

# Haivision

Stingray 2<sup>™</sup>  
Set Top Box  
User's Guide v6.6

HVS-ID-UG-VF-STING-66  
Issue 01

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## Safety Guidelines

Use the following guidelines when unsafe conditions exist or when potentially hazardous voltages are present:

- Always use caution and common sense.
- To reduce the risk of electrical shock, do not operate equipment with the cover removed.
- Repairs must be performed by qualified service personnel only.

### Antistatic Precautions

Electrostatic discharge (ESD) results from the buildup of static electricity and can cause computer components to fail. Electrostatic discharge occurs when a person whose body contains a static buildup touches a computer component.

The equipment contains static-sensitive devices that may be easily damaged, and proper handling and grounding is essential. Use ESD precautionary measures when installing systems or cards, and keep the parts and cards in antistatic packaging when not in use. If possible, use antistatic floorpads and workbench pads.

Improper handling and/or installation practices may VOID the warranty.



**CAUTION** When handling components, or when setting switch options, always use an antistatic wrist strap connected to a grounded equipment frame or chassis. *If a wrist strap is not available, periodically touch an unpainted metal surface on the equipment.* Never use a conductive tool, such as a screwdriver or a paper clip, to set switches.

---

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## Statement of FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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# About This Guide

Welcome to the User's Guide for Haivision's Stingray 2™ Set Top Box (STB), Version 6.6. This guide provides an introduction to the features and describes how to set up and operate the Set Top Box.

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## About Haivision

Haivision Network Video is a global leader in delivering advanced video networking, digital signage, and IP video distribution solutions. Haivision offers complete end-to-end technology for video, graphics, and metadata to help customers to build, manage, and distribute their media content to users throughout an organization or across the Internet. Haivision has specific expertise in the enterprise, education, medical/healthcare, and federal/military markets.

Haivision is based in Montreal and Chicago, with technical centers in Beaverton, Oregon; Austin, Texas; and Hamburg, Germany.

## Reliability of Information

The information contained in this user's guide has been carefully checked and is believed to be entirely reliable. However, as Haivision Network Video improves the reliability, function, and design of its products, the possibility exists that this guide may not remain current.

If you require updated information, or any other Haivision product information, contact:

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Or visit our website at: <http://www.haivision.com>

## Obtaining Documentation

You may download the latest software, Release Notes, and other relevant documentation from our Download Center at:

<http://www.haivision.com/download-center/>



**NOTE** All customers may access the Download Center; however, a login is required. If you do not have a login, select the link to create an account.

---

## Related Documents

In addition to this user's guide, the following document(s) are also available through Haivision's Download Center (see link above):

- Furnace Administration Guide
- InStream User's Guide

## Service Support

Haivision Network Video is committed to providing the service support and training needed to install, manage, and maintain your Haivision equipment.

For more information regarding service programs, training courses, or for assistance with your support requirements, contact Haivision Technical Support via our Support Portal on our website at: <http://www.haivision.com/support-portal-home>

## Document Conventions

The following document conventions are used throughout this guide.



**TIP** The light bulb symbol highlights suggestions or helpful hints.

---



**NOTE** Indicates a note, containing special instructions or information that may apply only in special cases.

---



**IMPORTANT** Indicates an emphasized note. It provides information that you should be particularly aware of in order to complete a task and that should not be disregarded. IMPORTANT is typically used to prevent loss of data.

---



**CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in damage to data or equipment, or minor to moderate injury. It may also be used to alert against unsafe practices.

---



**WARNING** Indicates an imminently hazardous situation which, if not avoided, could result in serious injury or death.

---

## Safety Information

The CAUTION and WARNING notices shown above are not only preventative measures designed to uphold the safety of both the service engineer and operator, but also enhance equipment reliability.

The definitions and symbols for CAUTION and WARNING comply with ANSI Z535.2, American National Standard for Environmental and Facility Safety Signs, and ANSI Z535.4, Product Safety Signs and Labels, issued by the American National Standards Institute.

# Product Overview

The Stingray 2 Set Top Box (STB) is a compact InStream™ enabled IP video appliance that delivers high definition content to flat panel displays for Furnace IP video systems. The Stingray 2 may be used for both user and administrator controlled environments. Stingray 2 STBs can be centrally managed, are easy to provision, and never require manual updating.

Figure 1 Front Panel View



## Easy Installation, No Updating

The Stingray 2 is a dedicated hardware platform that supports Furnace's InStream "zero footprint" player. Upon power up, the Stingray 2 communicates directly with the Furnace Portal Manager server to obtain the latest available InStream client. During operation, the Stingray 2 maintains constant communication with the Portal Manager assuring that 1) the video available is in line with any Conditional Access rights assigned, 2) the guide data is updated regularly, 3) any video access is logged into the VF Reports system, and 4) the administrator can have complete control over the Stingray 2 using Furnace's VF Command & Control module.

## Harmonized with InStream

The InStream client for the Stingray 2 is almost identical in look and feel to those available on desktop systems. Extended control is available by using the hand-held IR (infrared) remote control provided. Channel guides, electronic programming guides, and VoD content is updated constantly. The Video-on-Demand experience is also identical to that available on the desktop, with full fast forward and rewind available at any speed and searchable HotMarks™ allowing users to access content directly without visual searches.

## Central Control

VF Command & Control allows administrators to control individual, groups, or all Stingray 2 STBs on the Furnace network on an ad-hoc or scheduled basis. Typical use cases of this feature include:

- Changing a group of Stingray 2s to a particular channel for controlled HD signage.
- Allowing users in a common area to have channel control to the display but returning the Stingray 2 to a pre-established channel on a schedule (perhaps every half hour).
- Turning off the output of all Stingray 2s after hours so the connected displays go into low power standby mode.
- Sending a message (perhaps with scrolling text overlays) to Stingray 2s in a certain area that an event is pending.

The Furnace can even be integrated with an emergency messaging system.

## Flexible Decoding and I/O

The Stingray 2 supports most MPEG standards, including SD and HD H.264. The Stingray 2 can also support specific computer resolutions, useful when a live computer source (such as a centrally located signage system player) is connected to a Makito encoder.

The Stingray 2 comes standard with HDMI, Component Analog (Y,Pb,Pr), and Composite outputs. The STB is also equipped with a secondary Ethernet network interface to allow another device to share the Ethernet connection, for example, to connect a PC to the network through the Stingray 2.

## Content Protection

The Stingray 2 complies with the Furnace IP video end-to-end security framework and supports AES decryption of multicast or unicast signals. This is especially important for deployments where live video is transmitted to guarantee protection against recording, for example, live professional sports (where content is valuable to the owners) or medical procedures (to ensure patient confidentiality).

## Setup Made Easy

The Stingray 2 is easily installed without technical expertise. After you connect it to the network, it provisions itself automatically and a minute or so later plays the selected multicast or unicast content to the connected television.

## Feature Details

- SD/HD Set Top Box
- InStream viewer compatible
- VF Now Video-on-Demand support
- Easily administered via VF Command & Control (VFC2)

- VF Conditional Access compatible
- Limited support for playing dual-stream assets (one track at a time with Swap capability)
- OnGuide™ compatible with up to two weeks of program guide data
- Closed captioning support
- AES Decryption
- 32-bit color graphics with alpha-blending
- IR Remote Control standard
- Automatic provisioning and upgrades provided over network
- Metal box enclosure with anti-slip feet

Figure 2 Back Panel View



For additional details, please refer to [“Technical Specifications”](#) on page 32.

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# Package Contents

The Stingray 2 Set Top Box package includes the following components:

- 1 - Stingray 2 Set Top Box
- 1 - Power Supply Unit (PSU) and A/C power cord
- 1 - A/V cable (Composite video, left and right baseband audio)
- 1 - Infrared (IR) remote control

Other A/V cables such as Component Analog or HDMI must be purchased separately.

## Safety First

Please pay particular attention to the following points in order to help protect yourself and the STB:

- Refer to [“Safety Guidelines”](#) on page 3.
- The Stingray 2 contains no user serviceable parts. Opening the STB will void the warranty.
- Only connect the unit to a compatible power source.
- If you experience any issues or problems, consult your local service provider or support organization.

# Connecting the Stingray 2

To connect the Stingray 2:

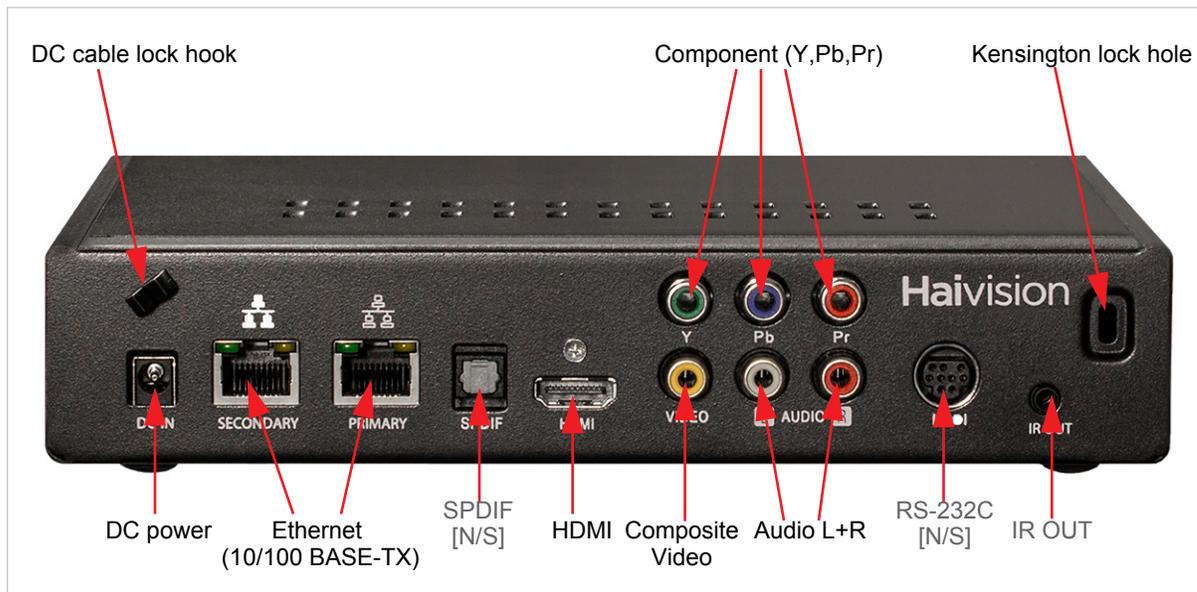
1. Connect the “PRIMARY” RJ45 Ethernet port to your network using a Cat5 STP cable (not included).
2. (Optional) Connect the “SECONDARY” Ethernet port to the Ethernet port on a PC (i.e., to connect the PC to the network using the Stingray 2 as a pass-through).

By default, the SECONDARY port works automatically when plugged in; however, it can be disabled as a configuration option by your service provider (by editing the STBImage profile).



**NOTE** The Stingray 2 has a built-in hardware Ethernet switch to manage traffic for both the PRIMARY and SECONDARY ports.

Figure 3 Back Panel Connectors



3. Connect the video and audio output jacks to the television, using the appropriate connector:
  - **Component Analog (Y,Pb,Pr) Video+Baseband Audio:** Use a component cable (must be purchased separately) to connect the Component Analog (Y,Pb,Pr) jacks. For audio, use the A/V cable (provided) to connect the Baseband audio (red/white RCA jacks) jacks.
  - **Composite Video+Baseband Audio:** Use the A/V cable (provided) to connect the Composite video (yellow RCA jack) and Baseband audio (red/white RCA jacks) jacks.
  - **HDMI Audio+Video:** Use an HDMI cable to connect the HDMI jack.
4. (Optional) Connect an Infrared (IR) extender cable to the IR Out port. Take care when inserting the IR extender cable into the socket. It should be properly aligned with not too much force.
5. Connect the Power Supply Unit (PSU) to the DC power input jack on the Stingray 2.
6. Then connect the A/C power cord to the PSU and insert the plug into an A/C outlet. Use only the A/C power cord provided with the PSU.



**NOTE** The SPDIF and RS-232C interfaces are not supported [N/S].

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# Operating the Stingray 2

The Stingray 2 Set Top Box (STB) automatically provisions itself with an application from the network. Whenever power is initially applied to the STB (or reapplied after power loss), it must be provisioned from the network to operate properly.



**NOTE** The Ethernet input and video and audio outputs must already be connected (as described in the previous section [“Connecting the Stingray 2”](#)).

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## To operate the Stingray 2:

1. Turn on the television and select the A/V input video mode corresponding to the Stingray 2 video connection (i.e., Composite, Component or HDMI).
2. Observe the Haivision splash screen. Within a minute or so the provisioning process should finish and the STB is ready for use.
3. If the STB has been configured with a locked screen (i.e., to require users to enter a PIN to unlock the STB whenever it is powered up or comes back out of standby mode), you will be prompted to enter your PIN.

Type the PIN on the remote control and press the OK button.

Immediately after provisioning, the Stingray 2 normally tunes to a channel and begins to play audio and video.

4. Adjust your television volume to a comfortable level and then use the Stingray 2 remote control to mute or adjust the volume of the STB.

Pressing the “Power” button on the remote control toggles the STB box between power on and standby mode.



**NOTE** If provisioning fails, contact your local service provider or help desk.

---



**TIP** To display closed caption text, enable the closed captioning feature of your television. Closed caption data is passed through the STB and straight to the television when available in the tuned stream (Composite output only). However, the STB has no control over the CC display.

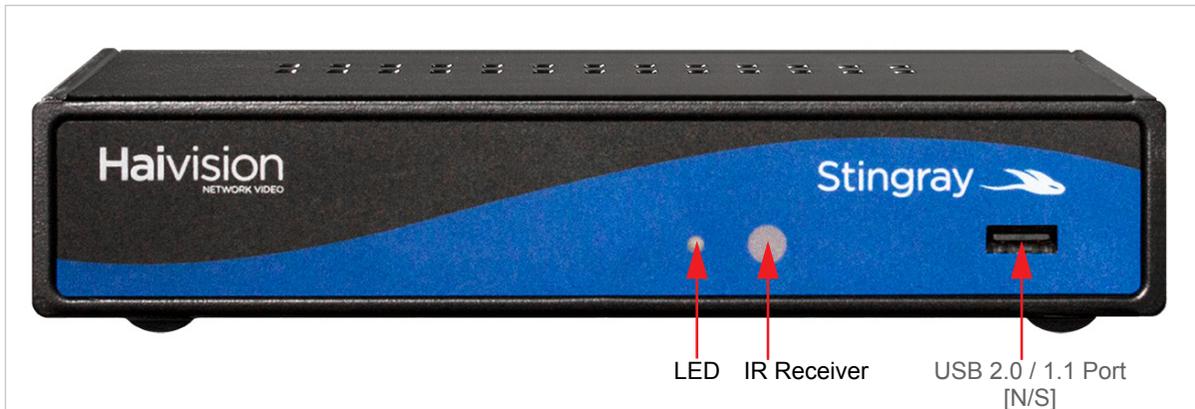
---

## LED Status Indicator (Front Panel)

The Stingray 2 has a single LED that indicates power, standby mode, and IR reception status (shown in the figure below).

LED Color/Description	Indication
Green	The Stingray 2 is powered on and out of standby mode.
Flashing	Indicates IR reception when a remote control button is pressed.
Red	Indicates standby mode.

Figure 4 Front Panel Connectors



**IMPORTANT** The IR Receiver port is *not* a button. Do not apply pressure on the IR Receiver as it may damage the unit.



**NOTE** The USB port is not supported [N/S].

# Initial Setup

In most cases, simply turning on the STB is sufficient and a first-time setup is not required.

However, in some cases, it may be necessary to interrupt the bootup process and configure the STB before it will boot correctly. For example, if there are multiple video services available on your network, it may be necessary to select the proper “realm” to which the STB will connect. Also, if your network is not DHCP-enabled, it may be necessary to configure the network settings of the STB before it will boot.



**NOTE** Before proceeding, make sure the STB has been correctly connected to the network and to a television monitor. See [“Connecting the Stingray 2”](#) on page 15.

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## To configure the STB settings:

When you plug in the power, the STB begins to boot up and you will see the progress display on the monitor. Note that each icon on the bottom of the display corresponds to a bootup phase, and will be greyed out until that phase is underway or complete.



1. To interrupt the bootup process, click the Up ARROW on the remote control.



**NOTE** You can interrupt the bootup process up until the third icon is lit, indicating that the STB has located an available provisioning server.

---

2. When prompted, enter your password.

The STB is typically shipped with no “read” password set; the default “write” password is 1234.

3. On the Settings options menu, select the item to configure.



For example, you can select an existing “realm” which the STB will “autodiscover” upon bootup, or you can manually enter the IP address of the device to which the STB will connect.



**TIP** The default realm is VFServer.

---

4. To connect to an existing “realm”, select Choose Realm.



- a. On the Choose Realm page, highlight your selection from the list.
  - b. Select Accept Changes.
  - c. When prompted, enter your password.
5. If your provisioning server is not available in the list of available realms, you may enter its IP address directly. To do so, from the Settings options page, select Manual Provisioning.

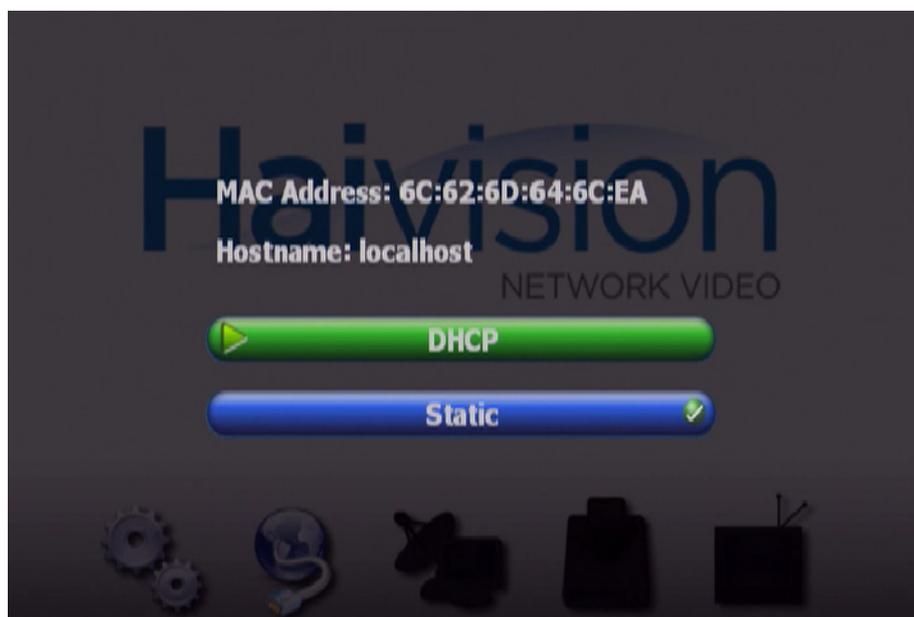


- a. On the Provisioning Address page, type in the IP Address of the licensing server or portal server. The default port number is 4902.
- b. Select Accept Changes.
- c. When prompted, enter your password.



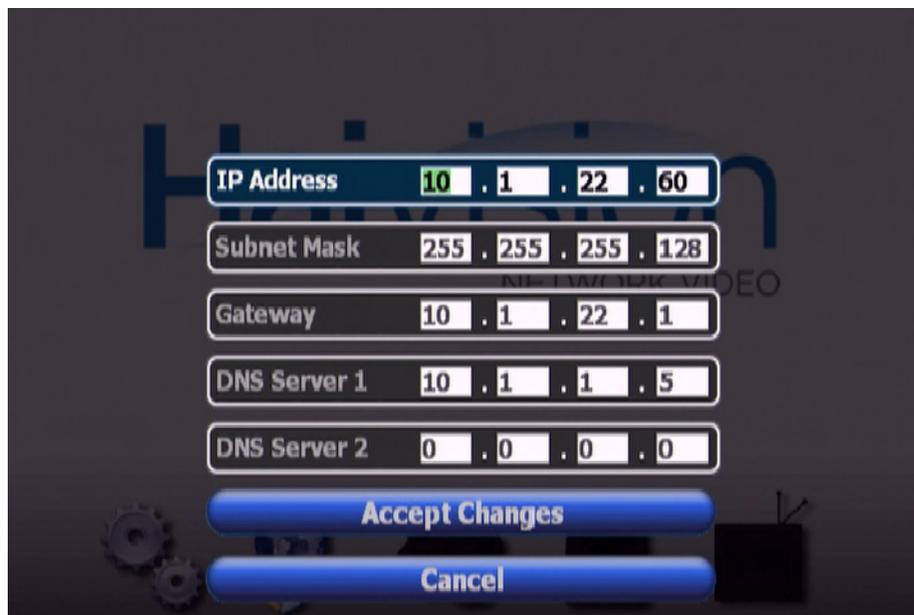
**NOTE** The STB will *either* connect to a “realm” if available and selected, *or* it will use the Provisioning Address. The most recent selection will take precedence.

6. To configure the network settings for the STB, on the Settings options page select Network Settings.



By default, DHCP is enabled for the STB.

7. To configure a static IP Address for the STB, on the Network Settings page select Static.



- a. On the Static Network Settings page, type in the new IP Address, Subnet Mask, Gateway Address, and DNS Server 1 and 2 addresses (as required for your system).
- b. Select Accept Changes.
- c. When prompted, enter the write password (factory default 1234).
- d. On the Settings options page, select Reboot.

The network changes take effect upon reboot.

8. When you have completed the setup, select Exit.

The boot process will continue with the chosen options.

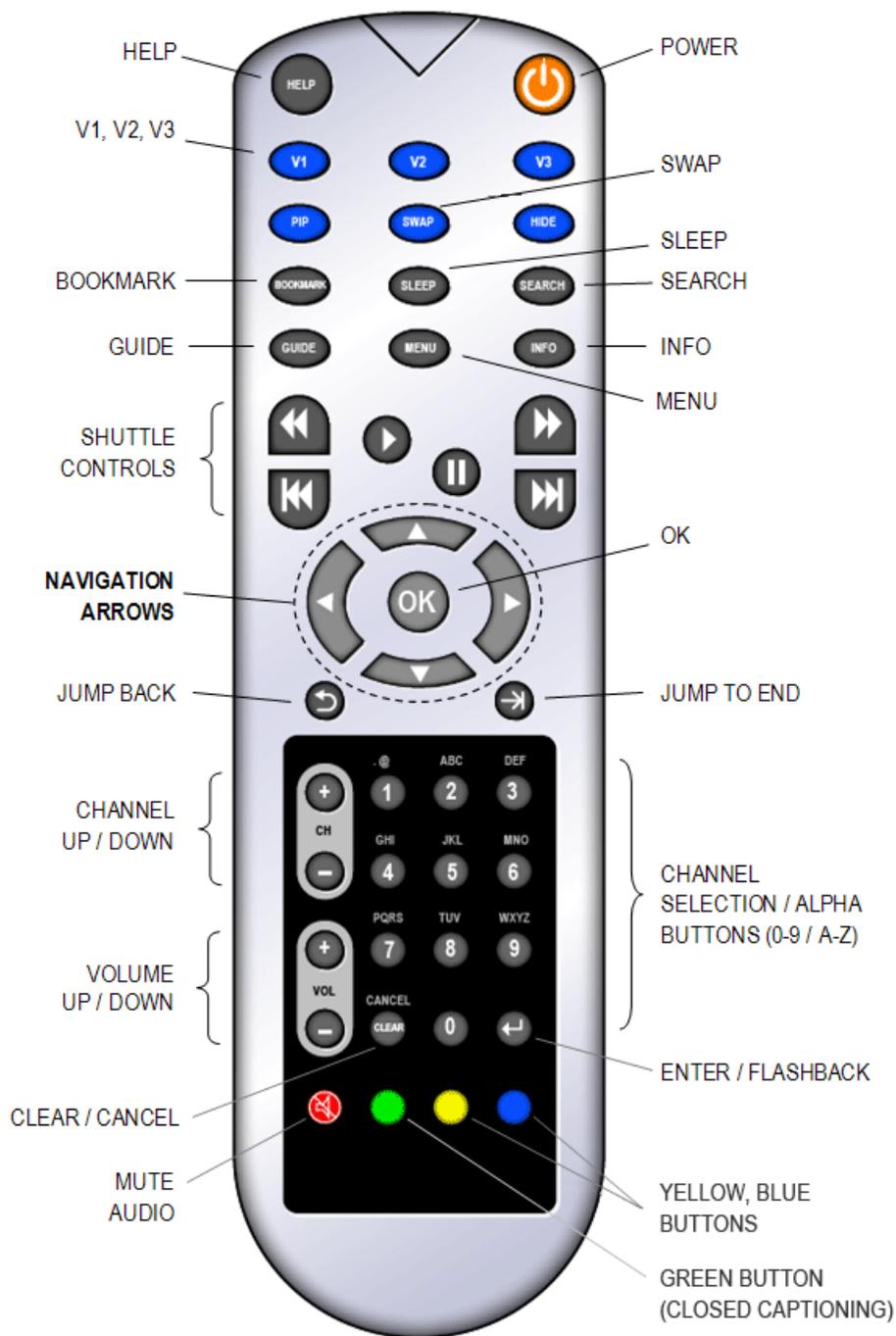
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# Using the Remote Control

Please review [Figure 5: “Remote Control”](#) on the following page to become familiar with the Stingray 2 IR remote control unit. The remote control functions are described on the sections that follow.

- [General Controls](#)
- [MENU Items](#)
- [SHUTTLE Controls \(Video-on-Demand\)](#)

Figure 5 Remote Control



## General Controls

### POWER

After the STB is provisioned with its application, pressing the power button brings the STB out of standby mode (green LED) or places it back in standby mode (red LED).

To use any of the other buttons below, the STB must have previously accepted its application from the network and be out of standby mode. Pressing a remote control button flashes the Stingray 2 LED to indicate reception.

### HELP

This displays the Help menu that describes the functions of the various buttons on the remote control. For example, press the GUIDE button and the Help system describes the function of GUIDE button.

### CHANNEL UP / DOWN

Use the CH (channel) + / - buttons to change channels. You can also change channels by typing in the channel number on the remote control. The channel automatically changes after a few seconds, or you can press ENTER after the channel number to make it change immediately.

CH+ and CH- also act as page up and page down buttons when navigating the program guide or menus.

### VOLUME UP / DOWN

These buttons control the volume level of the audio provided to the television (i.e., rather than affecting the volume level setting of the television). VOL+ increases the volume, and the VOL- decreases the volume level.

### MUTE

This silences (mutes) or un-silences (un-mutes) the audio output of the STB to the television. The MUTE button does NOT change the value that is set for the television.

### GUIDE

This displays the electronic program guide showing channel list and program lineup. If available, it also lists Video-on-Demand (VoD) content.

To navigate the program guide, press the up or down ARROW buttons to traverse the guide one entry at a time. Use the right ARROW or left ARROW buttons to move from the channel lineup to the program list.

To move up and down a page at a time, press the CH+ or CH- button.

To exit the guide and return to the television picture, press the GUIDE button.

To select a channel for viewing, place the cursor on it using the up or down ARROW button and press OK. Or you can press the channel number on the remote to move the cursor to that channel in the guide; then press OK to tune that channel.

To exit the guide, press the GUIDE button.

## NAVIGATION ARROWS

These are the four ARROW buttons in the center of the control surrounding the OK button. These buttons are used to move the cursor to navigate around the various menus.

The OK button is generally used to select an item on the screen.

In most menus the left ARROW button returns to the previous menu or back to video from the top level menu.

## INFO

This displays the current program information for the show that is currently playing. To exit this screen, press the INFO button or wait and it will disappear.

## SEARCH

This displays an alphanumeric keypad. As you type a search phrase, the STB displays the program titles matching the search string in the panel to the right.

To type a search phrase, use the navigation arrows to move the cursor over the next letter of the search phrase and then press OK to select that letter. In the same way, you can select “DEL” (to delete the letter to the left of the cursor), SP (space character) or CLR (clear entry).

Alternately, you can press the ALPHA buttons on the remote the number of times equal to the position of the letter needed (e.g., press the 8 button once to select the letter “T”, the 6 button three times to select “O” and so on). Pressing the ALPHA button a fourth time displays the number on the button. When using the ALPHA buttons, pause three seconds after entering one character to accept that entry and advance the cursor for the next entry.

Continue entering characters until the program of interest appears in the program list to the right.

To add the show to your ToDo list, move the cursor to the show by pressing the right navigation arrow, then press the up or down ARROW button to highlight the program and press the OK button. A confirmation prompt appears asking whether you wish to add the program to your ToDo list. Selecting “Yes” adds it, selecting “No” or allowing the prompt to timeout cancels the add request.

To exit this screen, press the SEARCH button.

## SLEEP

Select an interval in the menu to specify how long before the STB is automatically placed in standby. The selections are OFF, 15, 30, 45, 60, and 90 minutes. An example would be selecting 15 then pressing OK - this starts a 15 minute countdown before the STB is automatically placed in standby.

## SWAP

If a dual-stream asset is active, pressing the SWAP button causes the Picture-in-Picture (PIP) stream to change positions with the primary video stream.

## V1, V2, V3

The Stingray 2 tunes the “favorite” channel configured for the button. See [“Favorites \(V1, V2, V3\)”](#) under the MENU button for how to set your favorite channels.

## CHANNEL SELECTION

At any time you can change to any particular channel by entering the channel number with the keypad and pressing the ENTER button.

## ENTER / FLASHBACK

Pressing Enter after typing a channel number forces the STB to tune the channel immediately rather than waiting for 3 seconds after the last channel number is pressed. For example, if you want to tune channel 307, press “3” then “0” then “7” and press Enter – the tune occurs immediately.

When viewing a channel, pressing this button tunes the previously viewed channel.

## CLOSED CAPTIONING (CC)

Pressing the green button cycles through the Closed Captioning options.

## MENU Items

Pressing the MENU button displays the preferences screen that enables you to manage your favorite channels, ToDo List, and various system settings. Use the [NAVIGATION ARROWS](#) to highlight an item, and then press the OK button. The following choices are available.

### Favorites (V1, V2, V3)

This screen allows you to program your top three favorite stations on the remote control. Scroll down the channel list until the channel you want as a favorite is highlighted. Then press any one of the V1, V2 or V3 buttons. It saves that channel for the button you used.

To select any of your favorite channels you can just use the V1, V2 or V3 button at any time. You can overwrite any of the channels that are already programmed by selecting a different channel and pressing the V1, V2 or V3 button to configure that button with the new channel.

### ToDo List

This screen shows your current ToDo List. Items in the ToDo List cause the STB to tune and play the channel at the time of the event(s) in the list. Highlighting any ToDo item and pressing the OK button displays the item details.

Pressing the CLEAR button over any ToDo item deletes the item from the list. To delete all ToDo items, press the “Yellow” button (bottom row).

## System Settings

The System Settings consist of five separate submenus. These submenus allow you to change characteristics about the Stingray 2. The submenus are as follows:

### \* Display Settings

This menu is used to adjust **Video Settings**, **Display Resolution**, and **Info Display Time**.

- The **Video Settings** menu provides controls to adjust Brightness, Contrast, Saturation, and Sharpness.

Select an adjustment slider by moving up or down using the UP / DOWN navigation arrows to highlight the desired slider; then press the CH+ or CH- buttons to adjust the slider control.

Press the CLEAR button to reset the highlighted slider.

- The **Display Resolution** menu enables you to select between standard definition (SDTV) and high definition (HDTV) video output mode.



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**NOTE** Note that HDTV is available via HDMI and Y,Pb,Pr Component connectors. (See [“Connecting the Stingray 2”](#) on page 15.) This setting is only active until reboot or power loss unless the service provider automatically provisions the STB for HDTV mode.

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- The **Info Display Time** menu is used to adjust the expiration display time for information overlay banners.

Press the left arrow to move back to the previous menu or the MENU button to exit menus completely.

#### \* Audio Settings

This menu is used to adjust the **System Volume** and **SAP Audio** settings.

- **System Volume** sets the master volume for all of the system sounds rather than the volume of the television audio. It adjusts the volume of the user interface feedback sounds that the system uses for button presses, error messages, etc.

The choices are OFF, LOW, MEDIUM, and HIGH. Use the arrow buttons to highlight your preference; then press the OK button.

- The **SAP Audio** menu enables you to turn on or turn off the Secondary Audio Program (SAP). The SAP is the second audio channel (if available) that carries an alternate language for the current show.

When SAP audio is available in the tuned channel and SAP is turned on, the STB will play the secondary audio channel instead of the primary audio channel. When SAP is enabled and SAP audio is available and playing, a small box with the letters “SAP” appears in the upper right hand corner of the GUIDE screen.

Press the left arrow to move back to the previous menu or the MENU button to exit menus completely.

#### \* Network Settings



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**CAUTION** This menu is intended for use by service providers or system administrators only (rather than end-users).

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A password is required to enter the Network Settings screen. This menu allows for setting a DHCP or STATIC network configuration.

For a static configuration, a unique IP Address, Subnet Mask, Gateway, DNS1 and DNS2 must be supplied.

To set a DHCP dynamic configuration, select the DHCP option. The selected configuration activates after power is removed and reapplied to the STB.

## \* Information

This screen shows system information and settings for the Stingray 2. Use the UP / DOWN arrows to navigate through the screen. Press the left arrow to move back to the previous menu or the MENU button to exit the menus completely.

## SHUTTLE Controls (Video-on-Demand)

These buttons are used when watching Video-on-Demand (VoD).

The PAUSE button pauses video playback. Pressing PAUSE again resumes video playback.

Pressing the PLAY button resumes video playback.

Pressing FAST FORWARD once plays video forward at 6X speed. Pressing the FAST FORWARD button again plays video forward at 16X speed. Pressing FAST FORWARD again plays video forward at 64X speed. Pressing FAST FORWARD (a fourth time) returns to play mode.

The same functions work for the REWIND button playing in reverse.

## BOOKMARK

This button presents a list of bookmarks (if any had been configured within the selected VoD title). To select a bookmark, use the arrow buttons to navigate to one of interest and then press OK. Doing so displays the video at that bookmark and starts playing from that point.

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# APPENDIX A: Technical Specifications

This appendix lists the technical specifications for the Stingray 2.

## Topics In This Appendix

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## Video Decoding

Video Decoding	
Compression Standards	MPEG-1 MPEG-2 MPEG-4 Part 2 MPEG-4 Part 10 (H.264)
Video Resolutions	1920x1080p 30/29.97/25 Hz 1920x1080i 60/59.94/50 Hz 1280x720p 60/59.94/50 Hz 720x480/576i 60/59.94/50 Hz 720x480/576p 60/59.94/50 Hz (interlaced shown in fields per second)
Computer Resolutions	1280x1024 60 Hz 1280x768 85/75/60 Hz 1024x768 85/75/60 Hz
Video Bit Rates (bps)	SD video 450k to 10M HD video 1.5M to 10M Computer 800k to 9M CIF 150k to 10M

## Audio Decoding

Audio Decoding	
Compression Standards	MPEG 1 Layer II ISO/IEC 11172-3 MPEG-1 Audio Layer 3 (MP3) MPEG-2 AAC-LC ISO/IEC 13818-7 MPEG-4 AAC-LC ISO/IEC 14496-3
Audio Channels	2 per video channel
Bit Rates	From 32 to 448 kbps per audio pair
Frequency Response	From 20 Hz to 22 kHz

## Audio/Video Interfaces

Audio/Video Interfaces	
Video (Output)	Composite NTSC/PAL Y,Pb,Pr Component Analog HDMI
Audio (Output)	Unbalanced Stereo Analog Audio HDMI Embedded Digital Stereo Audio

## IP Networking

IP Network Interface	
Networking Protocols	Unicast Streaming (TCP VF Now for VOD) Multicast Streaming MPEG Transport Stream over UDP VFTP
Connector	RJ45

## Management Interfaces

Management Interfaces
Management via IP using Furnace Portal Manager (VF Command & Control)
Configuration via IP using Furnace Portal Manager (VF STB Imager)
Local control via Infrared Remote Control

## Physical Specifications

Stingray 2 Set Top Box (VF-STING)	
Dimensions	44mm H x 205mm W x 200 mm D (1.7"H x 8.07"W x 7.87" D)
Weight	3 lbs.
Power Supply	External Power Supply 100/240V 1.4A 60/50Hz input 12V 4.16A max.output
Temperature	0° to 50° C [32° to 122° F] operating -40° to 70° C [-40° to 158° F] non-operating
Relative Humidity	Up to 95% without condensation

## Regulatory/Compliance

Regulatory/Compliance	
EU Council Directives	EMC Directive - 2004/108/EC ROHS Directive - 2002/95/EC
EMC	EN 55022: 2006 A1: 2007 (emissions), CLASS A EN 55024:1998+A2:2003 (immunity) FCC part 15: 2009, subpart B, CLASS A ICES-003 Issue 4, Class A EN 61000-3-2: 2006, CLASS A EN 61000-3-3: 2008 AS/ NZS3548

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# Appendix B: Warranty Information

## Haivision Network Video One (1) Year Limited Warranty

Haivision warrants its hardware products against defects in materials and workmanship under normal use for a period of ONE (1) YEAR from the date of equipment shipment (“Warranty Period”). If a hardware defect arises and a valid claim is received within the Warranty Period, at its option and to the extent permitted by law, Haivision will either (1) repair the hardware defect at no charge, or (2) exchange the product with a product that is new or equivalent to new in performance and reliability and is at least functionally equivalent to the original product. A replacement product or part assumes the remaining warranty of the original product or ninety (90) days from the date of replacement or repair, whichever is longer. When a product or part is exchanged, any replacement item becomes your property and the replaced item becomes Haivision’s property.

### EXCLUSIONS AND LIMITATIONS

This Limited Warranty applies only to hardware products manufactured by or for Haivision that can be identified by the “Haivision” trademark, trade name, or logo affixed to them. The Limited Warranty does not apply to any non-Haivision hardware products or any software, even if packaged or sold with Haivision hardware. Manufacturers, suppliers, or publishers, other than Haivision, may provide their own warranties to the end user purchaser, but Haivision, in so far as permitted by law, provides their products “as is”.

Haivision does not warrant that the operation of the product will be uninterrupted or error-free. Haivision does not guarantee that any error or other non-conformance can or will be corrected or that the product will operate in all environments and with all systems and equipment. Haivision is not responsible for damage arising from failure to follow instructions relating to the product’s use.

This warranty does not apply:

- (a) to cosmetic damage, including but not limited to scratches, dents and broken plastic on ports;
- (b) to damage caused by accident, abuse, misuse, flood, fire, earthquake or other external causes;
- (c) to damage caused by operating the product outside the permitted or intended uses described by Haivision;
- (d) to a product or part that has been modified to alter functionality or capability without the written permission of Haivision; or
- (e) if any Haivision serial number has been removed or defaced.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY AND REMEDIES PROVIDED ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, STATUTORY, EXPRESS OR IMPLIED. AS PERMITTED BY APPLICABLE LAW, HAIVISION SPECIFICALLY DISCLAIMS ANY AND ALL STATUTORY OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES AGAINST HIDDEN OR LATENT DEFECTS. IF HAIVISION CANNOT LAWFULLY DISCLAIM STATUTORY OR IMPLIED WARRANTIES THEN TO THE EXTENT PERMITTED BY LAW, ALL SUCH WARRANTIES SHALL BE LIMITED IN DURATION TO THE DURATION OF THIS EXPRESS WARRANTY AND TO REPAIR OR REPLACEMENT SERVICE AS DETERMINED BY HAIVISION IN ITS SOLE DISCRETION. No Haivision reseller, agent, or employee is authorized to make any modification,

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EXCEPT AS PROVIDED IN THIS WARRANTY AND TO THE EXTENT PERMITTED BY LAW, HAIVISION IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO LOSS OF USE; LOSS OF REVENUE; LOSS OF ACTUAL OR ANTICIPATED PROFITS (INCLUDING LOSS OF PROFITS ON CONTRACTS); LOSS OF THE USE OF MONEY; LOSS OF ANTICIPATED SAVINGS; LOSS OF BUSINESS; LOSS OF OPPORTUNITY; LOSS OF GOODWILL; LOSS OF REPUTATION; LOSS OF, DAMAGE TO OR CORRUPTION OF DATA; OR ANY INDIRECT OR CONSEQUENTIAL LOSS OR DAMAGE HOWSOEVER CAUSED INCLUDING THE REPLACEMENT OF EQUIPMENT AND PROPERTY, ANY COSTS OF RECOVERING, PROGRAMMING, OR REPRODUCING ANY PROGRAM OR DATA STORED OR USED WITH HAIVISION PRODUCTS AND ANY FAILURE TO MAINTAIN THE CONFIDENTIALITY OF DATA STORED ON THE PRODUCT. THE FOREGOING LIMITATION SHALL NOT APPLY TO DEATH OR PERSONAL INJURY CLAIMS, OR ANY STATUTORY LIABILITY FOR INTENTIONAL AND GROSS NEGLIGENT ACTS AND/OR OMISSIONS.

## OBTAINING WARRANTY SERVICE

Before requesting warranty service, please refer to the documentation accompanying this hardware product and the Haivision Support Knowledge Base <http://haivision.com/support/knowledge-base>. If the product is still not functioning properly after making use of these resources, please contact your Authorized Reseller or Haivision at <http://support.haivision.com> using the information provided in the documentation. The Authorized Reseller or Haivision will help determine whether your product requires service and, if it does, will inform you how Haivision will provide it. You must assist in diagnosing issues with your product and follow Haivision's warranty processes.

Haivision may provide warranty service by providing a return material authorization ("RMA") to allow you to return the product in accordance with instructions provided by Haivision or Authorized Reseller. You are fully responsible for delivering the product to Haivision as instructed, and Haivision is responsible for returning the product if it is found to be defective. Your product or a replacement product will be returned to you configured as your product was when originally purchased, subject to applicable updates. Returned products which are found by Haivision to be not defective, out-of-warranty or otherwise ineligible for warranty service will be shipped back to you at your expense. All replaced products and parts, whether under warranty or not, become the property of Haivision. Haivision may require a completed pre-authorized form as security for the retail price of the replacement product. If you fail to return the replaced product as instructed, Haivision will invoice for the pre-authorized amount.

## APPLICABLE LAW

This Limited Warranty is governed by and construed under the laws of the Province of Quebec, Canada.

This Limited Hardware Warranty may be subject to Haivision's change at any time without prior notice.

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- 1.2. License Fee.** License Fee shall mean the consideration paid to Haivision for use of the Product. The License Fee is part or all of the price paid for the relevant Product.
- 1.3. Product.** Product shall mean the executable version of Haivision’s computer software, program or code, in object code format (specifically excluding source code), together with any related material including, but not limited to the hardware, Reference Manuals or database schemas provided for use in connection with the Product and including, without limitation, all Upgrades through the date of installation.
- 1.4. Reference Manuals.** Reference Manuals shall mean the most current version of the documentation for use in connection with the Product provided by Haivision to You.
- 1.5. Third-Party Content.** Services or materials, which are not proprietary to Haivision or may not be part of the materials of the company, entity or individual using the Product.
- 1.6. Updates.** Updates shall mean any periodic software releases, additions, fixes, and enhancements thereto, release notes for the Product and related Reference Manuals, (other than those defined elsewhere in this section as Upgrades) which have no value apart from their operation as part of the Product and which add minor new functions to the Product, but none so significant as to warrant classification as an Upgrade, which may be provided by Haivision to fix critical or non-critical problems in the Product on a scheduled, general release basis. Updates to the Product (“Version”) are denoted by number changes to the right of the decimal point for a version and revision number (for example, going from 2.0.0 to 2.1.0).

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**(b) Ownership.** The Product is conditionally licensed and not sold. As between the parties, Haivision and/or its licensors owns and shall retain all right, title and interest in and to all of the Product, including all copyrights, patents, trade secret rights, trademarks and other intellectual property rights therein, and nothing in this Agreement shall be deemed to transfer to You any ownership or title to the Product. You agree that you will not remove, alter or otherwise obscure any proprietary rights notices appearing in the Product. All Haivision technical data and computer software is commercial in nature and developed solely at private expense.

## 3. TERM AND TERMINATION

**3.1. Term.** The license and service term are set forth in your Entitlement(s). Additionally, this Agreement may be terminated without cause by You upon thirty (30) days written notice to Haivision.

- 3.2. Termination for Breach.** Your rights under this Agreement will terminate immediately without notice from Haivision if You materially breach this Agreement or take any action in derogation of Haivision’s rights to the Product. Haivision may terminate this Agreement should any Software become, or in Haivision’s reasonable opinion likely to become, the subject of a claim of intellectual property infringement or trade secret misappropriation.
- 3.3. Termination for Bankruptcy.** Haivision may terminate this Agreement, effective immediately, if You file, or have filed against You, a petition for voluntary or involuntary bankruptcy or pursuant to any other insolvency law, makes or seeks to make a general assignment for the benefit of its creditors or applies for, or consents to, the appointment of a trustee, receiver or custodian for a substantial part of its property.
- 3.4. Termination; Effect; Survival.** Upon the termination of this Agreement for any reason:
- (a) All license rights granted hereunder shall terminate;
  - (b) You shall immediately pay to Haivision all amounts due and outstanding as of the date of such termination or expiration; and
  - (c) You shall return to Haivision all Product and all Haivision Reference Manuals or certify that all such Product and Reference Manuals have been destroyed. Notwithstanding any termination of this Agreement, the following provisions of this Agreement shall survive for the relevant period of time set forth therein, if any: Sections [2.2](#), [4](#), [5](#) and [6](#).

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- 4.2. Warranty Disclaimers.** THE EXPRESS WARRANTIES SET FORTH IN SECTION [4.1](#) ABOVE IN RESPECT TO THE PRODUCT ARE IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, REGARDING THE PRODUCT, OR ITS OPERATION, FUNCTIONALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS (ALL OF WHICH ARE DISCLAIMED). HAIVISION DOES NOT WARRANT THAT ANY OF THE PRODUCT(S) WILL MEET ALL OF YOUR NEEDS OR REQUIREMENTS, OR THAT THE USE OF ANY OF THE PRODUCT(S) WILL BE UNINTERRUPTED OR ERROR-FREE, OR THAT ALL ERRORS WILL BE DETECTED OR CORRECTED.
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- (c) Haivision shall have no liability for: (i) the use of other than the then current release of the Product; (ii) the use of the Product other than as set forth in its accompanying documentation and as permitted herein; (iii) the modification of any of the Product by any party other than Haivision; or (iv) any infringement arising from the use of any Product by You after Haivision has issued a written notice to You requiring You to cease using such Product when Haivision exercises its option to terminate the License pursuant to Section 3.2 (collectively, "Exclusions"). SECTION 5.1 STATES HAIVISION'S ENTIRE OBLIGATION WITH RESPECT TO ANY CLAIM REGARDING THE INTELLECTUAL PROPERTY RIGHTS OF ANY THIRD PARTY.

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- 6.3. Consent to Use Data.** You agree that Haivision may collect and use technical data and related information, including but not limited to technical information about Your device, system and application software and peripherals, that is gathered periodically to facilitate the provision of software updates, product support and other services to You (if any) related to the Product. Haivision may use this information, as long as it is in a form that does not personally identify You, to improve its products or to provide services or technologies to You.
- 6.4. Transfer and Assignment.** Haivision may assign, sublicense, or transfer this Agreement and/or any or all of its rights or obligations hereunder. You may not assign, transfer or delegate any of its rights or obligations hereunder (whether by operation of law or otherwise) without the prior written consent of Haivision. For purposes of the preceding sentence, and without limiting its generality, any merger, consolidation or reorganization involving You (regardless of whether You are a surviving or disappearing entity) will be deemed to be a transfer of rights, obligations or performance under this Agreement for which Haivision's prior written consent is not required. Any unauthorized assignment, transfer or delegation by You shall be null and void. This Agreement is binding upon and inures to the benefit of the parties hereto and their respective permitted successors and assigns.
- 6.5. Waiver and Amendment.** No modification, amendment or waiver of any provision of this Agreement shall be effective, unless in writing signed by both parties. No failure or delay by either party in exercising any right, power or remedy under this Agreement, except as specifically provided herein, shall operate as a waiver of any such right, power or remedy. Without limiting the foregoing, any additional legal terms and conditions submitted by You in any other documents, including but not limited to the Entitlement, shall be of no legal force or effect.

- 6.6. Enforcement by Third Party.** For any Product licensed by Haivision from other suppliers, the applicable supplier is a third party beneficiary of this Agreement with the right to enforce directly the obligations set forth in this Agreement against You.
- 6.7. Third Party Content.** Haivision is not responsible for examining or evaluating the data, accuracy, completeness, timeliness, validity, copyright compliance, legality, decency, quality or any other aspect of any Third Party Content. Haivision does not warrant or endorse and does not assume and will not have any liability or responsibility to You or any other person for any Third Party content. You agree that any Third Party Content may contain proprietary information and material that is protected by applicable intellectual property and other laws, including but not limited to copyright, and that you will not use such proprietary content, information or materials in any way whatsoever except for permitted uses of the Third Party Content.
- 6.8. Third Party Royalties.** Your further reuse, retransmission, rebroadcast, display or other distribution of your Third Party Content using the Product may require that you obtain a license from and / or pay royalties to the owners of certain third party audio and video formats. You are solely responsible for obtaining such licenses and paying such royalties.
- 6.9. Governing Law/Submission to Jurisdiction.** This Agreement shall be governed by and construed in accordance with the laws of the Province of Québec, Canada and the Laws of Canada applicable therein (excluding any conflict of laws rule or principle, foreign or domestic), exclusive of the U.N. Convention on the International Sale of Goods. You hereby consent to the jurisdiction of any provincial or federal court located within the Province of Quebec and waive any objection which You may have based on improper venue or forum non conveniens to the conduct of any proceeding in any such court.
- 6.10. Severability.** If any provision of this Agreement is held by a court of competent jurisdiction to be contrary to law, such provision shall be changed and interpreted so as to best accomplish the objectives of the original provision to the fullest extent allowed by law and the remaining provisions of this Agreement shall remain in full force and effect.
- 6.11. Force Majeure.** Neither party shall be liable to the other party for any failure or delay in performance to the extent that such delay or failure is caused by fire, flood, explosion, war, terrorism, embargo, government requirement, labor problems, export controls, failure of utilities, civil or military authority, act of God, act or omission of carriers or other similar causes beyond its control. If any such event of force majeure occurs, the party delayed or unable to perform shall give immediate notice to the other party, and the party affected by the other's delay or inability to perform may elect, at its sole discretion, to terminate this Agreement or resume performance once the condition ceases, with an option in the affected party to extend the period of this Agreement up to the length of time the condition endured. Unless written notice is given within 30 calendar days after the affected party is notified of the condition, the latter option shall be deemed selected. During an event of force majeure, the affected party shall exercise reasonable effort to mitigate the effect of the event of force majeure.
- 6.12. Entire Agreement.** This Agreement, together with the Entitlement and all other documents that are incorporated by reference herein, constitutes the sole and entire agreement between Haivision and You with respect to the subject matter contained herein, and supersedes all prior and contemporaneous understandings, agreements, representations and warranties, both written and oral, with respect to such subject matter.
- 6.13. Language.** The parties confirm that it is their wish that this Agreement, together with the Entitlement and any other documents relating hereto, have been and shall be drawn up in the English language only. Les parties confirment que c'est leur volonté expresse que ce contrat et tous documents y étant relative, y compris les bons de commande, le avis, les annexes, les autorisations, les pièces jointes et les amendements soient rédigés en langue anglaise seulement.

- 6.14. Headings Not Controlling.** The headings used in this Agreement are for reference purposes only and shall not be deemed a part of this Agreement.
- 6.15. US Government Rights.** Some Products are commercial computer software, as such, term is defined in 48 C.F.R. §2.101. Accordingly, if You, as the Licensee, is the US Government or any contractor therefor, You shall receive only those rights with respect to the Product and Reference Materials as are granted to all other end users under license, in accordance with:
- (a) 48 C.F.R. §227.7201 through 48 C.F.R. §227.7204, with respect to the Department of Defense and their contractors; or
  - (b) 48 C.F.R. §12.212, with respect to all other US Government licensees and their contractors.
- 6.16. Notices.** All notices, requests, consents, claims, demands, waivers and other communications hereunder shall be in writing and shall be deemed to have been given:
- (a) When delivered by hand (with written confirmation of receipt);
  - (b) When received by the addressee if sent by a nationally recognized overnight courier (receipt requested);
  - (c) On the date sent by facsimile (with confirmation of transmission) if sent during normal business hours of the recipient, and on the next business day if sent after normal business hours of the recipient; or
  - (d) On the third day after the date mailed, by certified or registered mail, return receipt requested, postage prepaid. Such communications must be sent to the respective parties at the addresses set forth on the Entitlement (or to such other address as may be designated by a party from time to time in accordance with this Section **6.16**).

If you have questions, please contact Haivision Systems Inc., at 4445 Garand, Montréal, Québec, H4R 2H9 Canada or [legal@haivision.com](mailto:legal@haivision.com).

