



Numark Scratch Two-Channel DJ Scratch Mixer User Guide

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Numark

Numark Scratch Two-Channel DJ Scratch Mixer



Introduction

Thank you for purchasing Scratch. At Numark, we know how serious music is to you. That's why we design our equipment with only one thing in mind—to make your performance the best it can be.

Box Contents

- Scratch Software Download Card
- Power Cable User Guide
- USB Cable Safety & Warranty Manual

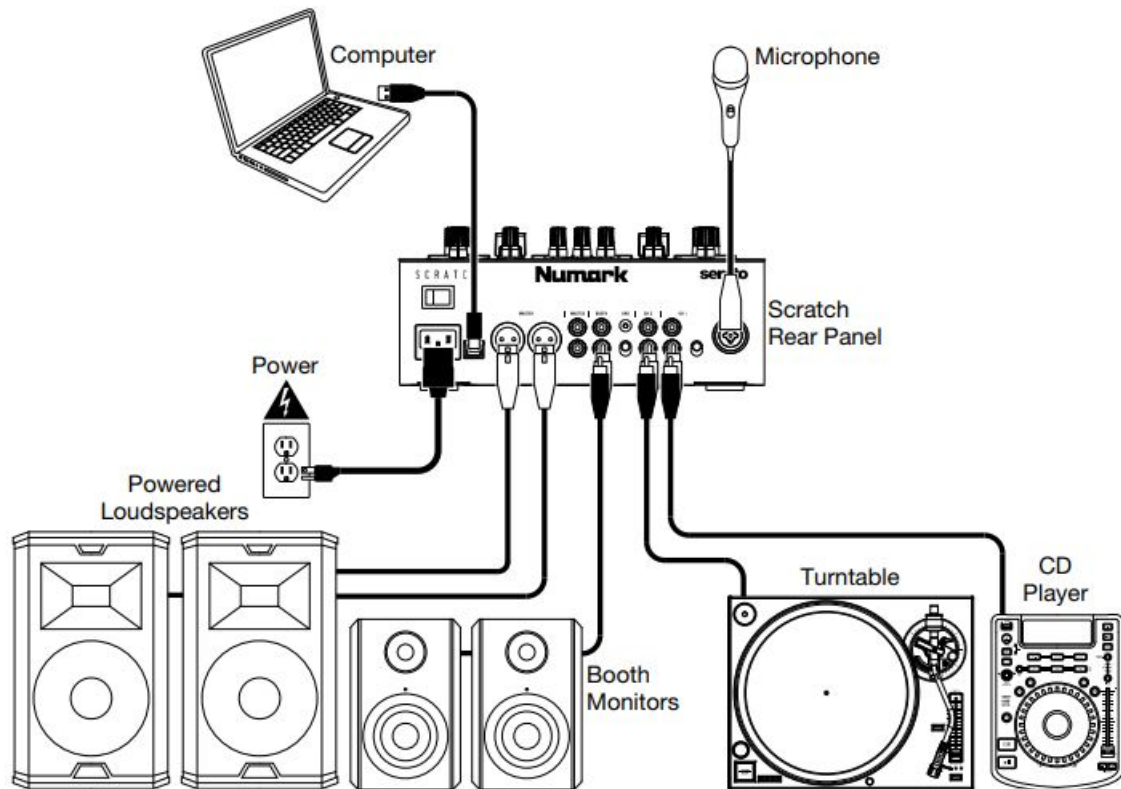
Support

For the latest information about this product (system requirements, compatibility information, etc.) and product registration, visit numark.com. For help using Serato DJ Pro with Scratch, visit Scratch's product page on numark.com. For additional product support, visit numark.com/support.

Setup

Connection Diagram

Items not listed under the Introduction > Box Contents are sold separately.



Software

This section will help get you started. Visit serato.com/dj/pro/downloads to download the Serato DJ Pro manual for software operating instructions.

Serato DJ Pro Software Installation for Mac OS X

- Follow the link on your Software Download Card to download the latest version of Serato DJ Pro.
- Browse using Finder to the location where the Serato DJ Pro download was saved.
- Double click the Serato DJ Pro .dmg installer file.
- The software EULA screen will appear—read the License Agreement, then click Agree.
- The disk image mounts and opens the actions folder.
- Drag the Serato DJ Pro application icon to the Applications folder alias.
- You may then need to enter your User Password to authenticate.
- Serato DJ Pro will now copy to the Applications folder, once this is finished you can unmount the disk image and launch Serato DJ Pro.

Serato DJ Pro Software Installation for Windows

- Follow the link on your Software Download Card to download the latest version of Serato DJ Pro.
- Browse using Windows Explorer to the location where the Serato DJ Pro download installer was saved.
- Double click the Serato DJ Pro .exe installer file.
- Accept the Security Warning and click "Run".
- The installer introduction screen will appear, click Next.
- Read the License Agreement, then tick "I agree to the license terms and conditions," then click Install.
- If a User Account Control window appears, click Yes.
- Serato DJ Pro will now perform a standard installation.

- The installation is now complete. You can now click Close.

Note: A shortcut will be created on the desktop.

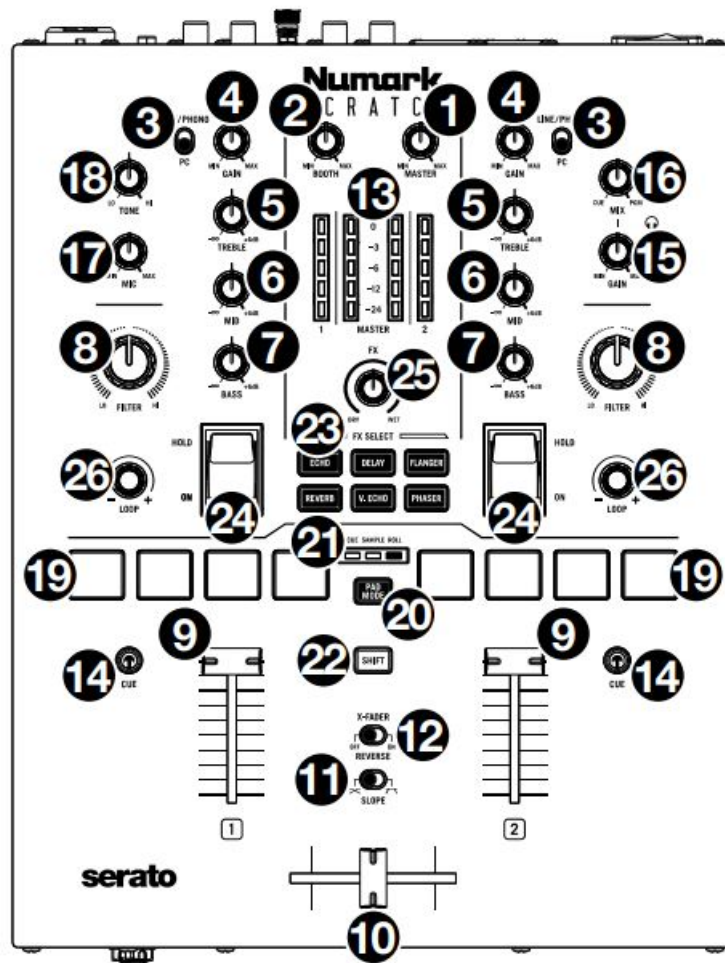
DVS (Digital Vinyl System)

Scratch is DVS enabled, which allows you to control a track in Serato DJ Pro with a turntable or CD player connected to Scratch.

Note: To use DVS with Scratch, you need to purchase Serato NoiseMap™ control records or CDs. See Operation > Using DVS with Scratch for DVS setup details.

Features

Top Panel



- **Master Volume Knob:** Turn this knob to adjust the output volume of the Master Outs. The VU Meters indicate the signal's volume level.
- **Booth Knob:** Turn this knob to adjust the output volume of the Booth Outs.
- **Deck Input Selector:** Use this switch to determine the audio source for the deck. When set to PC, the deck will receive audio from the corresponding channel in your DJ software. When set to Line/Phono, the deck will receive audio from the device connected to that deck's Line/Phono Input (such as a turntable or CD player).
- **Deck Gain:** Turn this knob to set the pre-fader, pre-EQ audio level of the corresponding deck. The VU Meters indicate the signal's volume level.
- **Deck EQ Treble:** Turn this knob to adjust the high (treble) frequencies.
- **Deck EQ Mid:** Turn this knob to adjust the mid-range frequencies.

- **Deck EQ Bass:** Turn this knob to adjust the low (bass) frequencies.
- **Deck Filter:** Turn this knob to adjust the filter applied to the deck. Turn the knob counterclockwise to apply a low-pass filter (LO). Turn the knob clockwise to apply a highpass filter (HI). Set it to the center ("12:00") position to deactivate the filters.
- **Deck Fader:** Move this fader to adjust the volume level of the corresponding deck.
- **Crossfader:** Move this fader to mix between the decks.
- **Slope:** Adjusts the slope of the crossfader curve. Flip this switch to the left for a smooth fade (mixing) or to the right for a sharp cut (scratching).
- **X-Fader Reverse:** Adjusts the setting for the left and right positions of the crossfader. When this switch is set to Off, Deck 1 will be assigned to the left side of the crossfader, while Deck 2 will be assigned to the right. When this switch is set to On, Deck 1 will be assigned to the right side of the crossfader, while Deck 2 will be assigned to the left.
- **VU Meters:** Monitors the audio levels. The Channel Level Meters (1 and 2) display the audio signal level of the deck. The Master Level Meters (Master) display the audio signal level of the master mix (sent out of the Master Outputs).
- **PFL/Cue:** Press this button to send this channel's pre-fader signal to the Cue Channel for monitoring through the Headphone Outputs. By pressing one Cue button at a time, you will cue that channel alone (and deactivate PFL monitoring for the other channel). To cue to both channels simultaneously, press the Cue buttons for both channels at the same time. The Cue button will light up when the corresponding deck's audio is being sent to the cue channel; otherwise, it will not be lit.
- **Cue Gain:** Turn this knob to adjust the volume level of the Headphone Outputs.
- **Cue Mix:** Turn to mix between the cue channel and program mix in the Headphone Outputs. When all the way to the left, only the cue channel will be heard. When all the way to the right, only the program mix will be heard.
- **Mic Level:** Turn this knob to adjust the gain of the Mic Input.
- **Mic Tone:** Turn this knob to adjust the balance of bass (LO) and treble (HI) frequencies in the audio signal coming from the Mic Input.
- **Performance Pads:** These pads on each deck have different functions depending on the current pad mode. See Operation > Pad Modes to learn how to use the pads in each mode.
- **Pad Mode Button:** Press this button to cycle through the three pad modes: Cue, Sample, and Roll. See Operation > Pad Modes to learn how to use the Performance Pads in each mode.
- **Pad Mode Indicators:** Displays which pad mode is selected. The LED corresponding to the currently selected pad mode will be lit.
- **Shift:** Use this button to access secondary controls of the Performance Pads and Loop Knob.
- **Software FX Buttons:** Press one of these buttons to select the corresponding software effect (Echo, Delay, Flanger, Reverb, Version Echo, or Phaser). Once the effect is selected with the Software FX button, it can then be applied to one or both decks with the Effects Toggles. The Software FX button LED will be dim when its corresponding effect is not selected. It will be lit solid when its corresponding effect is selected, and it will flash when the effect is activated with one or both Effects Toggles.
- **Effects Toggles:** You can use these toggles to activate effects on a deck. When the toggles are in the center position, all selected effects are deactivated. To momentarily apply software effects to a deck, pull that deck's Effects Toggle down and hold it in place. While you hold the toggle down, the effects will be activated. When you let go of the toggle, it will automatically return to the center position, and the effects will be deactivated. To latch software effects on a deck, push that deck's Effects Toggle into the up position. The toggle will lock into

place, and the effects will be activated. To deactivate the effects, pull the toggle back into the center position.

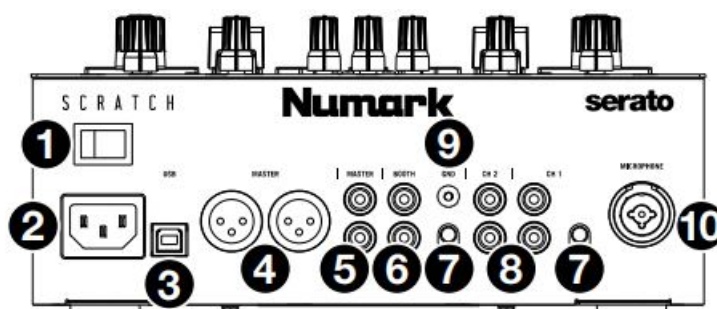
- **FX Mix:** Controls the amount of effected (Wet) vs. non-effected (Dry) sound in the mix.
- **Loop Knob:** Press this knob to activate an auto-loop on the corresponding deck. Turn the knob left to decrease the length of the loop and right to increase the length of the loop. Press the knob again to deactivate the loop. Hold Shift while rotating this knob to scroll through lists of tracks, crates, etc. in Serato DJ Pro. Hold Shift and press this knob to load the currently highlighted track to the corresponding deck. Hold Shift and quickly double-press this knob to load the currently highlighted track to both decks (creating “instant doubles”)

Front Panel



- Headphone Outputs (1/4", 1/8" / 6.35 mm, 3.5 mm, TRS): Connect your 1/4" or 1/8" (6.35 mm or 3.5 mm) headphones to this output for cueing and mix monitoring.

Rear Panel



- **Power Switch:** Use this switch to power Scratch on or off. Power on Scratch only after you have connected all of your input devices and before you power on your amplifiers and loudspeakers. Power off your amplifiers and loudspeakers before powering off Scratch.
- **Power Input:** While Scratch is powered off, connect the included power cable to this input and then to a power outlet.
- **USB Port (USB Type-B):** Use a USB cable to connect this USB port to an available USB port on your computer. This connection sends and receives audio and MIDI control information to and from the computer.
- **Master Out (XLR):** Connect this output to loudspeakers or an amplifier system. The program mix will be sent to this output. Use the Master knob on the top panel to control the volume level.
- **Master Out (RCA):** Connect this output to another mixer, recording device, etc. The program mix will be sent to this output. Use the Master knob on the top panel to control the volume level.
- **Booth Out (RCA):** Connect this output to booth monitors or a booth amplifier system. Use the Booth knob on the top panel to control the volume level.
- **Line/Phono Inputs (RCA):** Connect these inputs to a turntable, CD player, or other line/phono-level device. Remember to set the Line/Phono Selector for the corresponding deck to the appropriate position and to set the Deck Input Selector for that deck to Line/Phono. While these inputs allow you to mix audio from external

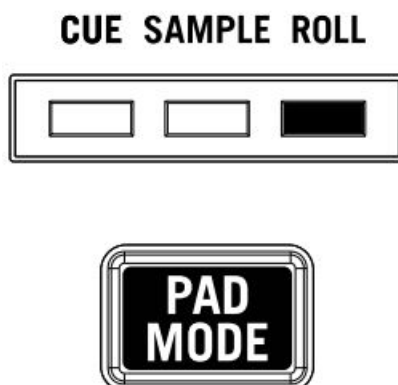
devices without a computer, they also allow you to use a turntable or CD player to control the playhead in Serato DJ Pro. See Operation > Using DVS with Scratch for more information.

- **Line/Phono Selector:** Set this switch to the appropriate position for the device connected to the corresponding deck's Line/Phono Input. If you are using phono-level turntables, set this switch to Phono to provide the additional amplification needed for phono-level signals. If you are using a line-level device (such as a line-level turntable, CD player, or sampler), set this switch to Line.
- **Phono Ground:** If you are using a phono-level turntable with a grounding wire, connect the grounding wire to this terminal. If you experience a low “hum” or “buzz,” this could mean that your turntable is not grounded.
Note: Some turntables have a grounding wire built into the RCA connection and, therefore, nothing needs to be connected to the grounding terminal.
- **Mic Input (XLR / 1/4” TS):** Connect a microphone or line-level device to this mono input. Use the Mic Level knob on the top panel to control the volume level.

Operation

Pad Modes

Each deck has four pads, which are always in one of three modes: Cue, Sample, or Roll. Press the Pad Mode button to change the pad mode. The corresponding Pad Mode Indicator will light up to display which mode is selected.



Cue

In Cue Mode, each pad assigns a hot cue point or returns the track to that hot cue point. To assign a hot cue point, press an unlit Pad at the desired point in your track. The pad will light up when it is assigned.

Note: If you load a track in your software that already has hot cue points saved, the corresponding pads will automatically be lit and assigned those hot cue points. To jump to a hot cue point, press a lit Pad. To delete an assigned hot cue point, press Shift and the corresponding pad.

Sample

In Sample Mode, the pads will control the sampler in the software. The pads each trigger a sample at a specified volume (you can assign the sample and its volume in the software). To assign a sample, first highlight the desired sample in your library. Then hold Shift and press an unlit pad corresponding to an empty sampler slot in the software. The sampler slot volume can be adjusted in Serato DJ Pro. To play a sample, press a lit pad. The pad will flash as the sample plays. To stop playback of a sample, press Shift and the corresponding Pad while it plays.

Roll

In Roll Mode, each pad triggers a momentary loop roll. Releasing the pad stops the loop roll and resumes normal

playback where the playhead would be if you had not triggered the loop roll (as if the track had been playing forward the whole time). To trigger a loop roll, press and hold any Pad. The length of the loop will be based on which of the four pads you press (leftmost for the shortest loop; rightmost for the longest loop). You can change which loop lengths are available in your DJ software, and the Performance Pads on Scratch will adjust accordingly

Using DVS with Scratch

With DVS (Digital Vinyl System), you can use a turntable or CD player to control the playhead on a channel in Serato DJ Pro. This allows you to get the classic feel of a vinyl record or CD while still playing audio from your computer.

Note: Before using DVS, you need to have Serato control records for your turntable or control CDs for your CD player (both sold separately). Serato control records and CDs are pressed with an audible tone specifically developed for controlling Serato DJ Pro. They can be purchased at retail stores or at store.serato.com. You can also make a control CD by burning the appropriate file to a blank CD-R disc. To download the file, go to serato.com/controlcd.

Configuring DVS

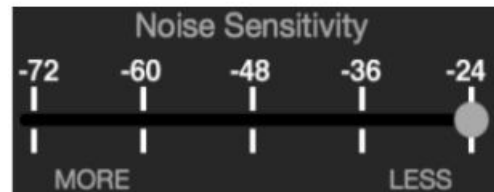
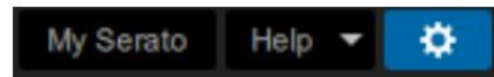
To use DVS with Scratch, first connect a turntable with control record or a CD player with control CD to one of the Line/Phono Inputs. Disable all built-in effects on the CD player, including keylock/master tempo. Make sure that the deck's Line/Phono switch is set to the correct position and that the Deck Input Selector for that deck is set to PC. Additionally, make sure that your computer is running Serato DJ Pro and connected to Scratch via the USB port. The Serato DJ Pro channel that you control will be the one corresponding to the mixer deck to which you've connected the turntable or CD player (deck 1 or 2). Once everything is properly connected, you then need to calibrate Serato DJ Pro for your turntable or CD player. This should be done every time you set up your equipment to use DVS.

To calibrate Serato DJ Pro:

- Play music from Serato DJ Pro as loudly as you would during your DJ set. Play the music from a channel different than the one you will control with your turntable or CD player.
- If you are using a turntable, put the needle on the control record with the turntable stopped. If you are using a CD player, make sure that the control CD is paused or stopped. Also, set the Serato DJ Pro channel you plan to control to ABS or REL mode by clicking the drop-down menu in the top corner of the virtual deck area (see Playback Modes for more details on the modes).
- Click the gear icon near the top right corner of Serato DJ Pro to open the Setup screen.
- In the Setup screen, click and hold the Estimate button until the Noise Threshold Slider stops moving. The lower the noise threshold, the more sensitive Serato DJ Pro will be to record movement and background noise.

Note: If you are using a turntable and the Noise Threshold Slider is jumping to the right (meaning the noise threshold is high), make sure that your turntable is properly grounded.

- Start playing your control record or control CD. When you do, you will see green rings appear in Scope View on the Serato DJ Pro Setup screen.
- Monitor the shape of the rings while your control record or control CD is playing. The inner ring should be as close to circular as possible. You can use the Scope Zoom Slider to zoom in or out as necessary. Use the Scope L/R balance and P/A balance controls in the Setup screen to adjust the shape of the inner ring, aiming to make it as circular as possible.



To determine whether the calibration was successful: Check the percentage of readable signal, which is listed on the bottom right of Scope View; it should be close to 85%. Also, with the control record or control CD stopped (and the needle on the control record), check the RPM, which is listed in the top right corner of Scope View; it should read 0.0.

If the RPM is fluctuating: move the Noise Threshold Slider until the RPM is stable at 0.0. If this does not work, there is a grounding or interference problem. Make sure that your turntable is grounded, that your hardware is not near a power source, and that your RCA cables are not laying across other power conducting cables. To use DVS with both Scratch decks: repeat the calibration process for the other deck on Scratch.

Playback Modes

With DVS, each channel in Serato DJ Pro can be operated in ABS (Absolute), REL (Relative), or INT (Internal) Mode. Each mode affects how your turntable or CD player will control the play head of its corresponding channel in Serato DJ Pro. In particular, choosing between ABS and REL will affect how you can work your turntable.

In ABS mode, the play head in Serato DJ Pro will be affected by the movement of the turntable needle as well as the movement of the control record while scratching. This way, the turntable in ABS mode mimics the operation of classic vinyl DJing. If you move the needle to a specific point on your control record, the play head in the Serato DJ Pro channel will jump to the corresponding point in the song. This means that hot cues and loops will be

disabled; if you want to jump to a certain point in the song, you need to use the needle.

In REL mode, the play head in Serato DJ Pro will be affected by the movement of the control record while scratching; however, the play head will not be affected by the movement of the turntable needle. If you reposition the needle and a song is playing on the Serato DJ Pro channel, the song will continue playing regardless of where you place the needle. This mode makes it possible to scratch a record while still being able to use the hot cue and loop functions in Serato DJ Pro. Also, if the needle skips while you're scratching in REL mode, it will not affect the playback of the song.

In INT mode, the control record or control CD is disabled from controlling the corresponding channel in Serato DJ Pro. To select the playback mode for a Serato DJ Pro channel, click the drop-down menu near the number of the channel in Serato DJ Pro, which is in the top corner of the virtual deck area (top left for channel 1; top right for channel 2). Then select between ABS (Absolute), REL (Relative), and INT (Internal). Alternatively, you can use the following keyboard shortcuts to enter one of the modes:

- **ABS mode:** F1 for the left deck, F6 for the right deck
- **REL mode:** F2 for the left deck, F7 for the right deck
- **INT mode:** F3 for the left deck, F8 for the right deck

Note: If you are operating in ABS or REL mode and the control record or control CD finishes playing before the corresponding song finishes in Serato DJ Pro, the channel will automatically switch into INT mode. This state is temporary and known as "Emergency Internal Mode." Once you start playing the control record or control CD again, Serato DJ Pro will automatically switch back into ABS or REL mode.

Technical Specifications

Phono Inputs (RCA)	
Frequency Response	RIAA Curve
Signal-to-Noise Ratio	99 dB (A-weighted, max input level)
THD+N	0.01% (1 kHz, -3 dB input)

Other Specifications	
USB	USB 2.0 High-Speed
ADC / DAC	24-bit, 48 kHz
DSP	32-bit fixed point
Drivers	PC: ASIO and Windows Audio Mac: UAC2 Class Compliant (no add'l driver needed)
Power Input	Typical: 120 VAC / 240 VAC / 50 Hz / 60 Hz Auto-Switching

Master Outputs (balanced XLR)	
Frequency Response	20 Hz – 20 kHz (± 0.2 dB)
Signal-to-Noise Ratio	108 dB (A-weighted, max output)
THD+N	0.007% (1 kHz, -1 dBFS)
Maximum Output Level	+20 dBu
Output Impedance	300 Ω

Master and Booth Outputs (RCA)	
Frequency Response	20 Hz – 20 kHz (± 0.2 dB)
Signal-to-Noise Ratio	107 dB (A-weighted, max output)
THD+N	0.005% (1 kHz, -1 dBFS)
Maximum Output Level	+6 dBV (2 Vrms)
Output Impedance	300 Ω

Headphone Outputs (1/4" and 1/8" TRS)	
Frequency Response	20 Hz – 20 kHz (± 0.2 dB)
Signal-to-Noise Ratio	108 dB (A-weighted, max output, unloaded)
THD+N	0.005% (1 kHz, 10mW per channel into 32)
Maximum Output Level	+14 dBu (unloaded)
Power Output	115 mW RMS (per channel into 32 Ω)
Output Impedance	32 Ω

Line Inputs (RCA)	
Frequency Response	20 Hz – 20 kHz (± 0.3 dB)
Signal-to-Noise Ratio	102 dB (A-weighted, max input level)
THD+N	0.008% (1 kHz, +6.8 dBV, -1 dBFS)
Max Input Level	+7.8 dBV (2.45 Vrms)
Input Impedance	47 k Ω

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Documents / Resources

	Numark Scratch Two-Channel DJ Scratch Mixer [pdf] User Guide Scratch, Two-Channel DJ Scratch Mixer, DJ Scratch Mixer, Scratch Mixer, Scratch, Mixer
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References

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