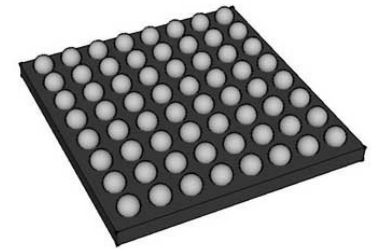



DSP 32bit 300MHz 338-Pin NFBGA Tray



Images are for reference only

[Inquiry](#)

Manufacturer:	Texas Instruments, Inc
Package/Case:	BGA338
Product Type:	Embedded Processors & Controllers
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active

General Description

Developers can now deliver pixel-perfect images at up to 720p H.264 at 30fps in their digital video designs without concerns of video format support, constrained network bandwidth, limited system storage capacity or cost with the new TMS320DM365 digital media processor based on DaVinci technology from Texas Instruments Incorporated (TI). With multi-format HD video, the DM365 also features a suite of peripherals saving developers on system costs. This ARM9-based DM365 device offers speeds up to 300 MHz and supports production-qualified H.264, MPEG-4, MPEG-2, MJPEG and VC1/WMV9 codecs providing customers with the flexibility to select the right video codec for their application. These codecs are driven from video accelerators offloading compression needs from the ARM core so that developers can utilize the most performance from the ARM for their application. Video surveillance designers achieve greater compression efficiency providing more storage without straining the network bandwidth. Developers of media playback and camera-driven applications, such as video doorbells, digital signage, digital video recorders, portable media players and more can ensure interoperability as well as product scalability by taking advantage of the full suite of codecs supported on the DM365.

Along with multi-format HD video, the DM365 enables seamless interface to most additional external devices required for video applications. The image sensor interface is flexible enough to support CCD, CMOS, and various other interfaces such as BT.656, BT.1120. The DM365 also offers a high level of integration with HD display support including, 3 built-in 10-bit HD Analog Video Digital to Analog Converters (DACs), DDR2/mDDR, Ethernet MAC, USB 2.0, integrated audio, Host Port Interface (HPI), Analog to Digital Converter, and many more features saving developers on overall system costs as well as real estate on their circuit boards allowing for a slimmer, sleeker design.

Key Features

Highlights

- High-Performance Digital Media System-on-Chip (DMSoC)
- Two Video Image Co-processors (HDVICP, MJCP) Engines
- Supports a Range of Encode, Decode, and Video Quality Operations
- HW Face Detect Engine
- Resize Engine from 1/16x to 8x
- 16-Bit Parallel AFE (Analog Front-End) Interface Up to 120 MHz
- 4:2:2 (8-/16-bit) Interface

8-/16-bit YCC and Up to 24-Bit RGB888 Digital Output

3 DACs for HD Analog Video Output

Hardware On-Screen Display (OSD)

Capable of 720p 30fps H.264 video processing

Note: 216-MHz is only capable of D1 processing

Peripherals include EMAC, USB 2.0 OTG,DDR2/NAND, 5 SPIs, 2 UARTs, 2 MMC/SD/SDIO, Key Scan

8 Different Boot Modes and Configurable Power-Saving Modes

Pin-to-pin and software compatible with DM368

Extended temperature (-40°C - 85°C) available for 300-Mhz device

3.3-V and 1.8-V I/O, 1.2-V/1.35-V Core

338-Pin Ball Grid Array at 65nm Process Technology

High-Performance Digital Media System-on-Chip (DMSoC)

216-, 270-, 300-MHz ARM926EJ-S Clock Rate

Fully Software-Compatible With ARM9

ARM926EJ-S Core

Support for 32-Bit and 16-Bit (Thumb Mode) Instruction Sets

DSP Instruction Extensions and Single Cycle MAC

ARM Jazelle Technology

EmbeddedICE-RT Logic for Real-Time Debug

ARM9 Memory Architecture

16K-Byte Instruction Cache

8K-Byte Data Cache

32K-Byte RAM

16K-Byte ROM

Little Endian

Two Video Image Co-processors (HDVICP, MJCP) Engines

Support a Range of Encode and Decode Operations

H.264, MPEG4, MPEG2, MJPEG, JPEG, WMV9/VC1

Video Processing Subsystem

Front End Provides:

HW Face Detect Engine

Hardware IPIPE for Real-Time Image Processing

Resize Engine

Resize Images From 1/16× to 8×

Separate Horizontal/Vertical Control

Two Simultaneous Output Paths

IPIPE Interface (IPIPEIF)

Image Sensor Interface (ISIF) and CMOS Imager Interface

16-Bit Parallel AFE (Analog Front End) Interface Up to 120 MHz

Glueless Interface to Common Video Decoders

BT.601/BT.656/BT.1120 Digital YCbCr 4:2:2 (8-/16-Bit Module

Histogram Module

Lens distortion correction module (LDC)

Hardware 3A statistics collection module (H3A)

Back End Provides:

Hardware On-Screen Display (OSD)

Composite NTSC/PAL video encoder output

8-/16-bit YCC and Up to 24-Bit RGB888 Digital Output

3 DACs for HD Analog Video Output

LCD Controller

BT.601/BT.656 Digital YCbCr 4:2:2 (8-/16-Bit) Interface

Analog-to-Digital Convertor (ADC)

Power Management and Real Time Clock Subsystem (PRTCSS)

Real Time Clock

16-Bit Host-Port Interface (HPI)

10/100 Mb/s Ethernet Media Access Controller (EMAC) - Digital Media

IEEE 802.3 Compliant

Supports Media Independent Interface (MII)

Management Data I/O (MDIO) Module

Key Scan

Voice Codec

External Memory Interfaces (EMIFs)

DDR2 and mDDR SDRAM 16-bit wide EMIF With 256 MByte Address Space (1.8-V I/O)

Asynchronous 16-/8-bit Wide EMIF (AEMIF)

Flash Memory Interfaces

NAND (8-/16-bit Wide Data)

16 MB NOR Flash, SRAM

OneNAND(16-bit Wide Data)

Flash Card Interfaces

Two Multimedia Card (MMC) / Secure Digital (SD/SDIO)

SmartMedia/xD

Enhanced Direct-Memory-Access (EDMA) Controller (64 Independent Channels)

USB port with Integrated 2.0 High-Speed PHY that Supports

USB 2.0 High-Speed Device

USB 2.0 High-Speed Host (mini-host, supporting one external device)

USB On The Go (HS-USB OTG)

Four 64-Bit General-Purpose Timers (each configurable as two 32-bit timers)

One 64-Bit Watch Dog Timer

Two UARTs (One fast UART with RTS and CTS Flow Control)

Five Serial Port Interfaces (SPI) each with two Chip-Selects

One Master/Slave Inter-Integrated Circuit (I2C) Bus

One Multi-Channel Buffered Serial Port (McBSP)

I2S

AC97 Audio Codec Interface

S/PDIF via Software

Standard Voice Codec Interface (AIC12)

SPI Protocol (Master Mode Only)

Direct Interface to T1/E1 Framers

Time Division Multiplexed Mode (TDM)

128 Channel Mode

Four Pulse Width Modulator (PWM) Outputs

Four RTO (Real Time Out) Outputs

Up to 104 General-Purpose I/O (GPIO) Pins (Multiplexed with Other Device Functions)

Boot Modes

On-Chip ARM ROM Bootloader (RBL) to Boot From NAND Flash, MMC/SD, UART, USB, SPI, EMAC, or HPI

AEMIF (NOR and OneNAND)

Configurable Power-Saving Modes

Crystal or External Clock Input (typically 19.2 Mhz, 24 MHz, 27 Mhz or 36 MHz)

Flexible PLL Clock Generators

Debug Interface Support

IEEE-1149.1 (JTAG) Boundary-Scan-Compatible

ETB (Embedded Trace Buffer) with 4K-Bytes Trace Buffer memory

Device Revision ID Readable by ARM

338-Pin Ball Grid Array (BGA) Package (ZCE Suffix), 0.65-mm Ball Pitch

65nm Process Technology

3.3-V and 1.8-V I/O, 1.2-V/ 1.35-V Internal

Community Resources

TI E2E Community

TI Embedded Processors Wiki

Recommended For You

TMS320DM642AZN6

Texas Instruments, Inc

BGA

TMS320C31PQA40

Texas Instruments, Inc

QFP

TMS320C6726BRFP266

Texas Instruments, Inc

QFP144

TMS320DM648ZUTD9

Texas Instruments, Inc

BGA

TMS320C203PZ80

Texas Instruments, Inc

QFP

TMS320F28027PTT

Texas Instruments, Inc

LQFP48

TMS5703137DZWTQ1

Texas Instruments, Inc

NFBGA-337

TMS34010FNL-40

Texas Instruments, Inc

PLCC

TMS320C6670ACYP2

Texas Instruments, Inc

FCBGA84

TMS320VC5402APGE16

Texas Instruments, Inc

LQFP-144

TMS320DM642AGDKA5

Texas Instruments, Inc

FCCSP(GDK)

TMS320C6424ZWT4

Texas Instruments, Inc

BGA

TMS320C6711DZDP250

Texas Instruments, Inc

BGA

TMS320DM65ZCE30

Texas Instruments, Inc

BGA

TMS320DM642AZNZA6

Texas Instruments, Inc

BGA