

# Torpedo



DVB to IP Gateways



Intelligent IP Video

## DVB to IP Gateways Repackage Digital Video Broadcasts for IP Networks

**Haivision's Torpedo™** allows enterprises to get digital broadcast transmission onto their IP networks without the need for re-encoding the video. Digital satellite (DVB-S/S2) and digital terrestrial (DVB-T) broadcasts contain audio/video programming using industry standard compression (MPEG-2 or H.264) contained within MPEG-2 transport streams. The Torpedo gateway tunes to particular channels, as delivered over RF by the DVB antennas or satellite dishes, extracts and filters the MPEG transport stream packets, and delivers the program content over IP networks eliminating the need to re-encode. A single Torpedo can support up to 11 content channels, each re-broadcast as unicast or multicast IP video data streams.

### Part of the Furnace End-to-End IP Video System

The Torpedo can be used as an independent device or as part of Haivision's Furnace end-to-end IP video system. Certainly obtaining digital broadcasts and transmitting them over an enterprise IP network is attractive and efficient due to the elimination of expensive RF cabling infrastructure. However, particular challenges remain. The enterprise may have particular requirements such as the need to control viewership, accommodate dirty or unicast only networks, and reach users that may not have the processing power or connectivity to view the large broadcast streams. With the Furnace, in addition to the fundamental advantages of the "zero-footprint" InStream player and the Stingray set top box, administrators can tune to particular programming, apply Conditional Access, encryption, and network error protection to the streams, and even groom the bandwidth via powerful transcoding tools.

With Haivision's Torpedo gateways and the Furnace IP video system, enterprises and educational institutions can efficiently bring digital broadcast to every desktop and every display efficiently with ultimate performance, reach, and control.



### Product Features

Haivision's Torpedo supports SD and HD satellite (DVB-S and DVB-S2) and terrestrial (DVB-T) signals; namely the Torpedo DVB-S2 and DVB-T. The Torpedo can be used as a standalone solution or it can be integrated as part of Haivision's Furnace™ IP video system. The Furnace provides for central control of all Torpedo gateways and can groom the streams from the Torpedo gateways with encryption for media security and forward error correction for stream resiliency, which are essential features for enterprise IP video applications.

The Torpedo DVB-T and DVB-S2 allow digital terrestrial TV and Radio channels (DVB-T, DVB-S or DVB-S2) to be streamed onto an IP network. Every Torpedo can stream up to 11 channels of live TV from a single RF multiplex to any authorized network computer.



For configuration and monitoring, the Torpedo comes with an on-board HTML setup browser. Through this interface administrators can select a broadcast source and scan through available DVB-T/DVB-S2 multiplex tables, choosing up to 11 individual channels. The Torpedo then transmits each channel as a separate IP video unicast or multicast stream.

Other configuration and monitoring features include:

- Multicast and Unicast address for output of video stream
- Static IP address or DHCP assignment of DVB-T/DVB-S2 Torpedo unit
- Supports Netmask, Gateway Address, DNS Server Addressing
- Command Line Interface available over Telnet or serial RS-232/USB
- SNMP: monitoring of key operating functions reported via on-board SNMP agent
- Management through Furnace VF Pilot

Signal Inputs:

- Torpedo DVB-T: RF input of Digital Terrestrial Television (DVB-T); TV and radio channels via a 75ohm IEC aerial connector
- Torpedo DVB-S2: RF input of Digital Satellite Television (DVB-S2); TV and radio channels via a 75ohm type F female connector
- Delivers up to 11 channels from an unscrambled DVB Multiplex
- Supports both SD (DVB-T, DVB-S) and HDTV (DVB-S2) inputs
- RF loopthrough for connection to additional Torpedo blades

The Torpedo is available as a standalone appliance, each supporting multiple channels, or as a blade within Haivision's 3U rack mountable chassis. Each 3U chassis can hold up to nine Torpedo blades, any combination of the DVB-T and DVB-S2 models. Each blade has web browser and RS232/USB control interface and is built around real-time embedded firmware. The chassis also includes a Power Supply Unit (PSU) to convert the electrical main input to low voltage DC power for each of the processor blades. Main voltage input to the rack is via an IEC connector on the rear.



## Specifications

### Torpedo Blade (X-340-X)

#### STREAMING PROTOCOLS

Unicast Streaming  
Multicast Streaming  
MPEG Transport Stream over UDP  
10/100 Base-T network  
Session Announcement Protocol (SAP)

#### MANAGEMENT and CONTROL

**IP:**  
10/100 Base-T interface  
**Serial Port:**  
RS232 interface for control and configuration  
**USB:**  
USBv1.1 interface for control and configuration

#### CAPACITIES

*Simultaneous Streams:*  
11 unicast/multicast channels from a single multiplex

### 9 Blade Chassis (F-T9-AC)

#### Dimensions:

19" rack mountable, 3 RU  
135 mm H x 482mm W x 214mm D  
5.31" H x 18.97" W x 8.43" D

#### Weight:

Rack with power supply – 3.53kg (7.78lbs)  
Each blade (B-340-x) – 300g

#### Power:

3 pin IEC Male 100-240V AC / 47-64 Hz  
150 Watts  
1.0A to 2.0A

#### Environmental:

0-40°C; 32-104°F

#### Certification:

CE, CB  
FCC Part 15

### Appliance (S-340-x)

#### Dimensions:

41mm H x 143mm W x 220mm D  
1.7" H x 5.7" W x 8.7" D

#### Weight:

1.1Kg (2.42lbs)

#### Power:

100-240V AC, 10 Watts via external DC adaptor with locking mini DIN connector

#### Environmental:

0-40°C; 32-104°F

#### Certification:

CE, CB  
FCC Part 15

**Ordering Information** (please obtain complete system quotations from Haivision or an authorized Haivision integration partner)

- S-340-S2 Torpedo DVB-S/S2 to IP Gateway Appliance** – DVB-S/S2 RF input & loop-thru, up to 11 channels, IP UDP multicast/unicast, 10/100 Ethernet, RS-232, 90-240 VAC external power.
- S-340-T Torpedo DVB-T to IP Gateway Appliance** – DVB-T RF input & loop-thru, up to 11 channels, IP UDP multicast/unicast, 10/100 Ethernet, RS-232, 90-240 VAC external power.
- B-340-S2 Torpedo DVB-S/S2 to IP Gateway Blade** – DVB-S/S2 RF input & loop-thru, up to 11 channels, IP UDP multicast/unicast, 10/100 Ethernet, RS-232, chassis required.
- S-340-T Torpedo DVB-T to IP Gateway Blade** – DVB-T RF input & loop-thru, up to 11 channels, IP UDP multicast/unicast, 10/100 Ethernet, RS-232, chassis required.
- F-T9-AC T9 - Torpedo 9 Slot Chassis** – Rackmount 3RU Chassis - Up to 9 Torpedo blades, AC power supply, 100-240VAC 47Hz-63Hz, 150 Watt max.