

# Extron Electronics

INTERFACING, SWITCHING AND DISTRIBUTION



THE VTG 150 & 200 VIDEO TEST GENERATORS  
AND RGB 202 VTG MINI-VIDEO TEST GENERATOR



- SUN
- IBM VGA
- Silicon Graphics
- IBM XGA
- Mac II
- NeXT
- IBM CGA
- IBM EGA
- Mac Classic
- RasterOps
- Digital Equipment
- Hewlett Packard
- VESA
- Radius
- Barco-Chromatics
- IBM 8514A
- Apollo
- HDTV
- Super VGA
- Atari
- Super Mac  
and many more

## FEATURES—VTG 150

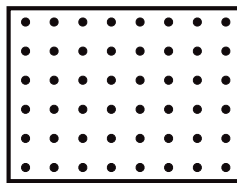
EXTRON's VTGs are the lowest priced generators with comparable performance, features, and specifications on the market.

- **Scan Format Programming** - Simple to operate with no user Scan Format Programming. Access to Scan Format and test patterns is by following the instructions on the menu driven back-lit LCD display.
- **Timer Feature** - This feature turns off the RGB output after 5 minutes of inactivity to prevent accidental CRT burn in. Sync output remains constant while this feature is engaged. If desired, this feature can be easily turned off. An LED will display whether it is engaged or not.
- **Signal Output** - Signals may be output on 5 BNC connectors (RGBS/HV), 9 pin TTL connector, 15 pin HD VGA connector, or 15 pin D Macintosh connector.
- **Sync Output** - Sync may be output as separate H&V, separate composite, sync on green, or sync on red, green & blue.
- **Back-lit LCD Display** - The VTG 150 will indicate computer type, resolution, and horizontal and vertical Scan rates.
- **Never Outdated** - As new Scan Formats are introduced they may be added to the VTG 150 through a format update program by sending the generator to Extron a nominal cost. A VTG 150 may also be upgraded to a VTG 200 at any time.
- **Adjustable Color** - Test pattern colors may be easily changed to display any combination of red, green, and blue. This is particularly useful when specific colors must be isolated.
- **Compact Design** - Small, compact design makes the VTG 200 the most portable pattern generator available.
- **Metal Enclosure** - provides maximum durability.

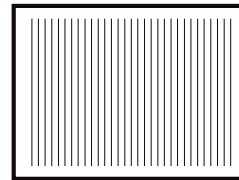
## FEATURES—VTG 200 (ONLY)

The VTG 200 includes all the same features and functions of the VTG 150 with these additional features:

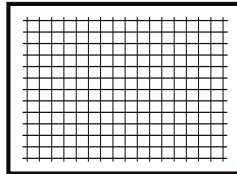
- **In Field Programmability** - With the VTG 200, a user may program a new computer format in the field for future applications. The VTG 200 can also be sent back to Extron for new format updates.
- **Composite Video Output** - In addition to the connectors found on the VTG 150, the VTG 200 also includes an NTSC/PAL composite Video output on a single BNC connector.



1  
Dots 12 x 16  
Focus and Convergence



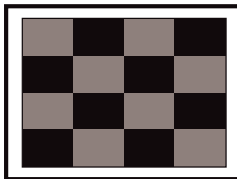
2  
Alternating Pixels  
Resolution



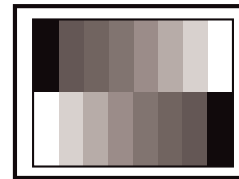
7\*  
Crosshatch 24 x 32  
Static, Dynamic and  
Point Convergence



8\*  
H Pattern Black on White  
Resolution/High Frequency Response



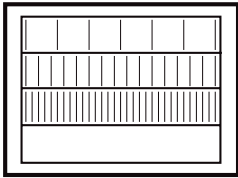
13  
Checkerboard  
14% (IRE)  
White Contrast Range, Screen Cutoff  
and Color Temperature



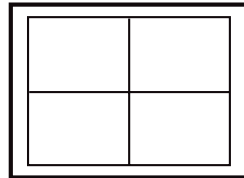
14\*  
8 Level Split Grayscale  
Video Level Tracking (Color)  
Video Gain Linearity (Mono)

## FEATURES—VTG 200 (ONLY-CONT.)

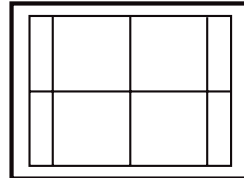
- **13W3 Output** - In addition to the VGA, MAC and BNC connectors found on the VTG 200, it also includes a 13W3 output to simulate SUN, SGI and PowerPC computers.
- **RS-232 Control** - The VTG 200 is capable of being controlled via an RS-232 control port (9 pin).
- **Composite Video Output** - The VTG 200 includes a composite Video (NTSC/PAL) output.
- **SMPTE/Pluge Pattern** - The VTG 200 includes a SMPTE color bar pattern and pluge pattern. This can be used to set-up a gray scale and black level.
- **Field Programmable** - The VTG 200 is field programmable. As a VTG 200 user encounters new scan rate PCs, Workstations and new formats, the VTG 200 can be programmed to add these new rates in the field. No need to send in the VTG 200 for any software updates.
- **Auto-Switchable Power** - The VTG 200 has an internal 90-270 Volt auto-switchable power supply.



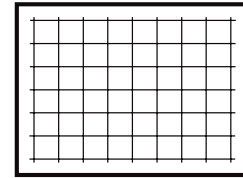
3  
Alternating Pixels  
Resolution



4  
Crosshair  
Vertical/Horizontal Image Tilt,  
Orthogonality Test



5  
Rectangle/Square Crosshair  
Linearity and Raster Centering



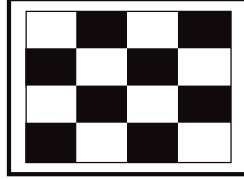
6  
Crosshatch 12 x 16  
Static and Dynamic Convergence



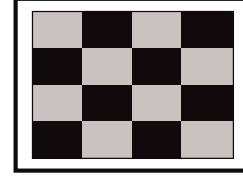
9  
H Pattern White on Black  
Resolution/High Frequency Reponse



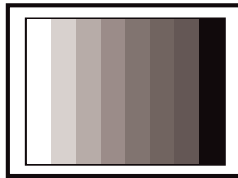
10  
Flat Field  
Purity Adjustment



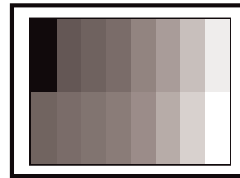
11  
Checkerboard  
100% (IRE)  
White Contrast Range, Screen Cutoff  
and Color Temperature



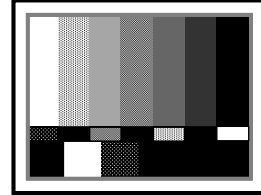
12  
Checkerboard  
56% (IRE)  
White Contrast Range, Screen Cutoff  
and Color Temperature



15  
8 Color Bar  
Color Check, Verify Red  
Green & Blue Balance



16  
16 Color Bar  
TTL Monitor  
Test & Split Field Analog Color Bar  
100%/56%



17  
SMPTE & PLUGE  
(VTG 200 only)  
Composite Video Set-up

## SPECIFICATIONS (VTG 150 & 200)

Dimensions:	VTG 150: 4.63" W x 4.75" D x 1.75 "H VTG 200: 7" W x 6" D x 1.75 "H
Weight:	VTG 150: 1 lb. VTG 200: 2 lbs.
Power Supply:	VTG 150: 9V 500 mA (wall mount) VTG 200: Internal 90-270 Volt auto-switched
Connectors:	5 BNC-Analog, 15 pin HD, 15 pin D, 9 pin TTL
Dot Clock:	230 MHz
Video Bandwidth:	450 MHz
Frequency Range:	VTG 150: 15-127 kHz VTG 200: 15-150+ kHz
Rise & Fall Time:	<1.5 nS
Enclosure:	Metal

The VTG 150 and VTG 200 have the same rise and fall time specification of less than 1.5 nanoseconds with an effective Dot Clock of 230 MHz. The horizontal pixel count generated by the VTG 150 and 200 are within 2% of the pixel count for the computer and video standard specification listed that have a Dot Clock within the 230 MHz Dot clock range of the VTG products

The BNC output provides RED, GREEN, and BLUE video at .7 volts peak to peak and HORIZONTAL and VERTICAL SYNC at TTL levels. The separate H&V output may be combined for

negative composite Sync. The VGA (15 pin HD) and Mac (15 pin D) outputs are also at .7 volts peak to peak for the video and TTL level sync. The composite video (BNC) is 1 volt peak to peak and meets SMPTE Standards.

You can update your VTG 100 to a VTG 150 or VTG 200. Simply call EXTRON for pricing and details.

## UPDATE PROGRAM

The VTG 150 and VTG 200 are never outdated. As new Scan Formats are introduced they may be added to the VTG products through a format update program for a nominal charge. You also have the option to upgrade the VTG 150 to a program-mable VTG 200, at an additional cost. Simply contact EXTRON at 714-491-1500 for details on how to update a VTG product.

up and system troubleshooting. The 16 test patterns provide maximum versatility when performing convergence, focus, color adjustments, contrast, geometry, and much more. With over 50 preprogrammed computer scan formats and field programmability (VTG 200) it now becomes possible to have all these simulated computer signals at your fingertips.

# RGB 202 VTG



The RGB 202 VTG is the industry's first and only totally universal computer-video interface with a built-in video test generator. Capable

of converting any computer system (TTL, Analog or ECL) to RGBS or RGBHV Analog video, the RGB 202 VTG is designed to be a total solution to rental and permanent system set-ups. Because the RGB 202 VTG includes a built-in Video Test Generator, (which outputs a VGA 31.5 kHz, Mac 35 kHz, SuperVGA/VESA 48 kHz and SUN/SGI 64 kHz signal test patterns and resolution levels without any input signal) it is perfect for setting up rentals or permanent systems even before the connected computer arrives. In addition, the computer-video interface features of the RGB 202 VTG allow it to be the ultimate converter box. Because the RGB 202 VTG has a built-in RGB 202<sub>xi</sub>, the features include: Level Control, Peaking (sharpness), Horizontal and Vertical Shift, Two-inputs, Boost (for runs up to 1,000'), an audio interface and every feature found on the RGB 202<sub>xi</sub> interface.

## FEATURES

- Built-in Video Test Generator (31, 35, 48 and 64 kHz signals at 640 x 480, 1024 x 768 and 1280 x 1024 resolutions)
- Each frequency has three display test patterns (fine cross-hatch, gray-scale and H-pattern). See patterns on previous page marked with red asteriks.
- Two input (one Analog/ECL and one Analog/TTL/ECL) totally universal computer-video interface
- 15 - 150 kHz Frequency Range
- 250 MHz RGB Video Bandwidth
- Variable Level Control
- Variable Sharpness Control (Peaking) for RGB and HDTV Signals
- Variable Boost Control for cable runs up to 1,000' (feet)
- Horizontal and Vertical Centering Control (with memory)
- LCD Scan Rate Readout of Horizontal and Vertical
- Front Panel or Back Panel Remote Input Switch
- Automatic Sync Stripping from Red, Green and Blue video channels
- Automatic Sync Output Detection (automatically outputs sync on green, composite or H&V channel)
- Internal Power Supply (90 - 270 Volt Auto-switchable)

# SCAN FORMATS

TTL	Resolution	Horz(kHz)	Vert(Hz)
CGA	640 x 200	15.75kHz	60Hz
MDA	720 x 350	18.4 kHz	50Hz
EGA	640 x 350	21.8 kHz	60Hz
Mac CL	512 x 342	22.2 kHz	60Hz
Mac SE	512 x 342	22.2 kHz	60Hz

VGA	Resolution	Horz(kHz)	Vert(Hz)
Stereographics VGA	640 x 222	31.5 kHz	120Hz
XGA 5	1024 x 768	57.0 kHz	70Hz
XGA 6	1024 x 768	61.1 kHz	75.8Hz
VGA 1	640 x 350	31.5 kHz	70 Hz
VGA 2	640 x 400	31.5 kHz	70 Hz
VGA 3*	640 x 480	31.5 kHz	60 Hz
8514 A	1024 x 768	35.5 kHz	87/43 Hz
VESA 1	800 x 600	35.2 kHz	56 Hz
VESA 2	640 x 480	37.9 kHz	72 Hz
VESA 3*	1024 x 768	48.4 kHz	60 Hz

Mac / Quadra	Resolution	Horz(kHz)	Vert(Hz)
Apple II	560 x 192	15.7 kHz	60 Hz
Mac 12"	512 x 384	24.5 kHz	60 Hz
Mac 13" & 14"*	640 x 480	35.0 kHz	60 Hz
Mac 16"	832 x 624	49.7 kHz	75 Hz
Mac 19"	1024 x 768	60.2 kHz	75 Hz
Mac 21"	1152 x 870	68.7 kHz	75 Hz
E-Mach/Quadra	832 x 624	44.9 kHz	67 Hz
Super Mac	1024 x 768	48.0 kHz	60 Hz
Radius/Super VGA	1024 x 768	48.0 kHz	60 Hz

Other	Resolution	Horz(kHz)	Vert(Hz)
NTSC	200 x 525	15.73 kHz	60/30 Hz
HP 12"	640 x 350	25.5 kHz	60 Hz
IBM 3472	720 x 532	37.7 kHz	67 Hz
IBM PowerPC	1360 x 1024	70.8 kHz	67 Hz
SGI*	1280 x 1024	63.9 kHz	60 Hz
Stereographics SGI	1280 x 492	63.9 kHz	120 Hz
PAL RGB	225 x 575	15.6 kHz	50/25 Hz
HDTV	1920 x 1035	33.75 kHz	60 Hz
VESA 4	1024 x 768	56.4 kHz	70 Hz
VESA 5	800 x 600	37.9 kHz	60 Hz
VESA 6	800 x 600	48.1 kHz	72 Hz
RasterOps	1024 x 768	60.2 kHz	75 Hz
RasterOps/Quadra	1152 x 870	68.7 kHz	75 Hz


CAD Workstation	Resolution	Horz(kHz)	Vert(Hz)
NCD-17C	1024 x 768	56.3 kHz	70 Hz
Cornerstone	1600 x 1280	105.1 kHz	76.2 Hz
Indigo	1024 x 768	48.0 kHz	60 Hz
Sun	1152 x 900	61.8 kHz	66 Hz
NeXT	1120 x 832	61.3 kHz	68 Hz
IBM RS	1280 x 1024	63.4 kHz	60 Hz
Apollo	1024 x 800	63.9 kHz	76 Hz
DEC VR	1280 x 1024	69.9 kHz	66 Hz
DEC VRM17	1024 x 768	69.9 kHz	72 Hz
DEC VR319	1280 x 1024	70.7 kHz	66 Hz
DEC VR320	1280 x 1024	77.1 kHz	72.6 Hz
Sun	1152 x 900	71.7 kHz	76 Hz
Sun	1280 x 1024	81.0 kHz	76 Hz
Sun	1600 x 1280	89.3 kHz	67 Hz

Super Hi-Res	Resolution	Horz(kHz)	Vert(Hz)
Extron	1280 x 1024	92 kHz	86.8 Hz
Extron	1600 x 1280	95 kHz	70.9 Hz
Extron	1800 x 1440	105 kHz	70 Hz
Extron	2048 x 1536	115 kHz	71.8 Hz
Chromatics	2K x 2K	126.8 kHz	60 Hz


\* Scan Rate Formats for the RGB 202 VTG.

### ELECTRONIC INFORMATION

Extron offers 24-hour worldwide access to all our technical literature, brochures and newsletters



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