



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.

Specifications

VIDEO	
Processing	4:4:4 (Y/Pb/Pr), 10-bit
SDI:	2160p(DCI)/59.94 Hz, 50 Hz (SMPTE ST2048)
	2160p(UHD)/59.94 Hz, 50 Hz (SMPTE ST2036)
HDMI: *1	2160p(UHD)/59.94 Hz, 50 Hz (CEA-861-F)
	1080p/59.94 Hz, 50 Hz (CEA-861-F)
Formats	1080i/59.94 Hz, 50 Hz (SMPTE ST274)
	4096 x 2160/60 Hz (CEA-861-F)
	3840 x 2160/60 Hz (CEA-861-F)
	2560 x 1440/60 Hz (VESA CVT Reduced blanking)
	1920 x 1200/60 Hz (VESA CVT Reduced blanking)
	1920 x 1080/240 Hz (Pixel Clock 556.8 MHz) *2
	1920 x 1080/144 Hz (Pixel Clock 346.54 MHz) *2
	1920 x 1080/120 Hz (VESA CVT Reduced blanking) *2
	1920 x 1080/60 Hz (CEA-861-F)
	1280 x 720/60 Hz (CEA-861-F)
	*1 HDCP 1.4, 2.2 supported.
	*2 Input and through output.
USB Streaming: *3 *4 *5	1080p, 720p, 480p/576p
	*3 LVC (USB Video Class) Uncompressed Video 4:2:2 (Y/Pb/Pr), 8-bit
	*3 The video signal frame rate can be selected Full or Half.
	*4 Color Gamut: Rec.601, Rec.709, Dynamic Range: SDR
* Color Gamut: Rec.601, Rec.709, Rec.2020	* Dynamic Range: SDR, HDR PQ (HDR10), HDR HLG
Functions	4K Scaler, FHD Down Scaler, Output Fade, Output Freeze, Test Pattern Generator, Rotation *6, Flip H, V, Edge Enhancer, Motion Adaptive Deinterlacer, Color Correction, Dynamic Range Conversion *6 Require to disable Sub Processing to use.

AUDIO	
Processing	24 bits/48 kHz
Formats	12G-SDI: Linear PCM, 24 bits/48 kHz, 16 ch (SMPTE 299M)
	HDMI 4K: Linear PCM, 24 bits/48 kHz, 8 ch
	STREAMING: Linear PCM, 16 bits/48 kHz, 2 ch (UAC (USB Audio Class))
Output Connectors	OUTPUT 1-3: HDMI Type A x 3 AUDIO OUT: RCA phono type PHONES: Stereo miniature type
Input Level	LINE IN: -10 dBu (Maximum: +8 dBu) AUDIO IN: +4 dBu (Maximum: +24 dBu)
Input Impedance	LINE IN: 38 k ohms AUDIO IN: 15 k ohms
Output Level	LINE OUT: -10 dBu (Maximum: +8 dBu) AUDIO OUT: +4 dBu (Maximum: +24 dBu)
Output Impedance	LINE OUT: 1 k ohm AUDIO OUT: 600 ohms
Functions	Output Level, Patchbay, Delay, Mastering, Test Tone Generator

CONNECTORS	
Input Connectors	12G-SDI IN: BNC type (SMPTE 2082, 2081, 424M(SMPTE 425M-AB), 292M, 259M)
	HDMI 4K IN: HDMI type A
	STREAMING: USB type B (USB3.0)
	LINE IN: RCA phono type
Output Connectors	AUDIO IN: DB-25 female type (Balanced audio 2 ch)
	REFERENCE IN: BNC type (Black Burst (Sync to frames), Bi-Level, Tri-Level)
	12G-SDI OUT: BNC type (SMPTE ST2082, ST2081, 424M(SMPTE 425M-AB), 292M, 259M)
	12G-SDI THRU: BNC type
	HDMI 4K OUT: HDMI type A
	STREAMING: USB type B (USB3.0)
Other Connectors	LINE OUT: RCA phono type
	AUDIO OUT: DB-25 female type (Balanced audio 2 ch)
	REFERENCE THRU/OUT: BNC type (Black Burst)
Other Connectors	USB HOST: USB A type (USB2.0) (for USB flash drive)
	REMOTE: RJ45 type, 100BASE-TX

OTHERS	
Functions	EDID Emulator Genlock Preset Memory x 8
Display	Graphic LCD 256 x 64 dots
Power Supply	AC Adaptor
Current Draw	2.3 A (DC 24V)
Power Consumption	55 W
Operation Temperature	+0 to +40 degrees Celsius +32 to +104 degrees Fahrenheit
Dimensions	210 (W) x 284.5 (D) x 43 (H) mm, 8-5/16 (W) x 11-1/4 (D) x 1-3/4 (H) inches
Weight (excl. Accessories)	2.2 kg 4 lbs 14 oz
Accessories	Owner's Manual, Leaflet "USING THE UNIT SAFELY", AC adaptor, Power cord, Rubber feet (4 pcs.), Rack mount angle set, DC Plug Stopper

* 0 dBu = 0.775 Vrms

PRELIMINARY



Roland

VC-100UHD

4K VIDEO SCALER

<https://proav.roland.com/>

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VC-100UHD 4K VIDEO SCALER



Next-generation A/V signal management processor for live events, fixed installations, and livestreaming

- 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
- Display processing for multiple audiences: 4K, HD, and web streaming
- High frame rate support at 120, 144, and 240 Hz
- Advanced visual effects and image processing
- Professional audio processing with flexible patching
- USB 3.0 webcam output for livestreaming broadcasts



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

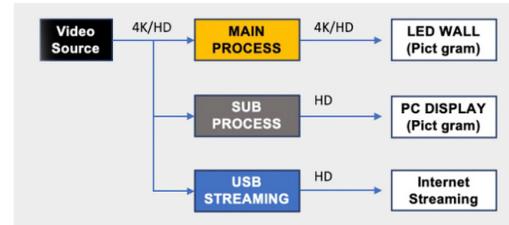
Extreme gaming machines are rapidly emerging as the esports market takes off. When milliseconds and costs matter, esports athletes have found a sweet spot for gameplay: 1080p resolution at HFR 120 or 144 Hz for smooth motion while battling opponents. The VC-100UHD lets you integrate these high-end gaming machines into your HD 59.94/50 Hz workflows while keeping gamers happy with a no-latency HFR 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 to lower resolutions to suit the available bandwidth. Audio delay is also available for correcting any lip sync issues you might encounter.

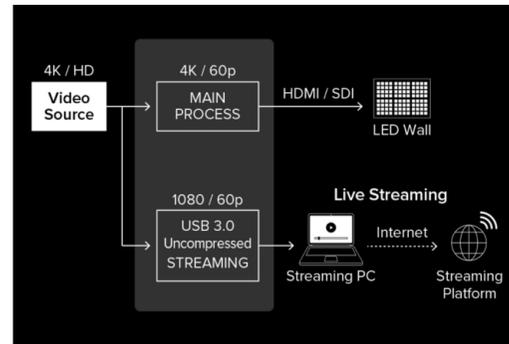
Process images for multiple audiences at once

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.



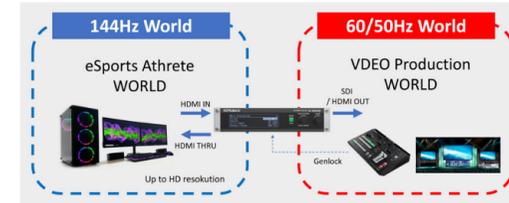
USB 3.0 webcam output for streaming and recording

With the V-8HD, storing and recalling individual scenes is done by pressing a few buttons. The 8 present memories and powerful composition effects engine work together to provide completely seamless loading and switching of inputs and stored scenes.



High Frame Rates? No problem.

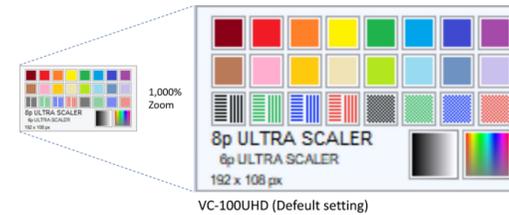
High frame rate (HFR) video sources can pose signal workflow challenges for integrated systems, but the VC-100UHD handles them with ease. Thanks to Ultra Scaler technology, system designers can simultaneously deliver 1080p video at rates up to 240 Hz for a gaming monitor, 59.94/50 Hz for an HD video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



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.

- 10-bit 4:4:4 pixel-accurate color
- Rec. 2020 wide color gamut
- High dynamic range (HDR-10) processing and conversion
- 1080p high frame rate (HFR) video at 120, 144, and 240 Hz
- Native DCI Digital Cinema System 4K (4096) resolution



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.

Advanced audio features

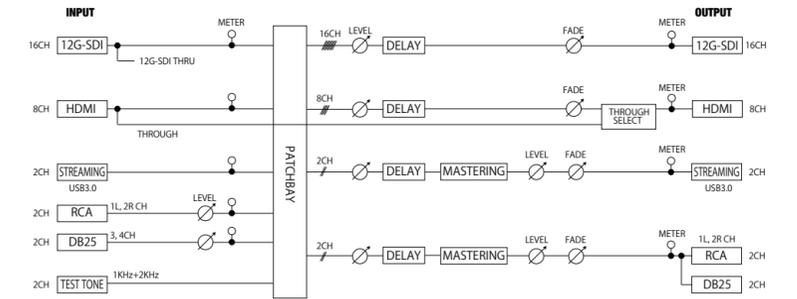
Along with video, the VC-100UHD can process embedded digital audio from the 12G-SDI and HDMI 2.0 inputs. Analog I/O is provided too, with balanced audio on a 25-pin D-sub connector for installations and line-level stereo audio on RCA jacks for prosumer video gear. An advanced audio patching system lets 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

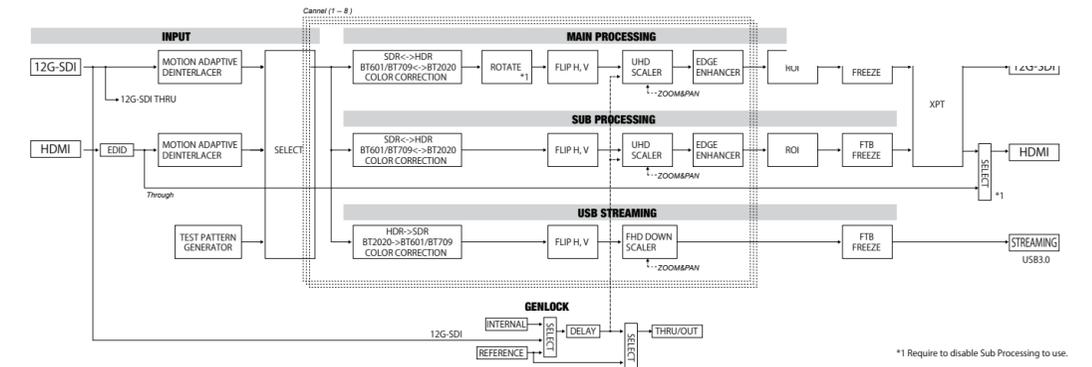
The VC-100UHD works great as a portable processor for grab-and-go productions, or can be installed in a rack for use in larger systems and fixed installations. It also comes equipped with rich integration capabilities, including:

- Custom EDID on HDMI
- 24 video test patterns and an audio test tone generator
- Support for backing up and recalling system settings on the job via USB memory
- Remote control support over LAN

Audio block diagram



Video block diagram



Dimensions

