# HDXrouters

## The Next Generation of SDI Routers

Thinklogical's HDX router series is designed to meet the needs of the broadcast industry by providing the performance, resiliency and versatility required in pre-production, post-production and broadcast operations. The HDX series is fully compliant with SMPTE standards supporting blackburst and tri-level synchronization.

Consistent with Thinklogical's VX family of routers, the HDX line provides true non-blocking matrix switching. The HDX series includes the HDX 80 and HDX 576 routers with 4 Gbps of performance for each connection. This allows for flexible configurations of 80 x 80, 288 x 288 and up to 576 x 576. In addition, the HDX router series provides mission critical dependability and unrivalled signal integrity. Being protocol agnostic, the switch supports SDI, HD-SDI, 3G, and Dual-link HD-SDI to meet the broad range of requirements for today's and tomorrow's broadcast environments.

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# HDX576

**4 Gbps** Router and Non-Blocking Matrix Switch

- **576 Fiber Ports In and Out for 576 x 576 Non-Blocking Matrix Switching**
- **Reference video input for synchronizing switching point is fully compliant to SMPTE "blackburst" and "tri-level" synchronization specifications (RP-168)**
- **Each Video Connection Supports 4 Gbps**
- **Route NTSC/PAL, SDI, HD-SDI, 3G, Dual link HD-SDI**
- **SMPTE 259M, 292M, 372M, 424M, and 425 level A and B compliant**
- **Unique hot pluggable optical (single mode or multi mode) or coaxial I/O modules**
- **Hot Swappable, 16 Port I/O cards in a passive midplane chassis**
- **Redundant, Hot-Swappable, and Current Sharing Power Supply Modules**

## The Logical Solution - The Next Generation of SDI Routers

The HDX576 is a high performance modular router and non-blocking matrix switch for complete, end-to-end routing of video. This highly reliable and resilient router is expandable from 16 x 16 up to 576 x 576. The HDX 576 includes standard configurations of 288 x 288, dual 288 x 288, or 576 x 576 - allowing for flexible configurations in a variety of environments. The unit is 26RU with built in power supplies that are redundant, hot swappable and current sharing. The switch also offers a unique modular design giving the option for any I/O module to be single mode, multi-mode fiber optics, or electrical I/O modules. The HDX576 is also configurable as a fully redundant 288 x 288 switch in blocks of 16, offering up to 4 swappable switch cards with a passive midplane.

## The System – Hot-Swappable and Redundant

The inspired modular approach of the HDX 576 allows for all critical system components including power supplies, cooling fans and pluggable optics (SFP+) to be hot-swappable, thus minimizing business impact in the unlikely event that a component should fail. The hot-swappable I/O boards also provide excellent in-service expansion capabilities in convenient steps of 16, thus allowing the HDX576 to be reconfigured without interrupting signal processing by powering down the router. In addition, the dual redundant power supplies ensure continuous, uninterrupted power.

The HDX 576 also offers the option of operating two independent 288 x 288 matrixes that can be utilized as a redundant system to eliminate down time. Two HDX 576 routers can also be used to create a fully redundant 576 x 576 system that is controllable via one interface for mission critical applications.

The HDX 576 is controlled via an external Linux or Windows computer. This allows for customization as well as ease of control and administration with access provided via a network connection (browser) or a serial port for 3rd party controller integration (such as Crestron, AMX or home-spun interfaces). Moreover, the HDX576 is equipped with industry-standard LC type fiber connectors and offers unprecedented integration with Thinklogical's Xtreme 3G+ Series of fiber optic transmitters and receivers.

## True 576 x 576 Non-Blocking Fiber Matrix Architecture

The HDX Router series provides users with non-blocking switching capability. The obvious advantage to this is greater switching flexibility in one chassis, allowing for any input signal to be available at any output or at multiple outputs without the need for rerouting.

## Modular Design Advantages

The HDX 576 is configurable with any combination of multi mode, single mode and coaxial I/O ports, which supports both short and long haul applications. Our modular design allows reclocking at any input using coaxial pluggable modules. Our SDI Xtreme 3G+ products also include a reclocking feature.


## Enhanced diagnostics and alarms

The HDX 576 provides extensive real-time monitoring and diagnostics of the internal product operating temperature, power supply voltages, I/O fiber links, fans, and other critical functions of the router. Redundant Controllers have LED indicators to provide active and fault monitoring, while the system alarms can be configured to trigger an external control system, generate SNMP traps, or generate email notifications.

## Provides Comprehensive Control Features using Thinklogical's HDX Configurator Control Software

The HDX 576 is engineered with a range of innovative Thinklogical control features designed to simplify operation in broadcasting environments. Thinklogical's HDX Configurator is an advanced GUI which provides a convenient user interface to the router from remote locations.

The HDX Configurator allows for easy and intuitive setup and control of the switching between source computer or video entities and user display destinations such as master control rooms, editing suites, screening rooms, digital processors, etc. In addition, single video sources may be multi-cast (one to more than one) or broadcast (one to all) to desired destinations. Macro presets may be created for saving and recalling commonly used input and output ties.

## Touch Panels

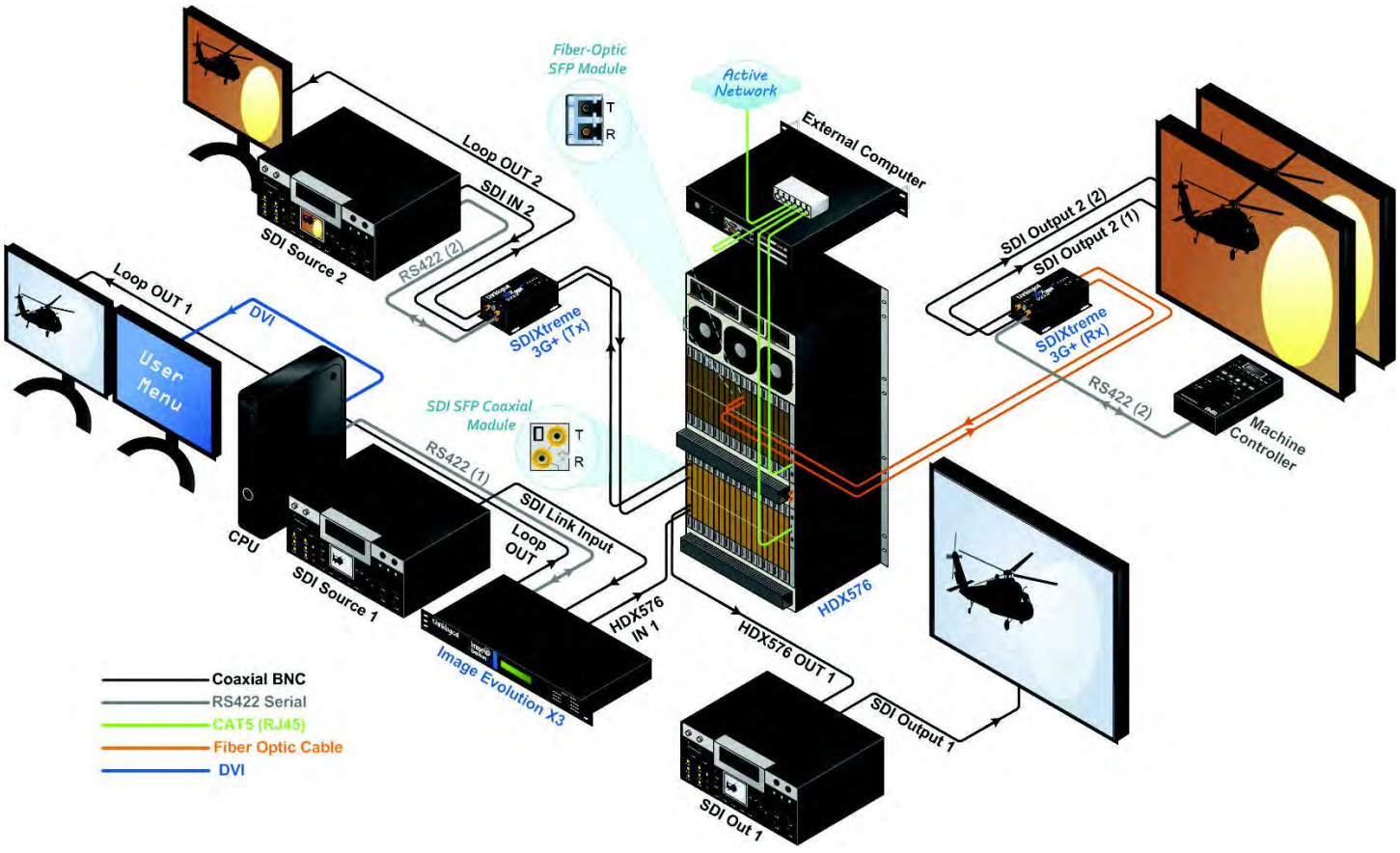
Thinklogical also provides users with control touch panels. With several sizes to choose from (5.7", 8.9", and 17"), they provide tremendous flexibility in external routing control. The touch panel simply connects to your network and provides the HDX Configurator interface, in a variety of locations, right at your fingertips.

*Shown: 5.7" and 17"*

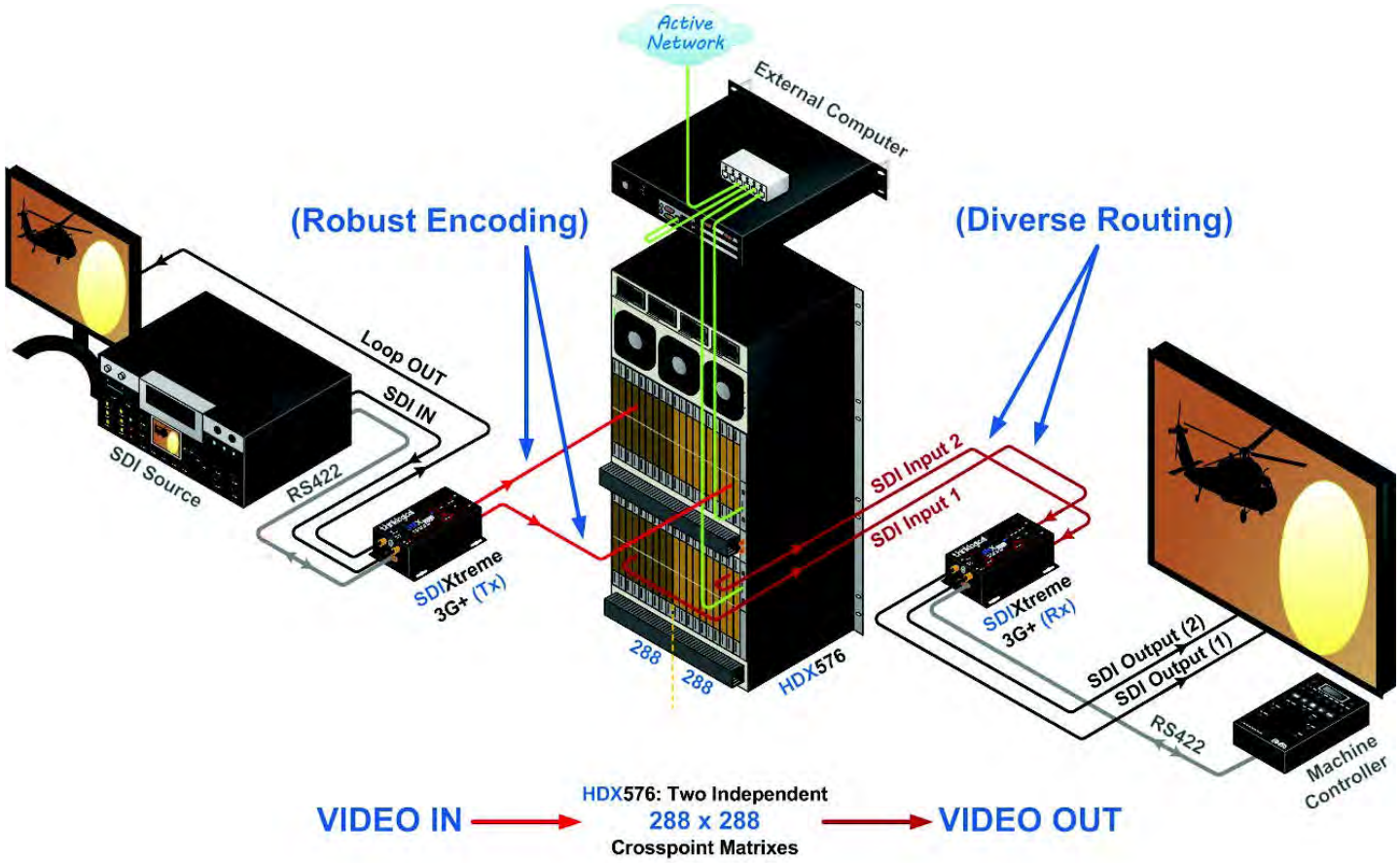
## Key Features

- 576 Fiber Ports In and Out for 576 x 576 Non-Blocking Matrix Switching
- Reference video input for synchronizing switching point is fully compliant to SMPTE "blackburst" and "tri-level" synchronization (RP-168)
- Each Video Connection Supports 4 Gbps
- Route NTSC/PAL, SDI, HD-SDI, 3G, Dual link HD-SDI
- SMPTE 259M, 292M, 372M, 424M and 425 level A and B compliant
- Takes advantage of Xtreme 3G+ Transmitters and Receivers
- Controllable via LAN or Serial Connection
- SNMP Support
- Control/Administration GUI Included
- Multicasting and Macros Supported
- Unique hot pluggable optical (single mode or multi mode) or coaxial I/O modules
- Hot Swappable, 16 Port I/O cards in a passive backplane chassis
- Redundant, Hot-Swappable, and Current Sharing Power Supply Modules
- Single, Hot-Swappable Fan Tray with Annunciator Port (for alarms)
- Redundant Controller Card (optional)
- 4 Swappable Switch Cards

**HDX 576 Application-** HDX 576 utilizing Image Evolution X3 and Xtreme 3G+ Transmitters and Receivers



**HDX 576 Application-** HDX 576 as a Redundant 288 x 288 Matrix Switch utilizing Xtreme 3G+ Transmitters and Receivers



## Technical Specifications

| | |
|---|---|
| Humidity | 5-95% RH, non-condensing |
| Operating Temperature | 0-50° C (32-122° F) |
| Physical Dimensions | Rack Size: EIA 19" (48.26 cm)<br>Height: 45.5" (26 RU)<br>Depth: 23" including fiber management trays<br>Shipping Weight: 170 lbs. |
| Ports | 16 x 16 minimum configuration<br>– Up to 576 x 576 |
| Coaxial I/O Modules | DIN 1.0/2.3 or HD-BNC |
| Video Inputs/Outputs | SMPTE 259M, SMPTE 292M, SMPTE 372M, SMPTE 424M, SMPTE 425 level A and B<br>Any optical signal between .05 Mb/s and 4 Gbp/s |
| Reference Timing | 2 independent timing planes with programmable outputs in clusters of 4 |
| Power Requirements | AC Input: 100-240VAC, 47-63 Hz<br>Universal AC Power Supply |
| Power Consumption | Approximately 1700 Watts<br>Fully Loaded |

## Ordering Information - Part Number and Description

**HDX576 ROUTER**
HDX-000576 HDX576 Matrix Router Chassis

**HDX576 DATA CARDS**
HDM-D00016 HDX 576 Matrix Router Data Input/Output Card, 16 Ports, SFP+, Multi-Mode
HDM-D00S16 HDX 576 Matrix Router Data Input/Output Card, 16 Ports, SFP+, Single-Mode
HDM-D00C16 HDX 576 Matrix Router Data Input/Output Card, 16 Ports, SFP Coaxial
HDM-D00E16 HDX 576 Matrix Router Data Input/Output Card, 16 Ports, NO SFP

**SFP Modules**
OSA-000045-R Multi-Mode Optics
OSA-000077-R Single-Mode Optics
CSA-000001-R Coaxial Module

**HDX 576 Router Spare Parts**
HDM-000001 HDX 576 Matrix Router Controller
HDM-000002 HDX 576 Matrix Router Fan Tray
HDM-000003 HDX576 Matrix Router Sync Card
HDM-000004 HDX576 Power Module
HDM-000005 HDX576 Switch Card

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# HDXrouters

## The Next Generation of SDI Routers

Thinklogical's HDX router series is designed to meet the needs of the broadcast industry by providing the performance, resiliency and versatility required in pre-production, post-production and broadcast operations. The HDX series is fully compliant with SMPTE standards supporting blackburst and tri-level synchronization.

Consistent with Thinklogical's VX family of routers, the HDX line provides true non-blocking matrix switching. The HDX series includes the HDX 80 and HDX 576 routers with 4 Gbps of performance for each connection. This allows for flexible configurations of 80 x 80, 288 x 288 and up to 576 x 576. In addition, the HDX router series provides mission critical dependability and unrivalled signal integrity. Being protocol agnostic, the switch supports SDI, HD-SDI, 3G, and Dual-link HD-SDI to meet the broad range of requirements for today's and tomorrow's broadcast environments.

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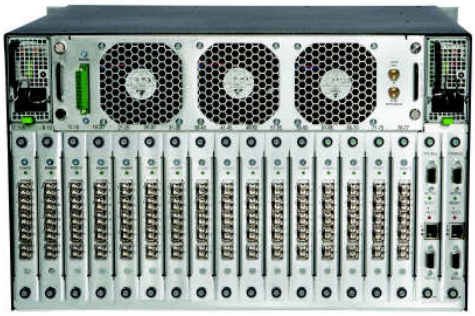
# HDX80

**4 Gbps** Router and Non-Blocking Matrix Switch


- **80 Fiber Ports In and Out for 80 x 80 Non-Blocking Matrix Switching**
- **Reference video input for synchronizing switching point is fully compliant to SMPTE "blackburst" and "tri-level" synchronization specifications (RP-168)**
- **Each Video Connection Supports 4 Gbps**
- **Route NTSC/PAL, SDI, HD-SDI, 3G, Dual link HD-SDI**
- **SMPTE 259M, 292M, 372M, 424M, and 425 level A and B compliant**
- **Unique hot pluggable optical (single mode or multi mode) or coaxial I/O modules**
- **Hot Swappable, 5 Port I/O cards**
- **Redundant, Hot-Swappable, and Current Sharing Power Supply Modules**



## The Logical Solution - The Next Generation of SDI Routers

The HDX 80 is a high performance modular router and non-blocking matrix switch for complete, end-to-end routing of video. This highly reliable and resilient router is expandable from 5 x 5 up to 80 x 80. The unit is 6RU with built in power supplies that are redundant, hot swappable and current sharing. The switch also offers a unique modular design giving the option for any I/O module to be single mode, multi-mode fiber optics, or electrical I/O modules. The HDX 80 is also configurable as a fully redundant 40 x 40 switch in blocks of 5.

## The System – Hot-Swappable and Redundant

The inspired modular approach of the HDX 80 allows for all critical system components including power supplies, cooling fans and pluggable optics (SFP+) to be hot-swappable, thus minimizing business impact in the unlikely event that a component should fail. The hot-swappable I/O boards also provide excellent in-service expansion capabilities in convenient steps of 5, thus allowing the HDX 80 to be reconfigured without interrupting signal processing by powering down the router. In addition, the dual redundant power supplies ensure continuous, uninterrupted power.

The HDX 80 also offers the option of operating two independent 40 x 40 matrixes that can be utilized as a redundant system to eliminate down time. Two HDX 80 routers can also be used to create a fully redundant 80 x 80 system that is controllable via one interface for mission critical applications.

The HDX 80 is controlled via an external Linux or Windows computer. This allows for customization as well as ease of control and administration with access provided via a network connection (browser) or a serial port for 3rd party controller integration (such as Crestron, AMX or home-spun interfaces). Moreover, the HDX 80 is equipped with industry-standard LC type fiber connectors and offers unprecedented integration with Thinklogical's Xtreme 3G+ Series of fiber optic transmitters and receivers.

## True 80 x 80 Non-Blocking Fiber Matrix Architecture

The HDX Router series provides users with non-blocking switching capability. The obvious advantage to this is greater switching flexibility in one chassis, allowing for any input signal to be available at any output or at multiple outputs without the need for rerouting.

## Modular Design Advantages

The HDX 80 is configurable with any combination of multi mode, single mode and coaxial I/O ports, which supports both short and long haul applications. Our modular design allows reclocking at any input using coaxial pluggable modules. Our SDI Xtreme 3G+ products also include a reclocking feature.


## Enhanced diagnostics and alarms

The HDX 80 provides extensive real-time monitoring and diagnostics of the internal product operating temperature, power supply voltages, I/O fiber links, fans, and other critical functions of the router. Redundant Controllers have LED indicators to provide active and fault monitoring, while the system alarms can be configured to trigger an external control system, generate SNMP traps, or generate email notifications.

## Provides Comprehensive Control Features using Thinklogical's HDX Configurator Control Software

The HDX 80 is engineered with a range of innovative Thinklogical control features designed to simplify operation in broadcasting environments. Thinklogical's HDX Configurator is an advanced GUI which provides a convenient user interface to the router from remote locations.

The HDX Configurator allows for easy and intuitive setup and control of the switching between source computer or video entities and user display destinations such as master control rooms, editing suites, screening rooms, digital processors, etc. In addition, single video sources may be multi-cast (one to more than one) or broadcast (one to all) to desired destinations. Macro presets may be created for saving and recalling commonly used input and output ties.

## Touch Panels

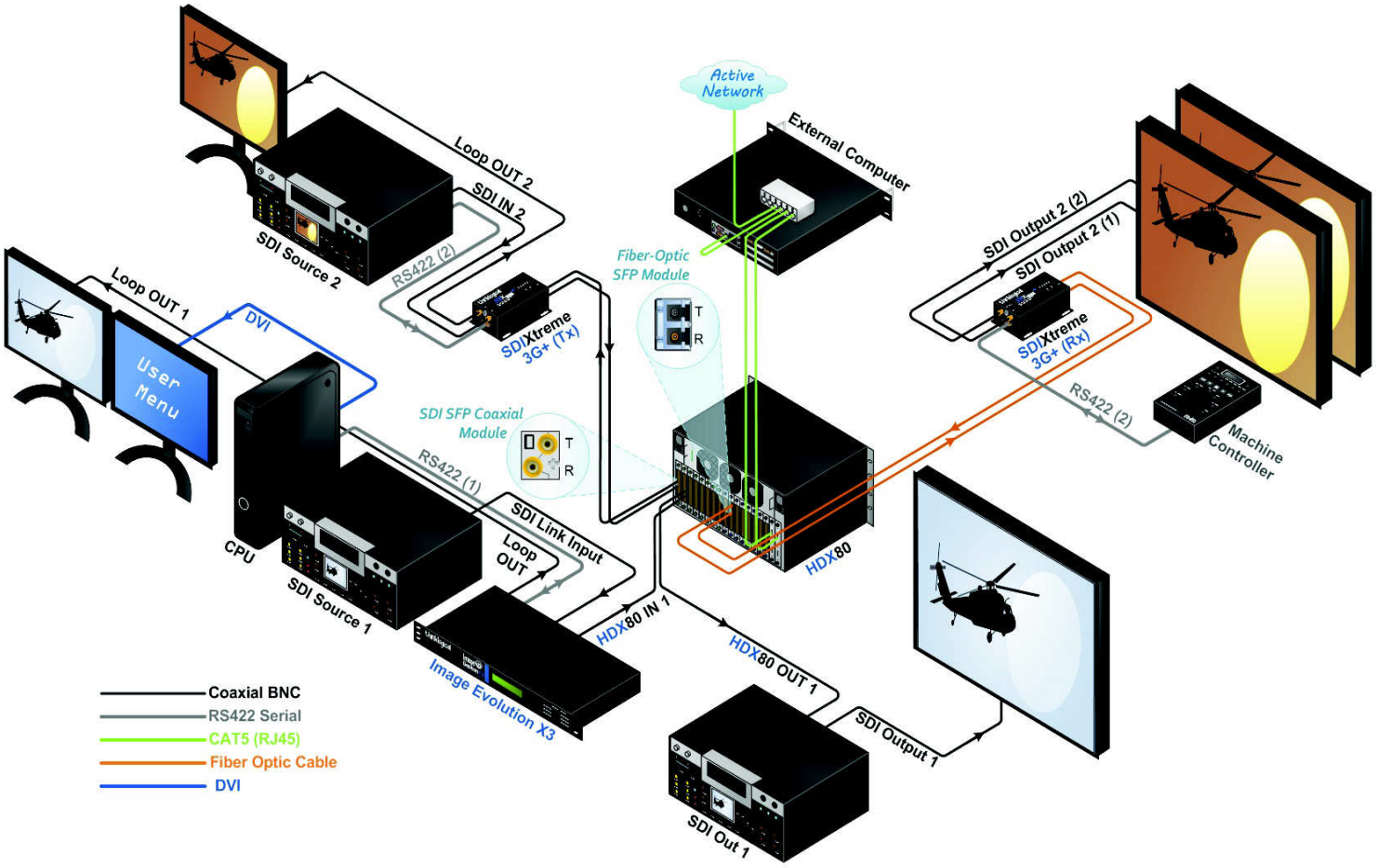
Thinklogical also provides users with control touch panels. With several sizes to choose from (5.7", 8.9", and 17"), they provide tremendous flexibility in external routing control. The touch panel simply connects to your network and provides the HDX Configurator interface, in a variety of locations, right at your fingertips.

*Shown: 5.7" and 17"*

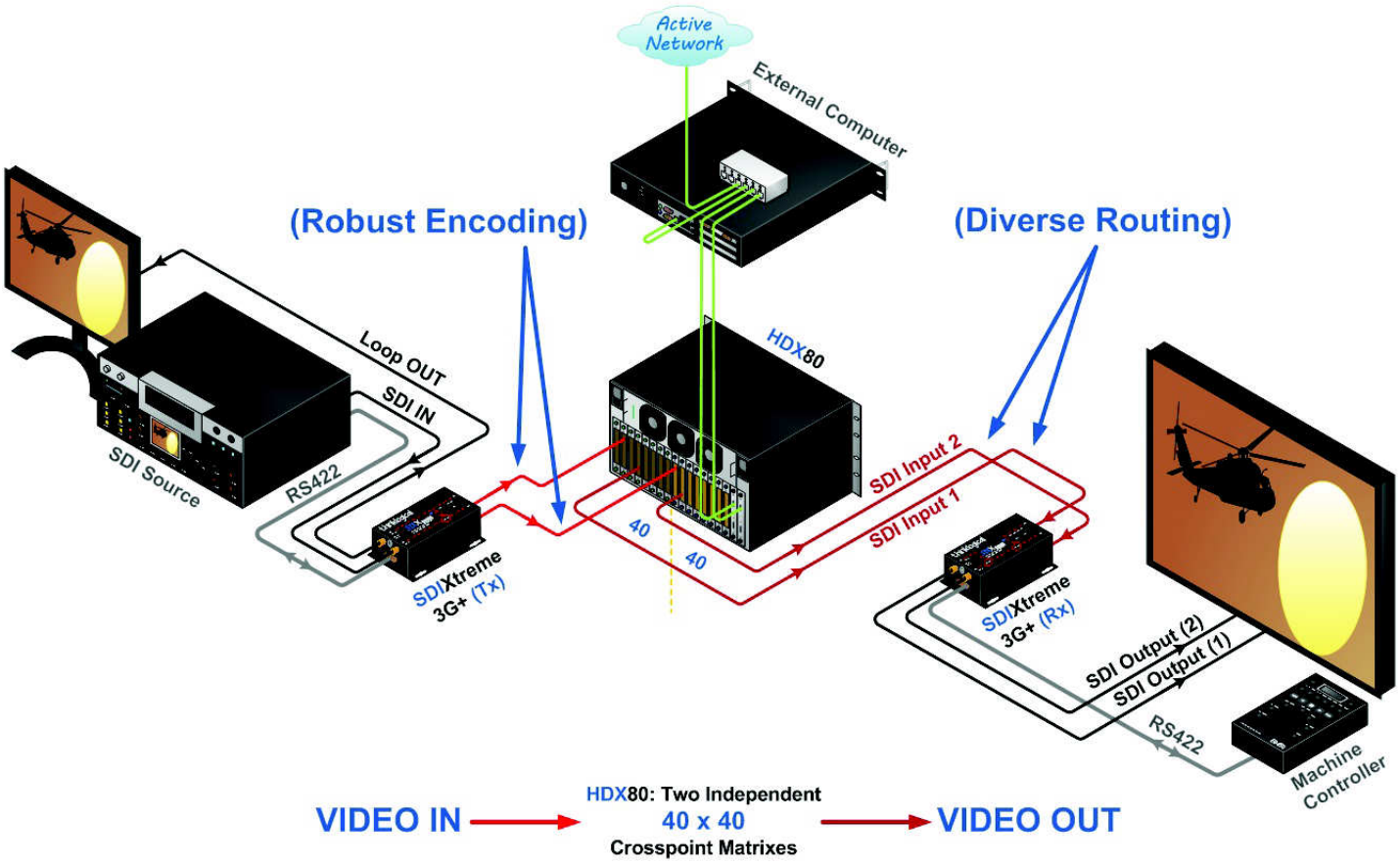
## Key Features

- 80 Fiber Ports In and Out for 80 x 80 Non-Blocking Matrix Switching
- Reference video input for synchronizing switching point is fully compliant to SMPTE "blackburst" and "tri-level" synchronization (RP-168)
- Each Video Connection Supports 4 Gbps
- Route NTSC/PAL, SDI, HD-SDI, 3G, Dual link HD-SDI
- SMPTE 259M, 292M, 372M, 424M and 425 level A and B compliant
- Takes advantage of Xtreme 3G+ Transmitters and Receivers
- Controllable via LAN or Serial Connection
- SNMP Support
- Control/Administration GUI Included
- Multicasting and Macros Supported
- Unique hot pluggable optical (single mode or multi mode) or coaxial I/O modules
- Hot Swappable, 5 Port I/O cards
- Redundant, Hot-Swappable, and Current Sharing Power Supply Modules
- Single, Hot-Swappable Fan Tray with Annunciator Port (for alarms)
- Redundant Controller Card (optional)

**HDX 80 Application-** HDX 80 utilizing Image Evolution X3 and Xtreme 3G+ Transmitters and Receivers



**HDX 80 Application-** HDX 80 as a Redundant 40 x 40 Matrix Switch utilizing Xtreme 3G+ Transmitters and Receivers



## Technical Specifications

| | |
|---|---|
| Humidity | 5-95% RH, non-condensing |
| Operating Temperature | 0-50° C (32-122° F) |
| Physical Dimensions | Rack Size: EIA 19" (48.26 cm)<br>Height: 6 RU 10.5" (26.7 cm)<br>Depth: 15.32" (43.59 cm)<br>Weight: 60 lbs (27.22 kg)<br>Shipping Weight: 100 lbs. (45.36 kg) |
| Ports | 5 x 5 minimum configuration<br>– Up to 80 x 80 |
| Coaxial I/O Modules | DIN 1.0/2.3 or HD-BNC |
| Video Inputs/Outputs | SMPTE 259M, SMPTE 292M,<br>SMPTE 372M, SMPTE 424M,<br>SMPTE 425 level A and B<br>Any optical signal between .05<br>Mb/s and 4 Gbp/s |
| Reference Timing | 1 timing plane with<br>programmable outputs |
| Power Requirements | AC Input: 100-240VAC, 47-63 Hz<br>Universal AC Power Supply |
| Power Consumption | Approximately 450 Watts<br>Fully Loaded |

## Ordering Information - Part Number and Description

**HDX 80 ROUTER**
HDX-000080 HDX80 Matrix Router Chassis

HDX 80 DATA CARDS
HDM-D00005 HDX 80 Matrix Router Data Input/Output Card, 5 Ports, SFP+, Multi-Mode
HDM-D00S05 HDX 80 Matrix Router Data Input/Output Card, 5 Ports, SFP+, Single-Mode
HDM-D00S05 HDX 80 Matrix Router Data Input/Output Card, 5 Ports, SFP, Coaxial
HDM-D00E05 HDX 80 Matrix Router Data Input/Output Card, 5 Ports, No SFP

**SFP Modules**
OSA-000045-R Multi-Mode Optics
OSA-000077-R Single-Mode Optics
CSA-000001-R Coaxial Module

**HDX80 Router Spare Parts**
HDM-000006 HDX 80 Matrix Router Controller
HDM-000007 HDX 80 Matrix Router Fan Tray
HDM-000008 HDX 80 Matrix Router Sync Card
HDM-000009 HDX 80 Power Module

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