

VG-870B/871B

Programmable Video Signal Generator

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.

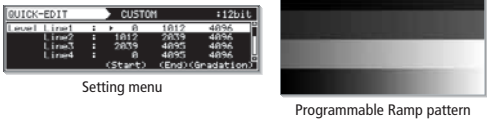


Sub-pixel patterns

Various types of sub-pixels test patterns enables user to test the flat panel performance more accurately.

Programmable Ramp patterns

Linear Ramp patterns with the setting of start and end level points as desired. Useful for testing the middle-range level of flat panels.

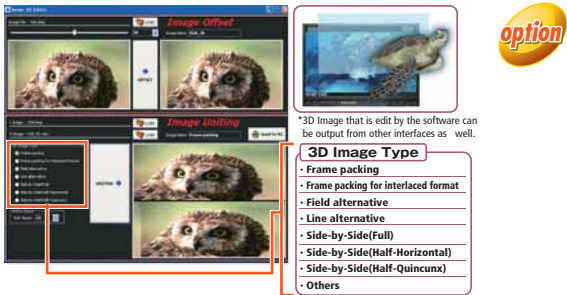


Options

3D Test function Option (Package of Pattern License and Software)

By using the optional software "3D Image Editor" SP-8870-3DT, users own Left and Right separately shot 2D image can be converted to 3D image format based on HDMI 1.4 standard. Various 3D test patterns for distinguishing Left and Right image, etc. are pre-installed.

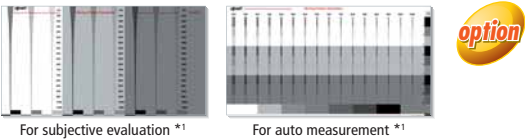
Notice : This option is fixed at ex-factory, upgrade after the delivery is not acceptable.

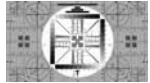
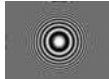


MPRT testing with APDC patterns

MPRT(Moving Picture Response Time) patterns developed by APDC (Advanced PDP Development Center Corporation) with 0.5 dot scrolling supported. About the auto measurement system, please ask ASTRODESIGN for more details.

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



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) * *The copy right belongs to Association of Radio Industries and Businesses	 Yacht Harbor * *The copy right belongs to Association of Radio Industries and Businesses	 8 Gray-Scale	 Monoscope  Circular Zone
Optional Functions					
VT-8500-0006	VT-8500-0008				
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
				Converter which converts 4Kx2K iTMDS x 1ch to LVDS 10 bit x 4ch	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°C
	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.

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HDMI™
HIGH DEFINITION MULTIMEDIA INTERFACE

x.v.Color

V-by-One
HS

SD

ASTRO

VG-870B/871B

Programmable Video Signal Generator



- New interfaces (DisplayPort, 4Kx2K iTMDS, V-by-One HS, SDI) supported
- 4Kx2K Digital Cinema Format supported
- Full HD 240Hz timing supported
- Uncompressed 10-bit moving picture playing (optional)
- High-Bit-Rate / One-Bit Audio (optional)
- RGB 16-bit drawing

VG-870B/871B

Programmable Video Signal Generator

Maximum 3 types of modules selectable and configured according to users application like TV, PC and LCD panel, testing flexibly(Fixed at ex-factory). By installing the same type modules, also possible for signal distribution application such as QC or aging testing(eg; VM-1815 LVDS Unit x 3 modules = single LVDS output x 12 ch. distribution).

PC Analog Unit (VM-1811)



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

TV Encoder Unit (VM-1812)



Video Output	Analog	BNC, S-Video, Composite, D-Terminal, D-sub 15pin, SCART, X2 RGB / YPbPr 5 to 165MHz RGB each 8bit 1080p / 1080i / 720p HDTV SDTV NTSC / PAL / SECAM Functions Teletext, Closed Caption, V-chip, Macrovision(Optional)
	Dot Clock	25 to 165MHz RGB each 8bit 1080p / 1080i / 720p HDTV SDTV NTSC / PAL / SECAM Functions Teletext, Closed Caption, V-chip, Macrovision(Optional)
SCART	Standard	PAL / SECAM (RGB / VBS / S-Video)
	Signal	RCA (L/R) 20 to 20KHz (100Hz Step) 2ch (L/R) 0 to 2000mv
Audio	Frequency	20 to 20KHz (100Hz Step)
	Channel	2ch (L/R)
Output Level	Frequency	20 to 20KHz (100Hz Step)
	Channel	2ch (L/R)

DVI Unit (VM-1814)



Video Output	Digital	DVI-D ×2Ch ch1 : Dual Link ch2 : Single Link (HDCP)
	Dot Clock	25 to 165MHz : Single Link 50 to 330MHz : Dual Link RGB each 16bit (10 to 16bit : max. 165MHz)
Colors(max.)	Dot Clock	25 to 165MHz : Single Link 50 to 330MHz : Dual Link RGB each 16bit (10 to 16bit : max. 165MHz)
	Colors(max.)	25 to 165MHz : Single Link 50 to 330MHz : Dual Link RGB each 16bit (10 to 16bit : max. 165MHz)

LVDS Unit (VM-1815)



Video Output	Digital	LVDS ×4 (MDR 26pin) 20 to *135MHz : Single Link 40 to 270MHz : Dual Link 80 to 340MHz : Quad Link RGB each 16bit (16bit : max. 240MHz)
	Dot Clock	20 to *135MHz : Single Link 40 to 270MHz : Dual Link 80 to 340MHz : Quad Link RGB each 16bit (16bit : max. 240MHz)
Colors(max.)	Dot Clock	20 to *135MHz : Single Link 40 to 270MHz : Dual Link 80 to 340MHz : Quad Link RGB each 16bit (16bit : max. 240MHz)
	Colors(max.)	20 to *135MHz : Single Link 40 to 270MHz : Dual Link 80 to 340MHz : Quad Link RGB each 16bit (16bit : max. 240MHz)

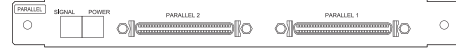
* 150MHz supported by Option

4Kx2K Unit (VM-1824)



Video Output	Digital	Digital output only Dual Link (Single Link HDCP, Dual Link HDCP) ×2 DVI Mode 8bit 25 to 165MHz : Single Link 50 to 330MHz : Dual Link iTMDS Mode 8 to 10bit 25 to 165MHz : Single Link 50 to 330MHz : Dual Link 12bit 25 to 150MHz : Single Link 50 to 300MHz : Dual Link Multi ch Mode 10 to 16bit 25 to 165MHz : Dual Link 50 to 330MHz : Quad Link 4K×2K Mode (Full HD 240Hz) 8 to 12bit 297 to 660MHz : Quad Link
	Dot Clock	25 to 165MHz : Single Link 50 to 330MHz : Dual Link 25 to 165MHz : Single Link 50 to 330MHz : Dual Link 25 to 150MHz : Single Link 50 to 300MHz : Dual Link 25 to 165MHz : Dual Link 50 to 330MHz : Quad Link 297 to 660MHz : Quad Link
Timing Setting	Setting accuracy	Cross split mode: 4-dot, 2-line setting Vertical 4-split mode: 8-dot, 1-line setting
	Video Format	RGB / YCbCr 4:4:4 Ver.1.3 (DDC2B)
E-EDID	Setting accuracy	Cross split mode: 4-dot, 2-line setting Vertical 4-split mode: 8-dot, 1-line setting
	Video Format	RGB / YCbCr 4:4:4 Ver.1.3 (DDC2B)

Parallel Unit (VM-1816)



Video Output	Digital	Parallel ×2 (Half-pitch 68-pin) 0.1 to 100MHz : Single Link 0.2 to 200MHz : Dual Link RGB each 16bit (16bit : max. 100MHz) +1.8/+2.5/+3.3/+5V
	Dot Clock	0.1 to 100MHz : Single Link 0.2 to 200MHz : Dual Link RGB each 16bit (16bit : max. 100MHz) +1.8/+2.5/+3.3/+5V
Colors(max.)	Dot Clock	0.1 to 100MHz : Single Link 0.2 to 200MHz : Dual Link RGB each 16bit (16bit : max. 100MHz) +1.8/+2.5/+3.3/+5V
	Signal Level	0.1 to 100MHz : Single Link 0.2 to 200MHz : Dual Link RGB each 16bit (16bit : max. 100MHz) +1.8/+2.5/+3.3/+5V

HDMI Unit (VM-1817)



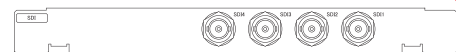
Video Output	Digital	HDMI ×2 HDMI Ver1.3a 25 to 165MHz (TMDS clock : 25 to 225MHz) RGB each 12bit
	Version	HDMI Ver1.3a 25 to 165MHz (TMDS clock : 25 to 225MHz) RGB each 12bit
Audio	Output Sampling Frequency	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192KHz HBR / OB audio (option)
	Input	RCA (L/R) RCA ×1 (COAXIAL), TOSLINK, I2S (Option)

DisplayPort Unit (VM-1820)



Video Output	Digital	DisplayPort ×2 VESA DisplayPort Ver.1.1a max.270MHz(1 port), max.340MHz(2 port) 1, 2, 4 Lanes Each 10-bit(RGB, YCbCr 4:4:4)
	Version	DisplayPort ×2 VESA DisplayPort Ver.1.1a max.270MHz(1 port), max.340MHz(2 port) 1, 2, 4 Lanes Each 10-bit(RGB, YCbCr 4:4:4)
Audio	Output	L-PCM TOSLINK
	Input	HDCP, DPCD(Read), EDID(Read/Write), DDC/CI

SDI Unit (VM-1821)



Video Output	Video Format	SD ×4 lines NTSC, PAL : (SMPT-259M) HD ×4 lines 1080p30, 1080i60 etc. : (SMPT-274M/SMPT-296M/SMPT-260M) 3G ×4 lines 1080p60, 720p60 etc. : (SMPT-425M) DUAL ×2 lines 1080p60 etc. : (SMPT-372M)
	Dot Clock	1080p30, 1080i60 etc. : (SMPT-274M/SMPT-296M/SMPT-260M) 1080p60, 720p60 etc. : (SMPT-425M) 1080p60 etc. : (SMPT-372M)
Audio	Output	L-PCM TOSLINK
	Input	HDCP, DPCD(Read), EDID(Read/Write), DDC/CI

V-by-One HS Unit (VM-1825)



Video Output	Digital	2ch (1ch supports 4 lanes.) *MDR 26-pin connector Normal MODE 8 to 10bit 20 to 75MHz (1Lane) 40 to 150MHz (2Lane) 80 to 300MHz (4Lane)
	Dot Clock	20 to 75MHz (1Lane) 40 to 150MHz (2Lane) 80 to 300MHz (4Lane)
Video Format	Video Format	4K×2K MOE 8 to 10 bit 297MHz to *600MHz (8 Lane) RGB / YCbCr 4:4:4
	Video Format	4K×2K MOE 8 to 10 bit 297MHz to *600MHz (8 Lane) RGB / YCbCr 4:4:4

* 680MHz supported by Option

4Kx2K Unit (VM-1824-A)



Video Output	Digital	Digital output only Single Link HDCP ×2 DVI Mode 8bit 25 to 165MHz : Single Link 50 to 330MHz : Single Link ×2 iTMDS Mode 8 to 10bit 25 to 165MHz : Single Link 50 to 330MHz : Single Link ×2 12bit 25 to 150MHz : Single Link 50 to 300MHz : Single Link ×2 Multi ch Mode 10 to 16bit 25 to 165MHz : Single Link ×2 50 to 330MHz : Single Link ×4 4K×2K Mode (Full HD 240Hz) 8 to 12bit 297 to 660MHz : Single Link ×4
	Dot Clock	25 to 165MHz : Single Link 50 to 330MHz : Single Link ×2 25 to 165MHz : Single Link 50 to 330MHz : Single Link ×2 25 to 150MHz : Single Link 50 to 300MHz : Single Link ×2 25 to 165MHz : Single Link ×2 50 to 330MHz : Single Link ×4 297 to 660MHz : Single Link ×4
Timing Setting	Setting accuracy	Cross split mode: 4-dot, 2-line setting Vertical 4-split mode: 8-dot, 1-line setting
	Video Format	RGB / YCbCr 4:4:4 Ver.1.3 (DDC2B)
E-EDID	Setting accuracy	Cross split mode: 4-dot, 2-line setting Vertical 4-split mode: 8-dot, 1-line setting
	Video Format	RGB / YCbCr 4:4:4 Ver.1.3 (DDC2B)

Features

HDMI

CEC

CEC (Consumer Electronics Control) commands communication testing function supported.



DDC/CI / HDCP / EDID

DDC/CI communication testing functions, HDCP certification results and EDID parameter check patterns are supported.



Deep Color

YCbCr 4:4:4, RGB 8-bit / 10-bit / 12-bit can be switched and checked by linear ramp pattern or optional 10-bit / 12-bit natural picture images.

AAC / AC3 Option

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

HBR / OB Full Audio 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	Next generation 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.

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).

Recording type	Uncompressed
Color space	RGB / YPbPr
Bit length	10-bit
Resolution	1920 × 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



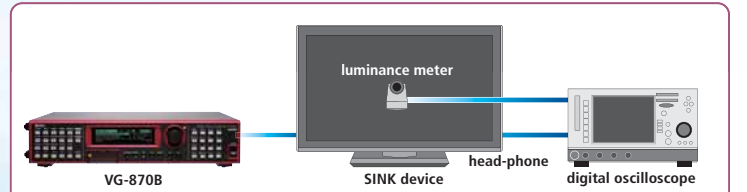
Stone Buddha



Torrent



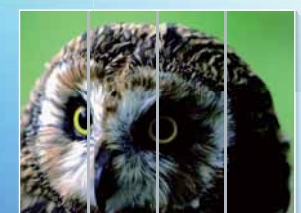
Billiards



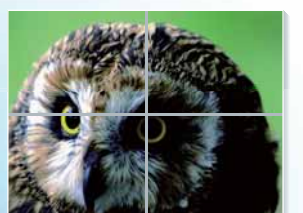
4Kx2K / Full HD 240Hz support unit (VM-1824 / VM-1824-A)

VM-1824/1824-A supports 4Kx2K Digital Cinema Format (4096x2160), and Full HD 240Hz panel testing. VM-1824 supports iTMDS/DVI Dual Link x 2 outputs. VM-1824-A supports iTMDS/DVI Single Link x 4 outputs. 10 and 12-bit signal are supported in the iTMDS only.

Note1) By using two VM-1824 or VM-1824-A, 4Kx2K 120Hz timing also supports.
Note2) By using the optional Converter Box (IA-1540), LVDS 8, 10-bit signal is output.



Vertical split mode



Cross split mode