

APPENDIX A – EQX Router: Technical Description

Introduction

The **EQX** platform is Evertz's flagship routing and distribution solution designed for high availability by adopting extensive redundancy for all critical system elements. With this, and the ability to route up to 576x576 signals, the **EQX** is ideal for mission critical and demanding 24/7 environments including network, local broadcaster, mobile production, cable, military, government and corporate applications.

Overview

The **EQX** delivers broadcast quality 576x576 routing capability in a compact 26RU frame, while expansion to 1152x1152 ensures a migration path for even larger applications.

By offering a format agnostic data path and which supports signals from 3 Mb/s all the way up to 3Gb/s the **EQX** delivers a future-proofed product with a high return on investment. The **EQX** supports SD-SDI, HD-SDI, DVB-ASI, SMPTE310 amongst others.

Its modular input and output design offers expansion capabilities in convenient groups of 18 inputs or outputs while the source-by-source intelligent auto configuration facility always ensures that the output path of the **EQX** is correctly arranged.

All active components including input cards, output cards, cross-point cards, frame controllers, cooling fans and power supplies are front-accessible and hot swappable to enable simple maintenance.

Multiple reference inputs and multiple internal timing planes deliver superior flexibility in any multi-format environment.

For the ultimate in terms of system availability, the **EQX** architecture has redundant protection for all critical system elements. The architecture has back-up cross-point configurations, redundant frame controllers, external redundant load sharing power supplies, redundant easy access cooling fans and a dedicated monitoring bus that is



independent of the system cross-points. In the event of a failure, manual or automatic re-routing of signals on an output-by-output basis is fully supported by the system software. Using the **EQX** monitoring capabilities, output quality can be verified prior to switching to redundant signal paths. The **EQX** is fully SNMP enabled and supports seamless integration with VistaLINK® PRO command and control systems.

EQX - 3 Key Points

1. High performance format agnostic platform

- SD-SDI, HD-SDI, DVB-ASI, SMPTE 310M and more!
- Scalable to 576x576 in a single 26RU frame.
- Input expansion in steps of 18
- Output expansion in steps of 18
- Up to 1152x1152 in multiple frames
- Source-by-source intelligent auto configuration:
 - Input equalization (On/Off)
 - Output reclocking (On/Off)
 - ASI Mode (On/Off)
 - Switch Point (Variable)
- Higher than 18dB return loss

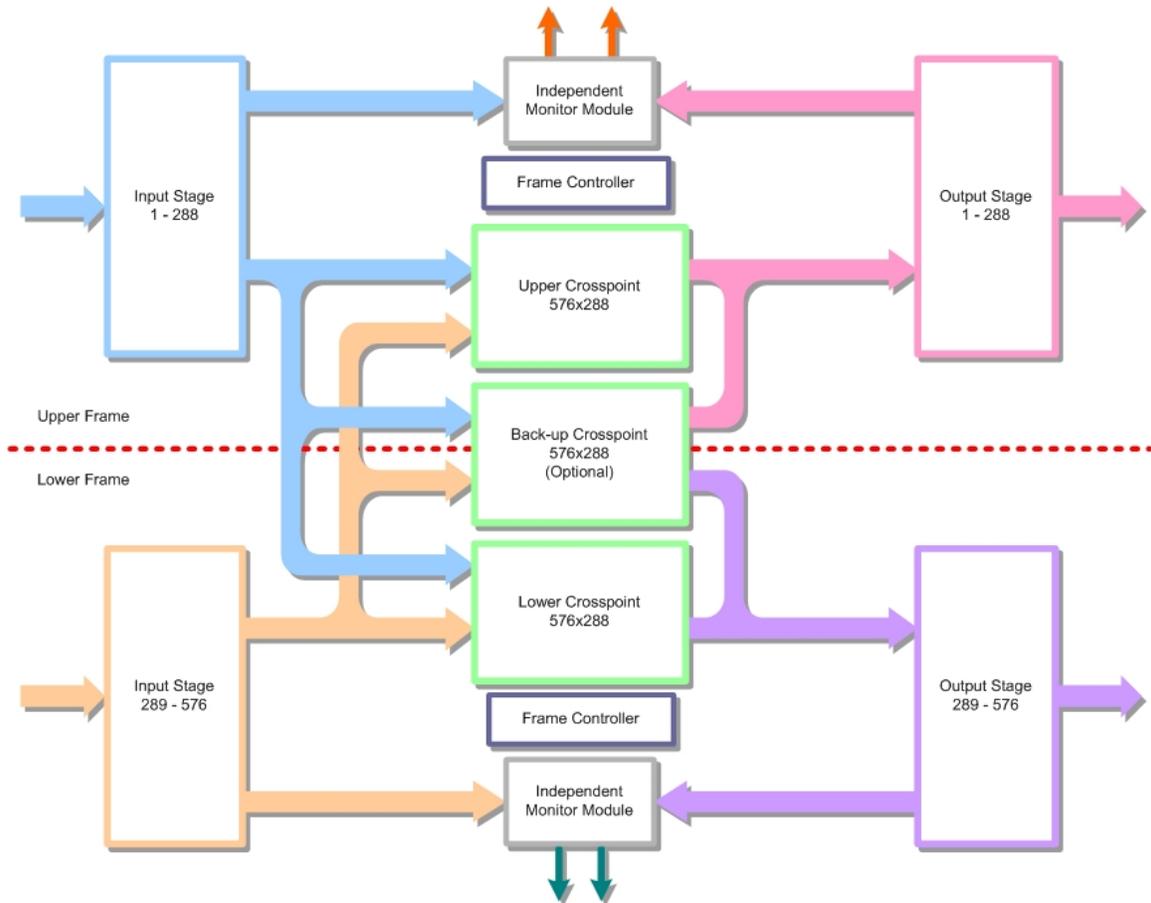
2. High availability, 24/7 design

- Full modular design
 - All modules are hot swappable
 - Passive I/O
- Full redundant design
 - Redundant cross point
 - Redundant frame controller
 - Redundant power supply
 - Redundant cooling fans
- Comprehensive system monitoring bus
 - VLPRO SNMP & AVM monitoring of I/O & cross point modules
 - Temperature monitoring
 - Power supply monitoring

3. Advanced system control & interfacing

- Supports the full range of Quartz remote control panels
- Full VLPRO command & control, SNMP & AVM
- Full integration with 3rd party automation systems
- Supports a wide selection of control protocols
- Ethernet, Serial RS422/232, F-Link and Q-Link ports

EQX – Signal Flow



EQX Signal Flow Diagram

The simple design and signal flow of the **EQX** is shown in the above diagram. There are four main active module types:

- **Input module** (x32)
- **Crosspoint module** (x2 main and x1 back-up)
- **Output module** (x32)
- **Frame controller module** (x1 main and x1 redundant)

All of the active modules are accessible from the front of the **EQX** frame providing easy access during maintenance. There are no active modules in the rear of the **EQX** frame.

The Back-up cross point module provides full protection in the case of a failed route. The switch over to the back-up cross point can be performed manually or automatically. In the event of a failure only the faulty route needs to be switch over to the back-up crosspoint. The new route can be checked before the switch is through the output monitoring facility.

EQX Control

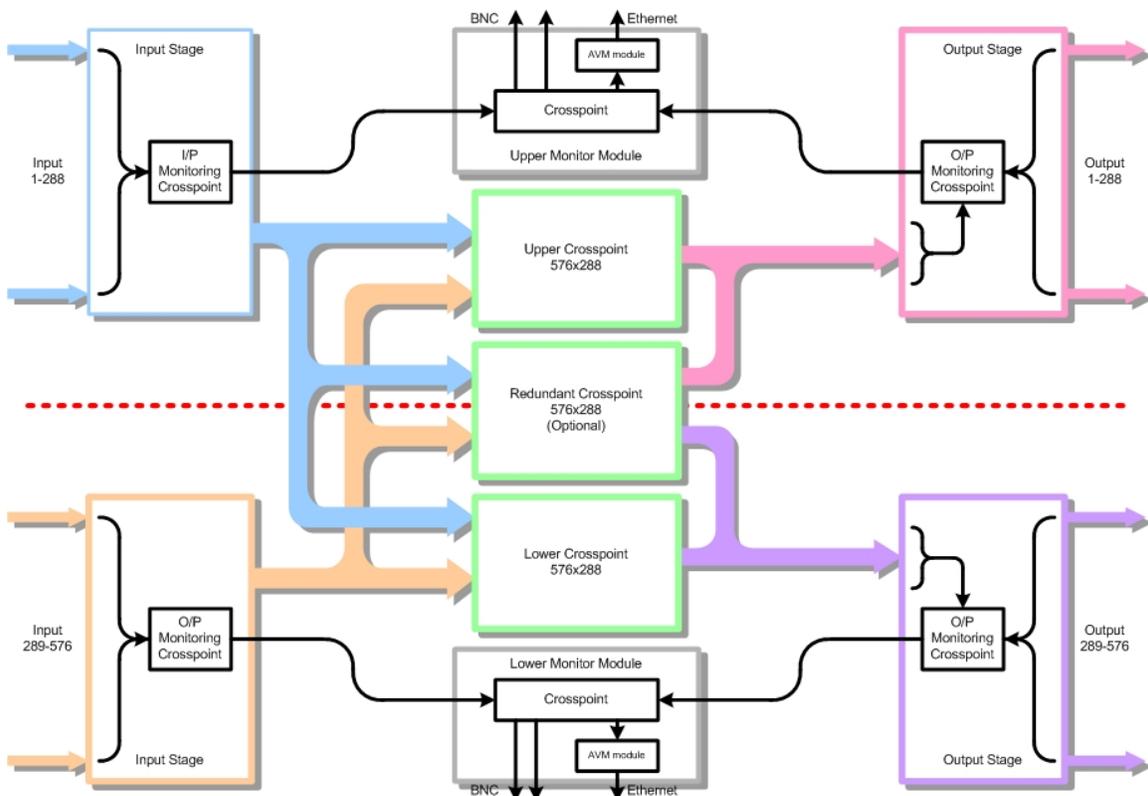
The **EQX** router includes, as standard, an internal Frame Controller module, which supports the Q-Link ports, F-Link ports, Ethernet ports and Serial ports which are mounted on the rear of the router.

Remote Control Panel: Any panel(s) from the entire range of Quartz remote control panels can be used with the **EQX** router connected via Q-Link or Ethernet.

External third party control: The **EQX** router can be remotely controlled via an external third party control device such as an automation system connected to the router's serial port or Ethernet.

EQX Signal and System Monitoring

EQX supports full signal monitoring of both inputs and outputs. It also incorporates comprehensive system monitoring, including power supply voltages, interior temperatures and fan speeds. Monitored data is available through SNMP for facility-wide monitoring systems such as VLPRO. System status may also be monitored remotely by a network based remote connection over TCP/IP. User configurable closing contacts are also provided for connection to an external alarm system.



EQX Signal Monitoring Path

EQX Router – Signal Path Modules

EQX Video Input Modules

The **EQX** input module comprises of 18 channels of adaptive cable equalization that feeds the incoming signal directly through to the Cross Point modules. On each input the cable equalization facility can be switch On/Off as required.

Each of the input modules supports eighteen (18) digital video inputs via the industry standard BNC connector mounted on the passive I/O Fin.

The **EQX** router can be loaded with a maximum of 32 video input modules providing square and non-square matrix configurations from as small as 18 inputs through to 576 inputs, in steps of 18.

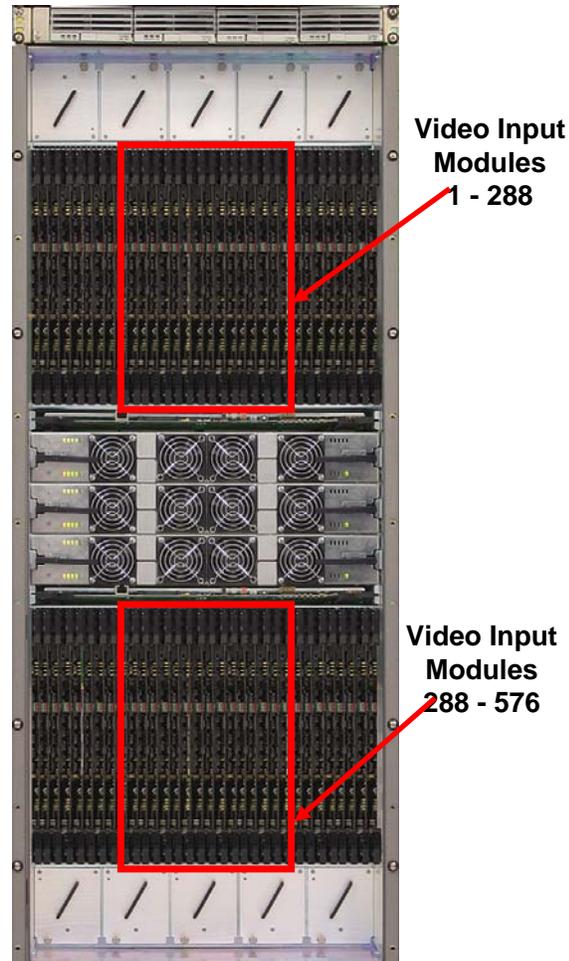
The input module handles digital video and embedded audio signals from 3Mb/s through to 3Gb/s.

- SD-SDI (625 and/or 525)
- HD-SDI (720p, 1080i, 1080p etc)
- DVB-ASI
- SMPTE310
- *plus* others

All of the input modules are accessed from the front of the frame and can be replaced while the **EQX** router is still operational should one of the modules fail. The input modules are air cooled by the fans mounted in the upper and lower half of the frame.

Input Module - Key Features

- HD-SDI digital video *plus* Embedded Audio
- SD-SDI digital video *plus* Embedded Audio
- Supports 3Mb/s to 3Gb/s digital video signals
- Input expansion in steps of 18, from 18 through to 576.
- Configurable signal equalisation (On/Off)
- Front access to all input modules.
- All input modules are hot swappable.
- Fan cooled.



EOX Cross point module

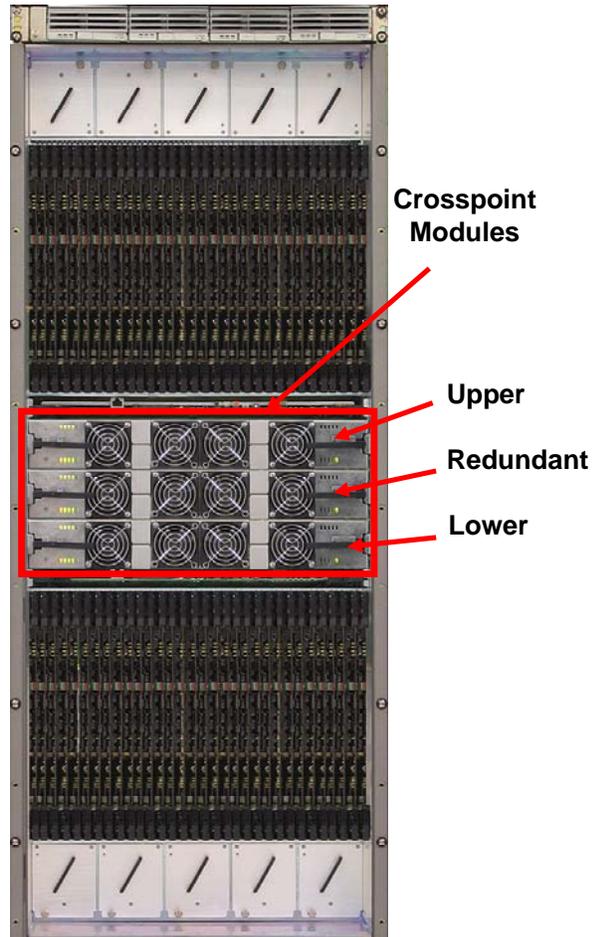
The **EOX** router has provision for three cross point modules. Each cross point module switches 576 inputs through to 288 outputs.

The upper location houses the cross point module that provides the switching for outputs 1-288, the upper section of the frame. The lower location provides the switching for outputs 289-576, the lower section of the frame.

The Back-up cross point module, which is fitted in to the central location, provides full protection in the case of a failed route(s). The switch over to the back-up cross point can be performed manually or automatically. In the event of a failure only the faulty route(s) needs to be switch over to the back-up crosspoint. The new route(s) can be checked before the switch is made through the output monitoring facility.

All of the cross point modules are accessed the front of the frame and can be replaced while the **EOX** router is still operational should one of the modules fail. The back-up cross point provides continued full operation while a main cross point module is being replaced.

The cross point modules are air cooled by the fan modules that are mounted on to the front of the cross point assemblies.



Cross Point - Key Features

- 576 input by 288 output cross point module
 - Upper cross point modules supports outputs 1-288
 - Lower cross point module supports outputs 289-576
 - Centre cross point module required back-up configuration (optional)
- Front access to all cross point modules.
- All crosspoint modules are hot swappable.
- All cross point modules are independently fan cooled.

EQX Video Output Modules

The **EQX** output module comprises of 18 reclocked output channels fed from the Crosspoint modules. On each output the reclocking facility can be switch On/Off or switched in to an ASI bypass mode, as required.

Like the input module each of the output modules supports eighteen (18) digital video outputs using via industry standard BNC connector mounted on the passive I/O Fin.

The **EQX** router can be loaded with a maximum of 32 video output modules, providing square and non-square configurations from 18 outputs through to 576 outputs in steps of 18.

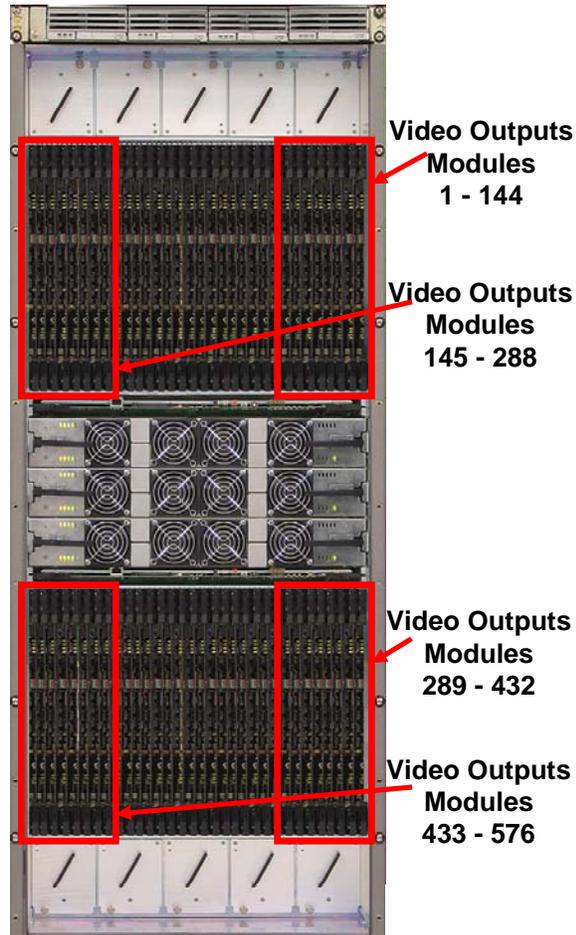
The input module handles digital video and embedded audio signals from 3Mb/s through to 3Gb/s.

- SD-SDI (625 and/or 525)
- HD-SDI (720p, 1080i, 1080p etc)
- DVB-ASI
- SMPTE310
- *plus* others

All of the output modules are accessed from the front of the frame and can be replaced while the **EQX** router is still operational should one of the modules fail. The output modules are air cooled by the fans mounted in the upper and lower half of the frame.

Output Module - Key Features

- HD-SDI digital video *plus* Embedded Audio
- SD-SDI digital video *plus* Embedded Audio
- Supports 3Mb/s to 3Gb/s digital video signals
- Output expansion in steps of 18, from 18 through to 576.
- Auto configurable:
 - Reclocking
 - Non-reclocking
 - ASI mode
- Front access to all input modules.
- All input modules are hot swappable.
- Fan cooled.



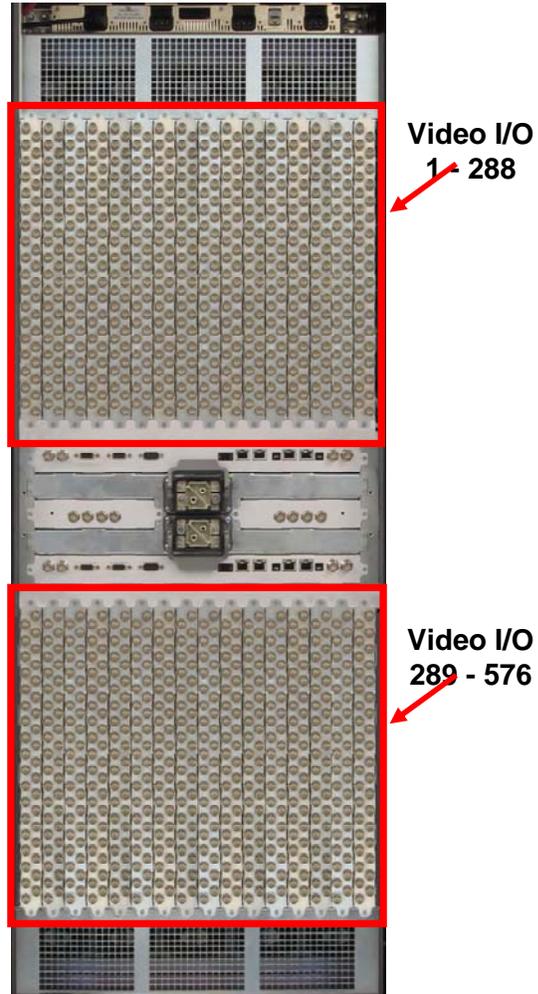
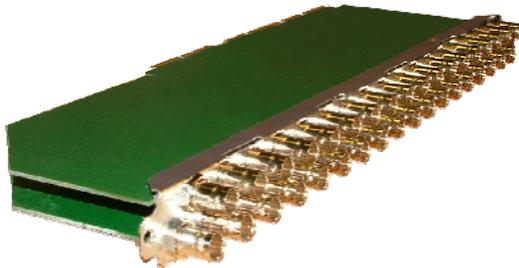
EOX Input & Output (I/O) Fins

Mounted in the rear of the **EOX** frame are the Input and Output (I/O) fins. These modules are completely passive; they have no components other than the 18 BNC connectors.

The **EOX** router is fitted with industry standard BNC connectors.

The I/O fins provide the link through to the input and output modules. The layout of the I/O fins follows the same layout as the Input and output modules.

The Output Fins occupy the 8 locations on the far right and left hand side of the frame in both the upper and lower section. The Input Fins occupy the 16 central locations of the frame in both the upper and lower section.



I/O Fin - Key Features

- Completely passive module
- Provides the link from the BNC connector to the input or output module
- Each fin carries 18 industry standard BNC video connectors
- All I/O fins can be hot swapped

EQX Router – Control & Monitoring Modules

EQX Frame Controller

The EQX router is fitted with an internal Frame Controller.

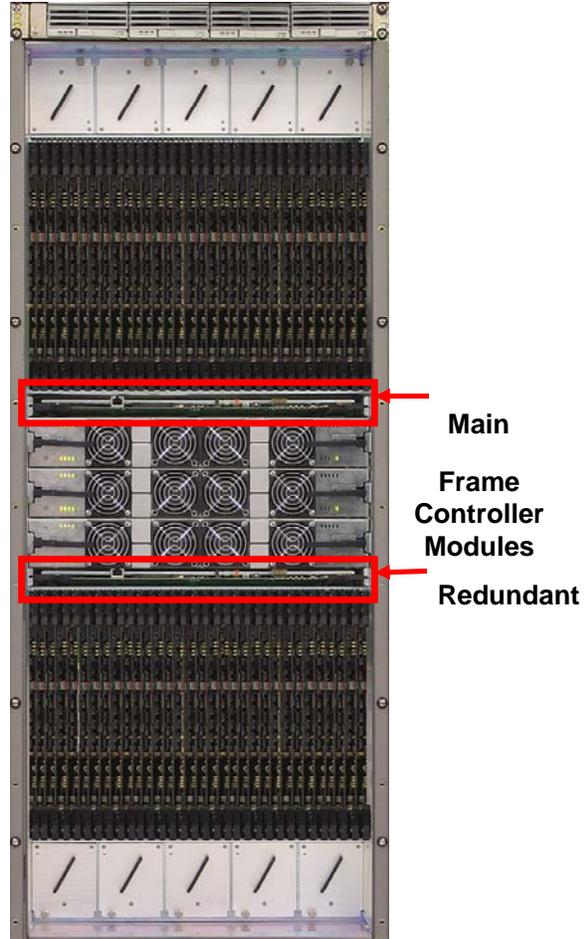
This frame controller handles all of the external and internal router communications from remote control panels and 3rd party devices such as automation systems.

The standard EQX configuration requires a single frame controller; however, a second frame controller can be fitted providing full redundancy.

Both the main and redundant controllers will automatically synchronize the routers cross point data base allowing the redundant frame controller to instantly take over should the main frame controller fail.

Within the EQX router the main internal and inter-frame communications are handled by F-Link. The frame control will automatically convert all Q-Link, Ethernet (for cross point switching) and Serial communications to F-Link.

The Frame Controllers are accessed from the front of the frame and can be replaced one at a time while the **EQX** router is still operational should one of the modules fail. The output modules are air cooled by the fans mounted in the upper and lower half of the frame.



Frame Controller - Key Features

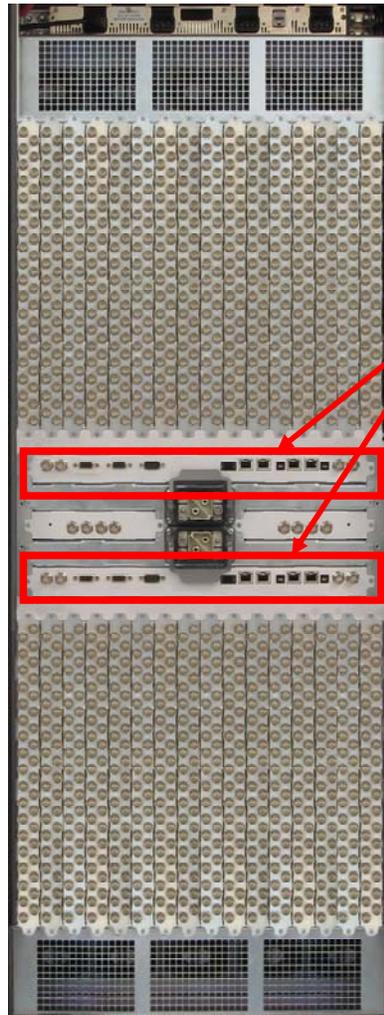
- Handles all internal and external router communications
 - F-Link (Internal and Inter-frame communications)
 - Q-Link (Remote Control Panels)
 - Ethernet (Automation systems & Remote Control Panels)
 - Serial RS422/232 (Automation systems)
 - F-Link & Ethernet ports on all active modules
- Redundant frame controller ensures continuous operation (optional)
- Full SNMP enabled

EQX Communication Ports

- 2x Ethernet Ports
- 2x F-Link Ports
- 4x Q-Link Ports
- 4x Serial Ports (RS422/232)
- 2x PSU Comms Ports
- 2x Alarm Ports

The Ethernet and Serial ports are used for automation control, remote control panels, router configuration and SNMP monitoring.

The Q-Link ports are used for the connection of the Quartz remote control panels.



Ethernet
Serial
F-Link
Q-Link

EQX Reference Input

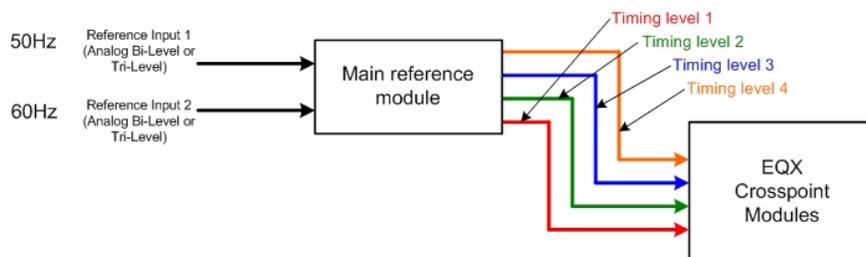
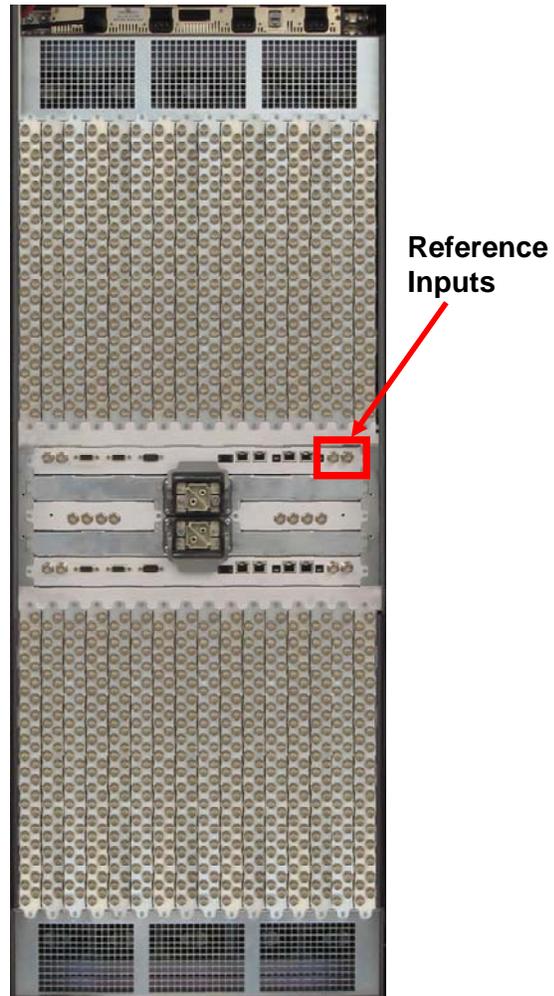
The internal timings and switch points for the **EQX** router are all generated from its signal fed to its reference input.

The **EQX** will accept either Bi-level or Tri-Level syncs, from which it is able to generate the required timing for switching SD and HD digital video signal.

From this single reference signal the **EQX** can generate four independent timing levels which provides SMPTE compliant switching for four different digital video standards within in the same frame.

- SD Digital Video:
 - 525
 - 625
- HD Digital Video (at 50 to 60 Hz):
 - 720p
 - 1080i
 - 1080p
 - Etc....

By supplying a second video reference, at a different frequency to the first, the **EQX** is able to generated timing levels at both frequencies, for example 50Hz and 60 Hz.



Reference Input - Key Features

- Two bi-level or tri-level reference inputs (SD/HD at 50Hz to 60Hz)
- Four independent timing levels for SMPTE compliant switching of up to four different digital video signals.
- Supports mixed digital video standards at mixed frequencies

EQX Monitoring Outputs

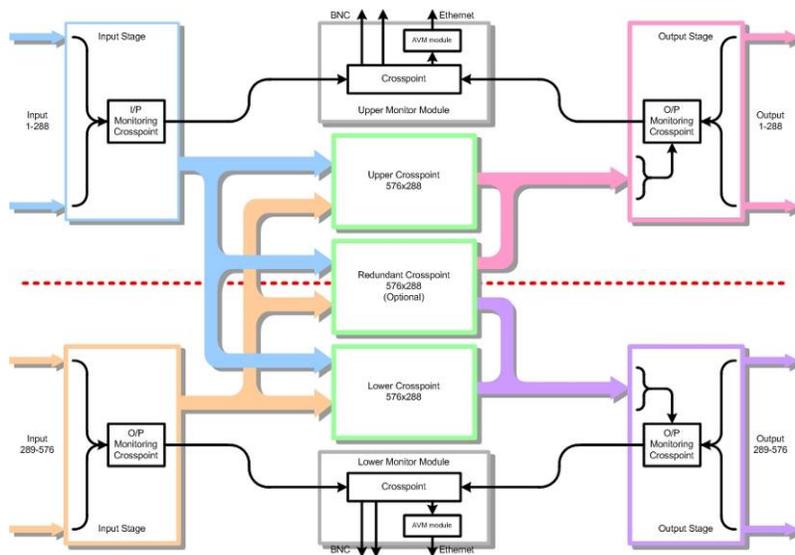
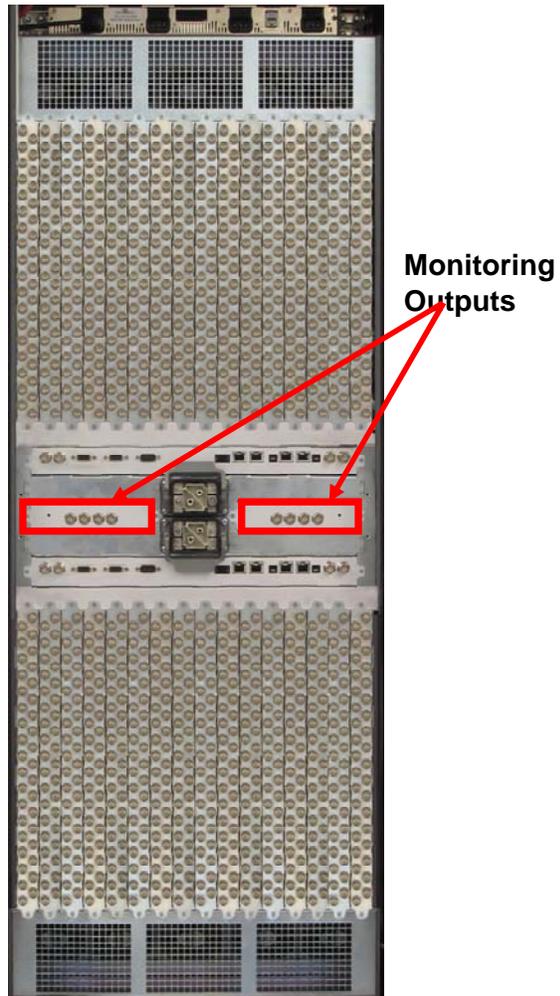
The **EQX** router supports signal monitoring of all of the video inputs and outputs via dedicated BNC connectors on the rear of the **EQX** frame.

The **EQX** also incorporates comprehensive system status monitoring, including power supply voltages, interior temperatures and fan speeds.

Monitored data is available through SNMP for facility-wide monitoring systems.

System status may also be monitored remotely by a network based remote connection over TCP/IP.

User configurable closing contacts are also provided for connection to an external alarm system.



EQX Signal Monitoring Path

EQX Router – Power Supply

EQX Power Supply

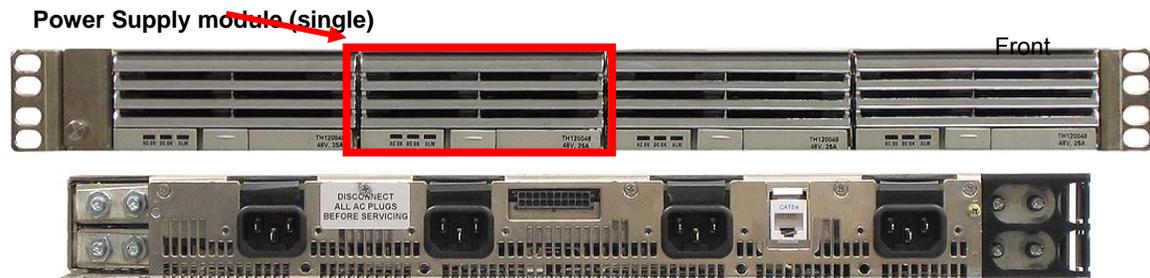
The EQX frame is powered from an external 48V DC source.

The external power supply for the **EQX** is a single rail, load sharing design. It is housed within a single 1RU rack mounting frame which carries four power supply modules each with their own AC inlet. The power supply modules can be hot swapped while the **EQX** is operational should one fail.



A DC cable fitted with a lever locking connector provides a secure connection from the Power Supply to the EQX frame.

A second power supply frame can be attached, via its own dedicated lever locking connector, to the **EQX** frame to provide full redundant protection.



EQX External Power Supply

Power Supply - Key Features

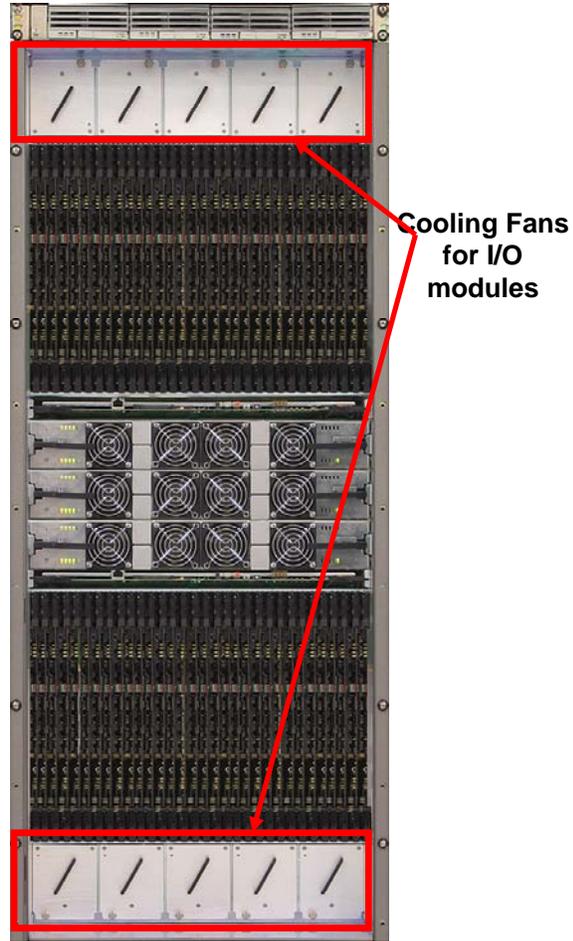
- 1RU 48V DC load sharing power supply frame carrying 4 power supply modules.
- One frame for standard operation
- Two frames for redundant operation
- Power supply modules can be hot swapped
- DC input power connections with a secure lever locking connector.
- Second DC connector for redundant power supply configuration

EQX Router – Frame & Module Cooling

EQX Input & output modules

The **EQX** frame is fan assisted air cooled.

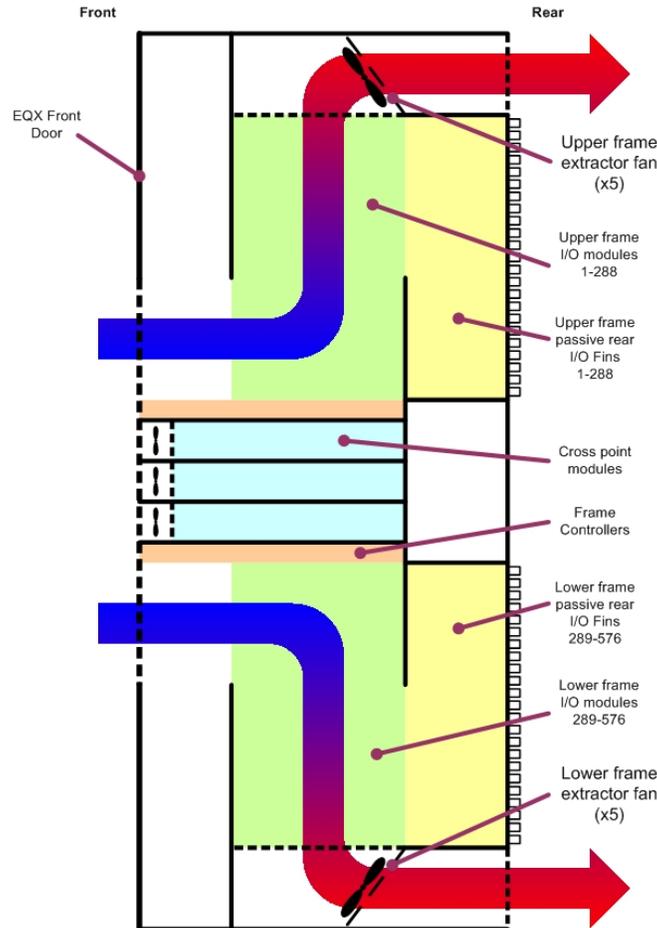
The input and output modules that are located in the upper and lower section of the **EQX** frame are independently cooled. Both the upper and lower section of the frame is equipped with a single row of five fans. These fans draw cool air in through the front door of the frame and expel the hot air out of the rear of the frame.



Each fan module is held in place by a single thumb screw and can be quickly and simply extracted and replaced from the front of the **EQX** frame should any one of them fail.

The single row of five fans that are located in both the upper and lower section of the **EQX** frame are arranged in a n+1 configuration and so provide redundancy, allowing a single fan to fail in either or both of the rows without causing the I/O modules to over heat. The performance of the fans are constantly monitored by the frame controllers. Any faults or failures are immediately reported.

The air flow through the EQX is from front to rear. The cool air enters the frame at the front and passes over the input and output modules and then exists through the rear of the frame.



I/O Fan Modules - Key Features

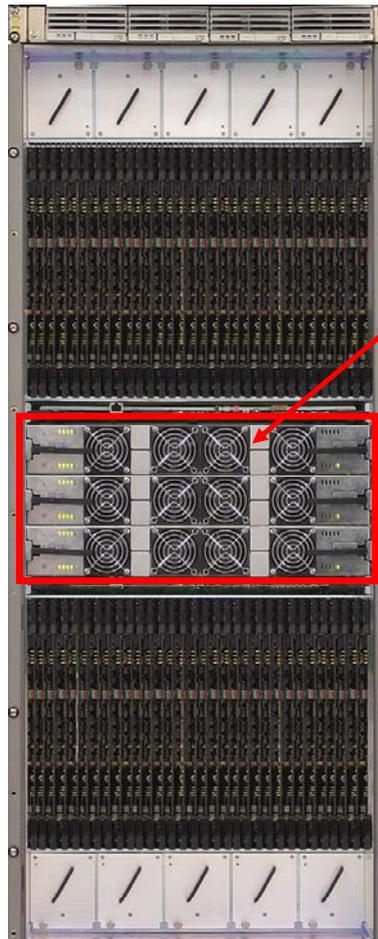
- Five fans are installed in to the upper & lower sections of the frame providing independent cooling of the Input and output modules
- Front access to all of the fan modules
- Individual fan assemblies can be hot swapped
- Redundant configuration ensures continuous cooling should a fan fail

EQX Cross point module

Each of the cross point modules within the **EQX** frame are independently cooled by a row of four fan modules mounted on to the front of the cross point assembly.

The cross point fans are arranged in an n+1 configuration providing redundancy which ensures sufficient cooling should a fan fail at any time.

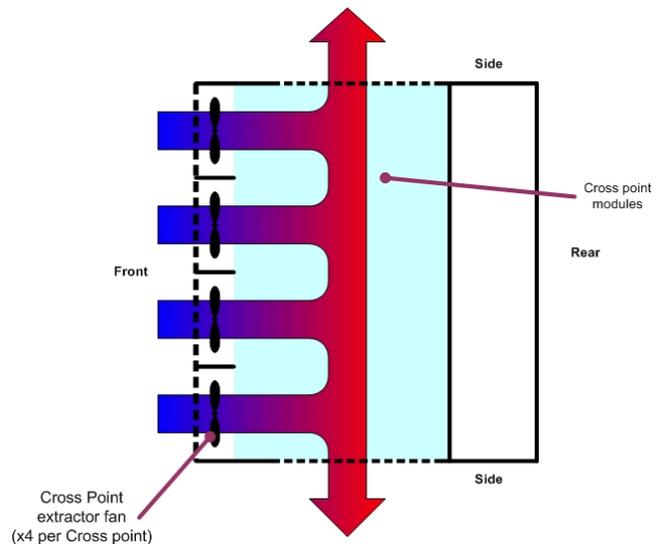
The performances of all of the cross point fans are constantly monitored by the frame controller. Any faults or failures are immediately reported.



Cooling Fans for Crosspoint Modules

Each of the cross point fan modules can be simply and quickly removed and replaced while the cross point module is still in place and operational.

Cool air is drawn in to the front of the cross point module, passed over the cross point circuitry and expelled out of the side of the frame.





Cross Point Fan Modules - Key Features

- Each cross point assembly is independently cooled
- N+ configuration ensures continuous cooling should a fan fail
- Individual fan assemblies can be hot swapped

EQX Router – Specifications

Configuration:

Inputs:	Selectable in blocks of 18
Outputs:	Selectable in blocks of 18
Crosspoint:	Back-Up crosspoint available
Frame Controller:	Redundant frame controller available

Standard Definition:

SD Video Inputs:

Signals supported:	SMPTE 259M, ASI DVB standard
Signal Level:	800mV p-p nominal
Impedance:	75 Ω terminating
Return Loss:	15dB typical
Cable equalization:	250m Belden 8281
Connectors:	BNC, 75 Ω terminating

SD Video Outputs:

Signal Level:	800mV p-p \pm 10%
Impedance:	75 Ω terminating
Return Loss:	15dB typical
D.C. offset:	0 \pm 0.5V
Connectors:	BNC, 75 Ω terminating

Signal Path:

Rise/fall times:	<0.4ns
Output jitter:	0.2UI p-p

Switching Reference:

Reference inputs:	2x BNC, Analog 525/625 75 Ω terminating
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High Definition:

HD Video Inputs:

Signals supported:	SMPTE 259M/292M/424M/ASI
Signal Level:	800mV p-p nominal
Impedance:	75 Ω terminating
Return Loss:	15dB typical
Cable equalization:	Belden 1694A, 100m
Connectors:	BNC, 75 Ω terminating

HD Video Outputs:

Signal Level: 800mV p-p \pm 10%
Impedance: 75 Ω terminating
Return Loss: 15dB typical
D.C. offset: 0 \pm 0.5V
Connectors: BNC, 75 Ω terminating

Signal Path:

Rise/fall times: <0.2ns
Path Length: 12ns, typical
Output jitter: 0.2UI p-p

Switching Reference:

Reference inputs (SD): Composite 525i 59.94 or 625i 50
Reference inputs (HD): Tri level sync 59.94 or 50Hz
Signal level: 1V p-p \pm 3dB
Impedance: 75 Ω
Line switching: 4 internal timing planes
Connectors: BNC, 75 Ω terminating

Control:

Q-Link: 4x 75 Ω video cable (max length 500m)
F-Link: 2x RJ45
Serial RS422/232: 2x D9 female
Ethernet, 10baseT: 2x RJ45

Physical:

Height: 26RU
Width: 19"
Depth: 18"
Operating Temperature: 0-40°C
Cooling: Fan cooled from front to rear

Power:

Supply: Auto ranging 85 to 240 VAC 50/60Hz
Redundancy: 1:1 available

APPENDIX B – List of Supported Third Party Protocols

Third Party Controls Evertz

3rd Party Controls Quartz		
No	Protocol Name	Who controls Who
-1	Quartz Standard	Computer controls Quartz.
-3	Probel simple	Pro-bel controls Quartz
-4	EBU Geneva	EBU controls Quartz
-7	Omnibus Panel	Omnibus controls Quartz (panels only)
-13	Probel SW-P-02	Pro-bel controls Quartz
-22	GVG 10XL ASC II	GVG controls Quartz
-23	GVG 10XL SMPTE	GVG controls Quartz
-24	GVG HX-GPI	GVG controls Quartz
-25	Panasonic SmartCart	Panasonic controls Quartz
-30	Thomson SW-P-02	Thomson Controls Quartz (Serial mixer cue)
-31	GVG Peripheral IF II	GVG 1200 Mixer controls Quartz (E-MEM)
-32	Sony Flexicart	Sony Controls Quartz
-39	Philips / BTS SI-3000	Philips / BTS controls Quartz
-40	Stagetec Nexus	Quartz controls Nexus
-44	GVG M-2100 control panel	GVG M-2100 channel controls Quartz salvo
-45	GVG SMS 7000 Native	GVG controls Quartz
-47	PSP Mixer	PSP controls Quartz
-48	Pro-bel SW-P-08	Pro-bel controls Quartz
-49	Leitch Passthrough	Leitch controls Quartz
-51	Sandar Pro san	Sandar controls Quartz
-53	FaderMaster 4/100	Bidirectional side-car protocol
-54	Snell & Wilcox Serial Tally	S&W HD & Golden Dave Serial Tally Protocol
-58	Utah SC-3	Utah controls Quartz
-60	Leitch Terminal (MA32)	Leitch controls Quartz
-61	WkinX Network	Network controls Quartz

Evertz Controls Third Party

Quartz Controls 3rd Party		
No	Protocol Name	Who controls Who
-2	TSL UMD	Quartz controls TSL
-9	Nvision	Quartz controls Nvision
-11	Probel SW-P-04	Quartz controls Pro-bel UMD
-16	BTS	Quartz controls BTS
-17	Probel SW-P-08	Quartz controls Pro-bel
-19	G\VG Horizon	Quartz controls G\VG Horizon
-21	Sony Routing Switcher	Quartz controls Sony routers BVS/DVS
-26	Maddox	Quartz controls Maddox
-27	Probel SW-P-02	Quartz controls Pro-bel
-28	Leitch MAS32	Quartz controls Leitch
-29	Pesa CPU Link #1	Quartz controls Pesa
-33	Quasar UMD	Quartz controls Quasar UMD's
-35	Sony VTR 0 pin	Quartz controls Sony VTR's & reflects status
-36	Sony DVS Series Mixer	Quartz receives serial tallies from mixer
-37	G\VG M-2100 Mixer	Quartz QMC controlled by ...
-38	G\VG SM S7000 Native	Quartz controls G\VG
-40	Stagete c Nexus	Quartz controls Nexus
-42	G\VG 200 Aux Bus cntrl	Quartz controls G\VG
-43	Utah SC-3	Quartz controls Utah
-46	Leitch Passthrough	Quartz controls Leitch
-52	Sony Audio Switcher	Quartz controls Sony
-55	Stagete c V5	Quartz controls Nexus
-62	Network MkinX	Quartz controls Network
-63	ETL General Matrix	Quartz controls ETL
-64	Ensemble UMD	Quartz Controls Ensemble UMD
-65	Talia Native	Quartz controls Talia
-66	G\VG T/CI Protocol	Quartz controls G\VG (Acappella)

APPENDIX C – Roadmap of Products and Features

Current Products/Features

Part Number	Functional Description
EQX26-FR	<p>26RU frame for up to 576x576 configurations, including:</p> <ul style="list-style-type: none"> • EQX-FAN (x5 upper and x5 lower fan assemblies) • EQX-I/O-BLANK (up to x30, ensures correct air flow in a part populated frame) • EQX-FC (x1 non-redundant frame controller) • EQX-FC-REAR (x2 frame controller comms ports) • EQX-MONITOR (x2 monitor modules) • EQX-RP-BLANK (up to 30, ensures correct air flow in a part populated frame) • CAB-PC1-AS (x1 Serial comms cable, PC-to-Router) • WA-S76 Upgrade Cable (x1 Serial comms to individual cards) • Pin-to-pin DB9 cables (x1)
EQX16-FR	<p>16RU frame for up to 288x288 configurations, including:</p> <ul style="list-style-type: none"> • EQX-FAN (x5 upper fan assemblies) • EQX-I/O-BLANK (up to x15, ensures correct air flow in a part populated frame) • EQX-FC (x1 non-redundant frame controller) • EQX-FC-REAR (x2 frame controller comms ports) • EQX-MONITOR (x2 monitor modules) • EQX-RP-BLANK (up to 15, ensures correct air flow in a part populated frame) • CAB-PC1-AS (x1 Serial comms cable, PC-to-Router) • WA-S76 Upgrade Cable (x1 Serial comms to individual cards) • Pin-to-pin DB9 cables (x1)
EQX16-18X18S	16RU frame populated with 18x18 matrix with SD only I/O, expandable up to 288x288. Non-redundant crosspoint, frame controller and power supply configuration.
EQX26-18X18S	26RU frame populated with 18x18 matrix with SD only I/O, expandable up to 576x576. Non-redundant crosspoint, frame controller and power supply configuration.
EQX16-18X18H	16RU frame populated with 18x18 matrix with HD/SD I/O, expandable up to 288x288. Non-redundant crosspoint, frame controller and power supply configuration.
EQX26-18X18H	26RU frame populated with 18x18 matrix with HD/SD I/O, expandable up to 576x576. Non-redundant crosspoint, frame controller and power supply configuration.
EQX16-18X18-3G	16RU frame populated with 18x18 matrix with 3G/HD/SD I/O, expandable up to 288x288. Non-redundant crosspoint, frame controller and power supply configuration.
EQX26-18X18-3G	26RU frame populated with 18x18 matrix with 3G/HD/SD I/O, expandable up to 576x576. Non-redundant crosspoint, frame controller and power supply configuration.
EQX16-18X18GC	26RU frame populated with 18x18 matrix with G-Link I/O, expandable up to 576x576. Non-redundant crosspoint, frame controller and power supply configuration.
EQX16-36X36GC-F	16RU frame populated with 36x36 matrix with Fibre I/O, expandable up to 288x288. Non-redundant crosspoint, frame controller and power supply configuration.
EQX26-36X36GC-F	26RU frame populated with 36x36 matrix with Fibre I/O, expandable up to

	576x576. Non-redundant crosspoint, frame controller and power supply configuration.
EQX-IP18S	18 SD only video inputs, including: <ul style="list-style-type: none"> • Passive input fin with 18 BNC connectors • SD only video input module
EQX-IP18H	18 SD/HD video inputs, including: <ul style="list-style-type: none"> • Passive input fin with 18 BNC connectors • SD/HD video input module
EQX-IP18-3G	18 SD/HD/3G inputs, including: <ul style="list-style-type: none"> • Passive input fin with 18 BNC connectors • SD/HD/3G video input module
EQX-IP18-GC	18 channel G-Link video input module <ul style="list-style-type: none"> • Active input fin G-Link connectors • SD/HD/3G video input module
EQX-IP-GC-F	36 channel Fiber video input module <ul style="list-style-type: none"> • Active input fin with Fiber connectors • SD/HD/3G video input module
EQX-XPT-576x288	576x288 SD/HD/3G crosspoint module, including redundant crosspoint fan assembly.
EQX-XPT-288x288	288x288 SD/HD/3G crosspoint module, including redundant crosspoint fan assembly.
EQX-OP18S	18 SD only reclocking video outputs, including: <ul style="list-style-type: none"> • Passive output fin with 18 BNC connectors • SD only video output module
EQX-OP18H	18 SD/HD reclocking video outputs, including: <ul style="list-style-type: none"> • Passive output fin with 18 BNC connectors • SD/HD video output module
EQX-OP18-3G	18 SD/HD/3G reclocking outputs, including: <ul style="list-style-type: none"> • Passive output fin with 18 BNC connectors • SD/HD/3G video output module
EQX-OP18-GC	18 channel G-Link video output module <ul style="list-style-type: none"> • Active output fin with G-Link connectors • SD/HD/3G video output module
EQX-OP36-GC-F	36 channel G-Link/Fiber video output module <ul style="list-style-type: none"> • Active output fin with Fiber connectors • SD/HD/3G video output module
EQX-S64-1X2-3G	EQX SD/HD/3G Splitter/Combiner
CP-1000A	Intelligent Control Panel, 16 BPS style. 1RU unit with 16 buttons featuring LCD in key cap for instant updating of source or identification labels. Can be completely configured for any use: XY, BPS multi-mode, breakaways.
CP-1600A	Remote mini XY panel, BPS. 1RU, 16 sources and destinations, 4 breakaway levels and lock. Programmable to control any one or all destinations.
CP-1601A	Remote panel, multimode 16 BPS and lock. 1RU unit, fully programmable e.g. 16 sources, 1 destination and lock
CP-1604	Remote panel multimode, 20 BPS. 1RU unit, fully programmable e.g. 16 sources, 4 destinations
CP-2024A	Intelligent control panel, keypad style. 2RU unit with 24-button keypad featuring LCD in key cap for instant updating of source or identification labels. Can be completely configured for any use, XY, BPS multi-mode, breakaways.
CP-2032A	Intelligent control panel, 32 BPS style. 2RU unit, with two rows of 16 buttons featuring LCD in key cap for instant updating of source or

	identification labels. Can be completely configured for any use, XY, BPS multi-mode, breakaways.
CP-2048A	Intelligent control panel, 48 BPS style. 2RU unit, with three rows of 16 buttons featuring LCD in key cap for instant updating of source or identification labels. Can be completely configured for any use, XY, BPS multi-mode, breakaways.
CP-3200A	Remote panel with keypad and display. 2RU unit, 24 button keypad, 7/8 character names on vacuum fluorescent display, with 4 levels of breakaway. Programmable keys for lock, last, next, toggle, etc. XY, five destination and single destination modes available.
CP-3201	Remote panel, multimode, 40 BPS. 1RU unit, fully programmable e.g. 32 sources, 4 destinations, 3 levels of breakaway and lock
CP-3208	Remote panel, 8 destination, 32BPS with displays. 2RU unit, 32 source, 8 destination, 8 take keys. Source names for each destination in 7 character LED displays
CP-6400	Remote display panel, XY, keypad. 2RU unit, extra large 32 button keypad, 8 character LED displays, 8 breakaway levels. Programmable keys for lock, last, next, toggle, etc.
CP-6401	Remote panel, multimode, 80 BPS. 2RU unit, fully programmable e.g. 64 sources, 8 destinations, 7 levels of breakaway and lock
CP-6402	Remote panel, 2 destination, keypad with displays. 2RU unit, large 24 button keypad, 2 destinations, 8 character LED displays for each destination, 8 breakaway levels.
CP-6404	Remote panel, 4 destination, keypad with displays. 2RU unit, large 24 button keypad, 4 destinations, 8 character LED displays for each destination, 8 breakaway levels. Programmable keys for lock, last, next, toggle, etc.
CP-6406	Remote panel, 6 destination, keypad with displays. 2RU unit, large 24 button keypad, 6 destinations, 8 character LED displays for each destination, 8 breakaway levels. Programmable keys for lock, last, next, toggle, etc.
CP-6408	Remote panel, 8 destination, keypad with displays. 2RU unit, large 24 button keypad, 8 destinations, 8 character LED displays for each destination, 8 breakaway levels. Programmable keys for lock, last, next, toggle, etc.

Future Products/Features:

Part Number	Functional Description
EQX-IP16-AD-S	EQX SD input module with 16 inputs
EQX-OP16-AE-S	EQX SD output module with 16 outputs
EQX-AMDX16	EQX Audio TDM Signal Mux/DeMux engine with 16 Audio TDM inputs and 16 Audio TDM outputs. All audio to be synchronous to frame Genlock
CP-2200E	Multi service dual LCD Evertz systems control panel.



EQX Transmission System with Fiber I/O:

APPENDIX D – Future Considerations

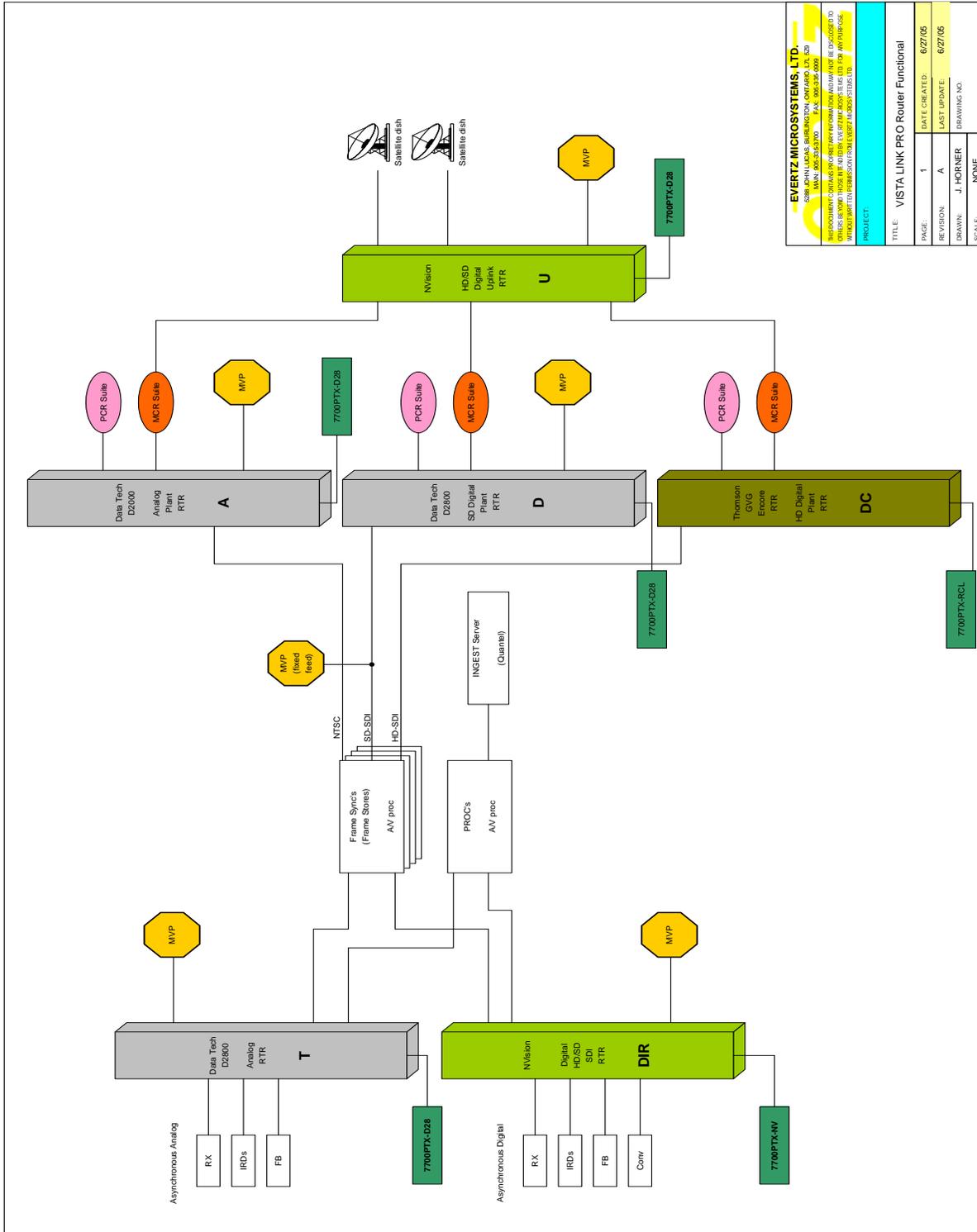
Future considerations should be made to include the following monitoring capabilities. This includes:

- +AVM optional on the EQX-Mon module to allow for fast and effective signal monitoring, analysis.
- +SLK StreamLink option on the EQX-Mon modules to allow streaming of full frame rate video and audio over IP to a VistaLINK® PRO operator station; +AVM option on input and output modules for fast and effective signal monitoring, analysis, and loading of SID information into UMD table

In addition to the above monitoring capabilities, by uniting VistaLINK® PRO, MVP™, and Routing, a complete integrated monitoring solution can be achieved, that only Evertz can provide:

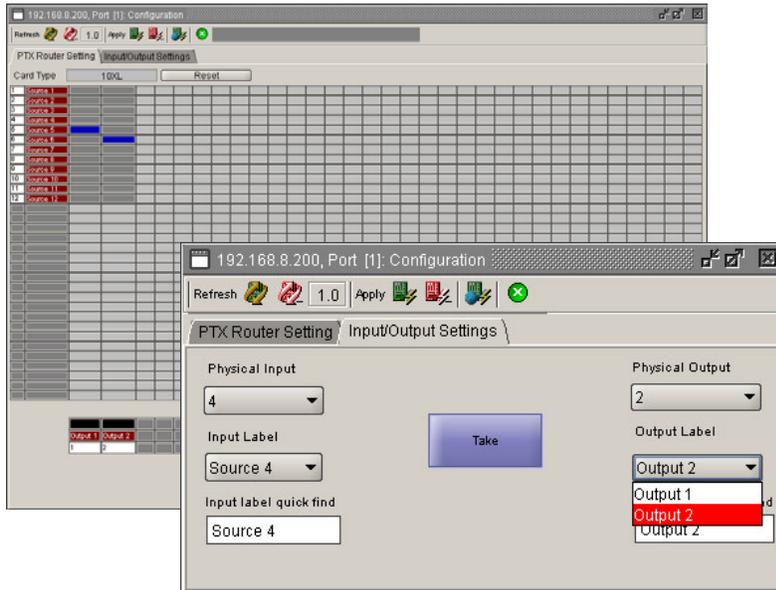
- With VistaLINK® PRO, thousands of network nodes are monitored and configured World-wide via SNMP, thus uniting all SNMP-based equipment from Evertz (such as MVP™ and EQX) and beyond, providing monitoring and configuration capabilities for mission critical needs. Via VistaLINK® PRO and SNMP, it allows for simple, reliable, secure, and efficient network monitoring and control for facility equipment.
- The Evertz MVP™ Multi-image display processor is the most flexible and feature-rich platform available, making it ideal for applications where video/audio monitoring and display are required. Its modular architecture allows for expansion to hundreds of inputs in a single system, displayed on many outputs. And its true hot-swappable architecture allows for seamless swap of any module or power supply during operation of the system, which is made simple with a front-loading frame. Since the MVP™ does not use a PC platform at its core of operation, it is well suited for 24/7 mission critical environments.
- The EQX platform is Evertz's flagship routing and distribution solution designed for high availability by adopting extensive redundancy for all critical system elements. With this, and the ability to route up to 576x576 signals, the EQX is ideal for mission critical and demanding 24/7 environments including network, local broadcaster, mobile production, cable, military, government and corporate applications. It is fully SNMP enabled and supports seamless integration with VistaLINK® PRO command and control systems.

APPENDIX E – Sample of Existing Transmission Systems Using VistaLINK® PRO

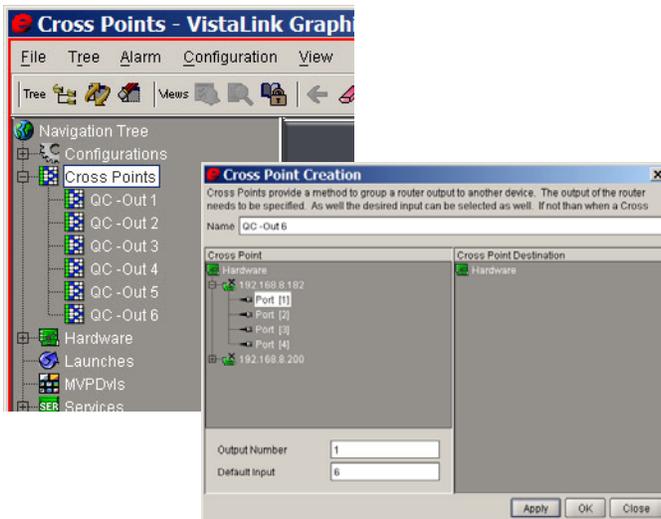


EVERTZ MICROSYSTEMS, LTD. <small>5288 JOHN LUCAS DRIVE, BURLINGTON, ONTARIO, L7L 5Z9 TEL: 905.336.5200 FAX: 905.336.5000 WWW.EVERTZ.COM</small>	
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PROJECT:	VISTA LINK PRO Router Functional
TITLE:	VISTA LINK PRO Router Functional
PAGE:	1
DATE CREATED:	6/27/05
REVISION:	A
LAST UPDATE:	6/27/05
DRAWN:	J. HORNER
DRAWING NO:	
SCALE:	NONE

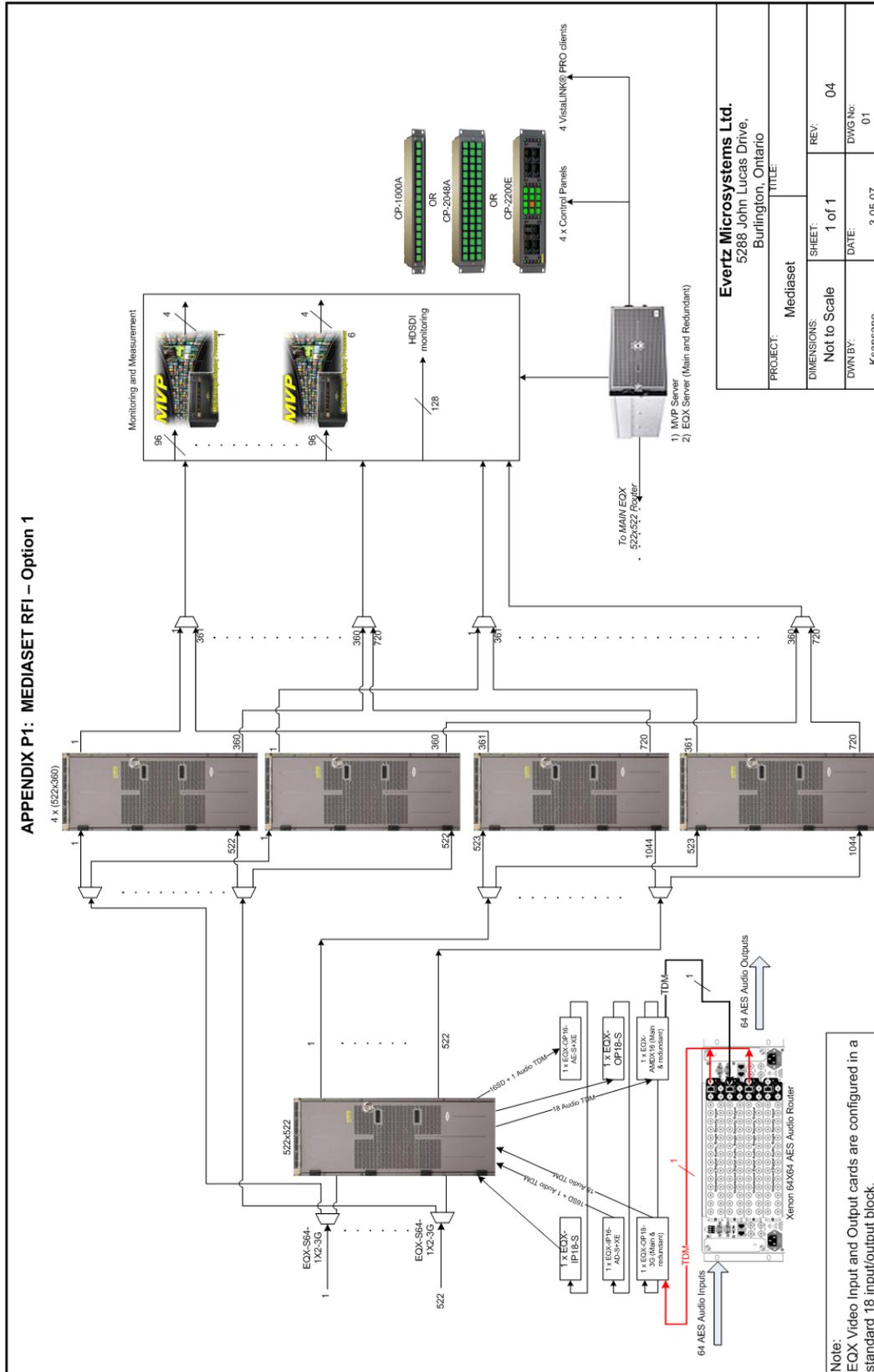
VistaLINK PRO Router Control



- Router Control via 7700PTX (4 ports)
- Source / Destination Labels from router or via PTX module
- Make router selections using cross point matrix view or in/out lookup utility
- Automatically change QC outputs with +SCH client
- Use VistaLINK PRO's "Cross point" feature to create custom router control panels in the Graphics client
- Build custom router access on an operators graphics view for certain outputs



APPENDIX P1 – Option 1



APPENDIX P2 – Option 2

