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**C6** USER GUIDE  
**C6-16/C6XS-16**  
 PROFESSIONAL MIXER

## **INTRODUCTION**

Thank you for buying this Studiomaster product. The C6-16/C6XS-16 are a compact, extremely versatile audio mixers designed specifically for the requirements of live sound and basic recording.

## **READ THE USER GUIDE**

Despite the sophisticated design they are easy to use mixers although to get the Best from your new purchase, we recommend you read this User Guide before getting down to any serious work.

## **UNPACKING**

Remove your Studiomaster product from its packaging and ensure that along with this User Guide you have an A.C. power cord / mains lead and a warranty card. Retain the packing carton in the eventuality that the unit needs to be returned for service or repair, and please complete and return your warranty card. Returning the completed warranty card does not diminish your statutory rights in any way.

## **Safety Instructions**

- a. Before connecting the A.C. power cord make sure the product is suitable for your local A.C. Supply.  
The C6 can be used on A.C. Voltages between 100-240V.
- b. Only use the A.C. power cord / mains lead supplied with the product. Replace if it becomes damaged in any way.
- c. Never operate without, or remove the safety ground (earth) from the A.C. power cord / mains lead.
- d. Do not attempt to remove any screws or panels. There are no user serviceable parts inside.
- e. Do not operate the unit next to heat sources such as radiators.
- f. The unit should not be operated or stored near rain or moisture.
- g. This equipment must not be exposed to dripping or splashing and no objects filled with liquids should be placed on top of it.
- h. Make a note of the serial number for future use.
- l. If the product gets damaged, has been dropped or appears to have developed a fault refer to a qualified Studiomaster service centre.

## **WARNING**

**THIS APPARATUS MUST BE EARTHED (GROUNDED)**



## 1. CHANNEL

### 1. GAIN control

Adjusts input signal's level, to get optimum balance between S/N ratio and dynamic range; set this control in a way that the CLIP LED blinks only occasionally in order to avoid distortion on the input channel

### 2. 80 switch(Hi-pass filter)

The switch turns on the HPF.  
HPF would cut off frequency that below 80Hz

### 3. COMP control

Adjust compression level ratio that is applied to the channel. Turn The knob right, compression ratio would increase. You will acquire a more smooth even dynamic effect.

Note: don't set compression ratio too high, because a higher average output can produce feedback.

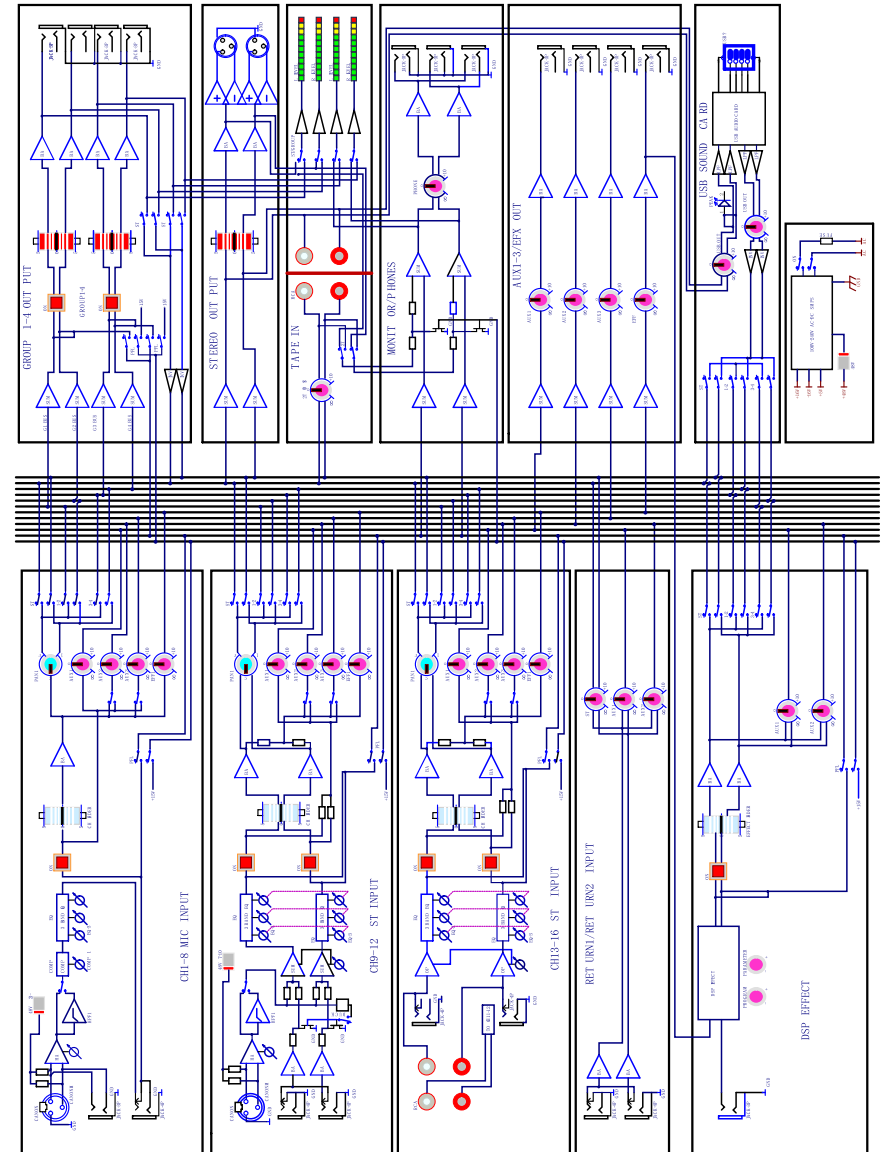
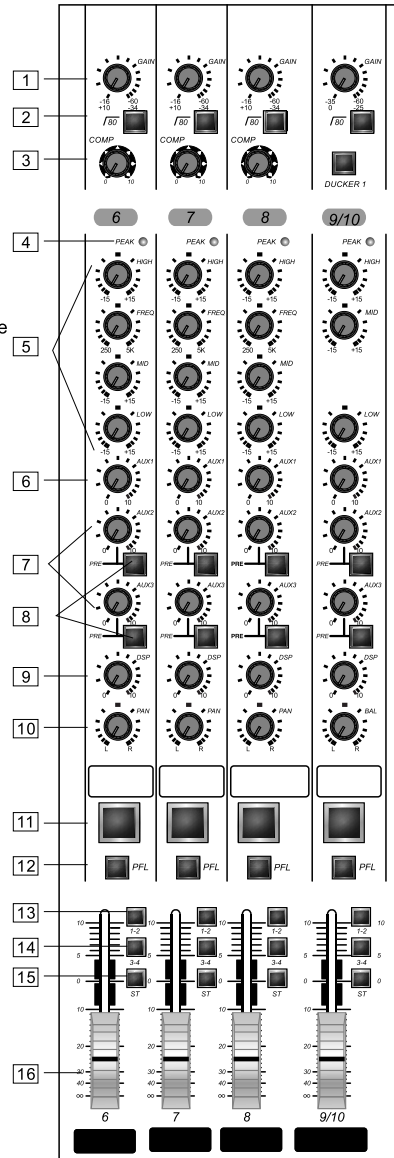
### 4. PEAK LED

Detects peak level of signal after EQ. when level reaches 3dB below clipping, PEAK LED would become red. As to stereo input channels (5/6 and 7/8) of XLR, would detect the PEAK level of post-microphone amplifier after EQ, and LED turns red when any of the level reaches 3dB below clipping.

### 5. EQ (HIGH, MID and LOW)

The three band EQ features high, mid and low frequencies. Set the knob at ▼ position at corresponding frequency bands, it produces flat respond. The following is the form of EQ type, frequency and max cut/boost of the three frequency bands.

Frequency band	Type	Frequency	Max Cut/boost
HIGH	Ramp-shape	10KHz	± 15dB
MID	Peak-shape	2.5 KHz	
LOW	Ramp-shape	100 Hz	
MID FREQ	Sweep	Should Read 250Hz-5KHz	



## Input specifications

Output Outlet	Gain	Input Impedance	Appropriate Impedance	Sensitivity	Nominated level	Max Value Before Clipping	Specifications Of Outlet
CH INPUT MIC (CHs 1-4)	-60dB	3K $\Omega$	50-600 $\Omega$ MIC	-80dBu(0.078mV)	-60dBu(0.775mV)	-40 dBu(7.75mV)	XLR-3-31type (balance {1=earth line, 2=hot line, 3=cold line})
	-16dB			-36 dBu(12.3mV)	-16 dBu(123V)	+4 dBu(1.23V)	
CH INPUT LINE (CHs 1-4)	-34dB	10K $\Omega$	600 $\Omega$ LINE	-54 dBu(1.55mV)	-34dBu(15.5mV)	-14 dBu(155mV)	TRS headphone inlet (balance{point=hot line ring=cold line, shield =earth line })
	+10dB			-10 dBu(245mV)	+10dBu(2.45V)	+30 dBu(24.5V)	
ST CH MIC INPUT (CHs 5/6, 7/8)	-60dB	3K $\Omega$	50-600 $\Omega$ MIC	-80dBu(0.078mV)	-60dBu(0.775mV)	-40 dBu(7.75mV)	XLR-3-31type (balance {1=earth line, 2=hot line, 3=cold line})
	-16dB			-36 dBu(12.3mV)	-16 dBu(123mV)	-6 dBu(389mV)	
ST CH LINE INPUT (CHs 5/6, 7/8)	-34dB	10K $\Omega$	600 $\Omega$ LINE	-54 dBu(1.55mV)	-34dBu(15.5mV)	-14 dBu(155mV)	Headphone Inlet (unbalance)
	+10dB			-10 dBu(245mV)	+10 dBu(2.45V)	+30 dBu(24.5V)	
ST CH INPUT (CHs9/10, 11/12)	—	10K $\Omega$	600 $\Omega$ LINE	-30 dBu(24.5mV)	-10 dBu(245mV)	+10 dBu(2.45mV)	headphone inlet (unbalance) RCA pin-inset
CH INSERT IN (CHs 1-4)	—	10K $\Omega$	600 $\Omega$ LINE	-20 dBu(77.5mV)	0 dBu(0.775mV)	+20 dBu(7.75mV)	TRS headphone inlet (unbalance{point = output, ing=input, shield=earth line})
RETURN(L, R)	—	10K $\Omega$	600 $\Omega$ LINE	-12 dBu(195mV)	+4 dBu(1.23mV)	+24 dBu(12.3mV)	Headphone inlet (unbalance)
2TR IN(L, R)	—	10K $\Omega$	600 $\Omega$ LINE	-26 dBu(50.1mV)	-10dBV(0.316mV)	+10 dBV(3.16mV)	RCApin-insert

## Output Specifications

Output Outlet	Output Impedance	Appropriate Impedance	Nominated level	Max Value Before Clipping	Specifications Of Outlet
STEREO OUT (L, R)	75 $\Omega$	600 $\Omega$ LINE	+4dBu(1.23V)	+24dBu(12.3V)	XLR-3-32 type (balance{1=earth line, 2=hot line, 3=cold line})headphone
GROUP OUT (1, 2)	150 $\Omega$	10K $\Omega$ LINE	+4dBu(1.23V)	+20dBu(7.75V)	Inlet (balance {point=hot Line, ring=cold Line shield =earth Line})
EFFECT/AUX (AUX1, 2*)SEND	150 $\Omega$	10K $\Omega$ LINE	+4dBu(1.23V)	+20dBu(7.75V)	Headphone inlet(impedance balance{ point=hot line, ring=cold line shield =earth line })
CH INSERT OUT (CHs1-4)	100 $\Omega$	10K $\Omega$ LINE	0dBu(0.775V)	+20dBu(7.75V)	Headphone inlet(impedance balance {point=hot line, ring=cold line, shield =earth line })
REC OUT(L, R)	600 $\Omega$	10K $\Omega$ LINE	-10dBV(0.316V)	+10dBu(3.16V)	RCA pin-insert
MONITOR OUT (L, R)	150 $\Omega$	600 $\Omega$ LINE	+4dBu(1.23V)	+20dBu(7.75V)	Headphone inlet(impedance balance {point=hot line, ring=cold line, shield =earth line })
PHONES OUT	100 $\Omega$	4 $\Omega$ PHONE	3mW	75mV	Stereo headphone inlet

## Front

### Channel

#### 6. AUX 1 control

Adjust signal level that is sent to AUX bus from channel. The knob usually set next to ▼ position. Signal of L (odd) and R(even) at stereo channel should be mixed and sent to AUX bus.

#### 7. AUX 2-3 control

Adjust signal level that is sent to AUX bus from channel. The knob usually set next to ▼ position. Signal of L (odd) and R(even) at stereo channel should be mixed and sent to AUX bus.

#### 8. AUX PRE switch

If set the switch at (—), The signal to the AUX bus is before the fader.

If set the switch at (■),The signal to the AUX bus is after the fader.

#### 9. DSP control

Adjust the signal level sent to DSP bus from channel. Note: channel fader also can affect the signal level that sent to bus at stereo channels (5/6, 7/8, 9/10 or 11/12).

#### 10. PAN/BAL controls

The pan and bal(balance) controls determine the signal level between left and right outputs.

#### 11. ON switch

Turn on channel. It is green when power is on.

#### 12. PFL switch

The switch can be used for monitoring pre-fader signal of channel.

The signal of channel is routed to PHONES jack and MONITOR OUT jack for monitoring.

#### 13. 1-2 switch

Routes channel signal to GROUP1 bus.

#### 14. 3-4 switch

Routes channel signal to GROUP3 bus.

#### 15. ST switch

Routes channel signal to STEREO L and R bus.

#### 16. channel fader

Adjust level of channel signal. Use the fader to adjust balance between channels.

**Main Control Section**

**1. ST RETURN TO AUX**

Control adjusts the level of L/R signal that is sent to AUX bus from st return.

**2. ST RETURN**

STEREO control adjusts the level of signal that is sent to STEREO L/R bus from st return input.

**3. MASTER AUX SEND**

MASTER AUX control adjusts signal level that is sent to AUX SEND jack.

**4. MASTER EFFECT**

MASTER EFFECT control adjusts signal level that is sent to MASTER EFFECT bus.

**5. POWER LEDS (+15,-15)**

After console turning on, the LED illuminates.

**6. LEVEL METER**

Displays the signal level determined by switch 9. However, if switch 11 is pressed the signal from 2TR INPUT IS DISPLAYED. Any PFL switch pressed will take priority over the above selections.

**7. 2TR IN jack**

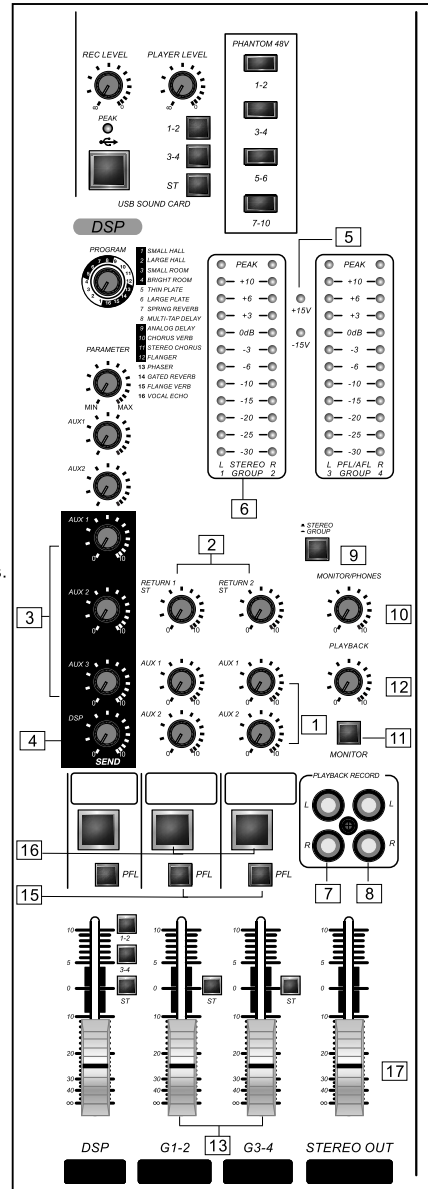
These RCA pin-jacks can be used for inputting stereo sound source. And when CD player connects to console directly, the jacks are available also.

Note: can use 2TR IN control to adjust signal level.

**8. REC OUT(L,R) jacks**

These RCA pin-jacks can connect directly to a recorder

Note: STEREO OUT main fader of console doesn't affect the output signal of the jacks. Please make appropriate level adjustment on recording devices.



INPUT HPF		CH 1-7/8, 80HZ, 12DB/octave
Input balance	CH1-8	HIGH:10KHz(slope) MID:250Hz-5KHz(sweep) LOW:100Hz(slope)
	CH9/10-15/6	HIGH:10KHz(slope) MID:2.5KHz(peak) LOW:100Hz(slope)
Max value $\pm 15$ dB boost/cut off frequency, max variation is below 3dB.		
Peak LED		After EQ, signal (signal from MIC HA of CHs 9/10 11/12 or EQ)reaches (+17dBu) -3dB below clipping Red LED illuminates.
Internal Digital DSP		16 types PROGRAM/PARAMETER control knobs footswitch(turn on/off digital DSP)
Led Level Meter	Pre-monitor Level	2x12 point LED level meter(PEAK, +10, +6, +3, 0, -3, -6, -10, -15, -20, -25, -30dB) if signal reaches 3dB below clipping, PEAK LED illuminates.
Power consumption		35W
Dimension (DxWxH)		585X590X250mm
Net weight C6-16		7kg(15Alb)
Net weight C6XS-16		7.1kg(15.6lb)

			Min Value	Type	Max Value	Unit
Frequency Response	STEREO OUT	GAIN: mini value(CHs1-11/12) When 20Hz-20KHz 1KHz nominated output level input: CHs1-15/16, RETURN, 2TR IN	-3.0	0.0	1.0	dB
	GROUP OUT					
	DSP/AUX (AUX1-4*)SEND					
	MONITOR OUT, REC OUT					
THD(THD+N)	STEREO OUT	When 20Hz-20KHz, it is +14dB, input GAIN control knob adjusts to minimum.			0.1	%
Hum and noise Octave filter used in hum and noise 6dB/octave, is measured at 12.7KHz, is equal to 20KHz filter of infinite dB/octave fader	CH INPUT 1-4MIC	EIN(equal input noise), Rs=150 Ω GAIN: max value				-128
	STEREO OUT	STEREO OUT/GROUP main fader is at nominated level, ST switch holder of all Channels 1-2, 3-4 switch should be turn off.				-86
	GROUP OUT					
	DSP/AUX (AUX1-4*)SEND	MASTER DSP/AUX(AUX1-3) control knobs adjust to nominated level all channels' DSP/AUX(AUX1-3) control knob adjusts to minimum.				-80
	STEREO OUT	STEREO OUT\GROUP main fader and a channel fader is at nominated level.				-60
	GROUP OUT					
STEREO OUT	Residue output noise				-98	
Crosstalk (1KHz)	Adjacent input	CHs1-8				-70
	Input to output	STEREO L/R, CH1-8, PAN: PAN sets at far left or far right.				-65
When measures Max voltage gain (1KHz), All faders and control knobs are at max position. PAN/BAL: sets at far right or far left.	Rs=150 Ω	MIC to CH INSERT OUT				60
	INPUT GAIN: max value	MIC to STEREO OUT				80
		MIC to GROUP OUT				74
		MIC to GROUP to ST				90
		MIC to REC OUT				60
		MIC to MONITOR OUT, ST to MONITOR				90
		MIC to PHONES OUT				90
		MIC to AUX(AUX1-3)SEND				76
		MIC to AUX(AUX1-3)SEND POST, DSP(AUX4*) SEND				86
		CH9/10, 11/12 of LINE to STEREO OUT				58
		CH9/10, 11/12 of LINE to GROUP OUT				
		CH9/10, 11/12 of AUX(AUX1-3*)SEND PRE				47
		CH9/10, 11/12 of AUX(AUX2-3*)SEND POST, DSP(AUX4*) SEND				57
		CH13/14, 15/16 to STEREO OUT				34
		CH13/14, 15/16 to GROUP OUT				
Phantom Voltage Mic	Rs=150 Ω	RETURN to STEREO OUT				16
		RETURN to DSP(AUX4*)SEND				9
	Rs=600 Ω	2TR IN to STEREO OUT				27.8
		NO LOAD				48
						V

### 9. Stereo/Group Switch

If set the switch at GROUP(—), GROUP1、4 bus signal would be sent to level meter. If set at STEREO(—), STEREO L/R bus and AFL/PFL signal would be sent to these jacks and level meter.

### 10. MONITOR control

Control signal level of PHONES and MONITOR OUT.

### 11. 2TR IN switch

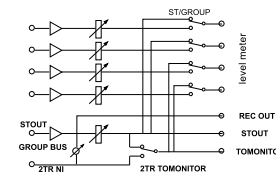
If set the switch at TO MONITOR(—), signal form 2TR IN jack would be sent to MONITOR OUT jack, PHONES jack and level meter.

### 12. 2TR IN control

Adjust signal level that sent to STEREO L/R bus from 2TR IN jack. The following figure refers to the corresponding relationship between switches and signal selection.

PFL	Switch		MONITOR/PHONES output signal
	2TR IN		
ON —			PFL
OFF —	MONITOR		2TR IN
	OFF —		STEREO

Can adjust individually and monitor the level of playing signal and recording signal in dubbing.



Note: if turn on PFL switch (—) of input channel, PFL output of the channel can only be sent to C-R OUT jack, PHONES jack and level meter.

### 13. MONITOR/PHONES LEVEL CONTROL

### 15. GROUP PFL switch

### 14. ST switch

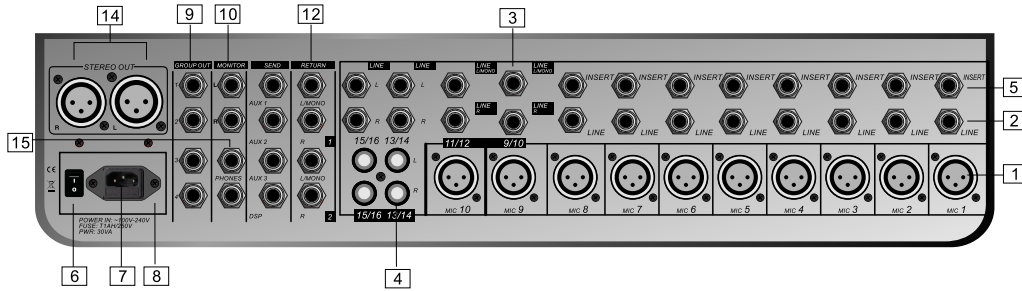
If turn on the switch(—), route the group signal to the STEREO bus.

### 16. Turns ON/OFF the GROUP output signal

### 17. STEREO OUT main fader

Adjust signal level that sent to STEREO OUT jack

## Rear panel input/output



### 1. MIC input XLR

(channel 1-8, 9/10, 11/12) are XLR microphone input jacks (1: earth line 2: hot line; 3: cold line)

### 2. LINE input jack(channel1-8)

These are balanced TRS socket line input jacks (T: hotline; R: cold line; S: earth line). Can use these balanced or unbalanced.

### 3. LINE input jacks (channel 11/12)

These are unbalanced stereo line input jacks.

### 4. LINE input jacks (channel 13/14, 15/16)

These are unbalanced stereo RCA pin-jacks.

### 5. INSERT jacks (channel1-8)

Each jack provides an insert point between EQ and fader at corresponding channels (channel1-8). These INSERT jacks can connect, compressor or noise filter etc devices to corresponding channels individually. These jacks are TRS(Tip, ring and sleeve), which can carry sending signal and returning signal simultaneously (Tip=send/output; ring=return/input; sleeve=earth line).

### 6. POWER switch

Used to set console power at ON.

### 7. A.C. Power socket

### 8. FUSE fuse holder

## Connector Wiring

Input & Output Jacks	Polarity	Structure
MIC INPUT\STEREO OUT	Pin 1: Earth Line Pin 2: Hot Line (+) Pin 3: Cold Line(-)	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>INPUT</p> </div> <div style="text-align: center;"> <p>OUTPUT</p> </div> </div>
LINE INPUT(channel 1-8) GROUP OUT\STEREO OUT MONITOR OUT\AUX(AUX1-4) DSP(AUX4)	Tip: Hot Line ( )+ Ring: Cold Line (-) Sleeve: Earth Line	<p style="text-align: center;">Ring Sleeve Tip</p>
INSERT	Tip: Output Ring: Input Sleeve: Earth Line	
PHONES	Tip: L Ring: R Sleeve: Earth Line	
RETURN LINE INPUT(CH 9/10-15/16)	Tip: Hot Line Sleeve: Earth Line	<p style="text-align: center;">Sleeve Tip</p>

Prg#	Description	Parameter 1	
1	Small Hall	Rev Time	0.9sec~3.5sec
2	Large Hall	Rev Time	1.5sec~8.6sec
3	Small Room	Rev Time	0.28sec~0.82sec
4	Bright Room	Rev Time	0.36sec~1.38sec
5	Thin Plate	Rev Time	0.44sec~1.54sec
6	Large Plate	Rev Time	0.72sec~10sec
7	Spring Reverb	Rev Time	0.4sec~2.3sec
8	Multi-tap Delay	Delay Time	0~680ms
9	Analog Delay	Delay Time	0~680ms
10	Chorus Verb	Rev Time	0.56sec~3.5sec
11	STEREO CHORUS	Rate	0.58Hz~6Hz
12	Flanger	Rate	0.58Hz~4.35Hz
13	Phaser	Rate	0.58Hz~11Hz
14	Gated Reverb	Gate Time	0.25sec~0.78sec
15	Flange Verb	Rev Time	0.34sec~2sec
16	Vocal Echo	Delay Time	0~400ms

### 9. GROUP OUT jacks

These impedance balanced jacks can output signal of GROUP1/2.

### 10. MONITOR OUT jacks

These stereo output jacks can be connected to studio monitor system.

### 11. PHONES jack

Connect headphone to the stereo headphone jack. Signal form PHONES jack is the same as the MONITOR OUT jack.

### 12. RETURN L(MONO), R jacks

These are unbalanced line input jacks, which can send signal to STEREO L/R bus and AUX bus.

These jacks can receive signal that return from external effect devices(reverb and delay etc).

Note: these jacks also can be used as auxiliary stereo input jacks. If only connect to L(MONO) jack, console would deal with signal as MONO channel signal, and send the same signal to L and R jacks.

### 13. SEND jack

AUX

This an impedance balanced output jack, which can output signal from AUX bus. For example, the jack can connect effect devices, or stage monitor system.

DSP is an impedance balanced output jack, can output signal from DSP bus. For example, the jack can connect to external effect device.

### 14. STEREO OUT(XLR) jack

These can transfer stereo output of console. To power Amplifiers and Speaker Systems.

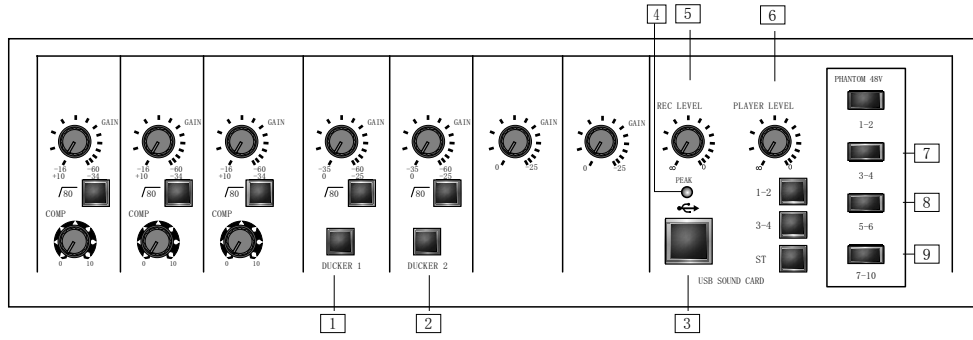
Use STEREOOUT main fader to control level and record stereo output of console at the same time, and can connect these jacks to recording devices.

### 15. FOOT SWITCH jack

Connect footswitch to turn on/off effect device.



Main Control Sect



**1. DUCKER 1 button**

Press the button, with an signal at MIC9, signal of CH9-10 would be attenuated to 30dB.

**2. DUCKER 2 button**

Press the button, with an input signal at MIC9 and MIC10, signal of CH11-12 would be attenuated to 30dB. when press DUCKER 1 and DUCKER 2 at the same time, when input signal at either MIC9 or MIC10, both CH9-10 and CH11-12 signal would be attenuated to 30dB.

**3. USB jack**

built-in jack of USB sound-card

**4. PEAK LED**

Detect peak level of signal that sent to sound card, when level reaches to 3dB bellow clipping, PEAK LED illuminates red.

**5. REC LEVEL control**

Adjust signal level that sent to USB sound card.

**6. PLAYER LEVEL control**

adjust volume that sent to USB sound card.

**7. 1-2 button**

when press the button, signal from USB sound card would be assigned to GROUP 1-2 channel.

**8. 3-4 button**

when press the button, signal from USB sound card would be assigned to GROUP 3-4 channel.

**9. St button**

When press the button, signal from USB sound card would be sent to ST channel.

Digital DSP

**1. PHANTOM +48V power switch**

When turn on/off phantom power, turn on switch 1-2 , provide +48V phantom power for (MIC1-2); turn on switch 3-4, provide +48V phantom power for (MIC3-4).turn on switch 5-6,provide +48V phantom power for (MIC5-6). turn on switch 7-10,provide+48V phantom forcuic (7-10)

Devices other than condenser mics may be damaged if connected to the phantom power supply. Note,however, that the switch may be left on when connecting to balanced dynamic microphones.

**2. PROGRAM data disk**

Select one effect from 16 internal effect. Refer to page 10 for more details of internal effect.

**3. PARAMETER control**

Adjust parameter (depth, speed etc) of selected effects. Final parameter of each effect would be saved. Note: when change different effects, as to new selected effect, console would restore to previous parameter (no matter which position the PARAMETER control is). When turn of power, these parameters would reset.

**4. AUX control**

Adjust signal level that sent to AUX (1-2) bus from internal digital effect device.

**5. ON switch**

Turn on/off internal effect. The switch illuminate green when it is on. Footswitch (sell separately) can turn on/off digital effect. note: the default state when power is on: ON switch illuminate green, internal effect is activated.

**6. DSP PFL switch**

The switch can be used for monitoring pre-fader signal of channel. When power is on, pre-fader signal of channel would be output to PHONES jack and MONITOR OUT jack for monitoring.

**7. DSP RTN fader**

Adjust signal level that sent to STEREO bus from internal digital effect device.

