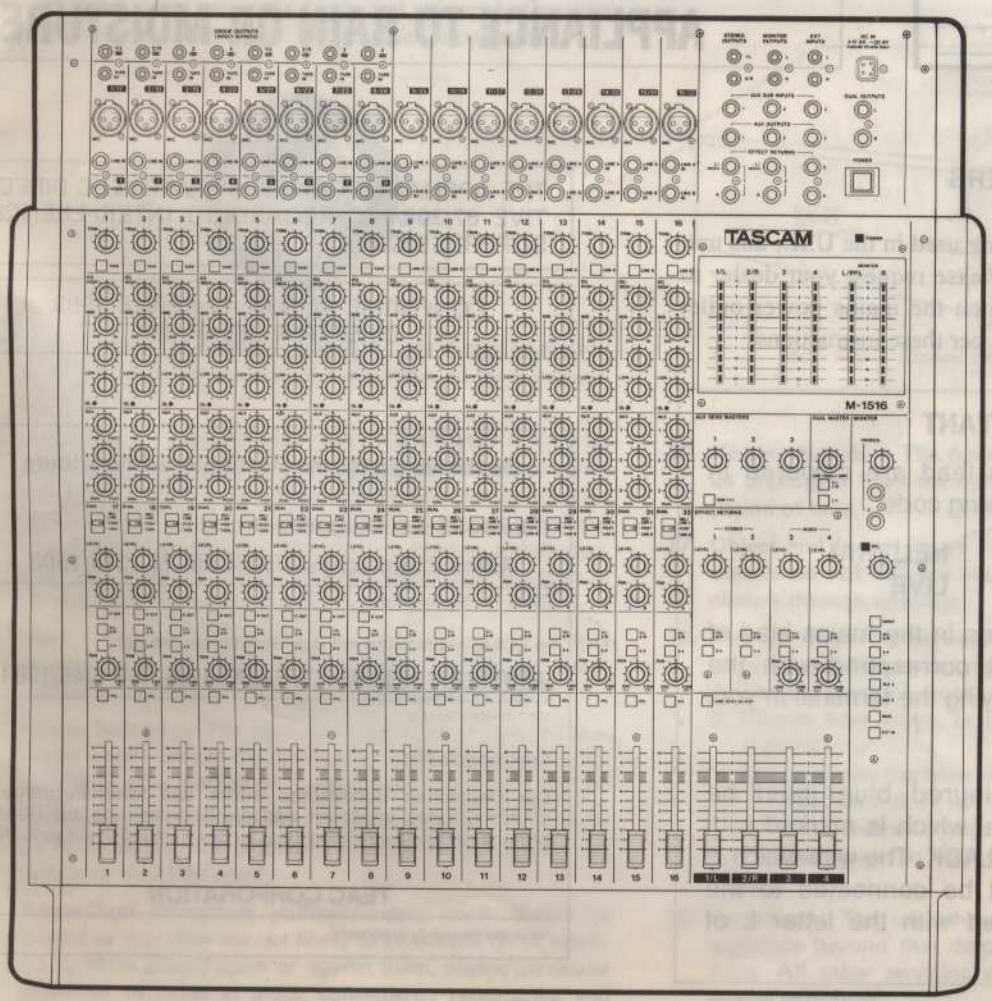
TASCAM

TEAC Professional Division

M-1516/M-1508

RECORDING MIXER



OWNER'S MANUAL

5700131600

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.
Model number _____
Serial number _____

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

NOTE FOR U.K. CUSTOMERS

Due to the variety of plugs being used in the U.K., this unit is sold without an AC plug. Please request your dealer to install the correct plug to match the mains power outlet where your unit will be used as per these instructions.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

BLUE:	**NEUTRAL**
BROWN:	**LIVE**

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminal in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L of coloured RED.

THE APPLIANCE CONFORMS WITH EEC DIRECTIVE 87/308/EEC REGARDING INTERFERENCE SUPPRESSION

CONFORME AL D.M. 13 APRILE 1989
DIRETTIVA CEE/87/308

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

Aufnahmemischpult TASCAM M-1516/1508

(Gerät, Typ, Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

AMTSBLATT 163/1984, VFG 1045/1984, VFG 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

TEAC CORPORATION

Name des Herstellers/Importeurs

SAFETY INSTRUCTIONS

CAUTION:

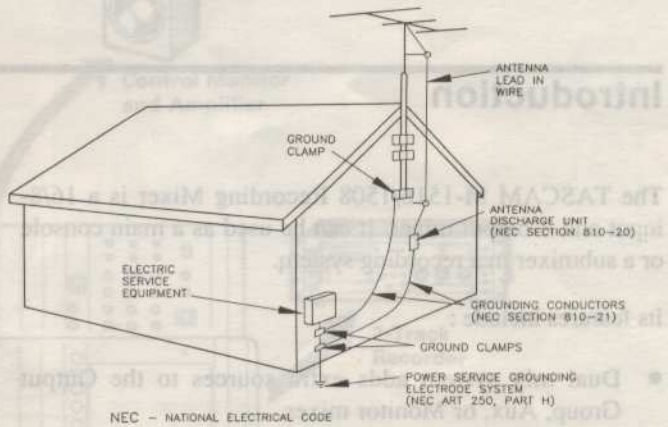
- **Read all of these instructions.**
- **Save these instructions for later use.**
- **Follow all warnings and instructions marked on the audio equipment.**

1. **Read Instructions** – All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions** – The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** – All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** – All operating and use instructions should be followed.
5. **Water and Moisture** – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. **Carts and Stands** – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. **Wall or Ceiling Mounting** – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources** – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Grounding or Polarization** – The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
12. **Power-Cord Protection** – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. **Cleaning** – The appliance should be cleaned only as recommended by the manufacturer.
14. **Power Lines** – An outdoor antenna should be located away from power lines.
15. **Outdoor Antenna Grounding** – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70 – 1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure below.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



16. **Nonuse Periods** – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
17. **Object and Liquid Entry** – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
18. **Damage Requiring Service** – The appliance should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the appliance; or
    C. The appliance has been exposed to rain; or
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
    E. The appliance has been dropped, or the enclosure damaged.
19. **Servicing** – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Table of Contents

Introduction

The TASCAM M-1516/1508 Recording Mixer is a 16/8-input and 4-output mixer. It can be used as a main console or a submixer in a recording system.

Its features include :

- Dual mix system adds extra sources to the Output Group, Aux, or Monitor mixes.
- Each channel has a 3-band EQ with separate frequency and amount controls for the midrange sweep equalizer.
- Four effects returns (2 stereo and 2 mono) accommodate a variety of effects units.
- Two sets of four Group Outputs (or eight Direct Outputs as individually selected) enable 8 track recordings without repatching.
- XLR-type (balanced), 1/4" phone and RCA input jacks accept external devices with different output specifications.
- Connectors put in easy reach of the operator for quick changes in live performance.
- The M-1508 can be used either as a tabletop console or in a rack mount, while maintaining access to the connectors. The RM-1508 rack mount adaptor kit is optionally available.

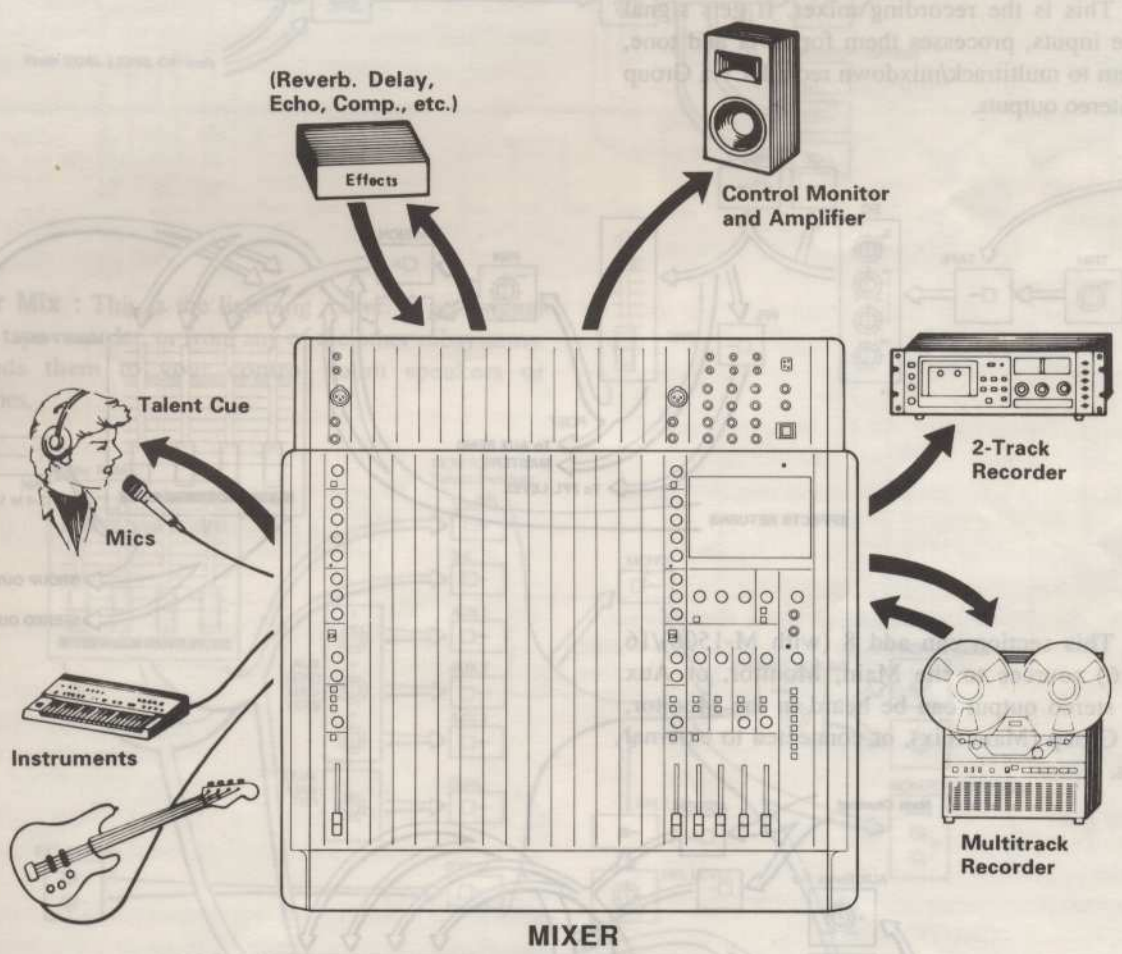
Using the Manual : This manual is a reference book. If you read it thoroughly at least once, you will know where to turn when you need answers. Not all of this information will necessarily apply to your studio, but understanding all the options will help improve your sound.
Unfortunately, it is out of our reach to know every circumstance under which you use the M-1516/1508 and this manual is not intended to cover all possibilities of the M-1516/1508 in a given, specific audio production system; every system is a little different. Also, this manual is not intended as a complete course in audio engineering. To get the most out of the M-1516/1508, you will have to read the manual of your recorders and others which make up your system, together with the present manual in a comparative way. There are also books and magazines that can provide valuable information to help you.

Use of Capital Letters : In general, we use all upper case type to designate a particular jack, switch or control name or label (like MIC). An upper case first letter is used to clearly distinguish an item from other similar ones (like Main channel, as distinct from DUAL channel).

The Recording System

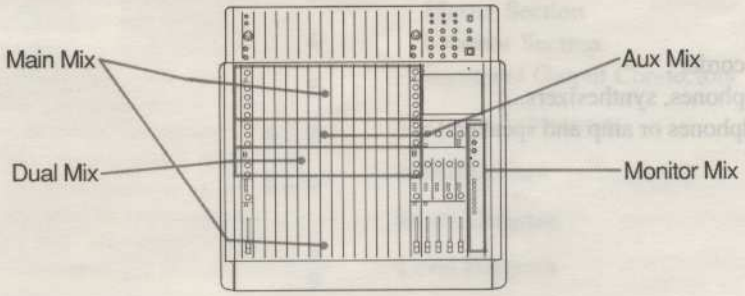
There are six elements to a complete recording system :

- Multitrack recorder ;
- Mixer ;
- 2-track (mixdown) recorder ;
- Input devices (microphones, synthesizers...)
- Output devices (headphones or amp and speakers) ; and
- Effects processors.

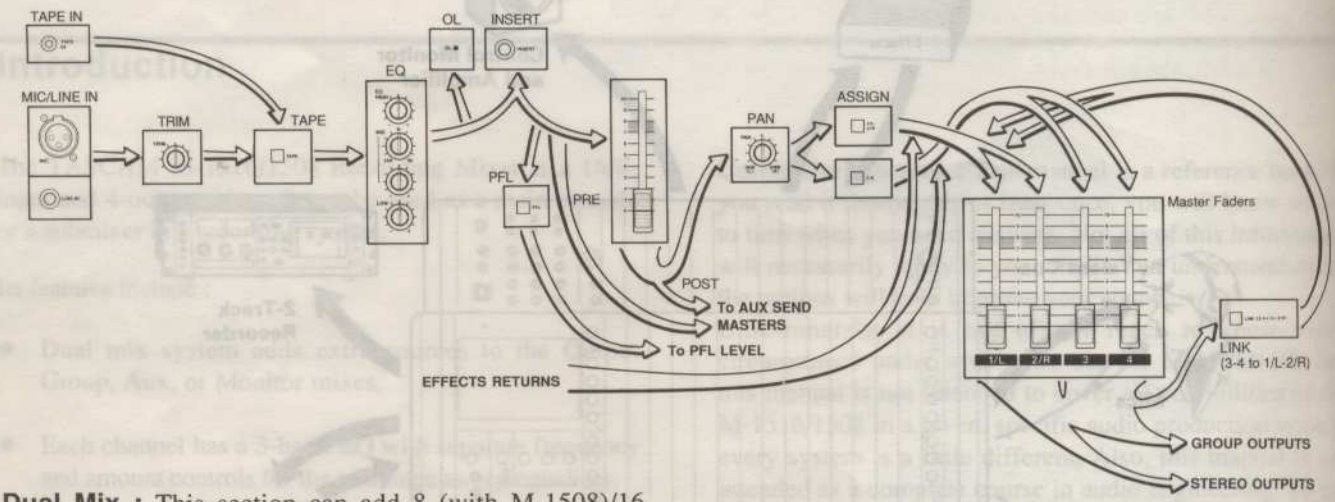


Mixer Subsystems

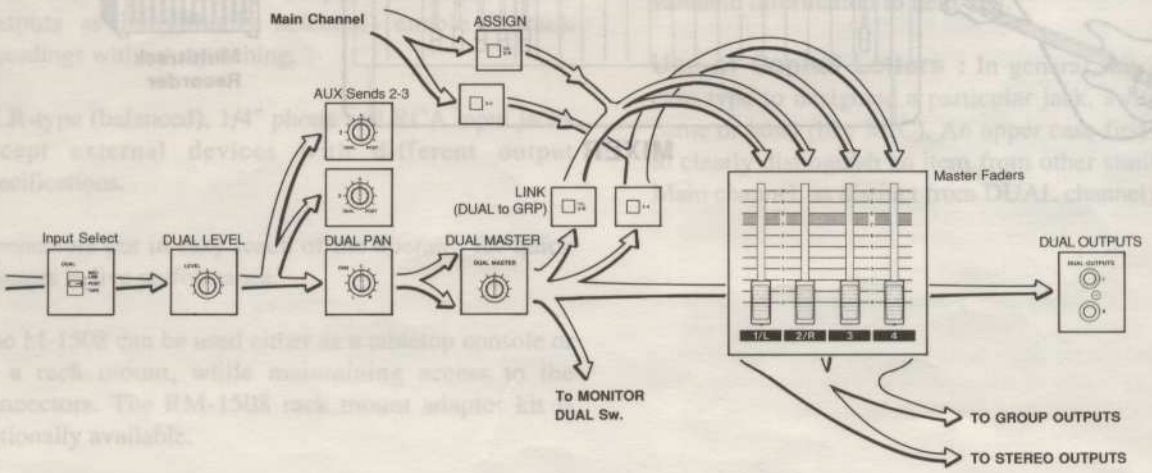
The M-1516/1508 is easy to understand if you break it down into several subsystems and learn the purpose of each section based on where it gets its signal FROM and where it sends signal TO.



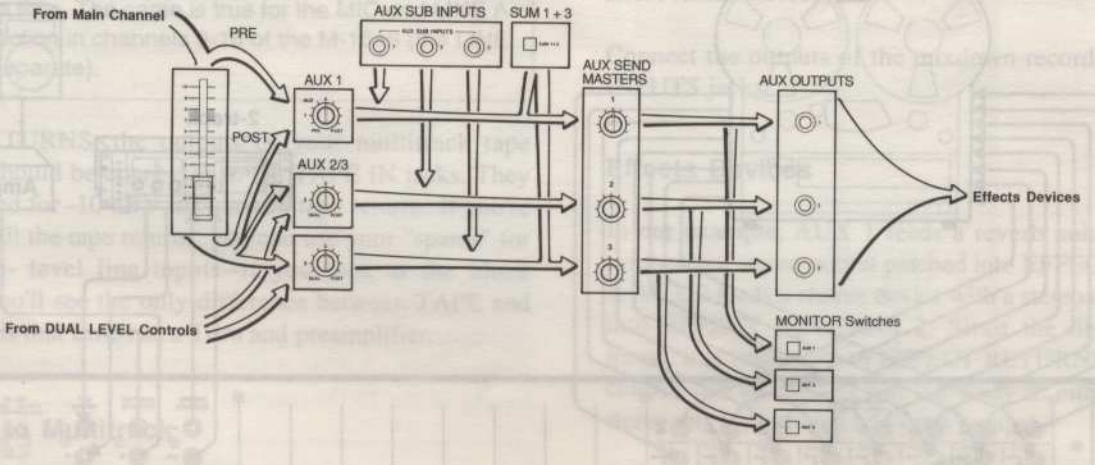
Main Mix : This is the recording mixer. It gets signal from multiple inputs, processes them for level and tone, and sends them to multitrack/mixdown recorder via Group outputs and Stereo outputs.



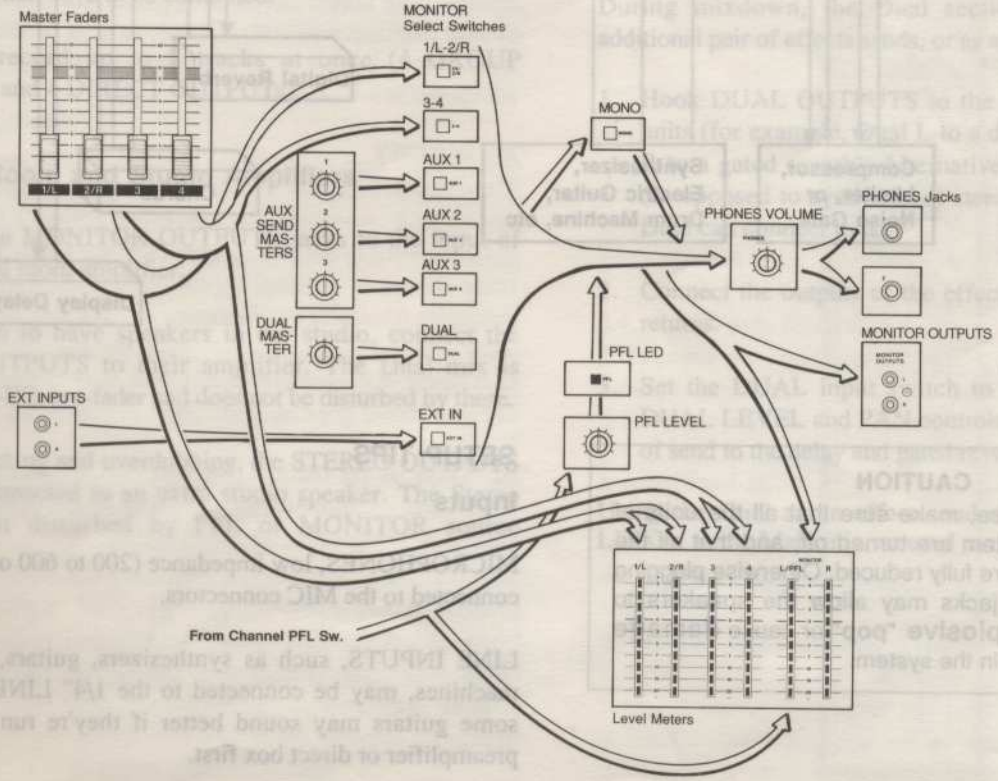
Dual Mix : This section can add 8 (with M-1508)/16 (with M-1516) sources to the Main, Monitor, or Aux systems. Its stereo output can be heard in the Monitor, linked to the Group (Main mix), or connected to external effects devices.



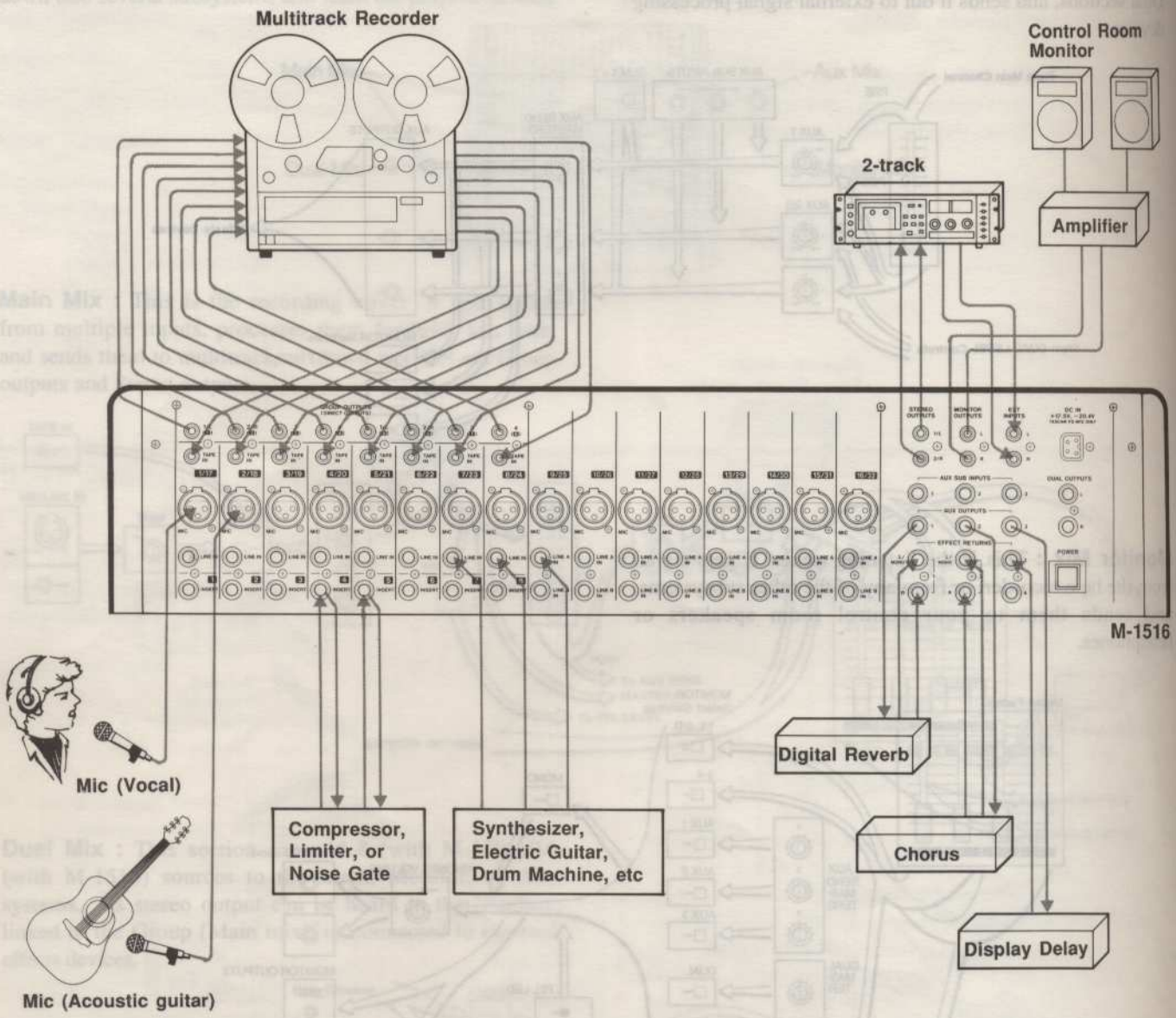
Aux Mix : This section gets its signal from the Main or Dual sections, and sends it out to external signal processing devices.



Monitor Mix : This is the listening mixer. It gets signal from the tape recorder, or from any of the other subsystems, and sends them to your control room speakers or headphones.



Connections



CAUTION

Before anything else, make sure that all the units of your recording system are turned off, and that all the level adjustments are fully reduced. Otherwise plugging and unpluging of jacks may allow the speakers to produce a loud **explosive "pop"** or cause **damage** to other equipment in the system.

SETUP TIPS

Inputs

MICROPHONES, low impedance (200 to 600 ohm) can be connected to the MIC connectors.

LINE INPUTS, such as synthesizers, guitars, and drum machines, may be connected to the 1/4" LINE IN jacks. some guitars may sound better if they're run through a preamplifier or direct box first.

NOTE

The MIC connector uses the same input circuitry as the LINE IN jack in the same channel. DON'T USE both at the same time. The same is true for the MIC and LINE A IN connection in channels 9-16 of the M-1516 (the LINE B IN is separate).

TAPE RETURNS, the outputs of your multitrack tape recorder, should be connected to the TAPE IN jacks. They are designed for -10 dBV unbalanced tape returns. If you're not using all the tape returns, you can use your "spares" for other high- level line inputs--if you look at the block diagram you'll see the only difference between TAPE and LINE INs is that Line has a Trim and preamplifier.

Outputs to Multitrack

Using good quality cables, connect the GROUP OUTPUT jacks to the same numbered tracks of your multitrack recorder.

In most cases, you will patch the DIRECT OUTPUT of individual channels (such as a lead vocal) to a track, saving the GROUP OUTPUTs for instruments (such as multiple keyboards) that have to be combined.

You can record up to 8 tracks at once (4 GROUP OUTPUTs and 4 DIRECT OUTPUTs).

Control Room and Studio Amplifiers

Connect the MONITOR OUTPUTS jacks to the input of your control room amplifier.

If you plan to have speakers in the studio, connect the DUAL OUTPUTS to their amplifier. The Dual mix is derived pre-EQ, pre-fader and does not be disturbed by these.

During tracking and overdubbing, the STEREO OUTPUTS may be connected to an extra studio speaker. The Stereo mix is not disturbed by PFL or MONITOR source selection.

Mixdown Deck

Connect the STEREO OUTPUTS jacks to the input of the stereo mixdown recorder.

Connect the outputs of the mixdown recorder to the EXT INPUTS jacks.

Effects Devices

In our example, AUX 1 feeds a reverb unit, which has a synthesized stereo output patched into EFFECT RETURNS 1. AUX 2 feeds a chorus device with a stereo output patched into EFFECT RETURNS 2. Since the digital delay is mono, it is connected to EFFECT RETURNS 3. The PAN control can be used to pan the delay to either side of the stereo mix (or between odd-even groups).

If you have a compressor, limiter, or noise gate, it normally is connected to an INSERT jack, using a PW-2Y (2m) or PW-4Y (4 m) insert cable. Don't connect these yet, until you're up and running, because it's only one more set of controls in the signal path that might cause confusion.

Using the Dual as an effect send

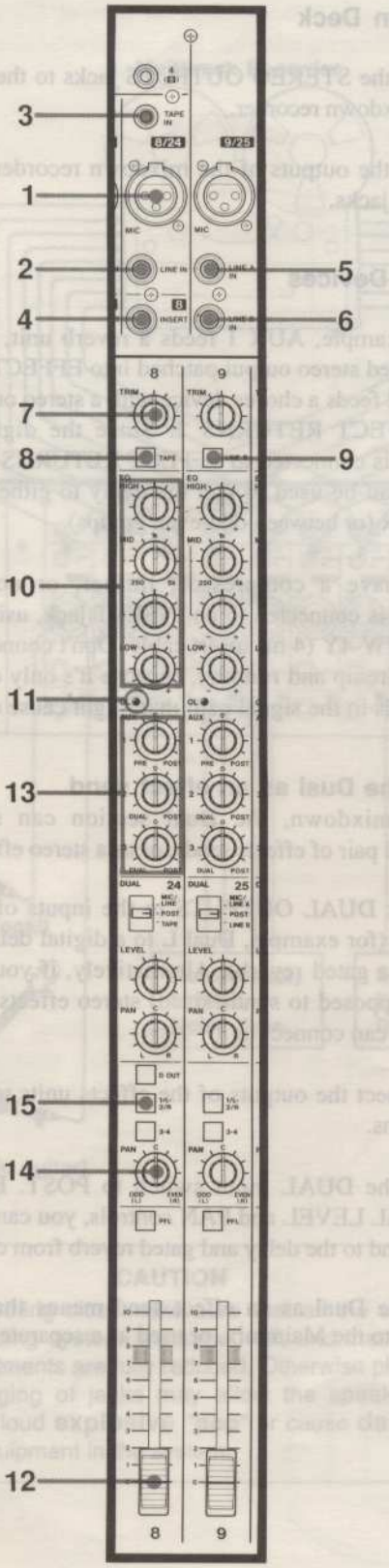
During mixdown, the Dual section can serve as an additional pair of effects sends, or as a stereo effects send.

1. Hook DUAL OUTPUTS to the inputs of two effects units (for example, Dual L to a digital delay, and Dual R to a gated reverb). Alternatively, if you have a true (as opposed to synthesized) stereo effects devices, the Dual can connect to it.

2. Connect the outputs of the effects units to two effects returns.

3. Set the DUAL input switch to POST. By using the DUAL LEVEL and PAN controls, you can set the level of send to the delay and gated reverb from channels 1-8.

Using the Dual as an effect send means that it can't be LINKed to the Main mix, or used as a separate monitor.



INPUT CHANNELS

1. MIC Input

These XLR type connectors are for connection of low-impedance (200 to 600 ohm) balanced microphones.

Pin assignment is : Pin 1 shield (ground), Pin 2 low ("cold") and Pin 3 high ("hot").

2. LINE IN

These 1/4" jacks are primarily intended for unbalanced line-level inputs such as synthesizers. But they also accommodate lower-level balanced signals such as from microphones thanks to their wide range of acceptable input levels (from –7 dBV down to –50 dBV, depending on the setting of the TRIM control).

NOTE

DO NOT USE both the MIC and LINE IN jacks in the same channel at one time. Disconnect one when the other is used.

3. TAPE IN

These RCA jacks are designated for tape inputs (or tape return). The signal normally goes to the Monitor section during tracking and overdubbing, or will be taken into the Dual channel, so it may be used as a stereo effect send or additional monitor.

4. INSERT

The INSERT jack is a three-conductor stereo (TRS) 1/4" phone jack inserted into the input channel signal path between the EQ section and the channel fader, and lets you route the input channel signal through an external signal processor (typically a compressor or equalizer).

If nothing is plugged into this jack it is bypassed and the channel signal goes on normally.

5. LINE A IN (M-1516 only)

These are additional line level inputs and have the same functions as the LINE IN jacks (#2).

NOTE

DO NOT USE both the MIC and LINE A IN jacks in the same channel at one time. Disconnect one when the other is used.

6. LINE B IN (M-1516 only)

These jacks are intended for line level inputs such as synthesizers and audio equipment that does not need preamplification (signal plugged into the LINE B IN jack does not go through TRIM).

The LINE B IN signal may be taken into the Main and the Dual mix, depending on the settings of the LINE B and the DUAL input select switch.

7. TRIM

This sets how much preamplification will be added to the MIC input. The setting also affects the LINE IN signal. The same is also true for the LINE A INputs on the M-1516. Turn to the right if the signal needs amplification ; turn to the left if the signal is so loud it is distorting the mixer electronics.

8. TAPE switch

This selects TAPE IN as the source of the 1-8 individual input channels. If the switch is off, the channel will be getting a signal from the MIC/LINE IN jack. The signal selected here goes on to the EQ section.

9. LINE B switch (M-1516 only)

This selects the LINE IN B jack as the source of the 9/25-16/32 individual channels, sending the signal on to the EQ section. When this switch is off, the channels will be getting a signal from the MIC/LINE A IN jack.

10. Equalizer

The three-band with midrange sweep equalizer allows you to adjust the tonality of the signal going through the Main channel. They get their signal after the TAPE switch (#8) and sent it on to the INSERT jack (#4) and Main input fader (#12).

HIGH : This is a high-frequency equalizer, shelving type, with a hinge point of 10 kHz and boost/cut amount of +/-12 dB.

MID frequency : This control lets you select the specific frequency range you want to affect (centered from 250 Hz to 5 kHz).

MID amount : This controls how much cut or boost is applied to the band chosen by the MID frequency control. Turning to the right amplifies the band, up to a maximum of 15 dB. Turning to the left cuts the band, to a maximum of -15 dB.

LOW : This is a bass shelving control, with a hinge point of 100 Hz and boost/cut amount of +/-12 dB.

11. OL (OverLoad) indicator

This indicator will flash when the signal level in the Main channel (post-EQ, pre-INSERT, pre-fader) is too high (23 dB over nominal level--this is 3 dB before the channel electronics will distort). If it flashes, lower the TRIM or output of the instrument until it stops flashing.

12. Main Channel Fader

This linear slide fader varies the level feeding the PAN control and 1/L-2/R and 3-4 assignment switches, the POST side of AUX 1, 2 and 3, and the POST position of the DUAL input switch (#17).

13. AUX 1, 2 and 3 controls

These control how much signal will go to AUX SEND MASTERS 1- 3.

The AUX 1 knob gets its signal from a point just before (PRE) or after (POST) the Main Channel Fader. Turn it to the right of center to send signal from the POST-fader point. Turn it to the left to send signal from the PRE-fader point. Setting it to the center position (12 o'clock) will turn off signal to the AUX 1 buss.

The AUX 2 and 3 knobs are similar to the AUX 1. But they differ in one important point : when you turn them to the left of center, AUX 2 and 3 will get their signal from a point after the DUAL LEVEL control (#18), and when you turn them to the right of center, they gets signal from the Main channel fader.

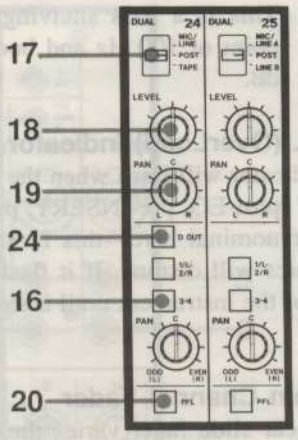
14. PAN pot (Main)

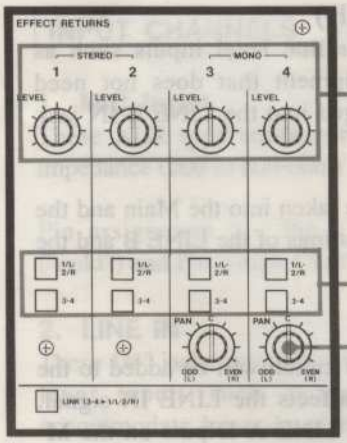
This sends the output of the Main channel in continuously variable degrees to either side of the stereo mix (if the 1/L-2/R assign switch is pressed), or to odd/even numbered group busses (pan left for groups 1 and 3, pan right for groups 2 and 4).

Pan all the way to the left or right to send signal only to either side of the stereo mix.

15. Main Assignment Switch, 1/L-2/R

This sends the output of the Main channel to group outputs 1 and 2 (or to the stereo left and right mix outputs at mixdown time). The amount of signal sent to the 1/L or 2/R mix is determined by the Main PAN control.





16. 3-4

This sends the output of the Main channel to group busses 3 and 4, in continuously variable degrees as controlled by the Main channel PAN.

The signals assigned to groups 1-4 are sent to the GROUP OUTPUT jacks (group 1 to output jacks 1 and 5, group 2 to output jacks 2 and 6, group 3 to output jacks 3 and 7, and group 4 to output jacks 4 and 8 if no D.OUT switch is pressed).

17. DUAL input switch

This determines where the signal of the Dual channel comes from.

The signal selected here is also sent to the AUX Send switches 2 and 3, and to the DUAL switch in the MONITOR switch rack.

The DUAL section is usually used for tape monitoring during tracking and overdubbing, but can also be used for eight (M-1508)/sixteen (M-1516) additional inputs to the Main mix (via the LINK switch (#29), or as a stereo effects send from the Main channels. See also p.9, "Using the Dual as an effect send."

18. DUAL LEVEL control

This controls how much of the signal chosen by the DUAL input switch (#17) goes to the DUAL PAN just below it, and then on to the DUAL MASTER control (#27).

19. DUAL PAN

This sends the output of the DUAL channel in continuously variable degrees to the left or right of the stereo DUAL mix.

20. PFL switch

PFL stands for "Pre-Fader Listen". When pressed, it sends the Main channel's signal (and only that channel's signal if no other PFL switches are pressed) directly to the MONITOR OUTPUTS and PHONES jacks. The master PFL LED (#35) lights, to alert you that PFL is active.

PFL signal comes from the equalizer and insert jack, and are pre-fader.

21. EFFECT RETURNS, LEVEL controls 1-4

These controls adjust how much signal from the four EFFECT RETURN jacks is sent to groups 1-4, or to the Left and Right sides of the final stereo mix at mixdown time.

22. EFFECT RETURNS, assignment switches 1/L-2/R and 3-4

These assign the effect returns to any of the four output group busses, or to the main stereo buss at mixdown time.

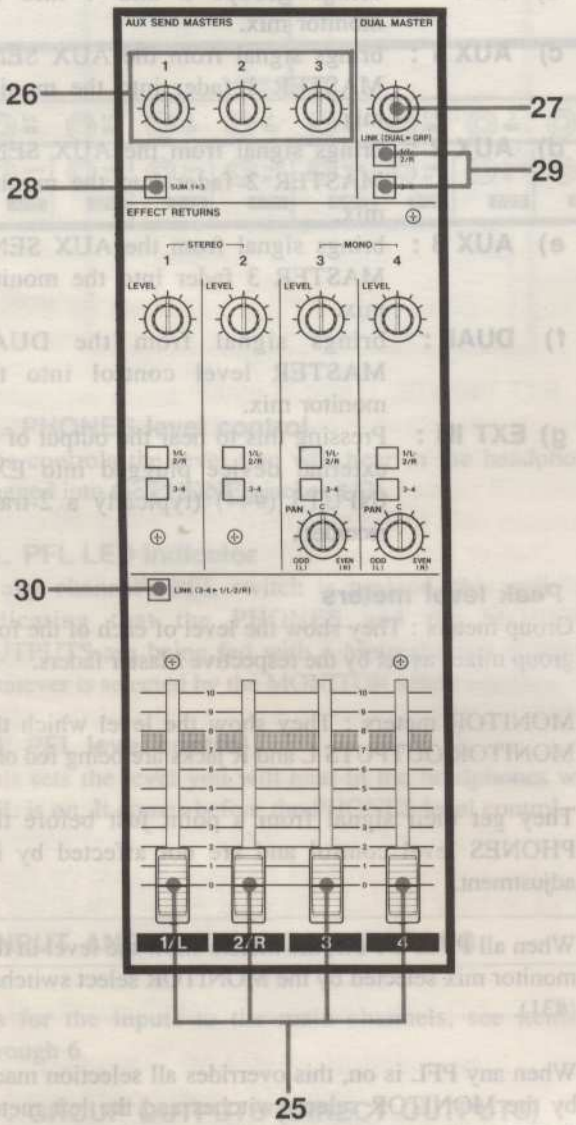
23. EFFECT RETURNS, PAN 3-4

This sends effects returns 3 and 4 in continuously variable degrees to either side of the stereo mix, or to odd/even numbered groups.

EFFECT RETURNS 3 and 4 are MONO, but they may both be combined to make an additional stereo return by turning 3's PAN left and 4's PAN right.

24. D.OUT switch (channels 1-8)

When pressed, this switch allows you to connect the post-fader signal of the Main channel path directly to a recorder track or other devices, without passing through a group buss. When released, this switch gets its signal from the group buss.



MASTER SECTION

25. Group/Stereo Master faders, 1/L, 2/R, 3 and 4

These adjust the total output level of all signals assigned to a group. They get their signal both from the Main Assignment switches (#15 and 16) and Effects Return Assignment switches (#22). They send signal to the GROUP OUTPUT jacks (#37) via the D.OUT switches (#24), or directly to STEREO OUTPUTS (#38).

The Master fader signals are also sent to the Group 1/L-2/R and 3-4 switches (#31) in the MONITOR section.

26. AUX SEND MASTERS 1-3

These are the last overall level controls for the Aux mixes. They get their signal from the AUX control knobs (#13) in the Main channels. The signal then goes to the respective AUX OUTPUT jacks, and to the AUX switches (#31) in the MONITOR section.

27. DUAL MASTER control

This is the master volume control for the DUAL stereo mix. It gets its signal from all DUAL LEVEL and PAN controls (#18 and 19). It sends signal to the DUAL OUTPUTS L and R jacks (#40), and to the DUAL switch (#31) in the MONITOR section.

28. SUM 1+3 switch

This sums or combines the signal going to the AUX SEND MASTER 1 control with the signal going to the AUX SEND MASTER 3 control. The main application is when you want to send signal from both the Main and DUAL channels to the same effects unit. The SUM takes place before (pre) the AUX SEND MASTERS.

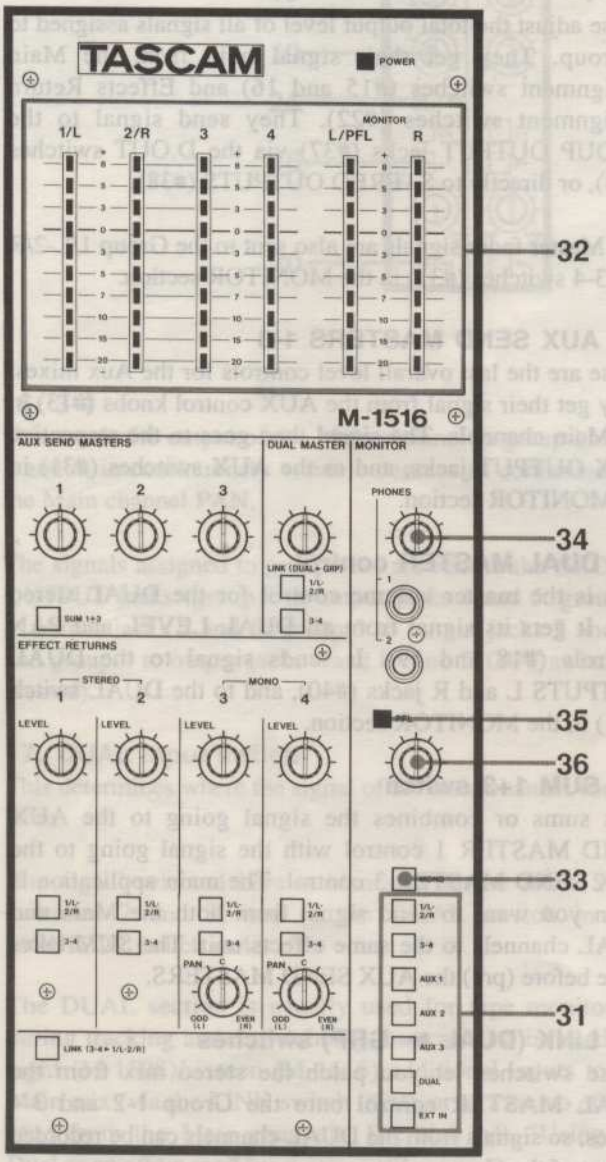
29. LINK (DUAL ► GRP) switches

These switches let you patch the stereo mix from the DUAL MASTER control onto the Group 1-2 and 3-4 Mixes, so signals from the DUAL channels can be recorded as part of the Group mixes or as a separate mix.

The left side of the Dual mix will go to the Master 1/L and 3 faders, and the right side of the Dual mix will go to the Master 2/R and 4 faders.

30. LINK (3-4 ► 1/L-2/R) switch

This lets you add Group mixes 3 and 4 into the Main Stereo mix, so they can be mixed down to an external two track.



MONITOR SECTION

This section controls what you hear in your headphones or monitor speakers, and what the meters show.

31. MONITOR select switches

a) **1/L-2/R :** This is an on-off switch that brings the groups 1 and 2 (or stereo L and R mixes) into the monitor mix.

b) **3-4 :** brings groups 3 and 4 into the monitor mix.

c) **AUX 1 :** brings signal from the AUX SEND MASTER 1 fader into the monitor mix.

d) **AUX 2 :** brings signal from the AUX SEND MASTER 2 fader into the monitor mix.

e) **AUX 3 :** brings signal from the AUX SEND MASTER 3 fader into the monitor mix.

f) **DUAL :** brings signal from the DUAL MASTER level control into the monitor mix.

g) **EXT IN :** Pressing this to hear the output of an external device plugged into EXT INPUTS (#44) (typically a 2-track recorder).

32. Peak level meters

a) Group meters : They show the level of each of the four group mixes as set by the respective Master faders.

b) MONITOR meters : They show the level which the MONITOR OUTPUTS L and R jacks are being fed on.

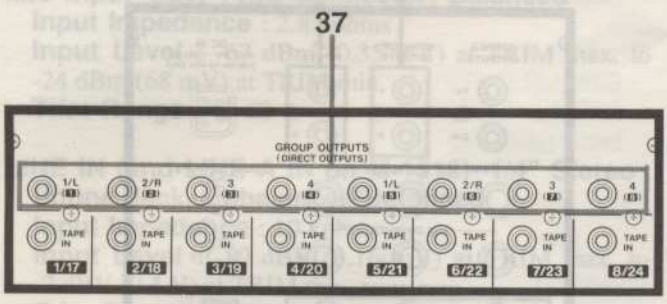
They get their signal from a point just before the PHONES level control and are not affected by its adjustment.

When all PFLs are off, the meters show the level in the monitor mix selected by the MONITOR select switches (#31).

When any PFL is on, this overrides all selection made by the MONITOR select switches and the left meter (L/PFL) displays the pre-fader, post-EQ level of a channel.

33. MONO switch

This makes the stereo mix into a mono mix. There are two main applications for it. During overdubbing, many performers play better when they're listening in mono ; in final mixdown, the engineer can use the MONO switch to check how the mix will sound when played back on a mono system.



34. PHONES level control

This controls the level you will hear in the headphones plugged into the PHONES jacks (#42).

35. PFL LED indicator

If any channel's PFL switch is pressed, this will light indicating that the PHONES and the MONITOR OUTPUTS are being fed with a Main channel instead of whatever is selected by the MONITOR select switches.

36. PFL level control

This sets the level you will hear in the headphones when PFL is on. It comes before the PHONES level control.

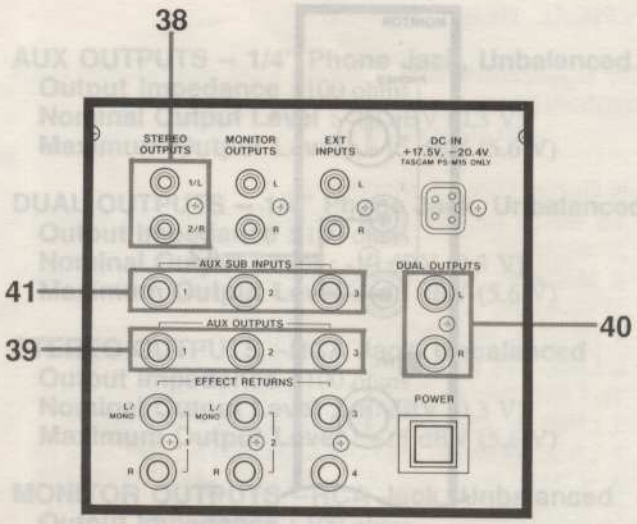
INPUT AND OUTPUT CONNECTORS

As for the inputs to the main channels, see items #1 through 6.

37. GROUP OUTPUTS (DIRECT OUTPUTS)

These 8 jacks have double function as the label shows. Which of the two functions is active depends on the settings of the D.OUT switch.

As the GROUP OUTPUT jacks, these carry input channel signals assigned to groups 1-4 and passed through each Master fader. The group 1 mix is sent out from GROUP OUTPUTS 1 and 5, the group 2 mix from GROUP OUTPUTS 2 and 6, the group 3 mix from GROUP OUTPUTS 3 and 7, and the group 4 mix from GROUP OUTPUTS 4 and 8. The GROUP OUTPUTS are typically connected to the unbalanced inputs of an multitrack recorder.



As the DIRECT OUTPUT jacks, these allow you to connect the post-fader signal of the 1-8 input channels directly to recorder tracks, or to an external mixer for an additional cue mix or effects sends.

Connecting to these jacks don't interrupt or change the signal flow through the mixer in any way.

38. STEREO OUTPUTS 1/L and 2/R

These unbalanced RCA jacks are typically connected to a mixdown deck with −10 dBV nominal input level.

39. AUX OUTPUTS 1-3

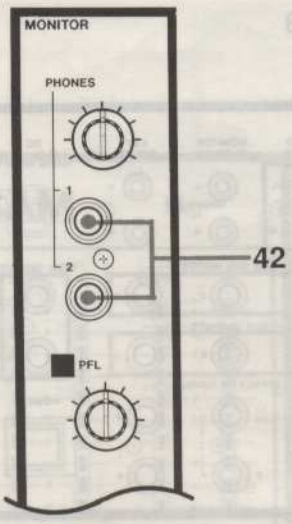
These are the output connectors for the three Auxiliary mix outputs of the mixer. Signal comes here directly from the AUX SEND MASTER controls. They are typically connected to the inputs of external devices such as reverbs, digital delays, etc. Auxes may also be used to feed a separate headphones (cue) mix.

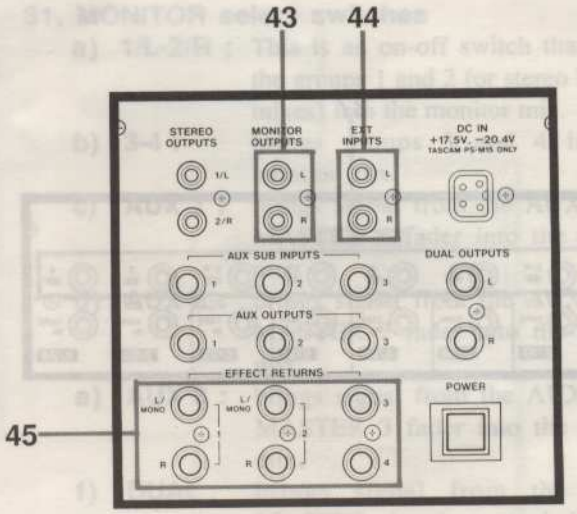
40. DUAL OUTPUTS L and R

Signal comes here directly from the DUAL MASTER level control. Connect here if you want to use the DUAL as a stereo effects send or additional monitor.

41. AUX SUB INPUTS 1-3

These unbalanced 1/4" jacks connect directly to the Aux busses. This allows effects send signal from an external mixer to be controlled by the AUX SEND MASTER faders of the M-1516/1508.





42. PHONES 1 and 2 jacks

For connection to any stereo headphones (with a 1/4" TRS 3- conductor plug) with an impedance of 8 ohms. They get signal from the MONITOR select switches, unless a PFL is pressed. If any PFL switch is pressed and the PFL LED lights, the headphone signal will come from that PFL switch.

43. MONITOR OUTPUTS, L and R jacks

This is the connection point to your control room monitor amplifier ; it's a line level version of the same signal that feeds the PHONES jacks. Signal comes here from the MONITOR select switches.

44. EXT INPUTS, L and R jacks

These provides a route from an external source (typically a −10 dBV level mastering recorder) directly to the MONITOR select EXT IN switch. Note that the EXT IN source can only feed the MONITOR buss (not the Group, Aux, Dual or Stereo busses), it is not used for any source you wish to mix together with other signals.

45. EFFECT RETURNS

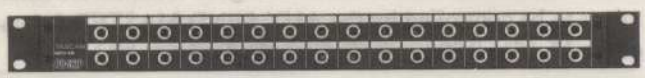
These jacks send signal directly to the corresponding EFFECT RETURNS LEVEL controls. Connect the output of your effects devices to these jacks, although you can connect any other line-level input if desired.

If a signal is plugged into the L/MONO jack of returns 1 and 2, but nothing is plugged into their R jack, the signal will go to both the odd and even groups (or L and R mixes).

Optional Accessories

RM-1508 Rack Mount Adaptor Kit (for the M-1508 only)

PB-32 Series Patch Bays



PW-2Y (2m)/PW-4Y (4m) Insertion Cable

Specifications

ELECTRONICS

MIC Input--XLR Type Connector, Balanced
Input Impedance : 2.8 kohms
Input Level : -67 dBm (0.35 mV) at TRIM max. to -24 dBm (68 mV) at TRIM min.
Trim Range : 43 dB

LINE IN (and LINE A IN on M-1516)--1/4" Stereo Phone Jack, Unbalanced/Balanced
Input Impedance : 10 kohms
Input Level : -50 dBV (3.16 mV) at TRIM max. to -7 dBV (0.4 V) at TRIM min.
Trim Range : 43 dB

LINE B IN (M-1516)-- 1/4" Phone Jack, Unbalanced
Input Impedance : 20 kohms
Nominal Input Level : -10 dBV (0.3 V)
Maximum Input Level: +15 dBV (5.6 V)

TAPE IN -- RCA Jack, Unbalanced
Input Impedance : 20 kohms
Nominal Input Level : -10 dBV (0.3 V)
Maximum Input Level : +15 dBV (5.6 V)

INSERT -- 1/4" Stereo Phone jack, Unbalanced
Output Impedance : 100 ohms
Nominal Output Level : -10 dBV (0.3 V)
Maximum Output level : +15 dBV (5.6 V)
Input Impedance : 47 kohms
Nominal Input Level : -10 dBV (0.3 V)
Maximum Input Level : +15 dBV (5.6 V)

GROUP OUTPUTS (DIRECT OUTPUTS) -- RCA Jack, Unbalanced
Output Impedance : 100 ohms
Nominal Output Level : -10 dBV (0.3 V)
Maximum Output Level : +15 dBV (5.6 V)

EXT INPUTS -- RCA Jack, Unbalanced
Input Impedance : 22 kohms
Nominal Input Level : -10 dBV (0.3 V)
Maximum Input Level : +15 dBV (5.6 V)

EFFECT RETURNS -- 1/4" Phone jack, Unbalanced
Input Impedance : 20 kohms
Nominal Input Level : -10 dBV (0.3 V)
Minimum Input Level : -20 dBV (0.1 V)

AUX SUB INPUTS -- 1/4" Phone Jack, Unbalanced
Input Impedance : 22 kohms
Nominal Input Level : -10 dBV (0.3 V)
Minimum Input Level : -20 dBV (0.1 V)

AUX OUTPUTS -- 1/4" Phone Jack, Unbalanced
Output Impedance : 100 ohms
Nominal Output Level : -10 dBV (0.3 V)
Maximum Output Level : +15 dBV (5.6 V)

DUAL OUTPUTS -- 1/4" Phone Jack, Unbalanced
Output Impedance : 100 ohms
Nominal Output Level : -10 dBV (0.3 V)
Maximum Output Level : +15 dBV (5.6 V)

STEREO OUTPUTS --RCA Jack, Unbalanced
Output Impedance : 100 ohms
Nominal Output Level : -10 dBV (0.3 V)
Maximum Output Level : +15 dBV (5.6 V)

MONITOR OUTPUTS --RCA Jack, Unbalanced
Output Impedance : 100 ohms
Nominal Output Level : -10 dBV (0.3 V)
Maximum Output Level : +15 dBV (5.6 V)

PHONES -- 1/4" Stereo Phone, Unbalanced
Nominal Load Impedance : 8 ohms x 2
Maximum Output Level : 100 mW + 100 mW

Equalizer
HIGH : 10 kHz, +/-12 dB
MID : 250 Hz to 5 kHz sweepable, +/-15 dB
LOW : 100 Hz, +/-12 dB

OL (OverLoad) Indicator
Flashing Level : 23 dB over nominal level

Level Meter
Type : 10-dot LED meter x 6

Fader Attenuation : 80 dB or more (at 1 kHz)

Power Requirements
USA/CANADA : 120 V AC, 60 Hz
EUROPE : 230 V AC, 50 Hz
U.K./AUSTRALIA : 240 V AC, 50 Hz
General Export : 100/120/220/240 V AC, 50/60 Hz

Power Consumption
M-1516 : 31 W
M-1508 : 23 W

TYPICAL PERFORMACE

Mic Equivalent Input Noise (150 ohm source) (DIN AUDIO/IHF A):
-129 dB/-130 dB

S/N Ratio (DIN AUDIO/IHF A)
16 MICs to GROUP OUTPUT (150 ohm source) : 55 dB/58 dB
8 MICs to GROUP OUTPUT (150 ohm source): 58 dB/61 dB
1 LINE IN to GROUP OUTPUT : 80 dB/82 dB
8 LINE INs to GROUP OUTPUT : 72 dB/75 dB
16 LINE INs to GROUP OUTPUT : 69 dB/72 dB
1 LINE IN to AUX OUTPUTS : 74 dB/77 dB
1 LINE IN to MONITOR OUTPUTS : 79 dB/82 dB
8 LINE INs (DUAL) to DUAL OUTPUTS : 72 dB/75 dB
16 LINE INs (DUAL) to DUAL OUTPUTS : 69 dB/72 dB
Headphones : 72 dB/75 dB

Total Harmonic Distortion (THD)
1 MIC IN to GROUP OUTPUT : 0.025 % or less (at 1 kHz)
1 LINE IN to GROUP OUTPUT : 0.025% or less (at 1 kHz)

Frequency Response (at nominal input/output level)
MIC IN to GROUP OUTPUT : 20 Hz to 20 kHz, +0.5 dB/-2 dB
LINE IN to GROUP OUTPUT : 20 Hz to 20 kHz, +0.5 dB/-2 dB
Headphones : 50 Hz to 20 kHz, +0.5 dB/-4 dB

Crosstalk
GROUP OUTPUT : 65 dB or better (at 1 kHz)
DUAL, AUX, MONITOR OUTPUTS : 60 dB or better (at 1 kHz)

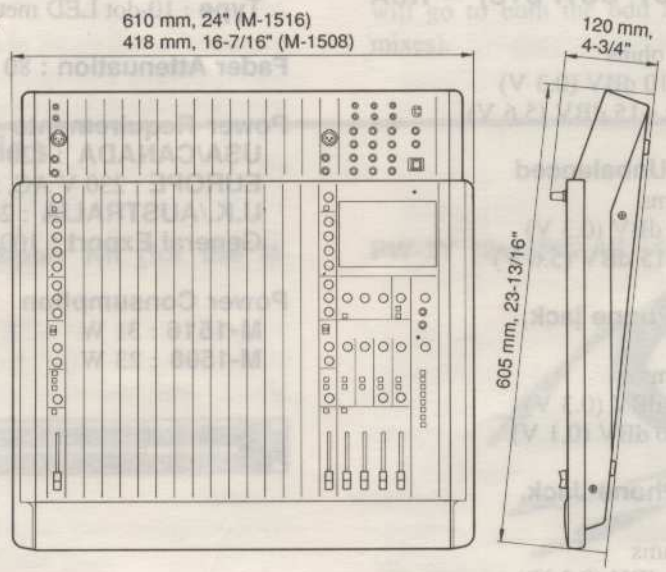
Click Noise : -35 dB or less

OTHERS

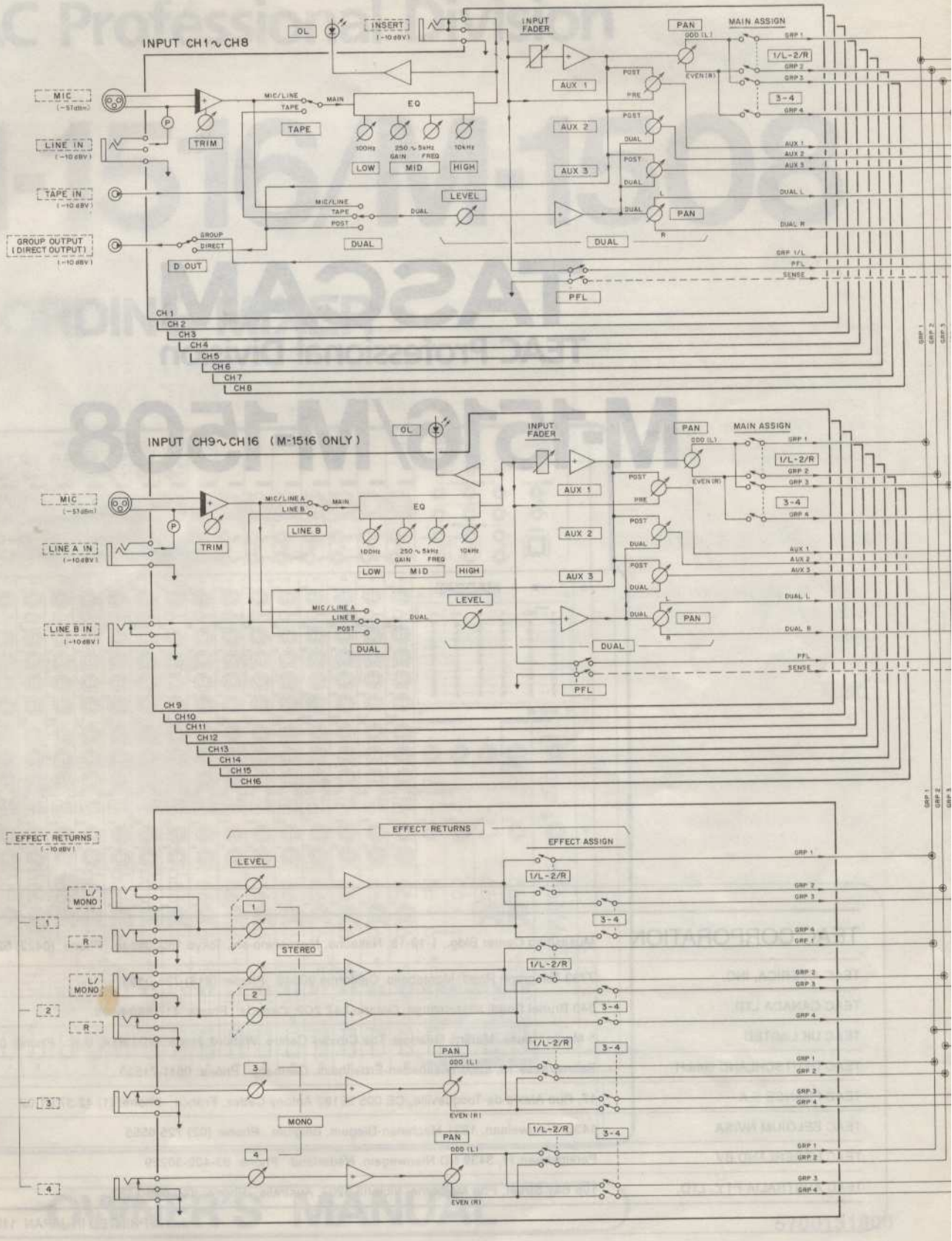
Dimensions (WxHxD)
M-1516 : 610 mm x 120 mm x 605 mm (24" x 4-3/4" x 23-13/16"))
M-1508 : 418 mm x 120 mm x 605 mm (16-7/16" x 4-3/4" x 23-13/16")
Weight
M-1516 : 9 kg (19-13/16" lbs)
M-1508 : 6 kg (13-4/16" lbs)

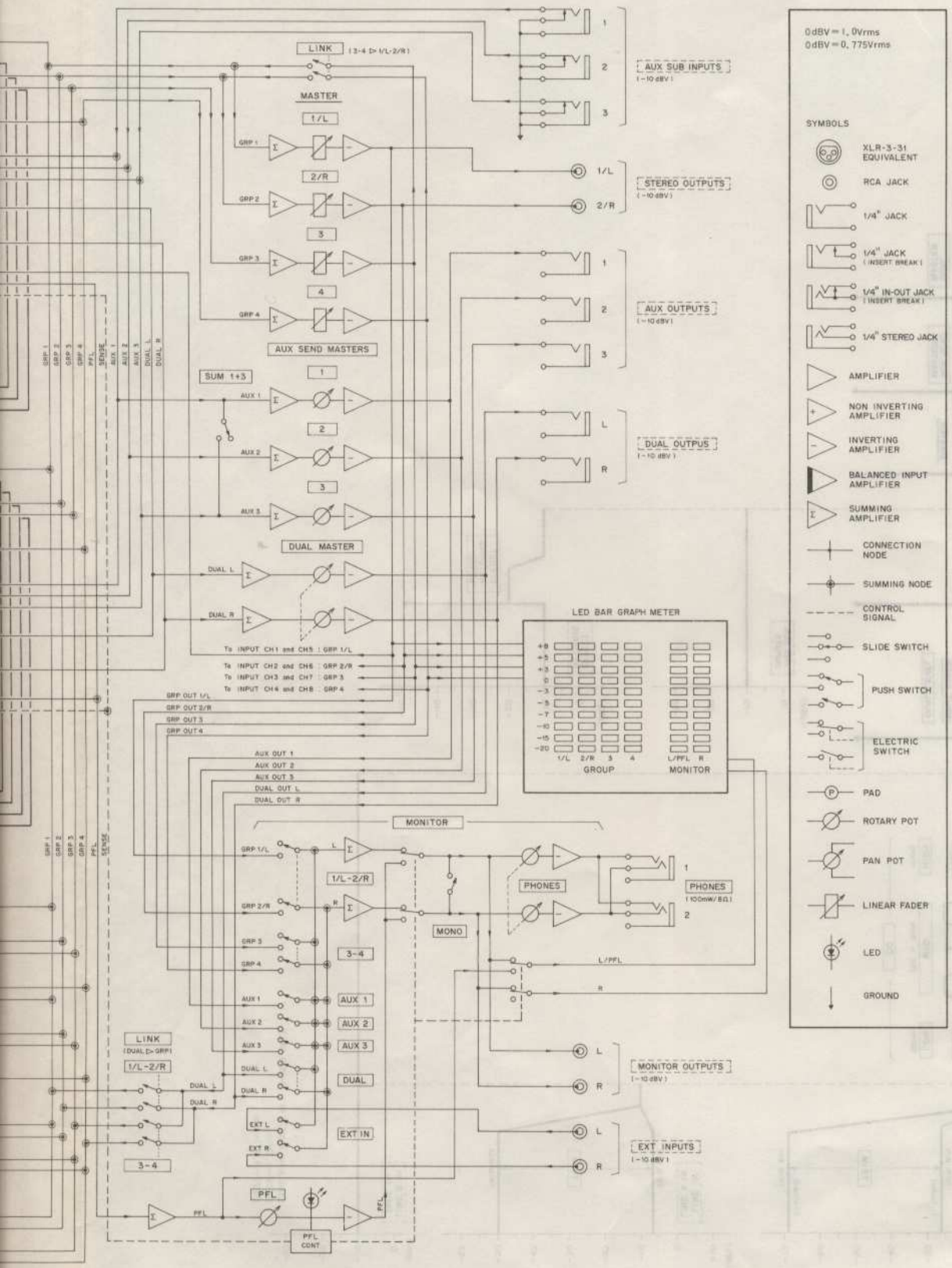
In these specifications : 0 dBV=1 V, 0 dBu=0.775 V, -10 dBV=0.316 V (rounded to 0.3 V).

Changes in specifications and features may be made without notice or obligation.



Block Diagram




LINK
MASTER
1/L
2/R
3
4
GRP 1
GRP 2
GRP 3
GRP 4
AUX SEND MASTERS
SUM 1+3
AUX 1
AUX 2
AUX 3
DUAL MASTER
DUAL L
DUAL R
AUX SUB INPUTS
STEREO OUTPUTS
AUX OUTPUTS
DUAL OUTPUS
LED BAR GRAPH METER
GROUP
MONITOR
MONITOR
1/L-2/R
3-4
PHONES
MONO
L/PFL
MONITOR OUTPUTS
EXT INPUTS
EXT IN
PFL
PFL CONT
SYMBOLS
XLR-3-31 EQUIVALENT
RCA JACK
1/4" JACK
1/4" STEREO JACK
AMPLIFIER
NON INVERTING AMPLIFIER
INVERTING AMPLIFIER
BALANCED INPUT AMPLIFIER
SUMMING AMPLIFIER
CONNECTION NODE
SUMMING NODE
CONTROL SIGNAL
SLIDE SWITCH
PUSH SWITCH
ELECTRIC SWITCH
PAD
ROTARY POT
PAN POT
LINEAR FADER
LED
GROUND

TASCAM
TEAC Professional Division
M-1516/M-1508

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