Product Brief

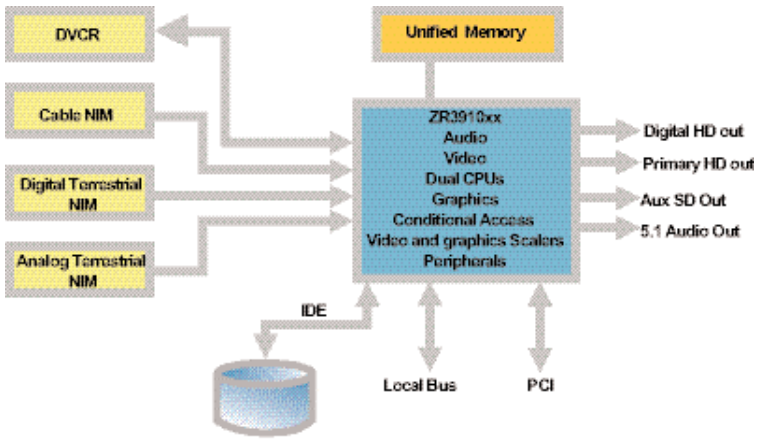
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Description

The Generation9-*Elite* series of ICs from Zoran builds upon the production proven, class leading technology and integration of the Generation9 family of products by bringing a new level of performance to Digital TV products. The Elite family adds dual CPUs, higher memory bandwidth and increased application flexibility and performance to the high level of integration and outstanding quality of the previous generation of Integrated DTV System ICs. The Generation 9-*Elite* IC architecture includes a multi-stream universal decoder which can decode and playback two fully independent A/V streams using separate time bases.

System Block Diagram



Key Features

- Dual High Performance 32-bit CPUs (540 MIPS)
- PCI, IDE, Local BUS, UART, IR and SPI
- Worldwide Conditional Access
- Copy Protection
- Flexi-Port Flexible Multi-channel I/O
- Video Orthogonality
- Video Signal Processor for Picture Improvement
- High Quality Video Scalers
- Floating-Point Media-DSP
- Innovative Tex/Warp Engines
- Dual Display Architecture
- Pin Compatible to Generation 9
- Software/API Compatible to Generation 9

Dual CPU Performance

The dual CPU architecture of the *Elite* family allows for significantly enhanced application software performance. This is accomplished by using one CPU, to perform all of the tightly coupled real-time tasks in the system. All of the low-level drivers and the real-time operating system run on the other identical CPU. This allows nearly all of the available CPU bandwidth of the second CPU, the Application CPU; to be available for user defined application processing.

Elite Software Architecture

The *Elite* software architecture developed for use in the *Elite* products allow for software written for Zoran's Generation9 products to seamlessly migrate to the *Elite* products. This "virtual device" software abstraction layer provides full Zoran API support to software running on the Application CPU. *Elite* API support is fully backwards compatible with the Generation9 product line allowing software written for the Generation9 ICs to run unchanged on the *Elite* system.

Drop-In Upgrade

The *Elite* series of ICs are designed to be a drop-in upgrade to the existing Generation9 IC. The Elites are signal and API compatible with their respective Generation9 counterparts.

Integrated DTV System On a Chip

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Access to World Markets

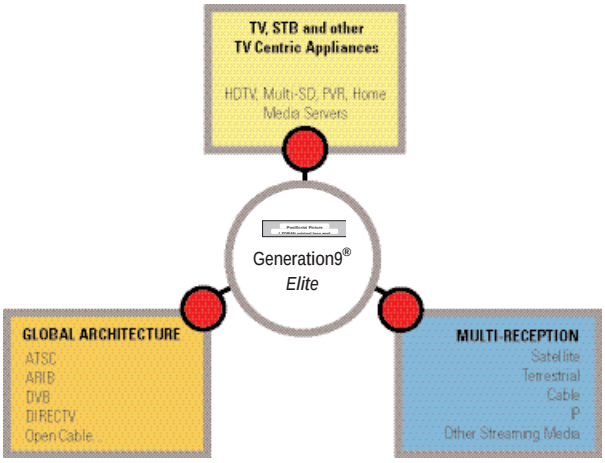
- A Global System Architecture provides a programmable system that supports multiple international standards including European DVB, US ATSC, US Cable CableCARD, the Japanese ARIB standard, and proprietary standards such as NDS ICAM.
- Generation9-*Elite* ICs incorporate AES encryption/decryption to/from the HDD or any other system I/O interface to protect any digital content.

Facilitates Modular and Expandable Systems

- Due to the flexible architecture and worldwide conditional access capabilities, a single hardware design can be retargeted at multiple world markets.
- A core design built around this architecture provides access to enhanced features such as PVR, additional broadcast reception types, PIP, POP and Dual Display STBs (e.g. sharing a single PVR HDD). OEMs can build a simple A/V system for time-to-market and enhance it quickly with additional market enabling features.

Flexible Integration

- Dual MIPS 32-Bit CPUs provide industry leading levels of both system and application support
- Cost-effective integration is achieved through the use of multiple optimized micro-controllers as well as an advanced proprietary floating point DSP and an industry standard CPU
- A Media DSP for real-time media processing separate from the Application CPU, rendering it Ideal for audio and enabled for Streaming Media
- The specialized Video Signal Processor (VSP) enables user defined features including motion adaptive de-interlacing algorithms, reverse 3:2 pulldown techniques, and film mode detection. Custom algorithms can be running in significantly less time than it would take to implement in hardware
- The Texture Processor Engine (TEX/Warp) provides TV centric graphics effects and ARIB acceleration not available to other architectures. Implement 3D TV effects without the cost of a 3D graphics engine as both graphics and video can be treated as user interface objects
- The Flexi-Port Multi-Channel I/O function meets the requirements of the most demanding DTV, PVR and STB architectures by providing true Orthogonality with different input and output formats including; Serial or Parallel TS, Multi BT.656 and DVI In or Out.



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