AP148
Akronite Reference Board

Overview

AP148, a Qualcomm Atheros reference design, is based on Akronite series. It comprised of IPQ8064, which is based on Dual-Core Snapdragon-based Krait CPU, with an ARM-v7-compliant instruction set. Each Krait CPU includes a 128-bit SIMD DSP, referred to as Venum. It is a "Stripped-Down" Snapdragon, Qualcomm 's very popular and powerful CPU for mobile handsets.

It is Qualcomm's answer to support high bandwidth radios, like the Beeliner 4x4 11ac radios, as well as many 11ac radios all on the same board.

It can support a number of 3rd party applications to make the device more useful for home, such as Streamboost and Alljoyn.

IPQ8064

Usage

AP148 can be used for many applications

- Dual Band Dual Concurrent (both 11ac) WLAN reference design

- High-Performance 5 Gigabit Ethernet port Home Gateway/ Smart Router/ Media Server

- SATA3.0 interface, can connect to external Solid State Disk (SSD) to do "fog computing"

- Dual USB 3.0 connectors which operates in the host mode supporting super speed.

- Supports NAND Flash, thus have larger capacity to support a lot of applications.

- Supports Open-WRT (12.09 Attitude Adjustment)

AP148 Reference Board

- Uses IPQ8064, Dual-Core Snapdragon-based Krait CPU @ 1.4 GHz

- ARM-v7-Compliant

- Features Set
  - RAM : 512 MBytes (32-bit DDR3/1066)
  - NOR Flash: 32 MByte
  - NAND Flash: 256 Mbyte
  - 5 x Gigabit Ports
  - 2 x PCIe 2.0 (RC) supports 2 x WLE900VX - Dual Band Dual Concurrent 11ac.
  - 2 x USB 3.0 (Host Mode Only)
  - 1 x SATA 3.0 Port
  - PCM/SLIC interface
  - I2C interface
  - UART Debug interface
  - JTAG Debug interface
  - Hardware Crypto Engine (for offload IPsec)

AP148 Reference Kit

- AP148 Reference Board

- 2 x WLE900VX radios (Dual Band 3x3 11ac)

- Serial Converter

- 12V, 4A power adapter

AP148 Notable Features

- Network Subsystem (NSS)
  - Accelerating the process of network packets
  - Consists of 2 multithreaded, network-accelerator cores at 733MHz
  - Each network-accelerator engines supports 12 threads of execution, operating in parallel. NSS functions include L2/L3 routing/bridging, Samba acceleration, LRO/TSO offload, connectivity accleration, as well as traffic management.
  - *Crypto Engines (AES, 3DES, SHA) available, for IPSec Hardware Encryption, reducing load on CPU.*

- NAND Flash (EBI2) Interface
  - The EBI2 interface supports NAND flash for boot memory or storage.
  - 8-bit NAND Flash

- GMAC supports IEEE 1588-2 Time Synchronization

- IPQ8064's PCM interface enable telephone connectivity.