



SCRATCH LIVE



- BACK
- SCROLL
- LOAD A
- MANUAL
- AUTO
- LOOPS
- SELECT
- IN
- LOOP
- OUT
- ROLL
- LOOP
- SAVE

MIC 1 MIC 2

LEVEL

PAN

HIGH

LOW

FLEXFX

EXT. INSERT

HELLLOO!

FLEXFX

FILTER FLANGER PHASER

ECHO ROBOT REVERB

BEAT

TIME

TAP

FLEXFX ON

CUE

PGM 1 SOURCE

PH/CD 2 1 2 AUX

LEVEL

HIGH

MID

LOW

FILTER

CROSSFADER

FLEXFX

CUE

PGM 2 SOURCE

PH/CD 2 1 2 AUX

LEVEL

HIGH

MID

LOW

FILTER

CROSSFADER

FLEXFX

CUE

PGM 3 SOURCE

PH/CD 4 3 4 AUX

LEVEL

HIGH

MID

LOW

FILTER

CROSSFADER

FLEXFX

CUE

PGM 4 SOURCE

PH/CD 4 3 4 AUX

LEVEL

HIGH

MID

LOW

FILTER

CROSSFADER

FLEXFX

CUE

MAIN LEVEL

DL

BALANCE

BOOTH

SESSION OUT

SESSION IN

SPLIT CUE

PAN

LEVEL

- BACK
- SCROLL
- LOAD B
- MANUAL
- AUTO
- LOOPS
- SELECT
- IN
- LOOP
- OUT
- ROLL
- LOOP
- SAVE

- DELETE
  - 1
  - 2
  - 3
  - 4
  - 5
- CUE POINTS

- DELETE
  - 1
  - 2
  - 3
  - 4
  - 5
- CUE POINTS

PGM 1 PGM 2 PGM 3 PGM 4

A B

## SIXTY-EIGHT MIXER OVERVIEW

The Sixty Eight is a four channel mixer with dual high-speed USB ports, Serato Scratch Live controls and built in effects.

### KEY FEATURES

- Two USB ports simultaneously stream audio on two computers
  - Each port supports 6 stereo Record and 5 stereo playback channels
  - 32-bit Floating point audio sampled at 48 kHz
- Four full featured input channels
  - Four stereo Phono/CD inputs
  - Line, Phone or S/PIDF operation
  - Four stereo auxiliary inputs
  - Four stereo USB playback options
  - Gain Trim, 3-band EQ and Filter
  - Crossfader FlexFx Assign
- Two fully independent microphone inputs
  - One with available phantom power
  - One with available line-level input
  - Independent Gain Trim, Pan, EQ and FlexFx Assign
- Advanced FlexFx Loop supports:
  - Built in effects
  - Analog Insert
  - USB Insert
  - Cue and mix level controls
- Headphone monitor with Split Cue option

### FOUR PROGRAM INPUT CHANNELS

#### PGM 1 and PGM 2 SOURCE selection:

- Phono/CD 1 (Phono or Line or S/PDIF)
- Phono/CD 2 (Phono or Line or S/PDIF)
- USB Playback 1
- USB Playback 2
- Auxiliary 1
- Auxiliary 2

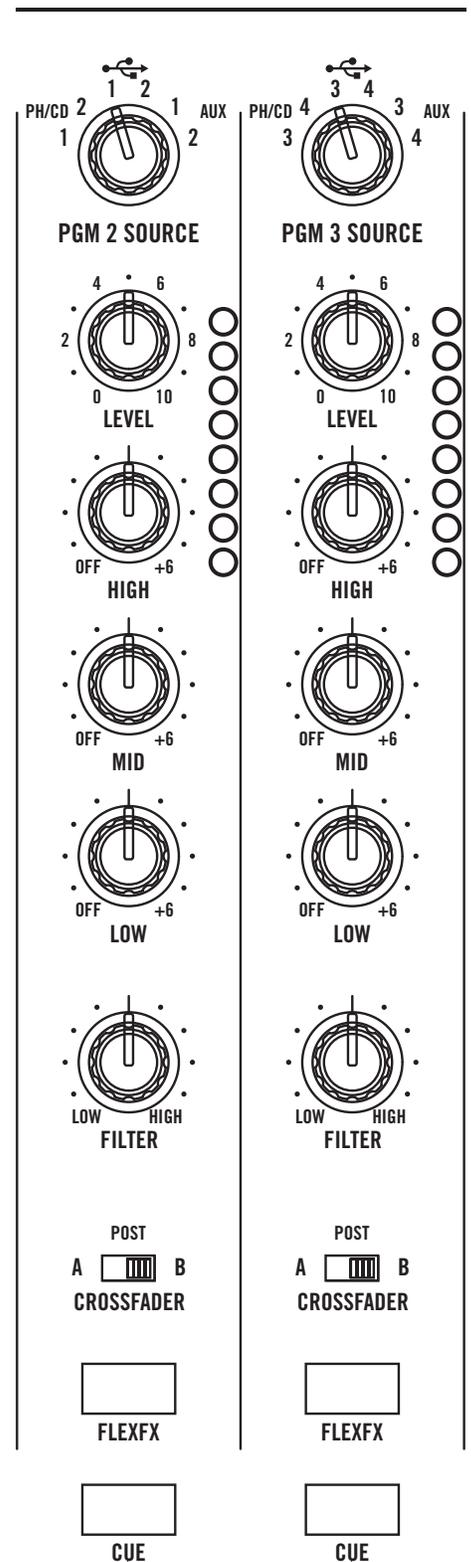
#### PGM 3 and PGM 4 SOURCE selection:

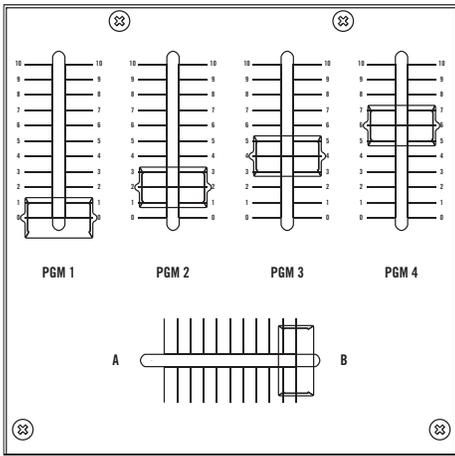
- Phono/CD 3 (Phono or Line or S/PDIF)
- Phono/CD 4 (Phono or Line or S/PDIF)
- USB Playback 3
- USB Playback 4
- Auxiliary 3
- Auxiliary 4

Note: **PHONO** or **LINE** or **S/PDIF** is individually selected for each of the four Phono/CD inputs using the rear panel dip switches. S/PDIF inputs support PCM audio only at sample rates from 44.1 kHz to 96 kHz.

#### Source Selection is followed by:

- **LEVEL** gain trim is Off to +12 dB, with unity gain at 12 o'clock.
- **HIGH / MID / LOW** 3-band, full-cut EQ range is Off to +6 dB, with unity gain at 12 o'clock.
- **LOW-PASS / HIGH-PASS FILTER**
  - Flat response is in the center.
  - Low-pass filter cut-off moves from 20 kHz toward 20 Hz as the knob is turned counter-clockwise.
  - High-pass filter cut-off moves from 20 Hz toward 20 kHz as the knob is turned clockwise.
- **CROSSFADER** assigns the channel to **A**-side, **POST** or **B**-side.
- **FLEXFX** assign takes the channel out of the Main Mix and sends it to the FlexFx Loop.
- **CUE** select assigns the channel to the headphone monitor.
- Each of the four channels has a mono rms signal level meter with peak-hold.



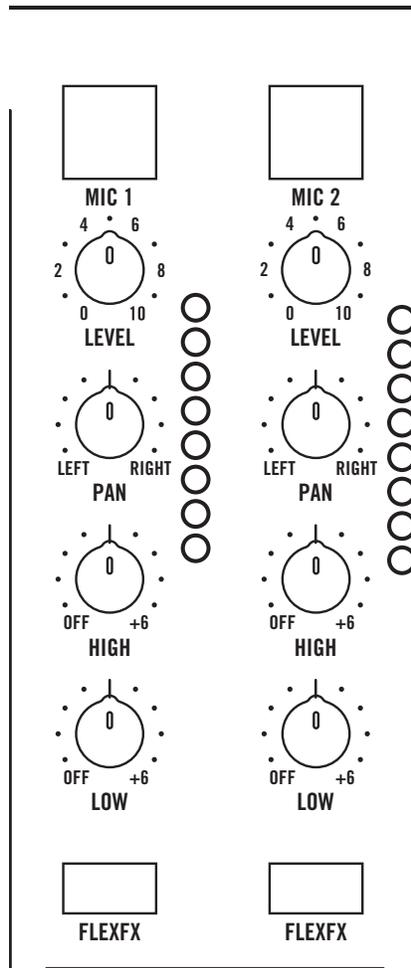
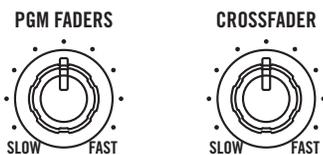


**CONTOUR CONTROLS** for PGM FADERS on the front panel affect all four channel faders.

**CROSSFADER**

- Assign each PGM channel to the A-side, B-side or Post-Crossfader with the **CROSSFADER** switches.
- No-noise, no-bleed magnetic fader.
- Field-replaceable.
- Adjust the **CROSSFADER CONTOUR** with the front panel **CROSSFADER** control.

**CONTOUR CONTROLS**



**MICS**

Two Microphone Inputs are fully independent, each with these controls:

- Large illuminated On / Off switch.
- **LEVEL** control.
- **PAN** the signal from left to right.
- **HIGH / LOW** 2-band, full-cut EQ range is Off to +6 dB with unity gain at 12 o'clock.
- **FLEXFX** Assign takes the signal out of the Main Mix and sends it to the FlexFx Loop.
- Mic 1 allows selection of +48 volt phantom power with a rear panel on/off switch.
- Mic-2 allows selection of **MIC** or **LINE**-level input with a rear panel switch.

**MAIN MIX**

The Main Mix is made from these signals:

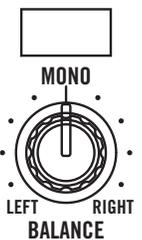
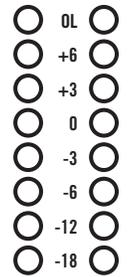
- PGM-1, PGM-2, PGM-3, PGM-4
- Mic-1, Mic-2
- Session Input
- FlexFx Mix

The Main Mix has these outputs:

- **MAIN**
  - Balanced XLR jacks
  - Maximum output 8 volts rms
  - Stereo rms meter with peak-hold.
- **BOOTH**
  - Balanced ¼" TRS jacks
  - Maximum output 8 volts rms
- **SESSION**
  - Unbalanced RCA jacks
  - Maximum output 4 volts rms
- Independent controls common to all Main Mix outputs:
  - **LEVEL** controls with a range of Off to 0 dB.
  - **BALANCE** Left/Right control.
  - **MONO** switch.



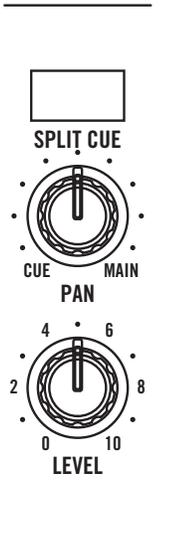
**MAIN LEVEL**



## HEADPHONES

The Headphone Monitor provides stereo or mono split-cue operation.

- In Stereo operation, the Pan control pans between stereo Cue and stereo Main Mix.
- In Split Cue operation, the Pan control pans between Mono Cue in the left ear and mono Main Mix in the right ear.
- Individual Cue buttons are provided for PGM-1, PGM-2, PGM-3, PGM-4 and FlexFx Loop.
- The Headphone Level control sets the level in the both of the front panel 3.5 mm and ¼" output jacks.



## FLEXFX

The FlexFx Loop provides the ability to create a sub-mix that may include any combination of the four PGM input channels, Mic 1 and Mic 2. This configuration allows:

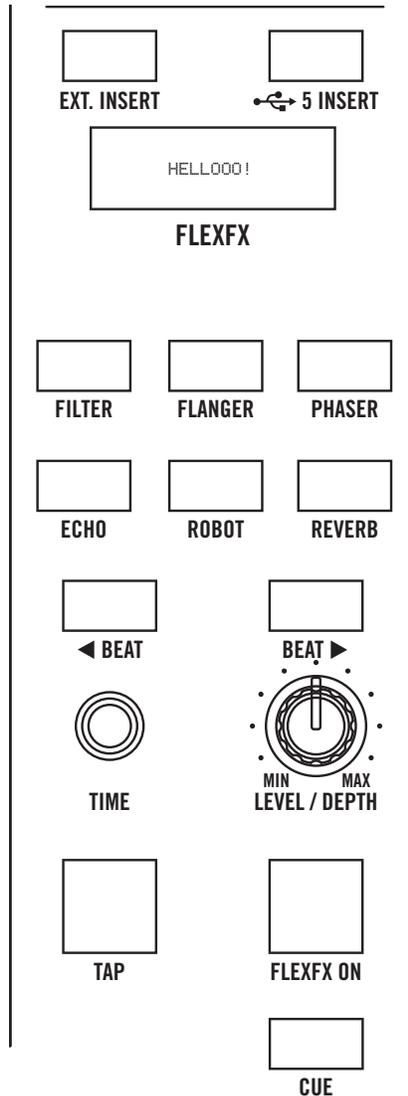
- Creating a unique submix.
- Adding internal or external effects to a submix.
- Recording a submix.
- Rehearsing a submix.

Any combination of the following signals may be assigned to the FlexFx Loop or to the Main Mix:

- **PGM 1, PGM 2, PGM 3, PGM 4, MIC 1 and MIC 2.**

The FlexFx Loop consists of the following elements in order of signal processing:

- Effects Engine: details in the next section.
- External analog FlexFx Loop insert.
- USB insert.
- **CUE** monitor button: "listens" to the effected signal, before the **FLEXFX ON** switch.



- **FLEXFX ON** switch:
  - When Off, this control effectively bypasses the Effects Engine, analog FlexFx Loop insert and USB insert. What you hear in the main mix is a dry version of any signal assigned to the FlexFx Loop.
  - When On, the signal is processed by any selected Effect, analog FlexFx Loop insert or USB insert.
  - This switch is not an on/off switch for the built-in Effects Engine. Effects are turned on and off individually with the effect select buttons.

- **FLEXFX MIX LEVEL** control (front panel)
  - Controls the level of the FlexFx signal going to the Main Mix.
  - Range is from Off to 0 dB.

If the **FLEXFX MIX LEVEL** control is turned up, and the **FLEXFX ON** button is Off (bypassed), there is no change in what is heard in the Main Mix when a channel is assigned to the FlexFx Loop. In this instance, it is possible to add internal or external effects to the signal and Cue the effected signal in the headphones before switching the **FLEXFX ON** button On.

Individual internal effects are selected on/off using one of the six effects buttons. Only one internal effect is selected at a time. See **AUDIO EFFECTS** on the next page for details.

USB and analog FlexFx Loop Inserts are selected individually.

- The **EXT. INSERT** button engages the external analog FlexFx Loop.
- The **5 INSERT** button engages the USB insert.

Both inserts are available with or without the use of an internal effect.

It is also possible to have the **FLEXFX MIX LEVEL** turned down, **FLEXFX ON** or Off, create a submix, add effects (or not) and Cue or rehearse the mix before bringing it into the Main Mix.

The FlexFx submix may be recorded separately via the USB send or the analog **FLEXFX LOOP SEND**.

The USB Insert uses USB record-5 and playback-5. The Send can serve as a USB audio output for recording a submix on a computer, or be used in conjunction with the USB Return to form an external USB effects loop. This loop feature eliminates gain structure issues associated with using Send and Return signals that are not co-located.

## USB AUDIO

There are six stereo record channels and five stereo playback channels. These channels are simultaneously available on two USB ports, allowing two computers to share the device. This allows two DJs to play together and supports uninterrupted transitions from one DJ to another. The six stereo record channels are sent to both USB ports. The five stereo playback channels from each port are summed in the mixer (playback-1 sums with playback-1 and playback-2 two sums with playback-2 etc.) USB audio is 32-bit floating point with a sample rate of 48 kHz.

Record channels are assigned as follows:

- USB-1 Record is assigned to one of these:
  - PH / CD 1
  - Pre-input selector
  - Supports Serato Vinyl Control
  - AUX 1
  - PGM 1 post fader
- USB-2 Record is assigned to one of these:
  - PH / CD 2
  - Pre-input selector
  - Supports Serato Vinyl Control
  - AUX 2
  - PGM 2 post fader
- USB-3 Record is assigned to one of these:
  - PH / CD 3
  - Pre-input selector
  - Supports Serato Vinyl Control
  - AUX 3
  - PGM 3 post fader
- USB-4 Record is assigned to one of these:
  - PH / CD 4
  - Pre-input selector
  - Supports Serato Vinyl Control
  - AUX 4
  - PGM 4 post fader
- USB-5 Record is the SEND on the USB-5 Insert in the FlexFx Loop.
- USB-6 Record is assigned to one of these:
  - MIC 1
  - MIC 2
  - Main Mix

The playback channels are assigned as follows:

- USB-1 Playback (virtual deck one)
  - PGM 1 SOURCE selector
  - PGM 2 SOURCE selector
- USB-2 Playback (virtual deck two)
  - PGM 1 SOURCE selector
  - PGM 2 SOURCE selector
- USB-3 Playback (virtual deck three)
  - PGM 3 SOURCE selector
  - PGM 4 SOURCE selector
- USB-4 Playback (virtual deck four)
  - PGM 3 SOURCE selector
  - PGM 4 SOURCE selector
- USB-5 Playback is the RETURN on the USB Insert in the FlexFx Loop.

## AUDIO EFFECTS

The internal effects engine is located in the FlexFx Loop. This allows any combination of PGM 1, PGM 2, PGM 3 PGM 4, MIC 1 and MIC 2 to be assigned to an effect. The FlexFx Loop supports recording, cueing and Main Mix level control of an effected signal. This has several advantages over conventional effects assignment.

Note: Individual effects are turned on/off using the effects buttons. The FlexFx Loop which includes the two external inserts) is turned On/Off with the **FLEXFX ON** button (off functions as a loop bypass).

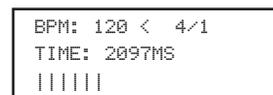
Six built-in effects:

- FILTER
- FLANGER
- PHASER
- HOLD ECHO
- ROBOT
- REVERB

### General Behavior

- The effect time is saved for each effect.
- Changing BPM for one effect changes the BPM for all effects.
- Tapping the BPM requires at least two taps.
- Changing the Beat multiplier results in an immediate change in the effect time.
- Changing the effect time adjusts the multiplier for other effects so that the new multiplier is as close as possible to the saved effect time.

## Effects Display and Match Indicator



### FLEXFX

The effects display shows the current BPM, beat multiplier and time for a selected effect. A bar graph represents the effect time relative to its range. If no effect is selected, the information for the last effect is displayed.

The effect time is normally a product of the BPM and the Beat multiplier. If the left (<) or right (>) arrow appears, there is an inequality between the BPM\*Beat and time. The arrow indicates which way to adjust the Beat to correct the inequality and get the closest possible time. If an asterisk (\*) is displayed, the BPM\*Beat results in the correct time as displayed.

For example, 120 BPM with a 4/1 beat multiplier would result in an effect time of 2000 ms. If the time is adjusted to a different value, such as 2097 ms, an arrow indicates that the product of the displayed BPM and multiplier does not result in the displayed effect time. For this example, 2000 ms is below 2097 ms, so hitting the < Beat button will snap to 120 \* 4/1 and change the time to its product, 2000 ms.

A flashing bar graph indicates that the requested effect time is out of range.

For example, if a BPM of 120 is used with a beat multiplier of 4, the resulting time is 2 seconds. If the multiplier is set to 16, the resulting time would be 8 seconds, which is out of range. In this case, the time remains at 2 seconds and the bar flashes.

Effect	Level/Depth Knob	Time Encoder	Tap Button	Beat Buttons
<b>Filter</b>	Adjusts the strength of the effect.	Adjusts the effect time. Holding the Tap Button while turning the knob adjusts the BPM. Depressing the knob restarts the effect. Value range: 32ms – 32000ms	Used to tap in a new BPM, which results in a new effect time.	Adjusts the beat multipliers up or down, which results in a new effect time. Value range: 1/16, 1/8, 1/4, 1/2, 3/4, 1/1, 2/1 4/1, 8/1, 16/1, 32/1, 62/1
<b>Flanger</b>				
<b>Phaser</b>				
<b>Echo</b>	Adjusts the decay of the echo. Max results in no decay, with faster decay the more the knob is turned CCW. Minimum results in no echo.	Adjusts the effect time. The effect time is the length of the recorded sample used for echoing. Holding the Tap Button while twisting the knob adjusts the BPM. Depressing the knob clears out the current sample used for echoing. Value range: 1ms – 4000ms		Adjusts the beat multipliers up or down, which results in a new effect time. Value range: 1/8, 1/4, 1/2, 3/4, 1/1, 2/1 4/1, 8/1, 16/1
<b>Robot</b>	that	does	not	compute
<b>Reverb</b>	everb	verb	erb	rb

## CONNECTING THE MIXER

Leave the power unplugged until everything else is connected!

## PGM INPUTS 1-4

The Sixty-Eight has four stereo analog inputs for PGM 1 through PGM 4. Any of these analog inputs may be set for Phono Input, Line Input or S/PDIF using the **P - L - S** switches located on the rear panel. Unused inputs are best set to LINE. Attach your turntable's ground wires to the Phono Ground connectors.

Any of the four analog inputs may be used for Scratch Live vinyl emulation control. Input 1 or Input 2 may be selected for Scratch Live Virtual Deck 1 control. Input 3 or 4 may be selected for Scratch Live Virtual Deck 2 control. Control input sources are selected in Scratch Live software.

## MIC INPUTS

The Mic Inputs will accept an XLR 3-pin plug, a balanced 1/4" TRS (tip-ring sleeve) plug or an unbalanced TS (tip-sleeve) plug. Mic 1 has a switchable phantom power option, and Mic 2 has a switchable line level option.

## ANALOG OUTPUTS

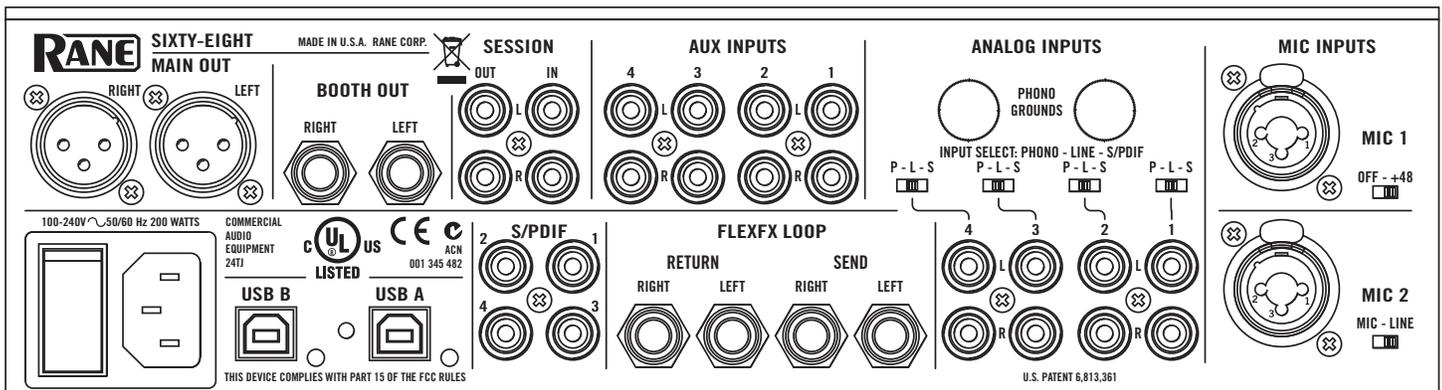
All analog outputs come from the same "Main Mix" signal. Main, Booth and Session outputs each have their own Level control. The Main output is on balanced XLR jacks with pin 2 "hot" per AES standards. The Booth output is on balanced 1/4" TRS (tip-ring-sleeve) jacks, though unbalanced TS (tip-sleeve) plugs may be used. The Session output is on regular unbalanced RCA jacks. Because all signals are identical, users may use any of these outputs as the "main" output if a different cable type is required

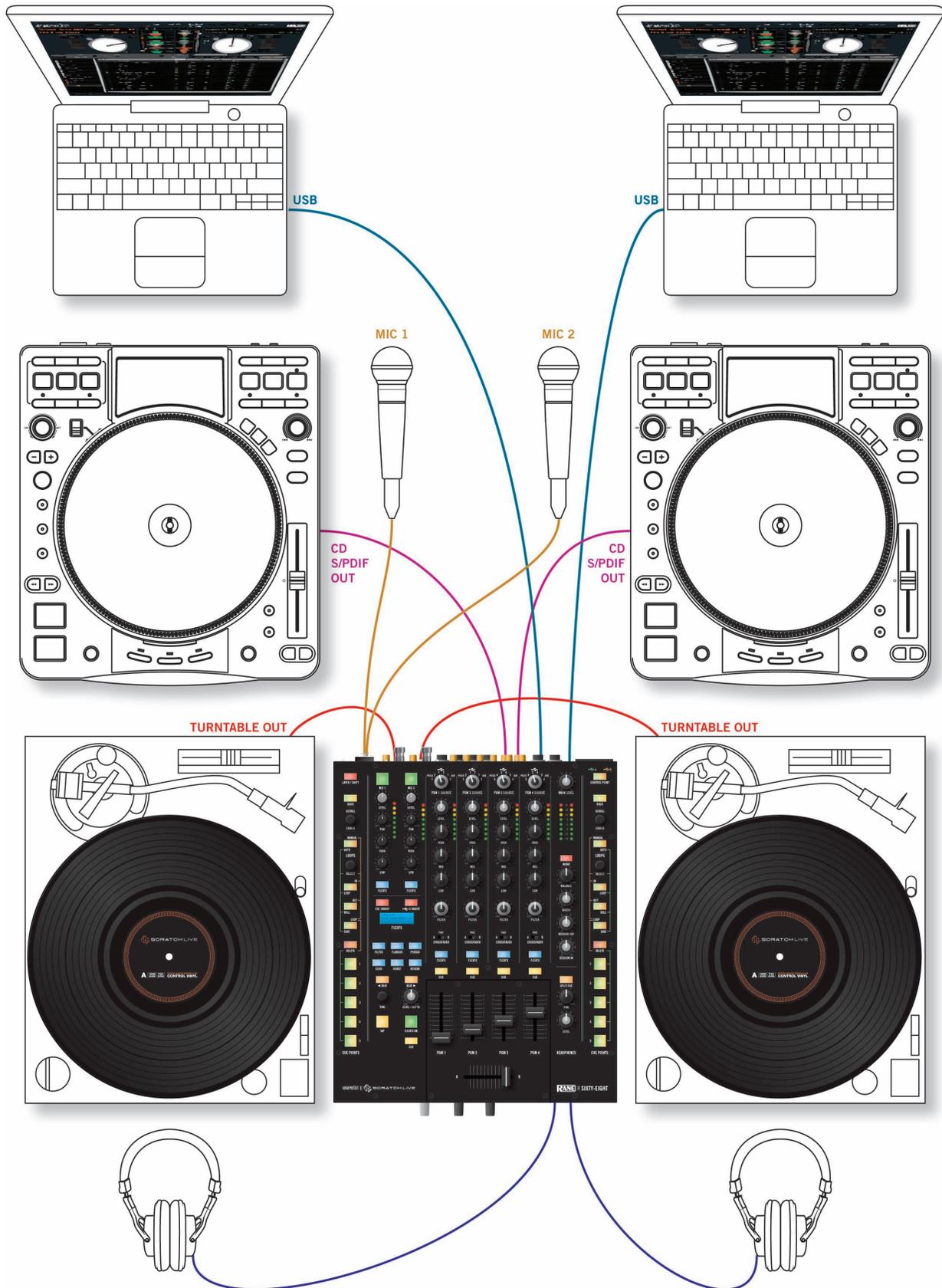
for system connection.

Rane recommends balanced wiring for the strongest signal and rejection of hum and noise. If your cable to the amp rack is less than 10 feet (3 meters), you can usually get away with an unbalanced cable. See the RaneNote "[Sound System Interconnection](#)" at [www.rane.com](http://www.rane.com) for details and cable wiring.

## POWER SUPPLY

The Sixty-Eight features an internal universal switching power supply that operates on any AC mains 100 to 240 VAC, 50 or 60 Hz (most places in the world). All that is required when traveling is the appropriate IEC line cord which is usually readily available. The universal supply is a major plus for the traveling DJ.





## SCRATCH LIVE 2.0 PRELIMINARY FEATURES FOR THE SIXTY-EIGHT MIXER

- 48 K / 32-BIT FLOATING POINT AUDIO FOR THE HIGHEST QUALITY PLAYBACK.
- SUPPORT FOR 4 DECKS.
- CHOICE OF 2 OR 4 DECK MODES:
  - The 4 Deck mode has 2 new fully functional decks below the current two.
- CHOICE OF VERTICAL, HORIZONTAL, OR DAW MODE DECK ARRANGEMENTS
  - Choose between layouts for both the 2 and 4 Deck modes. DAW (“digital audio workstation”) mode puts decks stacked top to bottom with the tracks running horizontally across the screen.
- SUPPORT FOR 2 DJS AT ONCE.
  - DJ handover is easy with two USB ports. Easily switch between two laptops without interrupting the music. eg., DJ A can be playing out channels 1 and 2, and then hand off those channels one at a time to DJ B.
  - Two DJs can perform in parallel on the same mixer: Two DJs connect, configure which channels they output in software, and then DJ side by-side off the same mixer. eg., DJ A can play out channels 1 and 2, and DJ B can play out channels 3 and 4 at the same time.
- CONTROL OF SCRATCH LIVE FROM THE HARDWARE CONTROL STRIPS
  - A plug-and-play preset is included which performs standard functions (Library Navigation, Cues, Loops).
  - Scratch Live will ship with one preset that matches the functionality of that printed on the mixer.
  - Customizable presets for advanced users who will be able to switch groups, so the control strips become open-assignable. I.e. like a MIDI controller, allowing custom functions and mapping.
- RECORD YOUR SEPARATE PGM INPUTS, FLEXFX USB SEND, AUX INPUTS OR MAIN MIX.
  - Choose Mix, Aux, and PGM Inputs as a possible record source.
- SP-6 SAMPLE PLAYER OUTPUT TO MIXER CHANNELS
  - Additional output options will be added to the SP-6 Sample Player, allowing a user to choose channels 1-4 or the FlexFX Return as output options. This allows things like having 3 decks coming out channels 1-3 and have the SP-6 coming out channel 4.
- CONTROL AND INSERTION OF SOFTWARE FX USING THE SIXTY-EIGHT FX CONTROLS.
- RECORD YOUR MIX TO DISK WITH PRE-FADER AUDIO AND FADER AUTOMATION RECORDED.
  - This record option allows a user to record not only audio, but fader automation. This can then be imported into a DAW for editing.
  - Ableton support with the first release with more to be added at a later date.