

# MediaKind MX8400 Multiplexer



A wide choice of cost-effective designs together with integration of any new technology is strived for by all broadcasters and operators. The introduction of IP interconnectivity offers a means to reduce infrastructure costs, increase flexibility and offer a choice of system architectures.

The MX8400 revolutionizes IP multiplexing technology. Providing up to eight independent multiplexed transport streams from a single enclosure and with built-in support for DVB Common Scrambling Algorithm for content protection and BISS, MX8400 facilitates numerous system architectures.

Suitable for a wide range of multiplexing and re-multiplexing applications, it's designed to offer system level redundancy and ease of operations. MX8400 is a feature rich product that also supports ASI input and output, SFN Adaptation, SMPTE 2022 Pro-MPEG FEC and Reflex™ Statistical Multiplexing. Fully integrated with nCompass management system, the MX8400 takes full advantage of the IP technology to provide a cost-effective, highly reliable and flexible solution. Dual hot swap PSUs are an option available for additional resilience.

## Product Overview

### Ideal for Primary Multiplexing in Central Headend

The MX8400 is suitable for a wide range of multiplexing and re-multiplexing applications - including primary multiplexing in headends for DTH satellite, cable and terrestrial, contribution systems and re-multiplexing applications in central and regional headends.

### Multiple Multiplexed Transport Stream Outputs

MX8400 offers a unique design concept that offers up to eight independent multiplexed transport streams to reduce costs and simplify designs, enabling systems to grow as the need demands.

### Statistical Multiplexing

MediaKind's Reflex Statistical Multiplexing is implemented to work over IP networks to provide the maximum utilization of available bit-rate. Supports both MPEG-2 SD and HD and MPEG-4 AVC SD and HD.

### Enabling Cost-effective Redundant and Resilient System Architectures

MX8400 offers a fully redundant architecture in combination with nCompass management system that enables implementation of cost effective and resilient system architectures; MX8400 supports redundant external clocks, Data, CA and Control ports. Support of IGMPv3 allows MX8400 to perform multicast joins and leaves to further simplify system design.

### Advanced Control and Monitoring Features

With nCompass Control, the MX8400 offers advanced control and monitoring features that allows for ease of use and maintenance - leading to savings through operational costs, time and labor.

### Increased Reliability

The highly integrated unit facilitates the need for fewer units and thus increases the overall system reliability.

## Base Unit Features

### MX8400/BAS/DPS

- MX8400 model – 2RU, eight option slots, single PSU with 2nd slot for additional PSU option
- Up to eight independent multiplexed outputs enabled through s/w licenses
- Up to 250 Mbps for an output transport stream
- Maximum utilization of output gigabit bandwidth
- Simultaneous output transport streams via IP and ASI
- Highly efficient multiplexing algorithms
- Advanced re-multiplexing
- Reflex statistical multiplexing
- Onboard ASI input and output as standard
- Port redundancy for Data, CA, Control and HSYNC
- Redundant HSYNC Input and output clock
- SNMP remote monitoring
- IGMP v3 support
- BISS Scrambling

## Software Options

### Additional Multiplexed Output (MX8400/SWO/MUX)

- Software license to enable each additional independent multiplexed output transport stream

### DVB CA Simulcrypt Base and Additional TS (MX8400/SWO/DVBCA, MX8400/SWO/DVBCA/EXT )

- Software licenses to enable the DVBCA Simulcrypt support

### SFN Adaptation (MX8400/SWO/SFN)

- Software license to allow each output transport streams configured as ETSI TS 101 191 v1.4.1 compliant SFN adaptor

### SMPTE 2022 Pro-MPEG FEC (MX8400/SWO/PROFEC/EXT)

- Software license to insert SMPTE 2022-1 and SMPTE 2022-2 Pro-MPEG FEC on each output stream support

## Hardware Options

### ASI Option Cards (MX8400/HWO/4ASI or MX8400/HWO/8ASI)

- Provides four or eight ASI option ports respectively. Each option card can be configured as either input or output

### SMPTE 2022 Pro-MPEG FEC Option Card (MX8400/HWO/PROFEC)

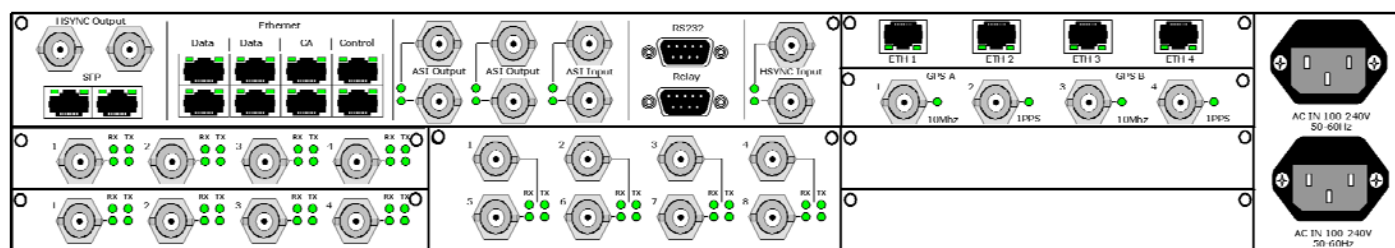
- Provides SMPTE 2022-1 and SMPTE 2022-2 Pro-MPEG FEC compliant receiver for error correction on up to 32 input transport streams

### GPS Option Card (MX8400/HWO/GPS)

- For multiplexer clock synchronization with an external GPS reference and providing of 1 PPS reference to SFN adapter

### Additional Power Supply (MX8400/HWO/DPS)

- Additional power supply for MX8400/BAS/DPS



Sample Configuration

## Specifications

### Inputs

<b>Transport Stream Inputs (Standard)</b>	Dual port Gigabit Ethernet input with two Electrical Ethernet ports (RJ45) ASI transport stream, two input ports
<b>Reference Inputs</b>	HSYNC: two redundant input ports

### Outputs

<b>Transport Stream Outputs (Standard)</b>	Gigabit Ethernet: two Electrical Ethernet ports ASI transport stream, four output ports
<b>Reference Outputs</b>	HSYNC, two redundant output ports

### Control

<b>Control</b>	Two 10/100 BaseT Ethernet ports for Control and additional two 10/100 BaseT ports for CA interfacing Control and set-up via nCompass Control
----------------	---

## Multiplexing

<b>Multiplexing</b>	<p>From one to eight independent multiplexed outputs from a single unit</p> <p>Multiple input and output data ports</p> <p>Transport stream rates up to 250 Mbps</p> <p>Up to 8192 PIDs supported per output TS</p> <p>Full PID remapping</p> <p>Input component tracking</p> <p>PID monitoring</p> <p>MPTS and SPTS support</p> <p>Removal of <math>\pm 60</math> mS of IP network jitter for each incoming TS</p> <p>Support for IGMP v3 protocol</p> <p>Reflex Statistical Multiplexing of MPEG-2 SD and HD</p> <p>Reflex statistical multiplexing of MPEG-4 AVCSD and HD</p> <p>Supports up to 24 different Simulcrypt DVBCA</p>
---------------------	--

## Diagnostics

<b>Diagnostics</b>	<p>Monitoring and redundancy via nCompass Control by MediaKind</p> <p>Remote monitoring and diagnostics via SNMP</p>
--------------------	--

## Physical and Power

<b>Dimensions (W x D x H)</b>	440 x 543 x 89 mm (17.5" x 21.5" x 2RU)
<b>Approximate Weight</b>	9 kg (20 lbs)
<b>Power Input</b>	AC wide ranging 100 VAC to 120 VAC or 220 to 240 VAC 50 Hz to 60 Hz nominal
<b>Power Consumption</b>	80 Watt nominal (without any options fitted)

## Environmental Conditions

<b>Operating Temperature</b>	0°C to 45°C (32°F to 113°F)
<b>Relative Humidity</b>	5% to 90%