

NEC Electronics and KWest Introduce EMMA Mobile 1 Turnkey Design for Multimedia Web Tablets and Advanced Remote Control Functionality

NEC Electronics' Low-power Technology Enables Non-stop Operation of Portable Multimedia Devices

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February 2, 2010—NEC Electronics and KWest today announced the availability of a turnkey design for

portable consumer products based on NEC Electronics' EMMA Mobile™ 1 system-on-chip (SoC). The turnkey design is the basis for devices that are linked to network routers and 3G networks to receive and play back data. At the same time, the turnkey design can be used to develop remote control systems with extensive functionality.

The turnkey design is based on the EMMA Mobile 1, a multimedia processor that incorporates all the functional units required for playback of multimedia data on a single chip. The EMMA Mobile 1 chip includes the high-end ARM1176JZF-S™ CPU core, a high-performance DSP core for playing back digital video and audio files, and a dedicated image processor. WLAN 802.11n, Bluetooth 2.1 EDR, optional 3G functionality and an infrared function are added to the turnkey design's options for receiving and transmitting data. NAND and eMMC flash are integrated as mass memory, as are USB 2.0 and a secure-data (SD) high-capacity slot. The newly introduced turnkey design is completed by a seven-inch touch display with 800 x 480 pixels and resistive- or capacitive-touch technology, a brightness sensor and a motion sensor. Further hardware options can be integrated as required.

The basic software provided with the turnkey design is a Linux base port with drivers for the EMMA Mobile 1 SoC and pre-integrated peripheral ICs. Two different frameworks are available: Qt 4.6 and Android 2.1. The Qt port interfaces to an optimized Gstreamer framework, developed by KWest, that uses all the video and audio accelerator functions of the Emma Mobile 1 SoC to provide an ultra-efficient basis for multimedia applications. The Qt port also utilizes the Emma Mobile 1 hardware graphics accelerator engine and can access multimedia functions provided from the DSP and the integrated video accelerator. The Android port utilizes an optimized OpenCORE implementation that, like the Gstreamer framework, accesses the internal accelerators of the EMMA Mobile 1 SoC.

The turnkey software is completed by KWest's Connected Media Framework (CoMeT). CoMeT ensures simple integration of portable media such as SD/MMC cards, iPods® and USB mass memory and gives access to online storage facilities like WebDAV or UpnP

servers. CoMeT contains a powerful media database that can scan and index all media and make the metadata available to applications via an SQL interface. CoMeT not only provides quick and easy access to Internet services such as podcasts, web radio, YouTube or personalized audio streams (e.g. Aupeo and Last.fm), but also provides a link to local media with Internet content, e.g. for finding similar recording artists.

Finally, CoMeT features a media-rendering engine that can handle a variety of formats and protocols to provide applications with a very simple interface for audio and video playback. A number of standard applications, including web browser, e-mail client, web radio, photo viewer and multimedia player, are available, as is a widget engine for linking external applications. CoMeT is available in the Qt and the Android ports, and KWest provides for both frameworks' APIs and applications that take advantage of the CoMeT functionality.

Product Features

Due to the ARM1176, the 500 MHz high-performance DSP and the H.264 accelerator, the device not only decodes and plays back audio data such as MP3 and AAC, but also displays video data compliant with MPEG-4, VC-1 and H.264 in D1 size with a frame rate of 30 fps. The device also integrates an LCD controller for driving an LCD panel up to WVGA (800 x 480 dots), allowing D1-size videos to be displayed on a WVGA screen. The H.264 accelerator can encode H.264 at 30 fps. In addition, the display of complex content such as web pages is accelerated by an integrated image processor. The EMMA Mobile 1 SoC adopts and enhances various technologies that date back to the development of NEC Electronics' Medity™ M2, a technology platform for mobile applications. These include automatic clock control, on-chip power switching and quick recovery—all functions that allow the turnkey design to be used as the basis for portable, energy-efficient devices.

NEC Electronics and KWest offer rapid customer support to customize the turnkey design at the hardware and software levels.

Availability

Samples of the EMMA Mobile 1 turnkey design are scheduled to be available from KWest starting March 2010. Hardware and software specifications are currently available from both companies. (Availability is subject to change without notice.)

Exhibition at MWC

NEC Electronics will exhibit the new turnkey design in NEC's booth (Hall 8, Stand 8A125) at the Mobile World Congress 2010 (MWC 2010) to be held in Barcelona, Spain, from February 15 to 18.

About NEC Electronics Corporation

NEC Electronics Corporation (TSE: 6723) specializes in semiconductor products encompassing advanced technology solutions for the high-end computing and broadband networking markets; system solutions for the mobile handset, PC peripheral, automotive and digital consumer markets; and multi-market solutions for a wide range of customer applications. NEC Electronics Corporation has subsidiaries worldwide including NEC Electronics America, Inc. (www.am.necel.com) and NEC Electronics (Europe) GmbH (www.eu.necel.com). More information about NEC Electronics worldwide can be found at www.necel.com.

About KWest GmbH

KWest specializes in the development of embedded systems for multimedia and information technology applications for the automotive and consumer industries. In addition to automotive components suppliers and OEMs, the customer base includes Internet service providers, telecommunications terminal equipment manufacturers and commercial enterprises. Besides product development and validation, KWest offers services such as production management and after-sales service. For further information about KWest, visit www.KWest.de.

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