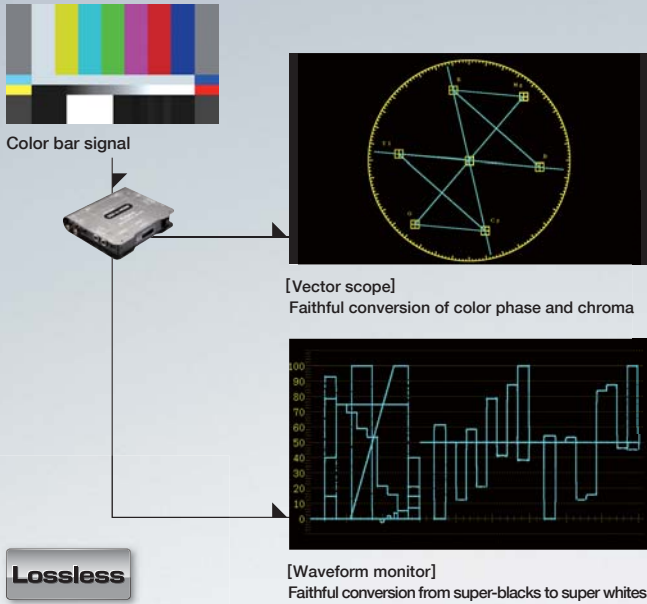# Lossless conversion in the palm of your hand.

Awarding-winning multi-format conversion technology concentrated in a simplified mini-converter.

Uncompromising commitment to picture quality.

The VC-1 series faithfully converts the original source with no change in color or brightness. It supports super-blacks and super-whites, and converts video from cameras and other source devices with all the originality intact.

Color bar signal

[Vector scope]
Faithful conversion of color phase and chroma

Lossless

[Waveform monitor]
Faithful conversion from super-blacks to super whites

On-board reclocker.

The VC-1 series features an on-board reclocker to compensate for attenuation of SDI signals carried over long distances. This makes it possible to receive camera-relay video while maintaining a high image quality.

Signal before reclocking

Reduction of jitter

Faithful reproduction of video characteristics.

The VC-1 series reproduces the video characteristics of the original source with no interlace artifacts, pixel shifting, or other conversion problems or signal errors. Jitter and return loss are at exceptional levels as well.

Burst signal

Lossless

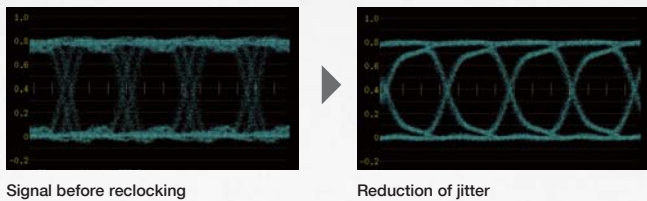[Waveform monitor]
Perfect conversion of frequency character
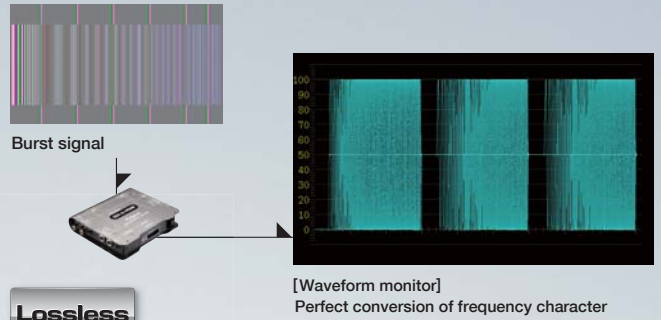
Support for 1080p 3G-SDI.

Video signals beyond 1080i can be input and output. The VC-1 series supports both level A and level B 3G-SDI, letting you connect a wide variety of 3G-SDI equipment. 1080i, 720p, and SD signals are accommodated automatically on connection.
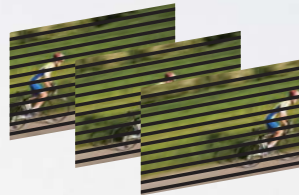
3G bps 1080/60p

Interlaced (1080/60i)

Progressive (1080/60p)

High quality and rugged construction for the rigors of front-line use.

High quality, smart design.

The exterior plating is aluminum at 2 millimeters thick. The connectors laid out inside the exterior plates are fastened to the chassis with nuts and bolts. This makes for a heavy-duty specification that can keep the connectors from coming loose even with frequent cable changes, as well as withstanding impact and drops. Every connector has an LED input indicator enabling you to confirm the status of signal transmission at a glance. The series is built for uncompromising reliability that includes accurate operation even over long periods of continuous use thanks to a design featuring exceptional heat-radiating efficiency.

Connectors fastened with nuts or screws.   LED input indicators for confirming signals

A form factor that accommodates use on-the-go.

Cutaway areas in the exterior plate enable you to fasten the unit to tripods or the like using velcro or elastic ties. This makes for convenient placement and setup even during live on-site use.

Attached to a tripod for mobile production

Support for HDCP HDMI signals.

The VC-1 series is compliant with HDCP. For example, the VC-1-DL can take HDCP-applied HDMI input signals, apply frame synchronization or delay, and produce HDCP-applied HDMI output. This allows the VC-1 series to be used in any HDCP-based system with no worries.

* HDCP-applied HDMI signals cannot be converted to SDI and recorded to HDMI recorders and editors.

Support for workflow combining audio and video.

Audio embedding and de-embedding features are provided (channel-selectable) in the VC-1 Series. The audio embedding feature lets you place audio signals from a different source into the video output. For example, when converting an SDI signal to HDMI, you can use the audio embedding feature to output high-quality audio from any of the SDI audio channels. Digital (AES/EBU) input and output are also supported, letting you exchange sound between professional audio equipment with no degradaton in signal. Analog input and output is supported as well making it possible to both monitor and input audio to/from a wide variety of equipment such as an audio console.

Easy configuration with DIP switches or dedicated PC/Mac software app.

DIP switches make it simple to accommodate on-site requirements. Change the conversion direction or other settings by simply sliding a DIP switch on the side of the unit. Delay Dials (VC-1-DL only) set the amount of delay for video and audio. Set the amount of delay independently for video and audio in a range of 0 to 9 fields (0 to 4.5 frames). Connection to a computer via USB cable unlocks even greater versatility with advanced settings including a memory location to lock in a favorite configuration. Control and configure multiple VC-1 units at the same time using a USB hub.

Delay Dials (VC-1-DL only) and DIP switches on side panel
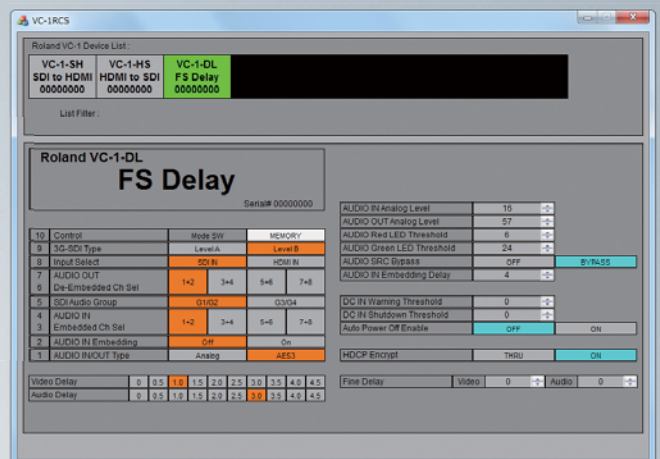
VC-1 RCS
*The VC-1 RCS for PC/Mac can be downloaded from www.rolandsystemsgroup.net.

VC-1Series

SDI to HDMI VC-1-SH

Conversion of video and audio signals from SDI input to HDMI output

Labels (left panel): SDI Input, SDI Output, Audio Input, USB Port

Labels (right panel): HDMI Output, Audio Output, DC IN Connector

3G HD SD — SDI to HDMI — Roland — VIDEO CONVERTER VC-1-SH

- SDI to HDMI Conversion
- Lossless image conversion
- 3G (Level A&B) / HD / SD SDI
- HDCP support
- Selectable Channel for Embedded / De-Embedded Audio

Block Diagram

SDI IN → Audio Embedded → Audio De-Embedded → HDMI OUT

SDI THRU/OUT

Analog/AES3 L—AUDIO IN—R → Analog/AES3 L—AUDIO OUT—R

MODE DIP SW

NO	MODE		OFF				ON		
10	CONTROL		MODE SW				MEMORY		
9	HDCP Encrypt		OFF				ON		
8	SDI THRU/OUT		THRU				OUT		
7 / 6	AUDIO OUT De-Embedded Ch Sel		1 + 2	3 + 4		5 + 6	7 + 8		
5	SDI Audio Group		G1/G2				G3/G4		
4 / 3	AUDIO IN Embedded Ch Sel		1 + 2	3 + 4		5 + 6	7 + 8		
2	AUDIO IN Embedding		OFF				ON		
1	AUDIO IN/OUT Type		Analog				AES3		

HDMI to SDI VC-1-HS

Conversion of video and audio signals from HDMI input to SDI output

Labels (left panel): SDI Output 1, SDI Output 2, Audio Input, USB Port

Labels (right panel): HDMI Input, HDMI Output, Audio Output, DC IN Connector

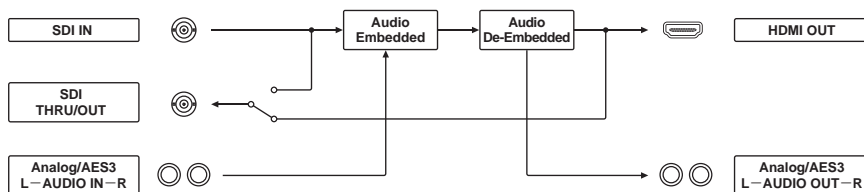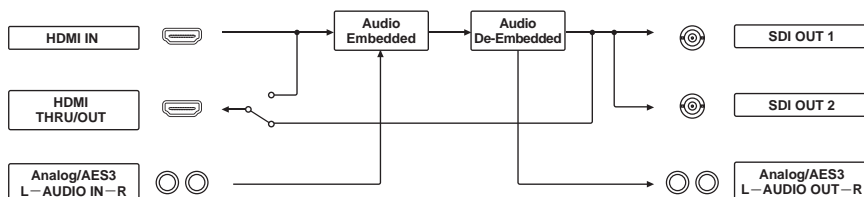3G HD SD — HDMI to SDI — Roland — VIDEO CONVERTER VC-1-HS

- HDMI to SDI Conversion
- Lossless image conversion
- 3G (Level A&B) / HD / SD SDI
- HDCP support
- Selectable Channel for Embedded / De-Embedded Audio

Block Diagram

HDMI IN → Audio Embedded → Audio De-Embedded → SDI OUT 1

HDMI THRU/OUT → SDI OUT 2

Analog/AES3 L—AUDIO IN—R → Analog/AES3 L—AUDIO OUT—R

MODE DIP SW

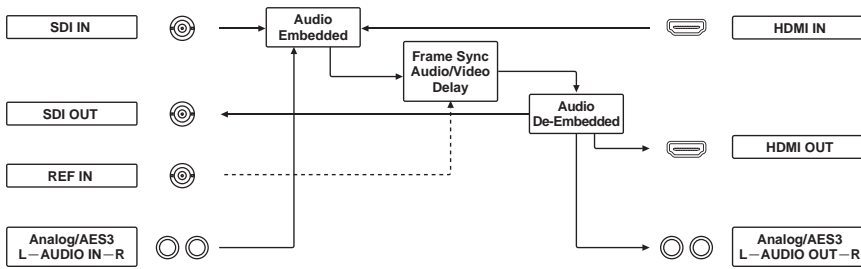| NO	MODE		OFF				ON		
10	CONTROL		MODE SW				MEMORY		
9	3G-SDI Type		Level A				Level B		
8	HDMI THRU/OUT		THRU				OUT		
7 / 6	AUDIO OUT De-Embedded Ch Sel		1 + 2	3 + 4		5 + 6	7 + 8		
5	SDI Audio Group		G1/G2				G3/G4		
4 / 3	AUDIO IN Embedded Ch Sel		1 + 2	3 + 4		5 + 6	7 + 8		
2	AUDIO IN Embedding		OFF				ON		
1	AUDIO IN/OUT Type		Analog				AES3		

FS Delay VC-1-DL

Bi-directional Conversion of video and audio signals from HDMI to SDI or SDI to HDMI with Frame Sync and Delay

SDI Input
SDI Output
Reference Input
Audio Input
USB Port

HDMI Input
HDMI Output
Audio Output
DC IN Connector

- HDMI to SDI Conversion
- SDI to HDMI Conversion
- Lossless image conversion
- 3G (Level A & B) / HD / SD SDI
- HDCP support
- Selectable Channel for Embedded / De-Embedded Audio
- Audio Delay - up to 9 fields (4.5 frames)
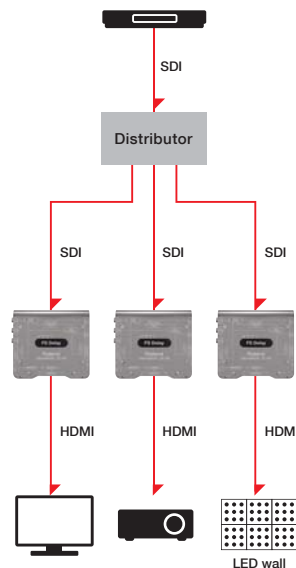- Video Delay - up to 9 fields (4.5 frames)

Block Diagram

SDI IN → Audio Embedded
HDMI IN
Frame Sync Audio/Video Delay
SDI OUT ← Audio De-Embedded
HDMI OUT
REF IN
Analog/AES3 L—AUDIO IN—R
Analog/AES3 L—AUDIO OUT—R

MODE DIP SW

NO	MODE	OFF			ON
10	CONTROL	MODE SW			MEMORY
9	3G-SDI Type	Level A			Level B
8	Input Select	SDI IN			HDMI IN
7 6	AUDIO OUT De-Embedded Ch Sel	1 + 2	3 + 4	5 + 6	7 + 8
5	SDI Audio Group	G1/G2			G3/G4
4 3	AUDIO IN Embedded Ch Sel	1 + 2	3 + 4	5 + 6	7 + 8
2	AUDIO IN Embedding	OFF			ON
1	AUDIO IN/OUT Type	Analog			AES3
	Audio Delay	x0.5 Frame (x1.0 Field)			
	Video Delay	x0.5 Frame (x1.0 Field)			

【Application for live video production】

SDI SDI HDMI
Sync Generator
IN
Switcher
Recording/ Live Broadcasting
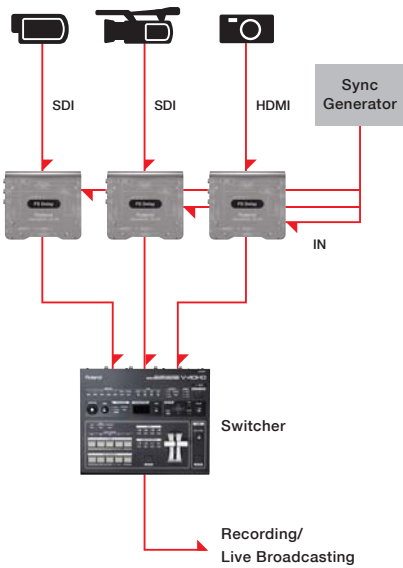
Synchronizing signal for asynchronous cameras

【Application for event】

SDI
Distributor
SDI SDI SDI
HDMI HDMI HDMI
LED wall

Adjustment of timing among different displays

VC-1 RCS for PC/Mac

10	Control	Mode SW			MEMORY
9	3G-SDI Type	Level A			Level B
8	Input Select	SDI IN			HDMI IN
7 6	AUDIO OUT De-Embedded Ch Sel	1+2	3+4	5+6	7+8
5	SDI Audio Group	G1/G2			G3/G4
4 3	AUDIO IN Embedded Ch Sel	1+2	3+4	5+6	7+8
2	AUDIO IN Embedding		Off		On
1	AUDIO IN/OUT Type		Analog		AES3

Video Delay	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5
Audio Delay	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5

AUDIO IN Analog Level	16	
AUDIO OUT Analog Level	57	
AUDIO Red LED Threshold	6	
AUDIO Green LED Threshold	24	
AUDIO SRC Bypass	OFF	BYPASS
AUDIO IN Embedding Delay	4	

DC IN Warning Threshold	0	
DC IN Shutdown Threshold	0	
Auto Power Off Enable	OFF	ON

HDCP Encrypt	THRU	ON

Fine Delay	Video	0		Audio	0

■ Specifications

HDMI to SDI：VC-1-HS

Input		
HDMI	Connector	Type A (19 pins) x 1
Analog Audio	Connector	1/4" TRS phone type (balanced) x 1 pair (L/R)
Digital Audio	Connector	1/4" TRS phone type (balanced) x 1 (Combined use with Analog Audio R ch Connector)

Processing
Audio embedding
Audio de-embedding

Output		
SDI	Connector	BNC type x 2
HDMI	Connector	Type A (19 pins) x 1 (Thru/Out)
Analog Audio	Connector	1/4" TRS phone type (balanced) x 1 pair (L/R)
Digital Audio	Connector	1/4" TRS phone type (balanced) x 1 (Combined use with Analog Audio R ch Connector)

SDI to HDMI：VC-1-SH

Input		
SDI	Connector	BNC type x 1
Analog Audio	Connector	1/4" TRS phone type (balanced) x 1 pair (L/R)
Digital Audio	Connector	1/4" TRS phone type (balanced) x 1 (Combined use with Analog Audio R ch Connector)

Processing
Audio embedding
Audio de-embedding

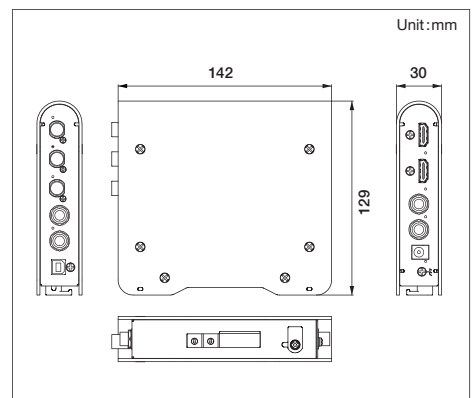| Output		
SDI	Connector	BNC type x 1 (Thru/Out)
HDMI	Connector	Type A (19 pins) x 1
Analog Audio	Connector	1/4" TRS phone type (balanced) x 1 pair (L/R)
Digital Audio	Connector	1/4" TRS phone type (balanced) x 1 (Combined use with Analog Audio R ch Connector)

FS Delay：VC-1-DL

Input		
SDI	Connector	BNC type x 1
HDMI	Connector	Type A (19 pins) x 1
Analog Audio	Connector	1/4" TRS phone type (balanced) x 1 pair (L/R)
Digital Audio	Connector	1/4" TRS phone type (balanced) x 1 (Combined use with Analog Audio R ch Connector)
Reference	Connector	BNC type x 1
Reference	Signal Format	Black Burst, Bi-level, Tri-level
Reference	Impedance	75 ohms

Processing
Video delay (0 to 4.5 frames)
Audio delay (0 to 4.5 frames)
Audio embedding
Audio de-embedding

Output		
SDI	Connector	BNC type x 1
HDMI	Connector	Type A (19 pins) x 1
Analog Audio	Connector	1/4" TRS phone type (balanced) x 1 pair (L/R)
Digital Audio	Connector	1/4" TRS phone type (balanced) x 1 (Combined use with Analog Audio R ch Connector)

*All specification and appearances are subject to change without notice.

■ VC-1 Common Specifications

Input / Output Format

SDI Input	Signal Standards	SMPTE 424M (SMPTE 425M-AB), SMPTE 292M, SMPTE 259M-C
SDI Input	Video Format	1920x1080/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/60i/59.94i/50i (Conforms to SMPTE 274M), 1280x720/60p/59.94p/50p/30p/29.97p/25p (Conforms to SMPTE 296M), 720x487/59.94i, 720x576/50i (Conforms to ITU-R BT.601-5)
SDI Input	Audio Format	Linear PCM, 24 bits, 48 kHz, 16 ch (Conforms to SMPTE 299M, SMPTE 272M-C)
HDMI Input	Video Format	1920x1080/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/60i/59.94i/50i, 1280x720/60p/59.94p/50p/30p/29.97p/25p, 720x480/59.94i, 720x576/50i (Conforms to CEA-861-D)
HDMI Input	Audio Format	Linear PCM, 24 bit, 48 kHz, 8 ch
SDI Output	Signal Standards	SMPTE 424M (SMPTE 425M-AB), SMPTE 292M, SMPTE 259M-C
SDI Output	Video Format	1920x1080/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/60i/59.94i/50i (Conforms to SMPTE 274M), 1280x720/60p/59.94p/50p/30p/29.97p/25p (Conforms to SMPTE 296M), 720x487/59.94i, 720x576/50i (Conforms to ITU-R BT.601-5)
SDI Output	Audio Format	Linear PCM, 24 bits, 48 kHz, 16 ch (Conforms to SMPTE 299M, SMPTE 272M-C)
HDMI Output	Video Format	1920x1080/60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/60i/59.94i/50i, 1280x720/60p/59.94p/50p/30p/29.97p/25p, 720x480/59.94i, 720x576/50i (Conforms to CEA-861-D)
HDMI Output	Audio Format	Linear PCM, 24 bit, 48 kHz, 8 ch

Audio Input / Output · Others

Analog Audio Input	Input Level	+4dBu	USB Connector		USB Type B (Hi-Speed USB) x 1
Analog Audio Input	Maximum Input Level	+22dBu	Power Supply		DC 9V
Analog Audio Input	Impedance	150 k ohms	Power Consumption		8W
Digital Audio Input	Signal Format	AES3, 16/24 bits, 32/48 kHz, 2 ch	Dimensions		150 (W) ×130 (D) ×30 (H) mm 5-15/16 (W) x 5-1/8 (D) x 1-3/16 (H) inches
Digital Audio Input	Impedance	110 ohms	Weight		500 g (without AC Adaptor) 1lb 2oz
Analog Audio Output	Signal Format	+4dBu	Operation Temperature		+0 to +40 degrees Celsius
Analog Audio Output	Impedance	600 ohms	Accessories		AC adaptor, Power Cord, Rubber Foot x 4, Owner's Manual
Digital Audio Output	Signal Format	AES3, 16/24 bits, 32/48 kHz, 2 ch			
Digital Audio Output	Impedance	110 ohms			

(0dBu＝0.775Vrms)

■ Dimensions

Unit：mm

142 · 30 · 129

■ Related Items

VC-300HD

Bi-Directional Multi-Format Converter with Built-in Audio Delay

HDV · DV · HD-SDI · SD-SDI · MULTI FORMAT
DVI · RGB · HDMI · COMPONENT

VC-50HD

Bi-directional video conversion between HD/SD-SDI and MPEG-2 TS/HDV/DV

HDV · DV · MPEG-2TS
HD-SDI · SD-SDI · HDMI

VC-30HD

Audio/Video Converter for Webstreaming and Capture/Archiving

HDV · DV · MPEG-2TS · HDMI
COMPONENT · S-VIDEO · COMPOSITE

Roland Systems Group, a member of the worldwide group of Roland companies, is dedicated to the support of audio and video professionals demanding excellence in both performance and system design. Through the development and support of video and audio products, we endeavor to improve workflow and maximize creative possibilities.

Ensuring high quality while protecting the environment: Roland is ISO9001 and ISO14001 certified

At Roland, several group companies have obtained ISO9001 certification. In addition, in January 1999, Roland also received ISO14001 international environmental management system certification. We're actively seeking ways to maintain harmony with the environment.
(ISO=International Standardization Organization: an organization for the promotion of standardization of international units and terms. They provide different categories of certification: ISO9001 Series certification is a product quality certification for products that undergo a certain level of quality control from the design stage to the after service stage; ISO14001 Series certification is for environment-related standards. Each member of the Roland Group is striving to obtain certification.)