



Roland VC-100UHD

ProdCode: ROLVC100UHD

4K Video Scaler



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Features

- 4K Video Scaler
- Professional A/V signal management in a compact and robust unit
- Features 12G-SDI and HDMI 2.0 I/O with Roland's Ultra Scaler video processing technology
- Internal YCbCr 4:4:4 10-bit lossless processing
- HDMI YCbCr 4:4:4 10-bit input/output
- Display processing for multiple audiences: 4K, HD, and web streaming
- High frame rate support at 100, 120, 144, 200 and 240 Hz with drop frame
- Advanced visual effects and image processing
- Region of Interest (ROI) switching via external USB numeric keypad
- Professional audio processing with flexible patching
- USB 3.0 webcam output for livestreaming broadcasts
- Front-panel LCD

Rear panel

- 12G SDI IN, OUT, THRU
- HDMI IN, OUT
- REFERENCE IN, THRU/OUT
- AUDIO IN/OUT (Balanced)

- LINE IN, LINE OUT (L/R)
- REMOTE (LAN)
- DC IN (24 V)
- USB Ports: USB HOST and STREAMING

Version 1.3 New Features

With the free Version 1.3 update, the VC-100UHD continues to evolve with new features and system enhancements. The internal processing has been improved with support for lossless RGB/YCbCr 4:4:4 10-bit over HDMI and 720p and 1440p/144 Hz frame rates. Roland's innovative Region of Interest (ROI) function has been added to the 4K inputs, with simple switching between ROI windows using an external USB numeric keypad. C/LFE audio mapping has been added for 5.1 surround applications. And there's now an automatic fan control that regulates operation based on the current environmental conditions, eliminating unnecessary fan noise.

Scale, Convert, and Stream

Introducing the Roland VC-100UHD, a next-generation A/V signal management solution for live events, fixed installations, and livestreaming. Built on a reliable hardware platform for mission-critical applications, this powerhouse processor combines multiple single-task technologies in a compact and flexible half-rack design. With Roland's Ultra Scaler on board, the VC-100UHD supports simultaneous scaling and conversion to multiple destinations, including 4K LED walls, HD displays, USB livestreams, and more.

Process Images for Multiple Audiences at Once

Using the VC-100UHD, it's a simple task to send 4K and 1080p video to multiple destinations at one time, including pixel-hungry LED walls, tech operator displays and recorders, and USB webcam streams for online viewing. With an ultra-high-definition source signal connected to the 12G-SDI or HDMI 2.0 video inputs, the VC-100UHD will automatically process and convert it to different resolutions, ready for distribution at 12G-SDI, HDMI, and USB 3.0 rear-panel outputs.

Front Panel Graphic LCD

With the VC-100UHD's high-resolution graphic LCD and intuitive menu structure, all functions can be accessed locally without the need for an external control device. On the comprehensive status screens, you can quickly check the resolution, frame rate, HDCP status, color space, bit depth, color gamut, dynamic range, audio levels, and more. In addition, the system message log screen makes troubleshooting easy.

The Ultra-Reliable Ultra Scaler

The VC-100UHD features Roland's revolutionary Ultra Scaler, the same no-compromise, ultra-reliable professional video processor found in the flagship V-600UHD 4K video switcher. Backed by a lightning-fast processing engine, Ultra Scaler delivers premium quality conversion for perfectly synchronized big-screen IMAG and precise dot-by-dot scaling for LED wall displays.

Roland's Ultra Scaler supports:

- 10-bit 4:4:4 pixel-accurate color
- Rec. 601, 709 and 2020 wide color gamut
- High dynamic range processing and conversion
- Version 1.3 High frame rate (HFR) video at 100, 119.88, 120, 200, 239.76, and 240 Hz (HDMI input only)
- Native DCI Digital Cinema System 4K (4096) resolution

Version 1.3 Lossless Conversion with 10-Bit Processing

When using YCbCr 4:4:4 and YCbCr 4:4:4 subsampling, the VC-100UHD's 10-bit internal processing fully maintains the color and gradation details of the input source. Compared with 8-bit processing, this allows you to display images with more colors and a smooth, natural look.

High Frame Rates? No Problem.

High frame rate (HFR) video sources can pose signal workflow challenges for integrated systems, but the VC-100UHD handles them with ease. Thanks to Ultra Scaler technology, system designers can simultaneously deliver 1080p video at rates up to 240 Hz for a gaming monitor, 59.94/50 Hz for an HD video system and LED displays, and 59.94/50 Hz for an HD livestream broadcast.

Onboard Visual Effects and Image Processing

Using the VC-100UHD's built-in visual effects, it's simple to rotate, flip, and mirror images. For example, a portrait image generated by a smartphone can be trimmed and rotated to fit seamlessly on a 16:9 landscape display for digital signage. And with the VC-100UHD's Frame Synchronizer and Genlock features, you can easily re-clock and stabilize video images as needed.

Simulate a PTZ Camera with ROI and a USB Numeric Keypad

With the VC-100UHD's built-in Region of Interest (ROI) function, you can easily produce multi-shot productions with a single 4K camera or zoom in and highlight presentation details. Creating an inviting viewer experience has never been easier:

select any 4K video input source to zoom, move, crop, and scale up to eight ROI windows. Then use a USB numeric keypad to switch windows during events just a like PTZ camera.

USB 3.0 Webcam Output For Streaming and Recording

Reach a worldwide audience and broadcast uncompressed 1080p video at 59.94/50 Hz on popular streaming platforms with the VC-100UHD. The USB 3.0 webcam output offers plug-and-play operation with the latest USB audio/video protocols, so there's no software to download or drivers to maintain. And with Roland's free VR Capture software, you can record your HD livestreams in ProRes 422 (Mac) or MP4 (Windows) formats for editing and distribution.

Advanced Audio Features

Along with video, the VC-100UHD can process embedded digital audio from the 12G-SDI and HDMI 2.0 inputs. Analog I/O is provided too, with balanced audio on a 25-pin D-sub connector for installations and line-level stereo audio on RCA jacks for prosumer video gear. An advanced audio patching system lets you route and embed/de-embed up to 16 input channels and output up to eight channels. Need to adjust lip sync? Just tweak the delay that's available on each audio output.

Compact and Ready for Any Application

The VC-100UHD works great as a portable processor for grab-and-go productions, or it can be mounted in a rack for use in larger systems and fixed installations. It also comes equipped with rich integration capabilities, including:

Selectable EDID on HDMI

- Version 1.2 12 video test patterns (including scrolling and animated patterns) and an audio test tone generator assignable to any channel
- Wide-range color correction to support a variety of input and output devices, including LED displays
- Support for backing up and recalling system settings on the job via USB memory
- Version 1.3 Automatic fan control function
- Version 1.3 C/LFE audio channel mapping
- Remote control support over LA

Application Examples

LED Walls

LED display technology has become a versatile creative tool for event designers. But many corporate events and festivals require pixel widths that exceed the HD format's 1920 pixels. The VC-100UHD's Ultra Scaler offers dot-by-dot output scaling at incredibly high quality, allowing you to connect to an LED display controller at the exact pixel dimensions needed. Supported resolutions include 4K High Dynamic Range (HDR), 1080p Standard Dynamic Range (SDR), and DCI Cinema 4K.

Esports

Extreme gaming machines are rapidly emerging as the esports market takes off. When milliseconds and costs matter, esports athletes have found a sweet spot for gameplay: 1080p resolution at HFR 120 or 144 Hz for smooth motion while battling opponents. The VC-100UHD lets you integrate these high-end gaming machines into your HD 59.94/50 Hz workflows while keeping gamers happy with a no-latency HFR up to 240Hz throughput. And by de-embedding gameplay audio from HDMI, you eliminate analog-to-digital conversions and keep the sound quality high. Game on!

Livestreaming

The VC-100UHD supports uncompressed livestreaming to global audiences at top quality via USB 3.0. Convert and scale incoming 4K UHD signals to Full HD 1080p/60 resolution or lower resolutions to suit the available bandwidth. Audio delay is also available for correcting any lip-sync issues you might encounter.

Staging

The VC-100UHD's ROI switching offers a great solution to enhance stage events and online sessions when the client doesn't have multiple cameras due to location or budget. Using ROI, you can crop out any part of the 4K video image and enlarge it to HD resolution. Register up to eight crop-out points and switch them instantly using a USB numeric keypad.

