

Set-Top Box Reference Design Kit

A complete development solution for accelerated time to market

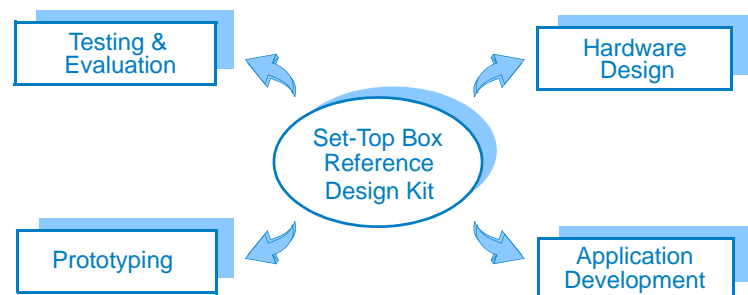
Highlights

Reference Design Kit Hardware

- IBM PowerPC* 403GC embedded controller
- Two RS-232 ports
- Serial port for IR remote control
- IEEE 1284 parallel port
- Smart card interface
- I²C port
- IBM CD21 MPEG-2 A/V decoder
- 4MB system DRAM (SIMM)
- 2MB FLASH memory
- 2KB serial EEPROM
- 4MB DRAM for video
- Digital video encoder (DENC) for:
 - NTSC, PAL or SECAM composite video
 - RGB and Y/C outputs
- Digital to analog converter (for audio)
- MPEG-2 transport chip (VES2020)
- System clock recovery logic
- Connectors for:
 - Transport stream front end
 - I²C four-pin expansion
 - Peripheral expansion
 - RISCWatch* and RISCTrace* debuggers
- Schematics and documentation

Reference Design Kit Software

- RTOS
- Compiler
- Debugger
- Device drivers
- Sample STB applications



Product Description

IBM's Set-Top Box (STB) Reference Design Kit provides the application development environment you need to craft the premier set-top box of tomorrow.

This STB development environment is available today with integrated hardware and software that has been quality-tested to help you maximize your product's potential. And since you don't have to start your design from scratch, you can minimize its time to market.

Integrated Hardware —

To provide maximum flexibility and functionality, the component specifications of hardware in this kit exceed the typical requirements for STB applications. This kit includes:

- IBM PowerPC 403GC* RISC embedded controller with integrated peripherals to provide the most cost-effective high-performance system solution
- IBM MPEG-2 Audio/Video Decoder (with superior error concealment) to

decode the MPEG stream, control On Screen Display (OSD), provide enhanced OSD functionality, and support MUSICAM audio

- IBM STB Peripheral Chip for cost-effective, reliable integration of GPIO, IR, Parallel Port, I²C, and a smart card interface on one chip
- Transport stream connector, to interface with satellite or cable network interface units (NIU), or interface with a Differential/ECL buffer module for a transport stream generator
- Audio DAC for digital to analog conversion of stereo audio
- Digital video encoder (EURO-DENC) to encode digital YUV video data to an NTSC or PAL or SECAM CVBS or S-video (Y/C) signal, as well as RGB
- Peripheral expansion port to integrate additional logic in the design, and to support testing, evaluation, debugging and prototyping



Integrated Software —

The STB Reference Design Kit contains test-proven STB software to further help speed your products to market; as well as development tools from premier vendors in the industry. You choose from one of two embedded application development tool packages, both of which include:

- Device drivers
- Sample STB applications to demonstrate audio/video and graphics capabilities, OSD functionality, and IR remote control

The balance of each package is a real-

time operating system (RTOS), a compiler, and a debugger.

One of several premier vendors contributing to this STB Reference Design Kit is Microware Systems Corporation. Their offering is the OS-9000** RTOS and the FasTrak** development environment. FasTrak is a complete drop-in toolset that includes a compiler, a debugger and much more.

Our other package consists of the pSOS+** RTOS from Integrated Systems, Inc., and the SingleStep** debugger from Software Development Systems, Inc. This package also offers compiler suites from Diab Data Inc.

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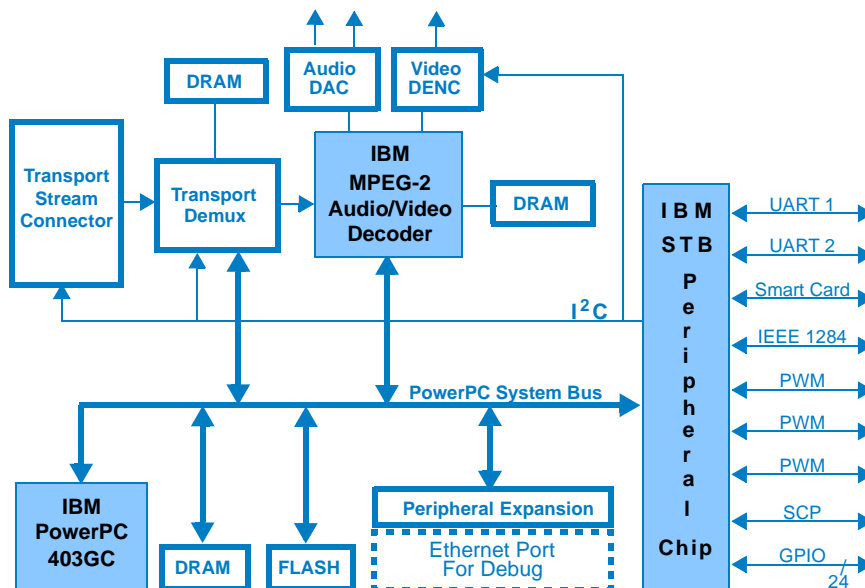
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Set-Top Box Reference Kit

We hope you will join the growing number of designers who recognize IBM Microelectronics' commitment to the set-top box market. You too are invited to employ IBM technology, tools, and technical support to develop leading-edge, cost-competitive STB solutions.

For more information about this reference design kit and other IBM set-top box products, contact your nearest IBM Microelectronics office, and visit our web site at:

<http://www.chips.ibm.com>



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