# Odin TeleSystems Inc.

Open Telecom for
Open Minds

Odin TeleSystems introduced the Alvis-ASM product family to provide the ultimate industry solution for voice (VoIP) and video streaming applications (TVoIP) essential for soft-switch systems, media gateways and transcoding applications. The Alvis-ASM solution is based on Texas Instruments' dual core DaVinci TMS320DM6443 Digital Media processors. These processors provide an astonishing amount of processing power which facilitates transcoding of up to 256 channels.

The Alvis-ASM is a daughter card which is designed to be populated on any Odin Telecom FrameworX (OTX) PCI/PCIe board of revision 2.0 or later. Packets containing voice or video transferred via the 10/100/1000 Ethernet port can easily be decoded and encoded and routed to bidirectional TDM channels of the H.100 bus of the OTX base board or to any of its telecom transceivers (e.g. E1/T1). Alvis-ASM is a perfect match for the OTX Thor-8-PCI-Plus boards which is equipped with eight E1/T1/J1spans (256 bidirectional channels). For transcoding systems without TDM streams, other Alvis variants like the Alvis-CSI or Alvis-PCIe are highly suitable (see separate product brief).

Each of the dual core processors on the Alvis-ASM consists of one ARM9 core and one DSP C64x+ core. For optimum performance, the work load is split between the two cores. The ARM core runs the MontaVista Linux operating system and handles higher layer stacks like Session Initiation Protocol (SIP) and TCP/IP. The DSP core runs DSP/BIOS (xDM codecs) and handles all real-time encoding/decoding operations.

The open architecture of the Alvis-ASM provides system designers with the building blocks needed to build a very powerful soft-switch or media gateway application, yet providing

Alvis-ASM
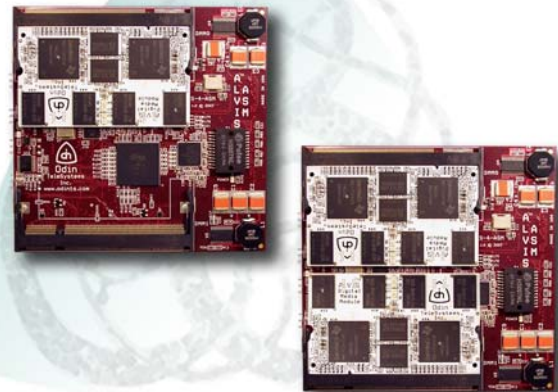
Feature Highlights

- Up to four Texas Instruments TMS320DM6443 dual core processors with 4752 DSP MIPS and 297 MHZ ARM9 processing power each.

- 256 MB DDR2 memory per processor

- 256 MB NAND shared flash memory

- Support for most popular VoIP algorithms like G.723.1, G.729AB, DTMF, MF, HDLC etc..

- MontaVista Linux on ARM-core. WinCE (optional)

- DSP/BIOS & Codec Engine Framework on DSP-core

- 10/100/1000 Ethernet connection via the OTX NIC card.

- Hardware WatchDog Timer on each DM device controlled by the ARM core.

- JTAG and Serial ports for debugging

- Supports standard OTX DSP API for customized DSP applications.

- Compatibility with TI xDM (XDAIS) specification

- OTX CodecEngine Servers for common SPM

- Odin ASM (application specific module) interface with 4 PCM highways (64 channels each)

Applications

Provides applications capabilities for the following, plus others:	• VoIP and TVoIP Media Gateway • Transcoders and Soft-switches • SS7 and ATM simulators, Call monitors, Voice Response Systems, etc

Technical Specifications

Board Connectors	• Odin ASM (Application Specific Module) interface • Two 2x70 board stack connectors (connects to OTX base board) • RJ-45 10/100/1000 Ethernet connector (via base board) • JTAG debug port (via base board) • USB 2.0 (via extension card) • Serial port
Data Interface	• 4 x 2/4/8 Mbit/s PCM highways switchable in the time-space switch of the host board • 10/100/1000 Ethernet connection (the TMS320DM6443 devices are switched via an on-board L2 Ethernet switch supporting features such as Full 4k EE 802.1Q VLAN support, QoS services according to IEEE 802.1p with up to 4 transmission priority queues, Congestion Management using Weighted Random Early Detection/Discard (WRED))
Control Interface	• Via OTX Driver API
DSP core and ARM9 Resources	• Alvis-1-ASM: 1 x TI TMS320DM6443; 4752 DSP MIPS + 297 MHz ARM9 • Alvis-2-ASM: 2 x TI TMS320DM6443; 9504 DSP MIPS + 2 x 297 MHz ARM9 • Alvis-4-ASM: 4 x TI TMS320DM6443; 19008 DSP MIPS + 4 x 297 MHz ARM9
Memory	• 256 MB SDRAM per TMS320DM6443 device (shared by DSP and ARM9 cores) • 256 MB Flash memory
Programming Interface	• OTX DSP API (for custom DSP core software) • OTX HW API (for controlling software) • Montavista Linux tools
Debugging Interface	• JTAG connection on host card, which allows connectivity to standard third-party emulator cards and Texas Instruments Code Composer Studio. • Serial port connection allows full access to ARM9 core
Power Requirements/Environmental Data	• Power is supplied via external power connector, or optionally via the base board. • Power consumption: TBD • Temperature: <u>operating</u>, 0^oC to $+50^o$C; <u>non-operating</u>, -40^oC to $+60^o$ C • Humidity: <u>operating</u>, 5% to 80% RH (%relative humidity) at up to $+30^o$C, and 5% to 30% RH above $+30^o$ C up to $+50^o$C non-condensing; <u>non-operating</u>, 5% to 80% RH at up to $+30^o$C, and 5% to 30% RH above $+30^o$C up to $+50^o$C non-condensing • Altitude: <u>operating</u>, up to 4,600 meters (15,333 feet); <u>non-operating</u>, up to 12,192 meters (50,000 feet)

Ordering Information

Product Name/Product Category	Alvis-1-ASM: HAA-1077-1-1.0 Optional: Alvis-ASM Ethernet Kit Alvis-2-ASM: HAA-1083-1-1.0 Product Number: 2:HMA11721-1.0 Alvis-4-ASM: HAA-1079-1-1.0

Contact Information

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