Extron Electronics
INTERFACING, SWITCHING AND DISTRIBUTION

RGB 202*xi* - TWO-INPUT UNIVERSAL INTERFACE

300 MHz Bandwidth (-3dB)

15-150 kHz Compatible

Level Control

Peaking (Sharpness)

Digital Sync Processing

Auto Power

LCD Readout

Horizontal Shift

Vertical Shift

Blue Enhance

2 Universal Inputs

External Control Knobs

Input Termination Switches

Serration Pulse Removal

Serration Pulse Generation

Sync Stripping from RGBS

Built-in Switching

PC Audio Interface

Totally Universal

Automatic Output Configurations:

RG_SB Output

RGBS Output

RGBHV Output

Internal Power Supply

APPLICATION

The Extron **RGB 202**$_{xi}$ is the highest performance, feature-oriented interface on the market today. The RGB 202$_{xi}$ is a universal Analog, ECL and TTL computer-video interface providing complete compatibility with **ANY** computer system on the market and can even compensate for many limitations found in data projectors and data monitors. These special enhancement features give the RGB 202$_{xi}$ the ability to actually improve image clarity, brightness, sharpness, contrast and make it capable of "driving,, the output RGB video signal up to 1000 feet (depending on input frequency).

Providing an RGB video bandwidth of 300 MHz (-3dB) and a horizontal frequency range compatibility between 15 - 150 kHz, the RGB 202$_{xi}$ will allow ANY computer to be connected to a compatible data or graphics style presentation monitor or projector while allowing simultaneous viewing of the computer's own local monitor. In addition, the RGB 202$_{xi}$ includes a feature not found on any computer-video interface today—an audio interface. Because the RGB 202$_{xi}$ has a built-in PC (computer) audio to line-level audio (balanced) converter, it is perfect for integration of PC audio into a rack audio switcher as the audio interface is inside the RGB 202$_{xi}$. No need for an external audio pre-amp or converter.

When utilizing any of Extron's input MBC cables and MBC BUFFERS, the RGB 202$_{xi}$ can be connected to any PC, laptop, workstation, X-terminal or graphics card and provide one output for the computer's monitor and one buffered and amplified output for connection to a large-screen data monitor or projector. Because the RGB 202$_{xi}$ has a 75 Ohm termination switch on both inputs, when connecting to most laptops a termination adapter is not required.

COMPATIBILITY

Although there are very few "standards,, in the computer industry, the RGB 202$_{xi}$ is compatible with ANY and EVERY computer system on the market today. There are many different video outputs, pin configurations, scan frequency rates and signal types - all factors important to computer-video interfacing - but the RGB 202$_{xi}$ along with MBC Cables makes the connection possible. This MBC and interface combination allow for computer monitor and secondary display image operation simultaneously. Extron has over 200 input cables compatible with all computer types but a partial compatibility listing is provided (See Partial Compatibility Listing). By simply using the correct cable from this list, the RGB 202$_{xi}$ is compatible with VGA, MAC, Quadra, CGA, EGA, Apple Performa, IBM PS/2, XGA, VESA, SuperVGA, Radius, SuperMac, SUN, SPARC, Apollo, Silicon Graphics, NeXT, NCD, Tektronix, HP and much, much more. Call Extron or refer to the Extron Product Catalog for a complete compatibility listing.

FEATURES

The **RGB 202**$_{xi}$ provides the user with numerous enhancement features that can actually improve the performance of the connected presentation monitor or projector. Each feature is summarized below:

- *Auto Power LED -- An LED senses computer operation and automatically turns the interface on and off.*

- *Level and Boost -- This control is similar to a contrast adjustment on a data monitor, which is used to adjust the brightness and contrast of the displayed image. It is this feature which is also used to boost the output signal to a maximum 1.45 volts peak to peak to compensate for losses of signal level or picture contrast due to an increase in cable resistance as cable length increases. Output distances of up to 1000 feet can be provided by adjusting this feature properly (depending on frequency).*

- *Peaking (Sharpness) Control -- This control is similar to a sharpness adjustment on a data monitor. A noticeably sharper image will be seen when using some peaking for all computers regardless of the cable length. The peaking adjustment is actually compensating for mid and high frequency RGB video bandwidth response in data monitors and projectors and for signal loss due to cable capacitance.*

- *Vertical Picture Centering (with memory) -- Vertically shifts the displayed image to the top or bottom of the monitor or projector screen. One vertical shift control will shift and "memorize" both RGB 202xi inputs.*

- *Horizontal Picture Centering (with memory) -- This adjustment is used to position the displayed image from side to side on the screen. One horizontal shift control will shift and "memorize" both RGB 202$_{xi}$ inputs.*

- *Scan Rate Readout -- This LCD read-out will accurately display both the horizontal and vertical scan frequencies of the computer signal.*

- *Internal Power Supply -- An auto-switchable 100-240 Volt/50-60 Hz internal power supply is included as a standard feature of the RGB 202xi.*

- *Blue Enhance (TTL) -- Allows for mixing in just the right amount of blue video with the green video for displaying blue text in a more readable aqua color.*

- *Digital Sync Processing -- Exclusive to Extron, our digital sync processing makes the RGB 202xi work with CRT, LCD and DLP (DMD) based presentation displays.*

The RGB 202$_{xi}$ is the ultimate Universal Interface for connecting computer systems to large-screen compatible displays; such as data/graphic projectors, monitors or similar RGB output or display devices. The RGB 202$_{xi}$ is capable of accepting signals ranging from 15 to 150 kHz and has a bandwidth of 300 MHz, which means this interface is perfect for even the most demanding systems. Unique features like

FEATURES (Continued)

- **Input Switch --** *The RGB 202xi interface is capable of being connected to two computer outputs simultaneously, thus making it a two input switcher as well as an interface. This switch is used to select which input source (one or two) will be displayed on the connected monitor or projector. Both inputs are universal.*

- **Universal Compatibility --** *The RGB 202xi is universally compatible with every computer on the market. It is also designed as a "future-ready" interface to make it compatible with computers introduced in the future.*

- **Termination Switches --** *These switches allow for 75 Ohm termination of the connected computer for both inputs. By using this feature, an external termination adapter is not required when using most analog computers without an external local monitor (i.e., a laptop).*

- **Automatic Sync Stripping --** *Sync is automatically stripped off any incoming signal with sync on the red, green and blue video channels. It can be added back, if desired, to the output signal of green by the use of an external dip switch. A "must have" feature for SGI workstations.*

- **Automatic Sync Output Detection --** *Automatically senses which outputs are being utilized on the RGB 202xi and sends sync through the proper channel. If coax cables are connected to the red, green and blue BNC connectors, sync is automatically sent on the green channel. If coax cables are connected to the red, green, blue and sync BNC connctors, sync is automatically routed separately to the H/HV composite sync channel. And finally, if coax cables are connected to red, green, blue and H&V sync channels, sync is automatically routed separately on the H&V channels.*

- **Audio Interface --** *The RGB 202xi includes a PC/computer audio (800 Ohm) to line-level audio (600 Ohm balanced) converter. Almost every new PC and workstation includes a built-in sound card so integrating this audio into the system can be easily accomplished with the RGB 202xi's audio interface.*

- **Two Input Switching --** *The RGB 202xi may be utilized as a two input (one Analog/ECL and one Analog/TTL) switcher. This feature may be activated by a front panel switch or a rear panel remote (contact closure) jack.*

- **Plastic or Metal Enclosure --** *Gives the option for scratch resistant high-impact plastic and durable metal enclosures - perfect for rental applications.*

PARTIAL COMPUTER COMPATIBILITY

Below is a sample listing of Extron's most popular MBC and ICWK cables for use with the RGB 202*xi* interface. Because this is only a partial listing, please call Extron for any assistance to interface a computer that may not be listed.

PART #	CABLE NAME	HOR. kHz	VER. Hz
26-108-03	MBC AMIGA HR	15.7	60
26-198-01	MBC APOLLO MONO	64.0	60-76
26-018-02	MBC APPLE IIGS	15.7	60
26-064-01	MBC BURROUGHS COLOR	22.2	60
26-307-01	MBC CORNERSTONE DP120	104	60
26-262-01	MBC E/MACHINE MONO	35.61	68
503-066	MBC IBM 3151	27.2	67.5
26-003-01	MBC IBM 3161/63/91/96 MONO	27.0	64.8
26-148-01	MBC IBM 3162	25.9	54.8
26-043-01	MBC IBM 3164/79/92/97 COLOR	22.31	60
26-227-01	MBC IBM 3178C	15.4	70
26-043-02	MBC IBM 3192 MONO	36.0	60
26-100-01	MBC IBM 3193C	50.6	80
26-058-01	MBC IBM 3194 14" DISPLAY	29.6	73
26-109-01	MBC IBM 3194 MONO	29.0	73
26-009-01	MBC IBM 3270PC	23.6	63
70-009-01	MBC IBM 3472/3477 Infowindow Kit	26.37	60
26-055-01	MBC IBM PC MONO (MDA)	18.1	50
26-010-01	MBC IBM PCC (CGA/EGA)	15.7-22	60
26-005-02	MBC IBM PGA HR	31.5	60
26-117-01	MBC IBM PS/2 (Standard VGA Only)	31.5	60-70
26-162-01	MBC IBM VGA HR (Super VGA)	31.5-61	60-70
26-224-01	LBC IBM VGA HR (Laptop Cable)	31.5	60-70
26-162-02	MBC IMAGE ADAPTER/A	31-61	60 or 70
26-018-02	MBC MAC/QUADRA HR	35-68	68
26-251-01	MBC MEMOREX TELEX 1192	27.5	64.5
26-272-01	MBC NCD 14C/17C-CR/19C-G	56-82	70
70-012-01	MBC NCD 15B/16E/19R	58-82	70
26-220-01	MBC NEXT BUFFER, MONO	63.0	68
26-270-01	MBC RGB H&V (9 Pin to 5 BNC's)	Varies	
26-213-01	MBC RGBS (9 Pin to 4 BNC'S)	Varies	
26-198-01	MBC SUN/APOLLO MONO	61-90	66-76
26-243-01	MBC Sun SPARC	61-89	68
503-072	ICWK DEC VT 320*	18.0	60
70-004-01	ICWK DEC 340 KIT	31.5	60
70-004-03	ICWK DEC VT 340	31.5	60
503-125	ICWK DEC VT 340 PLUS*	31.5	60
503-120	ICWK DEC VT 420*	37.0	60 or 70
503-071	ICWK HP 700/94*	28.6	60
26-029-01	ICWK IBM 3180	20.0	83
70-006-01	ICWK IBM 3476	28.0	60
26-102-03	ICWK MAC CLASSIC RGB (9 pin)	22.2	60
26-026-01	ICWK MAC RGB (9 pin)	22.2	60
26-102-02	ICWK MAC SE RGB (9 pin)	22.2	60
503-085	ICWK MEMOREX/TELEX 1191*	27.5	65.7
26-043-03	ICWK MEMOREX C19A	27.5	62.7
26-096-01	ICWK WSYE 50	23.0	60

Level/Boost Control and *Peaking* allow for cable run lengths up to 1000 feet. These two features compensate for loss in signal due to cable capacitance and resistance and can actually make your picture appear "sharper" (Peaking). In all, the features and performance of this interface give the user maximum control over computer-video signals to give the security of knowing fine tuning a system is just an interface away.

SPECIFICATIONS

Input Signal	Video:	ANALOG	0.3 to 1.45 Vp-p
		ECL	0.3 to 1.45 Vp-p
		TTL	2.7 to 7.00 Vp-p
	Audio:	Connector: 2.5 mm Stereo Phone Jack	
		Impedance: High Z	
	Sync:	Separate Sync TTL	
		Horizontal Sync - Positive/Negative	
		Vertical Sync - Positive/Negative	
		Composite Sync TTL Level	
		Positive/Negative	
		Composite Sync on Green Video	
		0.3 Vp-p Negative	
		(video 0.7 Vp-p Positive)	

Output Signal	Video:	ANALOG .3 to 1.45 Vp-p
	Sync:	Auto Sync on Green
		Composite Sync
		(separate)
		Separate H and V Sync
		(tracks polarity or forces Negative)
	Audio:	Connector: (2) 2.5 Stereo Phone Jacks
		Impedance: 600 Ohm
		Level: Line

Frequency Range .... Horizontal: 15.5 kHz to 150 kHz
(Automatically)
Vertical: 40 Hz to 140 Hz (Automatically)
LCD Scan-Rate Range .... 10 to 150 kHz Horizontal
30 to 200 Hz Vertical
RGB Video Bandwidth .... 300 MHz (-3dB) Actual Bandwidth
350 MHz Video Amplifier Bandwidth
Operating Temperature .... 0º to 50º C (31º to 122º F)
Storage Temperature .... -20º to 60º C (-4º to 140º F)
Humidity .... 5% to 95% non-condensing
Power Supply .... 100-240 Volt (auto-switchable)
MTBF .... 35,000 Hours
Nominal Power Dissipation .... 12 Watts
Dimensions .... 9.75" W x 7" D x 1.75" H
24.7 W x 17.8 D x 4.4 H cm
Shipping Weight .... Plastic: 2 lbs. 4 oz.; 1.02 kg.
Metal: 2 lbs. 10 oz.; 1.27 kg.
Warranty .... Two years, parts & labor

OPTIONAL ACCESSORIES

BNC CABLES
High Resolution four or five conductor mini-coax cable to output the signal from the RGB 202*xi* to a compatible presentation Monitor or Projector. Available in lengths from 3' to 1000'.
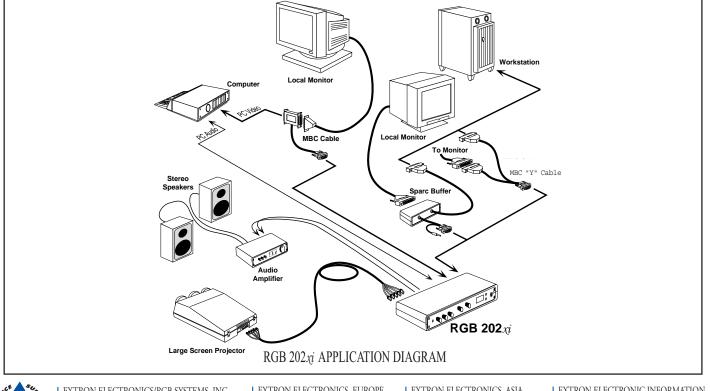

INPUT SWITCHES
EXTRON has a complete line of RGB, VGA, and MAC input switchers allowing multiple computer inputs to be switched to one connected projector or monitor.

OUTPUT DISTRIBUTION AMPLIFIERS
EXTRON has a complete line of RGB distribution amplifiers allowing one RGB 202*xi* output to be sent to multiple projectors or monitors.

RGB 202*xi* APPLICATION DIAGRAM