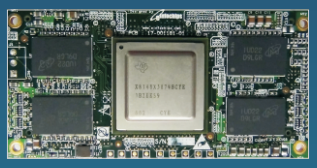
System on Module (SOM)

eInfochips | The Solutions People

Video Conferencing

Endoscopic Unit



Video Bore Scope

Video Controllers

High End Video Processing
IP cameras

Multichannel video Server

Imaging and Video intensive industries face challenge of designing and developing customized hardware solution for specific application use case, in reduced time and cost. This is coupled with fast evolving processor families with ever increasing complexity (density) integrated inside, requiring product companies to constantly launch new / upgraded existing variants in short time.

System on Module **(SOM)** is panacea which ensures reduced development and design risk for both. SOM, a re-usable module encompasses maximum hardware/processor complexity, leaving reduced work on the carrier/main board, **accelerating Time to Market**.

- SOM empowers product companies in enriching product mix by integrating system on module into different carrier cards allowing development of various products variants.
- Conversely same / common carrier card may also be populated with multiple SOM cards to develop cost effective and application specific solutions.
- Allows multiple products with different Price Performance Point with same design.

Reduce 5x to 10x design cost in terms of NRE, mechanical design, software design etc.

Encompass hardware complexity reducing development Time & complexity

Integrate with multiple carrier cards to enrich product offerings

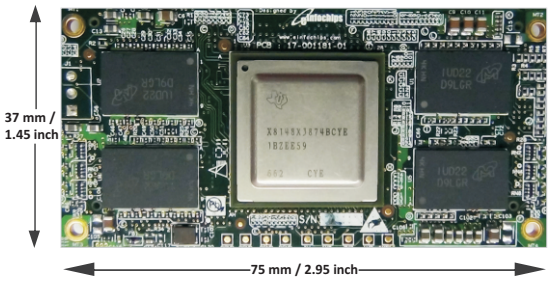
Same carrier can carry multiple SoC SOM for different product variants

DaVinci™ DM816x & DM814x and C6A816x DSP + ARM System on Module (SOM)

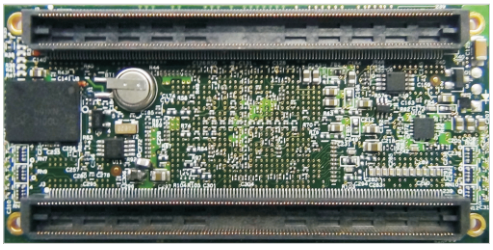
The latest SOMs developed by eInfochips are based on Texas Instruments' high-end video processing SoC families DaVinci™ DM816x & DM814x and C6A816x DSP + ARM. These are smallest form factor SOMs available in the market on these processor families. Even with this smallest form factor, SOM has PC equivalent processor speed where ARM can go up to 1 GHz and DSP can go up to 750 MHZ.

This makes SOM ideal off-the-shelf solution for high-end video processing intensive applications such as Machine Vision, Medical Imagining, Telecom, and other Multimedia/Imaging Applications.

Top View



Bottom View



SMALLEST available SOM on DaVinci™ DM816x & DM814x & C6A816x DSP + ARM

Product Highlights

- Production ready (SOM)
  - TI's DaVinci™ DM816x & DM814x based SOM
  - TI's C6A816x DSP + ARM processor based SOM
- Compact form factor (75 mm x 37 mm)
- Processor speeds (ARM up to 1.2GHz and DSP up to 1 GHz) equivalent to PC platform
- Linux Board support package (BSP)

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System on Module (SOM)

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eInfochips SOM Building Expertise: Over last decade, eInfochips has developed complex hardware around various processor families available from Texas Instruments.

Some of hardware designs include

- Multi-core SoC design, Multi-processor designs, Multi-FPGA based designs
- Board size ranging from 1.4 square inches to 140+ square inches
- PCB design up to 16 layers and over 4200 components on single board
- Hardware design with frequency > 1GHz

Elite Design House (EDH) partner of Texas Instruments

Expertise on TI Processor Technologies	
Technology	Processor Families
DSP	High Performance Multicore DSP
	DaVinci Series
	DSP and Media Processors
ARM	OMAP
	Stellaris
	Sitara
Microcontrollers	MSP430, TSC2046IPWR, TSC2004IRTJT

eInfochips has market proven process for developing compact form factor SOMs showcasing all the key capabilities with zero compromise on feature and/or performance.

Challenge	eInfochips Approach	Benefits
Small Form Factor Design	Detailed feasibility study for architecture design, increase use of smallest footprint component packages, optimize components placements, and use multi-layer PCB design capabilities.	Compact Product Design
Power Management & Thermal Stability	Achieved through technology like via in-pad, thermal simulation, and proper routing	Stable system performance over wider Temperature, Electromagnetic, and Thermal range
Pin Compatibility	Pin compatible design for different processor families	Integration into multiple carrier cards for several product versions
		Multiple products with different Price Performance point with same design

Smallest Form-Factor design: 75 mm x 37 mm

Power Density: 2.3 Watts/ Sq. inch

Pin Compatibility for different Pin Map SoCs

Design Scalability for product variants

Product Engineering Services

eInfochips specialises in delivering end-to-end product engineering services & solutions to global product companies for about 16 years. Our team has assisted 90+ product companies for successfully delivering over 350 innovative product designs across key industry verticals.

- Feasibility Study & Architecture Design
- Requirement Analysis
- Detailed Design & Product Planning
- Hardware Development
- Software Development
- Product QA, Testing and Verification
- Manufacturing diagnostics
- Industrial Design & Transfer to production
- Release Management

New Product Development

- Product Maintenance
- Product Enhancement
- Bug / Patch Management
- Product Support
- Release Management
- Data Management / Migration
- Documentation following CMMi standards
- Product Re-engineering

Product Sustenance & Maintenance

- Product Testing
- Compliance and Certifications like CE, FCC, UL, FDA
- Quality Assurance
- Test Automation

Product QA & Independent Testing

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