



Digital Media Processors

Core: ARM9, ARM9 + TMS320C64x+™ DSP



Optimized for digital video systems, the DaVinci™ technology portfolio includes digital signal processing SoCs, multimedia codecs, Authorized Software Providers and frameworks providing the industry's first complete offering of an open platform. The portfolio of DaVinci technology-based

processors provides engineers with a choice of ARM® processors, DSP co-processors, accelerators, peripherals or a combination of all to create a true SoC for digital video applications such as digital cameras, video phones, IP set-top boxes, digital media adapters, automotive infotainment, IP

network cameras and DVRs, portable media players, media gateways, multi-point control units, medical imaging and many other video applications.

Customers can quickly get started with development tools for a variety of application spaces and designs, including comprehensive development kits and reference designs. In addition to development tools, a complete software infrastructure ranging from low-level drivers to application APIs makes it possible for developers to implement complex codecs such as H.264 and MPEG-4 into ARM-based digital video designs without having to focus resources on writing and optimizing codecs and programming a DSP.

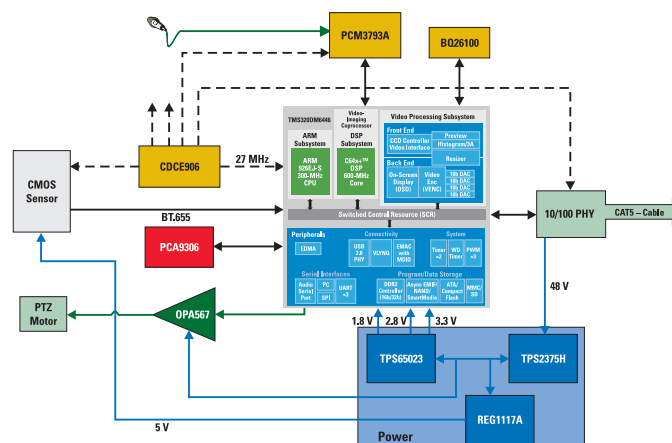
Features ▶

- Broad portfolio of digital signal processing SoCs, software, development tools and support
- Digital Media Software portfolio includes multimedia codecs such as H.264, MPEG-4, WMA9 and many more; for a free evaluation, visit www.ti.com/digitalmediasoftware
- Supports several operating systems including open source Linux, MontaVista™ Linux, Green Hills INTEGRITY™, Green Hills VelOSity, QNX Neutrino and Microsoft Windows® CE

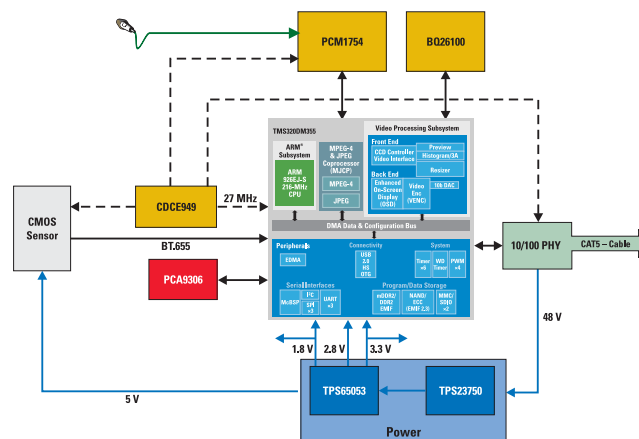
Benefits ▶

- Save months of development time by leveraging integrated, production-tested software and hardware components
- Real-time performance, simulation and emulation
- OEM product differentiation enabled by open development platform and flexible, complete solution
- Lower system cost significantly and leverage IP across multiple products
- Standard operating systems will allow developers with expertise on these systems to work in an environment that is familiar
- Valued members of TI's DaVinci Developer Network offer various levels of video system integration, optimization and system expertise on DaVinci technology-based products worldwide

IP Net Cam System Block Diagram Based on the DM644x Processor



Video Doorbell System Block Diagram Based on the DM355 Processor



DaVinci™ Technology-Based Digital Media Processors in Production Now ▶														
Device	CPUs	Frequency (MHz)	L1/ SRAM (Bytes)	L2/ SRAM (Bytes)	ROM (Bytes)	External Memory I/F	EDMA	Video Ports (Configurable)	Serial I/F	Connectivity I/F	Program/ Data Storage	Voltage (V)		Packaging
												Core	I/O	
TMS320DM355ZCE	ARM9, DaVinci Video	216 270	-	-	8K	1 16-/8-bit EMIFA, 1 16-bit mDDR/DDR2	64 Ch	1 input, 1 output	3 SPI, 2 ASP, 3 UARTs, I ² C	USB 2.0 HS	Async SRAM, mDDR/DDR2 SDRAM, NAND Flash, SmartMedia/xD	1.3	1.8/3.3	329 BGA, 13 x 13 mm
TMS320DM335ZCE135 TMS320DM335ZCE216 TMS320DM335ZCE270	ARM9, DaVinci Video	135 216 270	32	-	8K	1 16-/8-bit EMIFA, 1 16-bit mDDR/DDR2	64 Ch	1 input, 1 output	3 SPI, 2 ASP, 3 UARTs, I ² C	USB 2.0 HS	Async SRAM, mDDR/DDR2 SDRAM, OneNAND, NAND Flash, SmartMedia/xD	1.3	1.8/ 3.3	337 BGA, 13 x 13 mm
TMS320DM6441ZWT	C64x+™ DSP, ARM9, DaVinci Video	513/405 (DSP) 256/202 (ARM)	112K (DSP) 40K (ARM)	64K (DSP)	16K (ARM)	1 16-/8-bit EMIFA, 1 32-/16-bit DDR2	64 Ch	1 input, 1 output	ASP, I ² C, SPI, 3 UARTs	USB 2.0, VLYNQ™, 10/100 EMAC	Async SRAM, DDR2 SDRAM, NAND Flash, SmartMedia/xD	1.2/ 1.05	1.8/3.3	361 BGA, 16 x 16 mm
TMS320DM6443ZWT	C64x+, ARM9, DaVinci Video	594 (DSP) 297 (ARM)	112K (DSP) 40K (ARM)	64K (DSP)	16K (ARM)	1 16-/8-bit EMIFA, 1 32-/16-bit DDR2	64 Ch	1 output	ASP, I ² C, SPI, 3 UARTs	USB 2.0, VLYNQ, 10/100 EMAC	Async SRAM, DDR2 SDRAM, NAND Flash, SmartMedia/xD	1.2	1.8/3.3	361 BGA, 16 x 16 mm
TMS320DM6446ZWT	C64x+, ARM9, DaVinci Video	594 (DSP) 297 (ARM)	112K (DSP) 40K (ARM)	64K (DSP)	16K (ARM)	1 16-/8-bit EMIFA, 1 32-/16-bit DDR2	64 Ch	1 input, 1 output	ASP, I ² C, SPI, 3 UARTs	USB 2.0, VLYNQ, 10/100 EMAC	Async SRAM, DDR2 SDRAM, NAND Flash, SmartMedia/xD	1.2	1.8/3.3	361 BGA, 16 x 16 mm
TMS320DM6467	C64x+, ARM9, DaVinci HD Video	594 (DSP) 297 (ARM)	64K (DSP) 56K (ARM)	128K (DSP)	8 K (ARM)	1 16/8-bit EMIFA, 1 32-/16-bit DDR2	64 Ch	1 video port [config. for dual 8-bit SD (BT.565), single 16-bit HD (BT.1120), or single 8-/10-/12-bit raw capture chs]. 1 video port [config. for dual 8-bit SD (BT.565) or single 16-bit HD (BT.1120) display chs]. 2 transport stream I/F for MPEG transport stream. 1 VDCE for horz/vert downscaling, chroma conversion, edge padding, anti-alias filtering	2 McASPs, I ² C, SPI, 3 UARTs (with IrDA and CIR support)	32-Bit PCI (33 MHz), USB 2.0, PHY, VLYNQ, 10/100/1000 EMAC, (w/MII, GMII, and MDIO support) 32-/16-bit HPI	Async SRAM, DDR2 SDRAM, Smart Media/SSFDC/xD, NAND Flash, NOR Flash	1.2	1.8/3.3	529 BGA, 19 x 19 mm

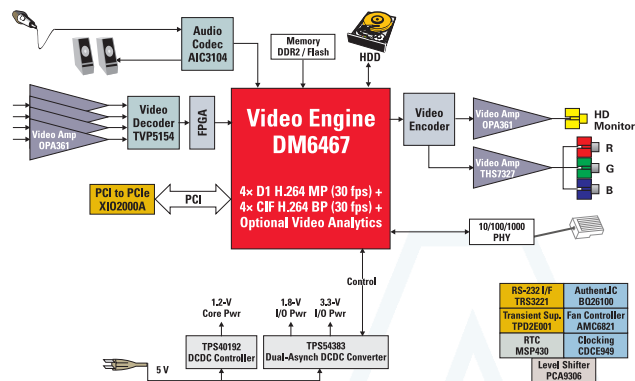
■ New devices are listed in red.

Development Tools Matrix ▶		
Type	Description	Part Number
Digital Video Software Production Bundle	The Digital Video Software Production Bundle (DVSPB) provides the software needed to design complex DaVinci technology-based digital video systems quickly and efficiently; the DVSPB significantly improves software integration and system visibility by incorporating tools such as Codec Engine, evaluation codecs, drivers and a production license for MontaVista Linux Pro 4.0, plus one year of MontaVista Zone access with updates. A DVSPB is recommended, coupled with a DVEVM, as a must-have for TI-supported ARM926 processor production design.	TMDSDVSPBA9-L TMDSDVSPBA9-3L*
TMDSEVM6446 Digital Video Evaluation Module	The Digital Video Evaluation Module allows developers to write production-ready application code for the ARM and provides access to the DSP core using DaVinci technology-based APIs to begin immediate application development for the TMS320DM6441, TMS320DM6443 and TMS320DM6446 digital media processors.	TMDSEVM6446
TMS320DM355 Digital Video Evaluation Module	The DM355 Digital Video Evaluation Module (DVEVM) allows developers to write production-ready application code for the ARM to begin immediate application development for the TMS320DM355 and TMS320DM335 digital media processors.	TMDXEVM355
TMS320DM6467 Digital Video Evaluation Module	The Digital Video Evaluation Module allows developers to write production-ready application code for the ARM and provides access to the DSP core using DaVinci technology-based APIs to begin immediate application development for the TMS320DM6467 digital media processor	TMDXEVM6467

* Complete DVSPB plus Code Composer Studio™ IDE version 3.3 and Spectrum Digital XDS560™ software emulator

■ New tools are listed in red.

Surveillance Digital Video Recorder System Block Diagram Based on the DM6467 Processor



For more information on Arrow's ARM solutions, pricing, and availability, visit www.arrow.com/arm or call 1-866-910-3650.



OMAP35x Applications Processors

Core: Cortex A8, Cortex A8 + TMS320C64x DSP



The OMAP35x processors offer unprecedented performance at handheld power levels. Targeting applications, such as portable navigation devices, Internet appliances, portable media players, and personal medical equipment, TI's new scalable OMAP platform offers four distinct single-chip

processors with a variety of combinations of the Cortex™-A8 core, multimedia rich peripherals, OpenGL® ES 2.0 compatible graphics engine, and DaVinci™ technology for applications wanting to incorporate video.

The OMAP35x applications processors are pin-for-pin compatible to make it easy for OEMs to efficiently create a complete product portfolio based on the single platform.

OMAP processors offer complete hardware, software, and tools solution

The modular and extensible OMAP35x Evaluation Module (EVM) provides all the components needed to begin developing today on the OMAP35x processor. This EVM includes an integrated power management, and analog solution specifically for OMAP processors. The modular design allows you to easily upgrade to future devices. Included with the EVM is the OMAP3503 Linux board support package based on the 2.6.22 kernel. A Windows CE 6.0 BSP will be available for developers in 3Q08.

Features ▶

OMAP35x Evaluation Module (EVM) available today

Hardware

- ARM Cortex-A8 based OMAP35x processor
- 128 MB LPDDR/128 MB oneNAND Flash or similar capacity and function
- Touch-screen LCD display with landscape/portrait modes
- Expansion connector provides flexible interface capability

Software

- OMAP35x03 Linux BSP
 - Kernel 2.6.22
 - Peripheral drivers
 - U-boot for boot loading
 - Busybox-based root file system
- Windows® CE 6.0 R2 BSP available

Connectivity

- Daughter card connectivity
- Ethernet, USB 2.0, SDIO, I²C, JTAG, keypad
- CompactFlash, SD/MMC, DDR
- S-Video output via NTSC/PAL and YPbPr/RGB

Development Tools and Support

- Open source development tools
- Reference schematics
- Emulator support: TI XDS560

TI eXpressDSP Digital Video Software Development Kit (DVSDK)

TI's eXpressDSP Digital Video Software Development Kit allows OMAP™ system integrators to incorporate discrete software modules and combine them into a single executable output for systems, avoiding months of tedious manual integration. By making it easy to create custom bundles of codecs for specific applications, the configuration kit makes it simple to rapidly create a software prototype. This Linux-based DVSDK version supports OMAP with Cortex A8 processors. The DVSDK is available on the www.ti.com/omapsoftwareupdates extranet for all OMAP35x registered users.

DVSDK Software Features

- TI video, imaging, and audio codecs
- Custom codecs that comply with TI's eXpressDSP™ Digital Media (xDM) algorithm standard
- Demonstration versions of popular video codecs to enable developers to benchmark and evaluate performance parameters
- Multimedia Application Programming Interfaces (APIs)
- TI's Codec Engine framework (audio/video)
- DSP/BIOS™ real-time kernel
- TI DSP/BIOS Link interprocessor communication technology (available in the Linux-based DVSDK)

Extensive Developer Network Support

Additional applications expertise and support is available from the more than 400 members of the TI Developer Network to help OMAP customers take their designs from concept to production as quickly as possible.

OMAP™ Processors Now Sampling ▶															
Part Number	CPU	Frequency (MHz)*	L1P (Bytes)	L1D (Bytes)	L2 (Bytes)	RAM (Bytes)	ROM (Bytes)	External Memory I/F	DMA	Timers	Serial Ports	Misc.	Voltage		Packaging
													Core*	I/O	
OMAP3530	C64x+™, ARM Cortex-A8	430 600	32K 16K	32K + 48K SRAM 16K	64K + 32K shared RAM 256K	64K	16K 112K	LPDDR, SDRAM, DDR1, SRAM, NOR, NAND, OneNAND	64 Ch 32 Ch	12 GP, 2 WDT	5 McBSP, 4 McSPI, 3 I ² C, 1 HS USB OTG, 1 HS USB Host (3 port), 1 HDQ/1-Wire, 3 UART(1 IrDA+GIS)	HW Video Accelerator, NEON Technology, Graphic Accelerator, LCD, TV out, Camera I/F, MMU, 3 MMC/SD/SDIO, 196 GPIO (shared)	0.8V to 1.35V	1.8V, 3.0V (MMC1 only)	0.4 mm 515 pin pBGA (12 mm x 12 mm) 0.65 mm 423 pin pBGA (16 mm x 16 mm)
OMAP3525	C64x+™, ARM Cortex-A8	430 600	32K 16K	32K + 48K SRAM 16K	64K + 32K shared RAM 256K	64K	16K 112K	LPDDR, SDRAM, DDR1, SRAM, NOR, NAND, OneNAND	64 Ch 32 Ch	12 GP, 2 WDT	5 McBSP, 4 McSPI, 3 I ² C, 1 HS USB OTG, 1 HS USB Host (3 port), 1 HDQ/1-Wire, 3 UART(1 IrDA+GIS)	HW Video Accelerator, NEON Technology, LCD, TV out, Camera I/F, MMU, 3 MMC/SD/SDIO, 196 GPIO (shared)	0.8V to 1.35V	1.8V, 3.0V (MMC1 only)	0.4 mm 515 pin pBGA (12 mm x 12 mm) 0.65 mm 423 pin pBGA (16 mm x 16 mm)
OMAP3515	ARM Cortex-A8	600	16K	16K	256K	64K	112K	LPDDR, SDRAM, DDR1, SRAM, NOR, NAND, OneNAND	64 Ch 32 Ch	12 GP, 2 WDT	5 McBSP, 4 McSPI, 3 I ² C, 1 HS USB OTG, 1 HS USB Host (3 port), 1 HDQ/1-Wire, 3 UART(1 IrDA+GIS)	NEON Technology, Graphic Accelerator, LCD, TV out, Camera I/F, MMU, 3 MMC/SD/SDIO, 196 GPIO (shared)	0.8V to 1.35V	1.8V, 3.0V (MMC1 only)	0.4 mm 515 pin pBGA (12 mm x 12 mm) 0.65 mm 423 pin pBGA (16 mm x 16 mm)
OMAP3503	ARM Cortex-A8	600	16K	16K	256K	64K	112K	LPDDR, SDRAM, DDR1, SRAM, NOR, NAND, OneNAND	64 Ch 32 Ch	12 GP, 2 WDT	5 McBSP, 4 McSPI, 3 I ² C, 1 HS USB OTG, 1 HS USB Host (3 port), 1 HDQ/1-Wire, 3 UART(1 IrDA+GIS)	NEON Technology, LCD, TV out, Camera I/F, MMU, 3 MMC/SD/SDIO, 196 GPIO (shared)	0.8V to 1.35V	1.8V, 3.0V (MMC1 only)	0.4 mm 515 pin pBGA (12 mm x 12 mm) 0.65 mm 423 pin pBGA (16 mm x 16 mm)

*product preview, final number may change

Tap into the open source community

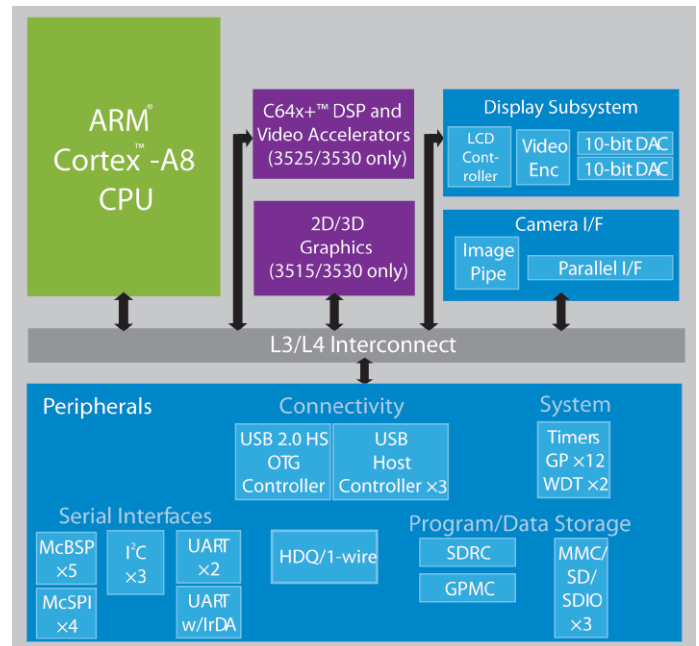
TI sees open source as a means to drive innovation, ultimately enabling our customers to create market-leading devices that push the envelope with performance and advanced capabilities. In addition, TI participates in a number of open source industry initiatives and open source projects. Support for these communities is another example of TI's ability to deliver proven software solutions for all major operating systems for portable electronics and advance the company's activity in the open source community.

Open Source Projects from TI <http://opensource.ti.com>

OMAP35x™ Evaluation Module



OMAP35x Processor Block Diagram



For more information on Arrow's ARM solutions, pricing, and availability, visit www.arrow.com/arm or call 1-866-910-3650.