

## Company Outline

**Company Name**  
ASTRODESIGN Inc.

**Establishment**  
February 15 1977

**Paid-in capital**  
72 million yen

**Representative**  
President Shigeaki Suzuki

**Officer**  
Senior Vice President Minoru Hosaka  
Vice President Osamu Ozaki  
Auditor Motoaki Morishita  
Executive Officer Tsutomu Mihara  
Junji Maeda

**Employees**  
155

**Sales**  
3.55 billion yen (2007.3)

**Contents of a business**  
High-speed digital signal processing technology is set on our core. The image and video apparatus, software, a HDTV studio apparatus, a measurement apparatus for the display, and a MPEG (Digital TV) apparatus are designed, manufactured, and sold by ourselves.

**Main Customer**  
EIZO NANA O CORPORATION  
Fuji Television Network, Inc.  
FUJITSU LIMITED  
Hitachi, Ltd.  
IKEGAMI TSUSHINKI CO.,LTD.  
Japan Business Television, Incorporated  
Matsushita Electric Industrial Co., Ltd.  
Mitsubishi Electric Corporation  
NEC Corporation  
NHK (Japan Broadcasting Corporation)  
NIPPON TELEVISION NETWORK CORPORATION  
SANYO Electric Co.,Ltd.  
Sharp Corporation  
Sony Corporation  
TOKYO BROADCASTING SYSTEM, INCORPORATED  
TOSHIBA CORPORATION  
TV Asahi Corporation  
Victor Company of Japan, Limited

## History

- 1977 The company is founded in Denen-Chofu, Ota-ku, Tokyo to design and develop electronic products.
- 1979 World's first programmable video signal generator developed.
- 1985 The Japan Broadcasting Corporation (NHK) asks us to develop HDTV-related equipment.
- 1986 To cope with our expanding operations and business performance, we build the new company building that houses us now in Nakahara-ku in the city of Kawasaki.
- 1987 To support our users in western Japan, we open our Kansai office in the city of Osaka.
- 1990 We increase our capital to 72 million yen.
- 1991 We open the Matsuyama R&D Center in the city of Matsuyama in Ehime Prefecture.
- 1993 We open the Kawasaki Technology Center in the city of Kawasaki in Takatsu-ku.
- 1996 The company is accredited under the ISO9001 international standard. (Registration no.: JET-0056)
- 1998 We open the Tottori R&D Center in Tottori prefecture.  
Astrosystems, Inc. is established in Los Angeles as our U.S. marketing base.
- 1999 The company is accredited under the ISO14001 international standard. (Registration no.: E99-102)
- 2002 NPS, Inc. of an associated company is merged and the head office is relocated to Meguro-ku, Tokyo.
- 2005 In accordance with Expo Aichi 2005 holding, we developed a Super Hi-vision Processor with NHK.
- 2007 The head office is relocated to Ota-ku, Tokyo.  
Three offices in the metropolitan area are integrated to one building.

# PRODUCTS LINE UP OF CINEMA AND BROADCASTING



**ASTRODESIGN, Inc.**

URL <http://www.astrodesign.co.jp>

● For more information, please contact us :

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1-5-2 Minami-yukigaya, Ota-ku, Tokyo, 145-066 Japan



# PRODUCTS LINE UP

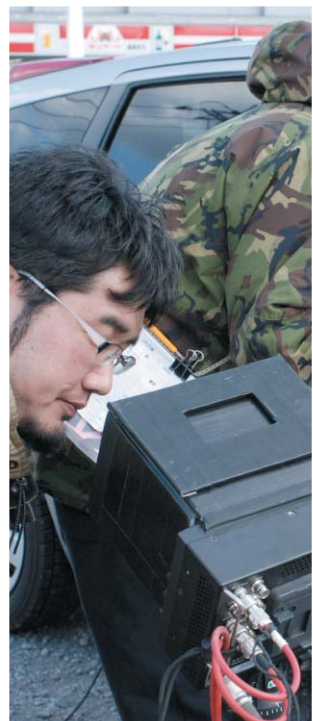
## MAIN CUSTOMER

### Japan

Chukyo TV. Broadcasting Co., Ltd. (CTV)  
 Fuji Television Network, Incorporated (Fuji-TV)  
 Japan Broadcasting Corporation (NHK)  
 Kansai Telecasting Corporation (KTV)  
 Nagoya Broadcasting Network Co., Ltd. (NBN)  
 Nippon Television Network Corporation (NTV)  
 Tokyo Broadcasting System Television, Incorporated (TBS)  
 TV Asahi Corporation  
 TV TOKYO Corporation

### World

ARRI MEDIA(England)  
 CANAL+(France)  
 Korean Broadcasting System(Korea)  
 M6(France)  
 Munhwa Broadcasting Corp(Korea)  
 TF1(France)









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# WM Series Explanation of Modes

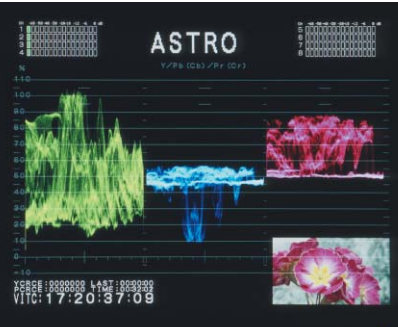
## Picture Mode

**Picture**  

**Picture color changed**  


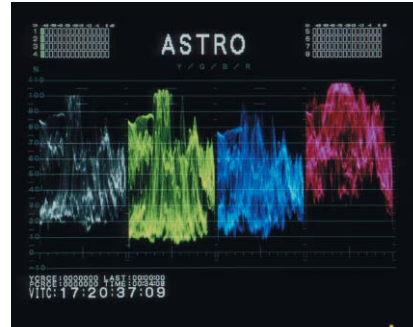
WM-3208/3215only  

  
**4:3** **SCOPE**  

  
**X4** **X2**  
 Display position can be moved in X2 or X4 mode

It's more than ably equipped with its monochrome, blue-only, color temperature selection, marker display function and other features to perform as a picture monitor.


## Waveforms Mode

**Parade of 3waveforms**  



Color or white can be selected as the waveform display.

**Parade of 4waveforms** WM-3208/3215only  


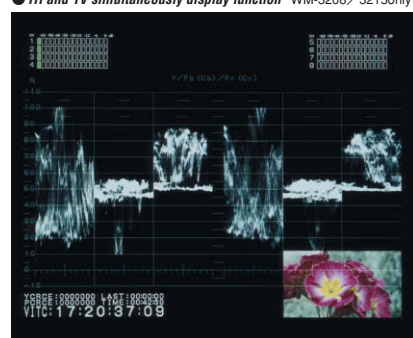
Y, G, B and R4 waveforms can be displayed simultaneously.

**Overlay of waveforms onto picture**  


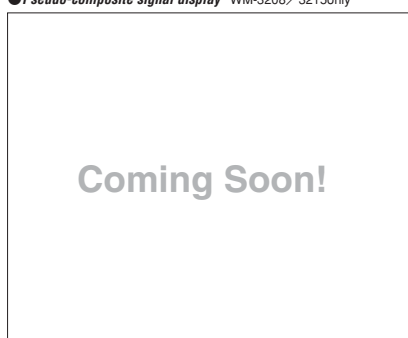
The correlation between the waveforms and picture can be monitored.

**Expansion in vertical direction, displayed with one waveform**  


When the gain has been changed, the auxiliary scale tracks.  
 WM-3208/3215only

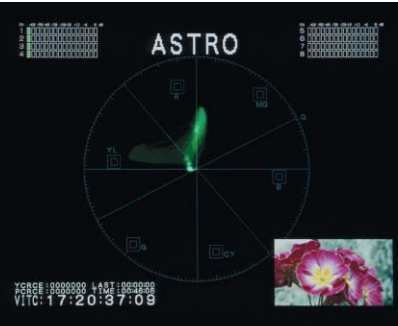
**1H and 1V simultaneously display function** WM-3208/3215only  


Switching operations are no longer needed since 1H waveforms and 1V waveforms can be measured simultaneously.

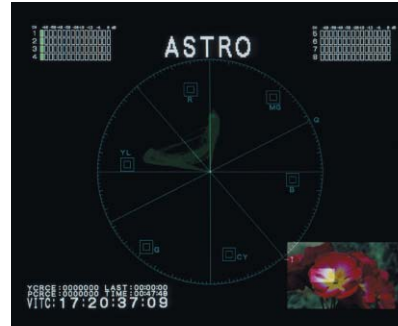
**Pseudo-composite signal display** WM-3208/3215only  


Coming Soon!


## Vectorscope Mode

**Vectorscope**  


Images have a much finer definition than the previous series (WM-3004, 3007).

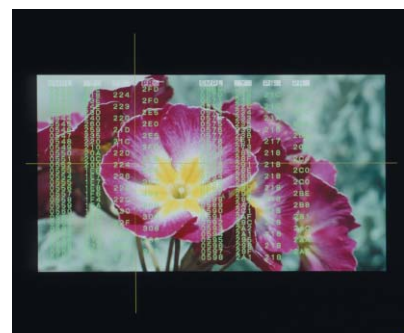
**Area scanning** WM-3208/3215only  


Vectorscope observations over any range enabled.

**Option** WM-3208/3215only  



Customer requirement optional for more than 20units order.

## Status Mode

WM-3208/3215only  



Signal levels in any range can be monitored using numerical values.

## Ancillary Data Mode

WM-3208/3215only  


Status of ancillary data can be monitored.

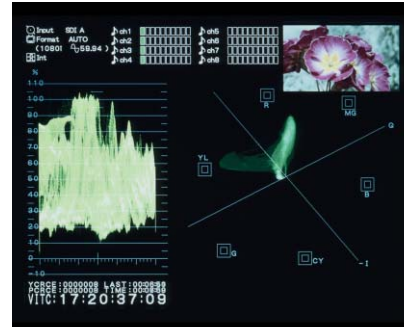
## Phase Comparison Mode

WM-3208/3215only  



Phase comparisons of 2 input signals and 2 sync signals can be monitored.

## Multi Mode


Multiple display modes can be monitored on a single screen.

**Multi 1** WM-3014only  


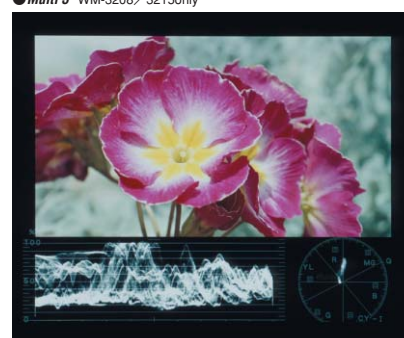
Waveforms, vectorscope, audio, pictures

**Multi 2**  


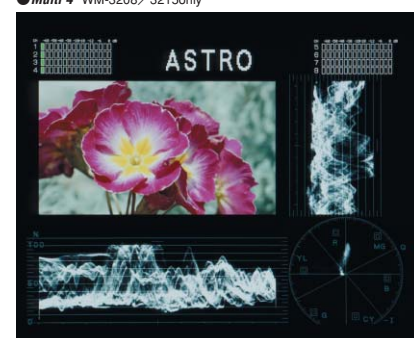
Waveforms, pictures

**Multi 1** WM-3208/3215only  


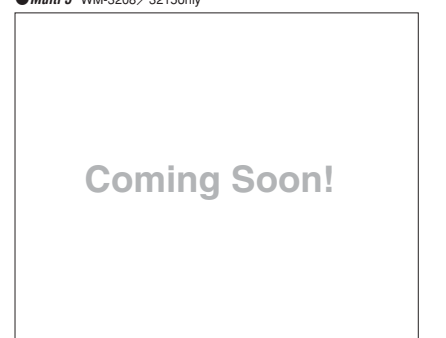
Waveforms, vectorscope, audio, pictures

**Multi 3** WM-3208/3215only  


Waveforms, vectorscope, pictures

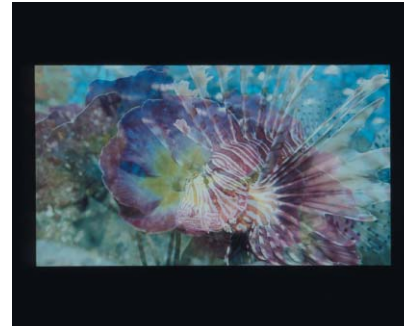
**Multi 4** WM-3208/3215only  


1H waveforms, 1V waveforms, vectorscope, pictures

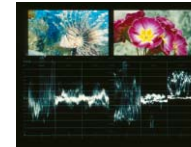
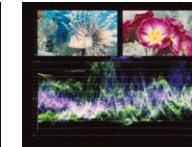
**Multi 5** WM-3208/3215only  


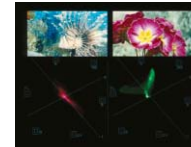

Coming Soon!

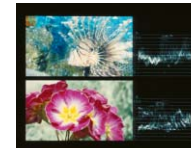

## Comparison Mode

**MODE 1** WM-3208/3215only  




The positions of two input images can be adjusted.

WM-3208/3215only  

  
**MODE2-H** **MODE3-H**

WM-3208/3215only  

  
**MODE4-H** **MODE5-H**

WM-3208/3215only  

  
**MODE2-V** **MODE3-V**

The difference in the level between two images can be measured.

WM-3208/3215only  

  
**MODE4-V** **MODE5-V**

The color tones of two images can be compared.

# LCD Waveform Monitor

These are compact, multifunctional waveform monitor in the LCD monitor series. A single unit combines various functions such as source monitoring, waveform monitoring, vector scoping provided and checking audio levels. The input signal supports full HD format and SDTV (525i, 625i). It can be used in any environment due to the ability to use camera batteries as a power source. It is perfect for monitoring video material in OB vans, at location sites and in the studio.

## LINE UP

### WM-3215/3215-L HD/SD 15-inch LCD Waveform Monitor

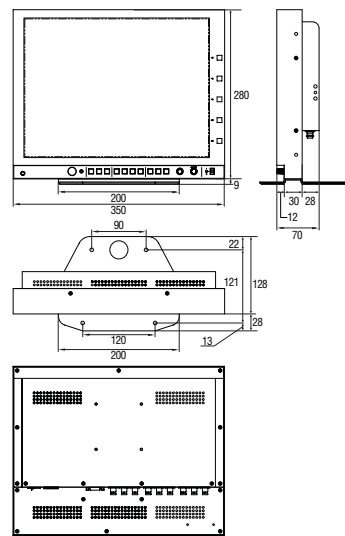


15  
inch

- HD-SDI    D1-SDI
- Composite    RGB 4:4:4 ※1
- DC Power Supply    Battery Supported※    UMD ※2

※Optional  
※1 It will be supported in autumn, 2007  
※2 WM-3215-L Only

#### Dimensional Drawing



### WM-3208/3208-L HD/SD 8-inch LCD Waveform Monitor

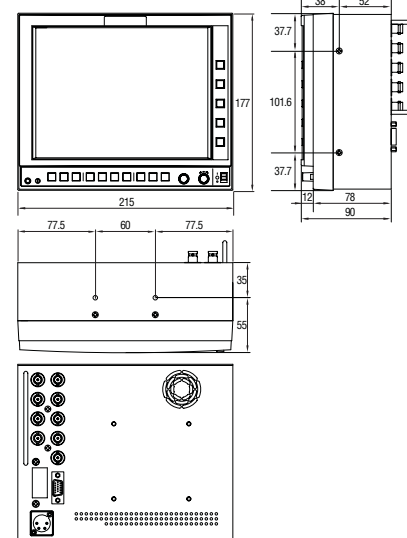


8  
inch

- HD-SDI    D1-SDI
- Composite    RGB 4:4:4 ※1
- DC Power Supply    Battery Supported※    UMD ※2

※Optional  
※1 It will be supported in autumn, 2007  
※2 WM-3208-L Only

#### Dimensional Drawing



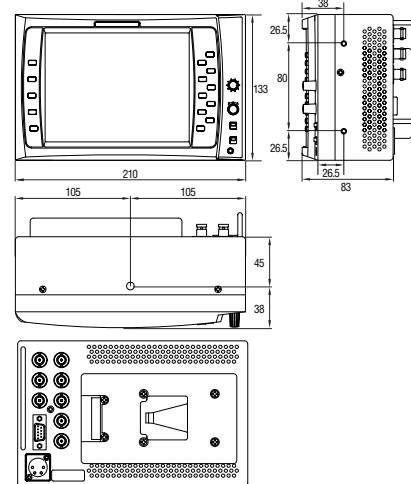
### WM-3014 HD/SD 6-inch LCD Waveform Monitor



6  
inch

- HD-SDI    D1-SDI
- YPbPr    Composite
- DC Power Supply    Battery Supported

#### Dimensional Drawing



## Specification

		HD/SD LCD Waveform Monitor		
		WM-3215	WM-3208	WM-3014
Display Size	Inch	<b>15</b> inch	<b>8</b> inch	<b>6</b> inch
LCD Panel Specifications	LCD panel	15-inch TFT LCD	8.4-inch TFT LCD	6.3-inch TFT LCD
	Brightness	1024×768 (960×540)	1024×768 (960×540)	1024×768 (960×540)
	Viewing angle	350cd/m <sup>2</sup>	350cd/m <sup>2</sup>	300cd/m <sup>2</sup>
		170° above and below 170° left and right		45° above and 60° below 120° left and right
Input format	HDTV	SMPTE 274M,296M	SMPTE 274M,296M	SMPTE 240M,274M,296M
	SDTV	SMPTE 292M,BTA S004B	SMPTE 292M,BTA S004B	SMPTE 292M,BTA S004B
Input signal	SDI (YPbPr 4:2:2)	4ch	4ch	2ch
	SDI (YPbPr 4:4:4)	2ch (Dual use)	2ch (Dual use)	—
	SDI (RGB 4:4:4) ※	2ch (Dual use)	2ch (Dual use)	—
	Analog (YPbPr)	—	—	1
	Composite	1	1	1
Output signal	SDI loopthrough output	1	1	1
Other specifications	Accessories	Stand/ AC/DC adapter	AC/DC adapter	AC/DC adapter
	Battery support	Option	Option	○
General specifications	Supply voltage	DC12V (10~18V)	DC12V (10~18V)	DC12V (10~18V)
	Power consumption	35W typ	24W typ	20W typ
	Operating temperature range (no condensation)	0~40°C	0~40°C	0~40°C
	Operating humidity range (no condensation)	30~80%RH	30~80%RH	30~80%RH
	Dimensions	W350×H280×D70 (mm)	W215×H177×D90 (mm)	W210×H133×D83 (mm)
Weight		6.5U half	4U half	3U half
		Approx.5.0kg (11.0 lbs)	Approx.2.0kg (4.4 lbs)	Approx.1.5kg (3.3 lbs)

※It will be supported in autumn, 2007.

## Features

### Auto-Tracing of Input Signals

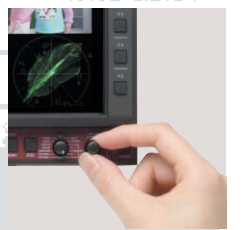
The input signal supports 23 kinds of HDTV and SDTV (D1-SDI) image formats. The monitor supports auto-tracing of all input signals and distinguishes frame rates of 1/1.000 and 1/1.001 automatically, eliminating troublesome settings.

### Employs LCD with High Brightness and Wide Viewing Angle

A highly portable LCD with a wide viewing angle has been employed, allowing viewing from the side. It also offers the low power consumption and compact design expected of LCD monitors.

### Multi-functional from Waveform to Audio Checking

The monitor is equipped with numerous functions required for checking HDTV images from all aspects, functioning as multiple monitor devices in a single unit.



# DM-3024 Native HD Resolution 24inch LCD Monitor

## Ideal for use in Studios and OB Vans!!

The DM-3024 is an LCD picture monitor with native HD resolution LCD panel (1920 x 1080). It is ideally suited for use in a wide range of applications including the monitoring of the images taken during live broadcasts or in studios and non-linear editing, and its slim-line dimensions and light weight make it perfect for carrying around.

The monitor comes with a wide array of functions including brightness adjustments, contrast adjustments, chroma adjustments and marker displays, and its video input and output expansion capability has been further stepped up by incorporating a 4-system module slot design. It supports many different video standards including HD/D1-SDI, Dual Link HD-SDI, component, composite, analog RGB (PC) and DVI.

LCD  
Monitor



### FEATURES

#### ● 4-system module selection method adopted

You can choose 4 kinds from 6 kinds of modules. (Support for component signals is pending.)



#### ※ Quad display Function.

When images are to be displayed on quad display, SDI input modules must be selected for all quad display.



SDI input



Composite input



Analog RGB input



DVI input



SDI output

- 24inch native resolution LCD.
- Quad split function (4 HD/D1-SDI modules are necessary).
- Dual Link HD-SDI supported (2 HD/D1-SDI modules are necessary)
- A broad spectrum of display and adjustment functions (brightness, contrast, macro, filter, monochrome, gamma, same-magnification display functions, marker display function) is provided.
- Time code display function
- Audio level display function
- With a single touch of a front switch, whether or not to display the input channels, same-magnification display, monochrome-only and markers is determined.
- External control using an infrared-ray remote controller can be exercised.

Specifications	
<b>TV system</b>	HDTV, SDTV and PC
<b>Input signal</b>	Input dependent upon 4 modules selected
SDI Input Module	SDI x2ch Loophrough x1ch Compliant to SMPTE 292M, 372M, 259M and BTA S-004B standard
SDTV Composite Input Module	NTSC/PAL composite X1ch Compliant to SMPTE 170M, ITU-R624-4 standards X1
HDTV Analog Input Module	HDTV analog YPbPr signal X1ch
DVI Input Module	DVI-I X1ch (WUXGA, UXGA, SXGA, XGA, SVGA, VGA) ※Digital Signal Only.
<b>Signal formats supported</b>	1920X1080 60i/59.94i, 1920X1080 50i, 1920X1080 30p/29.97p/30sF/29.97sF, 1920X1080 25p/25sF, 1920X1080 24p/23.98p/24sF/23.98sF 1280X720 60p/59.94p, 1280X720 50p, 1280X720 30p/29.97p, 1280X720 25p, 1280X720 24p/23.98p 720X525 59.94i, 720X625 50i ※Automatic scanning of input formats possible
<b>General specifications</b>	
Supply voltage	AC100 to 240V (50/60Hz)
Operating temperature range	-10 to 60°C (no condensation)
Operating humidity range	30 to 80%RH (no condensation)
Dimensions	552(W)X390(H)X88(D)mm
Weight	Approx. 10Kg(22lbs)

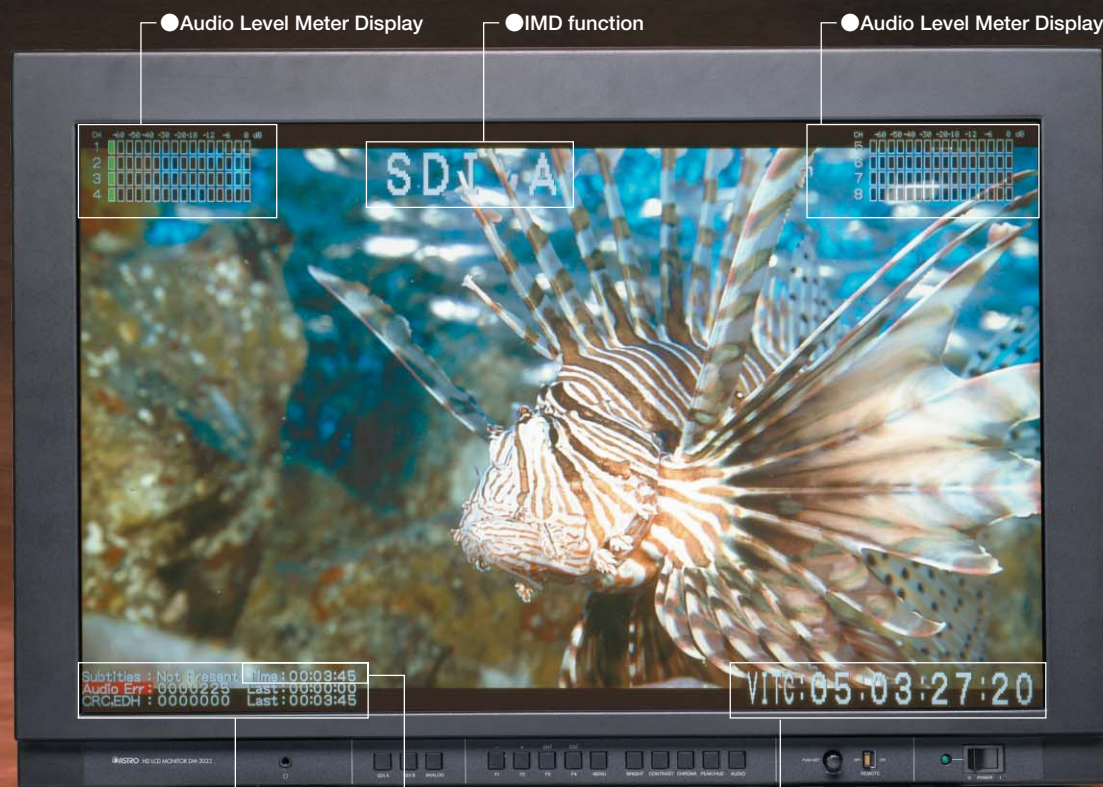
The dimensions, specifications and other details, given here are subject to change without notice due to improvements.

# 16:9 wide-screen LCD monitors

The 16:9 wide-screen LCD monitor series is a line-up of LCD monitors for broadcasting business applications. Its models incorporate liquid-crystal displays with a high brightness, high contrast and wide view angle in the 16:9 wide-screen format so that the HDTV images can fill the screen, and they can be used for monitoring images in studios, for instance. The extensive line-up ranges from the compact 9-inch model to the 32-inch type which is the largest available in the industry. The units support the HDTV and SDTV image formats which now play such an essential role in broadcasting business applications.

Brightness adjustment, contrast adjustment, chroma adjustment and marker displays are among the many functions which are provided to enable the image quality and display the images to be adjusted.

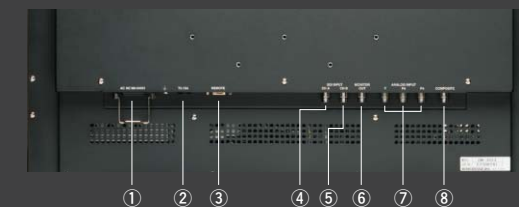
## LCD Monitor



※Photo:DM-3023-A

- Audio Level Meter Display
- IMD function
- Audio Level Meter Display
- Boot-time
- Time Code (VITC) Display
- Presence of Captiondata, Error check of Audio, Error check of CRC/EDH

### A name of each part (Rear part)



※Photo:DM-3023-A (Other model)

- |                    |  |
|--------------------|--|
| ① AC power         | ⑥ Monitor output (For monitoring of input signal)  |
| ② Fuse holder      | Select SDI (A) input → Output SDI (A) video signal |
| ③ Remote Connector | Select SDI (B) input → Output SDI (B) video signal |
| ④ SDI input (A)    | ⑦ Analog input (YPbPr)                             |
| ⑤ SDI input (B)    | ⑧ Analog input (Composite)                         |

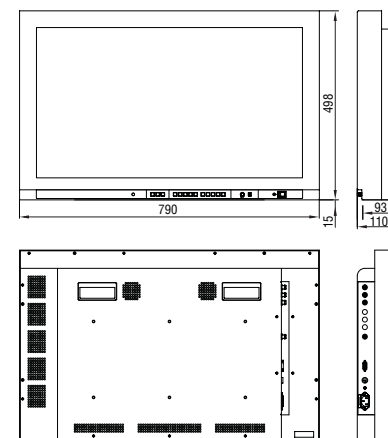
## LINE UP

### DM-3032-A HD/SD 32-inch Widescreen LCD Monitor

- 32 inch
- WIDE 16:9 screen
- HD-SDI
- D1-SDI
- YPbPr ※
- Composite
- ※Optional



#### Dimensional Drawing

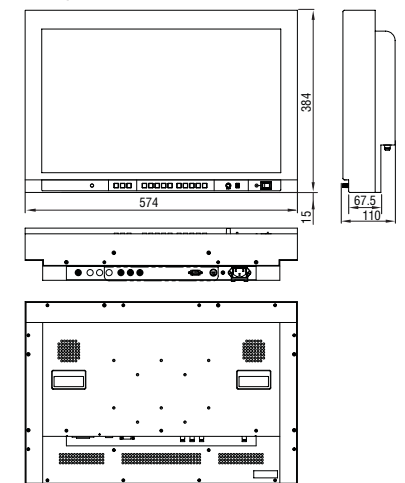


### DM-3023-A HD/SD 23-inch Widescreen LCD Monitor

- 23 inch
- WIDE 16:9 screen
- HD-SDI
- D1-SDI
- YPbPr ※
- Composite
- ※Optional



#### Dimensional Drawing

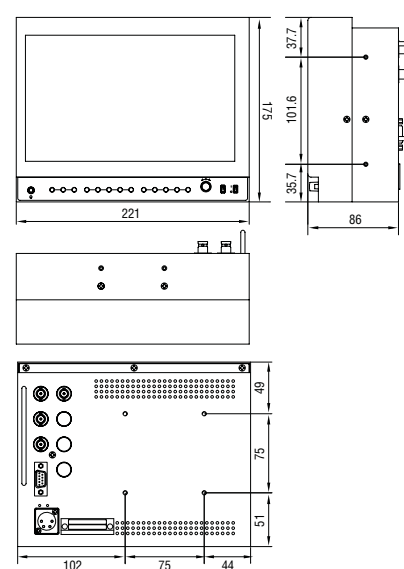


### DM-3011 HD/SD 9-inch Widescreen LCD Monitor

- 9 inch
- WIDE 16:9 screen
- HD-SDI
- D1-SDI
- YPbPr ※
- Composite
- DC Power Supply
- Battery Supported ※
- ※Other model



#### Dimensional Drawing

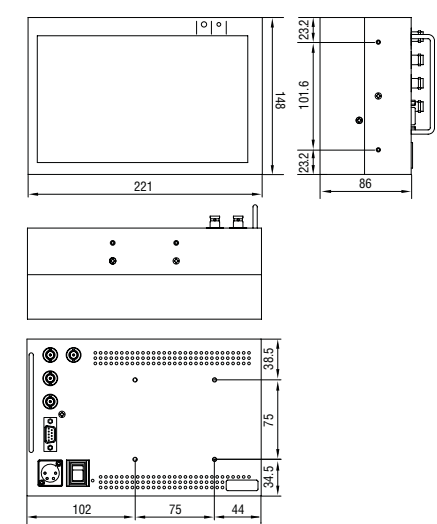


### DM-3109 HD/SD Space-Saving 9-inch Widescreen LCD Monitor

- 9 inch
- WIDE 16:9 screen
- HD-SDI
- D1-SDI
- Composite
- DC Power Supply



#### Dimensional Drawing

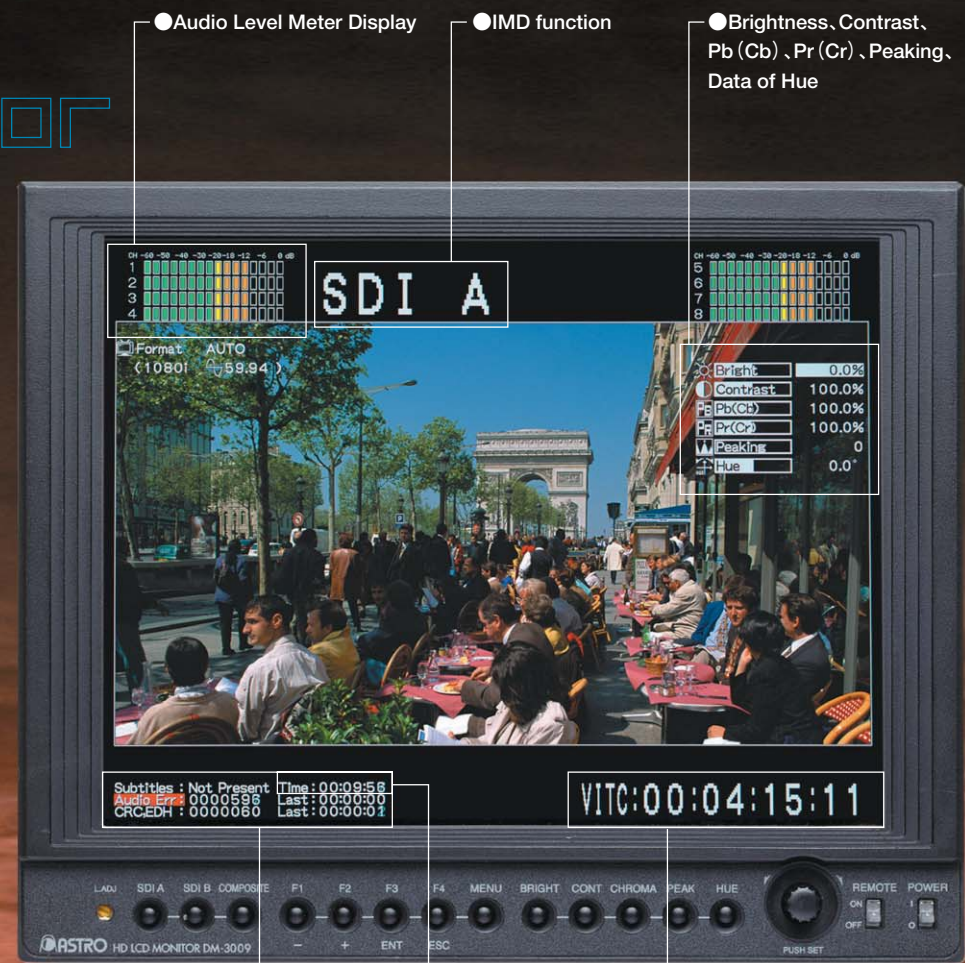


※No control buttons so RB-1666 is needed to adjust parameters such like brightness, chroma etc.

# 4:3 LCD monitors

The 4:3 LCD monitor series designed for broadcasting businesses can indicate time codes and statuses outside the image display area while the input images are displayed. The extensive line-up ranges from the ultra-portable 6-inch type to the 15-inch model. The units support the HDTV and SDTV image formats which now play such an essential role in broadcasting business applications. Brightness adjustment, contrast adjustment, chroma adjustment and marker displays are among the many functions which are provided to enable the image quality and display the images to be adjusted. The line-up includes models which can be powered by camera batteries and models which support ID displays so users can choose the exact model that dovetails with the intended applications.

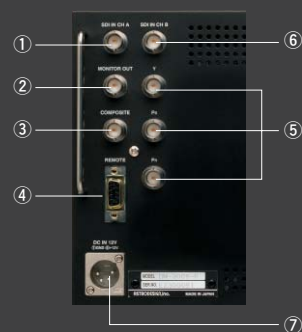
## LCD Monitor



※Photo:DM-3009

- Audio Level Meter Display
- IMD function
- Brightness, Contrast, Pb (Cb) , Pr (Cr) , Peaking, Data of Hue
- Boot-time
- Time Code (VITC) Display
- Presence of Captiondata, Error check of Audio, Error check of CRC/EDH

### A name of each part (Rear part)



- ① SDI input (A)
- ② Monitor output (For monitoring of input signal)  
Select SDI (A) input →Output SDI (A) video signal  
Select SDI (B) input →Output SDI (B) video signal
- ③ Analog input (Composite)
- ④ Remote Connector
- ⑤ SDI input (B)
- ⑥ Analog input (YPbPr)
- ⑦ DC Power Supply

※Photo:DM-3009-L (Other Model)

## LINE UP

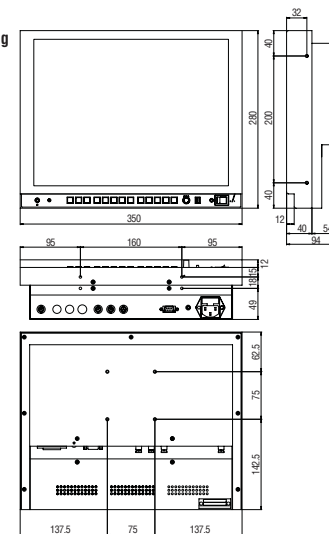
### DM-3016-L HD/SD 15-inch LCD Monitor

- 15 inch
- 4:3 screen
- HD-SDI
- D1-SDI
- YPbPr ※
- Composite

※Other model



#### Dimensional Drawing



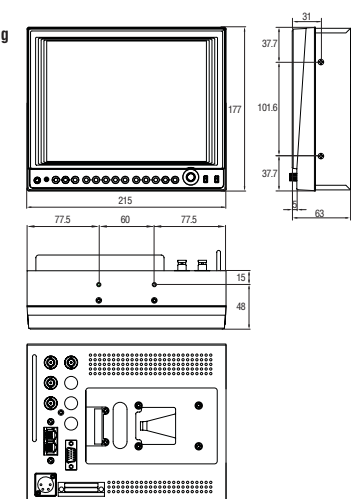
### DM-3009-L HD/SD 8-inch LCD Monitor

- 8 inch
- 4:3 screen
- HD-SDI
- D1-SDI
- YPbPr ※
- Composite
- DC Power Supply
- Battery Supported ※

※Other model



#### Dimensional Drawing



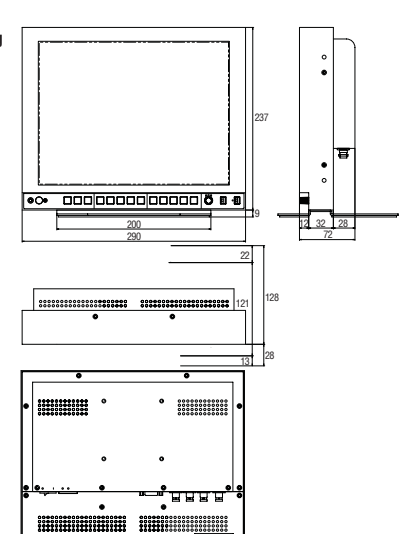
### DM-3112-L HD/SD 12-inch LCD Monitor

- 12 inch
- 4:3 screen
- HD-SDI
- D1-SDI
- Composite
- DC Power Supply
- Battery Supported ※

※Other model



#### Dimensional Drawing



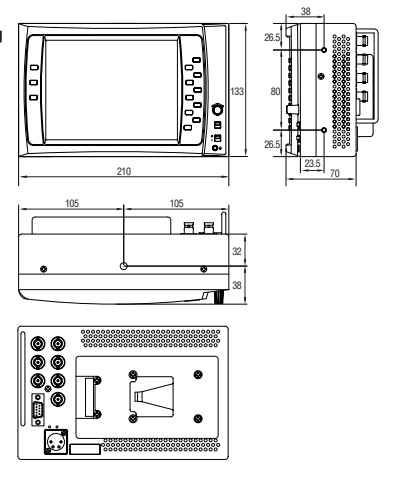
### DM-3106 HD/SD 6-inch LCD Monitor

- 6 inch
- 4:3 screen
- HD-SDI
- D1-SDI
- YPbPr
- Composite
- DC Power Supply
- Battery Supported

※Other model



#### Dimensional Drawing



# LCD Monitors with its ID Display Function **DM/WM-L Series**

In creating the DM/WM-L series with ID display function, ASTRODESIGN carried over the basic performance of the DM series/WM series which already has a proven track record of sales to many broadcast stations and production studios into its new series as a key building block, and it added an ID display function to the content monitor for Sub studio and OB Van. The series supports multiple HD format, SD format (NTSC and PAL) and composite input signals so its units can be used to construct monitor walls which are highly compatible with conventional display systems.



## FEATURES

### ●Space savings

Since even the ID display unit is contained inside the space which accommodates one LCD monitor, there is no more dead space behind the monitor wall and, in addition, the work space is significantly increased. Superimposition in monitor walls is also minimized.

### ●Cost savings and low power consumption

Since one unit is equipped with both ID display and monitor function, there is no need for users to purchase the monitor and ID display unit separately. Another advantage of this two-in-one feature is that less power is consumed.

### →Operating ease

The SP-3300 software program (for Windows) specially designed for the DM-L series makes easy work of operations involving ID displays, ally displays and simple waveform displays. IDs can be entered from the keyboard so the displays can be changed quickly.



SP-3300 (Optional)

## LOCATION



▲Studio



▲OB van

Photograph: Fuji Television Network, Inc.

## LCD MONITOR OPTION

※Changes may be made without notice to improve specifications and appearance.

### Light Shielding Hood

\*Only for Under Binch models



### IR Remote Control

for DM-3016-L, 3023-A, DM-3024, DM-3032-A, DM-3400



### Carrying Case

\*Only for Under Binch models



### Camera mount kit





# DM Series Specification

		HD/SD 16 : 9 widescreen LCD monitor				
		DM-3032-A	DM-3023-A	DM-3011	DM-3109	
Display size	Inch	32inch widescreen	23inch widescreen	9inch widescreen	9inch widescreen	
LCD panel specifications	LCD panel	32-inch TFT LCD	23-inch TFT LCD	9-inch TFT LCD	9-inch TFT LCD	
		1365X768 (1365X768)	1280X768 (1280X720)	800X480 (800X450)	800X480 (800X450)	
	Brightness	450cd/m <sup>2</sup>	450cd/m <sup>2</sup>	350cd/m <sup>2</sup>	350cd/m <sup>2</sup>	
	Viewing angle	170° above and below 170° left and right				
	Backlight adjustment	○	○	○	○	
Input system		FIX	FIX	FIX	FIX	
Input format	HDTV	SMPTE 240M,274M,296M	SMPTE 240M,274M,296M	SMPTE 240M,274M,296M	SMPTE 240M,274M,296M	
		SMPTE 292M,BTA S004B	SMPTE 292M,BTA S004B	SMPTE 292M,BTA S004B	SMPTE 292M,BTA S004B	
	SDTV	SMPTE 259M	SMPTE 259M	SMPTE 259M	SMPTE 259M	
	Other	—	—	—	—	
Input signal	SDI	2 (HD/D1 dual use)	2 (HD/D1 dual use)	2 (HD/D1 dual use)	2 (HD/D1 dual use)	
	YPbPr	Option	Option	Option	—	
	Composite	1	1	1	1	
	Other	—	—	—	—	
Output signal	SDI loopthrough output	1	1	1	1	
Other specifications	Accessories	Stand/ AC cable	Stand/ AC cable	AC/DC adapter	AC/DC adapter	
	Battery support	—	—	Option	—	
General specifications	Supply voltage	AC100~240V (50/60Hz)	AC100~240V (50/60Hz)	DC12V (10~18V)	DC12V (10~18V)	
	Power consumption	150W typ	100W typ	18W typ	20W typ	
	Operating temperature range (no condensation)	0~40C	0~40C	0~40C	0~40C	
	Operating humidity range (no condensation)	30~80%RH	30~80%RH	30~80%RH	30~80%RH	
	Dimensions		W790XH498XD110 (mm)	W574XH384XD157 (mm)	W221XH175XD86 (mm)	W221XH148XD86 (mm)
			—	—	4U half	3.5U half
	Weight		Approx.17kg (37.5 lbs)	Approx.12kg (26.5 lbs)	Approx.1.6kg (3.5 lbs)	Approx.1.5kg (3.3 lbs)

## Optional Support List

IR remote control	○	○	—	○
EIA compliant single rack mount kit	—	—	○	○
EIA compliant double rack mount kit	—	—	○	○
Stand	Standard	Standard	○	○
Tilt stand	—	—	○	○
Light shielding hood	—	—	—	—
Camera mount kit	—	—	○	—

## HDTV & SDTV Format List

■ (sF) denotes Segmented Frames.

Format	Scanning Type	Frame Rate (Hz)	Sampling Frequency (MHz)	Total Horizontal Pixel
SMPTE 240M	BTA S-001	1920X1035 60/2:1	74.25	2200
	BTA S-002B	1920X1035 59.94/2:1	74.18	2200
SMPTE 274M	BTA S-001	1920X1080 60/2:1	74.25	2200
	BTA S-002B	1920X1080 59.94/2:1	74.25/1.001	2200
		1920X1080 50/2:1 ※	74.25	2640
		1920X1080 30/1:1	74.25	2200
		1920X1080 29.97/1:1	74.25/1.001	2200
		1920X1080 25/1:1 ※	74.25	2640
		1920X1080 24/1:1 ※	74.25	2750
		1920X1080 23.98/1:1 ※	74.25/1.001	2750
		1920X1080 30 (sF)	74.25	2200
		1920X1080 29.97 (sF)	74.25/1.001	2200
		1920X1080 25 (sF) ※	74.25	2640
		1920X1080 24 (sF)	74.25	2750
		1920X1080 23.98 (sF)	74.25/1.001	2750
SMPTE 296M		1280X720 60/1:1	74.25	1650
		1280X720 59.94/1:1	74.25/1.001	1650
		1280X720 50/1:1 ※	74.25	1980
		1280X720 30/1:1	74.25	3300
		1280X720 29.97/1:1	74.25/1.001	3300
		1280X720 25/1:1 ※	74.25	3960
		1280X720 24/1:1 ※	74.25	4125
		1280X720 23.98/1:1 ※	74.25/1.001	4125
SMPTE 259M		720X487 59.94/2:1	13.5	780
		720X574 50/2:1	13.5	892

		HD/SD 4 : 3 LCD monitor				
		DM-3016-L	DM-3112-L	DM-3009-L	DM-3106	
Display size	Inch	15inch	12inch	8inch	6inch	
LCD panel specifications	LCD panel	15-inch TFT LCD	12.1-inch TFT LCD	8.4-inch TFT LCD	6.3-inch TFT LCD	
		1024X768 (1024X576)	1024X768 (1024X576)	1024X768 (1024X576)	1024X768 (960X540)	
	Brightness	350cd/m <sup>2</sup>	280cd/m <sup>2</sup>	400cd/m <sup>2</sup>	300cd/m <sup>2</sup>	
	Viewing angle	170° above and below 170° left and right	80° above and 70° below 170° left and right	170° above and below 170° left and right	45° above and 60° below 120° left and right	
	Backlight adjustment	○	○	○	—	
Input system		FIX	FIX	FIX	FIX	
Input format	HDTV	SMPTE 240M,274M,296M	SMPTE 240M,274M,296M	SMPTE 240M,274M,296M	SMPTE 240M,274M,296M	
		SMPTE 292M,BTA S004B	SMPTE 292M,BTA S004B	SMPTE 292M,BTA S004B	SMPTE 292M,BTA S004B	
	SDTV	SMPTE 259M	SMPTE 259M	SMPTE 259M	SMPTE 259M	
	Other	—	—	—	—	
Input signal	SDI	2 (HD/D1 dual use)	2 (HD/D1 dual use)	2 (HD/D1 dual use)	2 (HD/D1 dual use)	
	YPbPr	Option	—	Option	1	
	Composite	1	1	1	1	
	Other	—	—	—	—	
Output signal	SDI loopthrough output	1	1	1	1	
Other specifications	Accessories	Stand/ AC cable	Stand/ AC/DC adapter	AC/DC adapter	AC/DC adapter	
	Battery support	—	Option	1	○	
General specifications	Supply voltage	AC100~240V (50/60Hz)	DC12V (10~18V)	DC12V (11.4~12.6V)	DC12V (10~18V)	
	Power consumption	40W typ	17W typ	18W typ	16W typ	
	Operating temperature range (no condensation)	0~40C	0~40C	0~40C	0~40C	
	Operating humidity range (no condensation)	30~80%RH	30~80%RH	30~80%RH	30~80%RH	
	Dimensions		W353XH290XD86 (mm)	W290XH237XD72 (mm)	W215XH177XD63 (mm)	W210XH133XD70 (mm)
			6.5U	5.5U half	4U half	3U half
	Weight		Approx.3.8kg (8.4 lbs)	Approx.2.8kg (6.2 lbs)	Approx.1.8kg (4.0 lbs)	Approx.1.3kg (2.9 lbs)

※1.WUXGA,UXGA,SXGA,WXGA,XGA ※2.Dual Link HD-SDI, DVI, Y/C

○	○	—	—
○	○	○	○
—	—	○	○
Standard	Standard	○	—
○	○	○	—
—	—	—	○
—	—	○	○

## Features

### Automatic Input Signal recognition

Cumbersome settings are not needed as all input formats are automatically recognized and frame rates of 1/1.000 and 1/1.001 are also automatically distinguished.

### Easy-to-use Front Switches

Input channels, life-size display, monochrome, blue only and marker display can all be controlled in one touch of the front switches.



### Liquid Crystal for High-Brightness and Wide Field Vision

Employing the new liquid crystal, the monitors provide high-brightness, high-contrast and a wide field of vision. The field of vision extends 170 degree horizontally and is ideal for a wide variety of applications.

# LCD MONITOR

## DM-3400 4K2K 56inch LCD Monitor

### Supports 4K2K format and More real than real

DM-3400 is 56 inches 4K2K monitor that can process cinema 4K2K format or HD-SDI multi format. This monitor has 4 inputs of DVI-D and 4 inputs of HD-SDI (Dual Link). Brightness and color temperature, gamma can be adjusted by a wireless remote controller.



### Features

- Supports 4K2K (3840x2160) and 2K1K(1920x1080) format.
- Multi-rate support (60p, 60i, 24p/sF) and automatically detection of the field(frame) frequency.
- HD-SDI input is compliant to ITU-R BT.1769.
- HD-SDI input is x1ch or x4ch or x8ch. Supports YUV 4:2:2 and RGB 4:4:4(Dual Link).
- DVI-I(Digital signal only) x4ch input.
- Brightness, contrast, gamma and color temperature of picture quality can be adjusted by wireless remote controller.

### Specifications

Display	(Display resolution)	3840x2160 (1920x1080 x4ch)
	(Brightness)	500cd/m <sup>2</sup>
	(Contrast)	1200:1
Input	HD-SDI	ITU-R BT.1769(3840x2160@60Hz) SDI:1/4/8ch(Dual Link supported)
	DVI	DVI-I 4ch (Digital input only)
	Format	HD-SDI 1920x1080p23.98/24/59.94/60, 1920x1080i59.94/60 DVI 1920x1080p59.94/60

### Other

AES/EBU audio input Input x1 / Output x1 (HD-SDI embedded audio output)

### General specifications

Supply voltage	AC 100~220V
Power consumption	Approx. 500W
Operating temperature range	5~40°C
Operating humidity range	30~80%RH(non-condensing)
Dimensions	1,320(W) x 780(H) x 240(D) mm (including support parts for wall display)
Weight	Approx. 45.0 kg

# STUDIO EQUIPMENTS

## HR-7401 HDTV Uncompressed Hard Disk Recorder

### The world first compact size uncompressed digital format (RGB 4:4:4) supported disk recorder.

The HR-7401 is a hard disk recorder that plays and records uncompressed HDTV signals. It uses a reliable fiber channel hard disk as a recording medium. The HR-7401 achieves a maximum of 60min (YUV 4:2:2 Sampling) recording/playing operations per unit. Its 19-inch compact half-rack size body and portability offer mobility and space-saving convenience for desk-top editing, as well as for CM and film shooting that require high-quality images.

- Portable uncompressed recorder which can be held in one hand
- Changing disk packs allows long-time recording
- Combination of operability and fast response like a VTR



### Features

- The recording time is up to 30 minutes in Dual Link (RGB 4:4:4)
- Disk Pack can be exchanged easily
- Embedded audio can be recorded (up to 16ch) / played (2channels are selected among 1 to 8ch)

### Specifications

Input/Output signal	HD-SDI/Dual Link HD-SDI	
Input/Output signal and Recording mode	1920x1080(50i, 59.94i, 60i)	Single Link(YPbPr 4:2:2) / 60min. Dual Link(RGB 4:4:4) / 30min.
	1920x1080(23.98p/sF, 24p/sF, 25p/sF, 29.97p/sF, 30p/sF)	Single Link(YPbPr 4:2:2) / 60min. Dual Link(RGB 4:4:4) / 30min.
	1920x1080(59.94p,60p)	Dual Link(RGB 4:4:4) / 20min.
	1280x720(23.98p, 24p,25p, 29.97p, 30p)	Single Link(YPbPr 4:2:2) / 60min.
External Reference	HD Analog tri-level, BBS	

### Others

HDD extended terminal 2G Fiber Channel SFP x2  
AES/EBU audio input/output Input x1, Output x1 (BNC)

### General specifications

Main Unit	Voltage	Main Unit : DC12V or 24V / Exclusive Power Unit : AC100 - 240V (50/60Hz)
	Power consumption	180W MAX
Exclusive Power Unit	Dimensions	210(W)×132(H)×400(D)mm (8.3"×5.2" 15.7" : 3U half size)
	Weight	Approx. 10.2kg (22.5lbs)
Main Unit	Dimensions	210(W)×176(H)×400(D)mm (8.3"×6.9" 15.7" : 4U half size)
	Weight	Approx. 12.0kg (26.5lbs)

# SCAN CONVERTER

## SC-2055A Super Scan Converter

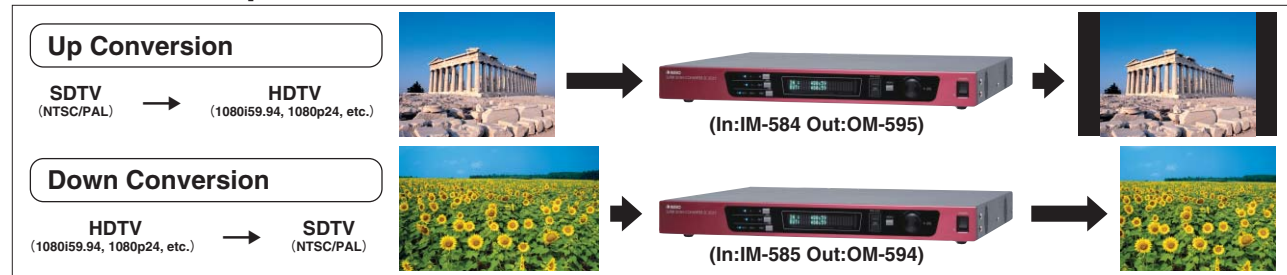
### Let us put you in command of all of your visual materials.

The SC-2055A super scan converter is compatible with many kinds of visual standards, including HD/D1-SDI, NTSC/PAL, DVI and analogue RGB. ASTRODESIGN incorporated its original astrosnap and TERA high-quality imaging technologies to offer converted images of dramatically high quality. System design consisting of program production to projectors and other large image systems tends to be complex, but the SC-2055A, compatible with numerous interfaces with high quality, makes it simple and is suitable for a wide range of applications.

The following are examples of usage made possible through combinations of input/output modules.



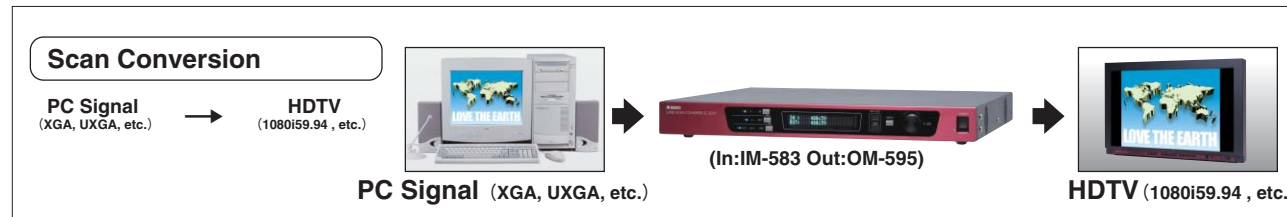
### Use case 1 Upward or downward conversion



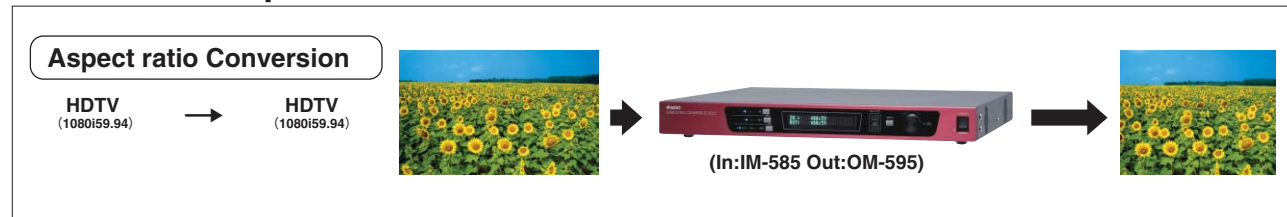
### Use case 2 Format conversion



### Use case 3 Scan conversion



### Use case 4 Aspect ratio conversion



### Features

#### Slot-in architecture of 2 channels for input and output respectively

Each of these modules: HD-SDI, D1-SDI, DVI, analogue RGB, Dual Link HD-SDI, and NTSC/PAL (input only) can be configured according to use.

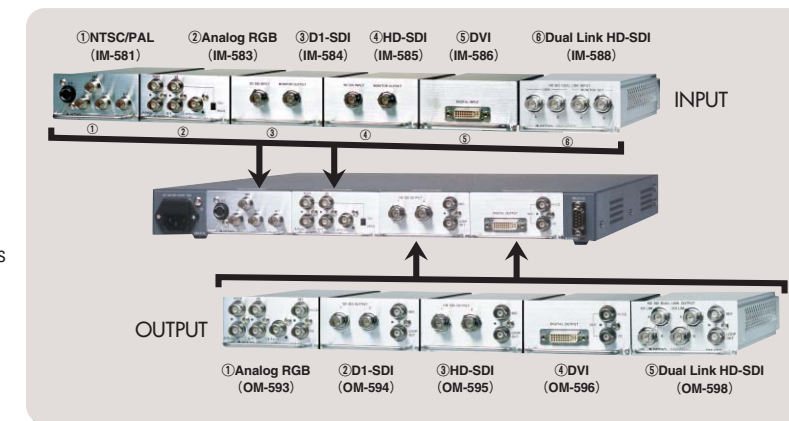
#### High-quality scan conversion at the highest level of the industry

ASTRODESIGN's original high-quality imaging technologies (astrosnap high-definition contour correction technology and TERA high-definition scaling conversion technology) are integrated.

#### Complete control over multi-format conversion

- ① HDTV(720p) ⇔ HDTV(1080i)
- ② HDTV(1080i50) ⇔ HDTV(1080i59.94)
- ③ SDTV ⇔ HDTV Compatible with numerous other conversions

#### 10-bit processing realized for internal processing



### Specifications

Input/Output Signal System (differs depending on I/O module)		
Scan mode	Progressive / Interlace	
AD sampling clock frequency/resolution	Max 165MHz/Max 2560x1580 *Interlace input : Max 74.25MHz/Max 1920x1080	
Horizontal frequency / Vertical frequency	15~150KHz/24~150Hz	
Gradation	RGB / Component; 10 bits each	
Input/Output Interface (module name)		
<b>NTSC/PAL</b>	<b>Input signals</b>	NTSC-M, PAL-B, D, G, H or I
	<b>Input: IM-581</b>	VBS, Y/C, Y/R-Y/B-Yx 1 each
<b>RGB/YPbPr/YCbCr</b>	<b>Input signals</b>	Dot clock frequency: 13.5 to 165 MHz
	<b>Input: IM-583</b>	R/Pr/Cr, G/Y, B/Pb/Cb, HS/CS, VS x 1ch(BNC)
	<b>Output: OM-593</b>	R/Pr/Cr, G/Y, B/Pb/Cb, HS/CS, VS x 1ch(BNC)
		External sync signal input x 1ch (HS/VS, CS supported)
<b>D1-SDI</b>	<b>Input signals</b>	SMPTTE 259M standard /SMPTTE 125M standard complied with
	<b>Input: IM-584</b>	D1-SDI x 1ch with loop-out (BNC)
	<b>Output: OM-594</b>	D1-SDI x 2ch (BNC)
		External sync signal input x 1ch with loop-out (HD bi-level, tri-level, BBS supported)
<b>HD-SDI</b>	<b>Input signals</b>	SMPTTE 240M, 274M, 296M standards complied with
	<b>Input: IM-585</b>	HD-SDI x 1ch with loop-out (BNC)
	<b>Output: OM-595</b>	HD-SDI x 2ch (BNC)
		External sync signal input x 1ch with loop-out (HD bi-level, tri-level, BBS supported)
<b>DVI</b>	<b>Input signals</b>	Dot clock frequency: 25 to 165 MHz
	<b>Input: IM-586</b>	DVI-I x 1ch (digital signals only; Single Link, DDC and hot plug supported; HDCP not supported)
	<b>Output: OM-596</b>	DVI-I x 1ch (digital signals only; Single Link, DDC and hot plug supported; HDCP not supported)
		External sync signal input x 1ch (HS/VS, CS supported)
<b>Dual Link HD-SDI</b>	<b>Input signals</b>	SMPTTE 292M, 372M standards/SMPTTE 240M, 274M, 296M standards complied with
	<b>Input: IM-588</b>	Dual Link HD-SDI x 1ch with loop-out (BNC)
	<b>Output: OM-598</b>	Dual Link HD-SDI x 2ch (BNC)
		External sync signal input x 1ch with loop-out (HD bi-level, tri-level, BBS supported)
<b>AM-1500 audio processor (※option)</b>		BTA F-1002, S-005B, S-006B standards/SMPTTE 299M, 272M standards complied with
		Only SDI embedded audio signal supported
Control System		
		RS-232C (D-Sub 9 pin)/ RS-422 (D-Sub 9 pin:option at shipping)
General Specifications		
Power voltage	AC100~240V (50/60Hz)	
Power consumption	76W MAX	
Operating temperature range	5~40°C	
Operating humidity range	30~80%RH(non-condensing)	
Outside dimensions	430 (W) x 44 (H) x 430 (D) mm (17.0"x1.7"x17.0 : 1U)	
Weight	Approx. 6.5Kg (14.3lbs)(with all 4 slots mounted)	

**HS-7042**  
16-Channel Splitter

HD



It proposes an advanced production style.

**Features**

- Display size selectable between 1/16,9/16,1/4,1/1 and mixed each
- HD-SDI input signal
- Underscan available
- Input signal format auto detection
- Overlay display of input signal status,error, audio level and arbitray character available
- Utility software for setting/manual operation attached
- Color of frame can be changed to previously setting color by external tally signal.
- Redundant power supply

**Specifications**

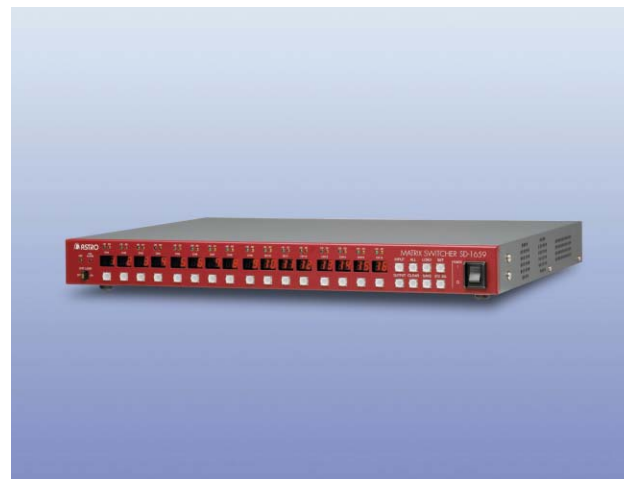
Input/Output signal	HD-SDI signal	Compliant to SMPTE 292M 269M, BTA S-001B 004B
	Reference	HD 3 level sync signal (compliant to ARIB BTA S-001B)
	Input	BB (compliant to RS-170)
Display frame		Squeeze ratio 100% to 80% and frame display are available.
		Squeeze ratio per channel form 100% to 80% and frame display are available
	Display Mode	Selectable between 1/16, 9/16, 1/4, 1/1
Display frame and character per each channel	Frame	256 color , color selectable by external tally signal.
	Character	10 Characters, 256 color, edge and background color setting available
	External interface	RS-422, 10Base-T/100Base-TX Ethernet
General specification	Power Voltage	AC100 - 240V (redundant power supply standard equipped)
	Power consumption	145W MAX
	Dimensions	430(W)×44(H)×350(D)/mm(1U)
	Weight	Approx. 5.0kg

**SD-1659**  
SDI Multi-rate Matrix Switcher

HD

SD

DVB-ASI



16x16 matrix at 1U size and flexibility of In/Out channels

**Features**

- The number of the input output channels constitutes it at a unit of 4 channel unit, and a combination is possible freely (Ex; 4x4, 4x16, 8x8, 16x16, etc.)
- HD-SDI, D1-SDI and DVB-ASI signal available
- A stable switching is possible by seamless switching by blanking change (\*It can not switch by blanking change in the case of DVB-ASI signal input.)
- It is equipped with convenient pre-set memory (16 kinds at the maximum)
- Small and lightweight (1U size, 5kg)

**Specifications**

Input/Output signal	Signal format	SMPTE 259M SMPTE 292M DVB-ASI
	NRZ signal	NRZ signal 75Ω 16 channels (BNC)
	Signal amplitude	0.8Vp-p ±10%
	External sync input	HDTV tri-level sync signal of SMPTE240M (1035i), 274M (1080i), 196M (720P) Or BBS of SMPTE 170M (NTSC)
	External control	RS-422A (Dsub-9pin female)
General specification	Power Voltage	AC100~AC240V (50/60Hz)
	Power consumption	Max. 30W
	Dimensions	430 (W) × 44 (H) × 320 (D) mm (16.9"×1.7"×5.2"x12.6" :1U )
	Weight	Approx. 5.0kg (11.0 lbs)

**HC-7039B**  
HD-SDI Multiprocessor

HD



Image and Audio Compensation Equipment

**Features**

- 10 settings can be saved in memory.
- You can expand up to 4 units by adding input.
- Allows compensation for various images such as gain, setup, clip, and gamma.
- Adjustment to delay images (three frames maximum) and to audio delay (maximum 300msec.).
- Supports AES/EBU audio input with an optional audio board.
- Gain adjustment and phase inversion of audio 1ch, 2ch and 5.1ch are supported.
- Allows down-mixing 5.1ch to 2ch stereo.
- 2ch stereo can be converted to monaural mixing.

**Specifications**

Television system	HDTV	
Input signal	HD-SDI compliant to SMPTE292M,BTA-004B, SMPTE299M, 1ch and loopthrough output with 1unit	
Output signal	HD-SDI compliant to SMPTE292M,BTA-004B, SMPTE299M, 3ch with in 1unit	
Number of Input/Output	Max, 4 input/output board can be equipped.	
Supported signal format	1920×1080 (59.94i)	
General specification	Voltage	AC100 to 240V (50/60Hz)
	Power consumption	Approx. 50W(1UNIT), 100W(4UNIT)
	Dimensions	430(W)×88(H)×400(D)mm (2U)
	Weight	Approx. 12.0kg

**SD-1645**  
HD-SDI Repeater

HD



Super compact repeater ideal for extending HD-SDI in units of 100 meters at remote broadcasting site, location site or in a studio

**Features**

- SMPTE 292M, BTA S-004B standards compliant (1.485Gbps SDI signals).
- SMPTE 274M, SMPTE 296M and BTA S-001B standards compliant.
- Supporting HDTV video full format -- 1080i, 1035i, 720p, 24p, 24sF, etc.
- Automatic switching to field frequency rates of 60Hz or 60/1.001Hz.
- Lightweight and compact in size.

**Specifications**

General specification	DC12V/300mA (cannon connector/XLR 4pin)
	Max. 3.6W
	85(W) × 25(H) × 45(D)mm (3.3" × 1.0" × 1.8")
	Approx. 180g (0.3 lbs)

# STUDIO EQUIPMENTS

## SG-7810 HDTV & SDTV Sync Generator

HD SD

Both Sync(HDTV&SDTV)  
and HD patterns can be generated

### Features

- Frame synchronization
- Genlocking
- Internal synchronization
- Phase adjusting function
- Pattern generating function on HD-SDI output
- Embedded audio generating function



### Specifications

Output signal	Analog sync output	HD analog trilevel sync or SDTV BB sync×3ch (For each 2 distribution) HD sync:Compliant to SMPTE274M, SMPTE296M and BTA S-001B BB sync:NTSC/PAL/S-PAL BBS
	HD-SDI output	HD-SDI signal×1ch (For 4 distribution) Compliant to SMPTE292M (Internal generated pattern)
	Embedded audio output	48KHz The amplitude is adjustable. Compliant to SMPTE299M
Reference sync input		1ch (HD analog trilevel sync or NTSC BB sync)
General specification	Power Voltage	DC12V (10 to 18V)
	Power consumption	Max 20W
	Dimension	210(W)×44(H)×310(D)mm (1U half size)
	Weight	Approx. 2.0kg

## SG-7802A HD-SDI Test Generator

HD

Compact and Easy to Operate

### Features

- SMPTE 292M, BTA S-004 standard conformity.
- Various test pattern displays.
- User data management by with a memory card.
- Ultimate lightweight and portable.
- Frame lock to external reference signal.
- Memory function eliminates settings at POWER-ON.
- 13kinds of test pattern.



### Specifications

Video output signal		HD-SDI signal compliant to SMPTE 292M, BTA S-004B×4ch
		HD-Analog YPbPr signal : Y (0.7Vp-p), PbPr (±0.35Vp-p), Sync : tri-level (±0.3Vp-p) (75Ω terminated)×1ch
Audio output signal		HD-SDI embedded audio compliant to SMPTE 299M ×4ch L/R analog monitoring audio×1ch
External sync signal		SMPTE 240M / 274M/296M and PAL / NTSC
Control		RS-232C (D-Sub 9pin 1ch), USB (USB 1.1)
General specification	Power voltage	AC 100 to 240V (50/60Hz)
	Power consumption	Max. 30W
	Dimensions	210(W) × 44(H) × 370(D) mm (8.3" × 1.7" × 14.6" : 1U half size)
	Weight	Approx. 2.0kg (4.4 lbs)

# DIGITAL BROADCASTING

## CX-5528 Multiplex and TS over IP Interface unit

### Features

- TS multiplexer of 1U half rack size
- DVB-ASI 4 input, DVB-ASI 2 distribution output (Throughput 100Mbps)
- It is possible as TS over IP Gateway  
(Only as for the single course, it is throughput 20Mbps at a time)
- Other than normal MUX, it is possible as ground digital broadcasting, broadcast satellite digital broadcasting, REMUX of plural cable TV ( TS)
- A multiplex of section, a section filters of PID, and a PID change is possible (It can change setting in real time)



### Specifications

Input	TS	DVB-ASI×4 (Bit rate: 10kbps~100Mbps/MAX 100Mbps) BNC connector
	External CLK Input	1ch(10MHz)
	Frame sync	1ch (Frame sync of ground digital broadcasting)
Output	TS	DVB-ASI×1 (For each 2 distribution, Bit rate: 10kbps~100Mbps/MAX 100Mbps) BNC connector
Ethernet		10BASE-T/100BASE-TX ×1 (TS over IP input/output)
ALARM		1ch (The point of contact, OPEN/CLOSE) D-sub 15pin
General specification	Voltage	AC100 to 240V (50/60Hz)
	Power consumption	Max30W
	Dimension	210(W)×44(H)×280(D)mm (excluding projected parts)
	Weight	Approx.1.7kg

## CM-5606 OFDM Modulator

Simple & Compact, and high efficiency

### Features

- Real time OFDM modulation from Broadcasting TS or MPEG-TS (Compliant to ARIB STD-B31, Japanese ISDB-T format).
- RF output is VHF~12ch, UHF13~62ch(90~770MHz).
- Monitoring of an input signal situation is possible by the alarm output.
- It is modulated by modulation parameter which accepted TMCC information.
- IFFT clock output (4.063492/8.126894MHz)
- Reference clock input (8.126894/10MHz)
- Compact design (1U half size)



### Specifications

RF output	Frequency	VHF: 1ch~UHF: 62ch (90~770MHz)
	Frequency deviation	Less than ±2.5ppm
	Level	0±5dBm
	Variable range	+10dBm~-5dBm / 0.1dBm step
	Connector	F
	Channel	1ch
Input signal	TS	ISDB-T format (Compliant to ARIB STD-B31) DVB-ASI (BNC x1, D-sub 25pin female x1)
General specification	Voltage	DC 12V (50/60Hz)
	Power consumption	Max.40W
	Dimension	210 (W) × 44 (H) × 350 (D) mm (excluding projected parts)
	Weight	Approx. 3.0kg

# TS ANALYZER

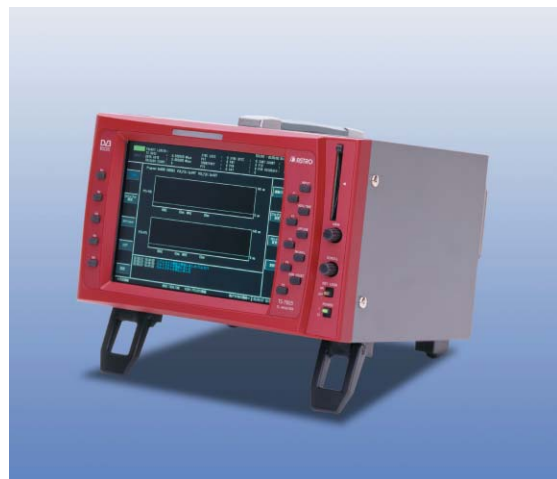
## TS-7815 TS Portable Analyzer

### Simple, Clear.

Imagine anyone being able to easily check what they want without needing specialized TS-related knowledge. Real-Time Information Gathering, Measurement Functions for Immediate Understanding of Fundamental TS Parameters.

The TS-7815 is a portable TS (Transport Stream) analyzer that performs TS analysis based on the MPEG2 standard (ISO/IEC 13818). And, not only DVB standard but ATSC (option) standard is supported. Featuring operations that don't require detailed TS-related knowledge. Designed with user-friendliness in mind to be easily usable by anyone.

Measurement features include TS bit rate measurement, PID summary display, section summary display, program tree display, PCR jitter measurement, PTS/DTS analysis, and more, enabling you to perform real-time analysis of fundamental TS parameters.



### Features

- DVB standard and ATSC standard (optional) is supported.
- Analysis results display on LCD monitor (6.3-inch XGA) (external output is supported)
- Support for automatic (ETSI TR 101 290) and manually-triggered TS data recording, log output, and alarm output
- Support for offline analysis of recorded TS data (PID map display etc.) Real-time eye pattern display
- Saving display screen to bitmap file on CompactFlash
- Network (FTP and SNMP) support
- Lightweight (2.6kg), compact design (3U half-rack size)
- Rackmounting support

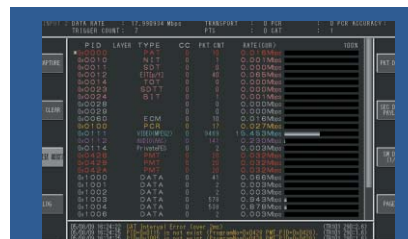
### Specifications

TS input	DVB-ASI (2 systems : only ch1 with through out)
Bit rate	70 Mbps (max.)
TS output	DVB-ASI (through output for one input only)
Input/output TS packets	188,204 and 208 bytes
Items analyzed	Bit rate monitoring in PID units Real-time PCR jitter measurement PSI structural analysis PTS analysis

### General Specifications

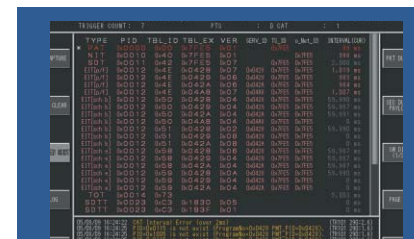
Supply voltage	DC 12V (10 to 18V supported), 4-pin male Cannon connector
Power consumption	20W
Operating temperature range	5 to 40°C
Operating humidity range	40 to 80% RH(no condensation)
Dimensions	210(W) × 133(H) × 210(D) mm (8.3" × 5.2"x 8.3" : 3U half size)
Weight	Approx. 2 kg (4.4lbs)

### View Modes



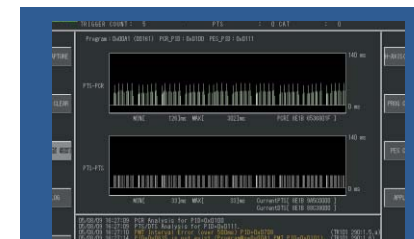
**Per-PID Information Display (Bit Rate Display)**  
While displaying LAYER (only on Japanese digital terrestrial broadcasting TS input) and TYPE for each PID, the bit rate is displayed as a numeric value or bar graph based on the received packet count.

\*Display Content  
Bar graph display of bit rate per second, packets per second, input PID, TMCC layer, PSI/SI table, CC error count



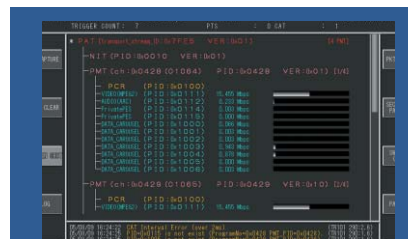
**Section Summary Display**  
A summary is displayed for each type of Section. Items displayed vary with Section.

\*Display Content  
PSI/SI table, input PID, table ID, table ID extension fields, version number, service ID, TS ID, original network ID, PSI/SI period



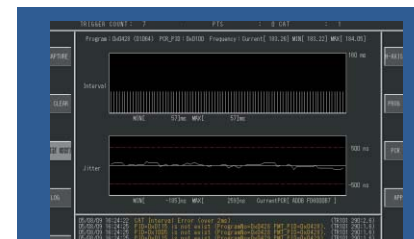
**PTS/DTS Display**  
By displaying the difference in PTS/DTS max and min values and PCR value, the PTS/DTS delay etc. can be verified. The PCR PID for each program and the PES PID included in that program will be selected and displayed.

\*Display Content  
PTS and PCR difference bar graph display, PTS value difference bar graph display, PMT program number, graph display of PCR PID, and PES PID included in PTS/DTS



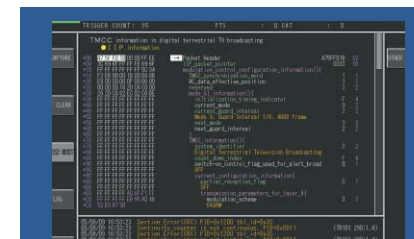
**Per-Program Stream Analysis Display**  
A summary view of the elementary streams (ES) composing a program is displayed. The bit rate for each ES can also be displayed.

\*Display Content  
PMT tree information, ES information taken from PMT information, PAT tree information, NIT PID and version, bit rate for each ES



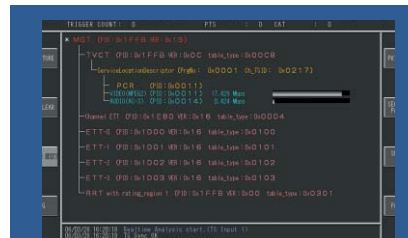
**PCR Analysis / Interval and Jitter Measurement Display**  
PCR interval and jitter is displayed for specified PID. Max and min values are displayed for interval and jitter.

\*Display Content  
PCR interval period bar graph display, PCR jitter line graph display, PCR value and offset frequency, PMT program number, graph display of PCR PID



**Digital Broadcast Analysis Display (ISDB)**  
ISDB(TMCC) analysis is performed on TS reception (204 byte) of digital terrestrial broadcasting and digital BS broadcasting

\*Display Content  
Input TS and FSYNC IN frame period, TS packet count for each layer, ISDB(TMCC) information layer map, IIP packet binary dump and packet structure, IIP packet structure details



**MGT/VCT Analysis Display**  
A tree view of the content of MGT and VCT is displayed.

\*Display Content  
Table information of MGT, Channel information of VCT. ES information for each channel, but rate for each ES.

### Always-Visible Display

INPUT 1	PACKET LENGTH : 188 byte + dummy16	SYNC LOSS	: 0	SYNC BYTE	: 0	CONT COUNT	: 0
	TS RATE : 32.513916 Mbps	PAT	: 0	PMT	: 0	PID	: 6
INPUT 2	DATA RATE : 18.005624 Mbps	TRANSPORT	: 0	PCR	: 0	PCR ACCURACY	: 0
	TRIGGER COUNT : 7	PTS	: 0	CAT	: 1		

### Log Display

```
Interval Error (over 2ms)
0x0115 is not exist (ProgramNo=0x0428 PMT_PID=0x0428)
0x1005 is not exist (ProgramNo=0x0428 PMT_PID=0x0428)
0x0115 is not exist (ProgramNo=0x0429 PMT_PID=0x0429)
0x1005 is not exist (ProgramNo=0x0429 PMT_PID=0x0429)
0x0115 is not exist (ProgramNo=0x042A PMT_PID=0x042A)
0x1005 is not exist (ProgramNo=0x042A PMT_PID=0x042A)
```

# QUALITY MANAGEMENT

## Quality Control

### 01

QUALITY CONTROL  
ACTIVITIES  
ISO9001

In March 1997 we obtained an ISO9001 certification.  
In March 2003, the company's certification was upgraded to comply with ISO9001: 2000.

#### Application range

Design, development, assembly, and adjustment of video processing and video processing products.

#### Products

Video signal generators, scan converters,  
HDTV studio equipment, MPEG2 encoders and decoders

Registration NO. JET-0056



### 02

ENVIRONMENT  
MANAGEMENT  
ACTIVITIES  
ISO14001

In December 1999 we obtained an ISO14001 certification.  
In December 2006, the company's certification was upgraded to comply with ISO14001:2004.

#### Registration range

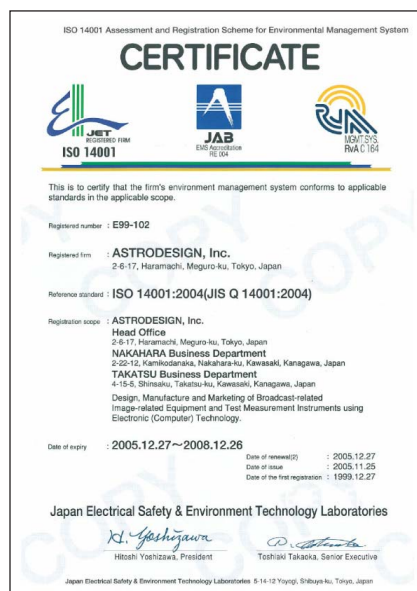
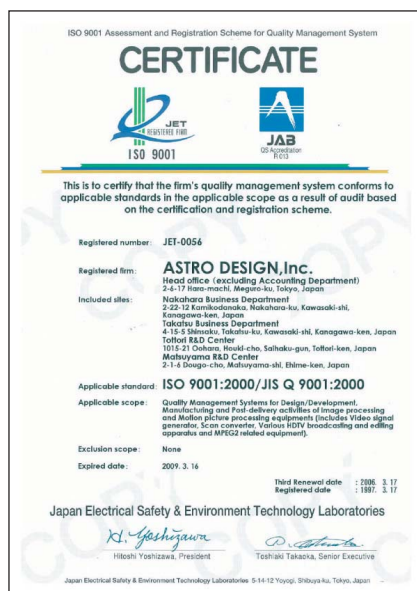
Head Office, NAKAHARA business department,  
TAKATSU business department.

Registration NO. E99-102



#### Basic vision

To pursue our vision of "becoming a division that delights society by creating new value," we use our home page and other communication tools to spell out our social and environmental policies. By publicizing our corporate mission - to bring human society into closer harmony with the earths environment through the introduction of products and services with a reduced environmental load-- we hope to garner the approval and support of the public.



### 03

QUALITY CONTROL  
ACTIVITIES STATUS

#### Reliance and Safety

To ensure that customers can easily use our products, we carry out reliability tests during the development phase of every new prototype. Every series of tests conducted features evaluation of specifications and design, a design review, environmental trials, and reliability tests. To assure product safety we carry out various tests using in-house rules based on IEC standards and specific laws and regulations that pertain to different countries.

#### CE marking

Products are designed and manufactured according to EC Safety Directives (low-voltage directives and EMC directives for EU countries), and all products that are confirmed to comply with EC directives bear the CE logo.

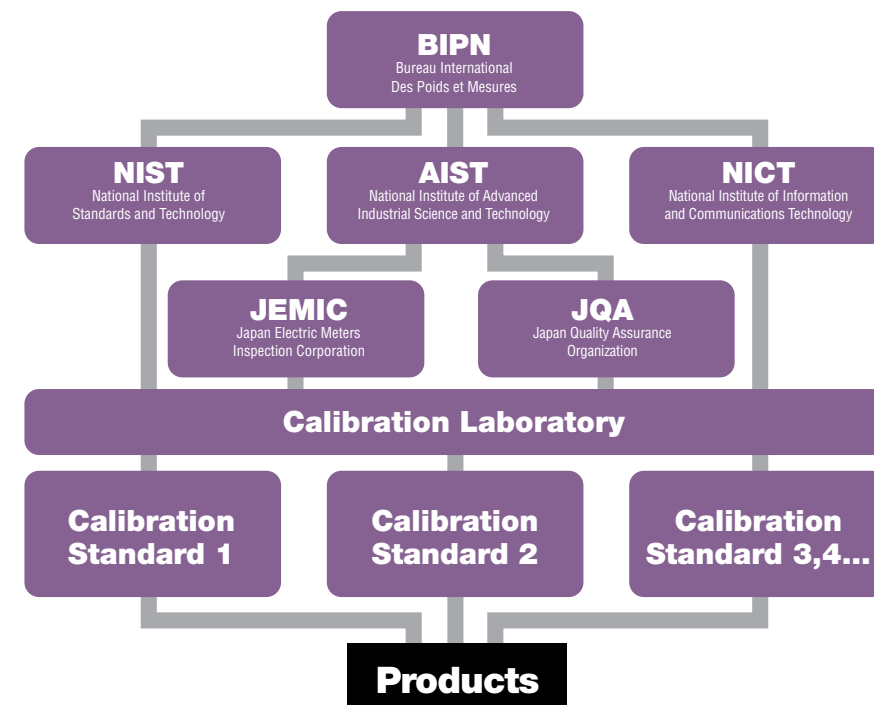
#### Inspection and Calibration

To ensure that customers can easily use our products, we carry out reliability tests during the development phase of every new prototype. Every series of tests conducted features evaluation of specifications and design, a design review, environmental trials, and reliability tests. To assure product safety we carry out various tests using in-house rules based on IEC standards and specific laws and regulations that pertain to different countries.

#### Repair

- (a) We will repair any product that fails during the guarantee period (1 year) at our own expense, provided that failure is not due to carelessness nor incorrect handling of the product. After expiration of the guarantee period we will make repairs at the customers' expense.
- (b) Send the product to us and we will repair it.
- (c) When replacement or repair parts are not available, when the product reliability cannot be maintained even after repairs, or when repairs will require great expense or time, we will consult with you before beginning the repairs.

#### General overview of a traceability system



# Create Next!

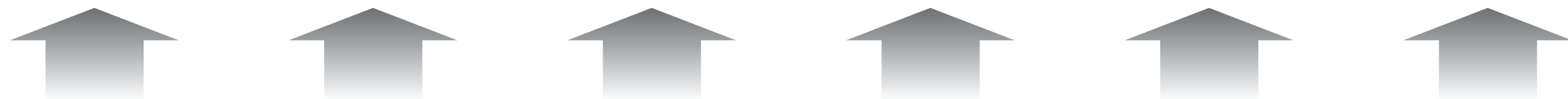
## Frontier technology



VP-8400  
Super HD dedicated image processor



DM-3400  
4K2K 56-inch LCD monitor



## Digital broadcasting technology



VG-870  
Programmable Video Signal Generator



VA-1809A  
HDMI Protocol Analyzer



WM-3014  
HD/SD 6-inch LCD Waveform Monitor



CX-569  
PCI bus-compatible TS multiplexer board



HR-7401  
HDTV Uncompressed Digital Disc Recorder

## Measurement and analyzing solution technology

### High-speed, multi-gray-scale image depiction technology

As images have come to adopt digital technology more and more, so has the demand arisen for greater powers of expressing those images by introducing multiple gray scales in the digital data so that the images will at least compare favorably to, if not excel, the quality of analog images. Astrodesign has come up with high-speed, multi-gray-scale image depiction technology which ably takes in its stride the increasingly voluminous amounts of data accompanying multiple gray scales.

### Standard system signal generation and analysis technology

Standard system signals span a broad spectrum that ranges from conventional standard TV and high-definition TV signals to the signals of the latest consumer-use digital AV interface called "HDMI," and all of these system standards are now being strictly observed. Astrodesign's engineers harness the company's technology so as to generate, measure and analyze these standard system signals to even greater levels of precision.

### Data compression and multiplexing technology

The amounts of data inherent to moving images are quite huge, and compressing and multiplexing this data are absolutely essential processes for ensuring the transmission of data by digital broadcasting or over the Internet. In compressing and multiplexing digital data, Astrodesign is constantly acquiring patents and working hard in many other different ways to deepen the pool of its technological resources.

### High-resolution video signal processing technology

Resolution conversion entails increasing or decreasing the video data. With a view to creating very natural-looking images which resemble the original images most closely, Astrodesign's high-resolution conversion processing technology provides interpolation when the data is to be increased and compensation when it is to be decreased regardless of the resolution of the images concerned.

## High quality conversion technology

### Scanning line conversion technology

Whether we see them on regular TV receivers, high-definition TV sets or personal computers, the images that greet our eyes every day are transmitted and displayed by means of scanning line systems. What Astrodesign's technology does is convert the scanning lines of images in different ways by, for instance, increasing or reducing the number of these lines to convert regular TV images into high-definition TV images.



SC-2055A  
Super Scan Converter



MC-2070  
Multimedia Scan Converter

# High-speed digital signal processing technology