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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	Original Version	Jul 09

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1. OVERVIEW

The 7700 series Distribution Amplifiers provide inexpensive distribution of serial digital video signal. The 7700DA4-SLKD features an auto-equalized input with four reclocked outputs.

The 7700DA4-SLKD StreamLINK® Decoder modules are also designed to accept and process Evertz's high-quality StreamLINK® compressed signals within any facility's IP infrastructure. By subscribing to an IGMP v2.0+ multicast channel, this module provides the ability to decode and decompress any video and audio signals that resides on the streaming network. The 7700DA4-SLKD in turn provides a high-quality SD-SDI output of the signal, which can then be routed within the facility for further processing and analysis.

Whether building a facility from the ground up or retrofitting an existing infrastructure, the 7700DA4-SLKD StreamLINK® Decoder's highly flexible design provides the perfect solution to any video and audio facility. The 7700DA4-SLKD modules are VistaLINK® PRO capable, offering remote monitoring, control and configuration via Simple Network Management Protocol (SNMP). The VistaLINK® PRO product line offers another solution to manage operations including signal monitoring and module configuration from SNMP-capable control systems (Manager or NMS) locally or remotely. An on-board http webserver also provides secure remote administration via a standard web browser.

The 7700DA4-SLKD modules occupy one card slot and can be housed in either a 1RU frame which will hold up to 3 modules, a 3RU frame which will hold up to 15 modules or a standalone enclosure which will hold 1 module.

Features:

Video Inputs:
- Auto-equalizing SD-SDI input

Video Outputs:
- 4 reclocked outputs of SD-SDI input or 4 decoded StreamLINK® outputs

Control:
- On-board http webserver
- SNMP enabled controls, fully integrated with the industry leading Evertz VistaLINK® PRO NMS
- Integrated card edge menu system

2. INSTALLATION

The 7700DA4-SLKD comes with a companion rear plate that occupies one slot in the frame. For information on inserting the module into the frame see section 3 of the 7700FR chapter.

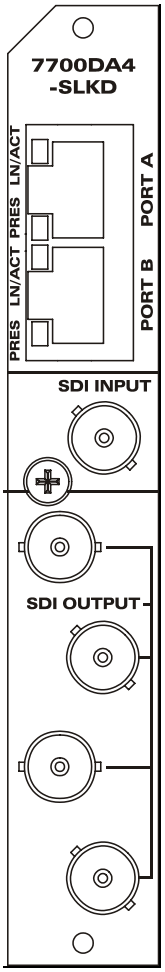


Figure 2-1: 7700DA4-SLKD Rear IO Module

SDI INPUT: Input BNC connector for 10-bit serial digital video signals compatible with the SMPTE 259M standard. See section 4.1 for information on selecting the correct video standard.

SDI OUTPUT: There are four BNC connectors with reclocked serial component video outputs, compatible with the SMPTE 259M standard.

ETHERNET: Port A is UNUSED.

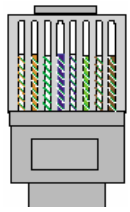
Port B is used for the input stream and to simultaneously connect to the configuration web-server on the card.

2.1. CONNECTING TO AN ETHERNET NETWORK

The 7700DA4-SLKD is designed to be used with 100Base-TX (100 Mbps) also known as *Fast Ethernet*, twisted pair Ethernet cabling systems. When connecting to 100Base-TX systems, category 5 UTP cable is required. 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 7700DA4-SLKD 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 colour code wiring table is provided in Table 2-1 for the current RJ 45 standards (AT&T 258A or EIA/TIA 258B colour coding shown). Also refer to the notes following the table for additional wiring guide information.

Pin 1



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 Colour 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 colours 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.

PRES: 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 7700DA4-SLKD has established a valid linkage to its hub, and whether the 7700DA4-SLKD is sending or receiving data. This LED will be ON when the 7700DA4-SLKD 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 7700DA4-SLKD is sending or receiving data. The LED will be OFF if there is no valid connection.

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUT

Standard:	Auto-equalizing SD-SDI (SMPTE 259M-C)
Number of Inputs:	1
Connector:	BNC per IEC 61169-8 Annex A
Equalization:	Automatic to 100m (Belden 1694AA)
Return Loss:	>15dB up to 270Mb/s
Embedded Audio:	Supported up to 2 groups per SMPTE 272M-A

3.2. SERIAL VIDEO OUTPUT

Number of Outputs:	4
Connector:	BNC per IEC 61169-8 Annex A
Signal Level:	800mV nominal
DC Offset:	0V ± 0.5V
Rise and Fall Time:	740ps nominal
Overshoot:	<10% of amplitude
Return Loss:	>15 dB
Wideband Jitter:	<0.2 UI

3.3. ETHERNET

Network Type:	Fast Ethernet 100 Base-TX 1EEE 802.3U standard for 100Mb/s base band CSMA/CD local area network
Connector:	RJ-45

3.4. ELECTRICAL

Voltage:	+12 VDC
Safety:	ETL Listed, complies with EU low voltage directive
Power:	<34 W
EMI/RFI:	Complies with FCC Part 15, Class A EU EMC Directive

3.5. PHYSICAL

Number of Slots:	1

4. WEB CONFIGURATION TOOL

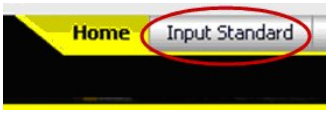
The 7700DA4-SLKD web configuration tool enables the user to configure the module settings.

Here, the user can change the input standard, change the network configuration settings, and add, edit, and delete a channel, with the ability to update the firmware.

Figure 4-1: 7700DA4-SLKD Screen

4.1. INPUT STANDARD

Selecting the **Input Standard** button at the top of the screen reveals the **SLKD Input Standard** window.



The user can change the **Input Video Standard** to *NTSC* or *PAL* using this window.

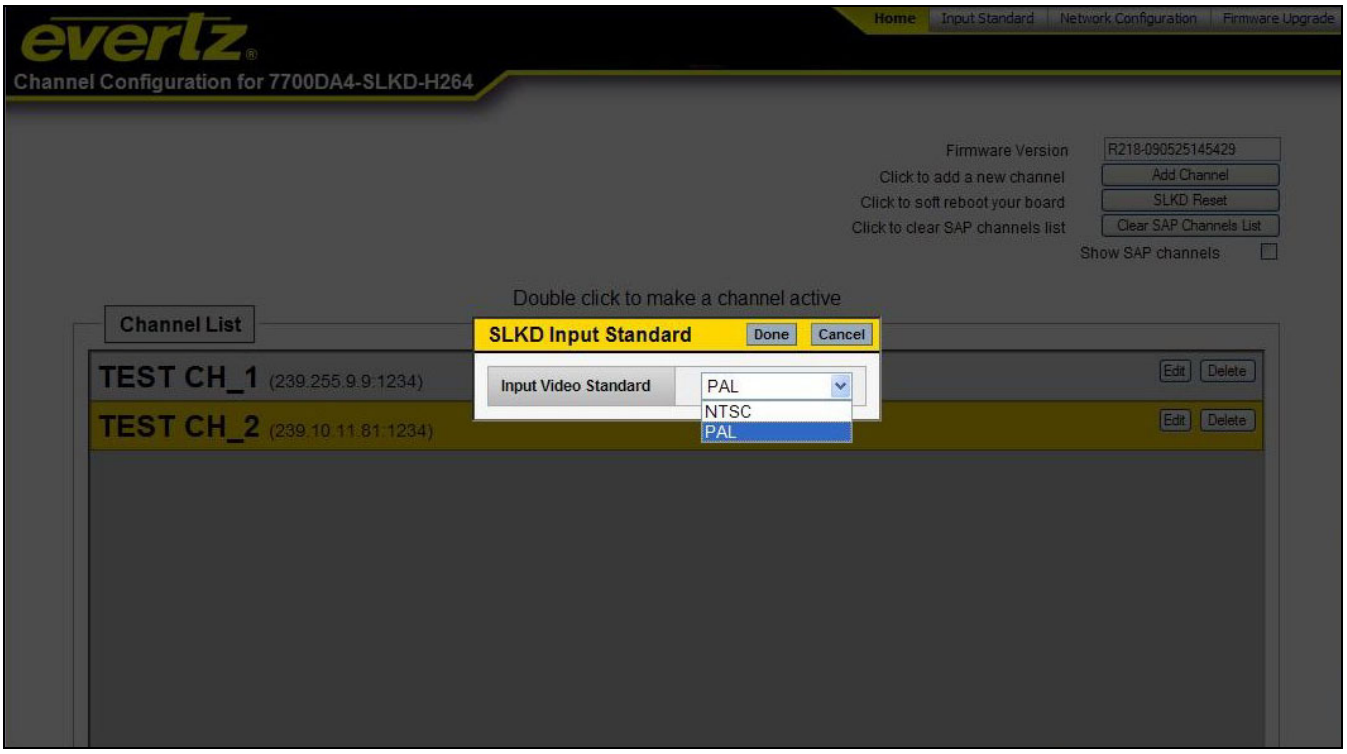


Figure 4-2: Input Standard

4.2. ADDING AND EDITING CHANNELS

4.2.1. Adding a Channel

The user can add a channel by selecting the **Add Channel** button to reveal the *Add Channel* window.

The user will be prompted to change the *Channel Name*, *Unicast/Multicast Address*, and the *Unicast/Multicast Port*.

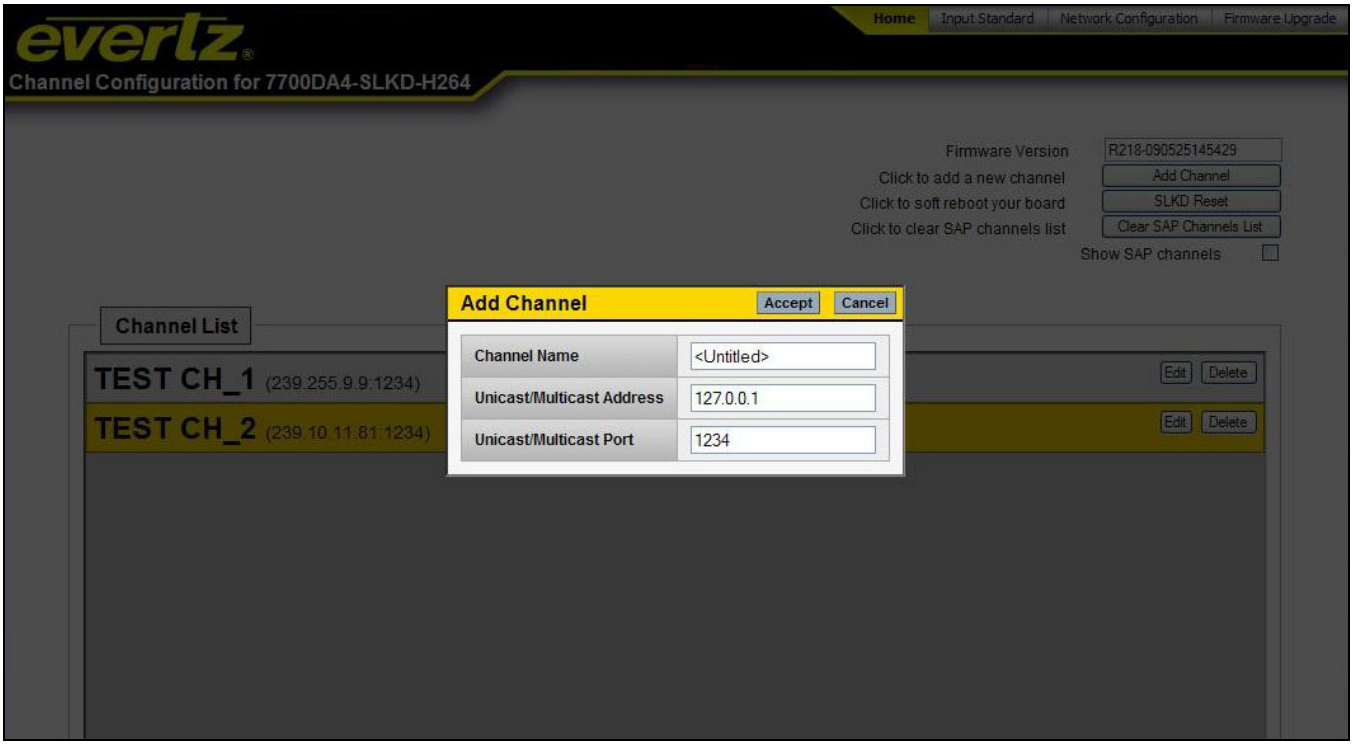


Figure 4-3: Adding a Channel

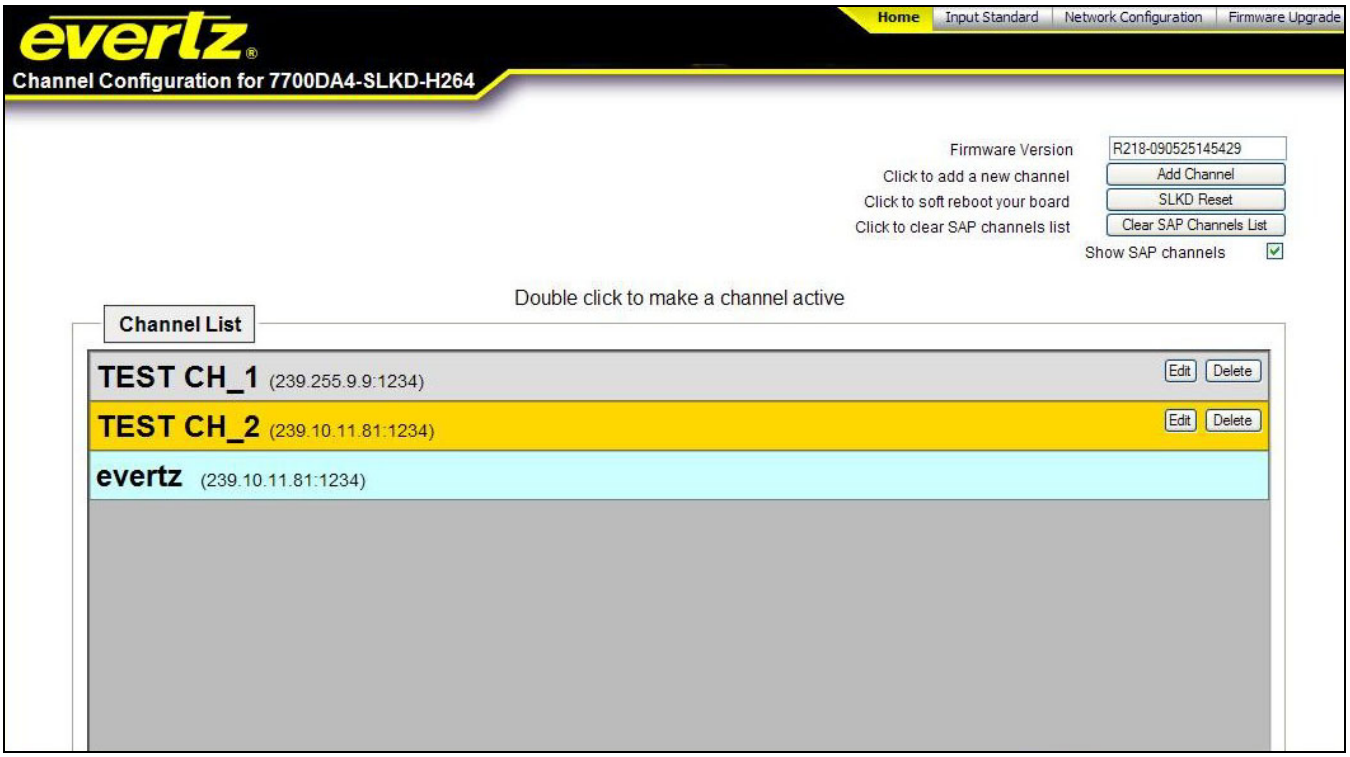


Figure 4-4: New Channel Has Been Added

4.2.2. Editing a Channel

To edit an existing channel, select a channel from the channel list and press the appropriate **Edit** button.

The channel properties will be revealed in the **Edit Channel** window. The user will be able to change the *Channel Name, Unicast/Multicast Address,* and the *Unicast/Multicast Port*.

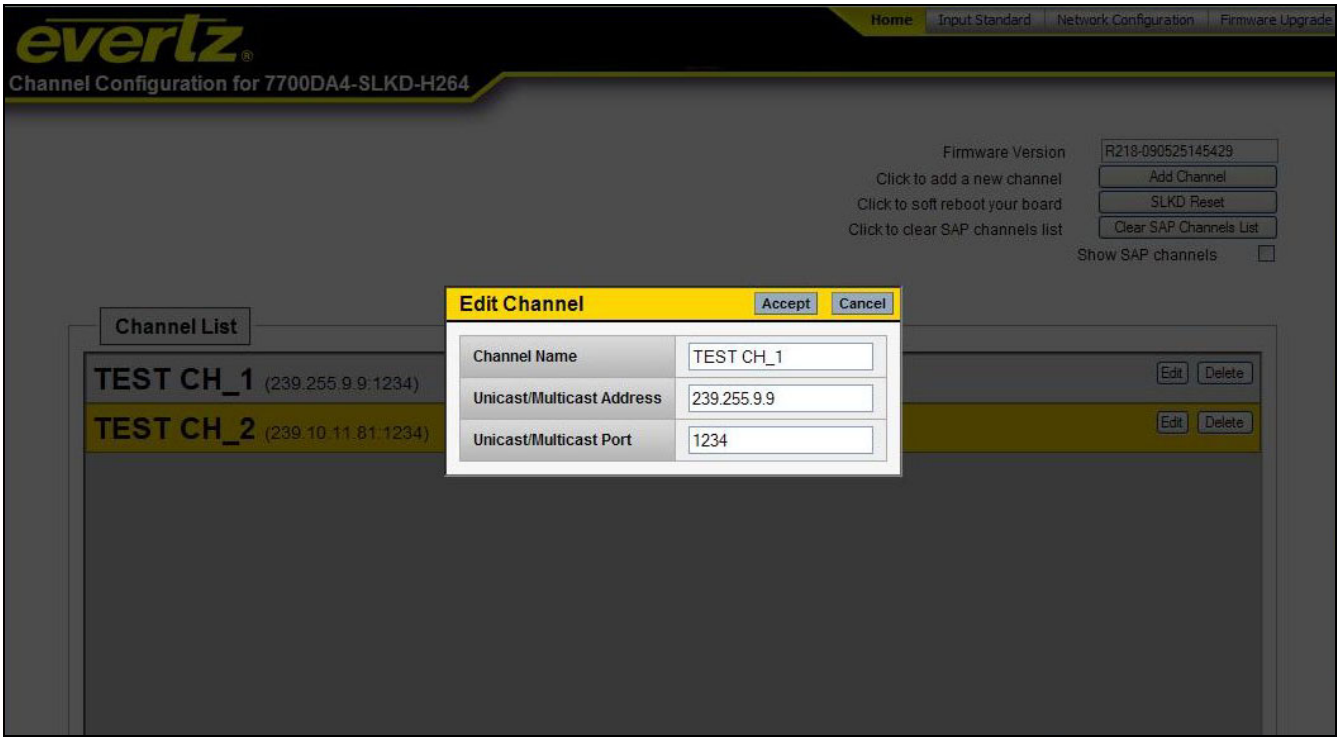
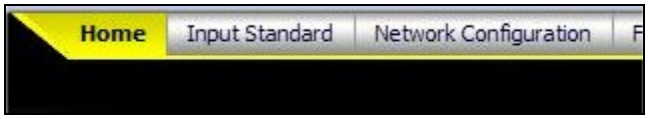


Figure 4-5: Editing a Channel

4.3. NETWORK CONFIGURATION

To configure the network, select the **Network Configuration** button from the top tool bar.



A **SLKD Decoder Setup** window will appear prompting the user to enter the network configuration settings. The network configuration window enables the user to set the *IP Address*, *Net Mask,* and *Gateway Address.*

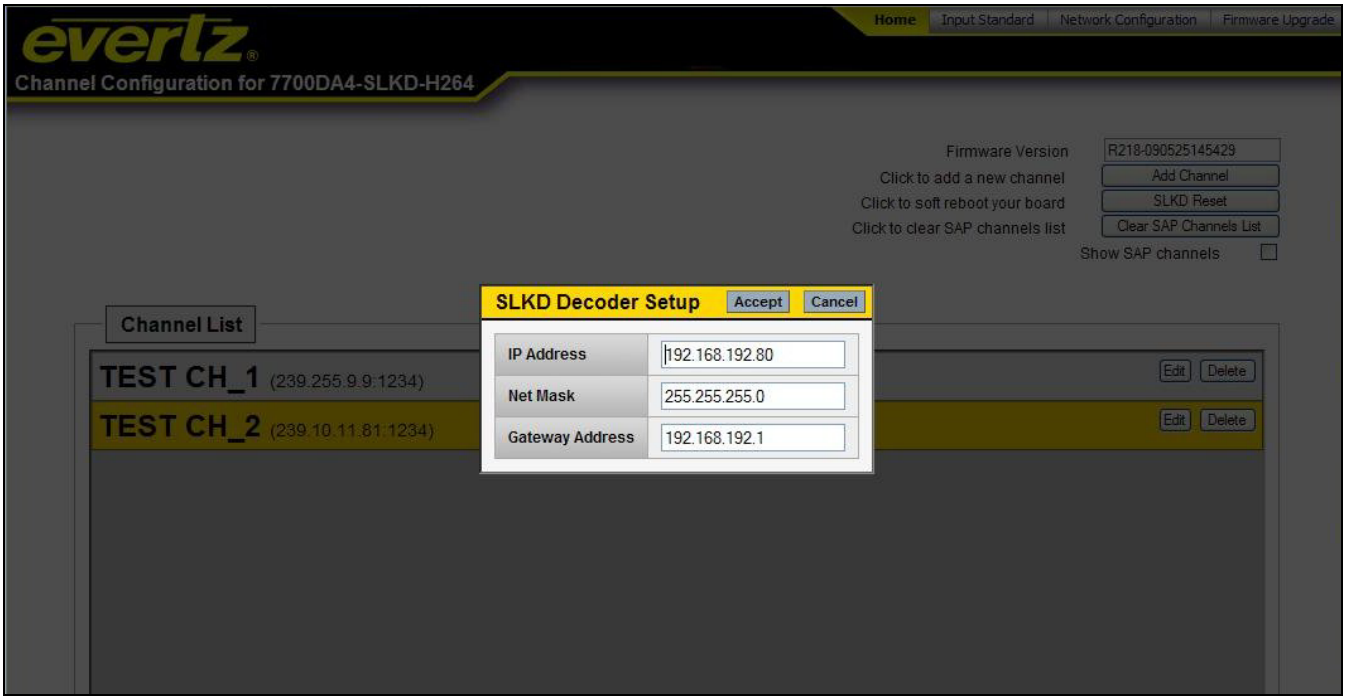


Figure 4-6: 7700DA4-SLKD Decoder Setup Screen

4.4. UPGRADING FIRMWARE

To upgrade a firmware file, select the **Firmware Upgrade** button in the top tool bar. The **Evertz 7700DA4-SLKx Firmware Upgrade** screen will appear, as shown in Figure 4-7.

To load the file, select the **Browse** button and navigate to the desired firmware file. Once the file appears in the **Get a file** field, select the **Upgrade the file** button.

Once the file is upgraded, the properties should be listed in the fields above.

To remove a file name, select the **Clear file name** button.

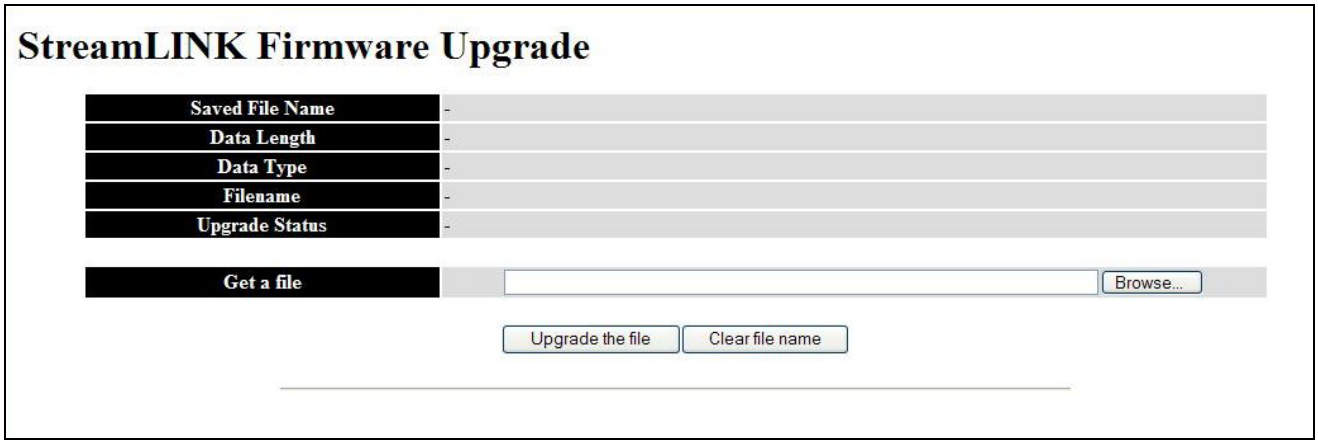


Figure 4-7: 7700DA4-SLKD Firmware Upgrade

5. STATUS LEDS

The 7700DA4-SLKD has six LED Status indicators on the front card edge to show operational status of the card at a glance.

Two large LEDs on the front of the board indicate the general health of the module.

LOCAL FAULT: This Red LED indicates poor module health and will be On during the absence of a valid input signal or if a local input power fault exists (i.e.: a blown fuse). The LOCAL FAULT indication can also be reported to the frame through the FRAME STATUS jumper.

MODULE OK: This Green LED indicates good module health. It will be On when a valid input signal is present, and board power is good.

The four small LEDs, located behind the four-digit display, are currently undefined.

The rotary encoder control is currently undefined.

6. *VISTA*LINK® REMOTE MONITORING/CONTROL

6.1. WHAT IS *VISTA*LINK®?

VistaLINK® is Evertz's remote monitoring and configuration platform which operates over an Ethernet network using Simple Network Management Protocol (SNMP). SNMP is a standard computer network protocol that enables different devices sharing the same network to communicate with each other. VistaLINK® provides centralized alarm management, which monitors, reports, and logs all incoming alarm events and dispatches alerts to all the VLPro Clients connected to the server. Card configuration through VistaLINK® PRO can be performed on an individual or multi-card basis using simple copy and paste routines, which reduces the time to configure each module separately. Finally, VistaLINK® enables the user to configure devices in the network from a central station and receive feedback that the configuration has been carried out.

There are 3 components of SNMP:

1. An SNMP manager, also known as a Network Management System (NMS), is a computer running special software that communicates with the devices in the network. Evertz *Vista*LINK® Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz *Vista*LINK® enabled products.

2. Managed devices (such as 7700DA4-SLKD), each with a unique address (OID), communicate with the NMS through an SNMP Agent. Evertz VistaLINK® enabled 7700 series modules reside in the 3RU 7700FR-C MultiFrame and communicate with the manager via the 7700FC VistaLINK® frame controller module, which serves as the Agent.

3. A virtual database known as the Management Information Base (MIB) lists all the variables being monitored, which both the Manager and Agent understand. Please contact Evertz for further information about obtaining a copy of the MIB for interfacing to a third party Manager/NMS.

For more information on connecting and configuring the *Vista*LINK® network, see the 7700FC Frame Controller chapter.

6.2. *VISTA*LINK® MONITORED PARAMETERS

This interface is currently undefined.