7800EMR-ALINK2
User Manual

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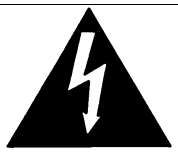
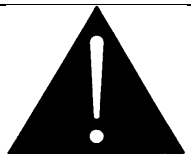
IMPORTANT SAFETY INSTRUCTIONS

	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated “Dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the product.

- Read these instructions
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC – SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE

WARNING
DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS ARE PLACED ON THE EQUIPMENT

WARNING
TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE

WARNING
THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE

INFORMATION TO USERS IN EUROPE

NOTE

CISPR 22 CLASS A DIGITAL DEVICE OR PERIPHERAL

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

CE

EN60065	Safety
EN55103-1: 1996	Emission
EN55103-2: 1996	Immunity

EN504192 2005
Waste electrical products should not be disposed of with household waste.
Contact your Local Authority for recycling advice

INFORMATION TO USERS IN THE U.S.A.

NOTE

FCC CLASS A DIGITAL DEVICE OR PERIPHERAL

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

WARNING

Changes or Modifications not expressly approved by Evertz Microsystems Ltd. could void the user's authority to operate the equipment.

Use of unshielded plugs or cables may cause radiation interference. Properly shielded interface cables with the shield connected to the chassis ground of the device must be used.

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Tables

REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release	Nov 2017

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1. OVERVIEW

The 7800EMR-ALINK2 provides a means of a bulk audio interconnection from a Studer A-Link interface to TDM for Evertz EMR and EQX Audio products using TDM backbone. There are 2 paired TDM links (both TX and RX) for one A-Link bidirectional interface. This is the case for both independent paths that can be configured to function in a master-slave mode or a dual independent path mode. The A-Link interface, using a sample rate of 48kHz, will allow for this module to support up to 1280 mono channels per direction for each path. The 7800EMR-ALINK2 utilizes a video reference locked to the system reference to ensure the signals are properly locked for transporting the audio seamlessly back and forth across TDM and A-LINK. Reference is provided via the 7800 frame reference inputs, optionally the card does have an external reference that can be selected and used.

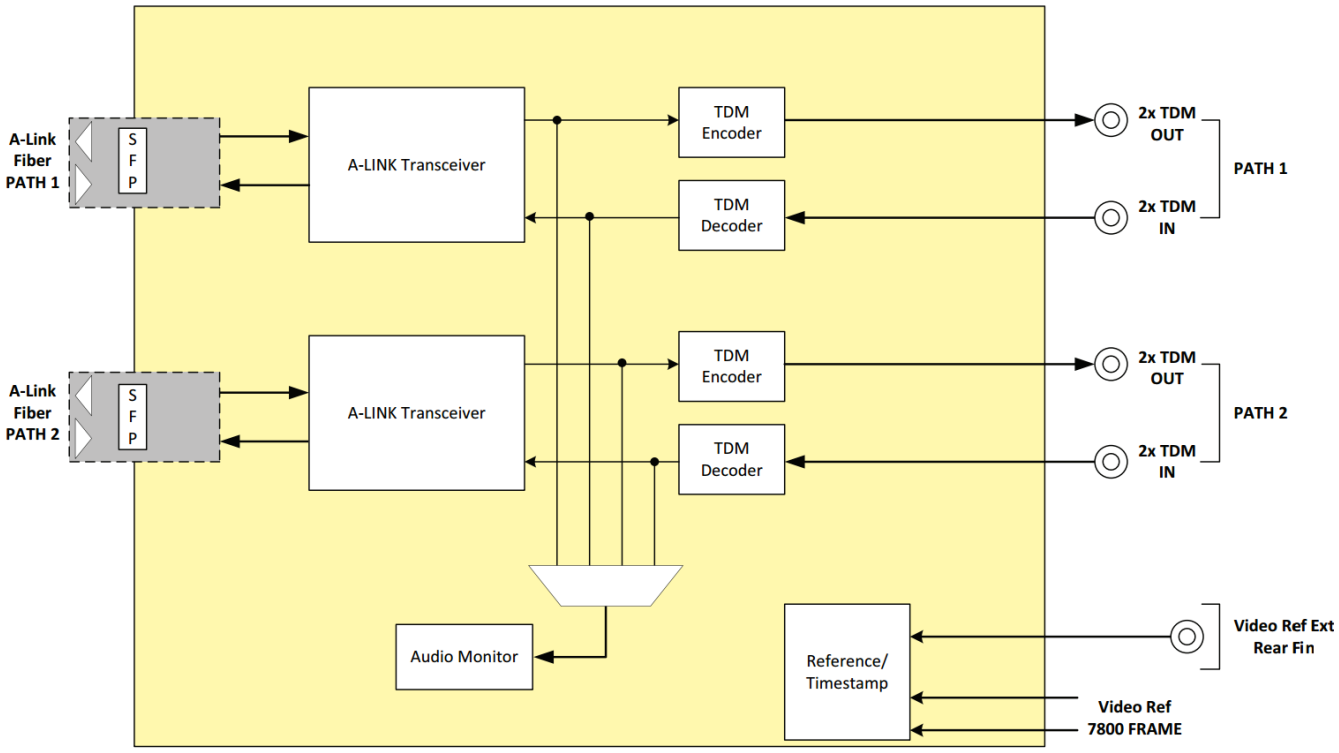

Figure 1-1: Block Diagram - 7800EMR-ALINK2

1.1. FEATURES & BENEFITS

- Low latency TDMV2
- 1280 Mono Channels per path
- Main and Redundant paths with auto fail over or dual path
- References from Rear Panel or Frame Reference
- Single Network connection
- Hot-swappable, Front- loading Modular Card
- VISTALINK® Monitoring and SNMP Management System

1.2. AUDIO CONNECTION

- **4 TDM DIN Inputs**: 4 DIN 1.0/2.3 Connectors
- **4 TDM DIN Outputs**: 4 DIN 1.0/2.3 Connectors

1.3. DUAL PORT MODE VS REDUNDANT MODE OPERATION

The 7800EMR-ALINK2 operates in two distinct modes, Dual Port Mode and Redundant Mode. When operating in Dual Port Mode, TDM Input 1 serves as the Main TDM Input and TDM Input 2 serves as the backup input on both A-Link port 1 & 2.

In Redundant Mode, A-Link Port 1 serves as the main A-Link port and Input 1 as the main TDM Input. A-Link Port 2 serves as the backup A-Link Port and as the backup TDM Input. In this mode the 2nd TDM input on each A-Link port is not operational. All TDM outputs remain operational in either Dual Port Mode or Redundant Mode

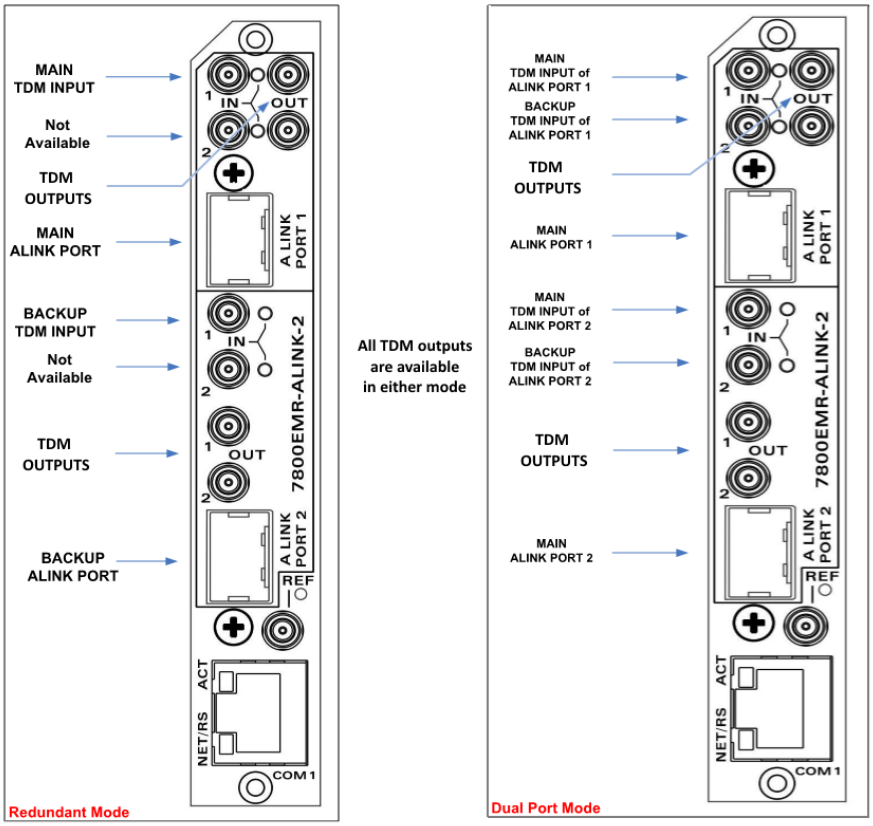

Figure 1-2 : Redundant Mode vs. Dual Port Mode Rear Panel Configuration - 7800EMR-ALINK2

2. SPECIFICATIONS

2.1. AUDIO INPUTS

Number of TDM Inputs	4 x DIN
Number of TDM Outputs	4 x DIN
Connector	BNC per IEC 61169-8 Annex A, DIN 1.0/2.3
Impedance	75 Ω terminating

2.2. A-LINK INPUTS/OUTPUTS

Number of A-LINK Inputs	2
Number of A-LINK Outputs	2
Connector:	SFP10G-TR85-A A-Link, SFP+ Optical Transceiver, 850nm, MMF

2.3. CONTROL

Ethernet	1 x RJ45

2.4. REFERENCE

External Reference Inputs	1 x DIN
Frame Reference Inputs	2 x BNC (depends on the frame)

2.5. FRAMES

Frame and Slot Occupancy	**7800FR** Frame with 1 slot occupancy
	7801FR Frame with 1 slot occupancy
	7800FR-QT Frame with 1 slot occupancy

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3. INSTALLATION

Before handling the card it is important to minimize the potential effects of static electricity. It is therefore recommended that an ESD strap to be worn.

7800EMR-ALINK2 module must have minimum 1 slot vacant in the frame. Each rear plate can house one 7800EMR-ALINK2 module.

3.1. INSTALLATION OF 7800EMR-ALINK2 ON 7800FR FRAME

Step 1: Install the 7800EMR-ALINK2 rear plate to the 7800 frame with screws provided and make sure the orientation of the rear plate is as shown in Figure 3-1.

Figure 3-1 : 7800EMR-ALINK2 Rear Plate

Step 2: Insert the 7800EMR-ALINK2 module in the 7800FR Frame and make sure the orientation of the card is correct and it is pushed all the way into the frame.

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4. FRONT CARD EDGE CONTROLS AND LEDS

The 7800EMR-ALINK2 front card edges have some key controls and indicators that can help in the installation and debugging processes. Figure 4-1 shows the card edges and describes the expected behavior of each component.

Component	Description	
A-Link Presence	Red	
	Green	
TDM Input	Red	
	Green	
Reference Detection	Red	Reference Lost
	Green	Reference Locked
Rotary Switch	Switched the display to view firmware version, IP address and temperature.	

Table 4-1 : Description of 7800EMR-ALINK2 Card Edge

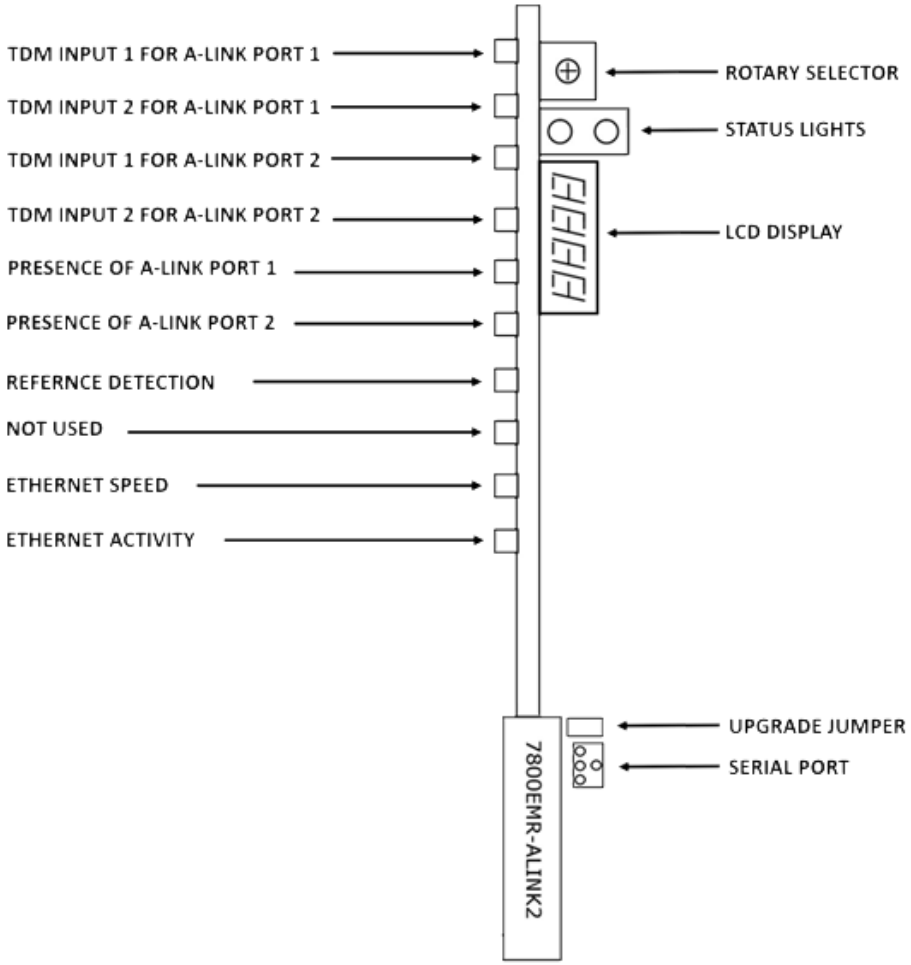

Figure 4-1 : Front Card Edges of 7800EMR-ALINK2

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5. SERIAL MENU

To determine or set IP address using the serial port, Connect DB9 cable between the COM port on the 7800EMR-ALINK2 (J6) and the computer. Start the terminal program and configure the ports settings with the parameters in Figure 5-1.

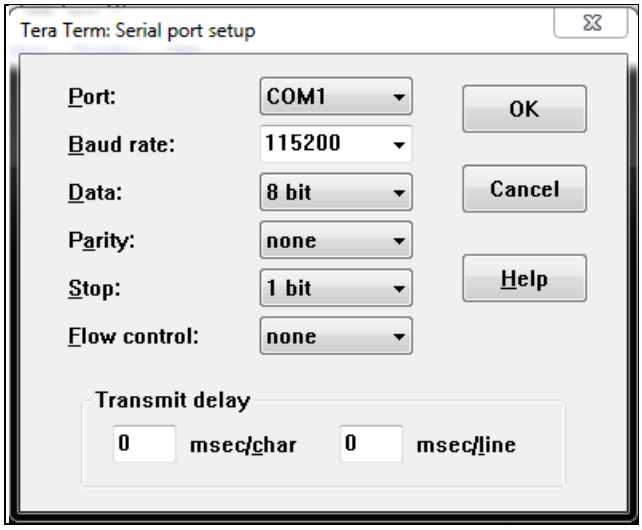

Figure 5-1 : COM Port Settings

After establishing serial communication, Main Menu will appear in the terminal window as in Figure 5-2.

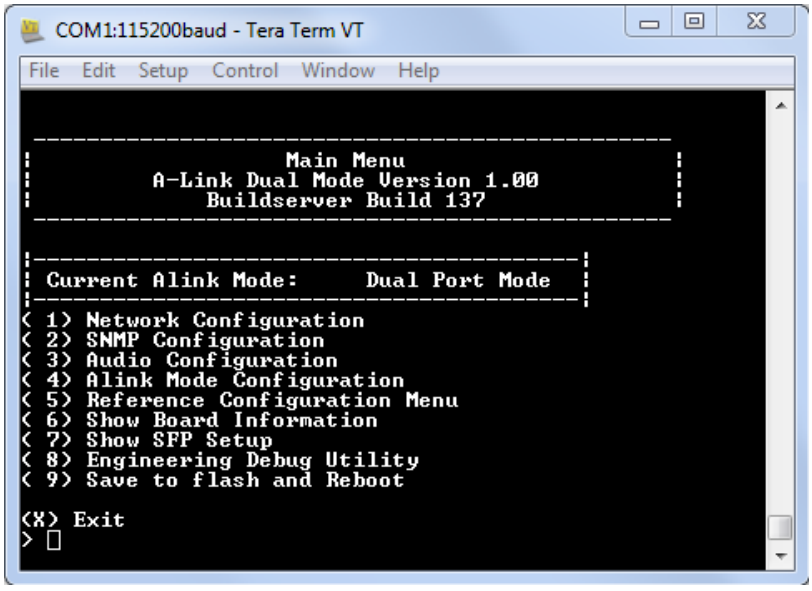

Figure 5-2 : Main Menu Prompt

5.1. NETWORK CONFIGURATION

Set IP Address	Allows the user to set the IP address.
Set Netmask	Allows the user to set the Netmask address.
Set Gateway	Allows the user to set the Gateway address.
Set Broadcast	Allows the user to set the Broadcast address.
Set DHCP	Allows the user to enable or disable the DHCP.

5.2. SNMP CONFIGURATION

Set Trap IP address	Allows the user to set the trap IP address.
Remove Trap IP address	Allows the user to remove the trap IP address.
Community Strings	Allows the user to set the community strings.

5.3. AUDIO CONFIGURATION

View Audio Input Packets		
	TDM Channels	Allows the user to view status of TDM Inputs.
	A-Link Channels	Allows the user to view status of A-Link Inputs.
View Audio Input Status		
	TDM Channels	Allows the user to view status of TDM Inputs in dB.
	A-Link Channels	Allows the user to view status of A-Link Inputs in dB.
TDM Port info		Displays the information about TDM Inputs and Outputs
A-LINK Port info		
	Set Redundant Mode	
		Use Main Port
		Use Redundant Port
		Use both Ports Main is preferred
		Use both Ports Redundant is preferred
	Set Quality Tx	Allows the user to set the transmitter quality between 0 -15.
	Set Address	Allows the user to set port address between 0 -254.
	Set Sample Rate	Allows the user to set SRC to 48KHz, 96KHz ……..
Audio TDM Fault Status		
	View Fault Configuration	Displays the fault for Silence ,Over Amplitude, Same/Anti phase, Loss and Non PCM.
	Set Fault Enable	Allows the user to enable the above faults per channel or range.
	Set Fault Threshold	Allows the user to set threshold for silence, over amplitude, same and anti phase.
	Set Fault Duration	Allows the user to set the fault duration for Silence, Over amplitude and phases, between 1-128 ms.
	Set Fault Reset Duration	Allows the user the set the trap reset time for Silence, over amplitude, phase, loss and non PCM.
Audio A-Link Fault Status		
	View Fault Configuration	Displays the fault for Silence ,Over Amplitude, Same/Anti phase, Loss and Non PCM.
	Set Fault Enable	Allows the user to enable the above faults per channel or range.
	Set Fault Threshold	Allows the user to set threshold for silence, over amplitude, same and anti phase.
	Set Fault Duration	Allows the user to set the fault duration for Silence, Over amplitude and phases, between 1-128 ms.
	Set Fault Reset Duration	Allows the user the set the trap reset time for Silence, over amplitude, phase, loss and non PCM.
View TDM Channel Pair Status	Allows the user to view the stereo status of TDM Audio Channel	
View A-Link Channel Pair Status	Allows the user to view the stereo status of A-Link Audio Channel	

TDM Tone Generator Menu		
	View Tone Gen Gain/Enable	Allows the user to view the gain status of tone gen per channel.
	View Tone Gen Status Info	Allows the user to view the status of tone gen per channel.
	Set Tone Gen Enable	Allows the user to enable or disable the tone gen per channel.
	Set Tone Gen Freq	Allows the user to set tone frequency.
	Set Tone Gen Gain	Allows the user to set the gain per channel.
	Set Tone Gen Invert	Allows the user to invert or un-invert audio phase.
A-Link Tone Generator Menu		
	View Tone Gen Gain/Enable	Allows the user to view the gain status of tone gen per channel.
	View Tone Gen Status Info	Allows the user to view the status of tone gen per channel.
	Set Tone Gen Enable	Allows the user to enable or disable the tone gen per channel.
	Set Tone Gen Freq	Allows the user to set tone frequency.
	Set Tone Gen Gain	Allows the user to set the gain per channel.
	Set Tone Gen Invert	Allows the user to invert or un-invert audio phase.

5.4. A-LINK MODE CONFIGURATION

Redundancy Mode	Allows the user to select Redundancy Mode.
Dual Port Mode	Allows the user to select Dual Port Mode.

5.5. REFERENCE CONFIGURATION MENU

View Reference Info	Allows the user to view status of Reference.
Set Primary Reference	Allows the user to set Ref.1 or Ref.2 as primary reference.
Set Reference input 2 source	Allows the user to set the reference source to be the MI or RP.
Set Reference Swap Mode	Allows the user to swap the reference manually or set it to Auto upon failure.
Set Video Reference Standard	Allows the user to select the reference standard if it is Video.
Reset Reference Swap count	Allows the user to reset the swap counter.
Reset PLL Drop count	Allows the user to reset the PLL drop count.
Reset Reference Drop count	Allows the user to reset the reference drop count.

5.6. SHOW BOARD INFORMATION

Displays all the information about the Firmware version, Temperature and LEDs.

5.7. SHOW SFP SETUP

Show SFP Status	Allows the user to view the status of SFP's.

5.8. ENGINEERING DEBUG UTILITY

This menu is used for Debugging purposes only.

5.9. SAVE TO FLASH AND REBOOT

When changes are made, this option is selected to save the changes to the flash and reboot the card.

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6. VISTALINK® PRO CONFIGURATION

This chapter assumes that the VistaLINK® PRO server and client are already configured for your network and user must have basic knowledge of the VistaLINK® PRO interface. It also assumes that the user or network administrator has already added the appropriate jar file to the server, and both the client and server applications have been restarted. 7800EMR-ALINK2 can communicate to VLPro using the control port of the card and appropriate Jar file. Open VistaLINK® PRO and click on the refresh tree icon. Select the IP address of 7800EMR-ALINK2 and right click to "View Configuration..." Depending on which mode the 7800EMR-ALINK2 is set to, the tab menu options in VistaLINK® PRO differ slightly. In section 6.1 and 6.2 both dual port mode and redundancy mode tab menus will be outlined respectively.

6.1. DUAL PORT MODE

When the 7800EMR-ALINK2 is operating in dual port mode the VistaLINK® PRO tab menus options will be displayed as outlined below.

6.1.1. GENERAL

The General tab displays the information about the Card, Frame Reference of Port 1 & 2 and Frame Reference trap status.

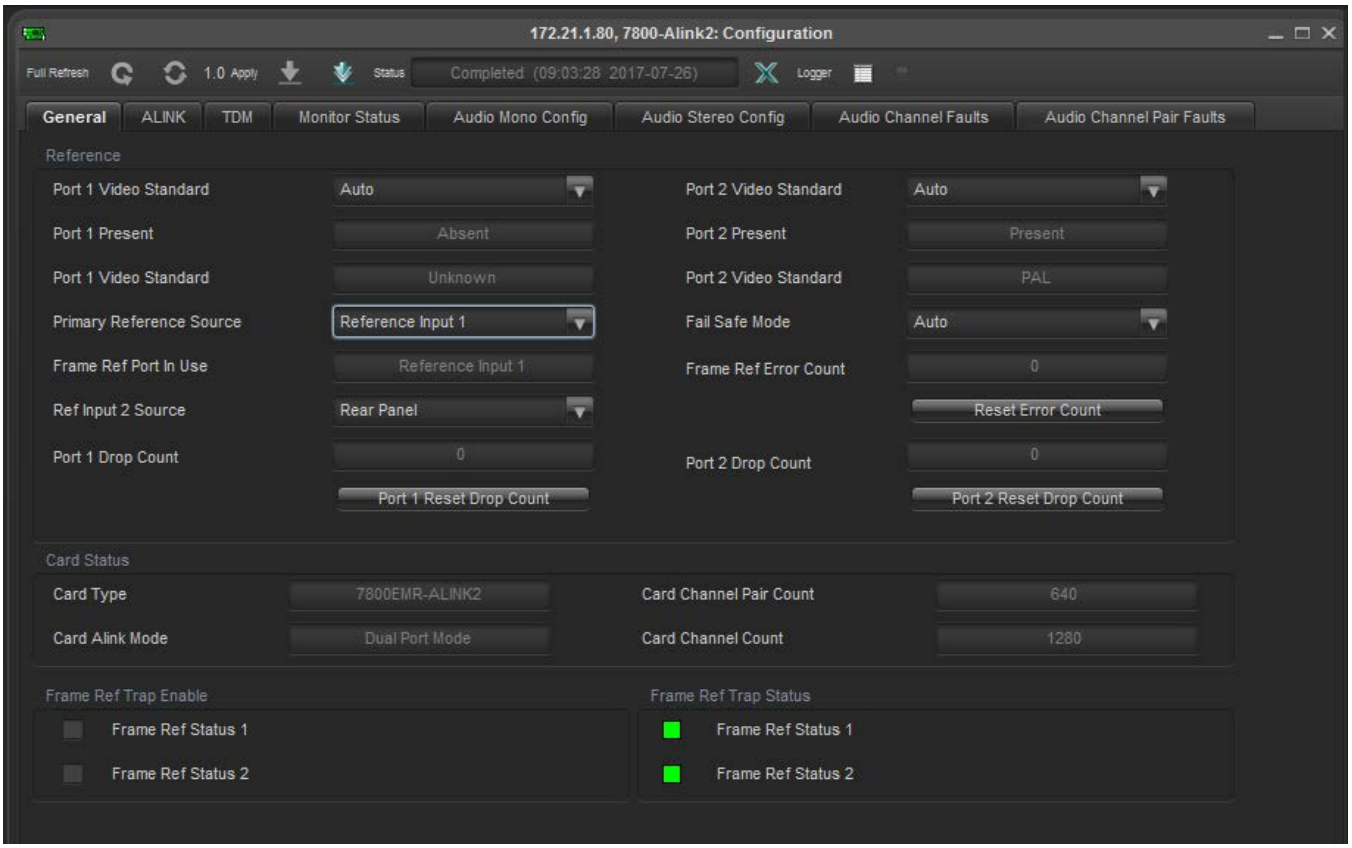

Figure 6-1 : Dual Port Mode - VistaLINK® - General

Reference

For Port 1 and Port2

Video Standard: Allows selecting the reference Standard from NTSC, PAL or Auto.

Present: Displays whether the Video reference is Present or Absent.

Video Standard: Displays the standard of the Video Reference.

Primary Reference Source: Allows to select the Primary Reference from Reference Port 1 or Reference Port 2.

Frame Ref Port In Use: Shows which Reference Port is in use (Reference Port 1 or Reference Port 2).

Ref Input 2 Source: Allows to select the Reference source, Frame or Rear Plate.

Port 1 Drop Count: Displays the Drop or Error Count of the Reference.

Port 1 Reset Drop Count: Button is used to reset the Drop or Error count of the reference.

Fail Safe Mode: Allows to configure the Reference fail safe mode, Fixed, Single Swap or Auto Mode.

Frame Ref Error Count: Shows the Error count of the Reference.

Reset Error Count: Button used to reset the Frame Reference Error Count.

Port 2 Drop Count: Displays the Drop or Error Count of the Reference.

Port 2 Reset Drop Count: Button is used to reset the Drop or Error count of the reference.

Card Status

Card Type: Displays the name of the card.

Card A-Link Mode: Displays which mode the card is current set to.

Card Channel Pair Count: Displays the Stereo Channel of the Card.

Card Channel Count: Displays the Mono Channel of the Card.

Frame Ref Trap and Status

Frame Ref Status 1: Raises a trap when a reference signal is removed from reference input 1.

Frame Ref Status 2: Raises a trap when a reference signal is removed from reference input 2.

6.1.2. A-LINK CONTROL

The A-Link Control section displays the status, control and A-Link Tone Generator.

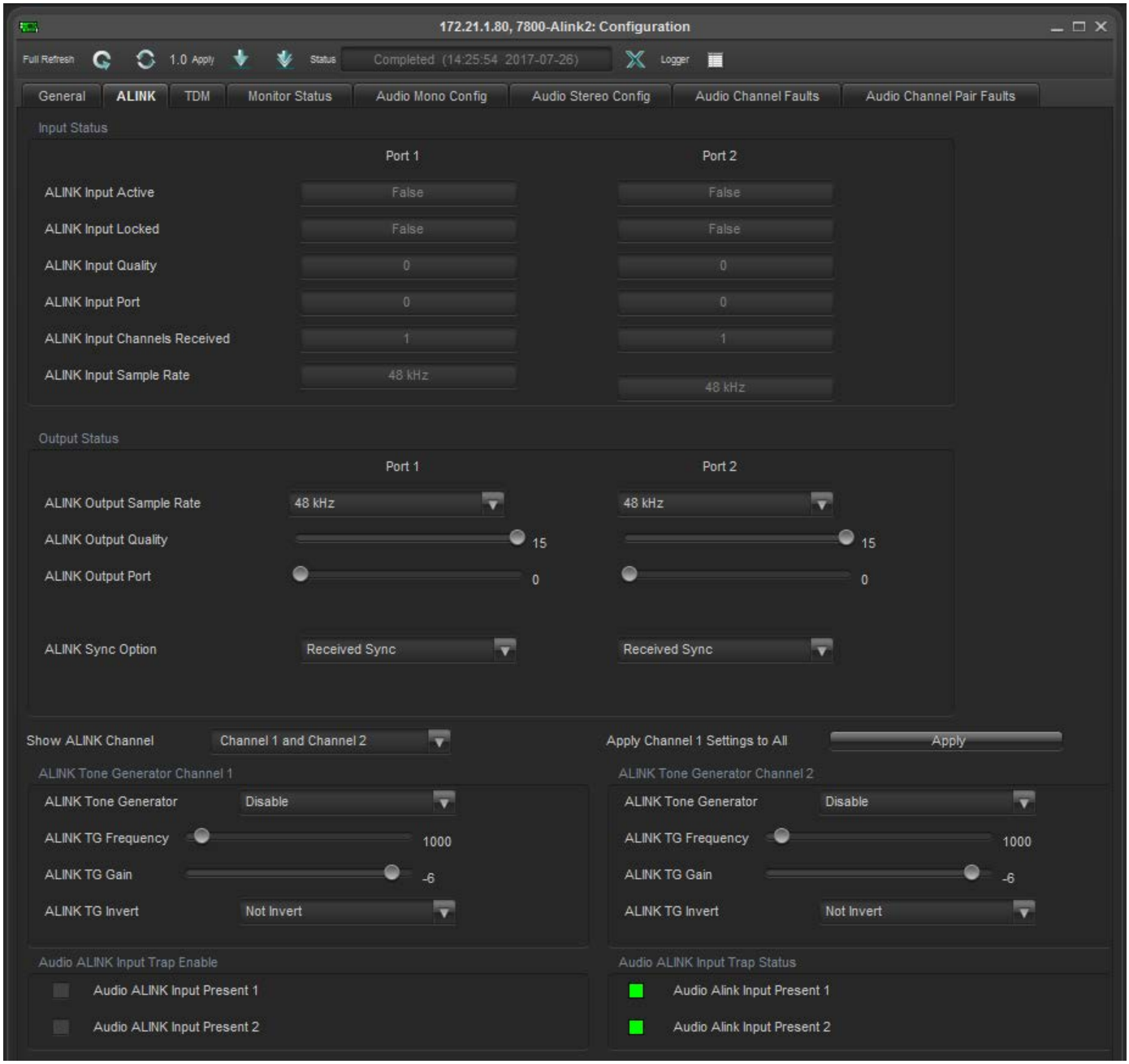

Figure 6-2 : Dual Port Mode - VistaLINK® - ALINK

Input Status

For A-Link Port 1 and Port 2

A-Link Input Active: Displays whether there is a valid A-LINK Input or not

A-Link Input Locked: Displays whether the A-LINK is Locked or not

A-Link Input Quality: Displays the quality of the A-LINK Source

A-Link Input Port: Displays the port # of the A-LINK Source

A-Link Input Channels Received: Displays the # of input channels received.

A-Link Input Sample Rate: Displays the input sample rate.

Output Status

For A-Link Port 1 and Port 2

A-Link Output Sample Rate: Allows the user to select the output sample rate.

A-Link Output Quality: Allows the user to select the output quality.

A-Link Output Port: Allows the user to select the output port.

A-Link Sync Option: Allows the user to select if the A-Link either generates or receives a Sync reference.

Show A-Link TG Channel: Allows the user to select to which pair of A-Link channels to configure.

Apply Button: Apply button allows the user to copy the settings of channel 1 to rest of the mono channels.

ALINK Tone Generator Channel 1 & 2

A-Link Tone Generator: Option to enable or disable tone generator per channel.

A-Link TG Frequency: Option to select the frequency of the tone generator.

A-Link TG Gain: Option to change the gain (-dB) of the tone generator.

A-Link TG invert: Option to invert the phase of the tone generator.

Audio A-Link Input Trap Enable

Audio A-Link Input Present 1: Option to enable the trap for A-Link Presence for A-Link port 1.

Audio A-Link Input Present 2: Option to enable the trap for A-Link Presence for A-Link port 2.

Audio A-Link Input Trap Status

Audio A-Link Input Present 1: Displays whether A-Link signal is present.

Audio A-Link Input Present 2: Displays whether A-Link signal is present.

6.1.3. TDM CONTROL

The TDM Control section displays the TDM Status and TDM Tone Generator.

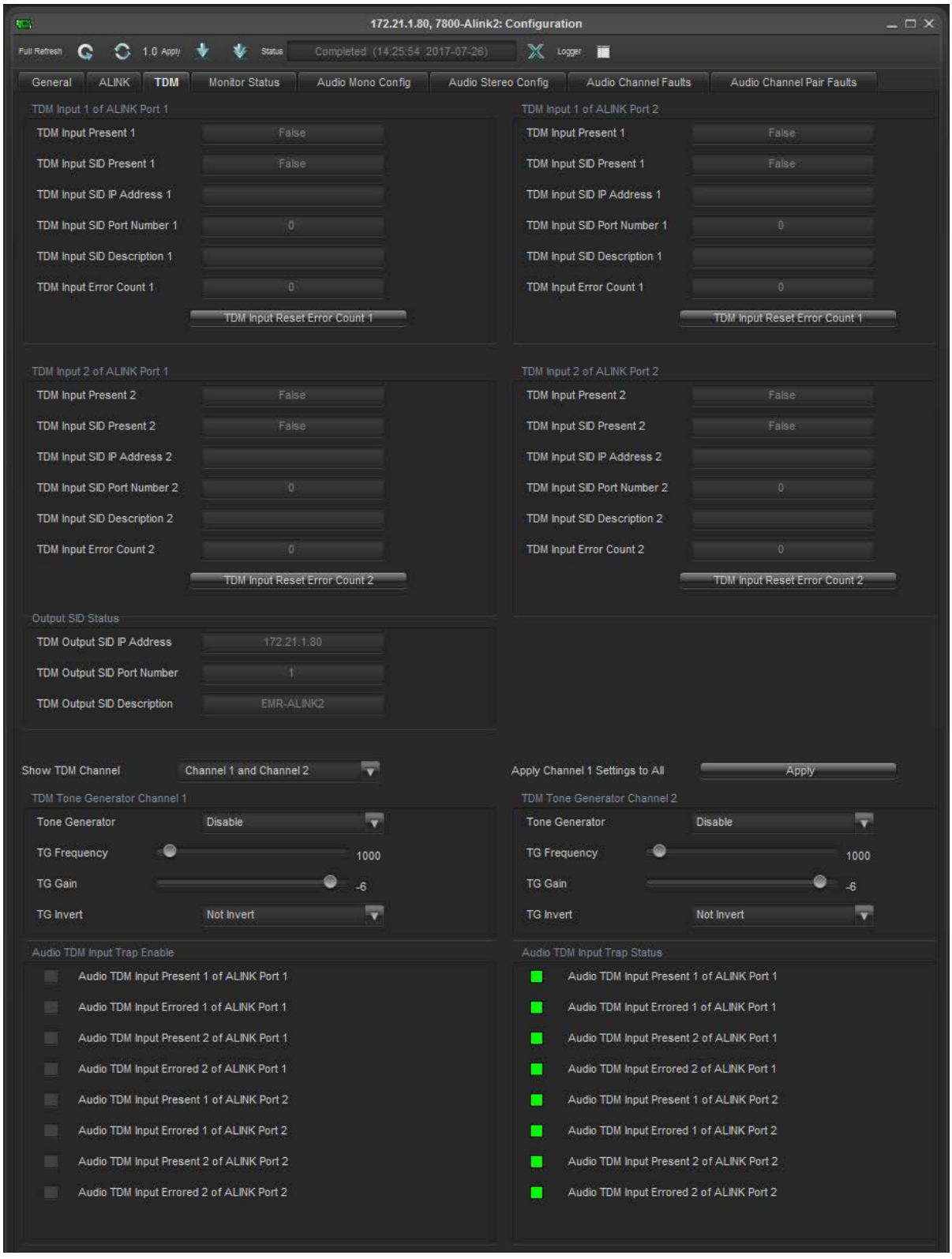

Figure 6-3 : Dual Port Mode - VistaLINK® - TDM Control

TDM Input 1 of A-Link Port 1

TDM Input Present 1: Displays whether the TDM Signal is detected on TDM Input 1 of A-Link Port 1.

TDM Input SID Present 1: Displays whether the TDM Signal has Source ID or not.

TDM Input SID IP Address 1: Displays the IP Address of the TDM Source.

TDM Input SID Port Number 1: Displays the Port # of the TDM Source.

TDM Input SID Description 1: Displays the description of the incoming TDM.

TDM Input Error Count 1: Displays the Error Count of the TDM signal on TDM Input 1 of A-Link Port 1.

TDM Input Reset Error Count 1: Button is used to reset the Error Count of the TDM Signal.

TDM Input 1 of A-Link Port 2

TDM Input Present 1: Displays whether the TDM Signal is detected on TDM Input 1 of A-Link Port 2.

TDM Input SID Present 1: Displays whether the TDM Signal has Source ID or not.

TDM Input SID IP Address 1: Displays the IP Address of the TDM Source.

TDM Input SID Port Number 1: Displays the Port # of the TDM Source.

TDM Input SID Description 1: Displays the description of the incoming TDM.

TDM Input Error Count 1: Displays the Error Count of the TDM signal on TDM Input 1 of A-Link Port 2.

TDM Input Reset Error Count 1: Button is used to reset the Error Count of the TDM Signal.

TDM Input 2 of A-Link Port 1

TDM Input Present 2: Displays whether the TDM Signal is detected on TDM Input 2 of A-Link Port 1.

TDM Input SID Present 2: Displays whether the TDM Signal has Source ID or not.

TDM Input SID IP Address 2: Displays the IP Address of the TDM Source.

TDM Input SID Port Number 2: Displays the Port# of the TDM Source.

TDM Input SID Description 2: Displays the description of the incoming TDM.

TDM Input Error Count 2: Displays the Error Count of the TDM signal on TDM Input 2 of A-Link Port 1.

TDM Input Reset Error Count 2: Button is used to reset the Error Count of the TDM Signal.

TDM Input 2 of A-Link Port 2

TDM Input Present 2: Displays whether the TDM Signal is detected on TDM Input 2 of A-Link Port 2.

TDM Input SID Present 2: Displays whether the TDM Signal has Source ID or not.

TDM Input SID IP Address 2: Displays the IP Address of the TDM Source.

TDM Input SID Port Number 2: Displays the Port# of the TDM Source.

TDM Input SID Description 2: Displays the description of the incoming TDM.

TDM Input Error Count 2: Displays the Error Count of the TDM signal on TDM Input 2 of A-Link Port 2.

TDM Input Reset Error Count 2: Button is used to reset the Error Count of the TDM Signal.

Output SID Status

TDM Output SID IP Address: Displays the IP Address of 7800EMR-A-LINK 2.

TDM Output SID Port Number: Displays the TDM Output Port # of 7800EMR-A-LINK 2.

TDM Output SID Description: Displays the description of outgoing TDM.

TDM Tone Generator Channel 1&2

Show A-Link TDM TG Channel: Allows the user to select to which pair of TDM channels to configure.

Apply Channel 1 Settings to All: Allows the user to apply chanel 1 setting to the rest of the mono channels.

Tone Generator: Option to enable to disable tone generator per channel.

TG Frequency: Option to select tone generator frequency (Hz).

TG Gain: Option to change the gain (-dB) for the tone.

TG Invert: Option to invert the phase for the tone.

Audio TDM Input Trap Enable

Audio TDM Input Present 1 of A-Link Port 1: Option to enable the trap for TDM presence for port 1.

Audio TDM Input Errored 1 of A-Link Port 1: Option to enable the trap for TDM Error for port 1.

Audio TDM Input Present 2 of A-Link Port 1: Option to enable the trap for TDM presence for port 1.

Audio TDM Input Errored 2 of A-Link Port 1: Option to enable the trap for TDM Error for port 1.

Audio TDM Input Present 1 of A-Link Port 2: Option to enable the trap for TDM presence for port 1.

Audio TDM Input Errored 1 of A-Link Port 2: Option to enable the trap for TDM Error for port 1 and 2.

Audio TDM Input Present 2 of A-Link Port 2: Option to enable the trap for TDM presence for port 1 & 2.

Audio TDM Input Errored 2 of A-Link Port 2: Option to enable the trap for TDM Error for port 1 and 2.

TDM Input Trap Status

Audio TDM Input Present 1of A-Link Port 1: Displays if TDM signal is present for A-Link port 1.

Audio TDM Input Errored 1of A-Link Port 1: Displays if there is any TDM signal error for A-Link port 2.

Audio TDM Input Present 2 of A-Link Port 1: Displays whether TDM signal is present and if there is any error for A-Link port 1.

Audio TDM Input Errored 2 of A-Link Port 1: Displays whether TDM signal is present and if there is any error for A-Link port 2.

Audio TDM Input Present 1of A-Link Port 2: Displays whether TDM signal is present and if there is any error for A-Link port 1.

Audio TDM Input Errored 1of A-Link Port 2: Displays whether TDM signal is present and if there is any error for A-Link port 2.

Audio TDM Input Present 2 of A-Link Port 2: Displays whether TDM signal is present and if there is any error for A-Link port 1.

Audio TDM Input Errored 2 of A-Link Port 2: Displays whether TDM signal is present and if there is any error for A-Link port 2.

6.1.4. MONITOR STATUS

The Monitor Status section allows the user to monitor the status of A-LINK and TDM Signal and also the audio.

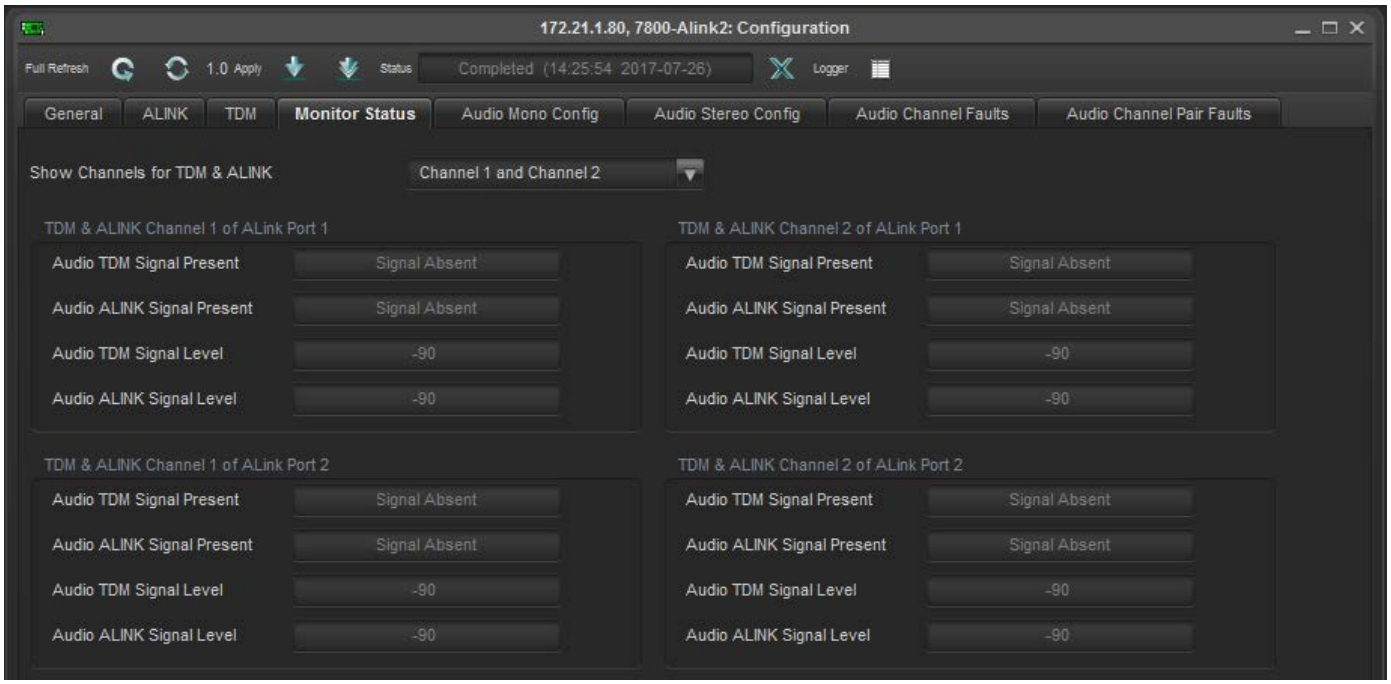

Figure 6-4 : Dual Port Mode - VistaLINK® - Monitor Status

TDM & A-LINK Channel 1&2 of A-LINK Port 1&2

Show Channels for TDM & A-Link: Allows the user to select the channels to see the status of TDM, A-Link and Audio Signal Levels.

Audio TDM Signal Present: Displays whether the TDM signal is present.

Audio A-Link Signal Present: Displays whether the A-Link signal is present.

Audio TDM Signal Level: Displays the Audio TDM signal Level.

Audio TDM Signal Level: Displays the Audio TDM signal Level.

Audio A-Link Signal Level: Displays the Audio A-Link signal Level.

6.1.5. AUDIO MONO CONFIG

The Audio Mono Config section allows the user to set the audio fault threshold for TDM and A-Link ports.

Figure 6-5 : Dual Port Mode - VistaLINK® - Audio Mono Config

TDM Audio Fault Definition for Channel 1 & 2 of Port 1 & 2

Show TDM Fault Definition Channel: Allows the user to select the mono channels to set the fault definitions.

Apply button: Apply button is to set the mono channel 1 settings to rest of the mono channels.

TDM Loss Reset Duration: Option to check audio for this many sec. before the fault is reset.

TDM Silence Level: Option to set the level that is considered silence.

TDM Silence Duration: Option to check audio for this many samples before it is declared “silence”.

TDM Silence Reset Duration: Option to check silence duration for this many sec. before the fault is reset.

TDM Over Level: Option to set the audio level that is considered “over”.

TDM Over Duration: Option to check audio for this many samples before it is declared “over”.

TDM Over Reset Duration: Option to check over duration for this many sec. before the fault is reset.

A-Link Audio Fault Definition for Channel 1 & 2 of Port 1 & 2

Show TDM Fault Definition Channel: Allows the user to select the mono channels to set the fault definitions.

Apply Button: Apply button is to set the mono channel 1 settings to rest of the mono channels.

A-Link Loss Reset Duration: Option to check audio for this many sec. before the fault is reset.

A-Link Silence Level: Option to set the level that is considered silence.

A-Link Silence Duration: Option to check audio for this many samples before it is declared “silence”.

A-Link Silence Reset Duration: Option to check silence duration for this many sec. before the fault is reset.

A-Link Over Level: Option to set the audio level that is considered “over”.

A-Link Over Duration: Option to check audio for this many samples before it is declared “over”.

A-Link Over Reset Duration: Option to check over duration for this many sec. before the fault is reset.

6.1.6. AUDIO STEREO CONFIG

The Audio Stereo Config section allows the user to set the audio fault threshold for TDM and A-Link ports.

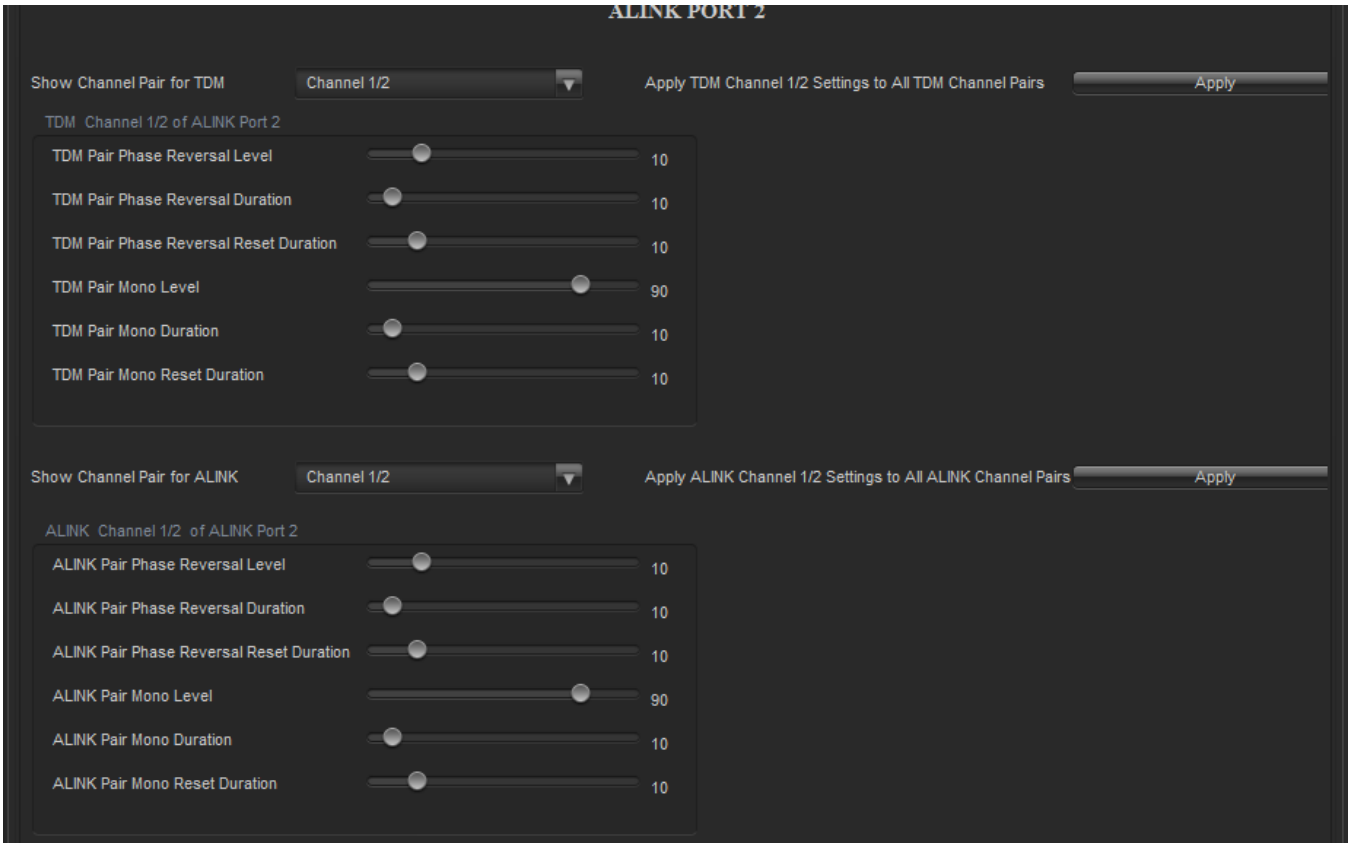

Figure 6-6 : Dual Port Mode - VistaLINK® - Audio Stereo Config

TDM Audio Fault Definition for Port 1&2

Show TDM Fault Definition Channel: Allows the user to select the TDM stereo channel to set the fault definitions.

Apply Button: Apply button is to set the TDM stereo channel 1/2 settings to rest of the stereo channels.

TDM Pair Phase Reversal Level: Sets the ratio of the pair at which it is declared out of phase.

TDM Pair Reversal Duration: Sets the duration before the signal is declared out of phase.

TDM Pair Phase Reversal Reset Duration: Sets the duration before the phase detection begins monitoring again.

TDM Pair Mono Level: Sets the ratio of the pair at which it is declared mono.

TDM Pair Mono Duration: Sets the duration before the signal is declared mono.

TDM Pair Mono Reset Duration: Sets the duration before the mono detection begins monitoring again.

TDM Audio Definition for Port 1&2

Show A-Link Fault Definition Channel: Allows the user to select the A-Link stereo channel to set the fault definitions.

Apply Button: Apply button is to set the TDM stereo channel 1/2 settings to rest of the stereo channels.

A-Link Pair Phase Reversal Level: Sets the ratio of the pair at which it is declared out of phase.

A-Link Pair Reversal Duration: Sets the duration before the signal is declared out of phase.

A-Link Pair Phase Reversal Reset Duration: Sets the duration before the phase detection begins monitoring again.

A-Link Pair Mono Level: Sets the ratio of the pair at which it is declared mono.

A-Link Pair Mono Duration: Sets the duration before the signal is declared mono.

A-Link Pair Mono Reset Duration: Sets the duration before the mono detection begins monitoring again.

6.1.7. AUDIO CHANNEL FAULTS

The Audio Pair Faults section allows the user to Enable or Disable the Phase Reversal traps and Mono traps.

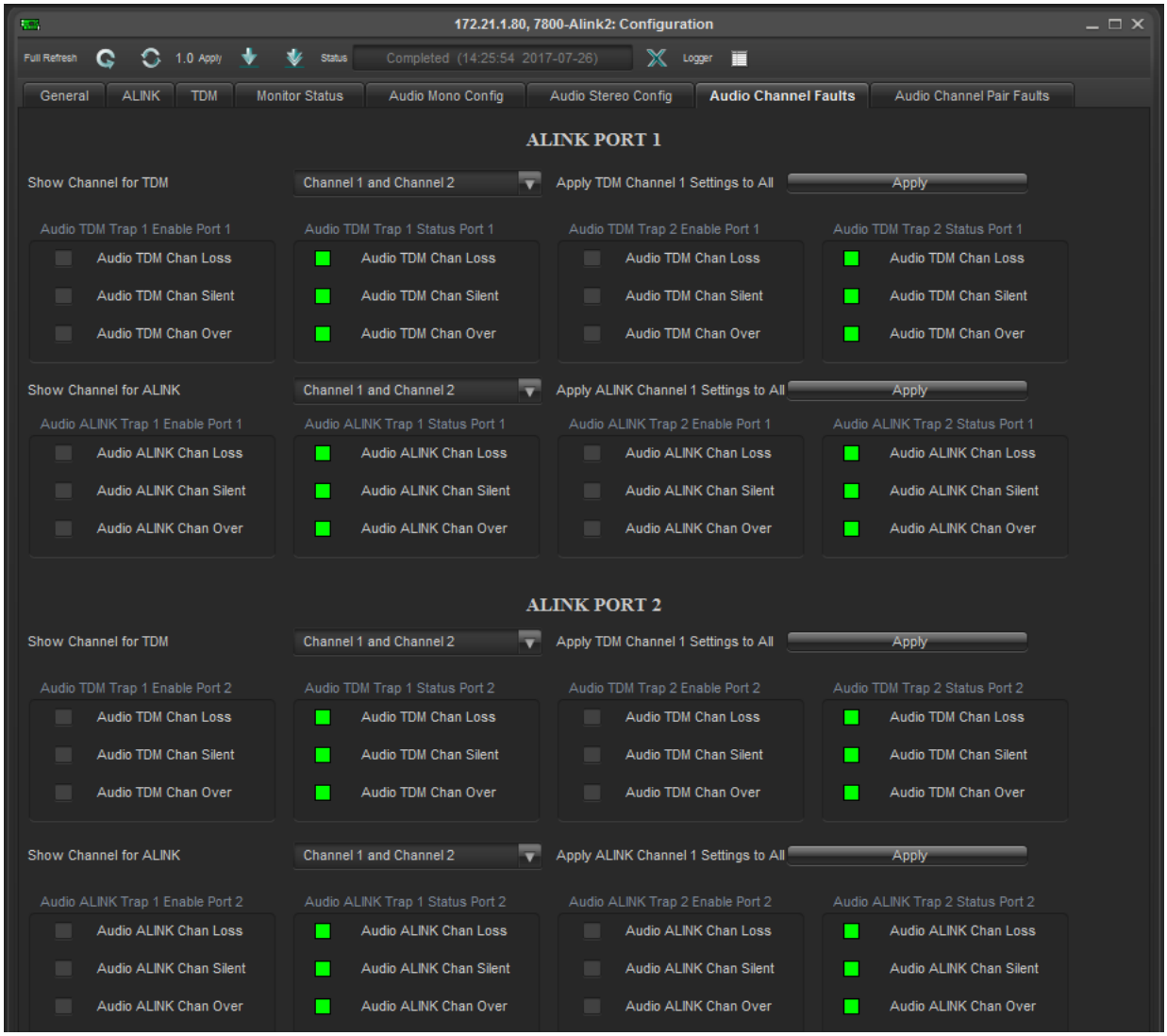

Figure 6-7 : Dual Port Mode - VistaLINK® - Audio Channel Faults

Show TDM Audio Fault Channels: Allows the user to select the TDM channels to enable the traps.

Apply Button: Apply button is to set the channel 1 settings to rest of the TDM channels.

TDM Trap Enable For A-Link Port 1 & 2

Audio Channel Loss: Option to enable the trap for audio channel loss.

Audio Channel Silent: Option to enable the trap for audio channel silent.

Audio Channel Over: Option to enable the trap for audio channel over.

TDM Fault Status For A-Link Port 1 & 2

Audio Channel Loss: Option to display whether the audio is Lost.

Audio Channel Silent: Option to display whether the audio is silent.

Audio Channel Over: Option to display whether the audio is over.

A-Link Trap Enable For A-Link Port 1 & 2

Audio Channel Loss: Option to enable the trap for audio channel loss.

Audio Channel Silent: Option to enable the trap for audio channel silent.

Audio Channel Over: Option to enable the trap for audio channel over.

A-Link Fault Status For A-Link Port 1 & 2

Audio Channel Loss: Option to display whether the audio is Lost.

Audio Channel Silent: Option to display whether the audio is silent.

Audio Channel Over: Option to display whether the audio is over.

6.1.8. AUDIO CHANNEL PAIR FAULTS

The Audio Pair Faults section allows the user to Enable or Disable the Phase Reversal traps and Mono traps.

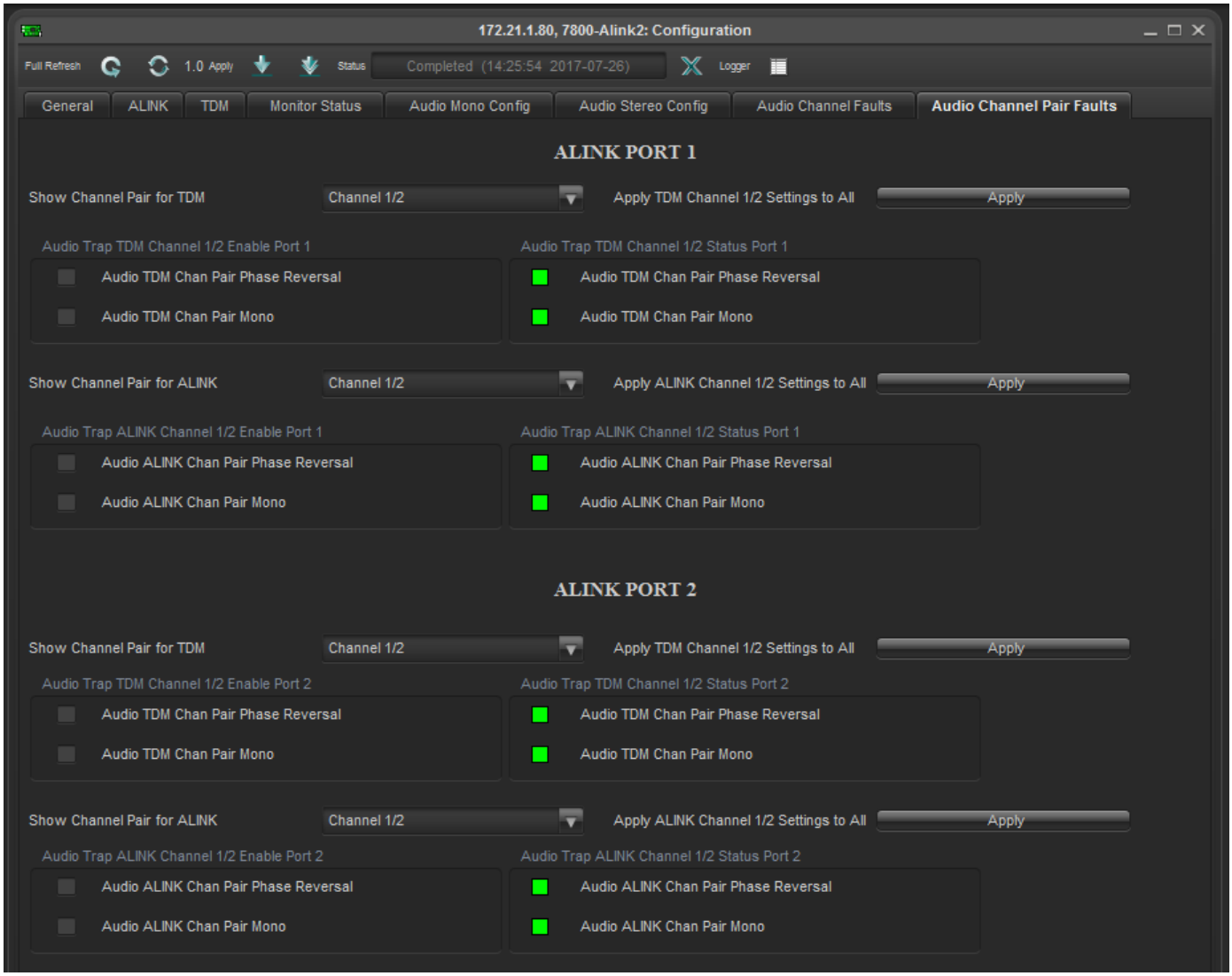

Figure 6-8 : Dual Port Mode VistaLINK® - Audio Channel Pair Faults

TDM Channels for A-Link Port 1 & Port 2

Show Audio Fault Channels: Allows the user to select which TDM channels to enable traps on.

Apply Button: The apply button applies the channel 1 settings to the rest of the TDM channels.

Trap Enable: Phase Reversal: Allows the user to enable traps to be sent out when a phase reversal fault is detected on the selected audio pair.

Trap Status: Phase Reversal: Status monitor displays fault condition on the audio pairs. Green indicates no faults while red indicates a triggered fault condition.

Trap Enable: Mono: Allows the user to enable traps to be sent out when a fault is detected on a mono channel on the selected audio pair.

Trap Status: Mono: Status monitor displays fault condition on the audio pairs. Green indicates no faults while red indicates a triggered fault condition.

A-Link Channels for A-Link Port 1 & Port 2

Show Audio Fault Channels: Allows the user to select which A-Link channels to enable traps on.

Apply Button: The apply button applies the channel 1 settings to the rest of the A-Link channels.

Trap Enable: Phase Reversal: Allows the user to enable traps to be sent out when a phase reversal fault is detected on the selected audio pair.

Trap Status: Phase Reversal: Status monitor displays fault condition on the audio pairs. Green indicates no faults while red indicates a triggered fault condition.

Trap Enable: Mono: Allows the user to enable traps to be sent out when a fault is detected on a mono channel on the selected audio pair.

Trap Status: Mono: Status monitor displays fault condition on the audio pairs. Green indicates no faults while red indicates a triggered fault condition.

6.2. REDUNDANCY MODE

When the 7800EMR-ALINK2 is operating in dual port mode the VistaLINK® PRO tab menus options will be displayed as outlined below

6.2.1. GENERAL TAB

The General tab displays the information about the Card, Frame Reference of Port 1 & 2 and Frame Reference trap status.

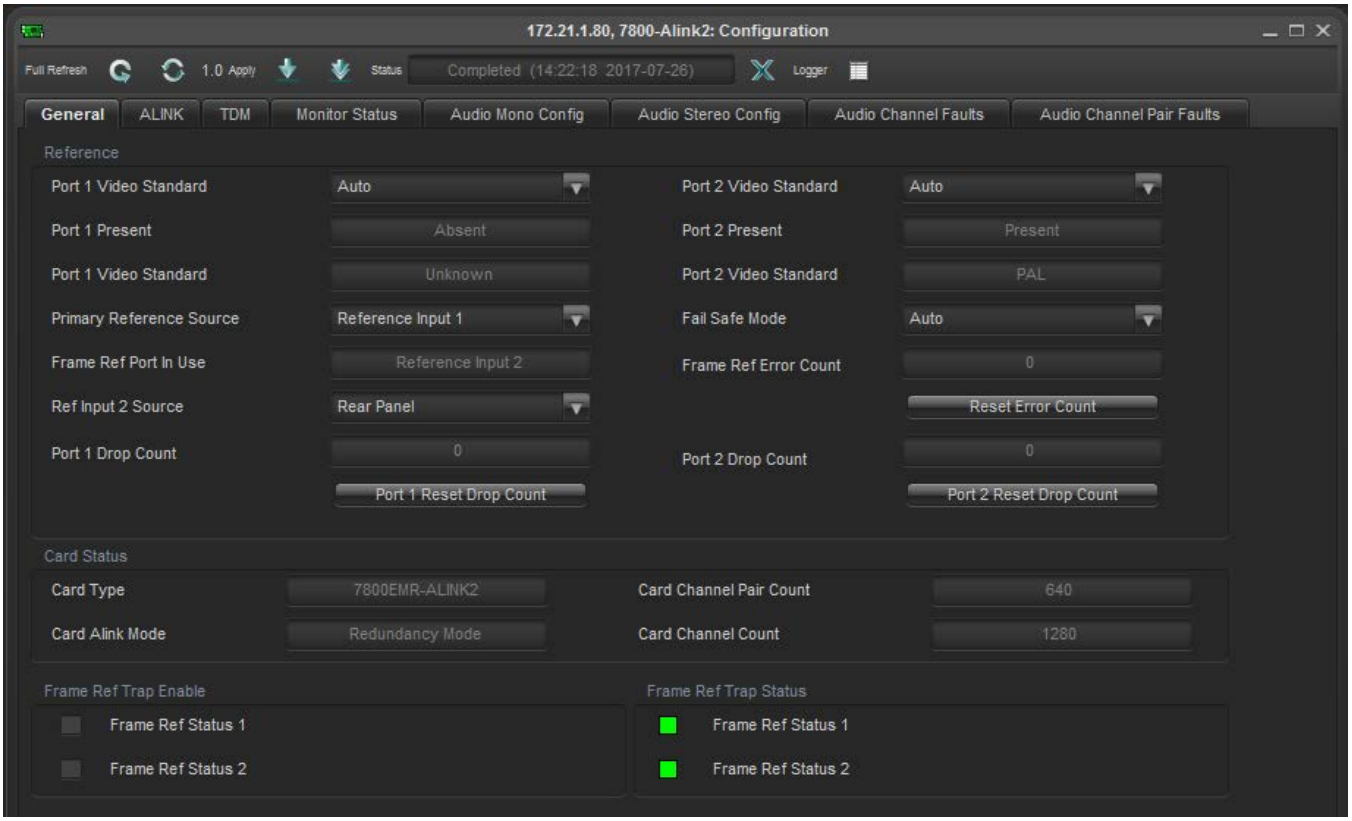

Figure 6-9 : Redundancy Mode - VistaLINK® - General

Reference

For Port 1&2

Video Standard: Allows to select the reference Standard from NTSC, PAL or Auto.

Present: Displays whether the Video reference is Present or Absent.

Video Standard: Displays the standard of the Video Reference.

Primary Reference Source: Allows to select the Primary Reference from Reference Port 1 or Reference Port 2.

Frame Ref Port In Use: Shows which Reference Port is in use (Reference Port 1 or Reference Port 2).

Ref Input 2 Source: Allows to select the Reference source, Frame or Rear Plate.

Port 1 Drop Count: Displays the Drop or Error Count of the Reference.

Port 1 Reset Drop Count: Button is used to reset the Drop or Error count of the reference.

Fail Safe Mode: Allows to configure the Reference fail safe mode, Fixed, Single Swap or Auto Mode.

Frame Ref Error Count: Shows the Error count of the Reference.

Reset Error Count: Button used to reset the Frame Reference Error Count.

Port 2 Drop Count: Displays the Drop or Error Count of the Reference.

Port 2 Reset Drop Count: Button is used to reset the Drop or Error count of the reference.

Card Status

Card Type: Displays the name of the card.

Card A-Link Mode: Displays which mode the card is current set to.

Card Channel Pair Count: Displays the Stereo Channel of the Card.

Card Channel Count: Displays the Mono Channel of the Card.

Frame Ref Trap & Status

Frame Ref Status 1: Raises a trap when a reference signal is removed from reference input 1.

Frame Ref Status 2: Raises a trap when a reference signal is removed from reference input 2.

6.2.2. A-LINK CONTROL

The A-Link Control section displays the status, control and A-Link Tone Generator

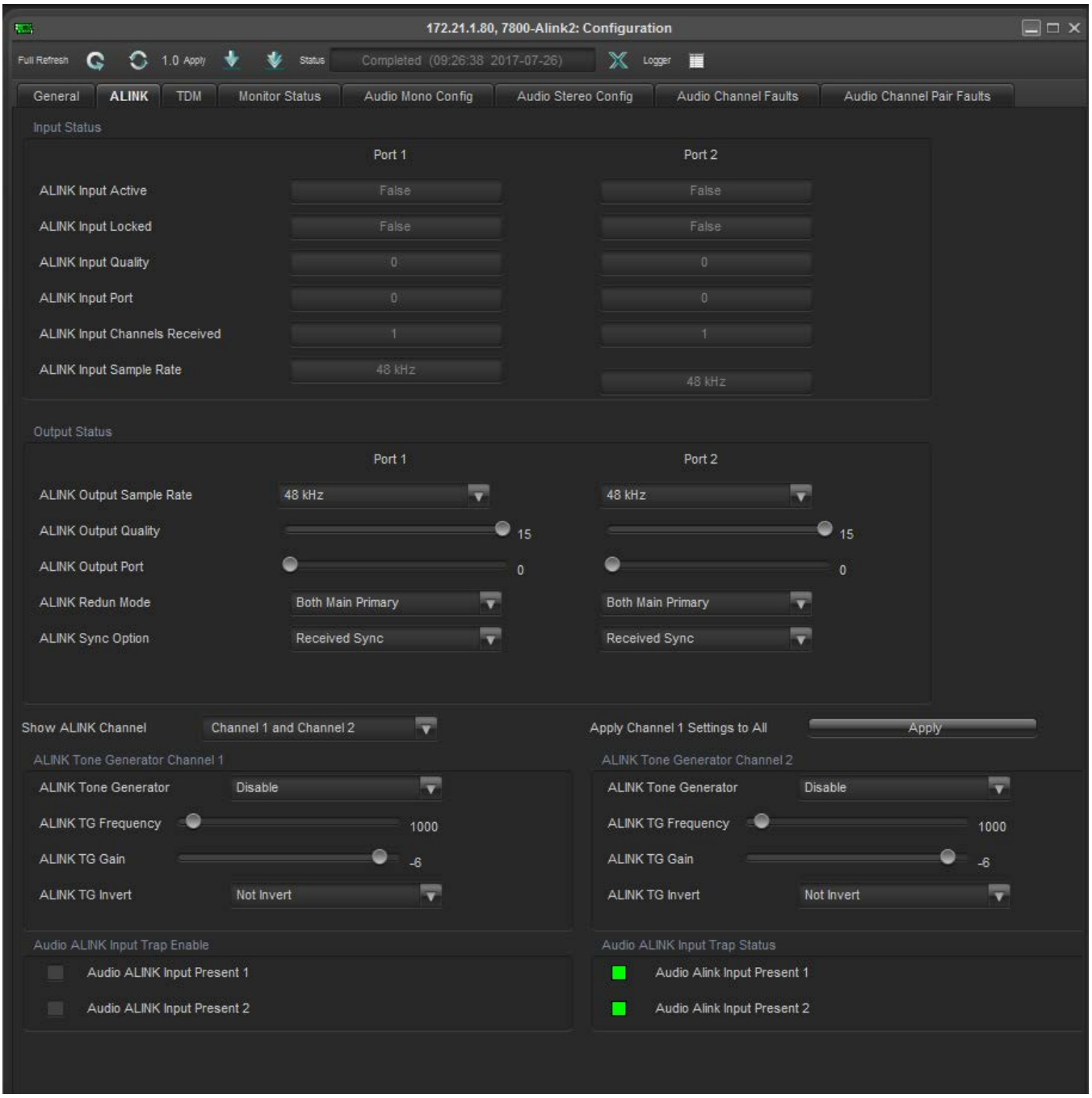

Figure 6-10 : Redundancy Mode - VistaLINK® - ALINK

Input Status for A-Link Port 1 & Port 2

A-Link Input Active: Displays whether there is a valid A-LINK Input or not.

A-Link Input Locked: Displays whether the A-LINK is Locked or not.

A-Link Input Quality: Displays the quality of the A-LINK Source.

A-Link Input Port: Displays the port # of the A-LINK Source.

A-Link Input Channels Received: Displays the # of input channels received.

A-Link Input Sample Rate: Displays the input sample rate.

Output Status for A-Link Port 1 & Port 2

A-Link Output Sample Rate: Allows the user to select the output sample rate.

A-Link Output Quality: Allows the user to select the output quality.

A-Link Output Port: Allows the user to select the output port.

A-Link Redundancy Mode: Allows the user to select which mode the A-Link operates in a redundancy instance.

A-Link Sync Option: Allows the user to select if the A-Link either generates or receives a Sync reference.

A-Link Tone Generator

Show A-Link TG Channel: Allows the user to select to which pair of A-Link channels to configure.

Apply Button: Apply button allows the user to copy the settings of channel 1 to rest of the mono channels.

A-Link Tone Generator: Option to enable or disable tone generator per channel.

A-Link TG Frequency: Option to select the frequency of the tone generator.

A-Link TG Gain: Option to change the gain (-dB) of the tone generator.

A-Link TG invert: Option to invert the phase of the tone generator.

Audio A-Link Input Trap Enable

Audio A-Link Input Present 1: Option to enable the trap for A-Link Presence for A-Link port 1.

Audio A-Link Input Present 2: Option to enable the trap for A-Link Presence for A-Link port 2.

Audio A-Link Input Trap Status

Audio A-Link Input Present 1: Displays whether A-Link signal is present.

Audio A-Link Input Present 2: Displays whether A-Link signal is present.

6.2.3. TDM CONTROL

The TDM Control section displays the TDM Status and TDM Tone Generator

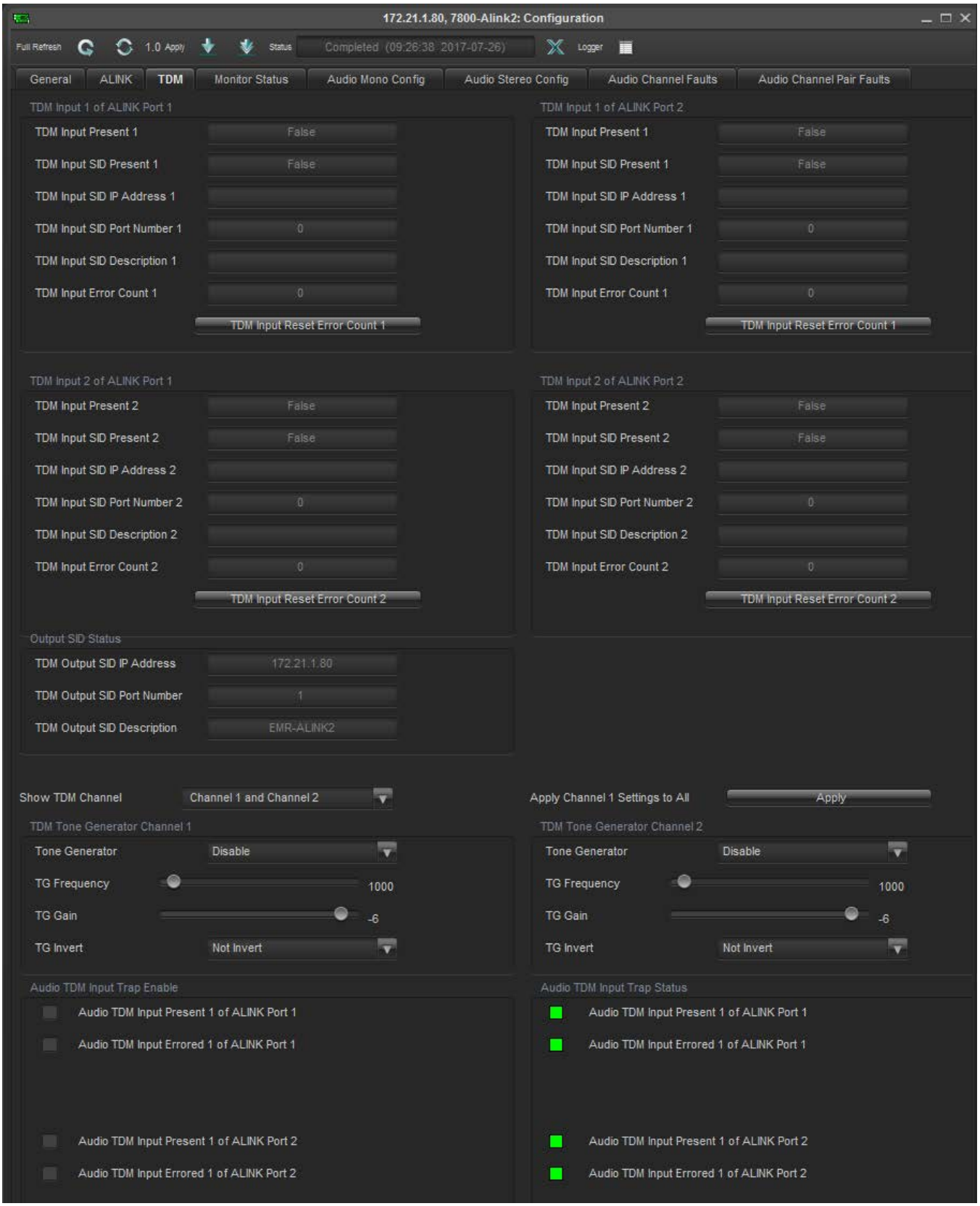

Figure 6-11 : Redundancy Mode - VistaLINK® - TDM Control

TDM Input 1 of A-Link Port 1

TDM Input Present 1: Displays whether the TDM Signal is detected on TDM Input 1 of A-Link Port 1.

TDM Input SID Present 1: Displays whether the TDM Signal has Source ID or not.

TDM Input SID IP Address 1: Displays the IP Address of the TDM Source.

TDM Input SID Port Number 1: Displays the Port # of the TDM Source.

TDM Input SID Description 1: Displays the description of the incoming TDM.

TDM Input Error Count 1: Displays the Error Count of the TDM signal on TDM Input 1 of A-Link Port 1.

TDM Input Reset Error Count 1: Button is used to reset the Error Count of the TDM Signal.

TDM Input 1 of A-Link Port 2

TDM Input Present 1: Displays whether the TDM Signal is detected on TDM Input 1 of A-Link Port 2.

TDM Input SID Present 1: Displays whether the TDM Signal has Source ID or not.

TDM Input SID IP Address 1: Displays the IP Address of the TDM Source.

TDM Input SID Port Number 1: Displays the Port # of the TDM Source.

TDM Input SID Description 1: Displays the description of the incoming TDM.

TDM Input Error Count 1: Displays the Error Count of the TDM signal on TDM Input 1 of A-Link Port 2.

TDM Input Reset Error Count 1: Button is used to reset the Error Count of the TDM Signal.

TDM Input 2 of A-Link Port 1

TDM Input Present 2: Displays whether the TDM Signal is detected on TDM Input 2 of A-Link Port 1.

TDM Input SID Present 2: Displays whether the TDM Signal has Source ID or not.

TDM Input SID IP Address 2: Displays the IP Address of the TDM Source.

TDM Input SID Port Number 2: Displays the Port # of the TDM Source.

TDM Input SID Description 2: Displays the description of the incoming TDM.

TDM Input Error Count 2: Displays the Error Count of the TDM signal on TDM Input 2 of A-Link Port 1.

TDM Input Reset Error Count 2: Button is used to reset the Error Count of the TDM Signal.

TDM Input 2 of A-Link Port 2

TDM Input Present 2: Displays whether the TDM Signal is detected on TDM Input 2 of A-Link Port 2.

TDM Input SID Present 2: Displays whether the TDM Signal has Source ID or not.

TDM Input SID IP Address 2: Displays the IP Address of the TDM Source.

TDM Input SID Port Number 2: Displays the Port # of the TDM Source.

TDM Input SID Description 2: Displays the description of the incoming TDM.

TDM Input Error Count 2: Displays the Error Count of the TDM signal on TDM Input 2 of A-Link Port 2.

TDM Input Reset Error Count 2: Button is used to reset the Error Count of the TDM Signal.

Output SID Status

TDM Output SID IP Address: Displays the IP Address of 7800EMR-A-LINK 2.

TDM Output SID Port Number: Displays the TDM Output Port # of 7800EMR-A-LINK 2.

TDM Output SID Description: Displays the description of outgoing TDM.

TDM Tone Generator

Show A-Link TDM TG Channel: Allows the user to select to which pair of TDM channels to configure.

Apply Channel 1 Settings to All: Apply button allows the user to copy the settings of channel 1 to rest of the mono channels.

Tone Generator: Option to enable to disable tone generator per channel.

TG Frequency: Option to select tone generator frequency.

TG Gain: Option to change the gain for the tone.

TG Invert: Option to invert the phase for the tone.

Audio TDM Input Trap Enable

Audio TDM Input Present 1 of A-Link Port 1: Option to enable the trap for TDM presence for port 1.

Audio TDM Input Errored 1 of A-Link Port 1: Option to enable the trap for TDM Error for port 1 and 2.

Audio TDM Input Present 1of A-Link Port 2: Option to enable the trap for TDM presence for port 1 and 2.

Audio TDM Input Errored 1 of A-Link Port 2: Option to enable the trap for TDM Error for port 1 and 2.

TDM Input Trap Status

Audio TDM Input Present 1 of A-Link Port 1: Displays whether TDM signal is present and if there is any error for A-Link port 1.

Audio TDM Input Errored 1 of A-Link Port 1: Displays whether TDM signal is present and if there is any error for A-Link port 2.

Audio TDM Input Present 1of A-Link Port 2: Displays whether TDM signal is present and if there is any error for A-Link port 1.

Audio TDM Input Errored 1 of A-Link Port 2: Displays whether TDM signal is present and if there is any error for A-Link port 2.

6.2.4. MONITOR STATUS

The Monitor Status section allows the user to monitor the status of A-LINK and TDM Signal and also the audio signal level.

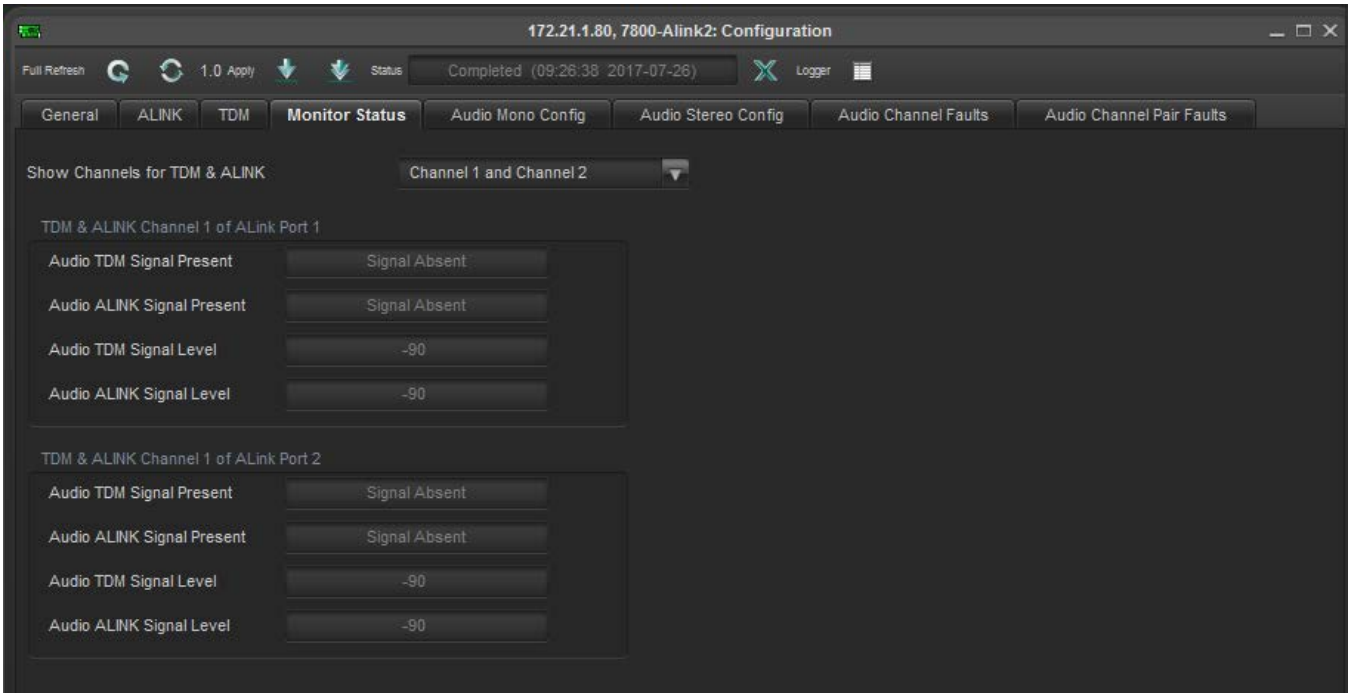

Figure 6-12 : Redundancy Mode - VistaLINK® - Monitor Status

TDM & A-LINK Channel 1 of A-Link Port 1 & 2

Show Channels for TDM & A-Link: Allows the user to select the channels to see the status of TDM, A-Link and Audio Signal Levels.

Audio TDM Signal Present: Displays whether the TDM signal is present.

Audio A-Link Signal Present: Displays whether the A-Link signal is present.

Audio TDM Signal Level: Displays the Audio TDM signal Level.

Audio A-Link Signal Level: Displays the Audio A-Link signal Level.

6.2.5. AUDIO MONO CONFIG

The Audio Mono Config section allows the user to set the audio fault threshold for TDM and A-Link ports.

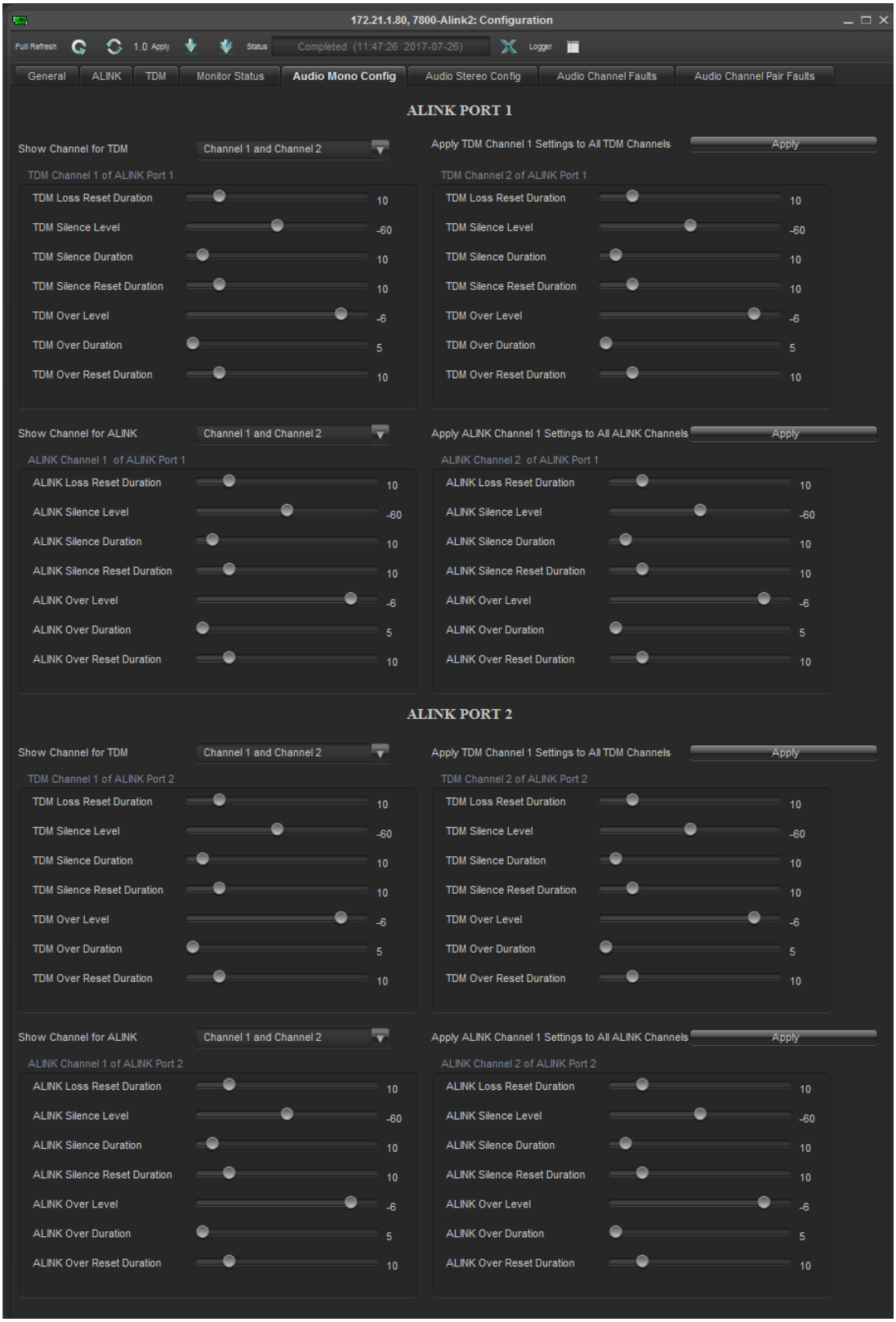

Figure 6-13 : Redundancy Mode - VistaLINK® - Audio Mono Config

TDM Audio Fault Definition for Channel 1 & 2 of Port 1 & 2

Show TDM Fault Definition Channel: Allows the user to select the mono channels to set the fault definitions.

Apply button: Apply button is to set the mono channel 1 settings to rest of the mono channels.

TDM Loss Reset Duration: Option to check audio for this many sec. before the fault is reset.

TDM Silence Level: Option to set the level that is considered silence.

TDM Silence Duration: Option to check audio for this many samples before it is declared “silence”.

TDM Silence Reset Duration: Option to check silence duration for this many sec. before the fault is reset.

TDM Over Level: Option to set the audio level that is considered “over”.

TDM Over Duration: Option to check audio for this many samples before it is declared “over”.

TDM Over Reset Duration: Option to check over duration for this many sec. before the fault is reset.

A-Link Audio Fault Definition for Channel 1 & 2 of Port 1 & 2

Show A-Link Fault Definition Channel: Allows the user to select the mono channels to set the fault definitions.

Apply button: Apply button is to set the mono channel 1 settings to rest of the mono channels.

A-Link Loss Reset Duration: Option to check audio for this many sec. before the fault is reset.

A-Link Silence Level: Option to set the level that is considered silence.

A-Link Silence Duration: Option to check audio for this many samples before it is declared “silence”.

A-Link Silence Reset Duration: Option to check silence duration for this many sec. before the fault is reset.

A-Link Over Level: Option to set the audio level that is considered “over”.

A-Link Over Duration: Option to check audio for this many samples before it is declared “over”.

A-Link Over Reset Duration: Option to check over duration for this many sec. before the fault is reset.

6.2.6. AUDIO STEREO CONFIG

The Audio Stereo Config section allows the user to set the audio fault threshold for TDM and A-Link ports

Figure 6-14 : Redundancy Mode - VistaLINK® - Audio Stereo Config

TDM Audio Fault Definition for Port 1 & 2

Show TDM Fault Definition Channel: Allows the user to select the TDM stereo channel to set the fault definitions.

Apply Button: Apply button is to set the TDM stereo channel 1/2 settings to rest of the stereo channels.

TDM Pair Phase Reversal Level: Sets the ratio of the pair at which it is declared out of phase.

TDM Pair Reversal Duration: Sets the duration before the signal is declared out of phase.

TDM Pair Phase Reversal Reset Duration: Sets the duration before the phase detection begins monitoring again.

TDM Pair Mono Level: Sets the ratio of the pair at which it is declared mono.

TDM Pair Mono Duration: Sets the duration before the signal is declared mono.

TDM Pair Mono Reset Duration: Sets the duration before the mono detection begins monitoring again.

A-LINK Audio Fault Definition for Port 1 & 2

Show A-LINK Fault Definition Channel: Allows the user to select the A-Link stereo channel to set the fault definitions.

Apply Button: Apply button is to set the A-Link stereo channel 1/2 settings to rest of the stereo channels.

A-LINK Pair Phase Reversal Level: Sets the ratio of the pair at which it is declared out of phase.

A-LINK Pair Reversal Duration: Sets the duration before the signal is declared out of phase.

A-LINK Pair Phase Reversal Reset Duration: Sets the duration before the phase detection begins monitoring again.

A-LINK Pair Mono Level: Sets the ratio of the pair at which it is declared mono.

A-LINK Pair Mono Duration: Sets the duration before the signal is declared mono.

A-LINK Pair Mono Reset Duration: Sets the duration before the mono detection begins monitoring again.

6.2.7. AUDIO CHANNEL FAULTS

The Audio Channel Faults section allows the user to enable and see the status of the faults.

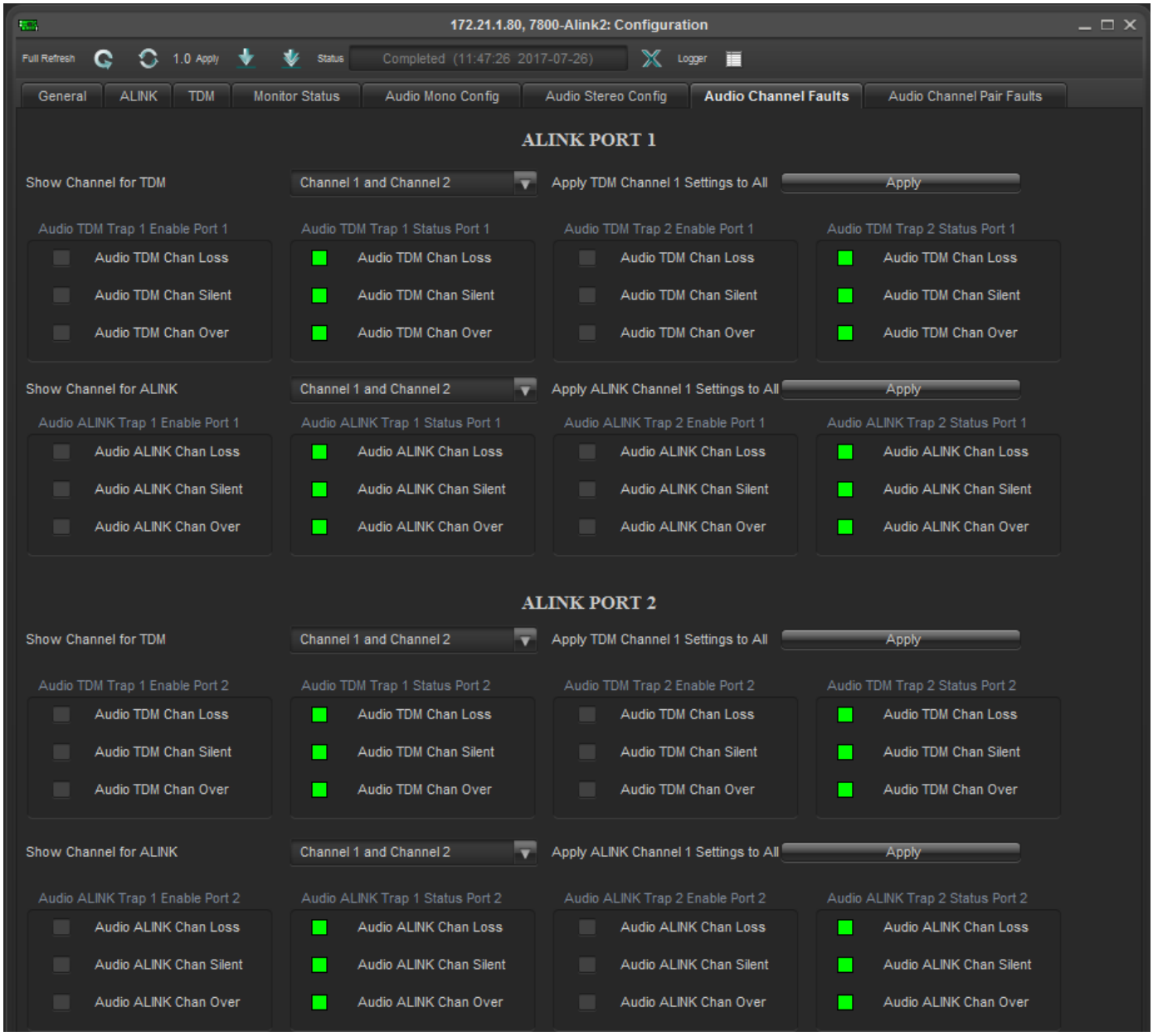

Figure 6-15 : Redundancy Mode - VistaLINK® - Audio Channel Faults

Show TDM Audio Fault Channels: Allows the user to select the TDM channels to enable the traps.

Apply Button: Apply button is to set the channel 1 settings to rest of the TDM channels.

TDM Trap Enable For A-Link Port 1 & 2

Audio Channel Loss: Option to enable the trap for audio channel loss.

Audio Channel Silent: Option to enable the trap for audio channel silent.

Audio Channel Over: Option to enable the trap for audio channel over.

TDM Fault Status For A-Link Port 1 & 2

Audio Channel Loss: Option to display whether the audio is Lost.

Audio Channel Silent: Option to display whether the audio is silent.

Audio Channel Over: Option to display whether the audio is over.

A-Link Trap Enable For A-Link Port 1 & 2

Audio Channel Loss: Option to enable the trap for audio channel loss.

Audio Channel Silent: Option to enable the trap for audio channel silent.

Audio Channel Over: Option to enable the trap for audio channel over.

A-Link Fault Status For A-Link Port 1 & 2

Audio Channel Loss: Option to display whether the audio is Lost.

Audio Channel Silent: Option to display whether the audio is silent.

Audio Channel Over: Option to display whether the audio is over.

6.2.8. AUDIO CHANNEL PAIR FAULTS

The Audio Pair Faults section allows the user to Enable or Disable the Phase Reversal traps and Mono traps.

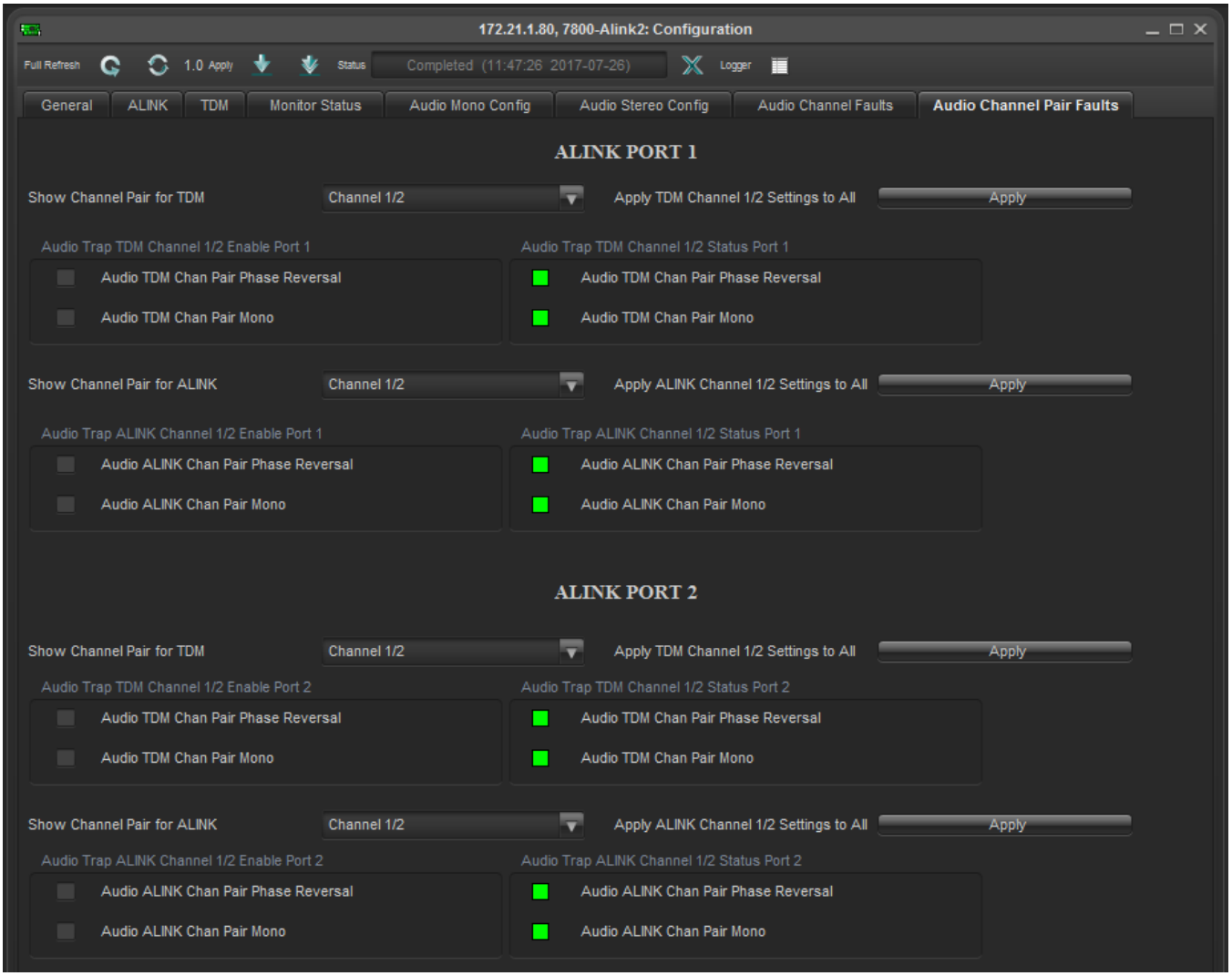

Figure 6-16 : Redundancy Mode - VistaLINK® - Audio Channel Pair Faults

TDM Channels for Port 1 & Port 2

Show Audio Fault Channels: Allows the user to select which TDM channels to enable traps on.

Apply Button: The apply button applies the channel 1 settings to the rest of the TDM channels.

Trap Enable: Phase Reversal: Allows the user to enable traps to be sent out when a phase reversal fault is detected on the selected audio pair

Trap Status: Phase Reversal: Status monitor displays fault condition on the audio pairs. Green indicates no faults while red indicates a triggered fault condition

Trap Enable: Mono: Allows the user to enable traps to be sent out when a fault is detected on a mono channel on the selected audio pair.

Trap Status: Mono: Status monitor displays fault condition on the audio pairs. Green indicates no faults while red indicates a triggered fault condition.

A-Link Channels for Port 1 & Port 2

Show Audio Fault Channels: Allows the user to select which A-Link channels to enable traps on.

Apply Button: The apply button applies the channel 1 settings to the rest of the A-Link channels.

Trap Enable: Phase Reversal: Allows the user to enable traps to be sent out when a phase reversal fault is detected on the selected audio pair

Trap Status: Phase Reversal: Status monitor displays fault condition on the audio pairs. Green indicates no faults while red indicates a triggered fault condition

Trap Enable: Mono: Allows the user to enable traps to be sent out when a fault is detected on a mono channel on the selected audio pair.

Trap Status: Mono: Status monitor displays fault condition on the audio pairs. Green indicates no faults while red indicates a triggered fault condition.

7. UPDATING VLPRO SERVER JAR FILE

Products from Evertz are constantly evolving and new features are often added. It is therefore important to update the JAR files in use to provide access to all the latest features or enhancements. It will also necessary to add JAR files for new products. If your new product has not appeared even after waiting a few minutes for the Ethernet switch negotiation to complete then it is possible that your JAR file may be old or missing.

To perform a JAR update, ensure that all VLPro clients are closed (those clients which are not closed will automatically be disconnected as soon as the VLPro server is restarted). Maximize the VLPro Server window from the Windows task bar, select ***Help →Apply Update → Product*** from the menu

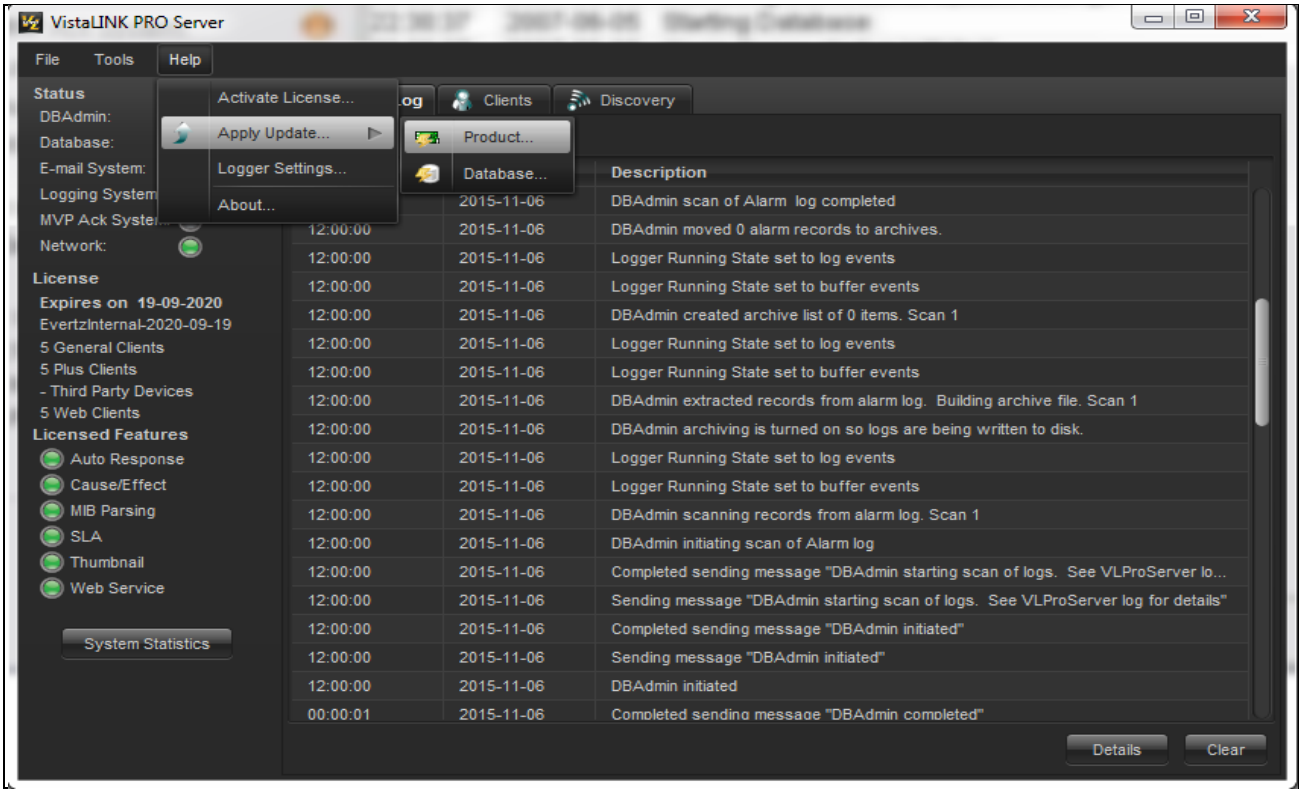

Figure 7-1 : VistaLINK® PRO Server

A window will appear, as shown in Figure 7-2, simply navigate to the location of the new JAR file and select the file by double clicking. The window will automatically close and the update will be applied in the background.

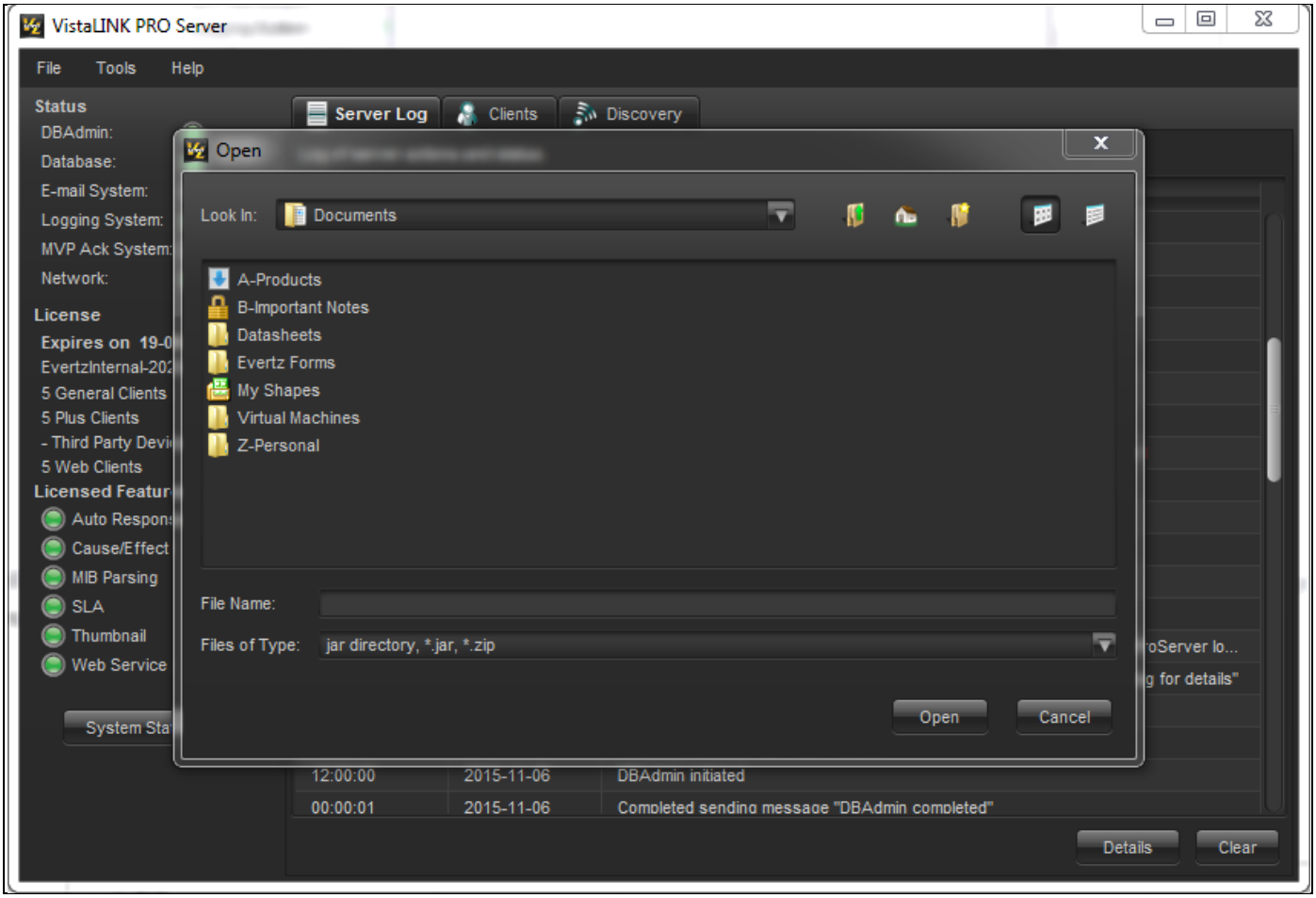

Figure 7-2 : VistaLink® PRO – Applying JAR Updates

You will be prompted to restart the server to enable the change to take effect. Apply as many JAR updates as required before restarting the server.

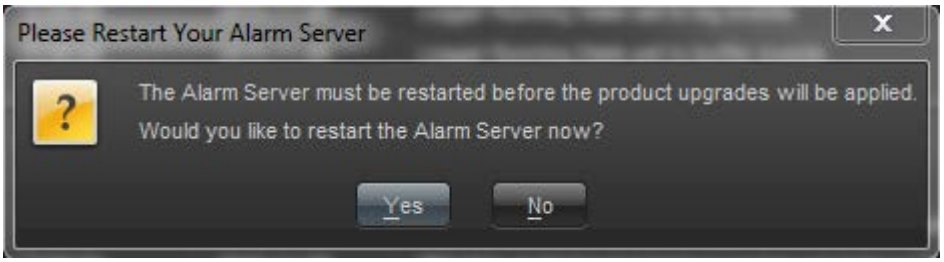

Figure 7-3 : VistaLink® PRO – Restart You Alarm Server

By clicking *Yes*, server will automatically restart, but it is normal for the startup to take marginally longer while each individual update is being applied. Once complete, you may restart the VLPro Clients. As the clients restarts you will experience a short delay while the update is applied. A prompt will appear confirming that the updates have been applied.

8. UPGRADING THE FIRMWARE ON 7800EMR-ALINK2 THROUGH FTP

1. Identify and confirm the IP Addresses of the module and PC/laptop, and ensure that they are on same subnet.

2. Obtain the new firmware and copy to any directory on your computer. (C:\temp)

3. Open a DOS window by selecting **Start → Run**, and typing "**cmd**" in the window that appears,

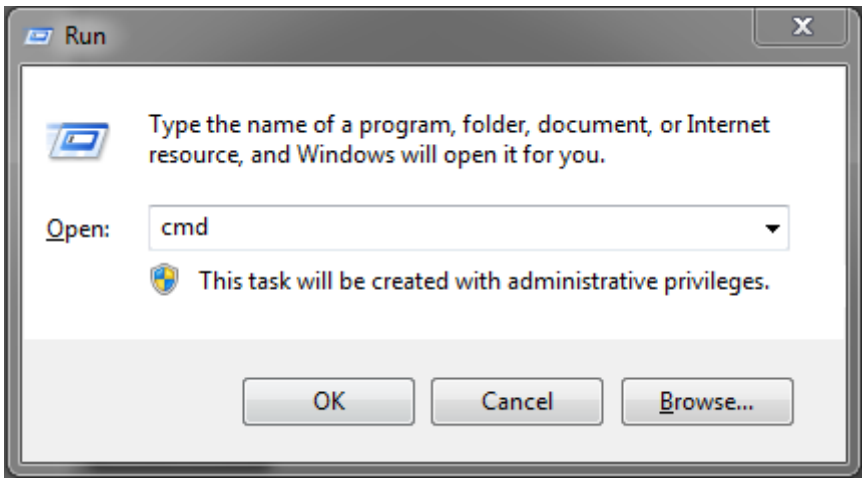

Figure 8-1 : Run Window for FTP Access

4. In the DOS window type: ***ftp xxx.xxx.xxx.xxx*** (where the x's represent the module's IP Address)

5. Press <ENTER> when prompted for a "**Username**". And again when prompted for a "**Password**"

6. At the "**ftp>"** prompt, type "**hash**", toggles number sign (#) printing for each data block that is transferred.

7. At the "**ftp>"** prompt, type "**put x.bin**", where x represents the name of the firmware (.bin)

Note: If the firmware file is not local to where you are performing the FTP, then include the path with the name:

(eg: "put c:\temp\alink2\firmware.bin")

8. Once the upgrade is complete, send the command ""bye" to exit ftp connection (see Figure 8-2) and the module will reboot itself. Don't remove the module during this process or it could corrupt the firmware code.

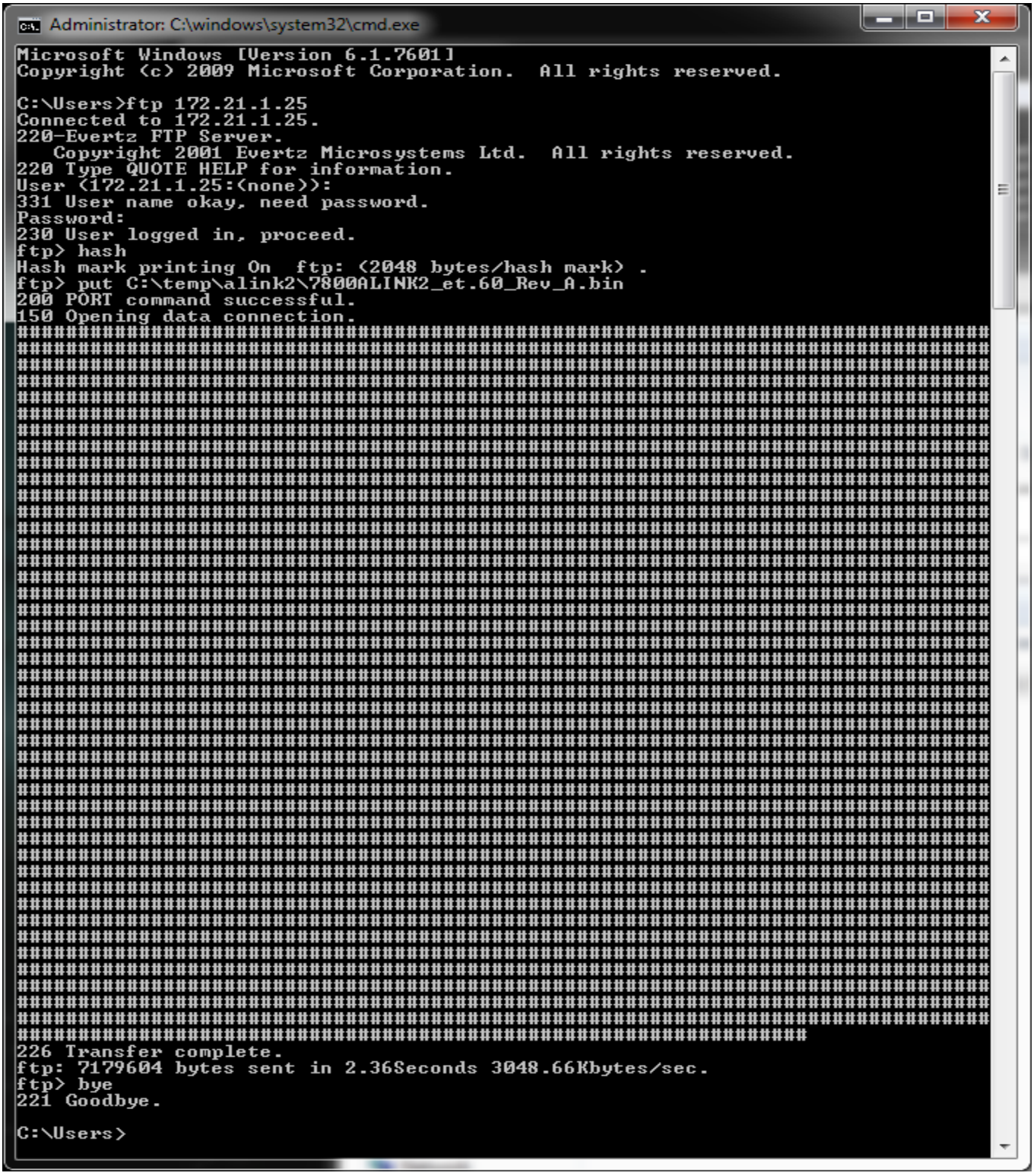

Figure 8-2 : Sample FTP Upgrade Window