correction function in operation.

### 35. Paint Control (LEVEL)

The graduation of the paint effect can be changed by adjusting this control.

### 36. Paint Button (PAINT)

The image can be transformed to resemble an oil painting of the video scene by pressing the button.

**37. Still Button (STILL)**

An instant still or frozen image of the video can be obtained by pressing this button.

**38. Strobe Button (STROBE)**

Video frames can be frozen intermittently, to achieve a strobe effect, by pressing this button. The strobe interval can be adjusted by the Effect Interval Timer (39) from approximately 0.03 seconds to 2.1 seconds.

**39. Effect Interval Timer (TIME)**

The time of interval for the Strobe effect, Multi effect and Trail effect can be adjusted by this timer. Also this timer works with the A/V Synchro function. In this case, the A/V Synchro interval applies to the Strobe effect.

**40. Multi Button (MULTI)**

The video image on the monitor TV becomes multiple video images by pressing this button. When you press it first, 4-images are displayed. The second press makes it 9-images and the third press makes it 16-images. The fourth press returns the screen to a single image screen. The trail interval can be changed by the Effect Interval Timer (39) from approximately 0.06 seconds to 2.1 seconds.

**41. Trail Button (TRAIL)**

The compressed video image trails one after another from small to larger and larger video images up to a maximum of 16 images. The start position can be selected by the Positioner Joystick (2) either to start from upper right or upper left. The trail interval can be changed by the Effect Interval Timer (39) from approximately 0.06 seconds to 2.1 seconds.

**42. A/V Synchro Control (LEVEL)**

This control adjusts the trigger sensitivity of the A/V Synchro. When this control is turned to the MAX position, the A/V Synchro will be triggered by (a higher threshold) high level sounds. When this control is turned to the MIN position, the A/V Synchro will be triggered by (a lower threshold) low level sounds.

**43. A/V Synchro Button (A/V SYNCHRO)**

Any combination of the digital effects (Nega, Mosaic, Mono, Paint, Still or Strobe) can be synchronized to pulse with certain levels of accompanying music or sound supplied to the WJ-MX50.

**44. DSK ON/OFF Button (ON)**

This button is pressed to activate the Downstream Key (DSK) effect.

**45. DSK-A Button (A)**

When this button is pressed, the Source Video Signal on the A-Bus will be the Key-Source Signal.

**46. Ext. Camera Button (EXT. CAMERA)**

When this button is pressed, the external camera which is connected to the External Camera Input (121) or (122) can be used as the Key-Source Signal.

**47. Matte Button (MATTE)**

When this button is pressed, the Matte Colour generated in the MATTE GENERATOR will be used as a Key-Fill Signal which is to be overlaid on the Key-Source Signal.

**48. White Button (WHITE)**

When this button is pressed, the white colour will be used as a Key-Fill Signal which is to be overlaid on the Key-Source Signal.

**49. Edge Button (EDGE)**

This button is used to edge on the Downstream Keyed images. Two types (shadow, border) and five kinds of edges are available by pressing this button repeatedly.

**Notes :**

1. When the Downstream Keyed images are white, you can colour the edge to any one of 9 colours, solid or graded by pressing the Graduation Button (12) and the Matte Colour Selector (13).
2. When the Matte Coloured Downstream Keyed images are used, the edge colour is always black.

**50. Key Reverse Button (REVERSE)**

The polarity of the Downstreamed Keyed Images will be reversed by pressing this button.

**51. DSK-B Button (B)**

When this button is pressed, the Source Video Signal on the B-Bus will be the Key-Source Signal.

**52. High Level Key Slide Control (KEY LEVEL)**

This slide control is used to adjust the sensitivity of the luminance level of the Key signal for higher level.

**53. Low Level Key Slide Control (KEY LEVEL)**

This slide control is used to adjust the sensitivity of the luminance level of the Key signal for lower level.

**54. Repeat Effect Button (REPEAT)**

Each of the multiple video images will be scanned one after another repeatedly by pressing this button.

**55. Once Only Button (ONCE)**

Each of the multiple video images will be scanned one time only by pressing this button. It will be frozen after that.

**56. Frame Button (FRAME)**

When this button is pressed the Digital Effected Image is reproduced as a frame video image. This feature is applied to Still, Strobe, Multi and Trail functions. And this button is used to remove the image vibration.

**Note :**

The difference between on and off of this button.

FRAME BUTTON	Output Signal	Resolution
ON	2-field	Standard
OFF	1-field	Reduced

**57. Effect-B Button (B)**

The Source Video Signal on B-bus will receive the Digital Effect by pressing this button (if Effect ON/OFF Button (59) is first pressed).

**58. Effect A-Button (A)**

The Source Video Signal on A-bus will receive the Digital Effect by pressing this button (if Effect ON/OFF Button (59) is first pressed).

**59. Effect ON/OFF Button (ON)**

The selected Digital Effect function becomes operative by pressing this button.

**60. Square Wipe Button**

Four wipe patterns can be selected by pressing this button repeatedly . . . circle, oval, square and diamond. The Aspect Control (29) or the Positioner Joystick (2) can be used with these patterns.

**61. Mosaic Wipe Button**

The wiping becomes a mosaic-like pattern by pressing this button. Four kinds of pattern are available by repeatedly pressing this button.

**62. Split Wipe Button**

The video scene is split from the centre of the image by pressing this button. Three kinds of patterns are available by repeatedly pressing this button.

**63. Blinds Wipe Button (BLINDS)**

The video scene is wiped in a blinds pattern. Several wipe combinations using buttons (62), (64), (66), (68) and (70) are operative with this button.

**64. Triangle Wipe Button**

The video scene is wiped with a triangle shape. Four patterns are available.

**65. Pairing Wipe Button (PAIRING)**

A paired wipe scene can be obtained by pressing this button. The wipe buttons of (64), (66), (68) and (70) are operative with this button.

**66. Diagonal Wipe Button**

The video scene is wiped with a diagonal shape. Four patterns are available.

**67. Multi Wipe Button (MULTI)**

The wiped pattern can be multiplied by pressing this button repeatedly. The effect of the multiplication depends on the wiped pattern.

**68. Corner Wipe Button**

The video scene is wiped with a square shape from the corner of the monitor screen. Four kinds of patterns are available.

**69. Slide Button (SLIDE)**

The wiped scene slides into the monitor screen by pressing this button once. Both wiped scenes slide in and out by pressing this button a second time.

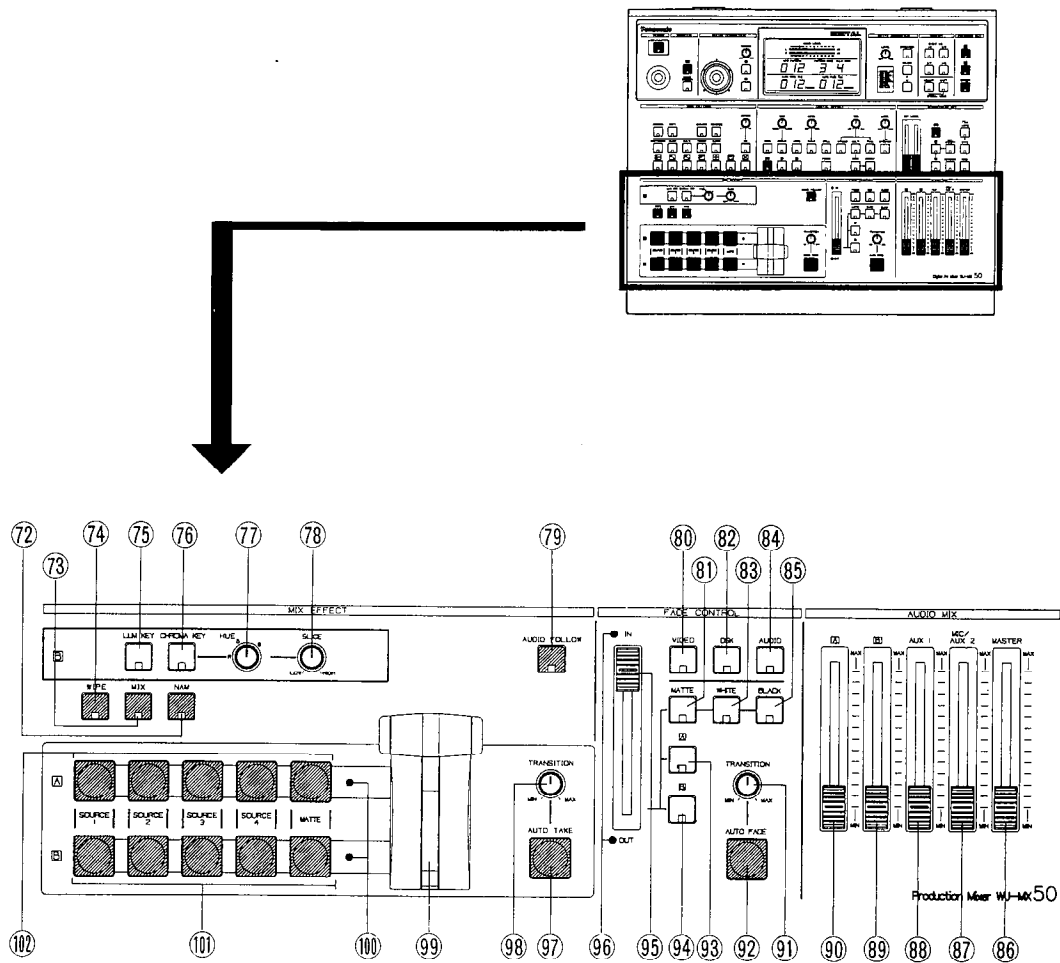
**70. Straight Wipe Button**

The video scene is wiped with a straight line. Four patterns are available.

**71. Compression Button (COMPRESSION)**

The compressed video scene is wiped into the monitor screen by pressing this button once. The compressed video scenes are wiped in and out of the monitor screen by pressing this button a second time.

# ■ TOP VIEW 3



Production Mixer VWJ-MX 50

## 72. NAM Select Button (NAM)

NAM (Non Additive Mix) effect is obtained by pressing this button and the Mix/Wipe Lever (99) is to be positioned at centre. The darker area on the B-bus image and the A-bus image are replaced at relative levels by the lighter areas of each other, i.e. the stronger (lighter) images from either input replace the weaker (darker) ones.

## 73. Mix Select Button (MIX)

This button is pressed to obtain a Mix Effect between the A-bus Source Video Signal and the B - bus Source Video Signal.

## 74. Wipe Select Button (WIPE)

This button is pressed to obtain a Wipe effect between the A-bus Source Video Signal and the B-bus Source Video Signal using the settings of the Wipe Pattern Select Buttons.

## 75. Luminance Key Select Button (LUM KEY)

The Luminance Key effect is obtained by pressing this button and the adjustment of the Slice Control (78). The B - bus signal must be the key signal.

## 76. Chroma Key Select Button (CHROMA KEY)

The Chroma Key effect is obtained by pressing this button and the adjustment of the Hue Control (77) and Slice Control (78). The B-bus signal must be the Key signal.

## 77. Hue Control (HUE)

This control is used to adjust the Hue of the Chroma Key effect.

## 78. Slice Control (SLICE)

This control is used to adjust the slice level of the luminance signal for the Luminance Key effect or the chroma signal for the Chroma Key effect.

## 79. Audio Follow Button (AUDIO FOLLOW)

When this button is pressed, the audio on the A-bus and B-bus can be changed according to the relative percentage position of the Mix/Wipe Lever (99).

## 80. Video Fade Button (VIDEO)

When this button is pressed, the Wiped or Mixed video signal will fade-in or fade-out by using the Fade Control (95).

**81. Matte Fade Button (MATTE)**

The video fade signal is faded out to the selected Matte Colour by pressing this button.

**82. DSK Fade Button (DSK)**

When this button is pressed, the Downstream Keyed signal will fade-in or fade-out by using the Fade Control (95).

**83. White Fade Button (WHITE)**

The video fade signal is faded out to White by pressing this button.

**84. Audio Fade Button (AUDIO)**

When this button is pressed, the audio will fade-in or fade-out by using the Fade Control (95).

**85. Black Fade Button (BLACK)**

The video fade signal is faded out to Black by pressing this button.

**86. Master Audio Fader (MASTER)**

The total audio level of the mixed audio signals is adjusted by sliding this fader.

**87. Mic/Aux-2 Audio Fader (MIC/AUX2)**

The audio level connected to the Microphone Jack (106) or the Auxiliary Audio Input-2 Jack (136) can be adjusted by sliding this fader. Select the Mic or Aux-2 audio signal by the Mic/Aux-2 Switch.(105).

**88. Aux-1 Audio Fader (AUX1)**

The audio level connected to the Auxiliary Audio Input-1 Jack (137) can be adjusted by sliding this fader.

**89. B-bus Audio fader (B)**

The audio level from the B-bus source inputs can be adjusted by sliding this fader.

**90. A-bus Audio Fader (A)**

The audio level from the A-bus source inputs can be adjusted by sliding this fader.

**91. Auto Fade Transition Control (TRANSITION)**

This control adjusts the automatic fading time from 0 to 510 frames for every 2 frames. This amount is then displayed on the "Auto Fade Time Indicator" (21).

**92. Auto Fade Button (AUTO FADE)**

When this button is pressed, the automatic fade sequence for the selected input(s) begins, with the time set by the Auto Fade Transition Control (91). This button remains lit during Auto-fading.

**93. A-bus Fade Button (A)**

The video fade signal is faded out to the A-bus video signal by pressing this button.

**94. B-bus Fade Button (B)**

The video fade signal is faded out to the B-bus video signal by pressing this button.

**95. Fade Control**

The fade-in and fade-out can be manually controlled by using this control.

**96. Fade LED (IN/OUT)**

When the IN (OUT) LED is continuously turned on, the fade is In (Out) situation. When the IN (OUT) LED is blinking, the fade-in (fade-out) is currently incomplete.

**97. Auto Take Button (AUTO TAKE)**

The Auto Take effect - Automatic Wipe/Mix/NAM - can be executed by pressing this button. This button lights during the Auto-Take interval.

**98. Auto Take Transition Control (TRANSITION)**

The Auto Take interval time can be adjusted by this control from 0 to 510 frames for every 2 frames.

**99. Mix/Wipe Lever**

In the wipe mode, manually moving this lever between the A-bus and B-bus will increase the relative portion of each bus signal, according to the option selected. In the mix mode, the audio/video are together switched between A-bus and B-bus.

**100. Mix/Wipe LED**

When the A-bus (or B-bus) LED is continuously turned on, the Wipe/Mix/NAM is A-bus (or B-bus) situation. When the A-bus (or B-bus) LED is blinking, the Wipe/Mix/NAM effect is only partially completed on the A-bus (or B-bus) side.

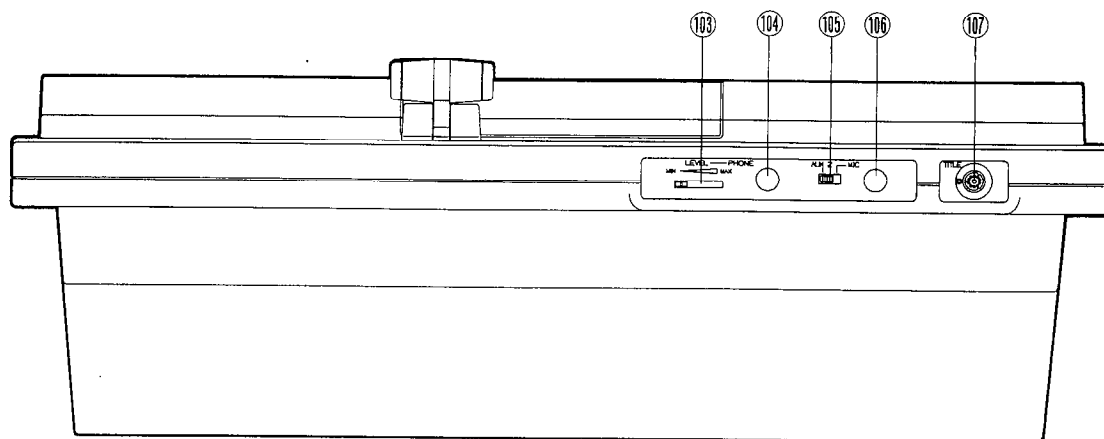
**101. B-bus Buttons (B)**

These buttons are used to select the desired audio/video signals allocated to the B-bus input. The Source 1/2/3/4 corresponds to the Source 1/2/3/4 audio/video inputs on the rear panel of the instrument.

**102. A-bus Buttons (A)**

These buttons are used to select the desired audio/video signals allocated to the A-bus input. The Source 1/2/3/4 corresponds to the Source 1/2/3/4 audio/video inputs on the rear panel of the instrument.

## ■ FRONT VIEW



### 103. Headphone Level Control (LEVEL)

The audio level of the headphone can be adjusted with this control.

### 104. Headphone Jack (PHONES)

Optional headphone can be connected to this jack.

### 105. Mic/Aux-2 Switch (AUX 2/MIC)

When the Mic/Aux-2 Audio Fader (87) is desired, select either Mic or Aux-2 with this switch.

### 106. Microphone Jack (MIC)

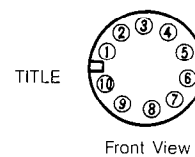
Optional microphone can be connected to this jack.

### 107. Title Input Connector (TITLE)

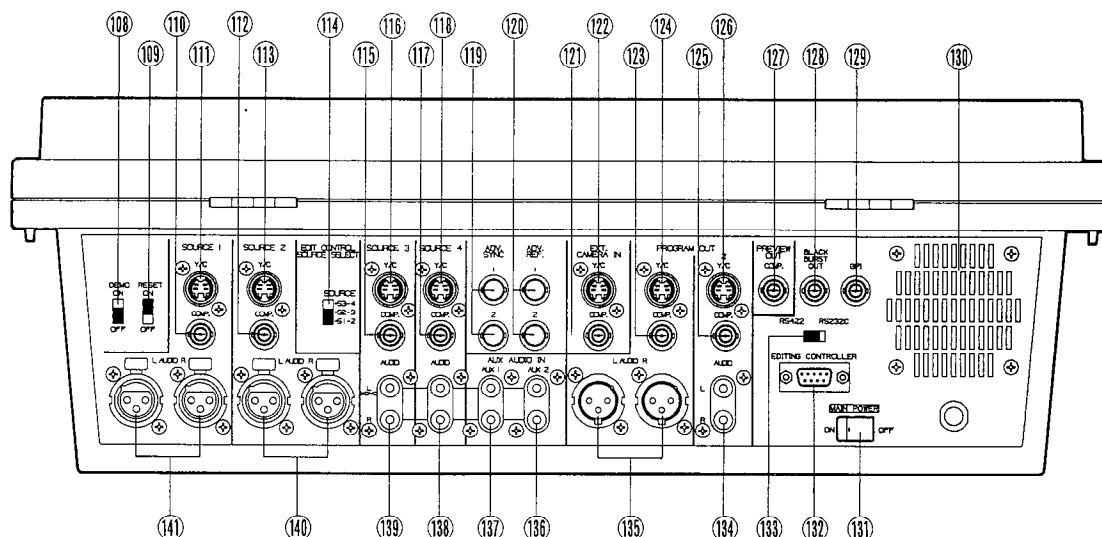
This connector is used to connect the optional Character Generator WJ-KB50 (recommended).

The pin numbers are stated below.

- (1) : Character IN
- (2) : Not used
- (3) : Ground
- (4) : Not used
- (5) : Sync out
- (6) : Not used
- (7) : Ground
- (8) : +9V OUT
- (9) : Ground
- (10) : ID



## ■ REAR VIEW



### 108. Demo ON/OFF Switch (DEMO ON/OFF)

When this switch is in the ON position, a preprogrammed mixer features demonstration takes place.

### 109. Reset ON/OFF Switch (RESET ON/OFF)

In case the power of this unit is turned on while this switch is in the ON position, the LED's on the panel light up as the factory preset. In case the power of this unit is turned on while this switch is in the OFF position, the LED's on the panel light up returning to how they were.

### 110. Source1 COMP. Input Connector (SOURCE1/COMP.)

This connector accepts a 1.0 Vp-p/75 ohms composite video signal.

### 111. Source1 Y/C Input Connector (SOURCE1-Y/C)

This connector accepts the S-Video signal.

#### Note:

This input has a priority over that of the COMP Connector in the Source 1. If the S-Video signal and the composite signal are both supplied to the Source1 at the same time, only the S-Video signal is used as a Source1 Video signal.

### 112. Source 2 COMP. Input Connector (SOURCE2/COMP.)

This connector accepts a 1.0 Vp-p/75 ohms composite video signal.

### 113. Source 2 Y/C Input Connector (SOURCE2-Y/C)

This connector accepts the S-Video signal.

#### Note:

This input has a priority over that of the COMP. Connector in the Source 2. If the S-Video signal and the composite signal are both supplied to the Source 2 at the same time, only the S-Video signal is used as a Source 2 Video signal.

### 114. Source Selection Switch (EDIT CONTROL SOURCE SELECT, SOURCE)

This switch is used to choose between the Source signals for the Editing Controller AG-A800. The relation between this switch and the source selection switches (P1, P2, AUX) on the AG-A800 is as follows.

WJ-MX50 SOURCE	AG-A800		
	P1	P2	AUX
S1-2	Source 1	Source 2	Source 3
S2-3	Source 2	Source 3	Source 4
S3-4	Source 3	Source 4	Source 1

#### Example :

If this switch is in the S1-2 position, Source1 is selected when P1 button is pressed.



- 115. Source 3 COMP. Input Connector (SOURCE3/COMP.)**  
This connector accepts a 1.0 Vp-p/75 ohms composite video signal.
- 116. Source 3 Y/C Input Connector (SOURCE4-Y/C)**  
This connector accepts the S-Video signal.  
**Note:**  
This input has a priority to that of COMP. Connector in the Source 3. If the S-Video signal and the composite signal are both supplied to the Source 3 at the same time, only the S-Video signal is used as a Source 3 Video signal.
- 117. Source 4 COMP. Input Connector (SOURCE4/COMP.)**  
This connector accepts a 1.0 Vp-p/75 ohms composite video signal.
- 118. Source 4 Y/C Input Connector (SOURCE3-Y/C)**  
This connector accepts the S-Video signal.  
**Note:**  
This input has a priority to that of COMP. Connector in the Source 4. If the S-Video signal and the composite signal are both supplied to the Source 4 at the same time, only the S-Video signal is used as a Source 4 Video signal.
- 119. Advance Sync Output Connectors (ADV SYNC)**  
In the A/B Roll Editing System, the Advance Sync signal from this connector should be supplied to the playback VTR's which do not have the Time Base Corrector (T.B.C.) inside.  
**Note:**  
The enough editing accuracy may not be obtained without this signal. This signal is necessary for the Compression function and Trail function when it is recorded on the VTR.
- 120. Advance Reference Output Connectors (ADV REF)**  
In the A/B Roll Editing System, the Advance Reference Signal from this connector should be supplied to the playback VTR's which have the Time Base Corrector (T.B.C.) inside (or AUX video source).  
**Note:**  
The enough editing accuracy may not be obtained without this signal. This signal is necessary for the Compression function and Trail function when it is recorded on the VTR.
- 121. External COMP. Input Connector (EXT CAMERA IN/COMP.)**  
The external camera to be used as a Key Source is connected to this connector when the camera has the composite video signal.
- 122. External Y/C Input Connector (EXT CAMERA IN/Y/C)**  
The external camera to be used as a Key Source is connected to this connector when the camera has a S-Video Signal.
- 123. Program Out-1 COMP. Output Connector (PROGRAM OUT 1/COMP.)**  
The Program Output Signal-1 of the composite video signal is provided via this connector.
- 124. Program Out-1 Y/C Output Connector (PROGRAM OUT 1/Y/C)**  
The Program Output Signal-1 of the S-Video signal is provided via this connector.
- 125. Program Out-2 COMP. Output Connector (PROGRAM OUT 2/COMP.)**  
The Program Output Signal-2 of the composite video signal is provided via this connector.
- 126. Program Out-2 Y/C Output Connector (PROGRAM OUT 2/Y/C)**  
The Program Output Signal-2 of the S-Video signal is provided via this connector.
- 127. Preview Output Connector (PREVIEW OUT, COMP.)**  
The effected video of the composite video signal is obtained at this connector regardless of the selection of the Program Out Buttons (15), (16), (17).
- 128. Black Burst Output Connector (BLACK BURST OUT)**  
The Black Burst Signal for use with system synchronization is provided via this connector to the Editing Controller.
- 129. GPI Input Connector (GPI)**  
In the A/B Roll Editing System, the GPI signal (General Purpose Interface) may be used in order to make an interface between the WJ-MX50 and the Editing Controller.
- 130. Cooling Fan**
- 131. Main Power Switch (MAIN POWER)**  
The unit becomes stand-by mode by turning on this switch. Unless this switch is turned on, the unit will not be on even if the (front panel) Power ON/OFF Button (1) is pressed.  
**Note :**  
The unit becomes on without pressing Power ON/OFF Switch (1) by turning Main Power Switch (131) on if the Reset ON/OFF Switch (109) had been set to the OFF position. This takes place leaving the Main Power Switch (131) off for more than a few days.

**132. Editing Control Connector  
(EDITING CONTROLLER)**

This connector is used for connecting with the Editing Controller AG-A800 or the Modem Unit.

**133. RS422/RS232C Selection Switch  
(RS422/RS232C)**

When using an external product such as the Editing Controller AG-A800 or the Modem Unit, this switch is used to make the selection. In the case of the Editing

**134. Program Out-2 Audio Output Jacks  
(PROGRAM OUT 2/AUDIO, L/R)**

The audio output signals of R-channel and L-channel on the Program Output 2 are provided via these jacks.

**135. Program Out-1 Audio Output Connectors  
(PROGRAM OUT 1/AUDIO L/R)**

The audio output signals of R-channel and L-channel on the Program Output1 are provided via these XLR-connectors.

**136. Auxiliary Audio Input-2 Jacks  
(AUX AUDIO IN, AUX2)**

The auxiliary audio input 2 signal can be inputted via these jacks. When the audio is supplied to the L-channel, this audio is supplied to the R-channel (mono-mode) internally. When the audio is also supplied to the R-channel, this audio is used for the R-channel only.

**137. Auxiliary Audio Input-1 Jacks  
(AUX AUDIO IN, AUX1)**

The auxiliary audio input 1 signal can be inputted via these jacks. When the audio is supplied to the L-channel, this audio is supplied to the R-channel (mono-mode) internally. When the audio is also supplied to the R-channel, this audio is used for the R-channel only.

**138. Source 4 Audio Input Jacks  
(SOURCE 4/AUDIO L/R)**

Source 4 Audio Input signal can be supplied via these jacks. When the audio is supplied to the L-channel, this audio is supplied to the R-channel (mono-mode) internally. When the audio is also supplied to the R-channel, this audio is used for the R-channel only.

**139. Source 3 Audio Input Jacks  
(SOURCE 3/AUDIO IN, AUX1)**

Source 3 Audio Input signal can be supplied via these jacks. When the audio is supplied to the L-channel, this audio is also supplied to the R-channel (mono-mode) internally. When the audio is also supplied to the R-channel, this audio is used for the R-channel only.

**140. Source 2 Audio Input Connectors  
(SOURCE 2/AUDIO L/R)**

The Source 2 Audio Input Signal can be supplied via these XLR-connectors.

**141. Source 1 Audio Input Connectors  
(SOURCE 1/AUDIO L/R)**

The Source1 Audio Input Signal can be supplied via these XLR-connectors.

# ADJUSTMENT PROCEDURE

## 1. Test Equipment Required

The following test equipments are required for adjustment.

- Oscilloscope (50 MHz band width, dual trace, delayed with three probes)
- Vector scope (Tektronix 1751 or equivalent)
- Frequency counter
- Waveform monitor
- Under scanned color video monitor
- Digital voltmeter
- Y/C Test Signal Generator
- SC-H Meter
- Audio signal generator
- Audio level meter

## 2. Disassembling Procedure for Adjustment

1. Remove 14 case screws.

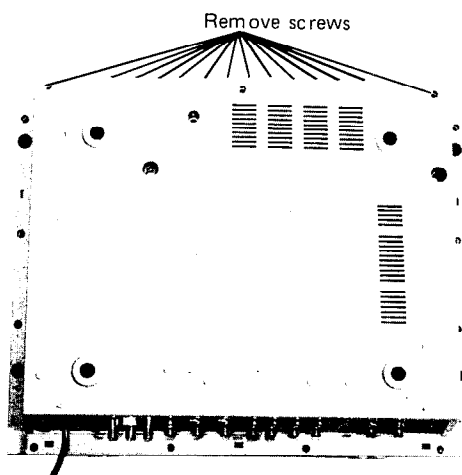


Fig 2-1

2. Open the front panel and secure it using arm.

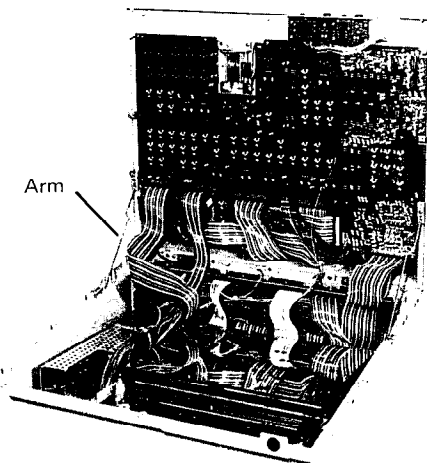


Fig. 2-2

3. Remove 2 screws fixing the PCB and remove 4 screws fixing the shield case.

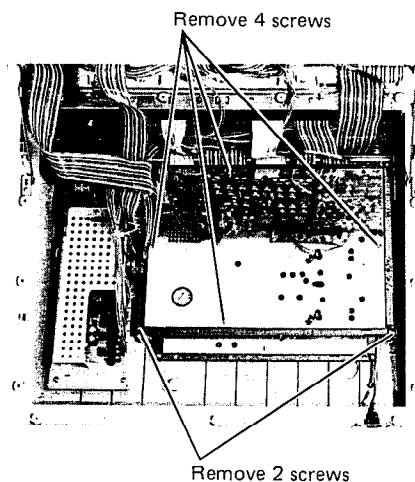


Fig 2-3

4. Stand up the PCB and hook the hinges to the metal angles. Remove the shield case using screw driver.

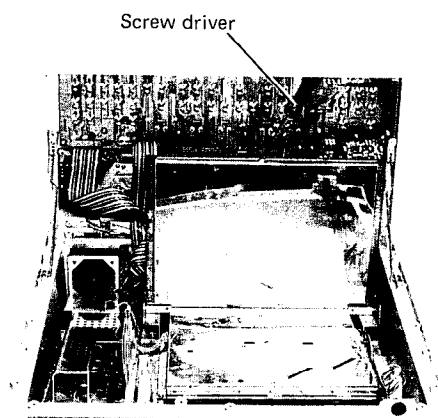


Fig 2-4

5. Remove 2 screws fixing PCB and remove 6 screws fixing the shield case.

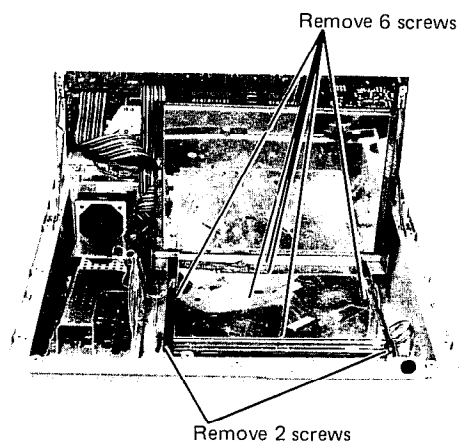


Fig 2-5

6. Slide the PCB to the front and stand up the PCB to hook the hinges to the metal angles. Remove the shield case using screw driver.

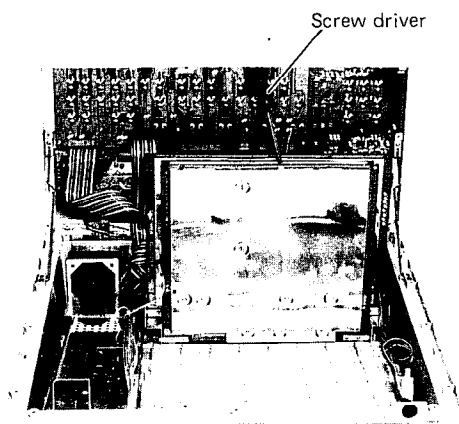
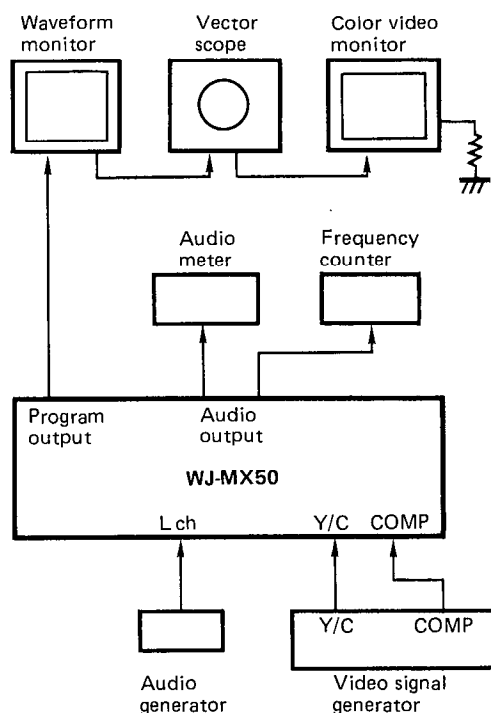


Fig 2-6

### 3. Adjustment Procedure



#### 3-1 5V Adjustment

Test point : TP25      Analog board  
Adjust : VR1      Power board

- Connect the digital voltmeter to TP25.
- Adjust VR1 to obtain the voltage of  $5 \pm 0.02V$ .

#### 3-2 FSC Adjustment

Test point : TP8      Digital board  
Adjust : VR1      Digital board

- Connect the frequency counter to TP8.
- Adjust VR1 to obtain the frequency of  $4.433639 \text{ MHz} \pm 5\text{Hz}$ .

Note : 1. This adjustment should be made after 10 min. warm up of the product.  
2. The response of frequency changing will be slow.

#### 3-3 READ VCO Adjustment

Test point : TP3      Digital board  
Adjust : L24      Digital board

- Connect the digital voltmeter to TP3.
- Adjust L24 to obtain the voltage of  $2.1 \pm 0.1V$ .

#### 3-4. Ach VCO Adjustment

Test point : TP7      Digital board  
Adjust : L17      Digital board

- Supply the color bar signal with the Y/C components to the source input of WJ-MX50 and select the Ach input.
- Connect the digital voltmeter to TP7.
- Adjust L17 to obtain the voltage of  $2.1 \pm 0.1V$ .

#### 3-5. Bch VCO Adjustment

Test point : TP6      Digital board  
Adjust : L12      Digital board

- Supply the color bar signal with the Y/C components to the source input of WJ-MX50 and select the Bch input.
- Connect the digital voltmeter to TP6.
- Adjust L12 to obtain the voltage of  $2.1 \pm 0.1V$ .

#### 3-6. Program Y gain Adjustment

Test point : Y/C Program Output      Rear Panel  
Adjust : VR26      Analog board

- Output the internal color bar signal to the Y/C Program Output.
- Adjust VR26 so that the white level becomes  $100 \pm 2 \text{ IRE}$ .

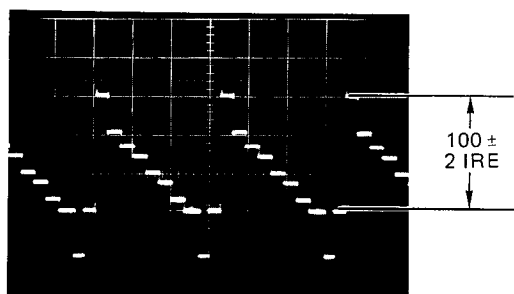


Fig-3-1

### 3-7. Program C Gain Adjustment

Test point : Y/C Program Output      Rear Panel  
Adjust : VR27      Analog board

- Output the internal color bar signal to the Y/C Program Output.
- Adjust VR27 so that the burst level becomes 0.3 Vp-p.

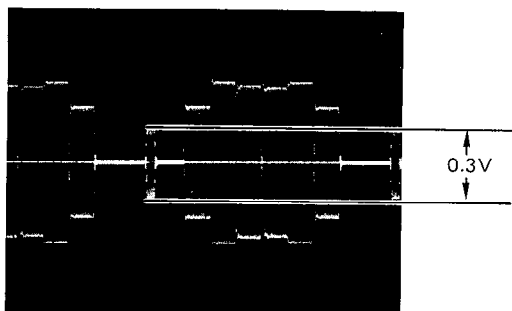


Fig-3-2

### 3-8. Program COMP Gain Adjustment

Test point : COMP. Program Output      Rear Panel  
Adjust : VR39      Analog board

- Output the internal color bar signal to the COMP. Program Output.
- Adjust VR39 so that the white level becomes  $100 \pm 2$  IRE.

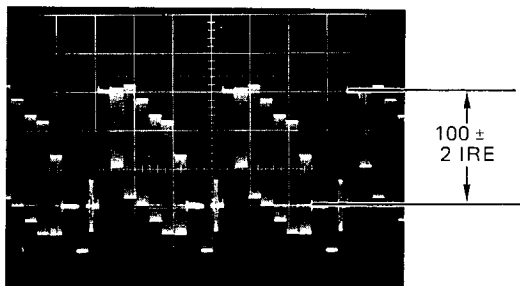


Fig-3-3

### 3-9. Preview Y Gain Adjustment

Test point : Y/C Preview Output      Rear Panel  
Adjust : VR28      Analog board

- Output the internal color bar to the Y/C Preview Output.
- Adjust VR28 so that the white level becomes  $100 \pm 2$  IRE.

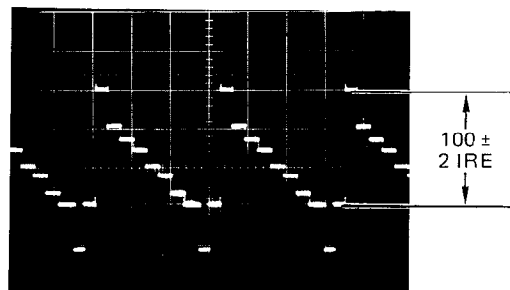


Fig-3-4

### 3-10. Preview C Gain Adjustment

Test point : Y/C Preview Output      Rear Panel  
Adjust : VR29      Analog board

- Output the internal color bar to the Y/C Preview Output.
- Adjust VR29 so that the burst level becomes 0.3 Vp-p.

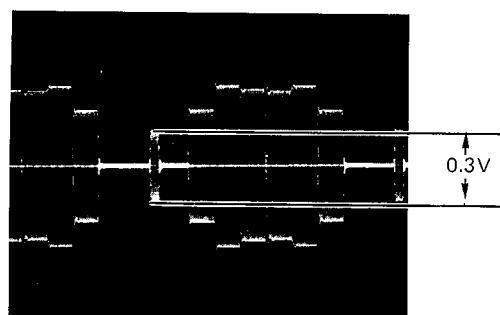


Fig-3-5

### 3-11. Program SC-H Adjustment

Test point : COMP. Program Output      Rear Panel  
Adjust : VR33      Analog board

- Output the internal color bar to the COMP. Program Output.
- Adjust VR33 by observing the SC-H meter (Vector scope. Tektronix 1751 or equivalent) to obtain the phase of  $0 \pm 5^\circ$ .

### 3-12. Preview SC-H Adjustment

Test point : COMP. Program Output Rear Panel  
Adjust : VR31 Analog board

- Output the internal color bar to the COMP. Program Output.
- Adjust VR31 by observing the SC-H meter (Vector scope. Tektronix 1751 or equivalent) to obtain the phase of  $0 \pm 5^\circ$ .

### 3-13. Black Burst SC-H Adjustment

Test point : COMP. Program Output Rear Panel  
Adjust : VR34 Analog board

- Output the internal color bar to the COMP. Program Output.
- Adjust VR34 by observing the SC-H meter (Vector scope. Tektronix 1751 or equivalent) to obtain the phase of  $0 \pm 5^\circ$ .

### 3-14. ADV REF SC-H Adjustment

Test point : COMP. Program Output Rear Panel  
Adjust : VR32 Analog board

- Output the internal color bar to the COMP. Program Output.
- Adjust VR32 by observing the SC-H meter (Vector scope. Tektronix 1751 or equivalent) to obtain the phase of  $0 \pm 5^\circ$ .

### 3-15. Ach FVCXO Adjustment

Test point : TP18 Analog board  
Adjust : CT3 Analog board

- Connect the frequency counter to the TP18.
- Adjust CT3 without Supplying any input signal to the WJ-MX50 to obtain the frequency of  $4.433619 \text{ MHz} \pm 5 \text{ Hz}$ .

### 3-16. Ach Burst-Gate-Pulse Width Adjustment

Test point : TP17 Analog board  
Adjust : VR9 Analog board

- Supply the RAMP signal ( $Y = 100 \text{ IRE}$ ,  $\text{APL} = 50\%$ ) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Ach input.
- Connect the oscilloscope to TP17.

- Adjust VR9 to obtain the pulse width of  $7.8 \mu\text{sec}$ .  
Note : Use TP23 for the trigger for the oscilloscope.

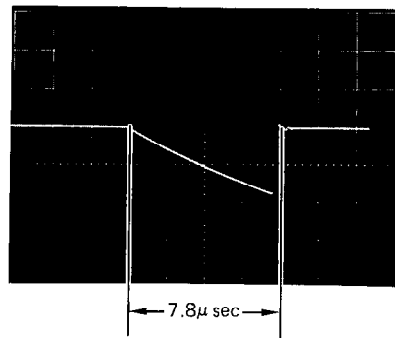


Fig 3-6

### 3-17. Ach Carrier Balance Adjustment

Test point : Y/C Program Output Rear Panel  
Adjust : VR20, VR22 Analog board

- Supply the RAMP signal ( $Y = 100 \text{ IRE}$ ,  $\text{APL} = 50\%$ ) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Ach input.
  - Increase the GAIN of the vector scope.
  - Adjust VR20 and VR22 so that the vector falls into the center of the vector scope.
- Note : The Color Correction of the WJ-MX50 should be off.

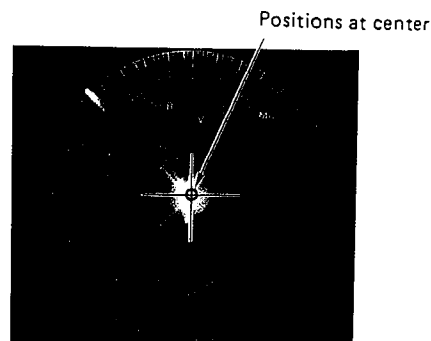


Fig 3-7

### 3-18. Ach Pedestal Adjustment

Test point : Y/C Program Output Rear Panel  
Adjust : VR21 Analog board

- Supply the RAMP signal ( $Y = 100 \text{ IRE}$ ,  $\text{APL} = 50\%$ ) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Ach input.
  - Adjust the VR21 so that the black level of the RAMP signal becomes  $0 + \frac{1}{-0} \text{ IRE}$ .
- Note : The black level of the RAMP signal should not be lower than 0 IRE.

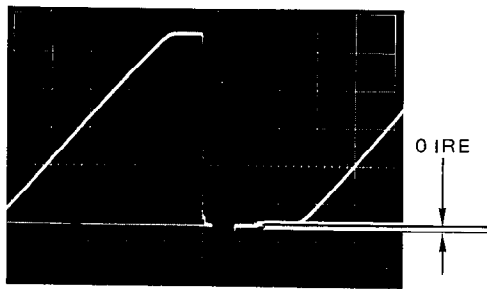


Fig 3-8

### 3-19. Ach Y GAIN

Test point : Y/C Program Output Rear Panel  
Adjust : VR15 Analog board

- Supply the RAMP signal (Y = 100 IRE, APL = 50%) with the Y/C components to the Ach input.
- Adjust VR15 so that the white level becomes  $100 \pm 2$  IRE.

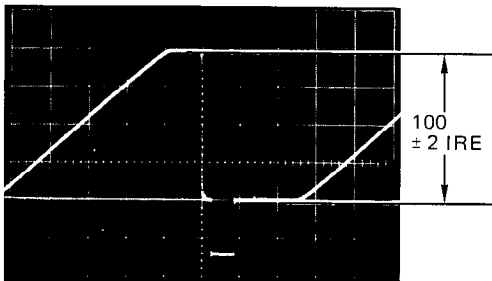
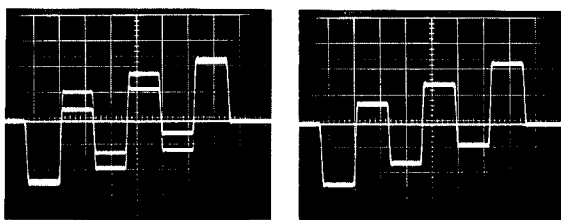


Fig 3-9

### 3-20. Ach Color Adjustment

Test point : Y/C Program Output Rear Panel  
TP13 Analog board  
Adjust : VR10, VR11, VR16 Analog board

- Supply the Color Bar signal with the Y/C components to the Ach input.
- Adjust VR10 (R-Y Gain), VR16 (B-Y Gain) by observing the vector scope so that each vector positions in each color area (田).
- Connect the oscilloscope to TP13.
- Adjust VR11 (Phase) so that the waveform coincides.



NO GOOD

GOOD

Fig 3-10

Note : Supply the Black Burst Signal from WJ-MX50 to the vector scope for the reference sync signal.

### 3-21. Bch FVCXO Adjustment

Test point : TP20 Analog board  
Adjust : CT4 Analog board

- Connect the frequency counter to the TP20.
- Adjust CT4 without supplying any input signal to the WJ-MX50 to obtain the frequency of  $4.433619 \text{ MHz} \pm 5 \text{ Hz}$ .

### 3-22. Bch Burst-Gate-Pulse Width Adjustment

Test point : TP19 Analog board  
Adjust : VR12 Analog board

- Supply the RAMP signal (Y = 100 IRE, APL = 50%) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Bch input.
  - Connect the oscilloscope to TP19.
  - Adjust VR12 to obtain the pulse width of  $7.8 \mu\text{sec}$ .
- Note : Use TP24 for the trigger for the oscilloscope.

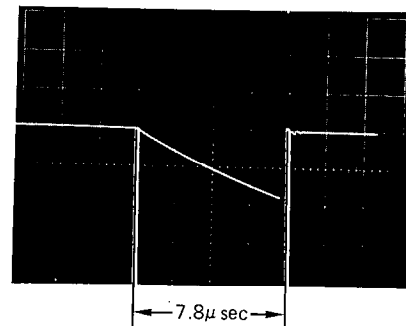


Fig 3-11

### 3-23. Bch Carrier Balance Adjustment

Test point : Y/C Program Output Rear Panel  
Adjust : VR23, VR25 Analog board

- Supply the RAMP signal (Y = 100 IRE, APL = 50%) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Bch input.
- Increase the GAIN of the vector scope.
- Adjust VR23 and VR25 so that the vector falls into the center of the vector scope.

Note : The Color Correction of the WJ-MX50 should be off.

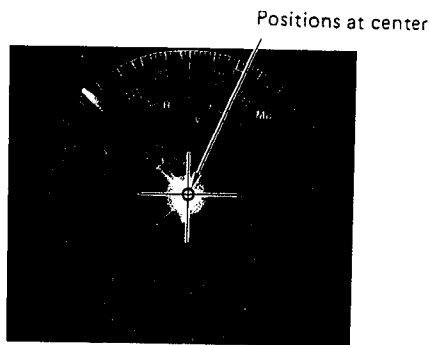


Fig 3-12

### 3-24. Bch Pedestal Adjustment

Test point : T/C Program Output      Rear panel  
Adjust : VR24      Analog board

- Supply the RAMP signal ( $Y = 100$  IRE,  $APL = 50\%$ ) with the Y/C components to the Y/C Source Inputs of both Ach and Bch.
- Select the horizontal wipe pattern (■) and wipe the signal at the black portion.
- Adjust VR24 so that the two black level of the RAMP signal matches at  $0 \pm 1$  IRE.

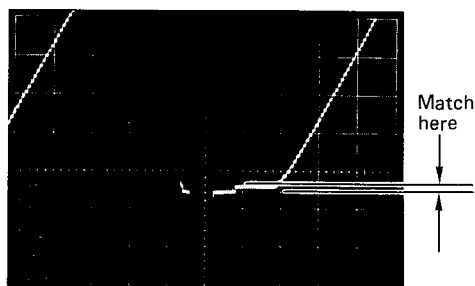


Fig. 3-13

### 3-25. Bch Y Gain

Test point : Y/C Program Output      Rear panel  
Adjust : VR18      Analog board

- Supply the RAMP signal ( $Y = 100$  IRE,  $APL = 50\%$ ) with the Y/C components to the Y/C Source Inputs of both Ach and Bch.
- Select the horizontal wipe pattern (■) and wipe the signal at the white portion.
- Adjust VR18 so that the two white level of the RAMP signal matches at  $100 \pm 2$  IRE

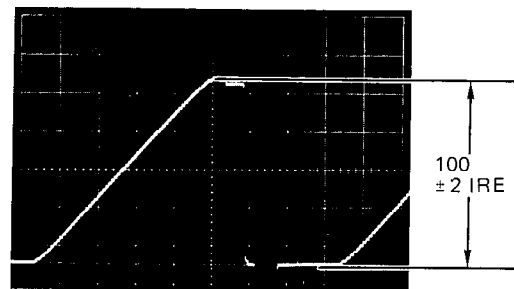
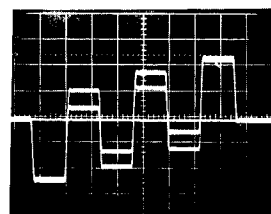


Fig 3-14

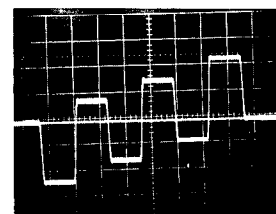
### 3-26. Bch Color Adjustment

Test point : Y/C Program Output      Rear panel  
TP16      Analog board  
Adjust : VR13, VR14, VR19      Analog board  
VR10, VR11, VR16

- Supply the Color Bar signal with the Y/C components to the Y/C Source Inputs of both Ach and Bch.
- Adjust VR13 (R-Y Gain), VR19 (B-Y Gain) by observing the vectorscope so that each vector positions in each color area (■).
- Connect the oscilloscope to TP16.
- Adjust VR14 (Phase) so that the waveform coincides.



NO GOOD



GOOD

Fig 3-15

Note : Supply the Black Burst Signal from WJ-MX50 to the vector scope for the reference sync signal.

- Select the vertical wipe pattern (■) and wipe the signal at the center of the picture.
- Adjust VR10, VR11, VR13, VR14, VR16 and VR19 so that every vector positions to the respective color area



### 3-27. Bch COMP. Gain Adjustment

Test point : Y/C Program Output Rear panel  
Adjust : VR5 Analog board

- Supply the RAMP signal ( $Y = 100$  IRE,  $APL = 50\%$ ) with Y/C components to the Y/C Source Input of Ach and the composite RAMP signal to the COMP. Source Input of Bch.
- Select the horizontal wipe pattern (■) and wipe the signal at the black portion.
- Adjust VR5 so that the two white level of the RAMP signal matches at  $100 \pm 2$  IRE.

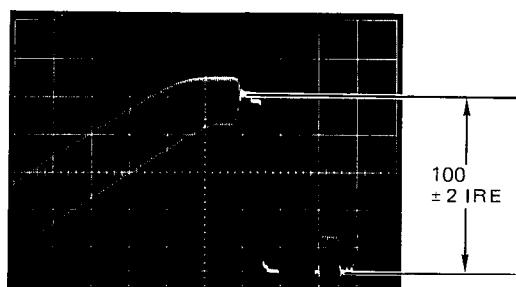


Fig 3-16

### 3-28. Ach COMP. Gain Adjustment

Test point : COMP. Program Output Rear panel  
Adjust : VR1 Analog board

- Supply the composite RAMP signal ( $Y = 100$  IRE,  $APL = 50\%$ ) to the COMP. Source Input of both Ach and Bch.
- Select the horizontal wipe pattern (■) and wipe the signal at the white portion.
- Adjust VR1 so that the two white level of the RAMP signal matches at  $100 \pm 2$  IRE.

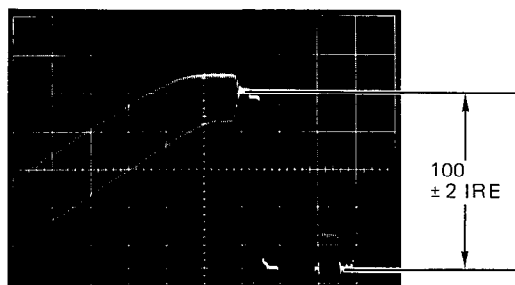


Fig 3-17

### 3-29. Ach/Bch H-phase Adjustment

Test point : COMP. Program Output Rear panel  
Adjust : VR17 Analog board

- Supply the composite CROSS HATCH signal to COMP. Source Inputs of both Ach and Bch.
- Select the MIX mode of the WJ-MX50 and mix both Ach and Bch signals with 50/50 percent. (Move the Mix/Wipe Lever at center position)
- Adjust VR17 so that the signal level becomes maximum.

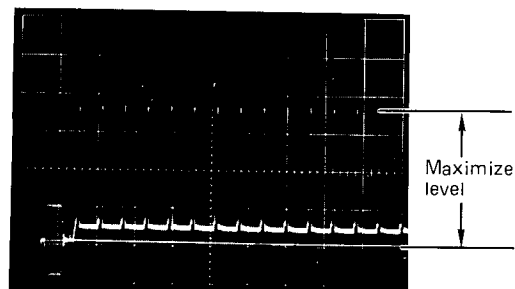


Fig 3-18

### 3-30. Wipe Balance Adjustment

Before performing this adjustment, setup the WJ-MX50 as follows.

- 1) Turn off the power of the WJ-MX50.
  - 2) Turn on the power of the WJ-MX50 while pressing the Event Number Buttons 1/5, 3/7 and the MEMORY Button simultaneously.
- The AUTO TAKE button and AUTO FADE Button are turned to red.

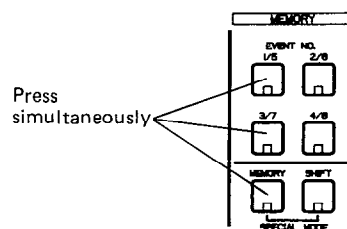


Fig 3-19

Adjust the Wipe Balance as follows.

**Test point :** AUTO TAKE TIME indicator Front panel

AUTO FADE TIME indicator Front panel

**Adjust :** VR312, VR313 Switch board

- Press the WIPE Button on the WJ-MX50. The LED starts blinking.
- Turn the Mix/Wipe Lever to the Bch position and keep the clearance of 8mm between the Lever and the panel.

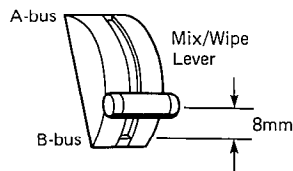


Fig 3-20

- Adjust the VR312 so that the Auto Take Time indicator shows 255 frames.
- Turn the Mix/Wipe Lever to the Ach position and keep the clearance of 6mm between the Lever and the panel.

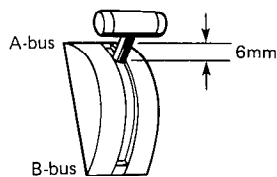


Fig 3-21

- Adjust the VR313 so that the Auto Take Time indicator shows 0 frame.
- Turn the power off then on the WJ-MX50 to initialize the unit.
- Confirm that the ONE-WAY wipe pattern functions correctly.
- Adjust both TRANSITION controls for AUTO TAKE and AUTO FADE to indicate 200 frames. Confirm that these indicators are not change by operating the Mix/Wipe Lever.

### 3-31. Audio Rch Adjustment

**Test point :** Audio Level Indicator for Rch

**Adjust :** VR7

Audio board

- Supply the audio signal (-18 dBs, 1 KHz) to the Lch of the SOURCE 3 audio input connector.
- Slide the A fader and the MASTER fader on the AUDIO MIX to the maximum position.
- Slide the FADE control to the IN position.
- Connect the audio level meter to the R or L channel of the Audio Program Output pin-connector.
- Adjust the output level of the audio signal generator so that the audio level meter reads -6 dBs.
- Adjust VR7 so that the R channel of the AUDIO LEVEL indicator of WJ-MX50 indicates 0 dB. (just light off the 2 dB indicator)

### 2-32. Audio Lch Adjustment

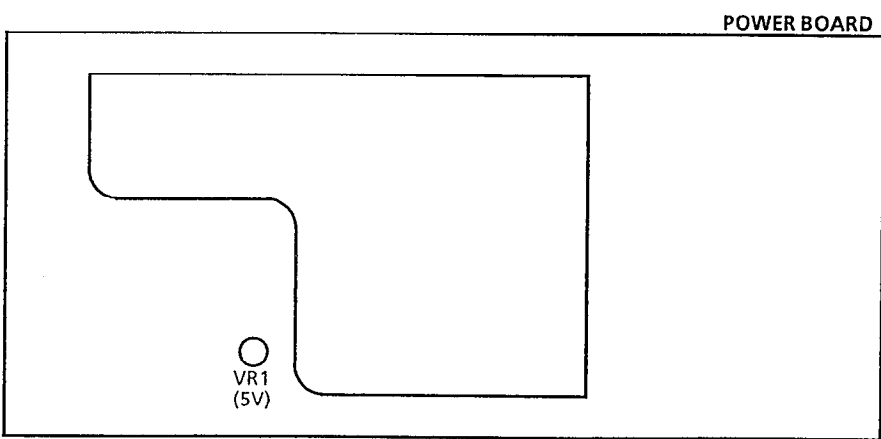
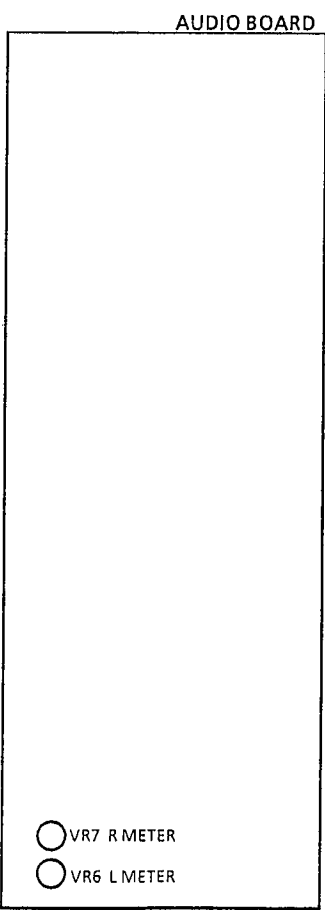
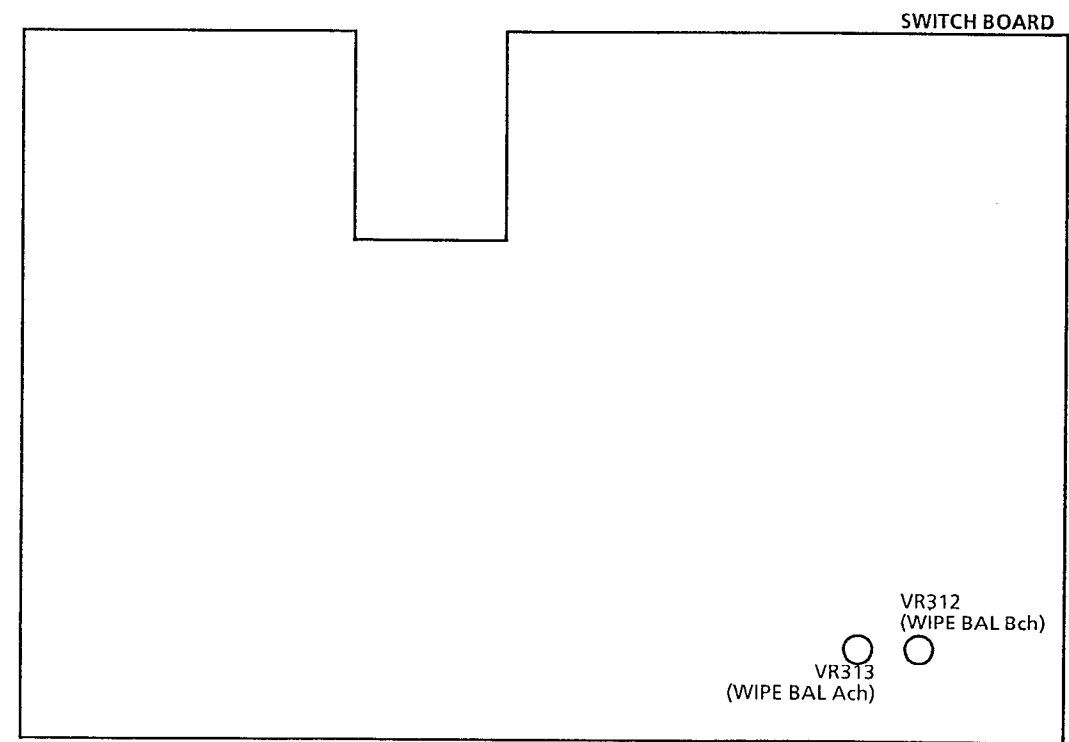
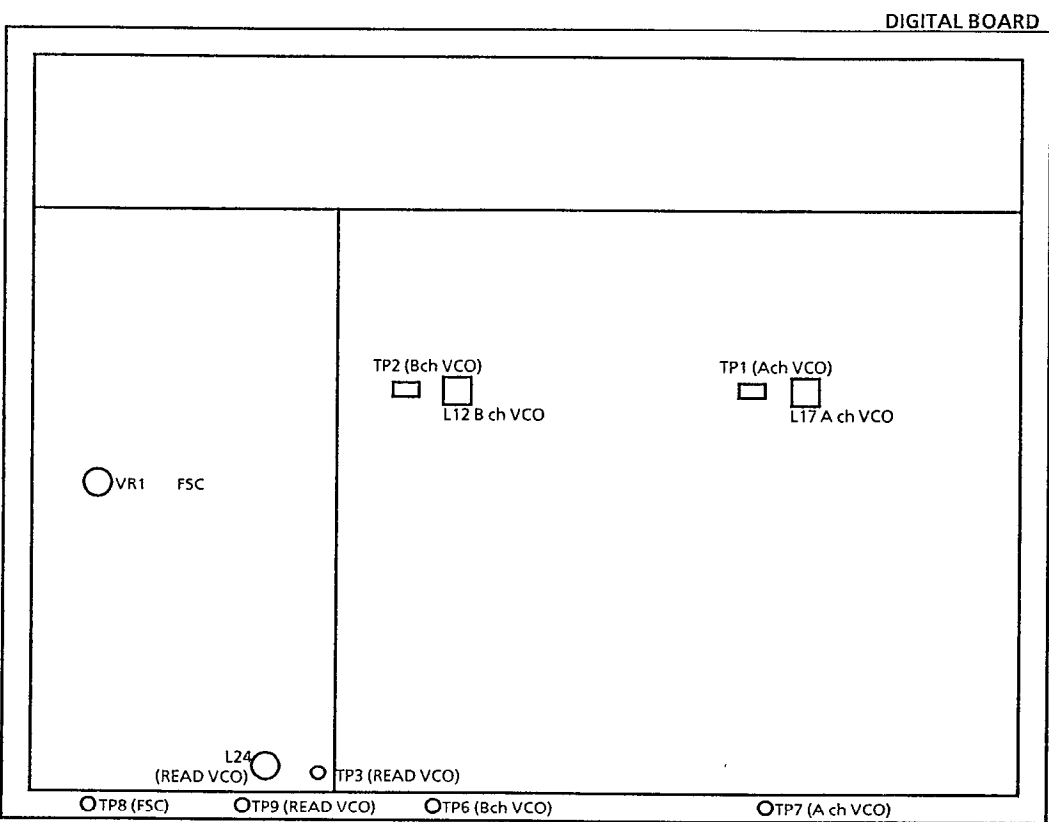
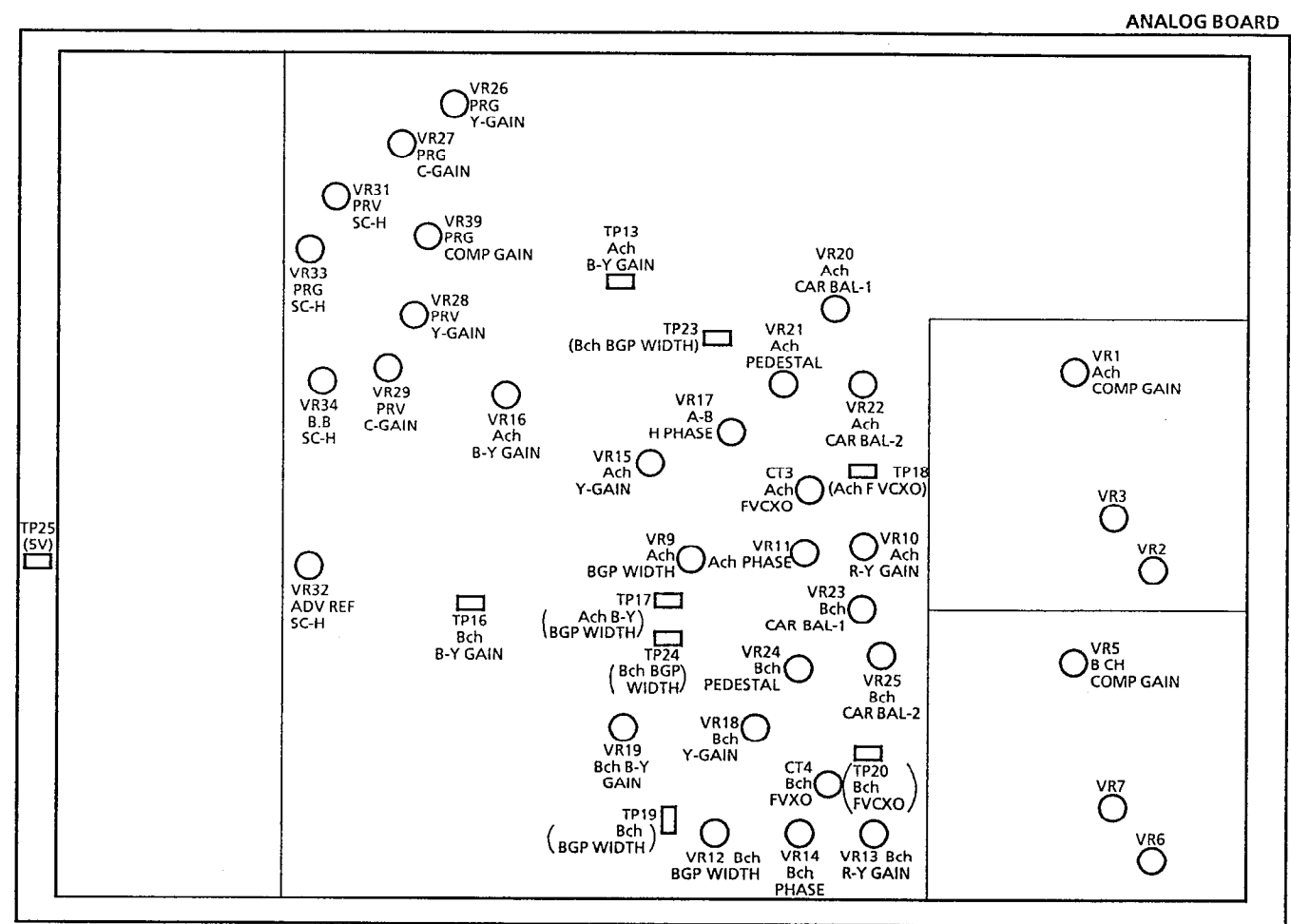
**Test point :** Audio Level Indicator for L ch

**Adjust :** VR6

Audio board

- Supply the audio signal (-18 dBs, 1 KHz) to the Lch of the SOURCE 3 audio input connector.
- Slide the A-fader and the MASTER fader on the AUDIO MIX to the maximum position.
- Slide the FADE control to the IN position.
- Connect the audio level meter to the R or L channel of the Audio Program Output pin-connector.
- Adjust the output level of the audio signal generator so that the audio level meter reads -6 dBs.
- Adjust VR6 so that the L channel of the AUDIO LEVEL indicator of WJ-MX50 indicates 0 dB. (just light off the 2 dB indicator)

LOCATION OF TEST POINTS AND ADJUSTING CONTROLS



CHIP COMPONENTS

1. Chip Transistor

The transistor number is indicated on the top surface of the chip transistor using two alphabet letters or one numerical and two alphabet letters.



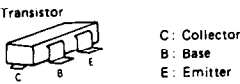
Transistor Number

Letter	Transistor No.	Letter	Transistor No.
A	2SB709	X	2SD602A
B	2SB709A	Y	2SD601
C	2SB710	Z	2SD601A
D	2SB710A	1Z	2SD1030
E	2SA1022	1N	2SK199
F	2SA1034	1O	2SK198
H	2SA1035	1A	2SB799
I	2SB792	1B	2SB814
K	2SC2778	1C	2SB902
P	2SD814	1F	2SK321
Q	2SD813	1L	2SK247
R	2SC2480	1K	2SK316
S	2SC2405	1M	2SJ84
T	2SC2406	1T	2SC3077
U	2SC2404	1X	2SC2845
V	2SC2295	2B	2SK374
W	2SD602	2C	2SK116

Example

WQ → 2SD602 – Q  
YQ → 2SD601 – Q  
1BS → 2SB814 – S

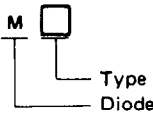
Appearance and Symbols



	1	2	3
Except 2SK199	Drain	Source	Gate
2SK199	Gate	Drain	Source

2. Chip Diode

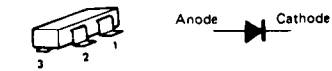
The diode number is indicated on the top surface of the chip diode using Two alphabet letters.



Diode Number

Letter	Diode No.	Letter	Diode No.
MA	MA151A	MI	MA152K
MB	MA152A	MK	MA28W-B
MC	MA153	ML	MA28T-A
MD	MA28-A	MN	MA151WA
ME	MA28-B	MO	MA152WA
MF	MA28W-A	MT	MA151WK
MH	MA151K	MU	MA152WK

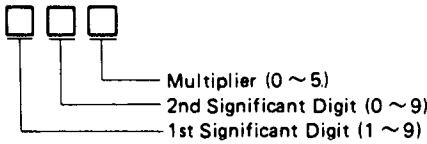
Appearance and Symbols



	1	2	3
MA28/28W/28T	—	Anode	Cathode
MA151K/152K	—	Anode	Cathode
MA151A/152A	—	Cathode	Anode
MA151WK/MA152WK	Anode	Anode	Cathode
MA151WA/MA152WA	Cathode	Cathode	Anode
MA153	Cathode	Anode	Common

3. Chip Resistor

The resistor value is indicated on the bottom surface of the chip resistor using three digit numbers.



EXAMPLE:

330 → 33 x 10<sup>0</sup> = 33 ohms  
561 → 56 x 10<sup>1</sup> = 560 ohms  
123 → 12 x 10<sup>3</sup> = 12 kohms

Note: Zero ohm resistor (jumper chip) is colored red or green.

4. Chip Capacitor

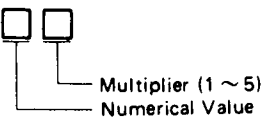
The capacitive value of replacement chip capacitors is indicated on the bottom surface. Original parts do not have value indication.

If the capacitive value is less than 100 pF, the value will be indicated by one or two digit number expressing the capacity directly in pF.

EXAMPLE:

0.5 → 0.5 pF    2.5 → 2.5 pF  
75 → 0.75 pF    33 → 33 pF  
1 → 1 pF    82 → 82 pF

If the capacitive value is 100 pF or greater, the value will be indicated by an alpha-numeric code. The letter precedes the number and expresses a numerical value to be multiplied by the number which follows.



Numerical Value

Letter	Value	Letter	Value
A	10	N	33
B	11	P	36
C	12	Q	39
D	13	R	43
E	15	S	47
F	16	T	51
G	18	U	56
H	20	V	62
J	22	W	68
K	24	X	75
L	27	Y	82
M	30	Z	91

\* Letters I and O are not used

EXAMPLE:

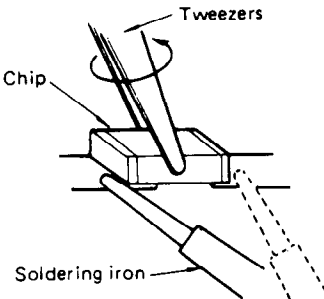
A1 → 10 x 10<sup>1</sup> = 100 pF  
N2 → 33 x 10<sup>2</sup> = 3300 pF  
S3 → 47 x 10<sup>3</sup> = 47000 pF

5. Precautions in replacing the chip component

1. Make sure that the unit is turned OFF when replacing the chip.
2. Use tweezers to prevent any damage to the chip surface.
3. Do not re-use the chips after removal.
4. Do not rub the electrode of chips.
5. Do not subject the chips to excessive stress.
6. It is recommended that a pencil-type soldering iron to be used.
7. The solder whose diameter is less than 0.5 mm is recommended.
8. Do not heat the chip beyond 3 seconds.
9. Maintain temperature control under 260°C (500°F) when soldering.

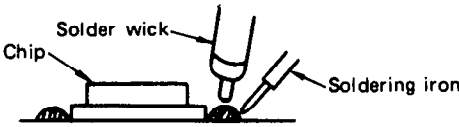
5-1 Removal (Transistor, Diode, Resistor and Capacitor)

1. Add the solder to both ends of the chip (three leads for chip transistor).
2. While attaching the soldering iron to both ends of the chip (three leads for chip transistor) as shown below, remove the chip by turning it with tweezers.  
Note Be careful not to damage other chips.

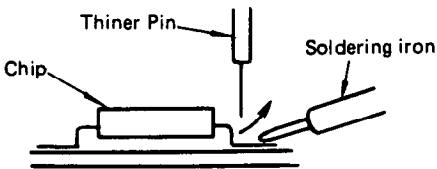


5-2 Removal (IC)

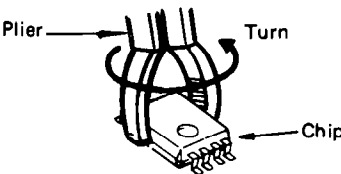
1. Add the solder wick and solder iron to each lead of the IC and remove solder.



2. Add the solder iron to each lead of the IC and left each lead of the IC using thinner pin.

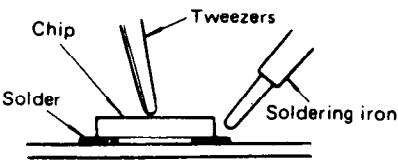


3. Remove IC turning it with plier.

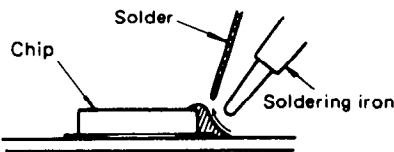


5-3 Mounting

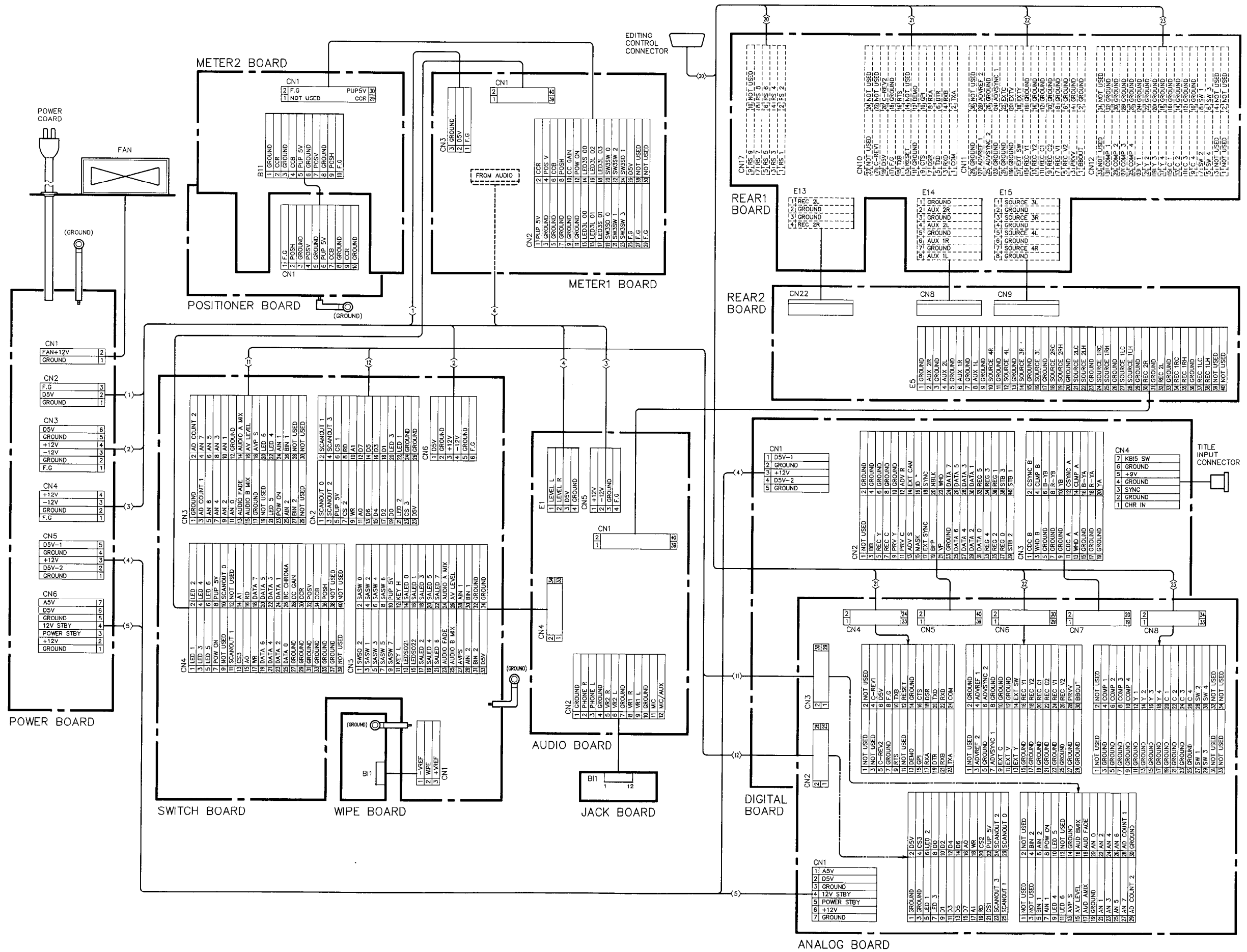
1. Place the solder thinly on the chip mounting foil.
2. Solder the chip temporarily while holding the chip with the tweezers.



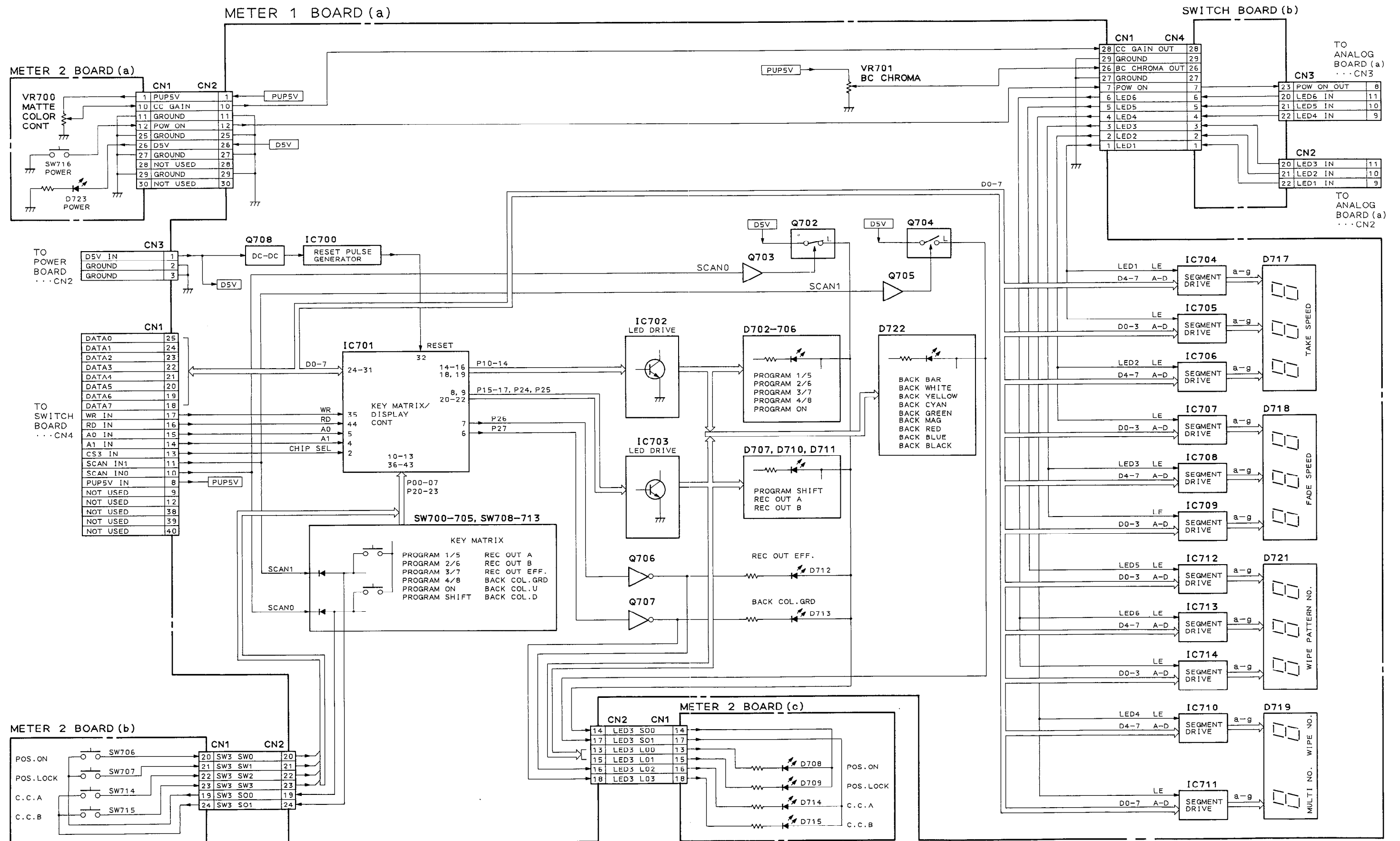
3. Solder both ends of chip (three leads for chip transistor).



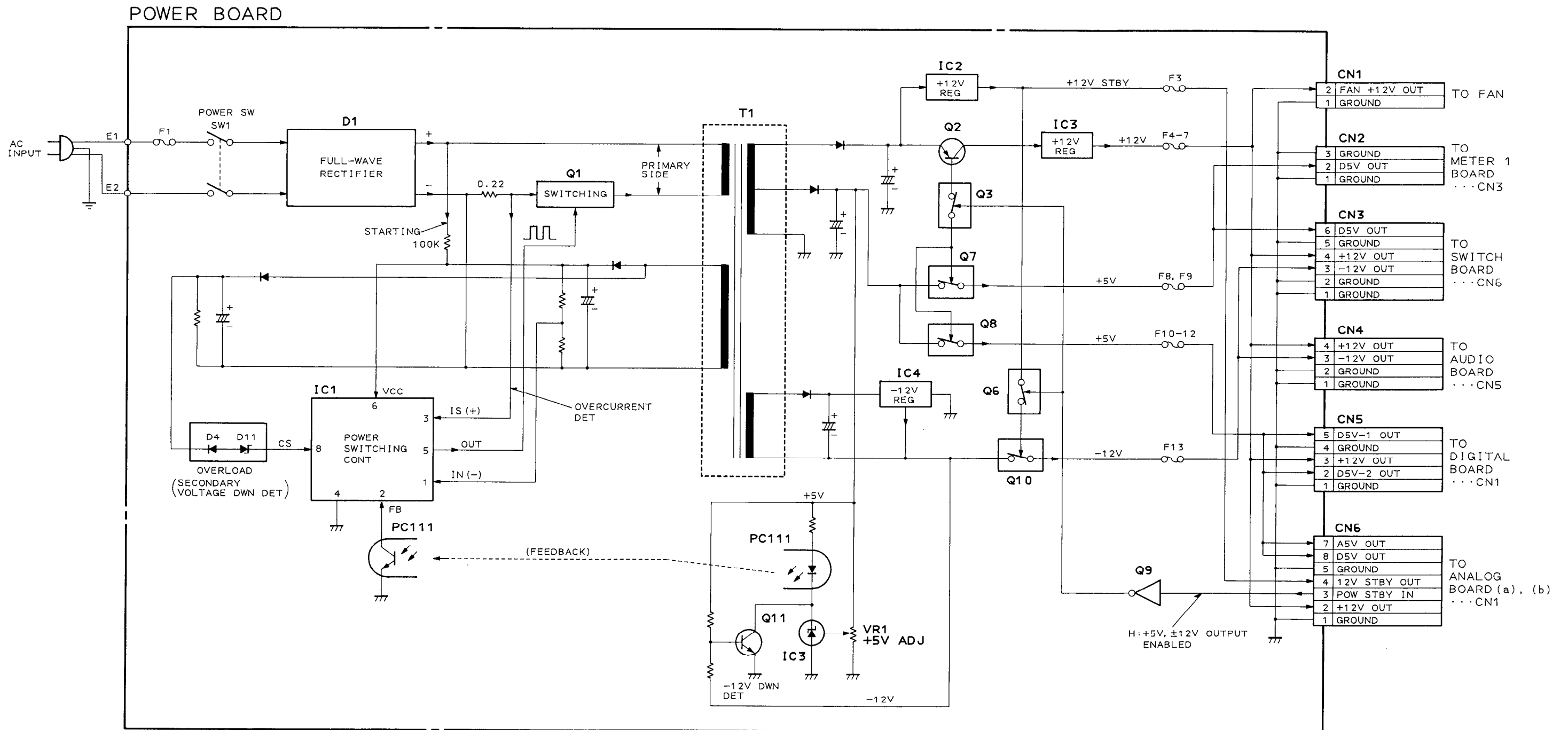
## WIRING DIAGRAM



## BLOCK DIAGRAM OF METER BOARD

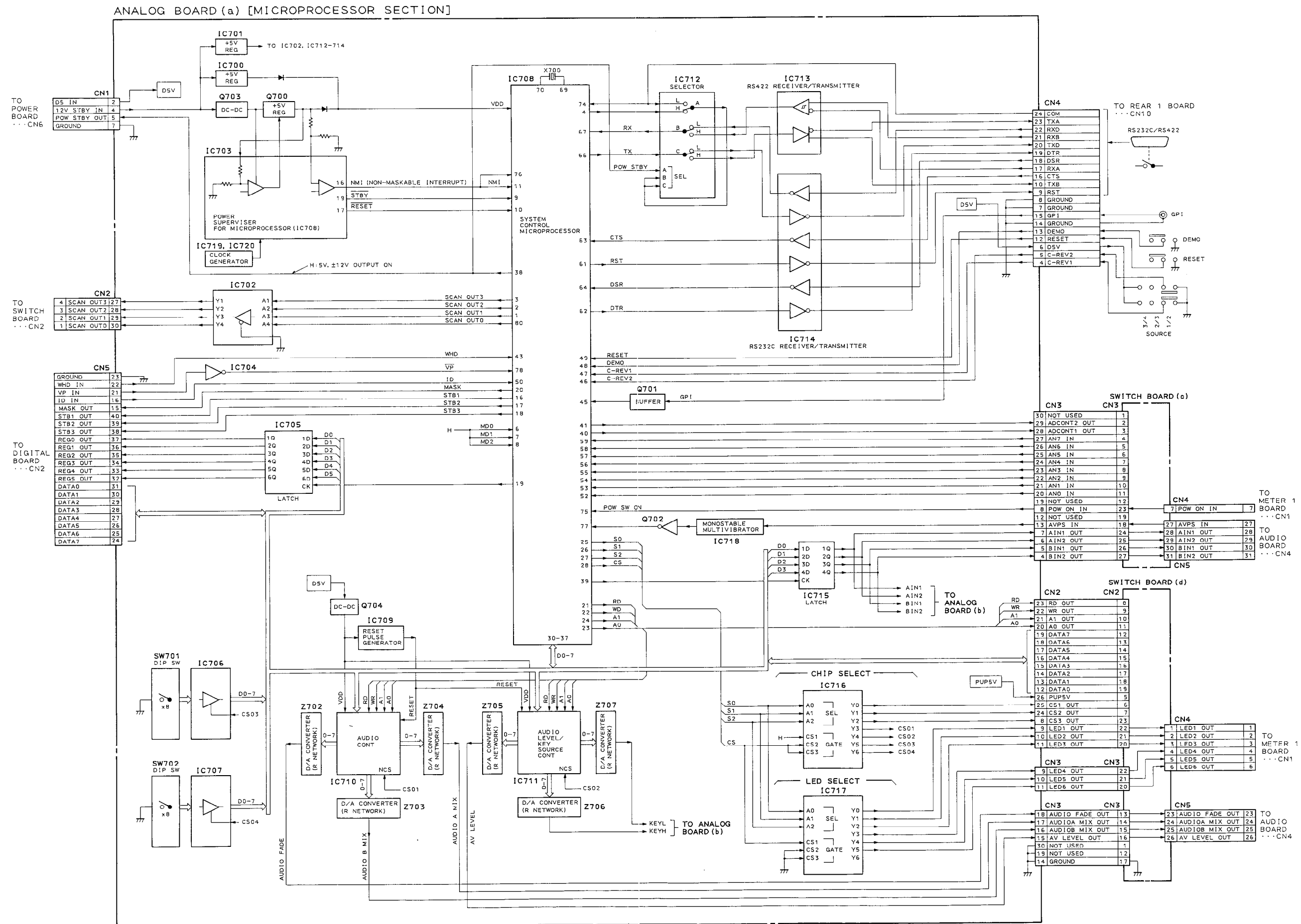


# BLOCK DIAGRAM OF POWER BOARD



WJ-MX50      WJ-MX50

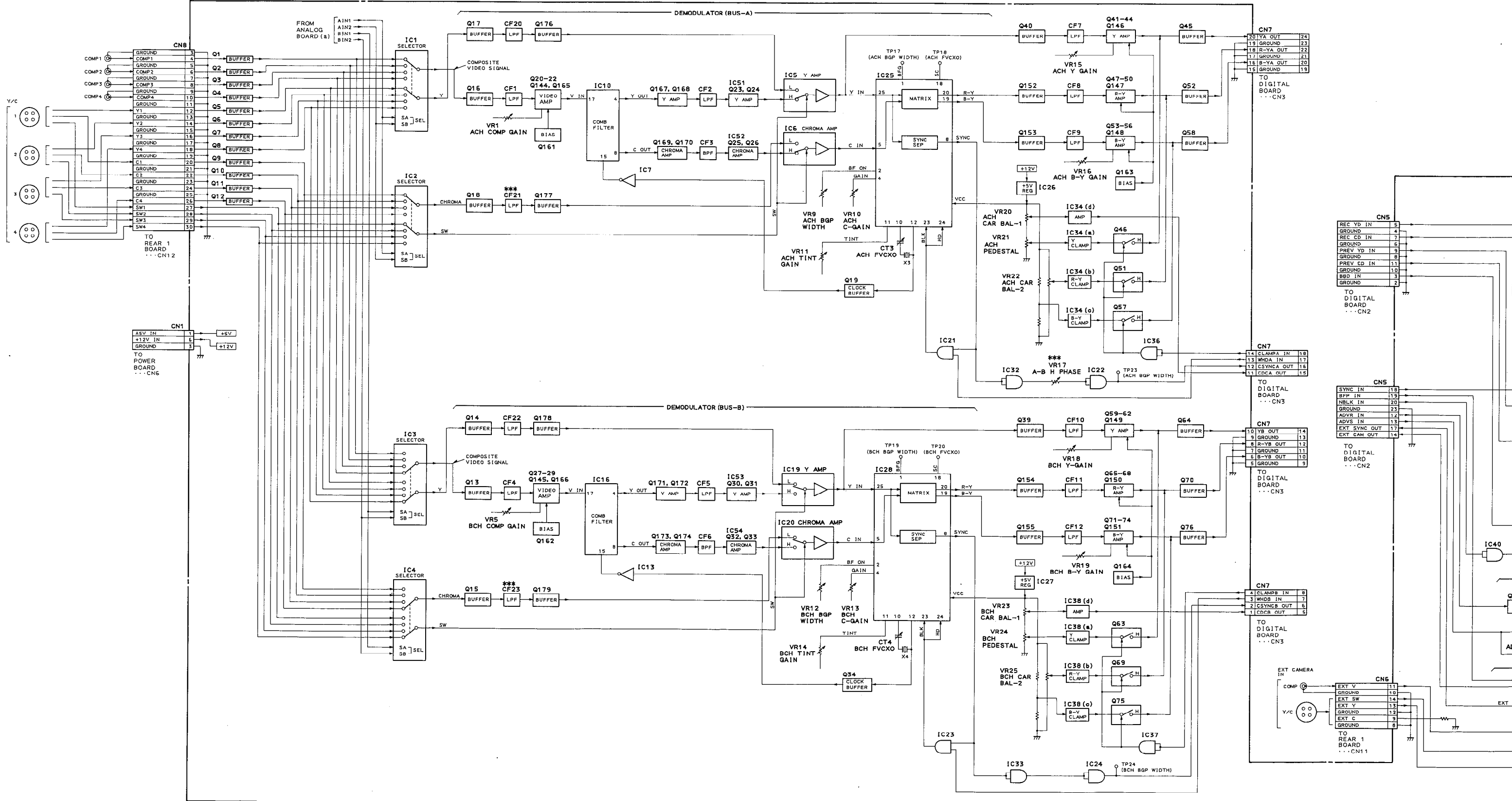
## BLOCK DIAGRAM OF ANALOG BOARD



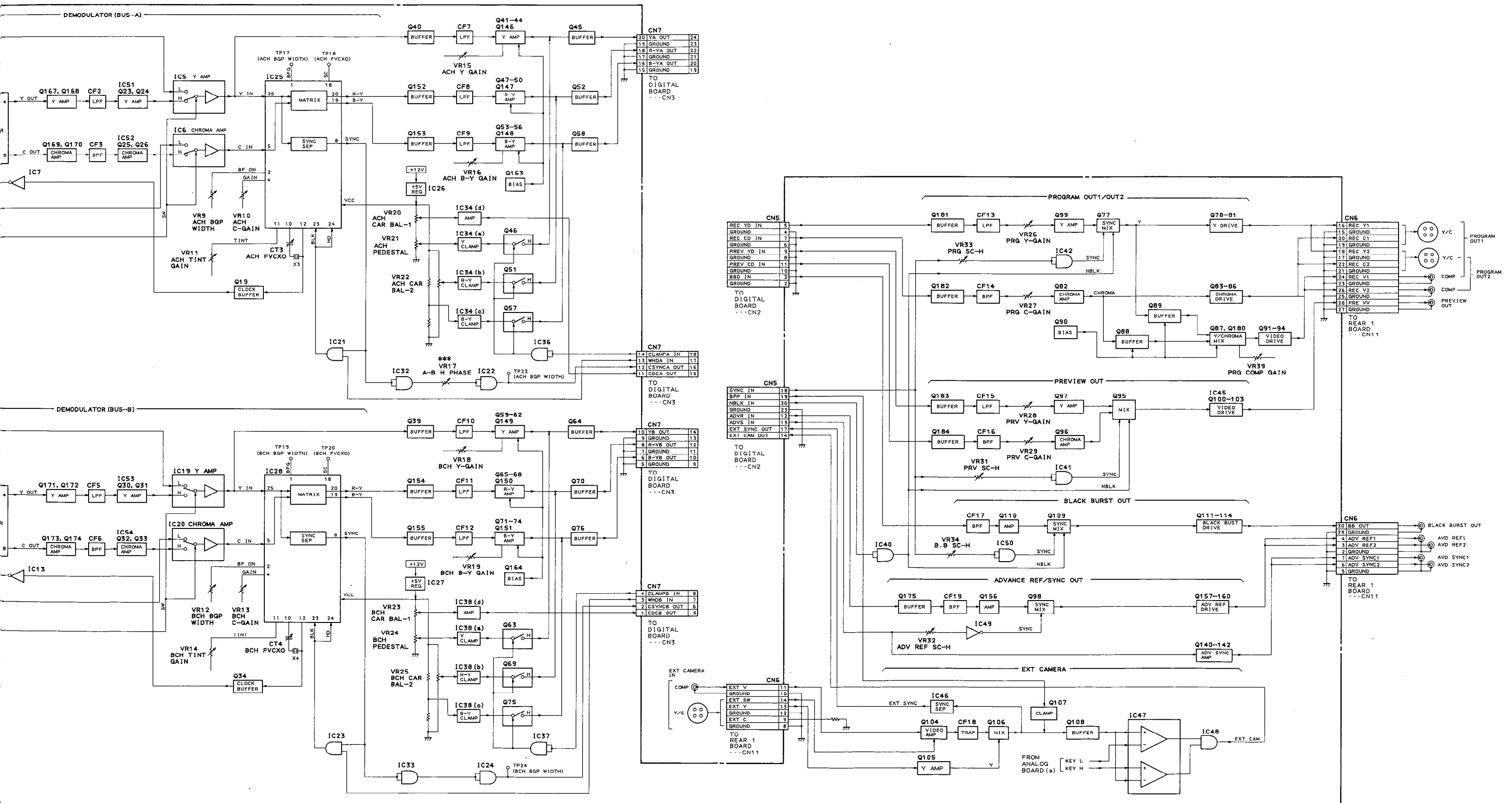


# BLOCK DIAGRAM OF ANALOG BOARD

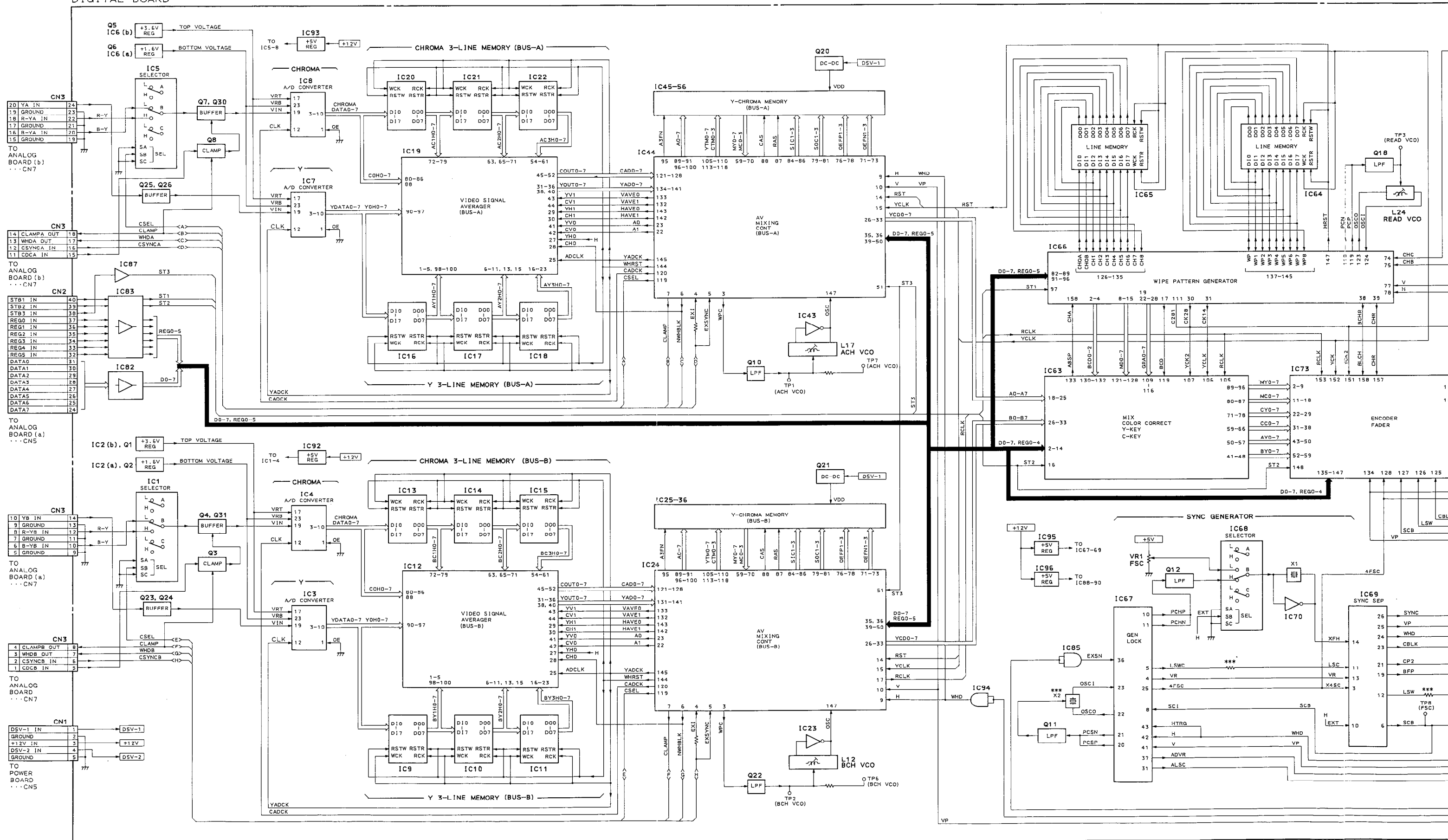
ANALOG BOARD (b) [DEMOMULATOR/REAR PANEL SECTION]



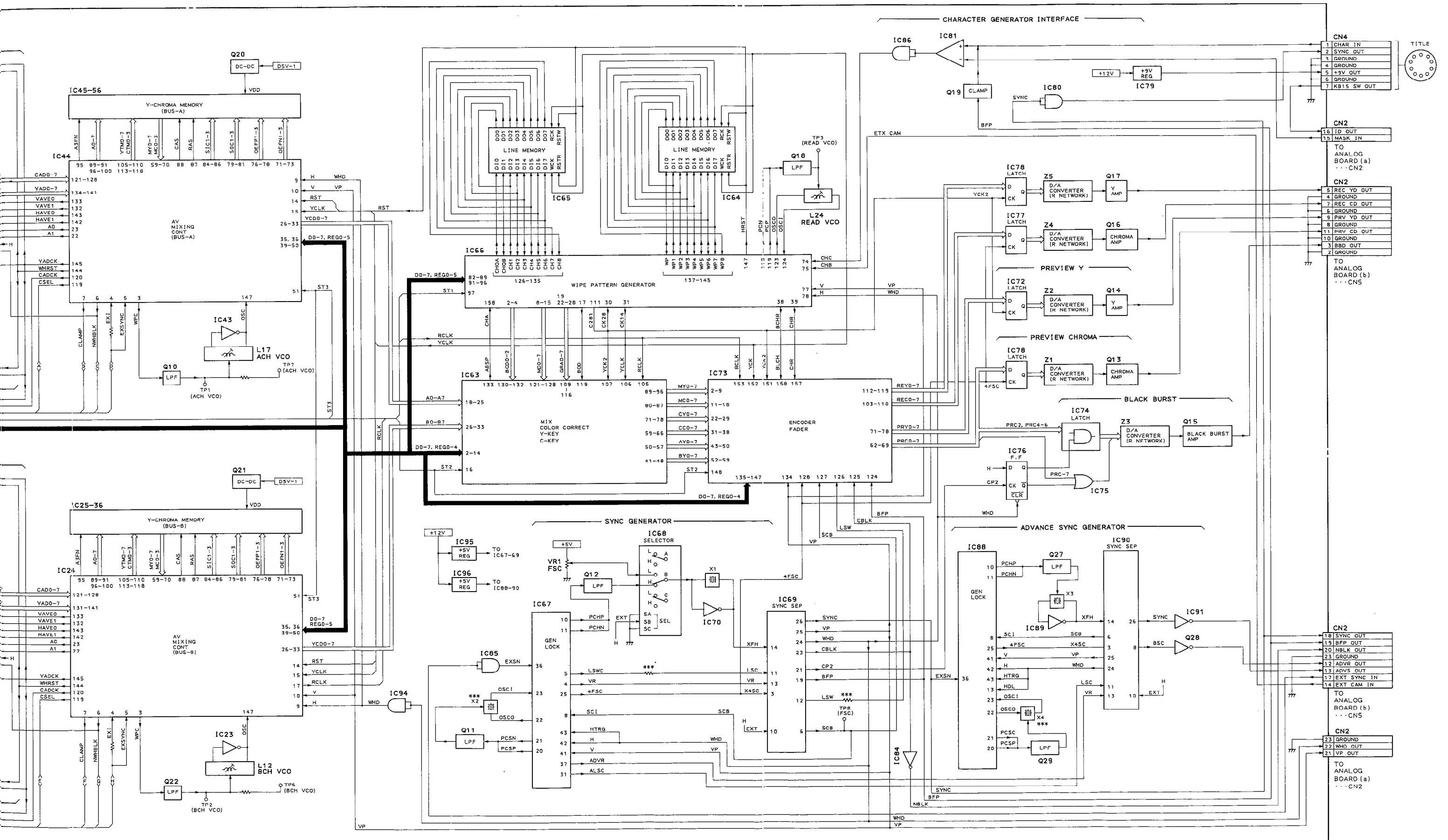
# BLOCK DIAGRAM OF ANALOG BOARD



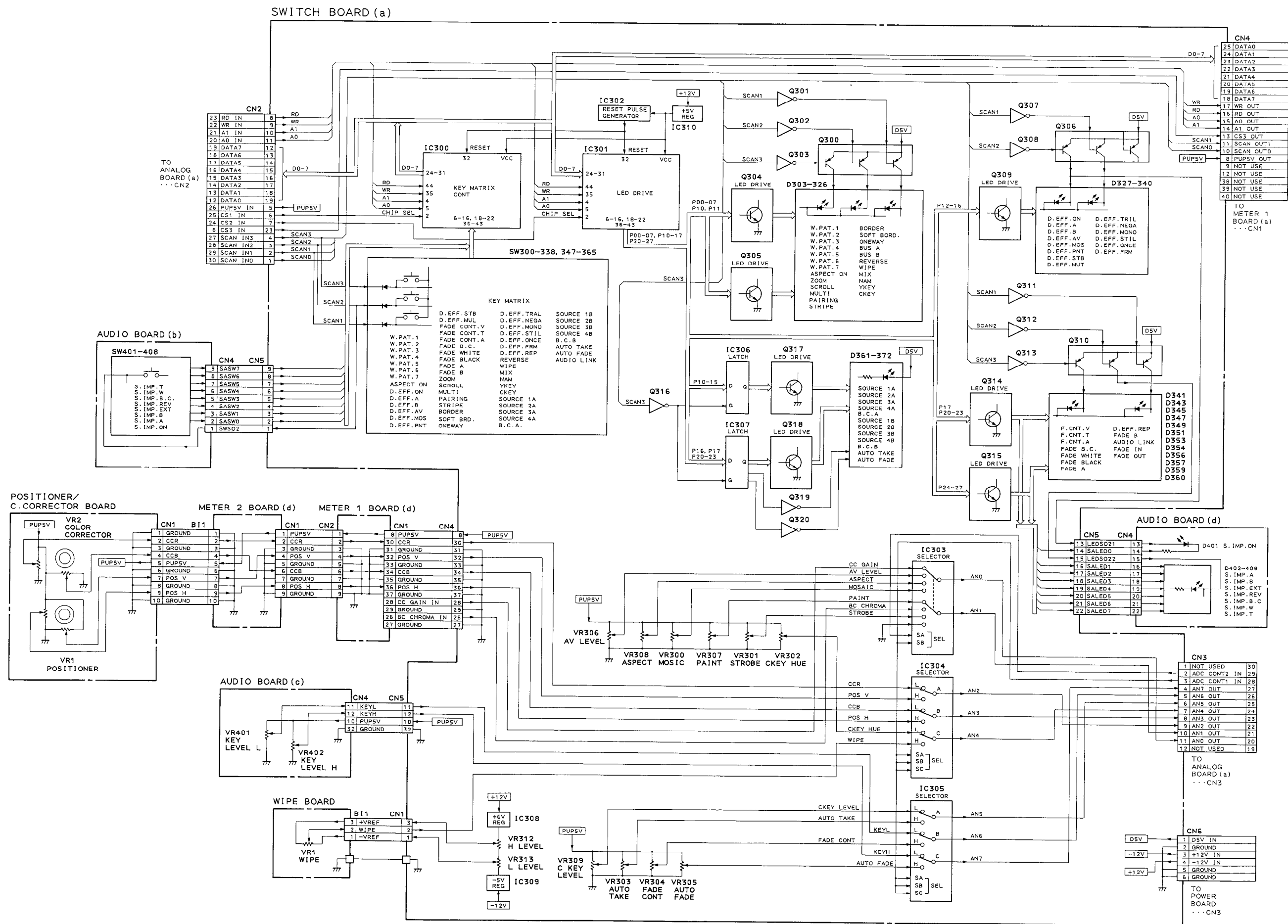
## DIGITAL BOARD



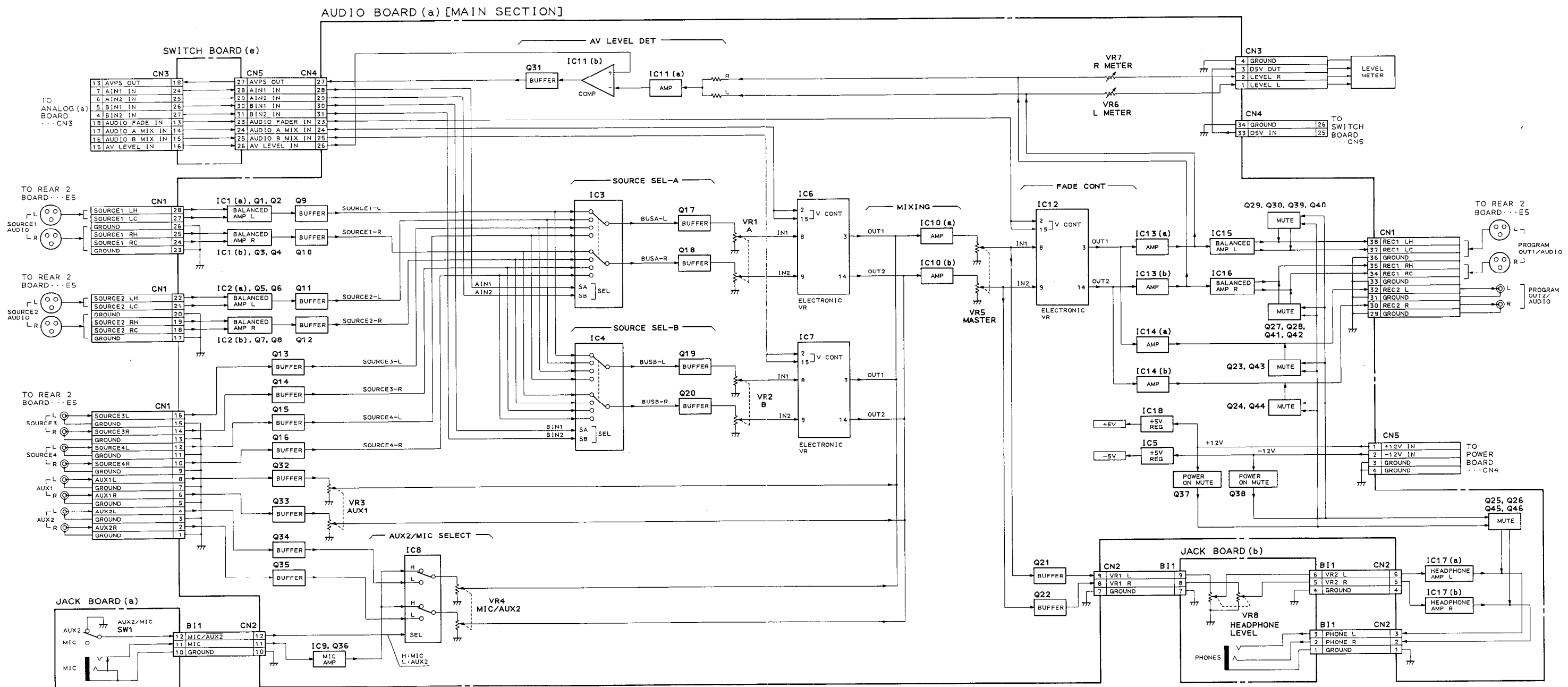
# BLOCK DIAGRAM OF DIGITAL BOARD



### BLOCK DIAGRAM OF SWITCH BOARD



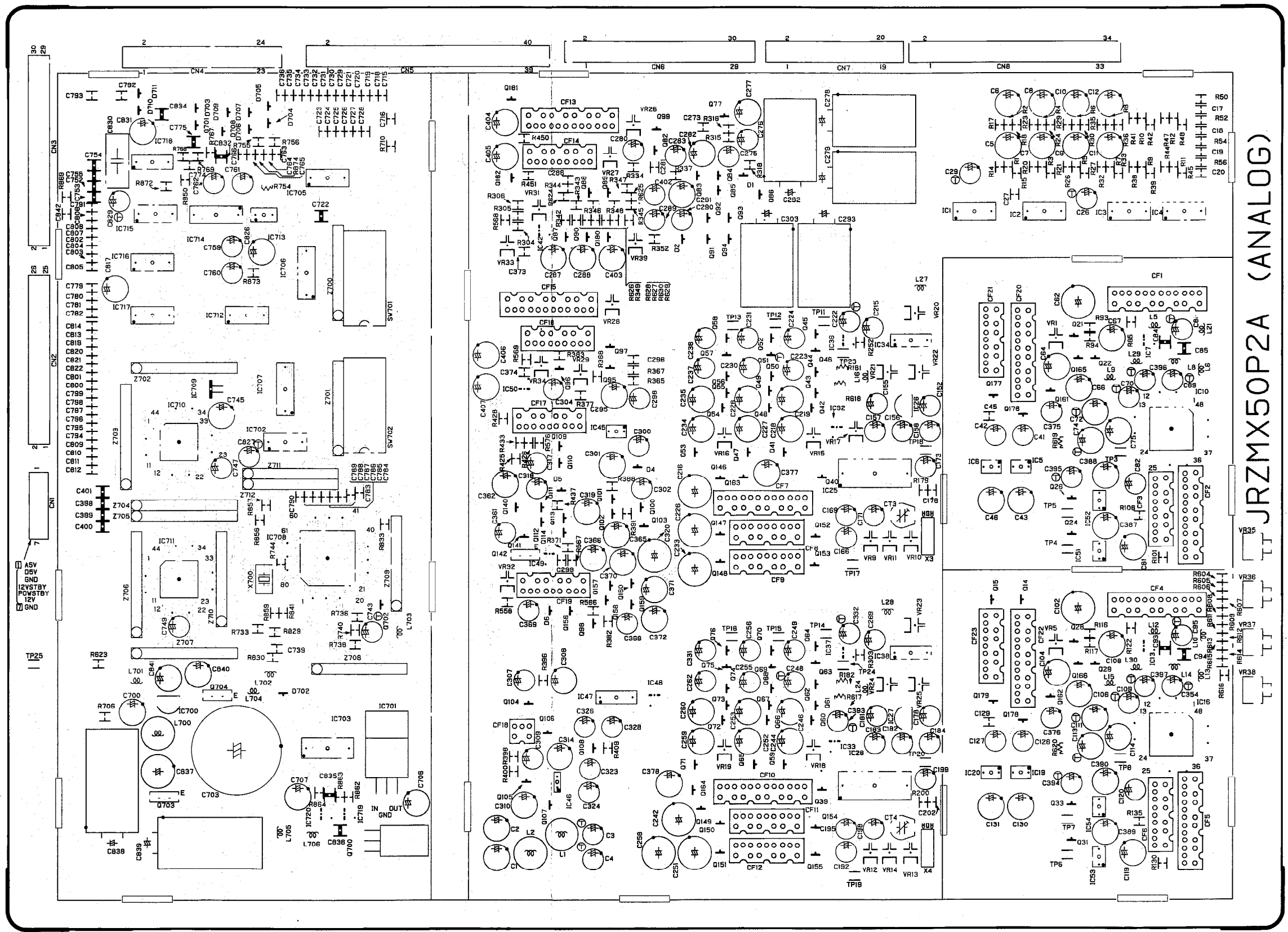
# BLOCK DIAGRAM OF AUDIO BOARD



<Index>  
ANALOG BOARD  
(COMPONENT SIDE)

IC1	D5	Q69	B4
IC2	D6	Q70	B4
IC3	D6	Q71	B4
IC4	D6	Q72	B4
IC5	D6	Q73	B4
IC6	C6	Q74	B4
IC7	D6	Q75	B4
IC10	C6	Q76	B4
IC13	B6	Q77	E4
IC16	B6	Q82	E4
IC19	B6	Q83	D4
IC20	B6	Q84	D4
IC25	C5	Q85	D4
IC26	C5	Q86	D4
IC27	B5	Q87	D3
IC28	A5	Q88	D4
IC32	C5	Q89	D4
IC33	B5	Q90	D4
IC34	D5	Q91	D4
IC36	D5	Q92	D4
IC37	B5	Q93	D4
IC38	B5	Q94	D4
IC42	D3	Q95	C4
IC45	C4	Q96	C3
IC46	A3	Q97	B4
IC47	B4	Q98	B4
IC48	B4	Q99	E4
IC49	C3	Q100	C4
IC50	C3	Q101	C4
IC51	C6	Q102	C4
IC52	C6	Q103	C4
IC53	A6	Q104	B3
IC54	A6	Q105	B3
IC700	B2	Q106	B3
IC701	B3	Q107	A3
IC702	C2	Q108	B4
IC703	B2	Q109	C3
IC705	D2	Q110	C3
IC706	D2	Q111	C3
IC707	C2	Q112	C3
IC708	C2	Q113	C3
IC709	C2	Q114	C3
IC710	C2	Q140	C3
IC711	B2	Q141	C3
IC712	D2	Q142	C3
IC713	D2	Q146	C4
IC714	D2	Q147	C4
IC715	D1	Q148	C4
IC716	D1	Q149	A4
IC717	D1	Q150	A4
IC718	D1	Q151	A4
IC719	A2	Q152	C5
IC720	A2	Q153	C5
Q14	B6	Q154	A5
Q15	B6	Q155	A5
Q21	D6	Q156	B3
Q22	D6	Q157	B4
Q24	C6	Q158	B4
Q26	C6	Q159	B4
Q28	B6	Q160	B6
Q29	B6	Q161	C6
Q31	A6	Q162	B6
Q33	A6	Q163	C4
Q39	A5	Q164	A4
Q40	C5	Q165	D6
Q41	C5	Q166	B6
Q42	C5	Q176	C6
Q43	C5	Q177	C6
Q44	C5	Q178	B6
Q45	D5	Q179	B6
Q46	D5	Q180	D4
Q47	C4	Q181	E3
Q48	C4	Q182	D3
Q49	C4	Q700	A3
Q50	C4	Q701	E2
Q51	D4	Q703	A2
Q52	D4	Q704	B2
Q53	C4	D1	D4
Q54	C4	D2	D4
Q55	C4	D4	C4
Q56	C4	D5	C3
Q57	D4	D6	B3
Q58	D4	D702	B2
Q59	B4	D703	E2
Q60	B5	D704	E2
Q61	B5	D705	E2
Q62	B5	D706	E2
Q63	B5	D707	E2
Q64	B5	D708	E2
Q65	B4	D709	E2
Q66	B4	D710	E1
Q67	B4	D711	E1
Q68	B4		

ANALOG BOARD



JRZMX50P2A (ANALOG)

(COMPONENT SIDE)

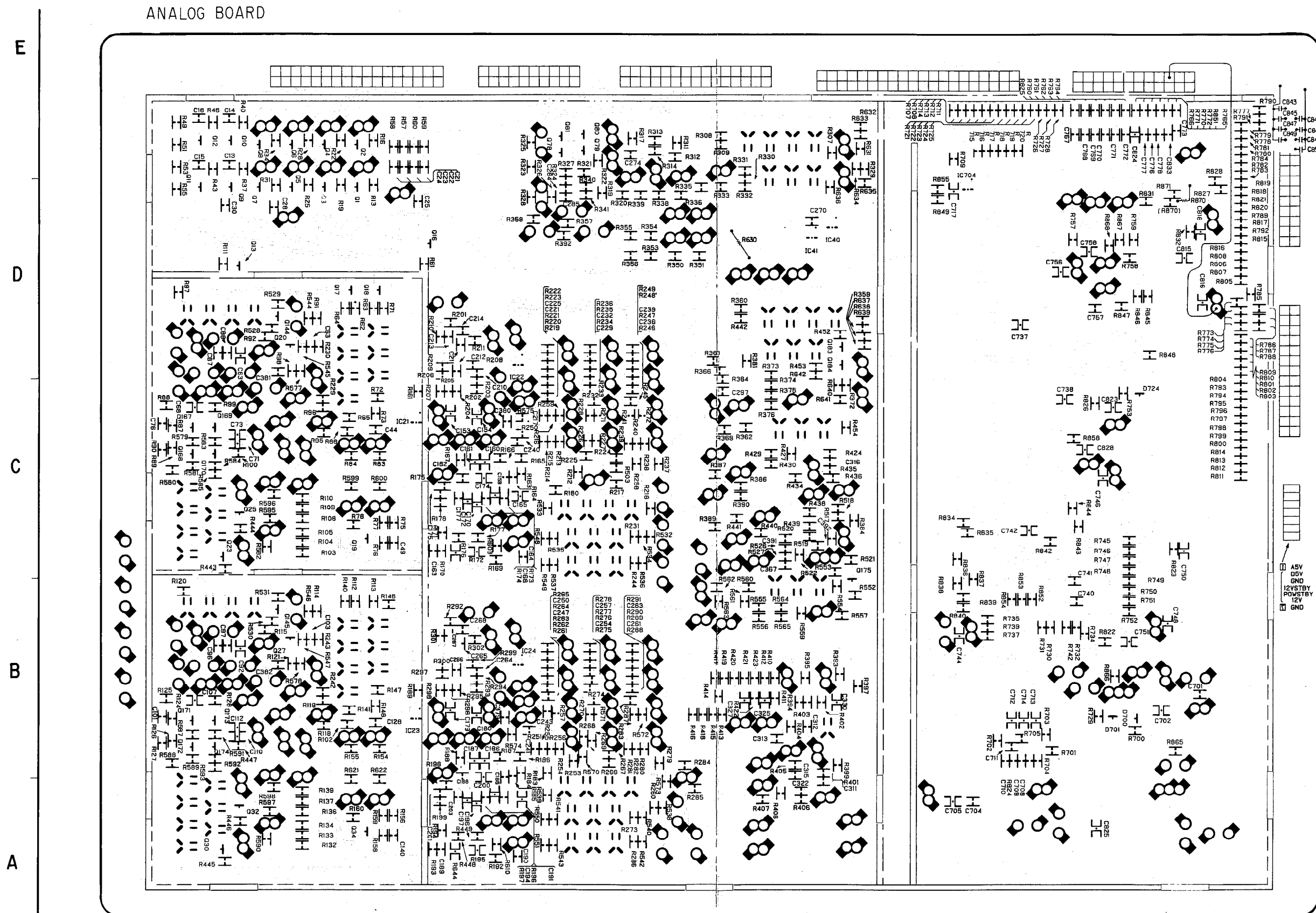
ANALOG BOARD (COMPONENT SIDE)		
*	NTSC	PAL
R304	4.3K	3.9K
R568	4.3K	3.9K
R569	3.3K	3.9K
R733	— OPEN —	10K
C783 - C790	— OPEN —	470P

# FRONT VIEW OF ANALOG BOARD

JRZMX50P2A (ANALOG)

ANALOG BOARD  
(COMPONENT SIDE)

*	NTSC	PAL
R304	4.3K	3.9K
R568	4.3K	3.9K
R569	3.3K	3.9K
R733	— OPEN —	10K
C783 - C790	— OPEN —	470P



## <Index> ANALOG BOARD (PATTERN SIDE)

IC21	C2
IC22	D3
IC23	B2
IC24	B3
IC40	D4
IC41	D4
IC704	D5
Q1	D2
Q2	E2
Q3	D2
Q4	E2
Q5	D2
Q6	E2
Q7	D2
Q8	E2
Q9	D1
Q10	E1
Q11	D1
Q12	E1
Q13	D1
Q16	D2
Q17	D2
Q18	D2
Q19	D2
Q20	D2
Q23	C1
Q25	C1
Q27	B2
Q30	A1
Q32	A1
Q34	A2
Q78	E3
Q79	E3
Q80	E3
Q81	E3
Q144	D2
Q145	B2
Q167	C1
Q168	C1
Q169	C1
Q170	C1
Q171	B1
Q172	B1
Q173	B1
Q174	B1
Q175	C5
Q183	D5
Q184	D5
D700	B6
D701	B6
D724	C6

## ANALOG BOARD (PATTERN SIDE)

*	NTSC	PAL
R89	0	— OPEN —
R90	— OPEN —	0
R104	1.5K	1.3K
R126	0	— OPEN —
R127	— OPEN —	0
R133	1.5K	1.3K
R167	— OPEN —	0
R188	— OPEN —	0
R309	620	750
R552	1K	3.9K
R565	1.2K	1.5K
R734	10K	— OPEN —
C63	100P	56P
C103	100P	56P
C241	270P	100P

(PATTERN SIDE)

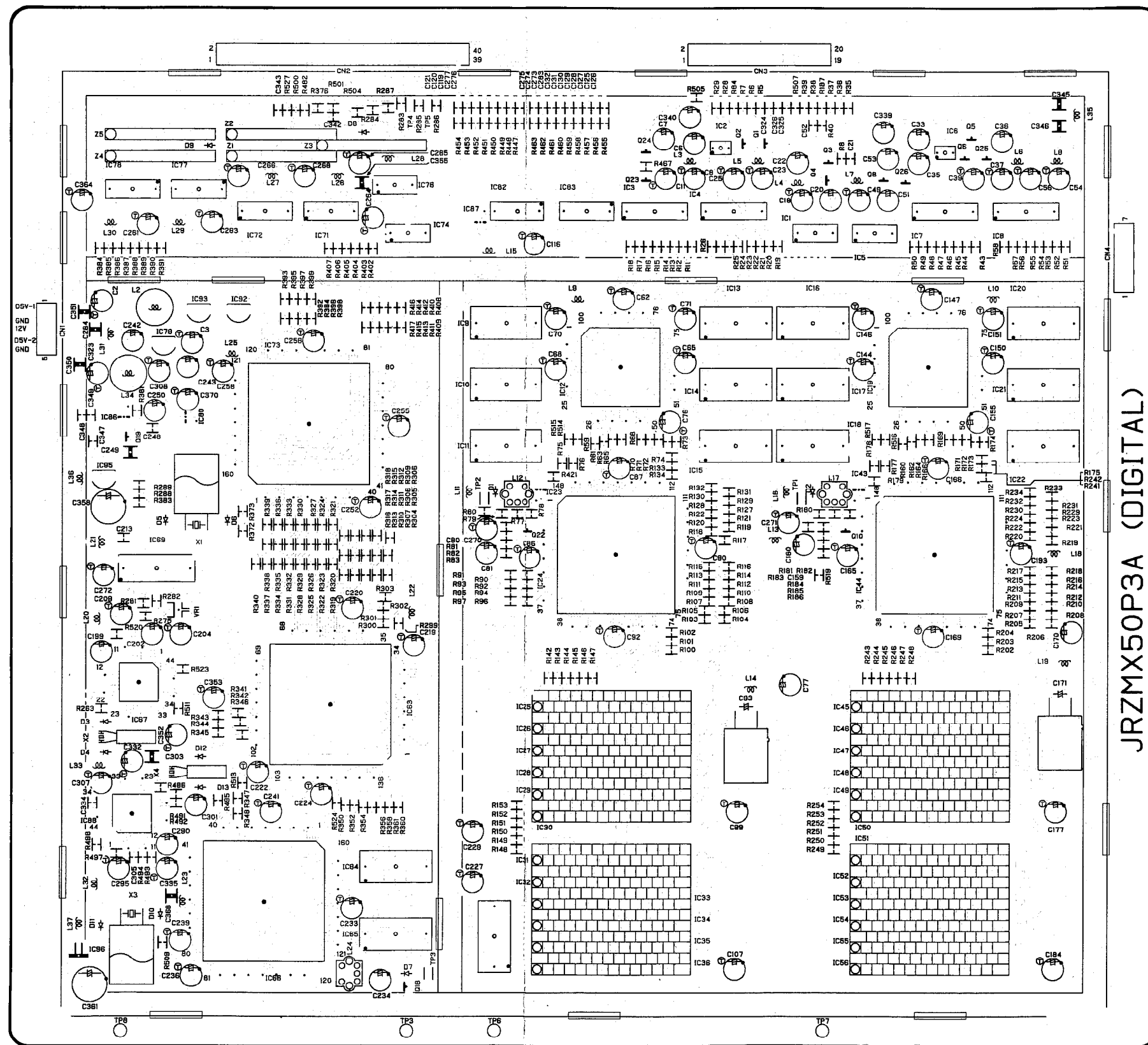


## &lt;Index&gt;

DIGITAL BOARD  
(COMPONENT SIDE)

IC1	E5	IC78	E1
IC2	E4	IC79	D2
IC3	E4	IC80	D2
IC4	E4	IC82	E3
IC5	E5	IC83	E3
IC6	E5	IC86	D1
IC7	E5	IC87	E3
IC8	E5	IC88	B1
IC9	D3	IC92	D2
IC10	D3	IC93	D2
IC11	D3	IC95	C1
IC12	D4	IC96	A1
IC13	D4	Q1	E4
IC14	D4	Q2	E4
IC15	D4	Q3	E5
IC16	D5	Q4	E5
IC17	D5	Q5	E5
IC18	D5	Q6	E5
IC19	D5	Q8	E5
IC20	D6	Q10	C5
IC21	D6	Q18	A3
IC22	D6	Q19	D1
IC23	C3	Q22	C3
IC24	C4	Q23	E4
IC25	B4	Q24	E4
IC26	B4	Q25	E5
IC27	B4	Q26	E5
IC28	B4	D1	C3
IC29	B4	D2	C5
IC30	B4	D3	B1
IC31	B4	D4	B1
IC32	B4	D5	C2
IC33	A4	D6	C2
IC34	A4	D7	A3
IC35	A4	D8	E2
IC36	A4	D9	E2
IC43	C5	D10	A2
IC44	C5	D11	A1
IC45	B5	D12	B2
IC46	B5	D13	B2
IC47	B5		
IC48	B5		
IC49	B5		
IC50	B5		
IC51	B5		
IC52	B5		
IC53	A5		
IC54	A5		
IC55	A5		
IC56	A5		
IC63	B2		
IC64	B3		
IC65	A3		
IC66	A2		
IC67	B1		
IC69	C1		
IC71	E2		
IC72	E2		
IC73	D2		
IC74	E3		
IC76	E3		
IC77	E2		

## DIGITAL BOARD



(COMPONENT SIDE)

JRZMX50P3A (DIGITAL)

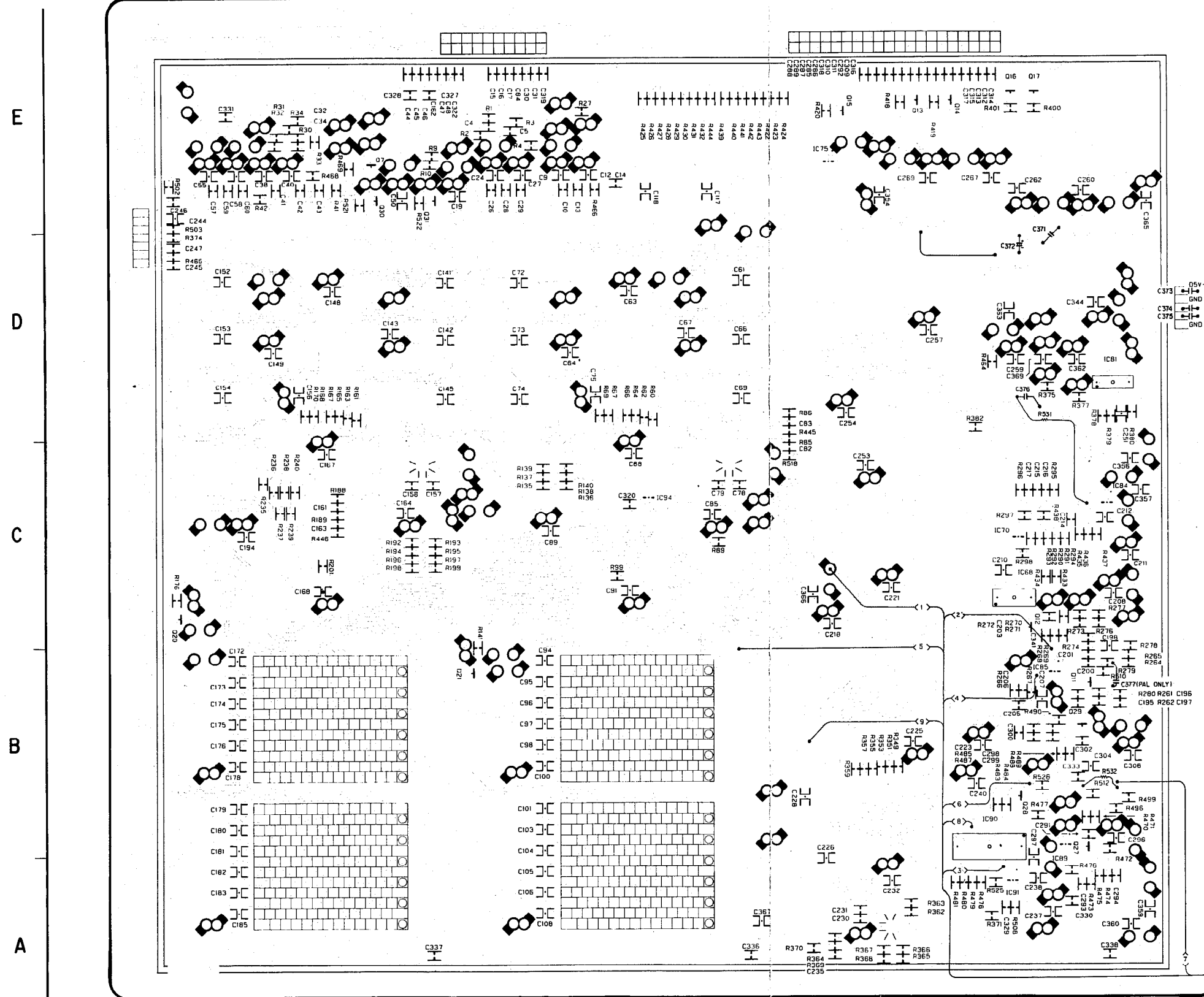
DIGITAL BOARD  
(COMPONENT SIDE)

*	NTSC	PAL
R275	— OPEN —	0
R491	620	0
R492	620	0
R496	0	— OPEN —
C199	2.2/50	10/16
C301	2.2/50	3.3/50

WJ-MX50

WJ-MX50

DIGITAL BOARD



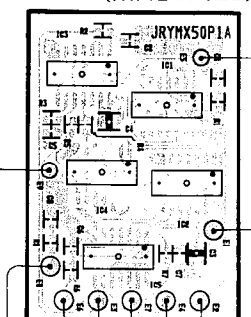
DIGITAL BOARD  
(PATTERN SIDE)

*	NTSC	PAL
R99	- OPEN -	0
R201	- OPEN -	0
R264	620	330
R265	620	330
R268	0	- OPEN -
R269	- OPEN -	0
R274	10K	18K
R278	7.5K	1K
R290	0	- OPEN -
R291	0	- OPEN -
R292	0	- OPEN -
R293	0	- OPEN -
R294	- OPEN -	0
R371	- OPEN -	0
R435	- OPEN -	510
R464	- OPEN -	0
R470	7.5K	1K
R478	0	- OPEN -
R479	0	- OPEN -
R481	0	- OPEN -
R499	- OPEN -	0
C216	560P	100P
C217	560P	100P
C333	- OPEN -	39P
C377	- OPEN -	39P

DIGITAL SUB BOARD  
(PATTERN SIDE)

*	NTSC	PAL
R4	0	- OPEN -
R5	- OPEN -	0

DIGITAL SUB BOARD  
(PATTERN SIDE)



PATTERN SIDE  
COMPONENT SIDE

<Index>

DIGITAL BOARD  
(PATTERN SIDE)

IC68	C5
IC70	C5
IC75	E4
IC81	D6
IC84	C6
IC85	B5
IC89	B5
IC90	B5
IC91	A5
IC94	C3
Q7	E2
Q11	B5
Q12	C5
Q13	E5
Q14	E5
Q15	E4
Q16	E5
Q17	E5
Q20	C1
Q21	B3
Q27	B5
Q28	B5
Q29	B5
Q30	E2
Q31	E2

<Index>

DIGITAL SUB BOARD

IC1	B7
IC2	B7
IC3	B7
IC4	B7

# SCHEMATIC DIAGRAM OF DIGI

## DIGITAL BOARD

G

F

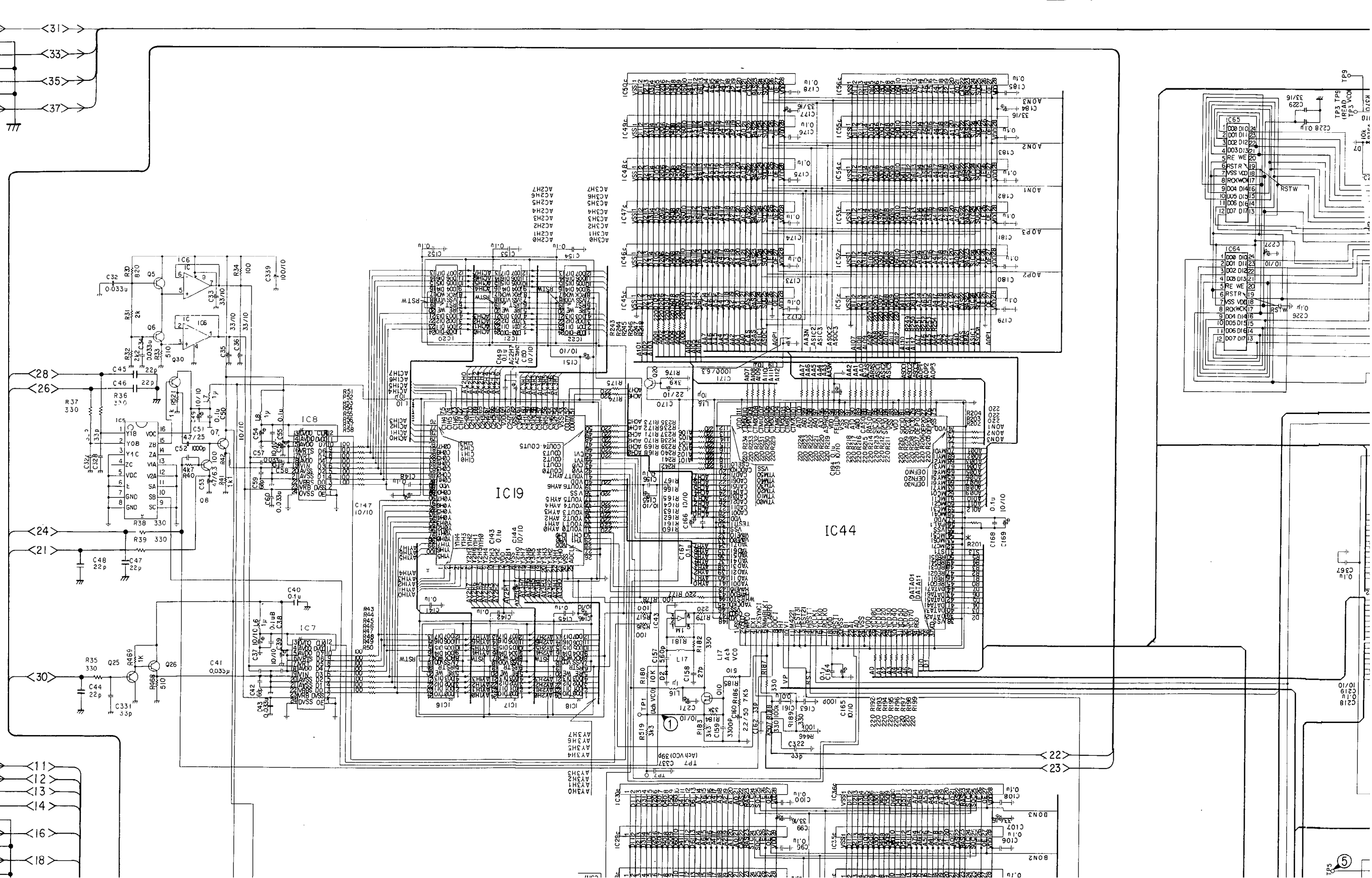
E

D

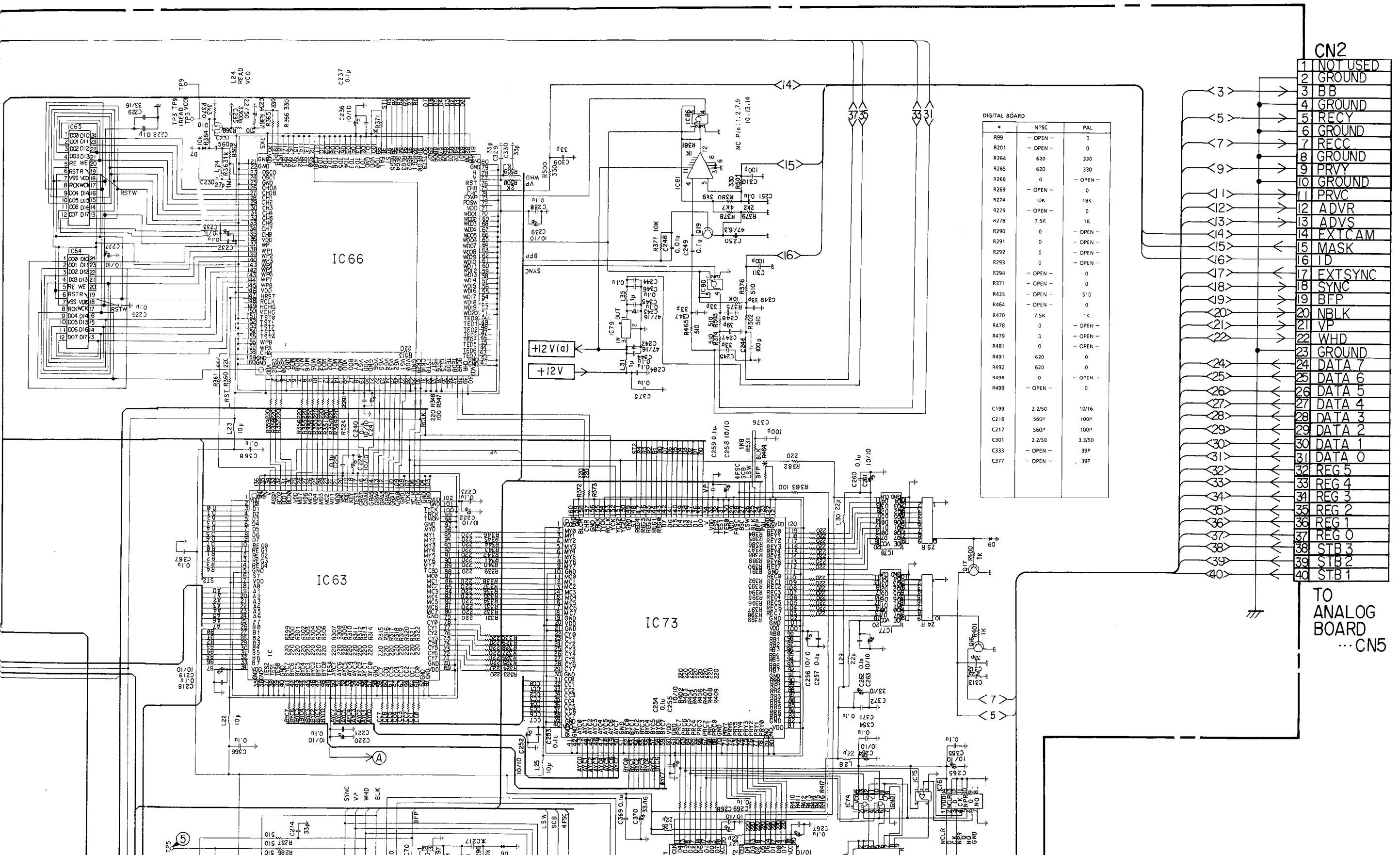
CN4	
CHARIN	1
GROUND	2
SYNC	3
GROUND	4
+9V	5
GROUND	6
KB15SW	7

TO  
TITLE  
INPUT  
CON-  
NECTOR

CN3	
CDCB	1
CSYNCB	2
WHDB	3
CLMPB	4
GROUND	5
B-YB	6
GROUND	7
R-YB	8
GROUND	9



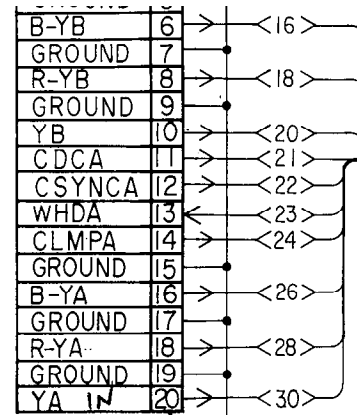
# DIAGRAM OF DIGITAL BOARD



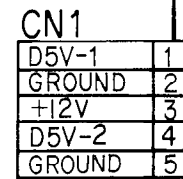
C

B

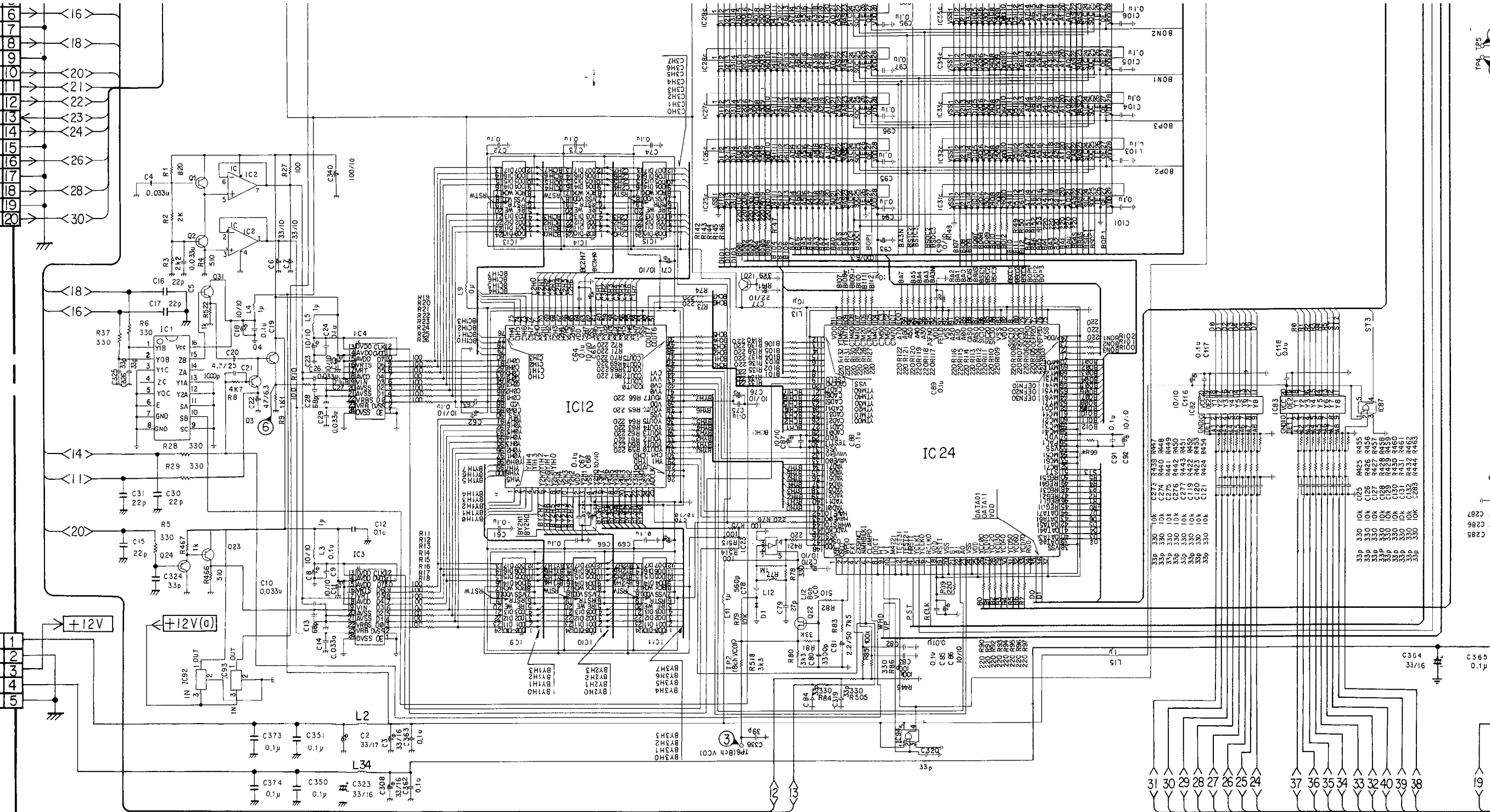
A



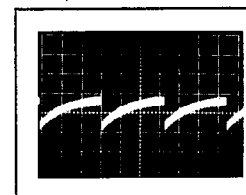
TO  
ANALOG  
BOARD  
...CN7



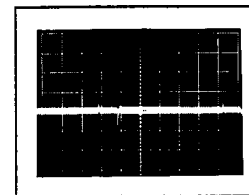
TO  
POWER  
BOARD



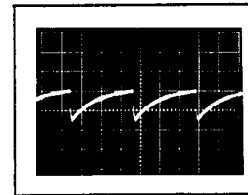
1. 20μs / DIV, 0.1V / DIV



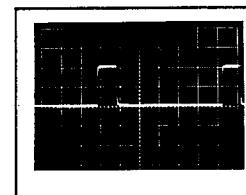
2. 10μs / DIV, 0.1V / DIV



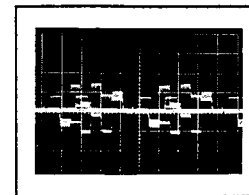
3. 20μs / DIV, 0.1V / DIV



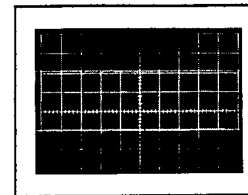
5. 10μs / DIV, 2V / DIV



6. 10μs / DIV, 0.5V / DIV



4. 10μs / DIV, 0.2V / DIV



## &lt;Index&gt;

## DIGITAL BOARD

IC1	C2
IC2	C2
IC3	B2
IC4	C2
IC5	E2
IC6	F2
IC7	D2
IC8	E2
IC9	B3
IC10	B3
IC11	B3
IC12	B3
IC13	C3
IC14	C3
IC15	C3

IC16	D3
IC17	D3
IC18	D3
IC19	E3
IC20	F3
IC21	F3
IC22	F3
IC23	B4
IC24	B4
IC25	C4
IC26	C4
IC27	D4
IC28	D4
IC29	D4
IC30	D4

IC31	C5
IC32	C5
IC33	D5
IC34	D5
IC35	D5
IC36	D5
IC43	E4
IC44	E4
IC45	F4
IC46	F4
IC47	F4
IC48	F4
IC49	G4
IC50	G4
IC51	F5

IC52	F5
IC53	F5
IC54	F5
IC55	G5
IC56	G5
IC63	E7
IC64	F6
IC65	F6
IC66	F7
IC67	B7
IC68	C7
IC69	D7
IC70	D7
IC71	D8
IC72	D8

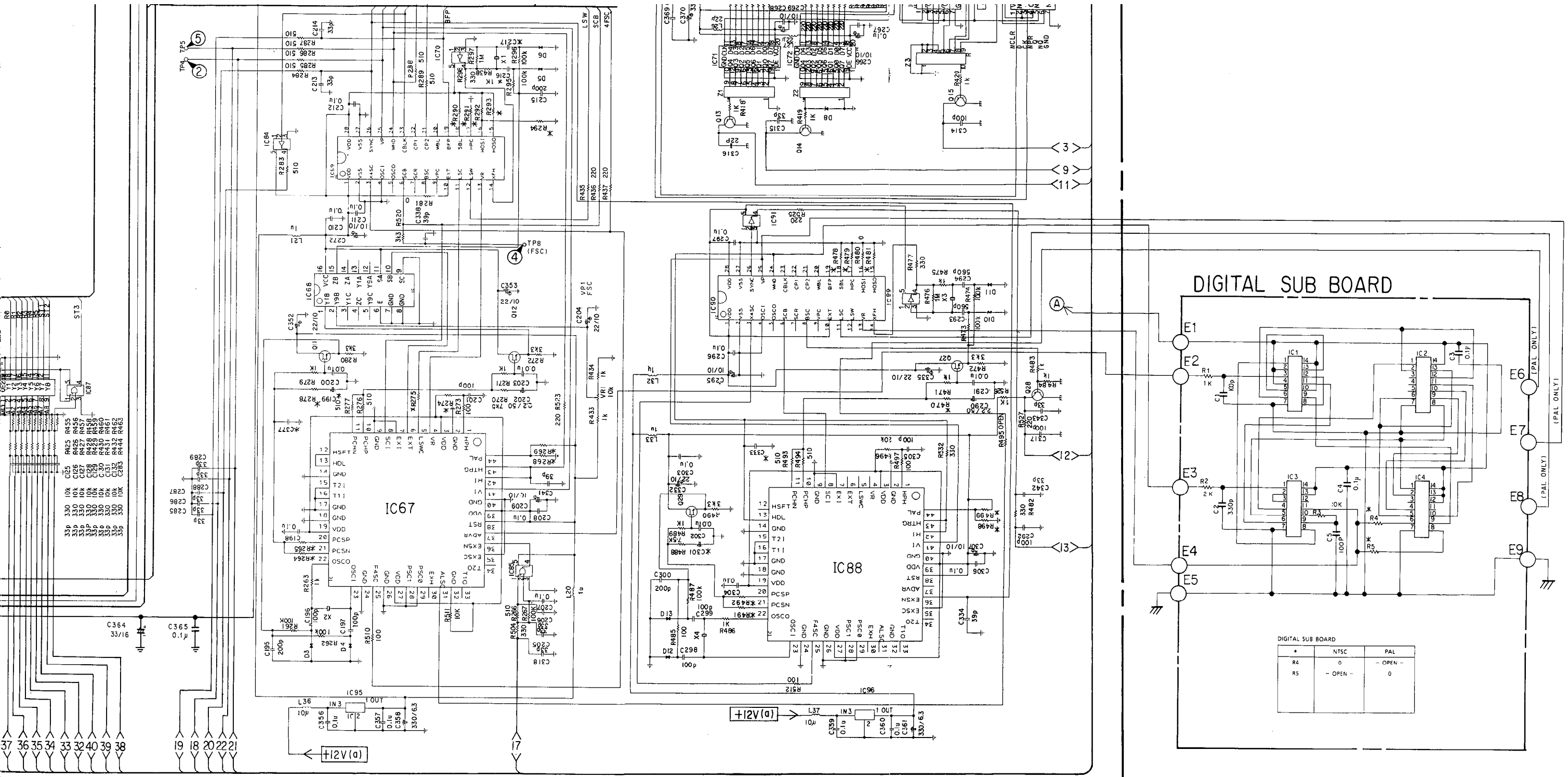
IC73	D8
IC74	D9
IC75	D9
IC76	D9
IC77	E9
IC78	E9
IC79	F8
IC80	F8
IC81	F8
IC82	B5
IC83	B6
IC84	C6
IC85	B7
IC86	G8
IC87	B6

IC88	B8
IC89	C9
IC90	C8
IC91	C8
IC92	B2
IC93	B2
IC94	A4
IC95	A7
IC96	A9

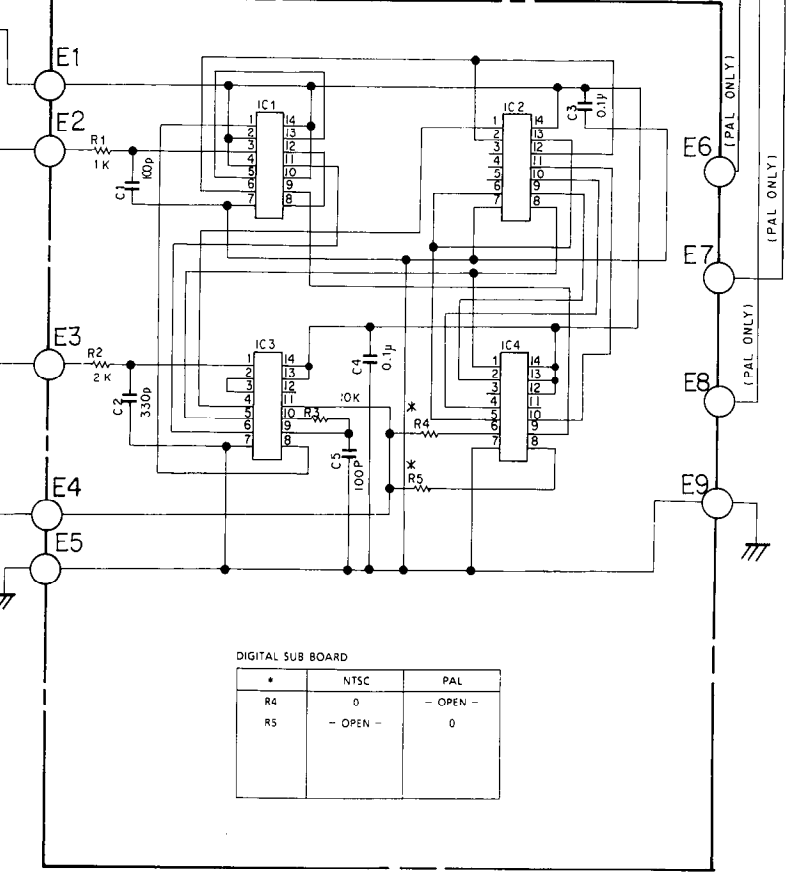
Q1	C2
Q2	C2
Q3	C2
Q4	C2
Q5	F2
Q6	F2
Q7	E2
Q8	E2
Q10	D4
Q11	C7
Q12	C7
Q13	C8
Q14	C8
Q15	C9
Q16	D9

Q17	C2
Q18	C2
Q19	C2
Q20	C2
Q21	C4
Q22	B4
Q23	B2
Q24	B2
Q25	D2
Q26	D2
Q27	C9
Q28	B9
Q29	B8
Q30	F2
Q31	C2

E9	D1
G6	D2
F8	D3
F4	D4
C4	D5
B4	D6
B2	D7
B2	D8
D2	D9
D2	D10
C9	D11
C9	D12
A8	D13
B8	



# DIGITAL SUB BOARD



DIGITAL SUB BOARD		
	NTSC	PAL
R4	0	- OPEN -
R5	- OPEN -	0

- D1 B4
- D2 D4
- D3 B7
- D4 B7
- D5 D7
- D6 D7
- D7 G6
- D8 C8
- D9 E9
- D10 C9
- D11 C9
- D12 A8
- D13 B8



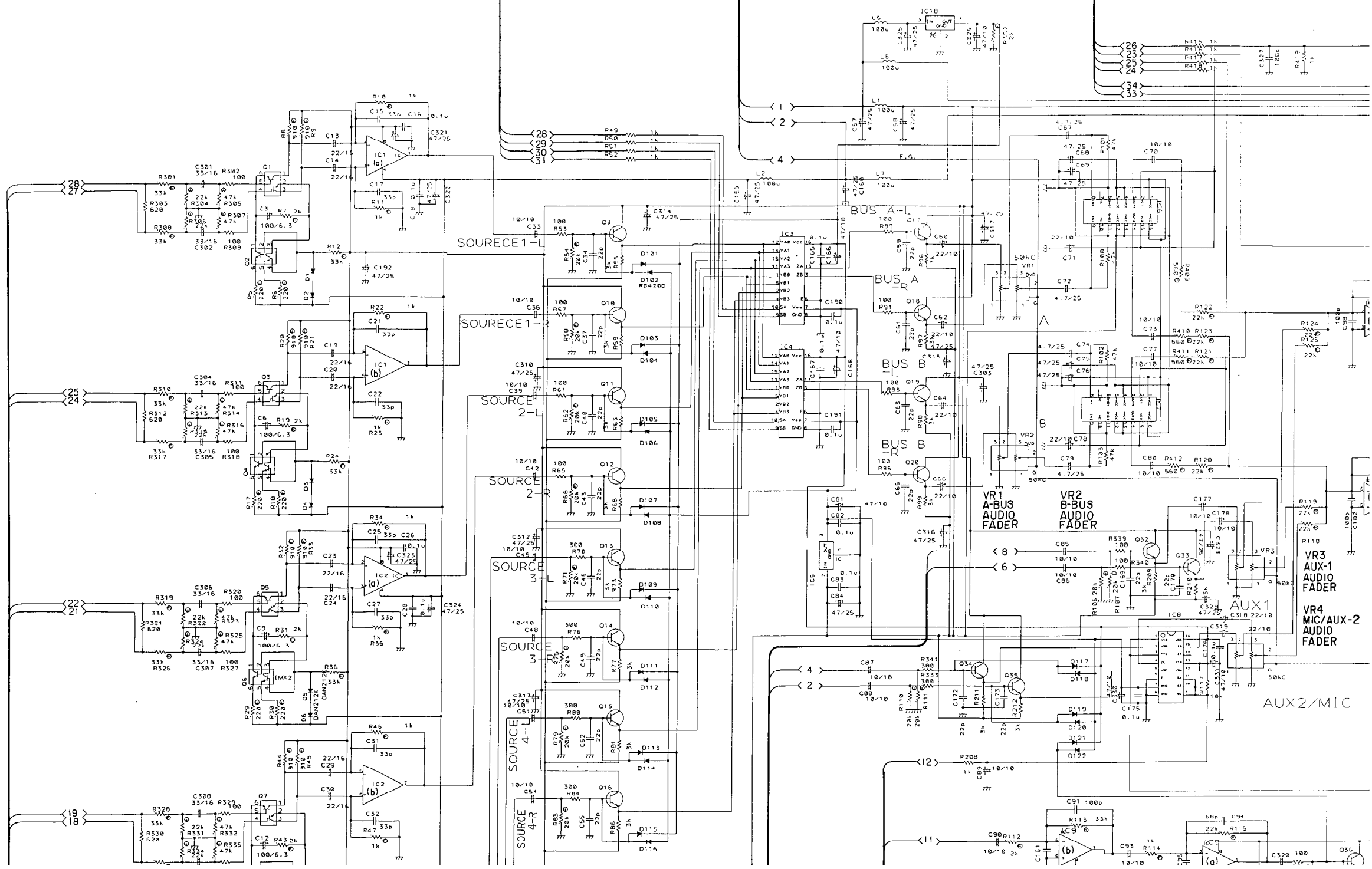
SCHEMATIC DIAGRAM OF A

AUDIO BOARD

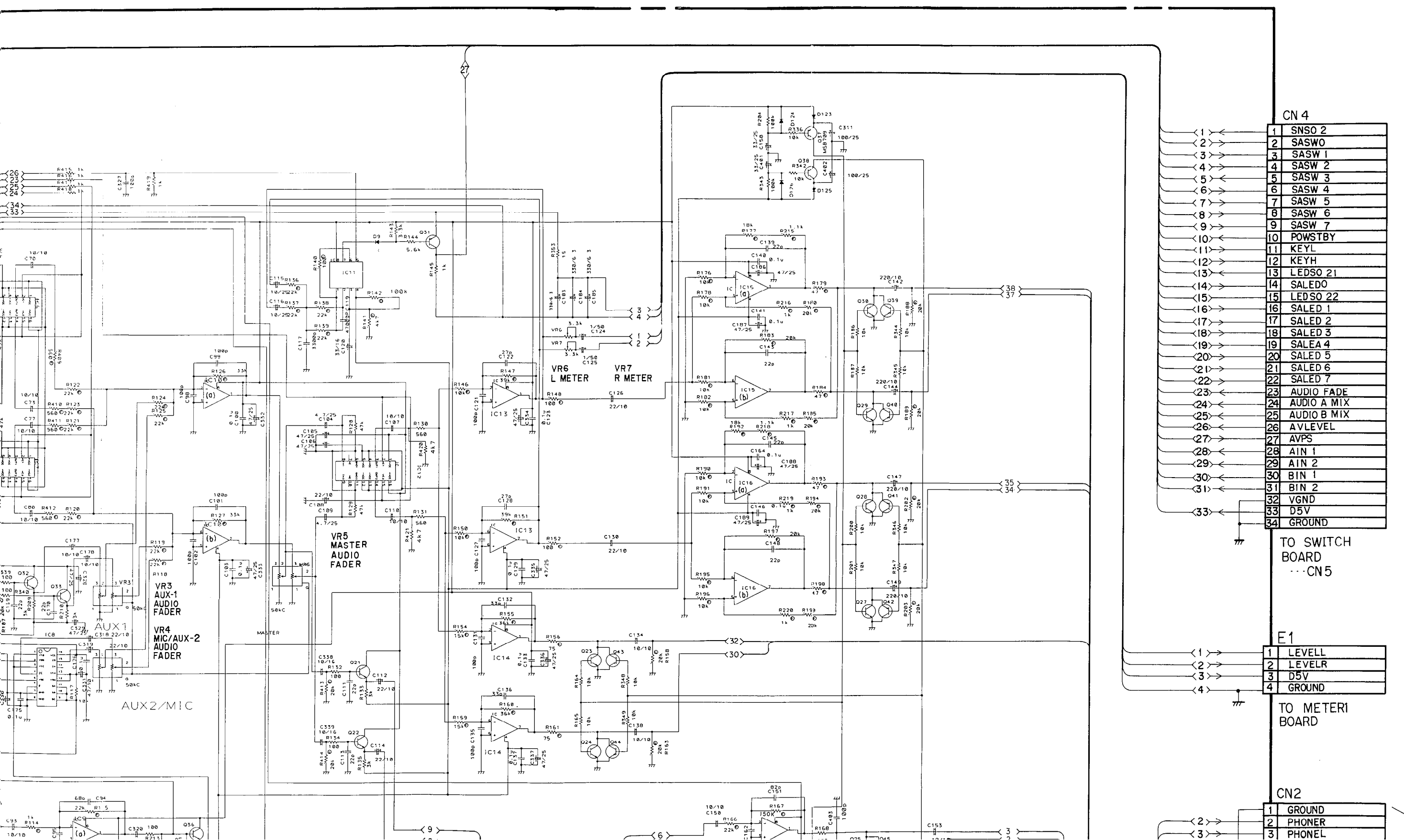
CN 5	
+12V	1
-12V	2
GROUND	3
FRAME GROUND	4

TO  
POWER  
BOARD  
...CN 4

CN 1	
GROUND	1
AUX2R	2
GROUND	3
AUX2L	4
GROUND	5
AUX1R	6
GROUND	7
AUX1L	8
GROUND	9
SOURCE4R	10
GROUND	11
SOURCE4L	12
GROUND	13
SOURCE3R	14
GROUND	15
SOURCE3L	16
GROUND	17
SOURCE2RC	18
SOURCE2RH	19
GROUND	20
SOURCE2LC	21
SOURCE2LH	22
GROUND	23
SOURCE1RC	24
SOURCE1RH	25
GROUND	26
SOURCE1LC	27



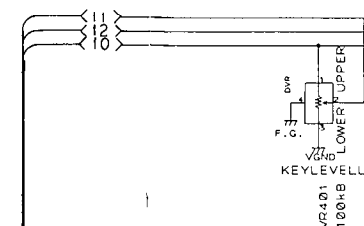
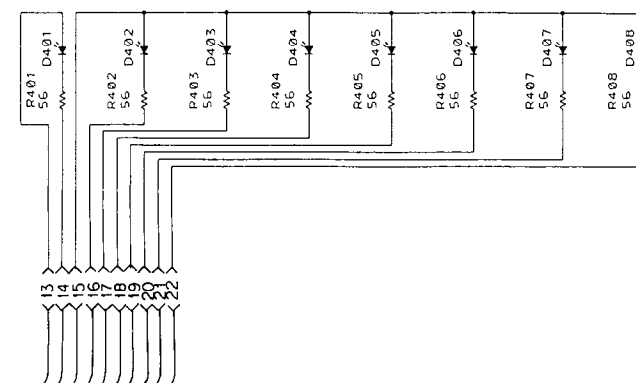
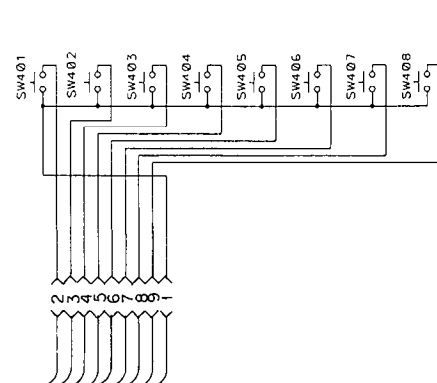
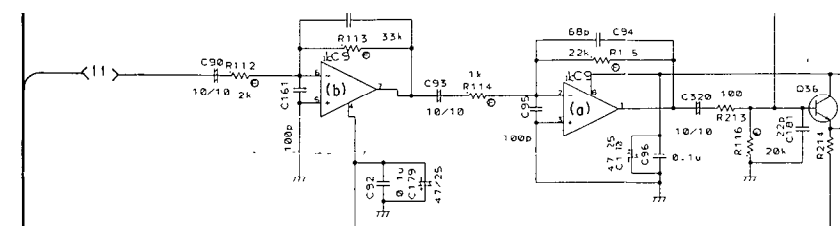
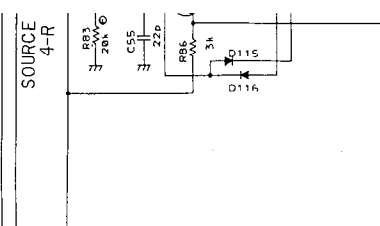
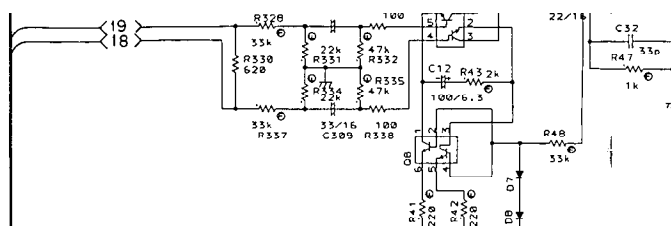
# C DIAGRAM OF AUDIO BOARD





SOURCE1RC	24	> (24)
SOURCE1RH	25	> (25)
GROUND	26	
SOURCE1LC	27	> (27)
SOURCE1LH	28	> (28)
GROUND	29	
REC2R	30	< (30)
GROUND	31	
REC2L	32	< (32)
GROUND	33	
REC1RC	34	< (34)
REC1RH	35	< (35)
GROUND	36	
REC1LC	37	< (37)
REC1LH	38	< (38)
NOT USED	39	
NOT USED	40	

TO  
REAR 2  
BOARD  
...E5



SW401 DSK ON/OFF BUTTON  
SW402 DSK A BUTTON  
SW403 DSK B BUTTON  
SW404 EXT CAMERA BUTTON  
SW405 KEY REVERSE BUTTON  
SW406 MATTE BUTTON  
SW407 WHITE BUTTON  
SW408 EDGE BUTTON

D401 DSK INDICATOR  
D402 DSK A INDICATOR  
D403 DSK B INDICATOR  
D404 EXT CAMERA INDICATOR  
D405 KEY REVERSE INDICATOR  
D406 MATTE INDICATOR  
D407 WHITE INDICATOR  
D408 EDGE INDICATOR

VR401 LOW LEVEL KEY SLIDE CONTROL  
VR402 HIGH LEVEL KEY SLIDE CONTROL

1

2

3

4

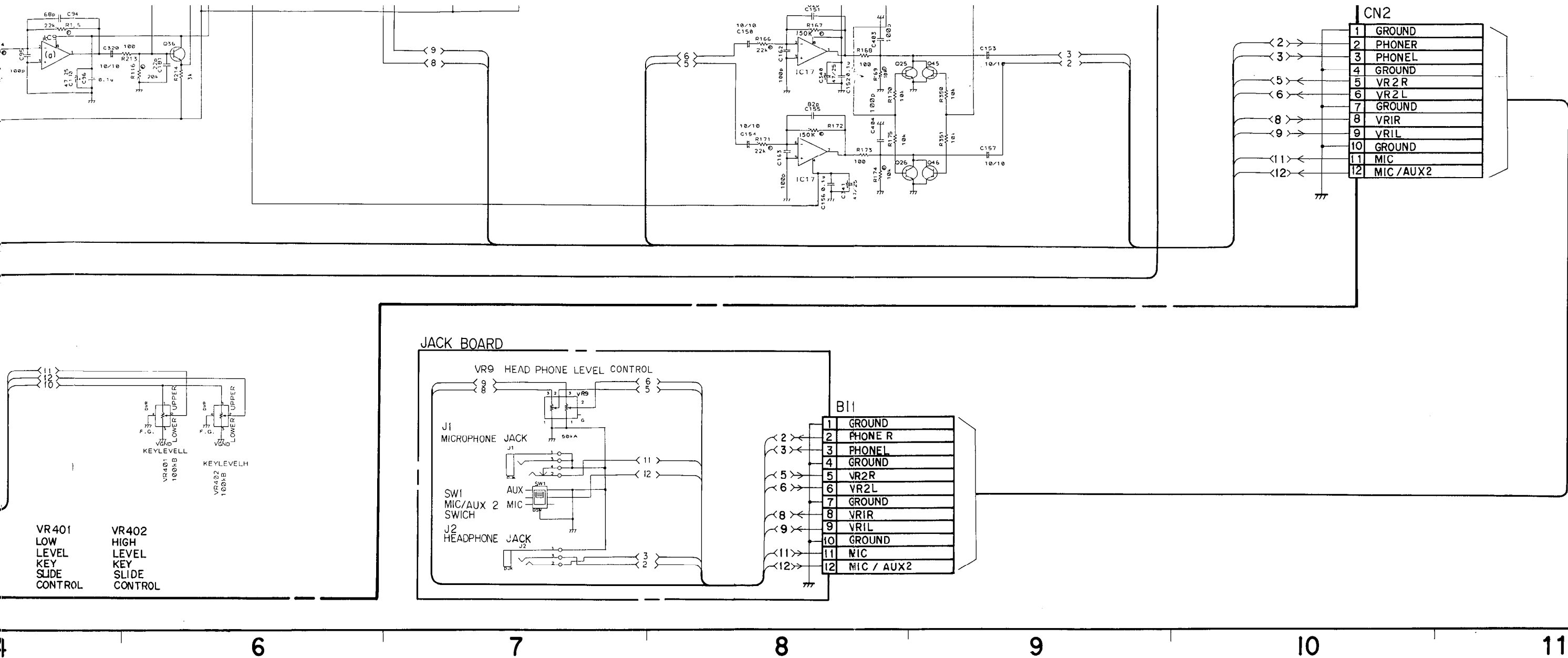
5

4

# <Index>

## AUDIO BOARD

IC1	E3,D3	Q1	E3	Q19	D5	Q37	F9	D1	E3	D110	D4	D402	A4
IC2	C3,D3	Q2	E3	Q20	D5	Q38	E9	D2	E3	D111	C4	D403	A4
IC3	E5	Q3	D3	Q21	C7	Q39	E9	D3	D3	D112	C4	D404	A5
IC4	D5	Q4	D3	Q22	C7	Q40	D9	D4	D3	D113	C4	D405	A5
IC5	D5	Q5	D3	Q23	C8	Q41	D9	D5	C3	D114	C4	D406	A5
IC6	E6	Q6	C3	Q24	C8	Q42	D9	D6	C3	D115	C4	D407	A5
IC7	D6	Q7	C3	Q25	C9	Q43	C8	D7	B3	D116	C4	D408	A5
IC8	C6	Q8	C3	Q26	B9	Q44	C8	D8	B3	D117	C6		
IC9	C6	Q9	E4	Q27	D9	Q45	C9	D9	E7	D118	C6		
IC10	D7	Q10	E4	Q28	D9	Q46	B9	D101	E4	D119	C6		
IC11	E7	Q11	D4	Q29	D9			D102	E4	D120	C6		
IC12	D7	Q12	D4	Q30	E9			D103	D4	D121	C6		
IC13	D8	Q13	D4	Q31	E8			D104	D4	D122	C6		
IC14	C8	Q14	C4	Q32	D6			D105	D4	D123	F9		
IC15	E9	Q15	C4	Q33	D6			D106	D4	D124	F9		
IC16	D9	Q16	C4	Q34	C5			D107	D4	D125	E9		
IC17	B9,C9	Q17	E5	Q35	C5			D108	D4	D126	E9		
IC18	E5	Q18	E5	Q36	C7			D109	D4	D401	A4		



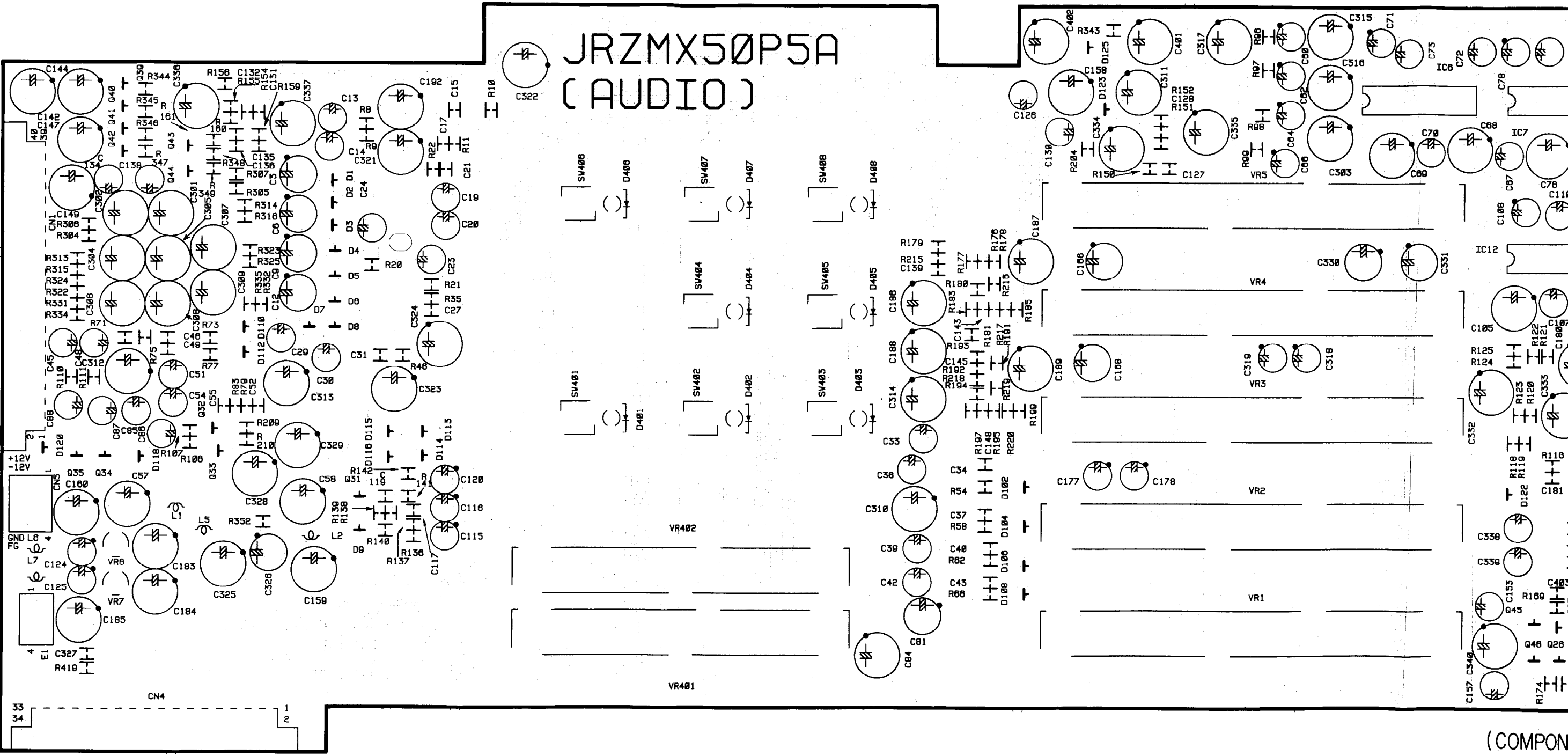
CONDUCTOR VIEW OF AUDIO BOARD

AUDIO BOARD

C

B

A



(COMPON

1

2

3

4

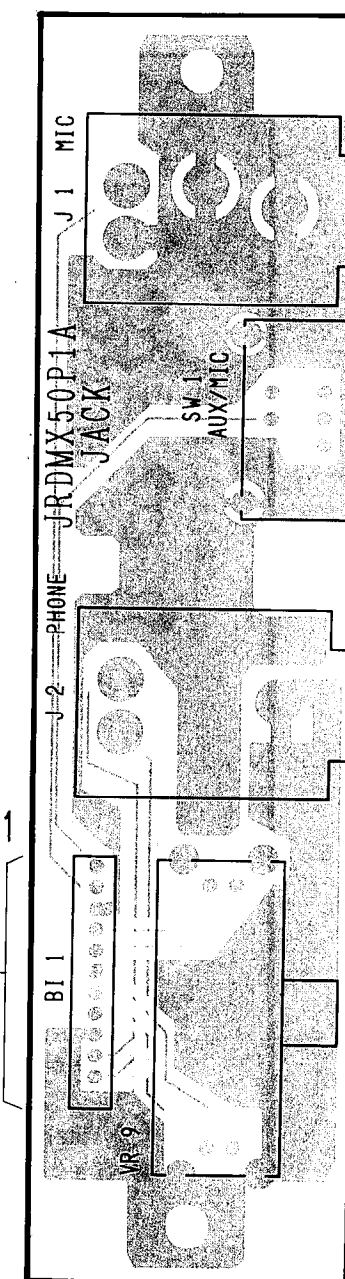
5

6

**JRZMX50P5A**  
**(AUDIO)**

The schematic diagram illustrates the internal circuitry of the JRZMX50P5A (AUDIO) component. It features a variety of electronic components, including resistors (R), capacitors (C), diodes (D), and integrated circuits (IC). The components are labeled with their respective values and types, such as R179, C188, D405, and IC12. The diagram is organized into several sections, with components arranged in a structured manner. The top section includes components like R179, C188, D405, and IC12. The middle section features a large central area with components like R179, C188, D405, and IC12. The bottom section includes components like R179, C188, D405, and IC12. The diagram is a black and white line drawing with various symbols and labels.

JACK BOARD



COMPONENT SIDE  
PATTERN SIDE

**AUDIO BOARD**  
(COMPONENT SIDE)

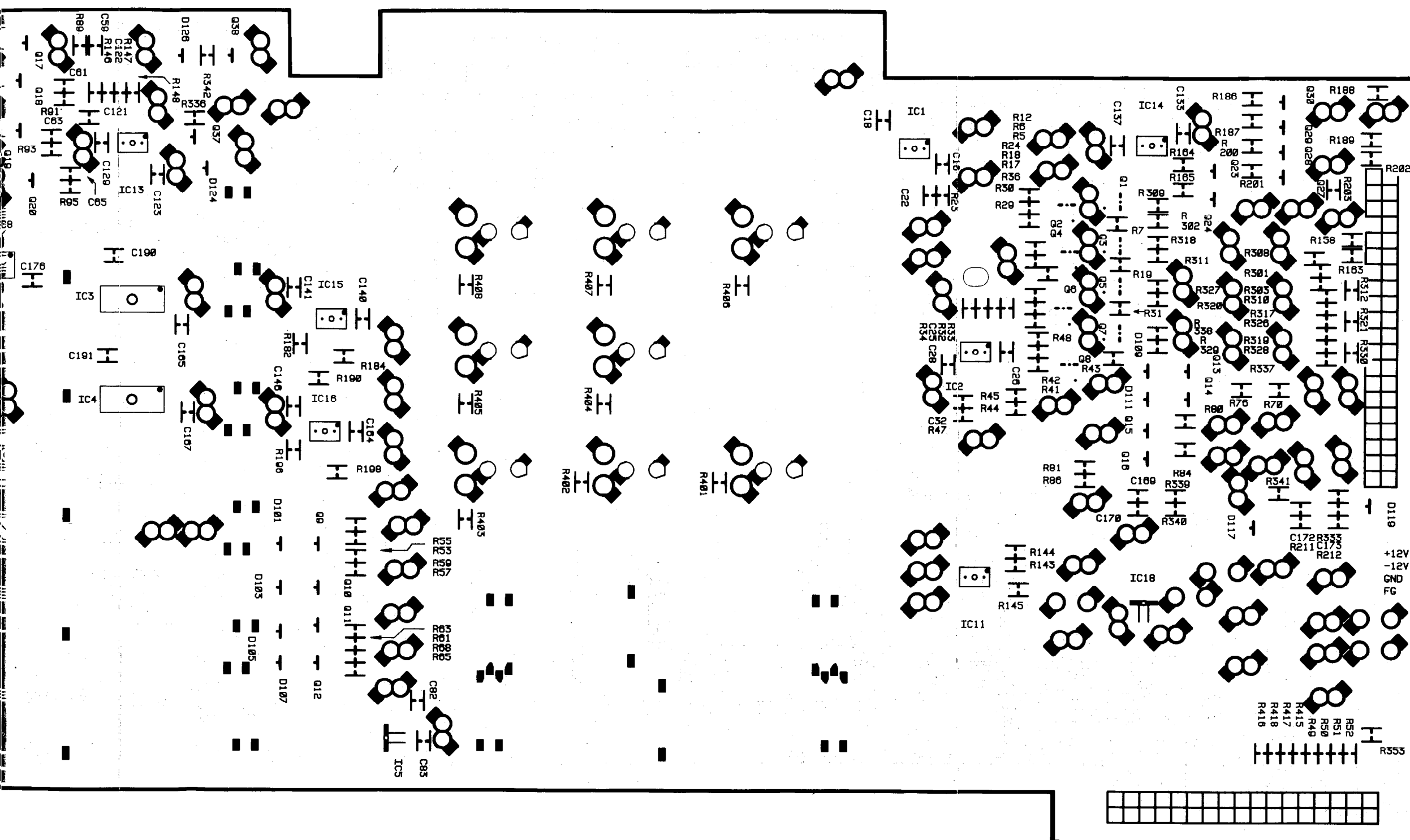
IC6	C6
IC7	C6
IC12	B6
Q25	A6
Q26	A6
Q31	B2
Q32	B2
Q33	B2
Q34	B1
Q35	B1
Q39	C1
Q40	C1
Q41	C1
Q42	C1
Q43	C1
Q44	C1
Q45	A6
Q46	A6
D1	C2
D2	C2
D3	C3
D4	B2
D5	B2
D6	B2
D7	B2
D8	B2
D9	A2
D102	B4
D104	B4
D106	A4
D108	A4
D110	B2
D112	B2
D113	B2
D114	B2
D115	B2
D116	B2
D118	B2
D118	B1
D120	B1
D122	B6
D123	C5
D125	C5
D401	B3
D402	B3
D403	B4
D404	B3
D405	B4
D406	C3
D407	C3
D408	C4



WJ-MX50

WJ-MX50

## CONDUCTOR VIEW OF AUDIO BOARD



(PATTERN SIDE)

## &lt;Index&gt;

AUDIO BOARD  
(PATTERN SIDE)

IC1	C5
IC2	B5
IC3	C3
IC4	B3
IC5	A4
IC8	C2
IC9	B1
IC10	B1
IC11	B5
IC13	C3
IC14	C6
IC15	C3
IC16	B3
IC17	A1
IC18	B6
Q1	C6
Q2	C6
Q3	C6
Q4	C6
Q5	C6
Q6	C6
Q7	B6
Q8	B6
Q9	B3
Q10	B3
Q11	A3
Q12	A3
Q13	B6
Q14	B6
Q15	B6
Q16	B6
Q17	C2
Q18	C2
Q19	C2
Q20	C2
Q21	B1
Q22	A1
Q23	C6
Q24	C6
Q27	C6
Q28	C6
Q29	C6
Q30	C6
Q36	B1
Q37	C3
Q38	C3
D101	B3
D103	B3
D105	A3
D107	A3
D109	B6
D111	B6
D117	B6
D119	B7
D121	B1
D124	C3
D126	C3

3

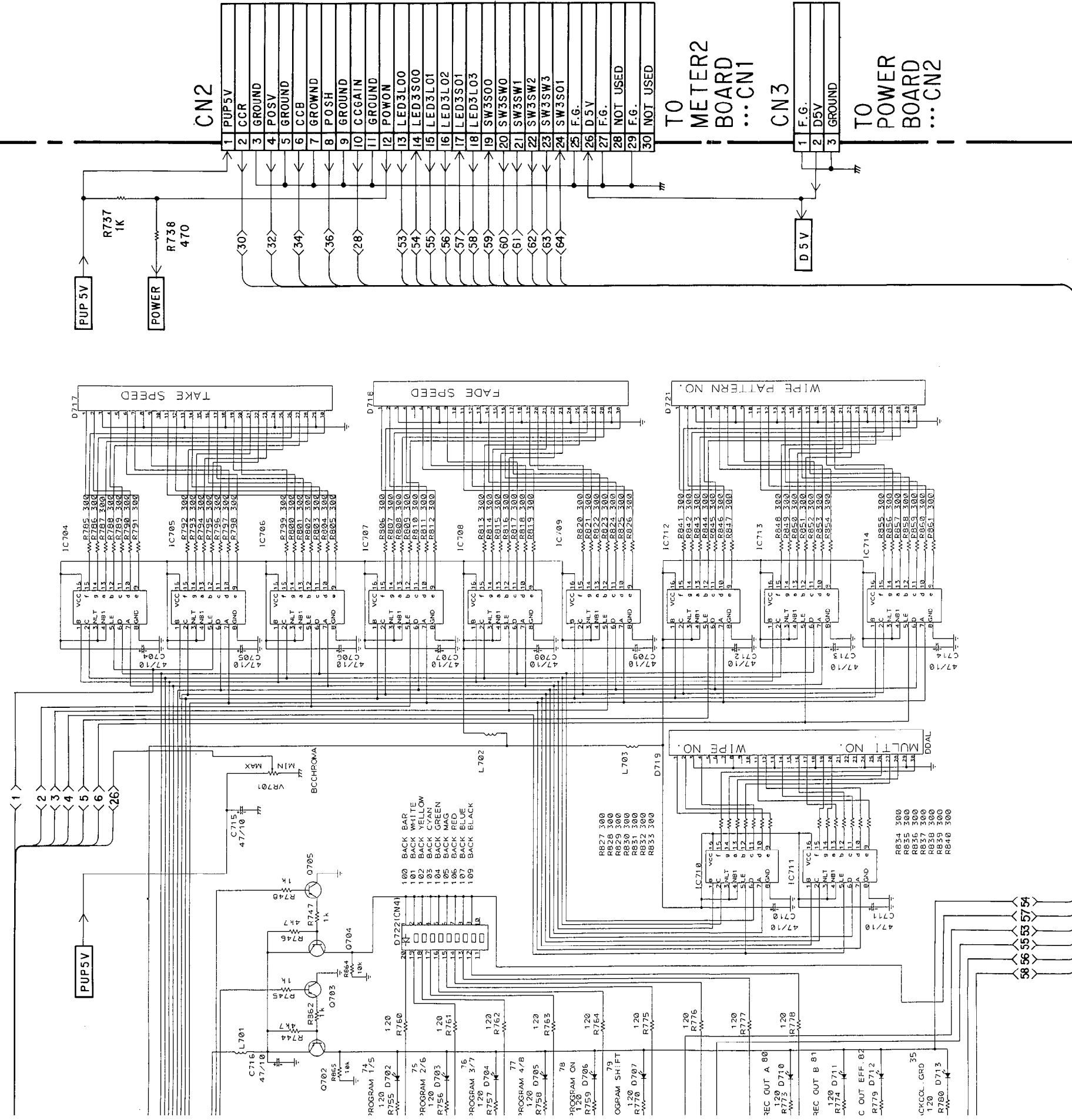
4

5

6

7

## SCHEMATIC DIAGRAM OF METER-1 BOARD



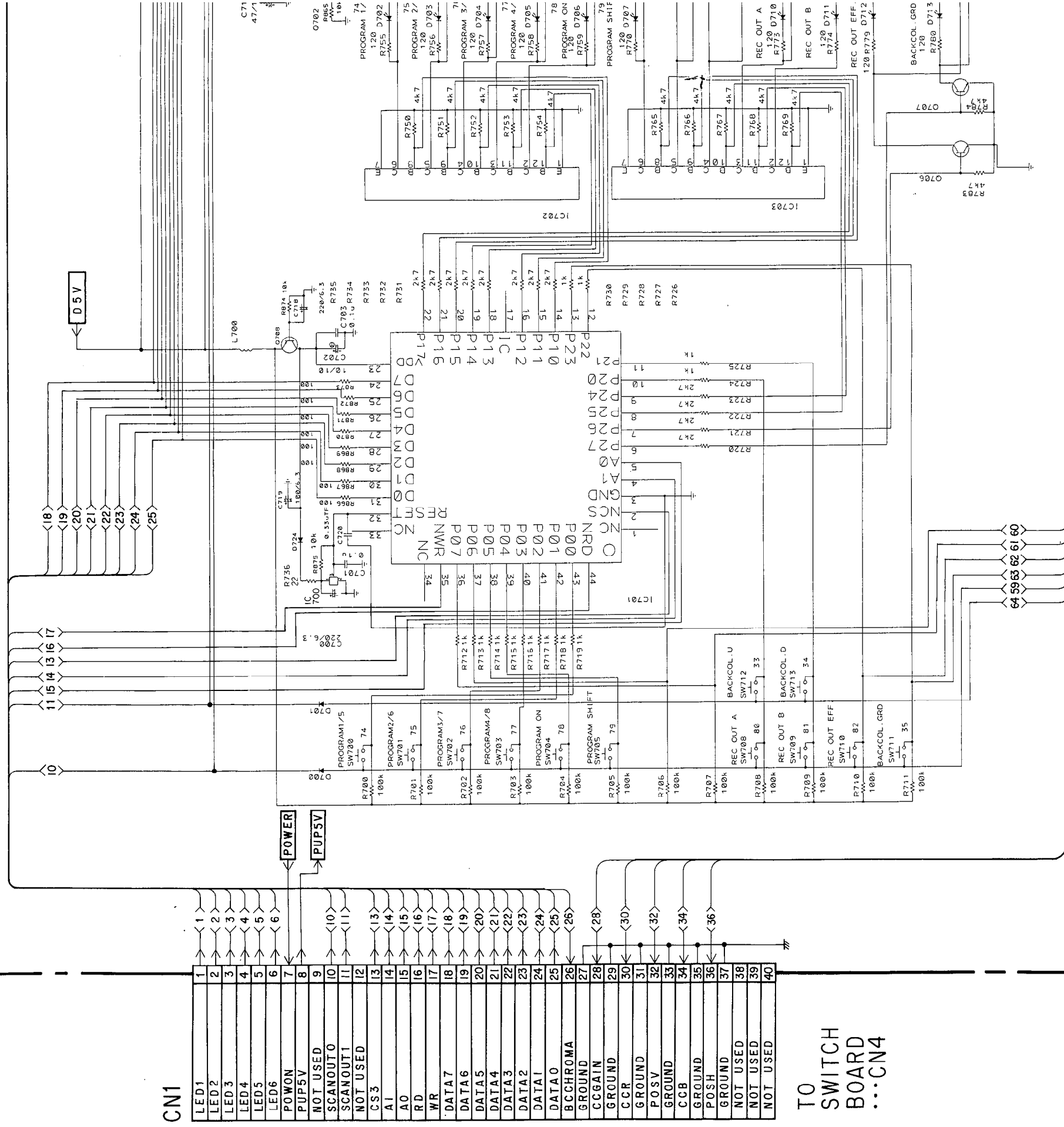
5

6

7

8

# METER I BOARD



## <Index>

### METER I BOARD

IC700	C3
IC701	C3
IC702	C4
IC703	B4
IC704	D6
IC705	D6
IC706	D6
IC707	C6

## 1

IC708	C6
IC709	B6
IC710	B5
IC711	B5
IC712	B6
IC713	B6
IC714	A6

## 2

Q702	C5
Q703	C5
Q704	C5
Q705	C5
Q706	A4
Q707	A4
Q708	D3

## 3

D700	C2
D701	C2
D702	C5
D703	C5
D704	C5
D705	C5
D706	C5

## 4

D707	B5
D710	B5
D711	B5
D712	B5
D713	A5
D717	D7
D718	C7

## <Index>

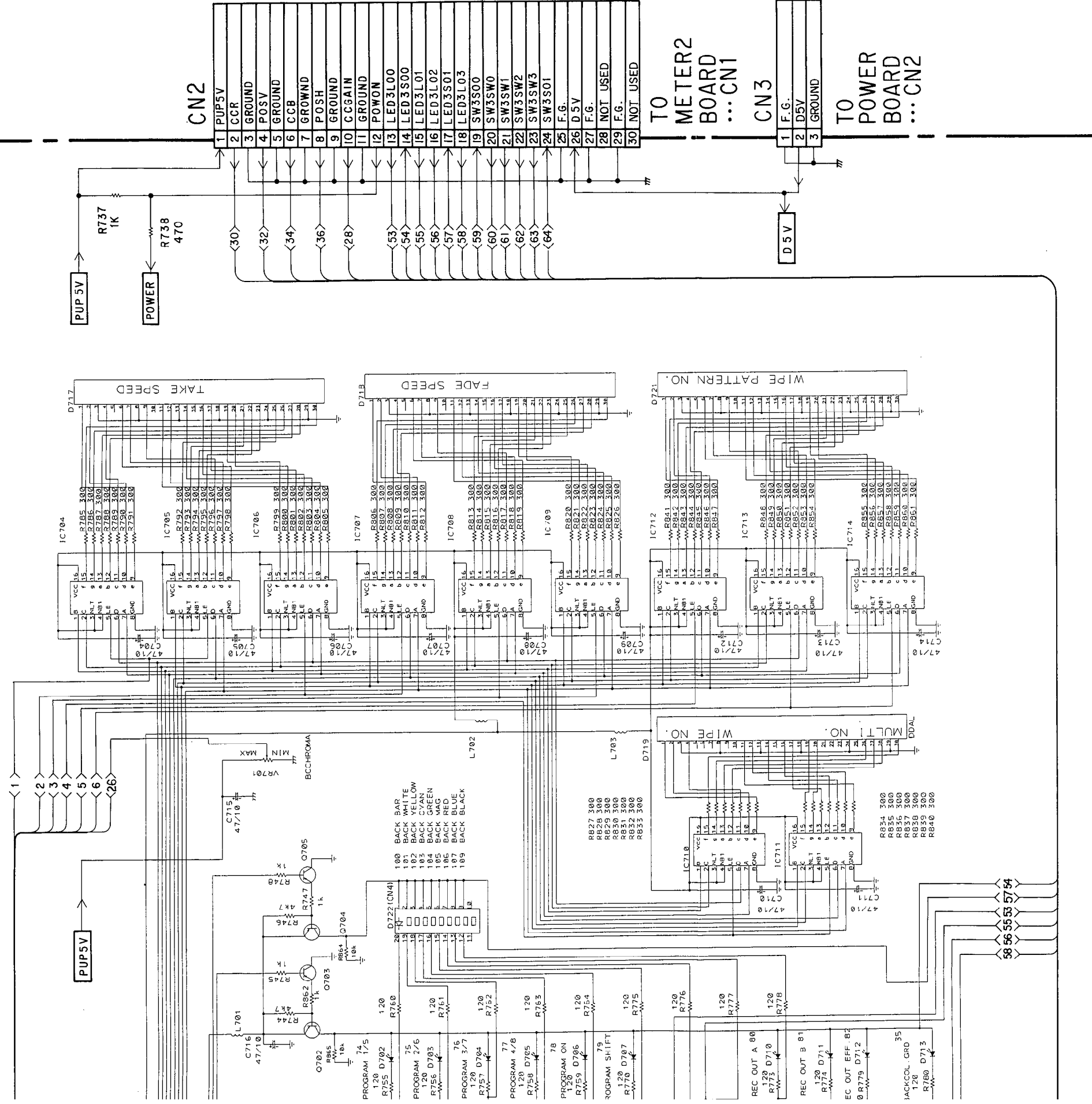
### METER I BOARD

(COMPONENT SIDE)  
IC701 B6

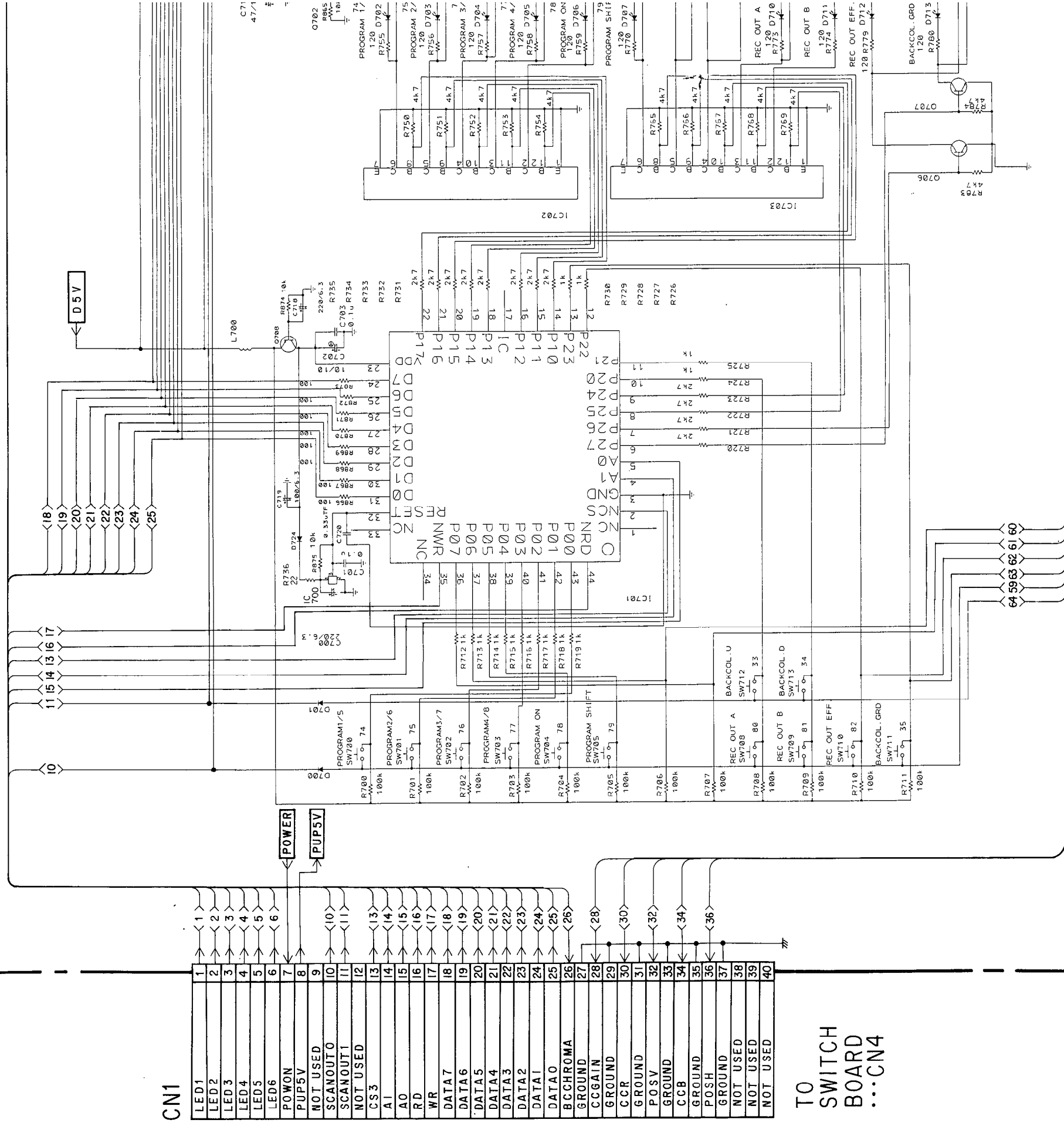
## METER I BOARD



# SCHEMATIC DIAGRAM OF METER-1 BOARD



METER1 BOARD



1

2

3

4

<Index>

METER1 BOARD

IC700	C3
IC701	C3
IC702	C4
IC703	B4
IC704	D6
IC705	D6
IC706	D6
IC707	C6

C6	Q708
B6	Q703
B5	Q704
B5	Q705
B6	Q706
B6	Q707
A6	Q708

D700	C2
D701	C2
D702	C5
D703	C5
D704	C5
D705	C5
D706	C5

D707	B5
D710	B5
D711	B5
D712	B5
D713	A5
D717	D7
D718	C7

D719	B6
D721	B7
D722	C5
D724	C3

<Index>

METER1 BOARD

(COMPONENT SIDE)  
IC701 B6

METER1 BOARD

# SCHEMATIC DIAGRAM OF S

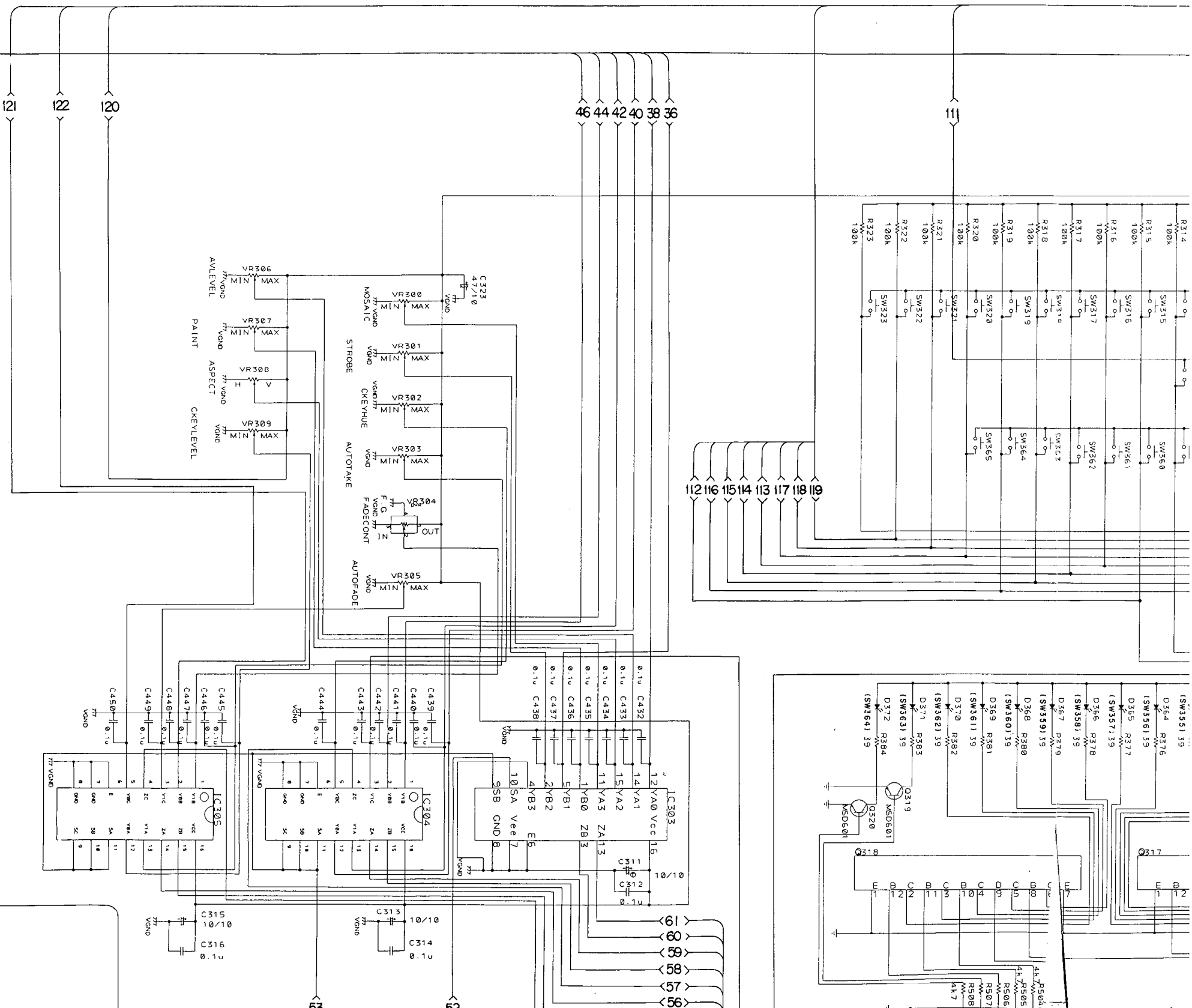
## SWITCH BOARD

CN 4

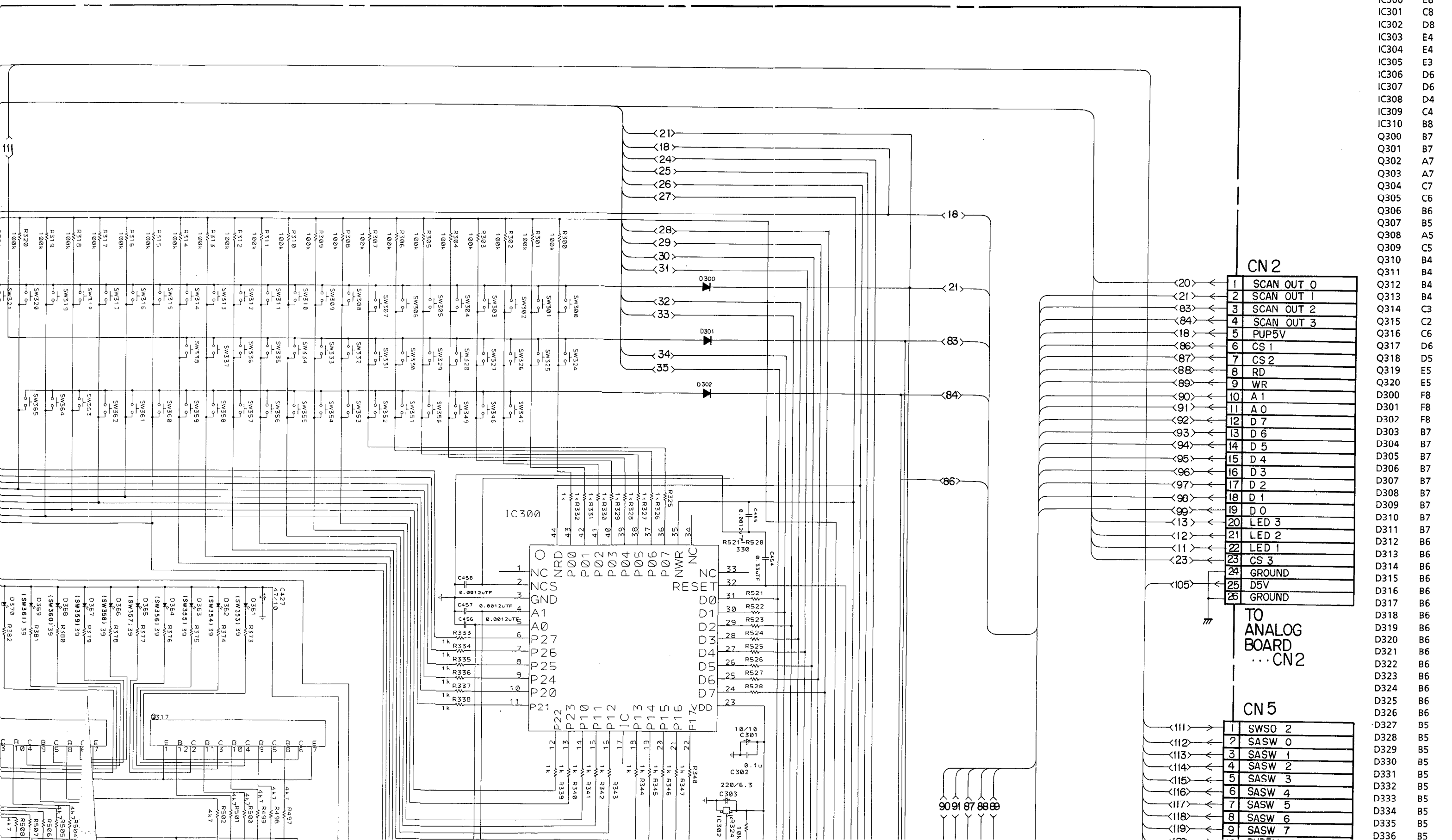
LED 1	1	<11>
LED 2	2	<12>
LED 3	3	<13>
LED 4	4	<14>
LED 5	5	<15>
LED 6	6	<16>
POW ON	7	<17>
PUP 5 V	8	<18>
NOT USED	9	
SCANOUT 0	10	<20>
SCANOUT 1	11	<21>
NOT USED	12	
CS 3	13	<23>
A 1	14	<24>
A 0	15	<25>
R D	16	<26>
WR	17	<27>
D 7	18	<28>
D 6	19	<29>
D 5	20	<30>
D 4	21	<31>
D 3	22	<32>
D 2	23	<33>
D 1	24	<34>
D 0	25	<35>
BCCHROMA	26	<36>
GROUND	27	
CCGAIN	28	<38>
GROUND	29	
CCR	30	<40>
GROUND	31	
POSV	32	<42>
GROUND	33	
CCB	34	<44>
GROUND	35	
POSH	36	<46>
GROUND	37	
NOT USED	38	
NOT USED	39	
NOT USED	40	

TO  
METER  
BOARD  
...CN1

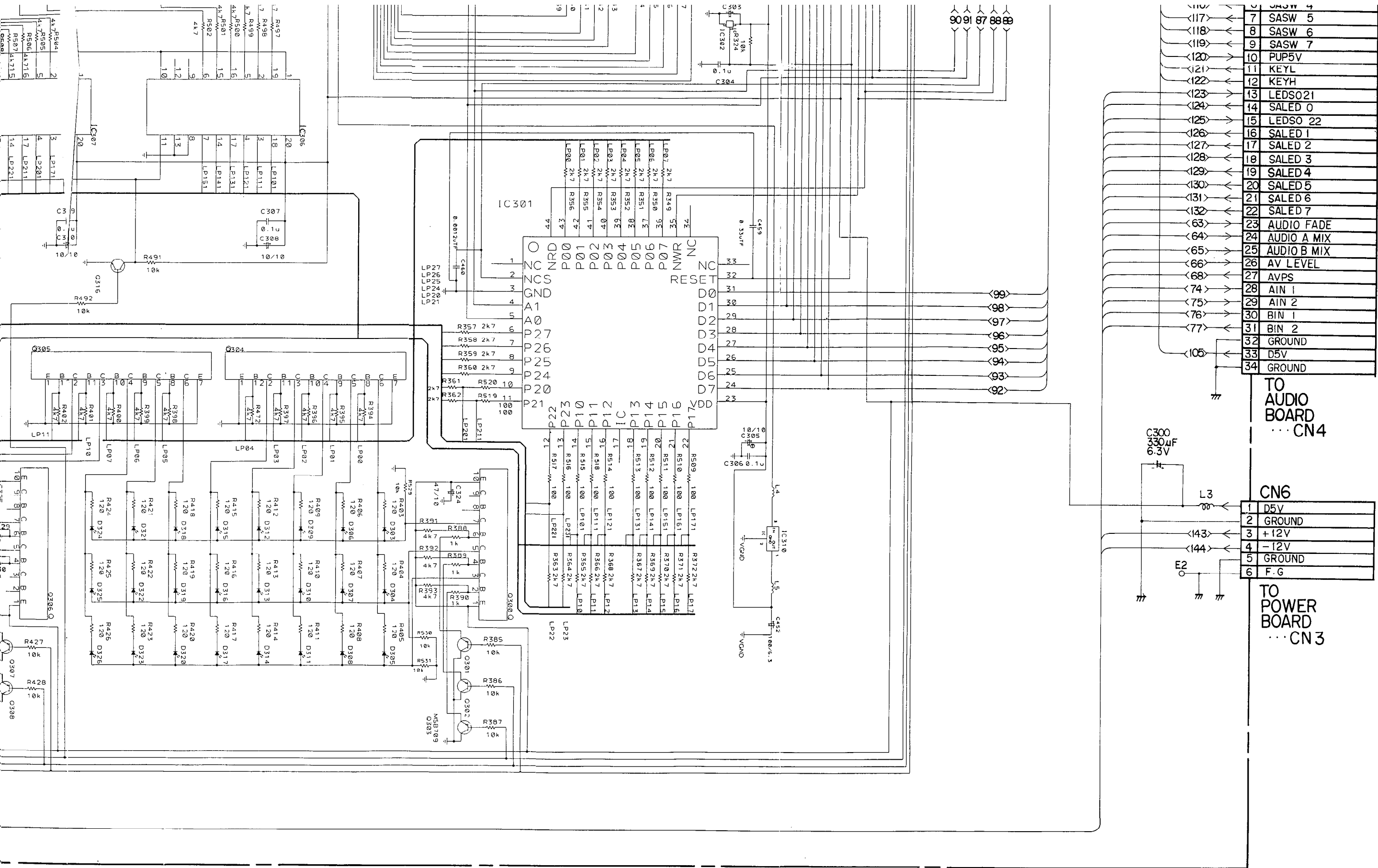
WIPE BOARD



# C DIAGRAM OF SWITCH BOARD







D333	B5
D334	B5
D335	B5
D336	B5
D337	B4
D338	B4
D339	B4
D340	B4
D341	B4
D343	B3
D345	B3
D347	B3
D349	B3
D351	B3
D353	B3
D354	B3
D356	B3
D357	B2
D360	B2

7	SASW 4
8	SASW 5
9	SASW 6
10	PUP5V
11	KEYL
12	KEYH
13	LEDS021
14	SALED 0
15	LEDS0 22
16	SALED 1
17	SALED 2
18	SALED 3
19	SALED 4
20	SALED 5
21	SALED 6
22	SALED 7
23	AUDIO FADE
24	AUDIO A MIX
25	AUDIO B MIX
26	AV LEVEL
27	AVPS
28	AIN 1
29	AIN 2
30	BIN 1
31	BIN 2
32	GROUND
33	D5V
34	GROUND

TO  
AUDIO  
BOARD  
...CN4

1	D5V
2	GROUND
3	+12V
4	-12V
5	GROUND
6	F.G

TO  
POWER  
BOARD  
...CN3

6

7

8

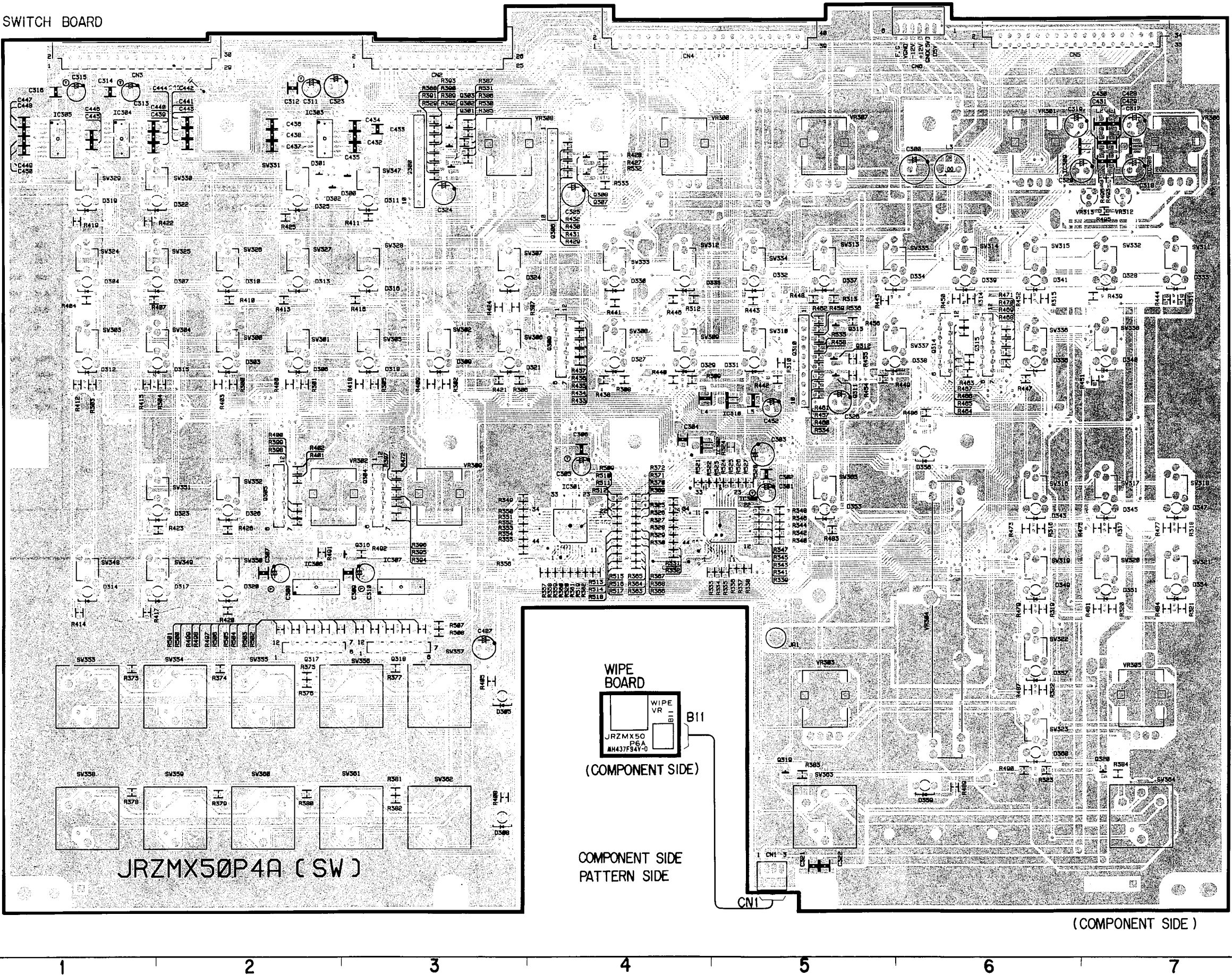
9

10



CONDUCTOR VIEW OF SWITCH BOARD

SWITCH BOARD



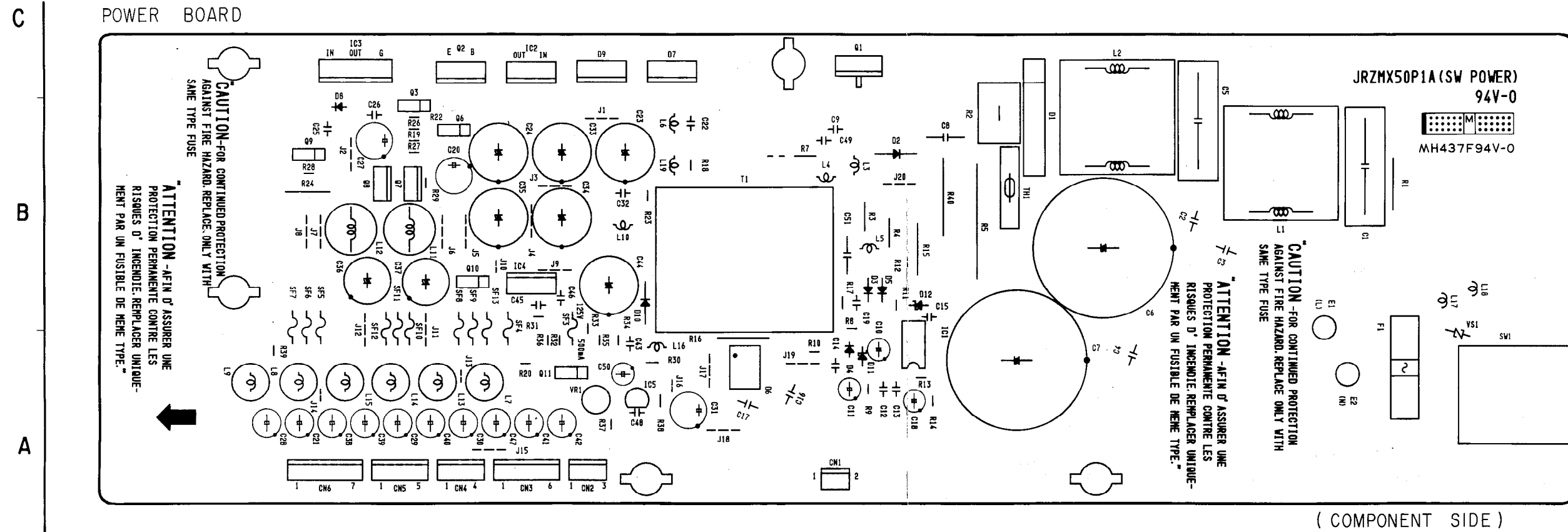
<Index>

SWITCH BOARD

IC300	C5	D334	D5
IC301	C4	D335	D4
IC302	C4	D336	D6
IC303	E2	D337	D5
IC304	E1	D338	D5
IC305	E1	D339	D6
IC306	C2	D340	D7
IC307	C3	D341	D6
IC308	E7	D343	C6
IC309	E6	D345	C7
IC310	C5	D347	C7
Q300	E3	D349	B6
Q301	E3	D351	B7
Q302	E3	D353	C5
Q303	E3	D354	B7
Q304	C3	D356	C6
Q305	C2	D357	B6
Q306	E4	D359	A6
Q307	E4	D360	B6
Q308	E4		
Q309	D4		
Q310	D5		
Q311	D5		
Q312	D5		
Q313	D5		
Q314	D6		
Q315	D6		
Q316	C3		
Q317	B2		
Q318	B3		
Q319	A5		
Q320	A7		
D300	E3		
D301	E2		
D302	E2		
D303	D2		
D304	D1		
D305	B3		
D306	D2		
D307	D2		
D308	A3		
D309	D3		
D310	D2		
D311	E3		
D312	D1		
D313	D2		
D314	B1		
D315	D2		
D316	D3		
D317	B2		
D318	D3		
D319	E1		
D320	B2		
D321	D3		
D322	E1		
D323	C2		
D324	D3		
D325	E2		
D326	C2		
D327	D4		
D328	D7		
D329	D4		
D330	D4		
D331	D5		
D332	D5		
D333	D7		

WJ-MX50      WJ-MX50

## CONDUCTOR VIEW OF POWER BOARD



POWER BOARD		NTSC		PAL	
*					
R2	1.5	5W	3.3	5W	
R4	0		100K	1/2W	
R5	15K	5W	12K	5W	
R7	1.2K	1W	—	OPEN	—
R13	82K	1/4W	56K	1/4W	
R14	8.2K	1/4W	5.6K	1/4W	
R15	0.22	2W	0.39	2W	
R40	0		8.2K	3W	
C6,7	470μF	200V	120μF	400V	
C9	100pF	1KV	—	OPEN	—
C11	2.2μF	50V	1μF	50V	
C49	100pF	1KV	—	OPEN	—
F1	125V	3.15A	250V	2A	
L6	—	—	—	JUMPER	—

### <Index>

#### POWER BOARD

IC1	A4	D1	B5
IC2	C3	D2	B4
IC3	C2	D3	B4
IC4	B3	D4	A4
IC5	A3	D5	B4
Q1	C4	D6	A3
Q2	C2	D7	C3
Q3	B2	D8	B2
Q6	B2	D9	C3
Q7	B2	D10	B3
Q8	B2	D11	A4
Q9	B2	D12	B4
Q10	B2		
Q11	A3		



SCHEMATIC DIAGRAM OF POWER BOARD

POWER BOARD

E101  
AC  
POWER  
CORD

	NTSC	PAL
R2	1.5 5W	3.3 5W
R4	0	100K 1/2W
R5	15K 5W	12K 5W
R7	1.2K 1W	— OPEN —
R13	82K 1/4W	56K 1/4W
R14	8.2K 1/4W	5.6K 1/4W
R15	0.22 2W	0.39 2W
R40	0	8.2K 3W
C6,7	470µF 200V	120µF 400V
C9	100pF 1KV	— OPEN —
C11	2.7µF 50V	1µF 50V
C49	100pF 1KV	— OPEN —
L6	0	— JUMPER —

CN1  
2 FAN+12V  
1 GROUND  
TO FAN  
MOTOR

CN2  
3 F. G.  
2 5V  
1 GROUND  
TO METER  
BOARD  
... CN3

CN3  
6 5V  
5 GROUND  
4 +12V  
3 -12V  
2 GROUND  
1 F. G.  
TO SWITCH  
BOARD  
... CN6

CN4  
4 +12V  
3 -12V  
2 GROUND  
1 F. G.  
TO AUDIO  
BOARD  
... CN5

CN5  
5 5V-1  
4 GROUND  
3 +12V  
2 5V-2  
1 GROUND  
TO DIGITAL  
BOARD  
... CN1

CN6  
7 5V  
6 5V  
5 GROUND  
4 12V STBY  
3 POWER STBY  
2 +12V  
1 GROUND  
TO ANALOG  
BOARD  
... CN1

<Index>

POWER BOARD

IC1	B2	Q1	B2	Q8	B4	D1	C2	D6	A4	D11	B2
IC2	C4	Q2	C4	Q9	B4	D2	B3	D7	C4	D12	B3
IC3	C4	Q3	C4	Q10	B4	D3	B2	D8	A2		
IC4	B4	Q6	B4	Q11	A4	D4	B2	D9	B4		
IC5	A4	Q7	B4			D5	B3	D10	B4		

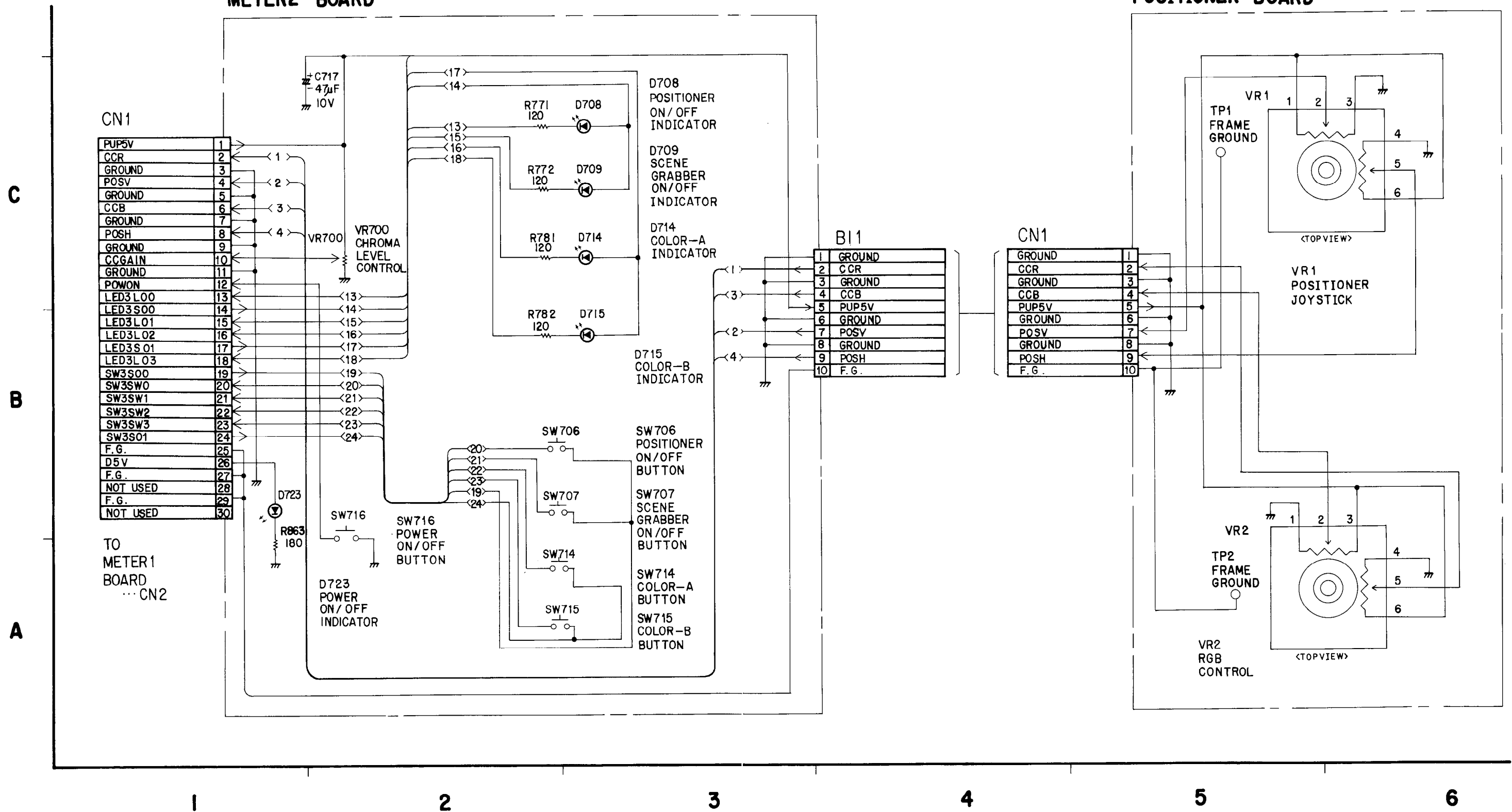
PRODUCT SAFETY NOTICE  
COMPONENT IDENTIFIED WITH THE "Δ" MARK HAVE  
THE SPECIAL CHARACTERISTICS FOR SAFETY.  
WHEN SERVICING ANY OF THESE COMPONENTS, IT IS  
ESSENTIAL THAT ONLY MANUFACTURE'S SPECIFIED  
PARTS BE USED.

WJ-MX50      WJ-MX50

## SCHEMATIC DIAGRAM OF METER-2 BOARD

### METER2 BOARD

### POSITIONER BOARD



#### <Index>

METER 2 BOARD

D708 C3

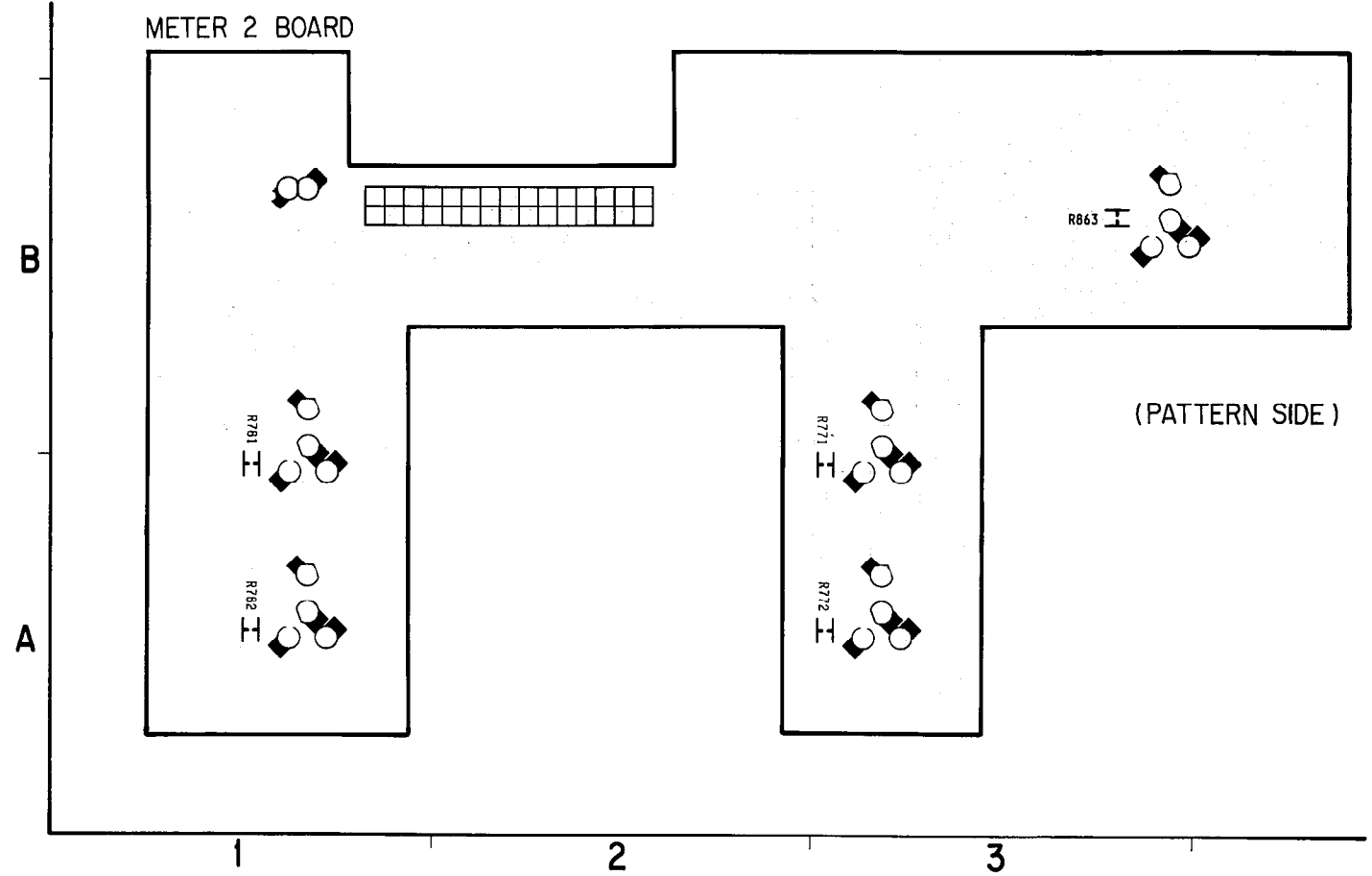
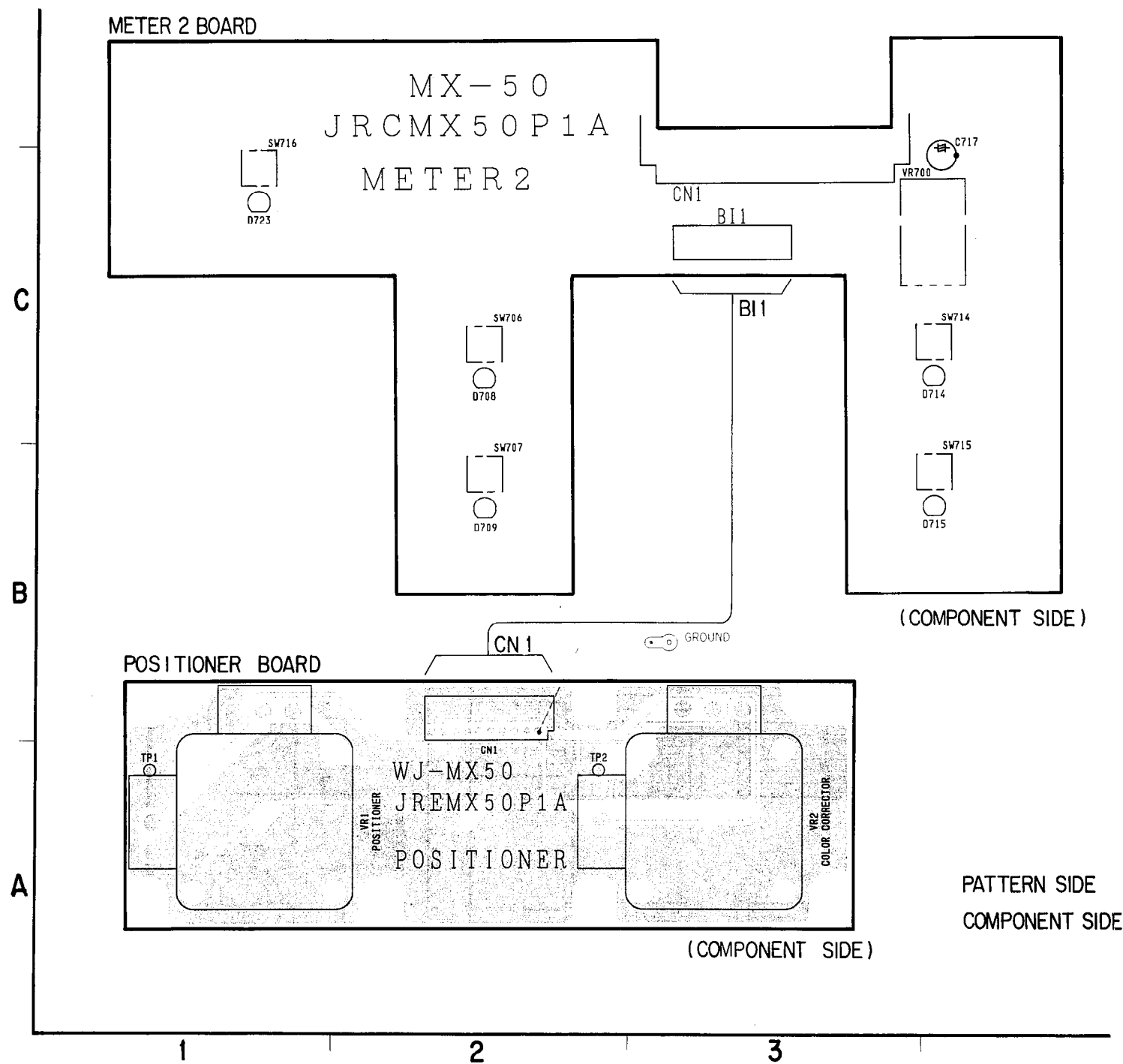
D709 C3

D714 C3

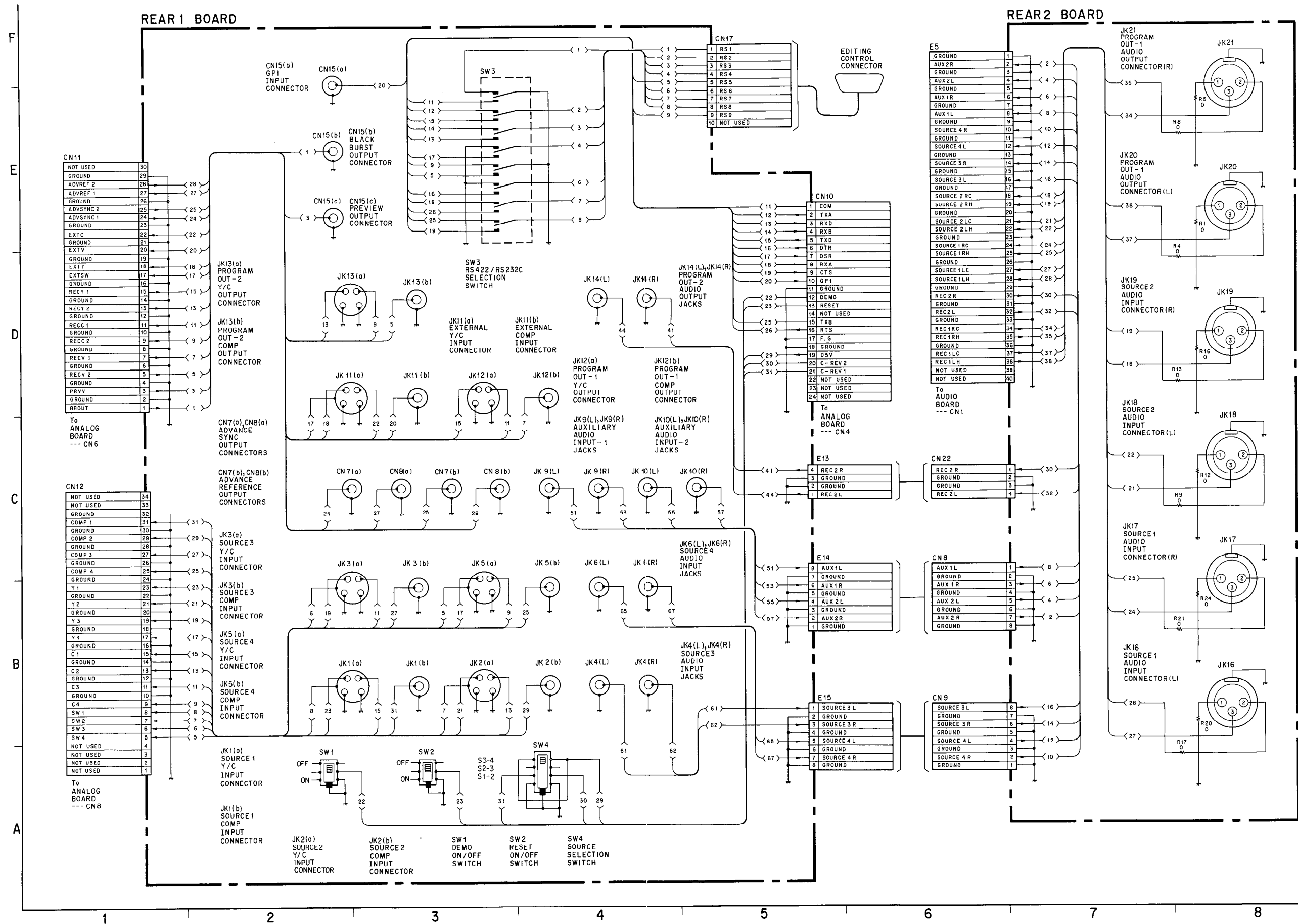
D715 C3

D723 B1

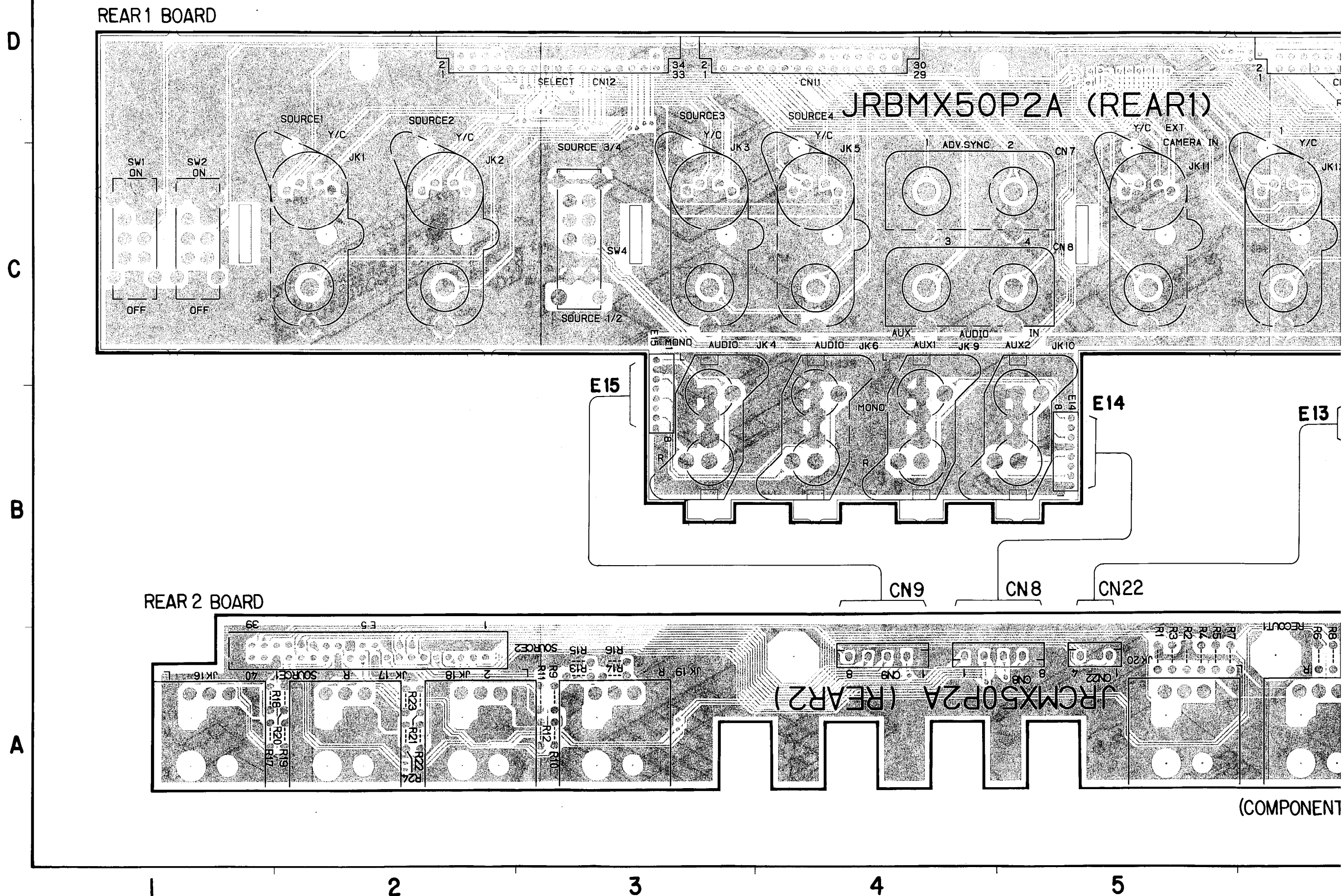
CONDUCTOR VIEW OF METER-2 BOARD



## SCHEMATIC DIAGRAM OF REAR BOARD

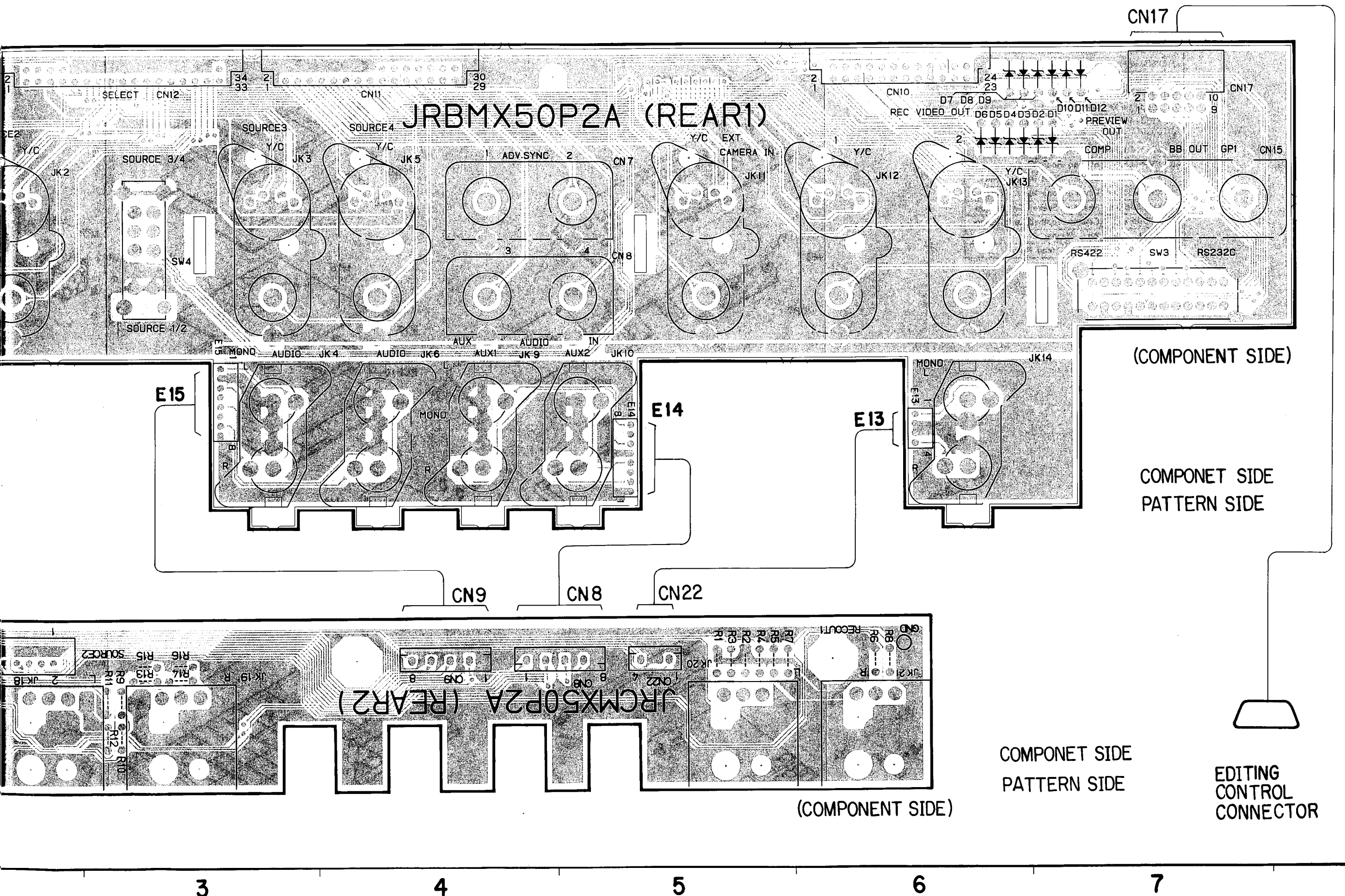


CONDUCTOR VIEW OF REAR BOARD



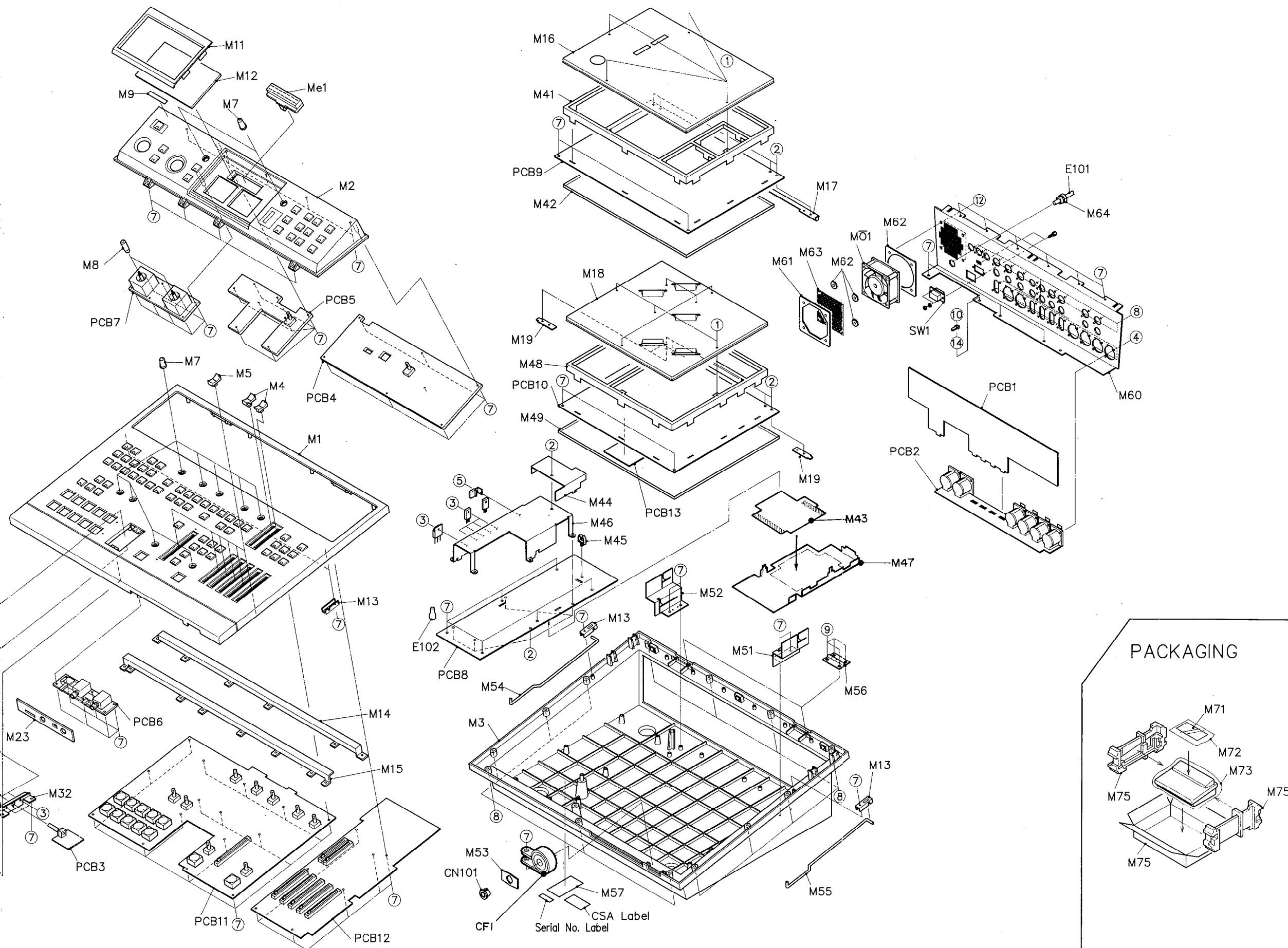


CONDUCTOR VIEW OF REAR BOARD





## EXPLODED VIEW





## REPLACEMENT PARTS LIST

### Important Notice

1. Components identified by "△" mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.
2. RTL : Retention Time Limited

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>MISCELLANEOUS</b>					
MO1	YWFBA06A12L	DC Motor	M52	YWV2SA2279A3	Mounting Angle
Me1	YWL1244	Level Meter Unit	M53	YVV5WA1398A4	Title Panel
CF1	YWTRCN16816	Filter	M54	YWV2SA2282A4	Mounting Angle
F101 △	XBA2C25ET0A	Current Fuse 2.5A 250V	M55	YWV2SA2283A4	Mounting Angle
E101 △	YWACL450/A	AC Power Cord for WJ-MX50/A	M56	YWTHTMN086	Hinge
	YWGTS2R5B	AC Power Cord for WJ-MX50/B			
	YWACJ450/G	AC Power Cord for WJ-MX50/G	M57 △	YWV7QA2802A4	Main Label for WJ-MX50/A
E102	YFCD20ACCAP	Insulator Cap		YWV7QA2809A4	Main Label for WJ-MX50/B
CN101	YWD0111N618	10-pin Title Connector		YWV7QA2810A4	Main Label for WJ-MX50/G
M1	YVV0MB0112AN	Upper Cover Assy	M60	YWV5EA1168A1	Rear Panel
M2	YVV0MB0113AN	Meter Case Assy	M61	YWV3BA0091A4	Supporting Angle
M3	YVV9AA0781AN	Mechanical Assy			
M4	YVV5RA0371A3	Slide VR Knob A	M62	YWV2NA0400A4	Spacer(X2)
M5	YVV5RB0335A3	Slide VR Knob B	M63	YVV5SA0148A4	Net
M7	YVV5RA0372A3	VR Knob	M64	YWSR6W1	Cord Clamp
M8	YVV5RA0334A3	Knob			
M9	YVV7PA0093A3	Badge			
M11	YWV5EA1153A2	Cover			
M12	YWV5WA1396A4	Panel			
M13	YWV2SA2284A4	Mounting Angle			
M14	YVV3BA0101A2	Supporting Angle			
M15	YVV3BA0102A2	Supporting Angle			
M16	YVV2HA1042A2	Shield Parts			
M17	YWV2SA2280A3	Mounting Angle			
M18	YVV2HA1043A2	Shield Parts			
M19	YWV2SA2281A4	Mounting Angle			
M23	YVV5WA1397A3	Panel			
M25	YWV5EA1150A3	Fader Cover			
M26	YWV5EA1151A3	Cover			
M27	YVV5JA0082A3	Grip			
M28	YVV5GA0128A4	Fader Cap A			
M29	YVV5GA0129A4	Fader Cap B			
M30	YWV2SA2303A4	Mounting Angle			
M32	YVV2KA0778A4	Chassis			
M33	YVV4HA0192B3	Fader Shaft			
M34	YVV4RA0103A4	Lever			
M35	YVV2NA0399A4	Spacer			
M36	YVV1FA0074A4	Nut			
M37	YVV1KA0151A4	Washer			
M38	YVV1KA0152A4	Washer			
M39	YVV5GA0130A4	Cap			
M44	YVV2PA0529A3	Insulator			
M45	YWUAMS11V0	Cord Clamp			
M51	YWV2SA2278A3	Mounting Angle			
			<b>REAR - 1 BOARD</b>		
			PCB1	YWJRAMX50P2A	Printed Board
			SW1,2	YFSSB022L6NP	Slide Switch
			SW3	YWSSSP82NL6	Slide Switch
			SW4	YWSSB02332BS	Slide Switch
			CN7,8	YWP2200B	Connector
			CN10	YWF795P024LA	24-pin Connector
			CN11	YWF795P030LA	30-pin Connector
			CN12	YWF795P034LA	34-pin Connector
			CN15	YWP2195	BNC Connector
			CN17	YW6091007	10-pin Connector
			JK1-3	YWB0096	BNC Connector Jack
			JK4	YWT6575AABA	2-pin Jack
			JK5	YWB0096	BNC Connector Jack
			JK6,9	YWT6575AABA	2-pin Jack
			JK10	YWT6575AABA	2-pin Jack
			JK11-13	YWB0096	BNC Connector Jack
			JK14	YWT6575AABA	2-pin Jack

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>REAR-2 BOARD</b>					
PCB2 CN8,9 CN22 JK16-19 JK20,21	YWJRAMX50P2A YW530140810 YW530140410 YWAF3LRPCT YWAF3LSPCRT	Printed Board Connector Connector Jack Jack	R738 R744 R745 R746 R747,748	YF2116471JT ERJ6GEYJ472 ERJ6GEYJ102 ERJ6GEYJ472 ERJ6GEYJ102	Carbon 470 ohms 1/16W Carbon 4.7K ohms 1/16W Carbon 1K ohms 1/16W Carbon 4.7K ohms 1/16W Carbon 1K ohms 1/16W
J1,4 J5 J8,9 J12,13 J16,17	ERDS2TC0 ERDS2TC0 ERDS2TC0 ERDS2TC0 ERDS2TC0	Jumper Resistor Jumper Resistor Jumper Resistor Jumper Resistor Jumper Resistor	R750-754 R755-764 R765-769 R770,773 R774-780	ERJ6GEYJ472 YF2116121JT ERJ6GEYJ472 YF2116121JT YF2116121JT	Carbon 4.7K ohms 1/16W Carbon 120 ohms 1/16W Carbon 4.7K ohms 1/16W Carbon 120 ohms 1/16W Carbon 120 ohms 1/16W
J20,21 J24	ERDS2TC0 ERDS2TC0	Jumper Resistor Jumper Resistor	R783,784 R785-861 R862 R864,865 R866-873	ERJ6GEYJ472 YF2116301JT ERJ6GEYJ102 ERJ6GEYJ103 YF2116101JT	Carbon 4.7K ohms 1/16W Carbon 300 ohms 1/16W Carbon 1K ohms 1/16W Carbon 10K ohms 1/16W Carbon 100 ohms 1/16W
<b>WIPE-BOARD</b>					
PCB3 VR1	YWJRZMX50P6A EWVAAK001B15	Printed Board Variable Resistor 100K ohms	R874,875 VR701 C700 C701 C702	ERJ6GEYJ103 EVJ02AF20B15 ECEA0JKA221 YF400104FZT YWS21A106T	Carbon 10K ohms 1/16W Variable Resistor 100K ohms Electrolytic 220 $\mu$ F 6.3V Ceramic 0.1 $\mu$ F Electrolytic 10 $\mu$ F 10V
<b>METER - 1 BOARD</b>					
PCB4 (RTL) IC700 IC701 IC704-714 Q702	YWJKBMX50P1A M51944AML1 YWUPD71055GB YWPD4511BAGS TA78 2SA1560	Printed Circuit Board Assy IC LSI IC Transistor Transistor	C703 C704-716 C718 C719 C720	YF400104FZT ECEA1AKS470 ECEA0JKA221 ECEA0JKS101 ECQM1H334KZ	Ceramic 0.1 $\mu$ F Electrolytic 47 $\mu$ F 10V Electrolytic 220 $\mu$ F 6.3V Electrolytic 100 $\mu$ F 6.3V Plastic 0.33 $\mu$ F
Q703 Q704 Q705 Q706,707	MSB709-QRS TA78 2SA1560 MSB709-QRS MSD601-QRS	Transistor Transistor Transistor Transistor Transistor	L700 L701 L702,703 SW700-705 SW708-713	ELJFA100KF ELESE2R2KA ELC08D082 EVQQTU05R EVQQTU05R	Coil 10 $\mu$ H Coil 2.2 $\mu$ H Coil Push Switch Push Switch
Q708 D700,701 D702-707 D710-713 D717,718	2SA1560 YWDAN212K YWSLR34VR3FM YWSLR34VR3FM YWLB403VN	Transistor Diode Diode Diode Diode	CN1 CN2 CN3 CN4	YWF795P040LA YWF795P030LA YW530150310 YWIC302003S4	Connector Connector Connector Socket
D719,721 D722 D724 R700-711 R712-719	YWLB403MN YWLD010VW YWRB421D YF2116104JT ERJ6GEYJ102	Diode Diode Diode Carbon Carbon	<b>METER-2 BOARD</b>		
R720-723 R724-727 R728-735 R736 R737	YF2116272JT ERJ6GEYJ102 YF2116272JT YF2116220JT ERJ6GEYJ102	Carbon 2.7K ohms 1/16W Carbon 1K ohms 1/16W Carbon 2.7K ohms 1/16W Carbon 22 ohms 1/16W Carbon 1K ohms 1/16W	PCB5 (RTL) D708,709 D714,715 D723 R771,772	YWJKBMX50P1A YWSLR34VR3FM YWSLR34VR3FM YWSLR34VR3FM YF2116121JT	Printed Circuit Board Assy Diode Diode Diode Carbon 120 ohms 1/16W
			R781,782 R863 VR700 C717 SW706,707	YF2116121JT YF2116181JT EVJ02AF20B15 ECEA1AKS470 EVQQTU05R	Carbon 120 ohms 1/16W Carbon 180 ohms 1/16W Variable Resistor 100K ohms Electrolytic 47 $\mu$ F 10V Push Switch
			SW714-716 CN1	EVQQTU05R YWF795P030LA	Push Switch Connector

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>JACK BOARD</b>					
PCB6 (RTL) VR8 SW1 JK1 JK2	YWJKBMX50P1A YWRS15H250KA YWSSSP22NL9 YWLJ23083090 YWLJ23083020	Printed Circuit Board Assy Variable Resistor 250K ohms Slide Switch Jack Jack	R3 R5 R7 R8 R9	ERD50FJ104 ERG5SJ153 ERG1SJ122 ERDS2TJ104 ERDS2TJ105	Carbon 100K ohms 1/2W Metal 15K ohms 5W Metal 1.2K ohms 1W Carbon 100K ohms 1/4W Carbon 1M ohms 1/4W
<b>POSI BOARD</b>					
PCB7 (RTL) VR1,2 CN1 TP1,2	YWJKEMX50P1A YWRKJB100KB YW530151010 YW32BM10	Printed Circuit Board Assy Variable Resistor 100K ohms Connector Test-pin	R10 R11 R12 R13 R14  R15 R16 R19 R20 R22	ERDS2TJ222 ERDS2TJ220 ERDS2TJ151 ERDS2TJ823 ERDS2TJ822  ERX2SJR22 ERC12ZGM156 ERDS2TJ123 ERDS2TJ100 ERDS2TJ471	Carbon 2.2K ohms 1/4W Carbon 22 ohms 1/4W Carbon 150 ohms 1/4W Carbon 82K ohms 1/4W Carbon 8.2K ohms 1/4W  Metal 0.22 ohms Solid Resistor 15M ohms 1/2W Carbon 12K ohms 1/4W Carbon 10 ohms 1/4W Carbon 470 ohms 1/4W
<b>POWER BOARD</b>					
PCB8 (RTL) IC1 IC2 IC3 IC4  IC5 Q1 Q2 Q3 Q6  Q7,8 Q9 Q10 Q11 D1  D2 D3 D4 D5 D6  D7 D8 D9 D10 D11  D12 TH1 VS1 R1 R2	YWJKZMX50P1A YWFA5304P YWUPC24M12HF YWSI3122V YWUPC24M12HF  YWTA76431S 2SK897 2SB953A-PQ 2SB641-QR 2SB642-QRS  2SD1752 2SD636-QRS 2SD973-RS 2SD636-QRS YWRBV406  RU1P YWERA9102 MA165 YWERA9102 YWPC111  YWESAB85M009 MA165 ESAC82M004 YWERAB4009 RD5.1JB2  YWEQA0325 NTH18D6R0LA ERC07DK471U ERC12ZGK105 ERF5TK1R5	Printed Circuit Board Assy IC IC IC IC  IC Transistor Transistor Transistor Transistor  Transistor Transistor Transistor Transistor Diode  Diode Diode Diode Diode Diode  Diode Diode Diode Diode Diode  Diode Thermistor Znr Solid Resistor Wire Wound 1.5 ohms 5W	R23 R24 R26 R27 R28  R29 R31 R32 R33 R34  R35 R36,37 R38 R39 VR1  C1 C2-4 C5 C6,7 C8  C9 C10,11 C12 C13 C14  C15 C16,17 C18 C20 C21  C23,24 C25,26 C27 C28-30 C31  C32 C33-35 C36,37 C38-42 C44	ERDS2TJ122 ERG1SJ470 ERDS2TJ471 ERDS2TJ104 ERDS2TJ333  ERDS2TJ472 ERDS2TJ222 ERDS2TJ333 ERDS2TJ683 ERDS2TJ101  ERDS2TJ102 ER0S2CKF6801 ERDS2TJ472 ERDS2TJ4R7 YFH0621A2R2K  ECQU2A224MV ECKDRS332ME ECQU2A224MV EC0S2DA471DA ECQE6103KZ  ECKD3A101KBN ECEA1HU2R2 ECQV1H104JZ ECQP1H331JZ ECQV1H473JZ  ECQB1H682JZ ECKDRS332ME ECA1VFQ270 ECA1CFQ471 ECA1CFQ181B  ECA1EFQ102 ECQV1H104JZ ECA1CFQ471 ECA1CFQ181B ECA1CFQ471  ECQB1H103JZ ECA1AFQ222 ECA1AFQ122 ECA1AFQ101 ECA1EFQ471	Carbon 1.2K ohms 1/4W Metal 47 ohms 1W Carbon 470 ohms 1/4W Carbon 100K ohms 1/4W Carbon 33K ohms 1/4W  Carbon 4.7K ohms 1/4W Carbon 2.2K ohms 1/4W Carbon 33K ohms 1/4W Carbon 68K ohms 1/4W Carbon 100 ohms 1/4W  Carbon 1K ohms 1/4W Metal 6.8K ohms 1/4W Carbon 4.7K ohms 1/4W Carbon 4.7 ohms 1/4W Variable Resistor 2.2K ohms  Plastic 0.22 $\mu$ F Ceramic 3300 pF Plastic 0.22 $\mu$ F Electrolytic 470 $\mu$ F Plastic 0.01 $\mu$ F  Ceramic 100 pF 1KV Electrolytic 2.2 $\mu$ F 50V Plastic 0.1 $\mu$ F 50V Plastic 330 pF 50V Plastic 0.047 $\mu$ F 50V  Plastic 6800 pF Ceramic 3300 pF Electrolytic 27 $\mu$ F Electrolytic 470 $\mu$ F Electrolytic 180 $\mu$ F  Electrolytic 1000 $\mu$ F 25V Plastic 0.1 $\mu$ F 50V Electrolytic 470 $\mu$ F 16V Electrolytic 180 $\mu$ F 16V Electrolytic 470 $\mu$ F 16V  Plastic 0.01 $\mu$ F 50V Electrolytic 2200 $\mu$ F 10V Electrolytic 1200 $\mu$ F 10V Electrolytic 100 $\mu$ F 10V Electrolytic 470 $\mu$ F 25V

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION
C45,46	ECQV1H104JZ	Plastic	0.1 $\mu$ F 50V	<b>ANALOG BOARD</b>		
C47	ECA1CFQ181B	Electrolytic	180 $\mu$ F 16V	PCB9 (RTL)	YWJKZMX50P2A	Printed Circuit Board Assy
C48	ECQV1H104JZ	Plastic	0.1 $\mu$ F 50V	IC1-4	MC74HC4052F	IC
C49	ECKD3A101KBN	Ceramic	100 pF 1KV	IC5	YWNJM2246M	IC
C50	ECEA1HU100	Electrolytic	10 $\mu$ F 50V	IC6	YWNJM2233BM	IC
C51	ECQE6103KZ	Plastic	0.01 $\mu$ F	IC7	YWSC7SU04F	IC
L1,2	YWHL24682	Coil		IC10	YWMC141625FU	IC
L3,4	YFBL02RN2R62	Coil		IC13	YWSC7SU04F	IC
L5	EL05S1330K	Coil	33 $\mu$ H	IC16	YWMC141625FU	IC
L7-9	YWPC7330K	Coil	33 $\mu$ H	IC19	YWNJM2246M	IC
L11,12	YWPC10220K	Coil	22 $\mu$ H	IC20	YWNJM2233BM	IC
L13-15	YWPC7330K	Coil	33 $\mu$ H	IC21-23	YWSC7S08F	IC
L17,18	YFBL02RN2R62	Coil		IC24	YWSC7S08F	IC
T1 $\Delta$	ETS28K702A	Power Transformer		IC25	YWM51271FP	IC
SW1	YWSEP2A01BBM	Seesaw Switch		IC26	NJM78L05A	IC
CF6,10	YWBL02RN1R62	Filter		IC27	NJM78L05A	IC
CF16,19	YWBL02RN1R62	Filter		IC28	YWM51271FP	IC
F3,4 $\Delta$	SSFR500F002	Current Fuse	500mA	IC32,33	YWSC7S08F	IC
F5-12 $\Delta$	SSFR1.6A002	Current Fuse	1.6A	IC34	YWNJM3403AM	IC
F13 $\Delta$	SSFR500F002	Current Fuse	500mA	IC36	YWSC7S08F	IC
CN1	YW53014-0210	-pin Connector		IC37	YWSC7S08F	IC
CN2	YW530140310	-pin Connector		IC38	YWNJM3403AM	IC
CN3	YW530140610	-pin Connector		IC40-42	YWSC7S08F	IC
CN4	YW530140410	-pin Connector		IC45	YWNJM2246M	IC
CN5	YW530140510	-pin Connector		IC46	YWLM1881M	IC
CN6	YW530140710	-pin Connector		IC47	NJM319M	IC
E1,2	YWTM028B	Terminal		IC48	YWSC7S08F	IC
E4,5	S-N5057	Fuse Holder		IC49	YWSC7SU04F	IC
E6-10	YWMA01	Terminal		IC50	YWSC7S08F	IC
E11-13	YW851248	Insulator		IC51	YWNJM2246M	IC
E14	YWM1748A	Holder		IC52	YWNJM2245M	IC
E15	YW45T01130L	Insulator		IC53	YWNJM2246M	IC
M45	YWUAMS11V0	Cord Clamp		IC54	YWNJM2245M	IC
M46	YWV7DA0328A2	Heat Sink		IC700	NJM78L05A	IC
				IC701	YWNJM78M05FA	IC
				IC702	YWMC74HC125F	IC
				IC703	YWHA16103FPJ	IC
				IC704	YWSC7SU04F	IC
				IC705	YWMC74HC174F	IC
				IC706,707	YWMC74HC541F	IC
				IC708	YWHD6475368F	IC
				IC709	-M51944AML1	IC
				IC710,711	YWUPD71055GB	LSI
				IC712	MC74HC4053F	IC
				IC713	YWSN75179BPS	IC
				IC714	YWMC145407F	IC
				IC715	YWMC74HC174F	IC
				IC716,717	YWMC74HC138F	IC
				IC718	YWUPD4538BG	IC
				IC719,720	YWSC7SU04F	IC
				Q1-22	MSD601-QRS	Transistor

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
Q23	MSB709-QRS	Transistor	Q158	MSB709-QRS	Transistor
Q24	MSD601-QRS	Transistor	Q159	MSD601-QRS	Transistor
Q25	MSB709-QRS	Transistor	Q160	MSB709-QRS	Transistor
Q26-29	MSD601-QRS	Transistor	Q161-166	MSD601-QRS	Transistor
Q30	MSB709-QRS	Transistor	Q167	MSB709-QRS	Transistor
Q31	MSD601-QRS	Transistor	Q168	MSD601-QRS	Transistor
Q32	MSB709-QRS	Transistor	Q169	MSB709-QRS	Transistor
Q33,34	MSD601-QRS	Transistor	Q170	MSD601-QRS	Transistor
Q39-43	MSD601-QRS	Transistor	Q171	MSB709-QRS	Transistor
Q44	MSB709-QRS	Transistor	Q172	MSD601-QRS	Transistor
Q45	MSD601-QRS	Transistor	Q173	MSB709-QRS	Transistor
Q46	2SD1328-RS	Transistor	Q174,175	MSD601-QRS	Transistor
Q47-50	MSD601-QRS	Transistor	Q176-179	MSB709-QRS	Transistor
Q51	2SD1328-RS	Transistor	Q180-184	MSD601-QRS	Transistor
Q52-56	MSD601-QRS	Transistor	Q700	2SA886-QR	Transistor
Q57	2SD1328-RS	Transistor	Q701	MSB709-QRS	Transistor
Q58-61	MSD601-QRS	Transistor	Q703,704	2SA1560	Transistor
Q62	MSB709-QRS	Transistor	D1,2	YWDAN212K	Diode
Q63	2SD1328-RS	Transistor	D4-6	YWDAN212K	Diode
Q64-68	MSD601-QRS	Transistor	D700-702	YWRB421D	Diode
Q69	2SD1328-RS	Transistor	D703	YWDAN212K	Diode
Q70-74	MSD601-QRS	Transistor	D704	YWRD5.1MB2	Diode
Q75	2SD1328-RS	Transistor	D705	YWDAN212K	Diode
Q76	MSD601-QRS	Transistor	D706	YWRD5.1MB2	Diode
Q77	MSB709-QRS	Transistor	D707	YWDAN212K	Diode
Q78	MSD601-QRS	Transistor	D708	YWRD5.1MB2	Diode
Q79	MSB709-QRS	Transistor	D709	YWDAN212K	Diode
Q80	MSD601-QRS	Transistor	D710	YWRD5.1MB2	Diode
Q81,82	MSB709-QRS	Transistor	D711	YWDAN212K	Diode
Q83	MSD601-QRS	Transistor	D724	YWRB421D	Diode
Q84	MSB709-QRS	Transistor	R1-12	YF2116750JT	Carbon 75 ohms 1/16W
Q85	MSD601-QRS	Transistor	R13	YF2116393GT	Carbon 39K ohms 1/16W
Q86	MSB709-QRS	Transistor	R14	YF2116753JT	Carbon 75K ohms 1/16W
Q87-91	MSD601-QRS	Transistor	R15	YF2116122JT	Carbon 1.2K ohms 1/16W
Q92	MSB709-QRS	Transistor	R16	YF2116393GT	Carbon 39K ohms 1/16W
Q93	MSD601-QRS	Transistor	R17	YF2116753JT	Carbon 75K ohms 1/16W
Q94-99	MSB709-QRS	Transistor	R18	YF2116122JT	Carbon 1.2K ohms 1/16W
Q100	MSD601-QRS	Transistor	R19	YF2116393GT	Carbon 39K ohms 1/16W
Q101	MSB709-QRS	Transistor	R20	YF2116753JT	Carbon 75K ohms 1/16W
Q102	MSD601-QRS	Transistor	R21	YF2116122JT	Carbon 1.2K ohms 1/16W
Q103	MSB709-QRS	Transistor	R22	YF2116393GT	Carbon 39K ohms 1/16W
Q104-106	MSD601-QRS	Transistor	R23	YF2116753JT	Carbon 75K ohms 1/16W
Q107	2SD1328-RS	Transistor	R24	YF2116122JT	Carbon 1.2K ohms 1/16W
Q108	MSD601-QRS	Transistor	R25	YF2116393GT	Carbon 39K ohms 1/16W
Q109,110	MSB709-QRS	Transistor	R26	YF2116753JT	Carbon 75K ohms 1/16W
Q111	MSD601-QRS	Transistor	R27	YF2116122JT	Carbon 1.2K ohms 1/16W
Q112	MSB709-QRS	Transistor	R28	YF2116393GT	Carbon 39K ohms 1/16W
Q113	MSD601-QRS	Transistor	R29	YF2116753JT	Carbon 75K ohms 1/16W
Q114,140	MSB709-QRS	Transistor	R30	YF2116122JT	Carbon 1.2K ohms 1/16W
Q141	MSB709-QRS	Transistor	R31	YF2116393GT	Carbon 39K ohms 1/16W
Q142	2SB642-QRS	Transistor	R32	YF2116753JT	Carbon 75K ohms 1/16W
Q144-151	MSB709-QRS	Transistor	R33	YF2116122JT	Carbon 1.2K ohms 1/16W
Q152-155	MSD601-QRS	Transistor	R34	YF2116393GT	Carbon 39K ohms 1/16W
Q156	MSB709-QRS	Transistor	R35	YF2116753JT	Carbon 75K ohms 1/16W
Q157	MSD601-QRS	Transistor	R36	YF2116122JT	Carbon 1.2K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R37	YF2116393GT	Carbon	39K ohms 1/16W	R119	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R38	YF2116753JT	Carbon	75K ohms 1/16W	R120	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R39	YF2116122JT	Carbon	1.2K ohms 1/16W	R121	YF2116332JT	Carbon	3.3K ohms 1/16W
R40	YF2116393GT	Carbon	39K ohms 1/16W	R122	YW2116105JT	Carbon	1M ohms 1/16W
R41	YF2116753JT	Carbon	75K ohms 1/16W	R125,126	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R42	YF2116122JT	Carbon	1.2K ohms 1/16W	R128	YF2116912GT	Carbon	9.1K ohms 1/16W
R43	YF2116393GT	Carbon	39K ohms 1/16W	R130,132	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R44	YF2116753JT	Carbon	75K ohms 1/16W	R133	YF2116152JT	Carbon	1.5K ohms 1/16W
R45	YF2116122JT	Carbon	1.2K ohms 1/16W	R134	YF2116122JT	Carbon	1.2K ohms 1/16W
R46	YF2116393GT	Carbon	39K ohms 1/16W	R135,136	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R47	YF2116753JT	Carbon	75K ohms 1/16W	R137	YF2116561JT	Carbon	560 ohms 1/16W
R48	YF2116122JT	Carbon	1.2K ohms 1/16W	R139	YF2116392JT	Carbon	3.9K ohms 1/16W
R49	YF2116202JT	Carbon	2K ohms 1/16W	R140,141	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R50	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R146-148	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R51	YF2116202JT	Carbon	2K ohms 1/16W	R154,155	YF2116474JT	Carbon	470K ohms 1/16W
R52	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R156	YF2116331JT	Carbon	330 ohms 1/16W
R53	YF2116202JT	Carbon	2K ohms 1/16W	R158	YF2116392JT	Carbon	3.9K ohms 1/16W
R54	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R159	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R55	YF2116202JT	Carbon	2K ohms 1/16W	R160	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R56-60	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R161	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R61	YW2116182JT	Carbon	1.8K ohms 1/16W	R163	YF2116393GT	Carbon	39K ohms 1/16W
R62-66	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R164	YF2116433GT	Carbon	43K ohms 1/16W
R71-73	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R165	YF2116391JT	Carbon	390 ohms 1/16W
R75	YF2116331JT	Carbon	330 ohms 1/16W	R166	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R76	YF2116392JT	Carbon	3.9K ohms 1/16W	R169	YF2116754JT	Carbon	750K ohms 1/16W
R77	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R170	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R78	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R171	YF2116752JT	Carbon	7.5K ohms 1/16W
R83,84	YF2116474JT	Carbon	470K ohms 1/16W	R172	L311J103J332	Carbon	10K ohms
R85	YW2116105JT	Carbon	1M ohms 1/16W	R173	YF2116202JT	Carbon	2K ohms 1/16W
R88,89	ERJ6GEY0R00	Carbon	1 ohms 1/10W	R174	YF2116754JT	Carbon	750K ohms 1/16W
R91	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R175	YF2116512JT	Carbon	5.1K ohms 1/16W
R92,93	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R176	YF2116912GT	Carbon	9.1K ohms 1/16W
R94	YF2116202JT	Carbon	2K ohms 1/16W	R177	YF2116183GT	Carbon	18K ohms 1/16W
R95	YF2116912GT	Carbon	9.1K ohms 1/16W	R178	YW2116620JT	Carbon	62 ohms 1/16W
R96	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	R179	YF2116151JT	Carbon	150 ohms 1/16W
R97	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R180	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R98	YF2116332JT	Carbon	3.3K ohms 1/16W	R181,182	ERDS2TJ470	Carbon	47 ohms
R99	YF2116912GT	Carbon	9.1K ohms 1/16W	R183	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R100	YF2116754JT	Carbon	750K ohms 1/16W	R184	YF2116393GT	Carbon	39K ohms 1/16W
R101-103	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R185	YF2116433GT	Carbon	43K ohms 1/16W
R104	YF2116152JT	Carbon	1.5K ohms 1/16W	R186	YF2116391JT	Carbon	390 ohms 1/16W
R105	YF2116122JT	Carbon	1.2K ohms 1/16W	R187	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R106,108	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R189	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R109	YF2116561JT	Carbon	560 ohms 1/16W	R192	YF2116754JT	Carbon	750K ohms 1/16W
R110	YF2116392JT	Carbon	3.9K ohms 1/16W	R193	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R111	YW2116182JT	Carbon	1.8K ohms 1/16W	R194	YF2116752JT	Carbon	7.5K ohms 1/16W
R112,113	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R195	L311J103J332	Carbon	10K ohms
R114	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R196	YF2116202JT	Carbon	2K ohms 1/16W
R115,116	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R197	YF2116754JT	Carbon	750K ohms 1/16W
R117	YF2116202JT	Carbon	2K ohms 1/16W	R198	YF2116512JT	Carbon	5.1K ohms 1/16W
R118	YF2116912GT	Carbon	9.1K ohms 1/16W				

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R199	YW2116620JT	Carbon	62 ohms 1/16W	R258	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R200	YF2116151JT	Carbon	150 ohms 1/16W	R259	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R201	YWR1220P512D	Metal	5.1K ohms	R260	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R202	YWR1220P162D	Carbon	1.6K ohms	R261	YF2116332JT	Carbon	3.3K ohms 1/16W
R203	YWR1220P622D	Metal	6.2K ohms	R262	YF2116511JT	Carbon	510 ohms 1/16W
R204	YWR1220P682D	Metal	6.8K ohms	R263	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R205,206	YWR1220P242D	Metal	2.4K ohms	R264	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R207	YWR1220P682D	Metal	6.8K ohms	R265	YF2116511JT	Carbon	510 ohms 1/16W
R208-211	YF2116510JT	Carbon	51 ohms 1/16W	R266	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R212	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R267	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R213	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R268	YF2116331JT	Carbon	330 ohms 1/16W
R214	YF2116181JT	Carbon	180 ohms 1/16W	R269	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R215	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R270	YF2116202JT	Carbon	2K ohms 1/16W
R216	YF2116202JT	Carbon	2K ohms 1/16W	R271,272	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R217	YF2116912GT	Carbon	9.1K ohms 1/16W	R273	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R218	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R274	YF2116332JT	Carbon	3.3K ohms 1/16W
R219	YF2116332JT	Carbon	3.3K ohms 1/16W	R275	YF2116511JT	Carbon	510 ohms 1/16W
R220	YF2116511JT	Carbon	510 ohms 1/16W	R276	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R221	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R277	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R222	YF2116511JT	Carbon	510 ohms 1/16W	R278	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R223	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R279	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R224	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R280	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R225	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R281	YF2116181JT	Carbon	180 ohms 1/16W
R226	YF2116331JT	Carbon	330 ohms 1/16W	R282	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R227	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R283	YF2116202JT	Carbon	2K ohms 1/16W
R228	YF2116202JT	Carbon	2K ohms 1/16W	R284	YF2116912GT	Carbon	9.1K ohms 1/16W
R229	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R285	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R230	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R286	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R231	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R287	YF2116332JT	Carbon	3.3K ohms 1/16W
R232	YF2116332JT	Carbon	3.3K ohms 1/16W	R288	YF2116511JT	Carbon	510 ohms 1/16W
R233	YF2116511JT	Carbon	510 ohms 1/16W	R289	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R234	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R290	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R235	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R291	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R236	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R292	YWR1220P512D	Metal	5.1K ohms
R237	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R293	YWR1220P162D	Carbon	1.6K ohms
R238	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R294	YWR1220P622D	Metal	6.2K ohms
R239	YF2116181JT	Carbon	180 ohms 1/16W	R295	YWR1220P682D	Metal	6.8K ohms
R240	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R296,297	YWR1220P242D	Metal	2.4K ohms
R241	YF2116202JT	Carbon	2K ohms 1/16W	R298	YWR1220P682D	Metal	6.8K ohms
R242	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R299-302	YF2116510JT	Carbon	51 ohms 1/16W
R243	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R303	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R244	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R304	YF2116432JT	Carbon	4.3K ohms 1/16W
R245	YF2116332JT	Carbon	3.3K ohms 1/16W	R305,306	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R246	YF2116511JT	Carbon	510 ohms 1/16W	R307	YF2116202JT	Carbon	2K ohms 1/16W
R247	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R308	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R248	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R309	YF2116621JT	Carbon	620 ohms 1/16W
R249	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R311	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R250	YF2116332JT	Carbon	3.3K ohms 1/16W	R312	YWR1220P102D	Metal	1K ohms
R251	ERJ6GEYJ562	Carbon	5.6K ohms 1/16W	R313	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R252	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R315	YFR1220P222D	Metal	2.2K ohms
R253	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R316	YWR1220P512D	Metal	5.1K ohms
R254	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R317	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R255	YF2116181JT	Carbon	180 ohms 1/16W	R318	YF2116474JT	Carbon	470K ohms 1/16W
R256	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R319	YF2116332JT	Carbon	3.3K ohms 1/16W
R257	YF2116202JT	Carbon	2K ohms 1/16W	R320	YF2116222GT	Carbon	2.2K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R321,322	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R397,398	YF2116750JT	Carbon	75 ohms 1/16W
R323	YF2116680JT	Carbon	68 ohms 1/16W	R399	YF2116332JT	Carbon	3.3K ohms 1/16W
R324,325	YF2116104JT	Carbon	100K ohms 1/16W	R400	YF2116222GT	Carbon	2.2K ohms 1/16W
R326	YF2116680JT	Carbon	68 ohms 1/16W	R401	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R327,328	YF2116104JT	Carbon	100K ohms 1/16W	R402-404	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R329	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R405	YF2116684JT	Carbon	680K ohms 1/16W
R330	YF2116331JT	Carbon	330 ohms 1/16W	R406	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R331	ERJ3GEYJ102	Carbon	1K ohms 1/16W	R407	ERJ6GEYJ562	Carbon	5.6K ohms 1/16W
R332,333	YF2116332JT	Carbon	3.3K ohms 1/16W	R408	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R334	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R409	YF2116512JT	Carbon	5.1K ohms 1/16W
R335,336	YF2116512JT	Carbon	5.1K ohms 1/16W	R410	YF2116163JT	Carbon	16K ohms 1/16W
R337	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R411,412	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R338,339	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R413,414	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R340,341	YF2116680JT	Carbon	68 ohms 1/16W	R415	YW2116305JT	Carbon	3M ohms 1/16W
R342,343	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R416	YF2116332JT	Carbon	3.3K ohms 1/16W
R344	YF2116101JT	Carbon	100 ohms 1/16W	R417	YW2116305JT	Carbon	3M ohms 1/16W
R345	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R418	YF2116332JT	Carbon	3.3K ohms 1/16W
R346	YWR1220P102D	Metal	1K ohms	R419,420	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R347	YF2116101JT	Carbon	100 ohms 1/16W	R421,422	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R348	YWR1220P102D	Metal	1K ohms	R423	YF2116163JT	Carbon	16K ohms 1/16W
R349	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R424	YF2116222GT	Carbon	2.2K ohms 1/16W
R350	YF2116332JT	Carbon	3.3K ohms 1/16W	R425	YF2116432JT	Carbon	4.3K ohms 1/16W
R351	YF2116222GT	Carbon	2.2K ohms 1/16W	R426-428	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R352	YF2116474JT	Carbon	470K ohms 1/16W	R429	ERJ6GEY0R00	Carbon	0 ohms 1/10W
R353,354	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R430	YF2116152JT	Carbon	1.5K ohms 1/16W
R355,356	YF2116680JT	Carbon	68 ohms 1/16W	R433	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R357,358	YF2116104JT	Carbon	100K ohms 1/16W	R434	YF2116474JT	Carbon	470K ohms 1/16W
R359	YF2116202JT	Carbon	2K ohms 1/16W	R435	YF2116222GT	Carbon	2.2K ohms 1/16W
R360	ERJ6GEY0R00	Carbon	0 ohms 1/10W	R436	YF2116332JT	Carbon	3.3K ohms 1/16W
R362	YF2116101JT	Carbon	100 ohms 1/16W	R437	YF2116474JT	Carbon	470K ohms 1/16W
R363	YWR1220P102D	Metal	1K ohms	R438,439	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R364	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R440	YF2116680JT	Carbon	68 ohms 1/16W
R365	YFR1220P222D	Metal	2.2K OHMS	R441	YF2116104JT	Carbon	100K ohms 1/16W
R367	YWR1220P512D	Metal	5.1K ohms	R442	YF2116621JT	Carbon	620 ohms 1/16W
R368	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R443-446	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R369	YF2116474JT	Carbon	470K ohms 1/16W	R447	YF2116754JT	Carbon	750K ohms 1/16W
R371	YF2116222GT	Carbon	2.2K ohms 1/16W	R448	YF2116912GT	Carbon	9.1K ohms 1/16W
R372	YF2116202JT	Carbon	2K ohms 1/16W	R449	YF2116183GT	Carbon	18K ohms 1/16W
R373	YF2116331JT	Carbon	330 ohms 1/16W	R450-454	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R374	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R503	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R375,376	YF2116332JT	Carbon	3.3K ohms 1/16W	R517	YF2116432JT	Carbon	4.3K ohms 1/16W
R377,381	YF2116511JT	Carbon	510 ohms 1/16W	R518	YF2116222GT	Carbon	2.2K ohms 1/16W
R382	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R519	YF2116112JT	Carbon	1.1K ohms 1/16W
R383	YWR1220P102D	Metal	1K ohms	R520	YF2116222GT	Carbon	2.2K ohms 1/16W
R384	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R521	YF2116332JT	Carbon	3.3K ohms 1/16W
R386	YF2116332JT	Carbon	3.3K ohms 1/16W	R522	YF2116511JT	Carbon	510 ohms 1/16W
R387	YF2116222GT	Carbon	2.2K ohms 1/16W	R526,527	YF2116680JT	Carbon	68 ohms 1/16W
R388	YF2116474JT	Carbon	470K ohms 1/16W	R528	YF2116332JT	Carbon	3.3K ohms 1/16W
R389,390	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R529	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R391	YF2116680JT	Carbon	68 ohms 1/16W	R530	YF2116332JT	Carbon	3.3K ohms 1/16W
R392	YF2116104JT	Carbon	100K ohms 1/16W				
R393	YF2116750JT	Carbon	75 ohms 1/16W				
R394	YF2116511JT	Carbon	510 ohms 1/16W				
R395	YF2116392JT	Carbon	3.9K ohms 1/16W				
R396	ERJ6GEYJ223	Carbon	22K ohms 1/10W				



REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
R531	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R617-620	ERDS2TJ100	Carbon 10 ohms
R532	YF2116202JT	Carbon 2K ohms 1/16W	R621,622	YF2116100JT	Carbon 10 ohms 1/10W
R533	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R623-626	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R534	YF2116202JT	Carbon 2K ohms 1/16W	R627	YF2116682JT	Carbon 6.8K ohms 1/16W
R535	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R628	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
R536	YF2116202JT	Carbon 2K ohms 1/16W	R629	YF2116332JT	Carbon 3.3K ohms 1/16W
R537	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R630	ERDS2TJ100	Carbon 10 ohms
R538	YF2116202JT	Carbon 2K ohms 1/16W	R631	YF2116333GT	Carbon 33K ohms 1/16W
R539	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R632	ERJ6GEYJ223	Carbon 22K ohms 1/10W
R540	YF2116202JT	Carbon 2K ohms 1/16W	R633	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R541	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R634,635	YF2116333GT	Carbon 33K ohms 1/16W
R542	YF2116202JT	Carbon 2K ohms 1/16W	R636	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R543	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R637,638	YF2116333GT	Carbon 33K ohms 1/16W
R544	YF2116101JT	Carbon 100 ohms 1/16W	R639	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R545	YF2116181JT	Carbon 180 ohms 1/16W	R640,641	YF2116333GT	Carbon 33K ohms 1/16W
R546	YF2116101JT	Carbon 100 ohms 1/16W	R642	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R547	YF2116181JT	Carbon 180 ohms 1/16W	R643,644	L311J103J332	Carbon 10K ohms
R548-555	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R700	YF2116201JT	Carbon 200 ohms 1/16W
R556	ERJ6GEYJ103	Carbon 10K ohms 1/16W	R702	YF2116123JT	Carbon 12K ohms 1/16W
R557	YF2116332JT	Carbon 3.3K ohms 1/16W	R704	YF2116184JT	Carbon 180K ohms 1/16W
R558	YF2116222GT	Carbon 2.2K ohms 1/16W	R706	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R559	YF2116474JT	Carbon 470K ohms 1/16W	R707,708	YF2116331JT	Carbon 330 ohms 1/16W
R560,561	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R709,710	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R562,563	YF2116680JT	Carbon 68 ohms 1/16W	R711-713	YF2116331JT	Carbon 330 ohms 1/16W
R564	ERJ6GEY0R00	Carbon 0 ohms 1/10W	R714	YF2116332JT	Carbon 3.3K ohms 1/16W
R565	YF2116122JT	Carbon 1.2K ohms 1/16W	R715-728	YF2116331JT	Carbon 330 ohms 1/16W
R566	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R729	YF2116510JT	Carbon 51 ohms 1/16W
R567	YF2116392JT	Carbon 3.9K ohms 1/16W	R730,731	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R568	YF2116432JT	Carbon 4.3K ohms 1/16W	R732	YF2116101JT	Carbon 100 ohms 1/16W
R569	YF2116332JT	Carbon 3.3K ohms 1/16W	R734	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R570-572	ERJ6GEYJ223	Carbon 22K ohms 1/10W	R735,737	ERJ6GEY0R00	Carbon 0 ohms 1/10W
R573	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R739	ERJ6GEY0R00	Carbon 0 ohms 1/10W
R574,575	YF2116104JT	Carbon 100K ohms 1/16W	R742,744	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R577,578	YF2116221JT	Carbon 220 ohms 1/16W	R745-752	YF2116331JT	Carbon 330 ohms 1/16W
R579	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R753	YF2116100JT	Carbon 10 ohms 1/10W
R580	YF2116471JT	Carbon 470 ohms 1/16W	R754	ERDS2TJ121	Carbon 120 ohms
R581	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R755,756	YF2116330JT	Carbon 33 ohms 1/16W
R582	YF2116474JT	Carbon 470K ohms 1/16W	R757,758	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R583	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R759	YF2116473GT	Carbon 47K ohms 1/16W
R584	YF2116471JT	Carbon 470 ohms 1/16W	R760-765	YF2116221JT	Carbon 220 ohms 1/16W
R585,587	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R766	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R588	YF2116471JT	Carbon 470 ohms 1/16W	R767	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R589	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R768	YF2116101JT	Carbon 100 ohms 1/16W
R590	YF2116474JT	Carbon 470K ohms 1/16W	R769	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
R591	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R770-772	YF2116331JT	Carbon 330 ohms 1/16W
R592	YF2116471JT	Carbon 470 ohms 1/16W	R773-776	YF2116221JT	Carbon 220 ohms 1/16W
R593	ERJ6GEYJ102	Carbon 1K ohms 1/16W	R777-784	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R595-598	YF2116101JT	Carbon 100 ohms 1/16W	R785-788	YF2116104JT	Carbon 100K ohms 1/16W
R599,600	YF2116100JT	Carbon 10 ohms 1/10W	R789-791	YF2116331JT	Carbon 330 ohms 1/16W
R603,610	YF2116561JT	Carbon 560 ohms 1/16W	R792	ERJ6GEYJ102	Carbon 1K ohms 1/16W
			R793-817	YF2116331JT	Carbon 330 ohms 1/16W
			R818-823	ERJ6GEYJ102	Carbon 1K ohms 1/16W
			R824	YF2116184JT	Carbon 180K ohms 1/16W
			R825	YF2116331JT	Carbon 330 ohms 1/16W
			R826	YF2116101JT	Carbon 100 ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R827	YFR1220P104D	Metal	100K ohms	C64	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
R828	YWR1220P124D	Metal	120K ohms	C66	ECSF1HE474	Electrolytic	0.47 $\mu$ F 50V
R829	ERJ6GEYJ103	Carbon	10K ohms 1/16W	C67	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
R830	YF2116104JT	Carbon	100K ohms 1/15W	C68	YWT316B104MT	Ceramic	0.1 $\mu$ F
R832	ERJ6GEYJ103	Carbon	10K ohms 1/16W	C69,70	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R833-836	YF2116331JT	Carbon	330 ohms 1/16W	C71	YWT316B104MT	Ceramic	0.1 $\mu$ F
R837-840	YF2116101JT	Carbon	100 ohms 1/16W	C72	YWS21A336	Electrolytic	33 $\mu$ F 10V
R841-849	YF2116331JT	Carbon	330 ohms 1/16W	C73	YWT316B104MT	Ceramic	0.1 F
R851	YF2116331JT	Carbon	330 ohms 1/16W	C74	YWS21A336	Electrolytic	33 $\mu$ F 10V
R852-859	ERJ6GEYJ103	Carbon	10K ohms 1/16W	C75	ECEA1HKS47	Electrolytic	0.47 $\mu$ F 50V
R862	YW2116105JT	Carbon	1M ohms 1/16W	C76	YF400102XKT	Ceramic	1000 pF
R863	YF2116224JT	Carbon	220K ohms 1/16W	C81	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
R864	YF2116331JT	Carbon	330 ohms 1/16W	C82	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
R865,866	ERJ6GEYJ103	Carbon	10K ohms 1/16W	C83-85	YWT316B104MT	Ceramic	0.1 $\mu$ F
R867,868	YF2116473GT	Carbon	47K ohms 1/16W	C86	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R869	YF2116221JT	Carbon	220 ohms 1/16W	C87	YF400070CHDT	Ceramic	7 pF (CH)
R870	ERDS2TJ102	Carbon	1K ohms 1/4W	C88	YF400180CHJT	Ceramic	18 pF
R872	YF2116101JT	Carbon	100 ohms 1/16W	C92-94	YWT316B104MT	Ceramic	0.1 $\mu$ F
R873,874	YF2116681JT	Carbon	680 ohms 1/16W	C95	YWS21A106T	Electrolytic	10 $\mu$ F 10V
VR1,5	EVM1DSW30BY2	Variable Resistor	330 ohms	C96	YF400070CHDT	Ceramic	7 pF (CH)
VR9	EVM1DSW30B54	Variable Resistor	50K ohms	C97	YF400180CHJT	Ceramic	18 pF
VR10,11	EVM1DSW30B24	Variable Resistor	20K ohms	C101	YF400102XKT	Ceramic	1000 pF
VR12	EVM1DSW30B54	Variable Resistor	50K ohms	C102	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V
VR13,14	EVM1DSW30B24	Variable Resistor	20K ohms	C103	YF400101CHJT	Ceramic	100 pF
VR15,16	EVM1DSW30BY2	Variable Resistor	330 ohms	C104	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
VR17	EVM1DSW30BQ3	Variable Resistor	4.7K ohms	C106	ECSF1HE474	Electrolytic	0.47 $\mu$ F 50V
VR18,19	EVM1DSW30BY2	Variable Resistor	330 ohms	C107	YWT316B104MT	Ceramic	0.1 $\mu$ F
VR20,21	-EVM1DSW30BE3	Variable Resistor	2.2K ohms	C108	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
VR22	EVM1DSW30BQ3	Variable Resistor	4.7K ohms	C109	YWS21A106T	Electrolytic	10 $\mu$ F 10V
VR23,24	-EVM1DSW30BE3	Variable Resistor	2.2K ohms	C110	YWT316B104MT	Ceramic	0.1 $\mu$ F
VR25	EVM1DSW30BQ3	Variable Resistor	4.7K ohms	C111	YWS21A336	Electrolytic	33 $\mu$ F 10V
VR26-29	EVM1DSW30BY2	Variable Resistor	330 ohms	C112	YWT316B104MT	Ceramic	0.1 $\mu$ F
VR31-34	-EVM1DSW30BE3	Variable Resistor	2.2K ohms	C113	YWS21A336	Electrolytic	33 $\mu$ F 10V
VR39	-EVM1DSW30BE3	Variable Resistor	2.2K ohms	C114	ECEA1HKS47	Electrolytic	0.47 $\mu$ F 50V
Z700,701	EXBF9E103J	Block Resistor		C119	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
Z702-707	YWRKM10L102F	Block Resistor		C120	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
Z708-712	EXBF9E103J	Block Resistor		C126,127	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
C1	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V	C128,129	YF400103XKT	Ceramic	0.01 $\mu$ F
C2	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C130,131	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
C3,4	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C140	YF400222XKT	Ceramic	2200 pF
C5-12	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C152	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
C13-20	YF400103XKT	Ceramic	0.01 $\mu$ F	C153,154	YWT316B104MT	Ceramic	0.1 $\mu$ F
C21-24	YF400101CHJT	Ceramic	100 pF	C155	ECEA1CKS220	Electrolytic	22 $\mu$ F 16V
C25	YF400104FZT	Ceramic	0.1 $\mu$ F	C156	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)
C26	YWS21A106T	Electrolytic	10 $\mu$ F	C157	ECEA1HKS47	Electrolytic	0.47 $\mu$ F 50V
C27,28	YF400104FZT	Ceramic	0.1 $\mu$ F	C158	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)
C29	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C159	YF400201CHJT	Ceramic	200 pF
C30	YF400104FZT	Ceramic	0.1 $\mu$ F	C160,161	YWT316B473MT	Ceramic	0.047 $\mu$ F
C41,42	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C162,163	YF400102XKT	Ceramic	1000 pF
C43	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C164	YF400222XKT	Ceramic	2200 pF
C44,45	YF400103XKT	Ceramic	0.01 $\mu$ F	C165	YWT316B104MT	Ceramic	0.1 $\mu$ F
C46	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C166	ECEA1ES47	Electrolytic	4.7 $\mu$ F 25V (KS)
C49	YF400222XKT	Ceramic	2200 pF	C168	YWT316B104MT	Ceramic	0.1 $\mu$ F
C62	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C169	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)
C63	YF400101CHJT	Ceramic	100 pF	C170	YWT316B104MT	Ceramic	0.1 $\mu$ F

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C171	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C240,241	YF400101CHJT	Ceramic	100 pF
C172	YWT316B104MT	Ceramic	0.1 $\mu$ F	C241	YF400271CHJT	Ceramic	270 pF
C173	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)	C242	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V
C174	YWT316B104MT	Ceramic	0.1 $\mu$ F	C243	YF400121CHJT	Ceramic	120 pF
C175	YF400050CHDT	Ceramic	5 pF	C244	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
C176	YF400561CHJT	Ceramic	560 pF	C246	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V
C177	YF400102XKT	Ceramic	1000 pF	C247	YF400330CHJT	Ceramic	33 pF
C178	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C248	ECSE1HE105	Electrolytic	1 $\mu$ F 50V
C179,180	YWT316B104MT	Ceramic	0.1 $\mu$ F	C249	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
C181	ECEA1CKS220	Electrolytic	22 $\mu$ F 16V	C250	YF400102XKT	Ceramic	1000 pF
C182	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)	C251	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V
C183	ECEA1HKS47	Electrolytic	0.47 $\mu$ F 50V	C252	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
C184	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)	C253	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V
C185	YF400201CHJT	Ceramic	200 pF	C254	YF400330CHJT	Ceramic	33 pF
C186,187	YWT316B473MT	Ceramic	0.047 $\mu$ F	C255	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V
C188,189	YF400102XKT	Ceramic	1000 pF	C256	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
C190	YF400222XKT	Ceramic	2200 pF	C257	YF400102XKT	Ceramic	1000 pF
C191	YWT316B104MT	Ceramic	0.1 $\mu$ F	C258	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V
C192	ECEA1ES4R7	Electrolytic	4.7 $\mu$ F 25V (KS)	C259	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
C194	YWT316B104MT	Ceramic	0.1 $\mu$ F	C260	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V
C195	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)	C261	YF400330CHJT	Ceramic	33 pF
C196,197	YWT316B104MT	Ceramic	0.1 $\mu$ F	C262	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V
C198	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C263	YF400102XKT	Ceramic	1000 pF
C199	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)	C264	YF400103XKT	Ceramic	0.01 $\mu$ F
C200	YWT316B104MT	Ceramic	0.1 $\mu$ F	C265	YWT316B104MT	Ceramic	0.1 $\mu$ F
C201	YF400050CHDT	Ceramic	5 pF	C266-268	YF400103XKT	Ceramic	0.01 $\mu$ F
C202	YF400561CHJT	Ceramic	560 pF	C269	ECEA1CKS220	Electrolytic	22 $\mu$ F 16V
C203	YF400102XKT	Ceramic	1000 pF	C270	YF400680CHJT	Ceramic	68 pF CH
C210	YF400103XKT	Ceramic	0.01 $\mu$ F	C273	YF400390CHJT	Ceramic	39 pF
C211	YWT316B104MT	Ceramic	0.1 $\mu$ F	C274	YF400100CHJT	Ceramic	10 pF
C212-214	YF400103XKT	Ceramic	0.01 $\mu$ F	C275	ECST1VD475	Electrolytic	4.7 $\mu$ F 35V
C215	ECEA1CKS220	Electrolytic	22 $\mu$ F 16V	C276	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V
C216	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C277	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C217	YF400121CHJT	Ceramic	120 pF	C278	ECEA0JU332	Electrolytic	3300 $\mu$ F 6.3V
C218	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C279	ECEA0JU332	Electrolytic	3300 $\mu$ F 6.3V
C219	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C280	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C221	YF400330CHJT	Ceramic	33 pF	C281	YF400222XKT	Ceramic	2200 pF
C222	YWS21A106T	Electrolytic	10 $\mu$ F	C282	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C223	ECSE1HE105	Electrolytic	1 $\mu$ F 50V	C283	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V
C224	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C284-286	YF400222XKT	Ceramic	2200 pF
C225	YF400102XKT	Ceramic	1000 pF	C287	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
C226	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C288	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
C227	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C289	ECEA1ES4R7	Electrolytic	4.7 $\mu$ F 25V (KS)
C228	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C290	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V
C229	YF400330CHJT	Ceramic	33 pF	C291	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C230	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	C292	ECEA0JU332	Electrolytic	3300 $\mu$ F 6.3V
C231	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C293	ECEA0JU332	Electrolytic	3300 $\mu$ F 6.3V
C232	YF400102XKT	Ceramic	1000 pF	C295	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
C233	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C296	YF400390CHJT	Ceramic	39 pF
C234	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C297	YF400100CHJT	Ceramic	10 pF
C235	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C298	ECST1VD475	Electrolytic	4.7 $\mu$ F 35V
C236	YF400330CHJT	Ceramic	33 pF				
C237	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V				
C238	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V				
C239	YF400102XKT	Ceramic	1000 pF				

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C299	YF400100CHJT	Ceramic	10 pF	C703	YWFYD0H105Z	Electrolytic	1 $\mu$ F
C300	ECEA1ES4R7	Electrolytic	4.7 $\mu$ F 25V (KS)	C704	YF400104FZT	Ceramic	0.1 $\mu$ F
C301	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V	C705	YWT316B104MT	Ceramic	0.1 $\mu$ F
C302	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V	C706	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V
C303	ECEA0JU332	Electrolytic	3300 $\mu$ F 6.3V	C707	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
C304,307	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C708	YF400102XKT	Ceramic	1000 pF
C308	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C709	YF400103XKT	Ceramic	0.01 $\mu$ F
C309	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C710	YWT316B104MT	Ceramic	0.1 $\mu$ F
C310	ECEA1AKS47Q	Electrolytic	47 $\mu$ F 10V	C711	YF400222XKT	Ceramic	2200 pF
C311,312	YF400220CHJT	Ceramic	22 pF	C712-714	YWT316B104MT	Ceramic	0.1 $\mu$ F
C313	YWT316B104MT	Ceramic	0.1 $\mu$ F	C715,716	YF400101CHJT	Ceramic	100 pF
C314	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C717	YWT316B104MT	Ceramic	0.1 $\mu$ F
C315	YWT316B104MT	Ceramic	0.1 $\mu$ F	C718	YF400330CHJT	Ceramic	33 pF
C316	YF400100CHJT	Ceramic	10 pF	C719-721	YF400101CHJT	Ceramic	100 pF
C317	ECST1VD475	Tantalum	4.7 $\mu$ F 35V	C722	YWT316B104MT	Ceramic	0.1 $\mu$ F
C318	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V	C723-736	YF400101CHJT	Ceramic	100 pF
C319	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C737,738	YWT316B104MT	Ceramic	0.1 $\mu$ F
C320	ECEA0GKA471	Electrolytic	470 $\mu$ F 4V	C739	YF400101CHJT	Ceramic	100 pF
C322	YF400103XKT	Ceramic	0.01 $\mu$ F	C742	YWT316B104MT	Ceramic	0.1 $\mu$ F
C323	ECEA1ESN3R3	Electrolytic	3.3 $\mu$ F 25V	C743	ECSF1CE106	Tantalum	10 $\mu$ F 16V
C324	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C744	YWT316B104MT	Ceramic	0.1 $\mu$ F
C325	YWT316B104MT	Ceramic	0.1 $\mu$ F	C745	ECEA0JKA221	Electrolytic	220 $\mu$ F 6.3V
C326	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C746	YWT316B104MT	Ceramic	0.1 $\mu$ F
C327	YWT316B104MT	Ceramic	0.1 $\mu$ F	C747	ECEA1CKS100	Electrolytic	10 $\mu$ F 16V
C328	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C748	YWT316B104MT	Ceramic	0.1 $\mu$ F
C330	YWT316B473MT	Ceramic	0.047 $\mu$ F	C749	ECEA1CKS100	Electrolytic	10 $\mu$ F 16V
C331	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C750-756	YWT316B104MT	Ceramic	0.1 $\mu$ F
C332,354	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C757	YF400104FZT	Ceramic	0.1 $\mu$ F
C361	ECEA1HKS3R3	Electrolytic	3.3 $\mu$ F 50V	C758	YWT316B104MT	Ceramic	0.1 $\mu$ F
C362	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V	C759-762	ECEA1CKS100	Electrolytic	10 $\mu$ F 16V
C365,366	ECEA1AKS101	Electrolytic	100 $\mu$ F	C763-774	YF400101CHJT	Ceramic	100 pF
C367	YF400680CHJT	Ceramic	68 pF	C775	YWT316B104MT	Ceramic	0.1 $\mu$ F
C368	ECST1VD475	Tantalum	4.7 $\mu$ F 35V	C776-782	YF400101CHJT	Ceramic	100 pF
C369	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V	C791-814	YF400101CHJT	Ceramic	100 pF
C370	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C815,816	YWT316B104MT	Ceramic	0.1 $\mu$ F
C371,372	ECEA0JKS101	Electrolytic	100 $\mu$ F 6.3V	C817	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V
C373,374	YF400680CHJT	Ceramic	68 pF	C818	YWT316B104MT	Ceramic	0.1 $\mu$ F
C375-378	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C819-822	YF400101CHJT	Ceramic	100 pF
C379,380	YF400103XKT	Ceramic	0.01 $\mu$ F	C823-825	YWT316B104MT	Ceramic	0.1 $\mu$ F
C381,382	YF400390CHJT	Ceramic	39 pF	C826	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C387-390	ECSF1EE226	Electrolytic	22 $\mu$ F 25V	C827	ECSF1CE106	Electrolytic	10 $\mu$ F 16V
C391	YF400330CHJT	Ceramic	33 pF	C828	YWT316B104MT	Ceramic	0.1 $\mu$ F
C392	YF400820CHJT	Ceramic	82 pF	C829	YWS21C105	Electrolytic	1 $\mu$ F
C393-397	YWS21A106T	Electrolytic	10 $\mu$ F	C830	ECQP1H103GZ	Plastic	10000 pF 50V
C398-401	YWT316B104MT	Ceramic	0.1 $\mu$ F	C831	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V
C402	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C832	YWT316B104MT	Ceramic	0.1 $\mu$ F
C403-407	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V	C833	YF400101CHJT	Ceramic	100 pF
C700	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V	C834-836	YWT316B104MT	Ceramic	0.1 $\mu$ F
C701	YF400104FZT	Ceramic	0.1 $\mu$ F	C837	ECEA1CU221	Electrolytic	220 $\mu$ F 16V
C702	YWT316B104MT	Ceramic	0.1 $\mu$ F	C838	ECEA1CU102	Electrolytic	1000 $\mu$ F 16V
				C840,841	ECEA0JKA221	Electrolytic	220 $\mu$ F 6.3V
				C842-850	YF400101CHJT	Ceramic	100 pF
				CT3,4	YFTZ03R200FR	Trimmer Capacitor	20 pF
				L1,2	ELC08D082	Coil	

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
L5	ELESE180KA	Coil 18 $\mu$ H	<b>DIGITAL BOARD</b>		
L6	ELESE6R8KA	Coil 6.8 $\mu$ H	PCB10 (RTL)	YWJKZMX50P3A	Printed Circuit Board Assy
L8-10	ELESE1R0KA	Coil 1 $\mu$ H	IC1	MC74HC4053F	IC
L12	ELESE180KA	Coil 18 $\mu$ H	IC2	NJM2904M	IC
L13	ELESE6R8KA	Coil 6.8 H	IC3,4	YWCXD1175AM	IC
L14,15	ELESE1R0KA	Coil 1 $\mu$ H	IC5	MC74HC4053F	IC
L16	ELESE101KA	Coil 100 $\mu$ H	IC6	NJM2904M	IC
L21	ELESE1R0KA	Coil 1 $\mu$ H	IC7,8	YWCXD1175AM	IC
L24,27	ELESE101KA	Coil 100 $\mu$ H	IC9-11	YWUPD42102G3	IC
L28	ELESE101KA	Coil 100 $\mu$ H	IC12	MN53040LBV	IC
L29,30	ELESE1R0KA	Coil 1 $\mu$ H	IC13-18	YWUPD42102G3	IC
L700	ELC08D082	Coil	IC19	MN53040LBV	IC
L701-706	ELESE100KA	Coil 10 $\mu$ H	IC20-22	YWUPD42102G3	IC
SW701,702	YWA6D8100	Slide Switch	IC23	YWSC7SU04F	IC
X3,4	YFMS30914M10	Crystal Oscillator	IC24	MN53100LBU4	IC
X700	YWCSA1966MXT	Crystal Oscillator	IC25-36	YWM5M4C500AL	IC
CF1,2	YWYS40075	Filter	IC43	YWSC7SU04F	IC
CF3	YWYS30500	Filter	IC44	MN53100LBU4	IC
CF4,5	YWYS40075	Filter	IC45-56	YWM5M4C500AL	IC
CF6	YWYS30500	Filter	IC63	YWPD65240074	IC
CF7	YWYS40072	Filter	IC64,65	YWUPD42102G3	IC
CF8,9	YWYS30552	Filter	IC66	YWUPD91361	IC
CF10	YWYS40072	Filter	IC67	YWPD65012C25	IC
CF11,12	YWYS30552	Filter	IC68	MC74HC4053F	IC
CF13	YWYS40075	Filter	IC69	MN676011NPS	IC
CF14	YWYS30500	Filter	IC70	YWSC7SU04F	IC
CF15	YWYS40075	Filter	IC71	YWMC74HC374F	IC
CF16,17	YWYS30500	Filter	IC72	YWMC74AC374M	IC
CF18	YWYS5G0399	Filter	IC73	YWPD65082067	IC
CF19	YWYS30500	Filter	IC74	YWMC74HC08F	IC
CF20	YWYS40075	Filter	IC75	YWSC7S32FER	IC
CF21	YWYS30500	Filter	IC76	YWMC74HC74F	IC
CF22	YWYS40075	Filter	IC77	YWMC74HC374F	IC
CF23	YWYS30500	Filter	IC78	YWMC74AC374M	IC
CN1	YW530140710	7-pin Connector	IC79	YWNJM78L09A	IC
CN2	YWF794P026LA	26-pin Connector	IC80	YWSC7S08F	IC
CN3	YWF794P030LA	30-pin Connector	IC81	NJM319M	IC
CN4	YWF794P024LA	24-pin Connector	IC82,83	YWMC74HC541F	IC
CN5	YWF794P040LA	40-pin Connector	IC84	YWSC7SU04F	IC
CN6	YWF794P030LA	30-pin Connector	IC85-87	YWSC7S08F	IC
CN7	YWF794P020LA	20-pin Connector	IC88	YWPD65012C25	IC
CN8	YWF794P034LA	34-pin Connector	IC89	YWSC7SU04F	IC
TP3-8	YWRCT2125TPV	Test Point	IC90	MN676011NPS	IC
TP11-20	YWRCT2125TPV	Test Point	IC91	YWSC7SU04F	IC
TP23-25	YWRCT2125TPV	Test Point	IC92,93	NJM78L05A	IC
M41	YWV2HA1044A1	Shield Parts	IC94	YWSC7S08F	IC
M42	YWV2HA1045A2	Shield Parts	IC95	NJM78L05A	IC
			IC96	YW78L05UATE2	IC
			Q1-8	MSD601-QRS	Transistor
			Q10	2SK198-Q	Transistor
			Q11,12	2SK198-Q	FET

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
Q13	MSB709-QRS	Transistor	R176	YF2116392JT	Carbon 3.9K ohms 1/16W
Q14,15	2SA1733	Transistor	R177	YF2116221JT	Carbon 220 ohms 1/16W
Q16	MSB709-QRS	Transistor	R178	YF2116101JT	Carbon 100 ohms 1/16W
Q17	2SA1733	Transistor	R179	YF2116221JT	Carbon 220 ohms 1/16W
Q18	2SK198-Q	FET	R180	ERJ6GEYJ103	Carbon 10K ohms 1/16W
Q19	MSD601-QRS	Transistor	R181	YW2116105JT	Carbon 1M ohms 1/16W
Q20,21	MSB709-QRS	Transistor	R182	YF2116331JT	Carbon 330 ohms 1/16W
Q22	2SK198-Q	Transistor	R183	YF2116332JT	Carbon 3.3K ohms 1/16W
Q23	MSD601-QRS	Transistor	R184	YF2116333GT	Carbon 33K ohms 1/16W
Q24,25	MSB709-QRS	Transistor	R185	YF2116511JT	Carbon 510 ohms 1/16W
Q26	MSD601-QRS	Transistor	R186	YF2116752JT	Carbon 7.5K ohms 1/16W
Q27	2SK198-Q	FET	R187	YF2116331JT	Carbon 330 ohms 1/16W
Q28	MSB709-QRS	Transistor	R188	YF2116104JT	Carbon 100K ohms 1/16W
Q29	2SK198-Q	FET	R189	YF2116331JT	Carbon 330 ohms 1/16W
Q30,31	MSD601-QRS	Transistor	R192-199	YF2116221JT	Carbon 220 ohms 1/16W
D1-7	1SV153	Diode	R202-224	YF2116221JT	Carbon 220 ohms 1/16W
D8,9	1SS99	Diode	R229-254	YF2116221JT	Carbon 220 ohms 1/16W
D10-13	1SV153	Diode	R261,262	YF2116104JT	Carbon 100K ohms 1/16W
R1	YF2116821GT	Carbon 820 ohms 1/16W	R263	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R2	YF2116202JT	Carbon 2K ohms 1/16W	R264,265	YF2116621JT	Carbon 620 ohms 1/16W
R3	YF2116222GT	Carbon 2.2K ohms 1/16W	R266	YF2116511JT	Carbon 510 ohms 1/16W
R4	YF2116511JT	Carbon 510 ohms 1/16W	R267	YF2116104JT	Carbon 100K ohms 1/16W
R5-7	YF2116331JT	Carbon 330 ohms 1/16W	R268	ERJ6GEY0R00	Carbon 0 ohms 1/10W
R8	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	R270	YF2116752JT	Carbon 7.5K ohms 1/16W
R9	YF2116112JT	Carbon 1.1K ohms 1/16W	R271	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R10-27	YF2116101JT	Carbon 100 ohms 1/16W	R272	YF2116332JT	Carbon 3.3K ohms 1/16W
R28,29	YF2116331JT	Carbon 330 ohms 1/16W	R273	YF2116101JT	Carbon 100 ohms 1/16W
R30	YF2116821GT	Carbon 820 ohms 1/16W	R274	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R31	YF2116202JT	Carbon 2K ohms 1/16W	R276,277	YF2116511JT	Carbon 510 ohms 1/16W
R32	YF2116222GT	Carbon 2.2K ohms 1/16W	R278	YF2116752JT	Carbon 7.5K ohms 1/16W
R33	YF2116511JT	Carbon 510 ohms 1/16W	R279	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R34	YF2116101JT	Carbon 100 ohms 1/16W	R280	YF2116332JT	Carbon 3.3K ohms 1/16W
R35-39	YF2116331JT	Carbon 330 ohms 1/16W	R281	ERJ6GEY0R00	Carbon 0 ohms 1/10W
R40	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	R283-289	YF2116511JT	Carbon 510 ohms 1/16W
R41	YF2116112JT	Carbon 1.1K ohms 1/16W	R290-293	ERJ6GEY0R00	Carbon 0 ohms 1/10W
R42-58	YF2116101JT	Carbon 100 ohms 1/16W	R295,296	YF2116104JT	Carbon 100K ohms 1/16W
R59-74	YF2116221JT	Carbon 220 ohms 1/16W	R297	YW2116105JT	Carbon 1M ohms 1/16W
R75	YF2116101JT	Carbon 100 ohms 1/16W	R298	YF2116331JT	Carbon 330 ohms 1/16W
R76	YF2116221JT	Carbon 220 ohms 1/16W	R299-346	YF2116221JT	Carbon 220 ohms 1/16W
R77	YW2116105JT	Carbon 1M ohms 1/16W	R347	YF2116101JT	Carbon 100 ohms 1/16W
R78	YF2116331JT	Carbon 330 ohms 1/16W	R348-361	YF2116221JT	Carbon 220 ohms 1/16W
R79	ERJ6GEYJ103	Carbon 10K ohms 1/16W	R362	ERJ6GEYJ102	Carbon 1K ohms 1/16W
R80	YF2116332JT	Carbon 3.3K ohms 1/16W	R363	YW2116105JT	Carbon 1M ohms 1/16W
R81	YF2116333GT	Carbon 33K ohms 1/16W	R364	ERJ6GEYJ103	Carbon 10K ohms 1/16W
R82	YF2116511JT	Carbon 510 ohms 1/16W	R365,366	YF2116331JT	Carbon 330 ohms 1/16W
R83	YF2116752JT	Carbon 7.5K ohms 1/16W	R367	YF2116752JT	Carbon 7.5K ohms 1/16W
R84	YF2116331JT	Carbon 330 ohms 1/16W	R368	YF2116511JT	Carbon 510 ohms 1/16W
R85	YF2116104JT	Carbon 100K ohms 1/16W	R370	YF2116332JT	Carbon 3.3K ohms 1/16W
R86	YF2116331JT	Carbon 330 ohms 1/16W	R372,373	YF2116221JT	Carbon 220 ohms 1/16W
R89-97	YF2116221JT	Carbon 220 ohms 1/16W	R374	YF2116511JT	Carbon 510 ohms 1/16W
R100-122	YF2116221JT	Carbon 220 ohms 1/16W			
R127-140	YF2116221JT	Carbon 220 ohms 1/16W			
R141	YF2116392JT	Carbon 3.9K ohms 1/16W			
R142-153	YF2116221JT	Carbon 220 ohms 1/16W			
R160-175	YF2116221JT	Carbon 220 ohms 1/16W			

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R375	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R513	YF2116221JT	Carbon	220 ohms 1/16W
R376	YF2116511JT	Carbon	510 ohms 1/16W	R514-517	YF2116101JT	Carbon	100 ohms 1/16W
R377	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R518-520	YF2116332JT	Carbon	3.3K ohms 1/16W
R378	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	R521,522	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R379	YF2116222GT	Carbon	2.2K ohms 1/16W	R523-525	YF2116221JT	Carbon	220 ohms 1/16W
R380	YF2116392JT	Carbon	3.9K ohms 1/16W	R526	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R381	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R527	YF2116221JT	Carbon	220 ohms 1/16W
R382	YF2116221JT	Carbon	220 ohms 1/16W	R531	ERDS2TJ182	Carbon	1.8K ohms 1/4W
R383	YF2116101JT	Carbon	100 ohms 1/16W	R532	ERDS2FJ331	Carbon	330 ohms 1/4W
R384-399	YF2116221JT	Carbon	220 ohms 1/16W	VR1	EVM1DSW30B14	Variable Resistor 10K ohms	
R400,401	ERJ6GEYJ102	Carbon	1K ohms 1/16W	Z1-5	YWRKM10L102F	Block Resistor	
R402-417	YF2116221JT	Carbon	220 ohms 1/16W	C2,3	ECSF1CE336	Electrolytic	33 $\mu$ F 16V
R418-420	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C4,5	YF400333XKT	Ceramic	0.033 $\mu$ F
R421	YF2116221JT	Carbon	220 ohms 1/16W	C6,7	ECEA1AKS330	Electrolytic	33 $\mu$ F 10V
R422-432	YF2116331JT	Carbon	330 ohms 1/16W	C8	YWS21A106T	Electrolytic	10 $\mu$ F
R433,434	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C9	YWT316B104MT	Ceramic	0.1 $\mu$ F
R436,437	YF2116221JT	Carbon	220 ohms 1/16W	C10	YF400333XKT	Ceramic	0.033 $\mu$ F
R438	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C11	YWS21A106T	Electrolytic	10 $\mu$ F
R439-444	YF2116331JT	Carbon	330 ohms 1/16W	C12	YWT316B104MT	Ceramic	0.1 $\mu$ F
R445,446	YF2116104JT	Carbon	100K ohms 1/16W	C13	YF400680CHJT	Ceramic	68 pF CH
R447-463	ERJ6GEYJ103	Carbon	10K ohms 1/16W	C14	YF400333XKT	Ceramic	0.033 $\mu$ F
R465,466	YF2116511JT	Carbon	510 ohms 1/16W	C15-17	YF400220CHJT	Ceramic	22 pF
R467	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C18	YWS21A106T	Electrolytic	10 $\mu$ F
R468	YF2116511JT	Carbon	510 ohms 1/16W	C19	YWT316B104MT	Ceramic	0.1 $\mu$ F
R469	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C20	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
R470	YF2116752JT	Carbon	7.5K ohms 1/16W	C21	YF400102XKT	Ceramic	1000 pF
R471	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C22	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
R472	YF2116332JT	Carbon	3.3K ohms 1/16W	C23	YWS21A106T	Electrolytic	10 $\mu$ F
R473,474	YF2116104JT	Carbon	100K ohms 1/16W	C24	YWT316B104MT	Ceramic	0.1 $\mu$ F
R475	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C25	YWS21A106T	Electrolytic	10 $\mu$ F
R476	YW2116105JT	Carbon	1M ohms 1/16W	C26	YF400333XKT	Ceramic	0.033 $\mu$ F
R477	YF2116331JT	Carbon	330 ohms 1/16W	C27	YWT316B104MT	Ceramic	0.1 $\mu$ F
R478-481	ERJ6GEY0R00	Carbon	1 ohms 1/10W	C28	YF400680CHJT	Ceramic	68 pF CH
R482	YF2116331JT	Carbon	330 ohms 1/16W	C29	YF400333XKT	Ceramic	0.033 $\mu$ F
R483,484	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C30,31	YF400220CHJT	Ceramic	22 pF
R485	YF2116104JT	Carbon	100K ohms 1/16W	C32	YF400333XKT	Ceramic	0.033 $\mu$ F
R486	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C33	ECEA1AKS330	Electrolytic	33 $\mu$ F 10V
R487	YF2116104JT	Carbon	100K ohms 1/16W	C34	YF400333XKT	Ceramic	0.033 $\mu$ F
R488	YF2116752JT	Carbon	7.5K ohms 1/16W	C35,36	ECEA1AKS330	Electrolytic	33 $\mu$ F 10V
R489	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C37	YWS21A106T	Electrolytic	10 $\mu$ F
R490	YF2116332JT	Carbon	3.3K ohms 1/16W	C38	YWT316B104MT	Ceramic	0.1 $\mu$ F
R491,492	YF2116621JT	Carbon	620 ohms 1/16W	C39	YWS21A106T	Electrolytic	10 $\mu$ F
R493,494	YF2116511JT	Carbon	510 ohms 1/16W	C40	YWT316B104MT	Ceramic	0.1 $\mu$ F
R496	YF2116203JT	Carbon	20K ohms 1/16W	C41	YF400333XKT	Ceramic	0.033 $\mu$ F
R497	YF2116101JT	Carbon	100 ohms 1/16W	C42	YF400680CHJT	Ceramic	68 pF CH
R498	ERJ6GEY0R00	Carbon	1 ohms 1/10W	C43	YF400333XKT	Ceramic	0.033 $\mu$ F
R500,501	YF2116331JT	Carbon	330 ohms 1/16W	C44-48	YF400220CHJT	Ceramic	22 pF
R502,503	YF2116511JT	Carbon	510 ohms 1/16W	C49	YWS21A106T	Electrolytic	10 $\mu$ F
R504,505	YF2116331JT	Carbon	330 ohms 1/16W	C50	YWT316B104MT	Ceramic	0.1 $\mu$ F
R507	YF2116331JT	Carbon	330 ohms 1/16W	C51	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
R508	YF2116202JT	Carbon	2K ohms 1/16W				
R509	ERJ6GEYJ102	Carbon	1K ohms 1/16W				
R510	YF2116101JT	Carbon	100 ohms 1/16W				
R511	ERJ6GEYJ103	Carbon	10K ohms 1/16W				
R512	YF2116101JT	Carbon	100 ohms 1/16W				

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C52	YF400102XKT	Ceramic	1000 pF	C159	YF400332XKT	Ceramic	3300 pF
C53	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C160	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V
C54	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C161	YF400103XKT	Ceramic	0.01 $\mu$ F
C55	YWT316B104MT	Ceramic	0.1 $\mu$ F	C162	YF400330CHJT	Ceramic	33 pF
C56	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C163	YF400101CHJT	Ceramic	100 pF
C57	YF400333XKT	Ceramic	0.033 $\mu$ F	C164	YWT316B104MT	Ceramic	0.1 $\mu$ F
C58	YWT316B104MT	Ceramic	0.1 $\mu$ F	C165,166	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C59	YF400680CHJT	Ceramic	68 pF CH	C167,168	YWT316B104MT	Ceramic	0.1 $\mu$ F
C60	YF400333XKT	Ceramic	0.033 $\mu$ F	C169	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C61	YWT316B104MT	Ceramic	0.1 $\mu$ F	C170	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C62	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C171	ECEA0JU102	Electrolytic	1000 $\mu$ F 6.3V
C63,64	YWT316B104MT	Ceramic	0.1 $\mu$ F	C172-176	YWT316B104MT	Ceramic	0.1 $\mu$ F
C65	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C177	ECSF1CE336	Electrolytic	33 $\mu$ F 16V
C66,67	YWT316B104MT	Ceramic	0.1 $\mu$ F	C178-183	YWT316B104MT	Ceramic	0.1 $\mu$ F
C68	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C184	ECSF1CE336	Electrolytic	33 $\mu$ F 16V
C69	YWT316B104MT	Ceramic	0.1 $\mu$ F	C185	YWT316B104MT	Ceramic	0.1 $\mu$ F
C70,71	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C193	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C72-75	YWT316B104MT	Ceramic	0.1 $\mu$ F	C194	YWT316B104MT	Ceramic	0.1 $\mu$ F
C76	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C195	YF400201CHJT	Ceramic	200 pF
C77	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C196,197	YF400101CHJT	Ceramic	100 pF
C78	YF400561CHJT	Ceramic	560pF	C198	YWT316B104MT	Ceramic	0.1 $\mu$ F
C79	YF400270CHJT	Ceramic	27 pF	C199	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V
C80	YF400332XKT	Ceramic	3300 pF	C200	YF400103XKT	Ceramic	0.01 $\mu$ F
C81	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	C201	YF400101CHJT	Ceramic	100 pF
C82	YF400103XKT	Ceramic	0.01 $\mu$ F	C202	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V
C83	YF400101CHJT	Ceramic	100 pF	C203	YF400103XKT	Ceramic	0.01 $\mu$ F
C84	YF400330CHJT	Ceramic	33 pF	C204	YWS21A226	Electrolytic	22 $\mu$ F 10V
C85	YWT316B104MT	Ceramic	0.1 $\mu$ F	C205,206	YF400330CHJT	Ceramic	33 pF
C86,87	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C207,208	YWT316B104MT	Ceramic	0.1 $\mu$ F
C88,89	YWT316B104MT	Ceramic	0.1 $\mu$ F	C209	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C90	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C210-212	YWT316B104MT	Ceramic	0.1 $\mu$ F
C91	YWT316B104MT	Ceramic	0.1 $\mu$ F	C213,214	YF400330CHJT	Ceramic	33 pF
C92	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C215	YF400201CHJT	Ceramic	200 pF
C93	ECEA0JU102	Electrolytic	1000 $\mu$ F 6.3V	C216,217	YF400561CHJT	Ceramic	560pF
C94-98	YWT316B104MT	Ceramic	0.1 $\mu$ F	C218	YWT316B104MT	Ceramic	0.1 $\mu$ F
C99	ECSF1CE336	Electrolytic	33 $\mu$ F 16V	C219,220	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C100,101	YWT316B104MT	Ceramic	0.1 $\mu$ F	C221	YWT316B104MT	Ceramic	0.1 $\mu$ F
C103-106	YWT316B104MT	Ceramic	0.1 $\mu$ F	C222	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C107	ECSF1CE336	Electrolytic	33 $\mu$ F 16V	C223	YWT316B104MT	Ceramic	0.1 $\mu$ F
C108	YWT316B104MT	Ceramic	0.1 $\mu$ F	C224	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C116	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C225,226	YWT316B104MT	Ceramic	0.1 $\mu$ F
C117,118	YWT316B104MT	Ceramic	0.1 $\mu$ F	C227	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C119-121	YF400330CHJT	Ceramic	33 pF	C228	YWT316B104MT	Ceramic	0.1 $\mu$ F
C125-132	YF400330CHJT	Ceramic	33 pF	C229	ECSF1CE336	Tantalum	33 $\mu$ F 16V
C141-143	YWT316B104MT	Ceramic	0.1 $\mu$ F	C230	YF400270CHJT	Ceramic	27 pF
C144	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C231	YF400561CHJT	Ceramic	560 pF
C145	YWT316B104MT	Ceramic	0.1 $\mu$ F	C232	YWT316B104MT	Ceramic	0.1 $\mu$ F
C146,147	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C233	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C148,149	YWT316B104MT	Ceramic	0.1 $\mu$ F	C234	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V
C150,151	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C235	YF400332XKT	Ceramic	3300 pF
C152-154	YWT316B104MT	Ceramic	0.1 $\mu$ F	C236	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C155	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C237,238	YWT316B104MT	Ceramic	0.1 $\mu$ F
C156	YWT316B104MT	Ceramic	0.1 $\mu$ F	C239	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C157	YF400561CHJT	Ceramic	560 pF	C240	YWT316B104MT	Ceramic	0.1 $\mu$ F
C158	YF400270CHJT	Ceramic	27 pF	C241	YWS21A106T	Electrolytic	10 $\mu$ F 10V



REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C242,243	ECEA1CK5470	Electrolytic	47 $\mu$ F 16V	C335	YWS21A226	Electrolytic	22 $\mu$ F 10V
C244	YWT316B104MT	Ceramic	0.1 $\mu$ F	C336-338	YF400390CHJT	Ceramic	39 pF
C245	YF400330CHJT	Ceramic	33 pF	C339,340	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
C246	YF400101CHJT	Ceramic	100 pF	C341	YF400390CHJT	Ceramic	39 pF
C247	YF400390CHJT	Ceramic	39 pF	C342,343	YF400330CHJT	Ceramic	33 pF
C248	YF400103XKT	Ceramic	0.01 $\mu$ F	C344-346	YWT316B104MT	Ceramic	0.1 $\mu$ F
C249	YWT316B104MT	Ceramic	0.1 $\mu$ F	C347-349	YF400330CHJT	Ceramic	33 pF
C250	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C350,351	YWT316B104MT	Ceramic	0.1 $\mu$ F
C251	YWT316B104MT	Ceramic	0.1 $\mu$ F	C352,353	YWS21A226	Electrolytic	22 $\mu$ F 10V
C252	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C354-357	YWT316B104MT	Ceramic	0.1 $\mu$ F
C253,254	YWT316B104MT	Ceramic	0.1 $\mu$ F	C358	ECEA0JKS331	Electrolytic	330 $\mu$ F 6.3V
C255,256	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C359,360	YWT316B104MT	Ceramic	0.1 $\mu$ F
C257	YWT316B104MT	Ceramic	0.1 $\mu$ F	C361	ECEA0JKS331	Electrolytic	330 $\mu$ F 6.3V
C258	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C362,363	YWT316B104MT	Ceramic	0.1 $\mu$ F
C259,260	YWT316B104MT	Ceramic	0.1 $\mu$ F	C364	ECSF1CE336	Electrolytic	33 $\mu$ F 10V
C261	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C365-369	YWT316B104MT	Ceramic	0.1 $\mu$ F
C262	YWT316B104MT	Ceramic	0.1 $\mu$ F	C370	ECSF1CE336	Electrolytic	33 $\mu$ F 10V
C263-266	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C371	RPE132F104Z	Ceramic	0.1 $\mu$ F
C267	YWT316B104MT	Ceramic	0.1 $\mu$ F	C372	ECSF1AE336	Electrolytic	33 $\mu$ F 10V
C268	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C373-375	YWT316B104MT	Ceramic	0.1 $\mu$ F
C269	YWT316B104MT	Ceramic	0.1 $\mu$ F	C376	ECKF1H101KB	Ceramic	100 pF 50V
C270-272	YWS21A106T	Electrolytic	10 $\mu$ F 10V	L2	ELC08D082	Coil	0.82 $\mu$ H
C273-277	YF400330CHJT	Ceramic	33 pF	L3-8	ELESE1R0KA	Coil	1 $\mu$ H
C283	YF400330CHJT	Ceramic	33 pF	L9,10	ELESE100KA	Coil	10 $\mu$ H
C284	YWT316B104MT	Ceramic	0.1 $\mu$ F	L11	ELESE1R0KA	Coil	1 $\mu$ H
C285-289	YF400330CHJT	Ceramic	33 pF	L12	YWS5LE0554	Coil	
C290	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	L13,14	ELESE100KA	Coil	10 $\mu$ H
C291	YF400103XKT	Ceramic	0.01 $\mu$ F	L15,16	ELESE1R0KA	Coil	1 $\mu$ H
C292	YF400101CHJT	Ceramic	100 pF	L17	YWS5LE0554	Coil	
C293,294	YF400561CHJT	Ceramic	560pF	L18,19	ELESE100KA	Coil	10 $\mu$ H
C295	YWS21A106T	Electrolytic	10 $\mu$ F 10V	L20,21	ELESE1R0KA	Coil	1 $\mu$ H
C296,297	YWT316B104MT	Ceramic	0.1 $\mu$ F	L22,23	ELESE100KA	Coil	10 $\mu$ H
C298,299	YF400101CHJT	Ceramic	100 pF	L24	YWS5LE0554	Coil	
C300	YF400201CHJT	Ceramic	200 pF	L25	ELESE100KA	Coil	10 $\mu$ H
C301	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	L26-30	ELESE220KA	Coil	22 $\mu$ H
C302	YF400103XKT	Ceramic	0.01 $\mu$ F	L31-33	ELESE1R0KA	Coil	1 $\mu$ H
C303,304	YWT316B104MT	Ceramic	0.1 $\mu$ F	L34	ELC08D082	Coil	0.82 $\mu$ H
C305	YF400101CHJT	Ceramic	100 pF	L35	ELESE1R0KA	Coil	1 $\mu$ H
C306	YWT316B104MT	Ceramic	0.1 $\mu$ F	L36,37	ELESE100KA	Coil	10 $\mu$ H
C307	YWS21A106T	Electrolytic	10 $\mu$ F 10V	X1-4	YFMS30914M10	Crystal Oscillator	
C308	ECSF1CE336	Tantalum	33 $\mu$ F 16V	CN1	YW530140510	5-pin Connector	
C309	YF400330CHJT	Ceramic	33 pF	CN2	YWF794P040LA	40-pin Connector	
C310,311	YF400101CHJT	Ceramic	100 pF	CN3	YWF794P020LA	20-pin Connector	
C312	YF400330CHJT	Ceramic	33 pF	CN4	YW530140710	7-pin Connector	
C313	YF400220CHJT	Ceramic	22 pF	TP1-5	YWRCT2125TPV	Test Point	
C314	YF400101CHJT	Ceramic	100 pF	M48	YWV2HA1046A1	Shield Parts	
C315	YF400330CHJT	Ceramic	33 pF	M49	YWV2HA1047A2	Shield Parts	
C316	YF400220CHJT	Ceramic	22 pF				
C317	YF400101CHJT	Ceramic	100 pF				
C318-320	YF400330CHJT	Ceramic	33 pF				
C322	YF400330CHJT	Ceramic	33 pF				
C323	ECSF1CE336	Tantalum	33 $\mu$ F 16V				
C324-331	YF400330CHJT	Ceramic	33 pF				
C332	YWS21A226	Electrolytic	22 $\mu$ F 10V				
C334	YF400390CHJT	Ceramic	39 pF				

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
<b>SWITCH BOARD</b>					
PCB11 (RTL)	YWJKZMX50P4A	Printed Circuit Board Assy	R484,486	YF2116121JT	Carbon 120 ohms 1/16W
IC300,301	YWUPD71055GB	LSI	R487,489	YF2116121JT	Carbon 120 ohms 1/16W
IC302	M51944AML1	IC	R490	YF2116121JT	Carbon 120 ohms 1/16W
IC303	MC74HC4052F	IC	R491,492	ERJ6GEYJ103	Carbon 10K ohms 1/16W
IC304,305	MC74HC4053F	IC	R493	YWR1220P100D	Metal 10 ohms
IC306,307	YWMC74HC373F	IC	R495,496	R1220P331D	Metal 330K ohms
IC308	YW78L06UATE2	IC	R497-508	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W
IC309	YW79L05UATE2	IC	R509-520	YF2116101JT	Carbon 100 ohms 1/16W
IC310	YW78L05UATE2	IC	R521-528	YF2116331JT	Carbon 330 ohms 1/16W
Q300	TA64	Transistor	R529-536	ERJ6GEYJ103	Carbon 10K ohms 1/16W
Q301-303	MSB709-QRS	Transistor	VR300-302	EVJ02AF20B15	Variable Resistor 100K ohms
Q304,305	TA78	Transistor	VR303	EVJ02AF20A15	Variable Resistor 100K ohms
Q306	TA64	Transistor	VR304	EWAQFEX05B15	Variable Resistor 100K ohms
Q307,308	MSB709-QRS	Transistor	VR305	EVJ02AF20A15	Variable Resistor 100K ohms
Q309	TA78	Transistor	VR306-309	EVJ02AF20B15	Variable Resistor 100K ohms
Q310	TA64	Transistor	VR312,313	EVM8GAGA00B12	Variable Resistor 100 ohms
Q311-313	MSB709-QRS	Transistor	C300	ECEA0JKS331	Electrolytic 330 $\mu$ F 6.3V
Q314,315	TA78	Transistor	C301	YWS21A106T	Electrolytic 10 $\mu$ F 10V
Q316	MSD601-QRS	Transistor	C302	YWT316B104MT	Ceramic 0.1 $\mu$ F
Q317,318	TA78	Transistor	C303	ECEA0JKA221	Electrolytic 220 $\mu$ F 6.3V
Q319,320	MSD601-QRS	Transistor	C304	YWT316B104MT	Ceramic 0.1 $\mu$ F
D300-302	YWDAN212K	Diode	C305	YWS21A106T	Electrolytic 10 $\mu$ F 10V
D303-341	YWSLR34VR3FM	Diode	C306,307	YWT316B104MT	Ceramic 0.1 $\mu$ F
D343,345	YWSLR34VR3FM	Diode	C308	YWS21A106T	Electrolytic 10 $\mu$ F 10V
D347,349	YWSLR34VR3FM	Diode	C309	YWT316B104MT	Ceramic 0.1 $\mu$ F
D351,353	YWSLR34VR3FM	Diode	C310,311	YWS21A106T	Electrolytic 10 $\mu$ F 10V
D354,356	YWSLR34VR3FM	Diode	C312	YWT316B104MT	Ceramic 0.1 $\mu$ F
D357,359	YWSLR34VR3FM	Diode	C313	YWS21A106T	Electrolytic 10 $\mu$ F 10V
D360	YWSLR34VR3FM	Diode	C314	YWT316B104MT	Ceramic 0.1 $\mu$ F
R300-307	YF2116104JT	Carbon 100K ohms 1/16W	C315	YWS21A106T	Electrolytic 10 $\mu$ F 10V
R308	YF2116104JT	Carbon 100K ohms 1/16W	C316	YWT316B104MT	Ceramic 0.1 $\mu$ F
R309-323	YF2116104JT	Carbon 100K ohms 1/16W	C317	ECEA1EKA470	Electrolytic 47 $\mu$ F 25V
R324	ERJ6GEYJ103	Carbon 10K ohms 1/16W	C318	ECEA1AKS470	Electrolytic 47 $\mu$ F 10V
R325-348	ERJ6GEYJ102	Carbon 1K ohms 1/16W	C319	ECEA1EKA470	Electrolytic 47 $\mu$ F 10V
R349-372	YF2116272JT	Carbon 2.7K ohms 1/16W	C320	ECEA1AKS470	Electrolytic 47 $\mu$ F 10V
R373-384	YF2116390JT	Carbon 39 ohms 1/16W	C321,322	YWT316B104MT	Ceramic 0.1 $\mu$ F
R385-387	ERJ6GEYJ103	Carbon 10K ohms 1/16W	C323-326	ECEA1AKS470	Electrolytic 47 $\mu$ F 10V
R388-390	ERJ6GEYJ102	Carbon 1K ohms 1/16W	C427	ECEA1AKS470	Electrolytic 47 $\mu$ F 10V
R391-402	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	C428-450	YWT316B104MT	Ceramic 0.1 $\mu$ F
R403-426	YF2116121JT	Carbon 120 ohms 1/16W	C452	ECEA0JKS101	Electrolytic 100 $\mu$ F 6.3V
R427,428	ERJ6GEYJ103	Carbon 10K ohms 1/16W	C453	ECQV05224JC	Plastic 0.22 $\mu$ F 50V
R429,430	ERJ6GEYJ102	Carbon 1K ohms 1/16W	C454	ECQM1H334KZ	Plastic 0.33 $\mu$ F
R431-437	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	C455-458	ECQB1H122JZ	Plastic 1200 pF
R438-452	YF2116121JT	Carbon 120 ohms 1/16W	C459	ECQM1H334KZ	Plastic 0.33 $\mu$ F
R454-456	ERJ6GEYJ103	Carbon 10K ohms 1/16W	C460	ECQB1H122JZ	Plastic 1200 pF
R457-459	ERJ6GEYJ102	Carbon 1K ohms 1/16W	L1,2	ELJFA100KF	Coil 10 $\mu$ H
R460-472	ERJ6GEYJ472	Carbon 4.7K ohms 1/16W	L3	ELC08D082	Coil
R473,475	YF2116121JT	Carbon 120 ohms 1/16W	L4,5	ELJFA100KF	Coil 10 $\mu$ H
R477,479	YF2116121JT	Carbon 120 ohms 1/16W	SW300-338	EVQQTU05R	Push Switch
R481,483	YF2116121JT	Carbon 120 ohms 1/16W	SW347-352	EVQQTU05R	Push Switch

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
SW353-357	YW600W01YP2	Push Switch	R12	YWR1220P333D	Metal 33K ohms
SW358-362	YW600W01GP2	Push Switch	R17,18	YWR1220P221D	Metal 220 ohms
SW363,364	YW600W01RP2	Push Switch	R19	YWR1220P202D	Metal 2K ohms
SW365	EVQQTU05R	Push Switch	R20,21	YWR1220P911D	Metal 910 ohms
CN1	YW530150310	3-pin Connector	R22,23	YWR1220P102D	Metal 1K ohms
CN2	YWF795P026LA	26-pin Connector	R24	YWR1220P333D	Metal 33K ohms
CN3	YWF795P030LA	30-pin Connector	R29,30	YWR1220P221D	Metal 220 ohms
CN4	YWF795P040LA	40-pin Connector	R31	YWR1220P202D	Metal 2K ohms
CN5	YWF795P034LA	34-pin Connector	R32,33	YWR1220P911D	Metal 910 ohms
CN6	YW530150610	6-pin Connector	R34,35	YWR1220P102D	Metal 1K ohms
<b>AUDIO BOARD</b>			R36	YWR1220P333D	Metal 33K ohms
PCB12 (RTL)	YWJKZMX50P5A	Printed Circuit Board Assy	R41,42	YWR1220P221D	Metal 220 ohms
IC1,2	NJM4558M	IC	R43	YWR1220P202D	Metal 2K ohms
IC3,4	MC74HC4052F	IC	R44,45	YWR1220P911D	Metal 910 ohms
IC5	79L05UATE2	IC	R46,47	YWR1220P102D	Metal 1K ohms
IC6,7	YWM5283P	IC	R48	YWR1220P333D	Metal 33K ohms
IC8	MC74HC4053F	IC	R49-52	ERJ6GEYJ102	Carbon 1K ohms 1/16W
IC9,10	NJM2068MD	IC	R53	YF2116101JT	Carbon 100 ohms 1/16W
IC11	NJM2043MD	IC	R54	YFR1220P203D	Metal 20K ohms
IC12	YWM5283P	IC	R55	YF2116302GT	Carbon 3K ohms 1/16W
IC13,14	NJM2068MD	IC	R57	YF2116101JT	Carbon 100 ohms 1/16W
IC15,16	NJM4556M	IC	R58	YFR1220P203D	Metal 20K ohms
IC17	YWM5216FP	IC	R59	YF2116302GT	Carbon 3K ohms 1/16W
IC18	YW78L05UATE2	IC	R61	YF2116101JT	Carbon 100 ohms 1/16W
Q1	IMX3T9	Transistor	R62	YFR1220P203D	Metal 20K ohms
Q2	IMX2	Transistor	R63	YF2116302GT	Carbon 3K ohms 1/16W
Q3	IMX3T9	Transistor	R65	YF2116101JT	Carbon 100 ohms 1/16W
Q4	IMX2	Transistor	R66	YFR1220P203D	Metal 20K ohms
Q5	IMX3T9	Transistor	R68	YF2116302GT	Carbon 3K ohms 1/16W
Q6	IMX2	Transistor	R70	YF2116301JT	Carbon 300 ohms 1/16W
Q7	IMX3T9	Transistor	R71	YFR1220P203D	Metal 20K ohms
Q8	IMX2	Transistor	R73	YF2116302GT	Carbon 3K ohms 1/16W
Q9-30	MSD601-QRS	Transistor	R75	YFR1220P203D	Metal 20K ohms
Q31	MSB709-QRS	Transistor	R76	YF2116301JT	Carbon 300 ohms 1/16W
Q32-36	MSD601-QRS	Transistor	R77	YF2116302GT	Carbon 3K ohms 1/16W
Q37	MSB709-QRS	Transistor	R79	YFR1220P203D	Metal 20K ohms
Q38	MSD601-QRS	Transistor	R80	YF2116301JT	Carbon 300 ohms 1/16W
Q39-46	MSB709-QRS	Transistor	R81	YF2116302GT	Carbon 3K ohms 1/16W
D1-9	YWDAN212K	Diode	R83	YFR1220P203D	Metal 20K ohms
D101-122	YWRB421D	Diode	R84	YF2116301JT	Carbon 300 ohms 1/16W
D123-126	YWDAN212K	Diode	R86	YF2116302GT	Carbon 3K ohms 1/16W
D401-408	YWSLR34VR3FM	Diode	R89,91	YF2116101JT	Carbon 100 ohms 1/16W
R5,6	YWR1220P221D	Metal 220 ohms	R93,95	YF2116101JT	Carbon 100 ohms 1/16W
R7	YWR1220P202D	Metal 2K ohms	R96-99	YF2116302GT	Carbon 3K ohms 1/16W
R8,9	YWR1220P911D	Metal 910 ohms	R100-103	YF2116473GT	Carbon 47K ohms 1/16W
R10,11	YWR1220P102D	Metal 1K ohms	R106,107	YFR1220P203D	Metal 20K ohms
			R110,111	YFR1220P203D	Metal 20K ohms
			R112	YWR1220P202D	Metal 2K ohms
			R113	YWR1220P333D	Metal 33K ohms
			R114	YWR1220P102D	Metal 1K ohms
			R115	YWR1220P223D	Metal 22K ohms
			R116	YFR1220P203D	Metal 20K ohms
			R117	ERJ6GEYJ103	Carbon 10K ohms 1/16W
			R118-125	YWR1220P223D	Metal 22K ohms
			R126,127	YWR1220P333D	Metal 33K ohms

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R128,129	YF2116473GT	Carbon	47K ohms 1/16W	R198	YWR1220P470D	Metal	47 ohms
R130,131	YF2116561JT	Carbon	560 ohms 1/16W	R199	YFR1220P203D	Metal	20K ohms
R132	YF2116101JT	Carbon	100 ohms 1/16W	R200,201	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R133	YF2116302GT	Carbon	3K ohms 1/16W	R202,203	YFR1220P203D	Metal	20K ohms
R134	YF2116101JT	Carbon	100 ohms 1/16W	R204	YF2116104JT	Carbon	100K ohms 1/16W
R135	YF2116302GT	Carbon	3K ohms 1/16W	R208	ERJ6GEYJ102	Carbon	1K ohms 1/16W
R136-139	YWR1220P223D	Metal	22K ohms	R209-212	YF2116302GT	Carbon	3K ohms 1/16W
R140	YWR1220P101D	Metal	100 ohms	R213	YF2116101JT	Carbon	100 ohms 1/16W
R141	YWR1220P472D	Metal	4.7K ohms	R214	YF2116302GT	Carbon	3K ohms 1/16W
R142	YFR1220P104D	Metal	100K ohms	R215	YWR1220P112D	Metal	1.1K ohms
R143	YF2116332JT	Carbon	3.3K ohms 1/16W	R216,217	YWR1220P102D	Metal	1K ohms
R144	ERJ6GEYJ562	Carbon	5.6K ohms 1/16W	R218	YWR1220P112D	Metal	1.1K ohms
R145	ERJ6GEYJ102	Carbon	1K ohms 1/16W	R219,220	YWR1220P102D	Metal	1K ohms
R146	YWR1220P103D	Metal	10K ohms	R301	YWR1220P333D	Metal	33K ohms
R147	YWR1220P393D	Metal	39K ohms	R302	YF2116101JT	Carbon	100 ohms 1/16W
R148	YWR1220P101D	Metal	100 ohms	R303	YF2116621JT	Carbon	620 ohms 1/16W
R150	YWR1220P103D	Metal	10K ohms	R304	YWR1220P223D	Metal	22K ohms
R151	YWR1220P393D	Metal	39K ohms	R305	YWR1220P473D	Metal	47K ohms
R152	YWR1220P101D	Metal	100 ohms	R306	YWR1220P223D	Metal	22K ohms
R154	YWR1220P153D	Metal	15K ohms	R307	YWR1220P473D	Metal	47K ohms
R155	R1220P363D	Metal	36K ohms	R308	YWR1220P333D	Metal	33K ohms
R156	YWR1220P750D	Metal	75 ohms	R309	YF2116101JT	Carbon	100 ohms 1/16W
R158	YFR1220P203D	Metal	20K ohms	R310	YWR1220P333D	Metal	33K ohms
R159	YWR1220P153D	Metal	15K ohms	R311	YF2116101JT	Carbon	100 ohms 1/16W
R160	R1220P363D	Metal	36K ohms	R312	YF2116621JT	Carbon	620 ohms 1/16W
R161	YWR1220P750D	Metal	75 ohms	R313	YWR1220P223D	Metal	22K ohms
R163	YFR1220P203D	Metal	20K ohms	R314	YWR1220P473D	Metal	47K ohms
R164,165	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R315	YWR1220P223D	Metal	22K ohms
R166	YWR1220P223D	Metal	22K ohms	R316	YWR1220P473D	Metal	47K ohms
R167	YWR1220P154D	Metal	150K ohms	R317	YWR1220P333D	Metal	33K ohms
R168	YF2116101JT	Carbon	100 ohms 1/16W	R318	YF2116101JT	Carbon	100 ohms 1/16W
R169	YWR1220P103D	Metal	10K ohms	R319	YWR1220P333D	Metal	33K ohms
R170	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R320	YF2116101JT	Carbon	100 ohms 1/16W
R171	YWR1220P223D	Metal	22K ohms	R321	YF2116621JT	Carbon	620 ohms 1/16W
R172	YWR1220P154D	Metal	150K ohms	R322	YWR1220P223D	Metal	22K ohms
R173	YF2116101JT	Carbon	100 ohms 1/16W	R323	YWR1220P473D	Metal	47K ohms
R174	YWR1220P103D	Metal	10K ohms	R324	YWR1220P223D	Metal	22K ohms
R175	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R325	YWR1220P473D	Metal	47K ohms
R176	YWR1220P103D	Metal	10K ohms	R326	YWR1220P333D	Metal	33K ohms
R177	YWR1220P183D	Metal	18K ohms	R327	YF2116101JT	Carbon	100 ohms 1/16W
R178	YWR1220P103D	Metal	10K ohms	R328	YWR1220P333D	Metal	33K ohms
R179	YWR1220P470D	Metal	47 ohms	R329	YF2116101JT	Carbon	100 ohms 1/16W
R180	YFR1220P203D	Metal	20K ohms	R330	YF2116621JT	Carbon	620 ohms 1/16W
R181,182	YWR1220P103D	Metal	10K ohms	R331	YWR1220P223D	Metal	22K ohms
R183	YFR1220P203D	Metal	20K ohms	R332	YWR1220P473D	Metal	47K ohms
R184	YWR1220P470D	Metal	47 ohms	R333	YF2116301JT	Carbon	300 ohms 1/16W
R185	YFR1220P203D	Metal	20K ohms	R334	YWR1220P223D	Metal	22K ohms
R186,187	ERJ6GEYJ103	Carbon	10K ohms 1/16W	R335	YWR1220P473D	Metal	47K ohms
R188,189	YFR1220P203D	Metal	20K ohms	R336	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R190,191	YWR1220P103D	Metal	10K ohms	R337	YWR1220P333D	Metal	33K ohms
R192	YWR1220P183D	Metal	18K ohms	R338-340	YF2116101JT	Carbon	100 ohms 1/16W
R193	YWR1220P470D	Metal	47 ohms	R341	YF2116301JT	Carbon	300 ohms 1/16W
R194	YFR1220P203D	Metal	20K ohms	R342	ERJ6GEYJ103	Carbon	10K ohms 1/16W
R195,196	YWR1220P103D	Metal	10K ohms	R343	YF2116104JT	Carbon	100K ohms 1/16W
R197	YFR1220P203D	Metal	20K ohms	R344-351	ERJ6GEYJ103	Carbon	10K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R352	YWR1220P202D	Metal	2K ohms	C66	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
R353	2116150JT	Carbon	15 ohms 1/16W	C67	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
R401-408	YF2116560JT	Carbon	56 ohms 1/16W	C68,69	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V
R409-412	YWR1220P561D	Metal	560 ohms	C70	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
R413,414	YFR1220P203D	Metal	20K ohms	C71	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
R415-419	ERJ6GEYJ102	Carbon	1K ohms 1/16W	C72	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
R420,421	ERDS2TJ472	Carbon	4.7K ohms 1/4W	C73	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
VR1-5	EWAQA1X05C54	Variable Resistor	50K ohms	C74	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
VR6,7	YFH0621A3R3K	Variable Resistor	3.3K ohms	C75,76	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V
VR401,402	EWAPFEX05B15	Variable Resistor	100K ohms	C77	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
C3,6	ECEA0JKS101	Electrolytic	100 $\mu$ F 6.3V	C78	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C9,12	ECEA0JKS101	Electrolytic	100 $\mu$ F 6.3V	C79	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
C13,14	ECEA1CSN220	Electrolytic	22 $\mu$ F 16V	C80	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
C15	YF400330CHJT	Ceramic	33 pF	C81	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C16	YF400104FZT	Ceramic	0.1 $\mu$ F	C82,83	YF400104FZT	Ceramic	0.1 $\mu$ F
C17	YF400330CHJT	Ceramic	33 pF	C84	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V
C18	YF400104FZT	Ceramic	0.1 $\mu$ F	C85-88	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
C19,20	ECEA1CSN220	Electrolytic	22 $\mu$ F 16V	C89	ECEA1AKS100	Electrolytic	10 $\mu$ F 10V
C21,22	YF400330CHJT	Ceramic	33 pF	C90	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
C23,24	ECEA1CSN220	Electrolytic	22 $\mu$ F 16V	C91	YF400101CHJT	Ceramic	100 pF
C25	YF400330CHJT	Ceramic	33 pF	C92	YF400104FZT	Ceramic	0.1 $\mu$ F
C26	YF400104FZT	Ceramic	0.1 $\mu$ F	C93	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
C27	YF400330CHJT	Ceramic	33 pF	C94	YF400680CHJT	Ceramic	68 pF CH
C28	YF400104FZT	Ceramic	0.1 $\mu$ F	C95	YF400101CHJT	Ceramic	100 pF
C29,30	ECEA1CSN220	Electrolytic	22 $\mu$ F 16V	C96	YF400104FZT	Ceramic	0.1 $\mu$ F
C31,32	YF400330CHJT	Ceramic	33 pF	C98,99	YF400101CHJT	Ceramic	100 pF
C33	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C100	YF400104FZT	Ceramic	0.1 $\mu$ F
C34	YF400220CHJT	Ceramic	22 pF	C101,102	YF400101CHJT	Ceramic	100 pF
C36	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C103	YF400104FZT	Ceramic	0.1 $\mu$ F
C37	YF400220CHJT	Ceramic	22 pF	C104	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
C39	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C105,106	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V
C40	YF400220CHJT	Ceramic	22 pF	C107	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
C42	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C108	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C43	YF400220CHJT	Ceramic	22 pF	C109	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
C45	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C110	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V
C46	YF400220CHJT	Ceramic	22 pF	C111	YF400220CHJT	Ceramic	22 pF
C48	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C112	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C49	YF400220CHJT	Ceramic	22 pF	C113	YF400220CHJT	Ceramic	22 pF
C51	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C114	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C52	YF400220CHJT	Ceramic	22 pF	C115,116	ECEA1EKS100	Electrolytic	10 $\mu$ F 25V
C54	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C117	YF400332XKT	Ceramic	3300 pF
C55	YF400220CHJT	Ceramic	22 pF	C119	YW400473XK	Ceramic	0.0047 $\mu$ F
C57,58	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V	C120	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V
C59	YF400220CHJT	Ceramic	22 pF	C121	YF400101CHJT	Ceramic	100 pF
C60	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C122	YF400270CHJT	Ceramic	27 pF
C61	YF400220CHJT	Ceramic	22 pF	C123	YF400104FZT	Ceramic	0.1 $\mu$ F
C62	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C124,125	ECEA1HKS010	Electrolytic	1 $\mu$ F 50V (KS)
C63	YF400220CHJT	Ceramic	22 pF	C126	ECEA1ASN220	Electrolytic	22 $\mu$ F 10V
C64	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C127	YF400101CHJT	Ceramic	100 pF
C65	YF400220CHJT	Ceramic	22 pF	C128	YF400270CHJT	Ceramic	27 pF
				C129	YF400104FZT	Ceramic	0.1 $\mu$ F
				C130	ECEA1ASN220	Electrolytic	10 $\mu$ F 10V
				C131	YF400101CHJT	Ceramic	100 pF
				C132	YF400330CHJT	Ceramic	33 pF
				C133	YF400104FZT	Ceramic	0.1 $\mu$ F

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C134	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C401	ECEA1EKS330	Electrolytic	33 $\mu$ F 25V
C135	YF400101CHJT	Ceramic	100 pF	C402	ECEA1EKS101	Electrolytic	100 $\mu$ F 25V
C136	YF400330CHJT	Ceramic	33 pF	C403,404	YF400101CHJT	Ceramic	100 pF
C137	YF400104FZT	Ceramic	0.1 $\mu$ F	L1,2	ELESE101KA	Coil	100 $\mu$ H
C138	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	L5-7	ELESE101KA	Coil	100 $\mu$ H
C139	YF400220CHJT	Ceramic	22 pF	SW401-408	EVQQTU05R	Push Switch	
C140,141	YF400104FZT	Ceramic	0.1 $\mu$ F	CN1	YWF795P040LA	40-pin Connector	
C142	ECEA1AKS221	Electrolytic	220 $\mu$ F 10V	CN2	YW530151210	12-pin Connector	
C143	YF400220CHJT	Ceramic	22 pF	CN4	YWF795P034LA	34-pin Connector	
C144	ECEA1AKS221	Electrolytic	220 $\mu$ F 10V	CN5	YW530150410	4-pin Connector	
C145	YF400220CHJT	Ceramic	22 pF	<b>DIGITAL-SUB BOARD</b>			
C146	YF400104FZT	Ceramic	0.1 $\mu$ F				
C147	ECEA1AKS221	Electrolytic	220 $\mu$ F 10V	PCB13	YWJRYMX50P1A	Printed Board	
C148	YF400220CHJT	Ceramic	22 pF	IC1	YWMC74HC74F	IC	
C149	ECEA1AKS221	Electrolytic	220 $\mu$ F 10V	IC2	YWMC74HC393F	IC	
C150	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	IC3	YWMC74HC04F	IC	
C151	YF400820CHJT	Ceramic	82 pF	IC4	YWMC74HC20F	IC	
C152	YF400104FZT	Ceramic	0.1 $\mu$ F	R1	ERJ6GEYJ102	Carbon	1K ohms 1/16W
C153,154	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	R2	ERJ6GEYJ202	Carbon	2K ohms 1/16W
C155	YF400820CHJT	Ceramic	82 pF	R3	ERJ6GEYJ103	Carbon	10K ohms 1/16W
C156	YF400104FZT	Ceramic	0.1 $\mu$ F	R4	ERJ6GEYJ0R00	Carbon	0 ohms 1/16W
C157	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V	C1	YF400101CHJT	Ceramic	100 pF
C158	ECEA1EKS330	Electrolytic	33 $\mu$ F 25V	C2	YF400330CHJT	Ceramic	33 pF
C159,160	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V	C3,4	YWT316B104MT	Ceramic	0.1 $\mu$ F
C161-163	YF400101CHJT	Ceramic	100 pF	C5	YF400101CHJT	Ceramic	100 pF
C164,165	YF400104FZT	Ceramic	0.1 $\mu$ F	<b>ACCESSORY PARTS/PACKAGING PARTS</b>			
C166	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V				
C167	YF400104FZT	Ceramic	0.1 $\mu$ F	M71	YWV8QA2776AN	Operating Instructions	
C168	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	M72	XZB26X40C05	Polyethylene Bag	
C169,170	YF400220CHJT	Ceramic	22 pF	M73	XZB55X71C1	Polyethylene Bag	
C172,173	YF400220CHJT	Ceramic	22 pF	M74	YWV7SA1655A3	Label	
C175,176	YF400104FZT	Ceramic	0.1 $\mu$ F	M75	YWV9CA1806AN	Packaging Assy	
C177,178	ECEA1AKS100	Electrolytic	10 $\mu$ F 10V				
C179,180	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C181	YF400220CHJT	Ceramic	22 pF				
C183-185	ECEA0JKS331	Electrolytic	330 $\mu$ F 6.3V				
C186-189	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C190,191	YF400104FZT	Ceramic	0.1 $\mu$ F				
C192	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C301,302	ECEA1CKN330	Electrolytic	33 $\mu$ F 16V				
C303	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C304-309	ECEA1CKN330	Electrolytic	33 $\mu$ F 16V				
C310	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C311	ECEA1EKS101	Electrolytic	100 $\mu$ F 25V				
C312-317	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C318,319	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V				
C320	ECEA1ASN100	Electrolytic	10 $\mu$ F 10V				
C321-325	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C326	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V				
C327	YF400101CHJT	Ceramic	100 pF				
C328,329	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C330,331	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V				
C332-337	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				
C338,339	ECEA1CSN100	Electrolytic	10 $\mu$ F 16V				
C340,341	ECEA1EKA470	Electrolytic	47 $\mu$ F 25V				

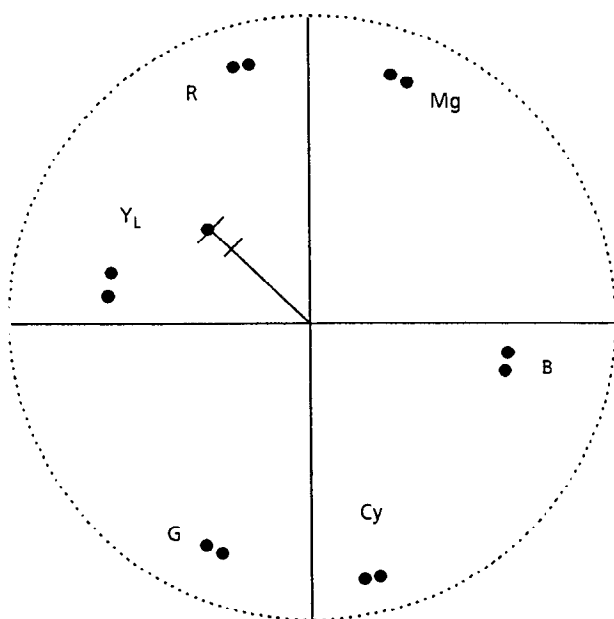


Fig. 4-42

COLOR	SATURATION	HUE
Red	$\pm 1\%$	$\pm 3^\circ$
Magenta	$\pm 5\%$	$\pm 3^\circ$
Yellow	$\pm 1\%$	$\pm 5^\circ$
Blue	$\pm 5\%$	$\pm 5^\circ$
Green	$\pm 5\%$	$\pm 5^\circ$
Cyan	$\pm 5\%$	$\pm 5^\circ$

- Adjust VR11 so that the vertical line of color bar signals coincide (within  $\pm 2\%$ ) each other on the center of the picture.

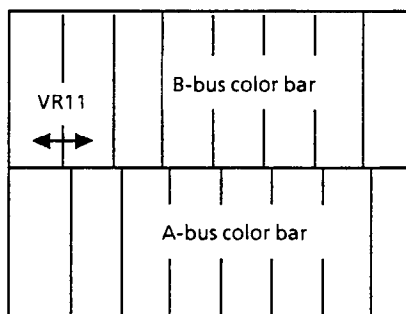


Fig. 4-43

#### (19) Back color Phase adjustment

Observe : Vectorscope

Adjust : VR15 (BACK COLOR PHASE) Control board

- Disconnect the coaxial cable between the VIDEO OUT connector of the test signal generator and the SOURCE 1 IN (VIDEO) connector on the rear panel of the WJ-MX10.

- Press the EFFECT switch on the output selection switches (VIDEO 1 / VIDEO 2 / EFFECT).
- Press the MIX switch on the Wipe / Mix selection switches.
- Press the BACK COLOR switches for both the A-bus and B-bus selection switches on the Wipe / Mix section.
- Set the WIPE / MIX lever to the A (A-bus) position all way down.
- Set the GAIN control of Vectorscope to the CAL position and the display mode selection switch (PAL / NTSC) to NTSC mode.
- Adjust VR15 so that the red vectors position one above another.

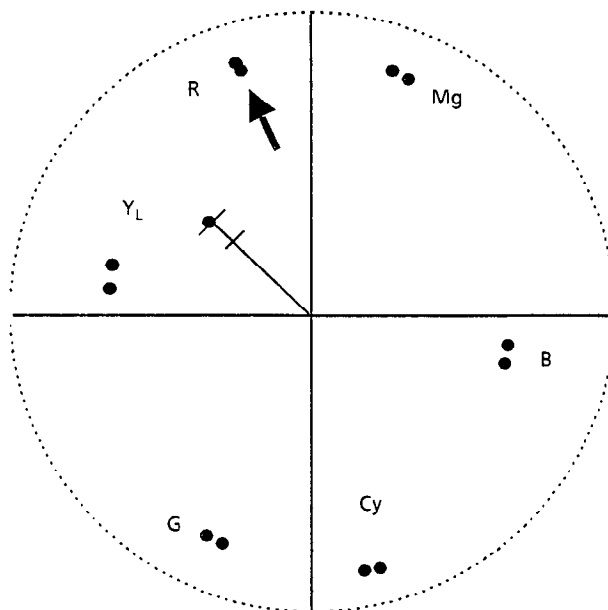


Fig. 4-44

#### (20) Masking adjustment

Observe : Waveform monitor or Oscilloscope

Adjust : VR12 (H.MASK WIDTH) Mixer board

VR13 (V.MASK WIDTH) Mixer board

- Disconnect the coaxial cable between the VIDEO OUT connector of the test signal generator and the SOURCE 1 IN (VIDEO) connector on the rear panel of the WJ-MX10.
- Press the EFFECT switch on the output selection switches (VIDEO 1 / VIDEO 2 / EFFECT).
- Press the ON (Superimpose) switch on the SUPERIMPOSE selection.
- Set the KEY LEVEL controls on the SUPERIMPOSE selection to the LOW end for the LOWER control and the HIGH end for the UPPER control.
- Press the WHITE switch on the SUPERIMPOSE selection in order to set the entire picture to white.
- Observe the waveform monitor or connect the oscilloscope to the REC VIDEO OUT connector.
- Connect the external trigger input of oscilloscope to TP6 (V1 HD) and set the sweep range of oscilloscope to H. rate.

- Turn VR12 fully counterclockwise first and then turn it back slowly and stop it where the white video signal is cut (masked)  $1.5 \mu s \pm 0.1 \mu s$ .

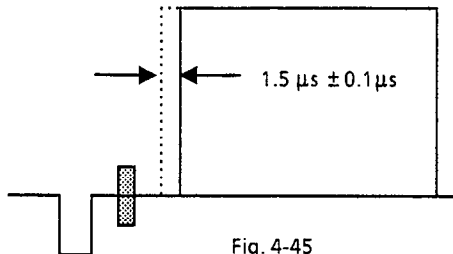


Fig. 4-45

- Observe the vertical waveform on the waveform monitor or the oscilloscope.
- Turn VR13 fully counterclockwise first and then turn it back slowly and stop it at where the white video signal is cut (masked)  $6H \pm 1H$ .

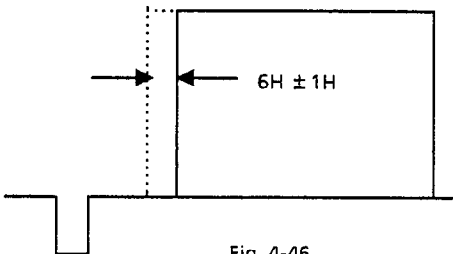


Fig. 4-46

#### (21) Audio adjustment

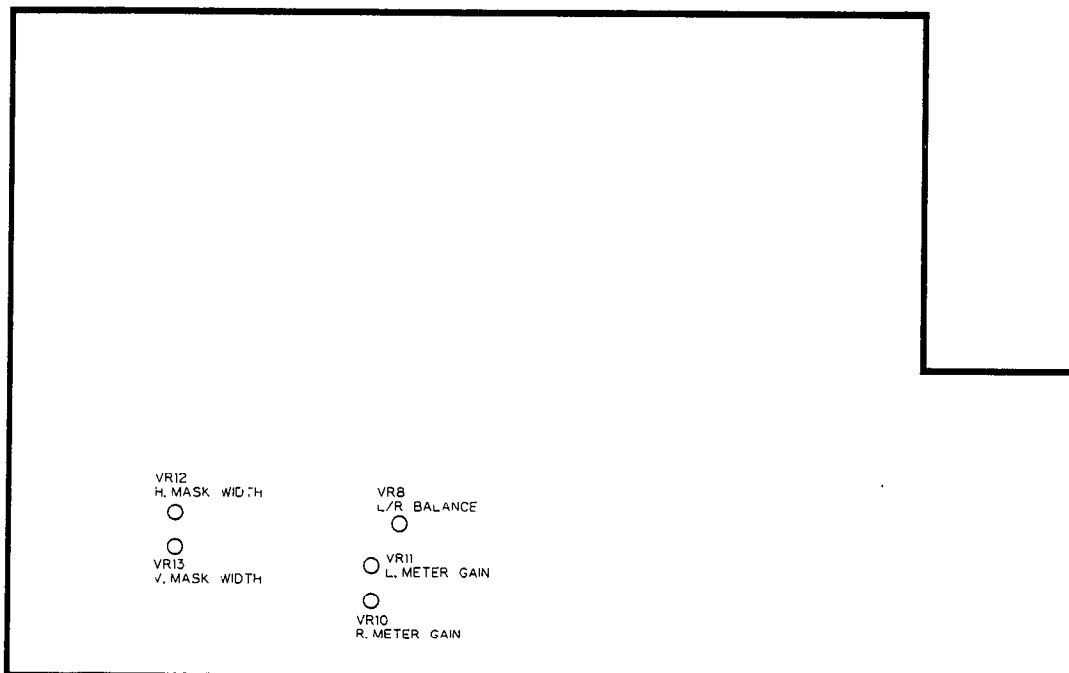
*Test points : REC AUDIO OUT connectors*

*Adjust : VR8 (L/R BALANCE) Mixer board*  
*VR11 (LEFT METER PRESET) Mixer board*  
*VR10 (RIGHT METER PRESET) Mixer board*

- Connect the audio cable(s) with pin connectors (RCA connectors) between the output terminal or connector of the low frequency test signal generator and the SOURCE 1 AUDIO L and R INPUT connectors of WJ-MX10.
- Disconnect the audio cable(s) from the SOURCE 2 AUDIO L and R INPUT connectors of WJ-MX10.
- Supply the 1 kHz, -10dB (316mV rms) sinewave signal to the SOURCE 1 AUDIO L and R INPUT connectors of WJ-MX10 from the test signal generator.
- Set the AUDIO BALANCE control (AUDIO 1 / AUDIO 2) to the AUDIO 1 end.
- Set the AUDIO level control (MAX / MIN) to the MAX end.
- Connect the 2 probes of oscilloscope to the REC AUDIO OUT L and R connectors.
- Set the polarity of channel 2 of the oscilloscope to the INVERTED position and ADDED (CH1 and CH2) position in order to display the L - R signal.
- Adjust VR8 for  $0 mV \pm 5 mV$ .
- Set the AUDIO level control (MAX / MIN) so that the REC AUDIO OUT L level becomes -8dB (398mV rms).
- After confirming that the all LEDs for left channel are lit on by turning VR11 fully counterclockwise, turn VR11 clockwise slowly and stop it at where the red LED for +2 point is off and LEDs from 0 point and lower are lit on.
- After confirming that the all LEDs for right channel are lit on by turning VR10 fully counterclockwise, turn VR10 clockwise slowly and stop it at where the red LED for +2 point is off and LEDs from 0 point and lower are lit on.

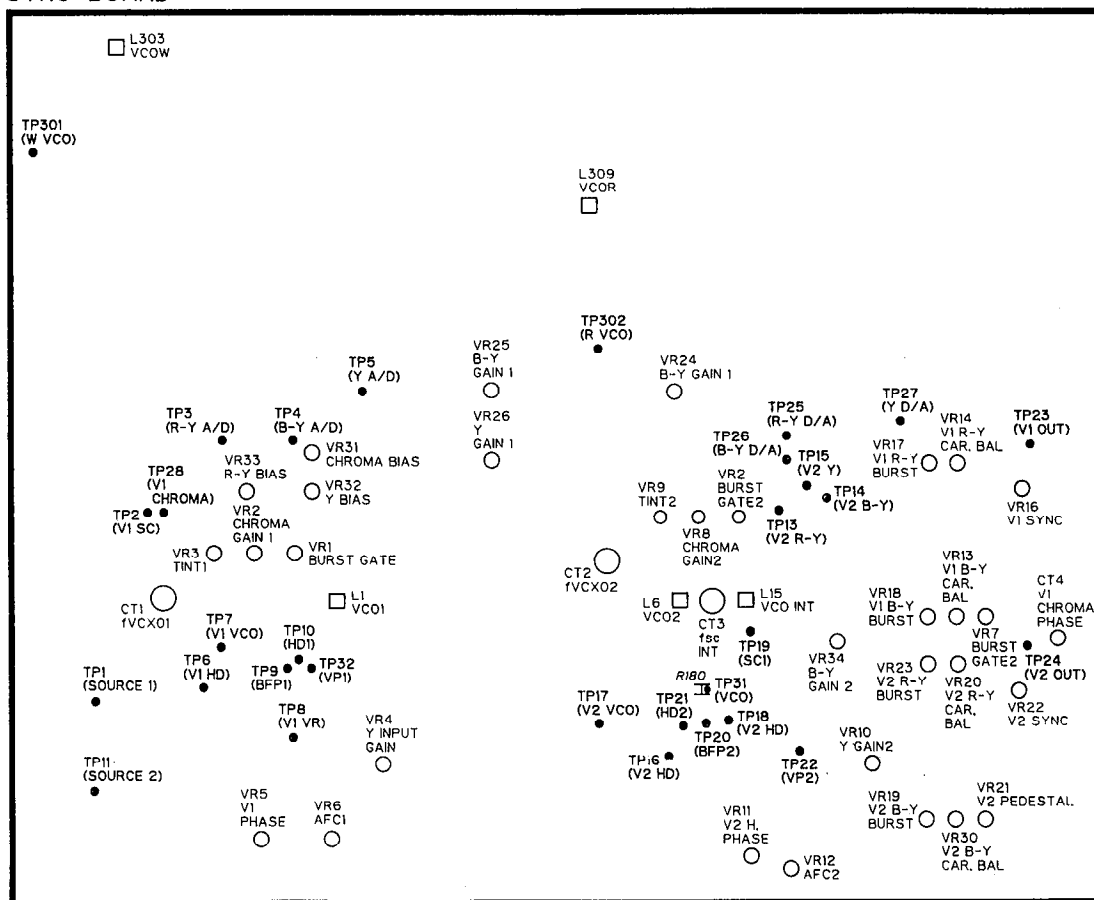
## LOCATION OF TEST POINTS AND ADJUSTING CONTROLS

### MIXER BOARD

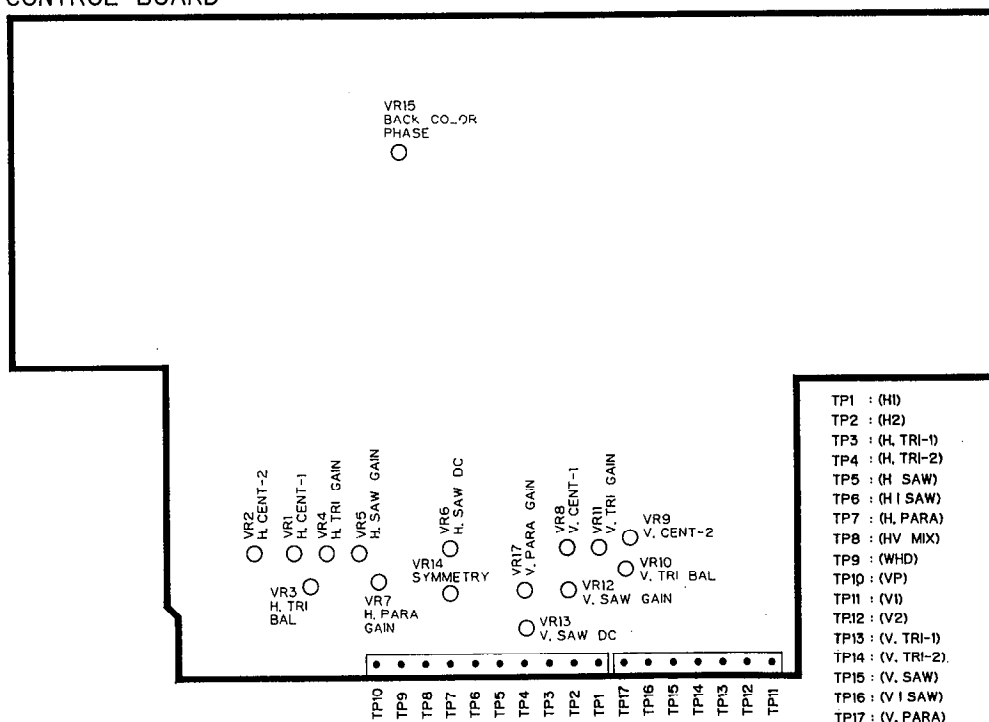




## SYNC BOARD



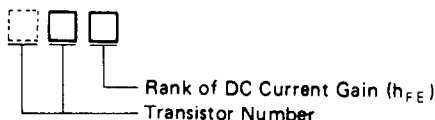
## CONTROL BOARD



## CHIP COMPONENTS

### 1. Chip Transistor

The transistor number is indicated on the top surface of the chip transistor using two alphabet letters or one numerical and two alphabet letters.



#### Transistor Number

Letter	Transistor No.	Letter	Transistor No.
A	2SB709	X	2SD602A
B	2SB709A	Y	2SD601
C	2SB710	Z	2SD601A
D	2SB710A	1Z	2SD1030
E	2SA1022	1N	2SK199
F	2SA1034	1O	2SK198
H	2SA1035	1A	2SB799
I	2SB792	1B	2SB814
K	2SC2778	1C	2SB902
P	2SD814	1F	2SK321
Q	2SD813	1L	2SK247
R	2SC2480	1K	2SK316
S	2SC2405	1M	2SJ84
T	2SC2406	1T	2SC3077
U	2SC2404	1X	2SC2845
V	2SC2295	2B	2SK374
W	2SD602	2C	2SK116

#### Example

WQ → 2SD602 - Q  
YQ → 2SD601 - Q  
1BS → 2SB814 - S

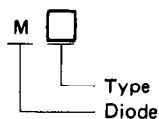
#### Appearance and Symbols



	1	2	3
Except 2SK199	Drain	Source	Gate
2SK199	Gate	Drain	Source

### 2. Chip Diode

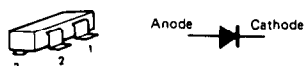
The diode number is indicated on the top surface of the chip diode using two alphabet letters.



#### Diode Number

Letter	Diode No.	Letter	Diode No.
MA	MA151A	MI	MA152K
MB	MA152A	MK	MA28W-B
MC	MA153	ML	MA28T-A
MD	MA28-A	MN	MA151WA
ME	MA28-B	MO	MA152WA
MF	MA28W-A	MT	MA151WK
MH	MA151K	MU	MA152WK

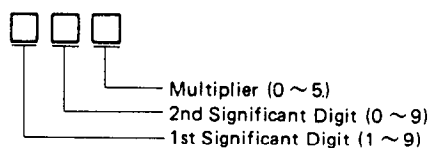
#### Appearance and Symbols



	1	2	3
MA28/28W/28T	-	Anode	Cathode
MA151K/152K	-	Anode	Cathode
MA151A/152A	-	Cathode	Anode
MA151WK/MA152WK	Anode	Anode	Cathode
MA151WA/MA152WA	Cathode	Cathode	Anode
MA153	Cathode	Anode	Common

### 3. Chip Resistor

The resistor value is indicated on the bottom surface of the chip resistor using three digit numbers.



#### EXAMPLE:

330 →  $33 \times 10^0 = 33 \text{ ohms}$   
561 →  $56 \times 10^1 = 560 \text{ ohms}$   
123 →  $12 \times 10^3 = 12 \text{ kohms}$

Note: Zero ohm resistor (jumper chip) is colored red or green.

### 4. Chip Capacitor

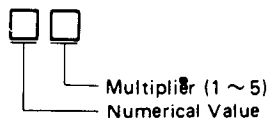
The capacitive value of replacement chip capacitors is indicated on the bottom surface. Original parts do not have value indication.

If the capacitive value is less than 100 pF, the value will be indicated by one or two digit number expressing the capacity directly in pF.

#### EXAMPLE:

0.5 → 0.5 pF      2.5 → 2.5 pF  
75 → 0.75 pF      33 → 33 pF  
1 → 1 pF      82 → 82 pF

If the capacitive value is 100 pF or greater, the value will be indicated by an alpha-numeric code. The letter precedes the number and expresses a numerical value to be multiplied by the number which follows.



**Numerical Value**

Letter	Value	Letter	Value
A	10	N	33
B	11	P	36
C	12	Q	39
D	13	R	43
E	15	S	47
F	16	T	51
G	18	U	56
H	20	V	62
J	22	W	68
K	24	X	75
L	27	Y	82
M	30	Z	91

\* Letters I and O are not used

**EXAMPLE:**

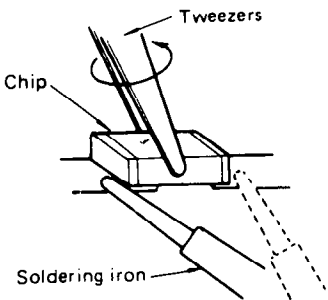
- A1 →  $10 \times 10^1 = 100 \text{ pF}$
- N2 →  $33 \times 10^2 = 3300 \text{ pF}$
- S3 →  $47 \times 10^3 = 47000 \text{ pF}$

**5. Precautions in replacing the chip component**

- 1. Make sure that the unit is turned OFF when replacing the chip.
- 2. Use tweezers to prevent any damage to the chip surface.
- 3. Do not re-use the chips after removal.
- 4. Do not rub the electrode of chips.
- 5. Do not subject the chips to excessive stress.
- 6. It is recommended that a pencil-type soldering iron to be used.
- 7. The solder whose diameter is less than 0.5 mm is recommended.
- 8. Do not heat the chip beyond 3 seconds.
- 9. Maintain temperature control under 260°C (500°F) when soldering.

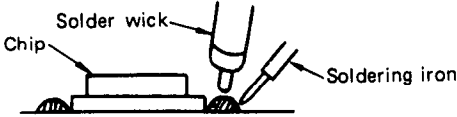
**5-1 Removal (Transistor, Diode, Resistor and Capacitor)**

- 1. Add the solder to both ends of the chip (three leads for chip transistor).
  - 2. While attaching the soldering iron to both ends of the chip (three leads for chip transistor) as shown below, remove the chip by turning it with tweezers.
- Note Be careful not to damage other chips.

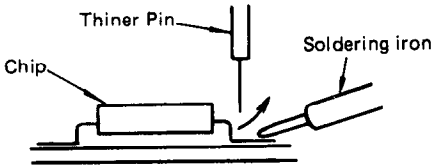


**5-2 Removal (IC)**

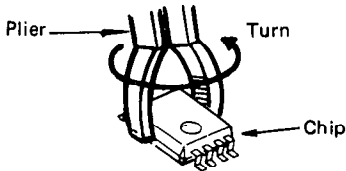
- 1. Add the solder wick and solder iron to each the IC and remove solder.



- 2. Add the solder iron to each lead of the IC and left each lead of the IC using thinner pin.

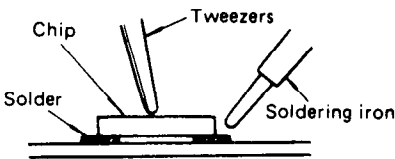


- 3. Remove IC turning it with plier.

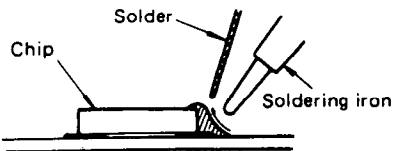


**5-3 Mounting**

- 1. Place the solder thinly on the chip mounting foil.
- 2. Solder the chip temporarily while holding the chip with the tweezers.

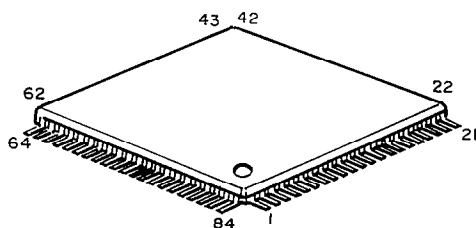


- 3. Solder both ends of chip (three leads for chip transistor).

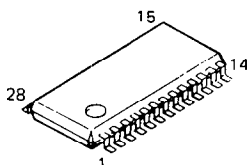


# APPEARANCE OF IC, TRANSISTOR AND DIODE

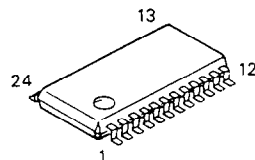
MN51010LKJ  
MN51015LVK



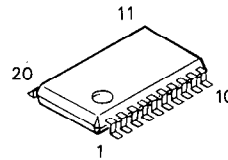
YWM51271FP  
MN676021PPS



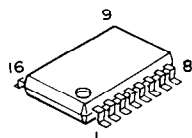
YWM51272FP  
TC5081AP



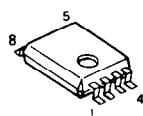
AN2510S  
YWSC49069F  
MN74HC245S  
MN74HC273S



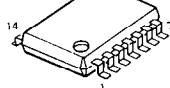
MN74HC4053S  
MN4528BS  
MN74HC153S  
MN74HC175S  
MN74HC157S  
MN74HC148S  
MN74HC158S



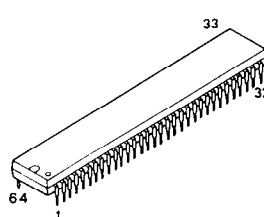
NJM3414M  
AN6914S  
NJM4559M  
YWM5216FP  
NJM4558M  
BA226AF  
NJM4560M



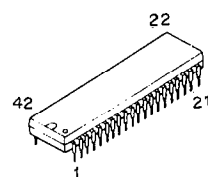
MN74HC00S  
MN74HC04S  
MN74HC08S  
MN74HC02S  
MN74HC32S  
MN74HC74S  
MN74HC86S  
MN74HC393S  
MN4013BS  
MN4066BS  
NJM319M



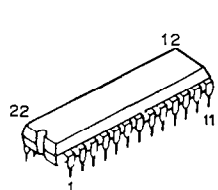
MN1554CCD1



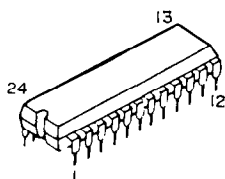
MP7684



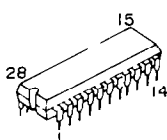
MP7684



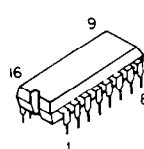
YWPD4110ZC1S  
YWPD65005232



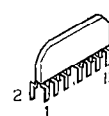
YWBA6822S



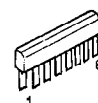
AN90B20  
MN40175B



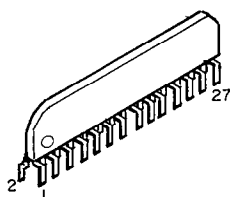
YWM51304L



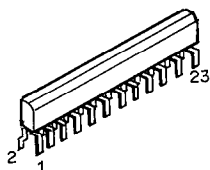
YWM51304L



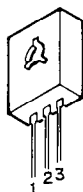
YWM5M4C500L



YWBA7230LS



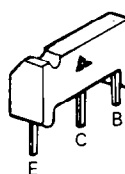
AN78N05



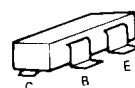
AN78L05  
AN78L09  
M51951ASL



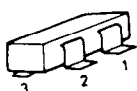
2SB641-QR  
2SD636-Q



2SA1022-C  
2SB709-Q  
2SC2404-CDTW  
2SD601-RS  
2SD602-QRS

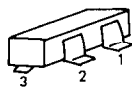


2SK198-Q



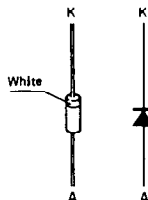
1 : Drain  
2 : Source  
3 : Gate

MA151K

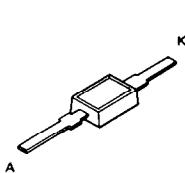


1 : NC  
2 : Anode  
3 : Cathode

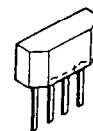
MA165



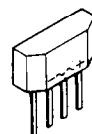
ISV153



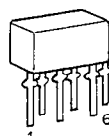
YWRB150F



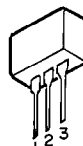
YWRBV401



YWLT9230H

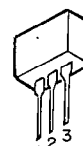


YWLT9000D  
YWLT9000N



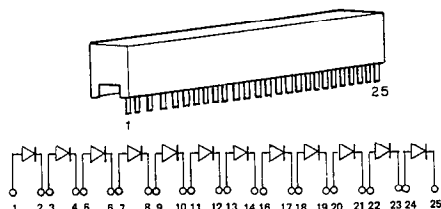
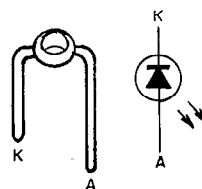
1 : Anode  
2 : Cathode  
3 : NC

YWLT9002ND

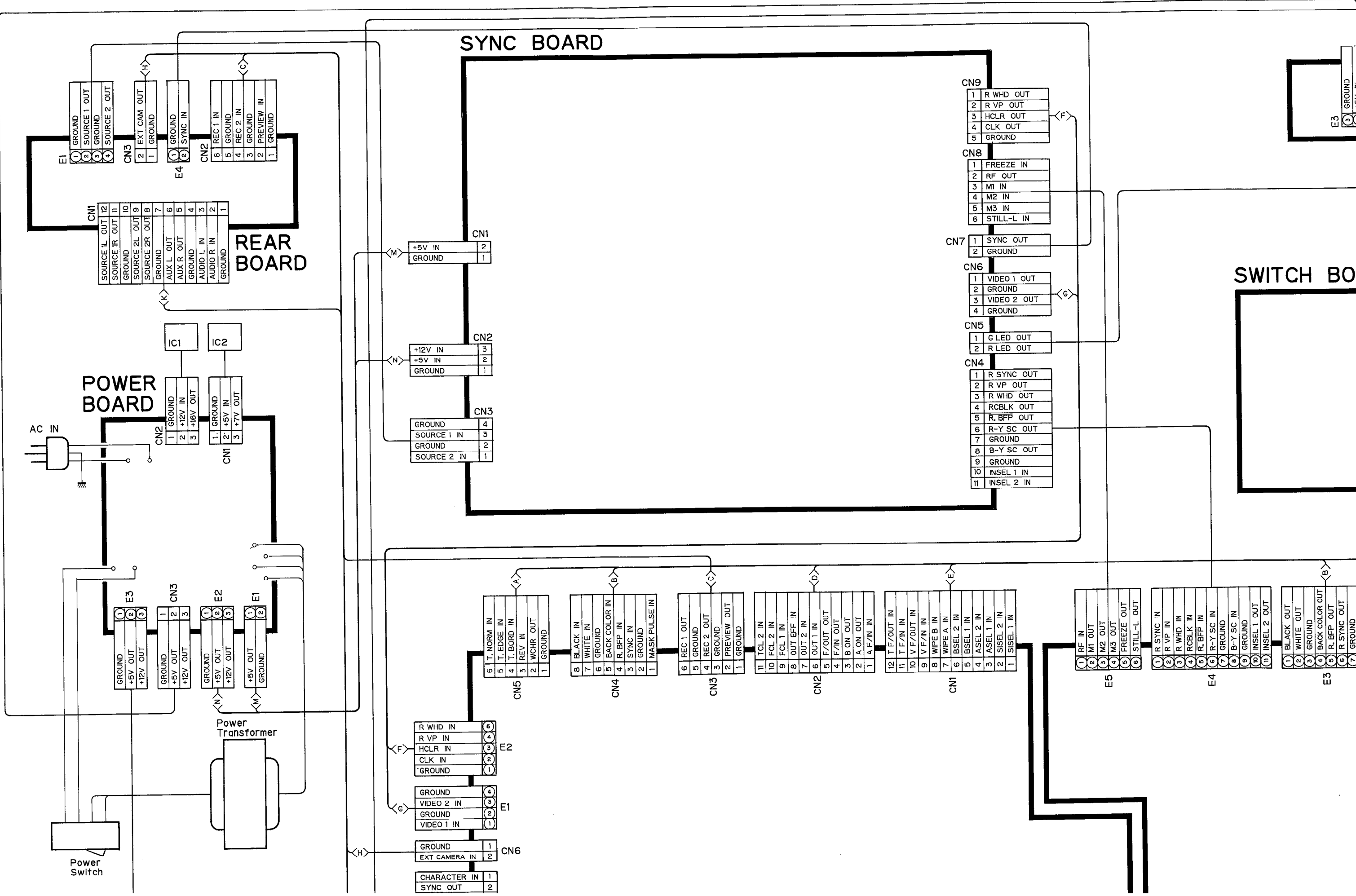


1 : Anode  
2 : Cathode  
3 : Anode

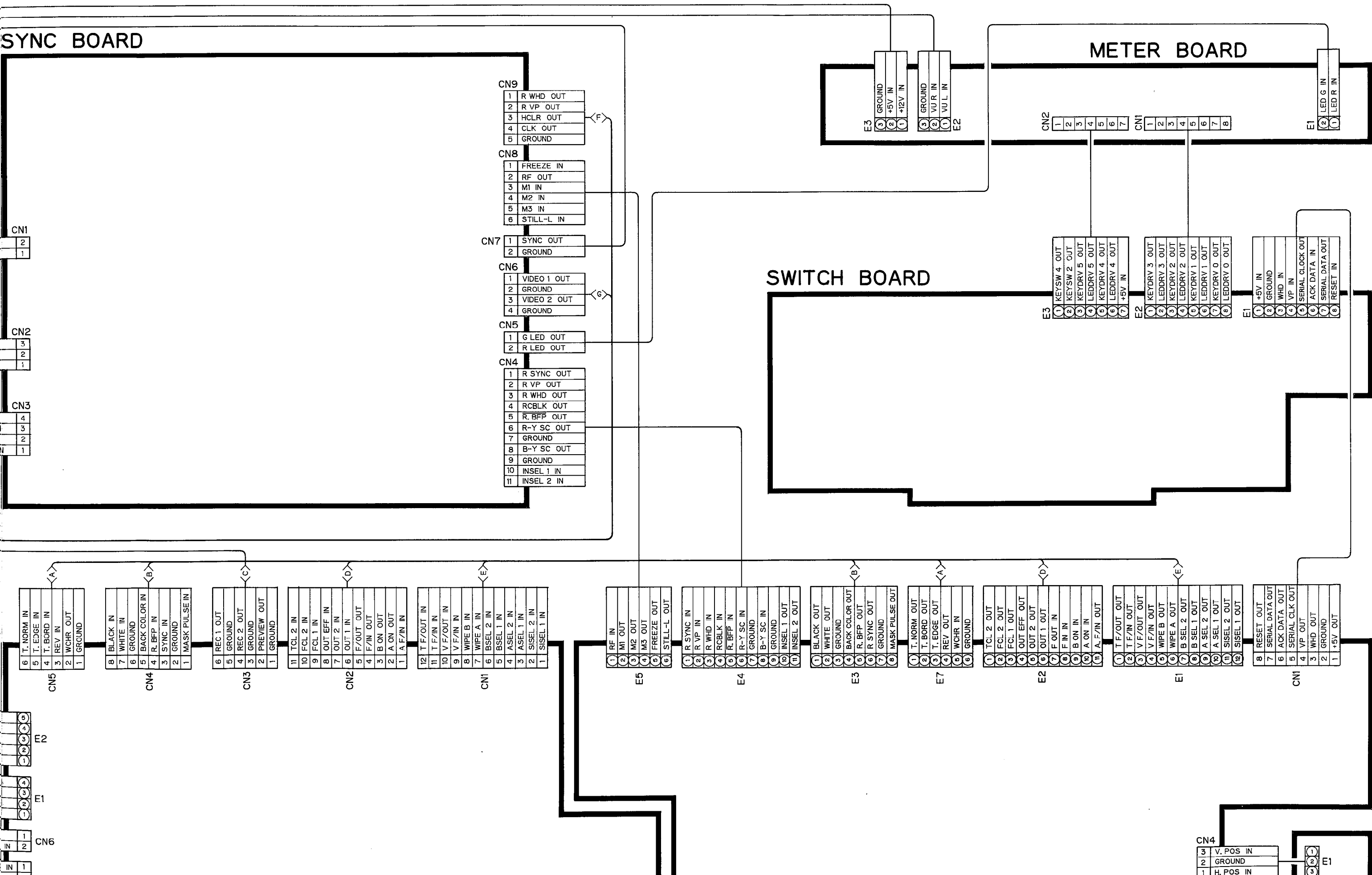
YWGL1HS211

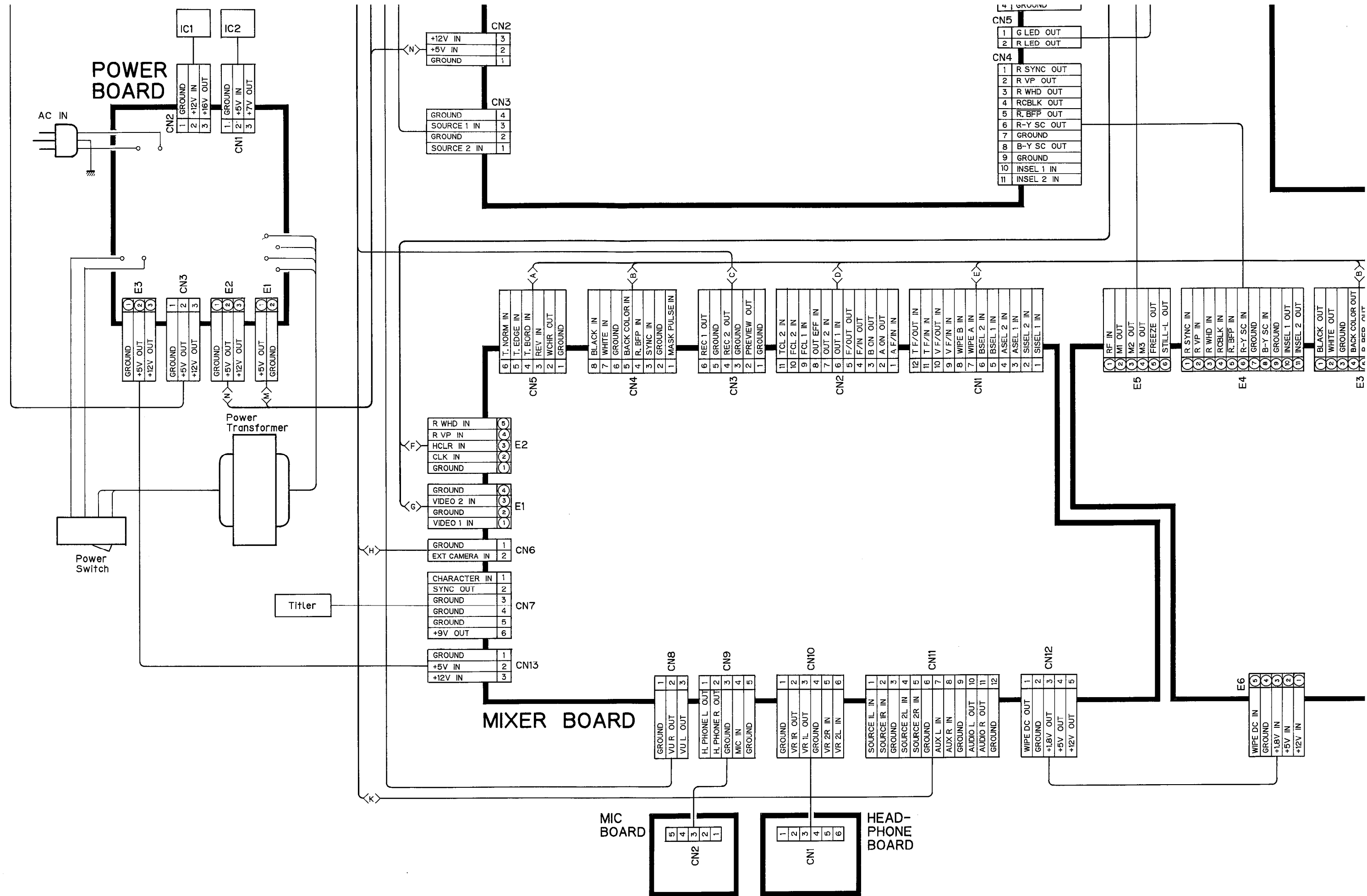


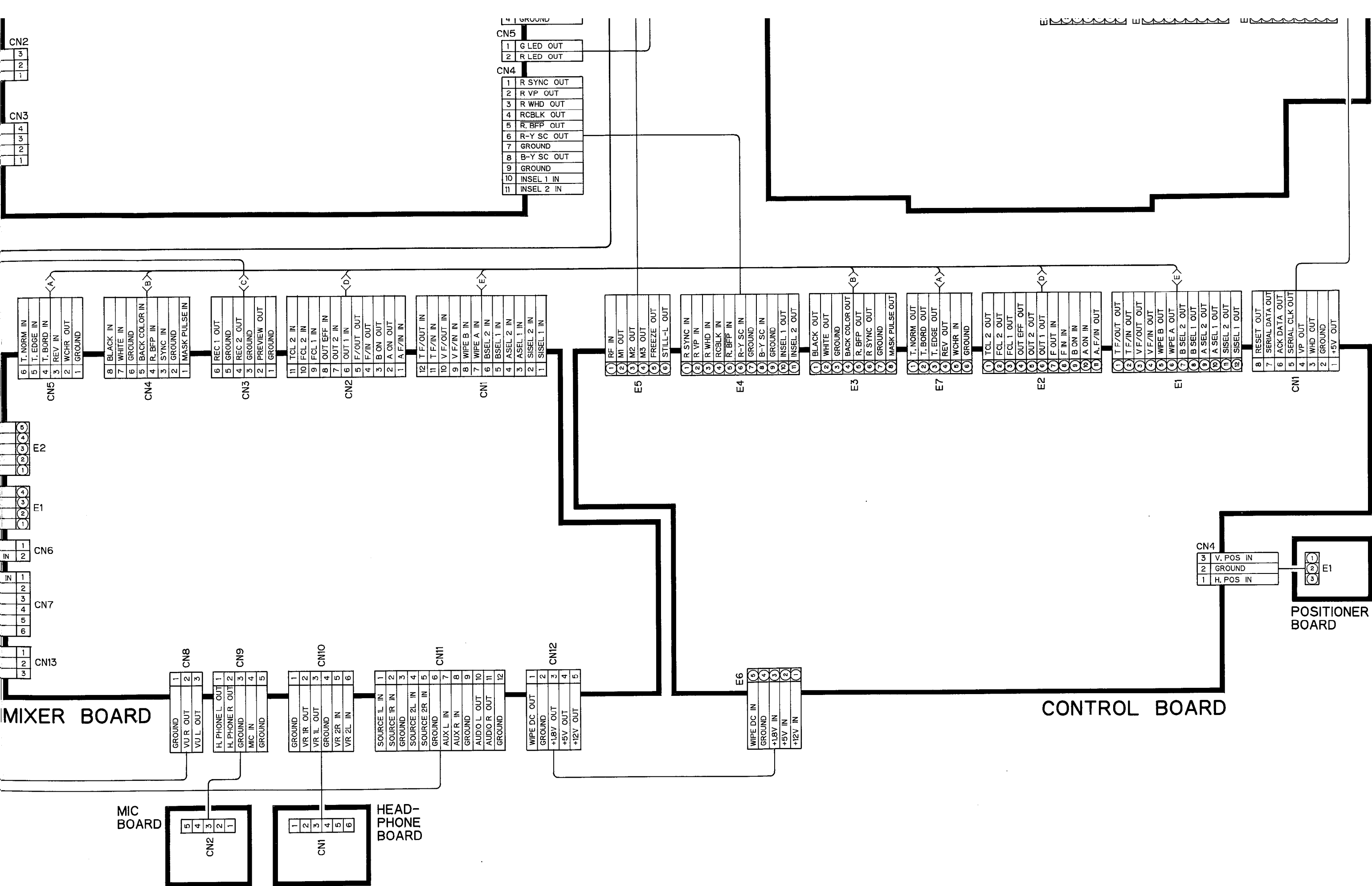
WIRING DIAGRAM



WIRING DIAGRAM



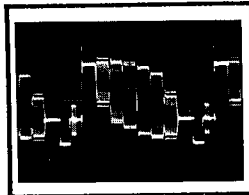




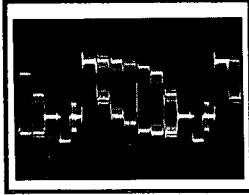


CONDUCTOR VIEW OF MIXER BOARD

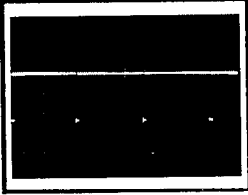
1. 0.5V/DIV, 10μs/DIV



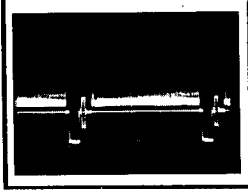
2. 0.5V/DIV, 10μs/DIV



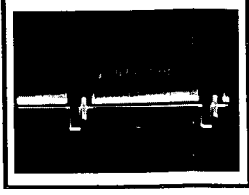
3. 2V/DIV, 20μs/DIV



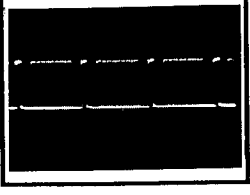
4. 0.2V/DIV, 10μs/DIV



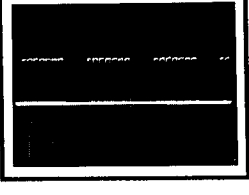
5. 0.5V/DIV, 10μs/DIV



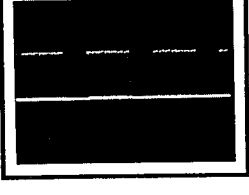
6. 0.2V/DIV, 20μs/DIV



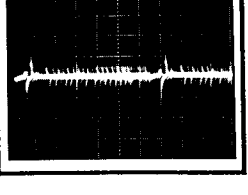
7. 0.2V/DIV, 20μs/DIV



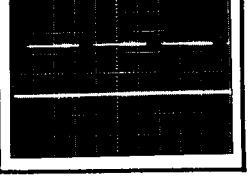
8. 0.2V/DIV, 20μs/DIV



9. 0.1V/DIV, 10μs/DIV



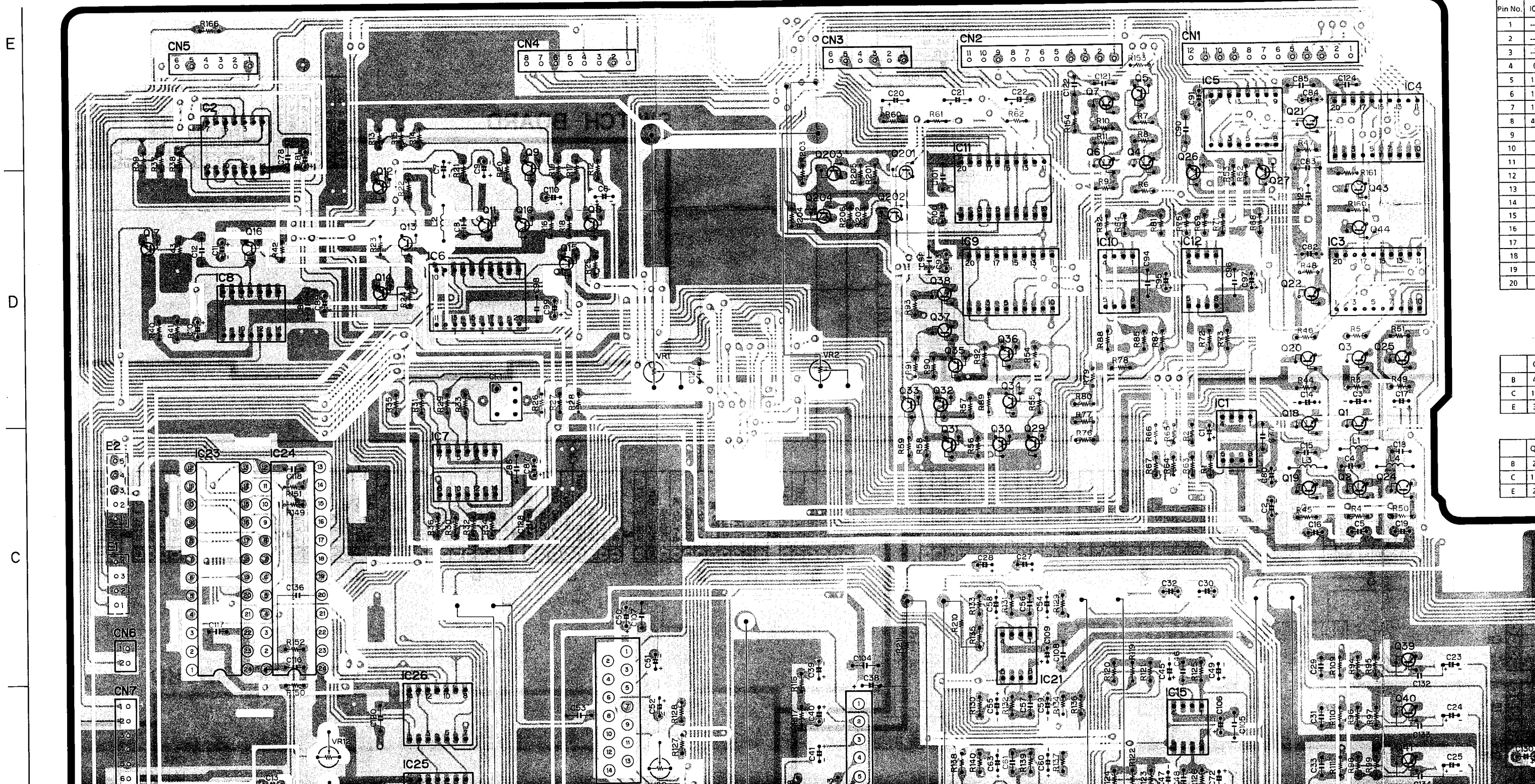
10. 2V/DIV, 20μs/DIV



11. 2V/DIV, 20μs/DIV

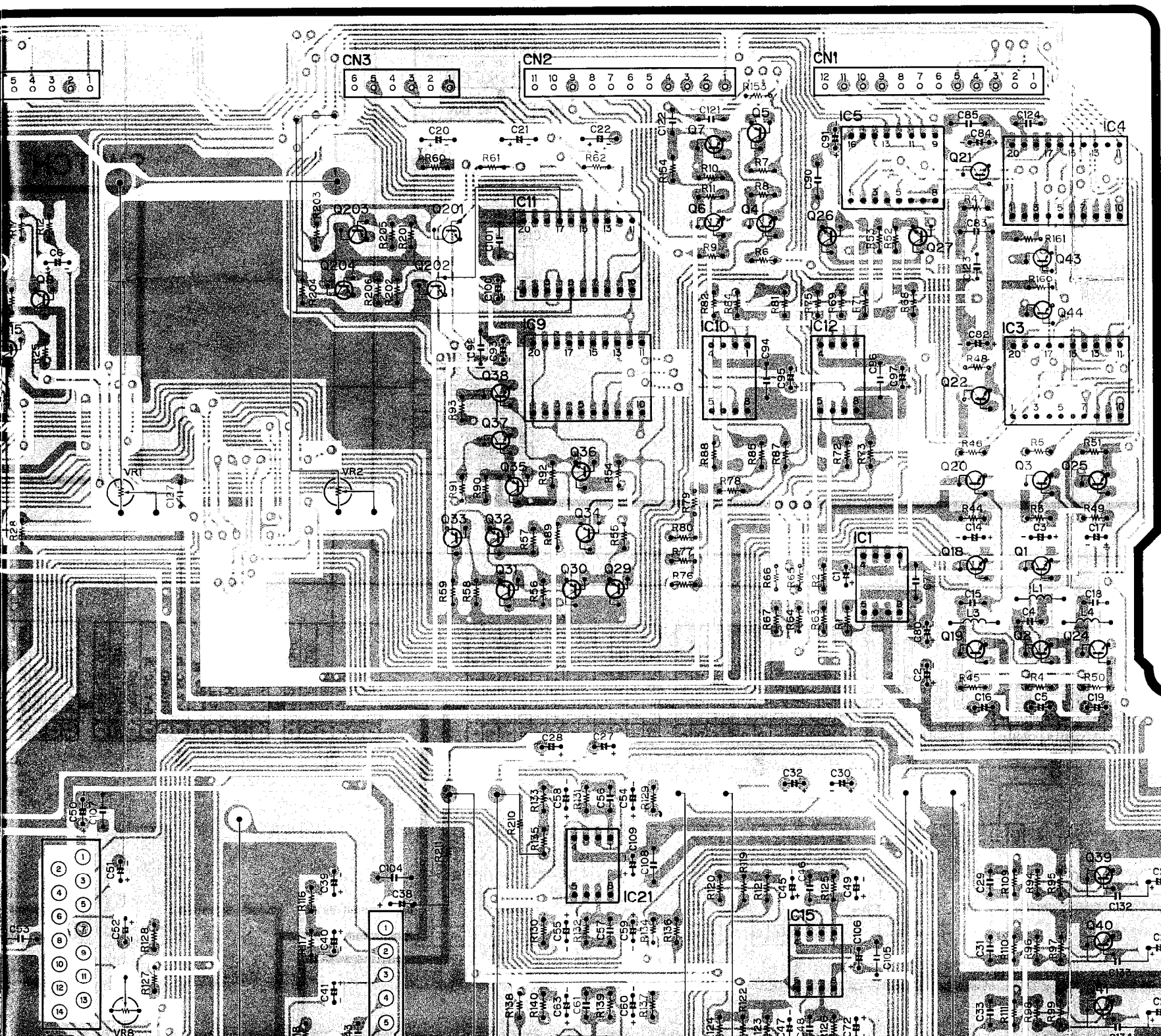
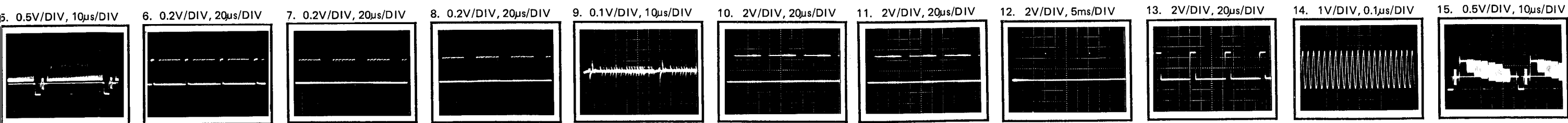


MIXER BOARD





CONDUCTOR VIEW OF MIXER BOARD



Pin No.	IC1	IC2	IC3	IC4	IC5	IC6	IC7	IC8	IC9	IC10	IC11	IC12	IC14	IC15	IC18	IC20	IC21
1	---	4.3	2.7	2.8	2.8	2.8	---	---	2.8	4.8	2.6	0	11.8	6.2	6.2	11.8	6.2
2	---	0.5	---	---	2.8	---	---	---	6.5	---	4.5	0	6.2	6.2	0	6.3	---
3	---	4.3	2.7	2.8	2.8	2.8	0	0	2.8	6.6	2.6	3.2	0	6.2	6.2	9.0	6.2
4	0	4.7	2.4	2.6	2.8	2.5	2.1	1.6	---	0	2.6	0	1.3	0	0	---	0
5	1.7	0.2	2.8	2.6	2.8	2.8	1.6	2.8	---	0.6	3.3	1.4	1.8	6.2	6.2	---	6.2
6	1.7	4.7	2.7	2.8	0	2.4	0	0	2.5	6.6	2.6	3.2	2.1	6.2	6.2	---	6.2
7	1.7	0	2.7	2.8	0	2.8	0.5	---	2.8	0	2.8	0	0	6.2	6.2	---	6.2
8	4.8	0.1	4.8	4.8	0	0	0	0	11.8	0	11.8	0	11.8	11.8	---	---	11.8
9	---	4.5	4.7	4.8	4.8	4.9	1.4	---	0	---	0	---	---	---	---	---	---
10	---	4.5	0	0	4.8	0	2.1	---	0	---	0	---	---	---	---	---	---
11	---	0	1.1	4.8	4.7	0	11.8	11.8	4.9	---	---	---	---	---	---	---	---
12	---	4.5	4.7	4.8	2.6	0	4.3	0.2	0	---	4.9	---	---	---	---	---	---
13	---	4.5	2.7	3.3	2.9	6.6	---	---	2.8	---	---	---	---	---	---	---	---
14	---	4.8	2.4	3.3	2.9	---	---	---	---	2.8	---	---	---	---	---	---	---
15	---	2.8	3.0	2.8	---	---	---	---	---	3.3	---	---	---	---	---	---	---
16	---	2.4	3.0	4.8	6.6	---	---	---	---	---	---	---	---	---	---	---	---
17	---	2.4	3.0	---	---	---	---	---	---	2.8	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
19	---	2.4	3.3	6.6	---	---	---	---	2.8	---	---	---	---	---	---	---	---
20	---	11.8	11.8	---	---	11.8	---	---	11.8	---	11.8	---	---	---	---	---	---

Pin No.	IC22	IC23	IC24	IC25	IC26
1	11.8	---	0	4.8	0
2	3.2	---	0.1	4.7	4.7
3	2.8	---	---	0	4.7
4	6.4	0	0	---	4.7
5	7.1	0	0	0	4.7
6	6.4	3.2	0	---	0
7	0	0	0	0	0
8	6.6	1.8	0	4.7	4.7
9	---	0	0	4.3	0
10	2.8	0	1.8	0	0
11	---	0	---	4.7	0
12	---	0	0	0	4.7
13	2.8	0	0.4	4.8	4.7
14	3.1	0	---	4.8	4.8
15	---	0	0.7	---	---
16	0	0	---	---	---
17	1.8	0	---	---	---
18	4.7	0	---	---	---
19	3.2	5.0	---	---	---
20	0	4.7	---	---	---
21	0	0	---	---	---
22	0	4.8	---	---	---
23	0	4.8	---	---	---
24	0	4.8	---	---	---

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25
B	4.5	0.1	2.0	2.8	2.2	2.4	1.9	2.8	2.8	9.3	0.1	1.7	2.4	1.8	2.8	0.1	0	4.2	0.1	1.7	3.3	3.0	2.8	0.1	2.0
C	11.8	2.0	0	11.8	0	11.8	0	11.8	9.3	11.8	1.7	0	11.8	0	11.8	1.6	1.8	11.8	1.4	0	11.8	11.8	0	2.0	0
E	3.9	1.8	2.8	2.1	2.8	1.9	2.5	2.2	2.2	8.7	1.8	2.4	1.8	2.4	2.2	1.8	0	3.6	1.8	2.4	2.8	2.2	3.5	1.8	2.8

	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48
B	2.8	2.8	2.2	2.8	3.5	3.5	4.2	2.9	2.8	3.5	3.5	4.2	2.9	5.8	5.7	5.7	5.7	2.4	2.7	0	0	0	0
C	11.8	11.8	0	0	0	11.8	11.7	0	0	0	11.8	11.7	0	0	0	0	0	0	0	0	0	3.9	3.7
E	2.2	2.2	2.8	3.5	4.2	2.9	3.6	3.6	3.5	4.2	2.9	3.6	3.6	6.4	6.3	6.3	6.3	3.0	3.3	0	0	0	0

MIXER BOARD

IC1	NJM3414M	C5	Q17	2SD601-RS	(Y)	D1
IC2	MN74HC00S	E1	Q18	2SD601-RS	(Y)	D5
IC3	YWSC49069F	D6	Q19	2SD601-RS	(Y)	C5
IC4	YWSC49069F	E6	Q20	2SA1022-C	(E)	D5
IC5	MN74HC4053S	E5	Q21	2SD601-RS	(Y)	E5
IC6	YWSC49069F	D2	Q22	2SD601-RS	(Y)	D5
IC7	NJM319M	C2	Q23	2SA1022-C	(E)	B7
IC8	NJM319M	D1	Q24	2SD601-RS	(Y)	C6
IC9	YWSC49069F	D4	Q25	2SA1022-C	(E)	D6
IC10	AN6914S	D5	Q26	2SD601-RS	(Y)	D5
IC11	YWSC49069F	D4	Q27	2SD601-RS	(Y)	D5
IC12	AN6914S	D5	Q28	2SB709-Q	(A)	B2
IC14	YWM51304L	B4	Q29	2SA1022-C	(E)	C4
IC15	NJM4559M	B5	Q30	2SB709-Q	(A)	C4
IC18	YWM5216FP	B4	Q31	2SD601-RS	(Y)	C4
IC20	AN78L09	B1	Q32	2SD601-RS	(Y)	C4
IC21	NJM4559M	C4	Q33	2SB709-Q	(A)	C4
IC22	YWM51523AL	B3	Q34	2SA1022-C	(E)	C4
IC23	YWP41102C15	A1	Q35	2SB709-Q	(A)	D4
IC24	YWP65005232	A1	Q36	2SD601-RS	(Y)	D4
IC25	MN74HC86S	B2	Q37	2SD601-RS	(Y)	D4
IC26	MN74HC00S	B2	Q38	2SB709-Q	(A)	D4
Q1	2SD601-RS	(Y)	Q39	2SB709-Q	(A)	B6
Q2	2SD601-RS	(Y)	Q40	2SB709-Q	(A)	B6
Q3	2SA1022-C	(E)	Q41	2SB709-Q	(A)	B6
Q4	2SD601-RS	(Y)	Q42	2SB709-Q	(A)	B6

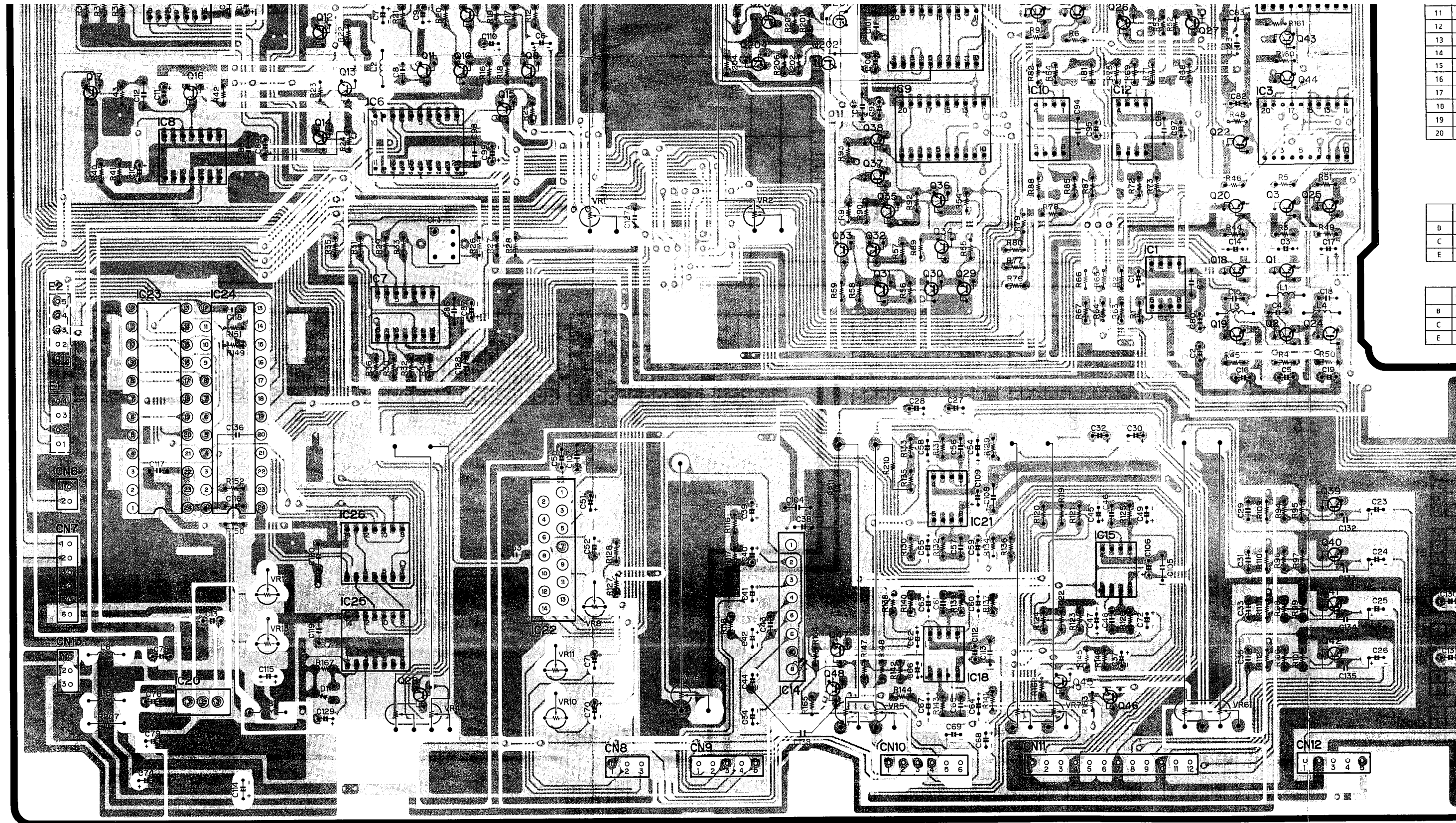


D

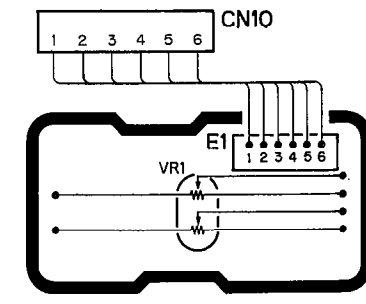
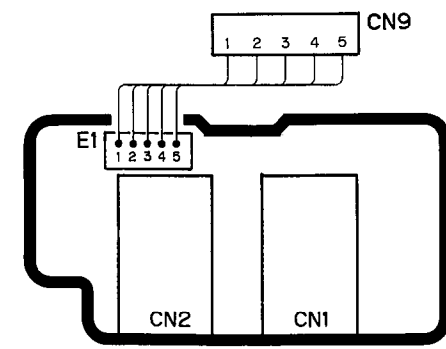
C

B

A



COMPONENT SIDE  
PATTERN SIDE

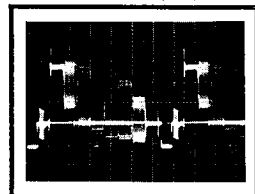




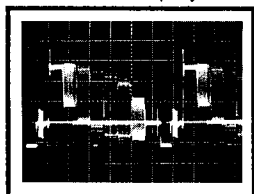


# SCHEMATIC DIAGRAM OF MIXER BOARD

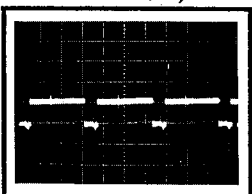
16. 50mV/DIV, 10μs/DIV



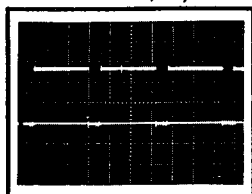
17. 50mV/DIV, 10μs/DIV



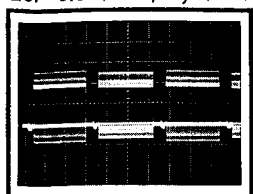
18. 0.1V/DIV, 10μs/DIV



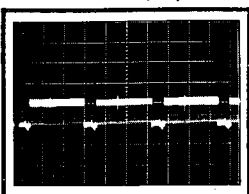
19. 0.5V/DIV, 20μs/DIV



20. 0.5V/DIV, 20μs/DIV

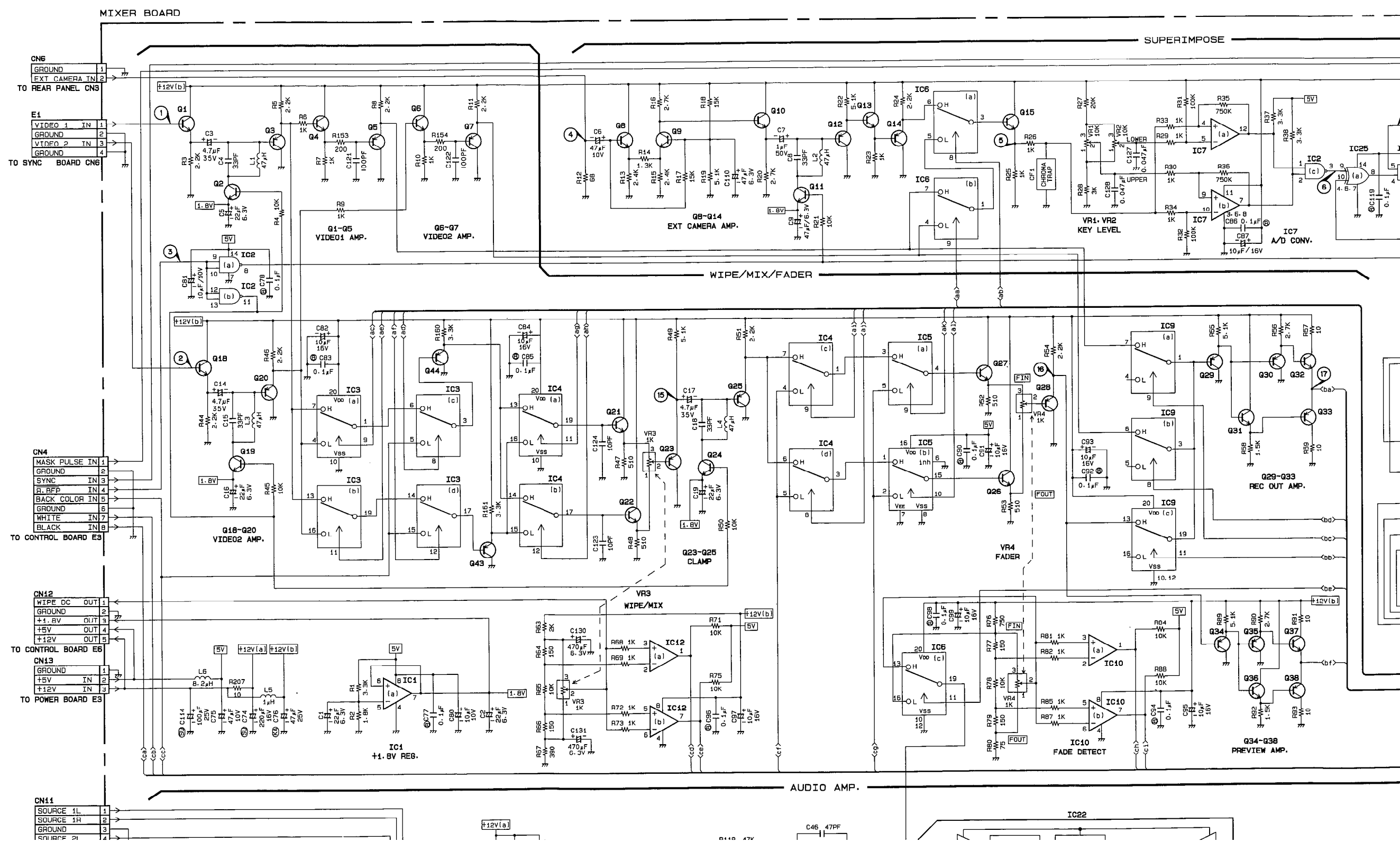


21. 0.1V/DIV, 20μs/DIV



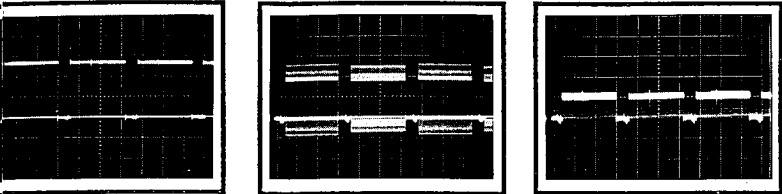
## MIXER BOARD

IC1	NJM3414M	E5	IC22	YW51523AL
IC2	MN74HC00S	I11, I12, H3	IC23	YWP41102C15
IC3	YW5C49069F	G4, G5, F4, F5	IC24	YWP65005232
IC4	YW5C49069F	G6, F6, G8, F8	IC25	MN74HC00S
IC5	MN74HC4053S	G8, H8, E8, C14	IC26	MN74HC00S
IC6	YW5C49069F	H9	Q1	2SD601-R5
IC7	NJM319M	H11	Q2	2SD601-R5
IC8	NJM319M	H13	Q3	2SA1022-C
IC9	YW5C49069F	G10, F9	Q4	2SD601-R5
IC10	AN6914S	E10	Q5	2SB709-Q
IC11	YW5C49069F	C13	Q6	2SD601-R5
IC12	AN6914S	E7	Q7	2SB709-Q
IC14	YW51304L	B9	Q8	2SD601-R5
IC15	NJM4559M	B8, C8	Q9	2SC2404-CDTW
IC18	YW5216FP	A10, B10	Q10	2SD601-R5
IC20	AN78L09	I14	Q11	2SD601-R5
IC21	NJM4559M	B11, C11	Q12	2SA1022-C
			Q13	2SD601-R5
			Q14	2SB709-Q
			Q15	2SD601-R5



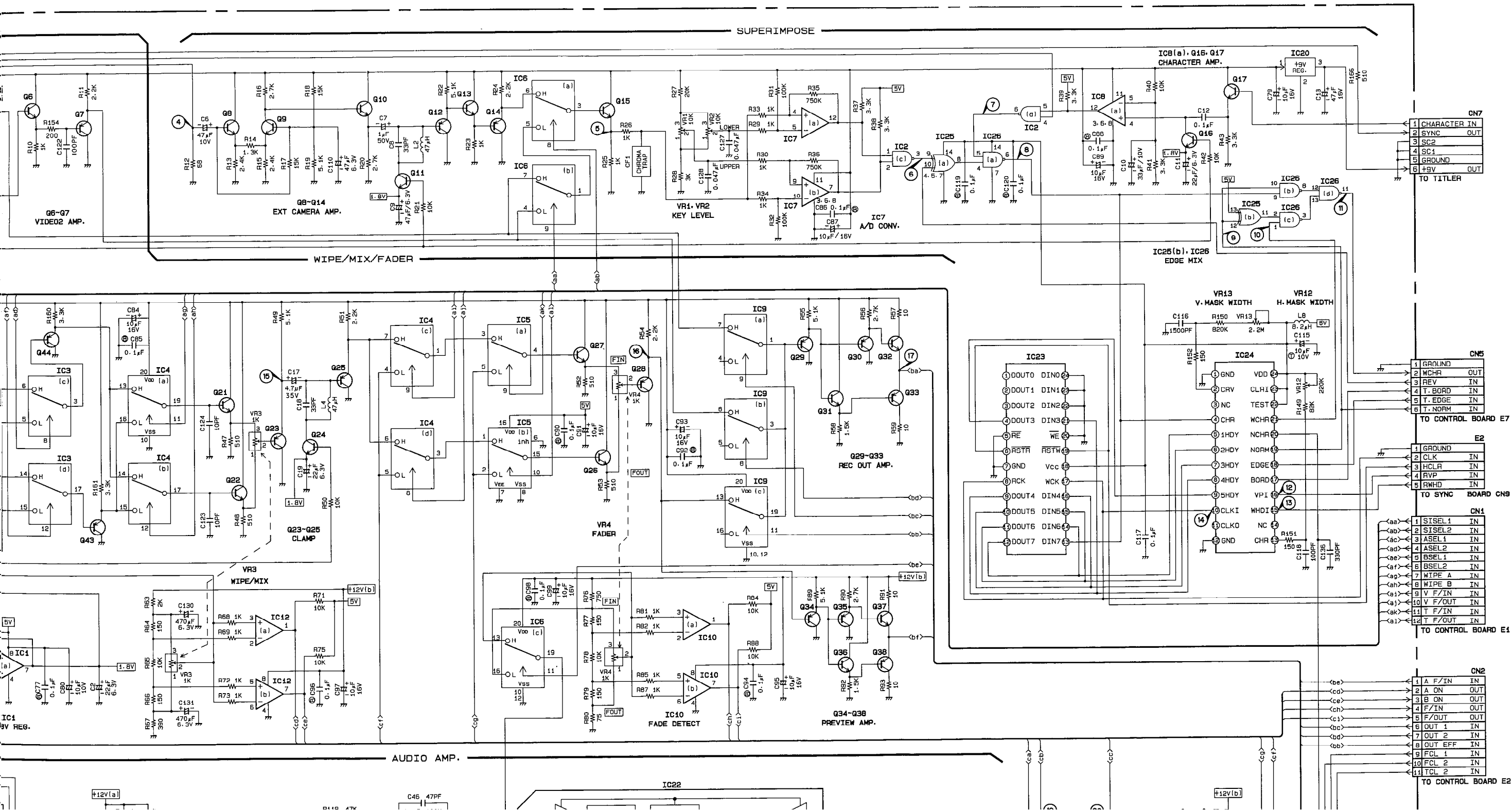
# SCHEMATIC DIAGRAM OF MIXER BOARD

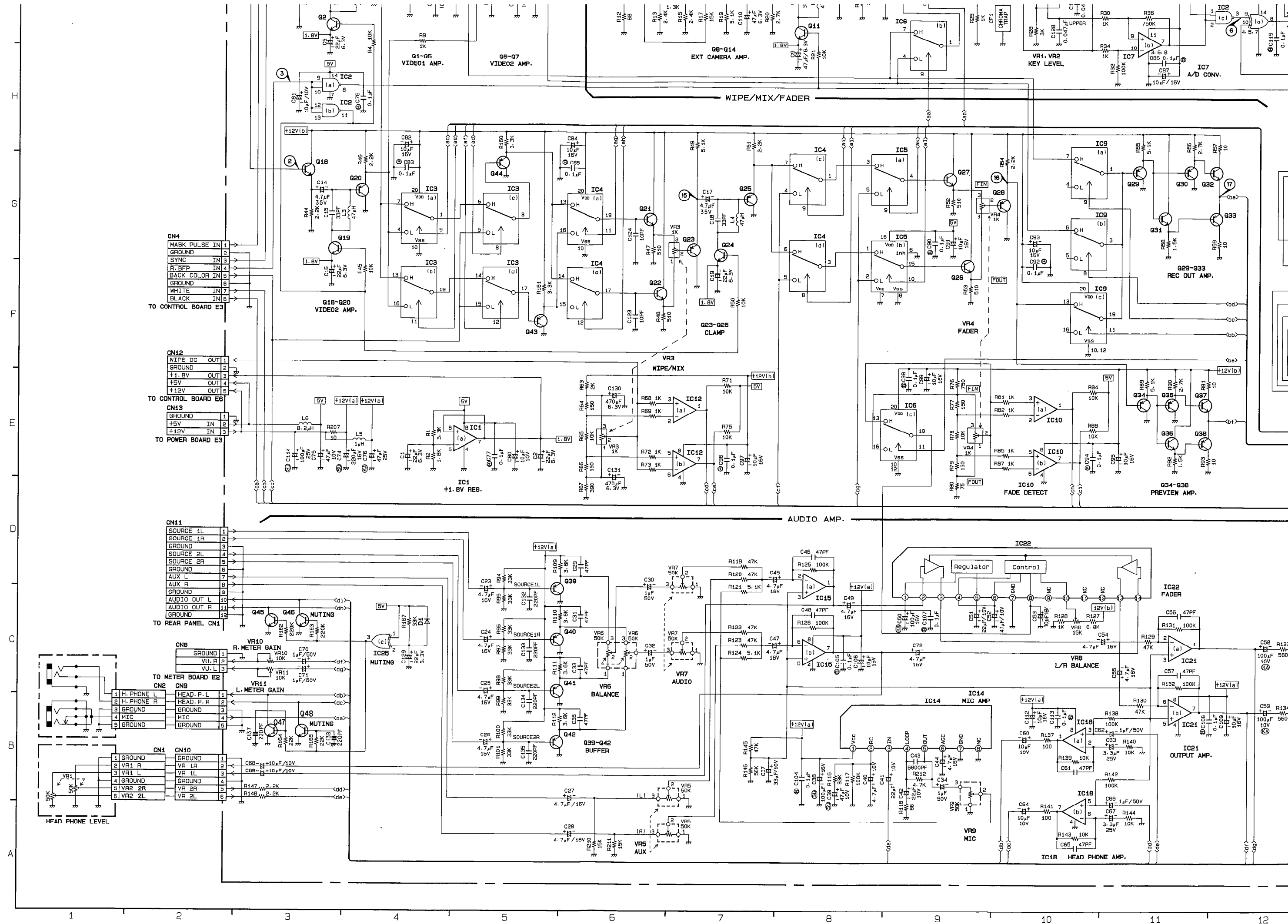
0.5V/DIV, 20μs/DIV 20. 0.5V/DIV, 20μs/DIV 21. 0.1V/DIV, 20μs/DIV



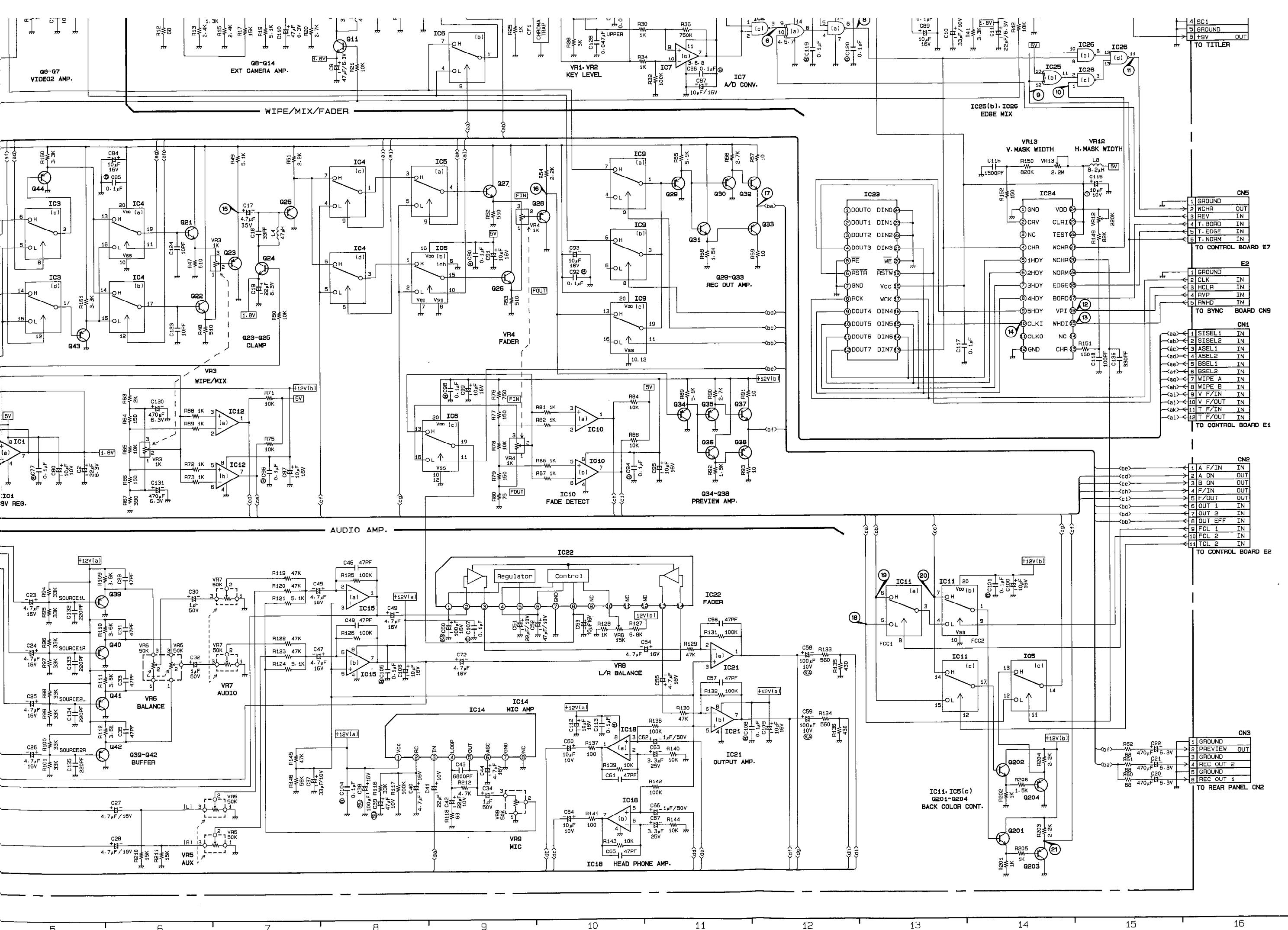
## MIXER BOARD

IC1	NJM3414M	E5	IC22	YWM51523AL	D10	Q16	2SD601-RS	(Y)	I14	Q36	2SD601-RS	(Y)	E11
IC2	MN74HC005	I11, I12, H3	IC23	YWPD41102C15	G13	Q17	2SD601-RS	(Y)	I14	Q37	2SD601-RS	(Y)	E11
IC3	YWSC49069F	G4, G5, F4, F5	IC24	YWPD65005232	G14	Q18	2SD601-RS	(Y)	G3	Q38	2SB709-Q	(A)	E11
IC4	YWSC49069F	G6, F6, G8, F8	IC25	MN74HC865	I12, I14, C4	Q19	2SD601-RS	(Y)	G3	Q39	2SB709-Q	(A)	D6
IC5	MN74HC4053S	G8, H8, E8, C14	IC26	MN74HC005	I12, H14	Q20	2SA1022-C	(E)	G4	Q40	2SB709-Q	(A)	C6
IC6	YWSC49069F	H9	Q1	2SD601-RS	(Y)	Q21	2SD601-RS	(Y)	G6	Q41	2SB709-Q	(A)	C6
IC7	NJM319M	H11	Q2	2SD601-RS	(Y)	Q22	2SD601-RS	(Y)	F6	Q42	2SB709-Q	(A)	B6
IC8	NJM319M	H13	Q3	2SA1022-C	(E)	Q23	2SA1022-C	(E)	G7	Q43	2SB709-Q	(A)	F5
IC9	YWSC49069F	G10, F9	Q4	2SD601-RS	(Y)	Q24	2SD601-RS	(Y)	G7	Q44	2SB709-Q	(A)	G5
IC10	AN6914S	E10	Q5	2SB709-Q	(A)	Q25	2SA1022-C	(E)	G7	Q45	2SD601-RS	(Y)	C3
IC11	YWSC49069F	C13	Q6	2SD601-RS	(Y)	Q26	2SD601-RS	(Y)	G9	Q46	2SD601-RS	(Y)	C3
IC12	AN6914S	E7	Q7	2SB709-Q	(A)	Q27	2SD601-RS	(Y)	G9	Q47	2SD601-RS	(Y)	B3
IC14	YWM51304L	B9	Q8	2SD601-RS	(Y)	Q28	2SB709-Q	(A)	G10	Q48	2SD601-RS	(Y)	B3
IC15	NJM4559M	B8, C8	Q9	2SC2404-CDTW	(U)	Q29	2SA1022-C	(E)	G11	Q201	2SD601-RS	(Y)	B14
IC18	YWM5216FP	A10, B10	Q10	2SD601-RS	(Y)	Q30	2SB709-Q	(A)	G11	Q202	2SD601-RS	(Y)	B14
IC20	AN78L09	I14	Q11	2SD601-RS	(Y)	Q31	2SD601-RS	(Y)	G11	Q203	2SB709-Q	(A)	B14
IC21	NJM4559M	B11, C11	Q12	2SA1022-C	(E)	Q32	2SD601-RS	(Y)	G11	Q204	2SB709-Q	(A)	A14
			Q13	2SD601-RS	(Y)	Q33	2SB709-Q	(A)	G11	D1	MA151K	(MH)	C4
			Q14	2SB709-Q	(A)	Q34	2SA1022-C	(E)	E11				
			Q15	2SD601-RS	(Y)	Q35	2SB709-Q	(A)	E11				



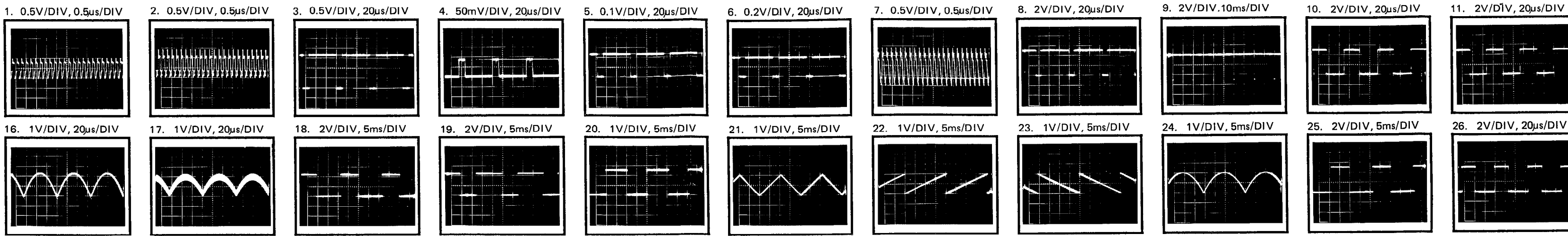




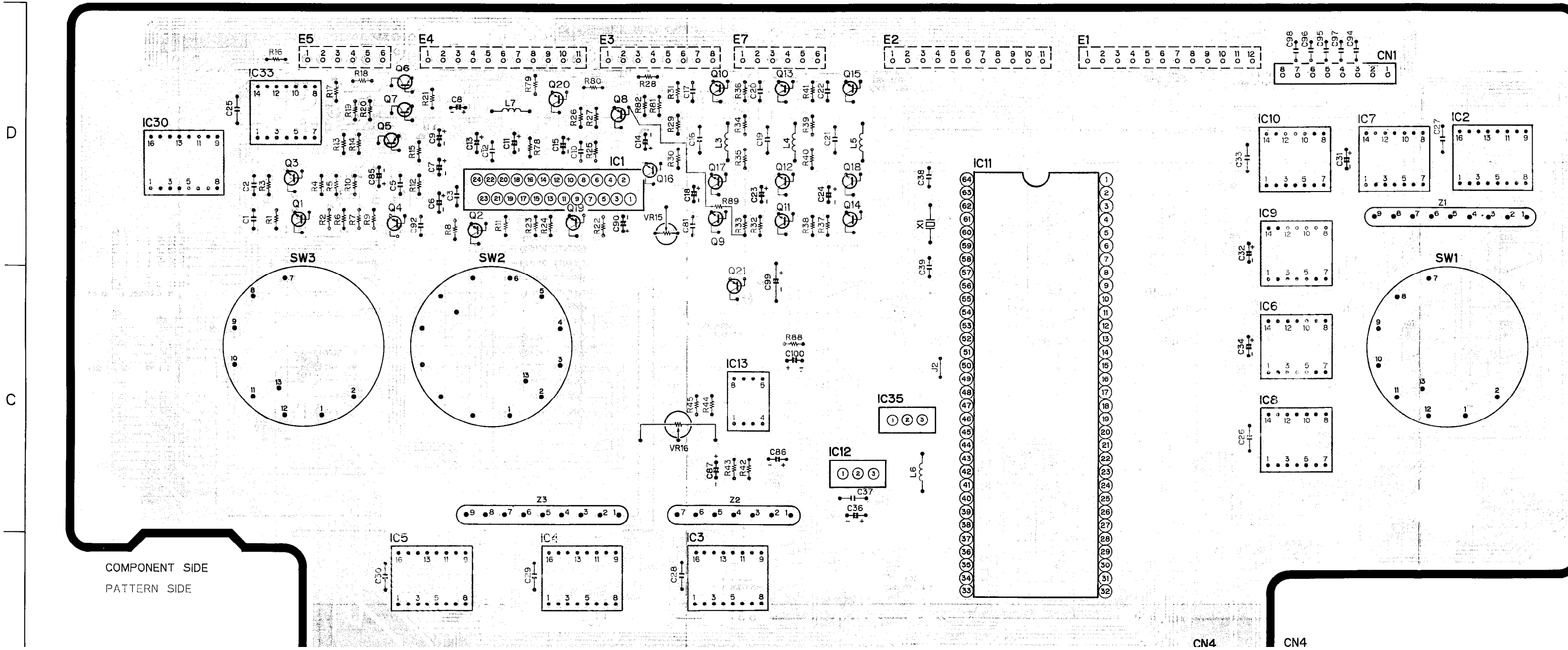




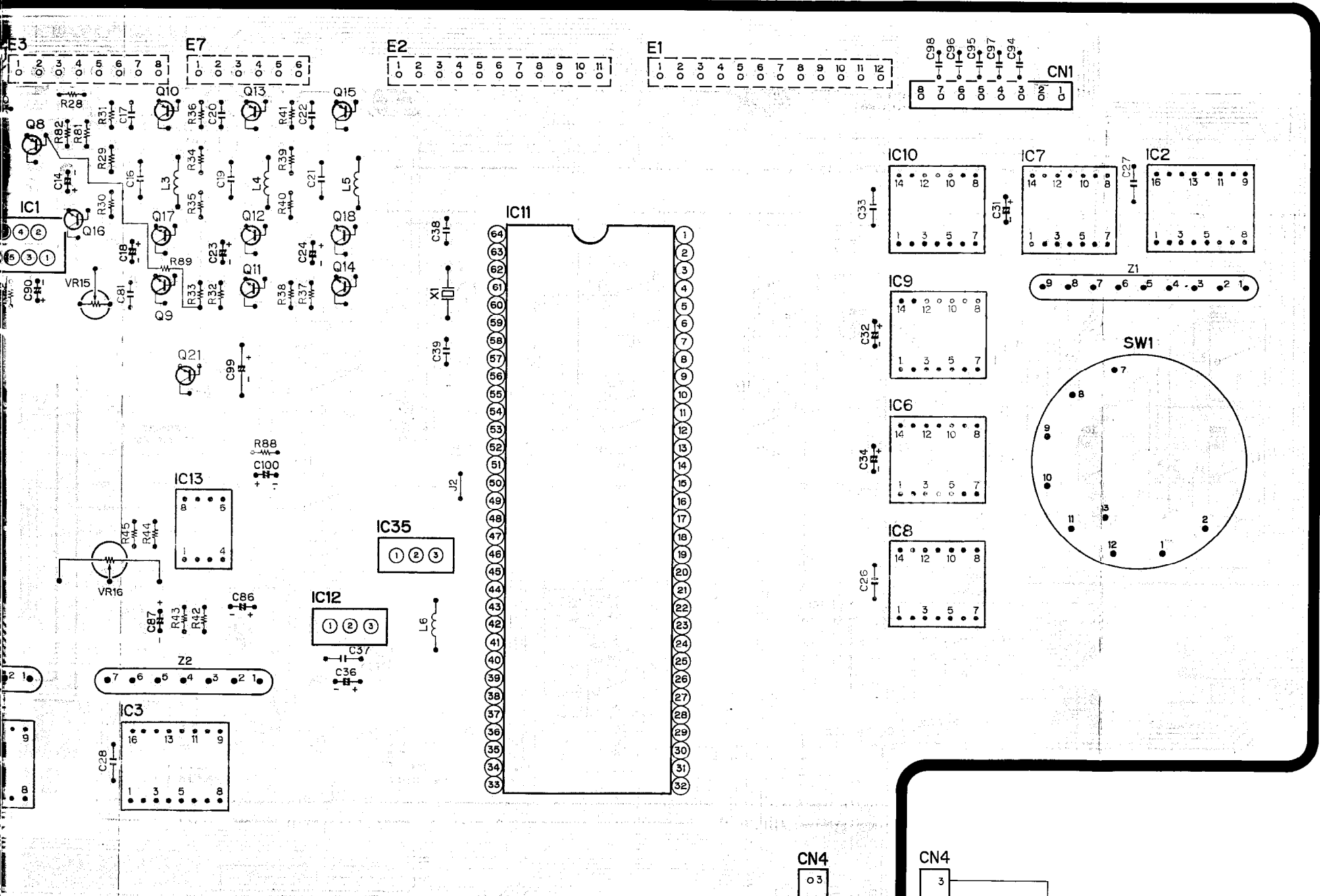
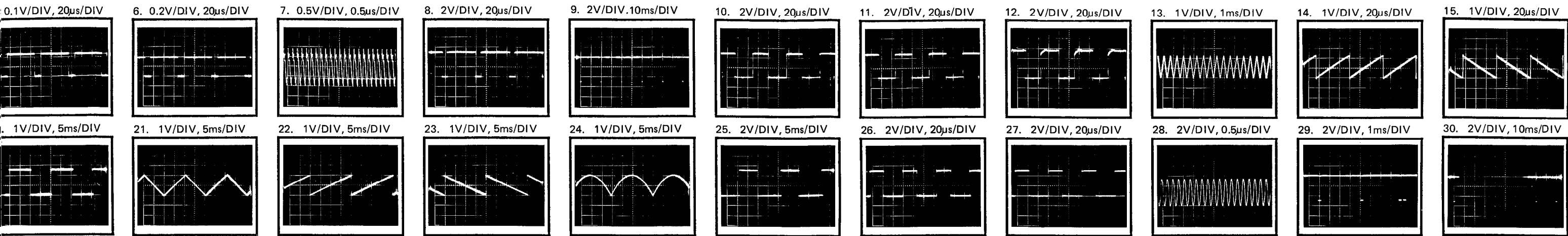
CONDUCTOR VIEW OF CONTROL BOARD



CONTROL BOARD



CONDUCTOR VIEW OF CONTROL BOARD



PinNo.	IC1	IC2	IC3	IC4	IC5	IC6	IC7	IC8	IC9	IC10	IC12	IC13	PinNo.	IC11	Pin No.	IC11	PinNo.	IC11
1	2.6	4.8	4.8	4.8	1.8	0	4.8	4.5	4.8	5.0	4.8	4.2	1	0	25	0	49	0
2	4.8	0	0	4.8	4.8	0	0	0.1	1.2	1.2	2	3.2	2	0	26	0	50	4.8
3	3.2	4.8	4.8	4.8	4.8	4.8	4.8	0	4.8	4.8	0	2.5	3	0	27	0	51	5.0
4	1.9	4.8	4.8	4.8	0	0	4.8	—	4.8	5.0		0	4	0	28	5.0	52	0
5	2.2	0	5.0	5.0	4.8	0	0	0	1.2	1.2		—	5	0	29	5.0	53	0
6	0	0	4.8	4.8	4.8	4.8	4.8	—	4.8	4.8		—	6	0	30	0	54	0
7	2.6	4.8	4.8	4.8	0	0	0	0	0	0		—	7	0	31	5.0	55	5.0
8	2.6	0	0	0	0	4.8	4.8	1.2	4.8	1.1		4.8	8	0	32	0	56	0
9	—	0	4.8	0	—	0	4.8	3.9	5.0	0			9	0	33	5.0	57	5.0
10	4.5	4.8	4.8	4.8	0	0	1.2	4.2	1.2	1.2			10	0	34	0	58	5.0
11	0	4.8	4.8	4.8	0	0	4.8	0	4.8	4.8			11	—	35	5.0	59	5.0
12	3.0	4.8	4.8	0	0	5.0	4.8	—	5.0	5.0			12	5.0	36	0	60	0
13	3.6	4.8	4.8	0	0	4.2	1.2	0	1.2	1.2			13	4.9	37	4.8	61	2.3
14	3.4	—	—	—	4.8	4.8	4.8	4.8	4.8	4.8			14	4.8	38	0	62	2.3
15	3.4	—	—	—	0								15	4.8	39	0	63	4.2
16	2.5	4.8	4.8	4.8	4.8								16	4.8	40	4.8	64	—
17	3.1												17	0	41	—		
18	3.4												18	5.0	42	—		
19	0												19	5.0	43	—		
20	3.0												20	0	44	4.2		
21	4.5												21	5.0	45	0		
22	0												22	5.0	46	0		
23	4.8												23	0	47	5.0		
24	4.8												24	4.1	48	0		

PinNo.	IC14	IC15	IC16	IC17	IC18	IC19	IC20	IC21	IC22	IC23	IC24	IC25	IC26	IC27	IC28	IC29	IC30
1	2.1	0	2.9	3.0	5.0	1.8	0	3.0	3.3	1.9	0	5.0	0	0	2.9	2.9	4.8
2	0.7	0.2	1.9	1.5	1.4	0.6	0.6	1.9	1.9	1.9	0	0	—	2.4	—	—	—
3	2.0	2.1	1.9	1.9	5.6	4.9	2.6	1.9	1.9	1.9	0	0	4.2	0	0.7	0.6	0
4	0	0	0	0	0	0	0	0	0	0	—	5.0	0	—	—	—	4.8
5	4.2	2.1	1.9	1.9	0	1.8	2.6	1.9	1.9	3.0	0	0	0	0.7	0.7	0.7	0
6	0.7	0.2	1.9	1.9	1.4	0	0.1	1.9	1.9	3.2	—	0	0	4.9	5.0	5.0	4.8
7	2.0	2.6	2.9	3.2	0	2.6	0	2.9	2.9	3.2	0	0	0	0	1.9	1.9	—
8	4.8	4.8	11.8	11.8	11.8	4.8	4.8	11.8	11.8	11.8	4.9	5.0	0	2.3	0	0	0
9											2.1	5.0	0	2.6	0	0	4.8
10											0	4.6	0	4.2	0	0	—
11											5.0	—	0	0.7	0	0	4.8
12											2.6	0	—	—	0	0	0
13											1.8	0	—	0	1.9	1.9	0
14											4.8	4.8	4.8	4.8	1.9	1.9	—
15															—	—	—
16															—	—	4.8
17															3.2	3.3	
18															—	—	
19															2.9	3.0	
20															11.8	11.8	

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
8	1.6	1.0	1.6	1.0	0.5	0	0	1.2	1.6	2.3	9.4	0.1	2.7	0	1.8	2.6	0.1

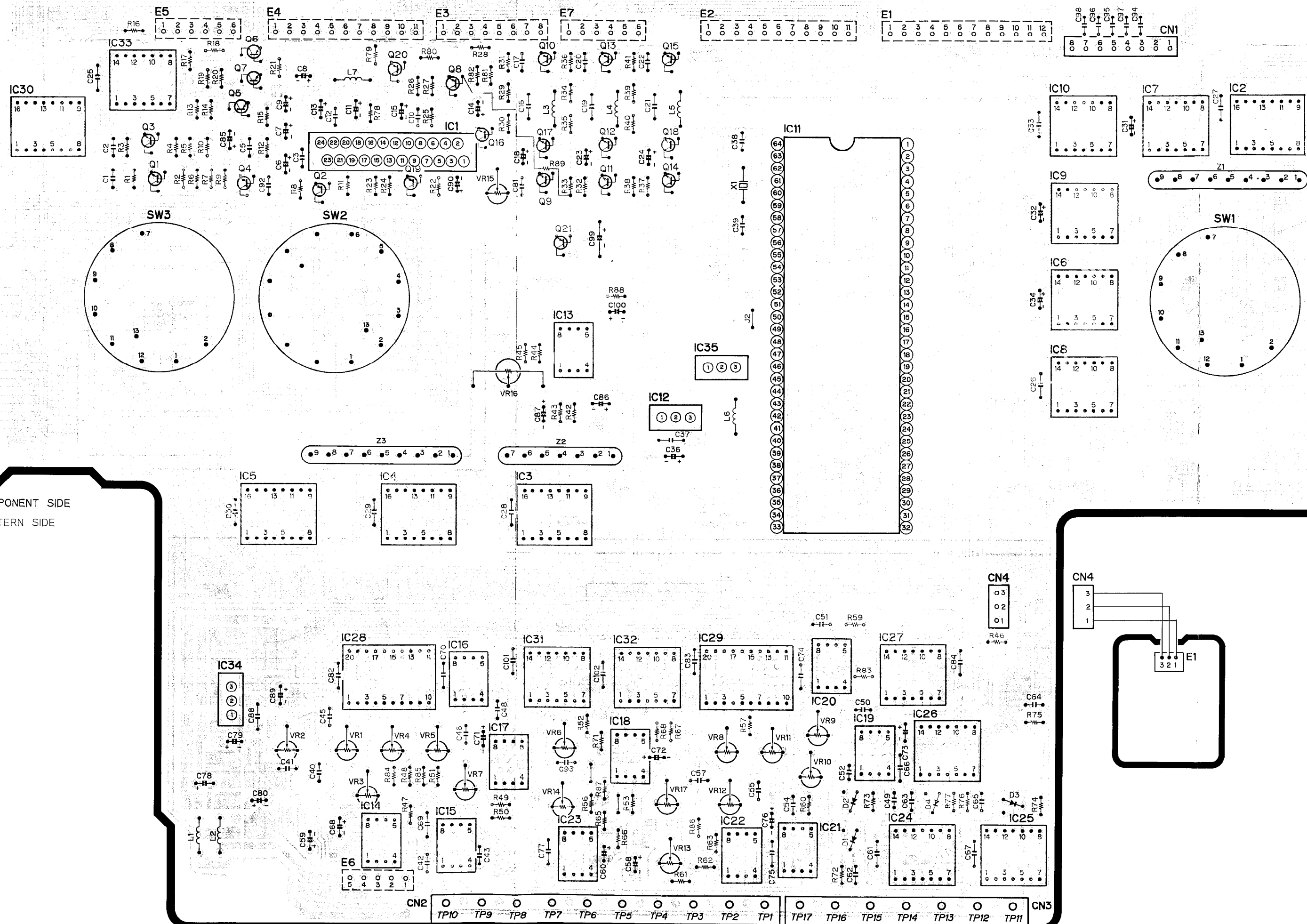
D

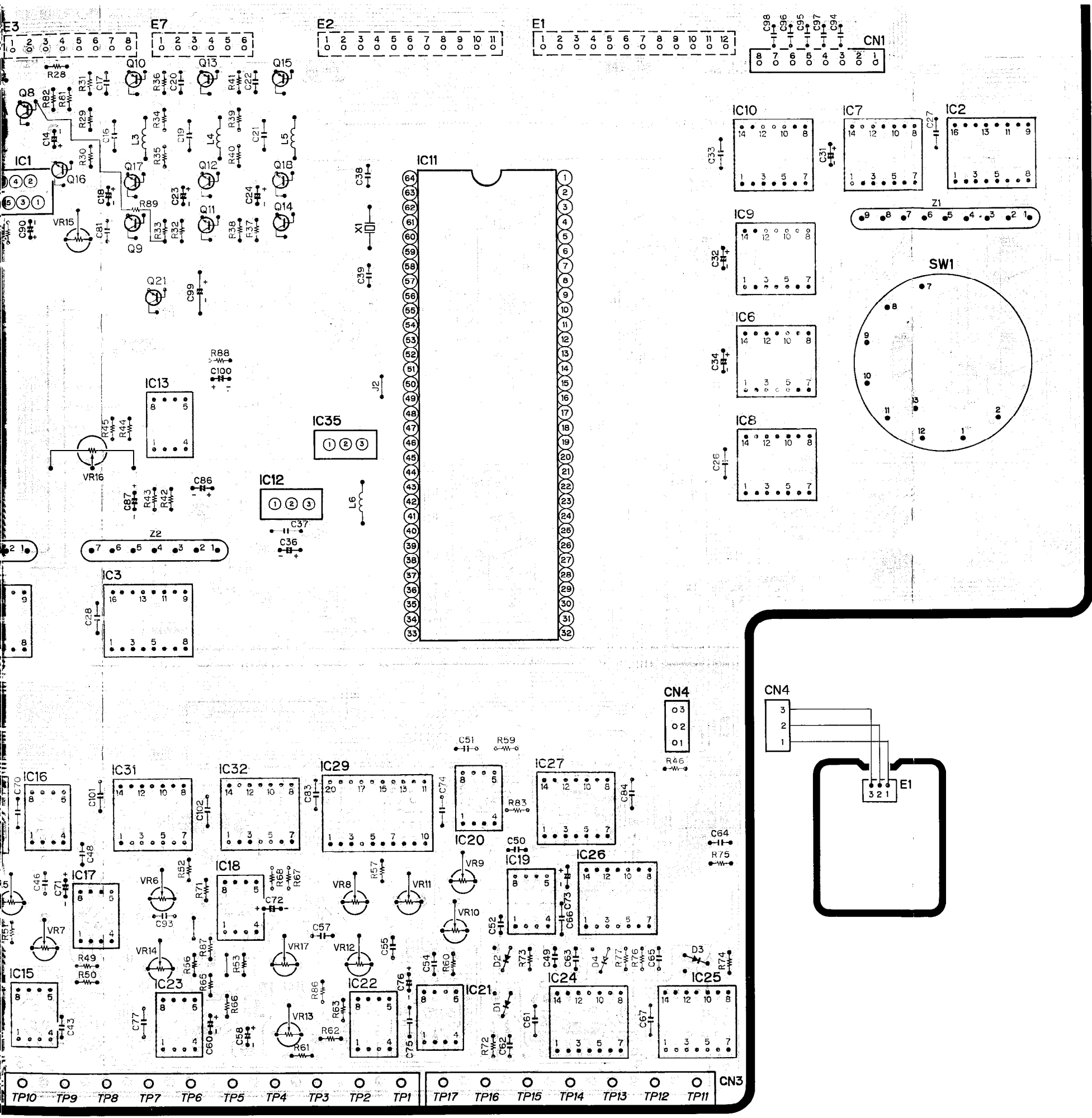
C

B

A

COMPONENT SIDE  
PATTERN SIDE





8	2.6	0	0	0	0	4.8	4.8	1.2	4.8	1.1		4.8	8	0	32	0	56	0
9	---	0	4.8	0	---	0	4.8	3.9	5.0	0			9	0	33	5.0	57	5.0
10	4.5	4.8	4.8	4.8	0	0	1.2	4.2	1.2	1.2			10	0	34	0	58	5.0
11	0	4.8	4.8	4.8	0	0	4.8	0	4.8	4.8			11	---	35	5.0	59	5.0
12	3.0	4.8	4.8	0	0	5.0	4.8	---	5.0	5.0			12	5.0	36	0	60	0
13	3.6	4.8	4.8	0	0	4.2	1.2	0	1.2	1.2			13	4.9	37	4.8	61	2.3
14	3.4	---	---	---	4.8	4.8	4.8	4.8	4.8	4.8			14	4.8	38	0	62	2.3
15	3.4	---	---	---	0								15	4.8	39	0	63	4.2
16	2.5	4.8	4.8	4.8	4.8								16	4.8	40	4.8	64	---
17	3.1												17	0	41	---		
18	3.4												18	5.0	42	---		
19	0												19	5.0	43	---		
20	3.0												20	0	44	4.2		
21	4.5												21	5.0	45	0		
22	0												22	5.0	46	0		
23	4.8												23	0	47	5.0		
24	4.8												24	4.1	48	0		

PinNo.	IC14	IC15	IC16	IC17	IC18	IC19	IC20	IC21	IC22	IC23	IC24	IC25	IC26	IC27	IC28	IC29	IC30
1	2.1	0	2.9	3.0	5.0	1.8	0	3.0	3.3	1.9	0	5.0	0	0	2.9	2.9	4.8
2	0.7	0.2	1.9	1.5	1.4	0.6	0.6	1.9	1.9	1.9	0	0	---	2.4	---	---	---
3	2.0	2.1	1.9	1.9	5.6	4.9	2.6	1.9	1.9	1.9	0	0	4.2	0	0.7	0.6	0
4	0	0	0	0	0	0	0	0	0	0	---	5.0	0	---	---	---	4.8
5	4.2	2.1	1.9	1.9	0	1.8	2.6	1.9	1.9	3.0	0	0	0	0.7	0.7	0.7	0
6	0.7	0.2	1.9	1.9	1.4	0	0.1	1.9	1.9	3.2	---	0	0	4.9	5.0	5.0	4.8
7	2.0	2.6	2.9	3.2	0	2.6	0	2.9	2.9	3.2	0	0	0	0	1.9	1.9	---
8	4.8	4.8	11.8	11.8	11.8	4.8	4.8	11.8	11.8	11.8	4.9	5.0	0	2.3	0	0	0
9											2.1	5.0	0	2.6	0	0	4.8
10											0	4.6	0	4.2	0	0	---
11											5.0	---	0	0.7	0	0	4.8
12											2.6	0	---	---	0	0	0
13											1.8	0	---	0	1.9	1.9	0
14											4.8	4.8	4.8	4.8	1.9	1.9	---
15															---	---	---
16																---	4.8
17															3.2	3.3	
18															---	---	
19															2.9	3.0	
20															11.8	11.8	

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
B	1.6	1.0	1.6	1.0	0.5	0	0	1.2	1.6	2.3	9.4	0.1	2.7	0	1.8	2.6	0.1
C	11.8	0	11.8	0	0	0	0	0	11.8	0	11.8	2.7	0	11.8	0	10.1	2.2
E	1.0	1.7	1.0	1.5	1.2	0.7	0.7	1.8	2.3	2.9	8.8	1.8	3.4	0	2.6	1.7	1.8

CONTROL BOARD

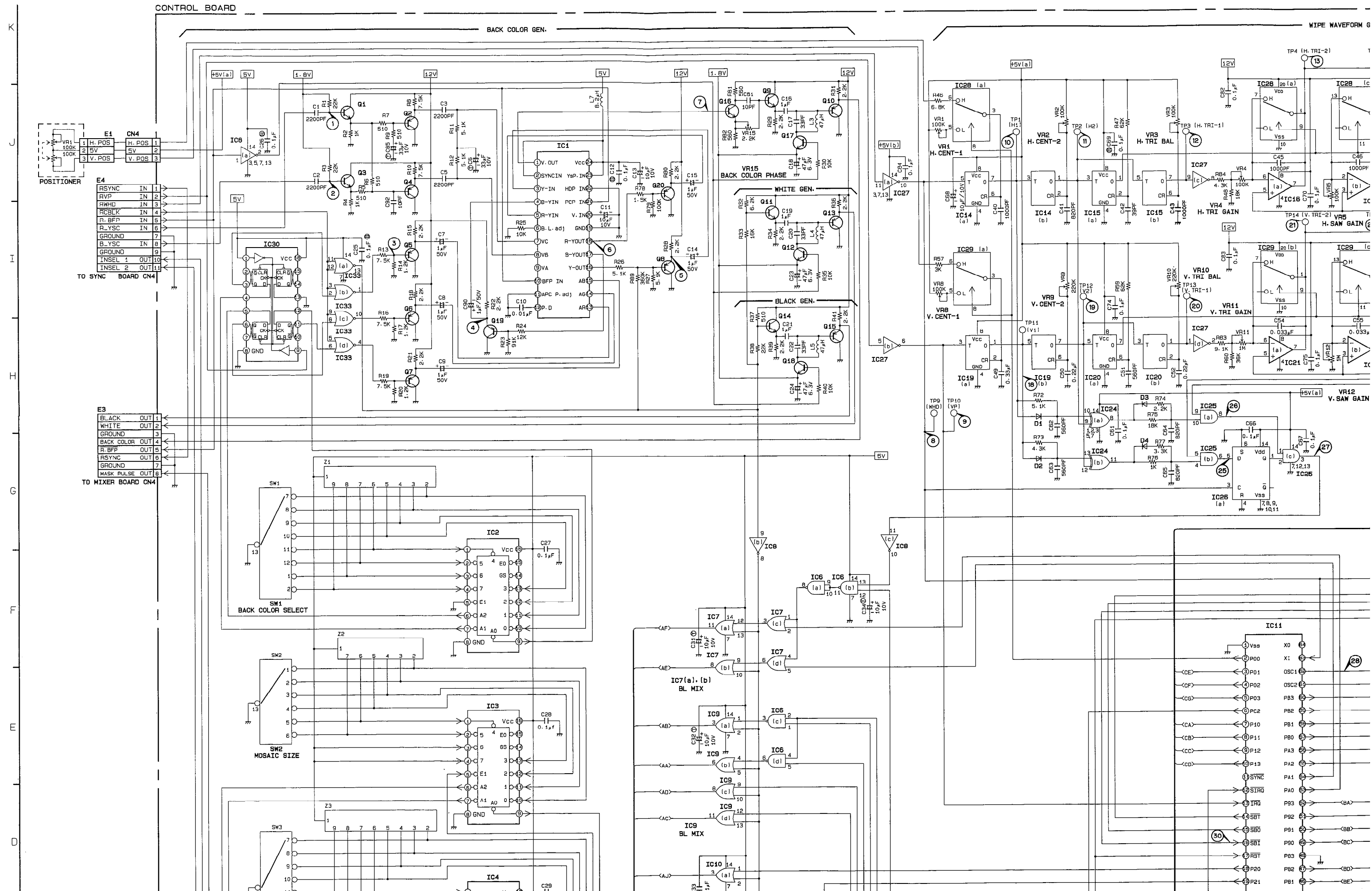
IC1	YWBA7230LS	D3	IC31	MN4066BS	B3
IC2	MN74HC148S	D6	IC32	MN4066BS	B4
IC3	MN74HC148S	B3	IC33	MN74HC02S	D1
IC4	MN74HC148S	B3	IC34	AN78L05	B2
IC5	MN74HC158S	B2	IC35	AN78L05	C4
IC6	MN74HC00S	C5	Q1	2SC2404-CDTW	(U) D1
IC7	MN74HC32S	D6	Q2	2SA1022-C	(E) D2
IC8	MN74HC04S	C5	Q3	2SC2404-CDTW	(U) D1
IC9	MN74HC32S	C5	Q4	2SA1022-C	(E) D2
IC10	MN74HC32S	D5	Q5	2SB709-Q	(A) D2
IC11	MN1554CCD1	D4	Q6	2SB709-Q	(A) D2
IC12	M51951ASL	C4	Q7	2SB709-Q	(A) D2
IC13	NJM3414M	C3	Q8	2SB709-Q	(A) D3
IC14	BA226AF	A2	Q9	2SC2404-CDTW	(U) D3
IC15	BA226AF	A3	Q10	2SA1022-C	(E) D3
IC16	NJM4560M	B3	Q11	2SD601-RS	(Y) D3
IC17	NJM4560M	A3	Q12	2SD601-RS	(Y) D3
IC18	AN6914S	A3	Q13	2SB709-Q	(A) D3
IC19	BA226AF	A4	Q14	2SD601-RS	(Y) D4
IC20	BA226AF	B4	Q15	2SA1022-C	(E) D4
IC21	NJM4560M	A4	Q16	2SC2404-CDTW	(U) D3
IC22	NJM4560M	A4	Q17	2SD601-RS	(Y) D3
IC23	NJM4560M	A3	Q18	2SD601-RS	(Y) D4
IC24	MN74HC86S	A5	Q19	2SB709-Q	(A) D3
IC25	MN74HC08S	A5	Q20	2SB709-Q	(A) D2
IC26	MN4013BS	A5	Q21	2SB709-Q	(A) C3
IC27	MN74HC04S	B5	D1	MA151K	(MH) A4
IC28	YW5C49069F	B2	D2	MA151K	(MH) A4
IC29	YW5C49069F	B4		MA151K	(MH) A5
IC30	MN74HC175S	D1		MA151K	(MH) A5

	Q18	Q19	Q20	Q21
B	0.1	2.7	3.4	11.0
C	1.8	0	0	11.8
E	1.8	3.6	4.1	11.7

PinNo.	IC31	IC32	IC33	IC34	IC35
1	5.6	0	3.5	11.8	11.7
2	2.9	0	0	0	0
3	2.9	2.9	1.2	4.8	4.8
4	5.6	0	0		
5	0	0	1.2		
6	0	0	4.8		
7	0	0	0		
8	5.6	0	4.8		
9	3.2	2.9	1.2		
10	3.0	3.0	0		
11	5.6	0	1.2		
12	0.1	0	1.2		
13	0	0	3.6		
14	4.8	4.8	4.8		

# SCHEMATIC DIAGRAM OF CONTROL BOARD



IC1	YWBA7230LS	15
IC2	MN74HC148S	J4
IC3	MN74HC148S	E4
IC4	MN74HC148S	E4
IC5	MN74HC158S	C4
IC6	MN74HC00S	F8, E7
IC7	MN74HC32S	F7
IC8	MN74HC04S	J2, G7, G8
IC9	MN74HC15S	E7, D7
IC10	MN74HC32S	F7, C7
IC11	MN155ACCD1	F11
IC12	M51951ASL	B11
IC13	NJM3414M	H8
IC14	BA226AF	H8, I9
IC15	BA226AF	I10
IC16	NJM4560M	I11, I12
IC17	NJM4560M	I13, I14
IC18	AN6914S	I5, H15
IC19	BA226AF	I9
C20	BA226AF	I10
C21	NJM4560M	H11, H12
C22	NJM4560M	I13, I14
C23	NJM4560M	G12
C24	MN74HC86S	G10
C25	MN74HC08S	G11
C26	MN4013BS	G11
C27	MN74HC04S	J8, H8, J10, H1
IC28	YW5CA9069F	J9, J11, J12, J13
IC29	YW5CA9069F	I9, I11, I12, I13
IC30	MN74HC175S	I13
IC31	MM4066BS	I14, K14
IC32	MM4066BS	I14, H14
IC33	MN74HC02S	J3, H3
IC34	AN78LOS	(A) H4
IC35	AN78LOS	B14
Q1	25C2404-CDTW (U)	Q3
Q2	25A1022-C (E)	I4
Q3	25C4004-CDTW (U)	J3
Q4	25A1022-C (E)	I4
Q5	25B709-Q (A)	I4
Q6	25B709-Q (A)	H4
Q7	25B709-Q (A)	H4
Q8	25B709-Q (A)	I6
Q9	25C2404-CDTW (U)	J7
Q10	25A1022-C (E)	H8
Q11	25D601-RS (Y)	I7
Q12	25D601-RS (Y)	I7
Q13	25B709-Q (A)	H8
Q14	25B709-Q (A)	I7
Q15	25A1022-C (E)	H8
Q16	25C2404-CDTW (U)	J7
Q17	25D601-RS (Y)	J7
Q18	25B709-Q (A)	H5
Q19	25B709-Q (A)	H7
Q20	25B709-Q (A)	J6
Q21	25B709-Q (A)	B13
D1	MA151K (MH)	H9
D2	MA151K (MH)	H9
D3	MA151K (MH)	H10
D4	MA151K (MH)	H10

E6		
1	12V	IN
2	5V	IN
3	1.8V	IN
4	GROUND	
5	WIPE DC	IN

TO MIXER BOARD CN12

		CN1
1	5V	OUT
2	GROUND	
3	WHD	OUT
4	VP	OUT
5	SERIALCLK	OUT
6	ACK DATA	OUT
7	SERIALDATA	IN
8	RESET	OUT

TO SWITCH BOARD E1

E1		
1	T F/OUT	OUT
2	T F/IN	OUT
3	V F/OUT	OUT
4	V F/IN	OUT
5	WIPE B	OUT
6	WIPE A	OUT
7	B SEL2	OUT
8	B SEL1	OUT
9	A SEL2	OUT
10	A SEL1	OUT
11	SISEL 2	OUT
12	SISEL 1	OUT

TO MIXER BOARD CN1

E2		
1	TCL 2	OUT
2	FCL 2	OUT
3	FCL 1	OUT



I  
G  
T  
E  
D  
C  
B  
A

E3

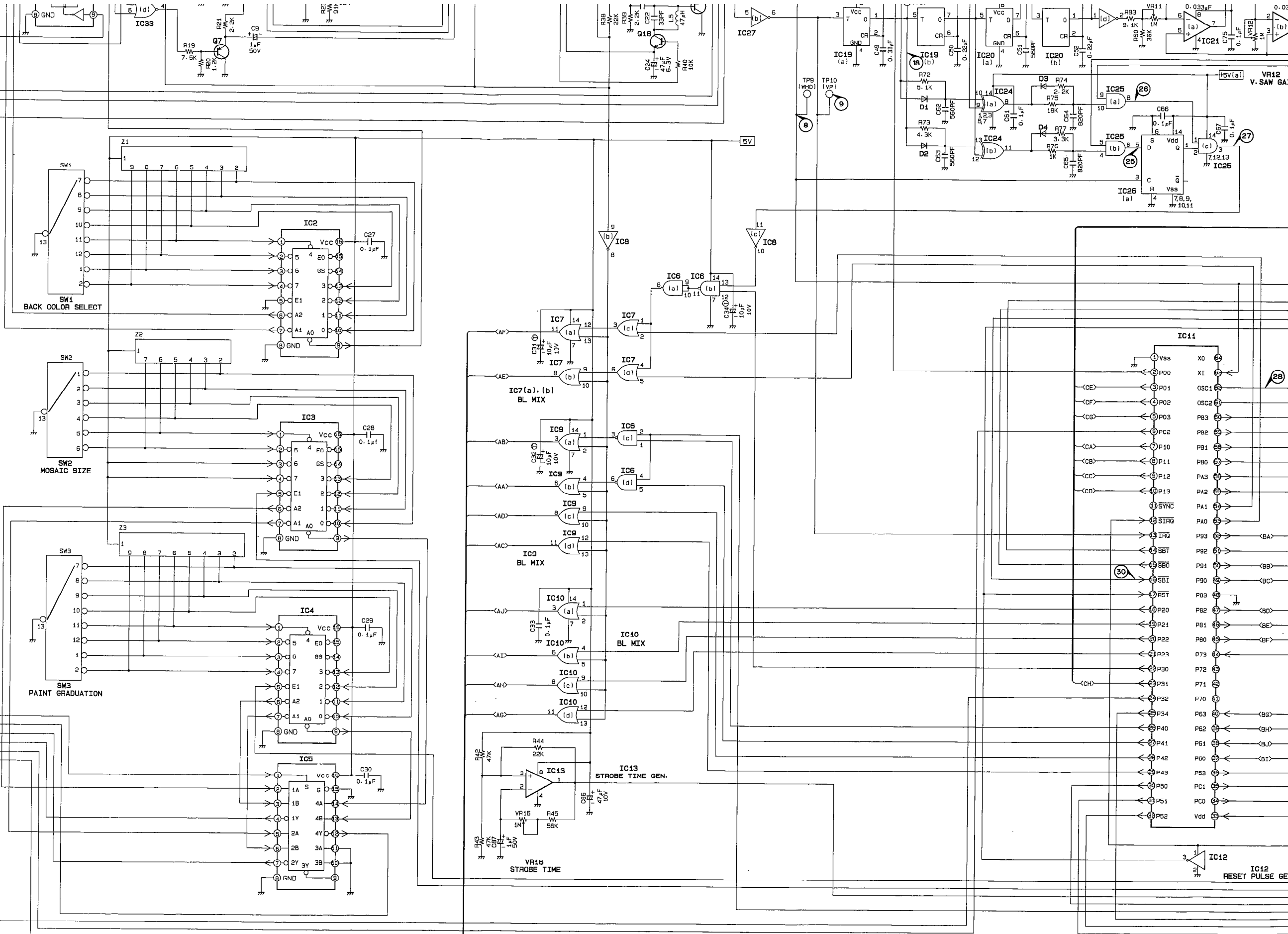
BLACK	OUT	1
WHITE	OUT	2
GROUND		3
BACK COLOR	OUT	4
R BFP	OUT	5
BSYNC	OUT	6
GROUND		7
MASK PULSE	OUT	8

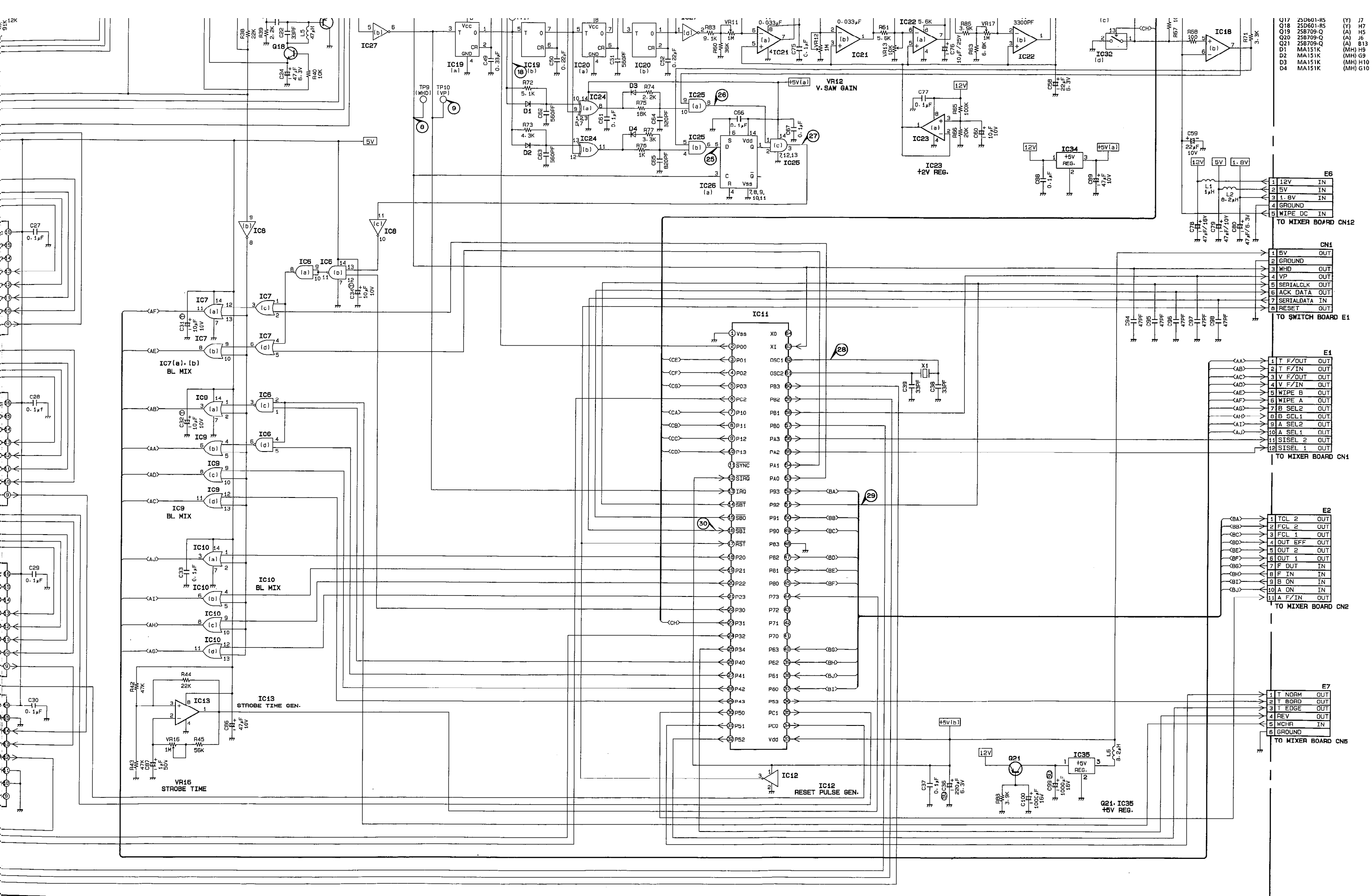
TO MIXER BOARD CN4

E5

RF	IN	1
M1	OUT	2
M2	OUT	3
M3	OUT	4
FREEZE	OUT	5
STILL-L	OUT	6

TO SYNC BOARD CN8

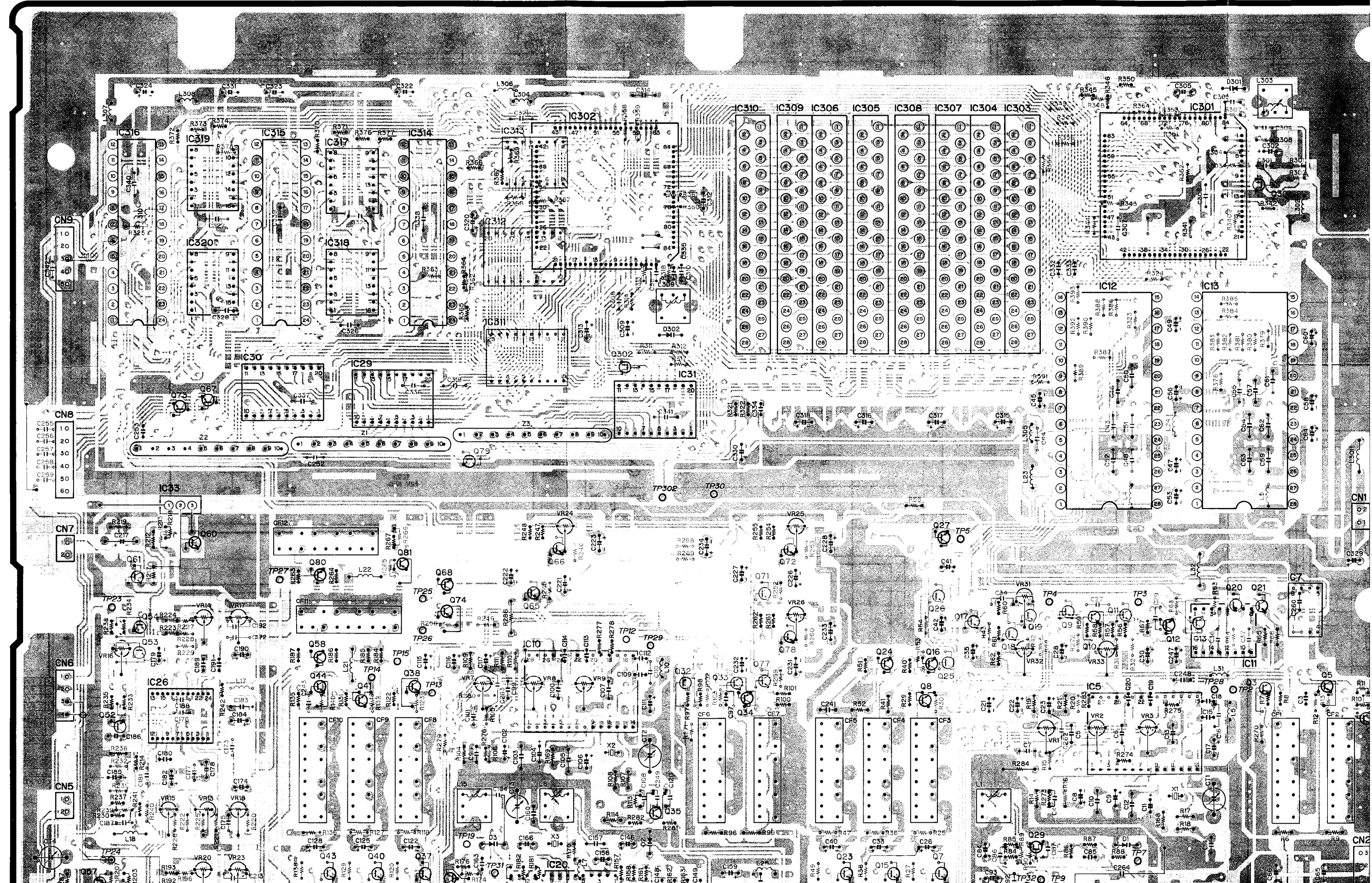






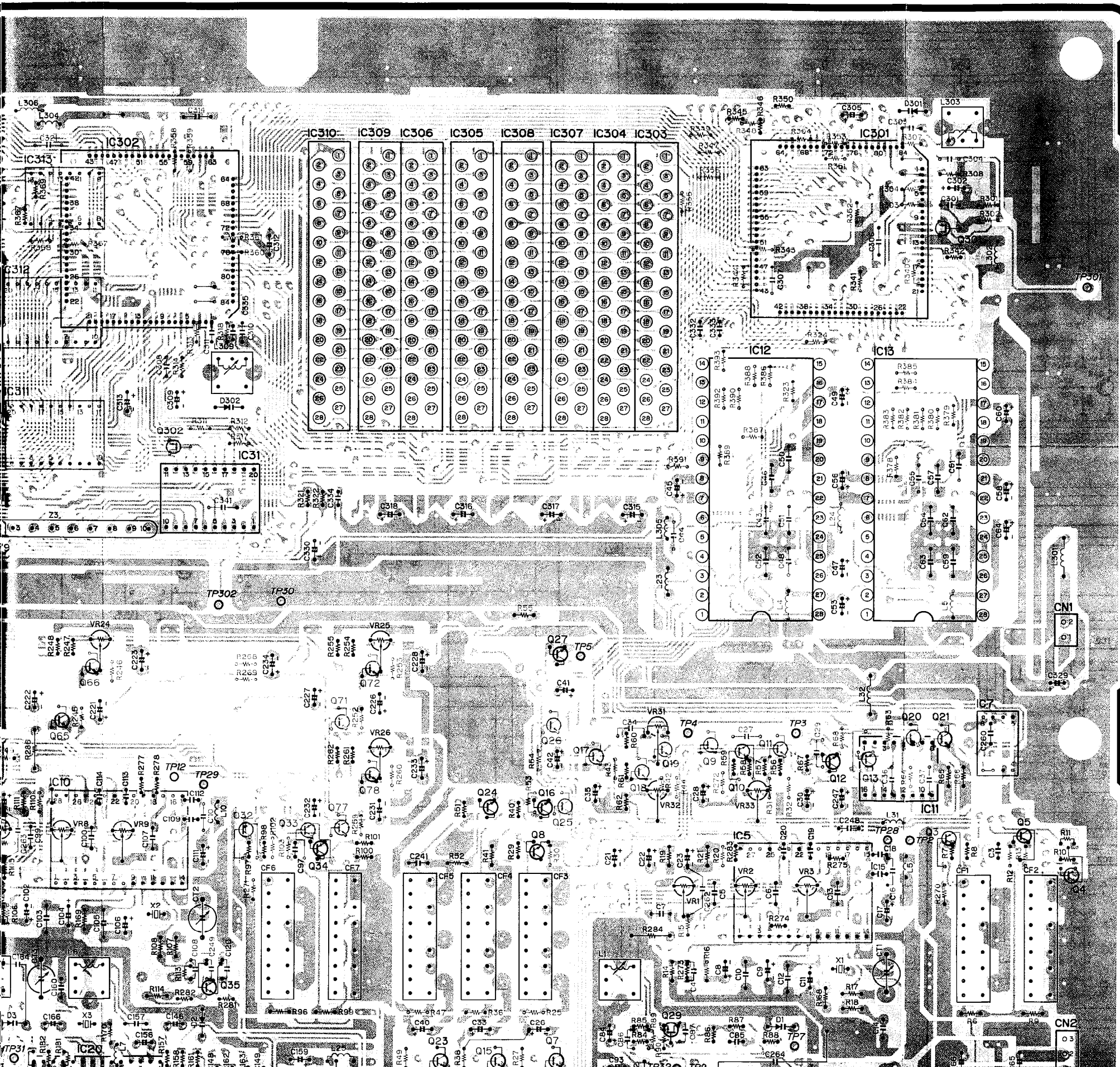
# CONDUCTOR VIEW OF SYNC BOARD

## SYNC BOARD





# CONDUCTOR VIEW OF SYNC BOARD



## SYNC BOARD

IC1	MN74HC4053S
IC2	MN4528B5
IC3	AN2510S
IC4	TC5081AP
IC5	YWM51271FP
IC6	MN74HC04S
IC7	NJM3414M
IC8	MN74HC00S
IC9	MN676021PPS
IC10	YWM51271FP
IC11	MN74HC4053S
IC12	MP7684
IC13	MP7684
IC14	MN4528B5
IC15	AN2510S
IC16	TC5081AP
IC17	MN74HC04S
IC18	MN74HC00S
IC19	MN74HC08S
IC20	MN676021PPS
IC21	MN74HC04S
IC22	MN74HC393S
IC23	MN4528B5
IC24	MN74HC74S
IC25	MN74HC74S
IC26	YWM51272FP
IC27	YWM51272FP
IC29	MN74HC245S
IC30	MN74HC245S
IC31	MN74HC245S
IC32	MN74HC86S
IC33	AN78L05
IC301	MN51010LVJ
IC302	MN51015LVK
IC303	YWM5M4C500L
IC304	YWM5M4C500L
IC305	YWM5M4C500L
IC306	YWM5M4C500L
IC307	YWM5M4C500L
IC308	YWM5M4C500L
IC309	YWM5M4C500L
IC310	YWM5M4C500L
IC311	MN74HC273S
IC312	MN74HC273S
IC313	MN74HC157S
IC314	YWPD41102C15
IC315	YWPD41102C15
IC316	YWPD41102C15
IC317	MN74HC153S
IC318	MN74HC153S
IC319	MN74HC153S
IC320	MN74HC153S
Q1	2SB709-Q
Q2	2SD601-RS
Q3	2SB709-Q
Q4	2SB709-Q
Q5	2SB709-Q
Q6	2SD601-RS
Q7	2SD601-RS
Q8	2SD601-RS
Q9	2SD601-RS
Q10	2SD601-RS
Q11	2SD601-RS
Q12	2SD601-RS
Q13	2SD601-RS
Q14	2SD601-RS
Q15	2SD601-RS
Q16	2SD601-RS
Q17	2SD601-RS
Q18	2SD601-RS
Q19	2SD601-RS
Q20	2SD601-RS
Q21	2SD601-RS
Q22	2SD601-RS
Q23	2SD601-RS
Q24	2SD601-RS
Q25	2SD601-RS
Q26	2SD601-RS
Q27	2SD601-RS
Q28	2SD601-RS
Q29	2SK198-Q
Q30	2SB709-Q
Q31	2SD601-RS
Q32	2SB709-Q
Q33	2SB709-Q
Q34	2SB709-Q
Q35	2SC2404-CDTW
Q36	2SD601-RS
Q37	2SD601-RS
Q38	2SD601-RS
Q39	2SD601-RS
Q40	2SD601-RS
Q41	2SD601-RS
Q42	2SD601-RS
Q43	2SD601-RS
Q44	2SD601-RS
Q45	2SD601-RS
Q46	2SK198-Q

B6	
A6	
A5	
B6	
C6	
B5	
C6	
A6	
B5	
C3	
C6	
E5	
E6	
A3	
A3	
A4	
B3	
B4	
B4	
B3	
A2	
A4	
A4	
A3	
C1	
B1	
D2	
D2	
D4	
A5	
D1	
E6	
E4	
E5	
E5	
E4	
E5	
E5	
E4	
E4	
D3	
E3	
E3	
E3	
E2	
E1	
E2	
E2	
E2	
B7	
B6	
C6	
C7	
C7	
B5	
B5	
C5	
C5	
C5	
C6	
C6	
B5	
B5	
C5	
C5	
C5	
C5	
D5	
B6	
B5	
A7	
A6	
C4	
C4	
C4	
C3	
B2	
B2	
C2	
B2	
B2	
C2	
B2	
C2	
B4	
B2	

Pin No.	IC301	Pin No.	IC301	Pin No.	IC302	Pin No.	IC302
1	2.4	43	0.8	1	2.4	43	1.0
2	---	44	0	2	2.3	44	0.9
3	-2.1	45	1.9	3	0	45	1.2
4	---	46	0	4	0	46	0.4
5	---	47	2.2	5	0	47	0
6	0.4	48	2.3	6	0	48	0
7	0.4	49	0	7	1.5	49	4.2
8	-0.9	50	2.3	8	0	50	---
9	-0.9	51	0	9	0.3	51	3.0
10	4.8	52	0	10	4.8	52	0
11	4.8	53	-0.1	11	0	53	0
12	0	54	4.8	12	0	54	4.8
13	0	55	-0.1	13	0.5	55	0
14	0	56	4.6	14	-0.4	56	1.9
15	1.1	57	0	15	-1.0	57	4.7
16	0	58	0	16	-1.2	58	3.7
17	0	59	4.6	17	2.8	59	4.7
18	0	60	0.1	18	0	60	3.7
19	1.3	61	0.1	19	2.0	61	0.7
20	1.5	62	0	20	1.1	62	0.7
21	1.8	63	0	21	4.8	63	0
22	1.7	64	4.7	22	0	64	---

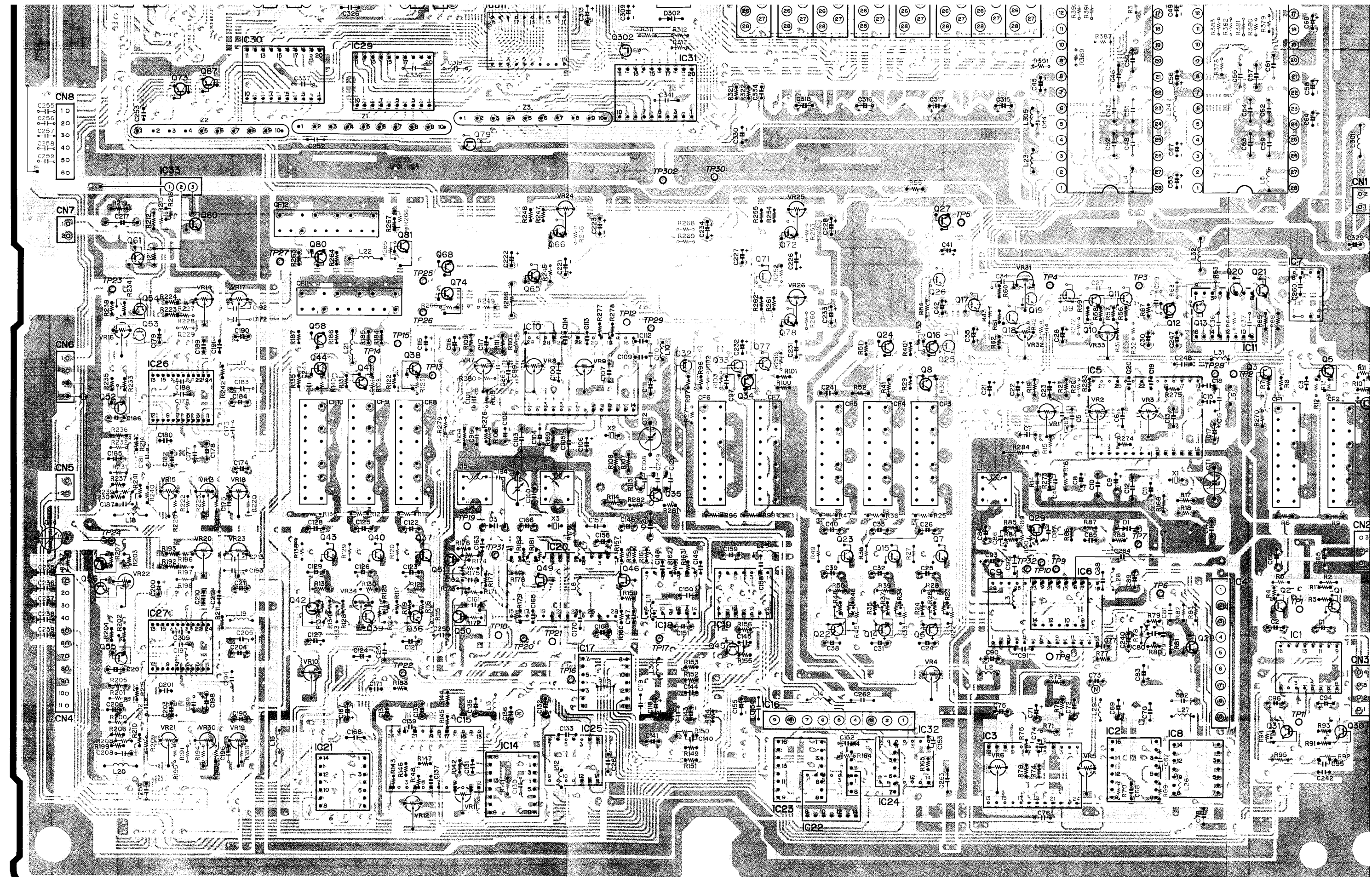


D

C

B

A



COMPONENT SIDE  
PATTERN SIDE

1

2

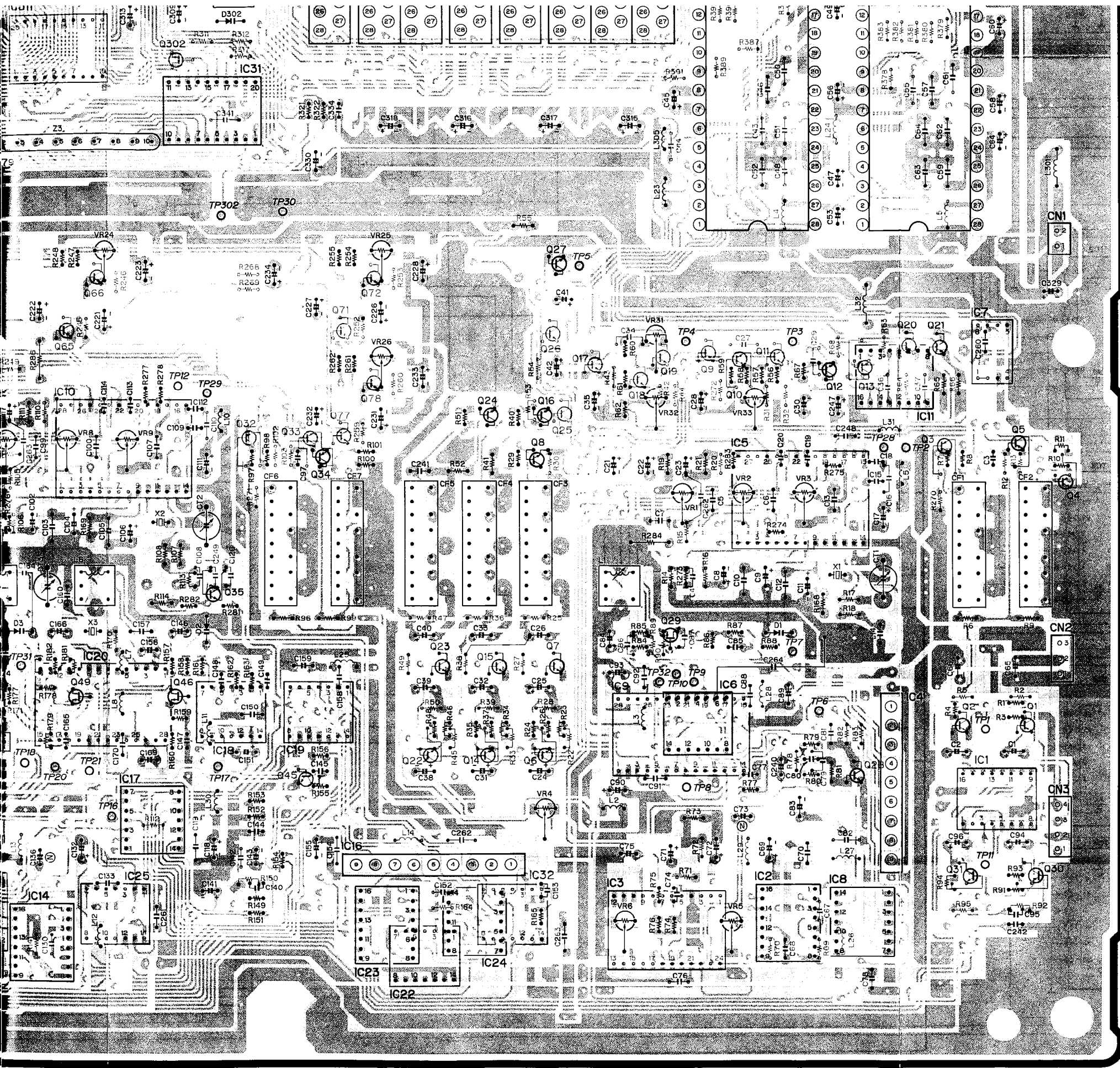
3

4

5

6





IC304	YWM5M4C500L	(A)
IC305	YWM5M4C500L	(A)
IC306	YWM5M4C500L	(A)
IC307	YWM5M4C500L	(A)
IC308	YWM5M4C500L	(A)
IC309	YWM5M4C500L	(A)
IC310	YWM5M4C500L	(A)
IC311	MN74HC273S	(A)
IC312	MN74HC273S	(A)
IC313	MN74HC157S	(A)
IC314	YWPD41102C15	(A)
IC315	YWPD41102C15	(A)
IC316	YWPD41102C15	(A)
IC317	MN74HC153S	(A)
IC318	MN74HC153S	(A)
IC319	MN74HC153S	(A)
IC320	MN74HC153S	(A)
Q1	25B709-Q	(A)
Q2	25D601-RS	(A)
Q3	25B709-Q	(A)
Q4	25B709-Q	(A)
Q5	25B709-Q	(A)
Q6	25D601-RS	(A)
Q7	25D601-RS	(A)
Q8	25D601-RS	(A)
Q9	25D601-RS	(A)
Q10	25D601-RS	(A)
Q11	25D601-RS	(A)
Q12	25D601-RS	(A)
Q13	25D601-RS	(A)
Q14	25D601-RS	(A)
Q15	25D601-RS	(A)
Q16	25D601-RS	(A)
Q17	25D601-RS	(A)
Q18	25D601-RS	(A)
Q19	25D601-RS	(A)
Q20	25D601-RS	(A)
Q21	25D601-RS	(A)
Q22	25D601-RS	(A)
Q23	25D601-RS	(A)
Q24	25D601-RS	(A)
Q25	25D601-RS	(A)
Q26	25D601-RS	(A)
Q27	25D601-RS	(A)
Q28	25D601-RS	(A)
Q29	25K198-Q	(A)
Q30	25B709-Q	(A)
Q31	25D601-RS	(A)
Q32	25B709-Q	(A)
Q33	25B709-Q	(A)
Q34	25B709-Q	(A)
Q35	25C2404-CDTW	(A)
Q36	25D601-RS	(A)
Q37	25D601-RS	(A)
Q38	25D601-RS	(A)
Q39	25D601-RS	(A)
Q40	25D601-RS	(A)
Q41	25D601-RS	(A)
Q42	25D601-RS	(A)
Q43	25D601-RS	(A)
Q44	25D601-RS	(A)
Q45	25D601-RS	(A)
Q46	25K198-Q	(A)
Q49	25K198-Q	(A)
Q50	25C2404-CDTW	(A)
Q51	25C2404-CDTW	(A)
Q52	25C2404-CDTW	(A)
Q53	25C2404-CDTW	(A)
Q54	25C2404-CDTW	(A)
Q55	25C2404-CDTW	(A)
Q56	25C2404-CDTW	(A)
Q57	25C2404-CDTW	(A)
Q58	25B709-Q	(A)
Q60	25D601-RS	(A)
Q61	25D602-QRS	(A)
Q65	25D601-RS	(A)
Q66	25D601-RS	(A)
Q67	25B709-Q	(A)
Q68	25B709-Q	(A)
Q71	25D601-RS	(A)
Q72	25D601-RS	(A)
Q73	25B709-Q	(A)
Q74	25B709-Q	(A)
Q77	25D601-RS	(A)
Q78	25D601-RS	(A)
Q79	25A1022-C	(A)
Q80	25B709-Q	(A)
Q81	25B709-Q	(A)
Q301	25K198-Q	(A)
Q302	25K198-Q	(A)
D1	15V153	(A)
D2	15V153	(A)
D3	15V153	(A)
D301	15V153	(A)
D302	15V153	(A)

Pin No.	IC301	Pin No.	IC301	Pin No.	IC302	Pin No.	IC302
1	2.4	43	0.8	1	2.4	43	1.0
2	---	44	0	2	2.3	44	0.9
3	-2.1	45	1.9	3	0	45	1.2
4	---	46	0	4	0	46	0.4
5	---	47	2.2	5	0	47	0
6	0.4	48	2.3	6	0	48	0
7	0.4	49	0	7	1.5	49	4.2
8	-0.9	50	2.3	8	0	50	---
9	-0.9	51	0	9	0.3	51	3.0
10	4.8	52	0	10	4.8	52	0
11	4.8	53	-0.1	11	0	53	0
12	0	54	4.8	12	0	54	4.8
13	0	55	-0.1	13	0.5	55	0
14	0	56	4.6	14	-0.4	56	1.9
15	1.1	57	0	15	-1.0	57	4.7
16	0	58	0	16	-1.2	58	3.7
17	0	59	4.6	17	2.8	59	4.7
18	0	60	0.1	18	0	60	3.7
19	1.3	61	0.1	19	2.0	61	0.7
20	1.5	62	0	20	1.1	62	0.7
21	1.8	63	0	21	4.8	63	0
22	1.2	64	4.7	22	0	64	2.3
23	1.1	65	4.7	23	1.4	65	0
24	0	66	4.6	24	1.4	66	2.3
25	0	67	-2.9	25	1.3	67	2.2
26	0	68	-0.7	26	0.6	68	0
27	1.3	69	-0.5	27	2.3	69	1.9
28	1.5	70	-2.2	28	1.9	70	0
29	1.8	71	0.9	29	1.9	71	0.8
30	1.3	72	1.4	30	0	72	0
31	0	73	4.8	31	0	73	4.8
32	0	74	0	32	4.8	74	0
33	4.8	75	0	33	4.8	75	0
34	0.7	76	0.6	34	1.9	76	0
35	---	77	0.1	35	1.9	77	0
36	0	78	0.4	36	1.6	78	0.8
37	0	79	-0.5	37	1.3	79	0
38	---	80	-1.2	38	0.8	80	0
39	0.8	81	-1.2	39	0.9	81	4.8
40	0	82	1.7	40	2.4	82	1.7
41	0	83	1.8	41	1.6	83	1.7
42	0	84	2.4	42	2.0	84	2.0

# SCHEMATIC DIAGRAM C

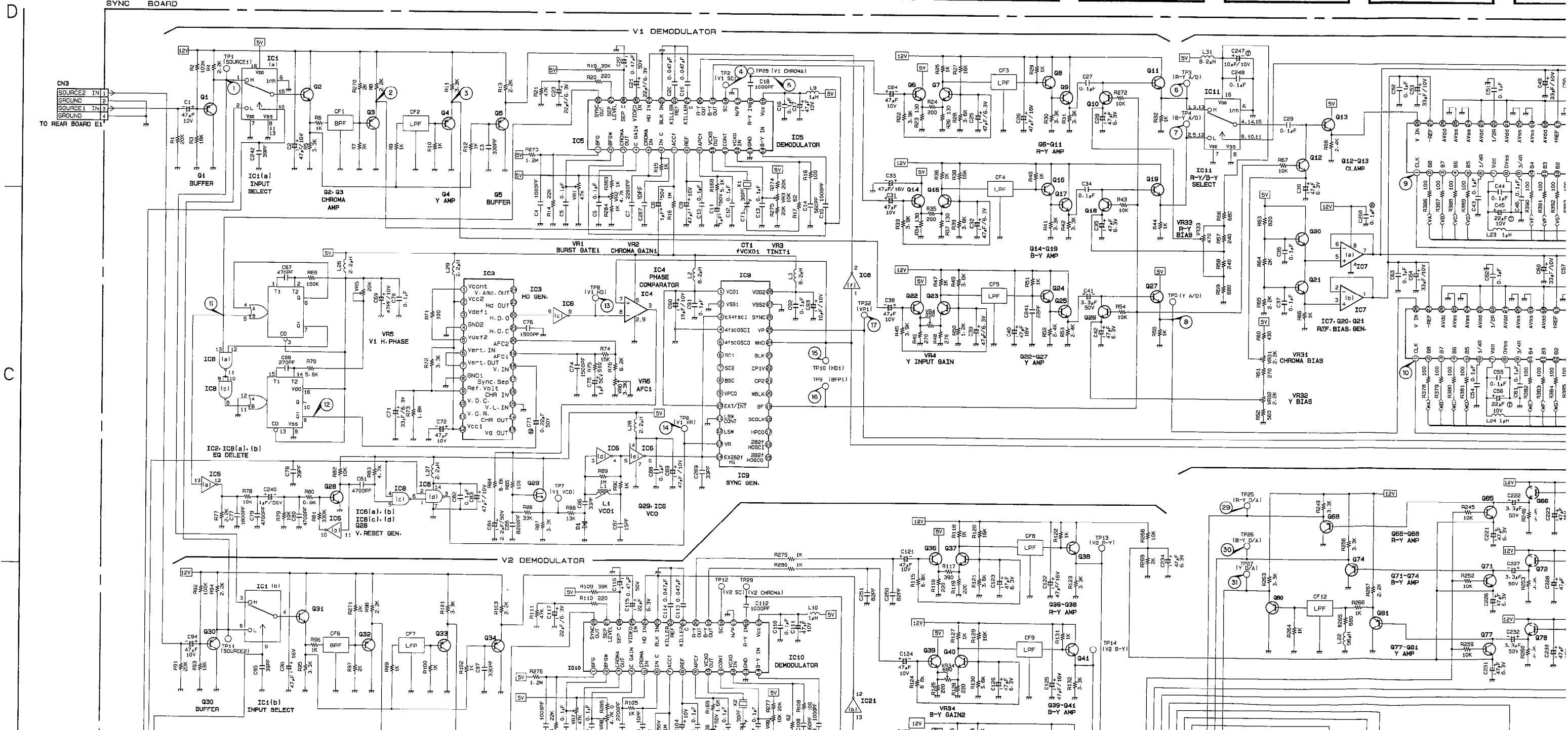
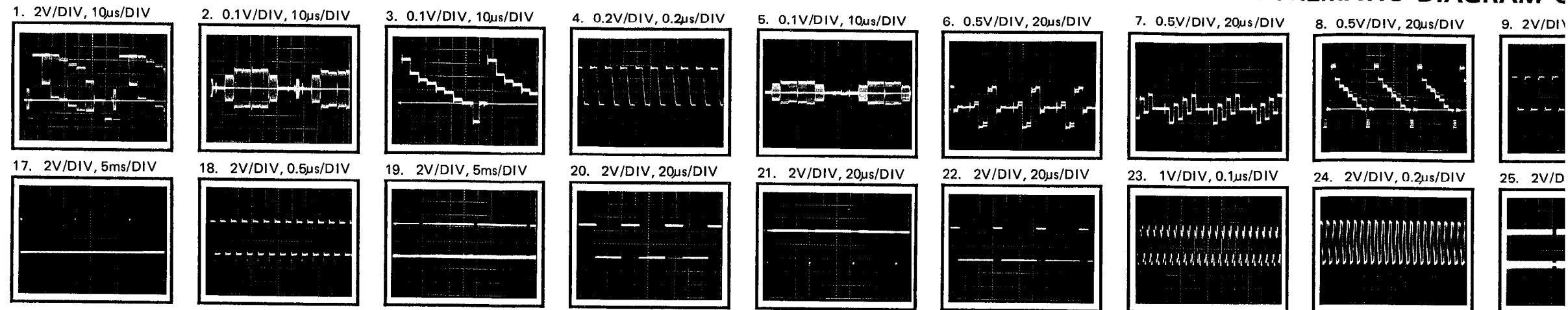
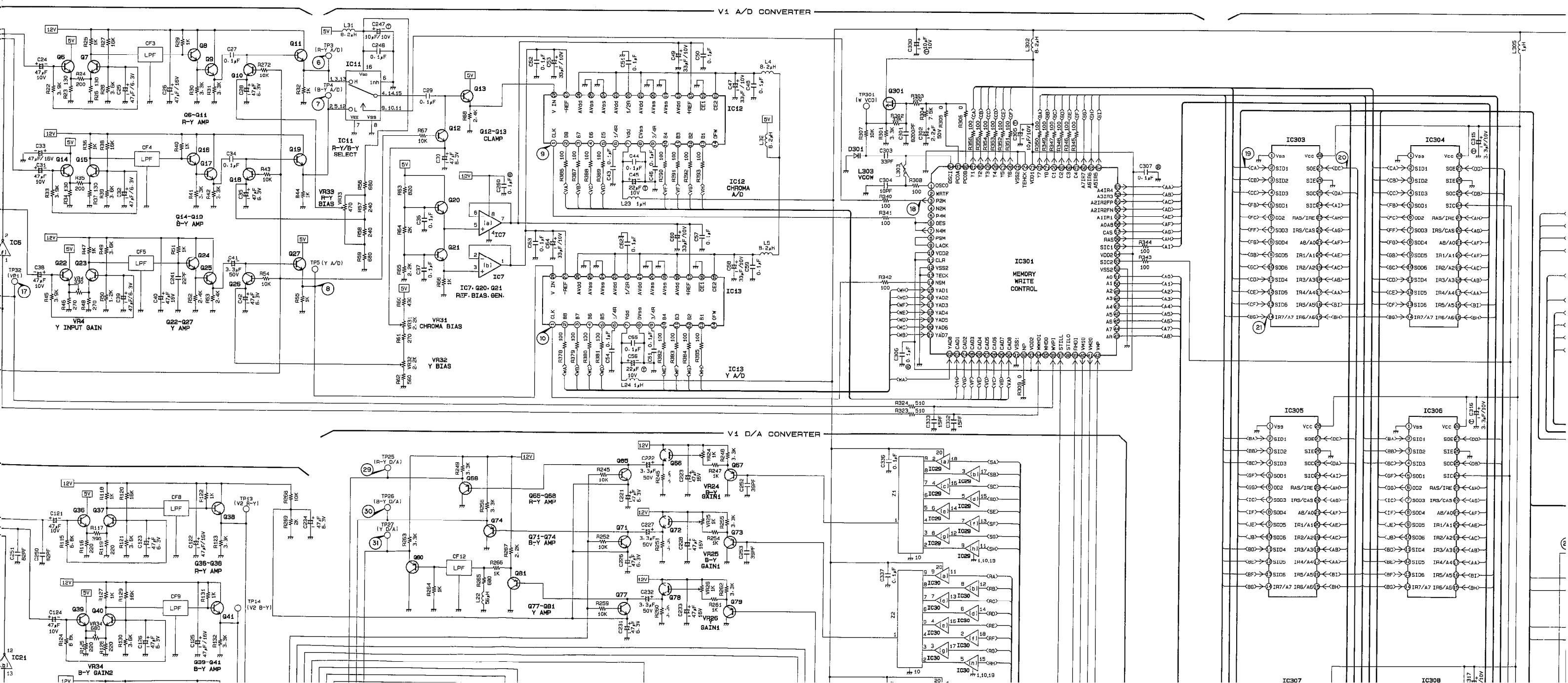
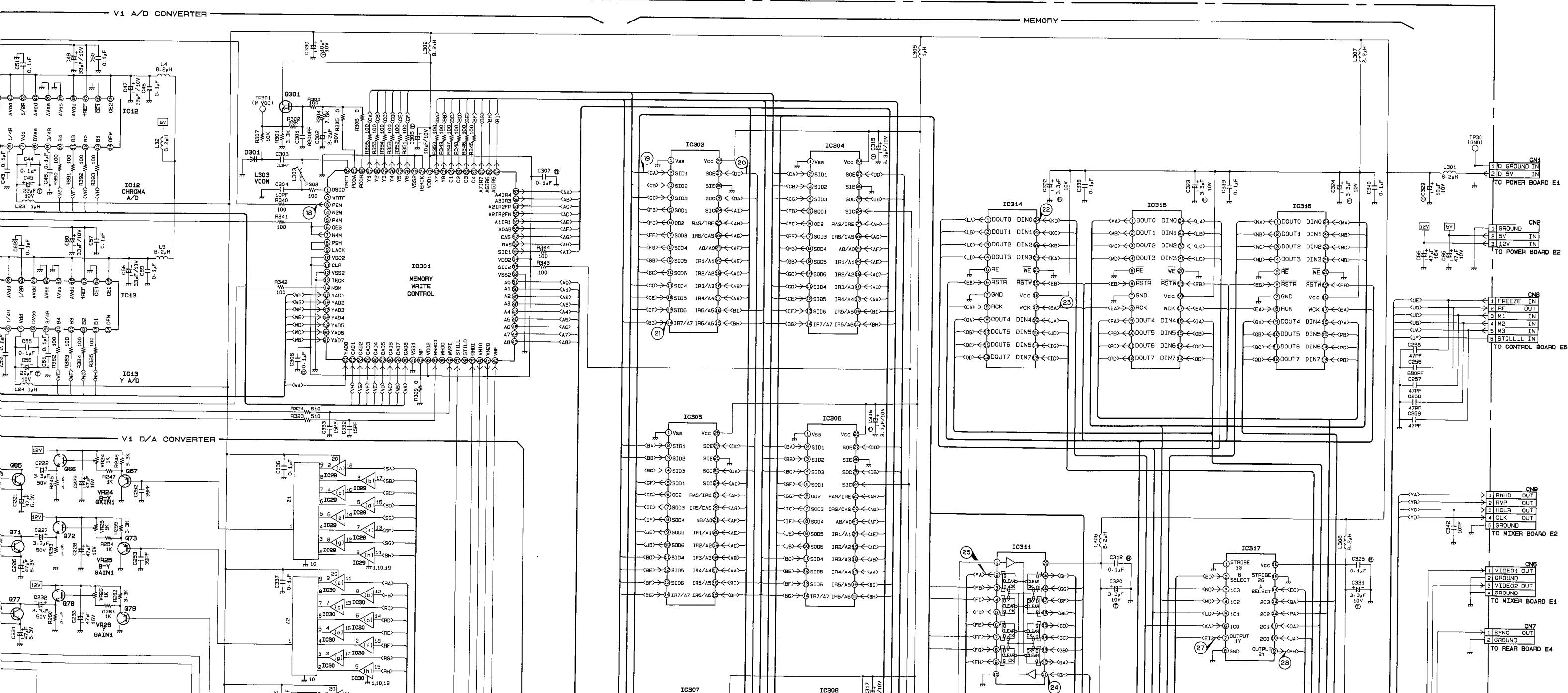
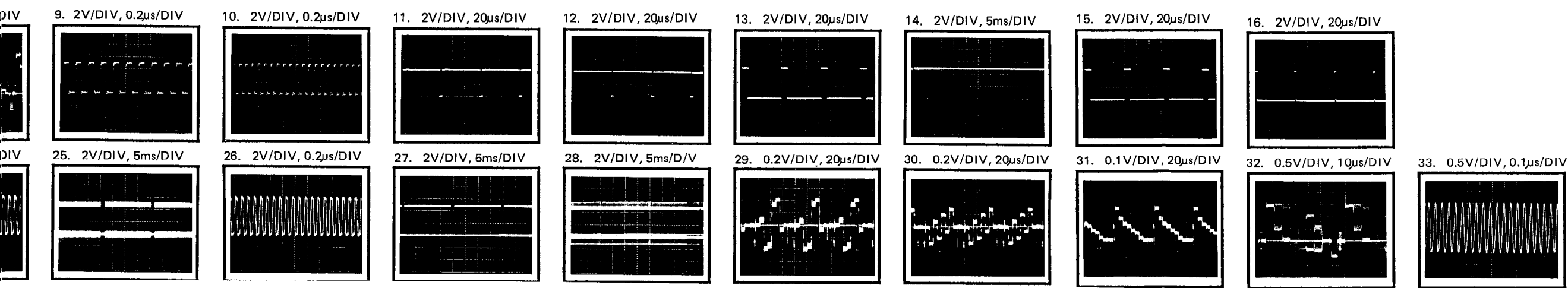


Figure 1 displays 32 oscilloscope waveforms, each with its corresponding settings (V/DIV,  $\mu\text{s}/\text{DIV}$  or  $\text{ms}/\text{DIV}$ ).

- 1. 0.2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 2. 0.1V/DIV, 10 $\mu\text{s}/\text{DIV}$
- 3. 0.5V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 4. 0.5V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 5. 2V/DIV, 0.2 $\mu\text{s}/\text{DIV}$
- 6. 2V/DIV, 0.2 $\mu\text{s}/\text{DIV}$
- 7. 2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 8. 2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 9. 2V/DIV, 5ms/DIV
- 10. 2V/DIV, 0.2 $\mu\text{s}/\text{DIV}$
- 11. 2V/DIV, 5ms/DIV
- 12. 2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 13. 2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 14. 2V/DIV, 5ms/DIV
- 15. 2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 16. 2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 17. 2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 18. 2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 19. 1V/DIV, 0.1 $\mu\text{s}/\text{DIV}$
- 20. 2V/DIV, 0.2 $\mu\text{s}/\text{DIV}$
- 21. 2V/DIV, 5ms/DIV
- 22. 2V/DIV, 0.2 $\mu\text{s}/\text{DIV}$
- 23. 2V/DIV, 5ms/DIV
- 24. 2V/DIV, 5ms/DIV
- 25. 0.2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 26. 0.2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 27. 0.1V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 28. 0.2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 29. 0.2V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 30. 0.1V/DIV, 20 $\mu\text{s}/\text{DIV}$
- 31. 0.1V/DIV, 20 $\mu\text{s}/\text{DIV}$



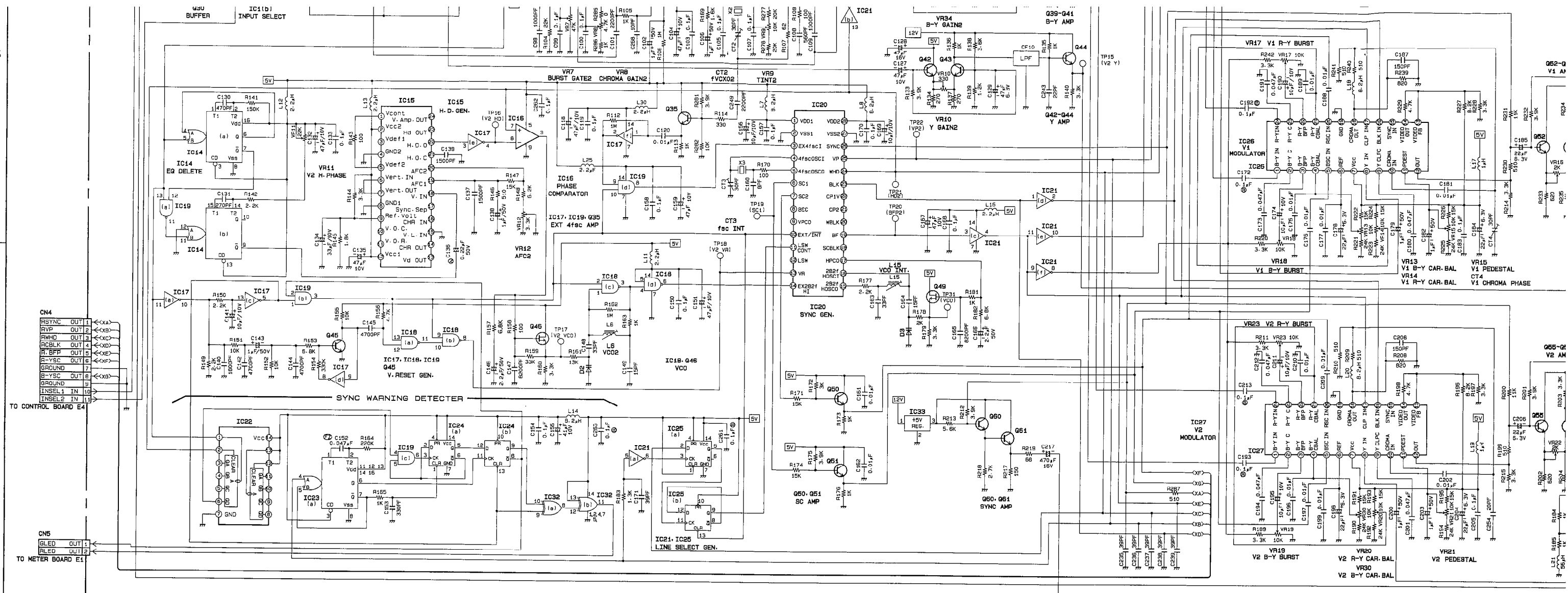
9. 2V/DIV, 0.2μs/DIV      10. 2V/DIV, 0.2μs/DIV





B

A



1

2

3

4

Pin No.	IC1	IC2	IC3	IC4	IC5	IC6	IC7	IC8	IC9	IC10
1	2.6	0	4.1	---	2.7	0.7	1.4	0	4.7	0
2	2.6	2.4	4.8	0	1.8	4.0	1.4	5.0	0	2.0
3	2.7	4.8	---	2.0	2.1	2.2	1.4	4.8	-4.6	2.1
4	2.7	3.0	0	---	2.3	2.2	0	5.0	0	2.4
5	2.7	4.0	4.1	4.8	2.8	2.2	3.3	4.8	---	2.8
6	0	3.0	0.7	0.8	2.8	-4.6	3.3	0	---	2.8
7	0	1.7	0.7	0.8	4.0	0	3.3	0	---	4.3
8	0	0	0	---	2.8	0.8	11.8	1.7	---	2.9
9	0	4.8	1.8	0	2.8	4.0	3.0	---	0	---
10	---	---	---	2.6	0	3.0	4.8	2.6	---	---
11	0	1.7	---	2.2	4.7	3.0	0	2.2	---	---
12	---	0	4.8	3.1	0.3	1.7	---	3.1	---	---
13	0	4.8	---	0	4.0	4.0	4.7	0	---	---
14	---	4.5	---	2.7	4.8	4.8	-4.6	2.7	---	---
15	2.7	0	0	4.8	---	---	---	4.8	---	---
16	4.8	4.8	---	2.7	---	---	---	2.7	---	---
17	---	---	---	0	---	---	---	---	---	0
18	---	5.1	---	3.8	---	---	---	3.8	---	---
19	0	0	2.0	0.1	2.0	---	---	0.1	2.0	---
20	---	2.8	2.0	---	2.0	---	---	2.0	---	---
21	---	2.9	2.1	---	---	---	---	---	0	---
22	---	4.0	2.6	---	---	---	---	---	0	---
23	---	---	4.0	---	---	---	---	4.0	---	---
24	---	---	4.0	---	---	---	0.7	4.0	---	---
25	---	2.7	---	---	---	---	0	2.7	---	---
26	---	2.8	---	---	---	---	---	2.2	---	---
27	---	2.5	---	---	---	---	0	2.8	---	---
28	---	3.9	---	---	---	---	4.8	0	---	---

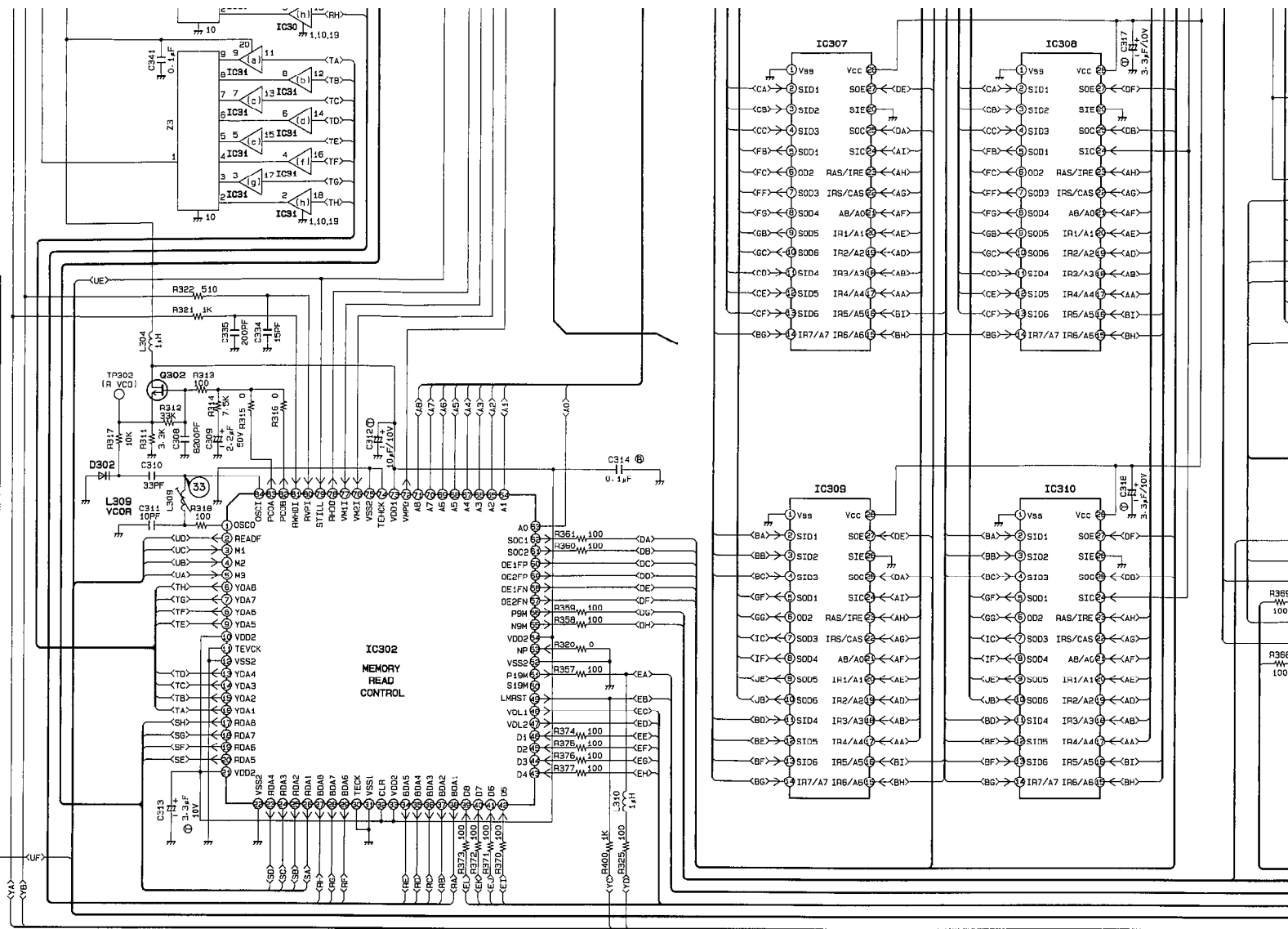
Pin No.	IC11	IC12	IC13	IC14	IC15	IC16	IC17	IC18	IC19	IC20
1	1.8	0.4	0.4	0	4.0	---	2.2	4.8	0	4.8
2	1.8	1.3	1.3	4.7	4.8	---	2.1	0	0	0
3	1.8	1.8	1.8	4.8	---	4.8	4.0	4.8	0	2.1
4	1.8	1.5	1.5	0	0	4.8	0.8	4.8	0	2.2
5	1.8	1.3	1.3	0.1	4.0	---	0	4.8	4.8	2.3
6	0	2.0	2.0	0	0.7	---	0	0	2.3	---
7	0	4.8	4.8	4.7	0.7	0.7	---	0	0	---
8	0	0	0	0	0.8	0	4.8	0	---	---
9	2.1	0	0	4.8	1.8	4.8	0	2.1	0	---
10	2.1	0	0	---	---	4.7	4.8	0	0	---
11	2.1	0	0	0	---	0.1	4.8	0	---	---
12	1.8	0	0	0	4.8	---	4.8	4.7	4.8	---
13	1.8	1.1	1.1	4.8	---	4.6	0	0.1	0	---
14	1.8	---	---	4.8	---	4.8	4.8	4.8	2.2	---
15	1.8	4.8	4.8	0	0	---	---	2.2	---	---
16	4.8	0	0	4.8	---	---	---	1.4	---	---
17	---	3.4	3.4	---	---	---	---	0.2	---	---
18	4.8	4.8	4.8	4.1	---	---	---	0.2	---	---
19	0	0	0	0	---	---	---	---	---	---
20	0	0	0	2.0	---	---	---	---	---	---
21	4.8	4.8	2.9	---	---	---	---	---	---	---
22	0	0	4.0	---	---	---	---	1.2	---	---
23	4.8	4.8	---	---	---	---	---	0.7	---	---
24	0	0	---	---	---	---	---	0	---	---
25	0	0	---	---	---	---	---	4.8	---	---
26	4.8	4.8	---	---	---	---	---	0	---	---
27	1.4	1.4	---	---	---	---	---	4.8	---	---
28	2.5	2.5	---	---	---	---	---	---	---	---

Pin No.	IC21	IC22	IC23	IC24	IC25	IC26	IC27	IC29	IC30	IC31	IC32	IC33
1	1.2	0.1	0	3.4	4.8	2.2	2.2	0	0	0	0	11.8
2	3.6	0.7	3.1	4.8	0.7	1.7	0.5	1.9	0.9	0	0	4.8
3	0.2	---	4.8	0	4.7	2.8	1.2	1.9	1.4	---	---	---
4	4.8	---	0	4.8	4.8	2.9	2.9	1.2	1.9	0.6	0	---
5	0	---	3.4	0	2.3	3.5	3.5	1.3	2.2	0.1	0	---
6	4.7	0	1.3	4.8	---	2.9	2.9	1.1	1.6	0.2	---	---
7	0	0	3.4	0	0	4.8	4.8	1.9	1.5	-0.8	0	---
8	0.2	---	0	4.8	4.8	2.2	2.2	1.4	1.3	-1.5	0	---
9	4.8	---	---	0	0	1.7	1.7	2.7	0.6	-1.4	0	---
10	0.2	---	---	4.8	4.8	2.9	2.9	0	0	0	0	---
11	4.8	---	4.8	1.3	2.3	2.8	2.9	2.7	0.6	-1.4	0	---
12	4.0	4.8	4.8	0	4.8	2.3	2.1	1.4	1.3	-1.5	0	---
13	1.2	4.8	4.8	0	0	1.8	1.7	1.9	1.5	-0.8	4.8	---
14	4.8	4.8	4.8	4.8	4.8	1.7	1.4	1.1	1.6	0.2	4.8	---
15	---	---	---	---	---	---	---	1.3	2.2	0.1	---	---
16	---	---	---	---	---	3.6	3.6	1.2	1.9	0.6	---	---
17	---	---	---	---	---	4.6	4.6	1.2	1.9	1.4	---	---
18	---	---	---	---	---	3.0	3.0	0.5	1.9	0.9	---	---
19	---	---	---	---	---	0	0	0	0	0	---	---
20	---	---	---	---	---	3.5	3.5	4.8	4.8	4.8	---	---
21	---	---	---	---	---	2.8	2.9	---	---	---	---	---
22	---	---	---	---	---	2.8	2.8	---	---	---	---	---
23	---	---	---	---	---	1.7	1.7	---	---	---	---	---
24	---	---	---	---	---	2.2	2.2	---	---	---	---	---

Pin No.	IC303	IC304	IC305	IC306	IC307	IC308	IC309	IC310
1	0	-1.2	-1.2	0	0	0	0	0
2	-1.2	-1.2	1.4	1.4	-1.2	-1.2	1.4	1.4
3	-1.2	-1.2	0.9	0.9	-1.2	-1.2	0.9	0.9
4	-0.5	-0.5	-2.2	-2.2	-0.5	-0.5	-2.2	-2.2
5	0	0	2.0	-2.9	0	0	2.0	2.0
6	0	0	0.8	0.8	0	0	0.8	0.8
7	-0.2	-0.2	-0.9	-0.9	-0.2	-0.2	0.5	0.5
8	1.2	1.2	0	0	1.2	1.2	1.1	1.1
9	0.8	0.8	0	0	1.1	1.1	0	0
10	1.1	1.1	0	0	0.4	0.4	3.6	3.6
11	0.4	0.4	-0.5	-0.5	0.4	0.4	-0.5	-0.5
12	0.1	0.1	-0.7	-0.7	0.1	0.1	-0.7	-0.7
13	0.6	0.6	-2.9	-2.9	0.6	0.6	-2.9	-2.9
14	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
15	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
16	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
17	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
19	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
20	4.6	4.6	4.6	4.8	4.6	4.6	4.6	4.6
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
24	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
25	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
26	0	0	0	0	0	0	0	0
27	3.7	4.7	3.7	4.7	3.7	4.7	3.7	4.7
28	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8

Pin No.	IC311	IC312	IC313	IC314	IC315	IC316	IC317	IC318	IC319
1	4.8	4.8	1.9	1.0	1.0	1.0	0	0	0
2	-0.1	-2.2	-2.2	1.2	1.2	1.2	0	0	0
3	0	-0.9	-0.9	1.0	1.0	1.0	1.0	1.0	1.0
4	0	-1.5	-3.0	1.4	1.0	1.0	1.0	1.0	1.0
5	-1.5	-1.8	-1.8	0	0	0	1.0	1.0	1.0
6	-0.9	1.1	0	4.2	4.2	4.2	1.2	0.7	1.0
7	-0.2	-0.9	-2.8	0	0	0	2.0	1.6	2.0
8	1.2	0.9	0	3.0	3.0	3.0	0	0	0
9	0.9	0.5	3.6	1.2	1.2	1.2	1.0	0.9	1.0
10	0	0	0	1.0	1.0	1.0	-3.6	0	-2.0
11	0	1.9	0.5	1.2	1.2	1.2	1.2	1.0	1.0
12	1.8	1.2	0	1.2	1.2	1.2	1.2	1.0	1.0
13	0.7	1.8	0	1.2	1.2	1.2	1.2	1.0	1.0
14	1.1	0.5	1.1	1.0	1.0	1.2	0	0	0
15	0.5	-0.7	0	0.7	0.7	0.7	0	0	0
16	2.0	1.0	4.8	0.5	0.5	0.5	4.8	4.8	4.8
17	2.0	2.0	3.0	3.0	3.0	3.0	---	---	---
18	0.8	0	4.8	4.8	4.8	---	---	---	---
19	0	1.0	4.2	4.2	4.2	---	---	---	---
20	4.8	4.8	0	0	0	---	---	---	---
21	---	---	---	1.2	1.2	1.2	---	---	---
22	---	---	---	0.7	0.7	0.7	---	---	---
23	---	---	---	1.0	1.0	1.0	---	---	---
24	---	---	---	1.0	1.0	1.0	---	---	---





IC1	MN74HC4053S	B1, D1	IC307	YWM5M4C500L
IC2	MN4528BS	C1	IC308	YWM5M4C500L
IC3	AN2510S	C2	IC309	YWM5M4C500L
IC4	TC5081AP	C2	IC310	YWM5M4C500L
IC5	YWM51271FP	D2	IC311	MN74HC245
IC6	MN74HC04S	C1, C2, C3	IC312	MN74HC245
IC7	NJM3414M	C4	IC313	MN74HC15
IC8	MN74HC00S	C1, C2	IC314	YWPD4110
IC9	MN676021PPS	C2	IC315	YWPD4110
IC10	YWM51271FP	B2	IC316	YWPD4110
IC11	MN74HC4053S	D4	IC317	MN74HC15
IC12	MP7684	D4	IC318	MN74HC15
IC13	MP7684	C4	IC319	MN74HC15
IC14	MN4528BS	B1	IC320	MN74HC15
IC15	AN2510S	B2	Q1	25B709-Q
IC16	TC5081AP	B2	Q2	25D601-RS
IC17	MN74HC04S	A1, B2	Q3	25B709-Q
IC18	MN74HC00S	A2	Q4	25B709-Q
IC19	MN74HC08S	A1, B1, A:	Q5	25B709-Q
		B2	Q6	25D601-RS
IC20	MN676021PPS	B3	Q7	25D601-RS
IC21	MN74HC04S	A2, B3	Q8	25D601-RS
IC22	MN74HC393S	A1	Q9	25D601-RS
IC23	MN4528BS	A1	Q10	25D601-RS
IC24	MN74HC74S	A2	Q11	25D601-RS
IC25	MN74HC74S	A2	Q12	25D601-RS
IC26	YWM51272FP	B4	Q13	25D601-RS
IC27	YWM51272FP	A4	Q14	25D601-RS
IC29	MN74HC245S	B5, C5	Q15	25D601-RS
IC30	MN74HC245S	B5	Q16	25D601-RS
IC31	MN74HC245S	B5	Q17	25D601-RS
IC32	MN74HC86S	A2	Q18	25D601-RS
IC33	AN78LOS	A3	Q19	25D601-RS
IC301	MN51010LVJ	C5	Q20	25D601-RS
IC302	MN51015LVK	A5	Q21	25D601-RS
IC303	YWM5M4C500L	C6	Q22	25D601-RS
IC304	YWM5M4C500L	C7	Q23	25D601-RS
IC305	YWM5M4C500L	C6	Q24	25D601-RS

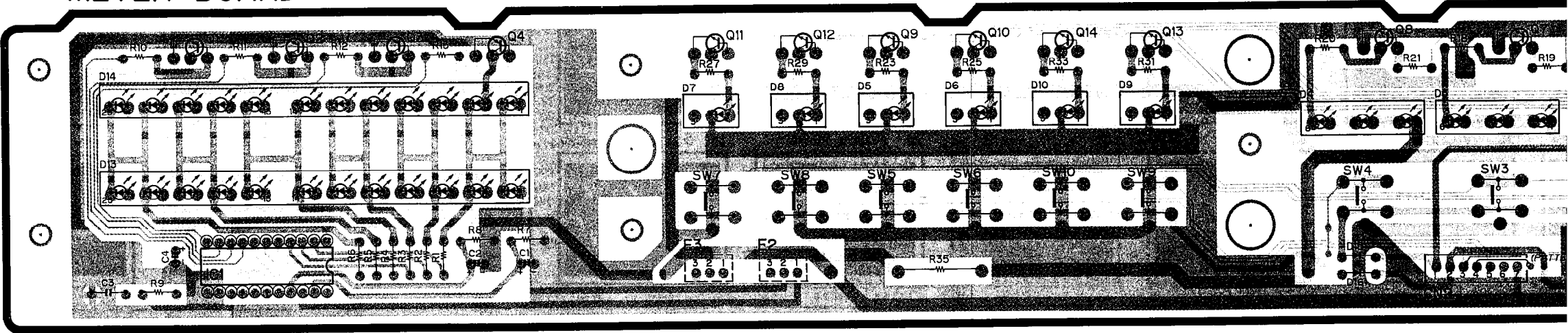
Pin No.	IC311	IC312	IC313	IC314	IC315	IC316	IC317	IC318	IC319	IC320
1	4.8	4.8	1.9	1.0	1.0	1.0	0	0	0	0
2	-0.1	-2.2	-2.2	1.2	1.2	1.2	0	0	0	0
3	0	-0.9	-0.9	1.0	1.0	1.0	1.0	1.0	1.2	1.0
4	0	-1.5	-3.0	1.0	1.0	1.0	1.0	1.0	1.2	1.0
5	-1.5	-1.8	-1.8	0	0	0	1.0	1.0	1.2	1.0
6	-0.9	1.1	0	4.2	4.2	4.2	1.2	0.7	1.0	1.0
7	-0.2	-0.9	-2.8	0	0	0	2.0	1.6	2.4	0.9
8	1.2	0.9	0	3.0	3.0	3.0	0	0	0	0
9	0.9	0.5	3.6	1.2	1.2	1.2	1.0	0.9	1.2	0.4
10	0	0	0	1.0	1.0	1.0	-3.6	0	-2.8	-3.0
11	0	1.9	0.5	1.2	1.2	1.2	1.2	1.0	1.2	1.2
12	1.8	1.2	0	1.2	1.2	1.2	1.2	1.0	1.2	1.2
13	0.7	1.8	0	1.2	1.2	1.2	1.2	1.0	1.2	1.2
14	1.1	0.5	1.1	1.0	1.0	1.2	0	0	0	0
15	0.5	0.7	0	0.7	0.7	0.7	0	0	0	0
16	2.0	1.0	4.8	0.5	0.5	0.5	4.8	4.8	4.8	4.8
17	2.0	2.0		3.0	3.0	3.0				
18	0.8	0		4.8	4.8	4.8				
19	0	1.0		4.2	4.2	4.2				
20	4.8	4.8		0	0	0				
21				1.2	1.2	1.2				
22				0.7	0.7	0.7				
23				1.0	1.0	1.0				
24				1.0	1.0	1.0				

	Q81			Q46	Q49	Q301	Q302
B	2.3		G	4.7	1.4	1.7	1.7
C	0		S	4.5	1.7	2.5	2.0
E	2.8		D	4.8	4.8	4.8	4.8

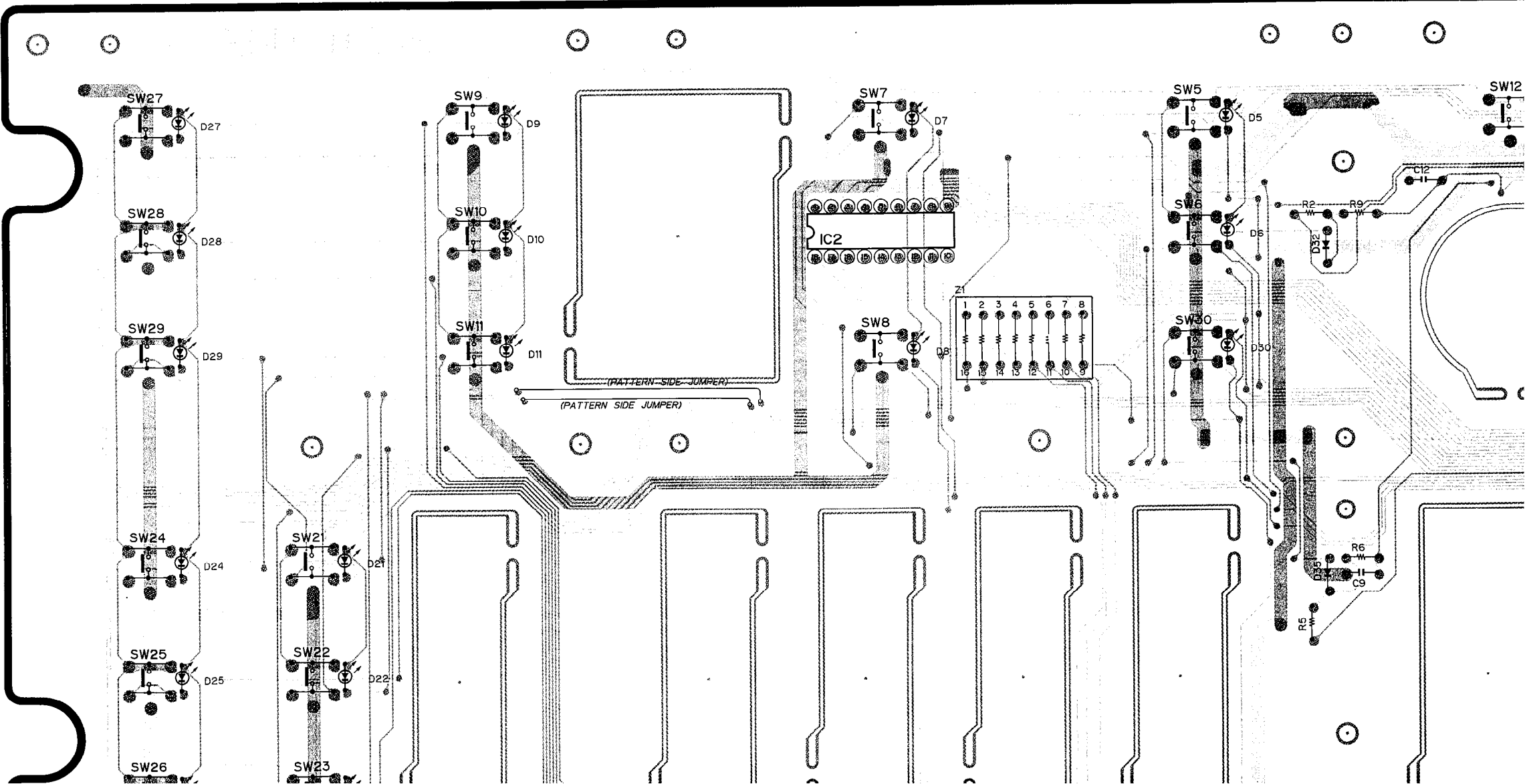


METER BOARD

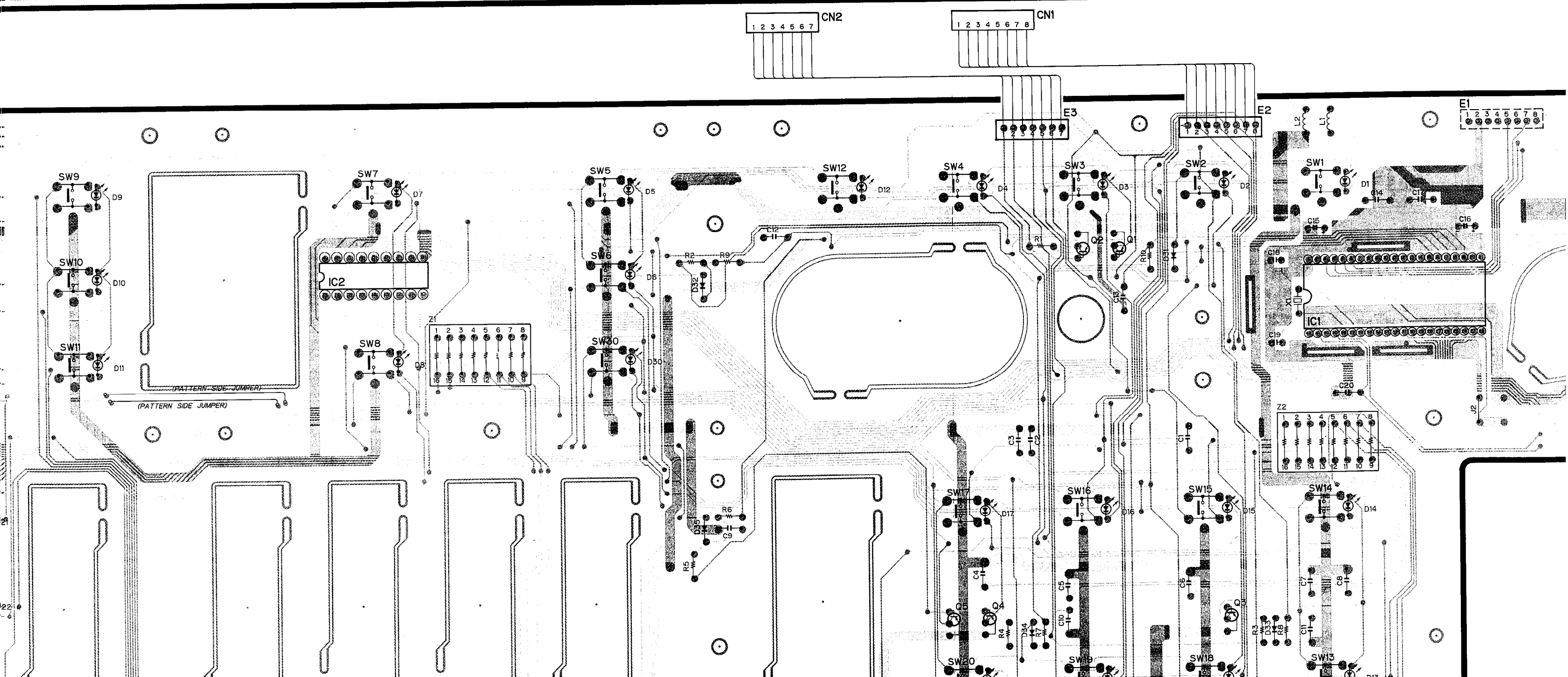
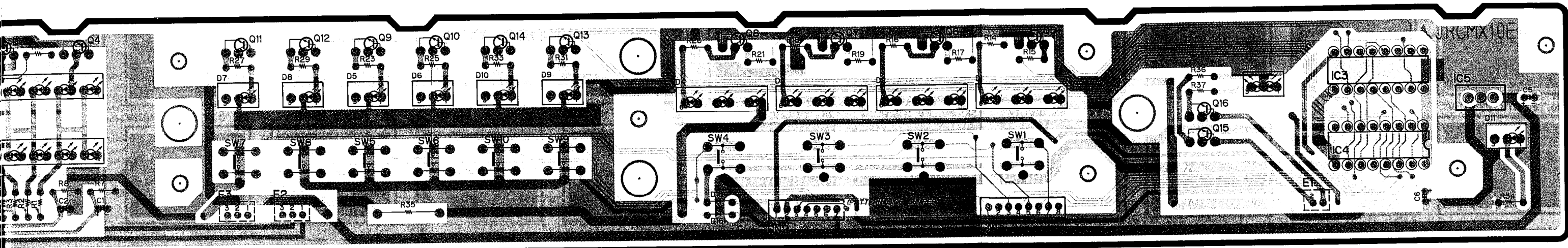
CONDUCTOR VIEW OF METER BOARD



SWITCH BOARD

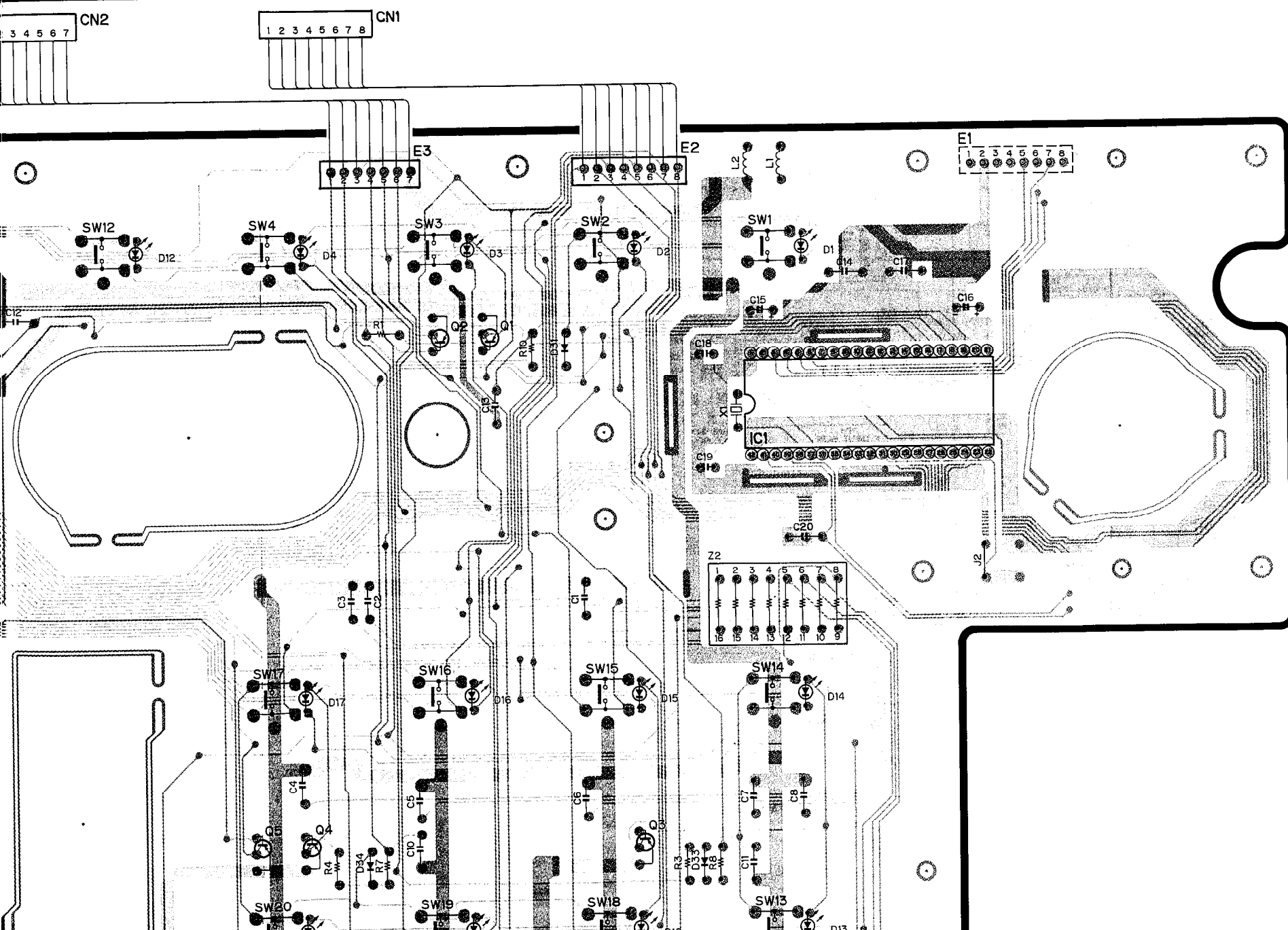
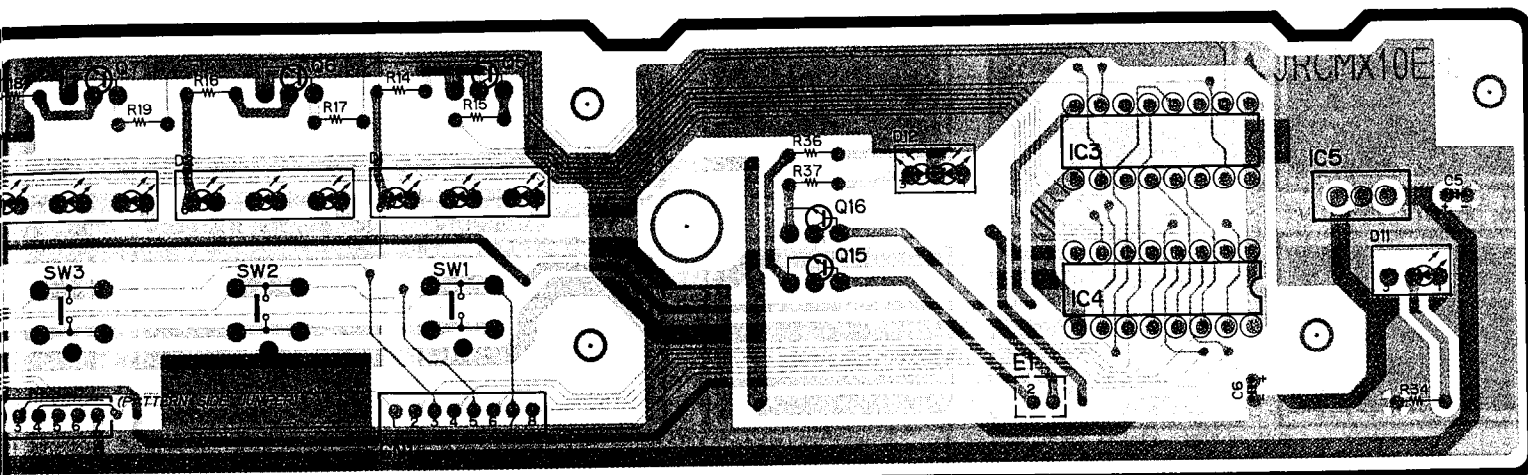


CONDUCTOR VIEW OF METER BOARD AND SWITCH BOARD





# ER BOARD AND SWITCH BOARD



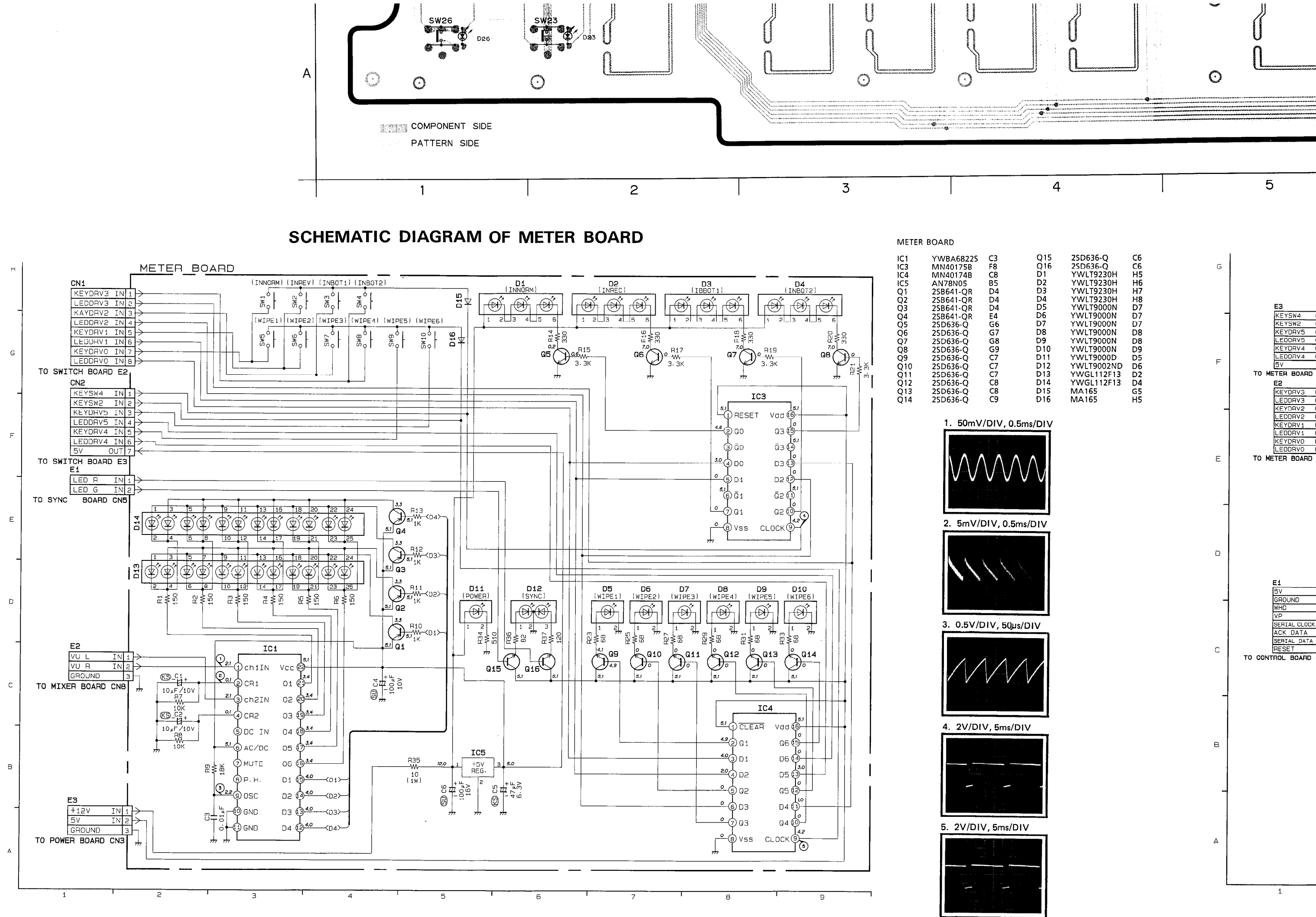
## METER BOARD

IC1	YWBA6822S	D1
IC3	MN40175B	D7
IC4	MN40174B	D7
IC5	AN78N05	D8
Q1	2SB641-QR	E1
Q2	2SB641-QR	E1
Q3	2SB641-QR	E2
Q4	2SB641-QR	E2
Q5	2SD636-Q	E6
Q6	2SD636-Q	E6
Q7	2SD636-Q	E5
Q8	2SD636-Q	E5
Q9	2SD636-Q	E3
Q10	2SD636-Q	E4
Q11	2SD636-Q	E3
Q12	2SD636-Q	E3
Q13	2SD636-Q	E4
Q14	2SD636-Q	E4
Q15	2SD636-Q	D7
Q16	2SD636-Q	D7
D1	YWLT9230H	E6
D2	YWLT9230H	E5
D3	YWLT9230H	E5
D4	YWLT9230H	E5
D5	YWLT9000N	E3
D6	YWLT9000N	E4
D7	YWLT9000N	E3
D8	YWLT9000N	E3
D9	YWLT9000N	E4
D10	YWLT9000N	E4
D11	YWLT9000D	D8
D12	YWLT9002ND	E7
D13	YWGL112F13	E1
D14	YWGL112F13	D1
D15	MA165	D5
D16	MA165	D5

## SWITCH BOARD

IC1	MN15542CCE1	C7
IC2	AN90B20	C3
Q1	2SB641-QR	C6
Q2	2SB641-QR	C6
Q3	2SB641-QR	A7
Q4	2SB641-QR	A6
Q5	2SB641-QR	A6
D1	YWGL1HS211	C7
D2	YWGL1HS211	C7
D3	YWGL1HS211	C6
D4	YWGL1HS211	C6
D5	YWGL1HS211	C4
D6	YWGL1HS211	C4
D7	YWGL1HS211	C3
D8	YWGL1HS211	C3
D9	YWGL1HS211	C2
D10	YWGL1HS211	C2
D11	YWGL1HS211	C2
D12	YWGL1HS211	C5
D13	YWGL1HS211	A7
D14	YWGL1HS211	B7
D15	YWGL1HS211	B7
D16	YWGL1HS211	B6
D17	YWGL1HS211	B6
D18	YWGL1HS211	A7
D19	YWGL1HS211	A6
D20	YWGL1HS211	A6
D21	YWGL1HS211	B2
D22	YWGL1HS211	A2
D23	YWGL1HS211	A2
D24	YWGL1HS211	B1
D25	YWGL1HS211	B1
D26	YWGL1HS211	A1
D27	YWGL1HS211	C1
D28	YWGL1HS211	C1
D29	YWGL1HS211	C1
D30	YWGL1HS211	C4
D31	MA165	C7
D32	MA165	C5
D33	MA165	A7
D34	MA165	A6
D35	MA165	B5

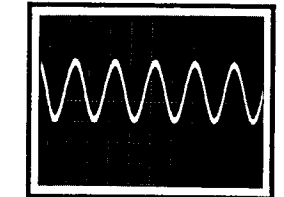
# SCHEMATIC DIAGRAM OF METER BOARD



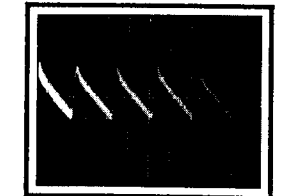
## METER BOARD

IC1	YWBA68225	C3	Q15	25D636-Q	C6
IC3	MN40175B	F8	Q16	25D636-Q	C6
IC4	MN40174B	C8	D1	YWL79230H	H5
IC5	AN78N05	B5	D2	YWL79230H	H6
Q1	25B641-QR	D4	D3	YWL79230H	H7
Q2	25B641-QR	D4	D4	YWL79230H	H8
Q3	25B641-QR	D4	D5	YWL79000N	D7
Q4	25B641-QR	E4	D6	YWL79000N	D7
Q5	25D636-Q	G6	D7	YWL79000N	D7
Q6	25D636-Q	G7	D8	YWL79000N	D8
Q7	25D636-Q	G8	D9	YWL79000N	D8
Q8	25D636-Q	G9	D10	YWL79000N	D9
Q9	25D636-Q	C7	D11	YWL79000D	D5
Q10	25D636-Q	C7	D12	YWL79002ND	D6
Q11	25D636-Q	C7	D13	YWL79002ND	D6
Q12	25D636-Q	C8	D14	YWL79002ND	D6
Q13	25D636-Q	C8	D15	YWL79002ND	D6
Q14	25D636-Q	C9	D16	YWL79002ND	D6

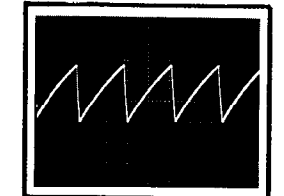
1. 50mV/DIV, 0.5ms/DIV



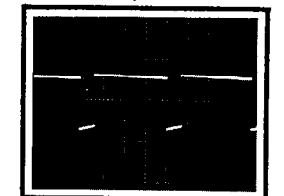
2. 5mV/DIV, 0.5ms/DIV



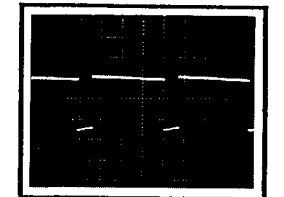
3. 0.5V/DIV, 50μs/DIV



4. 2V/DIV, 5ms/DIV

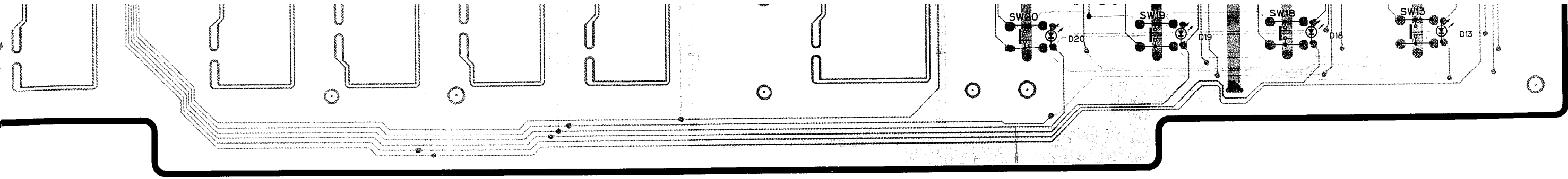


5. 2V/DIV, 5ms/DIV



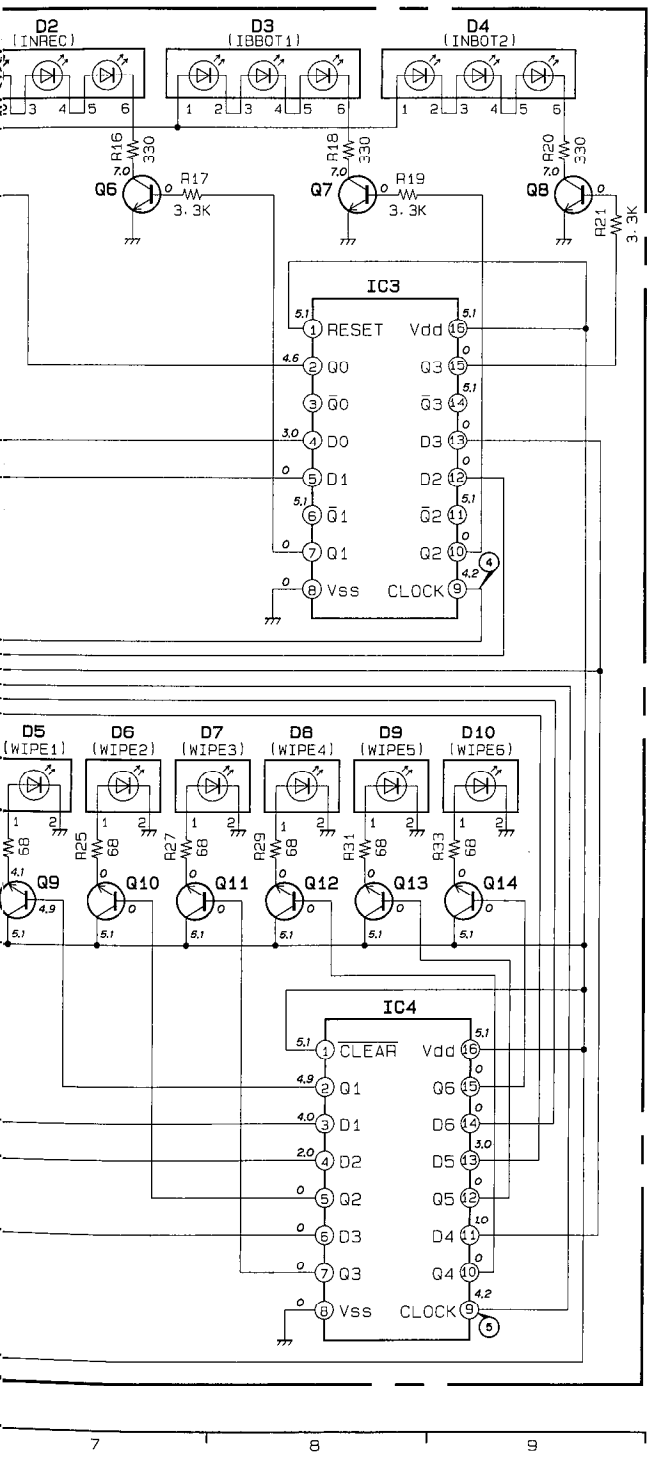
E3	KEYSW4	OUT
E3	KEYSW2	OUT
E3	KEYDRV5	OUT
E3	LEDDRV5	OUT
E3	KEYDRV4	OUT
E3	LEDDRV4	OUT
E3	5V	IN
E3	TO METER BOARD CN2	

E1	5V	IN
E1	GROUND	IN
E1	VP	IN
E1	SERIAL CLOCK OUT	IN
E1	ACK DATA IN	IN
E1	SERIAL DATA OUT	IN
E1	RESET	IN
E1	TO CONTROL BOARD CN4	



2 3 4 5 6 7 8

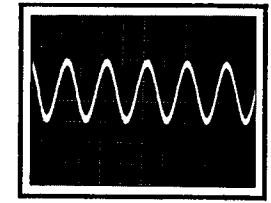
# BOARD



## METER BOARD

IC1	YWBA6822S	C3	Q15	2SD636-Q	C6
IC3	MN40175B	F8	Q16	2SD636-Q	C6
IC4	MN40174B	C8	D1	YWLT9230H	H5
IC5	AN78N05	B5	D2	YWLT9230H	H6
Q1	2SB641-QR	D4	D3	YWLT9230H	H7
Q2	2SB641-QR	D4	D4	YWLT9230H	H8
Q3	2SB641-QR	D4	D5	YWLT9000N	D7
Q4	2SB641-QR	E4	D6	YWLT9000N	D7
Q5	2SD636-Q	G6	D7	YWLT9000N	D7
Q6	2SD636-Q	G7	D8	YWLT9000N	D8
Q7	2SD636-Q	G8	D9	YWLT9000N	D8
Q8	2SD636-Q	G9	D10	YWLT9000N	D9
Q9	2SD636-Q	C7	D11	YWLT9000D	D5
Q10	2SD636-Q	C7	D12	YWGL112F13	D2
Q11	2SD636-Q	C7	D13	YWGL112F13	D4
Q12	2SD636-Q	C8	D14	MA165	G5
Q13	2SD636-Q	C8	D15	MA165	H5
Q14	2SD636-Q	C9	D16	MA165	H5

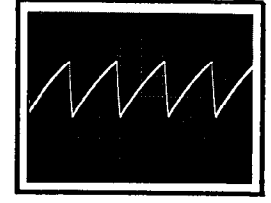
1. 50mV/DIV, 0.5ms/DIV



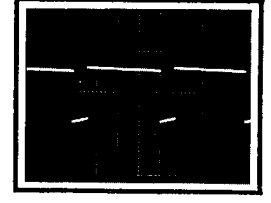
2. 5mV/DIV, 0.5ms/DIV



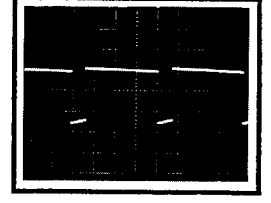
3. 0.5V/DIV, 50μs/DIV



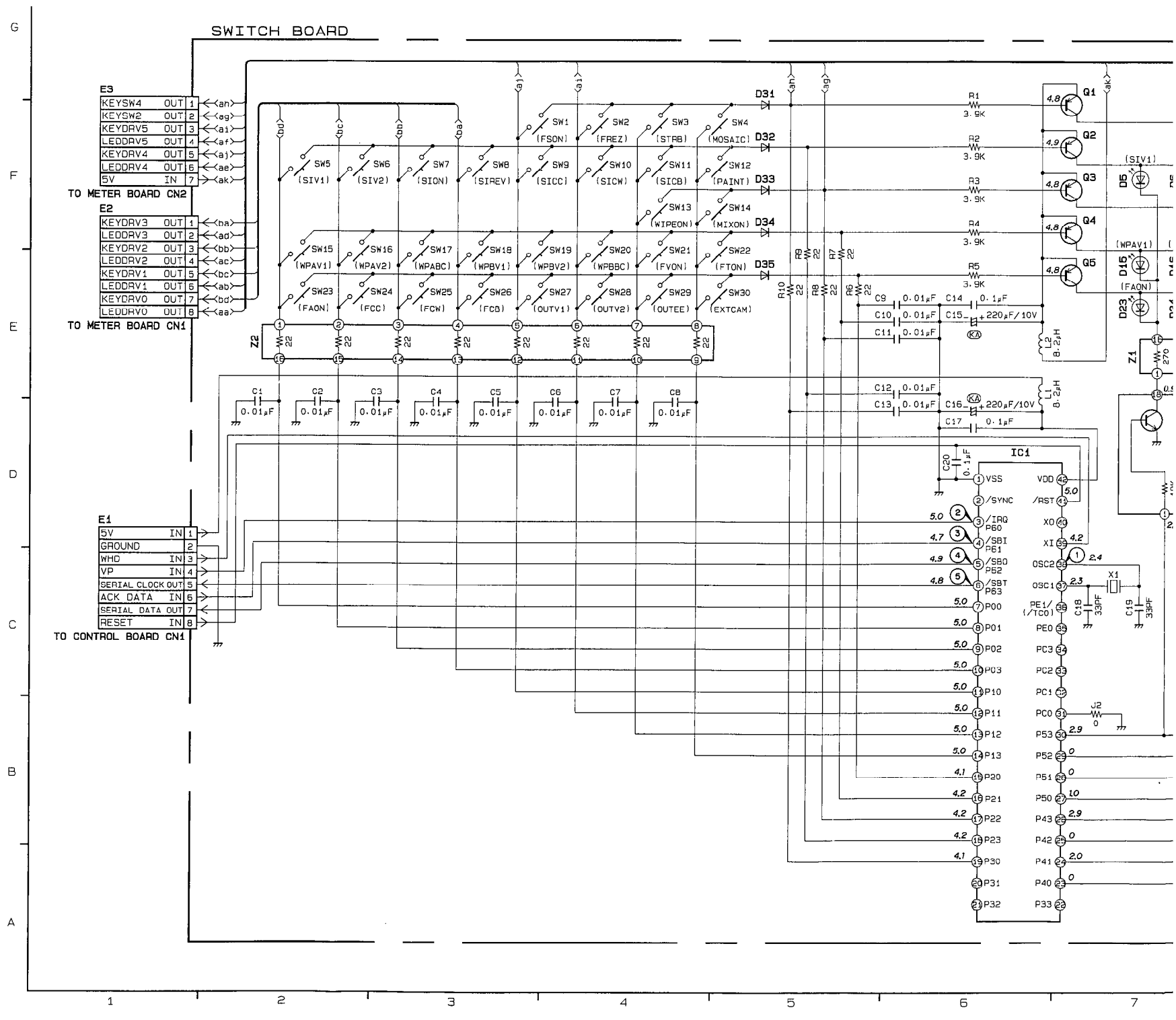
4. 2V/DIV, 5ms/DIV



5. 2V/DIV, 5ms/DIV



# SCHEMATIC DIAGRAM OF SWITCH BOAR





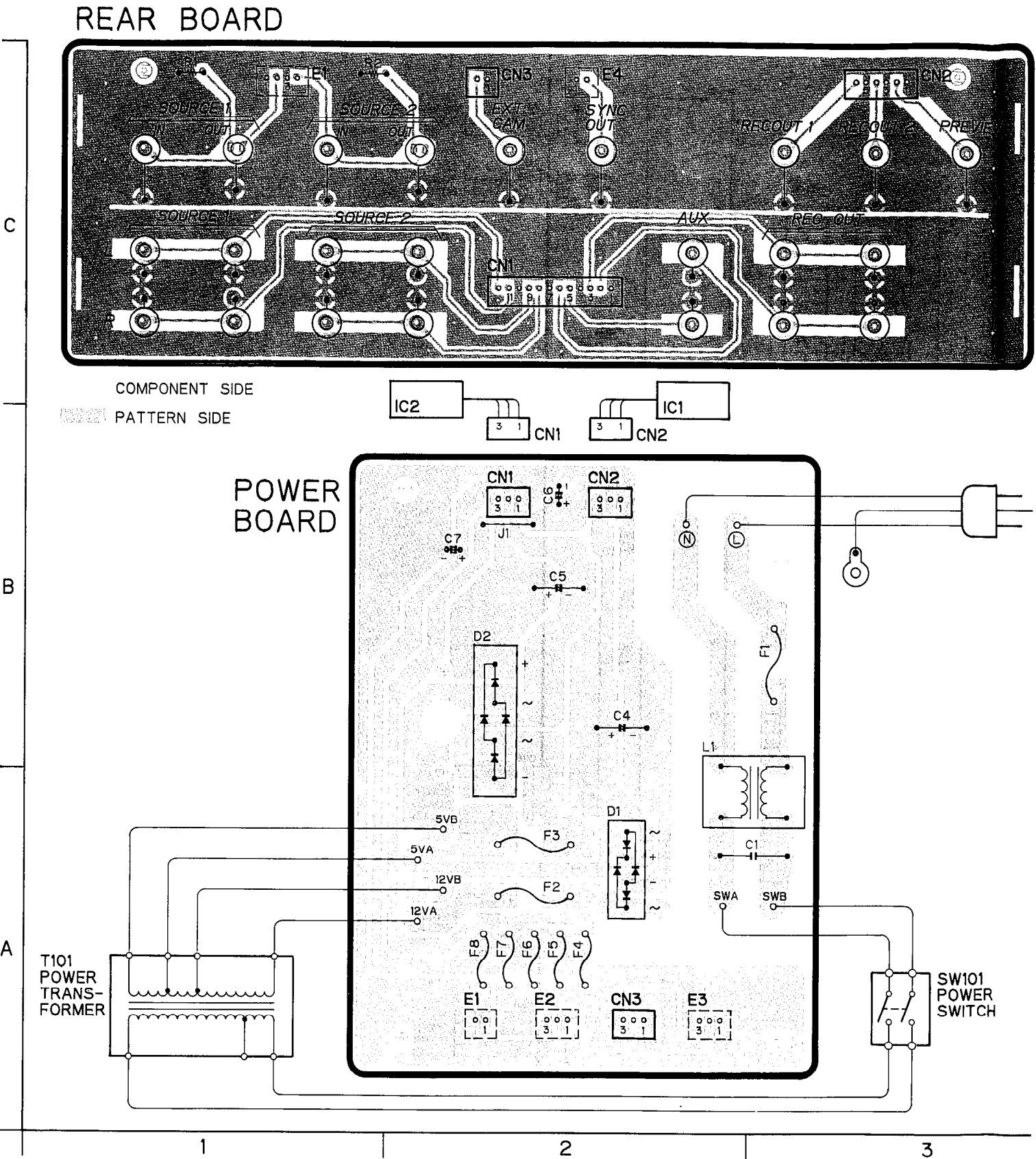
IC1	MN15542CCE1	D6	D15	YWGL1HS211	E7
IC2	AN90B30	D9	D16	YWGL1HS211	E7
Q1	25B641-QR	F6	D17	YWGL1HS211	E8
Q2	25B641-QR	F6	D18	YWGL1HS211	E8
Q3	25B641-QR	F6	D19	YWGL1HS211	E8
Q4	25B641-QR	E6	D20	YWGL1HS211	E9
Q5	25B641-QR	E6	D21	YWGL1HS211	E9
D1	YWGL1HS211	F8	D22	YWGL1HS211	E9
D2	YWGL1HS211	F9	D23	YWGL1HS211	E7
D3	YWGL1HS211	F9	D24	YWGL1HS211	E7
D4	YWGL1HS211	F9	D25	YWGL1HS211	E8
D5	YWGL1HS211	F7	D26	YWGL1HS211	E8
D6	YWGL1HS211	F7	D27	YWGL1HS211	E8
D7	YWGL1HS211	F8	D28	YWGL1HS211	E9
D8	YWGL1HS211	F8	D29	YWGL1HS211	E9
D9	YWGL1HS211	F8	D30	YWGL1HS211	E9
D10	YWGL1HS211	F9	D31	MA165	F5
D11	YWGL1HS211	F9	D32	MA165	F5
D12	YWGL1HS211	F9	D33	MA165	F5
D13	YWGL1HS211	F9	D34	MA165	E5
D14	YWGL1HS211	F9	D35	MA165	E5

Figure 1 shows a schematic diagram of a 2D grid. The grid is composed of small squares. A horizontal line runs across the middle of the grid, and a vertical line runs down the middle. The grid is divided into four quadrants by these lines. The top-left quadrant is labeled 'A', the top-right 'B', the bottom-left 'C', and the bottom-right 'D'. The horizontal line is labeled 'H' and the vertical line is labeled 'V'. The grid is labeled 'G'.

The diagram shows a rectangular grid of nodes. A horizontal line passes through the middle of the grid. Labels include 'N' at the top left, 'L' at the top right, and 'N' at the bottom left. There are also some smaller labels like '10' and '10' near the bottom right.

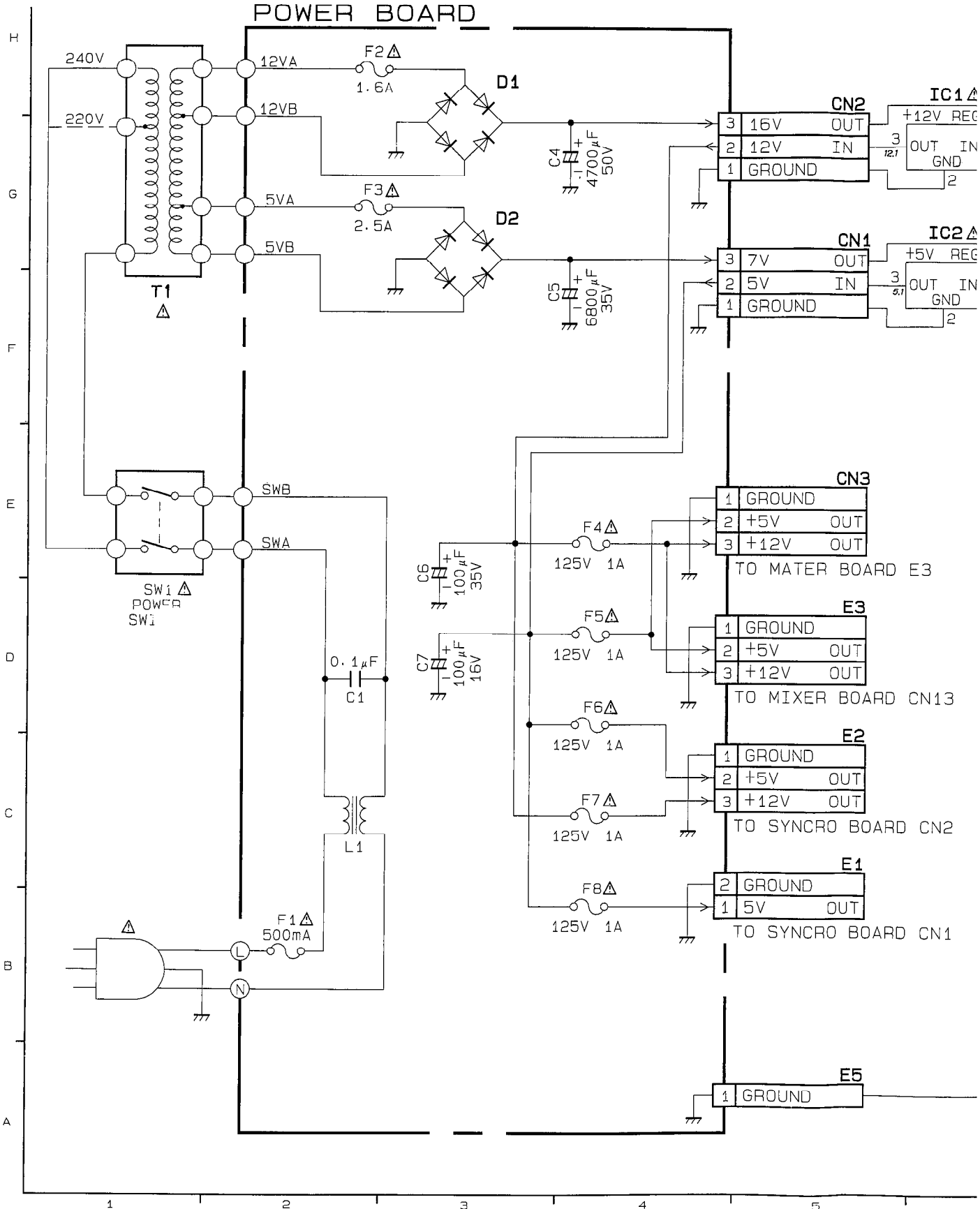


CONDUCTOR VIEW OF REAR BOARD AND POWER BOARD



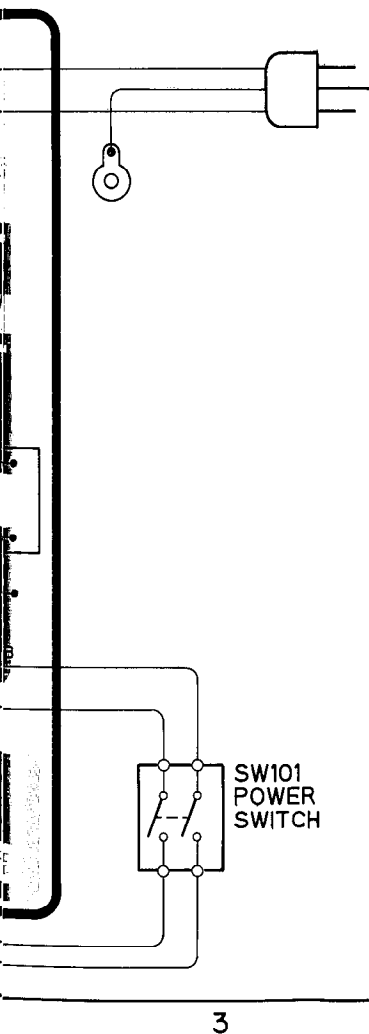
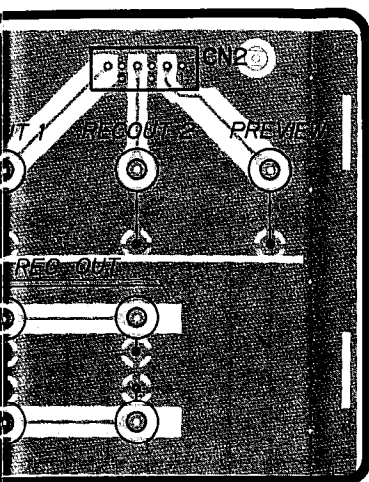
POWER BOARD  
D1 YWRB150F A2  
D2 YWRBV401 B2

SCHEMATIC DIAGRAM OF REAR BOARD

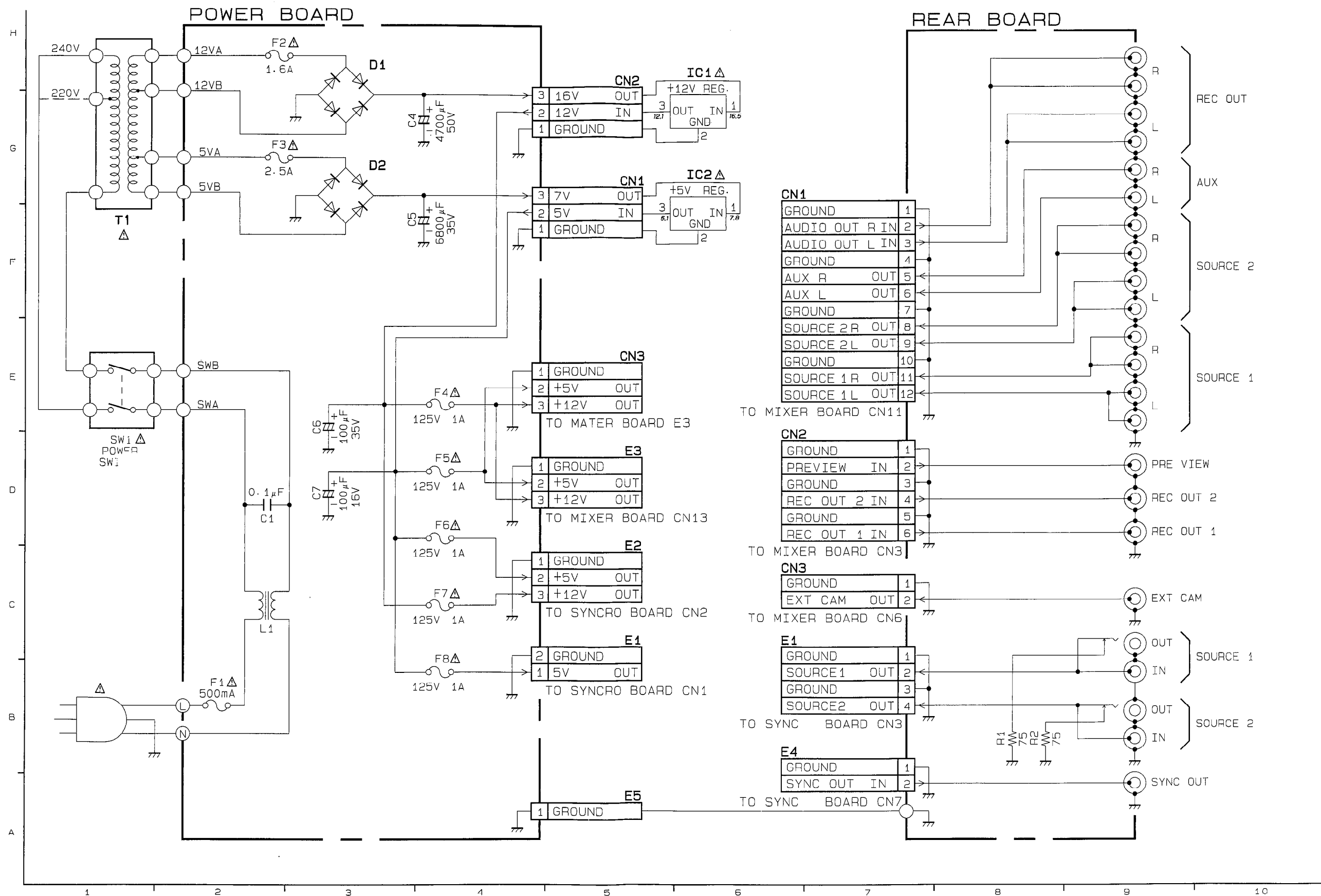


POWER BOARD  
D1 YWRB150F G3  
D2 YWRBV401 H3

ARD

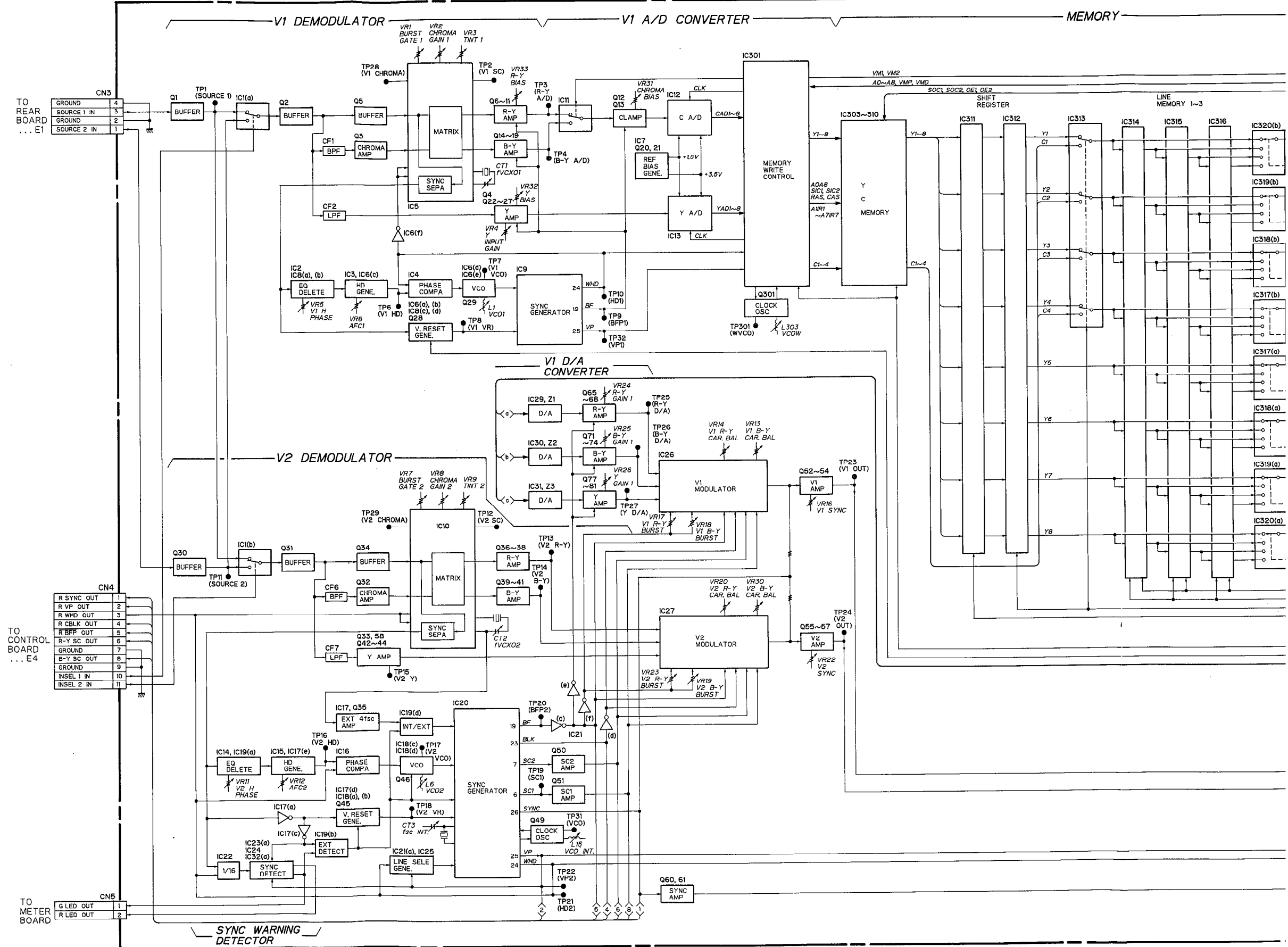


# SCHEMATIC DIAGRAM OF REAR BOARD AND POWER BOARD

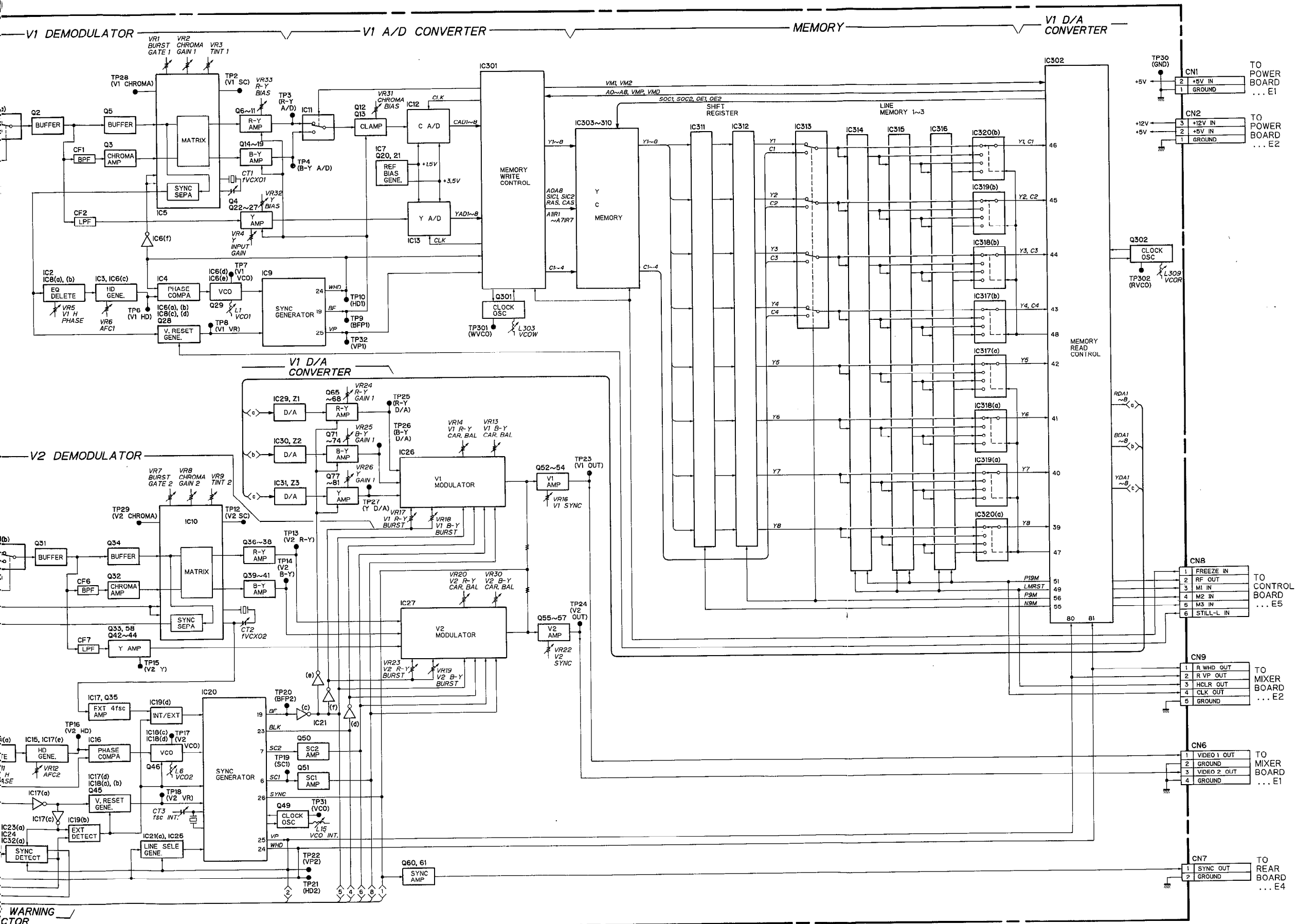


## BLOCK DIAGRAM OF SYNC BOARD

SYNC BOARD



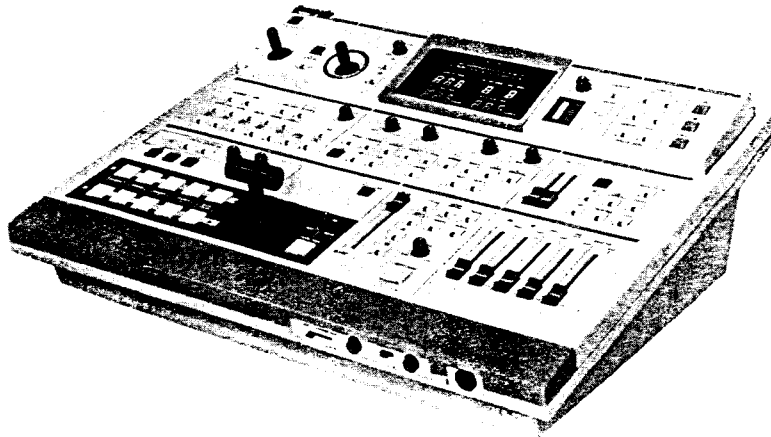
# BLOCK DIAGRAM OF SYNC BOARD



# Service Manual

Production Mixer  
**WJ-MX50**

**Supplement - 1**



Please use this supplement service manual together with original service manual for Model No. Order No. AVS 9206582C8

**1. Change of Parts List**

The original parts list for the Power Board, Analog Board and Digital Board should be revised with this supplement.

**2. Change of Exploded View**

M44 YWV2PA0529A3 Insulator should be deleted from MISCELLANEOUS.

M50 YWV2PA0539A3 Insulator and M47 YWV2HA1050A2 Shield Parts should be added to the Power Board.

# Panasonic

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
POWER BOARD				R31	ERDS2TJ222	Carbon	2.2K ohms 1/4W
PCB8 (RTL)	YWJKZMX50E1A	Printed Circuit Board Assy		R32	ERDS2TJ333	Carbon	33K ohms 1/4W
IC1	YWFA5304P	IC		R33	ERDS2TJ683	Carbon	68K ohms 1/4W
IC2	YWUPC24M12HF	IC		R34	ERDS2TJ101	Carbon	100 ohms 1/4W
IC3	YWSI3122V	IC		R35	ERDS2TJ102	Carbon	1K ohms 1/4W
IC4	YWUPC24M12HF	IC		R36,37	ER0S2CKF6801	Metal	6.8K ohms 1/4W
IC5	YWTA76431S	IC		R38	ERDS2TJ472	Carbon	4.7K ohms 1/4W
Q1	2SK960	FET		R39	ERD10TJ6R8	Carbon	6.8 ohms 1/4W
Q2	2SB953A-PQ	Transistor		R40	ERG3SJ822	Metal	8.2K ohms 3W
Q3	2SB641-QR	Transistor		VR1	YFH0621A2R2K	Variable Resistor 2.2K ohms	
Q6	2SB642-QRS	Transistor		C1	ECQU2A563MT	Plastic	0.056 μF
Q7,8	2SD1752	Transistor		C2-4	ECKDRS332ME	Ceramic	3300 pF
Q9	2SD636-QRS	Transistor		C5	ECQU2A224MV	Plastic	0.22 μF
Q10	2SD973-RS	Transistor		C6,7	EC0S2GA121DA	Electrolytic	120 μF40V
Q11	2SD636-QRS	Transistor		C8	ECQE6103KZ	Plastic	0.01 μF
D1	YWRBV406	Diode		C10	ECEA1HU2R2	Electrolytic	2.2 μF 50V
D2	RU1P	Diode		C11	ECEA1HU010	Electrolytic	1 μF 50V (SU)
D3	YWERA9102	Diode		C12	ECQM1H104JZ	Plastic	0.1 μF
D4	MA165	Diode		C13	ECQP1H331JZ	Plastic	330 pF 50V
D5	YWERA9102	Diode		C14	ECQV1H473JZ	Plastic	0.047 μF 50V
D6	YWPC111LY	Diode		C15	ECQB1H682JZ	Plastic	6800 pF
D7	YWESAB85M009	Diode		C16,17	ECKDRS332ME	Ceramic	3300 pF
D8	MA165	Diode		C18	ECA1VFQ270	Electrolytic	27 μF 35V
D9	ESAC82M004	Diode		C20	ECA1CFQ471	Electrolytic	470 μF 16V
D10	YWERA84009	Diode		C21	ECA1CFQ181B	Electrolytic	180 μF 16V
D11	RDS.1J82	Diode		C23,24	ECA1EFQ102	Electrolytic	1000 μF 25V
D12	YWEQA0325	Diode		C25,26	ECQM1H104JZ	Plastic	0.1 μF
TH1,2	YW16D13	Thermistor		C27	ECA1CFQ471	Electrolytic	470 μF 16V
VS1	ERZC07DK471U	ZNR		C28-30	ECA1CFQ181B	Electrolytic	180 μF 16V
R1	ERC12ZGK105	Solid Resistor	1M ohms	C31	ECA1CFQ471	Electrolytic	470 μF 16V
R2	ERF5TK3R3	Wire Wound	3.3 ohms	C32	ECQB1H103JZ	Plastic	0.01 μF
R3,4	ERD50FJ104	Carbon	100K ohms 1/2W	C33-35	ECA1AFQ222	Electrolytic	22 μF 10V
R5	ERG5SJ123	Metal	12K ohms 5W	C36,37	ECA1AFQ122	Electrolytic	1200 μF 10V
R8	ERDS2TJ104	Carbon	100K ohms 1/4W	C38-42	ECA1AFQ101	Electrolytic	100 μF 10V
R9	ERDS2TJ105	Carbon	1M ohms 1/4W	C44	ECA1EFQ471	Electrolytic	470 μF 25V
R10	ERDS2TJ222	Carbon	2.2K ohms 1/4W	C45,46	ECQM1H104JZ	Plastic	0.1 μF 50V
R11	ERDS2TJ220	Carbon	22 ohms 1/4W	C47	ECA1CFQ181B	Electrolytic	180 μF 16V
R12	ERDS2TJ151	Carbon	150 ohms 1/4W	C48	ECQM1H104JZ	Plastic	0.1 μF 50V
R13	ERDS2TJ563	Carbon	56K ohms 1/4W	C50	ECEA1AN220S	Electrolytic	22 μF 10V
R14	ERDS2TJ562	Carbon	5.6K ohms 1/4W	C51	ECQE6103KZ	Plastic	0.01 μF
R15	ERX2SJR39	Metal	0.39 ohms	L1	YWLF4D502	Coil	
R16	ERC12ZGM156	Solid Resistor	15M ohms 1/2W	L2	YWHL24183	Coil	
R19	ERDS2TJ123	Carbon	12K ohms 1/4W	L3,4	YFBL02RN2R62	Coil	0.01 μH
R20	ERDS2TJ100	Carbon	10 ohms 1/4W	L5	EL05SI330K	Coil	33 μH
R22	ERDS2TJ471	Carbon	470 ohms 1/4W	L7-9	YWPC7330K	Coil	33 μH
R23	ERDS2TJ122	Carbon	1.2K ohms 1/4W	L11,12	YWPC10220K	Coil	22 μH
R24	ERG1SJ470	Metal	47 ohms 1W	L13-15	YWPC7330K	Coil	33 μH
R26	ERDS2TJ471	Carbon	470 ohms 1/4W	L17,18	YFBL02RN2R62	Coil	2.6 μH
R27	ERDS2TJ104	Carbon	100K ohms 1/4W	L20	YWLF4D502	Coil	
R28	ERDS2TJ333	Carbon	33K ohms 1/4W	T1	ETS28K703A	Power Transformer	
R29	ERDS2TJ472	Carbon	4.7K ohms 1/4W	SW1	YWSEP2A01BBM	Seesaw Switch	
				CF10,16	YWBLO2RN1R62	Filter	
				CF19	YWBLO2RN1R62	Filter	
				F1	XBA2C25ET0A	Current Fuse	2.5 A 250V
				F3	SSFR630F002	Current Fuse	6.3 A

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
F4	SSFR500F002	Current Fuse 500 mA	<b>ANALOG BOARD</b>		
F5-12	SSFR1.6A002	Current Fuse 1.6 A	PCB9 (RTL)	YWJKZMX50E2A	Printed Circuit Board Assy
F13	SSFR500F002	Current Fuse 500 mA	IC1-4	MC74HC4052F	IC
CN1	YW530140210	2-pin Connector	IC5	YWNJM2246M	IC
CN2	YW530140310	3-pin Connector	IC6	YWNJM2233BM	IC
CN3	YW530140610	6-pin Connector	IC7	YWSC7SU04F	IC
CN4	YW530140410	4-pin Connector	IC10	YWMC141625FU	IC
CN5	YW530140510	5-pin Connector	IC13	YWSC7SU04F	IC
CN6	YW530140710	7-pin Connector	IC16	YWMC141625FU	IC
E1,2	YWTM028B	Terminal	IC19	YWNJM2246M	IC
E4,5	S-N5057	Holder	IC20	YWNJM2233BM	IC
E6-10	YWMA01	Terminal	IC21-24	YWSC7S08F	IC
E11-13	YW851248	Insulator	IC25	YWM51271FP	IC
E14	YWM1748A	Holder	IC26,27	NJM78L05A	IC
E15	YW45T01130L	Insulator	IC28	YWM51271FP	IC
M45	YWUAMS11V0	Cord Clamp	IC32,33	YWSC7S08F	IC
M46	YVV7DA0328A2	Heat Sink	IC34	YWNJM3403AM	IC
M47	YVV2HA1050A2	Shield Parts	IC36,37	YWSC7S08F	IC
M50	YVV2PA0539A3	Insulator	IC38	YWNJM3403AM	IC
			IC40-42	YWSC7S08F	IC
			IC45	YWNJM2246M	IC
			IC46	YWLM1881M	IC
			IC47	NJM319M	IC
			IC48	YWSC7S08F	IC
			IC49	YWSC7SU04F	IC
			IC50	YWSC7S08F	IC
			IC51	YWNJM2246M	IC
			IC52	YWNJM2245M	IC
			IC53	YWNJM2246M	IC
			IC54	YWNJM2245M	IC
			IC700	NJM78L05A	IC
			IC701	YWNJM78M05FA	IC
			IC702	YWMC74HC125F	IC
			IC703	YVHA16103FPJ	IC
			IC704	YWSC7SU04F	IC
			IC705	YWMC74HC174F	IC
			IC706,707	YWMC74HC541F	IC
			IC708	YVHD6475368F	IC
			IC709	M51944AML1	IC
			IC710,711	YWUPD71055GB	LSI
			IC712	MC74HC4053F	IC
			IC713	YWSN75179BPS	IC
			IC714	YWMC145407F	IC
			IC715	YWMC74HC174F	IC
			IC716,717	YWMC74HC138F	IC
			IC718	YWUPD45388G	IC
			IC719,720	YWSC7SU04F	IC
			Q1-22	MSD601-QRS	Transistor
			Q23	MSB709-QRS	Transistor
			Q24	MSD601-QRS	Transistor
			Q25	MSB709-QRS	Transistor

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
Q26-29	MSD601-QRS	Transistor	Q161-166	MSD601-QRS	Transistor
Q30	MSB709-QRS	Transistor	Q167	MSB709-QRS	Transistor
Q31	MSD601-QRS	Transistor	Q168	MSD601-QRS	Transistor
Q32	MSB709-QRS	Transistor	Q169	MSB709-QRS	Transistor
Q33,34	MSD601-QRS	Transistor	Q170	MSD601-QRS	Transistor
Q39-43	MSD601-QRS	Transistor	Q171	MSB709-QRS	Transistor
Q44	MSB709-QRS	Transistor	Q172	MSD601-QRS	Transistor
Q45	MSD601-QRS	Transistor	Q173	MSB709-QRS	Transistor
Q46	2SD1328-RS	Transistor	Q174,175	MSD601-QRS	Transistor
Q47-50	MSD601-QRS	Transistor	Q176-179	MSB709-QRS	Transistor
Q51	2SD1328-RS	Transistor	Q180-184	MSD601-QRS	Transistor
Q52-56	MSD601-QRS	Transistor	Q700	2SA886-QR	Transistor
Q57	2SD1328-RS	Transistor	Q701	MSB709-QRS	Transistor
Q58-61	MSD601-QRS	Transistor	Q703,704	2SA1560	Transistor
Q62	MSB709-QRS	Transistor	D1,2	YWDAN212K	Diode
Q63	2SD1328-RS	Transistor	D4-6	YWDAN212K	Diode
Q64-68	MSD601-QRS	Transistor	D700-702	YWRB421D	Diode
Q69	2SD1328-RS	Transistor	D703	YWDAN212K	Diode
Q70-74	MSD601-QRS	Transistor	D704	YWRD5.1MB2	Diode
Q75	2SD1328-RS	Transistor	D705	YWDAN212K	Diode
Q76	MSD601-QRS	Transistor	D706	YWRD5.1MB2	Diode
Q77	MSB709-QRS	Transistor	D707	YWDAN212K	Diode
Q78	MSD601-QRS	Transistor	D708	YWRD5.1MB2	Diode
Q79	MSB709-QRS	Transistor	D709	YWDAN212K	Diode
Q80	MSD601-QRS	Transistor	D710	YWRD5.1MB2	Diode
Q81,82	MSB709-QRS	Transistor	D711	YWDAN212K	Diode
Q83	MSD601-QRS	Transistor	D724	YWRB421D	Diode
Q84	MSB709-QRS	Transistor	R1-12	YF2116750JT	Carbon 75 ohms 1/10W
Q85	MSD601-QRS	Transistor	R13	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q86	MSB709-QRS	Transistor	R14	YF2116753JT	Carbon 75K ohms 1/10W
Q87-91	MSD601-QRS	Transistor	R15	YF2116122JT	Carbon 1.2K ohms 1/10W
Q92	MSB709-QRS	Transistor	R16	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q93	MSD601-QRS	Transistor	R17	YF2116753JT	Carbon 75K ohms 1/10W
Q94-99	MSB709-QRS	Transistor	R18	YF2116122JT	Carbon 1.2K ohms 1/10W
Q100	MSD601-QRS	Transistor	R19	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q101	MSB709-QRS	Transistor	R20	YF2116753JT	Carbon 75K ohms 1/10W
Q102	MSD601-QRS	Transistor	R21	YF2116122JT	Carbon 1.2K ohms 1/10W
Q103	MSB709-QRS	Transistor	R22	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q104-106	MSD601-QRS	Transistor	R23	YF2116753JT	Carbon 75K ohms 1/10W
Q107	2SD1328-RS	Transistor	R24	YF2116122JT	Carbon 1.2K ohms 1/10W
Q108	MSD601-QRS	Transistor	R25	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q109,110	MSB709-QRS	Transistor	R26	YF2116753JT	Carbon 75K ohms 1/10W
Q111	MSD601-QRS	Transistor	R27	YF2116122JT	Carbon 1.2K ohms 1/10W
Q112	MSB709-QRS	Transistor	R28	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q113	MSD601-QRS	Transistor	R29	YF2116753JT	Carbon 75K ohms 1/10W
Q114,140	MSB709-QRS	Transistor	R30	YF2116122JT	Carbon 1.2K ohms 1/10W
Q141	MSB709-QRS	Transistor	R31	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q142	2SB642-QRS	Transistor	R32	YF2116753JT	Carbon 75K ohms 1/10W
Q144-151	MSB709-QRS	Transistor	R33	YF2116122JT	Carbon 1.2K ohms 1/10W
Q152-155	MSD601-QRS	Transistor	R34	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q156	MSB709-QRS	Transistor	R35	YF2116753JT	Carbon 75K ohms 1/10W
Q157	MSD601-QRS	Transistor	R36	YF2116122JT	Carbon 1.2K ohms 1/10W
Q158	MSB709-QRS	Transistor	R37	ERJ6GEYJ393	Carbon 39K ohms 1/10W
Q159	MSD601-QRS	Transistor	R38	YF2116753JT	Carbon 75K ohms 1/10W
Q160	MSB709-QRS	Transistor	R39	YF2116122JT	Carbon 1.2K ohms 1/10W



REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R40	ERJ6GEYJ393	Carbon	39K ohms 1/10W	R128	YF2116912GT	Carbon	9.1K ohms 1/10W
R41	YF2116753JT	Carbon	75K ohms 1/10W	R130,132	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R42	YF2116122JT	Carbon	1.2K ohms 1/10W	R133	YF2116132JT	Carbon	1.3K ohms 1/10W
R43	ERJ6GEYJ393	Carbon	39K ohms 1/10W	R134	YF2116122JT	Carbon	1.2K ohms 1/10W
R44	YF2116753JT	Carbon	75K ohms 1/10W	R135,136	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R45	YF2116122JT	Carbon	1.2K ohms 1/10W	R137	YF2116561JT	Carbon	560 ohms 1/10W
R46	ERJ6GEYJ393	Carbon	39K ohms 1/10W	R139	YF2116392JT	Carbon	3.9K ohms 1/10W
R47	YF2116753JT	Carbon	75K ohms 1/10W	R140,141	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R48	YF2116122JT	Carbon	1.2K ohms 1/10W	R146-148	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R49	YF2116202JT	Carbon	2K ohms 1/10W	R154,155	YF2116474JT	Carbon	470K ohms 1/10W
R50	YF2116333GT	Carbon	33K ohms 1/10W	R156	YF2116331JT	Carbon	330 ohms 1/10W
R51	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R158	YF2116392JT	Carbon	3.9K ohms 1/10W
R51	YF2116202JT	Carbon	2K ohms 1/10W	R159	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R52	YF2116333GT	Carbon	33K ohms 1/10W	R160	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R52	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R161	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R53	YF2116202JT	Carbon	2K ohms 1/10W	R163	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R54	YF2116333GT	Carbon	33K ohms 1/10W	R164	YF2116433GT	Carbon	43K ohms 1/10W
R54	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R165	YF2116391JT	Carbon	390 ohms 1/10W
R55	YF2116202JT	Carbon	2K ohms 1/10W	R166	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R55	YF2116333GT	Carbon	33K ohms 1/10W	R169	YF2116754JT	Carbon	750K ohms 1/10W
R56-60	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R170	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R61	YW2116182JT	Carbon	1.8K ohms 1/10W	R171	YF2116752JT	Carbon	7.5K ohms 1/10W
R62-66	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R172	L311J103J332	Carbon	3.3K ohms 1/10W
R71-73	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R173	YF2116202JT	Carbon	2K ohms 1/10W
R75	YF2116331JT	Carbon	330 ohms 1/10W	R174	YF2116754JT	Carbon	750K ohms 1/10W
R76	YF2116392JT	Carbon	3.9K ohms 1/10W	R175	YF2116512JT	Carbon	5.1K ohms 1/10W
R77	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R176	YF2116912GT	Carbon	9.1K ohms 1/10W
R78	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R177	YF2116183GT	Carbon	18K ohms 1/10W
R83,84	YF2116474JT	Carbon	470K ohms 1/10W	R178	YW2116620JT	Carbon	62 ohms 1/10W
R85	YW2116105JT	Carbon	1M ohms 1/10W	R179	YF2116151JT	Carbon	150 ohms 1/10W
R91	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R180	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R92,93	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R181,182	ERDS2TJ470	Carbon	47 ohms 2W
R94	YF2116202JT	Carbon	2K ohms 1/10W	R183	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R95	YF2116912GT	Carbon	9.1K ohms 1/10W	R184	ERJ6GEYJ393	Carbon	39K ohms 1/10W
R96	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	R185	YF2116433GT	Carbon	43K ohms 1/10W
R97	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R186	YF2116391JT	Carbon	390 ohms 1/10W
R98	YF2116332JT	Carbon	3.3K ohms 1/10W	R187	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R99	YF2116912GT	Carbon	9.1K ohms 1/10W	R189	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R100	YF2116754JT	Carbon	750K ohms 1/10W	R192	YF2116754JT	Carbon	750K ohms 1/10W
R101-103	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R193	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R104	YF2116132JT	Carbon	1.3K ohms 1/10W	R194	YF2116752JT	Carbon	7.5K ohms 1/10W
R105	YF2116122JT	Carbon	1.2K ohms 1/10W	R195	L311J103J332	Carbon	3.3K ohms 1/10W
R106,108	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R196	YF2116202JT	Carbon	2K ohms 1/10W
R109	YF2116561JT	Carbon	560 ohms 1/10W	R197	YF2116754JT	Carbon	750K ohms 1/10W
R110	YF2116392JT	Carbon	3.9K ohms 1/10W	R198	YF2116512JT	Carbon	5.1K ohms 1/10W
R111	YW2116182JT	Carbon	1.8K ohms 1/10W	R199	YW2116620JT	Carbon	62 ohms 1/10W
R112,113	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R200	YF2116151JT	Carbon	150 ohms 1/10W
R114	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R201	YWR1220P512D	Metal	5.1K ohms
R115,116	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R202	YWR1220P162D	Carbon	1.6K ohms
R117	YF2116202JT	Carbon	2K ohms 1/10W	R203	YWR1220P622D	Metal	6.2K ohms
R118	YF2116912GT	Carbon	9.1K ohms 1/10W	R204	YWR1220P682D	Metal	6.8K ohms
R119	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	R205,206	YWR1220P242D	Metal	2.4K ohms
R120	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R207	YWR1220P682D	Metal	6.8K ohms
R121	YF2116332JT	Carbon	3.3K ohms 1/10W	R208-211	YF2116510JT	Carbon	51 ohms 1/10W
R122	YW2116105JT	Carbon	1M ohms 1/10W	R212	ERJ6GEYJ223	Carbon	22K ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R213	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R268	YF2116331JT	Carbon	330 ohms 1/10W
R214	YF2116181JT	Carbon	180 ohms 1/10W	R269	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R215	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R270	YF2116202JT	Carbon	2K ohms 1/10W
R216	YF2116202JT	Carbon	2K ohms 1/10W	R271,272	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R217	YF2116912GT	Carbon	9.1K ohms 1/10W	R273	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R218	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R274	YF2116332JT	Carbon	3.3K ohms 1/10W
R219	YF2116332JT	Carbon	3.3K ohms 1/10W	R275	YF2116511JT	Carbon	510 ohms 1/10W
R220	YF2116511JT	Carbon	510 ohms 1/10W	R276	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R221	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R277	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R222	YF2116511JT	Carbon	510 ohms 1/10W	R278	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R223	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R279	ERJ6GEYJ223	Carbon	22K ohms 1/10W
R224	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R280	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R225	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R281	YF2116181JT	Carbon	180 ohms 1/10W
R226	YF2116331JT	Carbon	330 ohms 1/10W	R282	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R227	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R283	YF2116202JT	Carbon	2K ohms 1/10W
R228	YF2116202JT	Carbon	2K ohms 1/10W	R284	YF2116912GT	Carbon	9.1K ohms 1/10W
R229	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R285	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R230	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R286	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R231	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R287	YF2116332JT	Carbon	3.3K ohms 1/10W
R232	YF2116332JT	Carbon	3.3K ohms 1/10W	R288	YF2116511JT	Carbon	510 ohms 1/10W
R233	YF2116511JT	Carbon	510 ohms 1/10W	R289	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R234	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R290	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R235	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R291	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R236	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R292	YWR1220P512D	Metal	5.1K ohms
R237	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R293	YWR1220P162D	Carbon	1.6K ohms
R238	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R294	YWR1220P622D	Metal	6.2K ohms
R239	YF2116181JT	Carbon	180 ohms 1/10W	R295	YWR1220P682D	Metal	6.8K ohms
R240	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R296,297	YWR1220P242D	Metal	2.4K ohms
R241	YF2116202JT	Carbon	2K ohms 1/10W	R298	YWR1220P682D	Metal	6.8K ohms
R242	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R299-302	YF2116510JT	Carbon	51 ohms 1/10W
R243	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R303	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R244	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R304	YF2116392JT	Carbon	3.9K ohms 1/10W
R245	YF2116332JT	Carbon	3.3K ohms 1/10W	R305,306	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R246	YF2116511JT	Carbon	510 ohms 1/10W	R307	YF2116202JT	Carbon	2K ohms 1/10W
R247	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R309	YF2116751JT	Carbon	750 ohms 1/10W
R248	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R311	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R249	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R312	YWR1220P102D	Metal	1K ohms
R250	YF2116332JT	Carbon	3.3K ohms 1/10W	R313	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R251	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W	R315	YFR1220P222D	Metal	2.2K ohms
R252	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R316	YWR1220P512D	Metal	5.1K ohms
R253	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R317	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R254	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R318	YF2116474JT	Carbon	470K ohms 1/10W
R255	YF2116181JT	Carbon	180 ohms 1/10W	R319	YF2116332JT	Carbon	3.3K ohms 1/10W
R256	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R320	YF2116222GT	Carbon	2.2K ohms 1/10W
R257	YF2116202JT	Carbon	2K ohms 1/10W	R321,322	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R258	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R323	YF2116680JT	Carbon	68 ohms 1/10W
R259	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R324,325	YF2116104JT	Carbon	100K ohms 1/10W
R260	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R326	YF2116680JT	Carbon	68 ohms 1/10W
R261	YF2116332JT	Carbon	3.3K ohms 1/10W	R327,328	YF2116104JT	Carbon	100K ohms 1/10W
R262	YF2116511JT	Carbon	510 ohms 1/10W	R329,331	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R263	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R332,333	YF2116332JT	Carbon	3.3K ohms 1/10W
R264	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R334	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R265	YF2116511JT	Carbon	510 ohms 1/10W	R335,336	YF2116512JT	Carbon	5.1K ohms 1/10W
R266	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R337	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R267	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R338,339	ERJ6GEYJ102	Carbon	1K ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R340,341	YF2116680JT	Carbon	68 ohms 1/10W	R417	YW2116305JT	Carbon	3M ohms 1/10W
R342,343	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R418	YF2116332JT	Carbon	3.3K ohms 1/10W
R344	YF2116101JT	Carbon	100 ohms 1/10W	R419,420	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R345	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R421,422	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R346	YWR1220P102D	Metal	1K ohms	R423	YF2116163JT	Carbon	16K ohms 1/10W
R347	YF2116101JT	Carbon	100 ohms 1/10W	R424	YF2116222GT	Carbon	2.2K ohms 1/10W
R348	YWR1220P102D	Metal	1K ohms	R425	YF2116432JT	Carbon	4.3K ohms 1/10W
R349	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R426-428	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R350	YF2116332JT	Carbon	3.3K ohms 1/10W	R430	YF2116152JT	Carbon	1.5K ohms 1/10W
R351	YF2116222GT	Carbon	2.2K ohms 1/10W	R433	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R352	YF2116474JT	Carbon	470K ohms 1/10W	R434	YF2116474JT	Carbon	470K ohms 1/10W
R353,354	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R435	YF2116222GT	Carbon	2.2K ohms 1/10W
R355,356	YF2116680JT	Carbon	68 ohms 1/10W	R436	YF2116332JT	Carbon	3.3K ohms 1/10W
R357,358	YF2116104JT	Carbon	100K ohms 1/10W	R437	YF2116474JT	Carbon	470K ohms 1/10W
R359	YF2116202JT	Carbon	2K ohms 1/10W	R438,439	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R362	YF2116101JT	Carbon	100 ohms 1/10W	R440	YF2116680JT	Carbon	68 ohms 1/10W
R363	YWR1220P102D	Metal	1K ohms	R441	YF2116104JT	Carbon	100K ohms 1/10W
R364	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R442	YF2116621JT	Carbon	620 ohms 1/10W
R365	YFR1220P222D	Metal	2.2K ohms	R443-446	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R367	YWR1220P512D	Metal	5.1K ohms	R447	YF2116754JT	Carbon	750K ohms 1/10W
R368	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R448	YF2116912GT	Carbon	9.1K ohms 1/10W
R369	YF2116474JT	Carbon	470K ohms 1/10W	R449	YF2116183GT	Carbon	18K ohms 1/10W
R371	YF2116222GT	Carbon	2.2K ohms 1/10W	R450-454	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R372	YF2116202JT	Carbon	2K ohms 1/10W	R503	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R374	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R517	YF2116432JT	Carbon	4.3K ohms 1/10W
R375,376	YF2116332JT	Carbon	3.3K ohms 1/10W	R518	YF2116222GT	Carbon	2.2K ohms 1/10W
R377,381	YF2116511JT	Carbon	510 ohms 1/10W	R519	YF2116112JT	Carbon	1.1K ohms 1/10W
R382	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R520	YF2116222GT	Carbon	2.2K ohms 1/10W
R383	YWR1220P102D	Metal	1K ohms	R521	YF2116332JT	Carbon	3.3K ohms 1/10W
R384	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R522	ERJ8GCSG511	Carbon	510 ohms 1/8W
R386	YF2116332JT	Carbon	3.3K ohms 1/10W	R526,527	YF2116680JT	Carbon	68 ohms 1/10W
R387	YF2116222GT	Carbon	2.2K ohms 1/10W	R528	YF2116332JT	Carbon	3.3K ohms 1/10W
R388	YF2116474JT	Carbon	470K ohms 1/10W	R529	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R389,390	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R530	YF2116332JT	Carbon	3.3K ohms 1/10W
R391	YF2116680JT	Carbon	68 ohms 1/10W	R531	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R392	YF2116104JT	Carbon	100K ohms 1/10W	R532	YF2116202JT	Carbon	2K ohms 1/10W
R393	YF2116750JT	Carbon	75 ohms 1/10W	R533	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R394	YF2116511JT	Carbon	510 ohms 1/10W	R534	YF2116202JT	Carbon	2K ohms 1/10W
R395	YF2116392JT	Carbon	3.9K ohms 1/10W	R535	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R396	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R536	YF2116202JT	Carbon	2K ohms 1/10W
R397,398	YF2116750JT	Carbon	75 ohms 1/10W	R537	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R399	YF2116332JT	Carbon	3.3K ohms 1/10W	R538	YF2116202JT	Carbon	2K ohms 1/10W
R400	YF2116222GT	Carbon	2.2K ohms 1/10W	R539	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R401	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R540	YF2116202JT	Carbon	2K ohms 1/10W
R402-404	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R541	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R405	YF2116684JT	Carbon	680K ohms 1/10W	R542	YF2116202JT	Carbon	2K ohms 1/10W
R406	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R543	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R407	ERJ6GEYJ562	Carbon	5.6K ohms 1/10W	R544	YF2116101JT	Carbon	100 ohms 1/10W
R408	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	R545	YF2116181JT	Carbon	180 ohms 1/10W
R409	YF2116512JT	Carbon	5.1K ohms 1/10W	R546	YF2116101JT	Carbon	100 ohms 1/10W
R410	YF2116163JT	Carbon	16K ohms 1/10W				
R411,412	ERJ6GEYJ103	Carbon	10K ohms 1/10W				
R413,414	ERJ6GEYJ102	Carbon	1K ohms 1/10W				
R415	YW2116305JT	Carbon	3M ohms 1/10W				
R416	YF2116332JT	Carbon	3.3K ohms 1/10W				

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R547	YF2116181JT	Carbon	180 ohms 1/10W	R709,710	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R548-551	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R711-713	YF2116331JT	Carbon	330 ohms 1/10W
R552	YF2116392JT	Carbon	3.9K ohms 1/10W	R714	YF2116332JT	Carbon	3.3K ohms 1/10W
R553-555	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R715-728	YF2116331JT	Carbon	330 ohms 1/10W
R556	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R729	YF2116510JT	Carbon	51 ohms 1/10W
R557	YF2116332JT	Carbon	3.3K ohms 1/10W	R730,731	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R558	YF2116222GT	Carbon	2.2K ohms 1/10W	R732	YF2116101JT	Carbon	100 ohms 1/10W
R559	YF2116474JT	Carbon	470K ohms 1/10W	R733,742	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R560,561	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R744	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R562,563	YF2116680JT	Carbon	68 ohms 1/10W	R745-752	YF2116331JT	Carbon	330 ohms 1/10W
R565	YF2116152JT	Carbon	1.5K ohms 1/10W	R753	YF2116100JT	Carbon	10 ohms 1/10W
R566	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R754	ERDS2TJ121	Carbon	120 ohms 2W
R567-569	YF2116392JT	Carbon	3.9K ohms 1/10W	R755,756	YF2116330JT	Carbon	33 ohms 1/10W
R570-572	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R757,758	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R573	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R759	YF2116473GT	Carbon	47K ohms 1/10W
R574,575	YF2116104JT	Carbon	100K ohms 1/10W	R760-765	YF2116221JT	Carbon	220 ohms 1/10W
R577,578	ERJ8GCSG221	Carbon	220 ohms 1/8W	R766	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R579	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R767	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R580	YF2116471JT	Carbon	470 ohms 1/10W	R768	YF2116101JT	Carbon	100 ohms 1/10W
R581	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R769	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R582	YF2116474JT	Carbon	470K ohms 1/10W	R770-772	YF2116331JT	Carbon	330 ohms 1/10W
R583	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R773-776	YF2116221JT	Carbon	220 ohms 1/10W
R584	YF2116471JT	Carbon	470 ohms 1/10W	R777-784	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R585,587	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R785-788	YF2116104JT	Carbon	100K ohms 1/10W
R588	YF2116471JT	Carbon	470 ohms 1/10W	R789-791	YF2116331JT	Carbon	330 ohms 1/10W
R589	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R792	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R590	YF2116474JT	Carbon	470K ohms 1/10W	R793-817	YF2116331JT	Carbon	330 ohms 1/10W
R591	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R818-823	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R592	YF2116471JT	Carbon	470 ohms 1/10W	R824	YF2116184JT	Carbon	180K ohms 1/10W
R593	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R825	YF2116331JT	Carbon	330 ohms 1/10W
R595-598	YF2116101JT	Carbon	100 ohms 1/10W	R826	YF2116101JT	Carbon	100 ohms 1/10W
R599,600	YF2116100JT	Carbon	10 ohms 1/10W	R827	YFR1220P104D	Metal	100K ohms
R603,610	YF2116561JT	Carbon	560 ohms 1/10W	R828	YWR1220P124D	Metal	120K ohms
R617-620	ERDS2TJ100	Carbon	10 ohms 2W	R829	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R621,622	YF2116100JT	Carbon	10 ohms 1/10W	R830	YF2116104JT	Carbon	100K ohms 1/10W
R623-626	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R832	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R627	YF2116682JT	Carbon	6.8K ohms 1/10W	R833-836	YF2116331JT	Carbon	330 ohms 1/10W
R628	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	R837-840	YF2116101JT	Carbon	100 ohms 1/10W
R629	YF2116332JT	Carbon	3.3K ohms 1/10W	R841-849	YF2116331JT	Carbon	330 ohms 1/10W
R630	ERDS2TJ100	Carbon	10 ohms 2W	R851	YF2116331JT	Carbon	330 ohms 1/10W
R631	YF2116333GT	Carbon	33K ohms 1/10W	R852-859	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R632	ERJ6GEYJ223	Carbon	22K ohms 1/10W	R862	YW2116105JT	Carbon	1M ohms 1/10W
R633	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R863	YF2116224JT	Carbon	220K ohms 1/10W
R634,635	YF2116333GT	Carbon	33K ohms 1/10W	R864	YF2116331JT	Carbon	330 ohms 1/10W
R636	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R865,866	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R637,638	YF2116333GT	Carbon	33K ohms 1/10W	R867,868	YF2116473GT	Carbon	47K ohms 1/10W
R639	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R869	YF2116221JT	Carbon	220 ohms 1/10W
R640,641	YF2116333GT	Carbon	33K ohms 1/10W	R870	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R642	ERJ6GEYJ102	Carbon	1K ohms 1/10W	R872	YF2116101JT	Carbon	100 ohms 1/10W
R643,644	L311J103J332	Carbon	3.3K ohms	R873,874	YF2116681JT	Carbon	680 ohms 1/10W
R700	ERJ6GEYJ201	Carbon	200 ohms 1/10W	VR1,5	EVM1DSW30BY2	Variable Resistor	330 ohms
R702	YF2116123JT	Carbon	12K ohms 1/10W	VR9	EVM1DSW30B54	Variable Resistor	50K ohms
R704	YF2116184JT	Carbon	180K ohms 1/10W	VR10,11	EVM1DSW30B24	Variable Resistor	20K ohms
R706	ERJ6GEYJ102	Carbon	1K ohms 1/10W	VR12	EVM1DSW30B54	Variable Resistor	50K ohms
R707,708	YF2116331JT	Carbon	330 ohms 1/10W	VR13,14	EVM1DSW30B24	Variable Resistor	20K ohms

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
VR15,16	EVM1DSW30BY2	Variable Resistor 330 ohms	C103	YF400560CHJT	Ceramic 56 pF
VR17	EVM1DSW30BQ3	Variable Resistor 4.7K ohms	C104	ECEA1AKS101	Electrolytic 100 µF 10V
VR18,19	EVM1DSW30BY2	Variable Resistor 330 ohms	C106	ECSF1HE474	Electrolytic 0.47 µF 50V
VR20,21	EVM1DSW30BE3	Variable Resistor 2.2K ohms	C107	YWT316B104MT	Ceramic 0.1 µF
VR22	EVM1DSW30BQ3	Variable Resistor 4.7K ohms	C108	ECEA1CKS470	Electrolytic 47 µF 16V
VR23,24	EVM1DSW30BE3	Variable Resistor 2.2K ohms	C114	ECEA1HKS47	Electrolytic
VR25	EVM1DSW30BQ3	Variable Resistor 4.7K ohms	C119	ECEA1AKS101	Electrolytic 100 µF 10V
VR26-29	EVM1DSW30BY2	Variable Resistor 330 ohms	C120,126	ECEA1ASN100	Electrolytic 10 µF 10V
VR31-34	EVM1DSW30BE3	Variable Resistor 2.2K ohms	C127	ECEA1ASN100	Electrolytic 10 µF 10V
VR39	EVM1DSW30BE3	Variable Resistor 2.2K ohms	C128,129	YF400103XKT	Ceramic 0.01 µF
Z700,701	EXBF9E103J	Block Resistor	C130,131	ECEA1AKS101	Electrolytic 100 µF 10V
Z702-707	YWRKM10L102F	Block Resistor	C140	YF400222XKT	Ceramic 2200 pF
Z708-712	EXBF9E103J	Block Resistor	C152	ECEA0JKS470	Electrolytic 47 µF 6.3V
C1	ECEA1CKS470	Electrolytic 47 µF 16V	C153,154	YWT316B104MT	Ceramic 0.1 µF
C2	ECEA1AKS470	Electrolytic 47 µF 10V	C155	ECEA1CKS220	Electrolytic 22 µF 16V
C3	YWS21A106T	Electrolytic 10 µF 10V	C156	ECEA1HKS010	Electrolytic 1 µF 50V (KS)
C4	ECSF1EE226BB	Electrolytic 22 µF 25V	C157	ECEA1HKS47	Electrolytic 0.47 µF 50V
C5-12	ECEA1AKS101	Electrolytic 100 µF 10V	C158	ECEA1HKS010	Electrolytic 1 µF 50V (KS)
C13-20	YF400103XKT	Ceramic 0.01 µF	C159	YF400201CHJT	Ceramic 200 pF
C21-24	YF400101CHJT	Ceramic 100 pF	C160,161	YWT316B473MT	Ceramic 0.47 µF
C25	YF400104FZT	Ceramic 0.1 µF	C162,163	YF400102XKT	Ceramic 1000 pF
C26	YWS21A106T	Electrolytic 10 µF 10V	C164	YF400222XKT	Ceramic 2200 pF
C27,28	YF400104FZT	Ceramic 0.1 µF	C165	YWT316B104MT	Ceramic 0.1 µF
C29	YWS21A106T	Electrolytic 10 µF 10V	C166	ECEA1ES4R7	Electrolytic 4.7 µF 25V (KS)
C30	YF400104FZT	Ceramic 0.1 µF	C168	YWT316B104MT	Ceramic 0.1 µF
C41,42	ECEA1ASN100	Electrolytic 10 µF 10V	C169	ECEA1HKS010	Electrolytic 1 µF 50V (KS)
C43	ECEA1AKS101	Electrolytic 100 µF 10V	C170	YWT316B104MT	Ceramic 0.1 µF
C44,45	YF400103XKT	Ceramic 0.01 µF	C171	ECEA0JKS470	Electrolytic 47 µF 6.3V
C46	ECEA1AKS101	Electrolytic 100 µF 10V	C172	YWT316B104MT	Ceramic 0.1 µF
C49	YF400222XKT	Ceramic 2200 pF	C173	ECEA1HKS010	Electrolytic 1 µF 50V (KS)
C62	ECEA1VKS470	Electrolytic 47 µF 35V	C174	YWT316B104MT	Ceramic 0.1 µF
C63	YF400560CHJT	Ceramic 56 pF	C175	YF400050CHDT	Ceramic 5 pF
C64	ECEA1AKS101	Electrolytic 100 µF 10V	C176	YF400561CHJT	Ceramic 560pF
C66	ECSF1HE474	Electrolytic 0.47 µF 50V	C177	YF400102XKT	Ceramic 1000 pF
C67	ECEA1CKS470	Electrolytic 47 µF 16V	C178	ECEA0JKS470	Electrolytic 47 µF 6.3V
C68	YWT316B104MT	Ceramic 0.1 µF	C179,180	YWT316B104MT	Ceramic 0.1 µF
C69,70	YWS21A106T	Electrolytic 10 µF 10V	C181	ECEA1CKS220	Electrolytic 22 µF 16V
C71	YWT316B104MT	Ceramic 0.1 µF	C182	ECEA1HKS010	Electrolytic 1 µF 50V (KS)
C72	YWS21A336	Electrolytic 33 µF 10V	C183	ECEA1HKS47	Electrolytic 0.47 µF 50V
C73	YWT316B104MT	Ceramic 0.1 µF	C184	ECEA1HKS010	Electrolytic 1 µF 50V (KS)
C74	YWS21A336	Electrolytic 33 µF 10V	C185	YF400201CHJT	Ceramic 200 pF
C75	ECEA1HKS47	Electrolytic 0.47 µF 50V	C186,187	YWT316B473MT	Ceramic 0.047 µF
C76	YF400102XKT	Ceramic 1000 pF	C188,189	YF400102XKT	Ceramic 1000 pF
C81	ECEA1AKS101	Electrolytic 100 µF 10V	C190	YF400222XKT	Ceramic 2200 pF
C82	ECEA1ASN100	Electrolytic 10 µF 10V	C191	YWT316B104MT	Ceramic 0.1 µF
C83-85	YWT316B104MT	Ceramic 0.1 µF	C192	ECEA1ES4R7	Electrolytic 4.7 µF 25V (KS)
C86	YWS21A106T	Electrolytic 10 µF 10V	C194	YWT316B104MT	Ceramic 0.1 µF
C87	YF400070CHDT	Ceramic 7pF (CH)	C195	ECEA1HKS010	Electrolytic 1 µF 50V (KS)
C88	YF400180CHJT	Ceramic 18 pF	C196,197	YWT316B104MT	Ceramic 0.1 µF
C92-94	YWT316B104MT	Ceramic 0.1 µF	C198	ECEA0JKS470	Electrolytic 47 µF 6.3V
C95	YWS21A106T	Electrolytic 10 µF 10V	C199	ECEA1HKS010	Electrolytic 1 µF 50V (KS)
C96	YF400070CHDT	Ceramic 7 pF (CH)	C200	YWT316B104MT	Ceramic 0.1 µF
C97	YF400180CHJT	Ceramic 18 pF	C201	YF400050CHDT	Ceramic 5 pF
C101	YF400102XKT	Ceramic 1000 pF	C202	YF400561CHJT	Ceramic 560 pF
C102	ECEA1VKS470	Electrolytic 47 µF 35V	C203	YF400102XKT	Ceramic 1000 pF

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C210	YF400103XKT	Ceramic	0.01 $\mu$ F	C274	YF400100CHJT	Ceramic	10 pF
C211	YWT316B104MT	Ceramic	0.1 $\mu$ F	C275	ECST1VD475	Electrolytic	4.7 $\mu$ F 35V
C212-214	YF400103XKT	Ceramic	0.01 $\mu$ F	C276	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V
C215	ECEA1CKS220	Electrolytic	22 $\mu$ F 16V	C277	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C216	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C278,279	ECEA0JU332	Electrolytic	3300 $\mu$ F 6.3V
C217	YF400121CHJT	Ceramic	120 pF	C280	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C218	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C281	YF400222XKT	Ceramic	2200 pF
C219	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C282	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C221	YF400330CHJT	Ceramic	33 pF	C283	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V
C222	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C284-286	YF400222XKT	Ceramic	2200 pF
C223	ECSF1HE105	Electrolytic	1 $\mu$ F 50V	C287	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V
C224	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C288	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
C225	YF400102XKT	Ceramic	1000 pF	C289	ECEA1ES4R7	Electrolytic	4.7 $\mu$ F 25V (KS)
C226	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C290	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V
C227	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C291	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C228	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C292,293	ECEA0JU332	Electrolytic	3300 $\mu$ F 6.3V
C229	YF400330CHJT	Ceramic	33 pF	C295	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
C230	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	C296	YF400390CHJT	Ceramic	39 pF
C231	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C297	YF400100CHJT	Ceramic	10 pF
C232	YF400102XKT	Ceramic	1000 pF	C298	ECST1VD475	Electrolytic	4.7 $\mu$ F 35V
C233	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C299	YF400100CHJT	Ceramic	10 pF
C234	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C300	ECEA1ES4R7	Electrolytic	4.7 $\mu$ F 25V (KS)
C235	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C301	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
C236	YF400330CHJT	Ceramic	33 pF	C302	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V
C237	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	C303	ECEA0JU332	Electrolytic	3300 $\mu$ F 6.3V
C238	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C304,307	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C239	YF400102XKT	Ceramic	1000 pF	C308	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C240,241	YF400101CHJT	Ceramic	100 pF	C309	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C242	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C310	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C243	YF400121CHJT	Ceramic	120 pF	C311,312	YF400220CHJT	Ceramic	22 pF
C244	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C313	YWT316B104MT	Ceramic	0.1 $\mu$ F
C246	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C314	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C247	YF400330CHJT	Ceramic	33 pF	C315	YWT316B104MT	Ceramic	0.1 $\mu$ F
C248	ECSF1HE105	Electrolytic	1 $\mu$ F 50V	C316	YF400100CHJT	Ceramic	10 pF
C249	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C317	ECST1VD475	Electrolytic	4.7 $\mu$ F 35V
C250	YF400102XKT	Ceramic	1000 pF	C318	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V
C251	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C319	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C252	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C320	ECEA0GKA471	Electrolytic	470 $\mu$ F 4V
C253	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C322	YF400103XKT	Ceramic	0.01 $\mu$ F
C254	YF400330CHJT	Ceramic	33 pF	C323	ECEA1ESN3R3	Electrolytic	3.3 $\mu$ F 25V
C255	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	C324	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
C256	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V	C325	YWT316B104MT	Ceramic	0.1 $\mu$ F
C257	YF400102XKT	Ceramic	1000 pF	C326	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C258	ECEA1VKS470	Electrolytic	47 $\mu$ F 35V	C327	YWT316B104MT	Ceramic	0.1 $\mu$ F
C259	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C328	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C260	ECEA1CKA101	Electrolytic	100 $\mu$ F 16V	C330	YWT316B473MT	Ceramic	0.047 $\mu$ F
C261	YF400330CHJT	Ceramic	33 pF	C331	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
C262	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	C332,354	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C263	YF400102XKT	Ceramic	1000 pF	C361	ECEA1HKS3R3	Electrolytic	3.3 $\mu$ F 50V
C264	YF400103XKT	Ceramic	0.01 $\mu$ F	C362	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V
C265	YWT316B104MT	Ceramic	0.1 $\mu$ F				
C266-268	YF400103XKT	Ceramic	0.01 $\mu$ F				
C269	ECEA1CKS220	Electrolytic	22 $\mu$ F 16V				
C270	YF400680CHJT	Ceramic	68 pF CH				
C273	YF400390CHJT	Ceramic	39 pF				

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C365,366	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C791-814	YF400101CHJT	Ceramic	100 pF
C367	YF400680CHJT	Ceramic	68 pF CH	C815,816	YWT316B104MT	Ceramic	0.1 $\mu$ F
C368	ECST1VD475	Electrolytic	4.7 $\mu$ F 35V	C817	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V
C369	ECEA0GKS470	Electrolytic	47 $\mu$ F 4V	C818	YWT316B104MT	Ceramic	0.1 $\mu$ F
C370	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C819-822	YF400101CHJT	Ceramic	100 pF
C371,372	ECEA0JKS101	Electrolytic	100 $\mu$ F 6.3V	C823-825	YWT316B104MT	Ceramic	0.1 $\mu$ F
C373,374	YF400680CHJT	Ceramic	68 pF CH	C826	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V
C375-378	ECEA1AKS470	Electrolytic	47 $\mu$ F 10V	C827	ECSF1CE106B	Tantalum	10 $\mu$ F 16V
C379,380	YF400103XKT	Ceramic	0.01 $\mu$ F	C828	YWT316B104MT	Ceramic	0.1 $\mu$ F
C381,382	YF400390CHJT	Ceramic	39 pF	C829	YWS21C105	Electrolytic	1 $\mu$ F 16V
C387-390	ECSF1EE226B	Tantalum	22 $\mu$ F 25V	C830	ECQP1H103GZ	Plastic	0.01 $\mu$ F 50V
C391	YF400330CHJT	Ceramic	33 pF	C831	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V
C392	YF400820CHJT	Ceramic	82 pF	C832	YWT316B104MT	Ceramic	0.1 $\mu$ F
C393-397	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C833	YF400101CHJT	Ceramic	100 pF
C398-401	YWT316B104MT	Ceramic	0.1 $\mu$ F	C834-836	YWT316B104MT	Ceramic	0.1 $\mu$ F
C402	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	C837	ECEA1CSS221	Electrolytic	220 $\mu$ F 16V
C403-407	ECEA1CKS470	Electrolytic	47 $\mu$ F 16V	C838	ECEA1CU102	Electrolytic	1000 $\mu$ F 16V
C408	YWT316B104MT	Ceramic	0.1 $\mu$ F	C840,841	ECEA0JKA221	Electrolytic	220 $\mu$ F 6.3V
C700	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V	C842-850	YF400101CHJT	Ceramic	100 pF
C701	YF400104FZT	Ceramic	0.1 $\mu$ F	CT3,4	YFTZ03R200FR	Trimmer Capacitor	20 pF
C702	YWT316B104MT	Ceramic	0.1 $\mu$ F	L1,2	ELC08D082	Coil	
C703	YWFYD0H105Z	Electrolytic	1 $\mu$ F	L5	ELESE180KA	Coil	18 $\mu$ H
C704	YF400104FZT	Ceramic	0.1 $\mu$ F	L6	ELESE6R8KA	Coil	6.8 $\mu$ H
C705	YWT316B104MT	Ceramic	0.1 $\mu$ F	L8-10	ELESE1R0KA	Coil	1 $\mu$ H
C706	ECEA1CKS330	Electrolytic	33 $\mu$ F 16V	L12	ELESE180KA	Coil	18 $\mu$ H
C707	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	L13	ELESE6R8KA	Coil	6.8 $\mu$ H
C708	YF400102XKT	Ceramic	1000 pF	L14,15	ELESE1R0KA	Coil	1 $\mu$ H
C709	YF400103XKT	Ceramic	0.01 $\mu$ F	L16	ELESE101KA	Coil	100 $\mu$ H
C710	YWT316B104MT	Ceramic	0.1 $\mu$ F	L21	ELESE1R0KA	Coil	1 $\mu$ H
C711	YF400222XKT	Ceramic	2200 pF	L24,27	ELESE101KA	Coil	100 $\mu$ H
C712-714	YWT316B104MT	Ceramic	0.1 $\mu$ F	L28	ELESE101KA	Coil	100 $\mu$ H
C715,716	YF400101CHJT	Ceramic	100 pF	L29,30	ELESE1R0KA	Coil	1 $\mu$ H
C717	YWT316B104MT	Ceramic	0.1 $\mu$ F	L700	ELC08D082	Coil	
C718	YF400330CHJT	Ceramic	33 pF	L701-706	ELESE100KA	Coil	10 $\mu$ H
C719-721	YF400101CHJT	Ceramic	100 pF	SW701,702	YWA6D8100	Slide Switch	
C722	YWT316B104MT	Ceramic	0.1 $\mu$ F	X3,4	YFMS30917M10	Crystal Oscillator	
C723-736	YF400101CHJT	Ceramic	100 pF	X700	YWCSA1966MXT	Crystal Oscillator	
C737,738	YWT316B104MT	Ceramic	0.1 $\mu$ F	CF1,2	YWYS40075	Filter	
C739	YF400104FZT	Ceramic	0.1 $\mu$ F	CF3	YWYS30484	Filter	
C742	YWT316B104MT	Ceramic	0.1 $\mu$ F	CF4,5	YWYS40075	Filter	
C743	ECSF1CE106B	Tantalum	10 $\mu$ F 16V	CF6	YWYS30484	Filter	
C744	YWT316B104MT	Ceramic	0.1 $\mu$ F	CF7	YWYS40072	Filter	
C745	ECEA0JKA221	Electrolytic	220 $\mu$ F 6.3V	CF8,9	YWYS30552	Filter	
C746	YWT316B104MT	Ceramic	0.1 $\mu$ F	CF10	YWYS40072	Filter	
C747	ECEA1CKS100	Electrolytic	10 $\mu$ F 16V	CF11,12	YWYS30552	Filter	
C748	YWT316B104MT	Ceramic	0.1 $\mu$ F	CF13	YWYS40075	Filter	
C749	ECEA1CKS100	Electrolytic	10 $\mu$ F 16V	CF14	YWYS30484	Filter	
C750-756	YWT316B104MT	Ceramic	0.1 $\mu$ F	CF15	YWYS40075	Filter	
C757	YF400104FZT	Ceramic	0.1 $\mu$ F	CF16,17	YWYS30484	Filter	
C758	YWT316B104MT	Ceramic	0.1 $\mu$ F	CF18	YWYSG0382	Filter	
C759-762	ECEA1CKS100	Electrolytic	10 $\mu$ F 16V	CF19	YWYS30484	Filter	
C763-774	YF400101CHJT	Ceramic	100 pF	CF20	YWYS40075	Filter	
C775	YWT316B104MT	Ceramic	0.1 $\mu$ F	CF21	YWYS30484	Filter	
C776-782	YF400101CHJT	Ceramic	100 pF	CF22	YWYS40075	Filter	
C783-790	YF400471CHJT	Ceramic	470 pF	CF23	YWYS30484	Filter	



REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
CN1	YW530140710	7-pin Connector	<b>DIGITAL BOARD</b>		
CN2	YWF794P026LA	26-pin Connector	PCB10 (RTL)	YWJKZMX50E3A	Printed Circuit Board Assy
CN3	YWF794P030LA	30-pin Connector	IC1	MC74HC4053F	IC
CN4	YWF794P024LA	24-pin Connector	IC2	NJM2904M	IC
CN5	YWF794P040LA	40-pin Connector	IC3,4	YWCXD1175AM	IC
CN6	YWF794P030LA	30-pin Connector	IC5	MC74HC4053F	IC
CN7	YWF794P020LA	20-pin Connector	IC6	NJM2904M	IC
CN8	YWF794P034LA	34-pin Connector	IC7,8	YWCXD1175AM	IC
J88,90	ERJ6GEY0R00	Jumper Resistor	IC9-11	YWUPD42102G3	IC
J125,127	ERJ6GEY0R00	Jumper Resistor	IC12	MN53040LBV	IC
J167,188	ERJ6GEY0R00	Jumper Resistor	IC13-18	YWUPD42102G3	IC
J308,330	ERJ6GEY0R00	Jumper Resistor	IC19	MN53040LBV	IC
J360,373	ERJ6GEY0R00	Jumper Resistor	IC20-22	YWUPD42102G3	IC
J429,564	ERJ6GEY0R00	Jumper Resistor	IC23	YWSC7SU04F	IC
J735,737	ERJ6GEY0R00	Jumper Resistor	IC24	MN53100LBU5	IC
J739	ERJ6GEY0R00	Jumper Resistor	IC25-36	YWM5M4C500AL	IC
TP3-8	YWRCT2125TPV	Test Point	IC43	YWSC7SU04F	IC
TP11-20	YWRCT2125TPV	Test Point	IC44	MN53100LBU5	IC
TP23-25	YWRCT2125TPV	Test Point	IC45-56	YWM5M4C500AL	IC
M16	YVV2HA1042A2	Shield Parts	IC63	YWPD65240074	IC
M17	YVV2SA2280A3	Mounting Angle	IC64,65	YWUPD42102G3	IC
M41	YVV2HA1044A2	Shield Parts	IC66	YWUPD91361	IC
M42	YVV2HA1045A2	Shield Parts	IC67	YWPD65012C25	IC
			IC68	MC74HC4053F	IC
			IC69	MN676021PPS	IC
			IC70	YWSC7SU04F	IC
			IC71	MC74HC374AF	IC
			IC72	YWMC74AC374M	IC
			IC73	YWPD65082067	IC
			IC74	YWMC74HC08F	IC
			IC75	YWSC7S32FER	IC
			IC76	YWMC74HC74F	IC
			IC77	MC74HC374AF	IC
			IC78	YWMC74AC374M	IC
			IC79	YWNJM78L09A	IC
			IC80	YWSC7S08F	IC
			IC81	NJM319M	IC
			IC82,83	YWMC74HCS41F	IC
			IC84	YWSC7SU04F	IC
			IC85-87	YWSC7S08F	IC
			IC88	YWPD65012C25	IC
			IC89	YWSC7SU04F	IC
			IC90	MN676021PPS	IC
			IC91	YWSC7SU04F	IC
			IC92,93	NJM78L05A	IC
			IC94	YWSC7S08F	IC
			IC95	NJM78L05A	IC
			IC96	YW78L05UATE2	IC
			Q1-8	MSD601-QRS	Transistor
			Q10	2SK198-Q	Transistor
			Q11,12	2SK198-Q	FET

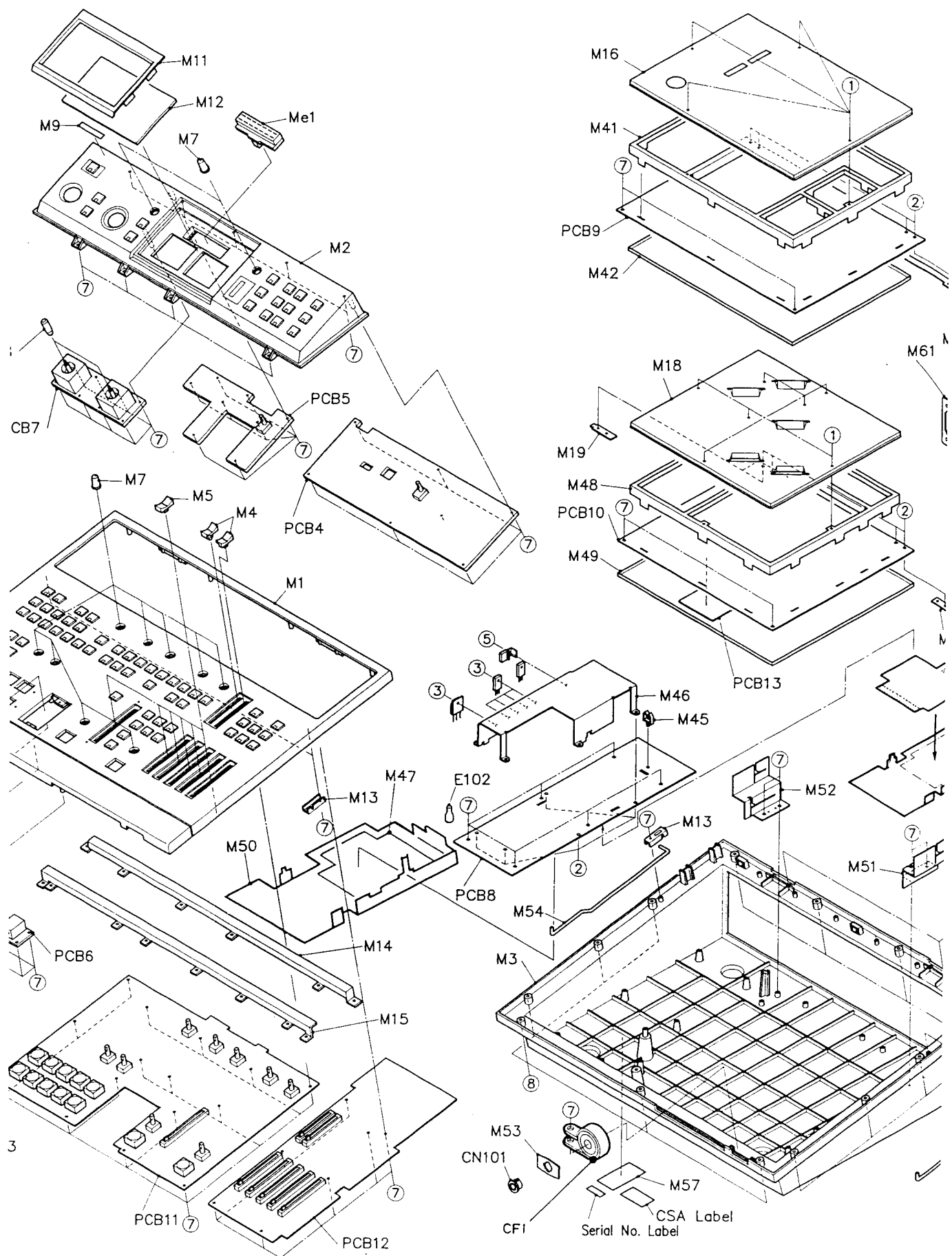
REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
Q13	MSB709-QRS	Transistor		R176	YF2116392JT	Carbon	3.9K ohms 1/10W
Q14,15	2SA1733	Transistor		R177	YF2116221JT	Carbon	220 ohms 1/10W
Q16	MSB709-QRS	Transistor		R178	YF2116101JT	Carbon	100 ohms 1/10W
Q17	2SA1733	Transistor		R179	YF2116221JT	Carbon	220 ohms 1/10W
Q18	2SK198-Q	FET		R180	ERJ6GEYJ103	Carbon	10K ohms 1/10W
Q19	MSD601-QRS	Transistor		R181	YW2116105JT	Carbon	1M ohms 1/10W
Q20,21	MSB709-QRS	Transistor		R182	YF2116331JT	Carbon	330 ohms 1/10W
Q22	2SK198-Q	Transistor		R183	YF2116332JT	Carbon	3.3K ohms 1/10W
Q23	MSD601-QRS	Transistor		R184	YF2116333GT	Carbon	33K ohms 1/10W
Q24,25	MSB709-QRS	Transistor		R185	YF2116511JT	Carbon	510 ohms 1/10W
Q26	MSD601-QRS	Transistor		R186	YF2116752JT	Carbon	7.5K ohms 1/10W
Q27	2SK198-Q	FET		R187	YF2116331JT	Carbon	330 ohms 1/10W
Q28	MSB709-QRS	Transistor		R188	YF2116104JT	Carbon	100K ohms 1/10W
Q29	2SK198-Q	FET		R189	YF2116331JT	Carbon	330 ohms 1/10W
Q30,31	MSD601-QRS	Transistor		R192-199	YF2116221JT	Carbon	220 ohms 1/10W
D1-7	1SV153	Diode		R202-224	YF2116221JT	Carbon	220 ohms 1/10W
D8,9	1SS99	Diode		R229-254	YF2116221JT	Carbon	220 ohms 1/10W
D10-13	1SV153	Diode		R261,262	YF2116104JT	Carbon	100K ohms 1/10W
R1	YF2116821GT	Carbon	820 ohms 1/10W	R263	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R2	YF2116202JT	Carbon	2K ohms 1/10W	R264,265	YF2116331JT	Carbon	330 ohms 1/10W
R3	YF2116222GT	Carbon	2.2K ohms 1/10W	R266	YF2116511JT	Carbon	510 ohms 1/10W
R4	YF2116511JT	Carbon	510 ohms 1/10W	R267	YF2116104JT	Carbon	100K ohms 1/10W
R5-7	YF2116331JT	Carbon	330 ohms 1/10W	R270	YF2116752JT	Carbon	7.5K ohms 1/10W
R8	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	R271	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R9	YF2116112JT	Carbon	1.1K ohms 1/10W	R272	YF2116332JT	Carbon	3.3K ohms 1/10W
R10-27	YF2116101JT	Carbon	100 ohms 1/10W	R273	YF2116101JT	Carbon	100 ohms 1/10W
R28,29	YF2116331JT	Carbon	330 ohms 1/10W	R274	YF2116183GT	Carbon	18K ohms 1/10W
R30	YF2116821GT	Carbon	820 ohms 1/10W	R276,277	YF2116511JT	Carbon	510 ohms 1/10W
R31	YF2116202JT	Carbon	2K ohms 1/10W	R278,279	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R32	YF2116222GT	Carbon	2.2K ohms 1/10W	R280	YF2116332JT	Carbon	3.3K ohms 1/10W
R33	YF2116511JT	Carbon	510 ohms 1/10W	R283-289	YF2116511JT	Carbon	510 ohms 1/10W
R34	YF2116101JT	Carbon	100 ohms 1/10W	R295,296	YF2116104JT	Carbon	100K ohms 1/10W
R35-39	YF2116331JT	Carbon	330 ohms 1/10W	R297	YW2116105JT	Carbon	1M ohms 1/10W
R40	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W	R298	YF2116331JT	Carbon	330 ohms 1/10W
R41	YF2116112JT	Carbon	1.1K ohms 1/10W	R299-346	YF2116221JT	Carbon	220 ohms 1/10W
R42-58	YF2116101JT	Carbon	100 ohms 1/10W	R347	YF2116101JT	Carbon	100 ohms 1/10W
R59-74	YF2116221JT	Carbon	220 ohms 1/10W	R348-361	YF2116221JT	Carbon	220 ohms 1/10W
R75	YF2116101JT	Carbon	100 ohms 1/10W	R362	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R76	YF2116221JT	Carbon	220 ohms 1/10W	R363	YW2116105JT	Carbon	1M ohms 1/10W
R77	YW2116105JT	Carbon	1M ohms 1/10W	R364	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R78	YF2116331JT	Carbon	330 ohms 1/10W	R365,366	YF2116331JT	Carbon	330 ohms 1/10W
R79	ERJ6GEYJ103	Carbon	10K ohms 1/10W	R367	YF2116752JT	Carbon	7.5K ohms 1/10W
R80	YF2116332JT	Carbon	3.3K ohms 1/10W	R368	YF2116511JT	Carbon	510 ohms 1/10W
R81	YF2116333GT	Carbon	33K ohms 1/10W	R370	YF2116332JT	Carbon	3.3K ohms 1/10W
R82	YF2116511JT	Carbon	510 ohms 1/10W	R372,373	YF2116221JT	Carbon	220 ohms 1/10W
R83	YF2116752JT	Carbon	7.5K ohms 1/10W	R374	YF2116511JT	Carbon	510 ohms 1/10W
R84	YF2116331JT	Carbon	330 ohms 1/10W	R375	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R85	YF2116104JT	Carbon	100K ohms 1/10W	R376	YF2116511JT	Carbon	510 ohms 1/10W
R86	YF2116331JT	Carbon	330 ohms 1/10W	R377	ERJ6GEYJ103	Carbon	10K ohms 1/10W
R89-97	YF2116221JT	Carbon	220 ohms 1/10W	R378	ERJ6GEYJ472	Carbon	4.7K ohms 1/16W
R100-122	YF2116221JT	Carbon	220 ohms 1/10W	R379	YF2116222GT	Carbon	2.2K ohms 1/10W
R127-140	YF2116221JT	Carbon	220 ohms 1/10W	R380	YF2116392JT	Carbon	3.9K ohms 1/10W
R141	YF2116392JT	Carbon	3.9K ohms 1/10W	R381	ERJ6GEYJ102	Carbon	1K ohms 1/10W
R142-153	YF2116221JT	Carbon	220 ohms 1/10W	R382	YF2116221JT	Carbon	220 ohms 1/10W
R160-175	YF2116221JT	Carbon	220 ohms 1/10W	R383	YF2116101JT	Carbon	100 ohms 1/10W

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
R384-399	YF2116221JT	Carbon	220 ohms 1/10W	C10	YF400333XKT	Ceramic	0.033 $\mu$ F
R400,401	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C11	YWS21A106T	Electrolytic	10 $\mu$ F
R402-417	YF2116221JT	Carbon	220 ohms 1/10W	C12	YWT316B104MT	Ceramic	0.1 $\mu$ F
R418-420	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C13	YF400680CHJT	Ceramic	68 pF CH
R421	YF2116221JT	Carbon	220 ohms 1/10W	C14	YF400333XKT	Ceramic	0.033 $\mu$ F
R422-432	YF2116331JT	Carbon	330 ohms 1/10W	C15-17	YF400220CHJT	Ceramic	22 pF
R433,434	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C18	YWS21A106T	Electrolytic	10 $\mu$ F
R435	YF2116511JT	Carbon	510 ohms 1/10W	C19	YWT316B104MT	Ceramic	0.1 $\mu$ F
R436,437	YF2116221JT	Carbon	220 ohms 1/10W	C20	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
R438	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C21	YF400102XKT	Ceramic	1000 pF
R439-444	YF2116331JT	Carbon	330 ohms 1/10W	C22	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
R445,446	YF2116104JT	Carbon	100K ohms 1/10W	C23	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R447-463	ERJ6GEYJ103	Carbon	10K ohms 1/10W	C24	YWT316B104MT	Ceramic	0.1 $\mu$ F
R465,466	YF2116511JT	Carbon	510 ohms 1/10W	C25	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R467	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C26	YF400333XKT	Ceramic	0.033 $\mu$ F
R468	YF2116511JT	Carbon	510 ohms 1/10W	C27	YWT316B104MT	Ceramic	0.1 $\mu$ F
R469-471	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C28	YF400680CHJT	Ceramic	68 pF CH
R472	YF2116332JT	Carbon	3.3K ohms 1/10W	C29	YF400333XKT	Ceramic	0.033 $\mu$ F
R473,474	YF2116104JT	Carbon	100K ohms 1/10W	C30,31	YF400220CHJT	Ceramic	22 pF
R475	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C32	YF400333XKT	Ceramic	0.033 $\mu$ F
R476	YW2116105JT	Carbon	1M ohms 1/10W	C33	ECEA1AKS330	Electrolytic	33 $\mu$ F 10V
R477,482	YF2116331JT	Carbon	330 ohms 1/10W	C34	YF400333XKT	Ceramic	0.033 $\mu$ F
R483,484	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C35,36	ECEA1AKS330	Electrolytic	33 $\mu$ F 10V
R485	YF2116104JT	Carbon	100K ohms 1/10W	C37	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R486	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C38	YWT316B104MT	Ceramic	0.1 $\mu$ F
R487	YF2116104JT	Carbon	100K ohms 1/10W	C39	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R488	YF2116752JT	Carbon	7.5K ohms 1/10W	C40	YWT316B104MT	Ceramic	0.1 $\mu$ F
R489	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C41	YF400333XKT	Ceramic	0.033 $\mu$ F
R490	YF2116332JT	Carbon	3.3K ohms 1/10W	C42	YF400680CHJT	Ceramic	68 pF CH
R493,494	YF2116511JT	Carbon	510 ohms 1/10W	C43	YF400333XKT	Ceramic	0.033 $\mu$ F
R496	YF2116203JT	Carbon	20K ohms 1/10W	C44-48	YF400220CHJT	Ceramic	22 pF
R497	YF2116101JT	Carbon	100 ohms 1/10W	C49	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R500,501	YF2116331JT	Carbon	330 ohms 1/10W	C50	YWT316B104MT	Ceramic	0.1 $\mu$ F
R502,503	YF2116511JT	Carbon	510 ohms 1/10W	C51	ECEA1ESN4R7	Electrolytic	4.7 $\mu$ F 25V
R504,505	YF2116331JT	Carbon	330 ohms 1/10W	C52	YF400102XKT	Ceramic	1000 pF
R507	YF2116331JT	Carbon	330 ohms 1/10W	C53	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
R508	YF2116202JT	Carbon	2K ohms 1/10W	C54	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R509	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C55	YWT316B104MT	Ceramic	0.1 $\mu$ F
R510,512	YF2116101JT	Carbon	100 ohms 1/10W	C56	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R513	YF2116221JT	Carbon	220 ohms 1/10W	C57	YF400333XKT	Ceramic	0.033 $\mu$ F
R514-517	YF2116101JT	Carbon	100 ohms 1/10W	C58	YWT316B104MT	Ceramic	0.1 $\mu$ F
R518-520	YF2116332JT	Carbon	3.3K ohms 1/10W	C59	YF400680CHJT	Ceramic	68 pF CH
R521,522	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C60	YF400333XKT	Ceramic	0.033 $\mu$ F
R523-525	YF2116221JT	Carbon	220 ohms 1/10W	C61	YWT316B104MT	Ceramic	0.1 $\mu$ F
R526	ERJ6GEYJ102	Carbon	1K ohms 1/10W	C62	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R527	YF2116221JT	Carbon	220 ohms 1/10W	C63,64	YWT316B104MT	Ceramic	0.1 $\mu$ F
R531	YW2116182JT	Carbon	1.8K ohms 1/10W	C65	YWS21A106T	Electrolytic	10 $\mu$ F 10V
R532	YF2116331JT	Carbon	330 ohms 1/10W	C66,67	YWT316B104MT	Ceramic	0.1 $\mu$ F
VR1	EVM1DSW30B14	Variable Resistor	10K ohms	C68	YWS21A106T	Electrolytic	10 $\mu$ F 10V
Z1-5	YWRKM10L102F	Block Resistor		C69	YWT316B104MT	Ceramic	0.1 $\mu$ F
C2,3	ECSF1CE336	Electrolytic	33 $\mu$ F 16V	C70,71	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C4,5	YF400333XKT	Ceramic	0.033 $\mu$ F	C72-75	YWT316B104MT	Ceramic	0.1 $\mu$ F
C6,7	ECEA1AKS330	Electrolytic	33 $\mu$ F 10V	C76	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C8	YWS21A106T	Electrolytic	10 $\mu$ F	C77	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V
C9	YWT316B104MT	Ceramic	0.1 $\mu$ F	C78	YF400561CHJT	Ceramic	560 pF

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C79	YF400270CHJT	Ceramic	27 pF	C199	ECEA1CK5100	Electrolytic	10 $\mu$ F 16V
C80	YF400332XKT	Ceramic	3300 pF	C200	YF400103XKT	Ceramic	0.01 $\mu$ F
C81	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	C201	YF400101CHJT	Ceramic	100 pF
C82	YF400103XKT	Ceramic	0.01 $\mu$ F	C202	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V
C83	YF400101CHJT	Ceramic	100 pF	C203	YF400103XKT	Ceramic	0.01 $\mu$ F
C84	YF400330CHJT	Ceramic	33 pF	C204	YWS21A226	Electrolytic	22 $\mu$ F 10V
C85	YWT316B104MT	Ceramic	0.1 $\mu$ F	C205,206	YF400330CHJT	Ceramic	33 pF
C86,87	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C207,208	YWT316B104MT	Ceramic	0.1 $\mu$ F
C88,89	YWT316B104MT	Ceramic	0.1 $\mu$ F	C209	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C90	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C210-212	YWT316B104MT	Ceramic	0.1 $\mu$ F
C91	YWT316B104MT	Ceramic	0.1 $\mu$ F	C213,214	YF400330CHJT	Ceramic	33 pF
C92	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C215	YF400201CHJT	Ceramic	200 pF
C93	ECEA0JU102	Electrolytic	000 $\mu$ F 6.3V	C216,217	YF400101CHJT	Ceramic	100 pF
C94-98	YWT316B104MT	Ceramic	0.1 $\mu$ F	C218	YWT316B104MT	Ceramic	0.1 $\mu$ F
C99	ECSF1CE336	Electrolytic	33 $\mu$ F 16V	C219,220	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C100,101	YWT316B104MT	Ceramic	0.1 $\mu$ F	C221	YWT316B104MT	Ceramic	0.1 $\mu$ F
C103-106	YWT316B104MT	Ceramic	0.1 $\mu$ F	C222	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C107	ECSF1CE336	Electrolytic	33 $\mu$ F 16V	C223	YWT316B104MT	Ceramic	0.1 $\mu$ F
C108	YWT316B104MT	Ceramic	0.1 $\mu$ F	C224	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C116	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C225,226	YWT316B104MT	Ceramic	0.1 $\mu$ F
C117,118	YWT316B104MT	Ceramic	0.1 $\mu$ F	C227	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C119-121	YF400330CHJT	Ceramic	33 pF	C228	YWT316B104MT	Ceramic	0.1 $\mu$ F
C125-132	YF400330CHJT	Ceramic	33 pF	C229	ECSF1CE336	Electrolytic	33 $\mu$ F 16V
C141-143	YWT316B104MT	Ceramic	0.1 $\mu$ F	C230	YF400270CHJT	Ceramic	27 pF
C144	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C231	YF400561CHJT	Ceramic	560 pF
C145	YWT316B104MT	Ceramic	0.1 $\mu$ F	C232	YWT316B104MT	Ceramic	0.1 $\mu$ F
C146,147	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C233	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C148,149	YWT316B104MT	Ceramic	0.1 $\mu$ F	C234	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V
C150,151	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C235	YF400332XKT	Ceramic	3300 pF
C152-154	YWT316B104MT	Ceramic	0.1 $\mu$ F	C236	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C155	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C237,238	YWT316B104MT	Ceramic	0.1 $\mu$ F
C156	YWT316B104MT	Ceramic	0.1 $\mu$ F	C239	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C157	YF400561CHJT	Ceramic	560 pF	C240	YWT316B104MT	Ceramic	0.1 $\mu$ F
C158	YF400270CHJT	Ceramic	27 pF	C241	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C159	YF400332XKT	Ceramic	3300 pF	C242,243	ECEA1CK5470	Electrolytic	47 $\mu$ F 16V
C160	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	C244	YWT316B104MT	Ceramic	0.1 $\mu$ F
C161	YF400103XKT	Ceramic	0.01 $\mu$ F	C245	YF400330CHJT	Ceramic	33 pF
C162	YF400330CHJT	Ceramic	33 pF	C246	YF400101CHJT	Ceramic	100 pF
C163	YF400101CHJT	Ceramic	100 pF	C247	YF400390CHJT	Ceramic	39 pF
C164	YWT316B104MT	Ceramic	0.1 $\mu$ F	C248	YF400103XKT	Ceramic	0.01 $\mu$ F
C165,166	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C249	YWT316B104MT	Ceramic	0.1 $\mu$ F
C167,168	YWT316B104MT	Ceramic	0.1 $\mu$ F	C250	ECEA0JKS470	Electrolytic	47 $\mu$ F 6.3V
C169	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C251	YWT316B104MT	Ceramic	0.1 $\mu$ F
C170	ECEA1AKS220	Electrolytic	22 $\mu$ F 10V	C252	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C171	ECEA0JU102	Electrolytic	1000 $\mu$ F 6.3V	C253,254	YWT316B104MT	Ceramic	0.1 $\mu$ F
C172-176	YWT316B104MT	Ceramic	0.1 $\mu$ F	C255,256	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C177	ECSF1CE336	Electrolytic	33 $\mu$ F 16V	C257	YWT316B104MT	Ceramic	0.1 $\mu$ F
C178-183	YWT316B104MT	Ceramic	0.1 $\mu$ F	C258	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C184	ECSF1CE336	Electrolytic	33 $\mu$ F 16V	C259,260	YWT316B104MT	Ceramic	0.1 $\mu$ F
C185	YWT316B104MT	Ceramic	0.1 $\mu$ F	C261	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C193	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C262	YWT316B104MT	Ceramic	0.1 $\mu$ F
C194	YWT316B104MT	Ceramic	0.1 $\mu$ F	C263-266	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C195	YF400201CHJT	Ceramic	200 pF	C267	YWT316B104MT	Ceramic	0.1 $\mu$ F
C196,197	YF400101CHJT	Ceramic	100 pF	C268	YWS21A106T	Electrolytic	10 $\mu$ F 10V
C198	YWT316B104MT	Ceramic	0.1 $\mu$ F	C269	YWT316B104MT	Ceramic	0.1 $\mu$ F

REF.NO.	PART NO.	DESCRIPTION		REF.NO.	PART NO.	DESCRIPTION	
C270-272	YWS21A106T	Electrolytic	10 $\mu$ F 10V	C377	YF400390CHJT	Ceramic	39 pF
C273-277	YF400330CHJT	Ceramic	33 pF	C378,379	ECST1ED106ZR	Electrolytic	10 $\mu$ F 25V
C283	YF400330CHJT	Ceramic	33 pF	L2	ELC08D082	Coil	
C284	YWT316B104MT	Ceramic	0.1 $\mu$ F	L3-8	ELESE1R0KA	Coil	1 $\mu$ H
C285-289	YF400330CHJT	Ceramic	33 pF	L9,10	ELESE100KA	Coil	10 $\mu$ H
C290	ECEA1HKS2R2	Electrolytic	2.2 $\mu$ F 50V	L11	ELESE1R0KA	Coil	1 $\mu$ H
C291	YF400103XKT	Ceramic	0.01 $\mu$ F	L12	YWS5LE0554	Coil	
C292	YF400101CHJT	Ceramic	100 pF	L13,14	ELESE100KA	Coil	10 $\mu$ H
C293,294	YF400561CHJT	Ceramic	560 pF	L15,16	ELESE1R0KA	Coil	1 $\mu$ H
C295	YWS21A106T	Electrolytic	10 $\mu$ F 10V	L17	YWS5LE0554	Coil	
C296,297	YWT316B104MT	Ceramic	0.1 $\mu$ F	L18,19	ELESE100KA	Coil	10 $\mu$ H
C298,299	YF400101CHJT	Ceramic	100 pF	L20,21	ELESE1R0KA	Coil	1 $\mu$ H
C300	YF400201CHJT	Ceramic	200 pF	L22,23	ELESE100KA	Coil	10 $\mu$ H
C301	ECEA1HKS3R3	Electrolytic	3.3 $\mu$ F 50V	L24	YWS5LE0554	Coil	
C302	YF400103XKT	Ceramic	0.01 $\mu$ F	L25	ELESE100KA	Coil	10 $\mu$ H
C303,304	YWT316B104MT	Ceramic	0.1 $\mu$ F	L26-30	ELESE220KA	Coil	22 $\mu$ H
C305	YF400101CHJT	Ceramic	100 pF	L31-33	ELESE1R0KA	Coil	1 $\mu$ H
C306	YWT316B104MT	Ceramic	0.1 $\mu$ F	L34	ELC08D082	Coil	
C307	YWS21A106T	Electrolytic	10 $\mu$ F 10V	L35	ELESE1R0KA	Coil	1 $\mu$ H
C308	ECSF1CE336	Tantalum	33 $\mu$ F 16V	L36,37	ELESE100KA	Coil	10 $\mu$ H
C309	YF400330CHJT	Ceramic	33 pF	L38	ELJFA101KF	Coil	100 $\mu$ H
C310,311	YF400101CHJT	Ceramic	100 pF	X1	YWN8R4R40625	Crystal Oscillator	
C312	YF400330CHJT	Ceramic	33 pF	X2	YFMS30917M10	Crystal Oscillator	
C313	YF400220CHJT	Ceramic	22 pF	X3	YWN8R4R40625	Crystal Oscillator	
C314	YF400101CHJT	Ceramic	100 pF	X4	YFMS30917M10	Crystal Oscillator	
C315	YF400330CHJT	Ceramic	33 pF	CN1	YW530140510	5-pin Connector	
C316	YF400220CHJT	Ceramic	22 pF	CN2	YWF794P040LA	4-pin Connector	
C317	YF400101CHJT	Ceramic	100 pF	CN3	YWF794P020LA	2-pin Connector	
C318-320	YF400330CHJT	Ceramic	33 pF	CN4	YW530140710	7-pin Connector	
C322	YF400330CHJT	Ceramic	33 pF	J99,201	ERJ6GEY0R00	Jumper Resistor	
C323	ECSF1CE336	Tantalum	33 $\mu$ F 16V	J269,275	ERJ6GEY0R00	Jumper Resistor	
C324-331	YF400330CHJT	Ceramic	33 pF	J281,294	ERJ6GEY0R00	Jumper Resistor	
C332	YWS21A226	Electrolytic	22 $\mu$ F 16V	J371,464	ERJ6GEY0R00	Jumper Resistor	
C333,334	YF400390CHJT	Ceramic	39 pF	J480,491	ERJ6GEY0R00	Jumper Resistor	
C335	YWS21A226	Electrolytic	22 $\mu$ F 16V	J492,495	ERJ6GEY0R00	Jumper Resistor	
C336-338	YF400390CHJT	Ceramic	39 pF	J499,529	ERJ6GEY0R00	Jumper Resistor	
C339,340	ECEA1AKS101	Electrolytic	100 $\mu$ F 10V	TP1-5	YWRCT2125TPV	Test Poin	
C341	YF400390CHJT	Ceramic	39 pF	TP10-15	YWRCT2125TPV	Test Poin	
C342,343	YF400330CHJT	Ceramic	33 pF	M18	YWV2HA1043A2	Shield Parts	
C344-346	YWT316B104MT	Ceramic	0.1 $\mu$ F	M19	YWV2SA2281A4	Mounting Angle	
C347-349	YF400330CHJT	Ceramic	33 pF	M48	YWV2HA1046A1	Shield Parts	
C350,351	YWT316B104MT	Ceramic	0.1 $\mu$ F	M49	YWV2HA1047A2	Shield Parts	
C352,353	YWS21A226	Electrolytic	22 $\mu$ F 16V				
C354-357	YWT316B104MT	Ceramic	0.1 $\mu$ F				
C358	ECEA0JKS331	Electrolytic	330 $\mu$ F 6.3V				
C359,360	YWT316B104MT	Ceramic	0.1 $\mu$ F				
C361	ECEA0JKS331	Electrolytic	330 $\mu$ F 6.3V				
C362,363	YWT316B104MT	Ceramic	0.1 $\mu$ F				
C364	ECSF1CE336	Electrolytic	33 $\mu$ F 16V				
C365-369	YWT316B104MT	Ceramic	0.1 $\mu$ F				
C370	ECSF1CE336	Tantalum	33 $\mu$ F 16V				
C371	YWT316B104MT	Ceramic	0.1 $\mu$ F				
C372	ECST1AD336ZR	Electrolytic	33 $\mu$ F 10V				
C373-375	YWT316B104MT	Ceramic	0.1 $\mu$ F				
C376	YF400101CHJT	Ceramic	100 pF				

# EXPLODED VIEW



# Service Manual

Production Mixer  
**WJ-MX50**

**Supplement-2**

Please file and use this supplement service manual together with original service manual and the supplement-1 service manual for Model No. WJ-MX50, order No. AVS9206582C8 and AVS9302659S8.

## LIST OF MODIFICATION

### ■ ANALOG BOARD

- R522, R577, R578, R870 and C873 have been changed to improve the productivity from Serial No. 27A00001 and higher.
- R330 and R373 have been changed to improve the chroma gain adjustment from serial No. 29A00001 and higher.
- C739 has been changed to prevent the malfunction of Power switch from serial No. 22A00001 and higher.
- IC708 has been changed to improve the productivity from 31A00001 and higher.
- The pattern foil of Analog Board have been changed to improve the productivity from serial No. 2YA00001 and higher.

### ■ POWER BOARD

- F1 have been added to prevent the radio frequency energy from serial No. 2YA00001 and higher.
- SW1 has been changed from serial No. 22A00001 and higher.
- C1, C50, TH1 and F3 have been changed to prevent the radio frequency energy from 27A00001 and higher.
- TH2 and L20 have been added to prevent the radio frequency energy from serial No. 27A00001 and higher.
- R39 has been changed from serial No. 26A00001 and higher.
- The pattern foil of Power Board have been changed to improve the productivity from serial No. 2YA00001 and higher.

### ■ SWITCH BOARD

- C453, C454 and C459 have been changed to improve the productivity from serial No. 27A00001 and higher.
- C455, C456, C457, C458 and C460 have been changed to improve the productivity from serial No. 2YA00001 and higher.
- D361, D362 and D363 have been added from serial No. 2YA00001 and higher.
- The pattern foil of the Switch Board have been changed to improve the productivity from serial No. 2YA00001 and higher.

# Panasonic



#### ■ REAR-1 BOARD

- D1 - D23 and D24 have been added to protect the INPUT circuit of D-Sub connector from 27A00001 and higher.
- The pattern foil of Rear-1 Board have been changed to improve the productivity from serial No. 2YA00001 and higher.

#### ■ AUDIO BOARD

- R141 has been changed to improve for audio effector from serial No. 26A00001 and higher.
- R419 has been changed to improve for audio effector from serial No. 28A00001 and higher.
- The pattern foil of Audio Board have been changed to improve the productivity from serial No. 2YA00001 and higher.

#### ■ DIGITAL BOARD

- R529, R531, R532, C371, C372, C376 and C377 have been changed to correction for temperature from serial No. 27A00001 and higher.
- C378, C379, R495 and L38 have been added to correction for temperature from serial No. 27A00001 and higher.
- R511 has been deleted to improve the productivity from 27A00001 and higher.
- IC24 and IC44 have been changed to improve the productivity from serial No. 26A00193 and higher.
- DIGITAL SUB BOARD have been deleted to improve the productivity from serial No. 2YA00001 and higher.
- The pattern foil of Digital Board have been changed to improve the productivity from serial No. 2YA00001 and higher.

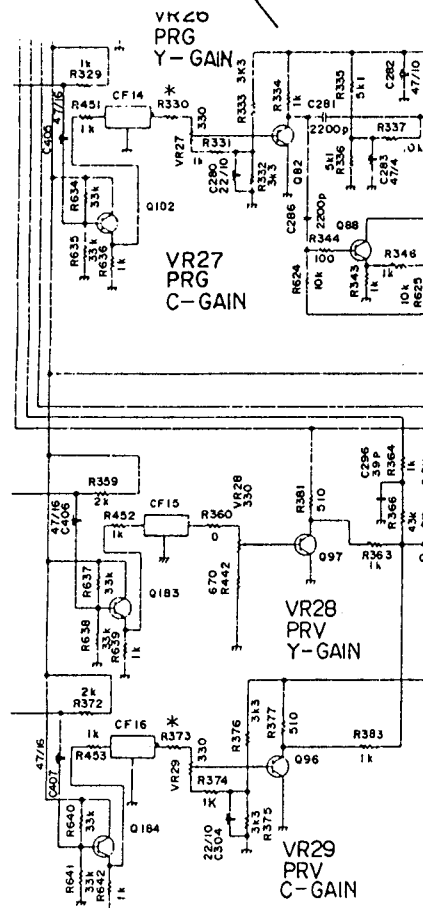
#### ■ POSITIONER BOARD

- The pattern foil of positioner board have been changed to improve the productivity from serial No. 2YA00001 and higher.

REF. NO.	ORIGINAL PART NO.	NEW PART NO.	DESCRIPTION
MISCELLANEOUS			
M5	YWACJ450/B	YWGTBS2R5B	AC power cord for WJ-MX50/B
ANALOG BOARD			
IC708	HD6475368F	YWHD536RA21F	IC
R330	YF2116331JT	ERJ6GEY0R00	Carbon 0 ohms 1/16W
R373	YF2116331JT	ERJ6GEY0R00	Carbon 0 ohms 1/16W
R522	YF2116511JT	ERJ8GCSG511	Carbon 510 ohms 1/16W
R577, 578	YF2116221JT	ERJ8GCSG221	Carbon 220 ohms 1/16W
R870	ERDS2T102	ERJ6GCSG102	Carbon 1K ohm 1/16W
C739	YF400103XKT	YF400104FZT	Ceramic 0.1 $\mu$ F
C873	ECEA1CU221B	ECEA1CSS221	Electrolytic 220 PF 16V
POWER BOARD			
R39	ERDS2TJ4R7	ERDS2TJ6R8	Carbon 6.8 ohms 1/4W
C1	ECQU2A224MV	ECQU2A563MT	Plastic 0.056 $\mu$ F 250V
C50	ECEA1HU100	ECEA1AN220S	Electrolytic 22 $\mu$ F 10V
L20	_____	YWLF4D222	Coil
F1	_____	XBA1C31NU100	Current Fuse
F3	SSFR500F002	SSFR630F002	Current Fuse 630 mA
SW1	YWSEP2A01BBM	YWSJP4A01BBM	Seesaw switch
TH1	NTH18D6ROLA	YW16D13	Thermistor
TH2	_____	YW16D13	Thermistor
SWITCH BOARD			
D361	_____	YWDAN212K	Diode
D362, 363	_____	YWRB421D	Diode
C453	ECQV1H224JZ	YF426474FZT	Ceramic 0.47 $\mu$ F
C454, 459	ECQV1H334JZ	YF426474FZT	Ceramic 0.47 $\mu$ F
C455, 456	ECQB1H122JZ	YF400122XKT	Ceramic 0.012 $\mu$ F
C457, 458	ECQB1H122JZ	YF400122XKT	Ceramic 0.012 $\mu$ F
C460	ECQB1H122JZ	YF400122XKT	Ceramic 0.012 $\mu$ F
REAR-1 BOARD			
D1-12	_____	YWHZ12A3	Diode
D13-24	_____	MA165	Diode
AUDIO BOARD			
R141	YWR1220P472D	YWR1220P102D	Metal 1K ohm
R419	ERJ6GEY102	YF211681JT	Carbon 680 ohms 1/16W

REF. NO.	ORIGINAL PART NO.	NEW PART NO.	DESCRIPTION	
DIGITAL BOARD				
IC24, 44	MN53100LBU4	MN53100LBU5	IC	
R495, 529	_____	ERJ6GEY0R00	Carbon	0 ohm
R511	ERJ6GEY103	_____		
R529	_____	ERJ6GEY0R00	Carbon	0 ohm
R531	ERDS2TJ182	YF2116182GT	Carbon	1.8K ohms
R532	ERDS2TJ331	YF2116331JT	Carbon	100 ohms 1/16W
C371	RPE132F104Z	YWT316B104MT	Ceramic	0.1 μF
C372	ECSF1AE336	ECST1AD336ZR	Tantalum	33 μF 10V
C376	ECKF1H101KB	YF400101CHJT	Ceramic	100 PF
C377	ECCF1H390JC	YF400390CHJT	Ceramic	39 PF
C378, 379	_____	ECST1ED106ZR	Tantel	10 μF 25V
L38	_____	ELJFA101KF	Coil	

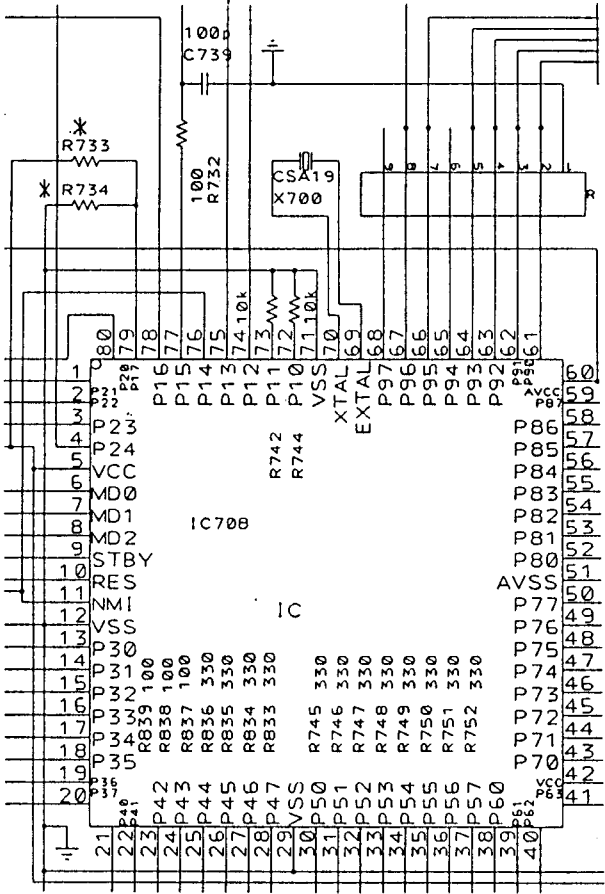
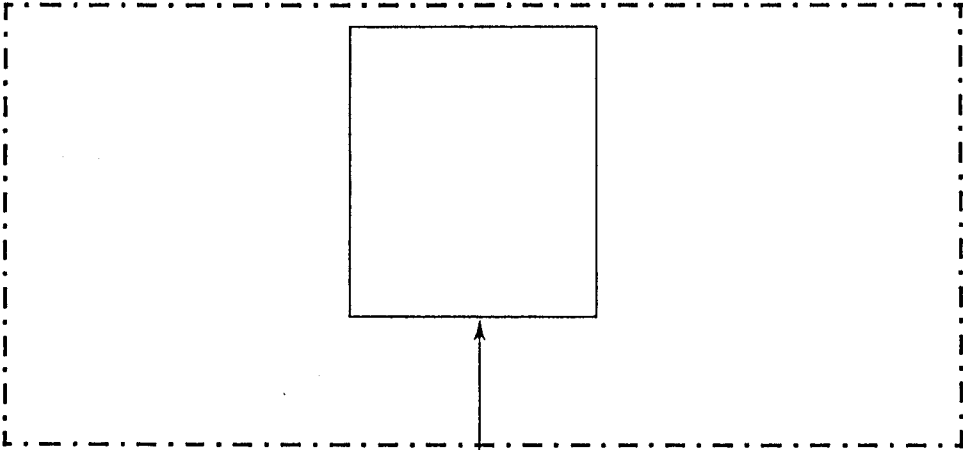
## ANALOG BOARD (1/2)



1. R330 and R373 have been changed

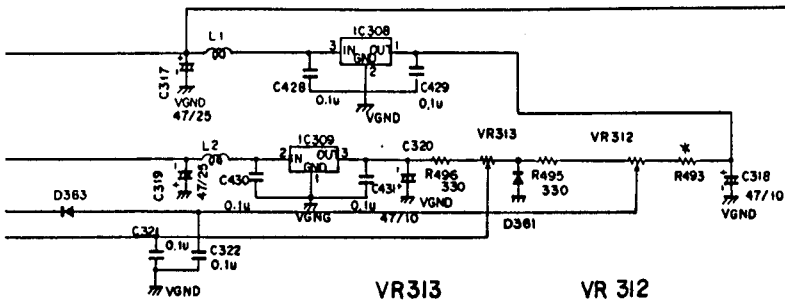
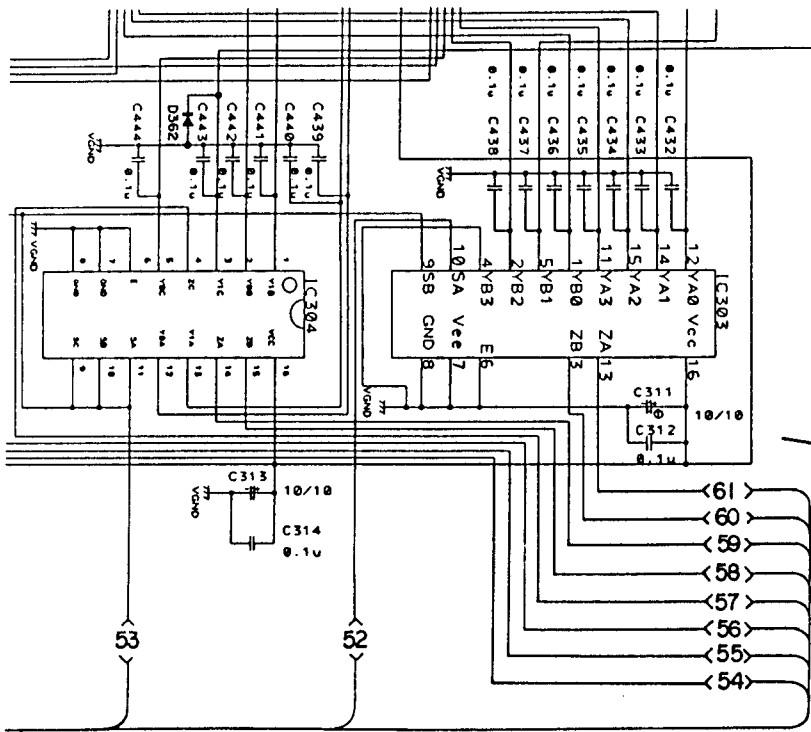
VI OF ANALOG BOARD

ANALOG BOARD (2/2)



1. IC708 and C739 have been changed

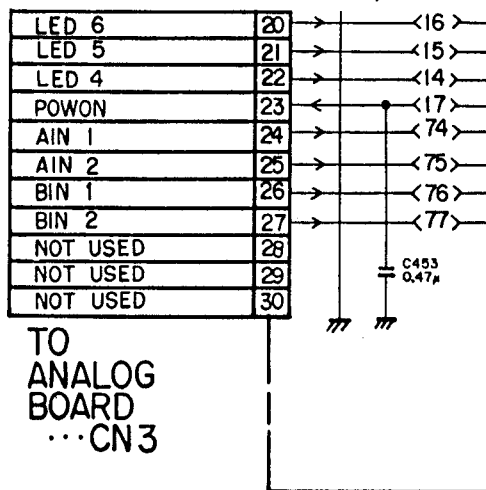
## SCHEMATIC DIAGRAM OF SV



*	NTSC	PAL
R493	33	10

VR313  
WIPE  
BAL  
Ach

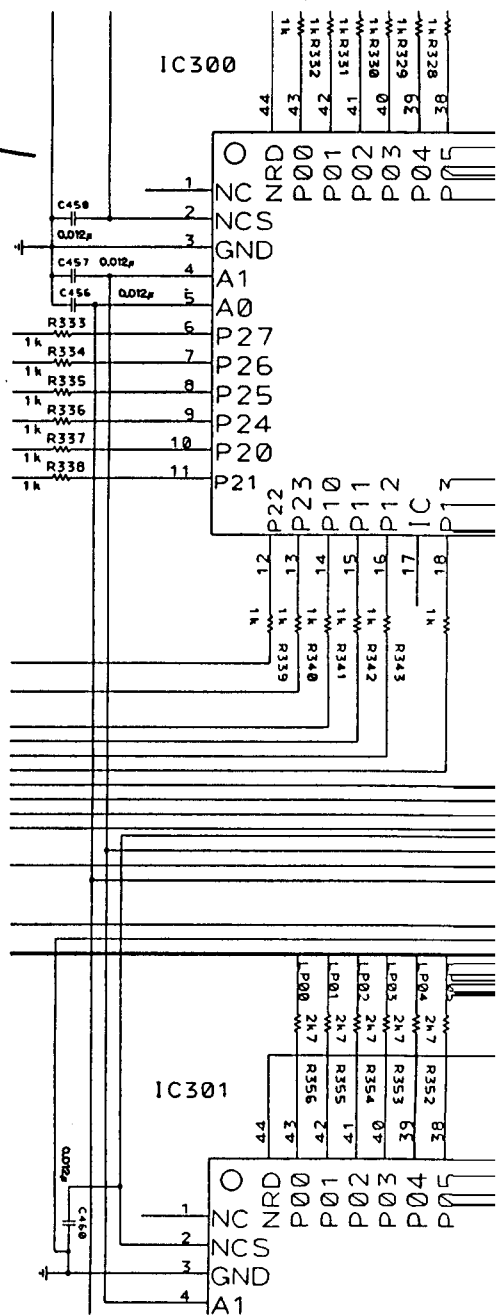
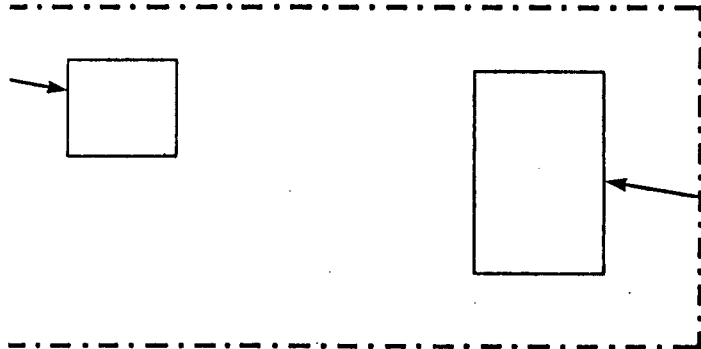
VR 312  
WIPE  
BAL  
B ch



1. C453, C454 and C459
2. C455, C456, C457, C458
3. D361, D362 and D363

# IC DIAGRAM OF SWITCH BOARD

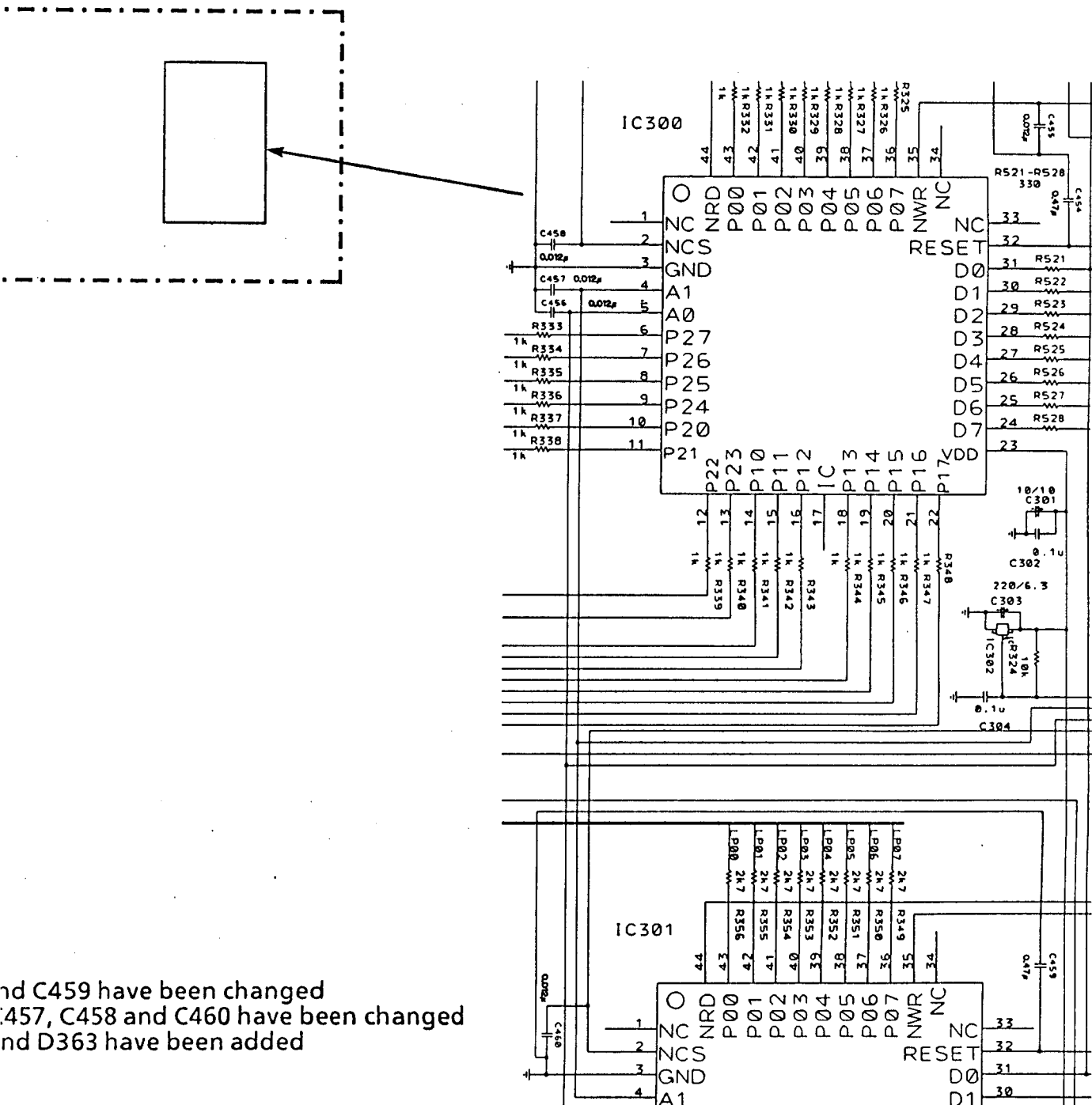
ITCH BOARD



1. C453, C454 and C459 have been changed
2. C455, C456, C457, C458 and C460 have been changed
3. D361, D362 and D363 have been added

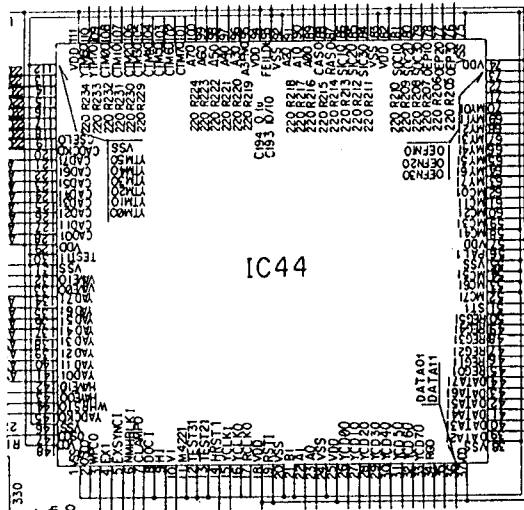


# OF SWITCH BOARD

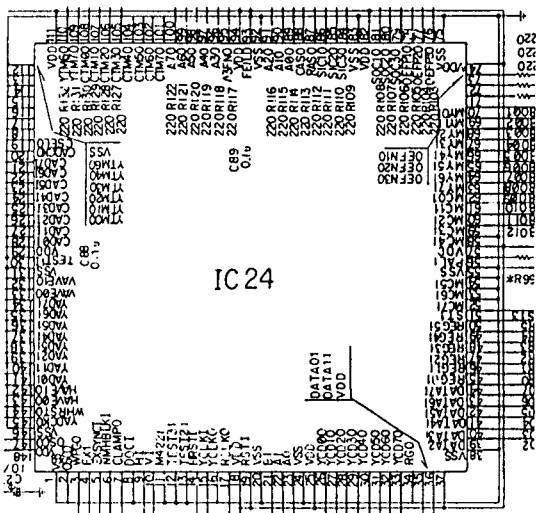
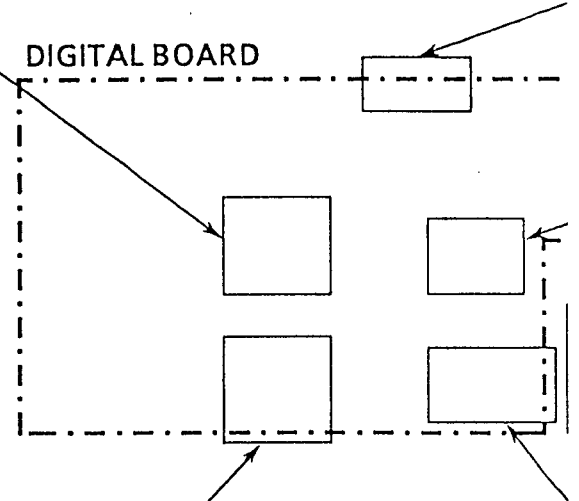


# SCHEMATIC DIAGRAM

1. R529, R531, R532, C371, C372, C376 and C377
2. IC24 and IC44 have been changed
3. C378, C379, R395 and L38 have been added
4. R511 has been deleted
5. DIGITAL SUB BOARD have been deleted



DIGITAL BOARD

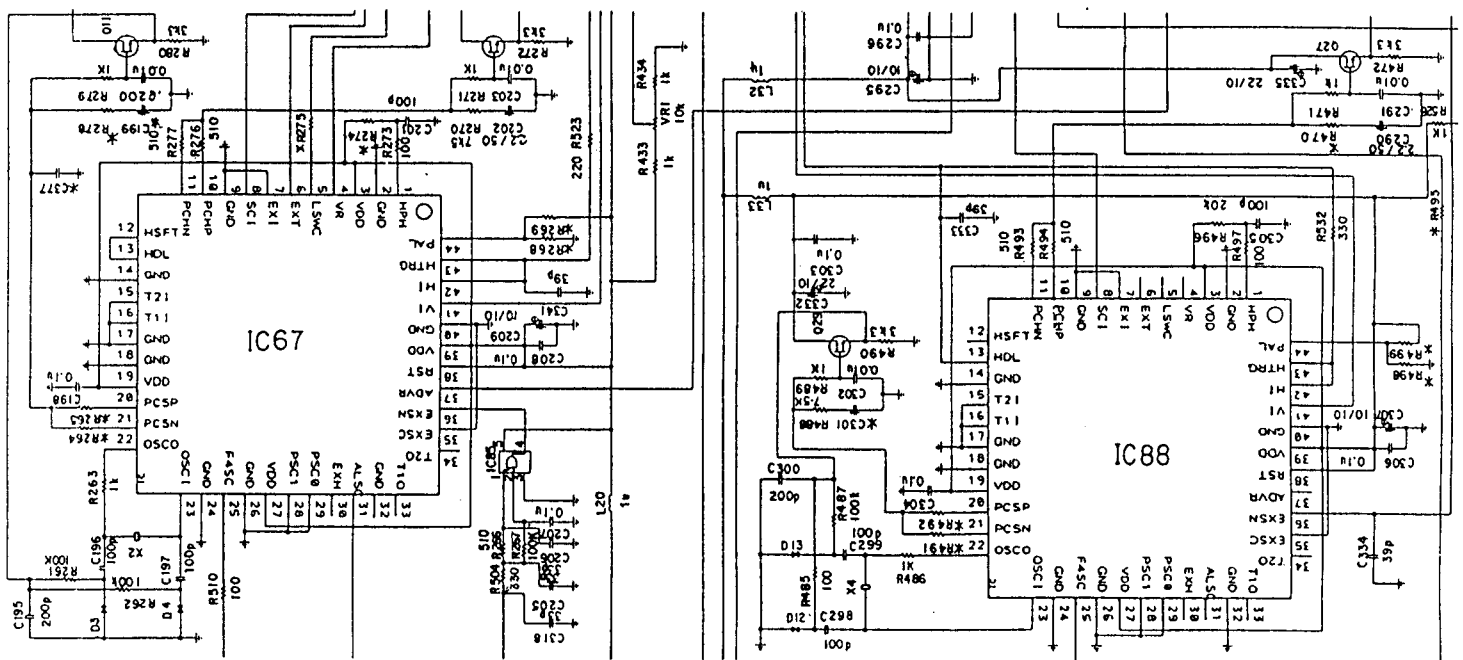
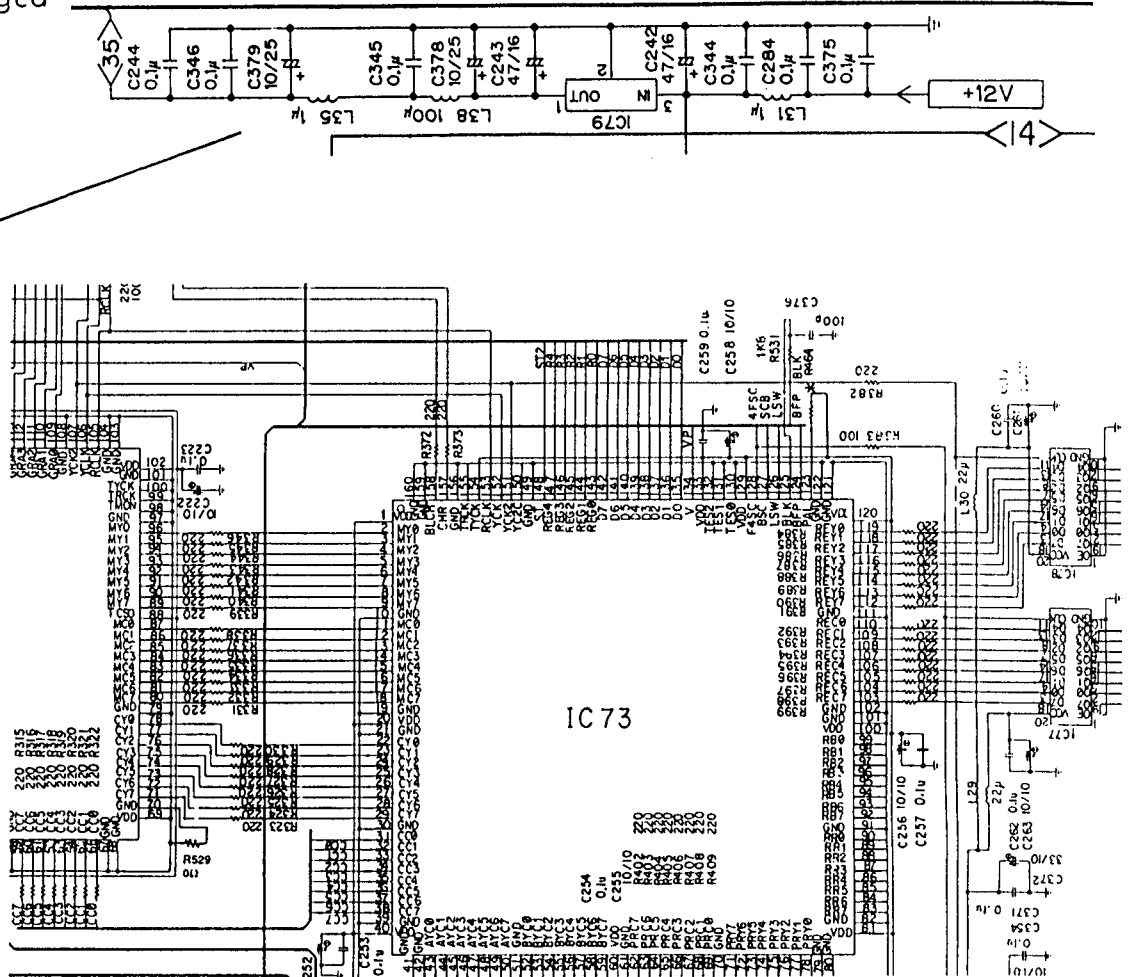
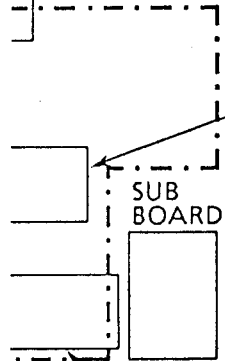


# GRAM OF DIGITAL BOARD

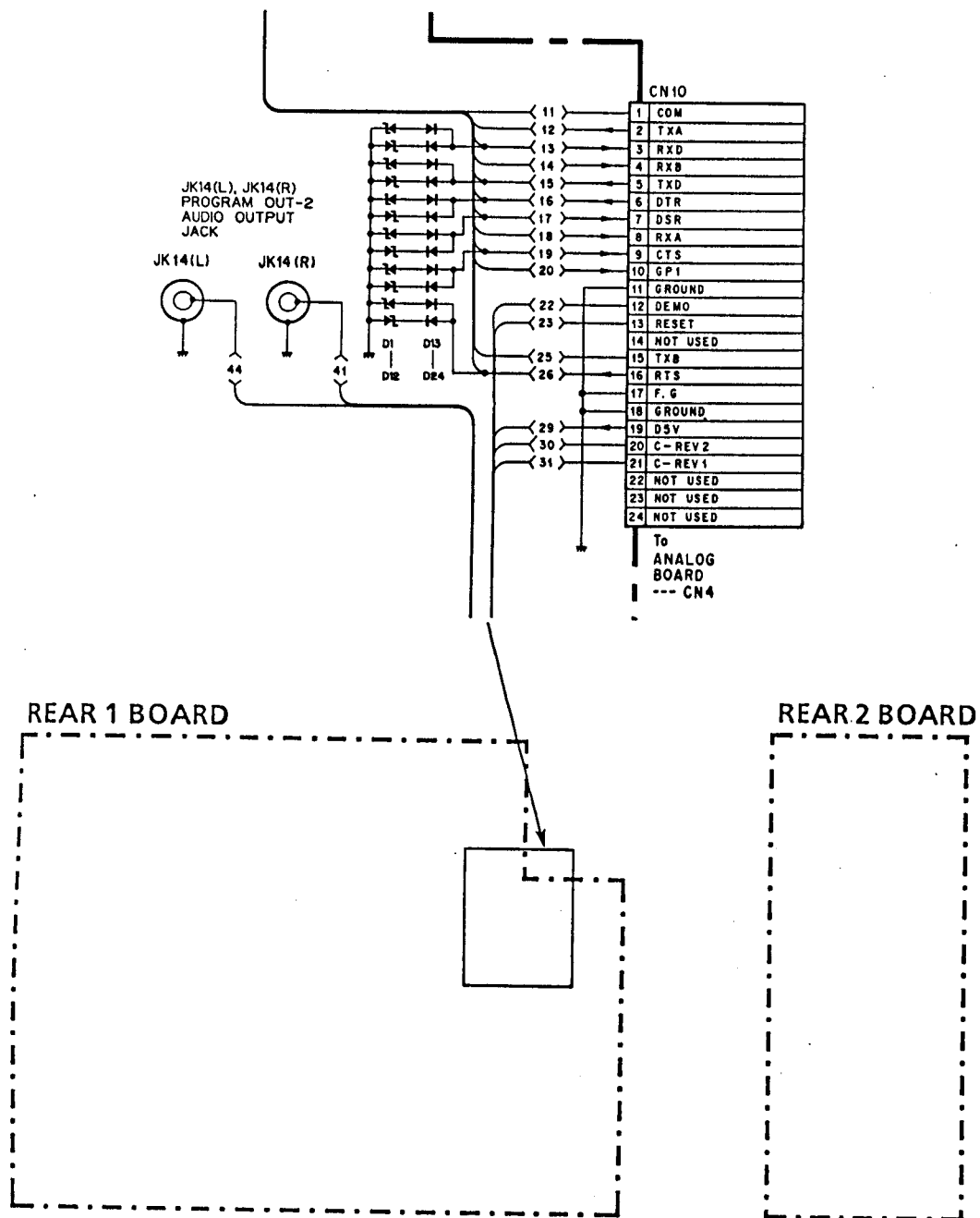
nd C377 have been changed

added

ted

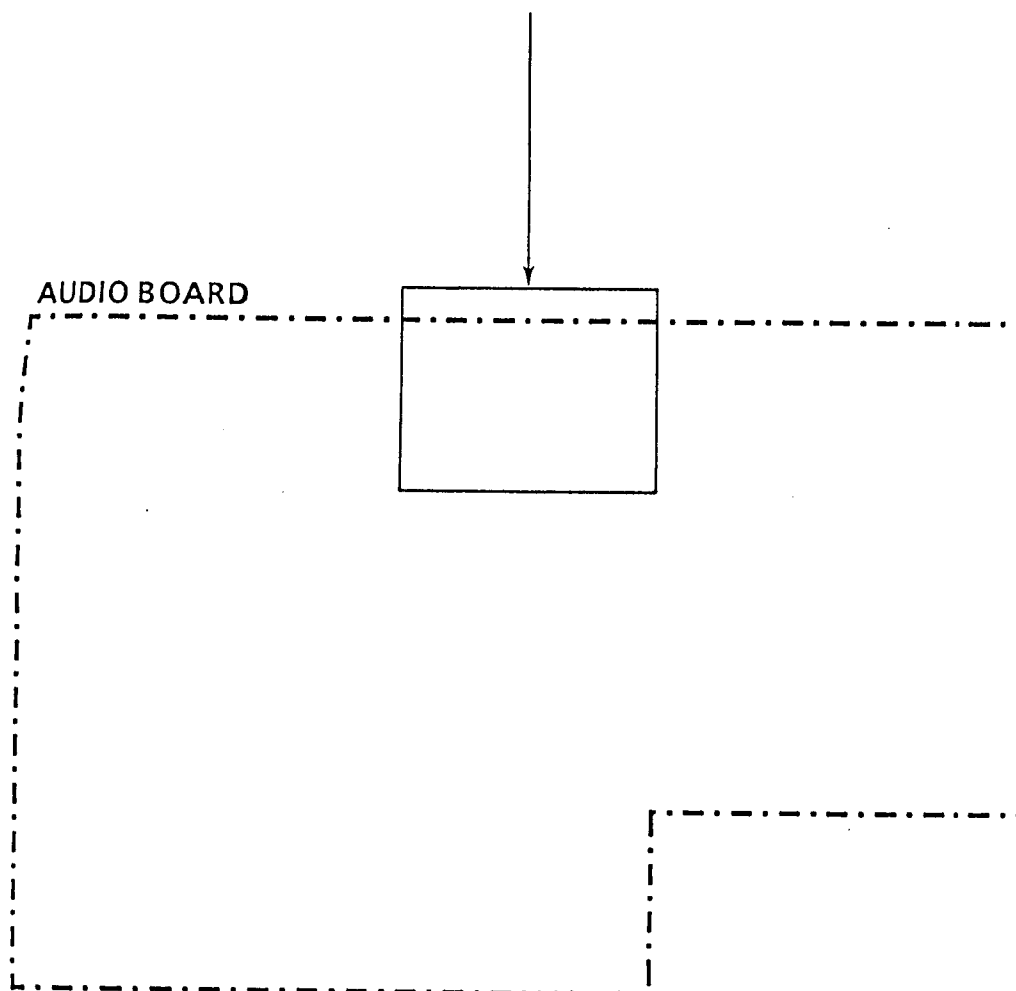
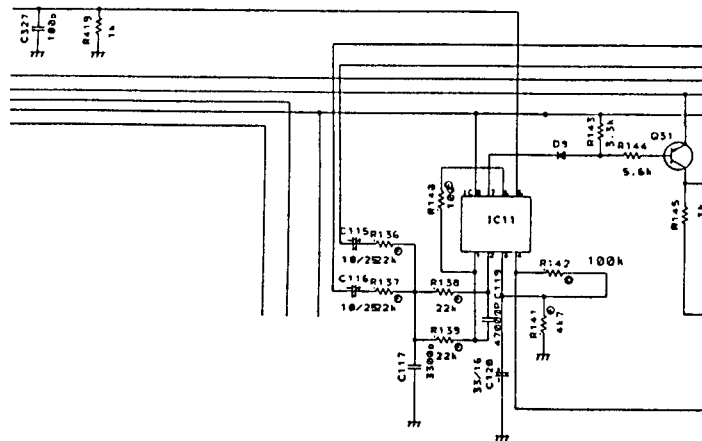


# SCHEMATIC DIAGRAM OF REAR BOARD



1. D1 - D23 and D24 have been added

## SCHEMATIC DIAGRAM OF AUDIO BOARD



1. R141 and R419 have been changed

# Service Manual

Production Mixer  
**WJ-MX50**

**Supplement-4**

Please file and use this supplement service manual together with the service manual for the Model NO. WJ-MX50, order No. AVS9206582C8, AVS9302659S8 and AVS9306716S8.

## ■ ADJUSTMENT PROCEDURES

- Adjustment Procedure have been corrected.

# Panasonic

# ADJUSTMENT PROCEDURE

## 1. Test Equipment Required

The following test equipments are required for adjustment.

- Oscilloscope (50 MHz band width, dual trace, delayed with three probes)
- Vector scope (Tektronix 1751 or equivalent)
- Frequency counter
- Waveform monitor
- Under scanned color video monitor
- Digital voltmeter
- Y/C Test Signal Generator
- SC-H Meter
- Audio signal generator
- Audio level meter

## 2. Disassembling Procedure for Adjustment

1. Remove 14 case screws.

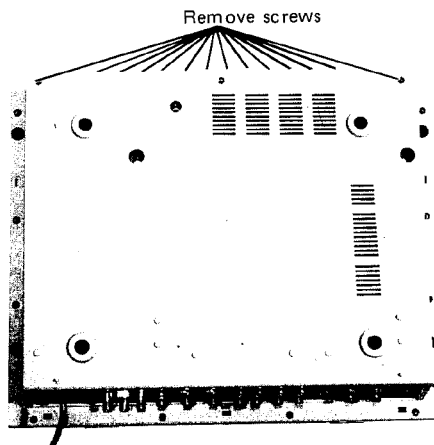


Fig 2-1

2. Open the front panel and secure it using 2 arms.

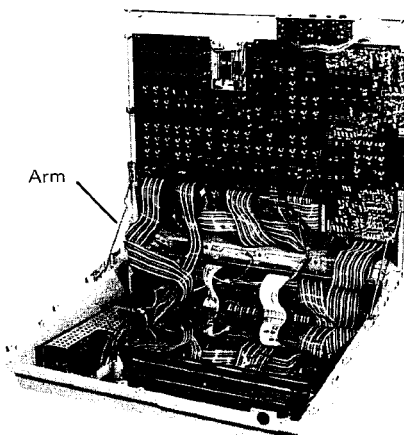


Fig. 2-2

3. Remove 2 screws fixing the PCB and remove 4 screws fixing the shield case.

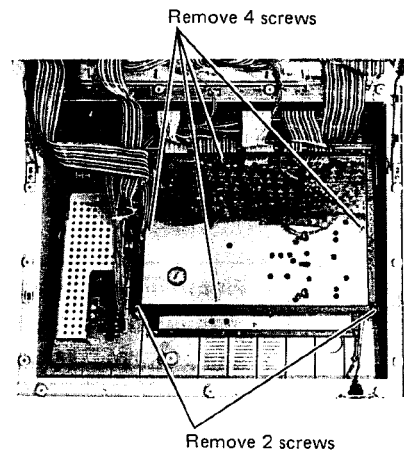


Fig 2-3

4. Stand up the PCB and hook the hinges to the metal angles. Remove the shield case using screw driver.

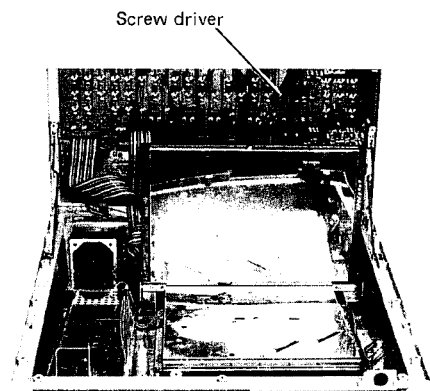


Fig 2-4

5. Remove 2 screws fixing PCB and remove 7 screws fixing the shield case.

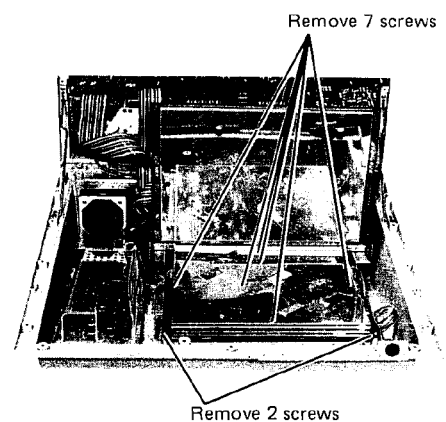


Fig 2-5



6. Slide the PCB to the front and stand up the PCB to hook the hinges to the metal angles. Remove the shield case using screw driver.

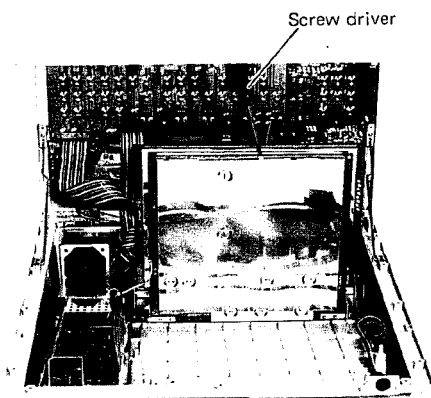
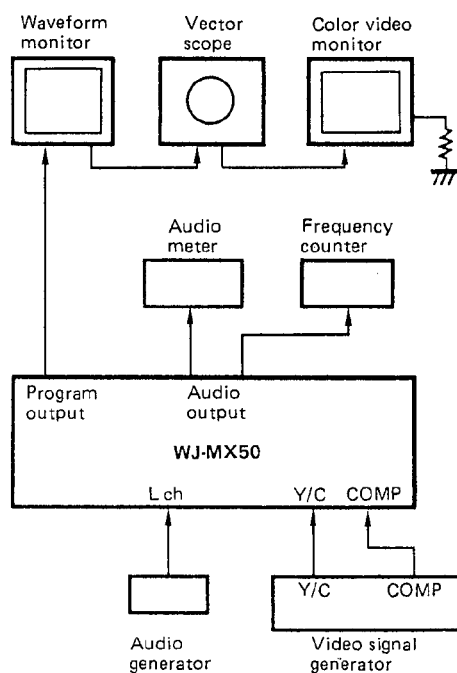


Fig 2-6

### 3. Adjustment Procedure



#### 3-1 5V Adjustment

Test point : TP25      Analog board  
Adjust : VR1      Power board

- Connect the digital voltmeter to TP25.
- Adjust VR1 to obtain the voltage of  $5 \pm 0.02V$ .

#### 3-2 FSC Adjustment

Test point : TP8      Digital board  
Adjust : VR1      Digital board

- Connect the frequency counter to TP8.
- Adjust VR1 to obtain the frequency of  $4.433639 \text{ MHz} \pm 5\text{Hz}$ .

Note : 1. This adjustment should be made after 10 min. warm up of the product.  
2. The response of frequency changing will be slow.

#### 3-3 READ VCO Adjustment

Test point : TP3      Digital board  
Adjust : L24      Digital board

- Connect the digital voltmeter to TP3.
- Adjust L24 to obtain the voltage of  $2.1 \pm 0.1V$ .

#### 3-4. Ach VCO Adjustment

Test point : TP7      Digital board  
Adjust : L17      Digital board

- Supply the color bar signal with the Y/C components to the source Input of WJ-MX50 and select the Ach input.
- Connect the digital voltmeter to TP7.
- Adjust L17 to obtain the voltage of  $2.1 \pm 0.1V$ .

#### 3-5. Bch VCO Adjustment

Test point : TP6      Digital board  
Adjust : L12      Digital board

- Supply the color bar signal with the Y/C components to the source Input of WJ-MX50 and select the Bch input.
- Connect the digital voltmeter to TP6.
- Adjust L12 to obtain the voltage of  $2.1 \pm 0.1V$ .

#### 3-6. Program Y gain Adjustment

Test point : Y/C Program Output      Rear Panel  
Adjust : VR26      Analog board

- Output the internal color bar signal to the Y/C Program Output.
- Adjust VR26 so that the white level becomes  $700 \pm 14\text{mV}$ .

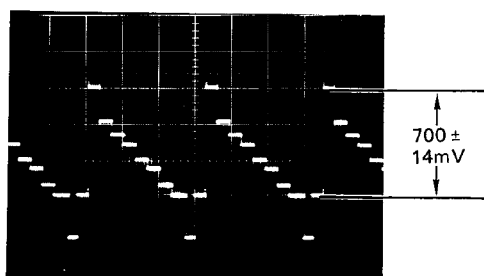


Fig-3-1

### 3-7. Program C Gain Adjustment

Test point : Y/C Program Output Rear Panel  
Adjust : VR27 Analog board

- Output the internal color bar signal to the Y/C Program Output.
- Adjust VR27 so that the burst level becomes 0.3 Vp-p.

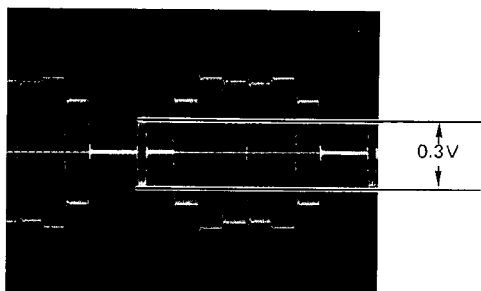


Fig-3-2

### 3-8. Program COMP Gain Adjustment

Test point : COMP. Program Output Rear Panel  
Adjust : VR39 Analog board

- Output the internal color bar signal to the COMP. Program Output.
- Adjust VR39 so that the white level becomes  $700 \pm 14\text{mV}$ .

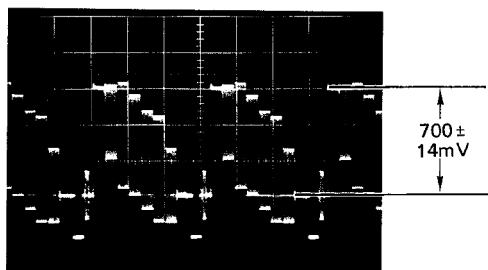


Fig-3-3

### 3-9. Preview Y Gain Adjustment

Test point : Preview Output Rear Panel  
Adjust : VR28 Analog board

- Output the internal color bar to the Preview Output.
- Adjust VR28 so that the white level becomes  $700 \pm 14\text{mV}$

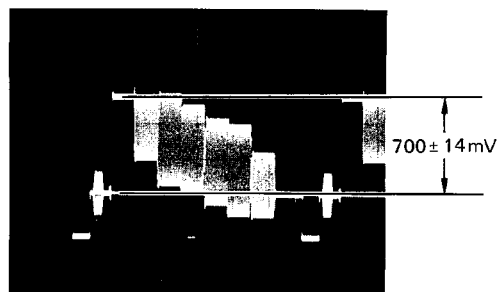


Fig-3-4

### 3-10. Preview C Gain Adjustment

Test point : Preview Output Rear Panel  
Adjust : VR29 Analog board

- Output the internal color bar to the Preview Output.
- Adjust VR29 so that the burst level becomes 0.3 Vp-p.

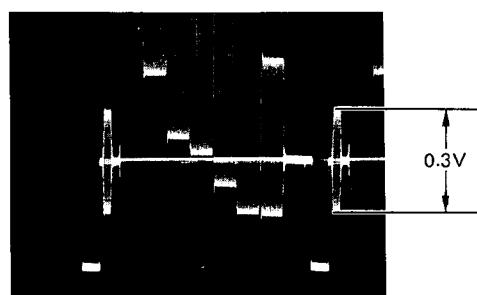


Fig-3-5

### 3-11. Program SC-H Adjustment

Test point : COMP. Program Output Rear Panel  
Adjust : VR33 Analog board

- Output the internal color bar to the COMP. Program Output.
- Adjust VR33 by observing the SC-H meter (Vector scope. Tektronix 1751 or equivalent) to obtain the phase of  $0 \pm 5^\circ$ .

### 3-12. Preview SC-H Adjustment

Test point : Preview Output      Rear Panel  
Adjust : VR31      Analog board

- Output the internal color bar to the Preview Output.
- Adjust VR31 by observing the SC-H meter (Vector scope. Tektronix 1751 or equivalent) to obtain the phase of  $0 \pm 5^\circ$ .

### 3-13. Black Burst SC-H Adjustment

Test point : Black Burst Output      Rear Panel  
Adjust : VR34      Analog board

- Output the internal color bar to the Black Burst Output.
- Adjust VR34 by observing the SC-H meter (Vector scope. Tektronix 1751 or equivalent) to obtain the phase of  $0 \pm 5^\circ$ .

### 3-14. ADV REF SC-H Adjustment

Test point : Advance Reference Output      Rear Panel  
Adjust : VR32      Analog board

- Output the internal color bar to the Advance Reference Output.
- Adjust VR32 by observing the SC-H meter (Vector scope. Tektronix 1751 or equivalent) to obtain the phase of  $0 \pm 5^\circ$ .

### 3-15. Ach FVCXO Adjustment

Test point : TP18      Analog board  
Adjust : CT3      Analog board

- Connect the frequency counter to the TP18.
- Adjust CT3 without supplying any input signal to the WJ-MX50 to obtain the frequency of  $4.433619 \text{ MHz} \pm 5 \text{ Hz}$ .

### 3-16. Ach Burst-Gate-Pulse Width Adjustment

Test point : TP17      Analog board  
Adjust : VR9      Analog board

- Supply the RAMP signal ( $Y=100\%$ ,  $APL=50\%$ ) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Ach input.
- Connect the oscilloscope to TP17.

- Adjust VR9 to obtain the pulse width of  $7.8 \mu\text{sec}$ .  
Note : Use TP23 for the trigger for the oscilloscope.

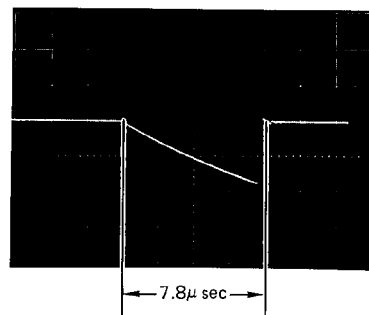


Fig 3-6

### 3-17. Ach Carrier Balance Adjustment

Test point : Y/C Program Output      Rear Panel  
Adjust : VR20, VR22      Analog board

- Supply the RAMP signal ( $Y=100\%$ ,  $APL=50\%$ ) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Ach input.
  - Increase the GAIN of the vector scope.
  - Adjust VR20 and VR22 so that the vector falls into the center of the vector scope.
- Note : The Color Correction of the WJ-MX50 should be off

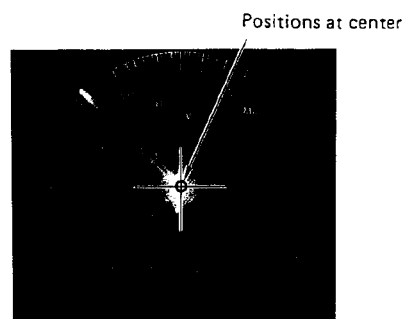


Fig 3-7

### 3-18. Ach Pedestal Adjustment

Test point : Y/C Program Output      Rear Panel  
Adjust : VR21      Analog board

- Supply the RAMP signal ( $Y=100\%$ ,  $APL=50\%$ ) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Ach input.
  - Adjust the VR21 so that the black level of the RAMP signal becomes  $0^{+1}_{-0} \%$ .
- Note : The black level of the RAMP signal should not be lower than  $0 \%$ .

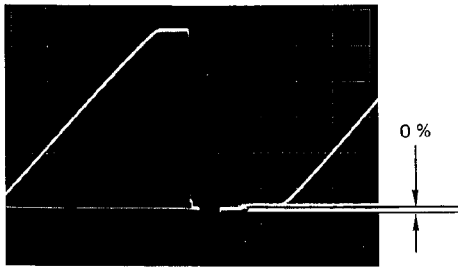


Fig 3-8

### 3-19. Ach Y GAIN

Test point : Y/C Program Output Rear Panel  
Adjust : VR15 Analog board

- Supply the RAMP signal (Y=100%, APL= 50%) with the Y/C components to the Ach input.
- Adjust VR15 so that the white level becomes  $100 \pm 2\%$ .

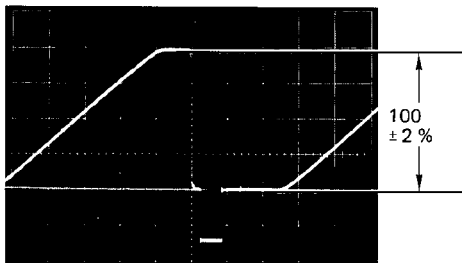


Fig 3-9

### 3-20. Ach Color Adjustment

Test point : Y/C Program Output Rear Panel  
TP13 Analog board  
Adjust : VR10, VR11, VR16 Analog board

- Supply the Color Bar signal with the Y/C components to the Ach input.
- Adjust VR10 (R-Y Gain), VR16 (B-Y Gain) by observing the vector scope so that each vector positions in each color area (田).
- Connect the oscilloscope to TP13.
- Adjust VR11 (Phase) so that the waveform coincides.

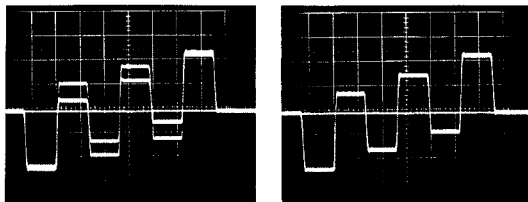


Fig 3-10

Note : Supply the Black Burst Signal from WJ-MX50 to the vector scope for the reference sync signal.

### 3-21. Bch FVCXO Adjustment

Test point : TP20 Analog board  
Adjust : CT4 Analog board

- Connect the frequency counter to the TP20.
- Adjust CT4 without supplying any input signal to the WJ-MX50 to obtain the frequency of  $4.433619 \text{ MHz} \pm 5 \text{ Hz}$ .

### 3-22. Bch Burst-Gate-Pulse Width Adjustment

Test point : TP19 Analog board  
Adjust : VR12 Analog board

- Supply the RAMP signal (Y=100%, APL= 50%) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Bch input.
  - Connect the oscilloscope to TP19.
  - Adjust VR12 to obtain the pulse width of  $7.8 \mu\text{sec}$ .
- Note : Use TP24 for the trigger for the oscilloscope.

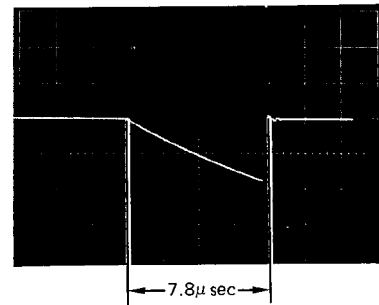


Fig 3-11

### 3-23. Bch Carrier Balance Adjustment

Test point : Y/C Program Output Rear Panel  
Adjust : VR23, VR25 Analog board

- Supply the RAMP signal (Y=100%, APL= 50%) with the Y/C components to the Y/C Source Input of the WJ-MX50 and select the Bch input.
  - Increase the GAIN of the vector scope.
  - Adjust VR23 and VR25 so that the vector falls into the center of the vector scope.
- Note : The Color Correction of the WJ-MX50 should be off.

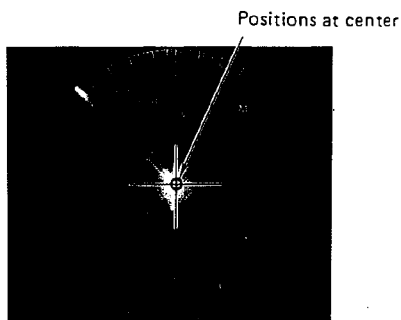


Fig 3-12

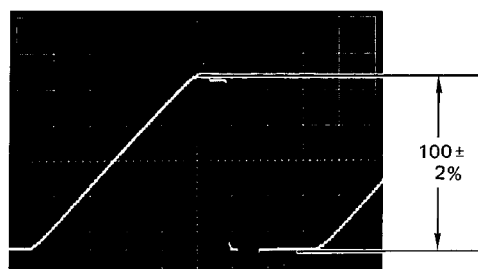


Fig. 3-14

### 3-24. Bch Pedestal Adjustment

Test point : Y/C Program Output      Rear panel  
Adjust : VR24      Analog board

- Supply the RAMP signal (Y=100%, APL= 50%) with the Y/C components to the Y/C Source Inputs of both Ach and Bch.
- Select the horizontal wipe pattern (■) and wipe the signal at the black portion.
- Adjust VR24 so that the two black level of the RAMP signal matches at  $0^{+1}_{-0}$  %.

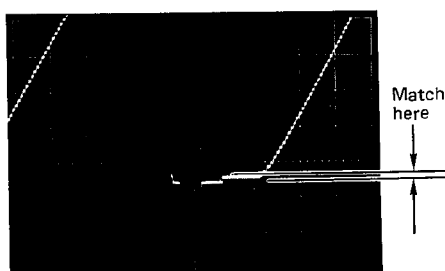


Fig 3-13

### 3-25. Bch Y Gain

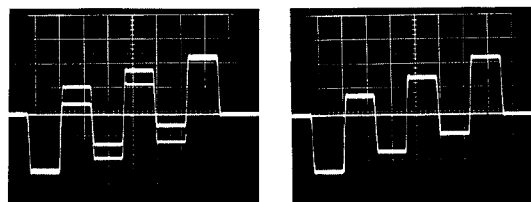
Test point : Y/C Program Output      Rear panel  
Adjust : VR18      Analog board

- Supply the RAMP signal (Y=100%, APL= 50%) with the Y/C components to the Y/C Source Inputs of both Ach and Bch.
- Select the horizontal wipe pattern (■) and wipe the signal at the white portion.
- Adjust VR18 so that the two white level of the RAMP signal matches at  $100 \pm 2$  %.

### 3-26. Bch Color Adjustment

Test point : Y/C Program Output      Rear panel  
TP16      Analog board  
Adjust : VR13, VR14, VR19      Analog board  
VR10, VR11, VR16

- Supply the Color Bar signal with the Y/C components to the Y/C Source Inputs of both Ach and Bch.
- Adjust VR13 (R-Y Gain), VR19 (B-Y Gain) by observing the vectorscope so that each vecto positions in each color area (■).
- Connect the oscilloscope to TP16.
- Adjust VR14 (Phase) so that the waveform coincides.



NO GOOD

GOOD

Fig 3-15

Note : Supply the Black Burst Signal from WJ-MX50 to the vector scope for the reference sync signal.

- Select the vertical wipe pattern (■) and wipe the signal at the center of the picture.
- Adjust VR10, VR11, VR13, VR14, VR16 and VR19 so that every vector positions to the respective color area

### 3-27. Bch COMP. Gain Adjustment

Test point : COMP Program Output Rear panel  
Adjust : VR5 Analog board

- Supply the RAMP signal (Y=100%, APL= 50%) with Y/C components to the Y/C Source Input of Ach and the composite RAMP signal to the COMP Source Input of Bch.
- Select the horizontal wipe pattern (■) and wipe the signal at the white portion.
- Adjust VR5 so that the two white level of the RAMP signal matches at  $100 \pm 2\%$ .

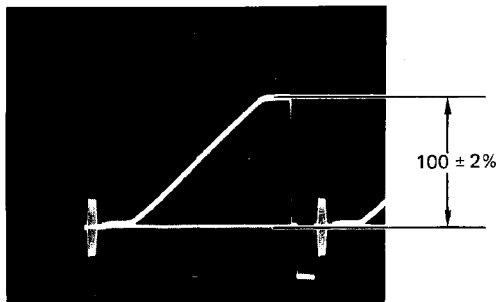


Fig 3-16

### 3-28. Ach COMP. Gain Adjustment

Test point : COMP. Program Output Rear panel  
Adjust : VR1 Analog board

- Supply the composite RAMP signal (Y= 100%, APL= 50%) to the COMP. Source Inputs of both Ach and Bch.
- Select the horizontal wipe pattern (■) and wipe the signal at the black portion.
- Adjust VR1 so that the two white level of the RAMP signal matches at  $100 \pm 2\%$ .

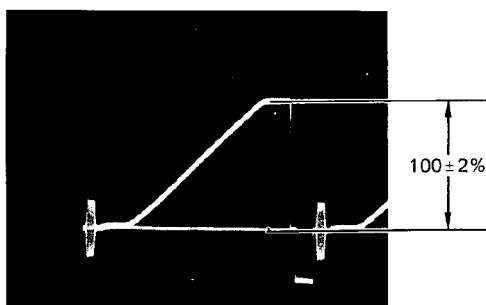


Fig 3-17

### 3-29. Ach/Bch H-phase Adjustment

Test point : COMP. Program Output Rear panel  
Adjust : VR17 Analog board

- Supply the composite CROSS HATCH signal to COMP. Source Inputs of both Ach and Bch.
- Select the MIX mode of the WJ-MX50 and mix both Ach and Bch signals with 50/50 percent. (Move the Mix/Wipe Lever at center position)
- Adjust VR17 so that the signal level becomes maximum.

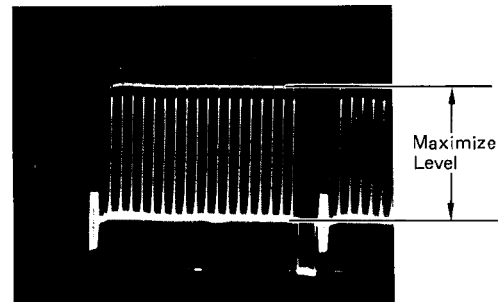


Fig 3-18

### 3-30. Wipe Balance Adjustment

Before performing this adjustment, setup the WJ-MX50 as follows.

- 1) Turn off the power of the WJ-MX50.
- 2) Turn on the power of the WJ-MX50 while pressing the Event Number Buttons 1/5, 3/7 and the MEMORY Button simultaneously.

The AUTO TAKE button and AUTO FADE Button are turned to red.

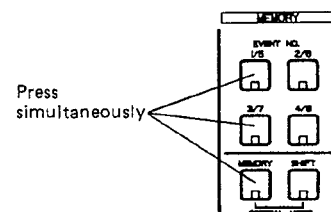


Fig 3-19

Adjust the Wipe Balance as follows.

**Test point :** AUTO TAKE TIME indicator Front panel

AUTO FADE TIME indicator Front panel

**Adjust :** VR312, VR313 Switch board

- Press the WIPE Button on the WJ-MX50. The LED starts blinking.
- Turn the Mix/Wipe Lever to the Bch position and keep the clearance of 8mm between the Lever and the panel.

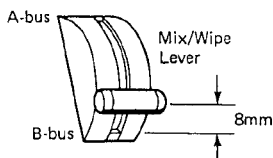


Fig 3-20

- Adjust the VR312 so that the Auto Take Time indicator shows 255 frames.
- Turn the Mix/Wipe Lever to the Ach position and keep the clearance of 6mm between the Lever and the panel.

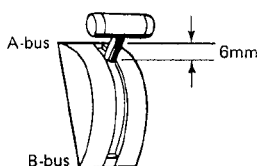


Fig 3-21

- Adjust the VR313 so that the Auto Take Time indicator shows 0 frame.
- Turn the power off then on the WJ-MX50 to initialize the unit.
- Confirm that the ONE-WAY wipe pattern functions correctly.
- Adjust both TRANSITION controls for AUTO TAKE and AUTO FADE to indicate 200 frames. Confirm that these indicators are not change by operating the Mix/Wipe Lever.

### 3-31. Audio Rch Adjustment

**Test point :** Audio Level Indicator for Rch

**Adjust :** VR7 Audio board

- Supply the audio signal (-12dBm , 1 KHz) to the Lch of the SOURCE 3 audio input connector.
- Slide the A fader and the MASTER fader on the AUDIO MIX to the maximum position.
- Slide the FADE control to the IN position.
- Connect the audio level meter to the R channel of the Audio Program Output pin-connector.
- Adjust the output level of the audio signal generator so that the audio level meter reads -6 dBs.
- Adjust VR7 so that the R channel of the AUDIO LEVEL indicator of WJ-MX50 indicates 0 dB. (just light off the 2 dB indicator)

### 3-32. Audio Lch Adjustment

**Test point :** Audio Level Indicator for L ch

**Adjust :** VR6 Audio board

- Supply the audio signal (-12 dBm , 1 KHz) to the Lch of the SOURCE 3 audio input connector.
- Slide the A-fader and the MASTER fader on the AUDIO MIX to the maximum position.
- Slide the FADE control to the IN position.
- Connect the audio level meter to the L channel of the Audio Program Output pin-connector.
- Adjust the output level of the audio signal generator so that the audio level meter reads -6 dBs.
- Adjust VR6 so that the L channel of the AUDIO LEVEL indicator of WJ-MX50 indicates 0 dB. (just light off the 2 dB indicator)

