Product Information 2018 Vol.6

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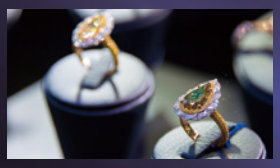
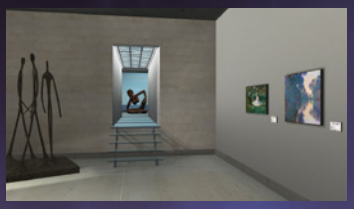
Product and Technical Information



Web catalog

Theater



CG

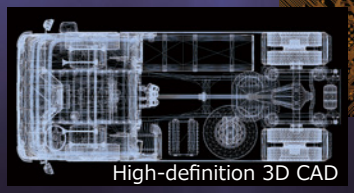
Broadcast

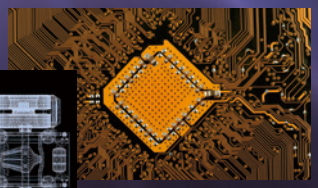
Second to None

8K

Making the Invisible Visible

Medical





Design

Research

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8K, to the Future Ahead

Since its founding in 1977, with high-end niche as a corporate philosophy, ASTRO has sought possibilities in a market that was underdeveloped and technically difficult for large enterprises to enter. We have developed a large array of products and expanded our business beyond expectations.

Specializing in real-time high speed digital signal processing technology, we have developed several “world’s first” or “first in Japan” products, including our many 8K devices.

Now, with the advancement of technologies such as the Internet and Artificial Intelligence, the world will become increasingly convenient and prosperous, and people's demands will change accordingly.

Our company’s goal is to further refine the image technology that we have cultivated up until now, actively challenging new fields, being active in various locations throughout the world.

We will continue to challenge unlimited possibilities for the future of this company.

8K Camera System

8K Camcorder
8C-B60A

8K SSD Recorder
HR-7518/HR-7518-A

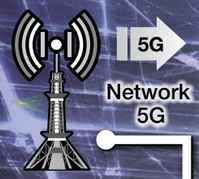
8K
Camera Head
Adapter
AT-4812

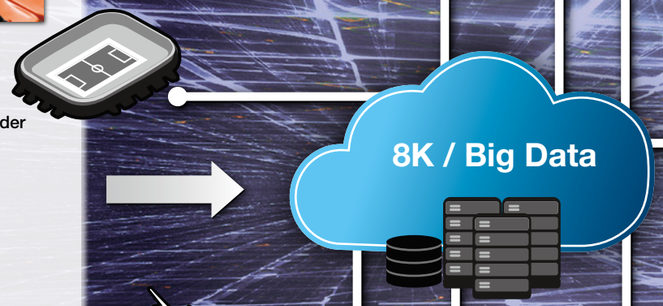
8K
Camera Control
Unit
AC-4813

8K
LCD Monitor
DM-3815

8K Camera System

With an ultra-high-resolution camera and realistic image reproduction, the “8K eye” which is said to be the equivalent of 4.3 or so when converted to human eyesight, makes visible what is normally invisible.





8K Server

8K Real-time Multi-system
tamazon GP-8001

Public Viewing

AI / Deep Learning

Big Data / AI

High speed large capacity data communication. By incorporating a large volume of high-definition 8K images, it can be used as teaching data for deep learning and contribute to use in various industrial fields such as surveillance, medical care and entertainment.

HGX-1 GPU Expansion Box

Security

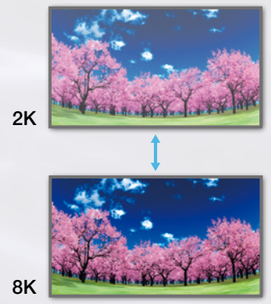
Medical

8K VR

8K VR

The VR system with the 8K camera solves both problems of insufficient HMD resolution and the complexity of the shooting system.

Super Resolution



The Ultimate in Visual Beauty

INSIGHT LASER 8K Imaging by ASTRO【8K Projector】

DIGITAL PROJECTION

3-Chip + Laser method
Brightness of 25,000 lumens

* This product is the property of Digital Projection, Inc.

8K Projector

By using a laser as a light source, our projector is able to produce an overwhelming 25,000 lumens.
It also supports HDR (HLG).

Features

- Brightness: 25,000 lumens
- HDR input compatible
- 3G-SDI x 16 / 12G-SDI x 8 input compatible
- Supports a wide input signal up to 7680 x 4320/120p
- Contrast: 2,000: 1 (native) 20,000: 1 (when Dynamic Laser Driving)
- Light source: Blue laser + Yellow Phosphor
- 3 chips x 1.38" 4096 x 2160 DMD
- Dimensions: 722 (W) x 479 (H) x 1,003 (D) mm
- Weight: 98 kg
- Power Requirements: AC 200 - 240V
- Laser light source for long-lasting, stable imagery over 20,000 hours.

Professional Grade 8K Camcorder

with integrated camera / recording unit for shooting, recording, playback and line output of 8K/60p video

8K Camcorder【8C-B60A】

SHARP

We highly recommend the purchase of an 8K shooting system including peripheral equipment such as lens and tripod.

* Outside of Japan, the above 8K camcorder can be purchased from SHARP CORPORATION.
* Lens, viewfinder, microphone, battery, camera supports and rigs are optional.

8C-B60A

Features

- 33 million (33M) pixel Super 35mm CMOS image sensor with PL lens mount.
- 8K/60p 4:2:2 10-bit recording capability with low CPU load CODEC, reduce the cost of post production.
  40 minutes recording when 2TB SSD pack is used.
  * Grass Valley HQX Codec : High quality codec for high speed processing and with superior generation tolerance.
- It can output 8K/60p uncompressed video at the same time as recording (Quad Link 12G-SDI output), can be used for 8K live distribution. Also supports playback after recording.
- Built-in SSD pack slot for recording media, V-mount battery powered. One person can operate 8K shooting.

Peripheral Equipment

MM-210 (2TB) / MM-210-1 (4TB)
SSD Pack

40 minutes of recording at 2TB, 80 minutes at 4TB

HB-7517
Transfer Box

Insert the MM-210 and transfer files to the PC at high speed (SAS connection)

VC-8429
Interface Converter

8K/60p 10-bit 4: 2: 2 Quad Link Converting 12G-SDI to HDMI 2.0 × 4 suitable for an 8K TV connection converter

DF-3516
High Definition Viewfinder

8C-B60A dedicated viewfinder. Supports camera control functions and HDR shooting

DM-3417
12-inch 4K LCD Monitor

Compatible with Quad Link 3G-SDI

HR-7518
8K SSD Recorder

8K recorder equipped with Quad Link 12G-SDI input/output, using MM-210 as the recording media

8K Real-time Multi-system【tamazon】

tamazon

tamazon converts 8K and multi-input baseband video signals into files, analyzes and processes in real-time.

tamazon GP-8001

Features

- Possible uses include editing, rendering, automatic monitoring by AI, machine learning, and more.
- 3G-SDI x 16 line
- 8K video (YC_BC_R, 4:2:2, 60p) compatible
- Generates files such as DPX in real-time
- Up to 3072 GB of system memory
- Multiple SSDs (up to 48) can be incorporated
- Suitable for real time processing of large volume video data

HGX-1 GPU Expansion Box

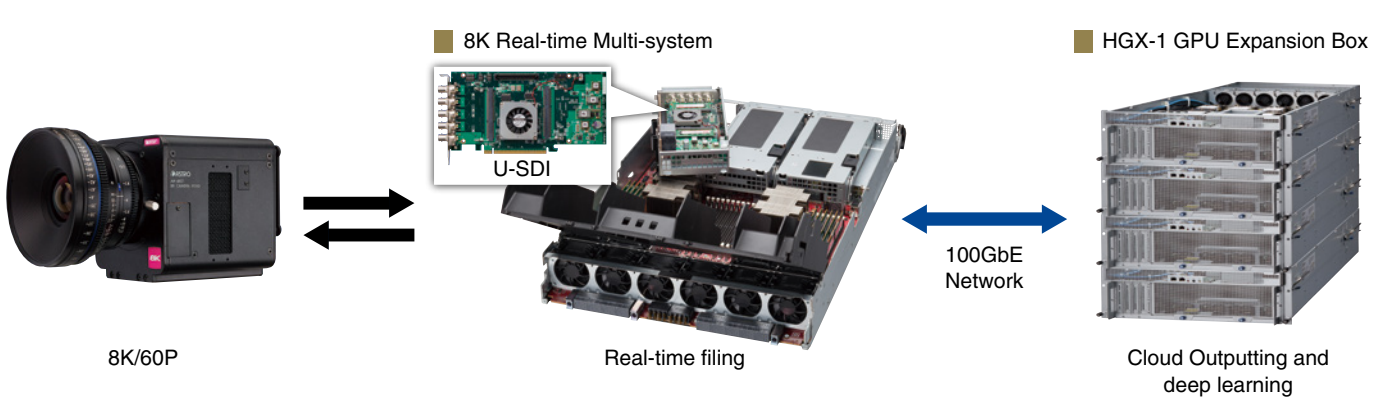
Features

- 4U GPU Expansion Box

The highly flexible Ingrasys HGX-1 Expansion Box supports configurations of up to eight high-performance SXM2 GPGPUs, eight PCIe-based GPGPUs or up to 32 low-powered GPGPUs.

Contains GPGPU accelerators for challenging demands in a variety of HPC applications including: oil and gas exploration, financial services, cloud computing and deep learning. The HGX-1 connects directly to single or four host server(s) through the latest PCIe x 16 Gen3 technology.

Powered by three 1600W redundant power supplies, the HGX-1 GPU Expansion Box is truly designed for hyperscale AI workloads.



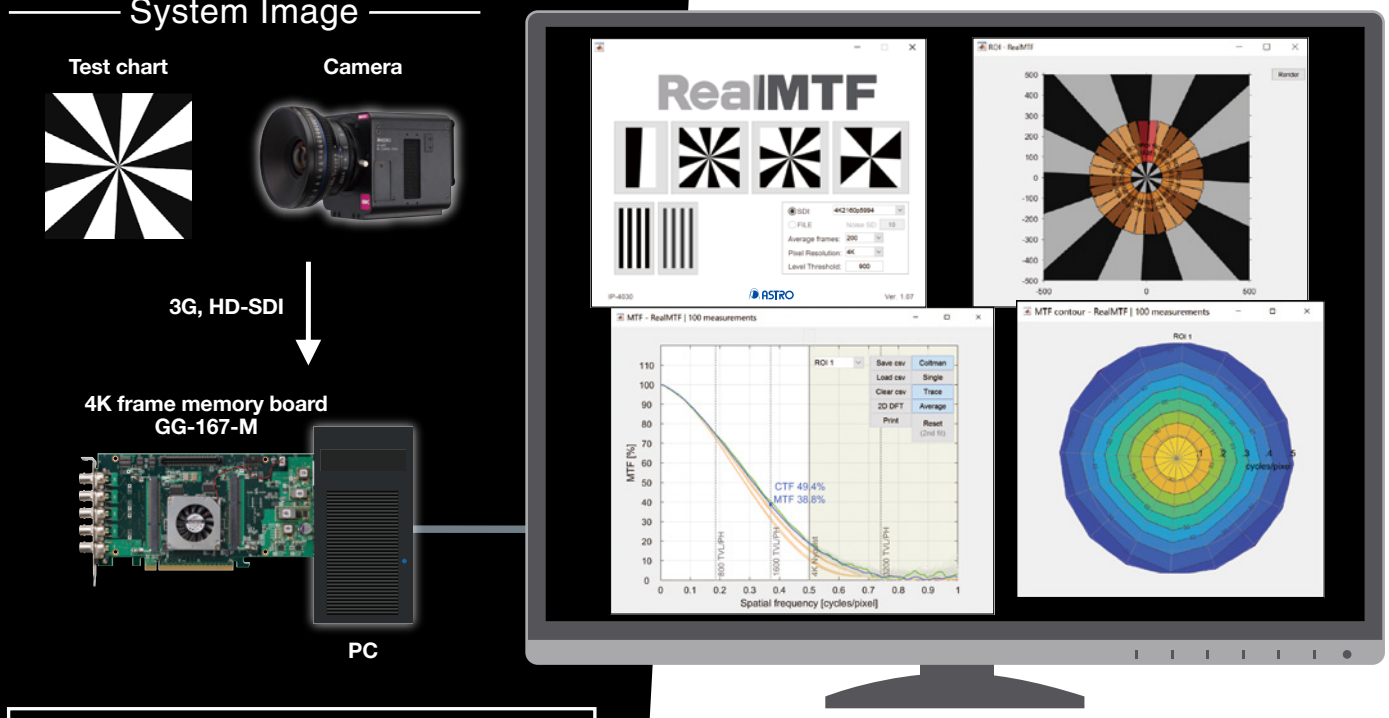
Measuring the Modulation Transfer Function (MTF) of Any Camera in Real-Time

Real-Time MTF Measuring Device【IP-4030】

What is ”Resolution”?

"Easily", and "Accurately".

System Image



Developed under the cooperation of the Japan Broadcasting Corporation

IP-4030

Features

- Analyzing edge response and measuring camera MTF
- Supports real time measurement
  - Measuring while controlling focus, iris and zoom is possible
- Support for multi-directional simultaneous measurement
  - Confirms optical positive pairing of the lens and image sensor
  - Confirms MTF anisotropy through pixel arrangement and image processing
  - Compares the MTF of the center and periphery of the image
- High precision
  - Reduces camera noise by frame addition
  - Analyzes curved edges by distortion aberration

RealMTF

12G / 6G / 3G / HD / SD-SDI Formats, with Max. 8K Resolution, Reference Input / Output Supported

12G-SDI Signal Generator【VG-886】 12G

VG-886

Features

- Supports 12G / 6G / 3G / HD / SD-SDI signals
- REF IN × 1, REF OUT × 2
- Payload can be inserted into SDI signal
- Audio can be superimposed
- Time code packets can be superimposed
- External control possible (LAN or RS-232C)

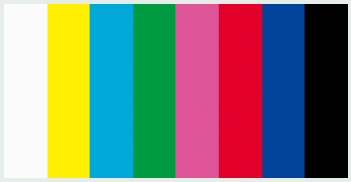
Timing Format

- 8K x 4K/60p by 12G-SDI Quad Link
- 4K x 2K/60p by 12G-SDI Single Link
- 4K x 2K/60p by 3G-SDI Quad Link
- 4K x 2K/120p by 12G-SDI Dual Link or 6G-SDI Quad Link (2SI)
- 1080/60p by 6G-SDI or 3G-SDI Single Link

These are just some of the many formats supported.

Pattern

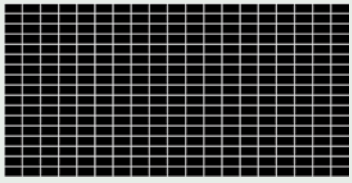
- Color bar
- Raster (W / R / G / B / Gray)
- Check field (Pathological)
- H Ramp, V Ramp
- Crosshatch
- Multiburst

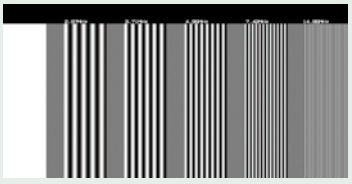

Color bar

Raster

Check field

H Ramp, V Ramp

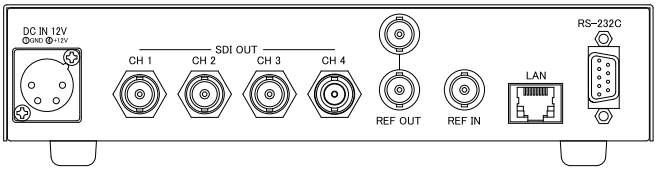

Crosshatch


Multiburst

Specifications

Power Requirements	DC 12V
Power Consumption	20 W (MAX)
Dimensions	210 (W) x 44 (H) x 310 (D) mm (1U Half, Excluding Protrusions)
Weight	Approx. 2 kg

Rear View



Bring 8K to Any Shooting Site
Simple 8K Editing, 8K Production Workflow

8K SSD Recorder 【HR-7518 (60 Hz compatible) / HR-7518-A (120 Hz compatible)】

HR-7518 / HR-7518-A

Features

- Compressed recording using Grass Valley HQX Codec
- Compressed recording / non-compression recording of 8K Dual Green is possible (two SSD packs are necessary for uncompressed recording)
- Optional expansion module allows recording of Full-Featured 8K (8K RGB 4: 4: 4 120p) (compressed recording only)
- 12G-SDI as standard input / output terminal
- Optical input / output terminal of U-SDI (ARIB STD-B58) is installed as a standard
- Dual SSD slots.
- Relay recording is possible (some recording formats excluded)
- Support for recording up to 32 channels of audio (uncompressed, 24 bits)
- Power supply (AC) duplex (60 Hz compatible model HR-7518 only)
- 2U rack mount size

Specifications

Item	Specifications
Video Format	8K (7680 x 4320) Dual Green 59.94p 8K YC_BC_R 4:2:2 59.94p 8K RGB 4:4:4 59.94p 8K YC_BC_R 4:2:2 119.88p 8K RGB 4:4:4 119.88p
Video Input / Output	3G-SDI (SMPTE 424M / ST 425-1) x 8ch Supports ancillary data (Audio, TC)
	12G-SDI (SMPTE ST 2082-1) x 4ch
	Optical (ARIB STD-B58) x 1ch Supports ancillary data (Audio, TC)
Data Transfer	USB 3.0

Ultra Compact Cube!

The Future of Visual Beauty Condensed into One Small Cube!

Single Plate Type 8K Camera Head

<AH-4801-E / AH-4801-G (60/120 Hz compatible)>

16 times that of current HDTV, 3600 TV lines / 33 million pixels will expand your world.

AH-4801-E / AH-4801-G (60/120 Hz compatible)

This highly anticipated ultra-high definition camera combines recorder and optical transmission device into an ultra-compact casing that weighs only 2kg.

With unsurpassed mobility and unrivaled operational reliability, we are pleased to announce that in 2018 we will begin sales to the general public.

Features

- 8K camera head with an adopted image sensor of 33 million pixels.
- A significant reduction in weight allows a built-in drive circuit in a casing of 100 mm squared to come in at approximately 2kg.
- Various video representations are possible in combination with lenses that have been proven in digital cinema photography etc.
- This ultra-compact 8K camera captures the hyper-realistic images and provides unlimited possibilities for filming live, filming underwater, and so much more.

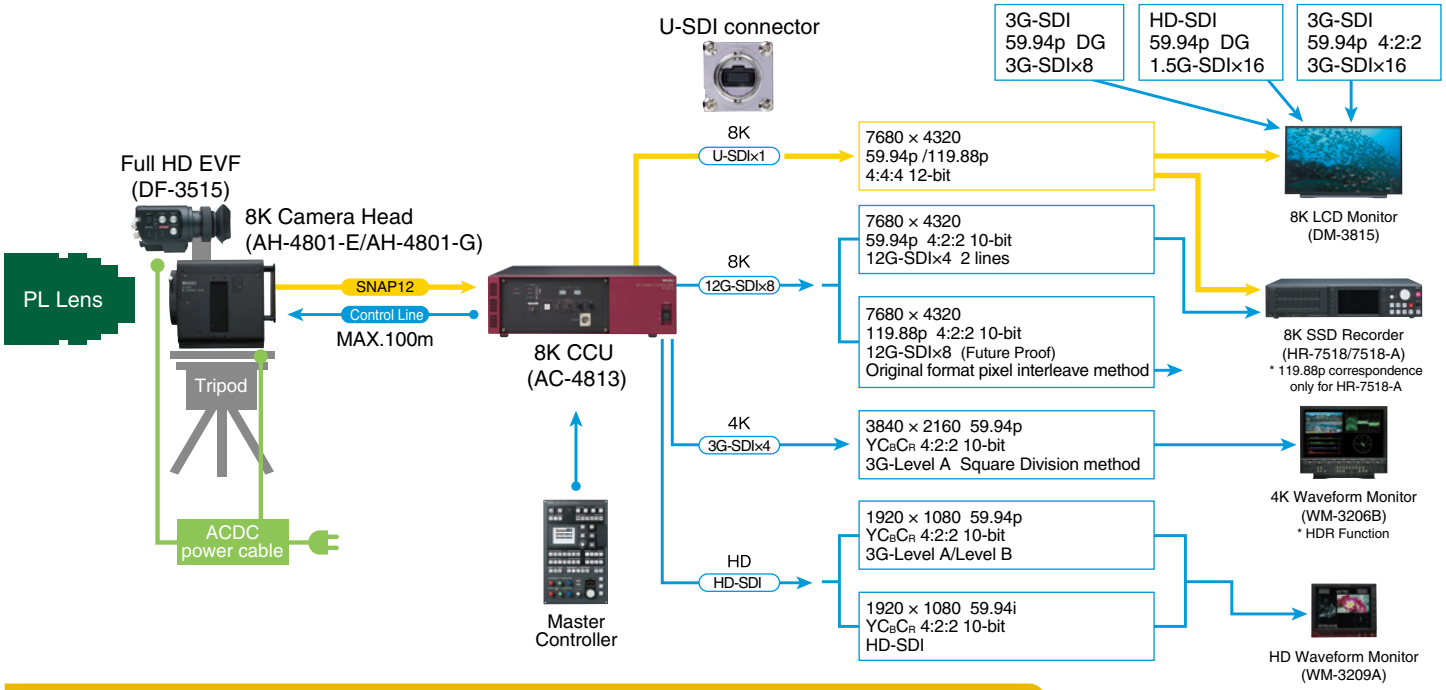
Main Specifications

- Sensor: 1.7-inch type CMOS 33 million pixels, 59.94 / 119.88p
- Resolution: Horizontal 7680 x Vertical 4320
- Imaging method: Single plate color (Bayer pattern)
- Lens mount: PL mount
- ND filter: 1/4, 1/16, 1/64 (AH-4801-G only)
- Output: 12-channel parallel Optical output (SNAP 12)
- Dimensions / Weight:
  AH-4801-E: 130 (W) x 125 (H) x 137.5 (D) mm / 2.0 kg (Excluding lens)
  AH-4801-G: 146 (W) x 125 (H) x 137.5 (D) mm / 2.2 kg (Excluding lens)

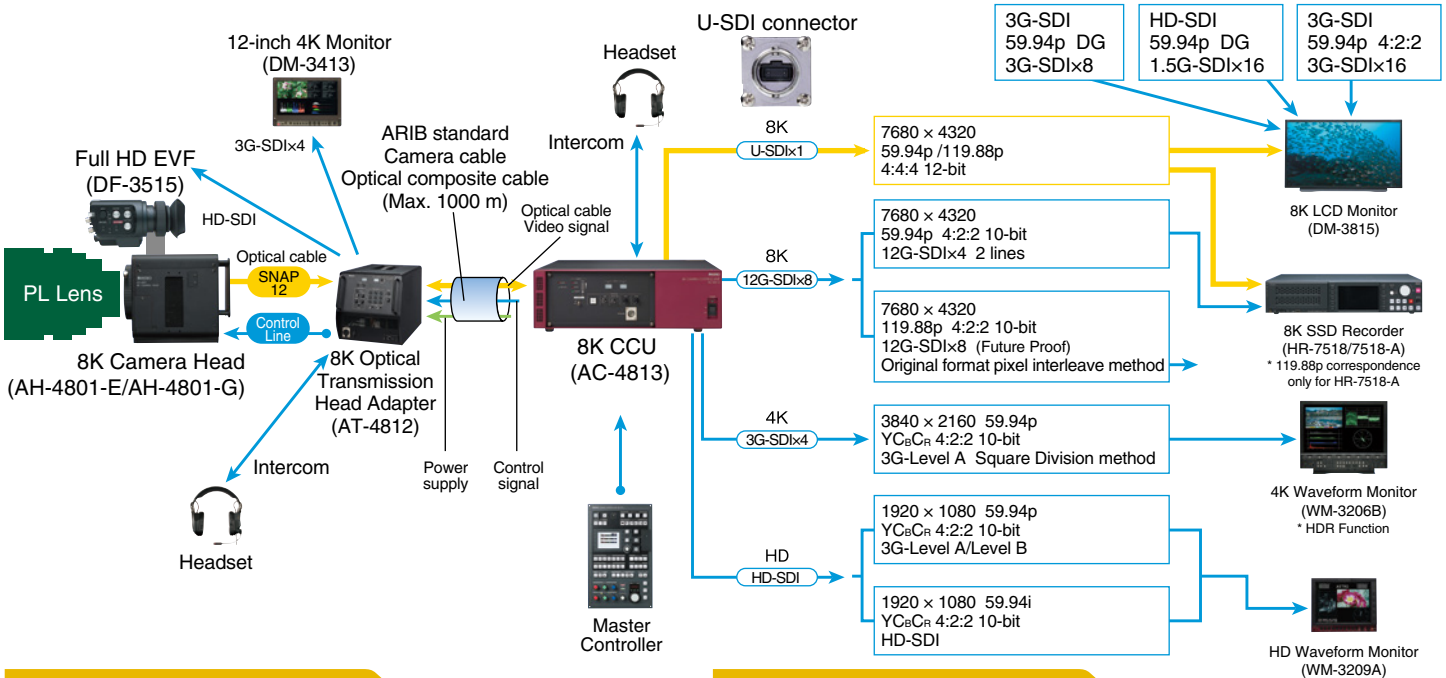
8K Super Hi-Vision Camera System Diagram

With advanced functions, high quality, and easy operability, all functions from 8K shooting to recording and backing up are fully supported.

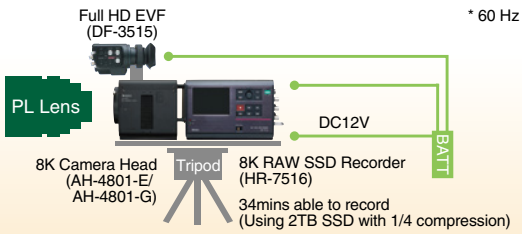
Optical Transmission System (basic configuration type of SNAP 12)



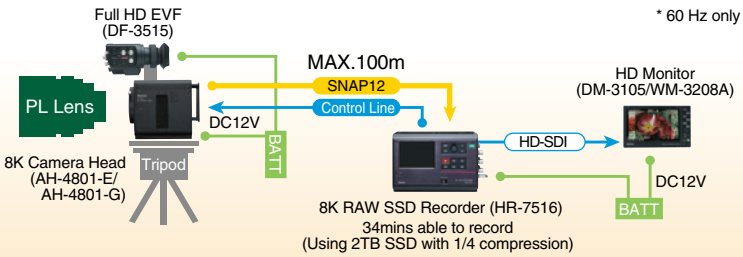
Optical Transmission System (ARIB standard cable configuration type)



Field Recording Case 1



Field Recording Case 2



ASTRODESIGN's New 55-inch 8K LCD Monitor!

Its size makes it perfect for both on-site shooting and in-office editing!

It is also ideal for a wide range of applications, from 8K video production workflow to medical and industrial fields.

【DM-3815: 120 Hz Model / DM-3814: 60 Hz Model】

55-inch LCD Panel | 8K (7680 × 4320) | 120 Hz (DM-3815) | ITU-R BT.709

ITU-R BT.2020 | Contrast Ratio 1200: 1 | U-SDI, 3G-SDI Input (DM-3815) | DVI Input (DM-3814)

8K 60 Hz / 120 Hz 55-inch LCD monitor with an 8K resolution of 7680 × 4320 pixels. Our monitor can not only be brought to almost any shooting site, but it can also be used for in-office editing and 8K video production in a wide variety of fields, such as product development, medical, and in various industrial applications as well.

DM-3815: 120 Hz model

U-SDI	RGB 4:4:4 YC_BC_R 4:4:4 YC_BC_R 4:2:2 YC_BC_R 4:2:0	10-bit, 12-bit	7680 × 4320	60p, 59.94p 120p, 119.88p
	Dual Green	10-bit		60p, 59.94p
HD-SDI × 16 3G-SDI × 8	Dual Green	10-bit	7680 × 4320	60p, 59.94p
3G-SDI × 16	YC_BC_R 4:2:2			

DM-3814: 60 Hz model

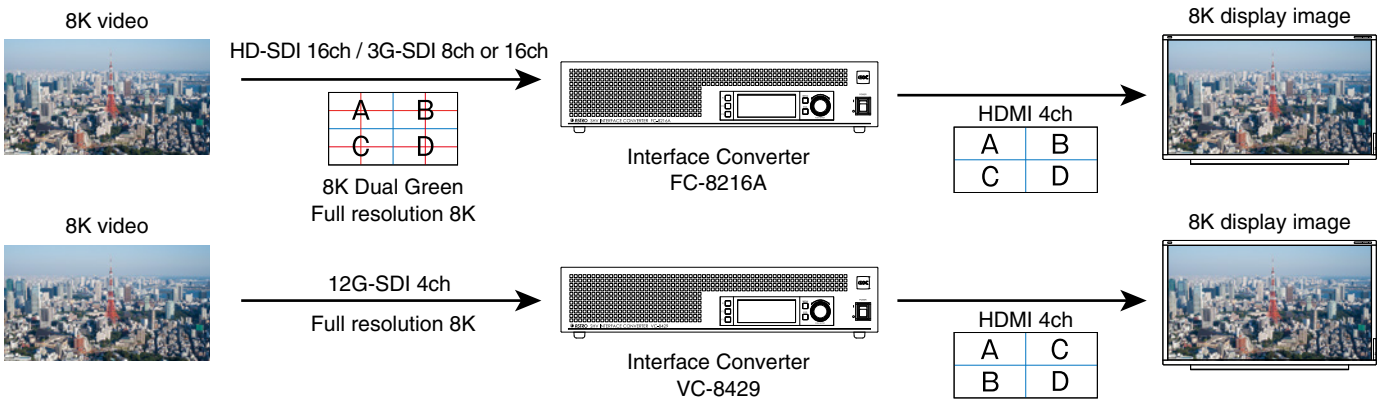
DVI Dual Link × 16	RGB 4:4:4	10-bit	7680 × 4320	60p, 59.94p
DVI Single Link × 16	RGB 4:4:4	8-bit	7680 × 4320	60p, 59.94p

Perfect for 8K Monitors (HDMI 2.0 × 4 ch) ! Displaying the True Value of 8K

[FC-8216A: HD / 3G-SDI Input Model / VC-8429: 12G-SDI Input Model 12G]

It is an interface converter that converts 8K signal to HDMI 2.0 × 4 ch.

FC-8216A / VC-8429



Specifications

Input system (FC-8216A)

Interface	Format
Full resolution 8K 3G-SDI input Level A / B compatible	BNC connector × 16 lines Square Division format 7680 × 4320 YC_BC_R 10 bits each 60 Hz / 59.94 Hz
8K Dual Green 3G-SDI input	BNC connector × 8 lines Square Division format 7680 × 4320 G1 / G2 / B / R each 10 bits 60 Hz / 59.94 Hz
8K Dual Green	BNC connector × 16 lines Square Division format 7680 × 4320 G1 / G2 / B / R each 10 bits 60 Hz / 59.94 Hz

Input system (VC-8429)

Interface	Format
Full resolution 8K 12G-SDI input Level A compatible	BNC connector x 4 lines 2-sample interleave division format 7680 × 4320 YC_BC_R 10 bits each 60 Hz / 59.94 Hz

Output system

Interface	Format
HDMI output	HDMI connector × 4 7680 × 4320 60 Hz / 59.94 Hz RGB 4:4:4 8-bit 7680 × 4320 60 Hz / 59.94 Hz YC_BC_R 4:2:2 12-bit 7680 × 4320 60 Hz / 59.94 Hz YC_BC_R 4:2:0 8-bit

Easily Integrate High Quality 8K, 4K, and HD! The Ultimate Converter is Finally Here!

8K Cross Converter 【SC-8219】 12G

SC-8219

This device up converts and down converts various 8K video signals YC_BC_R 4: 2: 2, 8K Dual Green, 4K and HD.

Features

- Up convert, down convert 8K YC_BC_R 4: 2: 2, 8K Dual Green, 4K, and HD video signals
- 12G-SDI compatible
- FS function
- Supports ancillary data
- 32-channel audio support, mapping change, downmix
- Preset functions
- Status monitoring
- Test pattern output
- Reference input (BB or tri-level sync signal), output phase adjustment function
- Remote control compatible
- Redundant power supply

	INPUT					SC-8219	OUTPUT				
VIDEO	8K	YC_BC_R 4:2:2	12G	Type 1	2SI	Format Conversion ◆High image quality with the latest algorithms ◆Rec.ITU-R BT.2020 compatible ◆HDR compatible	2SI	Type 1	12G	YC_BC_R 4:2:2	8K
			3G	Type 1	4K-2SI x 4		4K-2SI x 4	Type 1			
				Level A	SQD		SQD	Level A	3G		
		Dual Green	3G	Level B	SQD		SQD	Level B	3G	Dual Green	
	4K	YC_BC_R 4:2:2	12G	Type 1	2SI		2SI	Type 1	12G	YC_BC_R 4:2:2	4K
			3G	Level A	SQD		SQD	Level A	3G		
					2SI		2SI				
			3G	Level B	SQD		SQD	Level B	3G		
					2SI		2SI				
	HD	YC_BC_R 4:2:2	3G	Level A	Single		Single	Level A	3G	YC_BC_R 4:2:2	HD
				Level B				Level B			
			1.5G					1.5G			
AUDIO	8K	Ch.1 ～ Ch.32				Free Mapping 5.1ch Down MIX Mapping Stereo Down MIX Mapping	Ch.1 ～ Ch.32				8K
	4K										4K
	HD	Ch.1 ～ Ch.16					Ch.1 ～ Ch.16				HD

8K Super Hi-Vision

'8K Super Hi-Vision (SHV)' is a next-generation video technology that peovides an overpowering sense of realism and strong visual impact. ASTRODESIGN has been working on 8K SHV technology since its very beginning, resulting in the development of the variety of SHV equipment that is still being used today.

[8K SHV products shown here were jointly developed by ASTRODESIGN and NHK.]

Japan Broadcasting Corporation (NHK) has been conducting R&D on UHDTV television format, which is called Super Hi-Vision in Japan. 8K SHV boasts a resolution of 7680 x 4320 or 16 times the pixels of the current HD format. This video is viewed at 60fps in progressive video format. The feeling of immersion is impressive, with objects being displayed with a far more natural sense of depth.
ASTRODESIGN has been collaborating with NHK since the advent of SHV leading to the development of many necessary pieces of equipment to the SHV catalog. With the aim of delivering high quality public broadcasts by 2018, we are creating a steady stream of innovative equipment and technology from an intensive focus in R&D.

FC-8213
8K Interface Converter

8K YC_BC_R, 8K-DG Converted to Dual Link DVI 16 ch

<Features>
- Connection with DM-3814 is possible.

FC-8216A (HD / 3G-SDI)
VC-8429 (12G-SDI)
Interface Converter

NEW

8K YC_BC_R, 8K-DG to HDMI 2.0 Conversion

For Further Details ➡ Go to P13

AH-4801-E / G (60 Hz / 120 Hz)
8K Camera Head

Single plate type, ultra-compact Cube 8K Super Hi-Vision camera.

For Further Details ➡ Go to P10, P11

AC-4813
8K SHV CCU

8K SHV Camera head CCU camera control unit.
8K output, 4K, HD output is possible for monitoring.

AT-4812
8K SHV Optical Transmission Head Adapter

This is a device that transmits the 8K SHV signal produced by the camera head over long distances to a CCU using an optical camera cable.
You can transmit and receive audio, video, tally, intercom, and microphone signals to and from the camera, as well as control the lens and supply power.

HR-7516
8K SHV RAW Recorder

A portable 8K SSD recorder that works with the 8K camera head.
Original RAW format compressed recording makes it possible to record long 8K videos without needing a large casing.

DF-3515
Native HD Electronic View Finder

【Installation example】

Native HD 1920 × 1080 Resolution OLED Installed

For Further Details ➡ Go to P26

DM-3814 (60 Hz)
DM-3815 (120 Hz)
55-inch 8K LCD Monitor

■ 60 Hz / 120 Hz Compatible

For Further Details ➡ Go to P12

VP-8427
Full-Featured 8K Color Grading Equipment

A Color Grading Device That Uses Various Processes and Corrections in Real-time for High-speed Full-Featured 8K (120p) Color Correction

A full-featured 8K corrector equipped with optical interface (U-SDI) input/output conforming to the ARIB STD-B58.
You can correct flaws, details, lens aberrations, chromatic aberrations, and color grade.

<Features>
- Real-time full-featured 8K signal processing
- Scratch correction and chromatic aberration functions to fix problems during shooting
- Contour correction functions capable of parameter setting for image quality adjustment
- Two types of color adjustment functions (12 axes correction for simple operations, 3D LUT for detailed color tones)
- Input / output gamma LUT setting function that enables SDR / HDR processing and conversion
- Immediately reflects new settings in video
- 4K signals can be output in real-time
- Area settings for 4K video area can be set freely

SC-8212
NEW
FULL SHV CONVERTER

This device upconverts 8K-DG to full-resolution 8K (RGB 4: 4: 4 12-bit). The input interface is HD-SDI × 16 ch or 3G-SDI × 8 ch. The output interface is U-SDI (ARIB STD-B58).

SC-8214
NEW
DUAL SHV UPCONVERTER

This device upconverts 2 lines of 4K video to 8K-DG video. It performs optimally when up converting the 4K subtitle fill / key to 8K-DG fill / key.

SC-8217
NEW
SHV LUT COLOR CONVERTER

8K YC_BC_R 4: 2: 2, 8K Dual Green, 4K signal down conversion, HDR to SDR conversion, 3D gamut conversion using 3D LUT.

SC-8219
NEW
8K Cross Converter

8K YC_BC_R 4: 2: 2, 8K Dual Green, 4K, and HD video signals can be up converted and down converted.

For Further Details ➡ Go to P14

SC-8221
NEW
8K U-SDI to 12G-SDI Converter

This device is a down converter that can convert U-SDI (8K 120p / 60p RGB 4: 4: 4 12-bit) to 12G-SDI (8K 60p YC_BC_R 4: 2: 2).

HR-7512-C
8K / 4K SSD Recorder

Up to 16 TB of Loaded, Uncompressed Video Recording / Playback

This device is an uncompressed SSD recorder capable of recording and playing 8K / 4K video signals compatible with 3G-SDI.

<Features>

- 4K recording (YC_BC_R 4: 2: 2 / 30PsF) with a maximum capacity of 16TB or 400 minutes, and uncompressed 8K recording (8K-DG / 60p) of up to 100 minutes
- Select input / output I/F when requesting from 3G-SDI, DVI
- Easily operated repeat playback
- HD monitor (YC_BC_R 4: 2: 2 / 60i) equipped with down conversion output
- Support for reading and writing video from PC via eSATA port
- 24V DC input enables battery operation (2U size)
- Support for 8K recording (RGB 4: 4: 4 / 60p) by synchronous operation of 4 units

DB-3817
NEW
8K INTERFACE CONVERTER

This device intakes super Hi-vision signals and displays them on an 8K liquid crystal panel.
The optical interface is (U-SDI) compliant with ARIB STD-B58 and an input terminal of 3G-SDI × 8 ch. It can receive Full-Featured 8K signals, full resolution 8K signals and 8K-DG signals.
It also outputs V-by-One® HS signal to drive the liquid crystal panel.
Image adjustment supports changes to gamma, contrast and brightness.

DP-3818
NEW
8K INTERFACE CONVERTER

This device intakes Super Hi-Vision signals and displays 8K video on a 4 division sheet type organic flexible EL display.
It has an optical interface (U-SDI) compliant with ARIB STD-B58 and an input terminal of 3G-SDI × 8 ch and can also receive full specification 8K signals, Full-Featured 8K signals and 8K-DG signals. It outputs a V-by-One® HS signal, + 12V power supply and + 24V power supply to a drive seat type display. Adjustment of the sheet type display corresponds to gamma, contrast and brightness.

VC-8417
NEW
8K Optical → HDMI Converter

It converts one optical signal output from VP-8409 into HDMI × 9 lines.

MEMO

Video Content Library

VT-7002
4K Video Content

The Ryukyu Sea

Approx. 4 min. 40 sec.

VT-7003
4K Video Content

Ogasawara Sea

VT-7003-1 (OGASAWARA Island): Approx. 5 min. 28 sec.
VT-7003-2 (Ogasawara ocean FISH): Approx. 5 min. 9 sec.
VT-7003-3 (Ogasawara ocean MARINE LIFE): Approx. 5 min. 46 sec.
VT-7003-4 (Chichijima OGASAWARA): Approx. 4 min. 35 sec.

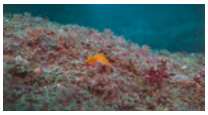
VT-7005
4K Uncompressed Video Content

Saipan

VT-7005-1 (Island Sunset) : Approx. 3 min. 33 sec.
VT-7005-2 (Managaha) : Approx. 3 min. 25 sec.
VT-7005-3 (Summer Vacation) : Approx. 1 min. 58 sec.
VT-7005-4 (Fire Dance) : Approx. 3 min. 38 sec.

VT-7006
"Pacific Sea near Japan" 8K uncompressed content

Sea of Kushimoto



Recording Time: Approx. 3 min. 42 sec.

VT-7008
"Budoh" - Japanese Martial Arts

Budo

Recording Time: Approx. 3 min.

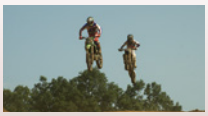
VT-7011
NEW
8K Video Content

Yakushima

4 min. 05 sec.

VT-8400
NEW
8K Video Content

Motocross



4 min. 56 sec.

LTO-7 8K Backup Device【TB-8103】

NEW

A system that backs up and restores 8K content to LTO-7 tape media.
8K-RAW data (our proprietary format) and HQX data recorded in SSD pack to LTO-7 tape media backup supported. You can also restore from LTO-7 tape media to SSD packs.

Features

- Back up to LTO-7
- Restore to SSD pack
- Operation with proven software "Astra 8K"
- 10 GbE card installed (optional)
- Possible to edit while accessing the tape from an external server

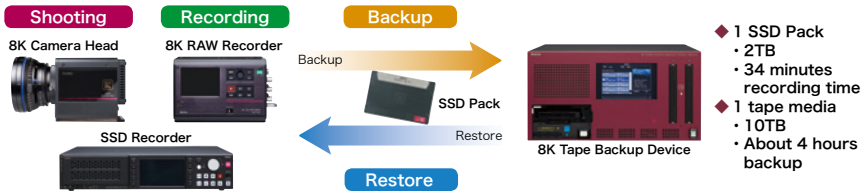
8K Tape Backup Device【TB-8101】

High-speed copy
Backup in 34 minutes for 70 minutes

Large capacity
Back up approximately 4 hours of 8K data on one tape

Durability
Tape storage length: 30 years

This is a device that backs up and restores 8K content to IBM tape media. By backing up to tape, it is possible to improve the SSD pack and 8K video production efficiency.



"8K Suite" Exhibition Space

An open exhibition space dedicated to the display of a working 8K video production environment.

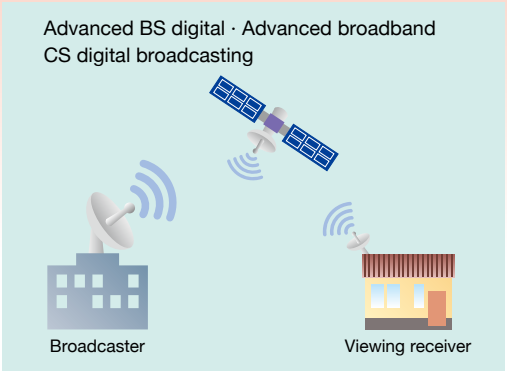
Visitors can enjoy hyper-realistic 8K video on a powerful 150-inch screen with 5.1 ch or 22.2 ch audio through a multi-speaker system specially designed to immerse the viewer into another world.
In addition, an array of other video production units such as cameras and recorders are showcased and available for use upon request.
Please feel free to drop by and take a look!

* Japanese market only

4K / 8K Broadcast System Multiplexer
Realize Advanced Service

MMT · TLV Multiplexer

MMT (MPEG Media Transport) has been standardized as the next generation transmission standard (ISO / IEC 23008-1) for 4K / 8K broadcast following MPEG-2 TS. By using MMT, advanced services such as content transmission are made possible through various networks such as broadcasting and communication.



MMT Multiplexer 【CX-5545】

It is an MMT multiplexer that multiplexes encoder output and SI output.

- IP input 2 ports, IP output 1 port and monitor out 1 port
- Multiple IP data flows can be received and multiplexed into multiple IP data flows for transmission
- MMT-SI can be input and multiplexed

TLV Multiplexer 【CX-5546】

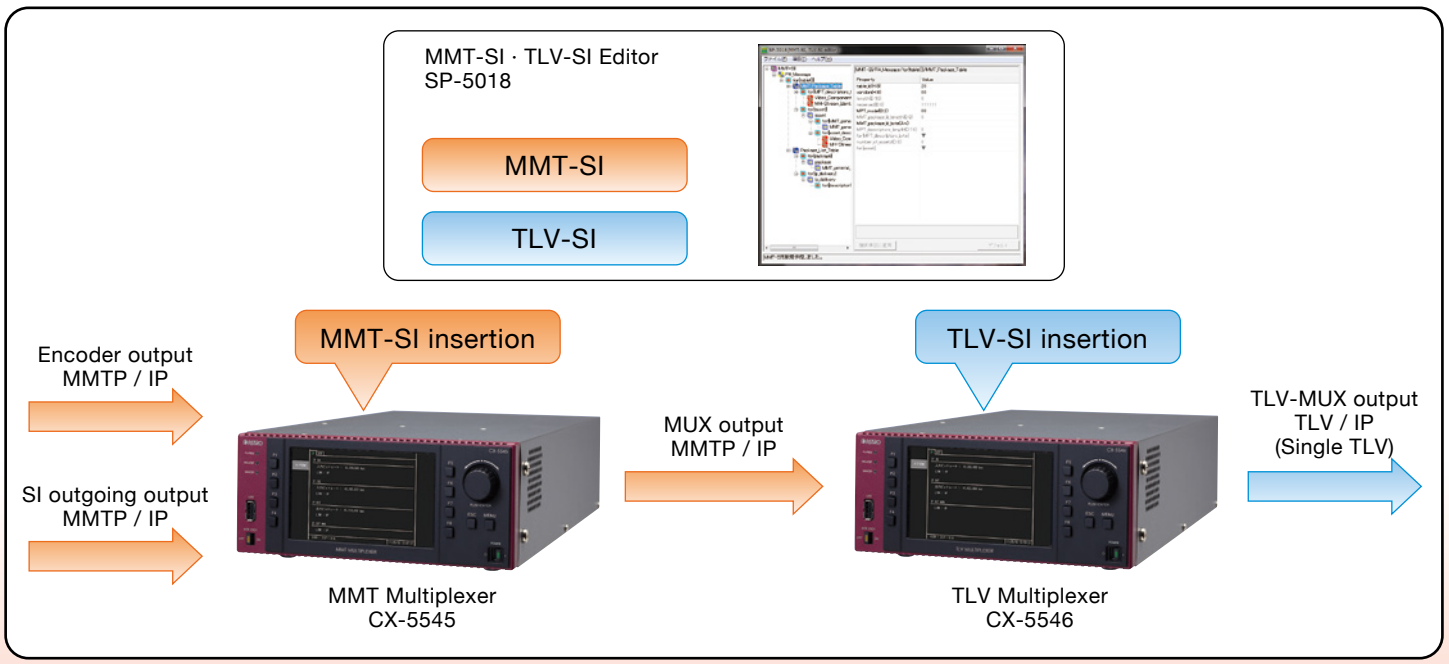
TLV multiplexer that receives the output of MMT multiplexer and multiplexes TLV.

- IP input 1 port, IP output 1 port and monitor out 1 port
- Multiple IP data flows can be received and one TV stream can be sent
- TLV-SI input and multiplexing possible

MMT-SI / TLV-SI Editor 【SP-5018】

An SI editor which creates MMT-SI and TLV-SI binary.

- New creation and editing of MMT-SI and TLV-SI are possible
- SI captured by SP-5800 can also be edited



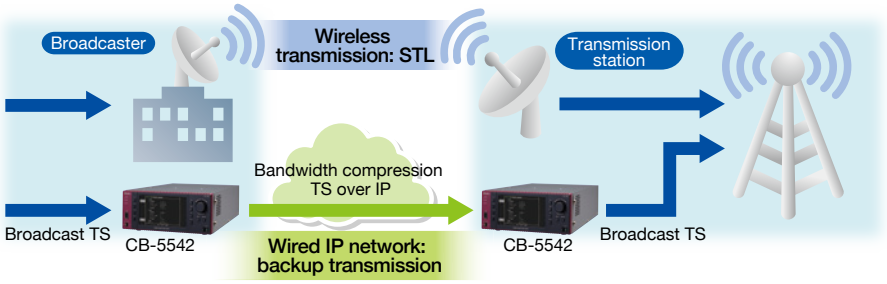
Multiplatform to Realize TS Transmission, Monitoring, Recording, and More!

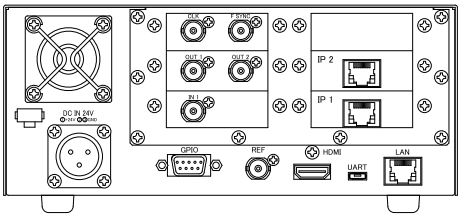
TS Multiplatform

Combining a dedicated board and mainframe firmware in a common platform unit provides various applications such as TS monitors and TS-IP transmitters.

ISDB-T Backup Unit 【CB-5542】

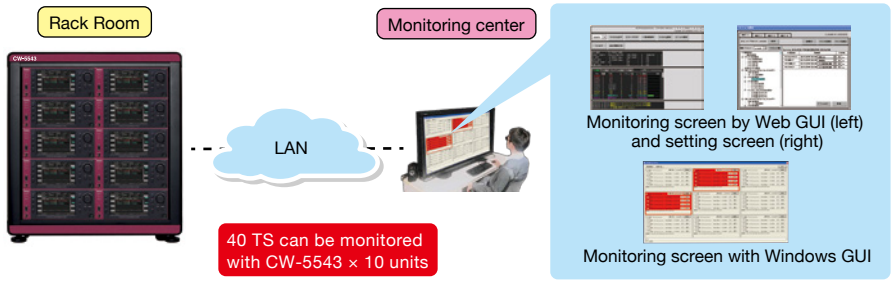
- TS over IP transmission after compressing the bandwidth of broadcast TS
- FSYNC output and 10 MHz clock output possible
- Bidirectional transmission possible with one transmitter / receiver
- Remote operation and information acquisition are possible

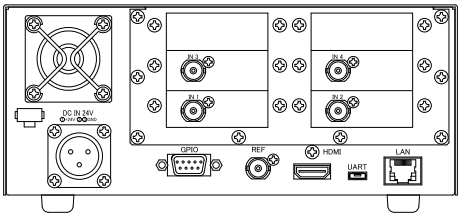




MPEG-2 TS Monitoring System 【CW-5543】

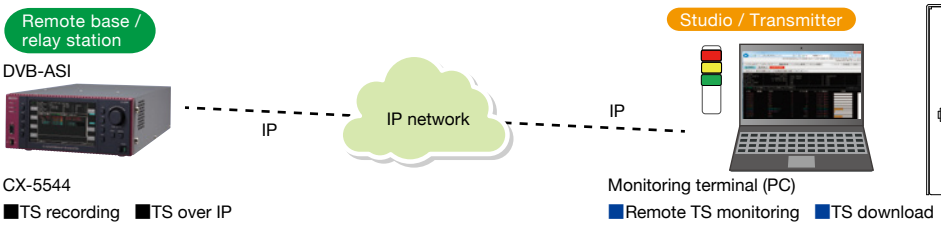
- Up to four TSs can be simultaneously monitored for each monitoring device
- Display PID information / PSI information / program information / PCR information
- Remote confirmation of input information via Web browser
- With the included Windows application, it is possible to check the status of multiple devices

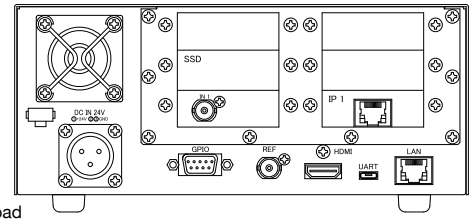




TS Monitoring / IP Transmitter 【CX-5544】

- "TS monitoring", "TS recording", and "IP transmission" all in one unit
- All functions can be operated with a Web browser
- TS recordings can be downloaded as TS over IP output in file format





Optional Additions Power Unit 【PS-708 · PS-708-A】

- Dual power supply unit for multi-platform use
- PS-708 provides redundant power for two units, PS-708-A for one unit

Digital Broadcasting MMT (MPEG Media Transport) · MPEG-2 TS

* Japanese market only

ASTRO can provide transmission facility solutions such as next-generation multiplexing system MMT compatible products for 4K / 8K broadcasting, MPEG-2 TS multiplexers, OFDM modulators etc.

CX-5545 · CX-5546

MMT Multiplexer / TLV Multiplexer

For Further Details ➡ Go to P18

CP-5541A

MMT Recorder & Player

NEW

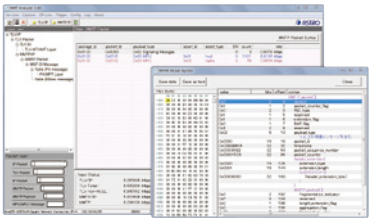
Recording and Playback of MMT Multiplexing Method Streams

＜Features＞

- SSD 256GB installed (max 3 hours at 200 Mbps recording time)
- 200 Mbps stream can be recorded and played back without loss
- Time stamp changeover output
- The file corresponds to two types of pcap and proprietary format

SP-5800

MMT Analyzer



Analysis of MMT Multiplexing Method Streams

＜Features＞

- Analysis of MMT and TLV is possible
- Supports real-time analysis and offline analysis
- Syntax analysis
- Stream recording is possible
- MMTP distribution time stamp and NTP jitter analysis
- Use as a monitoring device is possible in combination with a PC

SP-5018

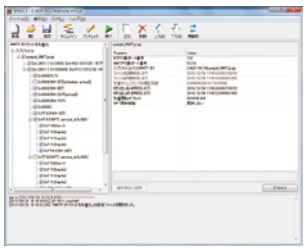
MMT-SI · TLV-SI Editor

＜Features＞

- MMT-SI and TLV-SI can be created and edited
- Standard check functions

SP-5017

MMT Simulator



MMT Test Stream Creation / Editing

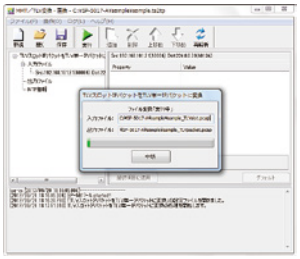
＜Features＞

- MMTP / IP file and MMT-SI multiplexing is possible
- File cutting
- IP address and packet ID can be changed

SP-5017-A

TLV / MMT Conversion Application

NEW



File Format Conversion

＜Features＞

- MMTP / IP, Single TLV, Composite TLV can be mutually converted
- Replacement of service configuration information of synthetic TLV is possible

CX-5528A-S

Multi-Route TS Splicer

Seamless TS Switching Regardless of Transmission Path

＜Features＞

- Switch specified TS for one service
- Switchable TS with delay difference
- TSs with different bit rates can also be switched
- Multiple transmission TS can also be switched
- 4 TS (DVB-ASI) inputs, 2 outputs

CX-5528A-F

TS Multiplexer for Relay Transmission

Connect and Go! Multiplexer for TS Multiplex Relay

＜Features＞

- Automatically follows the PAT / PMT configuration of input TS and reconfigures PAT / PMT and PID of output TS
- Output program_number is automatically reconfigured in the multiplexer
- TS (DVB-ASI) inputs four lines, outputs two (distribution)

CX-5526 · CX-5528A

MPEG-2 TS Gateway / MPEG-2 TS Multiplexer

Compact, Multifunctional TS Multiplexer That Covers IPDC to TS over IP in One Unit

＜Features＞

Multiplex function

- TS multiplexing of one line (CX-5526) / four lines (CX-5528) possible
- PID filter, changeable for each ASI input port
- PSI / SI section can be inserted
- Mux priority can be changed for each input port

TS over IP function

- Supports MPEG-2 TS over IP transmission / reception by UDP protocol
- Supports IPv4 / IPv6, unicast and multicast (IGMPv2 / MLDv1) transmission and reception
- Supports transmission / reception of RTP header, TTS (TS with time stamp, ARIB STD - B 219.2.2.3)
- Corresponds to error correction by FEC (PRO-MPEG CoP # 3 / SMPTE 2202-1) (strength can be set)
- Delay time can be set by absorption of IP network jitter
- Support PID filter / PID replacement of the input ASI

IPDC function

- Supports MPE, ULE / ROHC IP data casting, IP Encapsulation / Decapsulation function is also available

* Applicable to limiter function and smoothing function optional

* Another model that supports redundant power supply is also available

CM-5609C

OFDM Signal Generator

Memory Built-in OFDM Modulator

＜Features＞

- Built-in 32GB CF card in the main body
- MUX · ReMUX · OFDM modulation possible with external ASI input (3 lines) and built-in memory playback TS (1 line)
- Section insertion possible (up to 20 types, interval minimum 100 ms)
- Automatically update and output time information when TOT / TDT section is inserted
- External input TS recording and playback possible (up to 35 Mbps)

* MMT ... MPEG Media Transport. It was standardized as next-generation media transmission standard (ISO / IEC 23008-1) following the MPEG-2 Transport Stream

Digital Broadcasting MPEG-2 TS

* Japanese market only

By using the MPEG-2 TS I / O board, you can combine various applications. Offline applications are also available.

TS-7815D
TS Analyzer

■ Ideal for On-Site Stream Checking

＜Features＞
- Compact design of portable TS analyzers
- Available immediately after powering on
- Monitoring, analysis, and information display of major packets and section headers included in the TS stream
- Setting trigger conditions according to usage
- TS data recording with automatic trigger, log output, and alarm output possible

CB-5542-E/F
IPass

NEW

Transmits UDP / IP Data over TS Transmission Path

＜Features＞
- High bit rate IPDC (IP over TS) realized
- Supports UDP / IP data input over 200 Mbps
- CB-5542-E is used on the transmitting side, CB-5542-F on the receiving side, both used in opposition

CB-5542・CW-5543・CX-5544
ISDB-T Backup Unit (CB-5542)
MPEG-2 TS Monitoring System (CW-5543)
TS Monitoring / IP Transmitter (CX-5544)

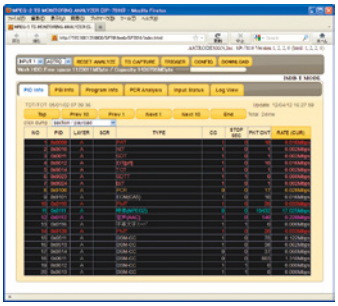
For Further Details ➡ Go to P19

CX-1531
MPEG-2 TS Multiplexer Board

Low Profile Compatible Compact System Construction Possible

＜Features＞
- Low Profile board compatible with PCI-Express standard
- Two TS inputs, one output
- Input 2 is a selection formula with external CLK input

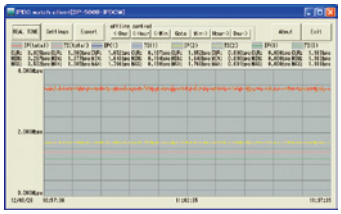
SP-7816
MPEG-2 TS Monitoring Analyzer



■ Specialized Analyzer for TS Monitoring

＜Features＞
- Results can be remotely monitored with a general Web browser
- Real-time simultaneous analysis of two TS series
- PID specific information display, PCR analysis (Interval / Jitter), PSI / SI section detailed analysis function etc.
- Alarm notification by log output and SNMP trap according to trigger condition
- ETSI TR 101 290 First Priority and Second Priority Monitoring and Alarm Notification
- Analyzed TS can be recorded
- Description analysis display of IPTV · ISDB-Tmm

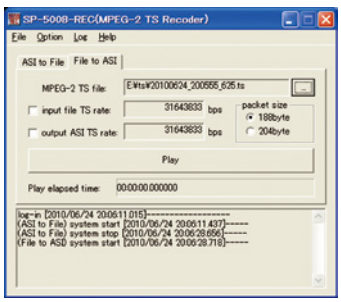
SP-5008-IPDCW
IP · TS Condition Monitoring Device



Monitor the Status of the IPDC Transmission Facility

＜Features＞
- IP and TS monitoring and recording possible
- Possible to monitor both IP input data and TS input data simultaneously on both bit rates using a graph

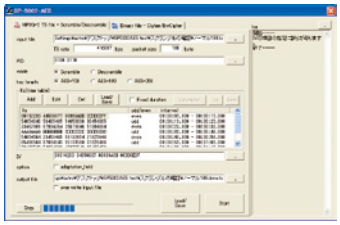
SP-5008-REC
MPEG-2 TS Recorder



■ Use Your PC as a TS Recorder & Player

＜Features＞
- TS recording and playback possible via CX-1531
- TS recording can be performed using the received SNMP TRAP as a trigger
- Size of recorded TS file can be set arbitrarily
- Optional TS files can be repeatedly sent
- Broadcast TS (ISDB-T) can be played
- Pre-trigger recording is possible

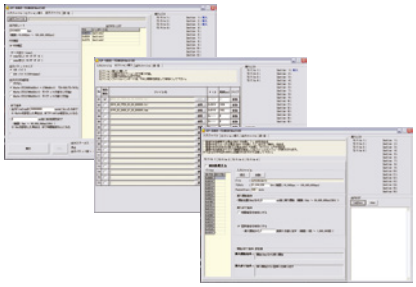
SP-5002-AES
MPEG-2 TS AES Encryption Software



Windows Application that Performs MPEG-2 TS and AES Encryption / Decryption of Binary Files

＜Features＞
- Encrypt and decrypt TS packets and binary files with AES
- Scramble key (Ks) and odd / even can be set for each by dividing the time axis into sections
- Encryption / decryption in CBC mode by 16 Bytes at a time and encryption / decryption (CBC + OFB mode) in OFB mode when the remaining part is less than 16 Bytes by the end

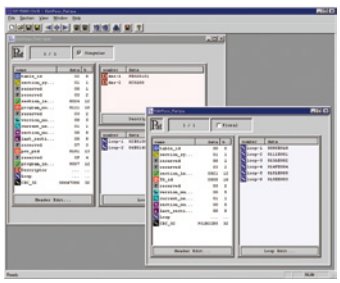
SP-5002A-TSMUX
Software TS Multiplexer



■ Ideal for Offline TS Editing

＜Features＞
- Up to four TS files can be output, one TS file can be output by multiplexing section files (maximum 256)
- Through / Discard / Replace for each PID of input TS file can be specified
- Supports multi-section
- Sections and PID filter settings can be written to / read from files

SP-5000-ARIB
PSI / SI Editor for ARIB



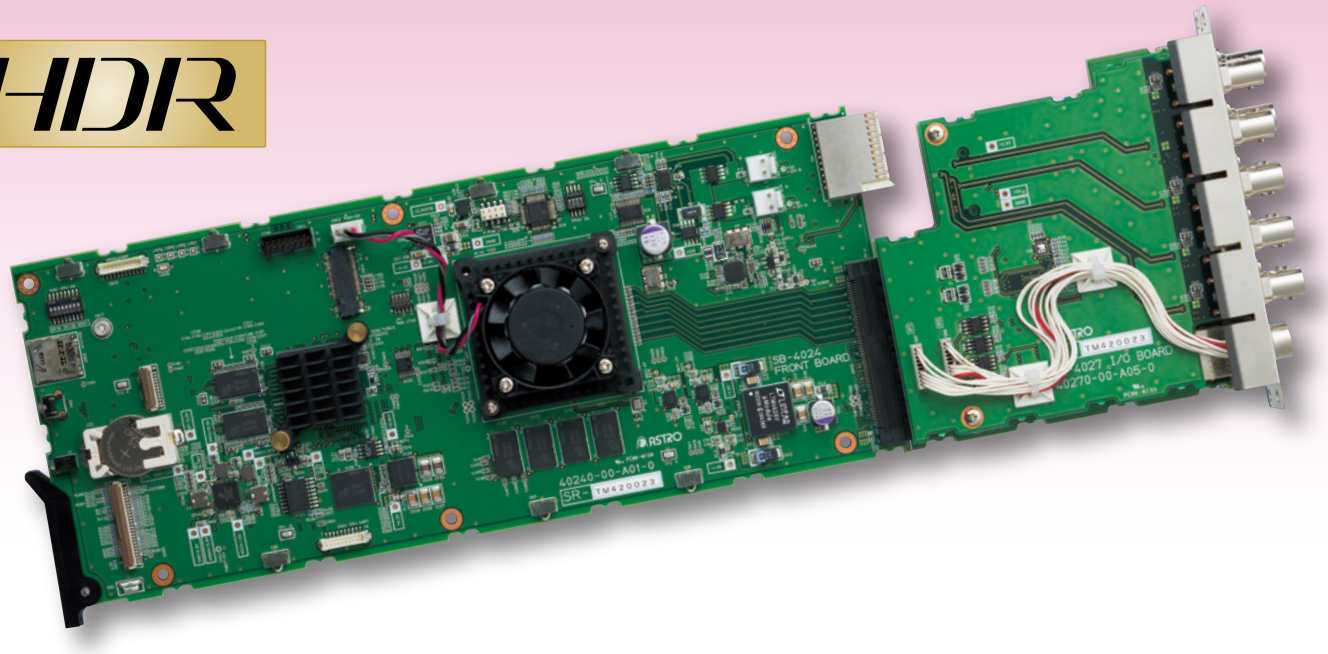
Applications Essential for Test Stream Creation

＜Features＞
- Highly flexible data editing with intuitive GUI
- Supports multiple sections (sub-table)
- Compatible with private section, nonstandard tables, and nonstandard descriptor screens
- CRC_32 automatic calculation function

High Image Quality, Multi-Functional, Space Saving. An All-in-One Response to the Various Challenges of 4K HDR Production Sites

12G-SDI Compatible 4K Converter Board 【SB-4027】 12G

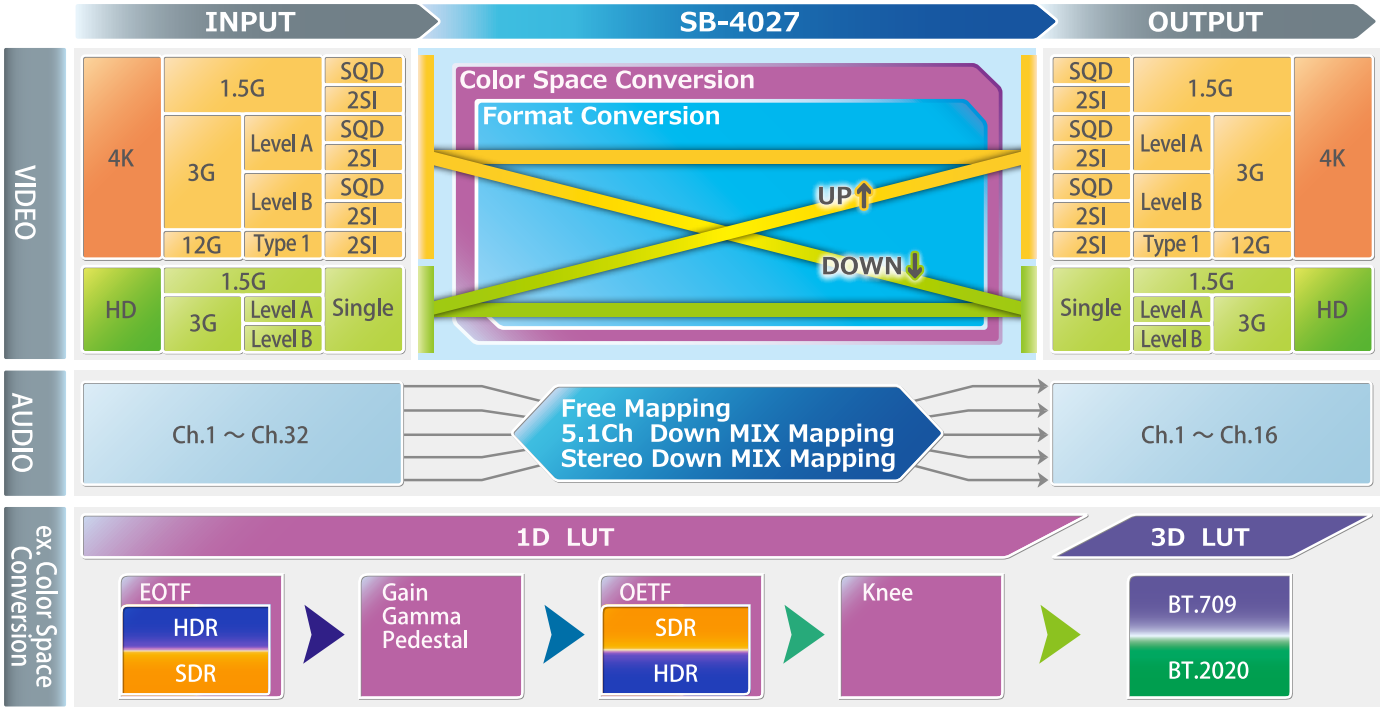
HDR



SB-4027

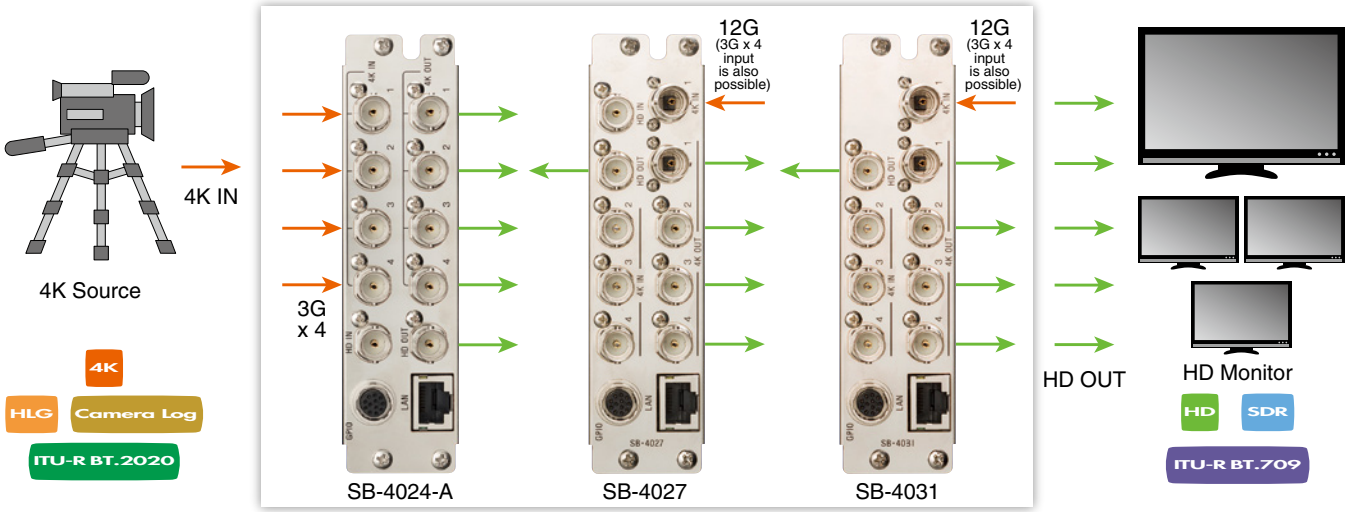
Features

- 4K ⇔ HD
  Up-Conversion, Down-Conversion
- ITU-R BT.2020 ⇔ ITU-R BT.709
  Colorimetry Conversion
- HDR ⇔ SDR
  Dynamic Range Conversion

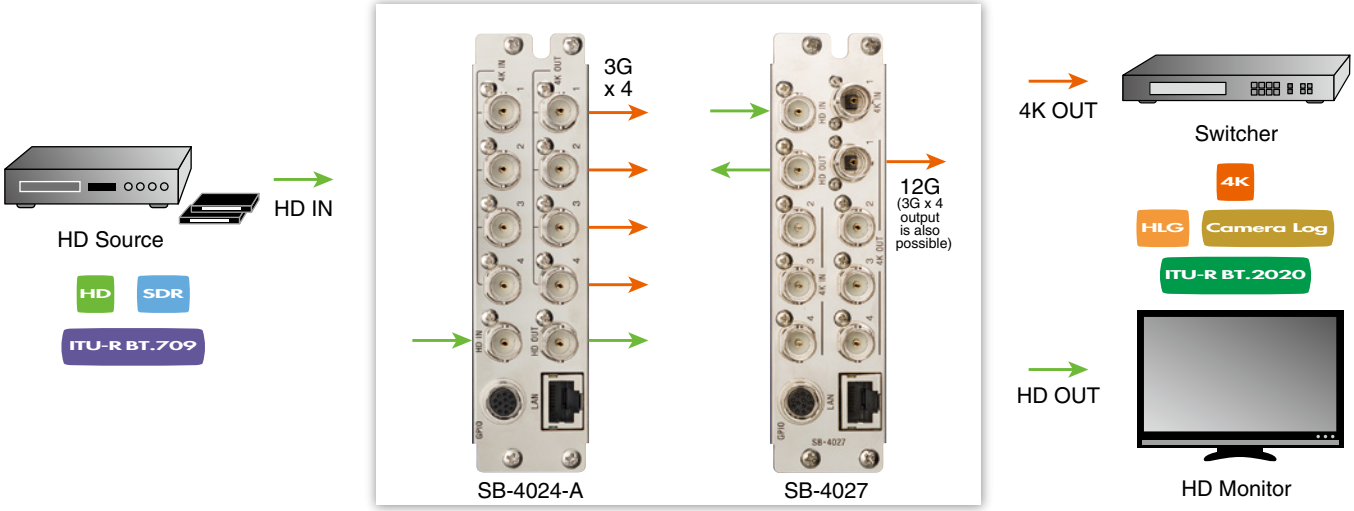


Application Example of 4K Converter HDR

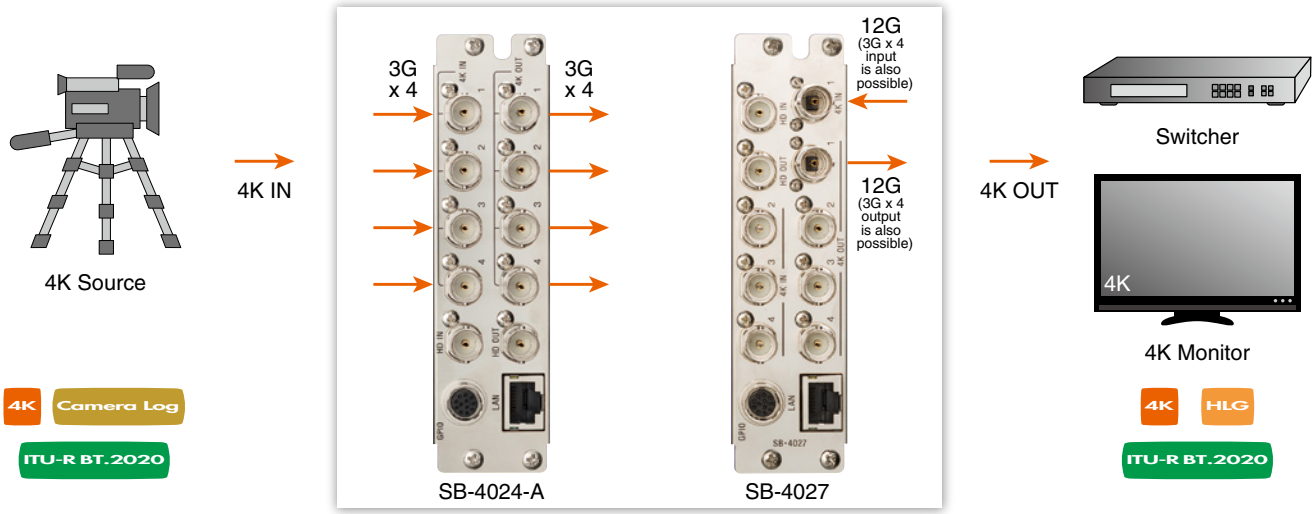
4K → HD mode



HD → 4K mode



4K → 4K mode



HD × 4 → HD × 4 mode, HD (IP) → HD × 4 mode, and bypass mode available as well

- HD × 4 → HD × 4 mode, HD (IP) → HD × 4 mode compatible models: SB-4024-A / SB-4027
- Bypass mode compatible models: SB-4024-A / SB-4027 / SB-4031

Definitive Edition: 4K 12G-SDI Compatible Downstream / Upstream Keyer

4K Inserter【HD-1679】12G

8 ch Superimposed text input
DSK / USK for two lines
Combine up to 8 captions on screen

HD-1679

A downstream keyer (DSK) and upstream keyer (USK) that corresponds to two 4K line inputs, eight 4K super max lines, and two 4K preview output lines.

Features

- SDI I / O compatible with 12G-SDI / 3G-SDI / HD-SDI
- Line and preview input / output supports 12G to 3G conversion, SQD ⇔ 2SI conversion, 3G Level A ↔ B conversion
- Can also be used as DSK / USK for HD
- Two lines (LINE A, LINE B) can individually set DSK / USK
- AVDL for line and FS for superimposed text
- Supports NAM / linear / priority synthesis
- BMP / TGA still image files registered as internal superimposed data
- Reduction of superimposed text, up / down / left / right cropping, display position specification
- Supports setting and operation by dedicated remote controller and web browser
- Supports contact output such as external control and alarm by GPIO (D-Sub 37-pin)
- Redundant power supply

Optional HDR

- Down convert the preview output
- Superimposed text input up conversion, color gamut conversion, EOTF / OETF conversion

RB-1679 / -A

Desktop Type Remote Controller
RB-1679 (5-pin specification)
RB-1679-A (3-pin specification)

RB-1679-D

Small Remote Controller
RB-1679-D

TB-1678 / -A

Take Box
TB-1678 (5-pin specification)
TB-1678-A (3-pin specification)

4K / HD Production Studio, OB Van Products, CG Delivery System

Through the power of ASTRODESIGN's technology and with four times as many pixels as Full HD, 4K allows the viewer to enjoy an exceedingly realistic video experience.

SB-4024-A · SB-4027 · SB-4031
4K Converting Board

NEW 4K HDR

SB-4024-A: 3G-SDI Compatible 4K-HD Cross Converter
SB-4027: 3G / 12G-SDI Compatible 4K-HD Cross Converter
SB-4031: 3G / 12G-SDI Compatible 4K-HD Down Converter

For Further Details ➡ Go to P22, 23

SD-7073
4K Interface Converter

4K

A device that converts four SDI signals (3G / Dual / HD-SDI) and HDMI signals in both directions.

<Features>

- Frame Rate Conversion
- Color correction function (GBR gain · offset · contrast / brightness · color temperature), marker multiplexing function, audio headphone output, magnification display function
- Asynchronous input support (± 0.5 V lead-in)
- Built-in test pattern display (color bar, grayscale)

GG-167-4K
4K Frame Memory Board

4K

A frame memory board which can output 4K in real-time.

<Features>

- High-speed data transfer in compliance with PCI Express 2.0 standard × 16 (electrical × 8)
- 4K / 59.94p real-time video output with 3G-SDI × 4 lines output
- Image synthesis to 4K input image is possible by using optional input / output expansion board
- Extensive support system with SDK standard attachment, sample code provision etc.

BE-4028
Board Enclosure

NEW 4K HDR

<Features>

- Up to two 4K converter boards can be mounted at once
- Redundant power supply
- 1U rack size

VC-7063 · VC-7063-1
Stereo Composer (VC-7063-1: with 3D Keyer)

3D Synthesis · Separation, Format Interface Conversion, Condensing Every Function, from On-site Shooting to Control Room

3G / HD-SDI, HDMI compatible 3D composer.
Two input signals can be multiplexed by a single 3D signal Side by Side or vice versa into two L / R systems and further Outputted. 3G / HD-SDI ⇔ HDMI interface and format conversion is also available

<Features>

- Compatible with several conversion methods such as Side by Side, Top and Bottom, Line by Line, Field Sequential, Frame Packing (* HDMI only), Supports
- Alignment function
- Mirror function
- Color correction function
- Frame synchronization function
- Enlargement / reduction function
- Multiple Marker Function
- Audio recombination / delay function
- Alarm output terminal (VC-7063-1 only)
- 3D keyer function (VC-7063-1 only)

GG-167-HD
HD Frame Memory Board

Real-Time Transmission, Full Frame Video Display

A frame memory board which can simultaneously output HD-SDI × 4 lines (fill or key selection).

<Features>

- High-speed data transfer in compliance with PCI Express 2.0 standard × 16 (electrical × 8)
- Capture input signal and synthesize output within board
- HD FILL + KEY 2 lines simultaneous output and simultaneous FILL 3 lines output etc. is possible
- Extensive support system with SDK standard attachment, sample source code provision, etc.

HD-1678
HDTV / 4K DSK

4K

**HD DSK / USK: 2 Lines, Super 8 Lines *
4K DSK: 1 Line, Super 2 Lines ***

<Features>

- 3G-SDI / HD-SDI compatible
- Supports asynchronous input between each super *
- AVDL function
- Connect up to 2 remote controllers
- Redundant power supply

* Super: Super-imposed data

Development evaluation and production of 4K equipment ➡ Go to P29, P31
4K converter · switcher ➡ Go to P22, P23, P33

VC-7063 Application Example

3D format and Interface Conversion.
Solution for both Medical and Broadcasting market.

Medical Applications

4K / HD Production Studio, OB Van Products, Production

ASTRODESIGN has been working on high vision video since the dawn of HD and we strongly support digital broadcasting standards that create images that are fit to be called high resolution.

DM-3105 · DM-3105-B
5-inch Widescreen LCD Monitor

Small and Compact High Quality 5-inch Monitor

＜Features＞

- Input video format: HDTV (21 types), SDTV (2 types)
- Input signal: 2 HD / SD-SDI, 1 analog composite
- High luminance · High contrast · Wide viewing angle of 170° up and down, left and right
- Brightness, Contrast, Chroma Adjustment, Marker Display, Simple waveform (Y signal), Simple vector display function
- DC power supply
- Battery-driven (DM-3105-B only)

DM-3417
12-inch 4K LCD Monitor

4K

HDR

Compact and Lightweight 4K LCD Monitor

Uses a 12-inch 4K resolution LCD, compact and lightweight.
Can display 4K full screen.

＜Features＞

- Possible to display 4K images with Dot-by-Dot even while being very compact at 12 inches
- Supports 4K (3840 × 2160 / 59.94p YC_BC_R 4: 2: 2 10-bit, Square Division, 2-sample interleave division) input
- Supports 12G-SDI × 1 input, 3G-SDI × 4 input 2 lines of 12G-SDI × 1 input, 1 line of 3G-SDI × 4 inputs available
- Through-output of each SDI format
- Compatible with HDR (Hybrid Log-Gamma [HLG: ITU-R BT.2100], Perceptual Quantizer [PQ: SMPTE ST 2084], S-Log 3)
- ITU-R BT.2020, ITU-R BT.709 compatible
- Supports registration and reading of two user-configurable 1D LUTs and 3D LUTs
- Zoom (MAG) function. 2 times magnification. After enlargement, enlarged portions of 5 stages can be specified horizontally and vertically
- Test pattern output to monitor (SMPTE color bar, gray scale, window, 50% flat field)
- Focus assist function

DF-3515
Native HD Electronic View Finder

HDR

【Installation example】

Native HD 1920 × 1080 Resolution OLED Installed

＜Features＞

- HDR display function
- Supports HD-SDI multi-format input
- HDMI input
- Low latency
- Peaking, upside-down function, x 2 x 4 magnification display
- HDMI to SDI conversion function (2K only)
- Mono, Blue Only function

MEMO

4K / HD Production Studio, OB Van Products, Production

ASTRODESIGN has been working on high vision video since the dawn of HD and we strongly support digital broadcasting standards that create images that are fit to be called high resolution.

WM-3206B · WM-3206B-A
4K Waveform Monitor

4K Compatible Waveform Monitor

<Features>
- 2K and 4K compatible
- HD-SDI (Dual/Single Link) and 3G-SDI (Level A/B) supported
- Square Division and 2-sample interleave division supported
- HDR (HLG, PQ, S-Log and Canon Log) scale waveform
- Free layout
- DC 12V type available (WM-3206B-A)

Layout setting example

WM-3209A
8-inch Waveform Monitor

3D Compatible 8-inch Waveform Monitor

<Features>
- 3G-SDI interface
- 3D measurement function
- Waveform display
- Vector scope display
- Ancillary display
- Audio level meter display
- Audio vector display
- Multi layout
- Phase difference display

AM-3807 · AM-3807-A
Audio Loudness Meter

7-inch Color Liquid Crystal Mounted with Emphasis on Visibility and Operability

Implements loudness range, surround waveform, Lissajous waveform, needle meter, spectrum analyzer display, demultiplex function.
Measure the loudness value of an audio signal of embedded SDI / AES input.
It is possible to manage the surround sound level, the phase monitoring between the channels, and the sound image management easily.

<Features>
- Overwrite re-measurement functions with time code management
- Log storage / reading function to USB memory
- Loudness range display
- Spectrum analyzer function
- Needle meter function
- Demultiplex function

HW-7066
Closed Caption Checker

* Japanese market only

Special Rasterizer for Checking Closed Captions

The HW-7066 displays HD, SD, analog and mobile closed captions with decoding.
It also supports DRCS.
It displays not only decoded closed captions but also analysis results of CM code and inter stationary control data conveyed by ancillary data.
Logging application software is available as an option.

<Features>
- HD, SD, analog and mobile captions are supported
- CS (Clear Screen) checking function
- History display
- ANC data display function
- CM code and inter-stationary control data are displayed with decoding

HW-7069
3G/HD-SDI Rasterizer

The New VE Desk Monitor

On the modern VE's desk, it is common to see several monitors, ID display machines, and waveform monitors.
ASTRODESIGN proposes a product that combines these into one unit.

<Features>
- Up to 4 systems of video and waveform are displayed on one screen
- Layout of information such as images, waveforms, vectors can be changed easily
- Interlocking with CCU and switcher is possible
- 3G-SDI compatible

AM-3805
Audio Monitor

Loudness Function Standard Equipped Audio Monitor

This is an advanced audio monitor that separates the audio signal embedded on each 3G / HD / SD SDI signals from the video signal and can simultaneously monitor up to 2 channels with built-in speakers or headphones.

Modular Signal Generator
Maximum 8K/120p Timing Formats Supported

Digital Video Generator 【VG-876 / VG-879】 HDMI 2.0 Compliance test

VG-876 / VG-879

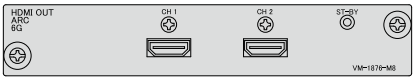
Main Features

- Supports the latest digital video interfaces such as HDMI 2.0b, DisplayPort 1.2a, V-by-One® HS and 12G-SDI.
- Max. 4 interface units are installed. All units are swappable by users.
- 8K/120p timing is output by synchronizing four VG-876 / VG-879 units. One video interface and one synchronizing unit (VM-1876-MX) should be installed in each VG.

HDMI 6G Unit HDCP 2.2 HDR

VM-1876-M8

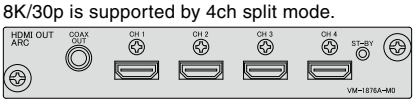
HDMI 2.0b based module. 4K/60p YC_BC_R 4:4:4 output is available.



HDMI Unit HDR

VM-1876A-M0

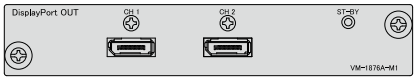
HDMI 2.0b based module. 4K/60p YC_BC_R 4:2:0 output is available.
8K/30p is supported by 4ch split mode.



DisplayPort Unit

VM-1876A-M1

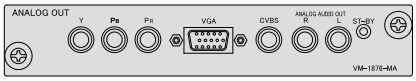
DisplayPort 1.2a based. 4K/60p RGB 4:4:4 transmission by SST and MST. 5.4Gbps (HBR2) is supported. HDCP is not supported.



Analog Unit

VM-1876-MA

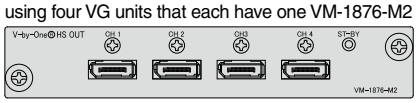
VGA, Composite (NTSC/PAL), Component and audio outputs are supported.



V-by-One® HS Unit

VM-1876-M2

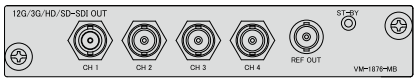
4K/120p and 8K/30p are output from a single board. 8K/120p output is possible by using four VG units that each have one VM-1876-M2 and VM-1876-MX installed.



12G-SDI Unit NEW

VM-1876-MB To be installed in VG-879 only

4K/60p is transmitted by one 12G-SDI channel, two 6G-SDI channels, or four 3G-SDI channels.



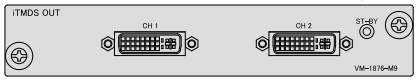
3G-SDI Unit

VM-1876-M5 To be installed in VG-876 only

iTMDS Unit

VM-1876-M9

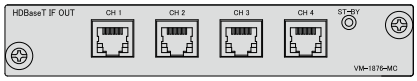
4K/60p is supported by a single board. 4K/120p is supported by two boards. LVDS output is supported by using optional IA-1540 converter.



HDBaseT Unit NEW

VM-1876-MC

HDBaseT 2.0 is supported. 4K/30p timing format, HDCP and EDID are supported.



Video Signal Generators

VG-870B · VG-871B
VG-873 · VG-874
(HDMI 300 MHz supported model)

Supports Various Video Standards Slot Type Interface

<Features>
- HDMI 300 MHz supported (VG-873/874)
- HDMI, DisplayPort/eDP, DVI, SDI, V-by-One® HS, LVDS and Parallel signals are supported.
- 4K/120p, 1080/120p and 1080/240p are supported.
- Full HD double speed (120 Hz)
- Uncompressed 10-bit video playback

<Interface Units>

<PC Analog Unit> VM-1811
BNC, D-Sub 15-pin, DVI
Notes: 10-bit RGB output for signals other than DVI

<TV Encoder Unit> VM-1812
BNC, D-Sub 15-pin, D-terminal, S-Video, VBS, SCART x2CH, audio L/R

<DVI Unit> VM-1814
DVI x2CH (Single/Dual Link), Max. 330 MHz output

<LVDS Unit> VM-1815
LVDS x4CH, Max. 340 MHz output

<Parallel Unit> VM-1816
Parallel x2CH, Max. 200 MHz output

<[4K] HDMI 300 MHz Unit> VM-1823
HDMI x2CH, audio out for ARC (coaxial), audio input (coaxial)
3D, HEAC, ARC and CEC functions
Installed in VG-873/874 only

<HDMI unit> VM-1822
HDMI x2CH, audio out for ARC (coaxial), audio input (coaxial)
Max. 165 MHz dot clock. 3D, ARC and CEC functions

<HDMI unit> VM-1817
HDMI x2CH, audio L/R, audio input (coaxial)
Max. 165 MHz dot clock. CEC function

<[4K] 4K iTMDS Unit> VM-1824
iTMDS x2CH (Dual Link), digital output only

<[4K] 4K iTMDS Unit> VM-1824-A
iTMDS x4CH (Single Link), digital output only

<[4K] V-by-One® HS Unit> VM-1825
MDR 26-pin x2CH (4 lanes each)

<[4K] DisplayPort/eDP Unit> VM-1826
DisplayPort 1.1a/eDP x2CH, control signal, four power supply lines, external power supply input

<DisplayPort Unit> VM-1820A
DisplayPort 1.1a x2CH, audio input (coax)

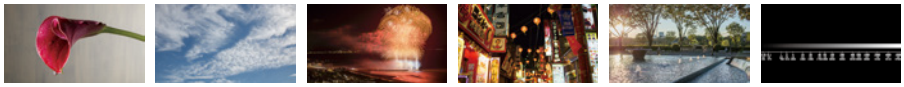
Options for Video Signal Generator

VT-7012
Dolby Vision Evaluation Contents Library (VG-876 and VG-879 Option)

NEW

<Features>
- By executing the test patterns with metadata for Dolby Vision, users can evaluate their device by monitoring the check marks position and its color.
- The Program data with the appropriate Vendor Specific InfoFrame is provided.
- 1920 x 1080 and 3840 x 2160 resolutions are supported.

VT-7009
8K and 4K HDR Picture Library (VG-876 and VG-879 Option)



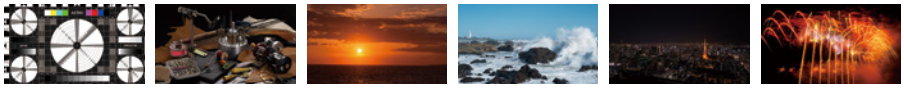
<Features>
- 8K (7680 x 4320) and 4K (3840 x 2160) images with 10 and 12-bit versions available to choose from.
- SMPTE ST 2084 (1000nits, 4000nits) in HDR standards, HLG and SDR formats.
- ITU-R BT.2020 (Rec.2020) color space is supported.
- 14 various images of nature scenes and scale patterns.
- With A reference manual that indicates proper evaluation of luminance, color, gradation and solidity.
- Easy operation by calling image number stored on a USB memory, in a format of the signal generator (VGD format).

VT-7007
Ultra-High Definition/Wide-Color-Gamut Standard Test Images Library (VG-876 and VG-879 Option)

<Features>
- 8K (7680 x 4320) and 4K (3840 x 2160) with WCG (Wide Color Gamut) of ITU-R BT.2020 (Rec.2020) compliant (12 bits).
- 2K (1920 x 1080) with ITU-R BT.709 (Rec.709) compliant (10 bits)
- 10 images for each three kinds of resolutions

*Copyright: Institute of Image Information & TV Engineers·Association of Radio Industries & Businesses
*Source: Institute of Image Information & TV Engineers
*It is necessary to obtain a permission from ITE before using VT-7007 in exhibitions, etc.
http://www.ite.or.jp/content/mta

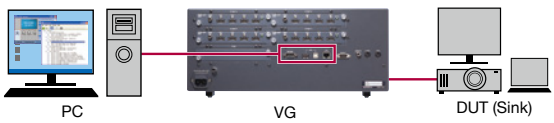
VT-7004 · VT-7004-A
4K Still Picture Library (VG-870B, VG-876 and VG-879 Option)



<Features>
- 20 uncompressed 8, 10 and 12-bit nature scenes and three 4K test patterns (2 types of monoscope patterns and a "Circular Zone Plate" pattern)
- 4K output formats: DCI, DCI 16:9 and QFHD (3840 x 2160).
- With A reference manual that indicates proper evaluation of resolution, gradation, texture, color and solidity.
- Easy operation by calling image number stored on a CF card or USB memory, in a format of the signal generator (VGD format). (Images are formatted for VG use in VGD file format. Patterns have numbers assigned for ease of access.)
- VT-7004 is for VG-870B series (CF card), and VT-7004-A is for VG-876 series (USB memory)

HDMI 2.0 Compliance Test
(VG-876 and VG-879 Option)

An option enabled VG-876 can perform HDMI 2.0 Compliance Test (Sink Test) by using SP-8870 software.



VT-8500-0006
HDMI High Bit Rate Audio (VG-870B, VG-876 and VG-879 Option)

This option provides compressed audio programs including High Bitrate audio and One bit audio.
Supported formats:
- DTS-HD Master Audio
- DTS-HD High Resolution Audio
- Dolby Digital Plus
- DSD (One Bit Audio)
- DTS Express (DTS-HD LBR)
- DTS Digital Surround
- Dolby True HD

HDMI Compliance tests can be performed as an option.

Specializing in Real-Time Analysis, Best Solution for developing HDMI 2.0b, HDCP 2.2, GVIF Equipment!

HDMI 2.0b / HDCP 2.2 Protocol Analyzer 【VA-1842】

HDMI 2.0 Compliance Test | HDR | HDCP 2.2 Compliance Test | HDMI 6G Model

HDMI 2.0 Protocol Analyzer 【VA-1838】

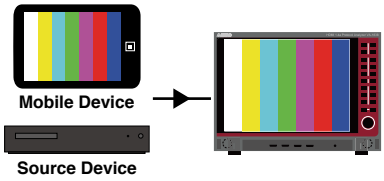
HDMI 2.0 Compliance Test | HDMI 3G Model

GVIF Protocol Analyzer 【VA-1839】

Easy and immediate start to analyze.

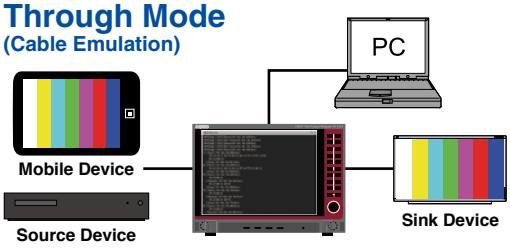
The photo is VA-1842

Receiver Mode
(Sink Emulation)



It corresponds to emulated operation emulating sink equipment such as TV by EDID setting, protocol analysis and video timing measurement.

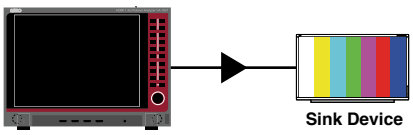
Through Mode
(Cable Emulation)



You can perform behavior emulating cable and protocol analysis. It is possible to get log data by triggering direct communication between source device such as mobile device and sink device.

* Optional for VA-1842

Generate Mode
(Source Emulation)



It corresponds to behavior and protocol analysis emulating a source device. Standard signal is output as a simple signal generator.

VA-1842 / VA-1838 / VA-1839

It is a protocol analyzer that can analyze protocol layers in the development of transmitters with interfaces such as HDMI 2.0b and GVIF. Equipped with a 12-inch LCD panel and built-in speaker, it can analyze video, audio, protocol, video timing in real-time. In addition, it is possible to check receipt of sink equipment and check the communication line by the generation (signal sending) function.

Main Functions

Analyzer (measurement) function
Measuring HDMI 2.0b, GVIF video timing and contents of each packet, check the difference with the standard value.

Receiver (monitor) function
HDMI 2.0b, GVIF can be received.

Through function
Analyzing the direct communication between the source device and the sink device by making the input / output pass through.

Emulation function
EDID information can be changed to the performance of various other monitors.

Video and audio monitoring function
Check the video of 8-bit, 10-bit, 12-bit HDMI 2.0b on 12-inch LCD monitor. Moreover, it can easily monitor the linear PCM sound with built-in speaker.

Program function
You can manage the data used for emulating the monitor programmatically. Just by calling up the program, you can easily change to the performance of various monitors. There is also a group function that picks up only what to use out of many programs.

Data storage function
Data such as analysis log and emulation setting can be saved in USB flash memory.

Log trigger function
You can set the trigger to capture the analysis data, and you can check the transmission and reception of commands on the control line.

Compliance test function
As a simulation of the certification test standard, you can perform a part of the compliance check and display the result item by item.
HDMI, CEC, HDCP (HDMI / GVIF)

* GVIF is a trademark of Sony Corporation.

What is HDMI 2.0b

HDMI (High-Definition Multimedia Interface) 2.0b is a standard for transmitting digital video and audio of consumer devices such as LCD TVs and BD players over a single cable and was released in September 2013.

The bandwidth of data transfer was extended from the then conventional bandwidth of 10.2 Gbps to 18 Gbps, and transmission of 4K 50 / 60p is now possible with one cable. In addition, up to 32 channels of audio can be transferred and the sampling frequency is now a maximum of 1536 kHz.

In addition, as the connectors and cables are the same as before, conventional ones can continue to be used.

Further, backwards compatibility allows you to connect, for example, a HDMI 2.0b monitor with an outdated HDMI PC.

As ASTRODESIGN is a participant in the HDMI Forum, which formulated HDMI 2.0b, we and cooperate as a manufacturer of measuring instruments to HDMI standards.

In the future, we will continue to develop products that meet next-generation video standards.

Protocol Analyzer

In order to view beautiful images, a high-definition display is necessary, but equipment needed to transmit the image cannot project clears images unless it itself is of high quality.
As a pioneer in this field, ASTRODESIGN supports R&D and the production of digital AV equipment.

Compatible Function Comparison

◎ : Dedicated

	Receiver mode	Through mode	Repeater mode	Generate mode	Standard	4K2K	HDCP	CTS	R&D	Production line	Field Service
VA-1842	○	Option	○	○	HDMI 2.0	30Hz / 60Hz	2.2 / 1.4	Option	○	○	○
VA-1839	○	×	×	○	GVIF	×	1.4	×	○	○	○
VA-1838	○	○	○	○	HDMI 2.0	30Hz / 60Hz (4:2:0)	1.4	Option	○	○	○
VA-1840	○	×	×	○	HDMI / MHL	30Hz	1.4	×	○	◎	×
VA-1844A	○	○	Option	Option	HDMI 2.0	30Hz / 60Hz	2.2 / 1.4	×	○	○	◎
VA-1845	○	×	×	○	HDMI 2.0	30Hz / 60Hz	2.2 / 1.4	×	×	◎	×

Protocol Analyzer

VA-1842 HDMI 2.0b / HDCP 2.2 Protocol Analyzer
VA-1838 HDMI 2.0 Protocol Analyzer
VA-1839 GVIF Protocol Analyzer

HDR

VA-1842 (HDMI 600 MHz / HDCP 2.2)
HDR compatible
The latest HDMI 2.0b / HDCP 2.2 functions can be inspected and measured

<Features>

- Supports HDMI 600 MHz
- Supports HDCP 2.2
- Analysis of 4K formats, ITU-R BT.2020 compatible
- Status display of each InfoFrame such as 3D, HDCP 2.2 / 1.4, CEC, EDID
- CEC and DDC line capture and log acquisition
- Receiver mode (Sink Emulation) Analysis of HDMI / HDCP protocols and video timing
- Through function (optional) allows the direct check of CEC, DDC communication between the source and sink device, obtain log
- Generate mode (Source Emulation) outputs a signal corresponding to the standard as a signal generator It can also be used as a signal generator for HDMI 4K and HDCP 2.2 / 1.4
- Compliance test function for HDMI 2.0b and HDCP 2.2

VA-1838 (HDMI 300 MHz)
Each function of HDMI can be inspected and measured. Supports 3D, ARC, HDCP / CEC / EDID measurement. Also supports 4K signal format.

<Features>

- Receiver mode (Sink Emulation)
- Through mode (Cable Emulation)
- Generate mode (Source Emulation)
- HDMI 2.0 Compliance Test Certified Device

VA-1839
Display, measure each function of GVIF* (Gigabit Video Interface).
You can evaluate HDCP functions of GVIF compatible equipment.
* GVIF is a trademark of Sony Corporation.

<Features>

- Video Timing Measurement, Picture Display
  Measure the video timing output from the inspected device and display images. Audio signal measurement and playback are also possible.
- Signal generation function
  Any video signal can be output. It supports HDCP ON / OFF and audio signal output.
- HDCP CTS function
  It is possible to evaluate each item of the copyright protection function defined by HDCP.

For Further Details ➡ Go to P30

HDMI Tester

VA-1844A
Portable Lightweight HDMI Tester

HDR

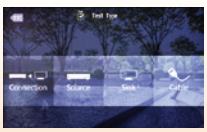
Portable Lightweight HDMI Tester

Instant confirmation of the latest functions of HDMI 2.0b · HDCP 2.2
Confirm connectivity between devices and implement cable test functions

<Features>

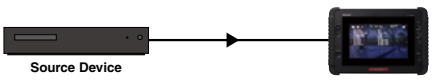
- 7-inch touch panel mounted
- Compact size: 269 (W) x 182 (H) x 41 (D) mm
- Weight 1.25kg
- 2 units synchronous mode (optional)
- HDMI 2.0b output (optional)
- Repeater mode (optional)

Analysis screen

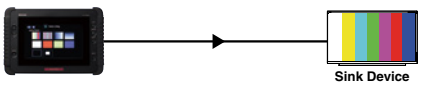


Test screen

Receiver Mode (Sink Emulation)
It is possible to measure video timing, confirm the status of HDCP 1.4 / 2.2, check the SCDC status, confirm the InfoFrame and Packet, set the EDID or emulate it from the target sink device, and save all data in the log.



Generate Mode (Source Emulation)
Up to 4K / 60p 4: 4: 4 output is possible when emulating a source device.



Through Mode (Cable Emulation)
By connecting VA-1844A between the source device and the sink device, you can check the direct communication of the DDC / CEC line.

Repeater Mode (Repeater) (optional)
Confirm that the output device operates correctly as a repeater.

HDMI/MHL Automatic Tester

VA-1840
IF Device / IF Board Inspection System

Automatic Inspection System Capable of Comparing Video / Still Images / Protocols

<Features>

- Automatically check the confirmation work of the display after visual inspection
- Output and save error reports
- Output of video signals can be measured

<Testing Application>

- Real Time Comparison
  Comparative inspection with images output from the main unit
- One Shot Compare
  Comparative inspection with arbitrary image registered in advance
- Previous Frame Compare
  Comparative inspection of input signal and 1 frame delayed image

Automatic Testing Systems

VA-1845
HDMI 4K Source Tester

Automatic Inspection Possible

This device in an automatic inspection device for production lines compatible with HDMI 2.0b and HDCP 2.2.
It is possible to measure / analyze HDMI output equipment via PC, and it is possible to set test items freely by command.

<Features>

- HDMI 2.0b / HDCP 2.2 compatible
  4K / 60p RGB 4: 4: 4 Measurement up to 8 bits possible
- Check video output
  Check the video data transmitted by the HDMI output device
- Audio output confirmation
  Check the level of audio output, frequency check, waveform acquisition
- Read confirmation of Packet / InfoFrame
  Performs HDMI protocol check and allows pass / fail judgment
- Confirmation of DDC line
  Perform access check of EDID, HDCP, SCDC.
- Confirmation of CEC line
  Perform access check of CEC command.
- Self-check mode equipped

8K2K Supported MULTI VIDEO PROCESSOR

Multimedia Scan Converter【MC-2085 / MC-2086】

High Resolution Image

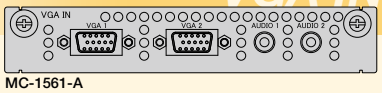
Uses:
Video conferencing, R&D,
High-quality simulations

Benefits:
- Dot by Dot image display.
- Image quality comparison available.

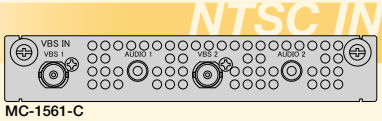
Entertainment

Uses:
Indoor / Outdoor digital signage,
Stadiums

Benefits:
- Displaying at the optimum sizes depending on LED pitches.
- Joint point and blending area are selectable.



MC-1561-A



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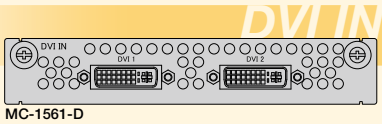

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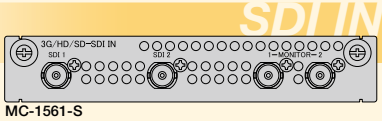
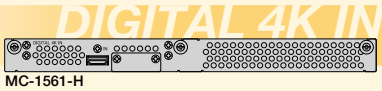


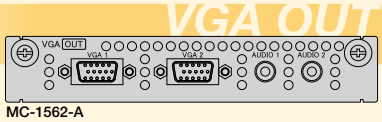
MC-1561-S



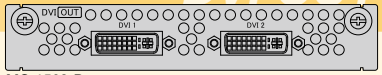
MC-1561-H

MC-2085

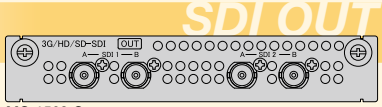
MC-2086



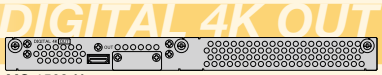
MC-1562-A



MC-1562-D



MC-1562-S



MC-1562-H

Security Monitoring

Uses:
Infrastructure monitoring,
Security, Transportation

Benefits:
- Able to handle multiple images simultaneously.

Medical Monitoring

Uses:
Surgical operation,
Academic conference

Benefits:
- Picture-in-picture with 4K available.

MC-2085 / MC-2086

Flexible high-resolution video system for multi-window and large scale display indoor or outdoor.

The MC-2085 / MC-2086 is a multi-video processor that can process 8K2K high resolution size in real-time.
With a slot type input / output interface board, it will always correspond to the latest connector.
For external control, by mounting LAN / RS-232C / remote contacts, it becomes possible to control from various control devices.

Main Functions

- Original zoom algorithm / Motion adaptive IP conversion algorithm and adopted 10-bit Arithmetic processing
- HDCP compatible (MC-1561-D / MC-1562-D only)
- Aspect mode selection, input EDID rewrite (duplication output / selected fixed value)
- Image rotation, key synthesis, fade switching
- Joint / blending area setting
- Web browser setting
- Audio support (embedded / main unit output)

System Integration Processor

ASTRODESIGN's proprietary image conversion algorithm makes up / down scaling in real time and resolution conversion at high speed while maintaining high image quality possible.

MC-2085 · MC-2086
Multimedia Scan Converter

MC-2085

MC-2086

8K2K High Resolution Support Multi Video Processor

For Further Details ➡ Go to P32

MI-2100
Media Integrator

Multi-function Digital Multi-switcher

Scan converter built-in multi-screen is compatible with the processor.
As well as supporting HDCP, it is ideal for a multi-display system such as monitoring, signage, and for use conference rooms.

<Features>

- I / O up to 68 channels
- 8.4-inch touch panel capable of intuitive operation
- Audio support (embedded / main unit earphone)
- Aspect mode selection
- EDID emulation (output copy)
- Joint / blending area setting

SC-2065A/B
Flexible Scan Converter

Best Entry Model for a Presentation or Events System

Format conversion, interface conversion, aspect ratio conversion compatible with HD / SD-SDI, DVI-D digital interface, analog YP_BP_R / Y (R-Y) (B-Y) / RGB, VBS analog interface video standards are all made possible.
As well as up-converting and down-converting with one unit, you can extract only the necessary part of the input video and set the output position freely, so it performs well in a variety of situations such as recording / editing, presentation, events and output to special equipment.

<Features>

- HDCP compatible (DVI)
- Various input / output interfaces
- "TERA" high image quality scaling processing (12-bit operation processing)
- "Astrosnap" high image quality I/P conversion processing (12-bit operation processing)
- Intuitive front menu operation
- WebUI, command control, SNMP monitoring via Ethernet connection

RB-1650C
Remote BOX

- 16-button learning function BOX allows registration of commands for each button
- RS-232C (9600 bps, 19200 bps, 38400 bps auto detection)
- DC 5V power supply (AC adapter included)
- Dimensions: 160 (W) x 40 (H) x 110 (D) mm

SC-2067B
Flexible Scan Converter

3D-SDI, Audio Compatible Top Model

SC-2067B is a universal type video processor covering a wide range of analog interfaces, including Component YP_BP_R / Y (R-Y) (B-Y), Composite VBS, RGB and digital, as well as DVI-D, HDMI, and SDI from SD-SDI to 3G-SDI.
It supports not only video but also audio, SDI embedded audio, HDMI digital audio, and external analog audio.
It also supports SNMP monitoring via LAN connection and can be used safely as a baseband or transmission equipment as well as standalone.

<Features>

- HDCP compliant (HDMI / DVI)
- Audio support (input selection, optional delay setting possible)
- Various input / output interface
- "TERA" high image quality scaling processing (12-bit operation processing)
- "Astrosnap" high image quality I/P conversion processing (12-bit operation processing)
- Intuitive front menu operation
- WebUI with Ethernet connection, command control, SNMP monitoring

RB-1636A
Remote BOX

- By pressing key switches 1-16, you can to switch the corresponding 1-16 mask tables. (MC-2085 / MC-2086 compatible)
- No power supply required
- Dimensions: 85 (W) x 30 (H) x 120 (D) mm

MEMO

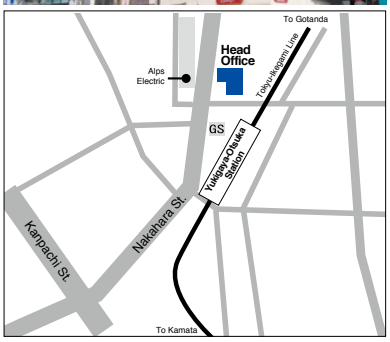
Corporate Profile

Company Name	ASTRODESIGN,Inc.	
Established	February 15, 1977	
Capital	72 Million Yen	
President and CEO	Shigeaki Suzuki	
Officers	Vice President	Tsutomu Mihara
	Director	Yoshiaki Tochimoto Yoshihito Manabe Ernie Chen Yasuhiro Yoshida Keiji Kimura
	Auditor	Yoichi Takahashi
Employees	155	
Business	Drawing on expertise in high-speed digital signal processing, ASTRODESIGN,Inc. develops manufactures, and sells imaging and video equipment, software, HDTV studio equipment, digital broadcast equipment, and display testing in addition to sales of communication, control, and testing modules and systems.	

Company History

1977	Established in Tokyo, specializing the design and development of electronic equipment
1979	Developed the world's first programmable video signal generator
1985	Invited to participate in joint HDTV development with NHK
1986	In response to growth, relocated to a new facility in Kawasaki
1987	Kansai office opened in Osaka, serving Western Japan
1990	Capital increased to 72 million yen
1993	Kawasaki Technology Center opened (merged into head office in 2007)
1996	ISO 9001 certified (registration no.: JET-0056)
1998	Tottori R&D Center opened
1999	ISO 14001 certified (registration no.: E99-102)
2002	Merger with affiliate NPS, head office relocated to Meguro-ku, Tokyo
2005	UHDTV processor jointly developed with NHK for Expo 2005 in Aichi
2007	Head office relocated to Ota-ku, Tokyo; consolidation of three Tokyo offices
2010	Expanded 4K product lines (including cameras and recorders) in anticipation of UHDTV market growth
2012	Subsidiary ASTRODESIGN,Inc. established in Silicon Valley, California
2013	Expanded 8K product lines in anticipation of 8K trial broadcasting
2016	Open "8K Suite" as 8K production facility

Head Office



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To All People Involved in Video Production

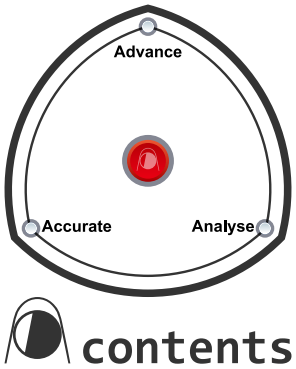
ASTRODESIGN, as a manufacturer who pushes the creation of new 8K video production environments, has continued to develop the theme of "Optimizing Total Production Workflow" from shooting to end production.

On the other hand, the conventional video production environment is not necessarily the ideal collaboration between the development of shooting equipment and post-production facilities such as computers and workstations. From the creator's point of view, "optimization" is missing. Particularly in 4K and above, the signal density is high and it will inevitably become an important task in future work to increase the processing speed and storage capacity.

Even 8K, which is said to be the ultimate in "Optimizing the Performance" of video, this is the biggest problem that must be solved in order to gain customer satisfaction and trust in all QCDs.

We, ASTRODESIGN, have recently released an optimized 8K video production workflow, and in the future, we plan to focus on content creation itself, spreading it to the world, and other support activities, as well as all those involved in video production.

We look forward to your continued support of ASTRODESIGN.



Inquiries about e-mail magazines

We are sending effective information to customers as hot magazine "ASTRODESIGN Communications" with technical commentary on latest terms, new products, version up, exhibition information etc.

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●Product specifications and appearance are subject to change without notice for improvement.

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