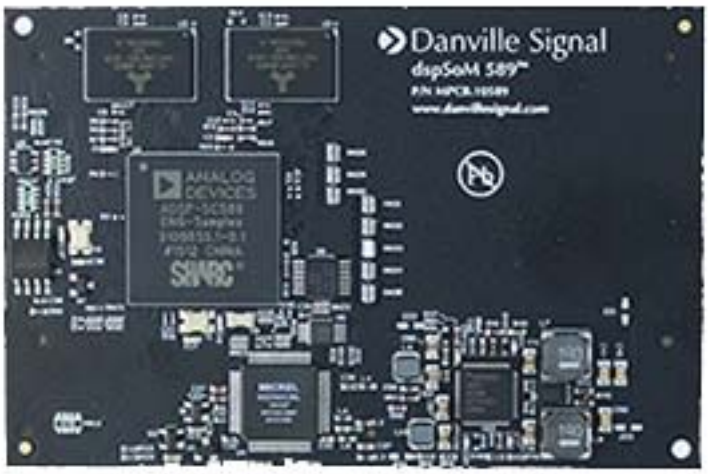
Danville Signal

dspSoM 589™ System-on-Module with Dual SHARC® & ARM® Cortex®-A5 Cores



The dspSoM 589 Features:

- SHARC ADSP-SC589 - Dual Core DSP, ARM-A5 and iFFT/FFT Accelerator
- Two 2Gb DDR3 and 128 Mb QUAD SPI Flash
- 1Gb Ethernet PHY w/unique Ethernet MAC Address
- Precision Clock for IEEE 1588 & AVB support
- Link Ports , Dual USB2 Ports, PCI Express Interface
- Small Form Factor: 60mm x 90mm
- All major connections brought out to three high density 0.8mm pitch connectors
- Optional Breakout Development Board

The Platform of Choice for Leading-Edge, High Performance Products

The dspSoM 589™ is a highly integrated, small form factor "System on Module" that provides you with a comprehensive development and production platform and is ideal for fast time to market of high performance audio and industrial products. As with our other products, the dspSoM 589 is a precisely built, integrated system, with the connectivity and peripheral set expert selected to best compliment the processors' feature set.

Class Leading Floating-Point Performance and Flexible Connectivity

At the heart of the dspSoM 589 is the SHARC SC589 processor, combining dual SHARC+ floating-point DSP cores, an ARM Cortex-A5 processor and a highly advanced FFT/iFFT Accelerator core on a single chip. The SC589 features an optimized connectivity engine with enhanced integrated peripherals including Gigabit Ethernet (w/AVB), MLB, USB, CAN, SDIO high speed link ports & PCIe. The SC589 features class leading, low power floating-point DSP Performance at under 2W, enabling products to be designed with reduced heat-sinks and fanless capability.

A Complete DSP and Control Solution

The dspSoM 589 is not just a prototyping board, it is a complete hardware solution delivering an optimized development platform for your designs and a production ready target for manufacturing. The dspSoM 589 platform enhances the SHARC features by providing a rich set of industry-leading system peripherals and memory.

Pre-Release
Preliminary Information

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dspSoM 589™ Dual Core DSP & ARM Module

SHARC® ADSP-SC589 DSP:

- Two SHARC floating point DSP cores (5.4 GFLOPS, 1.8 GMACs)
- ARM Cortex-A5 providing connectivity and additional processing including FPU and Neon® DSP extensions.
- Advanced FFT/iFFT accelerator (up to 18 GFLOPS - 5μsec 1024-pt cFFT with DMA)
- Large 640KB L1 SRAM per SHARC, shared L2 SRAM & advanced DMA features
- Glueless Digital Audio Interface including 16 half duplex SPORTs, I2S, TDM, SPDIF/AES3 & 16 Asynchronous Sample Rate Converters
- Under 2W power consumption, more than 2 times more efficient than the nearest competitive processors enabling products with reduced heat-sinks and no fans
- Advanced Security with Cryptographic accelerators and OTP Memory, for IP protection, fast secure boot and secure network connectivity

Interfaces:

- Ethernet: 1Gb with onboard PHY & IEEE-1588 support (requires magnetics/connector)
- USB 2.0 (2 ports), host and device configurations
- PCIe: 1 Lane 5Gb/s
- SPI (3 ports)
- TWI (3 ports)
- UART
- CAN
- Link Ports
- JTAG

Memory:

- 4Gb DDR3 SDRAM
- 128Mb SPI Flash
- 2kb SPI EEPROM with individual MAC address (EUI-48)

Power:

- Input Voltage 5.0 VDC - All local supplies are derived from on board switcher
- Input Current < 1A
- I/O Voltage is 3.3V

The dspSoM 589 is ideal for hi-performance Audiophile and precision Industrial devices that require no-compromise DSP, connectivity and control.

Lower the Cost and Simplify the Design of Creating DSP-based Products

Today's DSPs and other state-of-the-art components are extremely powerful, but they come at a price: they are often extremely difficult to design onto a board. Signal integrity, crosstalk, trace length matching, complex routing, multiple layer I/O paths, etc., all combine to make the utilization of the features of powerful chips challenging. The DSP generally requires more pcb layers and higher precision fabrication than typical I/O and power supply circuits. This rapidly contributes to fabrication costs as the whole board must accommodate the demands of all the circuits. Low noise converters and signal conditioning circuits are also much easier to isolate when high speed digital switching resides off board. As these and other mating circuit boards generally do not require same complexity or cost structure, the rest of your pc board layouts become more simple. Projects are completed quickly and cost effectively when developing with the dspSoM 589.

The Danville Advantage

We are experts in the design, creation and integration of flexible, modular development and production boards, providing turnkey DSP solutions for our customers, all you need to worry about is integration. Give us a call, let's start a conversation about how Danville Signal can provide the platform for your next design!

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