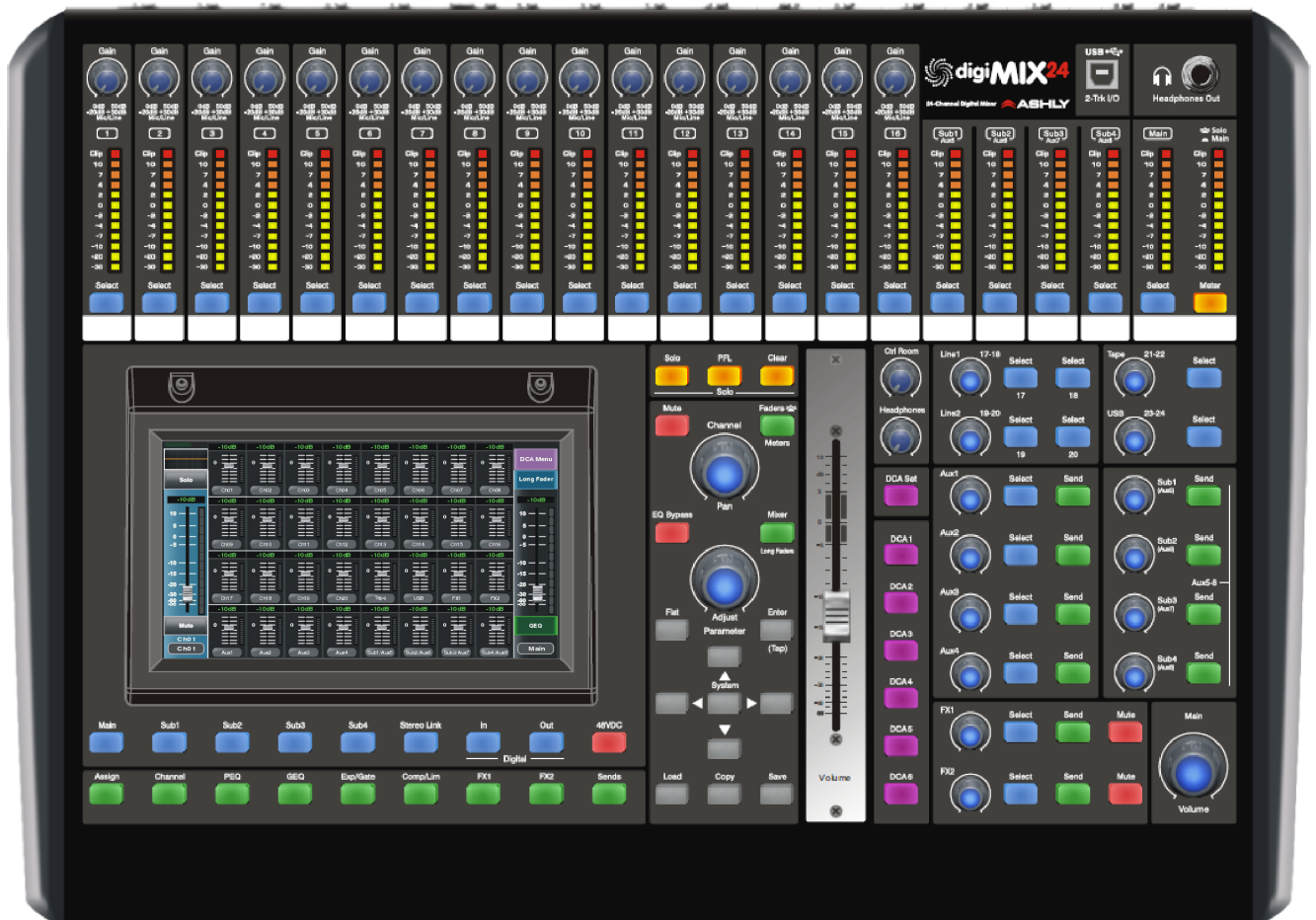




24 Channel Digital Mixer



Operating Manual

ASHLY AUDIO INC.

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Important Safety Instructions

Consignes de sécurité à lire attentivement



CAUTION
Risk Of Electric Shock
Do Not Open



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 instructions in the literature accompanying the device.

Le symbole de la foudre dans un triangle équilatéral symbolisant la foudre est prévu pour sensibiliser l'utilisateur à la présence de tension de voltage non isolée à l'intérieur de l'appareil. Elle pourrait constituer un danger de risque de décharge électrique pour les utilisateurs. Le point d'exclamation dans le triangle équilatérale alerte l'utilisateur de la présence de consignes qu'il doit d'abord consulter avant d'utiliser l'appareil.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
6. Do not use this apparatus near water.
7. Clean only with dry cloth.
8. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus.
10. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
12. Only use attachments/accessories specified by the manufacturer.
13. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

1. Lisez ces instructions.
2. Conservez ces instructions.
3. Observez les avertissements.
4. Suivez ces instructions.
5. Pour réduire le risque de feu ou la décharge électrique, ne pas exposer cet appareil pour pleuvoir ou l'humidité.
6. Ne pas utiliser l'appareil près de l'eau.
7. Le nettoyer à l'aide d'un tissu sec.
8. Ne pas bloquer les ouvertures de ventilation, installer selon les consignes du fabricant.
9. Eloigner des sources de chaleur tel: radiateurs, fourneaux ou autres appareils qui produisent de la chaleur.
10. Ne pas modifier ou amputer le système de la mise à terre. Une prise avec mise à terre comprend deux lames dont une plus large ainsi qu'une mise à terre: ne pas la couper ou la modifier. Si la prise murale n'accepte pas la fiche, consulter un électricien pour qu'il remplace la prise désuète.
11. Protéger le cordon de secteur contre tous bris ou pincement qui pourraient l'endommager, soit à la fiche murale ou à l'appareil.
12. N'employer que les accessoires recommandés par le fabricant.
13. N'utiliser qu'avec les systèmes de fixation, chariots, trépied ou autres, approuvés par le fabricant ou vendus avec l'appareil.
14. Débrancher l'appareil lors des orages électriques ou si inutilisé pendant une longue période de temps.
15. Un entretien effectué par un centre de service accrédité est exigé si l'appareil a été endommagé de quelque façon: si il a été exposé à la pluie,, l'humidité ou s'il ne fonctionne pas normalement ou qu'il a été échappé.

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Unpacking

As a part of our system of quality control, every Ashly product is carefully inspected before leaving the factory to ensure flawless appearance. After unpacking, please inspect for any physical damage. Save the shipping carton and all packing materials, as they were carefully designed to reduce to a minimum the possibility of transportation damage should the unit again require packing and shipping. In the event that damage has occurred, immediately notify your dealer so that a written claim to cover the damages can be initiated.

The right to any claim against a public carrier can be forfeited if the carrier is not notified promptly and if the shipping carton and packing materials are not available for inspection by the carrier. Save all packing materials until the claim has been settled.

About Ashly

Ashly Audio was founded in 1974 by a group of recording engineers, concert sound professionals, and electronics designers. The first products were elaborate custom consoles for friends and associates, but business quickly spread to new clients and the business grew. The philosophy we established from the very beginning holds true today: to offer only the highest quality audio tools at an affordable cost to the professional user – ensuring reliability and long life. Many years later, Ashly remains committed to these principles.

Ashly’s exclusive Five Year, Worry- Free Warranty (three years on touchscreen and motorized faders) remains one of the most generous policies available on any commercial- grade product. The warranty covers every product with the Ashly brand name and is offered at no extra cost.

Please read this entire manual to fully understand the features and capabilities of this product.

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in both a commercial and residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help..

❑ 1 INTRODUCTION

Thank you for purchasing the Ashly digiMIX24 digital and networkable 24 input x 14 bus mixer.

With 16 high performance discrete mic/line preamplifiers, 4 additional line-level inputs, stereo tape inputs, stereo USB audio input, DSP processing with parametric and graphic EQ, compressor/limiter, expander/gate, delay, invert polarity, two built in *stereo* effects buses, four aux buses, four subgroups which can switch to four additional aux outputs, six powerful DCA groups, sensitive LED metering, load/save/copy user preset control, password security, iPad® remote control via network connection, and much more, the compact and powerful digiMIX24 offers all the right tools to manage your sound job with confidence.

In order to quickly understand the features of the digiMIX24, please read this entire manual as you explore the controls, touchscreen, and network capabilities of your mixer.

Standard Features

- 16 low noise microphone preamps with dedicated trim controls, +48V phantom power, phase invert
- 4 dedicated line-level inputs
- Stereo tape/CD inputs and outputs on RCA connectors
- USB 2-track audio stereo record and playback
- TRS inserts on channels 1-8
- 4 aux sends and 4 subgroup outputs, switchable to 8 aux sends
- 6 DCA for fader or mute groups
- 2 internal stereo FX with fully editable reverbs, delay with tap tempo, tremolo, flanger, and chorus.
- 7 inch color LCD touch screen for graphical viewing, assign, and setup
- EZ-Mode for secure, simplified touchscreen or iPad® control
- 100mm precision Alps® motorized fader
- Pan control
- High resolution delay (0.2mS) on every input, subgroup, aux, or FX
- Expander/noise gate on every input and FX channel
- Compressor/limiter on every input, subgroup, output, and FX channel
- 4-band parametric/shelving EQ filters plus HPF/LPF on every input, subgroup, output, and FX channel
- 31-band graphic EQ on main, aux, and sub outputs
- Stereo link for adjacent inputs, subgroups, and aux outputs
- Solo/PFL on every input, output, subgroup, aux, or FX
- Stereo main outputs on XLR and phone jack with dedicated level control
- Headphone and control room outputs with dedicated level controls
- User presets for DSP channel, GEQ, FX, or scene settings, plus channel copy function
- 32-bit A/D and D/A converters, 32-bit DSP processing, 48KHz sampling rate
- Password security
- Wired network interface for iPad remote control, preset save/load and firmware update using Windows® or Mac®
- Internal 100-240VAC universal power supply
- Safety/compliance: cTUVus, CE, FCC, RoHs

Optional Features

- Dante-32 network audio interface
- USB-32 multi-track audio interface

2 MIXER CONTROLS



2.1 Input Trim

This controls the gain of the analog mic or line input preamplifier. For analog inputs, this is the most important control for setting up proper gain structure in the mixer. Properly set, it helps to avoid clipping and maintains low noise. A good rule is that with typical input signal present on a channel, adjust the trim control to allow 20dB headroom between the expected signal's peak level and when it clips. In other words, normal signal peaks should be around "0" on the meter. Set this control first and then leave it alone unless the input source changes. Do not use the trim control to adjust mix volume later on, use the channel's fader control instead.

2.2 Input/Output LEDs

Input LEDs indicate the signal level of each input in dBu, after its preamplifier but pre-fader. Output LEDs (Sub & Main) indicate signal level at the output. They can alternately indicate every channel's current fader position by pressing the Faders/Meters button (sec. 2.23).

2.3 Select Button

Each input, subgroup, main output, aux, and effect (FX) has its own select button. Press any select button to navigate to that channel's control interface. Any time a select button is pressed, the motorized fader controls that input or output level.

2.4 USB 2-Trk I/O Port

This is used to connect with a USB stereo audio device for playback or recording. It is not for software control of the mixer. USB audio input is adjusted using the USB 23-24 control (sec. 2.9). When recording from the USB port, the main L/R output signal is used.

2.5 Headphone Out

Plug in headphones here for monitoring the main outputs or selected solo channels. Use the Headphones Level control to adjust volume

2.6 Meter/Solo Button

Press this button to toggle the two LED bars directly above it from indicating either the Stereo Main signal level, or the Stereo Solo level.

2.7 Line 1 & 2 Level Control

Line1 and line2 level controls adjust the level of inputs 17-18 and 19-20 to the main mix. Line inputs can be assigned to the main, aux, sub, and FX bus using the Assign button and touchscreen (sec. 2.38). For stereo line inputs, press the Stereo Link button (sec. 2.34) so that settings of the selected line input will track with its adjacent channel. Movement of a selected line level control also moves the motorized fader and corresponding touchscreen fader, as all three controls work together.

2.8 Tape Level Control

Tape inputs 21-22 come from the RCA inputs, and can be assigned to the main, aux, sub, and FX bus using the assign button and touchscreen. This control only adjusts the tape input level to the main mix, working together with the motorized fader and the corresponding touchscreen fader.

2.9 USB Level Control

USB stereo inputs 23-24 come from the USB audio input (sec. 2.4). They can be assigned to the main, aux, sub, and FX bus using the assign button and touchscreen. This control only adjusts the USB input level to the main mix, working together with the motorized fader and the corresponding touchscreen fader.

2.10 Aux 1-4 Level Controls and Send Button

Aux outputs are typically used for secondary mixes such as monitors, video feed, assistive listening devices, subwoofers, etc. Each aux level control, when selected, determines the overall output level for that aux output.

Input channels are assigned to an aux mix pre or post-fader using one of two methods: The first method is to select an input channel, then press the <Assign> button. Use the touchscreen to select the aux outputs you wish to send that input channel to, then adjust the level sent to that aux mix by adjusting either the touchscreen <Parameter Adjust> control or the Adjust Parameter knob.

The second method is to press the <Send> button associated with each aux level control to quickly view and adjust all input channels sent to that aux mix. Use the touchscreen to select each input and assign it pre/post, and use either the touchscreen <Parameter Adjust> control or the Adjust Parameter knob to adjust the level sent to the aux mix.

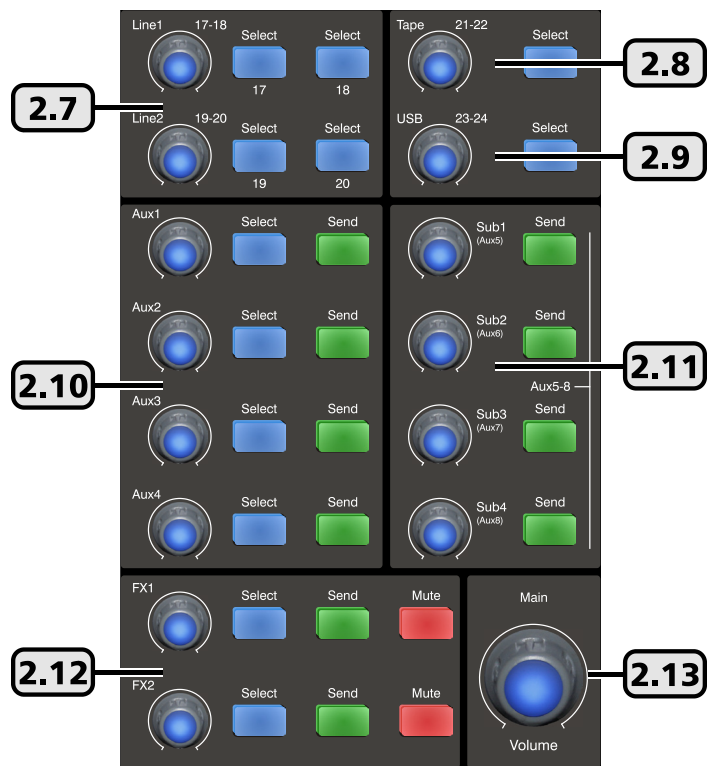
2.11 Subgroup 1-4 Level Control (or Aux 5-8)

Subgroups are typically used for a user-selected group of inputs to be controlled together using one fader, or to send grouped signals to their own dedicated output for recording or processing. Typical grouped inputs include drum sets, choirs, orchestral sections, background vocals, etc. FX can be included in a subgroup. Subgroups are somewhat similar to DCA and aux groups, but each have advantages. Subgroups in this mixer are always post-fader. Inputs can be assigned to multiple subgroups. To create a stereo subgroup, SUB1-2 or SUB3-4 can be linked using the stereo link button (sec. 2.34).

To assign inputs to a subgroup, first select an input or FX channel, then press the desired SUB (1-4) button below the touchscreen (sec. 2.33), or similarly press the Assign button for touchscreen control. All inputs and FX assigned to a subgroup will be controlled by their respective SUB (1-4) level control. Subgroups can only be routed back to the main L/R outputs or to their dedicated subgroup output jacks. Subgroups can use onboard processing including polarity, delay time, compression, PEQ, and GEQ.

When assigning an input to a subgroup for live mixing, you should leave its assignment to the Main output unselected, otherwise the input will still be heard in the main mix even with its subgroup level control turned all the way down.

Aux(5-8) Mode: All four subgroups can be switched as a group to work instead as Aux5-8 outputs that function the same as Aux1-4. To switch their function from subgroup to aux, press the system button (sec. 2.30) and press the touchscreen button that says Aux/Sub Mode and press "Yes" when the display prompts to change settings.



2.12 FX 1 & 2 Level Controls, Send, and Mute Button

This mixer has built-in effects including reverbs, delay, chorus, flanger, tremolo, plus various combinations. Up to 104 effects can be custom configured, saved, and loaded from mixer memory (sec. 2.44). Only two effects can be used at a time.

Press the FX1 or FX2 button beneath the touchscreen to define or load the currently available effects (sec. 2.44). Then press the FX1 or FX2 Send button and use the touchscreen Parameter Adjust fader or the Adjust Parameter knob (sec. 2.27) to set the level of each input that you want sent to each effect. Pre/Post effect send status is also assigned here. An alternate method of applying effect to an input channel is to select an input, press the Assign button, then select and adjust the resulting touchscreen FX1 or FX2 controls.

Once FX1 and FX2 have been defined and desired input channel sends have been adjusted, each FX bus must be routed to the main, aux, or subgroup outputs as desired. Press the FX1 or FX2 Select button, then press the Assign button, then select the main or sub outputs using the touchscreen or with the buttons below the touchscreen. Similarly assign and adjust the FX level sent to Aux outputs using the touchscreen parameter adjust control for each aux.

The master FX1 and FX2 knobs, when selected, work along with the motorized fader to control the FX level sent to the stereo main and four subgroup outputs as assigned. FX level sent to the aux outputs is adjusted by using the touchscreen assign window or the aux level controls, again while FX1 or FX2 is selected. Press the FX1 or FX2 mute button to silence the effect or compare the sound with/without effect.

2.13 Main Volume Control

This control adjusts the stereo output level to the main L/R outputs, nothing else. When the main select button is pressed (sec 2.3), this control works together with the motorized fader and touchscreen.

2.14 Ctrl Room Level Control

This adjusts the level of the control room outputs. Control room outputs always use the post-fader signal from the main L/R outputs.

2.15 Headphones Level Control

This adjusts the headphone output level. The headphones default to L/R post-fader signal unless an input, output, subgroup, FX, or DCA group is assigned to the solo bus. (sec 2.19)

2.16 DCA Set Button

Digital controlled amplifiers (DCA1-6) are used to combine multiple inputs, aux or sub outputs, or FX outputs into one group for easier control. DCA groups allow the relative fader position of each member to be preserved while adjusting their level as a group. It also allows the group to be instantly muted. This is typically used for grouping vocals, drums, choir or orchestral sections, etc. DCA groups must first be defined before using EZ-Mode (see section 6).

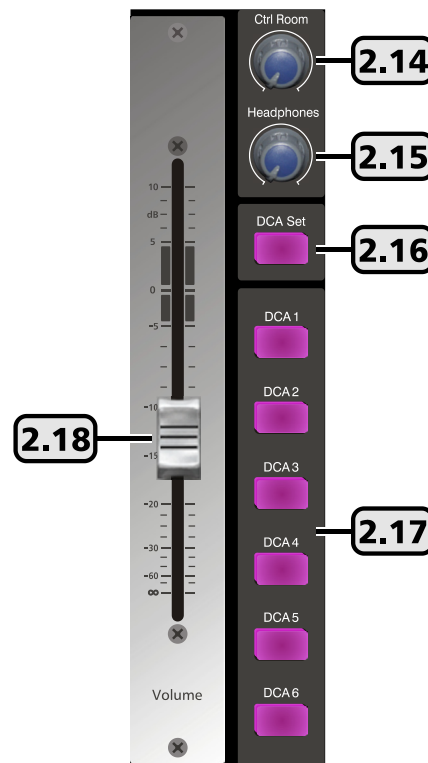
To set a DCA group, first press the DCA Set button so that it flashes, then select any DCA button on the mixer or touchscreen, then select the channels to group together for that DCA. When finished, press DCA Set again to store settings. Channels can be assigned to multiple DCA groups. To clear a DCA group, press the DCA set button, then press DCA clear on the touchscreen.

2.17 DCA Buttons

These six buttons are used to select a pre-defined DCA group for main fader, mute, or solo control. If the DCA group is not defined, a touchscreen message appears requiring a response before proceeding.

2.18 Motorized Fader

This is the primary level control for all inputs, main output, aux and sub outputs, effects master, and DCA control. Press the select button on any input or output, and the motorized fader will control its level. The fader works together with other level controls used for the same selected signal. Motorized fader speed can be adjusted in the system screen (see section 5.2).



2.19 Solo Button

Use the solo button for listening to one or more isolated signals in the headphones. Select an input, output, subgroup, FX, or DCA group, then press the solo button to include that signal in the solo bus. The default solo setting is post-fader, meaning the solo signal level depends on the solo channel's fader position.

Press the solo clear button to clear all solo selected channels. With no channels selected for solo, the headphone output defaults to the main L/R output, post fader. Solo status can also be viewed and set from the touchscreen display.

The solo feature is in stereo, so that any stereo linked channels or FX are heard in stereo.

2.20 PFL Button

As part of the solo function, PFL is used to monitor selected solo channels at their *pre-fader level*, meaning the selected solo channel(s) will still be heard even if its fader is turned down.

2.21 Clear Button

This button clears all solo selections and returns the headphones to main L/R.

2.22 Mute Button

The mute button is used to silence the selected input, output, aux or sub output, FX, or DCA group. Mute status can also be seen or controlled using the touchscreen display.

2.23 LED Faders/Meters Select Button

This button is used to toggle the input LEDs (sec. 2.2) between indicating the current signal levels across all channels, or indicating the current fader position of all channels.

2.24 Pan Control

The pan control is dedicated to fading signals from left to right in the mix. Its position for a channel is displayed in the touchscreen.

2.25 EQ Bypass Button

Press the EQ bypass button to disable the PEQ or GEQ on the selected channel. This is useful for comparing signal with and without EQ.

2.26 Mixer/Long Faders Select Button

This button toggles between the two main mixer displays, one showing every mixer input and output at once, the other showing groups of eight channels with longer faders. Channel names can only be edited in long fader mode. To edit a channel name, press and hold the channel number at the bottom of any channel in long fader mode, then use the pop-up touchscreen keyboard.

2.27 Parameter Adjust Control

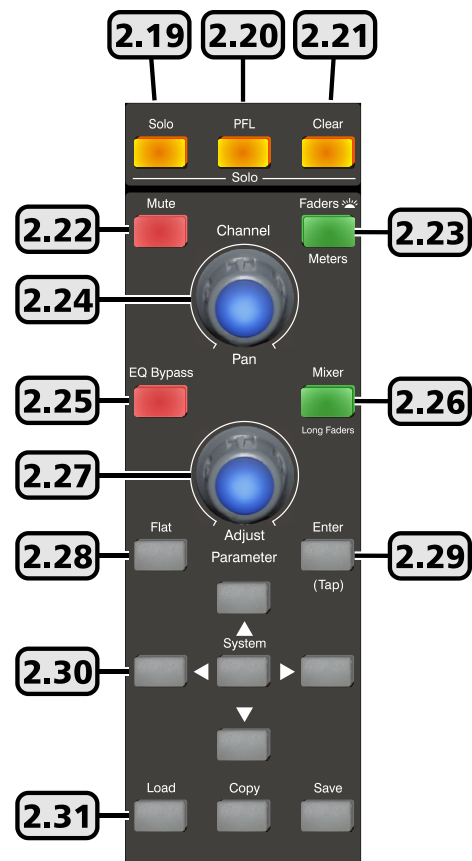
This control is typically used to adjust the currently active or highlighted DSP parameter within the touchscreen display. It may work together with other level controls.

2.28 Flat Button

Press this button to flatten the PEQ or GEQ settings on the currently selected input or output.

2.29 Enter (Tap) Button

This button has two functions. The first is to offer a "Yes" response any time the touchscreen prompts for yes or no input, for example selecting a DCA that has not yet been defined.



The second function is to manually set an FX delay time to match the beat of the music, also referred to as "tap delay". Press the FX1 or FX2 button and select Delay as the effect type. Set the delay time by pressing the TAP button at the start and again at the end of the desired delay time. Maximum tap delay is 1200ms.

2.30 System Buttons

The middle system button opens the touchscreen display for a variety of utility controls such as LCD brightness, aux/sub mode, password/security functions, default settings reset, and more (sec. 4). The up/down/left/right buttons are used to select and adjust controls shown on the touchscreen, their role depending on the currently open function. For example, with the GEQ function open, the two L/R system buttons move to select one of the 31 EQ bands, while the U/D buttons adjust the selected EQ filter level. The buttons work together with touch controls on the the screen, but for smaller touchscreen controls it is easier to use the system buttons.

2.31 Save, Load, and Copy Buttons

There are four different types of user presets that can be saved/loaded on the digiMIX24.

- 1) Scene - Scene presets are the most inclusive, capturing all audio settings in the mixer. Up to 24 scene presets are available.
- 2) DSP Channel - The DSP channel preset is used on inputs, outputs, aux, and subgroups. It saves/loads a single channel's assignments, channel settings, gate, comp, and PEQ/GEQ settings. Up to 48 different DSP channel presets can be saved.
- 3) FX - FX presets are used to save/load up to 104 different user defined FX1 and FX2 effects.
- 4) GEQ - The 48 GEQ presets are only used to save/load graphic equalizer settings, which are only used on outputs.

SAVE: To save a user preset, first press the save button, then use the touchscreen to select one of the four preset types. Next, select a preset number to use, then press the preset name box, type in a preset name, press enter, then press Save on the touchscreen to write to memory. Use UpPage and DownPage to navigate to the next available group of presets.

LOAD: To load a user preset, press the load button, then in the touchscreen window select the type of preset to load, then select one of the available presets and press the touchscreen load button.

To delete a user preset, press the load button, select a preset to delete, then press the touchscreen delete button.

COPY: To copy current settings from one channel to another, press the Copy Channel button on the touchscreen system page. The touchscreen window will display all inputs and outputs, with the currently selected channel flashing. This is the channel that will be copied *from*, and it can be changed by selecting any other channel using the touchscreen or control surface select buttons.

Channel DSP functions are individually listed across the bottom of the touchscreen. Each function can be checked or unchecked to include or exclude from being copied. In other words, only the checked parameters will be copied to the next channel. Press the Copy To button on the touchscreen, then select the channel(s) you want settings to be copied onto using either the touchscreen or the control surface select buttons. Press the *touchscreen* copy button to complete the copying process.

2.32 Touchscreen Display

Most mixer functions can be adjusted using either the touchscreen or the physical controls. A limited number of functions can only be adjusted using the touchscreen.

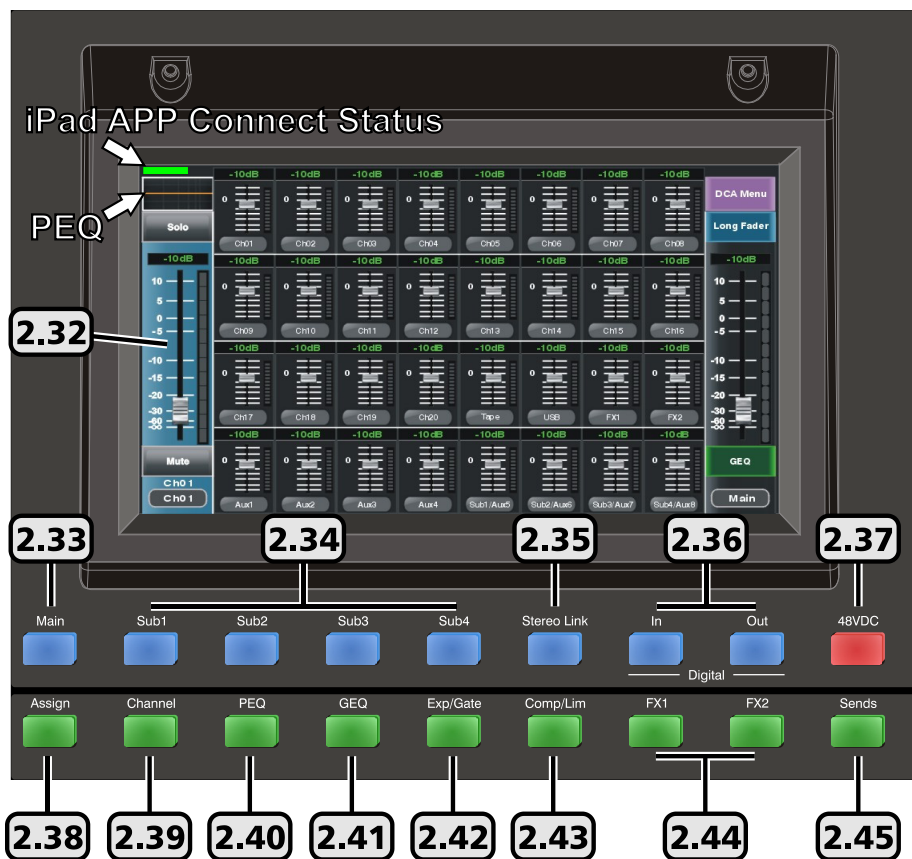
Level and fader controls are adjusted by either dragging the control, or by first selecting it then turning the adjust parameter knob (sec. 2.27).

In Mixer Mode, all inputs and outputs are shown. Touch any channel to select it for control. The selected input, FX, aux, or subgroup output appears on the left side. Channel parameters include channel name and number, mute status, level, pan, and solo. The Main output is always shown on the right side, with graphic EQ and pan control using the Pan knob.

An unlabeled touch-box above the solo function shows the current PEQ curve for the selected channel. Touch this box to access all DSP functions for the selected channel.

Above the PEQ box is a smaller unlabeled box which turns bright green when the mixer is connected on the network to an iPad running the digiMIX24 app. It turns black when the connection is lost.

A channel name can be edited by pressing and holding the name box until the keyboard appears. Type in the new name and press enter to complete. To escape out of the keyboard without changing anything, press the keyboard icon in the lower right corner.



2.33 Main

The Main button is used to assign the currently selected input channel, subgroup, or FX to the main mix, and becomes lit when assigned. Assignment status can also be edited using the touchscreen assign window (sec. 2.38).

2.34 Sub 1-4

The sub(1-4) buttons are used to assign the currently selected input channel or FX to a subgroup (sec. 2.11).

2.35 Stereo Link

The stereo link button is used to link two adjacent input channels, subgroups, or aux outputs together so that all level, DSP, and assignment parameters will be equally applied to both channels. Channel pairs can only be linked where the odd numbered channel is first, ie 1-2, 15-16, sub1-sub2, aux1-aux2, etc. When stereo linking a pair of channels, the mixer automatically routes the odd numbered channel to the left output and the even numbered channel to the right output, and they will be heard in stereo.

2.36 Digital In/Out

The optional Dante-32 or USB-32 multi-track audio module must be installed to use this feature. Press these buttons to open the input or output digital audio assignment window on the touchscreen. See section 7 for details on using Dante-32 or USB-32.

2.37 48VDC Phantom Power

Press the 48VDC button to assign +48Vphantom power to any of input channels 1-16.

2.38 Assign

This is one of the most important mixer functions, and should be the starting point for configuring every input channel. Press the assign button to view or change where the currently selected input or FX is routed to in the mixer. The selected channel is always shown on the left side of the display. Inputs can be assigned or sent to main, sub1-4 (or aux5-8, see sec. 2.11), aux1-4, and FX1-2.

Assigned routing paths turn blue when pressed. Signal level sent to Aux and FX buses must be adjusted individually using the touchscreen parameter adjust fader on the right side of the display, or by using the adjust parameter knob (sec. 2.27). There are many quick links to other mixer functions from within the assign window.

2.39 Channel

Press the channel button to view and access all DSP settings for the currently selected input channel, subgroup, main output, FX, or aux output. The currently selected channel is always shown on the left side of the touchscreen display.

Every DSP function has a dedicated On/Off button on the touchscreen.

Input channel DSP functions include stereo pan, polarity invert, channel delay up to 300ms, stereo link, expander/gate, PEQ, and compressor/limiter. Subgroups and aux outputs do not have expander/gate function. Channel DSP settings can be saved or loaded as a DSP channel preset (sec. 2.31).

2.40 PEQ

Press the PEQ button to engage the 6-band EQ for the currently selected input channel, subgroup, main output, FX, or aux output.

The PEQ has four parametric filters with adjustable frequency, bandwidth (Q), and gain. Any of these four can also be set as shelving filters by pressing their <Type> icon on the touchscreen. Two additional filters complete the PEQ section, a tuneable hi-pass (HPF) and low-pass (LPF), each offering 20 different slope types. For tips on using the PEQ see section 4.2.

Press the EQ Bypass button (sec. 2.25), or the touchscreen ON button to compare signal with and without PEQ. Press the Flat button (sec. 2.28) or the touchscreen Flat EQ button to return all PEQ filters to their 0dB gain and default starting parameters

2.41 GEQ

The GEQ 31-band graphic equalizer is only available on the main, subgroup, and aux outputs. It is not available on inputs or FX.

Select and drag individual filter faders up/down on the touchscreen, or use the left-right buttons on the touchscreen or on the top panel (sec. 2.30) to select frequency, then use the system up/down buttons to adjust filter level. Up to 48 different GEQ presets can be saved to memory and loaded later for use with specific rooms or loudspeakers.

Press the EQ bypass button (sec. 2.25), or the touchscreen ON button to compare signal with and without GEQ. Press the flat button (sec. 2.28) or the touchscreen flat EQ button to return all GEQ filters to 0dB.

2.42 Exp/Gate

Press this button to engage the noise gate/expander for the selected channel. This function will silence or reduce the level of an input or FX signal when it is below a user defined threshold. Controls include on/off, threshold, attack time, release time, and ratio. Infinite ratio silences all signal below the threshold (noise gate), while using a lower ratio allows some signal below the threshold to pass (downward expansion). Press the flat button to return the expander/gate parameters to their default settings. See sec. 4.3 for tips on using an expander/gate.

2.43 Comp/Lim

Press the Comp/Lim button to engage the compressor/limiter function on a selected input, subgroup, main output, FX, or aux output. Use this feature to reduce the dynamic range of a signal (compressor) or to limit how loud a signal can go (limiter). Touchscreen controls include on/off, threshold, attack time, release time, ratio, and post gain. See sec. 4.4 for tips on using a compressor/limiter.

2.44 FX 1 & 2

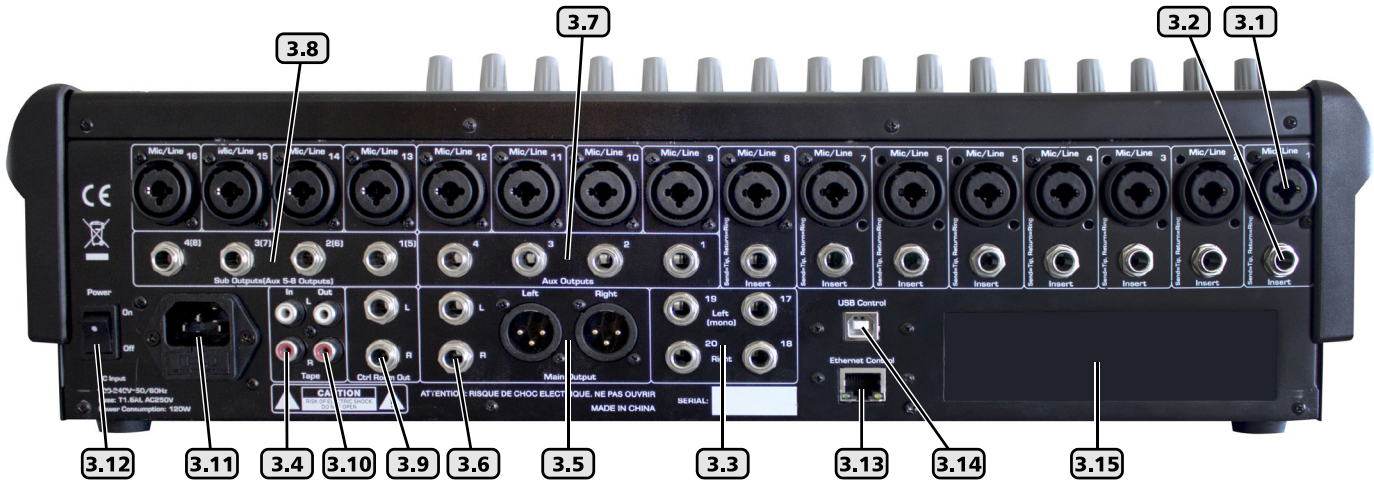
Two digital effect buses are available. Customized effects can be assigned to each bus and include three types of reverb, delay, tremolo, flanger, chorus, or combinations (sec. 4.5). User defined effects can be saved to 104 different DFX presets (sec. 2.31).

2.45 Sends

Main, Subgroup Send: Press this Send button followed by the Main Select button to quickly assign inputs or FX channels to the main output using the touchscreen. Likewise, press this button followed by any Sub 1-4 Send button to quickly assign inputs or FX to each subgroup. The touchscreen will display all inputs and FX channels as On or Off, tap to change status.

Aux, FX Send: Press this Send button followed by Aux 1-4 Send (Aux 5-8 if enabled) or FX 1-2 Send button to quickly view and adjust the pre/post status and level of all inputs as sent to an Aux or FX bus. Set an input's pre/post send status, then adjust its send level to the currently active Aux or FX bus using the touchscreen Parameter Adjust fader or the Adjust Parameter knob.

3 REAR PANEL FEATURES



3.1 Combo Jack Inputs, Channel 1-16

There are 16 mic/line channels that use a combo jack. The female XLR connector is for a balanced mic input, and the TRS (tip-ring-sleeve) phone jack is for balanced line level input. See the illustration for proper balanced or unbalanced wiring of XLR and phone jacks. The mic preamp circuit is overridden when the phone jack is inserted. Avoid plugging or unplugging connectors when the volume is turned up, as the resulting loud pops can damage loudspeakers.

3.2 TRS Insert, Channel 1-8

Channels 1-8 are each equipped with a single TRS jack insert point for use with external processors. Tip=send, and ring=return. The outgoing signal is taken right after the analog trim control, and the return signal goes directly to the digital bus for DSP processing.

3.3 Channel 17-18, 19-20 Stereo Line Inputs

These inputs function as two stereo line level inputs or as four mono inputs (sec. 2.7). There is no adjustable preamp on these inputs, so a strong input signal level (0dBu) is recommended. Plugging in only the left inputs (channels 17 or 19) sends a mono signal to both left and right inputs.

3.4 Tape Inputs

These two RCA inputs are controlled by the tape (21-22) level control (sec. 2.8)

3.5 Main Outputs

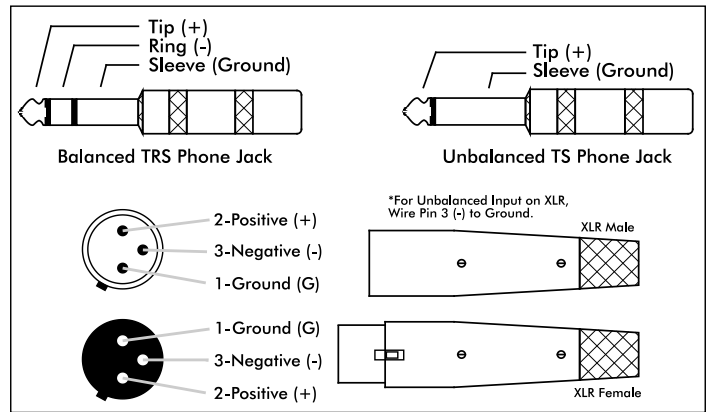
The left and right main outputs on balanced XLR male connectors are controlled by the main volume control (sec. 2.13). They are wired in parallel with the main phone jack outputs

3.6 Main Phone Jack Outputs

The left and right main outputs on TRS phone jack connectors are wired in parallel with the main XLR outputs.

3.7 Aux 1-4 Outputs

These four phone jacks are pseudo-balanced outputs for aux1-4 (sec. 2.10). They have single-ended signal with balanced impedance.



3.1 - Balanced and Unbalanced connector wiring

3.8 Subgroup 1-4 (or Aux 5-8) Outputs

These four phone jacks are pseudo-balanced outputs for sub1-4, or can be switched over for use as aux5-8 (sec. 2.11)

3.9 Control Room Output

The stereo control room output uses the same signal as the main outputs and is wired using balanced phone jacks.

3.10 Tape Outputs

The main stereo bus is routed post-main-fader to the RCA tape outputs.

3.11 AC Inlet

This is used to connect the mixer to AC mains using the detachable AC cord provided with the unit.

3.12 Power Switch

This switch turns on power to the mixer. Turn-on time is about 15 seconds.

3.13 Ethernet Control Jack

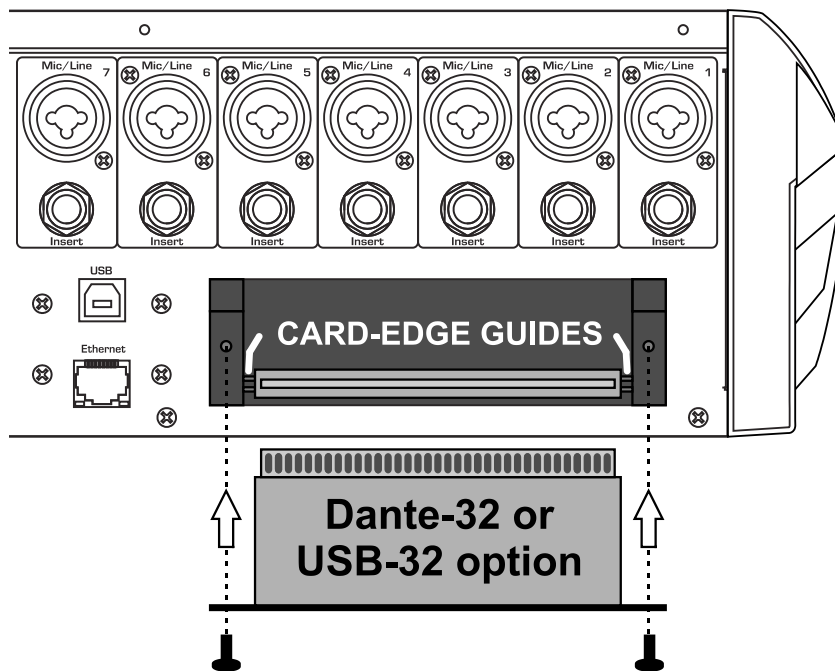
This Ethernet port is for the save/load preset or firmware update utility, or for connecting to a network for remote iPad control. See section 5.9 for details.

3.14 USB Control Jack

This USB port is used for the save/load preset software utility or for firmware update. See section 5.9 for details

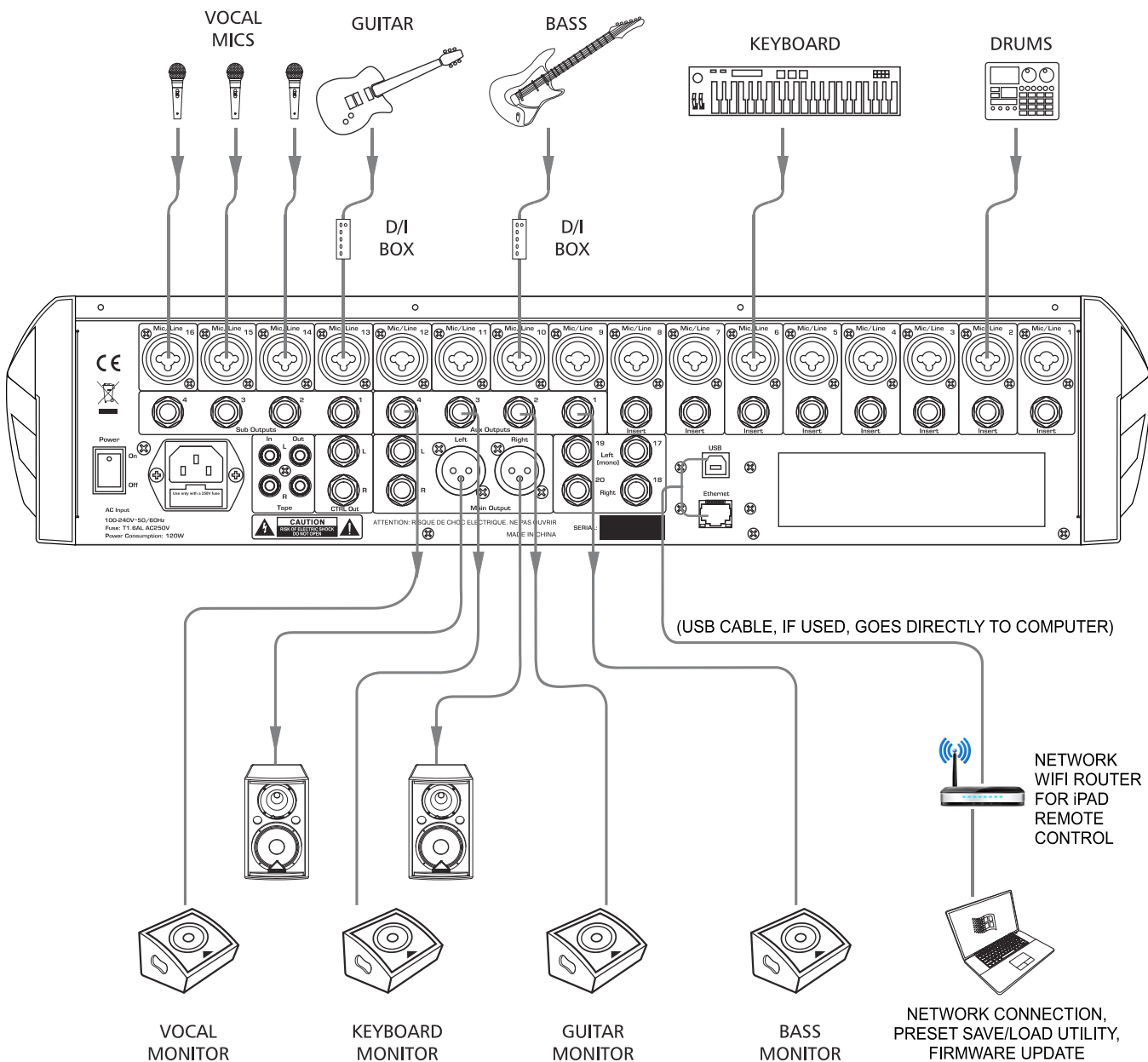
3.15 Digital Audio Module Option

Ashly offers optional field-installable Dante or multi-track USB audio modules for the digiMIX24 mixer. To install the module, first remove the mixer from power, then remove the two screws holding the blank plate to the back panel option slot, then carefully seat the Dante-32 or USB-32 module into the two card-edge guides on either side of the module slot as shown before finally pressing the module fully into the internal card-edge connector. Re-fasten with the two screws. See section 7-8 for operating details.



3.15 - Dante-32 or USB-32 installation on digiMIX24

4 GETTING STARTED



4.1 Typical Application

The above illustration shows a typical band setup with instrument and vocal inputs, four separate monitor mixes, stereo main speakers, and remote control from a laptop. Use the following procedure to safely and quickly set up the system.

- 1) Plug in all inputs, outputs, and speaker cables. Leave power amplifiers turned down at first.
- 2) One input at a time, set input trim controls so their loudest signal peaks are around 0dBu on the input meters (sec. 2.1)
- 3) Assign all used inputs to the main output using the assign button. (sec. 2.38)
- 4) Select the main output and turn its level all the way down (sec. 2.3)
- 5) Turn up power amplifiers, then slowly turn up the main fader or volume control (sec. 2.13) until reaching a comfortable level.
- 6) Verify that all inputs can be heard in the main speakers or use the solo function (sec. 2.19). Select an input before adjusting.

- 7) Adjust PEQ (sec. 2.40), expander/gate (sec. 2.42), and compressor/limiter (sec. 2.43) on each input channel as needed. For greater details and examples of how to use these functions, see sections 4.2, 4.3, and 4.4.
- 8) Assign the aux output(s) for all used input channels, adjusting their level to each monitor mix. (sec. 2.10 or 2.38)
- 9) Use the master aux level controls to set each overall monitor level (sec. 2.10)
- 10) Apply effects to input channels if desired. See sections 2.12, 2.44, and 4.5 for details and examples.
- 11) Adjust GEQ graphic equalizer for main, aux, or subgroup outputs. (sec. 2.41)
- 12) To create a vocal or other subgroup, follow the instructions in section 2.11, then select the subgroup to adjust the group level using the main fader.
- 13) To create a DCA level or mute group for all vocals or other groups, follow instruction in section 2.16, then select the DCA group before using the main fader or mute button.
- 14) Save settings as scene presets, DSP channel presets, FX presets, or GEQ presets (sec. 2.31).

4.2 PEQ Parametric EQ

Press the PEQ button to engage the parametric EQ for the currently selected input channel, subgroup, main output, FX, or aux output. The four filters EQ1-EQ4 can be shelving or parametric, with additional hipass and lowpass filters.

Shelving Filters: EQ1-EQ4 can be set as tuneable shelving filters, typically used as the high and low boost/cut controls. Press the filter <Type> image on the touchscreen to toggle between low shelf, high shelf, or parametric peak filter.

Parametric Filters can adjust frequency, bandwidth (Q), and filter gain/cut. Think of one band of parametric EQ as a single graphic equalizer fader where the frequency is variable, and the bandwidth (Q) is also variable. The smaller the bandwidth, the less the audio signal on either side of the frequency center is boost or cut, whereas a wider bandwidth produces a more audible change to the overall tone of a signal. In addition to basic tone controls, parametric filters are ideal for eliminating problem feedback frequencies without greatly affecting the overall sound. They are also useful for adding or removing a characteristic hot spot from microphones or for precisely compensating for room resonance. It is well worth the time becoming proficient with parametric EQ filters, as they offer the best solution to many EQ problems.

HPF/LPF: The highpass and lowpass filters are cut only, with adjustable frequency and slope. There are 20 different filter types to choose from including Butterworth, Bessel, and Linwitz-Riley, with filter slopes ranging from 6db/oct to 48dB/oct. These filters are typically used to limit bandwidth. A common application is to use an aux output to drive 70V transformer tapped speakers that are not suited for signal below 80Hz. Set the HPF for that Aux output to 80Hz, then select the desired filter type.

Tone Control: The four EQ filters can be used as basic tone controls with tuneable frequencies, ie high, high-mid, low-mid, and low. High and low typically use shelving filters. Press the <Flat EQ> button to restore all filters to 0dB gain, medium Q, and default starting frequencies and filter types. A lower Q broadens the filter to have a much greater effect, while a higher Q narrows the bandwidth and makes less of an overall difference when boost or cut.

Notch EQ for Feedback Control: To eliminate a feedback problem on a live mic input, set the PEQ flat and turn up the microphone level until it is on the edge of feedback. Then using the frequency control, sweep a narrower bandwidth (higher Q) filter through a problem feedback area, with just a slight amount of gain on that filter, until finding the exact frequency causing feedback. Once the feedback frequency has been identified, reduce the filter's gain until feedback is gone. Adjust the bandwidth (Q) as narrow as possible while still eliminating feedback. Repeat with additional filters and frequencies as necessary. Finding the problem frequency is relatively easy, but finding the best combination of minimal cut and bandwidth takes a little practice.

Notch EQ for Room Resonance: To reduce excess reverberation or boominess in a room, use the parametric filter on the main or aux outputs. With music playing through the speakers, engage a PEQ filter on the output, then sweep the filter's frequency with a slight boost and medium Q until you hear a disproportionate increase in the boominess of the music. This frequency is a room resonance, and can be notched to compensate. Adjust the bandwidth and cut only as little as necessary to fix the problem.



Figure 4.2: PEQ Parametric EQ Screen

4.3 GEQ Graphic EQ

The 31-band GEQ graphic equalizer is only available on the Main, Aux, or Sub outputs. It is not available for use with any input or FX channels.

Adjust GEQ filters by selecting and dragging them up and down on the touchscreen, or use the up/down/left/right buttons and Adjust Parameter knob. The left/right buttons select frequency, and the up/down buttons or Adjust Parameter knob can be used to adjust filter boost and cut.

The GEQ is engaged when the <On> button on the touchscreen is solid green. To bypass the GEQ, press the <On> touchscreen button again or press the EQ Bypass button found at the right of the screen.

To return all filters to 0dB, press the <Flat EQ> button on the touchscreen and confirm, or press the Flat button to the right of the screen and confirm.

Up to 48 different GEQ filter curves can be created, saved, and recalled. Current filter settings can also be copied to another output, subgroup, or aux using the <Copy> function, found on the touchscreen as well as having its own panel button.

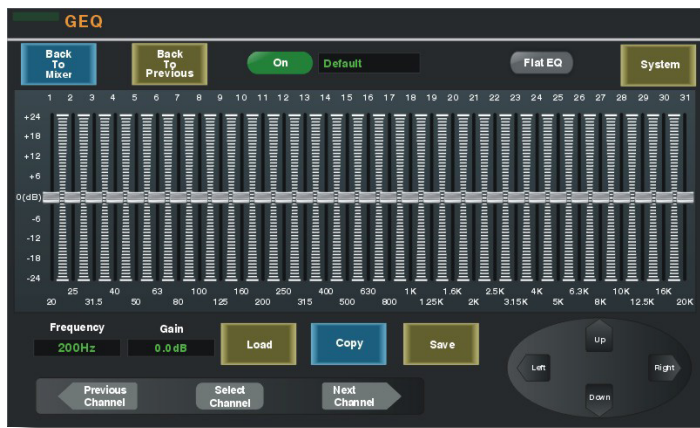


Figure 4.3: GEQ Graphic EQ Screen

4.4 Expander/Gate

A noise gate is typically used to eliminate unwanted, low level noise from an individual input, allowing only the louder signals to pass. An expander is used to increase the dynamic range of a signal by lowering the quietest signals.

Threshold is the input signal level above which the gate opens up and input signal is allowed to pass through unchanged.

Attack sets the amount of time from when the input signal reaches threshold to when the gate actually opens up. A medium attack time helps the gating action sound more natural.

Release sets the time the gate remains open after signal level falls back below threshold.

Ratio determines how much the input signal gets attenuated when the gate is closed. Infinite ratio completely silences the input when its signal is below the threshold, while a lower ratio allow some signal to pass through at all times.

When used as a downward expander, the idea is to extend the signal's dynamic range by taking the quieter signals and lowering their level even further. The lower the ratio control, the more signal below threshold will pass through. The higher the ratio, the greater the dynamic range will be between softest and loudest signals. An infinite ratio silences all signal below the threshold.

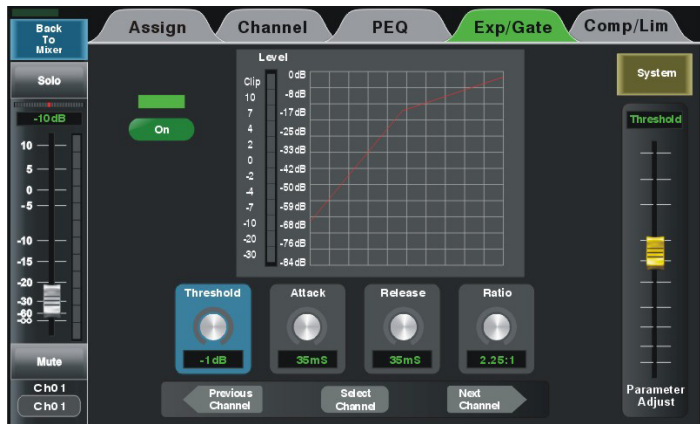


Figure 4.4: Expander/Gate Screen

4.5 Compressor/Limiter

This compressor/limiter has adjustable gain, threshold, attack time, release time, and ratio. The controls will only work when the ON button is pressed. The green bar above the ON button indicates when gain reduction is occurring. Press the <Flat> button to clear and return all compressor/limiter parameters to their default settings.

Threshold - This sets the input level above which gain reduction is used to compress the signal. Threshold range is from -30dB to +20dB.

Attack Time - The rate at which gain reduction occurs to the input signal when it exceeds threshold, from 10ms to 150ms.

Release Time - The rate at which gain reduction ends once the signal falls back down below threshold, from 10ms to 1000ms.

Ratio - This sets the amount of gain reduction applied to the signal above the threshold point. Ratio is from 1:1 to infinite.

Post Gain - The post gain control adjusts the compressor/limiter output level to make up for any loss of overall level due to gain reduction. It is typically used to match the level of compressed output with the original un-compressed input level, allowing an easy way to compare signal with and without compression.

Compression occurs when any signal above threshold has its gain reduced by the ratio settings. For example, a ratio of 4:1 means that as input signal increases above the threshold by 4dB, its output signal only increases by 1dB. The higher the ratio, the more gain reduction occurs. Use a compressor to minimize vocal peaks or instrument transients, or to reduce the dynamic range of a signal.

A limiter is a compressor with infinite ratio. The input signal cannot exceed the threshold at all. A limiter is primarily used on outputs for speaker protection or setting maximum SPL, whereas the compressor is more natural sounding and typically used on microphone inputs.



Figure 4.5: Compressor/Limiter Screen

4.6 FX (Effects)

This mixer includes 12 different effects and effect combinations. Only two effects can be used at one time. Up to 104 different effects can be created, saved, and loaded as FX presets (sec. 2.31).

Press the FX1 or FX2 button to open the FX editor window, then choose an effect type, edit its parameters, then save.

The next step is to send the desired signal level from input channels to the FX1 or FX2 bus. (sec. 2.12).

Lastly, select and assign FX1 or FX2 to aux, subgroup, or main outputs as desired. (sec. 2.12) Press either FX mute button to silence its effect. All available effects are listed in the table below.

All effects are in stereo, meaning they will synthesize a stereo effect even when driven by a mono send signal.



Figure 4.6: FX Screen

FX Presets	Description	Parameters
Reverb - Hall	Simulate and acoustic space of the sound	Pre-Delay; Decay; Room Size; Brightness; Diffusion; Wet-Dry Out
Reverb - Room	Simulate a studio room with many early reflections	Pre-Delay; Decay; Room Size; Brightness; Diffusion; Wet-Dry Out
Reverb - Plate	Simulate the transducer's sound like classic bright vocal plate	Pre-Delay; Decay; Room Size; Brightness; Diffusion; Wet-Dry Out
Delay	Echo of the input signal	Time; Decay; Brightness; Wet/Dry Out
ST Delay	Stereo Echo	L Time; R Time; L Decay; R Decay; Brightness; Wet/Dry Out
Tremolo	Modulation of signal without any pitch or phase shift	Depth; Mod Freq; Wet-Dry Out
Flanger	Adds a sweeping, swooshing "jet plane" sound using phase shift with delayed feedback	Feedback; Sweep Width; Mod Freq; Wet-Dry Out
Chorus	Creates the illusion of several vocals or instruments from a single input source	Feedback; Sweep Width; Mod Freq; Wet-Dry Out
Delay + Reverb	Delay with room reverb	Pre-Delay; Reverb Decay; Room Size; Brightness; Diffusion; Delay Time; Delay Feedback; Delay Bright; Wet-Dry Out
ST Delay + Reverb	Stereo delay with room reverb	Pre-Delay; Reverb Decay; Room Size; Brightness; Diffusion; Delay L/R Time; Delay L/R Feedback; Delay Bright; Wet-Dry Out
Chorus + Tremolo	Chorus with Tremolo	Feedback; Sweep Width; Mod Freq; Tremolo Depth; Tremolo Freq; Wet-Dry Out
Chorus + Reverb	Chorus with room reverb	Pre-Delay; Reverb Decay; Room Size; Brightness; Diffusion; Chorus Feedback; Sweep Width; Mod Frequency; Wet-Dry Out

5 SYSTEM FUNCTIONS

5.1 LCD Brightness

Press and drag the LCD brightness control bar to adjust.

5.2 Fader Calibration

The motorized fader speed can be reduced and quieted by pressing <Fader Calibration>. The fader will begin to travel up and down at the currently assigned speed. Adjust speed in both directions as necessary, then press Save/Exit.

5.3 Restore Default Settings

Press this button to reset the mixer to its default settings, returning all faders and EQ to zero, removing all DCA groups, and removing all channel and FX assignments. This does not erase the password or stored presets, it only resets the current unsaved scene settings.

5.4 Aux/Sub Mode

Press this button to switch Sub 1-4 outputs to function instead as Aux 5-8 outputs.

5.5 Password Settings

Press the "Password Settings" button to enter a new password, delete the current password, or reset the password. The same password is used for both system and EZ-Mode. Note that entering a password is only the first step when making security changes, you must also lock or unlock features using the password.

To enter a password for the first time, press System>Password Settings. A keyboard appears with two empty text boxes labeled "New Password" and "Confirm Password". A solid orange bar appears below the active text box. With the "New Password" text box active, type in a one to four character password using upper case (ABC.), lower case (abc.), or numerals/symbols (.?123). Passwords are case sensitive. Select and re-enter the password into the "Confirm Password" box and press "Enter" on the keyboard. The password is now stored in the mixer for system use or for EZ-Mode.

To Delete or Reset an existing password, press System>Password Settings. If a password is already stored in the mixer, the two text boxes say "Delete Password" and "Reset Password".

To delete the password, make sure the "Delete Password" box is active with the orange bar beneath it and press "Enter". The screen prompts for the current password to be entered into both text boxes, press enter, and the password is permanently erased from memory.

To reset the current password, press System>Password, make sure the "Reset Password" text box is active with the orange bar beneath it, and press "Enter". Type the current password in the "Enter Password" box, then select and type the new password into the "New Password" box and press "Enter". A blue screen pops up saying "Password Reset Successfully". Press "ok" to confirm the reset.

If the password has been forgotten, press and hold the <System + Clear> buttons for three seconds or until the screen blinks. This clears the existing password.

5.6 Lock/Unlock

Press the "Lock/Unlock" button to lock out mixer functions. If there is currently no password saved in the mixer, the screen prompts for a new password in the "New Password" and "Confirm Password" text boxes. After entering the new password, press "Enter", and the mixer will be locked. Attempting to move a control will prompt the user for the password before allowing changes.

If there is already a password in the mixer when you press "Lock/Unlock", the screen prompts for the current password, type it in and press "Enter" and the mixer will become locked.

The only controls that cannot be locked out are the power switch and the analog input trim controls.

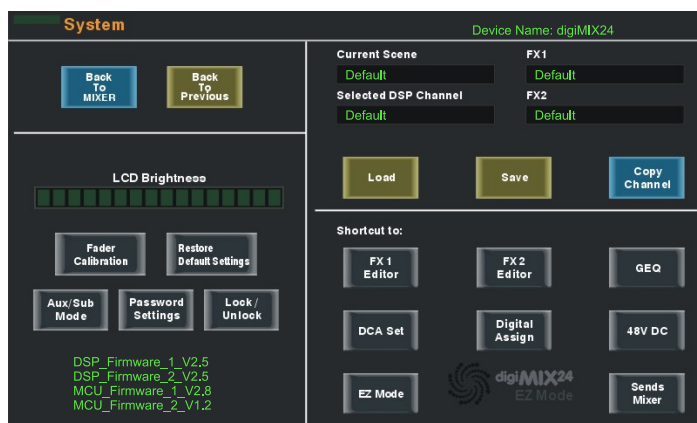


Figure 5: System Screen

5.7 System Shortcuts

Several shortcuts are available within the system touchscreen for navigating to common mixer functions. While most shortcut functions are also available by pressing control buttons, the EZ-Mode shortcut is only found here in the system screen. See section 6 for complete EZ-Mode details.

5.8 Other System Functions

Device Name - Press and hold the "Device Name" text box in the upper right hand corner of the system screen to bring up the keyboard, then type in the desired name for the mixer and press "Enter". The default name is "digiMIX24".

Current Scene - This displays the name of the scene loaded from memory onto the mixer. If no scene has been loaded, the current scene name is "Default".

Selected Channel - This displays the name of the DSP channel preset loaded from memory onto the currently selected input, FX, aux, subgroup, or main output channel. If no DSP channel has been loaded, the selected channel name is "Default".

FX1 & FX2 - This displays the name of the FX channel preset loaded from memory onto FX1 and FX2. If no FX preset has been loaded, the FX1 or FX2 name is "Default".

Firmware versions - The lower left corner of the touchscreen shows the currently loaded DSP and micro-controller firmware files. These are the internal programs that run the mixer. To update firmware, see section 5.9.

Factory Reset - For factory reset, press and hold all three <Load + Save + Enter> buttons during power-up, then press "yes" when prompted. *This will erase all stored presets.* It will also unlock the mixer if locked, but preserves the previous password in memory.

5.9 Firmware Update and Save/Load Preset software utility (PC or MAC version available)

IMPORTANT: Before updating the mixer firmware, remove the Dante-32 or USB-32 option if installed, then follow these steps:

1) Download the Digimix firmware update software from the Ashly website product page. Once installed, there will be a root directory called "DigitalMixer24Update*" containing a single file named "digitalMixer24Update*.exe", plus a sub-directory called "Lib" containing other files.

2) Turn off the mixer. Connect the mixer's Ethernet jack to a network shared with the PC, or connect directly to the PC with a USB printer cable. If using USB, the USB driver must first be downloaded from the Ashly website DigiMix product page and installed.

3) Press and hold the mixer's <System> button during power-up. Several lines of blue text will appear on the mixer touchscreen.

4) Open the "digitalMixer24Update*.exe" file from step #1. The status box remains grey until the firmware update tool is communicating with the mixer via the network or USB connection. The software automatically discovers the IP address or COM port used for the mixer. When it does, the mixer's address or port is shown in the "SerialPort/IP" line. If the address is not shown, click the software's "Refresh" button or reboot the mixer again in firmware update mode (step 3). *There should only be one mixer on the local network during firmware update.*

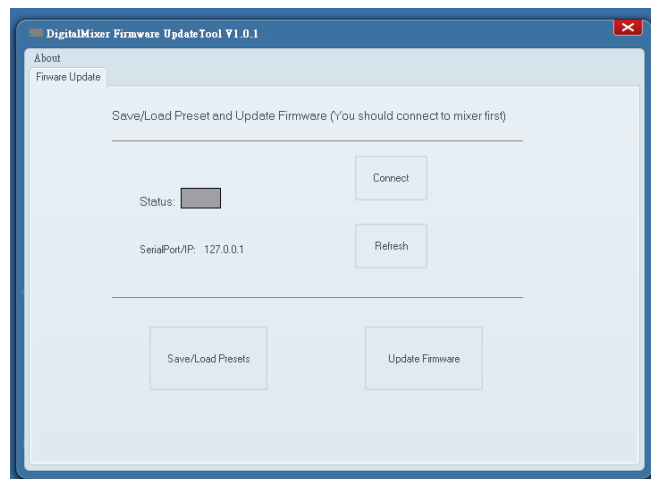


Figure 5.9: DigitalMixer24Update.exe software

5) Once the IP address or COM port is displayed, click the "Connect" button, which if successful changes the status button to green.

6) Once the Status is connected, click the "Update Firmware" button, then on the next screen click "Program". The entire firmware update process takes about five minutes.

7) Exit the software and restart the mixer normally.

Save/Load Preset utility: To copy or back up presets between a mixer and a computer, use the firmware update software tool by repeating steps 4-5 above, then click the "Save/Load Presets" button to view and use preset copy functions. Selected individual presets can be copied between mixer and the computer, as well as a full preset backup and restore. It is not necessary to remove digital audio options to save/load presets with a computer.

6 EZ-MODE

EZ-Mode offers a simplified and secure user control interface for non-technical people to control the mixer with the same ease of use as if they were operating lighting dimmers. All signal routing, levels, EQ, FX, DCA groups, and Aux sends are configured ahead of time in the main mixer before using EZ-Mode.

To access EZ-Mode, press the System button, then press the touch-screen EZ-Mode button in the shortcut section.

There are two EZ-Mode mixers types as shown below. Select the EZ-Mixer you want to use, then press <Go To EZ Mixer>.

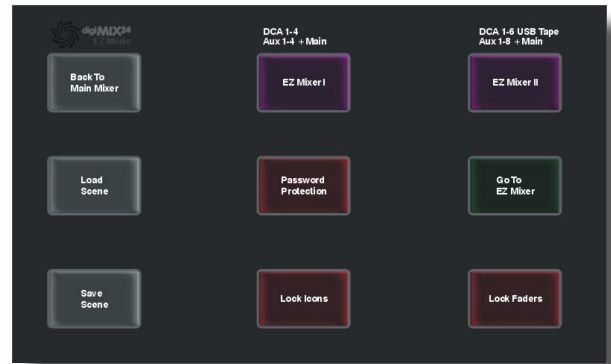


Figure 6.1: EZ-Mode Main Screen

EZ-Mode Mixer #1: (see figure 6.2) This mixer includes faders for DCA groups 1-4, Aux outputs 1-4, and Stereo Main output level with on/off switch for each fader. DCA groups must be defined before using EZ-Mode (see section 2.16)

EZ-Mode Mixer #2: (see figure 6.3) This mixer includes faders for DCA groups 1-6, USB Stereo input, Tape/CD input, Aux outputs 1-8, and Stereo Main output level, with on/off switch for each fader. To use EZ mixer #2, DCA groups must first be defined, and Sub 1-4 outputs must be configured to function as Aux 5-8 (see section 5.4).



Figure 6.2 EZ-Mode Mixer #1



Figure 6.3: EZ-Mode Mixer #2

EZ-Mode Icon Menu: (see figure 6.4) In either mixer, an icon can be assigned to each fader to quickly identify its function. Press and hold the grey box above each fader to view and select an icon from the pop-up icon table.

EZ-Mode Password: (see figure 6.1) A password can be entered in EZ-Mode to prevent access to the main mixer section while still allowing EZ-Mode control. The password used for EZ-Mode is always the same one used for the system password (see section 5.5).

Additionally, the password can be used to independently lock EZ-Mode faders or fader icons. The <EZ-Mode Password>, <Lock Icons>, and <Lock Faders> buttons turn red when enabled.

The EZ-Mode control surface is also available on an iPad for remote mixer control using a local wireless network (see section 9).

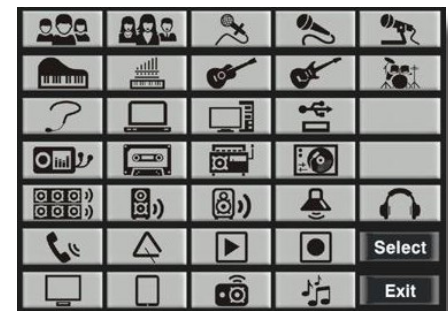


Figure 6.4: EZ-Mode Icon Menu

7 DANTE DIGITAL AUDIO (optional)

Dante, created by [Audinate](http://audinate.com), is an Ethernet based digital AV network technology that uses existing 100MB or 1GB network infrastructure for delivery of high performance, high channel count audio signals. With the optional Dante-32 module installed, the digiMIX24 can be integrated into a Dante digital audio network. The Dante-32 module can be field installed and is shipped separately from the mixer along with installation instructions.

7.1 Dante Controller: The Dante-32 module allows the digiMIX24 to receive and transmit audio with other Dante devices. Configuration of Dante audio streams requires the use of [Dante Controller](http://audinate.com). This free software from Audinate is available for both Windows® and Mac®. Dante Controller uses a simple matrix (shown at right) to connect Dante audio receivers with transmitters. Any Dante transmitter channel can be assigned to any DigiMix receiver channel (1-24). Note that when the Dante-32 module is installed, it must always be the master clock.

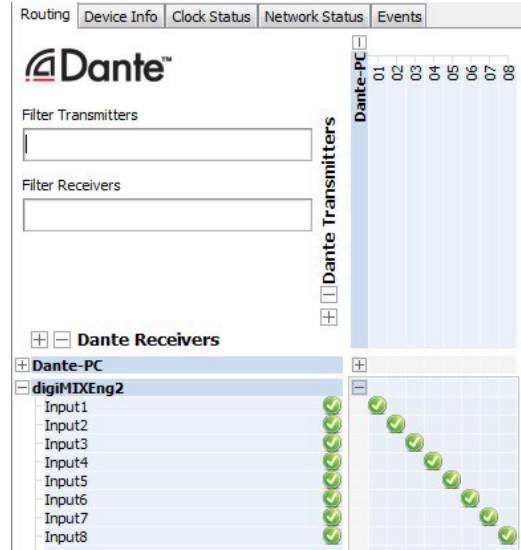
7.2 Dante Virtual Soundcard (not shown): The [Dante Virtual Soundcard](http://audinate.com), purchased separately from Audinate, allows a Windows and Mac computer to act as a Dante audio source. Any sound the computer can generate (background music, announcements, VoIP sessions, etc.) can be routed to a Dante receiver via the Dante controller.

7.3 Digital Input Assign: Press the <Digital - In> button below the touchscreen to open the Digital Input Assign window. Any of the mixer's 24 inputs channels can be assigned as exclusive Dante inputs by first selecting an input channel from within this window, then pressing it again so that it says "On" and the button turns green. When an input channel is selected for Dante, the mic/line preamp for that channel becomes disabled. Digital inputs are pre-DSP, pre-fader.

Press the <Channel Mapping> touchscreen button to view the fixed ASIO/Dante input channel mapping (see 7.3a below). These mappings cannot be changed, use the Dante Controller matrix to assign Dante outputs (transmitter) to digiMIX24 inputs (receiver). A single transmitter channel can be assigned to multiple receivers, but each receiver can have only one transmitter channel as an input source.



Dante-32 Module



7.1: Dante-32 Controller



7.3: Digital Input Assign

Channel Mapping

ASIO/Dante	Mixer	ASIO	Mixer
Output01 / Rx Ch01	Ch01	Output13 / Rx Ch13	Ch13
Output02 / Rx Ch02	Ch02	Output14 / Rx Ch14	Ch14
Output03 / Rx Ch03	Ch03	Output15 / Rx Ch15	Ch15
Output04 / Rx Ch04	Ch04	Output16 / Rx Ch16	Ch16
Output05 / Rx Ch05	Ch05	Output17 / Rx Ch17	Ch17
Output06 / Rx Ch06	Ch06	Output18 / Rx Ch18	Ch18
Output07 / Rx Ch07	Ch07	Output19 / Rx Ch19	Ch19
Output08 / Rx Ch08	Ch08	Output20 / Rx Ch20	Ch20
Output09 / Rx Ch09	Ch09	Output21 / Rx Ch21	Tape In-L
Output10 / Rx Ch10	Ch10	Output22 / Rx Ch22	Tape In-R
Output11 / Rx Ch11	Ch11	Output23 / Rx Ch23	USB In-L
Output12 / Rx Ch12	Ch12	Output24 / Rx Ch24	USB In-R

7.3a: Input Channel Mapping

7.4 Digital Output Assign: Press the <Digital - Out> button below the touchscreen to open the Digital Output Assign window. Digimix input channels 1-20, the solo bus, main, aux, and sub outputs can be individually selected as part of the Dante output stream without affecting their use within the digiMIX24 mixer. Digital outputs are post-DSP, pre-fader.

Press the <Channel Mapping> touchscreen button to view the fixed ASIO/Dante output channel mapping (see 7.4a below). These mappings cannot be changed, use the Dante Controller matrix to assign digiMIX24 digital outputs (transmitters) to other Dante device inputs (receivers).



7.4: Digital Output Assign

Mixer	ASIO/Dante	Mixer	ASIO
Ch01	Input01 Tx Ch01	Ch17	Input17 Tx Ch17
Ch02	Input02 Tx Ch02	Ch18	Input18 Tx Ch18
Ch03	Input03 Tx Ch03	Ch19	Input19 Tx Ch19
Ch04	Input04 Tx Ch04	Ch20	Input20 Tx Ch20
Ch05	Input05 Tx Ch05	Aux1	Input21 Tx Ch21
Ch06	Input06 Tx Ch06	Aux2	Input22 Tx Ch22
Ch07	Input07 Tx Ch07	Aux3	Input23 Tx Ch23
Ch08	Input08 Tx Ch08	Aux4	Input24 Tx Ch24
Ch09	Input09 Tx Ch09	Sub1 Aux5	Input25 Tx Ch25
Ch10	Input10 Tx Ch10	Sub2 Aux6	Input26 Tx Ch26
Ch11	Input11 Tx Ch11	Sub3 Aux7	Input27 Tx Ch27
Ch12	Input12 Tx Ch12	Sub4 Aux8	Input28 Tx Ch28
Ch13	Input13 Tx Ch13	Main-L	Input29 Tx Ch29
Ch14	Input14 Tx Ch14	Main-R	Input30 Tx Ch30
Ch15	Input15 Tx Ch15	Solo-L	Input31 Tx Ch31
Ch16	Input16 Tx Ch16	Solo-R	Input32 Tx Ch32

7.4a: Output Channel Mapping

8 USB-32 DIGITAL AUDIO (optional)

Ashly offers an optional, field-installable 32 channel USB digital audio module for the digiMIX24 for interfacing with other multi-track USB audio devices. Typical applications include multitrack recording from the mixer to a USB audio device, or playback of pre-recorded music from a USB audio device. One particularly useful application is to record a band live onto a multi-track DAW (digital audio workstation), then play it back through the mixer later for a "virtual" soundcheck before the musicians arrive. Visit the Ashly website to view the Ashly application note digiMIX-AN-2 for virtual soundcheck details.



USB-32 Module

8.1 USB-32 Device Driver - Purchase the USB-32 audio interface module from an Ashly dealer and install in the digiMIX24 mixer as instructed in section 3.15. A device driver is required for Windows computers but not for Mac. Ashly provides a Windows USB multi-channel device driver that can be downloaded from the Ashly website digiMIX24 product page. Install the device driver on the PC *before* connecting it to the digiMIX24. The device driver will appear as an "ASIO" type device in the audio software's device list. Complete USB-32 device driver installation instructions are found in the Ashly digiMIX24 AN-2 application note

8.2 DAW Hardware Configuration - The digiMIX24 cannot re-configure its internal channel mapping, it is hard-coded into the mixer (see illustrations 7.3a and 7.4a). You must have a working knowledge of your specific DAW hardware and software for proper configuration of channel mapping, recording, and playback properties.

8.3 USB-32 Channel Assignment - Assign digiMIX24 inputs and outputs for USB-32 digital audio the same way as you would for Dante (see sections 7.3 and 7.4). USB-32 digital audio inputs to the mixer are pre-DSP and pre-fader. USB-32 digital audio outputs from the mixer are post-DSP but still pre-fader.

9 iPad REMOTE CONTROL

A free remote control app for the iPad is available from the iTunes App Store or Ashly website. Most digiMIX24 mixer touchscreen controls are duplicated on the iPad app for wireless remote control of the mixer, including EZ-Mode.

9.1 iPad Setup steps:

9.1a) Configure the iPad Wi-Fi to be on the same network subnet as the digiMIX24.

9.1b) Download, install and launch the digiMIX24 app on an iPad with the mixer turned on and connected to the network. Only one iPad at a time can be used to control the digiMIX24.

9.1c) On startup, the iPad will display a list of IP addresses for currently available digiMIX24 mixer(s) on the network. Select an IP address and press <Connect>.

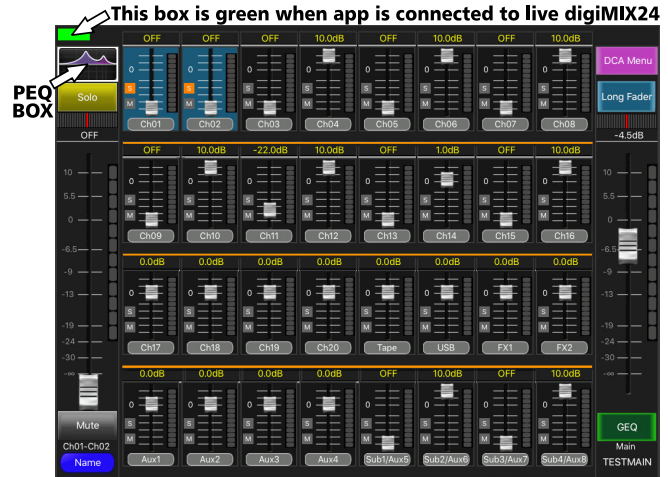
9.1d) In the mixer mode display, a green rectangle in the upper left corner indicates that the iPad app is connected via wireless network to a live digiMIX24 mixer. It turns grey if the network connection is lost. If it is grey, press it to return to the Device List used in step #9.1c. Once connected, the iPad will display the same screen as the mixer. Changes to either device will result in an immediate change to the other device.

9.1e) To access the iPad control screen for Assign, Channel, PEQ, Expander/Gate, or Compressor/Limiter functions on the currently selected channel, press the "PEQ" box in the upper left corner of the mixer mode screen as shown.

9.1f) To access EZ Mode or other system page functions from the iPad, press the <System> button from within any of the control screens mentioned above in step #9.1e.



9.1c) iPad app IP Address Selection



9.1d & 9.1e) Mixer Mode Display

9.2 iPad EZ Mode:

EZ Mode is offered on the iPad app in two different configurations for simplified wireless remote control of the mixer's DCA groups, Aux master outputs, Subgroup outputs, Tape and USB input levels, and Main output. The iPad EZ Mode interface is exactly the same as found on the digiMIX24 touchscreen. See section 6 for complete EZ Mode details. Enter EZ Mode on the iPad via the system page as described in step #9.1f above.

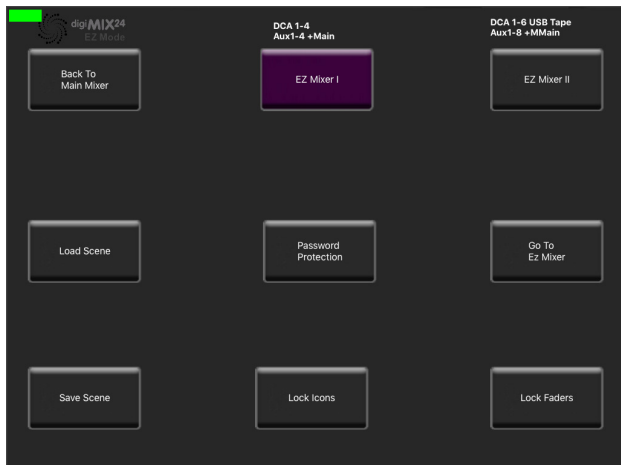
9.3 iPad EZ-Mode Password Protection and feature-lock:

The iPad EZ-Mode app always uses the same password as the mixer. *Password protection can be set from either device, and passwords are case sensitive.

***Note the following important EZ-Mode password entry details:**

1) On the digiMIX24, password entry uses a pop-up keyboard that always defaults to lower-case letters.

2) On the iPad app, the EZ-Mode password keyboard also defaults to lower case letters. The upper-case key must be pressed each time an upper case letter is desired. It is not a true caps-lock. Passwords between the mixer and the iPad EZ-Mode app must match exactly.



9.2: iPad EZ-Mode

❑ 10 TROUBLESHOOTING

10.1 No sound

Is the mic/line input cable plugged in and wired properly? If the mic is a condenser mic, is phantom power on? Is there activity on the input LED meter? Is the input muted or its fader turned down? Is the input assigned or sent to the proper output? Is the output turned down or muted? Are the power amps off or their level controls turned down? Is the input assigned to a subgroup or DCA which is muted or turned down? Are the HPF or LPF filters properly set in the PEQ section to allow the desired passband? Is the noise gate engaged and its threshold set so high that it always shuts off the signal?

10.2 Distorted sound

Is the input LED Clip light on? If so, turn down the input source or reduce the input trim control until the input LED signal peaks between 0-4 on the input meter bar. If there is still distortion, is the input fader too high? Is the Comp/Limiter engaged and its gain control set too high? Does a PEQ or GEQ filter have too much boost?

10.3 Excessive hiss

Hiss is caused by insufficient gain on the input stages and too much gain in the output stage. Be sure to have a strong input signal, adjusting the input trim control so the signal peaks are between 0 and 4 on the input LED meter bar.

10.4 Control does nothing

Is the desired input, output, or FX selected? If an expander/gate or comp/limiter control does not work, is the function turned ON? If the PEQ or GEQ controls do nothing, is the function turned on or is the EQ Bypass button lit up?

10.5 No sound in headphones when using solo button

Are the headphones turned down? If the PFL button is pressed, is there sufficient input signal? PFL means "pre-fader listen", so the position of that channel's fader will not affect solo. If PFL is off, is the channel fader turned down? If the input is assigned to a DCA or subgroup, is the DCA or subgroup turned down or muted?

10.6 FX not working

Three things are necessary for an FX to work properly.

- 1) FX must be properly defined. Press FX1 or FX2 to define, edit, or load an effect. Make sure the <Wet-Dry> mix control is properly set.
- 2) Inputs must have their signal sent to the FX1 or FX2 bus. Select an input and use the <Assign> function to send pre or post-fader signal to the FX bus using the touchscreen FX1 or FX2 controls.
- 3) FX1 and FX2 must be assigned to main, subgroup, or aux outputs. Select the FX1 or FX2. then press the Assign button to send it to the main, subgroup, or aux outputs.

11 SPECIFICATIONS

0dBu = 0.775Vrms

Microphone Input	Class-A discrete balanced, 6.8k Ohm input impedance
Frequency response to main output	20Hz ~ 20kHz +0.5/-1.0dB
Distortion (THD&N) to main output	<0.01% at 0dBu, 20Hz ~ 20kHz
Equivalent input noise	-126dBu, unweighted, 20Hz ~ 20kHz, 150 Ohm source
Gain (trim)	0 dB ~ +50dB
Maximum input level	+20dBu
Phantom power	+48VDC, +0/-4V, assignable to channels 1-16

Line input	Balanced, 75k Ohm input impedance
Frequency response to main output	20Hz ~ 20kHz at 0dBu, 0/-1.5dB
Distortion (THD&N) to main output	<0.01% at 0dBu, 20Hz ~ 20kHz
Gain (trim)	-20dB ~ +30dB
Maximum input level	+20dBu

TRS Insert	Unbalanced, tip = send, ring = return
Maximum output level	+20dBu, 120 Ohm source impedance
Maximum input level	+20dBu, 5.0k Ohm input impedance

Stereo Line Inputs 17~18, 19~20	Balanced (2 stereo pair), 27k Ohm input impedance
Frequency response to main output	20Hz ~ 20kHz, ±0.5dB
Distortion (THD&N) to main output	<0.01% at 0dBu, 20Hz ~ 20kHz
Gain	-∞ ~ +10dB
Maximum input level	+20dBu

Tape L/R input	Unbalanced RCA, 10k Ohm input impedance
Frequency response to main output	20Hz ~ 20kHz, ±0.5dB
Distortion(THD&N) to main output	<0.01% at 0dBu, 20Hz ~ 20kHz
Gain	-∞ ~ +10dB
Maximum input level	+20dBu

USB 2-Track I/O	USB type B connector, 16-bit, 44.1kHz sample rate
Frequency response to main output	20Hz ~ 20kHz, ±0.5dB
Distortion(THD&N) to main output	<0.02% at 0dBu, 20Hz ~ 20kHz
Gain	-∞ ~ +10dB
Maximum input/output level	+15dBu = full scale digital

Maximum Output levels (source impedance)

Main outputs	Balanced XLR and TRS phone jack, +20dBu (240 Ohm)
AUX 1~4 outputs	Pseudo-Balanced TRS phone jack, +20dBu (240 Ohm)
SUB 1~4 outputs	Pseudo-Balanced TRS phone jack, +20dBu (240 Ohm)
Tape outputs	Unbalanced RCA, +10dBu (1k Ohm)
Control room outputs	Pseudo-Balanced TRS phone jack, +20dBu (240 Ohm)
Residual output noise (one mic input assigned at 0dB)	-90dBu
Residual output noise (all 16 mic inputs assigned at 0dB)	-82dBu
Residual output noise (all 24 inputs assigned at 0dB)	-80dBu

Crosstalk

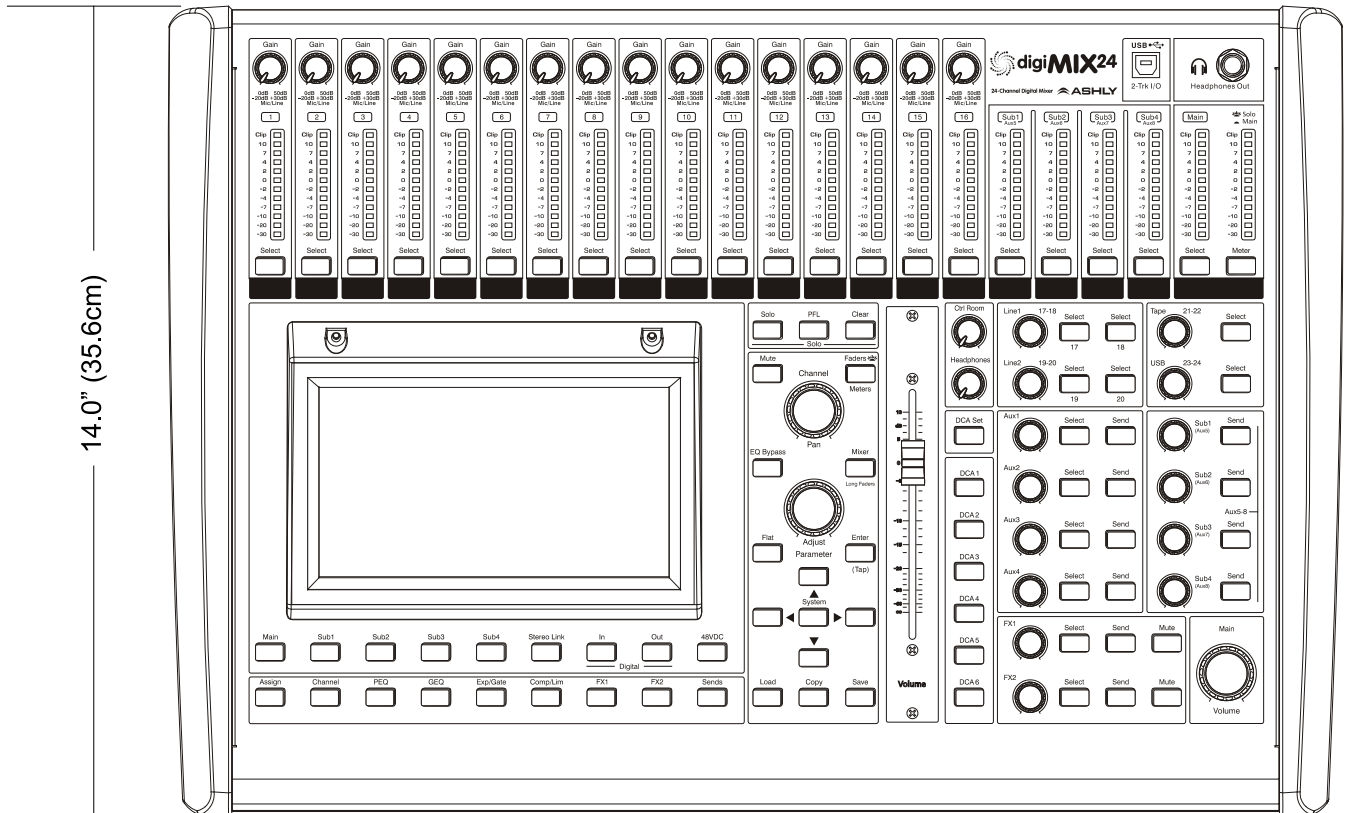
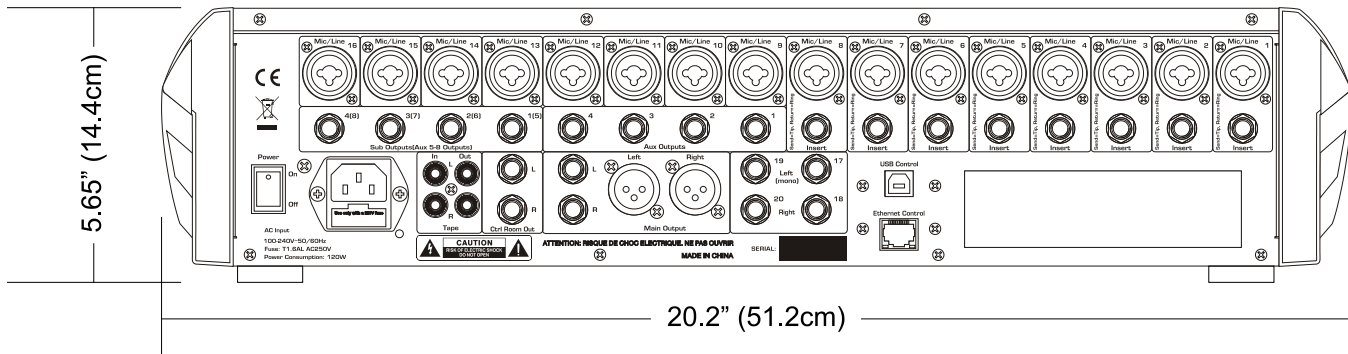
Adjacent channels (1kHz)	-82dB
Noise (bus noise, adjacent channels 20Hz ~ 20kHz)	-70dB

Channel DSP Functions:

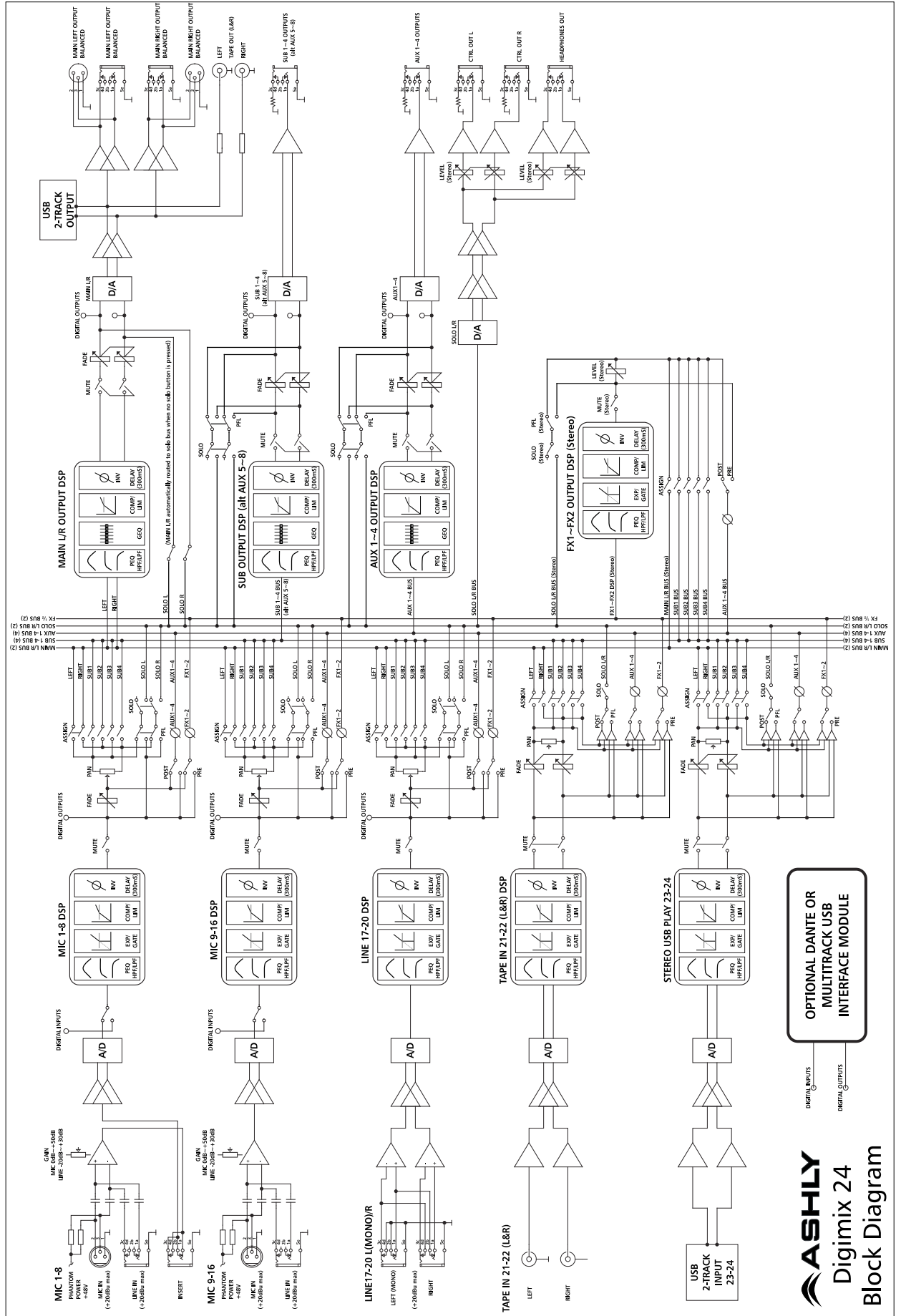
Polarity Invert (Inputs, subgroups, main, aux, FX)	Per channel, On/Off
Delay Time (Inputs, subgroups, main, aux, FX)	Per channel, 0-300ms in 0.2 ms increments
Noise Gate/Expander	Inputs, FX
Threshold range	-84dB ~ 0dBFS

Attack time	0.5mS ~ 200mS
Release time	10mS ~ 1,000mS
Ratio	1:1 ~ ∞
Compressor/Limiter	Inputs, subgroups, main, aux, FX
Threshold range	-50dB ~ 0dBFS
Attack time	10mS ~ 150mS
Release time	10mS ~ 1,000mS
Ratio	1:1 ~ ∞
Gain	0dB ~ +24dB
PEQ (parametric EQ)	Inputs, subgroups, main, aux, FX
EQ1, EQ2, EQ3, EQ4 filter type	Parametric, low shelf, high shelf
Parametric filters	20.6Hz ~ 20kHz, Q 0.4 ~ 24, boost/cut ±24dB
Shelving filters	20.6Hz ~ 20kHz, boost/cut ±24dB
HPF and LPF	20.6Hz ~ 20kHz, 20 filter types
HPF and LPF filter types	Bypass, Butterworth (BW) 6dB/oct, Bessel (BS) 6dB/oct, BW 12dB/oct, BS 12dB/oct, Linkowitz/Riley (LR) 12dB/oct, BW 18dB/oct, BS 18dB/oct, BW 24dB/oct, BS 24dB/oct, LR 24dB/oct, BW 30dB/oct, BS 30dB/oct, BW 36dB/oct, BS 36dB/oct, LR 36dB/oct, BW 42dB/oct, BS 42dB/oct, BW 48dB/oct, BS 48dB/oct, LR 48dB/oct
GEQ (graphic EQ)	Main, aux, subgroup outputs
Filter type	31 band, constant Q, boost/cut ±24dB
FX (effects)	FX input <u>Sends</u> from all 24 inputs, FX output <u>Assigns</u> to main output, subgroups, aux
Effect types	Reverbs (3), delay (1200ms), tremolo, flange, chorus, combinations See chart in section 4.6 for complete effects details
Stereo link	Inputs, subgroups, aux,
DCA groups	6 groups, level, mute, solo
Preset types	Scene (24), DSP channel (48), FX (104), GEQ (48)
A-D converter dynamic range	110dB, unweighted
Internal processor	32-bit floating point
Sample rate	48kHz
D-A converter dynamic range	106dB, unweighted
ADC/DAC bit depth	32-bit
Remote control	iPad®, with digiMIX24 app from iTunes App Store
Optional digital audio modules	Dante-32, USB-32
Firmware update, preset save/load software	PC or Mac®, available on Ashly website
AC mains	100-240VAC 50/60Hz, 120W max
Operating free-air temperature range	41°F ~ 113°F (5°C ~ 45°C)
Storage temperature range	-4°F ~ 140°F (-20°C ~ 60°C)
Unit dimensions	20.2"L x 5.65"W x 14.0"H (51.2cm x 14.4cm x 35.6cm)
Shipping dimensions	22.4"L x 8.15"W x 17.1"H (57.0cm x 20.7cm x 43.4cm)
Unit weight	17.6 lbs (8.0kg)
Shipping weight	20.7 lbs (9.4kg)
Dante-32 shipping weight	0.42 lbs (0.19kg)
Dante-32 shipping dimensions	6.02"L x 1.85"W x 7.09"H (15.3cm x 4.70cm x 18.0cm)
USB-32 shipping weight	0.47 lbs (0.21kg)
USB-32 shipping dimensions	6.02"L x 1.85"W x 7.09"H (15.3cm x 4.70cm x 18.0cm)
Compliance/safety	cTUVus, CE, FCC, RoHs
Limited warranty	5 year (3 years on touchscreen and motorized fader)

12 DIMENSIONS



13 BLOCK DIAGRAM



❑ 14 Ashly Audio Inc. LIMITED WARRANTY (USA ONLY)

(For other countries, please contact your respective distributor or dealer from where the unit was first purchased.)

For units purchased in the USA, warranty service for this unit shall be provided by ASHLY AUDIO, INC. in accordance with the following warranty statement.

ASHLY AUDIO, INC. warrants to the owner of this product that it will be free from defects in workmanship and materials for a period of FIVE years from the original-date-of-purchase, with the exception of touch-screen displays and motorized faders which are warranted for THREE years from the original-date-of-purchase.

ASHLY AUDIO INC. will without charge, repair or replace at its discretion, any defective product or component parts upon prepaid delivery of the product to the ASHLY AUDIO, INC. factory service department, accompanied with a proof of original-date-of-purchase in the form of a valid sales receipt. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

EXCLUSIONS: This warranty does not apply in the event of misuse, neglect, or as a result of unauthorized alterations or repairs made to the product. This warranty is void if the serial number is altered, defaced, or removed. ASHLY AUDIO, INC. reserves the right to make changes in design, or make additions to, or improvements upon, this product without any obligation to install the same on products previously manufactured.

Any implied warranties, which may arise under the operation of state law, shall be effective only for FIVE years (THREE years for touch-screen displays and motorized faders) from the original-date-of-purchase of the product. ASHLY AUDIO, INC. shall be obligated to only correct defects in the product itself. ASHLY AUDIO, INC. is not liable for any damage or injury, which may result from, or be incidental to, or a consequence of, such defects. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion, or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

OBTAINING WARRANTY SERVICE:

For warranty service in the United States, please follow this procedure:

1) Please return the product to ASHLY AUDIO, INC. freight prepaid, with a written statement describing the defect and application that the product is used in. ASHLY AUDIO, INC. will examine the product and perform any necessary service, including replacement of defective parts, at no further cost to you.

2) Please ship your product to:

ASHLY AUDIO, INC.
Attention: Service Department
847 Holt Road
Webster, NY 14580-9103



ASHLY AUDIO INC. 847 Holt Road Webster, NY 14580-9103 USA

Phone: (585) 872-0010 Fax: (585) 872-0739

Toll Free (800) 828-6308 www.ashly.com

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