



Odin TeleSystems Inc.

*Open Telecom for
Open Minds*

The Alvis-PCIe media processing board is a member of the award-winning Odin Telecom Frameworks (OTX) product family. The Alvis-PCIe offers the most processing power for demanding VoIP and video streaming applications, soft-switch systems, media gateways, transcoding systems, and similar applications.

The Alvis-PCIe is a PCI-Express (1x lane) card with popular interfaces such as Gigabit Ethernet, H.100 and PCI-Express.

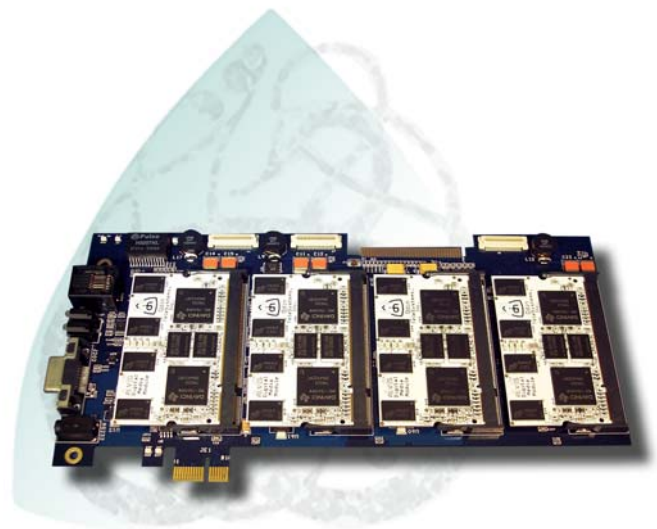
The processor engine of the board is a cluster of the DaVinci TMS320DM6443 Digital Media processor from Texas Instruments. The Alvis-PCIe board can be populated with up to eight of these powerful dual core processors providing an astonishing amount of processing power.

Voice or video packets can be routed via the on-board Ethernet switch to the appropriate processor. The processor can perform decoding and decoding functions. The result can either be transferred to the Ethernet port or routed to another OTX board via the on-board H.100 bus.

Each of the dual core processors on the Alvis-PCIe 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 and decoding operations.

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

Alvis-PCIe



Feature Highlights

- Up to eight Texas Instruments TMS320DM6443 dual core processors with 4752 DSP MIPS and 297 MHZ ARM9 processing power each.
- 256 MB DDR2 memory per processor
- 128 MB NAND shared flash memory
- Includes support for the most popular VoIP and Video algorithms like G.723, G.729AB, G.726, and G.711.
- MontaVista Linux on ARM-core. WinCE (optional)
- DSP/BIOS & Codec Engine Framework on DSP-core
- 10/100/1000 Ethernet port .
- On-board Ethernet switch supporting VLAN and other common networking features.
- One USB 2.0 port per processor (accessible via add-on card)
- JTAG and Serial ports for debugging
- Supports standard OTX DSP API for customized DSP applications.
- Secondary PCI-Express connector for chassis-to-chassis links and H.100 interface for board-to-board links.
- Low cost per transcoding-channel
- Very powerful for transcoding applications

Alvis-PCIe Product Brief

Applications			
<i>Provides applications capabilities for the following, plus others:</i>	<ul style="list-style-type: none"> • VoIP and TVoIP Media Gateway, Transcoders and Soft-switches • SS7 and ATM simulators, Call monitors, Voice Response Systems, etc 		
Technical Specifications			
<i>Board Connectors</i>	<ul style="list-style-type: none"> • PCI-Express interface (1x) • H.100 edge connector • RJ-45 10/100/1000 Ethernet connector • JTAG debug port • USB 2.0 (via extension card) • Secondary PCI-Express chassis-to-chassis connector • Serial port (one connector on board bracket; additional ports via add-on card) 		
<i>Data Interface</i>	<ul style="list-style-type: none"> • One 16 Mbit/s PCM highway per process switchable in the on-board time-space switch • One 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)) • One secondary PCI-Express interface for chassis-to-chassis connections 		
<i>Control Interface</i>	<ul style="list-style-type: none"> • Via OTX Driver API 		
<i>DSP core and ARM9 Resources</i>	<ul style="list-style-type: none"> • Alvis-1-PCIe: 1 x TI TMS320DM6443; 4752 DSP MIPS + 297 MHz ARM9 • Alvis-4-PCIe: 4 x TI TMS320DM6443; 19008 DSP MIPS + 4 x 297 MHz ARM9 • Alvis-8-PCIe: 8 x TI TMS320DM6443; 38016 DSP MIPS + 8 x 297 MHz ARM9 		
<i>Memory</i>	<ul style="list-style-type: none"> • 256 MB SDRAM per TMS320DM6443 device (shared by DSP and ARM9 cores) • 128 MB Flash memory 		
<i>Programming Interface</i>	<ul style="list-style-type: none"> • OTX DSP API (for custom DSP core software) • OTX HW API (for controlling software) • Montavista Linux tools 		
<i>Debugging Interface</i>	<ul style="list-style-type: none"> • JTAG connection, which allows connectivity to standard third-party emulator cards and Texas Instruments Code Composer Studio. • Serial port connection allows full access to ARM9 core 		
<i>Power Requirements/Environmental Data</i>	<ul style="list-style-type: none"> • Power is supplied via external power connector, or optionally via the base board. • Power consumption: TBD • Temperature: <u>operating</u>, 0° C to +50° C; <u>non-operating</u>, -40° C to +60° C • Humidity: <u>operating</u>, 5% to 80% RH (%relative humidity) at up to +30° C, and 5% to 30% RH above +30° C up to +50° C non-condensing; <u>non-operating</u>, 5% to 80% RH at up to +30° C, and 5% to 30% RH above +30° C up to +50° 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			
<i>Product Name/Product Category</i>	Alvis-1-PCIe: HAA-10841-1 One DaVinci processor PCI Express board Alvis-2-PCIe: HAA-10842-1 Two DaVinci processor PCI Express board Alvis-4-PCIe: HAA-10844-1 Four DaVinci processor PCI Express board Alvis-8-PCIe: HAA-10848-1 Eight DaVinci processor PCI Express board		
Contact Information			
<i>For more information on the Alvis-PCIe products, please contact:</i>	<table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"> Odin TeleSystems Inc. 800 E. Campbell Road, Suite 334 Richardson, TX 75081-1873 USA </td> <td style="width: 40%; vertical-align: top;"> Tel: +1-972-664-0100 Tel: 1-888-ODINTSM Fax: +1-972-664-0855 Email: info@odinTS.com Web: www.odinTS.com </td> </tr> </table>	Odin TeleSystems Inc. 800 E. Campbell Road, Suite 334 Richardson, TX 75081-1873 USA	Tel: +1-972-664-0100 Tel: 1-888-ODINTSM Fax: +1-972-664-0855 Email: info@odinTS.com Web: www.odinTS.com
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