



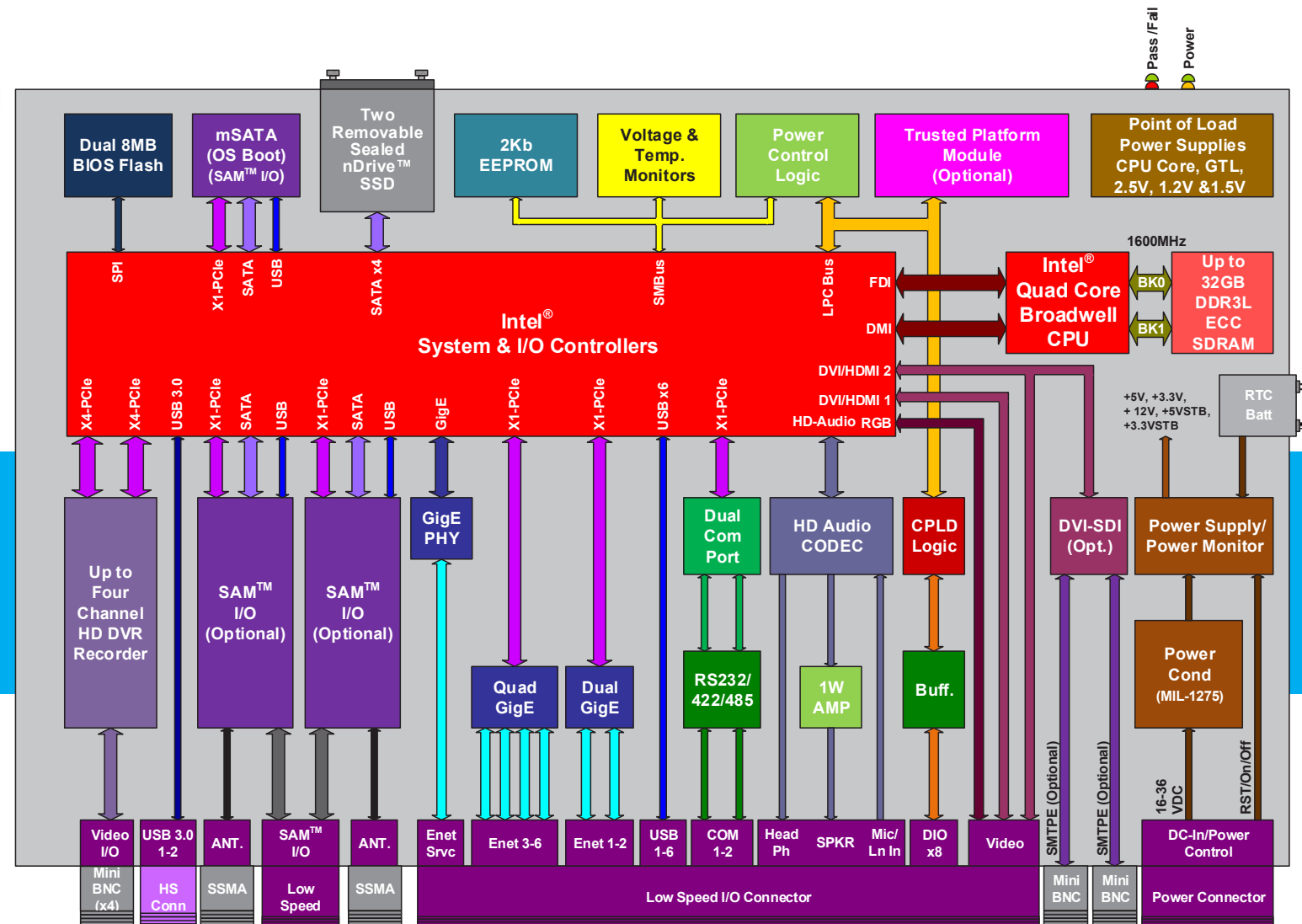
“EAGLE” SB1102-HDVR

Rugged, 4-Channel HD-DVR Recorder with Removable Drive(s)

- Records up to four HD video ports (SDI) simultaneously at 1080p/60Hz with audio
- Simultaneous Record and Monitor/Playback over LAN
- Supports H.264 compression on all four channels simultaneously
- Up to 2.7GHz Intel® Quad Core™ i7 Broadwell processor with 6MB of L3 Smart Cache
- Supports ultra-low power mode to 1.9GHz with Intel's Configurable TDP-down (cTDP)
- Up to 32GB of 1600MHz DDR3L memory with ECC
- Up to 1TB of sealed, removable, nDrive™ SSD (optional encrypt/secure-erase/write-protect)
- Up to 1TB of fixed, SSD for OS boot (optional encrypt/secure-erase/write-protect)
- High performance, embedded Iris™ Pro Graphics 6200 (2x improvement from Haswell)

- Two USB 3.0 and six USB 2.0 ports with power
- Seven Gigabit Ethernet ports with TCP/IP Offloading Engine (TOE)
- Supports dual DVI-D / HDMI ports and one RGB video port
- Support for optional dual redundant/independent HD-SDI video (lose one DVI per SDI)
- Two Serial ports with RS-232/422/485 options and eight buffered GPI/O lines
- Two SAM™ sites for custom I/O (MIL-STD-1553, Wi-Fi/BT, GPS, etc.)
- Full HD-Audio support with onboard 1W mono amplifier
- Dual flash BIOS, optional write-protect and Real Time Clock with field-replaceable battery
- Support for Active Management Technology (AMT) for remote KVM functions

- Intel® Virtualization Technology (VT-x/VT-d2) and Trusted Execution Technology (TXT)
- Trusted Platform Module (TPM) for secure operation (Optional)
- Ultra-fast boot (under 15 sec.) with full power-management control for sleep/hibernate
- CPU temperature and voltage monitoring with status LED indicators
- Reset and power On/Off signal with suspend support
- Ultra-low SWaP only 5.4" x 6.5" x 2.75" @ 5 lbs. and as low as 40W total
- MIL-STD 810G, MIL-STD 1275D, MIL-S 901D, DO-160D, MIL-STD 461E and IP66 compliant
- Operates at standard temp -20°C to +75°C or extended temp -40°C to +85°C (Optional)
- Available in ruggedization levels R3-R5



General Description

The SB1102-HDVR “Eagle” is a sixth-generation, ultra-rugged, small, lightweight HD-DVR computer system. Utilizing the latest TI DaVinci DSP, it is designed to record up to four HD video ports simultaneously at 1080p/60Hz with audio, simultaneously record and monitor/playback over LAN, and support H.264 compression on all four channels, while providing the highest level of workstation performance possible in a fully ruggedized, conduction-cooled, sealed system, operating up to -40°C to +85°C (-20°C to +75°C Standard). This system is designed for applications that require a small, ultra-rugged enclosure with the highest possible performance per dollar and per watt while utilizing rugged interconnects to provide a fully sealed system.

The Eagle supports the latest, most power-efficient Intel® Core™ i7 Broadwell-H processor with Hyper-Threading for a total of 8 logical cores, each operating up to 2.7GHz and having the ability to TurboBoost up to 3.4GHz. In addition, with Intel’s configurable TDP (cTDP), users have the ability to decrease the clock speed to as low as 1.9GHz. To harvest this incredible CPU performance, the CPU is coupled with up to 32GB of DDR3L RAM organized in two banks with support for Error Correcting Code (ECC). The ECC RAM provides 2-bit error detection and 1-bit error correction and supports up to 1600 Mega Transfers per Second (MTS) between CPU and memory. In addition, the embedded Intel® Iris™ Pro Graphics 6200 offers 2x graphics performance improvement over the Haswell graphics.

The I/O subsystem for the Eagle is designed to support a wide array of standard and custom I/O functions. The SB1102-HDVR configuration supports six Gigabit Ethernet channels with TCP/IP Offloading Engine (TOE), one additional Gigabit Ethernet for system configuration and remote control, two USB 3.0 and six USB 2.0 ports, eight buffered digital I/O lines, a full HD-Audio headset jack and a 1-watt audio amplifier to drive an 8-ohm speaker directly, two COM ports with RS-232/422/485 options, and dual DVI-D and one RGB port. There is also an option to configure the DVI-D video output(s) to HD-SDI (SMTPE-259/292/424/425) with either dual redundant or dual independent channels. Additional functions include two SAM™ Sites for custom I/O such as Wi-Fi/Bluetooth, GPS, Quad Video capture, dual channel CANbus, MIL-STD-1553, ARINC-429, FireWire, and many more.

The Eagle also supports the most secure storage subsystem possible. The system supports dual redundant 8MB BIOS Flash with optional hardware-write protect and a fixed mSATA boot device up to 1TB with hardware write-protect, secure-erase and encryption functions. In addition, the SB1102-HDVR supports two removable sealed nDrive™ SSDs up to 1TB each also with hardware write-protect, secure-erase and encryption functions. The SB1102-HDVR can optionally support FIPS-140-2 and FIPS-197 encryption standards for ultra-secure data storage. These data security functions along with the Trusted Platform Module (TPM) and the Trusted Execution Technology (TXT), make the Eagle the most secure HD-DVR system on the market.

Applications

The Eagle is designed to provide the ultimate dual or quad-channel HD-DVR computer system for defense and UAV applications, as well as industrial and commercial applications. Used in applications where high resolution digital video capture support is required, the Eagle is ideal for improving the SWaP-Efficiency of vehicle electronics at the lowest possible cost. The Eagle is a next generation of the Golden-Eye III, which is widely deployed in Army WIN-T vehicles, military helicopters, and naval applications where the computer is exposed to harsh environments, and UAVs, where power, weight, and size are the main considerations. The SB1102-HDVR is equipped for outdoor applications where it may be fully exposed to various elements like rain, sun, dirt, shock and vibration. The SB1102-HDVR is fully compliant to MIL-STD 810G, MIL-STD 1275D, MIL-S-901D, DO-160D, MIL-STD 461E and up to IP66. This system may also be ordered from the factory with operating systems such as Windows® or Linux® pre-installed.

Technology Used

The Eagle utilizes the latest fifth generation Intel® Core™ i7 Broadwell-H CPU, which is the most powerful, efficient processor from Intel® with advanced thermal management and graphics. The Broadwell Quad Core™ i7 processor supports Hyper-Threading for a total of eight logical cores and supports 6MB of L3 Smart Cache shared among the cores. Operating at a base 2.7GHz per core, the Broadwell processor is capable of TurboBoosting up to 3.4GHz and is configurable down to 1.9GHz for ultra-low power mode. Broadwell also supports 32GB of DDR3L RAM with ECC and 1600 Mega Transfers per Second (MTS) between the CPU and RAM. A major improvement of Broadwell over the Haswell Core™ i7 is the Intel® Iris™ Pro Graphics 6200, which offers 2x improvement in embedded graphics performance - comparable performance to that of a stand-alone GPU! In addition, the embedded graphics are capable of supporting DirectX 11.2, OpenGL 4.3 and displaying UHD resolutions with three independent video outputs. The Broadwell processor is also coupled with a Lynx Point™ chipset for a wide variety of I/O support. This CPU is considered the workhorse of the workstation market, with many added power saving features and peak performance with controlled thermals; also containing security functions such as Intel’s second-generation Virtualization Technology VT-x and Trusted Execution Technology (TXT). The Broadwell platform supports PCIeExpress Gen3, USB 3.0 and SATA 3 for the highest performance possible on a workstation platform.

Additional Views and Variations

SB1102-HDVR (Showing rear connector configuration)



Cooling

The Eagle system is equipped with GMS’s patent pending RuggedCool™ technology, which is the most unique conduction cooling system in the industry, and is the only system that operates up to -40°C to +85°C at full load without throttling the CPU. This cooling approach provides the lowest thermal resistance to the case while providing the highest shock specifications known in the industry. The SB1102-HDVR is a stand-alone, fan-less system and should be mounted directly to a metal surface that provides a reliable conductive thermal path for dependable operation.

Full Environmental Specs

The Eagle is available in ruggedization levels R3-R5. Additional information regarding the ruggedization levels and full environmental specifications for this product can be found on our website at www.gms4sbc.com/technologies/ruggedization.

