



DECTRIS

Next Generation X-Ray Detectors

DECTRIS EIGER Detector Systems

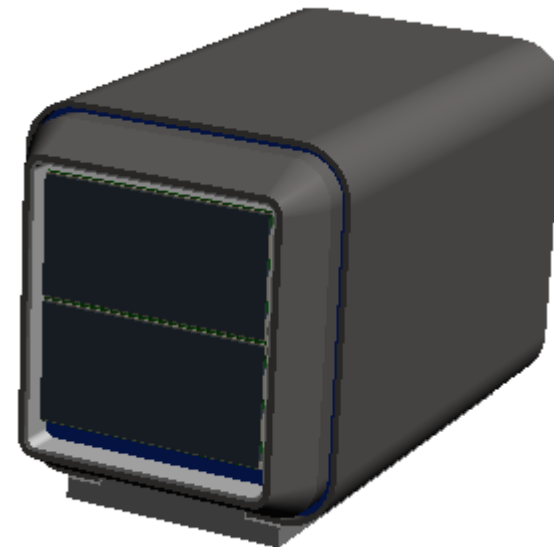
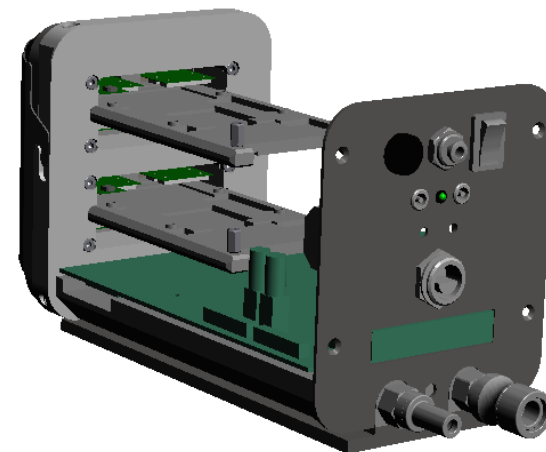
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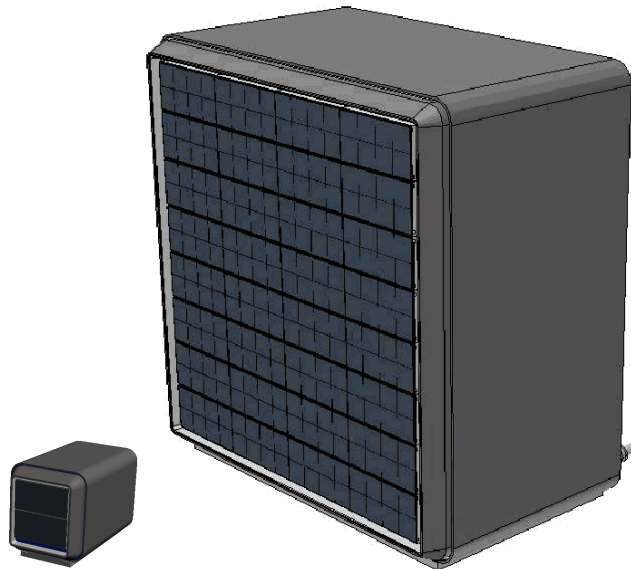
EIGER 1M

Number of Modules	2
Number of MCBs	4
Number of DCBs (4x10Gbit Link)	1
Clock speed	50 MHz DDR
Framerate	3 kHz
Summation	4096 images on MCB
Cooling	water cooled modules and boards
Dimensions	214 x 114 x 130



Planned EIGER Product Family

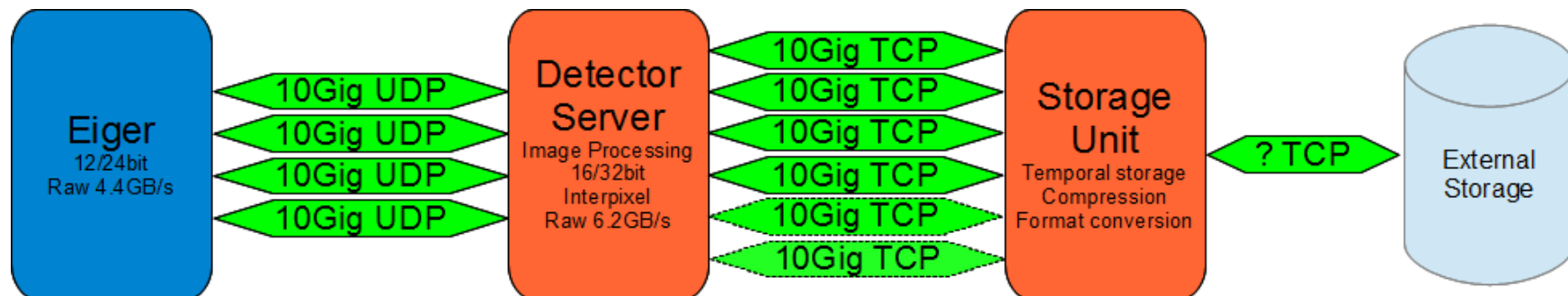
Type	# Modules	# MCB	# DCB	Framerate	Summation	DCB-PC
1M	2	4	1	3 kHz	-	40Gbps
4M	8	16	1	750 Hz	2 @ 1.5 kHz	40Gbps
9M	18	36	4	333 Hz	3 @ 1 kHz	40Gbps
16M	32	64	4	187 Hz	6 @ 1.125 kHz	40Gbps



Readout Requirements

- Real-time data processing
 - Sustained data rates of 5 GB/s (4x10GBase-T)
- Modular architecture
 - Parallelization (*e.g.* multi-core, memory)
 - Scalability (*e.g.* 1M-16M)
 - Stability
- Integration
 - API for direct access from user applications
 - Standards (*e.g.* HDF5)
 - System-independence

EIGER Detector System



- Eiger detector
- Detector server
 - Detector control
 - Image preprocessing (*e.g.* flatfield, rate correction)
 - Full image composition
- Storage unit
 - Intermediate storage with high I/O bandwidth (extends total acquisition time)
 - Compression
 - Format conversion (*e.g.* HDF5)
 - Interface to beamline IT infrastructure (*e.g.* distributed control software)