



Product Brief
PSA-110 ATCA AMC Carrier
10G Managed Switch Card

Rev 0.7

Summary:

The JumpGen Systems PSA-110 is the Fulcrum FM3224/FM4224 10 Gigabit Ethernet switch based AMC carrier board in a single slot aTCA form factor. The board supports up to 3 Mid-Size B+ AMC bays, each with two 10GBase-KX4 Fat Pipe and two 1000Base-KX Base interfaces. Optionally, two SFP+ interfaces and an HD-15 video connector are available on the front panel when used in a 2 AMC bay configuration.

The PSA-110 provides four 10GBase-KX4 Fabric Channel and five 1000Base-T Base Channel interfaces to the aTCA backplane. Therefore the PSA-110 can be used either as a Node Board or a 5-slot Hub Board in a standard aTCA chassis (another example application could use 5 PSA-110 boards all operating in a full mesh configuration). The 3 AMC bay and 2 AMC bay configurations both support front panel RJ-45 10/100/1000Base-T Ethernet, two USB ports, and a serial port. There is also an RTM interface that supports two more USB ports and a digital video DisplayPort interface.

The on-board 32-nm Intel Core i7 CPU with 72-bit DDR3 memory provides management functions for the Fulcrum switch, as well as providing a dual-core environment for running arbitrary application code. Management functions can either be provided by Fulcrum's ControlPoint management application or by direct access to the FocalPoint API.

CPU configuration options include multiple speeds, multiple memory configurations, multiple SSD sizes, and an optional PCIe connection to AMC B2 for use with AMC.1 cards or SCOPE-compliant AMC cards. Also available is CPU access to AMC.3 cards in any of the three AMC bays.

Features:

10 Gigabit Ethernet Switch	Fulcrum FM3224/FM4224 24-Port 10 Gigabit Ethernet Switch <ul style="list-style-type: none"> • Integrated SerDes • On-chip Multi-port Stream Memory and buffer management • Cut-through, Priority queues and Jumbo Frame support for high-performance cluster • Extended VLAN for Logical Partitioning • Managed Switch Options: <ul style="list-style-type: none"> ○ Fulcrum ControlPoint software for IP routing functions ○ Basic configuration via FocalPoint API
Processor / Switch Management	Intel® Core™ i7 processor <ul style="list-style-type: none"> • Integrated Memory Controller Hub (MCH) • Ibex Peak-M Platform Controller Hub (PCH) • Two channel 72-bit ECC DDR3 memory running up to 1066MHz 4-16 GB Solid State Drive mass storage SSD and PXE boot support Serial console redirection

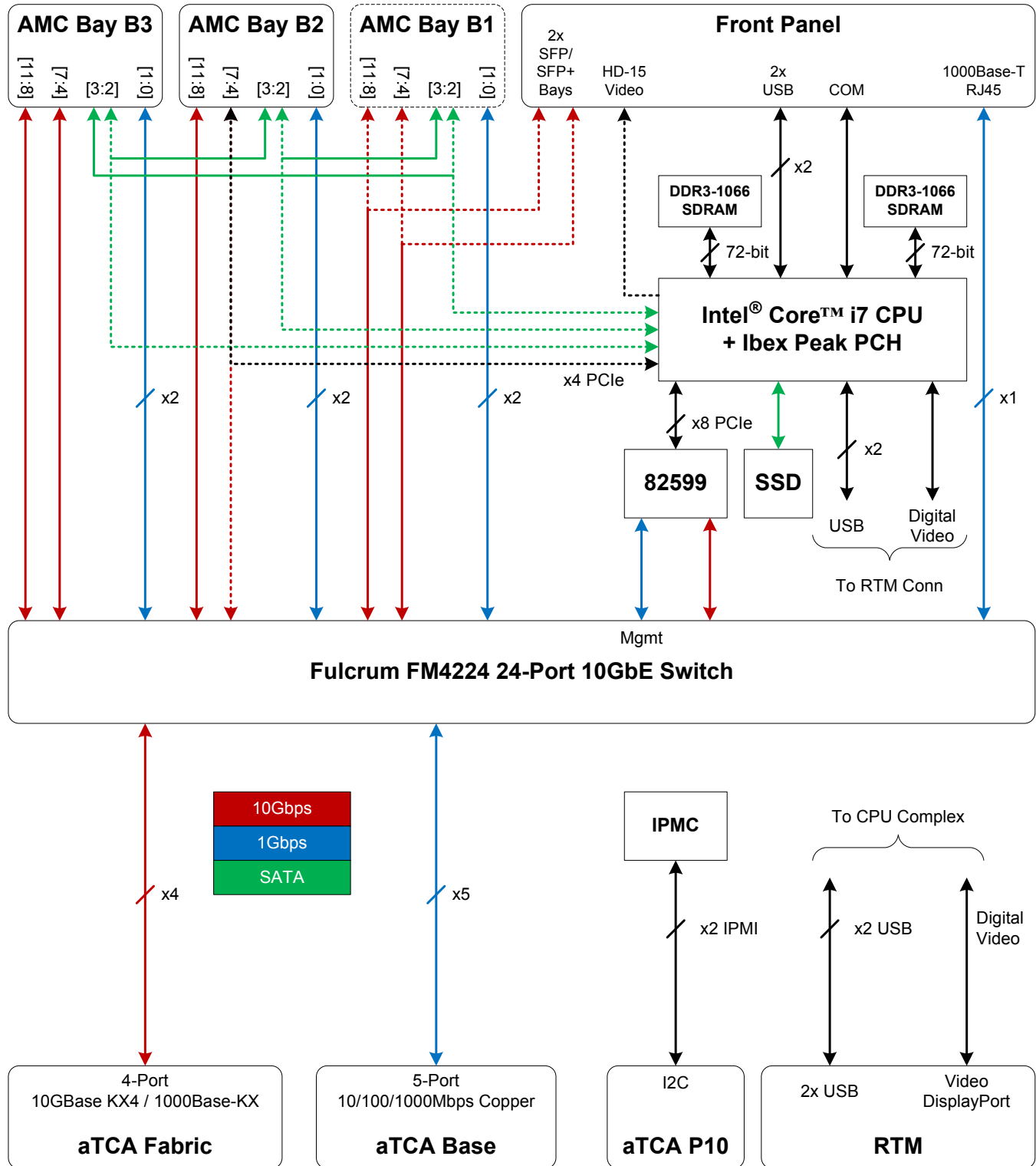
AMC Bays	<p>Three Mid Size B+ AMC Bays</p> <ul style="list-style-type: none"> • Two 10GBase-KX4 interfaces on AMC Fat Pipe Lane[4:7] and Lane[8:11] • Two 1000Base-KX interfaces on AMC Common region Lane[0] and Lane[1] • Rotational Lane[2] and Lane[3] routing scheme for flexible storage support
Front Panel Interfaces	RJ-45 10/100/1000 Ethernet, two USB 2.0 interfaces, COM port, and optional 2 SFP+ bays and HD-15 video, in lieu of one AMC bay
aTCA Backplane Interfaces	<p>Five 1000Base-T aTCA Base Channel interfaces</p> <p>Four 10GBase-KX4 Fabric Channel interfaces</p>
RTM Interface	Two USB 2.0 interfaces and a digital video DisplayPort interface.
Assembly options	<ul style="list-style-type: none"> • 3 mid-size AMC bay configuration (standard option). • 2 mid-size AMC bay configuration with 2 SFP+ interfaces and standard HD-15 analog video interface.
	<ul style="list-style-type: none"> • AMC bays' Lane[2] / Lane[3] rotation between each other (standard option). • AMC bays' Lane[2] interfaces to CPU SATA ports (example application would support CPU access to AMC hard drives).
	<ul style="list-style-type: none"> • 10GBase-KX4 interfaces on second AMC Lane[4:7]; note, this is the same as other AMC bays (standard option). • PCIe x4 interfaces to second AMC bay Lane[4:7]; allows CPU access via PCI Express to second AMC bay (other AMC lanes unchanged).
Environmental	<p>Operating temperature: 0 to 55 °C</p> <p>Humidity: 0 to 95% (non-condensing)</p> <p>Power Consumption: 85W (with no AMC cards installed)</p>

PSA-110 Intel® Processor Options:

Processor Number	# of Cores	Core (GHz)	L2 Cache (KB)	L3 Cache (MB)	TDP (Watt)	Process
i7-620LE	2	2.0	512	4	25	32nm
i7-620UE	2	1.067	512	4	18	32nm
i5-520UE	2	1.067	512	3	18	32nm

Other CPU options are available. Contact sales@jumpgen.com for more options.

Block Diagram:



Placement:

