User Guide

Interfaces

RGB 203 Rxi

Three Input, Universal Computer-Video Interface

Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

68-655-01 Rev. D
12 10

Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the instructions of the manufacturer.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

安全须知 • 中文

这个符号提示用户该设备用户手册中有重要的操作和维护说明。

这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必须使用有地线的供电系统供电。 第三条线（地线）是安全设施，不能不用或跳过 。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线， 避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。 不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。必须使用与厂家推荐的相同或相近型号的电池。按照生产厂的建议处理废弃电池。

FCC Class B Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Notational Conventions Used in this Guide

TIP: A tip provides a suggestion to make setting up or working with the device easier.

NOTE: A note draws attention to important information.

CAUTION: A caution warns of things or actions that might damage the equipment.

WARNING: A warning warns of things or actions that might cause injury, death, or other severe consequences.

Contents

Introduction

This user guide contains information about the Extron RGB 203 Rxi universal interface and how to operate and configure the unit.

About the RGB 203 Rxi

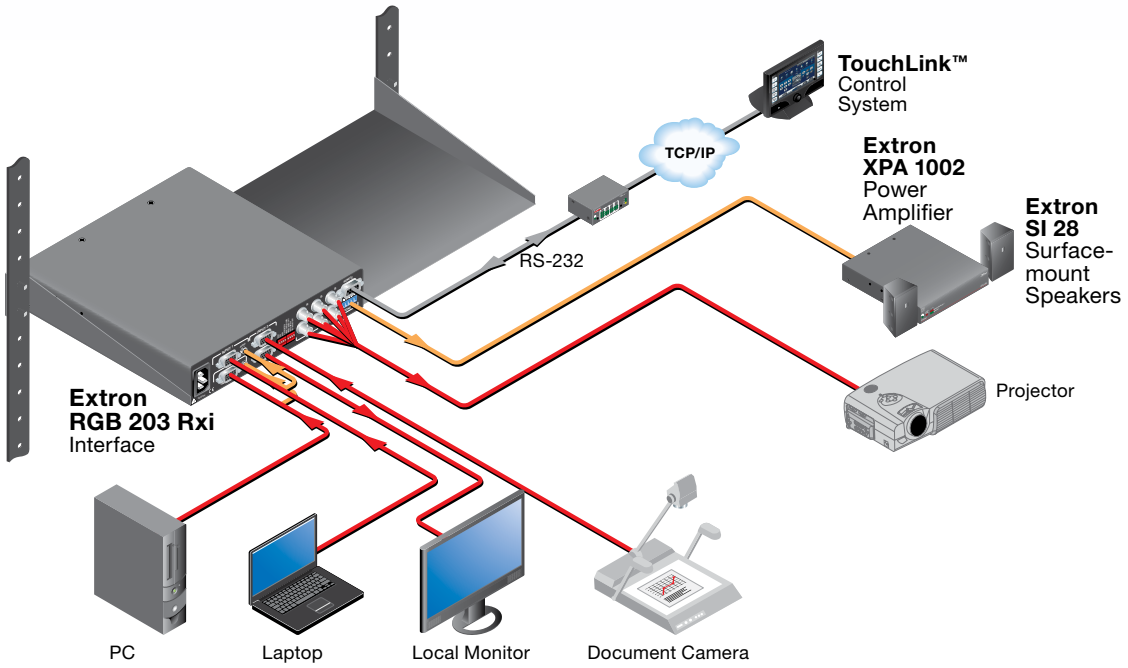


Figure 1. Typical Application for the RGB 203 Rxi

The RGB 203 Rxi is an analog computer-video interface with 300 MHz (-3 dB) video bandwidth. It comes in two models:

- RGB 203 Rxi with ADSP™
- RGB 203 Rxi with EDID Minder®

Both models have Digital Sync Validation Processing (DSVP™). They accept three video and two unbalanced stereo audio inputs (input 3 is video only). They provide a local monitor output (RGBHV, RGBs, or RGsB) and balanced, line level stereo or mono audio output. They also allow control of horizontal and vertical centering, level boost, and peaking.

Front panel controls, remote contact closure, autoswitching, or an RS-232 remote control system can select among inputs and can be used to shift the output image horizontally or vertically.

The interfaces are rack-mountable and furniture-mountable and have an internal switching power supply for worldwide power compatibility.

Features

EDID Minder — The Extron EDID Minder ensures the resolution of the video source signals is compatible with the display devices.

Sync processing — Using regular sync processing to allow centering control (H-shift or V-shift) can create problems with some digital display devices as a result of the sync delay. The Extron ADSP option maintains a stable sync signal while allowing centering control.

Digital Display Sync Processing (DDSP™) — This feature ensure proper displays without altering sync pulse timing or width. The sync processing type is selected via a rear panel DIP switch.

Digital Sync Validation Processing (DVSP) — In critical environments or unmanned, remote locations, it is vital to know which sources are active. The exclusive Extron DSVP confirms that input sources are active by scanning all sync inputs for active signals. DSVP provides instantaneous frequency feedback for composite sync or separate horizontal and vertical sync signals via the Remote port of the interface.

Automatic sync stripping — Sync signals are automatically stripped from the red, green, and blue video input signals. The interfaces normally output sync simultaneously as separate horizontal and vertical sync and as composite sync, but sync on green (SOG) can be selected via a rear panel DIP switch.

Sync polarity adjustment — Horizontal and vertical sync output can either follow input sync polarity, or outgoing sync can be forced to positive or negative via an internal jumper.

Serration pulse selection — This DIP switch selectable feature adds or strips the serration pulses from the output signal to make it compatible with digital display devices.

LCD scan rate indicator — This backlit liquid crystal display (LCD) indicates the horizontal and vertical sync rates, and the minimum and maximum centering limits. A DIP switch is provided for turning off the backlight.

Vertical sync pulse width adjustment — Vertical sync pulse width can be adjusted via a rear panel DIP switch.

RGBHV, RGBS, or RGsB outputs — Select the output format via cabling setup and rear panel DIP switch.

Stereo audio — The interface processes unbalanced PC stereo audio inputs as a line level, balanced stereo or mono audio output.

Horizontal and vertical centering controls — Separate front panel controls allow separate horizontal and vertical centering adjustments.

Level (boost) and peaking controls — Separate front panel controls compensate for signal losses from long cable runs.

Thirty memory presets — Thirty spaces are reserved in the memory of the interface for storing user-defined combinations of horizontal and vertical position settings based upon input signal scan rates. The interface automatically recalls the position settings when it detects an input signal with a matching scan rate.

Remote control input selection — Connect a remote contact closure keypad, an RS-232 control system, or a computer to the rear panel Remote port to remotely control the interface.

Front panel security lockout (Executive mode) — Locks out front panel control of horizontal and vertical shift and input selection.

Rear Panel Cabling

This section describes the rear panel cabling of the RGB 203 Rxi. The rear panels of both models are identical.

Rear Panel Connections

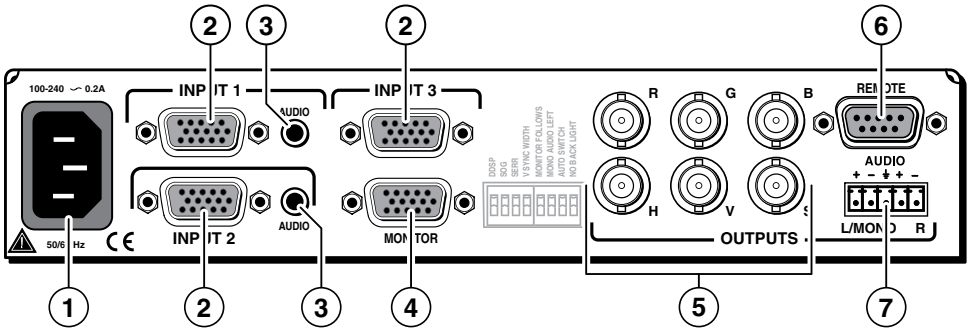


Figure 2. RGB 203 Rxi Rear Panel

① **AC power connector —** Connect a standard IEC AC power cord here for power input (100 VAC to 240 VAC, 50-60 Hz) to the internal power supply.

② **Inputs 1, 2, and 3 —** Connect the analog computer-video sources to these 15-pin HD female connectors.

> **NOTE:** Most laptop or notebook computers have an external video port, but they require special commands to output the video to that connector. Also, the screen of the laptop may shut off once that port is activated. See the user guide for the computer for details, or contact Extron for a list of laptop keyboard commands.

③ **Audio inputs 1 and 2 —** Connect the unbalanced stereo audio sources (such as computers or a CD player) to these 3.5 mm mini stereo jacks for unbalanced audio input. Figure 3 below shows how to wire the audio jack.

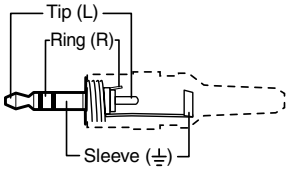


Figure 3. 3.5 mm Mini Stereo Jack

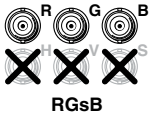
④ **Monitor connector —** If desired, connect a local monitor or other device to this 15-pin HD female connector.

⑤ **BNC output connectors —** Connect a coaxial cable between the display (projector or monitor) and the rear panel BNC connectors, as shown in the figure at right.

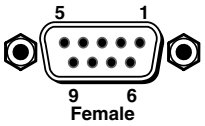
For RGBHV **(separate H and V sync)** output, connect the cables to five BNCs.

For RGBS **(composite sync),** connect the cables to four BNCs.

For RGsB **(sync on green, SOG)**, connect the cables to three BNCs. Also select the SOG option on the rear panel DIP switch (see **"Rear Panel DIP Switches"** on page 8).



⑥ **Remote connector —** Connect an RS-232 device (control system or PC computer) for remote switching between inputs and remote centering control to this 9-pin D female connector (see figure below for wiring details).



Pin	RS-232	Contact closure	Function
1	—	In#1	Input #1
2	TX	—	Transmit data (-)
3	RX	—	Receive data (+)
4	—	In#2	Input #2
5	Gnd	Gnd	Signal ground
6	—	In#3	Input #3
7	—	—	—
8	—	—	—
9	—	—	—

Figure 4. Wiring for 9-pin D connector

Software for RS-232 control is included with the interface. See **"Contact Closure Remote Control"** on page 17 for details.

Connect a contact closure remote control device to this 9-pin D female connector for remote switching between inputs.

The rear panel Remote connector also provides a way to select an input to the interface using a remote contact closure device. Contact closure control uses pins on the Remote connnector that are not used by the RS-232 interface. The contact closure pin assignments are shown in the table in figure 4.

To select a different input number using a contact closure device, momentarily short the pin for the desired input number to logic ground (pin 5). To force one of the inputs to be always selected, leave the short to logic ground in place. The short overrides front panel input selections.

NOTE: Shorting the contact closure pin to override the front panel selection does not work if the interface is in auto switch mode (the rear panel **DIP switch 7** is set to On).

⑦ **Audio output connector —** Connect an audio device, such as powered speakers, to this 3.5 mm, 5-pole captive screw connector for balanced or unbalanced audio output.

The connector, but not the wires, are provided. Insert the wires into the correct openings and tighten the screws to fasten the wires (see figure 5).

CAUTION: For unbalanced audio, connect the sleeves to the center contact ground. **DO NOT** connect the sleeves to the negative (-) contacts.

Figure 5. Wiring the Captive Screw Connector for Audio Output

Configuration

This section of the user guide provides information about **internal configuration** of jumpers on the circuit boards and **configuration of the rear panel DIP switches**.

Internal Configuration

The interface is factory configured to output RGBHV or RGBS video with sync that follows the input and is clamped to the back porch. The interface can be configured to output positive or negative sync or to clamp on the sync tip. These reconfigurations all require the interface to be opened.

1. Remove the three screws on each side and the two screws on top of the cover (see figure 6).

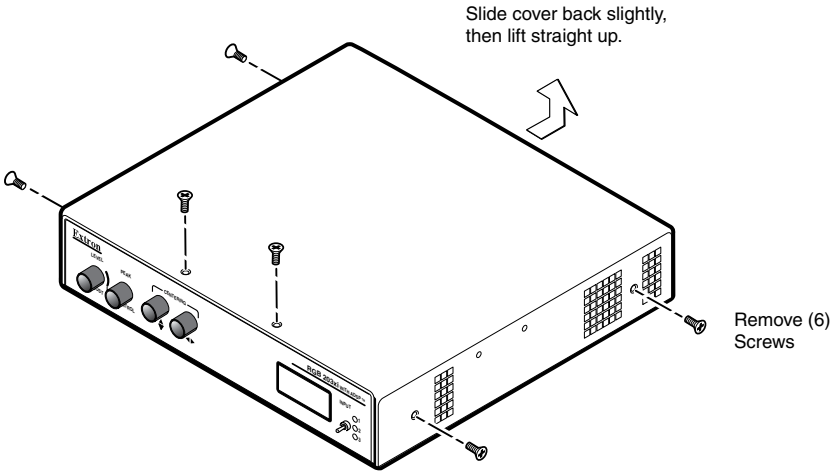


Figure 6. Removing RGB 203 Rxi Cover

CAUTION: Before removing the cover, take steps to prevent electrostatic discharge, which can damage the circuit boards of the unit.

2. Lift the cover off by sliding it straight back slightly and then lifting it straight up.

3. Configure the interface as desired (see **"Sync Polarity Jumpers"** and **"Video Clamping Jumper"** below). Figure 7 shows all of the user-serviceable components.

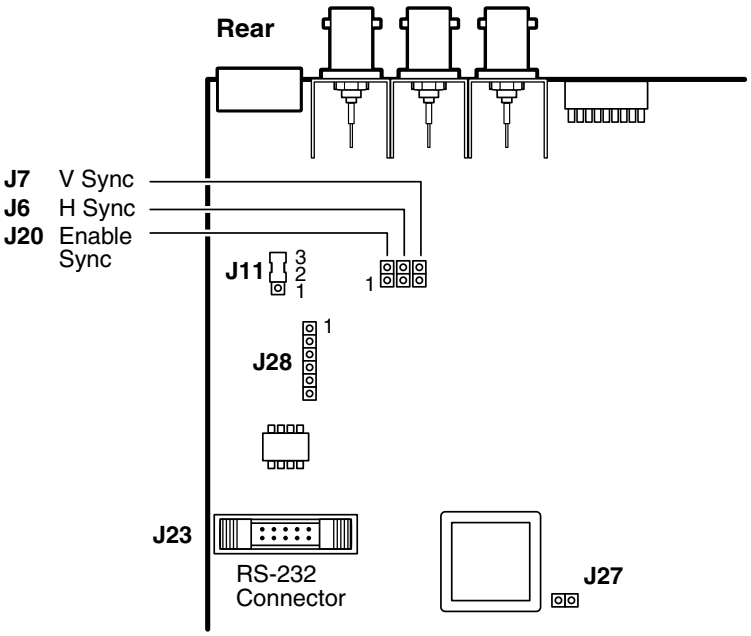


Figure 7. RGB 203 Rxi Internal Jumper Locations

4. Replace the cover and reinstall the screws.

Sync Polarity Jumpers

The interface is factory configured for the output sync to follow the input sync. To force positive or negative sync, reconfigure the jumpers as follows:

1. Locate jumper blocks J6, J7, and J20 on the printed circuit board (see figure 7).
2. **For sync follow (output sync polarity identical to the input sync)**, remove the jumper from block J20.
3. **For positive or negative sync**, install a jumper in block J20 and configure J6 and J7 as follows:
   a. Vertical sync — For positive sync, install a jumper in jumper block J7. For negative sync, remove the jumper from jumper block J7.
   b. Horizontal sync — For positive sync, install a jumper in jumper block J6. For negative sync, remove the jumper from jumper block J6.

Video Clamping Jumper

The interface is factory configured to clamp the sync timing to the back porch. To clamp the sync timing to the tip of the sync pulse, reconfigure the jumper as follows:

1. Locate J11 on the printed circuit board (see figure 7).
2. Set the jumper between pins 1 and 2 for sync timing clamped to the back porch.
   or
   Set the jumper between pins 2 and 3 for sync timing clamped to the sync tip.

Rear Panel DIP Switches

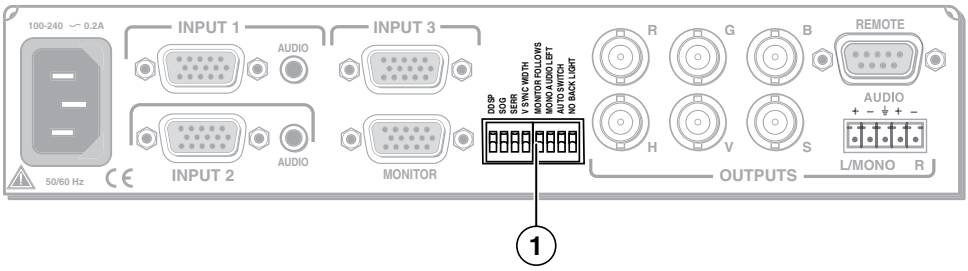


Figure 8. RGB 203 Rxi Rear Panel

NOTE: The default for all DIP switches is Off (down).

① **DIP switches —** This bank of DIP switches is used to configure the interface. The switches control:

1. **DDSP or ADSP —** DDSP disables all sync processing. This feature may be necessary for digital display devices such as LCD, DLP (digital light processor), and plasma displays. Use this option if the image is not displayed properly after other options, such as serration pulse and video termination changes, have been tried.

   On — The interface uses DDSP instead of ADSP. DDSP does not process the sync signal.

   Off — The interface performs sync processing operations, such as centering, with ADSP.

   NOTE: DDSP disables the horizontal and vertical centering controls.

2. **Sync On Green (SOG)**

   On — The interface outputs a composite sync signal on top of the green video signal (SOG) via the G output connector (RGsB).

   Off — The interface outputs separate horizontal and vertical sync (on the H and V connectors) and composite sync (on the S connector) for RGBHV or RGBS.

3. **Serration pulses**

   Many LCD and DLP projectors and plasma displays do not display properly if serration pulses are present in the sync signal. Flagging or bending at the top of the video image is a sign that the serration pulses should be removed.

   On — The interface outputs serration pulses in the vertical sync interval.

   Off — The interface does not output serration pulses.

4. **Vertical sync pulse width**

   For some digital displays, if:

   - no picture appears
   - the picture cuts in and out
   - the picture is scrambled

   try adjusting the output vertical sync pulse width or switching from ADSP to DDSP.

   On — The vertical sync pulse is narrow.

   Off — The vertical sync pulse is wide.

5. **Monitor follows**

   This switch controls the input assigned to the local monitor output and ID bit termination.

   On — The local monitor connector follows the input selection and ID bits 4 and 11 are tied to ground.

   Off — The local monitor output connector is locked to input 1 and ID bits 4 and 11 are unterminated.

6. **Mono audio left**

   On — Mono audio is output in the left channel only.

   Off — Output is normal stereo audio.

7. **Auto switching**

   On — The interface automatically switches to the highest numbered input with sync present.

   Off — The input must be switched manually.

   NOTE: Auto switch works for RGBHV and RGBS inputs only. Auto switch does not work for RGsB input.

8. **Backlight illumination**

   This switch controls illumination of the LCD backlight.

   On — The LCD backlight is off, except for three seconds at power-up.

   Off — The LCD backlight is on while a signal is present at the selected input.

Operation

This section of the guide provides information about RGB 203 Rxi **front panel controls and indicators** and **troubleshooting**.

Once the **video and audio cables have been connected**, the **power cords have been connected**, the **internal jumpers configured** (if necessary), and all devices powered on, the system is ready for operation. Select an input using the front panel toggle switch (⑨ in figure 9) or the remote control device. If the image does not appear on screen and sound is not audible, ensure that all devices are plugged in and receiving power. Adjust the **cabling** and **DIP switch** settings, if necessary. Select a different input to check for a picture and sound. If the problems persist, see **Troubleshooting** later in this chapter. If the troubleshooting tips do not help, call the Extron S3 Sales and Technical Support Hotline (see the back page of this guide for phone numbers).

Front Panel Controls and Indicators

Figure 9 shows the front panel of the RGB 203 Rxi with EDID Minder. The model with ADSP is identical except that it does not have the Record button and LED (⑤), the 2 position DIP switch (⑥), or the EDID Select rotary switch (⑦).

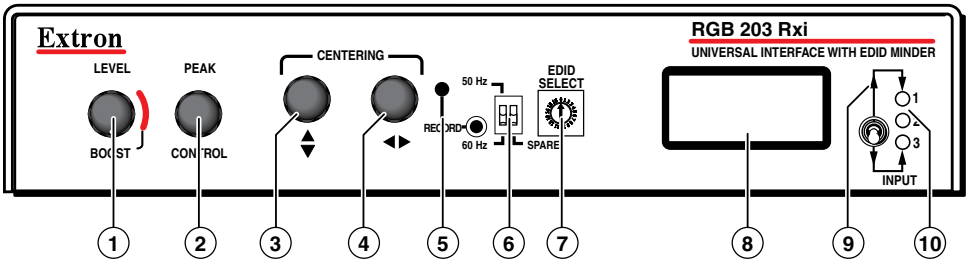
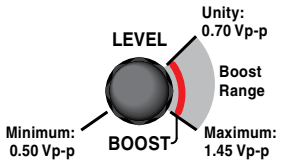


Figure 9. RGB 203 Rxi with EDID Minder Front Panel

Level and Peaking Controls

① **Level and Boost control —** The Level and Boost control alters the video output voltage to affect the brightness of the displayed image. Adjust the knob while viewing the displayed image to set the level/boost that provides the best picture quality.



For a typical (0.7 Vp-p) analog computer video input, adjust the output is as follows:

- At the minimum level setting (the counterclockwise limit of this control), the interface outputs video at 0.5 Vp-p.
- Unity level is 0.7 Vp-p, the same as the input signal. Set the control to just before the boost range (indicated by the red line on the interface, the shaded area on the illustration at right) to output unity level video.
- At the maximum level setting (the clockwise limit of this control), the interface outputs video at 1.45 Vp-p.

Select a setting in the boost range (0.7 volts and above) to compensate for the decrease in signal level that occurs when the signal passes through long cables.

Set the boost at 100% (the maximum level) for cable lengths over 500 feet for all computer signals of 15 kHz to 150 kHz.

② **Peaking (Peak) control —** Peaking affects the sharpness of a picture. Increased peaking can compensate for detail (mid- and high-frequency) loss from low bandwidth system components or capacitance in long cables. The minimum setting (at the counterclockwise limit) provides no peaking. The maximum setting (at the clockwise limit) provides 100% peaking. Adjust this control while viewing the displayed image to obtain the optimum picture sharpness.

Centering Controls

Many projectors store centering information in their own memories based on signal frequency. When a projector displays video from different input sources that have the same frequency, the image from one of the sources may not be centered. Using the centering controls of the interface eliminates that problem.

③ **Vertical centering (▲▼) —** While viewing the displayed image, rotate this control to move the image up or down on the screen. During centering adjustment, the LCD displays V-SHIFT (see the fourth bullet in the notes below).

④ **Horizontal centering (◄►) —** While viewing the displayed image, rotate this control to move the image to the right or left on the screen. During centering adjustment, the LCD displays H-SHIFT.

NOTES:

- DDSP disables the vertical and horizontal centering controls of the interface. If DIP switch 1 (DDSP) is set to On and either centering control is rotated, the LCD displays N/A DDSP ON.
- To use the centering controls of the display rather than the interface, set the DDSP DIP switch to On.
- Executive mode (see "Front Panel Security Lockout (Executive Mode)" in this chapter) disables the vertical and horizontal centering controls of the interface. If executive mode is on and either centering control is rotated, the LCD displays EXEC MODE ON.
- The centering controls have no mechanical limits to rotation. When the minimum or maximum limit of the control is reached, LCD indicates the horizontal or vertical shift limit has been reached and the picture stops moving on the screen.

Centering memory

Turning the centering control knobs not only moves the images, but it also stores the horizontal and vertical centering settings in separate memories for each selected input. The interface recalls the centering settings each time an input is selected. Centering adjustments only need to be set once for an application because the settings are saved even when the power is off.

EDID Minder Controls

Video sources communicate with the output device through the bi-directional Extended Display Identification Data (EDID) communication protocol. The output device then produces a signal with a resolution that is compatible with the display device.

The Extron EDID Minder feature maintains continuous EDID communication with the attached sources and ensures that the video sources power up correctly and maintain a proper video output, even if the display is off or a new monitor is connected to the output.

⑤ **Record button and LED —** The recessed Record button is used to record the EDID information provided by the current display device. An LED provides feedback about the current status when the Record button is used. The Record button has` three functions:

- **Record EDID information from a display device**
- **Erase user-recorded EDID information**
- **Restore firmware to factory default**

Record EDID information

To record EDID information, follow the following instructions:

1. Turn the EDID rotary switch to position 0 (see ⑦ on page 13).
2. Connect the display device to the local monitor output connector (see **"Rear Panel Connections"** on page 3) and power on the display.
3. Press and release the recessed Record button. The LED flashes red slowly three times while the EDID information is stored. When the recording is complete, the LED returns to a solid green. At that time, the display device can be switched off and disconnected.

   The EDID information is stored in memory and can be retrieved by setting the rotary switch to 0. The information is retained until it is overwritten or erased.

Erase user-recorded EDID information

To delete user-recorded EDID information, follow these instructions:

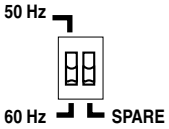
1. Turn the EDID rotary switch to position 0 (see ⑦ on page 13).
2. Press and hold down the Record button until the LED flashes red quickly five times. When the old values have been deleted, the LED returns to a solid green. After the reset, the user-recorded value is deleted.

Restore firmware to the factory default

To restore firmware to the factory-installed version, follow these instructions:

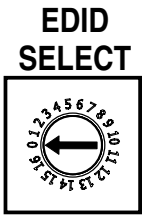
1. Disconnect power from the interface.
2. Press and hold the Record button while reconnecting the power. The LED flashes red slowly three times. After the factory default firmware is restored, the LED returns to solid green.

⑥ **2 position DIP switch —** The first DIP switch allows the user to choose the vertical frequency for the pre-programmed EDID, **positions 1 to E on the rotary switch**. The up position, which should be used in Europe, sets the vertical frequency to 50 Hz; the down position, which is the default setting, sets the vertical frequency to 60 Hz.



The second DIP switch is not used by this device.

⑦ **EDID Select rotary switch —** The 16 position rotary switch allows the user to select the EDID information that is provided to the input source.



- Postion 0 is for **user-recorded EDID information**.
- Positions 1-E are for **pre-programmed EDID information**.
- Position F passes through **EDID information from the local monitor output** to the local inputs.

NOTE: Configuring the rotary and DIP switches allows a user to select a pre-programmed EDID setting based on the native rate of a display (for example, 1024x768) and a desired frequency (50 or 60 Hz), but does not necessarily force a video source to output that rate.

Rotary switch settings and resolutions

Rotary Switch Position	Resolution
0	User-recorded EDID
1	800x600
2	1024x768 (default)
3	1280x720
4	1280x768
5	1280x800
6	1280x1024
7	1360x768
8	1366x768
9	1400x1050
A	1440x900
B	1600x1200
C	1680x1050
D	1920x1080
E	1920x1200
F	Local monitor pass-through

Using user-recorded EDID information

Position 0 uses the EDID information that has been saved by the user (see "**Record EDID Information**" on the page 12). To use this information:

1. Connect the RGB 203 Rxi to the source. Do not switch on the source device yet.
2. Set the rotary switch to 0.
3. Power on the source device.

NOTE: By default, setting 0 on the rotary switch has no EDID information saved to it. The user must save EDID to this location before it can be used.

Using pre-programmed EDID information

Positions 1 to E select from among 14 commonly used output resolutions that have been preset at the factory. Position 2 (1024x768) is the default setting, to ensure the unit works as shipped. See **the table on page 13** for the resolution associated with each position on the dial. To use one of the pre-defined EDID files:

1. Connect the RGB 203 Rxi to the source. Do not switch on the source device at this time.
2. Set the first DIP switch (⑥) to the required frequency (50 or 60 Hz).
3. Set the rotary switch to the required value (see the **table on page 13**).
4. Power on the source device.

Using pass-through EDID information from the local monitor

Position F passes through EDID information from a local monitor. To use this information:

1. Turn the EDID rotary switch to position F (see ⑦ on the previous page).
2. Connect the display device to the local monitor output connector (see **Rear Panel Connections** on page 3) and power on the display.
3. Power on the source device.

NOTE: EDID information must be available to the source device as it boots up. Before booting the source device, make sure the RGB 203 Rxi and the local monitor (if required) are powered on and the rotary dial is set to the correct value.

LCD Display

⑧ **LCD display —** The LCD displays the horizontal and vertical scanning rates of the input signal, and indicates the horizontal and vertical centering status and limits.

LCD screen backlight

The LCD lights for 15 seconds at power-up and it remains lit as long as an input signal is present at the selected input. To force the backlight to remain off at all times except at power-up, set **DIP switch 8** (No Backlight) to On (up) (see **Rear Panel DIP Switches** on page 8).

Scan rate indication

When the interface is powered on, the LCD lights for 15 seconds while it determines whether an input sync signal is present. If **DIP switch 8** is set to On (up), the LCD lights for three seconds only (see **Rear Panel DIP Switches** on page 8).

- If the interface does not detect an input sync signal, the LCD goes dark and displays `No Signal` until the interface receives an active sync signal.
- If the interface detects an input sync signal, the LCD displays the horizontal and vertical scan rates (sync frequencies) in the following format:

  ```
  Hxxx.xxk
  Vxxx.xHz
  ```

  The first line shows the horizontal rate in kiloHertz; the second line shows the vertical rate in Hertz.

Centering indications

While the vertical (▲▼) or horizontal (◄►) centering (shift) controls are being adjusted, the LCD displays `H-Shift` or `V-Shift`. That message remains on the LCD (in place of the scan rates) until the centering control has been inactive for 3 seconds. When a centering control reaches its minimum or maximum limit, the LCD displays `Min` or `Max` on the line below H-Shift or V-Shift.

Once the centering controls are no longer active, the centering settings are saved, and the LCD displays the current scan rates.

If **DIP switch 1** (DDSP) on the rear panel is set to On (up, see **Rear Panel DIP Switches** on page 8) and a centering control is rotated, the LCD displays `N/A DDSP On`, and the image does not shift on screen.

Input Selection

⑨ **Input selection switch —** The input selection toggle switch selects among inputs 1, 2, and 3 (see figure below). Each time you move the switch down, the interface switches to the next lower input (in the order that the inputs are listed on the front panel): input 1 → input 2, input 2 → input 3, input 3 → input 1. Moving the switch up selects the next higher input (in the order that the inputs are listed on the front panel). The switch returns to the center position automatically.

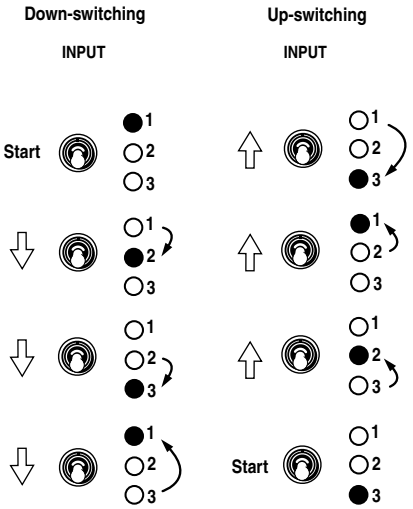


Figure 10. Input Selection Switch

A remote RS-232 control system or computer or a contact closure switch, connected via the rear panel Remote port, can also switch among the inputs.

NOTES: **Front panel security lockout** (see below) disables the Input selection switch. If executive mode is on and the input selection switch is operated, the LCD displays `Exec Mode On`.

The interface handles audio on inputs 1 and 2 only. When you select input 3, the audio output is muted.

⑩ **Input LED —** The lit LED indicates the selected input.

Front Panel Security Lockout (Executive Mode)

Front panel security lockout limits the operation of the interface from the front panel. When the interface is in executive mode, the front panel vertical centering (▲▼), horizontal centering (◄►), and input selection functions are disabled.

To toggle executive mode on or off, hold down the input selection switch for approximately five seconds. The LCD displays `Exec Mode On` to indicate the mode change. Release the switch. To toggle the executive mode off, hold down the Input selection switch again until the LCD displays `Exec Mode Off`.

Front panel security lockout does not affect the ability of the user to control the interface with **SIS commands** (see page 24) or the **RGB 201/203/580 Control Software** (see page 23).

Contact Closure Remote Control

The rear panel Remote connector also provides a way to select an input to the interface using a remote contact closure device. Contact closure control uses pins on the Remote connector that are not used by the RS-232 interface. The contact closure pin assignments are shown in the **table in figure 4**.

To select a different input number using a contact closure device, momentarily short the pin for the desired input number to logic ground (pin 5). To force one of the inputs to be always selected, leave the short to logic ground in place. The short overrides front panel input selections.

NOTE: Shorting the contact closure pin to override the front panel selection does not work if the interface is in auto switch mode with **DIP switch 7** on the rear panel set to On (up).

Troubleshooting

Turn on the input devices (computer, audio device) and output devices (projector, monitors, speakers). The image should now appear on the screen and sound should be audible.

If the Image Does Not Appear or There is No Sound

1. Ensure that all devices are plugged in.
2. Make sure that each device is receiving power. The front panel LCD of the interface lights if the interface is receiving power and an active sync signal.
3. Check the cabling and the audio connector wiring and grounding, and make adjustments as needed.
4. If using the model that has the EDID Minder, make sure the rotary dial and frequency DIP switch are set to the correct values. If these settings are changed, reboot the source device.
5. If using the model that has the EDID Minder, make sure the video output can support the resolution provided by the EDID Minder. If necessary reset the rotary dial and reboot the source device.
6. For digital display devices (including LCD, DLP and plasma devices), try changing the setting of **DIP switch 1** (DDSP).
7. To test the system setup and output, substitute a video test generator (VTG) for one of the computer inputs. To use a stand-alone VTG, disconnect the input and output devices, disconnect the power cord to the interface, replace the video source with a VTG, and restore AC power to the interface.
8. Call the Extron S3 Sales and Technical Support Hotline if needed (see the phone numbers listed on the back page of this guide).

If the Image is Not Displayed Correctly

1. If the output image looks too green, the **sync on green (SOG) DIP switch** (switch 2) may be set to On (up), and the display device may not be configured to handle SOG signals. Set the switch to Off (down).
2. If the picture bends or flags at the top of the screen, set the **serration pulse DIP switch** (switch 3) to Off (down).
3. For a display device that experiences intermittent glitches, try changing the DDSP setting using **DIP switch 1**.
4. If the picture "hangs off" the edges of the screen, adjust the **centering controls** (◄►, ▲▼).
5. If the edges of the image seem to exceed their boundaries or if thin lines and sharp edges look thick and fuzzy, try changing the **Level/Boost** or **Peak** Control settings. If the image is too bright, decrease the boost or peaking level.
6. If using the EDID Minder model, make sure the **rotary dial** and **two position (frequency) DIP switch** are set to the correct values. If these settings are changed, reboot the source device.
7. If using the EDID Minder model, make sure the video output can support the resolution provided by the EDID Minder. If necessary reset the **rotary dial** and reboot the source device.
8. If the image still does not display correctly, call the Extron S3 Sales and Technical Support Hotline (see the phone numbers listed on the back page of this guide).

If the Interface Does Not Respond to Controls

1. If you cannot adjust the **horizontal (◄► knob) or vertical (▲▼ knob) centering**, DDSP may be in use. Ensure that **DIP switch 1** (DDSP) on the rear panel is Off (down).
2. If you cannot **shift between inputs** (input selection switch) or **adjust the horizontal (◄► knob) or vertical (▲▼ knob) centering** from the front panel, but you can operate the interface via a remote control, the interface may be in front panel security lockout (executive mode). **Toggle executive mode off** (see Front Panel Security Lockout on page 16).

If the Image is Not Correctly Centered

If the picture from a new source computer does not seem correctly centered, the input position memory presets might require resetting. Reset the input position memories as follows:

1. Unplug the AC power cord from the interface.
2. Hold the input selection switch up while you plug in the AC power cord to the interface and wait approximately 5 seconds.
3. **Select the appropriate input** and **adjust the horizontal and vertical centering**.

If Auto Switching Does Not Work

Auto switch works for RGBHV and RGBS video inputs only. Auto switch does not work for RGsB video input.

NOTE: The selection of RGsB video output on rear panel **DIP switch 2** has no effect on auto switching.

If the Interface Does Not Record EDID

1. Make sure you have a display device connected to the local output.
2. Make sure the rotary switch is set to 0.
3. Make sure the LED flashes red slowly three times while the EDID information is stored and returns to a solid green when the recording is completed.
4. Check **Record EDID Information** on page 12 and **Using User-Recorded EDID Information** on page 14.

NOTE: EDID information must be available to the source device as it boots up. If you make changes to the EDID source by adjusting the rotary dial or the frequency DIP switch, you must reboot the source device.

If the Source Does Not Output the Correct Rate

NOTE: The resolution provided by the EDID source must be less than or equal to the resolution of the output device.

1. Make sure you have the correct resolution and frequency selected on the rotary dial and the DIP switch. After they have been reset, restart the source device.
2. If you are using a user-recorded EDID, make sure the rotary switch is set to 0 and make sure valid EDID information has been saved to position 0 (see **Using User-recorded EDID Information** on page 14).
3. If you are passing through EDID from a display connected to the local monitor output, make sure the rotary dial is set to position F and make sure the display is properly connected to the output connection.

Specifications

Video

Routing	3 x 1 router
Gain	0.5 V to 1.45 Vp-p
Bandwidth	300 MHz (-3 dB)
Rise time	1.5 ns
EDID	Supports emulation of custom or factory preset Extended Display Identification Data (EDID) tables (**EDID model only**)

Video input

Number/signal type	3 analog VGA-QXGA RGBHV, RGBS, RGsB, RsGsBs
Connectors	3 female 15-pin HD
Nominal level	0.7 Vp-p for RGB
Minimum/maximum levels	Analog: 0.3 V to 1.45 Vp-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	15 kHz to 150 kHz
Vertical frequency	40 Hz to 140 Hz
Return loss	<-30 dB @ 5 MHz
DC offset (max. allowable)	4 V

Video output

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	6 female BNC
Nominal level	0.7 Vp-p for RGB
Minimum/maximum levels	0.3 V to 1.30 Vp-p
Impedance	75 ohms
Return loss	-30 dB @ 5 MHz
DC offset	±5 mV maximum with input at 0 offset

Sync

Input type	RGBHV, RGBS, RGsB, RsGsBs
Output type	RGBHV, RGBS, RGsB
Input level	2 V to 5.5 Vp-p with ±0.2 VDC offset max.
Output level	TTL: 4V to 5V p-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max. propagation delay	85 ns
Max. rise/fall time	2 ns
Polarity	RGBHV: tracks polarity (or force negative sync via internal jumper) RGBS, RGsB: negative

Audio

Routing	2 x 1 stereo router
Gain	Unbalanced output: 0 dB; balanced output: +6 dB
Frequency response	20 Hz to 20 kHz, ±0.05 dB
THD + Noise	0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level

S/N	>90 dB at rated maximum output (17 dBu), balanced (unweighted)
Crosstalk	<-90 dB @ 1 kHz, fully loaded
Stereo channel separation	>90 dB @ 1 kHz

Audio input

Number/signal type	2 PC level stereo, unbalanced
Connectors	(2) 3.5 mm mini audio jacks (female)
Impedance	>10k ohms, unbalanced, DC coupled
Nominal level	-10 dBV (316 mVrms)
Maximum level	+8.5 dBu, (balanced or unbalanced) at 1% THD+N

NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

Audio output

Number/signal type	1 buffered stereo (2 channel) or mono, balanced/unbalanced
Connectors	(1) 3.5 mm captive screw connector, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1 dB channel to channel
Maximum level (Hi-Z)	>+14 dBu, balanced at 1% THD+N
Maximum level (600 ohm)	>+8.5 dBm, balanced at stated %THD+N

Control/remote — interface

Serial control port	RS-232, female 9-pin D connector (also used for contact closure)
Baud rate and protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configuration	2 = Tx, 3 = Rx, 5 = GND
Contact closure	1 female 9-pin D connector (also used for RS-232)
Contact closure pin configuration	1 = input 1, 4 = input 2, 5 = GND
Program control	Extron control/configuration program for Windows® Extron Simple Instruction Set™ (SIS™)

General

Input power	100 VAC to 240 VAC, 50-60 Hz, 18 watts, internal
MBC power jacks	9.0 VDC, 0.15 A
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +113 °F (0 to +45 °C) / 10% to 90%, noncondensing
Cooling	Convection, vents on left and right sides
Mounting	
Rack mount	Yes, with optional 1U rack shelf
Furniture mount	Yes, with optional under-desk mounting kit or through-desk mounting kit
Enclosure type	Metal
Enclosure dimensions	1.75" H x 8.75" W x 8.0" D (1U high, half rack wide) (4.4 cm H x 22.2 cm W x 20.3 cm D; with rear BNCs, D = 8.4" [21.3 cm]) (Depth excludes knobs.)
Product weight	2.2 lbs (1.0 kg)
Shipping weight	5 lbs (3 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

NOTE: Specifications are subject to change without notice.

Reference Information

This section provides information about included parts and optional accessories.

Included Parts

Description	Part Number
RGB 203 Rxi with ADSP or RGB 203 Rxi with EDID Minder	60-508-01 60-508-02
IEC cord (1)	
5-pole captive screw connector	100-457-01
Rubber feet (4)	
Disc with control software	
Tweeker	
RGB 203 Rxi Setup Guide	

Optional Accessories

Description	Part Number
RSU 129 1U, 9.5 inch deep, universal rack kit	60-190-01
RSB 129 1U, 9.5 inch deep basic rack shelf	60-604-02
MBU 125 under-desk mounting kit	70-077-01
MBD 129 through-desk mounting kit	70-077-02
VGA-A M-M MD 3 feet (90 cm) to 50 feet (15.2 m)	26-490-0x
MVGA-A M-F 3 feet (0.9 m)	26-565-02
MVGA-A M-M 3 feet (0.9 m) to 25 feet (7.6 m)	26-566-0x
Mac input adapter kit with audio	70-156-01
13W3 to 15 HD adapter kit with audio	70-157-03
MHR-5 BNC 3 feet (0.9 m) to 100 feet (30.4 m)	26-260-xx
MHR-5P BNC 3 feet (0.9 m) to 100 feet (30.4 m)	26-378-xx

Control Software

Control Software for Windows®

The RGB 203 Rxi can be **controlled by SIS™ commands** (see page 24) or by the control software, which is on the DVD that shipped with the unit. The control software is also available for download from the Extron website (**www.extron.com**).

Installing the Software

The control software is compatible with Windows 3.1, 3.11, 95/98, and above. To install the software, follow these instructions:

1. Insert the provided disc into the DVD drive of the computer. If the program does not start automatically, run `Launch.exe` from the DVD directory in Windows `My Computer`.
2. Select the **`Software`** tab.
3. Locate the RGB 201/203/580 control program program and click **`Install`**.
4. Follow the on screen instructions. By default the installation process places the file in a newly created `C:\Program Files\Extron\RGB201` folder.

Using the Software

To run the control program, follow these steps:

1. Locate the program in the `C:\Program Files\Extron\RGB201` folder, or click on the desktop icon (see figure at right). The Comm menu appears on the screen.

Rgb201.exe

2. Select the comm port that is connected to the interface. The software checks for the interface at that port and reads its configuration. The control program window appears.

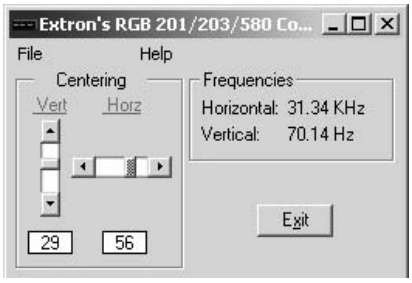


Figure 11. Control Program Screen for the RGB 203 Rxi

3. Adjust the vertical and horizontal centering, as required.

Using the Help System

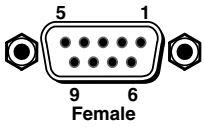
You can access the help program by double-clicking on the RGB 201 Help icon in the Extron Electronics program group, clicking **`Help`** on the task bar from within the RGB 201/203/580 Control Program, or pressing the **`F1 key`** from within the switcher control program.

SIS Commands

This section shows how to control the RGB 203 Rxi with Extron Simple Instruction Set (SIS) commands. The RS-232 protocol is 9600 baud, 1 stop bit, no parity, and no flow control.

Connecting the Control Computer

The rear panel Remote connector on the interface can be connected to the serial port of a computer or control system, or to a remote contact closure device. Remote communications with the interface are via the SIS commands, the Extron control program (see the previous section), or contact closure.



Pin	RS-232	Contact closure	Function
1	—	In#1	Input #1
2	TX	—	Transmit data (-)
3	RX	—	Receive data (+)
4	—	In#2	Input #2
5	Gnd	Gnd	Signal ground
6	—	In#3	Input #3
7	—	—	—
8	—	—	—
9	—	—	—

Simple Instruction Set (SIS) Control

Host-to-Interface Communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When a command is valid, the interface executes the command and sends a response to the host device. All responses from the interface to the host end with a carriage return and a line feed (CR/LF = ↵), which signals the end of the response character string. A string is one or more characters.

Interface-initiated Messages

When a local event such as a front panel or contact closure selection or adjustment takes place, the interface sends a message to the host. No response is required from the host. The interface-initiated messages are listed here (underlined).

The interface displays the copyright message when it first powers on. *Vx.xx* is the firmware version number.

(C) Copyright 2002, Extron Electronics, RGB 203 Rxi, Vx.xx ↵

When a change is made via a front panel control or another operation occurs that must be written to a new memory block, the interface sends the reconfiguration message:

RECONFIG ↵

No response is required from the RS-232 host, but the host may request a new status listing via the request information command (I/i) (see the Command and Response table in this chapter).

Error Responses

When the interface receives a valid SIS command, it executes the command and sends a response to the host device. If the interface is unable to execute the command because the command is invalid or it contains invalid parameters, it returns an error response to the host.

The error response codes and their descriptions are as follows:

`E01` – `Invalid input number` (the number is too large or small)

`E06` – `Invalid input selection`

`E10` – `Invalid command`

`E13` – `Invalid value` (the number is out of range/too large)

Timeout

Pauses of 10 seconds or longer between command ASCII characters result in a timeout. The command operation is aborted with no other indication.

Using the Command and Response Table

The command/response table is on page 24. Lower case letters are allowed in the command field only as indicated. Symbols are used throughout the table to represent variables in the command/response fields. Command and response examples are shown throughout the table. The ASCII to HEX conversion table, below, is for use with the command/response table.

Symbol definitions

↵	=	CR/LF (carriage return/line feed) (0x0D 0A)
•	=	space
X1	=	Input number: 1, 2, or 3
X2	=	Shift control range: -127 to +127
X3	=	Controller firmware version (listed to two decimal places, "x.xx")
X4	=	xxx.xx: frequency in Hz or kHz
X5	=	Input selected: 1 - 3 (for input 1 through 3)
X6	=	Part number

ASCII to HEX Conversion Table

Space	20	!	21	"	22	#	23	$	24	%	25	&	26	'	27	(	28	)	29	*	2A	+	2B
,	2C	-	2D	.	2E	/	2F	0	30	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F	@	40	A	41	B	42	C	43
D	44	E	45	F	46	G	47	H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
P	50	Q	51	R	52	S	53	T	54	U	55	V	56	W	57	X	58	Y	59	Z	5A	[	5B
\	5C	]	5D	^	5E	_	5F	`	60	a	61	b	62	c	63	d	64	e	65	f	66	g	67
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F	p	70	q	71	r	72	s	73
t	74	u	75	v	76	w	77	x	78	y	79	z	7A	{	7B	|	7C	}	7D	~	7E	DEL	7F
Esc	1B	CR	0D	LF	0A																		

Command and Response Table for SIS Commands

Command	ASCII Command (host to unit)	Response (unit to host)	Additional Description
Input selection			
Select input *Example:*	X1! 3!	Chn X1 ↵ Chn3↵	Select input X1. X1 = 1, 2, or 3. Select input 3.
Horizontal shift			
Set horizontal shift *Example:*	X2H 28H	Hph X2 ↵ Hph+028↵	Set horizontal shift value to X2. Shift control ranges from -127 to +127. Set horizontal shift value to +28.
Increment horizontal shift value	+H	Hph X2 ↵	Increases horizontal shift value by 1.
Decrement horizontal shift value	-H	Hph X2 ↵	Decreases horizontal shift value by 1.
Vertical shift			
Set vertical shift ***Example:***	X2/ -5/	Vph X2 ↵ Vph-005↵	Set vertical shift value to X2. Set vertical shift value to -5.
Increment vertical shift value	+/	Vph X2 ↵	Increases vertical shift value by 1.
Decrement vertical shift value	-/	Vph X2 ↵	Decreases vertical shift value by 1.
View information, part number, and firmware requests			
Information request *Example:*	I	Chn X1 •Hph X2 •Vph X2 • Hrt X4 •Vrt X4 ↵ Chn3•Hph+028•Vph-005• Hrt48.400•Vrt60.000	View the input selection X1, horizontal and vertical shift values X2, and horizontal and vertical frequencies X4. Input 3, horizontal shift +28, vertical shift -5, horizontal frequency 48.4 kHz, vertical frequency 60 Hz.
Request for a part number	N	X6 ↵	View the part number X6. X6 = 60-509-01 for RGB 203 Rxi with ADSP 60-509-02 for RGB 203 Rxi with EDID
Query firmware version	Q	X3 ↵	View the currently installed version of the firmware X3.

Mounting

This section shows how to mount the RGB 203 Rxi. Options include:

- **Tabletop mounting**
- **Under-desk mounting**
- **Through-desk mounting**
- **Rack mounting**

Follow the appropriate procedures in this section and in the instructions that come with the mounting kits. These instructions can also be downloaded from the Extron website (**www.extron.com**).

Tabletop Placement

For tabletop or desktop placement only, install the self-adhesive rubber feet/pads (provided) onto the four corners of the bottom of the interface enclosure.

Under-desk Mounting

Mount the unit under a desk or podium, using the optional Extron MBU 125 under-desk mounting kit (part number **70-077-01**). Follow the instructions provided with the MBU 125 kit.

Through-desk Mounting

Mount the unit through a desk or podium using the optional Extron MBD 129 through-desk mounting kit (part number **70-077-02**). Follow the instructions provided with the MBD 129 kit.

Rack Mounting

UL Guidelines for Rack Mounting

The following Underwriters Laboratories (UL) guidelines are relevant to the safe installation of these products in a rack:

1. **Elevated operating ambient temperature —** If the unit is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the equipment in an environment compatible with the maximum ambient temperature (Tma: +113 °F, +45 °C) specified by Extron.
2. **Reduced air flow —** Install the equipment in the rack so that the equipment gets adequate air flow for safe operation.
3. **Mechanical loading —** Mount the equipment in the rack so that uneven mechanical loading does not create a hazardous condition.
4. **Circuit overloading —** Connect the equipment to the supply circuit and consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Give appropriate consideration to the equipment nameplate ratings when addressing this concern.
5. **Reliable earthing (grounding) —** Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (such as the use of power strips).

Rack Mounting Procedure

The unit can be mounted on either of these optional rack systems:

RSU 129 — 9.5 inch deep 1U universal rack shelf kit (part number **60-190-01**)

RSB 129 — 9.5 inch deep 1U basic rack shelf (part number **60-604-02**)

To mount the interface on a rack shelf, follow the instructions provided with the shelf accessories.

Extron® Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1001 East Ball Road
Anaheim, CA 92805
U.S.A.

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe, Africa, and the Middle East:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:
Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:
Extron Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:
Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: (714) 491-1500 **Europe**: +31.33.453.4040
Asia: +65.6383.4400 **Japan**: +81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Extron **USA - West** Headquarters	Extron **USA - East**	Extron **Europe**	Extron **Asia**	Extron **Japan**	Extron **China**	Extron **Middle East**
+800.633.9876 Inside USA/Canada Only	**+800.633.9876** Inside USA/Canada Only	**+800.3987.6673** Inside Europe Only	**+800.7339.8766** Inside Asia Only	**+81.3.3511.7655**	**+400.883.1568** Inside China Only	**+971.4.2991800**
+1.714.491.1500 **+1.714.491.1517** FAX	**+1.919.863.1794** **+1.919.863.1797** FAX	**+31.33.453.4040** **+31.33.453.4050** FAX	**+65.6383.4400** **+65.6383.4664** FAX	**+81.3.3511.7656** FAX	**+86.21.3760.1568** **+86.21.3760.1566** FAX	**+971.4.2991880** FAX