Rack200
Rack300

Rack300

Rack200

User Guide

Document Version: v2.2
Software Version: v5.3

HAIVISION

Contents

Copyright and Trademarks

Compliance

Before using the unit, please inform yourself about laws and regulations in force in the country in which you use it. Please refer to the sticker pasted on the unit to know its version.

The declaration of conformity is available upon request. Should you need it, please contact Haivision.

FCC

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications to this equipment not expressly approved by Haivision may cause, harmful interference and void the FCC authorization to operate this equipment.

Safety and Health Precautions

⚠ Handling the Unit

- To avoid any injury during the installation, observe local health and safety requirements and guidelines for manual material handling.
- The unit must be handled carefully and thoughtfully to prevent safety hazards and damage.

⚠ Safety Precautions

- In accordance with IEC 62368-1:2014 standard, devices must be connected to PS2 power sources.

⚠ Servicing the Unit

- Only trained and approved service engineers are permitted to service this unit.
- Unauthorized maintenance or the use of non-approved replacements may affect the unit specifications and invalidate any warranties.

Operating Environment

- Make sure that the environment corresponds to the conditions mentionned below:
  - Only use at altitude not exceeding 2000 meters.
  - Only use in not-tropical climate regions.
    - Ambient operating temperature: -5°C to 40°C
    - Ambient operating temperature: 0°C to 40°C (for the DC adapter)
    - Ambient operating humidity: 10% to 85% (no condensation).

> **Important:**
> Operating the unit out of these ranges may cause damage and void the warranty.

- Protect the unit against rain, dust and shocks.
- Avoid long exposure to direct sunlight.
- Do not obstruct the air inlets and outlets.
- The unit relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250V, 20 A.
- Connection to earth is made through the DC adapter to which the unit is connected. Furthermore, the unit has a protective earth terminal on the rear side.

Caution - Safety precautions

Only use the DC adapter and the power cord provided by Haivision.

Using another DC adapter and power cord can damage the device and void the warranty.

Product Presentation

Overview

The Rack Series is a range of video encoders designed for space-constrained live production, including contribution applications and multi-camera remote/at-home productions.

The Rack Series is also designed to be used on vans or trucks, connected to a roof-mounted Haivision Quad CellLink (active 3G/4G multi-antennas) and/or Ka satellite transmitter, enabling video broadcast from any location around the world, even in the midst of unpredictable and unmanaged network conditions.

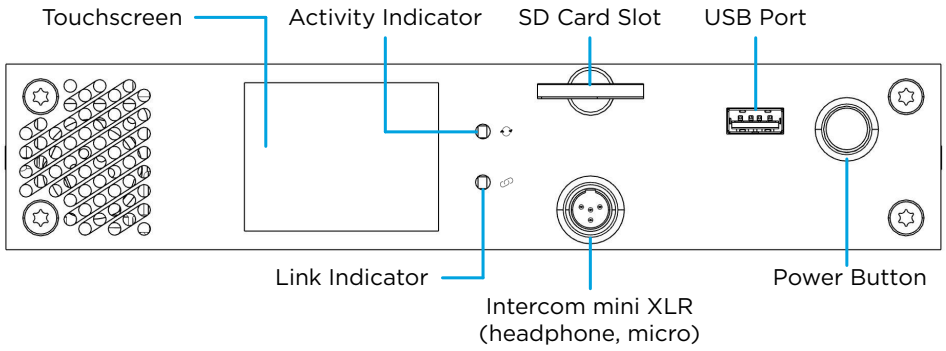
The Rack Series embeds a best-in-class full HD hardware H.265/HEVC encoder, as well as an H.264/AVC encoder to reach low bitrates at sub-second latency without comprising on video quality. Powered by the double award-winning SST technology (Safe Streams Transport), the Rack encoder offers ultra-reliable transmission on any network, thanks to an intelligent IP-bonding stack that aggregates all available bandwith without needing to stop a live transmission, even as connections are added or dropped. The SST technology ensures:

- aggregating simultaneously multiple network connections,
- dynamically adapting the video bitrate according to the network bandwidth fluctuations,
- protecting stream content,
- supporting retransmission of lost data.

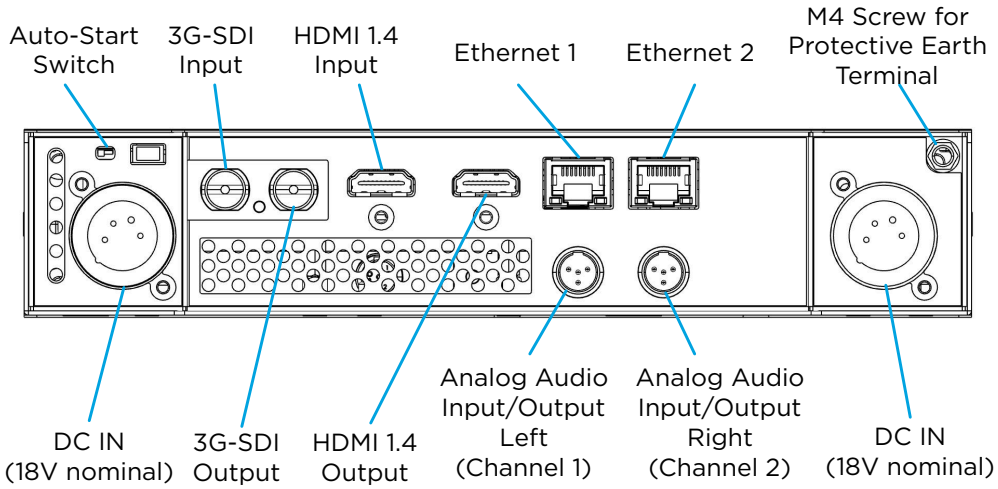
With its 1U half rack form factor, the product reduces costs and space requirements. Delivered in a "as-a-box" design, it can also be rack mounted thanks to dedicated kits hosting one or two units in 1U. The Rack Series is organized as illustrated in the following chart.

	Rack300	Rack200
H.265/HEVC encoder	●	
H.264/AVC encoder	●	●

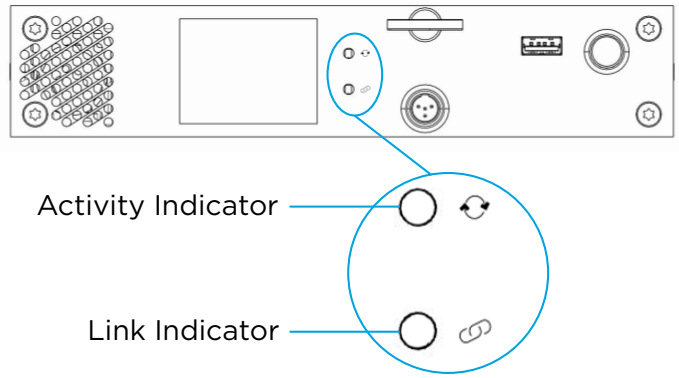
Front Panel



Rear Panel



Indicators Meaning



Activity Indicator

Status	Meaning
Fixed Green	The unit is starting.
Flashing Green	Live, Record or Forward in progress.
Off	No Live, Record or Forward in progress.

Link Indicator

Status	Meaning
Fixed Green	The unit is starting or connected to a StreamHub.
Off	The unit is not connected to a StreamHub.

Installation

Installing the Unit

1. Connect the Protective earth terminal.

> **Note:**
> The Protective earth terminal must be connected to the Rack ground pin. This pin must be connected to the safety ground.

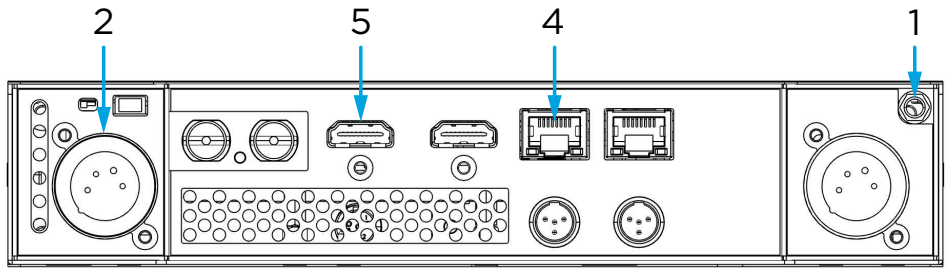
2. Connect the AC/DC adapter and the power cable.
3. Insert a SD card (if not already installed).

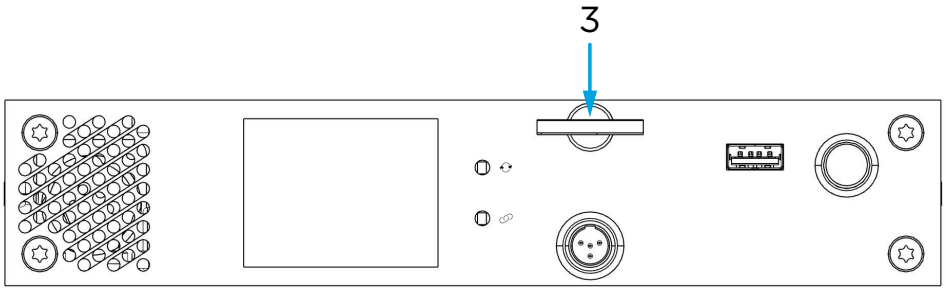
> **Note:**
> It is recommended to use FAT32 or exFAT formats and class 10 SD card.

4. For the Ethernet transmission, connect the Ethernet cable to Ethernet 1.

> **Note:**
> DHCP is the default operating mode for Ethernet 1.

5. Connect video input cables (SDI or HDMI).





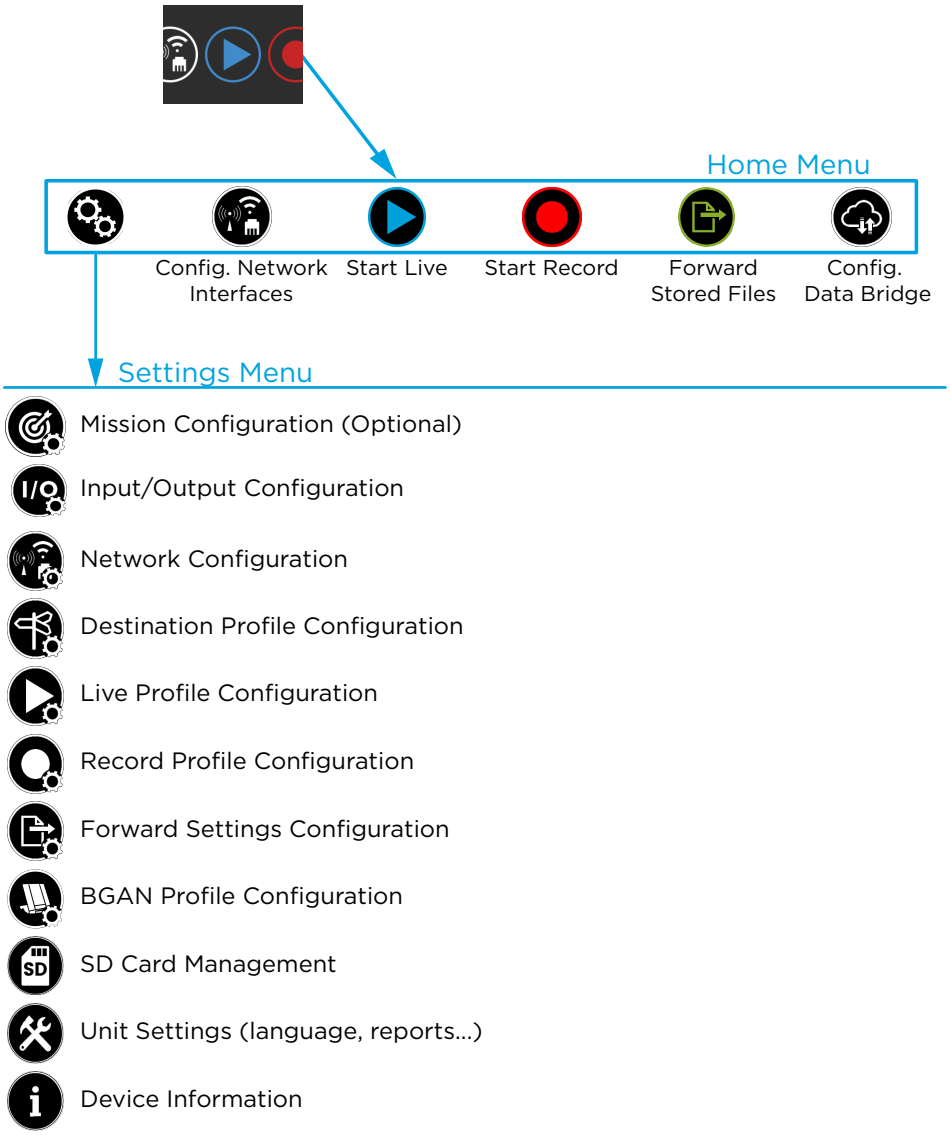
Unit Front Panel

The unit front panel allows you to:

- Configure the unit
- Start / stop live
- Start / stop record
- Forward stored files

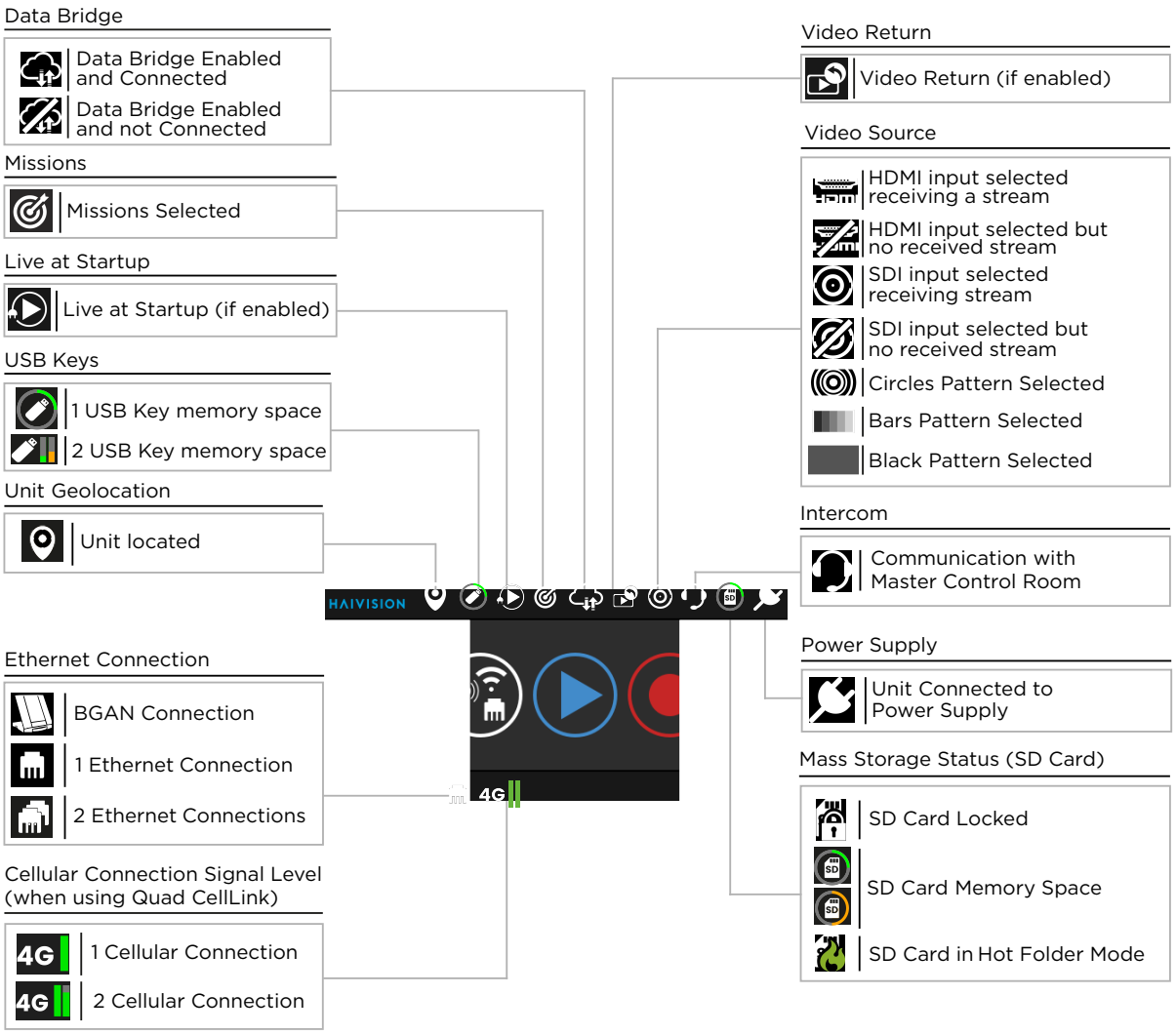
Menus

The diagram below shows the different menus accessible from **Home** and **Settings** Menus.



Icons

On the front panel screen, some icons indicate the unit state.



Error icons

Error with modem connection

Error with ethernet connection

Launching the Web Interface

The web interface allows you to:

- Configure the unit
- Start / stop live
- Start / stop record
- Forward stored files

To access the Web interface, use an Ethernet connection.

Ethernet Connection

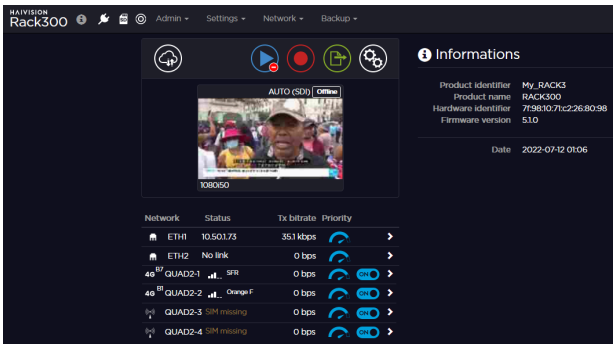
1. From the **Home** menu, click on .
   The screen displays the IP address assigned to the unit (by default in DHCP mode):
2. From a web browser, enter the unit IP address and append ":8888" to it.
   Example: 10.50.1.139:8888

   The login screen opens.

3. Enter the login and password (by default: login= **admin** ; password= **password**).

> **Note:**
> It is highly recommended to modify this factory password.

The web interface opens.



Configuring an Ethernet Interface

Devices connected to a local LAN transmitter are remotely controllable from the Media Control Room.

The unit can operate in different Ethernet modes:

- DHCP

  To use the unit in a domain that has a DHCP server.

  The DHCP server assigns the IP address, subnet mask and default gateway to the equipment.

  DHCP is the default configuration mode for Ethernet.

- STATIC

  To connect the unit to a domain without using a DHCP server.

  This requires that you are the network administrator to set IP settings of the Ethernet interface (IP addess, netmask and gateway).

- GATEWAY

  To connect a host to the unit (for instance a laptop).

  The unit acts as a DHCP server and assigns an IP address to the connected host.

  The unit automatically detects from the netmask the range of IP addresses that it can use for assigning an IP address to the host connected.

Factory Settings According to Selected Mode

Interface	MODE	IP Address	Netmask	Gateway
Ethernet 1	DHCP *	Assigned by DHCP server		
	STATIC	192.168.1.10	255.255.255.0	192.168.1.1
Ethernet 2	DHCP *	Assigned by DHCP server		
	STATIC	192.168.20.10	255.255.255.0	192.168.20.1
	GATEWAY	192.168.20.10	255.255.255.0	
	OFF	N/A	N/A	N/A

* Default configuration

Note:
When you select the OFF option, you disable the Ethernet mode. Configuring Ethernet interface may disconnect the unit.

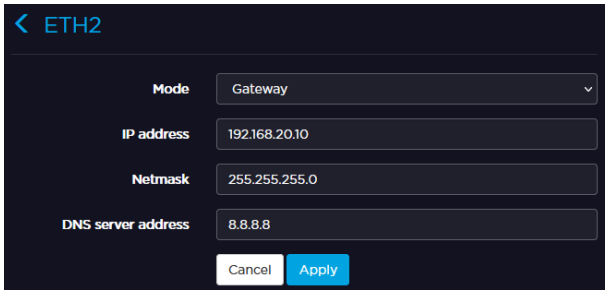
From the Unit Panel

1. From the **Home** menu, click on .
2. Click on the Ethernet line to configure it.
3. Click on the **Mode** field to enter the mode selection menu.
4. Click on a new mode.
5. The selected mode appears.
   - When selecting DHCP mode, settings are automatically retrieved.
   - When selecting STATIC mode, you need to enter network settings.
   - When selecting GATEWAY mode, you need to enter the IP Address, the netmask and the DNS server address.

a. Click on .
b. Click on settings fields to be modified.
c. Use the keyboard to enter new settings and click on to confirm.
d. Click on to scroll down and click on to save new settings.

From the Web Interface

1. From the Web Interface, click on on the Ethernet line.
2. In the **Mode** field, select the configuration mode according to the Ethernet connection used:
   - DHCP
   - STATIC
   - GATEWAY (only for Ethernet 2)
   - OFF (only for Ethernet 2)
3. According to the Ethernet connection, modify the settings if required:
   - IP Address, Netmask and Gateway if STATIC mode is selected.
   - IP Address, Netmask and DNS server address if GATEWAY mode is selected.
4. Click on **Apply** to save these settings.



Note:
Configuring Ethernet interface may disconnect the unit.

Configuring a 3G/4G Cellular Interface

Connecting a Quad CellLink to the Transmitter

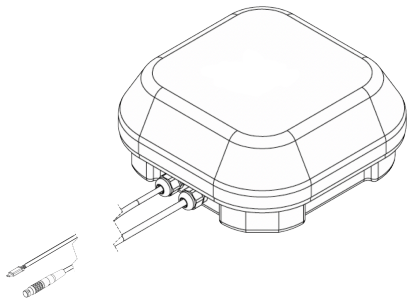
Connect a Quad CellLink to the transmitter to use cellular networks.

1. On the Quad CellLink, remove the SIM card cover and insert the SIM cards into slots according to indications written on the cover.

> **Note:**
> Make sure the SIM cards are already unlocked.

2. Replace the SIM card cover.
3. Connect the AC/DC adapter and the power cable.
4. Connect the USB cable to the unit.

> **Note:**
> Choose a weather protected area for this connection in order to avoid any damage due to ambient humidity or rain.

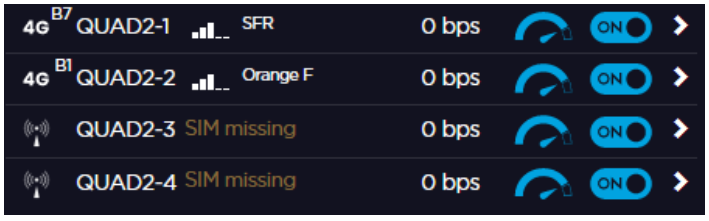


5. Open the transmitter Web Interface.

> **Note:**
> Please refer to transmitter or encoder User Guide.

The Quad CellLink is automatically detected:

- QUAD1-1 means modem #1 from Quad CellLink #1
- QUAD1-2 means modem #2 from Quad CellLink #1
- ...



Note:
You can connect up to two Quad CellLink to the transmitter.

Enabling / Disabling a Quad CellLink Cellular Modem

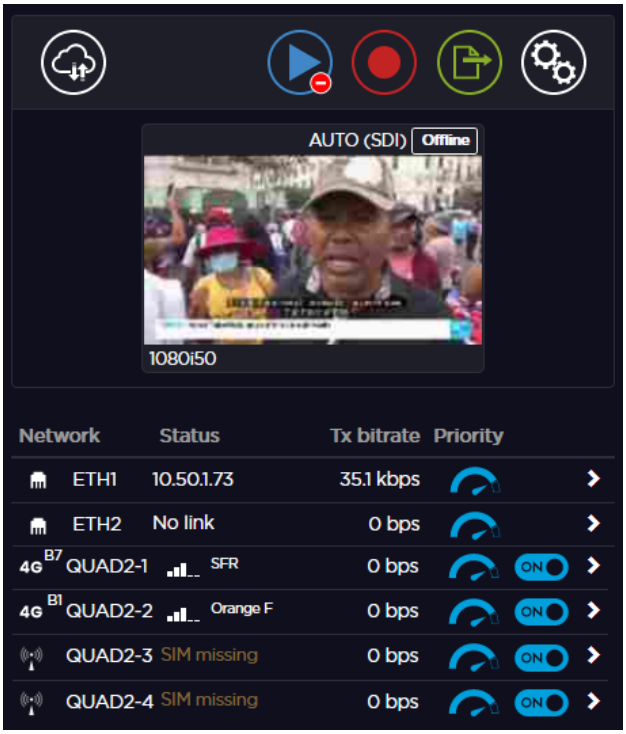
You can enable and disable modems from the Unit Panel or from the Web Interface.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on to select the modem that you want to enable or disable.
3. Click on the modem to be enabled or disabled.
4. Click on to enable the modem or on to disable it.

From the Web Interface

Click on or to enable or disable a modem.



Enabling / Disabling all Quad CellLink Cellular Modems

You can enable and disable all modems of a Quad CellLink from the Unit Panel or from the Web Interface.

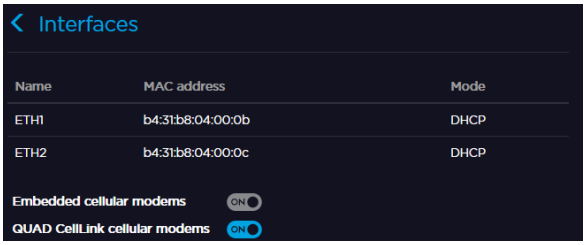
From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on to enable all modems of a Quad CellLink or on to disable them

From the Web Interface

1. From the Web Interface, click on **Network > Interfaces**.

2. Click on OFF to disable all modems of a Quad CellLink or on ON to enable them.



Managing the APN database

Connect a Quad CellLink to the unit to enable cellular networks. See Connecting a Quad CellLink.

The unit is delivered with a pre-defined APN database. You can enrich the database from the Web Interface. You can:

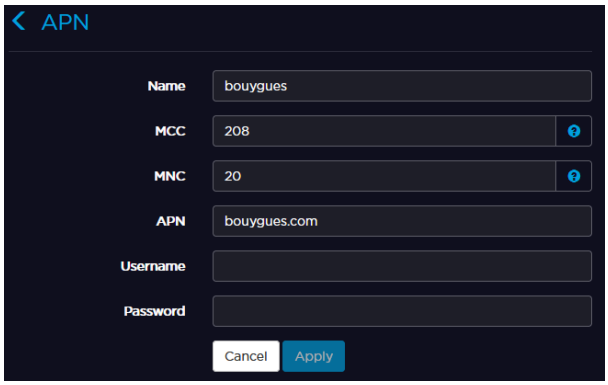
- Add and configure new APN settings to suit your requirements, so they can be easily selected from the list.
- Delete an APN.
- Enable/Disable the APN Automatic Configuration.
- Drag and drop APN to reorder the list.

Adding an APN to the database

1. From the Web Interface, click on **Network > APN**.
2. Click on **Add**.
3. Enter a **Name**.
4. Fill in the parameters fields (**MCC, MNC, APN**).

> **Note:**
> Click on ? to get some help if required.

5. Enter a **Username** and a **Password** if required.
6. Click on **Apply**.



The new APN appears in the APN database, and you can select it from the scrolling list when configuring a cellular interface operating within the same network.

Configuring the APN

If the SIM card operator is registered in the unit's database, the unit automatically assigns a name and an APN (Access Point Name).

If the APN assigned is not relevant, you can select another one within a predefined list, or configure a new one.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on or to select the Modem to configure.
3. Click on the line of the modem to be configured.
4. Check the APN assigned.
   a. Click on .
   b. Click on to scroll down and display the APN.

You can change the APN by:

- selecting an APN from a predefined list, or
- configuring settings for a new APN.

Selecting a predefined APN

1. Click on to scroll up to display the button.
2. Click on to access the list of predefined APN.
3. Click on or to select an APN.
4. Click on the screen to confirm the choice.
5. Click on to save.

Configuring a new APN

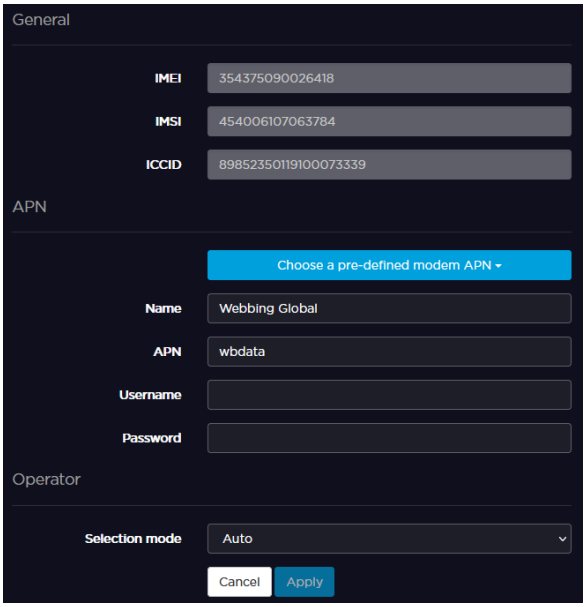
1. Click on the **APN** field.
2. Use the keyboard to enter a name for the new APN and click on .
3. Click on to scroll down and enter other settings (Username and Password) if required.
4. Click on to save.

From the Web Interface

1. Check that the operator's name is indicated in the Status field and the type of network is indicated.
2. Click on to configure the APN.
3. The IMEI, IMSI and ICCID fields are automatically filled in.
4. Check if the automatically assigned APN settings are relevant.

5. If the APN is not suitable, you can click on "**Choose a pre-defined modem APN**" and select the expected APN from the pre-defined list.

6. If you cannot find a relevant APN in the pre-defined list, you can:

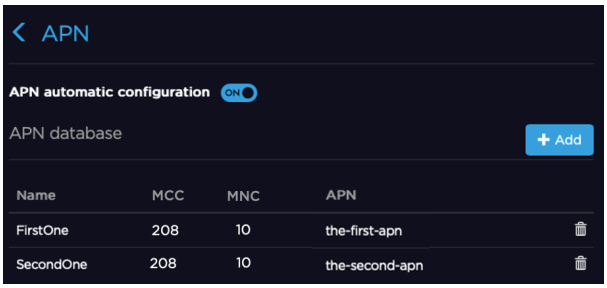


- Fill in the APN fields with proper settings and click on **Apply**.
- Enrich the pre-defined APN list by adding your APN to it (See Managing the APN database).

Deleting an APN

1. Click on **Network > APN**.

2. Double click on the trash button ( ).



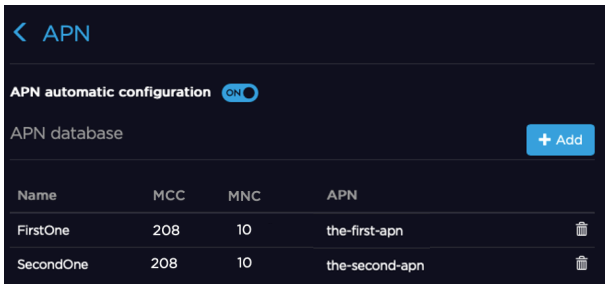
Enabling / Disabling the Automatic APN Configuration

When the **APN Automatic Configuration** is enabled, an APN is automatically assigned when a new SIM card is inserted.

1. From the Web Interface, click on **Network > APN**.

> **Note:**
> By default, the **APN Automatic Configuration** is enabled.

2. Click on ON to disable it. The button turns into OFF.



Configuring a BGAN Profile

By default, the unit does not have any BGAN profile. You must create and configure a BGAN profile before selecting it in a Live profile or a Forward configuration. See Adding and Configuring a Live profile and Configuring a Forward Settings chapters.

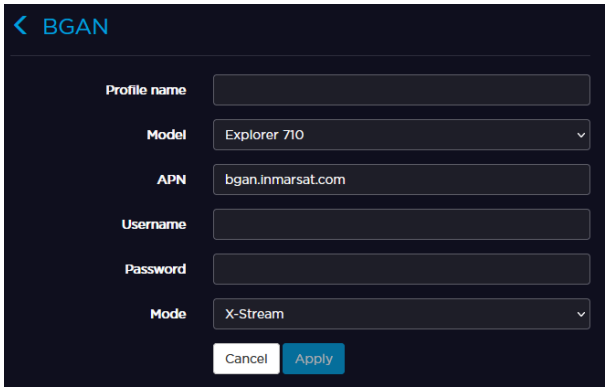
From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on .
4. Click on **Profile Name** field.
5. Use the keyboard to enter the new profile name.
6. Click on to confirm the new profile name.
7. Click on the **Model** field. Choose between:
   - Hughes 9201
   - Hughes 9211
   - Explorer 710
8. Click on the **APN** field.
9. Use the keyboard to enter a name for the APN and click on .
10. Click on the **Username** field and use the keyboard to enter a username. Click on to confirm. (Optional).
11. Click on the **Password** field and use the keyboard to enter a password. Click on to confirm. (Optional).
12. Click on the **Mode** field. Choose between:
    - X-Stream
    - Background
    - HDR Full-Asymmetric
    - HDR Full-Symmetric
13. Click on to save the BGAN profile.

From the Web Interface

1. From the Web Interface, click on **Network > BGAN**.
2. Click on .
3. Enter a profile name in the **Profile Name** field.
4. Choose a model in the drop-down list.
   - Hughes 9201
   - Hughes 9211
   - Explorer 710
5. Enter an APN in the **APN** field.

6. Enter a username in the **Username** field if required.
7. Enter a password in the **Password** field if required.
8. Choose a **Mode** in the drop-down list.
    - X-Stream
    - Background
    - HDR Full-Asymmetric
    - HDR Full-Symmetric



9. Click on **Apply**.

Managing Cellular Operators

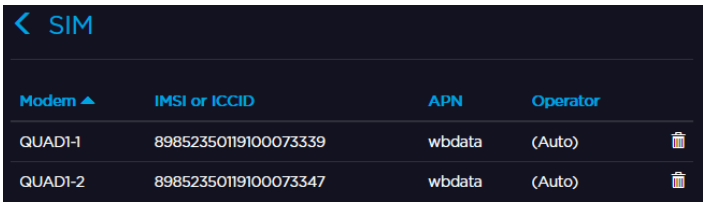
Connect a Quad CellLink to the unit to enable cellular networks. See Connecting a Quad CellLink.

For each SIM card, you can decide how to manage the selection of the cellular operator.

You have 3 possibilities:

- **Automatic mode**: The unit selects the operator by itself.
- **Manual Selection**: This mode is selected from the Web Interface. It allows entering the MCC and the MNC of the operator that you want to use.
- **Scan and Select**: You select among a list of operators detected via the scan of networks.

Note:
From the Web Interface, click on **Network > SIM** to have an overview of your SIM Cards. Sort the SIM Cards by clicking on the column titles.



Selecting the Automatic Mode

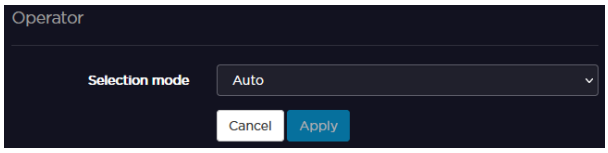
Note:
The Automatic Mode is the default setting.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on to scroll down to the modem to be configured.
3. Click on the modem line to enter the **MOD. CONFIG** menu.
4. Click on .
5. Click on the **Operator** field.
6. Click on OFF to enable the Automatic Mode.
   The Automatic Mode is selected.

From the Web Interface

1. Click on the modem line.
2. Select **Auto** in the **Selection mode** scrolling list.
3. Click on **Apply**.



Scanning and Selecting a Cellular Operator

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on to scroll down to the modem to be configured.
3. Click on the modem line to enter the **MOD. CONFIG** menu.
4. Click on .
5. Click on the **Operator** field.
6. Click on ON to disable the Automatic Mode. The button turns into OFF. The scan starts. It may take few minutes.
7. Click on the operator that you want to select.

> **Note:**
> Only white operators in the list can be selected.

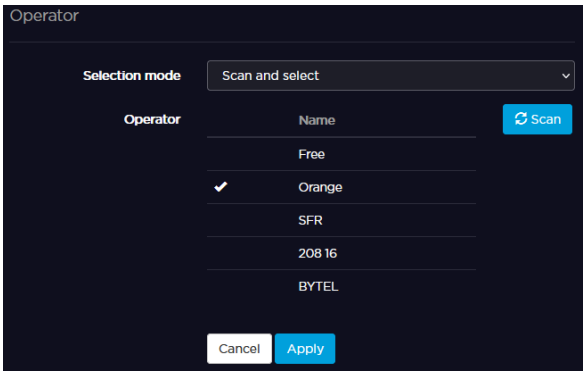
8. Click on ⌄ to scroll down and click on 💾 to save.

From the Web Interface

1. Click on the modem line.
2. Select **Scan and select** in the **Selection mode** scrolling list.
3. Select the operator among the operators listed.

> **Note:**
> Only white operators in the list can be selected.

4. Click on **Apply**.



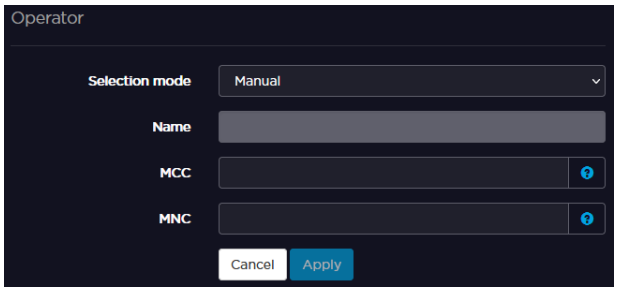
Selecting Manually a Cellular Operator

This option only available on the Web Interface allows to set the MCC (Mobile Country Code) and MNC (Mobile Network Code) manually.

1. Click on the modem line.
2. Select **Manual** in the **Selection mode** scrolling list.
3. Fill the **MCC** and **MNC** fields.

Note:
You can click on to access the lists of MCC and MNC.

4. Click on **Apply**.



Configuring Modem Bands

Note:
If modem bands are not set in automatic mode or of they are not all selected, a star is displayed on the modem line.

From the Unit Panel

Using the Standard mode

1. From the **Home** menu, click on .
2. Click on or to select the modem to configure.
3. Click on the line of the modem to be configured.
4. Click on to configure the modem.
5. Click on the **Frequency Bands** field.
6. Define the **Network Mode** field and choose:
   - Auto
   - 4G Only
   - 3G Only
7. Click on the **Preset** field and choose:
   - All Bands
   - Low Frequency

   Note:
   Low Frequency bands are useful for indoor operations.
8. Click on the **Carrier** field to select an image in the list.
9. Click on to save.

Using the Expert mode

1. From the **Home** menu, click on .
2. Click on or to select the modem to configure.
3. Click on the line of the modem to be configured.
4. Click on to configure the modem.
5. Click on the **Frequency Bands** field.
6. Click on to enable the **Expert Mode**. The **Expert Mode** is selected, all bands are displayed on the screen.
7. Click on to scroll down and display all the 4G and 3G bands.
8. Click on to unselect the different cellular bands. The green dots turn to grey.
9. Click on to scroll down and click on to save.

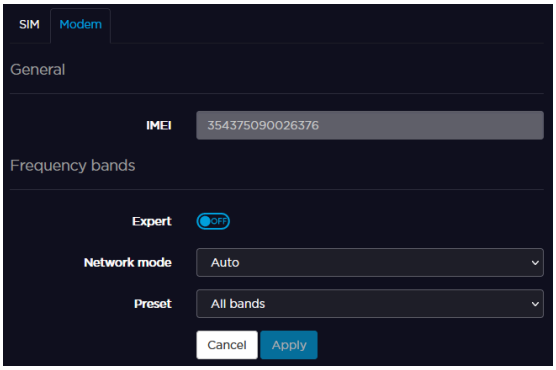
From the Web Interface

Using the Standard mode

1. Click on to configure the cellular bands.
2. Click on the **Modem** tab.
3. Define the **Network Mode** field and choose:
   - Auto
   - 4G Only
   - 3G Only
4. Click on the **Preset** field and choose:
   - All Bands
   - Low Frequency

> **Note:**
> Low Frequency bands are useful for indoor operations.

5. Click on **Apply**.



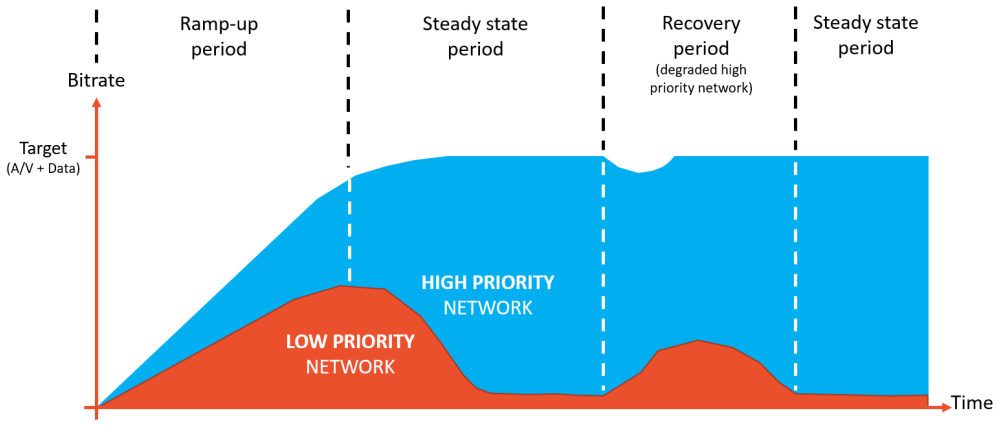
Using the Expert mode

1. Click on  to configure the cellular bands.
2. Click on the **Modem** tab.
3. Click on  to enable the **Expert Mode**.
   The button turns into  and all the cellular bands appear on the screen.
4. Click on  to unselect the different cellular bands. The green dots turn to grey.
5. Click on **Apply**.

Managing Priorities of Network Links

You can decide of a priority level (High or Low) for each network link used for Live or Forward operations.

These low and high priorities are managed as shown on the diagram below:



- For Live:
  - Both high and low priority links are used as long as the bitrate target set in the Live profile is not been reached.
  - Once the bitrate target is reached, high priority links are mainly used.
- For Forward:
  - Both high and low priority links are used as long as the bitrate target is lower than 1Mbps.
  - When the bitrate target is lower than, low priority links are mainly used.

By default, each network link is a set as a high priority link.

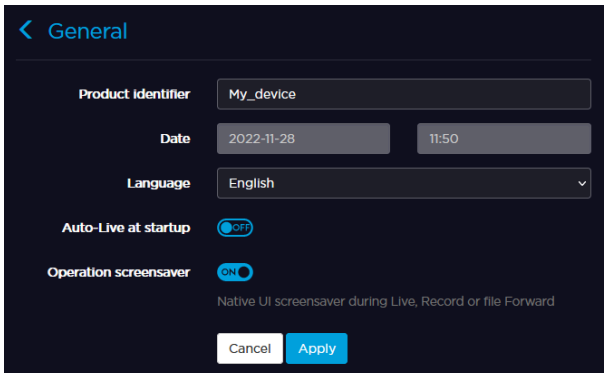
This setting can be changed, either from the unit panel or from the Web Interface, before starting an operation or while the operation is in progress:

- From the Web Interface, click on the gauge icon to select High () or Low () priority.

- From the unit panel, select the priority level when configuring network links (see chapter Configuring an Ethernet Interface).

Configuration

The following settings are related to this general menu.



Configuring the Unit Name

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **General**.
4. Click on the **Product Identifier** field.
5. Use the keyboard to enter an ID (up to 15 characters).
6. Click on to confirm.

From the Web Interface

1. From the Web Interface, click on **Settings > General**.
2. In the **Product Identifier** field, enter an ID (up to 15 characters).
3. Click on **Apply**.

Configuring the Time and Date

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **General**.
4. Click on the **Date** field.

5. Set the Time and date.

> **Note:**
> The Time and Date format is set to: YYYY-MM-DD HH:MM.

From the Web Interface

1. From the Web Interface, click on **Settings > General**.
2. Click on the **Date** and/or **Time** field to change it as required.
3. Click on **Apply**.

Selecting the Language

Supported languages are English, French, Spanish, Portuguese and Chinese.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **General**.
4. Click on the **Language** field.
5. Click on the language required.

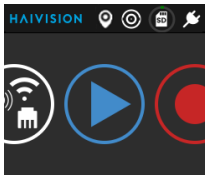
From the Web Interface

1. From the Web Interface, click on **Settings > General**.
2. Select the language.
3. Click on **Apply**.

Locating the Unit

This option is available only if the external GPS module (AW-OT-GPE) is connected to the unit.

If the external GPS module is connected to the unit, the location icon appears on the top of the screen.



Enabling / Disabling Auto-Live at Startup

This option allows you to start a Live automatically once the unit is connected to a StreamHub or a Manager and once there is a video source (Pattern, SDI or HDMI).

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **General**.
4. Click on to scroll down.
5. Click on to enable and on to disable **Auto-live at startup**.
   An icon appears on the top bar of the screen when **Auto-live at startup** is enabled.

From the Web Interface

1. From the Web Interface, click on **Settings General** .
2. Click on to enable or on to disable Auto-live at startup.
3. Click on **Apply**.

Enabling / Disabling Screensaver

This option allows to display a screensaver during a Live, a Record or a Forward.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **General**.
4. Click on to scroll down.
5. Click on to enable and on to disable Operation screensaver.

When this option is enabled, a moving screen appears during a Live, a Record or a Forward after 2 minutes of inactivity. Touching the screen do not interrupt the operation in process. It shows the screen displayed before the screensaver.

From the Web Interface

1. From the Web Interface, click on **Settings General** .
2. Click on to enable or on to disable **Operation screensaver**.
3. Click on **Apply**.

Selecting the Video Source

You can select amongst:

- Auto
- SDI input
- HDMI input - SD (PAL/NTSC) standard is not supported
- Pattern (Internal Pattern Generator)

Note:

- When selecting the Pattern generator as a source, you can select the pattern shape amongst color circles, color bars or a black pattern.
- You can also select amongst the following standards: 720p50, 720p59.84, 720p60, 1080p25, 1080p29.97, 1080i59.94, 1080i60, 1080p50, 1080p59.94 1080p60.
- When the Auto mode is selected (default mode), the following rules are applied:

SDI input presence	HDMI input presence	Selected input
Yes	No	SDI
No	Yes	HDMI
Yes	Yes	SDI

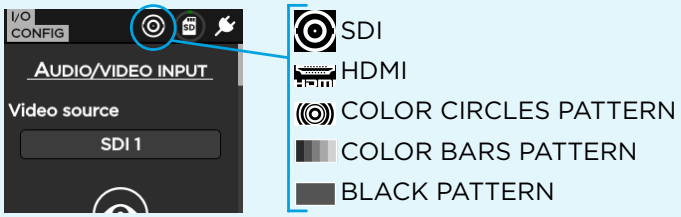
From the Unit Panel

1. From the **Home** menu, click on .
2. Click on .
   The current source is displayed.
3. Click on the **Video Source** field to select another source.
4. Select the expected source.

Note:

When selecting **Pattern**, the **Pattern Shape** and the **Pattern Standard** fields appear.

On the upper part of the screen, an icon indicates the selected source:



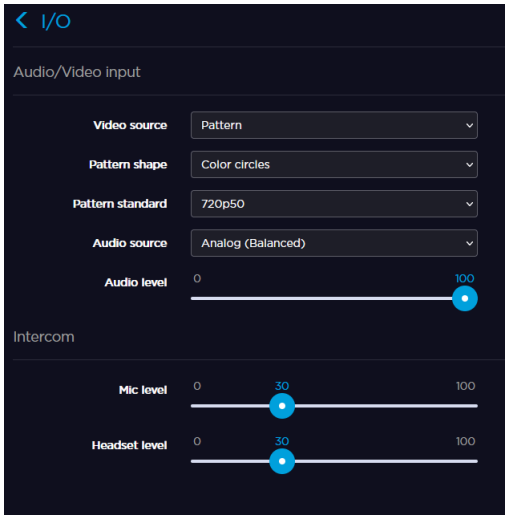
You can preview the selected video source.

5. Click on and on to preview the video.

From the Web Interface

You can access to the video source configuration by clicking on the icon on the top bar of the Web Interface.

1. From the Web Interface, click on **Settings > I/O**.
2. From the scrolling list, select the source:
   - Auto
   - SDI
   - HDMI
   - Pattern



Note:

- If Pattern is selected, you need to define the shape and the resolution to be used.
- If SDI, HDMI or Auto is selected, the video resolution is automatically detected.

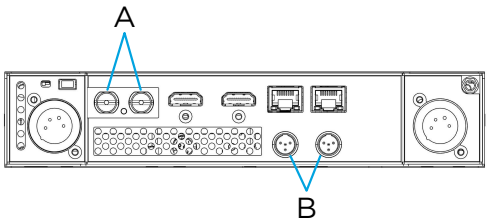
Selecting the Audio Source

You can select amongst 2 options:

- From video:

  When using the SDI or HDMI inputs (A), the audio is embedded in the video source.
- Analog (Balanced):

  When analog audio inputs (B) are used to connect to an analog audio source.



From the Unit Panel

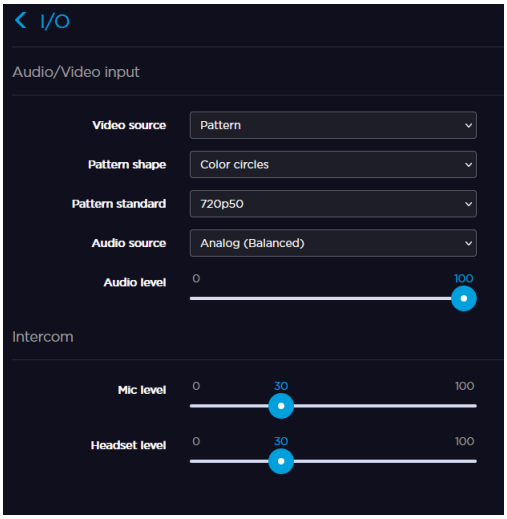
1. From the Home menu, click on .
2. Click on .
3. Click on .
   The current source is displayed.
4. Click on the **Audio source** field to select another source.
5. Select the expected source.
6. Click on or to adjust the analog input level.

> **Note:**
> • 0% is for audio muted.
> • 100% is for the max applicable gain.

From the Web Interface

1. From the Web Interface, click on **Settings > I/O**.
2. From the scrolling list, select the audio source amongst 2 options:
   • From video
   • Analog (Balanced)
3. When the audio source is analog, move the **Audio level** cursor to adjust it.

> **Note:**
> • 0% is for audio muted.
> • 100% is the max applicable gain.


I/O
Audio/Video input
Video source
Pattern
Pattern shape
Color circles
Pattern standard
720p50
Audio source
Analog (Balanced)
Audio level
0
100
Intercom
Mic level
0
30
100
Headset level
0
30
100

Adding and configuring a Live Profile

A **Live Profile** is a set of audio and video settings to fit with specific broadcasting requirements. Live Profiles can be configured from either the Web Interface or on the Unit Front Panel.
The unit is delivered with default Live Profiles:

- DEFAULT
- LOW DELAY
- HQUALITY 10s

Recommendations when configuring a Live Profile:

Broadcast over SST mode	For CBR, enter a value within the 500ms - 10s range. For VBR, enter a value within the 800ms - 10s range.		
Bitrate Control mode	CBR mode for streaming over managed networks. VBR mode for streaming over unmanaged networks.		
Resolution	As source for an encoding in the same resolution as source. Dynamic when the resolution is adapted to available bitrate (only for H.264)		
Live Bitrate (static resolution as source)	Video Resolution	Bitrate Range	
		H.265 / HEVC	H.264/AVC
	1080p 50/59.94/60	600 kbps - 20 Mbps	3 Mbps - 20 Mbps
	1080p 25/29.97/30	600 kbps - 20 Mbps	1.8 Mbps - 20 Mbps
	1080i 50/59.94/60	300 kbps - 20 Mbps	1.8 Mbps - 20 Mbps
	720p 50/59.94/60	300 kbps - 20 Mbps	1.4 Mbps - 20 Mbps
	SD (PAL or NTSC)	200 kbps - 20 Mbps	0.5 Mbps - 20 Mbps
Live Bitrate (dynamic resolution)	1080p 50/59.94/60	-	200 Kbps - 20 Mbps
	1080p 25/29.97/30		
	1080i 50/59.94/60		
	720p 50/59.94/60		
	SD (PAL or NTSC)		
Manual Resolution	1920 x 1080p 50/59.94/60	-	3 Mbps - 20 Mbps
	1920 x 1080p 25/29.97/30	-	1.8 Mbps - 20 Mbps
	1280 x 720p	-	1.4 Mbps - 20 Mbps
	854 x 480p	-	0.5 Mbps - 20 Mbps
	640 x 360p	-	0.4 Mbps - 20 Mbps
	426 x 240p	-	0.3 Mbps - 20 Mbps
Audio Settings	Channel Layout	Bitrate Range	
	1 x MONO	32 kbps - 256 kbps	
	1 x STEREO	64 kbps - 512 kbps	
	2 x MONO	64 kbps - 512 kbps	
	2 x STEREO	128 kbps - 1024 kbps	

Configuring a Broadcast Live Profile

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on .
4. Click on **Profile Name** field.
5. Use the keyboard to enter the new profile name.
6. Click on to confirm the new profile name.
7. Click on the **Application** field and choose between **Bcast (SRT)** or **Bcast (SST)**.
8. Click on the **End-to-End Latency** field to adjust the latency.
9. Click on and on the **BGAN profile** field to select a BGAN profile if required.

> **Note:**
> For SST Live Profile only. A **BGAN profile** must be defined. To define a BGAN Profile, see Configuring a BGAN Profile.

10. Click on the **Encoder Type** field and choose between H.264/AVC and H.265/HEVC.

> **Note:**
> For Rack300 only.

11. Click on the **Bitrate Control** field to select between VBR and CBR.

> **Note:**
> For SST Live Profile only.

12. Click on the **Capped Bitrate** field to enter a new bitrate.
13. In the Audio settings, click on the **Channel Layout** field and choose between: 1x Mono, 1x Stereo, 2x Mono, 2x Stereo, 4x Mono, 4x Stereo, 8x Mono, No audio
14. Click on the **Bitrate** field to adjust bitrate.
15. Click on and **ADVANCED +**.

> **Note:**
> Advanced parameters are available only if the **Encoder Type** is H.264.

16. Click on to enable **I and P frames only**.
17. Click on to enable **Manual Resolution**.
18. Click on the **Resolution** field to display the resolution list.

> **Note:**
> Only downscaling or same resolution are supported.

19. Click on the resolution that you want to apply.
20. Click on to save the new Broadcast Live Profile settings.

From the Web Interface

1. Click on **Settings > Live**.
2. Click on 

.
3. Enter a profile name in the **Profile Name** field.
4. Select the **Application** (Broadcast SST or Broadcast SRT).
5. In the **Network** settings, enter an **End-to-End Latency** according to the Bitrate Control used (CBR or VBR).
6. Select a **BGAN profile** in the drop-down list if needed.

   Note:
   For SST Live Profile only. A **BGAN profile** must be defined. To define a BGAN Profile, see Configuring a BGAN Profile.

7. In the **Video** settings:
   a. Select the **Encoder Type** (H.264/AVC or H.265/HEVC).

      Note:
      For Rack300 only.

   b. Select the **Bitrate Control** mode (VBR or CBR).

      Note:
      For SST Live Profile only.

   c. Enter a **Capped Bitrate**.
8. Fill in the **Audio** settings.
   a. Select the audio **Channel Layout**.
   b. Enter the total audio bitrate.
9. Click on **Advanced**.

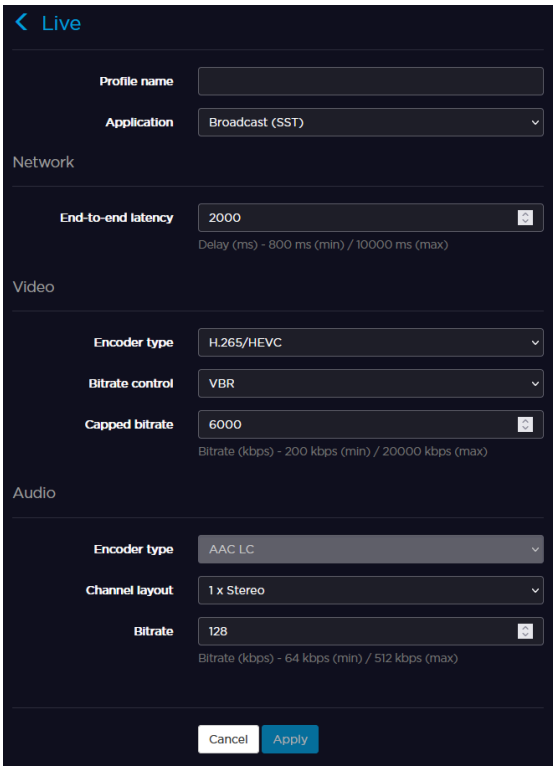
   Note:
   Advanced parameters are available only if the **Encoder Type** is H.264.

10. Click on 

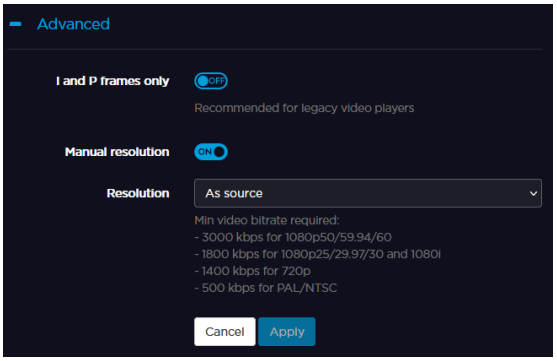
to enable **I and P frames only**.
11. Click on 

to enable **Manual Resolution**.

12. Click on the **Resolution** field to select the resolution to apply.



13. Click on **Apply**.



Configuring a Video Return Live Profile

From the Unit Panel

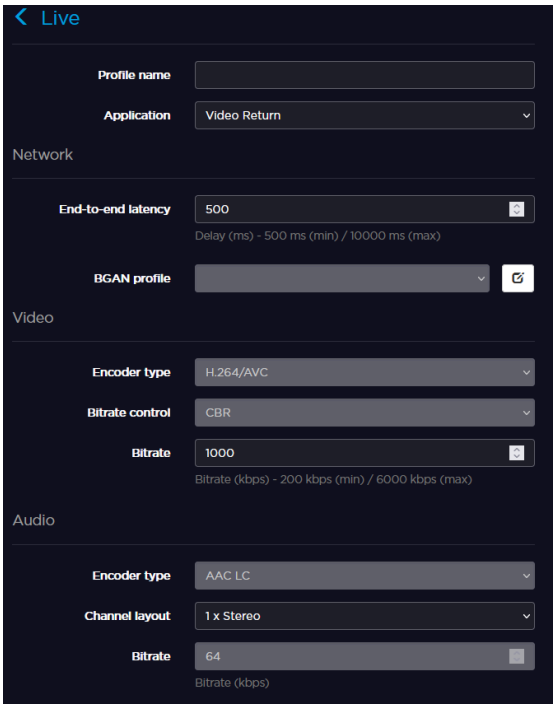
1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on .
4. Click on **Profile Name** field.
5. Use the keyboard to enter the new profile name.
6. Click on to confirm the new profile name.
7. Click on the **Application** field and choose **Video Return**.
8. Click on the **End-to-End Latency** field to adjust the latency.

9. Click on the **Bitrate** field to enter a new bitrate.
10. In the Audio settings, click on the **Channel Layout** field and choose between:
    - 1x Mono
    - 1x Stereo
11. Click on  and **ADVANCED +**.
12. Click on  to enable **Optimisation for LiveGuest**.
13. Click on  to enable **Manual Resolution**.
14. Click on the **Resolution** field to display the resolution list.
15. Click on the resolution you want to apply.
16. Click on  to save the new Video Return Live Profile settings.

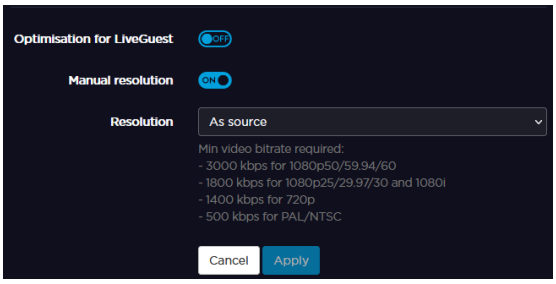
From the Web Interface

1. Click on **Settings > Live**.
2. Click on  .
3. Enter a profile name in the **Profile Name** field.
4. Set the **Application** to Video Return.
5. In the **Network** settings, enter an **End-to-End Latency**.
6. In the **Video** settings, set a bitrate.
7. In the **Audio** settings, select a **Channel Layout** between:
    - 1x Mono
    - 1x Stereo
8. Click on **Advanced**.
9. Click on  to enable **Optimisation for LiveGuest**.
10. Click on  to enable **Manual Resolution**.

11. Click on the **Resolution** field to select the resolution to apply.



12. Click on **Apply**.



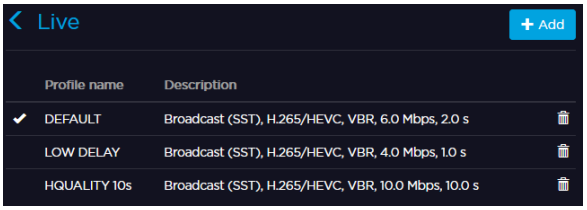
Deleting a Live Profile

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on to display the profile to delete.
4. Long press the profile to delete.
5. Click on **YES** to confirm the profile deletion.

From the Web Interface

1. Click on **Settings > Live**.
2. Double click the trash button ( ).



Note:
To reorder the profiles, drag and drop them.

Selecting a Live Profile

From the Unit Panel

You can select a Live Profile from the Unit Panel when you are starting a Live.

See the chapter Starting a Live.

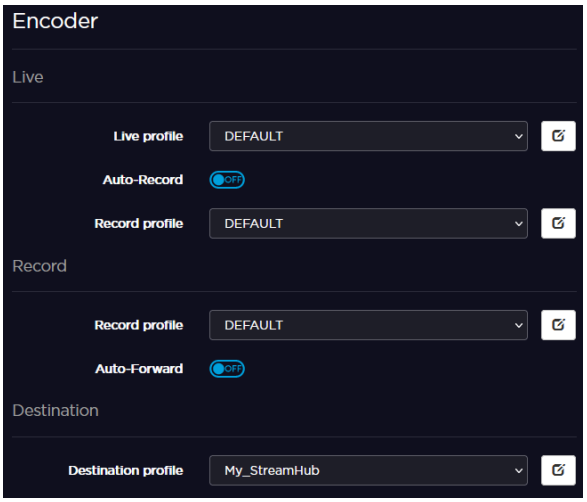
From the Web Interface

1. Click the icon.
   The encoder current settings are displayed.
2. Select a pre-defined **Live Profile**.
3. Activate **Auto-record** if required.

Note:

- When this option is enabled, a Record starts automatically when a Live is started.
- The record profile used for the **Auto-record** can be different than the one used for a Record.

4. Select a pre-defined **Record Profile**.



Adding and configuring a Record Profile

A **Record Profile** is a set of audio and video settings to fit specific broadcasting requirements. The supported file formats are Transport Stream and MP4.

Record Profiles can be configured from either the web interface or on the unit front panel.

The unit is delivered with a DEFAULT Record Profile.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on .
4. Click on the **Profile Name** field.
5. Use the keyboard to enter the new profile name.
6. Click on to confirm.
7. Click on the **File Format** field and select Transport Stream or MP4 format.
8. Click on to configure the Record Profile settings:
   - Video Settings (**Encoder Type**, **Bitrate**)

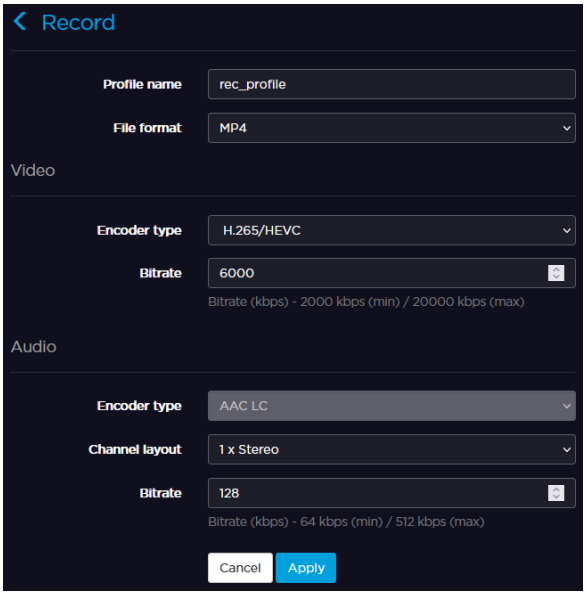
     When recording, the video is encoded in CBR mode with a resolution as source.
   - Audio Settings (**Encoder Type**, **Channel Layout**, **Bitrate**)
9. Click on to save the new Record Profile settings.

From the Web Interface

1. Click on **Settings > Record**.
2. Click on + Add .
3. Enter a profile name in the **Profile Name** field.
4. Choose the **File Format** between Transport Stream and MP4.
5. Choose the video **Encoder Type**.

> **Note:**
> For Rack300 only.

6. Set the video **Bitrate** (within 200kb/s and 20Mb/s).
7. Select the audio **Channel Layout**.
8. Set the total audio **Bitrate**.
9. Click on **Apply**.



Deleting a Record Profile

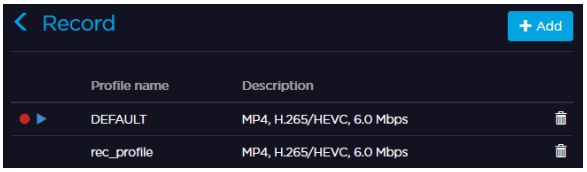
From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on to display the profile to delete.
4. Long press the profile to delete.
5. Click on **YES** to confirm the profile deletion.

From the Web Interface

1. Click on **Settings > Record**.

2. Double click the trash button ( ).



Note:
To reorder the profiles, drag and drop them.

Selecting a Record Profile

You can select different record profiles for:

- Live + Auto-record
- Record only

From the Unit Panel

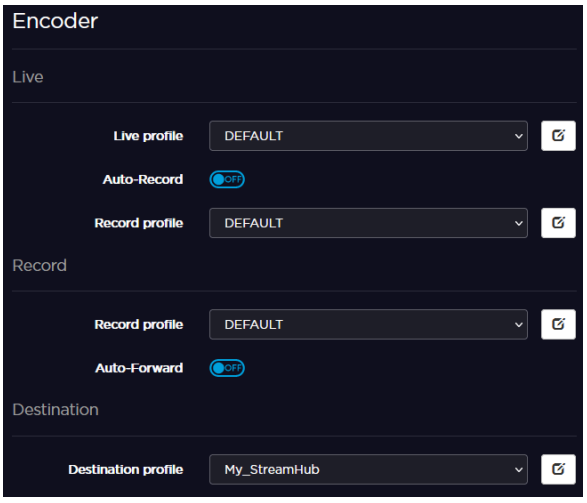
You can select a Record Profile from the Unit Panel when you are starting a Live or a Record.

See the chapter Starting a Record and chapter Starting a Live.

From the Web Interface

1. Click the icon.
   The encoder current settings are displayed.

2. Select a pre-defined **Record Profile**.



3. Activate **Auto-forward** if required.

> **Note:**
>
> - When this option is enabled, a Forward starts automatically when a Live is started.
> - The record profile used for the **Auto-record** can be different than the one used for a Record only.

Adding and Configuring a Destination Profile

A **Destination Profile** is a set of parameters allowing the unit to connect to a StreamHub, a Manager or a SRT Receiver.

StreamHub

From the Unit Panel

1. From the **Home** menu, click on  .
2. Click on  and click on  .
3. Click on  .
4. Click on  to configure the new StreamHub Profile settings:
   - Profile name
   - Type of destination
   - StreamHub IP address or Hostname
   - Input assignment on the StreamHub (Automatic Assignment possible)
   - Auto-connect function (Enabling/Disabling). This connection cannot be established through a BGAN terminal.
   - Port used. By default: 7900
   - Username. By default: aviwest
   - Password. By default: safestreams
   - AES key if required.

   Note:
   These settings may have been changed by the system administrator.
5. Click on  to save the new Destination Profile settings.

   Note:
   To select the newly created Destination Profile, see Selecting a Destination Profile.

From the Web Interface

1. Click on **Settings > Destination**.
2. Click the  button.
3. Enter a **Name** for the Profile.
4. Select StreamHub in the **Type** field.
5. Configure the following parameters:
   - StreamHub IP address or Hostname.
   - Input assignment on the StreamHub (Automatic Assignment possible).
   - Auto-connect function (Enabling/Disabling). This connection cannot be established through a BGAN terminal.
   - Port used. By default: 7900

- Username. By default: aviwest.
- Password. By default: safestreams
- AES key if required.

> **Note:**
> The **Auto-connect** option is selected to connect automatically to a receiver when the unit is powered. This connection cannot be established through a BGAN terminal. To select the newly created Destination Profile, see Selecting a Destination Profile.

6. Click on **Apply**.

Manager

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on .
4. Click on to configure the new Manager Profile settings:
   - Profile name
   - Type of destination
   - Manager IP address or Hostname
   - Auto-connect function (Enabling / Disabling): this connection cannot be established through a BGAN terminal.
   - Port used. By default: 9000
   - Username. By default: username
   - Password (if required). By default: password.

> **Note:**
> These settings may have been changed by the system administrator.

5. Click on to save the new Destination Profile settings.

> **Note:**
> To select the newly created Destination Profile, see Selecting a Destination Profile.

From the Web Interface

1. Click on **Settings > Destination**.
2. Click the + Add button.
3. Enter a **Name** for the Profile.
4. Select Manager in the **Type** field.
5. Configure the following parameters:

- Manager IP address or Hostname.
- Auto-connect function (Enabling / Disabling). This connection cannot be established through a BGAN terminal.
- Port used. By default: 9000
- Username. By default: username
- Password (if required). By default: password
- AES Key if required.

> **Note:**
> The **Auto-connect** option is selected to connect automatically to a receiver when the unit is powered. This connection cannot be established through a BGAN terminal. To select the newly created Destination Profile, see Selecting a Destination Profile.

6. Click on **Apply**.

SRT Receiver

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on .
4. Click on to configure the new SRT Receiver Profile settings:
   - SRT mode (Caller or Listener)
   - Host
   - SRT port
   - Ethernet port
   - Latency
   - SRT Encryption (and passphrase if enabled)
   - Stream ID (in Caller mode only).

> **Note:**
> These settings may have been changed by the system administrator.

5. Click on to save the new Destination Profile settings.

> **Note:**
> To select the newly created Destination Profile, see Selecting a Destination Profile.

From the Web Interface

1. Click on **Settings > Destination**.
2. Click the + Add button.
3. Enter a **Name** for the Profile.

4. Select SRT Receiver in the **Type** field.
5. Configure the following parameters:
   - StreamHub IP address or Hostname.
   - Input assignment on the StreamHub (Automatic Assignment possible).
   - Auto-connect function (Enabling/Disabling). This connection cannot be established through a BGAN terminal.
   - Port used. By default: 7900
   - Username. By default: aviwest.
   - Password. By default: safestreams
   - AES key if required.

> **Note:**
> The **Auto-connect** option is selected to connect automatically to a receiver when the unit is powered. This connection cannot be established through a BGAN terminal. To select the newly created Destination Profile, see Selecting a Destination Profile.

6. Click on **Apply**.

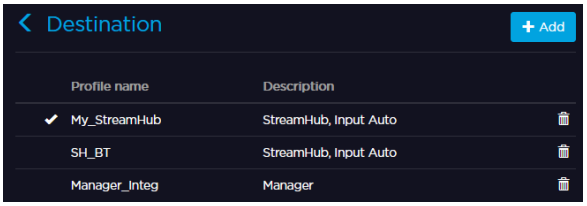
Deleting a Destination Profile

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
   A green dot ( ) indicates the currently selected profile.
3. Click on to display the profile to delete.
4. Long press the profile to delete.
5. Click on **YES** to confirm the profile deletion.

From the Web Interface

1. Click on **Settings > Destination**.
2. Double click the trash button. ( )



> **Note:**
> To reorder the profiles, drag and drop them.

Select a Destination Profile

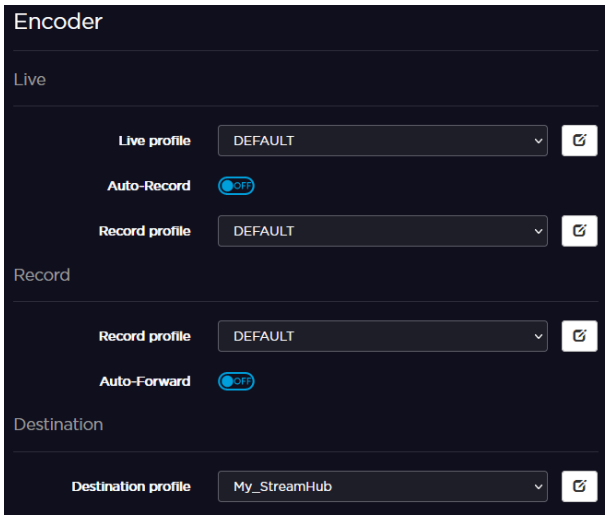
From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on until the profile required is displayed.
   A green dot ( ) indicates the currently selected profile.
4. Click on to select the destination profile.
   A green dot ( ) indicates the newly selected profile.

Note:
For single-encoding mode only. To select a Destination Profile in multi-encoding mode, see chapter Starting a live in Multi-Encoding mode.

From the Web Interface

1. Click the icon.
   The encoder current settings are displayed.
2. Select a pre-defined **Destination Profile**.



Configuring AES encryption

You can decide to encrypt a video during a Live operation, provided the destination server's license includes this option.

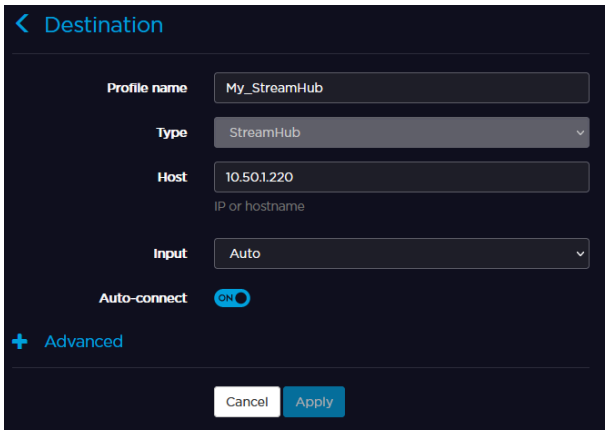
You can enable and disable the video AES encryption from the Unit Panel or the Web Interface.

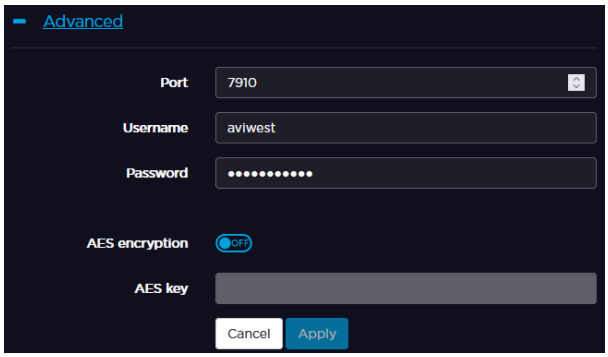
From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on until the profile concerned is displayed.
4. Click on the destination profile.
5. Click on and click on **ADVANCED +**.
6. Click on to display the **AES Encryption** option.
7. Click on to enable it, or on to disable it. If enabled, enter the AES key as defined in the destination server interface (please refer to the Server User Guide).

From the Web Interface

1. Click on **Settings > Destination**.
2. Click on the Destination Profile where the video is sent to.
3. Click on **Advanced**.
4. Click on or to enable or disable the **AES Encryption** function. If enabled, enter the AES key as defined in the destination server interface (please refer to the Server User Guide).





Configuring Forward Settings

The Forward function offers three possibilities:

- Forwarding one or several files saved on a mass-storage device,
- Forwarding all files saved on a mass-storage device,
- Forwarding the latest recorded file.

Note:

Mass storage can be SD cards and USB storage devices.

From the Unit Panel

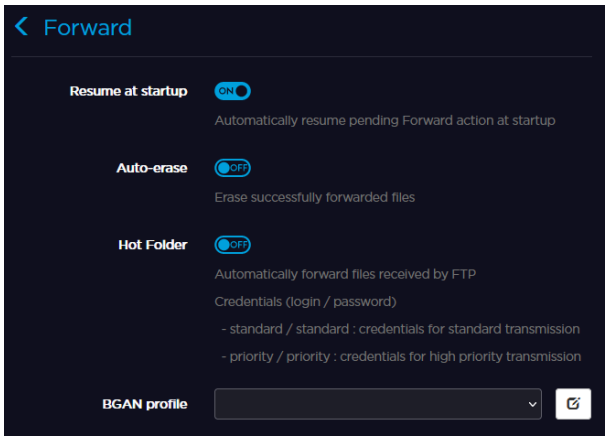
1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on to enable or on to disable the **Resume at Startup**, **Auto-erase**, or/and**Hot Folder** options.

Note:

- **Resume at Startup**: If any forward is still in progress when the unit is turned off, it is resumed when the unit is started up.
- **Auto-erase**: All successfully forwarded filed are automaticallt deleted once forward is completed.
- **Hot Folder**: Files coming from a camera are automatically transmitted via an ftp server.

From the Web Interface

1. Click on **Settings > Forward**.
2. Click on or to enable or disable the **Resume at Startup**, **Auto-erase** or/and **Hot Folder** options.
3. Select a BGAN Profile in the drop-down list if required.



Selecting a Mission

To receive missions, the selected destination profile must be a Manager supporting the Story Centric Workflow. See Selecting a Destination Profile.

From the Unit Panel

1. Click on  or  to see the different missions.
2. Click on  to have more information on the mission.
   This screen appears.
3. Click on  to go back to the previous screen.
4. Click on the mission to select it. It turns to orange during the loading.

The home screen appears with the  icon on the top bar. Click on this icon for more information.

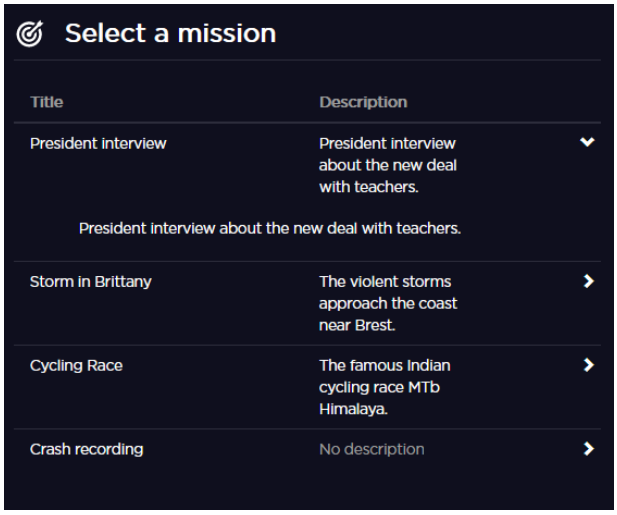
Changing the mission

1. Click on  .
2. Click on  .
3. Click on a mission title to display information.
4. Click on  to go back to the previous screen.
5. Click on  to change the mission.
   A green dot () indicates the new selected mission.

From the Web Interface

1. A list of missions appears on screen. The missions loading may take few seconds.

2. Click on  to see the description of the mission.

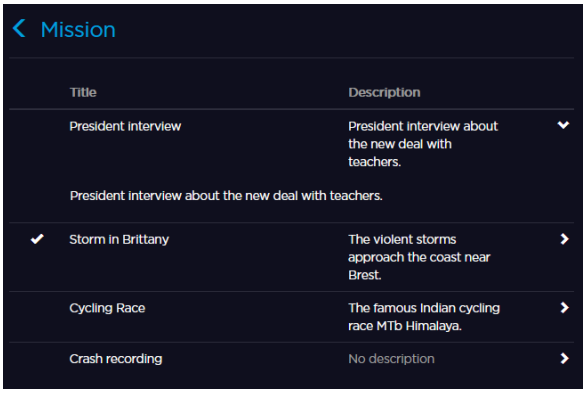


3. Click on a mission title to select it.

Changing the mission

1. Click on **Settings > Missions** or on the  icon in the top bar.

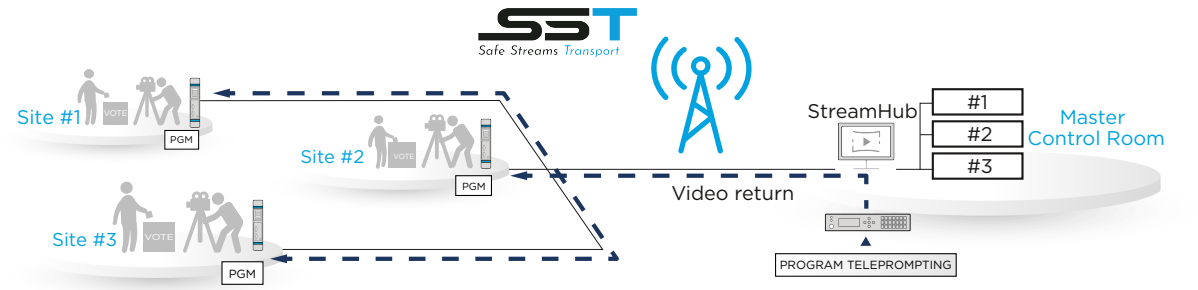
2. Click on another mission to select it.



Setting a Video Return

The **Video Return** feature allows Field Units operating on sites to receive live feeds, such as a program currently on air or a teleprompting from the Media Control Room even if a Live is running or not.

The unit must be connected to a StreamHub to allow the Video Return feature. Please refer to the StreamHub user guide for detailed information.



Emitting a Video Return

From the Unit Panel

1. Set a Live Profile with the application parameter set to Video Return (see chapter Adding and Configuring a Live Profile).
2. Start a Live with the profile previously created (see chapter Starting a Live).

From the Web Interface

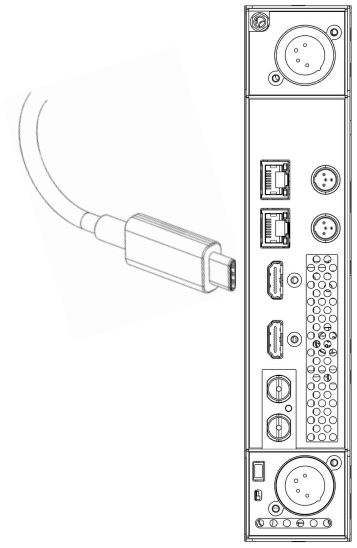
1. Set a Live Profile with the application parameter set to Video Return (see chapter Adding and Configuring a Live Profile).
2. Start a Live with the profile previously created (see chapter Starting a Live).

Receiving a Video Return

From the Unit Panel

Check that the video return icon appears on the top bar of the screen. If it appears, the unit is receiving a video stream.

1. Connect a screen to the HDMI port of the unit.



From the Web Interface

The video return icon ( ) on the top bar indicates that the unit is receiving a Video Return.

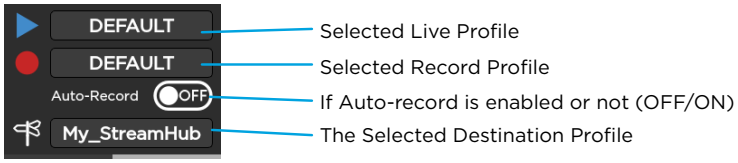
Starting a Live

You can start a live manually or you can enable the **Auto-live at startup**. See chapter Enabling / Disabling Auto-live at Startup.

From the Unit Panel

1. From the **Home** menu, click on .
   The video preview appears on screen and the live profile selected is reminded.

   When clicking on or , the Live menu reminds some information.



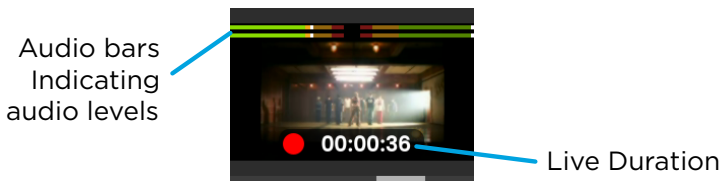
   You can modify settings before starting the Live action.

   - To select another Live profile:
     a. Click on the field.
     b. Click on another Live profile.
   - To select another Record profile:
     a. Click on the field.
     b. Click on another Record profile.
   - To modify the Auto-record mode: Click on the OFF or ON button.

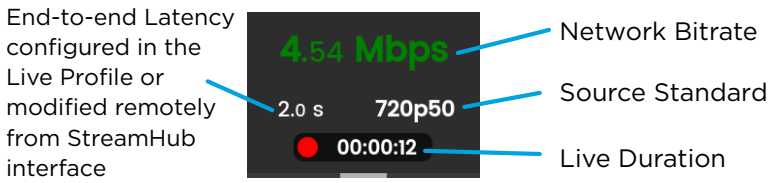
   > **Note:**
   > Simultaneous Live and Record in H.264 1080p50/59.94/60 not supported.

   - To select another Destination profile:
     a. Click on the field.
     b. Click on another Destination profile.

2. Click on to start the Live.
   The video preview appears on screen.



3. Click on to display some indications about the Live action:



Note:
See StreamHub User Guide to set another delay during Live operation.

In case of a Live and simultaneous Record, another screen appears alternately:

Note:
To stop the Live:

a. Click on .
b. Click on .
c. Click on to confirm.

To stop the Record:

a. Click on .
b. Click on .
c. Click on to confirm.

From the Web Interface

1. Click on to check that the unit settings are configured and selected as required:
   - Live profile
   - Auto-record mode (OFF / ON)
   - Record profile
   - Auto-forward option (OFF / ON)
   - Destination profile

Note:
If you enable the **Auto-record** option, the video file is automatically recorded during the live.

2. Click on  to start the Live.

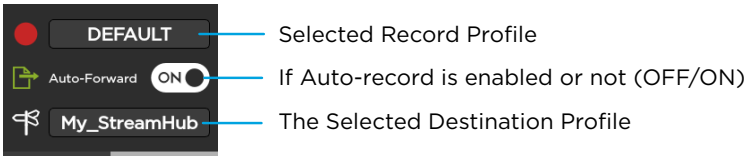
> **Note:**
> To stop the Live:
> a. Click on  . A  popup appears.
> b. Click on  or the  icon to stop the video transmisson.

Starting a Record

Note:
Make sure that you inserted a SD card before starting a record. This SD card must not be in read only (or locked) mode.

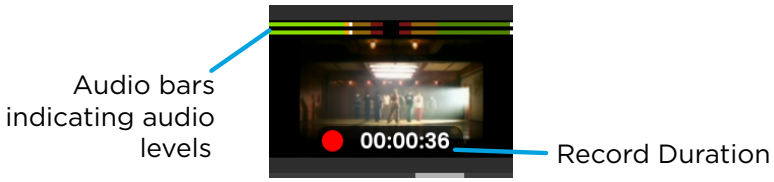
From the Unit Panel

1. From the **Home** menu, click on .
   The video preview appears on screen and the record profile selected is reminded.
   When clicking on or , the Record menu reminds some information.

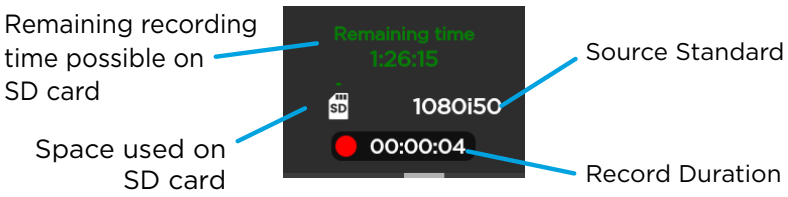


   - To select another Record profile:
     a. Click on the field.
     b. Click on another Record profile.
   - To modify the Auto-forward mode: Click on the or button option.
   - To select another Destination profile:
     a. Click on the field.
     b. Click on another Destination profile.

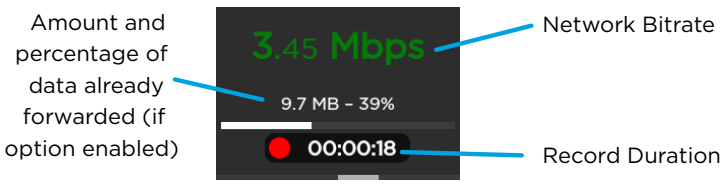
2. Click on to start the Record.
   The video preview appears on screen.



3. Click on to display some indications about the record action:



In case of a Record and simultaneous Forward, another screen appears when you click on the unit panel:



Note:
To stop the Record:

a. Click on .

b. Click on .

c. Click on to confirm.

To stop the Forward:

a. Click on .

b. Click on .

c. Click on to confirm.

From the Web Interface

1. Click on to check that the unit settings are configured and selected as required:
   - Record profile
   - Auto-forward option (OFF / ON)
   - Destination profile

Note:
If you enable the **Auto-forward** option, the video file is automatically forwarded during the record.

2. Click on to start the Record.

Note:
To stop the Record:

a. Click on . A Confirm popup appears.

b. Click on Confirm or the icon to stop the video recording.

To stop the Forward:

a. Click on . A Confirm popup appears.

b. Click on Confirm or the icon to stop the video transmission.

Starting a Forward

Make sure that a mass storage such as an SD card or a USB memory tick is connected to the unit.

You can choose to forward:

- The last record
- A selection of records
- All files

From the Unit Panel

From the **Home** menu, click on .
The forward interface appears:

- To forward the last record
  a. Click on .

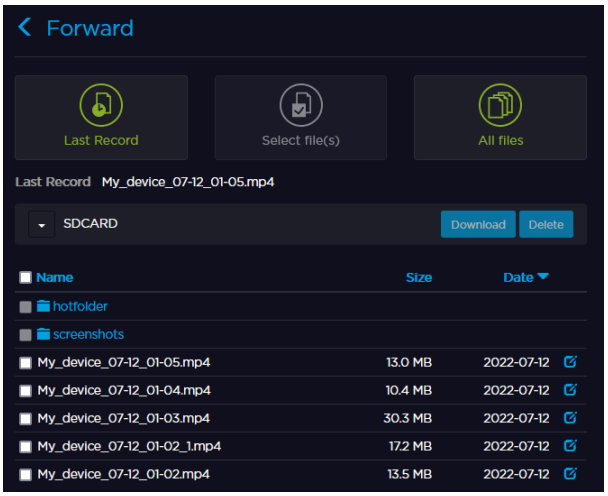
  The forward is starting.
- To forward some specific files
  a. Click on and on .
  b. Click on to open the SD card content.
  c. Click on the files that you want to forward. Use to scroll down if required
  d. Click on to start Forward

  The forward is starting.
- To forward all files
  a. Click on to scroll.
  b. Click on .

  The forward is starting.

From the Web Interface

Click on . The Forward interface appears.

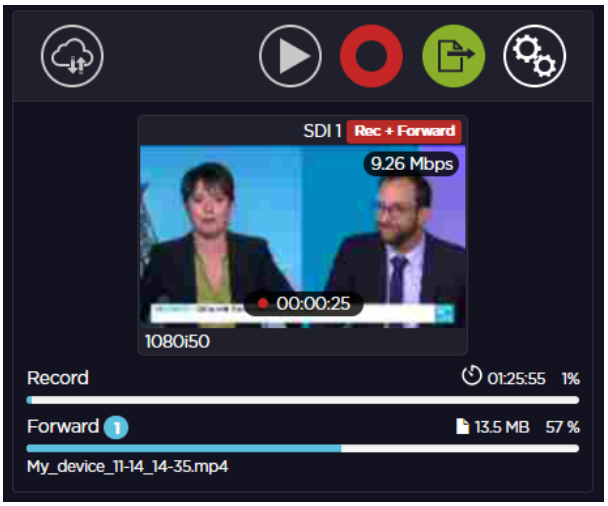


a. To forward the last record, click on .

b. To forward some specific files, select the files and click on .

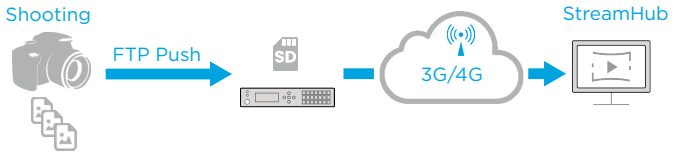
c. To forward all files, click on .

The forward in progress is indicated on the screen.



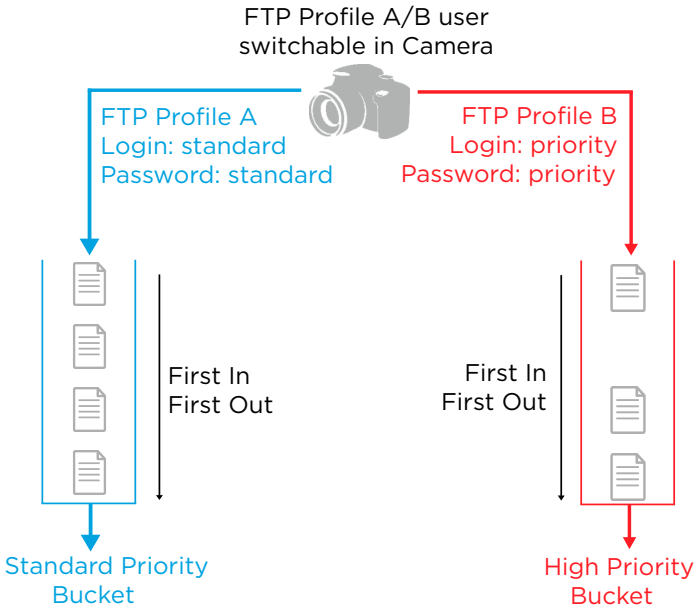
Transmitting Files via the Hot Folder

The Hot Folder function enables you to transmit files (eg. photos) automatically over unmanaged networks wherever the action is taking place. This function uses an ftp push to transmit files following the FIFO method (First In, First Out). You can enable or disable the function as required.



Note:

- You can manage the hot folder content on the SD card as you wish.
- Please refer to the procedure about deleting files in the chapter "Deleting file(s) from the SD card".
- Files can be transmitted according to 2 priority levels (Standard or Priority), as defined on the device that transmits files.



Enabling / Disabling the Hot Folder Function

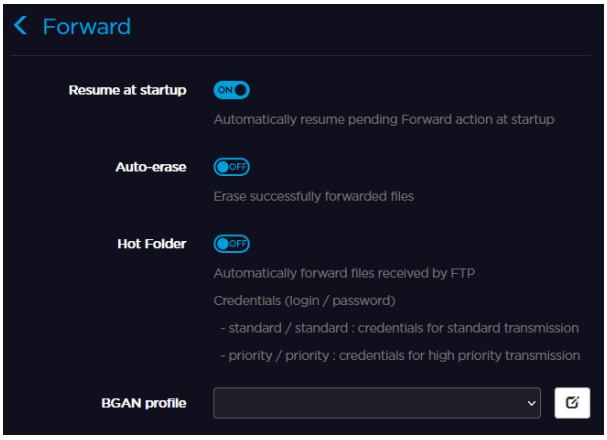
From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and on .
3. Click on to enable or on to disable the Hot Folder option.

From the Web Interface

1. Click on **Settings > Forward**.

2. Click on  or  to enable or disable the **Hot Folder** function.



Once the **Hot Folder** function is enabled, the icon appears in the upper bar.

Files are automatically forwarded following the priority levels defined on the camera (standard or high priority).

When the file transmission is starting, the forward action can be seen on screen.

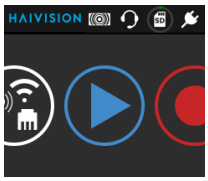
Using the Intercom

The Intercom function enables you to communicate with the Master Control Room, using a microphone or a headset connected to the unit.

You can manage the Intercom function from the StreamHub interface.

1. Connect the headset, or microphone to the unit.
2. From the StreamHub interface, start the Intercom session (please refer to the StreamHub User Guide).
   The intercom session is indicated by the icon :

On the Unit Front Panel



On the Unit Web Interface

Note:
You can adjust intercom settings from the Web Interface by clicking on the icon in the top bar.

From the Unit Panel

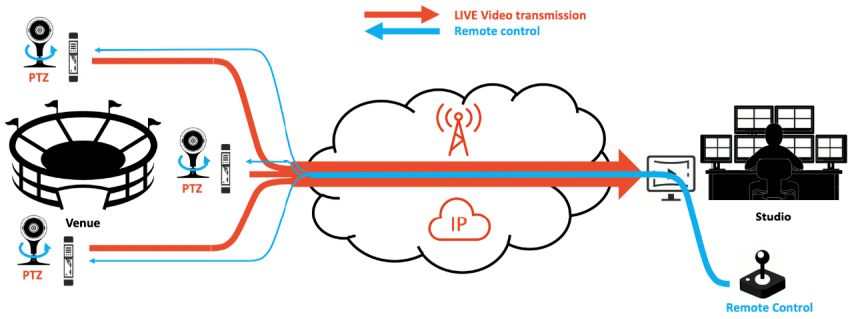
1. From the **Home** menu, click on .
2. Click on .
3. Click on to move to settings Micro and/or Headset levels.
4. Click on or to move the cursor.

From the Web Interface

1. Click on **Settings > I/O**.
2. Move the **Mic level** and the **Headset level** cursors to adjust the microphone and headset volumes.

Configuring a Data Bridge

When configured in Data Bridge mode, the unit can be used as a Data Bridge that profides access to Internet from the field, or access to devices connected to the transmitter LAN from the studio (such as remote control of camera).



In this configuration, Live operation is still allowed, but Record and Forward operations are no more available. Up to 10 client devices can connect simultaneously to the unit's local network. The Ethernet interface shall be configured in Gateway mode, see chapter Configuring an Ethernet Interface.

To configure a unit as a Data Bridge, you must select the server that should be used (Destination Profile), and then enable the Data Bridge mode. The selected server automatically allocates a license token to each Data Bridge that you enable.

From the Unit Panel

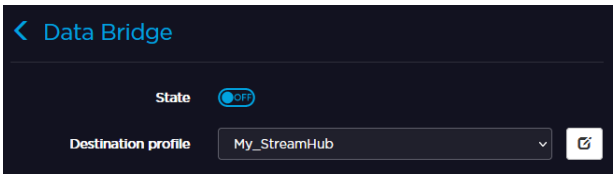
1. From the **Home** menu, click on .
2. Click on the Destination field ( ).
   A green dot ( ) indicates the currently selected profile.
3. Click on to scroll down the list of Destination Profiles.
4. Select a Destination Profile.
5. Click on to enable or on to disable the option.

Once the Data Bridge is configured, the icon appears in the upper bar.

In case the connection is not possible, the icon appears in the upper bar.

From the Web Interface

1. From the Web Interface, click on .
2. Select the **Destination Profile** from the scrolling list.
3. Click on OFF or ON to enable or disable Data Bridge.



Once the Data Bridge is configured, the button turns into and an icon appears in the upper bar.

In case the connection is not possible, the icon appears in the upper bar.

Locking a Field Unit from Manager Interface

You can lock / unlock a field unit from the Manager interface.

Please refer to the Manager User Guide to get the procedure to follow.

Once the field unit is locked, you cannot:

- add/delete/modify Destination profiles,
- add/delete/modify Live profiles,
- add/delete/modify Record profiles,
- add/delete/modify BGAN profiles,
- change/select a new Destination profile,
- import/export a configuration in the unit,
- restore the factory settings,
- upgrade the Firmware.

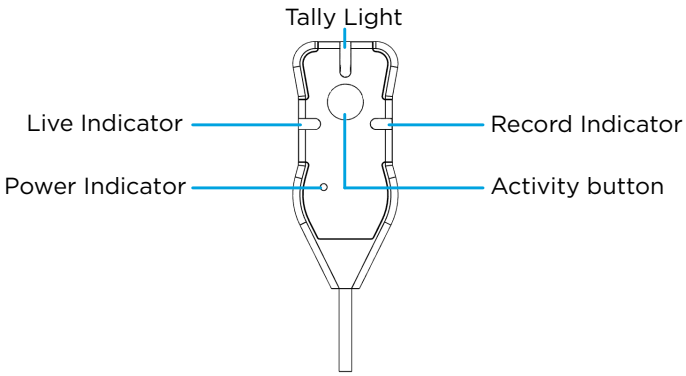
Note:
The unit remain locked if:

- the connection to the Manager is lost,
- the unit is rebooted,
- the unit is powered off/on.

Using the Remote Control

Connect the remote control to the unit thanks to the USB cable.

Note:
When the Remote control is connected, the Power indicator switch on and the other indicators blink for 3 seconds.



When no action is running

To start a Live	Short press the activity button.
To start a Record	Long press the activity button.

When an action is running

To stop all actions	Long press the activity button

Indicators Meaning

Power Indicator

Fixed Green	The remote control is connected to the unit.
Off	The remote control is not connected to the unit.

Live Indicator

Flashing Blue	The Live operation is starting.
Fixed Blue	The Live is in progress.
Off	No Live action is running.

Record Indicator

Flashing Red	The Record operation is starting.
Fixed Red	The Record is in progress.
Off	No Record action is running.

Tally Light Indicator

Fixed Red	The Unit is ON Air.
Off	The Unit is not ON Air.

Servicing

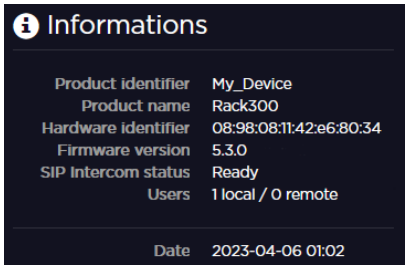
Getting the Unit Information

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
   The Device Info screen appears:
3. Use to scroll down information.

From the Web Interface

Click the icon to display the unit information:



You can access the unit information:

- The **Product Identifier**
- The **Product Name**
- The **Hardware ID**
- The **Firmware Version**
- The **SIP Intercom Status**
  - **Ready** if the product is registered to a Manager or connected to a StreamHub supporting SIP intercom.
  - **In call** if a call is in progress with Manager or a StreamHub.
- The **Users** connected to the Web Interface
  - Local: Locally on the LAN (Ethernet or Wifi).
  - Remote: From a StreamHub (up to 4 users).

Locking / Unlocking the Unit Panel

To lock or unlock the unit panel, long press the screen, more than 2 seconds.

The screen can be locked from:

• the Home screen,
• the Live screens,
• the Recording screens,
• the Forwarding view,
• the Screensaver screen.

Locked screen when an operation is in progress:

Locked screen when no operation is running:

Getting the IMEI/IMSI/ICCID numbers

Connect a Quad CellLink to the unit to enable cellular networks. See Connecting a Quad CellLink chapter.

- **IMEI (International Mobile Equipment Identity)**

  The IMEI number is a unique 15 digit number that identifies a cellular device within a mobile network. It identifies the modem embedded within the unit.

- **IMSI (International Mobile Subscriber Identity)**

  The IMSI number is a unique 25 digit number that identifies a mobile subscriber. It identifies the SIM card inserted in the unit.

- **ICCID (Integrated Circuit Card Identifier)**

  The ICCID number is a unique 19 to 22 digit number that identifies a SIM card. It identifies the chip of the SIM card inserted in the unit.

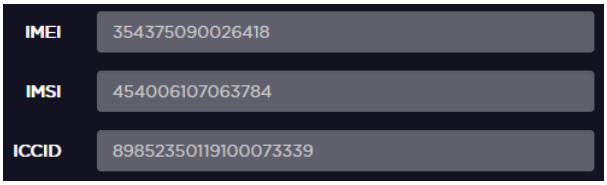
For legal purposes, you may need to register the IMEI, IMSI and/or ICCID numbers of the modem(s) used.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on to scroll the list of modems.
3. Long press on the modem for which you require the IMEI, the IMSI and/or the ICCID number.
   The IMEI, IMSI and ICCID numbers are displayed:

From the Web Interface

Click on on a modem line to display the modem details.



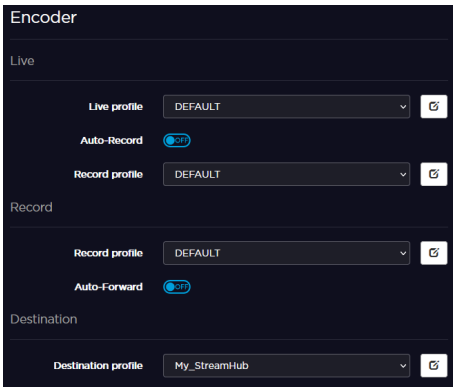
The modem IMEI, IMSI and ICCID numbers are indicated.

Testing a Live using the Pattern Mode

Once you have set a Destination Profile, you can configure a Live encoding using a Pattern and test communication between the unit and the destination StreamHub.

1. Click on to access the unit's settings.

2. Select a destination profile.



3. From the Web Interface, click on **Settings > I/O**.

4. From the scrolling list, select **Pattern** as a **Video Source** and the expected video standard.

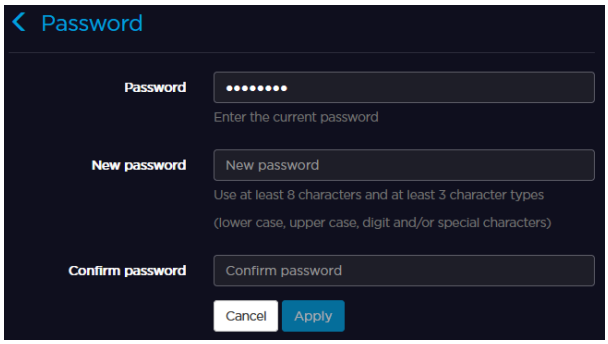
5. Select the **Pattern Shape** between:
   - Color circles pattern
   - Color bars pattern
   - Black pattern
6. Select the **Pattern Standard**.
7. Click on to start a Live.
   A graph appears on the unit's Web Interface.

Changing the Web Interface Password

1. Click on **Admin > Password**.
2. Enter the current password.
3. Enter the new password.

4. Confirm the new password.

5. Click on **Apply**.



Updating the Firmware

Note:
The Firmware can be updated from the Manager (v3.3.0 and higher)

From the Unit Panel

Make sure you have uploaded the .fw firmware file from the customer portal to an SD card or USB key.

1. Connect the USB key or insert the SD card that contains the new firmware (.fw file).
2. From the **Home** menu, click on .
3. Click on and click on .
4. Click on to scroll down and click on **Firmware**.

From the Web Interface

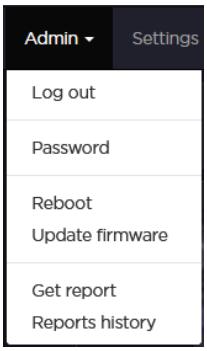
1. Click on **Admin > Update Firmware**.
2. Click on the **Browse** button to select the .fw software file that you saved.
3. Click on the **Update** button.
4. Follow the instructions on screen.

Note:
The update may take several minutes, depending if it is a major update or not. Make sure that no action is made meanwhile. At the end of the process, a message appears to reboot or switch off the unit, depending on the firmware version uploaded.

Rebooting the Unit

You can reboot the unit from the Web Interface only.

1. Click on **Admin > Reboot**.



2. Click on **Yes** to confirm.

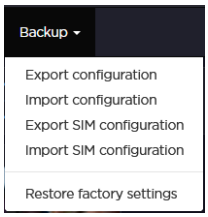
Restoring Factory Settings

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **Configuration**.
4. Click on **Factory settings**.
5. Click on **Yes**.

From the Web Interface

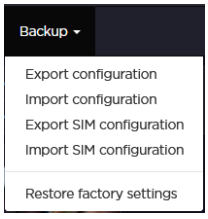
1. Click on **Backup > Factory settings**.



2. Click on **Yes** to confirm restoration.

Exporting the Unit Configuration

Click on **Backup > Export Config**.



Note:
An .awj file is exported in the download space. This file can be easily imported later, once factory settings have been restored.

Importing the Unit Configuration

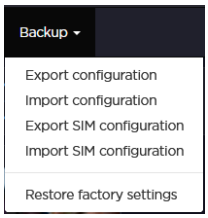
Note:
You can import the configuration from the Manager (v3.3.0 and higher).

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **Configuration**.
4. Click on **Import from file**.
5. Select the .awj file to be imported from the SD card or the USB memory key.

From the Web Interface

1. Click on **Backup > Import**.
2. Click on **Browse**, and select the .awj file to be imported.
3. Click on **Import**.



From a USB Key

The product supports its automatic reconfiguration at startup or upon detection of the insertion USB key containing specific configuration files in its root directory.

For an overall configuration: the specific file must be named *autoconfig.awj*.

For a configuration related to network only: the specific file must be named *networkconfig.awj* or *networkconfig.conf*. If both are present, only *networkconfig.conf* will be taken into account.

For a Destination Profile auto-configuration: the specific file must be named *destinationconfig.awj*.

Note:
If *autoconfig.awj*, *networkconfig.xxx* and *destinationconfig.awj* are present, only *autoconfig.awj* will be used.

The reconfiguration is rejected when:

- the file format is not valid.
- the file is not applicable for the product (e.g. Air configuration file applied on Pro3).
- the product is in operation (Live, Forward, Record).

Note:
When the unit is reconfigured, the Activity LED blinks 3 times in blue. When reconfiguration is rejected, the Activity LED blinks 3 times in red.

Unlocking a SIM Card

You can unlock a SIM card from the Unit Panel only.

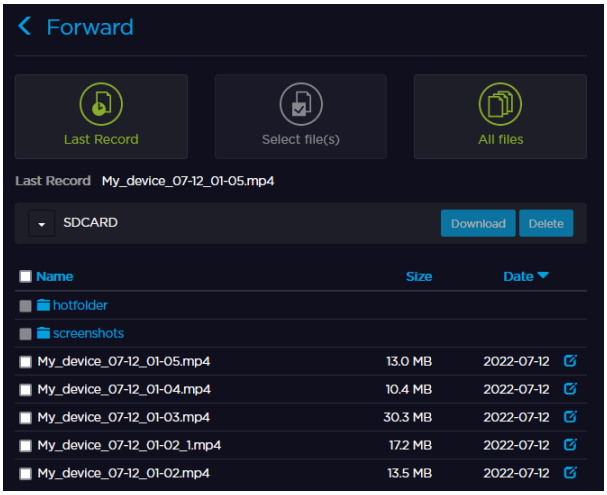
1. From the **Home** menu, click on .
2. Click on or to select the concerned Modem.
3. Click on the modem line indicating "Need pin".
4. Click on .
   The screen reminds the number of attempts left to enter the PIN code to unlock the SIM card.
5. Click on **OK** to activate the keyboard.
6. Enter the PIN code and click on to confirm.

Note:
In case you exceeded the number of attempts allowed, a message is displayed. The SIM card needs to be unlocked by entering the PUK code using another device such as a phone, a tablet...

Downloading Files from the SD Card

From the Web Interface

1. Click on . The Forward interface appears.



2. Select the files to be downloaded.
3. Click on Download.

From an FTP Client

SD card files can be downloaded from an FTP client with the following identification parameters:

- login : sdcard
- password : sdcard

Note:
Files can also be uploaded to the SD card via an FTP client.

Deleting file(s) from the SD card

Note:
Make sure that the SD card is not locked.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **Delete**.

4. Click on files you want to delete and click on .
5. Click on **Yes** to confirm.

From the Web Interface

1. On the menu bar, click on the SD card icon .

> **Note:**
> If the Hot Folder function is enabled, the icon looks like .

2. You can:
   - Select one or several files to delete.
     a. Click the files to be deleted.
     b. Click on Delete .
   - Select all files.
     a. Click on the **Name** box. All files are selected.
     b. Click on Delete .
   - Select files stored in the Hot Folder.
     a. Click on **Hot Folder**.
     b. Enter priority or standard folder to select files to be deleted.

Formatting the SD Card

> **Note:**
> This operation can be done only from the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **Format**.
4. Choose between FAT32 or exFAT.
5. Click on **Yes** to confirm.
6. Click on **OK** to complete the operation.

Troubleshooting

Getting a Report File

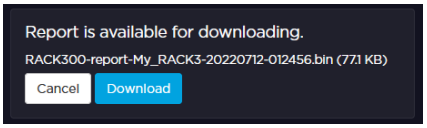
Haivision's support team may ask for a Report File that you can send by email to help them in investigating about unexpected behaviors.

From the Unit Panel

1. From the **Home** menu, click on .
2. Click on and click on .
3. Click on **Report**.
   A report is generated. It is accessible from the Web Interface or from the SD card (if present).
4. From the Web Interface, click on **Admin > Reports History**.
5. Click on the report that you want to download.
   A report file (.bin) is generated.
6. Attach the .bin file to an email in which you explain the issue you are facing, and send it to Haivision's support team. See contact address at the end of this manual.

From the Web Interface

1. Click on **Admin > Get Report**.
2. Click on **Download**.



   A report file (.bin) is generated.
3. Attach the .bin file to an email in which you explain the issue you are facing and send it to Haivision's support team. See contact addresses at the end of this manual.

Exporting a Report File from the History Folder

1. Click on **Admin > Reports History**.

   Note:
   The last 5 reports are listed.

2. Click on the report that you want to download.
   A report file (.bin) is generated.
3. Attach the .bin file to an email in which you explain the issue you are facing and send it to Haivision's support team. See contact addresses at the end of this manual.

Alarm Messages

Message	Solutions
Read-only SD card	Unlock the SD card inserted into the unit.
Receiver not defined	Please see Adding and Configuring a Destination Profile.
Bad Video synchronization	• Check that the video cable(s) are properly connected to the camera and to the unit. • On the Web Interface, check that the video input standard is properly identified.
Connection to receiver Failed	Edit the profile to connect to the receiver in the settings of the unit: select another channel or select the Auto-connect option (see Adding and Configuring a Destination Profile).
Receiver not available	Call the MCR. Make sure that the StreamHub is turned on and reachable.
No interface connected	Check that the network interfaces of the unit are enabled. Check that the SIM card is identified and that the modem is properly connected to network. Check the Ethernet cable.
Failed to connect to the server	The bandwidth is not sufficient to connect to the server. Wrong IP address or port set for the StreamHub. Check that destination profile settings are properly configured.
Authentification failed	Check username and password entered for the Destination profile used. Make sure to use a StreamHub for which AES is not activated.
Connection to server failed (max devices reached)	There is no more availble channel on the server to connect a unit. Select another receiver (see Adding and Configuring a Destination Profile).
Connection to server failed (Invalid license) / (Expired license) / (No license found)	The license applied on the server is invalid, expired or there is no locense applied on the server. You cannot connect the unit to this server until a valid license is applied on the server.
Connection to Input closed by server	The unit has been disconnected from the server by the user of the StreamHub.
Connection Lost	The unit has been disconnected from the Internet Network. Check your internet connection.
Connection to Input not authorized for this product	The unit tries to connect to a receiver's channel not available for this type of product. Edit the profile to connect to the receiver in the settings of the unit: select another channel (see Adding and Configuring a Destination Profile).
Error : check server profile	The server profile is not configured properly (see Adding and Configuring a Destination Profile).

Specifications

Video

		Rack300	Rack200 & Rack300
Standards	HD	1920x1080p 25/29.97/30/50/59.94/60 fps 1920x1080i 50/59.94/60 fps 1280x720p 50/59.94/60 fps	
	SD	720x576i (PAL) 720x480i (NTSC)	
Compression	Codec	H.265/HEVC	H.264/AVC
	Profile	Main	High
	Level	Up to 4.1	Up to 4.2
	Bit depth	8-bit	
	Chroma format	4:2:0	
Bitrate mode		VBR (Live) CBR (Live, Record)	
		H.265/HEVC	H.264/AVC
Live Bitrate (static resolution as source)	1080p 50/59.94/60	600kbps – 20Mbps	3Mbps – 20Mbps
	1080p 25/29.97/30	600kbps – 20Mbps	1.8Mbps – 20Mbps
	1080i 50/59.94/60	300kbps – 20Mbps	1.8Mbps – 20Mbps
	720p 50/59.94/60	300kbps – 20Mbps	1.4Mbps – 20Mbps
	SD (PAL or NTSC)	200kbps – 20Mbps	0.5Mbps – 20Mbps
Live Bitrate (dynamic resolution)	1080p 50/59.94/60	-	200kbps - 20Mbps
	1080p 25/29.97/30	-	
	1080i 50/59.94/60	-	
	720p 50/59.94/60	-	
	SD (PAL or NTSC)	-	
Live Bitrate (downscaled resolution)	1920x1080p 50/59.94/60	-	3Mbps – 20Mbps
	1920x1080p 25/29.97/30	-	1.8Mbps – 20Mbps
	1280x720p	-	1.4Mbps – 20Mbps
	854x480p	-	0.5Mbps – 20Mbps
	640x340p	-	0.4Mbps – 20Mbps
	426x240p	-	0.3Mbps – 20Mbps
Record File Format	MP4 Transport Stream		
Record Bitrate	2Mbps - 20Mbps		
Input/Output	1x 3G-SDI input 1x 3G-SDI output: video source loop through (SDI input/ HDMI input/ Pattern) 1x HDMI 1.4 input: HD only 1x HDMI 1.4 output: Video Return		

Audio

Channels	Up to 4 channels (SDI input) Up to 2 channels (HDMI input)
Codec	AAC-LC
Bitrate	32 to 256 kbps per channel
Mode	Dual Mono, Dual Stereo (SDI Only)
Input/Output	1x 3G-SDI input embedded audio 1x 3G-SDI output (loop though) embedded audio 1x HDMI 1.4 input

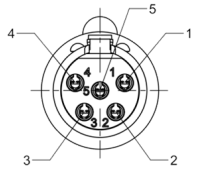
Video Return

Video	Codec	H.264/AVC 4:2:0 8 bit
	Resolution	720p50/60 1080p25/30 1080p50/60
	Bitrate Mode	CBR
	Bitrate	200Kbps to 6Mbps
Audio	Codec	AAC-LC
	Mode	Mono and Stereo
	Bitrate	32Kbps (for Mono) 64Kbps (for Stereo)

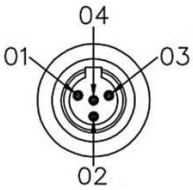
Networks

Ethernet	2x Links
Latency (end-to-end)	User configurable • Broadcast over SST mode ◦ CBR: 500ms to 10s ◦ VBR: 800ms to 10s • Broadcast over SRT mode (Ethernet only)

Audio / Video

3G-SDI Input 3G-SDI Output	Connector type: BNC connector Impedance: 75 Ohms Complies with SMPTE 259M, SMPTE 292M and SMPTE424M level A and level B-DS (limited to one SDI stream for level B-DS) Supported Embedded Audio at 48kHz
HDMI Input HDMI Output	Connector type: Type A Complies with HDMI 1.4 Fully Shielded HDMI cable is mandatory
Analog Audio Input / Output	Connector type: Mini-XLR (Male, 5 pins) Mates with • Rean/Neutrik RT5FCT-B (Female, 5 pins) • Switchcraft Mini-XLR TA5F Series (Female, 5 pins) Pins (Mating plugs) 1. Common GND 2. Balanced Input Hot (+) 3. Balanced Input Cold (-) 4. Microphone Input 5. Headphone/Line Output  Balanced channel input impedance: 59.6 kΩ Balanced channel input level (nominal): 4 dBu (1.23 Vp) Balanced channel input level (0dB Full Scale): 18 dBu (8.7 Vp) Balanced channel input level (max): 19.4 dBu (10.2 Vp) HeadPhone Dynamic Range (20 kHz Filter): 101 dB HeadPhone THD+N: -70 dB max HeadPhone Load Impedance: 16 Ω or higher HeadPhone Output Power: 55.8 mW max (16 Ω) Line full scale output voltage: 0.97 V_{RMS} Line load impedance (typical): 10 kΩ Microphone Bias: 2 V Microphone Maximum Level : 0.5 V_{RMS}

Return IFB Channels

Intercom Headset	Connector type: Mini-XLR (Male, 4 pins) (Signal comply with Apple and Samsung headsets) Mates with: • Rean/Neutrik RT4FCT-B (Female, 4 pins) • Switchcraft Mini-XLR TA4F Series (Female, 4 pins) Pins (Mating plugs) 1. Common GND 2. Microphone Input 3. Headphone Left Output 4. Headphone Right Output  Headphone Dynamic Range (20 kHz Filter): 100 dB Headphone THD+N: -70 dB max Headphone Load Impedance: 16 Ω or higher HeadPhone Output Power: 2 x 55 mW max (16 Ω) HeadPhone Full Scale output voltage: 0.65 V_{RMS} Microphone Bias : 2.5 V Microphone Maximum Level : 0.5 V_{RMS}

LAN / WAN

Ethernet	Two Ethernet ports 10/100/1000 Base-T RJ45 connector Green LED indicates link Orange LED indicated speed (on: 1000BT, off:10/100BT)

Storage

SD Card	SD slot, class10 recommended (FAT32, exFAT)
USB	One USB 3.0 Type A connector

Power

Dual DC Input	Input type: XLR 4 pin male connector Automatic under-voltage protection at 11.8 Volts Automatic over-voltage protection at 24 Volts
AC/DC Adapter	Manufacturer: EDAC POWER ELEC. Model: EA10951E-180 DC Output: 18V / 5A max AC Input: 100-240V-2.5A,50-60Hz

Hardware Specifications

	Rack200	**Rack300**
Power Supply	Dual DC input 18 V nominal, 5A Max	
Power Consumption	30 W max From 24 to 28 W typical	
Weight	1,22 kg	1,32 kg
Dimensions	22,2 x 4,4 x 11,5 cm 8.7" x 1.6" x 4.3"	
Operating temperature	-5°C to 40°C 23°F to 104°F 0°C to 40°C for the DC adapter 32°F to 104°F for the DC adapter	
Storage temperature	-20°C to 80°C -4°F to 176°F	
Air Flow	From the Front Panel to the Rear Panel	

Device disposal

Dispose of this product in a separate waste collection facility according to the requirements in force in your country. Please check the regulation in force in your country. In the European Union, please refer to the WEEE Directive.

Contact Us

General Support	North America (Toll-Free) **1 (877) 224-5445** International **1 (514) 334-5445** *and choose from the following:* Sales - 1, Cloud Services - 3, Support - 4
Managed Services	U.S. and International 1 (512) 220-3463
Fax	1 (514) 334-0088
Support Portal	https://support.haivision.com
Product Information	info@haivision.com