570EMR-ADMX
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 (i.e.: servicing) instructions in the literature accompanying the product.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Don't use this apparatus near water.
- Clean only with a dry cloth.
- Don't block any ventilation openings.
- Install in accordance with the manufacturer's instructions.
- Don't install near any heat sources such as radiators, heat registers, stoves, or other apparatuses (including amplifiers) that produce heat.
- Don't 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 third prong is provided for your safety. If the plug provided does not fit into your outlet, consult an electrician to replace 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 damage to the power-supply cord or plug, contact with liquid (or any object small enough to enter the apparatus), exposure to rain or moisture, drop damage, or upon experiencing any abnormal operation.

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, SUCH AS VASES, 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

FIBER OPTIC DEVICES

Some modules in this product may have fiber optic outputs. The following safety information applies to the optical outputs of these modules. Consult individual chapters for specific safety information for handling fiber optics.

WARNING

CAUTION – CLASS 1 VISIBLE & INVISIBLE LASER RADIATION WHEN OPEN DO NOT VIEW DIRECTLY OR WITH OPTICAL INSTRUMENTS.

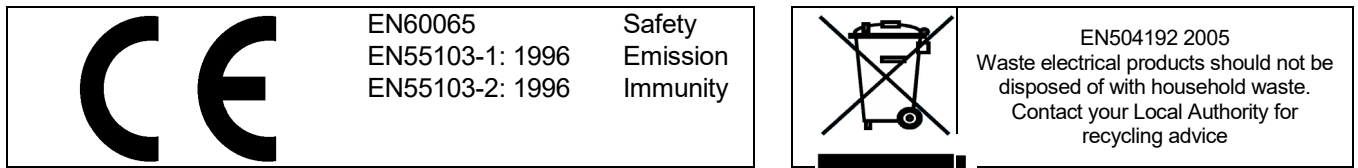# ELECTROSTATIC SENSITIVE DEVICES

The hand symbol within an equilateral triangle is intended to alert the user to instructions related to precautions for handling electrostatic-sensitive devices. See "Electro Static Discharge (ESD) Precautions" section for further details.

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 his 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 his 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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REVISION HISTORY

REVISION	DESCRIPTION	DATE
	Released as 570-AG-HUB Quick Reference Guide	January 2020
1.0	Released as Full Manual, revisions throughout	August 2020
1.1	Revisions throughout	November 2020

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Although every attempt has been made to accurately describe the features, installation and operation of this product in this reference guide, no warranty is granted nor liability assumed in relation to any errors or omissions unless specifically undertaken in the Evertz sales contract or order confirmation. Information contained in this reference guide is periodically updated and changes will be incorporated into subsequent editions. If you encounter an error, please notify Evertz Customer Service department. Evertz reserves the right, without notice or liability, to make changes in equipment design or specifications.

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1. OVERVIEW

The 570EMR-ADMX is Evertz 3rd generation low latency high-density IP audio shuffler card that enables edge devices to shuffle audio on the mono level. This device is the core for the audio subsystem which operates hand to hand with Magnum Audio Subsystem in 10GbE and 25GbE environment.

This device will operate in the background and user will not have access to it as a TX or RX device. It only works over SFP1 as the main link and for redundancy, a second unit is required. This single fiber can handle up 640 flows and the resources can be expanded beyond 640 by adding additional modules, allowing 570EMR–ADMX to be used in small, medium or large–scale SDVN environments.

The 570EMR–ADMX is hot-swappable and monitored via VistaLINK® in any of the Evertz 570 modular frames, it is strongly recommended to add a separate module for redundancy to avoid audio loss in case of device failure.

This module supports Audio over IP for AES67 [*] (SMPTE ST 2010–30 Level A & B).

Features:

- AES67: maximum of 640 multicasts per port [*]

- SMPTE ST 2110–30 Level A & B

- Mono audio shuffling

- VistaLINK®–capable for remote monitoring, control and configuration capabilities via SNMP using VistaLINK® PRO

- 1 x SFP+ 10GE trunk interfaces

- Supports PTP

- Supports AES67 audio over IP standards

- 1 x 10GE SFP+ Ports:

    o SFP1 sends/receives AES67 streams.

- InBand Control:

    o SFP1 is used for Main Inband Control.

* Check with factory on availability and for further details

PROCESSING CORE

Audio Decap/Encap
And
Mono Shuffling

AES67(ST 2110-30)

Video Ref.
570 Frame

Reference

PTP V2

VISTALINK
Interface

Module
Control Status

10/100
Ethernet

570FC
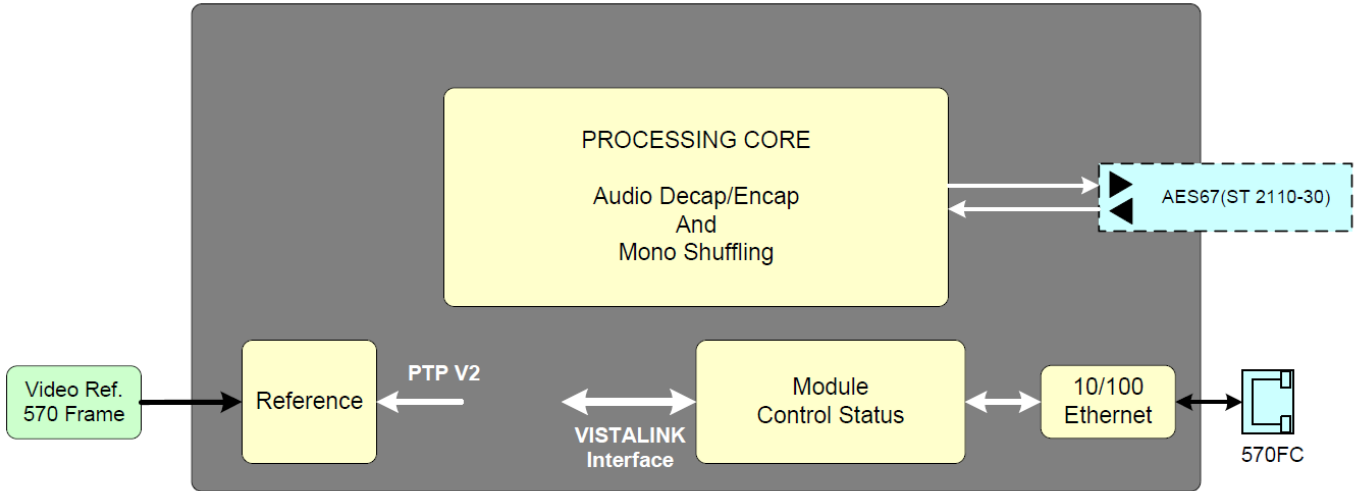
Figure 1-1: 570EMR-ADMX Block Diagram

2. SPECIFICATIONS

2.1. AUDIO INPUTS

Number of MADI Inputs: 10 x DIN (Future use)
Number of MADI Outputs: 10 x DIN (Future use)
Connector: DIN 1.0/2.3
Impedance: 75 Ω terminating

2.2. ETHERNET INTERFACE

Number of SFP Ports: 1 x 10GE SFP+ (Remaining are for future development)

2.3. ELECTRICAL

Voltage: +12VDC
Power Consumption: 70W

2.4. FRAMES

Frame and Slot Occupancy: 570 Frame with 2 slot occupancy
570 Standalone Frame

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3. INSTALLATION

3.1. FRONT AND REAR PLATE

Figure 3-1: 570EMR-ADMX Front (left) and Rear Plate (right)

3.1.1. Front Plate

The front plate of 570EMR-ADMX is equipped with 12 10GE SFP ports capable of passing/receiving 10GE of data per port. Only the first 1 x 10GE SFP port is available for this application.

3.1.2. Rear Plate

The rear plate of 570EMR-ADMX is equipped with 20 DIN connectors for future use.

3.2. HARDWARE INSTALLATION

570EMR-ADMX can be installed in one of the following two ways:
1. 570 Frame communication via Frame Controller
2. Standalone 570 Frame (Direct Communication)

Before handling the card, it is important to minimize the potential effects of static electricity. It is therefore recommended that an ESD strap be worn. Locate on the chassis two vacant slots. Unpack the 570EMR-ADMX and separate the rear panel from the main card. Locate on the rear of the rack the two slots and remove the blank panels. Insert the rear panel into the back of the chassis and secure using the screws provided.

Now insert the 570EMR-ADMX card into the corresponding front slots ensuring the card lines up with the slot runners on the bottom and the top of the chassis. Push the card **firmly** into the slot ensuring that when it mates with the rear card it has been firmly pushed into a seated position. Do not connect any cables to the rear card (failure to do this could cause unwanted network issues) until the initial configuration has been completed.

This procedure can be completed to all the other modules and is hot-swappable allowing for the frame to be powered on while installing.

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4.   CONFIGURING 570EMR THROUGH WEBEASY®

The 570FC provides a built-in web interface that allows a user to interact with the 570FC as well as WebEASY® supported products using a standard Internet web browser. The 570FC web interface can be accessed by entering the IP address of the 570FC into the address bar of an Internet web browser. When first visiting the 570FC web interface, the user will be asked to enter a Login and Password. Log in with "*root*" as username and "*evertz*" as password.

The home page of the 570FC provides a list of all products currently under the control of the 570FC along with a menu that displays information on specific *Product Location, Hardware*, *Software*, *SNMP V1 Community* strings, *SNMP V1 Trap* destinations and local *TRAP Management Faults* for the 570FC.

570EMR can receive IP address from 570FC through proxy mode. To receive the IP address from 570FC, click "Software" tab from 570FC webpage and select the IP Configure Mode "*Static or DHCP*". Then select the "*Slot#*", where you see the 570EMR in 570 Menu Page and "Enable" the Proxy Mode under the selected Slot#, then it will display three fields to enter the IP Address, Netmask and Gateway. After configuring these fields, click "Apply" to save the settings and refresh the page to see the settings are saved.

Go back to 570FC home page, it will provide a list of all 570EMR currently in the frame. It will also provide the firmware version of each card in the frame. Cards that appear in the white text do not support the WebEASY® interface and are therefore not configurable through the web interface. These cards must be configured using VistaLINK® or Serial Menu. Cards that support the WebEASY® interface will appear in yellow. Clicking on the yellow product name which is linked to the controls available for that card.

Refresh, Apply, and *Dynamic Apply* buttons on top of the page are used to apply changes to the config and refresh to check the current status of the config. These function in the same manner as in VistaLINK®.

4.1.   SYSTEM

This tab provides the basic configurations / Monitoring of IP address, InBand Control, Data Port Monitoring and Reference.

4.1.1. Control Port Configuration:

Figure 4-1: WebEASY® - System Tab / Control Port Configuration

Ethernet: Allows the user to set the IP Address, Netmask and Gateway. This IP Address is used for control and monitor when 570EMR in a standalone frame.

Proxy: This IP Address is received from 570FC through proxy. Doesn't allow the user to change the IP in 570EMR webpage, but user can change the IP Address in 570FC WebEASY page. This IP address is used for control and monitor when 570EMR is in 570 Frame with 570FC.

4.1.2. Data Port Configuration

Make sure SFP's data port IP address is under the same subnet as Magnum data ports. This setting is crucial for Magnum communication.

Data Port Configuration	−
SFP	
IP Address	20.20.20.130
Netmask	255.255.255.0
Gateway	

Figure 4-2: WebEASY® - System Tab / Data Port Configuration

IP Address: This parameter allows the user to set the IP Address for the data port.

NetMask: This parameter allows the user to set the netmask for the data port.

Gateway: This parameter allows the user to set the gateway for the data port.

4.1.3. Data Port Monitor
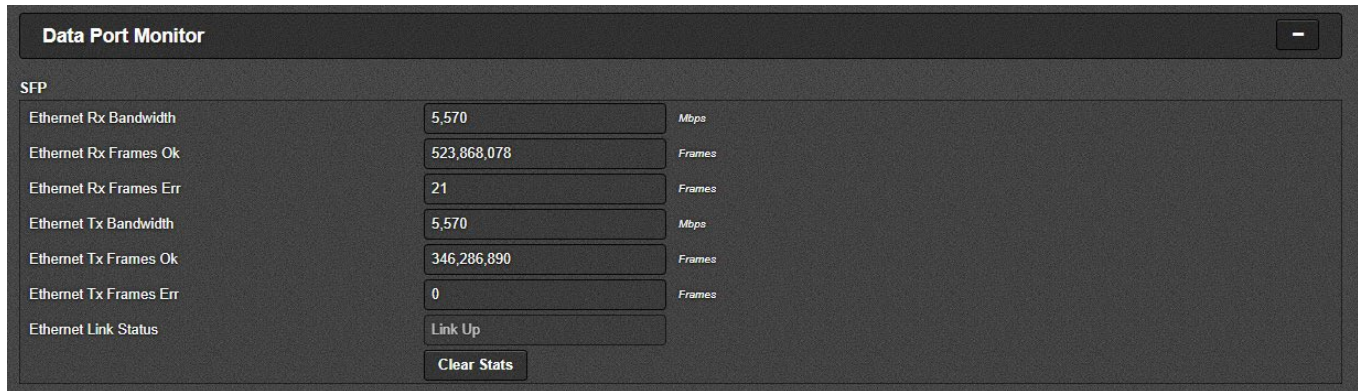
User can monitor the data port parameters in the section.

Data Port Monitor		−
SFP		
Ethernet Rx Bandwidth	5,570	Mbps
Ethernet Rx Frames Ok	523,868,078	Frames
Ethernet Rx Frames Err	21	Frames
Ethernet Tx Bandwidth	5,570	Mbps
Ethernet Tx Frames Ok	346,286,890	Frames
Ethernet Tx Frames Err	0	Frames
Ethernet Link Status	Link Up	
	Clear Stats	

Figure 4-3: WebEASY® - System Tab / Data Port Monitor

Ethernet Rx Bandwidth: Displays the Received Ethernet Bandwidth displayed in Mbps.

Ethernet Rx Frames Ok: Displays the number of Error-Free Frames Received.

Ethernet Rx Frames Err: Displays the number of Erroneous Frames Received.

Ethernet Tx Bandwidth: Displays the Transmitted Ethernet Bandwidth displayed in Mbps.

Ethernet Tx Frames Ok: Displays the number of Error-free Frames Transmitted.

Ethernet Tx Frames Err: Displays the number of Erroneous Frames Transmitted.

Ethernet Link Status: Displays the Ethernet port link status as either up or down.
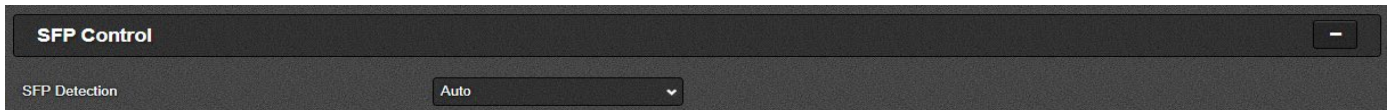
4.1.4. SFP Control

Figure 4-4: WebEASY® - System Tab / Data Port Configuration

SFP Detection: This control allows the user to specify the type of SFP being used. Options are Auto, Optical, Copper 3m and Copper 5m.

4.1.5. SFP Monitor

Figure 4-5: WebEASY® - System Tab / SFP Monitor

In this section, the user can view the SFP parameters.

SFP Part Number: Displays the part number of the SFP.

SFP Type: Displays the type of SFP.

SFP Rx Power Level: Displays the Receiver power level of the SFP.

SFP Tx Power Level: Displays the Transmitter power level of the SFP.

4.1.6. Genlock Control
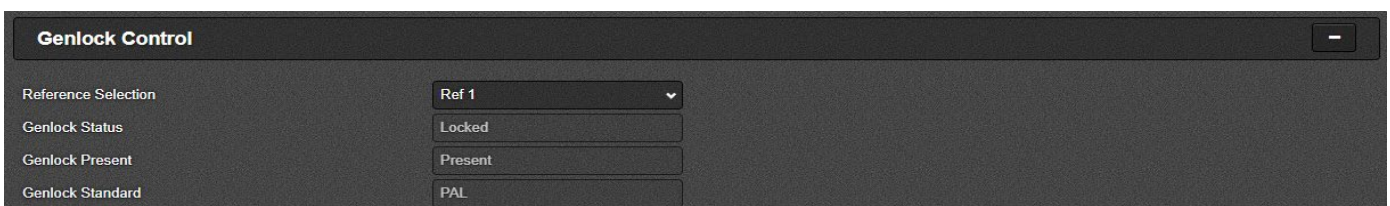
Figure 4-6: WebEASY® - System Tab / Genlock Control

Reference Selection: Allows the user to select the reference from REF 1, REF 2 or PTP.

Genlock Status: Displays if the selected reference is LOCKED or UNLOCKED.

Genlock Present: Displays if the selected reference is PRESENT or ABSENT.

Genlock Standard: Displays the standard of the selected reference.

> **Note:** For a stable functionality of the ADMX, a bi-level reference is required.
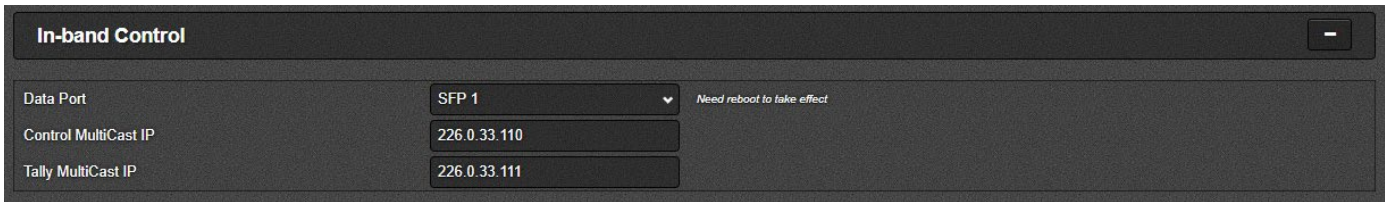
4.1.7. InBand Control

Figure 4-7: WebEASY® - System Tab / In-band Control

Data Port: Enable the Inband control on the selected SFP port.

Control Multicast IP: Allows the user to set or monitor the control multicast IP.

Tally Multicast IP: Allows the user to set or monitor the Tally multicast IP.

Note: The Control and Tally multicasts are being set by magnum.

4.1.8. RPC Timeout

Figure 4-8: WebEASY® - System Tab / RCP Timeout

RPC Timeout: Allows the user to set the timeout for RPC Connection and the option is 1 to 300000 ms.

4.1.9. Time Management

In this section, the user can set the time source to local or NTP server. The Time Zone offset and DLS can be manually set when the time source is set to NTP.

Figure 4-9: WebEASY® - System Tab / Time Management

Time Source: Allow the user to set the time source to manual to NTP.

Timezone Offset (NTP): Allows the user to set manual offset to compensate for timezone.

Day Light Saving (NTP): Allows the user to set DLS on or off.

External NTP Server (NTP): Allows the user to set the NTP server IP address.

4.1.10. Card Control

This section allows the user to set the card Alias, purge the card, load factory config or reboot the card.

Figure 4-10: WebEASY® - System Tab / Card Control

Card Alias: Allows the user to set a name for the device.

Purge Card: Allows the user to clear all the input IP addresses.

Load Factory Config: Allows the user to load the factory configuration.

Reboot Card: Allows the user to reboot the 570EMR.
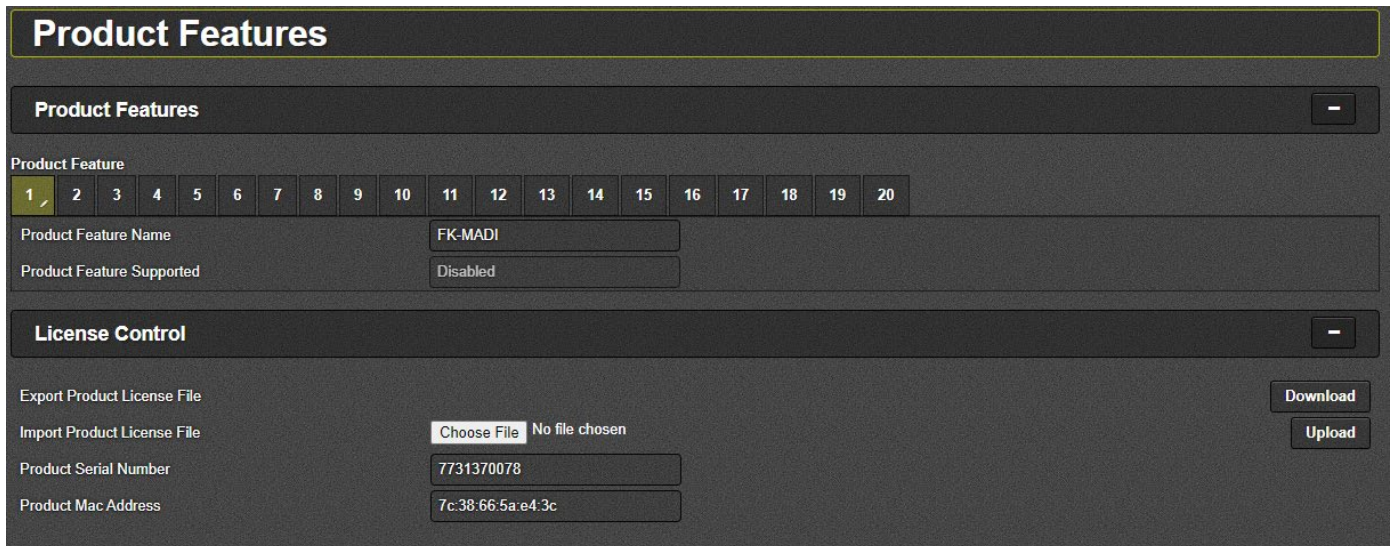
4.2.   PRODUCT FEATURES

Figure 4-11: WebEASY® - Product Features Tab

4.2.1. Product Features

This tab provides information on whether the card has any licenses or not.

4.2.2. License Control

In this section, the user can export or import the license.

4.3. INPUT FLOW CONTROL

This section allows the user to purge the incoming flow, monitor or manually tune multicast addresses.

Figure 4-12: WebEASY® - Input Flow Control / SFP Input

4.3.1.1. Express IP Input

Express Input Flow: The fields in this subsection allow the user to manually set the Multicast Address and Port number for each flow by defining a range of multicast addresses or purge all the tuned IPs.

Global Control: This button clears the RTP Sequence Error.

4.3.1.2. Input Flow Control

Allows the user to see or set the Multicast Address, UDP Port number and Source IP for each Transport Stream. Also, it displays the status of the IP Input, number of channels per flow, and RTP Sequence Errors.

Note: All multicast addresses are set automatically via SDVN, manual setup is for debugging purposes and it will cause audio loss or wrong audio if changed.

4.4. OUTPUT FLOW CONTROL

4.4.1. Global Control

In this section, the user can set the Packet time, Enable or Disable output mute, and set the Payload type.

Figure 4-13: WebEASY® - Output Flow Control / Global Control

AES67 IP Output Packet Time: Allows the user to set the output packet time to 1ms or 125µs.

IP Output Mute if PTP unlocked: If this option is enabled the output IP will be muted when PTP is not converged. This option has to be enabled when the card is used for MPPM purposes.

IP Output RTP Payload Type: This option allows the user to change the Payload type manually.

> **Note:** ADMX does not do Packet Time conversion, therefore; the input PT has to match the output PT for the proper operation.

4.4.2. SFP Output
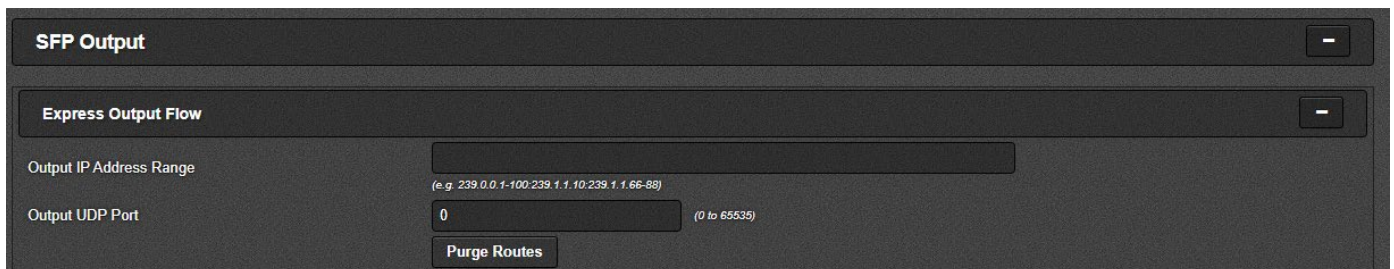
Figure 4-14: WebEASY® - Output Flow Control / SFP Output

Express Output Flow: The fields in this subsection allow the user to manually set the Multicast Address and Port number for each flow by defining a range of multicast addresses or purge all the IPs.

4.4.3. Output flow Control

Allows the user to see or set the Multicast Address and UDP Port number for each Transport Stream under each SFP. Also, it displays the status of the IP Output.
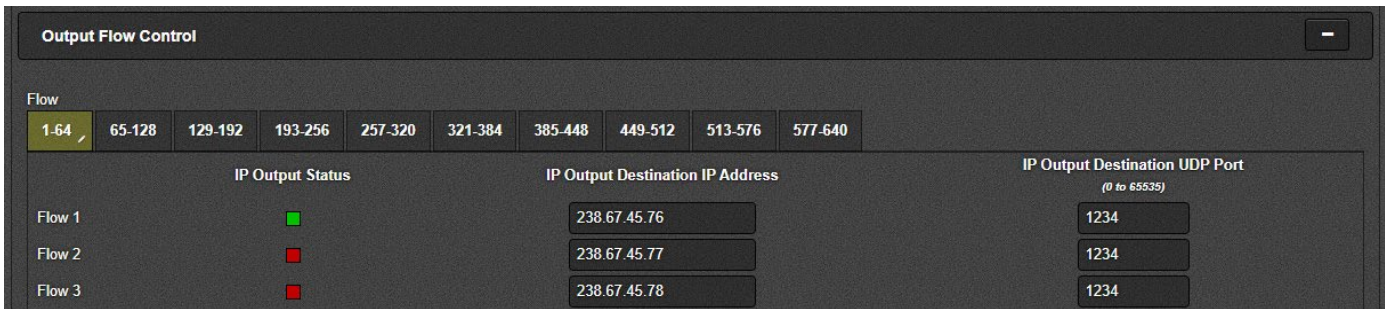
Figure 4-15: WebEASY® - Output Flow Control / Output Flow Control

✎ **Note:** All the multicast addresses are set automatically via SDVN, manual setup is for exceptional cases.

4.4.4. Output Flow Advanced Control

In this section, the user can set the source IP, UPD, ToS and TTL,

Figure 4-16: WebEASY® - Output Flow Control / SFP Input

Parameter	Description
IP Output Source IP Address	Allows the user to set the Source IP Address, source IP is important when the device is connected to a third-party switch.
IP Output Source UDP Port	Allows the user to set the Source UDP Port
IP Output Type Of Service	Allows the user to set the ToS, if your network doesn't support ToS, *use zero as default*.
IP Output Time To Live	Allows the user to set the Time to Live (TTL) Value.

Table 4-1: IP Output Flow Advanced Control (AES67) – Parameters

4.5. FLOW MAPPING

Figure 4-17: WebEASY® - Output Flow Control

4.5.1. Global Control

This section allows the user to set the number of audio channels to be encapsulated in each flow. Currently, only 4 channels per multicast is supported.

4.5.2. Flow Mapping

4.5.2.1. Express Mapping

This section allows the user to manually set or purge global routes by selecting the input source and start of the flow. These settings are dependent on the number of channels per flow.

✎ **Note:** Manual changes are not recommended; all these settings are set by magnum. Manual changes will cause audio to be routed to an incorrect destination.

4.5.2.2. Output Flow Mapping

This section will display the source of audio channels per flow

Parameter	Description
Input Flow	Allows the user to see or set flow number where the audio is coming from
Input Channel	Allows the user to see or set channel number from the associated flow

Table 4-2: Output Flow Mapping Parameters

> **Note:** Manual changes are not recommended; all these settings are set by magnum. Manual changes will cause audio to be routed to an incorrect destination.

4.5.2.3. Take All Mapping

To activate output flow mapping manually the "Take All Mapping" button has to be pressed. Pressing "Apply" at the top of the page will not activate the changes.

4.6. DELAY CONTROL

In this section, the user can set the delay to be manual or Auto, as well as the delay in milliseconds.

Figure 4-18: WebEASY® - Delay Control Tab

4.6.1. Global Delay Control

Network Delay for Auto Mode: Adjusts for end-to-end delay from Encap to Decap. Audio streams take a minimum of 3ms to be Encap'd, travel thru the network, reach the Decap unit, and go into memory, before they can be played out. The minimum recommended value for this setting is 3ms.

PTS Offset for Auto Mode: This field is meant to compensate for compressed streams that typically have a huge POSITIVE offset added to their PTS. These PTS values will be far ahead of running PTP, so the card cannot sync to it unless incoming timestamps advancement is known. In any regular operation, this setting has to be set to 0.

EMR Delay for Manual Mode: This field specifies how much latency we want thru the EMR, i.e., how long we want audio samples to stay in memory before we play them out. In this case, we don't care about network delay, how long it takes for audio streams to travel from Encap card to Decap card are all irrelevant. Samples are stored in memory, and read out N[ms] later as per user setting.

Latency Tolerance: Tells the ADMX how bursty the IP input can be. For "ideal" FPGA-based Sources like IPGs, VIPs or AG-HUBs, LT can be minimum like 1ms for PT125, and 3ms for PT1ms. Software-based sources may need LT of 4-5ms, even with good networks.

If LT value is too low for that particular Source/network, the ADMX will run into underflow, and output will have MUTEs from time to time. This may be a sign to increase the LT value.

LT cannot exceed EMR Delay. If LT is already equal to EMR Delay, and we want to increase it, then EMR Delay must be increased as well. Higher EMR Delay &LT means higher latency.

4.6.2. Per-Stream Delay Control and Monitor

In this section, user can monitor each flow for Resync and Underflow.
Clear Delay Monitor Status button will reset the Resync and underflow status. If status turns red after reset, that means the incoming signal has either packet drop, RTP error or not stable.

4.7. PTP CONTROL

In this section, the user can set the Domain Number for incoming PTP, also the incoming PTP status can be monitored.

Figure 4-19: WebEASY® - PTP Control Tab

4.7.1. PTP Control

PTP is used to distribute time and timebase to every device in the system. Senders mark each packet of video, audio, or ANC with an "RTP Timestamp" that indicates the "sampling time" (or equivalent). Receivers compare these timestamps in order to properly align the different essence parts to each other.

Domain Number: The domain number has to match the PTP source domain number.

4.7.2. PTP Monitor

Active Port: Shows if PTP is coming from the Main port.

Status: Shows if the device is converged to the incoming PTP or not.

Grandmaster Clock Identity: Shows the Identity (MAC) of the GMC.

Master Clock Identity: Shows the Identity (MAC) MSC.

Announce Received: Shows the numbers of PTP announcements have been received.

Announce Lost: Shows if any announcement has been lost. It should always be zero.

Sync Received: Shows the number of PTP sync has been received.

Sync Lost: Shows if any sync has been last.

Follow_up Received: Shows the number of follow_up requests received.

Follow_up Lost: Shows if any follow_up request has been lost.

Delay_Req: Shows the number of Delay has been requested.

Delay_Resp Received: Shows the number of Delay has been received. Delay_Req and Delay_Resp Receive have to match; if they don't, there is a misconfiguration with PTP route.

Delay_Resp Lost: Shows if any Delay response has been lost.

4.7.3. PTP vs Genlock

In this section, user can monitor to see whether PTP and BB genlock are in sync or not.

Table 4-3: WebEASY® - PTP Vs Genlock Tab

4.8. REFERENCE NOTIFY

In this section, the user can enable or disable traps for types of references.
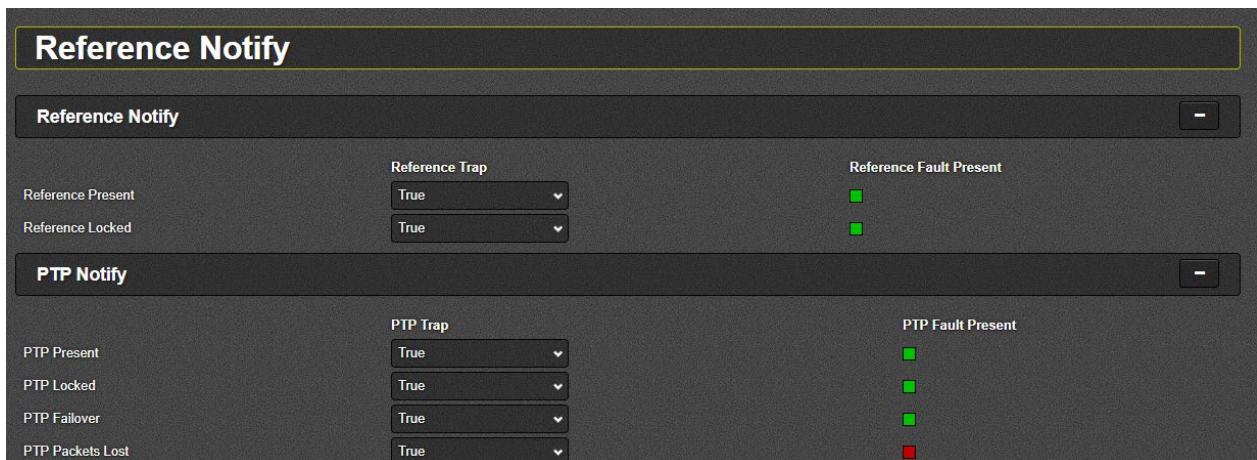

Figure 4-20: WebEASY® - Reference Notify Tab

4.8.1. Reference Notify

Reference Presence: Allows the user to set the trap for Reference Present to True or False.

Reference Locked: Allows the user to set the trap for Reference Locked to True or False.

4.8.2. PTP Notify

PTP Present: Allows the user to set the trap for PTP Present to True or False.

PTP Locked: Allows the user to set the trap for PTP Locked to True or False.

PTP Failover: Allows the user to set the trap to True or False during PTP Failover.

PTP Packet Lost: Allows the user to set the trap to True or False when there is PTP Packet Loss.

4.9. NOTIFY

In this section, the user can set the following traps to true or false:
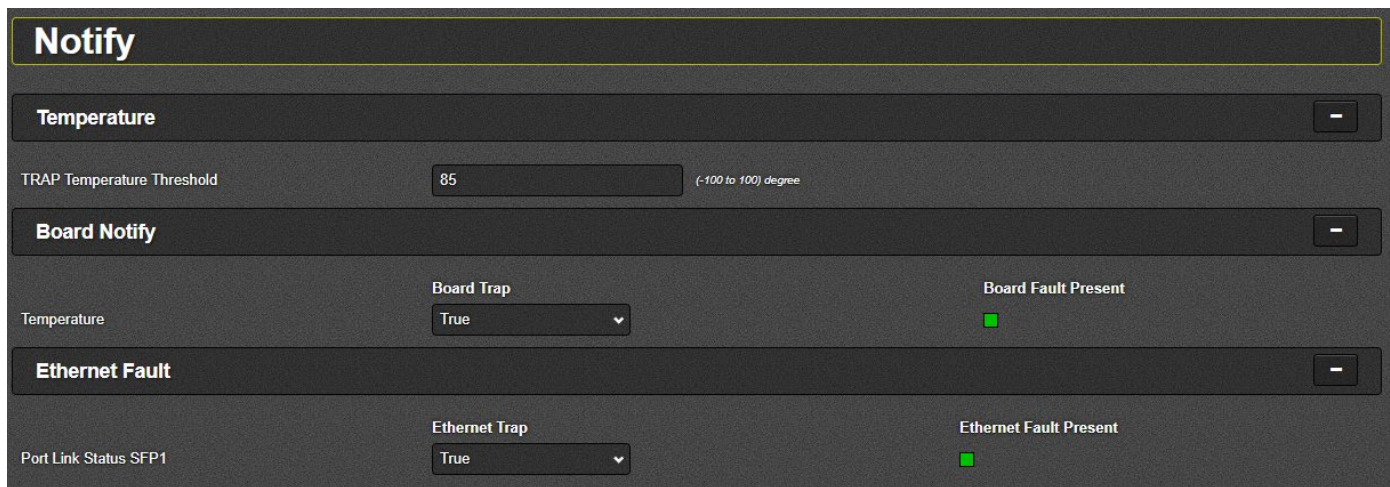

Figure 4-21: WebEASY® - Notify Tab

TRAP Temperature Threshold: Allows the user to set the Temperature Threshold at which the card should send a trap.

Board Temperature: Trap will be sent once the threshold temperature is surpassed.

Ethernet Fault: Once enabled, a trap will be sent if there is any fault on Ethernet 1.

4.10. SNMP TRAP

In this section, the user can view, add or remove trap destinations

SNMP Trap

SNMP Trap

TRAP Destination 1	127.0.0.1
TRAP Destination 2	
TRAP Destination 3	
TRAP Destination 4	
TRAP Destination 5	
TRAP Destination 6	
TRAP Destination 7	
TRAP Destination 8	
TRAP Destination 9	
TRAP Destination 10	
Number Of Valid Trap Destination	1
Add Trap Destination	
Remove Trap Destination	0 *(1 to 10)*

Figure 4-22: WebEASY® - SNMP Trap Tab

4.11. CONFIGURATION MANAGEMENT

In this section, the user can export and import Flow Input, Output and Mapping configuration as CSV files.

Configuration Management

Export Configuration [−]

Export Flow Input Configure File	Download
Export Flow Output Configure File	Download
Export Flow Mapping Configure File	Download

Import Configuration [−]

Import (only .csv files will be processed!)	Choose File No file chosen	Upload

Figure 4-23: WebEASY® - Configuration Management Tab

> **Note:** All these settings are set by Magnum and importing any config will overwrite the existing configuration which can cause wrong audio output.

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5. FIRMWARE UPGRADE

Using the WebEASY® on a web interface is the fasted and recommended procedure to load the firmware onto the 570EMR-ADMX.

5.1. FIRMWARE UPGRADE USING WEBEASY®

When first visiting the 570EMR-ADMX web interface, the user will be asked to enter a Login and Password. Enter "*root*" for Login and "*evertz*" for Password.

On the top of the web page for the 570EMR-ADMX, there is a tab labeled **Upgrade**. The **Upgrade** tab is used to check the current firmware version and upload the latest firmware.
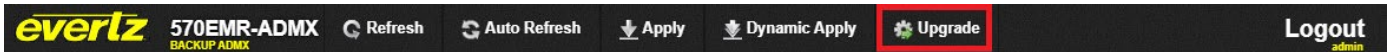

Figure 5-1: WebEASY® - Upgrade Button on Top Menu Bar

Selecting the *Upgrade* tab, will open a new window as shown in Figure 5-2 where the current firmware version is shown. Should the firmware version be outdated, the user will need to download the firmware image file.

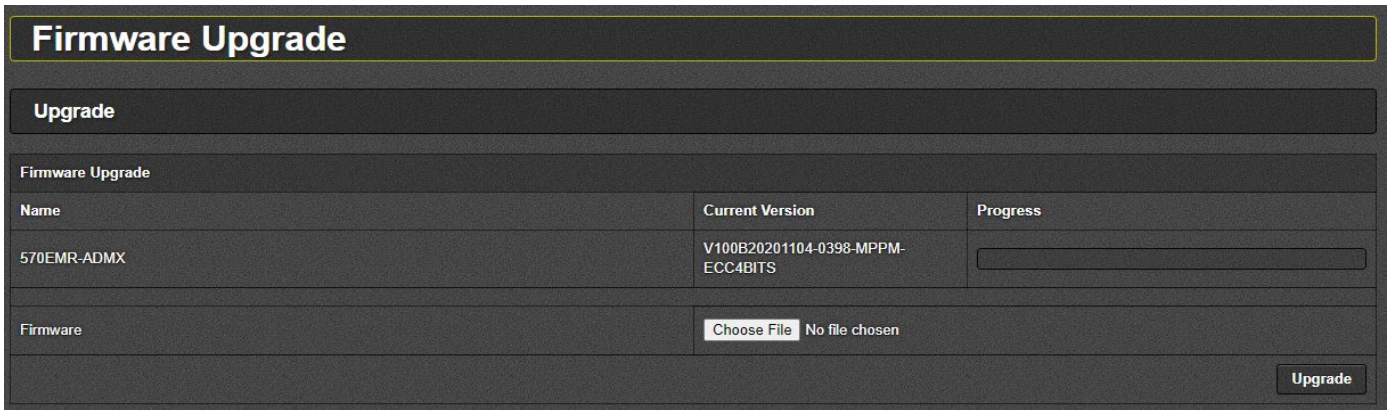**Note:** Contact Evertz to get the latest firmware file.

Figure 5-2: WebEASY® - Firmware Upgrade Menu
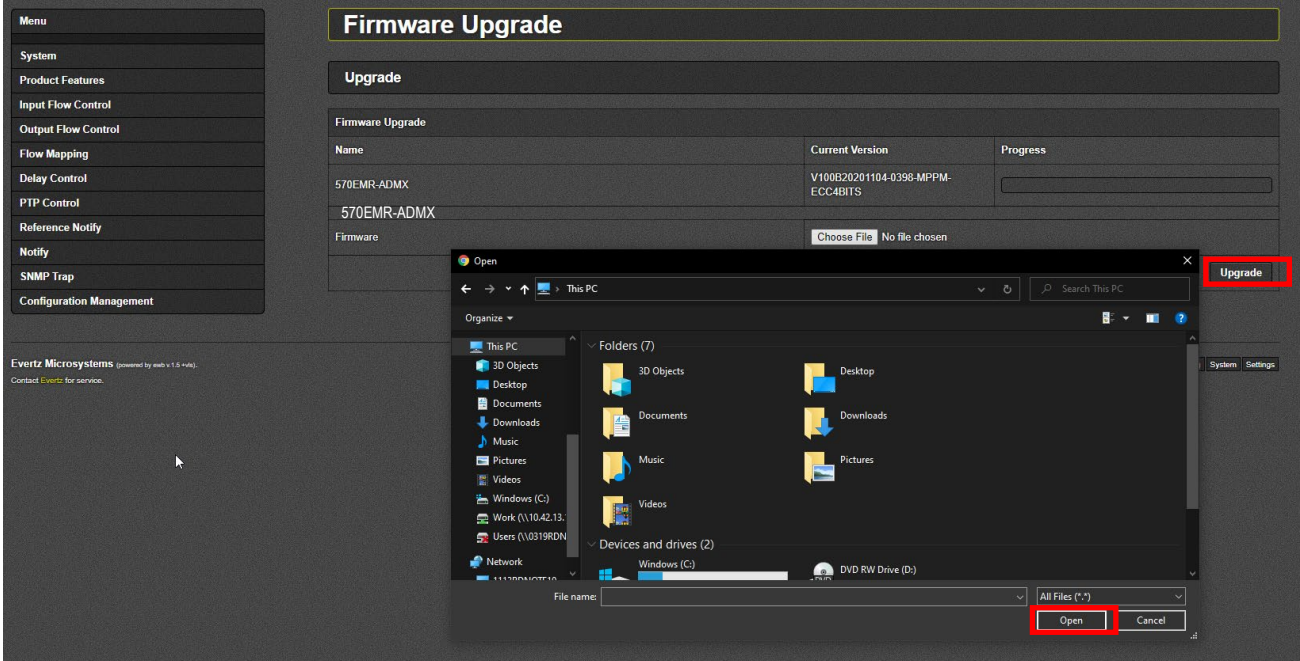
Click *Choose File* and browse to locate image file.

Figure 5-3: WebEASY® - Firmware Upgrade Menu

Once selected, click *Open* (Step 1) to advance to the next step. Click *Upgrade* (Step 2) and watch the progress bar for status. Once completed, the device will automatically restart.

6. APPENDIX A

This section will explain how to configure an Audio Subsystem with 570EMR-ADMX,

There are three different ways where a subsystem can be configured: Single core single hot, single-core dual-hot and dual-core dual hot.

Single Core Single Hot: In this type of system there is only one core and one ADMX with a single fiber connection. This type of configuration doesn't have any redundancy and is not recommended.
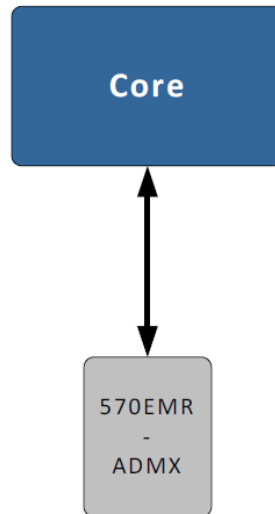

Figure 6-1: Single Core Single Hot Diagram

Single Core Dual Hot: In this type of system there is only one core and two ADMX's with a single fiber connection from each ADMX. This type of configuration has redundancy and the most recommended.
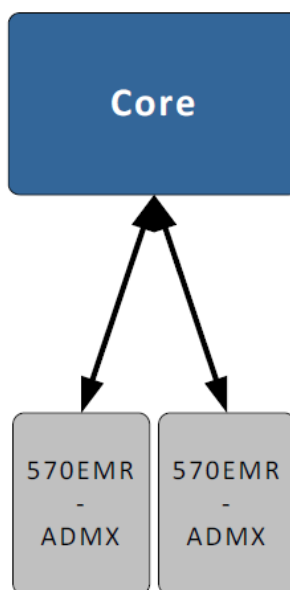

Figure 6-2: Single Core Dual Hot

Dual Core Dual Hot: This type of system is similar to Single Core Dual Hot, except there are main and backup cores and each ADMX connects to a core. This type of configuration is highly recommended for dual-core systems.
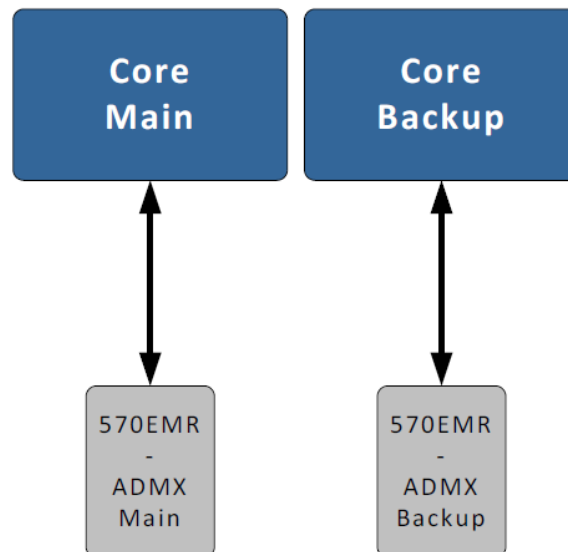

Figure 6-3: Dual Core Dual Hot

Requirements:

1- SDVN version 20.4.0 or higher with some patches for ADMX driver
2- AMDX(s) with latest general released firmware

Magnum Configuration:

Add Main or Main and Backup ADMX(s) to SDVN. Make sure the Backup ADMX is named with –BU suffix (e.g. 570-ADMX-BU).

- If there are only one ADMX and one core, add a single link from SPF1 of ADMX to the core.
- If there are two ADMXs and a single-core, add a single link from SFP1 of each ADMX to the core.
- If there are two Cores and two ADMXs, add a single link from SFP1 of Main ADMX to the Main core and a single link from SFP1 of Backup ADMX to Backup core.

In order for the audio subsystem to work, there are two flags in SDVN and two tweaks in ClientHost need to be set.

- In SDVN set the following flags to /etc/default/magnum
  o MAGRTRSRV_FLAGS="--single-core"
  o MAGQUARTZ_FLAGS="--allow-sdi-breakaway"

- In Clienthost set the following tweaks to /opt/eqx-server/config.d/tweaks.cfg
  o <tweak name='aspen_breakaway' value='enable' />
  o <tweak name='audio_group_size' value='1' />

- Once the above changes are made and saved, reboot the magnum and the subsystem would be ready.

7. APPENDIX B

- Real-Time Transport Protocol (RTP): The use of RTP is recommended as it provides services such as time stamping, sequence numbering and delivery monitoring, which can be beneficial for real-time delivery systems.

- Time To Live (TTL): TTL is a mechanism that limits the life span of data in a network. Using the Multicast IP protocol, the TTL value indicates the scope or range in which a packet may be forwarded. By convention:

    o 0 is restricted to the same host
    o 1 is restricted to the same subnet
    o 32 is restricted to the same site
    o 64 is restricted to the same region
    o 128 is restricted to the same continent
    o 255 is unrestricted

- Type of Service (ToS): The ToS field could specify a datagram's priority and request a route for low-delay, high-throughput, or highly-reliable service. Based on these ToS values, a packet would be placed in a prioritized outgoing queue, or take a route with appropriate latency, throughput, or reliability. If your network doesn't support ToS, use zero as default.

- Packet Time (AES67): Packet time is the real-time duration of the media data contained in a media packet. Given the sampling rate and packet time, the number of samples per packet can be calculated. Short packet times allow for lower latency but introduce overhead and high packet rates that may overtax some devices or networks. Long packet times imply higher latency and require additional buffering which may not be available on memory-constrained devices.

Packet time is determined by the sender and negotiated through connection management. Senders shall not change packet time for the duration of a session. Receivers may assume that packet time does not change for the duration of a session. To enable interoperation with standard RTP implementations, receivers should not rely on the presence or accuracy of any packet time description. Receivers should be able to determine packet time based on the timestamps in received packets.

End of document