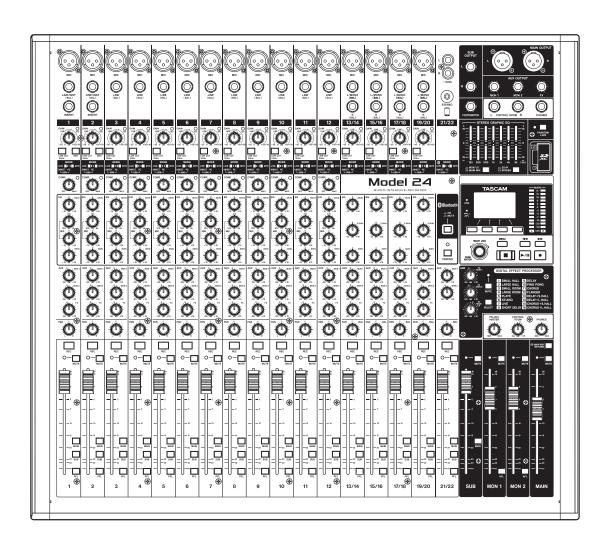
TASCAM

Model 24

Analog Mixer

取扱説明書



Precautions for safe use



警告

以下の内容を無視して誤った取り扱いをすると、人が死亡または重傷を負う可能性が想定される内容を示しています。



万一、異常が起きたら

煙が出た、変なにおいや音がするときは 機器の内部に異物や水などが入ったときは

電源プラグ をコンセン トから抜く **この機器を落とした、カバーを破損したときは** すぐに機器本体の電源スイッチを切り、必ず電源プラグをコンセントから抜いてください。

異常状態のまま使用すると、火災・感電の原因となります。

販売店またはティアック修理センター(巻末に記載)に修理をご依頼ください。



電源プラグにほこりをためない

電源プラグとコンセントの周りにゴミやほこりが付着すると、火災・感電の原因となります。 定期的 (年1回くらい) に電源プラグを抜いて、乾いた布でゴミやほこりを取り除いてください。

指示

電源コードを傷つけない

電源コードの上に重い物を載せたり、コードを壁や棚との間に挟み込んだり、本機の下敷きにしない 電源コードを加工したり、無理に曲げたり、ねじったり、引っ張ったり、熱器具に近付けて加熱したりし ない

コードが傷んだまま使用すると火災・感電の原因となります。

万一、電源コードが破損したら(芯線の露出、断線など)、販売店またはティアック修理センター(巻末に記載)に交換をご依頼ください。

付属の電源コードを他の機器に使用しない

故障、火災、感電の原因となります。



禁止

交流100ボルト以外の電圧で使用しない

この機器を使用できるのは日本国内のみです。表示された電源電圧(交流100ボルト)以外の電圧で使用しないでください。また、船舶などの直流(DC)電源には接続しないでください。火災・感電の原因となります。

この機器を設置する場合は、放熱をよくするために、壁や他の機器との間は少し(20cm以上)離して 設置する

ラックなどに入れるときは、機器の天面から1U以上、背面から10cm以上の隙間を空ける隙間を空けないと内部に熱がこもり、火災の原因となります。

この機器の通風孔などから内部に金属類や燃えやすい物などを差し込む、または落とさない 火災・感電の原因となります。

この機器の通風孔をふさがない

通風孔をふさぐと内部に熱がこもり、火災の原因となります。



機器の上に花びんや水などが入った容器を置かない

内部に水が入ると火災・感電の原因となります。



この機器のカバーは絶対に外さない



カバーを外す、または改造すると、火災・感電の原因となります。 内部の点検・修理は販売店またはティアック修理センター(巻末に記載)にご依頼ください。

分解禁止 この機器を改造しない

火災・感電の原因となります。



イヤホンやヘッドホンからの過度の音圧は、聴覚障害の原因となります。聴覚障害の可能性を防ぐために、長時間、高音量で聴かないでください。

注意



注意

以下の内容を無視して誤った取り扱いをすると、人が傷害を負う可能性が想定される 内容および物的損害のみの発生が想定される内容を示しています。



移動させる場合は、電源のスイッチを切るか、またはスタンバイにし、必ず電源プラグをコンセントから抜き、外部の接続コードを外す

コードが傷つき、火災・感電の原因や、引っ掛けてけがの原因になることがあります。

電源プラグ をコンセン トから抜く

旅行などで長期間この機器を使用しないときやお手入れの際は、安全のため必ず電源プラグをコンセントから抜く

通電状態の放置やお手入れは、漏電や感電の原因となることがあります。

オーディオ機器を接続する場合は、各々の機器の取扱説明書をよく読み、電源を切り、説明にしたがって接続する

また、接続は指定のコードを使用する



電源を入れる前には、音量を最小にする

突然大きな音が出て、聴力障害などの原因となることがあります。

指示

この機器はコンセントの近くに設置し、電源プラグは簡単に手が届くようにする

異常が起きた場合は、すぐに電源プラグをコンセントから抜いて、完全に電源が切れるようにしてください。

この機器には、付属の電源コードを使用する

それ以外の物を使用すると、故障、火災、感電の原因となります。



ぐらついた台の上や傾いた所など不安定な場所に置かない 湿気やほこりの多い場所に置かない。風呂、シャワー室では使用しない 調理台や加湿器のそばなど油煙や湯気が当たる場所に置かない 火災・感電やけがの原因となることがあります。

禁止

電源プラグを抜くときは、電源コードを引っ張らない コードが傷つき、火災・感電の原因となることがあります。 必ずプラグを持って抜いてください。



濡れた手で電源プラグを抜き差ししない 感電の原因となることがあります。

禁止



注意

5年に1度は、機器内部の掃除を販売店またはティアック修理センター(巻末に記載)にご相談ください。 内部にほこりがたまったまま、長い間掃除をしないと火災や故障の原因となることがあります。特に、 湿気の多くなる梅雨期の前に行うと、より効果的です。なお、掃除費用については、ご相談ください。

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1 - Introduction

Thank you very much for purchasing the TASCAM Model 24 Analog Mixer.

Before using this unit, read this Owner's Manual carefully so that you will be able to use it correctly and enjoy working with it for many years. After you have finished reading this manual, please keep it in a safe place for future reference. You can also download this Owner's Manual and the Reference Manual from the TEAC Global Site (http://teac-global.com/).

Features

- 22 input analog mixer with 22 line and 16 mic inputs
- Multitrack recording and playback with 24-track recording (22 input channels and MAIN MIX L/R bus)
- USB audio interface functions built-in
 - 24 tracks (22 input channels and MAIN MIX L/R bus) can be input to the computer
 - 22 track outputs and computer outputs can be assigned to channel inputs
 - Supports USB 2.0 at up to 48kHz and 24-bit
- Compressors included on channel 1-12 inputs
- 100mm faders enable precise adjustments
- High impedance (Hi-Z) inputs on channels 1-2
- Channel inserts (INSERT) on channels 1-2
- Multiple buses include stereo main (MAIN MIX L/R bus), sub (SUB L/R bus) and monitor (MONITOR OUT 1/2)
- 3 AUX sends (MON 1/MON 2/FX)
- Input channels have 3-band semi-parametric EQs with adjustable mid frequencies
- Outputs have a 7-band stereo graphic EQs useful for adjusting the mix
- 16 TASCAM preset effects can be used for a variety of applications
- Multitrack recording and playback possible using SD cards
- Bluetooth® audio playback supported
- Punching in and out supported per track (including punching in and out automatically and with footswitches)
- SD/SDHC cards and SDXC cards up to 128GB supported

Included items

This product includes the following items.

Take care when opening the package to avoid damaging the items. Keep the box and packing materials for transportation in the future.

Please contact the store where you purchased this unit if any of these items are missing or have been damaged during transportation.

- Main unit.....x 1
- Power cord.....x1
- Owner's Manual (this document) including warranty.....×1

Conventions used in this manual

In this manual, we use the following conventions:

- When we refer to a button or connector or control on the DR-40, the typeface looks like this: MENU.
- When we show characters that appear on the display, the typeface looks like this: MENU.
- The four buttons under the display are called the function buttons. From left to right, they are shown as buttons F1, F2, F3 and F4. Moreover the functions show at the bottoms of the screens will be shown in parentheses after the button names.

Examples: F1 METR button, F4 FX button

- SD/SDHC/SDXC memory cards are referred to as "SD cards".
- Computers, portable audio devices and other equipment connected to this unit using Bluetooth are called "Bluetooth devices".
- The song that is currently selected is called the "current song".
- Additional information is introduced in the styles below when needed:

TIP

We give hints and tips on using the DR-40 when you see this icon.

NOTE

These provide additional explanations and describe special cases.

CAUTION

Failure to follow these instructions could result in damage to equipment or lost data, for example.

⚠ CAUTION

Failure to follow these instructions could result in injury.

Trademarks

- TASCAM is a registered trademark of TEAC Corporation.
- SDXC Logo is a trademark of SD-3C, LLC.



- The Bluetooth® word mark and logo are the property of Bluetooth SIG, Inc. and are used by TEAC Corporation with permission.
- Supply of this product does not convey a license nor imply any right to distribute MPEG Layer-3 compliant content created with this product in revenue-generating broadcast systems (terrestrial, satellite, cable and/or other distribution channels), streaming applications (via Internet, intranets and/or other networks), other content distribution systems (pay-audio or audio-on-demand applications and the like) or on physical media (compact discs, digital versatile discs, semiconductor chips, hard drives, memory cards and the like). An independent license for such use is required. For details, please visit http://mp3licensing. com.
- Other company names, product names and logos in this document are the trademarks or registered trademarks of their respective owners.

Information is given about products in this manual only for the purpose of example and does not indicate any guarantees against infringements of third-party intellectual property rights and other rights related to them. TEAC Corporation will bear no responsibility for infringements on third-party intellectual property rights or other liabilities that occur as a result of the use of this product.

Properties copyrighted by third parties cannot be used for any purpose other than personal enjoyment and the like without the permission of the right holders recognized by copyright law. Always use this equipment properly.

TEAC Corporation will bear no responsibility for rights infringements committed by users of this product.

Precautions for placement and use

- The operating temperature range of this unit is 5–35 °C.
- Do not install this unit in the following types of locations. Doing so could make the sound quality worse or cause malfunction.

Locations with frequent vibrations

Next to a window or in another location exposed to direct sunliaht

Near heating equipment or in other locations that become very hot

Extremely cold places

Places with bad ventilation or high humidity

Very dusty places

- To enable good heat dissipation, do not place anything on top of the
- Do not place this unit on top of a power amplifier or other device that generates heat.

Notes about power supplies

- Insert the included power cord all the way into the AC IN connector.
- Do not connect a power supply other than one that is AC100V (50-60Hz).
- Hold the power cord by its plug when connecting or disconnecting it.

Beware of condensation

Condensation could occur if the unit is moved from a cold place to a warm place, it is used immediately after a cold room has been heated or it is otherwise exposed to a sudden temperature change. To prevent this, or if this occurs, let the unit sit for one or two hours at the new room temperature before using it.

Cleaning the unit

Use a dry soft cloth to wipe the unit clean. Do not wipe with chemical cleaning cloths, thinner, alcohol or other chemical agents. Doing so could damage the surface or cause discoloration.

1 - Introduction

About SD cards

This unit uses SD cards for recording and playback.

A list of SD cards that have been confirmed for use with this unit can be found on our web site. Please access to a product page of this product from the TEAC Global Site (http://teac-global.com) to find the list or contact the TASCAM customer support service. Please view the page for this model. You can also contact TASCAM customer support.

Precautions for use

SD cards are delicate media.

In order to avoid damaging SD cards, please take the following precautions when handling them.

- Do not leave them in extremely hot or cold places.
- Do not leave them in extremely humid places.
- Do not let them get wet.
- Do not put things on top of them or twist them.
- Do not hit them.
- Do not remove or insert them during recording, playback, data transmission or other access.
- When transporting them, put them into cases, for example.

SD card write protection

This unit writes track information to the media in order to improve operation performance. Since track information cannot be written to SD cards that are write-protected, the amount of time needed to read media will become longer, for example.

Note about formatting

SD cards formatted by this unit are optimized to improve performance during recording. Use this unit to format the SD cards to be used with it. Errors might occur when recording with this unit using an SD card formatted by a computer or other device.

Notes about power supplies

- 本機は電波法に基づく小電力データ通信システム無線局設備として技術基準適合証明を受けています。したがって、本機を使用するときに無線局の免許は必要ありません。ただし、以下の事項を行うと、法律で罰せられることがあります。
 - 分解/改造すること
 - 本機に貼ってある証明ラベルをはがすこと



本機は、2.4GHz帯を使用します。

変調方式としてFH-SS変調方式を採用し与干渉距離は10mです。 本製品は、日本国内でのみご使用ください。

● 本機は電波を使用しているため、第三者が故意または偶然に傍受することが考えられます。

重要な通信や人命にかかわる通信には使用しないでください。 通信時に、データや情報の漏洩が発生しても責任を負いかねます。 あらかじめご了承ください。

Only use this in an emergency.

再生音が途切れたり、ノイズが出る場合があります。

- 2.4GHz用周波数帯域を利用する,無線LAN,電子レンジ,デジタ ルコードレス電話, Bluetooth などの機器の近く。電波が干渉し て音が途切れることがあります。
- ラジオ, テレビ, ビデオ機器, BS/CSチューナーなどのアンテナ入 力端子を持つAV機器の近く。 音声や映像にノイズがのることが あります。

本機使用上の注意

本機の使用周波数は2.4GHz 帯です。 この周波数帯では電子レンジ等の産業・科学・医療用機器のほか,免許を要する工場の製造ラインで使用されている移動体識別用の構内無線局,免許を要しない特定小電力無線局や免許を要するアマチュア無線局などが運用されています。

他の機器との干渉を防止するために、以下の点に十分ご注意いただきご使用ください。

- ◆ 本機を使用する前に、近くで他の無線局が運用されていないことを確認してください。
- 万一,本機と他の無線局との間に電波干渉が発生した場合には、速やかに本機の使用場所を変えるか、使用を停止してください。
- 不明な点その他にお困りのことが起きたときは、お買い上げの 販売店またはタスカムカスタマーサポート(巻末に記載)へお 問い合わせください。

Bluetooth[®]

This unit has a built-in Bluetooth audio receiver, and can output sound played on a computer or portable audio device that supports Bluetooth (Bluetooth device).

CAUTION

The Bluetooth function of this unit is not guaranteed to enable connection or operation with all Bluetooth devices.

Profiles

This unit supports the following Bluetooth profiles.

A2DP Advanced Audio Distribution Profile

In order to transfer audio by Bluetooth, the Bluetooth device must support A2DP.

Even if a Bluetooth device supports the same profiles, though, its functions might differ according to its specifications.

Codecs

This unit supports the following codecs. It will automatically select one of them during audio transfer.

- SBC
- AAC

The unit will select the appropriate codec to use according to the codec compatibility of the other Bluetooth device and communication conditions.

NOTE

- You cannot select the codec to be used by pressing a button, for example.
- Due to characteristics of Bluetooth wireless technology, playback from a Bluetooth device will be slightly delayed compared to playback from this unit.

Content protection

This unit supports SCMS-T as a form of content protection when transmitting audio, so it can play protected audio.

Transmission security

This unit supports security functions during Bluetooth transmission in accordance with the Bluetooth standard specifications, but it does not guarantee the privacy of such transmissions.

TEAC CORPORATION will bear no responsibility should an information leak occur during transmission by Bluetooth.

User registration

Customers in the USA, please visit the TASCAM website (http://tascam.com/) to register as a user online.

https://tascam.jp/jp/login

アフターサービス

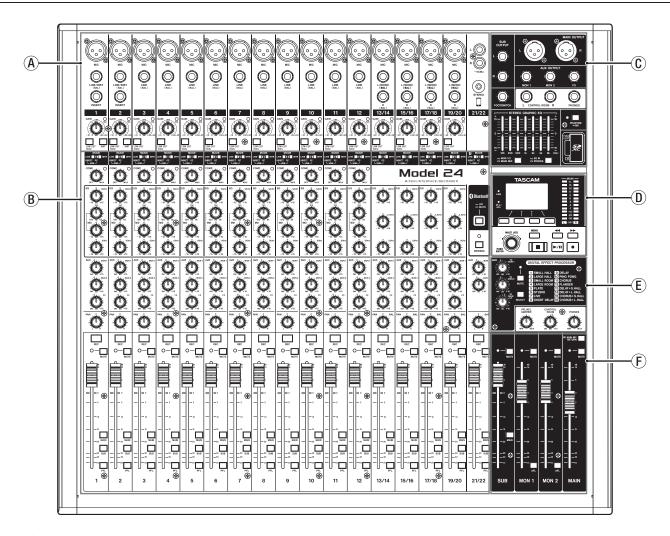
- この製品には、保証書が添付(巻末に記載)されています。 大切に保管してください。 万が一販売店の捺印やご購入日の記載がない場合は、無料修理保証の対象外になりますので、ご購入時のレシートなどご購入店・ご購入日が確認できる物を一緒に保管してください。
- 保証期間は、お買い上げの日より1年です。 保証期間中は、記載内容によりティアック修理センター(巻末に記載)が無償修理致します。 For details about each operation mode, see .
- 保証期間経過後,または保証書を提示されない場合の修理などについては,お買い上げの販売店またはティアック修理センター(巻末に記載)にご相談ください。修理によって機能を維持できる場合は,お客様のご要望により有料修理致します。
- 万一,故障が発生した場合は使用を中止し,必ず電源プラグをコンセントから抜いて,お買い上げの販売店またはティアック修理センター(巻末に記載)までご連絡ください。修理を依頼される場合は,次の内容をお知らせください。

なお、本機の故障、もしくは不具合により発生した付随的損害 (録音内容などの補償) の責については、ご容赦ください。

本機を使ったシステム内の記録メディアなどの記憶内容を消失した場合の修復に関しては、補償を含めて当社は責任を負いかねます。

- 型名,型番(Model 24)
- 製造番号 (Serial No.)
- 故障の症状(できるだけ詳しく)
- お買い上げの年月日
- お買い上げの販売店名
- む問い合わせ先については,巻末をご参照ください。
- 本機を廃棄する場合に必要となる収集費などの費用は、お客様の で負担になります。

Top panel



a Analog input jack section

Use this section to connect the input jacks for each channel and to adjust the input levels.

b Input channel mixing section

Use this section to choose input sources for each channel, adjust compressors and equalizers, and set levels sent to each bus (MAIN MIX L/R, PFL/AFL L/R, MONITOR OUT 1/2, FX, SUB L/R).

c Analog output jack section

Use this section to connect the output jacks and adjust the output equalizer.

d Screen operation section

Use this section to operate the meter, home and MENU screens shown on the display.

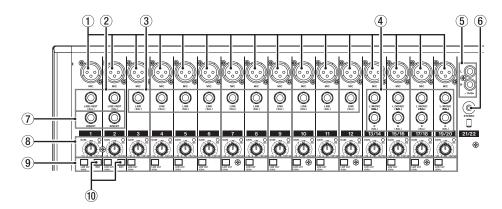
e Built-in effects operation section

Operate the built-in effects and adjust the output levels for each output in this section.

f Analog output adjustment section

Adjust the output levels from the MAIN OUTPUT, SUB OUTPUT, MON 1 and MON 2 jacks in this section.

Analog input jack section



① MIC input jacks (1-12, 13/14-19/20)

These are balanced XLR jacks for mic input.

• XLR (1: GND, 2: HOT, 3: COLD)

2 LINE/INST (BAL) mono input jacks (1-2)

These standard TRS jacks are mono line inputs.

Use the **INST** switches on the top of the unit to enable balanced line (MIC/LINE) input or unbalanced (INST) input.

When directly connecting a guitar, bass or other instrument, set the **INST** switch to on.

• TRS (Tip: HOT, Ring: COLD, Sleeve: GND)

③ LINE (BAL) input jacks (3-12)

These standard TRS jacks are line inputs.

• TRS (Tip: HOT, Ring: COLD, Sleeve: GND)

4 L/MONO (BAL)/R (BAL) stereo input jacks (13/14-19/20)

These standard TRS jacks are stereo line inputs.

If only the **L/MONO (BAL)** jack in a pair is connected, the same signal was be sent to both left and right channels.

• TRS (Tip: HOT, Ring: COLD, Sleeve: GND)

5 –10dBu (external input) jacks (21/22, RCA pin)

These RCA pin jacks are analog line outputs.

6 STEREO input jack (21/22, stereo mini)

This stereo mini jack is a line input jack.
Use this to connect with the line output jack of a tablet or other external device.

7 INSERT jacks (1-2, standard)

Use these standard TRS jacks to connect external devices (effects).

• TRS (Tip: SEND, Ring: RETURN, Sleeve: GND)

8 GAIN knobs and SIG indicators (1-12, 13/14-19/20)

Use the **GAIN** knobs to adjust the input levels of each channel. When the **MODE** switch is set to **LIVE** or **PC** for a channel, its **SIG** indicator will light green when a signal is input (–32 dB or higher).

9 LOW CUT switches (1-12, 13/14-19/20)

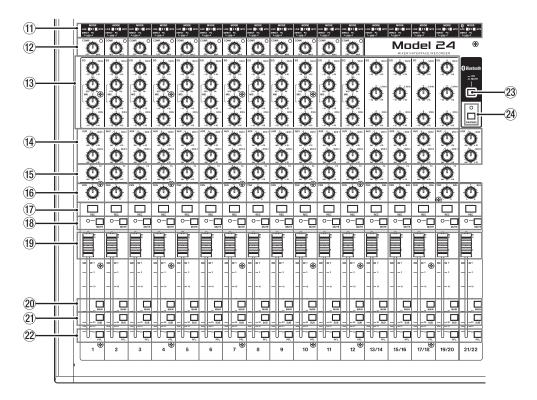
Turn this switch on to enable low cut filters that cut noise and other sounds at low frequencies.

10 INST switches (1-2)

Set according to the **LINE/INST (BAL)** input jack input sources. Turn the **INST** switch on when connecting an electric guitar, electric bass or other equipment with high output impedance.

Turn the **INST** switch off when connecting electronic instruments, audio devices, mics and other equipment.

Input channel mixing section



11) MODE switches (1-12, 13/14-19/20, 21/22)

Use these to select the input source for each channel.(see "Setting the MODE switch" on page 26)

(12) COMP knobs and indicators (1-12)

Use these knobs to adjust the compression of the signals input to each channel.

When compression is activated, the **COMP** indicators light.

13 EQ knobs (1-12, 13/14-19/20)

 Use these to boost and attenuate the HIGH, MID and LOW bands of each channel.

Setting range: ±15 dB

 The cutoff frequencies of the MID bands can be set for channels 1-12.

Setting range: 100Hz - 8kHz (default: 700Hz)

(4) MON 1/MON 2 knobs (1-12, 13/14-19/20, 21/22)

Use these to adjust the levels of signals sent to the MONITOR OUT 1/2 buses.

15 FX knobs (1-12, 13/14-19/20)

Use to adjust the levels of the signals sent to the FX bus.

16 PAN knobs (1-12, 13/14-19/20, 21/22)

Use to adjust the stereo positions of the signals input to each channel.

NOTE

- When PAN knobs are centered (C), signals are reduced by 3 dB and sent to both left and right MAIN MIX L/R buses.
- When a PAN knob is turned all the way to the left (L), that channel signal is sent only to the left MAIN MIX L/R bus. It is not sent to the right bus.
- When a PAN knob is turned all the way to the right (R), that channel signal is sent only to the right MAIN MIX L/R bus. It is not sent to the left bus

(1) REC buttons and indicators (1-12, 13/14-19/20, 21/22)

Use these to select the channels to record to the SD card.

(8) MUTE switches and indicators (1-12, 13/14-19/20, 21/22)

When these switches are on (MUTE indicator lit), those channels are muted.

(19) Channel faders (1-12, 13/14-19/20, 21/22)

Use these to adjust the send levels of channel signals.

20 MAIN switches (1-12, 13/14-19/20, 21/22)

Turn these switches on to send channel signals to the MAIN MIX L/R bus.

② SUB switches (1-12, 13/14-19/20, 21/22)

Turn these switches on to send channel signals to the SUB L/R bus.

22 PFL switches (1-12, 13/14-19/20, 21/22)

Turn these switches on to send channel signals to the PFL/AFL L/R bus.

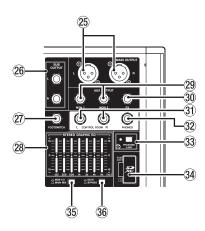
23 ON/MUTE switches

Turn this switch on to input audio from a paired Bluetooth device.

24 PAIRING button and indicator

Press and hold this button to activate Bluetooth pairing mode. Press when pairing to end pairing mode.(see "Connecting with Bluetooth devices" on page 20)

Analog output jack section



25 MAIN OUTPUT L/R jacks

These analog outputs are XLR jacks.

• XLR (1: GND, 2: HOT, 3: COLD)

26 SUB OUTPUT L/R jacks

These standard TS jacks are stereo analog outputs.

• TS (Tip: HOT, Sleeve: GND)

② FOOTSWITCH jack

This standard TS jack is for connecting a footswitch.

• TS (Tip: HOT, Sleeve: GND)

28 STEREO GRAPHIC EQ faders

This 7-band graphic equalizer affects signals output from the MAIN OUTPUT and AUX OUTPUT MON 1/2 jacks.

29 AUX OUTPUT MON 1/2 jacks

These standard TS jacks are analog outputs.

• TS (Tip: HOT, Sleeve: GND)

30 FX OUTPUT jack

This standard TS jack is an analog output.

When an external effect is connected, signals will not be sent to the built-in effect.

When using an external effect, turn the built-in effect off.

• TS (Tip: HOT, Sleeve: GND)

31 CONTROL ROOM L/R jacks

These standard TS jacks are stereo analog outputs.

Use these to monitor signals from the MAIN MIX L/R bus or PFL/AFL L/R bus.

• TS (Tip: HOT, Sleeve: GND)

32 PHONES jack

Use this standard stereo jack to connect stereo headphones. Use an adapter to connect headphones with a mini plug.

Use this to monitor signals from the MAIN MIX L/R bus or PFL/AFL L/R bus.

33 PHANTOM +48V switch and indicator

Use this switch to supply +48V phantom power to the **1-2**, **3-12** and **13/14-19/20 MIC** input jacks on the top of the unit.

The indicator lights when the **PHANTOM +48V** switch is set to on. Connect mics and output devices after turning phantom power on. Before turning phantom power off, disconnect mics and output devices.(see "Setting phantom power" on page 26)

34 SD card slot

Insert SD cards in these slots.(see "Inserting and removing SD cards" on page 21)

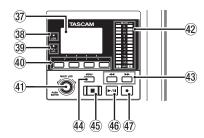
35 MON 1/2/MAIN MIX switch

Set which output signals are affected by the equalizer.

36 EQ IN/BYPASS switch

When this switch is on, the equalizer will affect the output signals set with the **MON 1/2/MAIN MIX** switch.

Screen operation section



37 Display

Shows a variety of information.

38 USB indicator

This lights when the USB connection is working.

39 PFL/AFL indicator

This indicator lights when a channel **PFL** switch is on or when the **MON 1/MON 2** fader **AFL** switch is on.

40 Function buttons

The functions of these buttons change depending on the screen shown on the display. The functions shown at the bottom of the display are the currently assigned functions.

NOTE

For convenience, the four buttons under the display are called the function buttons in this manual. From left to right, they are called the **F1**, **F2**, **F3** and **F4** buttons.

(41) MULTI JOG dial

This dial functions as a dial when turned and as a button when pressed.

Dial functions

- Turn when the Home Screen is open to move the file playback position.(see "Locate function" on page 30)
- When a MENU Screen is open, turn to select items and change setting values.(see "Basic MENU screen operations" on page 18)

Button function

- Press when the Home Screen is open to designate a locate point. (see "Locate function" on page 30)
- When a Menu Screen is open, press to confirm selections and settings (ENTER button function).

42 Output level indicators

These are output level indicators for the MAIN OUTPUT jacks.

43 ◄◄/▶► buttons

- When stopped and during playback, press and hold these buttons to search backward/forward.
- When the Home Screen is open, press the ◄◄ button to locate to the beginning of the current song (00:00:00, which is the zero point).
- When the Home Screen is open, press the ►► button to locate to the end of the current song.
- While pressing the button, press the ◄ button to locate to the point where recording last started.
- While pressing the button, press the ►► button to locate to the point where recording last stopped.
- If the current song has auto punch in or out points set, you can also locate to those points.
- When the SD PLAY Screen is in playback state, press to skip a file.(see "Playing WAV files on SD cards (SD PLAY mode)" on page 36)

44 MENU button

- When the Meter Screen is open, press to open the Home Screen.
- When the Home Screen is open, press to open the HENU Screen. (see "Menu structure" on page 17) and(see "Basic MENU screen operations" on page 18)
- When the MENU Screen or a menu item settings screen is open, press to return to the Home Screen.

45 ■ button/indicator

Press to stop playback or recording.

This button lights when stopped.

Press this button when paused to return to the beginning of the song or file.

46 ►/II button/indicator

Press this button to start playback.

This button lights during playback and recording.

This button blinks when paused.

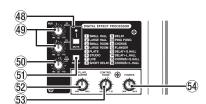
④7 ● button/indicator

Press this button to start recording.

This button lights during recording.

Press this button during playback to start recording (punch in).(see "Automatic punch in/out function" on page 31)

Built-in effects operation section



48 MUTE switch/indicator

When the **MUTE** switch is on (**MUTE** indicator lit), the signal from the built-in effect is muted.

49 TO MON 1/TO MON 2 knobs

Use these to adjust the levels of signals sent from the built-in effects to the MONITOR OUT 1/2 buses.

50 TO MAIN LR knob

Use these to adjust the levels of signals sent from the built-in effects to the MAIN MIX L/R buses.

51) SELECT button

Open the EFFECT Screen and make built-in effect settings.(see "Using the built-in effects" on page 28)

The built-in effect return signal is return to the MAIN MIX L/R bus and MONITOR OUT 1/2 buses.

52 PFL/AFL MASTER knob

Use these to adjust the send level from the PFL/AFL L/R bus.

53 CONTROL ROOM knob

Use to adjust the output levels of the **CONTROL ROOM** jacks.

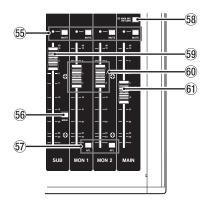
54 PHONES knob

Use this to adjust the headphone output level.

CAUTION

Before connecting headphones, minimize the volume with the **PHONES** knob. Failure to do so could result in a sudden loud noise that could harm hearing, for example.

Analog output adjustment section



65 MUTE switches and indicators (SUB, MON 1, MON 2, MAIN)

When MUTE switches are on (MUTE indicators lit), signals to the corresponding output jacks are muted.

56 MAIN switch

When this switch is on, the **SUB OUTPUT L/R** jack output signal is sent to the MAIN MIX L/R bus.

57 AFL switches (MON 1/MON 2)

When these switches are on, the **AUX OUTPUT MON 1/2** jack output signals are sent to the PFL/AFL L/R bus.

58 SD MAIN MIX RETURN switch

When this switch is on, signals from the USB interface and SD card can be mixed into the MAIN MIX L/R bus.

59 SUB fader

Use to adjust the output level of the **SUB OUTPUT** jacks.

60 MON 1/MON 2 fader

Use to adjust the output levels of the AUX OUTPUT MON 1/2 jacks.

61 MAIN fader

Use to adjust the output level of the MAIN OUTPUT jacks.

Rear panel



62 USB port

This is a B-type USB port. Use a USB cable (Type-A to Type-B) to connect the unit to a computer.(see "Connecting with a Computer" on page 37)

ATTENTION

The unit should be connected directly to the computer, not through a USB hub.

63 AC IN connector

Connect the included power cord here.

64 POWER switch

Press to turn the unit on and off.

ATTENTION

Before turning the unit on, lower the volumes of connected equipment to their minimum levels.

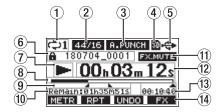
Failure to do so might cause sudden loud noises, which could harm your hearing or result in other trouble.

NOTE

Do not do this when the unit is operating (including recording, playing back or writing data to an SD card). Doing so could cause proper recording to fail and recorded data to be lost.

Home Screen

When the Meter Screen is open, press the \mathbf{MENU} button to open the Home Screen.



1) Repeat playback status

An icon appears when the repeat playback function is on.(see "Repeat playback function" on page 30)

2 Song format

This shows the current song file format.

44/16 44.1kHz, 16bit

44/24 44.1kHz, 24bit

48/16 48kHz, 16bit

48/24 48kHz, 24bit

NOTE

If no song is loaded, the operation format of the unit will be shown like 44/24 or 48/24.

3 Automatic punch in/out function on/off status

The **A-PUNCH** icon appears when the automatic punch in/out function is on.(see "Automatic punch in/out function" on page 31)

4 SD card present status

When an SD card is loaded, the \square icon appears. When an SD card is protected, the \square icon appears.

5 USB connection status

During USB connection, the icon appears.

6 Song name

This shows the name of the current song.

If a song is protected, an ficon appears before the file name.(see "Protecting/unprotecting songs" on page 25)

7 Transport status

This icon shows the recorder operation status.

Indi- cator	Meaning
	Stopped at the beginning of the file
Ш	Paused
•	Recording
•	Playback

8 Playback position

The current playback position is shown by a bar.

9 Automatic punch in/out point setting status

When the automatic punch in/out function is on, these show the status of automatic punch in/out point setting.

Punch in point

Punch out point

10 Remaining time

The remaining time available for recording on the SD card is shown (in hours: minutes: seconds).

(1) Built-in effect on/off status

When the built-in effect is on, the **FX.MUTE** icon appears.(see "Using the built-in effects" on page 28)

(12) Recorder time counter

This shows the elapsed time from the beginning of the song.

13 Song length

This shows the length of the current song (in hours: minutes: seconds).

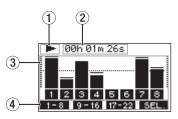
(14) Function button functions

This shows the functions assigned to the function button on the Home Screen.

- F1 METR button: This opens the Meter Screen.
- F2 RPT button: This turns the repeat playback function on/off.
- F3 UNDO button: This returns to the state before the previous operation.
- F3 REDO button: This restores the state after the previous operation.
- F4 FX button: This turns the built-in effect on/off.

Meters Screen

This shows the levels of the signals being input to the unit.



1 Transport status

This icon shows the recorder operation status.

2 Recorder time counter

This shows the elapsed time from the beginning of the song.

③ Track level meters

These show the signal levels of each channel.

4 Function button functions

This shows the functions assigned to the function button on the Meter Screen.

• F1 1-8 Press to show the level meters for channel 1-8 signals on the Meter Screen.

• F2 9-16 Press to show the level meters for channel 9-16 signals on the Meter Screen.

 F3 17-22 Press to show the level meters for channel 17-22 and MAIN MIX L/R bus signals on the Meter Screen.

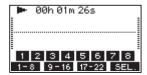
• F4 SEL. Press to change the input sources shown on the Meter Screen.

Meter Screen details

When the Meter Screen is open, press the **F4** SEL. button to change the signal sources shown by the meters.

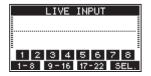
Channel input level screens

Depending on the **MODE** switch setting, the signal levels set for each channel are shown by the level meters.



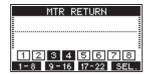
LIVE INPUT Screen

These level meters show the levels of the signals being input to the input jacks.



MTR RETURN Screen

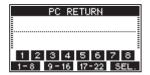
These level meters show the playback signal levels of songs recorded on SD cards.



1 2 3 4 Channels that have recording data in the song
1 2 3 4 Channels that do not have recording data in the song

PC RETURN Screen

These level meters show output signals from a computer when used as a **USB** audio interface.



Menu structure

When the Home Screen is open, press the \mathbf{MENU} button to open the MENU Screen.

The various menu items are as follows.

Menu item	Function	Page
SONG	Work with songs on an SD card	see page 24
TRACK CLEAR	Clear specific tracks or all tracks	see page 33
AUTO PUNCH	Set the auto punch in/out function	see page 31
A. PUNCH PRE ROLL	Set the pre-roll point	see page 32
IMPORT	Import chosen WAV files to song tracks	see page 33
SYSTEM	Open the SYSTEM Screen	
SD PLAY	Play WAV files on an SD card	see page 36
STORAGE	SD cards can be accessed from a computer	see page 37

On the HENU Screen, select SYSTEM to open the SYSTEM Screen. The menu items on the SYSTEM Screen are as follows.

Menu item	Function	Page
INFORMATION	View SD card information, song information and the firmware version	see page 34
DATE/TIME	Date and time settings	see page 22
SONG NAME	Set the song name format.	see page 34
DISPLAY	Adjust the display	see page 22
FOOTSW	Make footswitch settings	see page 31
INITIALIZE	Restore factory default settings	see page 35
MEDIA FORMAT	Format the SD card	see page 35

NOTE

The settings for all menu items are retained even when the unit is turned off.

Basic MENU screen operations

After using the **MENU** button to open the **MENU** Screen, it can be operated in the following manner.

This is an overview of basic operations. Function button assignments differ according to the screen shown on the display.

Selecting items (moving vertically on a page):

Turn the MULTI JOG dial.

Confirming a selected item:

Press the **MULTI JOG** dial (ENTER button function).

Opening a submenu from a page:

Press the **MULTI JOG** dial.

Going back one step in a menu:

Press the F1 **EXIT** button.

Returning to the Home Screen from a MENU Screen:

Press the F1 **HOME** button.

Menu operation procedures

This explanation uses an example of setting the pre-roll point.

1. Press the **MENU** button to open the Home Screen.



2. Press the MENU button to open the MENU Screen.



NOTE

Press the **F1 HOME** button to return to the Home Screen.

3. Turn the **MULTI JOG** dial to select the menu item.



A. PUNCH PRE ROLL selected

4. Press the **MULTI JOG** dial to open the settings screen.



A. PUNCH PRE ROLL Screen open

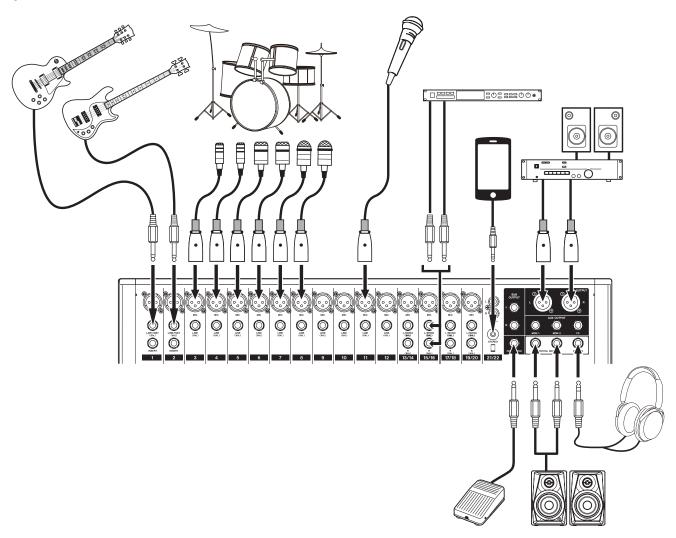
- 5. Turn the MULTI JOG dial to change the setting.
- To set another item on the same screen, press the MULTI JOG dial to move the cursor to the next setting.
- 7. Repeat steps 5 to 6 as necessary to set other items.
- 8. Press the F1 EXIT button to return to the MEMU Screen.
- **9.** Press the **F1 HOME** button to return to the Home Screen.

Connecting other equipment

This is an example of Model 24 connections.

Precautions before making connections

- Carefully read the operation manuals of the devices to be connected and then connect them correctly.
- Before making connections, turn this unit and all equipment to be connected off (standby).
- Install all connected devices, including this unit, so that they are powered from the same line. When using a power strip or similar device, be sure to use one that has high current capacity (thick cable) in order to minimize fluctuations in power voltage.
- Before connecting audio equipment, set the following knobs and faders to their lowest values. Failure to do so could cause sudden loud noises from monitoring equipment, and this could damage the equipment or harm hearing.
 - GAIN knobs (channels 1-12, 13/14-19/20)
 - Channel faders (channels 1-12, 13/14-19/20, 21/22)
 - SUB fader
 - MON 1/MON 2 faders
 - MAIN fader
 - CONTROL ROOM knob
 - PHONES knob



Examples of connections to a Model 24

3 - Preparation

Connecting microphones

Dynamic mics

Connect to MIC input jacks.

Condenser mics

When using a condenser microphone that requires phantom power, connect it to a MIC input jack and then turn the PHANTOM +48V switch on.(see "Setting phantom power" on page 26)

The PHANTOM +48V indicator lights when the PHANTOM +48V switch is on.

Guitar

When connecting a guitar or bass guitar directly to this unit, use the MIC jacks on channels 1-2 and turn the **INST** switch on for that jack.

Connecting electronic devices and other audio equipment

Use the following inputs to connect electronic devices and other audio equipment.

- LINE/INST (BAL) input jacks
- LINE (BAL) input jacks
- L/MONO (BAL)/R (BAL) input jacks
- -10dBu input jacks
- STEREO input jack

Connecting monitor speakers

Connect monitor speakers (powered speakers or an amplifier and speaker system) to the CONTROL ROOM L/R jacks.

Depending on the PFL switch and AFL switch settings, signals from the MAIN MIX L/R bus and PFL/AFL L/R bus can be monitored

Use the CONTROL ROOM knob to adjust the speaker volume.

Connecting headphones

Connect headphones to the PHONES jack (standard stereo). Depending on the PFL switch and AFL switch settings, signals from the MAIN MIX L/R bus and PFL/AFL L/R bus can be monitored

CAUTION

Before connecting headphones, minimize the volume with the PHONES knob. Failure to do so could result in a sudden loud noise that could harm hearing, for example.

Computer connections

Use a commercially-available Type-A-Type-B USB cable to connect the unit to a computer USB 2.0 port.

When the USB connection is working, the **USB** indicator in the screen operation section lights.

ATTENTION

The unit should be connected directly with the computer instead of via a USB hub.

Connecting with Bluetooth devices

This unit can output sound from a computer, portable audio device or other equipment that supports Bluetooth (A2DP).

Pairing

Follow the procedures below to enable communication with a Bluetooth device.

NOTE

Pairing also requires operation of the Bluetooth device.

Refer to the operation manual of the Bluetooth device for procedures.

- 1. Press the **ON/MUTE** switch to unmute.
- Confirm that the **PAIRING** indicator on the unit is blinking. If the PAIRING indicator is unlit, press the PAIRING button.



NOTE

When the unit is turned on, it automatically becomes ready for pairing. If 2 minutes pass in pairing mode, it will end. Press this button to reactivate pairing mode when it is disabled.

Select "Model 24" (this unit) on the other Bluetooth device. When pairing succeeds, the PAIRING indicator will stop blinking and remain lit, and connection with the other device will be complete.

NOTE

- Some older Bluetooth devices require the input of a passkey. Enter "0000" in such cases.
- Pairing will automatically end if connection is not confirmed within two minutes.
- When this unit is turned on, it will automatically try to connect with the Bluetooth device to which it was previously connected. At this time, pairing will automatically end after five minutes if connection is not possible because that Bluetooth device is not turned on or its Bluetooth function is turned off.

Unpairing

The Bluetooth device that is currently connected can be unpaired from the unit.

- 1. Press and hold the **PAIRING** button for at least two seconds.
- This ends the pairing. The **PAIRING** indicator will start blinking and the unit will be ready to pair.

Inserting and removing SD cards

Inserting SD cards

Insert an SD card into an SD card slot on the top of the unit to enable playback and recording by this unit.

NOTE

SD cards can be inserted whether or not the unit is on or off.

- 1. Open the SD card slot cover.
- The SD card label should be facing left and the connector should be inserted down.
- **3.** Close the SD card slot cover.

Removing SD cards

Turn the unit off or stop operation before removing an SD card.

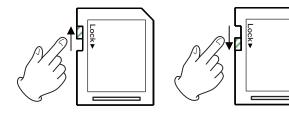
CAUTION

Do not remove an SD card when the unit is operating (including playing back or recording). Doing so could cause proper recording to fail, data to be lost, and sudden loud noises from monitoring equipment, which might damage the equipment, harm hearing or cause other trouble.

- 1. Press the SD card in gently to make it to come up.
- 2. Pull the SD card out.

SD card write protection switches

SD cards have write-protection switches that prevent writing new data to them.



If you slide the write-protection switch to the LOCK position, writing will not be possible. Move the write-protection switch to the unlocked position in order to record, erase and otherwise edit data on the card.

Turning the power on and off

CAUTION

- Turn down the volume of the sound system connected to the unit before starting up or shutting down the unit.
- Do not wear connected headphones when turning the unit on and off. Loud noises could damage the speakers or harm your hearing.

Before turning the power on

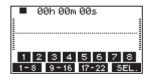
- 1. Make the following settings on the top of the unit.
 - EQ knobs → center values
 - Other knobs → all the way left
 - Faders → all the way down
 - Switches → off (not pushed in)
- Minimize the output levels of audio sources and input levels of amplifiers connected to this unit.

Turning the power on

 Use the **POWER** switch on the back of the unit to turn its power on.



Startup screen



Meter Screen

After the unit starts and the Startup Screen is shown, the Meter Screen will open.

NOTE

After the unit is turned on, the **PAIRING** indicator will blink for a set amount of time.

- **2.** Turn connected input audio source devices on.
- 3. Finally turn amplifiers on.

3 - Preparation

Turning the power off

Follow the procedures above in reverse when turning the power off. Failure to follow the correct order could result in clicking noises, for example, that might damage equipment.

ATTENTION

- Do not disconnect the power cord when the unit is operating (including recording, playing back, or writing data to an SD card). Doing so could cause proper recording to fail, recorded data to be lost, and sudden loud noises from monitoring equipment, which might damage the equipment, harm hearing or cause other trouble.
- When the unit is started up for the first time (or when the built-in clock is reset after being left unused without power for a long time), the DATE/TIME Screen appears before the Startup Screen to allow the date and time of the built-in clock to be set.(see "Setting the built-in clock date and time" on page 22)

Setting the built-in clock date and time

Using its internal clock, this unit includes the date and time when a file is recorded.

On the SYSTEM Screen, select DATE/TIME to open the DATE/TIME 1. Screen.(see "Menu operation procedures" on page 18)



2. Turn the MULTI JOG dial to change a value, and press the MULTI JOG dial to confirm it and move the cursor to the next item.

NOTE

Use the **F2** and **F3** buttons to move the cursor.

- Change the year, month, day, hour and minute in order, and complete the date and time setting.
- Press the **F4 SET** button to confirm the setting and return to the SYSTEM Screen.

NOTE

- When making a setting, you can press the F1 EXIT button to cancel the changes and return to the SYSTEM Screen.
- When setting the time, the time display will be stopped.
- By setting the TYPE item to DATE on the SONG NAME Screen, the date and time set here can be used for song names.(see "Setting the song name format" on page 34)

Adjusting the display

The display contrast and brightness can be adjusted.

Adjusting the display contrast

- 1. On the SYSTEM Screen, select DISPLAY to open the DISPLAY Screen. (see "Menu operation procedures" on page 18)
- 2. Select CONTRAST, and press the MULTI JOG dial.



- Adjust the display contrast. Options: 10-40 (default: 26)
- Press the MULTI JOG dial to confirm the setting.
- Press the F1 EXIT button to return to the MENU Screen.

Adjusting the display brightness

- 1. On the SYSTEM Screen, select DISPLAY to open the DISPLAY Screen. (see "Menu operation procedures" on page 18)
- Select CONTRAST, and press the MULTI JOG dial.



- Adjust the display brightness. Options: HIGH (default), LOW
- Press the MULTI JOG dial to confirm the setting.
- Press the **F1 EXIT** button to return to the **MENU** Screen.

Preparing an SD card for use

In order to use an SD card in this unit, this unit must be used to create a system file on it first.

- "Mo sys file Make sys file Are you sure? appears in a pop up when a new card or a card formatted by another device is inserted into the unit.
- Press the **MULTI JOG** dial to create a system file. When system file creation is complete, the Home Screen will reopen.

ATTENTION

In order to record, this unit must be used to format it first.(see "Formatting SD cards" on page 35)

4 - Managing Songs

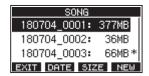
This recorder treats each recording data group as one song and manages data by song.

For one song, WAV files are saved for 22 tracks and a stereo master file. To record or produce music, a song that has already been created needs to be loaded or a new song needs to be created.

This chapter describes basic operations such as a method for loading songs and a procedure for creating new songs as well as various functions to mange songs.

Viewing the song list

To open a list of songs saved on an SD card, select SONG on the MENU Screen, and press the **MULTI JOG** dial to open the SONG Screen.(see "Menu operation procedures" on page 18)



 ${\tt On \ the \ 50NG}$ Screen, the following functions are assigned to the function buttons.

- Press the F1 EXIT button to return to the MEMU Screen.
- Press the **F2** DATE button to show the size on the SONG Screen.
- Press the F3 SIZE button to show the date on the SONG Screen.
- Press the F4 NEW button to open the NEW Screen where you can create a new song.(see "Creating a New Song" on page 23)

Song Operation

Select the desired song file on the SONG Screen and press the **MULTI JOG** dial to open a pop-up menu list with possible song operations.



To use a song operation, turn the **MULTI JOG** dial to select the desired item, and press the **MULTI JOG** dial.

LOAD

Loads the selected song.

INFORMATION

View information about the selected song.

DELETE

Deletes the selected song.

PROTECT

Protect the selected song.

UNPROTECT

Stop protection of the selected song.

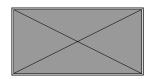
RENAME

Edits the name of the selected song.

Creating a New Song

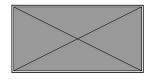
To record or play with this unit, you must create and load a song. The following procedure can be used to create a new song.

- Open the SONG Screen when the recorder is stopped.(see "Menu operation procedures" on page 18)
- 2. Press the F4 NEW button to open the NEW Screen.



Created songs are given names (titles) using the characters set on the SONG NAME Screen followed by a four-digit number.

 Edit the name of the song as necessary.
 To edit the name of the song, press the F2 NAME button to open the NAME EDIT Screen.



For details about how to edit song names, see "Editing textpage 25.

TIP

The song name can also be edited later using the REMAME Screen.

- 4. Turn the MULTI JOG dial to select the recording file format.
 Options: 44.1kHz 16bit (default), 44.1kHz 24bit, 48kHz 16bit, 44.1kHz 24bit
- 5. Press the F4 ok button to save the currently loaded song and create a new song.

When song creation completes, the SONG Screen reopens.

NOTE

- To cancel song creation, press the F1 EXIT button.
- A maximum of 100 songs can be created on a single SD card.
- Songs are created in the MTR folder on the SD card.

4 - Managing Songs

Loading Songs

Use the following procedure to load the song you want.

 Open the SONG Screen when the recorder is stopped.(see "Menu operation procedures" on page 18)

NOTE

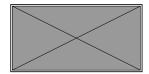
The * icon appears for a song currently being loaded. An 🔒 icon will appear before protected songs.

- Select the song that you want to load and press the MULTI JOG dial to open the menu list pop-up.
- Select LOAD, and press the MULTI JOG dial.
 After the selected song loads, the SONG Screen will reopen.

Viewing song information

You can check the song name (title), sampling frequency, bit rate, size, date and time.

- Open the SONG Screen when the recorder is stopped.(see "Menu operation procedures" on page 18)
- **2.** Select the song with information that you want to check and press the **MULTI JOG** dial to open the menu list pop-up.
- Select INFORMATION, and press the MULTI JOG dial. The INFORMATION Screen will open.



The song name, sampling frequency, bit rate, size, date and time will be shown.

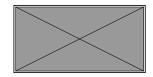
 After checking, press the F1 EXIT button to return to the SONG Screen.

Deleting songs

You can delete songs.

Deleting unnecessary songs when the SD card space is low can create more open space.

- Open the SONG Screen when the recorder is stopped.(see "Menu operation procedures" on page 18)
- Select the song that you want to delete and press the MULTI JOG dial to open the menu list pop-up.
- **3.** Select DELETE, and press the **MULTI JOG** dial. The SONG DELETE Screen will open.



Press the F4 YES button to confirm deletion.
 When song deletion completes, the SONG Screen reopens.

ATTENTION

Deleted songs cannot be restored.

NOTE

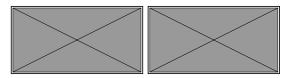
- To cancel song deletion, press the **F1** No button.
- The current song cannot be deleted. To delete the current song, load another song first.

Protecting/unprotecting songs

By protecting a song, you can disable editing, recording and deletion operations for that song.

You can protect and stop protecting songs.

- **1.** Open the SONG Screen when the recorder is stopped.(see "Menu operation procedures" on page 18)
- Select the song that you want to protect or unprotect and press the MULTI JOG dial to open the menu list pop-up.
- Select PROTECT or UNPROTECT, and press the MULTI JOG dial. The PROTECT or UNPROTECT screen will open.



4. Pres the F4 YES button to protect or unprotect the song.

NOTE

To cancel protection or unprotection, press the **F1** No button.

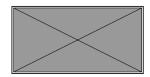
5. When song protection completes, the SOMG Screen reopens.

NOTE

- faicons appear before songs that are protected in the song list shown for copying, deletion and other operations.
- If you try to execute a prohibited operation (editing, recording, deletion) on a protected song, "Song is protected." will appear in a pop-up message on the display.

Editing song names

- Open the SONG Screen when the recorder is stopped.(see "Menu operation procedures" on page 18)
- Select the song with name that you want to change and press the MULTI JOG dial to open the menu list pop-up.
- **3.** Select RENAME, and press the **MULTI JOG** dial. The RENAME Screen will open.



 Edit the song name.
 For details about how to edit song names, see "Editing textpage 25below.

NOTE

To cancel song name editing, press the **F1 EXIT** button.

5. When finished editing the song name, press the F4 button to confirm the song name.
When song name editing is complete, the SONG Screen reopens.

Editing text

Use these operations to edit text.

Changing the cursor (editing point) position

Use the **F2** \leftarrow and **F3** \rightarrow buttons.

You can also press the **MULTI JOG** dial to move to the next character.

Deleting the character at the cursor position:

Turn the **MULTI JOG** dial.

You can input up to 11 characters, including symbols, numbers, and uppercase and lowercase letters.

Leaving a single space open:

Turn the **MULTI JOG** dial to select a blank space at the left end of any row, and press the **MULTI JOG** dial.

Canceling edits:

Press the **F1 EXIT** button.

Confirming the changes:

Press the **F4** OK button.