IBM

MPEGCS24 Digital Audio/Video Decoders

Highlights

Enabling cost-effective, value-add products

The IBM® MPEG-2 digital audio/video decoders, IBM MPEGCS24 and IBM MPEGCS24D, are advanced, high-performance chips designed to satisfy the needs of customers developing professional audio/video products. New members of IBM's family of MPEG-2 products, these single-chip decoders are suited for professional audio/video editing, broadcast, and a range of emerging applications.

IBM MPEGCS24 and IBM MPEGCS24D decoders can decode MPEG-2 4:2:2 Profile at Main Level video, Main Profile at Main Level (MP @ ML) video, and MPEG-2 stereo Layer I & II (CD quality) audio. The IBM MPEGCS24D decoder offers the added ability to decode Dolby® Digital audio. Both decoders feature an integrated transport stream demultiplexer and SDRAM interface.*

The MPEGCD21 was IBM's initial 4:2:2 profile decoder offering. Today the IBM MPEGCS24 and MPEGCS24D decoders build on this successful technology to give customers a combination of capabilities for designing value-add products quickly and affordably.

A flexible, single-chip solution for high-performance systems
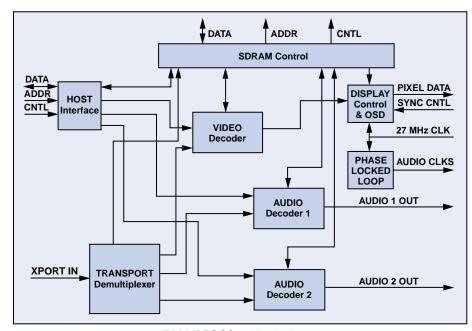
IBM MPEGCS24 and IBM MPEGCS24D decoders feature an integrated transport stream demultiplexer, MPEG-2 video decoder, dual audio decoders, and an SDRAM interface. By integrating these features on a single chip, the decoders enable more complex designs while helping to reduce design time and expense.

Integrated transport stream demultiplexer

The integrated transport stream demultiplexer accepts continuous input at a rate of up to 160 Mb/s in parallel format or 60 Mb/s in serial format. Compliant with the ISO/IEC 13818-1 system layer standard, it incorporates a range of capabilities, including data error detection, reporting and concealment, programmable PID and table filtering, and flexible packet data routing. These features assist in the design of very high-performance, complex systems using fewer external components.

IBM's single-chip digital audio/video decoders integrate advanced features for high-performance solutions.

IBM MPEGCS24 block diagram

MPEG-2 video decoder

The powerful video decoder is compliant with the ISO/IEC 13818-2 standards for MPEG-2 4:2:2 Profile at Main Level video and MP @ ML video decoding. Additionally, the video decoder is capable of decoding both elementary streams and packetized elementary streams at rates of up to 50 Mb/s. This capability supports point-to-point broadcast applications of studio quality.

The video decoder offers a suite of features that provide design flexibility for emerging, high-performance applications. Horizontal and vertical filtering, pan and scan, on-screen display support, 3:2 pulldown support, VBI output support, and audio and video synchronization are all incorporated into the video decoder. An on-chip SDRAM memory interface, supporting 4-MB and 8-MB memory configurations, enables more flexible, cost-effective designs.

Part numbers

IBM39MPEGCS24PFA16C
IBM39MPEGCS24DPFA16C

Dual audio decoders

The dual audio decoders, which can operate simultaneously, support robust designs, such as multi-language applications requiring multiple audio streams. The decoders can be configured to decode MPEG-1 and MPEG-2 Layer I and II audio in compliance with the ISO/IEC 13818-3 standard. The IBM MPEGCS24D can also decode Dolby Digital audio, providing the latest technology for digital and audio systems. Both the IBM MPEGCS24 and IBM MPEGCS24D offer a built-in phase locked loop for audio-video synchronization and the flexibility to support multiple audio sampling rates and outputs.

Tools for simplified design

To help customers expedite product development, IBM offers design tools, including an evaluation card and card schematics.

For more information, visit our Web site at www.chips.ibm.com

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Specifications

Technology	0.25-micron process, 4 levels of metal
Ambient temperature	0° C to 70° C
Nominal supply voltage	3.3 volts +/- 5%, 2.5 volts +/- 5%
Power dissipation	1 watt (nominal)
Packaging	208-pin, 28-mm PQFP

G522-0191-01