

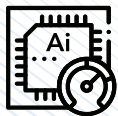
The VideoSmart™ VS680 is a high-performance multimedia system on chip (SoC) that combines a quad-core Arm® Cortex®-A73 processor with a neural processing unit (NPU). It is designed for secure and efficient edge AI processing of smart display IoT applications that combine video with smart speaker and local touch display capabilities. The SoC is supported by the SyNAP™ toolkit, allowing rapid development and optimization of secure machine learning (ML) and AI applications for video, vision, and audio. An integrated MIPI CSI-2® and ISP provide camera inputs for edge-based vision inference, minimizing the need for external components.

BENEFITS

- ▶ Supports multiple design form factors
- ▶ Secure, best-in-class AI performance
- ▶ Enables rapid development, porting, and optimization of AI workloads
- ▶ Integrated ISP for advanced camera-enabled use cases

APPLICATIONS

- ▶ Smart displays
- ▶ Soundbars
- ▶ Multi-camera platforms
- ▶ Set-top boxes (STBs) and streamers



AI ENABLED



SECURE



CAMERA READY



HIGH PERFORMANCE



FEATURES

- ▶ Quad-core Arm Cortex-A73 processor with security extensions
- ▶ Dedicated NPU for localized neural network (NN)/ML applications (up to 7.9+ TOPS)
- ▶ Support for multiple DNN frameworks and optimized for TensorFlow™ Lite Android™, NN API, and OpenVX™ inferencing via the SyNAP toolkit
- ▶ Enhanced security, including secure boot with RSA digital signature verification from eMMC and SPI NOR Flash; on-chip 32 Kbit OTP; true random number generator (TRNG); CAS and DRM engine support
- ▶ MIPI DSI® v1.2 output
- ▶ MIPI CSI-2 input with dual camera support

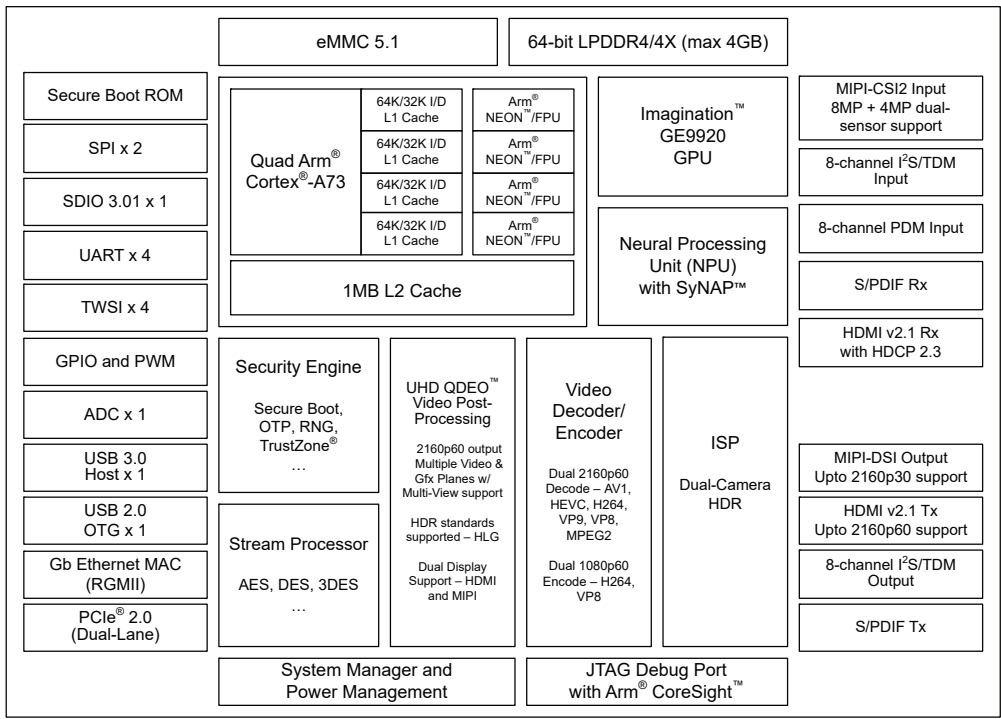


VS680 UHD Smart Display SoC

PRODUCT BRIEF

- ▶ Integrated ISP
- ▶ HDMI Rx input support
- ▶ DRAM controller; eMMC 5.1 controller
- ▶ Multi-standard video decoding and encoding/transcoding
- ▶ Audio decoding/processing, including far-field voice (FFV) and keyword detection
- ▶ GPU: Imagination™ PowerVR™ Series9XE GE9920
- ▶ Video/graphics display pipeline supporting dual display with QDEO™

SYSTEM BLOCK DIAGRAM



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