APR2c: PacketRunner2 with Cavium Processor

adax
Legacy to LTE

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

Introduction

The Adax PacketRunner2c (APR2c) 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 OCTEON II 6645 Processor with 10 cores at 1.1 GHz gives developers a high performance, highly flexible and scalable blade for LTE, 4G, and all other demanding telecom networks. The APR2c delivers the perfect Communications Appliance or ATCA subsystem for secure data and control plane applications.

The APR2c uniquely offers the combination of scalability and access to host processing power at a viable price point supporting IP transport, packet processing, DPI and security 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 the industry leading Cavium Octeon II family of multi-core processors, the Adax PacketRunner2c and Pkt2-AMC boards combine features and performance. The Cavium multi-core MIPS64 processors are designed specifically for networking, security, packet filtering and Deep Packet Inspection (DPI) and on the Adax boards provide a high performance solution for those demanding telecom applications. With Cavium OCTEON II processors, front-end processing of the Layer 2 protocols can reside on the Pkt2-AMCs providing hardware acceleration of SCTP, M2PA, DPI, and IPsec and efficient separation and processing of both control and data plane flows.

The APR2c makes the most of chip-based intelligence by including an on-board 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 Adax Pkt2-AMC modules to the APR2c blade for extra processing power rather than having to add a complete processor blade provides a highly-scalable and cost-effective solution in a small footprint.

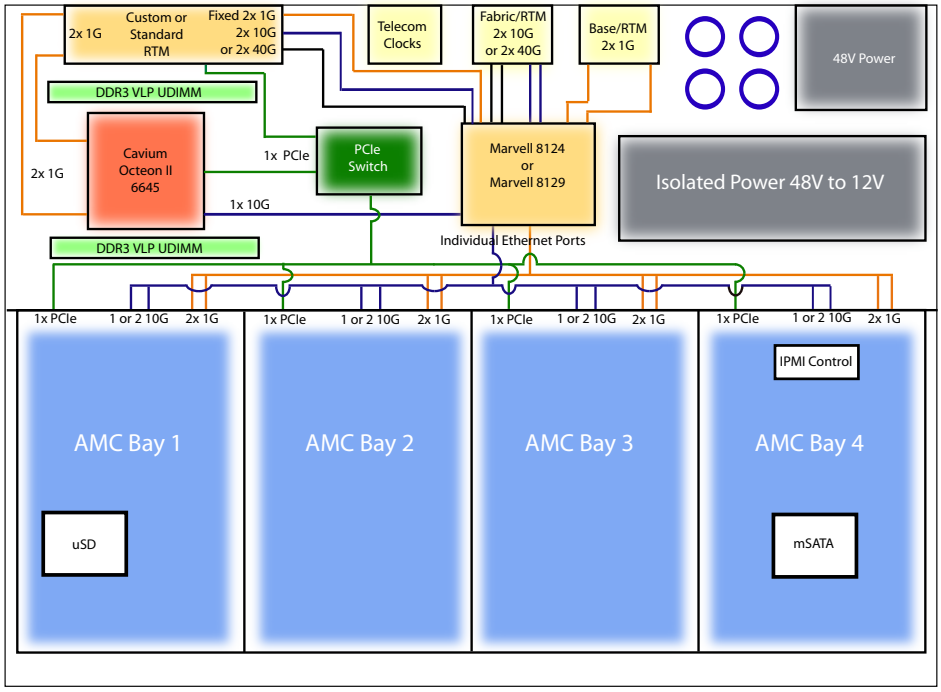
Integrated Solution

The integrated solution of the APR2c and Pkt2-AMCs in a complete 1U or 2U system delivers the perfect Communications Appliance. The on-board switch provides 16 x 1GbE or 4 x 10GbE interfaces to the network and 2 x 10GbE or 2 x 40GbE interfaces to the core without the need for an 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

APR2c Features

- Intelligent, High Performance, 4-Bay Communication Appliance blade or ATCA carrier blade, combining the power of multiple Cavium processor-based AMC boards
- OCTEON II 6645 Processor with 10 cores at 1.1 GHz
- Combine with Adax Cavium OCTEON II 6645 based Pkt2-AMCs for a massive 5 processor solution
- Integrated on-board 40GbE Marvell 98CX8124 Ethernet switch delivers:
  - Multiple 1Gbps or 10Gbps interfaces to the network
  - Dual 10GbE or 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 up to 1024GB
- Additional on-board mSATA SSD option up to 1024GB



APR2c 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:

- OCTEON II 6645 Processor with 10 cores at 1.1 GHz
- 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

APR2c 0416/04

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.

adax
Legacy to LTE

adax inc
2900 Lakeshore Ave,
Oakland, CA 94610, USA
Tel: (510) 548 7047
Fax: (510) 548 5526
Email: sales@adax.com

adax europe ltd
Reada Court, Vachel Road,
Reading, Berkshire, RG1 1NY, UK
Tel: +44 (0) 118 952 2800
Fax: +44 (0) 118 957 1530
Email: sales@adax.co.uk

adax china
Unit B-4 27 floor,
No. 888 Wan Hang Du Road
Shanghai 200042, China
Tel / Fax: +86 21 6386 8802
Email: sales@adax.com