USP3
User Manual

Table of Contents

Overview

When you need to push a button, but it doesn't have any!

***Tactile – Fast – Easy – Dependable* CONTROL**

The **Universal Switch Panel (USP3)** makes it easy to add tactile push buttons where and when you need them:

- ✓ *8 and 16 Push Buttons*
- ✓ *Tabletop & Rackmount*
- ✓ *RS232/RS422 serial port*
- ✓ *Fast Ethernet (100 BASE-T Full Duplex)*

Use the USP3 when you need to:

- *Control a GPI Output and status a GPI Input*
- *Transmit Ethernet TCP / UDP/ SNMP / HTTP messages and status responses.*
- *Receive Serial or Ethernet data to turn on/off a GPI Output.*
- *Transmit Serial messages and status responses. Receive specific Serial data and then transmit an Ethernet or SNMP notification*
- *Trigger a simple or complex sequence of actions from a Keypress or Source event: GPI Outputs, Serial & Ethernet messages*
- *Periodically send a heartbeat message: "I'm alive!"*
- *Use a Watchdog timer to transmit an SNMP notification after a time period of no heartbeats.*
- *Monitor SNMP Traps and turn on GPI Outputs (GPO)*
- *Control Flex Control Network devices, Tally them and more…*

The Universal Switch Panel (USP3) is a panel of generic switches designed to emulate the operation of mechanical switches. The mechanical switch feel is provided by the USP3's front panel switch. The mechanical switch's contact closure is provided by the USP3's general purpose outputs (GPO). The mechanical switch's internal tally indicator is provided by the USP3 switch's backlight.

Unlike mechanical switches, the operating mode of the front panel switches, GPO contact closures, and tally can be easily configured by the user for their specific application. Additionally, a switch on the Universal Switch Panel (USP3) can be configured to control Actions on another USP, GTP, IP Buddy or AIB as well as tally sources off remote USP's, GTP's, IP Buddy's or AIB's.

GETTING STARTED....

1. Go to Installation Section to install the USP3.
2. Go to System Configuration Section to set static IP address, Subnet Mask, and Gateway address.
3. Go to Remote Device Assignment Section to enter IP addresses for remote devices that USP3 will communicate with.
4. Go to System Configuration section to set default settings.

EQUIPMENT LIST

Qty	Component	Part Number
1	USP3 Switch Panel	USP3-8, USP3-8D, USP3-16
1	USP3 Power Supply	Included
1	USP3 Power Cord	Included
4	DB37 Cables	Included based on Kit
4	DB25 Cables	Included based on Kit

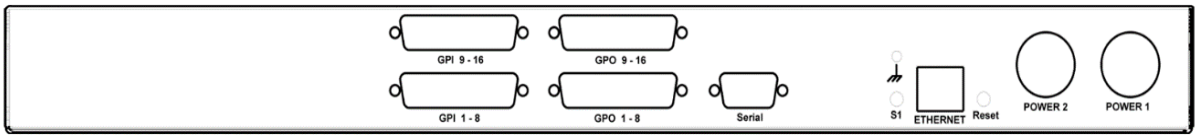
VERSION HISTORY

Issue	Date	Change Details
1	03/21/20	First Issue

Installation

1. Connect supplied power supply to POWER 1 connector. For redundant power option, connect power supplies to POWER 1 and POWER 2 connectors.

2. Connect Ethernet cable to ETHERNET connector.



DEFAULT ETHERNET CONFIGURATION
IP Address: 192.168.10.217
Subnet Mask: 255.255.255.0
Gateway: 192.168.10.1

The USP3 is configured using a standard web browser (Safari, Firefox, and Chrome). Enter the USP3's IP address in the Address/ URL bar, typically located at the top of the web browser page, to access the Home Page. Use the links on the left side of the Home Page to access the desired configuration web pages.

All configuration settings are saved in non-volatile memory in the USP3. Settings are retained when power is removed.

Settings may be uploaded to a computer as a configuration file (.dnf) for storage. Configuration files may be downloaded from a computer into the USP3 to restore a saved configuration. A configuration file contains all of the USP3's configurations except IP address, subnet mask, and gateway address. The USP3 does not support partial configuration upload or download. The configuration file is a not a text formatted file. It cannot be viewed or modified with a text editor.

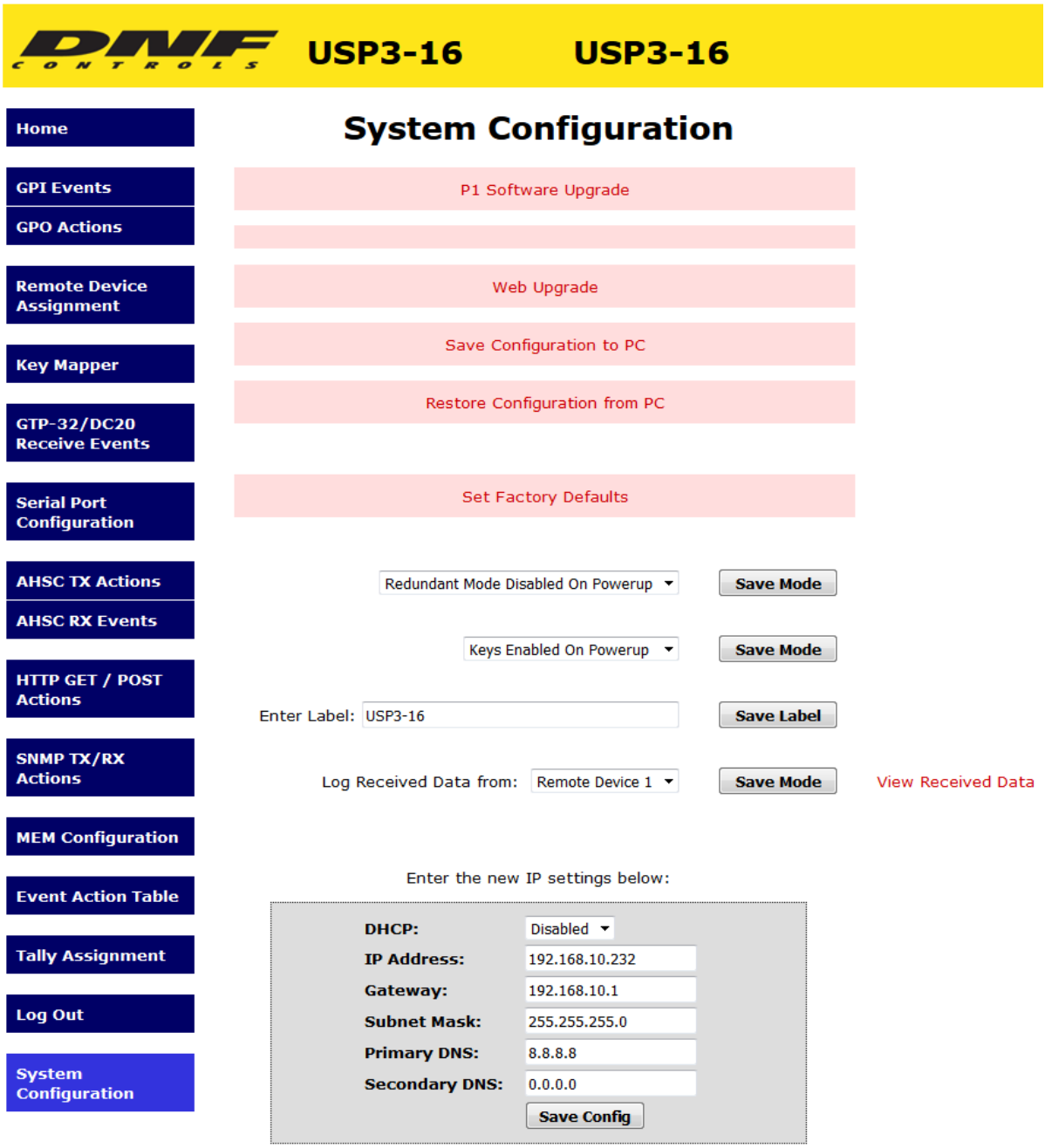
To access the System Configuration web page, use the following log-on when prompted:

USERNAME: dnfuser
PASSWORD: controls

System Configuration

The System Configuration page is used to configure the network settings for the USP3. Additionally, this page is used to install firmware upgrades, SAVE/RESTORE configuration files, set NTP time, manage/view logs and set factory defaults for the USP3-TSA panel:

The default IP address is: 192.168.10.217
The default Gateway is: 192.168.10.1
The default Subnet Mask is: 255.255.255.0



PARAMETER	DESCRIPTION
P1 Software Upgrade:	Use this link to install the P1 upgrade file provided by DNF Controls
Web Upgrade:	Use this link to install the Web pages upgrade file provided by DNF Controls
Save Configuration to PC:	Use this link to save the USP3's current configuration to a configuration file on a computer. The web browser will prompt for file name and directory. The file extension must be 'dnf'.
Restore Configuration from PC:	Use this link to download a configuration file from your computer to the USP3. The web browser will prompt for directory and configuration file name. The file extension must be 'dnf'.
Set Factory Defaults:	Use this link to reset all USP3 configuration settings to factory defaults. This will NOT change the IP address, subnet mask or gateway address. The USP3 will automatically reboot.
Redundant Mode on Powerup:	Use this dropdown to set the Redundant Mode on Powerup. If set to "Enabled" the USP will boot up with redundant mode enabled upon powerup. If set to "Disabled" the USP will boot up with redundant mode disabled upon powerup.
Key Mode on Powerup:	Use this dropdown to set the Key Mode on Powerup. If set to "Enabled" the USP will boot up with its keys enabled upon powerup. If set to "Disabled" the USP will boot up with its keys disabled upon powerup.
Enter Label:	Enter label to be displayed on top right of all web pages
Log received data from:	Use this dropdown to set the remote device that the USP will log received data from. After the remote device has been selected, select the "View Received Data" to enter the log page (See below).
Enter the new IP settings below:	DHCP ENABLED/DISABLED: Use this dropdown to enable or disable DHCP. Enter the new IP address, Gateway, Subnet Mask Primary DNS and Secondary DNS. Click on Save Config to save the new entries. The USP3 will automatically reboot.

View Received Data

The USP3 View Received Data link under the System Maintenance page monitors all incoming data from the selected remote device. Use the Refresh link to view incoming data as it is received. Use the Clear Log link to clear the log data.

!!NOTE!! View Received Data page does not auto-refresh and does not generate a log file.

VIEW RECEIVED DATA

Remote Device IP: 192.168.10.235
Remote Device Source Port: 161
Remote Device Destination Port: 161

Refresh CLEAR LOG

Remote Device: 1

Current Address: 0xA00100DC

Address:	00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F	
A000FF30	00 00 00 00 30 30 02 01 00 04 06 70 75 62 6C 69	. . . . 0 0 . . . . . p u b l i
A000FF40	63 A2 23 02 04 00 00 00 01 02 01 00 02 01 00 30	c . # 0
A000FF50	15 30 13 06 0B 2B 06 01 04 01 81 A8 25 08 01 00	. 0 . . . + ... % . . .
A000FF60	04 04 45 63 68 6F 30 36 02 01 00 04 06 70 75 62	. . E c h o 0 6 . . . . . p u b
A000FF70	6C 69 63 A3 29 02 01 FF 02 01 00 02 01 00 30 1E	l i c .) . . . . . 0 .
A000FF80	30 1C 06 0B 2B 06 01 04 01 81 A8 25 07 01 00 04	0 . . . + ... % . . . .
A000FF90	0D 55 52 5F 55 73 65 72 52 65 67 31 3A 32 30 30	. U R _ U s e r R e g 1 : 2 0 0
A000FFA0	02 01 00 04 06 70 75 62 6C 69 63 A2 23 02 04 00	. . . . . p u b l i c . # . . .
A000FFB0	00 00 02 02 01 00 02 01 00 30 15 30 13 06 0B 2B	. . . . . 0 . 0 . . . +
A000FFC0	06 01 04 01 81 A8 25 08 01 00 04 04 45 63 68 6F	. . . . . % . . . . . E c h o
A000FFD0	30 36 02 01 00 04 06 70 75 62 6C 69 63 A3 29 02	0 6 . . . . . p u b l i c .) .
A000FFE0	01 FF 02 01 00 02 01 00 30 1E 30 1C 06 0B 2B 06	. . . . . 0 . 0 . . . + .
A000FFF0	01 04 01 81 A8 25 07 01 00 04 0D 55 52 5F 55 73	. . . . . % . . . . . U R _ U s
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A0010010	75 62 6C 69 63 A2 23 02 04 00 00 00 03 02 01 00	u b l i c . # . . . . .
A0010020	02 01 00 30 15 30 13 06 0B 2B 06 01 04 01 81 A8	. . . 0 . 0 . . . + ...
A0010030	25 08 01 00 04 04 45 63 68 6F 30 36 02 01 00 04	% . . . . . E c h o 0 6 . . . .
A0010040	06 70 75 62 6C 69 63 A3 29 02 01 FF 02 01 00 02	. p u b l i c .) . . . . .
A0010050	01 00 30 1E 30 1C 06 0B 2B 06 01 04 01 81 A8 25	. . 0 . 0 . . . + ... %
A0010060	07 01 00 04 0D 55 52 5F 55 73 65 72 52 65 67 31	. . . . . U R _ U s e r R e g 1
A0010070	3A 32 30 30 02 01 00 04 06 70 75 62 6C 69 63 A2	: 2 0 0 . . . . . p u b l i c .
A0010080	23 02 04 00 00 00 04 02 01 00 02 01 00 30 15 30	# . . . . . 0 . 0
A0010090	13 06 0B 2B 06 01 04 01 81 A8 25 08 01 00 04 04	. . . + ... % . . . . .
A00100A0	45 63 68 6F 30 36 02 01 00 04 06 70 75 62 6C 69	E c h o 0 6 . . . . . p u b l i
A00100B0	63 A3 29 02 01 FF 02 01 00 02 01 00 30 1E 30 1C	c .) . . . . . 0 . 0 .
A00100C0	06 0B 2B 06 01 04 01 81 A8 25 07 01 00 04 0D 55	. . + ... % . . . . . U
A00100D0	52 5F 55 73 65 72 52 65 67 31 3A 32 00 00 00 00	R _ U s e r R e g 1 : 2 . . . .
A00100E0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	. . . . .

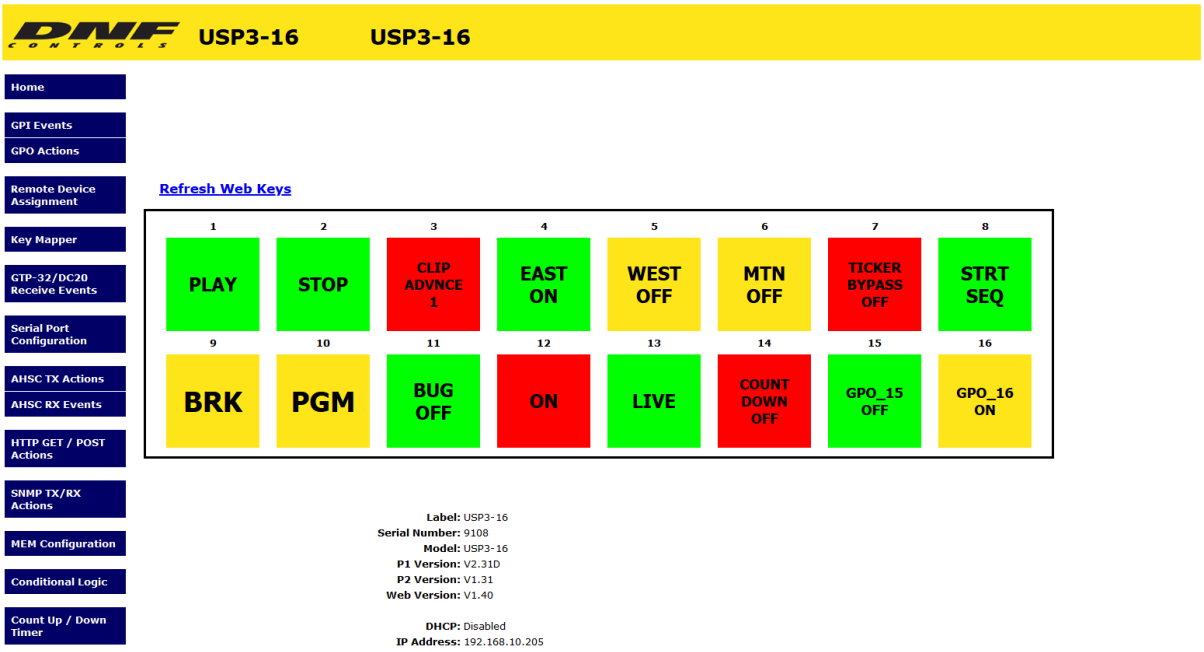
Web Keys

“USP3 Web Keys” when operators cannot physically press the USP3 buttons.

USP3 Web Keys are virtual buttons, on the USP3 Home web page, designed to emulate the operation of the USP3’s mechanical switches. Each Web key tallies the same Tally Source as its physical key without requiring any change to the USP3 configuration. Click on the web key to “press” the button and provide the same Momentary control function as the physical switch.
There is one Web Key displayed for each physical key. Both USP3 Web Keys and the USP3 hardware front panel can be used for control and tally simultaneously.

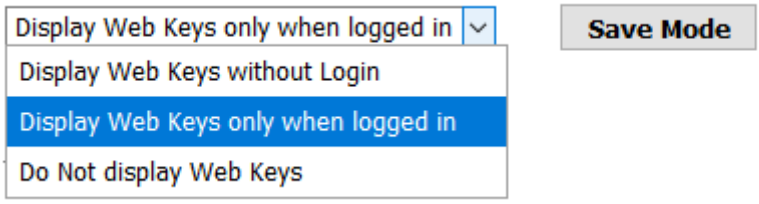
WEB KEY INSTALLATION

The Web Keys are fully operational, controlling and tallying the same as the physical keys by default in the current software. If Web Key or Web Key settings are not visible, please reach out to TSL support for a software update. Go to the System Configuration web page to configure when they are visible.



SYSTEM CONFIGURATION PAGE

1. Navigate to the SYSTEM CONFIGURATION page and locate the dropdown shown below.



Display Web Keys without login – The Web Keys are visible without requiring login to the USP3.

Display Web Keys only when logged in –The Web Keys are visible only after successful login. After logging out, the Web Keys are no longer visible.

Do not display Web Keys –The Web keys are not visible at any time.

2. Select the desired mode from the dropdown that best suites your requirements and click on "Save Mode" to save your changes. No reboot is required for the changes to take effect.

GPI Events

Use this page to configure the operation of the GPIs. If the GPIs are not used, this page may be left blank.

Home
GPI Events
GPO Actions
Remote Device Assignment
Key Mapper
GTP-32/DC20 Receive Events
Serial Port Configuration
AHSC TX Actions
AHSC RX Events
HTTP GET / POST Actions
SNMP TX/RX Actions
MEM Configuration
Event Action Table
Tally Assignment
Log Out
System Configuration

Save Refresh

GPI CONFIGURATION

GPI#	GPI Label	User Defined "ON" State	User Defined "ON" Mode	Debounce (*10 ms)	Currently
1	GPI_1	OPTO ON	Latch	1	OFF
2	GPI_2	OPTO ON	Latch	1	OFF
3	GPI_3	OPTO ON	Latch	1	OFF
4	GPI_4	OPTO ON	Latch	1	OFF
5	GPI_5	OPTO ON	Latch	1	OFF
6	GPI_6	OPTO ON	Latch	1	OFF
7	GPI_7	OPTO ON	Latch	1	OFF
8	GPI_8	OPTO ON	Latch	1	OFF
9	GPI_9	OPTO ON	Latch	1	OFF
10	GPI_10	OPTO ON	Latch	1	OFF
11	GPI_11	OPTO ON	Latch	1	OFF
12	GPI_12	OPTO ON	Latch	1	OFF
13	GPI_13	OPTO ON	Latch	1	OFF
14	GPI_14	OPTO ON	Latch	1	OFF
15	GPI_15	OPTO ON	Latch	1	OFF
16	GPI_16	OPTO ON	Latch	1	OFF

PARAMETER	DESCRIPTION
GPI Label:	Enter any 15 characters or symbols. For convenience only. Used in Event Action
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
Debounce Time:	The time period that the GPI must remain ON to be detected as ON. The selected time is multiplied by 10 milliseconds to compute the actual Debounce time.
Currently:	Current state of GPI as defined by User Defined ON State.

GPI Configuration

1. Click on the GPI EVENTS tab. The GPI Configuration page will be displayed. The USP3-16 will display 16 GPIs. The USP3-8 will display 8 GPIs.
2. Click on the drop-down arrow in each column to view the list of available options/ values. Select the desired option/ value by clicking on it.
3. Click in the User Defined ON State column and select the ON state for the GPI.
4. Click in the User Defined ON Mode column and select the operating mode for the GPI.
5. Click in the Debounce column and select the debounce time for this GPI. (The selected time is multiplied by 10 milliseconds to compute the actual Debounce time.) Debounce time is the time period that the GPI must remain on to be detected as ON.
6. Repeat steps 3 - 5 to configure each GPI.
7. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

   Click on any other page button to exit without saving changes.

GPO Actions

Use this page to configure the operation of the local GPOs. If the GPOs are not used, this page may be left blank.

Home

GPI Events

GPO Actions

Remote Device Assignment

Key Mapper

GTP-32/DC20 Receive Events

Serial Port Configuration

AHSC TX Actions

AHSC RX Events

HTTP GET / POST Actions

SNMP TX/RX Actions

MEM Configuration

Event Action Table

Tally Assignment

Log Out

System Configuration

Save

Refresh

GPO CONFIGURATION

GPO#	GPO Label	User Defined ON State	Operating Mode	Momentary On Time (*10ms)	Group	Currently
1	GPO_1	Relay Closed	Latch	1	None	OFF
2	GPO_2	Relay Closed	Latch	1	None	OFF
3	GPO_3	Relay Closed	Latch	1	None	OFF
4	GPO_4	Relay Closed	Latch	1	None	OFF
5	GPO_5	Relay Closed	Latch	1	None	OFF
6	GPO_6	Relay Closed	Latch	1	None	OFF
7	GPO_7	Relay Closed	Latch	1	None	OFF
8	GPO_8	Relay Closed	Latch	1	None	OFF
9	GPO_9	Relay Closed	Latch	1	None	OFF
10	GPO_10	Relay Closed	Latch	1	None	OFF
11	GPO_11	Relay Closed	Latch	1	None	OFF
12	GPO_12	Relay Closed	Latch	1	None	OFF
13	GPO_13	Relay Closed	Latch	1	None	OFF
14	GPO_14	Relay Closed	Latch	1	None	OFF
15	GPO_15	Relay Closed	Latch	1	None	OFF
16	GPO_16	Relay Closed	Latch	1	None	OFF

GPO OPERATING MODE

Each GPO can be configured by the user to operate according to one of the following operating modes. Only one operating mode can be assigned to a GPO at any time. The assignment of a new operating mode automatically overrides the previous operating mode assignment. All GPO configurations are done from the USP's GPO page or the USP's Event Action Table.

A) MOMENTARY OPERATION

When the controlling switch is pressed, the GPO will immediately turn on and start its ON Time timer. When the user configured time period has elapsed, the GPO will automatically turn OFF regardless of the state of the controlling switch. If the controlling switch is held pressed after the elapsed time or quickly released before the elapse time has expired, the GPO will only turn OFF when the user configured ON Time has elapsed. The controlling switch must be released and then re-pressed before the GPO will turn ON again.

B) FOLLOW/ LATCH OPERATION

When the controlling switch is pressed, the GPO will immediately turn ON. When the controlling switch is released, the GPO will immediately turn OFF. If the controlling switch is held pressed, the GPO will stay ON while the switch is being held. This operation is configured via the USP's Event Actions table.

C) TOGGLE OPERATION

When the controlling switch is pressed, the GPO will immediately change state. If the GPO was ON, it will turn OFF. If the GPO was OFF, it will turn ON. The GPO will not change state when the controlling switch is released. When the switch is released, the GPO will remain in its last state. This operation is configured via the USP's Event Actions table.

D) FLIP FLOP MODE OF OPERATION

One switch controls two GPOs. When the switch is pressed and the current status is ON, then the 2nd GPO will be turned ON and the 1st GPO will be turned OFF. When the switch is pressed and the current status is OFF, then the 1st GPO will be turned ON and the 2nd GPO will be turned OFF.

The GPOs can be configured as LATCH or MOMENTARY. The FLIP FLOP operation will be configured on a GPO by GPO basis in the Event Action Table. The FLIP FLOP operation is defined for GPOs located in the same unit, however it can be used for GPOs across multiple USP units. This operation is configured via the USP's Event Actions table (See page 12).

E) GROUP (RADIO GROUP) OPERATION

The GPO Group operates like a radio group of interlocked switches. Pressing one switch causes the other switches to automatically release. Only one switch will remain pressed at any time.

A GPO can belong to one and only one GPO Group. More than one GPO Group can exist with each group made up of other GPOs. When a GPO is assigned to a new GPO Group, it is automatically removed from its previous group.

Only one member of a GPO Group can be ON at any time. When a GPO member is turned ON, all of the other members are immediately turned off. The GPO will stay on until another member of the group is turned on. With the exception of powering on the USP, at least one GPO from the GPO group will be turned on.

F) GPO CONTROL BY SWITCH ON A REMOTE USP

The GPO can be controlled by a switch on a remote Universal Switch Panel in addition to being controlled by a switch on the same panel. The GPO will operate according to its user configured Operating Mode whenever the local or remote switch is pressed and released.

G) GPO CONTROL BY GTP-32 OR DC20 EVENT

The GPO can be controlled by a GTP-32 or DC20 event— GPI or Combinatorial. It will operate according to its user configured Operating Mode as if a local switch had been pressed or released.

H) GPO CONTROL BY ETHERNET EVENT

The GPO can be controlled by an incoming Ethernet command string/event. It will operate according to its user configured Operating Mode as if a local switch had been pressed or released.

PARAMETER	DESCRIPTION
GPO Label:	Enter any 15 characters or symbols. For convenience only, used in Event Action Table.
User Defined ON State:	**RELAY OPEN:** The relay is OPEN when the GPO is ON. The relay is CLOSED when the GPO is OFF. **RELAY CLOSED:** The relay is CLOSED when the GPO is ON. The relay is OPEN when the GPO is OFF (Factory Default).
User Defined Operating Mode:	**MOMENTARY:** The GPO turns ON, waits for the MOMENTARY ON TIME to expire, and then automatically turns OFF. **LATCH:** The GPO turns ON and stays ON. The GPO turns OFF and stays OFF.

Momentary ON Time:	For MOMENTARY operating mode only. ON duration for Momentary GPO. Drop down menu settable from 0.01 sec to 2.0 sec.
Group:	**Radio Group** RG1 – RG4: Only one GPO in a Group can be ON at a time. Before a GPO is turned ON, all the other GPOs in the group are immediately turned off. (Break before make)
Currently:	Current state of GPO as defined by User Defined ON State.

GPO Configuration

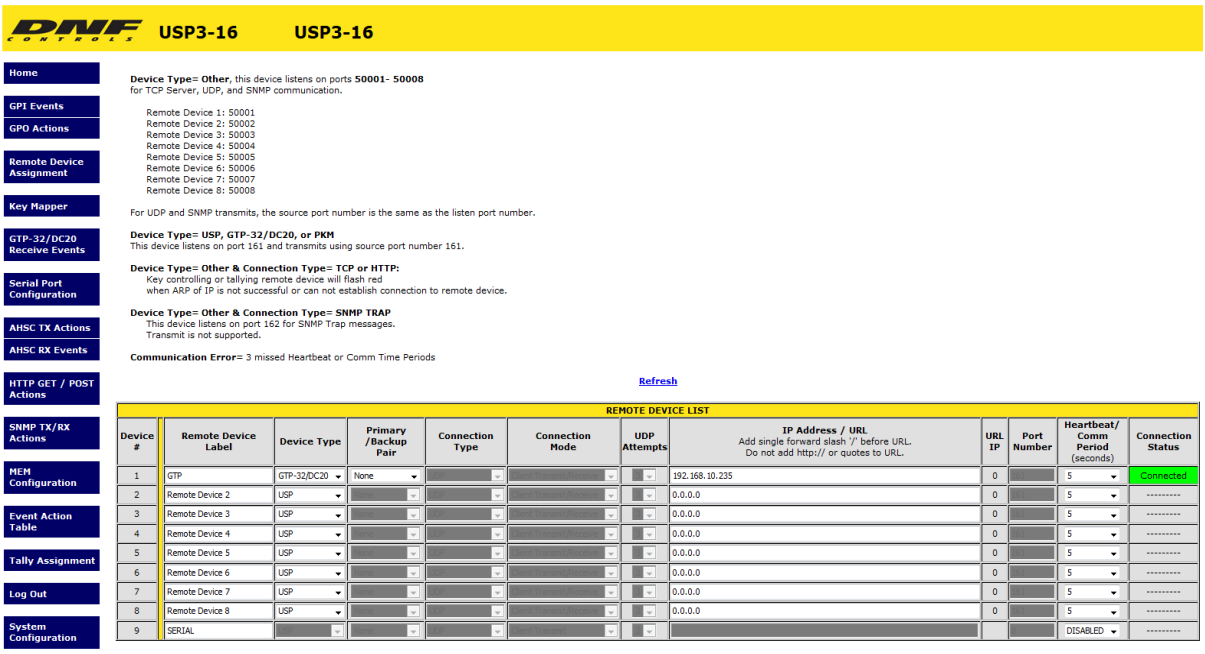
1. Click on the GPOs button. The GPO Configuration page will be displayed. The USP3-16 will display 16 GPOs. The USP3-8 will display 8 GPOs.
2. Click on the drop-down arrow in each column to view the list of available options/ values. Select the desired option/ value by clicking on it.
3. Click in the User Defined ON State column and select the desired ON state of the GPO.
4. Click in the Operating Mode column and select the operating mode for the GPO.
5. If Operation Mode= Momentary, click in the Momentary ON Time column and select the ON duration for the GPO. This is the amount of time the GPO will stay on before automatically turning OFF. (The selected time is multiplied by 10 milliseconds to compute the actual ON time.)
6. Repeat steps 3 - 5 to configure each GPO.
7. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

   Click on any other page button to exit without saving changes.

Remote Device Assignment

Use this page to identify the remote USP's, GTP-32's, AIB's, or other devices that the local USP will communicate with. If the USP3 will operate standalone, this page may be left blank.



PARAMETER	DESCRIPTION
Remote Device Label:	Enter a unique device description/ identifier, up to 32 characters in length that clearly identifies the remote device. This description/ identifier will appear in the remote device list that is used on the other configuration
Device Type:	GTP-32/DC20: Select to connect to a DNF GTP-32 or DC20/21. USP: Select to connect to other DNF Controls Universal Switch Panels and AnyWhere Interface Boxes. USP3-API: Select to connect to a 3rd party for direct control over the USP3. PKM: Use to connect to PC for Keymapper functionality. OTHER: Select to connect to a Ethernet Device.
Connection Type:	For OTHER Device Types only- Select UDP, SNMP, SNMP Trap, TCP/IP or HTTP GET/POST

Connection Mode:	***For TCP/IP Only*** Client Transmit: Establish connection to remote device. Transmit command. Disconnect from remote device. Client Transmit/Receive: Establish connection to remote device. Maintains connection to remote device. Server Receive/Transmit: Accept connection from client. Only client at assigned IP Address can connect. The client is responsible for maintaining connection. ***Server Mode only*** USP3 listens on the following ports: Port **50001** for connection from Remote Device 1 Port **50002** for connection from Remote Device 2 Port **50003** for connection from Remote Device 3 Port **50004** for connection from Remote Device 4
UDP Attempts:	***For UDP Connection Type only.*** The number of times that the message will be sent separated by 10 milliseconds. Since UDP does not provide guaranteed delivery, UDP Attempts provides more than one transmit attempt to deliver the message.
IP Address / URL:	Enter the IP address or URL for the remote device to be controlled or monitored.
URL IP:	Display the IP address associate with URL.
Port Number:	Destination port number for transmit actions Source port number for receive events. Set to '0' to receive events from any port number at remote device IP address.
Heartbeat Rate:	***For USP and GTP-32/DC20 Device Types.*** Default value is 5 seconds. Communication error is defined as loss of two consecutive heartbeats.
Connection Status:	***For USP and GTP-32/DC20 device types and TCP/IP connection types only*** Displays "Connected" in green when communicating with remote device Displays "---------"when NOT communicating with remote device or no IP address has been entered.
Save Button:	Click on Save button to save entered settings
Refresh Link:	Click on Refresh link to refresh Connection Status

Remote Device Configuration

1. Click on the Remote Device Assignment button. The Remote Device Assignment page will be displayed.
2. Click in the DEVICE Description field and enter a unique description/ identifier, up to 32 characters in length. This description/ identifier will appear in the remote device list that is used on the other configuration pages.
3. Click in the DEVICE TYPE dropdown field and select the correct device type for the remote device.
4. Click in the IP ADDRESS field and enter the IP Address for this device.
5. Click on the down arrow in the Heartbeat Rate column and select the number of seconds between heartbeats. For local LAN, use a small value. For WAN or internet use a larger value.
6. Repeat steps 2 thru 4 for each remote device that the USP will communicate with.
7. Click on the Save button to save changes. Changes will take effect immediately after saving.

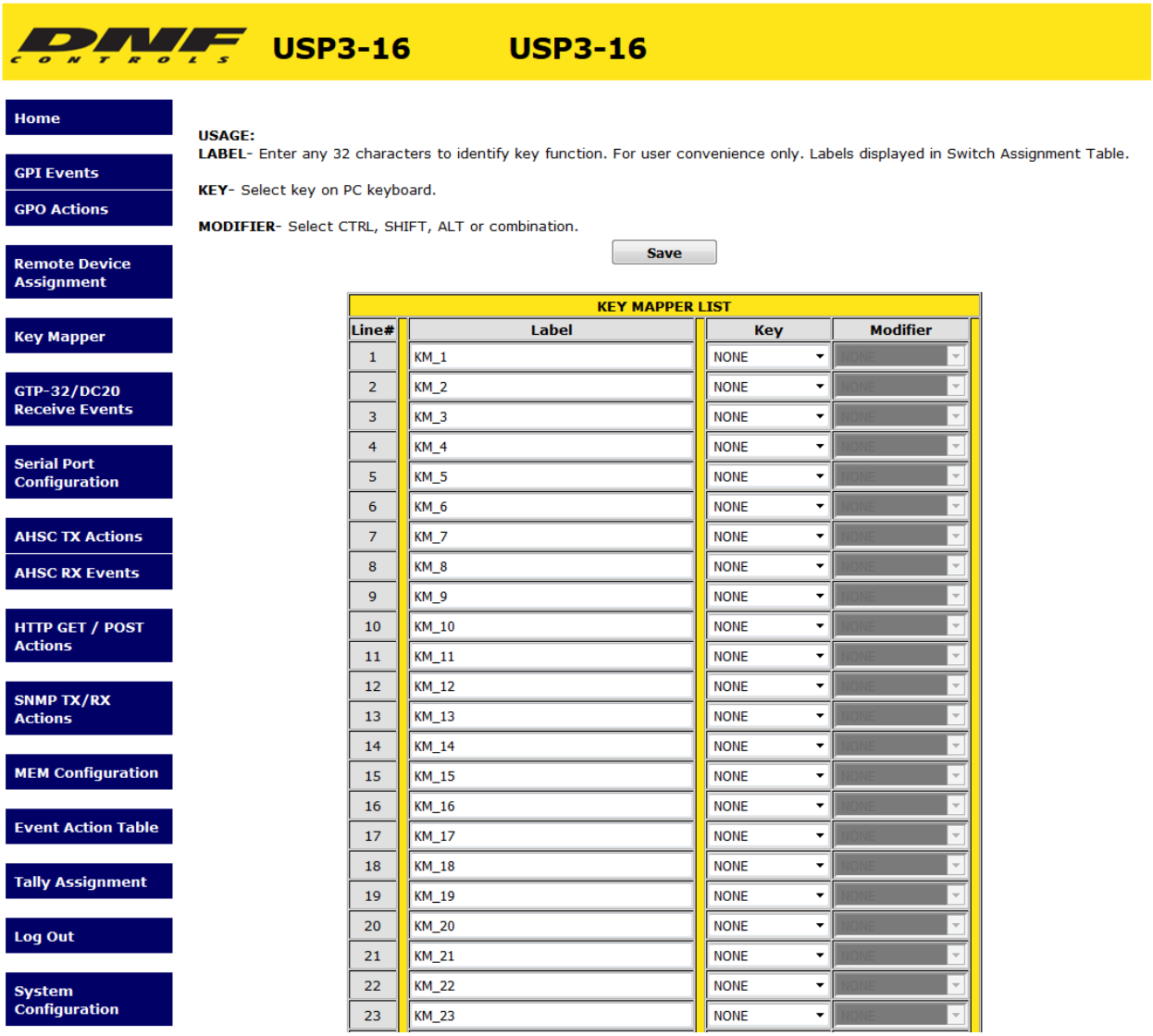
   OR,

   Click on any other page button to exit without saving changes.

NOTE - To clear a remote device assignment, set the IP address to 0.0.0.0 and delete the Device Description.

Keymapper

Use this page to configure the operation of the Key mapper functions. If the Key mapper functions are not used, this page may be left blank.



The Key Mapper function is a function that maps USP3 key presses to HOTKEYs for Editors, Graphic devices, Production Playout & Automation systems, as well as other Windows based applications.

For example, map USP3 Key: #2 to “SHIFT F3”

#10 to “CTRL SHIFT F10”

#23 to “CTRL ALT F1”

The USP3 connects to the Windows computer running Panel Key Mapper (pkm.exe) over an Ethernet connection, eliminating USB connectivity issues in mission critical applications.

When a USP key is pressed, the assigned Key Mapper List entry is transmitted to the Panel Key Mapper application, pkm.exe, running on the Microsoft Windows based remote device.

The Key Mapper List Web page contains 48 entries. Select an entry in the Key Mapper list web page to create the HOTKEY key combination used by the Editor or other Windows application. Use the Event Action Table to map a key press to one or more Key Mapper entries and to transmit the HOTKEY to a remote device. One HOTKEY can be sent to multiple remote devices.

PARAMETER	DESCRIPTION
Label:	Enter any 32 characters or symbols. For convenience only. Used in Event Action Table
Key:	Select PC Keyboard key from drop down menu
Modifier:	Select NONE or CTRL, SHIFT, ALT combination

Key Mapper Configuration

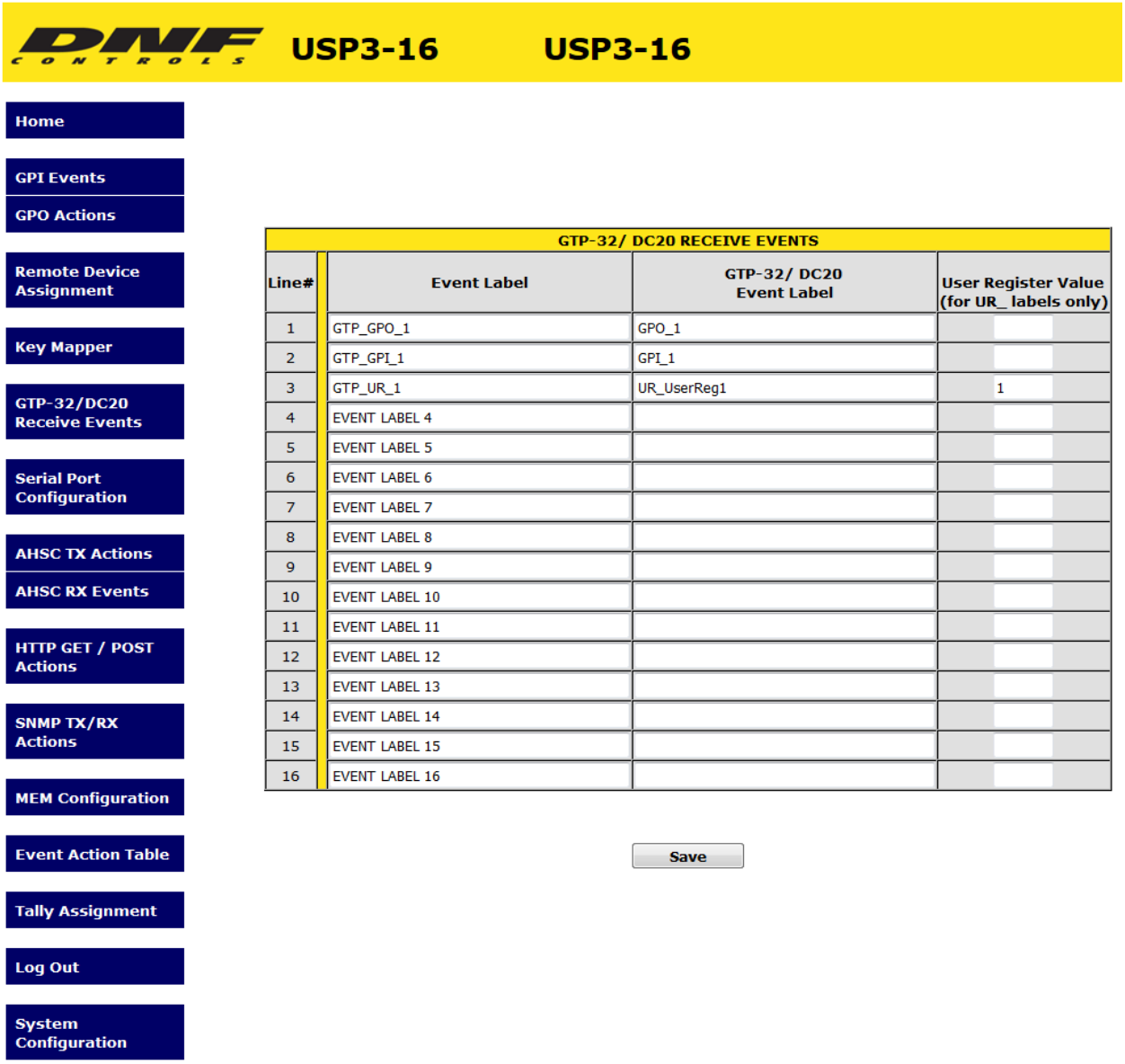
1. Click on the Key Mapper tab. The Key Mapper page will be displayed.
2. Click in the Label field and enter the desired User label.
3. Click on the drop down arrow in the KEY column to view the list of available PC Keyboard Keys. Select the desired option/ value by clicking on it.
4. Click on the drop down arrow in the MODIFIER column to view the list of available PC Keyboard Modifiers. Select the desired option/ value by clicking on it.
5. Repeat steps 2 - 4 to configure each Key Mapper list entry.
6. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

   Click on any other page button to exit without saving changes.

GTP-32 / DC20 Receive Events

Use this page to configure events coming from a GTP-32/DC20. If a GTP-32/DC20 is not used, this page may be left blank.



The GTP-32/DC20 Receive Events page allow for a GTP-32/DC20 source event or action to be configured as a local source event on a USP3. When a source event or action occurs on a GTP-32/DC20 that is configured in the remote device assignment table, the source event/action is transmitted to the Panel USP3 panel.

NOTE – The Event Notification Page of the GTP-32/DC20 must be configured properly for successful operation.

The GTP-32/DC20 Receive Events page contains 16 entries. Select an entry in the GTP-32/DC20 Receive Events page to create the GTP-32/DC20 receive event. Use the Event

Action Table to map the GTP-32/DC20 receive event to an action. One GTP-32/DC20 receive event can control multiple actions.

The GTP-32/ DC20 Receive Event type event is only displayed in the Event Action Table for Remote Devices of Device Type "GTP-32/ DC20".

PARAMETER	DESCRIPTION
Event Label:	Enter any 32 characters. This label is used in the Event Action Table.
GTP-32/ DC20 Event label:	Enter the GTP-32 or DC20 Event Label to tally. This Event Label must be listed in the GTP-32/ DC20's Event Notification Table with the IP address of this USP3. The entered Event Label must exactly match the event label in the Event Notification Table.
User Register Value:	For use with "UR_" event labels only. Enter a value '1' to '255': When the received User Register value matches the entered value, the event turns ON. **Note- '0' value is treated as an OFF state**

GTP/DC Receive Events Configuration

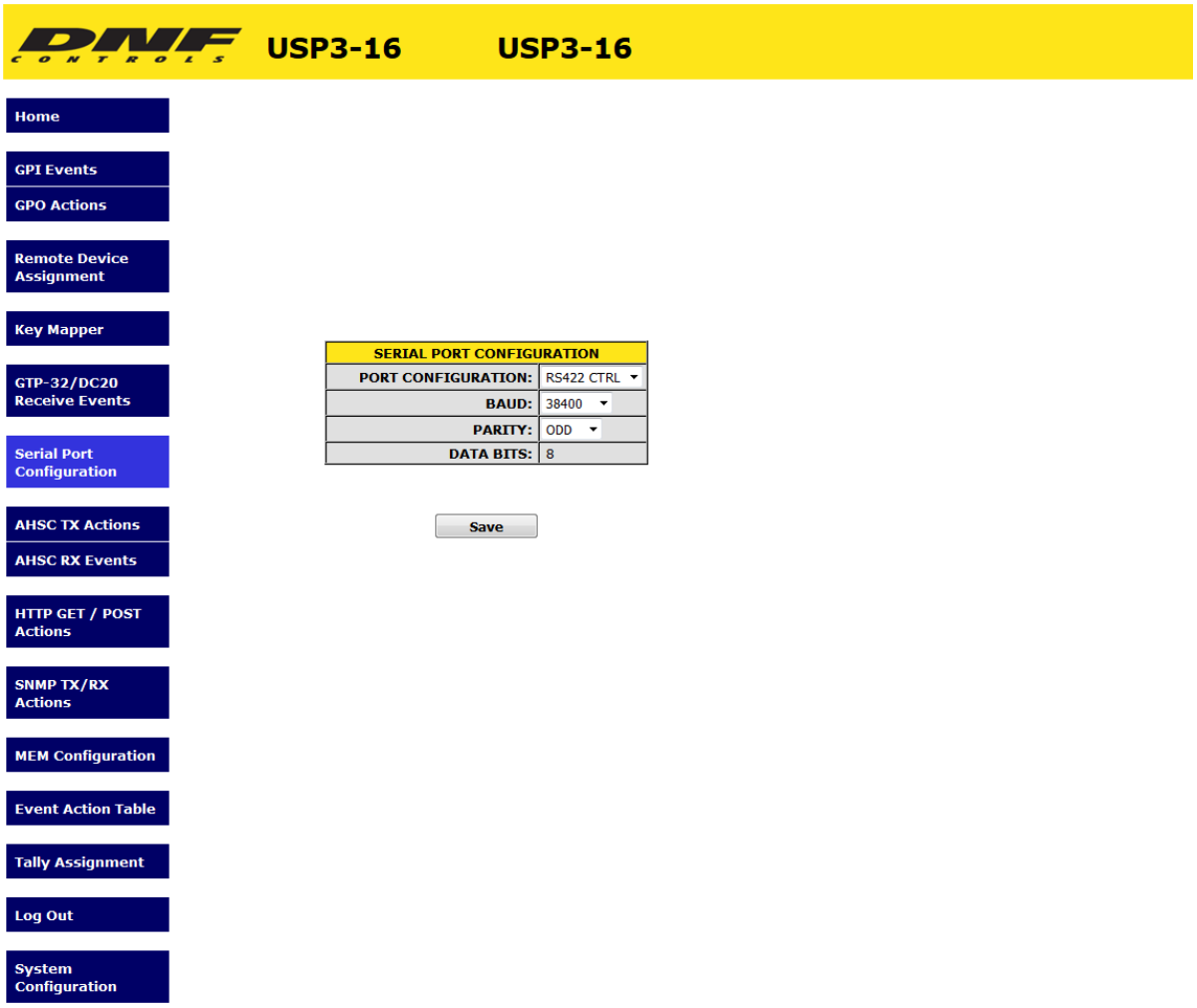
1. Click on the GTP-32/DC20 Receive Events tab. The GTP-32/DC20 Receive Events page will be displayed.
2. Click in the Event Label field and enter the desired User label.
3. Click in the GTP-32/DC20 Event Label field and enter the event label of the source/action found on the GTP-32/DC20. This event label must match every character as defined on the GTP-32/DC20.
4. If the event being received from a GTP-32/DC20 is a User register, enter the value of the User register in the User Register value field.
5. Repeat steps 2 - 4 to configure each GTP-32/DC20 Receive Events list entry.
6. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

   Click on any other page button to exit without saving changes.

Serial Port Configuration

Use this page to configure the serial port of the USP3. If the serial port is not used, this page may be left blank.



PARAMETER	DESCRIPTION
Port Configuration:	RS232 DTE, RS422 Controller or RS422 Device
Baud:	300, 1200, 2400, 4800, 9600,19200, 38400, 57600 & 115200
Parity:	None, Odd, Even
Data:	Fixed at 8
Stop:	Fixed at 1
Start:	Fixed at 1

SERIAL PORT CONFIGURATION

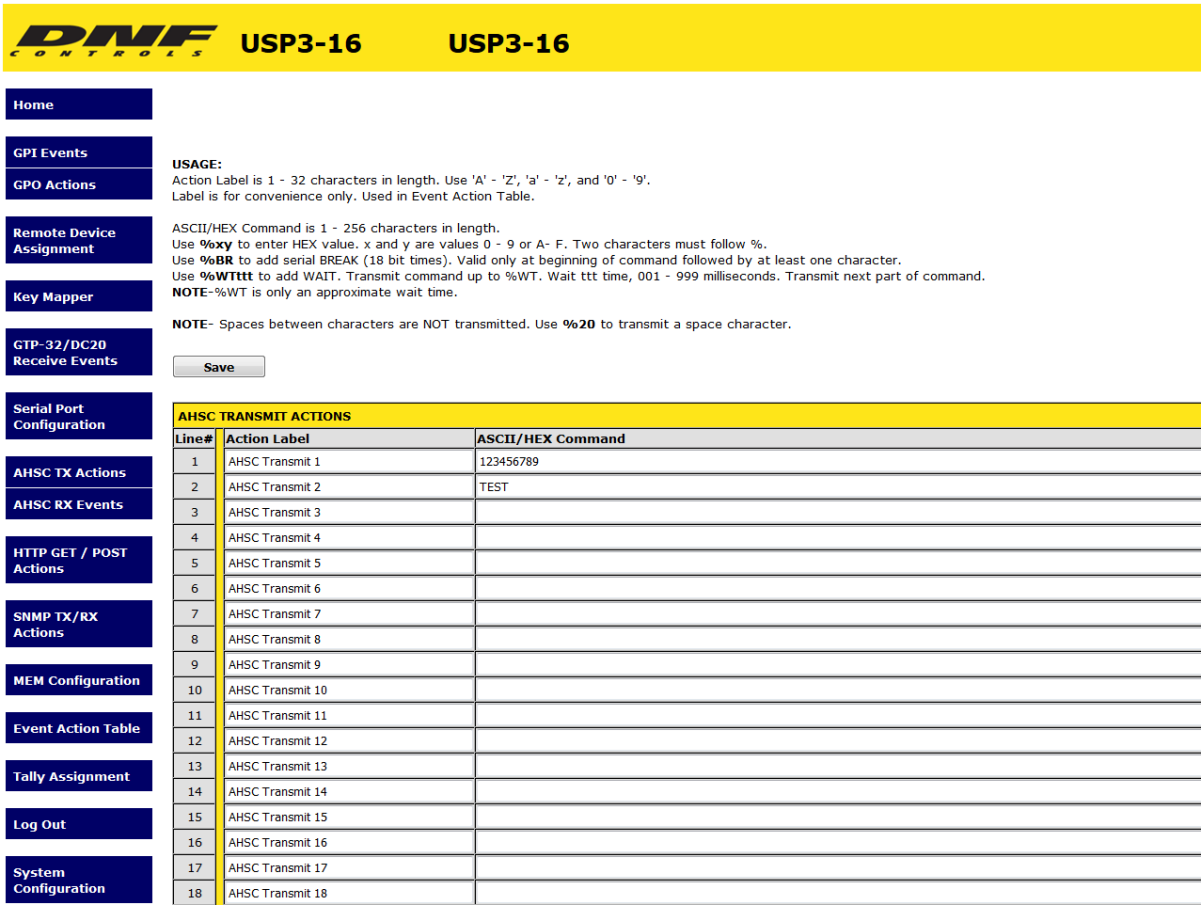
1. Click on the Serial Port Configuration tab. The Serial Port Configuration page will be displayed.
2. Click on the Port Configuration dropdown and select the desired port configuration.
3. Click on the Baud dropdown to select the correct baud rate.
4. Click on the Parity dropdown to select the correct parity setting.
5. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

   Click on any other page button to exit without saving changes.

AHSC TX Actions

Use this page to configure the AHSC Transmit commands. If AHSC Transmit commands are not used, this page may be left blank.



The AHSC Transmit action transmits a user entered group of characters to the user assigned IP Address and Port Number as assigned in the Remote Device Assignment page.

PARAMETER	DESCRIPTION
Action: Label:	Enter any 32 characters. This label is used in the Event Action Table.
ASCII/ HEX Command:	The ASCII/HEX Command is 1 - 256 characters in length. Use %yz to enter a HEX value. 'y' and 'z' are values 0 - 9 or A- F. Two characters must follow %. Use %WTttt to add a WAIT time, 001 - 999 milliseconds. Three numbers must follow %WT. The characters preceding %WT are sent immediately. The characters after %WTttt are sent after the wait time expires. More than one %WT can be included in a command. NOTE- %WT is only an approximate wait time. NOTE- Spaces between characters are NOT transmitted. Use %20 to transmit a space character. For SERIAL only Use %BR to add a BREAK character as the first transmitted character.

AHSC TX CONFIGURATION

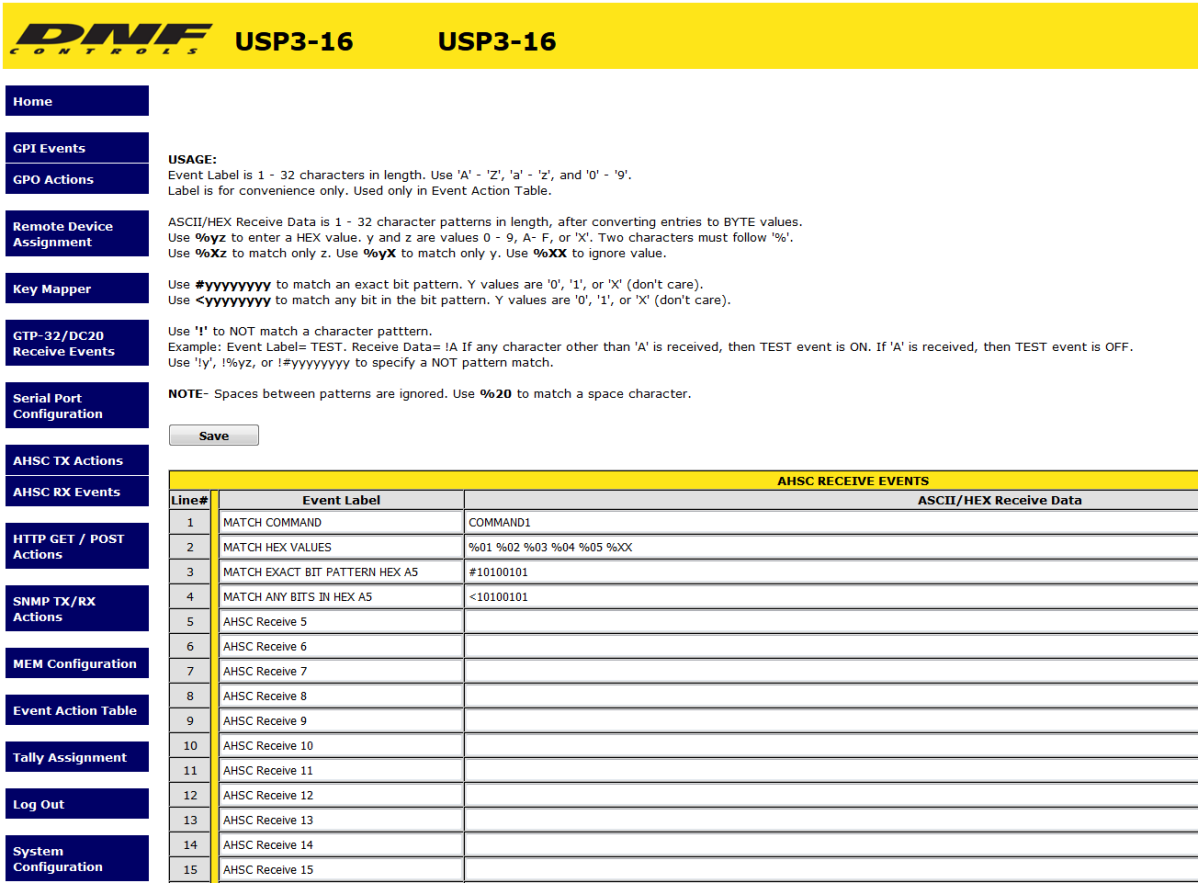
1. Click on the AHSC TX Actions tab. The AHSC TX Actions page will be displayed.
2. Click in the Action Label field and enter the desired User label.
3. Click in the ASCII/HEX Command field and enter the desired ASCII/HEX Transmit command.
5. Repeat steps 2 - 3 to configure each Transmit Action Command entry.
6. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

   Click on any other page button to exit without saving changes.

AHSC RX Events

Use this page to configure the AHSC Receive Events. If AHSC Receive Events are not used, this page may be left blank.



DNF CONTROLS USP3-16 USP3-16

Home
GPI Events
GPO Actions
Remote Device Assignment
Key Mapper
GTP-32/DC20 Receive Events
Serial Port Configuration
AHSC TX Actions
AHSC RX Events
HTTP GET / POST Actions
SNMP TX/RX Actions
MEM Configuration
Event Action Table
Tally Assignment
Log Out
System Configuration

USAGE:
Event Label is 1 - 32 characters in length. Use 'A' - 'Z', 'a' - 'z', and '0' - '9'.
Label is for convenience only. Used only in Event Action Table.

ASCII/HEX Receive Data is 1 - 32 character patterns in length, after converting entries to BYTE values.
Use **%yz** to enter a HEX value. y and z are values 0 - 9, A- F, or 'X'. Two characters must follow '%'.
Use **%Xz** to match only z. Use **%yX** to match only y. Use **%XX** to ignore value.

Use **#yyyyyyyy** to match an exact bit pattern. Y values are '0', '1', or 'X' (don't care).
Use **<yyyyyyyy** to match any bit in the bit pattern. Y values are '0', '1', or 'X' (don't care).

Use **'!'** to NOT match a character patttern.
Example: Event Label= TEST. Receive Data= !A If any character other than 'A' is received, then TEST event is ON. If 'A' is received, then TEST event is OFF.
Use '!y', !%yz, or !#yyyyyyyy to specify a NOT pattern match.

NOTE- Spaces between patterns are ignored. Use **%20** to match a space character.

Save

AHSC RECEIVE EVENTS

Line#	Event Label	ASCII/HEX Receive Data
1	MATCH COMMAND	COMMAND1
2	MATCH HEX VALUES	%01 %02 %03 %04 %05 %XX
3	MATCH EXACT BIT PATTERN HEX A5	#10100101
4	MATCH ANY BITS IN HEX A5	<10100101
5	AHSC Receive 5	
6	AHSC Receive 6	
7	AHSC Receive 7	
8	AHSC Receive 8	
9	AHSC Receive 9	
10	AHSC Receive 10	
11	AHSC Receive 11	
12	AHSC Receive 12	
13	AHSC Receive 13	
14	AHSC Receive 14	
15	AHSC Receive 15	

The AHSC Receive Events monitors a user entered group of characters from a user assigned IP Address and Port Number as assigned in the Remote Device Assignment page.

Monitor serial and Ethernet data for specific ASCII characters, hex values, or binary bits. Match an exact character pattern i.e.: "ABCDEF" or match a partial pattern i.e.: "A*C**F". Match the most or least significant half of a hex value. Match a specific on/off bit pattern

i.e.: 00110010, match a partial bit pattern

i.e.: **1100*0, or match any specific bits as on or off

i.e.: xx1x0x1x.

A Serial Receive and Ethernet Receive event turns ON, when received data matches the assigned, user entered data pattern, and then triggers an ON ACTION. Receive events do not trigger OFF ACTIONs. The Ethernet Receive data must come from the assigned IP address and Port number.

Use the "NOT" option to monitor system operation for abnormal status.

Pattern matching examples can be found in the back of this manual.

PARAMETER	DESCRIPTION
Event Label:	Enter any 32 characters. This label is for convenience only and is used in the Event Action Table.
ASCII/ HEX Receive Data:	Enter 1- 16 characters and/or bit patterns to match against received serial data. The received characters must exactly match the order and value of the entered patterns. If a received character does not match the entered pattern, all previous matches are discarded and the match process begins again with the first entered pattern. If more than 1 second elapses between received characters, all previous matches are discarded and the match process begins again. Use %yz to enter a HEX character. 'y' and 'z' are values 0 - 9, A - F, or 'X' (don't care). Enter %Xz to match only the z part of the HEX character. Enter %yX to match only the y part of the HEX character. Enter %XX to ignore the received value. Use #yyyyyyyy to match an exact bit pattern. 'y' values are '0', '1', or 'X' (don't care). For example, enter #0XXX1XXX to match bit7= 0 and bit3= 1. Bit0 is on the far right. Bit7 is on the far left. Use <yyyyyyyy to match any bit in the bit pattern. 'y' values are '0', '1', or 'X' (don't care). For example, enter <0XXX1XXX to match bit7=0 or bit3= 1. Bit0 is on the far right. Bit7 is on the far left. Use '!' to NOT match a character pattern. For example: Event Label= TEST. Receive pattern= !A. If any character other than 'A' is received, then TEST event is ON. If 'A' is received, then TEST event is OFF. Use !y, !%yz, or !#yyyyyyyy to specify a NOT pattern match. NOTE- Spaces between patterns are ignored. Use %20 to match a space character.

AHSC RX Configuration

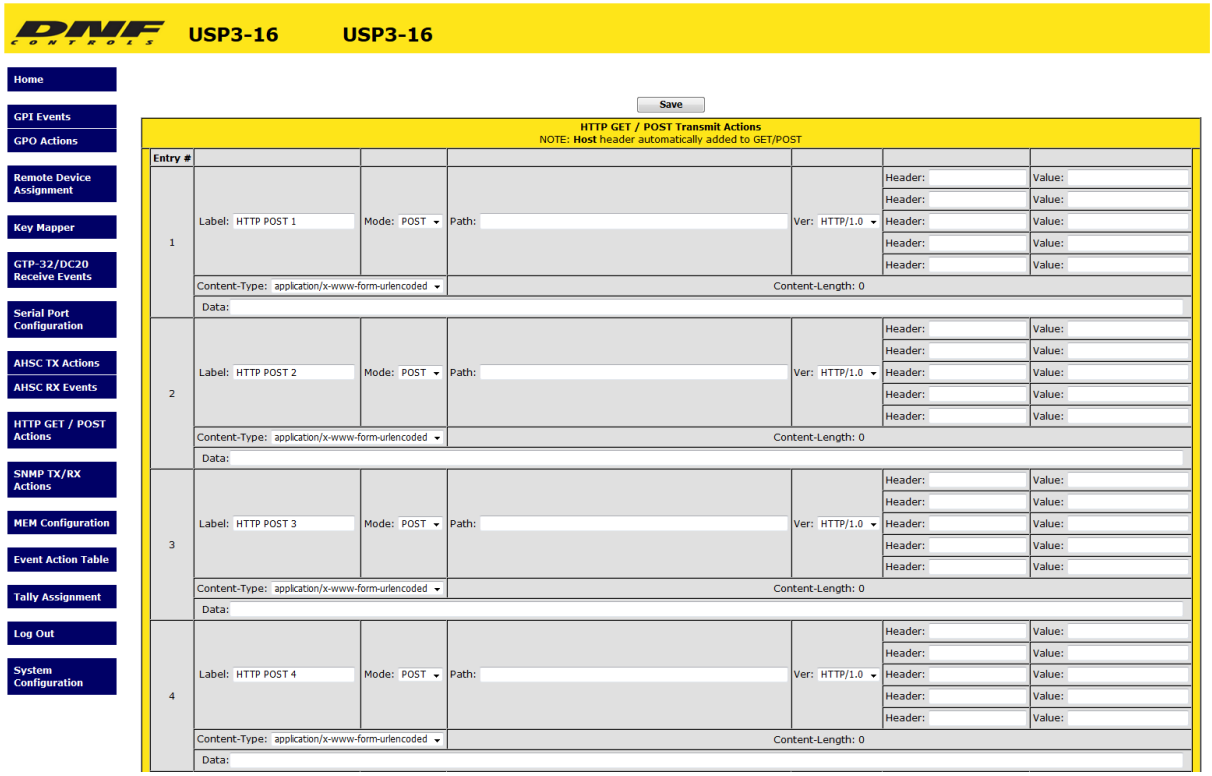
1. Click on the AHSC TX Actions tab. The AHSC TX Actions page will be displayed.
2. Click in the Action Label field and enter the desired User label.
3. Click in the ASCII/HEX Command field and enter the desired ASCII/HEX Transmit command.
4. Repeat steps 2 - 3 to configure each Transmit Action Command entry.
5. Click on the Save button to save changes. Changes will take effect immediately after saving.

OR,

Click on any other page button to exit without saving changes.

HTTP GET / POST Actions

Use this page to configure the HTTP GET/POST commands. If HTTP GET/POST commands are not used, this page may be left blank.



The Hypertext Transfer Protocol (HTTP) is designed to enable communications between clients and servers. HTTP works as a request-response protocol between a client and server.

Two commonly used methods for a request-response between a client and server are: GET and POST.

GET - Requests data from a specified resource

POST - Submits data to be processed to a specified resource

PARAMETER	DESCRIPTION
Action Label:	Enter any 32 characters. This label is used in the Event Action Table.
Mode:	Use the dropdown to select between HTTP “POST” and HTTP “GET”.
Path:	Define the path of the HTTP “POST” or “GET”.
Ver:	Use the dropdown to select between “HTTP/1.0” and “HTTP/1.1”.
Header:	Enter the header data of the HTTP “POST” or “GET”.

Value:	Enter the value data of the HTTP “POST” or “GET”.
Content-Type:	Options available: • Text/plain • Text/HTML • Application/XML • Application/JSON • Application/x-www-form-url encoded
Data:	Enter the data of the HTTP “POST” or “GET”.

HTTP Actions Configuration

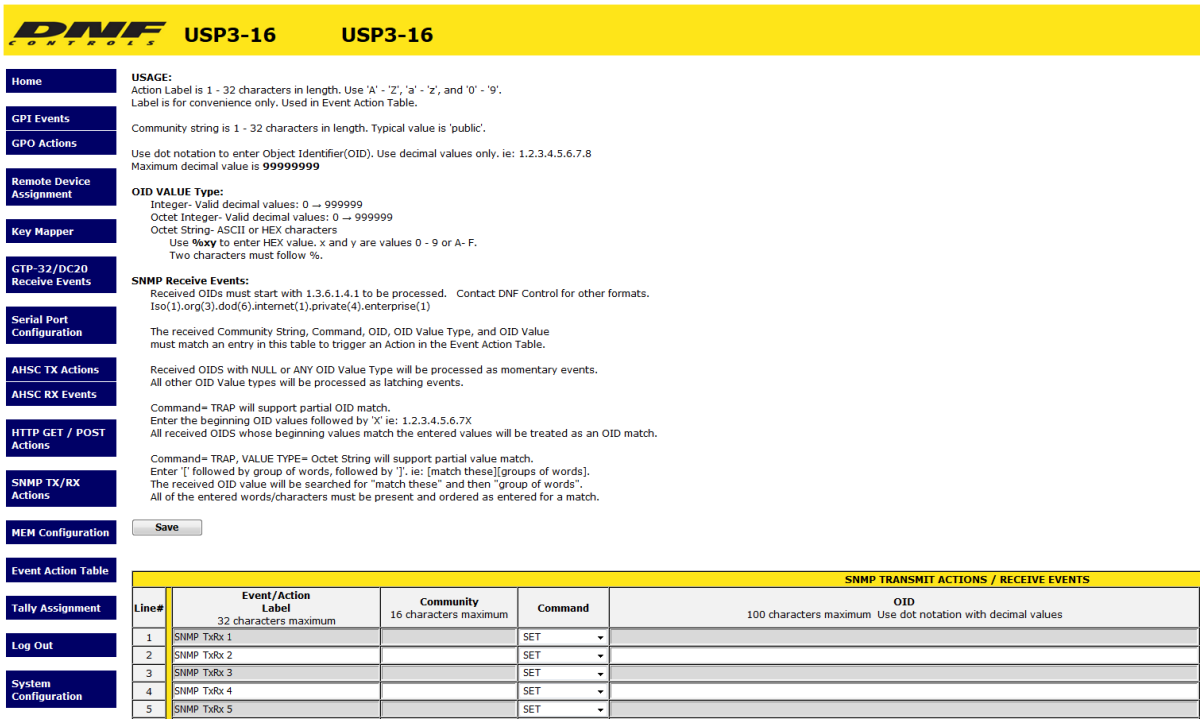
1. Click on the HTTP GET/POST Actions tab. The HTTP GET/POST Actions page will be displayed.
2. Click in the Label field and enter the desired User label.
3. Click on the Mode dropdown and select the desired HTTP mode.
4. Click in the Path field and enter the desired HTTP GET/POST path.
5. Click on the VER dropdown to select the correct HTTP version.
6. Click in the Header field to enter the desired HTTP GET/POST header.
7. Click in the Value field to enter the desired HTTP GET/POST value.
8. Click on the Content-Type dropdown and select the desired content-type format.
9. Click in the Data field to enter the desired HTTP GET/POST command data.
10. Repeat steps 2 - 9 to configure each HTTP GET/POST Command entry.
11. Click on the Save button to save changes. Changes will take effect immediately after saving.

    OR,

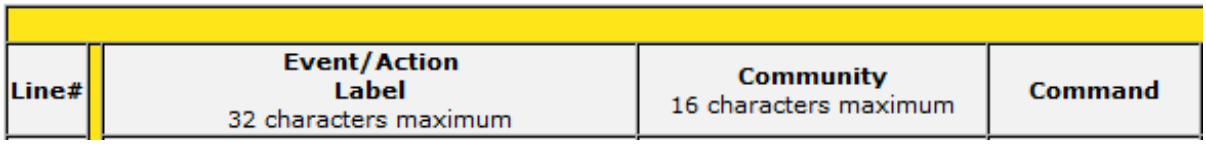
    Click on any other page button to exit without saving changes.

SNMP TX/RX Actions

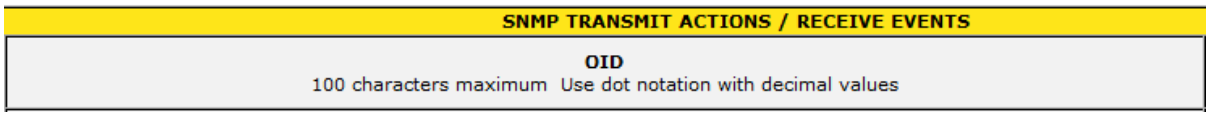
Use this page to configure the SNMP TX/RX actions. If SNMP TX/RX commands are not used, this page may be left blank.



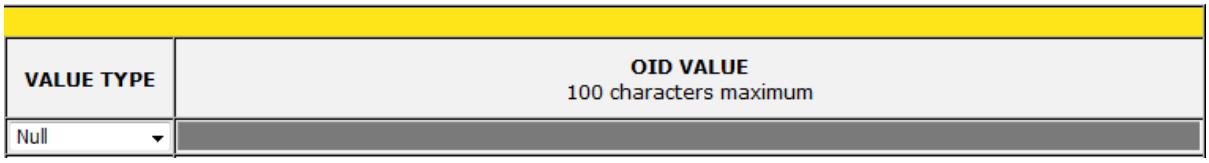
Simple Network Management Protocol (SNMP) is an Internet Standard protocol for collecting and organizing information about managed devices on IP networks and for modifying that information to change device behavior.



PARAMETER	DESCRIPTION
Event/Action Label:	Enter any 32 characters. This label is for convenience only and is used in the Event Action Table.
Community:	Community string is 1 - 32 characters in length. Typical value is 'public'.
Command:	SET, GET, GET RESPONSE or TRAP (RX ONLY)



PARAMETER	DESCRIPTION
Object Identifier (OID):	The OID is 8 - 256 decimal values in length entered in dot notation. Only decimal values are accepted. ie: 1.22.333.4.55.666.7.88. Maximum entered decimal value is 99999999.



PARAMETER	DESCRIPTION
Value Type/ OID Value:	OID Value Type: **Integer:** Enter decimal value 0 – 999999 for OID value. **Octet Integer**: Enter decimal value 0 – 999999 for OID value. **Octet String:** Enter 16 alphanumeric characters. **NULL:** Set to NULL when no OID value is entered.

SNMP TX/RX CONFIGURATION

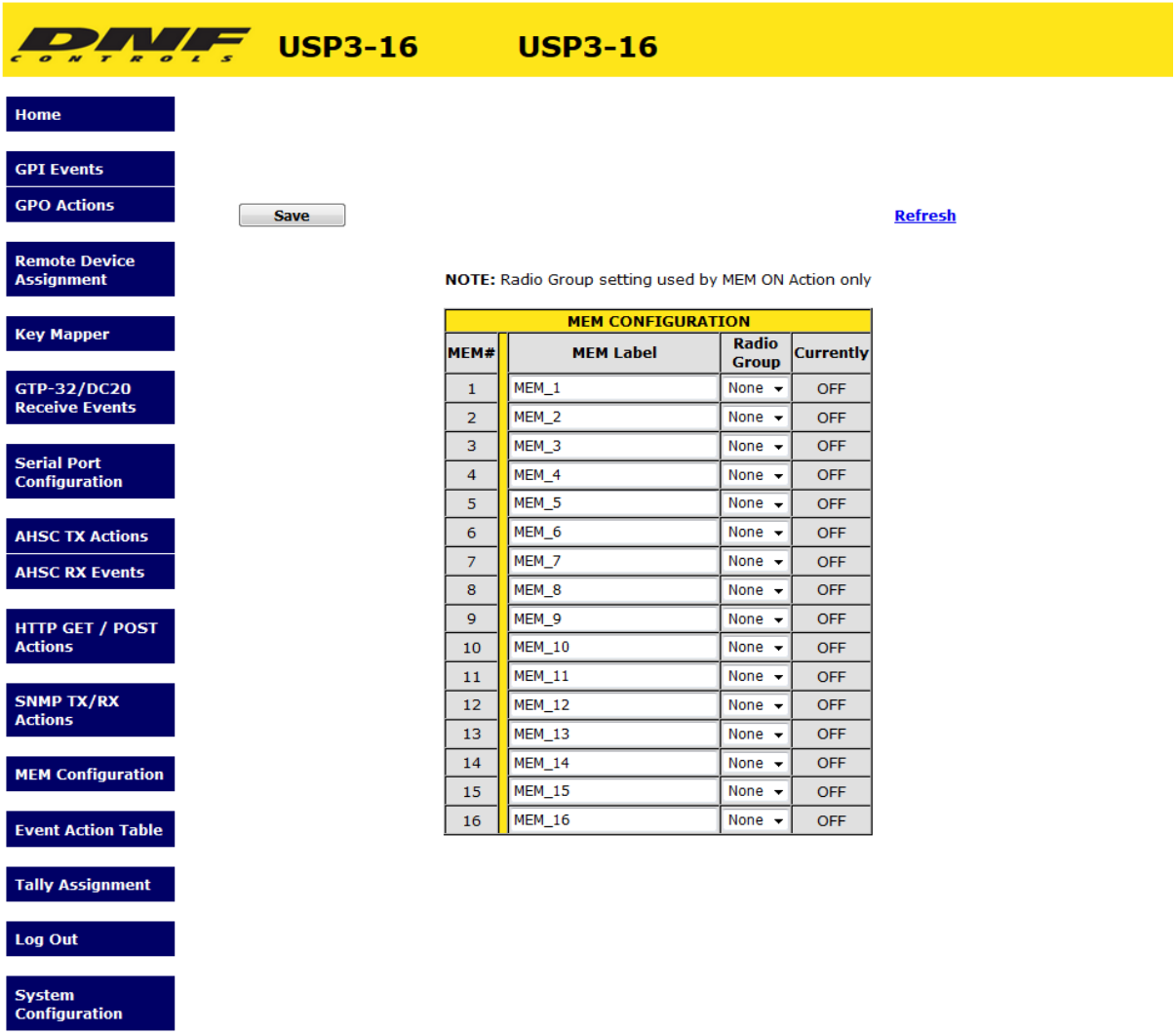
1. Click on the SNMP TX/RX Actions tab. The SNMP TX/RX Actions page will be displayed.
2. Click in the Event/Action Label field and enter the desired User label.
3. Click in the Community field to add the desired community string.
4. Click on the Command dropdown and select the desired command format.
5. Click in the OID field and enter the OID.
6. Click on the Value Type dropdown to select the correct OID value type.
7. Repeat steps 2 - 6 to configure each SNMP TX/RX Action entry.
8. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

Click on any other page button to exit without saving changes.

MEM Configuration

Use this page to configure local MEMS. If MEMS are not used, this page may be left blank.



MEM's are used to save an incoming "Events" ON or OFF state and trigger an ON or OFF "Action".

In the Event Action Table, an Event IN can turn ON, turn OFF or TOGGLE the state of a MEM. Also, a MEM can be used as an Event IN to trigger an ON or OFF ACTION.

For example, a MEM can be used to convert a momentary event into a latching tally. VTR Play status turns on MEM 1. VTR Stop status turns off MEM 1. The LCD Key tallying MEM 1 displays PLAY when MEM 1 is on and STOP when MEM 1 is off.

MEMs are also used on the Tally Assignment web page to control LCD Key text and color.

Please refer to section 18 for example of MEMs FLIP FLOP and RADIO GROUP.

PARAMETER	DESCRIPTION
MEM Label:	Enter any 32 characters. This label is for convenience only and is used in the Event Action Table.
Radio Group:	Select from “RG1 – RG6” to put the selected mem into a radio group.

MEM CONFIGURATION

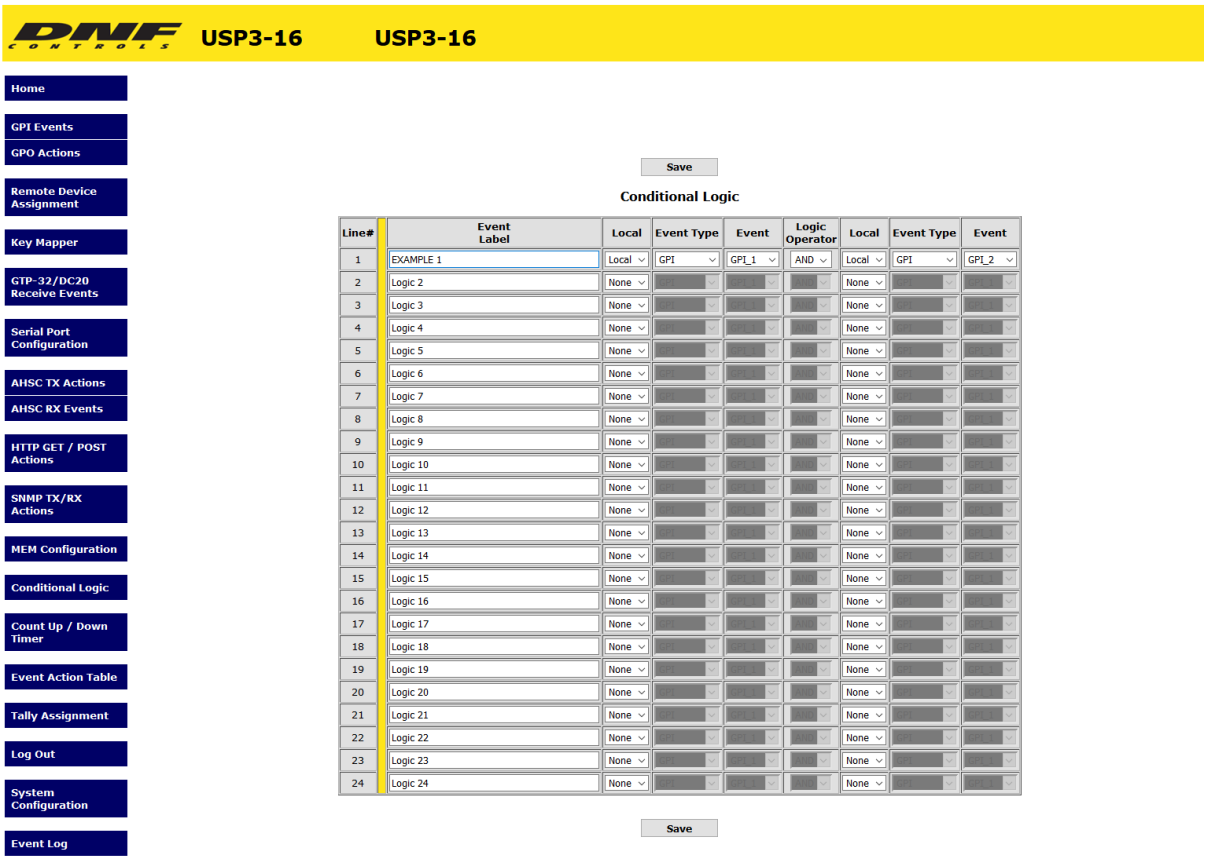
1. Click on the MEM Configuration tab. The MEM Configuration page will be displayed.
2. Click in the MEM Label field and enter the desired MEM label.
3. Click on the Radio Group dropdown to assign the MEM to a radio group.
4. Repeat steps 2 - 3 to configure each MEM entry.
5. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

   Click on any other page button to exit without saving changes.

Conditional Logic

In addition to one Event controlling one Action, the Conditional Logic Option allows one Action to be controlled by multiple Events based upon a user-entered definition.



The conditional 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 and OR).

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

CONDITIONAL LOGIC CONFIGURATION

1. Click on the Conditional Logic tab. The Conditional Logic page will be displayed.
2. Click in the Event Label field and enter the desired label.
3. Click on the “Local” dropdown and select “Local” from the dropdown selection.
4. Select either “Keypress”, “GPI” or “MEM” from the “Event Type” dropdown.

5. Select the event number from the “Event” dropdown.
6. Click on the second “Local” dropdown and select “Local” from the dropdown selection.
7. Select either “Keypress”, “GPI” or “MEM” from the second “Event Type” dropdown.
8. Select the event number from the second “Event” dropdown.
9. Click on the Save button to save changes. Changes will take effect immediately after saving.

   OR,

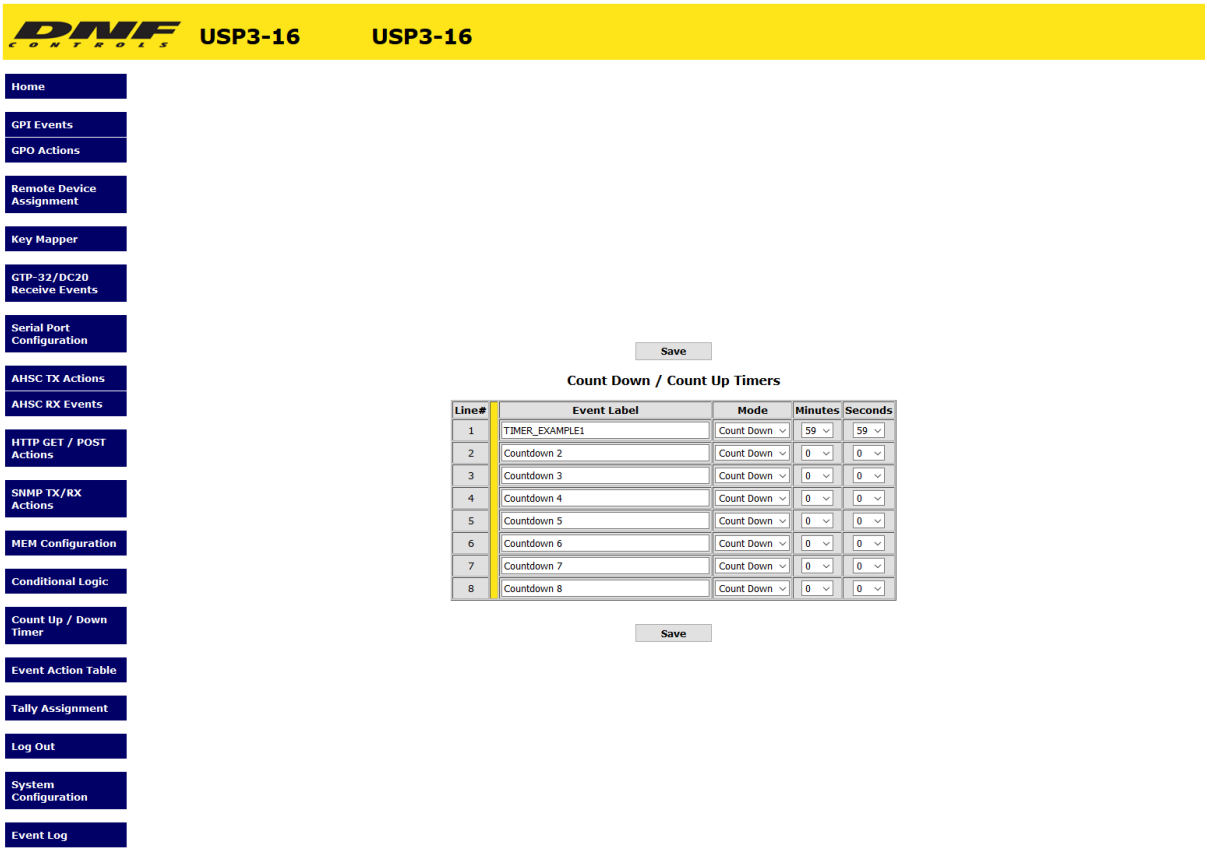
   Click on any other page button to exit without saving changes.

Conditional Event Definitions may be added, deleted, or modified at any time without affecting system operation or requiring a system reboot. After defining Conditional Event Definitions, their event identifiers may be used in the Event Action Table as a source to affect local GPOs.

The individual components of the Combinatorial Event Definition are monitored on a real-time basis by the USP3. When the current states of the components cause the definition to become true, the GPO assigned in the Event Action 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”.

Count Up Down Timer

The Count Up Down Time page allows you to create timers that can count up or down. Eight separate timers can be created with a maximum time of 1 hour.



TIMER CONFIGURATION

1. Click on the Count Up / Down Timer Configuration tab. The Count Up / Down Timer Configuration page will be displayed.
2. Click in the Event Label field and enter the desired Event label.
3. Click on the Mode dropdown and select from either a “Count Up” timer or a “Count Down” timer.
4. Click on the Minutes dropdown to assign minutes to your timer. Range is from 0 -59.
5. Click on the Seconds dropdown to assign seconds to your timer. Range is from 0 -59.
6. Repeat steps 2 - 3 to configure each MEM entry.
7. Click on the Save button to save changes. Changes will take effect immediately after saving.

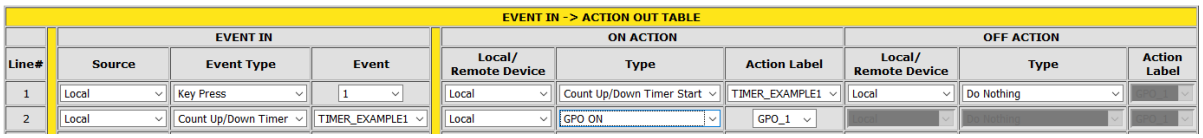
OR,

Click on any other page button to exit without saving changes.

Event Action Table

Once Timers have been configured in the Count Up Down Timer configuration page, they can be used in the Event Action table as an Event and as an Action.

First a Timer will need to be triggered by either a Local or Remote Event. Then it can be used as a source event to trigger an action. See Example configuration below.



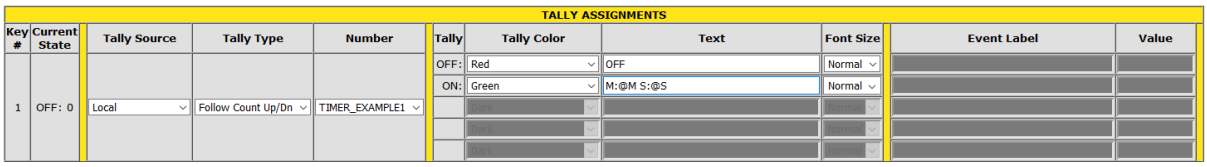
EVENT IN -> ACTION OUT TABLE

	EVENT IN			ON ACTION			OFF ACTION		
Line#	Source	Event Type	Event	Local/ Remote Device	Type	Action Label	Local/ Remote Device	Type	Action Label
1	Local	Key Press	1	Local	Count Up/Down Timer Start	TIMER_EXAMPLE1	Local	Do Nothing	GPO_1
2	Local	Count Up/Down Timer	TIMER_EXAMPLE1	Local	GPO ON	GPO_1	Local	Do Nothing	GPO_1

Tally Assignment Table

Count Up / Down Timers can be used as Tally Source to display running Count Up/Down time.

Tally Source: **LOCAL**
Tally Type: **FOLLOW COUNT UP/DN**
Number: *Enter the User Defined timer*
Tally Color: *Enter the desired ON and OFF Color*
Text: **ENTER THE FOLLOWING FORMAT FOR NUMERICAL COUNT "M:@M S:@S"**
Font Size: *Enter the desired font size*

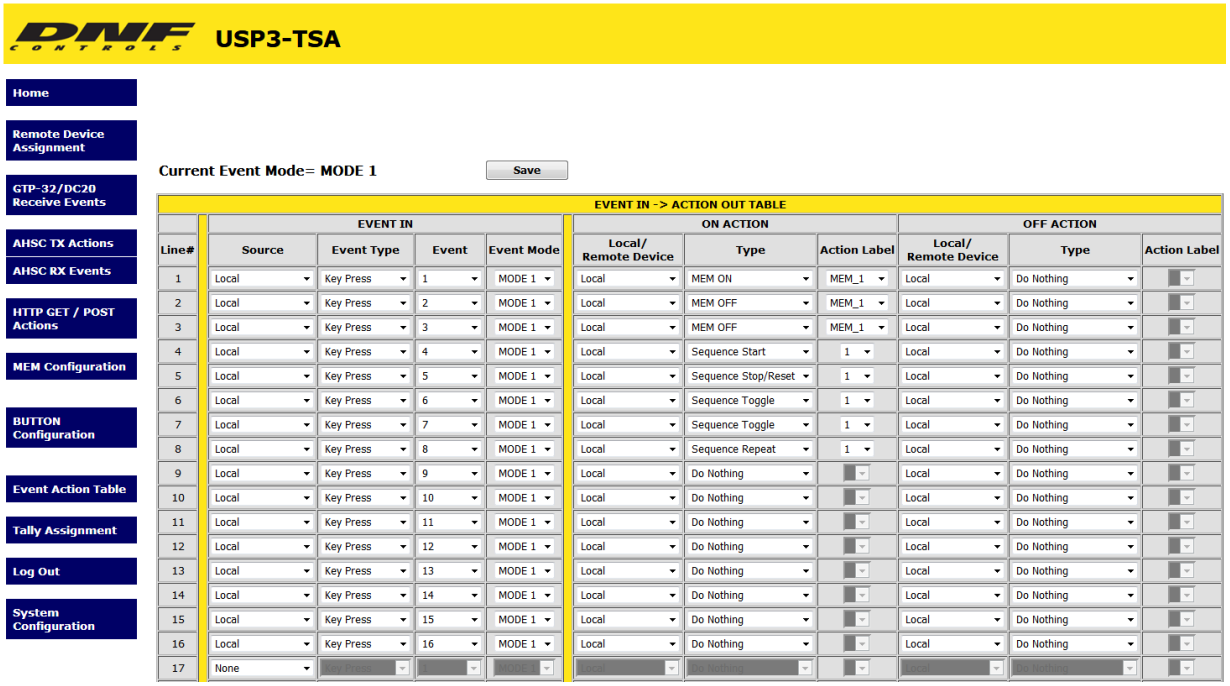


TALLY ASSIGNMENTS

Key #	Current State	Tally Source	Tally Type	Number	Tally	Tally Color	Text	Font Size	Event Label	Value
1	OFF: 0	Local	Follow Count Up/Dn	TIMER_EXAMPLE1	OFF:	Red	OFF	Normal		
					ON:	Green	M:@M S:@S	Normal		
						Blank		Normal		
						Blank		Normal		
						Blank		Normal		

Event Action Table

Use this page to assign source events to actions. Output actions will not fire unless they're mapped to a source event within the Event Action Table.



EVENT IN -> ACTION OUT TABLE

	EVENT IN				ON ACTION			OFF ACTION		
Line#	Source	Event Type	Event	Event Mode	Local/ Remote Device	Type	Action Label	Local/ Remote Device	Type	Action Label
1	Local	Key Press	1	MODE 1	Local	MEM ON	MEM_1	Local	Do Nothing	
2	Local	Key Press	2	MODE 1	Local	MEM OFF	MEM_1	Local	Do Nothing	
3	Local	Key Press	3	MODE 1	Local	MEM OFF	MEM_1	Local	Do Nothing	
4	Local	Key Press	4	MODE 1	Local	Sequence Start	1	Local	Do Nothing	
5	Local	Key Press	5	MODE 1	Local	Sequence Stop/Reset	1	Local	Do Nothing	
6	Local	Key Press	6	MODE 1	Local	Sequence Toggle	1	Local	Do Nothing	
7	Local	Key Press	7	MODE 1	Local	Sequence Toggle	1	Local	Do Nothing	
8	Local	Key Press	8	MODE 1	Local	Sequence Repeat	1	Local	Do Nothing	
9	Local	Key Press	9	MODE 1	Local	Do Nothing		Local	Do Nothing	
10	Local	Key Press	10	MODE 1	Local	Do Nothing		Local	Do Nothing	
11	Local	Key Press	11	MODE 1	Local	Do Nothing		Local	Do Nothing	
12	Local	Key Press	12	MODE 1	Local	Do Nothing		Local	Do Nothing	
13	Local	Key Press	13	MODE 1	Local	Do Nothing		Local	Do Nothing	
14	Local	Key Press	14	MODE 1	Local	Do Nothing		Local	Do Nothing	
15	Local	Key Press	15	MODE 1	Local	Do Nothing		Local	Do Nothing	
16	Local	Key Press	16	MODE 1	Local	Do Nothing		Local	Do Nothing	
17	None	Key Press	1	MODE 1	Local	Do Nothing		Local	Do Nothing	

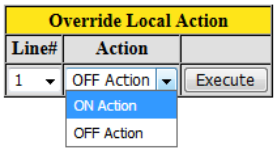
On an Event Action Table line, select an EVENT IN (left side of the table) then select an ACTION (right side of the table). Some events only support ON ACTIONS, so the OFF ACTION entries will be grayed out.

One EVENT IN can trigger more than one ACTION. Select the same EVENT IN on multiple lines and then select an ON or OFF ACTION on each line.

Only EVENTs and ACTIONs associated with the Remote Device's Device Type or Connection Type will be displayed in the drop down menus. If the desired event or action is not displayed, then go to the Remote Device Assignment web page and change the Device Type or Connection Type for the Remote Device.

There are 16 Sequence Timers. Use each Sequence Timer event number in multiple lines as the Event Type to create a sequence of actions. The first Sequence entry from the top of the table will be the first sequence action. The next Sequence entry from the top of the table will be the next sequence action. The Event column time is the delay before that line's action will execute. Use Sequence Start action to start a sequence. Use Sequence Stop/ Reset to stop a sequence. The Sequence will always start at its first line.

An "Override Local Action" link lets users execute the ON or OFF Actions of a given Event Action Table line without triggering the source event.



EVENT IN	
SOURCE	None (Greys out line) Local Event Remote Device Event Serial
EVENT TYPE (LOCAL)	**KEYPRESS** Keypress changed from OFF to ON. The selected ON ACTION will execute. Keypress changed from ON to OFF. The selected OFF ACTION will execute **GPI** GPI changed from OFF to ON. The selected ON ACTION will execute. GPI changed from ON to OFF. The selected OFF ACTION will execute **MEM** MEM changed from OFF to ON. The selected ON ACTION will execute. MEM changed from ON to OFF. The selected OFF ACTION will execute **SEQUENCE TIMER** The sequence timer's time has expired. Only ON ACTION is executed. The timer automatically restarts for the time period of the next sequence event in the table. After the last sequence event in the table has expired and its ON ACTION executed, the timer automatically restarts for the time period of the first sequence event in the table. MANUAL EVENT – Sequence time is ignored. **CONTINIOUS TIMER** The Continuous timer's time has expired. Only ON ACTION is executed. The timer automatically starts once "Save" is pressed in the Event Action table. After the timer has expired and its ON ACTION executed, the timer automatically restarts for the time period setup in the Event Action table.

EVENT TYPE (REMOTE)	**AHSC RECEIVE EVENT** A successful pattern match has occurred for the selected AHSC Receive Event pattern on the selected Remote Device. Only ON ACTION is executed. If the AHSC Receive Event pattern is assigned to multiple Remote Devices, only the ON ACTION associated with the Remote Device that received the successful match will execute. **GTP-32/DC20 RECEIVE (Only available for Device Type "GTP-32/DC20")** An Event Label was received that matched the selected GTP-32/DC20 Event Label on the selected Remote Device. Only ON ACTION is executed. If an Event Label is assigned to multiple Remote Devices, only the ON ACTION associated with the sending Remote Device will execute. **USP KEYPRESS (Only available for Device Type "USP")** An event (Keypress or GPI) was received that matched the selected event on the selected Remote Device.
EVENT	GPI Number, AHSC Receive Event Label, Ethernet Receive Event Label, GTP-32/DC20 Event Label or Sequence Timer time period. The display labels in the drop down menus are the same user entered labels on the event web pages

ON ACTION	
LOCAL / REMOTE	Execute Action on Local USP3 Execute Action on Remote
TYPE (LOCAL)	**GPO** Do Nothing Turn GPO ON Turn GPO OFF **MEM** Do Nothing Turn MEM ON Turn MEM OFF **SEQUENCE START** Start identified sequence at its first line in the Event Action Table. **SEQUENCE STOP / RESET** Immediately stop sequence. **SEQUENCE TOGGLE** Toggle current sequence. **SEQUENCE REPEAT** Repeat current sequence **SEQUENCE NEXT** Allows Manual Sequence operation. **KEY ENABLE** Turn ON Key Enable Turn OFF Key Enable Toggle Key Enable **REDUNDANT MODE** Turn ON Redundant Mode Turn OFF Redundant Mode Toggle Redundant Mode **MAIN / BACKUP** Select MAIN Select BACKUP Toggle between MAIN/BACKUP **RESTART TIMER** Restarts the currently selected timer in the Event Action Table.

TYPE (REMOTE)	**AHSC Transmit Action** Transmit the selected AHSC Action command. If command contains WAIT (%WT), then transmit all characters prior to %WT, wait for the time period defined by %WT, and then transmit the remaining characters or until the next %WT. A command may contain more than one %WT. **GTP-32/ DC20 (Only available for Device Type "GTP-32/DC20")** Transmit GPI ON (as a Key Press), GPI OFF (as a Key Release), GPO ON, and GPO OFF messages to a GTP-32 /DC20 Remote Device. **USP (Only available for Device Type "USP")** Transmit a Key Press to a Remote USP panel.
ACTION LABEL	GPO Number AHSC Transmit Action

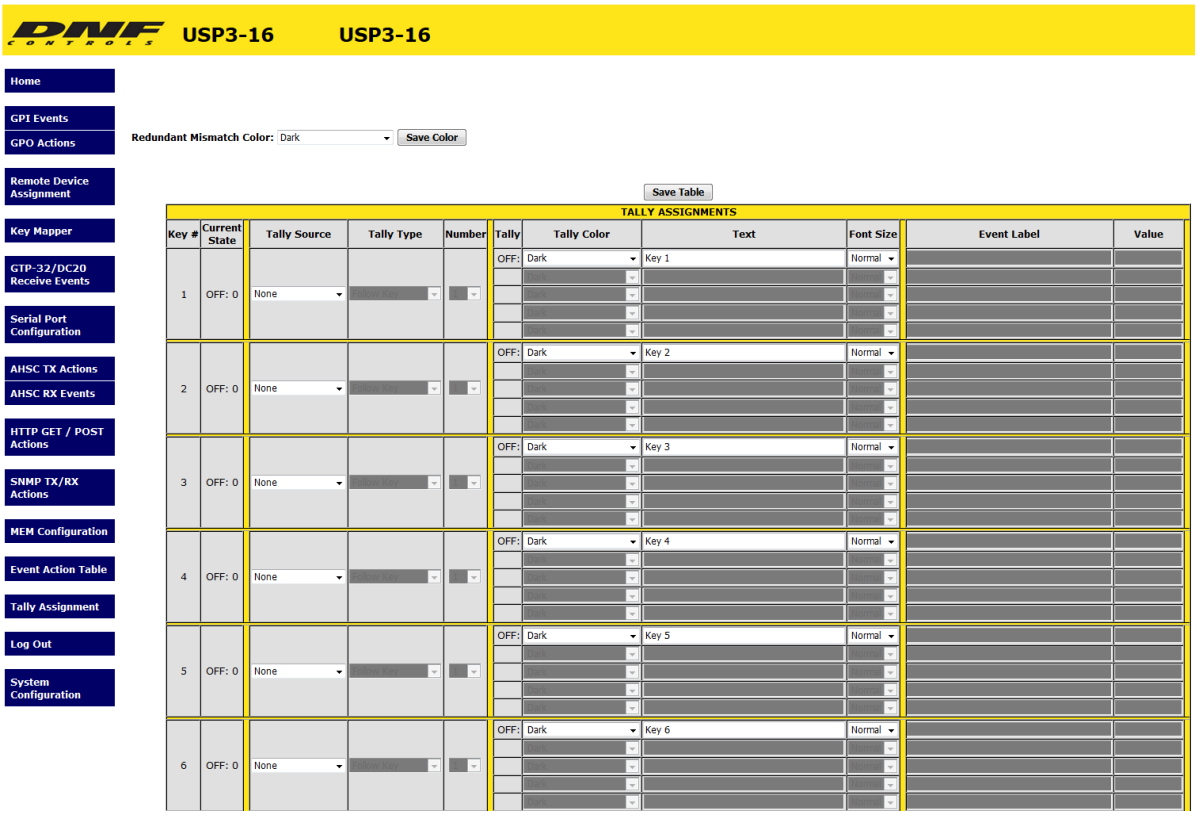
OFF ACTION	
LOCAL / REMOTE	Execute Action on Local USP3 Execute Action on Remote

TYPE (LOCAL)	**GPO** Do Nothing Turn GPO ON Turn GPO OFF **MEM** Do Nothing Turn MEM ON Turn MEM OFF **SEQUENCE START** Start identified sequence at its first line in the Event Action Table. **SEQUENCE STOP / RESET** Immediately stop sequence. **SEQUENCE TOGGLE** Toggle current sequence. **SEQUENCE REPEAT** Repeat current sequence **SEQUENCE NEXT** Allows Manual Sequence operation. **KEY ENABLE** Turn ON Key Enable Turn OFF Key Enable Toggle Key Enable **REDUNDANT MODE** Turn ON Redundant Mode Turn OFF Redundant Mode Toggle Redundant Mode **MAIN / BACKUP** Select MAIN Select BACKUP Toggle between MAIN/BACKUP **RESTART TIMER** Restarts the currently selected timer in the Event Action Table.

TYPE (REMOTE)	**AHSC Transmit Action** Transmit the selected AHSC Action command. If command contains WAIT (%WT), then transmit all characters prior to %WT, wait for the time period defined by %WT, and then transmit the remaining characters or until the next %WT. A command may contain more than one %WT. **GTP-32/ DC20 (Only available for Device Type "GTP-32/DC20")** Transmit GPI ON (as a Key Press), GPI OFF (as a Key Release), GPO ON, and GPO OFF messages to a GTP-32 /DC20 Remote Device. **USP (Only available for Device Type "USP")** Transmit a Key Press to a Remote USP panel.
ACTION LABEL	GPO Number AHSC Transmit Action

Tally Assignment

Use this page to assign the text legend, font size and tally color to each front panel switch.



TALLY OPERATING MODE

Key Tally is the change of state of an LCD backlight or text on the face of a front panel switch. Tallies can be driven by a source event or can follow an output action. Tallies can also be driven by remote events and actions from GTP-32's, USP3's and AIB's.

The LCD backlight colors available are:

Red, Flashing Red, Blinking Red / Red-Dim, Flashing Red-Dim, Blinking Red-Dim

Green, Flashing Green, Blinking Green / Green-Dim, Flashing Green-Dim, Blinking Green-Dim

Aqua, Flashing Aqua, Blinking Aqua / Aqua-Dim, Flashing Aqua-Dim, Blinking Aqua-Dim

Amber, Flashing Amber, Blinking Amber / Amber-Dim, Flashing Amber-Dim, Blinking Amber-Dim

Blue, Flashing Blue, Blinking Blue / Blue-Dim, Flashing Blue-Dim, Blinking Blue-Dim

Purple, Flashing Purple, Blinking Purple / Purple-Dim, Flashing Purple-Dim, Blinking Purple-Dim

There are two tally configurations, one configuration for an ON tally and another configuration for an OFF tally. All tally configurations are done from the USP's Tally Assignment web page.

FOLLOW OPERATION

The tally follows the state of the GPI, GPO, KEY, MEM, SEQ, or ENABLE KEY.

When a tally is configured as "Follow GPI", the tally will follow the state of an external device, like a downstream keyer, through an external GPI. Only one GPI can be assigned to control a switch's tally. When a new GPI is assigned to control a tally, the previous assignment is deleted. One GPI can be assigned to control more than one tally. The tally will turn ON when the controlling GPI is ON and turn OFF when the GPI is OFF.

When a tally is configured as "Follow GPO", the tally will follow the state of its local GPO. Only one GPO can be assigned to control a switch's tally. When a new GPO is assigned to control a tally, the previous assignment is deleted. One GPO can be assigned to control more than one tally. The tally will turn ON when the local GPO is ON and turn OFF when the GPI is OFF. The tally follows the state of the GPO regardless of the operating mode of the GPO.

When a tally is configured as "Follow KEY", the tally will follow the state of its currently assigned front panel Key. The tally will turn ON when the Key is pressed and turn OFF when the Key is released.

When a tally is configured as "Follow ENABLE", the tally will follow the state of its local Enable panel switch. The tally will turn ON when the Enable button is ON and turn OFF when the Enable button is OFF.

When a tally is configured as "Follow MEM", the tally will follow the state of a local MEM. The tally will turn ON when a MEM is ON and turn OFF when a MEM is OFF.

When a tally is configured as "Follow SEQ", the tally will follow the state of a local sequence. The tally will turn ON when a sequence is ON and turn OFF when the sequence is OFF

REMOTE OPERATION

A tally can be configured to be controlled by a GPI, GPO or MEM on a remote Universal Switch Panel or by a remote event on a GTP-32/DC20. Similar to the Follow Operation, the tally will turn ON when the remote event is ON and turn OFF when the remote event is OFF.

GTP/DC EXTENDED TALLY OPERATION

A tally can be controlled by multiple Combinatorial Logic events on a remote GTP-32/DC20. Each tally can be controlled by up to 5 different events.

Each tally event name starts with ET_, followed by a Name field and a Status field. The Name field identifies the remote event as a member of a group of tallies on the USP. When a remote event is received that begins with ET, it compares the contents of the Status field with the Status field of all configured ET events within the group, as distinguished by the Name field. If a match is found, the Tally shows the configured Text/Font/Color for that event. All other tallies for that group are turned off. If the Status field does not match any configured events, then the Tally reverts to Off Text/Font/Color, as configured within the Tally Assignment Page.

GTP/DC USER REGISTER OPERATION

A tally can be controlled by User register events on a remote GTP-32/DC20. Each tally can be controlled by up to 5 different User register event values.

SELECTION	DESCRIPTION	
Key Number	The USP3 key number.	
Tally Type	Local- Follow Key, Follow GPI, Follow GPO, Follow ENABLE Key, Follow Memory Location (MEM), Follow Sequence (SEQ) Remote- Tally Remote Device: USP, GTP-32/DC20, Other	
Tally Source	Local	Follow Key Tally is ON when key is pressed Tally is OFF when key is released Follow GPI Tally is ON when GPI is ON Tally is OFF when GPI is OFF Follow GPO Tally is ON when GPO is ON Tally is OFF when GPO is OFF Follow ENABLE Tally is ON when ENABLE is ON Tally is OFF when ENABLE is OFF Follow MEM Tally is ON when MEM is ON Tally is OFF when MEM is OFF Follow SEQ Tally is ON when Sequence is in progress Tally is OFF when Sequence is not running

SELECTION		DESCRIPTION
Tally Source	Remote	Follow remote USP GPI or GPO- Tally is ON when remote GPI/GPO is ON Tally is OFF when remote GPI/GPO is OFF Follow GTP-32 or DC-20 Event Label Tally is ON when Event Label state is ON Tally is OFF when Event Label state is OFF Extended Follow GTP/DC- For use with "ET_" Event Labels only Formatted: ET_NameField_StatusField The Extended Tally is off when received ET Event Label matches Name Field but does not match any Status entries assigned to key or matches OFF entry ET1Tally is ON when the received Event Label matches the Name Field and Status Field for ET1 and the Event Label is ON ET2 through ET4 Tally is ON when the received Event Label matches the Name Field and Status Field for ET2 through ET4, respectively, and the Event Label is ON Follow GTP/DC User Register- For use with "UR_" Event Labels only The UR Event Label is OFF when User Register value does not match any UR entries for key or matches OFF entry value UR1Tally is ON when the received User Register value matches the UR1 value entry UR2 through UR4 Tally is ON when the received User Register value matches the UR1 through UR4 value entry, respectively
Tally Number		GPI / GPO Number SNMP Table Entry Number AHSC Table Entry Number
Tally		OFF / ON OFF / ET1, ET2, ET3, ET4 for Extended Tallies OFF / UR1, UR2, UR3, UR4 for User Register Tallies
Tally Color		Dark, Red, Green, Amber Flashing Red, Flashing Green, Flashing Amber Blinking Red, Blinking Green, Blinking Amber Dim Red, Dim Green, Dim Amber Dim Flashing Red, Dim Flashing Green, Dim Flashing Amber Dim Blinking Red, Dim Blinking Green, Dim Blinking Amber
Text		Text displayed on key face for each tally entry
Font Size		Small: 3 rows x 6 characters per row Normal: 2 rows x 4 characters per row Big: 1 row x 3 characters per row

SELECTION	DESCRIPTION
Event Label	Manually enter, or cut & paste, the Event Label from the GTP-32's or DC20's Event Notification Table. The event label is case sensitive, may not contain spaces, and must exactly match the Event Notification Table entry. (Refer to the GTP-32 or DC20 User Manual.)
Value	Enter User Register value to match

STANDARD TALLY CONFIGURATION

1. Click on the Tally Assignment Button. The Tally Assignment Page will be displayed.
2. Click in the Tally Source column and select the tally source.
3. Click in the Tally Type column and select the source tally type.
4. Click in the Number column dropdown and select the event number.
5. Click in the Tally Color column OFF dropdown and select the OFF Text backlight color.
6. Click in the Tally Color column ON dropdown and select the ON Text backlight color.
7. Click in the OFF Text field and enter the text that will appear on the front panel switch face when the tally is off.
8. Click in the ON Text field and enter the text that will appear on the switch face during the tally ON state.
9. Click in the OFF Font column dropdown and select the font size used by the OFF Text.
10. Click in the ON Font column and select the font size used by the ON Text.
11. Click in the Event Label column and enter the GTP-32 or DC20 Event Label. Label spelling must match event label on the remote GTP-32/DC20. (Only available if SOURCE= GTP32/DC20.)
12. Repeat steps 2 – 13 to configure each switch tally.
13. Click on the Save button to save changes. Changes will take effect immediately after saving.
    OR,
    Click on any other page button to exit without saving changes.

GTP/DC EXTENDED TALLY CONFIGURATION

1. Click on the Tally Type dropdown and select "Follow GTP/DC Extended Tally".
2. Click in the Event Label field and enter the name of the Combinatorial Logic event being tallied. The event names must follow this naming scheme:

   ET_<Name>_<Status>

3. Each event name must being with ET, followed by an underscore. The Name field identifies the group of events that it belongs to. The Name field is followed by an underscore, which is then followed by the Status field. The Status field identifies the individual tally being received within the group.

4. Click in the OFF Text field and enter the text that will appear on the front panel switch face when the tally is off. Click in the ON Text field and enter the text that will appear on the front panel switch face when the tally is on.
5. Click in the Font column and select the font size used by each tally.
6. Click in the OFF Color column and select the tally backlight color. Click in the ON Color column and select the tally backlight color.
7. Repeat steps 2 – 5 for each event to be configured.
8. Click on the Save button to save changes. Changes will take effect immediately after saving.
   OR
   Click on any other page button to exit without saving changes.

GTP/DC USER REGISTER CONFIGURATION

1. Click on the Tally Type dropdown and select “Follow GTP/DC User Register”.
2. Click in the Event Label field and enter the name of the User register event being tallied.
3. Click in the Value field and enter the value of the User register event being tallied. (Normally OFF is zero and ON is one)
4. Click in the OFF Text field and enter the text that will appear on the front panel switch face when the tally is off. Click in the ON Text field and enter the text that will appear on the front panel switch face when the tally is on.
5. Click in the Font column and select the font size used by each tally.
6. Click in the OFF Color column and select the tally backlight color. Click in the ON Color column and select the tally backlight color.
7. Repeat steps 2 – 6 for each event to be configured.
8. Click on the Save button to save changes. Changes will take effect immediately after saving.
   OR
   Click on any other page button to exit without saving changes.

Redundant Mode

The redundant mode option allows an operator to monitor and control a Primary and Backup GTP-32 system from a single tactile panel. With a single button an operator can control Primary and Backup GTP panels and also monitor Primary and Backup GTP status. The redundant mode key color and text allow an operator to easily identify Primary / Backup system status and errors. Special Redundant mode function keys provide the ability to target the Primary or Backup channels to resolve any sync errors.

Redundant mode is only supported with GTP panels.

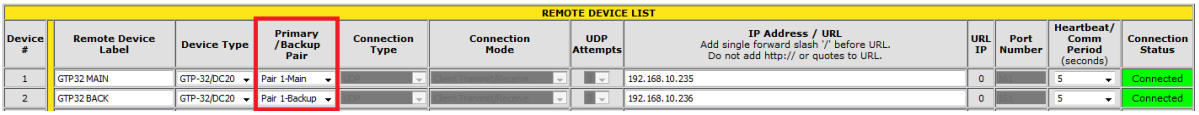
CONFIGURE MAIN/BACKUP PAIR

The first step to configuring redundant mode is to configure the Primary and Backup channel as a Main/Backup pair in the Remote device assignment page.

1. Click on the Remote Device Assignment tab. The Remote Device Assignment page will be displayed.
2. Click in the Primary/Backup Pair dropdown for the first remote channel and select “Pair 1-Main”
3. Click in the Primary/Backup Pair dropdown for the second remote channel and select “Pair 1-Backup”
4. Continue configuring the remainder of the Event Action Table line.
5. Repeat steps 1 – 3 to configure Pair 2.
6. Click on the Save button to save changes. Changes will take effect immediately after saving

   OR,

   Click on any other page button to exit without saving changes.



CONFIGURE MAIN/BACKUP FUNCTIONS

The Redundant mode option provides special functions that allow an operator to turn ON/OFF redundant mode as well as select between a Main and Backup channel.

Redundant Mode

The redundant mode option in the Event Action Table page allows for an operator to toggle or turn ON/OFF the redundant mode functionality. This allows an operator to target a mismatch error on either the main or backup channel.

1. Click on the Event Action Table tab. The Event Action Table page will be displayed.

2. Click in the Type dropdown under the ON/OFF actions column to select one of the redundant mode functions. The available redundant mode functions are:

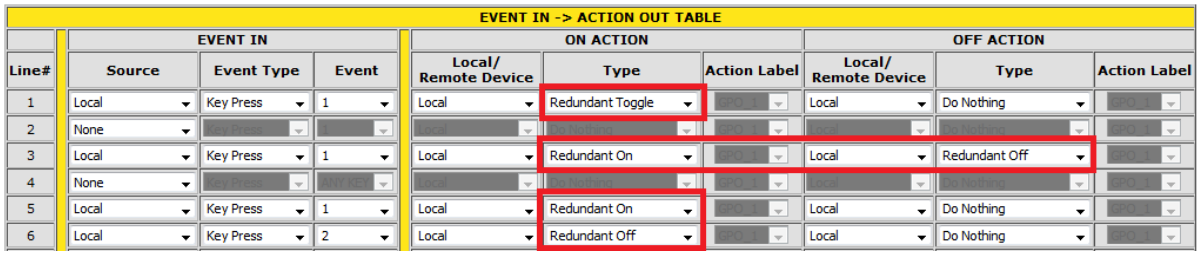
   Redundant Toggle
   Redundant ON
   Redundant OFF

3. Continue configuring the remainder of the Event Action Table line.
4. Click on the Save button to save changes. Changes will take effect immediately after saving

   OR,

   Click on any other page button to exit without saving changes.

The Examples below highlight the different configuration types available. Each Highlighted box represents a seperate configuration type.



EVENT IN -> ACTION OUT TABLE

	EVENT IN			ON ACTION			OFF ACTION		
Line#	Source	Event Type	Event	Local/ Remote Device	Type	Action Label	Local/ Remote Device	Type	Action Label
1	Local	Key Press	1	Local	Redundant Toggle		Local	Do Nothing	
2	None								
3	Local	Key Press	1	Local	Redundant On		Local	Redundant Off	
4	None								
5	Local	Key Press	1	Local	Redundant On		Local	Do Nothing	
6	Local	Key Press	2	Local	Redundant Off		Local	Do Nothing	

Main/Backup Selection

The Main/Backup selection mode option in the Event Action Table page allows for an operator to easily switch between the Main and Backup channel when redundant mode is set to OFF. This allows an operator to correct a mismatch error on either the main or backup channel by targetting the affected channel and correcting its state.

1. Click on the Event Action Table tab. The Event Action Table page will be displayed.
2. Click in the Type dropdown under the ON/OFF actions column to select one of the Main/Backup selection options. The available selection options are:

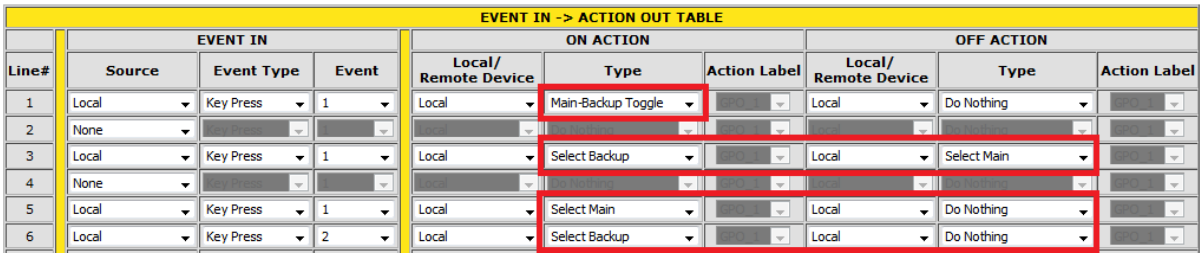
Main-Backup Toggle
Select Main
Select Backup

3. Continue configuring the remainder of the Event Action Table line.
4. Click on the Save button to save changes. Changes will take effect immediately after saving

   OR,

   Click on any other page button to exit without saving changes.

The Examples below highlight the different configuration types available. Each Highlighted box represents a seperate configuration type.



EVENT IN -> ACTION OUT TABLE

	EVENT IN			ON ACTION			OFF ACTION		
Line#	Source	Event Type	Event	Local/ Remote Device	Type	Action Label	Local/ Remote Device	Type	Action Label
1	Local	Key Press	1	Local	Main-Backup Toggle	GPO_1	Local	Do Nothing	GPO_1
2	None	Key Press		Local	Do Nothing	GPO_1	Local	Do Nothing	GPO_1
3	Local	Key Press	1	Local	Select Backup	GPO_1	Local	Select Main	GPO_1
4	None	Key Press		Local	Do Nothing	GPO_1	Local	Do Nothing	GPO_1
5	Local	Key Press	1	Local	Select Main	GPO_1	Local	Do Nothing	GPO_1
6	Local	Key Press	2	Local	Select Backup	GPO_1	Local	Do Nothing	GPO_1

CONFIGURE MAIN/BACKUP ACTIONS

When configuring an action for a redundant pair in the Event Action Table only a single line needs to be created. Selecting either the Main or Backup channel as the Action destination would result in both Main and Backup panels receiving the same action. Since the Main and Backup channels are already considered a pair in the remote device assignmment page sending an event to both the Main and Backup would cause a double trigger to occur to both Main and Backup channels.

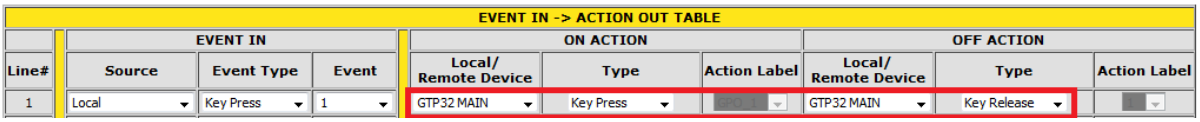
1. Click on the Event Action Table tab. The Event Action Table page will be displayed.
2. After configuring the EVENT IN, click in the Local/Remote Device dropdown and select either the Main channel or the Backup channel as configured in the Remote Device Assignment page.

   Do not create the same action line for both MAIN and BACKUP as this will result in a duplicate trigger that will affect both channels.
3. Continue configuring the remainder of the Event Action Table line.
4. Click on the Save button to save changes. Changes will take effect immediately after saving

   OR,

   Click on any other page button to exit without saving changes.

The Example below reflects a typical control action configuration.

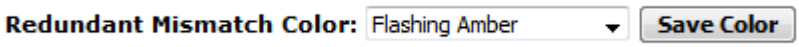


EVENT IN -> ACTION OUT TABLE									
	EVENT IN			ON ACTION			OFF ACTION		
Line#	Source	Event Type	Event	Local/ Remote Device	Type	Action Label	Local/ Remote Device	Type	Action Label
1	Local	Key Press	1	GTP32 MAIN	Key Press		GTP32 MAIN	Key Release	

CONFIGURE MAIN/BACKUP TALLY

When configuring a Tally for a redundant pair in the Tally Assignment Table only a single tally source needs to be assigned to a Key. Since the Main and Backup channels are already considered a pair in the remote device assignmment page the tally assignment table will look at the same event coming from both channels. In the case of a mismatch the key will display the Redundant Mismatch color

1. Click on the Tally Assignment tab. The Tally Assignment page will be displayed.
2. Configure the Redundant Mismatch Color located at the top of the page



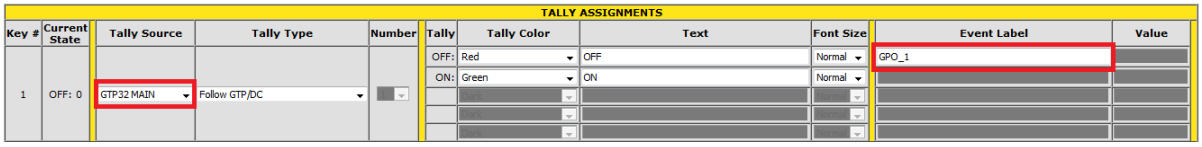
3. Click in the Tally Source dropdown and select either the Main channel or the Backup channel as configured in the Remote Device Assignment page.
4. Continue configuring the remainder of the Tally Assignment Key line.
5. Click on the Save button to save changes. Changes will take effect immediately

after saving

OR,

Click on any other page button to exit without saving changes.

The Example below reflects a typical Tally configuration.



TALLY ASSIGNMENTS

Key #	Current State	Tally Source	Tally Type	Number	Tally	Tally Color	Text	Font Size	Event Label	Value
1	OFF: 0	GTP32 MAIN	Follow GTP/DC		OFF:	Red	OFF	Normal	GPO_1	
					ON:	Green	ON	Normal		

Examples: Receive Pattern Matching

NOTE- ASCII and HEC data can be mixed in a user entered pattern. For simplicity only, the examples do not mix ASCII or HEX in a user entered pattern.

ASCII EXAMPLES

User Entered Pattern	Received ASCII Data	Notes
ABCD	ABCDEFG	Successful pattern match of first 4 received
ABCD	1234ABCDEFG	Successful pattern match of 5th , 6th, 7th, and 8th received characters
ABCD	1234A5BCDEFG	No pattern match. User entered pattern must be received as entered.
A %XX C D **NOTE**- spaces are not included in pattern match	ABCD ACCD AJCD A2CD	The value of the second character in the pattern, %XX, is like a wildcard, so it can be any character. A successful pattern match will result if the first, third and fourth characters are correct. All four received character patterns are a
A %XX C D	1234ABCDEFG 1234A5CDEFG 4AKCDE	Successful pattern matches.
A %XX C D	ACD	No pattern match. Four characters must be

HEX EXAMPLES (Base 16 Numbering)

User Entered Pattern	Received Hex Data	Notes
%12 %34	12 34 12 34 56 78 56 78 12 34 9A 56 78 12 34	Successful pattern matches for hexadecimal values 12 and 34.
%X2	12 32 52 A2	The first half of the received Hex value is like a wildcard and can be any value. Only the second half must match the user entered value. Successful pattern matches.
%12 %4X	12 43 12 4A 12 49 56 98 12 49	The second half of the received Hex value is like a wildcard and can be any value. Only the first half must match the user entered value. Successful pattern matches.
%12 %4X	12 34 12 84 12 56	No pattern match.

BINARY EXAMPLES (Base 2 Numbering)

User Entered Pattern	Received Binary Data	Notes
#0XXX1XXX Bit7 = 0, Bit3= 1 All other bits are “Don’t care”	01011000	Bit 7 is immediately after the ‘#’. Bit 0 is on the far right. A pattern match occurs only when Bit 7= 0 and Bit3= 1. The received data must exactly match these identified bit values for a match. The values of the other 6 bits are ignored. Successful match.
#0XXX1XXX	01111111 00001000 01101001	Successful pattern matches.
#0XXX1XXX	10001000	No pattern match. Bit 7, on the far left is ‘1’. It must be ‘0’ to match.
#0XXX1XXX	00000000	No pattern match. Bit 3 is ‘0’. It must be ‘1’ to match.

User Entered Pattern	Received Binary Data	Notes
<0XXX1XXX Bit7 = 0, Bit3= 1 All other bits are “Don’t care”	01011000	Bit 7 is immediately after the ‘#’. Bit 0 is on the far right. A pattern match occurs when Bit 7= 0 or Bit3= 1. Only one of the bits in the received data must match. The values of the other 6 bits are ignored Successful match.
<0XXX1XXX Bit7 = 0, Bit3= 1 All other bits are “Don’t care”	11111111	Received Bit 7 =1. Received Bit 3= 1. At least one identified bit, Bit 3, matches. Successful pattern match.
<0XXX1XXX Bit7 = 0, Bit3= 1 All other bits are “Don’t care”	10000000	Received Bit 7 =1. Received Bit 3= 0. None of the identified bits match the user entered pattern. No pattern match.
<0XXX1XXX Bit7 = 0, Bit3= 1 All other bits are “Don’t care”	11111111 00000000 01010101 10101010	Successful pattern matches.
<0XXX1XXX Bit7 = 0, Bit3= 1 All other bits are “Don’t care”	11110111 10000000 11010101 10100010	No pattern match.

ASCII EXAMPLES

User Entered Pattern	Received ASCII Data	Notes
!A	B	A pattern match is successful when the received character is any character except 'A'.
!A	AAAAAA	All of the received characters are 'A'. No pattern match.
!A	AB	The second character is not an 'A'. The received data is a successful pattern match.
!A	BA	The first character is not an 'A' and is a successful pattern match. The received data is a successful pattern match.
!A	BC	No character is an 'A'. Successful pattern match.
!AB	AB	The first character can be any character except 'A'. The second character must be 'B'. No pattern match
!AB	CB DB ZB	The first character can be any character except 'A'. The second character must be 'B'. Successful pattern match
!AB	CD	The first character can be any character except 'A'. The second character must be 'B'. No pattern match

HEX EXAMPLES (Base 16 Numbering)

User Entered Pattern	Received Hex Data	Notes
!%12	12	A pattern match is successful when any value is received except 12. No pattern match.
!%12 34	22 34	A pattern match is successful when any value is received except 12, immediately followed by 34 Successful pattern match.
!%12 34	11 34 21 34 9F 34 87 34	Successful pattern matches.
!%12 34	11 12 34	No pattern match
!%12 34	11 22 34 11 45 34 56	Successful pattern matches

Examples Sequences

When the Sequence Timer's event time expires, the associated ON Action will execute and then the timer for the sequence's next entry in the Event Action Table will start.

Upon receipt of a Sequence Start action, the timer for the Sequence's first entry in the Event Action Table will start.

Upon receipt of a Sequence Stop action, the sequence will immediately stop. The sequence entry in progress will halt without executing. The next Start action will cause the sequence to start at its first entry in the Event Action Table.

When the last Sequence action executes, the sequence will automatically turn off and stop executing. If the last Sequence action is Sequence Start, the sequence will loop until a Sequence Stop is received.

Example #1 Wait for Sequence Start action and then play sequence until end and stop.

Event Type	Event	Description
Key Press	1	Sequence 1 Start action
Sequence 1 Timer	100ms	Delay 100ms and then execute assigned ON Action
Sequence 1 Timer	1 sec	Delay 1 second and then execute assigned ON Action
Sequence 1 Timer	10 sec	Delay 10 seconds and then execute assigned ON Action
Sequence 1 Timer	100ms	Sequence 1 Start action
Key Press	2	Sequence 1 Stop action

Examples: MEM Flip Flop

To setup a FLIP FLOP action the use of a MEM is required. A source events (GPI or Keypress) ON action will FLIP FLOP the action of two GPO's.

The selected MEM that is being toggled will need to be setup in following manner to trigger the FLIP FLOP action.

ON ACTION: TURN ON GPO_1, TURN OFF GPO_2
OFF ACTION: TURN OFF GPO_1, TURN ON GPO_2

Example #1 MEM FLIP FLOP GPO 1 and 2

Local	Key Press	1	Local	MEM Toggle	MEM_1	Local	Do Nothing	
Local	MEM	MEM_1	Local	GPO ON	GPO_1	Local	GPO OFF	GPO_1
Local	MEM	MEM_1	Local	GPO OFF	GPO_2	Local	GPO ON	GPO_2

Examples: MEM Radio Group

To setup a MEM based RADIO GROUP TALLY the use of MEMs is required.

First a MEM/s will need to be assigned to a Radio Group (RG1 – RG6)

MEM CONFIGURATION			
MEM#	MEM Label	Radio Group	Currently
1	RWD	RG1	OFF
2	PLAY	RG1	OFF
3	STOP	RG1	ON

A source events (GPI, Keypress or Serial Event) ON action will turn ON the MEM/s associated with the Radio Group. MEM ON must be selected as the ON action for the Radio Group functionality to work properly.

	EVENT IN			ON ACTION			OFF ACTION		
Line#	Source	Event Type	Event	Local/ Remote Device	Type	Action Label	Local/ Remote Device	Type	Action Label
1	Local	Key Press	1	Local	MEM ON	RWD	Local	Do Nothing	GPO 1
2	Local	Key Press	2	Local	MEM ON	PLAY	Local	Do Nothing	GPO 1
3	Local	Key Press	3	Local	MEM ON	STOP	Local	Do Nothing	GPO 1

Assign each MEM to a specific USP3 Key in the Tally Assignment page.

TALLY ASSIGNMENTS										
Key #	Current State	Tally Source	Tally Type	Number	Tally	Tally Color	Text	Font Size	Event Label	Value
1	OFF: 0	Local	Follow MEM	RWD	OFF:	Red	RWD	Normal		
					ON:	Green	RWD	Normal		
						Dark		Normal		
						Dark		Normal		
						Dark		Normal		
2	OFF: 0	Local	Follow MEM	PLAY	OFF:	Red	PLAY	Normal		
					ON:	Green	PLAY	Normal		
						Dark		Normal		
						Dark		Normal		
						Dark		Normal		
3	ON: 1	Local	Follow MEM	STOP	OFF:	Red	STOP	Normal		
					ON:	Green	STOP	Normal		
						Dark		Normal		
						Dark		Normal		
						Dark		Normal		

When a Source Event triggers on the USP3, the MEM tied to this source event will turn ON. This MEM ON action will cause its Key tally to turn ON all other Key tallies in the same Radio Group will turn OFF.

Examples: GPO Momentary Radio Group

To setup a GPO Momentary Radio Group the use of MEMs is required.

First, in the GPO actions page set the operating mode of each GPO you will be using to “momentary” and set the desired momentary on-time.

GPO CONFIGURATION						
GPO#	GPO Label	User Defined ON State	Operating Mode	Momentary On Time (*10ms)	Group	Currently
1	GPO_1	Relay Closed	Momentary	100		OFF
2	GPO_2	Relay Closed	Momentary	100		OFF
3	GPO_3	Relay Closed	Momentary	100		OFF

Next, in the MEM Configuration page assign a MEM to each GPO that you will be using for your Radio Group. Under the Radio Group Dropdown, assign all MEM’s to the same radio group (RG1 – RG5)

MEM CONFIGURATION			
MEM#	MEM Label	Radio Group	Currently
1	GPO_1	RG1	OFF
2	GPO_2	RG1	OFF
3	GPO_3	RG1	OFF

A source event (GPI, Keypress or Serial Event) ON action will turn ON the MEM/s and GPO’s associated with the Radio Group. MEM ON must be selected as the ON action for the Radio Group functionality to work properly.

EVENT IN -> ACTION OUT TABLE									
	EVENT IN			ON ACTION			OFF ACTION		
Line#	Source	Event Type	Event	Local/ Remote Device	Type	Action Label	Local/ Remote Device	Type	Action Label
1	Local	Key Press	1	Local	GPO ON	GPO_1	Local	Do Nothing	
2	Local	Key Press	2	Local	GPO ON	GPO_2	Local	Do Nothing	
3	Local	Key Press	3	Local	GPO ON	GPO_3	Local	Do Nothing	
4	Local	Key Press	1	Local	MEM ON	MEM_1	Local	Do Nothing	
5	Local	Key Press	2	Local	MEM ON	MEM_2	Local	Do Nothing	
6	Local	Key Press	3	Local	MEM ON	MEM_3	Local	Do Nothing	

Panel Layout

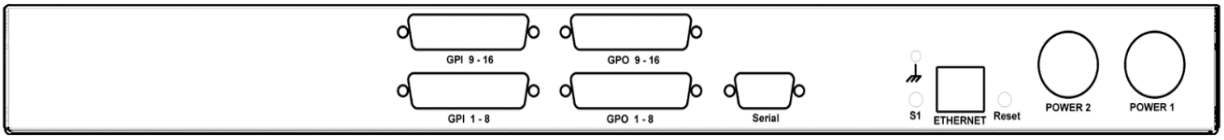
USP3-16 FRONT

USP3-8 FRONT

USP3-16 / USP3-8 REAR

USP3-8D FRONT & REAR

Specifications



REAR PANEL CONNECTORS				
POWER 1:	+12V DC, 3.0Amps			
POWER 2:	Optional power supply for redundant power			
RESET Switch:	Press to reset USP3			
ETHERNET:	RJ45 100baseT, Full Duplex			
S1 Switch:	Press and hold 10 seconds to reset IP address to 192.168.10.217 and configuration to factory default			
SERIAL CONNECTOR:	**PIN**	**RS232 DTE**	**RS422 Controller**	**RS422 Device**
	1	N/C	Frame Ground	Frame Ground
	2	RxD	Receive A (-)	Transmit A (-)
	3	TxD	Transmit B (+)	Receive B (+)
	4	Tied to 6	Receive Common	Receive Common
	5	Ground	N/C	N/C
	6	Tied to 4	Transmit Common	Transmit Common
	7	N/C	Receive B (+)	Transmit B (+)
	8	N/C	Transmit A (-)	Receive A (-)
	9	N/C	Frame Ground	Frame Ground

REAR PANEL CONNECTORS				
GPI CONNECTOR 1-8: Opto-isolator Inputs **NOTE:** GPI (+) is opto-isolator anode GPI (-) is opto-isolator cathode <u>To WET GPIs:</u> Connect GPI + to nearby +V pin. Connect GPI – to Ground to turn on GPI.	**PIN #**	**Description**	**PIN #**	**Description**
	1	Ground	14	GPI 8 **+**
	2	GPI 8 –	15	+V
	3	+V	16	GPI 7 –
	4	GPI 7 **+**	17	GPI 6 **+**
	5	GPI 6 –	18	+V
	6	+V	19	GPI 5 –
	7	GPI 5 **+**	20	GPI 4 **+**
	8	GPI 4 –	21	+V
	9	+V	22	GPI 3 –
	10	GPI 3 **+**	23	GPI 2 **+**
	11	GPI 2 –	24	+V
	12	+V	25	GPI 1 –
	13	GPI 1 **+**		
GPI CONNECTOR 9-16: Opto-isolator Inputs **NOTE:** GPI (+) is opto-isolator anode GPI (-) is opto-isolator cathode <u>To WET GPIs:</u> Connect GPI + to nearby +V pin. Connect GPI – to Ground to turn on GPI.	**PIN #**	**Description**	**PIN #**	**Description**
	1	Ground	14	GPI 16 **+**
	2	GPI 16 –	15	+V
	3	+V	16	GPI 15 –
	4	GPI 15 **+**	17	GPI 14 **+**
	5	GPI 14 –	18	+V
	6	+V	19	GPI 13 –
	7	GPI 13 **+**	20	GPI 12 **+**
	8	GPI 12 –	21	+V
	9	+V	22	GPI 11 –
	10	GPI 11 **+**	23	GPI 10 **+**
	11	GPI 10 –	24	+V
	12	+V	25	GPI 9 –
	13	GPI 9 **+**		

REAR PANEL CONNECTORS

GPO CONNECTOR 1-8:
Isolated Relay
Contact Closures

<u>To WET GPOs:</u>
Connect external power supply output to Common Bus, pin #1.

Connect GPO commons to nearby Common Bus pins

There is no need to connect power supply Ground to GPO connector

Pin #	Description	Pin #	Description
1	Common Bus	14	GP0 8 N.O
2	GPO 8 Common	15	Common Bus
3	Common Bus	16	GPO 7 N.O.
4	GPO 7 Common	17	GPO 6 N.O.
5	GPO 6 Common	18	Common Bus
6	Common Bus	19	GPO 5 N.O.
7	GPO 5 Common	20	GPO 4 N.O.
8	GPO 4 Common	21	Common Bus
9	Common Bus	22	GPIO 3 N.O.
10	GPO 3 Common	23	GPO 2 N.O.
11	GPO 2 Common	24	Common Bus
12	Common Bus	25	GPO 1 N.O.
13	GPO 1 Common		

GPO CONNECTOR 9-16:
Isolated Relay
Contact Closures

<u>To WET GPOs:</u>
Connect external power supply output to Common Bus, pin #1.

Connect GPO commons to nearby Common Bus pins

There is no need to connect power supply Ground to GPO connector

Pin #	Description	Pin #	Description
1	Common Bus	14	GP0 16 N.O
2	GPO 16 Common	15	Common Bus
3	Common Bus	16	GPO 15 N.O.
4	GPO 15 Common	17	GPO 14 N.O.
5	GPO 14 Common	18	Common Bus
6	Common Bus	19	GPO 13 N.O.
7	GPO 13 Common	20	GPO 12 N.O.
8	GPO 12 Common	21	Common Bus
9	Common Bus	22	GPIO 11 N.O.
10	GPO 11 Common	23	GPO 10 N.O.
11	GPO 10 Common	24	Common Bus
12	Common Bus	25	GPO 9 N.O.
13	GPO 9 Common		

Warranty

TSL Products 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 TSL Products.

In order to enforce the rights under this warranty, the customer must first contact TSL's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If TSL'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 TSL Products with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

TSL Products
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.

TSL Products, at its option, will repair or replace the defective unit. TSL Products will return the unit prepaid to the customer. The method of shipment is at the discretion of TSL Products, 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 TSL Products, either directly or through its authorized dealer network. Similarly, any repair work not performed by either TSL Products or its authorized dealer may void the warranty.

After the warranty period has expired, TSL Products offers repair services at prices listed in the TSL Products Price List. TSL Products reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

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

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