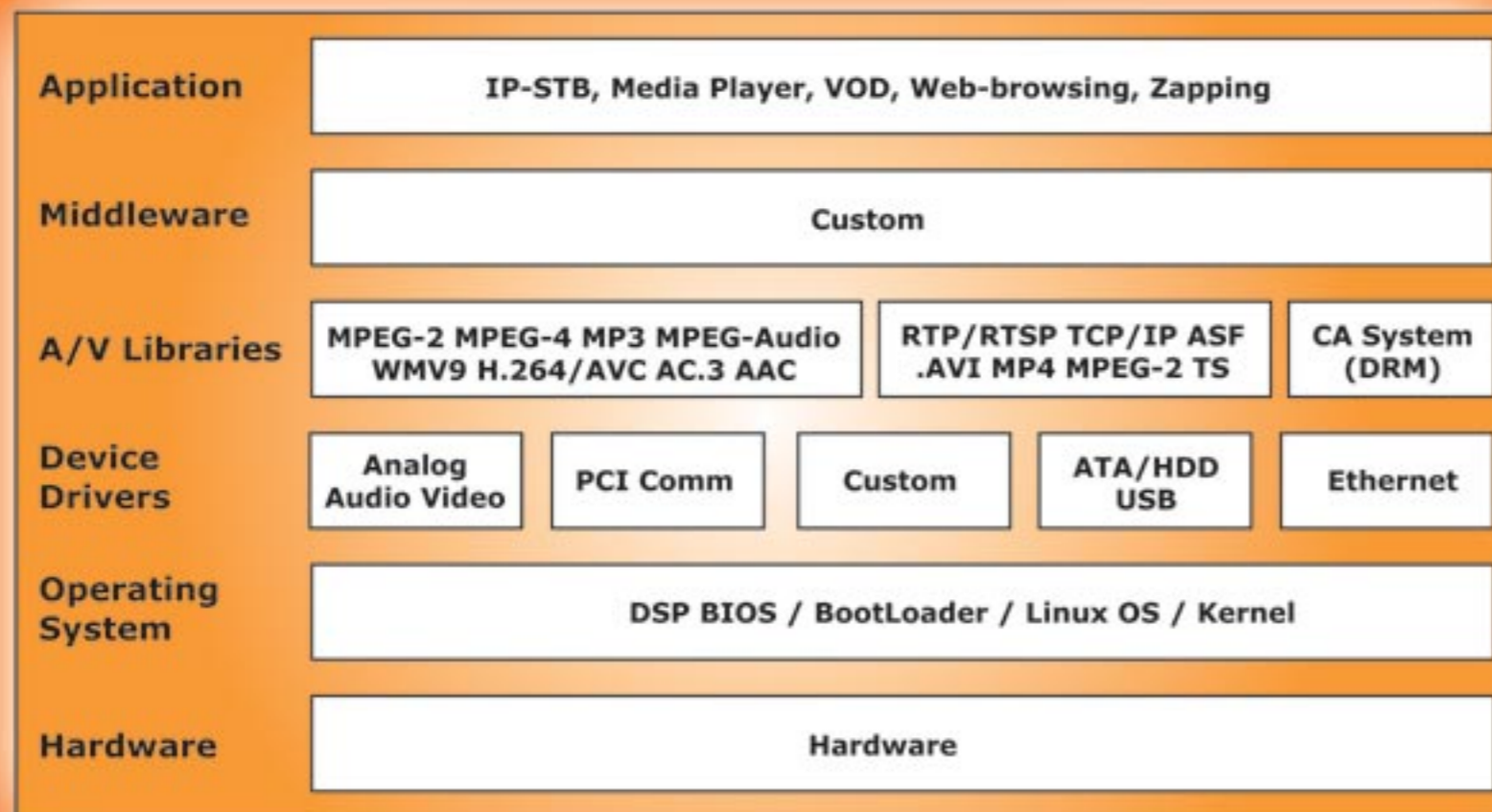


Thunder

Convergence for tomorrow entertainment

Programmable Reference Design for Digital Content Processing



FEATURES

- A computing board
- DM642 + Host CPU (controller)
- An I/O interface board
- Connectors and PHY components
- Audio and Video Codecs
- Linux OS & Applications
- APIs for fast development



DM642
Video co-processor
for
H.264 / AVC
Windows Media 9
...

Host CPU Controller
Services, DRM, UI,
Middleware,
Applications

BENEFITS

- Modularity with host CPUs
- Modularity with I/O Boards
- Easy use of DSP (co-processor)
- Complete S/W and H/W reference design
- Full upgradeability

Complete Software & Hardware Reference Design:

- *Toolkit* solving all audio/video key issues: lip sync, transport, streaming, codec switches
- *Versatile* with multi-format codecs, multi-modes (playback, record)
- *Time-To-Market speed-up* with APIs for fast applications developments

Dual-processor board combining the best of two worlds:

- DSP TI DM642 DSP (600/720 MHz) video co-processor
- Host CPU (Linux OS): peripherals, communication, OSD/graphics, end-user apps/services

Interfaces:

- IDE/ATA33 supporting 2 drives (DVD drive + HDD)
- Video In/Out, audio 6-channel In/Out and S/PDIF, Ethernet, miscellaneous data interfaces



KEY FEATURES

- High performance codecs
- Full Toolkit (HW / SW)
- DSP: the most versatile and effective video co-processor
- Fully programmable and open
- Re-use of existing code (Linux)
- Field upgradeable audio and video codecs
- Modular light design of any I/O board

APPLICATIONS

- Consumer Electronics
Home Gateways
HTiB, IPTV, IP-STB,
IP-videophones,
VOD Set Top Boxes,
PVR including CD/DVD player,
Nero Digital player
- In-Flight Entertainment
- Automotive/Infotainment
Rear Seat Players
On-board applications



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Hardware

PROCESSING BOARD

Processors

- DM642 TI DSP @600/720 MHz
- MPC5200 (Power PC) @400 MHz

Memory

- 16 MB (DSP) + 64 MB (GPP) SDRAM
- 32 MB Flash
- 128 kB Boot Flash

Operating system

- Linux OS (2.4.xx)

IDE/UDMA Port

- Support to 2 drives (DVD + HDD)
- Hard Disk Drive (30 GB)
- DVD Drive (option)

Dimensions

- 70 x 100 mm (2.76" x 3.94")

OTHER HARDWARE

Front panel user I/F board

- 5 Keys
- 3 LEDs
- Infra-Red Remote Control (RC5)

Debug Plug-In connector

- DSP JTAG Debug Interface
- CPU BDI Debug Interface

Metal case

- Dim.: 248 x 175 x 52 mm
(9.76" x 6.89" x 2")

INTERFACING BOARD

A/V interfaces (PAL/NTSC Video)

- 1 Y/C Video IN
- 1 RCA CVBS Video IN
- 1 Y/C Video OUT
- 1 RCA CVBS Video OUT
- 2 RCA Stereo Audio IN (24 bits / 192 kHz)
- 6 RCA 6-CH Audio OUT (24 bits / 192 kHz)
- 1 RCA SPDIF Audio OUT (192 kHz)

Peripherals interfaces

- 10/100 BaseT Ethernet
- USB 1.1 Host
- RS-232
- CAN BUS

Dimensions

- 170 x 100 mm (6.70" x 3.94")

Available on-request

- SPI, Second USB, GPIOs, IrDA
- 3 Video Ports, McBSP/McASP, TSI

POWER SUPPLY

Voltage

- 12 V (9V to 15V tolerated)

Boards Consumption

- 8 W Max.

Software Development Kit (SDK)

On DSP

Video decompression

- MPEG-4 ASP (ISO 14496 part 2)
- WM9 Video
- MPEG-4 AVC/H.264 (ISO 14496 part 10)
- Nero Digital
- DivX 3.11 to 5.x, MSMPEG-4, XviD
- MPEG-2 / MPEG-1

Audio decompression

With advanced video decoders it is recommended to perform audio decompression on the CPU to offload the DSP.

- MPEG-4 LC / HE AAC
- MPEG Audio (incl. MP3)
- AC-3
- WMA

Design Documentation

- Orcad source files (Option)
- BOM and schematics (Option)
- Source code examples
- Demos and application samples

On Host CPU

System Layers

- RTP / RTSP (ISMA)
- MPEG-2 Transport Stream (TS)
- ASF (Advanced Streaming Format)
- Descrambling (AES)

Audio decompression

- MPEG-4 LC / HE AAC
- MPEG Audio (incl. MP3)
- AC3

Documented APIs

- DSP control
- User Interface (keys/LED/IR remote control)
- OSD and graphics overlay management
- PVR (Record and Playback)

Board system

- Bootloader, Linux Kernel, Distribution
- Board Support Package (BSP)



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