



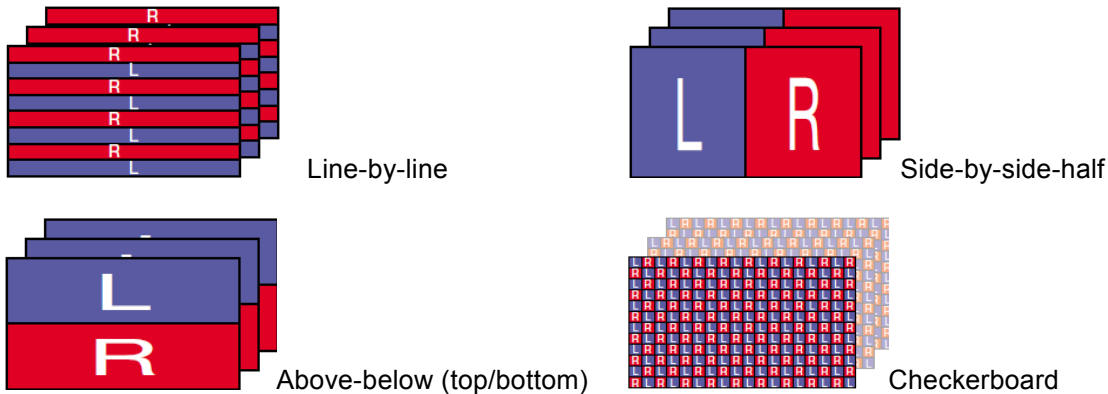
IF-2D3D1 Product Features

- **Real-time 2D/3D conversion using unique JVC algorithms**
 - 2D is converted into 3D in real time. Select from four different 3D mixed formats for stereo video output.
 - Separate L/R HD-SDI outputs enable conversion of existing 2D content to 3D. Handy for rough editing.
 - 3D output can be adjusted for both parallax and 3D intensity.
 - **Conversion of L/R dual signals to a 3D mixed format, ideal for real-time monitoring when shooting in 3D or when shooting with 2D equipment**
 - Scope: waveform monitor and vectorscope for comparing L/R video streams.
 - Split: for close comparison of left-eye and right-eye images on one screen with a movable boundary.
 - Rotation: to facilitate use of a reversed camera setup when shooting in 3D.
 - HD-SDI frame synchronizer* for synchronizing a pair of cameras that lack external sync.
 - Anaglyph and sequential viewing modes for enhanced convenience, providing multiple ways to check 3D content.
- *Time base information is not modified.*
- **Compatible with a wide range of HD formats**
 - **Housed in a rugged metal cabinet (1U)**

IF-2D3D1 Technical Information

- **Choice of 3D mixed formats**

JVC's unique algorithms convert 2D into 3D in real time. For maximum flexibility, there are four 3D mixed formats* for stereo video output — line-by-line, side-by-side-half, above-below, and checkerboard. Discrete L/R signals can be output for processing or dual projection, as well as stereo output for TV display using the HD-SDI and HDMI outputs (one each). This means the IF-2D3D1 can be connected directly to projectors, LCD, and PDP displays.



**Depending on the format of the input signals, the choice of output formats may be limited. For details, see table.*

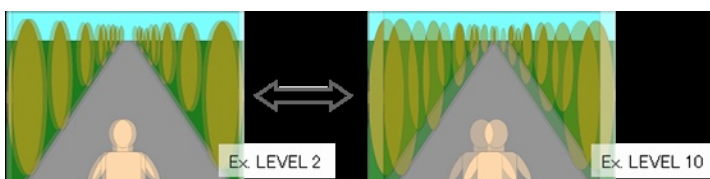
Parallax and 3D Intensity Adjustment

For enhancing the 3D effect to make the picture easier to view, the IF-2D3D1 offers two adjustments, Parallax and 3D Intensity.

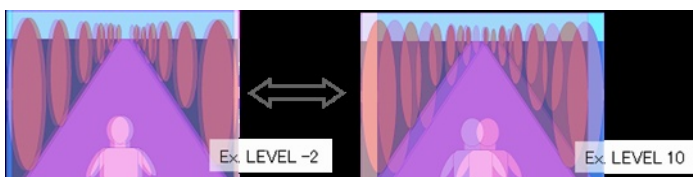
- **Parallax adjustment**

This displaces the left-eye and right-eye images horizontally. There are three different viewing modes. With Parallax 1, the L/R images are combined naturally, while Parallax 2 presents anaglyph images. The third mode, Parallax 3, allows adjustments to be made while displaying the left and right images sequentially.

Parallax 1: Adjust natural images



Parallax 2: Adjust anaglyph images



This makes it easy to check the left-eye image (red) and right-eye image (blue) as well as the foreground image and background image.

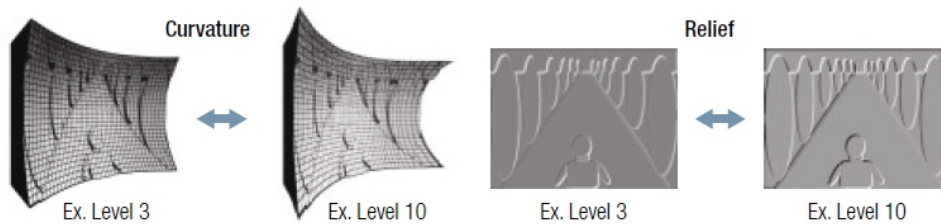
Parallax 3: Adjust the images while viewing L and R sequentially



Sequential mode is ideal for those who do not require 3D glasses for viewing.

- **3D Intensity adjustment:**

This allows virtual, simultaneous adjustment of curvature and relief to manipulate the intensity of the 3D effect. As with Parallax adjustment, there are three viewing modes: Intensity 1 (natural), Intensity 2 (anaglyph), and Intensity 3 (sequential).



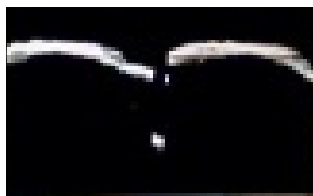
Curvature and relief can be adjusted simultaneously.

3D L/R Mixing Functions

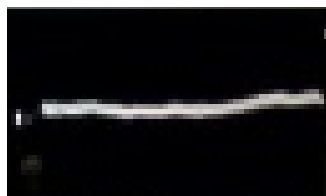
The IF-2D3D1 also offers three handy features for mixing left and right signals: Scope, Split, and Rotation.

- **Scope**

The waveform monitor helps identify discrepancies in the L/R signals from the cameras and is handy for making basic adjustments to the setup. A vectorscope is also provided. Single, parallel, and balanced display modes are offered to compare the signals and enable on-the-spot adjustments to the two cameras.



Waveform (parallel mode)

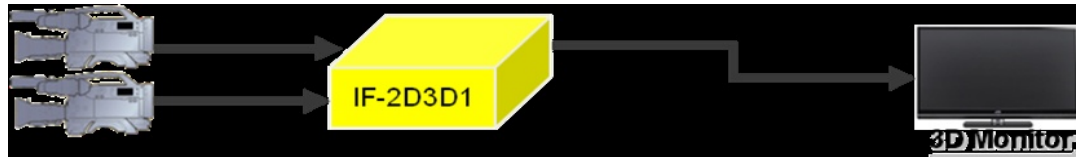


Waveform (balanced mode)

- **Split**

When shooting 3D materials, great care has to be taken to ensure there is no discrepancy in the exposure or white balance settings, or in the vertical alignment of the left and right cameras. Fortunately, such problems can be quickly spotted and eliminated with the convenient Split function offered by the IF-2D3D1. It overlaps the two images with a vertical boundary that can be positioned anywhere on screen. The L image is seen on the left of the boundary, with the R image on the right, thus allowing one to easily identify even minor discrepancies.

Connections



3D line-by-line content seen on a standard monitor

With the Split function, it is easy to identify and correct the following problems:

Left cam Right cam



Vertical misalignment

Left cam Right cam



White balance discrepancy

Left cam Right cam



Exposure discrepancy

Rotation

The Rotation feature is handy for 3D shooting when conditions dictate that one of the two cameras must be upside down. The IF-2D3D1 can rotate the upside-down video stream so both signals can be monitored the right way up. A one-frame delay ensures that both remain in sync.

Connections



Normal display during shooting



Display with Rotation active



The left-eye image is unchanged, but the right-eye image is rotated through 180 degrees. The processing is not instantaneous, so a one-frame delay is introduced on the left to ensure both images are in sync.

Input/Output Signal Formats

The table shows what inputs the IF-2D3D1 accepts and what signals it can output.

Note: LbL: Line-by-line; SbS: Side-by-side-half; AB: Above-below; CB: Checkerboard

Input			Functions		Output							
			2D/3D convert er	3D LR mixer	3D mixed formats				HDSDI		HDMI	
					LbL	SbS	AB ⁺ ₁	CB	3D mix	Discrete ⁺ ₁	3D mix	Discrete ⁺ ₁
HDSDI stereo 4:2:2 (for mixing)	1080	60p		✓	✓	✓	✓	✓	✓	✓	✓	✓
		50p		✓	✓	✓	✓	✓	✓	✓	✓	
		30p		✓	✓	✓	✓	✓	✓	✓	✓	
		25p		✓	✓	✓	✓	✓	✓	✓	✓	
		24p		✓	✓	✓	✓	✓	✓	✓	✓	
		60i		✓		✓		✓	✓	✓	✓	
	720	50i		✓		✓		✓	✓	✓	✓	
		60p		✓	✓	✓	✓	✓	✓	✓	✓	
	1080	50p	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		30p	✓	✓	✓	✓	✓	✓	✓	✓		
		25p	✓	✓	✓	✓	✓	✓	✓	✓		
		24p	✓	✓	✓	✓	✓	✓	✓	✓		
		60i	✓		✓		✓	✓	✓	✓		
		50i	✓		✓		✓	✓	✓	✓		
	720	60p	✓	✓	✓	✓	✓	✓	✓	✓		
		50p	✓	✓	✓	✓	✓	✓	✓	✓		
HDMI Video	1080	60p	✓		✓	✓	✓	✓	✓*2	✓*2	✓	✓
		50p	✓		✓	✓	✓	✓*2	✓*2	✓	✓	
		30p	✓		✓	✓	✓	✓*2	✓*2	✓	✓	
		25p	✓		✓	✓	✓	✓*2	✓*2	✓	✓	
		24p	✓		✓	✓	✓	✓*2	✓*2	✓	✓	
		60i	✓			✓	✓	✓*2	✓*2	✓	✓	
	720	50i	✓			✓	✓	✓*2	✓*2	✓	✓	
		60p	✓		✓	✓	✓	✓*2	✓*2	✓	✓	
		50p	✓	✓	✓	✓	✓	✓*2	✓*2	✓	✓	

*1: Above-below is available only when 3D mixed is selected for HD-SDI or HDMI output.

*2: HDCP-protected content cannot be output.

Specifications and Dimensions (Preliminary)

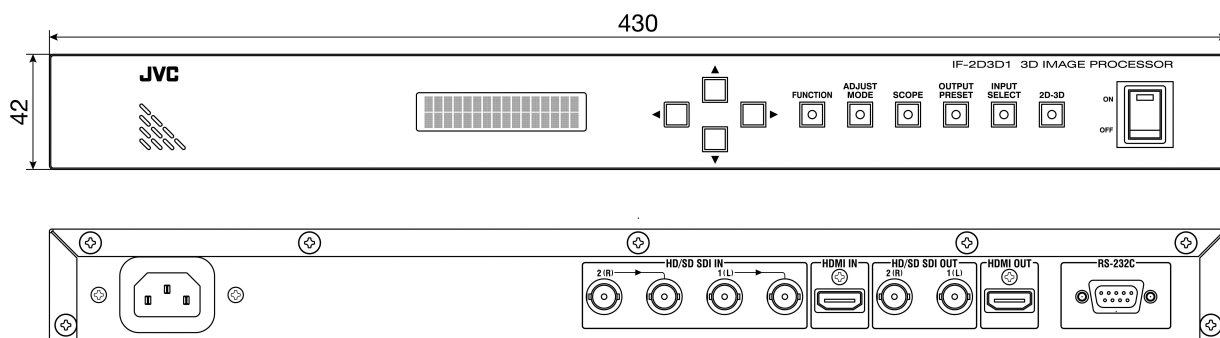
Input specifications	HD-SDI or HDMI
	HD-SDI is equipped with reclocked out
Output specifications	HD-SDI: Simultaneous discrete L and R signals
	HD-SDI and HDMI: 3D mixed format
	HDMI: Selectable (L or R)
Audio specifications	HD-SDI: Embedded audio to 8ch (48kHz)
	HDMI: Linear PCM to 8ch (48kHz)

Connectors

Input	IN 1 (L)	HD-SDI: BNC x 2 with reclocked out
	IN 2 (R)	HD-SDI: BNC x 2 with reclocked out
	HDMI	HDMI (Ver1.3): x 1
Output	OUT 1 (L)	HD-SDI: BNC x 1
	OUT 2 (R)	HD-SDI: BNC x 1
	HDMI	HDMI (Ver1.3): x 1
External remote		RS-232C D-sub 9-pin x 1

General

Power requirement	AC120 - 240 V
Power consumption (approx.)	10W
Dimensions (W x H x D)	17inch x 2inch x 9-5/8inch /
(including protrusions)	430mm x 49mm x 242mm
Weight	Less than 6.38lbs / 2.9kg
Supplied accessories	AC power cord, cord holder, rack mount bracket



(Unit:mm)

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