

## APPLICATIONS

- Multi-channel previews
- Mosaic navigation
- Local/regional customization
- Digital radio
- Confidence monitoring



The Harmonic ProStream® 8000 digital mosaic system enables the creation of mosaic screens with multiple video thumbnails and a still image or video elementary screen as a background. The solution provides a simple, flexible and cost-effective IP-based architecture for national/local channel navigation, on-demand promotions, in-band messaging services, sports/news split-screens and more.

By receiving and producing content through Gigabit Ethernet (GbE) I/O interfaces, ProStream 8000 can generate a mosaic video output without additional decoders or encoders. The system is deployed with top middleware clients and integrates easily into any set-top box environment.

ProStream 8000 is a 1-RU, PC-based platform capable of receiving any video codec, including SD and HD MPEG-2 and MPEG-4 AVC (H.264). The processor demultiplexes the transport stream, decodes and resizes the embedded videos, then re-encodes them to produce a mosaic of videos that can include up to 20 tiles or thumbnails. It also outputs a single MPEG/IP transport stream that includes a single mosaic video stream with up to 20 audio channels and the associated metadata.

ProStream 8000 can be managed via a programmatic XML over HTTP API, through the command line or via a simple web-based application. This application enables dynamic construction of the output by connecting to the platform and downloading the active configuration, or by loading a saved configuration. All updates to the layout, size and number of video thumbnails are instantly applied to the ProStream 8000 output, enabling users to design the output in real time. The ability to copy and paste existing thumbnails speeds up deployment of new layouts. In addition, the configuration may be fine-tuned in offline mode and saved for loading at another time.

ProStream 8000 can also embed custom metadata associated with each thumbnail. The standard SPTS metadata output includes the thumbnail positioning and associated MPEG structure of each embedded video and audio channel. Two thousand characters of additional program-specific information may also be added for decoding at the subscriber's STB.



## DIGITAL MOSAIC SYSTEM BENEFITS

### Flexibility

Easily configured from a third-party middleware server via XML file, scheduled layout changes allow a truly dynamic output that changes with the viewing demographics.

### Cost Effectiveness

The ProStream 8000 offers a completely integrated, high-value solution.

### Ease of Management

The application can be managed on-site or remotely via a web interface.

### Customized Performance

Individually pre-processing each MPEG stream (source video streams and output video stream) creates an appealing digital mosaic.

### Drop-In Installation

Native GbE IP ports plug seamlessly into existing media networks and also provide a dedicated network interface for remote management.

## KEY APPLICATIONS

### Channel Summary

ProStream 8000 creates a new user experience by allowing viewers to simultaneously review their favorite channels or themes and then go directly to their channel of choice. The solution allows the operator to showcase channel groups such as VOD services, sports, news and pay-per-view movies.

### Local/Regional Customization

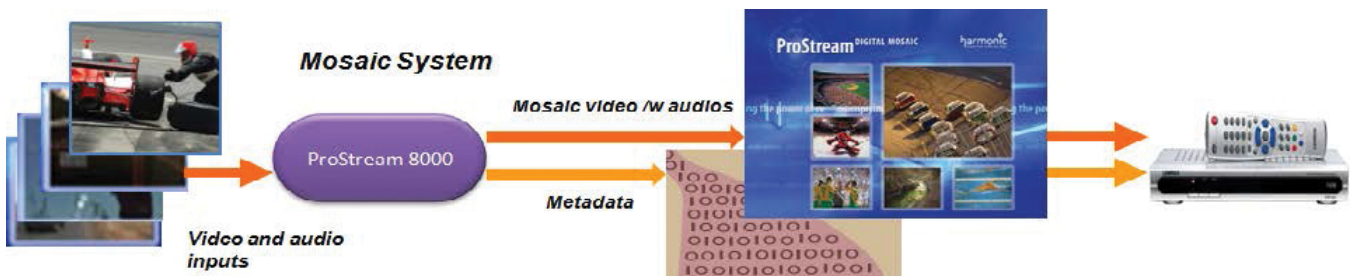
Utilizing the ProStream 8000 solution as part of an all-digital architecture increases service customization. For example, national feeds can be picked up by regional ProStream 8000 systems and channel overlays constructed at each hub, or national news can be overlaid with local news. And, these services can be managed from the regional or national facility.

### Digital Radio

Since many alternate audio channels can be sent within the SPTS program, ProStream 8000 can become a digital "radio station" for your subscribers. While an advertising or promotional video or graphic is in the visual background, CD-quality audio programmed by local radio stations or the system operator is delivered to the listener.

### Confidence Monitoring

ProStream 8000 allows operators to monitor desired feeds from any client (PC or STB) at any point in the network with no limitation to the network operation center panel. A single RU can monitor as many channels as required by using a cyclor application that rotates between mosaic pages. Audio meter allows the user to visually monitor audio levels per each thumbnail.



## Central & Localized Applications



## INPUTS

Standard Gigabit Ethernet input interface (IEEE802.3z)
Full line rate support (400 Mbps MPEG packets)
Multicast IP/UDP

## OUTPUTS

Standard Gigabit Ethernet input interface (IEEE802.3z)
Full line rate support (400 Mbps MPEG packets)
Multicast IP/UDP

## CONTROL INTERFACES

Ethernet	100/1000BaseTX
Connector	RJ-45
Protocols	HTTP, XML configuration, Telnet, Command Line Interface

## VIDEO INPUTS

Embedded Thumbnails	Up to 20 SD/HD videos
Encoding Standard	MPEG-2 MP@ML, MP@HL H.264 MP@L3 MPEG-2 TS over UDP/IP, SPTS or MPTS
Dynamic resizing, positioning, video quality pre-processing, decoding resolution, cropping	

## VIDEO OUTPUT

Format	NTSC or PAL
Encoding Bit Rate	2.5 to 15 Mbps
NTSC Resolutions	1280x720, 720x480, 704x480, 640x480, 544x480, 480x480, 352x480, 240x480
PAL Resolutions	1280x720, 720x576, 544x576, 480x576, 352x576, 352x288
Aspect Ratios	4:3, 16:9

## AUDIO INPUTS

Audio Standards	MPEG-1 Layer II Dolby Digital (AC-3) AAC
Number of Inputs	Up to 20 audio streams
Encoding Standard	Passthrough, MPEG-1 Layer II, AC3, AAC

## OUTPUT BACKGROUND

Video	Still Image (bmp, jpeg format) .mpv (MPEG Elementary Stream), .mpeg Multicast Video Source
Audio	MPEG-1 Layer II AC-3 AAC Multicast Audio Source

## DATA INSERTION

PSI/SI generation and insertion
Metadata in XML format

## PORTS

Rear	Four RJ-45, one 9-pin serial, two USB 2.0, video, PS/2 mouse, PS/2 key board, ID push button with blue/amber LED, RJ-45 for optional DRAC 4/1 management controller
Front	Two USB 2.0, ID push button with blue/amber LED, 15-pin video, system power on/off button

## ENVIRONMENTAL

Operating Temperature Range	50° F to 95° F 10° C to 35° C
Storage Temperature Range	-40° F to 149° F -40° C to 65° C
Relative Humidity	20-80% non-condensing (operating) 5-95% non-condensing (storage)
Regulatory	FCC Class B (U.S. only) ICES Class B (Canada) CE Mark (EN 55022 Class B, EN 55024, EN 61000-3-2, EN 61000-3-3) VCCI Class B (Japan) BSMI Class A (Taiwan) C-Tick Class B (Australia/New Zealand) SABS Class B (South Africa) CCC Class B (China) MIC Class B (Korea) UL 60950 CAN/CSA C22.2 No. 60950 EN 60950 -1 IEC 60950-1
Compliant with RoHS Directive 2002/95/EC	

## PHYSICAL SPECIFICATIONS

Input Voltage (Line frequency: 50-60Hz)	100/220 VAC
Typical Power Consumption	550 W
Power Display	Front panel LED
Redundant Power	Hot-plug redundant (670 Watts)
Cooling	Redundant fans
Dimensions (WxHxD)	16.7" x 1.67" x 30.4" (1RU) 42.6 cm x 4.26 cm x 77.2cm
Mounting	EIA Standard 19" rack, 1-RU

