Qseven module provides high computing performance at up to 1.2 GHz clock rates

MSC Embedded introduced the new MSC Q7-IMX6, a low power, high performance embedded module with strong graphics capabilities. The module is offered with three different processor versions and may be used for single-core, dual-core or even quad-core computing. This multi-mode capability gives new meaning to the often quoted concept of “scalable performance” for embedded boards.

The new Qseven module MSC Q7-IMX6 uses the ARM processor Freescale i.MX6 which contains a Cortex-A9 RISC CPU with one, two or even four cores. These processors are fully compatible with each other, so they can be alternatively soldered on the same boards. Even though the processor consumes very little power, it provides high computing performance at up to 1.2 GHz clock rates, accompanied by powerful graphics capabilities. All models except the single-core version provide the Freescale Triple Play graphics architecture which consists of decoder hardware for (dual-stream) 3D videos up to Full-HD resolution (1080p). Up to four shaders with a combined power of up to 200MT/s achieve excellent 3D graphics results, a separate 2D BLT engine accelerates user interface speeds, and an additional 2D OpenVG engine drives vector-based graphics.

The module provides two banks of DDR3 DRAMs supporting between 512MB and 4GB of memory. Additionally, a 128MB NOR Flash device stores the boot loader while an optional NAND Flash memory (up to 8GB) can be used as a Flash Disk. On top of this, a SATA-II interface up to 3Gbps is available to support external data and

program storage.

Among the Qseven interface set there are 2 USB 2.0 interfaces of which one may be host or client. An optionally populated hub device increases the number of USB interfaces to eight, so that all USB ports in the Qseven standard can be supported. PCI-Express x1 is provided as well as Gigabit Ethernet and AC'97 audio, along with busses such as CAN, SMBus, I2C and SPI. The HDMI V1.4 graphics output supports resolutions up to 1920 x 1200 (WUXGA) as well as dual-channel LVDS with 18 or 24 bits. These LVDS channels may alternatively be used as two different single-channel LVDS outputs for resolutions up to 1280 x 720 each. The internal graphics controller of the i.MX6 supports parallel operation of three different independent monitors so that each attachable screen can display different content.

MSC has provided a feature connector for interfaces not contained in the signal scheme of the Qseven connector. It can be accessed on the module and provides an additional UART next to SPI, MIPI-CSI and a BT.656 Camera interface.

Said Wolfgang Eisenbarth, VP Marketing, Embedded Computer Technology, MSC Vertriebs GmbH, "Despite its high computing and graphics performance and the multitude of functions, the MSC Q7-IMX6 consumes only 5 Watts of power. Moreover, all module variants will be available in the full industrial temperature rating, and as part of our embedded product portfolio, MSC will keep the module available for at least 7 years."

The MSC Q7-IMX6 will be accompanied by driver and BSP support for Linux and Windows Embedded Compact 7 with further operating systems to follow. MSC can provide a compact baseboard (MSC Q7-MB-EP4) for evaluation and test of the module. The Qseven Reference Platform (MSC Q7-MB-RP2) is already available in the ATX format and represents an ideal development environment. At the time of sample availability, MSC will also offer ready-to-run starter kits for the MSC Q7-IMX6.

The new Qseven module covers a broad band of computing performance resulting from the choice of available CPU devices. Therefore, it may be used for a wide range of applications. For example, it is well suited for HMI applications (Human-Machine-Interfaces) in which it is responsible for the graphical representation of the human user interface. Similar applications can be found in medical systems, control stations in home automation or display systems in POS (Point of Sales). Due to the high graphics performance, the module can also be used in applications from Point-of-Information (POI) up to large "Digital Signage" displays. Since the module will also be available in the extended temperature range, it is well suited for all kinds of industrial applications, and due to its low power consumption it can also be used for portable, battery-powered applications.

Pricing and availability
First samples will become available in January, 2013. The quad-core version will be priced around $180 in medium volumes.

For more information, visit www.mscembedded.com [1]

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