AIR Series

User Guide

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Software Version: v4.1

AVIWEST
Shaping tomorrow's live video

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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 AVIWEST.

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 WiFi), 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).

Health Precautions

Operating the unit is not recommended 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.

Coin Battery Safety Precautions

- Lithium battery ref: BR1225A

There is a 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 mentioned 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
  - ✓ Operating humidity: 10 % to 85 % (no condensation)

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 AVIWEST.

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

- <u>Important notice for Japan territory:</u>

  Using the 5GHz band (W52) outdoors is prohibited by radio regulations.
  Tur off WiFi 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 or 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 a long life internal rechargeable battery and a large set of audio and video interfaces, the AIR Series supports the best state-of-art H.265/HEVC & H.264/AVC encoders offering premium full HD and SD video quality with less data use and low latency.

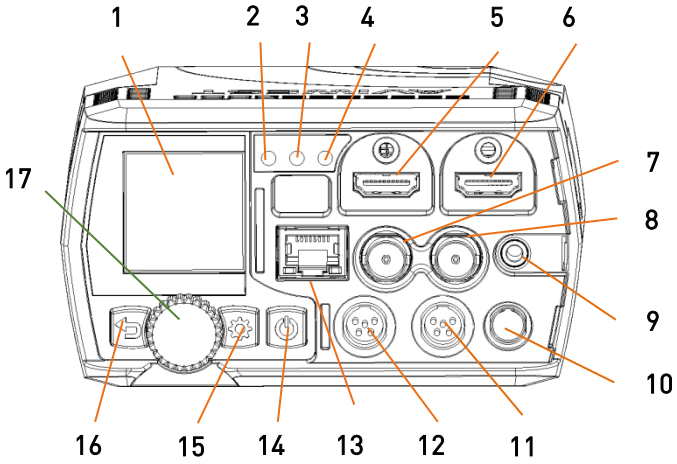
On the transmission side, the solution features up to 2 embedded cellular 3G/4G/5G modems and antennas plus additional extension links (internal Wi-Fi, Ethernet and USB ports) combined and controlled by our SST (Safe Stream Transport) technology. This award-winning technology powered by Aviwest is an 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.

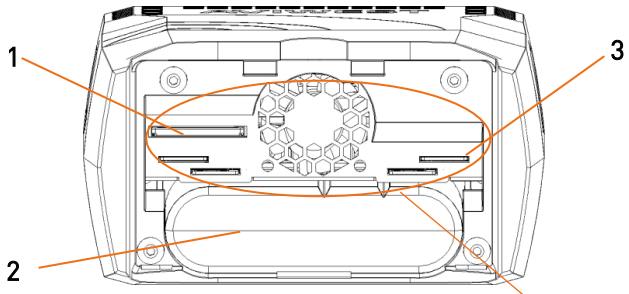
	AIR320e-5G	AIR320e	AIR300e	AIR220-5G	AIR220	AIR200
H.265/HEVC encoder	●	●	●			
H.264/AVC encoder	●	●	●	●	●	●
Embedded cellular modems	3G/4G/5G	3G/4G		3G/4G/5G	3G/4G	
4 extension links (Wi-Fi, Ethernet, USB)	●	●	●	●	●	●

Front Panel



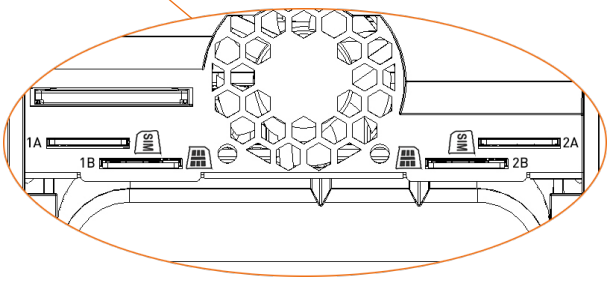
1	Screen	14	Power Button • To turn on the unit press the power button . • To turn off the unit press the power button for 3 seconds.
2	Activity indicator		
3	Link Indicator		
4	Battery level indicator		
5	HDMI 1.4 Output		
6	HDMI 1.4 Input	15	Settings Button
7	3G-SDI Output	16	Back Button
8	3G-SDI Input	17	Selection Wheel Turn to scroll within menus and lists. Short press to confirm a choice. Long press to start actions (ie. starting a forward).
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)		
13	Ethernet		

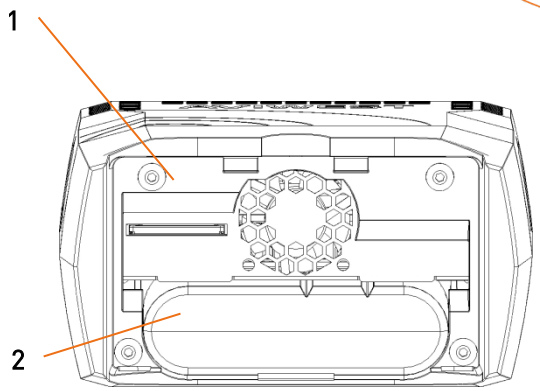
Rear Panel



AIR220 / AIR320 / AIR320e Models

1	SD card slot
2	Battery
3	4 x Micro SIM card slots organized as 2 banks for each Internal Cellular Modem

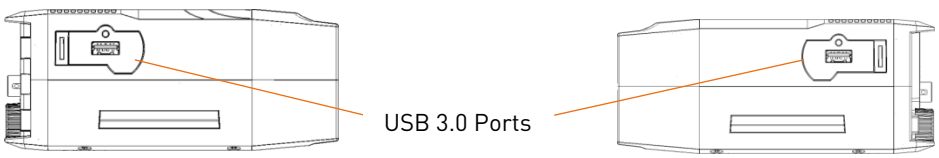




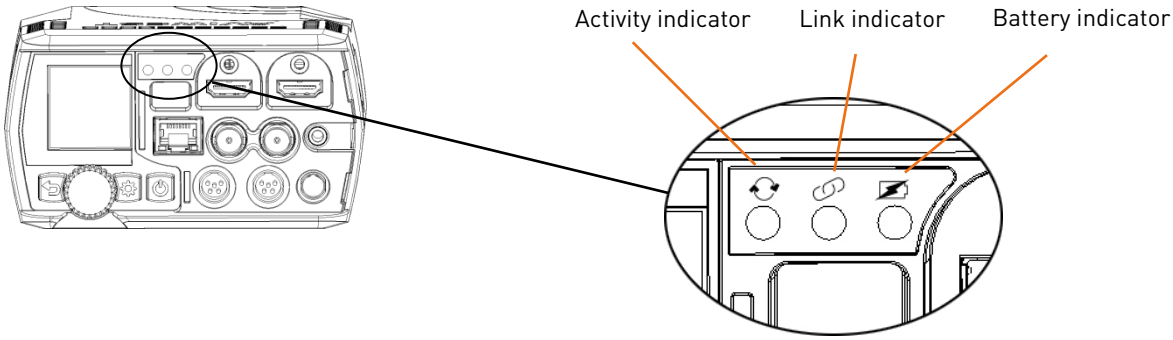
AIR200 / AIR300 / AIR300e Models

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. The unit is 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 on DC input with a fully charged battery
Fixed Green	The unit is powered by external source on DC input and charging internal battery
Fixed yellow	The unit is powered by external source on DC input 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

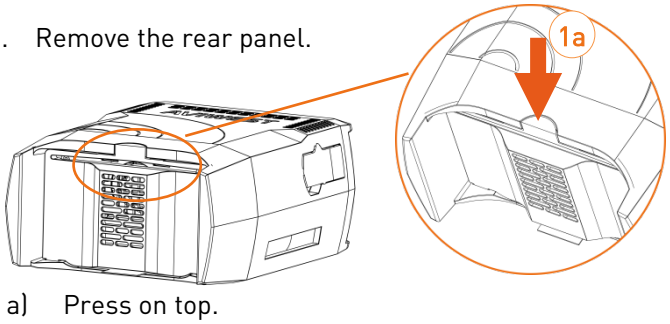
Checking Package Content

Please check that the package contains:

- AIR unit
- 19V AC/DC adapter
- A printed Quick Start Guide
- Flyer with QR code redirecting to WEB site with technical documents (User Guide, and Quick Start Guide)
- SD card (if ordered)

Installing the Unit

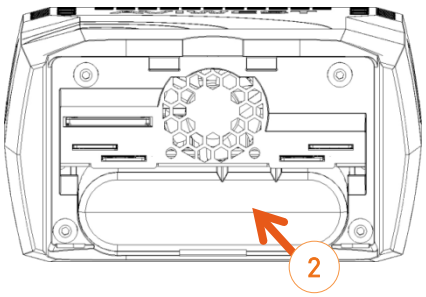
1. Remove the rear panel.



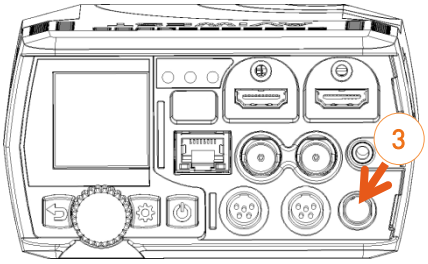
a) Press on top.

b) Remove the cover.

2. Install the battery into the unit (if not already installed).



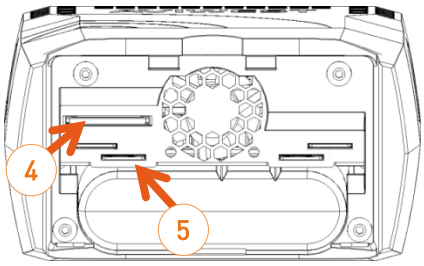
3. Connect the AC/DC adapter and power cable.



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

4. Insert a SD card (if not already installed).

   Note: It is recommended to use a FAT 32 or exFAT formats and class 10 SD card.



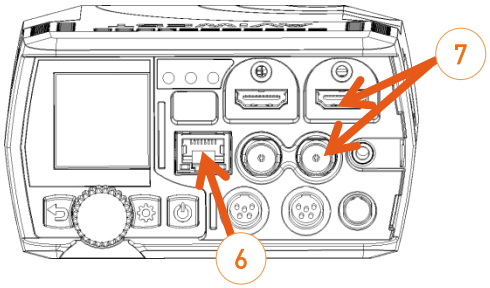
5. Insert a SIM card in a slot (not applicable for AIR200, AIR300 and AIR300e).

   Note: Slots 1A and 1B are coupled to Modem 1.

   While the slots 2A and 2B are coupled to Modem 2.

6. For Ethernet transmission, connect the Ethernet cable.

   Note: 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.

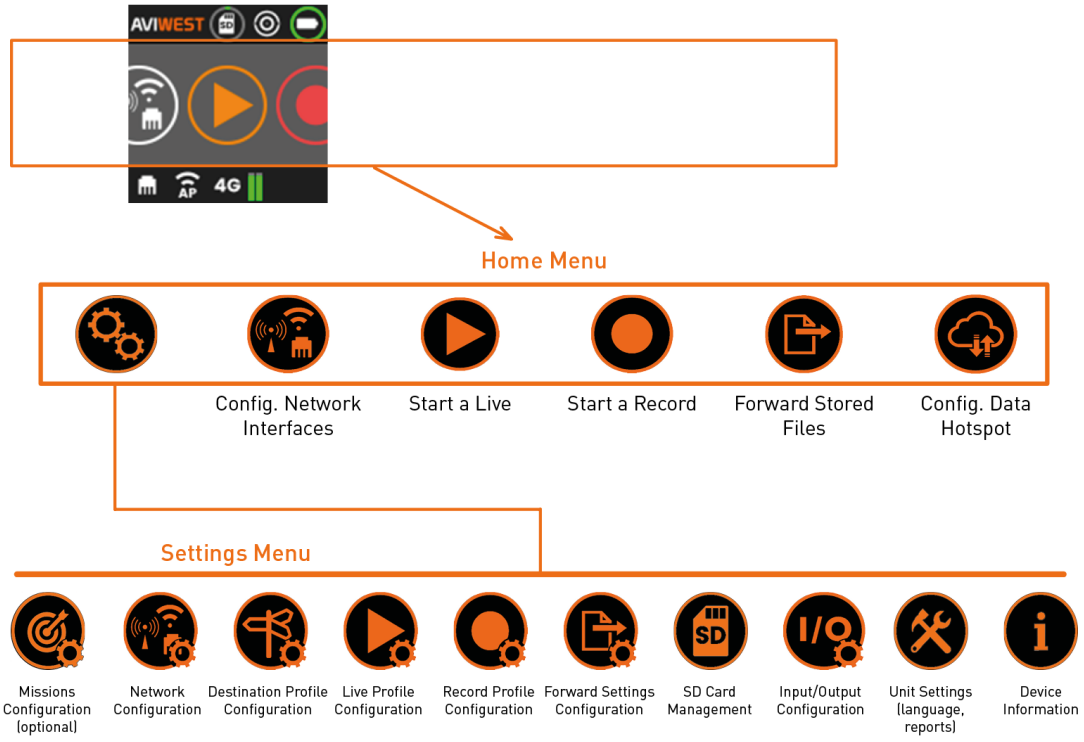
Unit Front Panel

The unit front panel allows you to:

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

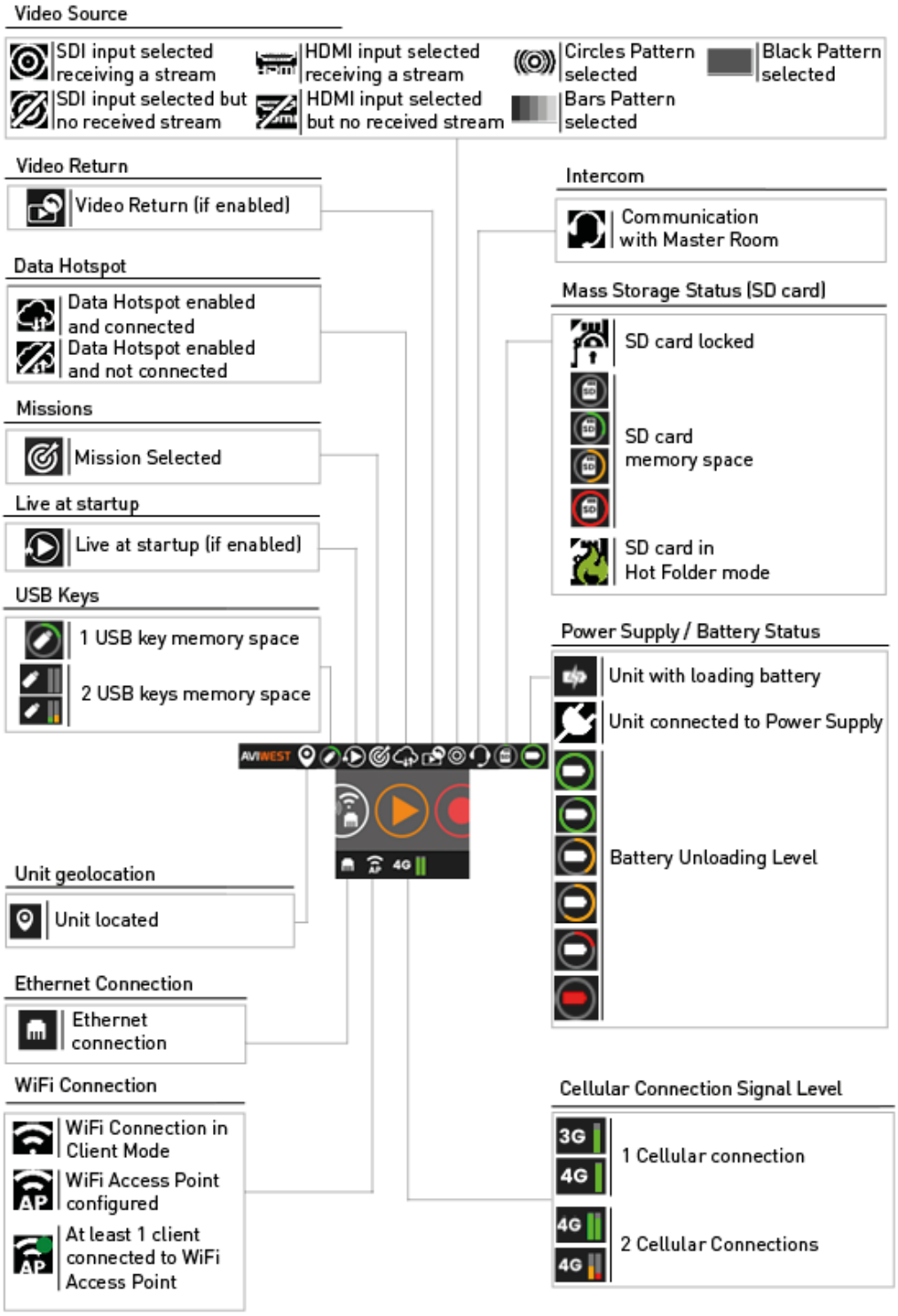
Menus

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

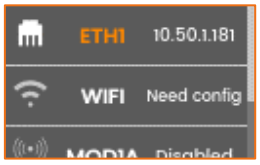
The web interface allows you to:

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

To access the Web interface, use an Ethernet connection or a WiFi connection.

Ethernet Connection

1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
   ▷ The screen displays the IP address assigned to the AIR unit (by default in DHCP mode).



3. From a web browser, enter the AIR unit Ip address and append **:8888** to it.
   Example: 10.0.1.241:8888

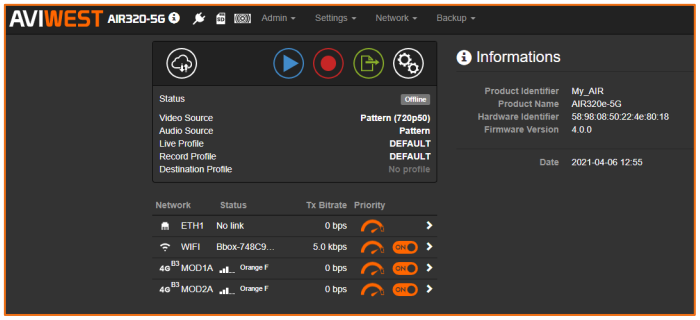
   ▷ The login screen opens:

   The screen will display the right designation according to the unit you have.

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

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

   ▷ The AIR web interface opens:



WiFi Connection (Access Point Mode)

1. From the Unit Panel configure the unit as a WiFi Access Point (see chapter Configuring a WiFi interface).

2. On your WiFi client device (computer, notebook, smartphone), go to the WiFi settings menu, and select the WiFi access point that you configured.

   Example: 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).

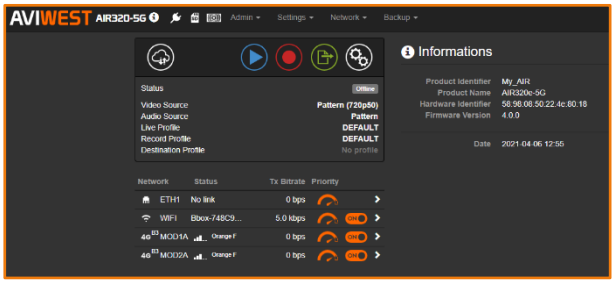
   ▷ The login screen opens:

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:

From a Notebook / Computer



From a Smartphone

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 address, 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.

Note: 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.

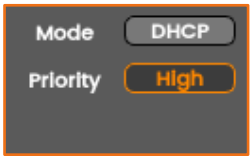
3. Press the wheel again to enter the **ETH1 CONFIG** menu.

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 retrieved.
  - You can set the network link priority (High or Low).



a) Turn the wheel to select priority field.

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

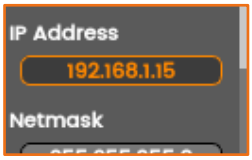
c) Turn the wheel to select High or Low priority.

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) Press to enter the input screen.

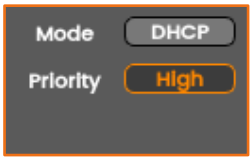
e) Use the wheel to enter settings (turn to select characters and press to confirm).

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 Priority field.



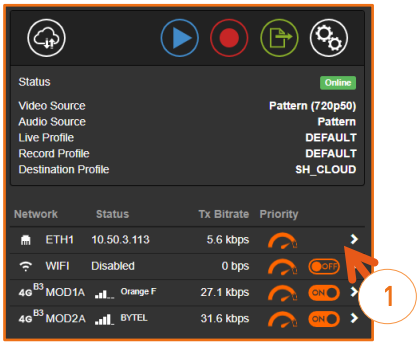
j) Press the wheel to access the priority selection (High or Low).

k) Turn the wheel to select High or Low priority.

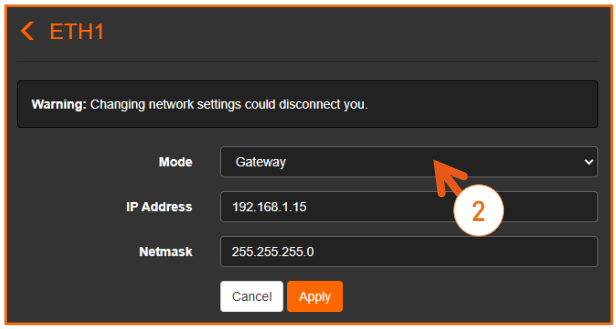
l) Press the wheel to confirm your choice.

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 and Netmask if GATEWAY mode is selected.

4. Click the **Apply** button to save these settings.

Note: Configuring Ethernet interfaces may disconnect the unit.

Configuring a WiFi Interface

The unit can operate either as a WiFi Access Point, or a WiFi Client.

Enabling/Disabling the WiFi Interface

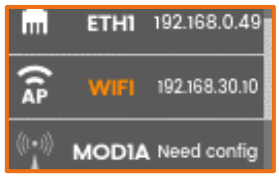
By default, the WiFi network in disabled.

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 WiFi configuration.



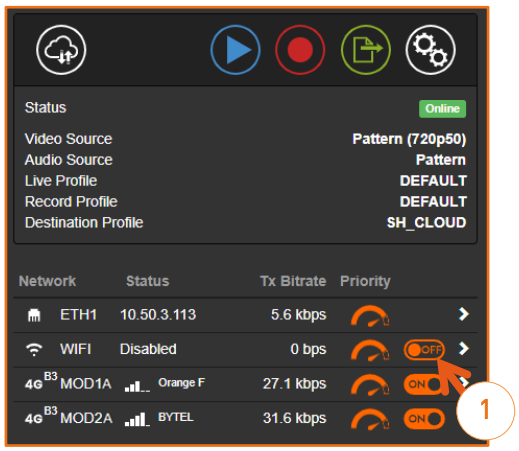
4. Press the wheel to confirm.

5. Press the wheel again to enable the WiFi.

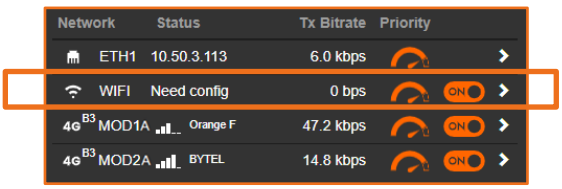
▷ The button turns into and the **Mode** field appears.

From the Web Interface

1. Click on or in the WiFi line to enable or disable the WiFi network.



▷ The WiFi network is enabled:



Configuring a WiFi Access Point

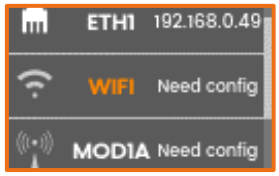
By default, the WiFi network is disabled. Make sure it is enabled. If not, see Enabling/Disabling the WiFi Interface.

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

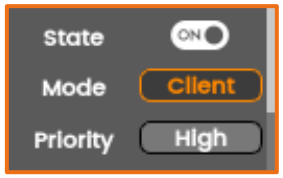
From the Unit Panel

1. From the Home menu, turn the wheel to select .

2. Press the wheel to confirm.
3. Turn the wheel to select the **WiFi configuration** screen.



4. Press the wheel to confirm.
5. Tun the wheel to select the **Mode** field.



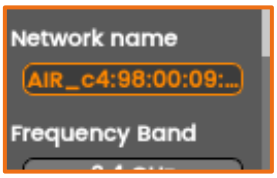
6. Press the wheel to access the selection list for the WiFi mode.

7. Turn the wheel to select **Access Point**.

8. Press the wheel to confirm.
9. Turn the wheel to select .

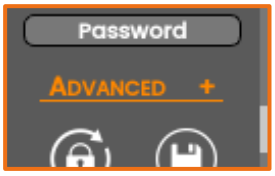
10. Define the WiFi settings.

- **Network name** (automatically formatted as follows: AIR followed by _ and the unit hardware ID.
  In the example beside: AIR_c4:98:00:09:c2:26:80:6c
- **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

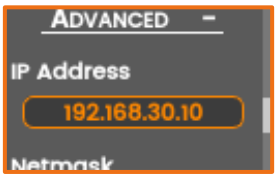


Note: In Access Point mode, 5GHz band is not available for Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.

11. Select **ADVANCED +** and press the wheel.



12. Turn and press the wheel to define the IP settings (IP Address and Netmask).



13. Turn the wheel to select .

14. Press the wheel to confirm.

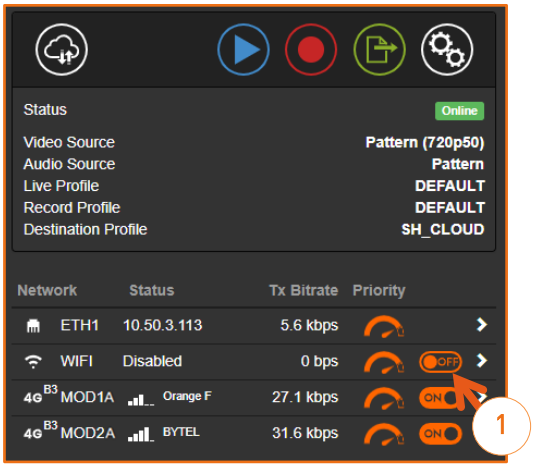
▷ An icon indicates that the WiFi Access Point is configured:

A WiFi Access Point is configured

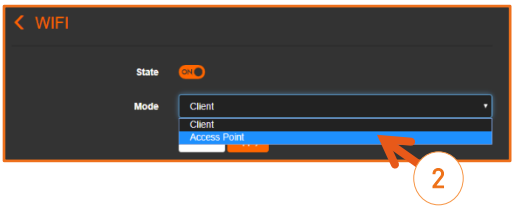
At least one client is connected to the Access Point

From the Web Interface

1. Click on the WiFi line to open the WiFi interface.

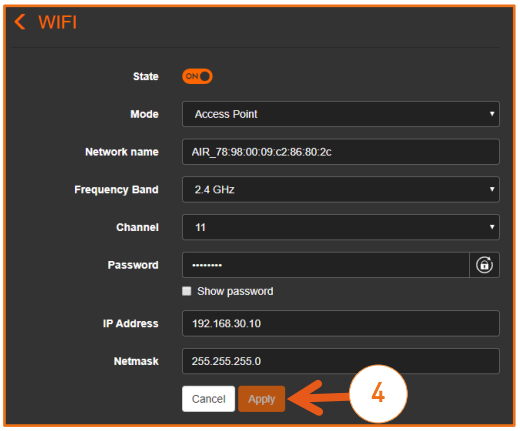


2. From the **Mode** scrolling list, select **Access Point**.



3. Define the WiFi settings:

- **Network name** (automatically formatted as follows: AIR followed by _ and the unit hardware ID.
  Example: AIR_78:98:00:09:c2:86:80:2c
- **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 to reset it.
- Enter the **IP Address** and the **Netmask.**



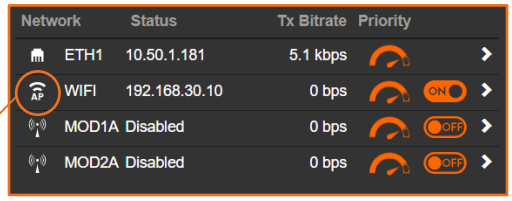
Note: In Access Point mode, 5GHz band is not available for Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.

4. Click on **Apply**.

▷ An icon indicates that the WiFi Access Point is configured:

A WiFi Access Point is configured

At least one client is connected to the Access Point



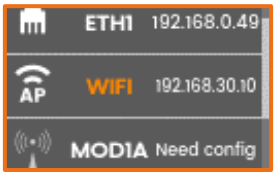
Configuring a WiFi Client Interface

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

From the Unit Panel

1. From the Home menu, turn the wheel to select .

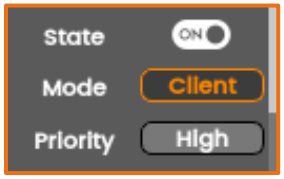
2. Press the wheel to confirm.
3. Turn the wheel to select the WiFi configuration.



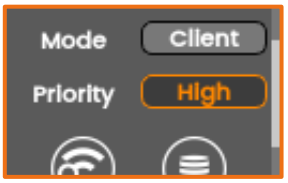
4. Press the wheel to confirm.
5. Turn the wheel to select the **Mode** field.

6. Press the wheel to access the selection list for the WiFi mode.

7. Turn the wheel to select the **Client** mode.
8. Press the wheel to confirm.
   ▷ The client mode is activated.



9. You can set the network link priority (High or Low).
   a) Turn the wheel to select 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 your choice.



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

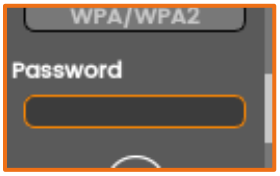
a) Turn the wheel to select .

b) Press the wheel to confirm.

c) Turn the wheel to select a network.

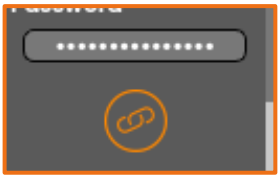
d) Press the wheel to confirm.

e) Press the wheel to activate the keyboard and enter the password.



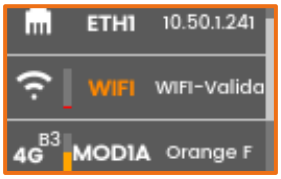
f) Turn and press the wheel to select the characters and compose the password.

g) Select the key and press the wheel to confirm the password.



h) Turn the wheel to select and press it to confirm.

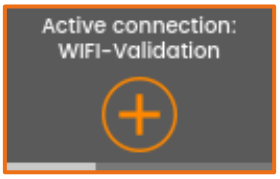
▷ The network is displayed:



Adding manually a hidden network

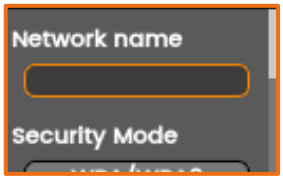
a) Turn the wheel to select and press it to confirm.

b) Press again the wheel to add a new network.



c) Enter the Network name.

d) Press the wheel to activate the keyboard.

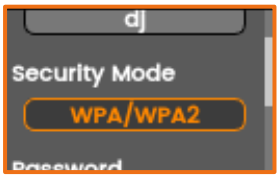


e) Turn and press the wheel to select characters and compose the password.

f) Select the key and press the wheel to confirm the network name.

g) Turn the wheel to select the **Security Mode**.

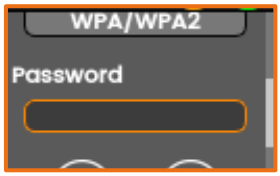
h) Press the wheel to display the Security Mode list.



i) Turn the wheel to select the Security Mode and press it to confirm your choice.

j) Turn the wheel to select the **Password** field.

k) Press the wheel to activate the keyboard and enter the password.



l) Turn and press the wheel to select characters and compose the password.

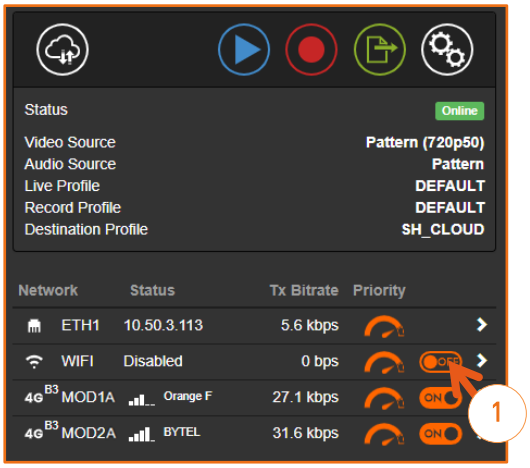
m) Select the key and press the wheel to confirm the network name.

n) Turn the wheel to select and press it to connect the new network.

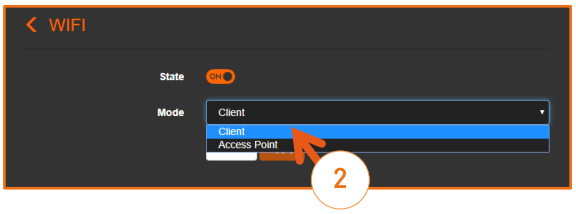
o) Turn the wheel to select and press it to save the new network.

From the Web Interface

1. Click on the WiFi line to open the WiFi interface.



2. From the **Mode** scrolling list, select **Client** mode.



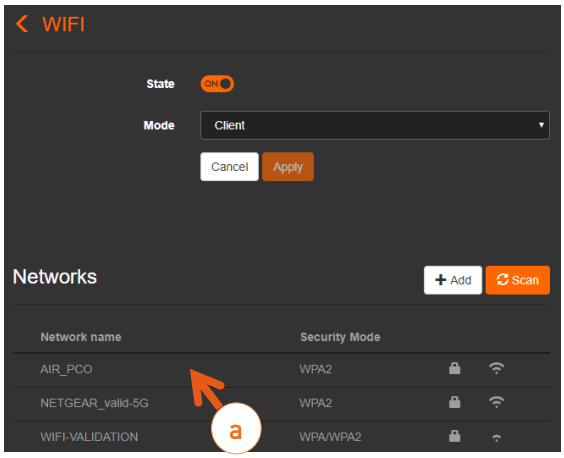
3. Click on **Apply**.

▷ 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.

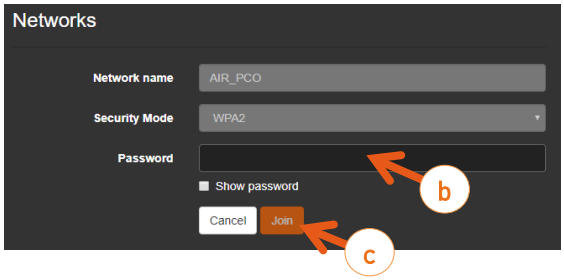
Selecting a network among the ones identified around

a) Select the network among the list.

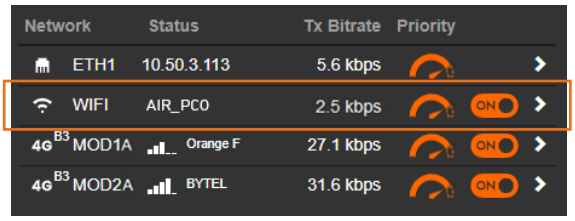


b) Enter the **Password**.

c) Click on **Join**.

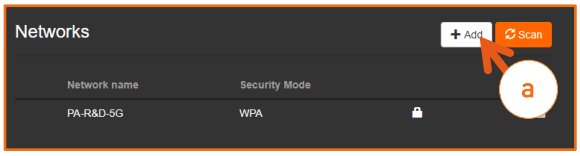


▷ The WiFi network that you selected is indicated:



Adding manually a hidden network

a) Click on **Add**.

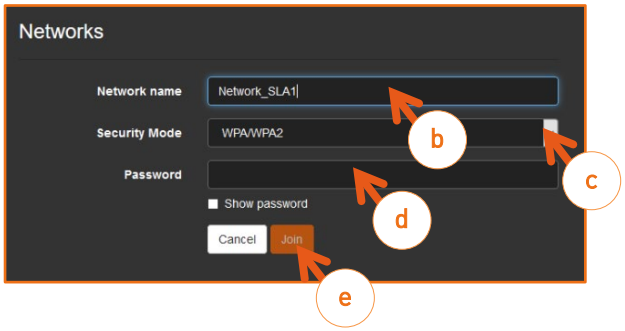


b) Enter the **Network name**.

c) Select the **Security Mode**.

d) Enter the network **Password**.

e) Click on **Join**.



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

Note: Not applicable for AIR200, AIR300 and AIR300e.

Inserting the SIM card

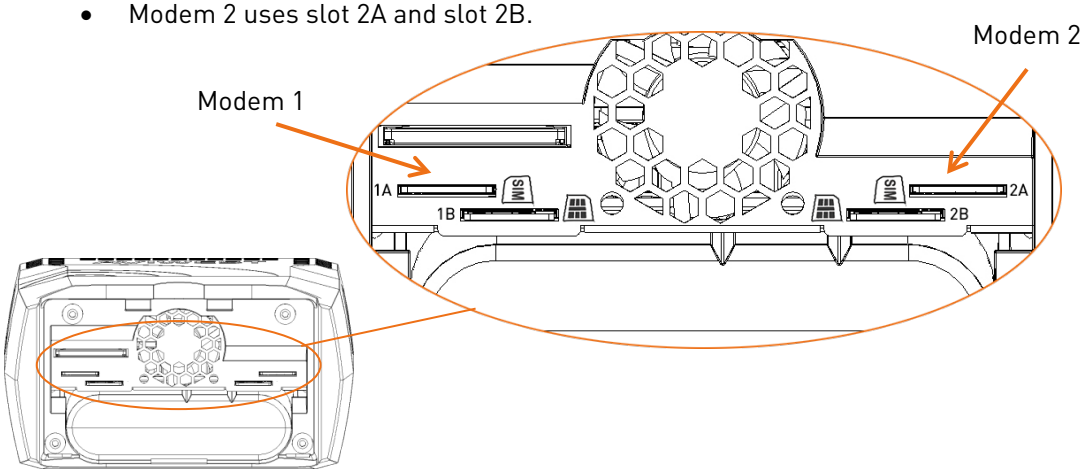
1. Make sure that your SIM card is unlocked.

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.

The unit is equipped with 2 modems. Each one allows inserting up to 2 SIM cards:

- 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:

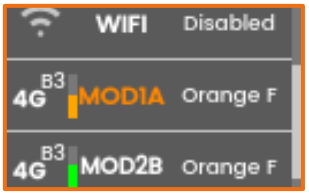
- Auto (Automatic Slot Assignment)
- Slot A
- Slot B

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

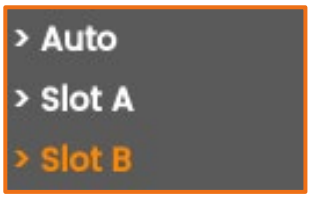
From the Unit Panel

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.



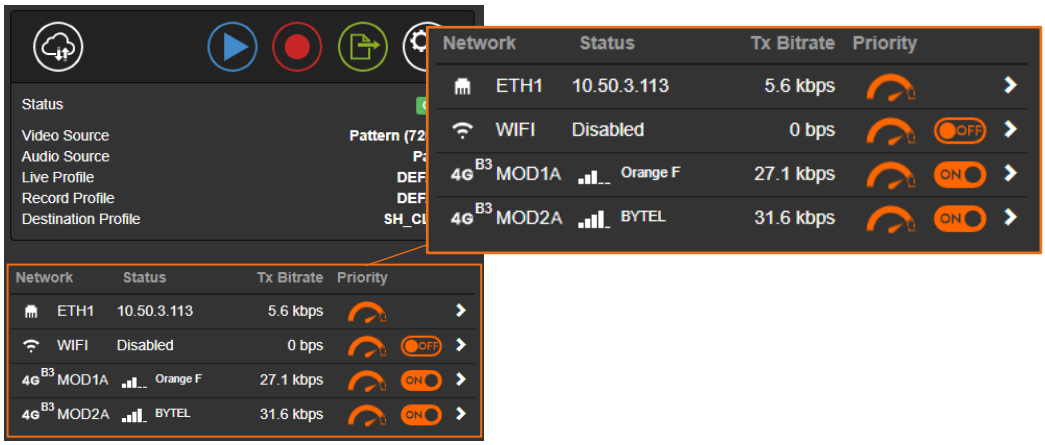
Note: In the example beside MODEM 1 is selected with slot A assigned.

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

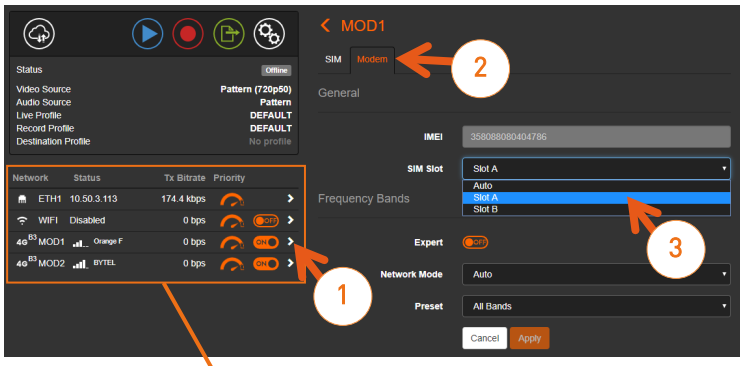
Note: In the example below MODEM 1 is selected with slot A assigned.



1. Click on ▶ in the modem line to open the MOD configuration interface.

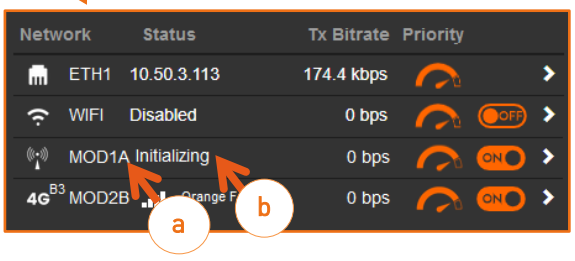
2. Click on the **Modem** tab.

3. Select the relevant slot.

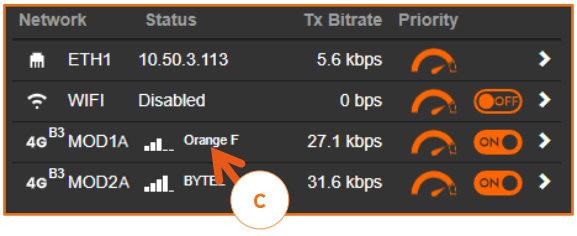


a) The newly selected slot is automatically applied.

b) An "Initializing" message appears.



c) The SIM card operator appears.



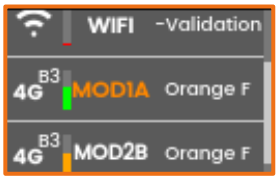
Configuring the APN

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

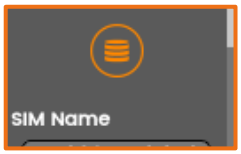
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you need to configure APN.
4. Press the wheel to confirm.
5. Turn the wheel to select .



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

To select a predefined APN

a) Press the wheel.



b) Press the wheel again to access the predefined APN list.

c) Turn the wheel and press it to select an APN.

d) Select and press the wheel to save.

To configure a new APN

a) Press the wheel.

b) Turn the wheel to scroll and enter settings for a new APN:

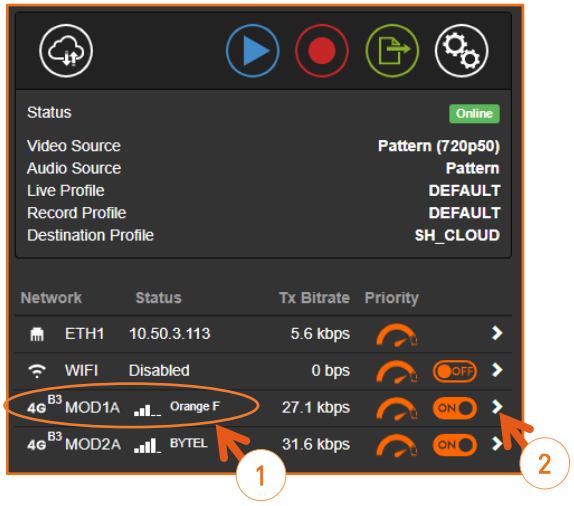
- SIM name
- APN
- Username
- Password

c) 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.

In the example beside: Orange F (Orange France) using Band 3 within a 4G network.

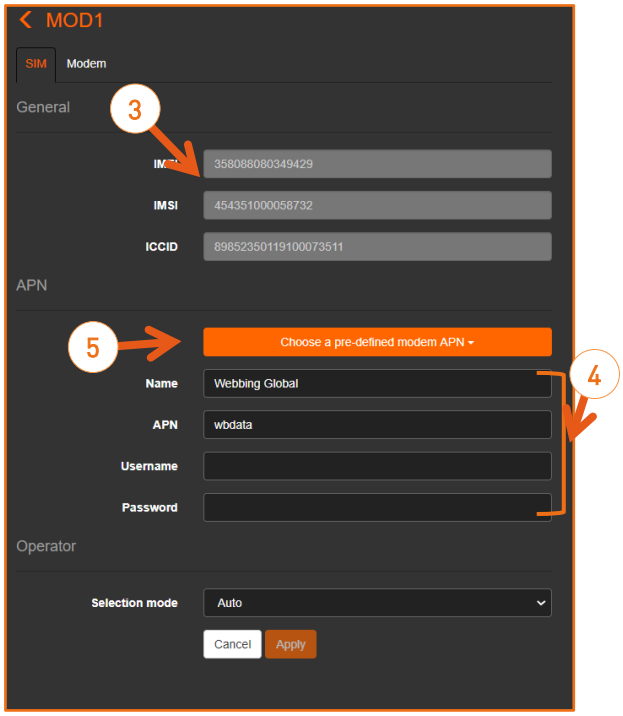


2. Click to configure the APN.

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).

Managing the APN database

The unit is delivered with a pre-defined APN database.

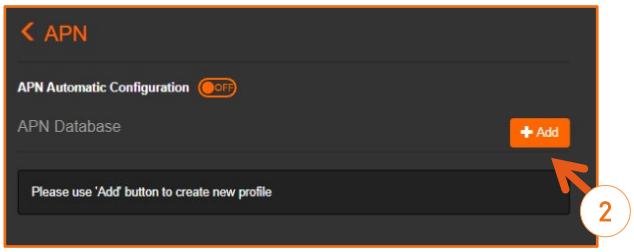
You can enrich this database from the Web Interface.

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.

Adding an APN to the database

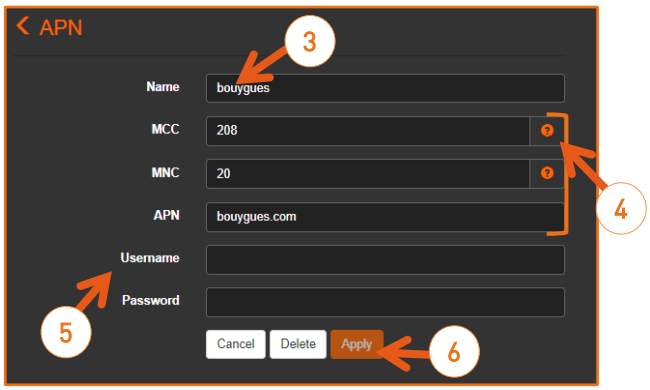
1. From the Web Interface, click on **Network > APN**.



2. Click the **Add** button.

3. Enter a **Name**.

4. Fill in the parameters fields **(MCC, MNC, APN)**

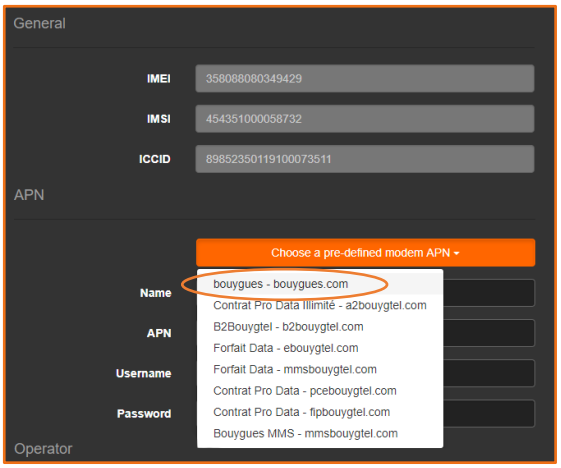


Note: Click on to get some help if required.

5. Enter a **Username** and **Password** if required.

6. Click on **Apply**.

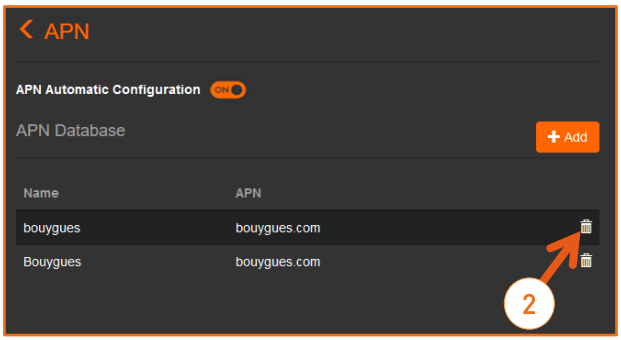
▷ The new APN appears in the APN database, and you can select it from the scrolling list when configuring a cellular interface operating within the same network.



Deleting an APN

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

2. Double click the trash button ( ).



Enabling / Disabling the Automatic APN Configuration

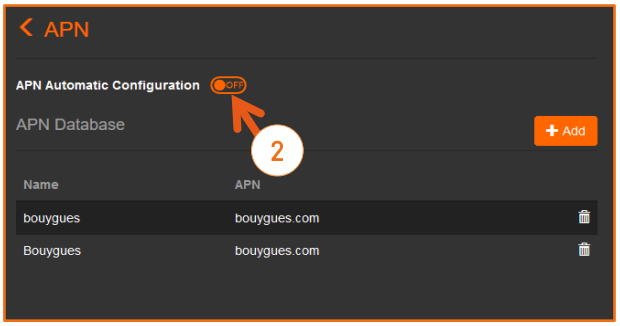
When the **APN Automatic Configuration** is enabled, an APN is automatically assigned when a new SIM card is inserted.

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.



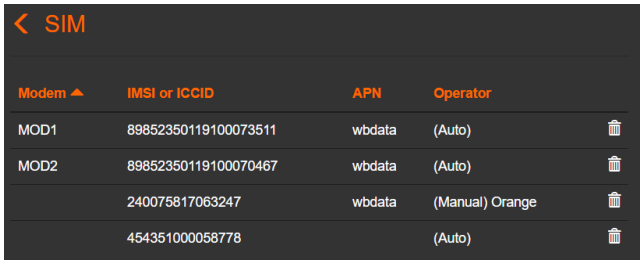
Managing Cellular Operators

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 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.

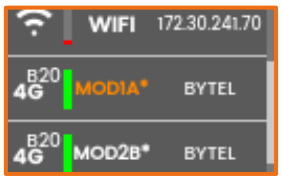


Selecting the Automatic Mode

Note: The Automatic Mode is the default setting.

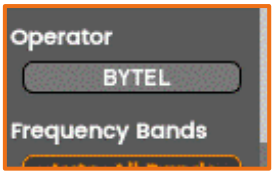
From the Unit Panel

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.
5. Press the wheel again to enter the **MOD.CONFIG** menu.



6. Turn the wheel to select .

7. Press the wheel to confirm.

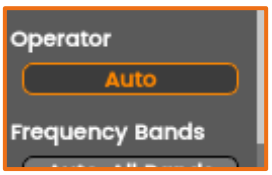


▷ The screen reminds the operator that is selected.

8. Press the wheel.

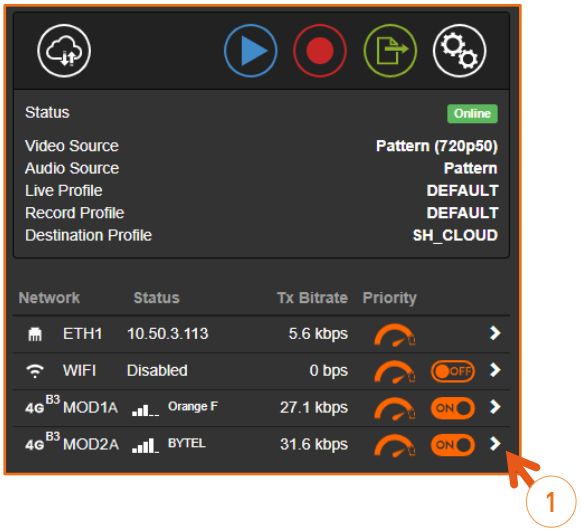
9. Press the wheel again to enable the Automatic Mode.

▷ The Automatic Mode is selected.



From the Web Interface

1. Click on the modem line.



2. Select **Auto** in the **Selection mode** scrolling list.

3. Click on **Apply**.

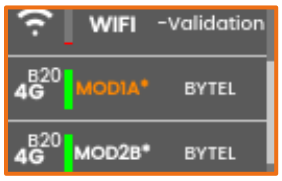
Scanning and Selecting a Cellular Operator

From the Unit Panel

1. From the Home menu, turn the wheel to select .

2. Press the wheel to confirm.

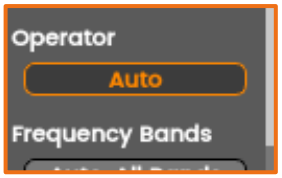
3. Turn the wheel to select the modem for which you need to select the operator.



4. Press the wheel to enter the **MOD CONFIG** menu.

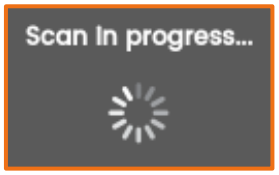
5. Turn the wheel to select .

6. Press the wheel to confirm.
   ▷ The screen reminds that Automatic Mode is selected.

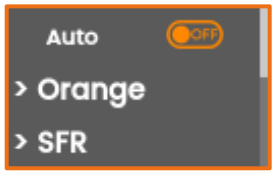


7. Press the wheel again.

8. Press the wheel to disable the Automatic Mode.

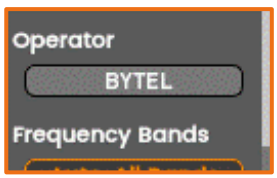


   ▷ The scan starts automatically.
   It may take a few minutes.



   ▷ Operators that can be selected are listed.

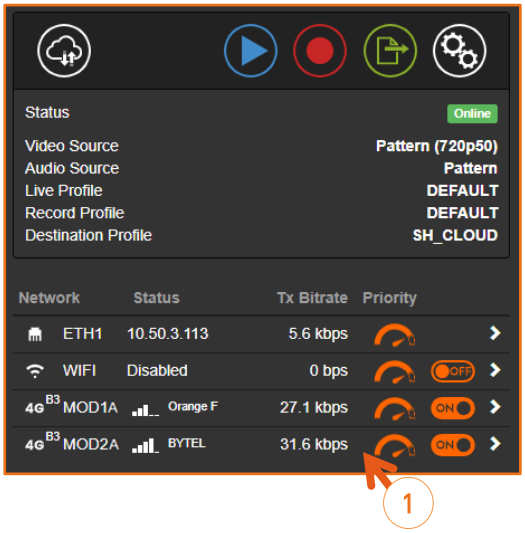
9. Turn the wheel to select the operator.
   Note: Only white operators in the list can be selected.



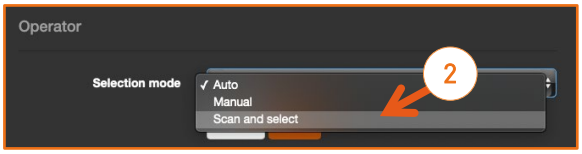
10. Press the wheel to confirm.

From the Web Interface

1. Click on the modem line.



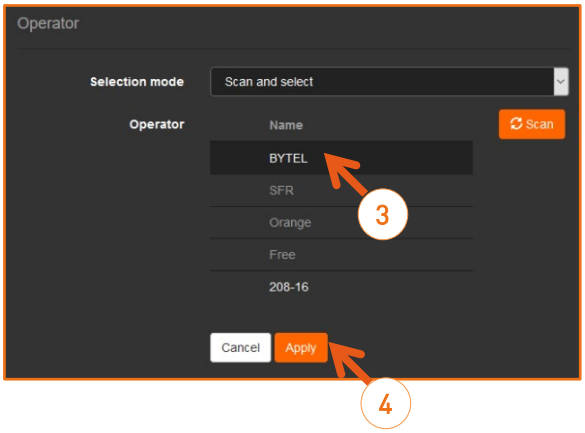
2. Select **Scan and select** in the **Selection mode** scrolling list.



3. Select the operator among the operators listed.

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

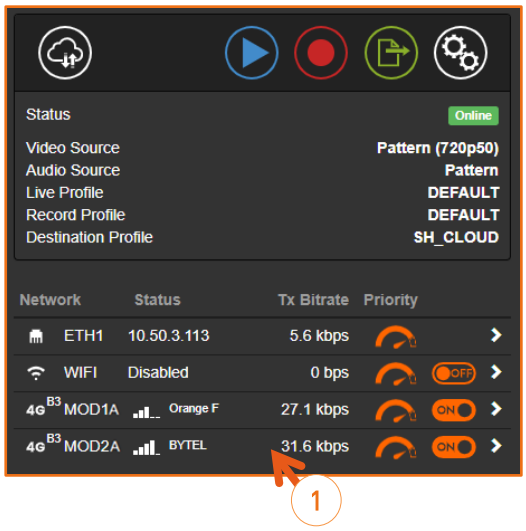
4. Click on **Apply**.



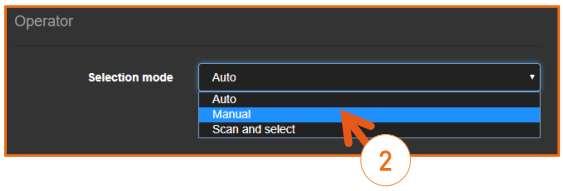
Selecting Manually a Cellular Operator

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.



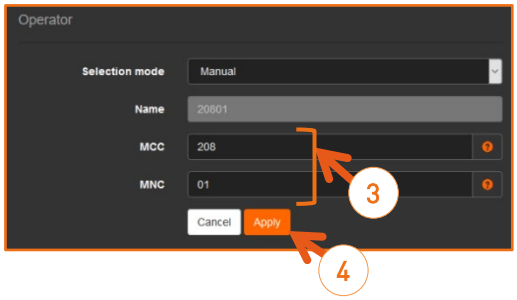
2. Select **Manual** in the **Selection mode** scrolling list.

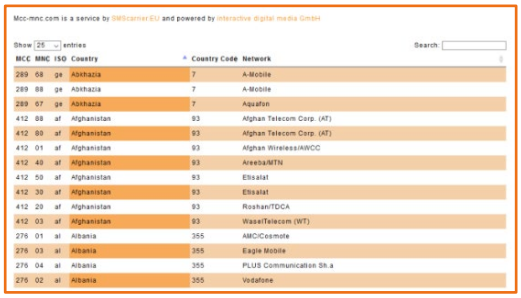


3. Fill the **MCC** and **MNC** fields.

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

4. Click on **Apply**.





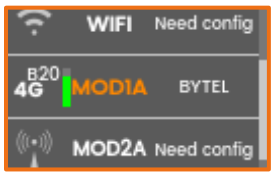
Configuring Modem Bands

Note: A star is displayed on the modem line if modem bands are not set in automatic mode or if they are not all selected.

From the Unit Panel

Using the Standard mode

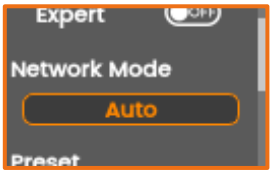
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you need to select the operator.



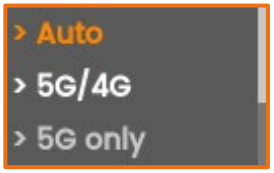
4. Press the wheel to enter the **MOD. CONFIG** menu.
5. Turn the wheel to select and press it to confirm.

6. Turn the wheel to select the **Frequency Bands** field.
7. Press the wheel to enter the menu.

8. Turn the wheel to highlight the **Network Mode** field.
9. Press the wheel to confirm.

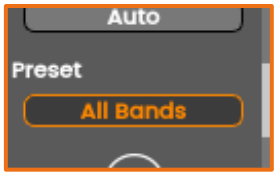


10. Turn the wheel to select the **Network Mode**.
    - **Note:** 5G/4G and 5G only are available on AIR220-5G and AIR320e-5G models.
    - **Note:** For 5G networks operating in Non-Standalone mode (NSA), select 5G/4G settings.



11. Press the wheel to confirm your choice.

12. Turn the wheel to highlight the Preset field.



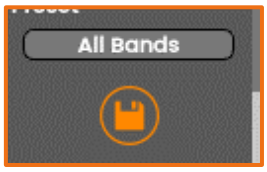
13. Press the wheel to confirm.

14. Turn the wheel to select the Preset and press it to confirm.

15. Turn the wheel to choose and press it to confirm.

    Note: Low Frequency bands are useful for indoor operations.

16. Select and press the wheel to save.

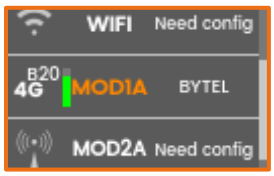


Using the Expert mode

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.



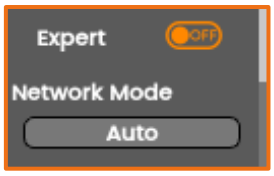
4. Press the wheel to enter the **MOD. CONFIG** menu.

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

6. Turn the wheel to select the **Frequency Bands** field.

7. Press the wheel to enter the menu.

8. Press again the wheel to enable the expert mode.



   ▷ The OFF button turns into ON and all the cellular bands are displayed on screen.

9. Turn the wheel to scroll down and display all the 5G, 4G and 3G bands.

10. Press the wheel to unselect the different cellular bands.

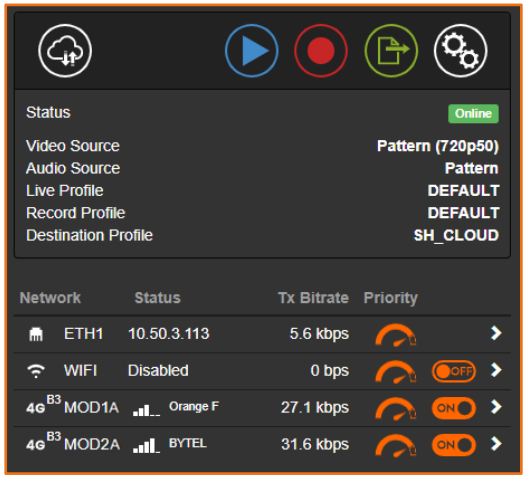
   ▷ The green dots turn to grey.

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.

   Note: For 5G networks operating in Non-Standalone mode (NSA), select 5G/4G settings.

4. Click on the **Preset** field and choose:

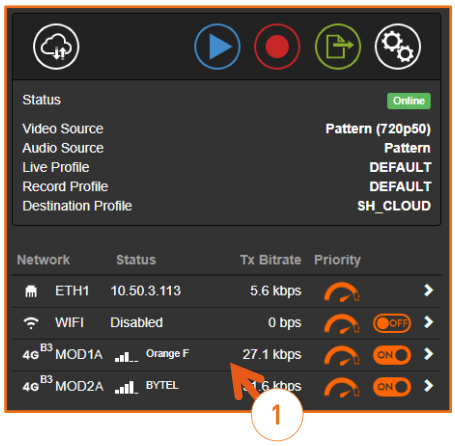
   - All Bands
   - Low Frequency

Note: Low Frequency bands are useful for indoor operations.

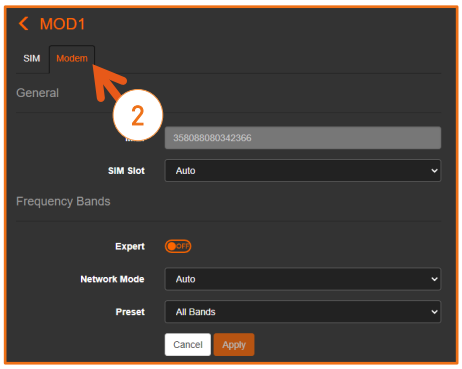
5. Click on **Apply**.

Using the Expert mode

1. Click on to configure the cellular bands.



2. Click on the **Modem** tab.



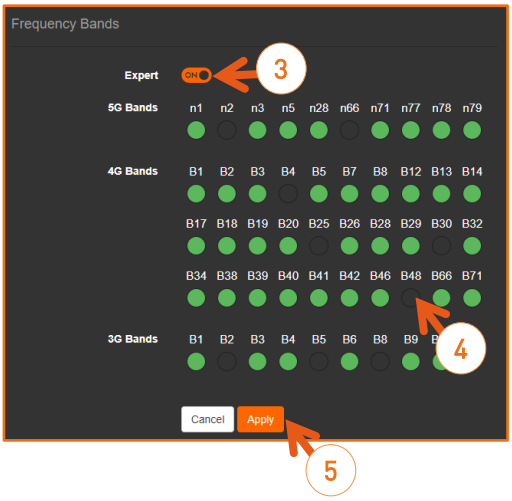
3. Click on OFF to enable the Expert mode.

   ▷ 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.

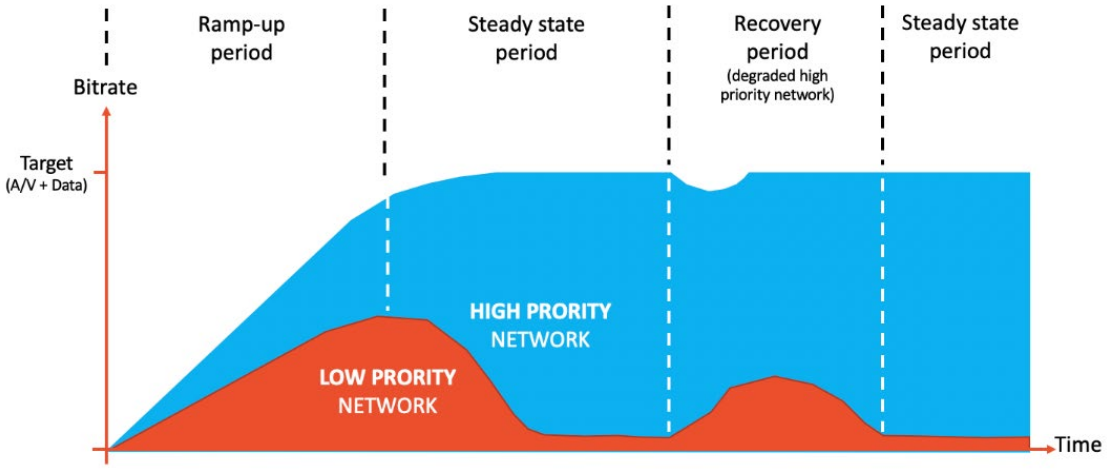
5. Click on **Apply**.



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:



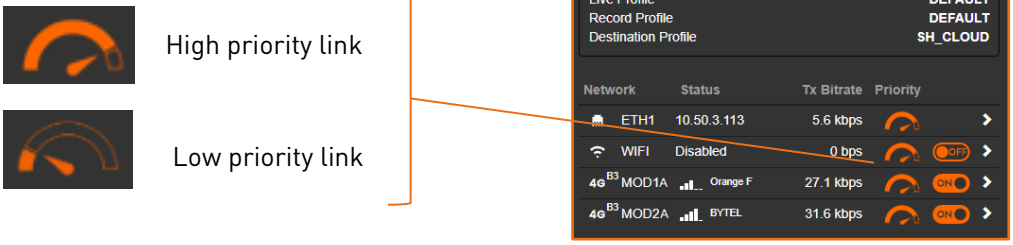
- For Live:
  - Both high and low priority links are used as long as the bitrate target set in the Live profile is not been reached.
  - Once the bitrate target is reached, high priority links are mainly used.

- 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 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.



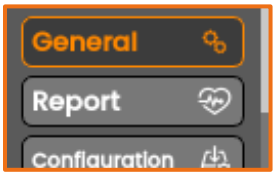
- From the unit panel select the priority level when configuring network links (see chapter Configuring an Ethernet Interface, Configuring a WiFi Client Interface).

Configuring the Unit Name

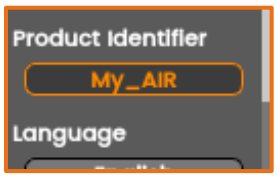
Giving a significant name to the unit allows you to identify it easily on a StreamHub interface.

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 .
4. Press the wheel to confirm.

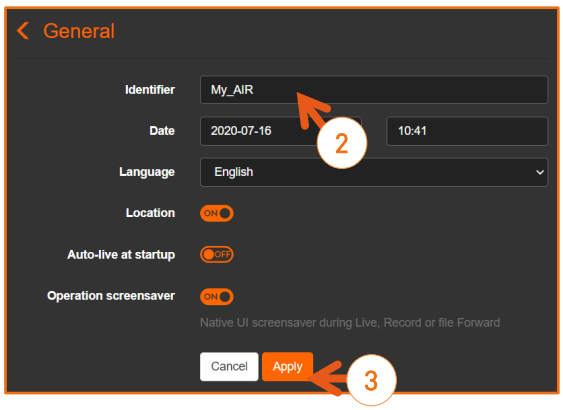


5. Press again the wheel to access the **General** settings.
6. Press the wheel to enter the **Product Identifier** field.

7. Turn to select characters and press to confirm.
8. Turn the wheel to select the key and press to confirm.

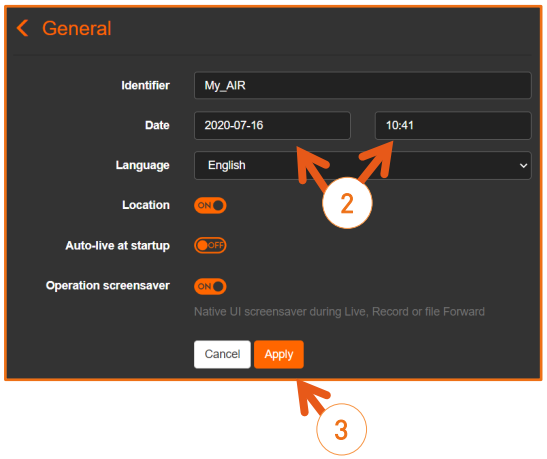
From the Web Interface

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



Configuring the Time and Date

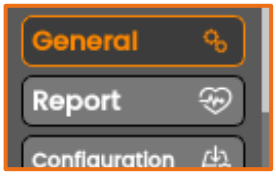
1. From the Web Interface, click on **Settings > General**.
2. Change the **Date** and/or **Time** as required.
3. Click the **Apply** button.



Selecting the Language

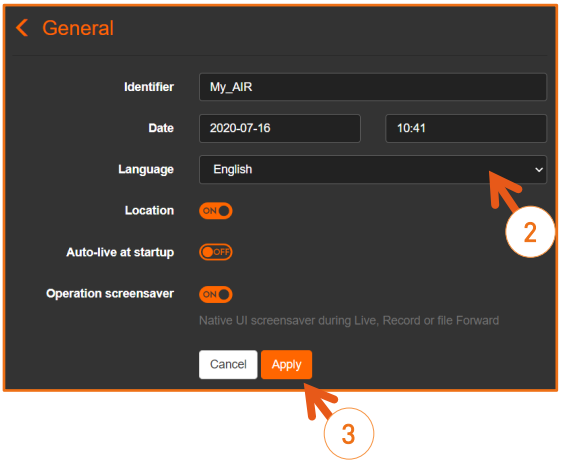
From the Unit Panel

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 again the wheel to access the **General** settings.
6. Turn the wheel to select the **Language** field and press it to confirm.
7. Select the language and press the wheel to confirm.



From the Web Interface

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

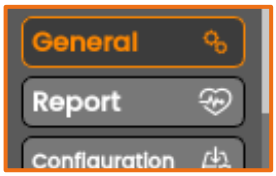


Enabling / Disabling the Unit Location

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

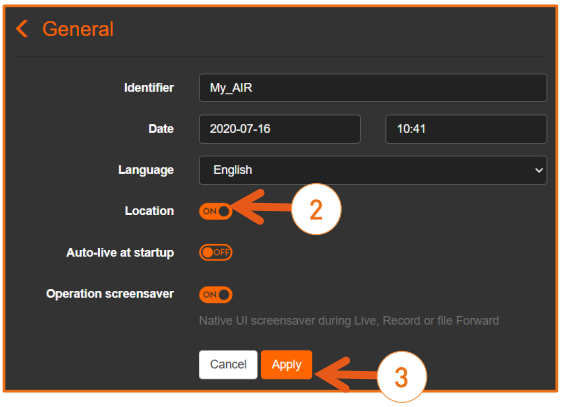
From the Unit Panel

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 again the wheel 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 to disable the unit Location.
   ▷ The button turns into .
3. Click on **Apply**.



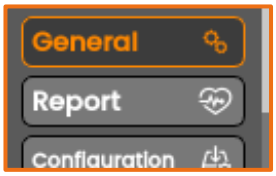
Note: You can access to this menu by clicking on the battery icon on the top bar of the screen.

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

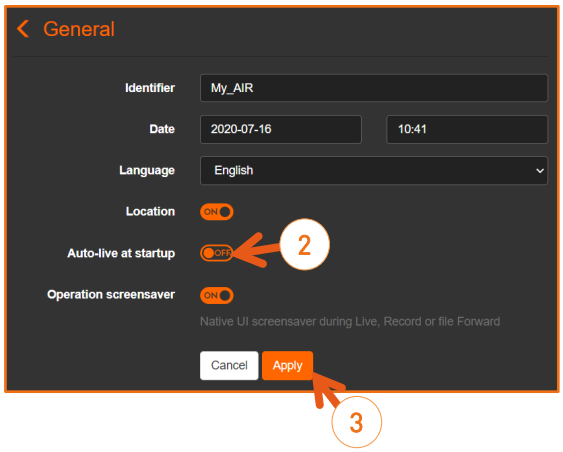
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Press again the wheel to access the **General** settings.
6. Turn the wheel to select **Auto-live at startup.**
7. Press the wheel to enable Auto-live at startup.



▷ An icon appears on the top bar of the screen when **Auto-live at startup** is enabled.

From the Web Interface

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

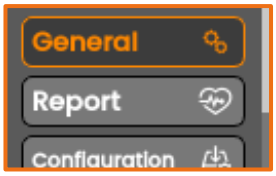


Enabling / Disabling Screensaver

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 again the wheel to access the **General** settings.
6. Turn the wheel to select **Operation screensaver.**
7. Press the wheel to enable Auto-live at startup.

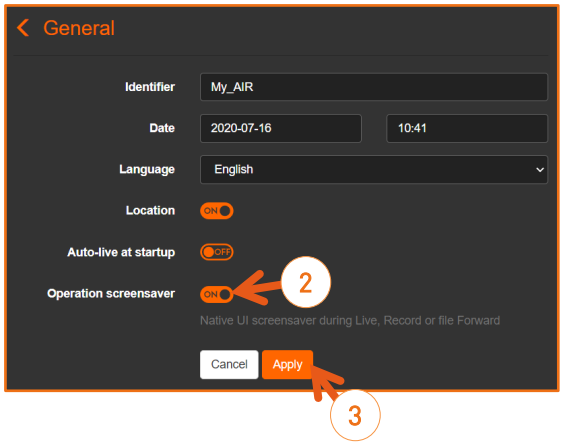


▷ When this option is enabled, this moving screen appears during a Live, a Record or a Forward after 2 minutes of inactivity.

Note: Touching the screen do not interrupt the operation in process. It shows the screen displayed before the screen saver.

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
- 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, 720p59.94, 720p60, 1080p25, 1080p29.97, 1080p30, 1080i50, 1080i59.94, 1080i60, 1080p50, 1080p59.94 and 1080p60.

- When the Auto mode is selected (default mode), the following rules are applied:

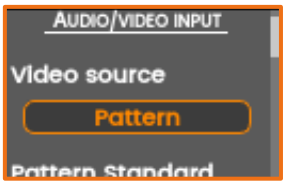
SDI input presence	HDMI input presence	Selected input
Yes	No	SDI
No	Yes	HDMI
Yes	Yes	SDI

From the Unit Panel

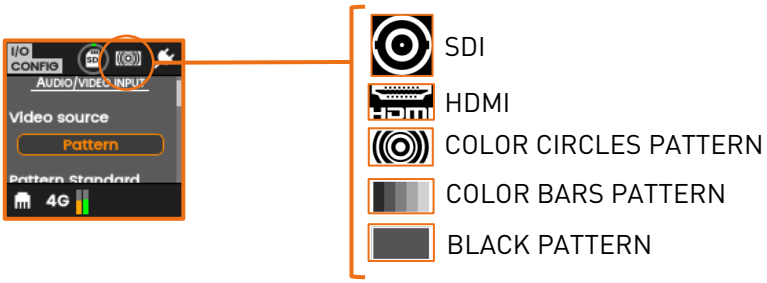
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Make sure that I/O is selected.
4. Press the wheel to confirm the selection.
   ▷ The current source is displayed.

5. Press the wheel to enter the source configuration menu.

6. Turn the wheel to select a source.
   Note: When selecting **Pattern**, the **Pattern Shape** and the **Pattern Standard** fields appear.
7. Press the wheel to confirm the choice.



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

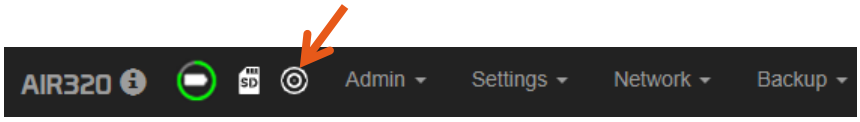


You can preview the selected video source.

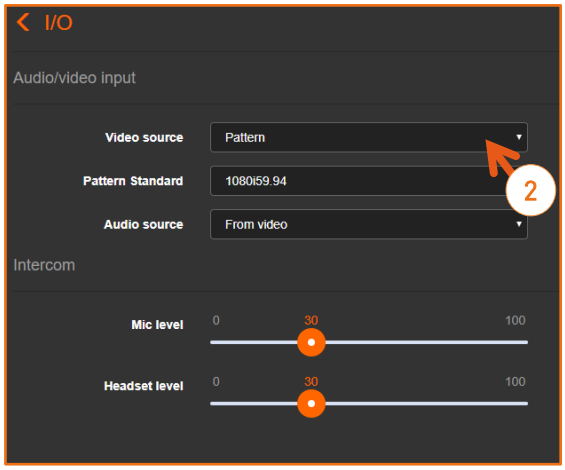
8. Turn the wheel to select .
9. Press the wheel to preview the video.

From the Web Interface

You can access to the video source configuration by clicking on the icon in 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:

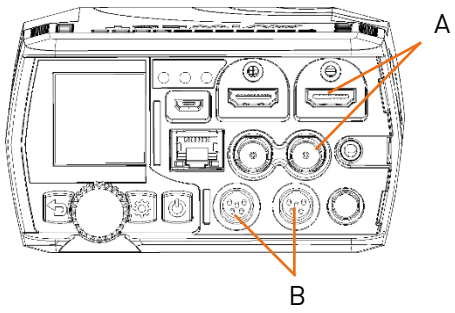
- If Pattern is selected, you need to define the resolution to be used.
- If SDI, HDMI or Auto is selected, the video resolution is automatically detected.

Selecting the Audio Source

You can select amongst 2 options:

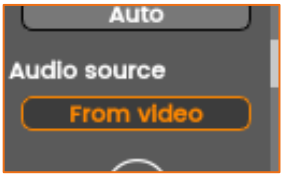
- **From Video**
  When using the SDI or HDMI inputs (A), the audio is embedded in the video source.

- **Analog (Balanced)**
  When analog audio inputs (B) are used to connect to an analog audio source.



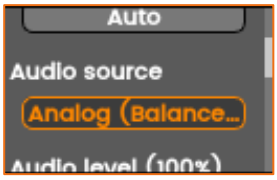
From the Unit Panel

1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Make sure that I/O is selected.

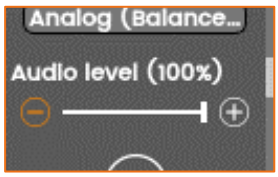


4. Press the wheel to enter the **I/O CONFIG** menu.
5. Turn the wheel to select the Audio source field.
   ▷ The current source is displayed.

6. Press the wheel to enter the source selection menu.
7. Use the wheel to select a source.
8. Press the wheel to confirm the choice.
   ▷ The new source is displayed.



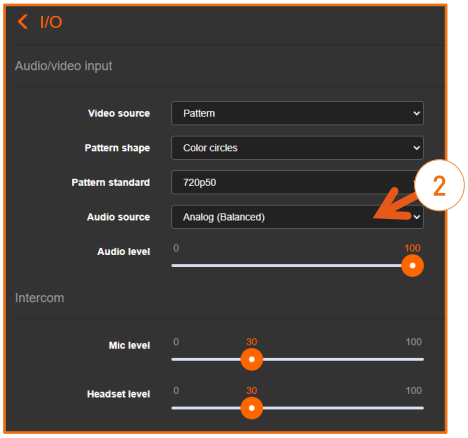
9. Turn the wheel to select either ⊖ or ⊕ for the analog input level.
10. Press the wheel to move the cursor towards ⊖ or ⊕.



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.

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 5 default Live Profiles:

- DEFAULT
- LOW DELAY
- HQUALITY 10s
- BGAN X-STREAM
- BGAN HDR

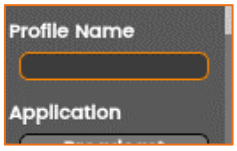
Recommendations when configuring a Live Profile:

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 network. • 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 (for H.264 only)		
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 1080 p25/29.97/30	-	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	

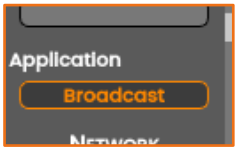
From the Unit Panel

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

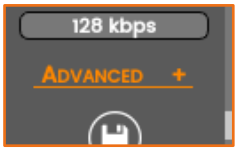
3. Press again the wheel to enter the **LIVE Create** menu.
4. Press the wheel to activate the keyboard.
5. Turn and press the wheel to select characters and compose a name.
6. Select the key and press the wheel to confirm the new live profile name.



7. Use the wheel to configure the Live Profile settings following the recommendations mentioned in the table above:
   - Application (Broadcast or Video Return)
   - End to End Latency
   - Video settings (Encoder Type, Bitrate Control, Resolution, Capped Bitrate)
   - Audio Settings (Encoder Type, Channel Layout, Bitrate Control Mode, 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.



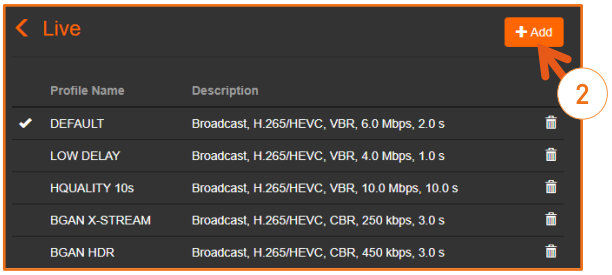
9. Turn the wheel to select the **I and P frames only** field and press it to enable this option.
   - ▷ The button turns into .

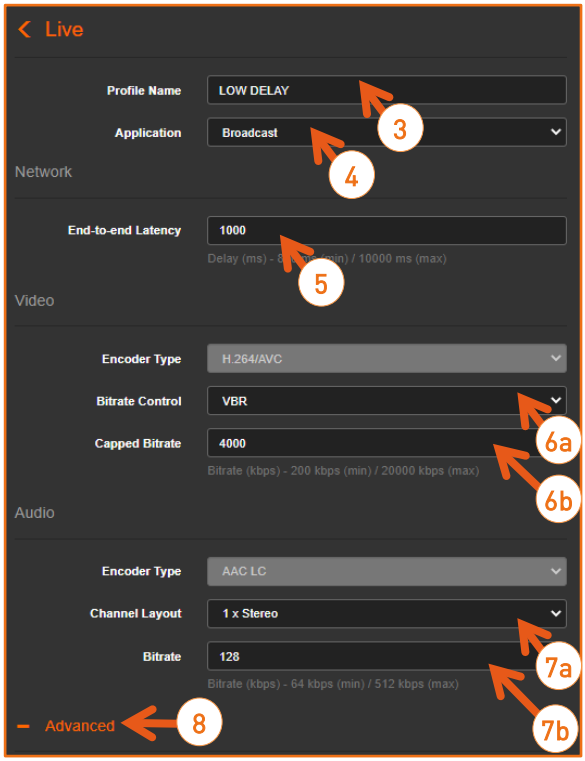
10. Turn the wheel to select the **Manual Resolution** field and press it to enable this option.
    - ▷ The button turns into and the **Resolution** field appears.

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 Live Profile.

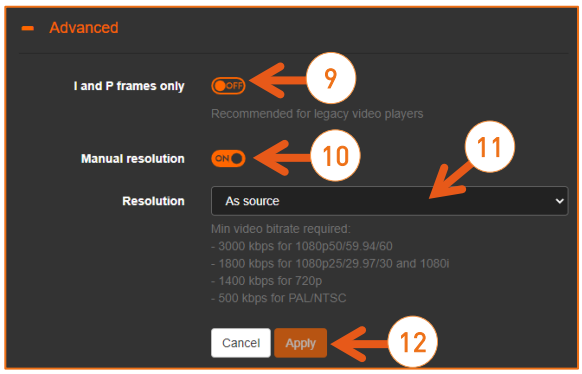
From the Web Interface





1. Click on **Settings > Live**.
2. Click the + Add button.
3. Enter a profile name in the **Profile Name** field.
4. Select the **Application** (Broadcast or Video Return).
5. In **Network** settings, enter an **End-to-End Latency** according to the Bitrate Control used (CBR or VBR).
6. In the **Video** settings:
   a) Select the Bitrate Control mode (VBR or CBR)
   b) Enter a Capped Bitrate
7. Fill in the **Audio** settings.
   a) Select the audio channel layout (1 x MONO / 1 x STEREO / 2 x MONO / 2 x STEREO)
   b) Enter the total audio bitrate.
8. Click on **Advanced**.

   Note: Advanced parameters are available in H.264 only.

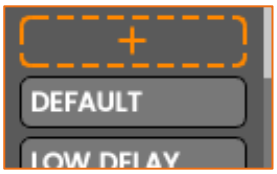


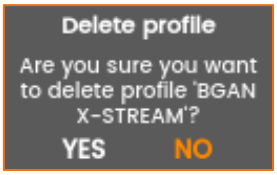
9. Click on OFF to enable **I and P frames only**.
10. Click on OFF to enable the **Manual Resolution**.
    ▷ The button turns into ON and the **Resolution** field appears.
11. Click on the **Resolution** field to select the resolution to apply.
12. Click on **Apply**.

Deleting a Live Profile

From the Unit Panel

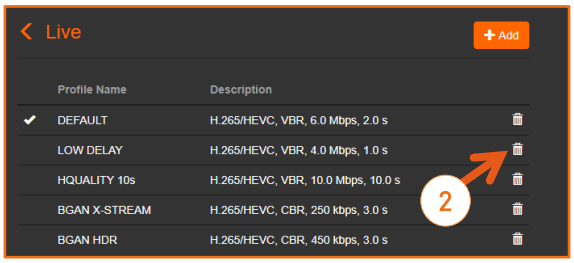
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press the wheel to confirm.
4. Turn the wheel until the profile to delete is displayed.
5. Long press the wheel to request the profile deletion.
6. Turn the wheel to select **YES**.
7. Press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





From the Web Interface

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



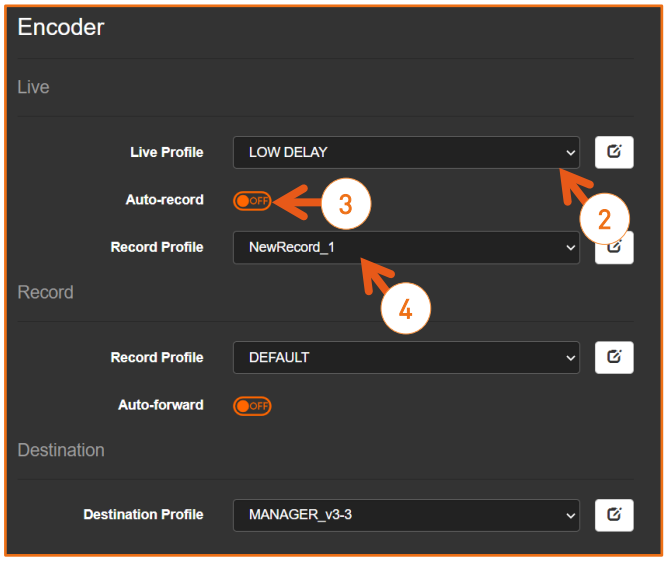
Selecting a Live profile

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.

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

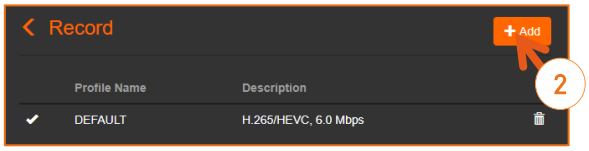
The unit is delivered with a DEFAULT Record Profile.

From the Unit Panel

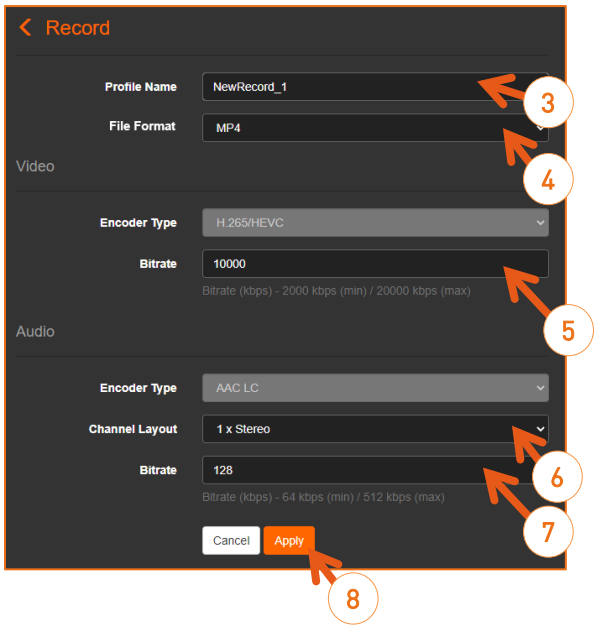
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Press again the wheel to enter the **RECORD Create** menu.
5. The Profile Name field is highlighted.
6. Press the wheel to activate the keyboard.
7. Turn and press the wheel to activate the keyboard.
8. Turn and press the wheel to select characters and compose a name.
9. Select the key and press the wheel to confirm the record profile name.
10. Use the wheel to configure the Record Profile settings:
    - File Format (Transport Stream, MP4)
    - Video settings (Encoder Type, Bitrate)
      When recording, the video is encoded in CBR mode with a resolution as source.
    - Audio Settings (Encoder Type, Channel Layout, Bitrate)
11. Select and press the wheel to confirm the creation of the Record Profile.

From the Web Interface

1. Click on **Settings > Record**.
2. Click the + Add button.



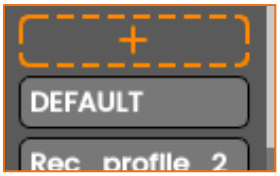
3. Enter a profile name in the **Profile Name** field.
4. Choose the File Format.
5. Set the video **Bitrate** (within 200kb/s and 20Mb/s).
6. Select the audio channel layout (1 x MONO / 1 x STEREO / 2 x MONO / 2 x STEREO).
7. Set the total audio **Bitrate**.
8. Click on **Apply**.

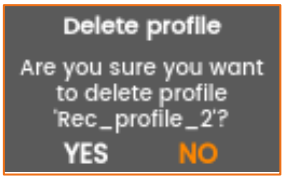


Deleting a Record Profile

From the Unit Panel

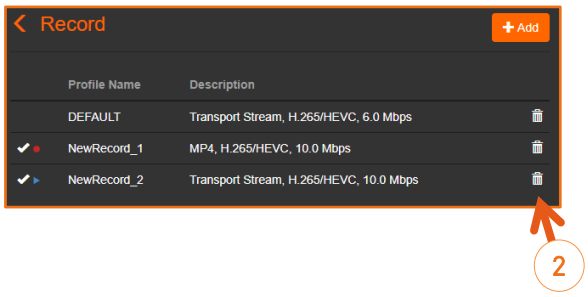
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Turn the wheel until the profile to delete is displayed.
5. Long press the wheel to request deleting the profile.
6. Turn the wheel to select **YES** and press it to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





From the Web Interface

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



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 profile used for **Auto-Record** must be in H.264 format.

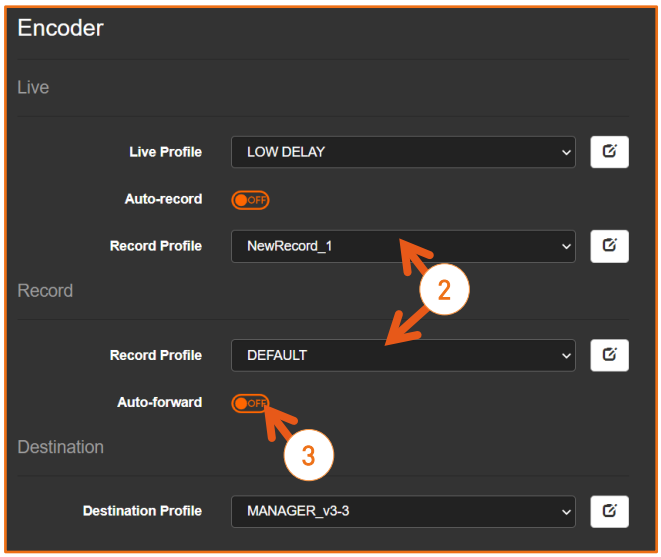
From the Unit Panel

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

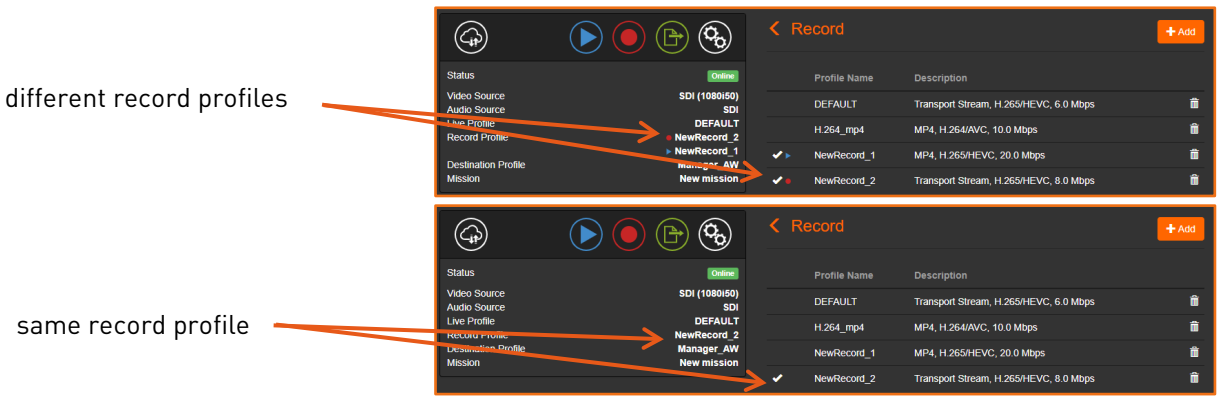
See chapters Starting a Record and Starting a Live.

From the Web Interface

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



Note: When this option is enabled, a Forward starts automatically when a Record is started.



Adding and Configuring a Destination Profile

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

Note:

- StreamHub is a web-based platform that receives, decodes, records and distributes video and audio feeds.
- Manager is a web-based platform that monitors and manage a contribution ecosystem. It is in charge of routing dynamically transmitters to appropriate StreamHub.

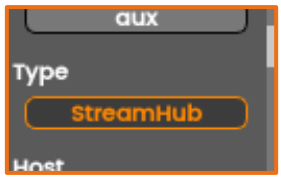
From the Unit Panel

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.
   ▷ The Add icon ( ) is highlighted.

3. Press the wheel to enter the **DESTINATION Create** menu.
   ▷ The Profile Name field is highlighted.
4. Press the wheel to activate the keyboard.

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. Turn the wheel to highlight the **Type** field.
8. Press the wheel to select the type of destination profile to be created (StreamHub or Manager).



9. Use the wheel to configure the new Destination Profile settings (turn and press):
    - For a StreamHub
        - StreamHub IP address or Hostname
        - Input assignment on the StreamHub (Automatic Assignment possible)
        - Auto-connect function (Enabling / Disabling)
        - Port used
        - Username and Password (if required)
    - For a Manager:
        - Manager IP address or Hostname
        - Auto-connect function (Enabling / Disabling)
        - Port used
        - Username and Password (if required)

    Note:

    - StreamHub Default Settings are:
        - Port: 7900
        - Username: aviwest
        - Password: safestreams
    - Manager Default Settings are:
        - Port: 9000
        - Username: username
        - Password: password
    - These settings may have been changed by the system administrator.

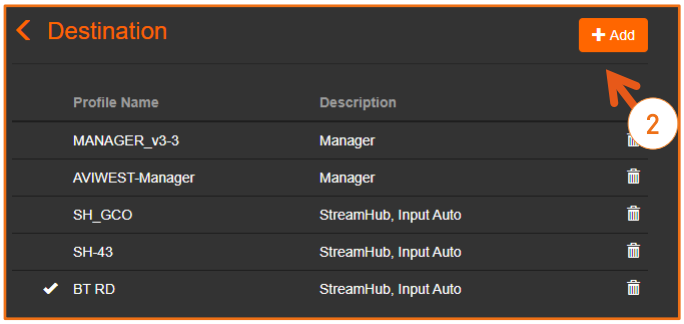
10. Select to save the new Destination Profile settings and press it to confirm.

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

From the Web Interface

1. Click on **Settings > Destination**.

2. Click the + Add button.

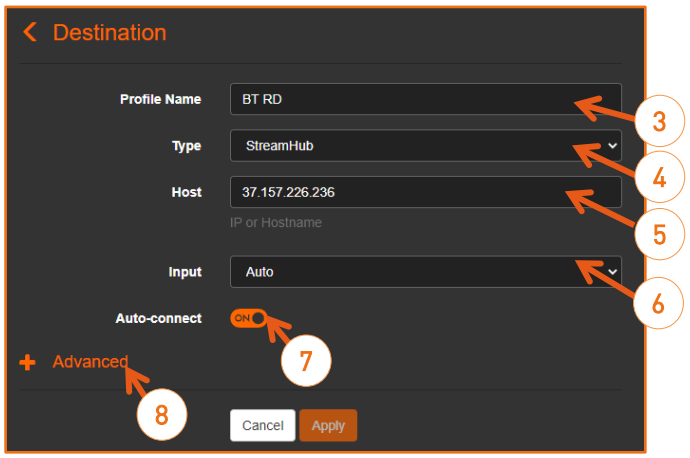


3. Enter a **Name** for the Profile.

4. Select the type of Destination Profile (StreamHub or Manager).

5. In the Host field, enter the URL, IP address or hostname of the StreamHub or Manager.

6. When creating a StreamHub profile, in the **Input** field, select the **AUTO** option if you wish an automatic assignment of inputs on StreamHub.



7. Check that the **Auto Connect** option is enabled or not, as needed.

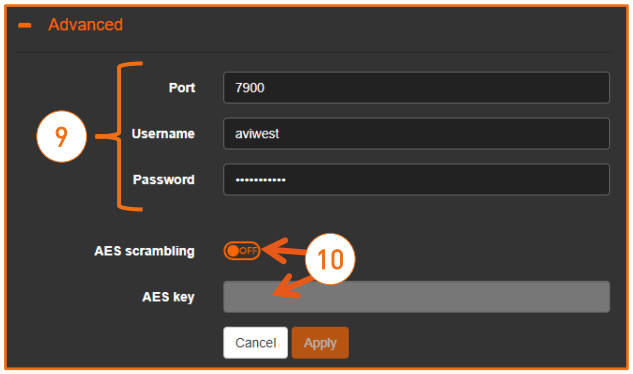
   Note: Auto Connect option is selected to connect automatically to the StreamHub server when the unit is powered.

8. Click on **Advanced**.

9. Check the Connection Port, Username and Password that are set.

   Note:

   - StreamHub Default Settings are:
     - Port: 7900
     - Username: aviwest
     - Password: safestreams
   - Manager Default Settings are:
     - Port: 9000
     - Username: username
     - Password: password



   These settings may have been changed by the system administrator.

10. If an AES encryption is required, enable it and enter the corresponding AES key.

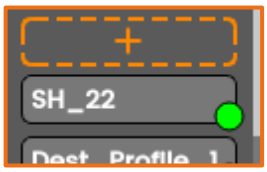
11. Click the **Apply** button.

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

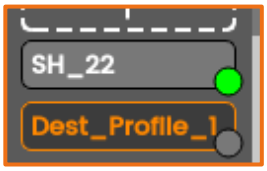
Deleting a Destination Profile

From the Unit Panel

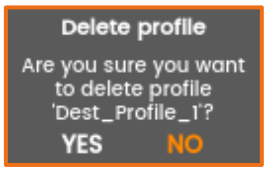
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.



3. Turn the wheel to select and press it to confirm.
   ▷ A green dot ( ) indicates the currently selected profile.
4. Turn the wheel until the profile to delete is displayed.

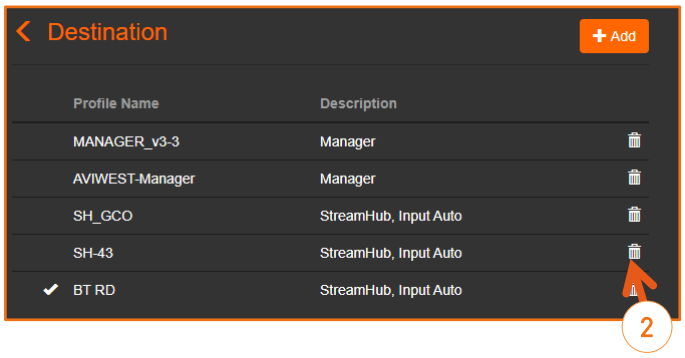


5. Long press the wheel to request the profile deletion.
6. Turn the wheel to select **YES** and press it to confirm the profile deletion.



From the Web Interface

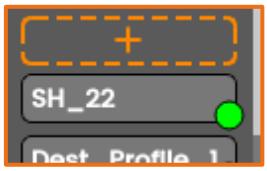
1. Click on **Settings > Destination**.
2. Double click the trash button ( ).

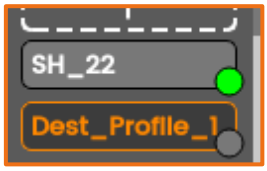


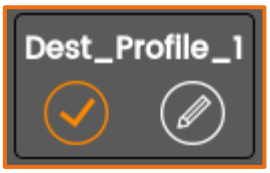
Selecting a Destination profile

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.
   ▷ A green dot ( ) indicates the currently selected profile.
4. Turn the wheel to select anther Destination Profile.
5. Press the wheel to confirm your choice.
6. Press again to confirm the modification of Destination Profile.

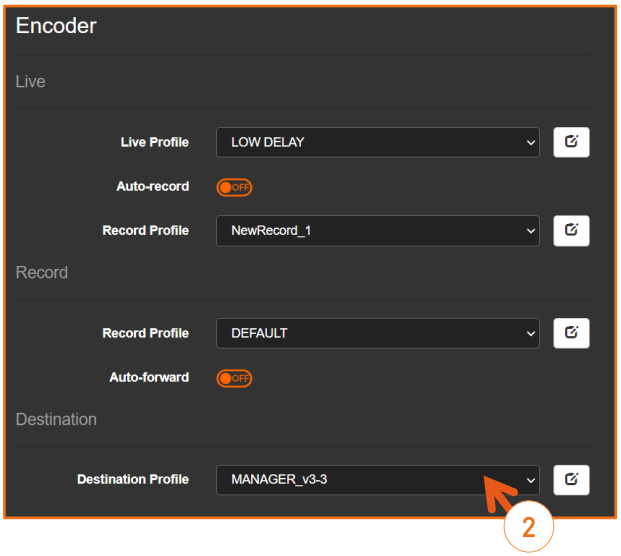






From the Web Interface

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



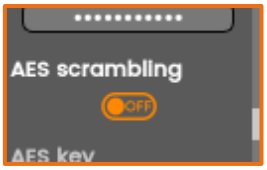
Configuring AES encryption

You can decide to encrypt / scramble 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

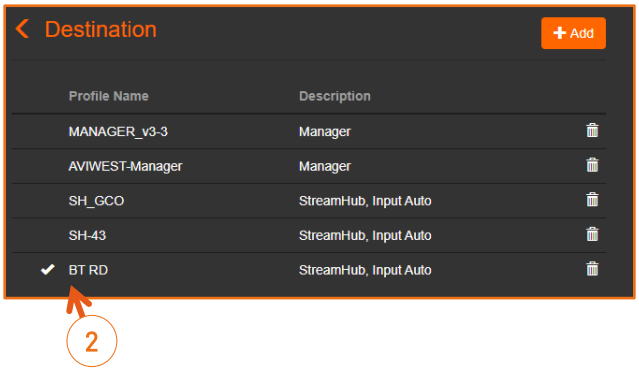
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Turn the wheel to select the destination profile where the video is sent to.
5. Press the wheel to confirm.
6. Turn the wheel to select and press it to confirm.
7.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



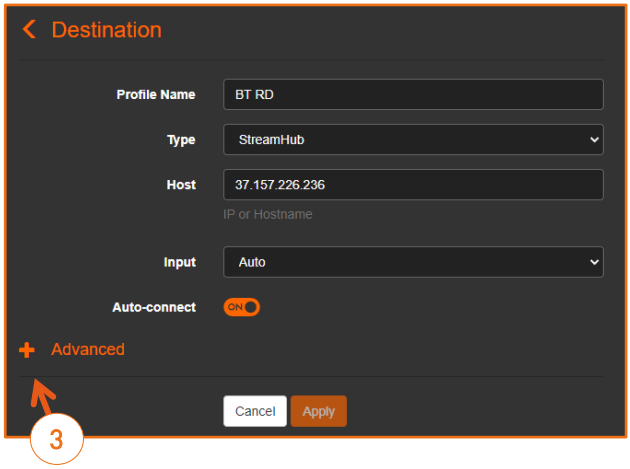
From the Web Interface

1. Click on **Settings > Destination**.

2. Click on the Destination profile where the video is sent to.

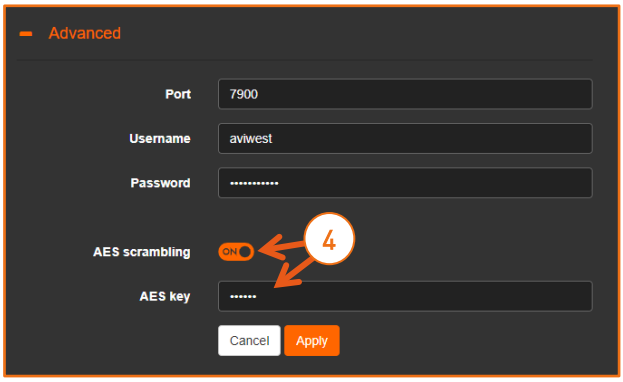


3. Click on **Advanced**.



4. Click on OFF or ON to enable or disable the **AES Scrambling** 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

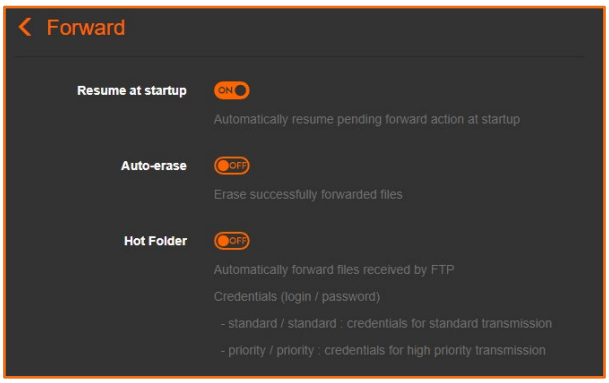
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to enter the **FORWARD CONFIG** menu.
5. Turn and press the wheel to select and enable or disable the forward options: **Resume at Startup, Auto-Erase** or **Hot Folder.**

Note:

- **Resume at Startup:** If any forward is still in progress when the unit is turned off, it is resumed when the unit is started up.
- **Auto-erase:** All successfully forwarded 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.

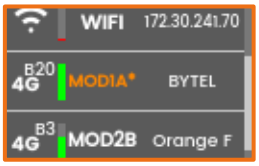


Enabling / Disabling a Cellular Modem

You can enable and disable modems from the unit panel or from the Web Interface.

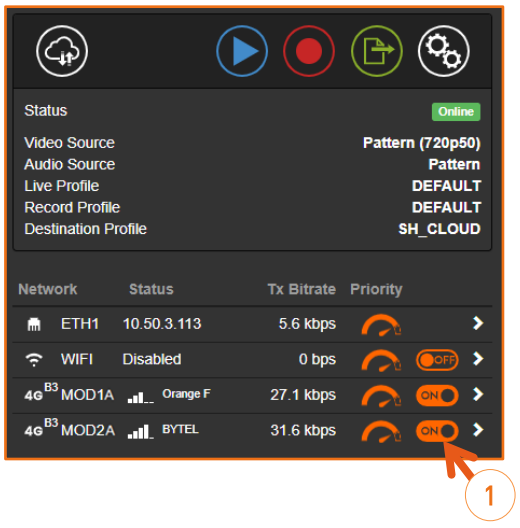
From the Unit Panel

1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem that you want to enable or disable.
4. Press the wheel to enter the **MOD.CONFIG** menu.
5. Press the wheel to enable ( ) or disable ( ) the modem.



From Web Interface

1. Click on or to enable or disable a modem.

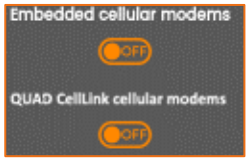


Enabling / Disabling all Internal Cellular Modems

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

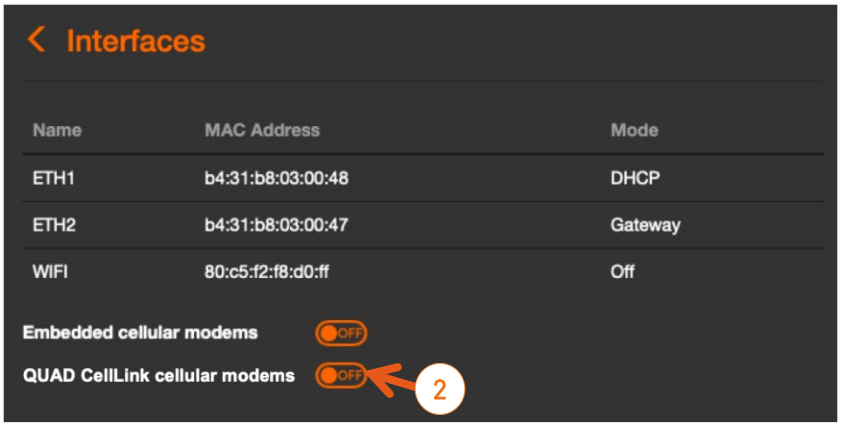
From the Unit Panel

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. Press the wheel to enable ( ) or disable ( ) the internal modems.



From the Web Interface

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



2. Click on to disable modems and 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. Turn and press the wheel to enable ( ) or disable ( ) the QUAD CellLink cellular modems.

From the Web Interface

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

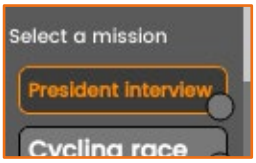
2. Click on to disable modems of the QUAD CellLink and on to enable them.

Selecting a Mission

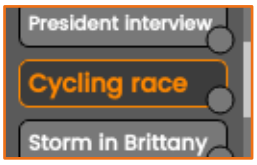
To receive missions, the destination profile selected must be a Manager supporting the Story Centric Workflow. See Selecting a Destination Profile.

From the Unit Panel

1. Turn the wheel to highlight the different missions.



2. Press and hold the wheel to have more information on 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

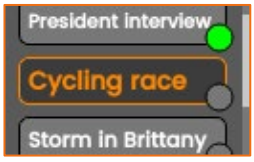
1. From the home menu, turn the wheel to select .

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.



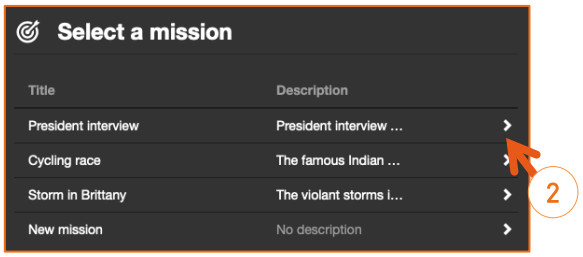
5. Press and hold the wheel to display more information on the mission.

6. Press again the wheel to confirm.

   ▷ A green dot ( ) indicates the new selected mission.

From the Web Interface

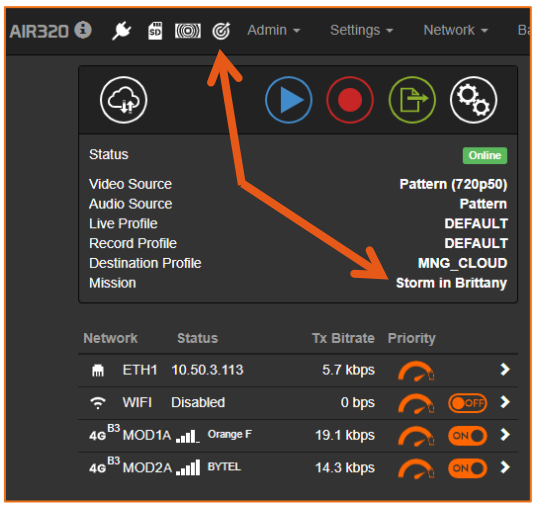
1. A list of missions appears on screen.
   ▷ The missions loading may take few seconds.



2. Click on › to see the description of the mission.
   ▷ The description is displayed.

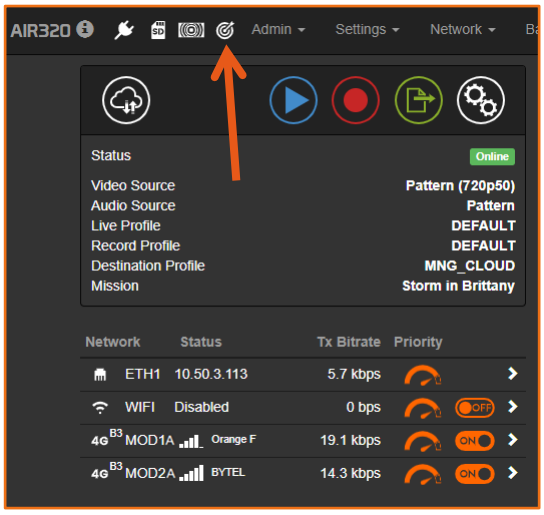
3. Click on a mission title to select it.

   ▷ The selected mission appears on the main screen and the mission icon appears on the top bar.



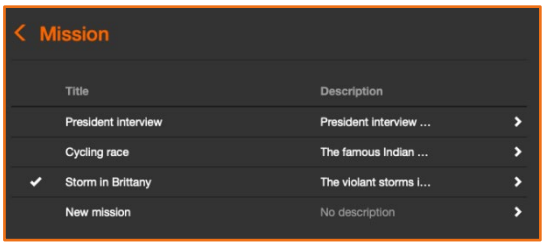
Changing the mission

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



2. Click on another mission to select it.

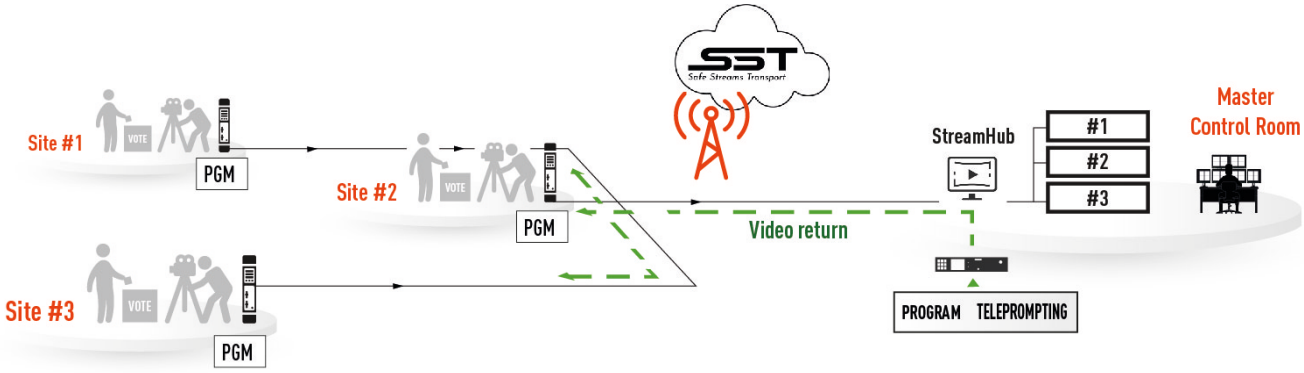
   ▷ The icon move to the selected mission.



Setting a Video Return

The Video Return feature allows to receive a video 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.



Emitting a Video Return

From the Unit Panel

1. Set a Live Profile with 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

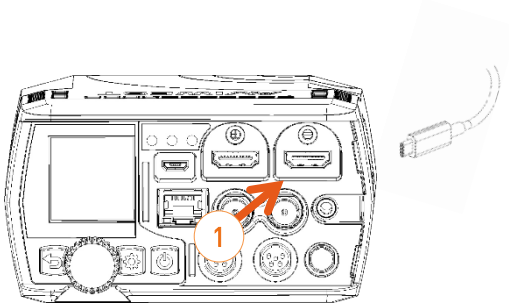
1. Set a Live Profile with application parameter set to Video Return (see chapter Adding and Configuring a Live Profile).
2. Start a Live with the profile previously created (see chapter Starting a Live).

Receiving a Video Return

From the Unit Panel

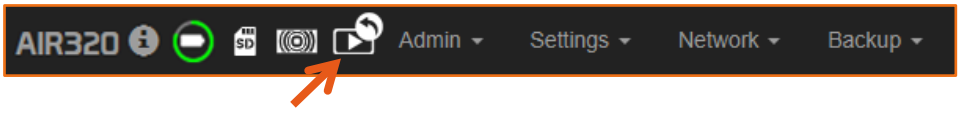
▷ Check that this icon appears on the top bar of the screen. If it appears, the unit is receiving a video stream.

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



From the Web interface

An icon on the top bar indicates that the unit is receiving a Video Return.



Starting a Live

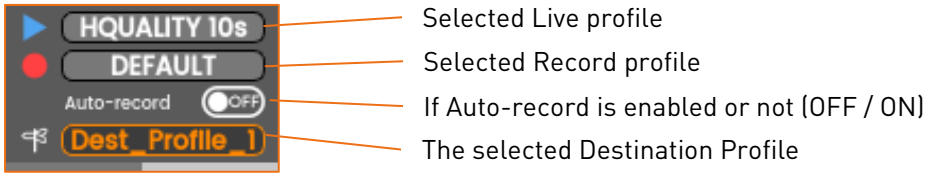
You can start a live manually or you can enable the **Auto-Live at startup**. See chapter Enabling / Disabling Auto-Live at Startup.

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 turning 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.

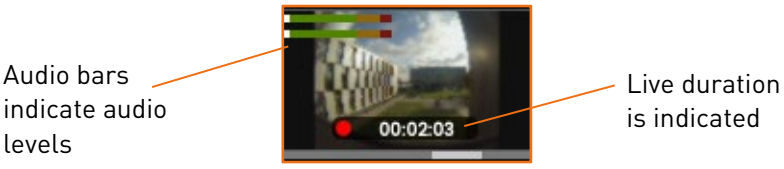
   - To select another **Record** profile:
     a) Turn the wheel to highlight the **Record** profile ( ).
     b) Press the wheel and turn to select the required profile.
     c) Press the wheel to confirm the choice.

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

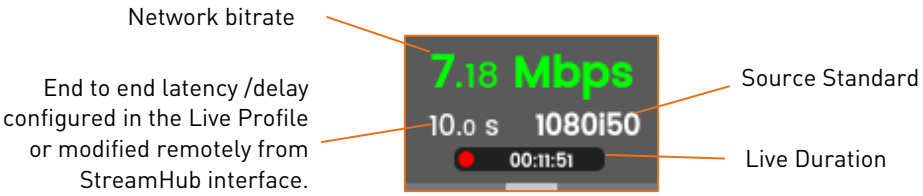
   - To select another **Destination** Profile:
     a) Turn the wheel to highlight the **Destination** profile ( ).
     b) Press the wheel and turn to select the required profile.
     c) Press the wheel to confirm the choice.

3. Turn the wheel to highlight and press the wheel to start the Live.

▷ The video preview appears on screen. and the live profile selected is reminded.

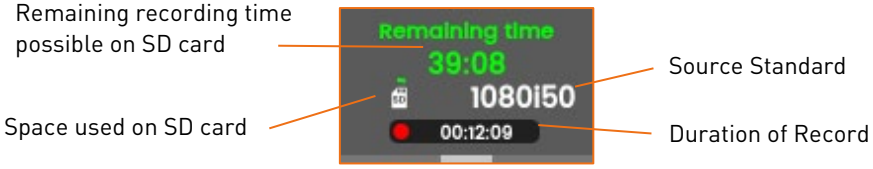


4. Turn the wheel to the left to display some indications about the Live action:



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

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



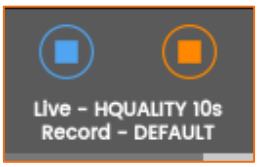
Note:

To stop the Live:

1. Turn the wheel to the right.
2. Press the wheel to stop the live.
3. Press again the wheel to confirm.

To stop the Record:

1. Turn the wheel twice to the right.
2. Press the wheel to stop the Record.
3. Press again the wheel to confirm.



From the Web Interface

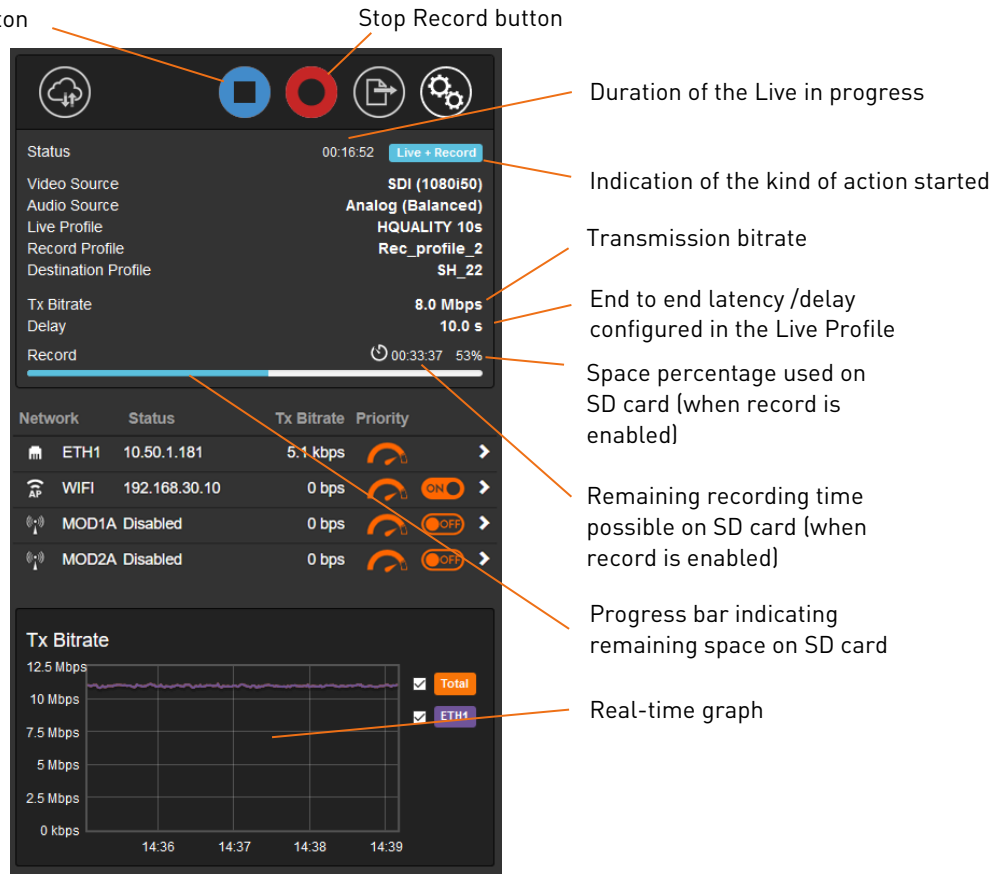
1. Click on to check that the unit settings are configured and selected as required:
   - Live profile
   - Auto-record mode (OFF / ON)
   - Record profile
   - Auto-forward option (OFF / ON)
   - Destination profile

Note:

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

2. Click on to start the Live.

   Some indications appear on screen:



Note:

To stop the Live:

1. Click on .

   A Confirm popup appears.

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

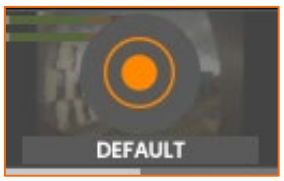
Starting a Record

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.
3. To start Record straight away, press the wheel again.

▷ The video preview appears on screen and the record profile selected is reminded.



When turning the wheel to the right, the RECORD menu reminds some information:

Selected Record profile

If Auto-forward is enabled or not (OFF / ON)

Destination Profile used

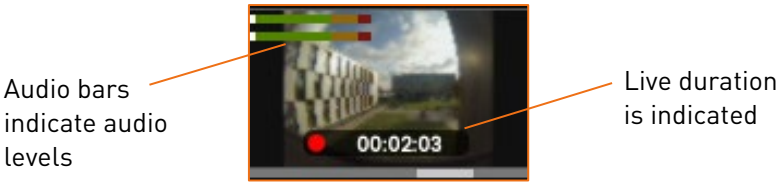
- To select another **Record** profile:
  a) Turn the wheel to highlight the **Record** profile ( ).
  b) Press the wheel and turn to select the required profile.
  c) Press the wheel to confirm the choice.

- To modify the **Auto-forward** mode:
  a) Turn the wheel to highlight the **Auto-forward** option.
  b) Press to enable or disable **Auto-forward**. (/).

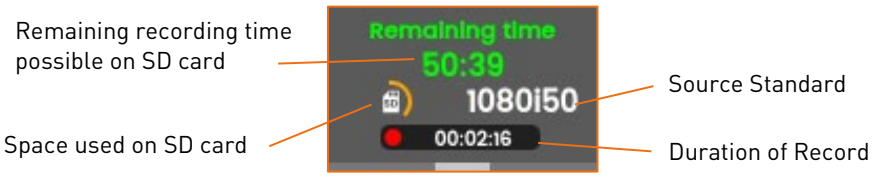
- To select another **Destination** Profile:
  a) Turn the wheel to highlight the **Destination** profile ( ).
  b) Press the wheel and turn to select the required profile.
  c) Press the wheel to confirm the choice.

4. Turn the wheel to the left to make sure that is highlighted and press the wheel to start the record.

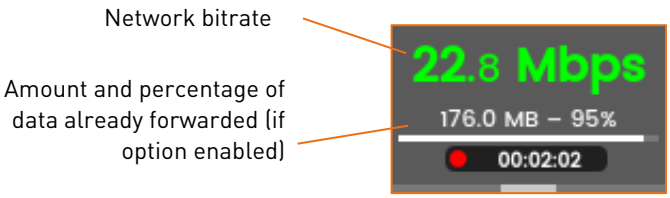
   ▷ The video preview appears on screen. and the record profile selected is reminded.



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



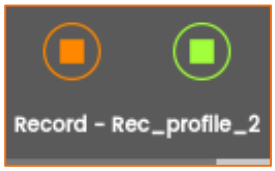
In case of a Record and simultaneous Forward, another screen appears alternately:

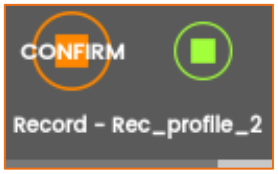


Note:

To stop the Record:

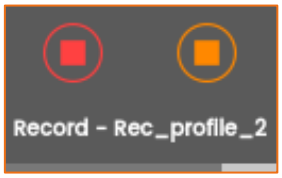
1. Turn the wheel to the right.
2. Press the wheel to stop the record.
3. Press again the wheel to confirm.





To stop the Forward:

1. Turn the wheel twice to the right.
2. Press the wheel to stop Forwarding.
3. Press again the wheel to confirm.



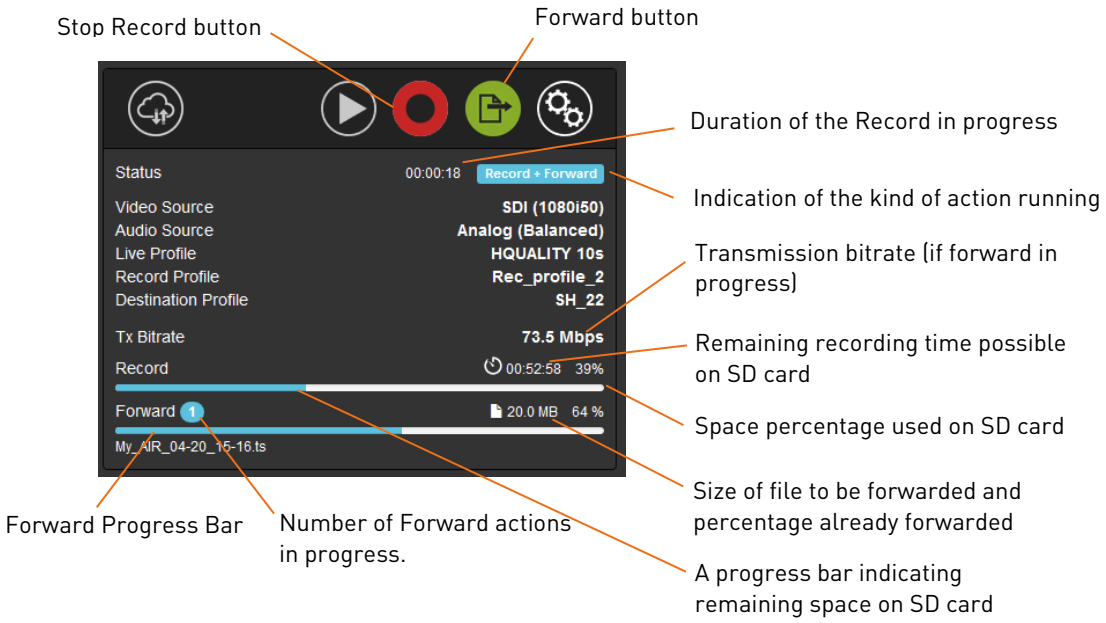
From the Web Interface

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

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

2. Click on to start the Record.

   Some indications appear on screen:



Note:

To stop the Record:

1. Click on .

   A Confirm popup appears.

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

To stop the Forward:

1. Click on .

   A Confirm popup appears.

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

Starting a Forward

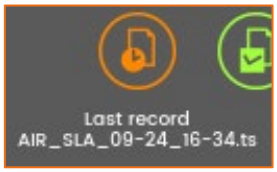
Make sure that a mass storage such an SD card or a USB memory stick is connected to the unit.

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.
   ▷ The Forward interface appears:



To forward the last record

a) Turn the wheel to select .
b) Press the wheel to confirm.
   ▷ The Forward is starting.

To forward some 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.

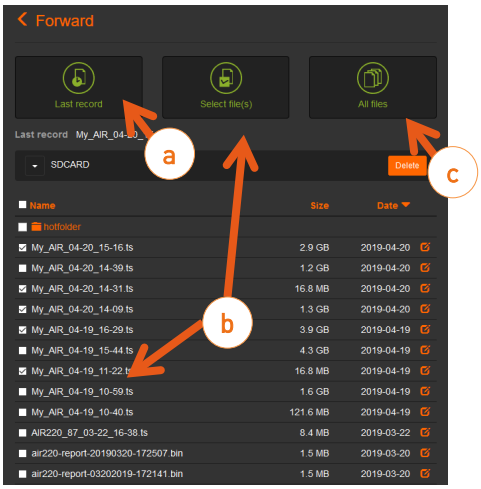
Note: You can modify the Destination profile towards which you send files:

a) Turn the wheel to highlight .
b) Press the wheel to confirm.
c) Turn the wheel to select another Destination profile.
d) Press the wheel to confirm.

From the Web Interface

1. Click on .

   ▷ The Forward interface appears.



   a) To forward the last record, click on

.

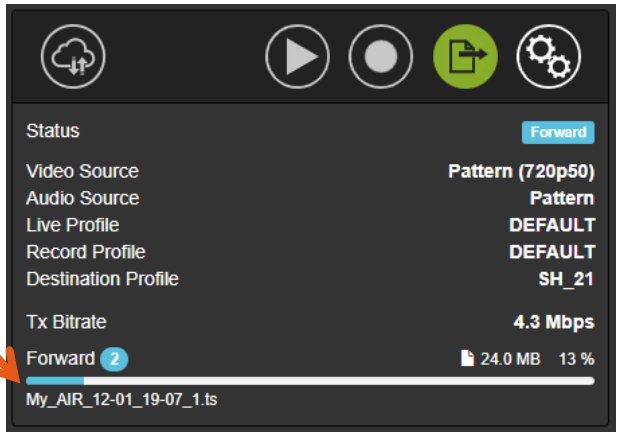
   b) To forward some specific files, select the files and click on

.

   c) To forward all files, click on

.

The forward in progress is indicated on screen.

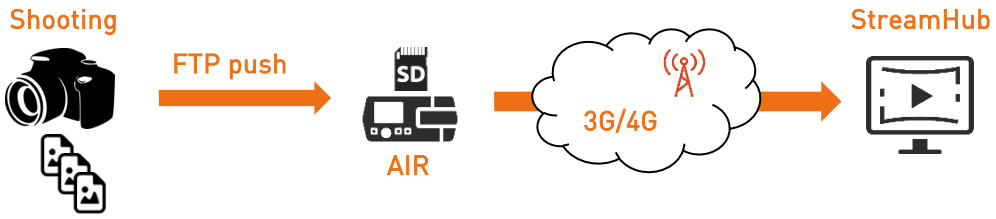


Transmitting Files via the Hot Folder

The Hot Folder function enables you to transmit files (eg photos) automatically over unmanaged networks wherever the action is taking place.

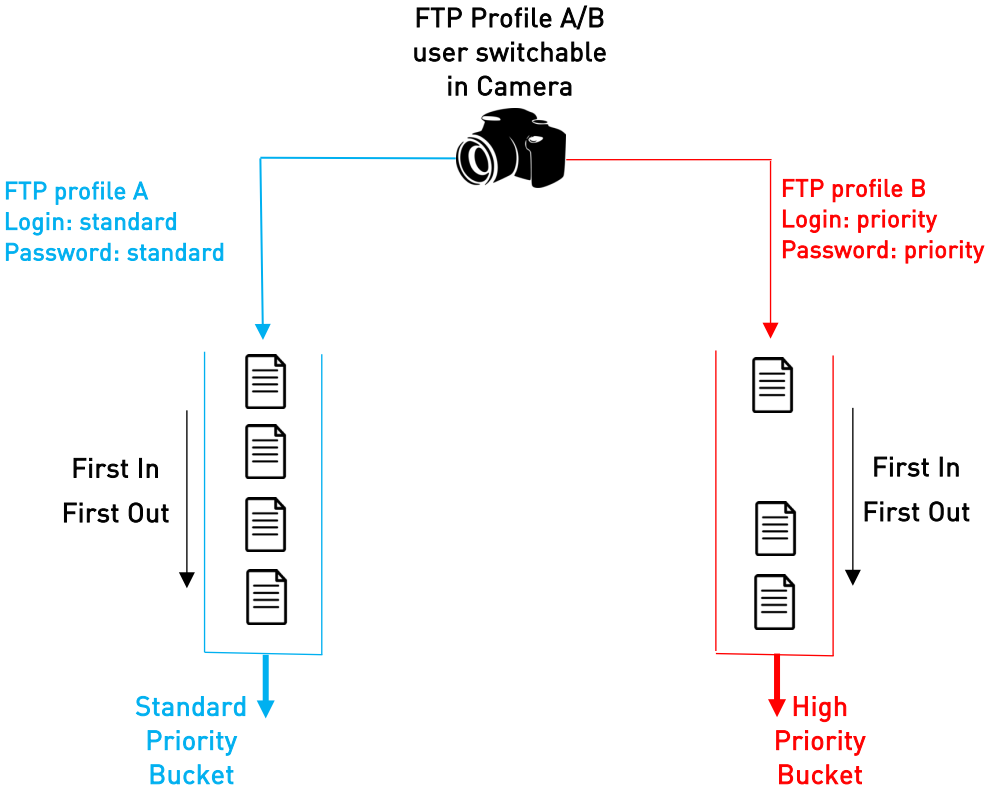
This function uses an ftp push to transmit files following the FIFO method (First In, First Out).

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.



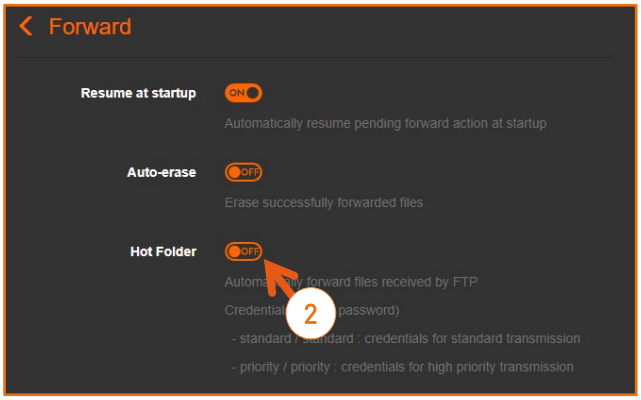
Enabling / Disabling the Hot Folder Function

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

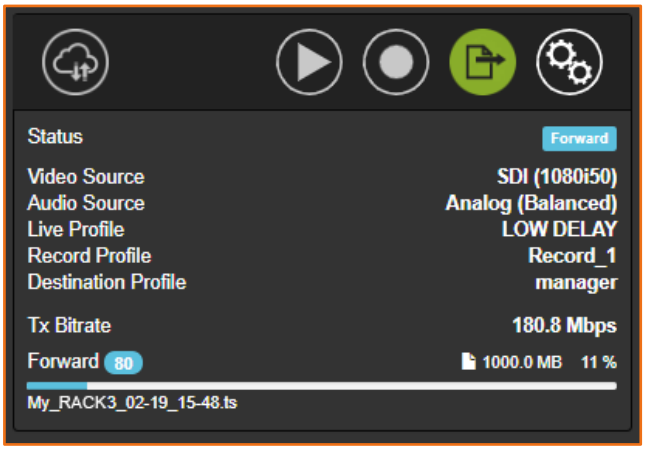
1. Click on **Settings > Forward**.
2. Click on or to enable or disable the **Hot Folder** function.



Once the Hot Folder option 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).

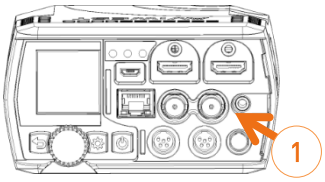
When the file transmission is starting the forward action can be seen on screen:



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.

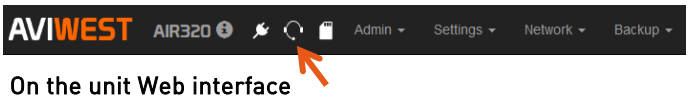
You can manage the Intercom function from the StreamHub interface.



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

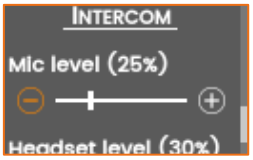


On the unit Web interface

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

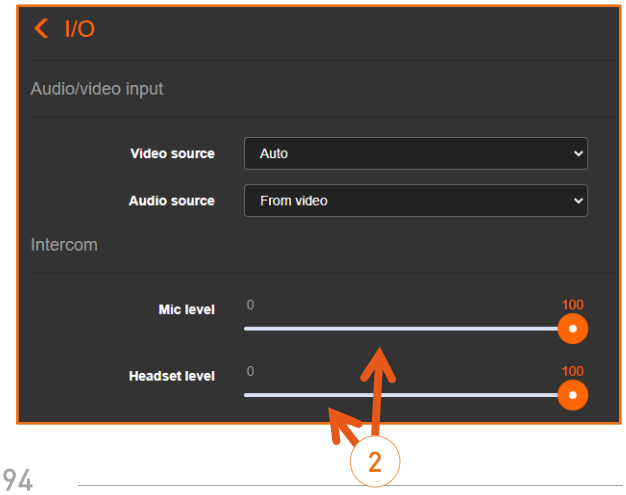
From the Unit Panel

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

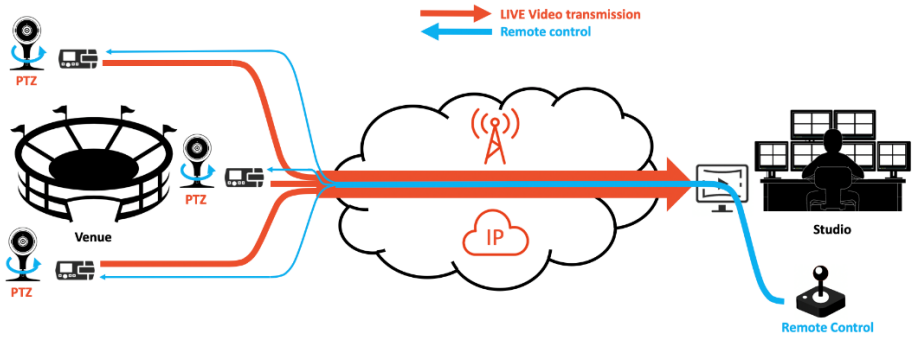
1. Click on **Settings > I/O**.
2. Move the **Mic level** and **Headset level** cursors to adjust the microphone and headset volumes.



Configuring a Data Bridge

When configured in Data Bridge mode, the unit can be used as a Data Bridge that provides access to Internet or manage remote production workflow.

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).

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

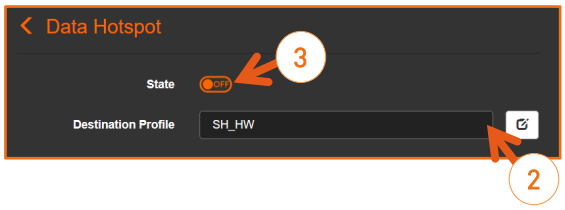
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to highlight the Destination profile field.
4. Press the wheel to enter the Destination Profile menu.
   ▷ A green dot ( ) indicates the currently selected profile.
5. Turn the wheel to select a destination profile dans press the wheel to confirm.
   ▷ The selected destination profile appears.
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:

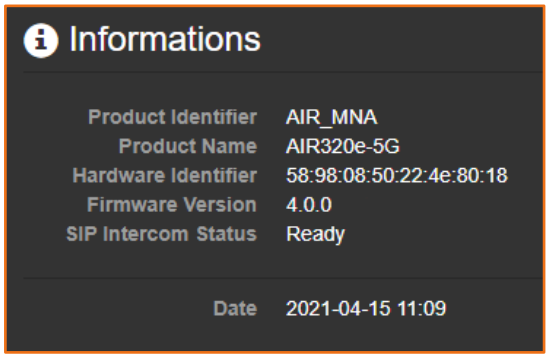
- add/delete/modify the Destination profiles.
- add/delete/modify the Live profiles.
- add/delete/modify the Record profiles.
- change/select a new Destination profile.
- import/export a configuration in the unit.
- restore the factory settings.
- upgrade the Firmware.

Note: The unit remain locked if:

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

Getting the unit information

From the Web Interface



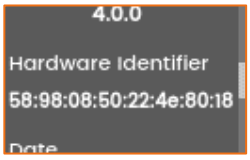
You can access the unit information:

- 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 SIP call is in progress with a Manager or a StreamHub.

Click the icon close to the name to display the unit information:

From the Unit Panel

1. 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:



Getting the IMEI/IMSI/ICCID numbers

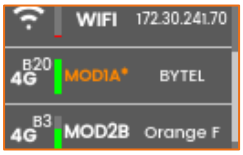
- **IMEI (International Mobile Equipment Identity)**
  The IMEI number is a unique 15 digit number that identifies a cellular device within a mobile network. It identifies the modem embedded within the unit.

- **IMSI (International Mobile Subscriber Identity)**
  The IMSI number is a unique 15 digit number that identifies a mobile subscriber. It identifies the SIM card inserted in the unit.

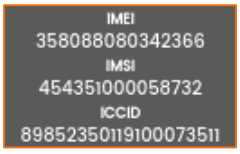
- **ICCID (Integrated Circuit Card Identifier)**
  The ICCID number is a unique 19 to 22 digit number that identifies a SIM card. It identifies the chip of the SIM card inserted in the unit.

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

From the Unit Panel



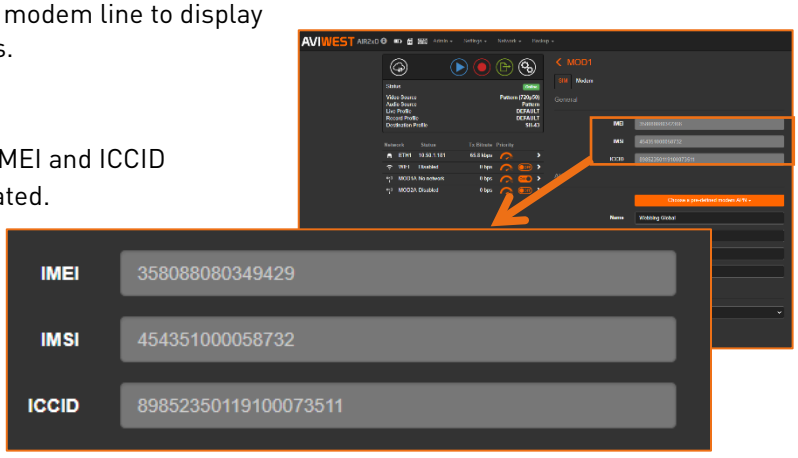
1. Turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select the modem for which you require the IMEI, IMSI and/or ICCID number.
4. Long press the wheel to display the numbers.



From the Web Interface

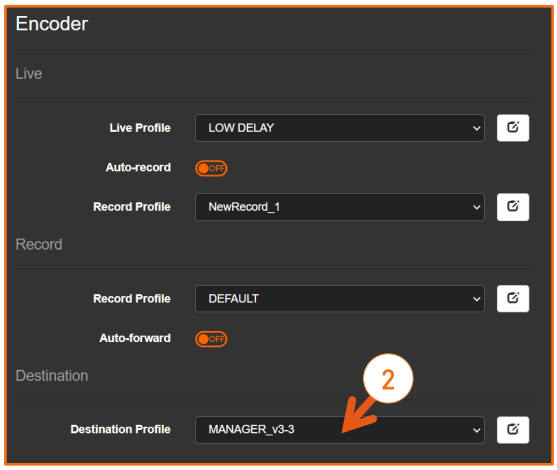
1. Click on on a modem line to display the modem details.

▷ The modem IMSI, IMEI 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 the **Video Source** and the expected video standard.

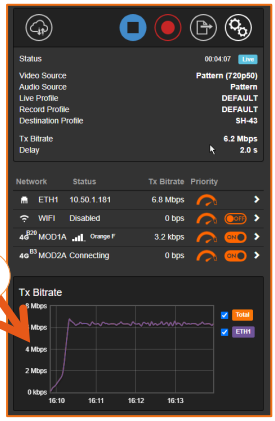
5. Select the **Pattern Shape** between:
   - Color circles pattern
   - Color bars pattern
   - Black pattern

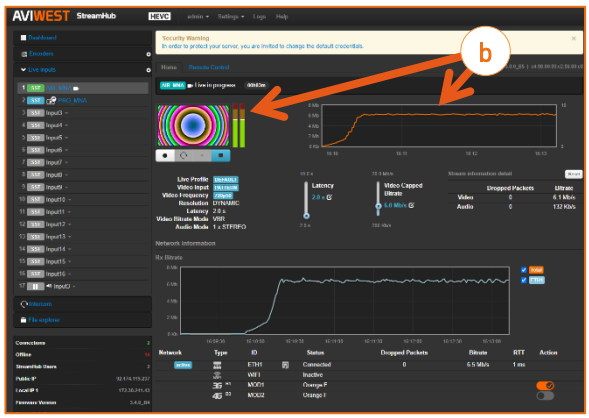
6. Select the **Pattern standard**.

7. Click on to start Live.

   a) A graph appears on the AIR Web Interface.

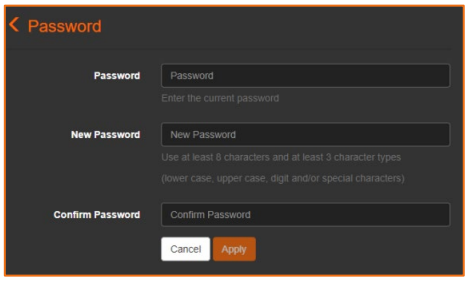
   b) While the pattern and the graph appear on the StreamHub interface.





Changing the Web Interface Password

1. Click on **Admin > Password.**
2. Enter the current password.
3. Enter the new password and confirm it by clicking on **Apply**.



Updating the Firmware

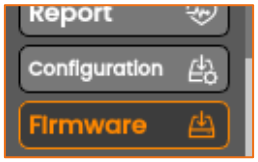
Note:

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

From the Unit Panel

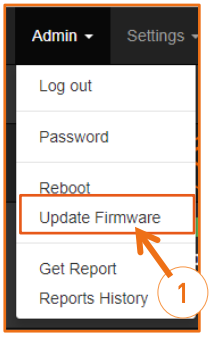
Make sure you have uploaded the .fw firmware file from the customer portal to an SD card or USB key.

1. Connect the USB key or insert the SD card that contains the new firmware (.fw file).
2. From the Home menu, 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.

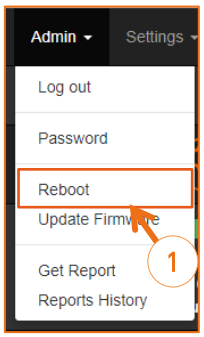
From the Web Interface



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

Note: The update may take several minutes, depending if this is a major update or not. Make sure that no action is made meanwhile. At the end of the process, a message appears to suggest restarting the unit.

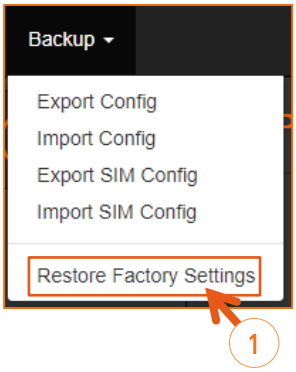
Rebooting the Unit



You can reboot the unit from the Web Interface only.

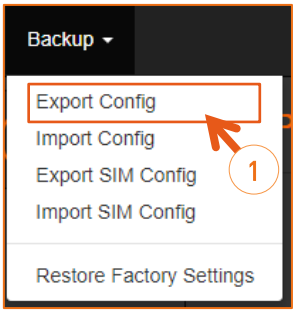
1. Click on **Admin > Reboot**.
2. Click the **Yes** button to confirm.

Restoring Factory Settings



1. Click on **Backup > Restore Factory Settings**.
2. Click the **Yes** button to confirm restoration.

Exporting the Unit Configuration



1. Click on **Backup >Export Config**.

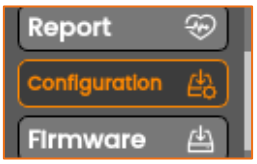
▷ An .awj file is exported in the download space. This file can be easily imported later, once factory settings have been restored.

Importing the Unit Configuration

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

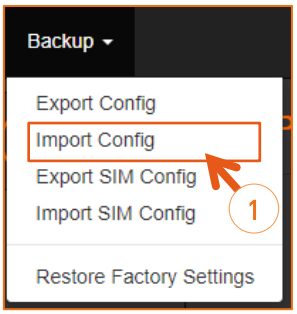
From the Unit Panel

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 choose the .awj file to be imported from the SD card or the USB memory key.



From the Web Interface

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



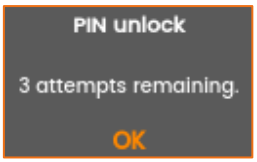
Unlocking a SIM card

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 unlock icon and press it to confirm.

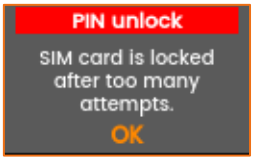
5. The screen reminds the number of attempts left to enter the PIN code to unlock the SIM card.



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

Note: In case you exceeded the number of attempts allowed, this message is displayed.

The SIM card needs to be unlocked by entering the PUK code using another device such as a phone, a tablet...

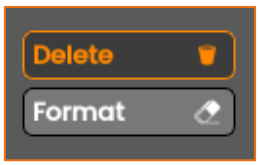


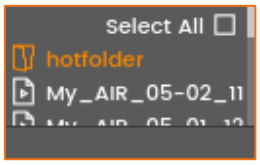
Deleting file(s) from the SD card

Make sure that the SD card is not locked.

From the Unit Panel

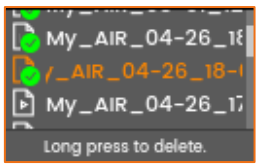
1. From the Home menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select .
4. Press the wheel to confirm.
5. Ensure that Delete is selected.
6. Press the wheel to enter the Delete menu.
7. You can:
   - Select some files
   - Select all files
   - Select files stored in the Hot Folder





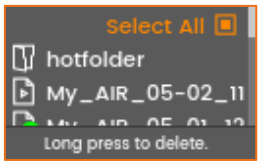
To select one or several files to delete

a) Turn the wheel.
b) Press the wheel to confirm the selection.
   ▷ Files selected to be deleted are then marked with a check.
c) Long press the wheel to delete selected files.



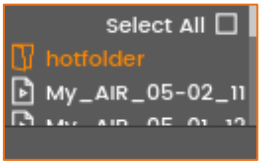
To delete all files

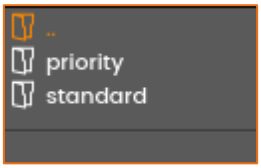
a) Turn the wheel to the left and highlight **Select All** option.
b) Long press the wheel to delete the files.



To select files stored in the Hot Folder

a) Turn the wheel to highlight **hotfolder**.
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 the SD card icon .

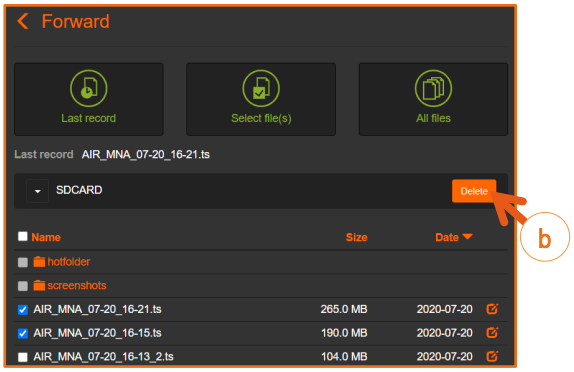
Note: if the Hot Folder function is enabled, the icon looks like .

2. You can:
   - select some files
   - select all files
   - select files stored in the Hot folder

To select one or several files to delete:

a) Click the files to be deleted.

b) Click on Delete .

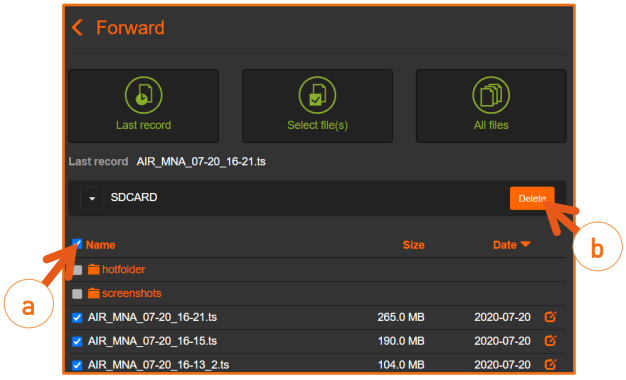


To select all files:

a) Click the Name box.

▷ All files are selected.

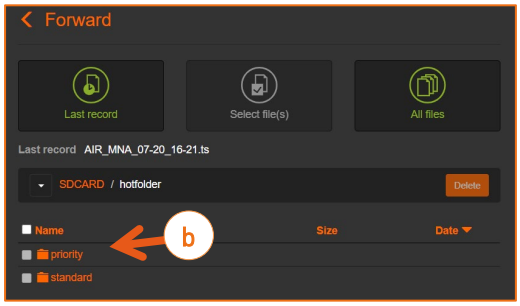
b) Click on Delete .



To select files stored in the Hot folder:

a) Click on **Hotfolder**.

b) Enter priority or standard folder to select files to be deleted.

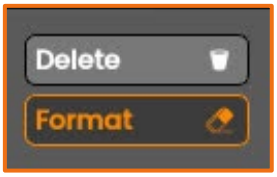


Formatting the SD Card

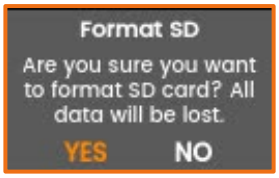
This operation can be done only from the unit front panel.

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.



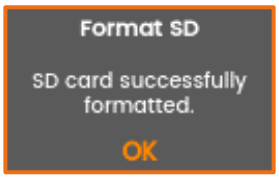
5. Turn the wheel to select **Format**.
6. Press the wheel to enter the **Format SD** menu.



7. Select **YES** to confirm formatting.
8. Press the wheel to confirm.

Note: the SD card is formatted in FAT32.

9. Press the wheel to complete the operation.

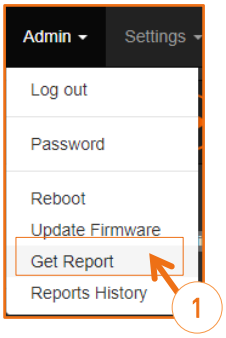


Troubleshooting

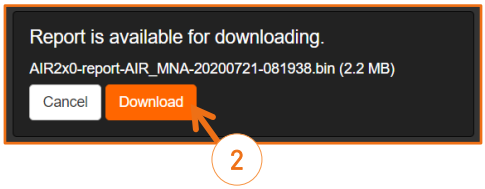
Getting a Report File

AVIWEST'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 Web Interface

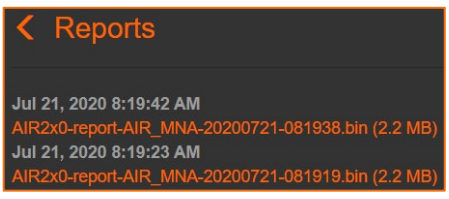


1. Click on **Admin > Get Report**.
2. Click the **Download** button.
   ▷ A report file (.bin) is generated.
3. Attach the .bin file to an email in which you explain the issue you are facing and send it to Aviwest support team. See contact addresses at the end of this manual.



From the Unit Panel

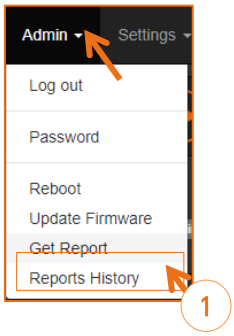
1. From the main menu, turn the wheel to select .
2. Press the wheel to confirm.
3. Turn the wheel to select and press it to confirm.
4. Turn the wheel to select **Report** and press it to confirm.
5. A report is generated and accessible from the Web Interface.
6. From the Web Interface, click on **Admin > Reports History**.
7. Click on the report that you want to download.
   ▷ A report file (.bin) is generated.
8. Attach the .bin file to an email in which you explain the issue you are facing and send it to Aviwest support team. See contact addresses at the end of this manual.



Exporting a Report File from the History Folder

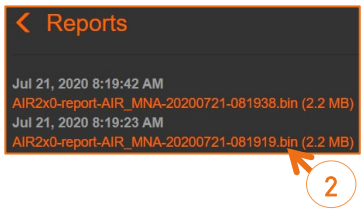
1. Click on **Admin > Reports History**.

   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 Aviwest 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 the video input standard is properly identified.
Missing 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.

Message	Solutions
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.
Authentication 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 available 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 license applied on the server. You cannot connect the unit to this server until a valid license is applied on the server.
Connection to channel 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 channel 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

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	-	200kps – 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	-	3 Mbps – 20Mbps
	1920x1080p 25/29.97/30	-	1.8 Mbps – 20Mbps
	1280x720p	-	1.4 Mbps – 20Mbps
	854x480p	-	0.5 Mbps – 20Mbps
	640x340p	-	0.4 Mbps – 20Mbps
	426x240p	-	0.3 Mbps – 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	Mono, Dual Mono, Stereo, Dual Stereo (SDI only)
Input / Output	1x 3G-SDI input embedded audio 1x 3G-SDI output (loop through) 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 1080i50/60 1080p50/60
	Bitrate mode	CBR
	Bitrate	200 Kbps to 6 Mbps
Audio	Codec	AAC-LC
	Mode	Mono and Stereo
	Bitrate	32 Kbps (for Mono) 64 Kbps (for Stereo)

Networks

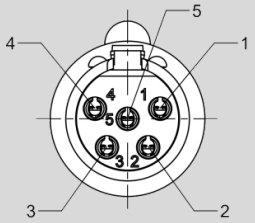
3G, 4G and 5G	For AIR220-5G and AIR320e-5G models
	• Two modems with embedded high gain custom antennas
	• Worldwide compliant
	• 5G SA and NSA modes supported
	• 5G sub 6GHz supported
	• Supported bands
	  ○ **5G:** n1, n2, n3, n5, n28, n66, n71, n77, n78, n79
	  ○ **4G:** B1, B2, B3, B4, B5, B7, B8, 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

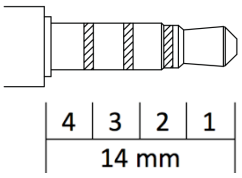
3G and 4G	For AIR220, AIR320 and AIR320e models
	• Two modems with embedded high gain custom antennas
	• Worldwide compliant
	• Supported bands
	  ○ **4G:** B1, B2, B3, B4, B5, B7, B8, B12, B13, B17, B18, B19, B20, B21, B25, B26, B28, B29, B30, B38, B39, B40, B41, B66
	  ○ **3G:** B1, B2, B3, B4, B5, B6, B8, B19

Ethernet	1 x Link

WiFi	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 • VBR: 800 ms to 10 s • CBR: 500 ms to 10 s

Interfaces

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 complies with Apple and Samsung headsets)* 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_{RM}
LAN/WAN	
Ethernet	10/100/1000 Base-T RJ45 connector Green LED indicates link Orange LED indicates speed (on: 1000BT, off:10/100BT)
WiFi	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 25 Volts
AC/DC Adapter	Manufacturer: ENG ELECTRIC CO., LTD Model: 6A-601DB19-028 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: 15.0V / 3200mAh / 48.0Wh

GNSS Receiver

Frequency range	1558 MHz – 1615MHz

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	**AIR300/AIR300e/AIR320/AIR320e**	**AIR200/AIR220**
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)	**AIR320/AIR220/AIR320e** 15,8 x 6,6 x 12,0 cm 6.22" x 2.36" x 4.72"	**AIR200/AIR300/AIR300e** 14 x 6,6 x 12,0 cm 5.51" 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 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	

Radiated Output Power

BT	**Frequency Range**	**Maximal radiated power**
	from 2400 MHz to 2483.5 MHz	0.76 mW
WiFi 2.4GHz	**Frequency Range**	**Maximal radiated power**
	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
	from 880 MHz to 915 MHz	250 mW
LTE	**Frequency Range**	**Maximal radiated power**
	from 1920 MHz to 1980 MHz	97.72 mW
	from 1710 MHz to 1785 MHz	69.18 mW
	from 2500 MHz to 2570 MHz	100 mW
	from 832 MHz to 862 MHz	199.52 mW
	from 703 MHz to 748 MHz	117.49 mW

✱ Not available in Access Point Mode for Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia.

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

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

Should you have any question or require complementary information, feel free to visit www.aviwest.com or contact AVIWEST's technical support team:

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