

**NEC Electronics Europe and DiscVision introduce Digital Terrestrial DVR Reference Design based on latest EMMA™ System LSI Chips**

*EMMA2SE & EMMA2SE/P, extensible solutions for low to high end MPEG-2 DVRs*

**DUESSELDORF and PADERBORN (Germany), May 23, 2007 --** NEC Electronics Europe and DiscVision today introduced a Digital Terrestrial Digital Video Recorder (DVR) Reference Design for the European market, based on NEC Electronics' EMMA™ line-up of digital AV devices. These devices are EMMA2SE ( $\mu$ PD61140) for FTA and EMMA2SE/P ( $\mu$ PD61142) for Pay TV advanced security. With the capabilities of these devices and with the Reference Design being an extensible system, development of solutions from low to high end is easily achievable. Hardware design data, software drivers and support from NEC Electronics significantly reduce time-to-market and design costs. DiscVision is further able to provide Hardware customisation and speed up software development by offering 'DiscVision DVR Reference software'. This is a complete pan European Linux based DVR software stack also available for the UK market with MHEG-5 1.0.6. For manufacturers with additional requirements, NEC Electronics is able to offer alternative hardware and software solutions on request.

The Reference Design provides superset functionality for a high end, turnkey, production ready system which is ideal for developers to test their software stack. This also allows evaluation of desired functions which may not be on low end target HW. Lower specification models can be achieved simply by omitting unwanted functions. The design flexibility allows realisation of a standard two tuner DVR, expandable to one with enhanced capabilities including dual AV outputs, enabling a DVR to simultaneously stream different video content to a television as well as to an external recording device such as a DVD recorder or VCR. Using an Ethernet controller and HDMI transmitter, the system can be expanded to include "networked DVR" and provide up-scaled high definition video to compatible HDMI interfaces. Provision of IDE and SATA Hard Disc Drive (HDD) interfaces, enables manufacturers to exploit the most cost effective internal HDD available on the market while the USB 2.0 High Speed interface allows use of external HDDs. NEC Electronics kit of parts includes EMMA2SE ( $\mu$ PD61140 or  $\mu$ PD61142), NEC Electronics DVB-T COFDM demodulator ( $\mu$ PD61540/1) and NEC Electronics All Flash microcontroller ( $\mu$ PD78F050x).

The DiscVision DVR software stack port for EMMA2SE, a Linux implementation, is based on an existing proven software stack running on EMMA2. DiscVision DVR software stack capitalises on Linux ready drivers for an extensible platform addressing peripherals such as USB 2.0 and Ethernet including TCP/IP stack thereby providing the most cost efficient and expandable

solution. The full DVR stack implements a superset of functions required for the superset HW configuration. In order to save on memory cost, this can be tailored for lower level configurations according to requirements.

### **Availability**

Reference Design HW and design data will be available from NEC Electronics from June 2007. HW adaptation and DVR software stack can be licensed from DiscVision.

### **Exhibition at ANGA Cable**

EMMA2SE and EMMA2SE/P, together with many other digital AV solutions, is exhibited at NEC Electronics booth at the ANGA Cable Trade Fair for Cable, Satellite and Multimedia held May 22-24, 2007 in Cologne, Germany.

###

### **KEY HW FEATURES**

- Twin tuner dual output DVR.
- DVB-T silicon tuners.
- Support for SATA / IDE and USB 2.0 connected HDDs. (SATA is optional).
- 2x USB 2.0 High Speed host interfaces.
- Ethernet 10 / 100 Mbit/sec connected via PCI. (Optional).
- Dolby AC3 via optical interface.
- HDMI output. (Optional).
- DVB-CI: two slots, Transport Stream Router (low cost embedded type – Optional).
- NAND flash support for high end systems.
- Standby power control.

### **KEY SOFTWARE FEATURES**

- Designed to Freeview Playback specification, MHEG5 1.0.6
- Dual TV support
- Dual Record on any medium including PC
- Trick modes: Any speed, any direction!
- Live Pause and Timeshift recording.
- Home Networking using UPnP AV stack

**About NEC Electronics (Europe) GmbH**

NEC Electronics (Europe) GmbH, headquartered in Duesseldorf, Germany, is a leading developer and supplier of semiconductor products in Europe. Committed to meeting customers' cost, performance and time-to-market requirements, the company offers solutions ranging from standard products to system-on-a-chip (SoC) solutions, as well as customized products for next-generation designs. Our customers also benefit from state-of-the-art manufacturing from the global production network of our parent company, NEC Electronics Corporation. Additionally, NEC Electronics (Europe) GmbH is the exclusive European sales and marketing channel of LCD modules from NEC LCD Technologies Ltd.. For more information visit <http://www.eu.necel.com>.

**About DiscVision GmbH**

DiscVision GmbH, based in Paderborn, Germany is an R&D design house that concentrates on the development and integration of advanced PVR systems. Using the long term know how in Linux based PVR systems, DiscVision is partnering with NEC since 2001 using the EMMA2 platform for its own hardware designs. DiscVisions integrates hardware and software and provides references system and turnkey solutions for OEM partners and brand owners. DiscVision has long term experience in the integration of DVB-S, DVB-T and DVB-C PVR platforms as well as on the integration of CA solutions for such platforms. DiscVision is offering the PVR systems and technologies in companion with a large set of external tools and services which interface to the DVR via a local PC or via the Internet.

**Media Contacts:****Europe**

Oliver Lüttgen  
NEC Electronics Europe  
+ 49-211-6503-1469  
[oliver.luetzgen@eu.necel.com](mailto:oliver.luetzgen@eu.necel.com)