Roland

V-1600HD
MULTI-FORMAT VIDEO SWITCHER

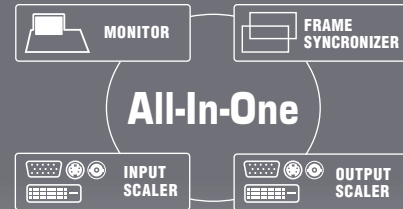| HD-SDI | SD-SDI | DVI-D | HDMI | RGB | COMPONENT | COMPOSITE | S-VIDEO | STILL IMAGE |

An All-In-One Multi-Channel, Multi-Format Live Video Switcher

MULTI FORMAT

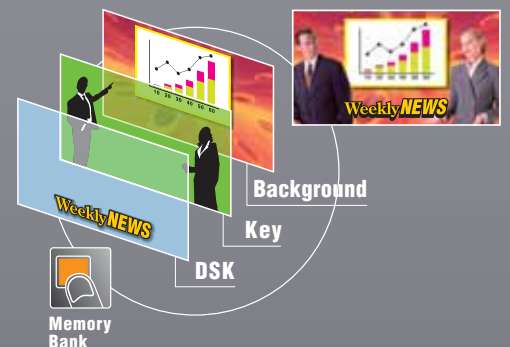# The All-in-One Solution for Any Live Event

All-In-One

Built-in Monitor, Scalers and Multi-Format Inputs and Outputs.

Intuitive Operation

DSK, Key Composition, and PinP are controlled using simple operations. 64 Memory banks provide storage and instant recall of setup parameters.

Connect, seamlessly mix and output a variety of video sources such as cameras, VTR's, RGB Computer Sources, Blu-ray/DVD, and high-end SD/HD-SDI video sources. The V-1600HD's all-in-one design combined with professional quality and features makes it the ideal choice for live video production.

Multi-Format

Multiple input and output formats with no need to purchase extra cards.

MULTI·FORMAT

Multiple Video Input Formats

SD | STILL IMAGE

720P

1080i

HDMI
*

RGB

V-1600HD

8 HD/SD-SDI INPUTS

4 RGB/COMPONENT INPUTS

2 DVI-D/HDMI INPUTS

2 SD INPUTS

Equipped with HD/SD SDI for professional video equipment as well as DVI-D for directly connecting PC/Mac. Also included is analog RGB, Component, S-Video and Composite.

*DVI-D - HDMI adaptor is needed.

Multiple Video Outputs

SD(COMPOSITE)

SD(S-Video)

HD-SDI

ANALOG RGB

COMPONENT

DVI-D

HDMI
*

V-1600HD

2 HD/SD-SDI OUTPUTS

2 RGB/COMPONENT OUTPUTS

2 DVI-D/HDMI OUTPUTS

2 SD OUTPUTS

Output digital/analog HD resolution while down-converting at the same time. Display to a primary screen with secondary feed to recording or broadcast. Spread output across two screens including ability to edge-blend.

*DVI-D - HDMI adaptor is needed.

V-1600HD
MULTI·FORMAT VIDEO SWITCHER

HD-SDI | SD-SDI | DVI-D | HDMI | RGB | COMPONENT | COMPOSITE | S-VIDEO | STILL IMAGE
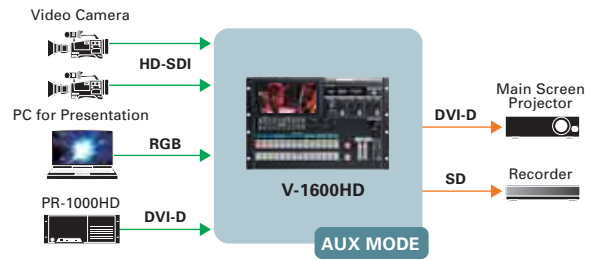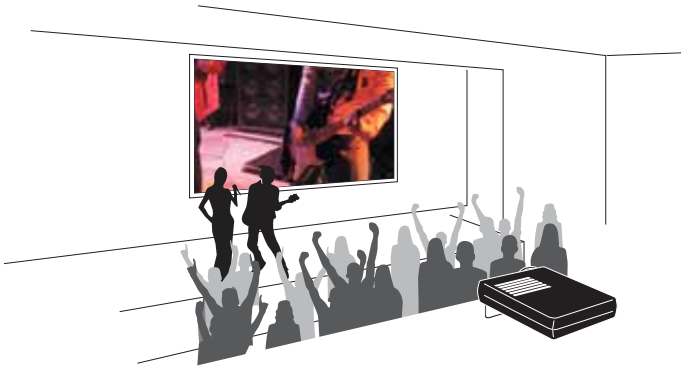
V-LINK

Multi-Format Solution for the HD Generation

HD video sources are now a common video format. The need to also mix in other video sources and formats makes the V-1600HD a necessary component for today's live video production.

LIVE PRODUCTION

● Event Production

Various video sources can be mixed seamlessly without external video converters.

Video Camera
HD-SDI
PC for Presentation
RGB
PR-1000HD
DVI-D

V-1600HD
AUX MODE

DVI-D → Main Screen Projector
SD → Recorder
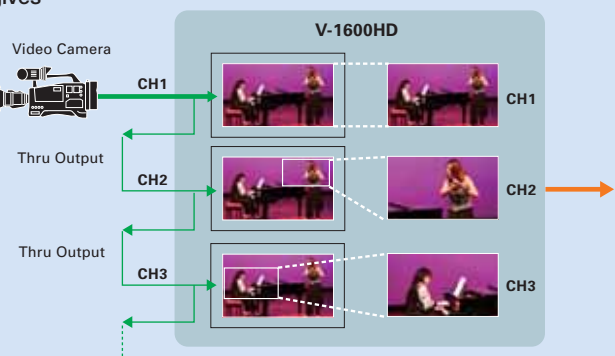
● Studio Production

Text/Graphic from a PC/Mac can be composited on background video content. HD output is available for display, recording, or broadcasting and SD output is available for monitoring, live streaming or recording.

PC
DVD — S-VIDEO
Video Camera
HD-SDI
RGB
V-1600HD
DSK MODE

HD → HD Monitor/Screen
HD → Recorder
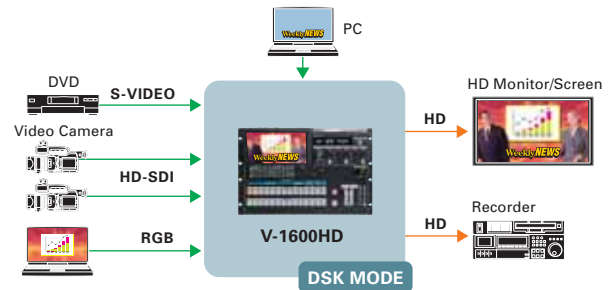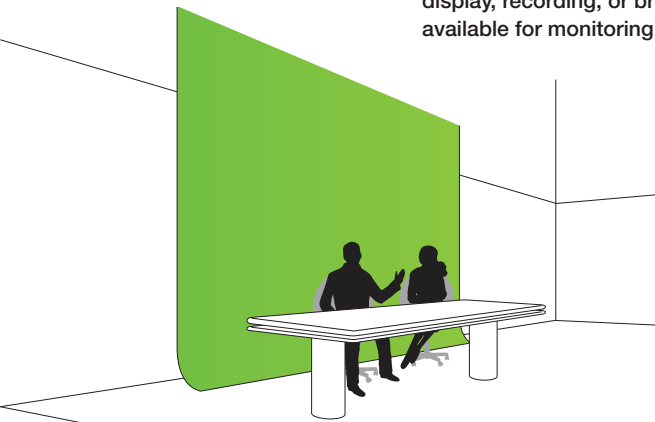
*In DSK mode, outputs are same format.

MULTI-ZOOM

Using the thru out connectors, one video input can be daisy-chained to multiple inputs. The scaler for each input can zoom into any position in the video image enabling a virtual multi-camera environment. This gives the appearance that you have additional cameras connected.
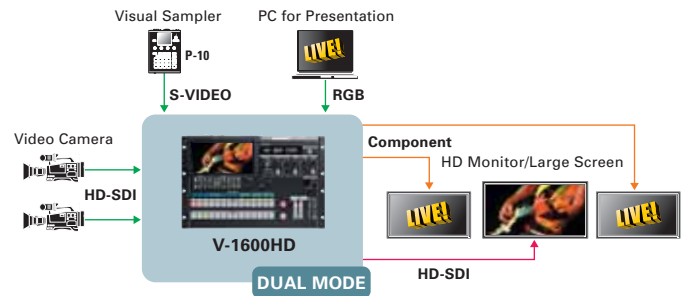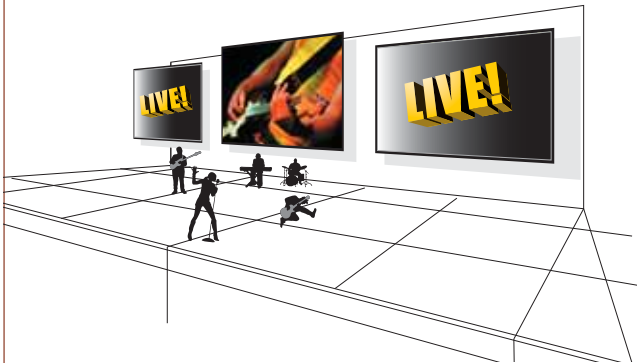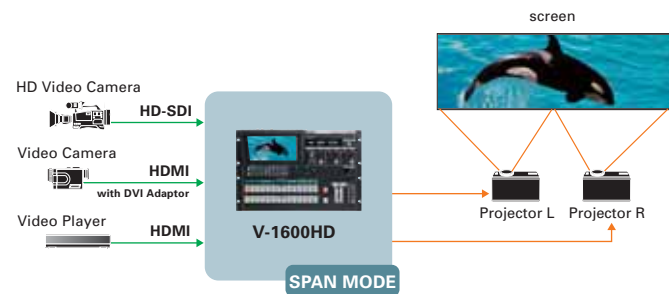
V-1600HD

Video Camera
CH1
Thru Output
CH2
Thru Output
CH3

CH1
CH2
CH3

MULTI-SCREEN SOLUTIONS

● Independent Outputs

Two independent outputs enable powerful multi-screen video productions.

Visual Sampler
P-10
S-VIDEO

PC for Presentation
RGB

Video Camera
HD-SDI

V-1600HD
DUAL MODE

Component
HD Monitor/Large Screen
HD-SDI

*In DUAL Mode, PinP, Key, DSK, External Control
are not available. Video transitions available
are CUT and Mix (Fade In/Out).

● Multi-Screen With Edge Blending

HD Video Camera
HD-SDI

Video Camera
HDMI
with DVI Adaptor

Video Player
HDMI

V-1600HD
SPAN MODE

screen

Projector L   Projector R
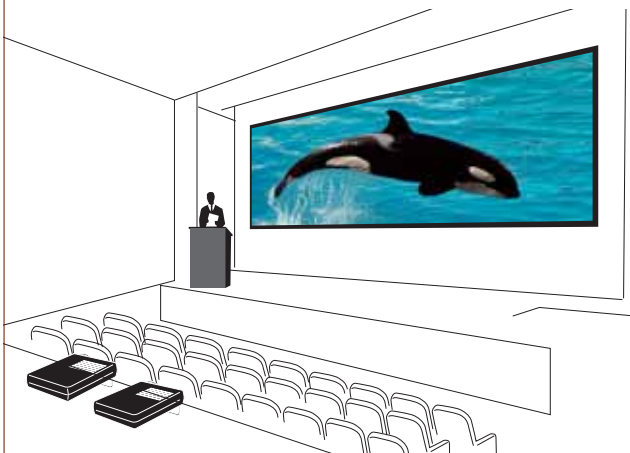
*At SPAN Mode, PinP, Key, DSK, External Control are not
available. Video transitions are CUT and Mix (Fade In/Out).

● DUAL Mode

Using the DUAL Mode, two video inputs can be switched
individually. Switching the both inputs at same time is
also possible. Preview monitoring of each output enables
confident operation.

Global Environmental Efforts

Camera   PC
                Energy Saving

PC   DVD

Global Environmental Efforts

*In DUAL Mode, PinP, Key, DSK, External Control
are not available. Video transitions available
are CUT and Mix (Fade In/Out).

● SPLIT Mode

Video 1

Video 2

Video 1   Video 2
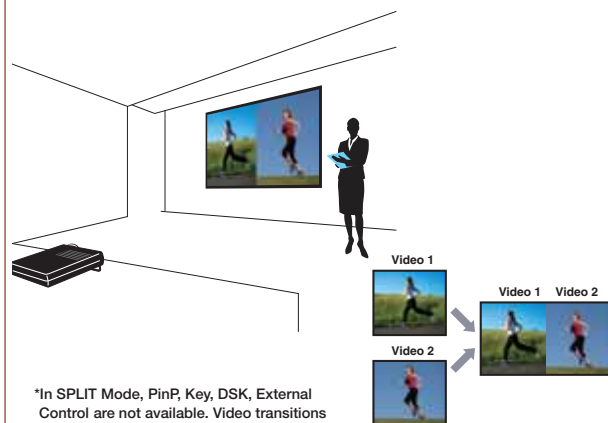
*In SPLIT Mode, PinP, Key, DSK, External
Control are not available. Video transitions
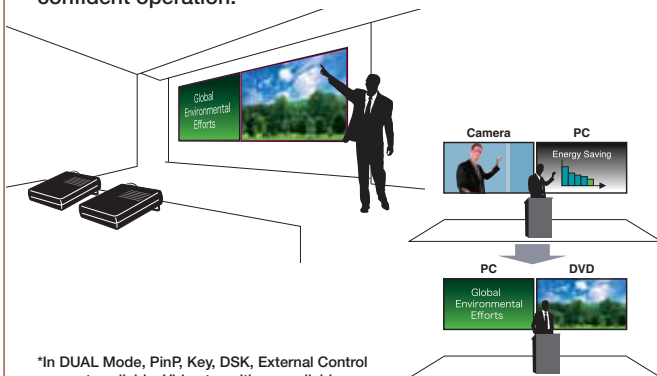available are CUT and Mix (Fade In/Out).

Everything You Need in One Unit

High Resolution 8.5 inches LCD Monitor

The built-in high quality monitor provides the ability to preview each video source eliminating the need for external preview monitors. Additionally, menu functions and parameters can be on the built-in screen.

PVW (Preview) BUS enables previewing of the visual effect before PinP composition.

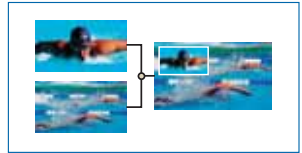Menu setup is available with output monitoring.

3 Monitor Selections

Monitor sources can be selected from PGM (Program), PVM (Preview), and AUX (Auxiliary) bus.

PinP (Picture in Picture)

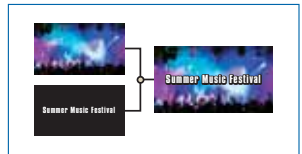Two images can be combined in one video image using PinP function.

Key Composition

Enable Chroma/Luminance Key composition, including semi-translucent composition using Linear Key.

DSK (Downstream Keyer)

DSK function is suitable for compositing logos or text. Key source can be confirmed by PVW monitor.

Synchronize using V-LINK

EDIROL video mixers/video presenters and RSS digital audio mixers can be synchronized with the V-1600HD using V-LINK.

Still Images from USB Memory

Up to 1920 x 1200 pixel BMP images can be assigned.

64 (8x8) Memory Presets

Save favorite setups for convenient and instant recall.

Quick Access to Functions

Dedicated setup buttons enable quick and easy setup.

14 channels of PGM/PST

PGM/PST (Program/Preset) style buttons are similar to those used in broadcast switchers. If signal is present, green color indicator is lit.

Manual Transition

Equipped with TAKE button and flip flop style T-bar fader.

Switchable Inputs

Input format types are switchable on Ch 11-14. The selected format is indicated on the backlit input status indicator.

Various Transition Effects

Includes Dissolves, NAM, and FAM mixing types. 4 types of wipe patterns are also included.

FAM (Full Additive Mix) transition: Images will transition with the luminance level held steady.
NAM (Non-Additive Mix) transition: The two images will be compared, and the pixels that have a higher brightness level will be shown while the images are switched.

Dissolve Transition

Cross Point

Image A   Image B

FAM, NAM Transition

Image A   Image B

Image A   Image B

Video Image at Cross Point

Dissolve Transition   FAM Transition   NAM Transition
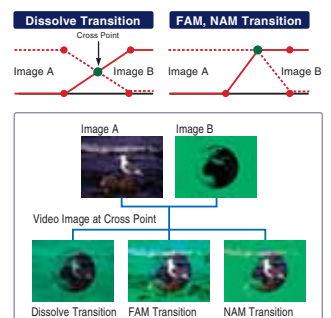
MULTI-INPUT

HD/SD-SDI Input x 8

HD-SDI, SD-SDI is recognized automatically. If output setup and aspect ratios are different from input, you can choose letterbox, crop or fill options. *Embedded audio is not available.

RGB/COMPONENT Input x 4

Four D-Sub 15-pin connectors for analog RGB input, including two switchable component connectors. Also supports RGBHV.

DVI-D/HDMI Input x 2

Four DVI-D inputs are supplied. HDMI* signal can be input using HDMI to DVI adapter. *Does not supports HDCP and HDMI 1.3 or later. Embedded audio is not available.

SD Input x 2

Composite input (BNC type) and S-Video (Y/C)

* All inputs have individual thru out connectors for flexible system configuration.

MULTI-OUTPUT

SDI Output x 2

Supports HD-SDI or SD-SDI output formats. Output 2 is assignable one signal source from PGM/PVW/AUX.

RGB/COMPONENT Output x 2

PC monitor or Projector can be connected from analog RGB or component connector.
An output source is assignable from PGM/PVW/AUX.
*Output format depends on output mode.

DVI-D/HDMI Output x 2

Connect a projector or monitor that supports a digital connection. HDMI output is possible using an HDMI to DVI-D adapter. Output 2 is assignable one signal source from PGM/PVW/AUX.

SD Output x 2

SD video can be output from the AUX bus using built-in scaler. An output source is assignable from PGM/PVW/AUX. *Output format depends on output mode.

CONTROL INTERFACE

■ REFERENCE Input

Reference input is available for synchronizing external equipment.

■ TALLY Output

TALLY signal is provided for camera or external monitors.

■ RS-422 REMOTE Connector

Controllable using RS-422 via computer software.

■ MIDI Connector

Control the V-1600HD via any MIDI device or any V-LINK enabled product.

■ Specifications

Video Processing		
Processing		4:2:2 (Y:Pb:Pr), 10 bit
Supported Formats	**VIDEO (HD/SD)**	480/59.94i, 576/50i, 480/59.94p, 576/50p, 1080/59.94p, 1080/50p, 1080/59.94i, 1080/50i, 720/59.94p, 720/50p
	RGB	640 x 480/60 Hz *1, 800 x 600/60 Hz *1, 1024 x 768/60 Hz *1, 1280 x 768/60 Hz *1, 1280 x 1024/60 Hz *1, 1600 x 1200/60 Hz, 1920 x 1200/60 Hz *2 * Conforms to VESA DMT Version 1.0 Revision 10 *1 Output refresh rate is 75 Hz when frame rate is set to 50 Hz *2 Reduced blanking
	STILL	Windows Bitmap File (.bmp) * Maximum 1900 x 1200 pixels, 24-bit per pixels, uncompressed

Input/Output Level and Impedance	
Composite	1.0 Vp-p, 75 ohms
S-Video	Luminance Signal : 1.0 Vp-p, 75 ohms Chrominance Signal : 0.286 Vp-p, 75 ohms (NTSC) 0.3 Vp-p, 75 ohms (PAL)
Analog HD/RGB	0.7 Vp-p, 75 ohms (H, V : 5VTTL)

Input Connectors	* Loop thru connectors are equipped for all inputs
Analog SD	S-Video (4 pin mini DIN type) x 1 Composite (BNC type) x 1 * Select one from menu
Analog HD (Component)	Y/Pb/Pr (BNC type) x 2 D-Sub 15 pin type x 2 * Combined use with analog RGB
Analog RGB	R/G/B/H/V (BNC type) x 2 D-Sub 15 pin type x 2 * Combined use with analog HD (Component)
DVI-D	Single Link Type x 2
HD/SD-SDI	BNC type x 8 * Conforms to SMPTE 259M-C, SMPTE 292M

Output Connectors	
Analog SD	S-Video (4 pin mini DIN type) x 1 Composite (BNC type) x 1
Analog HD (Component)	Y/Pb/Pr (BNC type) x 1 D-Sub 15 pin type x 1 * D-Sub 15 pin type : combined use with analog RGB
Analog RGB	D-Sub 15 pin type x 1 * Combined use with analog HD (Component)
DVI-D	Single Link Type x 2
HD/SD-SDI	BNC type x 2 * Conforms to SMPTE 259M-C, SMPTE 292M

Other Connectors	
TALLY	D-Sub 15 pin type x 3 (200 mA, Open Collector type)
Remote	MIDI (IN, OUT/THRU) RS-422 (D-Sub 9 pin type) x 1
REFERENCE	BNC type (IN, THRU) *Black Burst (Sync to Frames), Bi-Level, Tri-Level Sync
USB port (host)	A type x 1 for USB memory

Effects	
Transition	Mix, FAM, NAM, Wipe (9 patterns)
Composition	PinP, Chroma Key, Luminance Key, Split, DSK
Others	Output Fade, Edge Blending, Dual Screen, Span Screen

Others	
Power Consumption	90 W
Dimensions	482 (W) x 319.4 (D) x 206.2 (H) mm 19 (W) x 12-5/8 (D) x 8-1/8 (H) inches
Weight	8.1kg 17 lbs 14 oz
Accessories	Power Cord, Owner's Manual

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
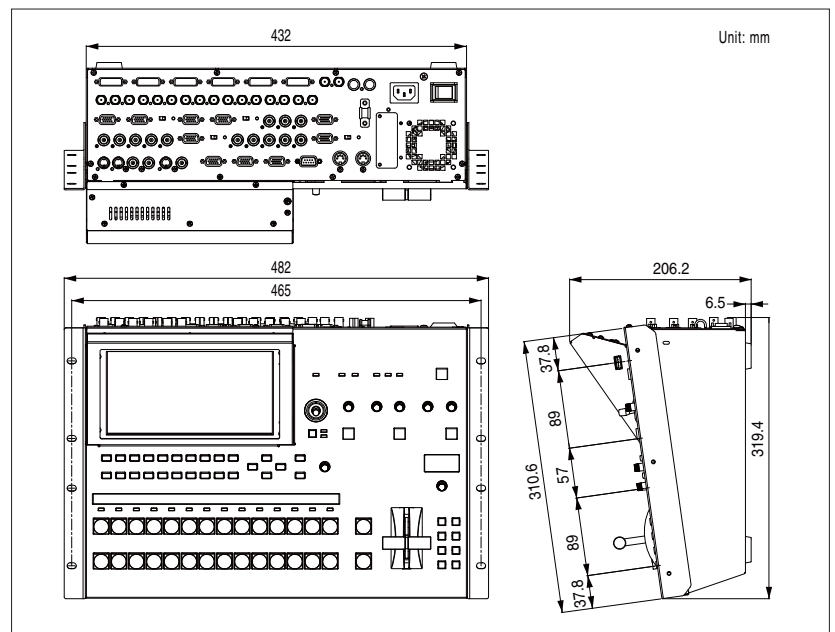
This product is intended for use in the following Electromagnetic environments:
E1:residential, E2:commercial and light industrial, E3:urban outdoors, E4:controlled EMC environment, ex. recording studio (broadcasting studio) which are specified in EN55103-1 and EN55103-2.

■ Rackmount Setup

■ Dimensions

Unit: mm

432

482 / 465

206.2 / 6.5

310.6 / 37.8 / 89 / 57 / 89 / 37.8 / 319.4

Roland Systems Group

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.

V-LINK — Using V-LINK, musicians can "play" video from their electronic instrument when used with Roland video products. With V-LINK, musicians have a powerful interface for realtime audio and video integration.

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.)

Roland
WE DESIGN THE FUTURE

www.rolandsystemsgroup.com/v1600hd