Numark®

NS7 V7 NS FX

NUMARK PERFORMANCE CONTROLLERS WITH SERATO™ ITCH

REFERENCE MANUAL
(ENGLISH) ::::: 1 – 43

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REGISTRATION

Please go to **http://www.numark.com** to register your NS7 / V7 / NSFX. Registering your product ensures that we can keep you up-to-date with any last-minute product developments and provide you with world-class technical support, should you run into any problems.

GROUND RULES

- **READ SAFETY INSTRUCTIONS & WARRANTY INFORMATION BEFORE USING THE PRODUCT.**
- Make sure all items listed in BOX CONTENTS are included.
- Before getting started and connecting devices to NS7 / V7 or turning NS7 / V7 on/off, make sure all devices are off and all faders and gain knobs are set to "zero."
- **READ AND FOLLOW THE SOFTWARE & DRIVER INSTALLATION INSTRUCTIONS**.

NS7 / V7 PLATTER ASSEMBLY

1. Remove NS7 / V7 from the packaging. Remove the platter assembly/assemblies from package.

   Place NS7 / V7 on a flat, stable surface for operation. Ensure unit has adequate air flow to all ventilation ports (especially if installed in a case).
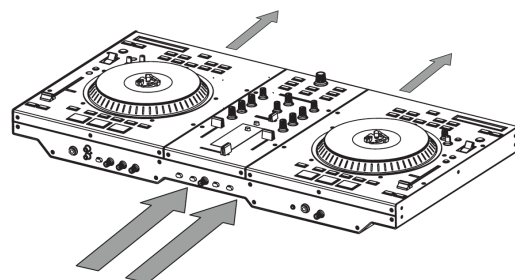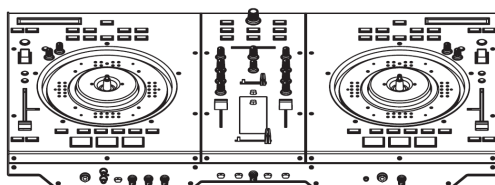
2. Place the platter onto NS7 / V7 by aligning the pins in the bottom of the platter with the holes in NS7's / V7's motor.
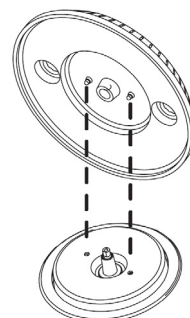
3. Place the slipmat onto the platter, then place the vinyl over the slipmat.
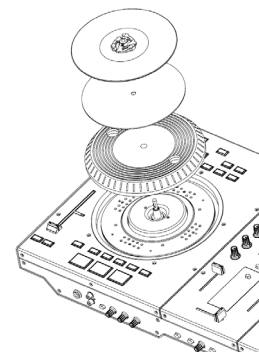
4. Line up the notch in the spindle with the screw in the vinyl's 45 RPM adapter. Use the allen wrench (included) to tighten the screw, locking the platter assembly to the spindle.

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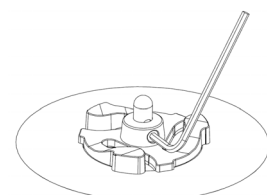
SOFTWARE INSTALLATION

Free updates to the Serato ITCH software are available online at **http://www.serato.com/itch**. We recommend checking the website for the latest update of Serato ITCH before installing it on your computer.

WINDOWS (XP & VISTA)

1. **_IMPORTANT:_** Do **_NOT_** connect the NS7 / V7 to your PC before you are prompted to do so. The installer will prompt you to connect it at the appropriate time.
2. Insert the included software CD into your computer's CD-ROM drive. An installation "wizard" will appear. (If it does not appear, open the contents of the software CD and double-click the "ITCH_Installer.exe" file.)
3. Follow the instructions on the screen to begin the installation process. During this process, you will be prompted to connect the NS7 / V7 to your computer. Throughout the installation:
    - if Windows warns you that any of the drivers' certificates cannot be verified, approve them anyway.
    - if Windows warns you that the hardware installation was not successful or may not work properly, ignore it.
    - if you see any dialog boxes flash briefly on the screen before disappearing, ignore them.

    These warnings are normal and are simply Windows' reaction to the cancellation of its own hardware installer. (NS7 / V7 and Serato ITCH use their own installation processes.)

If you selected the default location during the installation process, you can find the program in the following location:
    - XP: **Start Menu ▶ Programs ▶ ITCH**
   - Vista: **Windows Menu ▶ All Programs ▶ Serato ▶ ITCH**

MAC

1. Insert the software CD (included) into your computer's CD-ROM drive.
2. Open the contents of the software CD in your computer.
3. Double-click the ITCH Installer file.
4. Follow the instructions on the screen to begin the installation process. During this process, you will be prompted to connect the NS7 / V7 to your computer.

If you selected the default location during the installation process, you can find the program in your **Applications** folder.

CONNECTING THE NS7 / V7

1. NS7: Connect any optional input sources (microphones, turntables, CD players, etc.) to NS7.
2. Connect output devices (power amplifiers, sub-mixer, recorders, etc.) to NS7 / V7.
3. Plug all devices into power supply, and turn on devices in proper order:
    a. When **starting** a session, turn devices on in this order: (1) auxiliary input sources, (2) NS7 / V7, (3) output devices
    b. When **ending** a session, reverse this operation by turning off: (1) output devices, (2) NS7 / V7, (3) auxiliary input sources
4. Connect NS7 / V7 to your computer with the USB cable (included) and to your headphones.
5. Start Serato ITCH and go!

NS7

REAR PANEL OVERVIEW
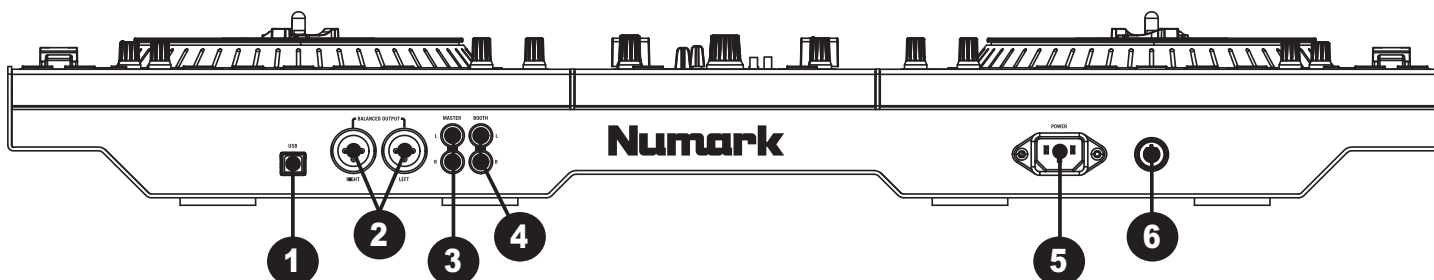
1. **USB –** This USB connection sends and receives audio and control information from a connected computer.
2. **MASTER OUTPUT (BALANCED) –** Connect this low-impedance XLR output to a PA system or powered monitors. The level of this output is controlled with the MASTER knob on the top panel.
3. **MASTER OUTPUT (RCA) –** Use standard RCA cables to connect this output to a speaker or amplifier system. The level of this output is controlled by the MASTER knob on the top panel.
4. **BOOTH OUTPUT (RCA) –** Use standard RCA cables to connect this output to a booth monitoring system. The level of this output is controlled by the BOOTH knob on the top panel.
5. **POWER IN –** Use the included power cable to connect NS7 to a power outlet. While the power is switched off, plug the cable into NS7 first, then plug the cable into a power outlet.
6. **POWER SWITCH –** Turns NS7 on and off. Turn on NS7 after all input devices have been connected and before you turn on amplifiers. Turn off amplifiers before you turn off NS7.

FRONT PANEL OVERVIEW

1. **MIC INPUT –** Connect a 1/4" microphone to this input.
2. **AUX INPUT (RCA) –** Use standard RCA cables to connect a line-level device, such as a CD player, sampler or audio interface, to this input.
3. **MIC / AUX SWITCH –** Activates or deactivates the MIC INPUT and AUX INPUT. For best signal-to-noise performance, turn this switch off when not in use.
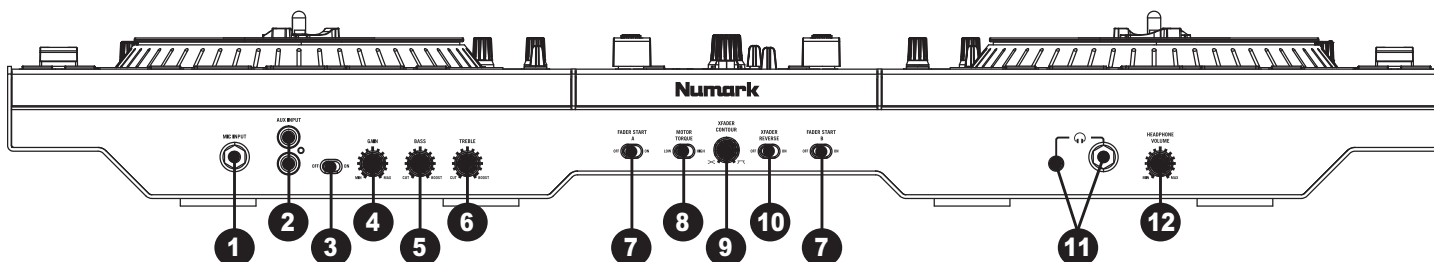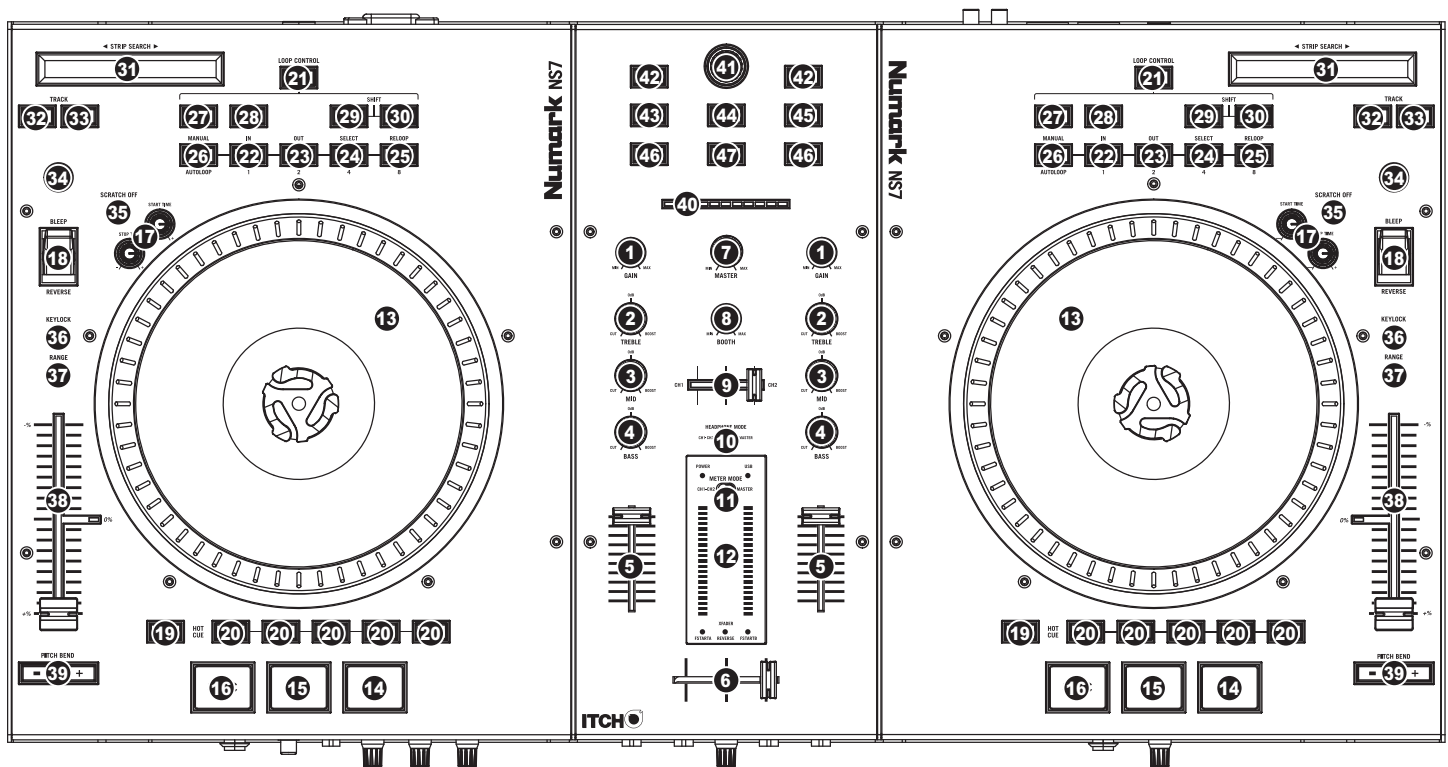4. **MIC / AUX GAIN –** Adjusts the pre-fader, pre-EQ audio level of the MIC INPUT and AUX INPUT.
5. **MIC / AUX BASS –** Adjusts the low (bass) frequencies of the MIC INPUT and AUX INPUT.
6. **MIC / AUX TREBLE –** Adjusts the high (treble) frequencies of the MIC INPUT and AUX INPUT.
7. **FADER START –** Enables or disables Fader Start on the corresponding side of the crossfader. When Fader Start is enabled on one side, moving the CROSSFADER toward that side will cause that channel to start playing. Moving the CROSSFADER away from that side will cause that channel to stop, and the audio will return to the beginning of the track.
8. **MOTOR TORQUE –** Flip this switch to adjust the torque of the PLATTERS. At the high setting, the PLATTERS will have the heavier, stronger feel of "modern" turntables. At the lower setting, they are lighter and more graceful – the feel of a "classic" turntable.
9. **CROSSFADER (XFADER) CONTOUR –** Adjusts the slope of the crossfader curve. Turn the knob to the left for a smooth fade (mixing) or to the right for a sharp cut (scratching).
10. **CROSSFADER (XFADER) REVERSE –** Reverses the assignment of Channels 1 and 2 on the CROSSFADER. (An LED on the top panel labeled "XFADER REVERSE" will illuminate when activated.)
11. **HEADPHONES –** Connect your 1/4" or 1/8" headphones to this output for cueing and mix monitoring.
12. **HEADPHONE VOLUME –** Adjusts the level of the headphone audio.

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TOP PANEL OVERVIEW

MIXER CONTROLS

1. **GAIN TRIM –** Adjusts the pre-fader, pre-EQ audio level of the corresponding channel in the software.

2. **CHANNEL TREBLE –** Adjusts the high (treble) frequencies.

3. **CHANNEL MID –** Adjusts the mid-range frequencies.

4. **CHANNEL BASS –** Adjusts the low (bass) frequencies.

5. **CHANNEL FADER –** Adjusts the audio level on the corresponding channel in the software.

6. **CROSSFADER –** Blends audio between the channels assigned to the left and right side of the crossfader.

   Note: The crossfader is user-replaceable if it should ever wear out. Simply remove the facepanel, then remove the screws holding it in position. Replace the fader with a quality authorized replacement from your local Numark retailer only.

7. **MASTER VOLUME –** Adjusts the output volume of the Program Mix.

8. **BOOTH VOLUME –** Adjusts the output volume of the BOOTH OUTPUT mix.

9. **HEADPHONE MIX –** Blends the pre-fader audio playing on Channels 1 and 2. Sliding this to the left plays Channel 1. Sliding to the right plays Channel 2.

10. **HEADPHONE MODE –** Selects the audio that is sent to the headphones. Switch it to "MASTER" to hear the Program Mix. Switch it to "CH1 CH2" to hear a mix of Channels 1 and 2 in the headphones.

11. **METER MODE –** Determines whether audio from the Program Mix or the Cue Channel is sent to the LED METERS. When set to "CH1-CH2," the Cue Channel will be monitored (Channel 1 in the left meter, Channel 2 in the right meter). When set to "MASTER," the Program Mix will be monitored in stereo.

12. **LED METERS –** Monitors the audio levels of the Program Mix or Cue Channel, depending on the position of the METER MODE switch.

4

TRANSPORT CONTROLS

USEFUL TERMS:

- **Audio Pointer:** The current position in a track from where audio will play. When you select a track and begin playing, the Audio Pointer will usually start from the beginning and stop at the end.
- **Cue Point:** A marked position in a track, which will be permanently stored by the software. You can set, return to, or delete Cue Points with the CUE CONTROLS.
- **Temporary Cue Point:** A marked position in a track, which will only remain while that track is still loaded in the Deck. You can set and return to the Temporary Cue Point with the CUE button.

PLAYBACK CONTROLS

13. **PLATTER / SLIPMAT / VINYL –** This motorized platter (with slipmat and vinyl) controls the Audio Pointer in the software.

14. **PLAY / PAUSE –** Starts or resumes playback if the Deck is paused. Pauses playback if the Deck is playing. (The rate at which the playback shifts from "play" to "pause" and from "pause" to "play" is controlled by the START TIME and STOP TIME knobs.)

15. **CUE –** If no Temporary Cue Point is assigned, or if the Deck is paused, press CUE to set a Temporary Cue Point. While the track is playing, press it again to return to the Temporary Cue Point and pause playback.

    You can hold down CUE to start playback from the Temporary Cue Point. Release it to return to the Temporary Cue Point and pause playback.

    You can hold down CUE and PLAY / PAUSE simultaneously to start playback from the Temporary Cue Point. Release both buttons to allow playback to continue.

16. **SYNC –** Automatically matches the corresponding Deck's tempo with the other Deck's tempo.

    Hold DELETE/SHIFT and press SYNC to snap the closest transient of that Deck's track to that of the opposite Deck.

17. **START TIME / STOP TIME –** Control the rate at which the playback shifts from "play" to "pause" and from "pause" to "play."

18. **BLEEP / REVERSE –** Reverses audio playback of the track on the corresponding deck.

    - When the switch is in the REVERSE position, the playback of the track will be reversed. Returning the switch to its center (deactivated) position will resume normal playback from wherever the Audio Pointer stops.
    - When the switch is held in the BLEEP position, the playback of the track will be reversed. Returning the switch to its center (deactivated) position will resume normal playback from where it would have been if you had never engaged the BLEEP function (i.e., as if the track had been playing forward the whole time).

CUE CONTROLS

19. **DELETE/SHIFT –** This button has two functions. As DELETE, this button enables Delete Cue Mode. As SHIFT, this button accesses alternate functions of certain buttons.

    - **DELETE –** Press or hold this to enable Delete Cue Mode, so you can erase assigned Cue Points from the HOT CUE BUTTONS. When the DELETE CUE button is lit bright red, it is in Delete Cue Mode. You can then press a red HOT CUE BUTTON to delete its assigned Cue Point. (Pressing the DELETE CUE button to enable Delete Cue Mode will let you delete one Cue Point at a time. Holding the DELETE CUE button to enable Delete Cue Mode will let you delete multiple Cue Points.)
    - **SHIFT –** Press and hold this button, then press another button to access its alternate function.

20. **HOT CUE BUTTONS (1-5) –** Assigns a Cue Point or returns the track to that Cue Point. When a HOT CUE BUTTON is unlit, you can assign a Cue Point by pressing it at the desired point in your track. Once it is assigned, the HOT CUE BUTTON will light up white. To return to that Cue Point, simply press it.

    Tip: If the Deck is paused, holding a lit HOT CUE BUTTON *will start playback from that Cue Point. Releasing it will return the track to that Cue Point and pause playback.*

    Note: Cue Points cannot be overwritten. You must first erase a Cue Point by pressing or holding the DELETE CUE *button while pressing the appropriate* HOT CUE BUTTON.

LOOP CONTROLS

21. **ON / OFF –** Press this to turn a loop on or off. If the Deck is already looping, it will exit the loop. If the Deck is not looping, the currently selected loop will be enabled (once the Audio Pointer enters the loop region). If no loop is set, nothing will happen.

22. **IN –** Press this to set a "Loop In" point where your loop will begin. If you are already in a loop when you press it, you can "fine tune" the placement of the "Loop In" point by moving the PLATTER. (Be sure the SCRATCH OFF button is lit so the PLATTER's motor is not running.) If no track is assigned to the Deck, nothing will happen.

23. **OUT –** Press this to set a "Loop Out" point where your loop will end. If you are already in a loop when you press it, you can "fine tune" the placement of the "Loop Out" point by moving the PLATTER. (Be sure the SCRATCH OFF button is lit so the PLATTER's motor is not running.) If no track is assigned to the Deck, nothing will happen.

> Hold DELETE/SHIFT and any of these buttons to access their alternate functions:
>
> **IN, OUT, SELECT, RELOOP:** Triggers Loop Roll in eighth, quarter, half, or one note measurements.
>
> **1/2 X, 2 X, SHIFT LEFT, SHIFT RIGHT:** Jumps to stored loops 1, 2, 3, or 4 (respectively) and instantly reloops them.

24. **SELECT –** Press this to rotate through the loops set in the track. From here, you can edit, reloop, or enable the loop you have selected. (Also, if you pressed LOOP IN but want to cancel the loop before completing it, press SELECT, which will toggle out of it.)

25. **RELOOP –** Press this to jump to the start of the loop and enable it. If the Deck is already looping when you press it, the Audio Pointer will jump to the start of the loop and continue. If no loop is set, nothing will happen.

26. **MODE –** Press this to switch between Manual Mode and Autoloop Mode, which changes the functions of the bottom four LOOP CONTROL buttons. In Manual Mode, the LOOP CONTROL buttons function as IN, OUT, SELECT, and RELOOP (explained above). In Autoloop Mode, the LOOP CONTROL buttons will set 1-, 2-, 4-, and 8-beat loops, respectively. Each loop will start at the Audio Pointer's location when the button is pressed.

    Note: Due to the way the software analyzes beats per minute (BPM), the length of 1-, 2-, 4-, and 8-beat loops will vary between tracks with different BPM readings.

27. **1/2 X –** Press this to halve the length of the selected loop.

28. **2 X –** Press this to double the length of the selected loop.

29. **SHIFT LEFT (◄) –** Press this to shift the selected loop to the left. It will move left the same distance as the length of the loop itself.

30. **SHIFT RIGHT (►) –** Press this to shift the selected loop to the right. It will move right the same distance as the length of the loop itself.

TRACK CONTROLS

31. **STRIP SEARCH –** The length of this strip represents the length of the entire track. Place your finger on a point along this sensor to jump to that point in the track. (If you want to scroll through a track, we recommend using your computer rather than running your finger along the strip.)

> Hold DELETE/SHIFT and any of these buttons to access their alternate functions:
>
> **TRACK FORWARD (▸▸|):** Fast-forward through the track.
> **TRACK BACK (|◂◂):** Rewind through the track.

32. **TRACK FORWARD (▸▸|) –** Press this to skip to the next track.

33. **TRACK BACK (|◂◂) –** Press this to skip to the beginning of the current track. If the Audio Pointer is within the first few seconds of the current track, pressing it will skip to the previous track.

PITCH CONTROLS

34. **TAP –** Tap this button at the same tempo as the track to help the software detect a more accurate BPM reading.

35. **SCRATCH OFF –** Press this to disable the PLATTER's motor and bring it to a stop.

36. **KEYLOCK –** If you have changed the pitch of the track, you can press the KEYLOCK button to return the track's pitch to its original key. The track's tempo will remain at the speed designated by the PITCH FADER.

37. **PITCH RANGE –** Press this to adjust the range of the PITCH FADER to ±8%, ±16%, and ±50%.

38. **PITCH FADER –** Controls the track's playback speed. An LED next to the fader will light up when set at 0%.

39. **PITCH BEND (+ / –) –** Press or hold down either of these buttons to temporarily adjust the track's playback speed. When released, the track playback will return to the speed designated by the PITCH FADER.

40. **BPM METER –** This meter is an aid for matching the tempo of both decks. When the white center LED is lit, the BPMs are matched. Otherwise, the meter will tend towards the faster deck. The further from center, the greater the difference between the two BPMs.

    The meter is also an aid while adjusting Loop In or Loop Out points. If you are making fine adjustments to your Loop In or Loop Out points using the PLATTERS, the lit LED will "wrap around" the meter. It will rest on the white center LED whenever the loop's length has been doubled or halved exactly.

    Note: The BPM METER *will aid in loop adjustments only if (1) a BPM reading has been entered for that track and (2) the two Decks' tempos have been synchronized.*

NAVIGATION CONTROLS

41. **SCROLL KNOB –** Use this knob to scroll through lists of tracks, Crates, etc. in the software. You can also press it to move between the panels shown in the software.

42. **FWD / BACK –** These buttons move the selector between various panels in the software.

43. **CRATES –** Press this to move the selector to the Crates Panel in the software.

44. **PREPARE –** Press this to move the selector to the Prepare Panel in the software.

45. **FILES –** Press this to move the selector to the Files Panel in the software.

46. **LOAD A / LOAD B –** Press one of these buttons while a track is selected to assign it to Deck A or Deck B, respectively.

   Tip: Pressing the LOAD A *or* LOAD B *button twice quickly will load the opposite Deck's track to that Deck as well, with its Audio Pointer in the same position. For more information, see "Instant Doubles" under "Playback" in the* SOFTWARE SETUP *section.*

47. **LOAD PREPARE –** Press this to add a selected track to the list of tracks in the Prepare Panel in the software.

Hold DELETE/SHIFT and any of these buttons to access their alternate functions:

FWD: Sort current Library/Crate/Panel View by album.

BACK: Sort current Library/Crate/Panel View by track number.
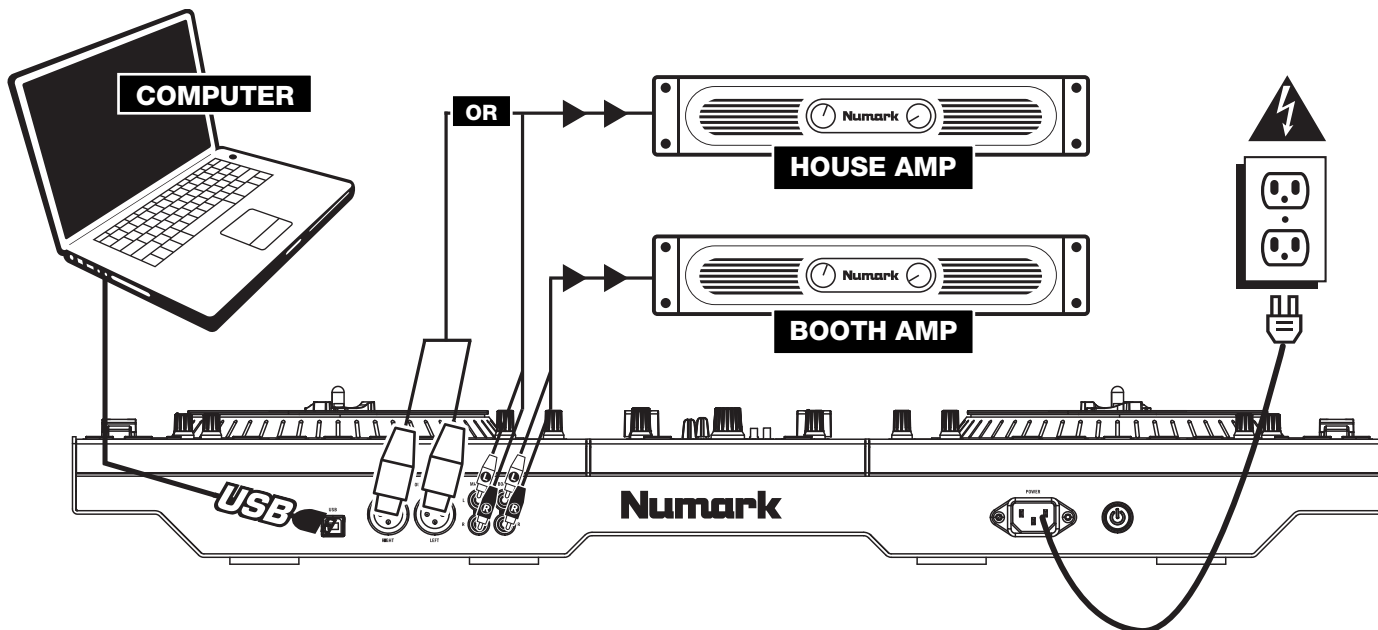
CRATE: Sort current Library/Crate/Panel View by song.

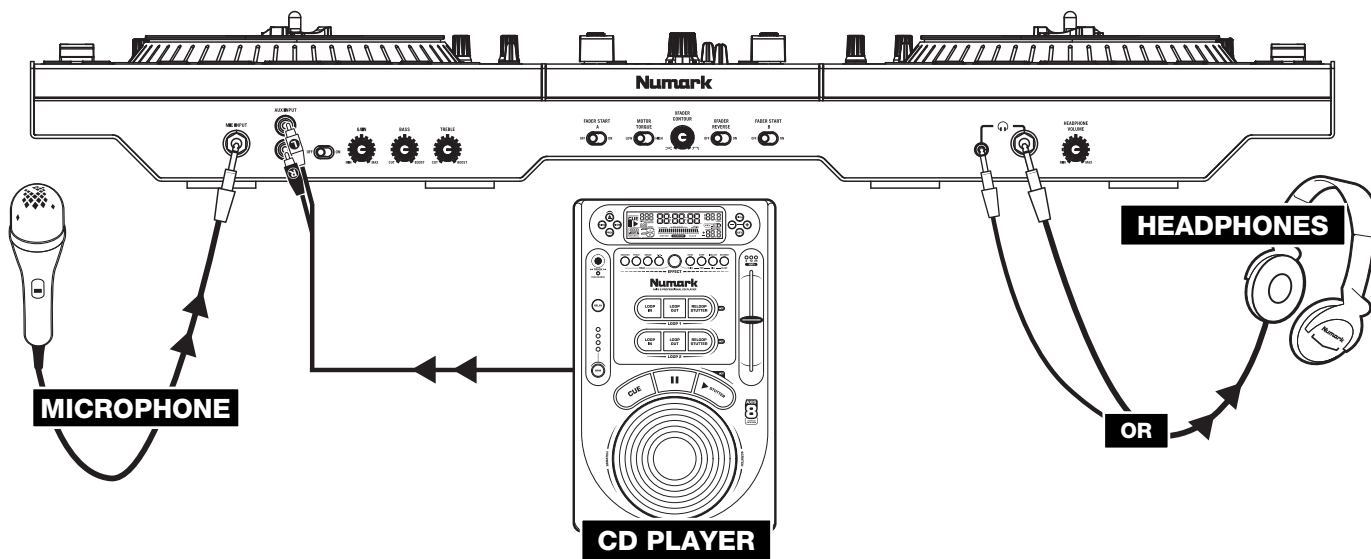**PREPARE:** Sort current Library/Crate/Panel View by artist.

FILES: Sort current Library/Crate/Panel View by BPM.

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CONNECTION DIAGRAM

BACK

COMPUTER

OR

HOUSE AMP

BOOTH AMP

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USB

POWER

**FRONT**

Numark

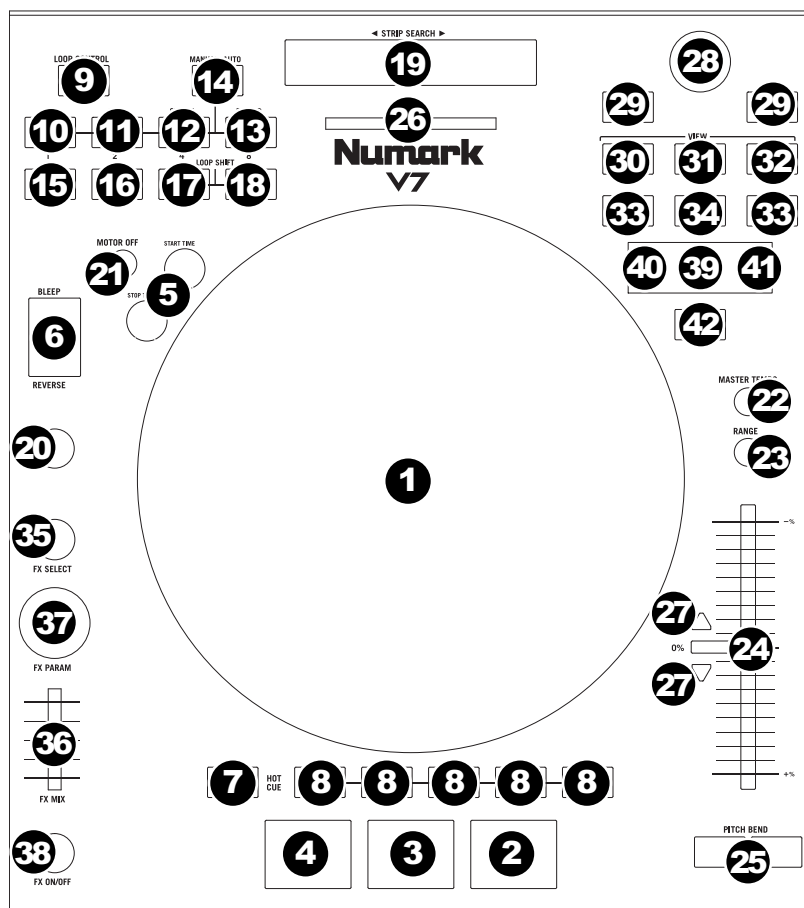MICROPHONE

HEADPHONES

OR

CD PLAYER

V7

REAR PANEL FEATURES

1. **POWER IN –** Use the included power cable to connect V7 to a power outlet. While the power is switched off, plug the cable into V7 first, then plug the cable into a power outlet.

2. **POWER SWITCH –** Turns V7 on and off. Turn on V7 after all input devices have been connected and before you turn on amplifiers. Turn off amplifiers before you turn off V7.

3. **USB –** This USB connection sends and receives audio and control information from a connected computer. Refer to the USB OPERATION section for more information.

4. **DECK A / DECK B OUTPUT (RCA) –** Use standard RCA cables to connect these outputs for Deck A and Deck B to the left and right channels (respectively) of your mixer.

5. **MOTOR TORQUE –** Flip this switch to adjust the torque of the PLATTERS. At the high setting, the PLATTERS will have the heavier, stronger feel of "modern" turntables. At the lower setting, they are lighter and more graceful – the feel of a "classic" turntable.

6. **REMOTE –** If you are using a "fader start"-compatible mixer, you can start and cue music automatically on the V7 by moving the mixer's crossfader towards it. To use fader start, connect the V7's REMOTE output to your fader start-compatible mixer with standard 1/8" cables.

7. **LINK CONNECTION –** If you are using two V7s, connect their LINK CONNECTIONS with the included link cable.

8. **DECK LOCATION SWITCH –** Reserved for future use.
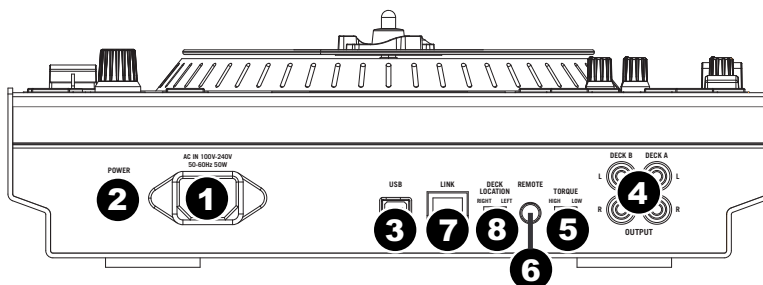
TOP PANEL FEATURES

USEFUL TERMS:
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- **Temporary Cue Point:** A marked position in a track, which will only remain while that track is still loaded in the Deck. You can set and return to the Temporary Cue Point with the CUE button.

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PLAYBACK CONTROLS

1. **PLATTER / SLIPMAT / VINYL –** This motorized platter (with slipmat and vinyl) controls the Audio Pointer in the software.
2. **PLAY / PAUSE –** Starts or resumes playback if the Deck is paused. Pauses playback if the Deck is playing. (The rate at which the playback shifts from "play" to "pause" and from "pause" to "play" is controlled by the START TIME and STOP TIME knobs.)
3. **CUE –** If no Temporary Cue Point is assigned, or if the Deck is paused, press CUE to set a Temporary Cue Point. While the track is playing, press it again to return to the Temporary Cue Point and pause playback.

    You can hold down CUE to start playback from the Temporary Cue Point. Release it to return to the Temporary Cue Point and pause playback.

    You can hold down CUE and PLAY / PAUSE simultaneously to start playback from the Temporary Cue Point. Release both buttons to allow playback to continue.
4. **SYNC –** Automatically matches the corresponding Deck's tempo with the other Deck's tempo.

    > Hold DELETE/SHIFT and press SYNC to snap the closest transient of that Deck's track to that of the opposite Deck.
5. **START TIME / STOP TIME –** Control the rate at which the playback shifts from "play" to "pause" and from "pause" to "play."
6. **BLEEP / REVERSE –** Reverses audio playback of the track on the corresponding deck.
    - When the switch is in the REVERSE position, the playback of the track will be reversed. Returning the switch to its center (deactivated) position will resume normal playback from wherever the Audio Pointer stops.
    - When the switch is held in the BLEEP position, the playback of the track will be reversed. Returning the switch to its center (deactivated) position will resume normal playback from where it would have been if you had never engaged the BLEEP function (i.e., as if the track had been playing forward the whole time).

CUE CONTROLS

7. **DELETE/SHIFT –** This button has two functions. As DELETE, this button enables Delete Cue Mode. As SHIFT, this button accesses alternate functions of certain buttons
    - **DELETE –** Press or hold this to enable Delete Cue Mode, so you can erase assigned Cue Points from the HOT CUE BUTTONS. When the DELETE CUE button is lit bright red, it is in Delete Cue Mode. You can then press a red HOT CUE BUTTON to delete its assigned Cue Point. (Pressing the DELETE CUE button to enable Delete Cue Mode will let you delete one Cue Point at a time. Holding the DELETE CUE button to enable Delete Cue Mode will let you delete multiple Cue Points.)
    - **SHIFT –** Press and hold this button, then press another button to access its alternate function.
8. **HOT CUE BUTTONS (1-5) –** Assigns a Cue Point or returns the track to that Cue Point. When a HOT CUE BUTTON is unlit, you can assign a Cue Point by pressing it at the desired point in your track. Once it is assigned, the HOT CUE BUTTON will light up white. To return to that Cue Point, simply press it.

    Tip: If the Deck is paused, holding a lit HOT CUE BUTTON *will start playback from that Cue Point. Releasing it will return the track to that Cue Point and pause playback.*

    Note: Cue Points cannot be overwritten. You must first erase a Cue Point by pressing or holding the DELETE CUE *button while pressing the appropriate* HOT CUE BUTTON.

LOOP CONTROLS

9. **ON / OFF –** Press this to turn a loop on or off. If the Deck is already looping, it will exit the loop. If the Deck is not looping, the currently selected loop will be enabled (once the Audio Pointer enters the loop region). If no loop is set, nothing will happen.

10. **IN –** Press this to set a "Loop In" point where your loop will begin. If you are already in a loop when you press it, you can "fine tune" the placement of the "Loop In" point by moving the PLATTER. (Be sure the SCRATCH OFF button is lit so the PLATTER's motor is not running.) If no track is assigned to the Deck, nothing will happen.

11. **OUT –** Press this to set a "Loop Out" point where your loop will end. If you are already in a loop when you press it, you can "fine tune" the placement of the "Loop Out" point by moving the PLATTER. (Be sure the SCRATCH OFF button is lit so the PLATTER's motor is not running.) If no track is assigned to the Deck, nothing will happen.

> Hold DELETE/SHIFT and any of these buttons to access their alternate functions:
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> **IN, OUT, SELECT, RELOOP:** Triggers Loop Roll in eighth, quarter, half, or one note measurements.
> **1/2 X, 2 X, SHIFT LEFT, SHIFT RIGHT:** Jumps to stored loops 1, 2, 3, or 4 (respectively) and instantly reloops them.

12. **SELECT –** Press this to rotate through the loops set in the track. From here, you can edit, reloop, or enable the loop you have selected. (Also, if you pressed LOOP IN but want to cancel the loop before completing it, press SELECT, which will toggle out of it.)

13. **RELOOP –** Press this to jump to the start of the loop and enable it. If the Deck is already looping when you press it, the Audio Pointer will jump to the start of the loop and continue. If no loop is set, nothing will happen.

14. **MODE –** Press this to switch between Manual Mode and Autoloop Mode, which changes the functions of the bottom four LOOP CONTROL buttons. In Manual Mode, the LOOP CONTROL buttons function as IN, OUT, SELECT, and RELOOP (explained above). In Autoloop Mode, the LOOP CONTROL buttons will set 1-, 2-, 4-, and 8-beat loops, respectively. Each loop will start at the Audio Pointer's location when the button is pressed.

    Note: Due to the way the software analyzes beats per minute (BPM), the length of 1-, 2-, 4-, and 8-beat loops will vary between tracks with different BPM readings.

15. **1/2 X –** Press this to halve the length of the selected loop.

16. **2 X –** Press this to double the length of the selected loop.

17. **SHIFT LEFT (◄) –** Press this to shift the selected loop to the left. It will move left the same distance as the length of the loop itself.

18. **SHIFT RIGHT (►) –** Press this to shift the selected loop to the right. It will move right the same distance as the length of the loop itself.

TRACK CONTROLS

19. **STRIP SEARCH –** The length of this strip represents the length of the entire track. Place your finger on a point along this sensor to jump to that point in the track. (If you want to scroll through a track, we recommend using your computer rather than running your finger along the strip.)

PITCH CONTROLS

20. **TAP –** Tap this button at the same tempo as the track to help the software detect a more accurate BPM reading.

21. **SCRATCH OFF –** Press this to disable the PLATTER's motor and bring it to a stop.

22. **MASTER TEMPO –** If you have changed the pitch of the track, you can press the MASTER TEMPO button to return the track's pitch to its original key. The track's tempo will remain at the speed designated by the PITCH FADER.

23. **PITCH RANGE –** Press this to adjust the range of the PITCH FADER to ±8%, ±16%, and ±50%.

24. **PITCH FADER –** Controls the track's playback speed. An LED next to the fader will light up when set at 0%.

25. **PITCH BEND (+ / –) –** Press or hold down either of these buttons to temporarily adjust the track's playback speed. When released, the track playback will return to the speed designated by the PITCH FADER.

26. **BPM METER –** This meter is an aid for matching the tempo of both decks. When the white center LED is lit, the BPMs are matched. Otherwise, the meter will tend towards the faster deck. The further from center, the greater the difference between the two BPMs.

    The meter is also an aid while adjusting Loop In or Loop Out points. If you are making fine adjustments to your Loop In or Loop Out points using the PLATTERS, the lit LED will "wrap around" the meter. It will rest on the white center LED whenever the loop's length has been doubled or halved exactly.

    Note: The BPM METER *will aid in loop adjustments only if (1) a BPM reading has been entered for that track and (2) the two Decks' tempos have been synchronized.*

27. **TAKEOVER LEDs –** When you select the other Deck with the DECK SELECT switch, the position of the V7's PITCH FADER may not match the Pitch setting for that Deck in the software. Slowly move the PITCH FADER in the direction indicated by the TAKEOVER LED arrow until it turns off. At this point, the PITCH FADER matches the Pitch setting in the software and can control it again.

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NAVIGATION CONTROLS

28. **SCROLL KNOB –** Use this knob to scroll through lists of tracks, Crates, etc. in the software. You can also press it to move between the panels shown in the software.

29. **FWD / BACK –** These buttons move the selector between various panels in the software.

30. **CRATES –** Press this to move the selector to the Crates Panel in the software.

31. **PREPARE –** Press this to move the selector to the Prepare Panel in the software.

32. **FILES –** Press this to move the selector to the Files Panel in the software.

33. **LOAD A / LOAD B –** Press one of these buttons while a track is selected to assign it to Deck A or Deck B, respectively.

    Tip: Pressing the LOAD A *or* LOAD B *button twice quickly will load the opposite Deck's track to that Deck as well, with its Audio Pointer in the same position. For more information, see "Instant Doubles" under "Playback" in the* SOFTWARE SETUP *section.*

34. **LOAD PREPARE –** Press this to add a selected track to the list of tracks in the Prepare Panel in the software.

> Hold DELETE/SHIFT and any of these buttons to access their alternate functions:
>
> **FWD:** Sort current Library/Crate/Panel View by album.
>
> **BACK:** Sort current Library/Crate/Panel View by track number.
>
> **CRATE:** Sort current Library/Crate/Panel View by song.
>
> **PREPARE:** Sort current Library/Crate/Panel View by artist.
>
> **FILES:** Sort current Library/Crate/Panel View by BPM.

EFFECTS CONTROLS

35. **FX SELECT –** Turn this knob to select an effect to apply to the channel, which will be displayed in the software. You can also press the knob to move automatically to the next effect.

36. **FX MIX –** Adjusts the amount of the effect, which will be displayed the software. To hear less of the effect (a "dry" mix), move this fader to the left. To hear more of the effect (a "wet" sound), move this fader to the right.

37. **FX PARAM –** Turn this knob to adjust the parameter of the effect, which will be displayed in the software.

38. **FX ON / OFF –** Press this button to activate or deactivate the effect. The button's LED will illuminate when the effect is on.

USB CONTROLS

39. **DECK SELECT –** Set this switch to assign the software Deck which the V7 will control. The left position is Deck A; the right position is Deck B.

40. **USB LED –** This LED will illuminate when the V7 can communicate with a computer connected to the USB port on the rear panel.

41. **LINK LED –** This LED will illuminate when the V7 can communicate with another V7 connected to the LINK CONNECTION on the rear panel.

42. **MASTER BUTTON –** This button determines which computer the V7 is controlling:

    - When the MASTER BUTTON is lit, the V7 is controlling the computer it is connected to via USB.
    - When the MASTER BUTTON is unlit, the V7 is controlling the computer connected to a V7 it is connected to via the LINK CONNECTION on the rear panel.

IMPORTANT!!!

- Before connecting the V7 to your computer, insert the included CD to install the latest drivers as well Serato ITCH. (Visit **www.serato.com/itch** to check for available software updates.)

- When reconnecting the V7 to your computer, the V7 will recall the previous positions of the software (e.g., Pitch, effects parameters, etc.). Be mindful of this before playing a track.

SETTING UP ONE V7
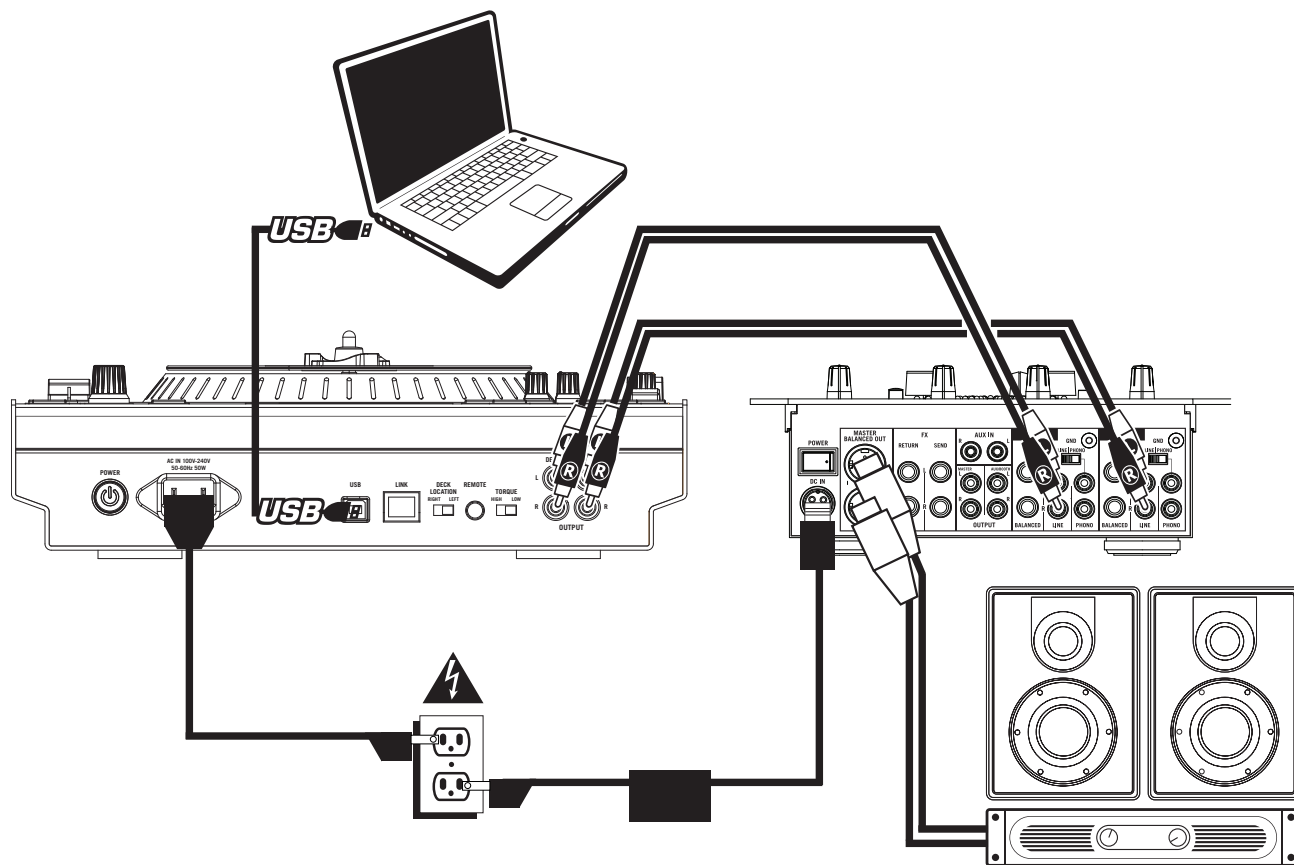
1. Connect the V7's DECK A OUTPUT to your mixer's left channel (line-level) input.
2. Connect the V7's DECK B OUTPUT to your mixer's right channel (line-level) input.
3. Connect the V7 to a USB port on your computer then open Serato ITCH. It will automatically detect the V7.
4. Check V7 for the following:
   a. The MASTER BUTTON should be lit. (If not, then press it.)
   b. The USB LED should be lit.

Notes:

- You can select Deck A or Deck B in the software with the V7's DECK SELECT switch.

- The LOAD A and LOAD B buttons will always load the selected track to their respective Decks in the software (regardless of the DECK SELECT switch position).

- If you adjust a Deck's pitch with the PITCH FADER, when you switch to the other Deck, the V7's PITCH FADER may not match that Deck's Pitch position in the software. When this happens, one of the TAKEOVER LEDs will illuminate (and the PITCH FADER will become inactive). Slowly move the PITCH FADER in the direction indicated until the light goes out. At that point, the PITCH FADER is in the correct software position and can now be used to adjust the track's Pitch.

- Except for the PITCH FADER, Deck-specific controls (whose positions may change when switching between decks) will cause the software's positions to "snap" automatically to match the hardware's positions. Be mindful of this as you switch between Decks.

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ADDING A SECOND V7

To complete a dual-V7 setup, set up one V7 (as described above) then follow these steps:

> _**Warning:**_ _Do NOT connect two V7s to the same computer via USB!_
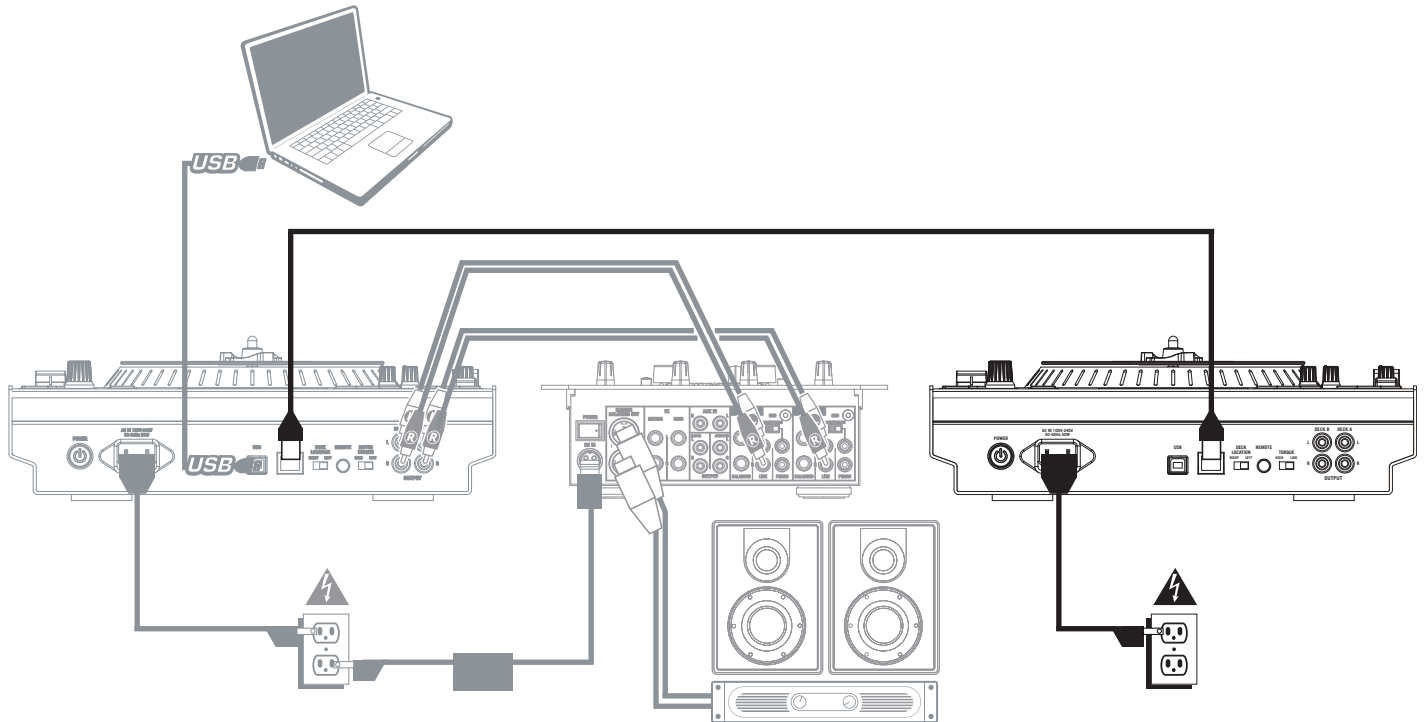
1. Connect the V7s' LINK CONNECTIONS to each other with the included link cable.
2. Use the DECK SELECT switches to set the left V7 as "Deck A" and the right as "Deck B."
   **Note:** Do not change the switches during your session.
3. Make sure your first V7 is connected a USB port on your computer then open Serato ITCH. It will automatically detect the V7s.
4. Check for the following:
   a. On the V7 connected to your computer, the MASTER BUTTON should be lit. (If not, then press it.)
   b. On the V7 connected to your computer, the USB LED should be lit.
   c. On the V7 that is not directly connected to your computer, the MASTER BUTTON should be _**un**_lit. (If not, then press it.)
   d. On the V7 that is not directly connected to your computer, the USB LED should be _**un**_lit.
   e. Both V7s' LINK LEDs should be lit. (If not, then reconnect them securely with the link cable.)

NSFX

ASSEMBLY INSTRUCTIONS

> **IMPORTANT:**
> Before connecting NSFX to your computer, visit **www.serato.com/itch** to download the latest version of Serato ITCH.

1. With the prongs of your NS7's laptop stand removed from the main piece, use a Phillips-head screwdriver to remove the two large screws and bumpers from each prong.

2. Replace the original bumpers and screws with the new ones included with the NSFX.

   Note: Use only the screws included with the NSFX to secure the new bumpers. (They are smaller than the original ones.)

3. Insert the prongs into the slots of the main bracket of the laptop stand. Do not use the original thumb screws that were included with the laptop stand.

4. Place NSFX on top of the main bracket of the laptop stand, inserting the thumb screws of the NSFX into the holes in the bracket. Tighten the screws to secure NSFX to the laptop stand.

5. Connect the NSFX's attached USB cable to a free USB port on your computer.
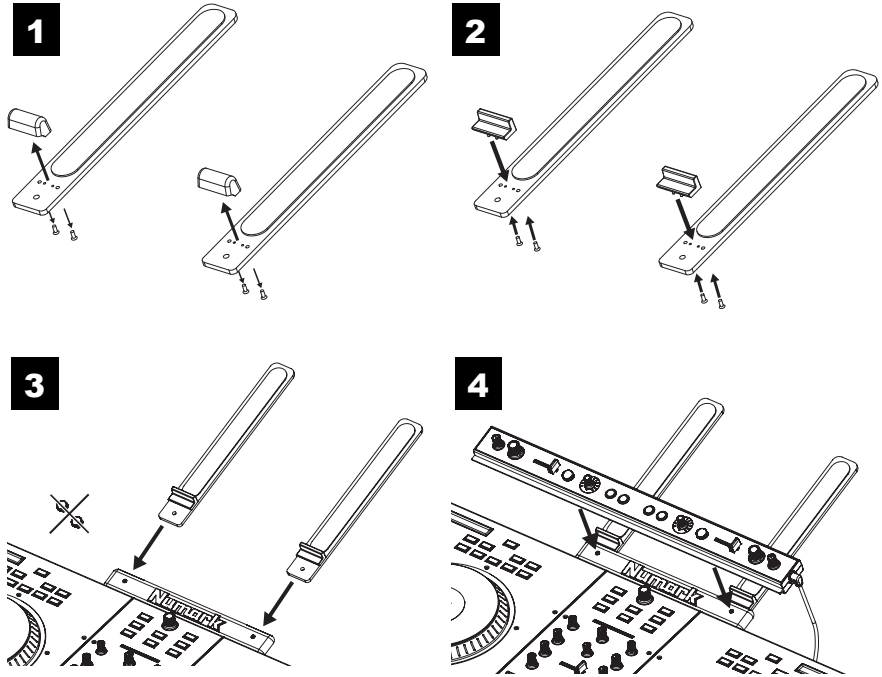
FEATURES

1. **USB CONNECTION –** Attach this cable to a free USB port on your computer. NSFX's LEDs will illuminate when the connection is made.

   > *Note: In order to use your NSFX, you will need two free USB ports on your computer – one for NS7, one for NSFX.*

2. **SOURCE –** Selects the channel that will be sent through the effect. You can select one of the following (which will be displayed in the software):

   - **DECK A –** The effect will be heard on Deck A.
   - **DECK B –** The effect will be heard on Deck B.
   - **AUX –**The effect will be heard on the MIC / AUX channel.
   - **MIX –** The effect will be heard on the entire (Master) mix.

3. **FX SELECT –** Turn this knob to select an effect to apply to the channel, which will be displayed in the software. You can also press the knob to move automatically to the next effect.

4. **FX MIX –** Adjusts the amount of the effect, which will be displayed the software. To hear less of the effect (a "dry" mix), move this fader to the left. To hear more of the effect (a "wet" sound), move this fader to the right.

5. **FX PARAM –** Turn this knob to adjust the parameter of the effect, which will be displayed in the software.

6. **FX ON / OFF –** Press this button to activate or deactivate the effect. The button's LED will illuminate when the effect is on.

7. **TAP TEMPO –** Tap this button at the desired tempo to enter a BPM manually, which will help determine the speed of rate-based effects. This BPM reading will be shown in the software. You can tap this button to enter a new tempo at any time, or you can return to the track's auto-BPM by holding the button down (see TEMPO SOURCE for more information).

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USING SERATO ITCH WITH THE NS7 / V7

IMPORTANT!

If you are using an NSFX with your NS7, please make sure you have downloaded the latest version of Serato ITCH from **http://www.serato.com/itch** to take advantage of the built-in effects. For more information on using NSFX with Serato ITCH, see the EFFECTS section of this manual.

GETTING STARTED

STARTING THE SOFTWARE

Serato ITCH will be installed to the following locations:

- Windows XP: **Start ▶ Programs ▶ ITCH**
- Windows Vista: **Windows Menu ▶ All Programs ▶ Serato ▶ ITCH**
- Mac OSX: **Applications** (on your hard drive)

Connect NS7 / V7 / NSFX before opening Serato ITCH. When the software launches, it will automatically detect the NS7 / V7 / NSFX.

IMPORTING MUSIC

■ Supported File Types
Serato ITCH supports the following file types: MP3, AAC, ALAC, WAV, AIFF, Ogg Vorbis and WL.MP3.

Fixed and variable bitrate files are both supported.

■ Adding Files to the Library
There are several ways to add files to your Serato ITCH library.

1. To show a view of your file system where you can browse your hard disk for music to load you can:
   - Click the **Files** button in the upper-left hand corner of the software window
   - Push the FILES button on the NS7 / V7
2. To navigate your files or Library, you can use:
   - NS7's / V7's Navigation Controls (the SCROLL KNOB or FWD and BACK buttons)
   - the cursor keys on your keyboard
   - the mouse
3. To load files into Serato ITCH, you can:
   - Click on files (or folders containing files) in the software's file browser and drag them onto the "All" heading in the Crate column, or into a specific Crate or Sub-Crate
   - Drag files (or folders containing files) directly from Windows Explorer (PC) or Finder (Mac) into the Serato ITCH Library
   - Load a file to either Deck, which automatically adds it to your Library

■ Deleting Files
To delete a track from a Crate, Sub-Crate, or the Library, select it in the software, then press CTRL + Delete (Windows) or CMND + Delete (Mac).

■ Importing Music from Audio CDs
Serato ITCH does not support CD ripping. We suggest you use a third party application like iTunes to convert your audio CDs into a suitable file type for Serato ITCH. We recommend importing songs as 320kbps mp3 files for high sound quality and low CPU load. Audio CDs can be played directly from the computer's CD-ROM or DVD-ROM drive.

Please visit **http://www.serato.com** for articles and information on file conversion.

■ **Showing Your iTunes™ Library:**

Serato ITCH can read your iTunes library and show it while browsing in ITCH. To enable this feature, click **Setup** to go to the Setup screen, then under the **Library** tab, select "Show iTunes Library." You will be able to access your iTunes Library.

| HARDWARE | PLAYBACK | LIBRARY | DISPLAY | MIXER |

SONG LIBRARY OPTIONS

☐ Show iTunes library
☐ Protect library
☑ Custom crate columns
☐ Center on selected song
☐ Show all file types
☐ Include subcrate tracks
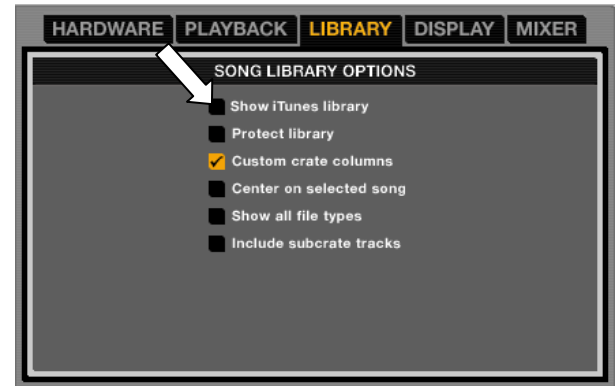
PREPARING YOUR FILES

Before you play your music in Serato ITCH, it is important to prepare your files by analyzing them. The software can scan the songs in your library to detect file corruption, save the waveform overview to an ID3 tag*, and calculate auto-gain and -BPM values.

> * **ID3 tags** *contain data about your tracks and are saved inside the files themselves.* *"Genre," "Track Name," and "Artist" are examples of common tag information.*

■ **How to Analyze Files**

To analyze files, start the software with the NS7 / V7 disconnected. On the right side of the main screen, you will notice a button labeled "Analyze Files." Click this to analyze all the tracks in your library. You can drag and drop individual folders, Crates, or files onto this button to force the analyzing of files at any time.
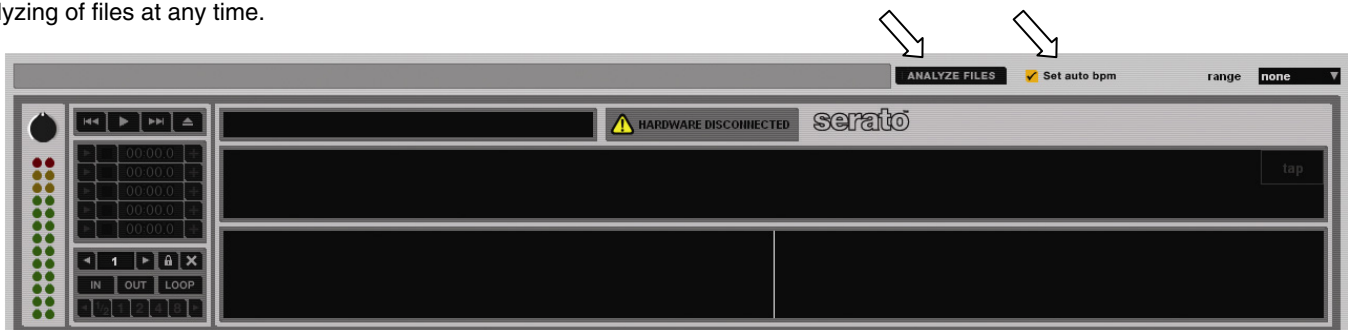
■ **About Corrupt Files**

If the software detects a corrupt file, it will tag it with one of two corrupt file icons: [icon] or [icon]
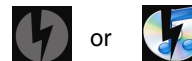
It is very important that you delete any corrupt files from your library as they can cause the software to crash whether or not you play the file.

■ **Auto-BPM**

If this option is checked while analyzing files, Serato ITCH will calculate the estimated tempos of your files. If it is confident that the auto BPM estimate for a file is accurate, it will be written to an ID3 tag* in the file.

The auto-BPM function will not be applied if the track already contains BPM information. To reanalyze files and use auto-BPM or auto gain on those files, drag them onto the "Analyze Files" button. If you know your files BPM will fall within a certain range, use the "Range" drop-down menu (on the right-hand side) to avoid double or half value BPMs being calculated.

■ **Offline Player**

The Offline Player is available whenever the NS7 / V7 is disconnected from your computer. The Offline Player's sound will be sent through your computer's default audio device (e.g., your computer's soundcard). This player is a useful tool for auditioning tracks and preparing your Crates. You can also use it to set, edit, or delete Cue Points and Loop Points without the NS7 / V7.

Load a track to the player by dragging it from your Library and dropping it onto the Deck. You can also select it in your library and press SHIFT + left arrow. You can use the control panel to the left of the waveform to set Cue Points and loops. Cue Points can be set by clicking on any one of the five slots. The lower part of the panel represents a combination of the software loop controls and the NS7's / V7's loop controls, which you can use to set your Loop In and Loop Out points or Autoloops.
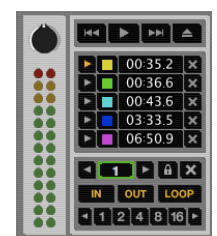
When the track being played ends, the next track in the current playlist will load and play automatically.

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SOFTWARE OVERVIEW
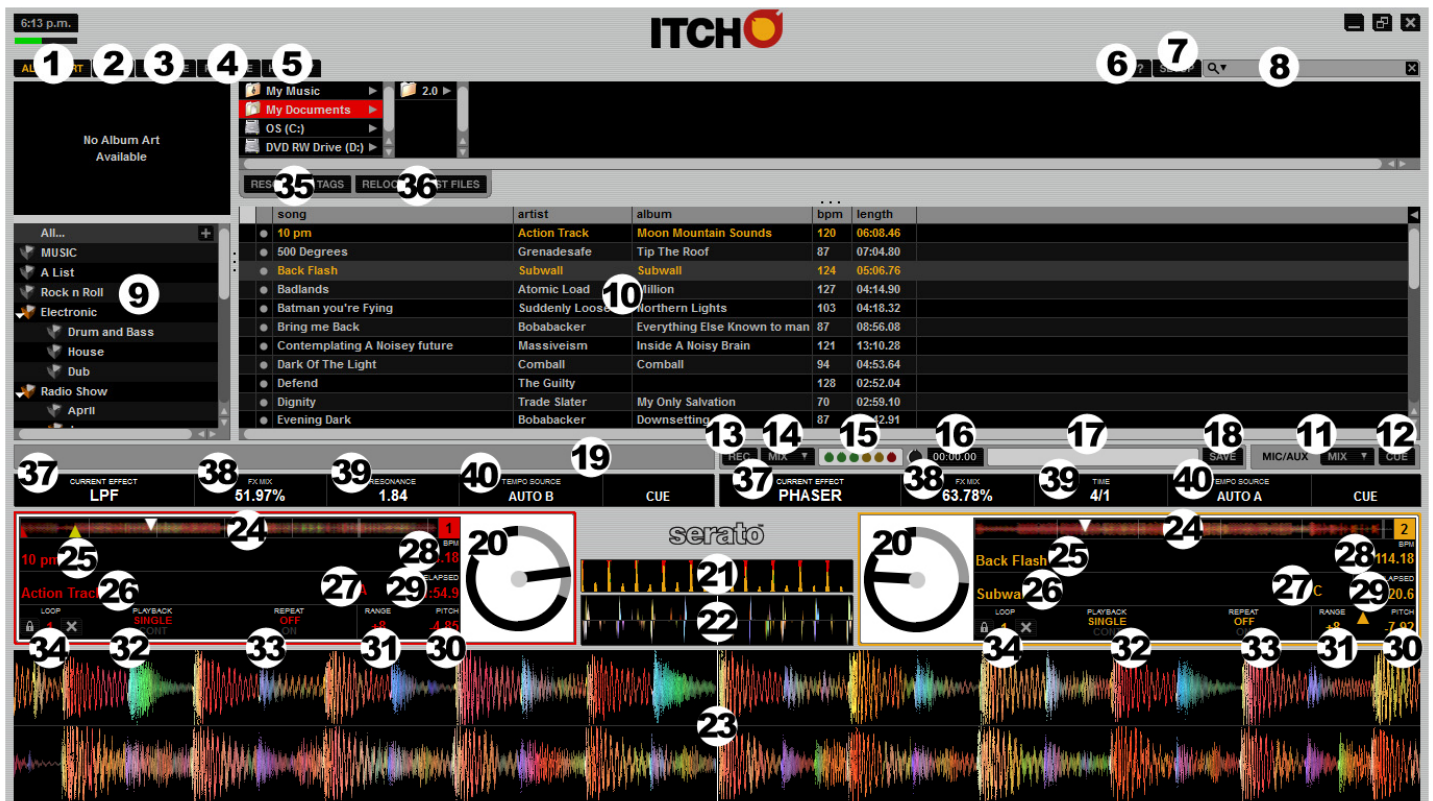
More complete descriptions of these features are given in later sections of this manual, but this is a brief overview of the key features in Serato ITCH:

1. **Album Art:** Displays the cover art for the album selected.
2. **Files:** Displays the Files Panel, which enables you to search for tracks on your hard drive.
3. **Browse:** Displays the Browse Panel, which enables you to browse for tracks by genre, BPM, etc.
4. **Prepare:** Displays the Prepare Panel containing tracks you have pre-selected for your set.
5. **History:** Displays the History Panel containing tracks that have already been played.
6. **Tool Tips:** Enables or disables Tool Tip Display, which provides a dialog box with a description of a software feature when you place your mouse over it.
7. **Setup:** Shows the software Setup screen.
8. **Search:** Searches your Library for the text entered in this field.
9. **Crates:** Displays the list of Crates and Sub-Crates available.
10. **Library:** Displays the songs available in your current selection.
11. **Mic / Aux:** Displays the channel or mix to which the NS7 MIC / AUX INPUT signal is sent.
12. **Cue:** Sends the NS7 MIC / AUX INPUT signal to the Cue Channel to be monitored through the headphones.
13. **Record:** Starts or stops recording.
14. **Record Source Selector:** Select a recording source from this drop-down menu.
15. **Recording Meter:** Indicates the peak levels of the audio being recorded.
16. **Recording Timer:** Timer for current recording.
17. **Recording Filename:** Enter the name of the file you are currently recording here.
18. **Save:** Saves the current recording to the "Recordings" folder inside your Main Library folder.
19. **Status Bar:** Displays the status of the currently selected item.
20. **Virtual Deck:** Rotates during playback.
21. **Beat-Matching Display:** Shows "transients" (usually the drum hits) to aid beat-matching.
22. **Tempo-Matching Display:** Displays tempos of both Decks to help the mixing process.

23. **Waveform:** Waveform of the currently loaded track. The top waveform is Deck A; the bottom is Deck B.

24. **Track Overview:** An overview of the currently loaded track's entire waveform.

25. **Track Name:** "Title" tag for the current track.

26. **Artist Name:** "Artist" tag for the current track.

27. **Key:** Displays the track's "key" ID3 tag (if available).

28. **BPM Field / Tap:** Displays track's BPM. You can click this field to "tap" out a time, from which the software will approximate and save a new BPM. If there is no BPM for the track, it will display "Tap" to prompt you to tap out a suggested tempo.

29. **Track Time Display:** Displays the current position of the Audio Pointer in the track.

30. **Pitch:** Applied pitch offset as a percentage (%) (determined by the position of the PITCH FADER).

31. **Pitch Range:** Current range of the PITCH FADER.

32. **Playback Mode:** Toggles between "Single" and "Continuous" Playback Modes. Single Playback Mode plays only one track, stopping when it is finished. Continuous Playback Mode will automatically play the next track in the Crate when one track ends. Whenever a new track is loaded, this setting will remain the same.

33. **Repeat Mode:** Toggles Repeat Mode "On" or "Off" for the track (when **Playback Mode** is set to "Single") or Crate (when **Playback Mode** is set to "Continuous"). Whenever a new track is loaded, this will default to "Off."

34. **Loop Number:** Displays the number of the currently selected loop. Clicking the "lock" icon next to it will disable any changes to the current loop. Clicking the "X" icon next to it will delete the current loop.

35. **Rescan ID3 Tags:** Re-reads file tags for the entire Library. Use this function if you have edited or modified file tags in other software.

    *Tip: Rescanning the tags is a handy way to identify any files that can not be found (for instance, if the files have been re-named or moved). These tracks are shown red in the Library pane, with a "***?***" icon in the* **Status** *column.*

36. **Relocate Lost Files:** If you have moved files which are already in your Library, they will show up as not found (denoted by a "**?**" icon in the **Status** column) and be displayed in red. Drag and drop a folder from Finder (Mac) or Explorer (Windows) onto this button to search it, and any sub-folders, for these files. Doing this will update the Library with their new location. You can also click this button to scan your whole file system, including external drives connected to your computer, for missing files.

37. **Effect:** The currently selected effect applied to the channel (if the NSFX's / V7's FX ON / OFF button is set to "on"). When browsing for a different effect to apply to the Deck, the name of the effect will be shown in this box (in a different color).

38. **FX Mix:** The amount of current effect, which can be adjusted with the NSFX's / V7's FX MIX fader.

39. **Parameter:** The parameter for the current effect, which can be adjusted with the NSFX's / V7's FX PARAM knob. Generally, this is the intensity of the effect but may vary between effects.

40. **Tempo Source:** The current BPM for the track, which helps determine the speed of the current effect (if it is rate-based). When this field reads "AUTO A" or "AUTO B," the effect will automatically follow the BPM of the track on Deck A or Deck B, respectively. If "MANUAL" is shown, it means neither Deck's track has a BPM. You can set the BPM (and change it at any time) by using the NSFX's TAP TEMPO button. You can also return to the track's auto-BPM by holding down TAP TEMPO.

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SOFTWARE SETUP

The Setup screen has controls to personalize and maintain your Serato ITCH system. Click the "Setup" button to enter the Setup screen. From here, you can click to enter any of the following tabs: **Hardware, Playback**, **Library**, **Display** or **Mixer**.

SOFTWARE VERSION & UPDATES: The version of Serato ITCH software is displayed in the bottom left corner of the **Setup** screen. The **Check for Updates** button will open **http://www.serato.com** in your web browser to tell you if there are available updates for your version of the ITCH software.

HARDWARE

- **Firmware Status / Updater:** When the NS7 / V7 is connected to your computer and your computer is online, this window indicates whether or not your firmware is current. If there is an available update, you will be able to click the "Update Firmware" button to update it. (See the UPDATING THE FIRMWARE section for more information.)

- **USB Buffer Size (Latency):** Adjust this virtual fader to set the buffer size of the USB connection between the hardware (NS7 / V7 / NSFX) and the software (Serato ITCH). If you are using a slower computer, increase the buffer size. At a larger buffer size, you should no longer experience any problems with your audio, but there may be a slight delay when the software responds to the hardware.

- **Platter Speed:** Changes the speed of the platters between 33RPM and 45PM.
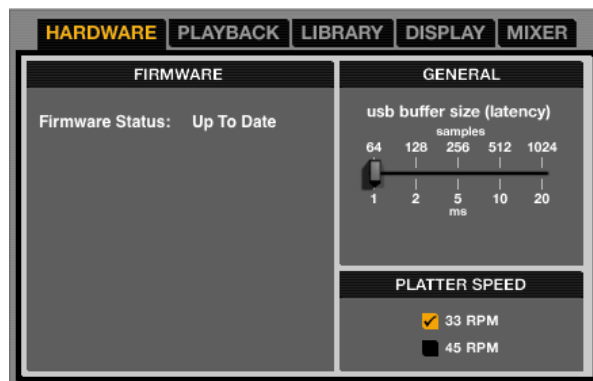
PLAYBACK

GENERAL:
- **Playback Keys Use Shift:** When checked, all Cue Point, Loop, and Playback keys on the computer keyboard require Shift or Caps Lock to function.

- **Lock Playing Deck:** When checked, you can only load a track to a Deck if it is paused.

- **Hi-Fi Resampler:** When checked, this significantly reduces digital distortion at very slow or very fast record speeds (which will slightly increase the CPU load). This option is on by default.

- **Use auto gain:** When checked, you can set the maximum amount of gain a track will have during playback. If a loaded track's gain is lower than this setting, its gain will be automatically boosted (its loudest point will match the auto gain level).

- **Instant Playback:** When **un**checked, if the START TIME knob is set at its minimum value, there is still a small audible startup time for the platters to get up to their normal speed. When checked, audio will start immediately after you start playback (as the platters get up to speed) and there is no audible speed-up sound of the platter.

- **Enable Beat Grid:** When checked, all Beat Grid functions are available. Uncheck this box if you do not want to use Beat Grid.

ON SONG LOAD: These options affect the state of tracks when first loaded to the Deck.
- **Play from Start:** When checked, a newly loaded track will start from the beginning. If this box is unchecked, a newly loaded track will start from wherever the Audio Pointer was located in the previously loaded track.

- **Instant Doubles:** When checked, this allows you to match the Audio Pointer position of the same track loaded onto both decks. When you have a track loaded on one Deck, then load the same track on the other Deck, the Audio Pointer will jump to the same position as the track that was loaded first (its Keylock and Loop settings will also be copied). This setting overrides the "Play from First Cue Point" option.

  Tip: Even if this option is unchecked, pressing the NS7's / V7's LOAD A *or* LOAD B *button twice quickly will load the opposite Deck's track to that Deck as well, with the Audio Pointer in the same position (the same as "Instant Doubles").*

- **Play from First Cue Point:** When checked, all tracks will start from their first Cue Point when loaded.

RECORDING (NS7 only):
- **Bit Depth:** Select the recording bit depth as 16-bit or 24-bit.

- **File Format:** Select the file format you want your audio recordings to be saved as – Wave (.WAV) or AIFF (.AIF).

LIBRARY

- **Show iTunes Library:** When checked, the current default iTunes library and iTunes playlists will be shown in Serato ITCH. (See the IMPORTING MUSIC section for more information.)
- **Protect Library:** When checked, your Library will be locked to prevent accidental deletion of tracks or Crates, and you will be unable to change file tags or Crate names.
- **Custom Crate Columns:** When checked, you can set custom column views for each Crate and Playlist. When unchecked (the default setting), all Crates will share the same column configuration as the "all…" Crate.
- **Center on Selected Song:** When checked, scrolling up and down in your Library will hold the selected track in the middle of the Library panel.
- **Show All File Types:** When checked, you will be able to see all files when importing tracks into your Library. If this option is not checked, only files that Serato ITCH can play will be displayed. (See the IMPORTING MUSIC section for more information.)
- **Include Sub-Crate Tracks:** When checked, the tracks from any Sub-Crate will be displayed in their "parent" Crate. When this option is unchecked, browsing a Crate will not show tracks that are in any of its Sub-Crates.
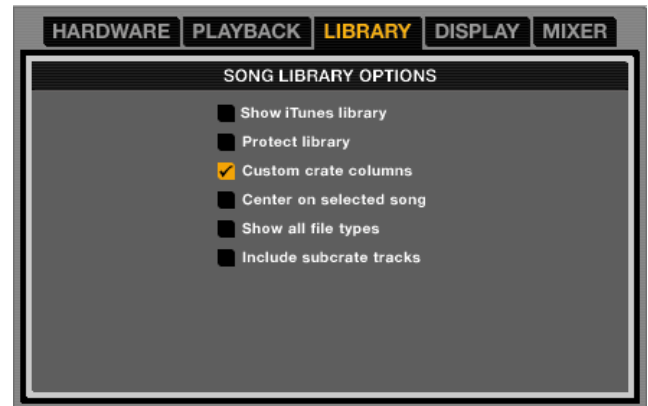
DISPLAY

- **Maximum Screen Updates:** This slider allows you to adjust the rate at which the software screen refreshes. A lower setting will potentially use less CPU. Users with slower computers or those running a recording program at the same time may want to do this if they are experiencing CPU performance issues. The default setting is 60 Hz, or refreshed 60 times per second. This setting applies to the entire Serato ITCH user interface: the **Virtual Decks**, the **Waveforms**, the **Library**, and the **Setup** screen.
- **Horizontal Waveforms:** When checked, main waveforms will be displayed horizontally across the bottom of the screen.
- **Left Vertical Waveforms:** When checked, main waveforms will be displayed vertically on the left side of the screen.
- **Right Vertical Waveforms:** When checked, main waveforms will be displayed vertically on the right side of the screen.
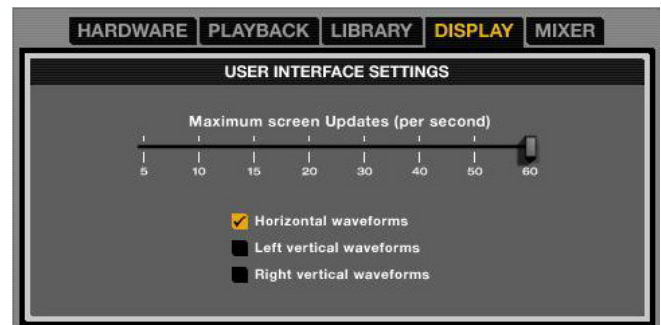
MIXER (NS7)

GENERAL:

- **Crossfader:** Click the drop-down menu to configure the crossfader: "Normal" is the standard crossfader style; "Disabled" will disable the crossfader.
- **EQ:** When the NS7's EQ knobs are in their maximum (right-most) position, they will boost that frequency range by the number of decibels specified here. Select either 6 dB or 12 dB.
- **Output:** Sets the audio output to Mono or Stereo.
- **Headroom:** Select how much headroom your device has before the internal limiter engages. Less headroom results in a louder output but has a greater chance of the limiter engaging (especially when more than one audio channels are in the mix). With the initial headroom setting of 0dB, you can apply 3dB of gain per Deck before the limiter engages.
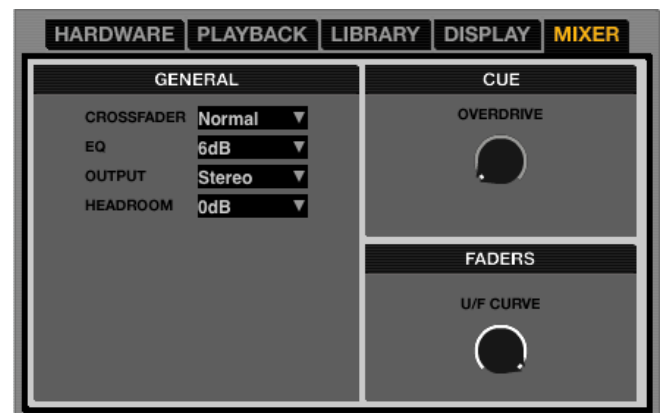
CUE/FADERS: "Turn" these virtual knobs by clicking on them and dragging up (to increase) or down (to decrease) with the mouse.

- **Overdrive:** Increase the setting on this knob to give the gain of the headphones an extra boost. To prevent hearing damage, be careful not to set this level too high.
- **U/F Curve:** Adjusts the upfader curve. Turn the knob to the left for a tighter "cut" and to the right for a more gradual fade.

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THE LIBRARY

Serato ITCH can support an unlimited number of tracks, so the only limitation is the size of your computer's hard drive. A number of features are included to help keep your music organized and find your songs quickly and easily.

CRATES & SUB-CRATES

Crates and Sub-Crates are a way to organize your music into groups for quick access. This can be by genre, mood, or whatever suits your DJing style.   The Crates area can be accessed by pressing the CRATES button on the NS7 / V7 or by clicking inside the Crates area with the mouse. The "+" button on the software allows you to create a new Crate. To add files to a Crate, drag and drop the track(s) from the library into the Crate. Crates can be nested inside each other to create Sub-Crates for more detailed sorting.

■ Crates

Serato ITCH uses digital "Crates" for quick access to your favorite collections. There is no limit to the number of Crates you can create, and any given track can be placed in multiple Crates. The Crate area is on the left hand side of the library.

For example, you could organize your files into the following Crates, where any one track would be filed in more than one Crate.

- Hip-Hop
- French Hip-Hop
- UK Hip-Hop
- Instrumental Hip-Hop
- Old School Hip-Hop
- Hip-Hop LPs
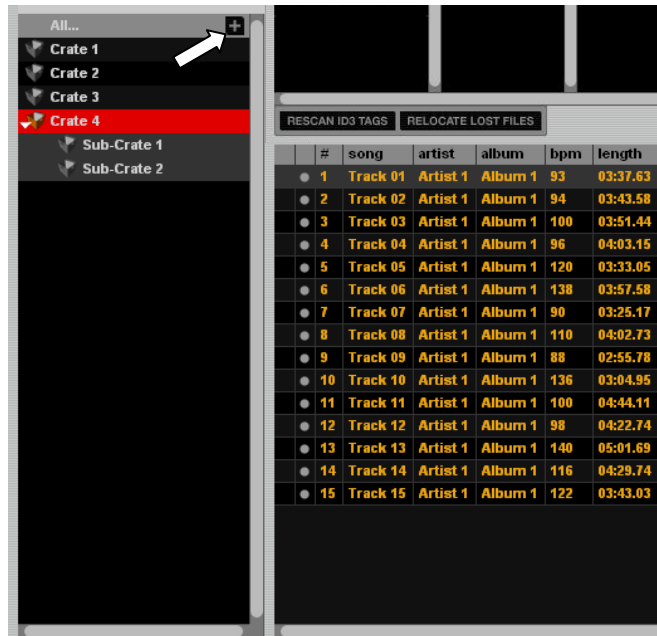
To make a new Crate, click the "**+**" button on the upper-right hand corner of the Crates area. To rename a Crate, double-click the Crate name. You can change the order of tracks within a Crate by dragging them up or down in the Library window.

Tip: The "Protect Library" *option in the* **Setup** *screen applies to removing, editing and renaming Crates. Check this option to prevent unintentional changes to your Crates.*

■ Sub-Crates

You can drag and drop Crates into other Crates to make Sub-Crates. If you drag a Crate to the very left of the Crate panel, it will stay in the top level of the Crate structure. If you drag the Crate a little to the right, onto the name of another crate, it will make the Crate you are dragging a Sub-Crate of the first Crate. Sub-Crates can be opened and collapsed. This way you can have a large number of Crates but still keep them easy to browse.

SEARCHING & BROWSING

■ Search

Serato ITCH includes a **Search** function to help you find files quickly and easily. Just enter text into the **Search** field in the upper-right hand corner of the screen. As you type, ITCH will automatically display files containing that text.

To select which fields the **Search** function will look through (i.e. Artist, Album, etc.), click on the icon on left side of the **Search** field. A drop-down menu will show which fields are currently being used. Press "Escape" on your keyboard or the "X" button on the right side of the **Search** field to clear it.

Tip: Press "Control" *and* "F" *on your keyboard to jump to the* **Search** *field. This keyboard shortcut will also display the Main Library – taking you out of any Crate or Playlist you might be in – so you can find any track in your collection. If you then click on a Crate or Playlist, the* **Search** *field will be cleared.*

■ **Browse**

To browse through your files, just scroll up or down with the SCROLL KNOB or FWD and BACK buttons on the NS7 / V7.

Clicking **Browse** in the software will open the **Browse** panel above the Main Library. The filters are GENRE, BPM, ARTIST, and ALBUM. You can narrow your search by selecting the specific genre, BPM, artist, or album title you're looking for, and the software will show the results on the Main Library window. You can move between the four filters with the FWD / BACK buttons in the NS7's / V7's Navigation Controls, the computer keyboard, or by clicking with the mouse.

COLUMNS

The view of your Library can be customized to show any of the columns listed below:

- Album
- Artist
- Bitrate
- BPM
- Comment
- Composer

- Filename
- Genre
- Grouping
- Label
- Length
- Location

- Remixer
- Sampling Rate
- Size
- Track
- Year

Clicking on the triangle in the upper-right hand corner of the Track Information Window will display this list of columns so you can select which to show or hide. You can resize columns by grabbing their edges with the mouse and dragging them to the width you want. You can also edit some of these fields (see "Editing ID3 Tags" under the TAGGING section).

ICONS

The column at the far left shows the status of each track. Examples of these icons are below.

The software has detected some corruption in the file. If possible, re-encode the MP3.

The track cannot be found. Most likely the file has been renamed or moved.

The track has been imported from the iTunes library.

The track has been imported from iTunes but is corrupt.

The software is trying to import a track from the iTunes library but cannot find the file.

The track is read-only. You can play it but not edit any of its information.

> You can click the **Relocate Lost Files** button in the Files panel to scan your whole file system – including external drives connected to your computer – for missing files (with the "**?**" icon). Doing this will update the Library with their new location. You can also drag and drop a folder from Finder (Mac) or Explorer (Windows) onto this button to search it, and any sub-folders, for these files.

TAGGING

■ **Editing ID3 tags**

Much of the information associated with each file can be edited from within the software. Double-click on the field within the Main Library to edit it. Filename, Length, Size, Bitrate, and Sampling Rate cannot be edited because this information is saved in the file itself. The "Protect Library" option in the **Setup** screen must be unchecked to allow edits. (See LIBRARY under the SOFTWARE SETUP section.)

> ** **ID3 tags** contain data about your tracks and are saved inside the files themselves. "Genre," "Track Name," and "Artist" are examples of common tag information.*

To re-read file tags for the entire Library, enter the Files panel and click the **Rescan ID3 Tags** button. Use this function if you have edited or modified file tags in other software.

Note: Tracks that are read-only have a "locked" icon. You can not edit tags for these files.

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Tip: To edit text, press "Control" *and* "E" *on your keyboard. You can also hold down* "Control" *and move with the keyboard's arrow keys to change to a different field while staying in Edit Mode. When you have more than one file selected, editing tags changes* all *the files in your selection.*

Tip: The second column in the Library is the label color for that file. Click it to bring up a color palette to customize the **Virtual Deck** *for that file.*

■ Album Art

MP3 files can contain album art. To display this album art, click the **Album Art** button on the upper-left hand corner of the software window. We recommend using iTunes to add album art to MP3s, though there are many other third party applications available.

PREPARING & REVIEWING TRACKS

■ Prepare

Click the **Prepare** button in the upper-left hand corner of the software window to access the Prepare Panel – an area for holding tracks, much like preparing a set by lifting records partially out of your record bag. You can also access this panel by pressing the PREPARE button on the NS7 / V7. You can drag tracks (or whole Crates) from the Main Library into the Prepare Panel, or drag them onto the **Prepare** button. You can also press the LOAD PREPARE button on the NS7 / V7 when the selector is on the track or Crate you want to add. Once a track from this list has played, it will be removed from the Prepare Panel. All tracks in the Prepare Panel will be discarded when you close the software.
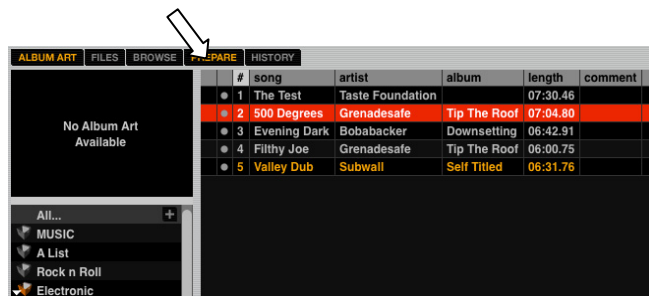
■ History
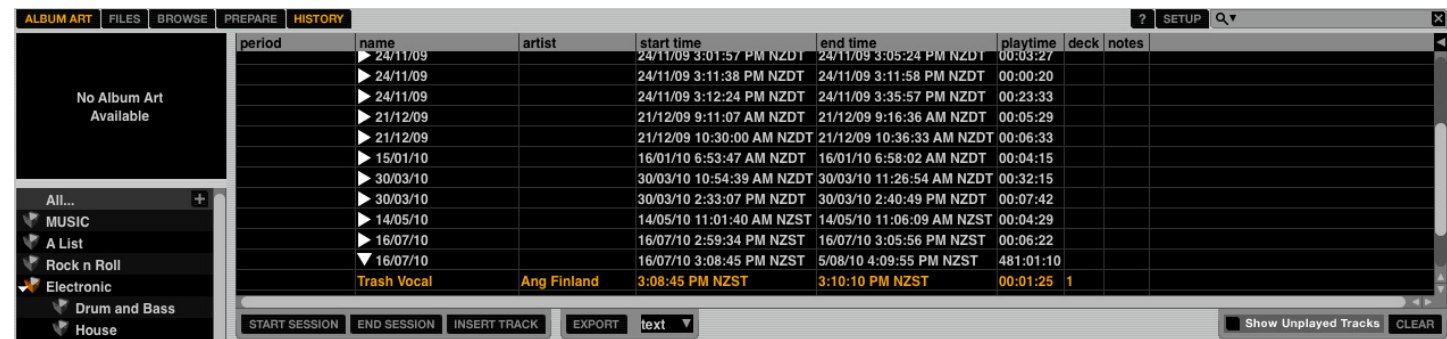
The **History** button opens a complete log of all the tracks you have played and allow you to export your ITCH session information as a data file. Each session is catalogued by date and time. Using the drop-down arrow, you can navigate to and view detailed information of any previous sessions. There are columns for the period (i.e., date of session), name of track, and artist name. In addition, the categories listed below will give you more detailed information about your sessions:

- **Start time:** When viewing a song row, the start time of the song is displayed. When viewing a session row, the start time of the session is displayed with the date (in real-time value).
- **End time:** When viewing a song row, the end time of the song is displayed. When viewing a session row, the end time of the session is displayed with the date (in real-time value).
- **Playtime:** When viewing a song row, the total played time of the song is displayed (i.e., 00:03:00). When viewing a session row, the total elapsed time of the session is displayed with date (i.e., 10/09/08 01:38:16).
- **Deck:** The virtual Deck that the song was played on will be displayed under the deck column. In the song row, either left or right is displayed. The offline player will be listed as offline.
- **Notes:** Use this field to list particular information about your songs and each session (i.e., note how you transitioned from one track to another).
- **Start Session / End Session:** To start or end a session, click the corresponding button.
- **Insert track:** If you wish to add information for tracks not played in ITCH into your session (e.g., if you played one of your favorite vinyl or CDs), select the song after which you want to insert it and click the "Insert Track" button. Double-click the inserted track fields and edit your information accordingly. When exporting an m3u playlist (see "Export" below), inserted tracks will not be present.

- **Export:** You can export each session as a data file using the "Export" button. Select a session, then choose your preferred file format, and click "Export." There are three possible export file formats:
  - o **text:** Creates a simple text file containing your session information.
  - o **csv:** Creates a file for use in spreadsheet software.
  - o **m3u:** Creates a playlist file, which can be imported into media players. Note that an m3u does not contain audio itself; it only points to the location of your audio files. (Sessions with inserted tracks will not be included in an m3u playlist.)
    Tip: To make a new ITCH Crate containing your session information, select a session and drag it to the + ("new Crate") icon. The crate will automatically use the session date as the Crate name.

Listing Behavior: Only the tracks you actually play are listed in history. This is done using an A-B algorithm, meaning a track on Deck A is only listed once the track on Deck B has been changed or ejected. You can choose to show tracks which you have auditioned but not actually played by checking the "Show Unplayed Tracks" box. The session will then also list these tracks in grey (along with the tracks you actually played). Alternatively, you can manually mark or unmark tracks as played by selecting a track (or a group of tracks) and clicking the "Mark as Played" or "Mark as Unplayed" button. This may be useful if you play a track off regular vinyl or CD (which breaks the A-B algorithm).

Songs that you have played are marked as yellow in your Library. Click the "Clear" button to reset the list of recently played tracks and turn the color of your Library back to white.

LIBRARY ZOOM

You can zoom in or out of the library to make the text bigger or smaller using the following keyboard shortcuts:

- Zoom In: CTRL + "+"
- Zoom Out: CTRL + "-"

SCRATCH LIVE COMPATIBILITY

Serato ITCH uses the same Library as Serato Scratch LIVE. If you are an existing Scratch LIVE user, all your music, loops, and Cue Points will be available in Serato ITCH. If you create a library in Serato ITCH then install Scratch LIVE, the music, loops, and Cue Points from Serato ITCH will automatically be available in Scratch LIVE, as well. Any changes made in either program will be written to the library, so if you have existing loops or Cue Points, be aware of this when moving between systems.

USING EXTERNAL DRIVES

Any external hard drive connected to your computer will be shown in the Files panel. You can load files by navigating the hard drive and locating your audio files. You can then drag them onto the Library or into Crates or Sub-Crates just as you would do when importing from the hard drive of your computer. The Crate information for files on your external drive is stored on the drive itself. This means if you add tracks on an external drive to your Library then plug that external drive into another machine running either Serato ITCH or Scratch LIVE, the Crates and tracks will automatically be visible in the Library.

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MIXING WITH THE NS7 / V7s

PLAYING YOUR FIRST TRACK

This section describes the basic steps to start playing tracks with the NS7 / V7 and Serato ITCH so you can start mixing.

RESETTING THE MIXER

It's a good idea to set the NS7 to the default settings before playing. To reset the NS7, set its CHANNEL FADERS all the way up, turn all EQ knobs to "12 o'clock," and set the MASTER, MONITOR, and BOOTH levels at "0." Place the CROSSFADER on the side where you will load your first track.

NAVIGATING THE LIBRARY

The Library contains all the music you have added to Serato ITCH. By using **Browse** and **Search** you can easily narrow your selection to find the track you want. You can also search your Library by keyword using the computer keyboard (see LIBRARY MANAGEMENT for more information). You can use the following controls to navigate the Library:

Hardware Controls:
- **FILES:** Use the FILES button (and FWD and BACK buttons) on the NS7 / V7 to access the file directories in the software.
- **CRATES:** Use the CRATES button (and FWD and BACK buttons) on the NS7 / V7 to access your Crates in the software.
- **SCROLL KNOB & FWD / BACK:** Use the SCROLL KNOB on the NS7 / V7 to move through the software, scroll through menus, and press it to select what you want. You can also use the FWD / BACK buttons on the NS7 / V7 to navigate through the software.

Mouse & Keyboard: In addition to the NS7's / V7's controls, you can use your computer's keyboard and mouse to navigate your Library. The cursor keys function as Up, Down, Forward, and Back buttons, or you can use "Page Up" and "Page Down" for faster scrolling. The mouse can select the different modes (e.g. Repeat or Playback Modes) and make Artist, Album, Genre, or BPM selections.

LOADING A TRACK TO THE DECK

Once you have located the file you want to load in the Library, you can load it either with the NS7 / V7, the mouse, or the keyboard. To get started, load a track to a Deck:

Hardware Controls: Use the LOAD A or LOAD B buttons on the NS7 / V7 to load a selected track to Deck A or Deck B (respectively).

Keyboard: Press "Shift" and the "Left" cursor key to load a track to Deck A. Press "Shift" and the "Right" cursor key to load a track to Deck B.

Mouse: To load a track using the mouse, drag and drop the selected track over the left or right **Virtual Deck**.

STARTING PLAYBACK

To begin playback press the PLAY / PAUSE button on the NS7 / V7. If you have just loaded a track, this will start playback from the beginning of the track (unless you have manually moved the Audio Pointer before playing it). Pressing PLAY / PAUSE during playback will pause playback at the current position. Pressing it again will resume playback from that position. If a Deck's Fader Start is activated, moving the NS7's CROSSFADER towards that Deck will cause it to begin playback. Moving it away from the Deck will stop playback and return the Audio Pointer to the start of the track.

ADJUSTING GAIN

The GAIN knob at the top of the NS7's Channel Controls allows you to boost or cut the audio level of the track before you control it with the CHANNEL FADER during the mixing process. We recommend having the level of the track adjusted such that the loudest part of the song causes the first 2 red lights on the LED METERS to light up without being permanently lit. Setting the GAIN so both tracks' levels behave like this makes it easy to balance the mix between them with the EQ and faders. If you set the gain level too high, the limiter in ITCH will activate to attempt to prevent the audio from clipping or distorting. When activated, the audio will be suppressed and the limiter light will appear at the top of the ITCH screen to alert you to decrease the gain level.

You can also give the Master Mix (including the BOOTH OUTPUT signal and MIC / AUX signal) an extra boost by increasing its Overdrive setting in the Mixer tab of the Setup screen. (See MIXER in the SOFTWARE SETUP section for more information.)

EQUALIZATION

Equalization (EQ) is used to boost and cut specific frequencies. EQ is used to balance the sound of 2 tracks that have been mastered differently, to make a track sound "right" on your particular system, or for creative mixing techniques. The NS7 features 3-band EQ (low, mid and high). The knobs go from full cut (or "kill") when turned all the way left, "unity" (or "flat" response) when facing straight up, and 6 or 12 dB of boost when turned all the way to the right, depending on the EQ setting in the Mixer tab of the Setup screen. (See MIXER in the SOFTWARE SETUP section for more information.)

With EQ, less is usually better. When boosting, do so sparingly, especially when you can cut other frequencies instead. For example, if you have a track with too much mid-range frequencies, rather than boosting the bass and treble to compensate, it is better to cut back the mid-range frequencies. Also, every speaker system and room has a different frequency response so you will need to adjust your EQ to suit not only the music you are playing but the room in which you are playing it.

MIXING IN THE NEXT TRACK

FINDING THE NEXT SONG

Once you have the first track playing, you need to find the next song to mix in. Browse your Library to find a suitable song (using the same process described in the PLAYING YOUR FIRST TRACK section). The BPM column is useful for finding a track with a similar tempo to the current song.

LOADING IT TO THE DECK

Before loading the next track, be sure the CROSSFADER is pushed over to the side of the currently playing track (so that only that track will play through the speakers). Load the next track to the other Deck (using the same process described in the PLAYING YOUR FIRST TRACK section).

PREVIEWING IT IN THE HEADPHONES

The HEADPHONE MODE switch on the NS7 controls what audio signal is sent to the headphones. When set to "MASTER," you will hear the Program Mix. Switch it to "CH1 CH2" to preview your music in the Cue Channel. Use the HEADPHONE MIX fader to balance between the audio levels of the left and right Decks in the headphones while cueing. The HEADPHONE VOLUME knob on the Front Panel controls the headphone volume. You can also give the headphone volume an extra boost by increasing its Overdrive setting in the Mixer tab of the Setup screen. (See MIXER in the SOFTWARE SETUP section for more information.)

## FINDING THE RIGHT PART OF THE SONG

■ **Track Overview**

This view provides a complete overview of the waveform of the track (in the **Waveform** display) and includes a marker to show the current position within the track (the Audio Pointer). This view is useful for finding good places to transition within the track.

The waveform is colored according to the spectrum of the sound: red representing low-frequency bass sounds, green representing mid-frequency sounds, and blue representing high-frequency treble sounds.

> **Hardware Controls:** You can use the STRIP SEARCH on the NS7 / V7 to move the Audio Pointer to a certain point the track by touching it (to make it jump to that point). The length of the STRIP SEARCH sensor represents the length of the *entire* waveform as displayed in the software.
> **Mouse:** You can make the Audio Pointer jump to different points within the track by clicking on the Track Overview display with the mouse.

Gray lines behind the track's waveform indicate the time within the track: a thin grey line marks each minute, and a thicker grey line marks each 5-minute interval. The overview will be filled when you load the track onto a **Virtual Deck**.

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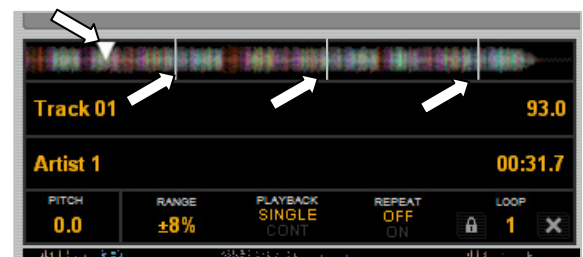
■ Main Waveforms

This view provides a close-up view of the track, including color-coding to show the frequency of the sound; red representing low-frequency bass sounds, green representing mid-frequency sounds and blue representing high-frequency treble sounds.
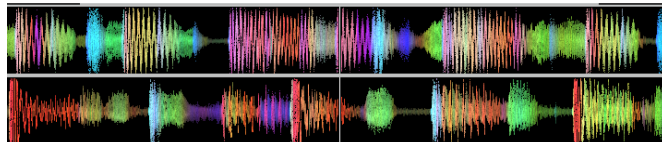
You can also switch to a three-band spectrum view by holding the "Ctrl" key on your keyboard and clicking on the waveform with the mouse. In this view, the top waveform represents the low-frequency band, the middle represents the mid-range, and the bottom represents the high.
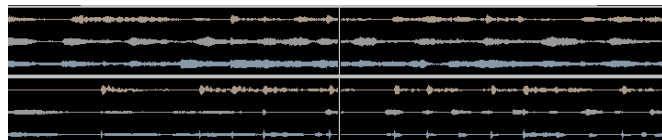
To "scrub" or make fine adjustments to your position within the track, click on the waveform with the mouse. The Main Waveform view will zoom into the current position in the track. You can use the "+" and "−" keys on your keyboard to zoom in and out.

■ Temporary Cue

This function allows you to set a Temporary Cue Point in a track that is not saved into the file (regular Cue Points will be recalled everytime you load the track). This is useful for finding a point in a song and then being able to start again easily from this point as you get your mix right.

To set a Temporary Cue Point, assign a track to the Deck, move the Audio Pointer or let the track play to the desired location, and press CUE. Your Temporary Cue Point is now set.

To return to the Temporary Cue Point, press CUE while the track is playing. The track will return to the Temporary Cue Point and playback will be *paused*.

Holding down CUE will start playback from the Temporary Cue Point. From here, you can:

- release CUE to return to the Temporary Cue Point and pause playback. This is good for "stuttering" in the start of a track.
- hold the PLAY / PAUSE button and CUE simultaneously and release both buttons to continue playback. This allows you to cue a track in from pause mode and then continue playback once you know the mix is right.

GETTING THE TRACKS IN TIME

The playback speed of the track (tempo, measured in beats per minute or BPM) is controlled by the PITCH FADER. Moving the PITCH FADER up will slow the track down, moving it down will speed the track up. This allows you to take two tracks with different tempos and mix them together in time.

The default range of the PITCH FADER is ±8% from the track's initial tempo. You can change its range to ±16% or ±50% by pressing the PITCH RANGE button on the NS7 / V7. The range will be displayed in the software in the Deck, in the **Range** field under the Artist and Track Name. (See the ADVANCED FEATURES section for more information.)

The simplest way to adjust one track's tempo to match the other is to move the PITCH FADER until their BPM values are the same. By repeatedly playing from the Temporary Cue Point and making fine adjustments with the PITCH FADER (and possibly experimenting with the PITCH RANGE), you can get the tracks playing at exactly the same speed.

Tip: You can easily match the tempo of one Deck to the other by pressing the SYNC *button. See the* ADVANCED FEATURES *section for more information about using* SYNC*.*

■ Tempo-Matching Display

The Tempo-Matching Display provides a helpful tool for matching tracks' tempos. Serato ITCH detects the tempo of the track and places a row of orange peaks (for the track on the left side) above a row of blue peaks (for the track on the right side). When the two tracks are matched to the same tempo, these peaks will line up.
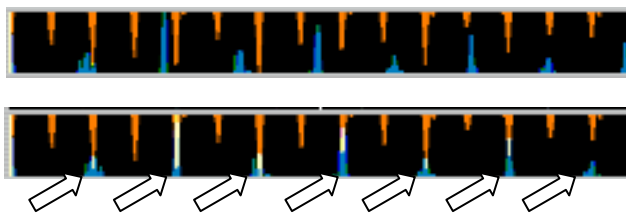
Note: This display does not show the relative timing of the beats, only the tempos of the tracks. The peaks will still line up when the tracks are playing at the same tempo, but are out of sync. To match the beats, see the DROPPING A TRACK IN section below.

DROPPING A TRACK IN

The NS7's / V7's PLATTERS are touch-sensitive. When a PLATTER's motor is off, that PLATTER is in Nudge Mode (the SCRATCH OFF button should also be lit). In Nudge Mode, moving the PLATTER backwards or forwards will temporarily bend the speed of the track faster or slower (respectively). This is for when you have two tracks mixed together but they are not quite in time. By "nudging" the platter back and forth you can ensure that the beats are aligned.

When opening the software, though, the PLATTERS will be in Scratch Mode by default (the SCRATCH OFF button will be off). In Scratch Mode, touching and holding the platter will stop playback just like with a record. Moving the platter will scratch backwards and forwards through the track as if you were using actual vinyl. You can also "nudge" while in Scratch Mode by turning the aluminum platter itself without touching the black top (the imitation vinyl). You do this by using the edges (similar to using the rails on a turntable to get tracks in time).

Tips:
- *You can use the* PITCH BEND *buttons to temporarily jog the tempo of the track, which is just like nudging the* PLATTER. *These will work whether the* PLATTER *is in Nudge Mode or Scratch Mode.*
- *Use the Temporary Cue functions to start from a Temporary Cue Point repeatedly. You can drop the track in a few times until you get it right.*

■ Beat-Matching Display

This view shows the position of beats within the track. When the peaks shown in this window are aligned, the two tracks' beats are matched. You can easily tempo- and beat-match your two tracks by using the Tempo- and Beat-Matching Displays together.

Example:
1. As a track is playing in Deck A (the left deck), load and play a track in Deck B (the right deck). After a few seconds, blue peaks will appear in the Tempo-Matching Display (representing the tempo of Deck B's track) below a set of orange peaks (the tempo of Deck A's track).
2. Adjust the pitch of Deck B's track using the PITCH FADER until the blue peaks are aligned with the orange peaks in the Tempo-Matching Display. Once they are aligned, the two tracks have the same tempo.
3. Next, align the markers in the Beat-Matching Display using the PLATTERS in Nudge Mode. It is helpful to watch the colors passing by in the Main Waveform Display (remember that a kick or bass drum will likely be red in color, and a snare drum will likely be green or blue). This technique may speed up the process of beat-matching.
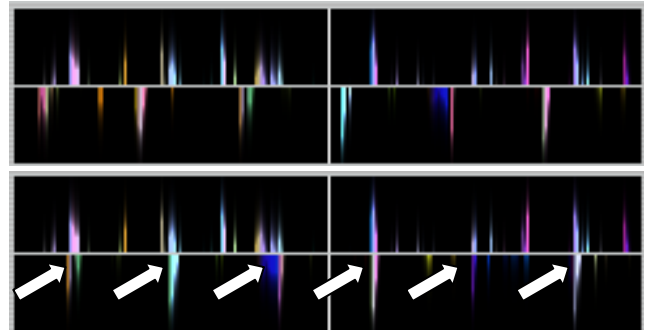
ADVANCED FEATURES

MIC & AUX MIXING

The NS7 features a microphone input and an auxiliary line input. The volume and equalization of these two inputs is controlled by the NS7 and each can be assigned either to the whole Program Mix or either side of the CROSSFADER. To do this, click the **Mic / Aux** button to display the drop-down menu and select where the MIC / AUX audio signal will be sent:

- **Mix:** The signal will be sent directly to the Program Mix. You can control the signal with the NS7's MASTER VOLUME knob and the MIC / AUX controls on the Front Panel.
- **X-F A:** The signal will be sent to Crossfader Channel A (the left channel). You can control the MIC / AUX signal with the NS7's MASTER VOLUME knob, the CROSSFADER and its related controls, and the MIC / AUX controls on the Front Panel.
- **X-F B:** The signal will be sent to Crossfader Channel B (the right channel). You can control the MIC / AUX signal with the NS7's MASTER VOLUME knob, the CROSSFADER and its related controls, and the MIC / AUX controls on the Front Panel.
- **Mute:** The MIC / AUX signal will be muted.
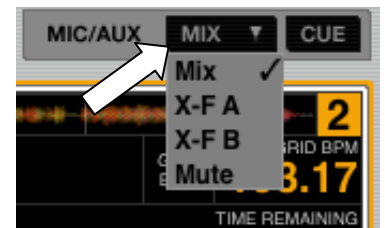
The gain knob next to the MIC and AUX inputs on the NS7 control the gain before the signal is sent to ITCH for mixing. You can also give this signal an extra boost by increasing the Mix Overdrive setting in the Mixer tab of the Setup screen. (See MIXER in the SOFTWARE SETUP section for more information.)

Numark

USING PITCH / TEMPO CONTROLS

The following functions allow you to manipulate the pitch and speed of a track to aid the mixing process.

■ Pitch

This number is the current percentage pitch difference from 0%. The amount by which you can increase or decrease this interval will vary with the **Pitch Range**.

■ Pitch Range

The PITCH RANGE button allows you adjust the range of the PITCH FADER to ±8%, ±16%, and ±50% of the original speed of the track. The current range will be displayed in the software in the Deck, in the **Range** field under the Artist and Track Name.
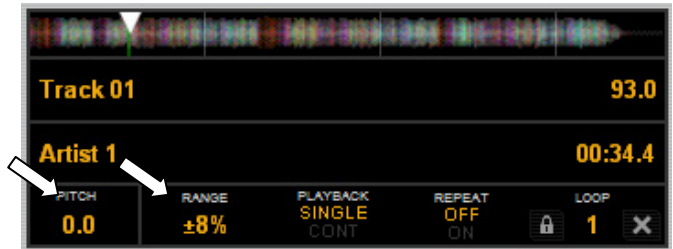
■ Keylock

Normally, when you change the speed of a track with the PITCH FADER, you will hear a change in the key of the music. When the NS7's KEYLOCK / V7's MASTER TEMPO button is on, even when you change a track's speed, its key stays the same. This is useful for avoiding two tracks sounding out of tune while mixing.

The NS7's / V7's KEYLOCK will be temporarily disabled as you are manipulating the PLATTER (i.e. when you are scratching) to create a natural scratching sound, but it will re-engage once you let it go.

■ Sync

Serato ITCH's Sync function helps simplify synchronizing your tracks' tempos. When you press the SYNC button on a Deck of the NS7 / V7, the button will flash and that track's tempo (BPM) change to match the tempo of the opposite Deck's track. (Both tracks must have BPM values in order for the Sync function to work.)

While Sync Mode is engaged, the playback speed is controlled by the PITCH FADER of the "Master" Deck (the Deck that does *not* have Sync Mode engaged). Both Decks will follow any changes in pitch you make to this Deck.

Note: The PITCH BEND *buttons will still operate independently on each Deck, even while in Sync Mode. In other words, the Master Deck's* PITCH BEND *buttons will only jog the tempo of its own Deck.*

If a new track is loaded to the Master Deck, the "Slave" Deck (the Deck that has Sync Mode engaged) will continue to follow the tempo of the Master Deck's previous track. At this point, adjusting the Master Deck's PITCH FADER will no longer affect the Slave Deck's tempo.

Tip: Before taking either Deck out of Sync Mode, note the arrows in the **Pitch** *field (of the Slave Deck). This is the Pitch Navigator. An arrow pointing up indicates the Deck's pitch must be increased to match the Master Deck. An arrow pointing down indicates the Deck's pitch must be decreased to match the Master Deck. Change the pitch accordingly (with the* PITCH FADER*) before taking it out of Sync Mode. This will ensure the tempo of your mix will remain constant.*

BEAT GRID & SYNC

A Beat Grid is a series of markers within a track that indicate a beat or a transient within the music structure. A Beat Grid allows ITCH to know precisely where each beat occurs and where each bar is within the music structure. This accurate beat information opens up possibilities for users to further manipulate a track and for precise track syncing and advanced looping features.

Analyzing an audio file will calculate the average BPM of a given track. Some tracks' BPMs are linear, so setting an accurate Beat Grid is easy, only requiring you to set the first downbeat Beat Marker. If you have tracks with variable BPMs you can also set custom Beat Markers, which will snap the grid to the track more accurately.

Enable Beat Grid

To turn on Beat Grid functionality, check the "Enable Beat Grid" option in the Playback tab on the Setup screen. (See the "Playback" tab described in the SOFTWARE SETUP section.)

Note: With the "Enable Beat Grid" option on, the Sync and Auto Tempo functions in ITCH now behave differently. (See "Sync Using Beat Grid" below).

Beat Grid Waveform View

The Beat Grid is placed on top of the waveform overview. It is displayed as follows:
- A thick white line indicates the beginning of each Beat Grid Bar.
- Each Beat Grid Bar has the bar number at the top of the marker.
- The first Beat Marker is called the Downbeat Marker and is a thick red line on the first beat.
- The Downbeat Beat Marker will be bar number 1.
- Each Beat Grid Bar is divided up into 4 thin line divisions.
- A thick red line also indicates a manually set Beat Marker.

Before Creating a Beat Grid

Setting up a Beat Grid relies on the track having an accurate BPM value so ITCH can set the Beat Grid markers on the track's beats or transients (see "How to Analyze Files" under the "Preparing Your Files" section in GETTING STARTED).

Note: BPM analysis has been greatly refined in ITCH 1.7. It is highly recommended that you analyze your entire library again using this new version of ITCH. To do this, enter Offline Player Mode then hold down Ctrl and click the "Analyze Files" button.

Creating a Beat Grid

ITCH will attempt to determine the first transient (this could be a kick drum or bass note) and use this to calculate the downbeat Beat Marker. Once the downbeat Beat Marker is set, ITCH uses the track's BPM to create a Beat Grid automatically throughout the track. If the BPM is accurate, this could be all you need to do. If not, you may need to adjust the Beat Grid, or manually set more Beat Markers to allow for some tempo variations.

To check if the Beat Grid has calculated the markers correctly, skip forward through the track and see if the markers fall on the beats or not (after a breakdown is a good place). We also recommend skipping to the track's outro and see if the markers are still falling on the beats.

Editing a Beat Grid

If the Beat Grid requires editing, turn on Grid Edit Mode by pressing Alt + spacebar (repeated pressing of this toggles between the Virtual Decks) or by clicking the "Grid Edit" button on the Virtual Deck. When Grid Edit Mode is on, the Grid Edit button on the Virtual Deck will flash and a green bar will appear above the waveform. To turn Grid Edit Mode off, press "Esc" or click the Grid Edit button again.

Grid Edit Mode can be used with your ITCH hardware connected or in Offline Player Mode. You may find it easier to make adjustments to the Beat Grid with the track not playing. To save changes made to a Beat Grid, press Enter. (Pressing "Esc" or clicking the Grid Edit button will exit Grid Edit Mode without saving any changes you have made to the Beat Grid.)

With Grid Edit Mode on, use the following functions with your computer keyboard or mouse (no hardware controls are used to edit Beat Grids):

Set a Beat Marker

Pressing X or ALT + double-clicking with the mouse will place a Beat Marker at the playhead position. The Beat Marker will snap to the closest transient. By default, ITCH will place a Beat Marker on the first detected transient.

Tip: Set new Beat Markers where there is a tempo change in the track to allow the tempo to warp around these points. With the track playing you can tap or click in Beat Markers on the fly. The Beat Markers will snap to the closest transient.

Deleting a Beat Marker

If you have set an incorrect Beat Marker, you can delete one, several, or all markers. To delete the closest marker to the playhead, press the Delete key or Alt + Shift + click with the mouse. To clear all Beat Markers, press Shift + Delete.

Adjust the Beat Grid

The Beat Grid may not always be correctly placed, which means the bars may not line up exactly with the transients, so you may need to make occasional adjustments. To adjust the Beat Grid so the bars align with the transients, use the left and right arrow keys or Alt + click and hold on a bar then drag it. The Beat Grid will expand or contract to follow your movements from your last set Beat Marker to the next Beat Marker. (If there is no next Beat Marker set then it will adjust to the end of the track.) To quickly adjust the Beat Grid, press Shift + left and right arrow. You can also tap-adjust the Beat Grid "on the fly" by tapping the space bar in time with the track. The Beat Grid will adjust in time with the tapped beat.

Tip: For all the left and right arrow key commands, you can use the up and down arrow keys instead when in vertical display mode.

Slip the Beat Grid

If your Beat Grid is sitting perfectly on the track's transients but the track's Downbeat Beat Marker is incorrect or the groove or feel is sounding slightly off, you may need to slip the Beat Grid. This will move the entire Beat Grid along as it is, to get a perfect fit with the other track's groove.

To slip the Beat Grid, press Ctrl + left and right arrow, or to quickly slip the Beat Grid press Shift + Ctrl + left and right arrow.

Tip: For all the left and right arrow key commands, you can use the up and down arrow keys instead when in vertical display mode.

Sync Using Beat Grid

Once your tracks have accurate Beat Grids, you can now use them to easily sync two tracks together. Press SYNC to snap the Beat Grid of the track to that of the Beat Grid of the track on the other Deck using the Master Clock. If the tracks start to fall out of time, press SYNC again to re-sync them. To turn sync off, press DELETE/SHIFT and SYNC. When sync is off, pressing DELETE/SHIFT and SYNC will toggle turning Auto Tempo on and off. You can still use the platters to manipulate the audio while synced, though this can cause the Beat Grids to fall out of alignment. Press SYNC to re-sync the tracks.

Master Clock

When using the Sync function, ITCH uses a Master Clock, which is a master tempo to which all decks are synced. The Master Clock will be displayed in the middle of the Virtual Deck area, and it will indicate which Decks are currently synced to the displayed tempo.

When you engage Sync on a Deck, that Deck becomes the Slave Deck while the Deck it has been synced to becomes the Master Deck. The Master Clock will take its tempo from the Master Deck. The PITCH FADER on the Master Deck will control the Master Clock's tempo, so changing the Master Deck's tempo will change the tempo of all synced Decks.

You can switch the Decks so that the Master becomes the Slave and vice versa. To do so, move the the physical position of PITCH FADER on the Slave Deck to match the pitch value displayed on the Virtual Deck. (You may need to adjust the pitch range if it is outside the current pitch range.) Once the PITCH FADER "takes over" the pitch, it will become the Master Deck and take control of the Master Clock's tempo.

The Master Clock will be cleared once all synced Decks have their Sync function disengaged.

USING CUE POINTS

To create a Cue Point, simply press any unlit HOT CUE BUTTON on the NS7 / V7. The button will then light up white to show that there is a Cue Point set. Once it is set, you can jump to it at any time by pressing that HOT CUE BUTTON.

While playback is paused, holding a HOT CUE BUTTON down will play from its Cue Point. When you release it, it will return to the Cue Point and remain paused.

To delete a Cue Point, press or hold the DELETE CUE button to enable Delete Cue Mode, then press a HOT CUE BUTTON that is lit red to erase its Cue Point. Pressing the DELETE CUE button to enable Delete Cue Mode will let you delete one Cue Point at a time. Holding the DELETE CUE button to enable Delete Cue Mode will let you delete multiple Cue Points

Note: Cue Points cannot be overwritten. You must first erase a Cue Point while in Delete Cue Mode before assigning a new Cue Point to that HOT CUE BUTTON.

■ Cue Point Status

The stripe on the rotating part of the Virtual Deck jumps to the "12 o'clock" position and changes color whenever you set a Cue Point. You are at the Cue Point when the stripe is one solid color and at the "12 o'clock" position. As the Audio Pointer moves beyond the Cue Point, the stripe will shorten by a fifth after each rotation. As the Audio Pointer approaches the Cue Point, the stripe will grow by a fifth after each rotation.
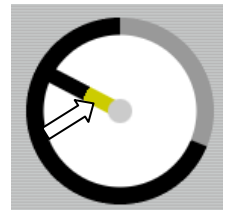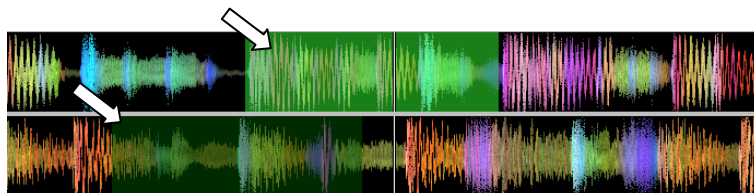
LOOPING

Use the NS7's / V7's LOOP CONTROLS area to create loops in your tracks. The bottom four LOOP CONTROL buttons have two modes. In Manual Mode, the MODE button is lit red, and the four buttons are IN, OUT, SELECT, and RELOOP. In Autoloop Mode, the MODE button is lit white, and the four buttons can create 1-, 2-, 4-, and 8-beat loops. This section will help you understand the two modes and how to use the controls.

■ **Setting a Loop**

In Manual Mode, pressing the IN button will set the beginning of your loop – the "Loop In" point. Pressing the OUT button will set the endpoint of the loop – the "Loop Out" point and begin playing the loop from the beginning. (To cancel a loop after pressing LOOP IN, press SELECT, which will toggle out of that loop without completing it.) Loops are highlighted green sections in the Main Waveform display in the software.

■ **Autolooping**

In Autoloop Mode, pressing the 1, 2, 4 or 8 button will set a 1-, 2-, 4-, or 8-beat loop (respectively). Each loop you set in this fashion will start from the Audio Pointer's location when the button is pressed, and that button will light up white. Pressing the button again will exit the loop and delete it.

Note: Due to the way the software analyzes beats per minute (BPM), the length of 1-, 2-, 4-, and 8-beat loops will vary between tracks with different BPM readings.

■ **Turning a Loop On or Off**

Press SELECT to toggle through the loops in the track. Turn a select loop on or off with the LOOP CONTROL ON / OFF button. If the Deck is already looping when you turn it off, it will exit the loop as playback continues. If the Deck is not looping, the currently selected loop will be enabled (once the Audio Pointer enters the loop region).

■ **Editing a Loop**

Press SELECT to toggle through the loops in that track. When you have selected the one you want, you can edit it a number of ways:

▪ **Manually Edit:** While in a loop, you can press the IN or OUT buttons to enable you to move the "Loop In" or "Loop Out" points (respectively) using the PLATTER. When you are done editing, press the same button again. (If the PLATTER's motor is on, the PLATTER's normal rotation will move your "Loop In" or "Loop Out" points. For better control, we recommend activating the SCRATCH OFF button so the PLATTER's motor is off.)

   Tip: As you are adjusting your loop point with the PLATTER*, a lit LED will "wrap around" on the NS7's / V7's* BPM METER*. It will rest on the white center LED whenever the loop's length has been doubled or halved exactly. This feature will only work properly if there is a BPM entered for that track.*

▪ **Reloop:** Press the RELOOP button to jump to the start of the selected loop and enable it. If the deck is already looping when you press it, the Audio Pointer will jump to the start of the loop and continue. If no loop is set, nothing will happen.

▪ **Halve / Double:** Press the 1/2 X button to halve the length of the selected loop, or press the 2 X button to double its length. The green highlighted region in the Main Waveform view will update to show the change.

▪ **Shifting:** Press the SHIFT LEFT button to shift the selected loop region to the left, or press SHIFT RIGHT to move it to the right. It will move the loop region the same distance as the length of the loop itself. The loop region will remain unchanged.

■ **Locking or Deleting a Loop**

Next to the number of the selected loop on each deck, there are two icons: a "lock" and an "X." Clicking the "lock" icon with your mouse will prevent you from editing or deleting the currently selected loop. Clicking the "X" icon will delete the currently selected loop.

BLEEP / REVERSE

The NS7's / V7's BLEEP / REVERSE switch reverses a track's audio playback in two different ways:

▪ When the switch is in the REVERSE position, the playback of the track will be reversed. (This will be visible in the Main Waveform display.) Returning the switch to its center (deactivated) position will resume normal playback from wherever the Audio Pointer stops.

▪ When you hold the switch in the BLEEP position, the playback of the track will be reversed. Returning the switch to its center (deactivated) position will resume normal playback from where it would have been if you had never engaged the switch (as if the track had been playing forward the whole time). Using the BLEEP function will not affect the Audio Pointer in the Main Waveform display; normal playback will resume wherever the Audio Pointer is in the track, as shown in the software.

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RECORDING (NS7 ONLY)

Serato ITCH can capture recordings of your Program Mix or NS7's MIC / AUX INPUT channel. Recording controls are grouped into a menu above Deck B in the software. To record:
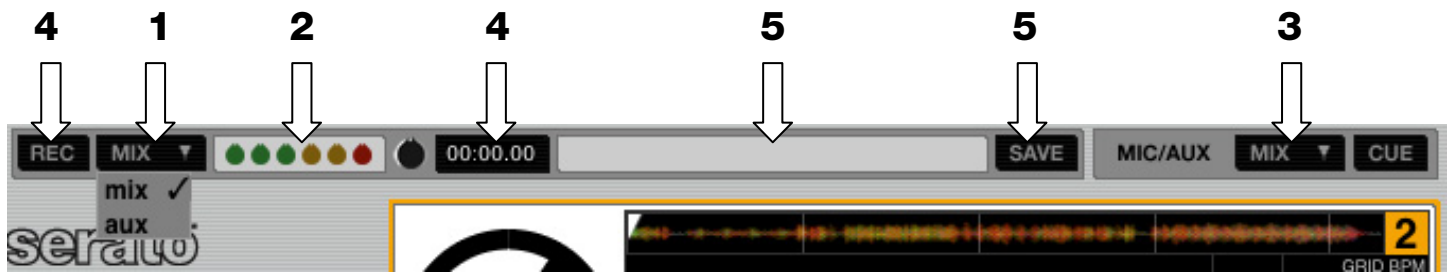
1. In the software, click the **Record Source Selector** and select your source from the drop-down menu. Selecting "Mix" will record the master output signal – post-faders/-EQ, and pre-MASTER VOLUME. Selecting "Aux" will record the NS7's MIC / AUX signal only.

2. Adjust the recording level using the appropriate controls for the source being recorded. The **Recording Meter** in the software shows the signal level that will be recorded to disk. We recommend that you set your levels so the loudest part of the mix causes the meter to enter the red zone only briefly.

3. To show or hide the channel controls for the MIC / AUX INPUT, click the **Mic / Aux** button.

4. Click the **Record** button to start recording. The length of the recording will be displayed in the **Recording Timer**. Press it again to stop recording.

5. Type a filename into the **Recording Filename** text field, and click **Save**. Recordings are saved as 16-bit 44.1 kHz stereo files (.AIFF) in the "Recorded" Crate inside your Main Library folder. The files can be accessed in **My Documents ► My Music ► Scratch LIVE ► Recording** (Windows) or **Users ► Music ► Scratch LIVE ► Recording** (Mac).

SERATO ITCH EFFECTS PANEL OVERVIEW

1. **EFFECT –** The currently selected effect applied to the channel (if the NSFX's / V7's FX ON / OFF button is set to "on"). When browsing for a different effect to apply to the Deck, the name of the effect will be shown in this box (in a different color).

2. **FX MIX –** The amount of the current effect, which can be adjusted with the NSFX's / V7's FX MIX fader.

3. **PARAMETER –** The parameter for the current effect, which can be adjusted with the NSFX's / V7's FX PARAM knob. Generally, this is the intensity of the effect but may vary between effects.

4. **TEMPO SOURCE –** The current BPM for the track, which helps determine the speed of the CURRENT EFFECT (if it is rate-based). When this field reads "AUTO A" or "AUTO B," the effect will automatically follow the BPM of the track on Deck A or Deck B, respectively. If "MANUAL" is shown, it means neither Deck's track has a BPM. You can set the BPM (and change it at any time) by using the TAP TEMPO button. You can also return to the track's auto-BPM by holding down TAP TEMPO.

TRANSITIONING BETWEEN DJs

NS7

To smoothly transition between two DJs with one NS7 and two laptops with Serato ITCH:

1. While either deck is playing, play a "transition" track (through the Program Mix) from an audio source connected to the NS7's AUX INPUT. Make sure your levels are appropriately matched by adjusting the MIC / AUX controls on the front panel.

    Note: The AUX INPUT *signal passes straight to the* MASTER OUTPUT*, so you may want to fade in the source using the* MIC / AUX GAIN *knob. Also, if the Mix Overdrive setting – in the Setup screen's Mixer tab – is set to boost the gain level of the Program Mix, we recommend reducing this to zero to avoid a noticeable volume change when you disconnect the NS7.*

2. Fade both NS7 decks' volumes down to zero, then stop playback on both decks.

3. On the next DJ's computer, open ITCH.

4. Disconnect the NS7 from the first computer and connect it the next DJ's computer.

5. Within ten seconds, the NS7 will be recognized and enabled in ITCH. Start performing!

V7

Numark V7s allow you to transition smoothly between two DJs (each with his own computer) without interrupting the music. To prepare for this, set up a dual-V7 setup then follow these steps:

Note: The instructions in this section address a setup with a mixer that supports multiple line-level inputs on two channels. However, you may also adapt these instructions to a four-channel mixer setup.
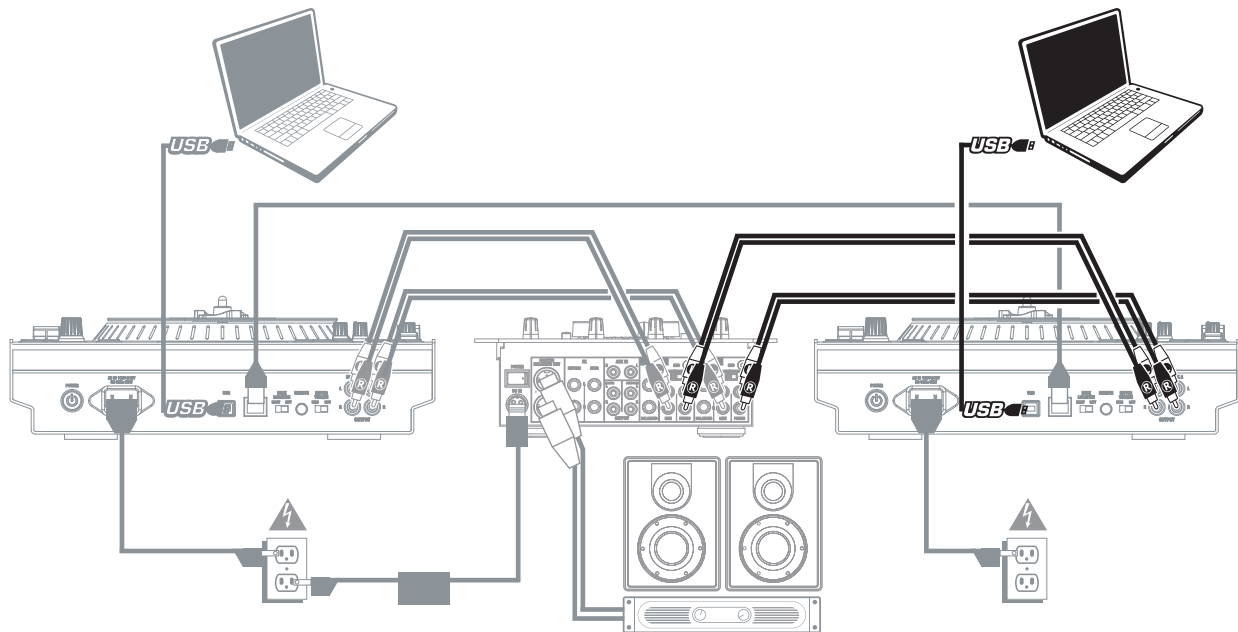
1. Connect ***both*** V7s' DECK A OUTPUTS to your mixer's left channel (line-level) inputs.

2. Connect ***both*** V7s' DECK B OUTPUTS to your mixer's right channel (line-level) inputs.

3. With a USB cable, the new DJ ("**DJ 2**") should connect his computer to the V7 that is not connected the current DJ's ("**DJ 1**"'s) computer.

4. As **DJ 1** is playing his last track, **DJ 1** should press the MASTER BUTTON on the unused V7.

5. On the unused V7, **DJ 2** can now cue up his first track and fade it in with the mixer.

6. When **DJ 2** has finished transitioning into his first track, he should press the MASTER BUTTON the opposite V7. He can now control Serato ITCH on his computer using both V7s.

7. **DJ 1** can now disconnect his computer from the setup without any interruption of the music.

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WHITELABEL AUDIO FILES

Whitelabel audio files are a unique file format (file extension "wl.mp3") developed by Serato. They are specially prepared for use in Serato ITCH – with files pre-analyzed, tagged with song and artist info, BPM readings, and album art where possible.

Whitelabel audio files play as high-quality, 320kbps stereo audio in Serato ITCH with an ITCH controller attached. Without an ITCH controller connected, or when playing these files through other mp3 software and devices, they will play as low-quality, 32kbps mono audio.

Whitelabel audio files are promotional releases from record labels available to ITCH DJs for free from **http://www.whitelabel.net**.

WHITELABEL.NET

The Serato Whitelabel Delivery Network is a unique system that allows record labels to deliver digital promotional releases directly to DJs. To download Whitelabel audio files, and to sign up to receive updates on the latest promotional releases, visit **http://www.whitelabel.net**.

LOCKED WHITELABEL.NET FILES

Due to some labels' licensing requirements, certain Whitelabel audio files will require e-mail and password verification to unlock them. If you have legitimately downloaded these tracks yourself, entering the e-mail and password you use for **whitelabel.net** will unlock the files for playback within Serato ITCH. If you are still having problems unlocking these files, please contact Serato technical support at **http://www.serato.com/support**.

SYSTEM REQUIREMENTS

Whitelabel.net is tested to work on these browsers:

- Internet Explorer 7 and above
- Firefox 3 and above
- Safari 3 and above

You will also need Adobe Flash Player installed and have Javascript enabled to be able to preview and download tracks.

Note: Running Whitelabel audio files through Mixed In Key can cause the files to play only at 32kbps in Serato ITCH (even with an ITCH controller attached). At this time, we recommend not using Mixed In Key with Whitelabel audio files.
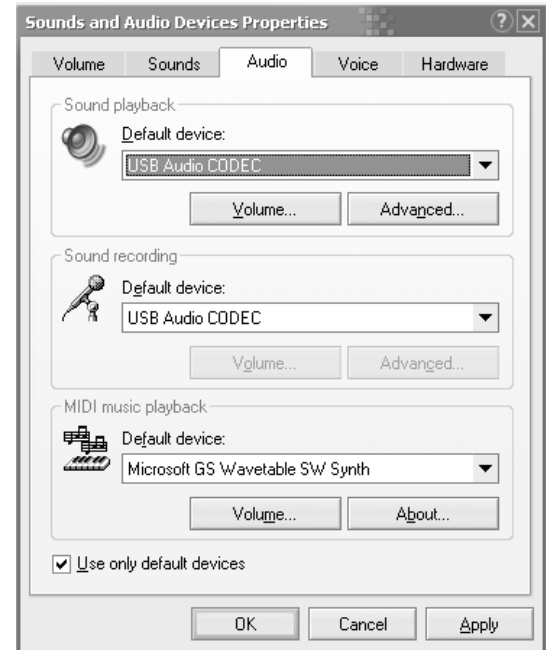
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USING THE NS7 / V7 AS A SOUND CARD

The NS7 / V7 is equipped with a USB port which allows you to play content and control the Serato ITCH software using the NS7 / V7. The USB interface works with your computer just like a standard USB sound card. Be sure you have installed the software and drivers on the software CD (included; see SOFTWARE INSTALLATION for more information).

WINDOWS CONFIGURATION

1. Turn on your computer and NS7 / V7.
2. Use a USB cable to connect the NS7's / V7's USB port to your computer.
3. Windows will immediately recognize the mixer as a "USB Audio Device" and will automatically install any required system components.
4. To change system audio preferences in Windows, you will need to access the **Sounds and Audio Devices** properties, located in the **Control Panel**. To access audio device settings, click on the **Audio** tab.
5. The first time you connect the NS7 / V7 to your computer, the mixer will be automatically assigned as the Default (or "Preferred") Device for sound playback on your computer. All of your computer's sounds will be sent to the mixer channel indicated above the USB connection.
6. To send audio from your computer to the NS7 / V7, select "USB Audio CODEC" in the **Sound Playback** field. This allows you to play audio from your computer into the NS7.
7. To send audio from the NS7 / V7 to your computer, select "USB Audio CODEC" in the **Sound Recording** field. This allows you to record into your computer.

   Note: If your sound playback or recording application does not have its own audio input and output settings (for example, Windows Sound Recorder, Windows Media Player or Apple iTunes), it will use the devices set in Sounds and Audio Devices. Please note that these settings are loaded upon application startup, so if you change device settings while the application is open, you will need to restart your application for the settings to take effect.

   *Tip: To prevent Windows from playing system sounds (beeps and bleeps) through the NS7 / V7, we highly recommend disabling these by clicking on the **Sounds** tab and selecting **No Sounds** from the pull-down menu.*

MAC CONFIGURATION

1. Turn on your computer and NS7 / V7.
2. Use a USB cable to connect the NS7's / V7's USB port to your computer.
3. Your computer will immediately recognize the mixer as a "Numark USB Audio Device."
4. To change system audio preferences on a Mac, you will need to access the **Audio MIDI Setup** preferences located in **Applications ▶ Utilities.**
5. To send audio from your computer to the NS7 / V7, select "Numark USB Audio Device" in the **Default Output** field. This allows you to play audio from your computer into one of either of the mixer channels, depending on which USB port is used to make the connection.
6. To send audio from the NS7 / V7 to your computer, select "Numark USB Audio Device" in the **Default Input** field. This allows you to record into your computer.

   Note: If your sound playback or recording application does not have its own audio input and output settings (for example, Apple iTunes), it will use the devices set in Audio MIDI Setup. Please note that these settings are loaded upon application startup, so if you change device settings while the application is open, you will need to restart your application for the settings to take effect.

   *Tip: We recommend leaving the **System Output** field set to **Built-in Output**. This ensures that system sounds (beeps and bleeps) will not sound through the mixer.*
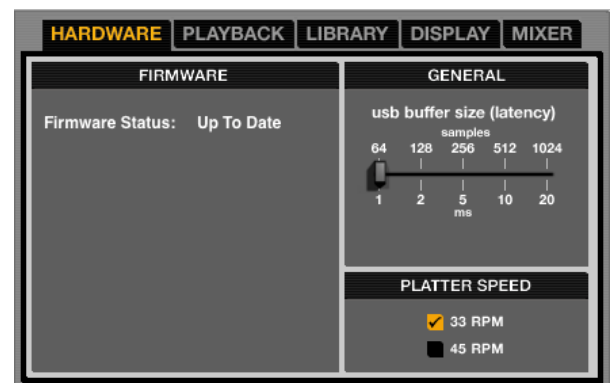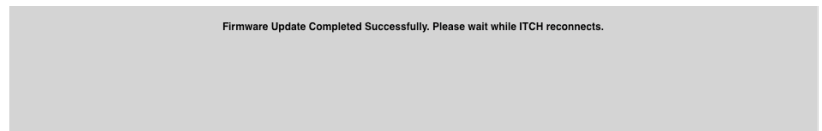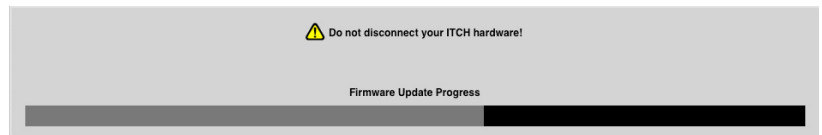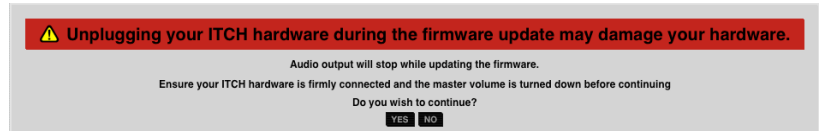
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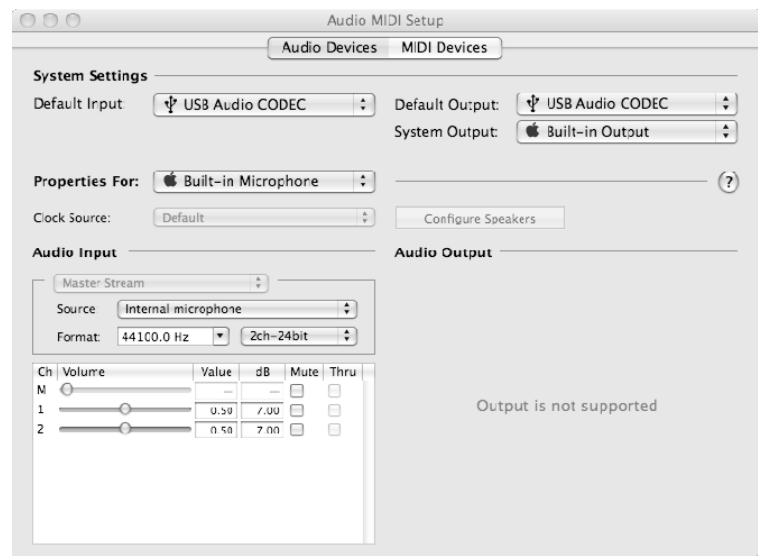
UPDATING THE FIRMWARE

Occasionally, there may be an available firmware update for the NS7 / V7. If your computer is connected to the internet, Serato ITCH will automatically detect if you need to update it. Follow these steps when you need to update your firmware:

Note: Audio output will stop during a firmware update. Do not update your firmware in the middle of a performance.

1. With your NS7 / V7 connected to the computer, go to the **Setup** screen and select the Hardware tab. You will see a message if there is an available firmware update.

2. Click the **Update Firmware** button.

3. A dialog box will appear warning you that audio output will stop during the updating process. Click "No" to cancel the update or "Yes" to confirm and continue.

⚠ **Unplugging your ITCH hardware during the firmware update may damage your hardware.**

Audio output will stop while updating the firmware.
Ensure your ITCH hardware is firmly connected and the master volume is turned down before continuing
Do you wish to continue?
YES NO

4. A progress bar will appear as your firmware is updating. Do not disconnect the NS7 / V7 during this process.

⚠ Do not disconnect your ITCH hardware!

Firmware Update Progress

5. When the update is complete, you will see a window confirming this. Wait while ITCH reacknowledges its connection with the NS7 / V7. You can resume performing when this is complete.

Firmware Update Completed Successfully. Please wait while ITCH reconnects.

HARDWARE | PLAYBACK | LIBRARY | DISPLAY | MIXER

FIRMWARE

Firmware Status: Up To Date

GENERAL

usb buffer size (latency)
samples
64   128   256   512   1024
1   2   5   10   20
ms

PLATTER SPEED

☑ 33 RPM
◼ 45 RPM

NS7 / V7 CALIBRATION

If you load new firmware to the NS7 / V7, or if you ever experience problems with your knobs or faders (a very rare occurrence), the NS7 / V7 can be recalibrated. Follow these instructions to calibrate the unit.

> ### *IMPORTANT NOTES:*
> - *When setting the knobs and faders during calibration, set the faders last (to ensure they don't accidentally move during adjustment).*
> - *When setting the knobs and faders, be sure they are all set at their endpoints. Slight inaccuracies could result in an incorrect calibration.*
> - *The* MIC / AUX GAIN, BASS, *and* TREBLE *knobs are analog controls and therefore not part of the calibration.*
> - *Though the NS7 is pictured, this section also applies to V7 calibration. If you are calibrating a V7, disregard references to the "left" or "right" Decks and follow all steps on that specific V7's controls.*

1. If you have uploaded new firmware, the left Deck's HOT CUE BUTTON 1 will flash twice, indicating that you should recalibrate it.
2. Disconnect the cable from the USB port and make sure the NS7 / V7 is off. While holding the right Deck's HOT CUE BUTTONS 1 and 3, turn the NS7's / V7's power on. HOT CUE BUTTONS 1-5 should flash twice.
3. Wait 10-20 seconds.
4. Set all faders and knobs to the maximum or right-most position. The PITCH FADERS should be at the bottom, which is their maximum. (See image below.) The left Deck's HOT CUE BUTTON 1 will light up.
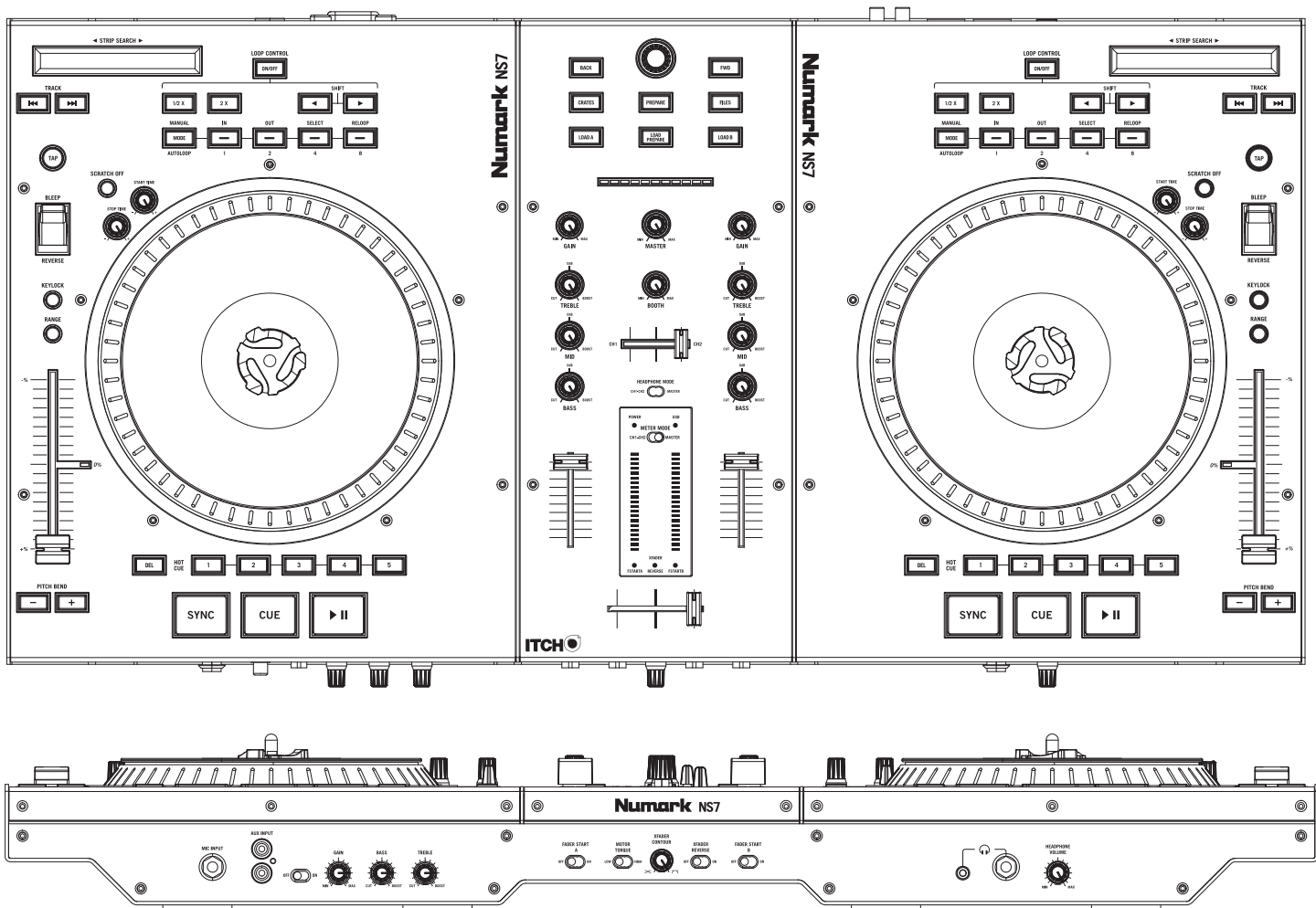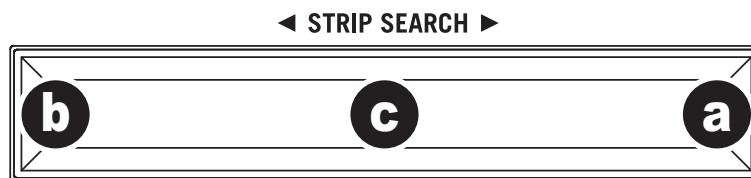

5. Press the lit left Deck's HOT CUE BUTTON 1. It will flash twice.

6. Set all faders and knobs to the minimum or left-most position. The PITCH FADERS should be at the top, which is their minimum. The left Deck's HOT CUE BUTTON 1 will light up.
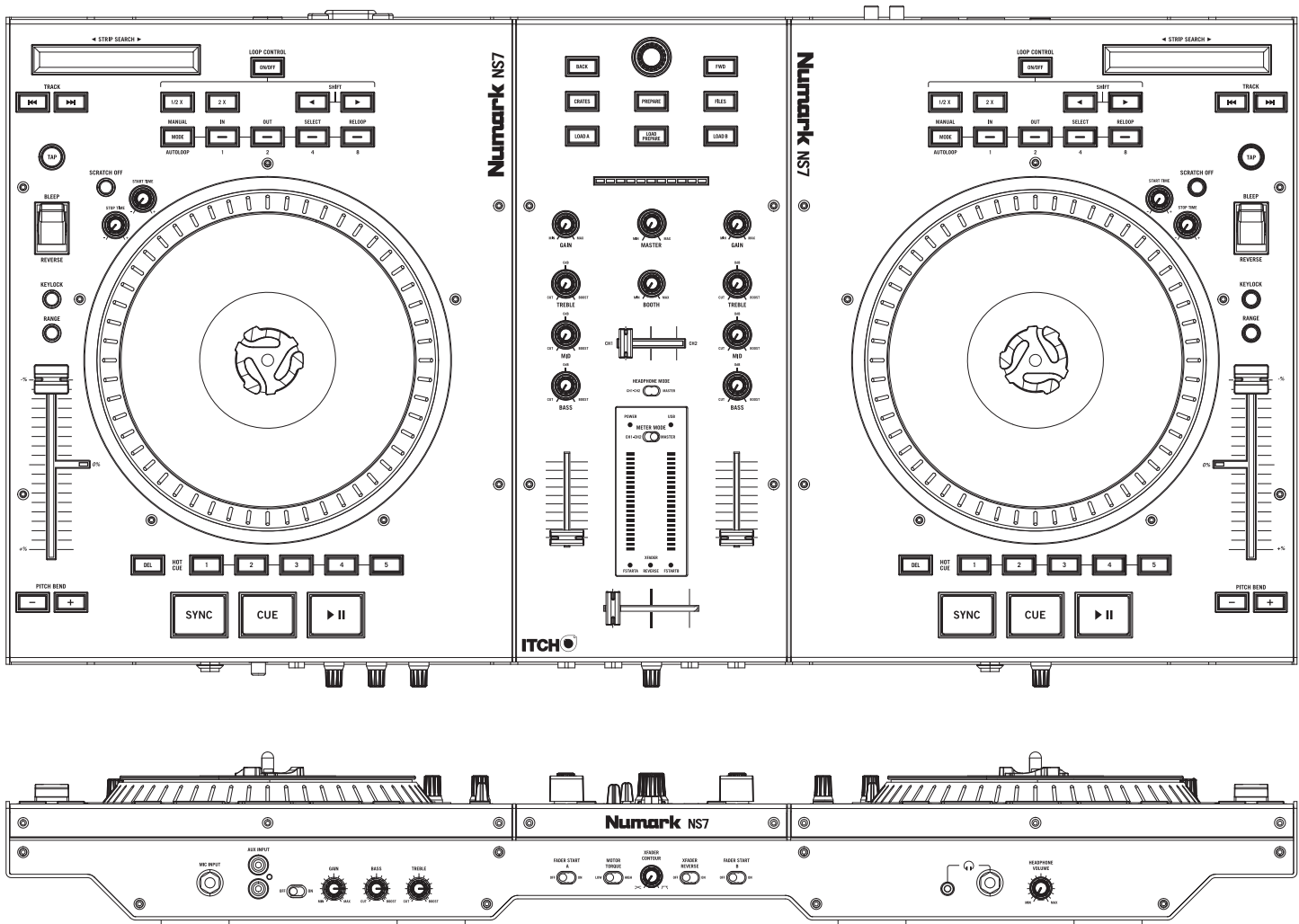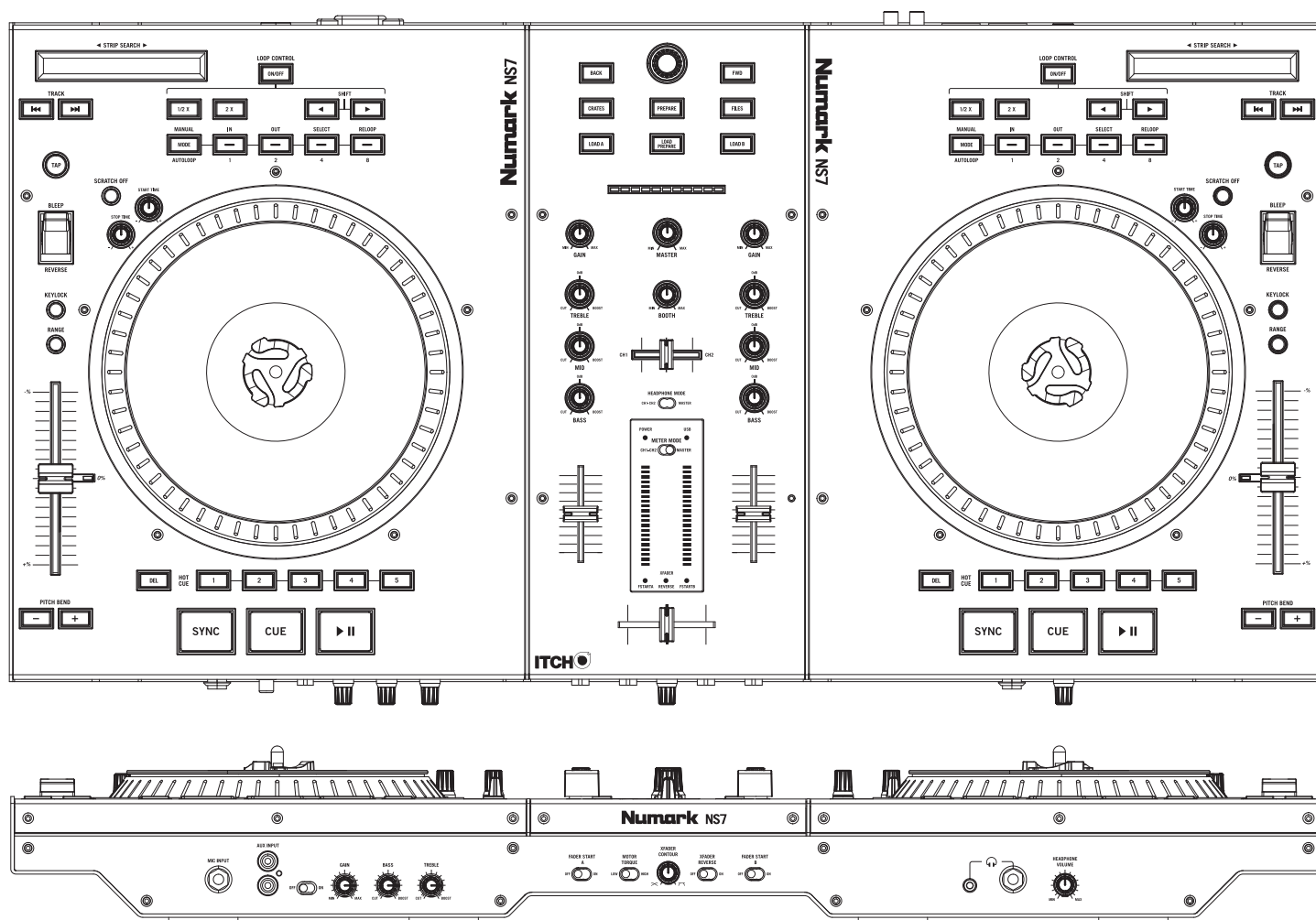

7. Press the lit left Deck's HOT CUE BUTTON 1. It will flash twice.

◄ **STRIP SEARCH** ►

8. On the left Deck's STRIP SEARCH sensor:
    a. Touch and hold the right-most position. When the left Deck's HOT CUE BUTTON 1 lights up, press it. It will flash twice.
    b. Touch and hold the left-most position. When the left Deck's HOT CUE BUTTON 1 lights up, press it. It will flash twice.
    c. Touch and hold the exact center position. When the left Deck's HOT CUE BUTTON 1 lights up, press it. It will flash twice.
9. Repeat Steps 8a-c with the right Deck's STRIP SEARCH sensor.

10. Set all faders and knobs to the middle/center position. The left Deck's HOT CUE BUTTON 1 will light up.

11. Press the lit left Deck's HOT CUE BUTTON 1. The left Deck's HOT CUE BUTTONS 1-5 will flash, indicating that calibration is complete.
12. Turn the NS7's / V7's power off then on again before reconnecting it to your computer.

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TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
I'm seeing a "Hardware Disconnected" message in the software.	The USB cable is not properly connected to your computer or NS7 / V7.	Make sure both USB connections are secure.
	The software was opened before NS7 / V7 was connected.	Close the software and reopen after properly connecting and powering on NS7 / V7.
	NS7 / V7 not powered on.	
I'm experiencing some audio dropouts or slow response.	Other programs are draining your computer's CPU.	Close any unnecessary programs and turn off your computer's wireless card (or disconnect from the internet).
		Disable anti-virus software or other programs that regularly scan your computer or regularly search for an internet connection.
		Change the buffer size settings in the software (see "USB Buffer Size" on Page 12). At a larger buffer size, you should no longer experience audio dropouts, but there may be a slight delay when the software responds to the hardware (latency). At a lower buffer size, your computer will respond more quickly (less latency), but your computer needs to be fast enough to prevent audio dropouts or other issues. Experiment to find the optimal settings for your computer.
Software closes or freezes as soon as it opens.	iTunes 8.0.2 (and higher) is interfering with how the software scans its libraries.	Downgrade your version of iTunes at **http://www.oldapps.com/itunes.htm**.
I'm having problems scanning or searching through my iTunes library.		
I'm hearing a weird noise when I start playback if the NS7's / V7's PLATTER is stopped.	The PLATTER's start time is too high.	Decrease the PLATTER's start time by adjusting the START TIME knob. (See "PLAYBACK CONTROLS".)
I'm experiencing software problems when running my finger along the NS7's / V7's STRIP SEARCH.	The STRIP SEARCH sensor isn't meant to receive information in a "continuous" fashion (i.e., running your finger across it).	Only use the STRIP SEARCH as if you were dropping a needle on a record – touch it at only one point at a time. To scroll/scrub through the track, spin the PLATTER instead.
The auto-BPM reading for a track is incorrect.	The software's BPM Range is not properly set for your track's tempo. (The BPM Range is restricting what BPMs are allowed.)	With the NS7 / V7 disconnected, set the software's BPM Range to an appropriate range that will allow the BPMs you want, then rebuild the overview for that track. (See "Auto-BPM" section.)
	Your track's rhythm is very syncopated or has bass drum or snare drum hits in odd places, causing a BPM miscalculation.	Manually tap a tempo for the track by pressing the Deck's TAP button (on the NS7 / V7) in time with the track.

For more information, visit: **http://www.numark.com/ns7**
http://www.numark.com/v7
http://www.numark.com/nsfx
http://www.serato.com/itch

TECHNICAL SPECIFICATIONS

NS7

ANALOG

SNR (Full Signal Path):

Balanced Outputs (XLR):	> 98 dB (A-weighted)
Unbalanced Outputs (RCA):	> 98 dB (A-weighted)
Headphone Outputs (1/4", 1/8"):	> 93 dB (A-weighted)

THD + N:

Balanced Outputs (XLR):	< 0.01% (A-weighted)
Unbalanced Outputs (RCA):	< 0.01% (A-weighted)
Headphone Outputs (1/4", 1/8"):	< 0.01% (A-weighted)

Maximum Output:

Balanced Outputs (XLR):	+ 26.3 dBu into > 1kΩ
Unbalanced Outputs (RCA):	+ 14.25 dBu into > 1kΩ
Headphone Output (1/4", 1/8"):	+ 19 dBu into > 32Ω

Frequency Response:	22 Hz – 22kHz (+0/-0.5 dB)

DIGITAL

Sample Rate:	44.1 kHz
Bit Depth:	24-bit

HARDWARE

(NS7 only, with assembled and mounted platters)

Weight:	35.5 lbs. (16.1 kg)
Dimensions (W x D x H):	30" x 15 7/8" x 3 7/8" (762 mm x 403.2 mm x 98.4 mm)

V7

DIGITAL

Sample Rate:	44.1 kHz
Bit Depth:	24-bit

HARDWARE

(V7 only, with assembled and mounted platter)

Weight:	16.3 lbs. (7.4 kg)
Dimensions (W x D x H):	12.5" x 14" x 3.8" (317 mm x 355 mm x 96 mm)

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