Extron® Electronics

INTERFACING, SWITCHING AND DISTRIBUTION

User's Manual

GSS 100

Graphic Still Store

68-974-01 **Rev. C**
10 06

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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's 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.

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.

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.

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.

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 manufacturer's instructions.

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.

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 Öbjekten 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.

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.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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

Extron's 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, USA

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

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

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

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 non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

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.

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。

Quick Start Guide — GSS 100

Install and operate the GSS 100 Graphic Still Store as follows:

Step 1

Turn all of the equipment off or disconnect it from the power source.

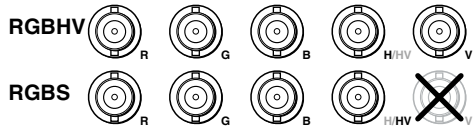
Step 2

Mount the GSS in a rack or furniture, or place it on a desktop.

Step 3

Connect video output cables for RGBHV or RGBS video.

If desired, **connect a pass-through** RGBHV or RGBS video input.



Step 4

Connect an RJ-45 cable between the GSS's LAN port and a computer or a computer network.

Step 5

If desired, connect the GSS to a control system or control computer via the GSS's RS-232 port.

Step 6

Apply power to the GSS and the computer and/or computer network.

Step 7

Use the embedded GSS web pages to load *.bmp and/or *.jpg image(s) into the GSS. See chapter 5, *HTML Control and IPL File Manager*.

Step 8

Select a stored image to display as follows:

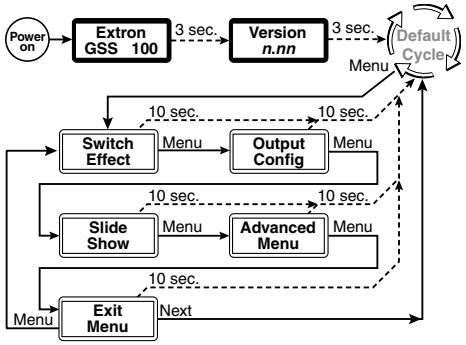
a. Press the front panel Image button.

b. Rotate the front panel Adjust/Select knob until the file name of the desired stored image is shown in the LCD display.

c. Press the front panel Take button.

Quick Start Guide — GSS 100, cont'd

Using the Menu System — Use the Menu and Next buttons to navigate through the menu system. Use the Adjust/Select knob to make changes.



Switch Effect — Select the cut or dissolve effect for the transition between images. Select the dissolve duration, between 0.0 and 5.0 seconds.

Output Configuration — Select the resolution and refresh rate, the sync format, the sync polarity, and the RGB delay, between 0.0 and 5.0 seconds.

Slide Show — Set the duration of each slide's display in the slide show, between 0 and 300 seconds, and select whether the pass-through input is included in the slide show.

Advanced Menu — Turn the slide show and autoswitch mode on and off; display the name, MAC address, and the temperature; and set the baud rate and IP address.

Exit Menu — Return to the default display cycle by pressing the Next button.

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Chapter One

Introduction

About the GSS 100 Graphic Still Store

Features

About the GSS 100 Graphic Still Store

The Extron GSS 100 is a portable graphic still store with 16 MB of memory, into which you can load up to 6 XGA (1024 x 768) bitmap images (*.bmp) or 32 or more (depending on the compression rate) XGA jpeg (*.jpg) still images. The GSS can then output them in an RGB video format. The GSS provides a pass-through RGB video input, in addition to the stored images, and allows you to switch the output between the input and one of the stored images. This allows you to display a still image of your own choosing, such as a logo, text, or a landscape, during meeting breaks or while you load or make last minute edits to a presentation on a laptop computer.

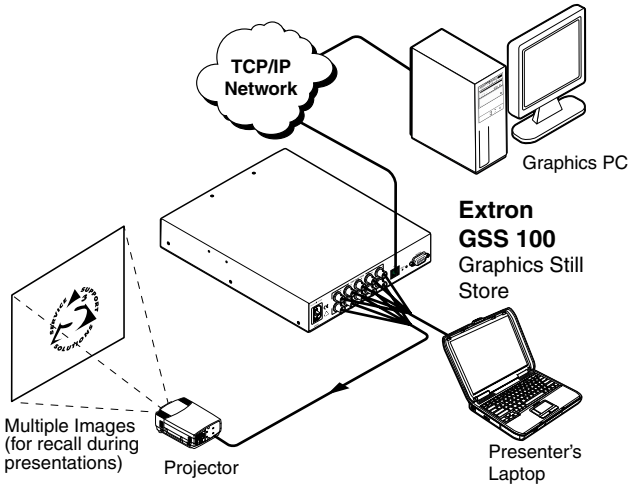


Figure 1-1 — Typical GSS 100 application

User-selected images, including the test patterns, can be uploaded to the GSS via its Ethernet port using the GSS's built-in HTML pages. The pass-through RGB input and the output are via female BNC connectors.

The GSS provides 16 MBytes of RAM for storage, providing room for up to 17 uploaded bitmap images. The number of images that the GSS can accommodate depends on the resolution of the images. The table on the next page shows the number of *.bmp images that the GSS can accommodate, based on several common resolutions.

Approximate image space for *.bmp files

Resolution	640x480	800x600	1024x768
Size	900 kB	1400 kB	2400 kB
Image space	17	11	6
Resolution	**1280x1024**	**1400x1050**	
Size	4000 kB	4400 kB	
Image space	4	3	

NOTE

*Because of the variable compression schemes for *.jpg images, there is no reliable method to calculate the number of *.jpg images that the GSS can hold.*

*Progressive *.jpg images are not supported.*

Bitmap (.bmp) images must be formatted as 24-bit RGB.*

This still store is housed in a rack-mountable, 1U high, half rack-width metal enclosure. The internal 100 VAC to 240 VAC, 50/60 Hz, 15-watt, auto switchable power supply provides worldwide power compatibility.

Features

- **16 MB of internal memory storage** — Sufficient for 6 XGA resolution (1024 x 768) *.bmp graphics, or 32 or more *.jpg images at XGA resolution, depending on the compression rate.
- Input pass-through mode
- Cut or dissolve switch effect between stored images
- Slide show effect automatically cycles through images
- **Auto-switch mode** — Automatically switches to the selected stored image or a slide show when sync is lost on the pass-through input.
- Rack and under-desk mountable
- Worldwide internal power supply

Chapter Two

Installation

Mounting the GSS

Rear Panel Connections

Mounting the GSS

Tabletop/desktop placement

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

Rack mounting

UL requirements

The following Underwriters Laboratories (UL) requirements pertain to the installation of the GSS into or onto a rack (figure 2-1).

1. **Elevated operating ambient** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
2. **Reduced air flow** — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
3. **Mechanical loading** — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
4. **Circuit overloading** — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
5. **Reliable earthing (grounding)** — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (such as the use of power strips).

Installation instructions

1. If feet were installed on the bottom of the GSS 100, remove them.
2. Place the GSS 100 on one half of the 1U (one unit high, one unit wide) rack shelf (part #**60-190-01**). Align the front of the GSS with the front of the shelf, and align the threaded holes on the bottom of the GSS with the holes in the rack shelf.
3. Attach the GSS to the rack shelf with the two provided 4-40 x 3/16" machine screws. Insert the screws from the underside of the shelf, and securely fasten them into diagonally-opposite corners (figure 2-1).

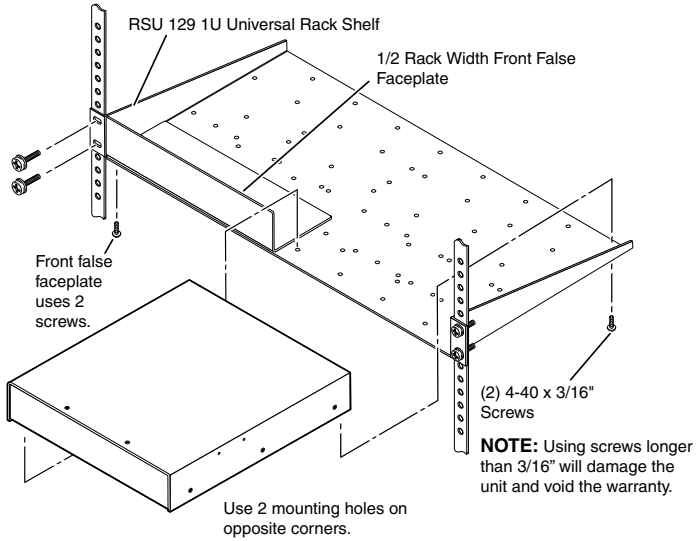


Figure 2-1 — Rack mounting the GSS 100

4. Attach the false front panel (provided with the rack shelf) to the unoccupied side of the rack (as shown above), or install a second half-rack-width device on that side by repeating steps **1** – **3**.
5. Attach the rack shelf to the rack using four 10-32 x ¾" bolts (provided with the shelf). Insert the bolts through the provided #10 beveled washers, then through the holes in the rack ears and rack (figure 2-1).

Rear Panel Connections

All connectors are on the rear panel (figure 2-2).

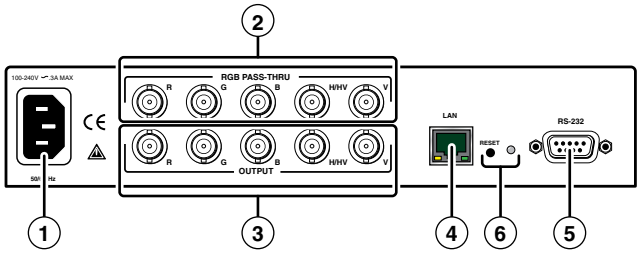


Figure 2-2 — GSS 100 graphic still store rear panel

Power connection

① **AC power connector —** Plug a standard IEC power cord into this connector to connect the GSS to a 100 VAC to 240 VAC, 50 or 60 Hz power source.

Signal connections

② **RGB Pass-through connectors** — Connect a high resolution or computer input (VGA, SVGA, XGA, SXGA, or UXGA) to these female, BNC connectors.

③ **Output connectors** — Connect an RGB video display or other device to these female BNC connectors. Figure 2-3 shows how to connect the RGB video format for each configuration.

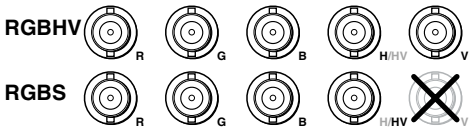


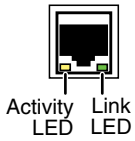
Figure 2-3 — Video output connection format

NOTE *The still image output format (RGBHV or RGBS) must be configured using the front panel controls or a Simple Instruction Set™ (SIS™) command. The output format applies only to the output of still images stored in the GSS; the RGB Pass-through video is output exactly as it is input.*

Remote connections

④ **LAN port** — Connect the GSS to a PC or to an Ethernet LAN, via this RJ-45 connector. You can use the GSS's embedded HTML pages to upload still images from the PC to the GSS and to control the GSS. You can also use a PC to control the GSS with SIS commands.

Ethernet connection indicators — The Link and Activity LEDs indicate the status of the Ethernet connection. The Link LED indicates that the GSS is properly connected to an Ethernet LAN. This LED should light steadily. The Activity LED indicates transmission of data packets on the RJ-45 connector. This LED flickers as the GSS communicates.



Cabling and RJ-45 connector wiring

It is vital that your Ethernet cables be the correct cables, and that they be properly terminated with the correct pinout. Ethernet links use Category (CAT) 5e or CAT 6, unshielded twisted pair (UTP) or shielded twisted pair (STP) cables, terminated with RJ-45 connectors. Ethernet cables are limited to a length of 328' (100 m).

NOTE *Do not use standard telephone cables. Telephone cables will not support Ethernet or Fast Ethernet.*

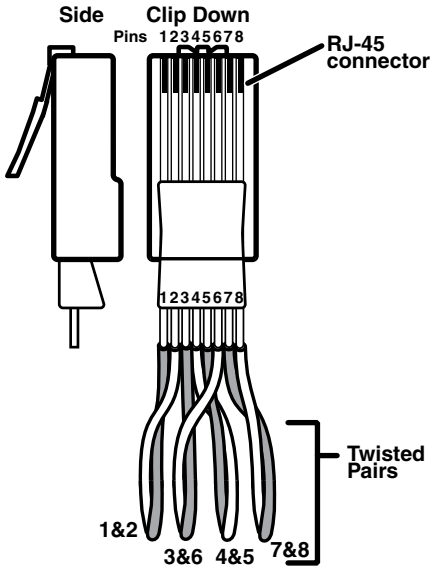
Do not stretch or bend cables. Transmission errors can occur.

The cable used depends on your network speed. The GSS supports both 10 MBps (10Base-T — Ethernet) and 100 MBps (100Base-T — Fast Ethernet), half-duplex and full-duplex Ethernet connections.

- 10Base-T Ethernet requires CAT 3 UTP or STP cable at minimum.
- 100Base-T Fast Ethernet requires CAT 5e UTP or STP cable at minimum.

The Ethernet cable can be terminated as a straight-through cable or a crossover cable and must be properly terminated for your application (figure 2-4).

- **Crossover cable** — Direct connection between the computer and the GSS 100.
- **Patch (straight) cable** — Connection of the GSS 100 to an Ethernet LAN.



Patch (straight) cable

Side 1		Side 2	
Pin	Wire color	Pin	Wire color
1	White-orange	1	White-orange
2	Orange	2	Orange
3	White-green	3	White-green
4	Blue	4	Blue
5	White-blue	5	White-blue
6	Green	6	Green
7	White-brown	7	White-brown
8	Brown	8	Brown

Crossover cable

Side 1		Side 2	
Pin	Wire color	Pin	Wire color
1	White-orange	1	White-green
2	Orange	2	Green
3	White-green	3	White-orange
4	Blue	4	Blue
5	White-blue	5	White-blue
6	Green	6	Orange
7	White-brown	7	White-brown
8	Brown	8	Brown

Figure 2-4 — RJ-45 connector and pinout tables

(5) **RS-232 port** — Connect a computer or control system to this 9-pin D connector to allow remote control using the SIS commands (figure 2-5). See chapter 4, *SIS™ Control*, for details.

PIN	RS-232	Function
1	—	None
2	TX	Transmit data
3	RX	Receive data
4	—	None
5	Gnd	Ground
6	—	None
7	—	None
8	—	None
9	—	None

Figure 2-5 — RS-232 connector pinout

Reset button

(6) **Reset button** — The Reset button initiates three levels of reset to the GSS. Press and hold the button while the GSS is running or while you power up the GSS for different reset levels.

- **Events (mode 3) reset** — Hold the Reset button for approximately 3 seconds (the Reset LED blinks once), then release it and push it again to toggle events monitoring on and off.
- **IP settings (mode 4) reset** — Hold the Reset button for approximately 6 seconds (the Reset LED blinks twice), then release it and push it again to reset the GSS's IP functions.

NOTE *The IP settings reset does not replace any user-installed firmware.*

- **Absolute (mode 5) reset** — Hold the Reset button for approximately 9 seconds (the Reset LED blinks three times), then release it and push it again to restore the GSS to the default factory conditions.

NOTE *Image files, IP settings, and user settings are all cleared and reset to the factory default.*

Chapter Three

Operation

Front Panel Controls and Indicators

Front Panel Operations

Front Panel Controls and Indicators

Figure 3-1 shows the controls and indicators on the front panel of the GSS 100. See *Front Panel Operations* for details on using these controls and indicators.

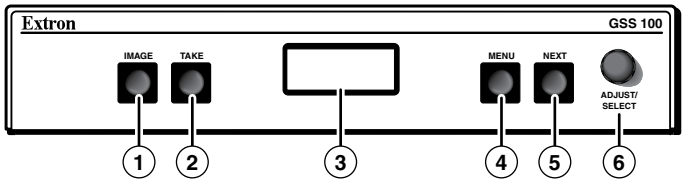


Figure 3-1 — GSS 100 front panel

① **Image button** — Press this button to activate the menu on the LCD display (③) that allows you to select between the pass-through input and one of the stored images.

② **Take button** — Press this button to select either the pass-through input or one of the stored images.

③ **LCD display** — The 8-column by 2-line LCD screen displays output and configuration menus and status information.

④ **Menu button** — Press the Menu button to enter and move through the main menu system in the GSS.

⑤ **Next button** — Press the Next button to step through the submenus in the GSS menu system.

⑥ **Adjust/Select knob** — Rotate the Adjust/Select knob to change settings when it is used in conjunction with the Image and Take buttons or the Menu and Next buttons.

Front Panel Operations

Plug in all system components and turn on the input device (such as a desktop or laptop computers) and the output monitor. Use the LAN port to upload one or more still images to the GSS. Select either the pass-through input or one of the stored still images to output (see *Selecting an image to display)*. The image should appear on the monitor connected to the output.

Power-on indications

Power is applied when the power cord is connected to an AC source. When AC power is applied, the GSS performs a self-test that shows the model name and the firmware version in the LCD display. After approximately 3 seconds, the LCD reverts to its default display cycle, alternating among four displays that show the model name, the currently displayed image (the pass-through input or one of the previously loaded images by its file name), the output resolution (of a stored image only; the pass-through input is output exactly as it is input), and the unit's IP address (figure 3-2).

The current settings are saved in nonvolatile memory. When power is applied, the latest configuration is retrieved.

NOTE *On figure 3-2 and all other flowcharts in this chapter, dashed lines indicate screen changes that are the result of a timeout function.*

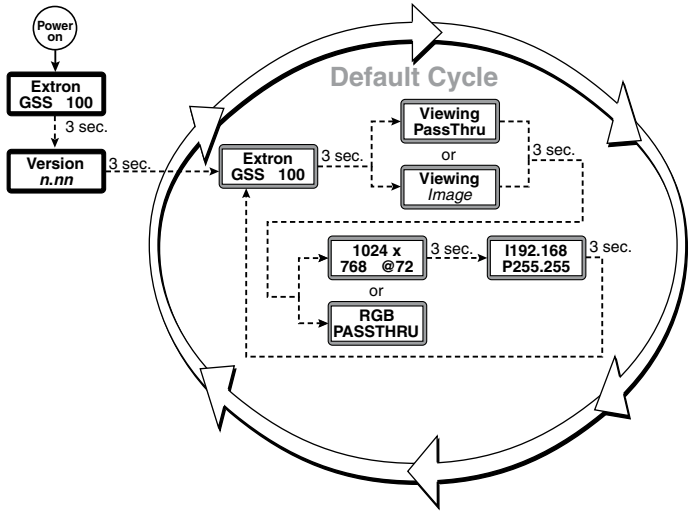


Figure 3-2 — LCD power-on displays and default display cycle

NOTE *If the displayed file name is too large (more than eight characters, including the file extension) for the LCD, the LCD shifts the file name to the left when it displays the name in the default display cycle (figure 3-3).*

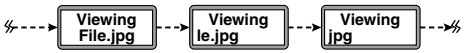


Figure 3-3 — File name indication

Selecting an image to display

NOTE *Valid image files must be uploaded to the GSS for them to be available for output. See chapter 5,* HTML Control and IPL File Manager, *to upload images.*

*The only valid file formats for stored images are *.bmp and *.jpg.*

Valid file names are up to 240 alphanumeric characters with no spaces.

*Progressive *.jpg images are not supported.*

Bitmap (.bmp) images must be formatted as 24-bit RGB.*

Select an image to display as follows:

1. Press and release the Image button (figure 3-4).

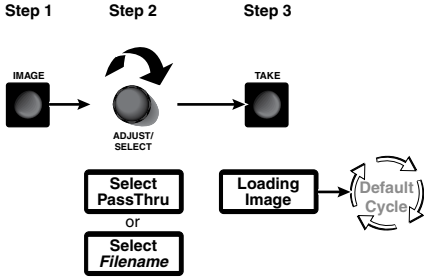


Figure 3-4 — Selecting an image

2. Rotate the Adjust/Select knob to select either PassThru or one of the previously loaded images by file name.

3. Press and release the Take button. The LCD shows **Loading Image** and then returns to the default display cycle once the image is loaded.

Muting the video output

To toggle the video output mute on and off, press and **hold** the Take button for approximately 3 seconds (figure 3-5). When the video output is muted (video is not output), an asterisk (*) appears and blinks in the LCD default display cycle, in either the output resolution display or the RGB pass-thru display. When the video output is unmuted (video is output), the asterisk is not present.

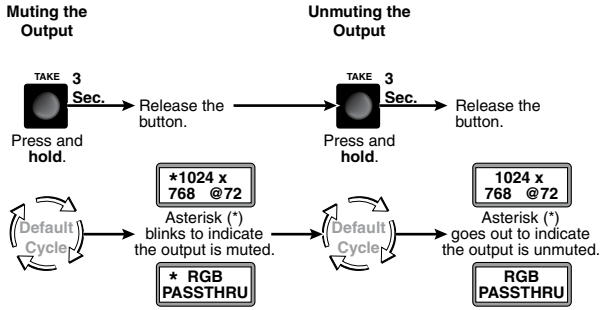


Figure 3-5 — Muting and unmuting the output

Menu system overview

Figure 3-6 shows a flowchart of the main menus in the menu system.

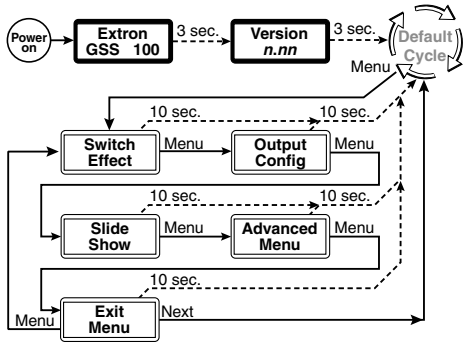


Figure 3-6 — Menu system flowchart

Menu button — Press the Menu button to activate the menu system and to scroll through the five main menus.

Next button — Press the Next button to move between the submenus of a selected main menu, to activate one for viewing or configuration, and to save a selection.

Adjust/Select knob — When in a submenu, rotate the Adjust/Select knob to scroll through the submenu options and select a setting. See the flowcharts in this chapter and specific sections for explanations of knob adjustments.

NOTE *To return to the default screens, let the GSS remain idle for 10 seconds until the selected screen times out, or press the Menu button until the Exit Menu appears, then press the Next button.*

NOTE *From any menu or submenu, after 10 seconds of inactivity, the GSS saves all adjustment settings and times out to the default LCD display cycle.*

The GSS saves settings to its non-volatile memory every three minutes. Ensure that you wait at least three minutes after making any changes or those changes may be lost.

Switch Effect menu

Figure 3-7 is a flowchart that shows an overview of the Switch Effect menu and the available settings.

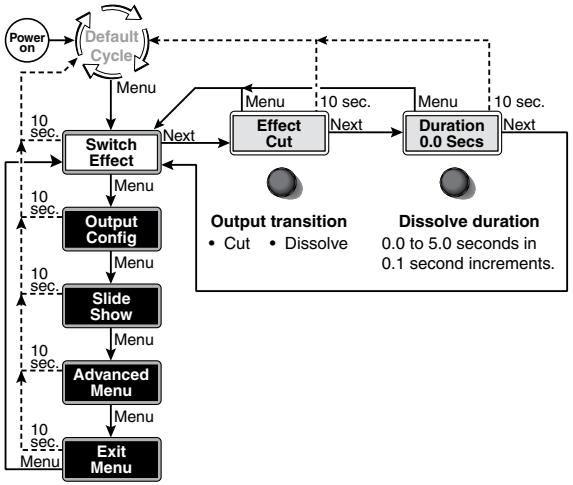


Figure 3-7 — Switch Effect menu flowchart

Effect submenu

Rotate the Adjust/Select knob while in the Effect submenu to cut (immediate switch) and dissolve (the image dissolves from old to new). Cut is the default selection.

Duration submenu

Rotate the Adjust/Select knob while in the Duration submenu to select the duration for the dissolve effect (if it is selected), between 0.0 and 5.0 seconds in 0.1 second increments. The default duration is 1.0 seconds.

Output Configuration menu

Figure 3-8 is a flowchart that shows an overview of the Output Configuration menu and the available settings.

NOTE *The Output Configuration menu settings apply only to the output of still images stored in the GSS; the RGB Pass-through video is output exactly as it is input.*

Resolution submenu

Rotate the Adjust/Select knob while in the Resolution submenu to select the resolution of the stored image output. 1024 x 768 at 60 Hz is the default resolution.

NOTE *To view an uncropped full screen image at 1080p or 1080i, the image resolution must be 1440 x 1080.*

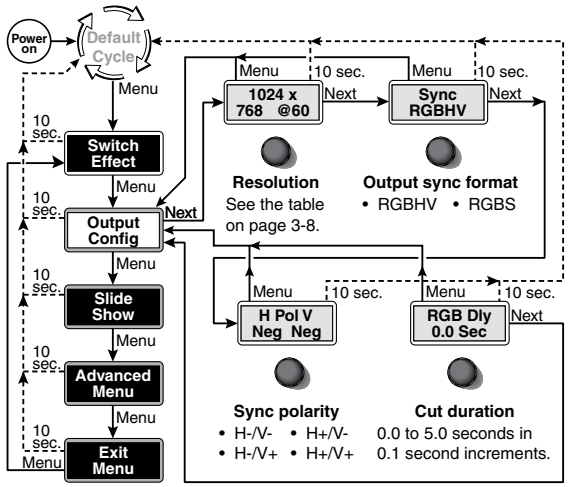


Figure 3-8 — Output Configuration submenu

Resolution	50 Hz	60 Hz	72 Hz	96 Hz	100 Hz	120 Hz
640 x 480	•	•	•	•	•	•
800 x 600	•	•	•	•	•	•
852 x 480	•	•	•	•	•	
1024 x 768	•	•	•	•		
1024 x 852	•	•	•	•		
1024 x 1024	•	•	•			
1280 x 768	•	•				
1280 x 1024	•	•				
1360 x 765	•	•				
1365 x 768	•	•				
1366 x 768	•	•				
1365 x 1024	•	•				
1400 x 1050	•	•				
480p	•	•				
576p	•	•				
720p	•	•				
1080i	•	•				
1080p	•	•				

Sync format submenu

Rotate the Adjust/Select knob while in the Sync format submenu to select the sync format for the still image output. RGBHV is the default selection.

Sync polarity submenu

Rotate the Adjust/Select knob while in the Sync polarity submenu to select the sync polarity (positive and negative) for the still image output. Horizontal and vertical negative sync are the default selection.

RGB Delay submenu

The GSS can briefly blank the RGB (video) output while it switches between the stored image and the pass-through image. This allows the change in display to appear without a glitch. RGB delay is also known as Triple-Action Switching or video mute switching.

Rotate the Adjust/Select knob while in the RGB Delay submenu to set the delay between 0 to 5 seconds, in 0.1-second increments. No delay (0.0 seconds) is the default setting.

Slide Show menu

Figure 3-9 is a flowchart that shows an overview of the Slide Show menu and the available settings.

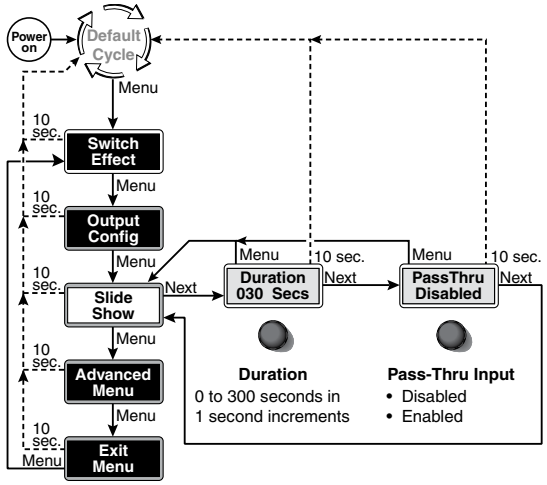


Figure 3-9 — Slide Show submenu flowchart

Duration submenu

Rotate the Adjust/Select knob while in the Duration submenu to set the duration of each displayed image in the slide show between 0 and 300 seconds, in 1-second increments. The default duration is 30 seconds.

NOTE *The actual time that an image is displayed may vary, based on the decoding time of the next image in the slide show.*

Pass-Thru submenu

Rotate the Adjust/Select knob while in the Pass-Thru submenu to enable or disable the inclusion of the pass-through input as part of the slide show. The pass-through input is disabled from being part of the slide show by default.

Advanced menu

Figure 3-10 is a flowchart that shows an overview of the Advanced menu and the available settings.

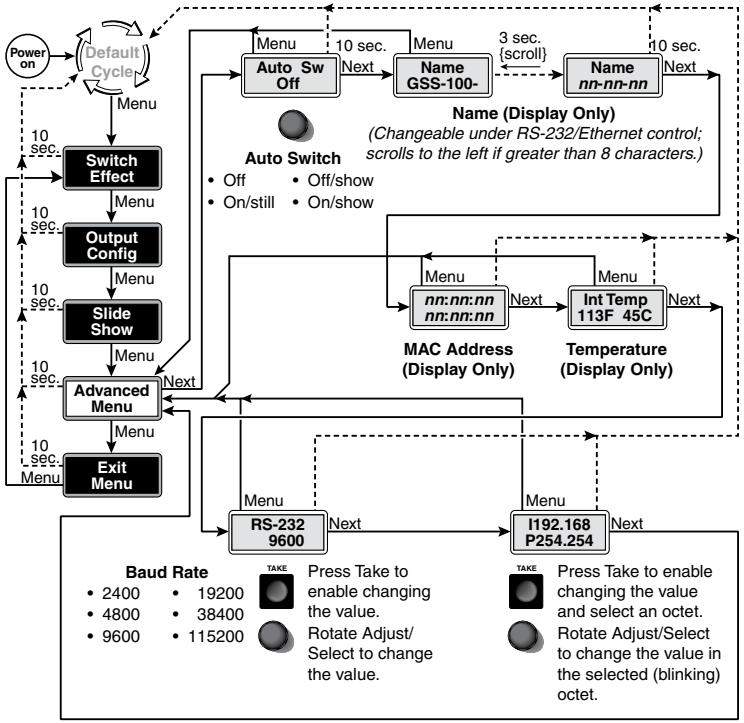


Figure 3-10 — Advanced submenu flowchart

Auto Switch (and slide show) submenu

The GSS can be set to an auto-switch mode that monitors the sync signal on the RGB pass-through input and automatically switches to the last-displayed stored image or slide show for output when sync is lost. This submenu also allows you to turn the auto-switching and slide show on and off.

Rotate the Adjust/Select mode while in the Auto-Switch submenu to select:

- **Off (auto-switch mode off and slide show off)** — Deactivates the automatic sync detection the slide show.
- **Off/show (auto-switch off and slide show on)** — Leaves the automatic sync detection off and manually initiates the slide show. If the pass-through input was being displayed when this selection is made, the GSS displays the first image alphabetically by file name.
- **On/still (auto-switch on and slide show off** — Activates the automatic sync detection and auto-switches to the still image. If sync is lost, the GSS switches to the last displayed image that was output and outputs that image until sync is restored or you select another image to display.
- **On/show (auto-Switch on and slide show on)** — Activates the automatic sync detection and auto-switches to the slide show. If sync is lost, the GSS switches to the last-displayed image and begins to cycle through the available images.

The default setting is off.

Name display

The read-only Name display shows either the factory default name or a customized name that can be assigned under RS-232 or Ethernet control. If the name is greater than eight characters, the display shows the first eight characters of the assigned name and then scrolls the name to the left to display the remaining characters of the name.

The factory default name is the product name (GSS-100-) plus last three pairs of MAC address. See chapter 4, *SIS™ Control*, and chapter 5, *HTML Control and IPL File Manager*, to assign a name.

MAC Address display

The read-only MAC Address display shows the hardcoded, factory assigned hardware address.

Internal Temperature display

The read-only Internal Temperature display shows the Fahrenheit and Celsius measurements for the GSS temperature.

CAUTION *Temperatures above 150 degrees Fahrenheit (65 degrees Celsius) are potentially damaging to the GSS.*

Baud Rate menu

The Baud Rate menu is read-only without further action. The menu shows the selected baud rate for the GSS's RS-232 port. The default setting is 9600.

To change the baud rate, press and release the Take button. The baud rate display starts blinking, and can be adjusted by rotating the Adjust/Select knob.

NOTE *The baud rate is also selectable using SIS commands or the HTML pages. See chapter 4,* SIS™ Control, *and chapter 5,* HTML Control and IPL File Manager.

IP address menu

The read-only IP address menu is read-only without further action. The menu shows the GSS's IP address. The factory default IP address is 192.168.254.254.

To change the IP address, one octet at a time, press and release the Take button. The first (most-significant) octet starts blinking, and can be adjusted by rotating the Adjust/Select knob. Repeatedly press and release the Take button to cycle through the four IP address octets, enabling them for editing, one at a time.

NOTE *The IP address is also selectable using SIS commands or the HTML pages. See chapter 4,* SIS™ Control, *and chapter 5,* HTML Control and IPL File Manager.

Exit menu

Press and release the Next button while in the Exit menu to return the LCD to the default display cycle.

Front panel security lockout (executive mode)

The front panel security lockout limits the operation of the GSS from the front panel. When the GSS is locked, the front panel Menu and Next buttons are disabled, although the Image and Take buttons are still functional. If you push the Menu or Next button when the GSS is locked, the LCD shows **X Mode Enabled** for approximately 3 seconds and then returns to the default display cycle.

To toggle the lock on and off, press and hold the Image button and the Next button for approximately 2 seconds.

Front panel absolute reset

The GSS 100 can be reset from the front panel, resetting the unit to its factory default conditions and deleting all uploaded images. Reset the GSS by pressing and holding the Menu and Next buttons while applying power to the unit (figure 3-11).

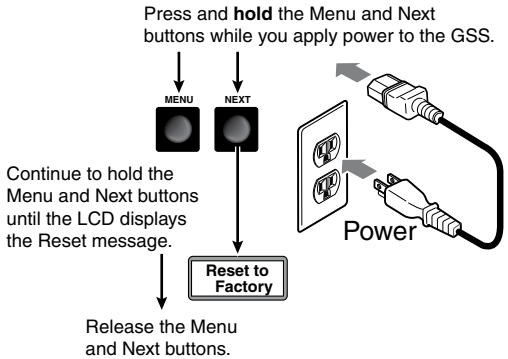


Figure 3-11 — System reset

Chapter Four

SIS™ Control

Simple Instruction Set Control

The GSS 100's rear panel RS-232 connector (figure 4-1) can be connected to the serial port of a host device, such as a computer or control system. Communications with the GSS are via Extron's Simple Instruction Set™ (SIS™) or Extron's Windows-based control program.

PIN	RS-232	Function
1	—	None
2	TX	Transmit data
3	RX	Receive data
4	—	None
5	Gnd	Ground
6	—	None
7	—	None
8	—	None
9	—	None

Figure 4-1 — Remote connector pinout

The baud rate for the rear panel RS-232 port can be set to a variety of different rates. The default protocol for the port is as follows:

- 9600 baud
- 8-bit, 1 stop bit
- no parity
- no flow control

Simple Instruction Set Control

Symbols

Symbols (values), defined on the next pages, are used throughout the discussions of the GSS-initiated messages that begin below and the command/response table that begins on page 4-8. The symbols represent variables in the GSS-initiated messages and the command/response table fields.

Symbol definitions

↵ = CR/LF (carriage return/line feed) (0x0D 0A)

← = Carriage return (no line feed)

• = Space

Esc = Escape key

[24, 27] = Superscripts Indicate the error message displayed if the command is entered incorrectly or with invalid parameters. See *Error responses*, later in this chapter.

X1 = Image file name Image name with file extension (*.bmp or *.jpg). May be up to 240 alphanumeric characters with no spaces.

X2 = Status:

On/off	0 = off	1 = on
Busy	0 = free	1 = busy
Cut/dissolve	0 = cut	1 = dissolve
Front panel lock	0 = unlock	1 = lock
Pass-through	0 = pass-thru	1 = no pass-thru

X3 = Time 00 - 50 (0.0 - 5.0 seconds) for RGB delay and dissolve duration.
0 - 300 seconds for slide show interval

X4 = Auto-switch/slide show 0 = off 2 = on/still
1 = off/show 3 = on/show

X5 = Resolution

0	= 640 x 480	9	= 1365 x 768
1	= 800 x 600	10	= 1366 x 768
2	= 852 x 480	11	= 1365 x 1024
3	= 1024 x 768	12	= 1400 x 1050
4	= 1024 x 852	13	= 480p
5	= 1024 x 1024	14	= 576p
6	= 1280 x 768	15	= 720p
7	= 1280 x 1024	16	= 1080i
8	= 1360 x 765	17	= 1080p

X6 = Refresh rate

0	= 50 Hz	3	= 96 Hz
1	= 60 Hz	4	= 100 Hz
2	= 72 Hz	5	= 120 Hz

X7 = Sync format 0 = RGBHV 1 = RGBS

X8 = Sync polarity 0 = H-/V- 2 = H+/V-
1 = H-/V+ 3 = H+/V+

X9 = Pass-through sync status

0 =	No sync signals detected
1 =	V sync signal detected
2 =	H sync signal detected
3 =	HV (composite) sync signal detected

X10 = Bytes of memory used *xxxxxxx*

X11 = Firmware version *x.xx*

X12 = Event number 00 - 99

X13 = Event buffer 0 = Receive
1 = User
2 = NVRAM

X14 = Event buffer offset 0 - Max. buffer size

X15 = Event data size b = Bit
B = Byte
S = Short (16 bits)
L = Long (32 bits)

NOTE *This parameter is case sensitive.*

X16 = Event data to write

X17 = Number of bytes to read

X18 = Event status fields:
- Event type
- Event state
- Event paused
- Error status
- RcvBuff_startptr
- RcvBuff_endptr
- UsrBuff_startptr
- UsrBuff_endptr

X19 = ASCII digit(s) representing the numeric value of the data element read from the event buffer (leading zeroes are supressed)

X20 = Port number 00 to 99 (00 = all ports)

X21 = Baud rate 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 57600, 115200 (9600 is default)

X22 = Parity **O**dd, **e**ven, **n**one, **m**ark, **s**pace

NOTE *Use the first letter only.*

X23 = Data bits 7 or 8

X24 = Stop bits 1 or 2

X25 = The number of seconds (in 10-second steps) before timeout on the IP connections: (min = 1, max = 6500, default = 30 [300 seconds]). If no data is received during the timeout period, the Ethernet connection is closed. Applicable to Ethernet connection only; when connected via the RS-232 port, only the global timeout commands apply.

GSS-initiated (unsolicited) messages

When a local event, such as a front panel operation or error condition, occurs, the GSS responds by sending a message to the host. The GSS-initiated messages are listed in the following pages. The messages are underlined.

The GSS does not expect a response from the host, but the host program may request a new status.

Power-up

(C) Copyright 2005, Extron Electronics, GSS 100, V*x.xx*↵
The GSS issues the copyright message when it first powers on. V*x.xx* is the firmware version number.

Image selection

Take↵
Bsy1↵
Bsy0↵

The GSS issues the above sequence of commands when a front panel image selection operation or a slide show image change occurs.

- The Take message indicates the change of output image.
- The Bsy1 message indicates to the connected control device that the GSS is busy processing the cut or dissolve transition and is unable to respond to input commands.
- The Bsy0 message indicates that the GSS is no longer busy and can respond to input commands.

Switch effect

Eff X3 ↵
The GSS initiates the Eff message when a front panel change in the image switch effect takes place.

Dur X3 ↵
The GSS initiates the Dur message when a front panel change in the dissolve duration takes place.

Output configuration

NOTE *The Output Configuration settings apply only to the output of still images stored in the GSS; the RGB Pass-through video is output exactly as it is input.*

Rte X5 * X6 ↵
The GSS initiates the Rte message when a front panel change in the output resolution takes place.

Tpo X7 ↵
The GSS initiates the Tpo message when a front panel change in the output sync format takes place.

Pol X8 ↵
The GSS initiates the Pol message when a front panel change in the output sync polarity takes place.

Dly X3 ↵
The GSS initiates the Dly message when a front panel change in the RGB delay interval takes place.

Auto-switch and slide show control

Pas X2 ↵
The GSS initiates the Pas message when a front panel change in the pass-through configuration takes place.

Aut X4 ↵
The GSS initiates the Aut message when a front panel change in the auto-switch and slide show on/off status takes place.

Sli X3 ↵
The GSS initiates the Sli message when a front panel change in the slide display duration takes place.

Front panel security lockout (executive mode)

Exe X2 ↵
The GSS initiates the Exe message when a front panel change in the front panel lock on/off status takes place.

Host-to-GSS communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command character sequence. When a command is valid, the GSS executes the command and sends a response to the host device. All responses from the GSS 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.

Error responses

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

E10↵ - Invalid command

E13↵ - Invalid value (out of range)

E14↵ - Not valid for this configuration

E17↵ - System timed out

E22↵ - Busy

E24↵ - Privilege violation

E25↵ - Device not present

E26↵ - Maximum number of connections exceeded

E27↵ - Invalid Event number

E28↵ - Bad Filename/File not found

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/response table

The command/response table begins on the next page. Uppercase or lowercase letters are acceptable in the command field. 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.

ASCII to HEX Conversion Table

	20	!	21	"	22	#	23	$	24	%	25	&	26	'	27	Esc	1B	CR	0D
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F	LF	0A		
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				

Command/response table for SIS commands

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
Image recall			
Recall an image to buffer	Esc X1 RF←	Cim•X1↵	Select image X1 to display.
NOTE *It will take a few seconds between issuance of the recall command (Esc X1 RF←) and receipt of the* Cim *response.*			
Show the currently displayed image	Esc RF←	X1↵	Buffer is loaded with image X1.
Take	%	Tke↵	Swap the displayed and buffered images using the selected effect (cut or dissolve).
Switch effect			
Set the effect to cut	9*0#	Eff0↵	Set the effect for switching images to cut (immediate).
Set the effect to dissolve	9*1#	Eff1↵	Set the effect for switching images to dissolve.
Read the effect	9#	X2↵	
Set the dissolve duration	10*X3#	DurX3↵	Set the duration of the dissolve effect to X3.
Read the dissolve duration	10#	X3↵	The dissolve duration is X3.
Source selection			
Display pass-through	1!	Chn1↵	Display the pass-through input.
Display last image	0!	Chn0↵	Display the previously selected stored image.
View pass-through status	!	X2↵	Pass-through mode is X2.
Slide show interval			
Set slide show interval	2*X3#	SliX3↵	Set the display time for each image to X3 seconds.
Read slide show interval	2#	X3↵	The display time for each image is X3 seconds.

Command/response table for SIS commands (continued)

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
Pass-through configuration			
Enable pass-through	1*1#	Pas1↵	Include the pass-through input in the slide show.
Disable pass-through	1*0#	Pas0↵	Do not include the pass-through input in the slide show.
Read pass-through status	1#	X2↵	Read pass-through status: 1 = include pass-through, 0 = do not include pass-through..
Auto-switch and slide show mode			
Set auto-switch and slide show	4*X4#	AutX4↵	Set auto-switch and slide show modes: **0 = Off** — Auto-switch on loss of pass-through sync and slide show are disabled. **1 = Off/show** — Auto-switch on loss of pass-through sync is disabled. Slide show is running. **2 = On/still** — On loss of sync on the pass-through input, auto-switch to display the the last-displayed image until pass-through sync is restored. **3 = On/show** — On loss of sync on the pass-through input, auto-switch to run the slide show until sync on the pass-through input is restored.
Read auto-switch and slide show status	4#	X4↵	

Command/response table for SIS commands (continued)

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
Output rate			
Set the output rate	X5*X6=	RteX5•X6↵	Set the output resolution for the stored image to X5 at X6 Hz.
NOTE *The output rate (=) command affects the display of the stored images only; pass-through images are output exactly as they are input.*			
Example:	3*1=	Rte3•1↵	Set the output resolution for the stored image to 1024 x 768 at 60 Hz.
View output rate	=	X5•X6↵	The stored image's output resolution is X5 at X6 Hz.
Output sync			
Set the output sync format	6*X7#	TpoX7↵	Set the stored image's output sync format to X7.
NOTE *The output sync format (6#) command affects the display of the stored images only; pass-through images are output exactly as input.*			
Example:	6*0#	Tpo0↵	Set the stored image's output sync format to RGBHV.
View output sync format	6#	X7↵	The stored image's output sync format is X7.
Set the ouput sync polarity	7*X8#	PolX8↵	Set the stored image's output sync format to X8.
NOTE *The output sync polarity (7#) command affects the display of the stored images only; pass-through images are output exactly as input.*			
Example:	7*0#	Pol0↵	Set the stored image's output sync polarity to H - and V -.
View output sync polarity	7#	X8↵	The stored image's output sync polarity is X8.
RGB delay (pass-through)			
Set RGB delay	8*X3#	Dly↵	Set the RGB delay (video mute) before displaying the RGB pass-through input to X3.
Read RGB delay	8#	X3↵	
Video mute			
Mute video	1B	Vmt1↵	Video mute on.
Unmute video	0B	Vmt0↵	Video mute off.
Read video mute status	B	X2↵	Video mute status.

Command/response table for SIS commands (continued)

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
Front panel lockout (Executive mode)			
Lock front panel	1x	Exe1↵	Lock front panel.
Unlock front panel	0x	Exe0↵	Unlock front panel.
Read front panel lock status	x	X2↵	Read front panel lock: 1 = locked, 0 = unlocked.
Event (script) control			
Read event buffer memory	Esc X12,X13,X14,X15E←	X19↵	Read the contents of a specific section of a memory buffer for event number X12.
Read event status	Esc X12E←	X18↵	Show the status of event X12. The following X18 information fields are displayed: event_type, event_state, event_paused, error_status, RcvBuff_startptr, cvBuff_endptr, UsrBuff_startptr, and UsrBuff_endpt.
Write event to memory buffer	Esc X12,X13,X14,X16,X15E←	EwrX12,X16↵	Write event X12 to buffer X13, offset by X14. Include data X16, size X15.
Read string from event buffer memory	Esc X12,X13,X14,X17FE←	{string}↵	Read string from event X12, buffer X13, offset by X14, X17 bytes.
Write string to event buffer memory	Esc X16,X12,X13,X14FE←	EwrX12,X16↵	Write data string X16 from event X12, buffer X13, offset by X14.
Start events	Esc1AE←	Ego↵	Initiate all programmed events.
Stop events	Esc0AE←	Est↵	Stop all programmed events.
Read number of events running	EscAE←	Enm##↵	

Command/response table for SIS commands (continued)

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
View, information, part number, and firmware requests			
Information request	I	Chn[X2]•Vmt[X2]•Exe[X2]•Typ[X9]↵	
Example:	I	Chn0•Vmt0•Exe1•Typ0↵	Pass-through input is not displayed, video output is not muted, panel is locked, no pass-through sync signal is detected.
Request user memory usage	4I	[X10]•Bytes•Used•out•of•17344•KBytes↵	
Example:	4I	1149184•Bytes•Used•out•of•17344•KBytes↵	This device has approximately 5850 kBytes of user memory available (17344 kBytes - 11491 kBytes) for additional stored images and locally-created HTML pages.
Request for part number	N	60-684-01↵	Display GSS 100 part number.
Query firmwre vesion	Q	[X11]↵	Firmware version *x.xx*.

Command/response table for SIS commands (continued)

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
Reset			
Erase all files	[Esc]Zfff←	Zpf↵	Reset flash memory (erase user-supplied files). *This reset does not reset IP settings.*
Master reset	[Esc]Zxxx←	Zpx↵	Resets all user settings to their default values. *This reset does not reset IP settings or delete loaded image files.*
Absolute reset	[Esc]Zqqq←	Zpq↵	Resets all device settings to their factory defaults. Erases all loaded files. *The firmware version remains unchanged.*
Absolute reset **retaining IP**	[Esc]ZY←	Zpy↵	Similar to absolute reset ([Esc]Zqqq), except that IP settings; including the IP address, subnet mask, gateway address, unit name, DHCP setting, and port mapping (Telnet/Web/Direct Access) are excluded. This preserves communications with the device and is **recommended after a firmware update**..

Command/response table for SIS commands (continued)

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
File management			
NOTE *A directory name is an alphanumeric text string that can also include the minus (-), plus (+), and colon (:) signs. Blank and space characters are not permitted. The first character must be a letter. The directory name is not case-sensitive.*			
Change or create directory	Esc*path/directory*/CJ←	Dir•*path/directory*/↵	
Go to root directory	Esc/CJ←	Dir•/]	
Go up one directory	Esc..CJ←	Dir•*path/directory*/↵	
Show current directory	EscCJ←	*path/directory*/↵	
NOTE *The response to the List Files commands (EscDF and EscLF) differ, depending on whether the command is sent via an RS-232/RS-422 or Telnet connection or sent via a Web browser connection.*			
List the files in the current directory RS-232/RS-422 port and Telnet	EscDF←	*filename*1,*date/time,length*↵ *filename*2,*date/time,length*↵ • • *filenamen*,*date/time,length*↵ *space_remaining* Bytes•Left↵↵	
List the files in the current directory Web browser	EscDF←	ar file = new array (); List user-supplied files. File [1] = 'filename1,date1,filesize1' File [2] = 'filename2,date2,filesize2'; • • File[*n*] = 'filename*n*,date*n*,filesize*n*' File[*n*+1] = *space_remaining* Bytes•Left	
List selected files from current directory	Esc*Xn*DF← Esc*Xn**Xn*DF←	*Same response* *Same response*	*Xn* is the the first character of the file extension. *Xn**Xn* is the first character of the filename and the first character of the extension.

Command/response table for SIS commands (continued)

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
File management (continued)			
List the files from the current directory and below	EscLF←	*Same response*	
List selected files from current directory and below	Esc*Xn*LF← Esc*Xn**Xn*LF←	*Same response* *Same response*	*Xn* is the the first character of the file extension. *Xn**Xn* is the first character of the filename and the first character of the extension.
Erase user-supplied Web pages and files	Esc*filename*EF←	Del*filename* ↵	
Erase current directory and its files	Esc/EF←	Ddl↵	
Erase current directory and subdirectories	Esc//EF←	Ddl↵	
Port configuration			
Configure port parameters	Esc*X20**X21*,*X22*,*X23*,*X24*CP←	Cpn01•Ccp9600,N,8,1↵	
Example:	Esc01*9600,N,8,1CP←	Cpn01•Ccp9600,N,8,1↵	Set the the RS-232 port to 9600 baud, no parity, 8 data bits, and 1 stop bit.
NOTE *The port variable (X20) is always 01.*			
View port parameters	Esc*X20*CP←	*X21*,*X22*,*X23*,*X24*↵	
Set RS-232 port timeout	Esc0**X25*TC←	Pti0**X25*↵	
View RS-232 port timeout	Esc0TC←	*X25*↵	
Set global IP timeout	Esc1**X25*TC←	Pti0**X25*↵	
View global IP timeout	Esc1TC←	*X25*↵	

Command/Response Table for IP SIS Commands

Symbol Definitions

X31 = Device name (Up to 240 characters)

NOTE *The following characters are invalid in the name: {space} ~ , @ = , ' [ ] { } < > ' " ; : | \ and ?.*

X31 = Default name "**GSS-100-**" + *last 3 pairs of MAC address*

X32 = Time and date (set) MM/DD/YY•HH:MM:SS *where:*
MM = month: 01 (Jan) through 12 (Dec)
DD = day: 01 through 31
YY = year: 00 through 99
HH = hour: 00 through 24
MM = minutes: 00 through 59
SS = seconds: 00 through 59

X33 = Time and date (read) In the format: Day,•DD•Mmm•YYYY•HH:MM:SS
where:
Day = weekday: Mon through Sun
DD = day: 01 through 31
Mmm = month: Jan through Dec
YYYY = year: 2000 through 2099
HH = hour: 00 through 24
MM = minutes: 00 through 59
SS = seconds: 00 through 59

X34 = GMT offset –12.0 through +14.0. Hours and minutes removed from GMT

X35 = Daylight Savings Time 0 = Daylight Savings Time off/ignore
1 = Daylight Savings Time on (northern hemisphere)
2 = Daylight Savings Time on (Europe)
3 = Daylight Savings Time on (Brazil)

X36 = IP address ###.###.###.###

X37 = Hardware (MAC) address ##-##-##-##-##-##

X38 = # of open connections 0 - 255

X39 = Password 12 digits, alphanumeric

NOTE *The following characters are invalid in passwords: {space} + ~ , @ = ' [ ] { } < > ' " ; : | \ and ?.*

X40 = DHCP (0 = off, 1 = on)

X41 = Port # 00 – 99 (00 = all ports)

X42 = Baud rate 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 57600, 115200

X43 = Parity **O**dd, **e**ven, **n**one, **m**ark, **s**pace (only the first letter required)

X44 = Data bits 7, 8

X45 = Stop bits 1, 2

X46 = Verbose mode 0 = Clear/none (default for Telnet connection)
1 = Verbose mode (default for RS-232 connection)
2 = Tagged responses for queries
3 = Verbose mode and tagged for queries

NOTE *If tagged responses is enabled, all read commands return the constant string and the value, the same as the set command does (for example, the read matrix name command, Esc CN←, returns Ipn•X15↵).*

X47 = Domain name Standard domain name conventions apply (for example, *xxx*.com)

NOTE *The following characters are invalid in a domain name: {space} + ~ , = ' [ ] { } < > ' " ; : | \ and ?. The @ character is only acceptable as the lead-in to the domain name (such as @extron.com).*

X48 = E-mail event number 1 – 64

X49 = E-mail address Typical e-mail address format (for example: *nnnnn*@*xxx*.com)

X50 = E-mail filename *yyyyyyy*.eml

Command/response table for IP SIS commands

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
IP setup commands			
Set device name (location)	Esc X30 CN←	Ipn•X30↵	
Read device name (location)	Esc CN←	X30↵	
Reset device name to factory default	Esc •CN←	Ipn•X31↵	
Set time and date	Esc X32 CT←	IptX32↵	
Read time and date	Esc CT←	X33↵	
Set GMT offset	Esc X34 CZ←	IpzX34↵	The divider between hours and minutes is a period.
Read GMT offset	Esc CZ←	X34↵	
Set Daylight Savings Time	Esc X35 CX←	IpxX35↵	Set the GSS to display the local time as Daylight Savings Time (+1 hour) in summer months.
Read Daylight Savings Time	Esc CX←	X35↵	
Set IP address	Esc X36 CI←	IpiX36↵	
Read IP address	Esc CI←	X36↵	
Read hardware address	Esc CH←	X37↵	
Read # of open connections	Esc CC←	X38↵	
Set subnet mask	Esc X36 CS←	IpsX36↵	
Read subnet mask	Esc CS←	X36↵	
Set gateway IP address	Esc X36 CG←	IpgX36↵	
Read gateway address	Esc CG←	X36↵	
Set administrator password	Esc X39 CA←	Ipa•X39↵	
Read administrator password	Esc CA←	X39↵	
Reset (clear) administrator password	Esc •CA←	Ipa•↵	

Command/response table for IP SIS commands (continued)

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
IP setup commands (continued)			
Set user password	Esc X39 CU←	Ipu↵	
Read user password	Esc CU←	X39↵	
Reset (clear) user password	Esc •CU←	Ipu•↵	
Set DHCP on or off	Esc X40 DH←	IdhX40↵	
Read DHCP status	Esc DH←	X40↵	
Configure serial port parameters	Esc X41 *X42,X43,X44,X45 CP←	Cpn X41 •Ccp X42,X43,X44,X45 ↵	
Read serial port parameters	Esc X41 CP←	X42,X43,X44,X45↵	
Set verbose mode	Esc X46 CV←	VrbX46↵	
Read verbose mode	Esc CV←	X46↵	
Email			
Set mail server and domaine name	Esc X36,X47 CM←	Ipm•X36,X47↵	
Read mail server and domain name	Esc CM←	X36,X47↵	
Set email events	Esc X48,X49,X50 CR←	IprX48,X49,X50↵	
Read email events	Esc X48 CR←	X49,X50↵	
Send email event	Esc X48 SM←	EmlX48↵	

Chapter Five

HTML Control and IPL File Manager

The GSS can be configured through its Ethernet port, connected via a LAN or WAN and using a web browser such as Microsoft's Internet Explorer. The browser's display of the GSS's configuration has the appearance of web pages. This chapter describes the factory-installed HTML pages, which are always available and cannot be erased or overwritten.

NOTE *If your Ethernet connection to the GSS is unstable, try turning off the proxy server in your Web browser. In Microsoft's Internet Explore, click Tools > Internet Options > Connections > LAN Settings, uncheck the "Use a proxy server..." box, and then click the Ok button.*

Configuring the Hardware

To function properly, the controlling PC and the GSS must be configured correctly: the PC must be network capable, with the proper protocols installed, and the hardware configured correctly. The GSS must also be set to recognize and accept commands.

PC configuration

This manual assumes that you have a Windows PC equipped with an operating network adapter. To allow your PC to work with Extron's Ethernet-controlled products, the TCP/IP protocol must be installed and properly configured.

For use on an existing Ethernet LAN intranet, your network administrator can provide you wih a unique IP address or confirm whether you need to set up the GSS for Dynamic Host Configuration protocol (DHCP) to have an address assigned automatically when you sign on.

Initial startup

When you power on the GSS for the first time, there are two ways to set up the IP address:

- Use the ARP command method.
- Use the direct PC method.

The default Web pages that are pre-loaded in the GSS provide a way to reconfigure the GSS once it has an active network connection with IP access. These Web pages are compatible with Netscape Navigator (version 6.0 or higher) or Internet Explorer (version 5.5 or higher).

Once the GSS has been configured, an Ethernet (intranet or Internet) connection can subsequently be used to contact or control it.

GSS configuration

Configuring the GSS using the ARP command

You can use the Address Resolution Protocol ("ARP") command to set up an IP address for your GSS. The ARP command associates the GSS's MAC address with the assigned IP address in your computer. You must then use the "ping" command to access the GSS, at which point the device server's IP address is reconfigured.

NOTE *To use this setup method, either your PC and the GSS must be connected to the same LAN or you may use a crossover Ethernet cable to connect the two devices. See* Cabling and RJ-45 connector wiring *in chapter 2,* Installation.

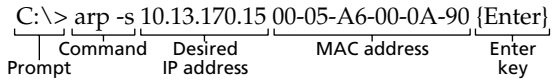
Use the ARP command to configure the IP address as follows:

1. Obtain a valid IP address for the GSS from your network administrator.
2. Obtain the GSS's MAC address (UID #) from the label on the GSS's rear panel.
3. **If the GSS has never been configured**, and is still set to its factory defaults, procede to step **4**.

   If the GSS has previously been configured, perform an IP settings (mode 4) reset. See *Reset button*, in chapter 2, *Installation*.

CAUTION *Your GSS must be configured with the default IP address (192.168.254.254) before executing the ARP command.*

4. Click Start > Run... to activate the Run window. Type **Cmd** in the Run window and click OK to access the MS-DOS command prompt.
5. Enter the ARP -s command with the desired new IP address (obtained from the system administrator) and the GSS's MAC address (from the label on the GSS's rear panel), as follows:



6. Execute a ping command using the GSS's new IP address as follows:

   C:\> ping 10.13.170.15 {Enter}

   After you send this command, the GSS changes to to the new address and starts responding to the ping requests (figure 5-1). The GSS's IP address is updated to the new address and you can reconnect using either Telnet or the Web to verify that the update was successful.

```
C:\>ping 10.13.170.15

Pinging 10.13.170.15 with 32 bytes of data:

Reply from 10.13.170.15: bytes=32 time<10ms TTL=128
Reply from 10.13.170.15: bytes=32 time<10ms TTL=128
Reply from 10.13.170.15: bytes=32 time<10ms TTL=128
Reply from 10.13.170.15: bytes=32 time<10ms TTL=128

Ping statistics for 10.13.170.15:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Figure 5-1 — GSS response to ping request

7. After the GSS responds to the ping command, issue the arp -d command at the DOS prompt to remove the IP address that you specified in step **5** from the ARP:

   C:\> arp -d {IP address} {Enter} (to remove the stated IP address)

   or

   c:\> arp -d* {Enter} (to remove all static IP addresses)

Configuring the GSS using a direct PC connection

This type of connection is used to initially connect to and configure the GSS. The GSS's default settings (IP address, subnet mask, and optional administrator name and password) must be changed in order to use the GSS on an intranet (LAN) on the Internet (WAN).

1. Plug one end of a CAT 5 Ethernet crossover cable into the rear panel LAN port on the GSS. See *Cabling and RJ-45 connector wiring* in chapter 2, *Installation* to make a cable.
2. Plug the other end of the CAT 5 cable into the Ethernet port on your PC.
3. Right-click the Network Neighborhood or My Network icon on your Windows (98, 2000, NT, ME, or XP) desktop and select Properties from the menu.
4. Select Internet Protocol (TCP/IP) from the list and click Properties.

   (If you are using Windows 2000, right-click Local Area Connection and select Properties from the menu, select Internet Protocol [TCP/IP] from the list, and then click Properties again.)

   NOTE *If Internet Protocol (TCP/IP) is not available or is not on the list, it must be installed. Refer to your Windows user's manual or your computer's online Help system for information on installing the TCP/IP protocol.*

5. Note the GSS's current IP address and subnet mask below: If your PC is set to "Obtain an IP address automatically," note that instead.

   IP address:_____

   Subnet mask:_____

6. Depending on your operating system, click either "Specify an IP address" or "Use the following IP address,".
   a. Leave the default gateway blank.
   b. Enter the following IP and subnet mask values:

      IP address: 192.168.254.253

      Subnet mask: 255.255.0.0

7. Save the changes and exit the Network setup. Reboot the PC for the changes to become effective.
8. Launch your PC's Web browser (Netscape Navigator or Internet Explorer).
   a. In the browser's address field, enter:

      http://192.168.254.254/index.html

      The GSS displays the default startup page.
   b. Configure the GSS (see the remainder of this chapter for configuring the GSS).
9. After configuring the GSS, repeat steps 3 and 4, changing your TCP/IP settings back to their original configuration.

Accessing the HTML Pages

Access the GSS using HTML pages as follows:

1. Start the Web browser program.
2. Click in the browser's Address field.
3. Enter the GSS's IP address in the browser's Address field.

NOTE *If the local system administrators have not changed the value, the factory-specified default, 192.168.254.254, is the correct value for this field.*

4. If you want the browser to display a page other than the default page (such as a custom page that you have created and uploaded), follow the address with a slash (/) and the file name to open.

NOTE *The browser's Address field should display the address in the following format: xxx.xxx.xxx.xxx/{optional_file_name.html}.*

NOTE *The following characters are invalid in file names: {space} + ~ , @ = ' [ ] { } < > ' " ; : \| \ and ?.*

5. Press the keyboard Enter key. The GSS checks to see if it is password protected.
   - If the GSS is not password protected, proceed to step **7**.
   - If the GSS is password protected, the Enter Network Password page (figure 5-2) appears.

Figure 5-2 — Enter Network Password page

NOTE *A User Name entry is not required.*

6. Click in the Password field and type in the appropriate administrator or user password. Click the OK button.

7. The GSS checks several possibilities, in the following order, and then responds accordingly:
   a. Does the address include a specific file name, such as 10.13.3.194/file_name.html? If so, the GSS outputs that HTML page to the PC or network.
   b. Is there a file in the GSS's memory that is named "index.html"?

      If so, the GSS outputs "index.html" as the default startup page.
   c. If neither of the above conditions is true, the GSS outputs the factory-installed default startup page, "nortxe_index.html" (figure 5-3), also known as the System Status page.

System Status Page

The System Status page (figure 5-3) provides an overall view of the status of the GSS, including various IP addresses, and the status of the RS-232 port. The System Status page is the default page that the GSS downloads when you connect to the GSS. Access the System Status page from other GSS HTML web pages by clicking the Status tab.

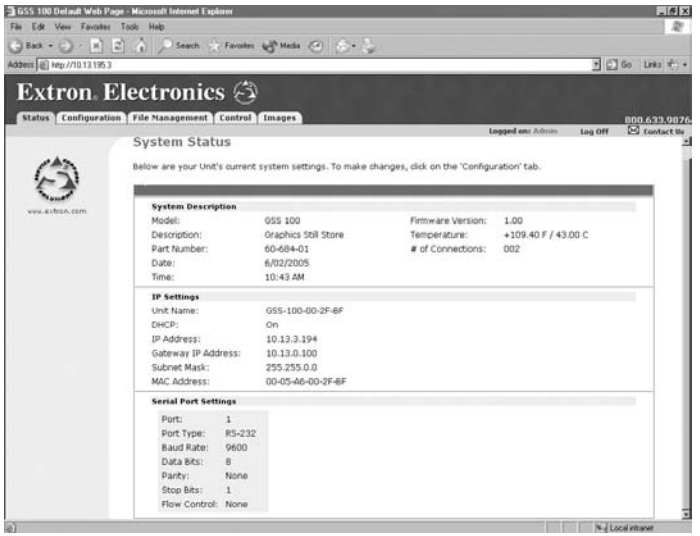


Figure 5-3 — System Status page

System Settings Page

You can change most of the IP parameters on the System Settings page (figure 5-4). Click the Configuration tab or the System Settings link on the sidebar at the left of the Video Settings page, Passwords page, Email Alerts page, or Firmware Upgrade page to access the System Settings page.

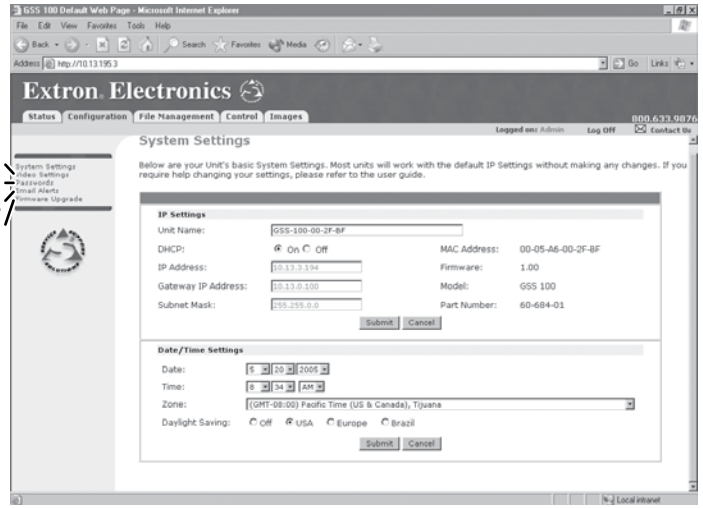


Figure 5-4 — System Settings page

The page is divided into two sections: IP Settings and Date/Time Settings. There are three types of controls on the System Settings page: simple fields with no drop boxes, fields with drop boxes, and radio buttons.

- Most IP protocol variables, such as the Unit Name, IP Address, Gateway IP address, and Subnet Mask are presented in simple fields.
- The time and date variables are presented in fields with drop boxes.
- On/off and multiple choice selections are radio buttons.

All changes made on the System Settings page must be confirmed by clicking the Submit button in the appropriate section. Clicking the Cancel button abandons the changes.

IP Settings section

Unit Name field

The Unit Name field contains the locally-assigned name of the GSS. This name field can be changed to any valid name, up to 24 alphanumeric characters.

NOTE *The following characters are invalid in the unit name: + ~ , @ = ‘ [ ] { } < > ’ “ ; : | \ and ?.*

Click the Submit button to take changes. Click the Cancel button to abandon them.

DHCP radio buttons

The DHCP On radio button directs the GSS to ignore any entered IP addresses and to obtain its IP address from a Dynamic Host Configuration Protocol (DHCP) server (if the network is DHCP capable). The DHCP Off radio button turns DHCP off. Contact the local system administrator to determine if DHCP is appropriate.

Click the Submit button to take changes. Click the Cancel button to abandon them.

IP Address field

NOTE *This field is grayed out and uneditable if DHCP is on.*

The IP Address field contains the IP address of the GSS.

Valid IP addresses consist of four 1-, 2-, or 3-digit numeric subfields (octets) separated by periods (dots). Each octet can be numbered from 000 through 255. Leading zeroes, up to three digits total per field, are optional. Values of 256 and above are invalid.

The factory-installed default address is 192.168.254.254, but if this conflicts with other equipment at your installation, you can change the IP address to any valid value.

NOTE *IP address changes can cause conflicts with other equipment. Only local system administrators should change IP addresses.*

Click the Submit button to take changes. Click the Cancel button to abandon them.

Gateway IP Address field

NOTE *This field is grayed out and uneditable if DHCP is on.*

The Gateway IP Address field identifies the address of the gateway to the server that is to be used if the GSS and the server are not on the same subnet.

The gateway IP address has the same validity rules as the GSS's IP address. The default is 000.000.000.000.

Click the Submit button to take changes. Click the Cancel button to abandon them.

Subnet Mask field

NOTE *This field is grayed out and uneditable if DHCP is on.*

The Subnet Mask field is used to determine whether the GSS is on the same subnet as the GSS's server when you are subnetting. The default is 255.255.000.000.

Click the Submit button to take changes. Click the Cancel button to abandon them.

MAC Address field

The Media Access Control (MAC) Address is hardcoded in the GSS and cannot be changed.

Date/Time Settings fields

The Date/Time Settings fields provide a location for viewing and setting the time functions.

NOTE *If setting the time, set the local time. The Zone variable allows you to then enter the offset from Greenwich Mean Time (GMT).*

NOTE *The Zone field identifies the standard time zone that was selected; and displays the amount of time, in hours and minutes, that the local time varies from the GMT international time reference.*

NOTE *When the daylight savings time feature is turned on, the GSS automatically updates its internal clock between Standard Time and Daylight Savings Time in the spring and fall on the date that the time change occurs in the United States of America, Brazil, or Europe (depending on the radio button selected). When the daylight savings time feature is turned off, the GSS does not adjust its time reference.*

Click the Submit button to take changes. Click the Cancel button to abandon them.

Video Settings Page

Access the Video Settings page (figure 5-5) by clicking the Configuration tab and then the Video Settings link on the left side of the System Settings page.

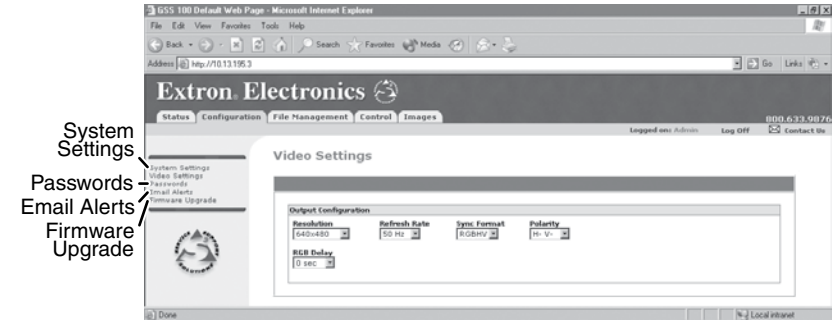


Figure 5-5 — Video Settings page

Set the video settings (resolution, refresh rate, sync format, and sync polarity) and RGB delay as follows:

1. Click the desired field. A drop down scroll box appears (figure 5-6).

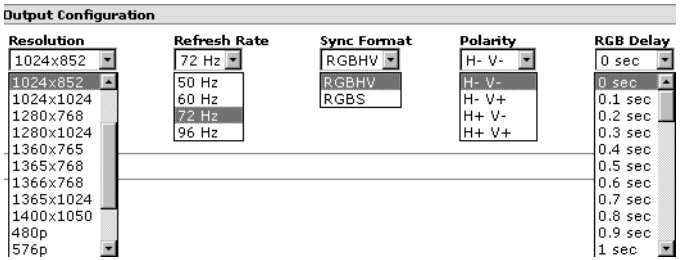


Figure 5-6 — Output Configuration drop boxes

NOTE *The RGB Delay drop box is shown at the right of the page rather than under the Resolution box for clarity only.*

2. If necessary, click and drag on the slider or click the scroll up (▲) or down (▼) button until the desired setting is visible.
3. Click the desired setting.

Passwords Page

Access the Passwords page (figure 5-7) by clicking the Configuration tab and then the Passwords link on the left side of the System Settings page.

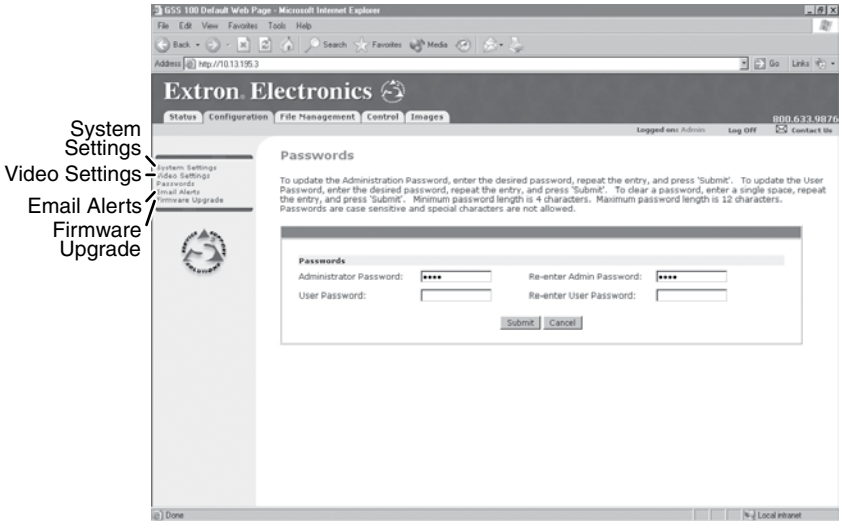


Figure 5-7 — Passwords page

The fields on the Passwords page are for entering and verifying administrator and user passwords. Passwords are case sensitive and are limited to 12 uppercase and/or lowercase alphanumeric characters. Each password must be entered twice; once in the Password field and then again in the Re-enter Password field. Characters in these fields are masked (•••••). If you do not want to password protect an access level, leave the Password field and the Re-Enter Password field blank. All changes made on the Port Settings must be confirmed by clicking the Submit button. Clicking the Cancel button abandons the changes.

NOTE *To clear an existing password (so that no password is required), enter a space in the Password and Re-enter Password fields and click the Submit button.*

E-mail Alerts page

Access the E-Mail Alerts page (figure 5-8) by clicking the Configuration tab and then the Email Alerts link on the left side of the System Settings page. This page provides a way to set the GSS to automatically send e-mail alert messages when settings are changed on the GSS. You can enter up to 64 e-mail recipients.

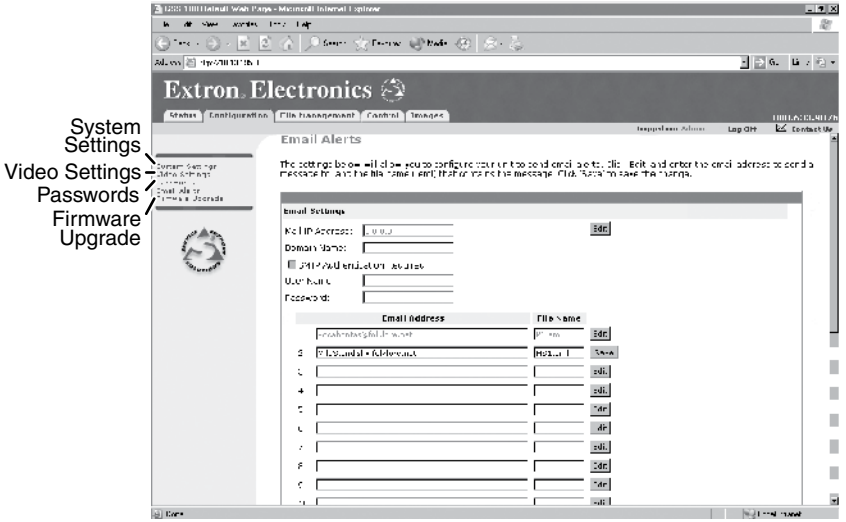


Figure 5-8 — E-Mail Alerts page

Configure the GSS to send e-mail alerts as follows:

1. On the Email Alerts screen, click the *Edit* button located to the right of the Mail IP Address and Domain Name fields. The *Edit* button changes to *Save*.
2. Enter the GSS's IP address and the appropriate domain name in the appropriate fields. If desired, select the SMTP Authorization required checkbox and enter the desired User Name and Password in the appopriate fields.

NOTE *All of the variables and selections in step* **2** *are available from your network administrator.)*

3. Click the *Save* button.

4. Set up e-mail addresses for notification for each recipient of e-mail alerts as follows:

   a. Click the *Edit* button at the end of the address row. The *Edit* button changes to *Save*.

   b. Enter the e-mail address of the recipient, and the name of the file (*.eml extension), stored in the GSS, that contains the message.

   c. Click the Save button to save the changes. The Save button changes back to Edit.

Sending an e-mail alert

To send an e-mail alert, issue the **send mail** (Esc X41 SM ←) SIS command. See chapter 4, *SIS™ Control*, for details.

For detailed information on creating scripts for monitoring and scheduling GSS events, refer to the *Global Viewer Software User's Guide*.

Firmware Upgrade Page

The Firmware Upgrade page provides a way to upgrade the firmware that is coded on the GSS's control board without taking the GSS out of service, opening the enclosure, and replacing the firmware chip. Access the Firmware Upgrade page (figure 5-9) by clicking the Configuration tab and then the Firmware Upgrade link on the left side of the System Settings page.

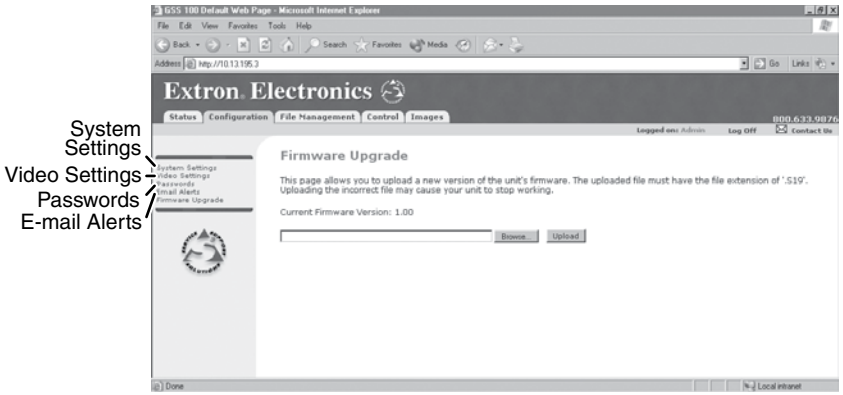


Figure 5-9 — Firmware Upgrade page

Update the GSS firmware as follows:

NOTE *The Firmware Upgrade page is only for replacing the firmware that controls all processor operation.*
***To insert your own HTML pages**, see* File Management Page, *on page 5-16.*
***To upload images**, see* Image Settings Page *on page 5-18.*

1. Visit the Extron web site, www.extron.com, and select either:
   - The download tab and then select firmware files
   - The GSS 100 product page
2. Select the latest firmware installation package (*.exe file) for the GSS and download it. Note the folder to which you save the file.
3. Run the executable (*.exe) file to decompress the firmware file.
4. Connect the PC to the GSS via the GSS's Ethernet port, either directly or through a network.
5. Access the GSS using HTML pages.
6. Click the Configuration tab.
7. Click the Firmware Upgrade link.
8. Click the Browse button. An open file window appears (figure 5-10).

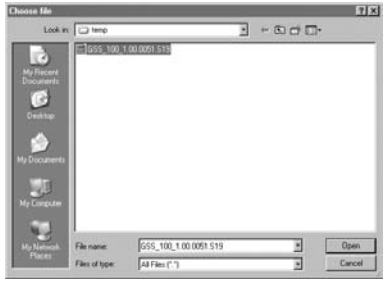


Figure 5-10 — Firmware upgrade open file window

9. Navigate to the folder where you saved the firmware upgrade file. Select the file.

NOTE *Valid firmware files must have the file extension ".S19". Any other file extension is not a firmware upgrade file.*

NOTE *The original factory-installed firmware is permanently available on the GSS. If the attempted firmware upload fails for any reason, the GSS automatically reverts to the factory-installed firmware.*

10. Click the Open button.

11. Click the Upload button. The firmware upload to the GSS may take a few minutes. The GSS's LCD display shows **Firmware Upload**, then **Re-Starting**. When the LCD returns to the default display cycle (see *Power-on indications*, in chapter 3, *Operation*), the firmware upload is complete.

File Management Page

To delete files such as HTML pages from the GSS or to upload your own files to the GSS, click the File Management tab. The GSS outputs the File Management HTML page (figure 5-11).

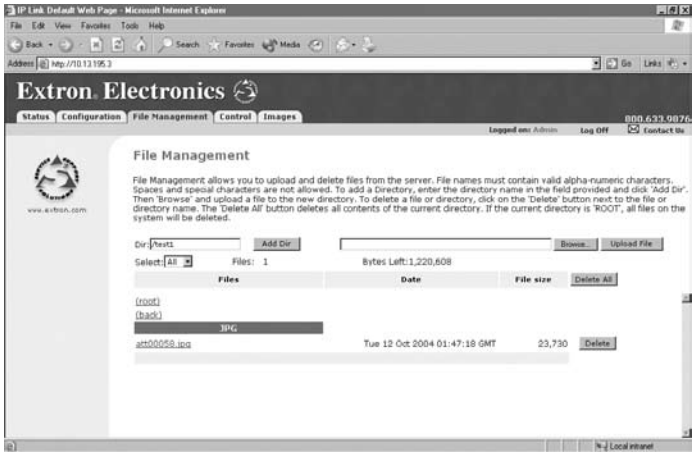


Figure 5-11 — File Management page

NOTE *The files listed in figure 5-11 are shown for example only and may not be present on your GSS 100.*

To delete a file, click the individual Delete button to the right of the file that is no longer needed.

Upload your own files as follows:

1. Click the *Browse* button. The Choose File window appears.

2. Browse through your system and select the desired file.

NOTE *The following characters are invalid in file names: {space} + ~ @ = ' [ ] { } < > ' " ; : | \ and ?.*

NOTE *If you want one of the pages that you create and upload to be the default startup page, name that file "index.html".*

3. Click the Upload File button. The file that you selected appears in the list.

Control Page

Click the Control tab to access the Control page (figure 5-12).

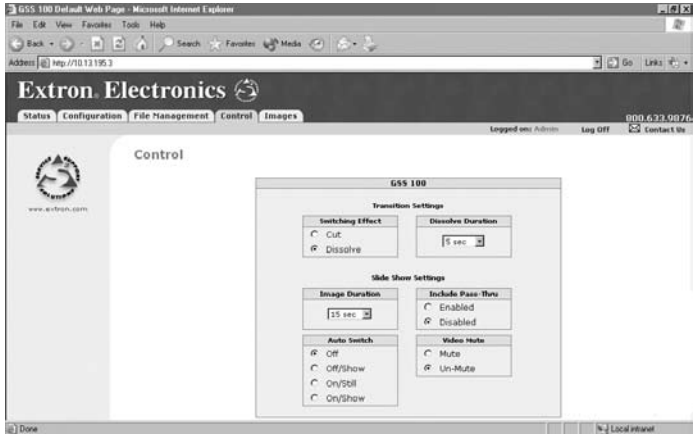


Figure 5-12 — Control page

On the Control page, you can set the transition effect (cut or dissolve), mute and unmute the video, and select the dissolve duration (from 0 to 5 seconds, in 0.1-second increments). You can also change the slide show settings, such as:

- The duration of each image displayed in the slide show (from 0 to 300 seconds)
- Inclusion of the pass-through input in the slide show
- Auto Switch mode

Image Settings Page

Click the Images tab to access the Image Settings page.

You can upload and delete stored images and select a stored image for display on the Image Settings page (figure 5-13). You can also select the pass-through input for display.

The Image Index column displays thumbnails of all stored images in the GSS. The Current Image field identifies the image file that is currently being displayed. The Selected Image field identifies the image file (if different from the current image) that is selected and awaiting the Take command.

NOTE *If no new image has been selected, the Current Image and Selected Image fields contain the same file name.*

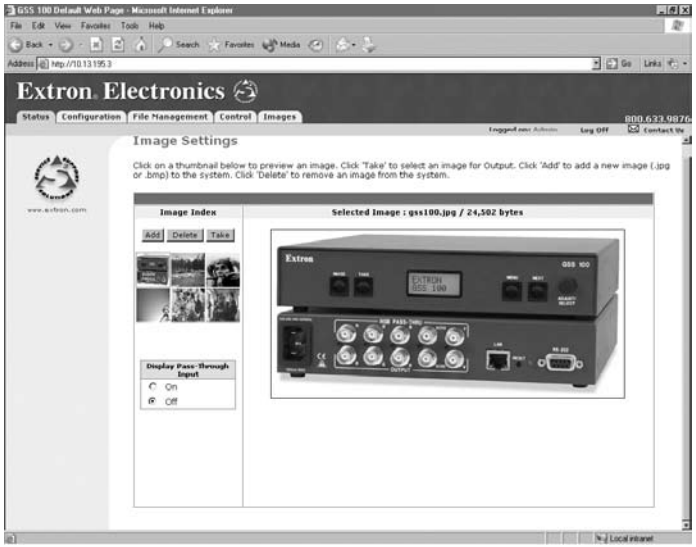


Figure 5-13 — Image Settings page

Uploading (adding) an image

Upload an image to the GSS 100 as follows:

1. Click the *Add* button. The Add Image field appears (figure 5-14).

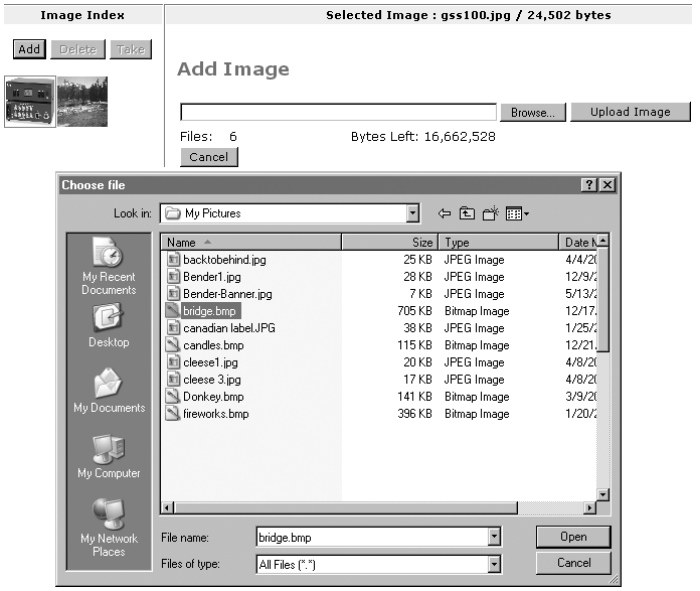


Figure 5-14 — Uploading an image

2. Click the *Browse* button. The Choose File window appears.
3. Browse through your system and select the desired image file.

NOTE *The only valid file formats for uploaded image files are *.bmp and *.jpg.*

Valid file names are up to 240 alphanumeric characters with no spaces.

*Progressive *.jpg images are not supported.*

Bitmap (.bmp) images must be formatted as 24-bit RGB.*

4. Click the *Open* button. The complete file location and name appear in the Add Image field.
5. Click the *Upload Image* button. After several seconds, a thumbnail of the uploaded image appears in the Image Index portion of the page and the image is available for display.

Deleting a stored image

Delete a stored image from the GSS 100 as follows:

1. Select (click) the thumbnail of the image to be deleted.
2. Click the *Delete* button. A confirmation message appears.
3. Click the *Ok* button.

Selecting a stored image

Select a stored image for the GSS 100 to output as follows:

1. Select (click) the thumbnail of the image to be displayed. The file name and a larger image appear in the Selected Image field.
2. Click the *Take* button. After several seconds, GSS outputs the image and shows the name of the displayed image in the Current Image banner on this page.

Special Characters

The HTML language reserves certain characters for specific functions. The GSS does not accept these characters as part of its name, passwords, or locally created file names. Valid file names:

- Are a maximum of 24 uppercase or lowercase alphanumeric characters
- Cannot include spaces or underscore characters
- Cannot start with a number or a dash
- Cannot end with a dash

NOTE *Other files, such as image files are not constrained by these guidelines.*

Installing the IPL File Manager and Uploading Images

You can also upload images using the free Extron IPL File Manager program, designed for Extron's IP Link family of products. You can download the IP Link File Manager software from the Extron Web site, www.extron.com.

Installing the IPL File Manager

1. Log on to the Extron Web site, www.extron.com.
2. Type *IPL file manager* in the Web page's Search box in the upper right corner. Press the keyboard Enter key.
3. Click *IP Link™ File Manager* under the Products header that appears in the Search Results. The IP Link File Manager Web page appears.
4. Click *Control Software*. The product's Download screen appears.
5. Enter the information requested on the screen.
6. Click the *Download IPLinkFileManagerSWx_x.exe* button.
7. On the File Download window that appears, click the *Save* button. The Save As window opens.
8. Navigate to the desired location for your file, then click the *Save* button. The IP Link File Manager is stored on your PC.
9. To install the IP Link File Manager, double-click the IPLinkFileManager.exe file that you downloaded. Follow the instructions on the installation program windows.

Uploading image files

After you have set up the progam for the GSS that is connected to your computer, you can now upload image files to the GSS. These files can be *.bmp and *.jpg files.

Use the IP Link File Manager program to upload files to the GSS as follows:

1. Click *Start > Programs > Extron Electronics > IPL Tools > IP Link File Manager > IPL File Manager* to start the program.

   If the Select Startup Mode window (figure 5-15) **does not** appear, proceed to step **4**:

2. If the Select Startup Mode window (figure 5-15) appears:

   And you have not used this program while connected to this GSS before, proceed to step **3**.

   And you have used this program while connected to this GSS before, click *Use Previous Setup* and proceed to step **4**.

NOTE *Select the* Never ask again *checkbox to skip the Select Startup Mode Window step from now on.*

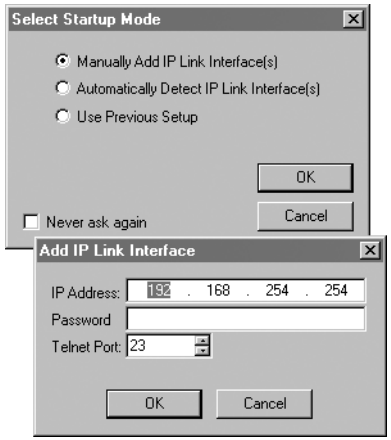


Figure 5-15 — Select Startup Mode window

3. Type the GSS's IP address and, if the GSS is password protected, the password into the Add IP Link Interface box. Click *OK*.

4. The IP Link File Manager program window appears (figure 5-16). The window contains two major sections.
   - Computer System (left section) — Displays your computer's file system. In this section you can browse to locate files on your PC hard drive or a server to which you have access.
   - IP Link Interfaces (right section) — Displays the files that are loaded in the GSS.

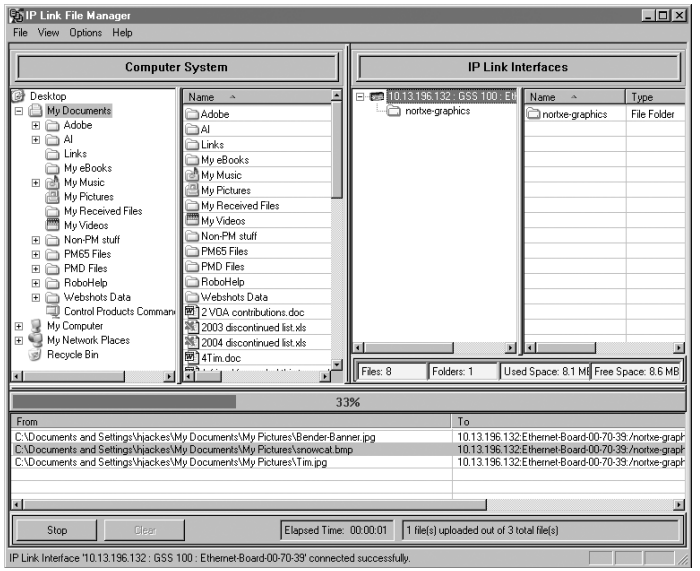


Figure 5-16 — IP Link File Manager program window

5. Check to see that the GSS contents include the directory "nortxe-graphics".

   If the "nortxe-graphics" directory is present in the GSS, proceed to step **6**.

   If the "nortxe-graphics" directory is not present in the GSS, create the folder as follows:

   a. Right-click the GSS's IP address in the IP Link Interfaces (right) section of the window.

   b Click *Add Directory*.

   c. Type the name *nortxe-graphics* and then press the PC's Enter key

6. Upload images to the GSS as follows:

NOTE *The only valid file formats for uploaded image files are *.bmp and *.jpg.*

Valid file names are up to 240 alphanumeric characters with no spaces.

*Progressive *.jpg images are not supported.*

Bitmap (.bmp) images must be formatted as 24-bit RGB.*

   a. In the Computer System (left) section of the IP Link File Manager window, navigate the folder that contains the file(s) that you want to upload to the GSS.
   b. Select the file(s) that you want to upload.
   c. Drag the file(s) to the "nortxe-graphics"directory in the IP Link Interfaces (right) section.

      The file upload queue at the bottom of the IP Link File Manager program window shows the files that you have dragged to the GSS and the status of the upload.

      After a few seconds, the name(s) of the dragged file(s) appears in the interface file list.

7. Delete images from the GSS by clicking on them and pressing the PC's Delete key and clicking *Yes* in the advisory box that appears.

Appendix A

Reference Information

Specifications

Part Numbers

Specifications

Video input

Number/signal type ..... 1 VGA–UXGA RGBHV, RGBS pass-through
Connectors ..... 5 female BNC
Nominal level ..... 0.7 Vp-p for RGB
Minimum/maximum levels ..... Analog: 0.3 V to 1.5 Vp-p with no offset
Impedance ..... 75 ohms
Horizontal frequency ..... 15 kHz to 145 kHz
Vertical frequency ..... 30 Hz to 170 Hz
Return loss ..... <-42 dB @ 5 MHz
DC offset (max. allowable) ..... 1.5 V

Video output

Number/signal type ..... 1 VGA-SXGA RGBHV, RGBS (selectable for stored images, follows input type for pass-through input)
Connectors ..... 5 BNC female
Nominal level ..... 0.7 Vp-p for RGB
Minimum/maximum levels ..... 0 V to 0.7 Vp-p (unity gain on pass-through input)
Impedance ..... 75 ohms
Vertical frequencies ..... 50 Hz, 60 Hz, 72 Hz, 96 Hz, 100 Hz, 120 Hz
Output resolutions ..... 640x480[1,2,3,4,5,6], 800x600[1,2,3,4,5,6], 852x480[1,2,3,4,5], 1024x768[1,2,3,4], 1024x852[1,2,3,4], 1024x1024[1,2,3], 1280x768[1,2], 1280x1024[1,2], 1360x765[1,2], 1365x768[1,2], 1365x1024[1,2], 1366x768[1,2], 1400 x 1050[1,2] HDTV: 480p[1,2], 576p[1,2], 720p[1,2], and 1080i[1,2]
[1] = at 50 Hz [2] = at 60 Hz [3] = at 72 Hz
[4] = at 96 Hz [5] = 100 Hz [6] = 120 Hz
Return loss ..... -43 dB @ 5 MHz
DC offset ..... ±5 mV with input at 0 offset

Sync

Input type ..... RGBHV, RGBS
Output type ..... RGBHV, RGBS
Input level ..... 1.5 V to 5.0 Vp-p
Output level ..... TTL: 4.5 Vp-p, unterminated
Input impedance ..... 510 ohms
Output impedance ..... 75 ohms
Max input voltage ..... 5.0 Vp-p
Max. propagation delay ..... 20 ns
Polarity ..... Selectable

File loading times

640 x 480 resolution
- Bitmap (BMP) file ..... 1.0 second
- JPEG (189 kB) file ..... 2.5 seconds
- JPEG (20 kB) file ..... 2.0 seconds

1024 x 768 resolution
- Bitmap (BMP) file ..... 3.0 seconds
- JPEG 100% (651 kB) file ..... 4.0 seconds
- JPEG 75% (157 kB) file ..... 3.5 seconds

1400 x 1050 resolution
- Bitmap (BMP) file ..... 4.0 seconds
- JPEG 100% (702 kB) file ..... 5.5 seconds
- JPEG 75% (181 kB) file ..... 4.5 seconds

Memory and image storage

Internal memory ..... 16 MB

Image storage memory requirements

	Total Megabytes of Memory Required at Specific Resolutions				
BMP Images Available	640 x 480	800 x 600	1024 x 768	1280 x 1024	1400 x 1050
1	0.9 MB	1.4 MB	2.4 MB	3.9 MB	4.4 MB
2	1.8 MB	2.9 MB	4.7 MB	7.8 MB	8.8 MB
3	2.8 MB	4.3 MB	7.1 MB	11.8 MB	13.2 MB
4	3.7 MB	5.8 MB	9.4 MB	15.7 MB	
5	4.6 MB	7.2 MB	11.8 MB		
6	5.5 MB	8.6 MB	14.2 MB		
7	6.5 MB	10.1 MB			
8	7.4 MB	11.5 MB			
9	8.3 MB	12.9 MB			
10	9.2 MB	14.4 MB			
11	10.1 MB	15.8 MB			
17	15.7 MB				

NOTE *JPEG image storage is highly variable and is based on file size. To calculate the total number of JPEG images you can store, divide 16 MB by the JPEG file size. For example, 16 MB ÷ 500 kB (0.5 MB) = 32 images.*

Control/remote — video processor

Serial control port	RS-232, 9-pin female D connector
Baud rate and protocol	300 to 115200 baud (configurable) Default settings (adjustable: 9600 baud; 8 data bits; 1 stop bit; no parity
Serial control pin configurations	2 = TX, 3 = RX, 5 = GND
Ethernet control port	1 RJ-45 female connector
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, DHCP, ICMP (ping), TCP/IP, Telnet
Ethernet default settings	Link speed and duplex level = autodetected IP address = 192.168.254.254, subnet mask = 255.255.0.0, default gateway = 0.0.0.0 DHCP = off
Program control	Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer, Telnet

General

Power	100 VAC to 240 VAC, 50/60 Hz, 30 watts, internal, autoswitchable
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
Rack mount	Yes, with optional 1U rack shelf, part #**60-190-01** or **60-604-01**; or furniture-mountable with optional brackets
Enclosure type	Metal
Enclosure dimensions	1.75" H x 8.75" W x 9.5" D (1U high, half rack wide) 4.4 cm H x 22.2 cm W x 24.1 cm D (Depth excludes connectors and knobs.)
Product weight	4.5 lbs (2.1 kg)
Shipping weight	7 lbs (4 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
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.*

Part Numbers

Item	Part number
GSS 100	60-684-01
IEC power cord	
Rubber feet (4)	
GSS 100 User's Manual	

Accessories

Accessories	Part number
RSU 129 19" 1U universal rack shelf kit	60-190-01
RSB 129 19" 1U basic rack shelf	60-604-01

Cables

When using signals with a scanning frequency of 15-125 kHz and running distances of 100 feet or more, use high resolution BNC cables to achieve maximum performance.

Bulk cable

RG6/super high resolution cable	Part #
RG6/SHR-4 bulk, 500'	22-099-02
RG6/SHR-5 bulk, 500'	22-100-02
RG6/SHR male crimp connectors, qty. 50	100-075-51

BNC-4 Mini HR Cable	Part #
BNC-4 Mini HR bulk, 500'	22-032-02
BNC-4 Mini HR bulk, 1000'	22-032-03

BNC-5 Mini HR Cable	Part #
BNC-5 Mini HR bulk, 500'	22-020-02
BNC-5 Mini HR bulk, 1000'	22-020-03

Plenum BNC-5 Mini HR Cable	Part #
Plenum BNC-5 Mini HR bulk, 500'	22-103-02
Plenum BNC-5 Mini HR bulk, 1000'	22-103-03

Assorted connectors

BNC connectors	Part #
BNC Mini HR crimp connectors, qty. 50	100-074-51
SHR male crimp connectors, qty. 50	100-075-51
BNC bulkhead connectors, qty. 50 (for custom wall plates)	100-076-51

Pre-cut cables

BNC-4 Mini HR cable is used for RGBS cable runs, and BNC-5 Mini HR cable is used for RGBHV cable runs. Either type can also be used for composite video.

NOTE *All Extron BNC cables have male connectors on both ends. A plenum version of the BNC-5 Mini HR cable is also available.*

BNC-4 Mini HR Cable	Part #
BNC-4-25′ MHR (25 feet/7.5 meters)	26-210-04
BNC-4-50′ MHR (50 feet/15.0 meters)	26-210-05
BNC-4-75′ MHR (75 feet/23.0 meters)	26-210-06
BNC-4-100′ MHR (100 feet/30.0 meters)	26-210-07
BNC-4-150′ MHR (150 feet/45.0 meters)	26-210-08
BNC-4-200′ MHR (200 feet/60.0 meters)	26-210-09
BNC-4-250′ MHR (250 feet/75.0 meters)	26-210-54
BNC-4-300′ MHR (300 feet/90.0 meters)	26-210-53
BNC-5-25′ MHR (25 feet/7.5 meters)	26-260-03

BNC-5 Mini HR Cable	Part #
BNC-5-50′ MHR (50 feet/15.0 meters)	26-260-04
BNC-5-75′ MHR (75 feet/23.0 meters)	26-260-16
BNC-5-100′ MHR (100 feet/30.0 meters)	26-260-05
BNC-5-150′ MHR (150 feet/45.0 meters)	26-260-12
BNC-5-200′ MHR (200 feet/60.0 meters)	26-260-06
BNC-5-250′ MHR (250 feet/75.0 meters)	26-260-18
BNC-5-300′ MHR (300 feet/90.0 meters)	26-260-14

NOTE *Bulk cable in lengths up to 5000′ (1524 meter) rolls is available with or without connectors.*