ARCHITECTURAL SPECIFICATIONS
Pathfinder KVM over IP extension, matricing, multiviewing and HDCP solution
(HDCP compliant - HDMI, DVI, VGA, DisplayPort. Audio, RS232, high speed USB2.0, KVM extension and matrix**)**

DESIGN
- KVM over IP extension and matricing solution must include a 5-year warranty with system support for 5 years after discontinuance of the product.
- KVM over IP extension and matricing solution must support legacy VGA signals
- KVM over IP extension and matricing solution must support VGA, HDMI 1.4, DVI-I, and DisplayPort 1.2 signals
- KVM over IP extension and matricing solution must support High definition video resolutions of 1920x1200 @ 60hz 24bit and 4k resolutions of 4096x2160 @ 60Hz 4:4:4 24bit.
- KVM over IP extension and matricing solution must support bi-directional analog audio
- KVM over IP extension and matricing solution must support HDCP 1.4 or higher
- KVM over IP extension and matricing solution must support multimode and singlemode fiber for extension up to 20km and matricing.
- KVM over IP extension and matricing solution must support CAT cable for extension up to 30m and matricing.
- KVM over IP extension and matricing solution must support a mixed system of CAT and fiber endpoints.
- KVM over IP extension and matricing solution must support over 3,000 endpoints.
- KVM over IP extension and matricing solution must support low latency of no more than 5ms in video distribution
- KVM over IP extension and matricing solution must support up to 16 PC's at a single workstation without any additional hardware, such as USB aggregates or other proprietary network devices. Control of these PCs shall be from a single mouse and keyboard.
- KVM over IP extension and matricing solution must support multiviewing of at least four 1920x1200p@60fps PC's on a single 4K display. Control of these PC's shall be from a single mouse and keyboard.
- KVM over IP extension and matricing solution must support USB lock out where all USB storage devices may be blocked for file transfer.
- KVM over IP extension and matricing solution must support USB 2.0 mass storage and camera devices at speeds up to 480Mbit/s.
- KVM over IP extension and matricing solution must support DisplayPort Multi-stream transport (MST) providing for extended desktops or screen duplication, without additional hardware.
- KVM over IP extension and matricing solution must provide a local monitor loop out at every source.
- KVM over IP extension and matricing solution must support the ability to update firmware locally or remotely.
- KVM over IP extension and matricing solution shall support redundant power at all 4k endpoints.
- KVM over IP extension and matricing solution shall not require a proprietary server or other dedicated networking devices.
- KVM over IP extension and matricing solution shall work with any professional managed network switch, and not a proprietary device.
- KVM over IP extension and matricing shall not require IP address at individual endpoints.
- KVM over IP extension and matricing solution shall not require user licenses, keys or subscriptions.
- KVM over IP extension and matricing must be passively cooled so that it does not contribute to the noise floor of the room.

PROGRAMMING

- Pathfinder Encoders and Decoders:

Part number	Description
MG-KVM-531	DVI KVM Encoder, supports up to 1920x1200
MG-KVM-532	DVI KVM Decoder, supports up to 1920x1200
MG-KVM-5CPR	RJ45 1G SFP for MG-KVM-53x series (30m)
MG-KVM-5MM	Multimode fiber SFP for MG-KVM-53x series (500m)
MG-KVM-5SM	Singlemode fiber SFP for MG-KVM-53x series (20km)
MG-KVM-831	DP1.2 KVM Encoder, supports up to 4096x2160
MG-KVM-832	DP1.2 KVM Decoder, supports up to 4096x2160
MG-KVM-8CPR	RJ45 10G SFP for MG-KVM-83x series (30m)
MG-KVM-8MM	Multimode fiber SFP for MG-KVM-83x series (300m)
MG-KVM-8SM	Singlemode fiber SFP for MG-KVM-83x series (10km)

TECHNICAL SPECIFICATIONS

MG-KVM-500 Series		
	Encoder	Decoder
Interfaces	1x DVI-I in 1x DVI-I (loop out) 1x USB-B 2x 3.5mm Analog Audio (Line In/out) 1x RS232 via RJ11 1x KVM link via SFP+ 1x DC power port	1x DVI-D out 4x USB-A 2x 3.5mm Analog Audio (Line In/out) 1x RS232 via RJ11 1x KVM link via SFP+ 1x Locking DC power port
Video	up to 1920x1200@60Hz 24bit	up to 1920x1200@60Hz 24bit
Audio	Analog 16bit, 44kHz, 2ch	Analog 16bit, 44kHz, 2ch
USB	USB 2.0 transparent max. 480 Mbit/s mass storage and camera supported	USB 2.0 transparent max. 480 Mbit/s mass storage and camera supported
RS232	Transparent max. 230.400 bps TxD, RxD, DTR, CTS,	Transparent max. 230.400 bps TxD, RxD, DTR, CTS,
HDCP	1.4	1.4
KVMLink data rate	1Gbps	1Gbps
Max distance	328ft (30m) via RJ45 1640ft (500m) via Mulitmode Fiber 12miles (20km) via Singlemode Fiber	328ft (30m) via RJ45 1640ft (500m) via Mulitmode Fiber 12miles (20km) via Singlemode Fiber
Enclosure WxHxD	4.3x1.57x5.2" (110x40x132.5mm)	4.3x1.6x5.2" (110x40x132.5mm)
Weight	0.6lbs (302g)	0.6lbs (291g)
Mounting	Built in surface mount Rack mount kit available	Built in surface mount Rack mount kit available
Power	12V DC 1A	12V DC 1A
Consumption	8W	8W without USB devices, 10W Max
Redundant Power	n/a	n/a
Operation environment	0 to 45 °C /32 to 113 °F) < 80%, non condensing	0 to 45 °C /32 to 113 °F) < 80%, non condensing
Storage environment	-25 to 80 °C (-13 to 176 °F) < 80%, non condensing	-25 to 80 °C (-13 to 176 °F) < 80%, non condensing
Cooling	free air convection	free air convection
MTBF	82,820 hours	82,820 hours
Compliance	CE, FCC	CE, FCC
Network Switch Requirements	IGMP Snooping V2 or higher. Gateway bandwidth of 1Gbit on the connected port	
Warranty	5 years	5 years

MG-KVM-800 Series		
	Encoder	Decoder
Interfaces	1x DP 1.2 in 2x DP 1.2 out 1x USB-B 2x 3.5mm Analog Audio (Line In/out) 1x D-Sub9 (female) 1x 1GBit LAN via RJ45 1 x KVM link via SFP+ 1x DC power port 1x IEC AC power port	2x DP 1.2 out 4x USB-A 2x 3.5mm Analog Audio (Line In/out) 1x D-Sub9 (male) 1x 1GBit LAN via RJ45 1 x KVM link via SFP+ 1x DC power port 1x IEC AC power port
Video	up to 4096 x 2160 @ 60Hz 4:4:4 24bit	up to 4096 x 2160 @ 60Hz 4:4:4 24bit
Audio	Analog; 16bit, 44kHz, 2ch Digital (embedded); 16bit, 44kHz, 2ch	Analog; 16bit, 44kHz, 2ch Digital (embedded); 16bit, 44kHz, 2ch
USB	USB 2.0 transparent max. 480 Mbit/s mass storage and camera supported	USB 2.0 transparent max. 480 Mbit/s mass storage and camera supported
RS232	Transparent max. 230.400 bps TxD, RxD, DTR, CTS,	Transparent max. 230.400 bps TxD, RxD, DTR, CTS,
HDCP	not supported	not supported
KVMLink data rate	10Gbps	10Gbps
Max distance	100ft (30m) via RJ45 1000ft (300m) via Mulitimode fiber 6.2miles (10km) via Singlemode fiber	100ft (30m) via RJ45 1000ft (300m) via Mulitimode fiber 6.2miles (10km) via Singlemode fiber
Enclosure WxHxD	8.6x1.65x5.2" (218x42x132.5mm)	8.6x1.65x5.2" (218x42x132.5mm)
Weight	1.5lbs (676g)	1.6lbs (707g)
Mounting	Built in surface mount Rack mount kit available	Built in surface mount Rack mount kit available
Power	internal AC power supply 90-240V/60-50Hz	internal AC power supply 90-240V/60-50Hz
Consumption	15W	15W (without USB devices), 18W Max
Redundant Power	12 VDC 3A (optional)	12 VDC 3A (optional)
Operation environment	0 to 45 °C /32 to 113 °F) < 80%, non condensing	0 to 45 °C /32 to 113 °F) < 80%, non condensing
Storage environment	-25 to 80 °C (-13 to 176 °F) < 80%, non condensing	-25 to 80 °C (-13 to 176 °F) < 80%, non condensing
Cooling	free air convection	free air convection
MTBF	82,820 hours	82,820 hours
Compliance	CE, FCC	CE, FCC
Network Switch Requirements	IGMP Snooping V2 or higher. Gateway bandwidth of 10Gbit on the connected port	
Warranty	5 years	5 years