JVC®
PROFESSIONAL

SDI TO HD-SDI HDTV UP-CONVERTER

BC-D2300U

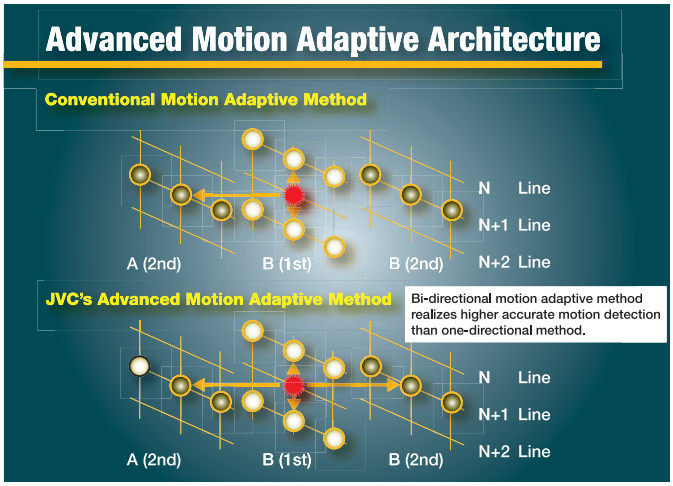
1080i/720p HDTV Up-Converter
with built-in Audio/Video processor

High-Technology, Low-Cost Solution for DTV Broadcasting from JVC's Newly Introduced BC-D2300U HD Up-Converter

JVC's BC-D2300U converts standard definition 480i NTSC (SDTV) signals into broadcast quality 1080i/720p signals. At its core is a highly accurate motion detection algorithm supported by JVC's original Advanced Motion-adaptive Interpolation, a built-in two-dimensional enhancer, and a built-in audio-delay resynchronizer. For broadcasters, the results are high-quality up-converted pictures and seamless transitions from current NTSC broadcasts to high-definition broadcasts using conventional NTSC standard definition equipment. The full-featured BC-D2300U also ensures uniform picture quality when inserting sequences captured with analog equipment into digital programming. All this from a compact unit, featuring exceptionally low power consumption and superior performance, at a fraction of the cost of creating new HDTV programming during the transition from analog to digital HDTV broadcasting.

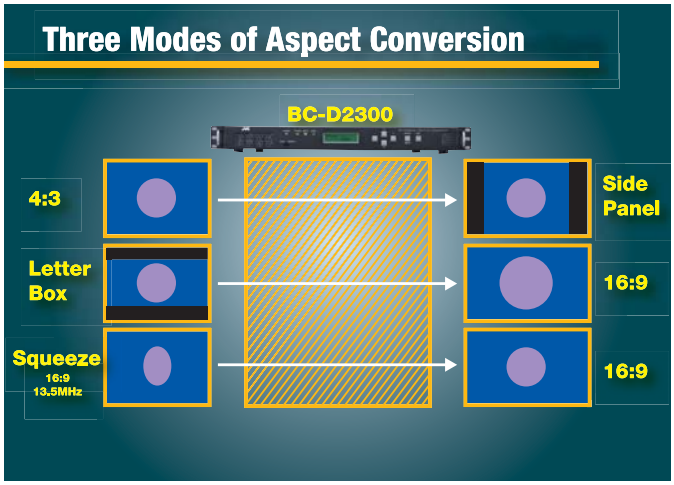
480i NTSC to 1080i/720p HDTV Signal Conversion
JVC's BC-D2300U offers dual format compatibility, allowing operators to convert 480i, 4:2:2 digital component (D1) signals into 1080/60i or 720/60p digital high-definition signals via the menu display control. The optional BC-D231U board is available to convert digital composite (D2) signals.

Advanced Motion-adaptive Interpolation
The BC-D2300U applies innovative motion-adaptive interpolation technology to distinguish between moving and still areas of images and convert them separately — intra-field interpolation for moving image fields and inter-field interpolation for still image fields — into HDTV images. This eliminates blur for moving images and increases vertical resolution for still images.

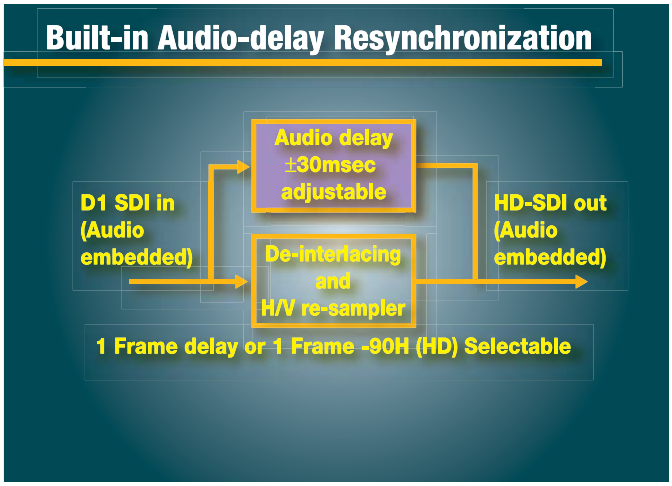


Motion Sense
Motion Sense is a function for controlling Advanced Motion-adaptive Interpolation. Depending on the input picture, operators can easily set Motion Sense parameter values from zero to 15 to optimize the picture quality, or use JVC's optimum default setting of eight. At the zero end of the range a video stream is interpreted as a still image and inter-field interpolation is applied, while at a setting of 15 the entire video is interpreted as moving images and intra-field interpolation is applied. This enables subtle adjustments to be made to get optimum quality for various pictures.

Three Modes of Aspect Conversion
The BC-D2300U accepts video inputs with aspect ratios of 4:3 and 16:9, as well as Squeeze mode pictures generated by stretching 4:3 video to the left and the right.



Built-in Audio-delay Resynchronizer
Audio multiplexing signals embedded in video can be output after being synchronized with a delay time produced during video signal conversion, 1 Frame or 1 Frame -90H [HD] and user adjustable ±30 msec to each selected delay time.



User-friendly Operation
All of the functions of the BC-D2300U can be accessed and controlled from the unit's LCD-equipped front panel. A time-saving Profile function saves frequently used menu settings for instant retrieval.

ID Function
When using multiple up-converters, a unique ten-character ID, which is displayed in the Top menu, can be set for each unit for circuit identification.

Video Cropping
A convenient video cropping function hides the left and right edges of the video output in 4:3 mode by adjusting the side panel width. The color of the side panels can be freely set by the user using Y, C_b and C_r or Hue, Saturation, and Luminance parameters.

Compact, Power-saving Design
For easy installation and to keep running costs low, the BC-D2300U features an elegant 1 rack unit space-saving design and exceptionally low power consumption of 35 W. The low power consumption compared to others in its class makes the BC-D2300U ideal for mobile applications.

Error Display and Alarm Signal Output
A built-in error display and an alarm provide real-time warning to users of problems that could adversely affect broadcast quality.

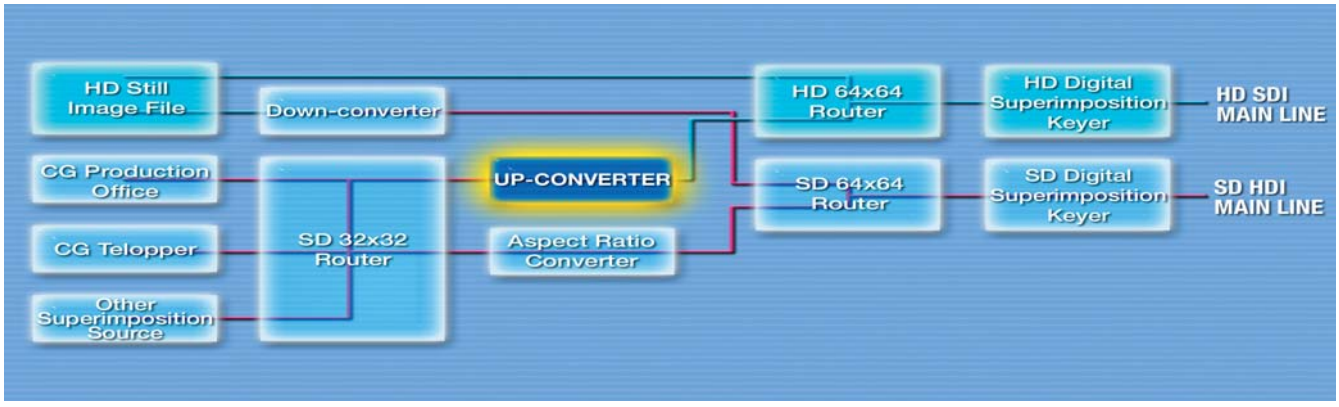
Remote Control Capability
To further enhance ease of use and installation flexibility, a maximum of 31 units of BC-D2300U can be controlled by one host computer through RS-485 serial interface. (D-sub 9-pin female)

Composite Digital and Analog Component Input Board
Optional input board (BC-D231U) is available to input composite digital signal and analog component signal.

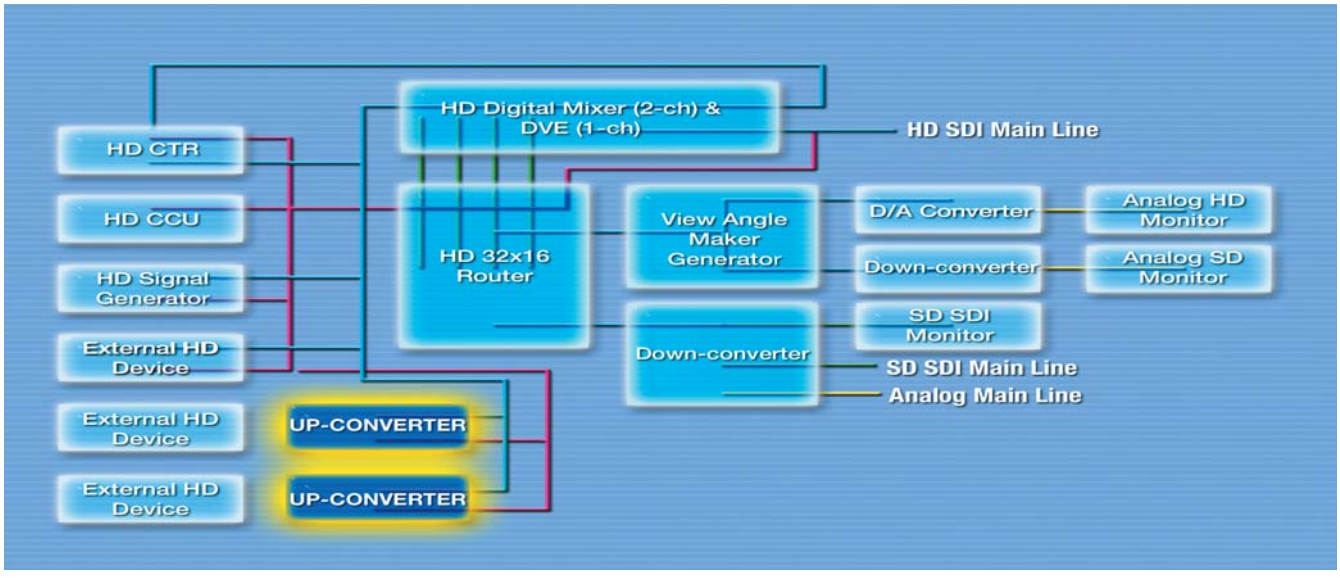
Color Correction and Variable Enhancer Functions
Optional software (BC-D232U) is available to deliver color corrector and variable enhancer functions for even greater versatility.

EXAMPLES OF SYSTEM CONFIGURATIONS

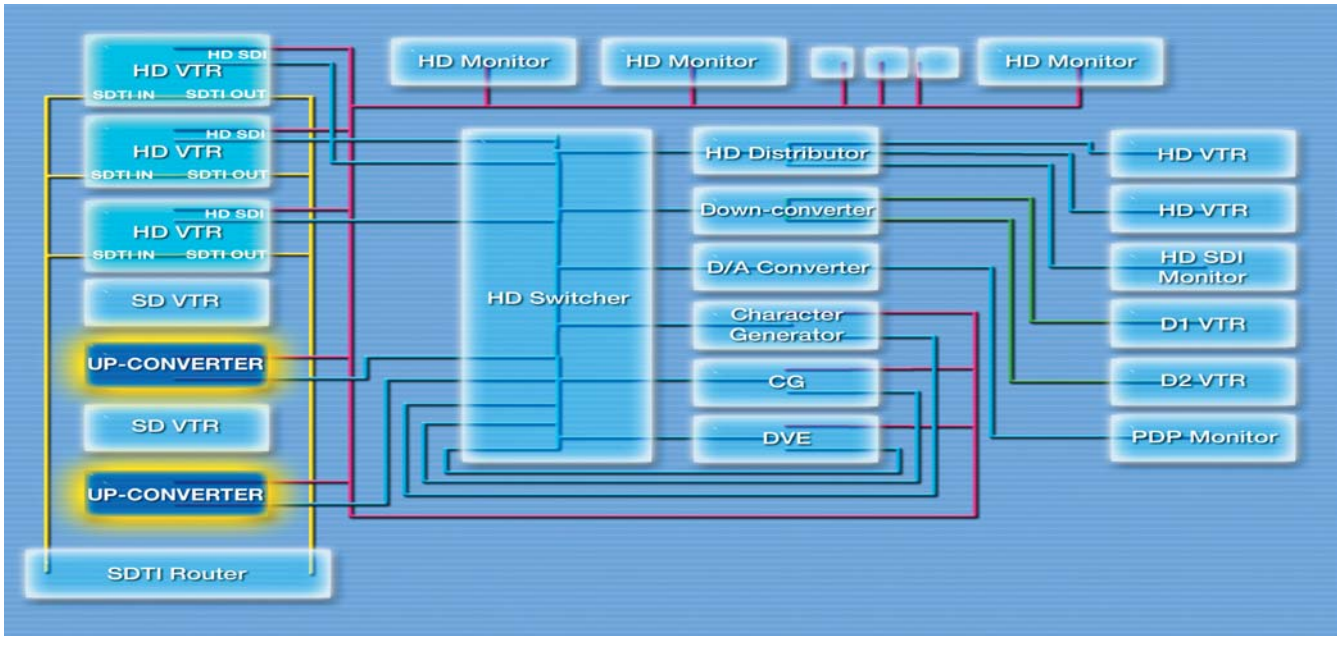
■ *Scheme of Superimposition System*



■ *Scheme of Video System in a Drama Production Studio*



■ *Scheme of Editing Room System*



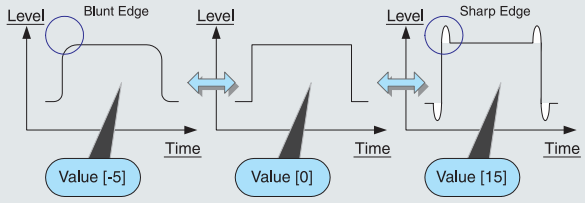
OPTIONAL BC-D232U IMAGE CONTROL SOFTWARE

This Software Consists of Variable Enhancer and Color Corrector Functions

VARIABLE ENHANCER

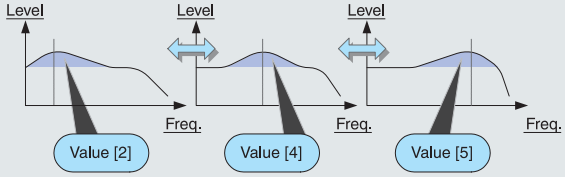
Enhancement Level

■ This item adjusts the level of contour enhancement to an optimum level.



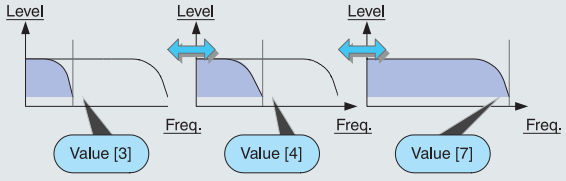
Enhance Freq.

■ This item adjusts the frequency band to which the contour enhancement is applied (frequency characteristics adjustment).



Cut Off Freq.

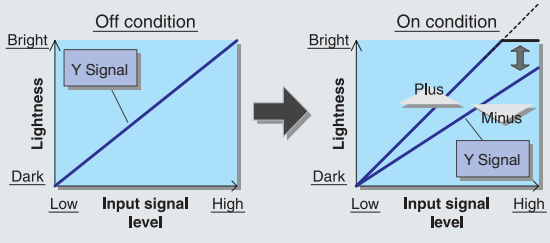
■ This item adjusts the frequency limiting the bandwidth of the input video signal. The bandwidth is not limited when this item is set to the factory default (7 [MHz]) (through condition).



COLOR CORRECTOR

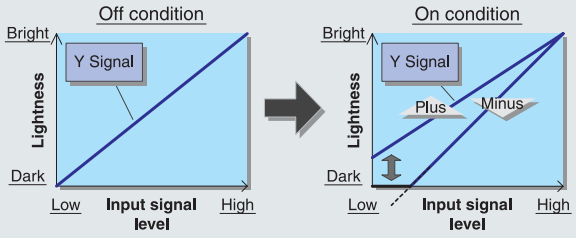
White Level Adjustment

■ This item varies the contrast of the high-luminance areas in the displayed video.



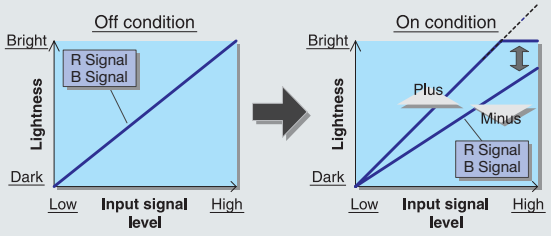
Black Level Adjustment

■ This item varies the contrast of the low-luminance areas in the displayed video.



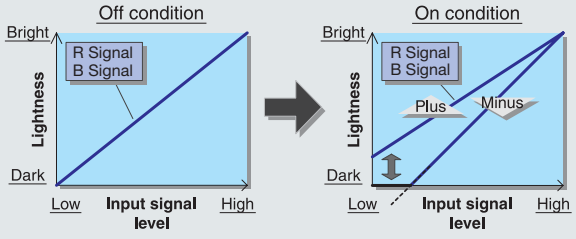
White Color (R)/White Color (B) Adjustment

■ This item varies the redness or blueness of the high-luminance areas in the video independently.



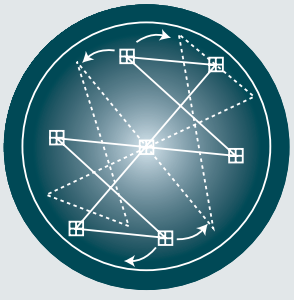
Black Color (R)/Black Color (B) Adjustment

■ This item varies the redness or blueness of the low-luminance areas in the video independently.



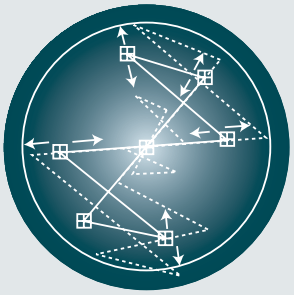
Phase

■ This item varies the color phase of the displayed video with ±180 degrees.

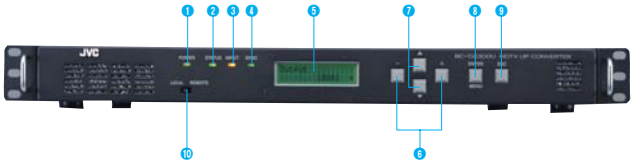


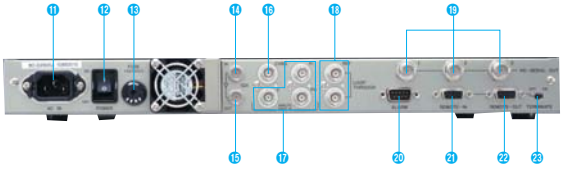
Chroma

■ This item varies the color saturation of the displayed video. The video becomes black and white when this item is set to -100.



CONTROLS, CONNETORS AND INDICATORS





1. [POWER] Indicator
2. [STATUS] Indicator
3. [INPUT] Indicator
4. [SYNC] Indicator
5. Display
6. [+/-] Button
7. [▲/▼] Button
8. [ENTER/MENU] Button
9. [ESC] Button
10. [LOCAL/REMOTE] Switch
11. [AC IN] Power input connector
12. [POWER] Switch
13. Fuse holder
14. [SDI IN] Connector
15. [SDI OUT] Connector
16. [CVBS] Input connector
17. [Y/Cb/Cr] Input connectors
18. [[REF] External reference sync signal input connectors (loop-through)
19. [HD SERIAL OUT] HD digital serial output
20. [ALARM] Connector... D-sub 9-pin (male)
21. [REMOTE-IN] Connector... D-sub 9-pin (female)
22. [REMOTE-OUT] Connector... D-sub 9-pin (female)
23. [TERMINATE] Switch

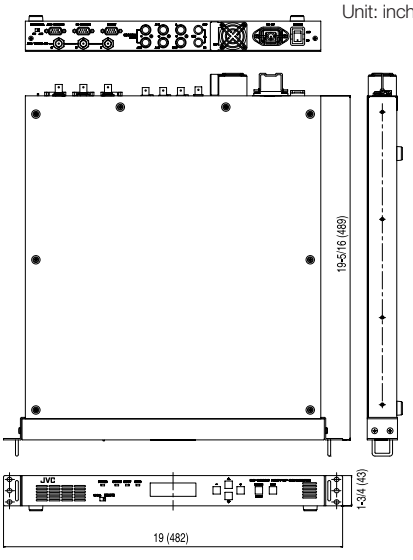
Note: The [CVBS] and [Y/Cb/Cr] connectors are enabled only when the BC-D231U optional board is installed.

SPECIFICATIONS

Input	
Video	Digital serial video signal (NTSC: 480i), SMPTE 259M x 1, 75 ohms unbalanced, with active through output (In order to input a D2 signal or an analog signal, an optional board "BC-D231U" is required.)
Audio	Digital serial audio signal, SMPTE 272M x 1, 4ch, Sampling frequency 48kHz, Common input with video signal
Reference Signal	NTSC black burst or HD sync x 1, 75 ohms unbalanced, with bridge output
Output	
Video	Digital serial video signal, SMPTE 292M x 3, Colorimetry (On: ITU-R BT.601 ⇨ ITU-R BT.709/Off: through), 75 ohms unbalanced
Audio	Embedded serial digital audio signal, SMPTE 272M x 3, 4ch, Sampling frequency 48kHz, Common output with video signal quantization
Quantization	10 bits
Conversion Mode	3 modes (4:3/Letter box/Squeeze)
Video/Audio Delay	1 frame/1 frame - 90 HD lines
Position Adjustment	Vertical: ±60 HD lines Horizontal: ±120 pixels (Resolution: 2 pixels)
Event Memory	4 memories
Power Input	AC 120V, ±10%, 50/60Hz
Power Consumption	Approx. 35W
Dimensions (W x H x D)	19 x 1-3/4 x 19-5 /16 inches 482 x 43 x 489 mm 1U rack mounting
Weight	Approx. 14 lbs. (6.2 kg)
Accessory	One set of rack mounting metal fittings

DIMENSIONS

Unit: inches (mm)



OPTIONAL ACCESSORIES

BC-D231U
D2/Analog Composite/Analog Component Input Board

BC-D232U
Image Control Software

Design and specifications subject to change without notice.

■ The Hachioji Plant of Victor Company of Japan, Ltd., has received ISO14001 and ISO9001 Certifications under the global standard for environmental management.

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