

Portable HD Video Market on the Fast Track with New Low-Cost DaVinci™ Processor

The new sub U.S. \$10* TMS320DM355 DaVinci digital media processor offers HD video performance and two times the battery life of today's HD products. This device is ideal for portable HD applications such as digital cameras, IP network cameras, digital photo frames, video door bells and many others.

Developers can save months of development time in creating low-cost portable, HD-capable digital video devices by leveraging the integrated video processing subsystem, an MPEG-4/JPEG co-processor (MJCP), an ARM926EJ-S core, peripherals and development tools. The integration of a video/imaging co-processor and video processing subsystem is how the DM355 processor achieves its performance and ultra-low power consumption. The MJCP provides HD MPEG-4

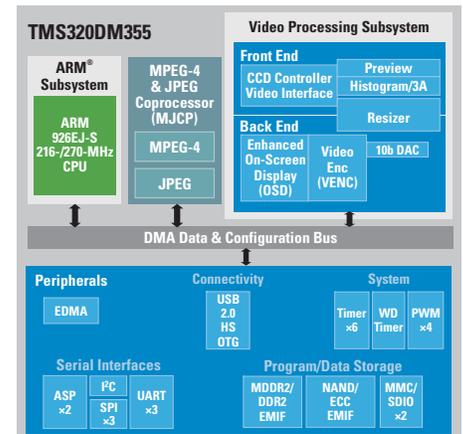
SP encode or decode at 720p and 30 frames per second and JPEG encode or decode at 50 Megapixels per second. The video processing subsystem integrates a preview engine, histogram, resizer and on-screen display all in hardware. Combined, the MJCP and video processing subsystem provide the equivalent of up to 640 MHz of DSP processing performance, enabling up to 270 MHz of ARM® processing capabilities to be available for product differentiation.

Systems based on the new DM355 solution will get up to twice the battery life of currently available portable HD systems. Depending on the application, the DM355 processor consumes approximately 400 mW during HD MPEG-4 encoding and only 1 mW of stand-by power. This means that consumers using DM355 processor-based digital cameras

in video mode can expect to record 80 minutes of HD video while using just two AA batteries.

Learn more at www.ti.com/dm355nl.

(*in 50 KU quantities)



TMS320DM355 processor block diagram

New DM355 DVEVM Shaves Months Off Development Time

The new TMS320DM355 Digital Video Evaluation Module (DVEVM) helps developers to achieve the fastest possible time to market and save months of development time. For U.S. \$495, the module includes:

- MontaVista Linux Pro 4.0 demonstration version
- On-board Ethernet controller with application notes and schematics
- JPEG and HD MPEG-4 SP production codecs and G.711 codec
- Full software board support package (BSP)
 - All drivers including UART, I2C, SPI, EDMA, NAND, MMC, SDIO, USB high-speed
 - U-boot loader
- Video capture of NTSC or PAL signals via composite video input
- NTSC or PAL output via composite video output
- Other features such as microphone in, headphone out, line in and line out, UART, USB 2.0 OTG, 2-GB NAND Flash memory and JTAG for test
- Free ORCAD files, schematics and PCB layout files

Developers using the DM355 processor and DVEVM can also take advantage of all existing DaVinci technology portfolio tools and support including the applications programming interfaces common across DaVinci offerings. Visit www.ti.com/dm355dvevml.

Register for October 16 DM355 Webcast

Find out why the TMS320DM355 processor, through integration of hardware and software, is the best option to design portable, low-cost HD video/imaging applications. In this webcast, TI experts will provide an

overview of the new DM355 digital media processor and give an operational overview of the DM355 Digital Video Evaluation Module (DVEVM) which includes an optimized MontaVista Linux demonstration version,

production video/imaging codecs and drivers for the complete peripheral set. Register today at www.ti.com/dm355webcastnl.

Integrated Video/Imaging Codecs are Key Differentiator for DM355 Processor

How do you make a state-of-the-art video processing solution even better? By combining key HD video/imaging codecs with digital video silicon for less than U.S. \$10. The new DM355 digital media processor will outperform any offering on the market today for HD-capable digital video/imaging portable devices. With power consumption as low as 1 mW, designers get production-ready HD MPEG-4 encode and decode at 720p, 30 fps and JPEG encode and decode at 50 MPixels/second plus a G.711 codec. All these codecs are available with the DM355 processor with no royalties or license fees*. The features of the DM355 processor enable end products with HD capability at up to half the cost and twice the battery life of existing HD products on the market today.

Visit www.ti.com/dm355codecsnl.

* Patent IP royalties are not included, and must be licensed and paid for separately.

Engineering in Front of the Camera – Click on the DaVinci™ Line-Up

Whether you have two minutes or two hours, there is a video, podcast or webcast for you. A variety of videos featuring the new DM355 processor are available for on-demand viewing. Complete platform information including hardware and software will be featured in:

- **Technical Videocasts** – These four-minute videos give engineers the technical meat on the new DM355 processor products and software. Topics include: codec engine, software and tools, third parties, discussions on the future of video and much more.
- **Video360 Podcast** – Market movers and

shakers including independent industry technical analysts discuss the changes to the video market and why we should include ARM® in video applications.

- **DaVinci Webcasts** – Register to attend the newest Oct. 16 DaVinci webcast or view the archive of TI on-demand webcasts to learn the latest about DaVinci technology and how it can help your next design.

Check back frequently as we add new videos to the line-up at

www.ti.com/dm355videosnl.

Tune DaVinci-based Digital Video Systems Quickly and Efficiently with New Digital Video Software Production Bundle

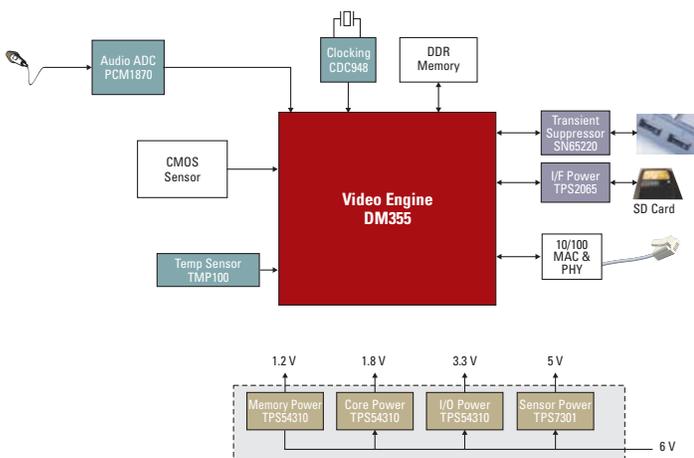
The Digital Video Software Production Bundle (DVSPB) provides the software needed to design complex DaVinci-based digital video systems quickly and efficiently. The DVSPB significantly improves software integration and system visibility by incorporating a variety of tools including:

- TI's Linux-based Digital Video Software Development Kit (DVSDK) including Codec Engine, multimedia APIs and Codec Engine frameworks

- Evaluation codecs, demos and drivers
- Production MontaVista Linux Pro 4.0 license, MontaVista Zone and DevRocket annual subscription
- SoC Analyzer
A DVSPB is recommended, coupled with a DVEVM, as a must-have for TI-supported ARM926 processor production design. Visit www.ti.com/dvspbnl.

Optimized System Block Diagrams

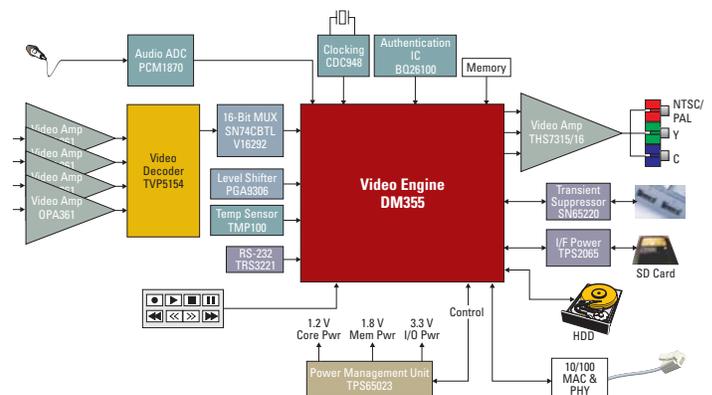
The DM355 digital media processor is ideally suited for a variety of applications. TI has the system expertise and the complete product



Low-end IP network camera block diagram

offering to optimize the entire design. View the video surveillance market system block diagrams for details.

For more block diagrams, visit www.ti.com/dm355blockdiagramsnl.



Low-end DVR block diagram

DaVinci DM355 At-A-Glance

It's easy to get started with DM355 processor solutions. Visit www.ti.com/dm355nl for easy reference of all the items needed for development.

- DM355 Digital Media Processor
- DM355 Technical Documents
- DM355 Digital Video Evaluation Module (DVEVM)
- Digital Video Software Production Bundle (DVSPB)
- Code Composer Studio™ IDE
- eXpressDSP™ Digital Media Software
- TI's DSP Third Party Network
- DM355 Videocasts
- DM355 Webcast
- DaVinci Podcast
- DaVinci CD
- DaVinci FAQs



DaVinci™ Technology DM355 Processor Q&A

For what applications is the TMS320DM355 processor best suited?

- Digital cameras/camcorders
- Digital photo frames
- Low-power network cameras
- Video doorbells
- Video baby monitors
- Portable media players
- Low-cost four-channel DVRs
- Many others

What are the key market drivers for this device?

There is a growing demand for high-definition video capture and playback in handheld devices at consumer price points. OEMs and ODMs are looking for a complete solution that will enhance their products, keep them affordable and reduce time to market.

What is the availability of these products?

At announcement date (September 4, 2007), silicon will be available and development tools will be available with an eight-week lead time. The devices will reach production volume in 1Q08.

What is the anticipated power consumption on this device?

- <400 mW for HD video encode (720p)
- ~1 mW standby power, deep sleep mode

Why is this solution a better offering for the customer?

The DM355 processor offers much higher performance than what is currently available from other ASICs and ASSPs on the market today. The combination of HD video capture and display, with additional ARM horsepower, all for less than U.S. \$10 is unprecedented.

Why are you introducing an ARM®-based processor?

We are dedicated to meeting the needs of our customers and one thing we've been hearing from them is that they want and need to be able to create scaleable product lines, within which they can have similar products at varying levels of functionality and price. By offering the DM355 processor and DVEVM, we've made it easier for our customers to do this.

This device includes the same Video Processing Subsystem as all DaVinci processors to help offload the processing required by the ARM. It also includes an MPEG/JPEG co-processor (MJCP) which handles the "heavy lifting" of the video processing. Thus the ARM, whether you have the 216 MHz or 270 MHz device, will be free to handle features such as the audio processing, user interface, networking, etc.

Finally, the ARM architecture allows the enormous number of open source Linux developers to reuse their IP on this device.

Which operating systems does the DM355 processor support?

The DM355 processor supports Linux and Windows® CE. Linux support is available from MontaVista and Logic Product Development is supporting Windows CE.

How is this a DaVinci device when it has a different architecture from the TMS320DM644x and TMS320DM643x devices?

DaVinci technology represents TI's complete offering for digital video applications, and we recognize that different video applications have different processing requirements.

Through DaVinci technology, we have a range of processing architectures for our customers to select from and all are wrapped with DaVinci software, development tools and support.

What is included with the development tool?

The DM355 DVEVM (TMDXEVM355) includes:

- MontaVista Linux Pro 4.0 demonstration version
- Full software board support package (BSP)
 - All drivers including UART, I2C, SPI, EDMA, NAND, MMC, SDIO, USB high-speed
 - U-boot loader
- On-board Ethernet controller with application notes and schematics
- JPEG and HD MPEG-4 SP production codecs and G.711 codec
- Video capture of NTSC or PAL signals via composite video input
- NTSC or PAL output via composite video output
- Other features such as microphone in, headphone out, line in and line out, UART, USB 2.0 OTG, 2-GB NAND Flash memory and JTAG for test
- Free ORCAD files, schematics and PCB layout files

What software comes with the processor and/or DVEVM?

Royalty and license-free* production-ready HD MPEG-4 encode and decode and JPEG encode and decode plus a G.711 codec are included with the DM355 processor solution.

To view all DaVinci technology FAQs, please visit www.ti.com/davincifaqnl.

** Patent IP royalties are not included, and must be licensed and paid for separately.*



CD Provides Comprehensive View of DaVinci Technology

This highly informative CD includes numerous white papers, FAQs, technical specifications and documents, benchmarks, information about third-party support, podcasts, important Web links and more. Get your free copy now at www.ti.com/davincicdnl.



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New DaVinci Technology Overview Brochure

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