

Hitachi Begins to Provide SH7300 Platform SDK as Total Solution of Application Software Development for Next Generation Mobile Phone Systems Incorporating SH-Mobile

— With solution encompassing both hardware and software, enabling to halve application development time for next generation mobile phone systems and simplify development of sophisticated applications —

Tokyo, December 19, 2002— Hitachi, Ltd. (TSE: 6501) today announced the SH7300 Platform SDK (Software Development Kit), development solution encompassing both hardware and software, that is for application software development of mobile phone systems using the SH7300 which is the top model in the application processor SH-Mobile series for next generation mobile phones. Providing will begin in January 2003 in Japan.

The SH7300 Platform SDK comprises (1) the SH7300 Solution Engine^{®*1} of application development board, (2) the SH7300 HI Application Engine^{™*2} for building an application development environment, and (3) the SH7300 Middleware suite of tools for implementing video and audio playback or video mail on mobile phones, as well as an application programming interface (API), etc. By these hardware and software for effective system development, the SH7300 Platform SDK makes it possible to develop applications with high-efficiency for next generation mobile phones incorporating the SH7300. And application development time is possible to reduce to approximately half that previously required. In addition, the libraries for MPEG-4 hardware accelerator built into the SH7300 are providing and videophone functions for next generation mobile phones can be developed and evaluated easily.

The SH7300 Solution Engine and SH7300 HI Application Engine are manufactured by Hitachi ULSI Systems Co., Ltd. and Hitachi, Ltd. provides a total solution.

Recently, applications for mobile phones have expanded beyond voice communication to include high-level functions such as the games or image distribution. Hitachi developed the SH-Mobile series of processors to handle dedicated processing of such applications and they have been very favorably received within the industry. The SH7300 is the newest product in this series. It has a built-in MPEG-4 hardware accelerator to support smooth motion in applications for next generation mobile phones, such as videophone functions based on the high-speed data communication. However, when developing a variety of applications employing high-level functions for processors that are faster and have more advanced functions, the application programs themselves trend to become larger size and more complex, and the time required to develop them to increase. This means that there is a strong need for improved development efficiency for systems and applications in order to make it possible to bring new products to market in timely.

In response to this need, Hitachi is offering the SH7300 Platform SDK as a total application development solution for developers of next generation mobile phone systems incorporating the SH7300. It comprises a development board, software for building a development environment, and a suite of middleware tools.

By using the SH7300 Platform SDK, a developer can substantially simplify the task of building a development environment. This means that the actual application development can be started quickly and that the major emphasis can be focused on this task. In addition, the developer can make use of the middleware tools provided to develop a variety of applications easily. By a reduction the load of building a development environment and a suite of software (API, middleware etc.) that make creating applications more efficient, the SH7300 Platform SDK effectively halves the time required from the point when building the development environment starts to the point when application development is completed.

The compositions and features of the SH7300 Integrated Platform are described below.

< Compositions and Features >

1. SH7300 Solution Engine

This application development board equips with an SH7300 with an operating frequency of 118.8 MHz. It provides the functions and interface necessary for developing mobile phone applications in a compact unit. The board size is 100 mm × 254 mm, and mounted on it are a VGA size CMOS camera module, two LCD panels, 30 key switches, and other devices. It also equips with an audio interface and an expansion slot to support easy connection with external devices. In addition, the small size of the board means that application development can be accomplished in a limited area, such as on a desk. A circuit diagram of the board is provided and developers are free to make use of elements of the circuit design when developing their own system hardware. Thus the time required for hardware development is reduced as well.

2. SH7300 HI Application Engine

This is a software suite that includes an operating system and debugger for building an application development environment. This eliminates the time to perform tasks, such as set-up of the operating system and loading device drivers etc., before start of application development. By this software suite, application development environment on the μ ITRON*³ OS can be built up easily. In addition, it is easy to evaluate multitasking applications, something that is extremely difficult to do using a conventional ICE (in circuit emulator). A debugging environment is provided as well, making it possible to minimize the time required for evaluation (which tends to be the most time consuming part of system development).

3. SH7300 Middleware Suite, Application Programming Interface (API), MPEG-4 Libraries

In addition to MP3 for audio, JPEG and MPEG-4 for image, and middleware for communication and voice support, the SH7300 Middleware suite includes middleware optimized for implementing functions such as synchronized video and audio playback, video mail, and Silicon Audio for the SH7300. This provides developers with an easy way to create a variety multimedia applications. In addition, the supplied API supports functions such as video mail for mobile phones. The developer can thus implement such functions simply by only calling the API.

Libraries for MPEG-4 hardware accelerator built into the SH7300 are also included. This simplifies the development of applications implementing video playback or videophone capabilities for next generation mobile phones. Using the array of software tools provided, developers can create a variety of applications with advanced functions in short time.

Hitachi will continue adding refinements to the environment and software in order to achieve an even greater degree of development efficiency.

Notes: 1. Solution Engine[®] is a registered trademark of Hitachi ULSI Systems Co., Ltd. in Japan.

2. HI Application Engine[™] is a trademark of Hitachi ULSI Systems Co., Ltd. in Japan.

3. The abbreviation μ ITRON stands for “Micro Industrial TRON”. TRON, in turn, stands for “The Real-time Operating system Nucleus.”

Other mentioned company and product names are trademarks or registered trademarks of their respective companies.

< Typical Applications >

- Development of application programs for next generation mobile phones incorporating the SH7300.

< Specifications >

1. SH7300 Solution Engine

Item		Specifications
Incorporated device		SH7300 (Package: HQFP-256) (Hitachi, Ltd.)
System clock		Operating frequency: 118.8 MHz (Internal), 19.8 MHz (External)
RAM	SDRAM	64 Mbytes
RAM	NOR-type flash ROM	4 Mbytes
	AND-type flash ROM	32 Mbytes
	EPROM	2 Mbytes (with socket)
PCMCIA		1 slot (CompactFlash™ card)
Serial interface	RS232C	1 channel (uses SCIF built into SH7300)
Extended functions	VIO interface	VGA CMOS camera module × 1
	Dedicated interface	Connection to baseband CPU
	LCD interface	65,536-color VGA TFT LCD × 1, 65,536-color QCIF TFT LCD × 1
	Key interface	30 key switches
	Card interface	SIM (Smartcard Interface Module) card interface
	Audio interface	Audio input and output terminals (stereo)
	Expansion slot	140-pin connector
Operation voltage	DC 5.0 V (AC 100–200 V to DC 5 V adapter included)	
Outline Size	100 mm × 254 mm (main board and LCD board, 2-board structure)	

2. SH7300 HI Application Engine

Item		Specifications
Incorporated software	OS	HI7700/4 (Hitachi, Ltd.): μ ITRON 4.0 specification OS
	File system	UltraFile/Hi (Hitachi ULSI Systems Co., Ltd.): FAT12/16/32, Japanese long filename support
	Multitasking debugger	UltraMonitor/Hi (Hitachi ULSI Systems Co., Ltd.): Multitasking debugging function, nonstop debugging function
	Configurator	OS operating environment settings, OS rebuild-up function
	Sample drivers	Dedicated: VI03, IIC, GPIO, LCD, SIO, SIOF, SCIF, SIU, dedicated interface General use: PC-ATA card, serial interface, flash memory
Operating environment	PC: Windows® 98/XP, Windows® 2000 Target: SH7300 Solution Engine	

Notes: Microsoft® and Windows® are registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.

CompactFlash™ is a trademark of SanDisk Corporation in United States and is licensed to CFA (CompactFlash Association).

Hitachi, Ltd. is a board member of the CFA. <http://www.compactflash.org/>

3. SH7300 Middleware

Item	Specifications	
Sound	AAC decoder/encoder	MPEG-2/MPEG-4 AAC support
	MP3 decoder/encoder	MPEG-1/MPEG-2 Audio Layer III support
Moving Image	MPEG-4 video decoder/encoder	MPEG-4 simple profile support
Still image	JPEG CODEC	JPEG still image compression format support
	PNG CODEC	W3C still image compression format support
Communication	Sound echo cancellation	ITU-T G.167 support
Voice	AMR CODEC	Third-generation mobile communications standard AMR support
System	Video playback/video recording system	MP4 file (ISO/IEC 14496-1) support
	Silicon audio system	MP3/AAC support (audio recording/playback functions)

Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
