Air Series

User Guide

Document Version: v4.1
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.

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.

⚠ Electronic and Radio Interference

- To avoid interferences with electronic devices contained in vehicles, keep the unit away from the vehicle's dashboard.
- When connected to wireless networks (3G/4G/5G or Wi-Fi), the unit emits microwaves that can interfere with other electronic devices.
- The operation of this equipment in a residential environment could cause radio interference.

⚠ Safety Precautions

- Do not use the unit in any place where the use of mobile phones is usually banned: airplanes, hospitals, and areas with potentially explosive atmosphere (e.g. gas stations, repair shops, fuel or chemical storage areas).

⚠ Coin Battery Safety Precautions

- Lithium battery (ref: BR1225A)
- There is a risk of explosion if the battery is replaced by an incorrect type.

⚠ Health Precautions

Operating the unit is not recomended for:

- People with electronic implants (e.g. pacemakers, insulin pumps, implanted pulse generators, hearing aids).
- Pregnant women, old people, children, teenagers and people suffering from epilepsy.

⚠ 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.
- For safety reason, the battery must not be opened at any moment. Please refer to the manufacturer datasheet for detailed information.

⚠ Battery Safety Precautions

- Do not expose to water, fire or excessive heat.
- Do not crush, disassemble, puncture or short circuit the connector terminals.
- Charge the battery before initial use.

- Charge only with a SMBus compliant level 2 or 3 charger.
- Caution: Risk of explosion if the battery is replaced by an incorrect type.

Operating Environment

- The unit is designed to be used indoors and outdoors.
- Choose a weather-protected location to avoid any damage due to ambient humidity, moisture, extreme temperatures or long exposure to direct sunlight.
- Choose a clean, dust free and well-ventilated area.
- Remove any dust that could obstruct air inlets and outlets.
- Allow at least 5cm free airspace at the front, back and on each side of the unit to ensure adequate cooling. And do not obstruct the air inlets and outlets.
- 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 (with internal battery): 0°C to 45°C
    - Ambient operating temperature (with external DC adapter): 0°C to 40°C
    - Charging temperature: 0°C to 40°C
    - 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.

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.

- Important notice for Japan territory:
  - Using the 5GHz band (W52) outdoors is prohibited by radio regulations.
  - Turn off Wi-Fi capabilities or select only 2.4GHz band when the device is used outdoors.

Product Presentation

Overview

The Air Series is a range of encoders & transmitters allowing video professionals to broadcast news, sports of field events from any location around the world. This solution supports video live transmission, record and forward over unmanaged networks - such as 3G/4G-LTE and 5G cellular network, LAN/WAN or public internet.

Designed in a very compact ruggedized enclosure along with long live internal rechargeable battery and a large set of audio and video interfaces, the Air Series supports the best state-of-the-art H.265/HEVC and H.264/AVC hardware encoder by offering premium video quality with less data usage and low end-to-end latency.

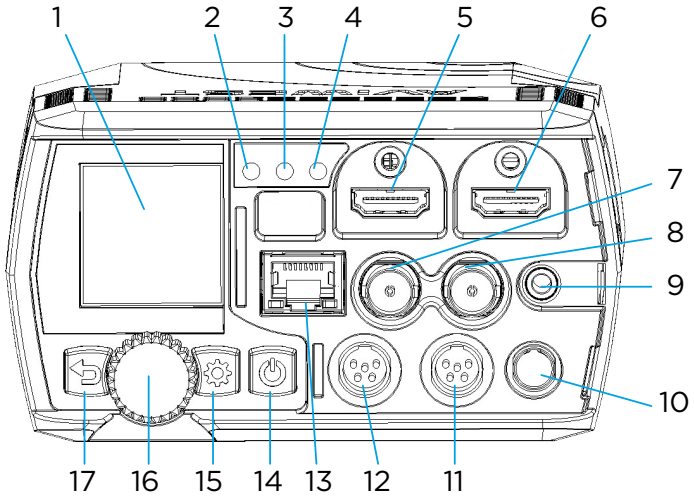
On the transmission side, the solution features up to 2 embedded cellular 3G/4G/5G modems and antennas plus additional extension links (internat Wi-Fi, Ethernet and USB ports) combined and controlled by our SST (Safe Streams Transport) technology. This award-winning technology powered by Haivision is an intelligent IP bonding stack offering a set of powerful contribution network protocols. It ensures the delivery of video even in the midst of unpredictable and unmanaged networks conditions by:

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

The Air series is organized as illustrated in the following chart.

	Air200	Air220	Air220-5G	Air320e-5G
H.265/HEVC encoder				●
H.264/AVC encoder	●	●	●	●
Embedded Cellular Modems		3G/4G	3G/4G/5G	3G/4G/5G
4 extension links (Wi-Fi, Ethernet, USB)	●	●	●	●

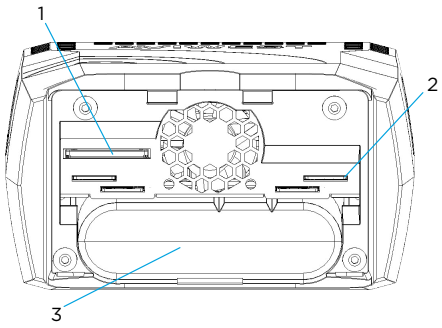
Front Panel



1	Screen	13	Ethernet
2	Activity Indicator	14	Power Button • To turn on the unit, press . • To turn off the unit, press for 3 seconds.
3	Link Indicator		
4	Battery Level Indicator		
5	HDMI 1.4 Output		
6	HDMI 1.4 Input	15	Settings Button
7	3G-SDI Output	16	Selection Wheel • Turn to scroll within the menus and lists. • Short press to confirm a choice. • Long press to start actiond (ie. starting a forward).
8	3G-SDI Input		
9	Intercom mini-jack (Headphone, micro)		
10	DC IN (19V nominal)		
11	Analog Audio input/output (right) (channel 2)		
12	Analog Audio input/output (left) (channel 1)	17	Back Button

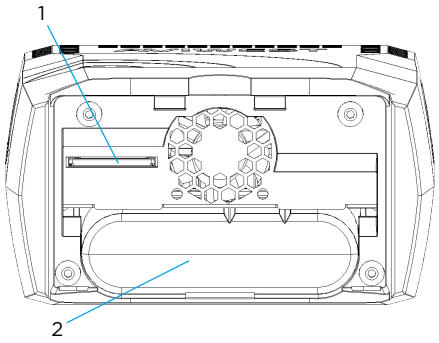
Rear Panel

Figure 1. Air220 / Air220-5G / Air320e-5G Models



1	SD Card Slot
2	Battery
3	4 x Micro SIM Card Slots Organized as 2 Banks for Each Internal Cellular Modem

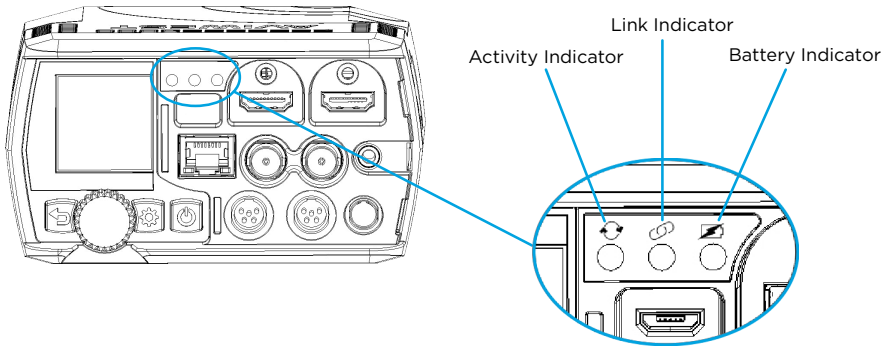
Figure 2. Air200



1	SD Card Slot
2	Battery

Left and Right Sides

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.

Battery Indicator

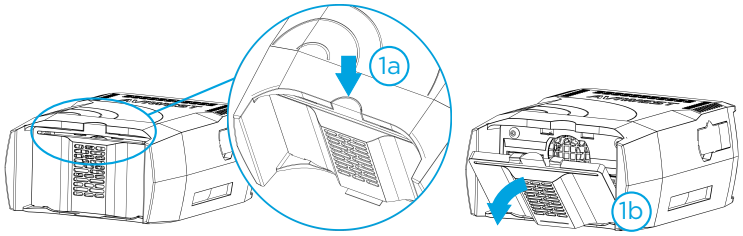
Status	Meaning
Fixed Blue	The unit is powered by external source with a fully charged battery.
Fixed Green	The unit is powered by external source and charging internal battery.
Fixed Yellow	The unit is powered by external source without battery charge.
Off	The unit is operating on battery only.

Note:
The unit is charging only when turned off. Make sure that you turned it off before charging the battery.

Installation

Installing the Unit

1. Remove the rear panel.
   a. Press on top.
   b. Remove the cover.



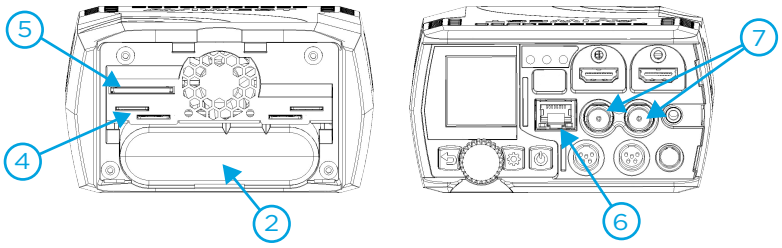
2. Install the battery onto the unit (if not already installed).
3. Connect the AC/DC adapter and power cable.

> **Note:**
> To disconnect, pull the self-latching mechanism to release the connector.

4. Insert a SD card (inf not already installed). It is recommended to use a FAT32 or exFAT formats and class 10 SD card.
5. Insert a SIM card in a slot (not applicable for Air200).

> **Note:**
> Slots 1A and 1B are coupled to Modem 1. While slots 2A and 2B are coupled to Modem 2.

6. For Ethernet transmission, connect the Ethernet cable. DHCP is the default operating mode.
7. Connect Video Input cables (SDI or HDMI).
8. Make sure that ventilation grids of the unit are not obstructed.



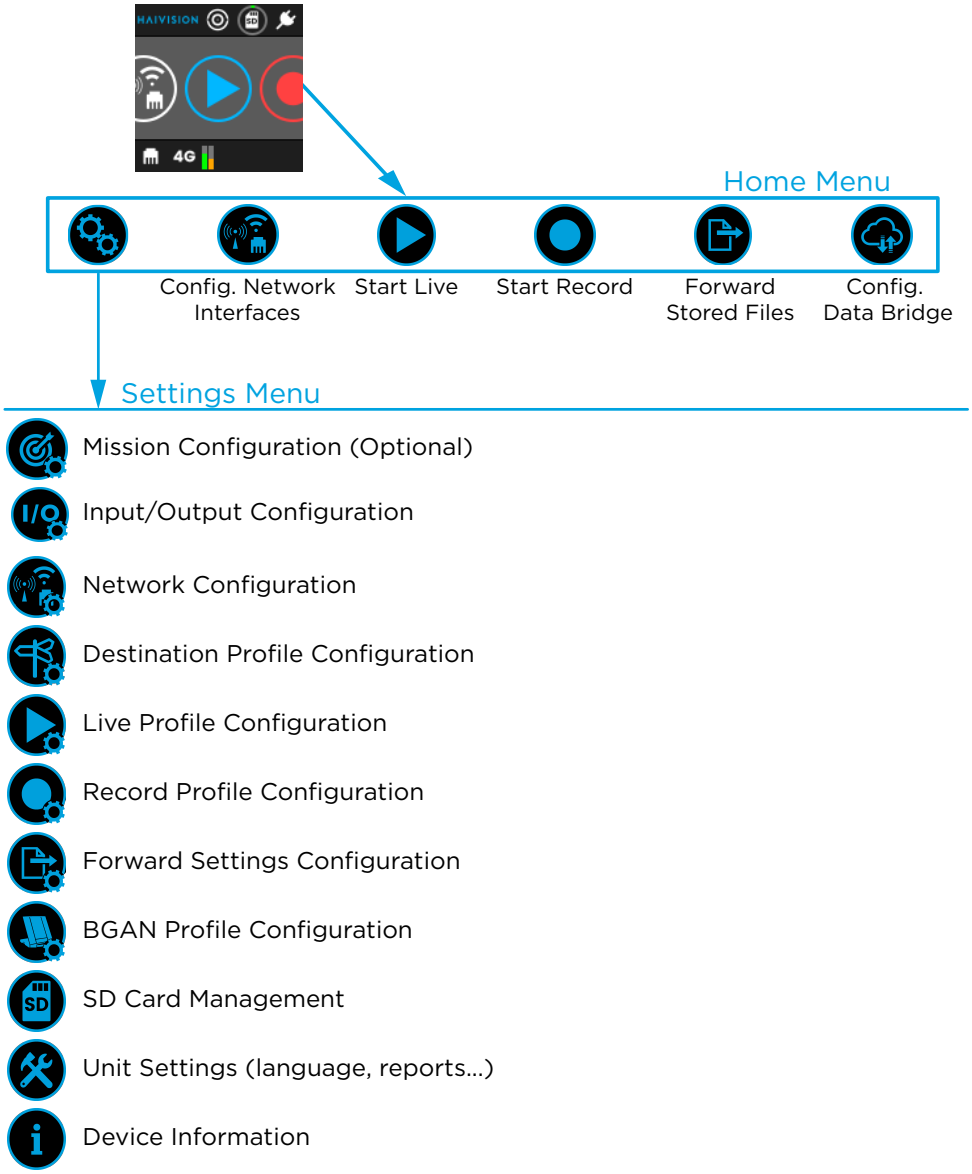
Unit Front Panel

The unit front panel allows you to:

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

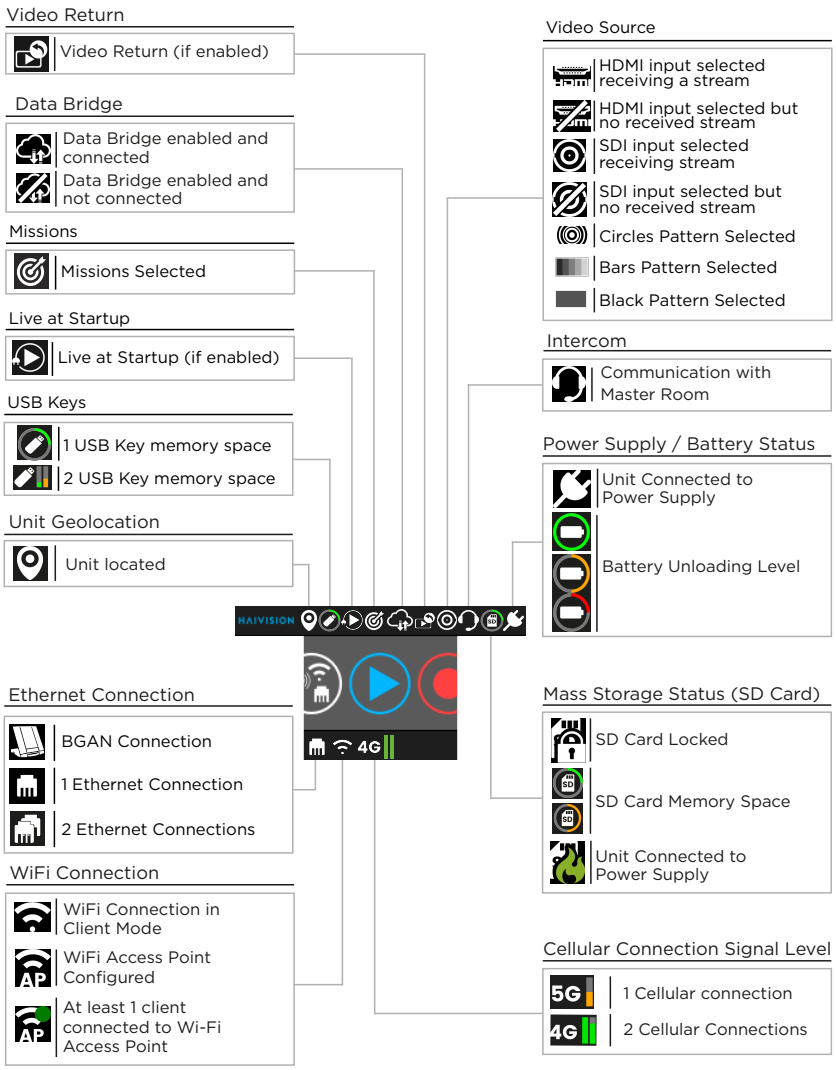
Menus

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 or a Wi-Fi connection.

Ethernet Connection

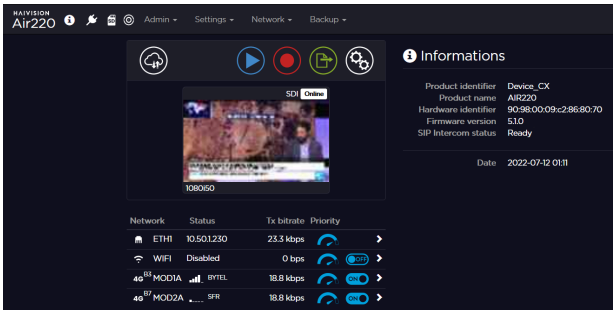
1. From the **Home** menu, turn the wheel to select and press the wheel to confirm.
   The screen displays the IP address assigned to the unit (by default in DHCP mode):
2. From a web browser, enter the unit IP address and append ":8888" to it.
   Example: 10.50.1.139:8888

   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.



Wi-Fi Connection (Access Point Mode)

1. From the Unit Panel, configure the unit as a Wi-Fi Access Point (see chapter Configuring a WiFi Interface).
2. On your Wi-Fi client device (computer, notebook, smartphone), go to the Wi-Fi settings menu, and select the Wi-Fi access point that you configured.
   Air_bf:98:10:01:02:8e:80:c0
3. Enter the password that you defined.
4. In a web browser, enter the unit url: http://192.168.30.10:8888 (default IP address if it has not been changed).

   The login screen opens:

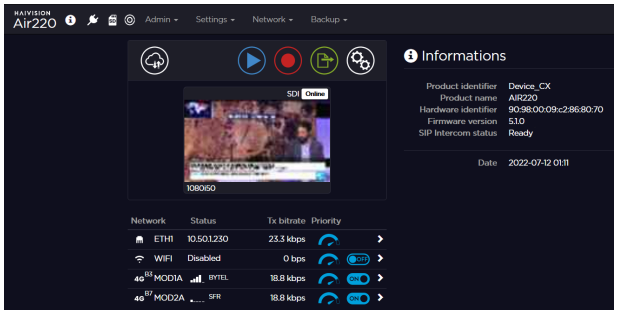
5. Enter the login and password.

   Default login = **admin**

   Default password = **password**

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

   The unit 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

MODE	IP Address	Netmask	Gateway
DHCP	Assigned by DHCP server		
STATIC	192.168.1.10	255.255.255.0	192.168.1.1
GATEWAY	192.168.1.10	255.255.255.0	
OFF	N/A	N/A	N/A

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, turn the wheel to select .
2. Press the wheel to confirm.
3. Press the wheel again to enter the **ETH1 CONFIG** menu.
4. Press the wheel again to set Ethernet options (DHCP, Static, Gateway, Off).
5. Turn the wheel to scroll the list and select.
6. Press the wheel to confirm your choice.
   - When selecting DHCP mode:
     - Settings are automatically retrived.
     - You can set the network link priority (High or Low).

   a. Turn the wheel to select the **Priority** field.

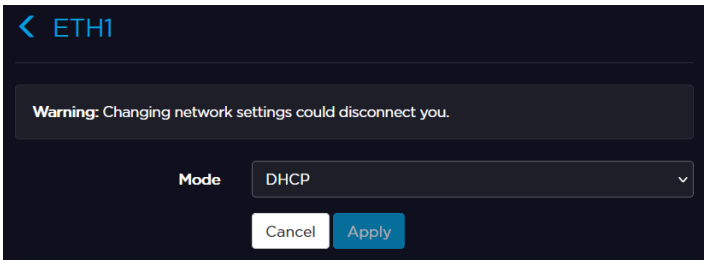
   b. Press the wheel to access the priority selection (High or Low).

c. Turn the wheel to select High or Low priority.
d. Press the wheel to confirm your choice.

- When selecting STATIC or GATEWAY modes, you need to enter network settings.
  a. Turn the wheel to select the icon.
  b. Press the wheel to enter the **ETH CONFIG** menu.
  c. Turn the wheel to select the settings to be modified.
  d. Turn the wheel to enter the input screen.
  e. Use the wheel to enter settings (turn to select characters and press to confirm).
  f. Turn the wheel to select the key and press to confirm.
  g. Turn the wheel to select .
  h. Press the wheel to save settings.
  i. Turn the wheel to select the **Priority** field.
  j. Press the wheel to access the priority selection (High or Low).
  k. Turn the wheel to select High or Low priority.
  l. Press the wheel to confirm your choice.

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
   - OFF
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 Wi-Fi Interface

The unit can operate either as a Wi-Fi Access Point, or a Wi-Fi Client.

Enabling / Disabling the Wi-Fi Interface

By default, the Wi-Fi network is disabled.

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the Wi-Fi configuration.
4. Press the wheel to confirm.
5. Press the wheel again to enable the Wi-Fi network.
   The OFF button turns into ON and the **Mode** field appears.

From the Web Interface

Click on ON or OFF in the Wi-Fi line to enable or disable the Wi-Fi network.

Configuring a Wi-Fi Access point

By default, the Wi-Fi network is disabled. Make sure it is enabled. If not, see Enabling / Disabling the Wi-Fi Interface.

When configured in Wi-Fi access point mode, the unit can be controlled remotely from a smartphone, tablet or laptop.

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the Wi-Fi configuration.
4. Press the wheel to confirm.
5. Turn the wheel to select the **Mode** field.
6. Press the wheel to access the selection list for the Wi-Fi mode.
7. Turn the wheel to select **Access Point**.
8. Press the wheel to confirm.
9. Turn the wheel to select .
10. Define the Wi-Fi settings.
    - **Network name** (automatically formatted as follows: Air followed by _ and the unit hardware ID. Example: Air_bf:98:10:71:c2:26:80:6c
    - **Frequency Band** Select 2.4GHz or 5.0GHz
    - **Channel** Select the channel used (dynamic list according to the Frequency Band select):
        - 2.4GHz: channel 1 to 11.
        - 5.0GHz: channel 36, 40, 44 and 48.
    - **Password** By default: Password

> **Note:**
> In Access Point mode, 5GHz band is not available for Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.

11. Turn and press the wheel to enter the **ADVANCED +** menu.
12. Turn and press the wheel to define the IP settings (IP Address, Netmask and DNS Server Address).
13. Turn the wheel to select .
14. Press the wheel to confirm.

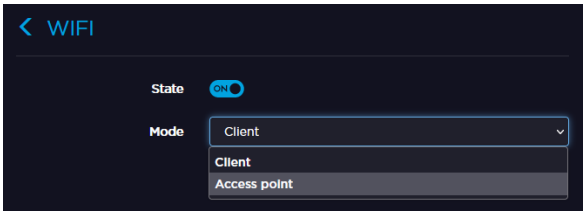
An icon indicates that the Wi-Fi Access Point is configured:

AP A Wi-Fi Access Point is configured.

AP At least one client is connected to the Access Point.

From the Web Interface

1. Click on the Wi-Fi line to open the Wi-Fi interface.
2. From the **Mode** scrolling list, select **Access Point**.

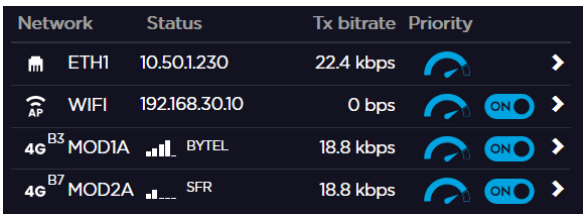


3. Define the Wi-Fi settings.

- **Network name** (automatically formatted as follows: Air followed by _ and the unit hardware ID. In the example beside: Air_28:98:10:11:82:b6:80:18
- **Frequency Band** Select 2.4GHz or 5.0GHz
- **Channel** Select the channel used (dynamic list according to the Frequency Band selected):
  - 2.4GHz: channel 1 to 11
  - 5.0GHz: channel 36, 40, 44 and 48
- **Password** By default: Password
  - Click on to reset it.
- Enter the **IP Address**, the **Netmask** and the **DNS Server Address**.

> **Note:**
> 5GHz band is not available for Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.

4. Click on **Apply**.



An icon indicates that the Wi-Fi Access Point is configured:

A WiFi Access Point is configured

At least one client is connected to the Access Point

Configuring a Wi-Fi Client Interface

By default, the Wi-Fi network is disabled. Make sure it is enabled. If not, see Enabling / Disabling the Wi-Fi Interface.

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the Wi-Fi configuration.
4. Press the wheel to confirm.
5. Turn the wheel to select the **Mode** field.
6. Press the wheel to access the selection list for the Wi-Fi mode.
7. Turn the wheel to select **Client**.
8. Press the wheel to confirm.
9. You can set the network link priority (High or Low).
   a. Turn the wheel to select the Priority field.
   b. Press the wheel to access the Priority selection.

c. Turn the wheel to select high or low priority.

d. Press the wheel to confirm.

10. You have 2 possibilities to configure a client interface.
    - Selecting a network among the ones identified around.
    - Adding manually a hidden network.

Selecting a network among the ones identified around

1. Turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select a network.
4. Press the wheel to confirm.
5. Press the wheel to activate the keyboard and enter the password.
6. Turn and press the wheel to select the characters and compose the password.
7. Select the key and press the wheel to confirm the password.
8. Turn the wheel to select and press it to confirm.

Adding manually a hidden network

1. Turn the wheel to select and press it to confirm.
2. Press the wheel again to add a new network.
3. Enter the Network name.
   a. Press the wheel to activate the keyboard.
   b. Turn and press the wheel to select characters and compose the password.
   c. Select the key and press the wheel to confirm the network name.
4. Turn the wheel to select the **Security Mode** field.
5. Press the wheel to display the **Security Mode** list.
6. Turn the wheel to select the Security mode and press it to confirm your choice.
7. Turn the wheel to select the **Password** field.
8. Press the wheel to activate the keyboard and enter the password.
9. Select the key and press the wheel to confirm the network name.
10. Turn the wheel to select and press it to connect the new network.
11. Turn the wheel to select and press it to save the new network.

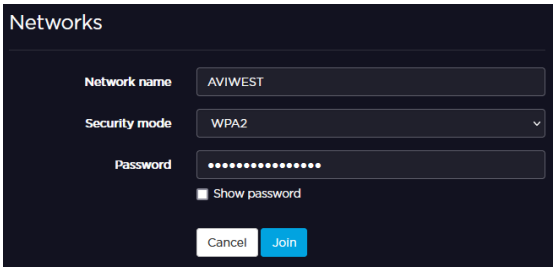
From the Web Interface

1. From the Web Interface, click on on the Wi-Fi line.
2. From the **Mode** scrolling list, select **Client** mode.
3. Click on **Apply**.
   Surrounding networks are scanned and listed.
4. You have 2 possibilities to configure a client interface:

- Selecting a network among the ones identified around.
- Adding manually a hidden network.

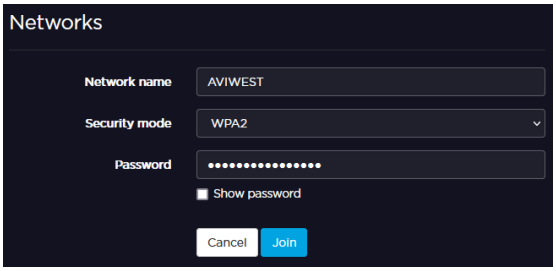
Selecting a network among the ones identified around

1. Select the network among the list.
2. Enter the **Password**.
3. Click on **Join**.



Adding manually a hidden network

1. Click on **Add**.
2. Select the **Network name**.
3. Select the **Security Mode**.
4. Enter the network **Password**.
5. Click on **Join**.



Configuring a 3G/4G/5G Cellular Interface

Note:
Not applicable for Air200.

Inserting the SIM Card

1. Make sure that your SIM card is unlocked.

   Note:
   In some cases, you may need to identify the unit IMEI (International Mobile Equipment Identity). To know how to access this information, please refer to Getting the IMEI Number chapter.

2. Insert the SIM card into a slot on the unit rear panel.
   - Modem 1 uses slot 1A and slot 1B.
   - Modem 2 uses slot 2A and slot 2B.

Assigning a Slot to a Modem

You need to assign a slot to the modem according to the SIM card(s) that you want to use. This assignment is independent for Modem 1 and Modem 2. For each modem you can select either:

- Auto (Automatic Slot Assignment)
- Slot A
- Slot B

When Automatic slot assignment is selected, the unit automatically assigns the relevant slot according to the following table:

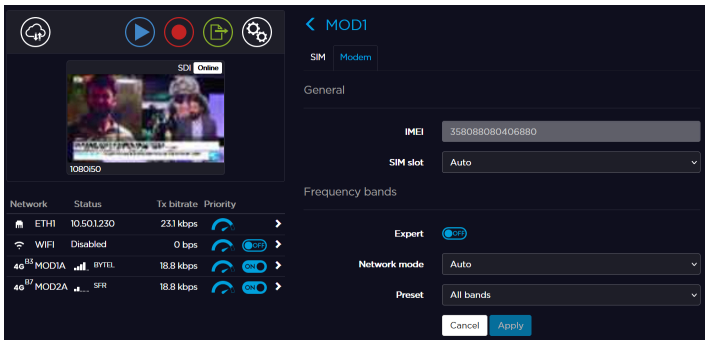
SIM Card in Slot A	SIM Card in Slot B	Assigned Slot
✓	✓	A
✓	✗	A
✗	✓	B

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem that you want to configure.
4. Press the wheel to enter the **MOD. CONFIG** menu.
5. Turn the wheel to highlight the SIM Slot field.
6. Press the wheel to confirm.
7. Turn the wheel to select the relevant slot.
8. Press the wheel to confirm.

From the Web Interface

1. Click on ▶ in the modem line to open the **MOD** configuration interface.
2. Click on the **Modem** tab.
3. In the **SIM Slot** field, select the relevant slot.
   a. The newly selected slot is automatically applied.
   b. An "initializing" message appears.
   c. The SIM card operator appears.



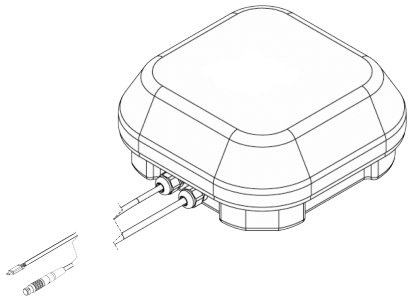
Connecting a Quad CellLink to the Transmitter

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.

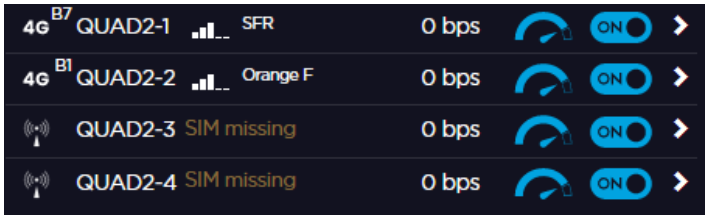


5. Open the transmitter Web Interface.

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 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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn and press the wheel to select and enter the **MOD.CONFIG** menu.
4. Press the wheel to enable or disable the modem.

From the Web Interface

Click on OFF or ON to enable or disable a modem.

Enabling / Disabling all Internal Cellular Modems

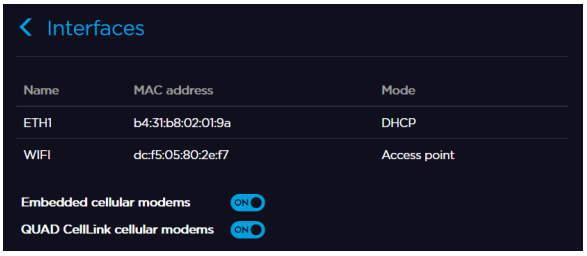
You can enable and disable all internal cellular modems at the same time from the Unit Panel or from the Web Interface.

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Turn and press the wheel to enable or disable all internal cellular modems.

From the Web Interface

1. From the Web Interface, click on **Network > Interfaces**.
2. Click on OFF to disable embedded modems and on ON to enable them.



Enabling / Disabling all Quad CellLink Cellular Modems

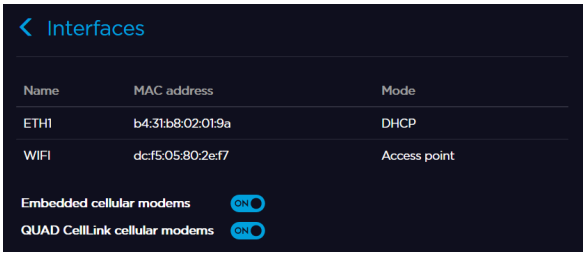
You can enable and disable all modems of a Quad CellLink from the Unit Panel or from the Web Interface.

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Press the wheel to enable or disable all Quad CellLink cellular modems.

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

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

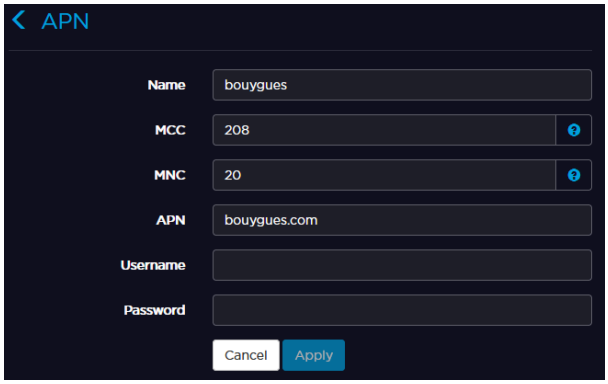
- Add and configure new APN settings to suit your requirements, so they can be easily selected from the list.
- Delete an APN.
- Enable/Disable the APN Automatic Configuration.
- Drag and drop APN to reorder the list.

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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you need to configure the APN.
4. Press the wheel to confirm.
5. Turn the wheel to select .

You can either select an APN from a predefined list or configure settings for a new APN.

To select a predefined APN

1. Press the wheel twice to access the predefined APN list.
2. Turn and press the wheel to select an APN.
3. Select and press the wheel to save.

To configure a new APN

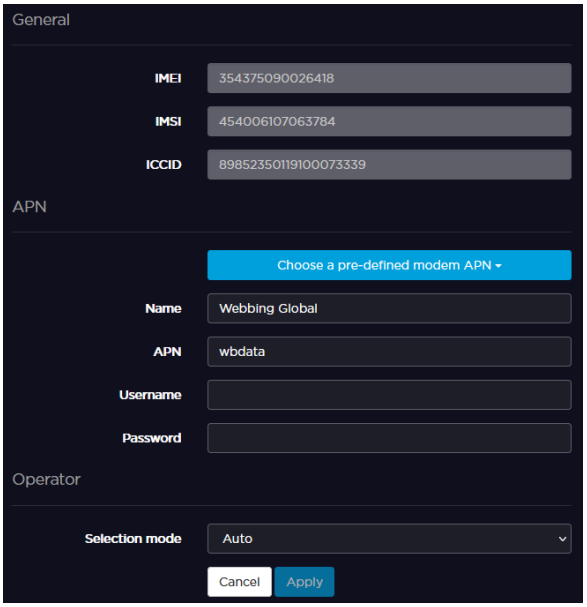
1. Press the wheel.
2. Turn the wheel to scroll and press the wheel to enter the settings for a new APN:
   - SIM name
   - APN
   - Username
   - Password
3. Select and press the wheel to save.

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:

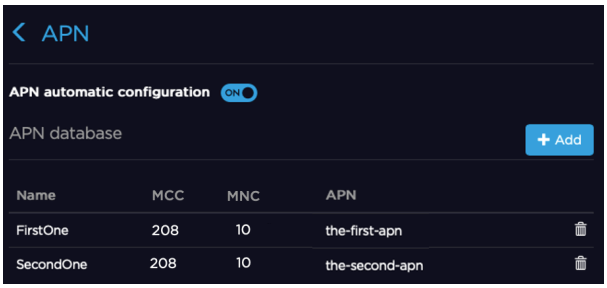


- Fill in the APN fields with proper settings and click on **Apply**.
- Enrich the pre-defined APN list by adding your APN to it (See Managing the APN database).

Deleting an APN

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

2. Double click on the trash button ( ).



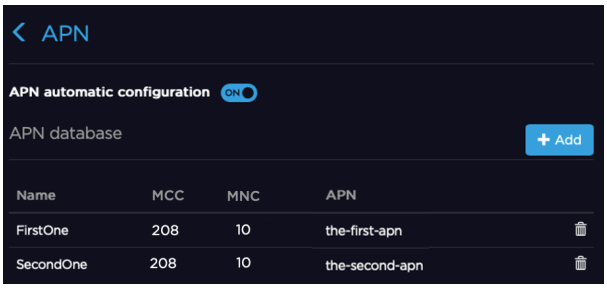
Enabling / Disabling the Automatic APN Configuration

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

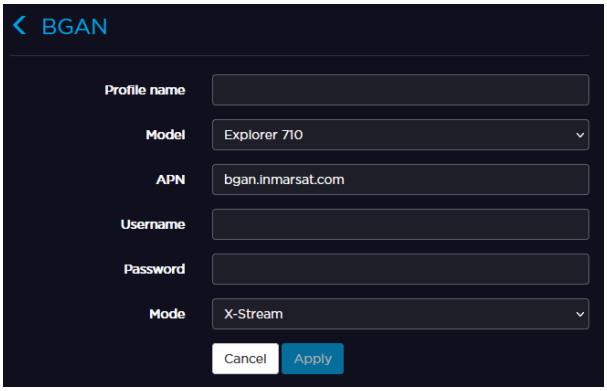
1. From the **Home** menu, turn the wheel to select  .
2. Press the wheel to confirm.
3. Turn the wheel to select  and press it to confirm.
4. Use the wheel to configure the **BGAN Profile** settings:
   - **Profile Name**
   - **Model** (Hughes 9201, Hughes 9211, Explorer 710)
   - **APN**
   - **Username** (if required)
   - **Password** (if required)
   - **Mode** (X-Stream, Background, HDR Full-Asymmetric, HDR Full-Symmetric)
5. Turn the wheel to select  .
6. Press the wheel to confirm.

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**.



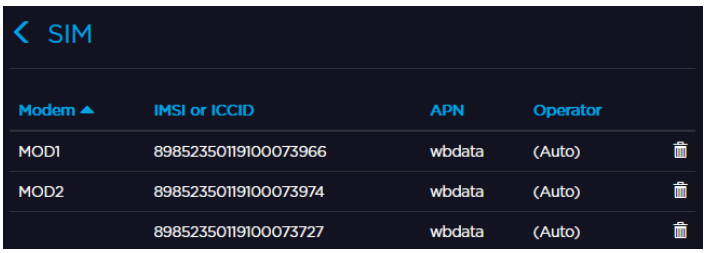
Managing Cellular Operators

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

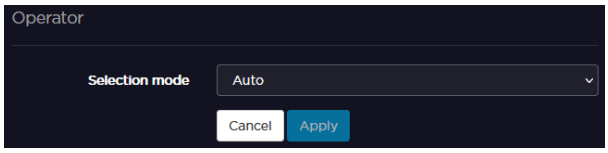
Note:
The Automatic Mode is the default setting.

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you configure the cellular modem.
4. Press the wheel to confirm and enter the **MOD. CONFIG** menu.
5. Turn the wheel to select .
6. Press the wheel to confirm.
7. Press the wheel again to enter in the **Operator** field.
8. To enable or disable the Automatic mode, press the wheel.

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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you need to select the operator.
4. Press the wheel to enter yhe **MOD. Config** menu.
5. Turn the wheel to select .
6. Press the wheel to confirm.
7. Press the wheel again to enter in the **Operator** field.
8. Press the wheel to disable the Automatic Mode.

Note:
The scan starts automatically. It may take a few minutes. Operators that can be selected are listed.

9. Turn the wheel to select the operator and press the wheel to confirm.

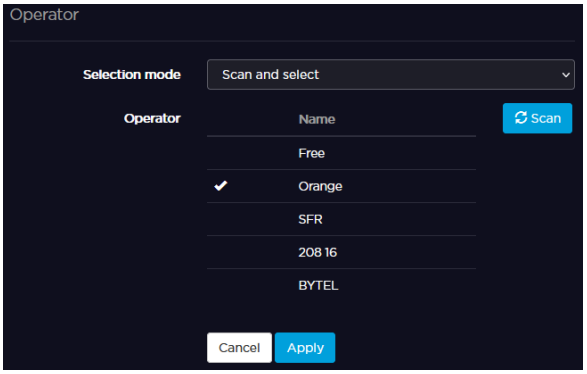
Note:
Only white operators in the list can be selected.

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**.



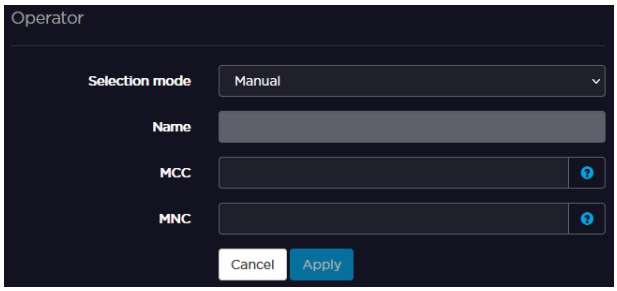
Selecting Manually a Cellular Operator

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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you need to select the operator.
4. Press the wheel to enter the **MOD. Config** menu.
5. Turn the wheel to select .
6. Press the wheel to confirm.
7. Turn and press the wheel to enter in the **Frequency Bands** field.
8. Turn the wheel to highlight the network mode field.
9. Press the wheel to confirm.
10. Turn and press the wheel to select the network mode.

Note:
- 5G/4G and 5G Only are available on Air220-5G and Air320e-5G models.
- For 5G networks operating in Non-Standalone mode (NSA), select 5G/4G settings.

11. Turn the wheel to select the **Preset** field and press the wheel to confirm.
12. Turn the wheel to choose between All Bands or Low Frequency.

Note:
Low Frequency bands are useful for indoor operations.

13. Turn and press the wheel to enter the **Carrier** field and select an image in the list.

Note:

- for Air220-5G and Air320e-5G models only.
- Selecting the carrier-specific firmware may be mandatory to comply with some local regulations (e.g. Japan). In common cases, you should always keep the generic firmware selected. Should you have any doubt, please contact our support team.

14. Turn the wheel to select .
15. Press the wheel to confirm.

Using the Expert Mode

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you need to select the operator.
4. Press the wheel to enter yhe **MOD. Config** menu.
5. Turn the wheel to select .
6. Press the wheel to confirm.
7. Turn and press the wheel to enter in the **Frequency Bands** field.
8. Press the wheel again to enable the expert mode.
9. Turn the wheel to scroll down and display all the 5G, 4G and 3G bands.
10. Turn and press the wheel to unselect the different cellular bands.
11. Turn the wheel to select and press it 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
   - 5G/4G
   - 5G Only
   - 4G Only
   - 3G Only

Note:

- 5G/4G and 5G Only are available on Air220-5G and Air320e-5G models.
- For 5G networks operating in Non-Standalone mode (NSA), select 5G/4G settings.

4. Click on the **Preset** field and choose:
   - All Bands
   - Low Frequency

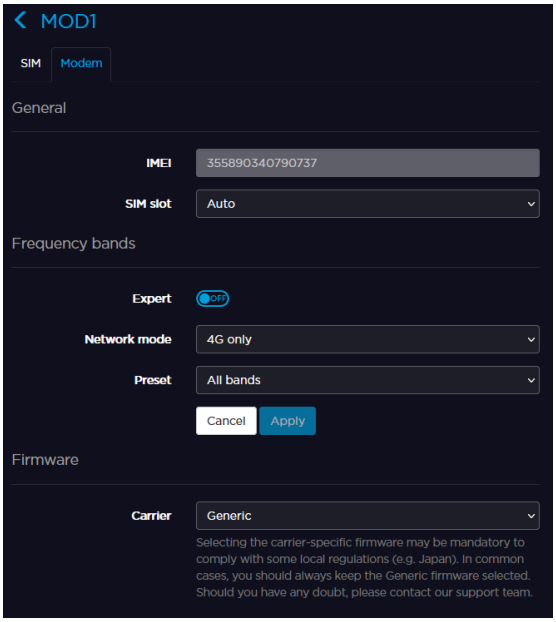
Note:
Low Frequency bands are useful for indoor operations.

5. In the **Carrier** field, select the image in the drop-down list.

Note:

- for Air220-5G and Air320e-5G models only.
- Selecting the carrier-specific firmware may be mandatory to comply with some local regulations (e.g. Japan). In common cases, you should always keep the generic firmware selected. Should you have any doubt, please contact our support team.

6. Click on **Apply**.

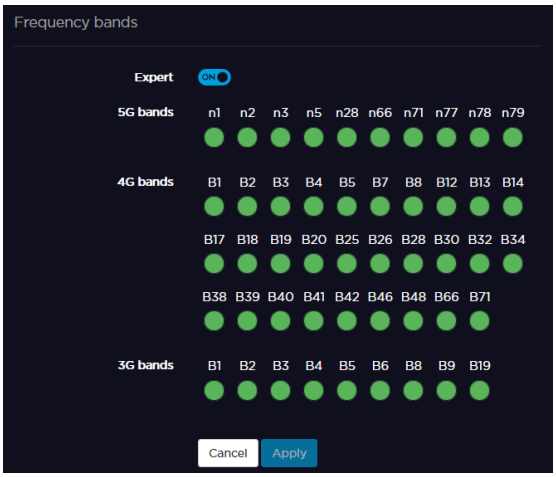


Using the Expert mode

1. Click on ❯ to configure the cellular bands.
2. Click on the **Modem** tab.
3. Click on OFF to enable the **Expert Mode**.
   The button turns into ON and all the cellular bands appear on the screen.

4. Click on  to unselect the different cellular bands. The green dots turn to grey.

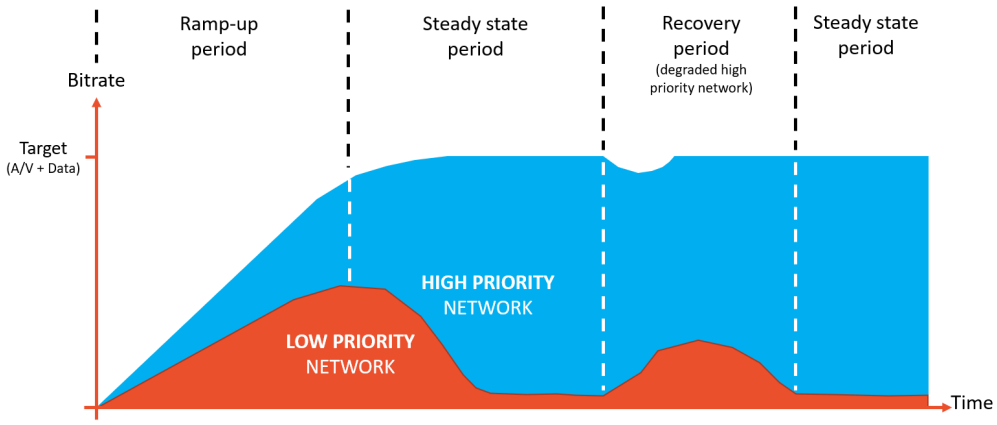
5. Click on **Apply**.



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:

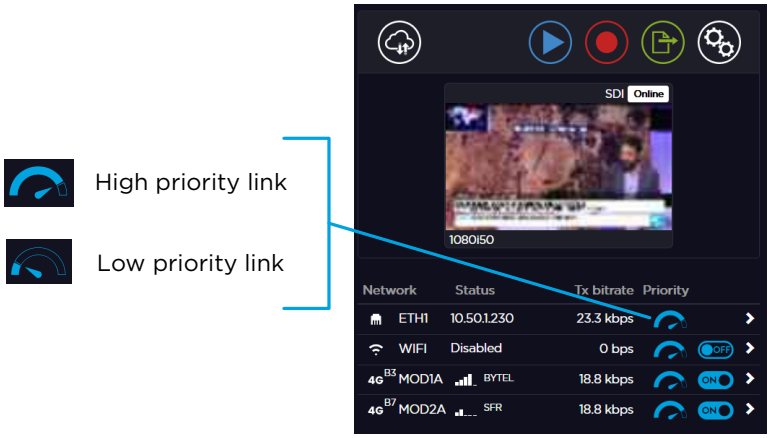


- For Live:
  - Both high and low priority links are used as long as the bitrate target set in the Live profile is not been reached.
  - Once the bitrate target is reached, high priority links are mainly used.
- For Forward:
  - Both high and low priority links are used as long as the bitrate target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

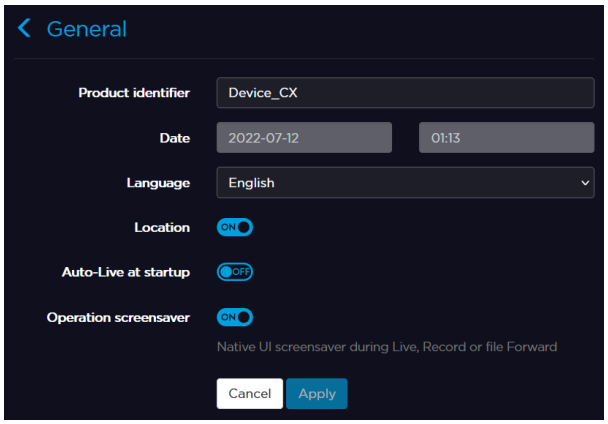
- From the Web Interface, click on the gauge icon to select High () or Low () priority.



- 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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Press the wheel again to access the General settings.
6. Press the wheel to enter the Product Identifier field.
7. Turn and press the wheel to select characters.
8. Turn the wheel to select the key and press it 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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .

4. Press the wheel to confirm.
5. Press the wheel again to access the General settings.
6. Turn and press the wheel to enter the Date field.
7. Turn and press the wheel to select characters.

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

8. Turn the wheel to select the key and press it to confirm.

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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Press the wheel again to access the **General** settings.
6. Turn the wheel to select the **Language** field and press it to confirm.
7. Turn the wheel to select the language required.
8. Press the wheel to confirm.

From the Web Interface

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

Enabling / Disabling the Unit Location

You can enable or disable the unit location to allow (or not) the Manager application locating the unit.

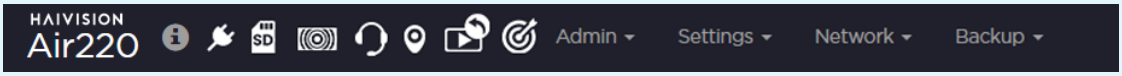
From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Press the wheel again to access the **General** settings.
6. Turn the wheel to select the **Location** field.
7. Press the wheel to enable or disable the location.

From the Web Interface

1. From the Web Interface, click on **Settings > General**.
2. Click on ON to disable the unit location.
   The button turns into OFF .
3. Click on **Apply**.

Note:
You can access to this menu by clicking on the Location icon on the top bar 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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Press the wheel again to access the **General** settings.
6. Turn the wheel to select **Auto-live at startup**.
7. Press the wheel to enable or disable Auto-live.
   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 OFF to enable or on 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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Press the wheel again to access the **General** settings.
6. Turn the wheel to select **Operation screensaver**.
7. Press the wheel to enable or disable **Operation screensaver**.

From the Web Interface

1. From the Web Interface, click on **Settings General** .
2. Click on OFF to enable or on 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: NTSC, PAL, 720p50, 720p59.84, 720p60, 1080p25, 1080p29.97, 1080i59.94, 1080i60, 1080p50, 1080p59.94 and 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, turn the wheel to select .
2. Press the wheel to confirm.
3. Select and press the wheel to confirm.
4. Press the wheel again to enter the **Video Source** field.
5. Turn and press the wheel to select a source

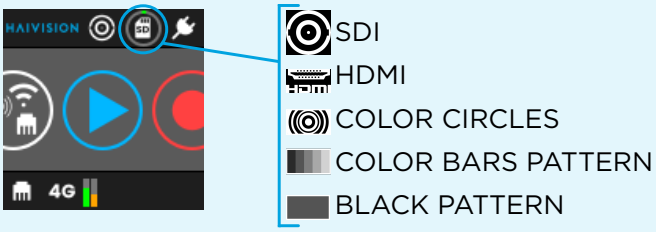
Note:
When selecting **Pattern**, **Pattern Shape** and **Pattern Standard** fields appear.

6. Press the wheel to confirm your choice.

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:

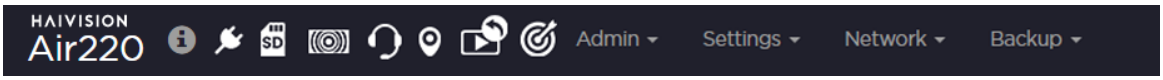


You can preview the selected video source.

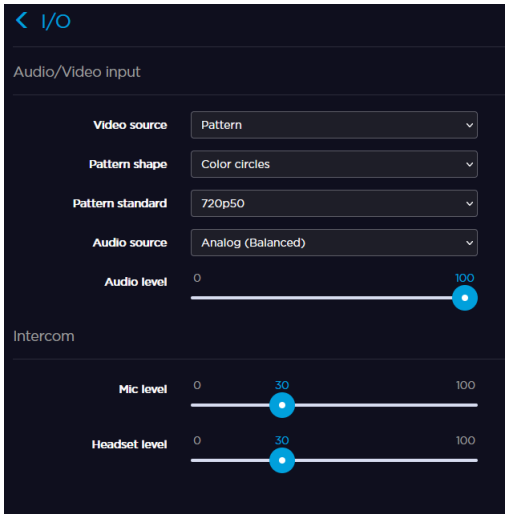
7. Turn the wheel to select .
8. Press the wheel to preview the video.

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.

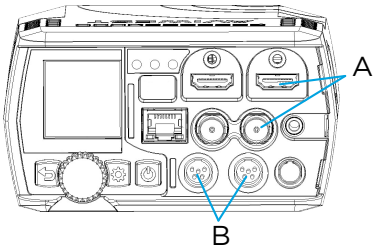
Selecting the Audio Source

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

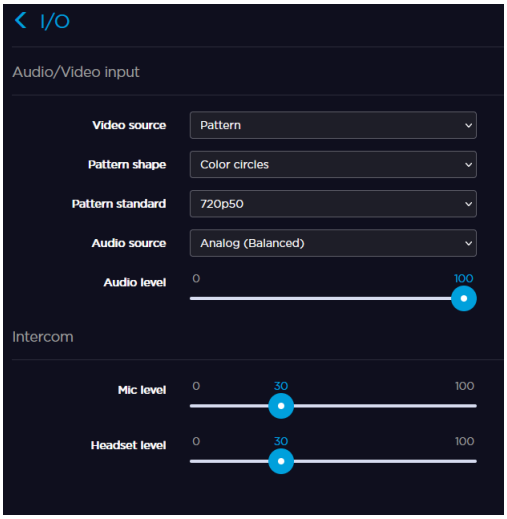
1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Select and press the wheel to confirm.
4. Turn the wheel to select the **Audio source** field.
5. Press the wheel to enter the source selection menu.
6. Turn the wheel to select a source.
7. Press the wheel to confirm.
8. Turn the wheel to select either or for the analog input level.
9. Press the wheel to move the cursor towards or .

> **Note:**
> • 0% is for audio muted.
> • 100% is 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:

End-to-End Latency	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	

Configuring a Broadcast Live Profile

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Press the wheel again to create a new live profile.
5. Press the wheel to enter the **Profile Name** field.
6. Turn and press the wheel to select characters and compose a name.
7. Use the wheel to configure the **Live Profile** settings following the recommendations mentioned in the table above:

   For Broadcast SST:
   - **End-to-End Latency**
   - **Bitrate Control**
   - **Capped Bitrate**
   - **Channel Layout**
   - **Bitrate**

   For Broadcast SRT:
   - Video **Bitrate**
   - **Channel Layout**
   - Audio **Bitrate**

8. Turn the wheel to select **ADVANCED +** and press it to confirm.

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

9. Turn the wheel to select the **Optimisation for LiveGuest** field and press it to enable or disable this option if required.
10. Turn the wheel to select the **Manual Resolution** field and press it to enable or disable this option if required.

> **Note:**
> The OFF button turns into ON and the **Resolution** field appears.

11. Turn the wheel to select the **Resolution** field and press it to select the output resolution.

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

12. Turn and press the wheel to apply the new resolution.
13. Select and press the wheel to confirm the creation of the Video Return Live profile.

From the Web Interface

1. Click on **Settings > Live**.
2. Click on + Add .
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 Air3xx only.

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

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

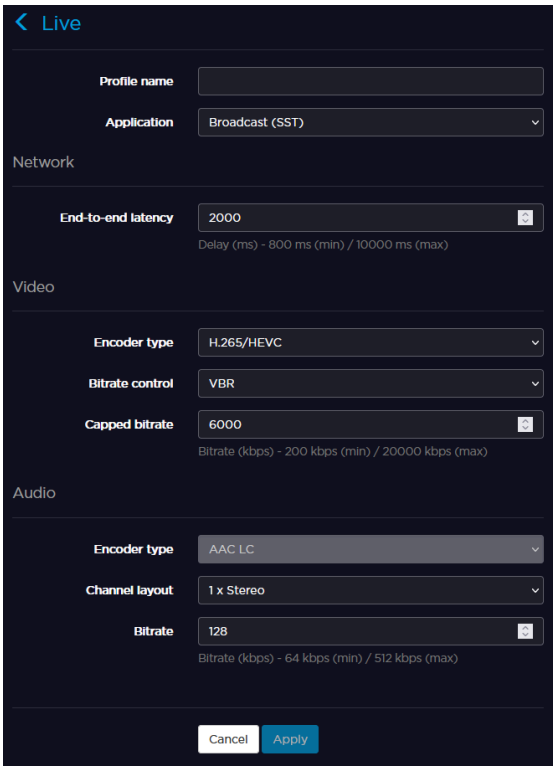
   c. Enter a **Capped Bitrate**.

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

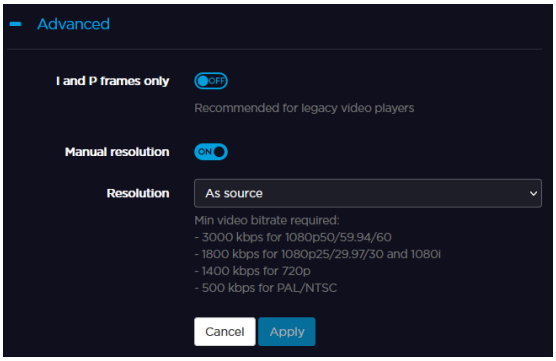
> **Note:**
> Advanced parameters are available only if the **Encoder Type** is H.264.

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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Press the wheel again to create a new live profile.
5. Press the wheel to enter the **Profile Name** field.
6. Turn and press the wheel to select characters and compose a name.
7. Use the wheel to configure the **Live Profile** settings following the recommendations mentioned in the table above:

- Application (Video Return)
- End-to-end Latency
- Bitrate
- Channel Layout

8. Turn the wheel to select **ADVANCED +** and press it to confirm.

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

9. Turn the wheel to select the **Optimisation for LiveGuest** field and press it to enable or disable this option if required.
10. Turn the wheel to select the **Manual Resolution** field and press it to enable or disable this option if required.

> **Note:**
> The OFF button turns into ON and the **Resolution** field appears.

11. Turn the wheel to select the **Resolution** field and press it to select the output resolution.

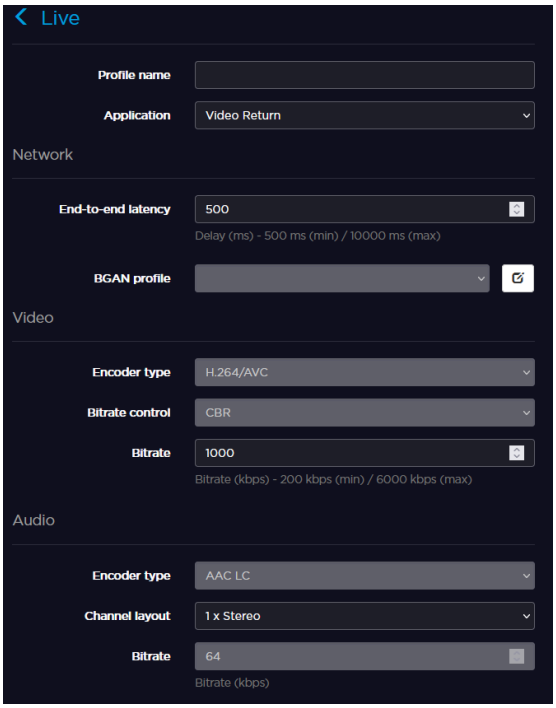
> **Note:**
> Only downscaling or same resolution are supported.

12. Turn and press the wheel to apply the new resolution.
13. Select and press the wheel to confirm the creation of the Video Return Live profile.

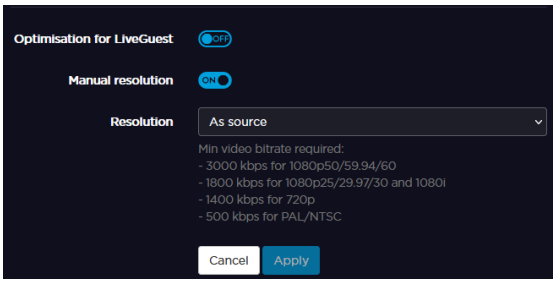
From the Web Interface

1. Click on **Settings > Live**.
2. Click on + Add .
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 OFF to enable **Optimisation for LiveGuest**.
10. Click on OFF to enable **Manual Resolution**.

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



12. Click on **Apply**.



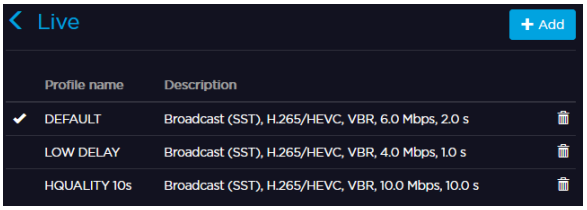
Deleting a Live Profile

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Turn the wheel until the profile to delete is displayed.
5. Long press the wheel to request the profile deletion.
6. Turn the wheel to select YES.
7. Press the wheel 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.

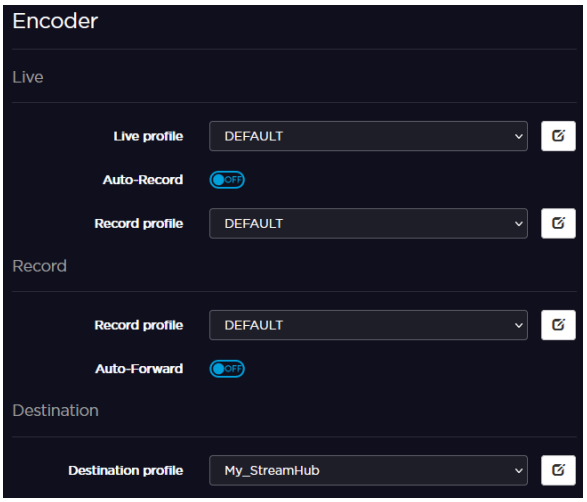
From the Web Interface

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**.



Note:
When the **Live Profile** is configured to encode the video in H.265 format, the Record profile used for **Auto-record** must be in H.264 format.

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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Press the wheel again to create a new record profile.
5. Press the wheel to enter the **Profile Name** field.
6. Turn and press the wheel to select characters and compose a name.
7. Select the key and press the wheel to confirm the record profile name.
8. Use the wheel to configure the Record profile settings:

- File Format (Transport Stream, MP4)
- Video settings (Encoder Type, Bitrate)
- Audio Settings (Encoder Type, Channel Layout, Bitrate)

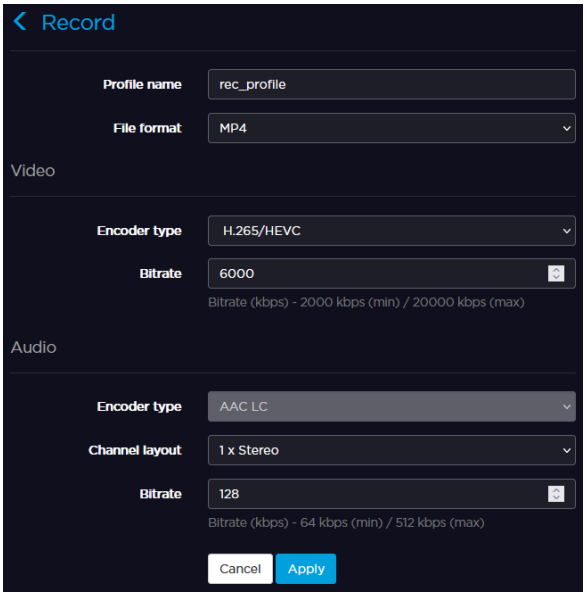
9. Select and press the wheel to confirm the creation of the Record profile.

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 Air320e-5G 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

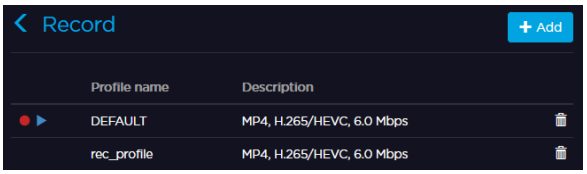
From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.

4. Turn the wheel until the profile to delete is displayed.
5. Long press the wheel to request the profile deletion.
6. Turn the wheel to select **YES** and press it to confirm.

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

Note:
When the **Live Profile** is configured to encode the video in H.265 format, the Record used for **Auto-record** must be in H.264 format.

From the Unit Panel

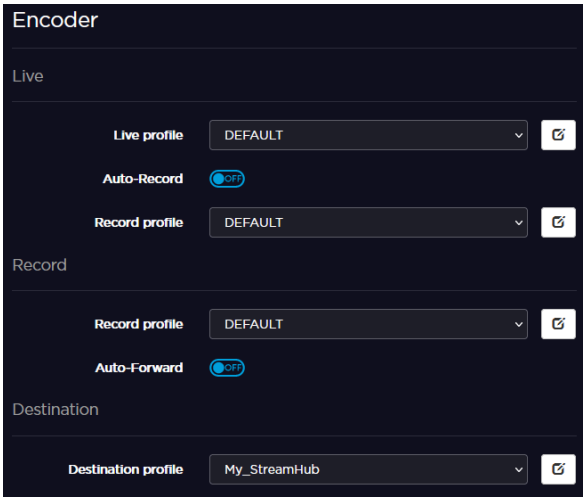
You can select a Record Profile from the Unit Panel when you are starting a Live or a Record.

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, turn the wheel to select and press it to confirm.
2. Turn the wheel to select and press it to confirm.
3. Press the wheel again to create a new destination profile.
4. Press the wheel to enter the **Profile Name** field.
5. Turn and press the wheel to select characters and compose a name.
6. Select the key and press the wheel to confirm the destination profile name.
7. Use the wheel to select the type of destination.
8. Use the wheel to configure the StreamHub profile settings:
   - 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.
9. Turn the wheel to select and press it to confirm.

From the Web Interface

1. Click on **Settings > Destination**.
2. Click the + Add 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, turn the wheel to select and press it to confirm.
2. Turn the wheel to select and press it to confirm.
3. Press the wheel again to create a new destination profile.
4. Press the wheel to enter the **Profile Name** field.
5. Turn and press the wheel to select characters and compose a name.
6. Select the key and press the wheel to confirm the destination profile name.
7. Use the wheel to select the type of destination.
8. Use the wheel to configure the Manager profile settings:
   - 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:**
> 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.

9. Turn the wheel to select and press it to confirm.

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, turn the wheel to select and press it to confirm.
2. Turn the wheel to select and press it to confirm.
3. Press the wheel again to create a new destination profile.
4. Press the wheel to enter the **Profile Name** field.
5. Turn and press the wheel to select characters and compose a name.
6. Select the key and press the wheel to confirm the destination profile name.
7. Use the wheel to select the type of destination.
8. Use the wheel to configure the SRT Receiver profile settings:
   - SRT mode (Caller or Listener).
   - Host (in Caller mode only).
   - SRT port.
   - Ethernet port.
   - Latency.
   - SRT Encryption (and passphrase if enabled).
   - Stream ID (in Caller mode only).

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.

9. Turn the wheel to select and press it to confirm.

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**.

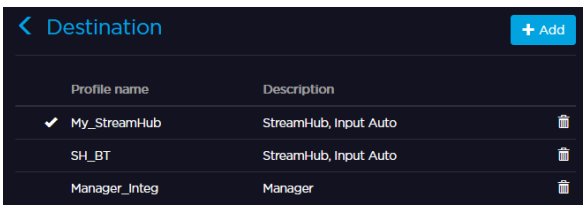
Deleting a Destination Profile

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Turn the wheel until the destination profile to delete is displayed.
5. Long press the wheel to request the destination profile deletion.
6. Turn the wheel to select **YES** and press it to confirm.

From the Web Interface

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



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

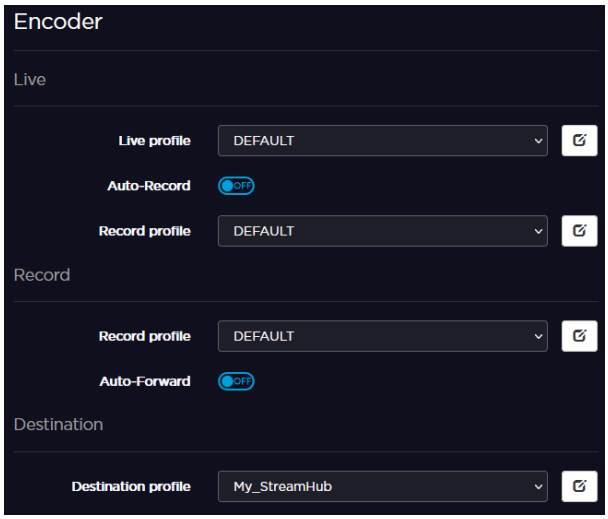
Select a Destination Profile

From the Unit Panel

1. From the **Home** menu, turn the wheel to select and press it to confirm.
2. Turn the wheel to select and press it to confirm.
   A green dot ( ) indicates the currently selected profile.
3. Turn the wheel to select another destination profile.
4. Press the wheel to confirm your choice.
5. Press the wheel again to confirm the modification of destination profile.

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.

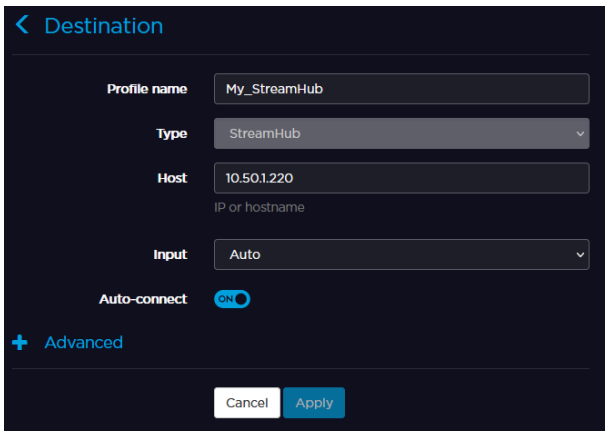
You can enable and disable the video AES encryption from the Unit Panel or the Web Interface.

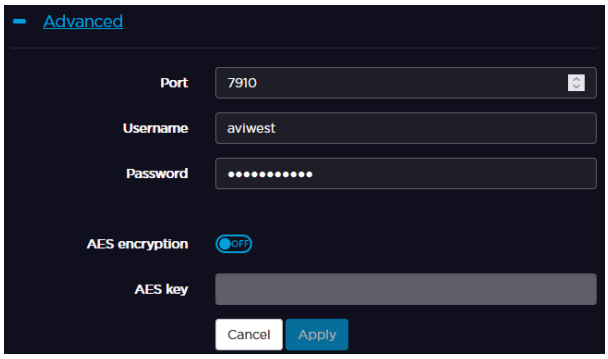
From the Unit Panel

1. From the **Home** menu, turn the wheel to select and press it to confirm.
2. Turn the wheel to select and press it to confirm.
3. Turn the wheel to select the destination profile where the video is sent to and press the wheel to confirm
4. Turn the wheel to select and press it to confirm.
5. Turn the wheel to highlight **ADVANCED +**.
6. Press the wheel to confirm.
7. Turn the wheel to highlight the **AES Encryption** field.
8. Press the wheel to enable or disable this option.
9. If enabled, use the wheel to enter the AES key as defined in the destination server interface (please refer to the StreamHub user guide).
10. Turn the wheel to select and press it to confirm.

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 OFF or ON 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

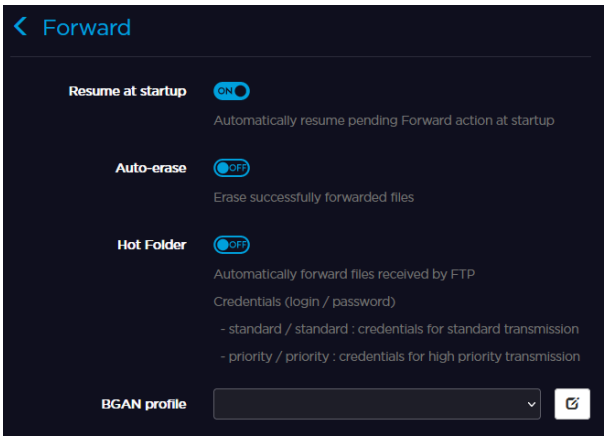
1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to enter the **Forward Config** menu.
5. Turn and press the wheel to select and enable or disable the forward options: **Resume at Startup**, **Auto-erase** or **Hot Folder**.
6. Turn and press the wheel to select a BGAN profile if required.

Note:

- **Resume at Startup**: If any forward is still in progess when the unit is turned off, it is resumed when the unit is started up.
- **Auto-erase**: All successfully forward files are automatically 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 OFF or ON 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. Turn the wheel to highlight the different missions.
2. Press and hold the wheel to have more information about the mission.
3. Press  to go back to the previous screen.
4. Turn the wheel to highlight a mission.
5. Press the wheel to confirm.

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

Changing the mission

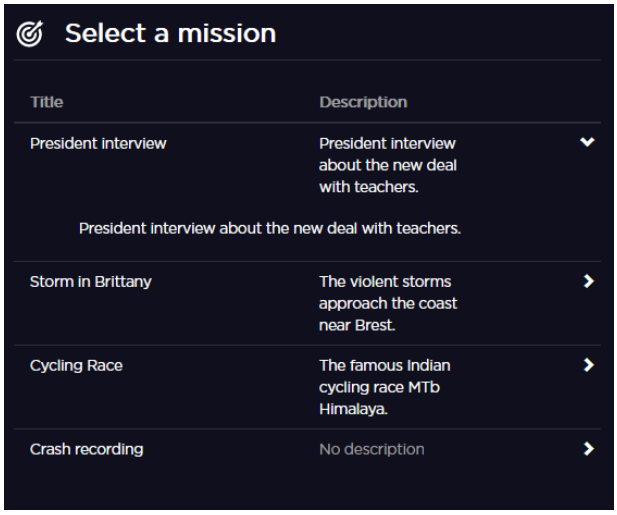
1. From the **Home** menu, turn the wheel to select  .
2. Press the wheel to confirm.
3. Press the wheel again to enter the **Missions** menu.
   The current mission is indicated by a green dot ().
4. Turn the wheel to highlight a mission.
5. Press and hold the heel to display more information on the mission.
6. Press the wheel to confirm.

A green dot () indicates the newly selected mission.

From the Web Interface

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

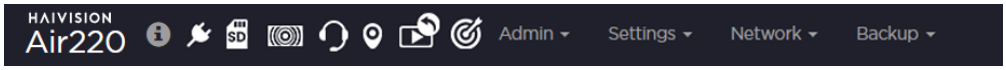
2. Click on  to see the description of the mission.



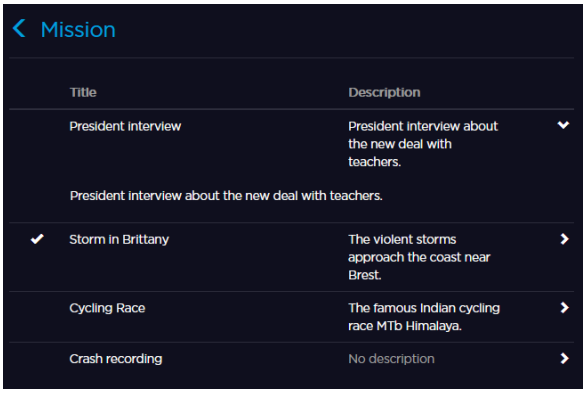
3. Click on a mission title to select it.

Changing the mission

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



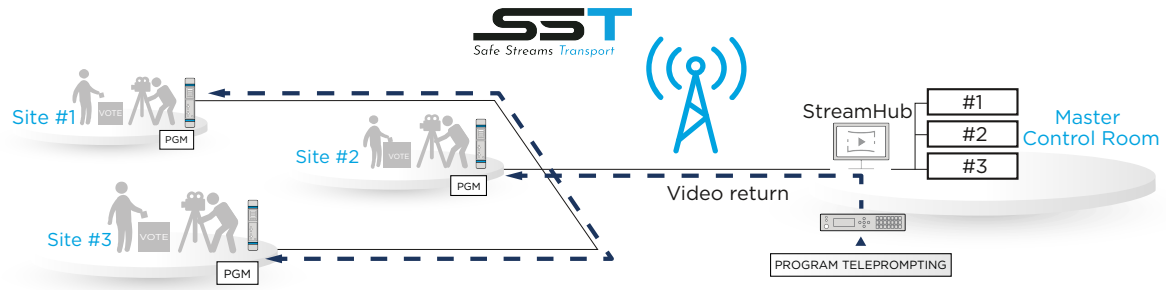
2. Click on another mission to select it.



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

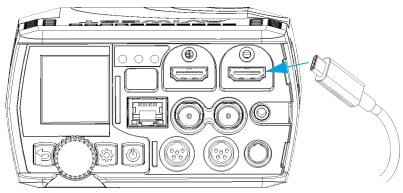
1. Set a Live Profile with the application parameter set to Video Return (see chapter Adding and Configuring a Live Profile).
2. Start a Live with the profile previously created (see chapter Starting a Live).

Receiving a Video Return

From the Unit Panel

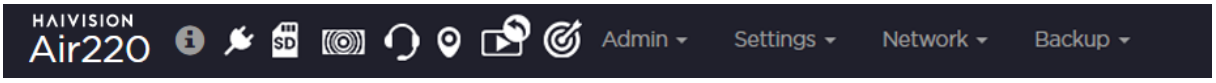
Check that the video return icon appears on the top bar of the screen. If it appears, the unit is receiving a video stream.

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.



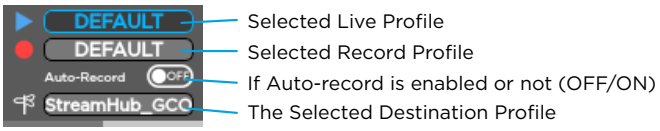
Starting a Live

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, turn the wheel to select .
2. Press the wheel to enter the **LIVE** menu.
   The video preview appears on screen and the live profile selected is reminded.

   When turing the wheel, the **LIVE** menu reminds some information:



   You can modify settings before starting the Live action.

   • To select another **Live** profile:
     a. Turn the wheel to highlight the **Live** profile ( ).
     b. Press the wheel and turn to select the required profile.
     c. Press the wheel to confirm the choice.

   • To select another **Record** profile:
     a. Turn the wheel to highlight the **Record** profile ( ).
     b. Press the wheel and turn to select the required profile.
     c. Press the wheel to confirm the choice.

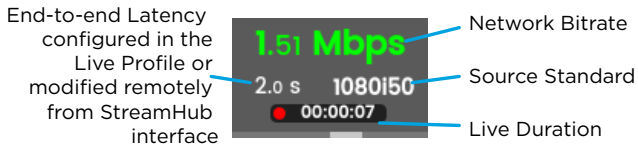
   • To modify the **Auto-record** mode:
     a. Turn the wheel to highlight the **Auto-record** option.
     b. Press to enable (ON) or disable (OFF) **Auto-record**.

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

   • To select another **Destination Profile**:
     a. Turn the wheel to highlight the **Destination Profile** ( ).
     b. Press the wheel and turn to select the required profile.
     c. Press the wheel to confirm the choice.

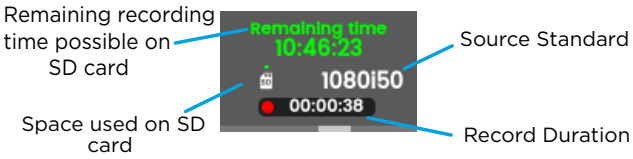
3. Turn the wheel to highlight and press the wheel to start the live.
   The video preview appears on screen.

4. Turn the wheel to the left to display some indications about the Live action:



Note:
Please refer to the 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. Turn the wheel to the right.
b. Press the wheel to stop the live.
c. Press the wheel to confirm.

To stop the Record:
a. Turn the wheel twice to the right.
b. Press the wheel to stop the record.
c. Press the wheel 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.

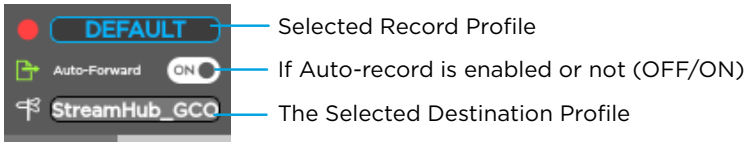
b. Click on  or the  icon to stop the video transmisson.

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.

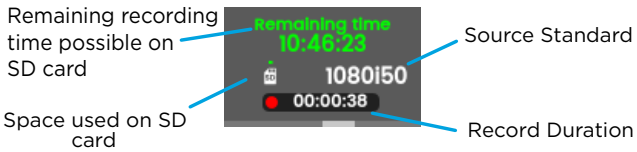
From the Unit Panel

1. Turn the wheel to select ( ).
2. Press the wheel to enter the **RECORD** menu.
   When turning the wheel to the right, the **RECORD** menu reminds some information:

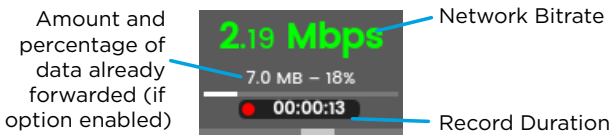


   • To select another **Record Profile**:
   a. Turn the wheel to highlight the **Record Profile** ( ).
   b. Press the wheel and turn to select the required profile.
   c. Press the wheel to confirm the choice.
   • To modify the **Auto-forward** mode:
   a. Turn the wheel to highlight the **Auto-forward** field.
   b. Press the wheel to enable or disable **Auto-forward** (/).
   • To select another destination profile:
   a. Turn the wheel to highlight the destination profile ( ).
   b. Press the wheel and turn to select the required profile.
   c. Press the wheel to confirm.
3. Turn the wheel to the left to make sure that is highlighted and press the wheel to start the record.
   The video preview appears on screen.

4. Turn the wheel to the left to display some indications about the recording:



In case of a record and simultaeous forward, another screen appears alternately:



Note:
To stop the record:
a. Turn the wheel to the right.
b. Press the wheel to stop the record.
c. Press the wheel to confirm.

To stop the forward:
a. Turn the wheel twice to the right.
b. Press the wheel to stop the forward.
c. Press the wheel 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:

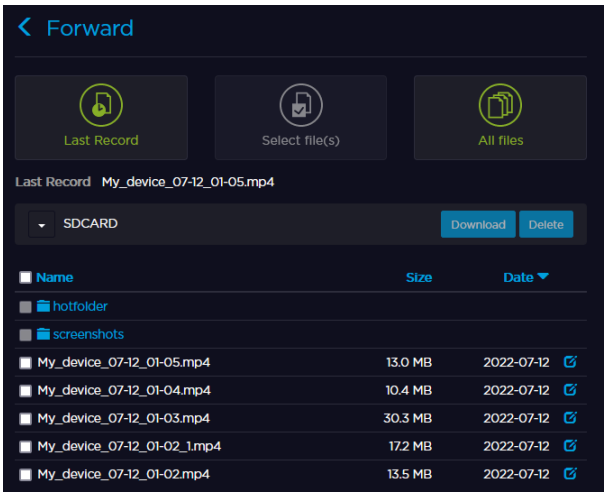
- The last record
- A selection of records
- All files

From the Unit Panel

1. Turn the wheel to select  .
2. Press the wheel to confirm.
   - To forward the last record
     a. Turn the wheel to select  .
     b. Press the wheel to confirm.
   - To forward specific files
     a. Turn the wheel to select  .
     b. Press the wheel to confirm.
     c. Press the wheel again to enter the SD card and/or the USB key content.
     d. Turn the wheel to select the files to forward and press the wheel to confirm each selection.
     e. Long press the wheel to start forwarding.
   - To forward all files
     a. Turn the wheel to select  .
     b. Press the wheel to confirm.
     c. Turn the wheel to highlight  .
     d. Press the wheel to confirm.
     e. Turn the wheel to select another destination profile.
     f. Press the wheel to confirm

From the Web Interface

Click on . The Forward interface appears.

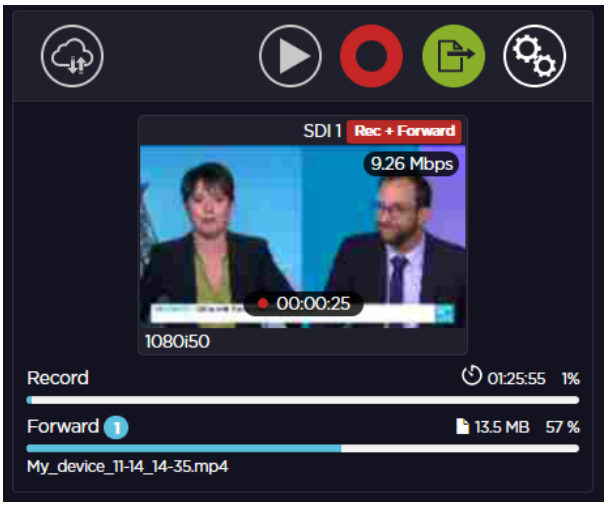


a. To forward the last record, click on .

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

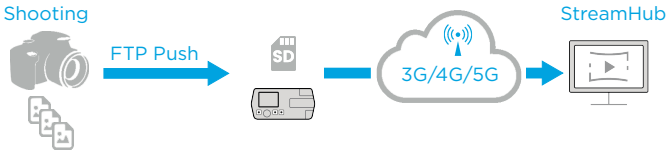
c. To forward all files, click on .

The forward in progress is indicated on the screen.



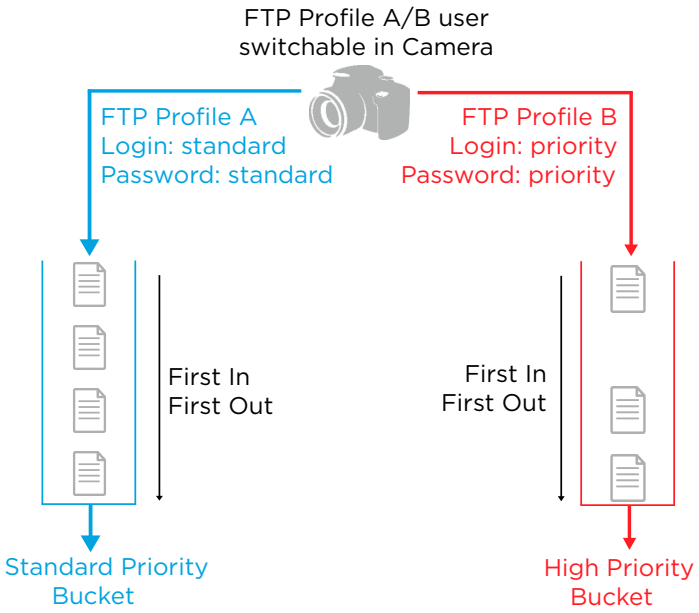
Transmitting Files via the Hot Folder

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

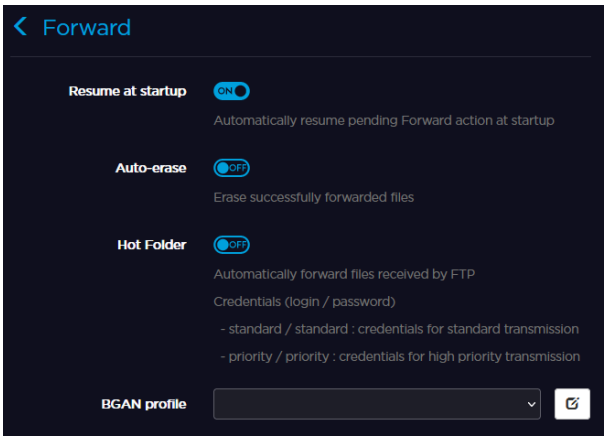
1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to enter the **Forward Config** menu.

5. Turn the wheel to select **Hot Folder** option.
6. Press the wheel to enable or disable the option.

From the Web Interface

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

2. Click on OFF or ON 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

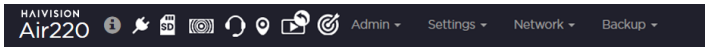
The Intercom function enables you to communicate with the Master Control Room, using a microphone or a headset connected to the unit.

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.

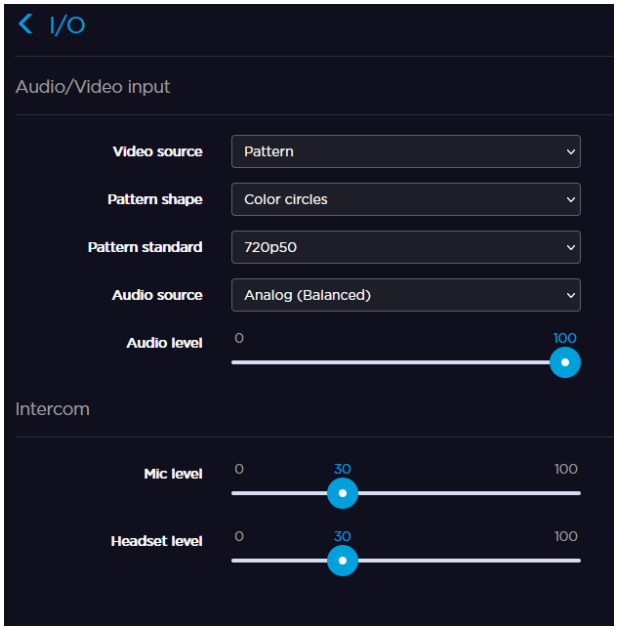
From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Turn the wheel to scroll down.
6. Turn the wheel to select either or for the micro level or the headset level.
7. Press the wheel to move the cursor towards or .

From the Web Interface

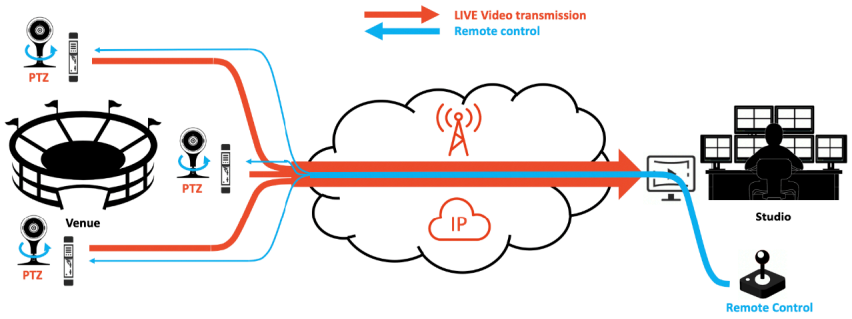
1. Click on **Settings > I/O**.

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 (Ethernet or WiFi). 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

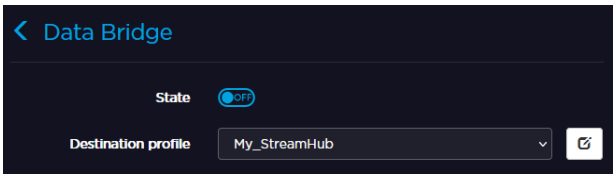
1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to highlight the Destination profile field.
4. Press the wheel to enter the Destination Profile menu.
5. Turn the wheel to select a destination profile and press the wheel to confirm.
6. Turn the wheel to highlight the data bridge field.
7. Press the wheel to enable or disable the Data Bridge mode.

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.

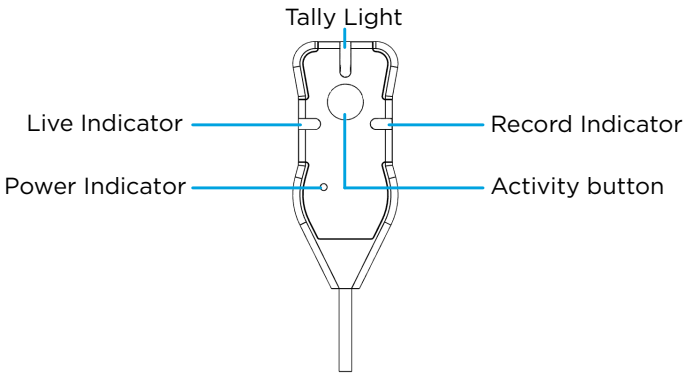
Note:
The unit remain locked if:

- 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

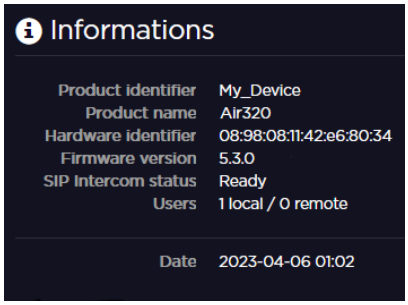
Getting the Unit Information

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Turn the wheel to scroll and display the unit's 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 wheel, 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

- **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.

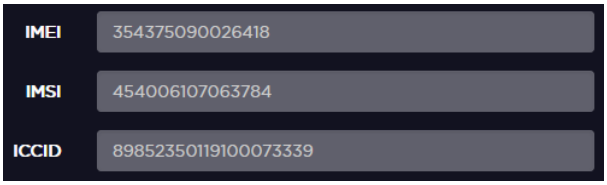
For legal purposes, you may need to register the IMEI, IMSI and/or ICCID numbers of the modem(s) used.

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you require the IMEI, IMSI and/or ICCID number.
4. Long press the wheel to display the numbers.

From the Web Interface

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



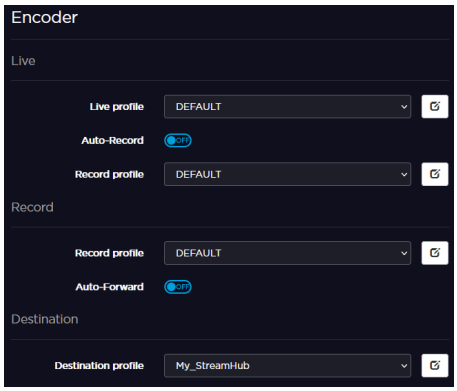
The modem IMEI, IMSI and ICCID numbers are indicated.

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.

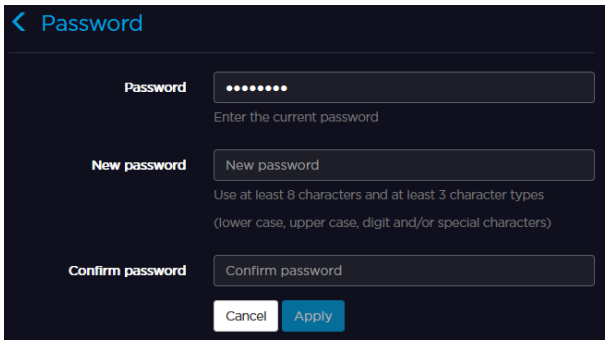
5. Select the **Pattern Shape** between:
   - Color circles pattern
   - Color bars pattern
   - Black pattern
6. Select the **Pattern Standard**.
7. Click on to start a Live.
   A graph appears on the unit's Web Interface.

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:

- Make sure that the battery is properly charged before starting to update
- The Firmware can be updated from the Manager (v3.3.0 and higher)

From the Unit Panel

1. Connect the USB key or insert
2. From the **Home** menu, turn the wheel to select .
3. Press the wheel to confirm.
4. Turn the wheel to select .
5. Press the wheel to confirm.
6. Turn the wheel to select **Firmware**.
7. Press the wheel to confirm.
   A message displays information about the firmware version and asks for confirmation.
8. Turn the wheel to select **YES**.
9. Press the wheel to confirm.

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.

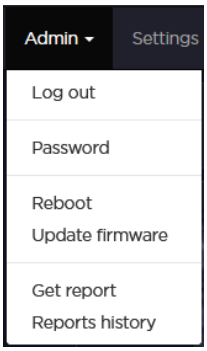
4. Follow the instructions on screen.

> **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.



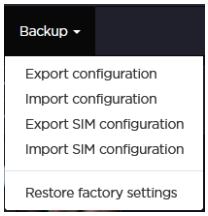
Restoring Factory Settings

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Turn and press the wheel to enter the **Configuration** menu.
6. Turn and press the wheel to select **Factory settings**.
7. Press the wheel again to select **Yes** ans restore factory settings.

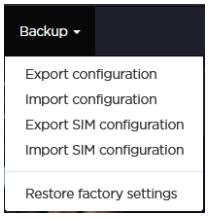
From the Web Interface

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

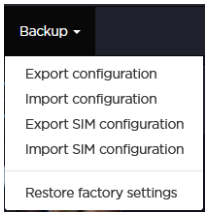
Note:
You can import the configuration from the Manager (v3.3.0 and higher).

From the Unit Panel

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Turn and press the wheel to enter the **Configuration** menu.
6. Press the wheel again to select **Import from file**.
7. 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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the concerned modem and press the wheel to confirm.
4. Turn the wheel to highlight the icon and press it to confirm.

The screen reminds the number of attempts left to enter the PIN code to unlock the SIM card.

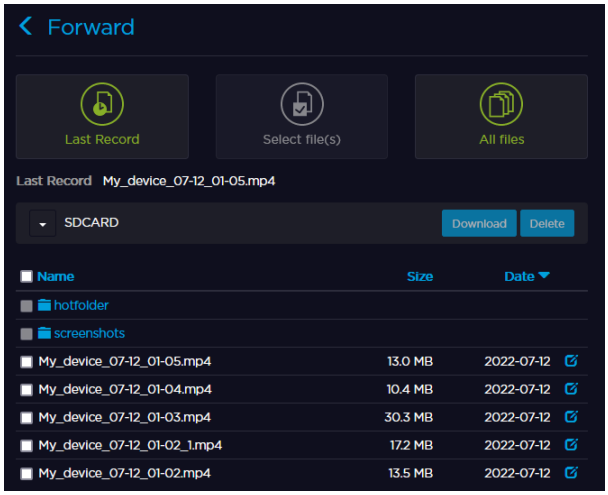
5. Press the wheel to activate the keyboard and enter the PIN code.
6. Select the key and press the wheel to confirm the PIN code.

> **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, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Press the wheel again to enter the **Delete** menu.
6. You can:
   - Select one or several files to delete
     a. Turn the wheel.
     b. Press the wheel to confirm the selection. Selected files are maked with a check.
     c. Long press the wheel to delete the selected files.
   - Delete all files
     a. Turn the wheel to the left and highlight **Select All** option.
     b. Long press the wheel to delete the files.
   - Select files stores in the Hot Folder
     a. Turn the wheel to highlight **Hot Folder**.
     b. Press the wheel to enter the hot folder.
     c. Select the priority or standard folder.
     d. To select the files to delete, turn the wheel and press it.
     e. Long press the wheel to delete the selected files.

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

This operation can be done only from the Unit Panel.

1. From the **Home** menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Turn the wheel to select **Format**.
6. Press the wheel to enter the **Format SD** menu.
7. Turn and press the wheel to select FAT32 or exFAT.

> **Note:**
> FAT32 format is older and limits the size of files to 4 Go.

8. Press the wheel to confirm 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. Press the wheel to confirm.
3. Turn the wheel to select  and press it to confirm.
4. Turn the wheel to select **Report** and press it to confirm.
   A report is generated and accessible from the Web Interface.
5. From the Web Interface, click on **Admin > Reports History**.
6. Click on the report that you want to download.
   A report file (.bin) is generated.
7. 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.

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.
Missiong signal on SDI/HDMI	Check that the source set in the video settings corresponds to the actual video input.
Missing audio signal on HDMI	If the source should embed audio signals, please check the camera settings.
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

		Air3 Series	Air3 & Air2 Series
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)	
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) Up to 2 channels (Analog 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 2x analog audio input (Balanced)

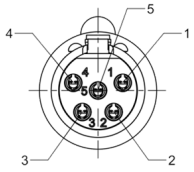
Video Return

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)

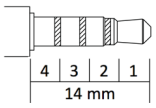
Networks

3G, 4G and 5G	For Air220-5G and Air320e-5G models: 2 modems with embedded high gain custom antennas Worldwide compliant 5G SA and NSA modes supported 5G sub 6GHz supported Supported bands • 5G: n1,n2,n3,n5,n7,n8,n12,n20,n25,n28,n38,n40,n48,n66,n71,n77,n78, n79 • 4G: B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B46, B48, B66, B71 • 3G: B1, B2, B3, B4, B5, B6, B8, B9, B19
3G and 4G	For Air220, Air320 and Air320e models: Two modems with embedded high gain custom antennas Worldwide compliant Supported bands • 4G: B1, B2, B4, B5, B7, B8, B12, B13, B17, B18, B19, B20, B21, B25, B26, B28, B29, B30, B38, B39, B40, B41, B66 • 3G: B1, B2, B3, B4, B5, B6, B8, B19
Ethernet	1x Link
Wi-Fi	Configurable in Access Point Mode or Client Mode Maximum simultaneous connections to Access Point: 10 Frequency Band: 2.4 GHz or 5 GHz Dynamic list of channels (Access Point Mode): • 1 to 11 for 2.4 GHz • 36, 40, 44 and 48 for 5 GHz
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: 4pins (TRRS) 3.5 mm Audio Jack (Signal comply with Apple and Samsung headsets) • Rean/Neutrik RT4FCT-B (Female, 4 pins) • Switchcraft Mini-XLR TA4F Series (Female, 4 pins) Pins (Mating plugs) 1. Tip (Left HP) 2. Ring1 (Right HP) 3. Ring2 (Ground) 4. Sleeve (Microphone)  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	One Ethernet port 10/100/1000 Base-T RJ45 connector Green LED indicates link Orange LED indicated speed (on: 1000BT, off:10/100BT)
Wi-Fi	Dual Band 2.4 GHz and 5 GHz 802.11 b/g/n/ac

Storage

SD Card	SD slot, class10 recommended (FAT32, exFAT)
USB	Two USB 3.0 Type A connectors

Power

DC Input	Input type: Standard self-latching 2-pole connector with alignment key Automatic under-voltage protection at 11.8 Volts Automatic over-voltage protection at 24 Volts	
AC/DC Adapter	Manufacturer: ENG ELECTRIC CO., LTD Model: 6A-601DB19 Rated Input:100-240 VAC, 50-60Hz, 1.5A max Rated Output: 19VDC, 3.42A	
Internal Battery	Lithium-ion Rechargeable Battery	
	Manufacturer: RRC power solutions Model: RRC 2054 Capacity: 14.4V / 3450mAh / 49.7Wh	Manufacturer: AUDIOROOT Model: eSmart Li-48neo (FBALCO0117) Capacity: 14.4V / 3350mAh / 48.0Wh

Note:
Please leave the battery in the unit even not in use.

Hardware Specifications

Power Supply	DC input 19 V nominal, 3.42A Max Internal 48Wh battery (up to 3 hours)	
Power Consumption	35 W max From 25 to 28 W typical for Air320 From 18 to 22 W typical for Air220	
Weight	Air320e-5G	Air200/Air220/Air220-5G
Without internal battery	0.97 kg / 2.14 lbs	0.85 kg / 1.87 lbs
With internal battery	1.21 kg / 2.67 lbs	1.08 kg / 2.38 lbs
Dimensions (W x H x D)	15,8 x 6,6 x 12 cm 6.22" x 2.36" x 4.72"	
Operating Temperature	0°C to 45°C (with internal battery only) 32°F to 113°F (with internal battery only) 0°C to 30°C (in Backpack) 32°F to 86°C (in Backpack) 0°c to 40°C (with DC adapter) 32°F to 104°F (with DC adapter)	
Charging temperature	0°C to 40°C 32°F to 104°F	

Note:
When the unit is placed in a backpack, lateral openings of the backpack must remain open and the unit's fan must be placed face to those lateral openings in order to let the air flow.

Radiated Output Power

	Frequency Range	Maximal radiated power
WiFi 2.4GHz	from 2400 MHz to 2483.5 MHz	45.71 mW
WiFi 5GHz*	Frequency Range	Maximal radiated power
	from 5150 MHz to 5250 MHz ♦	131.83 mW
	from 5250 MHz to 5350 MHz	100 mW
	from 5470 MHz to 5725 MHz	91.2 mW
UMTS	Frequency Range	Maximal radiated power
	from 1920 MHz to 1980 MHz	223.87 mW
		138.04 mW ☼
	from 880 MHz to 915 MHz	250 mW
		75.34 mW ☼
LTE	Frequency Range	Maximal radiated power
	from 1920 MHz to 1980 MHz	97.72mW
		50.12 mW ☼
	from 1710 MHz to 1785 MHz	69.18 mW
		181.97 mW ☼
	from 2500 MHz to 2570 MHz	100 mW
		93.33 mW ☼
	from 880 MHz to 862 MHz	96.38 mW ☼
	from 832 MHz to 862 MHz	199.52 mW 120.23 mW ☼
	from 703 MHz to 748 MHz	117.49 mW 120.23 mW ☼
5G (with internal antennas)	Frequency Range	Maximal radiated power
	from 3300 MHz to 3800 MHz	57.54 mW ☼
	from 1920 MHz to 1980 MHz	50.12 mW ☼
	from 1710 MHz to 1785 MHz	181.97 mW ☼
	from 2500 MHz to 2570 MHz	93.33 mW ☼
	from 880 MHz to 915 MHz	96.38 mW ☼
	from 832 MHz to 862 MHz	120.23 mW ☼
	from 703 MHz to 748 MHz	120.23 mW ☼

♦ Not available in Client Mode for Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.

☼ With 5G cellular Modem

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