

570DSK-12G-F

Downstream Keyer with Logo Insertion

User Manual



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	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “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 this information
- 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.
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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

This equipment with the CE marking complies with both the EMC Directive (2014/30/EU) and the Low Voltage Directive (2014/35/EU) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European standards:

- EN62368-1:2014 Product Safety
- EN55022:2010 Immunity

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.

INFORMATION TO USERS IN THE U.S.A.

NOTE

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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.

REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release (based on FW B92)	Dec 2021

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1. OVERVIEW

The 570DSK-12G-F is an SDI-oriented Keyer with software-enabled features, which has a downstream Keyer designed for 3G/4K/UHD applications with logo insertion, capable of HDR processing. Each path supports 3G/4K/UHD with an external Keyer (from Key/Fill inputs) and an internal logo layer for animations and static logos. Logos can be stored on a customer provided NAS server or on the card itself by using FTP.

The 570DSK-12G-F can be externally controlled by VUE – Evertz customizable user interface – and/or by a third-party automation system over IP.

It is also VistaLINK® capable, offering remote monitoring, control and configuration capabilities via Simple Network Management Protocol (SNMP).

Features

- Full 16-bit linear RGB Keyer with video fade-in and fade-out processing.
- One 3G/4K/UHD external Keyer
- Video formats: HD/3G Level A and 12G single essence.
- Insert static or animated logos from NAS storage.
- Multiple control interfaces and/or third-party automation using IP.
- Dolby compliant

Network Management

- Built in VistaLINK® support for remote monitoring and control via SNMP (using VistaLINK® PRO)

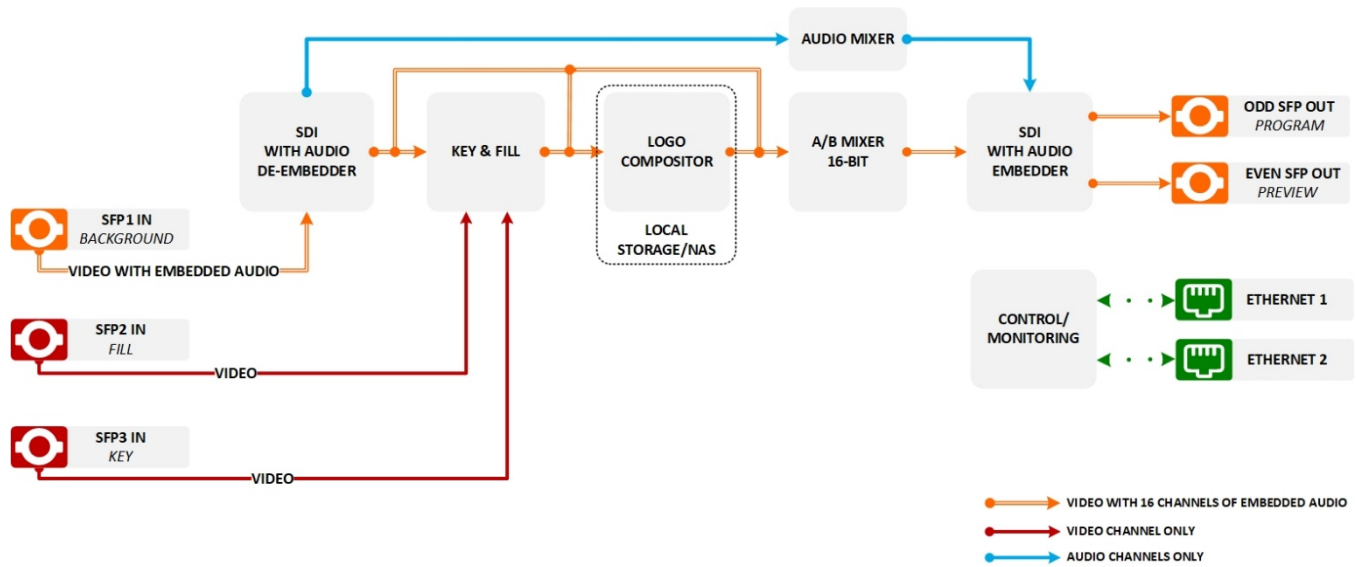


Figure 1-1: 570DSK-12G-F Block Diagram

2. INSTALLATION

2.1. UNPACKING

Remove the equipment carefully from the box and look it over. Any error should be reported to your supplier immediately. Save all the packing material after unpacking the equipment as this could be useful in the future if it's needed to return the unit for maintenance.

Check each item supplied for transit damage. Any damage should be reported in detail to your supplier. You must state the serial number of the unit, which can be found on the rear of the frame. Check that power cords supplied are suitable for your country and the equipment is compatible with your main (line) voltage.

2.2. FRAME

The 570DSK-12G-F comes with a companion rear plate that occupies two slots on a 570FR (3RU) or S570FR (1RU) frame. When installed in the 570FR frame, a "Blank Slot" must be installed next to the module's front panel.

2.3. POWER REQUIREMENTS

The 570FR/S570FR frame comes with one auto-ranging power supply that automatically senses the input voltage over the range of 100 to 240 VAC. An additional power supply (570PS) can be ordered to provide fully redundant powering of the frame. Power should be applied by connecting a 3-wire grounding type power supply cord to the power entry module on the rear panel of each power supply. The power cord should be minimum 18 AWG wire size; type SVT marked VW-1, maximum 2.5m in length.

The power entry modules contain a standard IEC power inlet connector, two 5 x 20 mm fuse holders and an EMI line filter.



CAUTION – TO REDUCE THE RISK OF ELECTRICAL SHOCK, GROUNDING OF THE GROUND PIN OF THE MAINS PLUG MUST BE MAINTAINED.

2.4. REFERENCE

The 570FR/S570FR frame comes with two BNC connectors, labeled as REF1 and REF2. There must be an analog reference present to ensure that the signal passing through 570DSK-12G-F will occur synchronously.

The 570DSK-12G-F requires to receive bi-level reference (NTSC or PAL). Also, the signal sources need to be of the same standard and frequency. These sources must lock to the same reference and be timed to within $\pm 1/2$ line with respect to the reference as well.



NOTE: NTSC reference must be placed into REF1 port and PAL reference must be placed into REF2 port.

2.5. REAR AND FRONT PANEL

Error! Reference source not found. shows Rear and Front panels of the 570DSK-12G-F modules.

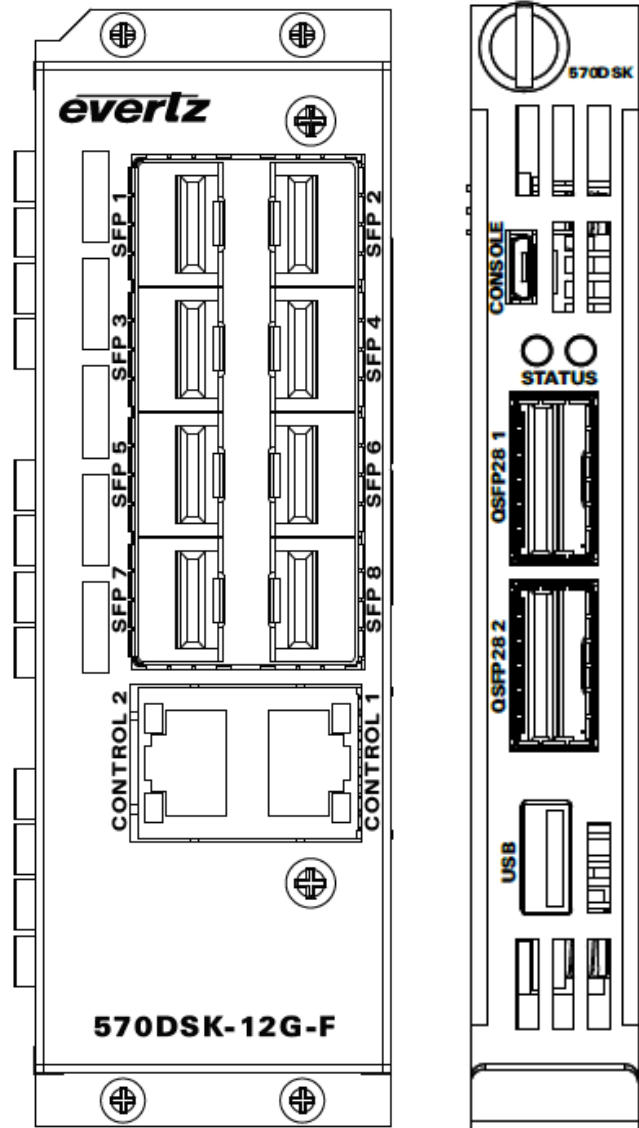


Figure 2-1: 570DSK-12G-F Rear and Front Panels

2.5.1. Front Panel

Front panel is equipped with two QSFPs ports, one USB Type-A port and one USD Micro-B (5 pins) port.

QSFPs: support 25GB of data per path (future use).

USB Micro-B: Port to access 570DSK-12G-F serially and change its IP address.

2.5.2. Rear Panel

The rear plate is equipped with eight I/O SFP ports and two RJ-45 network connectors.

The device supports both coaxial SFP3TR-HDBNC-12G SFP (Figure 2-2) and fiber SFP3TR-13-12G SFP – Evertz Ordering Numbers. A high quality coax cable should be used to help ensure optimum performance.



Figure 2-2: SFP3TR-HDBNC-12G IO Ports Side and Front Views

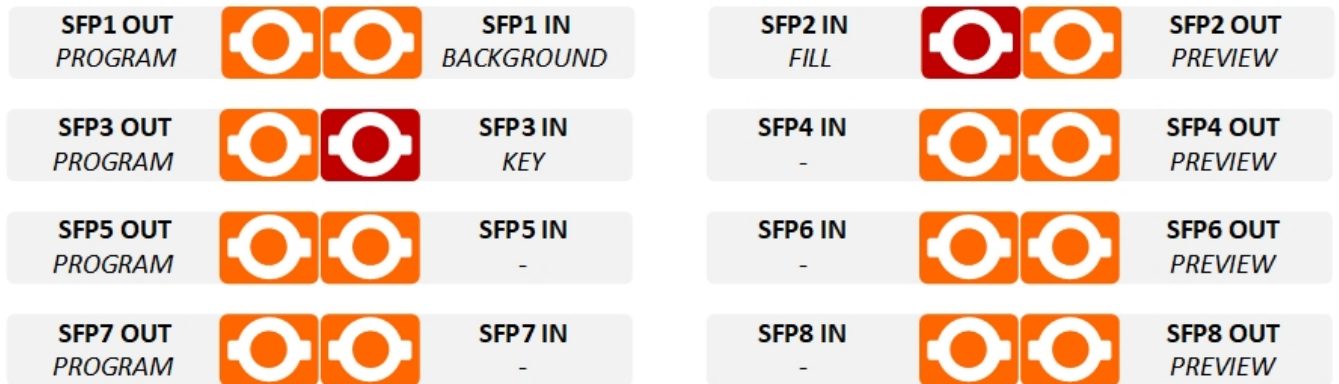


Figure 2-3: IO Ports Configuration

The RJ-45 connectors are Ethernet ports used for monitoring and controlling of the system. See Section 2.7 for information on connecting to an Ethernet network. See Section 2.8 for information on configuring the network address of the router.

Ethernet 1: Network port to access the Web interface, VistaLink and a connection to the FTP Server.

Ethernet 2: Network port to access the Web interface, VistaLink and a connection to the FTP Server.



It is both important and good practice that cables are properly supported and not hanging from the connectors as this can put unnecessary stress on the connectors and possibly reduces their working life.

2.6. SOURCE VIDEOS

2.6.1. Video Inputs

Video source connected to SFP1 is called Background video. This signal will be displayed through all the outputs ports, Program (odd output ports) and Preview (even output ports), – still when Keyer is disabled.

Video source connected to SFP2 is named Fill video. Once the Keyer is enabled and all three input signals are in place, the Fill video will be displayed in a front layer of the Background video.

The video source connected to SFP3 is called Key. Its pattern must be composed by a sharp black and white image, in order to achieve two distinct images in one output video. Once the Keyer is activated, the black section will display the Background video and the white will display the Fill video through the same output signal (as output video seen in Figure 2-4).

In case, the user requires blended images, intermediate intensities of grey can be used in the Key input video. The Background and Fill images on the output will be displayed proportionally with the percentage of white and black used in the Key input video.

The following provides examples of the each video source and its composed video output:

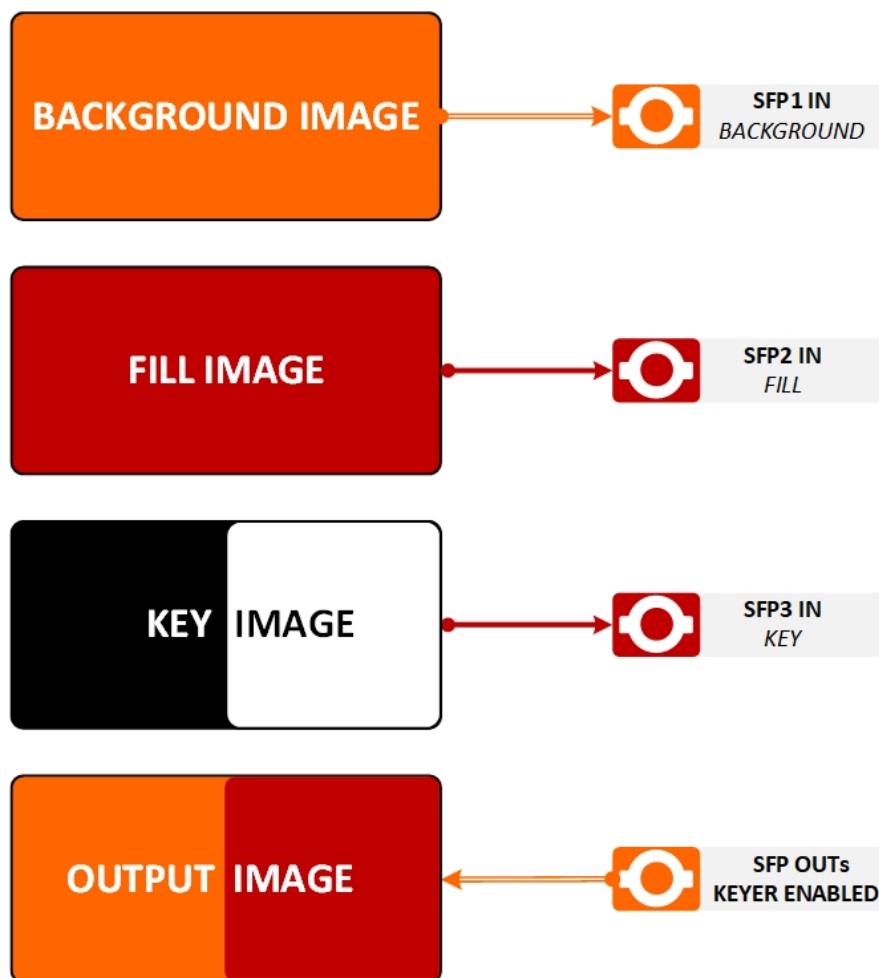


Figure 2-4: Video Sources vs Video Output

2.7. CONNECTING TO AN ETHERNET NETWORK

The 570DSK-12G-F is designed to be used with either a 1Gbe or 10Gbe network, also known as *Fast Ethernet*, twisted pair Ethernet cabling systems. The cable must be “straight through” with a RJ-45 connector at each end. Create a network connection by plugging one end of the cable into the RJ-45 receptacle of the 570DSK and the other end into a port of the supporting network device.

The straight-through RJ-45 cable can be purchased or can be constructed using the pinout information in Table 2-1. A color code wiring table is provided in Table 2-1 for the current RJ 45 standards (AT&T 258A or EIA/TIA 258B color coding shown). Also refer to the notes following the table for additional wiring guide information.

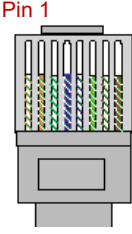
	Pin #	Signal	EIA/TIA 568A	AT&T 258A or EIA/TIA 568B	10BaseT or 100BaseT
	1	Transmit +	White/Green	White/Orange	X
2	Transmit –	Green/White or White	Orange/White or Orange	X	
3	Receive +	White/Orange	White/Green	X	
4	N/A	Blue/White or Blue	Blue/White or Blue	Not used (required)	
5	N/A	White/Blue	White/Blue	Not used (required)	
6	Receive –	Orange/White or Orange	Green/White or Green	X	
7	N/A	White/Brown	White/Brown	Not used (required)	
8	N/A	Brown/White or Brown	Brown/White or Brown	Not used (required)	

Table 2-1 : Standard RJ45 Wiring Color Codes

Note the following cabling information for this wiring guide:

- Only two pairs of wires are used in the 8-pin RJ 45 connector to carry Ethernet signals.
- Even though pins 4, 5, 7 and 8 are not used, it is mandatory that they be present in the cable.
- 10BaseT and 100BaseT use the same pins; a crossover cable made for one will also work with the other.
- Pairs may be solid colors and not have a stripe.
- Category 5 cable must use Category 5 rated connectors.

The maximum cable run between the downstream Keyer and the supporting hub is 300 ft (90 m). The maximum combined cable run between any two end points (i.e. downstream Keyer and PC/laptop via network hub) is 675 feet (205 m).

Devices on the Ethernet network continually monitor the receive data path for activity as a means of checking that the link is working correctly. When the network is idle, the devices also send a link test signal to one another to verify link integrity. The downstream Keyer rear panel is fitted with two LEDs to monitor the Ethernet connection.

10/100: This LED is ON when a 100Base-TX link is last detected. The LED is OFF when a 10Base-T link is last detected. Upon power-up the LED is OFF as the last detected rate is not known and therefore defaults to the 10Base-T state until rate detection is completed.

LN/ACT: This dual purpose Green LED indicates that the 570DSK has established a valid linkage to its hub, and it determines whether the 570DSK is sending or receiving data. This LED will be ON when the 570DSK has established a good link to its supporting hub. This gives you a good indication that the segment is wired correctly. The LED will BLINK when the 570DSK is sending or receiving data. The LED will be OFF if there is no valid connection.

2.8. MODULE CONFIGURATION

There are two ways to configure the 570DSK-12G-F serially: through Micro-B USB (located in the front panel) and through the serial port J24 located on the card's edge, as shown in Figure 2-5.

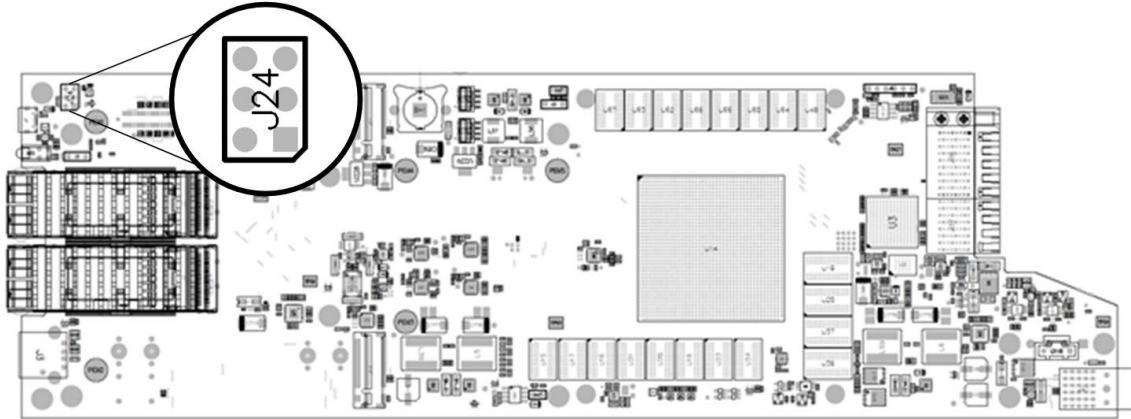


Figure 2-5: 570DSK-12G-F card

In order to connect the PC to the serial port on the card's edge, a serial 7700 upgrade cable is required. The 7700 upgrade cable, supplied with the 570FR/S570FR frame, is a multi-colored ribbon cable with a six pin header socket on one end and a female 9 pin D connector on the other end (Evertz part number WA-S76). This cable is normally in the vinyl pouch at the front of the manual binder. Connect the ribbon cable to port to **J24** and power up the card.

Once the TERA TERM is open, configure the port settings of the terminal program as follows:

Baud	115200
Parity	no
Data bits	8
Stop bits	2
Flow Control	None

Table 2-2: Port Setting Data

- 1) When the card is powered-up, the HyperTerminal connection displays boot-up status information and once completed, ends with the 'Status Message' as shown in Figure 2-6.
- 2) Login with customer/customer credentials.

```
petalinux-570dp login: customer  
Password:
```

Figure 2-6: Tera Term – Main Menu

2.8.1. Network Configuration

- 1) Enter the Ethernet port you would like to change/set the IP address configuration. See Figure 2-7 for reference. Eth0 is control port 2 and eth1 is control port 1. You can find the IP addresses for these ports by logging with root/evertz and type 'ifconfig eth0' or 'ifconfig eth1'.

```
*****  
*****  
Enter option 1, 2, or 3:  
*****  
1: Modify interface address  
2: Add a static route  
3: Remove static routes  
*****  
1  
Enter interface name (eth0 or eth1):  
eth0  
dhcp or static?:  
static  
Enter IP address:  
192.168.8.86  
Enter Netmask address:  
255.255.255.0  
Please reboot after 30s for settings to take effect
```

Figure 2-7: Tera Term – Network Configuration

- 2) To save the new IP address, login again with root/evertz and type 'reboot' as Figure 2-8.

```
root@petalinux-570dp:~#  
root@petalinux-570dp:~# reboot
```

Figure 2-8: Tera Term – Saving New IP

2.9. LOGOS STORAGE

In order for the logos to be activated through the Web interface or/and the M2100 system, the logos must be stored into the 570DSK-12G-F local NAS (Network Attached Storage).

The user can choose any preferred FTP application. The following procedure was done using Windows Command Prompt:

- 1) Open a Command Prompt window
- 2) FTP to the device, by typing 'ftp' and the 570DSK-12G-F IP address, as Figure 2-9.

```
C:\Users\eng>ftp 192.168.8.86
Connected to 192.168.8.86.
220 Operation successful
500 Unknown command
User (192.168.8.86:(none)):
230 Operation successful
```

Figure 2-9: Command Prompt – FTP to the Device

- 3) Press 'Enter' twice. Once the operation is done, type the following commands (Figure 2-10), in order access the local NAS, where the logos will be stored.

```
ftp> cd ssd1
250 Operation successful
ftp> cd public
250 Operation successful
ftp> cd logos
250 Operation successful
ftp> cd HD
250 Operation successful
```

Figure 2-10: Command Prompt – Storage Directory Path

NOTE: The user can choose whether to store the logo into the directory named **HD** or **4K**. In case the user wants to store in the 4K file, type the command: **cd 4K**, instead of cd HD. These two files can be seen using the following command:

```
root@petalinux-570dp:~# ls /mnt/ftp/ssd1/public/logos/
4K  HD
```

Figure 2-11: Tera Term – 4K and HD Directory Location

- 4) After determining where to store the logos, type 'put' and drag the file to the Command Prompt window, so the directory where the file (.rgb or .json) is stored in the user PC is displayed as shown in Figure 2-12.

```
ftp> put C:\Users\eng\Desktop\DSK\logos\evertz.json
200 Operation successful
```

Figure 2-12: Command Prompt – Storage .json File into the Device

- 5) Press 'Enter' to complete the operation. There will be a message of 'Operation Successful' as figure above.
- 6) Repeat steps 3-5 to include the **other** file (.rgb or .json) of the same logo into the device. So, in case the user have included .json file in steps 3-4, the .rgb file must be included according to step 6 (or vice-versa). Otherwise, if **only one** of the files is FTP into the device, non-stop error messages will be displayed serially.

```
ftp> put C:\Users\eng\Desktop\DSK\logos\evertz.rgb  
200 Operation successful
```

Figure 2-13: Command Prompt – Storage .rgb File into the Device



NOTE: In case another line ftp does not appear, press ‘Ctrl’ and C keys.

- 7) The user can check if the files were correctly moved to the appropriate directory using the following commands:

ls /mnt/ftp/ssd1/public/logos/HD or ls /mnt/ftp/ssd1/public/logos/4K

```
root@petalinux-570dp:~# ls /mnt/ftp/ssd1/public/logos/HD  
evertz.json evertz.rgb
```

Figure 2-14: Tera Term – Logo Files Stored in HD Directory



NOTE: The logo will be activated only if both .json and .rgb file are accessible/stored into the 570DSK-12G-F.

2.10. LOGO FILES

The .rgb file is an image file format, which its content can be a logo, icon or any digital image the user would like to apply to the output video signal of the 570DSK-12G-F.

In order to store other details related to the width, height and offset of the logo, the user must create a .json file (Java Script Object Notation) as well.

2.10.1. RGB File

The 570DSK-12G-F supports 16-bit RGB. Moreover, no specific resolution is required for .rgb files, as long as the resolution is in accordance with the size and sharpness of the logo.



NOTE: The user must consider the output signal specifications to create an appropriate RGB file; especially if the signal is SDR or HDR and the gamut is 709 or 2020.

2.10.2. JSON File

Figure 2-15 details the information in the .json file of static logos. It is important to define the name of the logo that will be recognizable by the user, who will activate it through either GPIO (see Section 4.16) in the Web Interface or through M2100 (see Section 5.2).

The other information describe the structural data as it is bellow presented.

```
1 {
2   "ID": "EVDSK_MEDIA_ITEM",
3   "name": "evertz",
4   "file_name": "evertz.rgb",
5   "media_type": "logo",
6   "LogoDef": {
7     "pixel_format": "R16G16B16A16LE",
8     "width": 320,
9     "height": 90,
10    "layer": 1,
11    "offset_top": 201,
12    "offset_left": 202,
13    "frame_count": 1,
14    "alpha": 100
15  }
16 }
```

Figure 2-15: .json File Data Content of Static Logo

ID: This variable indicates the ID of the project



NOTE: Different logos can have the same ID.

Name: This variable indicates the name of the logo, which will be used to activate it through GPIO and M2100.

File Name: This variable indicates the name of the .rgb file

Pixel Format: This variable indicates the format of the logo (**Default: R16G16B16A16LE**)

Width: This variable describes the width of the logo (in pixels)

Height: This variable describes the height of the logo (in pixels)

Layer: This variable indicates which layer the logo will appear on the output signal

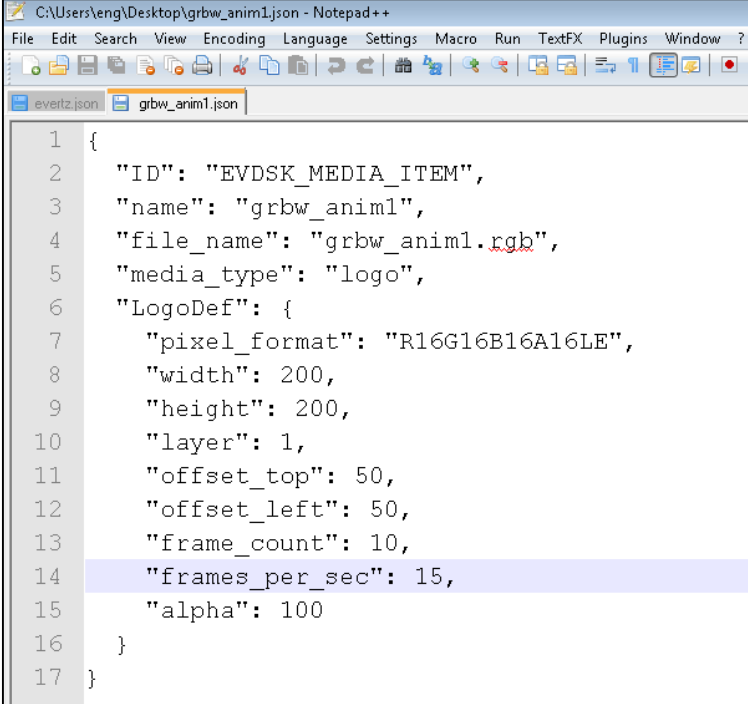
Offset Top: This variable describes the distance between the video top end and the logo (in pixels)

Offset Left: This variable describes the distance between the video left end and the logo (in pixels)

Frame Count: This variable indicates the frame quantity of the logo, whether the logo is static (1 frame) or animated (more than 1 frame) – see Figure 2-16

Alpha: This variable indicates the level of transparency of the logo, whether it is transparent (alpha = 0) or opaque (alpha = 100)

In case the logo is animated, the user must also include a frame per second as it is shown in Figure 2-16.



```
1 {
2   "ID": "EVDSK_MEDIA_ITEM",
3   "name": "grbw_anim1",
4   "file_name": "grbw_anim1.rgb",
5   "media_type": "logo",
6   "LogoDef": {
7     "pixel_format": "R16G16B16A16LE",
8     "width": 200,
9     "height": 200,
10    "layer": 1,
11    "offset_top": 50,
12    "offset_left": 50,
13    "frame_count": 10,
14    "frames_per_sec": 15,
15    "alpha": 100
16  }
17 }
```

Figure 2-16: .json File Data Content of Animated Logo



NOTE: The user must consider the `offset_top` and `offset_left` in relation to the desired video standard. As a result, the logo will be in a different location depending whether it is 3G or 12G video.

The Figure 2-17 shows the details related to the .json file of Figure 2-15, such as logo width, height, offset top and left, in pixels.

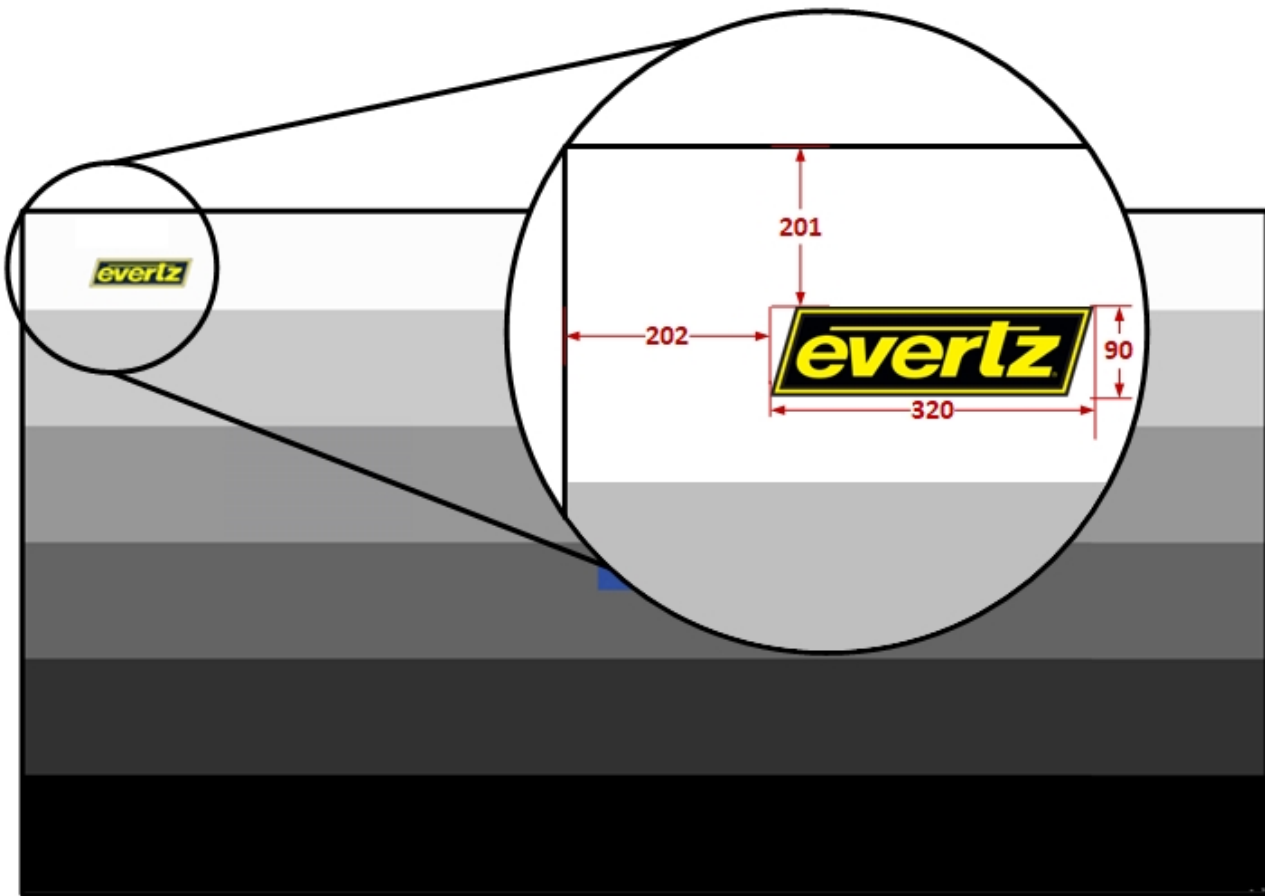


Figure 2-17: Output Video Signal with Zoomed Details of the Activated Logo

3. SPECIFICATION

3.1. CONFIGURATION

Inputs	Fixed at 8 ports (only 1-3 are functioning)
Outputs	Fixed at 8 ports
Redundant Protection	Redundant Power Supply

3.2. VIDEO INPUTS

Standards	SMPTE424M (3Gb/s) and SMPTE 2082 (12Gb/s) for video payload definition
Signal Level	800mV _{p-p}
Impedance	75Ω terminating
Performance	SFP and coaxial cable length dependent

3.3. VIDEO OUTPUTS

Signals Supported	SMPTE424M, SMPTE 2082 (SFP dependent)
Signal Level	800mV _{p-p}
Impedance	75Ω terminating
Performance	SFP dependent

3.4. REFERENCE TIMING

Switching Reference	Analog 525/625 bi-level looping
Connector	BNC (Frame)
Signal Level	1Vp-p ± 3dB
Impedance	75Ω

3.5. CONTROL

Serial	RS422/232: 1x DB-9 Female
Ethernet	10/100/1000Base-T, 2x RJ-45
Protocol	M2100 over TCP/IP

3.6. PHYSICAL (NUMBER OF SLOTS)

570FR (3RU)	15
S570FR (1RU)	4

3.7. ELECTRICAL

Input Voltage	Auto-ranging 100-240V AC, 50/60Hz
Input Power	130W 1R

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4. WEB INTERFACE

The 570DSK-12G-F is controlled using a web interface. WebEASY[®] operates using Ethernet and SNMP control protocols.

Once the card has been installed and the network addresses for the control port have been setup, the 570DSK-12G-F can be completely configured using the web interface.

4.1. LOGIN

The 570DSK-12G-F hosts its own web interface that can be accessed by using a web browser to navigate to the device's IP address. The login username and password can be 'customer/customer', 'root/evertz' or 'admin/admin'.

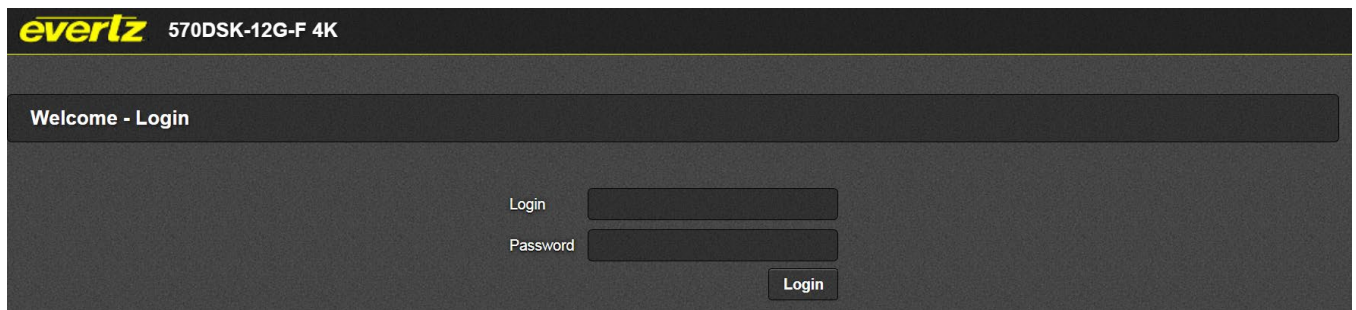


Figure 4-1: WebEASY[®] – Login



**NOTE: The computer must be on the same subnet, in order to have communication with the device.
In case the device is in different subnet, make sure to properly set a gateway address.**

The web interface presents a side menu with all sections available for the user to configure and monitor the 570DSK-12G-F.

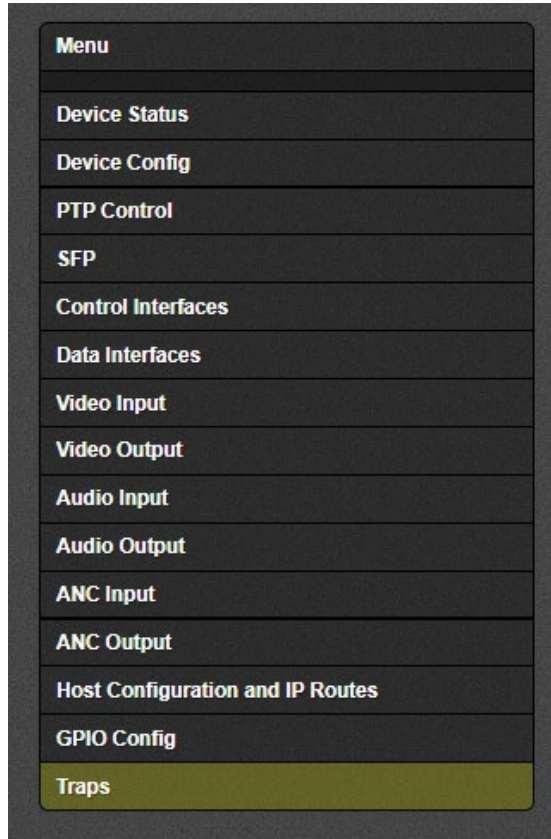


Figure 4-2: WebEASY® – Side Menu

4.2. FIRMWARE UPGRADE

Upgrading the 570DSK-12G-F is done using a button located on the top of the Web interface, labeled 'Upgrade'.

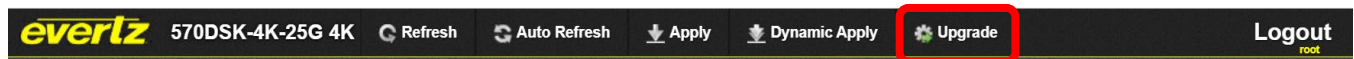


Figure 4-3: WebEASY® – Top Menu

The 'Upgrade' button is used to check current firmware version and to upload the latest firmware (Figure 4-4).

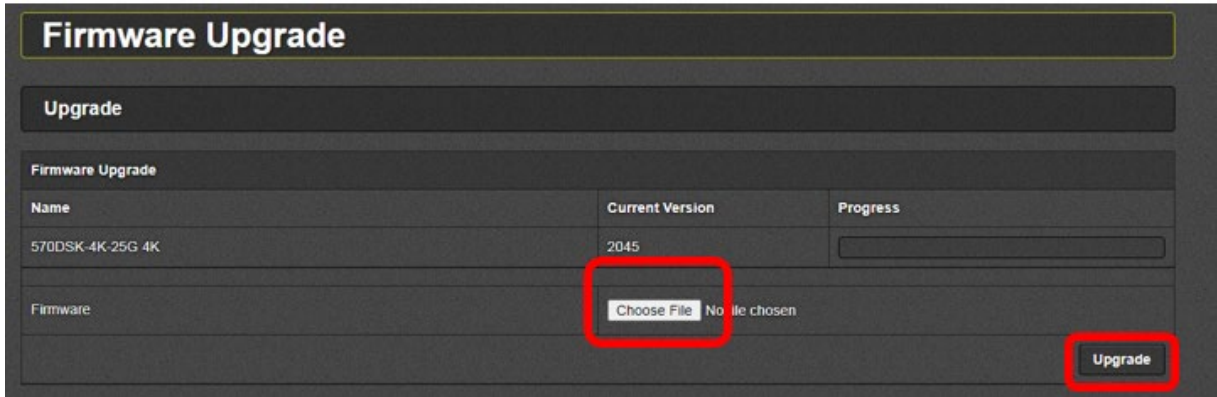


Figure 4-4: WebEASY® – Firmware Upgrade

In case the firmware is outdated, the user can upload a new image by clicking ‘**Choose File**’ button and selecting the file name *570DSK-12G-F.tar.gz*. Once the firmware is selected, click the ‘**Upgrade**’ button. The ‘Progress’ bar will show the status of the upload.

After the upload is complete, the device will automatically reboot. The entire process can take more than 5 minutes, which a ‘Page Unresponsive’ message might appear as Figure 4-5. Click “Wait” button to continue the upgrade progress.

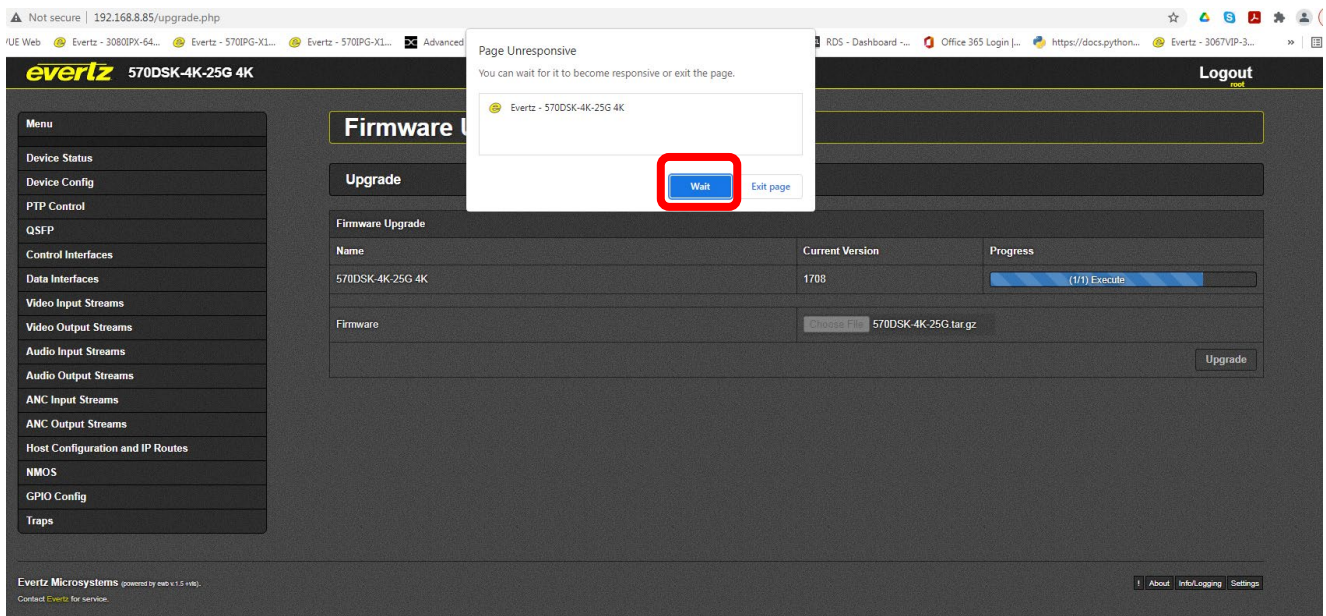


Figure 4-5: WebEASY® – Unresponsive Message



NOTE: The ‘Page Unresponsive’ message can appear a few times during the process. Therefore, the user must click “Wait” button everytime the message is displayed.

Once the device is done rebooting, login back into the web interface and verify if the firmware was correctly upgraded.

In case the upgrade failed. Please, repeat the same steps described above.

Otherwise, the user can begin configuring the web interface sections as outlined in the following chapters.

4.3. DEVICE STATUS

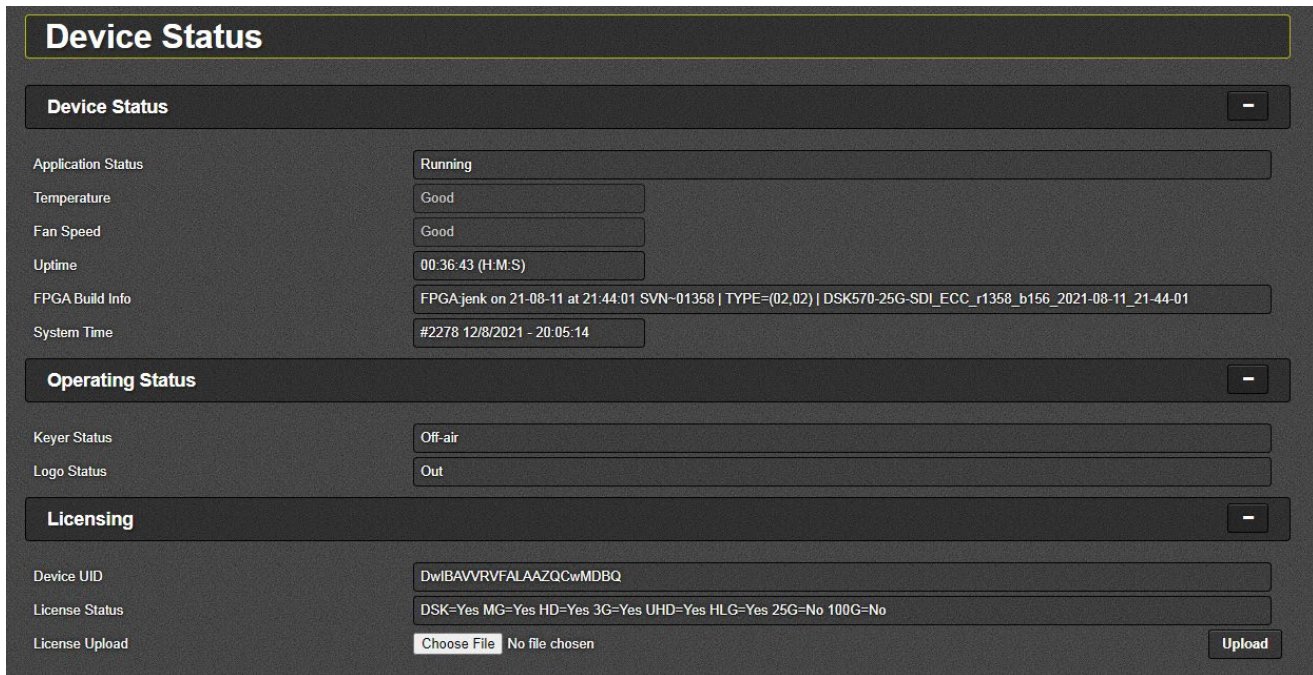


Figure 4-6: WebEASY® - Device Status

4.3.1. Device Status

Application Status: This parameter indicates the status of the unit.

Temperature: This parameter displays the temperature status of the unit, whether it is running in a regular temperature range ('Good') or if it is running out of range ('Bad').

Fan Speed: This parameter displays the fan speed status of the unit, whether it is running in a operating temperature range ('Good') or if it running out of range ('Bad').

Uptime: This parameter displays the amount of time that has elapsed since the device was powered on. The format is Days:Hours:Minutes:Seconds.

4.3.2. Operating Status

Keyer Status: This parameter displays the Keyer status, whether Keyer is not present ('Off-air'), present on Preview output signal ('Cue-on') or present on Program output signal ('On-air').

Logo Status: This parameter displays the logo status, whether logo is not present ('Out' or '[logo name]: out'), present on Preview output signal ('[logo name]: Cue'), or present on Preview and Program output signal ('[logo name]: In')

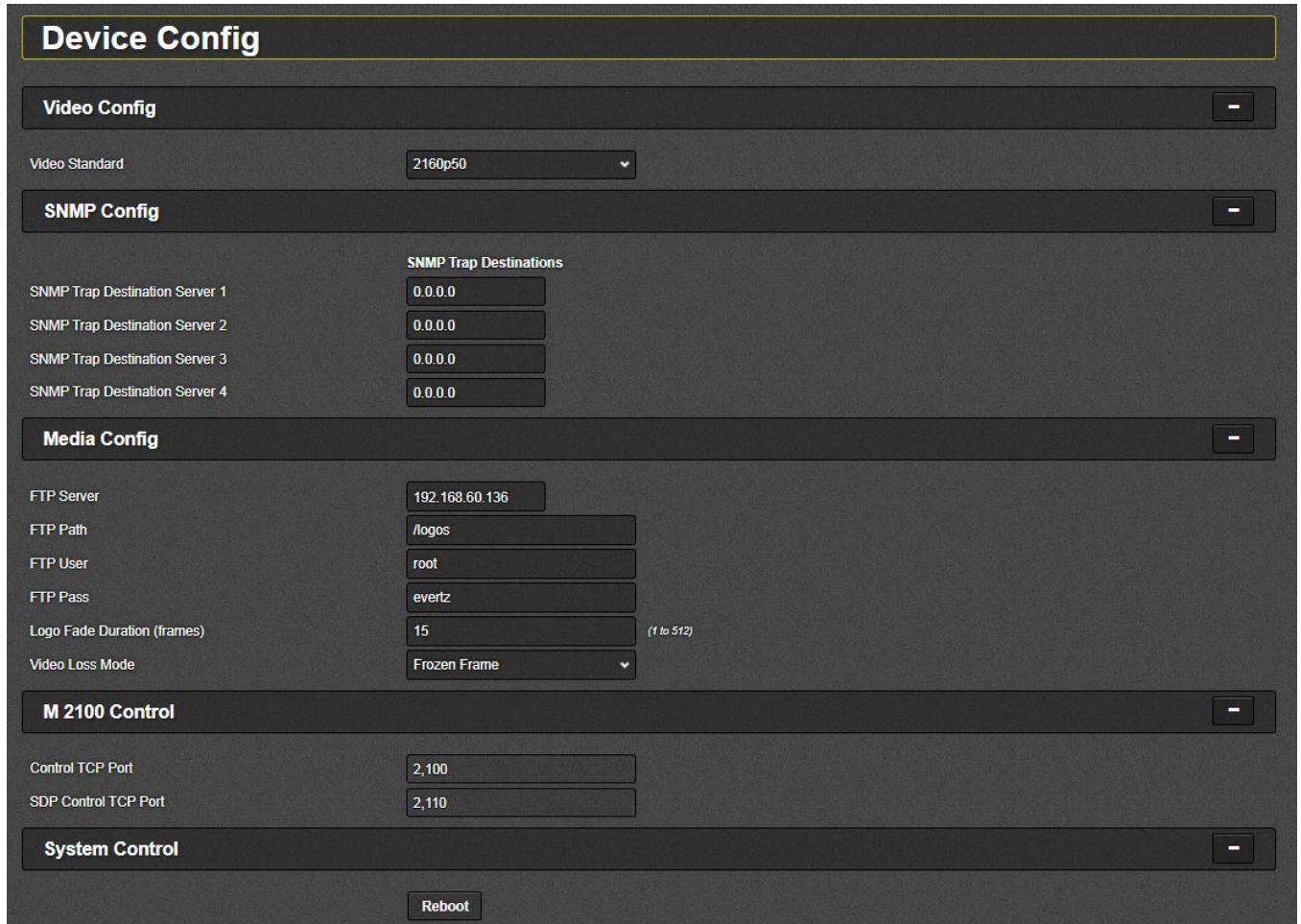
4.3.3. Licensing

Device UID: This parameter displays the devices unique ID, which it is required to request license(s)

License Status: This parameter displays the license types (i.e.: 'HD=Yes' means that the device passes HD signals).

License Upload: This button allows user to select and upload a product license file

4.4. DEVICE CONFIG



The screenshot shows the 'Device Config' interface with the following sections and fields:

- Video Config:** Video Standard (2160p50)
- SNMP Config:**
 - SNMP Trap Destinations:

SNMP Trap Destination Server 1	0.0.0.0
SNMP Trap Destination Server 2	0.0.0.0
SNMP Trap Destination Server 3	0.0.0.0
SNMP Trap Destination Server 4	0.0.0.0
- Media Config:**
 - FTP Server: 192.168.60.136
 - FTP Path: /logos
 - FTP User: root
 - FTP Pass: evertz
 - Logo Fade Duration (frames): 15 (1 to 512)
 - Video Loss Mode: Frozen Frame
- M 2100 Control:**
 - Control TCP Port: 2,100
 - SDP Control TCP Port: 2,110
- System Control:** Reboot button

Figure 4-7: WebEASY® – Device Config

4.4.1. Video Config

Video Standard: This field is used to select the video standard that matches the input signal

4.4.2. SNMP Config

SNMP Trap Destination Server 1-4: This field is used to set/display the Destination IP Address for all traps

4.4.3. Media Config

The Media Config section allows the user to set the details of the FTP server – where the logos will be stored –, in order to connect it to the 570DSK-12G-F. See Section **Error! Reference source not found.** for details.

FTP Server: This field is used to set/display the IP address of the FTP server

FTP Path: This field is used to set/display the directory of the FTP server (Default: /ssd1)

FTP User: This field is used to set/display the user name of the FTP server (Default: root)

FTP Pass: This field is used to set/display the password of the FTP server (Default: evertz)

Logo Fade Duration: This field is used to set/display the logo fade duration frames

Video Loss Mode: This field is used to select the action in case there is a video loss, whether it is 'Blue Screen', 'Black Screen' or 'Frozen Frame'

4.4.4. M2100 Control

Control TCP Port: This field is used to set/display the port to control the device by the Thrid Control Party automation protocol M2100, which controls the Keyer and logo action (Default: 2100)

SDP Control TCP Port: (Not used, future use only)



NOTE: The device must be rebooted in order for changes above mentioned to take effect.

4.4.5. System Control

Reboot: This button allows the user to reboot the device.

4.5. PTP CONTROL (NOT USED, FUTURE USE ONLY)

PTP Control

PTP Config

Domain Number (0 to 127)

Priority 1 (0 to 255)

Priority 2 (0 to 255)

PTP Port Config

Port 1

Port 2

Interface

Identity

State

Mode

Log Announce Interval (0 to 4)

Log Sync Rate (-1 to 1)

Announce Receipt Timeout (2 to 255)

DSCP (0 to 63)

Acceptable Master Enable

BMCA Transition

PTP Status

Current Steps Removed

Current Mean Path Delay

Parent Port Identity

Parent Grandmaster Identity

Parent Grandmaster Clock Quality

Parent Grandmaster Priority 1

Parent Grandmaster Priority 2

Figure 4-8: WebEASY® – PTP Control

4.6. SFP

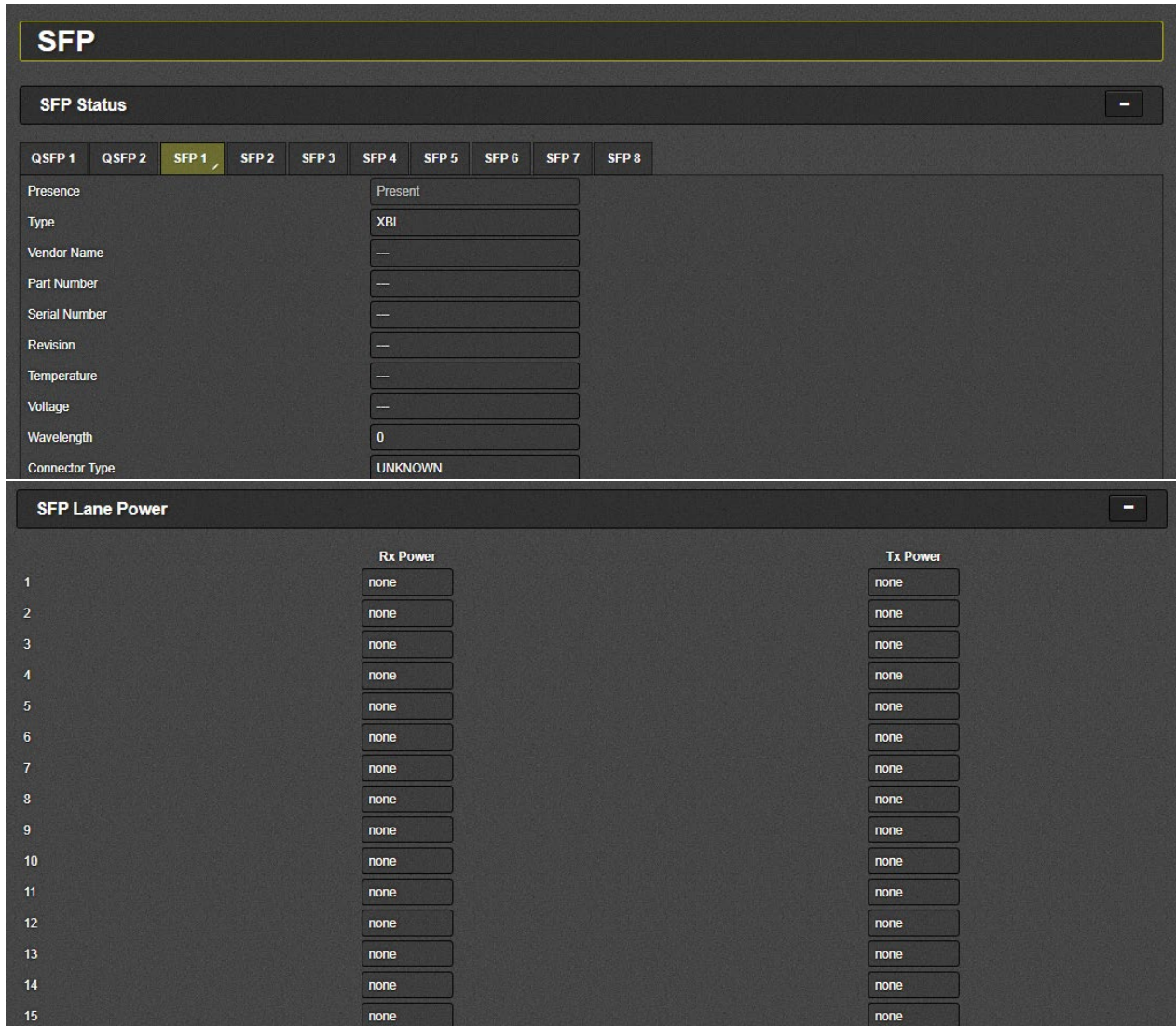


Figure 4-9: WebEASY® – SFP

4.6.1. SFP Status

QSFP1-2: This section displays details of the QSFP plugged on ports 1-2 (future use)

SFP1-8: This section displays details of the SFP plugged on ports 1-8

4.6.2. SFP Lane Power

Rx Power: This parameter displays the power of each channel/port, when input signal is present. 1-4 corresponds to QSFP1(future use), 5-8 corresponds to QSFP2 (future use) and 9-16 corresponds to each SFP ports 1-8.

Tx Power: This parameter displays the power of each channel/port, when output signal is present. 1-4 corresponds to QSFP1(future use), 5-8 corresponds to QSFP2 (future use) and 9-16 corresponds to each SFP ports 1-8.

4.7. CONTROL INTERFACES

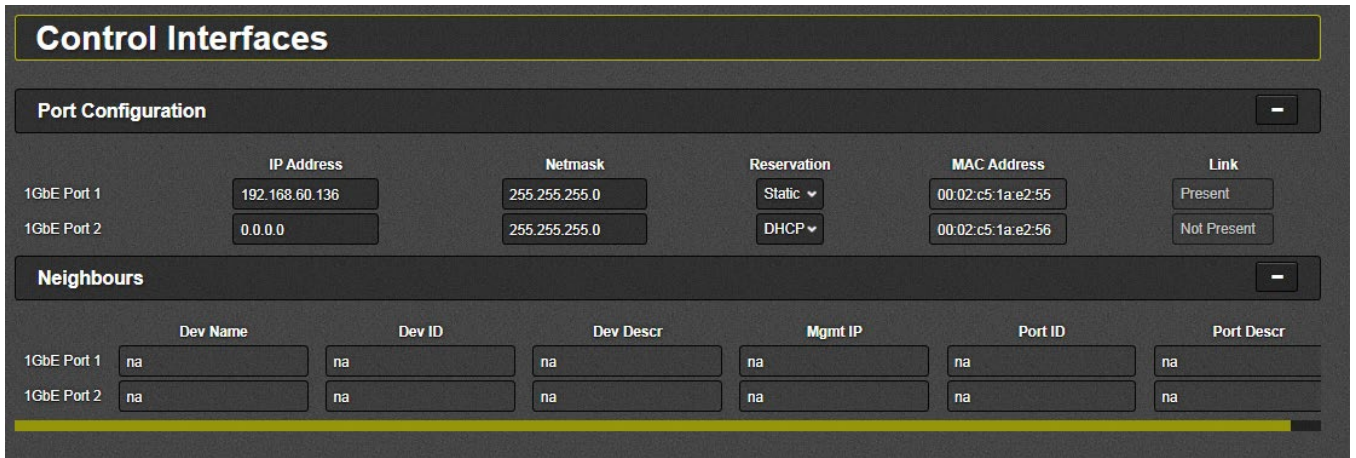


Figure 4-10: WebEASY[®] – Control Interfaces

4.7.1. Port Configuration

IP Address: This field set/displays the IP address to each Ethernet port

Netmask: This field set/displays the Netmask address to each Ethernet port

Reservation: This field is used to select a network protocol, whether it is ‘Static’ or ‘DHCP’

MAC Address: This parameter displays the MAC Address of each Ethernet port

Link: This parameter displays the status of each Ethernet port, whether there it connected (‘Present’) or disconnected (‘Not Present’)

4.7.2. Neighbours (Not used, future use only)

4.8. DATA INTERFACE (NOT USED, FUTURE USE ONLY)

Data Interfaces							
Port Configuration							
	IP Address	Netmask	MAC Address	Bandwidth Config	Link	TX Bandwidth (kbs)	RX Bandwidth (kbs)
QSFP 1.1 - Magnum ENET1	0.0.0.0	255.255.255.0	00:02:c5:1a:e2:59	10G	Not Present	none	none
QSFP 1.2 - Magnum ENET3	0.0.0.0	255.255.255.0	00:02:c5:1a:e2:5a	10G	Not Present	none	none
QSFP 1.3	0.0.0.0	255.255.255.0	00:02:c5:1a:e2:5b	Undefined	Not Present	none	none
QSFP 1.4	0.0.0.0	255.255.255.0	00:02:c5:1a:e2:5c	Undefined	Not Present	none	none
QSFP 2.1 - Magnum ENET2	0.0.0.0	255.255.255.0	00:02:c5:1a:e2:5d	10G	Not Present	0	0
QSFP 2.2 - Magnum ENET4	0.0.0.0	255.255.255.0	00:02:c5:1a:e2:5e	10G	Not Present	0	0
QSFP 2.3	0.0.0.0	255.255.255.0	00:02:c5:1a:e2:61	Undefined	Not Present	none	none
QSFP 2.4	0.0.0.0	255.255.255.0	00:02:c5:1a:e2:62	Undefined	Not Present	none	none

Neighbours						
	Dev Name	Dev ID	Dev Descr	Mgmt IP	Port ID	Port Descr
evgb0	na	na	na	na	na	na
evgb1	na	na	na	na	na	na
evgb4	na	na	na	na	na	na
evgb5	na	na	na	na	na	na

Figure 4-11: WebEASY® – Data Interface

4.9. VIDEO INPUT

Video Input	
Input Configuration	
Program	Presence: Present
Fill	Presence: Present
Key	Presence: Present

Figure 4-12: WebEASY® – Video Input

4.9.1. Input Configuration

Program: This parameter indicates whether there is a valid input signal on SFP1 ('Present'), or an invalid input video ('Not Present')

Fill: This parameter indicates whether there is a valid input signal on SFP2 ('Present'), or an invalid input video ('Not Present')

Key: This parameter indicates whether there is a valid input signal on SFP3 ('Present'), or an invalid input video ('Not Present')

4.10. VIDEO OUTPUT (NOT USED, FUTURE USE ONLY)

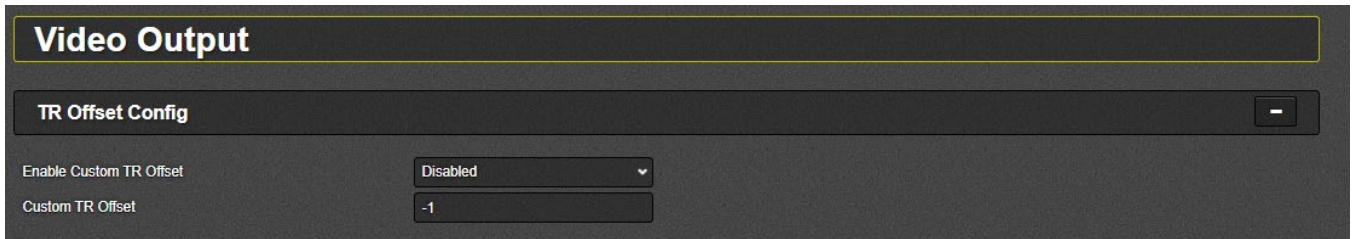


Figure 4-13: WebEASY® – Video Output

4.11. AUDIO INPUT

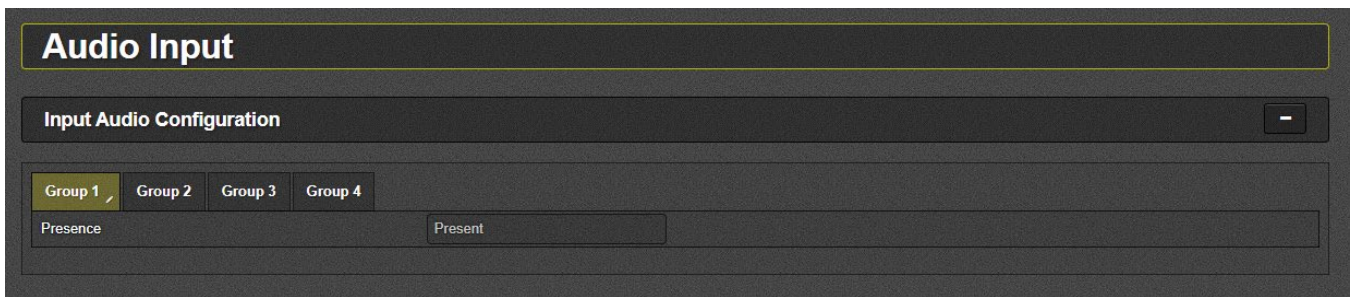


Figure 4-14: WebEASY® – Audio Input

4.11.1. Input Audio Configuration

Group 1-4: This section indicates whether there is valid input audio in each group of SFP1 ('Present') or an invalid input audio ('Not Present')

4.12. AUDIO OUTPUT

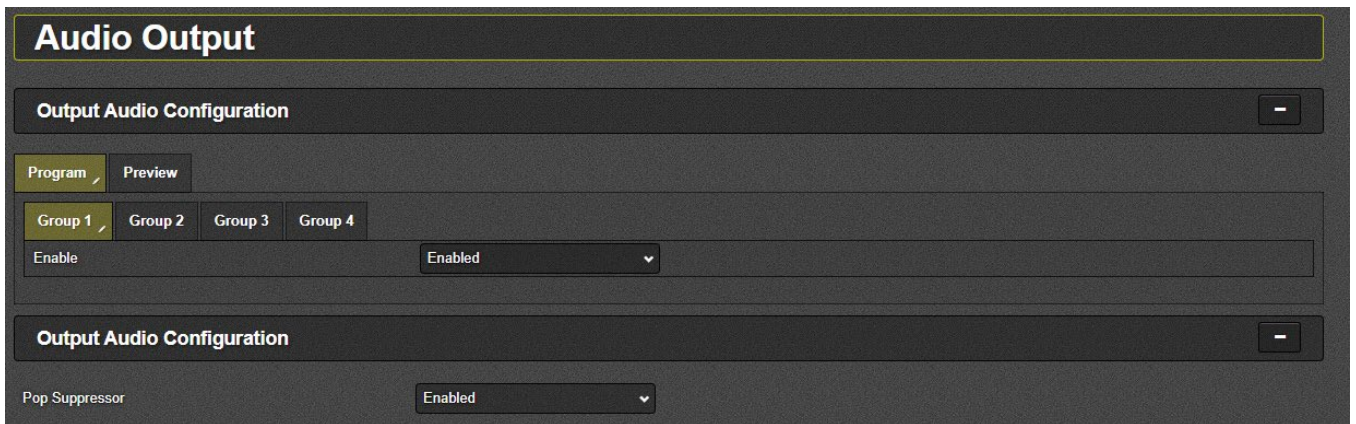


Figure 4-15: WebEASY® – Audio Output

4.12.1. Output Audio Configuration

Program: This section allows the user to select whether to “Enable’ or ‘Disable’ each group of audio through even output SFPs

Preview: This section allows the user to select whether to “Enable’ or ‘Disable’ each group of audio through odd output SFPs

Pop Suppressor: (Future feature)



NOTE: The device must be rebooted in order for changes above mentioned to take effect.

4.13. ANC INPUT (NOT USED, FUTURE USE ONLY)

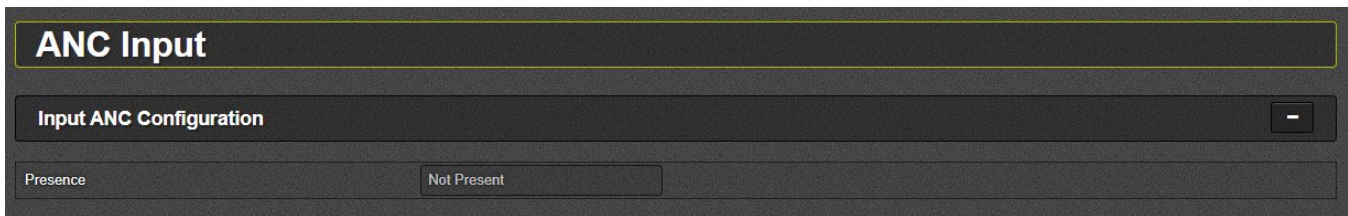


Figure 4-16: WebEASY® – ANC Input

4.14. ANC OUTPUT (NOT USED, FUTURE USE ONLY)

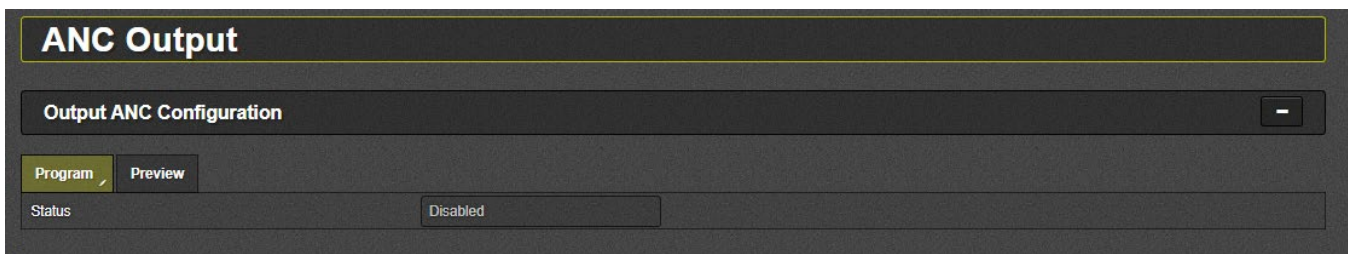


Figure 4-17: WebEASY® – ANC Output



NOTE: The ANC is embedded in the SDI output signal.

4.15. HOST CONFIGURATION AND IP ROUTES (FUTURE USE ONLY)

Figure 4-18: WebEASY® – Host Configuration and IP Routes

4.16. GPIO CONFIG

GPIO	GPIO Type	GPIO Value	GPIO Action (0 to 1)
GPIO 1	unused	none	0
GPIO 2	unused	none	0
GPIO 3	unused	none	0
GPIO 4	unused	none	0
GPIO 5	unused	none	0
GPIO 6	unused	none	0
GPIO 7	unused	none	0
GPIO 8	unused	none	0
GPIO 9	unused	none	0
GPIO 10	unused	none	0
GPIO 11	unused	none	0
GPIO 12	unused	none	0
GPIO 13	unused	none	0
GPIO 14	unused	none	0
GPIO 15	unused	none	0
GPIO 16	unused	none	0
GPIO 17	unused	none	0
GPIO 18	unused	none	0
GPIO 19	unused	none	0
GPIO 20	unused	none	0

Figure 4-19: WebEASY® – GPIO Config

4.16.1. Control Panel Config

This section allows the user to activate/deactivate the Keyer and logos.

GPI Type: This field is used to select whether Keyer or logo will be displayed on the output signal

- 'KeyerOnAir': Activate Keyer
- 'KeyerOff': Deactivate Keyer
- 'LogoOnAir': Activate logo
- 'LogoOut': Deactivate logo

GPI Value: This field is used to set/display the name of the Keyer or logo

GPI Action: This switch is used to activate the selected GPI Type



NOTE: Once the GPI Action switch is toggled, hit the 'Apply' button, in order for the selected action(s) to take effect.



NOTE: The activation done from GPIO Web interface section is temporary. In case of a reboot, any Keyer or Logo will be removed from the output signals.

4.17. TRAPS

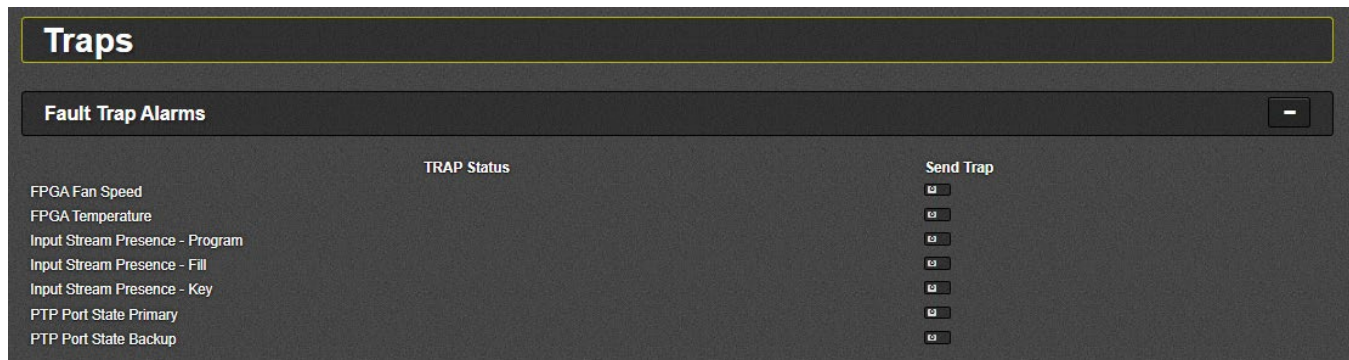


Figure 4-20: WebEASY® – Traps

5. M2100 REMOTE CONTROL

M2100 is a Master Control Switcher that can be used to control external devices over a network connection. The system message protocol and protocol commands are executed through M2100 automation interface.

The Master Control Message Protocol defines the low-level format of messages passed to/from the Master Control system.

The M2100 is used to enable/disable the Keyer and logos on the 570DSK-12G-F, according to the following instructions:

1) Open the AutomationLoader.exe

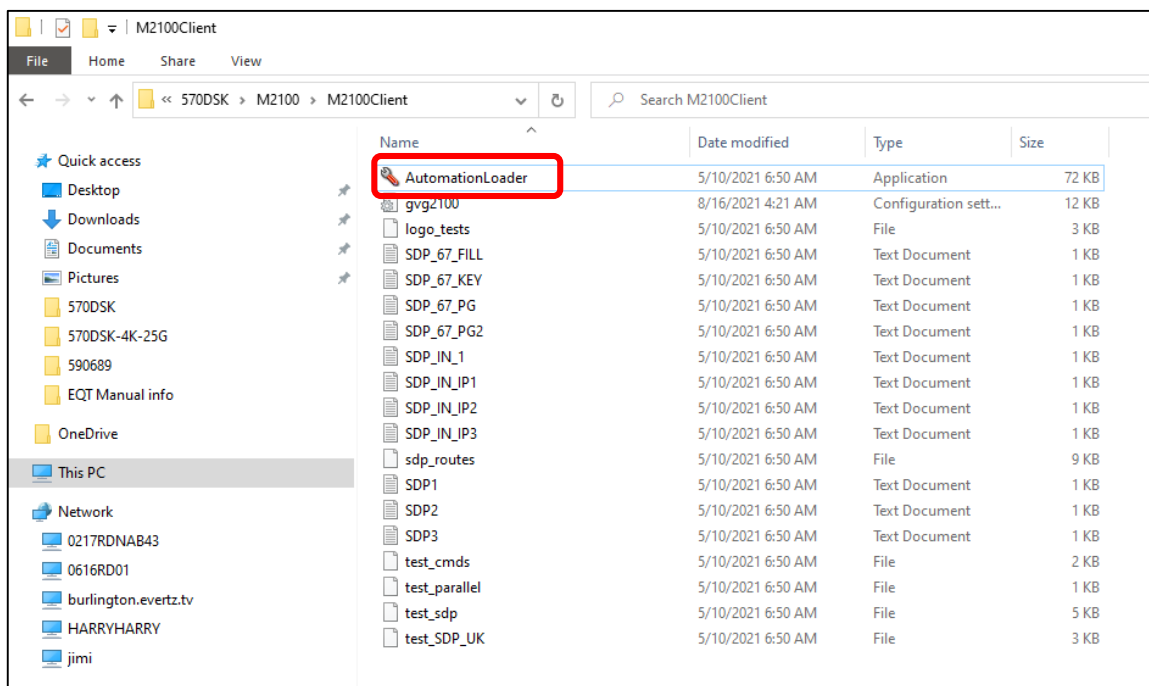


Figure 5-1: M2100 – Automation Loader exe. file

2) Set the IP address of the 570DSK-12G-F, include the port (Default: 2100) and click 'Open' button to connect it to the device, as Figure 5-2.

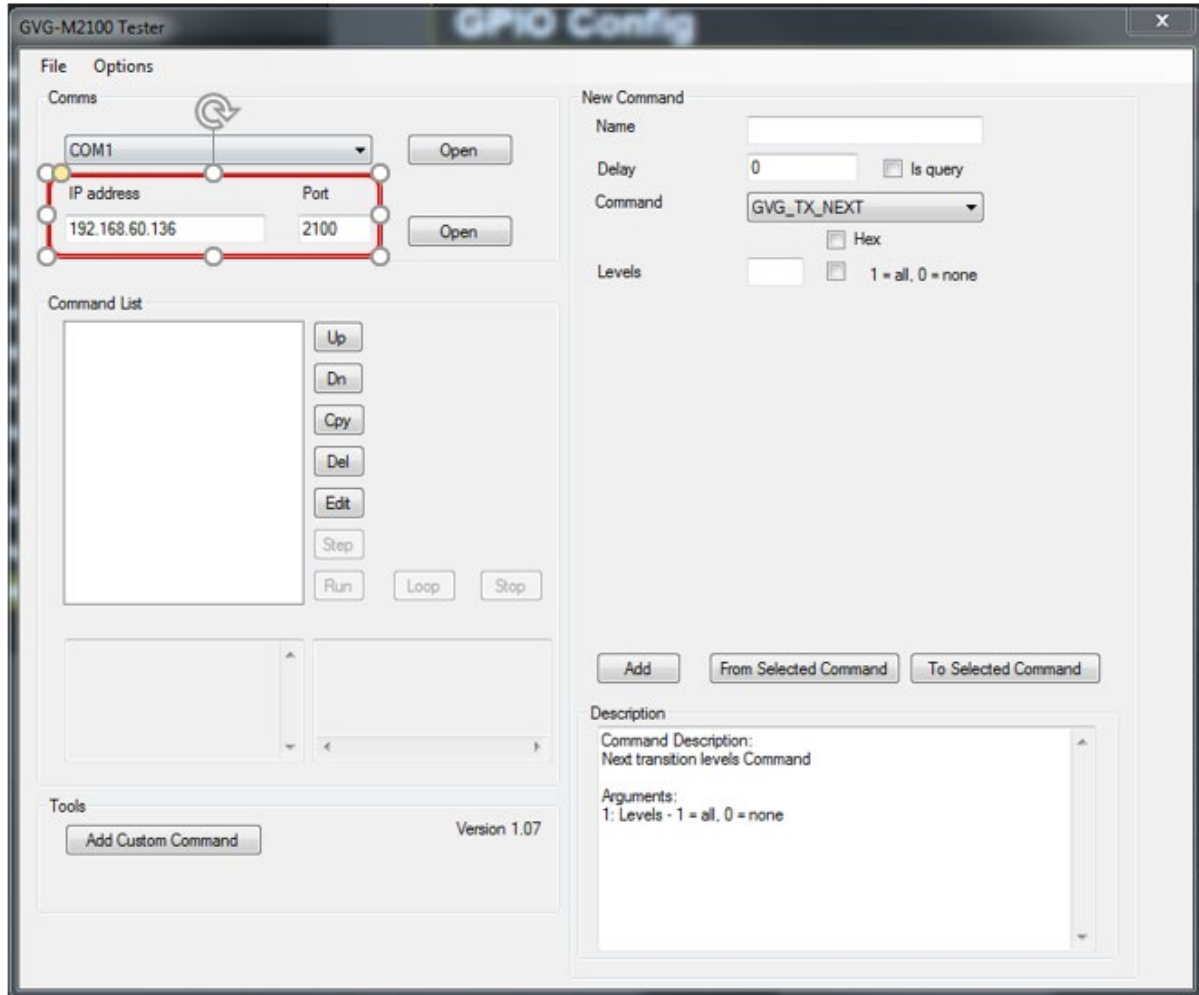


Figure 5-2: M2100 – IP Configuration

5.1. KEYER

5.1.1. Enable Keyer

- 1) Select '**GVG_KEY_ENABLE**' in the 'Command' option, include '1' in 'Keyer' and press 'Add' button, so the command will be moved/stored to the 'Command List' on the side of the window, as Figure 5-3.

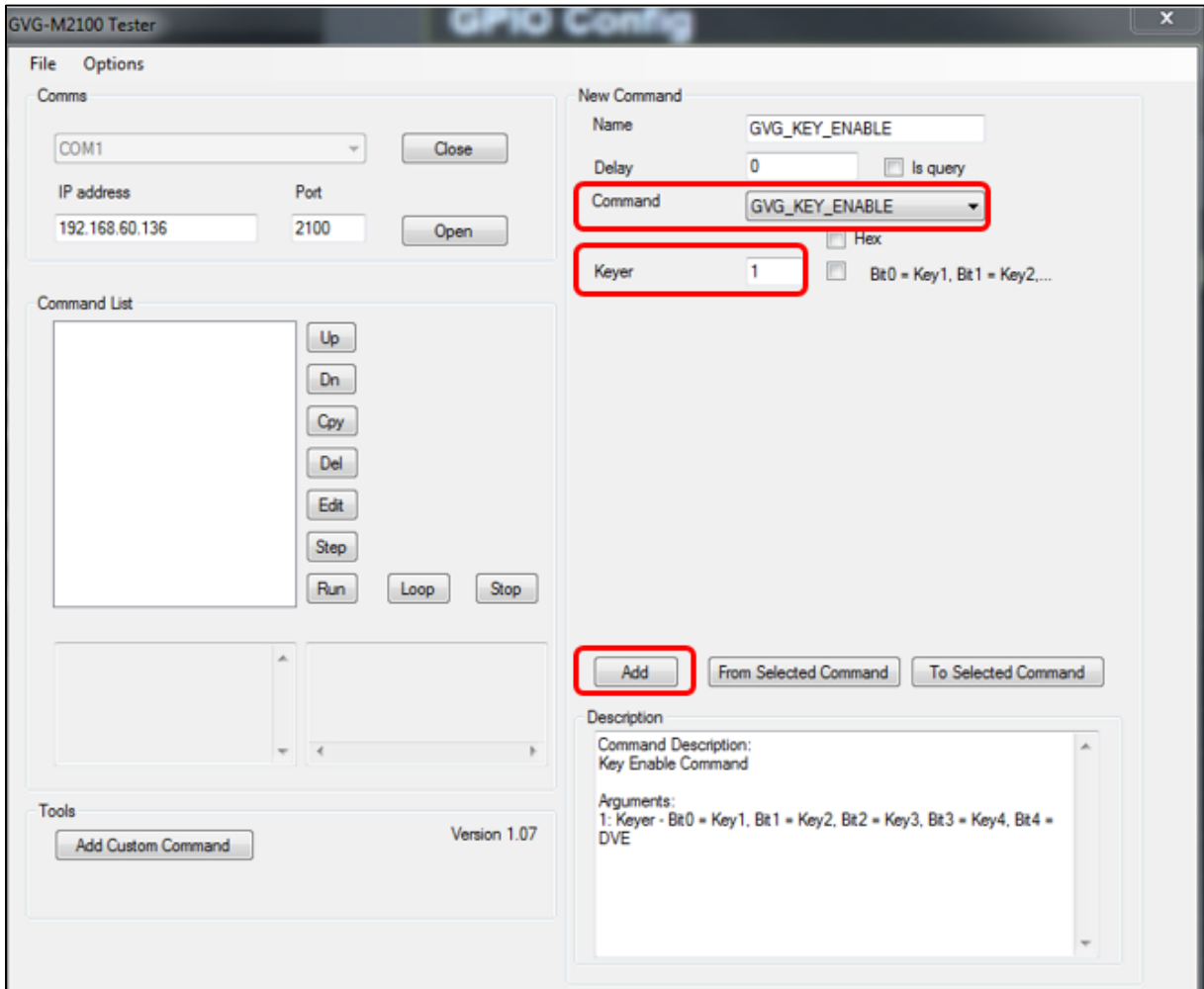


Figure 5-3: M2100 – Add Keyer Command

- 2) Select 'GVG_KEY_ENABLE' in the 'Command List' and press 'Step' button to activate the Keyer, as Figure 5-4.

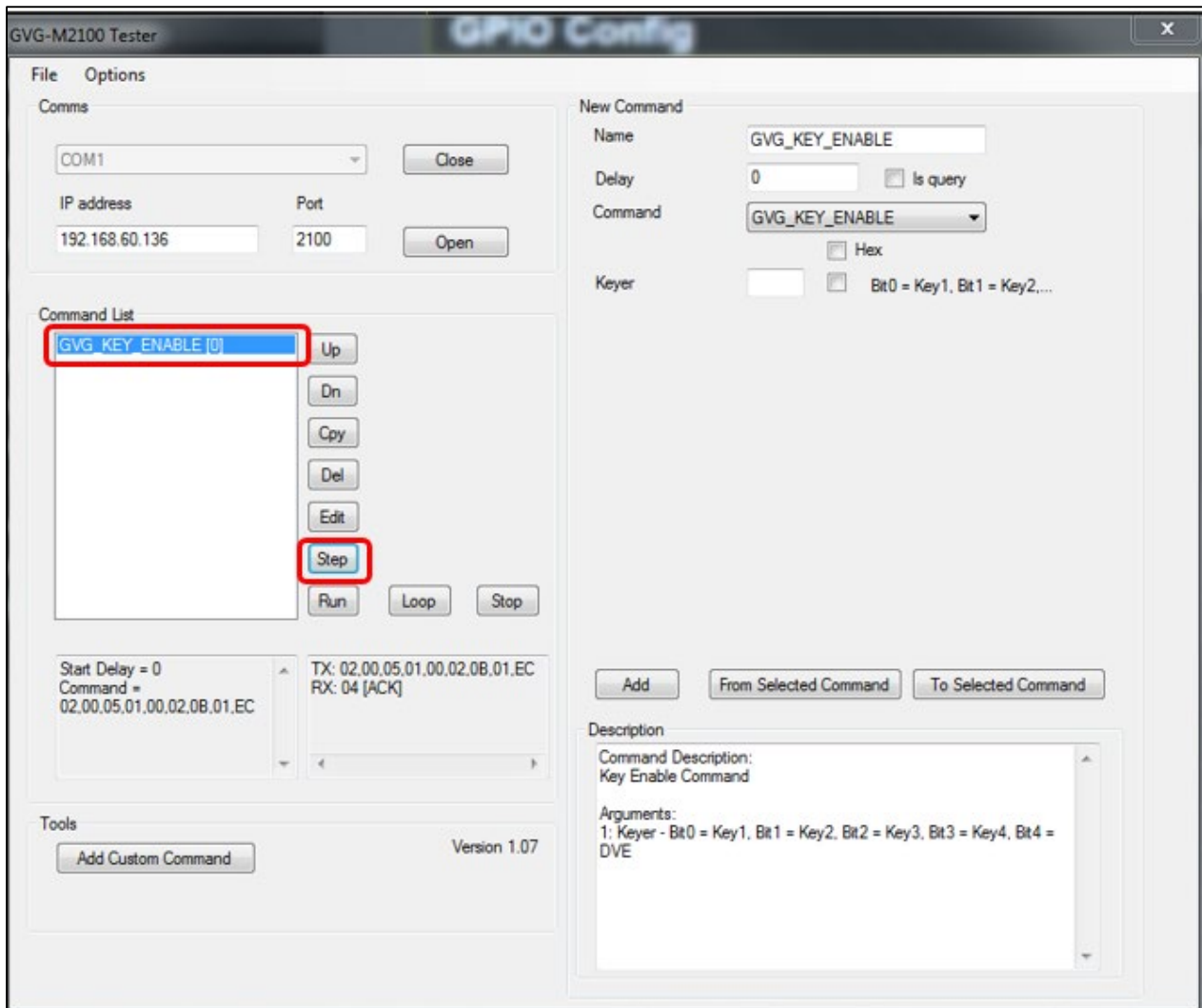


Figure 5-4: M2100 – Activate Keyer Command

- 3) The Keyer will be displayed through Preview (PVW) output signals – even SFP ports. The 'Keyer Status', in the Web interface, will change from "Off-air" to "Cue-on".

- 4) In order to display the Keyer, also, through Program (PGM) output signals – odd SFP ports –, the ‘GVG_TX_START’ in ‘Command’ option must be selected. Type number ‘3’ in ‘Trigger’ and press ‘Add’ button, so the command will be moved/stored to the ‘Command List’ on the side of the window, as Figure 5-5.

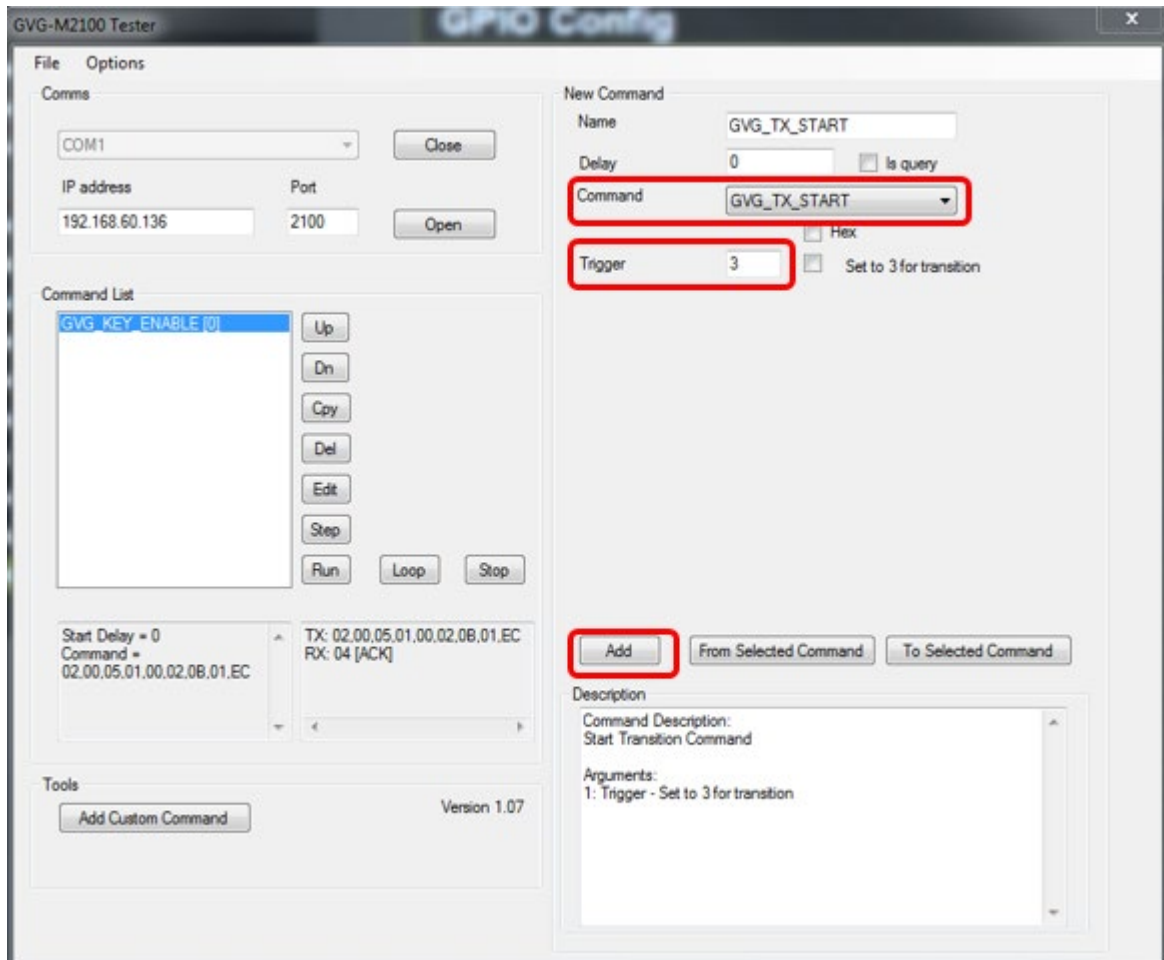


Figure 5-5: M2100 – Add Transition (from PVW to PGM) Command

- 5) Select the 'GVG_TX_START' in the 'Comand List' and press 'Step' button to activate the Keyer, as Figure 5-6.

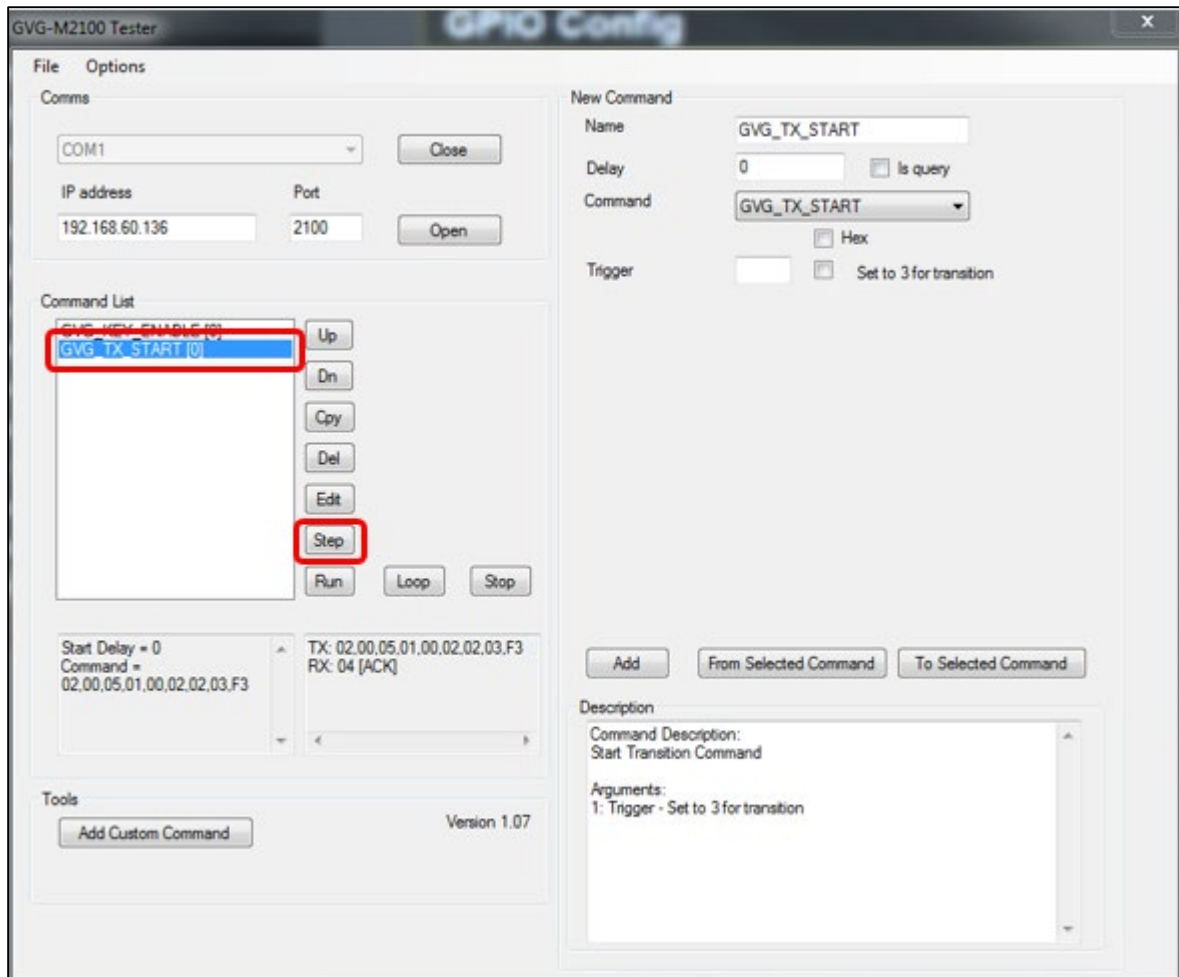


Figure 5-6: M2100 – Activate Keyer with Transition (from PVW to PGM) Command

- 6) The Keyer will be displayed through PGM and PVW output signals (all outputs ports). The status of the Keyer will change from "Cue-on" to "On-air" in the Web interface.



NOTE: The instructions can be saved by clicking in the 'File' button and selecting the 'Save'/'Save as' option, which allows the user to activate the Keyer without adding a new command every time.



NOTE: The 570DSK-12G-F will display the Keyer through the output signals only when all three input signals are connected (see Figure 1-1).

5.1.2. Disable Keyer

- 1) In order to remove the Keyer **only** from PVW output signals, select '**GVG_KEY_ENABLE**' again and press 'Step'. The Keyer will **remain only** through PGM output signals (see step 2 of Section 5.1.1).
- 2) In order to **remove** the Keyer from **any output signal**, select '**GVG_KEY_ENABLE**' in the 'Command' option. Although, this time, type '0'(zero) in 'Keyer'. Once the user press 'Step', the 'Keyer Status', in the Web interface, will change from "Cue-on" to "Off-air" OR from "On-air" to "Cue-off".

5.2. LOGOS

There are two options to display logos through Preview and Program output signals.

5.2.1. Enable Logos in sequence, from PVW to PGM outputs

- 1) Select '**EVERTZ_MEDIA_CUE**' in the 'Command' option, type the name of the logo and press 'Add' button, so the command will be moved/stored to the 'Command List' on the side of the window, as Figure 5-7.

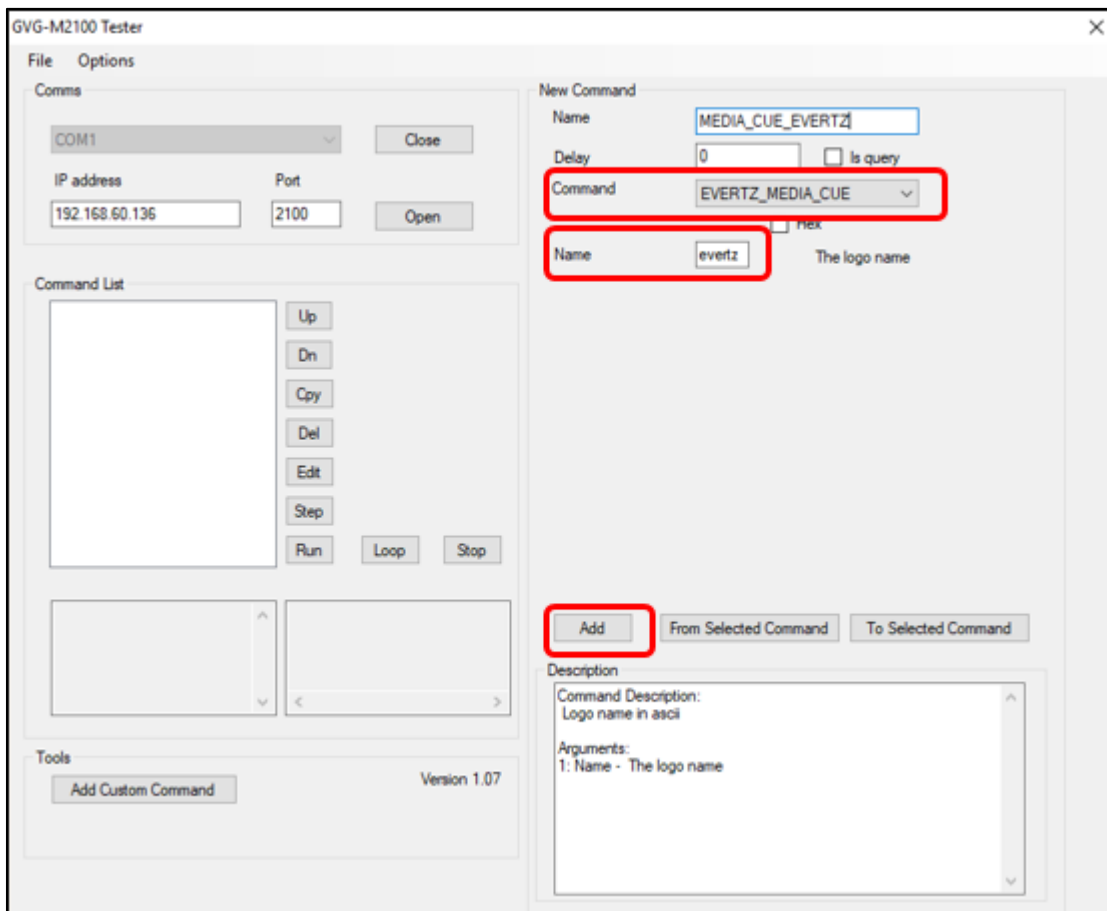


Figure 5-7: M2100 – Add Command to Display Logo Through PVW



NOTE: The 570DSK-12G-F supports displaying more than one logo through the output signals. Therefore, the user can set the same command with different logo names in 'Name' field.

- 2) Select the 'EVERTZ_MEDIA_CUE' in the 'Comand List' and press 'Step' button to activate the logo, as Figure 5-8.

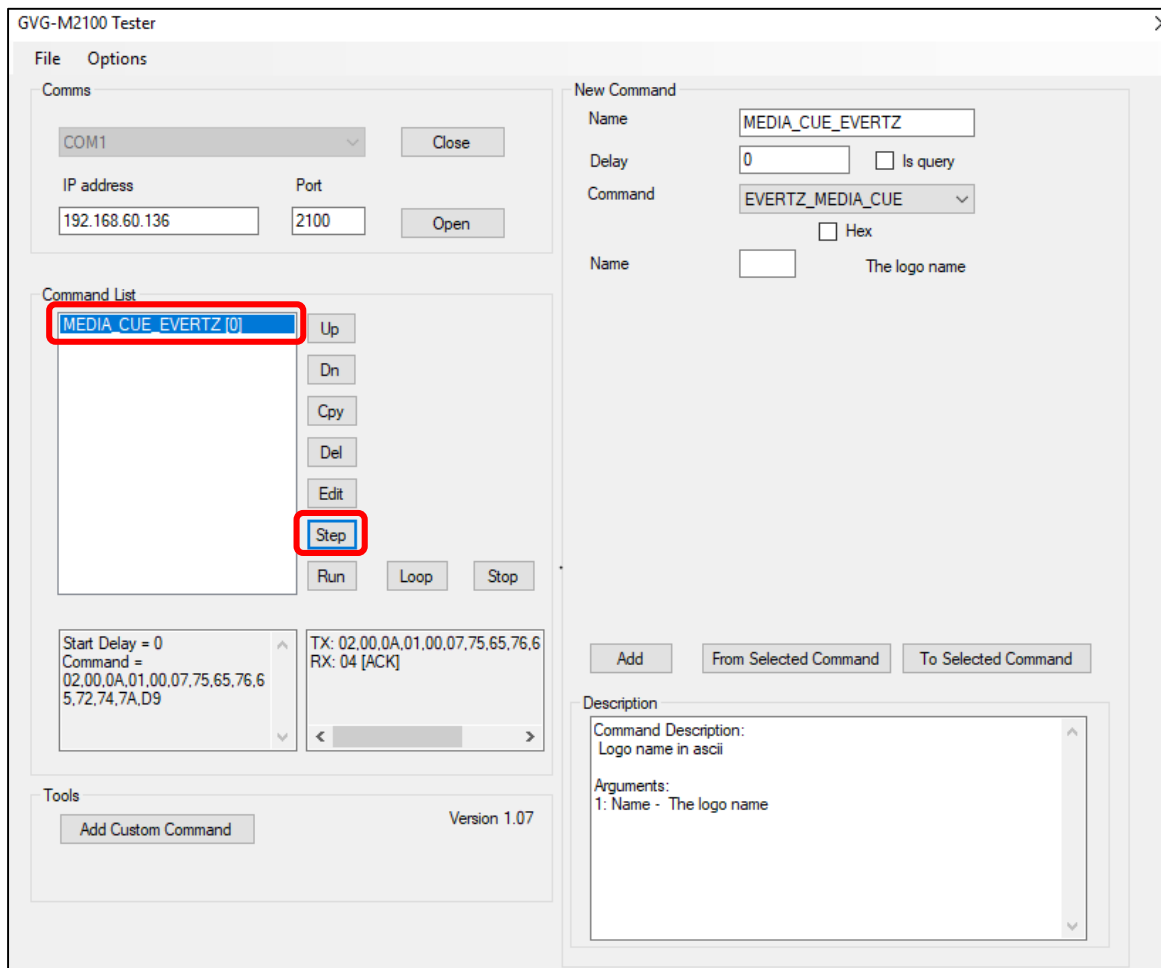


Figure 5-8: M2100 – Activate Command to Display Logo Through PVW

- 3) The logo will be displayed **only** through PVW output signals.
The status of the logo in the Web interface will change from 'out' to '[logo_name]: Cue'
- 4) In order to display the logo through PGM output signals **as well**, repeat steps 5-6 of Section 5.1.1
The status of the logo, in the Web interface, will change from '[logo_name]: Cue' to '[logo_name]: In'

5.2.2. Enable Logos through PVW and, at the same time, through PGM outputs

- 1) Select '**EVERTZ_MEDIA_IN**' in the 'Command' option, include the name of the logo in 'Name' field and press 'Add' button, so the command will be moved/stored to the 'Command List' on the side of the window, as Figure 5-9.

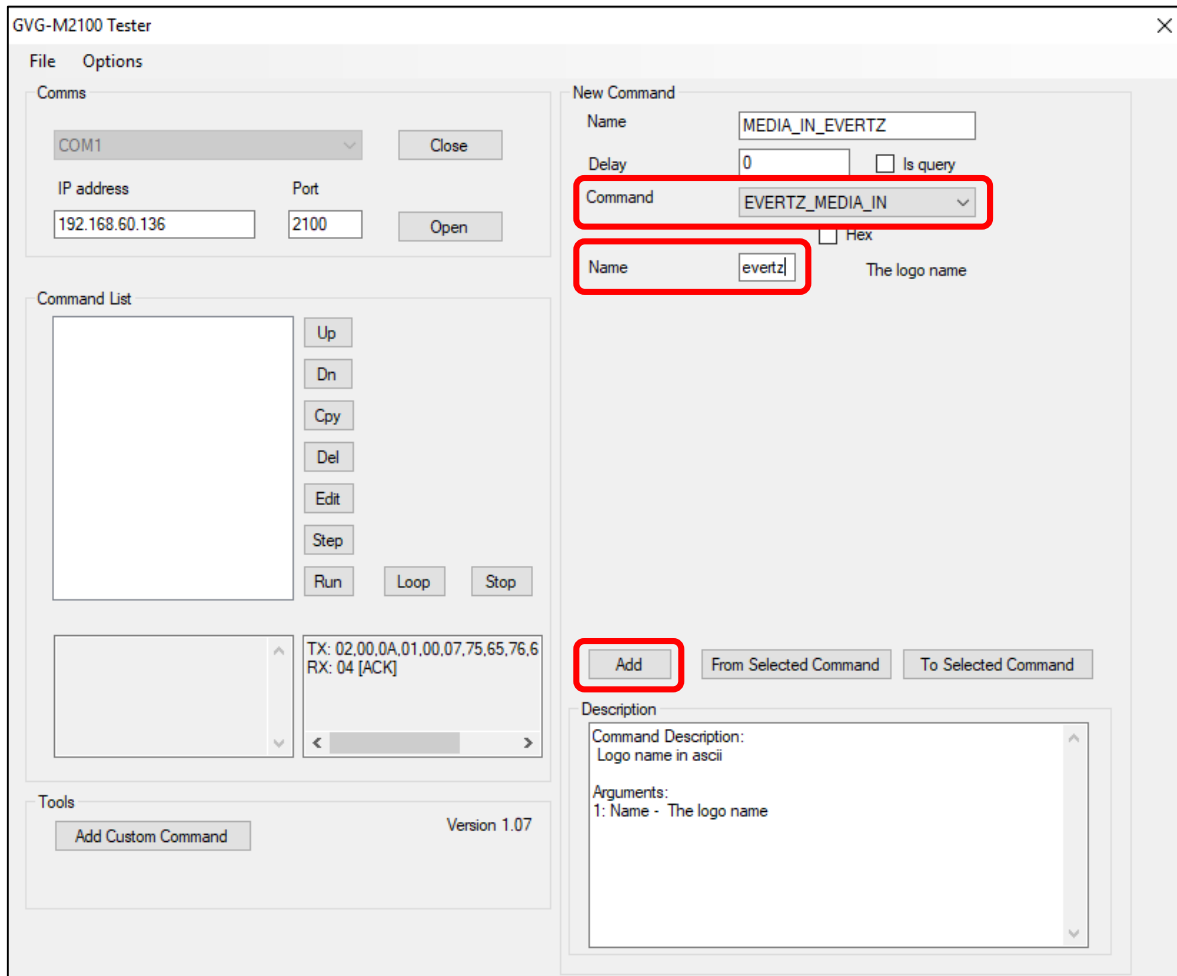


Figure 5-9: M2100 – Add Command to Display Logo Through All Outputs

- 2) Select 'EVERTZ_MEDIA_IN' in the 'Command List' and press 'Step' button to activate the logo, as Figure 5-10.

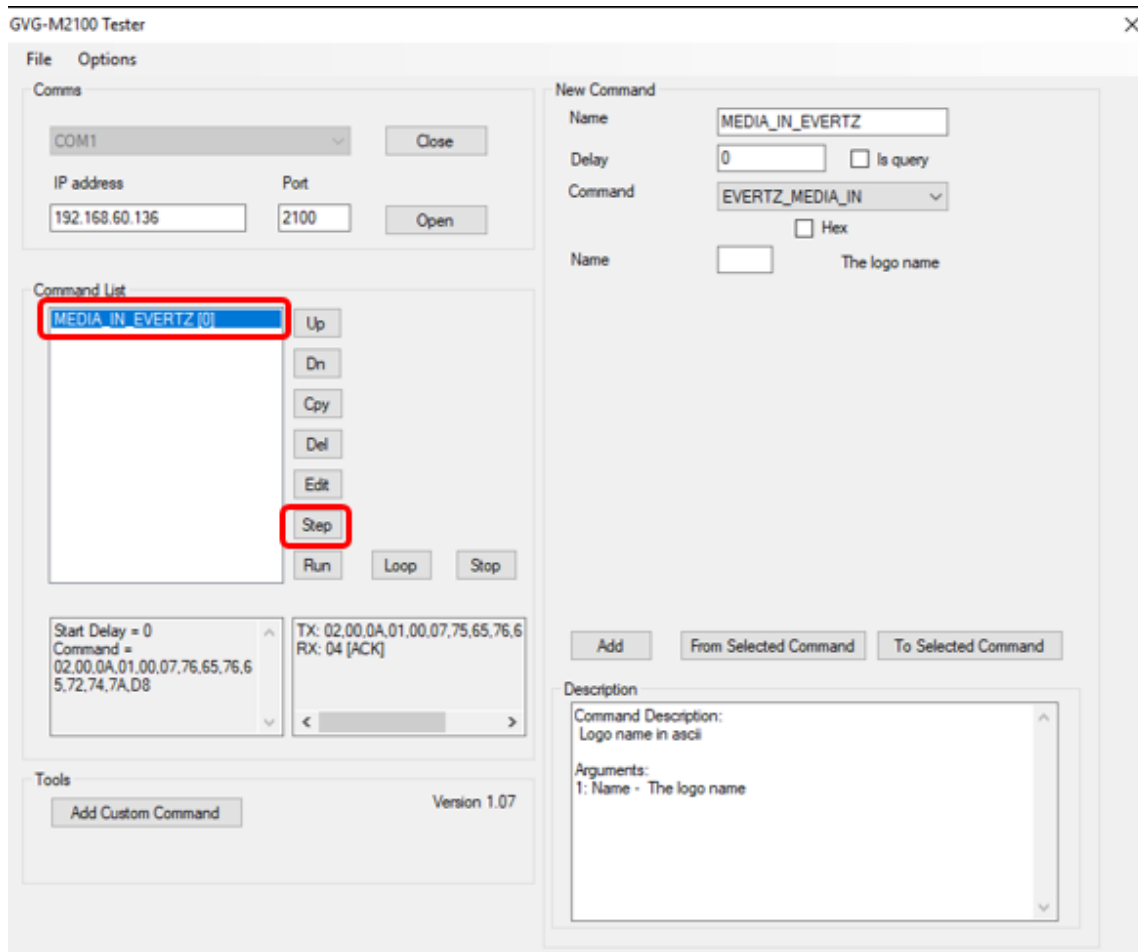


Figure 5-10: M2100 – Add Command to Display Logo Through All Outputs

- 3) The logo will be displayed through PGM and PVW outputs (all outputs).
The logo, in the WEB INTERFACE, will change from 'Out' to 'logo_name: In'



NOTE: The 570DSK-12G-F supports displaying more than one logo through the output signals. Therefore, the user can set the same command with different logo names in 'Name' field.



NOTE: The instructions can be saved by clicking in the 'File' button and selecting the 'Save'/'Save as' option, which allows the user to activate the logos without adding a new command every time.

5.2.3. Disable the Logos displayed through PVW

- 1) In order to remove the logo from PVW output signals (before using 'GVG_TX_START'), select '**EVERTZ_MEDIA_OUT**' in the "Command" option, include the name of the logo in 'Name' field and press "Add" button, so the command will be moved/stored to the 'Command List' on the side of the window, as Figure 5-11.

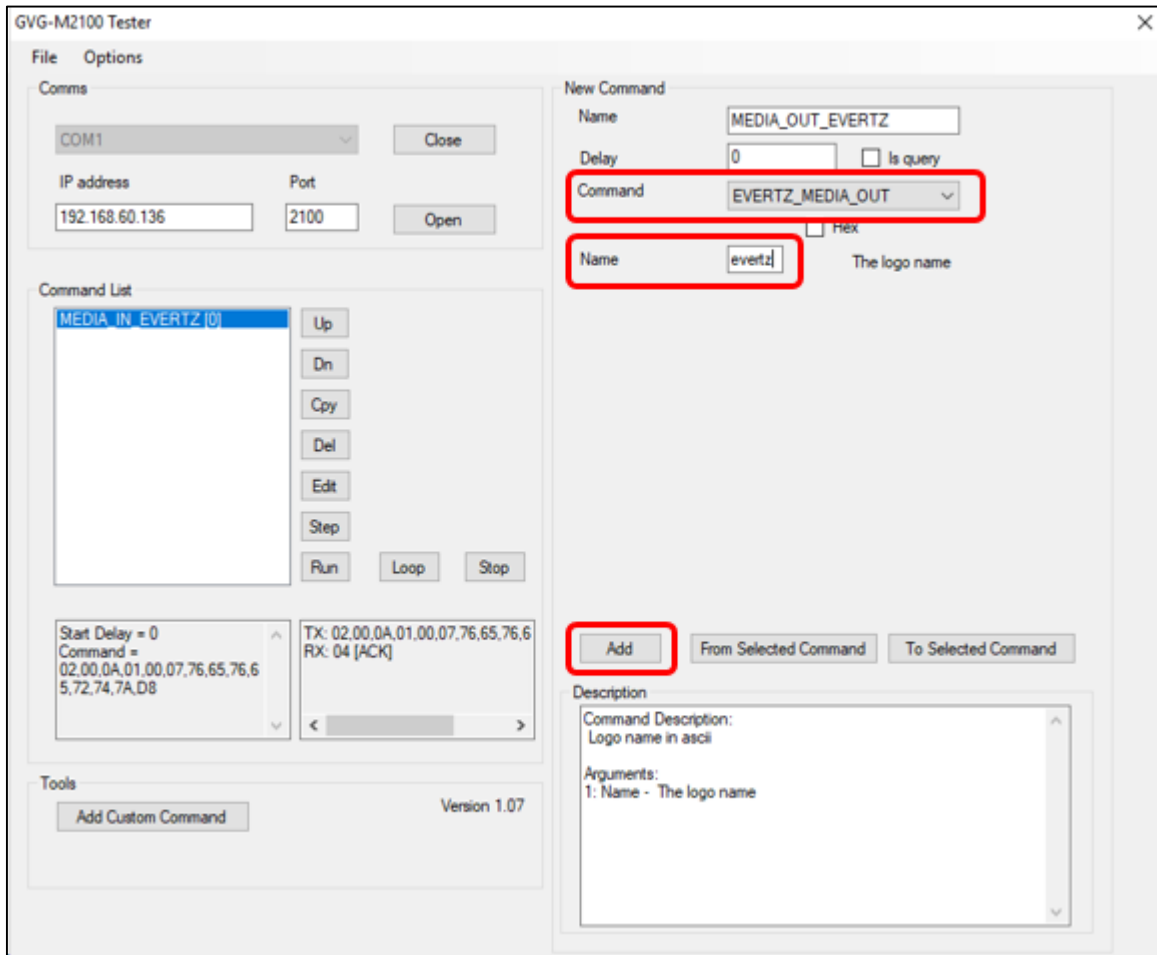


Figure 5-11: M2100 – Add Command to Remove Logo Through PVW

- 2) Select '**EVERTZ_MEDIA_OUT**' in the 'Command List' and press 'Step' button to deactivate the logo, as Figure 5-12.

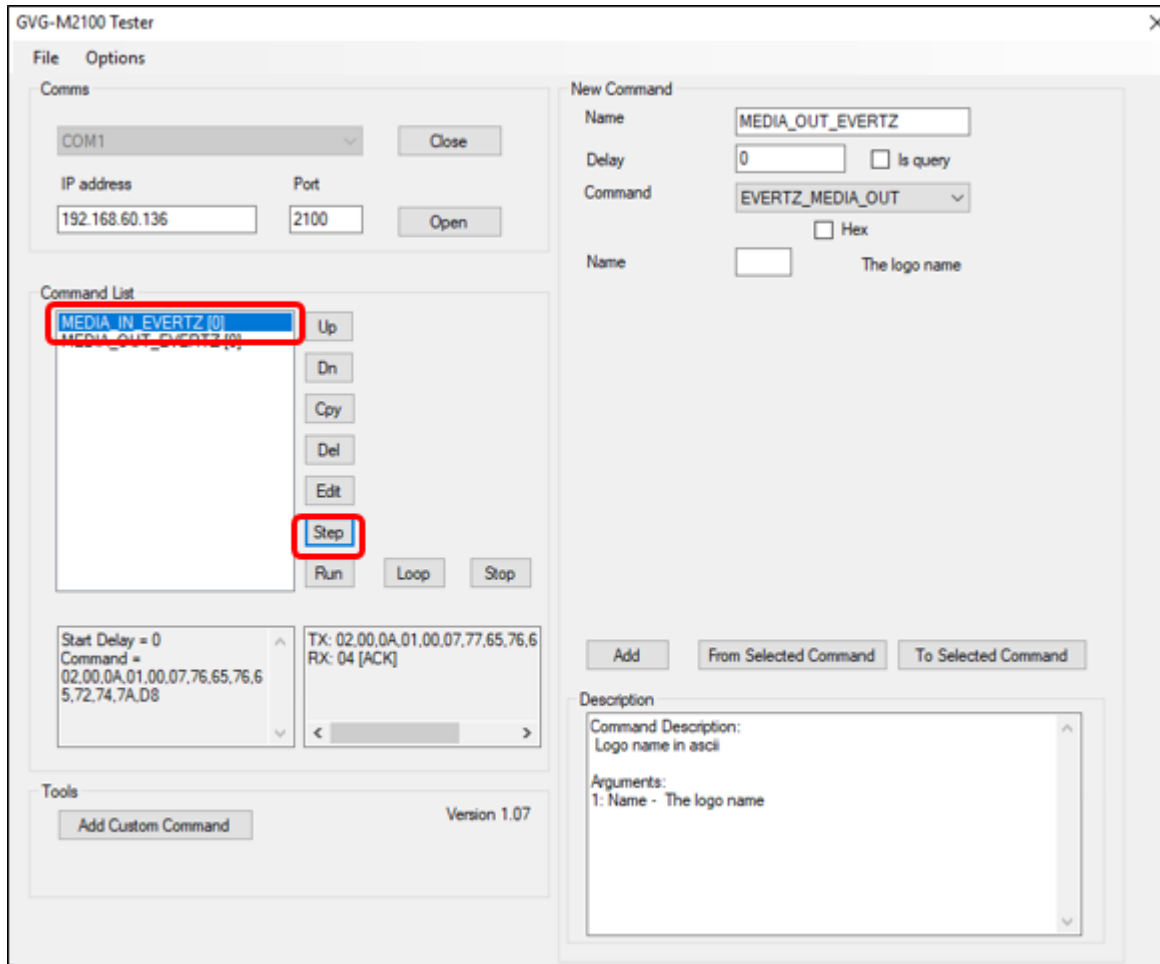


Figure 5-12: M2100 – Activate Command to Remove Logo Through PVW

- 3) The 'Logo Status', in the Web interface, will change from 'logo_name: Cue' to 'logo_name: out'
- 4) After using 'GVG_TX_START' to apply the logo through PGM, the same command can also be used to remove the logo from PVW, remaining only through PGM output signals.
- 5) In case 'GVG_TX_START' is used a third time, the logo will be removed from PGM and it will be displayed once again through PVW.



NOTE: The 570DSK-12G-F supports displaying/removing more than one logo through the output signals. Therefore, the user can set the same command with different logo names in 'Name' field.



NOTE: The instructions can be saved by clicking in the 'File' button and selecting the 'Save'/'Save as' option, which allows the user to deactivate the logos without adding a new command every time.

6. DEFINITIONS

- 4:2:2:** The sampling ration used in the HDTV digital video signal. For every 4 samples of luminance, there are 2 samples each of R-Y (red minus luminance) and B-Y (blue minus luminance).
- 16x9:** A wide-screen television format such as HDTV in which the aspect ratio of the screen is 16 units wide by 9 units high as opposed to the 4x3 aspect ratio of traditional SD television.
- AES/EBU:** Sometimes abbreviated as AES. Refers to the digital audio standard (AES3-1992) set by the Audio Engineering Society and European Broadcast Union and used by most forms of digital audio from CDs to professional digital video.
- ASPECT RATIO:** The ratio of width to height in a picture. Theatre screens generally have an aspect ratio of 1.85 to 1, widescreen TV (16x9) is 1.77 to 1, and traditional SD TV (4x3) is 1.33 to 1.
- CCIR:** Abbreviation for International Radio Consultative Committee, an international standards committee. This organization is now known as ITU.
- CCIR-601:** See ITU-R601.
- CLIFF EFFECT:** Also referred to as the 'digital cliff.' This is a phenomenon found in digital video systems that describes the sudden deterioration of picture quality when due to excessive bit errors, often caused by excessive cable lengths. The digital signal will be perfect even though one of its signal parameters is approaching or passing the specified limits. At a given moment however, the parameter will reach a point where the data can no longer be interpreted correctly, and the picture will be totally unrecognizable.
- COMPONENT ANALOG:** The non-encoded output of a camera, video tape recorder, etc., consisting of the three primary colour signals: red, green, and blue (RGB) that together convey all necessary picture information. In some component video formats these three components have been translated into a luminance signal and two colour difference signals, for example Y, B-Y, R-Y.
- COMPONENT DIGITAL:** A digital representation of a component analog signal set, most often Y, B-Y, R-Y. The encoding parameters are specified by ITU-R709 for HDTV signals. SMPTE 274M and SMPTE 296M specify the parallel interface.
- COMPOSITE ANALOG:** An encoded video signal such as NTSC or PAL video that includes horizontal and vertical synchronizing information.
- COMPOSITE DIGITAL:** A digitally encoded video signal, such as NTSC or PAL video that includes horizontal and vertical synchronizing information.

- DROP FRAME:** In NTSC systems, where the frame rate is 29.97002618 frames per second, the drop frame mode permits time of day indexing of the frame numbers by dropping certain frame numbers. Specifically frames 0, and 1 at the beginning of each minute except minutes 0, 10, 20, 30, 40, and 50, are omitted, to compensate for an approximate timing error of 108 frames (3 seconds 18 frames) per hour. A flag bit is set in the time code to signal when the drop frame mode is in effect.
- EBU:** Abbreviation for European Broadcast Union, an organization of European broadcasters that among other activities provides technical recommendations for the 625/50 line television systems.
- EMBEDDED AUDIO:** Digital audio is multiplexed onto a serial digital video data stream.
- ITU:** The United Nations regulatory body governing all forms of communications. ITU-R (previously CCIR) regulates the radio frequency spectrum, while ITU-T (previously CCITT) deals with the telecommunications standards.
- ITU-R601:** An international standard for standard definition component digital television from which was derived SMPTE 125M and EBU 3246-E standards. ITU-R601 defines the sampling systems, matrix values and filter characteristics for Y, B-Y, R-Y and RGB component digital television signals.
- NTSC:** The National Television Standards Committee established the television and video standard in use in the United States, Canada, Japan, and several other countries. NTSC video consists of 525 horizontal lines at a field rate of approximately 60 fields per second (Note – two fields is equal to one complete frame). Only 487 of these lines are used for picture. The rest are used for sync or extra information such as VITC and Closed Captioning.
- PAL:** Abbreviation for Phase Alternating Line, the television and video standard in use in most of Europe. It consists of 625 horizontal lines at a field rate of 50 fields per second (Note – two fields is equal to one complete frame). Only 576 of these lines are used for picture. The rest are used for sync or extra information such as VITC and Teletext.
- PIXEL:** The smallest distinguishable and resolvable area in a video image. A single point on the screen. In digital video, a single sample of the picture. Derived from the words *picture element*.
- SMPTE:** Abbreviation for Society of Motion Picture and Television Engineers, a professional organization that recommends standards for the film and television industries.
- SMPTE 12M:** The SMPTE standard for time and address code. SMPTE 12M defines the parameters required for both linear and vertical interval time codes.

- SMPTE 125M:** The SMPTE standard for bit parallel digital interface for component video signals. SMPTE 125M defines the parameters required to generate and distribute component video signals on a parallel interface.
- SMPTE 259M-C:** The SMPTE standard for 525- and 625-line serial digital component and composite interfaces.
- SMPTE 272M:** The SMPTE standard for embedding audio in serial digital standard definition (SMPTE 259M-C) video signals.
- SMPTE 274M:** The SMPTE standard for bit parallel digital interface for high definition component video signals with an active picture of 1080 lines x 1920 pixels.
- SMPTE 276M:** The SMPTE standard for transmission of AES/EBU digital audio signals over coaxial cable.
- SMPTE 292M:** The SMPTE standard for high definition serial digital component interfaces.
- SMPTE 296M:** The SMPTE standard for bit parallel digital interface for high definition component video signals with an active picture of 720 lines x 1280 pixels.
- SMPTE 299M:** The SMPTE standard for embedding audio in serial digital high definition (SMPTE 292M) video signals.
- TRS:** Abbreviation for Timing Reference Signals used in composite digital signals. It is four digital words long.
- TRS-ID:** Abbreviation for Timing Reference Signal Identification, a reference signal used to maintain timing in composite digital systems. It is four digital words long.

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