

Cheetah

Cheetah Series Routing Switchers

3

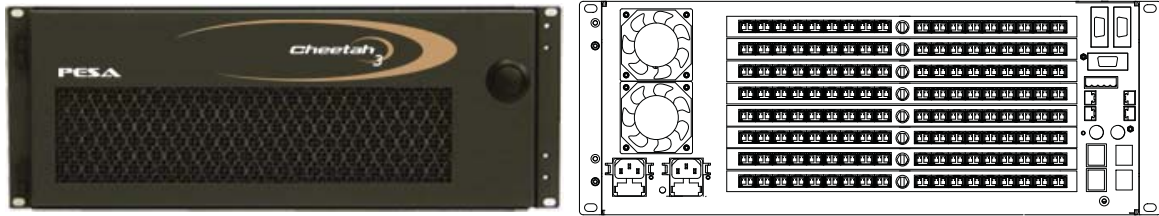


Fiber Optic Routing up to 144X144

Features and Benefits

- Small Frame Size – 144X144 in 4RU
- SD/HD/3G Multi-rate from 143Mbps to 3.0Gbps
- Fiber I/O for Singlemode and Multimode
- Matrix granularity - 144X144 Matrix Card
- I/O in groups of 36
- Digital video signals for SMPTE 259M, 292M, 372M, 424M
- Front loading, hot-swappable matrix, power, control for 24/7 operations
- Redundant power, control and matrix cards available
- Wide range of rack-mount and desktop control panels
- Supports PESA router control and many 3rd party control systems
- Lower power consumption

144X144



PESA's Cheetah 144NE Fiber Router System is a high performance, modular fiber optic switch system for either ProAV or Broadcast HD-SDI and 3G-SDI applications. Cheetah 144NE Fiber is expandable in sizes from 36X36 up to 144X144 in the same 4RU frame. It is fully compatible with the new QFX Series of fiber media extenders for dual link DVI, HD-SDI, and 3G-SDI. The frame supports redundant power, control, and a hot-swappable 144X144 Crosspoint matrix. I/O cards allow easy expansion in groups of 36 inputs or 36 outputs per card which simplifies future expansion without the need to replace cards or frames. The frame system is based on the field proven Cheetah line of routers and maintains the same high reliability always found in the PESA brand.

The PESA Cheetah 144NE Fiber is a modular design featuring eight I/O slots. Each I/O supports up to 36 fiber optic connections using standard LC-type fiber SFP modules. The I/O fiber cards are based on 1310nm singlemode lasers but can be used in multimode applications with reduced performance specifications. Singlemode fiber allows signal transports up to 10Km while multimode is limited to approximately 600m with 50/125 cables.

Taking advantage of a small 4RU footprint, the Cheetah 144NE Fiber Router can be configured as a partially loaded frame allowing for easy future field expansion. The system's integrated Matrix Frame Controller monitors the health of the unit and automatically recognizes any new I/O cards. Once the cards are installed, the Cheetah 144NE Fiber Router can be easily configured with the 3500PRO or PERC 2000 System Controller software. The Cheetah 144NE Fiber Router can be controlled from the PESA control system or by any third-party control system such as Crestron® or AMX®. Its compatible with all PESA RCP panels, and also supports web based control via our ClikControl network software. To complete the full end-to-end transmission and routing system, the Cheetah 144NE Fiber supports all QFX Series fiber extender modules. PESA's VidBlox media extenders allow signal conversion from DVI or VGA signals up to 2560 X 1600, while the QuadBox™ media extenders allow simple, low-cost fiber to coax conversion. Cheetah 144NE Fiber's 3G-SDI Transport allows signal switching up to 3Gbps while offering digital switching capability to support SD-SDI, HD-SDI, and 3G-SDI without the need for external media converters. The frame is designed as a high performance HD Multirate video router supporting SMPTE 259M, 292M, 372M and 424M standards. Matching the transport paths of the QFX series media converters to perform within the 3G-SDI transport insures accurate motion video transport without pathological errors or the need to have end-to-end mux/de-mux modules.

Features and Benefits

- Small Frame Size – 144X144 in 4RU
- SD/HD/3G Multi-rate from 143Mbps to 3.0Gbps
- Digital video signals for SMPTE 259M, 292M, 372M, 424M
- Matrix granularity - 144X144 Matrix Card
- I/O Modules in groups of 36
- Front loading, hot-swappable matrix, power, control for 24/7 operations
- Redundant power, control and matrix cards available
- Available in fiber I/O
- Wide range of rack-mount and desktop control panels
- Supports PESA router control and many 3rd party control systems
- Lower power consumption



FIBER INPUT CARD

- Number of Inputs per module 36
- Type SFP (Small Form Factor Pluggable)
- Model Singlemode or Multimode
- Wavelength 1310nm
- Optical Input Power -18dBm (min.), 0dBm (max.)
- Distances supported 10Km (SM, 9/125u)
400m (1200ft) 50/125u
200m (600ft) 62.5/125u

NOTE: Operating distances are approximate. Cable loss and other interconnects can affect total light loss between SFP modules



FIBER OUTPUT CARD

- Number of Inputs per module 36
- Type SFP (Small Form Factor Pluggable)
- Model Singlemode or Multimode
- Wavelength 1310nm
- Optical Output Power -10dBm (min.), -3dBm (max.)
- Distances supported 10Km (SM, 9/125u)
400m (1200ft) 50/125u
200m (600ft) 62.5/125u

NOTE: Operating distances are approximate. Cable loss and other interconnects can affect total light loss between SFP modules

I/O Sizes Supported In 4RU	36X36	36X72	36X108	36X144
	72X36	72X72	72X108	72X144
	108X36	108X72	108X108	108X144
	144X36	144X72	144X108	144X144

Digital Specifications

Inputs / Outputs for Coax	Dual Optical SFP Module
Connector Type	36
Number of Connectors per IO	LC
Connector style	>15dB from 5Mhz to 1.5Ghz
Return Loss	>10dB, 1.5Ghz to 3GHz
Output Signal Level	800mV, p-p, +/-10%
Output Signal Polarity	Non-inverted
Input Data Rates	143 Mbps to 1.5Gbps - ASI/SD/HD 143 Mbps to 3.0Gbps - SD/HD/3G
Optical Input wavelength	Singlemode (1310 optimal)
Input Power	-20dBm (min) -1dBm (max)
Output Data Rates	143 Mbps to 3.0Gbps Auto reclocking to SMPTE 259M, 292M 424M. Bypass mode - 143Mb to 3Gbps
Output Power	-9dBm (min) -3dBm (max)
Optical Loss Budget	Approx. 9dB assumes two optical connections over a 10Km singlemode fiber
Jitter	< 0.2UI, p-p, SMPTE 259M, 292M <0.3UI, p-p, SMPTE 424M compliant with RP-184
Fiber Transmission Specifications	IEC 61754-20-1
Typical Operating Distances	9/125u (10Km / 6.25 miles) 50/125u (400m / 1200 feet) 62.5/125u (200m / 600feet)

NOTE: Operating distances are approximate only. Cable loss and other interconnects can affect the total light loss between a TX and RX path. These are only estimates and may not reflect the actual lengths achievable.

Digital Signal Performance

Inputs / Outputs for Coax	Auto-detect compliant with
Re-clocking	SMPTE 259M, 292M, 424M
Rise/Fall Time	< 600 ps, +/- 10% SMPTE 259M < 270 ps, SMPTE 292M < 135ps, SMPTE 424M
Overshoot	< 10% of amplitude (max.)
Alignment Jitter	< 0.2UI , 100kHz to 150MHz < 0.3UI, 150MHz to 300MHz
Timing Jitter	<1.0UI from 10Hz to 100kHz SMPTE 259/292 < 2.0UI from 10Hz to 100kHz SMPTE 424M
Operational Mode Selections	AUTO - detects correct signal type MANUAL - force to a specific format BYPASS - allow signals to pass w/o reclocking
Data Rates Supported	143Mbps to 3.0Gbps

Environmental

Cooling	Forced air front to back
Operating Temperature	0-40 degrees (C)
Operating Humidity	10-90% non-condensing

AC power connections

144NE	IEC - 60320 connector 95VAC to 240VAC, 47-63Hz Maximum watts per from - 450W
-------	--

Safety and Conformance

FCC, CE, UL, RoHS / WEEE

warranty 3 years parts and labor

Control and Interfaces

panel communications	RS-485 / 3 pin detachable
control communications	RS-232 / 422 / Ethernet
connector type	9 pin D-SUB, RJ-45
control system	PESA 3500PRO, PERC2000
Third Party Interfaces	use PESA CPU Link
Network Software	QuView PNC Network interface
Number of Panels per frame	600

Cooling

internal cooling fans with auto sensing speed adjustments
144NE 2 fans

Mechanical

Dimensions 19.00W X 7.00H X 21.00D
482.6mm X 177.8mm X 533.4mm

CH144NE3G-36X36-F	Cheetah 144NE Optical router, 36 x 36 SDI to 3Gb in 4RU
CH144NE3G-36X72-F	Cheetah 144NE Optical router, 36 x 72 SDI to 3Gb in 4RU
CH144NE3G-36X108-F	Cheetah 144NE Optical router, 36 x 108 SDI to 3Gb in 4RU
CH144NE3G-36X144-F	Cheetah 144NE Optical router, 36 x 144 SDI to 3Gb in 4RU
CH144NE3G-72X36-F	Cheetah 144NE Optical router, 72 x 36 SDI to 3Gb in 4RU
CH144NE3G-72X72-F	Cheetah 144NE Optical router, 72 x 72 SDI to 3Gb in 4RU
CH144NE3G-72X108-F	Cheetah 144NE Optical router, 72 x 108 SDI to 3Gb in 4RU
CH144NE3G-72X144-F	Cheetah 144NE Optical router, 72 x 144 SDI to 3Gb in 4RU
CH144NE3G-108X36-F	Cheetah 144NE Optical router, 108 x 36 SDI to 3Gb in 4RU
CH144NE3G-108X72-F	Cheetah 144NE Optical router, 108 x 72 SDI to 3Gb in 4RU
CH144NE3G-108X108-F	Cheetah 144NE Optical router, 108 x 108 SDI to 3Gb in 4RU
CH144NE3G-108X144-F	Cheetah 144NE Optical router, 108 x 144 SDI to 3Gb in 4RU
CH144NE3G-144X36-F	Cheetah 144NE Optical router, 144 x 36 SDI to 3Gb in 4RU
CH144NE3G-144X72-F	Cheetah 144NE Optical router, 144 x 72 SDI to 3Gb in 4RU
CH144NE3G-144X108-F	Cheetah 144NE Optical router, 144 x 108 SDI to 3Gb in 4RU
CH144NE3G-144X144-F	Cheetah 144NE Optical router, 144 x 144 SDI to 3Gb in 4RU

CH-MATRIX144-3G	Cheetah - 144 x 144 Crosspoint Card
81906530930	3Gb-SDI Fiber Input Card - Cheetah 144NE
81906531080	3Gb-SDI Fiber Output Card - Cheetah 144NE



ORDERING INFORMATION

U.S. Corporate Headquarters

PESA

103 Quality Circle, Suite 210

Huntsville, Alabama 35806

TEL: +1 256-726-9200

FAX: +1 256-726-9271

sales@pesa.com

Warranty:

Products manufactured by PESA are manufactured for performance and reliability. PESA warrants these products against defects and workmanship for a period of three years.

Services:

Customer support is available 24 hours a day, 7 days a week by calling 1-800-323-7372.

International customers call

+1 (256) 726-9222.

In addition to our customer service support center, we offer extended warranties and online technical resources via our website at: **www.pesa.com**

On site or factory training is available for control system operations, technical, and maintenance training. Contact our technical support group for additional information.

Spares can be ordered through your area sales representative.

Specifications subject to change without notice.

www.pesa.com

MKTDOC-0015A311