Signal Processors

GSS 100
Graphic Still Store

Extron   GSS 100

IMAGE   TAKE   EXTRON   MENU   NEXT
                     GSS 100
                                        ADJUST/
                                        SELECT

100-240 VAC 50/60Hz   RGB PASS-THRU
                     R   G   B   H/HV   V
                                              LAN   RS-232
                     R   G   B   H/HV   V   RESET
300mA MAX   OUTPUT

Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

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.

安全须知 • 中文

⚠ 这个符号提示用户该设备用户手册中有重要的操作和维护说明。

⚡ 这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

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'Il 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 Objekten blockiert werden.

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

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

Advertencia

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

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

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

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

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalentamiento 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.

警告

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

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

电源线保护 • 妥善布线，避免被踩踏，或重物挤压。

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

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

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

FCC Class A Notice

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. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

The Class A 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 with FCC emissions limits.
	For more information on safety guidelines, regulatory compliances, EMI/EMF compliance, accessibility, and related topics, **click here**.

Conventions Used in this Guide

In this user guide, the following are used:

> **NOTE:** A note draws attention to important information.

> **TIP:** A tip provides a suggestion to make working with the application easier.

> **CAUTION:** A caution indicates a potential hazard to equipment or data.

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

Commands are written in the fonts shown here:

```
^AR Merge Scene,,Op1 scene 1,1 ^B 51 ^W^C
```
```
[Ø1] R ØØØ4 ØØ3ØØ ØØ4ØØ ØØ8ØØ ØØ6ØØ [Ø2] 35 [17] [Ø3]
```

Esc X1 * X17 * X20 * X23 * X21 CE ⬅

> **NOTE:** For commands and examples of computer or device responses mentioned in this guide, the character "Ø" is used for the number zero and "O" represents the capital letter "o."

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 2Ø8.132.18Ø.48: bytes=32 times=2ms TTL=32
```
```
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx —t
```
```
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.

Click the **OK** button.

Contents

Introduction

This section introduces the Extron® GSS 100 Graphic Still Store, including:

- **About this Guide**
- **About the GSS 100 Graphic Still Store**
- **Features**

About this Guide

This manual contains installation and operating information for the Extron GSS 100 Graphic Still Store.

> **NOTE:** Throughout this guide, the unit is identified as either "GSS 100," the "GSS," or the "graphic still store."

About the GSS 100 Graphic Still Store

The Extron GSS 100 (see figure 1) 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 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.
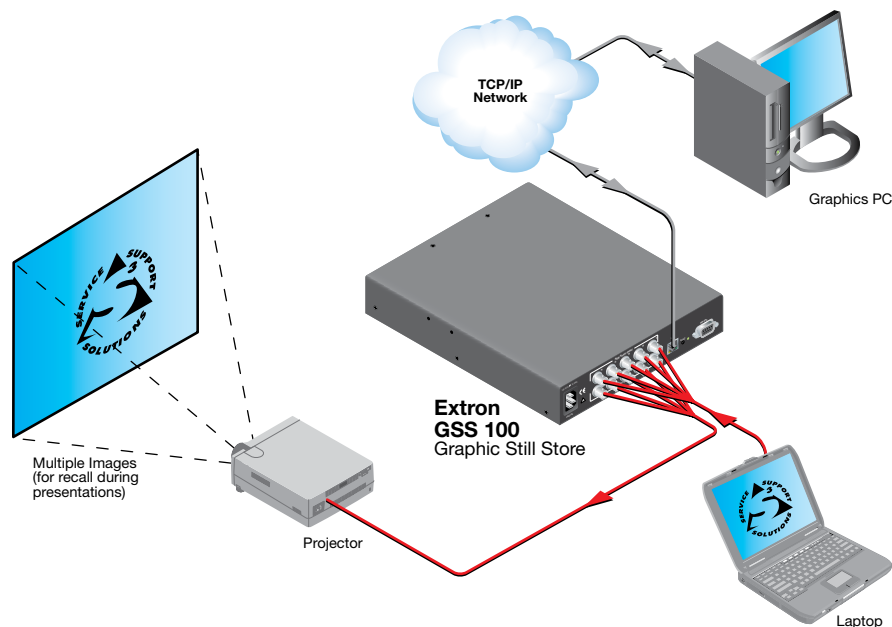

Figure 1. **Typical GSS 100 Application**

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

The GSS provides 16 MB 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. Table 2 shows the number of BMP images that the GSS can accommodate, based on several common resolutions.

Table 2. Approximate Image Space for BMP Files

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

The graphic 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, 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

Installation

This section details the installation of the GSS 100, including:

- **Mounting the GSS**
- **Rear Panel Connections**

Mounting the GSS

CAUTION: Installation and service must be performed by authorized personnel only.

Detailed mounting instructions can be found in the "**Reference Information**" section. The 1U high, half-rack width GSS 100 can be placed on a tabletop, **mounted on a rack shelf**, or **mounted under or through furniture**. Use the applicable optional hardware:

- RSU 129 9.5-inch deep universal rack shelf kit (part number **60-190-01**)
- RSB 129 9.5-inch deep basic rack shelf (part number **60-604-02**)
- MBU 125 Under-desk mount kit (part number **70-077-01**)
- MBD 129 Through-desk mount kit (part number **70-077-02**)

Rear Panel Connections

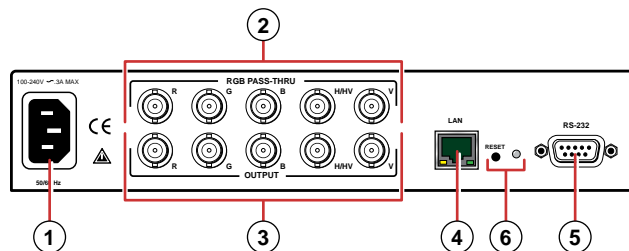All connectors are on the rear panel (see figure 2).

Figure 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 (see figure 3 to connect the RGB video format for each configuration).
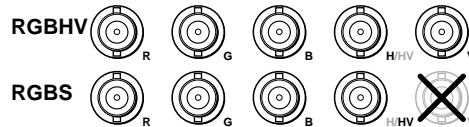
Figure 3. Video Output Connection Format

> **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

Ethernet connection

④ **LAN port —** Connect the GSS to a PC or to an Ethernet LAN, via this RJ-45 connector. You can use the HTML pages embedded in the GSS 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.

Activity LED   Link LED
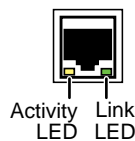
Link LED indicator — The green (link) LED indicates that the GSS 100 is properly connected to an Ethernet LAN. This LED should light steadily.

Act LED indicator — The yellow (activity) LED indicates transmission of data packets on the RJ-45 connector. This LED should flicker as the GSS 100 communicates.

Cabling

It is vital that your Ethernet cables be the correct cable type and that they be correctly terminated with the proper connector pinout. Ethernet links use Category (CAT) 3, 5e, or 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 feet (100 m).

> **NOTES:** • Do not use standard telephone cables. Telephone cables do 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 100 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.

RJ-45 connector wiring

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

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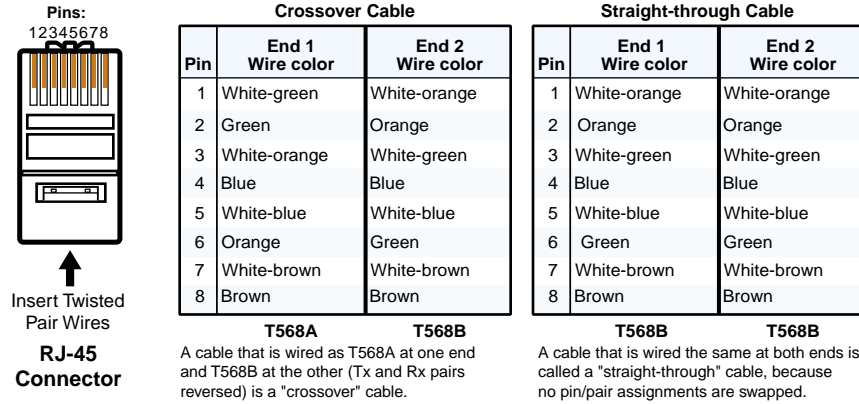- **Patch (straight) cable —** Connection of the GSS 100 to an Ethernet LAN

Pins:
12345678

Insert Twisted
Pair Wires

**RJ-45
Connector**

Crossover Cable

Pin	End 1 Wire color	End 2 Wire color
1	White-green	White-orange
2	Green	Orange
3	White-orange	White-green
4	Blue	Blue
5	White-blue	White-blue
6	Orange	Green
7	White-brown	White-brown
8	Brown	Brown
	T568A	**T568B**

A cable that is wired as T568A at one end and T568B at the other (Tx and Rx pairs reversed) is a "crossover" cable.

Straight-through Cable

Pin	End 1 Wire color	End 2 Wire color
1	White-orange	White-orange
2	Orange	Orange
3	White-green	White-green
4	Blue	Blue
5	White-blue	White-blue
6	Green	Green
7	White-brown	White-brown
8	Brown	Brown
	T568B	**T568B**

A cable that is wired the same at both ends is called a "straight-through" cable, because no pin/pair assignments are swapped.

Figure 4. **RJ-45 Connector and Pinout Tables**

Serial connection

⑤ **RS-232 port —** Connect a computer or control system to this 9-pin D connector to allow remote control using the SIS commands (see figure 5 and the "**Programming Guide**" section).

RS-232

5   1

9   6

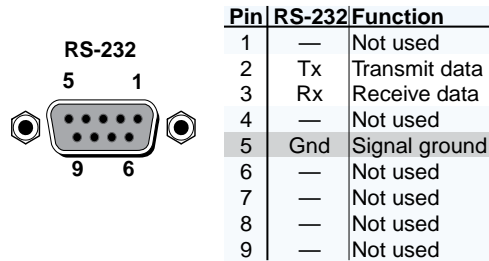| Pin	RS-232	Function
1	—	Not used
2	Tx	Transmit data
3	Rx	Receive data
4	—	Not used
5	Gnd	Signal ground
6	—	Not used
7	—	Not used
8	—	Not used
9	—	Not used

Figure 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 for a moment 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 for a moment to reset the IP functions of the GSS.

- **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 for a moment to restore the GSS to the default factory conditions.

> **NOTE:** The absolute (mode 5) reset clears all image files, IP settings, and user settings and resets the graphic still store to the factory default.

Operation

This section describes the front panel operation of the GSS 100, including:

- **Front Panel Controls and Indicators**
- **Front Panel Operations**

Front Panel Controls and Indicators

Figure 6 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.
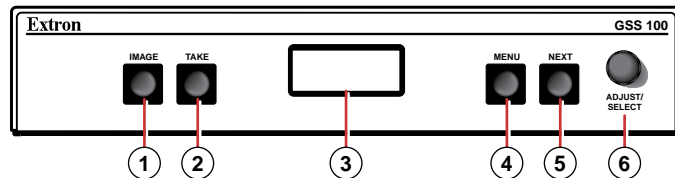

Figure 6. GSS 100 Front Panel

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 between the GSS and 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 15 seconds, the LCD diplays its default cycle, alternating among four displays that show the model name, the currently displayed image (the pass-through input or the file name of one of the previously loaded images), the output resolution (of a stored image only; the pass-through input is output exactly as it is input), and the IP address of the unit (see figure 7).

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

> **NOTE:** On figure 7 and all other flowcharts in this chapter, dashed lines indicate screen changes that are the result of a timeout function.
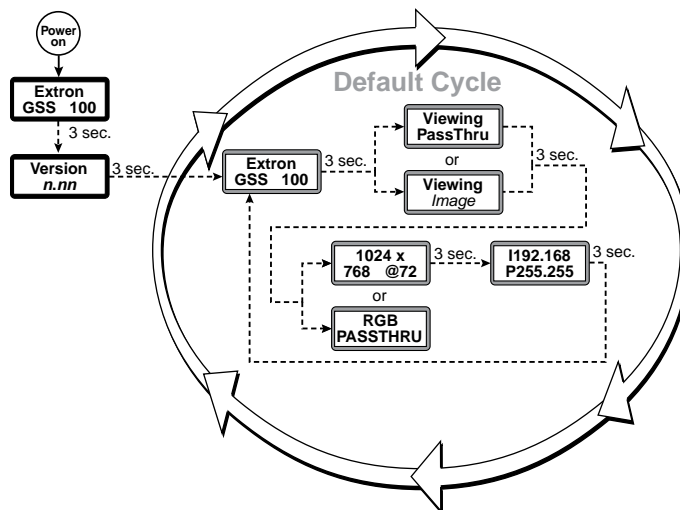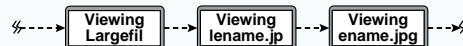

Figure 7. LCD Power-on Displays and Default Display Cycle

> **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:
>
>

Selecting an Image to Display

> **NOTES:** • 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.
>
> • 1080i and 1080p files need to be mastered at a resolution of 1440 x 1080 instead of the expected 1920 x 1080.

Select an image to display as follows:

1. Press and release the Image button (see figure 8).
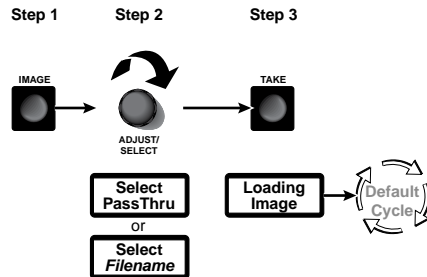
Figure 8.   Selecting an image

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 (see figure 9). 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-through display. When the video output is unmuted (video is output), the asterisk is not present.

Figure 9.   Muting and Unmuting the Output

Menu System Overview

Figure 10 shows a flowchart of the main menus in the menu system.

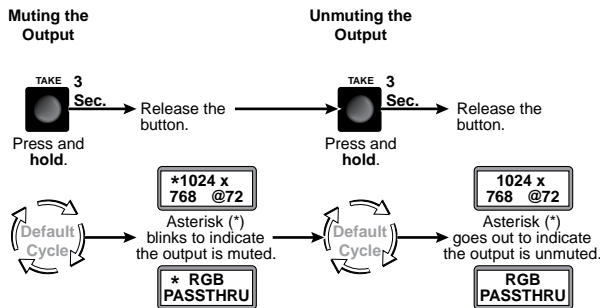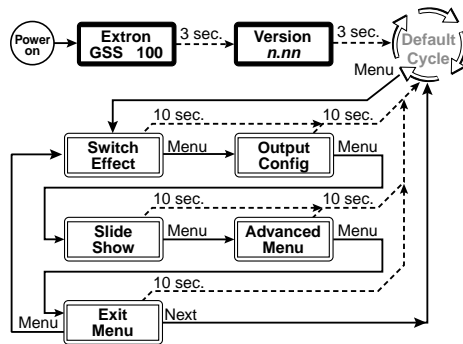**Figure 10. Menu System Flowchart**

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 section and specific subsections for explanations of knob adjustments.

> **NOTES:**
> - To return to the default cycle, let the GSS remain idle for 30 seconds until the selected screen times out, or press the Menu button until the Exit Menu appears, then press the Next button.
> - From any menu or submenu, after 30 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 3 minutes. Ensure that you wait at least 3 minutes after making any changes or those changes may be lost.

Switch Effect menu

Figure 11 is a flowchart that shows an overview of the Switch Effect menu and the available settings.
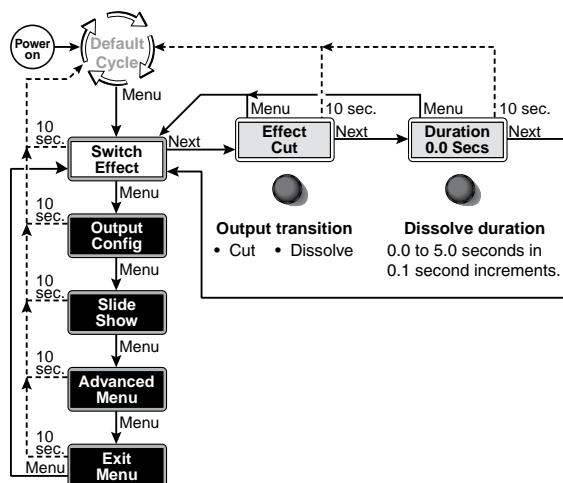
Figure 11. Switch Effect Menu Flowchart

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 12 is a flowchart that shows an overview of the Output Configuration menu and the available settings.

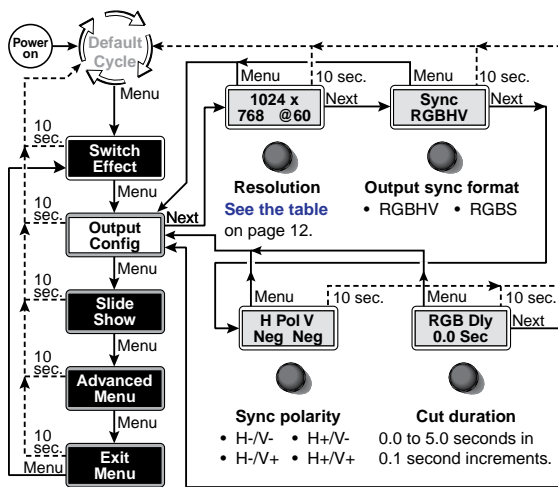**Figure 12. Output Configuration Submenu**

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.

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 800	•	•				
1280 x 1024	•	•				
1360 x 765	•	•				
1365 x 768	•	•				
1366 x 768	•	•				
1365 x 1024	•	•				
1400 x 1050	•	•				
1440 x 900	•	•				
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 and 5 seconds, in 0.1-second increments. No delay (0.0 seconds) is the default setting.

Slide Show menu

Figure 13 is a flowchart that shows an overview of the Slide Show menu and the available settings.
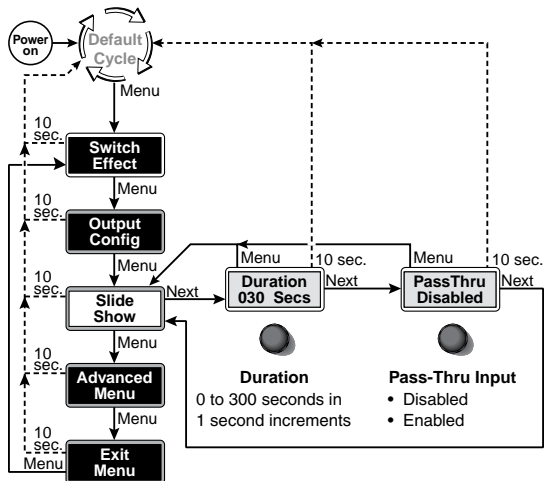
Figure 13. **Slide Show Submenu Flowchart**

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 14 is a flowchart that shows an overview of the Advanced menu and the available settings.
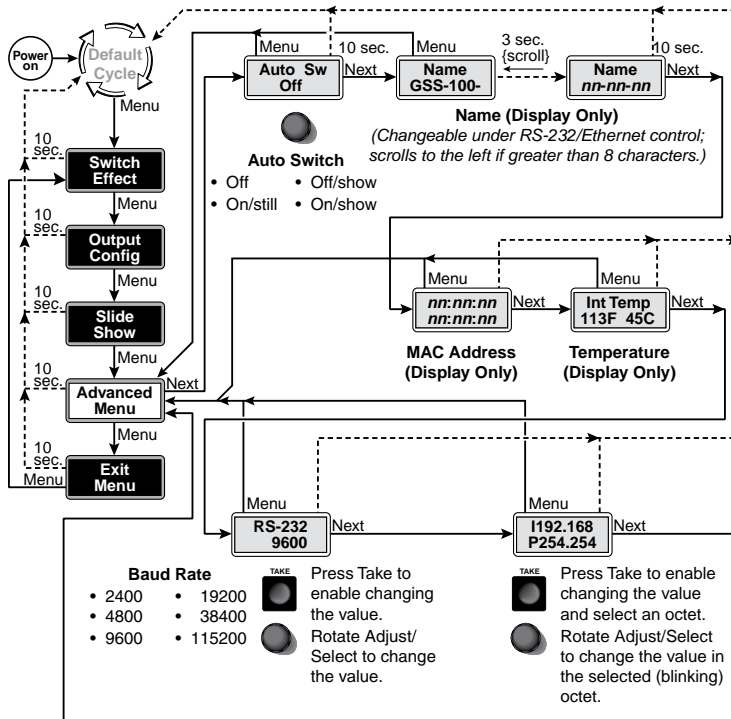
Figure 14. Advanced Submenu Flowchart

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 and 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 the last three pairs of the MAC address (see the "**Programming Guide**" and "**HTML Control and IPL File Manager**" sections 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 submenu

The Baud Rate menu is read-only without further action. The menu shows the selected baud rate for the RS-232 port of the GSS. 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 (see the "**Programming Guide**" section).

IP address submenu

The read-only IP address menu is read-only without further action. The menu shows the IP address of the GSS. 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 the "**Programming Guide**" and "**HTML Control and IPL File Manager**" sections).

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 (lock mode 1) 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 5 seconds and then returns to the default display cycle.

To toggle the lock on and off (lock mode 0), press and **hold** the Image button and the Next button for approximately 2 seconds.

> **NOTE:** Lock mode 2, available using SIS commands only, completely locks the front panel, including the Image and Take buttons. Lock mode 2 can also be disabled using SIS commands **only** (see the "**Programming Guide**" section).

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 (see figure 15).
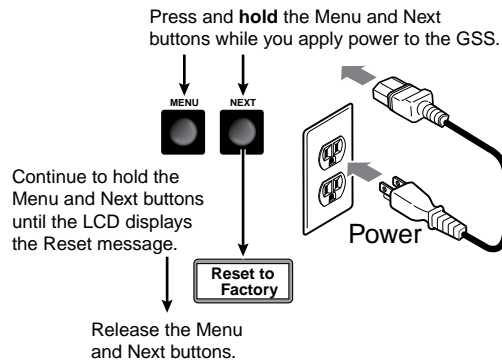
Figure 15. System Reset

> **NOTE:** The front panel absolute reset can be used to recover a GSS that has been inadvertently loaded with image files in incompatible formats.

Programming Guide

This section describes Simple Instruction Set operation of the GSS 100.

The rear panel RS-232 connector (see figure 16) can be connected to the serial port of a host device, such as a computer or control system. Communications with the GSS are via the Extron Simple Instruction Set (SIS).

RS-232

5   1

9   6

Pin	RS-232	Function
1	—	Not used
2	Tx	Transmit data
3	Rx	Receive data
4	—	Not used
5	Gnd	Signal ground
6	—	Not used
7	—	Not used
8	—	Not used
9	—	Not used

Figure 16. 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 starting below, are used throughout the discussions of the GSS-initiated messages that begin below and the command and response table that begins on **page 22**. The symbols represent variables in the GSS-initiated messages and the command and response table fields.

↵ = CR/LF (carriage return and line feed) (hex 0D 0A)

← = Carriage return (no line feed, hex 0D)

| = Pipe (can be used interchangeably with the ← character)

• = Space character

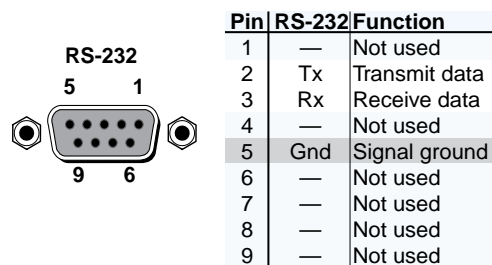Esc = Escape key (hex 1B)

W = Can be used interchangeably with the Esc character

X1 = Image file name   Image name with file extension (*.bmp or *.jpg)
(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
Pass-through	0 = pass-thu	1 = no pass-thru

X3 = Time   00 – 50 (0.0 to 5.0 seconds) for RGB delay and dissolve duration
000 – 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	10 = 1366 x 768
1 = 600 x 600	11 = 1365 x 1024
2 = 852 x 480	12 = 1400 x 1050
3 = 1024 x 768	13 = 480p
4= 1024 x 852	14 = 576p
5 = 1024 x 1024	15 = 720p
6 = 1280 x 768	16 = 1080i
7 = 1280 x 1024	17 = 1080p
8 = 1360 x 765	18 = 1280 x 800
9 = 1365 x 768	19 = 1440 x 900

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 = Front panel Lock mode   0 = unlock   1 = partial lock   2 = complete lock

X10 = Event number   00 through 99

X11 = Event buffer   0 = Receive   1 = User   2 = NVRAM

X12 = Even buffer offset   00 through maximum buffer size

X13 = Event data size

b = bit	S = short (16 bits)
B = byte	L = long (32 bits)

> **NOTE:** The X13 parameter is case sensitive.

X14 = ASCII digits representing the numeric value of the data element read from the event buffer (leading zeroes are suppressed)

X15 = Event status fields   Event type
Event state
Event paused
Error status
RcvBuff_startptr
RcvBuff_endptr
UsrBuff_Startptr
UsBuff_endptr

X16	= Event data to write

X17 = Number of bytes to read

X18 = Pass-through sync status

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

X19 = Bytes of memory used   *nnnnnnn* (bytes)

X20 = Firmware version   *n.nn*

GSS-initiated (Unsolicited) Messages

When a local event, such as an equipment power-up, 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 2010, Extron Electronics, GSS 100, V*x.xx*↵

The GSS 100 issues the `Copyright` message (above) 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 100 initiates the `Eff` message when a front panel change in the image switch effect takes place.

Dur X3 ↵

The GSS 100 initiates the `Dur` message when a front panel change in the dissolve duration takes place.

Output configuration

`Rte`X5`*`X6↵

The GSS 100 initiates the `Rte` message when a front panel change in the output resolution
takes place.

`Syn`X7↵

The GSS 100 initiates the `Syn` message when a front panel change in the output sync format
takes place.

`Pol`X8↵

The GSS 100 initiates the `Pol` message when a front panel change in the output sync
polarity takes place.

`Dly`X3↵

The GSS 100 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 100 initiates the `Pas` message when a front panel change in the pass-through
configuration takes place.

`Aut`X4↵

The GSS 100 initiates the `Aut` message when a front panel change in the auto-switch and
slide show on and off status takes place.

`Sli`X3↵

The GSS 100 initiates the `Sli` message when a front panel change in the slide display
duration takes place.

Front panel locks

`Exe`X2↵

The GSS 100 initiates the `Exe` message when a front panel change in the front panel lock on
or off status takes place.

Host-to-GSS Instructions

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

E10 — Invalid command
E13 — Invalid value (out of range)
E14 — Illegal command for this configuration
E17 — Timeout (caused only by direct write of global presets)
E22 — Busy
E24 — Privilege violation (Ethernet, Extron software only)
E25 — Device not present
E26 — Maximum number of connections exceeded
E27 — Invalid event number
E28 — Bad filename or 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 and Response Tables

The command and response table begins on the **next page**. Either uppercase or lowercase letters are acceptable in the command field except where indicated for the audio level (gain and attenuation) commands. 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 and response table.

ASCII to Hex Conversion Table									Esc	1B	CR	ØD	LF	ØA
Space →		2Ø	!	21	"	22	#	23	$	24	%	25	&	26	'	27
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
Ø	3Ø	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@	4Ø	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	5Ø	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
`	6Ø	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	7Ø	q	71	r	72	s	73	t	74	u	75	v	76	w	77
x	78	y	79	z	7A	{	7B	l	7C	}	7D	~	7E	DEL	7F

Command and Response Table for SIS Commands

Command	ASCII Command (Host to Unit)	Response (Unit to Host)	Additional description
Image recall			
Recall an image to buffer	Esc X1 RF←	Cim•X1↵	Select image X1 to display.
NOTE: It takes several seconds between the issuance of the recall command (Esc X1 RF←) and the receipt of the Cim response.			
Show the image that is currently displayed	Esc RF←	X1↵	The 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*Ø#	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	1Ø*X3#	DurX3↵	Set the duration of the dissolve effect to X3.
Read the dissolve duration	1Ø#	X3↵	The dissolve duration is X3.
Source selection			
Display pass-through	1!	Chn1↵	Display the pass-through input.
Display last image	Ø!	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.
Pass-through configuration			
Enable pass-through	1*1#	Pas1↵	Include the pass-through input in the slide show.
Disable pass-through	1*Ø#	Pas0↵	Do not include the pass-through input in the slide show.
Read the pass-through status	1#	X2↵	Show the status of the pass-through.
Auto-switch and slide show mode			
Set auto-switch and slide show mode	4*X4#	AutX4↵	Set auto-switch and slide show mode. X4 definitions: **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 is disabled. Slide show is running. **2 = On/still** — On loss of sync on the pass-through input, auto-switch to display 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.
Show auto-switch and slide show mode	4#	X4↵	

NOTE:

X1 = Image file name	Image name with file extension (*.bmp or *.jpg)	
X2 = Cut / dissolve status:	0 = cut	1 = dissolve
Pass-through status:	0 = pass-thu	1 = no pass-thru
X3 = Time (duration)	00 – 50 (0.0 to 5.0 seconds) for dissolve duration	
	000 – 300 seconds for slide show interval	
X4 = Auto-switch / slide show	0 = off	2 = on / still
	1 = off / show	3 = on / show

Command/Response Table for SIS Commands (continued)

Command	ASCII Command (Host to Unit)	Response (Unit to Host)	Additional description
Output rate			
Set the output rate	X_5*X_6=	RteX_5*X_6↵	Set the output resolution for the stored image to X_5 at X_6 Hz.
NOTE: The output rate (=) command affects the display of the stored images only; pass-through sources 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.
Read output rate	=	X_5*X_6↵	The output resolution of the stored image is X_5 at X_6 Hz.
Output sync			
Set the output sync format	6*X_7#	SynX_7↵	Set the output sync format of the stored image to X_7.
NOTE: The output sync format (6#) command affects the display of the stored images only; pass-through sources are output exactly as they are input.			
Example:	6*Ø#	SynØ↵	Set the output sync format for the stored image to RGBHV.
View output sync format	6#	X_7↵	The output sync format for the stored image is X_7.
Set the output sync polarity	7*X_8#	PolX_8↵	Set the output sync polarity of the stored image to X_8.
NOTE: The output sync polarity (7#) command affects the display of the stored images only; pass-through sources are output exactly as they are input.			
Example:	7*Ø#	PolØ↵	Set the output sync polarity for the stored image to H– and V–.
View the output sync polarity	7#	X_8↵	The output sync polarity for the stored image is X_8.
RGB delay (for pass-through)			
Set RGB delay	8*X_3#	DlyX_3↵	Set the RGB delay value (video mute) before displaying the RGB pass-through input to X_3.
Read RGB delay	8#	X_3↵	
Video mute			
Mute video	1B	Vmt1↵	Mute the output video (black screen)
Unmute video	ØB	VmtØ↵	Unmute the output video (output video)
Show video mute status	B	X_2↵	
Front panel lock (Executive mode)			
Partially lock front panel	1X	Exe1↵	Partially lock the front panel. Only the Image and Take buttons function.
Completely lock front panel	2X	Exe2↵	Lock all front panel functions.
Unlock front panel	ØX	ExeØ↵	Unlock the front panel.
Show front panel lock status	X	X_9↵	

NOTE:

X_2 = On / off status — 0 = off, 1 = on

X_3 = Time (duration) — 00 – 50 (0.0 to 5.0 seconds) for RGB delay duration

X_5 = Resolution

0 = 640 x 480	5 = 1024 x 1024	10 = 1366 x 768	15 = 720p
1 = 600 x 600	6 = 1280 x 768	11 = 1365 x 1024	16 = 1080i
2 = 852 x 480	7 = 1280 x 1024	12 = 1400 x 1050	17 = 1080p
3 = 1024 x 768	8 = 1360 x 765	13 = 480p	18 = 1280 x 800
4= 1024 x 852	9 = 1365 x 768	14 = 576p	19 = 1440 x 900

X_6 = Refresh rate

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

X_7 = Sync format — 0 = RGBHV, 1 = RGBS

X_8 = Sync polarity — 0 = H– / V–, 1 = H– / V+, 2 = H+ / V–, 3 = H+ / V+

X_9 = Front panel lock modes — 0 = unlock, 1 = partial lock, 2 = complete lock

Command	ASCII Command (Host to Unit)	Response (Unit to Host)	Additional description
Event (script) control			
Read event buffer memory	`Esc` `X10` , `X11` , `X12` , `X13` `E` ←	`X14` ↵	Read the contents of a specific section of a memory buffer for event number `X10`.
Read event status	`Esc` `X10` `E` ←	`X15` ↵	Show the status of event `X10`. The following `X15` 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` `X10` , `X11` , `X12` , `X16` , `X13` `E` ←	`Ewr` `X10` , `X16` ↵	Write event `X10` to buffer `X11`, offset by `X12`. Include data `X16`, size `X13`.
Read string from event buffer memory	`Esc` `X10` , `X11` , `X12` , `X17` `FE` ←	`<string>` ↵	Read string from event `X10`, buffer `X11`, offset by `X12`, `X17` bytes.
Write string to event buffer memory	`Esc` `X16` , `X10` , `X11` , `X12` `FE` ←	`Ewr` `X10` , `X16` ↵	Write data string `X16` from event `X10`, buffer `X11`, offset by `X12`.
Start events	`Esc` `1AE` ←	`Ego` ↵	Initiate all programmed events.
Stop events	`Esc` `ØAE` ←	`Est` ↵	Stop all programmed events.
Show # of running events	`Esc` `AE` ←	`Enm`*nn* ↵	*nn* is the number of events running.
View, information, part number, and firmware requests			
Information request	`I`	`Chn` `X2` •Vmt `X2` •Exe `X9` •Typ `X18` ↵	
Example:	`I`	`ChnØ•VmtØ•Exe1•TypØ` ↵	
			Pass-through input is not displayed, video output is not muted, panel is partially locked, no sync signal is detected on the pass-through input.
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 HTML pages.
Request for part number	`N`	`6Ø-684-Ø1` ↵	Display the GSS 100 part number.
Query firmware version	`Q`	`X11` ↵	Firmware version *x.xx*.
Resets			
Erase all files	`Esc` `Zfff` ←	`Zpf` ↵	Erase user-supplied files. Does not reset IP settings.
Master reset	`Esc` `Zxxx` ←	`Zpx` ↵	Resets all user settings to their default values. 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 (IP address, subnet mask, gateway address, unit name, DHCP setting, and port mapping [Telnet/web/Direct Access] are excluded). Preserves communications with the device and is recommended after a firmware update.

NOTE:

`X2` = On or off status:		0 = off	1 = on	
Pass-through status:		0 = pass-thu	1 = no pass-thru	
`X9` = Front panel lock modes		0 = unlock	1 = partial lock	2 = complete lock
`X18` = Pass-through sync status		0 = No sync detected		2 = H sync detected
		1 = V sync detected		3 = HV (composite) sync detected
`X19` = Bytes of memory used		*nnnnnnn* (bytes)		
`X20` = Firmware version		*n.nn*		
`X10` = Event number		00 through 99		
`X11` = Event buffer		0 = Receive	1 = User	2 = NVRAM
`X12` = Even buffer offset		00 through maximum buffer size		
`X13` = Event data size (case sensitive)		b = bit	S = short (16 bits)	B = byte L = long (32 bits)
`X16` = Event data to write				
`X17` = Number of bytes to read				
`X15` = Event status fields		See the complete list in the `Esc` `X10` `E` ← command, above		
`X14` = ASCII digits representing the numeric value of the data element read from the event buffer				

Command/Response Table for SIS Commands (continued)

Command	ASCII Command (Host to Unit)	Response (Unit 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	`Esc`CJ←	path/directory/↵	
NOTE: The response to the View File Directory command differs, depending on whether the command is sent via an RS-232, RS-422, or Telnet connection or sent via a web browser connection.			
View file directory <u>RS232/RS422 port and Telnet</u>	`Esc`DF←	*<filename1>,<date/time>,<length>*↵ *<filename2>,<date/time>,<length>*↵ *<filename3>,<date/time>,<length>*↵ • • • • *<filenamen>,<date/time>,<length>*↵ *<number of Bytes>*•Left↵↵ List user-supplied files.	
View file directory <u>web browser</u>	`Esc`DF←	Var file = new array (); File [1] = '*<filename1>,<date1>,<filesize1>*'; File [2] = '*<filename2>,<date2>,<filesize2>*'; File [3] = '*<filename3>,<date3>,<filesize3>*'; • • • • filename*<n>*File [*<n>*] = '*<filenamen>,<daten>,<filesizen>*'; File [*<n+1>*] = *<number of Bytes>*•Left List user-supplied files.	
List specific files from the current directory	`Esc``Xn`DF← `Esc``Xn``Xn`DF←	{same response as above} {same response as above}	`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.
List specific files from the current directory and subdirectories	`Esc``Xn`LF← `Esc``Xn``Xn`LF←	{same response as above} {same response as above}	`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↵	

Command and Response Table for IP- and Port-specific SIS Commands

Symbol definitions

| X40 | = Device name | (Up to 240 alphanumeric characters) |

> **NOTE:** The following characters are invalid or not recommended in the name: {space} + ~ , @ = ` [ ] { } < > ' " " ; : | \ and ?.

| X41 | = Default name | GSS-100- + last 3 pairs of MAC address |

| X42 | = Time and date (for set) | In the format: MM/DD/YY•HH:MM:SS *where:* | MM = month: 01 (Jan) through 12 (Dec)
DD = day: 01 through 31
YY = year: (20)00 through (20)99
HH = hour: 00 through 23
MM = minutes: 00 through 59
SS = seconds: 00 through 59 |

| X43 | = Time and date (for read) | In the format: Day,•DD•Mmm•YYYY•HH:MM:SS *where:* | Day = weekday: Mon through Sun
DD = date: 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 |

| X44 | = GMT offset | −12.0 through +14.0. Hours and minutes removed from GMT |

| X45 | = Daylight Saving Time | 0 = Daylight Saving Time off/ignore
1 = Daylight Saving Time on (North America) | 2 = Daylight Saving Time on (Europe)
3 = Daylight Saving Time on (Brazil) |

X46	= IP address	*nnn.nnn.nnn.nnn*
X47	= Hardware (MAC) address	*nn-nn-nn-nn-nn-nn*
X48	= Number of open connections	0 – 255
X49	= Password	12 alphanumeric characters

> **NOTE:** The following characters are invalid or not recommended in passwords: {space} + ~ , @ = ` [ ] { } < > ' " " ; : | \ and ?.

X50	= DHCP	0 =off, 1 = on
X51	= Port number	00 – 99 (00 = all ports)
X52	= Baud rate	2400, 3600, 4800, 7200, 9600, 14400, 19200, 28800, 38400, 57600, 115200
X53	= Parity	**o**dd, **e**ven, **n**one, **m**ark, **s**pace

> **NOTE:** For the X53 parameter, use the first character only. The parameter is case **in**sensitive.

X54	= Data bits	7 or 8 (8 = default)
X55	= Stop bits	1 or 2 (1 = default)
X56	= Port timeout	The number of seconds (in 10-second steps) before timeout on the IP connections: minimum = 1 (10 seconds), maximum = 6500 (65,000 seconds or just over 18 hours), default = 30 (300 seconds or 5 minutes). 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.
X57	= Verbose mode	0 = clear or none (default for Telnet connection) 1 = verbose mode (default for RS-232 or RS-422 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 as the set command does (for example, the read matrix name command Esc CN ← returns Ipn•X40 ←).

Command and Response Table for IP-Specific SIS Commands

Command	ASCII Command (host to unit)	Response (unit to host)	Additional description
IP and port setup commands			
Set device name	[Esc][X40]CN←	Ipn•[X40]←	
Read device name	[Esc]CN←	[X40]←	
Reset device name to factory default	[Esc]•CN←	Ipn•[X41]←	"GSS‑1ØØ" plus the last three pairs of the MAC address.
Set time and date	[Esc][X42]CT←	Ipt[X42]←	
Read time and date	[Esc]CT←	[X43]←	
Set GMT offset	[Esc][X44]CZ←	Ipz[X44]←	In the command, the divider between hours and minutes can be either a colon (:) or a period. In the response, the divider is a colon.
Example:	[Esc]8.ØCZ←	Ipz+Ø8:ØØ←	
Set Daylight Saving Time	[Esc][X45]CX←	[X45]←	
Read Daylight Saving Time	[Esc]CX←	[X45]←	
Set IP address	[Esc][X46]CI←	Ipi[X46]←	
Read IP address	[Esc]CI←	[X46]←	
Read hardware address	[Esc]CH←	[X47]←	
Read # of open connections	[Esc]CC←	[X48]←	
Set subnet mask	[Esc][X46]CS←	Ips[X46]←	
Read subnet mask	[Esc]CS←	[X46]←	
Set gateway IP address	[Esc][X46]CG←	Ipg[X46]←	
Read gateway IP address	[Esc]CG←	[X46]←	
Set administrator password	[Esc][X49]CA←	Ipa•[X49]←	
Read administrator password	[Esc]CA←	[X49]←	
Reset (clear) administrator password	[Esc]•CA←	Ipa•←	
Set user password	[Esc][X49]CU←	Ipu•[X49]←	
Read user password	[Esc]CU←	[X49]←	
Reset (clear) user password	[Esc]•CU←	Ipu•←	
Set DHCP on or off	[Esc][X50]DH←	Idh[X50]←	[X50]: 0 = off, 1 = on
Read DHCP on/off status	[Esc]DH←	[X50]←	
Set serial port parameters	[Esc][X51]*[X52],[X53],[X54],[X55]CP←	Cpn[X51]•Ccp[X52],[X53],[X54],[X55]←	
Example:	[Esc]Ø1*96ØØ,N,8,1CP←	Cpn Ø1•Ccp96ØØ,N,8,1←	Set the the RS-232 port to 9600 baud, no parity, 8 data bits, and 1 stop bit.
Read serial port parameters	[Esc]Ø1CP←	[X52],[X53],[X54],[X55]←	
Configure current port timeout	[Esc]Ø*[X56]TC←	PtiØ*[X56]←	
View current port timeout	[Esc]ØTC←	[X56]←	
Set global IP timeout	[Esc]1*[X56]TC←	PtiØ*[X56]←	
View global IP timeout	[Esc]1TC←	[X56]←	
Set verbose mode	[Esc][X57]CV←	Vrb[X57]←	
Read verbose mode	[Esc]CV←	[X57]←	

HTML Control and
IPL File Manager

This section describes the operation of the GSS 100, including:

- **Configuring the Hardware**
- **Opening the Embedded Web Pages**
- **Status Tab**
- **Configuration Tab**
- **File Management Tab**
- **Control Tab**
- **Images Tab**
- **Installing the IPL File Manager and Uploading Images**
- **Special Characters**

The GSS can be configured through its Ethernet port, connected via a LAN or WAN and using a web browser such as the Microsoft® Internet Explorer®. The display of the configuration of the GSS 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 100 is unstable, try turning off the proxy server in your web browser. In Internet Explorer, click **Tools** > **Internet Options** > **Connections** > **LAN Settings**, uncheck the **Use a proxy server...** box, and then click **OK**.

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 Ethernet-controlled products from Extron, the TCP/IP protocol must be installed and properly configured.

For use on an existing Ethernet LAN intranet, your network administrator can provide you with 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 after 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 MAC address of the GSS with the assigned IP address in your computer. You must then use the "ping" command to access the GSS, at which point the IP address of the device server is reconfigured.

> **NOTE:** Use this setup method in either of two configurations:
>
> - Both your PC and the GSS connected to the same LAN using patch (straight) cables
> - Direct connect between the two devices using a crossover Ethernet cable.
>
> See "**Cabling**" and "**RJ-45 connector wiring**" in the Installation section.

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 MAC address (UID #) of the GSS from the label on the rear panel.

3. **If the GSS has never been configured**, and is still set to its factory defaults, proceed to step **4**.

    If the GSS has previously been configured, perform an IP settings (mode 4) reset (see "**Reset Button**" in the Installation section).

    > **NOTE:** 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 MAC address of the GSS (from the label on the rear panel of the GSS), as follows:

```
C:\> arp -s 10.13.170.15 00-05-A6-00-0A-90 <Enter>
```
Prompt Command   Desired   MAC address   Enter
                  IP address   key

6. Execute a ping command using the new IP address of the GSS 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 (see figure 17). The IP address of the GSS 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 17. GSS Response to Ping Request

7. After the GSS responds to the ping command, issue the `arp -d` command at the command 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 default settings of the GSS (IP address, subnet mask, and optional administrator name and password) must be changed in order to use the GSS on an intranet (LAN) or 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 the Installation section 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, you need to install it. Refer to your Windows user manual or the online Help system for your computer for information on installing the TCP/IP protocol.

5. Note the current IP address and subnet mask of the GSS in the space 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 web browser (Internet Explorer or Mozilla® Firefox®) on your PC.

   a. In the 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 section for configuring the GSS).

9. After configuring the GSS, repeat steps **3** and **4**, changing your TCP/IP settings back to their original configuration.

Opening the Embedded Web Pages

Access the GSS 100 using HTML pages as follows:

1. Start the web browser program.

2. Click in the **Address** field of the browser.

3. Enter the IP address of the GSS in the **Address** field of the browser.

> **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 uploaded), enter a slash (/) and the name of the file to open.

> **NOTES:** • The **Address** field of the browser should display the address in the following format: *xxx.xxx.xxx.xxx*/{*optional_file_name.html*}.
>
> • The following characters are invalid in file names:
> {space} + ~ , @ = ' [ ] { } < > ' " " ; : | \ and ?.

5. Press the keyboard <Enter> key. The GSS 100 checks to see if it is password protected.

   If the GSS 100 is not password protected, it checks and downloads the HTML pages (proceed to step **7**).

   If the GSS 100 is password protected, the GSS 100 downloads the Enter Network Password page (see figure 18).

Figure 18. 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 100 checks several possibilities, in the following order, and then responds accordingly:

   • Does the address include a specific file name, such as 10.13.156.10/*file_name*.html? **If so**, the GSS 100 downloads that HTML page.

   • Is there a file in the memory of the GSS 100 that is named "index.html?" **If so**, the GSS 100 downloads "index.html" as the default startup page.

   • **If neither of the above conditions is true**, the GSS 100 downloads the factory-installed default startup page, "nortxe_index.html" (see figure 19), also known as the System Status page.

Status Tab

System Status Page

The System Status page (see figure 19) provides an overall view of the status of the GSS 100, including various IP addresses, and the status of the RS-232 port. The System Status page is the default page that the GSS 100 downloads when you connect to the GSS 100. Access the System Status page from other pages by clicking the **Status** tab.

Figure 19. **System Status Page**

The status web page periodically updates itself to reflect the latest status of the GSS 100 components. If a variable changes, the display shows the change the next time it updates.

Configuration Tab

System Settings Page

The GSS 100 downloads the System Settings page (see figure 20) when you click the **Configuration** tab. The screen consists of fields in which you can view and edit IP administration and system settings. You can access the Video Settings, Passwords, and Firmware Upgrade pages by clicking the appropriate link.

Figure 20. System Settings Page

On password-protected connections, there are two levels of protection: administrator and user. Administrators have full access to all functions on the system settings page. Users can select images to output, set output mutes, and view all settings with the exception of passwords.

IP Settings fields

The **IP Settings** fields provide a location for viewing and editing settings unique to the Ethernet interface. After editing any of the settings in this field, click the **Submit** button at the bottom of the field.

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 or not recommended in the matrix name:
> + ~ , @ = ' [ ] { } < > ' " ; : | \ and ?.

DHCP radio buttons

The **DHCP On** radio button directs the GSS 100 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.

> **NOTE:** The **IP Address**, **Gateway IP Address**, and **Subnet Mask** fields become uneditable if DHCP is on.

IP Address field

The **IP Address** field contains the IP address of the connected GSS 100. This value is encoded in the flash memory of the GSS 100.

Standard IP protocol consists of addresses comprised of four 1-, 2-, or 3-digit numeric subfields, properly called "octets," separated by dots (periods). Each field 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.

Gateway IP Address field

The **Gateway IP Address** field identifies the address of the gateway to the mail server to be used if the GSS 100 and the mail server are not on the same subnet. Standard IP protocol rules apply to the gateway IP address.

The factory-installed default address is 000.000.000.000, but if this conflicts with other equipment at your installation, you can change the gateway IP address to any valid value.

Subnet Mask field

The **Subnet Mask** field is used to determine whether the GSS 100 is on the same subnet as the mail server when you are subnetting.

The factory-installed default address is 255.255.000.000, but if this conflicts with other equipment at your installation, you can change the subnet mask to any valid value.

MAC Address, Model, and Part Number fields

The Media Access Control (**MAC**) **Address**, **Model**, and **Part Number** are hardcoded in the GSS 100 and cannot be changed.

Firmware field

The **Firmware** field identifies the installed firmware version. This field is hardcoded in the GSS 100 and can be changed only by installing a different firmware version (see "**Firmware Upgrade Page**").

Date/Time Settings fields

The **Date/Time Settings** fields (see figure 21) provide a location for viewing and setting the time functions.

Figure 21. Date/Time Settings Fields

Change the date and time settings as follows:

1. Click the drop box for the variable to be changed. The adjustable variables are month, day, year, hours, minutes, AM/PM, and (time) zone. A drop-down scroll box appears (the year drop box is selected in figure 21).

2. Click and drag the slider or click the scroll up ▲ button or the scroll down ▼ button until the desired variable is visible.

3. Click the desired variable.

> **NOTES:** • If setting the time, set the local time. The **Zone** variable allows you to then enter the offset from Greenwich Mean Time (GMT).
>
> • The Zone field identifies the standard time zone selected and displays the amount of time, in hours and minutes, that the local time varies from the GMT international time reference.

4. Repeat steps **1** through **3** for other variables that need to be changed.

5. If appropriate, select the appropriate **Daylight Saving** radio button to turn on the daylight savings time feature for your region or nation.

> **NOTE:** When daylight saving time is turned on, the GSS 100 automatically updates its internal clock between standard time and daylight saving time in the spring and fall on the date that the time change occurs in the country or region selected. When daylight saving time is turned off, the GSS 100 does not adjust its time reference.

6. Click the **Submit** button at the bottom of the Date/Time Settings area.

Video Settings Page

Access the Video Settings page (see figure 22) by clicking the **Video Settings** link on the System Settings page.

System Settings
Refresh
Passwords
No function on GSS
Firmware Upgrade

Figure 22. **Video Settings Page**

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

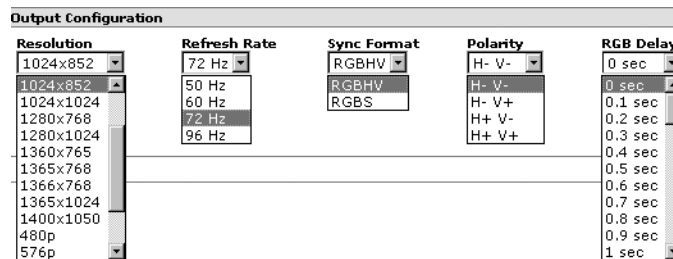**1.** Click the desired field. A drop down scroll box appears (see figure 23).

Figure 23. **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 (see figure 24) by clicking the **Passwords** link on the System Settings page.

System Settings
Video Settings
Refresh
No function on GSS
Firmware Upgrade

Figure 24. **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 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 by asterisks (*****). If you do not want to password protect an access level, leave the **Password** field and the **Re-Enter Password** field blank. After entering the desired password in both fields, click the **Submit** button.

> **NOTE:** An administrator password must be created before a user password can be created.

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

Email Alerts Page

The E-Mail Alerts page is an artifact of the HTML pages of other Extron products and has no function for the GSS 100. Future firmware revisions may remove this page.

Firmware Upgrade Page

The **Firmware Upgrade** page provides a way to replace the firmware that is coded on the control board of the GSS 100 without taking the GSS 100 out of service. Access the Firmware Upgrade page (see figure 25) by clicking the **Firmware Upgrade** link on the System Settings page.
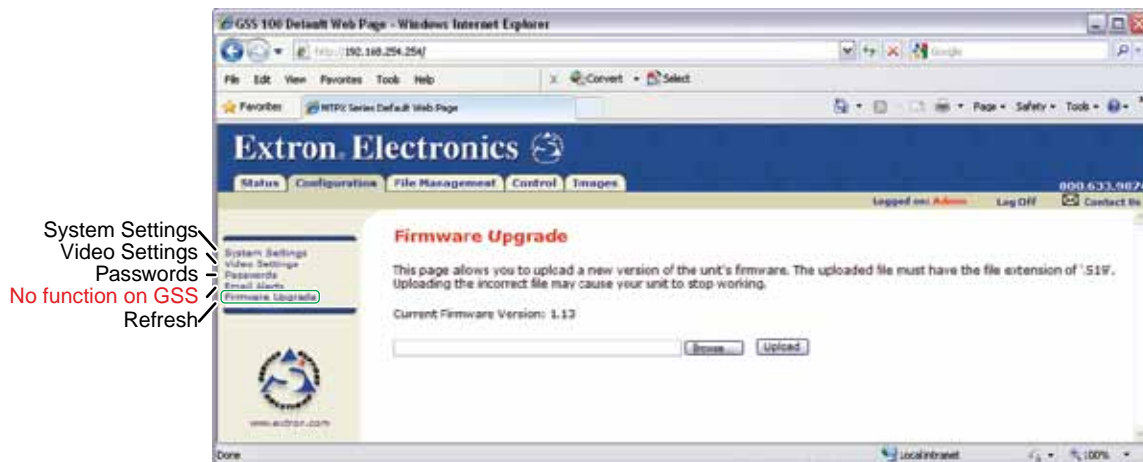
Figure 25. Firmware Upgrade Page

Update the GSS 100 firmware as follows:

> **NOTE:** The Firmware Upgrade page is only for replacing the firmware that controls all GSS 100 operation. To insert your own custom HTML pages, see "**File Management Tab**."

1. Visit the Extron website, **www.extron.com**, select the GSS 100 product category, select the latest firmware installation package (*.exe file) for the GSS 100, and download the file. Note the folder to which you save the firmware file.
2. Run the executable (*.exe) file to decompress the firmware file.
3. Connect the PC to the GSS 100 via the LAN port of the GSS 100.
4. Access the GSS 100 using HTML pages.
5. Click the **Configuration** tab.

6. Click the `Firmware Upgrade` link (see figure 26).
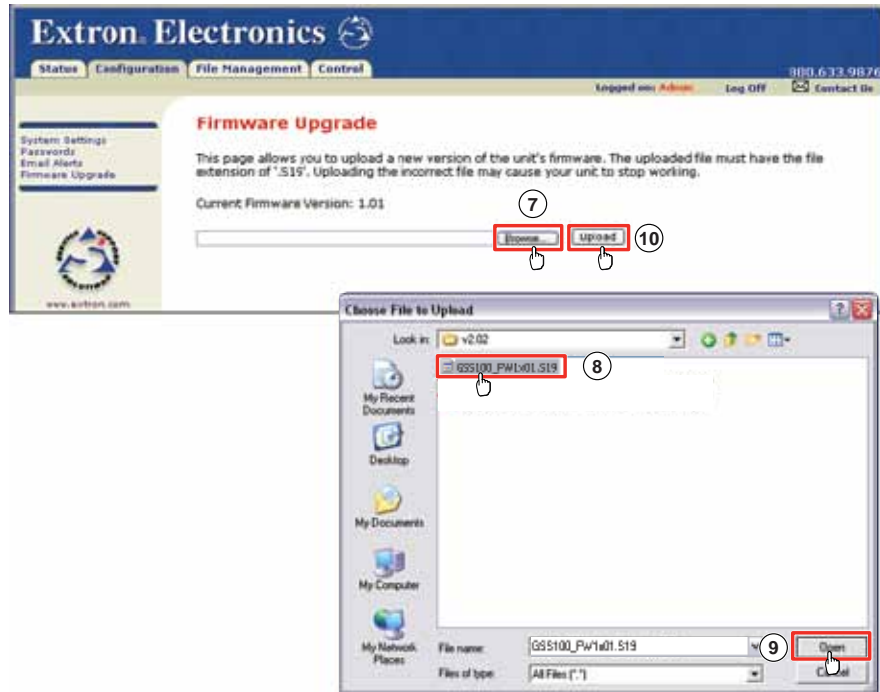
Figure 26. **Firmware Upgrade**

7. Click the `Browse` button. A `Choose File to Upload` window appears.

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

> **NOTES:** • Valid firmware files must have the file extension ".S19." A file with any other extension is not a firmware upgrade.
>
> • The original factory-installed firmware is permanently available on the GSS 100. If the attempted firmware upload fails for any reason, the GSS 100 automatically reverts to the factory-installed firmware.

9. Click the `Open` button.

10. Click the `Upload button`. The firmware upload to the GSS 100 may take a few minutes. The LCD display on the GSS shows **Firmware Upload**, then **Re-Starting**. When the LCD returns to the default display cycle (see "**Power-on indications**" in the Operation section), the firmware upload is complete.

File Management Tab

File Management Page

To delete files such as HTML pages from the GSS 100 or to upload your own files to the GSS 100, click the **File Management** tab. The GSS 100 downloads the File Management HTML page (see figure 27).

Figure 27. **File Management Page**

> **NOTE:** The files listed in figure 27 are shown for example only and may not be present on your GSS 100.

To delete a file, click the **Delete** button associated with that file.

Upload your own files as follows:

> **NOTE:** The following characters are invalid or not recommended in file names:
> {space} + ~ , @ = ' [ ] { } < > ' " " ; : | \ and ?.

1. Click the **Browse** button.

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

   > **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 or files that you selected appear in the list.

Control Tab

Control Page

Click the `Control` tab to access the Control page (see figure 28).
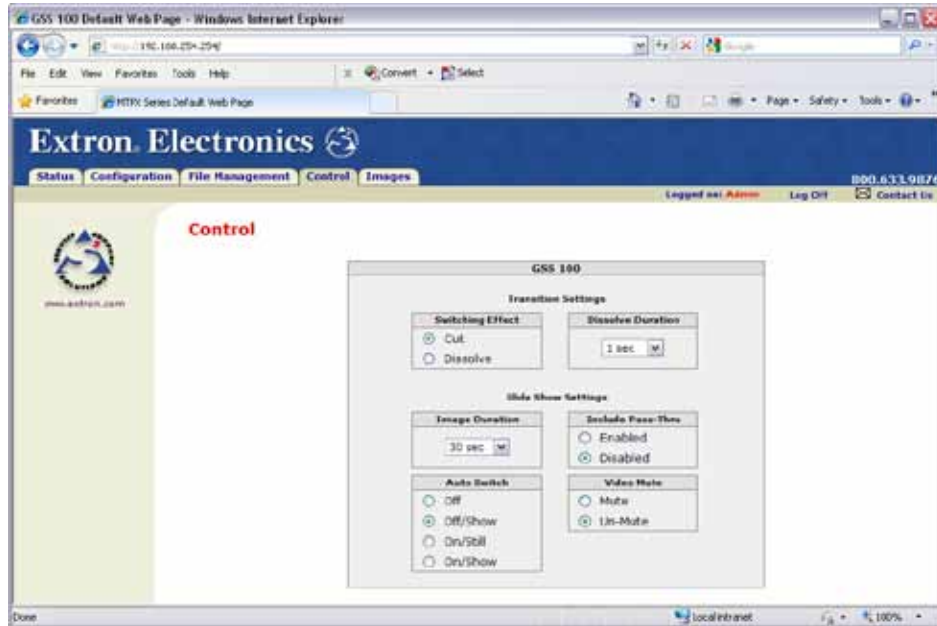
Figure 28. Control Page

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
  - **Off —** Auto-switch on loss of pass-through sync and slide show are disabled.
  - **Off/show —** Auto-switch on loss of pass-through is disabled. Slide show is running.
  - **On/still —** On loss of sync on the pass-through input, auto-switch to display the last-displayed image until pass-through sync is restored.
  - **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.

Images Tab

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 (see figure 29). 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 29. Image Settings Page

Uploading (adding) an image

Upload an image to the GSS 100 as follows:

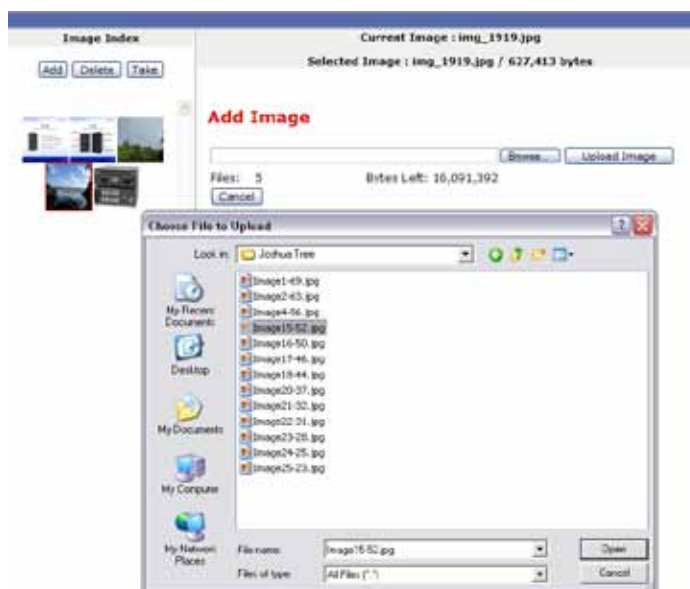**1.** Click the **Add** button. The **Add Image** field appears (see figure 30).

Figure 30. **Uploading an Image**

2. Click the **Browse** button. The Choose File to Upload window appears.

3. Browse through your system and select the desired image file.

> **NOTES:**
> - 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.
> - 1080i and 1080p files need to be mastered at a resolution of 1440 x 1080 instead of the expected 1920 x 1080.

4. Click the **Open** button. The complete file path 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.

Installing the IPL File Manager and Uploading Images

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

Installing the IPL File Manager

1. Log on to the Extron website, **www.extron.com**.

2. Type **IPL file manager** in the Search box in the upper-right corner of the web page. 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 **Download Now**. The Download Center screen appears.

5. Enter the information requested on the screen.

6. Click the **Download IPLinkFileManagerSW**_nxnxn_**.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 (see **figure 31** on the next page) **does not** appear, proceed to step **4**:

2. If the Select Startup Mode window (see figure 31) appears:

   And you have <u>not</u> 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** check box to skip the Select Startup Mode Window step from now on.
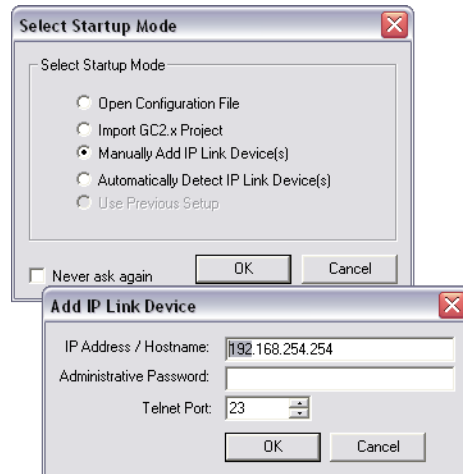
Figure 31. **Select Startup Mode Window**

3. Type the IP address of the GSS 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 (see figure 32). The window contains two major sections.

 • **Computer System (left section) —** Displays the file system of your computer. 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.
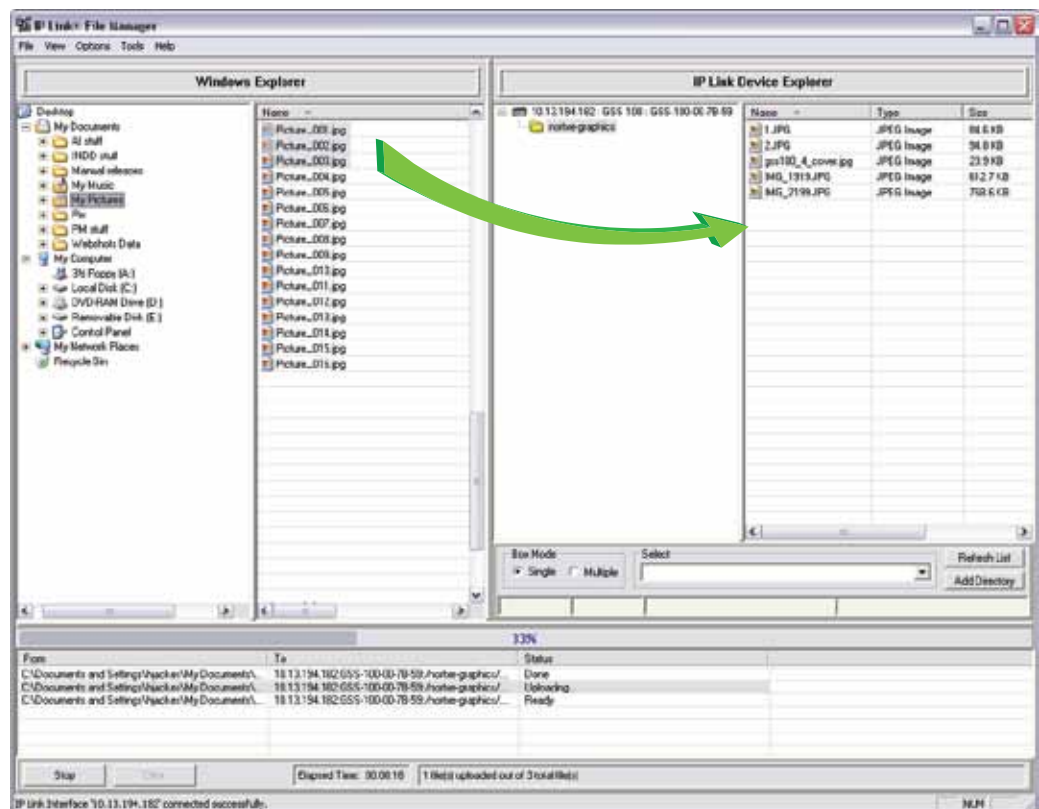
Figure 32. **IP Link File Manager Program Window**

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 <u>not</u> present in the GSS, create the folder as follows:

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

b. Click **Add Directory**.

c. Type the name `nortxe-graphics` and then press the <Enter> key on the PC.

6. Upload images to the GSS as follows:

> **NOTES:** • 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.
>
> • 1080i and 1080p files need to be mastered at a resolution of 1440 x 1080 instead of the expected 1920 x 1080.

In the Computer System (left) section of the IP Link File Manager window, navigate the folder that contains the file or files that you want to upload to the GSS.

d. Select one or more files that you want to upload.

e. Drag the file or files 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 names of the dragged files appear in the interface file list.

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

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

Reference Information

This section discusses the specifications, part numbers, and accessories for the GSS 100 Graphic Still Store. Topics that are covered include:

- **Specifications**
- **Part Numbers**
- **Mounting the Unit**

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 of 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], 1280x800[1,2], 1280x1024[1,2], 1360x765[1,2], 1365x768[1,2], 1365x1024[1,2], 1366x768[1,2], 1400 x 1050[1,2], 1440x900[1,2]
	HDTV: 480p[1,2], 576p[1,2], 720p[1,2], 1080i[1,2], and 1080p[1,2]
	[1] = at 50 Hz, [2] = at 60, Hz [3] = at 72 Hz, [4] = at 96 Hz, [5] = 100 Hz, [6] = 120 Hz

> **NOTE:** For the output resolutions listed below, the total pixel and active pixel values are reduced:
> 1080i: 1440x1080 active pixels
> 1080p: 1440x1080 active pixels
> The sync timings and line widths are correct and most displays recognize the rate correctly. Image files should be compressed to 1440x1080 to fill the entire video raster.

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

File Loading Times (in seconds)		
File Type	Using the Front Panel	Using SIS™ or Web Pages
640 x 480 resolution		
Bitmap (BMP) file	2.0	4.5
JPEG (189 KB) file	1.5	2.5
JPEG (20 KB) file	1.5	2.0
1024 x 768 resolution		
Bitmap (BMP) file	5.5	6.5
JPEG 100% (651 KB) file	3.5	6.5
JPEG 75% (157 KB) file	2.5	5.0
1400 x 1050 resolution		
Bitmap (BMP) file	8.0	9.0
JPEG 100% (702 KB) file	5.5	10.0
JPEG 75% (181 KB) file	4.5	9.0

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................... 2400 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 and full duplex with autodetect

Ethernet protocol .... ARP, ICMP (ping), IP, TCP, DHCP, 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 Simple Instruction Set (SIS™)
Microsoft® Internet Explorer®, Telnet

General

Power .... 100 VAC to 240 VAC, 50/60 Hz, 30 watts, internal

Temperature/humidity .... Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
Operating: +32 to +113 °F (0 to +45 °C) / 10% to 90%, noncondensing

Cooling... Convection, no vents

Mounting

    Rack mount .... Yes, with optional 1U rack shelf

    Furniture mount .... Yes, 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 24.1cm 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)

Regulatory compliance

    Safety .... CE, c-UL, UL

    EMI/EMC .... CE, C-tick, FCC Class A, ICES, VCCI

MTBF .... 30,000 hours

Warranty....................................... 3 years parts and labor

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NOTES: • All nominal levels are at ±10%.
       • 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 Setup Guide	

Mounting Options

Part	Part Number
RSU 129 9.5-inch deep universal rack shelf kit	60-190-01
RSB 129 9.5-inch deep basic rack shelf	60-604-02
MBU 125 Under-desk mount kit	70-077-01
MBD 129 Through-desk mount kit	70-077-02

Cables

When using signals with a scanning frequency of 15–125 kHz and running distances of 100 feet (30.4 m) or more, use high resolution BNC cables to achieve maximum performance.

Bulk five-conductor cable

RG6 Super High Resolution Cable	Part Number
RG6-5/500 500 feet (150 m) spool	22-100-02

MHR-5 Mini High Resolution Cable	Part Number
MHR-5/500 non-plenum 500 feet (150 m) spool	22-020-02
MHR-5/1000 non plenum 1000 feet (300 m) spool	22-020-03

MHR-5P Plenum Mini High Resolution Cable	Part Number
MHR-5P/500 plenum 500 feet (150 m)	22-103-02
MHR-5P/1000 plenum 1000 feet (300 m) spool	22-103-03

Crimp tools and assorted connectors

Item	Part Number
RG6 Universal Crimp Termination Kit with 100 connectors	100-267-02
RG6 Crimp BNC Male, qty. 50	100-260-01
MHR universal Crimp Termination Kit with 100 connectors	100-266-02
MHR Crimp BNC Male, qty. 50	100-250-01
BNC bulkhead connectors, qty. 50 (for custom wall plates)	100-076-51

Pre-cut five-conductor cables

RG6 BNC Super High Resolution Cables	Part Number
RG6-5 BNC/3 through BNC/50 (*various lengths*)	26-369-*nn*

MHR-5 BNC Mini High Resolution Cable	Part Number
MHR-5 BNC/3 through BNC/100 (*various lengths*)	26-260-*nn*

MHR-5P BNC Plenum Mini High Resolution Cable	Part Number
MHR-5P BNC/3 through BNC/100 (*various lengths*)	26-378-*nn*

Mounting the Unit

The GSS 100 is housed in a rack-mountable, 1U high, half rack-width metal enclosure.

Tabletop 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 100 into a wall or furniture.

1. **Elevated operating ambient temperature —** If the unit is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the 113 °F (45 °C) maximum ambient temperature (Tma) specified by Extron.

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 (that is, the use of power strips).

Installation instructions

Secure the unit to an optional 1U (one unit high, one unit wide) rack shelf (part number **60-190-01** or **60-604-02**) and install the shelf in a rack in accordance with the directions that accompany the shelf.

Furniture Mounting

Under-Furniture Mounting

Secure an optional MBU 125 under-desk mounting kit brackets (part number **70-077-01**) to the unit and mount the unit under a desk or table in accordance with the directions that accompany the kit.

Through-furniture mounting

Secure an optional MBD 129 through-desk mounting kit brackets (part number **70-077-02**) to the unit and mount the unit through a desk or other furniture in accordance with the directions that accompany the kit.

Extron® Warranty

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

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

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

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

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

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

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

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

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

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

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

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

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

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http://emailbydomain.com

Auto manuals search

http://auto.somanuals.com

TV manuals search

http://tv.somanuals.com