VG-859C

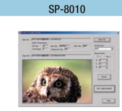
Programmable Video Signal Generator

Specifications

Data Programming			Remote Box RB-1848 or Software SP-8848
Analog Outputs			BNC(RGB, YCbCr), D-sub, DVI, D-terminal
		Dot clock frequency(step)	5.00 to 250.000MHz (0.001MHz step)
		Scan Mode	Interlaced & Video / Interlace & Sync / Non-interlace
		Display Colors	16,770,000 colors (24-bit true colors)
		Video Format	RGB or YCbCr
		Video Level (Accuracy)	0.3 to 1.2V 75Ω(±3% or less)
		Sync on Green	Available
		Sync Level (Accuracy)	0.0 to 0.6V 75Ω(±3% or less)
		Setup Level	0.00 to 0.25V 75Ω
		Rise / Fall Time	1.5ns or less
		Separate Sync (Accuracy)	HS, VS, CS (2.0V or more)
		Horizontal Timing	
		Range	10 to 300KHz
		Total Pixels(Accuracy)	128 to 8192 dots (1 dot step)
		Vertical Timing	
		Range	15.6 to 200Hz
		Total Lines (Accuracy)	4 to 8192 lines (1H step)
		Serration	Equalizing Pulse on/off, 0.5H/1H/XOR selectable
DVI Outputs			DVI-I
		Dot clock frequency(step)	25.000 to 165.000MHz (0.001MHz step)
		DDC2B	Available(Read / Write / Compare / Edit)
		HDCP	Available(Ver.1.0)
		Video Format	TMDS(RGB, YCbCR 4:4:4)
HDMI outputs			HDMI Type A connector
	Video	Clock Bandwidth	25.000 to 225.000MHz (Pixel Clock : up to 165.000MHz)
		Display Colors (Normal)	RGB each 24-bit / RGB each 36-bit (Multi-bit Deep Color Mode)
		Compliant	HDMI Ver.1.3a
		DDC2B	Available(Read / Write / Compare / Edit) EDID Ver.1.3a 512k Byte
		HDCP	Available(Ver.1.0 or Ver1.1 with AV-MUTE ON/OFF function)
		Video Format	TMDS(RGB, 4:4:4, YCbCR 4:2:2 or xvYCC601/709) *1
	Audio	Channel	Max. 8 channels
		Bits per Sample	16, 20, 24-bit
		Sample Rate	32, 44.1, 48. 88.2, 96, 176.4, 192KHz
		Waveform	Sinewave, Sweep
		Amplitude	0-7FFF(in case of 16-bit)
		Frequency Range	20Hz to 20KHz
		Frequency Resolution	20Hz Step
		External Audio Input	S/PDIF(TOSLINK(optical), COAX), Analog
		Special Control Mode	Mute, Frequency, Volume
Analog Audio Outputs			L/R RCA connector
		Frequency Range	0Hz to 20KHz
		Frequency Resolution	100Hz step
		Channel	2 channels (L/R)
		Output Level Range	0 to 200mV
		Output Level Resolution	50mV step
		Special Control Mode	Tone(L/R) / Sweep/ Mute
TV Outputs			Composite, S-Video(S1,S2), YCbCr, RGB
		Output Mode	NTSC 4.43, NTSC 3.58(M.J), PAL(B,D,G,H,I,K,N,M) SECAM
		Output Format	Composite(BNC), S-Video(S1,S2 with format control function)
			SCART (with optional IA-575)
		Function	Vchip, Closed Caption, Teletext, Macrovision (optional)
HDTV Signal Outputs			YPbPr, D-terminal(D1 to D5 with format control)
		Format	SMPTE / EIA / China / Australia
		Resolution	1080i,p / 720p / 480p
Data Storage Device			Compact Flash (adapter included) / standard 128MB
		Flash Memory(Read Only)	450timings + 450patterns
		Memory Card(R/W)	850timings + 850patterns + 100programs(group)
		Disk on PC(R/W)	with SP-8848 software, unlimited data storage
Software			Standard SP-8848 Windows Software
		Function	Timing & Pattern(incl. bmp/jpeg, C language) Edit, EDID edit, Cursor, etc.
Control Interface			RS-232C or LAN(10/100BASE-TX) or REMOTE
General specifications		Power Voltage	AC100 to 120V, AC200 to 240V (50/60Hz)
		Power Consumption	80W MAX
		Operating Temperature Range	+5 to 40ºC
		Storage Temperature Range	-10 to 60ºC
		Operating Humidity Range	30 to 80% (non-condensing)
		Dimensions	370(W) x 73(H) x 320(D)mm (excluding projections)
		Weight	Approx. 5.5Kg

*1 Available only for xvYCC special test pattern. This function is under development(as of March 2007), and firmware updates may be required. For details, please inquire to our sales support desk.

Options

Remote BOX (with editing function)	Remote BOX	SCART BOX	DTV Card	Built-in pattern card for 8/10/12 bit image	Software for max.16bit tiff to VBM(VG format) converting	Built-in pattern card for China TV test pattern library	License
RB-1848	RB-614C	IA-575	VT-8000	VT-8001	SP-8010	VT-8500-0004	
			 Monoscope pattern Circular zone plate etc.				1) Macrovision function 2) Max.12-bit Multi-bit

Restrictions

•Analog output and CS output Tr/Tf differ from high definition TV BTA or SMPTE standards. •Analog output and CS output Tr/Tf differ from NTSC standards. •Tri-level SYNC setting is in units of four dots. •VS signal is output based on vertical reference phase point. • The amplitude level of the synchronization output of the positive pole is linked with the synchronization output level of the negative pole. •Simultaneous output of color difference signal and RGB is not possible. •Output of NTSC/PAL/SECAM for VBS and S-terminal output is OFF except for specified timing. •The DVI signal setting is in units of one dot for single link 25 - 100MHz, and two dots for 100MHz - 165MHz. •In HDCP mode, DVI shall be output from either one of the HDMI connectors. (selectable)

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

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VG859C-IB3204E-1000-1

HDMI HDCP

ASTRO

VG-859C

Programmable Video Signal Generator

A programmable video signal generator that supports the latest HDMI standard, Ver1.3a (EIA/CEA-861D), and is optimal for next-generation FPD TV testing.

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A programmable video signal generator that supports the latest HDMI standard, Ver1.3a (EIA/CEA-861D), and is optimal for next-generation FPD TV testing.

The VG-859C is a portable video generator that supports every display measurement fields, such as inspection field for FPD TV sets which support digitalized broadcast and digitalized interface, and development field for highly advanced display devices and sophisticated PC monitors.
Using with an optional remote BOX (RB-1848, etc) allows data editing and program executing. For digital output, the VG-859C supports DVI as well as HDMI (High Definition Multimedia Interface)Ver.1.3a (the latest version of HDMI).
It can inspect the new features of HDMI 1.3a, such as Deep Color(up to RGB12bit), xvYCC, and Lipsync. For analog output, the VG-859C has a wide variety of output ports (BNC, Dsub15pins, D-terminal, DVI-I, S-terminal), and supports RGB signals, color difference signals, tri-level synchonization signals, and TV standard signals.

Wideband dot clock

The dot clock supports a maximum of 250MHz analog output, a maximum of 165MHz digital DVI output (through custom conversion), and a maximum of 225MHz digital HDMI output (maximum pixel clock is 165MHz), and can be finely set in units of 1KHz. High-definition displays at HD (1080/60p) and QXGA (2048x1536) or higher resolutions can also be supported.

HDMI standard Ver.1.3a

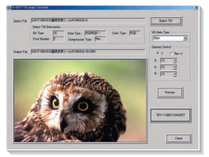
The VG-859C supports the latest standard (Ver. 1.3a) of the HDMI digital interface (EIA / CEA-861D), and the InfoFrame setting parameters are also standard-compliant.

*Only linear PCM audio is supported. Uncompressed and lossless audio formats such as SACD and Dolby TrueHD are not supported.

Deep Color output (max. RGB 12-bit)

RGB/Y444 can switch between RGB 8-bit/10-bit/12-bit output. Can display up to RGB each 12-bit 4096-level linear ramp patterns and composite ramp patterns, optimal for multi-level testing, through optional license input. By using the optional SP-8010 software, 10/12-bit tiff format natural images can also be Saved on the VG and output as a pattern.

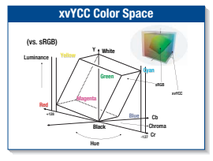
Ramp pattern for comparing the graduation

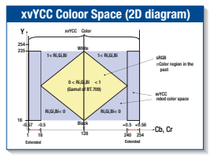

SP-8010 software image

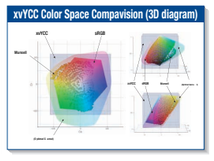
xvYCC / Lipsync test function (under development)

The xvYCC (xvYCC709/xvYCC601) video standard, with a color gamut surpassing current HDTV, and a video and audio delay (Lipsync) test function are supported.

*These functions are under development(as of March 2007), and firmware updates may be required. For details, please inquire to our sales support desk.







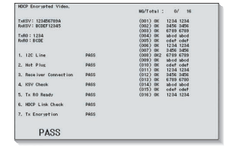
Support for CEC function

Support for transmission and reception of CEC (Consumer Electronics Control) commands over the HDMI output, and simple display of the communication results on Sink (TV) equipment.

DDC/CI / HDCP EDID OK/NG simple test function

Can DDC/CI simple communication test function, HDCP (High-band Width Digital Content Protection) authentication test, and EDID checksum OK/NG pass-fail results as a pattern.

*The DDC/CI simple communication test function is under development(as of March 2007), and firmware updates may be required. For details, please inquire to our sales support desk.



HDCP test pattern

Natural image pattern

Natural image data in e.g. JPEG or BMP format can be Saved on the VG CF card, and output as a test pattern. Images can also be scrolled in units of 1 dot horizontally and vertically.


Natural picture image

Internal samples for a variety of video timings and patterns

The unit has roughly 450 types of sample data built in, including sample data for the latest HDTV systems (480, 720, 1080), SDTV systems (NTSC, PAL, SECAM), PC systems such as VESA, and CEA-861D.

Teletext test pattern

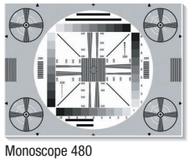

EDID display pattern

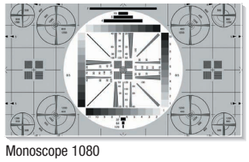

SMPTE color bar


AFD aspect pattern

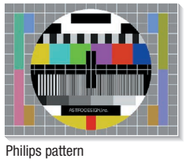
VT-8000 DTV card (optional)

By using the optional VT-8000 DTV card, SD and HDTV resolution TV test patterns such as monoscope, ITE standard patterns (flower girl, etc.), and multiburst can be used.


Monoscope 480


Monoscope 1080


Multi-Burst


Philips pattern

Wide variety of TV signal outputs and functions

In addition to digital signals such as HDMI and DVI, analog signals including RGB, YPbPr (YCbCr), S-Video, composite ((NTSC/PAL/SECAM), D-terminal (D5), and SCART (optional IA-575 required) are also supported.