INPHONIK

RX950

CLASSIC AD/DA CONVERTER

V 1.1.2

Table of content

RX950

CLASSIC AD/DA CONVERTER

Introduction

FOREWORD

Does the Akai S950 need an introduction? If you're reading these pages, probably not. Also, you probably already know the holly reputation this iconic sampler, released in 1989, still has today.

Personnally, I had the chance to learn to use one of these when I was 7. At the time, I was fascinated by the ease of use of this hefty machine for seamlessly playing back anything we would throw into it (not to mention the « reverse » feature that is quite hilarious to play with when you're a child). Years later, I only heard about this device's sound characteristic its fans call the « grit ». And I eventually could personnally experience it. Yes, this instrument affects the sound. This is not an audio myth. Everybody talks about the 12-bit resolution. But is it all?

This simple question gave birth to the RX950. And to a whole year of work. Because it required a lot of precision and patience to gather such subtle ingredients.

FOR CURIOUS PEOPLE

The answer to our foreword's question is: no, the 12-bit resolution does not make it all. A disassembly and a long reverse engineering of our own S950 has revealed an actual poem of conception signed by Akai.

This sound « color » comes in particular from the gain applied to the input signal that is later generously filtered before being sampled. At this state, the spectrum is already nicely altered. Then comes the very analog-to-digital conversion with a 12-bit resolution (which is all by itself an actual masterpiece that we managed to replicate). During playback, the sound, converted back to analog is affected by a last filter whose the frequency cut depends on both the playback setting, but also on the bandwidth setting while recording. This allows to reduce aliasing artifacts as much as possible, thanks to, in particular, the use of 6th-order Butterworth low-pass filters.

At each step, it has been fascinating to note that Akai's ambition had obviously been restrained by technical limitations (as well as costs) at the time, but in any case these issues were solved in a musical way.

We hope you'll love to play with our plug-in as much as we had pleasure to develop it.

Sincerely,
Mathieu Demange & William Lamy

INPHONIK

Installation

VST2, VST3, NKS, AUDIO UNIT, AAX

https://www.inphonik.com/products/rx950-classic-ad-da-converter/

Windows   Minimal requirements: Windows Vista (64-bit) and higher
macOS   Minimal requirements: macOS 10.7 (64-bit) and higher
Linux   Minimal requirements: a 64-bit distro

1. Download the installation program from your order confirmation email
2. Run the installation program
3. Choose the desired plug-in versions
4. Run your DAW and find the RX950 in the effects list

RACK EXTENSION (REASON STUDIOS)

https://www.reasonstudios.com/shop/rack-extension/rx950-classic-adda-converter/

Windows / macOS Minimal requirements: Reason v7.1 and higher

1. Download the RX950 from the Propellerhead Shop
2. Recommanded: sync your Rack Extensions for offline use
3. Run Reason and fin the RX950 in the effects list

AUv3 / IAA

https://itunes.apple.com/app/rx950-classic-ad-da-converter/id1406136418

iPhone / iPad / iPod Touch   Minimal requirements: iOS 9.3 and higher

1. Download the RX950 from the App Store
2. Run the RX950 or open it as an effet from a third-party musical app.

Customer support

Thank you so much for buying our product!

We swear we won't let you down if your have questions:

- Read our FAQ,
- Contact us for any information,
- Report a bug...

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The RX950

The **RX950 Classic AD/DA Converter** is an effect plug-in designed to be used in your DAW running on Windows, macOS or iOS.

The RX950 has been **designed to give your sound the unique color, the warmth and grit of the Akai S950 sampler**. Indeed, this iconic sampler from the end of the 80's was famous for its musical qualities, and even if the hi-fi standards weren't entirely met, it induced **a soft saturation, a 12-bit resolution, a subtle aliasing effect and a low-pass filter everyone recognize**. These are all the qualities you can expect from a real music instrument that played its part in the birth of major music genres like hip hop and house music.

To perform the entire range of these characteristics, the RX950 follows, step by step, every stage of audio processing of the original machine, as if your sound had been sampled then played back in real time:

- Line input
- Analog gain
- Pre-filtering
- A/D conversion
- D/A conversion
- Post-filtering
- Line output

Our own S950 has been paintaskly studied and its sound thoroughly compared in order to obtain these unique sound capabilities.

The RX950 is used :

- to process separate tracks (beats, basslines, synth parts, loops...)
- to process the master output bus of your entire composition
- to process wet signals of your delays or reverbs
- to process things we probably don't know yet.

We hope that the RX950 will give you full satisfaction, and that as a connaisseur (or not) of the legendary sampler our plugin is inspired of, you'll like the sound of it and the creative possibilities it offers.

The interface
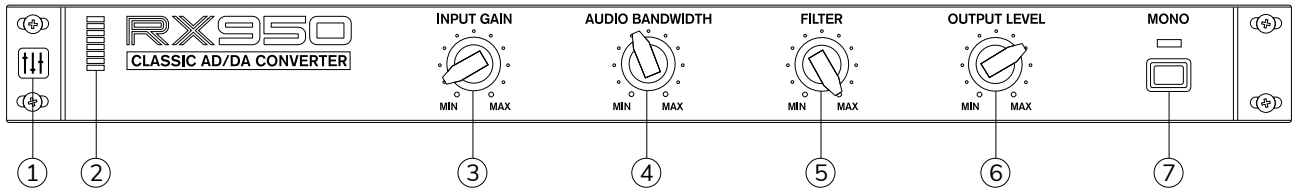
1. **Settings button (all versions except Rack Extension)**
    Access graphical interface scaling options
    Access sound brilliance knob setting
    Displays software version informations (useful for support requests)

2. **Input signal LED-meter**
    Monitors the input signal processed by the RX950

3. **Input gain knob**
    Adjusts the S950's characteristic soft saturation

4. **Audio bandwidth knob**
    Adjusts the sampling frequency circuitry

5. **Filter knob**
    Adjusts the low-pass filter's frequency cut

6. **Output level knob**
    Adjusts the final output level

7. **Mono toggle button**
    Operates a 50/50 mix of left and right channels for working in mono (as done by the S950)

The Input Gain knob

This knob adjusts the analog gain simulation for applying a non-linear, soft saturation. Its very high amplitude allows it to adapt to many types of sounds for giving them the famous S950's grit.

INPUT GAIN

MIN   MAX
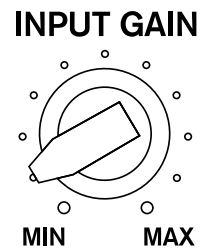
The Audio Bandwidth knob

This knob sets the sampling circuitry's bandwidth. It impacts the pre-filtering stage as well as the sampling frequency stricly speaking. Internally, this value is muliplied by 2.5 to obtain the sampling frequency (so the S950 was able to sample up to 19 200 x 2.5 = 48 KHz).
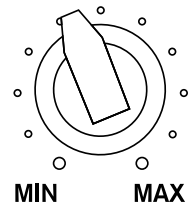
Note that the audio circuitry of the S950 induces a light boost in the upper spectrum. This can be heard when the Audio Bandwidth knob is set near its max values. You can enhance or tame this setting using the Brilliance knob in the Settings panel.

AUDIO BANDWIDTH

MIN   MAX

FINE-TUNING VALUES

To obtain more precise controls with the knobs, once the left mouse button is pressed, press simultaneously the Alt key (or Shift in Reason).
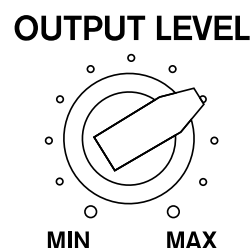

The Filter knob

This knob adjusts the S950's famous low-pass filter. It's a non-resonant 6th-order Butterworth filter.

FILTER

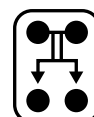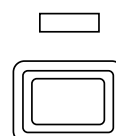MIN   MAX

The Output Level knob

This know sets the output level of the RX950, and allows for example to compensate an excessive input gain level.

OUTPUT LEVEL

MIN   MAX

The Mono button

This knows allows to toggle the plug-in's output in mono mode, by applying a 50/50 left and right channels mix. This process allows to work in the same conditions as on a S950, but is also a useful mixing tool (for detecting phase issues in particular).

MONO

Presets suggestions

|	INPUT GAIN	AUDIO BANDWIDTH	FILTER	OUTPUT LEVEL	MONO
Default settings	0.00	10000	99	0.00	OFF
Drums Fattener	10.40	12769	99	-6.85	OFF
Floppy Fire	17.69	19200	44	-10.35	ON
Golden Era	1.78	5866	97	-0.30	ON
Hi-Fi Brightness	1.39	19200	99	-2.34	OFF
Lo-Fi Goodness	1.39	7015	99	-2.34	OFF
Monomaniac	0.00	18079	65	0.00	ON
Party Inside	7.55	3000	0	-3.64	ON
Radio AM	18.29	9350	53	-12.18	ON
RAM Shortage	1.40	4676	99	-1.56	ON
Resampled	7.89	6687	59	-6.03	ON
Saturated Vox	18.29	9788	99	-12.87	ON
Sound System	8.94	19200	60	-6.17	OFF
Speaker Destroyer	19.54	5467	99	-10.51	OFF
Stone Deaf	12.10	9535	40	-4.93	ON
Street Cred	3.24	9009	63	-3.48	OFF
Subtle Warmth	1.68	13880	99	-1.71	OFF
Twelveness	2.83	3000	99	-1.24	ON
Vocal Thickener	11.95	12462	99	-7.72	OFF
Worn Out	4.32	4810	48	-1.37	OFF

The settings panel

(all versions except Rack Extension)

Display Scaling	Brilliance	Informations	
100% 150% 200% 250%		Plug-in Format: VST	Architecture: 64-bit
		Version: 1.1.1	Platform: macOS

①   ②   ③   ④
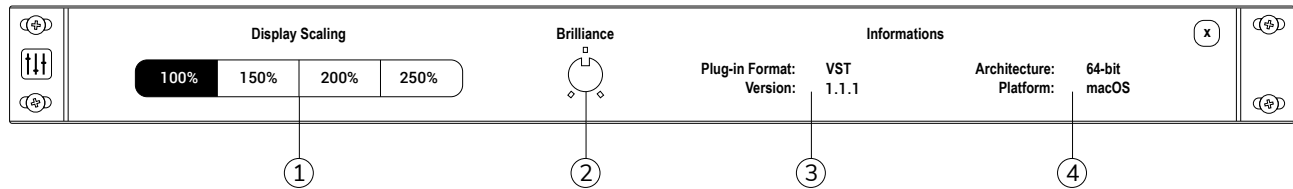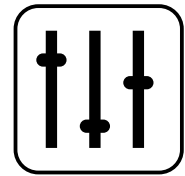
1. Display scale setting

If the RX950's graphical interface looks too small on screen, you can adjust its scale. Click the settings button on the left of the RX950 and choose a scaling factor from 100% to 250%.

2. Audio bandwidth Brilliance setting

This knob enhances or tames a light boost in the upper spectrum that can be heard when the Audio Bandwidth knob is set near its max values.

3. RX950 version informations

in order to check if you have the latest version.

4. System informations

to give us in any customer support request.

Parameter value keyboard typing

(all versions except Rack Extension)

If tweaking the knobs with your mouse is not precise enough for you, you can manually type the parameters with your keyboard.

1. Double-click on a knob to pop-up an input field
2. Type in a value
3. Confirm with the Enter key

Note : You don't have to type the units (Hz or dB)

The back panel

(Rack Extension version only)
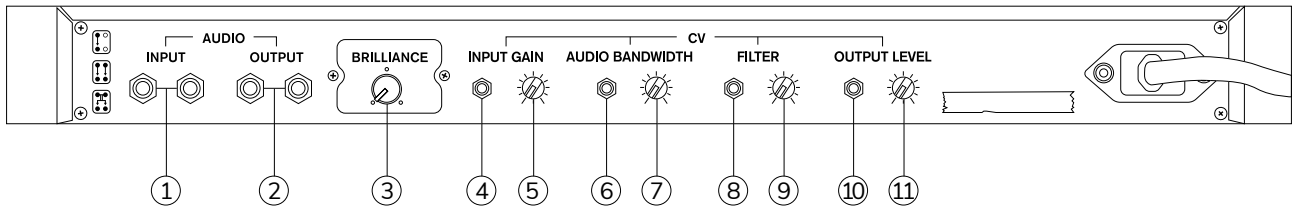
1. Stereo audio input
2. Stereo audio output
3. Audio bandwidth brilliance knob
4. Input gain CV input
5. Trim knob for input gain CV input
6. Audio bandwidth CV input
7. Trim knob for audio bandwidth CV input
8. Filter CV input
9. Trim knob for filter CV input
10. Output level CV input
11. Trim knob for output level CV input

MIDI Control Change control table

(Rack Extension version only)

Control	MIDI CC
Input gain	CC 12
Audio Bandwidth	CC 13
Filter	CC 14
Output Level	CC 15
Mono	CC 16

Default NKS controls

(VST version with compatible Native Instruments controllers)

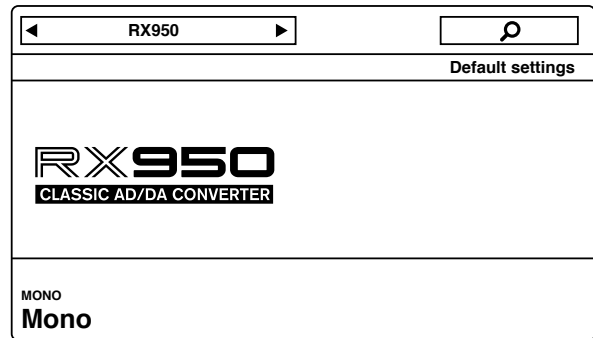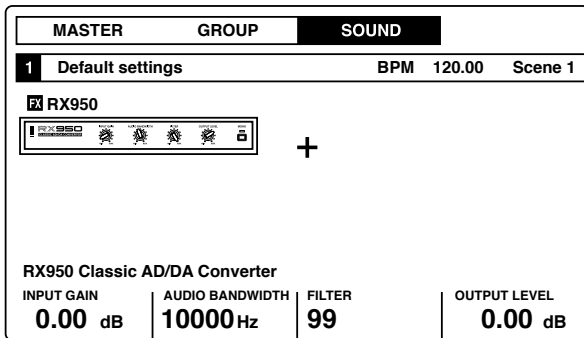| MASTER	GROUP	SOUND

1 Default settings BPM 120.00 Scene 1

RX RX950

+

RX950 Classic AD/DA Converter

INPUT GAIN	AUDIO BANDWIDTH	FILTER	OUTPUT LEVEL
0.00 dB	10000 Hz	99	0.00 dB

◄ RX950 ► 🔍

Default settings

RX950
CLASSIC AD/DA CONVERTER

MONO
Mono

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Last updated: March 07, 2018

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contact@inphonik.com
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The Akai brand and the S950 product name are the property of Akai and are in no way associated or affiliated with Inphonik and the software RX950 Classic AD/DA Converter.

Logos of VST, NKS, Audio Units, AAX, Rack Extension and iOS are the property of they respective brands.

Protect your ears. Exposing them to high-pressure acoustic levels is a severe risk for your audition.

Credits & Thanks

The RX950 Classic AD/DA Converter has been conveived, concepted and produced by Inphonik, and co-designed by Inphonik and William Lamy. Visuals and the RX950 logo have been produced by William Lamy.

THANK YOU!

Joey Luck, Noel Gonzalez, Mats Karlof, Dwayne Smith, Myron Reese, James Flamestar, Pierre Doursout, Marco Raaphorst, Luc Leroy, Quincy Valentine, Michel Desangles, Yoann Turpin, Francis Demange, Thomas Demange, Miguel Randriana, Hervé Honoré, Emmanuel Oriol, Charlie Davis-Miller, Rembert Gantke, Ramon Pankert, Faheem Hasan, Alan Platten, Ed Gray.

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