

# Chips, tools and boards – technical distributor and boards manufacturer

## Focussing on embedded solutions with extensive design support

*At an early stage embedded products and services became of strategic importance for MSC Vertriebs GmbH. Today they contribute considerably to the results of the company, which continuously expands its embedded offering, and has made significant investments in recent years.*

■ MSC together with Gleichmann Electronics count among the leading high-tech distributors of innovative electronic products in the European market. The strategy is not only to supply sophisticated components from innovative semiconductor manufacturers, but also to support customers in designing their application-specific solutions. To offer deep product knowledge and broad technology know-how, MSC focusses on dedicated embedded products and services.

Since the introduction of transputer technology, MSC has concentrated on embedded solutions and gained substantial core competence in this market. As a very early player in this field, the company has expanded its embedded offering continuously and made significant investments in recent years. With the emphasis on customers' interests and their individual solutions, the distributor has achieved a deep fundamental understanding and know-how.

In the centre stage of an embedded solution is the innovative system approach including the software and the mechanics. Frank Schimmer, Director of Marketing, says: "We offer broad customer support, ranging from comprehensive consultation in the beginning to the realisation of the complete embedded system. Our technical specialists are dedicated to single product lines or specialised in different market segments." Meanwhile the MSC group has over 1500 employees. Many of the technical staff deal with embedded designs for custom-specific solutions. Frank Schimmer states: "Our specialists have long-term experience in embedded technologies, and our employee turnover is extremely low." The headquarters and design centres in Germany are located so as to ensure short distances to customers, and enable close



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technical support and services by the experienced FAE teams. The FAEs arrange various technical training courses at customers' request. Furthermore the company emphasises its closeness to manufacturers to stabilise its strategic partnerships.

At the beginning of most embedded designs, the specification and the desired system performance require the right choice of the microcontroller and the programmable FPGA, the display control and additional components. To design the complete embedded system different development tools and design platforms will be applied. The newly released webshop MSC ToolGuide offers a quick overview of all available embedded design tools virtually accessible to B2B customers. Designers find on this website information about development tools not only from MSC and GE Research, but also from manufacturers Actel, Atmel, Cypress, Falcom, Keil, Lattice, NEC and Renesas. The MSC ToolGuide is realised as user-oriented software combined with integrated shopping cart functionality. The webshop transactions are accessible in an intuitive and conceptual way. The flexible tool enables to zoom in and off the

product for details. Obtaining information about technical data is faster and easier than ever before. Special functions were created to compare products with each other in a clear structured chart. The advantages are clearly visible, says Frank Schimmer: "With our MSC ToolGuide the customer is able to explore an easy, fast and convenient way of online shopping. It offers the option to search for all the needed information without the time required for telephoning. The ToolGuide offers easy and safe handling, short delivery times, excellent customer support as well as reasonable prices." The webshop will be shortly extended with displays, RF components, and power devices. The MSC ToolGuide can directly be reached at [www.msc-toolguide.com](http://www.msc-toolguide.com) or by link from the MSC website: [www.msc-ge.com](http://www.msc-ge.com).

One of the new MSC ToolGuide products is the Renesas SDK1725 starter kit specifically for the development of dual CAN applications. Comprising the CANopen stack and CANopen development tools from port GmbH, and the H8SX/1725F-based microcontroller starter kit, the combination is suited for developing a variety of safety-critical applications. The H8SX/1725F CANopen library provides all the services necessary to provide CANopen communications compliant with the CiA 301 V 4.2 communication profile. It facilitates the fast and easy development of master and slave devices, and is able to serve one or two of the CAN Controllers within the H8SX/1725F microcontroller.

Gleichmann Electronics now offers a development environment - NEC Electronics 78K0R - Spin it! kit - for the control of brushless DC (BLDC) motors. The platform helps software designers to optimally use the motor control specific features of the highly integrated 78K0R/Ix3 16-bit microcontroller family. For example, the 78K0R - Spin it!, built on a single board, supports functions such as start/stop, direction of rotation and speed of rotation (rpm). MSC also develops design tools and reference platforms using its own design teams. The new modular and flexible reference design

platform Hpe\_IRP has been generated using technologies from Gleichmann Electronics, Intel, Altera and 3S-Smart Software Solutions. The platform for industrial automation applications bases on the Intel Atom processor on an MSC Qseven module and an Altera Arria GX FPGA. The development kit provides designers with a solution for immediately starting designs enabling field bus and real-time Ethernet connectivity in an industrial run-time environment. Target markets for the reference platform are industrial automation applications such as programmable logic controllers (PLCs), human-machine interfaces (HMIs), panel PCs, and industrial drives.

Wolfgang Eisenbarth, Director of Marketing, Embedded Computer Technology states: "Our efficient, flexible and high-performance design platform Hpe\_IRP, based on the new Qseven standard, shortens design cycles, reduces costs and time-to-market significantly. The industrial reference platform enables innovative custom designs with our Gleichmann Research FPGA design tools and a large library of real-time functions incorporating an automatic connection tool."

Gleichmann Electronics Research develops and manufactures development platforms and tools for high-integrated FPGAs and offers comprehensive ASIC design services. The company recently presented SEulator technology. It simplifies and accelerates the design of ARM Cortex-M3 based ASICs or FPGAs. For little extra cost, emulation platforms like Hpe\_midiv2 can be converted into a hardware accelerator to support simulation of complex ASICs or FPGAs. The MSC programming service offers best quality and reliability both for small series as well as for large volumes in all programmable technologies (flash, OTP, Antifuse, etc.) and all package types. Using modern pick and



*Wolfgang Eisenbarth: MSC also offers highly integrated board-level solutions*

place programming machines, the company provides the best treatment of all components. In order to minimise embedded system development times, MSC offers powerful highly integrated board-level solutions. The company supports open embedded computing standards like ETX and COM Express and has established the EXM32 computer-on-module specification for industrial environment. COM Express based products record a fast growing business volume. As one of the founder members of the Qseven consortium, the company presented its first Qseven power saving computer-on-module MSC Q7-US15W in the compact form factor 70 mm x 70 mm. The Qseven platform integrates a power saving Intel Atom processor and the mobile Intel System controller hub (SCH) US15W. The module is suited for fanless or mobile applications and ideally complements the high-end COM Express boards. Furthermore MSC designed the Qseven reference platform for the verification

of the interoperability of different modules and for performance of compliance tests. MSC offers its COM Express modules in different performance classes, for example with Intel Pentium M, Intel Atom or Intel Core 2 Duo processors. Based on the new Core 2 Duo and Atom processor families, the company has recently introduced the powerful CXB-GM45 and the low-power CXB-A945M embedded module. Like all modern MSC COM Express platforms, the modules are equipped with innovative hardware and BIOS based security functionality compliant to the requirements of the Trusted Computing Group (TCG). Therefore, the Trusted Platform Module TPM from Infineon and furthermore, the SecureCore BIOS from Phoenix Technologies have been integrated.

To optimize the development of computer-on-modules based systems and to match the customer's time-to-market, MSC offers application-specific industrial platforms. The industrial platform MSC CX-MB-IP1 in Mini-ITX format (170 mm x 170 mm) is designed for the acceptance of COM Express modules in basic and compact form factors and provides a broad range of available interfaces which are particularly required in industrial applications. For integration of a variety of different displays, the platform features a JILI30 connector and a backlight connection. Appropriate display kits and cable sets are available from MSC.

As computer-on-module manufacturer, MSC can easily customise the offered product, and offer design services for reference platforms on customer request and specifications. Furthermore as distributor the company has access to a variety of innovative vendors, for example to bundle a computer-on-module with a display, memory card, cables and the BIOS making a complete system. ■

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