Solos™-WV2 CX94616

Optimized Triple Play Chipset with Integrated ADSL2+, Wireless LAN, Multi-channel Voice and USB 2.0

Target Markets

- Wireless/DSL/Voice Integrated Access Device (IAD)
- Wireless/Ethernet WAN/Voice Integrated Access Device (IAD)
- Simple DSL to Voice Adapter

Applications

- Wireless/DSL/Voice Integrated Access Device (IAD)
- Ethernet-to-Wireless Bridge and Routers
- 802.11n ADSL2/2+ IAD with external 802.11n upgrade

Features

- TR-100/67 ANSI/ETSI compliant ADSL/ADSL2/ADSL2+
- Integrated high-performance ARM network processor
- Integrated VoIP support for up to two channels of G.711, G.726, G.729ab, G.722 and other codecs
- Integrated 802.11b/g MAC/BB and co-processor
- Integrated 10/100 Dual Ethernet MACs with support for Turbo MII (200 Mbps)
- Dual USB 2.0 Host/Device Support
- Support for Advanced INP with Erasure Decoding
- Cost effective FxO support
- Hardware VPN engine supporting DES, 3DES, AES, SHA-1, SHA-256, and MD5 operations
- Integrated power regulators

Development Tools/ Software

- Full support for advanced features such as IPTV quality of service (QoS), advanced firewall

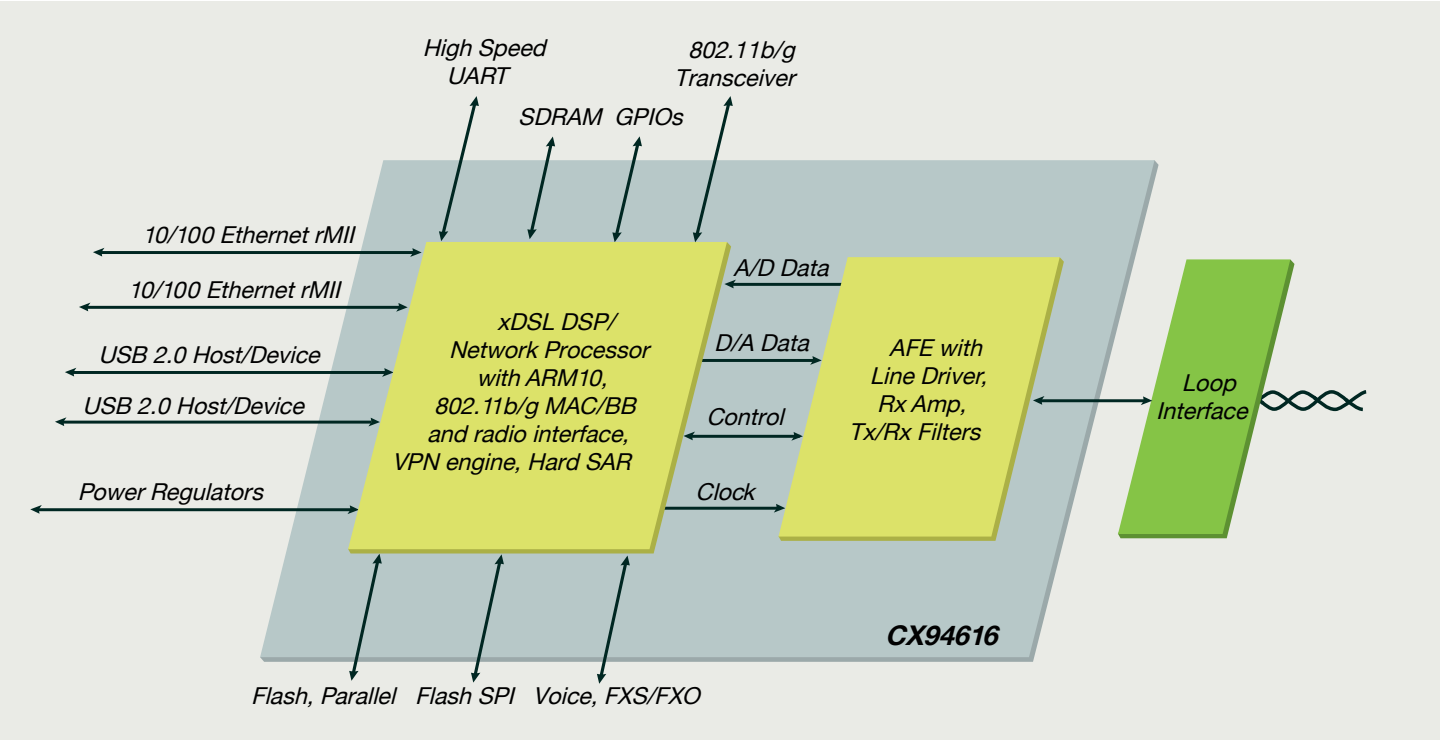
The Solos-WV2 CX94616 chipset includes a highly integrated analog front end (AFE) and a multi-processor chip with integrated multi-channel voice, USB 2.0 and 802.11 b/g MAC and baseband functionality. The CX94616 includes all the interfaces required to enable feature-rich DSL and Ethernet CPE platforms.

The Solos-WV2 CX94616 is part of a new family of CPE products from Ikanos designed to leverage common network processor, DSP firmware, software, and hardware efforts across multiple applications from simple DSL bridges to high-performance wireless enabled integrated access devices (IADs).

Companion chips to this product include the CX50321 Wi-Fi® 802.11b/g transceiver, CX20560 1-channel and CX20559 2-channel VoIP SLIC with integrated codec support. Other products in this family include the CX94611 (ADSL2+ chipset with integrated wireless LAN) and the CX94415 (ADSL2+ chipset with PCI).

An integrated 802.11 a/b/g MAC/baseband and wireless co-processor in the CX94616 interfaces to Ikanos' CX50321 Wi-Fi® transceiver. The optimized Wi-Fi architecture reduces the number of components and improves manufacturing and quality with a repeatable and easily tunable Wi-Fi front end. The CX94611 has been designed to accommodate advanced wireless features such as push-button Wi-Fi Protected Setup (WPS) to easily and securely connect to wireless devices for reliable Wi-Fi coverage with both data and multimedia streams. In addition to integrated 802.11a/b/g applications, the flexible wireless co-processor can be used for higher speed 802.11n applications.

Solos™-WV2 CX94616 Block Diagram



The PCM and SPI bus on the Solos-WV2 CX94616 can be used to connect external SLICs to the internal voice engine allowing a 2FXS/1FXO VoIP solution, running complex algorithms such as G.729ab, G.726, G.722 or G.711 on each channel. The programmable architecture of the CX94616 allows for voice upgradeability to other codecs and provides an upgrade path for emerging codec support. The PCM and SPI bus may also be used for DECT and ISDN applications.

The CX94616 handles connections to an Ethernet PHY, Ethernet switch, or HomePlug®/ HomePNA™ through two 10/100 Ethernet MACs with rMII interface. Support for dual USB 2.0 host/device applications is available to attach peripherals such as printers, network attached storage, 3G Uplink devices, cameras, or other USB products. Both parallel and serial flash (SPI) support is included in the CX94616 for maximum design flexibility. The device interfaces to high speed SDRAM using a 16/32-bit wide connection and includes additional GPIOs for further expansion.

The CX94616 incorporates a flexible dedicated DSP, which supports multiple DSL standards (TR-100/TR-67 compliant) including ADSL, ADSL2, ADSL2+ (Annexes A, B, M, I, J and L), using proven firmware to reduce time-to-market, and is fully programmable to give OEMs a secure, stable path for future upgrades and features. The CX94616 is equipped with IPTV and triple play ready features such as an erasure decoding support to provide a superior IPTV/ triple play protection of DSL line against noise interference.

At the center of the CX94616 chipset is a high-performance ARM™-based RISC processor core with dedicated Flow Cache Engine (FCE)-engine acceleration to meet the line rate throughput during maximum system loading. The platform supports industry standard operating systems such as Linux® and other 3rd party operating systems. To assist the processor, additional hardware engines, including a dedicated Wi-Fi processor, and hardware ATM SAR, are integrated to support compute intensive tasks. The software solutions for the CX94616 include full support for advanced features such as IPTV quality of service (QoS), advanced firewall, and the Broadband Forum's initiative to standardize and simplify the provisioning and configuration of the DSL gateway.

ikanos™

Product Features

- Support for ADSL/ADSL2/ADSL2+ (G.992.1, G.992.2, T1.413, G992.3, G.992.5) with optimized AFE designed to meet ADSL (TR-067) and ADSL2+ (TR-100) requirements
- Integrated field-proven xDSL DSP core with Annex A, B, M, I, J, and L support
- IPv6 ready
- Comprehensive QoS features and IPTV Ready with enhanced Impulse Noise Protection (INP) through larger RS memory and Erasure decoding
- Optimized power management with support for dying gasp
- Dual Ethernet MAC support ideal for ADSL2+ and/or Ethernet WAN Gateway Applications
- 10/100/200 Turbo MII support
- Support for 2 USB 2.0 Host/Device Interfaces
- Support for parallel and serial (SPI) Flash
- Advanced wireless features including WPS, Multiple SSID, and Smart Antenna support
- MGCP and SIP support for VoIP
- Modular IP stack with comprehensive networking protocol support including advanced bridging and routing capabilities, Dynamic Host Configuration Protocol (DHCP), Point-to-Point Protocol over Ethernet (PPPoE), point-to-point protocol over ATM (PPPoA)
- PPP and tunneling features and routing information protocol (RIP)
- Simple Network Management Protocol (SNMP) agent and tools
- Stateful Packet Inspection (SPI) firewall and network address translation (NAT) security solution
- ATM SAR engine supporting Unspecified Bit Rate (UBR), Constant Bit Rate (CBR) and other service classes
- Common customer development environment and tools across ADSL to VDSL2 products
- Reference designs available for rapid prototyping
- Easy upgrade to cost affective 802.11n IAD

For more information, contact Ikanos.

Ikanos Communications, Inc.
47669 Fremont Boulevard
Fremont, California 94538

www.ikanos.com

P +1 510.979.0400

F +1 510.979.0500

E sales@ikanos.com