

SVB 200 8K ULTRA-HD VIDEO CAMERA

A high performance image processing SoC for next generation 8K format professional broadcast and cinematography cameras

Lead the market

Buying off the shelf silicon may give you the comfort of a known unit cost, but at what price? There is little chance to add stand-out features: it's not your chip, your chosen size, your feature set or your roadmap. What is more, you're vulnerable to supplier price changes.

Take charge

Create your own chip and you can differentiate, lead the market, reduce your bill of materials and take charge of the supply chain.

- ✓ No dead silicon
- ✓ You're in control
- ✓ The chip is optimised in terms of size and efficiency.

With Sondrel as your partner, the next iteration of your chip will be simple too.

A truly compelling approach

Sondrel's customisable designs cut the design lifecycle reducing the cost, time and risk compared with designing from scratch.

Small is beautiful

It is not possible to achieve equivalent processing speeds and performance targets on process nodes above 12nm without unfeasible heat output, making this an unbeatable, future-proof solution for filming in 8k.

Silicon for emerging markets

Cinematography | Broadcast Filming | ENG | Surveillance
Inspection & Maintenance | Medical |



SVB-200 uses powerful, high speed image processing & handling engines to manage the huge uncompressed data volumes involved in 8K video recording. The super-efficient 12nm design consumes 10x less power than the same chip manufactured on a 65nm node. It provides the versatility to record at 8Kp60 and simultaneously output 2x4K or 8x1080.

Our next generation designs are based on successful client implementations that offer an attractively low NRE and a compelling speed to market for a competitive edge.

Efficient, full featured video processing platform 28-nm HPM CMOS process

- Dualcore MIPS P5607 1.2GHz (5371 CoreMark)
- Linux kernel version 4.4 or latest (64-bit)
- Socket and interface for vector processor for CNN/DNN
- Crypto DMA engine and security cores for security and trust
- Industry leading image sensors support

Advanced Image Processing

- 800 MPixels input rate
- Multi-exposure line-interleaved HDR
- Electronic Image Stabilisation (EIS)
- Dual independent sensor inputs
- 3D motion compensated noise reduction (MCTF)

High-Efficiency Video Encoding

- H.264 video compression
- Flexible multi-streaming capability
- Dual 4Kp30 video performance
- Multiple CBR and VBR bit rate control modes
- Smart H.264 and H.265 encoder algorithms

Audio support

- InterAptiv audio processor
- Multi input/output audio channel

Wired & wireless communication

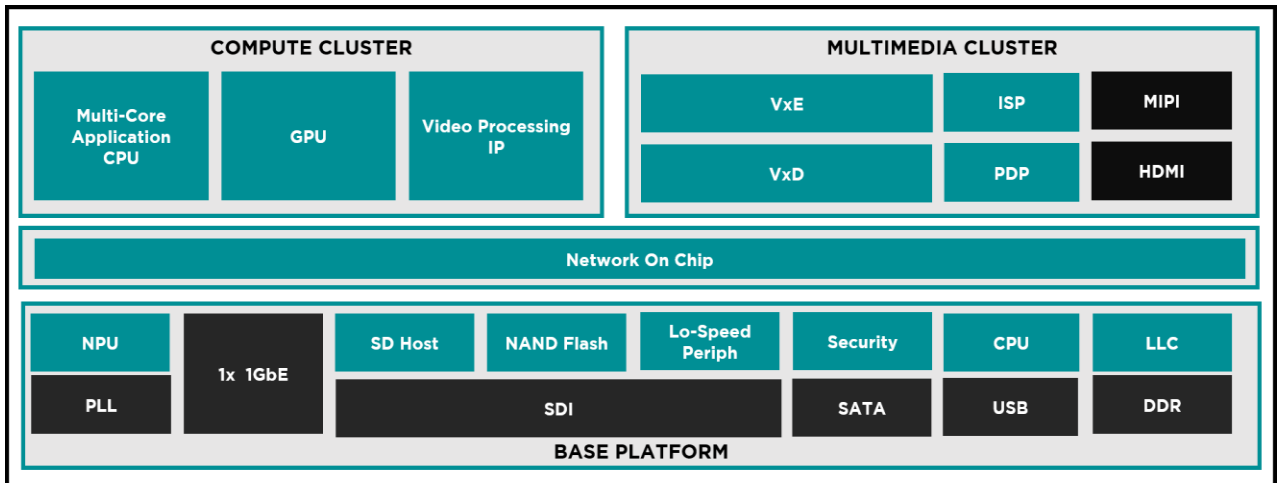
- High-performance on-chip Wi-Fi and Bluetooth
- 10/100/100 ethernet
- Capable of Simultaneous output 8K, 2x4K or 8x1080p

Call us on +44 (0) 118 983 8550 or email sales@sondrel.com

SVB 200

8K ULTRA-HD VIDEO CAMERA

- ✓ The most advanced video sensor capabilities to identify any target, irrespective of fogging or fast movement
- ✓ 8K resolution providing over-sampling for region-of-interest delivery at 4K or 1080p
- ✓ Superb clarity and detail for medical, security & surveillance and industry inspection applications
- ✓ Exceptional processing power and high speed wireless or wired data transfer
- ✓ Power consumption matching or lower than today's 4K devices
- ✓ Energy efficient, low heat output design using 1/10th the power of the same specification produced at a 65nm process node



Processor Cores

- Main CPU - multi-core 64-bit Arm® Cortex-A-class
- 64KB L1 instruction & data caches
- 2MB L2v cache quad core CPU
- + NEON SIMD extension for video processing acceleration
- + VFPv4 coprocessor for floating point operations
- GPU Arm Mali-V76 for 8K content

Sensor and Video I/O

- Primary :
 - Multi sensor input with independent ISP configuration
 - 12G-SDI
- Secondary
 - HDMI® 2.1 including PHY with CEC support
 - 2xMIPI CSI2.0
- 4-lane MIPI DSI and FPD link (LVDS)
- 2xHiSPI

Front End Sensor Processing

- HDR10, HDR+, Dolby Vision and HLG
- Lens shading correction
- Multi-exposure HDR (line-interleaved sensors)
- WDR with local tone mapping

Image Processing

- Supporting a range of sophisticated capabilities such as :
 - 3D motion compensated noise reduction (MCTF)
 - 3-Axis Electronic Image Stabilization (EIS)
 - Defect pixel correction
 - Geometric lens distortion & chromatic aberration correction

Video Encoding

- H.265 & H.264 (HEVC)
- Up to 4 simultaneous stream encodes:
 - 1x8Kp60, 2x4Kp60, 4x4Kp30, multi-channel recording

Video Encoding

- H.265 & H.264 (HEVC)
- Up to 4 simultaneous stream encodes:
- Flexible GOP configuration with I, P, and B frames
- Temporal Scalable Video Codec with 4 layers (SVCT)
- Dynamic region of interest (ROI)
- Multiple CBR and VBR rate control modules

Security & Crypto Acceleration

- Crypto acceleration @2.6Gbps and up to 400Mhz with encryption AES 128/192/256, DES,
- Authentication standards SHA-1/SHA-256/SHA-512/MD-5/AES-GCM/AES-CBC/AES-xCBC/ HMAC

Communication

- IEEE 802.11ac 2x2 MIMO Wi-Fi (867 Mbps), 600 MHz Viterbi / LDPC
- Ethernet 10/100/1000
- Bluetooth 4.1 Baseband

Memory Interfaces

- DDR & LPDDR up to 2.4 GHz, 2x32-bit data bus
- 3 x SD controllers with SDXC SD™ card
- NAND flash, ECC supported
- Boot from SPI-NAND/NOR, SPI-EEPROM, NAND flash, USB, or eMMC

Peripheral Interfaces

- 802.11a/b/g/e/i/n 10/100/1000 Ethernet
- 802.11 ac (Wifi) & Bluetooth 4.1
- 2 x USB 3.0/2.0 Ports
- Multiple I2S, SSI/SPI, I2C, and UART
- 32xGPIO ports, 4xPWM, Steppers, IR, ADC
- Watchdog Timer, multiple general-purpose timers, JTAG

Physical

- TSMC 12nm FFC