HDMI 1.4 Signal Generator
VG-870B / 871B

HDMI™ · x.v.Color · V by One HS · apdc

ASTRO

Uncompressed 10-bit Moving picture function (VM-1819)

The moving picture can be output from all the interface of the VG-870B / 871B.
There is no compressed noise that often appears in Blu-Ray player, digital tuner and HDD recorders.
Maximum 4 scenes are selectable from VT-7001 Video library (option).

option

Recording type	Uncompressed			
Color space	RGB / YPbPr			
Bit length	10-bit			
Resolution	1920 X 1080			
Color format	4:4:4 / 4:2:2			
Frame rate	60i	50i	24p	24PsF
Max. play time 4:4:4	16sec	19sec	20sec	20sec
4:2:2	24sec	29sec	30sec	30sec

Japanese room   Stone Buddha
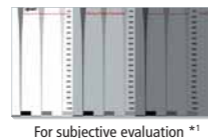
Torrent   Billiards

Subtitle Scrolling

Subtitle character scrolling functions supported. Users own bitmap(256 colors) character at various languages with edge created by Photoshop or other software can be scrolled at different speed and direction.
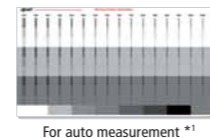
Subtitle —— ASTRO

Moving picture resolution measurement APDC patterns

VG-870B/871B is equipped with the moving picture resolution measurement patterns developed by apdc (Advanced PDP Development Center Corporation). By using 0.5-dot scrolling function, it realizes smoother movement. About auto measurement system, please ask ASTRODESIGN in detail.

*1 APDC pattern is provided by Advanced PDP Development Center Corporation.

For subjective evaluation *1   For auto measurement *1

option

Programmable Ramp patterns

In the linear ramp patterns, the start and end level points with the changing step value is set. This function enables middle-range ramp level test.

Setting menu

Programmable Ramp pattern

■ Options

Remote BOX		Optional Pattern Library		
RB-1870	RB-1871	VT-8001	VT-8500-0004	VT-8500-0007
"Full Key" type with Edit Functions (R&D application)	"Less Key" type without Edit Functions (Production application)	8,10,12-bit Natural Pictures of "Skin tone chart" and "Yacht harbor" pictures	Chinese TV Test Patterns including China Monoscope, etc..	TV Evaluation Patterns including Circular Zone Plate, 8-bit Natural Pictures like "Skin tone chart" and "Yacht harbor", etc..
		Flesh Color Chart (Woman with Carnations) * Yacht Harbor * *The copy right belongs to Association of Radio Industries and Businesses	8 Gray-Scale	Monoscope Circular Zone

Optional Functions						Software
VT-8500-0006	VT-8500-0008					SP-8010
HBR(High Bit Rate) / OB(One Bit) Audio Data	AAC / AC3(Dolby Digital) Audio Data	HBR / OB Audio Compliance Test Software License	Macrovision Copy Protection	Otsuka Electronics MPRT2000 support (with Trigger cable)	MPRT 0.25 / 0.125 dot scroll option	Image Format Converter which converts max. 16-bit users TIFF format image to VBM (for VG) format image.

■ Specifications

Storage Media	ATA Compact Flash Card X 1 (max.1000 Programs)
External Interface	RS-232C, LAN, Remote
General Specifications Voltage	AC100 to 120V, AC200 to 240V, 50/60Hz
Operating Temperature Range	+5 to 40℃
Operating Humidity Range	30 to 80% (no condensation)
Dimensions	430(W) X 88(H) X 370(D)mm (excluding projected parts)

Dimensions, specifications etc. in this catalog may change without notice for improvement.

ASTRODESIGN,Inc.

HDMI 1.4
Signal Generator
VG-870B / 871B

- ▣ HDMI 1.4 "3D" test functions
- ▣ HDMI 1.4 "ARC"(Audio Return Channel) test function
- ▣ High-Bit-Rate / One-Bit Audio (optional)
- ▣ CEC, DeepColor, Lip-Sync, HDCP, EDID testing
- ▣ Uncompressed 10-bit moving picture playing (optional)
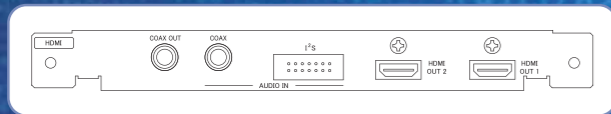- ▣ Various TV and PC interfaces supported

HDMI 1.4 Signal Generator
VG-870B / 871B

The VG-870B / 871B is programmable signal generator with various TV interfaces and test functions. Functions for testing 3D and ARC(Audio Return Channel) specified on the latest HDMI 1.4 standards, also HBR/OB audio, CEC, DeepColor, Lip-Sync, HDCP, EDID are supported.
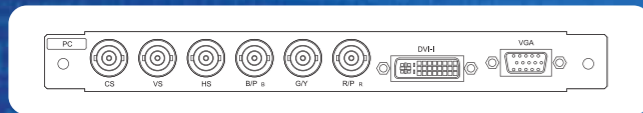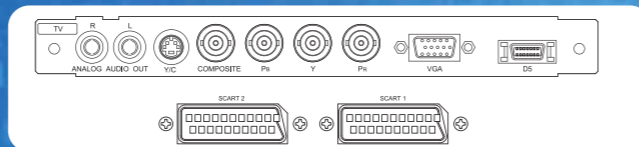
■ HDMI Interfaces

Video Output	Digital	HDMI×2
	Version	HDMI Ver1.4
	Dot Clock	25 to 165MHz (TMDS clock : 25 to 225MHz) *max.150MHz for 12-bit
	Colors(max.)	RGB each 12bit
Digital Sampling Frequency		32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192KHz
		HBR / OB audio (option)
Audio	Output	HDMI, COAXIAL (for ARC testing)
	Input	COAXIAL, I2S (option)

■ PC Interfaces

Video Output	Analog	BNC, D-sub 15pin
	Dot Clock	VG-870B : 5 to 300MHz
		VG-871B : 5 to 250MHz
	Video Level	0.3 to 1.2V
	Offset Level	0 to 250mV
	Colors(max.)	RGB each 10bit
	Sync Level	HS / VS TTL
		CS(Bi-level) 300mV ※on Sync : 0 to 600mV
		CS(Tri-level) ±300mV ※on Sync : 0 to ±600mV
	Digital	DVI-I (Single Link, HDCP supported)
	Dot Clock	25 to 165MHz
	Colors(max.)	RGB each 8bit
	Copy Protect	HDCP supported

■ TV Interfaces

Video Output	Analog	BNC, S-Video, Composite, D-Terminal, D-sub 15pin, SCART×2
	Color	RGB / YPbPr
	Dot Clock	5 to 165MHz
	Colors(max.)	RGB each 8bit
	HDTV	1080p / 1080i / 720p
	SDTV	NTSC / PAL / SECAM
	PC	Programmable/Internal Timing
	Functions	Teletext, Closed Caption, V-chip, Macrovision(Option)
	SCART Standard	PAL / SECAM
	Signal	(RGB / VBS / S-Video)
Audio		RCA (L/R)
	Frequency	0 to 20KHz(100Hz Step)
	Channel	2ch
	Output Level	0 to 2000mv

Output Features

HDMI

3D

Test patterns of 3D format specified in HDMI 1.4 standards are supported.
By using the software "3D Image Editor" SP-8870-3DT, users own Left and Right separately shot 2D image can be converted to 3D image format.
Various 3D test patterns for distinguishing Left and Right image, etc. are pre-installed, can be displayed with 3D InfoFrame setting.

*3D Image that is edit by the software can be output from other interfaces as well.

3D Image Type
・Frame packing
・Frame packing for interlaced format
・Field alternative
・Line alternative
・Side-by-Side(Full)
・Side-by-Side(Half-Horizontal)
・Side-by-Side(Half-Quincunx)
・Others

ARC (Audio Return Channel)

ARC audio return process between VG and TV(HDMI SINK) can be tested.
ARC test pattern with the status of CDC (Capability Discovery and Control) on CEC line and Audio information. Audio output from coaxial connector can be used for checking on AV AMP or Audio Analyzer.
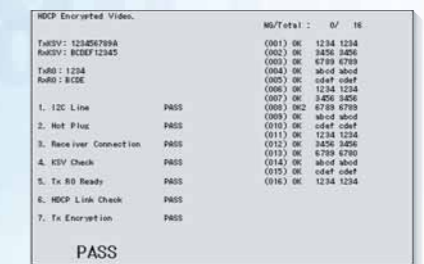
CEC Function

CEC (Consumer Electronics Control) commands communication is supported. The communication result is displayed in a test pattern.

CEC Command

DDC/CI / HDCP / EDID

DDC/CI communication inspection functions, HDCP certification tests and EDID parameter patterns are displayed.

HDCP Test pattern

AAC / AC3 Option *option*

AAC(Dolby Digital) and AC3 digital audio that is supported by the latest flat panel display is supported.

HBR / OB Full Audio Option *option*

In addition to AAC and AC3, HBR(High-Bit-Rate) and OB(One-Bit) audio that is defined in the HDMI Ver.1.3 is supported. By using the I2S interface, audio is embedded and output.
Compatible with the VG-849C-A "HBR/OB Audio Compliance Tester" and compliance test software available as option.

Audio Signal standard	AAC/AC3 option	Audio Full option	
			I2S support
AC3 (Dolby Digital)	YES	YES	–
AAC	YES	YES	–
Dolby Digital Plus	–	YES	YES
Dolby TrueHD	–	YES	YES
DTS Digital Surround	–	YES	YES
DTS-HD High Resolution Audio	–	YES	YES
DTS-HD Master Audio	–	YES	YES
DTS Express (DTS-HD LBR)	–	YES	YES
DSD (One Bit Audio)	–	YES	–

HDMI Lip-Sync

SINK device Testing System

The delay time between video and audio can be measured by system with the digital oscilloscope and the luminance meter. Using the oscilloscope to measure the audio data provided from the head-phone output from SINK device and video data with the luminance meter. The VG-870B/871B can set the delay time of audio and video in the range of 0±500msec. The shift amount of the sync of the SINK device can be measured if it is within the range of the HDMI 1.3a standard (±500msec) or not.

luminance meter

VG-870B   SINK device   head-phone   digital oscilloscope