Roland

OCTA-CAPTURE

Hi-Speed USB Audio Interface

Technology Overview

Rear view

- 10 inputs, 10 outputs, resolution up to 24-bit/192 kHz, USB 2.0 connectivity
- Eight-channel mic preamp section equipped with newly developed VS Preamps for pristine sound
- AUTO-SENS feature automatically sets the optimal input levels for all eight mic channels
- Lightweight and compact body makes it easy to record anywhere
- VS Streaming, Roland's advanced audio streaming technology, delivers superior audio stability with unprecedented low latency

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Eight channels with VS Preamps for pure, transparent sound

OCTA-CAPTURE is the embodiment of Roland's commitment to excellence in music production. Designed to capture audio at a level of quality that will satisfy even the most demanding professionals, OCTA-CAPTURE features VS Preamps on its eight analog inputs. Built with a Class A design for superb audio performance, these microphone preamps are based on those that have become a trusted part of Roland's V-Mixer series of commercial digital consoles, as well as the V-STUDIO 700 high-end DAW system. VS Preamps feature a rich array of premium components that help maintain the purity and transparency of the sound, including radial capacitors designed specifically for audio applications. As a result, they achieve an astonishing input-equivalent noise level of -123 dB, among the very best in their class. Another characteristic of VS Preamps is their even balance of sound reproduction over the entire frequency range, from ultra lows to extreme highs. This lets you record sources with no unwanted coloring of the original sound.

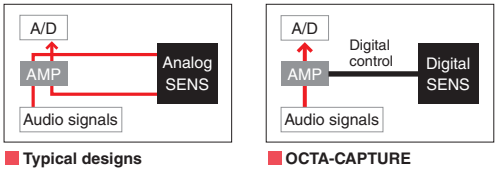
VS PREAMP

What is Class A circuitry?

Amplifier circuitry is classified into different "classes" depending on the performance characteristics of its design. Class A distinguishes itself by utilizing 100% of the current flow in its linear range at all times. What this means to musicians is that this simple design ensures a stronger, hotter current draw with audio performance that tends to have more sonic detail and less distortion.

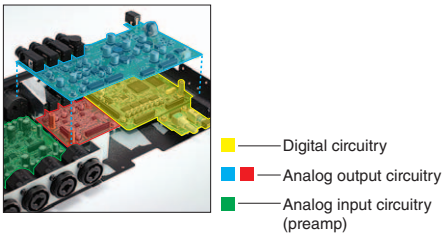
Minimal analog circuitry reduces unwanted noise

In order to achieve excellent sound quality, designers must simplify a circuit's design as much as possible to prevent audio quality deterioration from undesirable signal-path routing. To this end, OCTA-CAPTURE's design has eliminated as much analog circuitry as possible for controlling parameters such as input level, impedance, and phase reversal, as well as low-cut filters and compressors. All of these parameters are controlled digitally with the built-in DSP, reducing the amount of analog circuitry not related to amplification, and therefore minimizing unnecessary variations in sound. The LED level meter and peak indicator are controlled by the DSP as well; this is a great advantage, not only in terms of reducing the effects of analog circuitry on sound quality, but also in ensuring accurate meter readings.



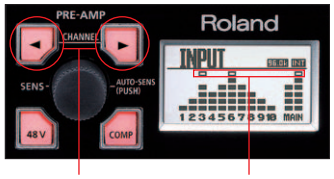
Specially designed low-noise power circuitry

In OCTA-CAPTURE, the analog input and output circuitry and digital circuitry are all completely isolated from each other on the circuit board level. Each board has its own power supply, which helps reduce noise and keeps crosstalk to a minimum. Needless to say, wiring runs have been significantly reduced. Independent of the analog input circuitry, OCTA-CAPTURE comes with a large-capacity power supply that is dedicated to supplying phantom power. This enables consistent recording performance, even when power must be supplied to eight microphones at once or when using mics that require large amounts of power.



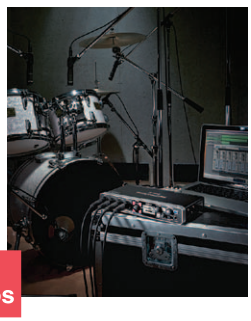
Large LCD with peak indicator

OCTA-CAPTURE's front panel is equipped with a large, easily visible LCD with level meters. These meters allow you to make fine adjustments to your input levels, with a peak-hold function for checking peak levels on all channels at once. The Channel Select switch to the left of the LCD doubles as a peak lamp; it flashes red when any channel's peak level is exceeded, allowing you to instantly recognize excessive input levels from a distance.

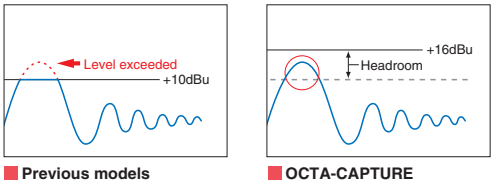


Pro features for perfect multi-mic recordings

With its eight mic preamps, OCTA-CAPTURE shows its mettle in multi-mic applications like recording drums or full bands. The input level specs for Channels 7 and 8 have been optimized for extremely dynamic sound sources with high peak levels such as kick drums; the extra headroom (up to +16dBu) available on these channels helps prevent clipping and other recording problems. OCTA-CAPTURE also features independent compressors on its eight analog inputs to control the dynamics of difficult sound sources, ensuring solid recordings with clear sound and consistent levels.



8 Mic preamps



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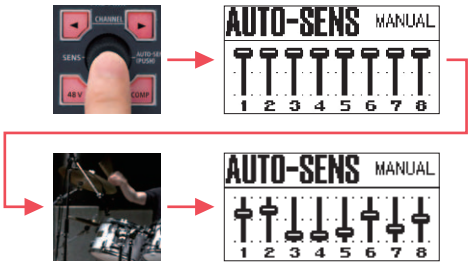
AUTO-SENS automatically sets the input level for each channel

Setting optimum recording levels is an indispensable part of capturing high-quality recordings. If input levels are too high, the sound will distort; if levels are too low, you lose the advantage of the excellent resolution afforded by digital recording, and the sound suffers from signal-to-noise ratio deterioration. To solve these issues, OCTA-CAPTURE is equipped with a newly developed "AUTO-SENS" function, which makes it quick and easy for even novice users to set the optimum level for a particular sound source. With AUTO-SENS, all you have to do is press a button, supply sound input, and the built-in DSP will analyze the sound and set the optimum input level. In addition to Manual mode, where the DSP begins analyzing when you press the button and stops when you press it again, you can also define a preset analysis time of 30 seconds, 1 minute, 3 minutes, or 5 minutes. This revolutionary function is a real time-saver in recording sessions where setup time is limited.

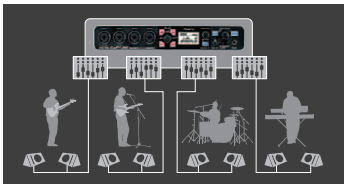


Press the AUTO-SENS button, play the connected instruments, and OCTA-CAPTURE automatically sets the perfect recording levels.

High-performance DSP onboard with support for four discrete mixes

With OCTA-CAPTURE and its high-performance DSP boasting 40-bit internal processing capability, you can use up to four digital mixers in two different categories (input mixer and output mixer) without tasking your PC. With these "direct mixers," you're able to directly output any connected source without routing it through your DAW program, and also tweak your sounds using OCTA-CAPTURE's built-in digital reverb and compressor. You can provide four independent latency-free mixes for performers, with different source volumes and dry-wet balances to suit the preferences of each musician. Each digital mixer also features a patch bay, which allows you to route your outputs for various applications and save these settings on your PC.

Direct mixer control



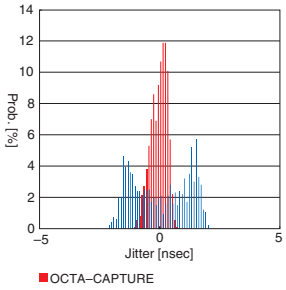
Four discrete mixes

VS Streaming achieves extreme low-latency recording

OCTA-CAPTURE embodies the ideal vision of next-generation audio interfaces, and Roland's latest "VS Streaming" audio-streaming technology is another feature that underscores its exceptional advantage. OCTA-CAPTURE incorporates a high-performance crystal master clock, providing a fundamental solution to "jitter" (time-based fluctuations of the clock) that causes latency and other issues. By syncing the digital circuitry, driver, and DAW program to this clock, jitter is reduced to a minimum, allowing the flow of audio data to be controlled by constant amounts. This results in an optimized buffer size, achieving latencies as low as 48 samples at 44.1/48 kHz, or approximately one millisecond with an ASIO driver. VS Streaming is a technological marriage between hardware and driver, achieving low latency, clear sound quality, and rock-solid performance that has been long sought-after in the field of music production, yet previously unobtainable.

VS STREAMING

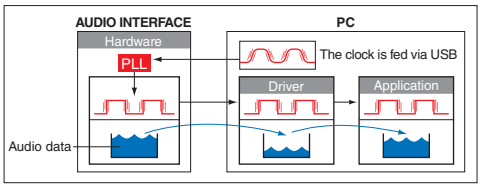
VS Streaming is Roland's innovative audio-streaming technology that achieves super-low latency, excellent sound quality, and high performance by syncing the entire system (driver and hardware) to a high-precision dedicated clock.



Comparison of jitter

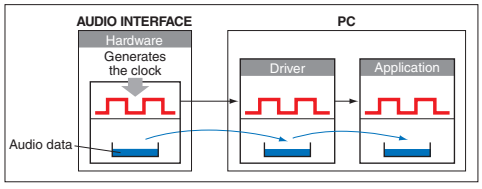
The horizontal axis of the graph shows the reference value for measurements, with 0 nsec at the center to show the degree of jitter (clock fluctuation) on the scales to the left and right. The vertical axis shows numerical values of the probabilities (as percentages) that jitter can occur under normal use. Based on this comparison with a competing product, these probabilities for OCTA-CAPTURE are most pronounced in the 0 nsec area, which is an indication that it delivers extremely low jitter.

Typical designs



All components (audio interface, driver, DAW, etc.) sync with the clock generated on the PC. Clocks generated on PCs are inherently not very precise, as they are affected by the PC's performance and operating conditions. This results in jitter (time-based fluctuations of the clock), which in turn destabilizes the flow of audio data, resulting in latency and unclear sound.

OCTA-CAPTURE



All components are synced to the high-performance crystal on OCTA-CAPTURE instead of the clock generated on the PC. This reduces jitter and results in rock-solid performance that is not affected by PC performance or operating conditions. Controlling jitter ensures a stable flow of audio data, and the buffer size can be optimized to reduce latency to a minimum.

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Meticulous attention to detail

- OCTA-CAPTURE features a high-performance headphone output with refined circuitry, providing superb sound quality that will serve you well not only during recording, but also for making final sound choices in the mixing process. Additionally, the headphone amp provides an output level of +16 dBu, ensuring rock-solid monitoring even when recording in high dB situations.
- Rugged metal body that's lightweight and compact.
- Included rack ears let you mount OCTA-CAPTURE in a studio rack.
- One-in/one-out MIDI interface onboard.
- Cakewalk's acclaimed SONAR LE DAW program is included, along with high-quality software synths and a diverse range of plug-in effects.
- Two OCTA-CAPTURE units can be used together to increase I/O capability.

Headphone Jack

Rackmount setup

Use OCTA-CAPTURE as an I/O expansion unit for the V-STUDIO series

OCTA-CAPTURE is a great interface for expanding the audio I/O of your V-STUDIO 700 or V-STUDIO 100 DAW systems. With the VS Streaming driver, the DAW program recognizes the V-STUDIO and OCTA-CAPTURE as a single audio device, allowing you to handle all audio I/Os seamlessly without the need for cumbersome connection settings.

Specifications

- **Number of Audio Record/Playback Channels** [Sampling Frequency = 44.1 kHz, 48 kHz, 96 kHz] Record: 12 channels, Playback: 10 channels [Sampling Frequency = 192 kHz] Record: 4 channels, Playback: 4 channels
- **Signal Processing** PC interface: 24-bit, AD/DA Conversion: 24-bit, Internal: 40-bit
- **Sampling Frequency** AD/DA Conversion: 44.1 kHz / 48 kHz / 96 kHz / 192 kHz, DIGITAL (IN/OUT): 44.1 kHz / 48 kHz / 96 kHz
- **Nominal Input Level** Input Jack 1 — 6 (XLR type): -56 to -6 dBu, Input Jack 7 — 8 (XLR type): -50 to +0 dBu, Input Jack 1 — 8 (1/4-inch TRS phone type): - 46 to +4 dBu
- **Nominal Output Level** OUTPUT 1 — 8: +0 dBu (balanced)
- **Headroom** 16 dB
- **Input Impedance** Input Jack 1 — 6 (XLR type): 5 k ohms (balanced), Input Jack 7 — 8 (XLR type): 10 k ohms (balanced), Input Jack 1 — 8 (1/4-inch TRS phone type): 17 k ohms (balanced)
- **Output Impedance** OUTPUT 1 — 8: 1.8 k ohms (balanced), PHONES: 47 ohms
- **Frequency Response** 192.0 kHz: 20 Hz to 90 kHz (+0/-8 dB), 20 Hz to 60 kHz (+0/-2 dB), 96.0 kHz: 20 Hz to 40 kHz (+0/-2 dB), 48.0 kHz: 20 Hz to 22 kHz (+0/-2 dB), 44.1 kHz: 20 Hz to 20 kHz (+0/-2 dB)
- **Residual Noise Level** INPUT 1 — 2 → MAIN OUT: -87 dBu typ. (GAIN: min., 600 ohms terminated, IHF-A)
  * Internal Direct Monitor Mixer setting: Stereo Link: ON, Input channel fader: Unity
- **Dynamic Range** [AD block] INPUT 1 — 8: 104 dB typ. (GAIN: min.) [DA block] OUTPUT 1 — 8: 113 dB typ.
- **Display** 128 x 64 dots Graphic LCD (backlit LCD)
- **Connectors** Input Jacks 1 — 8 (XLR type / 1/4-inch TRS phone type): XLR type (balanced/ phantom power), 1/4-inch TRS phone type (balanced), Coaxial Input Connector, Coaxial Output Connector, Headphone Jack (Stereo 1/4-inch phone type), Output Jack 1 — 8 (1/4-inch TRS phone type (balanced)), MIDI Connectors (In, Out), USB Connector
- **Phantom Power** DC 48 V (unloaded maximum), 6 mA (maximum load)
  * Current value per channel.
- **Power Supply** DC 9 V (AC adaptor)
- **Current Draw** 1.45 A
- **Dimensions** 283.8 (W) x 157.9 (D) x 50.4 (H) mm / 11-3/16 (W) x 6-1/4 (D) x 2 (H) inches
- **Weight** 1.32 kg / 2 lbs 15 oz
- **Accessories** Rack Mount Angle x 2, Owner's Manual, Cakewalk Production Plus Pack DVD-ROM, Driver CD-ROM, AC Adaptor, USB cable

* 0 dBu = 0.775 Vrms

System Requirements*1

Windows

- **OS** Microsoft® Windows® 7 / Windows Vista® / Windows® XP Home / Windows® XP Professional SP2 or later*2
- **Computer** Windows-compatible PC with USB 2.0 port
- **CPU/Clock** Intel® Core™ 2 Processor 1.6 GHz or higher
- **Memory (RAM)** 1 GB or more (2 GB or more is recommended)

Macintosh

- **OS** Mac OS X 10.4.11 or later*3 (10.5.7 or later for Production Plus Pack*4)
- **Computer** Apple Macintosh series
- **CPU/Clock** Intel® Core™ Processor
- **Memory (RAM)** 1 GB or more (2 GB or more is recommended)

*1 This product has been tested on representative computers that meet the system requirements, but we cannot guarantee that it will operate on any computer that meets these requirements. Please be aware that even under the same conditions, differences in the operating environment may produce differences in performance.
*2 This product does not support Windows XP Media Center Edition or XP Professional x64.
*3 Macintosh computers running Microsoft Windows are not supported.
*4 Please note: SONAR LE does not run on Mac OS

- To use at 192 kHz, Intel® Core™ 2 Processor/2 GHz or higher and built-in 7200 rpm or faster hard drive are required.
- To use two OCTA-CAPTUREs Intel® Core™ 2 Processor/2 GHz or higher and built-in 7200 rpm or faster hard drive are required. To use two OCTA-CAPTUREs at 96 kHz or higher, one separate built-in SATA or faster hard drive dedicated for audio recording is required. (A USB hard drive cannot be used.) In case of Macintosh, Mac OS X v10.5.8 or later is required.

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