Solos™-WV CX94615

High Speed ADSL2+ Chipset with Integrated Wireless LAN and Voice

Target Markets

- Customer premises equipment

Target Applications

- Wireless/DSL/Voice Integrated Access Device (IAD)

Features

- Support for ADSL/ADSL2/ADSL2+
- Integrated MAC/BB for high speed 802.11a/b/g interfaces to Wi-Fi transceivers and RF front end modules
- Integrated VoIP support for up to two channels of G.711, G.726, G.729ab, and other codecs
- Integrated high performance ARM network processor
- Integrated power regulators to simplify power supply design and reduce overall system cost
- Support for USB 1.1 and 2.0 Host/Device applications
- High speed SDRAM interface
- Hardware VPN engine supporting DES, 3DES, AES, SHA-1, SHA-256, and MD5 operations
- Open OS support for Linux, ISOS, and third party stacks
- Support for extended impulse noise protection (INP) for better IPTV quality
- Support for Ikanos' CX205xx SLIC family with integrated codec

The Solos-WV CX94615 is part of a family of pin compatible customer premises equipment (CPE) products designed to leverage common DSP firmware, software, and hardware efforts across multiple applications from DSL bridges to wireless enabled DSL integrated access devices (IADs).

The chipset includes a highly integrated analog front end (AFE) and a single-chip network processor with both integrated voice and 802.11a/b/g MAC and baseband functionality. The CX94615 includes all the interfaces required to enable feature-rich DSL CPE platforms.

Other products in this family include the CX94410 (ADSL2+ chipset with enhanced INP) and the CX94610 (ADSL2+ chipset with integrated wireless LAN).

An integrated 802.11 a/b/g MAC/baseband processor in the CX94615 interfaces to Wi-Fi® transceivers and RF front-end modules. 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.

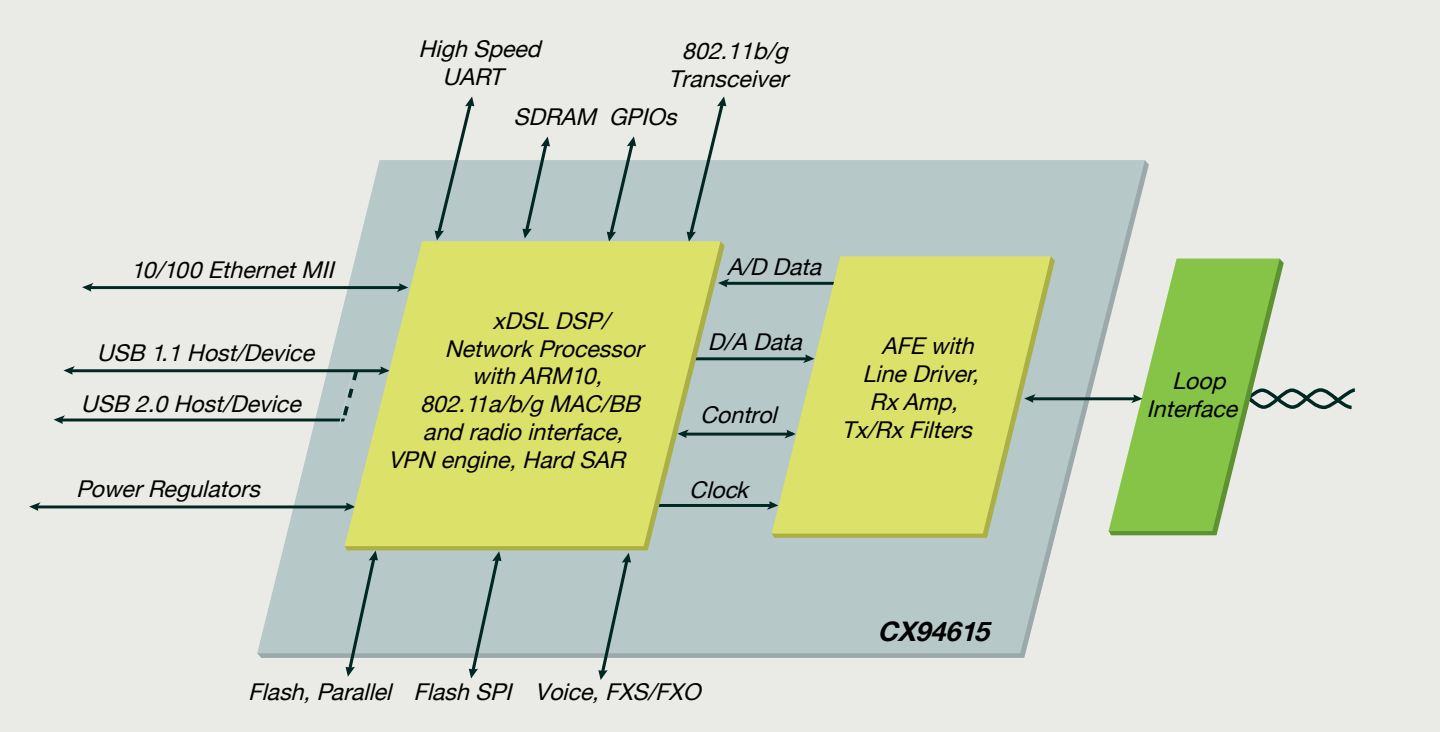
The CX94615 has been designed to accommodate advanced wireless features such as push-button Wi-Fi protected setup (WPS) to easily and securely connect to wireless devices, and full smart antenna support for reliable Wi-Fi coverage with both data and multi-media streams.

The PCM and SPI bus on the CX94615 can be used to connect external codecs and SLICs to the internal voice DSP. This creates a 2 FXS/1 FXO VoIP solution which is capable of running complex algorithms such as G.729ab, G.726 or G.711 on each channel. The programmable architecture of the CX94615 allows for voice upgradeability to other codecs and provides a seamless migration path for emerging wide-band codec support. Additional channels of voice can be added to the CX94615 using voice co-processors.

The CX94615 supports an Ethernet PHY, Ethernet switch, and HomePlug®/HomePNA™ devices through a 10/100 Ethernet MAC Media Independent Interface (MII). Support for USB 2.0 host/device applications is available for attaching peripherals such as print servers, network attached storage, cameras, or other USB input devices. Both parallel and serial flash (SPI) support is included in the CX94615 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 CX94615 incorporates a flexible dedicated DSP, which supports multiple DSL standards 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 network equipment manufacturers a secure stable path for future upgrades and features.

Solos™-WV CX94615 Block Diagram



Key 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 ADSL2/2+ (WT-100) requirements
- IPv6 ready
- Integrated field-proven xDSL DSP core with Annex A, B, M, I, J, and L support
- Expandable voice architecture to support up to eight additional FXS voice channels
- Integrated 10/100 Ethernet MAC with MII interface
- Optimized power management with support for dying gasp
- QoS features including support for extended INP for better IPTV quality
- Support for parallel and serial (SPI) flash
- Support for DSLHome including TR-064, TR-068, TR-069, TR-098, TR-104, TR-106, TR-110, TR-111, TR-124, TR-133
- Memory and feature optimized binary and source software releases for targeted deployments
- Advanced Wireless features including WPS and Smart Antenna support
- MGCP and SIP stacks for VoIP
- Easy to use HTML based graphical user interface (GUI) tools for customization of user configuration web pages
- 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
- UPnP for seamless network interconnectivity
- Common customer development environment and tools across ADSL to VDSL2 products
- Reference designs available for rapid prototyping

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