

# Service Manual

RECORDING MIXING CONSOLE  
WR-8816

7569

## SPECIFICATIONS

Frequency Response:	MIC INPUT — ±1.0dB 20Hz to 20kHz 64dB Gain at trim control max +4dB at Group Output
	LINE INPUT — ±0.5dB 20Hz to 20kHz 24dB Gain at trim control max +4dB at Group Output
THD:	MIC INPUT Less than 0.03% at 20Hz Typical 0.02% Less than 0.03% at 1kHz Typical 0.02% Less than 0.07% at 20kHz Typical 0.05% (74dB Gain, +20dB at Group Output)
	LINE INPUT Less than 0.07% 20Hz to 20kHz Typical 0.05% (34dB Gain, +20dB at Group Output)
SMPTE IM Distortion:	Less than 0.03% Typical 0.02% (Mic or Line Inputs +20dB at Group Output)
Equivalent Input Noise:	-128dB Maximum -132dB Typical IHF A WTD (74dB Gain 150 ohm Source)
Maximum Input Level:	MIC: +10dB at MIC PAD position LINE: +30dB
Maximum Gain:	MIC: 74dB ±1.5dB LINE: 34dB ±1.5dB
Cross Talk:	60dB at 1kHz
CMRR:	70dB Minimum at 1kHz 80dB Typical
Phantom Power:	+48 DC Regulated 100mA Maximum Current
Input Channel Equalizer:	High 4k/8k/12kHz ±12dB (Shelving) Mid 400 to 6.3kHz ±12dB (Peaking) Low 60/120/240Hz ±12dB (Shelving)
Inputs:	MIC IN 16 MIC -60dB to -40dB 5kΩ PAD -40dB to -20dB 5kΩ LINE IN 16 -20dB to 0dB 10kΩ ECHO RETURN IN 2 -20dB 20kΩ RETURN IN 4 -10dB 100kΩ AUX IN 2 -10dB 5kΩ
Mixing Busses:	Group 4 Master 2 Send 2 Echo 2 Solo 1
Outputs:	Group 4 +4dB 600Ω -10dB 10kΩ Master 2 +4dB 600Ω -10dB 10kΩ Send 2 +4dB 600Ω Echo 2 +4dB 600Ω Monitor 4 +4dB 3kΩ Headphone 2 Watts/8Ω

## RAMSA



Maximum Output:	+22dB
Meters:	4 x 14 point LED Peak Meter
Fader:	100mm stroke Professional Straight Line Fader
Peak Factor:	Head Room 32dB Program 18dB
Power Consumption:	120V AC 60Hz, 140W
Accessory:	Micky Knob x 1
Dimensions:	35-53/64" (W) x 10-7/16" (H) x 29-23/32" (D) (910mm) (265mm) (755mm)
Weight:	Approx. 102 lbs (46kg)

\*0dB is referenced to 0.775V rms.  
Weight and dimensions shown are approximate.  
Specifications are subject to change without notice.

**Panasonic**  
PROFESSIONAL AUDIO DIVISION

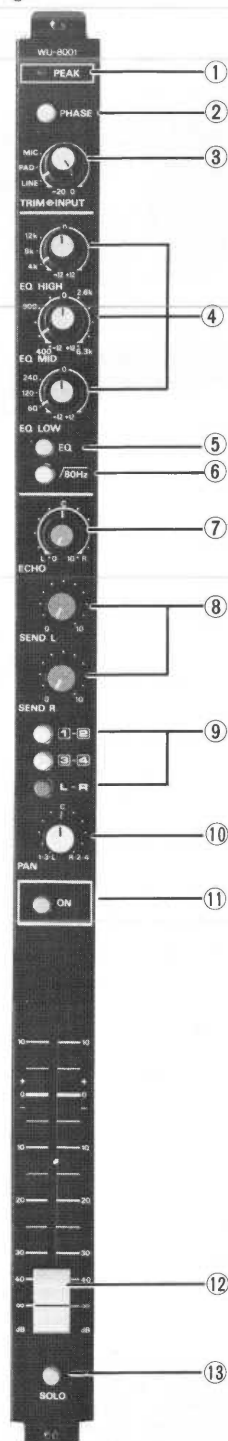
Professional Audio Division  
Panasonic Company, Division of  
Matsushita Electric Corporation of America  
One Panasonic Way, Secaucus, New Jersey 07094

# LOCATION OF CONTROLS

## INPUT MODULE

### WU-8001

In addition to 16 microphone inputs, the input modules on the WR-8816 can also accommodate 16 line inputs – a total of 32 inputs – plus 16 direct line outputs. This means that multi-track recording or overdubbing may be performed without time consuming changes in patch connections. The additional Left, Right channel assignment capability permits input signals to bypass the Group modules for direct 2-track mixdown or monitoring. Each module is equipped with its own equalizer, echo, and volume controls for flexible adjustments at the input stage.



#### 1. Peak LED

The peak LED indicates that 6dB of headroom remains in the pre-amp section. By adjusting the input/trim control as high as it can go before the LED flashes during peaks, you can obtain the optimum S/N ratio, while retaining low distortion. The LED's indication applies to pre-EQ, pre-fader signals.

#### 2. Phase Switch

This switch allows instant phase reversal of the microphone connected at each input. If an out-of-phase condition exists (a possibility if two microphones are mixing the same instrument, or if the cables are connected in reverse), this convenient switch can return the mic to normal phase. This is an enormous time-saver, especially when compared to re-soldering the mic cables (required by some mixers to reverse the phase).

#### 3. Input/Trim

To keep input signals below the clipping level of the pre-amp, input sensitivity level can be set as high as  $-60\text{dB}$ , in three increments of  $-20\text{dB}$  each. Since the trim takes effect before the insertion jack, it allows adjustment to the optimum level for connection of external equipment.

#### 4. Equalizer

These controls offer the engineer maximum flexibility in tonal adjustment – a sophisticated 3-band variable frequency equalizer section is included. The center knob controls the level adjustment and includes a 0dB center detent. The outer knob adjusts the frequency.

These rotary pots provide the input signals with three bands of EQ adjustment.

HIGH	4kHz, 8kHz, 12kHz	$\pm 12\text{dB}$
MID	400Hz – 6.3kHz	$\pm 12\text{dB}$
LOW	60Hz, 120Hz, 240Hz	$\pm 12\text{dB}$

For the midrange control, a continuously variable rotary knob permits precise frequency adjustment, covering about one octave around the center frequency. The Low and High EQ settings are 3-position shelving-type controls.

#### 5. Equalizer ON Switch

Using this switch, you can turn the equalizer on or off without resetting the level adjustment positions.

#### 6. High Pass Filter Switch

In comparison with the lowest EQ setting (a maximum attenuation of  $-12\text{dB}$  at 60Hz), this filter provides a sharper  $-18\text{dB/octave}$  cutoff at 80Hz. This is useful for eliminating low frequency vibrations (which may occur when using hand held mics) or to provide greater microphone isolation.

## **7. Echo Control**

The echo controls utilize a novel, highly practical approach. Rather than a cumbersome system involving two separate echo level controls, a single level control with a concentric pan pot is provided. This arrangement makes it simple to position the echo signal, so that it precisely follows the position of the instruments or vocalists, when using a stereo echo or effects unit. If mono effects devices are used instead, the pan pot may be rotated either left or right, which assigns it to one of the two Master Echo Send controls. The echo signal is derived post-EQ, post-fader, so the echo level will ride up or down with the input fader, while still maintaining the same chosen percentage of Echo signal.

## **8. Send L, R Control**

This control adjusts the amount of pre-fader, pre-EQ signal sent to the musician's headphones, via the Master Cue Send controls. Either one stereo or two mono cue signals may be sent to the headphones.

## **9. Program Buss Assign Switch**

This section assigns the input signal to any of the four Group outputs, or directly to the L, R output section.

## **10. Pan Control**

The Pan control, used in conjunction with the program buss assign switch, adjusts the amount of input signal sent to any of the assigned channels. Turning the pan control to the left assigns channels 1, 3, L and turning to the right assigns channels 2, 4, R. In the center position the input signal will be sent to all assigned channels. During the mixdown, the pan is an effective tool for creating a stereo sound field.

## **11. Channel On Switch**

When this switch is engaged, the input signal is sent to any of the assigned output channels. When it is switched out, the signal to the Group and output busses is muted, the direct out signal is disconnected as well. Mic leakage or noise caused by a mic not in use will thus be eliminated.

## **12. Input Fader**

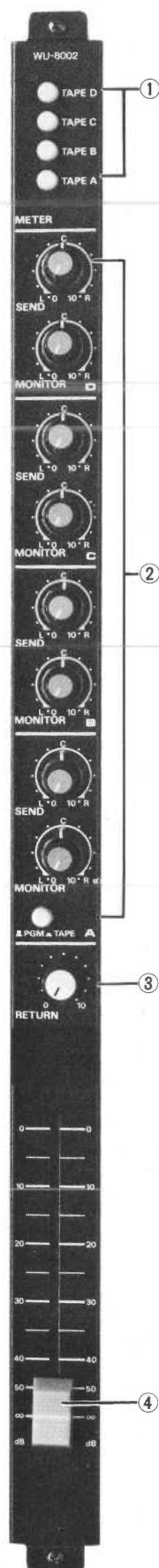
These conductive plastic, professional input fader controls permit independent adjustment of the volume level for each Input module. The extra-long 100 mm stroke assures precise level settings. Reference dB levels are also indicated.

## **13. Solo Switch**

This switch is used to monitor the post-fader signal at each Input module individually. Since it can be locked in the "on" position, simultaneous monitoring with other modules can be performed. Activation of the solo button is indicated by the solo-on LED.

The solo setting has priority over other monitoring modes, so even if the L and R Master volume must be attenuated, the input levels may still be monitored. In addition to headphone monitoring, the L and R control room outputs connected to separate monitor speakers will also provide a mono solo signal. This is especially useful for conducting final checks prior to actual takes.

# GROUP MODULE WU-8002



The signals can be monitored at 16 points and grouping adjustments made to set the optimum balance. Then the mixed signals are routed to the Master module's L and R busses. If certain input signals require no grouping, they may be assigned directly to the Master module. This permits the 4 Group modules to be used for grouping applications, exclusively.

### 1. Meter Select Switch

These lock-release type switches determine which of the 4 tape signals will be displayed on each of the 4 peak level meters (Group output may be monitored at the Tape A position). This arrangement allows you to monitor up to 16 channels. By using the tape recorder's tape/source switch, the meter will read either the live or the tape signal level.

### 2. Tape Monitor

The line output from a multi-track recorder may be connected to the LINE IN jacks at the input modules. These, in turn, are connected to the tape monitor section of the Group modules. Each tape monitor incorporates separate Monitor and Cue Send level controls. With 4 monitor on each Group module, the 4 Group modules are equipped to monitor line inputs from channels 1 to 16, respectively.

\* The outer knob of the monitor control adjusts the left and right positioning of the tape signal to the Master module. The inner knob adjusts this output's level. This gives the control room and the studio full monitoring capability of all 16 channels during multi-track recording. Also, the outer knob of the Send control adjusts the left and right positioning of the tape signal to the master cue send controls. The inner knob adjusts the level. This gives the musician full monitoring capability, independent of the control room's mix.

\* The recording engineer can mix down any of the tape tracks onto a stereo master tape, without passing through the input modules. This is useful when EQ or effects send are not required, and will eliminate unnecessary electronics.

\* The Monitor section of inputs 1-4 can also be switched to monitor the program signals routed through the Group modules. This permits monitoring during mixing of previously recorded tape tracks with live program signals.

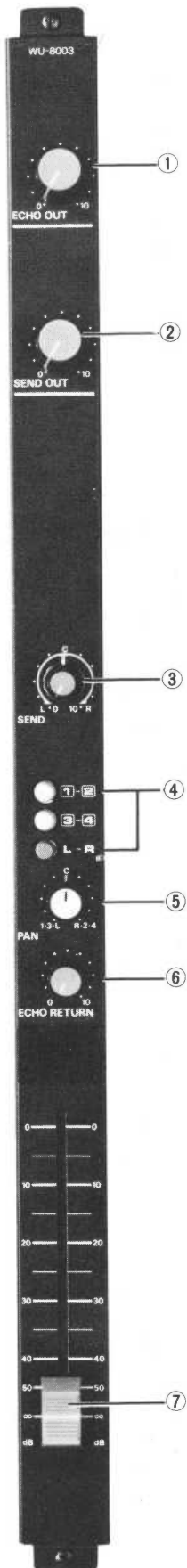
### 3. Return

This controls the level of the signals returned to the Group modules.

### 4. Group Fader

These control the level for the respective group program signals.

# MASTER MODULE WU-8003



These modules provide total control facilities for the various signals from the Input and Group modules, echo units, and other sound processors. Because the Master module can fade out all signals, the settings made on the Input and Group faders may be retained.

## 1. Master Echo Controls

These control the Master level of the signals sent to the echo unit.

## 2. Master Send Controls

These provide Master level control of the headphone cue signals, which are sent from the input module or tape monitor section. This feature can be used for headphone monitoring by the performers in the studio.

## 3. Send Control

This assigns the echo return signals to the left and right Send mixing busses where the echo can be added to the musician's Send signals. The outer knob is a pan control, while the inner knob is for level adjustments.

## 4. Echo Return Assign Switch

This switch assigns the signals returned from the echo unit to the program buss which you select.

## 5. Pan Pot

This pan-pot assigns the echo return signals to your selected program for mixing.

## 6. Echo Return

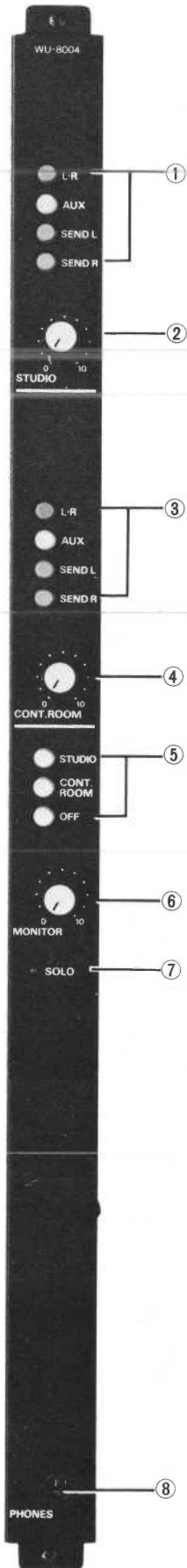
This control adjusts the level of the echo return inputs.

## 7. Master Fader

This controls the volume of the left and right Master outputs.

Use the attached Micky Knob for the gang control of L and R channels.

# MONITOR MODULE WU-8004



In response to demands for truly flexible monitoring capability, Ramsa has included facilities in the WR-8816 which allow checks at all stages of the mixer output, both in the studio and the control room.

### 1. Studio Select Switch

This switch selects one of the 4 modes available for studio output monitoring. The L, R position allows the performers to monitor the stereo mixdown signals. AUX permits stereo monitoring of the signal from the tape deck connected to the AUX input terminals. The Send output L and R switches allow mono monitoring of the separate left and right signals.

### 2. Studio Control

This controls the output level for the studio select switch settings listed above.

### 3. Control Room Select Switches

The various outputs may be selected for monitoring in the control room by means of these switches. Listening mode is indicated in parentheses.

L, R: Master L, R (stereo)  
 AUX: AUX input (stereo)  
 Send L: Send L (mono)  
 Send R: Send R (mono)

### 4. Control Room Volume Control

This sets the output level for control room listening.

### 5. Phones Select Switches

You can select headphone monitoring for either the studio or the control room with these switches. When neither headphone monitor is in use, this control should be switched off.

### 6. Monitor Control

This control adjusts the listening levels for stereo headphone monitoring.

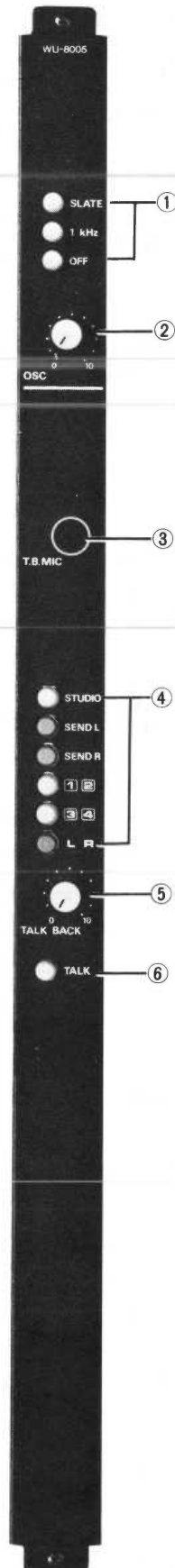
### 7. Solo Indicator

This readout indicates that the input solo switch is in the ON position.

### 8. Headphone Jack

Standard 1/4" (6.3 mm) jack for stereo headphone.

# TB/OSC MODULE WU-8005



For close communication between the mixing operator and the studio musicians, the TB/OSC module features a convenient provision for two-way talkback.

Built-in oscillator facilities make it easy to confirm that the controls are set properly prior to actual recording of the program.

### 1. OSC Select Switch

With this switch, the operator can choose either a 40 Hz/slate tone or 1 kHz sine wave. When the OSC select switch is in the OFF position, the talkback facility may be activated.

### 2. Oscillator Output Level Control

### 3. Talkback Microphone

Built-in condenser microphone.

### 4. TB/OSC Assign Switch

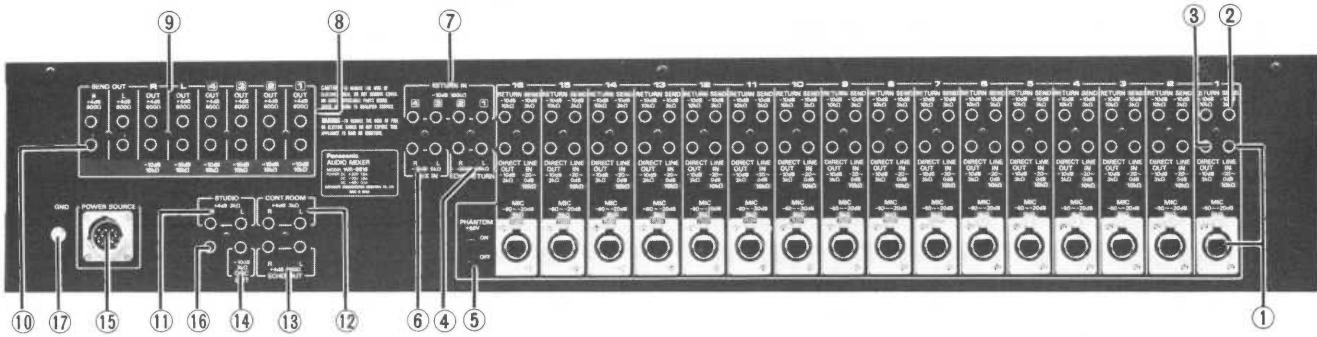
- Studio
- Send L
- Send R
- Group 1—2
- Group 3—4
- Master L—R

### 5. TB Mic Level Control

### 6. Talk Switch

With the OSC switch in the OFF position, this is held in while speaking to the musicians. The volume can be adjusted with the TB level control.

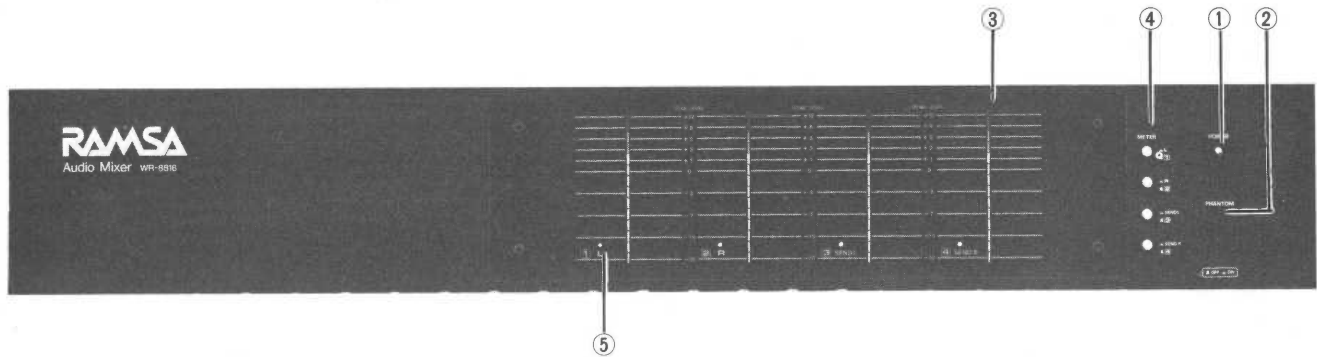
# REAR PANEL



- 1) Input - XLR type connector for Mic and pin jack for Line  
Mic & Pad — Balanced  
Line — Unbalanced
- 2) Input Insertion Jacks  
-10dB level
- 3) Direct Out - pin jack  
-10dB level
- 4) Echo Return - pin jack  
-20dB level
- 5) Phantom Power On/Off Switch  
Supplies power (48V DC) to condenser microphones
- 6) Aux In - pin jack  
-10dB level
- 7) Return In - pin jack  
-10dB level
- 8) Group Output - pin jack  
+4dB and -10dB levels, post group fader
- 9) Master L & R Output - pin L and R mixing buss output, post master L & R fader +4dB and -10dB levels
- 10) Send Out - pin jack  
Send mixing buss output, post send out level control  
Dual +4dB level outputs
- 11) Studio Out - pin jack  
For studio feed, post studio select and level control  
+4dB level
- 12) Control Room - pin jack  
Control room monitor output, post control room select switch and level control  
+4dB level
- 13) Echo Output - pin jack  
+4dB level
- 14) OSC Out - pin jack  
Output for Oscillator or Talkback signal through OSC/T.B. level control  
-10dB level
- 15) Power Source  
DC power supply input connector which is connected between the power supply unit with the supplied power supply cable  
(Connection should be made only with the supplied cable.)
- 16) Spare Jack - no connection
- 17) GND  
Terminal for grounding

Note:  
0dB is referenced to 0.775V rms.

# METER PANEL



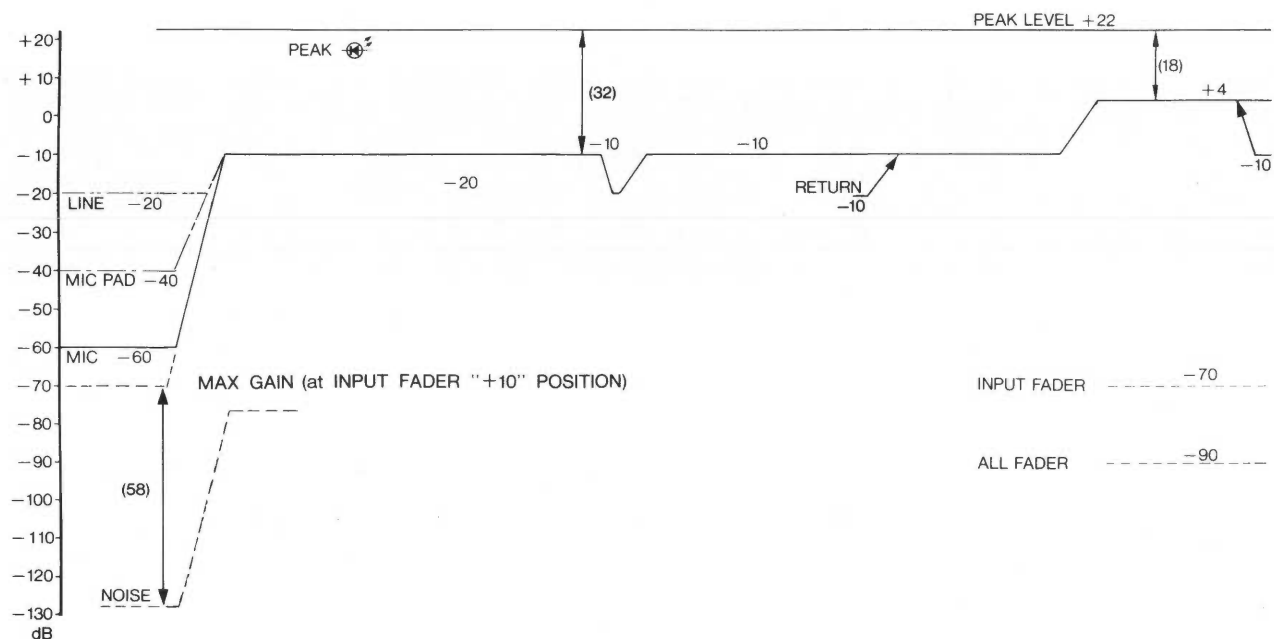
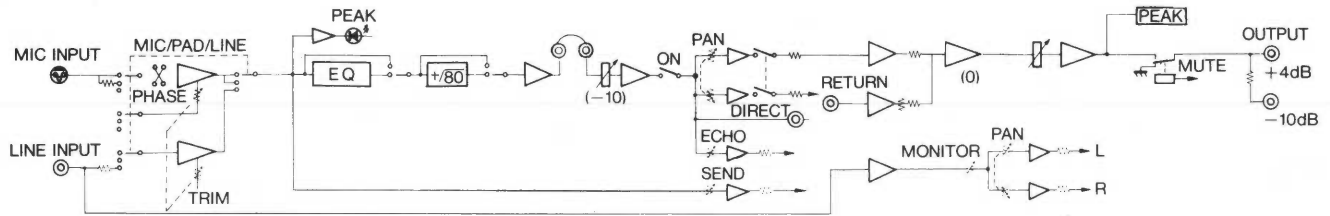
- 1) Power Indicator Lamp  
Indicates that the power supply unit is turned on and the mixing board is supplied with  $\pm 20V$  DC power.
- 2) Phantom Power Indicator Lamp  
Indicates 48V DC is supplied.
- 3) Meter - 14 point LED peak meter
- 4) Meter Select Switch  
Normal for Group 1, 2, 3, 4 outputs.  
Push for Master L, R, Send L, R outputs.
- 5) Indicator Light for Meter Selection

# IMPORTANT NOTICE

- 1) The power supply should be exclusively model WU-8081 and the multi core cable for connection should be the one which is supplied with WU-8081 only.
- 2) The mixer outputs are available in a few seconds after the power switch is turned on. Also, it takes approximately 5 minutes before the performance of the mixer become fully stabilized. Clicking-sounds might be generated before it is fully warmed up.
- 3) When turning the Phantom Power on, turn the output faders down to avoid the click-sound which might result in damages to the speaker systems or other equipment connected.  
And refrain from connecting unbalanced microphones, which might result in damage of the microphones and the mixer's power supply.
- 4) Input and output levels are referenced to as OdB = 0.775V rms. And the measurement of microphone input level is made without applying 600 ohm termination at the output of the oscillator. For the other input circuits, the measurement is to be made applying 600 ohm termination at the output of the oscillator.

- 5) In case of taking out the individual modules, unscrew 2 screws at the both sides of the front pad, lift the pad, then disconnect the buss line connector and unscrew one screw fixing each module on the front chassis, and then pull the module out.
- 6) In case of taking out or inserting knobs from or to the knob shaft, match the directions of the cut side of the shaft and the stopper of the knob. Especially for the dual shaft knobs, match the angle of the shaft for outer knobs with that of the inner knobs.
- 7) Be sure to connect the supplied patch plug between the return and send jacks on the rear panel. Unless the patch plug is connected, no signals will be sent out of each input circuit. When connecting a compressor, limiters, or other effect units, however, disconnect the patch plug and connect such external units instead.

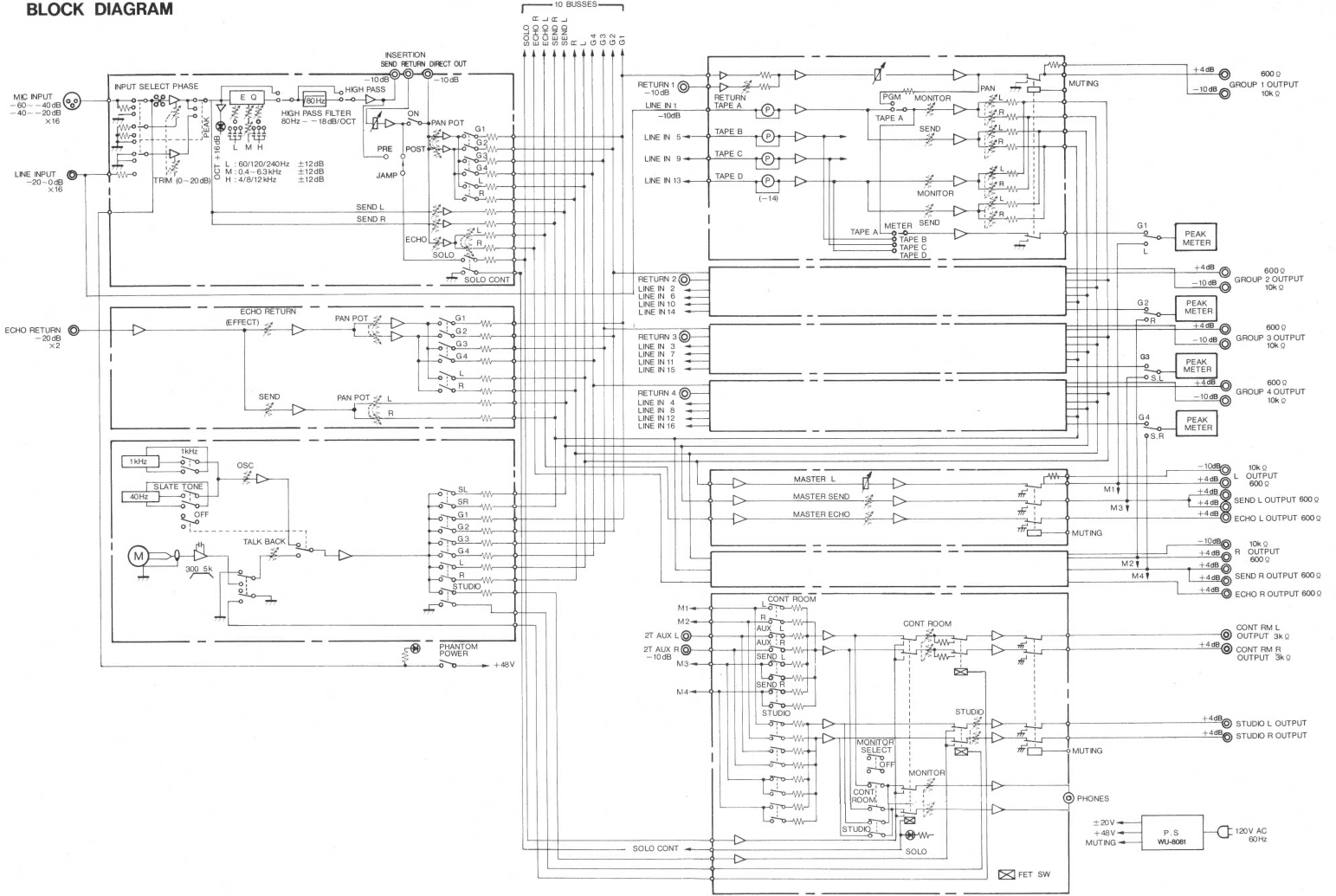
# LEVEL DIAGRAM



Note: 0 dB = 0.775V rms.

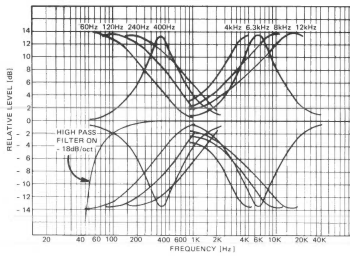


**BLOCK DIAGRAM**

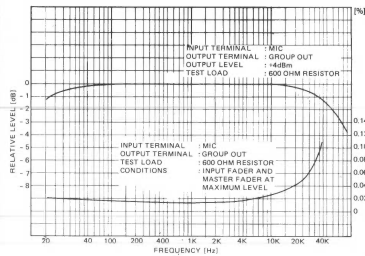


## TYPICAL PERFORMANCE

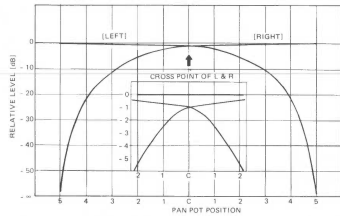
INPUT EQUALIZER



FREQUENCY RESPONSE/TOTAL HARMONIC DISTORTION



PAN POT



## OPERATION CHECK

### Notice

- Input and output levels are referenced to as 0 dB = 0.775 V rms. And the measurement of microphone input level is made without applying a 600 ohm termination at the output of the oscillator. For the other input circuits, the measurement is to be made

applying a 600 ohm termination at the output of the oscillator.

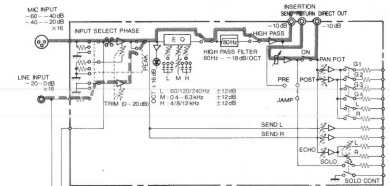
- When the headphone monitor is not in use, the Phones Select Switches should be "off".

### 1. MIC INPUT → DIRECT OUT LINE INPUT → DIRECT OUT

- Set the controls on the Input Module (WU-8001) as follows.

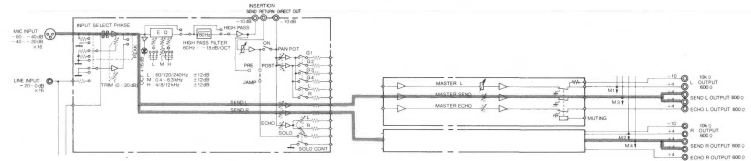
Input Level Switch : MIC  
Input Trim Control : At "0" on scale  
Equalizer On Switch : At off position  
High Pass Filter Switch : At off position  
Channel On Switch : At on position  
Input Fader : At "0" on scale  
Solo Switch : At off position

- Apply a -60 dB (±1 dB)/1 kHz signal to the MIC INPUT connector.
- Check that the output level at DIRECT OUT is -10 dB with a 3 kohm load.



- Set the Input Level Switch to LINE, and apply a -20 dB (±1 dB)/1 kHz signal to the LINE INPUT jack.
- Check that the output level at DIRECT OUT is -10 dB with a 3 kohm load.
- Check all the MIC INPUTS and LINE INPUTS in the same way.

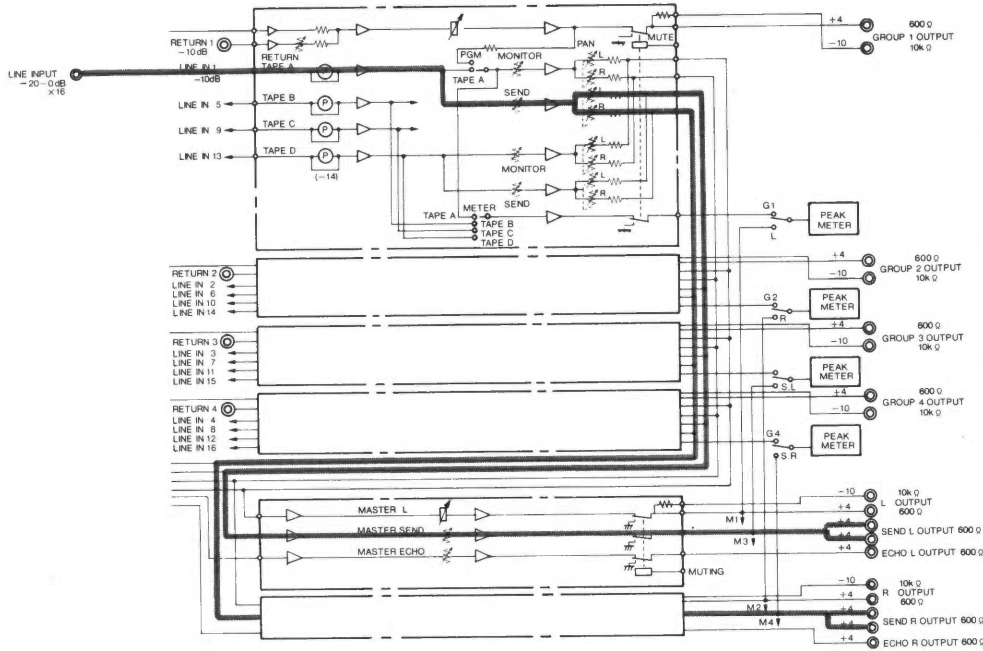
### 2. MIC INPUT → SEND OUTPUT LINE INPUT → SEND OUTPUT



- Set the controls on the Input Module (WU-8001) and Master Module (WU-8003) as follows.  
Input Module (WU-8001)  
Input Level Switch : MIC  
Input Trim Control : At "0" on scale  
Send L, R Control : At "10" on scale  
Master Module (WU-8003)  
Master Send Control : At "10" on scale
- Apply a -60 dB (±1 dB)/1 kHz signal to the MIC INPUT connector.

- Check that the output levels at SEND L OUTPUT and SEND R OUTPUT are +4 dB with a 600 ohm load.
- Set the Input Level Switch to LINE, and apply a -20 dB (±1 dB)/1 kHz signal to the LINE INPUT jack.
- Check that the output levels at SEND L OUTPUT and SEND R OUTPUT are +4 dB with a 600 ohm load.
- Check all the MIC INPUTS and LINE INPUTS in the same way.

### 3. LINE INPUT → SEND OUTPUT



- Set the controls on the Input Module (WU-8001), Group Module (WU-8002) and Master Module (WU-8003) as follows.

Input Module (WU-8001)

Program Buss Assign Switch : At off position

Group Module (WU-8002)

PGM/TAPE Select Switch : TAPE

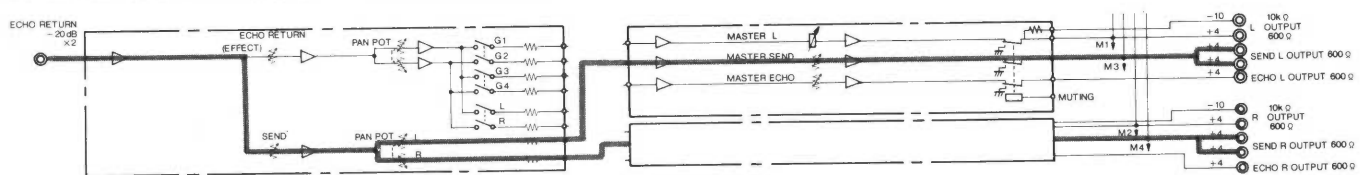
Send Level Control : At "10" on scale

Master Module (WU-8003)

Master Send Control : At "10" on scale

- Apply a  $-20$  dB ( $\pm 1.5$  dB)/1 kHz signal to the LINE INPUT jack.
- Set the Send Pan Control on the Group Module to L, and check that the output level at SEND L OUTPUT is +4 dB with a 600 ohm load.
- Set the Send Pan Control on the Group Module to R, and check that the output level at SEND R OUTPUT is +4 dB with a 600 ohm load.
- Check all the LINE INPUTs in the same way.

### 4. ECHO RETURN INPUT → SEND OUTPUT



- Set the controls on the Master Module (WU-8003) as follows.

Master Send Control : At "10" on scale

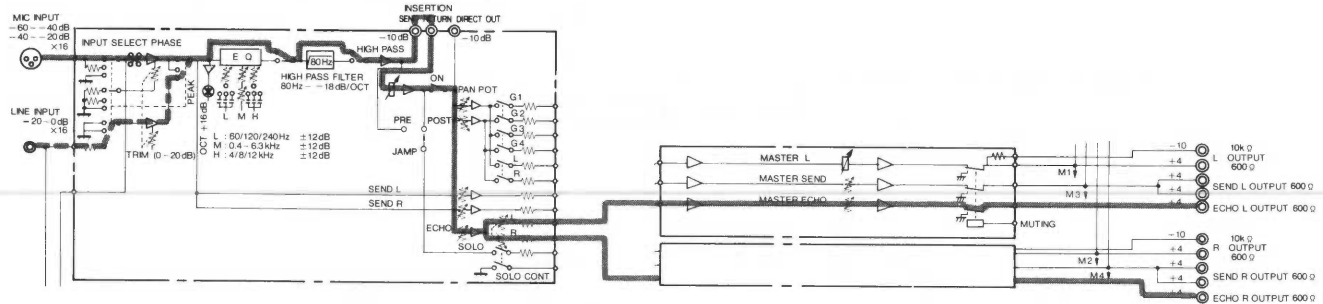
Send Control : At "10" on scale

Master Fader : At "0" on scale

- Apply a  $-20$  dB ( $\pm 1$  dB)/1 kHz signal to the ECHO RETURN INPUT jack.
- Set the Send Pan Control to L, and check the output level at SEND L OUTPUT is +4 dB with a 600 ohm load.

- Set the Send Pan Control to R, and check the output level at SEND R OUTPUT is +4 dB with a 600 ohm load.
- Check all the ECHO RETURN INPUTs in the same way.

## 5. MIC INPUT → ECHO OUTPUT LINE INPUT → ECHO OUTPUT



- Set the controls on the Input Module (WU-8001) and Master Module (WU-8003) as follows.

### Input Module (WU-8001)

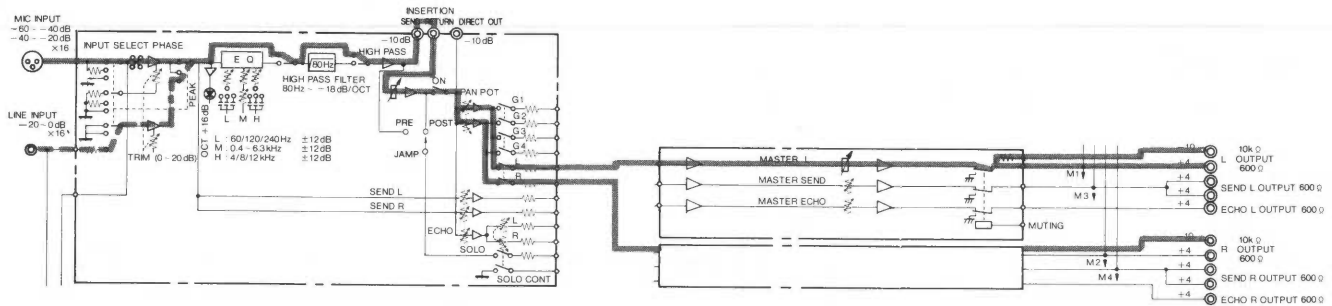
- Input Level Switch : MIC
- Input Trim Control : At "0" on scale
- Equalizer On Switch : At off position
- High Pass Filter Switch : At off position
- Channel On Switch : At on position
- Input Fader : At "0" on scale
- Echo Level Control : At "10" on scale

### Master Module (WU-8003)

- Master Echo Control : At "10" on scale

- Apply a  $-60$  dB ( $\pm 1$  dB)/1 kHz signal to the MIC INPUT connector.
- Set the Echo Pan Control to L, and check that the output level at ECHO L OUTPUT is +4 dB with a 600 ohm load.
- Set the Echo Pan Control to R, and check that the output level at ECHO R OUTPUT is +4 dB with a 600 ohm load.
- Set the Input Level Switch to LINE, and apply a  $-20$  dB ( $\pm 1$  dB)/1 kHz signal to the LINE INPUT jack.
- Check the ECHO OUTPUT level in the same way.
- Check all the MIC INPUTs and LINE INPUTs in the same way.

## 6. MIC INPUT → MASTER OUTPUT LINE INPUT → MASTER OUTPUT



- Set the controls on the Input Module (WU-8001) and Master Module (WU-8003) as follows.

### Input Module (WU-8001)

- Input Level Switch : MIC
- Input Trim Control : At "0" on scale
- Equalizer On Switch : At off position
- High Pass Filter Switch : At off position
- Channel On Switch : At on position
- Input Fader : At "0" on scale
- Solo Switch : At off position
- Program Buss Assign Switch : "L-R"

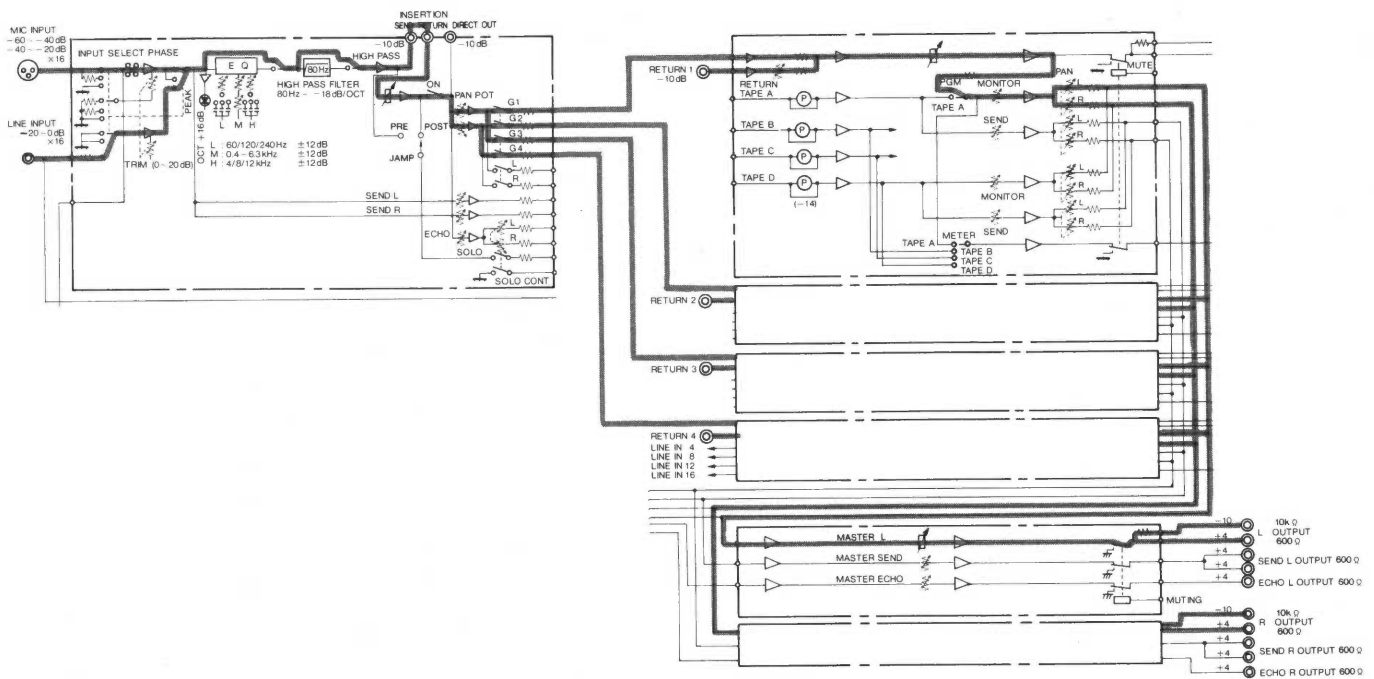
### Master Module (WU-8003)

- Master Fader : At "0" on scale

- Apply a  $-60$  dB ( $\pm 1.5$  dB)/1 kHz signal to the MIC INPUT connector.

- Set the Pan Control on the Input Module to L, and check that the one output level at MASTER L OUTPUT is +4 dB with a 600 ohm load and the other is  $-10$  dB with a 10 kohm load.
- Set the Pan Control on the Input Module to R, and check that the one output level at MASTER R OUTPUT is +4 dB with a 600 ohm load and the other is  $-10$  dB with a 10 kohm load.
- Set the Input Level Switch to LINE, and apply a  $-20$  dB ( $\pm 1.5$  dB)/1 kHz signal to the LINE INPUT jack.
- Check the MASTER OUTPUT level in the same way.
- Check all the MIC INPUTs and LINE INPUTs in the same way.

**7. MIC INPUT → MASTER OUTPUT  
 LINE INPUT → MASTER OUTPUT  
 RETURN INPUT → MASTER OUTPUT**



- Set the controls on the Input Module (WU-8001), Group Module (WU-8002) and Master Module (WU-8003) as follows.

Input Module (WU-8001)

- Input Level Switch : MIC
- Input Trim Control : At "0" on scale
- Equalizer On Switch : At off position
- High Pass Filter Switch : At off position
- Input Fader : At "0" on scale
- Solo Switch : At off position
- Program Buss Assign Switch : "1-2" and "3-4"

Group Module (WU-8002)

- Group Fader : At "0" on scale
- PGM/TAPE Select Switch : PGM
- Tape Monitor A Level Control : At "10" on scale

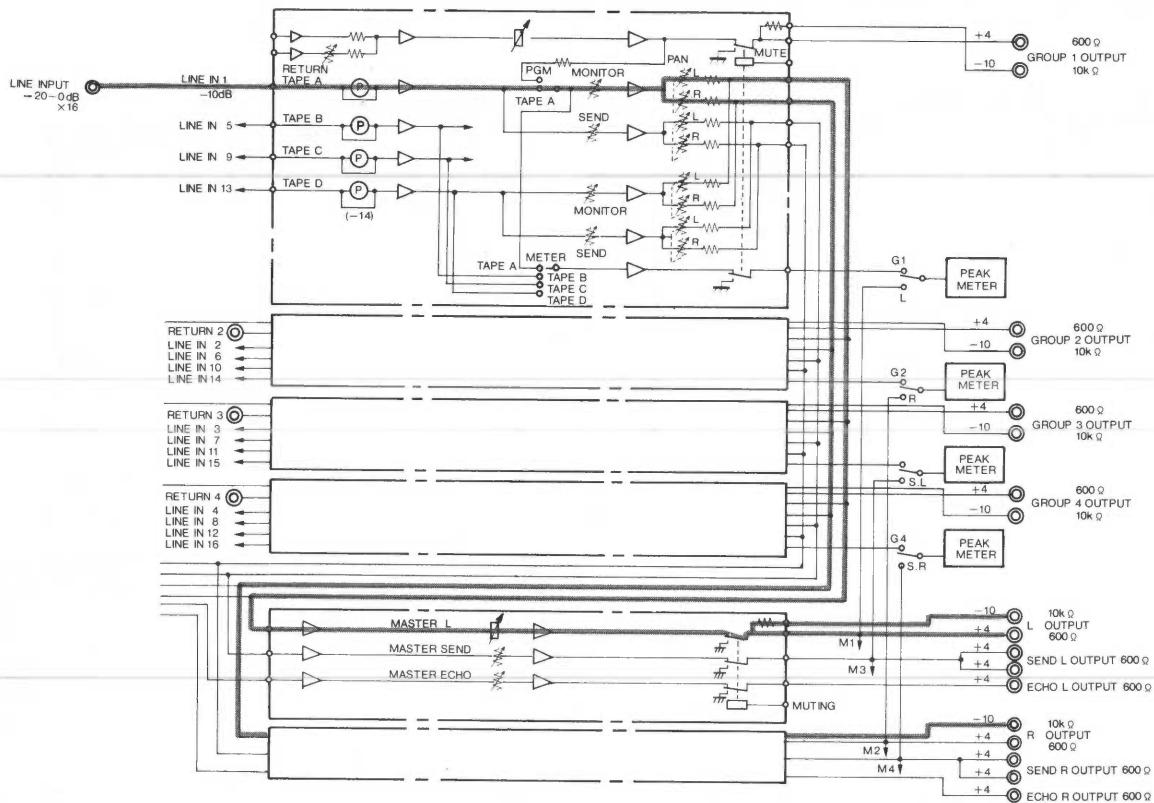
Master Module (WU-8003)

- Master Fader : At "0" on scale

- Apply a  $-60$  dB ( $\pm 1.5$  dB)/1 kHz signal to the MIC INPUT connector.
- Set the Pan Control to L on the Input Module and Tape A Monitor Pan Control to L on the Group Module.

- Check that the one output level at MASTER L OUTPUT is  $+4$  dB with a 600 ohm load and the other is  $-10$  dB with a 10 kohm load.
- Set the Pan Control to R on the Input Module and Tape A Monitor Pan Control to R on the Group Module.
- Check that the one output level at MASTER R OUTPUT is  $+4$  dB with a 600 ohm load and the other is  $-10$  dB with a 10 kohm load.
- Check all the MIC INPUTs in the same way.
- Apply a  $-20$  dB ( $\pm 1.5$  dB)/1 kHz signal to the LINE INPUT jack and check the MASTER L & R OUTPUTs level in the same way. (Check all LINE INPUTs)
- Apply a  $-10$  dB ( $\pm 1$  dB)/1 kHz signal to the RETURN IN jack and check the MASTER OUTPUT level in the same way. (Check all RETURN INPUTs)

## 8. LINE INPUT → MASTER OUTPUT



- Set the controls on the Input Module (WU-8001), Group Module (WU-8002) and Master Module (WU-8003) as follows.

Input Module (WU-8001)

Program Buss Assign Switch : At off position

Group Module (WU-8002)

PGM/TAPE Select Switch : TAPE

Monitor Level Control : At "10" on scale

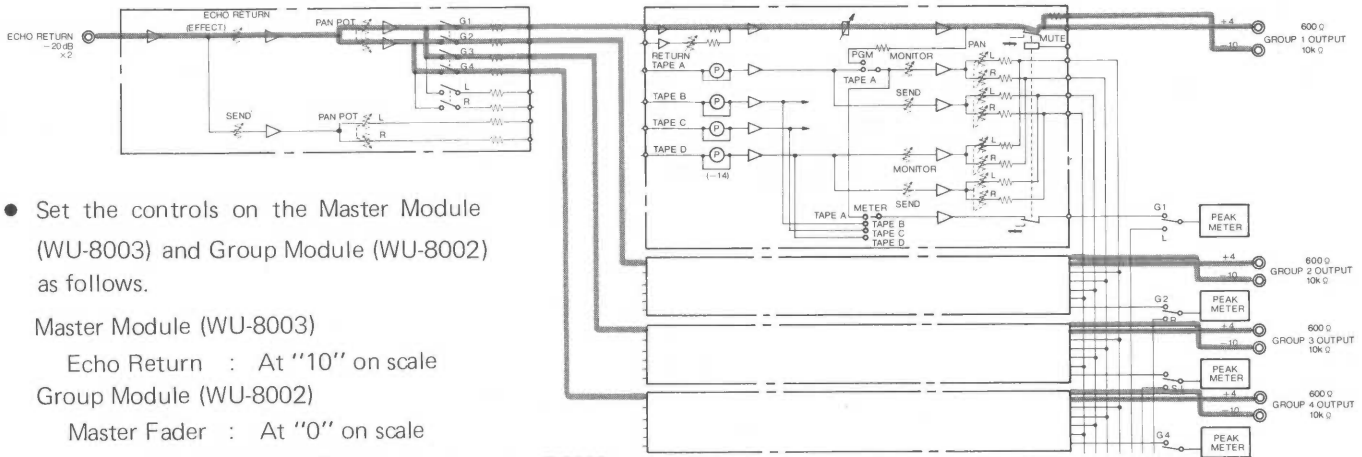
Master Module (WU-8003)

Master Fader : At "0" on scale

- Apply a  $-20$  dB ( $\pm 1.5$  dB) 1 kHz signal to the LINE INPUT jack.

- Set the Monitor Pan Control on the Group Module to L, and check that the one output level at MASTER L OUTPUT is +4 dB with a 600 ohm load and the other is  $-10$  dB with a 10 kohm load.
- Set the Monitor Pan Control on the Group Module to R, and check that the one output level at MASTER R OUTPUT is +4 dB with a 600 ohm load and the other is  $-10$  dB with a 10 kohm load.
- Check all the LINE INPUTS in the same way.

## 9. ECHO RETURN INPUT → GROUP OUTPUT



- Set the controls on the Master Module (WU-8003) and Group Module (WU-8002) as follows.

Master Module (WU-8003)

Echo Return : At "10" on scale

Group Module (WU-8002)

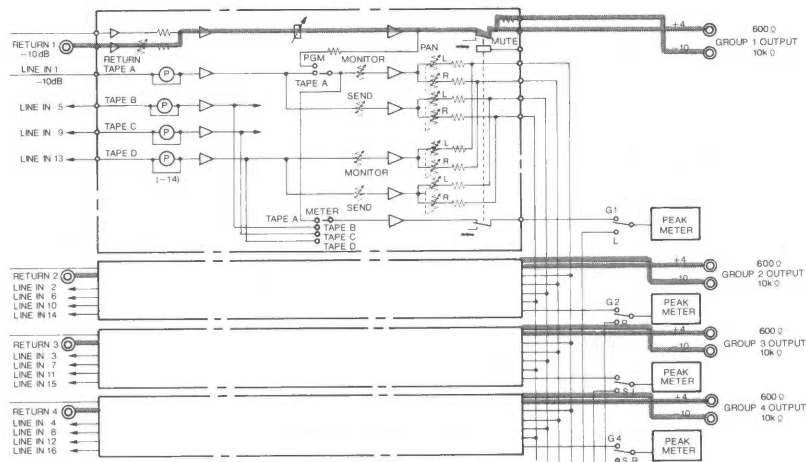
Master Fader : At "0" on scale

- Apply a  $-20\text{ dB}$  ( $\pm 1\text{ dB}$ )/1 kHz signal to the ECHO RETURN INPUT connector.
- Check all the GROUP OUTPUTs while setting the controls on the Master Module as follows.

OUTPUT	CONTROL	Pan Control	Echo Return Assign Switch
GROUP 1		L	"1-2"
GROUP 2		R	"1-2"
GROUP 3		L	"3-4"
GROUP 4		R	"3-4"

- Check that the one output level at GROUP OUTPUT is  $+4\text{ dB}$  with a 600 ohm load and the other is  $-10\text{ dB}$  with a 10 kohm load.
- Check all the ECHO RETURN INPUTs in the same way.

## 10. RETURN INPUT → GROUP OUTPUT



- Set the controls on the Group Module (WU-8002) as follows.

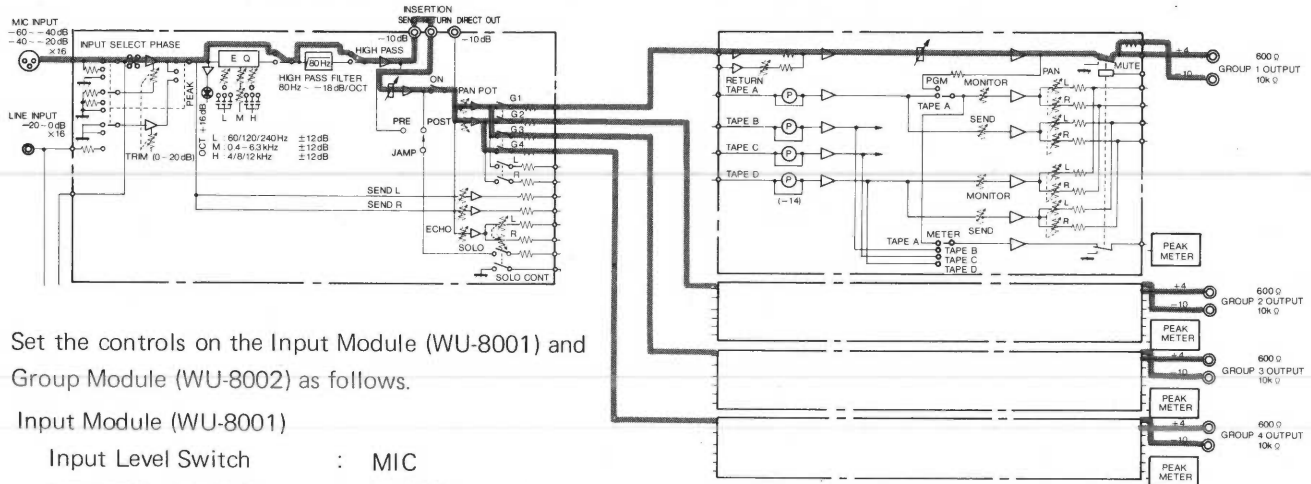
Group Fader : At "0" on scale

Return Control : At "10" on scale

- Apply a  $-10\text{ dB}$  ( $\pm 1\text{ dB}$ )/1 kHz signal to the RETURN IN jack.

- Check that the one output level at GROUP OUTPUT is  $+4\text{ dB}$  with a 600 ohm load and the other is  $-10\text{ dB}$  with a 10 kohm load.

## 11. MIC INPUT → GROUP OUTPUT LINE INPUT → GROUP OUTPUT



- Set the controls on the Input Module (WU-8001) and Group Module (WU-8002) as follows.

### Input Module (WU-8001)

- Input Level Switch : MIC
- Input Trim Control : At "0" on scale
- Equalizer On Switch : At off position
- High Pass Filter Switch : At off position
- Channel On Switch : At on position
- Input Fader : At "0" on scale
- Solo Switch : At off position
- Program Buss Assign Switch: "1-2" and "3-4"

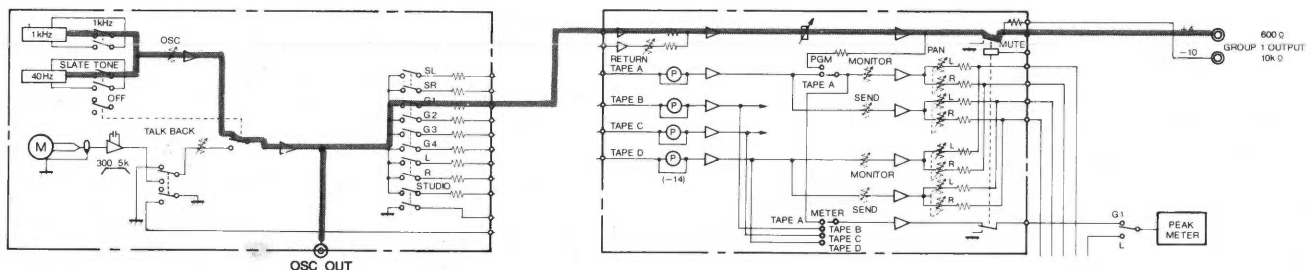
### Group Module (WU-8002)

- Group Fader : At "0" on scale

- Apply a  $-60$  dB ( $\pm 1.5$  dB)/1 kHz signal to the MIC INPUT connector.
- Set the Pan Control to L on the Input Module, and check that the one output level at GROUP 1 OUTPUT is  $+4$  dB with a 600 ohm load and the other is  $-10$  dB with a 10 kohm load.
- Check GROUP 3 OUTPUTs in the same way.

- Set the Pan Control to R on the Input Module, and check that the one output level at GROUP 2 OUTPUT is  $+4$  dB with a 600 ohm load and the other is  $-10$  dB with a 10 kohm load.
- Check GROUP 4 OUTPUTs in the same way.
- Set the Input Level Switch to LINE, and apply a  $-20$  dB ( $\pm 1.5$  dB)/1 kHz signal to the LINE INPUT jack.
- Check the GROUP OUTPUT level in the same way.
- Check all the MIC INPUTs and LINE INPUTs in the same way.

## 12. OSC OUT Level



- Set the controls on the Group Module (WU-8002) and OSC/TB Module (WU-8005) as follows.

### OSC/TB Module (WU-8005)

- OSC Select Switch : 1 kHz/SLATE
- TB/OSC Assign Switch : Group 1-2

### GROUP Module (WU-8002)

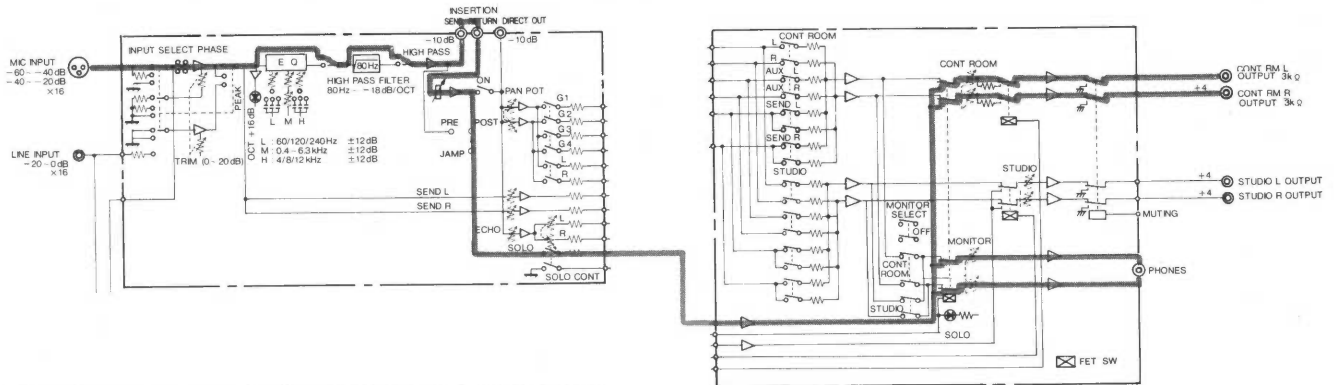
- Group Fader : At "0" on scale

- Adjust the Oscillator Output Level Control so that the GROUP OUTPUT level becomes  $+4$  dB with a 600 ohm load.
- Check that the output level at OSC OUT is  $-10$  dB ( $\pm 1.5$  dB) with a 3 kohm load.
- Check that the OSC frequency is  $1$  kHz  $\pm 100$  Hz and  $40$  Hz  $\pm 4$  Hz.



### 13. SOLO CONTROL

(MIC INPUT → CONT ROOM OUTPUT)  
(LINE INPUT → CONT ROOM OUTPUT)



- Set the controls on the Input Module (WU-8001) and Monitor Module (WU-8004) as follows.

Input Module (WU-8001)

- Input Level Switch : MIC
- Input Trim Control : At "0" on scale
- Equalizer On Switch : At off position
- High Pass Filter Switch : At off position
- Solo Switch : At on position

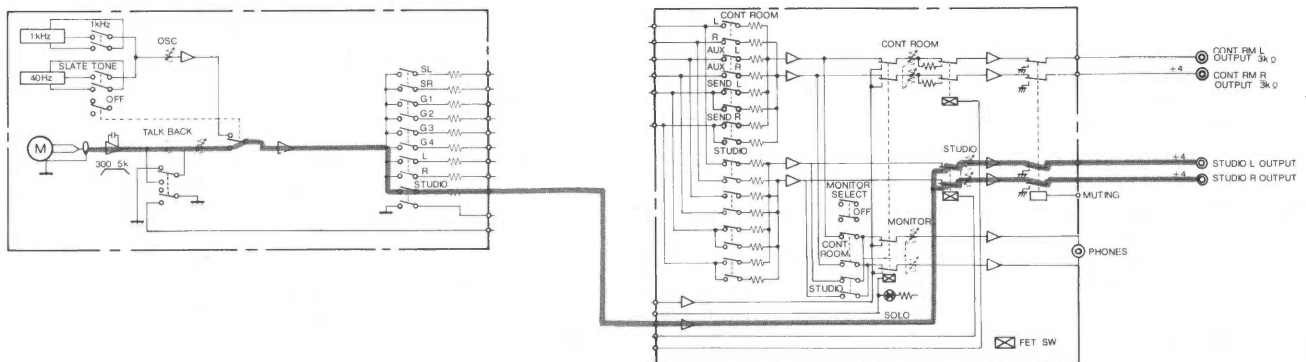
Monitor Module (WU-8004)

- Control Room Volume Control : At "10" on scale
- Monitor Control : At "10" on scale

- Apply a  $-60$  dB ( $\pm 1.5$  dB)/1 kHz signal to the MIC INPUT connector.

- Check that the output level at the CONT ROOM OUTPUT is  $+4$  dB with a 3 kohm load.
- Set the Input Level Switch to LINE, and apply a  $-20$  dB ( $\pm 1.5$  dB)/1 kHz signal to the LINE INPUT jack.
- Check the CONT ROOM OUTPUT level in the same way.
- Check all the MIC INPUTs and LINE INPUTs in the same way.

### 14. TALKBACK MIC



- When the Talk Switch is depressed and the OSC Select Switch is in the "off" position, signals from the microphone installed in the TB/OSC Module are applied to the STUDIO L & R OUTPUTs. At the same time, the CONTROL ROOM L & R OUTPUT signals are muted about 20 dB.

### 15. CONTROL ROOM OUTPUT LEVEL

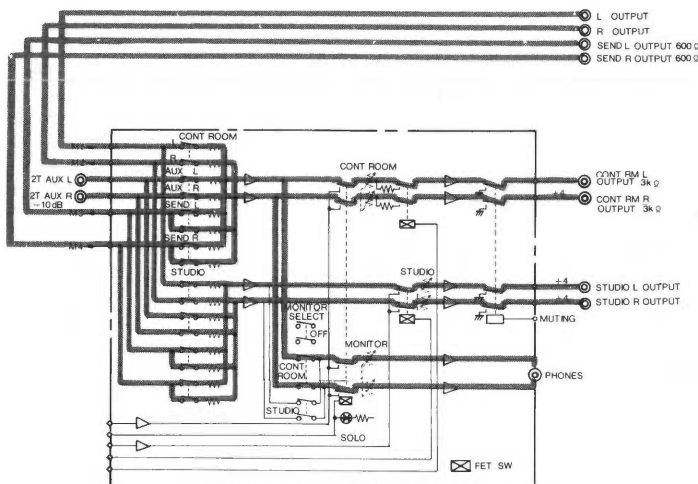
- Control room monitoring is controlled by the Control Room Select Switches and Control Room Volume Control of the Monitor Module (WU-8004).
- Check the CONT ROOM OUTPUT level as follows.

INPUT		Control Room Volume Control	Control Room Select Switch	Control Room Output
SIGNAL	LEVEL			
Master L & R	+4 dB	At "10" on scale	L•R	+4 dB (± 1dB) (with a 3 kohm load)
Send L	+4 dB		SEND L	
Send R	+4 dB		SEND R	
AUX L & R	-10 dB		AUX	

### 16. STUDIO ROOM OUTPUT LEVEL

- Studio room monitoring is controlled by the Studio Select Switch and Studio Control of the Monitor Module (WU-8004).
- Check the STUDIO OUTPUT level as follows.

INPUT		Studio Control	Studio Select Switch	Studio Output
SIGNAL	LEVEL			
Master L & R	+4 dB	At "10" on scale	L•R	+4 dB (± 1dB) (with a 3 kohm load)
Send L	+4 dB		SEND L	
Send R	+4 dB		SEND R	
AUX L & R	-10 dB		AUX	



### 17. HEADPHONES OUTPUT LEVEL

- Headphone monitoring is controlled by the Monitor Control and Phones Select Switches on the Monitor Module (WU-8004).
- Set the Monitor Control to max. and check that more than 2 W +2 W (+14 dB (± 1 dB) with a 8 ohm load) output is obtained from PHONES jack.

**Caution:** Do not send out the maximum sinewave output from the Headphone jack for more than 10 seconds.

### 18. PEAK LED

- Set the controls on the Input Module (WU-8001) as follows:
  - Input Level Switch : MIC
  - Input Trim Control : At "0" on scale
- Apply a -34 dB (±2dB)/1 kHz signal to the MIC INPUT connector.
- Check that the Peak LED is lit. Check all the MIC INPUTs in the same way.

### 19. METER

- Set the controls on the Input Module (WU-8001) and Group Module (WU-8002) as follows.
  - Input Module (WU-8001)
    - Input Level Switch : MIC
    - Input Trim Control : At "0" on scale
    - Equalizer On Switch : At off position
    - High Pass Filter Switch : At off position
    - Input Fader : At "0" on scale
    - Channel On Switch : At on position
    - Program Buss Assign Switch : "1-2" and "3-4"
  - Group Module (WU-8002)
    - Group Fader : At "0" on scale
    - PGM/TAPE Select Switch : PGM
    - Meter Select Switch : TAPE A
- Set the Pan Control to L on the Input Module (WU-8001), and apply a -60 dB (±1dB)/1KHz signal to the MIC INPUT connector.
- Check that the 0dB PEAK LEDs are lit in both Group 1 and 3 on the Meter Panel.
- Set the Pan Control to R on the Input Module (WU-8001) and check that the 0dB PEAK LEDs are lit in both Group 2 and 4 on the Meter Panel.
- With increasing input Level, check that the +12dB PEAK LEDs (red) go on both Group 2 and 4 on the Meter Panel when the GROUP OUTPUT LEVEL becomes +16dB(±2dB) with a 600 ohm load.

# DISASSEMBLY

## Module Unit Removal

- Remove two screws of the arm rest first (Fig. 1).
- Remove the Arm Rest by lifting it up as shown below.

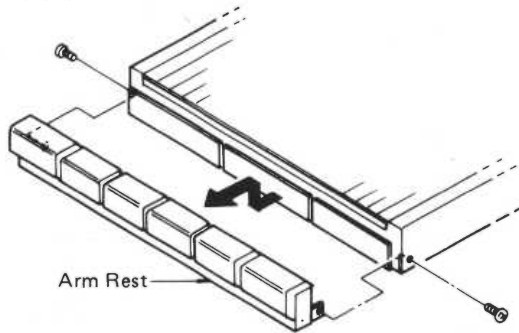


Fig. 1

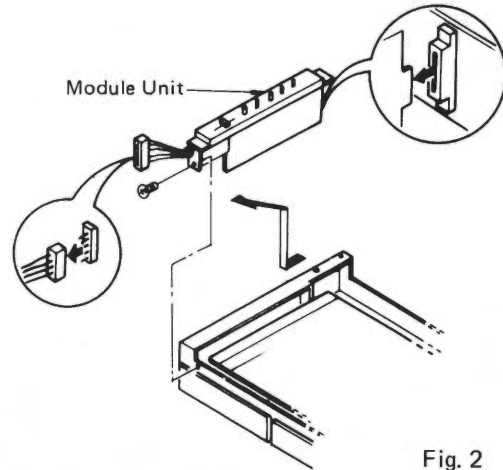


Fig. 2

## Rear Cover Removal

- For checking and repairing the Peak LED, remove the rear cover by removing the five screws. (Fig. 3)

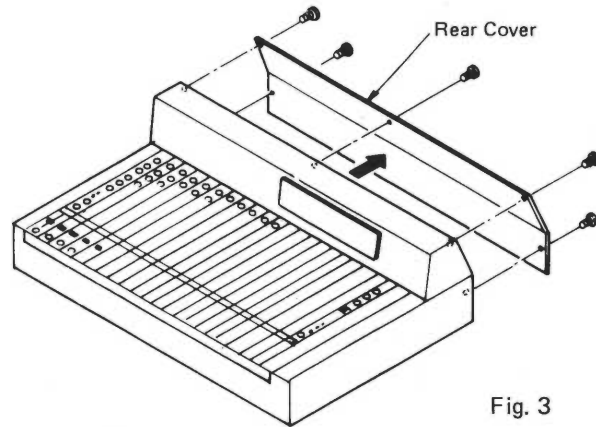


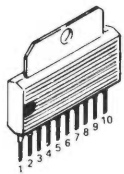
Fig. 3

- Remove the module fixing screw and the connector. (Fig. 2)
- Remove the module unit by lifting the front first, taking care not to damage the adjacent modules, and pull out the module. (Fig. 2)
- To reassemble, reverse the above procedure.

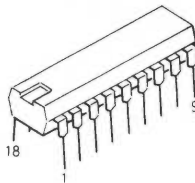
## TERMINAL GUIDE

### IC

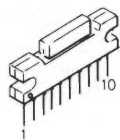
YWTA7220P



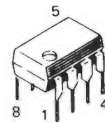
BA682



YWHA1374



YWNJM4560DX



### TRANSISTOR

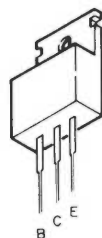
2SK30A



2SC828  
2SC828A  
2SC1318  
2SC2557  
2SA720

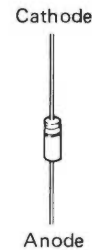


2SD365



### DIODE

OA91  
MA150TA  
MA161  
WZ-032  
WZ130T7A



LN21RPSL



1 : Anode  
2 : Cathode

LN28RPP  
LN38GPP



1 : Anode  
2 : Cathode

LN421YP



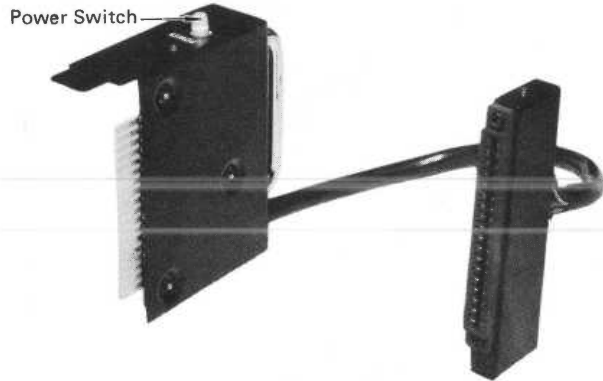
1 : Anode  
2 : Cathode

# SERVICE JIG

**Test Cord and Service Jig are available for checking and repairing.**

## (1) Test Cord (WR-CJIG-2)

The Test Cord WR-CJIG-2 is composed of a Mother Board Connector and a Buss Line Connector for testing each module unit after removing it from the mixing console. (See Photograph 1,2)



Photograph 1. Mother Board Connector



Photograph 2. Buss Line Connector

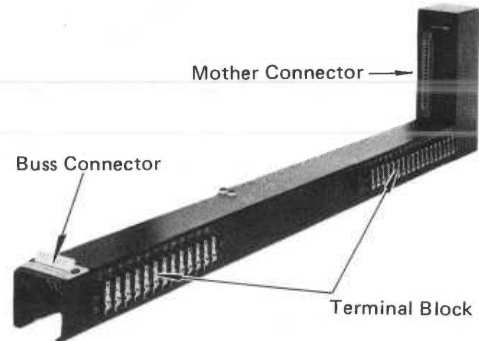
- Insert the mother board connector unit into the place from which a module unit to be tested was removed. Next, connect the test module unit, then connect it to the buss line using the Buss Line Connector. (See Photograph 3)
- Turn on the power switch of the Mother Board Connector and the module unit will be powered for operation.



Photograph 3. Connection of the Test Cord

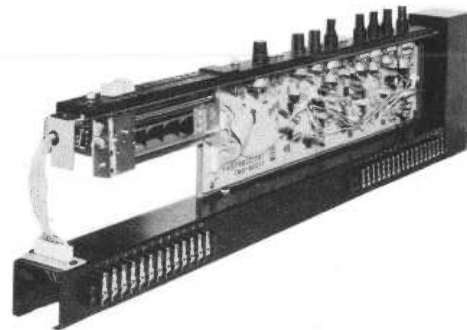
## (2) Service Jig (WR-CJIG-3)

The Service Jig WR-CJIG-3 is used for servicing module units at a service bench. All the input and output terminals of the mother connector and buss connector are connected to the terminal block respectively. For testing, connect DC  $\pm$  20V power supply to No. 16 (0V), No. 17 (+20V) and No. 18 (-20V) terminals of the terminal block. (See Photograph 4.)



Photograph 4.

- Set the module unit to be tested as shown below.



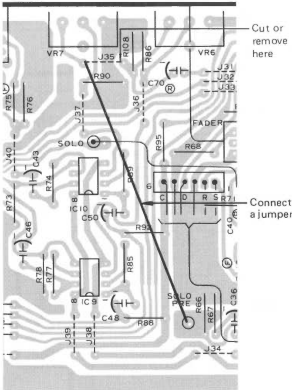
Photograph 5.

## MODIFICATIONS OF INPUT MODULES/GROUP MODULES

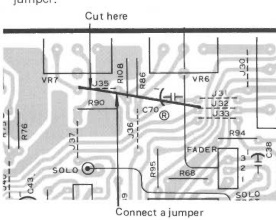
### ■ Input Module (WU-8001)

In response to some requests we have had, the following information indicates how to modify the Sends on the input modules from Pre-EQ, Pre-Fader to Post-EQ, Pre-Fader or Post-EQ, Post-Fader.

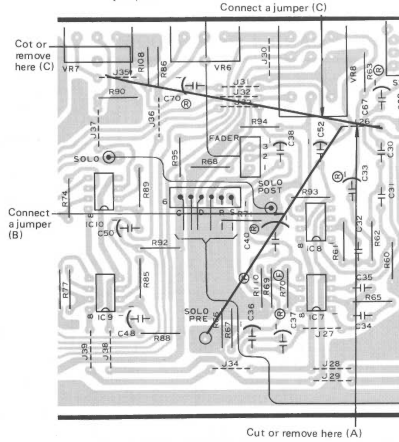
- 1) Send R-Change to Post-EQ, Pre-Fader (Send L-no change)
  - A) Cut or remove Jumper J 35.
  - B) Connect the left side of J35 and the SOLO (PRE) with a jumper.



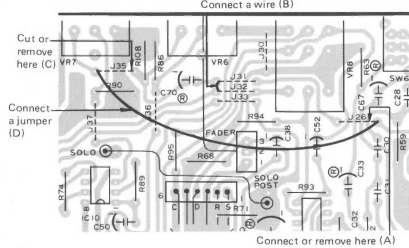
- 2) Send R-Change to Post-EQ, Post-Fader (Send L-no change)
  - A) Cut or remove Jumper J 35.
  - B) Connect the left side of J35 and J32 with a jumper.



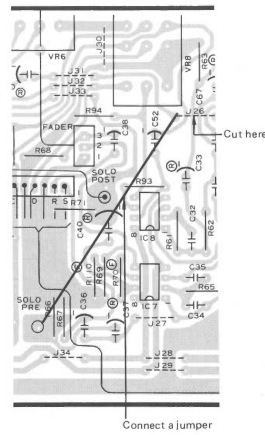
- 3) Send L-Change to Post-EQ, Pre-Fader (Send R-no change)
  - A) Cut or remove Jumper J 26.
  - B) Connect the left side of J26 and the SOLO (PRE) with a jumper.
  - C) Cut or remove Jumper J35 and connect the left side of J35 and the right side of J26 with a jumper.



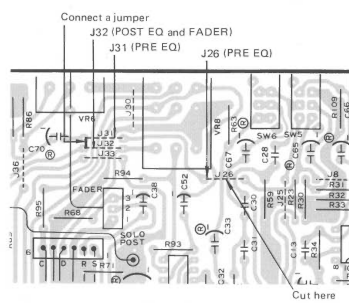
- 4) Send L-Change to Post-EQ, Post-Fader (Send R-no change)
  - A) Cut or remove Jumper J 26.
  - B) Connect a wire from Jumper J31 to Jumper J32.
  - C) Cut or remove Jumper J35.
  - D) Connect the left side of J35 and the right side of J26 with a jumper.



- 5) Send R & L-Change to Post-EQ, Pre-Fader
  - A) Cut or remove Jumper J26 of the Input Module Circuit Board.
  - B) Connect the left side of J26 and SOLO (PRE).



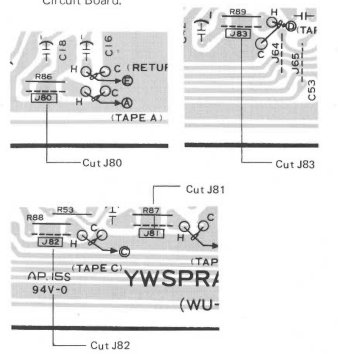
- 6) Send R & L-Change to Post-EQ, Post-Fader
  - A) Cut or remove Jumper J26.
  - B) Connect a wire from Jumper J31 to Jumper J32.



### ■ Group Module (WU-8002)

Change of the Group Module (WU-8002) Tape Input Level from -10 dB to +4 dB.

- 1) Cut the J80 ~ J83 when the R86 ~ R89 and J80 ~ J83 are soldered on the Group Module Circuit Board.

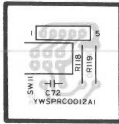


- 2) The following changes are needed when the R86 ~ R89 and J80 ~ J83 are not soldered on the Group Module Circuit Board.

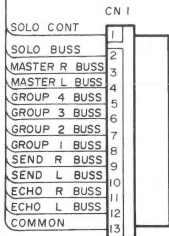
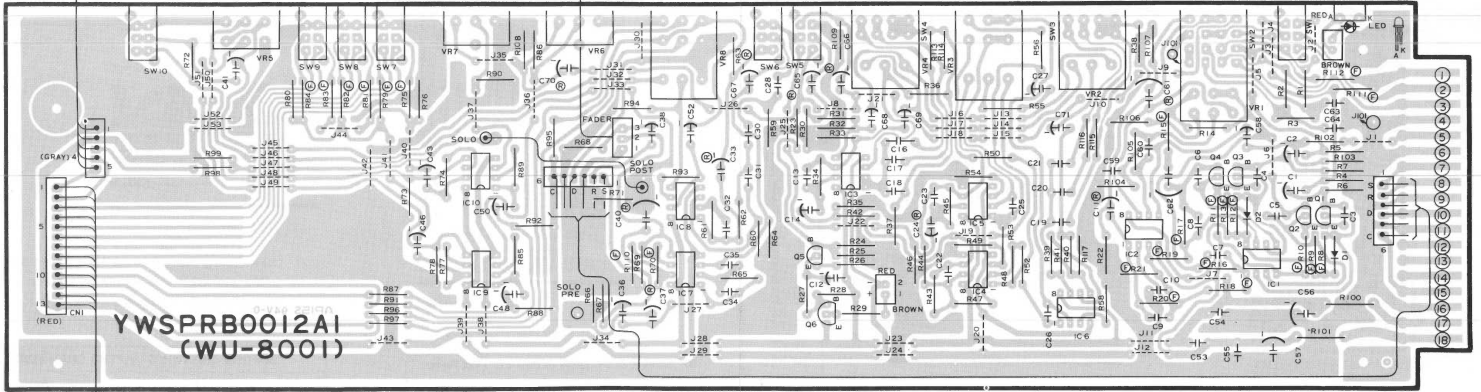
	BEFORE CHANGING	AFTER CHANGING
TAPE A		
TAPE B		
TAPE C		
TAPE D		

## INPUT MODULE (WU-8001) CIRCUIT BOARD DIAGRAM

SOLO SWITCH CIRCUIT BOARD  
(YWSRPC0012A1)

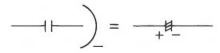


INPUT CIRCUIT BOARD (YWSPRB0012A1)

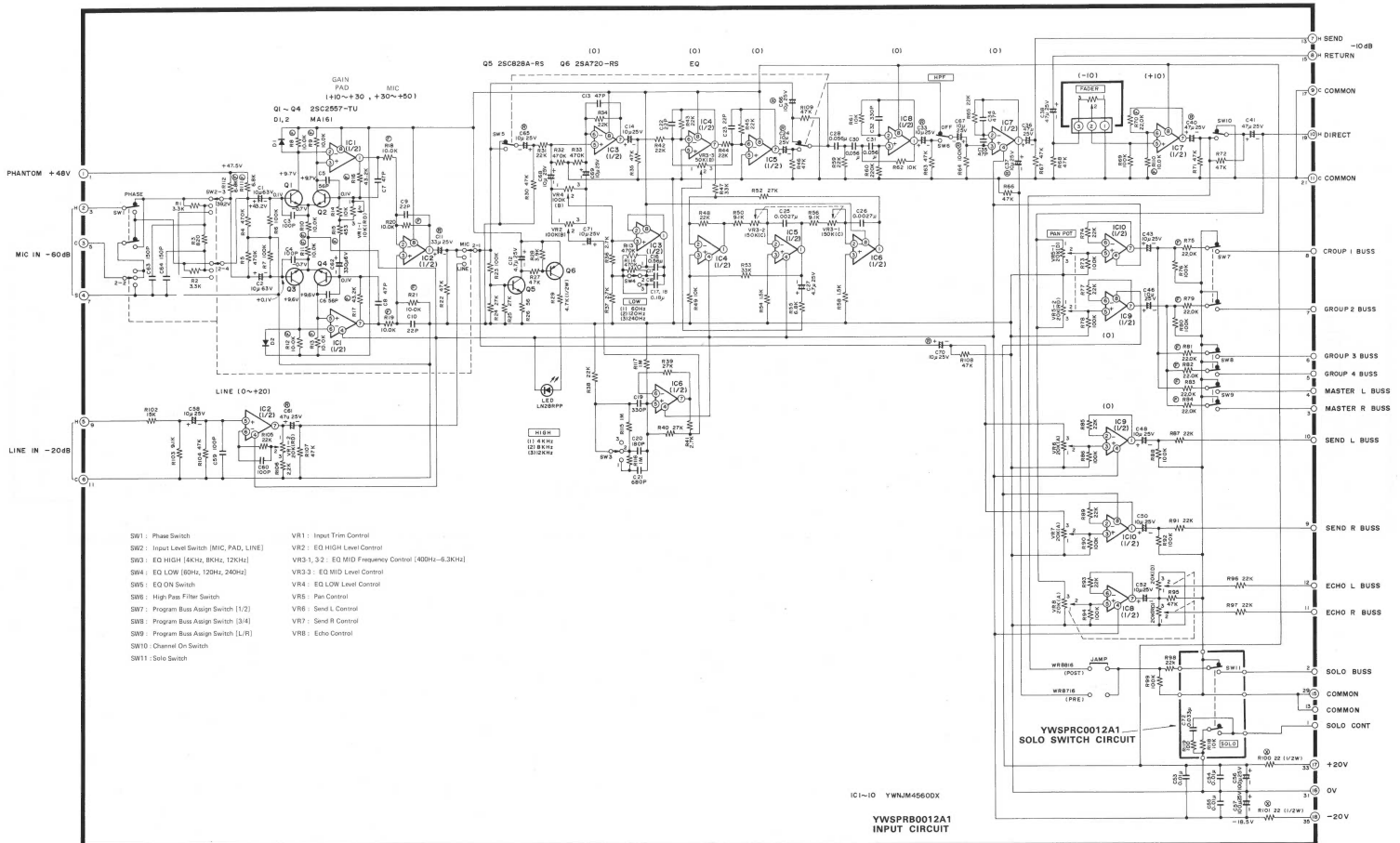


TO INPUT BUSS MOTHER BOARD  
(YWSPR40022A2)

CN2 ~ CN8



## INPUT MODULE (WU-8001) SCHEMATIC DIAGRAM

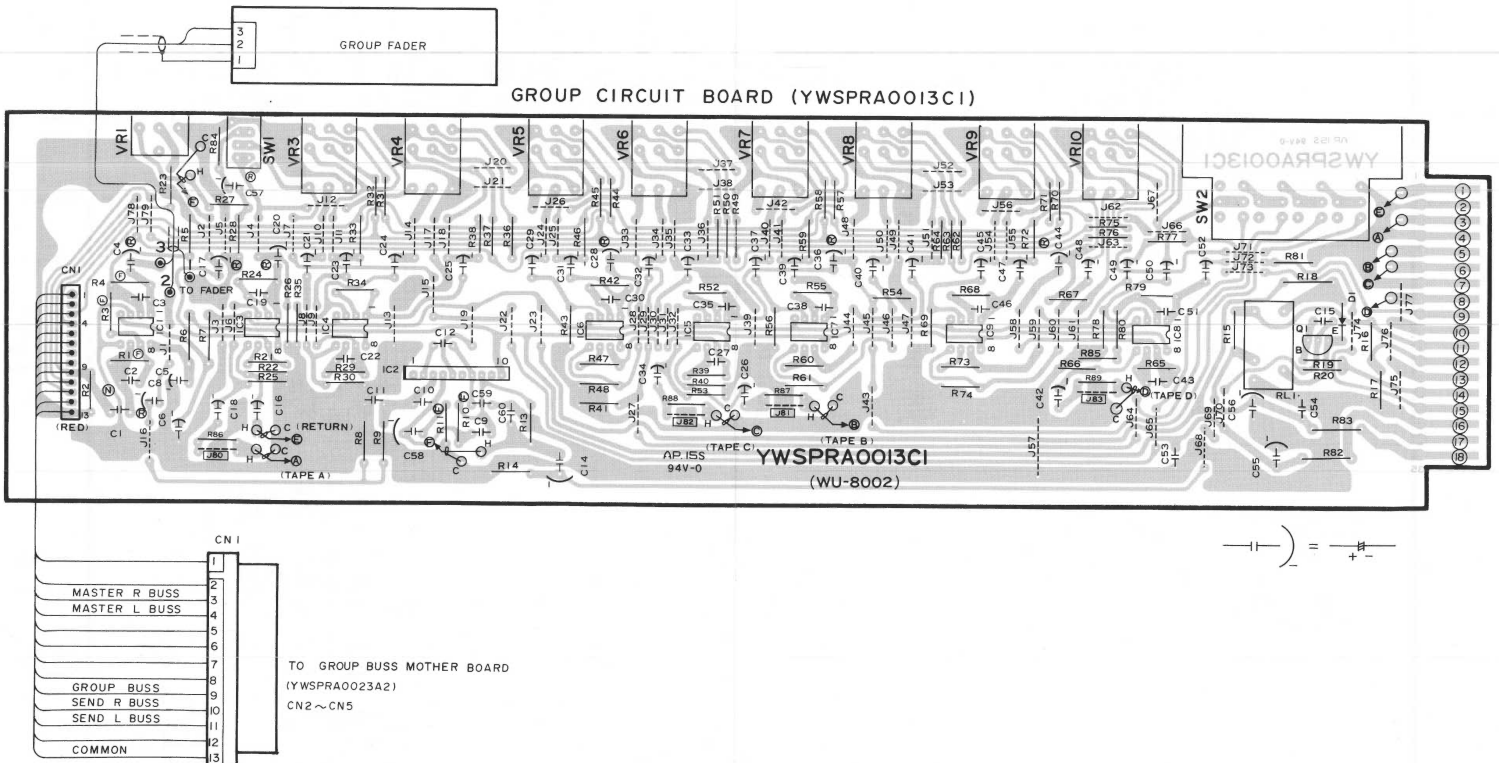


- |   |  |
|---|--|
| SW1 : Phase Switch                        | VR1 : Input Trim Control                               |
| SW2 : Input Level Switch (MIC, PAD, LINE) | VR2 : EQ HIGH Level Control                            |
| SW3 : EQ HIGH (24Hz, 80Hz, 120Hz)         | VR3-1, 3, 2 : EQ MID Frequency Control (400Hz--8.3KHz) |
| SW4 : EQ LOW (60Hz, 120Hz, 240Hz)         | VR3-3 : EQ MID Level Control                           |
| SW5 : EQ ON Switch                        | VR4 : EQ LOW Level Control                             |
| SW6 : High Pass Filter Switch             | VR5 : Pan Control                                      |
| SW7 : Program Bus Assign Switch (1/2)     | VR6 : Send L Control                                   |
| SW8 : Program Bus Assign Switch (3/4)     | VR7 : Send R Control                                   |
| SW9 : Program Bus Assign Switch (L/R)     | VR8 : Echo Control                                     |
| SW10 : Channel On Switch                  |  |
| SW11 : Solo Switch                        |  |

- Notes
1. All resistor values are in ohms  $\frac{1}{10}$ W, 5% unless otherwise specified.  $\text{Ⓢ}$ ... 5%
  2. All capacitor values are in farads 50V unless otherwise specified.
  3. The mark  $\text{Ⓢ}$  shows fuse resistor.
  4. Do not order components by Part No. written on schematic diagram. Use replacement parts list.

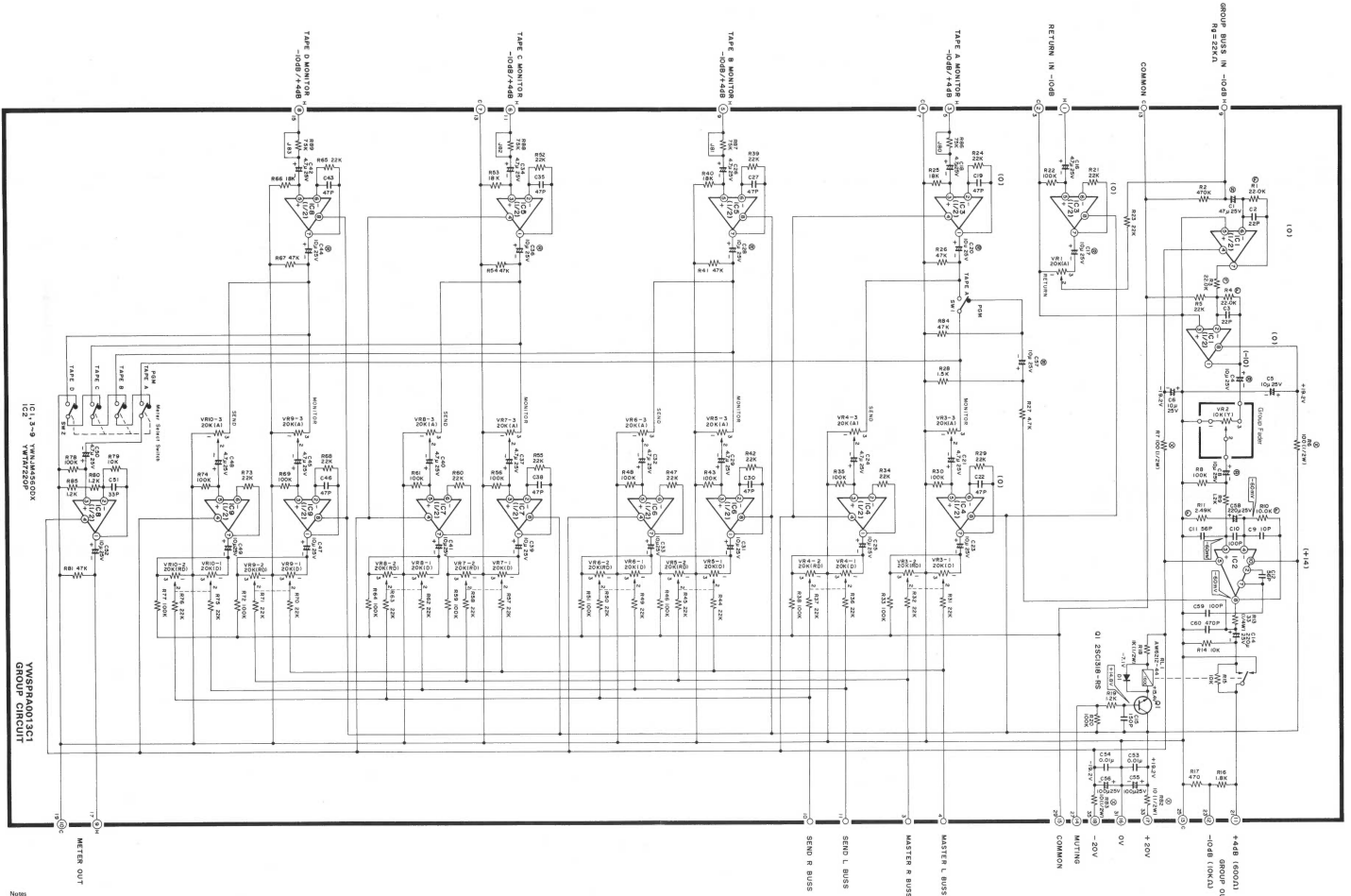
IC1-10 YWLM45600X  
**YWSPR0012A1**  
**INPUT CIRCUIT**

GROUP MODULE (WU-8002) CIRCUIT BOARD DIAGRAM



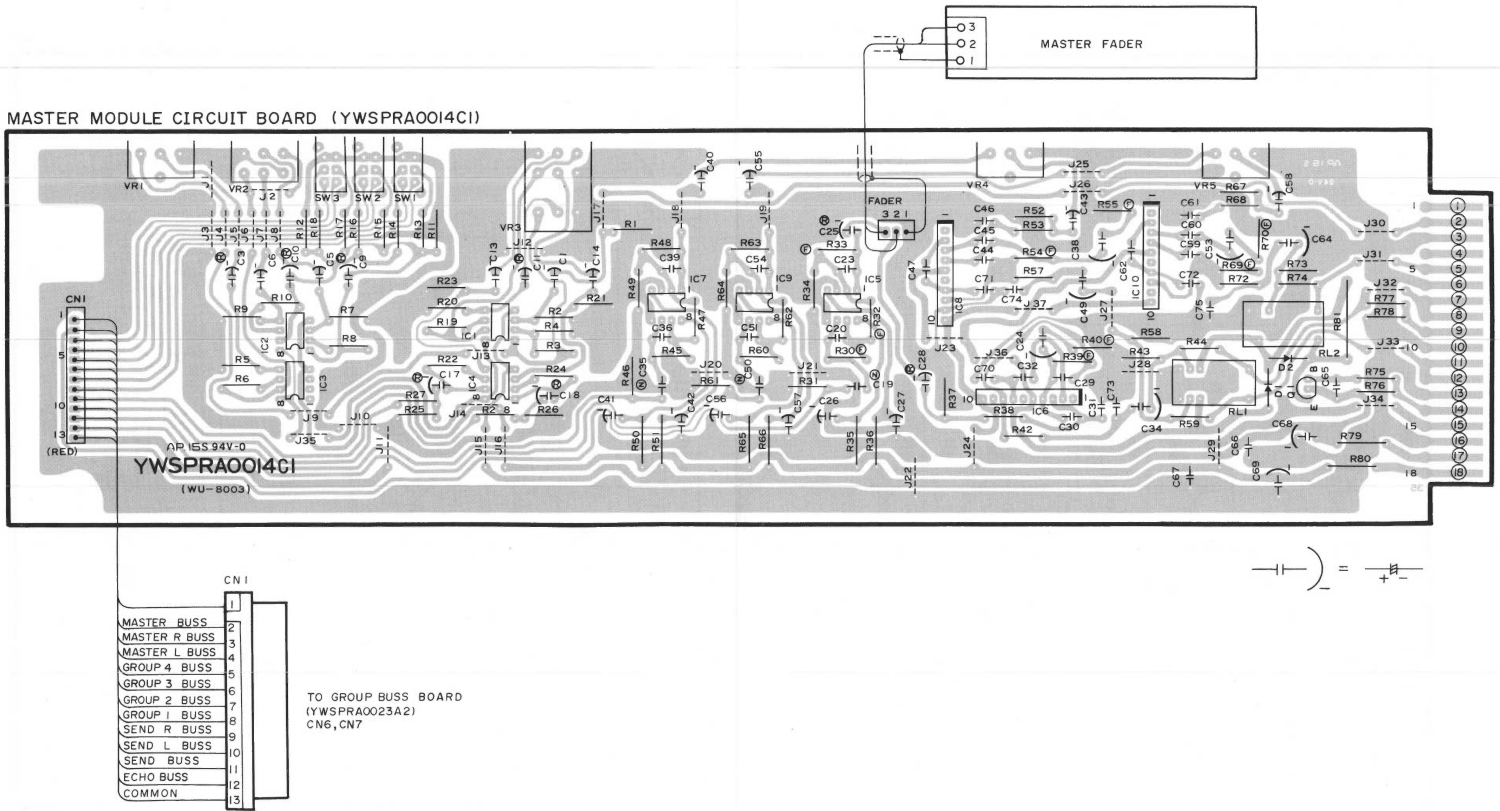


GROUP MODULE (WU-8002) SCHEMATIC DIAGRAM

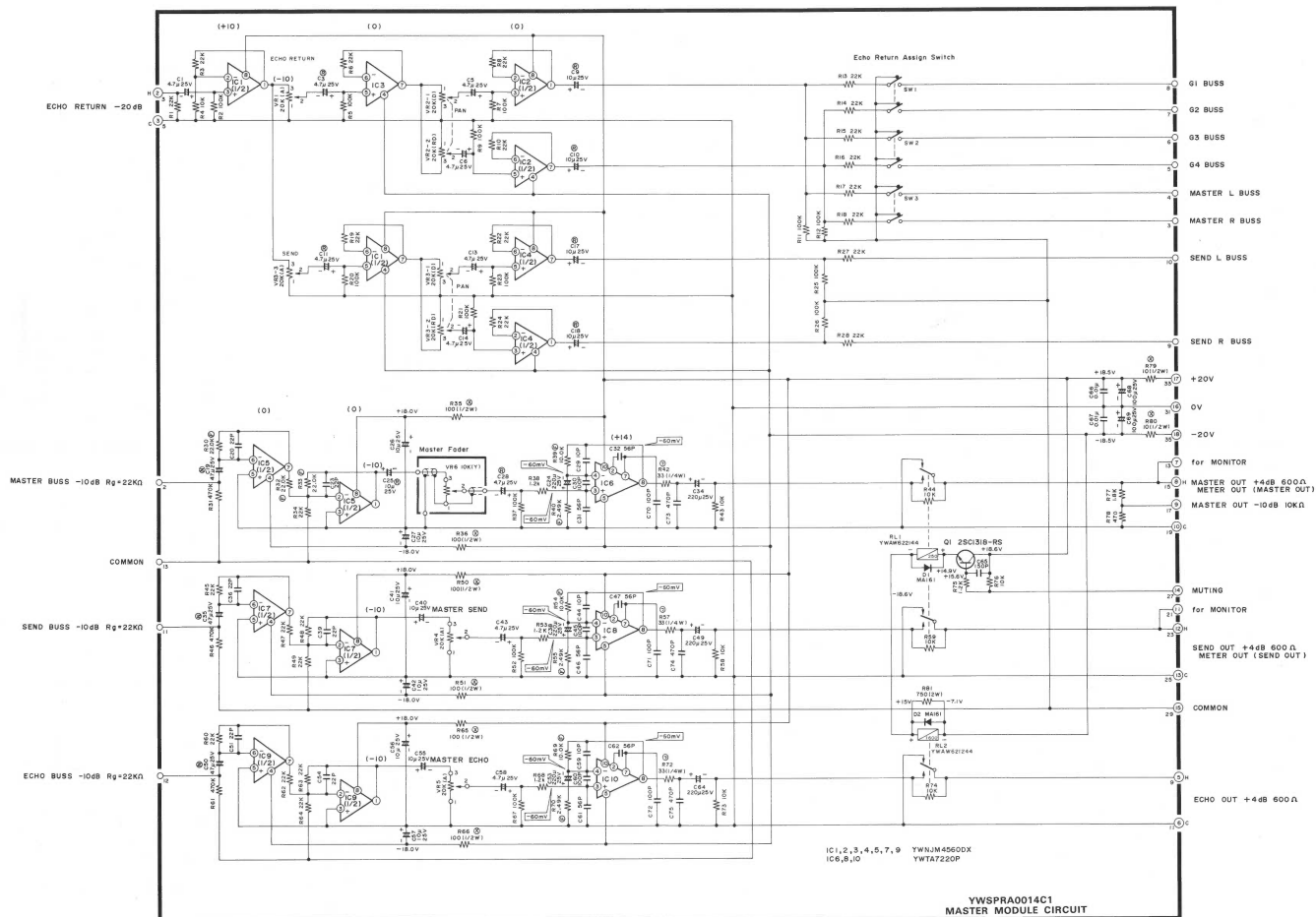


- Notes
1. All resistor values are in ohms 3%± unless otherwise specified. ( ) ... ±1%
  2. All capacitor values are in farads 50V unless otherwise specified.
  3. The mark (X) shows fuse resistor.
  4. Do not order components by Part No. written on schematic diagram. Use replacement parts list.

## MASTER MODULE (WU-8003) CIRCUIT BOARD DIAGRAM



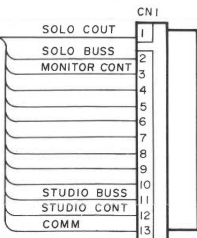
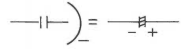
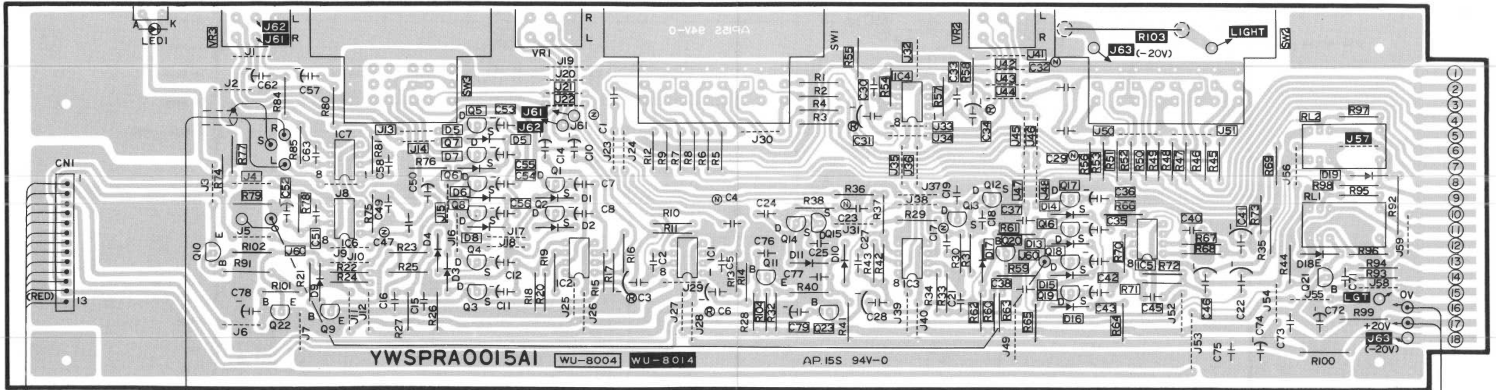
### MASTER MODULE (WU-8003) SCHEMATIC DIAGRAM



- Notes
1. All resistor values are in ohms unless otherwise specified.  $\text{①}$  ... 1%
  2. All capacitor values are in farads 50V unless otherwise specified.
  3. The mark  $\text{ⓧ}$  shows fuse resistor.
  4. Do not order components by Part No. written on schematic diagram. Use replacement parts list.

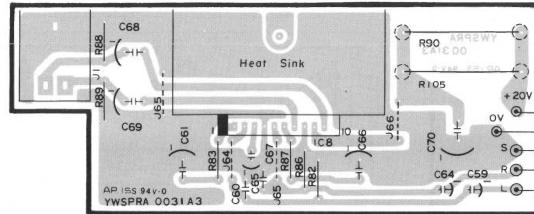
MONITOR MODULE (WU-8004) CIRCUIT BOARD DIAGRAM

MONITOR CIRCUIT BOARD (YWSPRA0015A1)

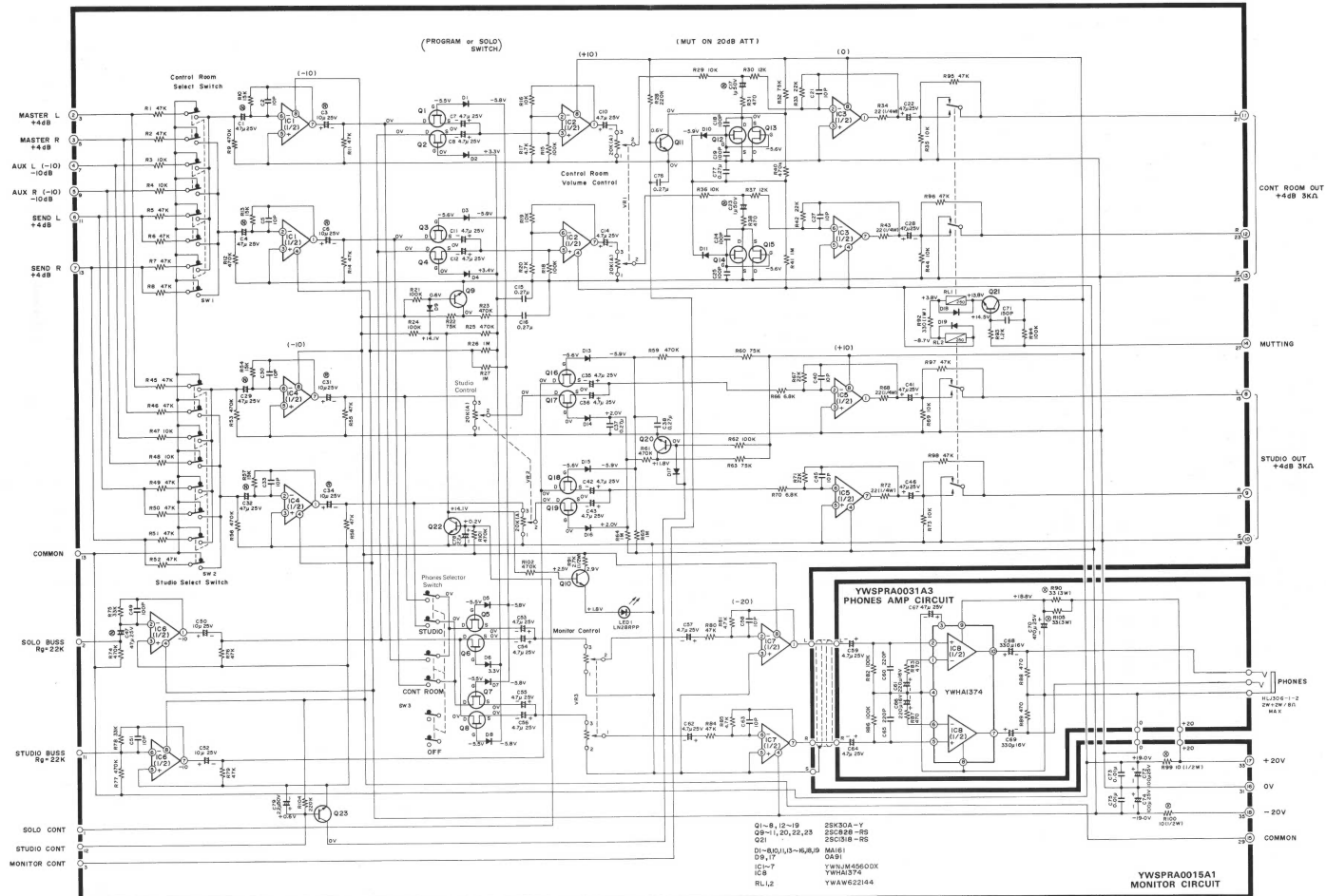


TO GROUP BUSS MOTHER BOARD  
(YWSPRA0023A2)  
CN8

PHONES AMP CIRCUIT BOARD  
(YWSPRA0031A3)

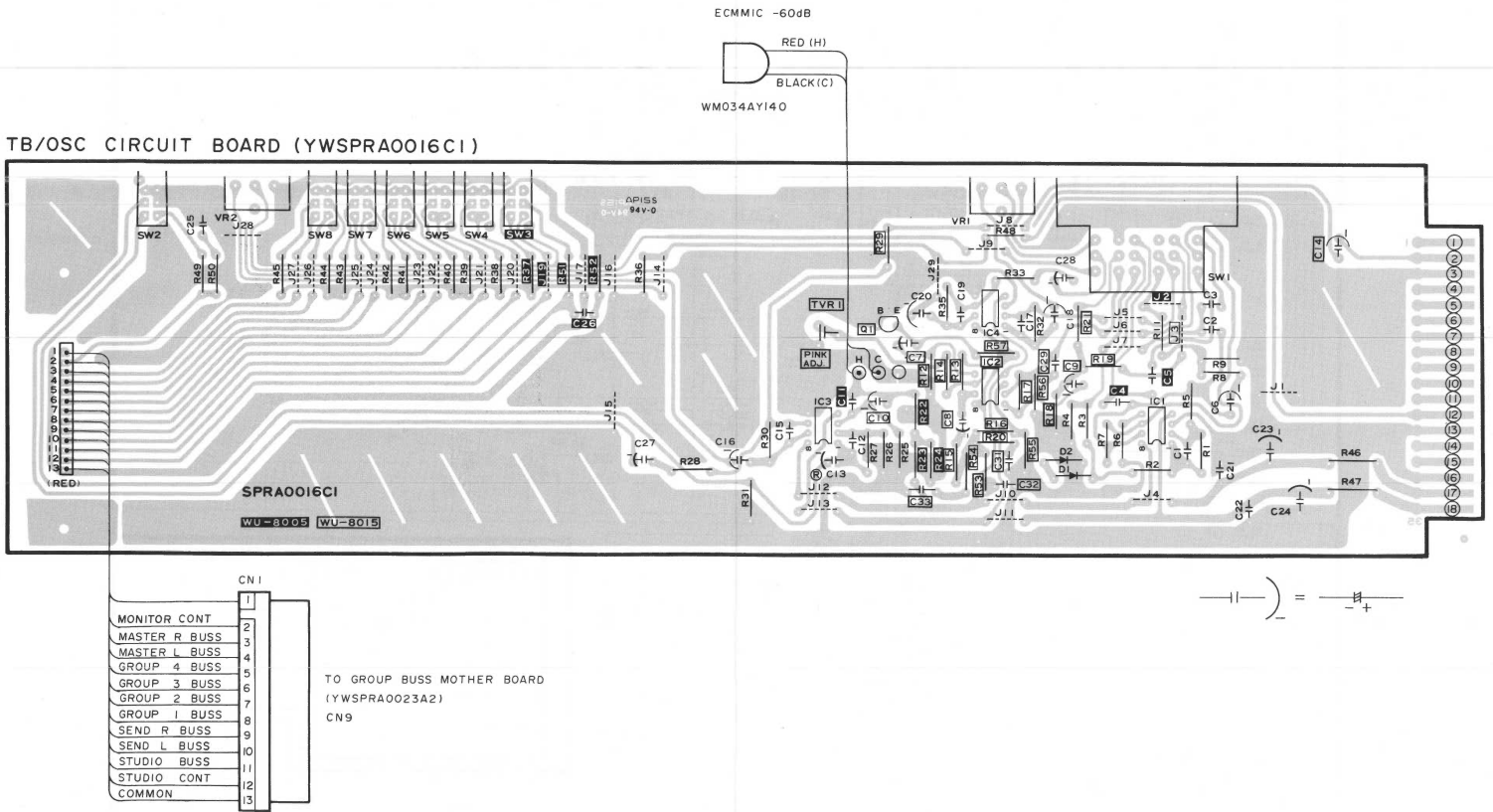


## MONITOR MODULE (WU-8004) SCHEMATIC DIAGRAM

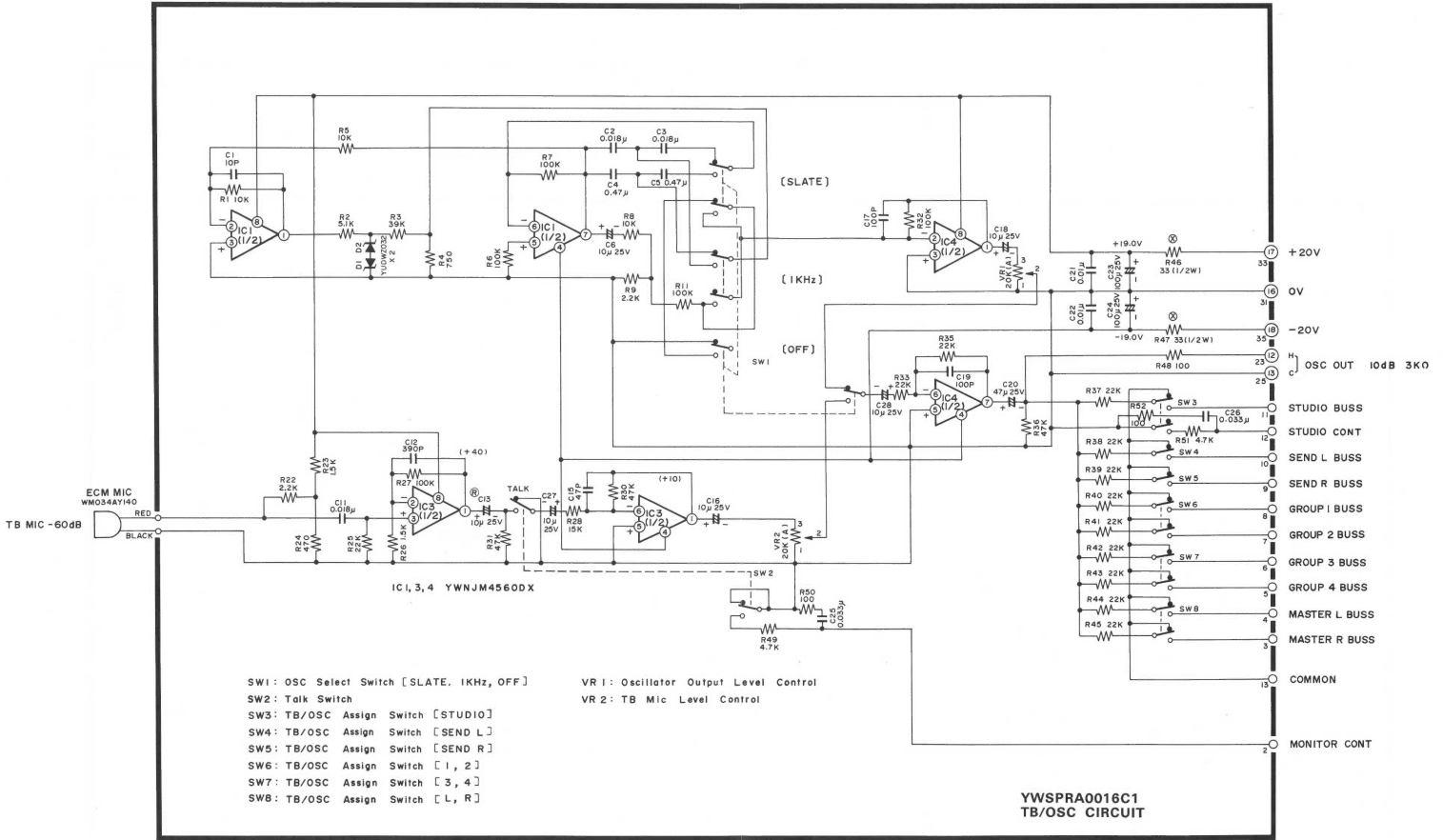


- Notes:
1. All resistor values are in ohms unless otherwise specified.  $\text{\textcircled{R}}$  ... 1%
  2. All capacitor values are in farads unless otherwise specified.
  3. The mark  $\text{\textcircled{R}}$  shows fuse resistor.
  4. Do not order components by Part No. written on schematic diagram. Use replacement parts list.
  5. The mark  $\text{\textcircled{A}}$  shows non polarity aluminum electrolytic capacitor.

OSC/TB MODULE (WU-8005) CIRCUIT BOARD DIAGRAM



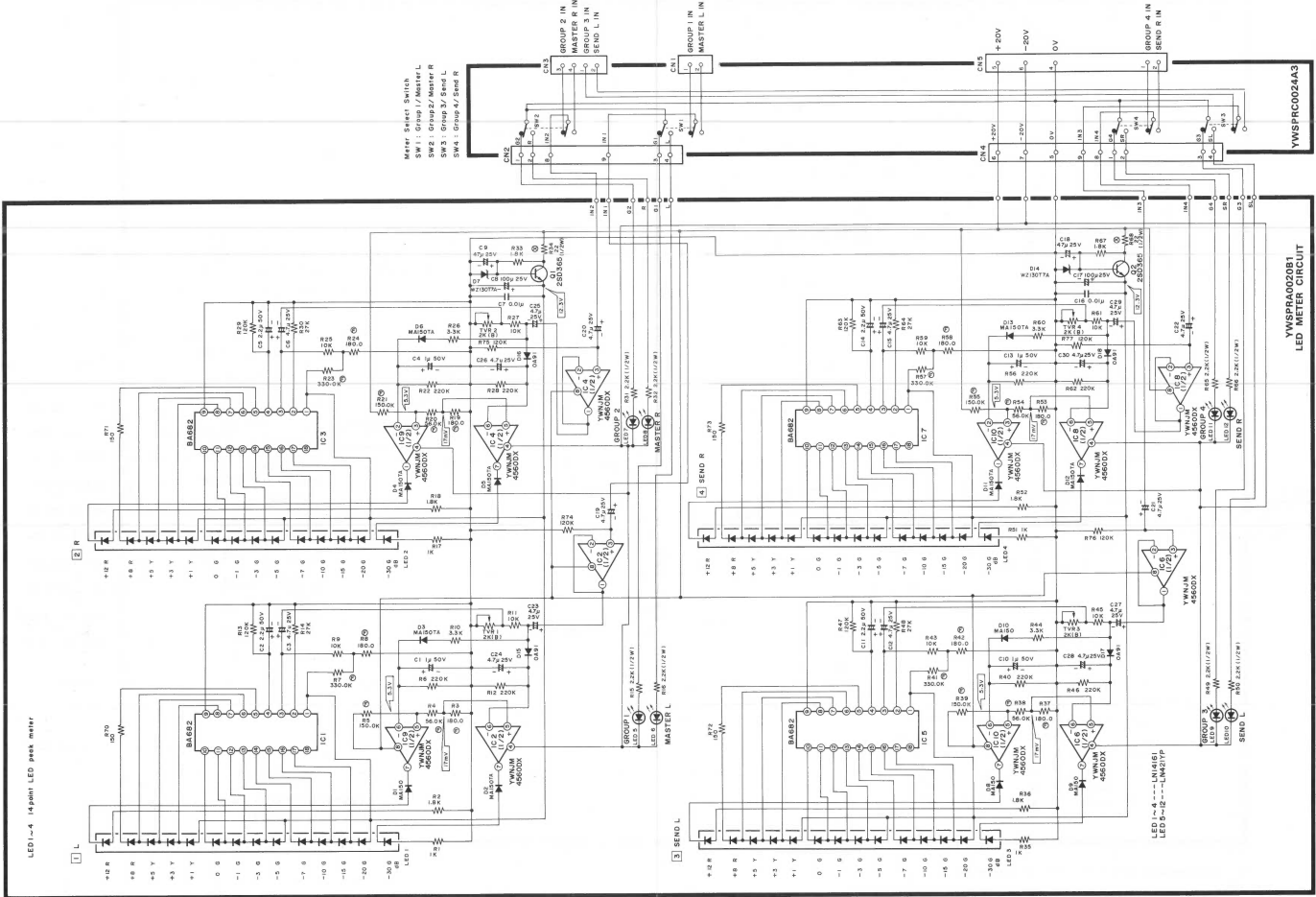
### OSC/TB MODULE (WU-8005) SCHEMATIC DIAGRAM



**Notes**

1. All resistor values are in ohms  $\frac{1}{2}$ W $\pm$ 5% unless otherwise specified.  $\text{\textcircled{E}}$  ...  $\pm$ 1%
2. All capacitor values are in farads 50V unless otherwise specified.
3. The mark  $\text{\textcircled{X}}$  shows fuse resistor.
4. Do not order components by Part No. written on schematic diagram.  
Use replacement parts list.

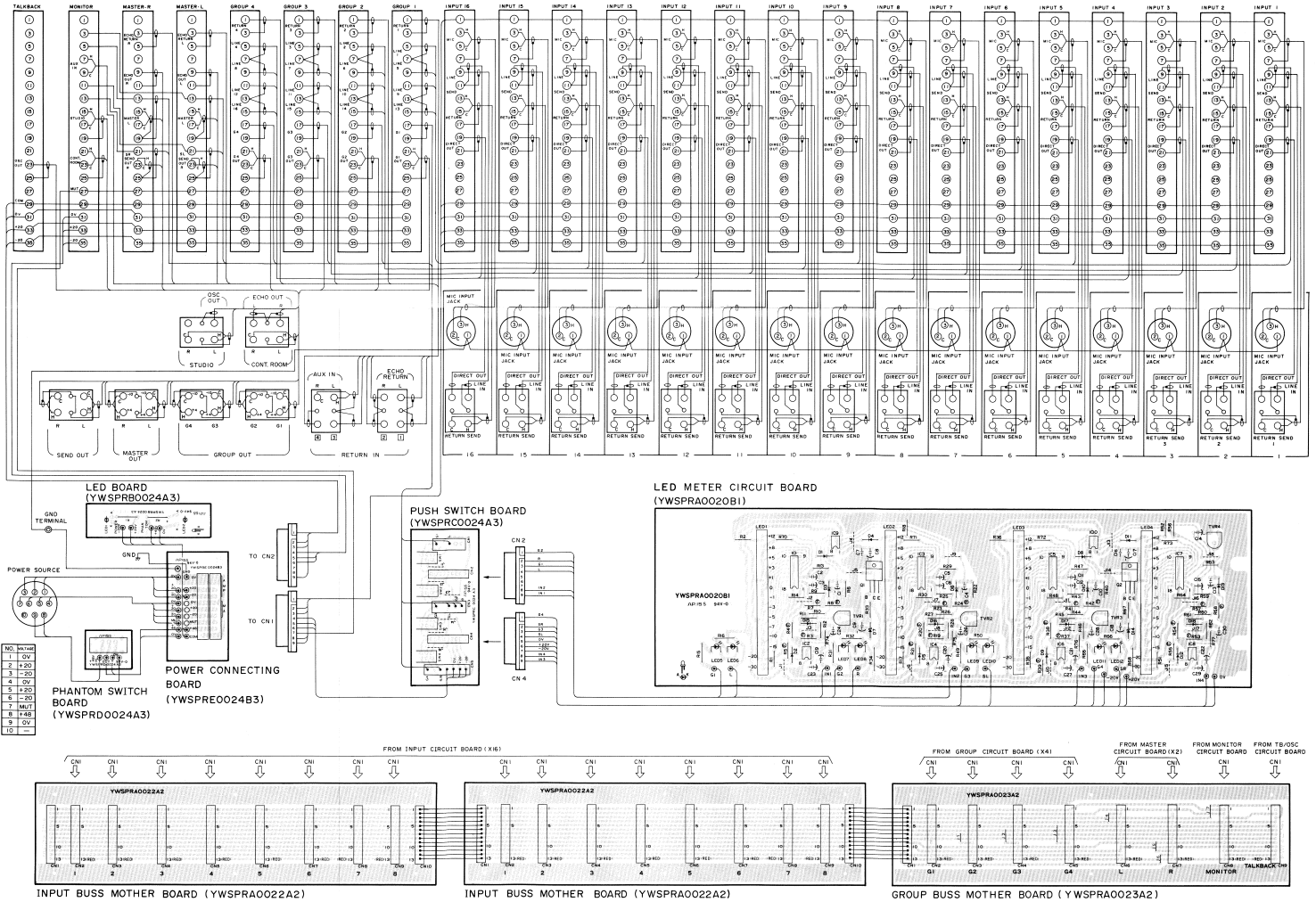
## WR-8816 SCHEMATIC DIAGRAM (METER SECTION)



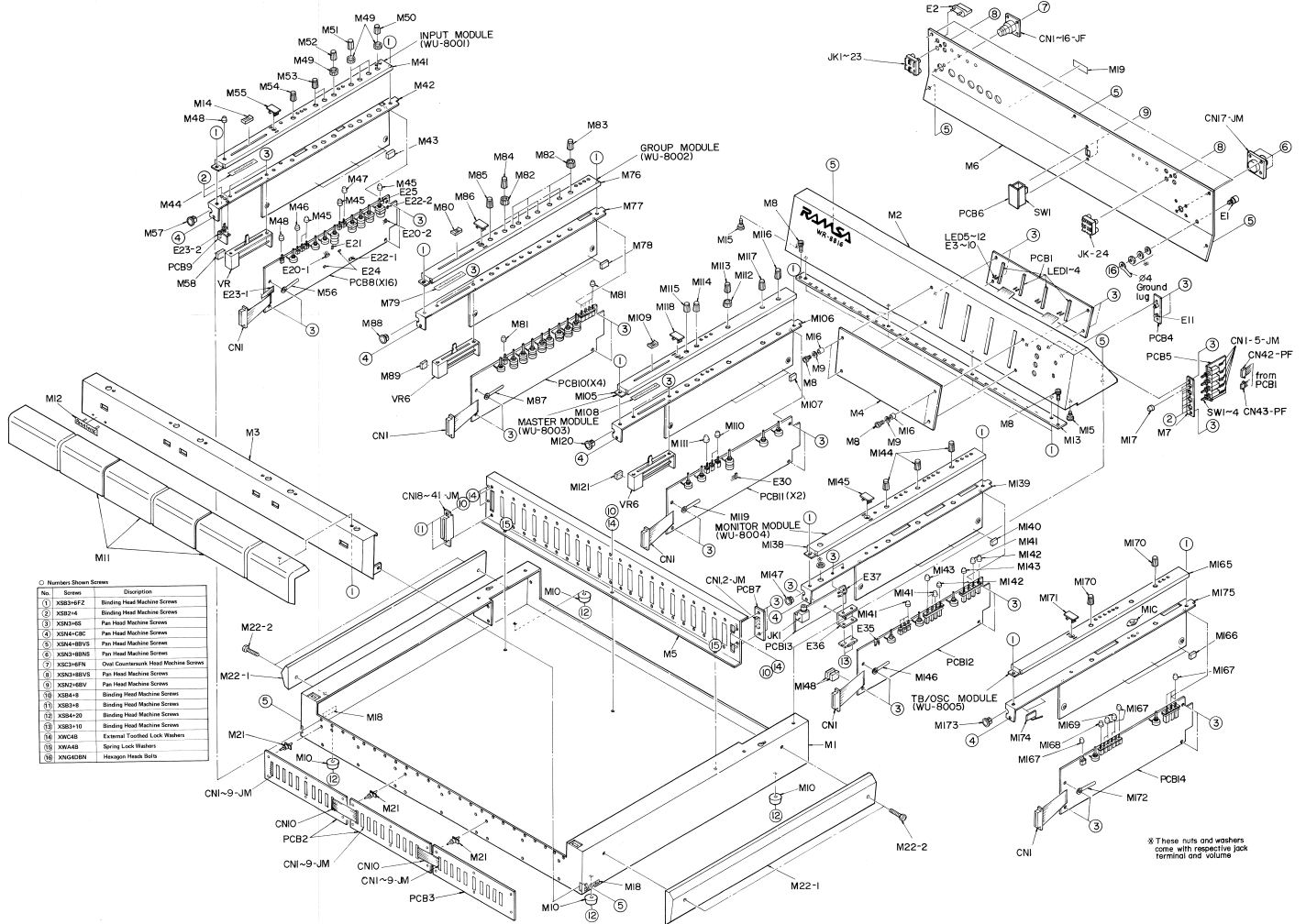
- Notes
1. All resistor values are in ohms (Ω) unless otherwise specified. Ⓢ ... 15%
  2. All capacitor values are in farads (F) unless otherwise specified.
  3. The mark Ⓢ shows fuse resistor.
  4. Do not order components by Part No. written on schematic diagram. Use replacement parts list.



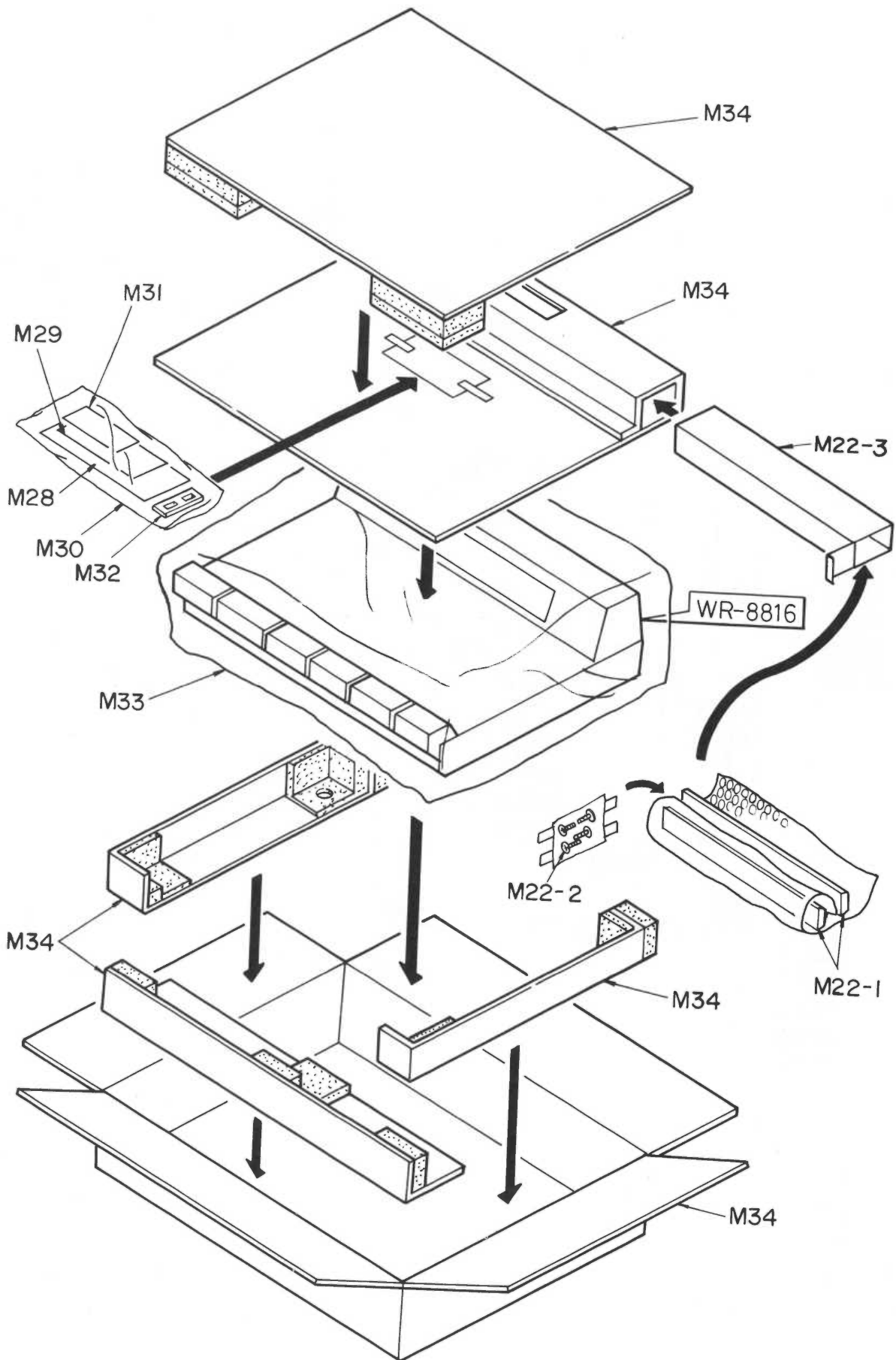
**WR-8816 CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM**



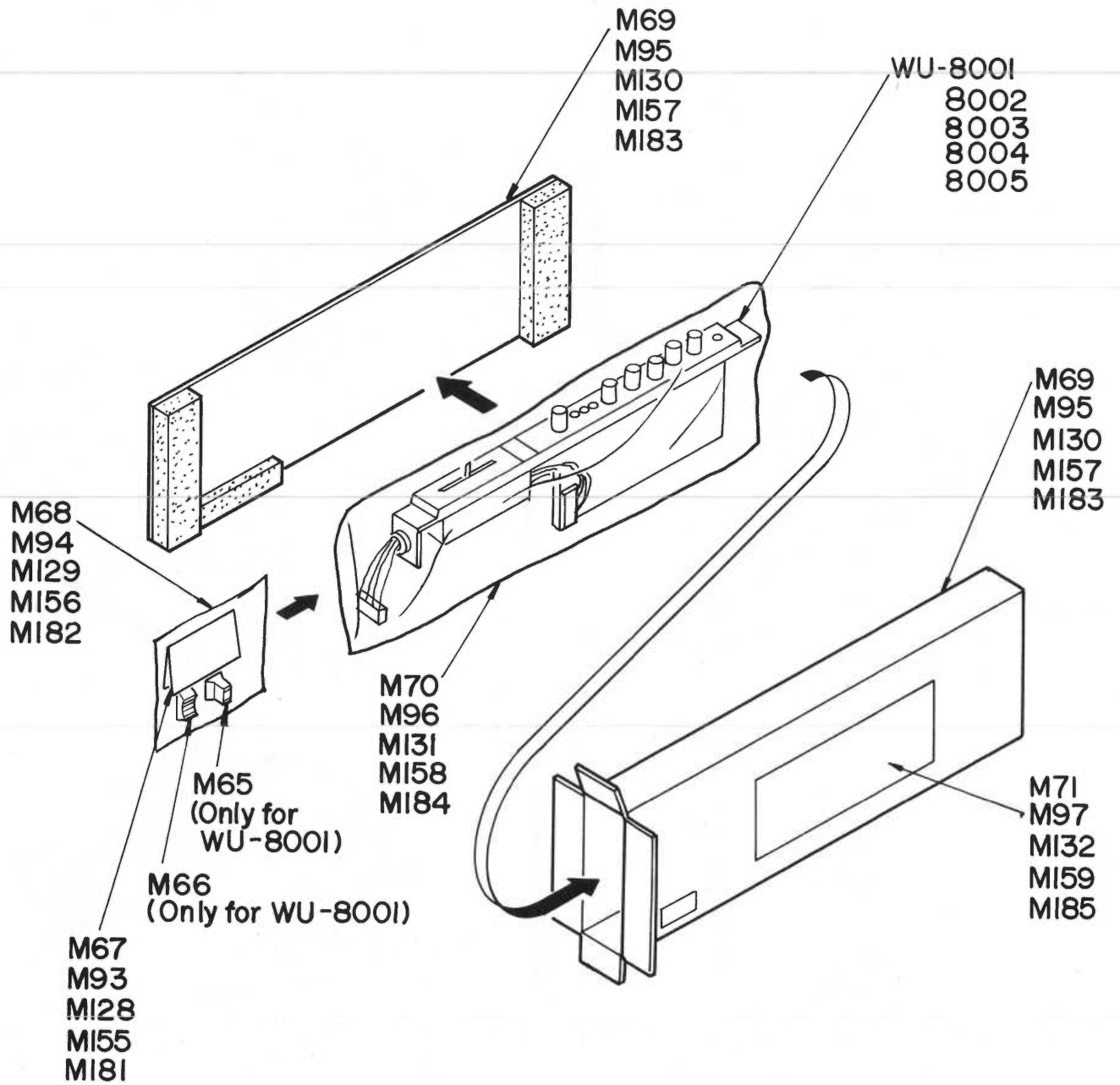
### WR-8816 EXPLODED VIEW



# WR-8816 PACKAGING



# PACKAGING (MODULE UNIT)



# REPLACEMENT PARTS LIST

## Important Notice

1. Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. Components identified by \* mark are new parts used from this model.

MODEL WR-8816

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
<b>WR-8816 MISCELLANEOUS</b>			LED1~4	LN14161	Bar L.E.D (x4)
			LED5~12	LN421YP	L.E.D (x8)
CN1~16-JF	YWFM-3-31L	3-Pin Jack Female (x16)	R1	ERD25FJ102	Carbon Film 1K $\Omega$ ¼W
CN17-JM *	YW21RG10PUL	10-Pin Jack Male	R2	ERD25FJ182	Carbon Film 1.8K $\Omega$ ¼W
CN18~41-JM	CR4E18S4W	18-Pin Jack Male (x24)	R3	ERO25CKF1800	Metal Film 180 $\Omega$ ¼W
CN42, 43-PF *	EMCM0953A52	9-Pin Plug Female (x2)	R4	ERO25CKF5602	Metal Film 56K $\Omega$ ¼W
JK1~24 *	YW1814P340	Jack (x24)	R5	ERO25CKF1503	Metal Film 150K $\Omega$ ¼W
E1	YWUB0029	Grounding Terminal	R6	ERD25FJ224	Carbon Film 220K $\Omega$ ¼W
E2 *	YW1801E035	Short Bar (x16)	R7	ERO25CKF3303	Metal Film 330K $\Omega$ ¼W
M1 *	YWS2KA0018D1	Chassis	R8	ERO25CKF1800	Metal Film 180 $\Omega$ ¼W
M2 *	YWS5EA0012B1	Case for Meter (REC)	R9	ERD25FJ103	Carbon 10K $\Omega$ ¼W
M3 *	YWS5EA0010B1	Table	R10	ERD25FJ332	Carbon 3.3K $\Omega$ ¼W
M4 *	YWS5EA0014B4	Meter Glass	R11	ERD25FJ103	Carbon Film 10K $\Omega$ ¼W
M5 *	YWS2KA0019C1	Chassis for Mother Board	R12	ERD25FJ224	Carbon Film 220K $\Omega$ ¼W
M6 *	YWS5WA0025B1	Panel	R13	ERD25FJ124	Carbon Film 120K $\Omega$ ¼W
M7 *	YWS2SA0007A4	Switch Angle	R14	ERD25FJ273	Carbon Film 27K $\Omega$ ¼W
M8	XVE4A10FNK-S	Screw (M4 x 10) (x6)	R15,16	ERD50FJ222	Carbon Film (x2) 2.2K $\Omega$ ½W
M9 *	YWS1KA0003A4	Washer (x4)	R17	ERD25FJ102	Carbon Film 1K $\Omega$ ¼W
M10	YWS-WB03	Rubber Foot (x4)	R18	ERD25FJ182	Carbon Film 1.8K $\Omega$ ¼W
M11 *	YWS5DA0003A2	Arm Rest (x3)	R19	ERO25CKF1800	Metal Film 180 $\Omega$ ¼W
M12	YWS-LM025	"Panasonic" Badge	R20	ERO25CKF5602	Metal Film 56K $\Omega$ ¼W
M13 *	YWS5WA0026B3	Name Sash	R21	ERO25CKF1503	Metal Film 150K $\Omega$ ¼W
M14 *	YWR130-HR01	Slide Knob (x16)	R22	ERD25FJ224	Carbon Film 220K $\Omega$ ¼W
M15 *	YWE5100EM01	Screw (x2)	R23	ERO25CKF3303	Metal Film 330K $\Omega$ ¼W
M16 *	YWS2NA0002A4	Spacer (x4)	R24	ERO25CKF1800	Metal Film 180 $\Omega$ ¼W
M17 *	YWS5RA0002B4	$\phi$ 7.5 Knob (White) (x4)	R25	ERD25FJ103	Carbon 10K $\Omega$ ¼W
M18 *	YWYVK100-UB02	Caution Label (x2)	R26	ERD25FJ332	Carbon 3.3K $\Omega$ ¼W
M19 *	YWAE6UB10	Serial No. Label	R27	ERD25FJ103	Carbon Film 10K $\Omega$ ¼W
M21	YWL CBS-4NM	P.C. Board Support for Buss (x18)	R28	ERD25FJ224	Carbon Film 220K $\Omega$ ¼W
<b>YWSPRA0020B1 LED METER CIRCUIT BOARD</b>			R29	ERD25FJ124	Carbon Film 120K $\Omega$ ¼W
PCB1 *	YWSPRA0020B1	Circuit Board Ass'y	R30	ERD25FJ273	Carbon Film 27K $\Omega$ ¼W
IC1	BA682	Integrated Circuit	R31,32	ERD50FJ222	Carbon Film (x2) 2.2K $\Omega$ ½W
IC2	YWNJM4560DX	Integrated Circuit	R33	ERD25FJ182	Carbon Film 1.8K $\Omega$ ¼W
IC3	BA682	Integrated Circuit	R34	ERQ12AJ220	Fuse Resistor 22 $\Omega$ ½W
IC4	YWNJM4560DX	Integrated Circuit	R35	ERD25FJ102	Carbon Film 1K $\Omega$ ¼W
IC5	BA682	Integrated Circuit	R36	ERD25FJ182	Carbon Film 1.8K $\Omega$ ¼W
IC6	YWNJM4560DX	Integrated Circuit	R37	ERO25CKF1800	Metal Film 180 $\Omega$ ¼W
IC7	BA682	Integrated Circuit	R38	ERO25CKF5602	Metal Film 56K $\Omega$ ¼W
IC8~10	YWNJM4560DX	Integrated Circuit (x10)	R39	ERO25CKF1503	Metal Film 150K $\Omega$ ¼W
Q1,2	2SD365	Transistor (x2)	R40	ERD25FJ224	Carbon 220K $\Omega$ ¼W
D1	MA150	Diode	R41	ERO25CKF3303	Metal Film 330K $\Omega$ ¼W
D2~6	MA150TA	Diode (x5)	R42	ERO25CKF1800	Metal Film 180 $\Omega$ ¼W
D7	WZ130T7A	Zener Diode	R43	ERD25FJ103	Carbon Film 10K $\Omega$ ¼W
D8	MA150	Diode	R44	ERD25FJ332	Carbon Film 3.3K $\Omega$ ¼W
D9~13	MA150TA	Diode (x5)	R45	ERD25FJ103	Carbon Film 10K $\Omega$ ¼W
D14	WZ130T7A	Zener Diode	R46	ERD25FJ224	Carbon Film 220K $\Omega$ ¼W
D15~18	OA91	Diode (x4)	R47	ERD25FJ124	Carbon Film 120K $\Omega$ ¼W
			R48	ERD25FJ273	Carbon Film 27K $\Omega$ ¼W
			R49,50	ERD50FJ222	Carbon Film (x2) 2.2K $\Omega$ ½W
			R51	ERD25FJ102	Carbon Film 1K $\Omega$ ¼W

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R52	ERD25FJ182	Carbon Film 1.8KΩ ¼W	LED2	LN38GPP	LED
R53	ERO25CKF1800	Metal Film 180Ω ¼W	R1,2	ERD50FJ512	Carbon Film 5.1KΩ ½W
R54	ERO25CKF5602	Metal Film 56KΩ ¼W	E11	YWV550-FR03	LED Holder
R55	ERO25CKF1503	Metal Film 150KΩ ¼W	<b>YWSPRC0024A3 PUSH SWITCH BOARD</b>		
R56	ERD25FJ224	Carbon Film 220KΩ ¼W	PCB5 *	YWSPRC0024A3	Circuit Board
R57	ERO25CKF3303	Metal Film 330KΩ ¼W	SW1~4	YWSPJ222LNT	Push Switch (x4)
R58	ERO25CKF1800	Metal Film 180Ω ¼W	CN1-JM	YW5136-4A	4-Pin Jack Male
R59	ERD25FJ103	Carbon Film 10KΩ ¼W	CN2-JM *	EMCS0952M	9-Pin Jack Male
R60	ERD25FJ332	Carbon Film 3.3KΩ ¼W	CN3-JM	YW5136-4A	4-Pin Jack Male
R61	ERD25FJ103	Carbon Film 10KΩ ¼W	CN4-JM *	EMCS0952M	9-Pin Jack Male
R62	ERD25FJ224	Carbon Film 220KΩ ¼W	CN5-JM	YW5136-6A	6-Pin Jack Male
R63	ERD25FJ124	Carbon Film 120KΩ ¼W	<b>YSPRD0024A3 PHANTOM SWITCH BOARD</b>		
R64	ERD25FJ273	Carbon Film 27KΩ ¼W	PCB6 *	YWSPRD0024A3	Circuit Board
R65,66	ERD50FJ222	Carbon Film (x2) 2.2KΩ ½W	SW1	YWSSB022L06U	Slide Switch for Phantom
R67	ERD25FJ182	Carbon Film 1.8KΩ ¼W	<b>YWSPRE0024B3 POWER CONNECTING BOARD</b>		
R68	ERQ12AJ220	Fuse Resistor 22Ω ½W	PCB7 *	YWSPRE0024B3	Circuit Board
R70~73	ERD25FJ151	Carbon Film (x4) 150Ω ¼W	CN1, 2-JM	YW5136-9A	9-Pin Jack Male (x2)
R74~77	ERD25FJ124	Carbon Film (x4) 120KΩ ¼W	<b>ACCESSORY/PACKING PARTS</b>		
TVR1~4	EVNK4AA00B23	Trimmer Variable Resistor (x4) 2KΩ(B)	M22	YWS9AA0007A4	Side Plate Ass'y
C1	ECEA1HS010	Electrolytic 1μF 50V	M22-1	YWS5DA0001A2	Side Plate (x2)
C2	ECEA1HS2R2	Electrolytic 2.2μF 50V	M22-2	JCB0103MBRZ	Screw (x4)
C3	ECEA1ES4R7	Electrolytic 4.7μF 25V	M22-3	YWS8DA0014A4	Packaging Case for Side Plate Ass'y
C4	ECEA1HS010	Electrolytic 1μF 50V	M28 *	YWS8QA0004B4	Operating Instructions
C5	ECEA1HS2R2	Electrolytic 2.2μF 50V	M29	YWS-RB115	Servicenter List
C6	ECEA1ES4R7	Electrolytic 4.7μF 25V	M30	XZB26X40C05	Polyethylene Bag for Accessory
C7	ECQM1H103KZ	Polyester 0.01μF 50V	M31	YWABUA0001A2	Warranty Card
C8	ECEA1ES101	Electrolytic 100μF 25V	M32	YWA8SA0002A4	Micky Knob
C9	ECEA1ES470	Electrolytic 47μF 25V	M33 *	YWT100X120X1	Polyethylene Bag for Set
C10	ECEA1HS010	Electrolytic 1μF 50V	M34 *	YWS9CA0007B4	Packaging Case Ass'y
C11	ECEA1HS2R2	Electrolytic 2.2μF 50V	<b>INPUT MODULE (WU-8001) (1 set with 16 pcs.)</b>		
C12	ECEA1ES4R7	Electrolytic 4.7μF 25V	VR	EVAJ15D15Y14	Variable Resistor for Fader
C13	ECEA1HS010	Electrolytic 1μF 50V	M41	YWS5WA0013A1	Input Panel
C14	ECEA1HS2R2	Electrolytic 2.2μF 50V	M42	YWS2KA0008B1	Input Chassis
C15	ECEA1ES4R7	Electrolytic 4.7μF 25V	M43	YWB95WB01	Rubber Foot (x3)
C16	ECQM1H103KZ	Polyester 0.01μF 50V	M44	YWUA520LB01A	Fader Cover
C17	ECEA1ES101	Electrolytic 100μF 25V	M45	YWS5RA0002B4	φ7.5 Knob (White) (x4)
C18	ECEA1ES470	Electrolytic 47μF 25V	M46	YWS5RB0002B4	φ7.5 Knob (Gray)
C19~30	ECEA1ES4R7	Electrolytic (x12) 4.7μF 25V	M47	YWS5RC0002B4	φ7.5 Knob (Yellow)
E3~10	YWE2400FR01	LED Holder (x8)	M48	YWS5RE0002B4	φ7.5 Knob (Orange) (x2)
<b>YWSPRA0022A2 INPUT BUSS MOTHER BOARD (1 set with 2 pcs.)</b>			M49	YWS5RA0008B3	φ15 Knob (x5)
PCB2 *	YWSPRA0022A2	Circuit Board	M50	YWS5RA0009A3	φ11 Knob (White)
CN1~9-JM *	EMCS1352M	13-Pin Jack Male (x9)	M51	YWS5RC0009A3	φ11 Knob (Yellow) (x3)
CN10 *	EMCM1305D42V	13-Pin Connector with Cable	M52	YWS5RE0009A3	φ11 Knob (Green)
<b>YWSPRA0023A2 GROUP BUSS MOTHER BOARD</b>			<b>INPUT MODULE (WU-8001) (1 set with 16 pcs.)</b>		
PCB3 *	YWSPRA0023A2	Circuit Board	VR	EVAJ15D15Y14	Variable Resistor for Fader
CN1~9-JM *	EMCS1352M	13-Pin Jack Male (x9)	M41	YWS5WA0013A1	Input Panel
<b>YWSPRB0024A3 LED BOARD</b>			M42	YWS2KA0008B1	Input Chassis
PCB4 *	YWSPRB0024A3	Circuit Board	M43	YWB95WB01	Rubber Foot (x3)
LED1	LN21RPSL	LED	M44	YWUA520LB01A	Fader Cover

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
M53	YWS5RD0010A3	φ14 Knob (Blue) (x2)	R61,62	ERD25FJ103	Carbon Film (x2) 10KΩ ¼W
M54	YWS5RA0010A4	φ14 Knob (White)	R63	ERD25FJ473	Carbon Film 47KΩ ¼W
M55	YWS5CA0001B4	Name Plate	R64	ERD25FJ104	Carbon Film 100KΩ ¼W
M56	YWVJR3	Cord Clamp	R65	ERD25FJ223	Carbon Film 22KΩ ¼W
M57	YWOCB375	Bushing	R66~68	ERD25FJ473	Carbon Film (x3) 47KΩ ¼W
M58	YWS2FA0002A4	Cushion for Buss	R69	ERD25FJ104	Carbon Film 100KΩ ¼W
<b>YWSPRB0012A1 INPUT CIRCUIT BOARD (1 set with 16 pcs.)</b>			R70	ERO25CKF2202	Metal Film 22KΩ ½W
			R71,72	ERD25FJ473	Carbon Film (x2) 47KΩ ¼W
			R73	ERD25FJ104	Carbon Film 100KΩ ¼W
			R74	ERD25FJ223	Carbon Film 22KΩ ¼W
			R75	ERO25CKF2202	Metal Film 22KΩ ¼W
			R76	ERD25FJ104	Carbon Film 100KΩ ¼W
			R77	ERD25FJ223	Carbon Film 22KΩ ¼W
			R78	ERD25FJ104	Carbon Film 100KΩ ¼W
			R79	ERO25CKF2202	Metal Film 22KΩ ¼W
			R80	ERD25FJ104	Carbon Film 100KΩ ¼W
PCB8	YWSPRB0012A1	Circuit Board	R81~84	ERO25CKF4322	Metal Film (x4) 43.2KΩ ¼W
IC1~10	YWNJM4560DX	Integrated Circuit (x10)	R85	ERD25FJ223	Carbon Film 22KΩ ¼W
Q1~4	2SC2557-TU	Transistor (x4)	R86	ERD25FJ104	Carbon Film 100KΩ ¼W
Q5	2SC828A-RS	Transistor	R87	ERD25FJ223	Carbon Film 22KΩ ¼W
Q6	2SA720-RS	Transistor	R88	ERD25FJ104	Carbon Film 100KΩ ¼W
D1,2	MA161	Diode (x2)	R89	ERD25FJ223	Carbon Film 22KΩ ¼W
LED	LN28RPP	LED	R90	ERD25FJ104	Carbon Film 100KΩ ¼W
R1,2	ERD25FJ332	Carbon Film (x2) 3.3KΩ ¼W	R91	ERD25FJ223	Carbon Film 22KΩ ¼W
R3	ERD25FJ821	Carbon Film 820Ω ¼W	R92	ERD25FJ104	Carbon Film 100KΩ ¼W
R4,5	ERD25FJ474	Carbon Film (x2) 470KΩ ¼W	R93	ERD25FJ223	Carbon Film 22KΩ ¼W
R6,7	ERD25FJ104	Carbon Film (x2) 100KΩ ¼W	R94	ERD25FJ104	Carbon Film 100KΩ ¼W
R8~13	ERO25CKF1002	Metal Film (x6) 10KΩ ¼W	R95	ERD25FJ473	Carbon Film 47KΩ ¼W
R14	ERD25FJ103	Carbon Film 10KΩ ¼W	R96~98	ERD25FJ223	Carbon Film (x3) 22KΩ ¼W
R15	ERO25CKF4530	Metal Film 453Ω ¼W	R99	ERD25FJ104	Carbon Film 100KΩ ¼W
R16,17	ERO25CKF4322	Metal Film (x2) 43.2KΩ ¼W	R100,101 *	ERQ12AJ220	Fuse Resistor (x2) 22Ω ½W
R18~21	ERO25CKF1002	Metal Film (x4) 10KΩ ¼W	R102	ERD25FJ153	Carbon Film 15KΩ ¼W
R22	ERD25FJ473	Carbon Film 47KΩ ¼W	R103	ERD25FJ912	Carbon Film 9.1KΩ ¼W
R23	ERD25FJ104	Carbon Film 100KΩ ¼W	R104	ERD25FJ473	Carbon Film 47KΩ ¼W
R24,25	ERD25FJ273	Carbon Film (x2) 27KΩ ¼W	R105	ERD25FJ223	Carbon Film 22KΩ ¼W
R26	ERD25FJ560	Carbon Film 56Ω ¼W	R106	ERD25FJ222	Carbon Film 2.2KΩ ¼W
R27	ERD25FJ473	Carbon Film 47KΩ ¼W	R107~109	ERD25FJ473	Carbon Film (x3) 47KΩ ¼W
R28	ERD25FJ392	Carbon Film 3.9KΩ ¼W	R110	ERO25TKF1002	Metal Film 10KΩ ¼W
R29 *	ERD50FJ472	Carbon Film 4.7KΩ ½W	R111,112	ERO25CKF1002	Metal Film (x2) 6.8KΩ ¼W
R30	ERD25FJ473	Carbon Film 47KΩ ¼W	R113,114	ERO25CKF6801	Carbon Film (x2) 470KΩ ¼W
R31	ERD25FJ223	Carbon Film 22KΩ ¼W	R115~117	ERD25FJ105	Carbon Film (x3) 1MΩ ¼W
R32,33	ERD25FJ474	Carbon Film (x2) 470KΩ ¼W	VR3 *	YWSVRA0001A4	Variable Resistor 150KΩ(C)x2, 50KΩ(B)
R34	ERD25FJ223	Carbon Film 22KΩ ¼W	VR5 *	YWSVRA0003A4	Variable Resistor 20KΩ(D),(RD)
R35	ERD25FJ473	Carbon Film 47KΩ ¼W	VR6,7 *	YWSVRA0004A4	Variable Resistor (x2)20KΩ(A)
R36,37	ERD25FJ272	Carbon Film (x2) 2.7KΩ ¼W	VR8 *	YWSVRA0002A4	Variable Resistor 20KΩ(D),(RD), 20KΩ(A)
R38	ERD25FJ223	Carbon Film 22KΩ ¼W	C1,2	ECEA1JS101	Electrolytic (x2) 100μF 63V
R39,40	ERD25FJ273	Carbon Film (x2) 27KΩ ¼W	C3,4	ECCF1H101J	Ceramic (x2) 100pF 50V
R41	ERD25FJ272	Carbon Film 2.7KΩ ¼W	C5,6	ECCF1H560J	Ceramic (x2) 56pF 50V
R42~45	ERD25FJ223	Carbon Film (x4) 22KΩ ¼W	C7,8	ECCF1H470J	Ceramic (x2) 47pF 50V
R46	ERD25FJ473	Carbon Film 47KΩ ¼W	C9,10	ECCF1H220J	Ceramic (x2) 22pF 50V
R47	ERD25FJ333	Carbon Film 33KΩ ¼W	C11 *	ECEA25M33R	Electrolytic 33μF 25V
R48	ERD25FJ223	Carbon Film 22KΩ ¼W	C12	ECEA1ES4R7	Electrolytic 4.7μF 25V
R49	ERD25FJ103	Carbon Film 10KΩ ¼W	C13	ECCF1H470J	Ceramic 47pF 50V
R50	ERD25FJ912	Carbon Film 9.1KΩ ¼W	C14	ECEA1ES100	Electrolytic 10μF 25V
R52	ERD25FJ273	Carbon Film 27KΩ ¼W	C16 *	ECQE1564T135	Polyester 0.56μF 50V
R53	ERD25FJ333	Carbon Film 33KΩ ¼W			
R54	ERD25FJ152	Carbon Film 1.5KΩ ¼W			
R55	ERD25FJ682	Carbon Film 6.8KΩ ¼W			
R56	ERD25FJ912	Carbon Film 9.1KΩ ¼W			
R58	ERD25FJ152	Carbon Film 1.5KΩ ¼W			
R59	ERD25FJ223	Carbon Film 22KΩ ¼W			
R60	ERD25FJ224	Carbon Film 220KΩ ¼W			

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C17,18	ECQV05184JZ	Polyester (x2) 0.18 $\mu$ F 50V	<b>ACCESSORY/PACKAGING PARTS</b>		
C19	ECKF1H331KB	Ceramic 330pF 50V			
C20	ECCF1H181J	Ceramic 180pF 50V	M65	YWR130-HR03	Knob for SR
C21	ECKF1H681KB	Ceramic 680pF 50V	M66	YWR130-HR01	Knob for REC
C22,23	ECCF1H220J	Ceramic (x2) 22pF 50V	M67	* YWS8QA0007A4	Operating Instructions
C24	* ECEA25M10R	Electrolytic 10 $\mu$ F 25V	M68	YWT20X25C03	Polyethylene Bag for Accessory
C25,26	ECQM1H272JZ	Polyester (x2) 0.0027 $\mu$ F 50V	M69	YWS9CA0009A4	Packaging Case
C27	ECEA1ES4R7	Electrolytic 4.7 $\mu$ F 25V	M70	XZB45X63C05	Polyethylene Bag for Set
C28	ECQV05563JZ	Polyester 0.056 $\mu$ F 50V	M71	YWS-RB032	Packaging Label
C30,31	ECQV05563JZ	Polyester (x2) 0.056 $\mu$ F 50V	<b>GROUP MODULE (WU-8002) MISCELLANEOUS (1 set with 4 pcs.)</b>		
C32	ECKD1H331KB	Ceramic 330pF 50V			
C33	* ECEA25M10R	Electrolytic 10 $\mu$ F 25V	VR6	EVAJ15D15Y14	Variable Resistor for Fader Control
C34,35	ECCF1H470J	Ceramic (x2) 47pF 50V	M76	YWS5WA0014A1	Group Panel
C36	ECEA1ES470	Electrolytic 47 $\mu$ F 25V	M77	YWS2KA0009B1	Group Chassis
C37	* ECEA25M10R	Electrolytic 47 $\mu$ F 25V	M78	YWB95WB01	Rubber Foot (x3)
C38	ECEA1ES470	Electrolytic 10 $\mu$ F 25V	M79	YWUA520LB01A	Fader Cover
C40	* ECEA25M47R	Electrolytic 47 $\mu$ F 25V	M80	YWR130-HR02	Fader Knob (Red)
C41	ECEA1ES470	Electrolytic 47 $\mu$ F 25V	M81	YWS5RA0002B4	$\phi$ 7.5 Knob (White) (x5)
C43	ECEA1ES100	Electrolytic 10 $\mu$ F 25V	M82	YWS5RA0008B3	$\phi$ 15 Knob (White) (x8)
C46	ECEA1ES100	Electrolytic 10 $\mu$ F 25V	M83	YWS5RB0009A3	$\phi$ 11 Knob (Gray) (x4)
C48	ECEA1ES100	Electrolytic 10 $\mu$ F 25V	M84	YWS5RD0009A3	$\phi$ 11 Knob (Blue) (x4)
C50	ECEA1ES100	Electrolytic 10 $\mu$ F 25V	M85	YWS5RA0009A3	$\phi$ 14 Knob (White)
C52	ECEA1ES100	Electrolytic 10 $\mu$ F 25V	M86	YWS5CA0001B4	Name Plate
C53~55	ECQV05103JZ	Polyester (x3) 0.01 $\mu$ F 50V	M87	YWVJR3	Cord Clamp
C56,57	ECEA1ES101	Electrolytic (x2) 100 $\mu$ F 25V	M88	YWOCB375	Bushing
C58	ECEA1ES100	Electrolytic 10 $\mu$ F 25V	M89	YWS2FA00024A4	Cushion for Buss
C59,60	ECCF1H101J	Ceramic (x2) 100pF 50V	<b>YWSPRA0013C1 GROUP CIRCUIT BOARD (1 set with 4 pcs.)</b>		
C61	* ECEA25M47R	Electrolytic 47 $\mu$ F 25V			
C62	ECEA0JS331	Electrolytic 330 $\mu$ F 6.3V	PCB10	YWSPRA0013C1	Circuit Board
C63,64	ECCF1H151J	Ceramic (x2) 150 $\mu$ F 50V	IC1	YWNJM4560DX	Integrated Circuit
C65~67	* ECEA25M10R	Electrolytic (x3) 10 $\mu$ F 25V	IC2	YWTA7220P	Integrated Circuit
C68,69	ECEA1ES100	Electrolytic (x2) 10 $\mu$ F 25V	IC3~9	YWNJM4560DX	Integrated Circuit (x7)
C70	ECEA25M10R	Electrolytic 10 $\mu$ F 25V	Q1	2SC1318-RS	Transistor
C71	ECEA1ES100	Electrolytic 10 $\mu$ F 25V	D1	MA161	Diode
SW1	YWSPJ222LN	Push Switch	R1	ERO25CKF2202	Metal Film 22K $\Omega$ $\frac{1}{4}$ W
SW2(VR1)*	YWSSRA0001A4	Rotary Switch with Variable Resistor 10K $\Omega$ (RD), 20K $\Omega$ (RD)	R2	ERD25FJ474	Carbon Film 470K $\Omega$ $\frac{1}{4}$ W
SW3,4 (VR2,4)	* YWSSRA0002B4	Rotary Switch with Variable Resistor (x2) 100K $\Omega$ (B)	R3,4	ERO25CKF2202	Metal Film (x2) 22K $\Omega$ $\frac{1}{4}$ W
SW5~10	YWSPJ222LN	Push Switch (x6)	R5	ERD25FJ223	Carbon Film 22K $\Omega$ $\frac{1}{4}$ W
CN1	* EMC1340D42V	13-pin Connector with Cable	R6,7	ERQ12AJ101	Fuse Resistor (x2) 100 $\Omega$ $\frac{1}{4}$ W
E20	* EMCL0625C32V	6-pin Connector for Jumper Wires (1 set with 2pcs)	R8	ERD25FJ104	Carbon Film 100K $\Omega$ $\frac{1}{4}$ W
E21	* EMCL0345C33	3-pin Connector for Fader Connection	R9	ERD25FJ122	Carbon Film 1.2K $\Omega$ $\frac{1}{4}$ W
E22	* EMCL0218D41V	2-pin Connector for Jumper Wires (1set with 2pcs)	R10	ERO25CKF1002	Metal Film 10K $\Omega$ $\frac{1}{4}$ W
E23	* EMCL0533D42V	5-pin Connector with Cable	R11	ERO25CKF2491	Metal Film 2.49K $\Omega$ $\frac{1}{4}$ W
E24	YWWP22-1B	Terminal (x2)	R13	ERD25FJ330	Carbon Film 33 $\Omega$ $\frac{1}{4}$ W
E25	YWUA520FR01	LED Holder	R14,15	ERD25FJ103	Carbon Film (x2) 10K $\Omega$ $\frac{1}{4}$ W
<b>YWSPRC0012A1 SOLO SWITCH CIRCUIT BOARD (1 set with 16 pcs.)</b>			R16	ERD25FJ182	Carbon Film 1.8K $\Omega$ $\frac{1}{4}$ W
			R17	ERD25FJ471	Carbon Film 470 $\Omega$ $\frac{1}{4}$ W
PCB9	YWSPRC0012A1	Circuit Board	R18	ERD50FJ102	Carbon Film 1K $\Omega$ $\frac{1}{4}$ W
R118	ERD25FJ103	Carbon Film 10K $\Omega$ $\frac{1}{4}$ W	R19	ERD25FJ122	Carbon Film 1.2K $\Omega$ $\frac{1}{4}$ W
R119	ERD25FJ101	Carbon Film 100 $\Omega$ $\frac{1}{4}$ W	R20	ERD25FJ104	Carbon Film 100K $\Omega$ $\frac{1}{4}$ W
C72	ECQV05333JZ	Polyester 0.033 $\mu$ F 50V	R21	ERD25FJ223	Carbon Film 22K $\Omega$ $\frac{1}{4}$ W
SW11	YWSPJ222LNT	Push Switch	R22	ERD25FJ104	Carbon Film 100K $\Omega$ $\frac{1}{4}$ W



SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R23,24	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C1	ECEA1EN470	Electrolytic 47μF 25V
R25	ERD25FJ183	Carbon Film 18KΩ ¼W	C2,3	ECCF1H220P	Ceramic (x2) 22pF 50V
R26	ERD25FJ473	Carbon Film 47KΩ ¼W	C4	ECEA25M10R	Electrolytic 10μF 25V
R27	ERD25FJ472	Carbon Film 4.7KΩ ¼W	C5,6	ECEA1ES100	Electrolytic (x2) 10μF 25V
R28	ERD25FJ152	Carbon Film 1.5KΩ ¼W	C8	ECEA25M10R	Electrolytic 10μF 25V
R29	ERD25FJ223	Carbon Film 22KΩ ¼W	C9	ECCF1H100D	Ceramic 10pF 50V
R30	ERD25FJ104	Carbon Film 100KΩ ¼W	C10	ECCF1H101J	Ceramic 100pF 50V
R31,32	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C11,12	ECCF1H560J	Ceramic (x2) 56pF 50V
R33	ERD25FJ104	Carbon Film 100KΩ ¼W	C14	ECEA1ES221	Electrolytic 220μF 25V
R34	ERD25FJ223	Carbon Film 22KΩ ¼W	C15	ECCF1H151J	Ceramic 150pF 50V
R35	ERD25FJ104	Carbon Film 100KΩ ¼W	C16	ECEA1ES4R7	Electrolytic 4.7μF 25V
R36,37	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C17	ECEA25M10R	Electrolytic 10μF 25V
R38	ERD25FJ104	Carbon Film 100KΩ ¼W	C18	ECEA1ES4R7	Electrolytic 4.7μF 25V
R39	ERD25FJ223	Carbon Film 22KΩ ¼W	C19	ECCF1H470J	Ceramic 47pF 50V
R40	ERD25FJ183	Carbon Film 18KΩ ¼W	C20	ECEA25M10R	Electrolytic 10μF 25V
R41	ERD25FJ473	Carbon Film 47KΩ ¼W	C21	ECEA1ES4R7	Electrolytic 4.7μF 25V
R42	ERD25FJ223	Carbon Film 22KΩ ¼W	C22	ECCF1H470J	Ceramic 47pF 50V
R43	ERD25FJ104	Carbon Film 100KΩ ¼W	C23	ECEA1ES100	Electrolytic 10μF 25V
R44,45	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C24	ECEA1ES4R7	Electrolytic 4.7μF 25V
R46	ERD25FJ104	Carbon Film 100KΩ ¼W	C25	ECEA1ES100	Electrolytic 10μF 25V
R47	ERD25FJ223	Carbon Film 22KΩ ¼W	C26	ECEA1ES4R7	Electrolytic 4.7μF 25V
R48	ERD25FJ104	Carbon Film 100KΩ ¼W	C27	ECCF1H470J	Ceramic 47pF 50V
R49,50	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C28	ECEA25M10R	Electrolytic 10μF 25V
R51	ERD25FJ104	Carbon Film 100KΩ ¼W	C29	ECEA1ES4R7	Electrolytic 4.7μF 25V
R52	ERD25FJ223	Carbon Film 22KΩ ¼W	C30	ECCF1H470J	Ceramic 47pF 50V
R53	ERD25FJ183	Carbon Film 18KΩ ¼W	C31	ECEA1ES100	Electrolytic 10μF 25V
R54	ERD25FJ473	Carbon Film 47KΩ ¼W	C32	ECEA1ES4R7	Electrolytic 4.7μF 25V
R55	ERD25FJ223	Carbon Film 22KΩ ¼W	C33	ECEA1ES100	Electrolytic 10μF 25V
R56	ERD25FJ104	Carbon Film 100KΩ ¼W	C34	ECEA1ES4R7	Electrolytic 4.7μF 25V
R57,58	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C35	ECCF1H470J	Ceramic 47pF 50V
R59	ERD25FJ104	Carbon Film 100KΩ ¼W	C36	ECEA1ES100	Electrolytic 10μF 25V
R60	ERD25FJ223	Carbon Film 22KΩ ¼W	C37	ECEA1ES4R7	Electrolytic 4.7μF 25V
R61	ERD25FJ104	Carbon Film 100KΩ ¼W	C38	ECCF1H470	Ceramic 47pF 50V
R62,63	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C39	ECEA1ES100	Electrolytic 10μF 25V
R64	ERD25FJ104	Carbon Film 100KΩ ¼W	C40	ECEA1ES4R7	Electrolytic 4.7μF 25V
R65	ERD25FJ223	Carbon Film 22KΩ ¼W	C41	ECEA1ES100	Electrolytic 10μF 25V
R66	ERD25FJ183	Carbon Film 18KΩ ¼W	C42	ECEA1ES4R7	Electrolytic 4.7μF 25V
R67	ERD25FJ473	Carbon Film 47KΩ ¼W	C43	ECCF1H470J	Ceramic 47pF 50V
R68	ERD25FJ223	Carbon Film 22KΩ ¼W	C44	ECEA25M10R	Electrolytic 10μF 25V
R69	ERD25FJ104	Carbon Film 100KΩ ¼W	C45	ECEA1ES4R7	Electrolytic 4.7μF 25V
R70,71	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C46	ECCF1H470J	Ceramic 47pF 50V
R72	ERD25FJ104	Carbon Film 100KΩ ¼W	C47	ECEA1ES100	Electrolytic 10μF 25V
R73	ERD25FJ223	Carbon Film 22KΩ ¼W	C48	ECEA1ES4R7	Electrolytic 4.7μF 25V
R74	ERD25FJ104	Carbon Film 100KΩ ¼W	C49	ECEA1ES100	Electrolytic 10μF 25V
R75,76	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W	C50	ECEA1ES4R7	Electrolytic 4.7μF 25V
R77,78	ERD25FJ104	Carbon Film (x2) 100KΩ ¼W	C51	ECCF1H330J	Ceramic 33pF 50V
R79	ERD25FJ103	Carbon Film 10KΩ ¼W	C52	ECEA1ES100	Electrolytic 10μF 25V
R80	ERD25FJ122	Carbon Film 1.2KΩ ¼W	C53,54	ECQV05103JZ	Polyester (x2) 0.01μF 50V
R81	ERD25FJ473	Carbon Film 47KΩ ¼W	C55,56	ECEA1ES101	Electrolytic (x2) 100μF 25V
R82,83	ERQ12AJ100	Fuse Resistor (x2) 10Ω ½W	C57	ECEA25M10R	Electrolytic 10μF 25V
R84	ERD25FJ473	Carbon Film 47KΩ ¼W	C58	ECEA1ES221	Electrolytic 220μF 25V
R85	ERD25FJ122	Carbon Film 1.2KΩ ¼W	C59	ECCF1H101J	Ceramic 100pF 50V
R86~89	ERD25FJ753	Carbon Film (x4) 75KΩ ¼W	C60	ECKF1H471KB	Ceramic 470pF 50V
VR1 *	YWSVRA0004A4	Variable Resistor 20KΩ(A)	SW1 *	YWSPJ222LN	Push Switch
VR3~10 *	YWSVRA0002A4	Variable Resistor (x8) 20KΩ(D), (RD), (A)	SW2 *	YWSUF40NS	Push Switch
			RL1 *	YWAW621244	Relay
			CN1 *	EMCM1340D42V	13-Pin Connector with Cable

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
<b>ACCESSORY/PACKAGING PARTS</b>			R20,21	ERD25FJ104	Carbon Film (x2) 100KΩ ¼W
			R22	ERD25FJ223	Carbon Film 22KΩ ¼W
			R23	ERD25FJ104	Carbon Film 100KΩ ¼W
			R24	ERD25FJ223	Carbon Film 22KΩ ¼W
			R25,26	ERD25FJ104	Carbon Film (x2) 100KΩ ¼W
M93 *	YWS8QA0008A4	Operating Instructions	R27,28	ERD25FJ223	Carbon Film (x2) 22KΩ ¼W
M94	YWT20X25C03	Polyethylene Bag for Operating Instructions	R30	ERO25CKF2202	Metal Film 22KΩ ¼W
M95	YWS9CA0009A4	Packaging Case Ass'y	R31	ERD25FJ474	Carbon Film 470KΩ ¼W
M96	XZB45X63C05	Polyethylene Bag for Set	R32,33	ERO25CKF2202	Metal Film (x2) 22KΩ ¼W
M97	YWS-RB032	Packaging Label	R34	ERD25FJ223	Carbon Film 22KΩ ¼W
<b>MASTER MODULE (WU-8003) MISCELLANEOUS</b>			R35,36 *	ERQ12AJ101	Fuse Resistor (x2) 100Ω ½W
VR6	EVAJ15D15Y14	Variable Resistor for Fader Control	R37	ERD25FJ104	Carbon Film 100KΩ ¼W
M105	YWS5WA0015A1	Master Panel	R38	ERD25FJ122	Carbon Film 1.2KΩ ¼W
M106	YWS2KA0010B1	Master Chassis	R39	ERO25CKF1002	Metal Film 10KΩ ¼W
M107	YWB95WB01	Rubber Foot (x3)	R40	ERO25CKF2491	Metal Film 2.49KΩ ¼W
M108	YWUA520LB01A	Fader Cover	R42	ERD25FJ330	Carbon Film 33Ω ¼W
M109	YWS5RA0003B3	Fader Knob (Gray)	R43,44	ERD25FJ103	Carbon Film (x2) 10KΩ ¼W
M110	YWS5RA0002B4	φ7.5 Push Button (White) (x2)	R45	ERD25FJ223	Carbon Film 22KΩ ¼W
M111	YWS5RB0002B4	φ7.5 Push Button (Gray)	R46	ERD25FJ474	Carbon Film 470KΩ ¼W
M112	YWS5RA0008B3	φ15 Knob	R47~49	ERD25FJ223	Carbon Film (x3) 22KΩ ¼W
M113	YWS5RD0009A3	φ11 Knob (Blue)	R50,51 *	ERQ12AJ101	Fuse Resistor (x2) 100Ω ½W
M114	YWS5RA0010A3	φ14 Knob (White)	R52	ERD25FJ104	Carbon Film 100KΩ ¼W
M115	YWS5RE0010A3	φ14 Knob (Green)	R53	ERD25FJ122	Carbon Film 1.2KΩ ¼W
M116	YWS5RB0001B3	φ18 Knob (Green)	R54	ERO25CKF1002	Metal Film 10KΩ ¼W
M117	YWS5RC0001B3	φ18 Knob (Blue)	R55	ERO25CKF2491	Metal Film 2.49KΩ ¼W
M118	YWS5CA0001B4	Name Plate	R57	ERD25FJ330	Carbon Film 33Ω ¼W
M119	YVWJR3	Cord Clamp	R58,59	ERD25FJ103	Carbon Film (x2) 10KΩ ¼W
M120	YWOCB375	Bushing	R60	ERD25FJ223	Carbon Film 22KΩ ¼W
M121	YWS2FA0002A4	Cushion for Buss	R61	ERD25FJ474	Carbon Film 470KΩ ¼W
<b>YWSPRA0014C1 MASTER CIRCUIT BOARD (1 set with 2 pcs.)</b>			R62~64	ERD25FJ223	Carbon Film (x3) 22KΩ ¼W
PCB11	YWSPRA0014C1	Circuit Board	R65,66 *	ERQ12AJ101	Fuse Resistor (x2) 100Ω ½W
IC1~5	YWNJM4560DX	Integrated Circuit (x5)	R67	ERD25FJ104	Carbon Film 100KΩ ¼W
IC6	YWTA7220P	Integrated Circuit	R68	ERD25FJ122	Carbon Film 1.2KΩ ¼W
IC7	YWNJM4560DX	Integrated Circuit	R69	ERO25CKF1002	Metal Film 10KΩ ¼W
IC8	YWTA7220P	Integrated Circuit	R70	ERO25CKF2491	Metal Film 2.49KΩ ¼W
IC9	YWNJM4560DX	Integrated Circuit	R72	ERD25FJ330	Carbon Film 33Ω ¼W
IC10	YWTA7220P	Integrated Circuit	R73,74	ERD25FJ103	Carbon Film (x2) 10KΩ ¼W
Q1	2SC1318-RS	Transistor	R75	ERD25FJ122	Carbon Film 1.2KΩ ¼W
D1,2	MA161	Diode (x2)	R76	ERD25FJ103	Carbon Film 10KΩ ¼W
R1	ERD25FJ223	Carbon Film 22KΩ ¼W	R77	ERD25FJ182	Carbon Film 1.8KΩ ¼W
R2	ERD25FJ104	Carbon Film 100KΩ ¼W	R78	ERD25FJ471	Carbon Film 470Ω ¼W
R3	ERD25FJ223	Carbon Film 22KΩ ¼W	R79,80 *	ERQ12AJ100	Fuse Resistor (x2) 10Ω ½W
R4	ERD25FJ103	Carbon Film 10KΩ ¼W	R81 *	ERG2ANJ751	Metal Film 750Ω 2W
R5	ERD25FJ104	Carbon Film 100KΩ ¼W	VR1 *	YWSVRA0004A4	Variable Resistor 20KΩ(A)
R6	ERD25FJ223	Carbon Film 22KΩ ¼W	VR2 *	YWSVRA0003A4	Variable Resistor 20KΩ(D), (RD)
R7	ERD25FJ104	Carbon Film 100KΩ ¼W	VR3 *	YWSVRA0002A4	Variable Resistor 20KΩ(D),(RD),(A)
R8	ERD25FJ223	Carbon Film 22KΩ ¼W	VR4,5 *	YWSVRA0004A4	Variable Resistor (x2) 20KΩ(A)
R9	ERD25FJ104	Carbon Film 100KΩ ¼W	C1	ECEA1ES4R7	Electrolytic 4.7μF 25V
R10	ERD25FJ223	Carbon Film 22KΩ ¼W	C3	ECEA25M4R7	Electrolytic 4.7μF 25V
R11,12	ERD25FJ104	Carbon Film (x2) 100KΩ ¼W	C5,6	ECEA1ES4R7	Electrolytic (x2) 10μF 25V
R13~19	ERD25FJ223	Carbon Film (x7) 22KΩ ¼W	C9,10 *	ECEA25M10	Electrolytic (x2) 10μF 25V
			C11 *	ECEA25M4R7	Electrolytic 4.7μF 25V
			C13,14	ECEA1ES4R7	Electrolytic (x2) 4.7μF 25V
			C17,18 *	ECEA25M10	Electrolytic (x2) 10μF 25V
			C19	ECEA1EN470	Electrolytic 47μF 25V
			C20	ECCF1H220	Ceramic 22pF 50V
			C23	ECCF1H220	Ceramic 22pF 50V

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C24	ECEA1ES221	Electrolytic 220 $\mu$ F 25V	M143	YWS5RD0002B4	$\phi$ 7.5 Push Button (Blue) (x4)
C25 *	ECEA25M10R	Electrolytic 10 $\mu$ F 25V	M144	YWS5RA0010A3	$\phi$ 14 Knob (White) (x3)
C26,27	ECEA1ES100	Electrolytic (x2) 10 $\mu$ F 25V	M145	YWS5CA0001B4	Name Plate
C28 *	ECEA25M4R7	Electrolytic 4.7 $\mu$ F 25V	M146	YWVJR3	Cord Clamp
C29	ECCF1H100D	Ceramic 10pF 50V	M147	YWOCB375	Bushing
C30	ECCF1H101J	Ceramic 100pF 50V	M148	YWS2FA0002A4	Cushion for Buss (x2)
C31,32	ECCF1H560J	Ceramic (x2) 56pF 50V	<b>YWSPRA0015A1 MONITOR CIRCUIT BOARD</b>		
C34	ECEA1ES221	Electrolytic 220 $\mu$ F 25V			
C35	ECEA1EN470	Electrolytic 47 $\mu$ F 25V			
C36	ECCF1H100D	Ceramic 10pF 50V			
C38	ECEA1ES221	Electrolytic 220 $\mu$ F 25V			
C39	ECCF1H220J	Ceramic 22pF 50V	PCB12 *	YWSPRA0015A1	Circuit Board
C40~42	ECEA1ES100	Electrolytic (x3) 10 $\mu$ F 25V	IC1~7	YWNJM4560DX	Integrated Circuit (x7)
C43	ECEA1ES4R7	Electrolytic 4.7 $\mu$ F 25V	Q1~8	2SK30A-Y	Transistor (x8)
C44	ECCF1H100D	Ceramic 10pF 50V	Q9~11	2SC828-RS	Transistor (x3)
C45	ECCF1H101J	Ceramic 100pF 50V	Q12~19	2SK30A-Y	Transistor (x8)
C46,47	ECCF1H560J	Ceramic (x2) 56pF 50V	Q20	2SC828-RS	Transistor
C49	ECEA1ES221	Electrolytic 220 $\mu$ F 25V	Q21	2SC1318-RS	Transistor
C50	ECEA1EN470	Electrolytic 47 $\mu$ F 25V	Q22,23	2SC828-RS	Transistor (x2)
C51	ECCF1H220	Ceramic 22pF 50V	D1~8	MA161	Diode (x8)
C53	ECEA1ES221	Ceramic 220 $\mu$ F 25V	D9	OA91	Diode
C54	ECCF1H220	Ceramic 22pF 50V	D10,11	MA161	Diode (x2)
C55~57	ECEA1ES100	Electrolytic (x3) 10 $\mu$ F 25V	D13~16	MA161	Diode (x4)
C58	ECEA1ES4R7	Electrolytic 4.7 $\mu$ F 25V	D17	OA91	Diode
C59	ECCF1H100D	Ceramic 10pF 50V	D18,19	MA161	Diode (x2)
C60	ECCF1H101J	Ceramic 100pF 50V	LED1	LN28RPP	LED
C61,62	ECCF1H560J	Ceramic (x2) 56pF 50V	R1,2	ERD25FJ473	Carbon Film (x2) 47K $\Omega$ $\frac{1}{4}W$
C64	ECEA1ES221	Electrolytic 220 $\mu$ F 25V	R3,4	ERD25FJ103	Carbon Film (x2) 10K $\Omega$ $\frac{1}{4}W$
C65	ECCF1H151J	Ceramic 150pF 50V	R5~8	ERD25FJ473	Carbon Film (x4) 47K $\Omega$ $\frac{1}{4}W$
C66,67	ECQV05103	Polyester (x2) 0.01 $\mu$ F 50V	R9	ERD25FJ474	Carbon Film 470K $\Omega$ $\frac{1}{4}W$
C68,69	ECEA1ES101	Electrolytic (x2) 100 $\mu$ F 25V	R10	ERD25FJ153	Carbon Film 15K $\Omega$ $\frac{1}{4}W$
C70~72	ECCF1H101J	Ceramic (x3) 100pF 50V	R11	ERD25FJ473	Carbon Film 47K $\Omega$ $\frac{1}{4}W$
C73~75	ECCF1H471J	Ceramic (x3) 470pF 50V	R12	ERD25FJ474	Carbon Film 470K $\Omega$ $\frac{1}{4}W$
SW1~3	YWSPJ222LN	Push Switch (x3)	R13	ERD25FJ153	Carbon Film 15K $\Omega$ $\frac{1}{4}W$
RL1 *	YWAW622144	Relay	R14	ERD25FJ473	Carbon Film 47K $\Omega$ $\frac{1}{4}W$
RL2 *	YWAW621244	Relay	R15	ERD25FJ104	Carbon Film 100K $\Omega$ $\frac{1}{4}W$
CN1 *	EMCM1340D42V	13-pin Connector with Cable	R16	ERD25FJ103	Carbon Film 10K $\Omega$ $\frac{1}{4}W$
E30 *	EMCL0345C33	3-pin Connector for Fader Connection	R17	ERD25FJ472	Carbon Film 4.7K $\Omega$ $\frac{1}{4}W$
<b>ACCESSORY/PACKAGING PARTS</b>			R18	ERD25FJ104	Carbon Film 100K $\Omega$ $\frac{1}{4}W$
M128 *	YWS8QA0009A4	Operating Instruction	R19	ERD25FJ103	Carbon Film 10K $\Omega$ $\frac{1}{4}W$
M129	YWT20X25C03	Polyethylene Bag for Operating Instructions	R20	ERD25FJ472	Carbon Film 4.7K $\Omega$ $\frac{1}{4}W$
M130	YWS9CA0009A4	Packaging Case Ass'y	R21	ERD25FJ104	Carbon Film 100K $\Omega$ $\frac{1}{4}W$
M131	XZB45X63C05	Polyethylene Bag for Set	R22	ERD25FJ753	Carbon Film 75K $\Omega$ $\frac{1}{4}W$
M132	YWS-RB032	PC Label	R23	ERD25FJ474	Carbon Film 470K $\Omega$ $\frac{1}{4}W$
<b>MONITOR MODULE (WU-8004) MISCELLANEOUS</b>			R24	ERD25FJ104	Carbon Film 100K $\Omega$ $\frac{1}{4}W$
M138	YWS5WA0016A1	Monitor Panel	R25	ERD25FJ474	Carbon Film 470K $\Omega$ $\frac{1}{4}W$
M139	YWS2KA0011B1	Monitor Chassis	R26,27	ERD25FJ105	Carbon Film (x2) 1M $\Omega$ $\frac{1}{4}W$
M140	YWB95WB01	Rubber Foot (x3)	R28	ERD25FJ224	Carbon Film 220K $\Omega$ $\frac{1}{4}W$
M141	YWS5RA0002B4	$\phi$ 7.5 Push Button (White) (x5)	R29	ERD25FJ103	Carbon Film 10K $\Omega$ $\frac{1}{4}W$
M142	YWS5RB0002B4	$\phi$ 7.5 Push Button (Gray) (x2)	R30	ERD25FJ123	Carbon Film 12K $\Omega$ $\frac{1}{4}W$
			R31	ERD25FJ471	Carbon Film 470 $\Omega$ $\frac{1}{4}W$
			R32	ERD25FJ753	Carbon Film 75K $\Omega$ $\frac{1}{4}W$
			R33	ERD25FJ223	Carbon Film 22K $\Omega$ $\frac{1}{4}W$
			R34	ERD25FJ220	Carbon Film 22 $\Omega$ $\frac{1}{4}W$
			R35,36	ERD25FJ103	Carbon Film (x2) 10K $\Omega$ $\frac{1}{4}W$
			R37	ERD25FJ123	Carbon Film 12K $\Omega$ $\frac{1}{4}W$
			R38	ERD25FJ471	Carbon Film 470 $\Omega$ $\frac{1}{4}W$

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R40	ERD25FJ474	Carbon Film 470KΩ ¼W	C18,19	ECCF1H101J	Ceramic (x2) 100pF 50V
R41	ERD25FJ105	Carbon Film 1MΩ ¼W	C21	ECCF1H100D	Ceramic 10pF 50V
R42	ERD25FJ223	Carbon Film 22KΩ ¼W	C22	ECEA1ES470	Electrolytic 47μF 25V
R43	ERD25FJ220	Carbon Film 22Ω ¼W	C23	ECEA1HN010	Electrolytic 1μF 50V
R44	ERD25FJ103	Carbon Film 10KΩ ¼W	C24,25	ECCF1H101J	Ceramic (x2) 100pF 50V
R45,46	ERD25FJ473	Carbon Film (x2) 47KΩ ¼W	C27	ECCF1H100D	Ceramic 10pF 50V
R47,48	ERD25FJ103	Carbon Film (x2) 10KΩ ¼W	C28,29	ECEA1ES470	Electrolytic (x2) 47μF 25V
R49~52	ERD25FJ473	Carbon Film (x4) 47KΩ ¼W	C30	ECCF1H100D	Ceramic 10pF 50V
R53	ERD25FJ474	Carbon Film 470KΩ ¼W	C31	ECEA25M10R	Electrolytic 10μF 25V
R54	ERD25FJ153	Carbon Film 15KΩ ¼W	C32	ECEA1EN470	Electrolytic 47μF 25V
R55	ERD25FJ473	Carbon Film 47KΩ ¼W	C33	ECCF1H100D	Ceramic 10pF 50V
R56	ERD25FJ474	Carbon Film 470KΩ ¼W	C34	ECEA25M10R	Electrolytic 10μF 25V
R57	ERD25FJ153	Carbon Film 15KΩ ¼W	C35,36	ECEA1ES4R7	Electrolytic (x2) 4.7μF 25V
R58	ERD25FJ473	Carbon Film 47KΩ ¼W	C37,38	ECQE1274JNB	Polyester (x2) 0.47μF 100V
R59	ERD25FJ474	Carbon Film 470KΩ ¼W			
R60	ERD25FJ753	Carbon Film 75KΩ ¼W	C40	ECCF1H100D	Ceramic 10pF 50V
R61	ERD25FJ474	Carbon Film 470KΩ ¼W	C41	ECEA1ES470	Electrolytic 47μF 25V
R62	ERD25FJ104	Carbon Film 100KΩ ¼W	C42, 43	ECEA1ES4R7	Electrolytic (x2) 4.7μF 25V
R63	ERD25FJ753	Carbon Film 75KΩ ¼W	C45	ECCF1H100D	Ceramic 10pF 50V
R64,65	ERD25FJ105	Carbon Film (x2) 1MΩ ¼W	C46	ECEA1ES470	Electrolytic 47μF 25V
R66	ERD25FJ682	Carbon Film 6.8KΩ ¼W	C47	ECEA1EN470	Electrolytic 47μF 25V
R67	ERD25FJ223	Carbon Film 22KΩ ¼W	C49	ECCF1H101J	Ceramic 100pF 50V
R68	ERD25FJ220	Carbon Film 22Ω ¼W	C50	ECEA1ES100	Electrolytic 10μF 25V
R69	ERD25FJ103	Carbon Film 10KΩ ¼W	C51	ECCF1H100D	Ceramic 10pF 50V
R70	ERD25FJ682	Carbon Film 6.8KΩ ¼W	C52	ECEA1ES100	Electrolytic 10μF 25V
R71	ERD25FJ223	Carbon Film 22KΩ ¼W	C53~57	ECEA1ES4R7	Electrolytic (x5) 4.7μF 25V
R72	ERD25FJ220	Carbon Film 22Ω ¼W	C58	ECCF1H100D	Ceramic 10pF 50V
R73	ERD25FJ103	Carbon Film 10KΩ ¼W	C62	ECEA1ES4R7	Electrolytic 4.7μF 25V
R74	ERD25FJ474	Carbon Film 470KΩ ¼W	C63	ECCF1H100D	Ceramic 10pF 50V
R75	ERD25FJ333	Carbon Film 33KΩ ¼W	C71	ECCF1H151J	Ceramic 150pF 50V
R76	ERD25FJ473	Carbon Film 47KΩ ¼W	C72	ECEA1ES101	Electrolytic 100μF 25V
R77	ERD25FJ474	Carbon Film 470KΩ ¼W	C73	ECQV05103	Polyester 0.01μF 50V
R78	ERD25FJ333	Carbon Film 33KΩ ¼W	C74	ECEA1ES101	Electrolytic 100μF 25V
R79,80	ERD25FJ473	Carbon Film (x2) 47KΩ ¼W	C75	ECQV05103	Polyester 0.01μF 50V
R81	ERD25FJ472	Carbon Film 4.7KΩ ¼W	C76,77	ECQE1274JNB	Polyester (x2) 0.24μF 100V
R84	ERD25FJ473	Carbon Film 47KΩ ¼W	C78,79	ECEA1HS2R2	Electrolytic (x2) 2.2μF 50V
R85	ERD25FJ472	Carbon Film 4.7KΩ ¼W	SW1,2	YWSUF40NS	Push Switch (x2)
R91	ERD50FJ272	Carbon Film 2.7KΩ ¼W	SW3	YWSUF30NS	Push Switch
R92	ERG1ANJ331	Metal Film 330Ω 1W	RL1,2	YVAW622144	Relay (x2)
R93	ERD25FJ122	Carbon Film 1.2KΩ ¼W	CN1 *	EMCM1340D42V	13-Pin Connector with Cable
R94	ERD25FJ104	Carbon Film 100KΩ ¼W	E35	YWUA520FR01	LED Holder
R95~98	ERD25FJ473	Carbon Film (x4) 4.7KΩ ¼W			
R99,100	ERQ12AJ100	Fuse Resistor (x2) 10Ω ½W			
R101,102	ERD25FJ474	Carbon Film (x2) 470KΩ ¼W			
R104	ERD25FJ224	Carbon Film 220KΩ ¼W			
VR1~3 *	YWSVRA0005A4	Variable Resistor (x3) 20KΩ(A) x 2	PCB13	YWSVRA0005A4	Circuit Board
C1	ECEA1EN470	Electrolytic 47μF 25V	IC8	YWHA1374	Integrated Circuit
C2	ECCF1H100D	Ceramic 10pF 50V	R82	ERD25FJ104	Carbon Film 100KΩ ¼W
C3	ECEA25M10R	Electrolytic 10μF 25V	R83	ERD25FJ471	Carbon Film 470Ω ¼W
C4	ECEA1EN470	Electrolytic 47μF 25V	R86	ERD25FJ104	Carbon Film 100KΩ ¼W
C5	ECCF1H100D	Ceramic 10pF 50V	R87~89	ERD25FJ471	Carbon Film (x3) 470Ω ¼W
C6	ECEA25M10R	Electrolytic 10μF 25V	R90	ERQ3CJ330	Fuse Resistor 33Ω 3W
C7,8	ECEA1ES4R7	Electrolytic (x2) 4.7μF 25V	R105	ERQ3CJ330	Fuse Resistor 33Ω 3W
C10~12	ECEA1ES4R7	Electrolytic (x3) 4.7μF 25V	C59	ECEA1ES4R7	Electrolytic 4.7μF 25V
C14	ECEA1ES4R7	Electrolytic 4.7μF 25V	C60	ECCF1H221J	Ceramic 220pF 50V
C15,16	ECQE1274JNB	Polyester (x2) 0.27μF 100V	C61	ECEA1CS221	Electrolytic 220μF 16V
C17	ECEA1HN010	Electrolytic 1μF 50V	C64	ECEA1ES4R7	Electrolytic 4.7μF 25V

**YWSVRA0031A3  
PHONES AMP CIRCUIT BOARD**

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C65	ECCF1H221J	Ceramic 220pF 50V	R30,31	ERD25FJ473	Carbon Film (x2) 47K $\Omega$ ¼W
C66	ECEA1CS221	Electrolytic 220 $\mu$ F 16V	R32	ERD25FJ104	Carbon Film 100K $\Omega$ ¼W
C67	ECEA1ES470	Electrolytic 47 $\mu$ F 25V	R33	ERD25FJ223	Carbon Film 22K $\Omega$ ¼W
C68,69	ECEA1CS331	Electrolytic (x2) 330 $\mu$ F 16V	R35	ERD25FJ223	Carbon Film 22K $\Omega$ ¼W
C70	ECEA1ES471	Electrolytic 470 $\mu$ F 25V	R36	ERD25FJ473	Carbon Film 47K $\Omega$ ¼W
JK1	YWHLJ306-1-2	1-Pin Jack	R37~45	ERD25FJ223	Carbon Film (x9) 22K $\Omega$ ¼W
E36 *	YWS7DA0002B4	Heat Sink for IC	R46,47	ERQ12AJ330	Fuse Resistor (x2) 33 $\Omega$ ½W
E37	YWMT6X1R2X7	$\phi$ 6 Shield Tube (x4)	R48	ERD25FJ101	Carbon Film 100 $\Omega$ ¼W
<b>ACCESSORY/PACKAGING PARTS</b>			R49	ERD25FJ472	Carbon Film 4.7K $\Omega$ ¼W
			R50	ERD25FJ101	Carbon Film 100 $\Omega$ ¼W
M155 *	YWS8QA0010A4	Operating Instruction	R51	ERD25FJ472	Carbon Film 4.7K $\Omega$ ¼W
M156	YWT20X25C03	Polyethylen Bag for Operating Instructions	R52	ERD25FJ101	Carbon Film 100 $\Omega$ ¼W
M157	YWS9CA0009A4	Packaging Case Ass'y	VR1,2	YWSVRA0004A4	Variable Resistor 20K $\Omega$ (A)
M158	XZB45X63C05	Polyethylen Bag for Set	C1	ECCF1H100D	Ceramic 10pF 50V
M159	YWS-RB032	PC Label	C2,3	ECQV05183	Polyester (x2) 0.018 $\mu$ F 50V
<b>TB/OSC MODULE (WU-8005) MISCELLANEOUS</b>			C4,5	ECQE1474T135	Polyester (x2) 0.47 $\mu$ F 100V
MIC	YWM034AY140	Microphone Unit	C6	ECEA1ES100	Electrolytic 10 $\mu$ F 25V
M165 *	YWS5WA0017A1	Talkback Panel	C11	ECQV05183	Polyester 0.018 $\mu$ F 50V
M166	YWB95WB01	Rubber Foot (x3)	C12	ECKF1H391KB	Ceramic 390pF 50V
M167	YWS5RA0002B4	$\phi$ 7.5 Push Button (White) (x7)	C13	ECEA25M10R	Electrolytic 10 $\mu$ F 25V
M168	YWS5RB0002B4	$\phi$ 7.5 Push Button (Gray)	C15	ECCF1H470J	Ceramic 47pF 50V
M169	YWS5RD0002B4	$\phi$ 7.5 Push Button (White) (x2)	C16	ECEA1ES100	Electrolytic 10 $\mu$ F 25V
M170	YWS5RA0010A3	$\phi$ 14 Knob (White) (x2)	C17	ECCF1H101J	Ceramic 100 $\mu$ F 50V
M171	YWS5CA0001B4	Name Plate	C18	ECEA1ES100	Electrolytic 10 $\mu$ F 25V
M172	YWVJR3	Cord Clamp	C19	ECCF1H101J	Ceramic 100pF 50V
M173	YWOCB375	Bushing	C20	ECEA1ES470	Electrolytic 47 $\mu$ F 25V
M174	YWP-20	Cord Clamp for Buss (x2)	C21,22	ECQV05103	Polyester (x2) 0.01 $\mu$ F 50V
M175	YWS2KA0012B1	Talkback Chassis	C23,24	ECEA1ES101	Electrolytic (x2) 100 $\mu$ F 25V
<b>YWSPRA0016C1 TB/OSC CIRCUIT BOARD</b>			C25,26	ECQV05333	Polyester (x2) 0.033 $\mu$ F 50V
PCB14 *	YWSPRA0016C1	Circuit Board	C27,28	ECEA1ES100	Electrolytic(x2) 10 $\mu$ F 25V
IC1	YWNJM4560DX	Integrated Circuit	SW1	YWSUF30NS	Push Switch
IC3,4	YWNJM4560DX	Integrated Circuit (x2)	SW2	YWSPJ222NN	Push Switch
D1,2	YUDWZ032	Diode (x2)	SW3~8	YWSPJ222LN	Push Switch (x6)
R1	ERD25FJ103	Carbon Film 10K $\Omega$ ¼W	CN1 *	EMCM1340D42V	13-Pin Connector with Cable
R2	ERD25FJ512	Carbon Film 5.1K $\Omega$ ¼W	<b>ACCESSORY/PACKAGING PARTS</b>		
R3	ERD25FJ393	Carbon Film 39K $\Omega$ ¼W	M181 *	YWS8QA0011A4	Operating Instruction
R4	ERD25FJ751	Carbon Film 750 $\Omega$ ¼W	M182	YWT20X25C03	Polyethylene Bag for Operating Instructions
R5	ERD25FJ103	Carbon Film 10K $\Omega$ ¼W	M183	YWS9CA0009A4	Packaging Case Ass'y
R6,7	ERD25FJ104	Carbon Film (x2) 100K $\Omega$ ¼W	M184	XZB45X63C05	Polyethylene Bag for Set
R8	ERD25FJ103	Carbon Film 10K $\Omega$ ¼W	M185	YWS-RB032	PC Label
R9	ERD25FJ222	Carbon Film 2.2K $\Omega$ ¼W			
R11	ERD25FJ104	Carbon Film 100K $\Omega$ ¼W			
R22	ERD25FJ222	Carbon Film 2.2K $\Omega$ ¼W			
R23	ERD25FJ152	Carbon Film 1.5K $\Omega$ ¼W			
R24	ERD25FJ471	Carbon Film 470 $\Omega$ ¼W			
R25	ERD25FJ223	Carbon Film 22K $\Omega$ ¼W			
R26	ERD25FJ152	Carbon Film 1.5K $\Omega$ ¼W			
R27	ERD25FJ104	Carbon Film 100K $\Omega$ ¼W			
R28	ERD25FJ153	Carbon Film 15K $\Omega$ ¼W			

