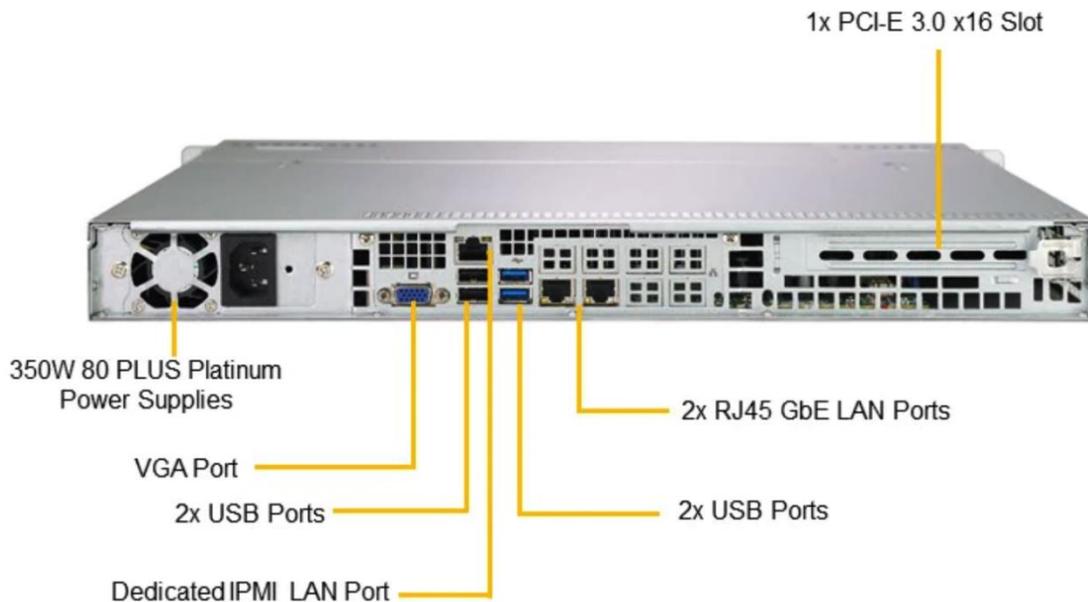


PRODUCT MODEL NUMBER: TSA-M3600 TRANSLITE STREAMING ANALYZER



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CHAPTER 1

INTRODUCTION

1.1 PRODUCT OVERVIEW

IPTV has become the preferred choice of distribution for most local and wide area networks. Translite Global's IPTV Streaming Analyzer is used for monitoring the system constantly for quality and integrity to guarantee the best viewing experience. The system receives IP encapsulated digital audio and video data. It will monitor all media flows in the network, perform extensive tests on standard compliance and user profile matching, and generate alarms when TS, video or audio errors occur.

Visual alerts, statistics and reports provided to the operator ensures quick detection of service interruption thus increasing usability and viewer satisfaction. The system's viewer enables simultaneous display of up to 36 live HD/SD streams of video content along with its visual audio parameters as well as a master alarm indicator.

1.2 KEY FEATURES

➤ **Comprehensive TS Analysis:**

It supports MPEG-2, AVC, and HEVC video encoding formats, as well as commonly used audio formats including MP3, AAC, AAC plus, and AC3. It analyzes transport stream program structure, measures PID bitrate, performs PCR, and buffer analysis, detects any black and frozen frames, and monitors missing audio and video element streams.

➤ **Multi-View Monitoring Display:**

Translite Streaming Analyzer can display up to 36 SD/HD live streams of video content. Its audio parameters are made visible on the video wall as well. Both Multicast and Unicast streams can be decoded for display. The viewer has an on-screen display of channel information, on-screen audio level indicator, as well as on screen error alert.

➤ **Alarm Logs and Reports:**

Visual alerts, statistics and reports provided to the operator ensures quick detection of service interruption thus increasing usability and viewer satisfaction. The system's viewer enables simultaneous display of up to 36 live HD/SD streams of video content along with its visual audio parameters as well as a master alarm indicator. The operator receives real-time information about any interruptions to the video, audio of the live streams.

➤ **Monitored Parameters:**

Warning Category	Warning Content
Input	Packet loss
	Reconnect_for_lossofinput
	Reconnect_lossofsync
	Timestamp_Error
	Audio_change_detected
	Video_change_detected
	CC_error
	Stream_Disconnected

Buffer_status	Input_Buffer_Frame_overflow
	Encode_Buffer_Frame_overflow
	Rawdata_overflow
Exception_detect	Static_Frame_Detect
	Blace_scene_Detect
	Color_bar_Detect
	Mosaic_Detect
	Silence_Detect

➤ **Remote Access:**

This solution allows users to access the server remotely by using a standard web browser. This is ideal for network-wide video service monitoring. The video key frames that are decoded, can be streamed to a unicast or multicast IP address and can be viewed at different locations.

➤ **Email, Page Alerts, SMS Alerts:**

The monitoring system notifies the system user in the following events: source interruption, abnormal source encoding, abnormal source decoding – by either sending an email, sending an SMS, or just a page alert (depending on choice of alarm selected by the user). All errors generated are logged in the database and can be reviewed later.

➤ **Supported Streaming Protocols:**

- MPEG TS over RTP
- MPEG TS over UDP (SPTS, MPTS)
- HTTP Live Streaming (HLS)
- Real-time streaming protocol (RTSP)
- Real-time messaging protocol (RTMP)
- TS over HTTP

The relevant input source address format is as follows:

rtmp://192.168.1.100:1935/live/stream

rtsp://192.168.1.100:554/live/stream

http://192.168.1.100:8000/live/stream.m3u8

http://192.168.1.100:8000/live/stream

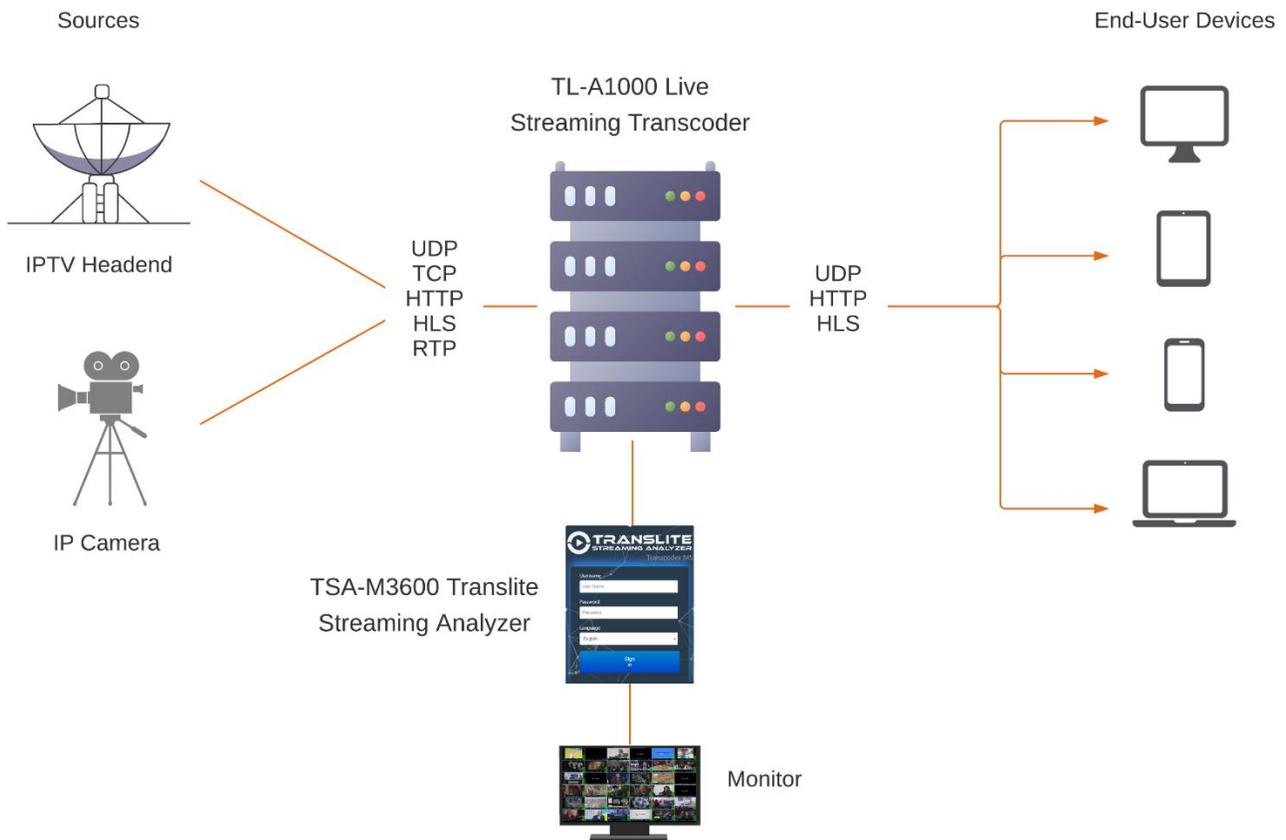
udp://223.0.0.1:6666

1.3 SPECIFICATIONS

Hardware	
GPU Based System	Supermicro 5019C-M-OTO-14 (Customized)
Audio & Video Specifications	
Video	MPEG-2, AVC/H.264, HEVC/H.265
Audio	MP3, AAC
Transport	MPEG-2 TS (SPTS/MPTS)
System Requirements	
CPU	Intel Quad Core Processor 3.30GHz, 8Mb Cache (71W)
GPU	Nvidia Quadro P2000

Memory	DDR4 16GB* 2(qty)
SSD	Intel S3710 200G
Input and Output Parameters	
Input Streaming Media Protocol	HTTP HLS RTMP UDP RTP RTSP
Output Streaming Media Protocol	HTTP HLS RTMP UDP RTP RTSP

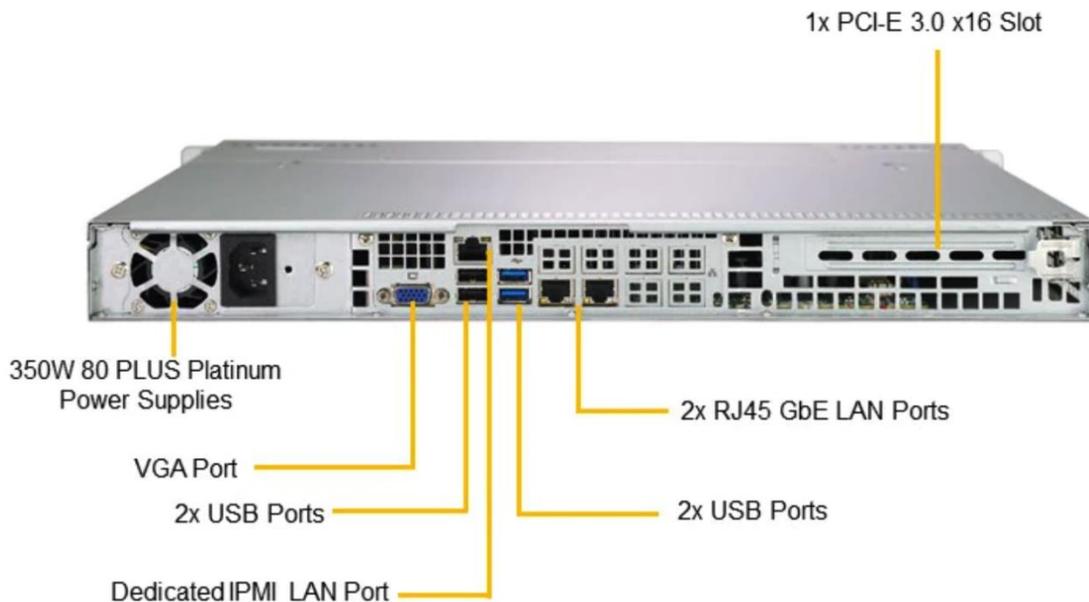
1.4 PRINCIPLE CHART



Pair with Translite Global's **Live Streaming Transcoder: (TL-A1000)**



1.5 APPEARANCE AND DESCRIPTION



CHAPTER 2

INSTALLATION GUIDE

This section is to explain the cautions the users must know in some case that possibly injure may bring to users when it's used or installed. For this reason, please read all details here and make in mind before installing or using the product.

2.1 ACQUISITION CHECK

When user open the package of the device, it is necessary to check items according to packing list. Normally it should include the following items:

- | | |
|-------------------------------------|-----|
| ➤ TSA-M3600 Live Streaming Analyzer | 1PC |
| ➤ Power Cord | 1PC |

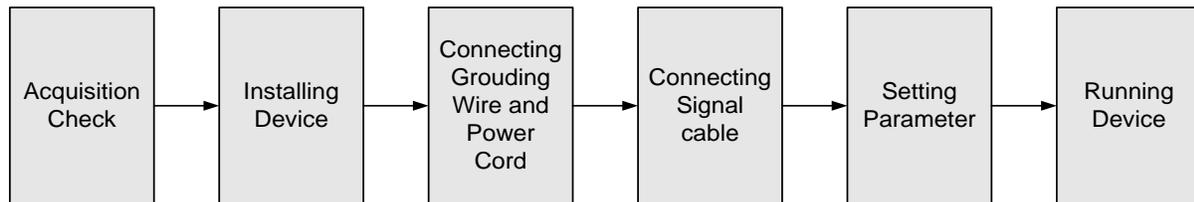
If any item is missing or mismatching with the list above, please contact the local manufacturer.

2.2 INSTALLATION PREPARATION

When user installs the device, please follow the steps below:

- Checking the possible device missing or damage during the transportation
- Preparing the relevant and correct environment for installation
- Installing TSA-M3600 Live Streaming Analyzer
- Connecting communication port (if it is necessary)

2.3 DEVICE'S INSTALLATION FLOWCHART



2.4 ENVIRONMENT REQUIREMENT

Item	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, the distance between 2 rows of machine frames should be 1.2~1.5m and the distance against wall should be no less than 0.8m.
Machine Hall Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1 \times 10^7 \sim 1 \times 10^{10} \Omega$, Grounding current limiting resistance: $1 M\Omega$ (Floor bearing should be greater than 450Kg/m^2)
Environment Temperature	5~40°C(sustainable), 0~45°C(short time) installing air-conditioning is recommended
Relative Humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105Kpa
Door & Window	Installing rubber strip for sealing door-gaps and dual level glasses for window
Wall	It can be covered with wallpaper, or brightness less paint.
Fire Protection	Fire alarm system and extinguisher
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device

power requires DC 12V. Please carefully check before running.

2.5 GROUNDING REQUIREMENT

- All function modules' good grounding designs are the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.
- Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- It is prohibited to use any other device as part of grounding electric circuit
- The area of the conduction between grounding wire and device's frame should be no less than 25mm².
- It is prohibited to use any other device as part of grounding electric circuit
- The area of the conduction between grounding wire and device's frame should be no less than 25mm².

2.5.1 FRAME GROUNDING

All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and avoid circling. The area of the conduction between grounding wire and grounding strip should be no less than 25mm².

2.5.2 DEVICE GROUNDING

Connecting the device's grounding rod to frame's grounding pole with copper wire

2.6 WIRE'S CONNECTION

The power switch is located at the left of the front panel, and the power socket and grounding pole is located at the right end of the rear panel, whose order goes like this, power socket and grounding pole, and users can refer 1.4 for details.

Connecting Power Cord

User can insert one end into power supply socket, while insert the other end to AC power.

Connecting Grounding Wire

When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω .



Caution:

Before connecting power cord to TSA-M3600 Live Streaming Analyzer, user should set the power switch to "OFF".

2.7 SIGNAL CABLE CONNECTION

Before operating, user should connect all devices requiring cables.

CHAPTER 3

DEVICE ACCESS AND LOGIN

The default login address of the monitoring system is <http://IP/webtrans>, where IP can be replaced by the real IP address of the encoding device.



3.1 LOGIN

Enter your username and password

Default username: **admin**

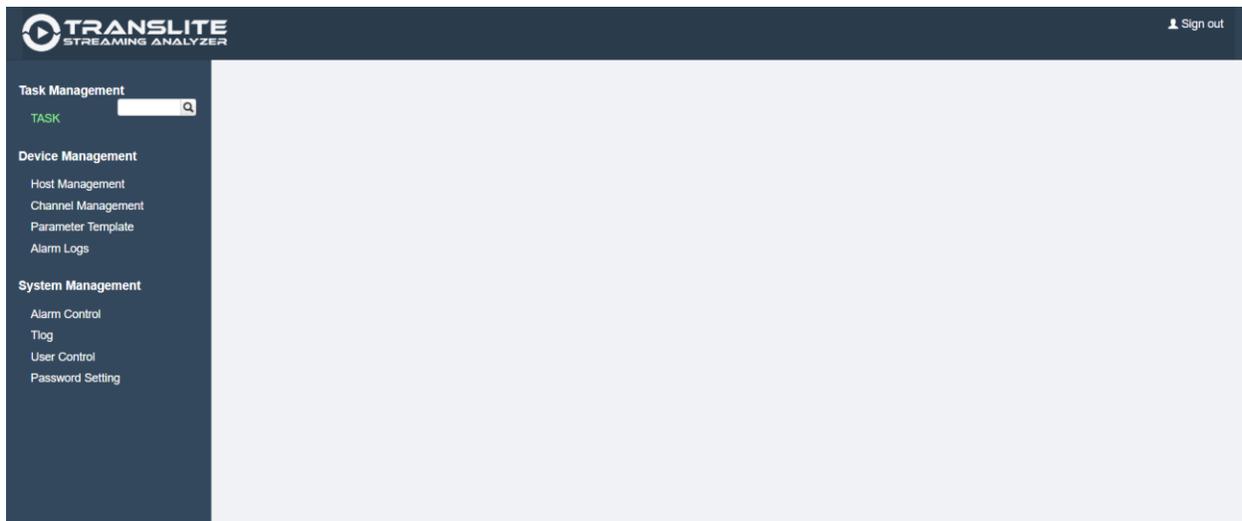
Default password: **123**



The image shows a login form for TRANSLITE STREAMING ANALYZER Transcoder MS. The form is set against a dark blue background with a network diagram pattern. It includes the following fields and elements:

- Username:** A text input field with the placeholder text "User Name".
- Password:** A text input field with the placeholder text "Password".
- Language:** A dropdown menu currently showing "English".
- Sign in:** A prominent blue button.

Once the login is completed, you will see the dashboard as below



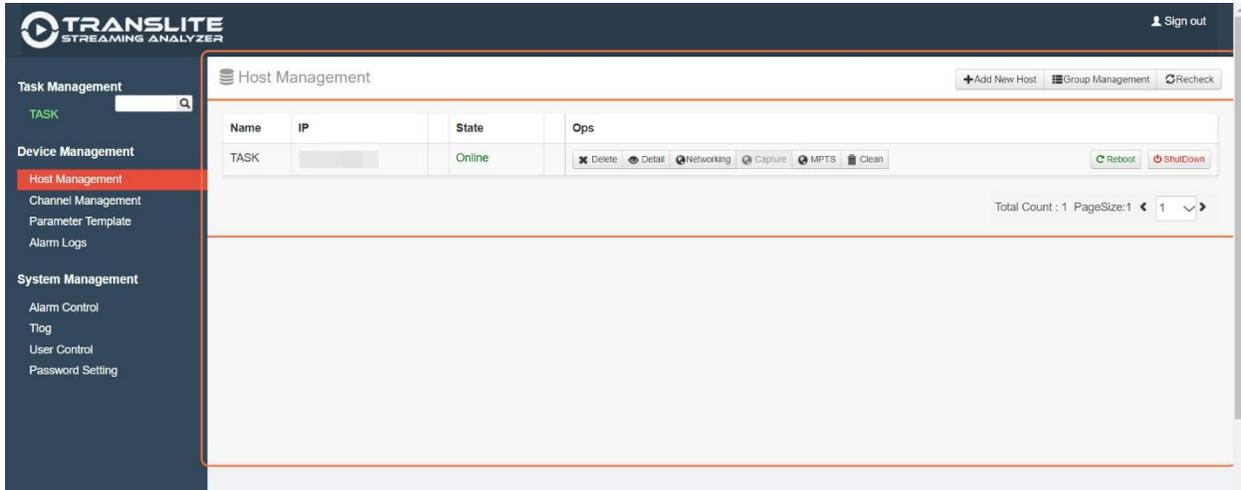
CHAPTER 4

DEVICE MANAGEMENT

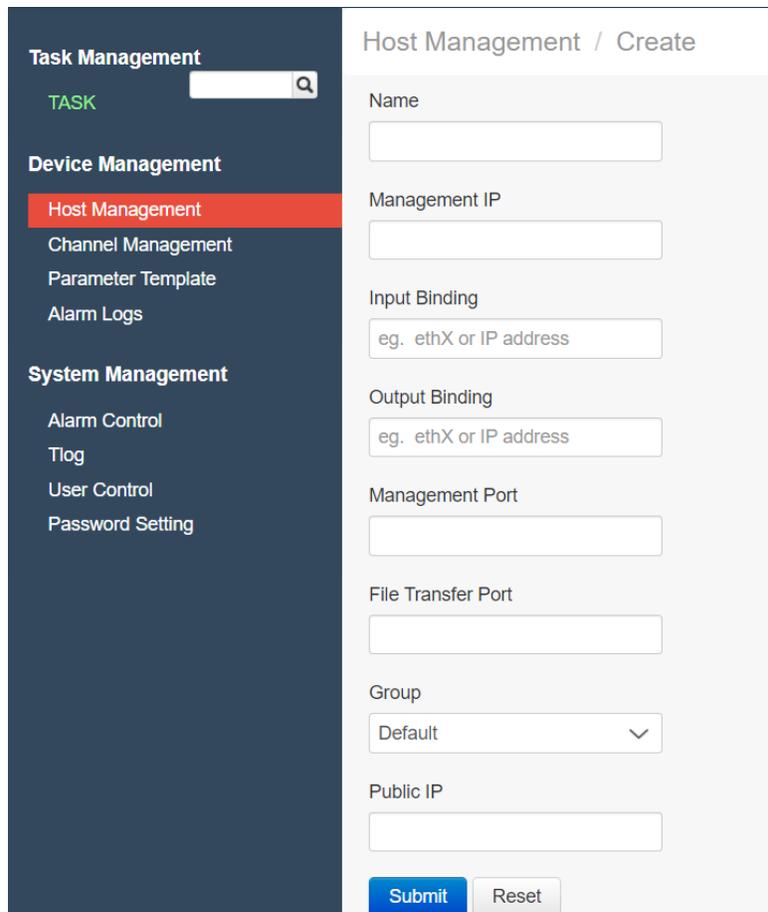
4.1 HOST MANAGEMENT

The Monitoring system can centralize the management of multiple hosts. Unless users need to add management of multiple machines, or need to troubleshoot, ordinary users need not operate this interface

The Host Management option allows you to Add new host and then reboot or shutdown the host if required. It also indicates the status of the host server.



4.1.1 ADD NEW HOST



Host name: Must be filled in with the desired name

Management IP: Fill in the true IP address of the host that needs to be managed.

Input binding: Optional; can fill in the binding network ports of input source, such as machine has two network ports eth0 and eth1, need to get signal source from eth0, then eth0 can be filled in here.

Output Binding: Optional; Output Source's Network Port Binding.

Management Port: Must fill in. If no special instructions, fill in 2030 uniformly.

File Transfer port: Optional; generally, do not need to fill in.

Group: Multiple hosts can be divided into different groups.

After successfully adding the host, refresh the page, you can see the newly added host in the Task Management tab of the menu bar on the left side of the page.

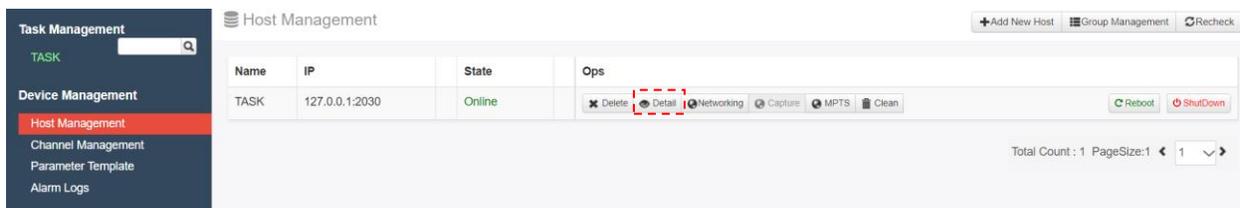
4.1.2 GROUP MANAGEMENT

Click the "Group Management" button to create a new group or edit the existing group.

Users can create multiple different groups to manage the host according to the type and performance of the host.

4.1.3 HOST EDITOR

Click on the "Details" button of the corresponding host in the "Host Management" interface to edit the host.



The screenshot shows the "Host Management" interface. On the left is a sidebar with navigation options: Task Management, Device Management, Host Management (highlighted), Channel Management, Parameter Template, and Alarm Logs. The main area displays a table with the following data:

Name	IP	State	Ops
TASK	127.0.0.1:2030	Online	Delete Details Networking Capture MPTS Clean Reboot ShutDown

At the top right of the interface are buttons for "+ Add New Host", "Group Management", and "Recheck". At the bottom right, it shows "Total Count : 1" and "PageSize: 1" with a dropdown menu.

4.1.4 CLEAN TASK

In the "Host Management" interface, each corresponding host has a "clean" button, which can quickly empty all tasks under the host. Please operate with caution.

4.1.5 RECHECK

When the status of the host is displayed as "offline", you can click this button and try to reconnect all hosts.

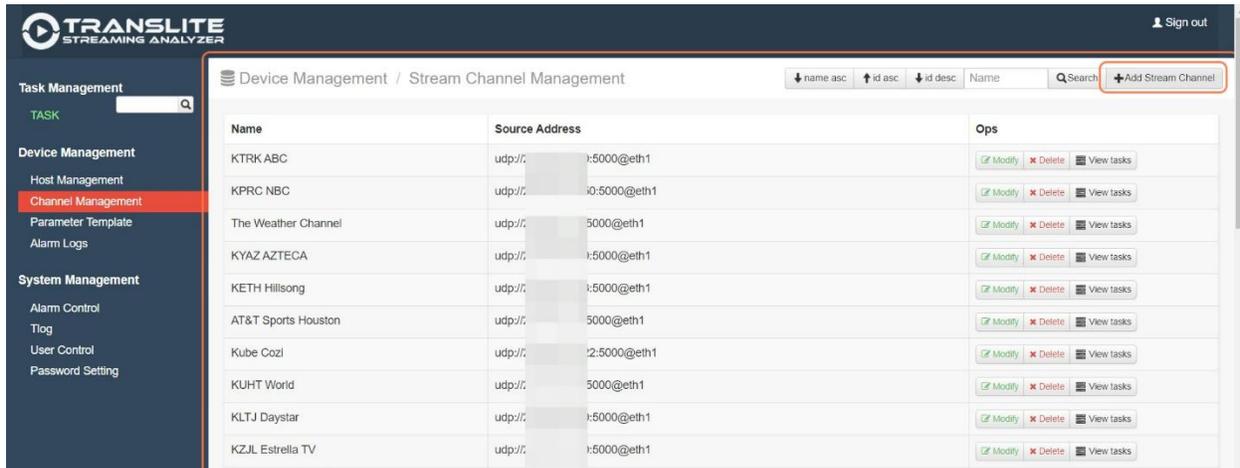
4.1.6 REBOOT & SHUTDOWN

Restart the single host system or close the corresponding host system

4.2 CHANNEL MANAGEMENT

The Channel Management tab lets you to add the stream channel by specifying the Channel name, Protocol type, the source and the deinterlace option.

Click on Add Stream Channel to add a new channel as indicated below

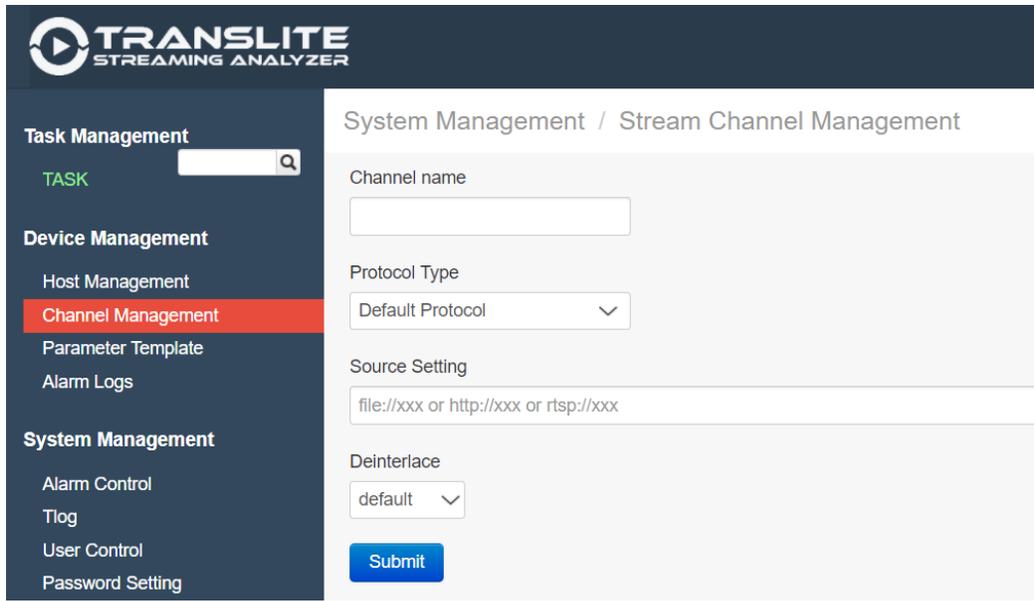


Channel Name: Provide your custom channel name.

Protocol type: Choose the protocol type as 'Default Protocol'.

Source setting: Input the address information of the media source, the general media source provider will provide the detailed information of the source address, just paste the source address here.

Supported media source formats are: RTMP, RTSP, HLS, HTTP, UDP, FILE, etc.



The screenshot shows the TRANSLITE STREAMING ANALYZER web interface. The left sidebar contains navigation menus for Task Management, Device Management, and System Management. The 'Channel Management' option under Device Management is highlighted. The main content area is titled 'System Management / Stream Channel Management' and contains the following fields:

- Channel name:
- Protocol Type:
- Source Setting:
- Deinterlace:

A blue 'Submit' button is located at the bottom of the form.

Example for input source address format is as follows:

rtmp://192.168.1.100:1935/live/stream;

rtsp://192.168.1.100:554/live/stream;

http://192.168.1.100:8000/live/stream.m3u8;

http://192.168.1.100:8000/live/stream;

udp://223.0.0.1:6666

file:///usb/testfile.mp4&repeated=1

4.3 PARAMETER TEMPLATE

The default parameter template is transparent. No modification is required.

TRANSLITE STREAMING ANALYZER

System Management / Transcode Parameter Management

Task Management: TASK [search]

Device Management: Host Management, Channel Management, **Parameter Template**, Alarm Logs

System Management: Alarm Control, Tlog, User Control, Password Setting

Template name: ABG

Video | Audio

Encode format: transparent

Level: [input]

B-Frames: 3

Reference frames: 3

Key framerate: 1

Display ratio: auto

Field mode: off

More Settings:

Bitrate control: ABR

Bitrate(kbps): 1024

Frame rate: auto

Keep resolution: [input] X [input]

GOP Align: off

Scale: Ordinary

Buttons: Save, Reset

However, different types of audio and video parameters can be defined to apply to a channel if required. The below screenshots indicate an example for the same

TRANSLITE STREAMING ANALYZER Sign out

System Management / Transcode Parameter Management

Task Management: TASK [search]

Device Management: Host Management, Channel Management, **Parameter Template**, Alarm Logs

System Management: Alarm Control, Tlog, User Control, Password Setting

Template name: 720_8m

Video | Audio

Encode format: h264

Level: 51

B-Frames: 3

Reference frames: 3

Key framerate: 1

Display ratio: auto

Field mode: off

More Settings:

Profile: high_profile

Bitrate control: ABR

Bitrate(kbps): 1024

Frame rate: auto

Keep resolution: 1280 X 720

GOP Align: on

Scale: Ordinary

Buttons: Save, Reset, Back

4.4 ALARM LOGS

The Alarm Logs shows the list of alarm notifications received for all the channels along with the Notification level, timestamp and the current state details.

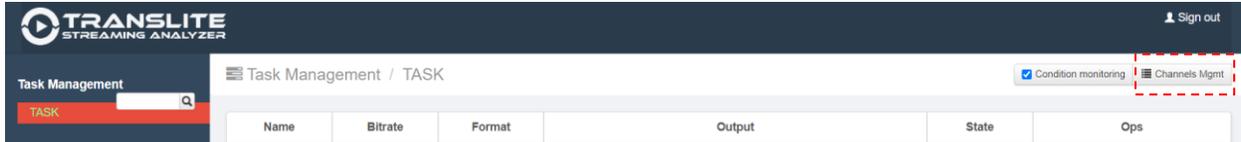
If there is an alarm message generated here, the page will have an alarm sound, as long as it is not handled or ignored, the alarm sound will not stop.

Content	Device	Channels	Notif_Level	Date	State	Ops
audio data::decode resume	TASK	HBC (Houston Busin...	Announcement	0000-00-00 00:00:00	Untreated	Treat Delete
video data::decode resume	TASK	HBC (Houston Busin...	Announcement	0000-00-00 00:00:00	Untreated	Treat Delete
video data::decode resume	TASK	Infowars	RECOVER	2022-01-13 22:46:19	Untreated	Treat Delete
audio data::decode resume	TASK	Infowars	RECOVER	2022-01-13 22:46:19	Untreated	Treat Delete
video data::decode stop	TASK	Infowars	HIGH	2022-01-13 22:46:13	Untreated	Treat Delete
audio data::decode stop	TASK	Infowars	HIGH	2022-01-13 22:46:13	Untreated	Treat Delete
video data::decode stop	TASK	TRUTV	HIGH	2022-01-13 12:55:31	Untreated	Treat Delete
audio data::decode stop	TASK	TRUTV	HIGH	2022-01-13 12:55:31	Untreated	Treat Delete
video data::decode resume	TASK	TNT	RECOVER	2022-01-13 12:55:25	Untreated	Treat Delete

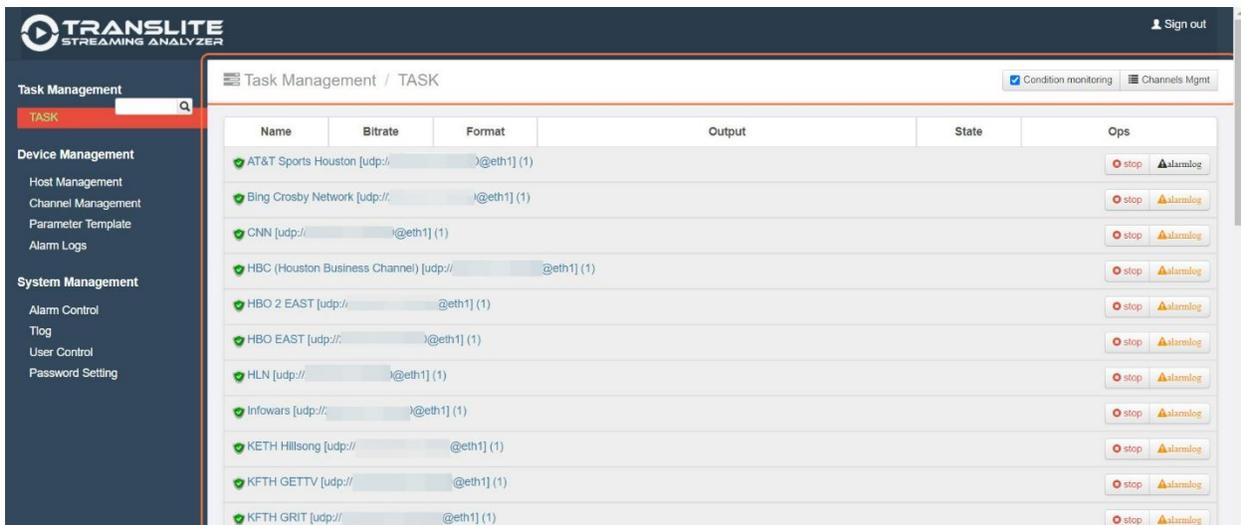
CHAPTER 5

TASK MANAGEMENT

Under 'Channels Mgmt', the required channels that are to be binded can be chosen. Ensure to enable all the required channels.



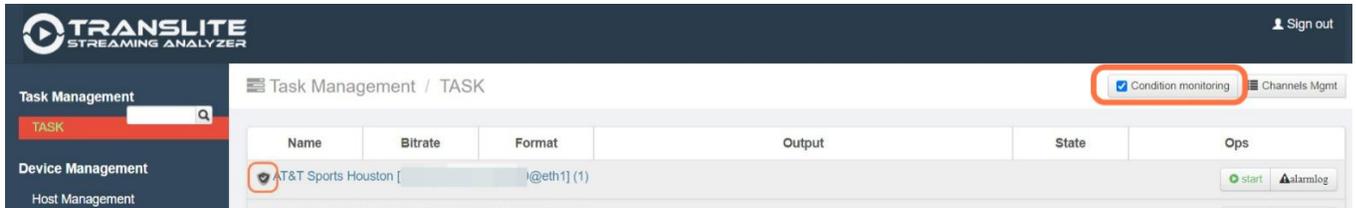
The Task Management tab lists all the binded channels. The channels that are to be monitored can be started by clicking on the 'start' button. Clicking on the 'alarm log' button displays the alarms raised (if any) for that channel.



5.1 Condition monitoring

Check the "Condition monitoring" label, the system will monitor the status of the task in real time.

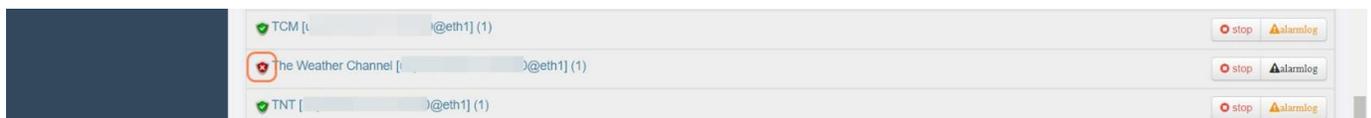
When all tasks under a channel are not started, the status monitoring icon in front of the channel is gray.



When there are tasks running under the channel and all the tasks in operation are normal, the status monitoring icon will be displayed green.



The status monitoring icon will turn red when there is a task running under the channel and there is an unfair task in all the running tasks.



CHAPTER 6

SYSTEM MANAGEMENT

6.1 ALARM CONTROL

Under the Alarm Control tab, new user alarms can be created. When a new user alarm is created, the user phone number and email id is provided which receives the alarm.

Different alarm range can be set as per requirement. Below are the alarm range options:

STOP_INP → Stop Input

STOP_DEC → Stop Decoding

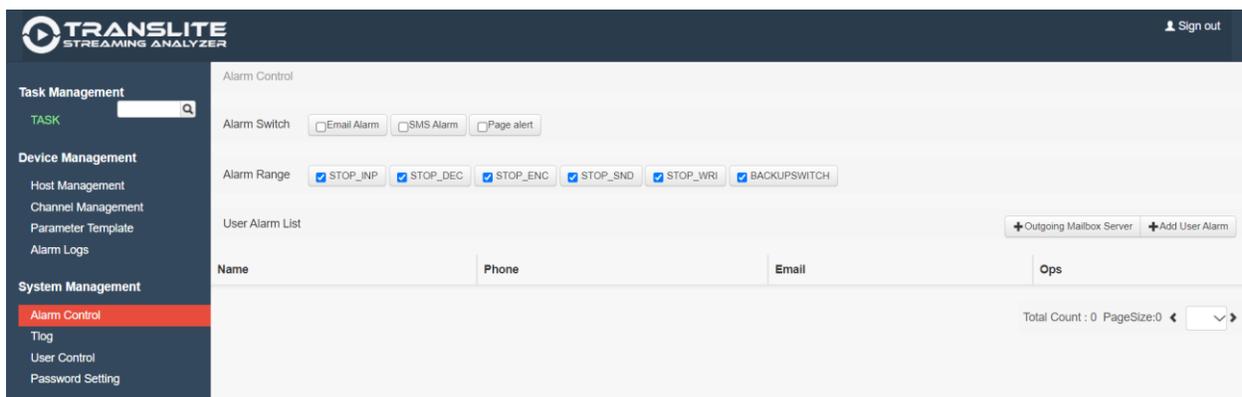
STOP_ENC → Stop Encoding

STOP_SND → Stop Sending

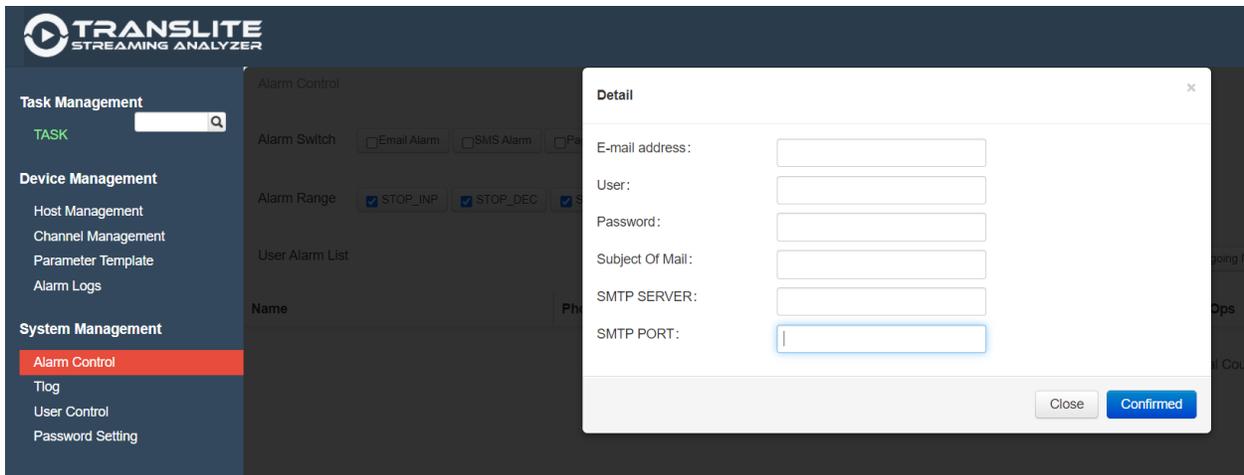
STOP_WRI → Stop Writing

BACKUPSWITCH → Backup Switch

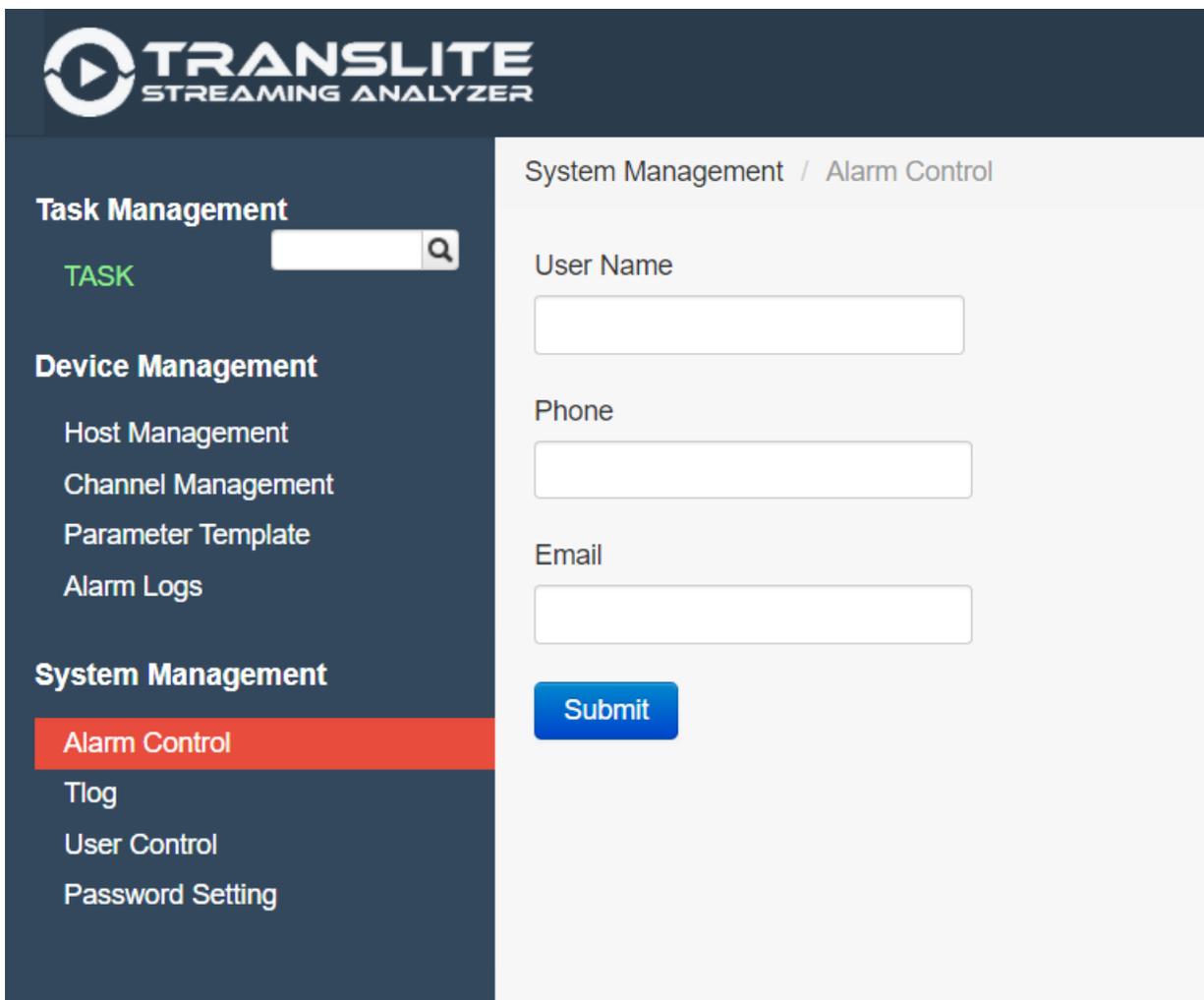
The Alarm switch options can be chosen among Email Alarm, SMS Alarm and Page alert



The Outgoing Mailbox Server settings can be specified for e-mail alarms.



Under the Add User Alarm, the username, phone number and Email of the user can be specified.



6.2 TLOG

The Tlog tab maintains a users' operation log, you can see who operated those channels and when. It gives details along with the username, IP and timestamp details.

Content	Device	User Name	IP	Date
Tasks Startall(AT&T Sports Houston)	TASK	admin	136.185.16.143	2022-01-18 20:33:56
Tasks Stopall(AT&T Sports Houston)	TASK	admin	136.185.16.143	2022-01-18 20:33:52
Login system		admin	136.185.16.143	2022-01-18 20:31:53
Login system		admin	136.185.16.143	2022-01-18 18:42:55
Login system		admin	136.185.16.143	2022-01-18 16:13:26
Login system		admin	136.185.16.143	2022-01-18 13:53:37
Login system		admin	136.185.16.143	2022-01-17 12:21:27
Login system		admin	136.185.16.143	2022-01-17 20:45:42
Login system		admin	122.178.177.67	2022-01-14 07:48:01

6.3 USER CONTROL

The User control tab allows you to create new users and assigning a specific set of user rights to that user. The user can be classified as either 'Admin' or 'Ordinary user' or 'System Management' user as indicated in the below screenshot.

Click on 'Add User' to create a new user.

User Name	User role	Ops
+ Add User		

TRANSLITE
STREAMING ANALYZER

System Management / Alarm Control

Task Management

TASK

Device Management

- Host Management
- Channel Management
- Parameter Template
- Alarm Logs

System Management

- Alarm Control
- Tlog
- User Control**
- Password Setting

User Name

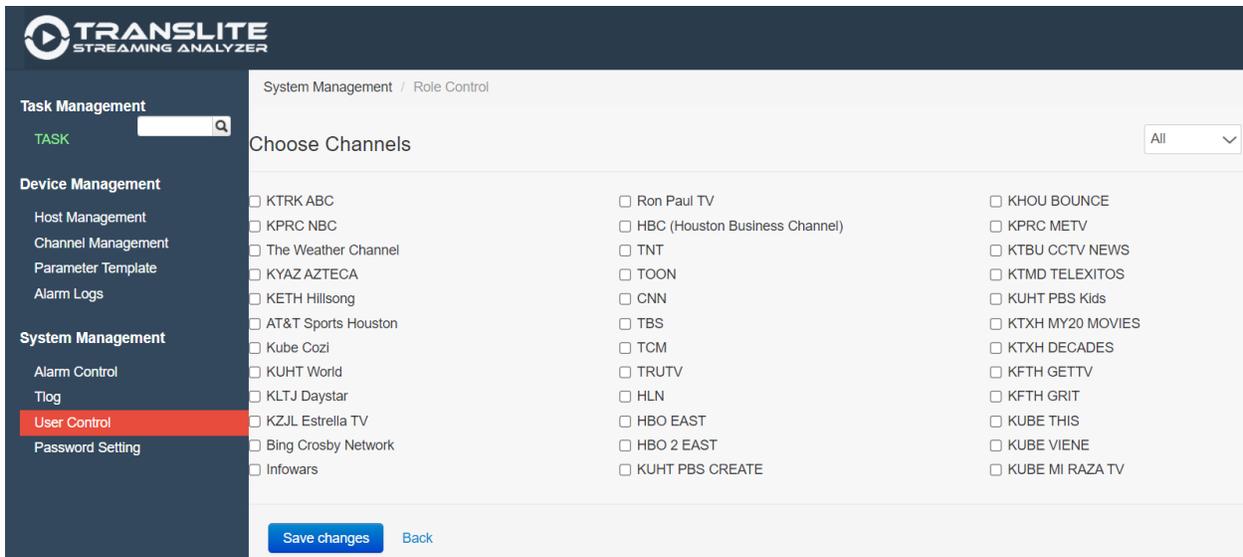
User rights
ADMIN

New password

Each user can be given rights to all or only required number of channels. This can be set by clicking on 'User rights'

User Control

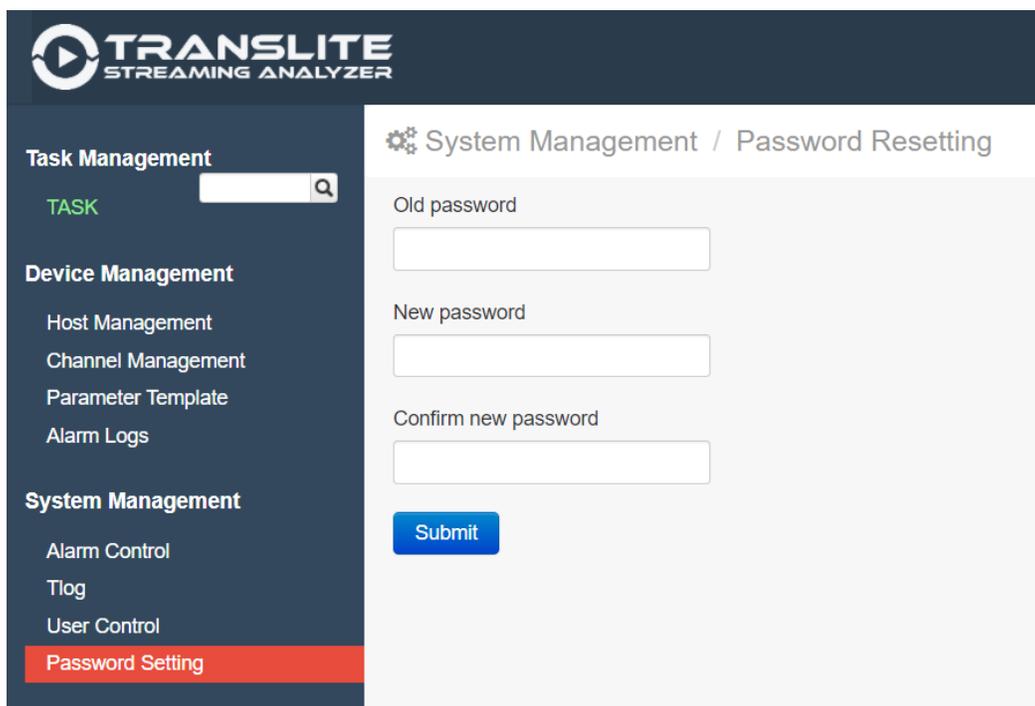
User Name	User role	Ops
admin	Super Admin	
public	System Management	<input type="button" value="User rights"/> <input type="button" value="Modify"/> <input type="button" value="Delete"/>



As indicated in the above screenshot, the permissions for select channels can be granted to the user by clicking on the check boxes.

6.4 PASSWORD SETTINGS

Passwords can be managed and changed under the Password Settings tab



CHAPTER 7

TROUBLESHOOTING

All Translite Global products have been passed the testing and inspection before shipping out from factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by Translite Global. To prevent potential hazard, please strictly follow the operation conditions.

Prevention Measure

- Installing the device at the place in which environment temperature between 0 to 45 °C
- Making sure good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary
- Checking the input AC within the power supply working range and the connection is correct before switching on device
- Checking the RF output level varies within tolerant range if it is necessary
- Checking all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must greater than 10 seconds.

Conditions need to unplug power cord

- Power cord or socket damaged.
- Any liquid flowed into device.
- Any stuff causes circuit short
- Device in damp environment
- Device was suffered from physical damage
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed

CHAPTER 9

APPLICATIONS

Monitor Live IPTV, OTT channels and ensure quick detection of service interruption thus increasing usability and viewer satisfaction expanding your subscriber base beyond your existing distribution network.



Continuous monitoring and Analysis



Easy system setup



LOW Capex, LOW Maintenance costs

For Sales

North America:
sales@transliteglobal.com

Asia:
sales@translite.co.in

Rest Of The World:
sales@transliteglobal.com

For Support

North America :
support@transliteglobal.com

Asia:
support@translite.co.in

Rest Of The World:
support@transliteglobal.com