CLAYMORE®

CLY^{DX}24.8
DIGITAL MIXING CONSOLE

User's Manual

Touch screen · digital *fx* · digital MIXER · USB ENABLED · App · Dante™

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO REDUCE THE RISK OF ELECTRIC SHOCK PLEASE DO NOT REMOVE THE COVER OR THE BACK PANEL OF THIS EQUIPMENT.
THERE ARE NO PARTS NEEDED BY USER INSIDE THE EQUIPMENT. FOR SERVICE, PLEASE CONTACT QUALIFIED SERVICE CENTERS.

This symbol, wherever used, alerts you to the resence of un-insulated and dangerous voltages in the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.

This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.

Protective Ground Terminal

AC mains (Alternating Current)

Hazardous Live Terminal

ON: Denotes the product is turned on.

OFF: Denotes the product is turned off.

CAUTION
Describes precautions that should be observed to prevent damage to the product.

1. Read this Manual carefully before operation.

2. Keep this Manual in a safe place.

3. Be aware of all wamings reported with this symbol.

4. Keep this Equipment away from water and moisture.

5. Clean it only with dry doth. Do not use solvent or other chemicals.

6. Do not damp or cover any cooling opening. Install the equipment only in accordance with the Manufactu-rer's instructions.

7. Power Cords are designed for your safety. Do not remove Ground connections! If the plug does not fit your AC outlet, seek advice from a qualified electri-cian. Protect the power cord and plug from any physical stress to avoid risk of electric shock. Do ot place heavy objects on the power. This could cause electric shodk or fire.

8. Unplug this equipment when unused for long periods of time or during a storm.

9. Refer all service to qualified service personnel only. Do not perform any servicing other than those instruc-tions contained within the User's Manual.

10. To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder.

WARNING
To reduce the risk of electric shock and fire, do not expose this equipment to moisture or rain.

Dispose of this product should not be placed in municipal waste and should be separate collection.

Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

11. Move this Equipment only with a cart, stand, tripod, or bracket, specified by the manufacturer, or sold with the Equipment. When a cart is used, use caution when moving the cart / equipment combination to avoid possible injury from tip-over.

12. Permanent hearing loss may be caused by exposure to extremely high noise levels.
The US. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible exposure to noise level.
These are shown in the following chart:

Hours x day	SPL	Example
8	90	Small gig
6	92	Train
4	95	Subway train
3	97	High level desktop monitors
2	100	Classic music concert
1.5	102	
1	105	
0.5	110	
0.25 or less	115	Rock Concert

According to OSHA, an exposure to high SPL in excess of these limits may result in the loss of heat. To avoid the potential damage of heat, it is recommended that Personnel exposed to equipment capable of generating high SPL use hearing protection while such equipment is under operation.

The apparatus shall be connected to a mains socket outlet with a protective earthing connection.

The mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

Notes

Index

### front Panel

Page7:   1. Ch1-24 input gain control knob _____ 6. Digital In/Out
Page8:   7. Automix _____ 9. Assign
Page9:   10. Gate _____ 13. Channel
Page10:   14. FX Edit _____ 17. System
Page11:   18. Save/Load _____ 22. Adjust Parameter Knob
Page12:   23. Solo _____ 30. Name
Page13:   31. DCA Clear _____ 35. Talkback
Page14:   36. DCA Groups1-12 _____ 44. HP1
Page15:   45. LCD

Index

Rear Panel

under the EM disturbance, the ratio of signal-noise may be changed above 3dB.

* The mixer for professional use. They can be used in following electromagnetic environment: residential, commercial and light industrial, urban outdoors.
They are the apparatus not intended for rack mounting.

* The peak inrush currents equal to 8.33 A.

*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, and (2)this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 a 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.

Notes

10 Notes

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Table of contents

Introduction

Thank you for purchasing our Digital Mixer. With 24 line-level inputs, 24 microphone preamplifiers; Digital 4 band full parametric EQ; Compressor; Gate; Delay; Remote control; 13 precision motor fader for lever control; Large and small LCD display operation in real-time; Program, save, load, and copy functions and so on. This Digital Mixer helps you creating a wonderful show. It is easy to operate though it has powerful function.
We suggest that you use this manual to familiarize yourself with the features and applications before using.

Summary of Features

Standard Features
- 24 microphone preamplifiers and line-level inputs
- +48V phantom power
- 8 Aux sends (contain 8 TRS '1/4' interface and 8 'XLR' interface)
- 1 Main L/R Output(contain 1 TRS '1/4' interface and 1 'XLR' interface)
- All channels Control Room outputs
- 1 headphones output
- USB Stereo recording/playback
- USB or network port firmware update interface, can be used to connect ipad remote control APP
- 2 internal FX
- 13 100mm precision motor fader
- 7 inch color LCD touch screen for graphical view and setup
- Two-color LCD displaying channel information
- 24-bit/48KHz sampling rate
- Program, save, load & copy functions
- Digital noise gate
- Digital compressor/limiter
- Digital 4-band full parametric EQ
- PAN, Phase reverse, Time delay
- DCA for Digital Control Audio or MUTE
- Lock and unlock function
- Change the password
- Automix, RTA, Talkback

Optional Features
- T-32DANTE network audio interface, field installable
- T-32USB multi-track audio interface, field installable

Usefull Data

Please write your serial number here for future reference.

Serial Number:

Date of Purchase:

Purchased at:

DSP Control

9.19 RTA interface
The same as the RTA function button on the panel, touch the box to enable the RTA function, the level corresponding to each frequency is displayed in real time. Shown as follow:
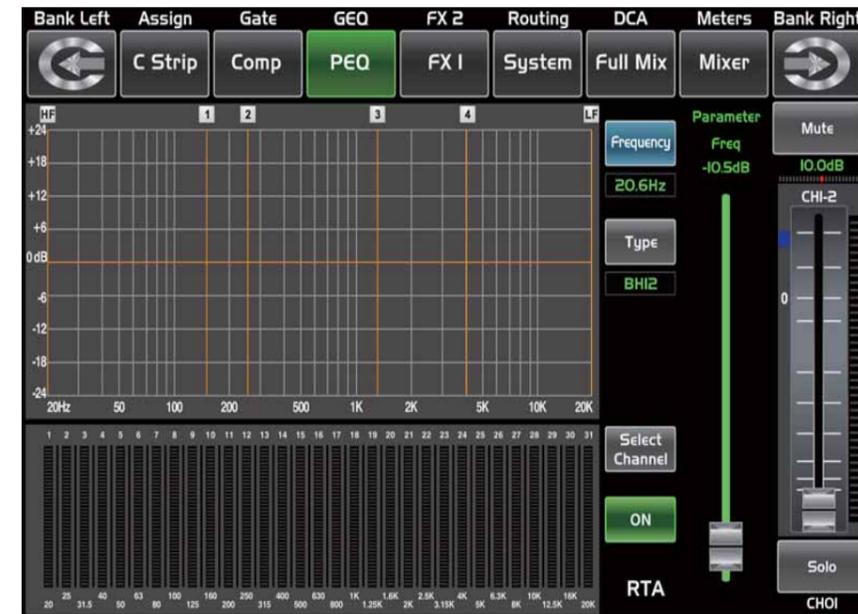
9.20 48V interface
It will be illuminated by touching the box, providing 48V phantom power (CH1-CH24, it is the same function as the +48V button on panel).
Warning: when you touch the corresponding box, it will prompt says" please do not supply phantom power to any device which do not need phantom power, otherwise the device may be damaged, are you sure?" If you touch ok then it will supply 48V phantom power to the corresponding channel or touch cancel to give up the operation.

DSP Control

Select a channel or bus that you want to copy its settings onto other channels, then press Copy button, you can see the selected channel or bus will flash. Touch OFF of other channel or bus, it will turn to ON and the background will illuminate red, which means you are ready to copy.

Touch above controls, the hook mark will come up, which means you have selected the controls and ready to copy their parameters to other channels or buses.
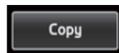
Then touch Copy control to complete your operation.
In the process of operation, please keep an eye to the LCD screen display.

9.18 Automix interface
The Automix automatically reduces the level of a microphone when it is not being used. Consequently it lowers the rumble, reverberation and other extraneous noise that occur when several microphones operate simultaneously.
It is typically used to mix panel discussions on television talk shows and at conferences and seminars. It can also be used to mix actors' wireless microphones in theater productions and musicals. It is frequently employed in settings where it is expected that a live sound operator will be not present, such as courtrooms and city council chambers.

Control

Function Buttons and Knobs
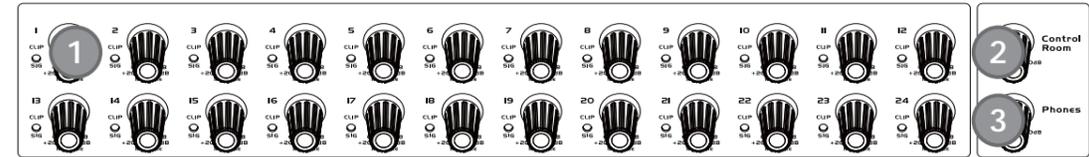
1. Ch1-24 input gain control knob
The knob Ch1-24 control the gain level of the channel's input.
Note: It is very important to properly set the level of the input gain to minimize noise and avoid overload distortion.
When the signal> + 18dB, this Clip LED lights green, indicating the relevant channel signal overload.
When the signal> -30dB, this Sig LED lights green, indicating the status of the relevant channel input signal.

2. Control Room Knob
This knob controls the overall output level for control room.

3. Phones Knob
This knob controls the overall output level for headphones.

4. Route to Main
Press the input channel button, then press this button, can quickly route the input channel to main (including CH1-24, AUX1-8 and FX1-2).

5. DC48V Phantom Power button
Every microphone input equips with an individual phantom power which is controlled by the 48V phantom power button. It will illuminate when phantom power is activated.
Note: Please notice that only the condenser microphone needs phantom power.
Please do not supply phantom power to any device which don't need phantom power otherwise the device may be damaged.

- DC48V -
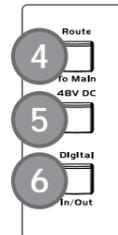
6. Digital In/Out
Press this button, it will switch between Digital In and Digital Out function.
This button engages and disengages the digital channel when you have an optional input/output module inserted.
• Digital In
The button will illuminate to indicate that current channel has been selected as digital input. The window is as below.
For the detail operation, please refer to introduction of DSP Control section.

Control

• Digital Out

The button will illuminate to indicate that current channel has been selected as digital output. The window is as below.

For the detail operation, please refer to introduction of DSP Control section.

When the button illuminated, please pay attention to which channel is Digital Input and which channel is Digital Output during operation.

- Digital In -


- Digital Out -

7. Automix

Press this button to activate the Automix function. The Automix automatically reduces the level of a microphone when it is not being used. Consequently it lowers the rumble, reverberation and other extraneous noise that occur when several microphones operate simultaneously.

8. Pan Knob

The encoder controls signal level from left to right for the selected input channel. The LCD display shows the setting in real time. If two channels have been linked as stereo pair, the LCD display will automatically change to stereo pan.

9. Assign

Press this button to enter assign page, signal from a selected input channel can be assigned to Main, AUX1-8, and FX1-2. The window is as below.

For the detail operation, please refer to introduction of DSP Control section.
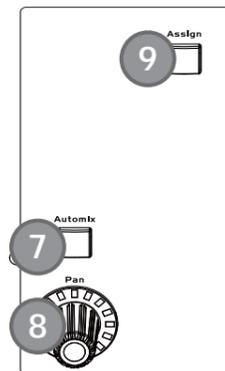
- Automix -

- Assign -

DSP Control

9.16 Load/Save interface

In this interface you can load or save Scene, Effect, GEQ or DSP channel setting too. The chosen preset can be deleted by pressing Delete. Please notice the instruction that is shown on the LCD display.

This items show names of preset, when you select a preset, its name will show on the bottom box, then touch Load control on the screen to load the selected preset to corresponding controls.

Touch anyone of these controls, the corresponding background will illuminate, you can load preset of selected controls.


Touch Delete to delete current selected item's preset, touch Load to load current selected item's preset, touch Save to save current selected item's preset.

The preset can be recalled to the same channel with exactly the same DSP setting and other setting like Solo, Mute, Post..., but with the channel's own DSP setting if recall to other channels. For example, if you select Channel 6 and save the setting as scene preset 6. If you select the Channel 6 and press the Load button to load the scene preset 6, then, the Channel 6 will be exactly same as the scene preset 6. But if you choose other channel like Channel 7, the DSP setting will be same as the Channel 7 and other settings will be same as preset 6.

9.17 Copy interface

DSP Control

9.15 System interface
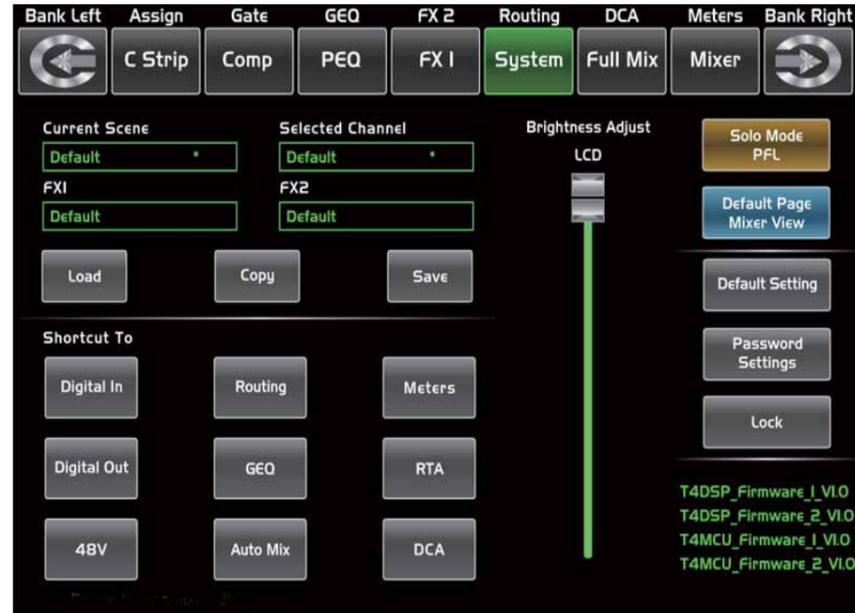
Text in these box show current corresponding preset you have saved.

Touch these icons to enter corresponding page.
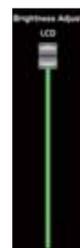
You can use this fader to adjust the LCD brightness.
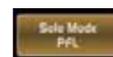
It is the same as PFL on the panel, touch it and it will be illuminated in synchronization with the PFL button on the panel. For details, please refer to the introduction of the PFL in the panel section.

Select the default interface is Full Mixer or Mixer after restarting the mixer.

Touch this button to change password of the system. Input an old password and a new password. The system will save the new one as current password. Please note messages on the screen when operation.

Touch this button to lock the system. Once locked, you must input your password to unlock it. Default password and Super password is "2412", which means you can tap it to unlock your mixer every time you forget your password. Please note messages on the screen when operation.
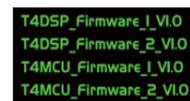
At the lower right corner, you can see instruction of the DSP firmware.

Control

10. Gate
Noise gate attenuates signals that below the threshold and allows signals to pass through only when they are above a threshold setting. The window is as below.
For the detail operation, please refer to introduction of DSP Control section.

11. Comp
A compressor reduces the level of an audio signal if its amplitude exceeds a certain threshold. The window is as below.
For the detail operation, please refer to introduction of DSP Control section.

12. PEQ
An equalizer is a filter that allows you to adjust the level of frequency in the range of 20Hz-20KHz. The window is as below.
For the detail operation, please refer to introduction of DSP Control section.

13. Channel
Press this button, you will see Channel page on LCD screen. It gives you a preview of other function such as Polarity, Delay, Link, Gate, EQ, Compressor etc. You can also adjust corresponding parameters that show on the screen. But for Gate here, you can only adjust threshold; For Compressor, you can only adjust threshold; For EQ, you can adjust nothing here.
For the detail operation, please refer to introduction of DSP Control section.
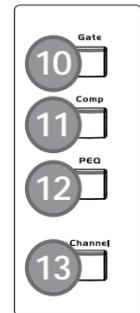
- Gate -

- Comp -

- PEQ -

- Channel -

Control

14. FX Edit
Press this button can show and editor the setting of internal effects. Each of the FX owns 12 program effects. The window is as below.
For the detail operation, please refer to introduction of DSP Control section.

15. Copy
Press this button and select a channel to copy the setting parameters of this channel to other channels.
For the detail operation, please refer to introduction of DSP Control section.

16. Routing & Sends on Faders AUX1-8/FX1-2
Press this button, users can select one or several channels to assign the signal to corresponding outputs.
Routing: Press this button to enter the assign page, select the channel to be assigned (AUX1-8, FX1-2 and Main) and click Enter to confirm.
Sends on Faders AUX1-8/FX1-2: The function is the same as the Routing button. Press this button and it will flash, then select the channel to be assigned.
For the detail operation, please refer to introduction of DSP Control section.

17. System
Press this button to go to System page, as well as show and edit parameters of the system, as below picture show.
For the detail operation, please refer to introduction of DSP Control section.
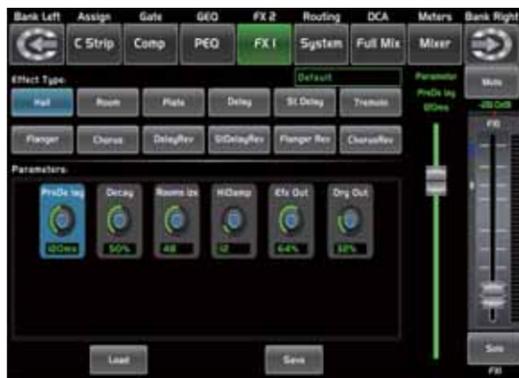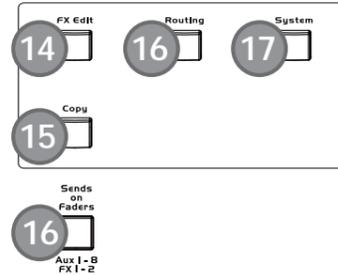
- FX Edit -

- Copy -

- Routing & Sends on Faders AUX1-8/FX1-2 -
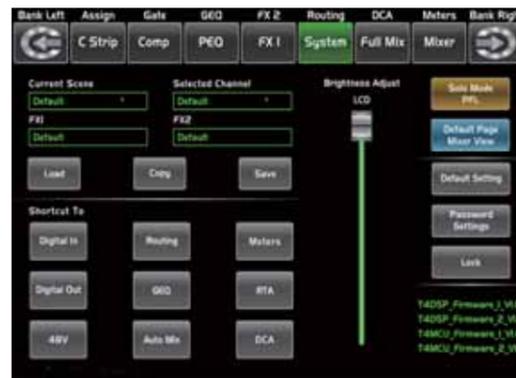
- System -

DSP Control

10.0dB The number above it shows level of current channel.

This icon on the right shows the actual input signal level activity.

This icon on the left shows LIMITER/COMP meters.

9.14 Routing interface
You can select input channels of Main 1-24 and FX1-2 route them to output channels of Main, Aux 1-8 and FX1-2. For example, below window shows Aux 1 routing function. In this page, you can route input channels in LCD screen to Aux1 output.
In Main routing page, channel level can not be adjusted, but channel level in Aux and FX pages are adjustable.
As the function of this button will be a little bit different in different control please notice the notes that are shown on the LCD screen when operating.

Touch it to route input channel 1 to output AUX1 as an example. Please rotate Parameter Adjust knob or slide long fader on the screen to change selected channel's audio level. Touch PRE on the screen, it will switch to POST, and the background will illuminate. The selected channel will derive its signals from all channels post-fader. If the button has not been pressed and not illuminate, by default, the selected channel will derive its signal from all channels pre-fader and all unaffected by the sending channel's fader position.
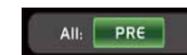
This icon is a switch to change all channels to be POST or PRE. If the selected channel was linked, they will change synchronous in this page when you adjust them.

Slide the fader or rotate Parameter Adjust knob to adjust level of selected input channel.

DSP Control

Press one of these buttons DCA1-12 either the panel or screen, this will light indicating it is ready to be edited either to add or delete channels.

Each DCA group can be renamed as needed. For it you only have to touch the respective box DCA holding it down until the screen shows you the keyboard. This action can also be made from the pages of "Long Faders" or "Mixer".

To select channels touch the box corresponding to the desired channel and that box will change color indicating that the channel was added. In the same way to remove a channel of a group, touch the channel box and this will turn off indicating their elimination.

After you edit the DCA group, press the "DCA Set" button which is blinking, either on screen or panel. Repeat the above steps to edit other DCA groups. Each group may be assigned repeatedly channels, for example channel 3 could belong to DCA1 and DCA2 at the same time, etc. After selection finished, the system will return to the page "Mixer" automatically, in which page you can operate selected group. You can slide fader on the left of screen to increase or decrease the channel fader levels (not volume) in proportion at the same time, or by rotating the corresponding knob to control the level.

Pressing this button a warning box will be displayed on the screen, which must be confirmed if you desired clear the channel selection of the respective DCA group.

9.13 Meters interface

This page gives you an overall review of all input and output channels and buses' meters status. Please note that this interface is not adjustable. If you want to adjust volume, you can achieve it in the Long Fader or Routing interface, or directly press the corresponding channel buttons.

This icon indicates current channel's fader position, "0" is zero dB position.

Control

18. Save/Load

Save: Used to save the current settings (Scene, DSP, GEQ, FX).

Load: used to load presets (Scene, DSP, GEQ, FX).

By pressing this button to achieve the switching of save and load.

- Save -

- Load -

19. Mixer

Press this button, you will see mixer page on LCD screen, where you can control all the input and output channels' level, solo and mute, as well as DCA group level control, the window is as below.

For the detail operation, please refer to the introduction of DSP Control section.

- Mixer -
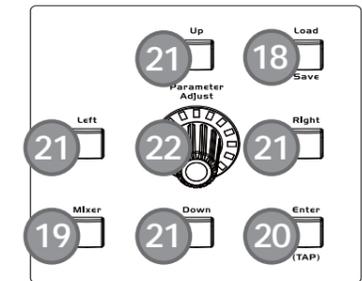
20. Enter(TAP)

This button can activate two types of function.

• Enter: Confirm the edited parameter values.

When there is a confirmation message jump out on the screen, press Enter button to answer "yes".

• TAP: In the FX1 and FX2 page, it will switch to TAP function, you can use this button to enter a delay time in tempo with the music being played.

As the function of this button will be a little bit different in different function, please notice the notes that are shown on the screen when operating.

21. UP & Down & Left & Right button

These buttons move the cursor around the display page, or select and delete parameters and options. Sometimes, Up button function is the same as Left button, while Down button function is the same as Right button. But in GEQ, Up and Down adjust gain level, while Left and Right adjust frequency.

As the function of this button will be a little bit different in different function, please notice the notes that are shown on the screen when operating.

22. Adjust Parameter Knob

This Encoder adjusts the parameter values of selected control that are shown on the LCD display. Turning it clockwise increases the value and counterclockwise decreases the value.

As the function of this button will be a little bit different in different function, please notice the notes that are shown on the screen when operating.

Control

23. Solo
Press this button will send its channels or buses to the control room outputs. It will illuminate as has been pressed and enabled.

23

24. Mute
Press this button will mute selected channel and all of its assigned outputs. It will illuminate when the button has been pressed and enabled.

24

25. Select Button
There are 12 select buttons as you can see on the panel. Press this button will route its channel to add DSP setting and assign its output. It will illuminate as has been pressed and enabled. Press "1-12" button, which means CH1-12 correspondingly, press "13-24" button, which means CH13-24 correspondingly, and press "Levels" button, which means AUX1-8 and FX1-2 correspondingly. In DCA window, you can select group channels by this button.

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26. Volume Fader
There are 13 faders on the panel which is used for level adjustment of the corresponding channel, including 12 faders for CH1-24 and 1 for Main.

27. S Clear
Press this button to clear the solo function for all of the soloed buses or channels.

26

28. M Clear
Press this button to clear the mute function for all of the muted buses or channels.

29. Stereo Link
Press this button to select the Pan function, then rotate Parameter Adjust encode to control signal level from left to right for the selected input or output bus. If you have adjusted a channel pan, please just touch 2 times on the screen and make it back to the centre position. The LCD display shows the setting in real time. If two channels have been linked as stereo pair, the LCD display will automatically change to stereo pan.
22. Link button Input channels, aux buses, can be linked as a stereo pair. It will illuminate if the stereo link button has been pressed and enabled. The stereo pairs are predefined and cannot be changed. They are as follows:
Channels 1 - 2 / Channels 3 - 4 / Channels 5 - 6 / Channels 7 - 8 / Channels 9 - 10
Channels 11 - 12 / Channels 13 – 14 / Channels 15 - 16 / Channels 17 - 18 / Channels 19 - 20
Channels 21 - 22 / Channels 23 - 24 / Aux 1 - 2 / Aux 3 - 4 / Aux5 - 6 / Aux7 - 8

27

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29

A stereo link can be enabled when either channel in the pair is selected by pressing the Link button. When the Link button is illuminated which indicates the Stereo Link function enabled, all DSP setting, solo status and main assignments are passed to the other channel in the pair.
• Link & DCA: After link, the channels can also be grouped to DCA as stereo channel, but not able to cancel the link in DCA. On the contrary, if the channel has been grouped to DCA, it can not link at all, but its paired channel can link.
For example, channel 5 is linked with channel 6, then both channel 5 and 6 can be grouped to DCA. But if channel 5 has been grouped to DCA first, it can not link to channel 6, but channel 6 can link to channel 5.
• Link & Routing: The two linked channels can route as stereo channel, while routed channels can also link later. Please note that this is a nondestructive passing, the other channel's previous setting will be restored after the Link button is disengaged. For example, when Channel 6 has been selected, then press Stereo Link button, all of Channel 6's setting will be copied onto Channel 5. The Channel 5's own setting will restore after the Link button has been disengaged.

30

30. Name
Press this button to rename the channel.
Operation: Press Name button--- Select the channel which need to be named--- Edit the name--- Enter.

DSP Control

9.11 Digital Out interface

When you select a channel as digital output, OFF will switch to ON, the background of ON will illuminate. The screen will give clues if no digital card inserted in, and the Digital Out function can not enable either.

9.12 DCA Set interface
To enter the page DCA group assignment must press the button "DCA Set" located on the panel, which started to blink indicating it is in edit mode. You can also go to this screen by pressing the icon in the pages of different functions such as; (Mixer, Assign, Channel and System) where "DCA Assign" appears. The page is shown as follows:
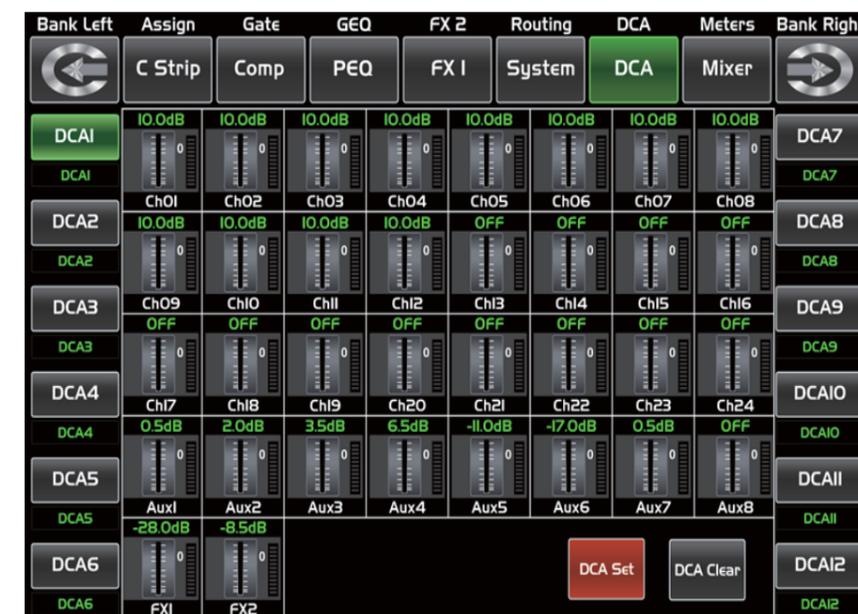
DSP Control

9.10 Digital In interface
Only channel 1-24 are given digital input. You can select which channels input from option module, and which channels input from analog. The screen will give clues if no digital card inserted in, and the Digital in function can not enable either.

 Touch this icon to switch between Digital Input and Digital Output page.

 This symbol enables you to choose digital input channels, touch the switch OFF, it will turn to ON and illuminate, which means this selected channel can input digital signal.

 When you choose a digital assign channel, you can adjust its input level by sliding this long fader on the screen or by rotating Parameter Adjust knob on the panel.

Control

31. DCA Clear
Press this button to clear the corresponding DCA group.
Operation: Press DCA Set button--- Select the DCA group which need to be cleared--- Press DCA Clear button--- Yes.

32. FX Mute
This button is for FX function, when press it, effects of FX1-2 will be mute synchronously, which is similar to MUTE button.

33. DCA set
Digital Control Audio (DCA) can realize group assignment. DCA volume control will always leave the same ratio between the channel fader levels, independent of the volume control. Press this button, it will flash until some channels have been selected, then press it again to save the settings and turn off the button. For example, if you want to set CH1 & CH2 as DCA1, the steps are: Press DCA Set to enable DCA setting --- Press DCA1, then select CH1 & CH2 --- Press DCA Set again to confirm.
The corresponding window is as below picture show.
For the detail operation, please refer to introduction of DSP Control section.

34. Meters
Press this button to enter meters check page, as below picture show, for the details, please refer to corresponding introduction of DSP Control section.

35. Talkback
Insert the microphone on the rear panel CH24 Mic input jack. Press this button enter the Talkback interface and the button will be illuminated at the same time. Touch the Talkback Active box on the screen to enable the Talkback function. CH24 can be assigned to Main and AUX1-8. There are two modes:
PTT mode: Select PTT mode, you must always press the Talkback button to speak, and release to end the speaking.
ON/OFF mode: Select ON/OFF mode, press the Talkback button to speak.
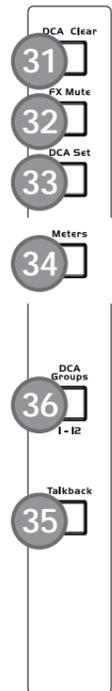
- DCA set -

- Meters -

- Talkback -

Control

36. DCA Groups1-12
Press this button to activate the DCA level adjustment function. Slide the corresponding fader to adjust the level of the pre-defined DCA group. If it has not been DCA grouped, the screen will prompt "This DCA group is not defined".

37. RTA
RTA: Real-Time Analysis. Press this button to activate the RTA function. With 31 frequency points analysis, each frequency corresponds to a level value, the level of each frequency can be seen on the screen in real time.

38. GEQ
Press this button to activate GEQ function (note: only for output channel). In GEQ page you can set the 31-band EQ. The window is as below.
For the detail operation, please refer to introduction of DSP Control section.

39. Select Main
It is used for selecting Main channel. Enter main channel interface by pressing this button.

40. USB Lamp Connector
This connector can connect with a 5V-500mA lamp which can help you use the digital mixer whether in dark situation or not conveniently.
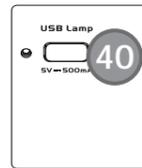
41. LED Level Indicator
It indicates the level of the MAIN channel or SOLO channel. By default, it is used to indicate the MAIN channel level when the SOLO METER button is not pressed.
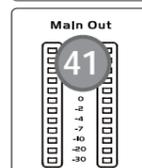
42. Solo Meters
When the button is off, meters above it indicate input level of main, while illuminated indicate input level of Solo.

43. PFL
The default setting for the Solo bus is After-Fader Listen (AFL); by pressing PFL,
Pre-Fader Listen is enabled. In either mode, press Solo on any channel or bus to route that channel to the Solo bus and has no effect on the main.

44. HP1
This jack is used for connecting headphones.

- RTA -   - GEQ -

DSP Control

Touch anyone of these controls to adjust parameter of the effects by rotating Parameter Adjust knob or slide fader on the right of LCD screen.

It includes 12 kinds of adjustable effects which can help to realize the effect that you want to show your audience.

No.	Preset	Description	Parameter
1	Hall	Simulate an acoustic space of the sound	Pre Delay; Decay; Room Size; Hi Damp; Efx Out; Dry out
2	Room	Simulate a studio room with many early reflections	Pre Delay; Decay; Room Size; Hi Damp; Efx Out; Dry Out
3	Plate	Simulate the transducer's sound like classic bright vocal plate	Pre Delay; Decay; Room Size; Hi Damp; Efx Out; Dry out
4	Delay	Reproduce the sound input on the output after a lapse of time	Time; Decay; Hi Damp; Efx Out; Dry Out
5	Stdelay	Recreate the input sound on the stereo output with different time	L Time; R time; L Decay; R Decay; Hi Damp; Efx Out; Dry Out
6	Tremolo	Simulate the sound effect by repeating the same note or different notes alternately and quickly	Feed Back; Depth; ModFreq; Efx Out; Dry Out
7	Flanger	Simulate to play with another person carrying out the same notes on the same instrument	ModFreq; Efx Out; Dry Out
8	Chorus	Recreate the illusion of more than one instrument from a single instrument sound	Feed Back; Depth; ModFreq; Efx Out; Dry Out
9	DelayRev	Delay with room effect	Pre Delay; Rev Decay; Room Size; Rev Hi; Rev Out; Echo Time; Echo Hi; Echo F.B; Echo out; Dry Out
10	StDelayRev	Stereo Delay with room effect	Pre Delay; Rev Decay; Room Size; Rev Hi; Rev Out; L Time; R Time; L Decay; R Decay; Echo Hi; Echo Out; Dry Out
11	FlangerRev	Stereo chorus and large room reverb	Pre Delay; Rev Decay; Room Size; Rev Hi; Rev Out; ModF.B; ModDepth; ModFreq; Mod Out; Dry Out
12	ChorusRev	Simulate the sound effect achieved by rotating horn speakers and a bass cylinder	Pre Delay; Rev Decay; Room Size; Rev Hi; Rev Out; ModF.B; ModDepth; ModFreq; ModOut; Dry Out

DSP Control

In this screen, you can adjust gain at every specific frequency. The EQ number, Frequency and Gain value which you are adjusting will be shown on the LCD below the graphic curve. Please follow the instruction that is shown on the LCD display to adjust the value.

The Flat EQ button can help you set the whole 31 bands to be default setting.

The box can show the frequency and gain that you are adjusting.

Touch Load, Copy and Save to realize corresponding function.

Touch this control in this area to enter page of corresponding channel.

Touch ON/OFF switch, it will illuminate and enable the GEQ function. Compare with ON in other page, the different is that even you don't turn on it, the GEQ parameter is adjustable, but won't function.

Text Default in the box shows preset of GEQ. You can change it by loading another parameter setting.

The GEQ settings can be saved as preset for future use by pressing the Save button and flowing instruction that is shown on the LCD display. Please notice that the assign state will not be saved when one GEQ setting is saved as preset (assign state could be saved in scene option). The preset can be recalled by pressing the Load button and deleted by pressing the Flat EQ button after it has been chosen. Please notice the instruction that is shown on the LCD display. Please take section of DSP Load, Save, Copy as reference.

9.9 FX1-2 interface

The setting values of FX1-2 can be saved as preset for future use by simply touching the Save button and following the instruction that is shown on the LCD display.
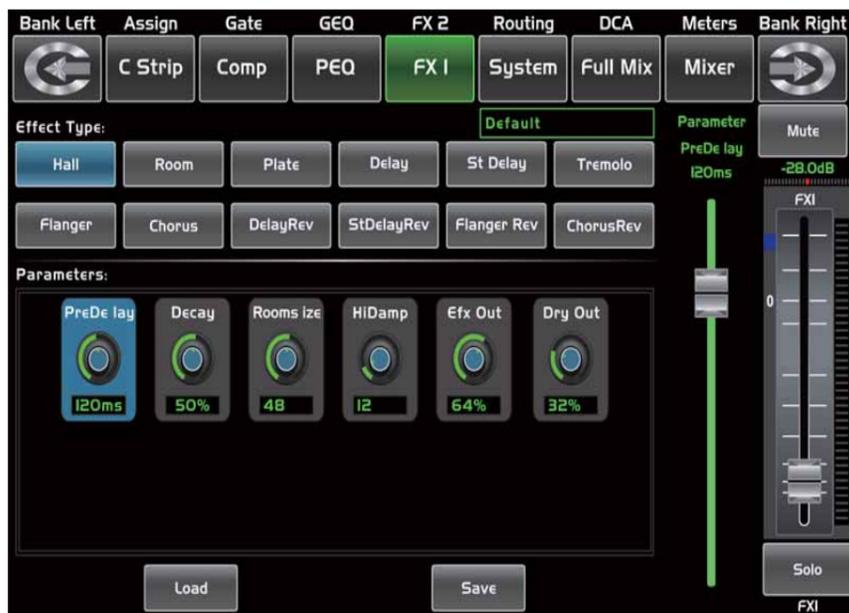

Control

45. LCD

The digital mixer equips an 800*480 large LCD screen (for displaying the current operation interface) and 13 128*64 LCD screens (for displaying channels, channel names, and level values).
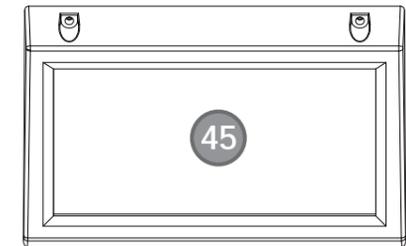
Rear Panel
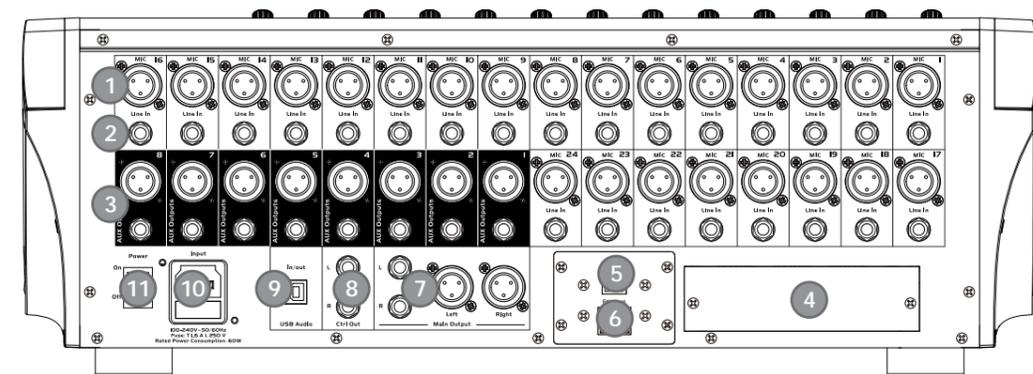
1. MIC Input Jack
This Digital Mixer equips 24 microphone preamplifiers for use with all types of microphones. The preamplifier has a Class A input buffer which followed by a dual-servo gain stage. This arrangement will bring ultra-low noise and wide gain control which help to boost signals without increasing unwanted background noise.

2. Line Input Connector
This Digital Mixer is equipped with 1/4 "balanced TRS connectors for line input.
Note: Please notice that there will be a momentary spike in the output when plugging in a microphone or a line-level input device, or turning phantom power on or off. So it should be better to mute or turn down the channel fader before changing connections or turning phantom power on or off.

3. Aux Outputs
These are balanced mono outputs for each auxiliary. The Aux mixing will be output from these 8 Aux channels. Aux mixing can be used for monitoring and effects processing.

4. Optional module
Select our optional module that you want for extra function.
Please contact with distributor to get more information about the optional modules.

5. USB
This port is for remote control or firmware update.

6. Ethernet
This port is for Ethernet control or firmware update.

7. Main Output
This Digital Mixer features both XLR and TRS main outputs.

Control

8. Ctrl Out
These are the balanced control-room outputs. The level is controlled by the knob in the Control Room on the top panel.

9. USB Audio In/Out
This port is for USB audio input and output. You can connect it to WINDOWS/MAC system without any USB driver.

10. Power Input
The provided power cable can be plugged in.

11. Power Switch
Push the top part of the switch to turn on and the bottom part to turn off.

Software Update

We will always update the Digital Mixer software, please download the latest version from below sites: www.claymorepro.com
Since function of the Digital Mixer will also change when you update the software, this manual can help you familiar with the basic function, for the precision, please refer to the real digital mixer.
Note: When you update the firmware, all the parameters you had saved in the mixer may be destroyed.

DSP Control

Touch it to set the Q for the Low/Low-mid/High-mid/High band separately. The Q is the ratio of the center frequency to the bandwidth. If the center frequency is constant, the bandwidth is inversely proportional to the Q, which means that if you raise the Q, the bandwidth will be narrowed. It can be adjusted from 0.4 to 24.

Touch it to set the gain cut or boost at the center frequency for the Low/Low-mid/High-mid/High band separately. It can be set from -24 to +24 dB.

This is a high-pass filter. It can pass higher frequencies. When set to its lowest position, the filter is off.
Type indicates the filter's type that you selected, different type means different shape and different filter frequency range.

This is a low-pass filter. It can pass lower frequencies. When set to its highest position, the filter is off.
Type indicates the filter's type that you selected, different type means different shape and different filter frequency range.
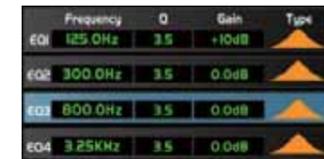
Touch EQ1 to set its Frequency, Q and Gain parameters separately, touch Type to change the filter to high-pass, low-pass or band-pass filter, the same as EQ2, EQ3 and EQ4. You can see the waveform on the screen.
Note: you can also rename the selected channel by long pressing CHXX.

9.8 GEQ interface

The digital mixer features MAIN Stereo, AUX Mono, 31-band, 1/3 octave graphic EQs. The 31 bands range from 20Hz to 20 KHz. There is 1 MAIN Stereo GEQ, 8 AUX Mono GEQs in 24-bit/48 kHz sample rate.

DSP Control
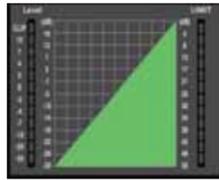
The compressor grid shows level setting of threshold in real time. Meter on the left indicates the input signal's level activity. Meter on the right indicates degree of compressor.

Touch anyone of these controls to enter corresponding page.
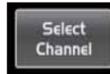
It is the same with that in Assign interface in section 9.3.
Note: you can also rename the selected channel by long pressing CHXX.

9.7 PEQ interface

Touch the switch to engage or disengage the equalizer for the selected channel. It will illuminate to indicate that the equalizer has been touched and enabled. The LCD display shows the EQ setting in real time. Its parameters can adjust by sliding the curve on the screen directly or using up & left & down & right key to choose the function that you want to modify and use the Parameter Adjust knob to set the value.
Please notice that only if the EQ button has been enabled can its parameters be adjusted. The equalizer is available for all input and output buses.


Touch it, a dialog box saying " Are you sure to flat the EQ? " will prompt to check with you, if you click "yes", all the setting values in this page will restore to default, while choose "no" can keep your settings.


Touch it to set the center frequency of the equalizer's Low/Low-mid/High-mid/ High band separately. The center frequency is the middle of the pass-band between the lower and upper cutoff frequencies which define the limits of the band. The center frequency can be set from 20Hz to 20K Hz.

Hookup Diagram

Block Diagram

OPTIONAL CARD

DSP Control
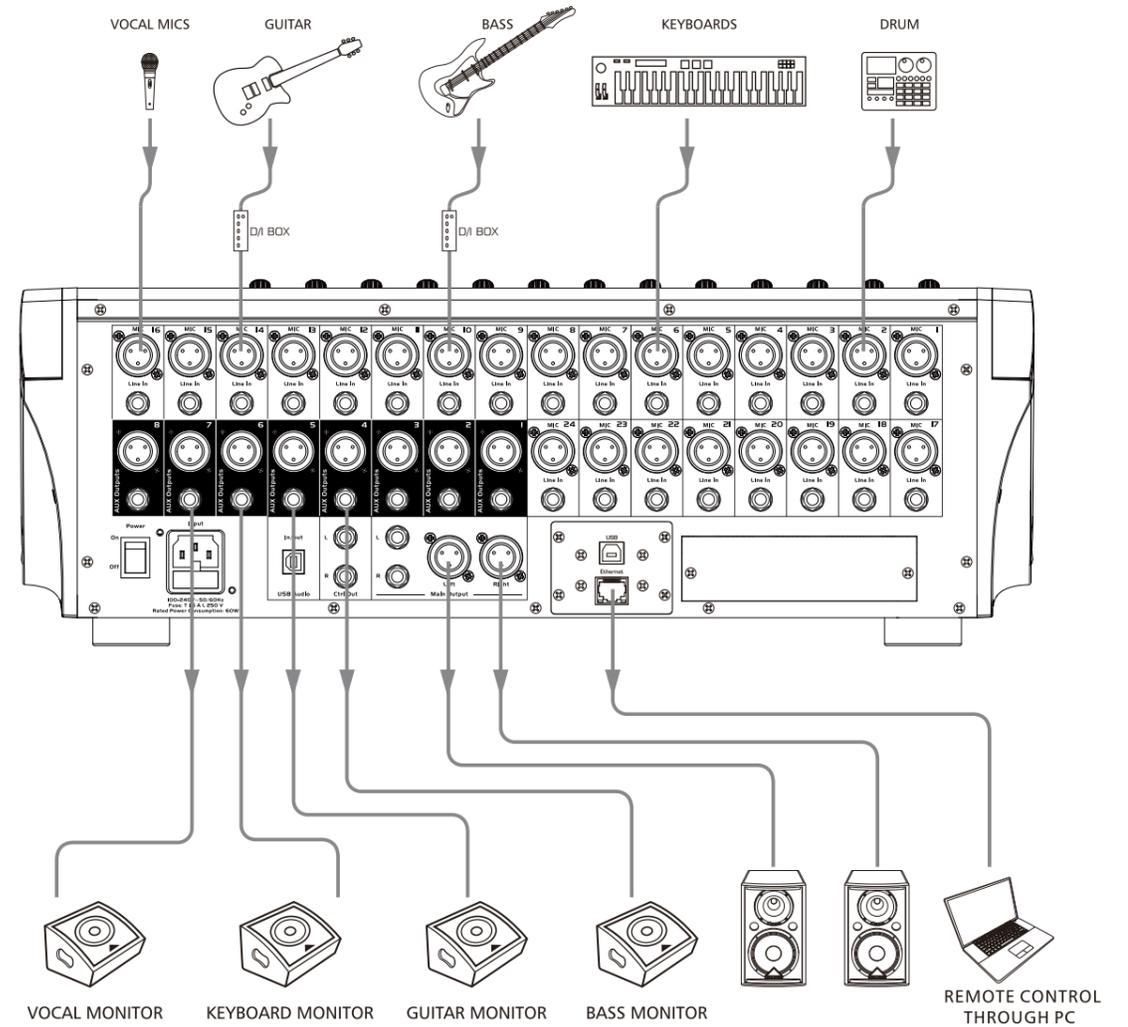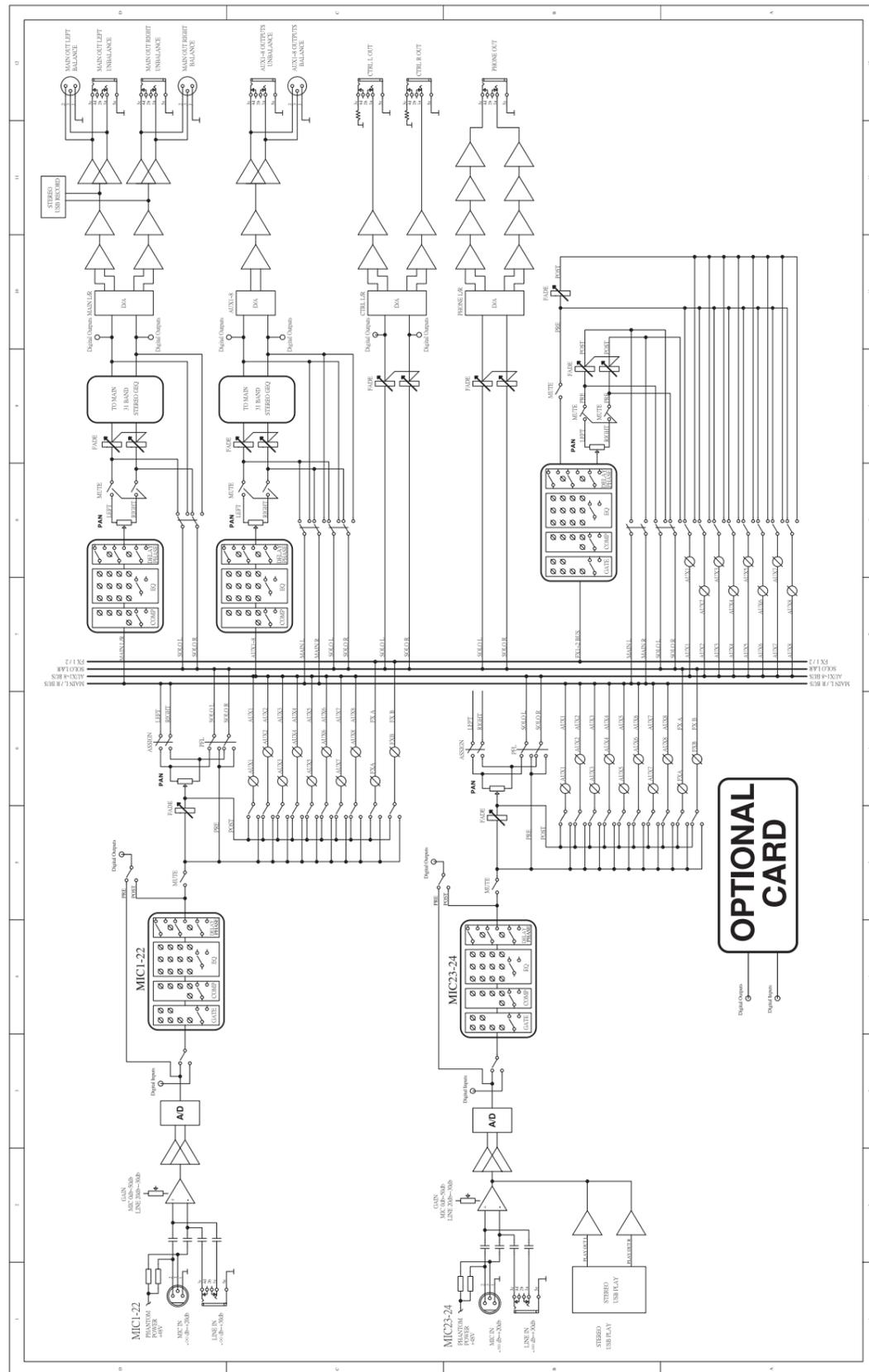
9.6 COMP interface
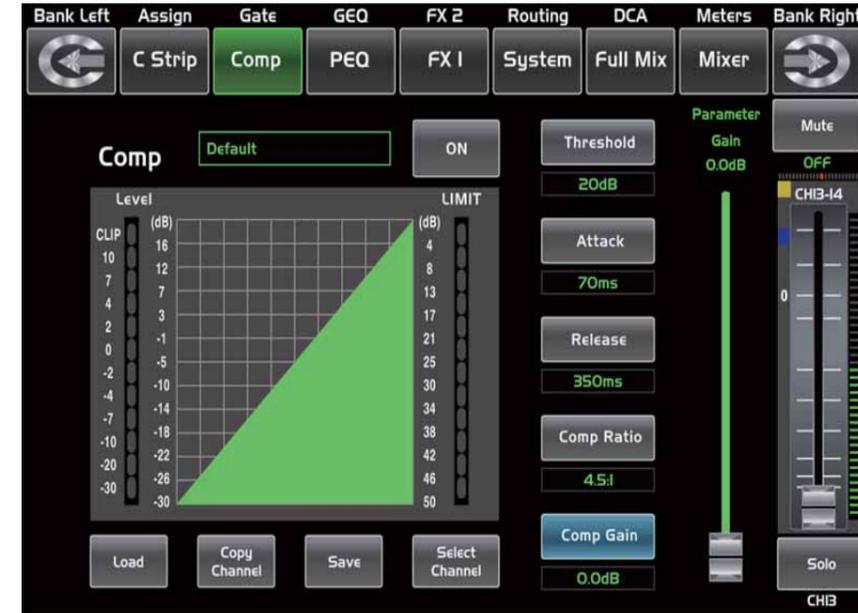
Touch the switch in this window, you can engage and disengage the Compressor for the selected channel. It will illuminate to indicate that the compressor has been pressed and enabled. The LCD display shows the compressor setting in real time. Its parameters can change by rotating the Parameter Adjust to set the value of Gain, Threshold, Attack, Release & Ratio control directly or using up & left & down & right key to choose the function that you want to modify. Please notice that only if the Compressor button has been enabled can its parameters be adjusted.

The bar lights green when the switch is ON, there is signal input and under compressing, which means it enables the compressor function.

Touch it to set the gain of the compressor for the selected channel or bus. Generally, when compressing signal, the decreasing of gain will cause whole level attenuation. This Gain control can recover the lost level and re-adjust volume that compressed before. The Gain can be set from 0 dB (no gain adjusted) to +24 dB.

Touch it to set the compressor threshold for the selected channel. If the amplitude of an audio signal exceeds a certain threshold, the compressor will reduce the level of this signal. The threshold can be set from -30 to 20 dB.
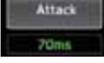
Touch it to set the compressor's attack setting for the selected channel. The attack setting is the period when the compressor is decreasing gain to reach the level that is determined by the ratio. You can set the attack from 10 to 150 milliseconds.

Touch it to set the compressor for the selected channel. Release sets the length of time the compressor takes to return to its normal gain once the signal level drops below the threshold. Release can be set from 10 to 1,000 milliseconds.

Touch it to set the compression ratio for the selected channel. The ratio determines the amount of gain reduction. For example, a ratio of 4:1 means that if input level is 4 dB over the threshold, the output signal level will be 1 dB over the threshold. The ratio can be set from 10:1 to 1:1 until limit.

9.5 Gate interface
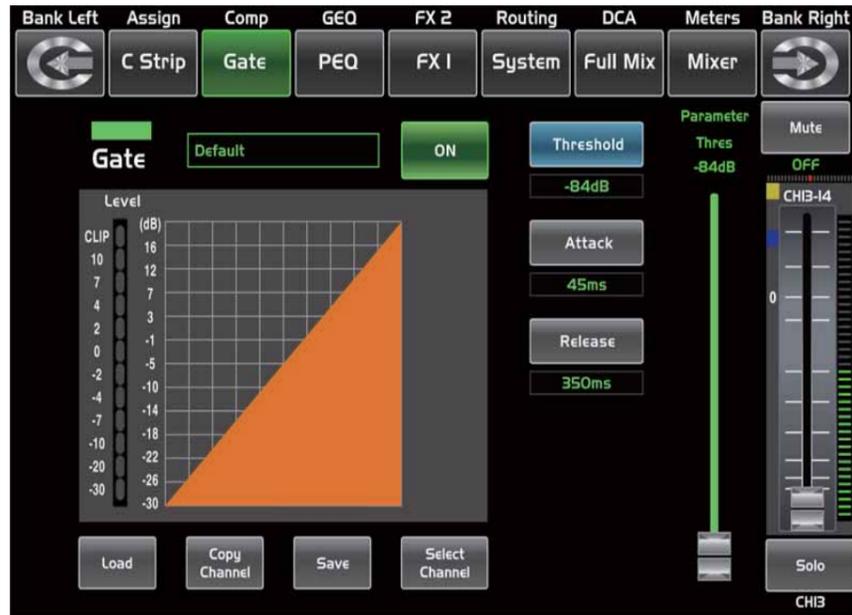
 Touch the switch in this window, you can engage and disengage the Gate for the selected channel. It will illuminate to indicate that the Gate has been touched and enabled. The LCD display shows the Gate setting in real time. Its parameters can change by adjusting Threshold, Attack & Release control directly and use the Parameter Adjust knob to set the value.
Please notice that only if the Gate control has been enabled can its parameters be adjusted.

 It will lights Green when the switch is ON, there is signal input and the value is below threshold level, which means it enables the gate function.

 Touch it to set the level at which the gate will open. It can be set from 20 to -84 dB.

 Touch it to set the time for the gate to change from closed to open, much like a fade-in. It can be set from 0.5 to 200 ms.

 Touch it to set the amount of time for the gate to go from open to fully close.
It can be set from 0.01 to 1 second.
Note: A fast release abruptly cuts off the sound once it has fallen below the threshold, A slower release smoothly changes from open to closed, much like a slow fade out.
If the release time is too short a click can be heard when the gate re-opens.

 The Gate grid shows level setting of threshold in real time. Meter on the left indicates the input signal's level activity.

 Touch anyone of these controls to enter corresponding page.

 It is the same with that in Assign interface in section 9.3.
Note: you can also rename the selected channel by long pressing CHXX.

Microphone input	Electronically balanced
Frequency Response to Main Output	22Hz~22KHz at 0dBu ±1.5dBu
Distortion(THD&N) to Main Output	<0.01% at 0dBu 1KHz
Gain	0dBu~50dBu
SNR(Signal to Noise Ratio)	111dB
Maximum Input Level	+20dBu ±0.5dBu
Phantom Power(+/-3V)	+48VDC
Line input	Electronically balanced
Frequency Response to Main Output	22Hz~22KHz at 0dBu ±1.5dBu
Distortion(THD&N) to Main Output	<0.01% at 0dBu 1KHz
Gain	-20dBu~+30dBu
Maximum Input Level(Gain at 0dBu)	+20dBu ±0.5dBu
USB stereo inputs	
Frequency Response to Main Output	22Hz~22KHz at 0dBu±1.5dBu
Distortion(THD&N) to Main Output	<0.02% at 0dBu 1KHz
Maximum Input Level	16dBu ±0.5dBu
Main Outputs	
Maximum Outputs Level	+20dBu ±0.5dBu
AUX SEND (XLR)	
Maximum Output Level	+20dBu ±0.5dBu
AUX SEND (1/4 TRS)	
Maximum Output Level	+20dBu ±0.5dBu
Control Room Outputs	
Maximum Output Level	+20dBu ±0.5dBu
HeadPhones Level	
Maximum Output Level	+15dBu ±0.5dBu
System Crosstalk	
Input to Output(at + 0dBu 1KHz)	-88dBu
Adjacent Channels(at + 0dBu 1KHz)	-87dBu
Noise(Bus noise)	-91dBu

Technical Specification

Noise Gate	
Threshold Range	-84dBu ~ +20dBu
Attack time	0.5mS ~ 200mS
Relesae time	10mS~1S
Compressor	
Threshold Range	-30dBu -+20dBu
Attack time	10mS ~ 150mS
Relesae time	10mS~1S
Ratio	1:1 to Limit
Gain	0dBu - +24dB
EQ	
Low (LowPass or LowShelf)	21Hz~19.2KHz +/- 24dB
Low Mid	21Hz~19.2KHz +/- 24dB
High Mid	21Hz~19.2KHz +/- 24dB
High(HighPass or HighShelf)	21Hz~19.2KHz +/- 24dB
Digital Audio	
ADC Dynamic Range	114dB
DAC Dynamic Range	114dB
Internal Processor	32-bit , floating point
ADC,DAC bit depth	24bit
Impedances	
Microphone input	6.8KΩ
Line input	75K
Stereo input	27K
All other output	240Ω
operating free-air temperature range	0~40
storage temperature range	-20 ~45

DSP Control

Touch it in Polarity to invert the phase of the selected channel's signal (to alter the phase by 180°). If the phase reverse is active the button will illuminate. The LCD display shows the phase reverse setting in real time. The Polarity control can be used to correct audio signals which are out of phase as well as to cancel/reinforce each other.

Touch it in Delay Time can engage and disengage the delay for the selected channel.
It will illuminate to indicate that the delay has been pressed and enabled. The LCD display shows the delay time in real time. It can be set 300ms at 48K Hz. Please notice that only if the Delay button has been enabled can its parameter be adjusted.

When Delay icon is engaged, touch it in Delay Time and rotate the Parameter Adjust knob can control the selected channel's delay time.

Touch it, the function is the same as Link button on the panel.
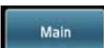
Touch this control, it will illuminate as well as the button, signal from a selected channel can be assigned to Main channel, for the details please refer to assign introduction in section 9.3.

Touch the switch ON to enable Gate function, then rotate Parameter Adjust knob or slide long fader on the LCD screen to adjust value of Threshold, which will show in the middle box. During adjustment, corresponding figure change will show in the Gate grid.
In this area, you can touch the grid area to enter Gate page, for the detail of Gate function, please refer to the Gate introduction in section 9.5.
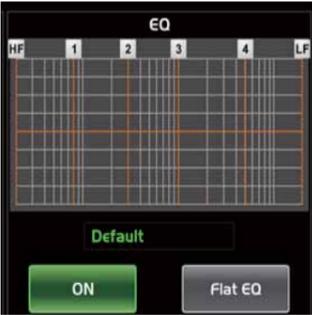
Touch the switch ON to enable EQ function, it will illuminate and synchronize with ON/OFF control in EQ page. Please set values in EQ page because it is not adjustable here. This page can only show the values. You can also load a preset, please refer to load introduction section for the detail operation, the loaded state will show in the middle box.
Touch Flat EQ to eliminate EQ settings and restore it to default.
In this area, you can touch the grid area to enter EQ page, for the detail of EQ function, please refer to the EQ introduction in section 9.7.

Touch the switch to enable Compressor function, then rotate Parameter Adjust knob or slide long fader on the right LCD screen to adjust value of Threshold, which will show in the middle box. During adjustment, corresponding figure change will show in the Compressor grid.
In this area, you can touch the grid area to enter COMP page, for the detail of COMP function, please refer to the COMP introduction in section 6.6.

Touch anyone of these controls to enter corresponding page.
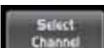
It is the same with that in Assign interface in section 9.3.
Note: you can also rename the selected channel by long pressing CHXX.

Adjust this parameter to change selected output channel audio. This fader function is the same with Parameter Adjust knob, they will change synchronously.

Touch pan left or right to change signal's balance effect, it can be adjusted by Parameter Adjust knob on the panel when pan button is on.
If you have adjusted a channel pan, please just touch 2 times on the screen and make it back to the centre position.

48V **Phase** **Load** **Copy** **Save**

Touch anyone of these controls to enter corresponding page.

Link

Touch it, the background and Link button will illuminate synchronously, and current channel will link to its default paired-channel, the button will illuminate then.

Select Channel

Touch Select icon here, all input channels will display to you. Please follow the indication on the LCD screen to operate.
For different input channels, the function and output assignments are different, please notice indication on the screen.
When switch to AUX 5-8, enables output assignments to be more.

9.4 Channel interface
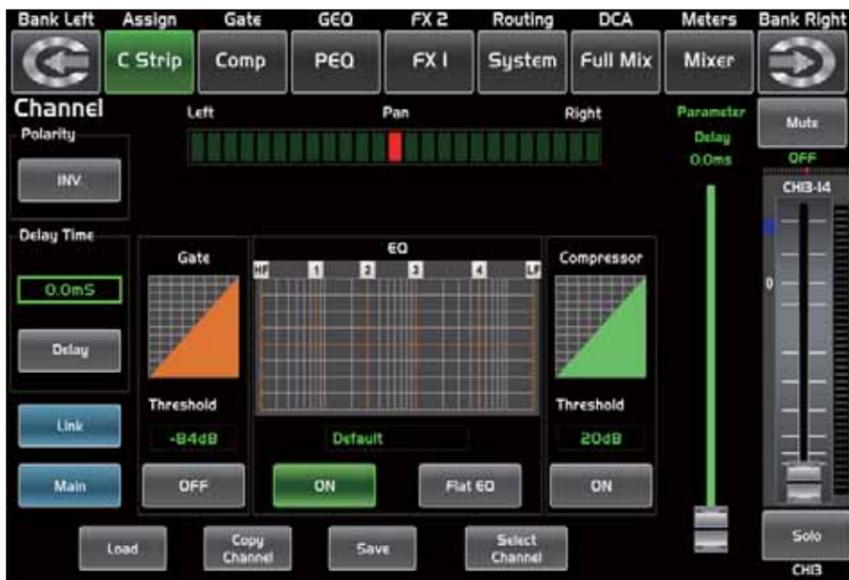
In addition to control directly on the machine, the Digital Mixer can also achieve remote operation via the app, which greatly facilitates the users.

9.1 Mixer interface
Once you turn on the mixer switch, the Mixer interface will come to your eyes at first if you have preset, now let's see what you can get in this interface.
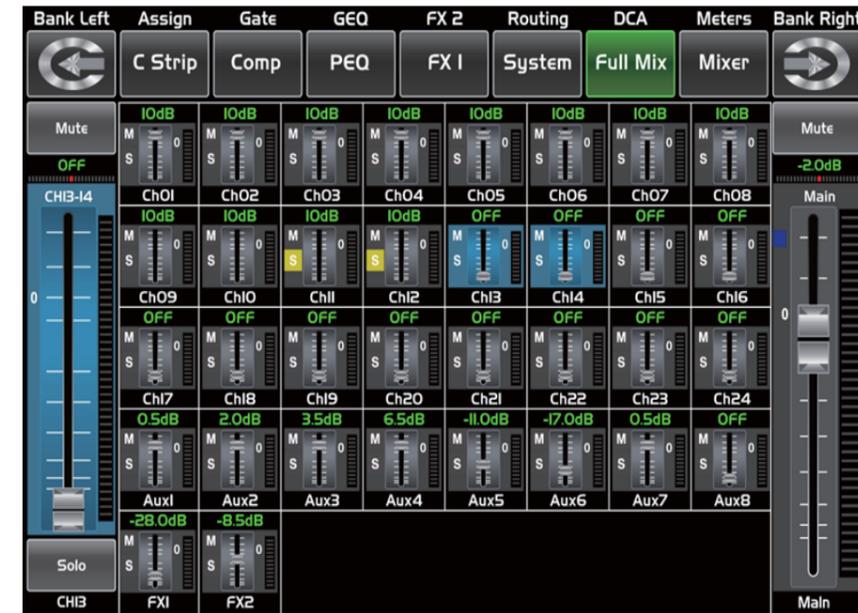
Touch a channel, for example, CH02, the background and corresponding CH2 button will illuminate synchronously, you can control the output signal level by Parameter Adjust knob. The meter on the left indicates the level of the input signal, and the meter on the right indicates the level of the main channel.
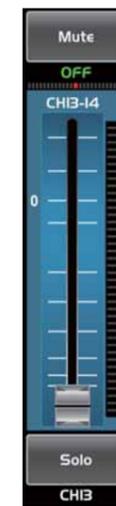
Meter beside the fader indicates the input signal level activity .This long fader can control level of all input and output channels in this screen, but for one selected channel at one time, all its control will change synchronized with the selected channel.

-2.0dB Meter beside the fader indicates signal activity. The number indicates current channel level.

The pan icon shows real pan of selected channel audio signal, rotate the pan button on the panel to adjust it.

Solo Touch the icon to monitor selected channel audio signal, it will illuminate synchronized with Solo button on the panel.

Mute Touch the icon to silence selected channel audio signal, it will illuminate synchronized with Mute button on the panel.

CH13 This letter shows the real current channel. You can also rename the channel by touching it and holding for a while, a virtual key will come into your vision then please tap the keyboard and give a new name to this channel as you like.

DSP Control
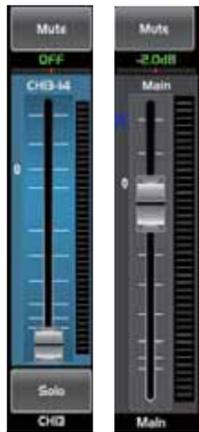
Slide the fader, you can increase or decrease corresponding channel's level.

9.2 Long Faders interface

Touch this icon to switch channels and enter corresponding Long Faders page, in which you can adjust channels' basic function like pan, solo, mute, level and rename the channel, etc.

Functions on this icon (like mute, level number, pan, long fader, solo and channel name) are the same with that in Mixer interface.

DSP Control

9.3 Assign interface

The 24 main inputs and internal FX returns can be assigned to any or all of the outputs, Aux sends and main outputs. Aux 1-4 and AUX5-8 can switch to each other by touching a switch icon in this page.

First, let's see the Aux1-4 mode as below picture show.

Touch Main, AUX1-4 or AUX5-8 on the LCD screen or corresponding button on the panel to assign input channel audio to these channels or buses. They will illuminate synchronizing with buttons in Assign area on the panel after pressed. To adjust output level of the channel audio, you can rotate Parameter Adjust knob or corresponding Main, AUX1-4 or AUX5-8 knobs on the panel.

Touch AUX1-4 and FX1-2 on the LCD screen or press corresponding button on the panel to assign input channel audio to these channels or buses. To adjust output level of the channel audio, you can rotate Parameter Adjust knob on the panel.

Touch PRE on the screen, it will switch to POST, the AUX & FX send will derive its signals from all channels post-fader. If the icon has not been pressed and not illuminate, by default, the AUX & FX Send will derive its signal from all channels pre-fader and all unaffected by the sending channel's fader position.

In a word, touch PRE and switch it to POST, then you can adjust its level by sliding fader. Otherwise, the fader wouldn't function on level adjustment.

Slide the fader to change selected input channel audio. The fader function is the same with Fader on the panel, which can control input signal's level, they will change synchronously.

Meter beside it indicates the signal level activity.

Pan above fader indicates value of pan setting.

Solo can monitor selected channel audio.

Mute can silence selected channel audio.

Long press the name box can rename the selected channel.