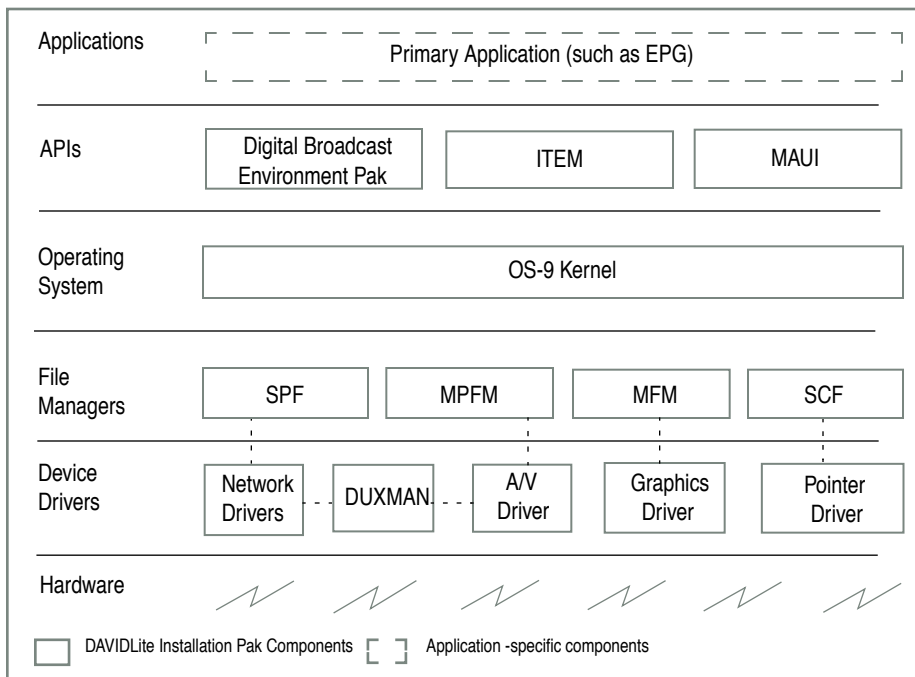# DAVIDLite
Installation Pak License

Features

- Optimized for digital broadcast receivers used in satellite, terrestrial and hybrid digital/analog networks
- Meets requirements for reduced software size, cost and functionality of digital broadcast receivers
- Upwards-compatible with DAVID for easy migration to fully interactive, two-way networks
- Supports international digital broadcast standards including DVB and MPEG

Product Overview

DAVIDLite is a compact operating system software environment for digital broadcast receivers used in digital satellite, digital terrestrial, and hybrid digital/analog networks. DAVIDLite cost-effectively enhances system performance by simultaneously managing incoming high-speed data communications, MPEG audio and video decoding, display of on-screen graphical user interfaces and management of channel navigation and conditional access.

Based on Microware's OS-9 real-time operating system, DAVIDLite is a streamlined version of the DAVID system software currently deployed in fully-interactive digital television networks around the world. With DAVIDLite, Microware has taken advantage of OS-9's inherent scalability and modularity to optimize the DAVID system specifically for digital broadcast environments with limited return channel capabilities.

The fact that DAVIDLite is upwards compatible with DAVID provides manufacturers a migration path for the future. This compatibility along with its proven technology, small footprint and reduced cost per unit makes DAVIDLite the software platform of choice for digital broadcast receivers.

DAVIDLite's modular architecture is extremely compact, offering a cost-effective solution for manufacturers of digital broadcast receivers.

Applications

Typically, digital broadcast receivers are designed to support a single primary application, such as an Electronic Programming Guide (EPG) with broadcast channel navigation, pay-per-view and near video-on-demand capabilities.

Application Programming Interfaces (APIs)

Above the OS-9 Kernel is a set of well-defined APIs which insulate applications from the underlying hardware and network architectures for optimal portability:

- **Multimedia Application User Interface (MAUI)**—fast, look-and-feel-independent API for graphics and application control
- **Integrated Telecommunications Environment for Multimedia (ITEM)**—open API for supporting device-to-network communications

To minimize memory requirements, these API libraries are linked in only when required by the application in a DAVIDLite Environment.

Additional APIs for channel navigation and EPG data management are found in the Digital Broadcast Environment Pak which also provides channel tuning and conditional access functionality for DAVIDLite devices to be compliant with the Digital Video Broadcast (DVB) standard.

Operating System

At the heart of DAVIDLite is the powerful OS-9 Kernel capable of handling up to 65,535 tasks simultaneously. OS-9's unique modular architecture and secure process model allow dynamic loading of DAVIDLite system or user application modules while the system is up and running.

File Managers

Below the OS-9 Kernel are hardware-independent file managers, each responsible for managing a specific category of input/output functionality:

- **Serial Protocol File Manager (SPF)**—oversees all network communications
- **Motion Picture File Manager (MPFM)**—manages decompression and demultiplexing (DUXMAN) of MPEG digital data
- **Multimedia File Manager (MFM)**—facilitates graphics display and audio playback
- **Serial Character File Manager (SCF)**—controls user input device

Device Drivers

Device drivers are the only DAVIDLite modules that are hardware-specific. These drivers can be easily modified by manufacturers to port DAVIDLite to the particular hardware chips present in a digital television device.

Product Contents

The DAVIDLite Installation Pak License includes a complete OS-9 Developers Kit with the OS-9 Kernel, SCF, and other standard OS-9 components.

In addition, the DAVIDLite Installation Pak License provides robust C libraries and system modules for SPF, MPFM, and MFM. The DAVIDLite Installation Pak also provides linkable C libraries for the MAUI and ITEM APIs for application development.

Source code is provided for sample device drivers used under all file managers as well as a sample Player Shell application.

Finally, the DAVIDLite Installation Pak License includes the complete Digital Broadcast Environment Pak which provides additional API libraries, protocol modules and sample device drivers for channel management and conditional access mechanisms.

Documentation

Full technical documentation is included with DAVIDLite on CD-ROM:

- DAVIDLite System Specification
- DAVID Installation Guide and Release Notes
- Using MPFM
- MPFM Programming Reference
- Using DUXMAN
- Using MAUI
- MAUI Programming Reference
- Using SPF
- SPF Programming Reference
- MAUI Porting Guide
- MPFM Porting Guide
- SPF Porting Guide

Comprehensive documentation is also provided for the OS-9 Developers Kit and the Digital Broadcast Environment Pak.

Hardware Requirements

The DAVIDLite Installation Pak License is available for digital television devices based on one of the following chipsets: Motorola 68xxx or PowerPC 40x, 60x, or 8xx. Contact Microware on the availability of DAVIDLite support for other microprocessors.

Software Requirements

A UNIX or PC host development system installed with the appropriate Microware Fas-Trak toolset, featuring the Ultra C/C++ Compiler is required for application and system software development.

Ordering Information

For pricing and licensing information, please contact your local microware representative or call Microware at 515-223-8000.

Additional Information

For additional information, please refer to the Digital Broadcast Environment Pak Data Sheet and the DVB for DAVIDLite White Paper. Information on training and consulting services is also available.

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1900 N.W. 114th Street Des Moines, Iowa 50325-7077
Phone (515) 223-8000 Fax (515) 224-1352
E-mail: info@microware.com   Internet: www.microware.com
Microware Systems, France +33 4 42.58.63.00   Microware Systems Ltd., U.K. +44 1628 667578
Microware Systems K.K., Japan +81 3-3257-9000   Microware Systems Ltd., Germany +49 8102 74220