

# Extron Electronics

INTERFACING, SWITCHING AND DISTRIBUTION



Active audio buffering

SmartSave™

LCD menu driven

Front panel connection  
(RGB 304)

Level control

Peaking control

220 MHz (-3 dB)  
bandwidth

Horizontal & vertical  
picture centering

Digital Display Sync  
Processing (DDSP™)

Scan rate readout

RS-232 control

Rack mountable

40 memory locations



## APPLICATION

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*RGB 304 computer-video and audio interface*

The Extron **RGB 302** and **RGB 304** are digitally controlled, universal analog computer-video interfaces with active audio buffering. Designed for permanent installations, control system environments and rental applications using both CRT and digital displays such as LCDs and DLPs, the RGB 302 and 304 provide ease of operation, flexible control and simple set-up.

Providing a 15–135 kHz horizontal frequency range and a 220 MHz (-3 dB) video bandwidth with no more than -1 dB of loss up to 190 MHz, the RGB 302 and 304 are compatible with virtually every PC and workstation on the market today. Active audio buffering enables the RGB 302 and 304 to convert low level, unbalanced audio signals from PCs into line-level, balanced audio signals. This allows for longer signal runs with less susceptibility to outside interference.

With automatic sync output detection, pre-programmed image enhancements and digital control, the RGB 302 and RGB 304 offer quick and easy installation with seamless user control. Additionally, the RGB 302 and 304 are compatible with all of Extron's MBC and LBC computer input cables allowing for simultaneous operation of the computer's local monitor and any compatible data or graphics projector, monitor or LCD/DLP projector.

Extron's SmartSave™ technology allows computer setup to be quick and easy. With 40 available memory blocks, 15 of which are pre-programmed, source saving and recall becomes transparent to the user. Horizontal and vertical settings, video level, video peaking and output sync polarity settings are all stored within a memory block based on incoming computer rates and sync polarities. Upon initial connection, the RGB 302 and 304 interface will search for a matching memory block. When a match is found all memory settings will be recalled. If a match is not found a new block will be created. All adjustments will be automatically stored and recalled the next time that source is applied.

Both models also feature variable video level and peaking (picture sharpness) control, horizontal centering and vertical centering controls. The RGB 302 and 304 can even "lock-out" unwanted users. For example, in a rental environment, after the interface has been configured, front panel control can be disabled so that a customer cannot accidentally change the settings.

## APPLICATION (Cont.)

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The RGB 302 and 304 differ in one area. The RGB 304 provides computer video and audio input connections directly from the front panel. When mounted in a rack or even under a table, the user has clear, direct access to the computer connection port on the RGB 304 interface. This convenience means no more crowding under a table or tangling behind a rack— just plug in an MBC or LBC cable and the connection is accomplished.

Controlling the RGB 302 and 304 is also easy via the RS-232 serial port and the front panel. They may be set up at the time of installation using either a PC and Extron's own Windows® based control program software, or a third party control system.

## FEATURES

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- **SmartSave™**— The RGB 302 and 304 provide pre-programmed settings for various computer graphic card resolutions. This makes using the RGB 302 and 304 simple. These settings are essentially transparent to the user after initial setup. The interface will automatically recall and save a computer setting so nothing needs to be changed, touched or adjusted upon connection.
- **Audio interfacing**— A 3.5 mm stereo mini input on the RGB 302 and 304 provides connection of computer audio. Audio interfacing allows the unbalanced PC audio signal to be converted to a line-level, balanced, audio signal. The benefit that balanced audio provides is the elimination of unwanted noise which is normally associated with unbalanced audio distribution over longer cable runs.
- **Advanced digital sync processing**— Provides the ability to run composite sync to a LCD, DLP or Plasma display and still be able to center the computer-video image on the screen.
- **LCD menu driven**— A front panel LCD display allows for alpha-numeric menus of all RGB 302 and 304 features and functions. When the user is not accessing any of the interfaces' features through the LCD menu, it will continuously display the incoming horizontal and vertical scan frequencies, sync output location and channel status. The menus and functions may be viewed in English, Spanish, German or French.
- **Front panel connection**— The RGB 304 provides front panel computer input connection making it easy to connect/disconnect sources even when the interface is mounted in a rack or under a table.
- **Level controls**— Similar to a picture control on a data monitor, level control is used to adjust the brightness and contrast of the displayed image.

## FEATURES (Cont.)

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- **Peaking control**– Peaking control is used to compensate for capacitance in long cable runs, and can actually make a computer image look better on the presentation display than it does on the computer's own local display monitor.
- **Built-in Digital Display Sync Processing (DDSP™)**– Sync is output in its original state ensuring compatibility with digital display products such as LCDs, DLPs and Plasma displays.
- **220 MHz bandwidth**– The RGB 302 and 304 provide 220 MHz (-3 dB) video bandwidth. With no more than -1 dB of loss, up to 190 MHz, signal integrity is assured throughout the system.
- **Horizontal & vertical picture centering**– Horizontal centering shifts the displayed image left or right on the display screen and will initially set itself up in the “center” position based on the incoming signal. Vertical centering shifts the displayed image on the presentation display to the top or bottom of the screen.
- **Automatic sync output detection**– Exclusive to Extron, the RGB 302 and 304 will automatically detect the output termination on the BNC connector and determine where sync is to be applied. This feature may be set or over-ridden by using the RGB 302 and 304's menu driven LCD display, an RS-232 control device or a control system. The RGB 302 and 304 will also automatically strip all incoming sync from the red, green and blue video channels.
- **Scan rate readout**– This LCD read-out will accurately display both the horizontal and vertical scan frequencies of the computer signal.
- **Security “lock-out”**– Built into every RGB 302 and RGB 304 is the ability to disable front panel control to prevent any set-up changes. This feature was designed with rental applications in mind, so that a user cannot accidentally change any of the interfaces' features.
- **RS-232 control port**– This 9 pin female connector is an RS-232 standard port for external control of the RGB 302 and 304 by a control system or a host PC/terminal (includes Windows® based control program software). The RGB 302 and 304 utilize Extron's Simple Instruction Set (SIS™), a set of basic ASCII code commands which provide simple control through a third party control system.
- **Rack mountable**– A 1U, 1/2 rack width metal enclosure allows the RGB 302 and 304 to be mounted in a rack and more easily integrated into a system.
- **Internal power supply**– The RGB 302 and 304 each have an internal, auto-switchable 100-240 VAC 50/60 Hz power supply.
- **Control program software**– Using Extron's free Windows® based control program software, all operations which can be performed at the front panel may also be performed via a remote PC.

## SPECIFICATIONS

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### Input signals

Video	
Analog.....	.3 to 1.45 volts p-p
Audio	
Connector .....	3.5 mm stereo mini jack
Impedance.....	High Z (unbalanced)
Sync .....	Separate sync TTL
Horizontal sync .....	Positive/negative
Vertical sync .....	Positive/negative
Composite sync TTL level .....	Positive/negative
Sync on green .....	.3 volts p-p negative
Sync on red, green and blue .....	.3 volts p-p negative

### Output signals

Video .....	Analog: .3 to 1.45 volts p-p
Sync .....	Automatic sync output
	Sync on green
	Composite sync
	Separate H&V sync
Audio .....	Connector: (2) 3.5 mm
	stereo mini jacks
Impedance .....	50 ohm capable of driving
	600 ohm
Level .....	Line (balanced/unbalanced)
Frequency range	
Horizontal .....	15.5 kHz to 135 kHz
Vertical.....	40 Hz to 140 Hz
LCD scan-rate range .....	10 to 150 kHz horizontal
	30 to 200 Hz vertical
RGB video bandwidth.....	220 MHz (-3 dB)
	no more than -1 dB
	to 190 MHz
Operating temperature .....	0° to 50° C (31° to 122° F)
Storage temperature.....	-20° to 60° C (-4° to 140° F)
Humidity .....	5% to 95% non-condensing
Power supply .....	100-240 VAC, 50/60 Hz
	Internal auto-switchable
Nominal power dissipation .....	12 watts
Approvals .....	CE, UL, CUL listed
Dimensions.....	1.75"H x 8.75"W x 9.5"D
	4.45 x 22.22 x 24.13 cm
Shipping weight .....	6 lbs. (2.7 kg)
Warranty .....	Two years, parts & labor
Part numbers	
RGB 302 .....	60-243-01
RGB 304 .....	60-244-01

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# ACCESSORIES

1U Rack shelf ..... 60-190-01

## Monitor breakout cables

MBC VGA/XGA HR ..... 26-162-01  
 MBC MAC/Quadra ..... 26-018-02  
 MBC SUN Sparc HR ..... 26-424-01  
 MBC SGI/13W3 HR ..... 26-425-01

## Laptop breakout cables

LBC VGA HR 3' ..... 26-224-02  
 LBC VGA HR 6' ..... 26-224-01  
 LBC VGA HR 12' ..... 26-224-03

LBC MAC HR 3' ..... 26-363-03  
 LBC MAC HR 6' ..... 26-363-01  
 LBC MAC HR 12' ..... 26-363-04

LBC SUN HR 3' (61 kHz) ..... 26-413-04  
 LBC SUN HR 6' (61 kHz) ..... 26-413-01  
 LBC SUN HR 12' (61 kHz) ..... 26-413-05

LBC SUN HR 3' (71 kHz) ..... 26-413-06  
 LBC SUN HR 6' (71 kHz) ..... 26-413-02  
 LBC SUN HR 12' (71 kHz) ..... 26-413-07

LBC SUN HR 3' (81 kHz) ..... 26-413-08  
 LBC SUN HR 6' (81 kHz) ..... 26-413-03  
 LBC SUN HR 12' (81 kHz) ..... 26-413-09

LBC MAC 35/VGA HR ..... 26-394-01

## Laptop breakout cables with 3.5 mm stereo audio connectors

LBC VGA HR 3'A ..... 26-441-01  
 LBC VGA HR 6'A ..... 26-441-02  
 LBC VGA HR 12'A ..... 26-441-03

LBC MAC HR 3'A ..... 26-442-01  
 LBC MAC HR 6'A ..... 26-442-02  
 LBC MAC HR 12'A ..... 26-442-03

LBC SUN HR 3'A (61 kHz) ..... 26-443-01  
 LBC SUN HR 6'A (61 kHz) ..... 26-443-02  
 LBC SUN HR 12'A (61 kHz) ..... 26-443-03

LBC SUN HR 3'A (71 kHz) ..... 26-444-01  
 LBC SUN HR 6'A (71 kHz) ..... 26-444-02  
 LBC SUN HR 12'A (71 kHz) ..... 26-444-03

LBC SUN HR 3'A (81 kHz) ..... 26-445-01  
 LBC SUN HR 6'A (81 kHz) ..... 26-445-02  
 LBC SUN HR 12'A (81 kHz) ..... 26-445-03

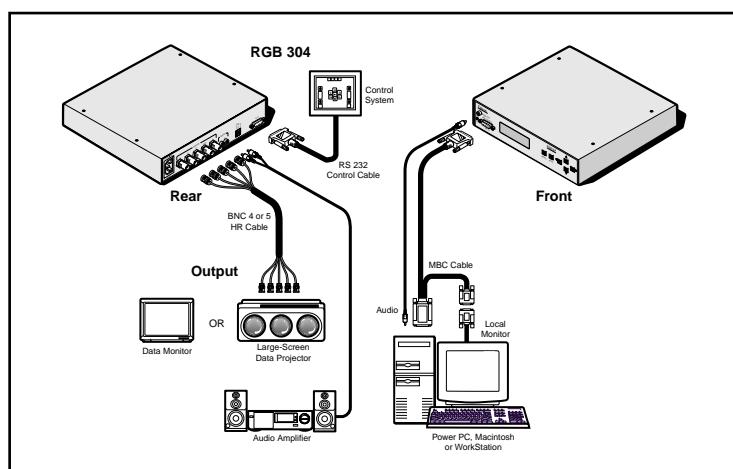
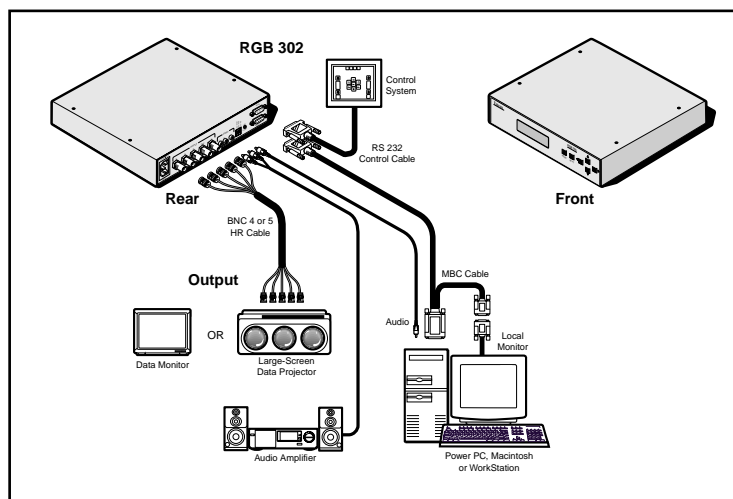
## Installation Cable

Extron's Install Plenum is a unique cable that incorporates computer-video, composite video, audio, control and power in one single jacketed plenum rated cable. Because the install cable includes (6) mini coax, (4) 26 gauge twisted pair and (3) 20 gauge wires, it is a perfect replacement for installations where two or three separate cables have been used before. With the install cable, not only can RGBS be distributed from a wall plate/podium to a rack but also audio, video and control — all in one cable!

Bulk Install Plenum, 500' HR ..... 22-111-03

Bulk Install Plenum, 1000' HR ..... 22-111-04

## APPLICATION DIAGRAMS



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