INTEL Pro750™ PRODUCT FAMILY–
based on DVI Technology

DIGITAL VIDEO AND AUDIO FOR THE PERSONAL COMPUTER

The Intel Pro750 product family incorporates Digital Video Interactive (DVI) technology to open a new world of interactive multimedia software for application developers and video producers. With Pro750 hardware and software products, developers can provide new dimensions in personal computer software, offering full-motion video, multiple-track audio, high-resolution still video images and dynamic graphics, all in a single, integrated application.

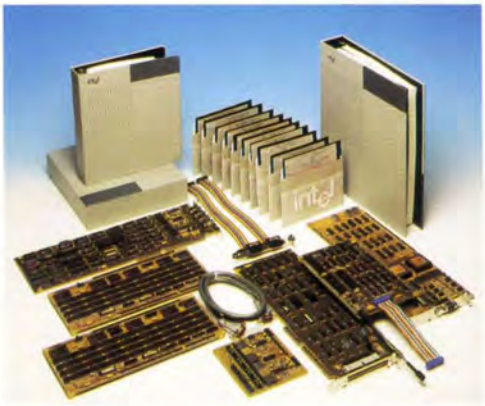
The Pro750 Application Development Kit (ADK) is a complete development environment, consisting of three boards and four add-on modules for installation in a PC AT™ bus, PC-compatible computer. System software, authoring and production software tools provide the application developer with the support tools necessary for DVI software development in the C programming language.

The Pro750 End-User Kit (EUK) is a subset of the ADK and provides the basic functionality required to run a DVI application program. It consists of the ADK's three main boards with a single add-on memory module and driver software.

FEATURES:

- Video Board with Intel 82750 PA/DA Video Display Processors
- Audio Board
- Utility Board
- Add-on VRAM Modules
- NTSC Video Digitizer Module
- Audio Digitizer Module
- Drivers and Diagnostics
- Run-time System Software
- Authoring Tools
- DVI Compression Service
- Training and Support

The Pro750
Application Development Kit



intel®

March 1989
Order Number: 240450-001

HARDWARE FEATURES

82750 PA/DA VIDEO DISPLAY PROCESSORS

The 82750 chip set is the heart of today's DVI technology. The chip set is designed to offer an integrated solution to video and graphics. Its flexible features support the decompression and display of motion video images, video compression, image manipulation and dynamic graphics.

The 82750PA is a pixel processor operating at 12.5 MIPS. It is a programmable device with on-chip RAM for microcoded programs. The 82750DA is a highly flexible display processor. It offers horizontal resolutions up to 1024 pixels with vertical resolutions up to 585 lines conforming to NTSC, PAL and graphics standards. Up to 16.8 million colors can be displayed at a time.

VIDEO BOARD WITH VRAM MODULES AND OPTIONAL NTSC DIGITIZER

The Pro750 Video Board contains the Intel 82750PA/DA Video Display Processors. It is designed for output to an analog RGB display. The board also includes an RCA phono jack for video input to the optional NTSC Video Digitizer Add-on Module. Connectors are included on the video board to allow the Digitizer to be installed as a piggyback module on the video board. The Digitizer Module genlocks to an external video source, allowing images to be captured at a resolution up to 768 pixels by 512 lines and allowing images to be superimposed on an NTSC input. The combination Video Board and Digitizer Module occupy a single slot.

Connectors on the Video Board and VRAM Modules allow VRAM Modules to be configured based upon the needs of an application. The Pro750 EUK provides 1MB of VRAM. The standard ADK is shipped with 2MB of VRAM. Up to 4MB of VRAM can be installed in a Pro750 system. Configurations utilizing two or more VRAM Modules extend into the adjacent slot in a standard AT bus system.

AUDIO BOARD AND ADD-ON DIGITIZER MODULE

The Pro750 Audio Board uses a TMS 320C10 Digital Signal Processor to provide multi-track, multi-channel digital audio. Up to four tracks are dynamically mixable down to two output channels. Variable sampling rates are provided up to 32 KHz over an 84 dB dynamic range. Audio software algorithms include real-time ADPCM compression and decompression. For output there are 2 RCA phono output jacks for connection to a standard stereo audio amplifier. Two additional RCA phono jacks are used for input to the Audio Digitizer Add-on Module. Connectors are included on the board for the Audio Digitizer Module.

UTILITY BOARD WITH CD-ROM INTERFACE

The Utility Board includes the interface to a Sony 6100 series CD-ROM player. A 50-pin connector is also mounted on the board for connecting to an internal Sony 510 CD-ROM player. The CD-ROM driver is compatible with Microsoft CD-ROM Extension drivers for DOS. Two high-performance game port connectors are also mounted on the backplane for use with two 3-button joysticks.

SOFTWARE FEATURES

RUN-TIME SYSTEM SOFTWARE

System Software libraries are included to allow DVI data files to run in the DOS environment. These are libraries of object files for compiling and linking into a final DVI application. RTX, or Real-time Executive, is a multi-tasking extension of PC-DOS™ and MS-DOS™ and includes a library of routines to allow the many capabilities of DVI to work concurrently.

AVSS, or Audio/Video Support System, is a real-time manager of digital data files, read from disk or from RAM, which coordinates the simultaneous support and presentation of digital audio and video. AVSS includes routines for controlling various combinations of full-motion video, digital audio and still frames individually or in combination.

The Video Microcode Library allows access to the capabilities of the Intel 82750 chip set. This library includes routines for decompression of full-motion video, image processing, and for the creation of graphics and video effects. A Graphics Library is included to provide C-language access to the high-performance capabilities of the 82750 chip set.

Sample DVI Application Screens

SOFTWARE FEATURES

AUTHORING TOOLS

To assist in the creative process of editing and assembling audio/video data files and software routines into a finished application, the ADK includes Authoring Tools software.

The application developer can use Edit-Level Video (ELV) software tools for real-time compression of video directly on a PC using the processing power of the 82750 chip set. This allows the developer to work with ELV video in previewing the final application. Tools are included to provide ELV compression at a rate of 10 frames per second, to playback ELV data files, and to incorporate ELV files into an application. Then, for final video quality, the DVI Compression Service is used to create Presentation-Level Video (PLV) files.

Software tools are included to allow still images to be captured and compressed at various resolutions and quality levels on the Pro750 system. This gives the application developer creative control over the final image file size and quality.

Tools are also included for capturing and editing digital audio. The developer has control over the quality level (sampling rate) and can program the audio for dynamic mix and presentation of the two output channels.

For previewing and editing video and audio data files, the Audio/Video Editing Tool is provided to allow the developer to select edit and linking points for data files. It creates files for AVSS to use in running the final program.

To assist with preparation of compressed data for replication on CD-ROMs, the ADK includes layout and formatting software tools.

DRIVERS AND DIAGNOSTICS

The Driver Software allows the Pro750 board products to operate with DOS and the PC computer. Diagnostics Software is also supplied to test the operation of the boards.

DEMONSTRATION SOFTWARE

Demonstration software includes sample code to demonstrate microcode routines and a collection of examples of application software.

SERVICES AND SUPPORT

DVI COMPRESSION SERVICE

The Pro750 ADK is designed to work in conjunction with Intel Princeton Operation Compression Service. After the developer has selected motion video for use in a final application, it is sent on master videotape to a DVI Compression Service facility for Presentation-Level Video compression. The developer can play back this compressed motion video on the Pro750 ADK or EUK.

TRAINING

Intel Princeton Operation offers a training program for application developers, programmers, and hardware developers. The curriculum includes hands-on training covering all aspects of the Pro750 family of hardware and software products.

CUSTOMER SUPPORT

Technical customer support is available through an on-line electronic mail system, facsimile and telephone.

SPECIFICATIONS

PHYSICAL CHARACTERISTICS

Video Board: Standard Full Slot PC AT–13.2" x 4.5"
Video Digitizer Module (option)
VRAM Module 1
VRAM Module 2 (option)

Audio Board: Standard Full Slot PC AT–13.2" x 4.5"
Audio Digitizer Module (option)

Utility Board: Standard Full Slot PC AT–13.2" x 4.5"

SPECIFICATIONS

Board Interface Connections:

Video Board:
- Analog RGB output (female DB-9 connector)
- Composite Video input (female RCA phono connector)

Audio Board:
- 2 Channel output (female RCA phono connector)
- 2 Channel input (female RCA phono connector)

Utility Board:
- External Sony Bus CD-ROM cable connector
- Internal 50-pin bus connector for Sony CD-ROM
- 2 joystick inputs (female DB-9 connectors)

APPLICATION DEVELOPMENT KIT HARDWARE REQUIREMENTS

- PC AT or compatible 80286 or 80386 based computer with 3 available AT bus slots and 640K system memory. (With 2MB or more of VRAM the Video Board will extend into fourth slot in some PCs.)
- Analog RGB Monitor (for video board output)
- Stereo Amplifier and 2 Audio Speakers

Optional:
- Sony 510-12 Internal Half-height CD-ROM Player or Sony 6100 Series External CD-ROM Player with MS-DOS CD-ROM Extensions
- 2MB of EMS Memory
- 3-Button Joystick
- Mouse

APPLICATION DEVELOPMENT KIT SOFTWARE REQUIREMENTS

- IBM PC-DOS 3.3 or Microsoft MS-DOS 3.3 Operating System
- Microsoft C Version 5.1 Compiler
- Microsoft LIB Library Manager, Version 3.04 or higher recommended
- Microsoft LINK Overlay Linker, Version 3.51 or higher required
- Microsoft MAKE Program Maintenance Utility, Version 4.02 or higher recommended
- Microsoft MASM Assembler, Version 5.1 or higher recommended

POWER CONSUMPTION

Video Board:

Voltage	Nominal Current	Maximum Current
+5 Volts	1990 mA	2600 mA
+12 Volts	54 mA	83 mA
−12 Volts	−51 mA	−83 mA

Video Digitizer Add-on Module:

Voltage	Nominal Current	Maximum Current
+5 Volts	1000 mA	1400 mA
−5 Volts	−50 mA	−100 mA
+12 Volts	45 mA	83 mA

Video Board VRAM Add-on Module:

Voltage	Nominal Current	Maximum Current
+5 Volts	720 mA	1000 mA

Audio Board:

Voltage	Nominal Current	Maximum Current
+5 Volts	1220 mA	1700 mA
+12 Volts	54 mA	83 mA
−12 Volts	−58 mA	−83 mA

Audio Digitizer Add-on Module:

Voltage	Nominal Current	Maximum Current
+5 Volts	150 mA	200 mA
−5 Volts	−1 mA	−2 mA
+12 Volts	175 mA	250 mA
−12 Volts	−36 mA	−62 mA

Utility Board:

Voltage	Nominal Current	Maximum Current
+5 Volts	960 mA	1400 mA

ENVIRONMENTAL REQUIREMENTS

Environment	Requirement
Operating Temperature	15.6°C to 30°C
Storage Temperature	10°C to 43°C
Humidity	8% to 80%
Non-Operating Humidity	20% to 80%

ORDERING INFORMATION

Order Code	Description
PRO750/1200ADK	Pro750 Application Developer Kit including Video Board with add-on modules for 2MB VRAM and Video Digitizing, Audio Board with Audio Digitizer Add-on Module, and Utility board. Application Development Software includes Runtime System Software, Authoring Tools, Drivers, Diagnostics, and Demonstration Software.
PRO750/1200EUK	Pro750 End-User Kit includes Video Board with 1 MB VRAM Add-on Module, Audio Board, and Utility Board. Software Drivers and Diagnostics are included.

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Printed in USA/0389/10K/LKA/PSZ
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