

# Specifications

## SB-4024-A/SB-4027/SB-4031

### Input / Output Formats

Name	Connector	Format	Resolution / Bit Depth	Standard	Frame Rate
4K-IN 4K-OUT	BNC x 4 1 line	12G-SDI Type 1 2SI	3840 x 2160 4:2:2 10 bits	SMPTE ST 2082-1	59.94p/60p/50p
		3G-SDI Level A/B SQD	3840 x 2160 4:2:2 10 bits	SMPTE ST 424	59.94p/60p/50p
		3G-SDI Level A/B 2SI	3840 x 2160 4:2:2 10 bits		59.94p/60p/50p
		1.5G-SDI SQD	3840 x 2160 4:2:2 10 bits	SMPTE ST 292-1	59.94i/60i/50i/29.97PsF/30PsF/24PsF/23.98PsF/25PsF/29.97p/30p/25p/24p/23.98p
1.5G-SDI 2SI	3840 x 2160 4:2:2 10 bits	59.94i/60i/50i/29.97p/30p/25p/24p/23.98p			
HD-IN HD-OUT	BNC x 1 1 line	1.5G-SDI	1920 x 1080 4:2:2 10 bits	SMPTE ST 292-1	59.94i/60i/50i/29.97PsF/30PsF/24PsF/23.98PsF/25PsF/29.97p/30p/25p/24p/23.98p
		3G-SDI Level A/B	1920 x 1080 4:2:2 10 bits	SMPTE ST 424	59.94p/60p/50p

LAN	RJ-45 Ethernet 100Base-TX	Control
GPIO	12-pin Connector	GPIO 1 to 4
	HIROSE HR-10G-10R-12S (71)	GPIO 1 to 4

\* 4K-OUT, HD-IN: SB-4024-A, SB-4027 only  
■ SB-4027, SB-4031 only

### Functions

Item	Format	Description
Colorimetry Conversion	Input	Rec. ITU-R BT.2020/Rec. ITU-R BT.709
	Output	Rec. ITU-R BT.2020/Rec. ITU-R BT.709
	Grid	32 x 32 x 32
	Internal	Irregular Interval Each interval of R/G/B is the same.
	Grid Precision	Non-linear 10 bits
	Operational Precision	16 bits
HDR/SDR Conversion	EOTF/OETF	Non-linear, linear conversion
	1D LUT	Non-linear 10 bits
Preset Numbers		8
Time Code	LTC / VITC	LTC/VITC is bypassed with same delay as process delay
Embedded Audio Format	Number of Channels	32 channels (4K)
	Sampling	48 kHz
	Resolution	24 bits
	Synchronization	Video synchronized
Payload	SMPTE ST 352	Payload is embedded with input / output format and colorimetry setting information.
	Input	Available both on BE-4028/NXL-FR316
Reference	BB SYNC	Frame rate 59.94i/50i
	Tri-level Sync	Frame rate 59.94i/60i/50i/24p/25p
	SDI Output Phase Adjustment	SDI output phase can be adjusted based on reference input. Vertical ±8 LINE (-237μsec to +237μsec) Horizontal -1100 to +1099 steps
	SDI Input Phase Difference	-0.1H ~ +0.4H (-2.9μsec ~ +11.8μsec) Phase difference between each channel is -0.25 to +0.25H (-7.4μsec to +7.4μsec) from CH1
	Input Setting	Reference Input/SDI (CH1) /AUTO *Video input and reference input shall be synchronized.

### General Specifications

Dimensions (board)	Front board 275.8 (W)x114.5 (H)mm Rear board 115.15 (W)x114 (H)mm Input board 115.15 (W)x108 (H)mm Excluding protrusions Two slots occupied
Weight	0.5kg
Power Consumption	22W (MAX)
Power Requirement	DC 12V
Guaranteed Operating Temperature Range	+5 to 40°C (no condensation) *1
Performance Guarantee Temperature Range	+10 to 35°C (no condensation) *1
Operating Humidity Range	+20 to 80% RH (no condensation)
Operating Temperature Range	-20 to 60°C (no condensation)

\*1 Ambient temperature when the board is in the NXL-FR316.

## BE-4028

### General Specifications

Dimensions	430(W) x 44(H) x 410(D)mm (Excluding Protrusions)
Weight	3.8 kg
Power Consumption	52W MAX (With Two Boards)
Power Requirement	AC100 - 240V (50/60Hz)
Operating Temperature Range	5 to 40°C
Operating Humidity Range	20 to 80%RH (No Condensation)

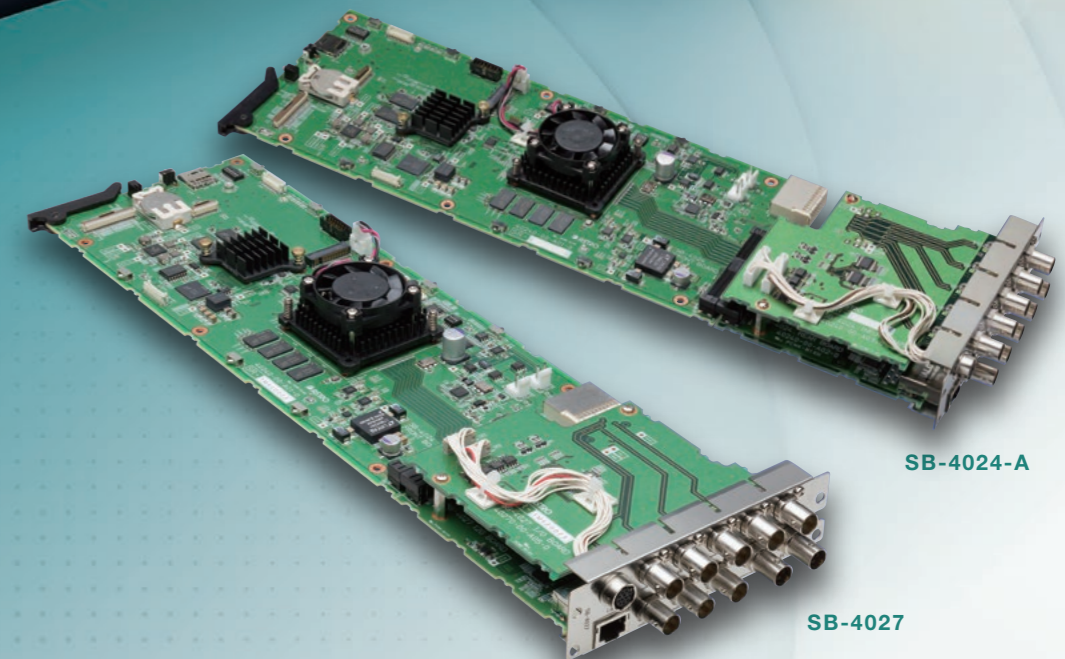
# HD-4K Converting Board Series

## 4K Converting Board SB-4024-A / SB-4027 / SB-4031

**HDR**

**SR Live**  
for HDR

## Board Enclosure BE-4028



SB-4024-A

SB-4027

BE-4028



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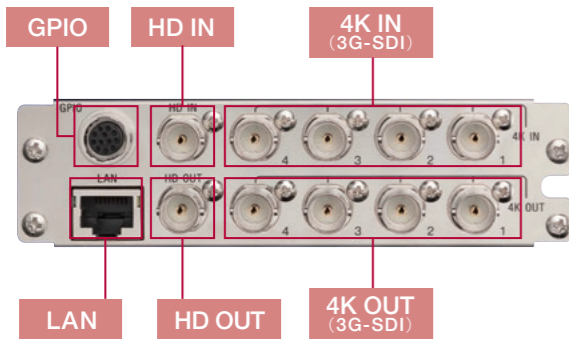
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SB4024-A/4027/4031/BE4028-TY4506E-3

# High Quality Conversion, Utility Functions and Space Saving

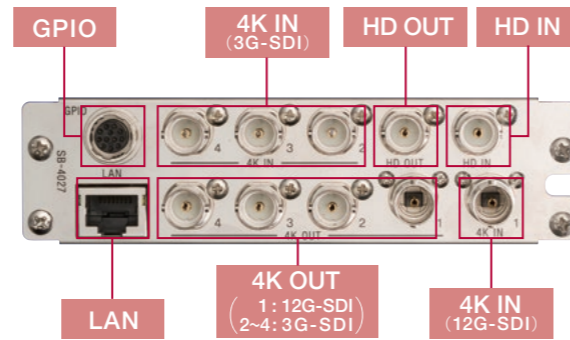
Cross converter board that supports 4K HDR production.

## SB-4024-A 4K Converting Board



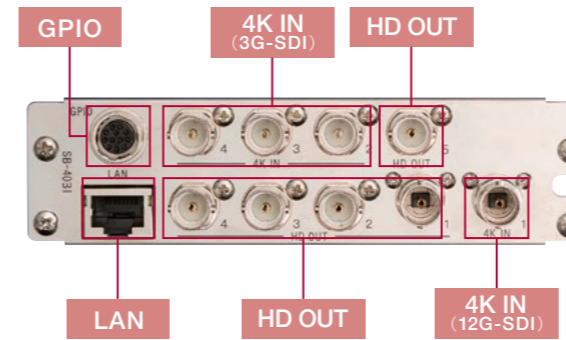
## SB-4027 4K Converting Board

12G



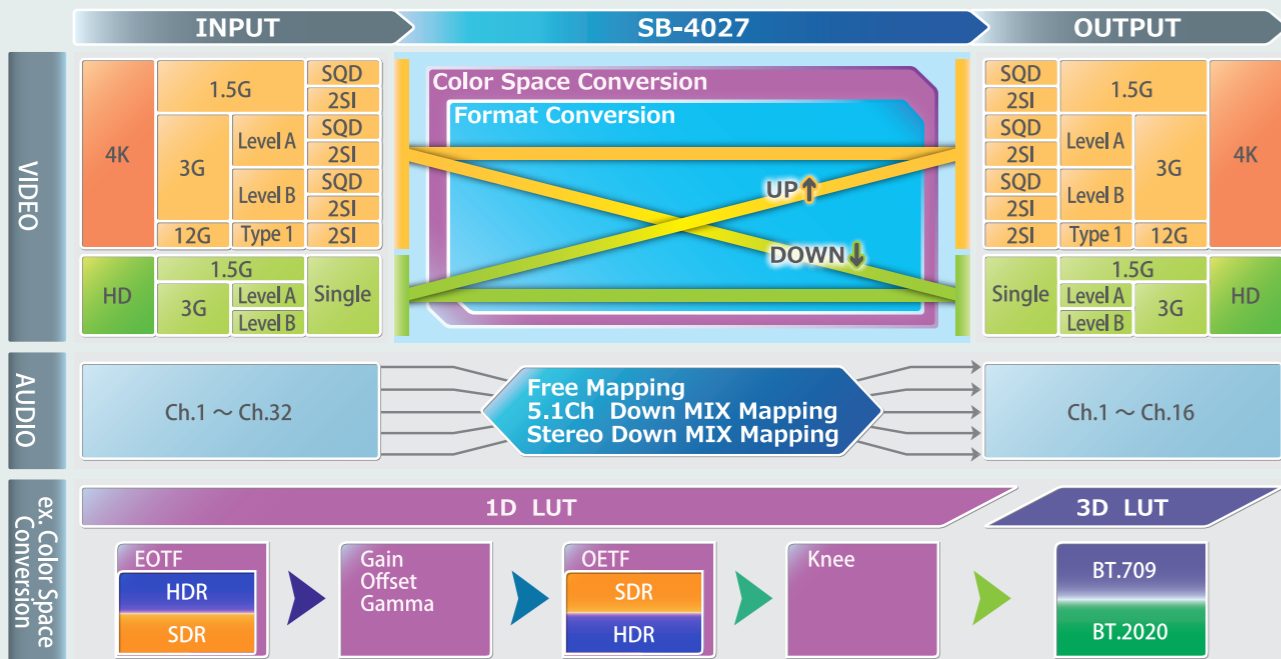
## SB-4031 4K Down-Converting Board

12G



<b>4K ⇔ HD</b> Up-Conversion, Down-Conversion	<b>ITU-R BT.2020 ⇔ ITU-R BT.709</b> Colorimetry Conversion	<b>HDR ⇔ SDR</b> Dynamic Range Conversion
<ul style="list-style-type: none"> <li>Motion detection, IP conversion</li> <li>Enhance function</li> </ul>	<ul style="list-style-type: none"> <li>Simultaneous use of 3D LUT and Linear Matrix</li> <li>Irregular Interval Grid Format 32 x 32 x 32 grids</li> <li>ITU-R BT.2407 ANNEX 2</li> </ul>	<ul style="list-style-type: none"> <li>Gain, Offset, Gamma and Knee adjustment</li> <li>Various types of log supported (HLG, PQ, S-Log, Canon Log, V-Log etc.)</li> <li>1D LUT File import</li> </ul>

- 3G-SDI Level A ⇔ B Conversion
- 4K 2SI ⇔ SQD Conversion
- SR Live (Option)
- Law Latency Bypass Mode
- Audio Mapping Function  
Input / Output channel re-mapping, 5.1ch → Stereo downmix



## Two Types of Frames for the SB-series

	Capacity	Size	Redundant Power	NXLK-IP40F (SONY SDI-IP Converter Board) Built-In
BE-4028	2	1U	○	×
NXL-FR316	8	3U	○	○

## BE-4028

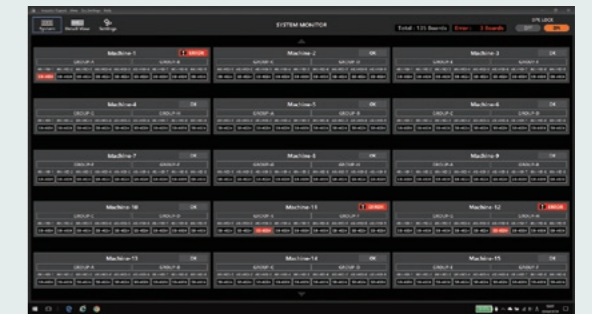


## Signal Processing Unit (SONY) NXL-FR316



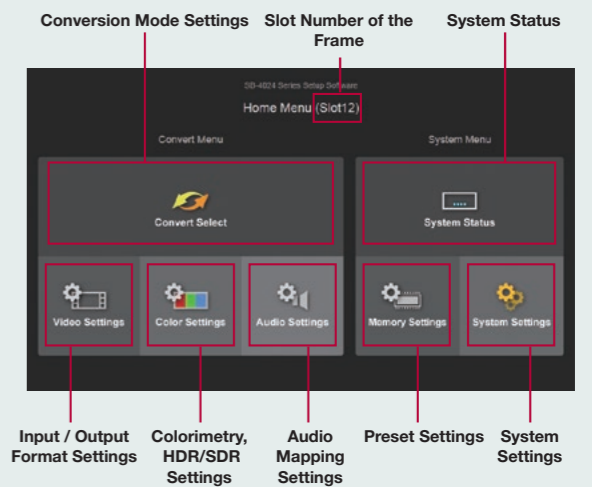
## Applications for Controlling Multiple Boards

Applications that monitor and control multiple boards in system operation such as OB VAN and sub-studio.



## Control Software

Each board can be controlled via web browser. Features are preset in settings. 1D and 3D LUT import and more available.



## WonderLook Pro

Although WonderLook Pro was originally designed for IS-Mini, the SB-4024-A/4027/4031 can also be controlled by WonderLook Pro. It has many useful features, including color correction and new LUT creation. Only WonderLook Pro corporate license can support SB-4024-A/4027/4031 control.



WonderLook Pro is a registered trademark of Vidente Co., Ltd.