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GTP-32 CONTROL PROCESSOR User Manual

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REVISION HISTORY

1.0 100217 First Release of Updated Manual

GETTING STARTED

- 1) Go to the Installation Section to install the GTP-32.
- 2) Go to the Network Configuration Section to configure the static IP address, Subnet Mask and Gateway address.
- 3) Go to the System Setup Section to configure the System Password, System Label and System Date/Time.
- 4) Go to the GPI Configuration Section to configure the GPIs on the GTP-32.
- 5) Go to the GPO Configuration Section to configure the GPOs on the GTP-32.
- 6) Go to the Protocol Assignment Section to configure 3rd party devices.
- 7) Go to the Event Definitions Section to configure other Source Events within the GTP-32.
- 8) Go to the Action Definitions Section to configure other Actions within the GTP-32.
- 9) Go to the Event Monitoring Section to assign Events to control Actions within the GTP-32.

EQUIPMENT LIST

<u>QTY</u>	<u>Component</u>
1	GTP-32
1	GTP-32 Power Supply
1	Power Cord
1	RS422/RS232 Serial Cable
1	3 Pin Phoenix LTC Connector
4	DB37 Male Connector
4	DB37 Connector Hood

INSTALLATION

!!CAUTION!!

Do NOT apply AC voltage to power supply, then connect power supply to GTP-32. Component damage may occur.

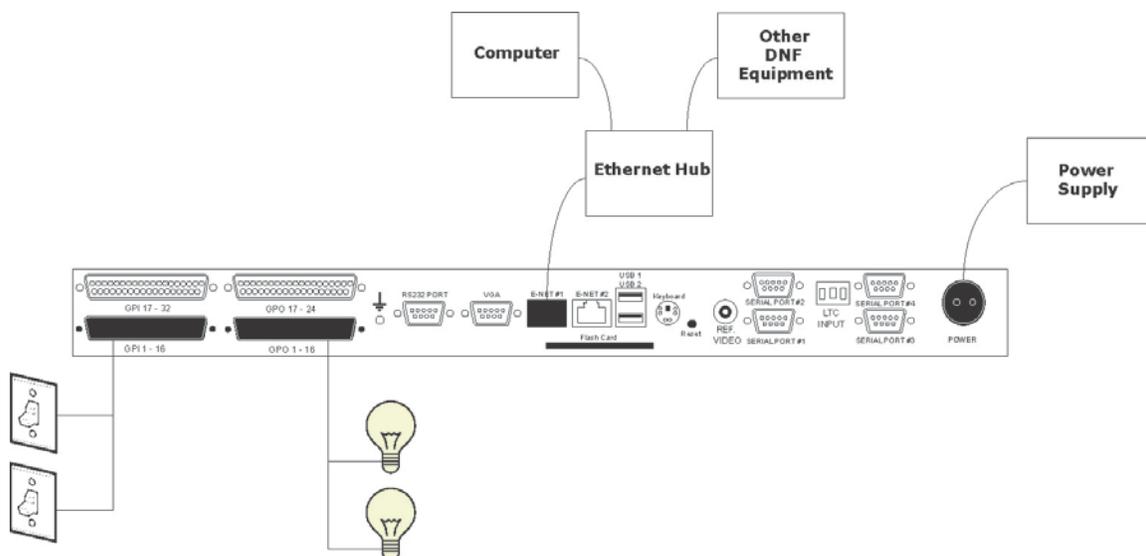
- 1) Wire external GPI and external GPO connections to supplied D37 male connectors, per the GPIO connector wiring diagram in SPECIFICATIONS section.
- 2) Connect wired D37 connectors from step 1 to GTP-32 connector labeled “GPI 1-16”, “GPI 17-32”, “GPO 1-16”, or “GPO 17-32”.
- 3) Connect Ethernet cable to GTP-32 connector labeled “ETHERNET 2”. Connect other end of Cat 5 cable to customer supplied Ethernet hub.

OPTIONAL: Connect Ethernet cable to GTP-32 connector labeled “ETHERNET 2”. Connect other end of Ethernet cable to customer supplied Ethernet hub.

- 4) Connect power supply’s round locking female connector to GTP-32 connector labeled “POWER 1”.

OPTIONAL: Connect second power supply’s round locking female connector to GTP-32 connector labeled “POWER 2”.

- 5) Connect female side of power cable to supplied power supply.
- 6) Connect male side of power cable to AC voltage, 100 – 240.



- 7) Push GTP-32 power switch, located on front panel, to ON position. "O" on power switch is OFF position.
- 8) Front panel LEDs will flash during power up. When power up and system initialization completes, the front panel LEDs will turn off and the front panel display will show Model Number and Software Version. Allow 25 seconds for power up and system initialization to complete.

No connection is required for the REF VIDEO, DIAGNOSTIC, or VGA connectors on the rear of the GTP-32. LTC and Serial Port connectors may be required depending on Protocols and Options.

NETWORK CONFIGURATION

Network Configuration is required after initial installation. The GTP-32 must be rebooted for updated network configurations to take effect.

NOTE-The default network configuration of the GTP-32 is as follows:

IP Address: 192.168.10.217

Subnet Mask: 255.255.255.0

Gateway Address: 192.168.10.1

IP ADDRESS SETUP

- 1) On GTP-32 front panel, use **↑↓** keys to select “Current IP1” to assign an IP address to Ethernet 1.
- 2) Press ENTER key. Display will show current IP address with cursor in far left column.
- 3) Use **↑↓** keys to change number.
Use **← →** keys to move cursor position.
- 4) Press ENTER to save new IP address, or press ESC to exit without saving.
- 5) If using Ethernet 2, use **↑↓** keys to select “Current IP2” ” to assign an IP address to Ethernet 2. Then repeat steps 2 through 4.

NOTE- Ethernet 2 must be configured with a different subnet than Ethernet 1. If Ethernet 1 and Ethernet 2 are configured to use the same subnet, Ethernet 2 will not be accessible.

SUBNET MASK SETUP

- 1) On GTP-32 front panel, use **↑↓** keys to select “Current Mask”.
- 2) Press ENTER key. Display will show current Subnet Mask with cursor in far left column.
- 3) Use **↑↓** keys to change number.
Use **← →** keys to move cursor position.
- 4) Press ENTER to save new Subnet Mask, or press ESC to exit without saving.

GATEWAY ADDRESS SETUP

- 1) On GTP-32 front panel, use **↑↓** keys to select "Current Gateway".
- 2) Press ENTER key. Display will show current Gateway address with cursor in far left column.
- 3) Use **↑↓** keys to change number.
Use **← →** keys to move cursor position.
- 4) Press ENTER to save new Gateway address, or press ESC to exit without saving.

NOTE- Ethernet 1 and Ethernet 2 use the same Gateway Address.

Once network configuration is complete, the GTP-32 must be restarted for any new settings to take effect. Please complete all necessary changes to the network configuration before restarting the GTP-32.

The GTP-32 supports DHCP to automatically obtain network configuration settings. DHCP is disabled by default. To enable DHCP support,

SYSTEM SETUP

System Setup should be performed following the installation and network configuration of the GTP-32.

Setup is performed using a computer running an off the shelf web browser such as Google Chrome or Firefox. Connect the Ethernet cable from the computer to the same Ethernet switch that the GTP-32 is connected to.

- 1) After launching the web browser, enter the IP address of the GTP-32 to be setup. The GTP-32 Home Page will be displayed.
- 2) The default password, when shipped from the factory, is “controls”, all lower case. The password is used to access all configuration screens.
- 3) From the GTP-32 Home Page, click on the “System” link. The System page will be displayed:

Current User: admin

Sys Startup Time: October / 2 / 2017 15:30:04 Mon

Sys Time: October / 6 / 2017 13:30:26 Fri

LTC Time: 13:30:26:06 (Generated)

Video Ref Not Present. Field 1 Generated Count: 10152513

Video Ref Not Present. Field 2 Generated Count: 10152513

System is using RPN combinatorial processing

- [Set Admin Password](#)
- [User Management](#)
- [Set System Time](#)
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- [Set System Label](#)
- [Set System Port Number](#)
- [Configure User Options](#)
- [Configure Outgoing E-Mails](#)
- [Configure DHCP / Configure DNS](#)

- [User Notepad](#)

- [Configure SNMP](#)
- [Restart the System](#)
- [Diagnostics](#)
- [System Maintenance](#)
- [Registration Overview](#)

- [Logout](#)

SET ADMIN PASSWORD

- 1) Click on “Set Admin Password”. The Set Password page will be displayed.

Set Password

- Password must be between 5 & 32 characters.
- Password cannot contain spaces.
- Password is case-sensitive.

Old Password:

New Password:

Verify New Password:

- 2) In the “Old password” entry box, enter the current password.

Note: When shipped from the factory, the default password is “controls”, all lower case.

- 3) Enter the new password in the “New Password” entry box.
- 4) Enter the new password in the “Verify New Password” entry box.
- 5) Click on “Save” to save the new password, or click on “Cancel” to exit without changing passwords.

Note: If the “New Password” entry and the “Verify New Password” entry do not match, an error will be displayed.

SET SYSTEM LABEL

The system label is a unique name assigned to a GTP-32 which allows operators to easily distinguish between multiple units. The system label is displayed on the front LCD panel of the GTP-32 as well as at the top right of every webpage on the GTP-32. Each GTP-32 should be assigned a system label that sufficiently describes its role within a system.

- 1) Click on “Set System Label”. The Set System Label page will be displayed.

Set System Label

- Label may contain any alpha, numeric, or special characters.
- Max length of label is 16 characters.

System label: DC20

New System Label:

- 2) Enter any name made up of letters, numbers, or special characters, up to 16 characters.
- 3) Click on “Save” to save the name entered.
OR
Click on “Cancel” to exiting without changing the System Label.

SET SYSTEM TIME

The system time is used for event logging within the GTP-32. If the GTP-32 is connected to LTC or to a remote SNTP server, the system time will automatically be updated with the time obtained from that source. Otherwise, the system time should be manually set on the Set System Time page.

- 1) Click on “Set System Time”. The Set System Time page will be displayed.

(Continued on next page)

Sys Time: October / 6 / 2017 14:45:01 Fri
LTC Time: 14:45:01:02

Set System Time

Year	Month	Day
2017 ▾	October ▾	6 ▾

Hour	Min.	Sec.
14 ▾	45 ▾	1 ▾

UTC Offset
0 ▾

- 2) Using the drop down menus, set the current Date, Time and UTC Offset.
- 3) Click on "Save" to save the entered date and time.
OR
Click on "Cancel" to exit without saving.

CONFIGURE SNTP

The GTP-32 supports the ability to connect to a local SNTP server to periodically update its system time. The GTP-32 can also act as a SNTP server for other GTP-32s in order to keep their system times consistent across multiple units. It is recommended that all GTP-32s within a system use a common SNTP server.

- 1) Click on “Configure SNTP”. The Configure SNTP page will be displayed.

Sys Time: October / 6 / 2017 15:05:14 Fri
LTC Time: 15:05:14:04

SNTP Client Configuration:

Client Status	Remote SNTP Server IP	Client State
Disabled ▾	0.0.0.0	Not Running

SNTP Server Configuration:

Server Status	Server State	Server Time Base	LTC Time
Disabled ▾	Not Running	15:05:14:04	LTC

UTC Offset Configuration:

UTC Offset
0 ▾

Save Config Refresh Cancel

- 4) If the GTP-32 is connecting to a remote SNTP server, select “Enabled” from the Client Status drop-down menu, then enter the IP address of the remote SNTP server in the Remote SNTP Server IP field.
- 5) If the GTP-32 is acting as an SNTP server, select “Enabled” from the Server Status drop-down menu.
- 6) Select the correct UTC Offset from the UTC Offset drop-down menu.

7) Click on the Save Config button to save your changes.

OR

Click on the Cancel button to discard your changes.

SET SYSTEM PORT NUMBER

The system time is used is used for communicating to other DNF systems. The default port number is 50000 and should not be changed unless advised by DNF.

1) Click on “Set System Port Number”. The Set DNF port number page will be displayed.

Set DNF Port Number

- This port is used for communicating to other DNF systems.
- Default value is 50000.
- Illegal values are 0 and 0xffffffff.
- Reboot is required after Save operation.

DNF Port Number :

2) Enter the new port number in the text box field.

3) Click on “Save” to save the entered port number.

OR

Click on “Cancel” to exit without saving.

CONFIGURE USER OPTIONS

The system time is used is used for communicating to other DNF systems. The default port number is 50000 and should not be changed unless advised by DNF.

- 1) Click on “Configure User Options”. The Configure User Options page will be displayed.

Configure User Options

Combinatorial Validation:	<input type="text" value="AUTOMATIC"/>	<input type="button" value="Save Option"/>
LTC and Video Ref. Timebase:	<input type="text" value="NTSC"/>	<input type="button" value="Save TimeBase"/>
Lost LTC:	<input type="text" value="SYNC_WITH_Real-Time_Clock"/>	<input type="button" value="Save LTC Option"/>
Power Up Time:	<input type="text" value="60 seconds"/>	<input type="button" value="Save Powerup Time"/>
Room Name:	<input type="text"/>	<input type="button" value="Save Room Name"/>

Action processing of events in pending registration state:disabled. Click [here](#) to enable

Combinatorial Validation – When set to “Automatic” the system will automatically rebuild the combinatorial dependency tree, validate the combinatorial equations, and notify registrants of combinatorial equations that are no longer valid. When set to manual a user will need to select the “Process Equations” button in order to rebuild the combinatorial dependency tree, validate the combinatorial equations, and notify registrants of combinatorial equations that are no longer valid.

LTC and Video Ref Time base – Set the time based to be used by the GTP-32. In order to use Time Events and Time Actions the time base selected must match with the time base that is being fed into the GTP-32.

Lost LTC – Set the fallback method preferred in case of a loss of LTC.

If “Sync with SNTP” is selected:

- When the system comes up and if SNTP client is enabled, LTC register is updated with current SNTP time.
- When LTC is connected, LTC register is overwritten with the LTC signal.
- If LTC is lost, LTC register is overwritten with current SNTP time.
- While LTC signal is disconnected, LTC register is being updated every frame using Video Reference pulse. It is being resynched with SNTP every 30 minutes (at the same time when RTC is being updated with SNTP time).
- If SNTP is not enabled, the system behaves the same way as when “Do Not Sync” option is selected.
- When SNTP becomes enabled and LTC signal is not present, LTC register is updated with current SNTP time.

If “Do Not Sync” is selected:

- When the system comes up, LTC register is 00:00:00:00.
- When LTC is connected, LTC register is overwritten with the LTC signal.
- If LTC is lost, LTC register does not get overwritten with anything.
- While LTC signal is disconnected, LTC register is being updated every frame using Video Reference pulse.

If the option is changed from “Do Not Sync” to “Sync with SNTP” and LTC signal is not present, the LTC register will immediately be updated with SNTP time. If the option is changed from “Sync with SNTP” to “Do Not Sync”, LTC register will not be affected.

Power Up Time – Set the amount of time required for a GTP-32 to power up.

Room Name – A unique room name that is given to the panel to be able to identify it for delegation purposes.

Action Processing of Event in Pending Registration - All events with pending event registration status are being monitored by registration monitor. Once in 60 seconds, registration monitor sends out registration requests for pending events.

If event is REMOTE and goes from ONLINE to OFFLINE, its registration status is changed to pending and event status is changed to OFF automatically. If this causes an ON to OFF transition, OFF function will be executed. Disable “action processing of events in pending registration state” to prevent this so events in pending state does not cause any actions to be executed.

If event is COMBINATORIAL and one of the REMOTE elements goes from ONLINE to OFFLINE, its registration status is changed to pending and that specific remote event status is changed to OFF automatically. Combinatorial event will keep regarding REMOTE event state as OFF and combinatorial event will keep getting evaluated. Disable “action processing of events in pending registration state” to prevent this so events in pending state does not cause any actions to be executed.

- 2) Click on the “Save” button next to each option to save the current selection.
OR
Click on “Back” to exit without saving.

OUTGOING EMAIL CONFIGURATION

The Outgoing Email configuration page provides a user with the capability of creating “Recipient Lists” which contain a list of recipient E-mail addresses. Each Recipient List will contain a unique name, a description, and up to 20 different E-mail addresses. Operators can create a total of 10 different Recipient Lists.

- 1) Click on “Configure Outgoing E-Mails”. The Outgoing E-Mail Configuration page will be displayed.

Outgoing E-Mail Configuration

- Reboot is NOT required after Save operation.
- No validation is made on the fields, yet.

SMTP Server IP Address :	<input type="text"/>
SMTP Server IP Port :	<input type="text"/>
Sender's Email Address :	<input type="text" value="support@dnfcontrols.com"/>
Username :	<input type="text"/>
Password :	<input type="password"/>
Notification E-Mail #1 :	<input type="text"/>
Notification E-Mail #2 :	<input type="text"/>
Notification E-Mail #3 :	<input type="text"/>

Outgoing E-Mail Configuration Registrant Table

There are no registrants

<input type="button" value="Save SMTP Config"/>	<input type="button" value="Push Config to Registrants"/>	<input type="button" value="Refresh Table"/>	<input type="button" value="Back"/>
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- 2) Enter the IP address of the SMTP server in the “SMTP Server IP Address” field.
- 3) Enter the port number of the SMTP server in the “SMTP Server IP Port” field.
- 4) Enter the email address of the sender in the “Sender’s Email Address” field.
- 5) Enter the Username and Password associated with the senders email address.
- 6) Enter a notification email (optional) in the Notification Email #1 - #3 field. This is used to notify additional recipients of the email actions.
- 7) Click on “Save” to save the current selection.

CONFIGURE DHCP / CONFIGURE DNS

The Configure DHCP page allow a user to enable or disable DHCP. When set to ENABLED the network server will automatically assign an IP address, Subnet and Gateway. When set to DISABLED the GTP will manually need to be assigned an IP address, Subnet and Gateway via the front panel.

The Configure DNS page allow a user to enable or disable DNS.

- 1) Click on “Configure DHCP”. The DHCP Client Configuration page will be displayed.

DHCP Client Configuration

DHCP Client: Disabled ▼

Save DHCP Config

Back

- 2) Select “Enabled” from the DHCP Client drop-down menu to enable DHCP. Select “Disabled” from the DHCP Client drop-down menu to disable DHCP
- 3) Click on “Save” to save the current selection.
OR
Click on “Back” to exit without saving.

- 4) Click on "Configure DNS". The Configure Domain Name Servers page will be displayed

Configure Domain Name Servers

Primary DNS Address:

Secondary DNS Address:

- 5) Enter a Primary DNS IP Address in the Primary DNS Address field. Enter a Secondary DNS IP Address in the secondary DNS Address field.
- 6) Click on "Save" to save the current selection.
OR
Click on "Back" to exit without saving.

USER NOTEPAD

The User Notepad allow a user to add notes or comments specific to the unit for internal use only.

VIEW/EDIT USER NOTEPAD FILE

Enter Text. Press Save.

CONFIGURE SNMP

The Configure SNMP page allow a user to configure the SNMP setup.

- 1) Click on “Configure SNMP”. The SNMP Configuration page will be displayed.

SNMP Configuration

- Set the SNMP Community String.
- Set SNMP Trap Sink (NMS) IP Address.
- If set, all DNF Enterprise traps are sent to SNMP trap sink.
- In order to disable trap sink, enter 0.0.0.0 for IP Address.

SNMP Community String:

SNMP Trap Sink IP Address:

- 2) Enter the SNMP Community String in the SNMP Community String field.
Enter the SNMP Trap Sink IP Address in the SNMP Trap Sink IP Address field.
- 3) Click on “Save” to save the current selection.
OR
Click on “Back” to exit without saving.

GPI CONFIGURATION

The GPI webpage is used to configure the individual GPIs within the GTP-32. Each GPI input is isolated using an opto-isolator that requires a differential voltage across it to turn it on. This input supports positive and negative voltages, active high GPI sources, and active low GPI sources. GPIs may be used as Source Events in Combinatorial Event Definitions and in the Event Monitoring Table.

GPI SETUP

- 1) From the GTP-32 Home Page, click on the “GPI” link. The GPI Configuration Table page will be displayed.

- Momentary GPIs will not detect OFF state change.
- For normal operation use Latched GPIs.

[Edit / Backup / Restore / Create Default / GPI Configuration Table](#)

GPI CONFIGURATION TABLE

GPI#	Label	Description	Opto Isolator State	GPI CURRENT EVENT STATE	Configuration		
					User Defined "ON" State	User Defined "ON" Mode	Debounce (*10 ms)
1	GPI_1		Deenergized	OFF	OPTO ON	Latched	1
2	GPI_2		Deenergized	OFF	OPTO ON	Latched	1
3	GPI_3		Deenergized	OFF	OPTO ON	Latched	1
4	GPI_4		Deenergized	OFF	OPTO ON	Latched	1
5	GPI_5		Deenergized	OFF	OPTO ON	Latched	1
6	GPI_6		Deenergized	OFF	OPTO ON	Latched	1
7	GPI_7		Deenergized	OFF	OPTO ON	Latched	1
8	GPI_8		Deenergized	OFF	OPTO ON	Latched	1
9	GPI_9		Deenergized	OFF	OPTO ON	Latched	1

- 2) At the top or bottom of the page, click on the “Edit GPI Configuration Table” link.

If prompted for password, enter your password then click on “Login” to log in

to the GTP-32. If already logged in, the password prompt will not be displayed.

The GPI Configuration Table will be displayed with drop down boxes.

- Enter a GPI label.
- Choose an "ON" State.
- Choose an "ON" Mode.
- Enter a Debounce Time.
- Max Debounce value is 255 (= 2550 ms).

Save Cancel

GPI CONFIGURATION TABLE

GPI#	Label	Description	GPI CURRENT STATE	Configuration		
				User Defined "ON" State	User Defined "ON" Mode	Debounce (*10 ms)
1	GPI_1		OFF	OPTO ON	Latched	1
2	GPI_2		OFF	OPTO ON	Latched	1
3	GPI_3		OFF	OPTO ON	Latched	1

GPI Parameters

GPI Label	Enter up to 32 characters.
Description	Enter up to 128 characters. For convenience only.
Opto Isolator State	Current state of the opto-isolator (Energized or De-energized)
GPI Current Event State	Current state of GPI as defined by User Defined ON State.
User Defined "ON" State	OPTO ON: The GPI is ON when the opto-isolator is energized (powered). The GPI is OFF when the opto-isolator is de-energized. OPTO OFF: The GPI is ON when the opto-isolator is de-energized. The GPI is OFF when the opto-isolator is energized (powered).
User Defined "ON" Mode	Latched: The GPI turns ON and stays ON. The GPI turns OFF and stays OFF. Momentary: The GPI turns ON for a short time and then turns OFF and stays OFF. This pattern repeats every time the GPI becomes active. Momentary GPIs do not trigger OFF actions in the Event Monitoring Table.
Debounce	The time period that the GPI must remain ON to be detected as ON. The entered time is multiplied by 10 milliseconds to compute the actual

	Debounce time. Maximum Debounce time is 2.55 seconds (2550 ms)
--	---

3) For each GPI, do the following:

- a) Enter a label name to help identify the GPI with a source function.
- b) Set the “User Define ON State”. Click on the drop down arrow.

Select OPTO ON if the GPI is considered “ON” when power (+V or -V) is applied across the GTP-32’s opto-isolator 2-wire input.

Select OPTO OFF if the GPI is considered on when no power is applied across the GTP-32’s opto-isolator 2-wire input.

- c) Set the “User Defined ON Mode”. Click on the drop down arrow.

Select LATCHED if the GPI source signal turns on and stays on when activated. The GPI source signal turns off and stays off when de-activated (GPI follows the source signal). This is the recommended setting.

Select MOMENTARY if the GPI source signal turns on for a specific duration then automatically turns off, when activated.

- d) If MOMENTARY is selected, enter a “Debounce” time in the DEBOUNCE box. If LATCH was selected, debounce time is ignored.

The debounce time is used to filter out unwanted GPI signals. If the debounce time is greater than that GPI’s on time, then the GPI will be ignored. If the debounce time is less that the GPI on time, then the GPI will be detected.

Set the debounce time to the minimum on time of the GPI to be detected.

All debounce time entries are automatically multiplied by 10 milliseconds. The minimum entry is “1”, for 10 milliseconds. The maximum entry is “255” for 2550 milliseconds. All entries greater than “255” will be set to “255”.

- 4) After entering GPI configuration data, click on SAVE to save the entered configuration data or click on CANCEL to exit without saving.

GPO CONFIGURATION

The GPO webpage is used to configure the individual GPOs within the GTP-32. Each GPO output is a normally open, relay contact pair. GPOs may be used as Actions in the Event Monitoring Table.

GPO SETUP

- 1) From the GTP-32 Home Page, click on the “GPO” link. The GPO Configuration Table page will be displayed.

[Edit / Backup / Restore / Create Default / GPO Configuration Table](#)

GPO CONFIGURATION TABLE Refresh								
GPO#	Label	Description	Current State	User Defined "ON" State	User Defined "ON" Mode	On time (*10 ms)	Transition Delay (*10 ms)	Debounce Time (*16 ms)
1	GPO_1		OFF	Relay Closed	Latched	0	0	1
2	GPO_2		OFF	Relay Closed	Latched	0	0	1
3	GPO_3		OFF	Relay Closed	Latched	0	0	1
4	GPO_4		OFF	Relay Closed	Latched	0	0	1
5	GPO_5		OFF	Relay Closed	Latched	0	0	1
6	GPO_6		OFF	Relay Closed	Latched	0	0	1
7	GPO_7		OFF	Relay Closed	Latched	0	0	1
8	GPO_8		OFF	Relay Closed	Latched	0	0	1
9	GPO_9		OFF	Relay Closed	Latched	0	0	1
10	GPO_10		OFF	Relay Closed	Latched	0	0	1
11	GPO_11		OFF	Relay Closed	Latched	0	0	1
12	GPO_12		OFF	Relay Closed	Latched	0	0	1
13	GPO_13		OFF	Relay Closed	Latched	0	0	1
14	GPO_14		OFF	Relay Closed	Latched	0	0	1
15	GPO_15		OFF	Relay Closed	Latched	0	0	1
16	GPO_16		OFF	Relay Closed	Latched	0	0	1
17	GPO_17		OFF	Relay Closed	Latched	0	0	1

- 2) At the top or bottom of the page, click on the “Edit GPO.... Configuration Table” link.

If prompted for password, enter your password then click on “Login” to log in to the GTP-32. If already logged in, the password prompt will not be displayed.

The GPO Configuration Table will be displayed with drop down boxes.

- Enter a GPO label.
- Choose an "ON" State.
- Choose an "ON" Mode.
- Enter an On Time.
- On Time only effects momentary GPO's.
- Max On Time value is 255 (= 2550 ms).
- Max Transition Delay is 255 (= 2550 ms).
- Transition Delay is valid only for PIC Versions 12 or later.
- Max Debounce Time is 255 (= 4080 ms).

Save Cancel

GPO CONFIGURATION TABLE

GPO#	Label	Description	GPO CURRENT STATE	Configuration				
				User Defined "ON" State	User Defined "ON" Mode	On Time (*10 ms)	Transition Delay (*10 ms)	Debounce Time (*16 ms)
1	GPO_1		OFF	Relay Closed ▾	Latched ▾	0	0	1
2	GPO_2		OFF	Relay Closed ▾	Latched ▾	0	0	1
3	GPO_3		OFF	Relay Closed ▾	Latched ▾	0	0	1

GPO Parameters

GPO Label	Enter up to 32 characters.
Description	Enter up to 128 characters. For convenience only.
Current State	Current state of GPO as defined by User Defined ON State.
User Defined "ON" State	Relay Closed: The relay is CLOSED when the GPO is ON. The relay is OPEN when the GPO is OFF. Relay Open: The relay is OPEN when the GPO is ON. The relay is CLOSED when the GPO is OFF.
User Defined "ON" Mode	Latched: The GPO turns ON and stays ON. The GPO turns OFF and stays OFF. Momentary: The GPO turns ON, waits for the On Time to expire, and then Automatically turns OFF.
On Time	For Momentary GPOs only. Defines the On duration for the Momentary GPO. The entered time is multiplied by 10 milliseconds to compute the actual Momentary ON time. Maximum On Time is 2.55 seconds (2550 ms)
Transition Delay	The Defines delay before changing GPO state. The entered time is multiplied by 10 milliseconds to compute the actual Transition Delay.

	Maximum Transition Delay is 2.55 seconds (2550 ms)
Debounce Time	Defines the time period required between GPO changes of state. The entered time is multiplied by 16 milliseconds to compute the actual Debounce time. Maximum Debounce time is 4.08 seconds (4080 ms)

- 3) For each GPO, do the following:

Note: It is only necessary to change these settings to achieve specific functions. Under normal use these will remain at their default settings.

- a) Enter a label name to help identify the GPO with an output function.
- b) Set the “User Defined ON State”. Click on the drop down arrow.

Select “RELAY CLOSED” if the GPO is considered “ON” when the relay contacts are closed. In this mode the relay will pass a signal or ground from the COM contact to the NORMALLY OPEN contact.

Select “RELAY OPEN” if the GPO is considered “ON” when the relay contacts are open. In this mode the relay will NOT pass any signal voltage or ground from the COM contact to the NORMALLY OPEN contact.

- c) Set the “User Defined ON Mode”.

Select LATCHED if the GPO should stay ON or OFF until told to change states (GPO follows the assigned source event).

Select MOMENTARY if the GPO should turn ON for a finite period of time then automatically turn OFF without being told to turn OFF.

- d) If MOMENTARY is selected in step above, enter an ON TIME. The GPO will turn on for the ON TIME, then automatically turn OFF.

All ON TIME entries are automatically multiplied by 10 milliseconds. The minimum entry is “1”, for 10 milliseconds. The maximum entry is “255” for 2550 milliseconds. All entries greater than “255” will be set to “255”.

- 4) After entering GPO configuration data, click on SAVE to save the entered configuration data or click on CANCEL to exit without saving.

EVENT DEFINITIONS

The Event Definitions webpage contains links to configure a number of Source Events contained within the GTP-32. Source Events are used to trigger Actions using the Event Monitoring Table, or as part of a Combinatorial Logic Event. Source Events based on a specific protocol/channel are configured under the Protocol Assignment page.

Restore EMT Events

Restore EMT Events are used to trigger an Action when a specific Event Monitoring Table is loaded.

Example: Triggering a tally when a specific show configuration is loaded.

Currently used EMT file is not a restored file.

Action processing of events in pending registration state: disabled. [Explain this..](#)

[Back Refresh](#)

Event Name	Filename	Event State
RESTORE_ERROR	Error Condition	OFF

[Back Refresh](#)

USP Events

USP Events are used to trigger an Action based on a Keypress, GPI or a GPO on a remote Universal Switch Panel.

[Add / Edit / Delete / Backup / Restore / Refresh](#)

USP Event Definitions

Line #	Local Event Label	IP Address	Event Type	Event #	Value	Destination User Register	Conditional User Register	Event Status
1	USP_KEY1	192.168.10.217	Keypress Momentary	1	N/A	N/A	N/A	Pending

[Add / Edit / Delete / Backup / Restore / Refresh](#)

Local Event Label	Enter up to 32 characters.
IP Address	Enter the IP Address of the USP
Event Type	Select from the following options: Keypress – GTP responds to both press and release of USP KEY Keypress Momentary - GTP responds to only the press of a USP KEY

	GPO - GTP responds to the GPO of a USP GPI - GTP responds to the GPI of a USP USP Defined Value - Used for USP-RDC functionality. USP Set User Register Value - USP Keypress sets User register to a specific value USP Offline - GTP responds to an OFFLINE USP
Event #	Enter the number of the USP Keypress, GPI or GPO.
Value	Enter a number value.
Destination User Register	Select a User Register from the drop-down menu. The selected User register will have its value changed upon pressing the assigned USP key.
Conditional User Register	A conditional user register that must be active in order to set a value to the destination user register.
Event Status	"Pending" will always be displayed until after the event is initially triggered. After its initial trigger it will only either display "OFF" or "ON".

Remote Connection Events

Remote Connection Events are used to trigger an Action when the Ethernet connectivity to a remote GTP-32 is lost.

Example: Triggering a tally to an Alarm Monitoring system when the connection to a remote GTP-32 is lost.

Remote Connection Event Definitions

Currently loaded file is: Table changed and not backed up

Event Label	IP Address	Connection Status	Event State
RC_GTP_233	192.168.10.233	Offline	ON

[Add](#) / [Edit](#) / [Delete](#) / [Backup](#) / [Restore](#) / [Refresh](#) Remote Connection Event Definitions

Remote Events

Remote Events are events that reside on remote boxes and are defined locally to use within combinatorial events. Additionally a remote event can also be used directly in the Event monitoring table.

Example: A remote GPI and a local GPI must both be active in order to drive a local GPO.

REMOTE EVENT DEFINITION TABLE

Refresh

Local Event Label	Remote Event Label	Remote IP	Enabled ?	Connected ?	Registration Status	Event State
REM_GPI1	GPI_1	192.168.10.92	YES	YES	REGISTERED	OFF

[Add / Edit / Delete / Backup / Restore](#) Remote Event Definition

Combinatorial Events

The Combinatorial Logic Option for the GTP-32 delivers Tally Intelligence. In addition to one Event controlling one Action, the Combinatorial Logic Option allows one Action to be controlled by multiple Events based upon a user-entered definition.

The Combinatorial Event Definition screen, available through the GTP-32's web interface is used by the operator to create a combinatorial event definition.

The combinatorial event definition consists of:

- Unique user entered name (event identifier)

- User entered equation that contains a list of source events to monitor and logical operators (AND, OR, NOT, XOR, NAND, and NOR).

Combinatorial Event Definitions may be added, deleted, or modified at any time without affecting system operation or requiring a system reboot. Combinatorial Event Definitions may also be nested in other Combinatorial Event Definitions.

After defining Combinatorial Event Definitions, their event identifiers may be used in the Channel Event Monitoring Table as a source to affect local GPOs. Remote GTP-32s may also use these event identifiers in their Channel Event Monitoring Tables to affect GPOs. The individual components of the Combinatorial Event Definition are monitored on a real-time basis by the GTP-32. When the current states of the components cause the definition to become true, the GPO assigned in the Event Monitoring Table will be controlled by the associated "ON Function". When the current states of the components cause the definition to become false, the assigned GPO will be controlled by the associated "OFF Function".

Example: The ON state of a GPI and the OFF state of another GPI need to be active in order to trigger a GPO.

- Create complex event definitions. Use local & remote GPIs & events.
- Event Label must be unique on this unit. Maximum of 31 characters.
- Definition example: GPI_1 AND GPI_2 OR GPI_3.

Event Definitions are processed automatically

[Add / Edit / Delete / Backup / Restore / Refresh](#) Combinatorial Event Definition

Event Label	Description	Combinatorial Event Definition	Status
CE_TEST		GPI_1 AND GPI_2	Not in use
CE_TEST1		GPI_1 AND NOT GPI_3	Not in use
CE_TEST2		GPI_1 OR GPI_4	Not in use

[Add / Edit / Delete / Backup / Restore / Refresh](#) Combinatorial Event Definition

User Register Configuration

User Registers are used to store a value to keep track of various statuses within the GTP-32.

Example: A User Register can be used to track the receipt of momentary GPIs to drive latching tallies.

[Edit / Backup / Restore / Refresh](#) User Registers Table

User Registers Table

User Register #	Label	Short Description	Long Description	Event Mode	Default Value	Disable OFF execution at power up	Current Value	Current Value (Hex)
1	UR_UserReg1			Normal	0	NO	0	0x0
2	UR_UserReg2			Normal	0	NO	0	0x0
3	UR_UserReg3			Normal	0	NO	0	0x0
4	UR_UserReg4			Normal	0	NO	0	0x0
5	UR_UserReg5			Normal	0	NO	0	0x0
6	UR_UserReg6			Normal	0	NO	0	0x0
7	UR_UserReg7			Normal	0	NO	0	0x0
8	UR_UserReg8			Normal	0	NO	0	0x0
9	UR_UserReg9			Normal	0	NO	0	0x0
10	UR_UserReg10			Normal	0	NO	0	0x0
11	UR_UserReg11			Normal	0	NO	0	0x0
12	UR_UserReg12			Normal	0	NO	0	0x0

User Register User Defined Events

User Register User Defined Events are used to trigger an Action based on a specific value or condition within a User Register.

Example: Triggering a tally when a User Register is set to a value of 5 or greater.

[Add / Edit / Delete / Backup / Restore / Refresh](#) User Register User Defined Event Definitions

User Register User Defined Events Table

Event Label	User Register	Operator	Value	Current Value	Event State	Mode
URE_EQUAL_TO_1	1:UserReg1	=	1	0	OFF	Latched
URE_VALUE_CHNGD	1:UserReg1	Value Changed	N/A	0	OFF	Momentary
URE_TESTBIT_1	1:UserReg1	Test Bit	1	0	OFF	Latched
URE_NOT_EQUAL_TO_2	1:UserReg1	!=	2	0	ON	Latched
URE_GREATER_THAN_2	1:UserReg1	>	2	0	OFF	Latched
URE_LESS_THAN_2	1:UserReg1	<	2	0	ON	Latched

[Add / Edit / Delete / Backup / Restore / Refresh](#) User Register User Defined Event Definitions

Time Events

Time Events are used are used to trigger an action based on a specific time of day.

Example: Driving the text and color on a remote Universal Switch Panel key from the GTP-32.

[Add / Edit / Delete / Backup / Restore / Refresh](#) TIME EVENTS Definitions Table

- Caution: LTC signal does not report day of week information, it is obtained from real time clock. Therefore, LTC and RTC need to be the same to generate an accurate event at the desired day of week.

TIME EVENTS Definitions Table

Currently loaded file is: Table changed and not backed up

Sys Time: October / 10 / 2017 12:04:26 Tue

LTC Time: 12:04:26:04 Non drop frame

Event Label	Description	Event Time	Time Source	Days
TE_7AM_ALARM	7AM ALARM FOR WEEKDAYS	07:00:00:00	LTC	Mon Tue Wed Thr Fri

[Add / Edit / Delete / Backup / Restore / Refresh](#) TIME EVENTS Definitions Table

User Data Events

User Data Events are used to store a custom data string so that it can be sent to a remote device.

Example: Driving the text and color on a remote Universal Switch Panel key from the GTP-32.

[Edit](#) / [Backup](#) / [Restore](#) / [Refresh](#)

USER DATA Table

Currently loaded file is: Display Type:

User Data Number	Event Label	Description	Current Data
1	UD_UserData_1		F : 1 _ C : 0 1 _ T : KEY 1 O N _
2	UD_UserData_2		
3	UD_UserData_3		
4	UD_UserData_4		
5	UD_UserData_5		
6	UD_UserData_6		
7	UD_UserData_7		
8	UD_UserData_8		
9	UD_UserData_9		
10	UD_UserData_10		
11	UD_UserData_11		
12	UD_UserData_12		
13	UD_UserData_13		

Continuous / Watchdog Timer

Continuous/Watchdog timers are used to repeatedly trigger an action based on the time interval set.

Example: An end device require a heartbeat every 5 seconds in order to maintain a connection.

[Add](#) / [Edit](#) / [Delete](#) / [Backup](#) / [Restore](#) / [Refresh](#) Continuous / Watchdog Timer Definitions
Max number of entries in this table is: 32

Continuous / Watchdog Timer Definitions

Currently loaded file is: Table changed and not backed up

Event Label	Time
CT_1_SEC_TIMER	1 seconds

[Add](#) / [Edit](#) / [Delete](#) / [Backup](#) / [Restore](#) / [Refresh](#) Continuous / Watchdog Timer Definitions

ACTION DEFINITIONS

The Action Definitions webpage contains links to configure a number of Actions contained within the GTP-32. Actions are triggered by Source Events using the Event Monitoring Table.

Restore EMT Actions

Restore EMT Actions are used to restore a specified Event Monitoring Table configuration.

Example: Loading a specific show configuration from a USP Event.

Currently used EMT file is not a restored file.

Action processing of events in pending registration state: disabled. [Explain this..](#)

[Back Refresh](#)

Action Name	Filename
RS_RESTORE_ERROR	Error Condition

[Back Refresh](#)

Time Actions

Time Actions gives the user the ability to delay the turn on and/or turn off of a GPO by up to 24 hours. The user can assign a delay or no delay to each GPO. Additionally, the user can assign a unique delay time for each delay. The delayed turn on, or turn off, can be cancelled at any time before the delay expires.

The Time Delay Action requires a connection from the GTP to the facility's LTC time source. Combinatorial Logic option is included with the Time Delay Action software..

Example: When an incoming GPI is received a GPO will activate after 5 seconds of the initial source trigger.

[Add](#) / [Edit](#) / [Delete](#) / [Refresh](#) / [Backup](#) / [Restore](#) Time Delay Action Definitions

System Time: 12:50:27
LTC Time: 12:50:27:12
LTC Mode: NTSC NDF
Saved Delay Time Mode:

Time Delay Action Definitions [Display Status](#)

Action Label	Frequency	Delay Time HH:MM:SS:FF	Function
TD_5_SEC_DELAY	Repetitive	00:00:05:00	Turn On GPO
TD_CANCEL_5SEC	Repetitive	CANCEL	TD_5_SEC_DELAY

[Add](#) / [Edit](#) / [Delete](#) / [Refresh](#) / [Backup](#) / [Restore](#) Time Delay Action Definitions

User Register User Defined Actions

User Register User Defined Actions are used to adjust the value contained within a User Register.

Example: Incrementing the value of a User Register each time a specific GPI is received.

[Add](#) / [Edit](#) / [Delete](#) / [Backup](#) / [Restore](#) / [Refresh](#) User Register Action Definitions

User Register Actions Table

Action Label	Category	Parameter
URA_SET_TO_2	Set Reg to Value	2
URA_5SEC_COUNT	Set Value and Countdown to Zero	5
URA_COPY_VALUE_REG	Copy value from Reg	1
URA_CLEARBIT_1	Clear Register Bit	1
URA_SETBIT_1	Set Register Bit	1
URA_TOGGLE_BIT_1	Toggle Register Bit	1

[Add](#) / [Edit](#) / [Delete](#) / [Backup](#) / [Restore](#) / [Refresh](#) User Register Action Definitions

SNMP Actions

SNMP Actions are used to send an SNMP message to a remote third party device.

Example: Sending SNMP messages to a third party Alarm Monitoring System.

[Add / Edit / Delete / Backup / Restore](#) SNMP Action Definitions

SNMP Action Definitions

Action Label	Community	SNMP Command Type	OID	OID Value Type	OID Value	Destination IP Address	Destination Port Number
SN_TEST	public	Set	1.3.6.1.4.1.343	Null		192.168.0.13	161

[Add / Edit / Delete / Backup / Restore](#) SNMP Action Definitions

Email Actions

Email Actions are used to send Email messages when a specific action occurs.

Example: Sending an email to Engineering staff when the Ethernet connection to a remote GTP-32 is lost.

[Modify / Backup / Restore / Refresh / Recipient Lists](#)

Email Actions Table

Action Label	EMA_Test
Recipient List	List_1
Subject	Test
Test	

User Data Actions

User Data Actions are used to set the data string contained within a User Data Event.

Example: Setting the text and color of a Universal Switch Panel key based on a router crosspoint.

[Add / Edit / Delete / Backup / Restore / Refresh](#)

USER DATA ACTIONS Table

Currently loaded file is: Modified and not backed up

Action Label	Description	Action Type	USP Font	USP Color	USP Defined Value	User Data
UDA_KEY1_ON		SET USP TALLY	NORMAL	Red		KEY1 ON

[Add / Edit / Delete / Backup / Restore / Refresh](#)

User Register Table Actions

User Register Table Actions allow the operator to assign Actions to specific User Register values without creating separate entries in the Event Monitoring Table.

Example: Switching between multiple text and color displays on a USP key.

Add User Register Action Table

Action Table	<input type="text" value="URT_TABLE_1"/>
Description	<input type="text"/>

User Register	Value	On Type	On Function	On Data	Off Type	Off Function	Off Data	
1:UserReg1	0	GPO Control	Turn On GPO	1:GPO_1	GPO Control	Turn Off GPO	1:GPO_1	<input type="button" value="Delete Line"/>
1:UserReg1	1	GPO Control	Turn On GPO	2:GPO_2	GPO Control	Turn Off GPO	2:GPO_2	<input type="button" value="Delete Line"/>
1:UserReg1	2	GPO Control	Turn On GPO	3:GPO_3	GPO Control	Turn Off GPO	3:GPO_3	<input type="button" value="Delete Line"/>

PROTOCOL ASSIGNMENT

The Protocol Assignment table is used to configure any Serial or Ethernet based connections to third party equipment such as video servers, production switchers, etc. Any protocol/channel specific Source Events or Actions will be configured here.

- 1) Click on the “Protocol Assignment” link at the top of the page. The Protocol Assignment Table will be displayed.

- Protocol Assignment**
- Function licenses and allowed control functions are as follows:
 - For Playout Devices:
 - Basic License: Basic Control
 - Clip Control License: Basic Control, Clip Control
 - UABS1 License: Basic Control, Clip Control, Playlist Control, Master Control, Ingest Review
 - UABS2 License: Basic Control, Clip Control, Playlist Control, Master Control, Ingest Review, Ingest Record Control, Ingest Source
 - For Router Devices:
 - Router Control
 - For Graphic Devices:
 - Graphics Control
 - Use Device Config -> Edit to edit Control Function (if applicable).

[Edit Protocol Assignment Table](#)

Last Updated: October / 9 / 2017 22:34:22

PROTOCOL ASSIGNMENT TABLE

Channel	Physical Connector	Channel Label	Control Protocol	Control Function	List Config	Device Config	PHY Config	Definitions	Current Group (First..Last)	Status
1	Serial_1	label0	Unassigned	N/A Ch Type	N/A	Unassigned	N/A	N/A	0 0..0	No Comm
2	Serial_2	label1	Unassigned	N/A Ch Type	N/A	Unassigned	N/A	N/A	0 0..0	No Comm
3	Serial_3	label2	Unassigned	N/A Ch Type	N/A	Unassigned	N/A	N/A	0 0..0	No Comm
4	Serial_4	label3	Unassigned	N/A Ch Type	N/A	Unassigned	N/A	N/A	0 0..0	No Comm

List of licensed protocols and functions:

Protocols:

ahsc_e,

Functions:

USP, Time Events,
Combinatorial Logic,

- 2) Click on “Edit Protocol Assignment Table”. An editable version of the table will be displayed.

PROTOCOL ASSIGNMENT TABLE

Channel#	Physical Connector	Channel Label	Control Protocol	Group Toggle Range
1	Serial_1 ▾	label0	ahsc_e ▾	0 ▾ 0 ▾
2	Serial_2 ▾	label1	ahsc_e ▾	0 ▾ 0 ▾
3	Serial_3 ▾	label2	ahsc_e ▾	0 ▾ 0 ▾
4	Serial_4 ▾	label3	ahsc_e ▾	0 ▾ 0 ▾

You must Unassign the Protocol prior to changing it.

- 3) When assigning a Serial protocol, select “Serial” from the Physical Connector drop down menu. When assigned an Ethernet protocol, select “Ethernet” from the Physical Connector drop down menu.
- 4) For each channel, enter a channel identifier (up to 20 characters) in the “Channel Label” box.
- 5) For each channel, select from the Licensed Control Protocol drop down menu.
- 6) Click on “SAVE” to save the entered values
OR
Click on “BACK” to exit without saving entered values.

Configuration details for specific protocols are covered within that protocol’s separate documentation.

EVENT MONITORING

The Event Monitor Table, the power of the GTP-32, routes Events to Actions. The GTP-32 monitors local and remote Events to execute various actions. “Local Events” are GPIs that are located inside the GTP-32. “Remote Events” are Events located in another GTP-32 that can be accessed over an Ethernet connection.

The GTP-32 monitors the current state of an Event. When the Event turns “ON”, the associated Action assigned in the “ON FUNCTION” is executed. When the Event turns “OFF”, the associated Action assigned in the “OFF FUNCTION” is executed.

In the Event Monitoring Table, a single Event may be routed to control a single Action. A single Event may be routed to control many Actions. Also, many Events may be routed to control a single Action.

The Event Monitoring Table uses combining logic to support the “One to Many” and “Many to One” relationships. If three (3) Events (i.e. GPIs) are routed to control the same Action, (i.e.: a GPO), the GPO will turn on if ANY one of the three GPIs is turned on. The GPO will only turn off when ALL three GPIs are turned off.

Each row in the Event Monitoring Table is used to route one Event to one Action. To use one Event to control many Actions, add a row for each Action to be controlled. To use many Events to control one Action, add one row for each Event.

- 1) Click on the “Event Monitoring” link. The Event Monitor Table page will be displayed.

[Add / Edit Events / Edit Actions / Delete / Backup / Restore / Create Default Event Monitor Table](#)
 Currently used file is not a restored file.
 Action processing of events in pending registration state: disabled. [Explain this.](#)
 Last Refreshed: October / 9 / 2017 22:48:05

EVENTS							ACTIONS				
Status	Source IP	Connection Status	Event Label	Registration State	Event State	Event Type	ON/OFF Type	ON Data	ON Function	OFF Data	OFF Function
Enabled	0.0.0.0	Local	GPI_2	REGISTERED	OFF	GPI	GPO Control	2:GPO_2	Turn On GPO	2:GPO_2	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_3	REGISTERED	OFF	GPI	GPO Control	3:GPO_3	Turn On GPO	3:GPO_3	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_4	REGISTERED	OFF	GPI	GPO Control	4:GPO_4	Turn On GPO	4:GPO_4	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_5	REGISTERED	OFF	GPI	GPO Control	5:GPO_5	Turn On GPO	5:GPO_5	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_6	REGISTERED	OFF	GPI	GPO Control	6:GPO_6	Turn On GPO	6:GPO_6	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_7	REGISTERED	OFF	GPI	GPO Control	7:GPO_7	Turn On GPO	7:GPO_7	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_8	REGISTERED	OFF	GPI	GPO Control	8:GPO_8	Turn On GPO	8:GPO_8	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_9	REGISTERED	OFF	GPI	GPO Control	9:GPO_9	Turn On GPO	9:GPO_9	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_10	REGISTERED	OFF	GPI	GPO Control	10:GPO_10	Turn On GPO	10:GPO_10	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_11	REGISTERED	OFF	GPI	GPO Control	11:GPO_11	Turn On GPO	11:GPO_11	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_12	REGISTERED	OFF	GPI	GPO Control	12:GPO_12	Turn On GPO	12:GPO_12	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_13	REGISTERED	OFF	GPI	GPO Control	13:GPO_13	Turn On GPO	13:GPO_13	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_14	REGISTERED	OFF	GPI	GPO Control	14:GPO_14	Turn On GPO	14:GPO_14	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_15	REGISTERED	OFF	GPI	GPO Control	15:GPO_15	Turn On GPO	15:GPO_15	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_16	REGISTERED	OFF	GPI	GPO Control	16:GPO_16	Turn On GPO	16:GPO_16	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_17	REGISTERED	OFF	GPI	GPO Control	17:GPO_17	Turn On GPO	17:GPO_17	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_18	REGISTERED	OFF	GPI	GPO Control	18:GPO_18	Turn On GPO	18:GPO_18	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_19	REGISTERED	OFF	GPI	GPO Control	19:GPO_19	Turn On GPO	19:GPO_19	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_20	REGISTERED	OFF	GPI	GPO Control	20:GPO_20	Turn On GPO	20:GPO_20	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_21	REGISTERED	OFF	GPI	GPO Control	21:GPO_21	Turn On GPO	21:GPO_21	Turn Off GPO
Enabled	0.0.0.0	Local	GPI_22	REGISTERED	OFF	GPI	GPO Control	22:GPO_22	Turn On GPO	22:GPO_22	Turn Off GPO

ADD A ROW TO THE EVENT MONITORING TABLE

- 1) Click on the “Event Monitoring” link at the top of the page. The Event Monitor Table will be displayed.
- 2) Click on the Add link near the top of the table. The entry screen will be displayed.

- Assign source event to GPO.
- Source event may be local or remote event.
- For REMOTE EVENT, enter Source IP and Source Event Label.
- GPO may be any local GPO.
- Duplicate entries will not be saved!
- Available entries=992

Add Event to Channel Event Monitoring

Status:	Enabled	▼
Source IP:	0.0.0.0	
Source Event Type:	GPI	
Source Event Label:	2: GPI_2	
ON/OFF Type:	GPO Control	
ON Function and Data:	Turn On GPO	2:GPO_2
OFF Function and Data:	Turn Off GPO	2:GPO_2

- 3) Select Status “Enabled” from the drop down menu.
- 4) Select Source event type, “Local” or “Remote”.
- 5) If Remote was selected for the Source Event Type, enter the Source IP address of the Remote GTP-32 to monitor, then enter the Event Label of the Event being monitored.
- 6) If Local was selected, select a Source Event Type from the drop down menu. Then select the desired Event from the Source Event label drop down menu.
- 7) For the Action, select the desired ON/OFF Type from the drop down menu.
- 8) Select the “ON FUNCTION” and “ON DATA”. This is the function that will execute each time the Source Event turns on.
- 9) Select the “OFF FUNCTION” and “OFF DATA”. This is the function that will execute each time the Source Event turns off. If the function is controlled by more than one Source Event, all Source Events must turn off before the OFF FUNCTION will execute.
- 10) Click on SAVE and EXIT to save the entry and exit to the previous page.
- 11) Click on SAVE and Add to save the entry and continue to add events, or click

on DONE to exit without saving.

Note: Duplicate events are not permitted in the table. If an added row is a duplicate of an existing row, the new row will not be added to the table.

EDIT A ROW IN THE EVENT MONITORING TABLE

- 1) Click on the “Event Monitoring” link at the top of the page. The Event Monitor Table will be displayed.
- 2) To edit the Events portion of the Event Monitoring Table, click on the Edit Events link at the top of the page. To edit the Actions portion of the Event Monitoring Table, click on the Edit Actions link.
- 3) Using the check boxes on the left hand side, check the desired rows to be edited, or check the All box to select all rows.

NOTE: While editing Actions, only a single line may be selected.

- You have selected "Edit Events".
- Click the "All" box to edit all rows OR click the desired row(s) to edit.
- **Warning:** Events in **Pending** State will not be processed! Click [here](#) to enable.

Edit Event in Event Monitoring Table

All <input type="checkbox"/>	Status	Source IP	Source Event Label	On Data	ON Function	Off Data	OFF Function
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_2	2:GPO_2	Turn On GPO	2:GPO_2	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_3	3:GPO_3	Turn On GPO	3:GPO_3	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_4	4:GPO_4	Turn On GPO	4:GPO_4	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_5	5:GPO_5	Turn On GPO	5:GPO_5	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_6	6:GPO_6	Turn On GPO	6:GPO_6	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_7	7:GPO_7	Turn On GPO	7:GPO_7	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_8	8:GPO_8	Turn On GPO	8:GPO_8	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_9	9:GPO_9	Turn On GPO	9:GPO_9	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_10	10:GPO_10	Turn On GPO	10:GPO_10	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_11	11:GPO_11	Turn On GPO	11:GPO_11	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_12	12:GPO_12	Turn On GPO	12:GPO_12	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_13	13:GPO_13	Turn On GPO	13:GPO_13	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_14	14:GPO_14	Turn On GPO	14:GPO_14	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_15	15:GPO_15	Turn On GPO	15:GPO_15	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_16	16:GPO_16	Turn On GPO	16:GPO_16	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_17	17:GPO_17	Turn On GPO	17:GPO_17	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_18	18:GPO_18	Turn On GPO	18:GPO_18	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_19	19:GPO_19	Turn On GPO	19:GPO_19	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_20	20:GPO_20	Turn On GPO	20:GPO_20	Turn Off GPO

- 4) Click on "EDIT" at the top or bottom of the table, or click on "BACK" to return to the previous page.
- 5) For each selected row, make the desired changes using the displayed pull down menus.
- 6) Once all changes have been made, click on the Save button to save the changes, or click on Cancel to exit without saving.

Note: Duplicate events are not permitted in the table. If an edited row is a duplicate of an existing row, the edited row will be restored with its original data.

DELETE A ROW IN THE EVENT MONITORING TABLE

- 1) Using the web browser:
- 2) Click on the "Event Monitoring" link at the top of the page. The Event Monitor Table will be displayed.
- 3) Click on "Delete ... Channel Event". The row selection page will be displayed.

- You have selected "Edit Events".
- Click the "All" box to edit all rows OR click the desired row(s) to edit.
- **Warning:** Events in **Pending** State will not be processed! Click [here](#) to enable.

Edit Event in Event Monitoring Table

All <input type="checkbox"/>	Status	Source IP	Source Event Label	On Data	ON Function	Off Data	OFF Function
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_2	2:GPO_2	Turn On GPO	2:GPO_2	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_3	3:GPO_3	Turn On GPO	3:GPO_3	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_4	4:GPO_4	Turn On GPO	4:GPO_4	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_5	5:GPO_5	Turn On GPO	5:GPO_5	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_6	6:GPO_6	Turn On GPO	6:GPO_6	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_7	7:GPO_7	Turn On GPO	7:GPO_7	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_8	8:GPO_8	Turn On GPO	8:GPO_8	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_9	9:GPO_9	Turn On GPO	9:GPO_9	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_10	10:GPO_10	Turn On GPO	10:GPO_10	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_11	11:GPO_11	Turn On GPO	11:GPO_11	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_12	12:GPO_12	Turn On GPO	12:GPO_12	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_13	13:GPO_13	Turn On GPO	13:GPO_13	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_14	14:GPO_14	Turn On GPO	14:GPO_14	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_15	15:GPO_15	Turn On GPO	15:GPO_15	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_16	16:GPO_16	Turn On GPO	16:GPO_16	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_17	17:GPO_17	Turn On GPO	17:GPO_17	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_18	18:GPO_18	Turn On GPO	18:GPO_18	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_19	19:GPO_19	Turn On GPO	19:GPO_19	Turn Off GPO
<input type="checkbox"/>	Enabled	0.0.0.0	GPI_20	20:GPO_20	Turn On GPO	20:GPO_20	Turn Off GPO

- 4) Using the check boxes on the left hand side, check the desired rows to be deleted, or check the All box to select all rows.
- 5) Click on "DELETE" at the bottom of the table.
- 6) A confirmation page will be displayed. Click on "DELETE" at the bottom of the page to delete the selected rows, or click on "CANCEL" to return to the previous page without deleting.

DIAGNOSTICS

The diagnostics menu can be found under the “System” menu tab.

VTR Control and Channel Status: The VTR control and Channel Status diagnostics page allows a user to have “PLAY”, “STOP” and “REWIND” functionality over a configured VTR channel.

VTR Control and Channel Status Diagnostics

VTR Control			
Channel 1	Channel 2	Channel 3	Channel 4
Play	Play	Play	Play
Stop	Stop	Stop	Stop
Rewind	Rewind	Rewind	Rewind

Channel Status			
Channel 1	Channel 2	Channel 3	Channel 4
Stop N/A	No Comm With Device No Comm With Device	No Comm With Device No Comm With Device	No Comm With Device No Comm With Device
Click here to refresh status			

GPO Control: The GPO control page allow a user to manually turn ON or OFF a specific GPO.

Control GPOs :

GPO#	Label	Current State	Change To:
1	GPO_1	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
2	GPO_2	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
3	GPO_3	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
4	GPO_4	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
5	GPO_5	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
6	GPO_6	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
7	GPO_7	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
8	GPO_8	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
9	GPO_9	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
10	GPO_10	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF

Generate Test GPI's: The GPI control page allow a user to manually turn ON or OFF a specific GPI.

Generate Test GPIs

GPI/O #	GPI Label	GPI State	GPO State	Change GPI To:
1	GPI_1	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
2	GPI_2	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
3	GPI_3	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
4	GPI_4	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
5	GPI_5	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
6	GPI_6	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
7	GPI_7	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
8	GPI_8	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
9	GPI_9	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
10	GPI_10	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
11	GPI_11	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
12	GPI_12	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
13	GPI_13	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
14	GPI_14	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
15	GPI_15	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
16	GPI_16	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF
17	GPI_17	OFF	OFF	<input checked="" type="radio"/> No Change <input type="radio"/> ON <input type="radio"/> OFF

IP Diagnostic: The IP Diagnostics page allow a user to ping a remote device for connectivity.

IP Diagnostic

Check All <input type="checkbox"/>	Source IP Address
<input checked="" type="checkbox"/>	192.168.10.93
<input type="checkbox"/>	

Combinatorial Diagnostics: The Combinatorial Diagnostics page reviews each combinatorial line as well as each component of the combinatorial equation.

Combinatorial Event Diagnostics

Event Label	Event State	Registration State	Used ?	Subevent Label	Type	Subevent State	Subevent Registration State	Defined Locally?
CE_TEST	Not in use	Not in use	Not in use	GPI_1	Primary	OFF	REGISTERED	Defined
				GPI_2	Primary	NOT PROCESSED YET	NOT IN USE	Defined
CE_TEST1	Not in use	Not in use	Not in use	GPI_1	Primary	OFF	REGISTERED	Defined
				GPI_3	Primary	NOT PROCESSED YET	NOT IN USE	Defined
CE_TEST2	Not in use	Not in use	Not in use	GPI_1	Primary	OFF	REGISTERED	Defined
				GPI_4	Primary	NOT PROCESSED YET	NOT IN USE	Defined

SELFTEST: The self-test page allows a user to put the panel in self-test mode. Self-test will need loop back connectors in order to show a "PASS".

SPECIFICATIONS

Power: 100 VAC - 240 VAC power supply, Phihong PSAA60M, supplied with IEC connector

Size: 1RU: 1 3/4 inch x 19 inch x 8 1/2 inch (H.W.D.)

Weight: 7 lbs

Front Panel Display: 2 line x 16 character

Front Panel Keyboard: 8 keys with LEDs

E - Net #1: RJ45 Connector

E - Net #2: RJ45 Connector (Not Used)

LTC Input: 3-pin Phoenix Connector

Pin-out for Balanced LTC:

Pin 1 = LTC HI

Pin 2 = LTC LOW

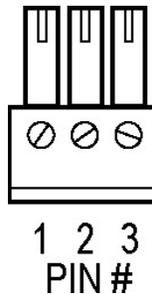
Pin 3 = Common/Shield

Pin-out for Unbalanced LTC:

Pin 1 = LTC HI

Pin 2 = Tie to Pin 3

Pin 3 = Shield



REF Video: BNC Connector, Female (Not Used)

Power Connector: 2-Pin Male (CPC Connector)

Pin #	Function
1	Not Connected
2	+15-28V
3	Ground
4	Not Connected

Diagnostic Port: 9-Pin Female (D9F)

Pin #	Function	Pin #	Function
1	DCD	6	DSR
2	Rxd	7	RTS
3	Txd	8	CTS
4	DTR	9	RI
5	Ground		

Serial Port 1, 2, 3, 4: 9-Pin Female (D9F)

Pin #	Function	Pin #	Function
1	Frame Ground	6	Transmit Common
2	Receive A (-)	7	Receive B (+)
3	Transmit B (+)	8	Transmit A (-)
4	Receive Common	9	Frame Ground
5	Spare		

GPIO CONNECTORS: GPI 1 - 16, GPI 17 - 32, GPO 1 - 16, GPO 17 - 32: 4 x 37-Pin Female (D37F)

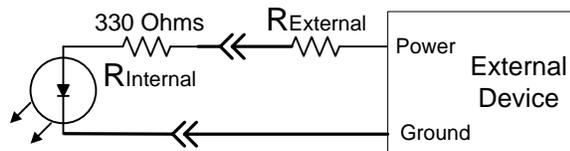
GPI: Opto Isolated Input. GPI source must provide power to turn on opto-isolator.

GPI Opto-isolator Input:

5V - 12 V input voltage

24V use external resistor = 680 - 820 ohm

20ma MAXIMUM CURRENT



Specification for GPI input:

1. Voltage: (Internal resistor only)

+3.3V minimum

+5V typical

+6V maximum

2. Current: (Internal resistor only)

5mA minimum

10mA typical

15mA maximum

For typical 10mA current, if external voltage is higher than +5V, a series resistor is required:

$$R_{ext} = (V_{ext} - 4.5) / 0.01$$

$$V_{ext} = +9V \Rightarrow R_{ext} = 450 \text{ Ohms}$$

$$V_{ext} = +12V \Rightarrow R_{ext} = 750 \text{ Ohms}$$

$$V_{ext} = +24V \Rightarrow R_{ext} = 1950 \text{ Ohms}$$

GPO: Relay Contact Closure Output. "Dry" contact closure.

GPO Relay Contacts:

0.5 A @ 125VAC

1.0 A @ 24VDC

1.0 A MAXIMUM CURRENT

GPI CONNECTOR PINOUT

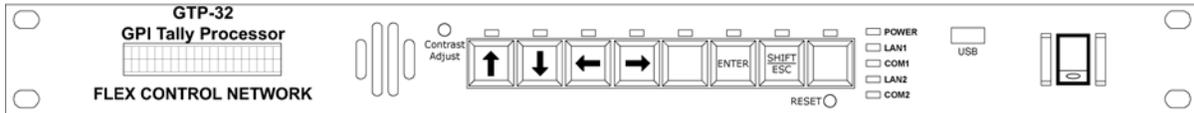
Pin #	Function	Pin #	Function
1	Ground	20	Ground
2	GPI #1 Anode (+)	21	GPI #1 Cathode (-)
3	GPI #2 Anode (+)	22	GPI #2 Cathode (-)
4	GPI #3 Anode (+)	23	GPI #3 Cathode (-)
5	GPI #4 Anode (+)	24	GPI #4 Cathode (-)
6	GPI #5 Anode (+)	25	GPI #5 Cathode (-)
7	GPI #6 Anode (+)	26	GPI #6 Cathode (-)
8	GPI #7 Anode (+)	27	GPI #7 Cathode (-)
9	GPI #8 Anode (+)	28	GPI #8 Cathode (-)
10	Ground	29	Ground
11	GPI #9 Anode (+)	30	GPI #9 Cathode (-)
12	GPI #10 Anode (+)	31	GPI #10 Cathode (-)
13	GPI #11 Anode (+)	32	GPI #11 Cathode (-)
14	GPI #12 Anode (+)	33	GPI #12 Cathode (-)
15	GPI #13 Anode (+)	34	GPI #13 Cathode (-)
16	GPI #14 Anode (+)	35	GPI #14 Cathode (-)
17	GPI #15 Anode (+)	36	GPI #15 Cathode (-)
18	GPI #16 Anode (+)	37	GPI #16 Cathode (-)
19	Ground		

GPO CONNECTOR PINOUT

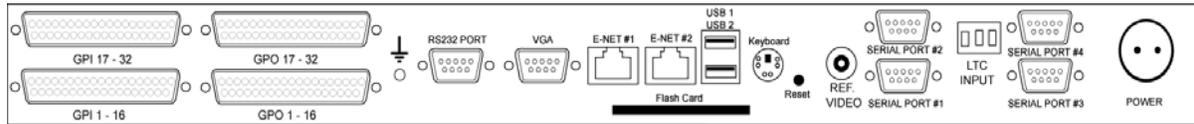
Pin #	Function	Pin #	Function
1	Common Bus	20	Ground
2	GPO #1 N.O	21	GPO #1 Relay Common
3	GPO #2 N.O	22	GPO #2 Relay Common
4	GPO #3 N.O	23	GPO #3 Relay Common
5	GPO #4 N.O	24	GPO #4 Relay Common
6	GPO #5 N.O	25	GPO #5 Relay Common
7	GPO #6 N.O	26	GPO #6 Relay Common
8	GPO #7 N.O	27	GPO #7 Relay Common
9	GPO #8 N.O	28	GPO #8 Relay Common
10	Common Bus	29	Ground
11	GPO #9 N.O	30	GPO #9 Relay Common
12	GPO #10 N.O	31	GPO #10 Relay Common
13	GPO #11 N.O	32	GPO #11 Relay Common
14	GPO #12 N.O	33	GPO #12 Relay Common
15	GPO #13 N.O	34	GPO #13 Relay Common
16	GPO #14 N.O	35	GPO #14 Relay Common
17	GPO #15 N.O	36	GPO #15 Relay Common
18	GPO #16 N.O	37	GPO #16 Relay Common
19	Common Bus		

FRONT & REAR VIEWS

Front View



Rear View

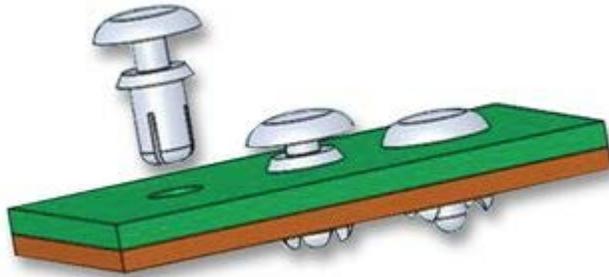


CONFIGURE GPIS FOR DRY/WET OPERATION

GPIs are set to Dry operation by default. The GPIs may be set for Wet mode using either a GTP-32 Breakout Panel or using jumpers within the GTP-32. To configure the jumpers inside the GTP-32:

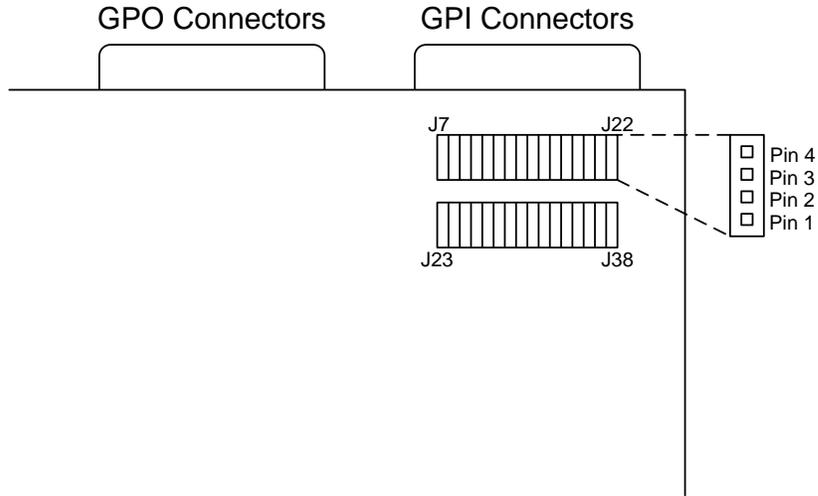
- 1) Power down the GTP-32.
- 2) Using a Phillips screwdriver, remove the top cover from the GTP-32. To do so, you will need to remove the screws from each side of the unit, 2 from the rear, and 1 from the center of the front of the unit.

For SN# 502207 and above the front panel screw has been replaced with a push rivet.



Click-Lock Shank—Place in the hole and press the head. When you hear a snap, the shaft has expanded and the rivet is secured. Pry to remove.

- 3) The GPIO card is on the far right hand side of the unit (if facing the front panel), behind the GPIO connectors.
- 4) The jumpers for the GPIs are directly behind the GPI connectors, labeled J7 through J38. Each set of jumpers for a GPI consists of 4 pins. See the table below for which GPI corresponds to which jumpers.



- 5) For Dry operation, set one jumper across pins 2 and 3. Hang the second jumper off of pin 1.
- 6) For Wet operation, set one jumper across pin 1 and 2. Set the second jumper across pins 3 and 4.
- 7) Once all necessary changes to the jumpers have been made, replace the top cover and screws on the GTP-32.

GPI	Jumper
1	J7
2	J8
3	J9
4	J10
5	J11
6	J12
7	J13
8	J14
9	J15
10	J16
11	J17
12	J18
13	J19
14	J20
15	J21
16	J22

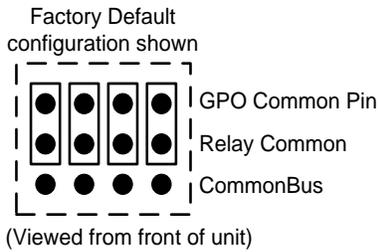
GPI	Jumper
17	J23
18	J24
19	J25
20	J26
21	J27
22	J28
23	J29
24	J30
25	J31
26	J32
27	J33
28	J34
29	J35
30	J36
31	J37
32	J38

CONFIGURE GPOS FOR DRY/WET OPERATION

NOTE: Signal connected to Common Bus is isolated from GTP/DC electronics & power supply.

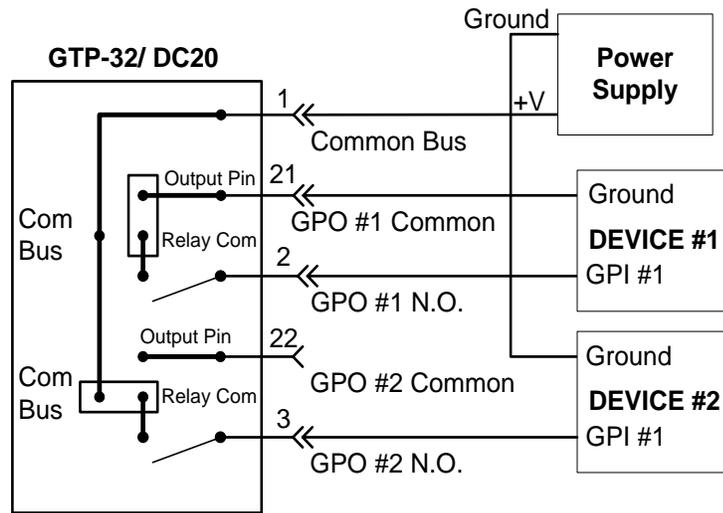
NOTE:

GPO Jumpers located inside GTP-32

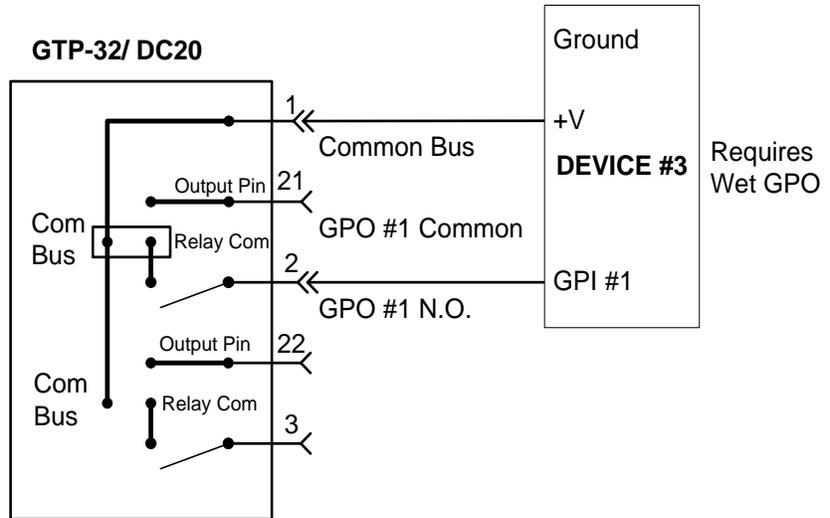


JUMPER	GPO
J40	1
J41	2
J42	3
J43	4
J44	5
J45	6
J46	7
J47	8
J48	9
J49	10
J50	11
J51	12
J52	13
J53	14
J54	15
J55	16
J56	17
J57	18
J58	19
J59	20
J60	21
J61	22
J62	23
J63	24
J64	25
J65	26
J66	27
J67	28
J68	29
J69	30
J70	31
J71	32

EXAMPLE #1- External Power Supply to wet GPOs



EXAMPLE #2- Device supplied power to wet GPOs



LIMITED WARRANTY

DNF Controls warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from DNF Controls.

In order to enforce the rights under this warranty, the customer must first contact DNF's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If DNF's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to DNF Controls with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

DNF Controls
19770 Bahama St.
Northridge, CA 91324
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

DNF Controls, at its option, will repair or replace the defective unit. DNF Controls will return the unit prepaid to the customer. The method of shipment is at the discretion of DNF Controls, principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning or other acts of God damaged the product. All repair parts are to be supplied by DNF Controls, either directly or through its authorized dealer network. Similarly, any repair work not performed by either DNF Controls or its authorized dealer may void the warranty.

After the warranty period has expired, DNF Controls offers repair services. Equipment is evaluated and repair price quoted prior to any work performed. DNF Controls reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

DNF Controls shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.