UltriGPI

UltriGPI User Guide

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ROSS

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You've made a great choice. We expect you will be very happy with your purchase of Ross Technology.

Our mission is to:

1. Provide a Superior Customer Experience
   - offer the best product quality and support
2. Make Cool Practical Technology
   - develop great products that customers love

Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at *solutions@rossvideo.com*.

David Ross
CEO, Ross Video
dross@rossvideo.com

Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

UltriGPI · User Guide

- Ross Part Number: **2401DR-204-01**
- Revision: 1
- Release Date: June 26, 2025
- Software Version: **1.0**

The information contained in this manual is subject to change without notice or obligation.

Copyright

Patents

Patent numbers US 7,034,886; US 7,508,455; US 7,602,446; US 7,802,802 B2; US 7,834,886; US 7,914,332; US 8,307,284; US 8,407,374 B2; US 8,499,019 B2; US 8,519,949 B2; US 8,743,292 B2; GB 2,419,119 B; GB 2,447,380 B; and other patents pending.

Notice

The material in this manual is furnished for informational use only. It is subject to change without notice and should not be construed as commitment by Ross Video Limited. Ross Video Limited assumes no responsibility or liability for errors or inaccuracies that may appear in this manual.

EMC Notices

US/Canada United States of America FCC Part 15

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a Commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

This Class “A” digital apparatus complies with Canadian ICES-003 rules. Cet appareil numérique de la classe “A” est conforme a la norme NMB-003 du Canada.

Important — *Changes or modifications to this equipment not expressly approved by Ross Video Ltd. could void the user’s authority to operate this equipment.*

European Union

This equipment is in compliance with the essential requirements and other relevant provisions of CE Directive 93/68/EEC.

Australia/New Zealand

This equipment is in compliance with the provisions established under the Radiocommunications Act 1992 and Radiocommunications Labelling (Electromagnetic Compatibility) Notice 2008.

International

This equipment has been tested to CISPR 32:2015 along with amendments AMD1:2019, and found to comply with the limits for a Class A Digital device.

Notice — *This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.*

Korea — Class A Statement

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.
This device has been evaluated for conformity for use in a business environment. When used in a home environment, there is a danger of interference.

General Handling Guidelines

- Careful handling, using proper ESD precautions, must be observed.
- Power down the system before PCB removal.

A Word About Static Discharge

Throughout the many procedures in this manual, please observe all static discharge precautions.

Caution — *Avoid handling the switcher circuit boards in high static environments such as carpeted areas, and when synthetic fiber clothing is worn. Touch the frame to dissipate static charge before removing boards from the frame, and exercise proper grounding precautions when working on circuit boards. Exercise proper grounding precautions when working on circuit boards.*

Maintenance/User Serviceable Parts

This product contains no user serviceable parts. If the unit does not appear to be working properly, please contact Technical Support using the numbers listed under the "**Contact Us**" section of this manual. This product is covered by a generous 1-year warranty and will be repaired without charge for materials or labor within this period. See the "**Warranty and Repair Policy**" section in this manual for details.

Environmental Information

Waste Electrical and Electronic Equipment Directive (WEEE Directive)

The equipment may contain hazardous substances that could impact health and the environment. To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration. You can also contact Ross Video for more information on the environmental performances of our products.

Use of Hazardous Substances in Electrical and Electronic Products (China RoHS)

Ross Video Limited has reviewed all components and processes for compliance to: “Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products” also known as China RoHS.

The “Environmentally Friendly Use Period” (EFUP) and Hazardous Substance Tables have been established for all products. We are currently updating all of our Product Manuals. The Hazardous substances tables are available on our website at:

http://www.rossvideo.com /about-ross/company-profile/green-practices/china-rohs.html

电器电子产品中有害物质的使用

Ross Video Limited 按照以下的标准对所有组件和流程进行了审查:

"电器电子产品有害物质限制使用管理办法" 也被称为中国RoHS。

所有产品都具有 "环保使用期限" (EFUP）和有害物质表。目前，我们正在 更新我们所有的产品手册。

有害物质表在我们的网站:

http://www.rossvideo.com/about-ross/company-profile/green-practices/china-rohs.html

Security and Privacy

If you would like more information on how Ross Video security and privacy practices have been applied to the UltriGPI, what you should know about maintaining security of this product, and how we can partner with you to ensure security throughout this product's life-cycle, contact techsupport@rossvideo.com.

Ross Video has implemented reasonable administrative, technical, and physical safeguards to help protect against security incidents and privacy breaches involving a Ross Video product provided those products are used in accordance with Ross Video instructions for use. However, as systems and threats evolve, no system can be protected against all vulnerabilities and we consider our customers the most important partner in maintaining security and privacy safeguards. If you have

any concerns, we ask that you bring them to our attention, and we will investigate. Where appropriate, we will address the issue with product changes, technical bulletins and/or responsible disclosures to customers and regulators. Ross Video continuously strives to improve security and privacy throughout the product life-cycle using practices such as:

- Privacy and Security by Design
- Product and Supplier Risk Assessment
- Vulnerability and Patch Management
- Secure Coding Practices and Analysis
- Vulnerability Scanning
- Access Controls appropriate to Customer Data
- Incident Response
- Clear paths for two-way communication between customers and Ross Video

If you would like to report a potential product related privacy or security issue (incident, breach, or vulnerability), contact techsupport@rossvideo.com.

Company Address

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Contents

Introduction

This guide covers the installation, configuration, and use of the UltriGPI. The following chapters are included:

- "**Introduction**" summarizes the guide and provides important terms, and conventions.
- "**Before You Begin**" provides general information to keep in mind before installing and configuring your UltriGPI.
- "**Hardware Overview**" presents information on the UltriGPI hardware components and features.
- "**Physical Installation**" provides instructions for the physical installation of the UltriGPI, and how to connect to a power source.
- "**Cabling**" summarizes how to connect the UltriGPI to your facility network, and to external devices.
- "**Getting Started**" provides instructions for launching DashBoard, assigning an initial IP address to the UltriGPI, and accessing the interfaces in DashBoard.
- "**Enabling the Servers**" outlines how to configure the UltriGPI as a server using the RossTalk, TSL v3, and/or the TSL v5 protocols.
- "**GPI I/O Configuration**" summarizes how to configure each GPI I/O using the options in the Input & Output Conditioning tab.
- "**Using Function Sets**" explains the use of functions and function sets in configuring the GPI messages for the inputs and outputs of the UltriGPI.
- "**Using GPI Inputs to Control a Router**" outlines how to configure a function that enables the UltriGPI to control Ultrix and NK series routing switchers using GPI inputs.
- "**Using RossTalk**" outlines how to configure a function that enables the UltriGPI to communicate with an external device via the RossTalk GPI protocol.
- "**Using the TSL Protocol**" outlines how to configure a function set for the supported TSL protocols.
- "**DashBoard Interface Overview**" summarizes the functions, menus, and parameters of the UltriGPI in DashBoard.
- "**Technical Specifications**" provides technical specification details on the UltriGPI.
- "**Software Licenses**" provides third-party software license information for your UltriGPI.
- "**Service Information**" provides information on the warranty and repair policy for your UltriGPI.
- "**Glossary**" provides a definitions of commonly used terms and conventions for this guide.

Related Publications

It is recommended to consult the following Ross documentation before installing and configuring your UltriGPI:

- ***DashBoard User Guide***, Ross Part Number: 8351DR-004
- ***UltriGPI Quick Start Guide***, Ross Part Number: 2401DR-202
- ***ULTRIX-FR1, ULTRIX-FR2, and ULTRIX-FR5 User Guide***, Ross Part Number: 2101DR-004
- ***ULTRIX-FR12 User Guide***, Ross Part Number: 2101DR-604

Documentation Conventions

Special text formats are used in this guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and sub-menus that must be followed to reach a particular command.

Interface Elements

Bold text is used to identify a user interface element such as a dialog box, menu item, or button. For example:

In the **Network** tab, click **Apply**.

User Entered Text

Courier text is used to identify text that a user must enter. For example:

In the **Language** box, enter **`English`**.

Referenced Guides

Text set in bold and italic represent the titles of referenced guides, manuals, or documents. For example:

For more information, refer to the ***ULTRIX-FR12 User Guide***.

Menu Sequences

Menu arrows are used in procedures to identify a sequence of menu items that you must follow. For example, if a step reads "**File** > **Save As**," you would click the **File** menu and then click **Save As**.

Important Instructions

Star icons are used to identify important instructions or features. For example:

✶ Contact your IT department before connecting to your facility network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP Address, Subnet Mask, and Gateway for your device.

Contacting Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel. During business hours (Eastern Time), technical support personnel are available by telephone. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support person who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. This team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- **Toll Free Technical Support (North America)**: 1-844-652-0645
- **Toll Free Technical Support (International)**: +800 1005 0100
- **Technical Support**: (+1)613-652-4886
- **After Hours Emergency**: (+1)613-349-0006
- **E-mail**: techsupport@rossvideo.com
- **Website**: http://www.rossvideo.com

Before You Begin

This guide is intended to be used by both operations and maintenance personnel. The guide provides an overview of the UltriGPI, describes how to install and set up the UltriGPI system components, and how to operate and maintain the UltriGPI once it is configured.

Features

The UltriGPI includes the following features:

- Ability to individually configure each GPI input
- Ability to individually configure each GPI output
- Supports the RossTalk protocol
- Supports the TSL v3 protocol
- Supports the TSL v5 protocol
- Reports status and configuration remotely via the DashBoard Control System
- 1-year transferable warranty

Applications

The UltriGPI can operate in a number of roles:

- RossTalk interface — use a RossTalk protocol server to detect GPI input activity and operate GPI output
- TSL message sender — operate UMD text and tally (Ultriscape) from GPI input activity using a TSL protocol.
- TSL tally message processor — receive the GPI output tally from a production switcher (Acuity, Carbonite) using a TSL protocol.
- Plain text message sender — send plain text or RossTalk messages from the GPI input or output activity.
- GPI router — transfer the state of any GPI input to any GPI output.
- GPI inputs to router take — perform a take operation on up to five destinations spread over up to five routers.

Configuration Overview

Figure 1 summarizes the generalized work flow of configuring your UltriGPI.

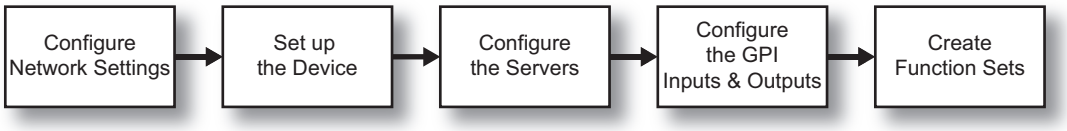


Figure 1 Process for Configuring an UltriGPI

Configure the Network Settings

Once the UltriGPI is physically installed and cabled to your facility network, you will need to assign it an initial static IP Address to enable DashBoard to locate it on your network. Establishing an initial IP Address enables DashBoard to communicate with the UltriGPI and update the Basic Tree View with the UltriGPI nodes.

Walkabout is a DashBoard system for network device discovery. UltriGPI supports the Walkabout system for configuration of its IP settings. Once you establish communications over ethernet between UltriGPI and DashBoard, you can proceed to use the interfaces in DashBoard that enable the UltriGPI to communicate with the other devices in your system.

For More Information on...

- assigning an initial IP address to the UltriGPI, refer to "**Using Walkabout to Assign the Initial IP Address to the UltriGPI**".
- using DashBoard, refer to "**Accessing the UltriGPI in DashBoard**".
- the available tabs and menus in DashBoard, refer to "**DashBoard Interface Overview**".

Set up the Device

When adding multiple UltriGPI to your system, configure the following to help easily identify each unit:

- Device name — assign a unique name to each UltriGPI to distinguish among multiple products in a system.
- STATUS LED — set the intensity of the LED on the front panel to match the ambient lighting of your location.

For More Information on...

- setting up the UltriGPI, refer to "**Customizing the UltriGPI**".

Configure the Servers

The UltriGPI can be configured to act as a network server for RossTalk and TSL communications. This requires you to define the following for each protocol:

- a port address
- the total number of connections
- the expected operation

For More Information on...

- configuring a server on the UltriGPI, refer to "**Enabling the Servers**".

Configure the GPI Inputs and Outputs

The UltriGPI provides an interface between openGear agents, such as DashBoard, and hardware devices that communication via the General Purpose Interface (GPI). Some devices produce outputs (GPI outputs) that are intended to either control other devices or signal their own status. When these signals are connected to inputs (GPI inputs) on the UltriGPI, the UltriGPI communicates the state of the GPIs via the openGear protocol (OGP) to DashBoard. Similarly, the UltriGPI accepts commands via the RossTalk protocol, and/or the TSL v3 and v5 protocols that cause it to produce GPI outputs to control external devices.

For More Information on...

- configuring the GPI I/O, refer to "**GPI I/O Configuration**".

Create Function Sets

A function set is a group of five configurations (functions) that define the transport of GPI status and messages via a supported protocol. This allows you to:

- set up more than one function set for finer control of operation
- support multiple RossTalk or TSL message functions
- combine multiple TSL message tallies to a single GPI output

- route multiple GPI inputs to a single GPI output

For More Information on…

- implementing specialized configurations, refer to "**Using Function Sets**".

Hardware Overview

This chapter presents information on the UltriGPI hardware components and features.

Front Panel Overview

The front panel of the UltriGPI includes one STATUS LED. (**Figure 2**)

Figure 2 UltriGPI — Front Panel Components

STATUS LED

The STATUS LED, located on the front of the UltriGPI chassis, reports on general communication and status conditions. **Table 1** describes the possible information the STATUS LED reports.

- The STATUS LED can be configured to report the status of the function set(s). Each function can specify an LED flash count that will cause the LED to flash that many times whenever that function is active. Refer to "**Using Function Sets**" for details.

Table 1 describes what the color of the STATUS LED reports.

Table 1 STATUS LED — Color Description

If the LED is	Description
Green	Indicates correct operation with no errors
Blue/Green	Indicates correct operation with at least one DashBoard connection
Blue	Indicates that the Walkabout Locate mode was enabled in DashBoard
Violet	A firmware update is in progress
White	A brief test when power is applied
Amber	Indicates an internal fault is detected. Service may be required.
Red	Indicates one or more interfaces are not operating as expected.

Table 2 describes what a flashing state of the STATUS LED reports.

Table 2 STATUS LED — Flashing Descriptions

If the LED is	Description
Single Flash (every 6s)	Indicates normal operation in the absence of any user specified activity
Multiple Flashes	Indicates activity as specified by user. Refer to "**Using Function Sets**".

Top Overview

The chassis top of the UltriGPI provides a silk-screen map of the connections available. **Figure 3** illustrates the UltriGPI faceplate top. From the top you can see that the chassis has:

- a network connection
- a power (PWR) port
- a pair of GPI Input (16-9, 8-1) connectors
- a pair of GPI Output (16-9, 8-1) connectors

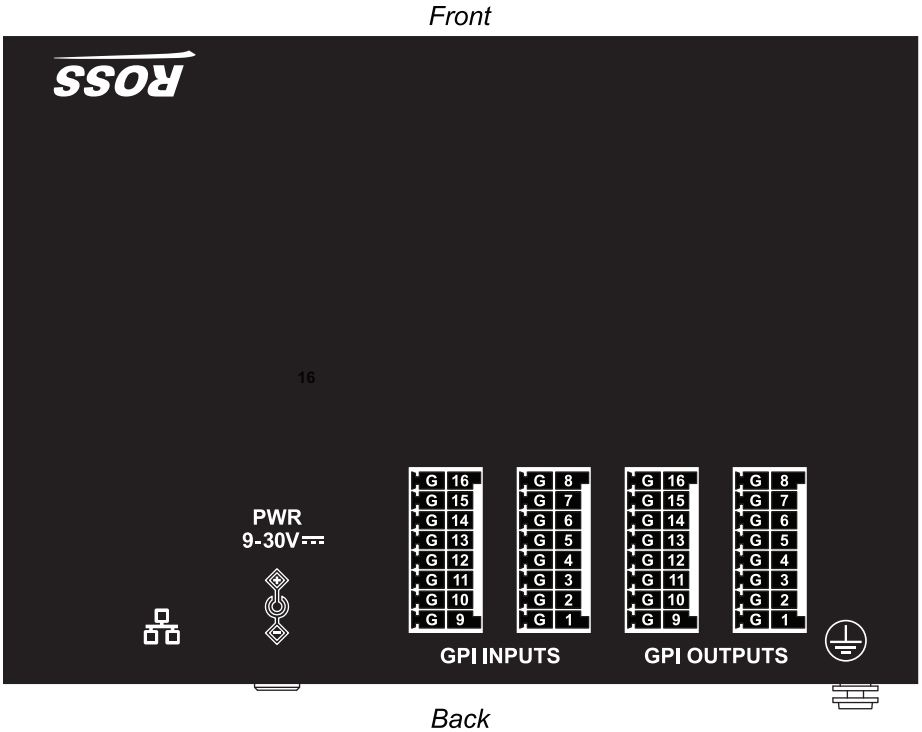


Figure 3 UltriGPI — Top Components

Back Panel

The back panel includes the network, power, and GPI connectors. (**Figure 4**)

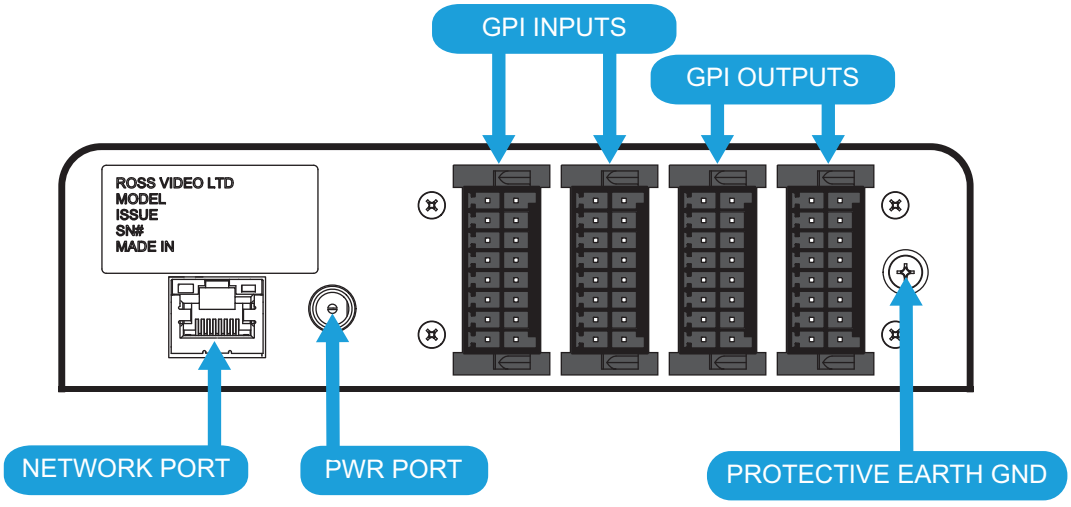


Figure 4 UltriGPI — Back Panel Components

NETWORK Port

The NETWORK port is an RJ-45 port for connecting to your facility network. This connection is used to communicate with a DashBoard client for configuration and monitoring purposes.

The UltriGPI also supports Power over Ethernet (PoE) as a Powered Device (PD). Typically the UltriGPI consumes less than 2.5watts.

Connect the UltriGPI to the same network as your DashBoard client computer or to a network that has a route to the network your DashBoard client computer is on.

The NETWORK port also features two LEDs that report the link status and speed (network speeds of 10Mbps and 100Mbps are supported) for the UltriGPI. (**Figure 5**)

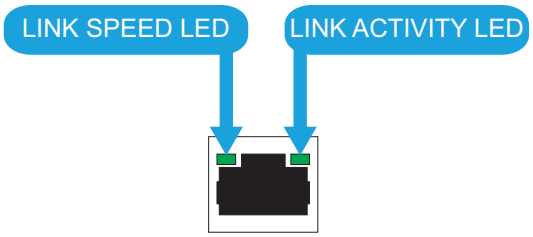


Figure 5 UltriGPI — LEDs on the NETWORK Port

Table 3 summarizes the NETWORK LEDs behavior.

Table 3 NETWORK Port LEDs — Descriptions

LED	Description
Link Speed LED	
Green	When lit green, this LED indicates that data is currently transferred at 100Mbps.
Amber	When lit amber, this LED indicates that data is currently transferred at 10Mbps.
Off	When unlit, this LED indicates that no data is currently transferred.
Link Activity LED	
Yellow	When lit solid yellow, this LED indicates a link is established.
Flashing Yellow	When flashing yellow, this LED indicates activity on the link.
Off	When unlit, this LED indicates the absence of a link.

PWR Port

The PWR port on the UltriGPI is a 2.0mm connector with a center pin and a 5.5mm diameter barrel.

The UltriGPI can be powered from the supplied AC to DC power adapter (P/N 70-01081). This adapter provides an 90-264VAC input with 3-pole IEC320-C14 AC inlet, and a 15VDC output with a mating locking power plug on a 1m cable.

For More Information on...

- the power specifications, refer to "**Technical Specifications**".

GPI Inputs

There are two WAGO male connectors that are designated as the GPI inputs (1-8, 9-16). Each connector includes 16 pins and are mapped as shown in **Figure 3**.

GPI Outputs

There are two WAGO male connectors that are designated as the GPI outputs (1-8, 9-16). Each connector includes 16 pins and are mapped as shown in **Figure 3**.

✶ GPI outputs are numbered from 17 to 32 for use in the RossTalk protocol.

Protective Earth Ground

The UltriGPI includes a protective earth ground stud.

Physical Installation

This chapter assists in the installation of the UltriGPI. If you have questions pertaining to the installation, contact us at the numbers listed in "**Contacting Technical Support**". Our technical staff is always available for consultation, training, or service.

For More Information on...

- the specifications for the UltriGPI, refer to "**Technical Specifications**".
- notices to service personnel, refer to the document ***Important Regulatory and Safety Notices*** that shipped with your UltriGPI.

Static Discharge

Throughout this chapter, please heed the following cautionary note:

ESD Susceptibility — *Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments such as carpeted areas and when synthetic fiber clothing is worn. Always exercise proper grounding precautions when working on circuit boards and related equipment.*

Unpacking

Unpack each UltriGPI you received from the shipping container and ensure that all items are included. If any items are missing or damaged, contact your sales representative or Ross Video directly.

Before You Begin

To ensure long life for this product, observe the following precautions and operating requirements:

- Maintain a temperature of 0°C to 40°C (32°F to 104°F).
- Allow for air circulation around the UltriGPI for convectional cooling.
- Cable ties may be necessary in some applications to relieve strain on the mounting hardware and the connectors.
- Many different mounting positions are possible. Some installation options are permanent and require careful consideration of the final positioning before installation.

✶ In some mounting locations, the power adapter must be affixed in a similar manner as the UltriGPI.

Non-Slip Pads

Four non-slip adhesive pads have been supplied for desktop placements or when stacking multiple units. Remove the protective backing film from the adhesive and affix one non-slip pad to each of the four corners on the bottom of the UltriGPI.

Connecting the Protective Earth Stud

Use standard engineering practices to connect the Protective Earth stud to an appropriate earth ground.

Caution — *Risk of electrical shock. Enclosure shall be connected to earth ground via protective earth stud and 16-18AWG conductor or larger.*

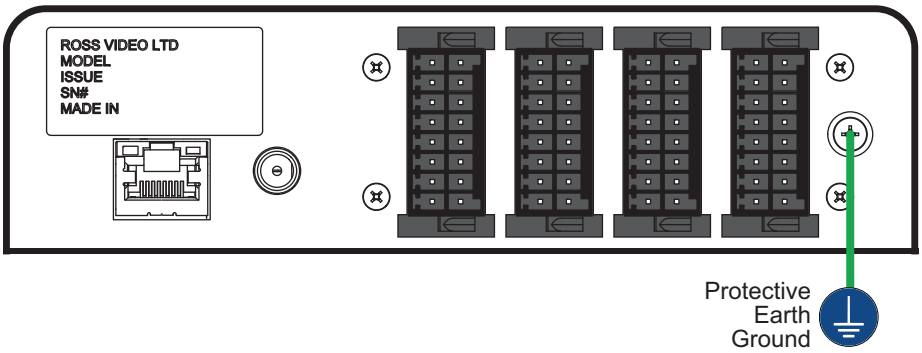


Figure 6 UltriGPI — Protective Earth Ground Stud

Connecting to a Power Supply

The UltriGPI is shipped with an external power supply. The DC Power cord has a locking connector that securely fastens into the PWR DC port on the UltriGPI chassis.

Warning — *The power supply connector of the UltriGPI power supply module must be fully inserted into the UltriGPI PWR port and the locking collar fully secured before use. Failure to do so may damage the PWR port on the UltriGPI chassis.*

Caution — *Ensure to connect the DC Power cord of the power supply to the PWR port on the UltriGPI before connecting the power supply to the power source.*

Caution — *Use of improper adapters may damage the UltriGPI and will void the warranty.*

The UltriGPI is powered by external power sources connected to the coaxial PWR port on the back of the unit. (**Figure 7**)

Caution — *Shock Hazard. Disconnect all power sources before servicing to avoid shock hazard.*

Attention — *Risque d'électrocution. Débranchez toutes les sources d'alimentation avant l'entretien.*

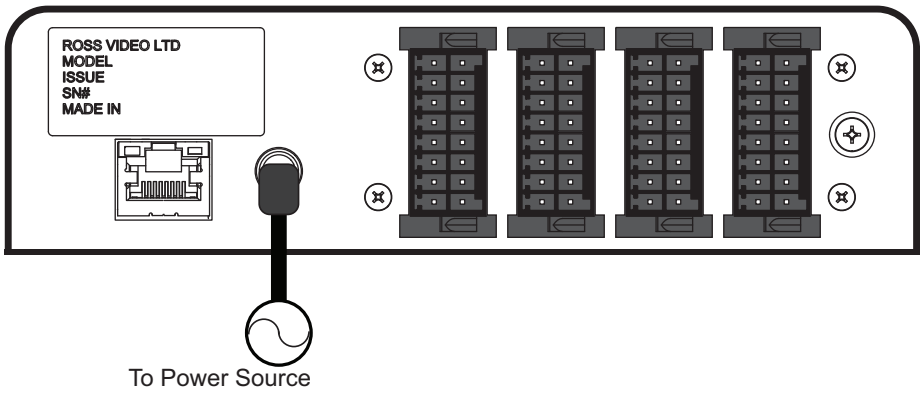


Figure 7 UltriGPI — Power Connection

Notice — *The UltriGPI automatically powers on when power is applied.*

The UltriGPI also supports Power over Ethernet (PoE) as a Powered Device (PD).

Cabling

If you have questions pertaining to the setup of UltriGPI, contact us at the numbers listed in "**Contacting Technical Support**". Our technical staff is always available for consultation, training, or service.

For More Information on...

- the technical specifications for the UltriGPI, refer to "**Technical Specifications**".
- notices to service personnel, refer to the document ***Important Regulatory and Safety Notices*** that shipped with your UltriGPI.

Before You Begin

Keep the following in mind before cabling the UltriGPI:

- Contact your IT department before connecting to your facility network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP address, Subnet Mask, and Gateway for your device.
- If difficulties or problems are experienced when connecting the UltriGPI to a network hub, contact your network administrator.

Cabling the NETWORK Port

The UltriGPI is connected directly to your network so that it can interface with the devices and the computer running the DashBoard client. After a physical connection is established via the NETWORK port, Walkabout is used to configure the network settings for the UltriGPI.

✶ The exact steps for connecting your UltriGPI to your facility via an Ethernet network depend on the network requirements of your facility.

For More Information on...

- Walkabout, refer to "**Using Walkabout to Assign the Initial IP Address to the UltriGPI**".
- downloading and installing DashBoard, refer to the ***DashBoard User Manual***.

Cabling a PoE Connection

If you wish to power the UltriGPI via a PoE connection to your facility network, you will need an RJ-45 PoE connector.

✶ Ross Video does not supply this cable.

✶ There is no power switch for the UltriGPI.

Connecting to your Facility Network

The UltriGPI provides one 10Base-T / 100Base-TX RJ-45 NETWORK port. This NETWORK port is used to connect to other devices in the tally control system. The plastic retaining spring clip on the plug provides mating connector locking.

✶ The Internet Protocol (IP) settings of the NETWORK port must be configured from the UltriGPI DashBoard interface. The port hardware automatically sets the data transfer rate to 10Mbps, or 100Mbps, and the transfer mode to half or full- duplex.

✶ Contact your network administrator if difficulties or problems are experienced when connecting the UltriGPI to a network hub, or with assigning IP addresses.

To establish a connection to the facility network

✶ You will need an ethernet cable with a standard RJ-45 connector.

1. Connect one free end of a standard CAT 5/5e/6 Ethernet cable to a free port of the network hub.
2. Connect the other end of the same cable to the **NETWORK** port on the back of the UltriGPI.

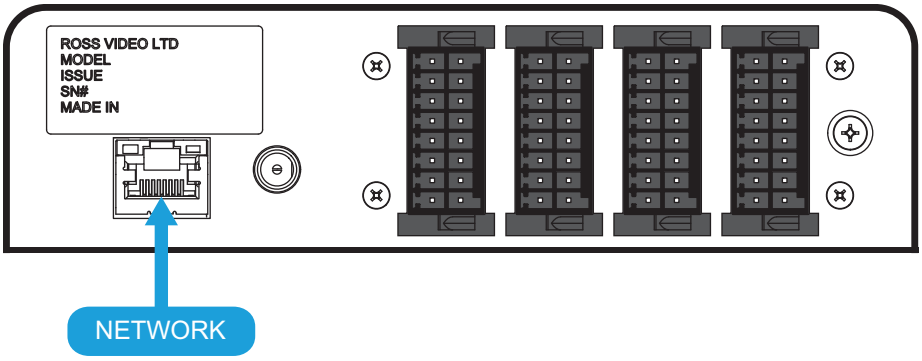


Figure 8 UltriGPI — Network Connection

Connecting an External Device to the GPI I/O

The UltriGPI can interface with external equipment via the GPI Input and Output connectors. Refer to **Figure 9** for the UltriGPI pinout designations.

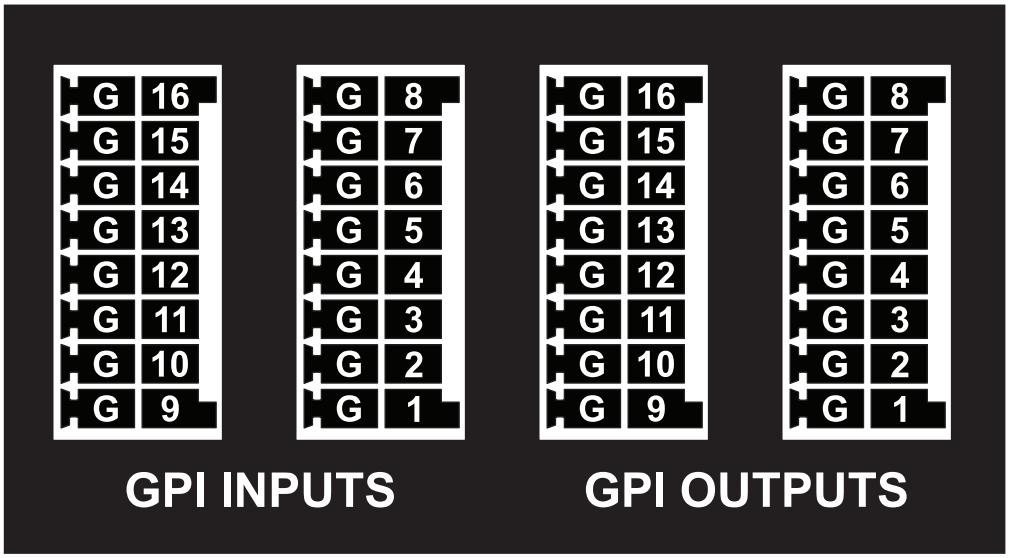


Figure 9 GPI I/O — Pin-out Designations

Each GPI connector is an WAGO 713-1108 16-pin male terminal block. Cable your GPI connector using the following procedure.

To cable a GPI connector

✶ This procedure requires a small flat-blade screwdriver.

1. Strip each required wire end approximately 0.25” (6.35mm).
2. On the female plug:
   a. Insert the screwdriver in the slot beside the pin to be connected.
   b. Insert the stripped wire end into the slot.
   c. Remove the screwdriver.

3. Repeat steps 1 to 2 for each required pin on each female plug.

✶ You may wish to use a centered strain relief plate on the wires of the female plug.

4. For each female plug to install:
    a. Align the female plug above the GPI connector.
    b. Insert the female plug into the GPI connector.
    c. Use the lever on the side of the GPI connector to secure the female plug to the connector.

✶ When the lever is closed, the female plug is locked into the male GPI connector.

Getting Started

This chapter provides instructions for launching DashBoard, assigning an initial IP address to the UltriGPI, and accessing the interfaces in DashBoard.

Before You Begin

Ensure the following:

- a valid IPV4 address is available for the UltriGPI.
- your facility IT Department provided the required network settings to be assigned to the UltriGPI and each NET port you plan to enable.
- when the UltriGPI is configured as a server in DashBoard, it accepts a maximum of five connections from DashBoard client devices.

✶ DashBoard must run on a computer that has a physical wired Ethernet connection directly to the UltriGPI and configured with an IP address in the same range as the address of the UltriGPI.

Launching DashBoard

The UltriGPI offers the typical DashBoard interface to control all the devices capabilities, from initial setup to implementation of specialized functions. Users can configure the network settings of the device, server settings, GPI input and output conditioning, and all details of special function operation.

For More Information on…

- downloading and installing the DashBoard client software, refer to the ***DashBoard User Manual***.
- the UltriGPI interfaces, refer to "**DashBoard Interface Overview**".

To launch DashBoard

1. Ensure that you are running DashBoard software version 9.14 or higher.
2. Launch DashBoard by double-clicking its icon on your computer desktop.

Using Walkabout to Assign the Initial IP Address to the UltriGPI

Once the UltriGPI is physically installed and cabled to your facility network, you will use Walkabout to assign it an initial static IP address to enable DashBoard to locate it on your network. This enables the UltriGPI to use RossTalk and TSL commands to trigger GPI Outputs and report GPI Input events.

To use Walkabout to assign the initial static IP address to the UltriGPI

1. Launch DashBoard.
2. From the DashBoard client main toolbar, select **File** > **Show Walkabout**.

   The DashBoard window displays the **Walkabout** table.
3. Click **Refresh**, located at the bottom of the Walkabout tab, to ensure the list in the Walkabout interface is current.
4. In the **Walkabout** table, find the entry for the UltriGPI you want to configure.
5. Use the **Name** field to assign a unique identifier to the UltriGPI.

   This will be the name displayed in the Tree View of DashBoard.

6. Use the **Address** field to specify the IP address supplied by your IT Department for this device.

✶ After you edit a cell in the **Walkabout** table, it is recommended to wait approximately 1 minute, then click **Refresh** to apply the new settings.

7. Ensure the **Netmask** field is set to match your network requirements.
8. Use the **Gateway** field to specify the IP address for connection outside of the local area network (LAN).
9. Click **Reboot** in the row of the **Walkabout** table for the UltriGPI.

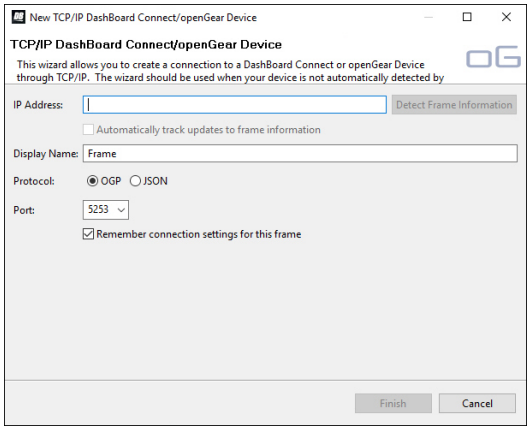
Manually Adding the UltriGPI to the Tree View

The UltriGPI does not automatically display the DashBoard Tree View. You must manually add it to the Tree View.

To manually add the UltriGPI to the Tree View in DashBoard

1. From the main toolbar in DashBoard, select **File** > **New** > **TCP/IP DashBoard Connect or openGear Device**.

   The **New TCP/IP openGear Frame Connection** dialog opens.



2. In the **IP Address** field, enter the IP address that you specified in "**To use Walkabout to assign the initial static IP address to the UltriGPI**".
3. Enter a unique identifier for the UltriGPI in the **Display Name** field or click **Detect Frame Information**.

✶ This is the name displayed in the DashBoard Tree View.

4. Click **Finish** to close the dialog.
5. Verify that the UltriGPI node displays in the DashBoard Tree View.
6. Right-click the UltriGPI node (with the name assigned in step 3) in the Tree View.

   A dialog opens.

7. Select **Open** from the dialog.

   The UltriGPI interface displays in DashBoard.

Accessing the UltriGPI in DashBoard

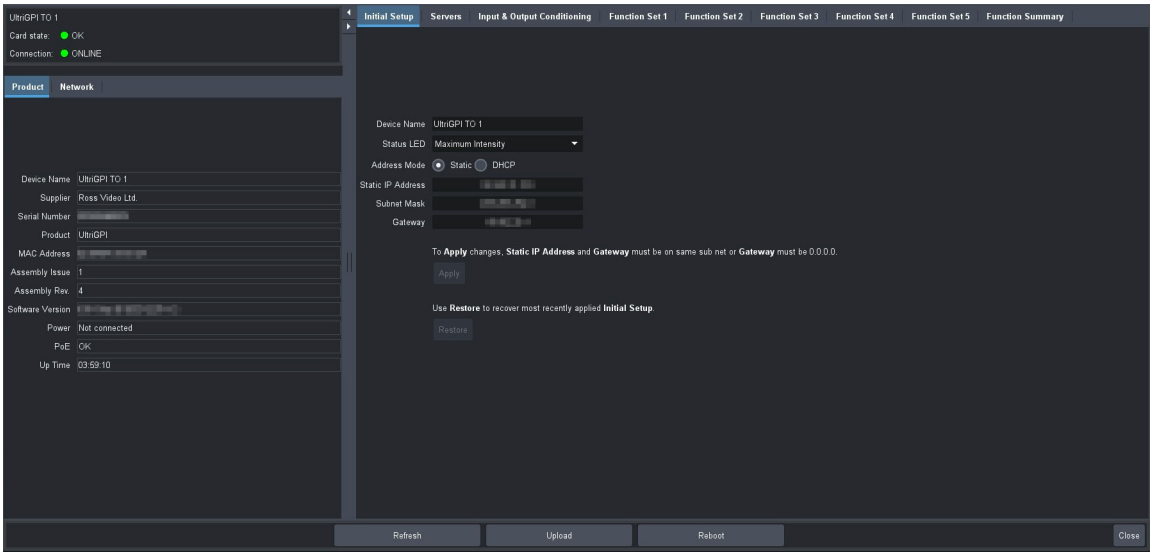
The UltriGPI groups the configuration, monitoring, and operating features as a series of tabs in the DashBoard client window. Each tab provides access to specific configuration options for your UltriGPI.

This procedure assumes that you have launched DashBoard on your computer and assigned a valid IP address to the UltriGPI.

To access the UltriGPI interfaces in DashBoard

1. In the Basic Tree View of DashBoard, expand the top **UltriGPI** node.

2. Double-click the **UltriGPI** sub-node to display the UltriGPI interface in the DashBoard window.



Changing the Network Settings of the UltriGPI

Once you have establish connection to the UltriGPI, you may want to change the IP address from the default setting to one that was provided by your IT Department.

✶ Ross Video recommends using a static IP address.

To change the network settings for the UltriGPI

1. Display the UltriGPI interface as outlined in "**To access the UltriGPI interfaces in DashBoard**".

   The **Initial Setup** tab is automatically selected.

2. Use the **Mode** menu to select **Static**.
3. Use the **Static IP Address** field to specify the new static IP Address for the UltriGPI.
4. Use the **Subnet** field to specify the subnet mask for your network.
5. Use the **Static Gateway** field to specify the gateway for communications outside of the local area network (LAN) the card will use.

✶ DHCP mode is typically not used as the external devices must have the UltriGPI address programmed into them for their normal operation with UltriGPI server functions. DHCP mode may be useful during testing but is not recommended for a permanent installation of this product.

6. Click **Apply** to save the new settings.

Customizing the UltriGPI

You can choose to assign a unique identifier to the UltriGPI within DashBoard, and determine how the front panel STATUS LED reports communication status.

To specify a display name for the UltriGPI

1. Display the UltriGPI interface as outlined in "**To access the UltriGPI interfaces in DashBoard**".

   The **Initial Setup** tab is automatically selected.

2. Type a new label in the **Device Name** field.

✶ The default is `My UltriGPI`.

3. Click **Apply** to save the new setting.

To set the STATUS LED behavior

1. Display the UltriGPI interface as outlined in "**To access the UltriGPI interfaces in DashBoard**".

   The **Initial Setup** tab is automatically selected.

2. Use the **Status LED** menu to specify the brightness of the STATUS LED on the front panel

✶ The higher the number, the higher the intensity of the LED.

3. Click **Apply** to save the new setting.

Enabling the Servers

The UltriGPI can be operated as a server using the RossTalk, TSL v3, and/or the TSL v5 protocols. Using these servers is optional as the functions provided by these servers are also available in client and UDP delivery transport modes via the Function Sets feature.

This chapter outlines how to configure a server on the UltriGPI using the Servers tab in DashBoard.

For More Information on…

- function sets, refer to "**Using Function Sets**".

Overview

To configure a server connection via the Servers tab:

1. Specify the port.
2. Specify the number of expected connections for each server.
   - Choose from exactly none, one, two, or three connections are expected, or at least those amounts, or no more than those amounts, to detect a fault.
   - This setting does not limit the function of the server in any way but helps the user identify connection situations that should be considered a fault. Only the fault indicator is affected, and the intention is to signal an operator to possibly take corrective action.

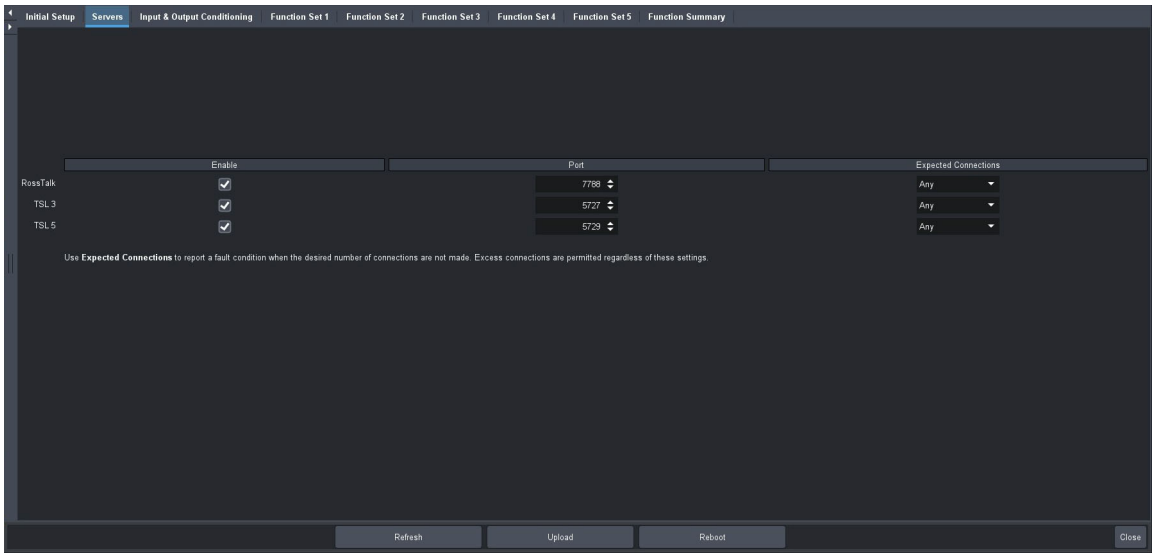
     For example, if two remote devices use RossTalk server connections and this is deemed essential to overall system health, the user can select "Exactly Two" for the expected RossTalk server connections. If one, none, or three or more connections are present, the UltriGPI detects a fault condition which appears in DashBoard and is reported via the STATUS LED on the UltriGPI front panel.
   - If the number of server connections is not relevant to system health, you may select "Any", to disable the fault detection for that server.

Configuring a Server

If you have a device that communicates via the RossTalk GPI protocol, you may enable the RossTalk server function for the UltriGPI from the Servers tab. If you have devices that communicate via the TSL v3 or TSL v5 protocol, you will need to enable those server functions via the Servers tab, and then configure a function set for the TSL protocol settings using the options on a Function Set tab.

To configure a server on the UltriGPI

1. Display the UltriGPI in DashBoard as outlined in "**To access the UltriGPI interfaces in DashBoard**".
2. Select the **Servers** tab.



3. Locate the row for the type of server you wish to configure.
4. Select the **Enable** box for each server type you require.
5. Use the **Port** field to specify the port the server will use on the network.
6. Use the **Expected Connections** menu to specify the minimum, maximum, or exact number of desired connections via this server.

✶ An alarm is reported by the UltriGPI if the expected number of connections is not met.

GPI I/O Configuration

Each UltriGPI provides 16 GPI inputs and 16 GPI outputs. Any of these can be used to interface with external equipment in various ways. Some or all of them can be internally connected to each other under user control to produce a “GPI router”. The state of any GPI input can be directed to any GPI output without the use of external equipment.

This chapter summarizes how to configure the GPI I/O using the options in the Input & Output Conditioning tab.

Overview

The UltriGPI provides user control over how GPI inputs and GPI outputs interface with other equipment in the facility. Several types of input or output conditioning are available.

For any of these input and output conditions, a “Common” setting is available so that some or all inputs and outputs can be affected from a single common setting. Any input or output can have a specific non-common setting that remains unaffected by the corresponding common setting. It is expected that most inputs and outputs follow the common setting with non-common settings as the exception.

Input and output conditioning on both ends can also be useful in tracking down wiring problems at installation time or, for testing configured functions before actual wiring connections are made.

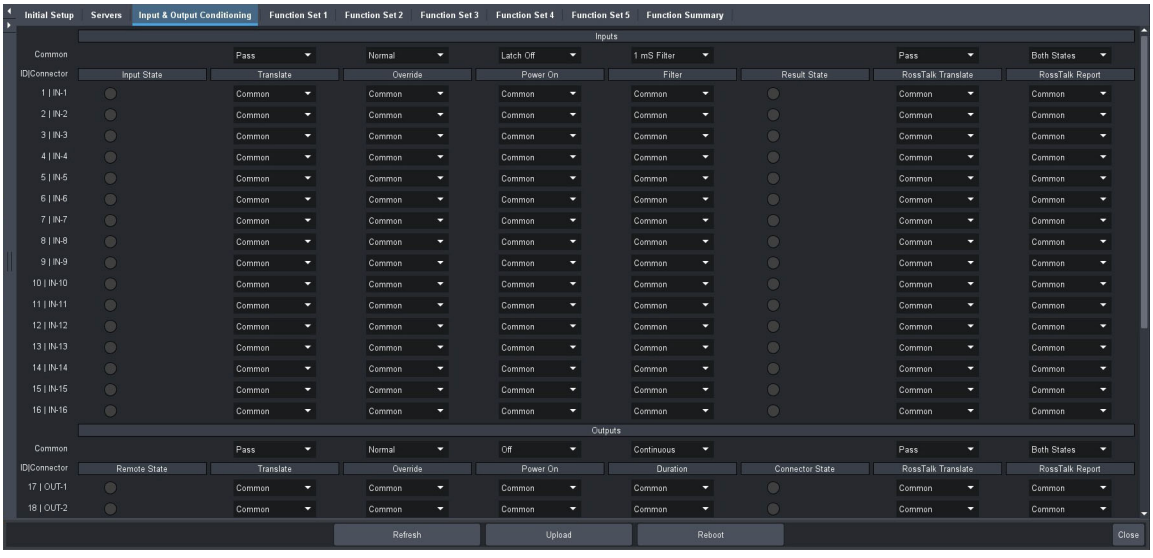
Configuring the GPI Inputs and Outputs

You can define a Common setting for the GPI Inputs, and a Common setting for the GPI Outputs. After defining and applying the Common setting to all GPI inputs and outputs, you may wish to configure individual GPI inputs and outputs as required. This section outlines both approaches.

To define the Common setting for the GPI Inputs

1. Display the UltriGPI in DashBoard as outlined in “**To access the UltriGPI interfaces in DashBoard**”.
2. Select the **Input & Output Conditioning** tab.

   The tab is organized into two areas: Inputs (top), and Outputs (bottom).



The first row in each area allows for defining the Common settings. This allows for settings to be defined once and applied to multiple GPI inputs or outputs at once.

Individual inputs or outputs may be customized to suit requirements, or set to Common to use the Common settings.

✶ The first option of each Common menu is the default setting. These are the most often used settings.

To configure a GPI input

1. Display the UltriGPI in DashBoard as outlined in "**To access the UltriGPI interfaces in DashBoard**".
2. Select the **Input & Output Conditioning** tab.
3. Locate the row for the specific GPI input under the **Inputs** banner of the tab.

✶ You may need to scroll down the tab to locate the required GPI input.

4. Use the **Translate** menu to convert a GPI input before its state is submitted to the rest of the UltriGPI function logic. Choose from the following:
   - Pass — The GPI input signal passes through without changes.
   - Invert — The GPI input state is inverted. Inverting the state could be used to accommodate reversed logic of connected equipment.
   - On Toggle Latch — A corresponding internal latch is toggled when the specified GPI input signal changes from OFF to ON.
   - Off Toggle Latch — A corresponding internal latch is toggled when the specified GPI input signal changes from ON to OFF.
   - Ignore — The GPI input state is ignored. Ignoring the state could be used to temporarily insulate UltriGPI from the misbehavior of connected equipment.
5. Use the **Override** menu to force the GPI input to ON or OFF to simulate an actual input connected to the UltriGPI.

✶ The **Override** menu is useful where the user wishes to confirm desired operation of the UltriGPI without the need to provide a real signal at its input connector. This may be because the real signal input is not working as expected or is not yet available.

Choose from the following:

- Normal — The GPI input passes through without changes.
- Force Off — The GPI input submitted to the UltriGPI logic is set to OFF and the actual GPI input is ignored.
- Force On — The GPI input submitted to the UltriGPI logic is set to ON and the actual GPI input is ignored.

6. Use the **Power On** menu to determine the state of the latch on power up of the UltriGPI.

✶ The **Power On** menu is only relevant where the Translate setting for the same GPI input is one of the Toggle Latch settings.

Choose from the following:

- Latch Off — The internal latch corresponding to the specified GPI input is OFF when the UltriGPI recovers from a loss of power.
- Latch On — The internal latch corresponding to the specified GPI input is ON when the UltriGPI recovers from a loss of power.
- Last Latch State — The internal latch corresponding to the specified GPI input is its last know state when the UltriGPI recovers from a loss of power.

7. Use the **Filter** menu to set a signal de-bounce delay.

✶ Physical devices like push buttons or relay contacts typically do not simply latch from on to off. The contacts 'bounce' as they make or break. This results in multiple on/off states during the contact transition. The **Filter** menu allows for a delay in the logic before processing the final state. This prevents noisy contact closures from sending multiple on/off states through to further processing logic.

Choose from the following:

- # mS Filter — The time the logic waits for the input signal to 'settle' before sending on for further processing.
- No Bounce Filter — Select this when connecting the UltriGPI to an external device that has solid state control (non-relay or switch contact) such as another non-relay computer port that does not bounce.

8. Use the **RossTalk Translate** menu to pass, invert or ignore a GPI input or output state. Choose from the following:
   - Pass — The signal is reported to RossTalk clients as passing through without changes.
   - Invert — The signal is inverted before reporting to RossTalk clients.
   - Ignore — The signal state is not reported to RossTalk clients.
9. Use the **RossTalk Report** menu to determine which GPI input state triggers a RossTalk message or report. Choose from the following:
   - Both States — A RossTalk report is sent on any GPI input transition.
   - On State — A RossTalk report is sent when the GPI input changes to ON.
   - Off State — A RossTalk report is sent when the GPI input changes to OFF.
   - Ignore — A RossTalk report is not sent under any conditions for this GPI input.

To configure a GPI output

1. Display the UltriGPI in DashBoard as outlined in "**To access the UltriGPI interfaces in DashBoard**".
2. Select the **Input & Output Conditioning** tab.
3. Locate the row for the specific GPI output under the **Outputs** banner of the tab.

✶ You may need to scroll down the tab to locate the required GPI output.

4. Use the **Translate** menu to convert the GPI output after its state is asserted by the rest of the UltriGPI function logic. Choose from the following:
   - Pass — The output signal passes through without changes.
   - Invert — The output state is inverted. Inverting the state could be used to accommodate reversed logic of connected equipment.
   - Ignore — The GPI output state is ignored. Ignoring the state could be used to temporarily insulate connected equipment from the UltriGPI functions.
5. Use the **Override** menu to force the GPI output to ON or OFF to provide a signal to a wired external device.

✶ The **Override** menu is useful where the user wishes to confirm desired operation of the UltriGPI without the need to provide a configured function to operate the real GPI output at the connector. This may be needed to test external device behavior to help when configuring the function of an output later.

Choose from the following:

- Normal — The GPI output state is determined by the UltriGPI logic.
- Force Off — The GPI output state is forced to OFF.
- Force On — The GPI output state is forced to ON.

6. Use the **Power On** menu to determine the state of the output on power up of the UltriGPI.

✶ The **Power On** menu is only relevant where the state of the same GPI output is not determined to be some other state due to the configuration of any relevant function. For example, if the GPI output is routed from a GPI input, the output state is determined by the GPI input state. Use the Power On menu where an external device is controlling the GPI output but does not provide a periodic refresh of the desired GPI state.

   Choose from the following:

   - Off — The specified GPI output state changes to OFF when the UltriGPI recovers from a loss of power.
   - On — The specified GPI output state changes to ON when the UltriGPI recovers from a loss of power.
   - Last State — The specified GPI output state changes to its last known state when the UltriGPI recovers from a loss of power.

7. Use the **Duration** menu to set the amount of time the GPI remains active.

✶ Normally, a GPI output maintains its state continuously as directed by internal logic. A GPI output can also be set up to have a limited active duration. To make the GPI output active again, the internal logic must become inactive and active once again. This is useful where connected equipment expects a short pulse instead of a continuous state to have the desired operation.

   Choose from the following:

   - Continuous — The active state is continuous.
   - # seconds — The active state continues for the specified duration, then reverts to the inactive state.

8. Use the **RossTalk Translate** menu to pass, invert, or ignore the GPI output state. Choose from the following:

   - Pass — The signal is reported to RossTalk clients without changes.
   - Invert — The signal is inverted before reporting to RossTalk clients.
   - Ignore — The signal state is not reported to RossTalk clients.

9. Use the **RossTalk Report** menu to determine which GPI output state triggers a RossTalk message or report. Choose from the following:

   - Both States — A RossTalk report is sent on any transition for this GPI output.
   - On State — A RossTalk report is sent when this GPI output state changes to ON.
   - Off State — A RossTalk report is sent when this GPI output state changes to OFF.
   - Ignore — A RossTalk reports is not sent under any conditions for this GPI output.

Using GPI Inputs for Take Operations

You can perform a take operation on up to five destinations spread over up to five routers. One destination each on five routers, or five destinations on one router, or any combination in between, can be accommodated. The taken source can be specified, or the original source can be re-taken. Take actions can be directed by a GPI activating, multiple GPIs activating, or all GPIs in a set becoming inactive. This handles the typical function of a set of “tap switches” (pressing the joystick mounted on camera control panels) for fast camera comparison in the camera shading area of a production system.

Input and Output Conditioning Interaction

For both GPI inputs and outputs, the various conditioning settings can have some interaction. For example, making a GPI output Duration non-continuous has the effect of making the output

normally OFF except when triggered for the configured duration. If that GPI output also has its Translate setting configured as Invert then the actual output is normally ON except when triggered for the configured duration.

In general, the Override setting takes precedence over the Translate setting and those take precedence over the other settings. It is recommended that GPI inputs and outputs be exercised using the various settings to achieve the desired operation.

To help identify the effects of conditioning, there are two columns surrounding the settings. They are intended to provide a “before” and “after” picture of the effects of conditioning settings.

- For GPI inputs, the Input State and Result State columns show the actual and resulting GPI input states.
- For GPI outputs, the Remote State and Connector State columns show the internal logic state coming from enabled functions and actual GPI output states.

Using Function Sets

This chapter explains the use of functions and function sets in configuring the GPI messages for the inputs and outputs of the UltriGPI.

Overview

The UltriGPI provides the ability to define the transport of GPI status and messages via a protocol.

What is a function?

A function defines the transport of GPI status and messages via a specific protocol. All functions can be independently enabled or disabled as required.

To implement specialized functions, you specify the minimum set of parameters necessary through a Function Set sub-tab in DashBoard. Default settings make it so many parameters can be left as is. While a function is enabled, any changes to its settings take effect immediately. Or the function can be disabled while multiple changes are made, then re-enabled to put the changes into use.

What is a function set?

A function set is a method to group multiple functions for ease of understanding and setting. At the bottom of each Function Set tab, a sub-tab displays for each function type. The user chooses which set to configure, one at a time, then enables the operation of each one as required. Even though they have a similar purpose, each function in the set operates with their own settings.

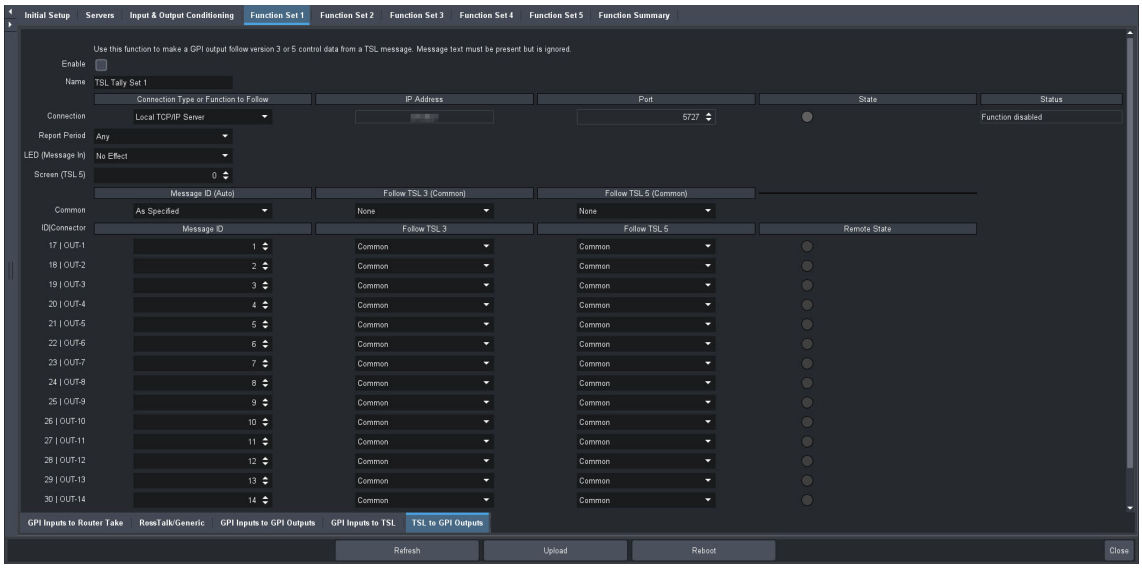


Figure 10 Example of Function Set 1 > TSL to GPI Outputs

Function sets can be useful where you wish to have somewhat similar operations but with a difference in final behavior. Each function in a set can be named to help track its purpose. Function sets allow one or more functions to be configured such as:

- Support for RossTalk messages. Refer to "**Using RossTalk**".
- Support for TSL messages. Refer to "**Using the TSL Protocol**".
- Combine multiple TSL message tallies to a specific GPI output. Refer to "**Using the TSL Protocol**".
- Route multiple GPI inputs to a specific GPI output. Refer to "**Mapping the GPI Inputs and Outputs via a Function**".

- Control Ultrix and NK series routing switchers. Refer to "**Using GPI Inputs to Control a Router**".

A function set can also enable the UltriGPI perform the same function but on several different network ports and addresses. For example:

- Send TSL messages to different multi-viewers.
- Get TSL tally from, or send RossTalk triggers to, multiple switchers.

Where multiple function sets are intended to use the same network port or address, the function set can be directed to follow the settings of another set of the same function type. This relieves the user from having to specify the same address and port in multiple places.

It is possible, even likely, that more than one function set is directed to control the state of the same GPI output. In this case, the states from each function set are combined so that any one function can activate the GPI output and all related functions sets must release the state before the GPI is released.

✶ Avoid re-entry of IP address and ports settings used by more than one function set.

Client and UDP Transport

Client and UDP transport methods can be used by three protocols: RossTalk, TSL v3, and TSL v5. Each of the five function sets can choose one of four methods that messages will be delivered:

1. Use the built-in server where remote devices connect as clients.
2. Behave as a client and connect to a user-specified server address and port.
3. Use UDP transport to and from a user-specified remote device address and port.
4. Follow the settings of another function set of the same type.

✶ Method 4 avoids specifying the same network information in multiple places. Note that making two or more function sets follow each other in a circular way results in a temporary disabling of those function sets.

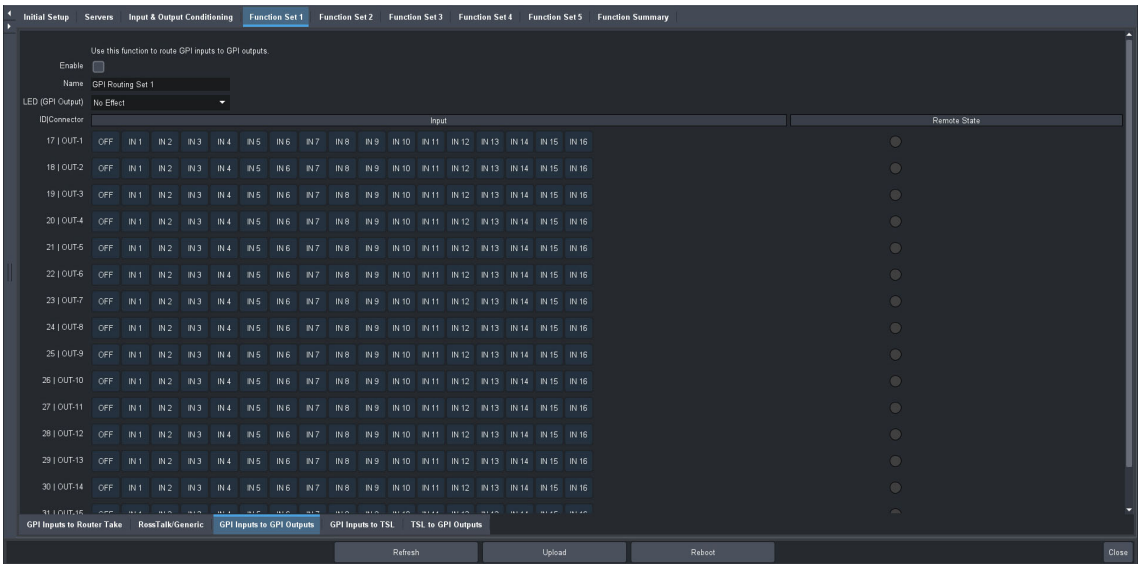
Mapping the GPI Inputs and Outputs via a Function

The GPI Inputs to GPI Outputs function provides a 16x16 map of the available GPI inputs and outputs of the UltriGPI. You can map inputs to outputs as required for each Function set, then enable the functions as needed.

To define a function to map the GPI input to the GPI output(s)

1. Display the UltriGPI in DashBoard as outlined in "**To access the UltriGPI interfaces in DashBoard**".
2. Select any **Function Set** tab.
3. Select the **GPI Inputs to GPI Outputs** sub-tab.

   In the following example, the user selected the **GPI Inputs to GPI Outputs** sub-tab for Function Set 2.



4. Use the **Name** field to assign a unique identifier to this function.

   This name is used to identify the function in the UltriGPI DashBoard interfaces.

5. Use the **LED (GPI Output)** menu to determine if the STATUS LED on the front panel reports when this function is active and any one or more routed GPI states change.

✶ Each function can specify an LED flash count that causes the STATUS LED on the front panel to flash that many times whenever that function set is active. This is useful to quickly identify the function set operation from the UltriGPI. Refer to "**Front Panel Overview**" for the location of the STATUS LED.

6. To map a GPI input and output pair:

   a. Locate the GPI output connector in the **ID | OUT** column.

      The nomenclature "ID | OUT#" indicates the output pair on the UltriGPI back panel. For example, Con 1-9 indicates Pair 9 on the first connector.

   b. Click the required **IN** button to assign the specified GPI input signal to this GPI output.

✶ Toggle the button to **OFF** to prevent this function from contributing to the state of the GPI output.

7. Select the **Enable** box to activate this function. A function that is not enabled is equivalent to having all outputs set to the OFF input.

Managing the Function Sets

Although unlikely to be used in practice, using all five function types and all five sets per type means that there are potentially 25 functions. The **Function Summary** tab helps keep track of them. It lists all functions by type, set, and name. The user can see and modify the name of each function set and enable or disable as required on-the-fly.

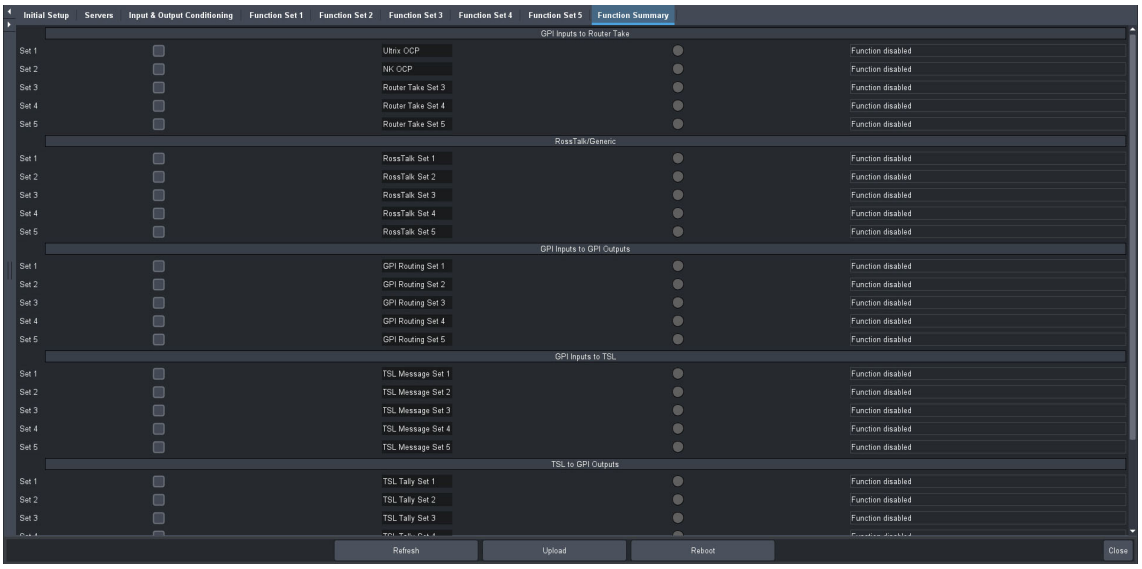


Figure 11 Example of the Function Summary Tab

The status of each set also displays, indicating how many remote clients are connected to UltriGPI server functions, is a remote server connected to an UltriGPI client function, or how recently a message was received on UDP transport functions.

Enabling or naming function sets here are identical to the same actions on parameters that appear on the individual function type sub-tabs.

✶ Enable state and function name can be changed on the Function Summary tab or on the individual Function Set sub-tabs.

Monitoring the Status of a Function

The State and Status fields are read-only (on the Router Take function, this field is labeled as Connection) and indicate when a function is enabled and working correctly (green), when a function is enabled but not working correctly (red), or when a function is disabled (gray).

- **When the Connection Type is Local TCP/IP Server** — the State is green even if nothing is connected. The **Status** field indicates the number of active connections.
- **When the Connection Type is Remote TCP/IP Server** (or a router in the Router Take function) — the State is green only if there is a working connection to that server. The Status field indicates whether or not a connection to a server is established.
- **When the Connection Type is UDP** — the State is red initially but goes green as soon as any message is transported since a connection cannot be verified (lack of verification is the main difference between UDP and TCP/IP transports). The Status field indicates how long ago the most recent message was received or sent.

✶ For the TSL to GPI Outputs function, use the Report Period field to specify how frequently messages must arrive to keep the State field from going from green to red.

Using GPI Inputs to Control a Router

This chapter outlines how to configure a function that enables the UltriGPI to control Ultrix and NK series routing switchers using GPI inputs.

Overview

The expected application is to use GPI inputs to take a set of sources on a routing switcher destination. When multiple functions are configured, there can be up to five destinations, 16 sources per destination, covering the same device or up to five different devices.

Router Actions

GPI inputs can be set up to take a specific router source or take the source that was originally taken before a specific source is taken. To determine an original source, the UltriGPI monitors the take actions of external devices such as a control panels.

GPI Triggers

Router actions can be triggered in three ways:

- by any one of a single GPI input from a set becoming active,
- multiple simultaneous inputs within the set becoming active, or
- all inputs within a set becoming inactive.

Defining a GPI Inputs to Router Take Function

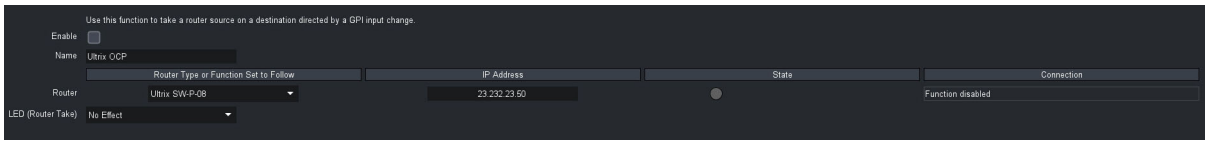
This section outlines how to configure the GPI inputs of the UltriGPI to control a specific router in your system.

To configure a GPI Inputs to Router Take function

1. Display the UltriGPI in DashBoard as outlined in "**To access the UltriGPI interfaces in DashBoard**".
2. Select the **Function Set** tab you wish to configure with a Router Take function.
3. Select the **GPI Inputs to Router Take** sub-tab.
4. Use the **Name** field to assign a unique identifier to this GPI Inputs to Router Take function.

✶ This name is used to identify the function in the UltriGPI DashBoard interfaces.

5. Use the **Router Type or Function Set to Follow** menu to specify the type of router the UltriGPI uses for this function. Choose from the following:
   - Ultrix SW-P-08 — The UltriGPI connects to an Ultrix series router using the SW-P-08 protocol. The port number is automatically selected to work with the Ultrix routers.
   - NK Series — The UltriGPI connects to an NK series router using the NK protocol. The port number is automatically selected to work with NK series products.
   - Use Set # — Applies the connection settings defined in the specified function set.
6. If a router type was chosen in step 5, use the **IP Address** field to specify the IP address of the router device to be controlled by the UltriGPI.



7. Use the **LED (Router Take)** menu to determine how the STATUS LED on the front panel reports when this function causes a router take to be performed.
8. Select the **Enable** box.
   - The function becomes active for this GPI Inputs to Router Take function set.
   - If a connection to a router device is present, the State and Connection fields show a working connection.
   - If a working connection is not present, or the user has decided to enable the function later, the function can still be configured but either full names or numbers must be specified in steps 9 and 12, or partial entries must be confirmed later once a connection to the router device is established.
9. Use the **Target** field to choose the router destination to be controlled by this UltriGPI function. Under **Destination**, enter the full or partial name of the desired router destination.
   - If a working connection to the router device has been established, press Enter to validate the name and make the Status field show the full name of the first destination that matches the entry including its corresponding system number in parenthesis.
   - If the desired destination is not found, or a different destination name appears, re-specify the desired destination name with more detail.
   - To choose a destination by system number, enter only numbers and the Status field shows the number with the corresponding name of that destination.

10. After the Destination is specified, optionally add one or more commas and level numbers from 1 to 32 to specify the router levels to be taken.
    - If none are specified, only the first router level for the specified destination can be taken.
    - The Status read-only field reports the valid specified levels.
11. Decide which GPI inputs are to be involved in this function. For each of those GPI inputs, under the **Action** column, choose the desired router action to be taken.
    - To take a specific source, choose **Take Specified Source**.
    - To take the original source, choose **Take Original Source**.
    - For GPI inputs that are not to be involved in this function, choose **No Action**. This action does not exclude those GPI triggers from being involved in other functions.

✶ If at least one GPI input **Action** is not set to **No Action**, choose the Action of the special **GPI triggers All GPIs Off and Multiple GPIs On**.

12. For each GPI input or trigger where **Take Specific Source** is selected in the **Action** menu, under **Source**, enter the full or partial name of the desired router source.
    - If a working connection to the router has been established, press **Enter** to validate the name. The Status field will report the full name of the first source that matches the entry including its corresponding system number in parenthesis.
    - If the desired source is not found, or a different source name appears, re-specify the desired source name with more detail.
    - To choose a source by system number, enter only numbers and the Status field shows the number with the corresponding name of that source.

13. After a source is specified, optionally add one or more commas and level numbers from 1 to 32 to specify the router levels to be taken.
    - If none are specified, all router levels for the specified source can be taken. Validly specified levels appear in the Status field.
    - The actual levels affected once a take is performed by the function are those that are specified by either the source or destination entries, or the levels they have in common where both are specified.
14. If not already done in step 8, select the **Enable** box.
    - The function becomes active for this GPI Inputs to Router Take function set.
    - If a connection to a router device is present, the State and Connection fields show a working connection.

Using RossTalk

This chapter outlines how to configure a function that enables the UltriGPI to communicate with an external device via the RossTalk GPI protocol.

Overview

The RossTalk GPI protocol focuses on relaying GPI states between devices or triggering device actions. It can be used in two ways.

RossTalk GPI Commands

A remote device can connect to the UltriGPI RossTalk server using the RossTalk GPI protocol to interrogate the state of GPI inputs and outputs or control the state of GPI outputs. GPI state change events are reported as decided by the remote device according to the protocol. Up to five remote devices can use the RossTalk server at the same time, each with their own session so as not to interfere with the commands, responses, and reporting choices of the other devices. To increase flexibility, the UltriGPI RossTalk server can appear as a client to a remote server or a UDP transport but operate exactly as it would when employed as a server.

Simple Text Commands

A remote device using client, server, or UDP transport delivery methods, can receive RossTalk commands from UltriGPI to control actions on that device. While the default content of command messages follows the protocol, the user is free to construct generic GPI-specific text commands to communicate instructions to a remote device that can differ significantly to the RossTalk protocol. This offers considerable flexibility in communicating with simple text-driven devices that provide a variety of functions.

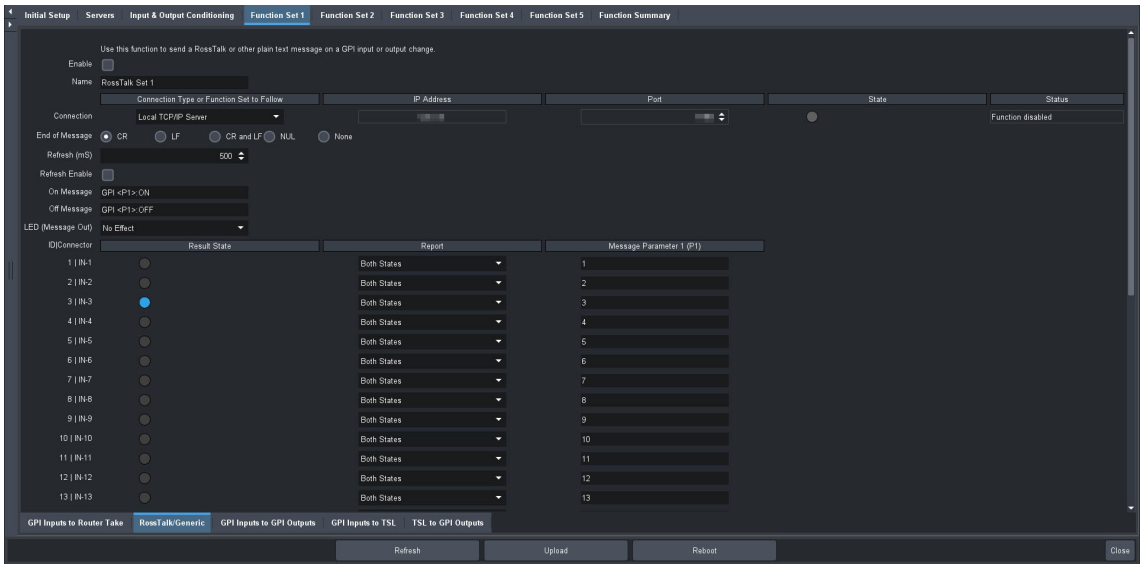
Defining a RossTalk/Generic Function

This section outlines how to configure a function that enables the UltriGPI to communicate via the RossTalk GPI protocol.

To configure a RossTalk/Generic function

1. Display the UltriGPI in DashBoard as outlined in "**To access the UltriGPI interfaces in DashBoard**".
2. Select the **Function Set** tab you wish to include a configured the RossTalk function.
3. Select the **RossTalk/Generic** sub-tab.

   In the following example, the user selected Function Set 1 > RossTalk/Generic.



4. Use the **Name** field to assign a unique identifier to this RossTalk / Generic function.

   This name is used to identify the function in the UltriGPI DashBoard interfaces.

5. Use the **Connection Type or Function Set to Follow** menu to specify the transmission control protocol the UltriGPI uses for this RossTalk function. Choose from the following:

   - Local TCP/IP Server — The UltriGPI starts a local TCP/IP server. The port number is set via the RossTalk settings on the Servers tab.
   - Remote TCP/IP Server — The UltriGPI connects to a specific TCP/IP server with the IP address and port number specified in the corresponding fields.
   - UDP — The UltriGPI will forward messages to the UDP device located at the IP address and port number specified in the corresponding fields.
   - Use Set # — Applies the connection settings defined in the specified function set.

6. Use the **IP Address** field to specify the IP address of the external device that will receive the RossTalk/Generic messages from the UltriGPI.

7. Use the **Port** field to specify the port number that remote devices are connected to when using the RossTalk protocol to communicate with the UltriGPI.

✶ The port type (TCP/IP or UDP) is determined by the Connection Type menu. For example, while using Local TCP/IP Server, the applicable port is set on the Servers tab and the now irrelevant IP Address and Port fields are disabled but maintain their previous settings until needed again once a different connection type is selected.

8. Use the **End of Message** options to determine how the end of the message is represented. Choose from the following:

   - CR — the ASCII symbol for a carriage return.
   - LF — the ASCII symbol for a line feed.
   - CR and LF — the ASCII symbols for a carriage return and line feed.
   - NUL — the ASCII symbol for NULL.
   - None — the message end is not indicated.

9. To enable the UltriGPI to re-send the message:

   a. Use the **Refresh** field to specify the number of milliseconds the UltriGPI will wait before re-sending the message to the external device.

✶ A value of 0 disables the automatic refresh.

b. Select the **Refresh Enable** box when automatic periodic messages are required.

10. Use the **On Message** field to configure the message when a GPI becomes active.

    The message uses `<P1>` to insert a parameter within the text. The RossTalk default GPI On Message is `GPI <P1>:ON`.

11. Use the **Off Message** field to configure the message when the GPI becomes inactive. The message uses `<P1>` to insert a parameter within the text. The RossTalk default GPI Off message is `GPI <P1>:OFF`.

12. Use the **LED** menu to determine the STATUS LED on the front panel behavior when a RossTalk message is sent. Choose from the following:

    - No Effect — The STATUS LED on the UltriGPI front panel will not flash because this function is in use.
    - # Flashes — The STATUS LED on the UltriGPI front panel flashes the specified number of times when this function is in use.

13. Locate the **ID | Connector** row for the required GPI input or GPI output.

14. Use the **Report** menu to specify when a RossTalk report is generated. Choose from the following:

    - Both States — A RossTalk report is sent on any change of the specified GPI input or output.
    - On State — A RossTalk report is sent when the specified GPI input or output changes from inactive to active.
    - Off State — A RossTalk report is sent when the specified GPI input or output changes from active to inactive.
    - None — A change on the specified GPI input or output does not cause a RossTalk report to be sent.

15. Use the **Message Parameter** field to specify a string that can be inserted into each message.

16. Repeat steps 13 to 15 for each required GPI input or GPI output.

17. Select the **Enable** box.

    The RossTalk/Generic function is active for this function set.

Using the TSL Protocol

Many devices use the TSL protocol to communicate tally and text information. The UltriGPI can simultaneously and independently accept and produce TSL messages, in protocol versions 3 and 5. TSL messages can be used in two ways:

- report the GPI input state
- change the GPI output state

With either method, message delivery can be set up for server, client, or UDP transport, to be compatible with the requirements of external devices.

This chapter outlines how to configure a function set for each method.

Defining a GPI Inputs to TSL Function

The GPI Inputs to TSL function enables the UltriGPI to send a TSL v3 or TSL v5 message on a GPI input change. The content of text in the TSL messages is determined by a combination of GPI state and user-specified text. The message can be used to provide information to a compatible display device, such as Ross Ultriscape.

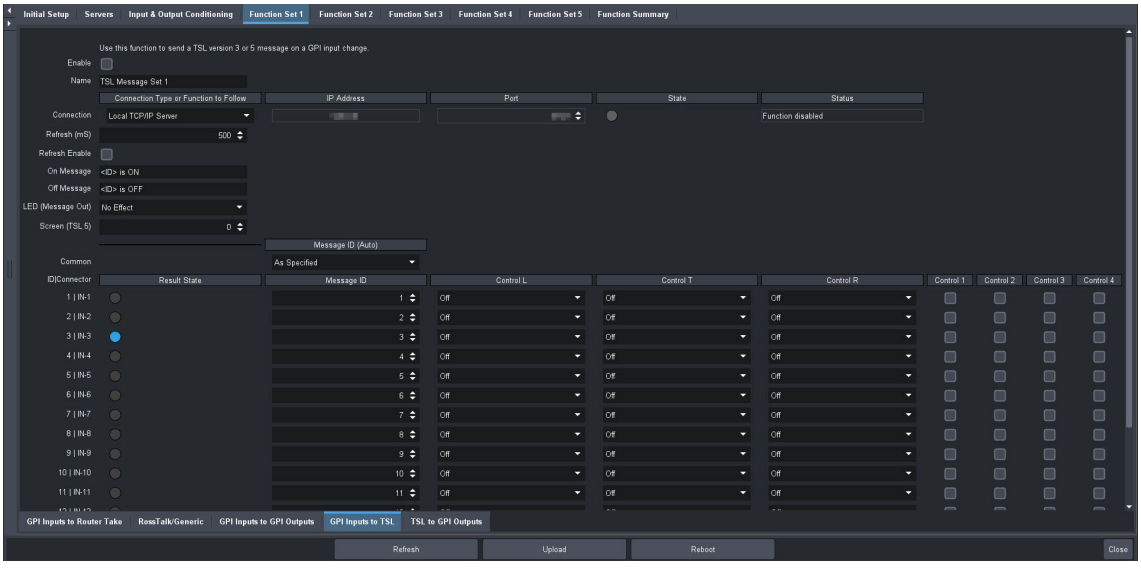
The state of GPI inputs and user-specified text is combined into either version of TSL message and sent to a remote device. The choice of how a GPI input state is inserted into the message determines which protocol is sent. For TSL v3, a GPI input state can be inserted into any of four binary tally controls. For TSL v5, a GPI input state can be inserted into any of three quaternary tally controls. If both are specified, UltriGPI sends messages for TSL v3 and v5 at the same time.

✶ Do not specify both TSL v3 and TSL v5 controls for the same remote device unless that device is capable of automatically sensing both protocol formats over the same communication channel.

To configure a GPI Inputs to TSL function

1. Display the UltriGPI in DashBoard as outlined in "**To access the UltriGPI interfaces in DashBoard**".
2. Select the **Function Set** tab you wish to use for the GPI Inputs to TSL function.
3. Select the **GPI Inputs to TSL** sub-tab.

   In the following example, the user selected Function Set 1 > GPI Inputs to TSL.



4. Use the **Name** field to assign a unique identifier to this function.

   This name is used to identify the function in the UltriGPI DashBoard interfaces.

5. Use the **Connection Type** menu to specify the sending method that the UltriGPI will use for this GPI Inputs to TSL function. Choose from the following:

   - Local TCP/IP Server — The UltriGPI starts a local TCP/IP server. The port number is set via the TSL settings on the Servers tab.
   - Remote TCP/IP Server — The UltriGPI connects to a specific TCP/IP server with the IP address and port number specified in the corresponding fields.
   - UDP — The UltriGPI will forward messages to the UDP device located at the IP address and port number specified in the corresponding fields.
   - Use Set # — Applies the connection settings defined in the specified function set.

6. Use the **IP Address** field to specify the IP address of the external device that will receive the TSL messages from the UltriGPI.

7. Use the **Port** field to specify the port number that remote devices are connected to when using the TSL protocol to communicate with the UltriGPI.

8. To configure an auto refresh rate for all GPI inputs:

   a. Use the **Refresh** field to specify the number of milliseconds the UltriGPI will wait before re-sending a TSL message to the external device. Note that a value of 0 disables the automatic refreshing.

   b. Select the **Refresh Enable** box.

9. Use the **On Message** field to configure the message when a GPI input becomes active. The message uses the nomenclature of `<ID><text>` where:

   - `<ID>` is the ID assigned to the GPI via its Message ID field.
   - `<text>` is the message text. The default On Message is: `<ID> is ON`.

10. Use the **Off Message** field to configure the message when a GPI input becomes inactive. The message uses the nomenclature of `<ID><text>` where:

    - `<ID>` is the ID assigned to the GPI via its Message ID field.
    - `<text>` is the message text. The default Off Message is: `<ID> is OFF`.

11. Use the **LED (Message Out)** menu to determine the STATUS LED behavior for this function. Choose from the following:

    - No Effect — The STATUS LED on the UltriGPI front panel is not affected by this function.
    - # Flashes — The STATUS LED on the UltriGPI front panel flashes when this function causes a message to be sent.

12. If you are using the TSL v5 protocol, use the **Screen (TSL 5)** field to specify the TSL v5 screen number for any outgoing messages.

13. Locate the **ID | Connector** row for the required GPI input.

14. Use the **Message ID** field to specify the number that replaces `<ID>` in the TSL message text sent when this GPI input changes. It is also the identifier number portion of the TSL message.

✶ This number must be 0 to 126 for TSL v3 or 0 through 65534 for TSL v5 messages.

15. Use the **Common** > **Message ID (Auto)** field to determine how the Message ID is used. Choose from the following:

    - As Specified — uses the Message ID field for each GPI input as described above.
    - Sequential From First ID — uses only the Message ID field from the first GPI input to determine the actual Message ID for the remaining GPI Inputs. Each Message ID will be the

next higher number for consecutive GPI inputs. The unused fields remain as specified but have no effect on outgoing TSL messages.

16. Use the **Control L** menu to choose the content of the two Left tally bits in the outgoing TSL v5 message. Choose from the following:
    - Off — Left tally bits are both off.
    - Red — Left tally bits are set to a red code (MSB off, LSB on).
    - Green — Left tally bits are set to a green code (MSB on, LSB off).
    - Amber — Left tally bits are set to an amber code (MSB on, LSB on).
17. Repeat step 16 for the **Control T** (Text tally).
18. Repeat step 16 for the **Control R** (Right tally) bits.

✶ At least one of Control L, T, or R, must be set to either Red, Green, or Amber to have a TSL v5 message sent when the GPI input changes.

19. Use the **Control** 1, 2, 3, and 4 boxes to activate the corresponding tally bit in the outgoing TSL v3 message.

✶ At least one of Control 1, 2, 3, or 4 must be selected to have a TSL v3 message sent when the GPI input changes.

✶ Note that TSL v3 includes 4 control bits, and TSL v5 includes 6 control bits (3 pairs).

20. Repeat steps 13 to 19 for each additional GPI input.
21. Select the **Enable** box.

    The GPI Inputs to TSL function is active for this function set.

Defining a TSL to GPI Outputs Function

The TSL to GPI Outputs function enables the UltriGPI to force a GPI output to follow TSL v3 or TSL v5 control data in a message.

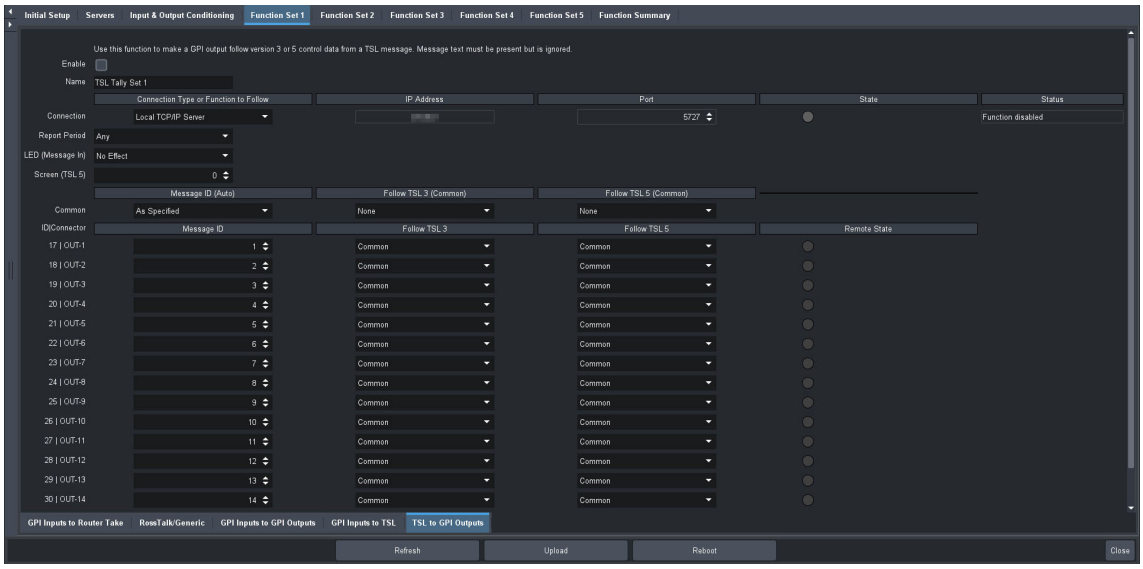
A remote device sends a message that directs UltriGPI to change the state of its GPI outputs. The user designates specific message ID, screen (TSL v5 only), and tally control fields to affect each specific GPI output. Text information in the message is ignored. This method is generally used to control a resource tally, such as a camera tally light, as directed by live tally from a switcher device. UltriGPI automatically detects the protocol version of the TSL message. It is generally expected that only one version of TSL message is provided by each connected device.

✶ Message text must be present, but is ignored.

To configure a TSL to GPI Outputs function

1. Display the UltriGPI in DashBoard as outlined in "**To access the UltriGPI interfaces in DashBoard**".
2. Select the **Function Set** tab you wish to use for the TSL to GPI Outputs function.
3. Select the **TSL to GPI Outputs** sub-tab.

   In the following example, the user selected Function Set 1 > TSL to GPI Outputs.



4. Use the **Name** field to assign a unique identifier to this function.

   This name is used to identify the function in the UltriGPI DashBoard interfaces.

5. Use the **Connection Type** menu to specify the receiving method that the UltriGPI will use for this TSL to GPI Outputs function. Choose from the following:

   - Local TCP/IP Server — The UltriGPI starts a local TCP/IP server. The port number is set via the TSL settings on the Servers tab.
   - Remote TCP/IP Server — The UltriGPI connects to a specific TCP/IP server with the IP address and port number specified in the corresponding fields.
   - UDP — The UltriGPI accepts messages from the UDP device located at the IP address and port number specified in the corresponding fields.
   - Use Set # — Applies the connection settings defined in the specified function set.

6. Use the **IP Address** field to specify the IP address of the external device that will transmit the TSL messages to the UltriGPI.

7. Use the **Port** field to specify the port number that remote devices are connected to when using the TSL protocol to communicate with the UltriGPI.

8. Use the **Report Period** menu to indicate the expected frequency of incoming TSL messages.

   - Select Any if the remote device does not provide periodic messages.
   - Select another setting that is more than the expected incoming message frequency. This helps identify a lost connection by reporting a error in the Status field.

9. Use the **LED (Message In)** menu to determine the STATUS LED behavior for this function. Choose from the following:

   - No Effect — The STATUS LED on the UltriGPI front panel is not affected by this function.
   - # Flashes — The STATUS LED on the UltriGPI front panel flashes when this function causes a GPI output to change state.

10. Use the **Screen (TSL 5)** field to set the screen number from 0 to 65534.

    This number must match the screen number from incoming TSL v5 messages. Messages containing a different screen number are ignored. This field has no effect on incoming TSL v3 messages.

11. Use the **Message ID (Auto)** field to determine how the Message ID is used. Choose from the following:
    - As Specified — use the message ID field from each GPI output as described below.
    - Sequential From First ID — uses only the Message ID from the first GPI output to determine the actual Message ID for the remaining GPI outputs. Each Message ID will be the next higher number for consecutive GPI outputs.
12. Use the **Message ID** field to specify the ID of the incoming TSL message that is able to control the corresponding GPI output. The same message ID can be used for multiple GPI outputs.
13. Use the **Follow TSL 3** menu to determine if the GPI output state follows the control bit in the received TSL v3 message. Choose from the following:
    - Common — applies the setting from the Follow TSL 3 (Common) menu.
    - None — the specified GPI output state is not affected by incoming TSL v3 messages.
    - Control # Off — the specified GPI output state is ON when the specified control bit is OFF.
    - Control # On — the specified GPI output state is ON when the specified control bit is ON.
14. Use the **Follow TSL 5** menu to determine if the GPI output state follows the control bit in the received TSL v5 message. Choose from the following:
    - Common — applies the setting from the Follow TSL 5 (Common) menu.
    - None — the specified GPI output state is not affected by incoming TSL v5 messages.
    - Control # Off — the specified GPI output state is ON when the specified control bit is OFF.
    - Control # On — the specified GPI output state is ON when the specified control bit is ON.
    - Right color — the specified GPI output state is ON when the two Right tally bits match the specified color pattern.
    - Text color — the specified GPI output state is ON when the two text tally bits match the specified color pattern.
    - Left color — the specified GPI output state is ON when the two Left tally bits match the specified color pattern.

✶ For each color option (Right, Text, Left), the tally bits must match one of the specified color patterns: off (MSB off, LSB off), red (MSB off, LSB on), green (MSB on, LSB off), or amber (MSB on, LSB on).

15. Repeat steps 12 to 14 for each additional GPI output.
16. Select the **Enable** box.

    The TSL to GPI Outputs function is active for this function set.

DashBoard Interface Overview

This chapter summarizes the UltriGPI functions, menus, and parameters available in DashBoard.

Overview

UltriGPI groups the configuration, monitoring, and operating features as a series of tabs in the DashBoard client window. The left pane displays tabs that report read-only information. The tabs in the right pane provide access to specific UltriGPI menus and fields.

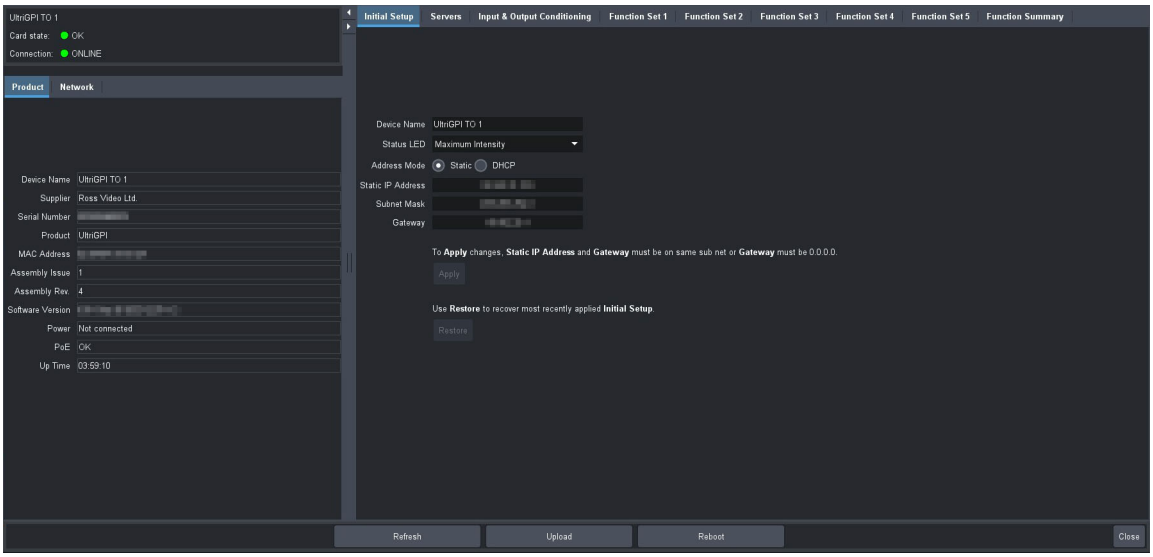


Figure 12 Example of the UltriGPI in DashBoard

Product Tab

The Product tab displays in the left pane of the UltriGPI interface in DashBoard. (**Figure 13**)

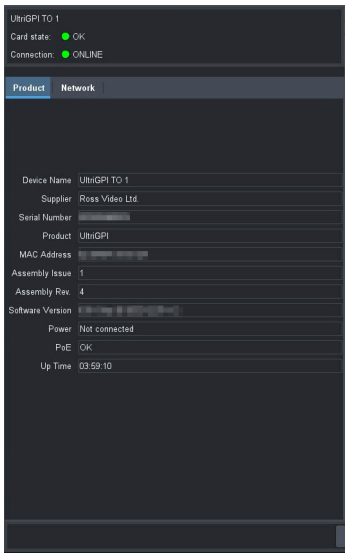


Figure 13 Example of the Product Tab

Table 4 summarizes the read-only information displayed in the Product tab.

Table 4 Product Tab

Item	Parameters	Description
Device Name	<text>	Indicates the identifier assigned to the UltriGPI
Supplier	Ross Video Ltd.	Indicates the supplier/manufacturer of the UltriGPI
Serial Number	#	Indicates the serial number of the UltriGPI
Product	UltriGPI	Indicates the UltriGPI product name
MAC Address	#	Indicates the MAC address for the UltriGPI
Assembly Issue	#	Indicates the hardware version of the UltriGPI
Assembly Rev	#	Indicates the hardware revision of the UltriGPI
Software Version	#	Software version running on the UltriGPI
Power	#volts	Indicates the status of the power supply connected to the PWR port on the UltriGPI
	Not connected	
PoE	OK	Indicates the status of the Power over Ethernet (PoE) connection to the UltriGPI (via the NETWORK port on the back panel)
	None	

Network Tab

The Network tab displays in the left pane of the UltriGPI interface in DashBoard. (**Figure 14**)

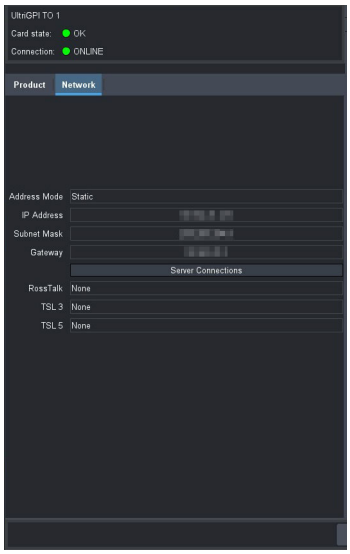


Figure 14 Example of the Network Tab

Table 5 summarizes the read-only information displayed in the Network tab.

Table 5 Network Tab

Item	Parameters	Description
Address Mode	Static	The user defines the network settings for the UltriGPI
	DHCP	UltriGPI obtains its network settings automatically from the DHCP server in your system

Table 5 Network Tab (Continued)

Item	Parameters	Description
IP Address	#.#.#.#	Indicates the IP address currently assigned to the UltriGPI
Subnet Mask	#.#.#.#	Indicates the subnet mask currently assigned to the UltriGPI
Gateway	#.#.#.#	The IP address for connection outside the subnet
Server Connections		
RossTalk	#	Indicates the number of connections the UltriGPI RossTalk server is currently detecting. This does not include UltriGPI RossTalk client or UDP connections.
	None	The UltriGPI does not detect any RossTalk connections currently; new connections can be still detected
TSL v3	#	Indicates the number of connections the UltriGPI TSL v3 server is currently detecting. This does not include UltriGPI TSL v3 client or UDP connections.
	None	The UltriGPI does not detect any TSL v3 connections currently; new connections can be still detected
TSL v5	#	Indicates the number of connections the UltriGPI TSL v5 server is currently detecting. This does not include UltriGPI TSL v5 client or UDP connections.
	None	The UltriGPI does not detect any TSL v5 connections currently; new connections can be still detected

Initial Setup Tab

The Initial Setup tab displays in the right pane of the UltriGPI interface in DashBoard. (**Figure 15**)

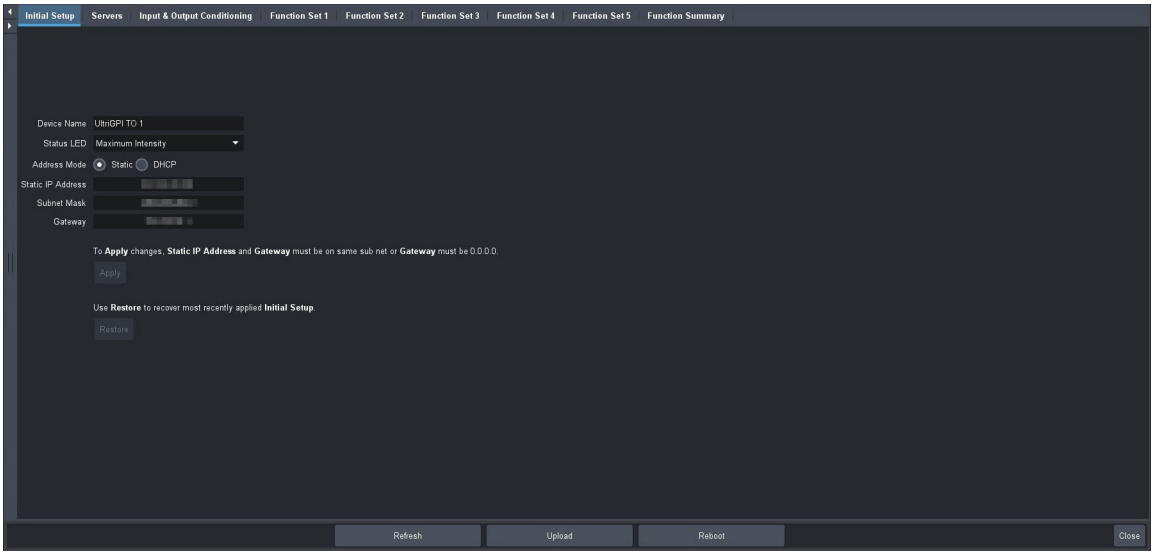


Figure 15 Example of the Initial Setup Tab

Table 6 summarizes the fields and menus displayed in the Initial Setup tab.

Table 6 Initial Setup Tab

Item	Parameters	Description
Device Name	<text>	Assigns a unique identifier to the UltriGPI within DashBoard
Status LED	Maximum Intensity	The STATUS LED, located on the front panel, is lit at the brightest level
	#	Specifies the brightness of the STATUS LED where the higher the number, the higher the intensity of the LED
	Minimum Intensity	The STATUS LED is lit at the lowest level
Address Mode	Static	The user manually supplies the network settings for the UltriGPI
	DHCP	Automates the assignment of network settings for the UltriGPI
Static IP Address	#.#.#.#	Specifies the IP address for the UltriGPI. The default is 192.168.20.211. Applicable only while the Address Mode is set to Static.
Subnet Mask	#.#.#.#	Specifies the subnet mask for the UltriGPI. The default is 255.255.255.0. Applicable only while the Address Mode is set to Static.
Gateway	#.#.#.#	Specifies the gateway for communication outside of the local area network (LAN). The default is 192.168.20.1. Applicable only while the Address Mode is set to Static.
Apply	Updates the edited settings on the Initial Setup tab	
Restore	Returns all editable settings, on the Initial Setup tab, to the last saved values	

Servers Tab

The Servers tab displays in the right pane of the UltriGPI interface in DashBoard. (**Figure 16**)

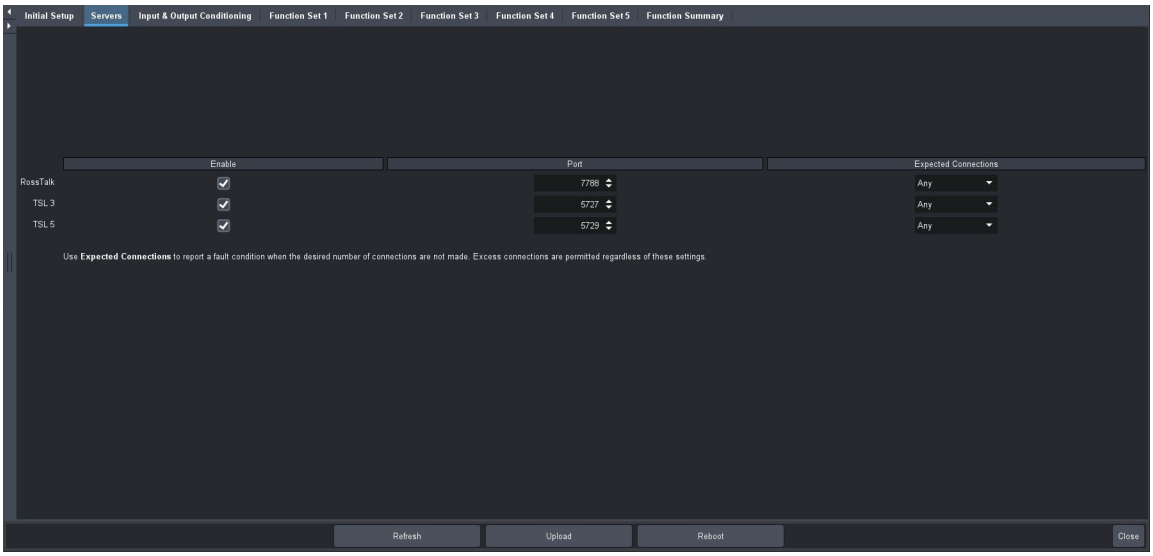


Figure 16 Example of the Servers Tab

Table 7 summarizes the fields and menus displayed in the Servers tab.

Table 7 Servers Tab

Item	Parameters	Description
RossTalk, TSL		
Enable	Selected	Enables the UltriGPI to communicate as a network server via the specified protocol
	Cleared	Disables the network server used to communicate via the specified protocol
Port	#	Defines the TCP/IP server port when using the specified protocol to communicate with the UltriGPI
Expected Connections	#	Specifies the minimum, maximum, or exact number of desired connections via this protocol server. If this number is not met, an alarm is reported. The default is Any.

Input & Output Conditioning Tab

The Input & Output Conditioning tab displays in the right pane of the UltriGPI interface in DashBoard. (**Figure 17**)

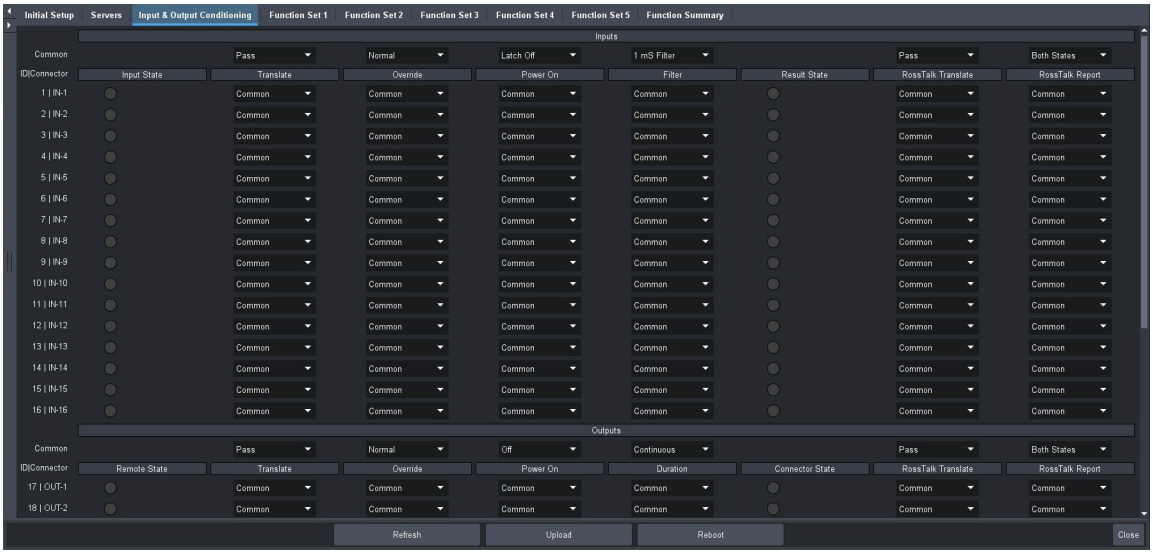


Figure 17 Example of the Input & Output Conditioning Tab (Default Values)

Inputs

Table 8 summarizes the Inputs fields and menus displayed in the Input & Output Conditioning tab.

Table 8 Input & Output Conditioning — Inputs

Item	Parameters	Description
Common or ID | Connector[a]		
Input State (read-only)[b]	Blue	Indicates the GPI input is active
	Gray	Indicates the GPI input is not active
Translate	Pass	The GPI signal passes through without changes
	Invert	The GPI input state is inverted. Inverting the state could be used to accommodate reversed logic of connected equipment.
	On Toggle Latch	A corresponding internal latch is toggled when the GPI input signal changes from OFF to ON
	Off Toggle Latch	A corresponding internal latch is toggled when the GPI input signal changes from ON to OFF
	Ignore	The GPI input state is ignored. Ignoring the state could be used to temporarily insulate UltriGPI from the misbehavior of connected equipment
Override	Normal	The GPI input passes through without changes
	Force Off	The GPI input submitted to the UltriGPI logic is set to OFF and the actual GPI input is ignored
	Force On	The GPI input submitted to the UltriGPI logic is set to ON and the actual GPI input is ignored

Table 8 Input & Output Conditioning — Inputs (Continued)

Item	Parameters	Description
Power On[c]	Latch Off	The internal latch corresponding to the GPI input is OFF when the UltriGPI recovers from a loss of power
	Latch On	The internal latch corresponding to the GPI input is ON when the UltriGPI recovers from a loss of power
	Last Latch State	The internal latch corresponding to the GPI input is its last know state when the UltriGPI recovers from a loss of power
Filter	# mS Filter	The UltriGPI does not react to GPI input state changes faster than this amount, either 1, 5, 10, or 20 mS. The default is 1mS.
	No Bounce Filter	The UltriGPI reacts to any GPI input state change as fast as possible
Result State (read-only)	Blue	After conditioning, the GPI input is active
	Gray	After conditioning, the GPI input is not active
RossTalk Translate	Pass	The signal is reported to the RossTalk clients as passing through without changes
	Invert	The signal is reported as inverted to the RossTalk clients
	Ignore	This signal state is not available to RossTalk clients
RossTalk Report	Both States	A RossTalk report is sent on any GPI input transition
	On State	A RossTalk report is sent when the GPI input changes to ON
	Off State	A RossTalk report is sent when the GPI input changes to OFF
	Ignore	A RossTalk report is not sent when the GPI input changes, but the GPI input state can be reported upon request by the client

a. Indicates the input pair on the UltriGPI back panel. For example Con 1-9 indicates Pair 9 on the first connector.
b. Displays in each ID | Connector row.
c. This setting is only relevant when the Translate setting for the same GPI input is one of the Toggle settings.

Outputs

Table 9 summarizes the Outputs fields and menus displayed in the Input & Output Conditioning tab.

Table 9 Input & Output Conditioning — Outputs

Item	Parameters	Description
Common or ID | Connector[a]		
Remote State (read-only)[b]	Blue	Before conditioning, the internal GPI output is active
	Gray	Before conditioning, the internal GPI output is not active

Table 9 Input & Output Conditioning — Outputs (Continued)

Item	Parameters	Description
Translate	Pass	The internal GPI output state passes through to the GPI output
	Invert	The output state is inverted
	Ignore	The internal GPI output state is ignored and is not passed through to the GPI output
Override	Normal	The GPI output state is determined by the UltriGPI logic
	Force Off	The GPI output state is forced to OFF
	Force On	The GPI output state is forced to ON
Power On[c]	Off	The GPI output state changes to OFF when the UltriGPI recovers from a loss of power
	On	The GPI output state changes to ON when the UltriGPI recovers from a loss of power
	Last State	The GPI output state changes to its last known state when the UltriGPI recovers from a loss of power
Duration	Continuous	The GPI output provides a continuous state
	# seconds	The GPI output remains in the active state for 0.05, 0.10, 0.25, or 1 second
Connector State (read-only)	Blue	The GPI output state is active
	Gray	The GPI output state is not active
RossTalk Translate	Pass	The signal is reported to the RossTalk clients as passing through without changes
	Invert	The signal is reported as inverted to the RossTalk clients
	Ignore	This signal state is not available to RossTalk clients
RossTalk Report	Both States	A RossTalk report is sent on any transition for this GPI output
	On State	A RossTalk report is sent when this GPI output state changes to ON
	Off State	A RossTalk report is sent when this GPI output state changes to OFF
	Ignore	A RossTalk reports is not sent under any conditions for this GPI output

a. Indicates the output pair on the UltriGPI back panel. For example, Con 1-9 indicates Pair 9 on the first connector.
b. Displays in each ID | Connector row.
c. This setting is only relevant where the state of the same GPI output is not determined to be some other state due to the configuration of any relevant function.

Function Set Tabs

There are five function sets, each with five sub-tabs. Each sub-tab provides options for managing data and messages via a specific command set. (**Figure 18**) The following sections summarize the fields and menus on each sub-tab.

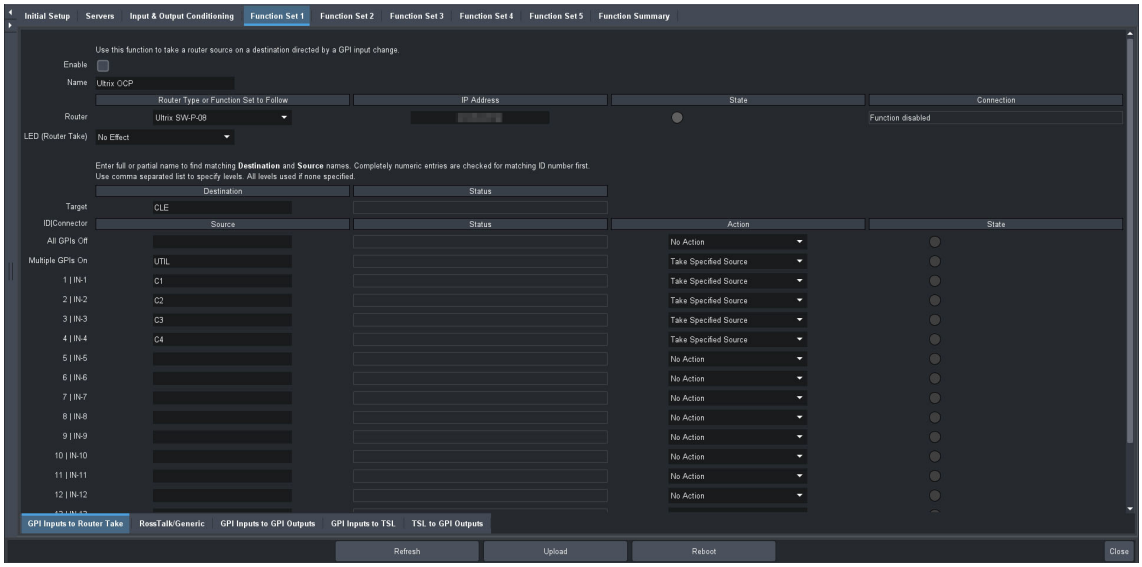


Figure 18 Example of a Function Set Series of Sub-tabs

GPI Inputs to Router Take Sub-tab

Table 10 summarizes the fields and menus displayed in the GPI Inputs to Router Take sub-tab.

Table 10 Function Set # > GPI Inputs to Router Take Sub-tab

Item	Parameters	Description
Enable	Selected	The GPI Inputs to Router Take function is active for this function set.
	Cleared	The GPI Inputs to Router Take function is disabled for this function set
Name	<text>	Assigns a unique identifier to this function. This name is used to identify the function in the UltriGPI DashBoard interfaces.
Router	Ultrix SW-P-08	The UltriGPI connects to an Ultrix series router using the SW-P-08 protocol. The port number is automatically selected to work with Ultrix series products.
	NK Series	The UltriGPI connects to an NK series router using the NK protocol. The port number is automatically selected to work with NK series products
	Use Set #	Applies the connection settings defined in the specified function set
IP Address	#.#.#.#	Specifies the IP address of the router the UltriGPI will communicate with

Table 10 Function Set # > GPI Inputs to Router Take Sub-tab (Continued)

Item	Parameters	Description
Connection (read-only)[a]	Function Enabled	Reports on the connection between the UltriGPI and the external device
	Function Disabled	The Enable box is not selected for this GPI Inputs to Router Take function set
LED (Router Take)		Determines how the STATUS LED on the front panel reports when this function causes a router take to be performed
Destination		
Target	<text>	Specifies the full or partial name of the desired router destination. If none are specified, only the first router level for the specified destination can be taken.
Status (read-only)		Reports the full name of the first destination that matches the entry including its corresponding system number in parenthesis.
Source		
All GPIs Off	<text>	Specifies the full or partial name of the desired router source
Multiple GPIs On	<text>	
ID | Connector[b]	<text>	
Status (read-only)		Reports the full name of the first source that matches the entry including its corresponding system number in parenthesis
Action	Take Specified Source	The specified source is taken if the corresponding GPI input becomes active
	Take Original Source	The original source is taken if the corresponding GPI input becomes active
	No Action	The corresponding GPI input does not perform any action even if a source is specified
State (read-only)	Refer to "**Monitoring the Status of a Function**".	

a. Refer to "**Monitoring the Status of a Function**".
b. Indicates the pair on the UltriGPI back panel. For example 1 | IN-9 indicates Pair 9 on the first connector.

RossTalk/Generic Sub-tab

The RossTalk/Generic sub-tab provides options to send a RossTalk command, or other plain text messages, on a GPI input or output change. (**Figure 19**)

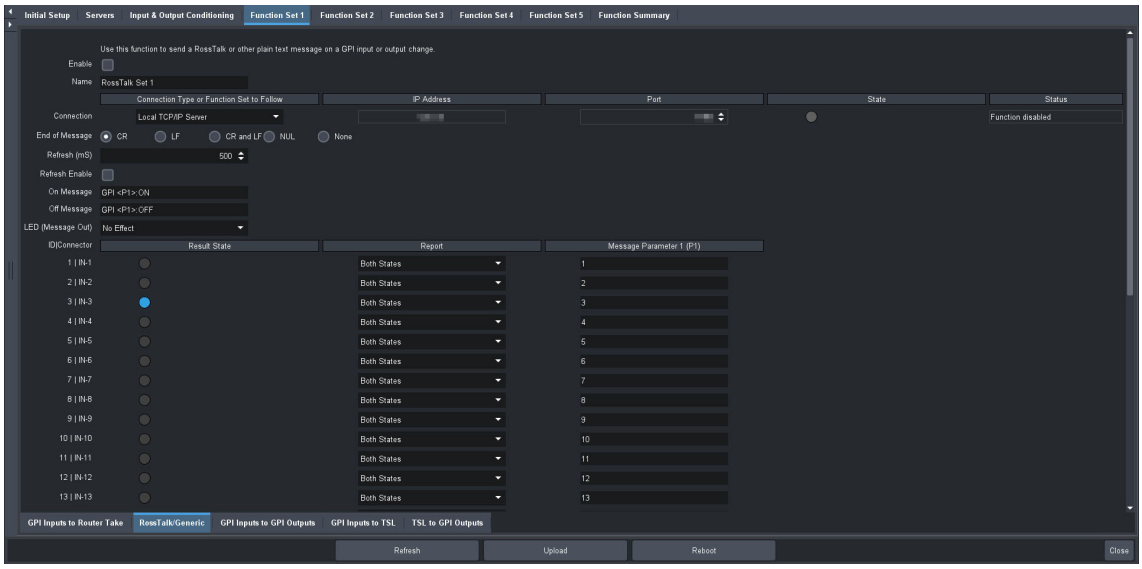


Figure 19 Function Set > RossTalk/Generic Sub-tab

Table 11 summarizes the fields and menus displayed in the RossTalk/Generic sub-tab.

Table 11 Function Set # > RossTalk/Generic Sub-tab

Item	Parameters	Description
Enable	Selected	The RossTalk/Generic function is active for this function set
	Cleared	The RossTalk/Generic function is disabled for this function set
Name	<text>	Assigns a unique identifier to this function. This name is used to identify the function in the UltriGPI DashBoard interfaces.
Connection Type or Function Set to Follow	Local TCP/IP Server	Uses the local RossTalk server
	Remote TCP/IP Server	The UltriGPI sends messages to the TCP/IP server located at the IP address and port specified in the corresponding fields
	UDP	The UltriGPI forwards messages to the UDP device located at the IP address and port number specified in the corresponding fields
	Use Set #	Applies the connection settings defined in the specified function set
IP Address	#.#.#.#	Specifies the IP address used by the Remote TCP/IP Server or UDP device
Port[a]	#	Specifies the port used by the Remote TCP/IP Server or UDP device

Table 11 Function Set # > RossTalk/Generic Sub-tab (Continued)

Item	Parameters	Description
Status (read-only)[b]	# connection(s)	Displays when connected to a Local TCP/IP Server
	Connected to server	Displays when connecting to a Remote TCP/IP Server
	No messages	Displays when connecting via UDP but no data was sent yet
	Last message # s/m/h ago	Displays when connecting via UDP to indicate when the last message was sent (where s represents seconds, m represents minutes, and h represents hours)
End of Message	CR	The end of the message is represented by the ASCII character for a carriage return
	LF	The end of the message is represented by the ASCII character for a line feed
	CR and LF	The end of the message is represented by the ASCII characters for a carriage return and line feed
	NUL	The end of the message is represented by the ASCII character zero for a NUL pointer
	None	No additional characters follow the message
Refresh (mS)	#	Specifies the number of milliseconds the UltriGPI will wait before re-sending the message to the external device. A value of 0 disables the automatic refreshing. This setting is only applicable when the Refresh Enable box is selected.
Refresh Enable	Selected	The UltriGPI resends messages at the speed specified in Refresh (mS)
	Cleared	The UltriGPI will not resend messages
On Message	<text>	This message is sent when a GPI becomes active. A message containing `<P1>` has that part replaced by a GPI input-specific parameter.
Off Message	<text>	This message is sent when a GPI becomes inactive. A message containing `<P1>` has that part replaced by a GPI input-specific parameter.
LED (Message Out)	No Effect	The STATUS LED on the UltriGPI front panel will not flash when a message is sent
	# Flashes	The STATUS LED on the UltriGPI front panel will flash the specified number of times when a message is sent
ID | Connector[c]		
Result State (read-only)	Off	Indicates the GPI is not active
	On	Indicates the GPI is active

Table 11 Function Set # > RossTalk/Generic Sub-tab (Continued)

Item	Parameters	Description
Report	Both States	A RossTalk report is sent on any transition on this specific GPI
	On State	A RossTalk report is sent when the GPI is active
	Off State	A RossTalk report is sent when the GPI is not active
	None	The GPI status is not reported by the RossTalk messages
Message Parameter	<text>	Specifies the text to replace the `<P1>` placeholder in On or Off Messages when the corresponding GPI changes.

a. The port type (TCP/IP or UDP) is determined by the Connection Type menu.
b. Refer to "**Monitoring the Status of a Function**".
c. Indicates the pair on the UltriGPI back panel. For example Con 1-9 indicates Pair 9 on the first connector.

GPI Inputs to GPI Outputs Sub-tab

The GPI Inputs to GPI Outputs sub-tab enables you to map the GPI inputs to GPI outputs. (**Figure 20**)

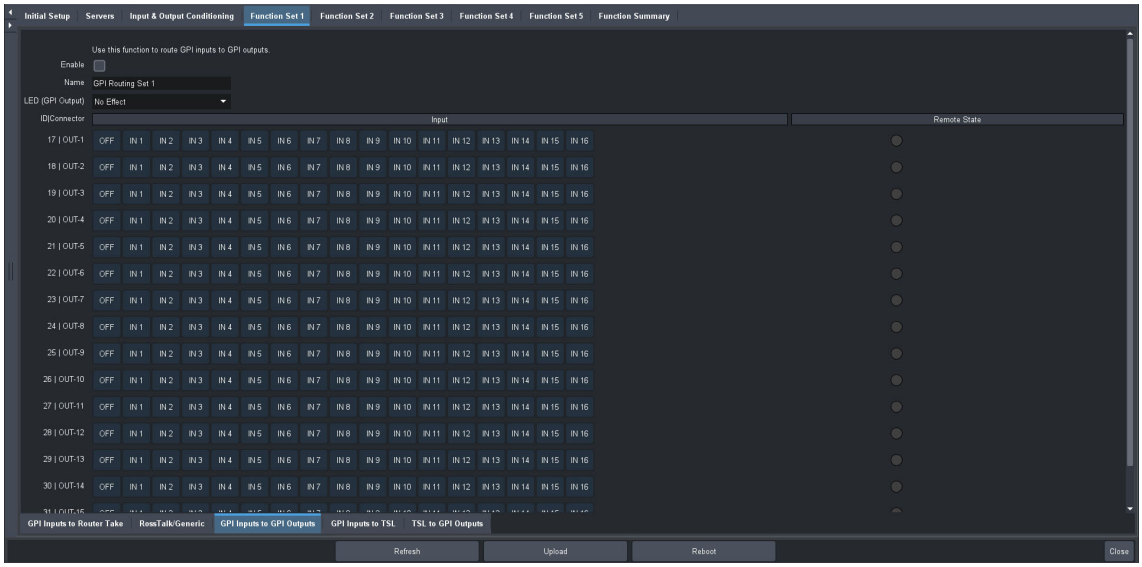


Figure 20 Example of the Function Set > GPI Inputs to GPI Outputs (Default Values)

Table 12 summarizes the fields and menus displayed in the GPI Inputs to GPI Outputs sub-tab.

Table 12 Function Set # > GPI Inputs to GPI Outputs Sub-tab

Item	Parameters	Description
Enable	Selected	The settings in this tab are now active for this function set
	Cleared	Disables the settings in this tab for this function set
Name	<text>	Assigns a unique identifier to this function. This name is used to identify the function in the UltriGPI DashBoard interfaces.

Table 12 Function Set # > GPI Inputs to GPI Outputs Sub-tab (Continued)

Item	Parameters	Description
LED (GPI Output)	No Effect	The STATUS LED on the UltriGPI front panel will not flash when this function is in use
	# Flashes	The STATUS LED on the UltriGPI front panel will flash the specified number of times when this function is in use
ID | OUT-#[a]		
Input	OFF	Toggles the GPI output to OFF
	IN #	Assigns the GPI input signal to this GPI output
Remote State (read-only)	Blue	Indicates the GPI is active
	Gray	Indicates the GPI is not active

a. Indicates the output pair on the UltriGPI back panel. For example Con 1-9 indicates Pair 9 on the first connector.

GPI Inputs to TSL Sub-tab

The GPI Inputs to TSL sub-tab enables the UltriGPI to send a TSL v3.1 or TSL v5.0 message on a GPI inputs change. (**Figure 21**)

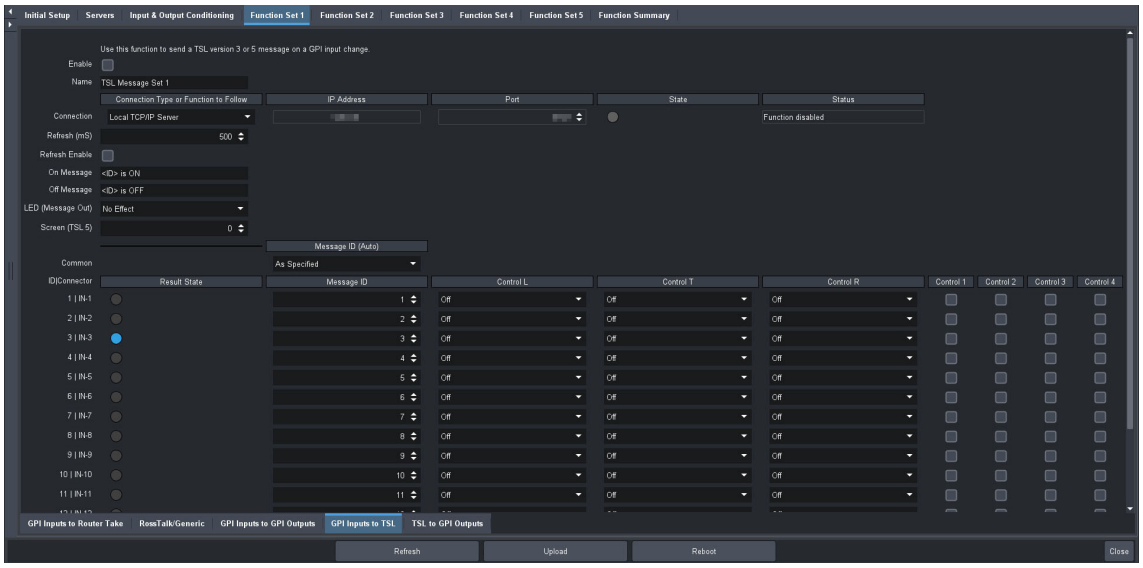


Figure 21 Example of the Function Set > GPI Inputs to TSL (Default Values)

Table 13 summarizes the fields and menus displayed in the GPI Inputs to TSL sub-tab.

Table 13 Function Set # > GPI Inputs to TSL Sub-tab

Item	Parameters	Description
Enable	Selected	The GPI Inputs to TSL function is active for this function set. Enables the use of the TSL v3 or v5 protocol to control the UltriGPI via this function set.
	Cleared	The GPI Inputs to TSL function is disabled for this function set. Disables the use of the TSL v3 or v5 protocol to control the UltriGPI via this function set.
Name	<text>	Assigns a unique identifier to this GPI Inputs to TSL function. This name is used to identify the function in the UltriGPI DashBoard interfaces.
Connection Type	Local TCP/IP Server	Uses the local RossTalk server
	Remote TCP/IP Server	The UltriGPI sends messages to the TCP/IP server located at the IP address and port specified in the corresponding fields
	UDP	The UltriGPI forwards messages to the UDP device located at the IP address and port number specified in the corresponding fields
	Use Set #	Applies the connection settings defined in the specified function set
IP Address	#.#.#.#	Specifies the IP address used by the Remote TCP/IP Server or UDP device
Port	#	Specifies the port used by the Remote TCP/IP Server or UDP device
Report Period	Select Any	The remote device does not report messages
	#	Select the setting that is more than the expected incoming message frequency. This helps identify a lost connection by reporting a error in the Status field.
Status (read-only)[a]	# connection(s)	Displays when connected to a Local TCP/IP Server
	Connected to server	Displays when connecting to a Remote TCP/IP Server
	No messages	Displays when connecting via UDP but no data was sent yet
	Last message # s/m/h ago	Displays when connecting via UDP to indicate when the last message was sent (where s represents seconds, m represents minutes, and h represents hours)

Table 13 Function Set # > GPI Inputs to TSL Sub-tab (Continued)

Item	Parameters	Description
Refresh (mS)	#	Specifies the number of milliseconds the UltriGPI will wait before re-sending a TSL message to the external device. Note that a value of 0 disables the automatic refreshing. This setting is only applicable when the Refresh Enable box is selected. This setting applies to all GPI inputs.
Refresh Enable	Selected	The UltriGPI resends messages at the speed specified in Refresh (mS)
	Cleared	The UltriGPI will not resend messages
On Message	<ID> <text>	Sends a message to indicate that the GPI is active where: • `<ID>` is the ID assigned to the GPI via its Message ID field • `<text>` is the message text. The default On Message is: `<ID> is ON`
Off Message	<ID> <text>	Sends a message to indicate that the GPI is not active where: • `<ID>` is the ID assigned to the GPI via its Message ID field • `<text>` is the message text. The default Off Message is: `<ID> is OFF`.
LED (Message In)	No Effect	The STATUS LED on the UltriGPI front panel will not flash because this function is in use
	# Flashes	The STATUS LED on the UltriGPI front panel will flash the specified number of times because this function is in use
Screen (TSL 5)	#	Specifies the TSL v5 screen number for any outgoing messages
Common		
Message ID (Auto)	As Specified	Uses the Message ID field for each GPI input as described above
	Sequential from First ID	Uses only the Message ID field from the first GPI input to determine the actual Message ID for the remaining GPI Inputs. Each Message ID will be the next higher number for consecutive GPI inputs. The unused fields remain as specified but have no effect on outgoing TSL messages.
ID | Connector[b]		
Result State (read-only)	Blue	Indicates the GPI is active
	Gray	Indicates the GPI is not active

Table 13 Function Set # > GPI Inputs to TSL Sub-tab (Continued)

Item	Parameters	Description
Message ID	#	The DisplayID associated with the input or output, assigned to this GPI, that will be included in the TSL message. • Must be between 0-126 for TSL v3. • Must be between 0-65534 for TSL v5.
Control L	Off	The Left tally bit is ignored
	Red	The Left tally bit generates a red code
	Green	The Left tally bit generates a green code
	Amber	The Left tally bit generates an amber code
Control T	Off	The Text tally bit is ignored
	Red	The Text tally bit generates a red code
	Green	The Text tally bit generates a green code
	Amber	The Text tally bit generates an amber code
Control R	Off	The Right tally bit is ignored
	Red	The Right tally bit generates a red code
	Green	The Right tally bit generates a green code
	Amber	The Right tally bit generates an amber code
Control #	Selected	Includes the control bit(s) in the TSL message. Note that TSL v3 includes 4 control bits, and TSL v5 includes 6 control bits (2 pairs).
	Cleared	The control bit is not included in the TSL message

a. Refer to "**Monitoring the Status of a Function**".
b. Indicates the input pair on the UltriGPI back panel. For example Con 1-9 indicates Pair 9 on the first connector.

TSL to GPI Outputs Sub-tab

The TSL to GPI Outputs sub-tab enables the UltriGPI to force a GPI output to follow TSL v3 or TSL v5 control data in a message. (**Figure 22**) Note that message text must be present, but will be ignored.

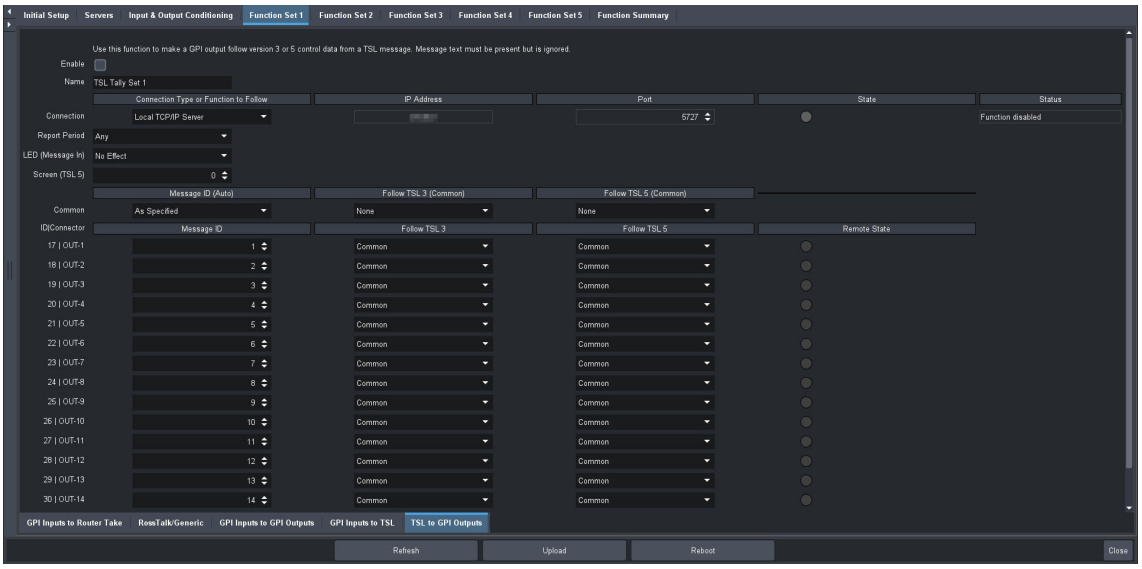


Figure 22 Example of the Function Set > TSL to GPI Outputs (Default Values)

Table 14 summarizes the fields and menus displayed in the TSL to GPI Outputs sub-tab.

Table 14 Function Set # > TSL to GPI Outputs Sub-tab

Item	Parameters	Description
Enable	Selected	Enables the use of the TSL v3 or v5 protocol to control a GPI output via this function set. The UltriGPI will send the tally information along with the video via this GPI output.
	Cleared	Disables the use of the TSL v3 or v5 protocol to control a GPI output via this function set
Name	<text>	Assigns a unique identifier to this TSL to GPI Outputs function. This name is used to identify the function in the UltriGPI DashBoard interfaces.
Connection Type	Local TCP/IP Server	Uses the local RossTalk server
	Remote TCP/IP Server	The UltriGPI sends messages to the TCP/IP server located at the IP address and port specified in the corresponding fields
	UDP	The UltriGPI forwards messages to the UDP device located at the IP address and port number specified in the corresponding fields
	Use Set #	Applies the TSL to GPI Output settings defined in the specified function set
IP Address	#.#.#.#	Specifies the IP address used by the Remote TCP/IP Server or UDP device
Port	#	Specifies the port used by the Remote TCP/IP Server or UDP device

Table 14 Function Set # > TSL to GPI Outputs Sub-tab (Continued)

Item	Parameters	Description
Status (read-only)[a]	# connection(s)	Displays when connected to a Local TCP/IP Server
	Connected to server	Displays when connecting to a Remote TCP/IP Server
	No messages	Displays when connecting via UDP but no data was sent yet
	Last message # s/m/h ago	Displays when connecting via UDP to indicate when the last message was sent (where s represents seconds, m represents minutes, and h represents hours)
On Message	<ID> <text>	Configures the message when a GPI is active. The On Message field contains any text, optionally embedded with `<ID>`. In the outgoing TSL message, the provided text is sent and `<ID>` is replaced with text from the Message ID field specific to the active GPI input that caused the message to be sent. The default On Message is: `<ID> is ON`.
Off Message	<ID> <text>	Configures the message when the GPI is not active. The Off Message field contains any text, optionally embedded with `<ID>`. In the outgoing TSL message, the provided text is sent and `<ID>` is replaced with text from the Message ID field specific to the active GPI input that caused the message to be sent. The default Off Message is: `<ID> is OFF`.
Report Period (mS)	Any	Every transmitted TSL message is reported
	At least every # seconds	Specifies the frequency that the UltriGPI reports the transmitted TSL messages
	At least every # minute(s)	
LED (Message In)	No Effect	The STATUS LED on the UltriGPI front panel will not flash because this function is not in use
	# Flashes	The STATUS LED on the UltriGPI front panel will flash the specified number of times when a TSL message is transmitted
Screen (TSL 5)	#	Displays the TSL protocol tally ID entry when using TSL protocol v5. Specify a number from 0 to 65534. This number must match the screen number from incoming TSL v5 messages. Messages containing a different screen number are ignored. This field has no effect on incoming TSL v3 messages.
Common		

Table 14 Function Set # > TSL to GPI Outputs Sub-tab (Continued)

Item	Parameters	Description
Message ID (Auto)	As Specified	Specifies a GPI identification string that is inserted in place of the <ID> in each GPI message. Each ID can be up to 4 characters.
	Sequential from first ID	Uses only the Message ID field from the first GPI input to determine the actual Message ID for the remaining GPI Inputs. Each Message ID will be the next higher number for consecutive GPI inputs. The unused fields remain as specified but have no effect on outgoing TSL messages.
Follow TSL #	Common	Applies the Common setting for this function set
	None	The GPI output is not affected by incoming TSL messages
	Control # Off	The GPI output is ON when the specified control bit is OFF
	Control # On	The GPI follows the specified control bit when a GPI status is set to ON
Follow TSL 5[b]	Right <color>	The specified GPI output state is ON when the two Right tally bits match the specified color pattern
	Text <color>	The specified GPI output state is ON when the two text tally bits match the specified color pattern
	Left <color>	The specified GPI output state is ON when the two Left tally bits match the specified color pattern
Remote State (read-only)	Blue	Indicates the GPI is active
	Gray	Indicates the GPI is not active

a. Refer to "**Monitoring the Status of a Function**".
b. For each color option (Right, Text, Left), the tally bits must match one of the specified color patterns: off (MSB off, LSB off), red (MSB off, LSB on), green (MSB on, LSB off), or amber (MSB on, LSB on).

Function Summary

The Function Summary tab enables you to enable/disable all function sets from a single tab. (**Figure 23**)

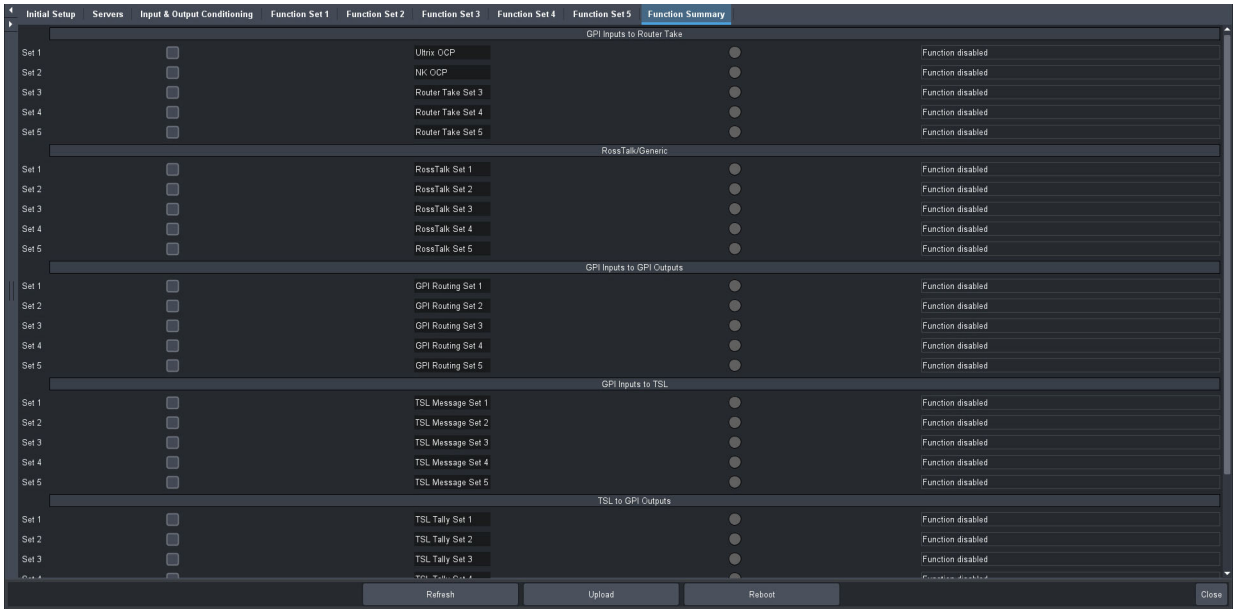


Figure 23 Example of a Function Summary Tab

Table 15 summarizes the fields and menus displayed in the Function Summary tab.

Table 15 Functions > Function Summary Tab

Item	Parameters	Description
<Function> - Set #		
Enable	Selected	Applies the settings for this function
	Cleared	The settings are ignored for this function
Name	<text>	Assigns a new label to this function. This overrides the label assigned via the individual function set sub-tab.
Remote State (read-only)	Blue	Indicates this function is active
	Gray	Indicates this function is not active
Status (read-only)[a]	Function Enabled	The Enable box is selected for this function
	Function Disabled	The Enable box is not selected for this function
All Functions		
Restore Default Function Settings	All editable settings on all function sub-tabs are reset to the factory default values	

a. Refer to "**Monitoring the Status of a Function**".

Technical Specifications

This chapter provides the technical information for UltriGPI.

✶ Specifications are subject to change without notice.

Physical

Table 16 Technical Specifications — Physical

Item	Specifications
Dimensions	4.69” (119.2mm) x 6.36” (161.4mm) x 1.73” (43.9mm)

NETWORK Port

Table 17 Technical Specifications — NETWORK Port

Item	Specifications
Number of NETWORK Ports	1
Standards Accommodated	10/100 BASE-T
Connector Type	RJ-45 jack (8P8C modular jack)

GPI Input Connectors

Table 18 Technical Specifications — GPI Inputs Connectors

Item	Specifications
Number of Inputs	16 pull-to-ground
Open Circuit Voltage	+5VDC
Activation Current	1.5mA
Connector Type	16-pin pluggable terminal block with wire lever lock (P/N 30-01838)
	WAGO 713-1108
	Supplied with UltriGPI Mating Connector Kit (P/N 2401KR-001)

GPI Output Connectors

Table 19 Technical Specifications — GPI Outputs Port

Item	Specifications
Number of Outputs	16x pull-to-ground with fuse protection[a]
Open Circuit Voltage	+15VDC maximum
Maximum Current	100mA

Table 19 Technical Specifications — GPI Outputs Port (Continued)

Item	Specifications
Connector Type	16-pin pluggable terminal block with wire lever lock (P/N 30-01838)
	WAGO 713-1108
	Supplied with UltriGPI Mating Connector Kit (P/N 2401KR-001)

a. The fuse will trip on overload and reset when the load is removed.

Environment

Table 20 Technical Specifications — Environment

Item	Specifications
Temperature	0°C to +40°C operating -20°C to +60°C non-operating
Humidity	20% to 80% non-condensing

Power

Table 21 Technical Specifications — Power

Item	Specifications
Voltage	9 to 30VDC
Power	Maximum 5W
PoE (IEEE 802.3af)	Maximum 5W

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Service Information

This chapter provides information on the warranty and repair policy for your UltriGPI.

Troubleshooting Checklist

In the event of problems with your UltriGPI, the following basic troubleshooting checklist may help identify the source of the problem. If the UltriGPI still does not appear to be working properly after checking all possible causes, contact your Ross products distributor, or the Technical Support department at the numbers listed in "**Contacting Technical Support**".

1. **Visual Review** — Performing a quick visual check may reveal many problems, such as connectors not properly seated or loose cables. Check the units, and any associated peripheral equipment for signs of trouble.
2. **Power Check** — Monitor the STATUS LED on the UltriGPI front panel for the presence of power. Verify that the power cable is connected to a power source and that power is available at the power main.
3. **Connected Equipment** — Verify that externally connected equipment and devices are working properly.

Warranty and Repair Policy

The UltriGPI is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of one (1) year from the date of shipment from our factory. In the event that your UltriGPI proves to be defective in any way during this warranty period, Ross Video Limited reserves the right to repair or replace this piece of equipment with a unit of equal or superior performance characteristics.

Should you find that this UltriGPI has failed after your warranty period has expired, we will repair your defective product should suitable replacement components be available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the ONE (1) year warranty period.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits) incurred by the use of this product. Implied warranties are expressly limited to the duration of this warranty.

This UltriGPI User Guide provides all pertinent information for the safe installation and operation of your Ross Product. Ross Video policy dictates that all repairs to the UltriGPI are to be conducted only by an authorized Ross Video Limited factory representative. Therefore, any unauthorized attempt to repair this product, by anyone other than an authorized Ross Video Limited factory representative, will automatically void the warranty. Please contact Ross Video Technical Support for more information.

In Case of Problems

Should any problem arise with your UltriGPI, please contact the Ross Video Technical Support Department. (Contact information is supplied at the beginning of this publication.)

A Return Material Authorization number (RMA) will be issued to you, as well as specific shipping instructions, should you wish our factory to repair your UltriGPI. If required, a temporary replacement frame will be made available at a nominal charge. Any shipping costs incurred will be the responsibility of you, the customer. All products shipped to you from Ross Video Limited will be shipped collect.

The Ross Video Technical Support Department will continue to provide advice on any product manufactured by Ross Video Limited, beyond the warranty period without charge, for the life of the equipment.

Glossary

The following terms are used throughout this guide:

Contact closure output — a two-terminal output in which both terminals are isolated from ground, and which provides either an open or closed circuit between the two terminals to signal two states.

DashBoard — the DashBoard Control System.

Dry — a GPIO input/output circuit that does not apply any voltage to its terminals, relying instead on current provided by another wet GPIO connected to it.

GPI — a general purpose interface.

Isolated input — a two-terminal input circuit in which both terminals are isolated from ground and which is activated by a current flowing through the two terminals.

Pull-to-ground input — a two-terminal input circuit in which one terminal is grounded. The other terminal is at a high logic level when open, and can be externally connected to ground to assert it low.

System— the mix of interconnected production and terminal equipment in your environment.

User — the person who uses the UltriGPI.

Voltage source output — a two-terminal output in which the two logic states are defined by either an open circuit or a DC voltage between the two terminals, one of which is connected to ground.

Wet — a GPIO input/output circuit that applies a voltage, and can therefore source a current through an interconnection to another device.

Wetting voltage — the voltage that is injected into an interconnection, normally by one device.