

# APR2i: PacketRunner2 with Intel Processor



## Secure Data & Control Plane Application and Packet Processing for LTE and All IP Networks



### Introduction

The Adax PacketRunner2i (APR2i) is an intelligent carrier blade and Communications Appliance for process intensive telecom applications. It has 4 AMC bays to take any combination of Adax or other industry standard midsize AMC modules. The on-board Intel E3-1268-Lv3 processor has 4 cores with 8 threads and runs at 2.5GHz normal or 3.3GHz turbo, giving developers a high-performance, highly flexible and scalable blade for LTE, 4G, and all other demanding telecom networks.

The APR2i delivers the perfect Communications Appliance or ATCA subsystem for secure data and control plane applications. The APR2i uniquely offers the combination of scalability and access to host processing power at a viable price point supporting IP transport, packet processing and applications on a single blade without the need for a general CPU or ProcessorAMC. This is the industry's most cost-effective, multi-purpose solution which combines security and high-performance control and data plane services from one tightly coupled resource.

### The Adax Advantage

Utilizing the embedded services of both the industry-leading Intel Xeon E3-1268-Lv3 processor and Cavium Octeon II family of multi-core processors, the Adax PacketRunner2i is specifically designed for networking, security, packet filtering and Deep Packet Inspection (DPI) providing a high-performance solution for those demanding telecom applications. The Intel processor hosts the application and the Cavium OCTEON II processors provide front-end processing of Layer 2 protocols and hardware acceleration of SCTP, M2PA, DPI, and IPsec with efficient separation and processing of both control and data plane flows. Specific Cavium cores are dedicated entirely to security applications, offloading the host processor from this compute-intensive work. The APR2i makes the most of chip-based intelligence by including an onboard Marvell switch for 10GbE data plane transfer between

the Pkt2-AMCs and efficient 1GbE, 10GbE and 40GbE external connections. Scalability and Flexibility are what make Adax unique. The depth and breadth of the Adax product range provides the flexibility to configure options that meet individual customer requirements by adding and removing cards as required. For example being able to add the Cavium based AdaxPkt2-AMC modules to the APR2i blade for extra processing power rather than having to add a complete processor blade provides a highly scalable and cost-effective solution.

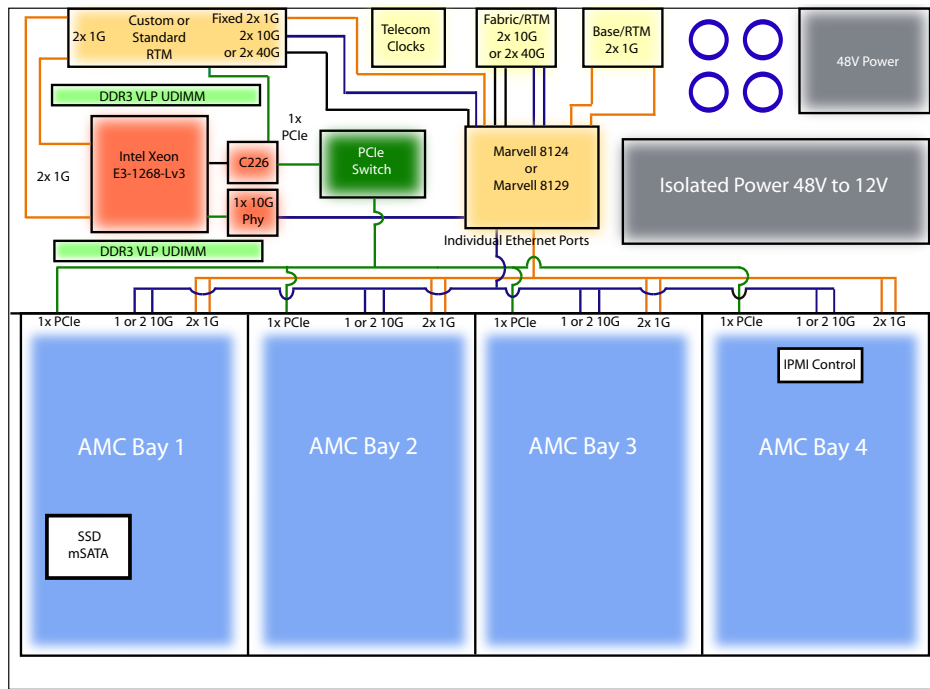
### Integrated Solution

The integrated solution of the APR2i and Pkt2-AMCs in a complete 1U or 2U system delivers the perfect Communications Appliance. Multiple 10G connectivity is built in as standard with the on-board switch and the optional 40G version requires no extra switch blade or module. Remote monitoring and management is included using a simplified shelf manager for temperature and fan control. Running standard Linux makes for ease of portability between applications and platforms.

The Adax Communications Appliance provides robust, high-speed, security functions, packet processing and control and data plane services for any network node or telecom application server. The result is excellent system performance and unparalleled ease of integration in a cost-effective 1U or 2U platform that delivers all the advantages of ATCA at a significantly lower price point.

### APR2i Features

- Intelligent, High-Performance, 4-Bay Communication Appliance blade or ATCA carrier blade, combining the power of an Intel processor with support for multiple Cavium processor-based AMC boards
- Intel Xeon E3-1268-Lv3, embedded processor, 4 cores, 8 threads, 2.5GHz normal, 3.3GHz turbo
- Combine with Adax Cavium OCTEON II 6645 based Pkt2 AMCs
- Integrated on-board 40GbE Marvell 98CX8124 Ethernet switch delivers:
  - 16 x 1Gbps or 4 x 10Gbps interfaces to the network
  - 2 x 10GbE or 2 x 40GbE ports to Fabric Domain
  - Option of Marvell 98CX8129 for 2 x 10GbE to each AMC
- 4, 8, 16 and 32GB DDR3 RAM options
- Rear Transition Module (RTM) with 1GbE, 10GbE and 40GbE port options and mSATA upto 1024GB
- Additional on-board mSATA SSD option up to 1024GB



**APR2i Block Diagram**

## Technical Specifications

### Standards:

- PICMG ATCA 3.0 and 3.1, Region 3 Option 9
- IPMI v1.5
- IEEE 802.3
- Designed to meet Belcore GR-63-CORE

### Processor:

- Intel Xeon E3-1268-Lv3 4 cores, 8 threads, 2.5GHz and 3.3GHz turbo
- 8MB of L3 cache
- Ethernet Switch:
- Marvell 98CX8124/8129. Full wirespeed switching for 4x 40GbE, 5x 10GbE, 12x 1GbE (additional 4x 10GbE with Marvell 98CX129)

### Memory:

- 4, 8, 16 or 32GigaBytes of DDR3 Memory (4GB standard)
- 32MB of Flash Memory
- mSATA SSD options up to 1024GB

### Dimensions:

- 1U, single slot
- 28 cm x 32 cm

### Interfaces

- 4 AMC bays, each with 6 x 1GbE, or 1 x 10GbE & 2 x 1GbE, & 1 x PCIe
- 2 front panel micro-USB ports
- 1 micro-USB to the RTM
- 2 40/10GbE to Fabric
- 2 40/10GbE to RTM

### Power and Safety:

- Typical power: 105W (blade only) - 210W (including AMCs)
- Maximum power: 240W

### Electrical and Safety:

- Certified: US/16222/UL IEC 60950-1 (2005) Second Edition; FCC Part 15B
- Class A; VCCI; EN55022:2006 +A1;EN55024:1998 +A1:2001, +A2:2003
- Designed to Meet: EN61000-4-2,3,4,6

### Environmental Conditions:

- Operating Temperatures -5C to 55C
- Storage Temperatures -40C to 65C
- Relative Humidity 10% to 90% (non-condensing)
- Vibration: Operating: 5-100Hz:0.25G  
RMS Passive: 100-500Hz:1G RMS

APR2i 0416/04  
All specifications are subject to change without notice

**Adax** is an industry leader in high performance packet processing, security and network infrastructure for Legacy to LTE networks. Modular, scalable and flexible, the Adax LTE-EPC solutions, SIGTRAN and SS7 Signaling platforms, as well as the DPI, IPsec Security, and GTP acceleration products enable customers to build the solutions they need, creating a smarter network infrastructure for all.



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