



exhibition highlights



Excellence in Electronics

Innovative Production Engineering and Intelligent Design Will Lead to Success

Welcome to the Embedded World Exhibition 2010!

Experience MSC/GE's Fascinating Innovations



MSC Vertriebs GmbH and Gleichmann Electronics present latest innovations, trends and developments of embedded technologies of the sectors **Industrial Automation, Medical Technology, Transportation, Building Automation, POS/POI Systems and Consumer Electronics**.

Get inspired and benefit from our knowledge and experience concerning the whole range of electronic devices and applications highlighted in this leaflet. Our wish for you for the embedded world: Experience the Power of Innovation!

We are looking forward welcoming you at our booth no. **463 located in hall 9**.

Your MSC/GE Exhibition Team



MSC Embedded World Exhibition 2010

Product Offering Expanded: "Stretched Panels" from Tovis

Gleichmann & Co. Electronics GmbH and the South Korean Tovis Co. Ltd, one of the leading manufacturers of special format TFT panels, have agreed to a far-reaching sales cooperation on a pan-European level.

Tovis rebuilds ordinary TFT panels into so-called "stretched panels" which results in aspect ratios of e.g. 32:9 or even 56:9. To achieve this, panels in the usual 4:3 or 16:9 formats are precisely cut and then immediately thereafter sealed again without any loss of liquid. This is performed using Tovis' patented cutting and sealing process. Frank Dornscheidt, Line Manager at Gleichmann Electronics, responsible for the marketing of Tovis' products in the European market, sees an ideal complement with the special format TFT panels from Tovis to the current display product portfolio of the MSC-Gleichmann Group. ▶ **p. 10**

Embedded Computer Technology

New Intel® Atom™ Dual Core CPU

MSC Vertriebs GmbH presents the ETX™ platform MSC ETE-PV510 based on the new dual core Intel® Atom™ processor D510 with integrated graphics and memory controller. The powerful computer-on-module is a perfect replacement for existing ETX™ solutions integrating Intel®'s obsolete Pentium® M or Celeron® M processors. The well established ETX™ technology thereby remains attractive, also for new embedded computing designs. ▶ **p. 3**

Microcontrollers

Renesas eXtreme Microcontroller RX610

With the new eXtreme MCU family Renesas has adopted new technologies that will respond to present and future market requirements to ensure eXtreme processing performance of 1.65 MIPS/MHz, eXtreme fast embedded Flash memory running with 100 MHz, eXtreme code efficiency, eXtreme lower power consumption while retaining best possible compatibility with existing products. ▶ **p. 6**

Displays

New Hitachi Display with IPS-Pro Technology

Superior IPS-Pro technology prevails more and more in mid sized TFTs. Therefore MSC is pleased to present Hitachi's latest product: TX26D12V-M0AAA. It is dedicated to high-end applications. It meets the industrial standard and is best suited for process control displays, diagnostic systems and monitoring applications. ▶ **p. 9**

Embedded Computer Technology

COM Express Platform for Extended Temperature Range



COM Express Module Supports Extended Temperature Range

The powerful COM Express™ platform MSC CXC-US15WP from MSC Vertriebs GmbH is designed for an extended temperature range of -40 to +85 °C. The board uses only components, which are qualified for the low and high temperatures. Furthermore, the design of the platform was adapted to the extended conditions.

Based on the Menlow XL platform, the standardized Computer-on-Modules MSC CXC-US15WP are available in two extended temperature versions; with the power-saving Intel® Atom™ processor Z510PT or Z520PT, clocked at a maximum of 1.33 GHz. In addition to the Intel® System Controller Hub US15WPT containing the Intel® Graphics Media Accelerator 500, the board comes with up to 2 GB of DDR2 SDRAM. Since the packages of the Intel® components that are designed for the extended temperature range are considerably larger than the commercial temperature component packages, the innovative CPU modules are implemented in the Compact COM Express™ form factor with dimensions of 95 x 95 mm. MSC supplies a passive heat sink and a heat spreader for the embedded modules.

The COM Express™ platform MSC CXC-US15WP is particularly suitable for use in visualization and HMI applications in the extended temperature range where not computing power, but rather low power dissipation and ruggedness are the main pri-

orities. Target markets are the areas of transportation and automotive, industrial automation and medical technology. In addition to compact MSC CXC-US15WP modules for the extended temperature range, MSC also has two modules with Intel® Atom™ Z530P and Z510P for the standard temperature range in its product portfolio. MSC positions these modules as cost-effective x86 COM Express™ entry-level products and thus ideally complements its more powerful platforms like the MSC CXB-A945M. Besides 18/24-bit LVDS with up to 1366 x 768 pixel and SDVO with maximum 1920 x 1080 pixel, the comprehensive range of interfaces of the MSC CXC-US15WP platform includes two PCI Express™ x1, a PCI and a LPC interface. In addition, High Definition Audio, 8 x USB 2.0, Gigabit Ethernet and an Enhanced IDE port are provided. The MSC CXC-US15WP platform offers flexible boot possibilities, for example, by an optional integrated flash disk or by a Micro SD card connected via an on-board Micro SDIO slot.

For evaluation and design-in of its COM Express™ platform MSC offers evaluation baseboards with PC-type connectors. The CPU modules run under the operating systems Windows® XP (embedded) and Linux. Special starter kits for Linux are available on request.

Embedded Computer Technology

Baseboard for Efficient Development of Qseven Systems

The platform's 102 mm (3,5 Inch) format emphasizes the extreme compact Qseven™ module size of 70 x 70 mm. The modules are mounted via a proven MXM connection on the baseboard. MSC Vertriebs GmbH offers three types of its Qseven™ module MSC Q7-US15W based on an Intel® Atom™ processor varying in main features like CPU performance and number of SATA ports and PCI Express™ x1 lanes. The scalable computer-on-modules are ideally suited for mobile, battery-operated and fanless systems. Beside its compactness the embedded platform MSC Q7-MB-EP1 offers a selection of important interfaces defined in the Qseven™ specification. Two USB 2.0 ports, one mini-USB port, audio, a serial interface (D-Sub connector) and Gbit LAN are available on the front side. For the integration of a variety of different displays, the baseboard provides a VGA standard display interface, LVDS and a backlight interface.



Qseven Baseboard for Industrial Automation

The platform integrates even a 4/5 wired resistive touch controller for the connection of a touch screen.

Additional to the offered standard functions the baseboard can be configured individually by the customer. A Mini PCI Express™ card holder is integrated on the board for the implementation of e.g. wireless LAN support and flash memory extensions. Furthermore the platform can be customized by two internal USB ports and via the integrated MMC/SD card slot. MSC offers boot support for MMC/SD cards under Linux.

The 4pin power connector for 10 - 28 VDC power supply supports battery operation and the static operation. The board support package for both Windows® XP and Linux can be downloaded at the website of MSC Vertriebs GmbH.

Embedded Computer Technology

First COM Express Module Based on Intel® Dual Core Celeron CPU

Two cores at the price of one offers the new innovative COM Express™ module from the CXB-GM45 family developed by MSC Vertriebs GmbH. The board is assembled with the first Intel® Celeron™ processor with two cores T3100 Dual Core, showing considerable high computing and graphics power.

The Intel® Celeron™ T3100 Dual Core CPU has a nearly two times better computing performance compared to the Intel® Celeron™ 575 version. The 35W thermal dissipation power of the T3100 processor is only little higher than the 31W of the previous type. The special highlight: The price the new T3100 module is only little higher than that of the single core predecessor. The T3100 processor is clocked at 1.9 GHz and integrates 1 MB L2 cache. Two dual channel DDR3 memory modules (two SO-DIMM sockets) with a total capacity of up to 8 GB provide a high computing performance and low power con-

sumption on the board. Depending on the customer requirements, MSC ships the compact CXB-GM45 COM Express™ platform in the "basic" format 125 x 95 mm with different single-core and dual-core processors from Intel®'s embedded low power Penryn generation, built in 45 nm technology. The modules are available with the Intel® Celeron™ Dual Core T3100, the Intel® Core™ 2 Duo T9400, the Intel® Core™ 2 Duo P8400 or the Intel® Celeron™ 575 processor.

The CXB-GM45 modules are based on the Intel® GM45 graphics and memory controller hub (GMCH) and the Intel® ICH9M Enhanced IO controller hub. The Intel® GM45 chipset integrates the Mobile Intel® Graphics Media Accelerator 4500MHD including Intel's Clear Video technology and supporting DirectX 10 and OpenGL 2.0. Driving two displays is provided via the dual independent display mode. The maximum CRT resolution is 2048 x 1536 pixels.



COM Express™ Module
from the CXB-GM45 Family

To guarantee best connectivity, the COM Express™ platform offers eight USB 2.0 ports, an 32 bit PCI bus, five PCI Express™ x1 lanes, one PCI Express™ x16 (PEG) interface and an 10/100/1000 Base-TX Ethernet interface. Four SATA-2 channels with up to 300Mb/s and an Enhanced IDE port (ATA/UDMA166) are available for data storage.

The powerful platform CXB-GM45 runs under Windows® Vista, Windows® XP (embedded) and Linux operating systems. Evaluation baseboards are available from MSC for development support and design-in. Moreover, MSC offers design services for application-specific motherboards.

First ETX Platform with New Intel® Atom™ Dual Core CPU



First Intel Dual Core Celeron
on COM Express

The dual core Intel® Atom™ processor D510 is part of Intel®'s Embedded Roadmap and ensures the long-term availability of ETX™ products for at least seven more years.

The ETX™ module MSC ETE-PV510 integrates the 1.66 GHz D510 processor and the Intel® ICH8M IO controller hub. This two-chip solution offers a significant better performance than the fast 1.8 GHz Intel® Pentium® M. In comparison to the Intel® Atom™ N270 CPU with Mobile Intel® chipset 82945GSE and ICH7DH Southbridge, the graphics and computing per-

formance has nearly been doubled. In addition to this high-end ETX™ module, MSC offers the entry level model MSC ETE-A945GSE, which is also long-term available. This model is based on a low-power Intel® Atom™ N270 CPU running at 1.6 GHz.

Compliant with the worldwide proven ETX™ specification 3.02, the ETX™ platform MSC ETE-PV510 offers the legacy interfaces ISA, PS/2, COM and LPT. Two out of the six available USB 2.0 interfaces, are constructed as loss-free high speed interfaces in the form of mini-USB connectors on the top side of the module. The board has a 32 bit PCI bus interface, an 10/100Base-T Ethernet interface and two SATA channels with up to 300 MB/s. Via the LVDS interface an industrial display with a maximum resolution of 1366 x 768 pixels can be connected. The CRT interface delivers an accuracy of 2048 x 1536 pixels. The 95 x 114 mm ETX™

module optionally integrates a 4GB flash disk to boot an embedded system. An extension to 8 GB is under preparation. The boot performance and the flash capacity exceed the requirements of most ETX™ applications. Without the need for an external hard drive very compact low cost embedded systems with increased mechanical stability can be implemented.

The ETX™ module MSC ETE-PV510 is designed for powerful applications in different markets like industrial automation, image processing, medical and digital signage.

MSC provides different baseboards for the evaluation and the design-in of the ETX™ platform. Special starter kits for Windows® and Linux operating systems are available on request.

Embedded Computer Technology

Tiny Qseven Starter Kits with ready-to-run Linux Installation



Qseven Starter Kit

MSC Vertriebs GmbH is offering several Qseven Starter Kits which are based on MSC's Qseven modules featuring a 70 x 70 mm form factor and the Intel® Atom™ processor. These kits are designed to strongly simplify the evaluation of and the integration with this new technology.

The kits are based on the new 120 mm (3.5 Inch) platform board Q7-MB-EP1 and offer a variety of useful interfaces. Along with the kit, the user can select a suitable Qseven module from the MSC portfolio. Additionally, the kit features a Qseven Heatspreader, a ready-to-run Linux installation on USB Flash Stick and a suitable 12 V power supply. Optionally, the evaluation kit is available with a TFT panel including a suitable cable kit.

The starter kit does not yet contain a Qseven module. Instead, the user is encouraged to order his Qseven module of choice so that the kit always uses the module with the most suitable processor speed and feature set from the MSC range of Qseven modules with Intel Atom processor:

Z530 with 1.6GHz, 1GB DRAM, 3x PCIe x1, 2x SATA-300, 8x USB, Gbit LAN

-

Z510 with 1,1GHz, 1GB DRAM, 3x PCIe x1, 2x SATA-300, 8x USB, Gbit LAN

-

Z510 with 1,1GHz, 512MB DRAM, 1x PCIe x1, 8x USB, Gbit LAN

-

Z530 with 1,6GHz, 1GB DRAM, 4GB Flash Disk, 1x PCIe x1, 1x SATA-150, 8x USB, Gbit LAN

-

Z510 with 1,1GHz, 1GB DRAM, 4GB Flash Disk, 1x PCIe x1, 1x SATA-150, 8x USB, Gbit LAN

The new Embedded Platform board Q7-MB-EP1 combines the most important interfaces for embedded applications on a compact 3.5 Inch printed circuit board (pcb) with the following features: Qseven module socket, Mini-PCI-Express socket, MMC/SD Card socket, VGA/CRT and LVDS interfaces, 2 SATA interfaces and 4 x USB connectors, on-board 4/5-wire touch controller for resistive

touch panels, 6-channel HD audio codec, serial interface and 10 V-28 V power converter. Thus the Qseven carrier board is suitable for a wide range of embedded applications from industrial controls to information kiosks and POS systems, to name just a few.

For the Qseven Starter Kit the chosen module will be mounted on the EP1 baseboard and covered with the Qseven Heatspreader which acts as a heat sink and effects a steady distribution of the resulting heat. In addition, an aluminium rail called Heatrail leads heat from the underside of the module down to the metallisation of the carrier board's pcb. For small housing with little air circulation, an optional heatsink may be mounted on the heatspreader.

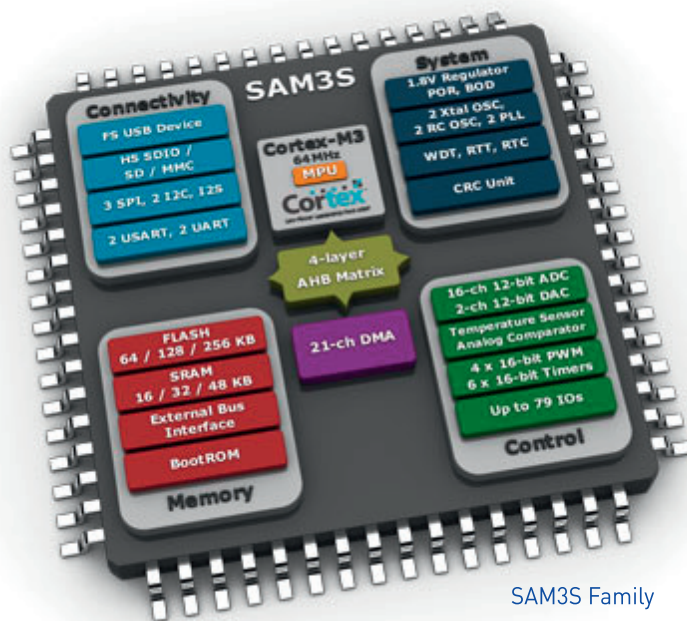
For operation without LCD, a CRT/VGA output connector is available on the baseboard. Alternatively, an LVDS TFT panel may be connected using the JILI30 interface of the carrier board. A starter kit with an optional TFT is also available, and in addition MSC can offer a selection of further LCD panels from its wide product portfolio encompassing very many renowned LCD manufacturers. A 12 V power supply with suitable cables is enclosed in the delivery so that the starter kit may be powered up immediately after unwrapping.

To further alleviate the integration of Qseven modules, a 4 GB USB Flash stick is included which contains a ready-to-run, bootable Ubuntu 9.10 Linux installation. Manuals, drivers and additional tools can be found on the included Resource-CD. Last but not least, the carrier case of the starter kit contains a comprehensive „Getting-Started“ manual which helps with a fast start-up of the kit.

Microcontroller

Atmel's New Cortex™-M3 SAM3S Family

General Purpose Cortex-M3 Flash MCUs, Compatible to SAM7S



SAM3S Family

Atmel's latest ATSAM3S series includes 18 general-purpose Cortex®-M3 based Flash microcontrollers that improve impedance matching, simplify PCB design and save 50 percent power at 1 MHz operation with a consumption of only 2.3 mW.

At maximum operating frequency of 64 MHz the device consumes 1.45 mW / MHz. The SAM3S is a member of Atmel's Flash microcontroller family based on the high-performance 32-bit ARM Cortex-M3 RISC processor. It provides processing power and features such as system control, sensor interfaces, 64k to 256 kByte (512K in spec.) Flash memory options, an optional external parallel bus interface, connectivity capabilities and user interface support. Additional features include On-Die Termination (ODT), USB Device, SDIO, Parallel PIO signal capture, 12-bit ADC and DAC, 4 UARTs, dual I2C, I2S, timers, unique chip ID, and power and reset management.

The SAM3S's supply voltage ranges from 1.62 to 3.6V operation and package options from 48-pin QFP and QFN up to 100-pin

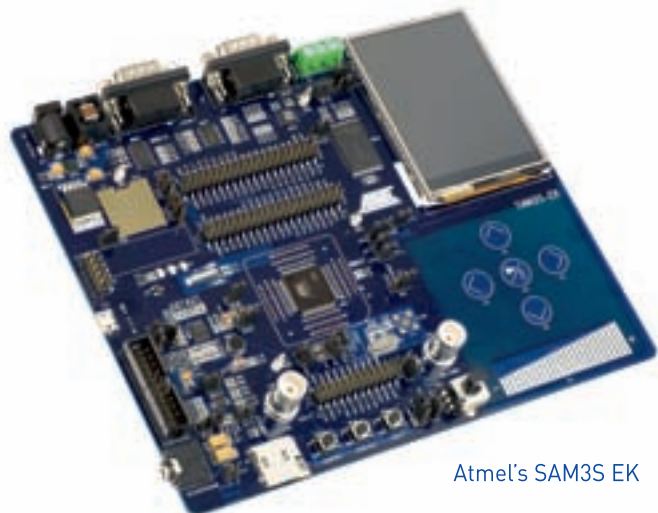
QFP and BGA. Atmel's SAM3S also expands market opportunities in applications including consumer, industrial control, metering, toys, medical, test and measurement, 802.15.4 wireless networking, PC, cell phone and gaming peripherals.

The SAM3S series is the ideal Cortex-M3 upgrade path for the SAM7S and SAM7SE,

Atmel's best-selling ARM® Flash MCU. With the Cortex-M3 core running at a maximum clock rate of 64 MHz at 1.8V, 85°C, the SAM3S Flash MCU brings a 50 percent raw performance increase over the SAM7S series. In its 64-pin version, the SAM3S is pin-to-pin compatible with the SAM7S, enabling customers to upgrade performance while hardware remains unchanged to preserve investments previously made.

SAM3S expands existing SAM3U High-Speed USB family. Next coming SAM3X and SAM3A Cortex™-M3 families will add Dual CAN and Ethernet connectivity. SAM3N will come as entry point solution coming from 8- or 16-bit MCUs, which need a performance- but not a cost boost.

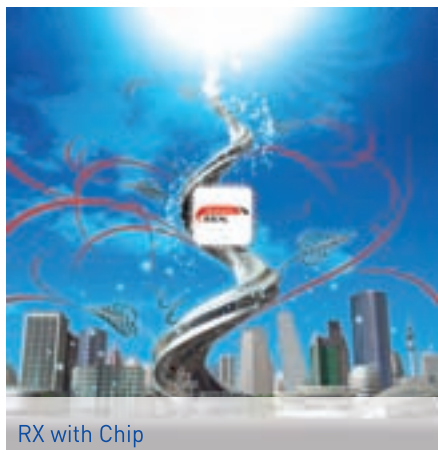
You can order ATSAM3 Startup bundles, which includes SAM3S-EK and AT91SAM-ICE, via MSC Web Shop.



Atmel's SAM3S EK

Microcontroller

RX610 - Mass Production Launch for the first RX Device



Renesas eXtreme Microcontroller

With the new Renesas eXtreme MCU family Renesas has adopted new technologies that will respond to present and future market requirements to ensure eXtreme processing performance of 1.65 MIPS/MHz, eXtreme fast embedded Flash memory running with 100 MHz, eXtreme code efficiency, eXtreme lower power consumption while retaining best possible compatibility with existing products.

The innovative Renesas solution was to combine the advantages of the high-speed RISC CPU designs refined in their SuperH family with those of the flexible, code-efficient CISC designs from their H8S/H8SX and M16C/R32C families. Specifically, to create a next-generation CPU architecture, the RX design team added the single precision floating-point unit and the general-purpose register machine Harvard architecture and 5-stage pipeline of RISC to the byte variable-length instructions of CISC. This clever design approach was made possible by building on decades of MCU design experience and applying a large library of accumulated IP.

RX610 - ready to go!

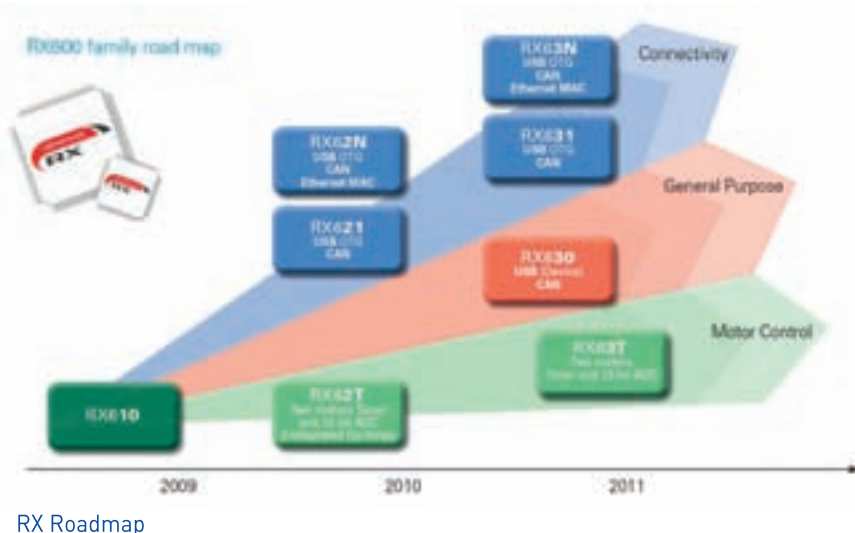
The RX610 is the first device running under mass production and thus ready for evaluation and design-in. The RX610 group offers 8 devices with a memory capacity between 768 KB and 2 MB. The flash memory is of high-speed MONOS (Metal Oxide Nitride Oxide Silicon) structure, that can be accessed at 100 MHz in a single clock cycle. Combined with more than 30% improvement in code efficiency compared to Renesas' existing products, it is highly useful for large-scale applications that require high-speed processing. In addition, 128 KB of SRAM and a 32 KB of data flash memory with background operation function are mounted to eliminate the need for external memory.

In addition to enhanced standard functions such as serial communications and timer, the new products incorporate a variety of popular functions used in existing Renesas products, including DMAC (Direct Memory Access Controller) to perform high-speed data transfer in place of the CPU, DTC (Data Transfer Controller) to make data transfer efficient, and CMT (Compare Match Timer) useful for interrupt and polling.

Moreover, a multi-layer structure was adopted for the internal bus of the RX600 series to separate the data transfer path, enabling a high-speed external transfer using DMAC and DTC.

The new chips, which come in LQFP-144 and BGA-176 packages, integrate an extensive range of built-in legacy, enhanced and new peripheral functions for system design flexibility. RX610 MCUs also achieve low-power consumption operation with 0.5 mA/MHz. To help customers shorten the development cycles of new embedded systems, Renesas and third-party suppliers like IAR and KPIT support the RX series. The Renesas Starter Kit for RX610 is available at MSC Vertriebs GmbH.

Development work on additional members of the RX600 family is ongoing. The next addition to the RX series will be a product-line called "Connectivity" that will offer more memory and package options as well as incorporate additional peripheral functions like ethernet, USB, CAN.



Microcontroller

Low-Power, Single-Chip Wireless Microcontroller



ATmega128RFA1 Evaluation Kit

In December 2009 Atmel® Corporation, announced a new family of AVR® wireless microcontroller (MCU) devices targeting wireless applications such as ZigBee® and IPv6/6LoWPAN.

The ATmega128RFA1 is IEEE 802.15.4 compliant and combines Atmel's picoPower® AVR MCU and a 2.4 GHz RF transceiver. Atmel's picoPower technology offers ultra-low power consumption to ultimately enable longer battery life for wireless ZigBee applications, including smart energy, building automation, telecom and health care. Additionally ATmega128RFA1 is supported by Atmel's QTouch® Library, making it easy to combine capacitive touch functionality with RF in a single chip.

The ATmega128RFA1 is the leading device in this new single-chip family. The combination of the 8-bit AVR MCU with low current consumption in all operating modes, a degradation-free supply voltage range down to 1.8V and fastest wake-up time from SLEEP mode to active modes make the ATmega128RFA1 to the most power efficient device in the market.

In full operation mode at 16 MHz current consumption is less than 19 mA in total for RF-transmission and AVR operations. In deep sleep mode consumption is only 250nA and can be waked up on radio for any communication. Further power optimizations, - like keeping the RF transceiver active while the microcontroller sleeps, are enabled by various power-down modes in-

cluding the wake-on-radio feature. This low power single-chip device is helping designers to develop battery driven systems. Due to the fact that this SoC measures only 9 mm x 9 mm it is fulfilling the requirement to save board space and bring down system cost.

The system performance can be boosted up with unique features of the radio interface. A broad range of IEEE-802.15.4 applications can be supported. With +3.5dBm transmission power (Tx) and -100dBm receive sensitivity (RX) the potential range of this device is very long. The radio link budget is additionally improved when the antenna diversity feature is used which automatically selects the best from two antennas for each incoming frame. The device supports the control of external power amplifiers for range extension. High data rate modes up to 2 Mbit/s are available addressing general purpose 2.4 GHz ISM applications.

IEEE 802.15.4. MAC, IPv6/6LoWPAN, RF4CE, BitCloud ZigBeePRO and BitCloud Smart Energy are available for free.

In order to support system development with Atmel's free software stacks, libraries, tools and hardware the ATmega128RFA1 Evaluation Kit is available.



AVR XMEGA

Displays

14 cm (5,7 Inch) QVGA TFT: TX14D22VM1BAA

Hitachi Continues Product Enhancement of the slim-TFT-Family



TX14D22VM1BAA

MSC Vertriebs GmbH presents Hitachi's latest product of the slim-TFT-family.

Innovative production engineering and intelligent design will lead the new panel to success. It perfectly fulfils the requirements of an industrial environment.

The display's mechanical depth is 35% less than previous 14 cm (5,7 Inch) panels of Hitachi's compact family. Through the slim

outline it is suited to small space applications. The outline measures 131 x 102.2 x 7.1 mm.

The price had been downcasted, despite even better optical characteristics, improved robustness and decreased power consumption (1 W backlight and electronic) compared to other displays of the compact series.

Long life quality LEDs were implemented, according to the product philosophy of the manufacturer.

The operating temperature of the panel is -20 up to +70 degrees Celsius.

The TFT is available at MSC Vertriebs GmbH, optional with laminated analogue resistive touch screen.

18 cm (7 Inch) WVGA TFT: TX18D35VM0AAA

New TFT Impresses with IPS-Pro-Technology, LED Backlight, Mechanical Quality and Brilliant Optical Performance



TX18D35VM0AAA

MSC Vertriebs GmbH distributes the new 18 cm (7 Inch) display of the manufacturer Hitachi.

The panel is ideal suited for various applications in monitoring, media terminals and user interfaces in rugged industrial environment.

It features the latest and innovative IPS-Pro technology, which makes it superior to other panels with common TN cell struc-

ture. Advantages are stable color image from any viewing angle, excellent color saturation and very high contrast.

The aspect ratio is 15:9 wide format by a resolution of 800 x 480 pixels. Infinitely variable dimming of the LED backlight is possible, due to an integrated LED driver. The typical brightness is 450 cd/m² and the contrast is specified with 600:1. The proportion of bezel to screen is significantly benignant, which enables space-saving applications. The outline measures 165 x 104 x 12,8 mm.

Operating temperature ranges from -30 up to +85 degrees Celsius.

On customer request the MSC delivers the display with laminated analogue resistive type touch screen.

Displays

Hitachi's Latest TFT with IPS-Pro-Technology and LED Backlight

23 cm (9 Inch) WVGA TFT:
TX23D38VM0CAA

MSC Vertriebs GmbH enhances its product range with Hitachi's latest TFT TX23D-38VM0CAA.



TX23D38VM0CAA

The display is developed for the special demand of customers, who needs to rely on quality of the mechanic and the optical performance, as for example a high brightness (450 cd/m²), rich contrast (800:1), as well as the option to read the screen under any viewing angle and direction.

The datasheet specifies the backlight unit with 70 k hours (MTTH). The brightness is as well analogue as digital easily adjustable by pulse width modulation from 0 to 100% using the onboard LED controller.

The integrated 24 bit LVDS receiver allows 16.7 million colors and longer cable lengths without noticeably signal distortion.

The dimensions of the module are 218 x 135 x 11.15 mm and an active area measures 195 x 117 mm.

The display is designed for a temperature range of -20 to +70 degrees Celsius. It is ideally suited for low temperature condition, by the use of LEDs.

The TFT will be offered by MSC Vertriebs GmbH with long time availability, optional with an analogue resistive touch screen.

Displays

17 cm (6,5 Inch) VGA TFT: TX17D01VM2CAA

New Hitachi TFT with VGA Resolution and LED Backlight



TX17D01VM2CAA

MSC Vertriebs GmbH has announced the introduction of a new high performance 18 cm (6.5 Inch) VGA TFT display, of the Hitachi Display Products Group.

With LED backlight featuring a typical brightness of 600 cd/m² the display demonstrates the latest high brightness LED technology.

An integrated LED driver gives the opportunity to scale the luminance and as its con-

sequence the power consumption of the backlight without any steps.

Another benefit is the option to increase the LED lifetime far beyond the specified 70 k hours by dimming the LED Backlight. The dimming mode ranges from 0 to 100%.

The display impresses with a contrast of 600:1. The outline measures 153 x 118 x 9.1 mm with a weight of 190 g.

The viewing angle is specified with 60/80/80/80 (U/D/L/R) which grants a good contrast ratio and readability. Another advantage is the wide operating temperature range from -20 up to +70 degrees Celsius. Datasheets of the VGA TFT TX17D01VM-2CAA are available within the display-navigator at MSC website www.msc-ge.com.

26 cm (10.4 Inch) SVGA TFT: TX26D12VM0AAA

New Hitachi Display with IPS-Pro Technology



TX26D12VM0AAA

The display's in-plane-switching technology (IPS-Pro) achieves high contrast, orthochromatic colours and a stable colour image from any viewing angle.

Uniquely, using this technology there are no limits to the viewing direction. The display is readable from all perspectives and its optical performance is impressive, especially at extreme viewing angles.

Hitachi specifies a typical contrast of 800:1. The aspect ratio corresponds to the classical 4:3 format and the resolution is 800 x 600 pixels.

The display has an LVDS interface which indicates that a good signal quality is maintained even when it is used in conjunction with the longer cable length.

Optionally the TFT can be driven either in 262 k or 16.7 M colour mode. An integrated LED driver provides infinitely variable dim functionality of the backlight. The brightness is 450 cd/m².

The display is also available with a laminated analogue resistive type touch screen.

Displays

14 cm (5.7 Inch) VGA TFT Display

Outstanding Visual Performance,
Compact Outline and Excellent Value



TX14D17

Hitachi Europe Ltd. Display Products Group and MSC Vertriebs GmbH have introduced the new panel TX14D17VM1BAB.

The TFT display belongs to the "Compact" family. The series features a very small form factor, with back sided blind holds for mounting. This enables the manufacturer shrinking the bezel to a minimum.

The new model is offered additionally to the existing CCFL and LED variants of the 14 cm (5.7 Inch) LCD TFT family. On account of Hitachi's optimized production process the displays are offered at excellent value combined with high quality. The panels are meeting perfectly the industrial standards and operate in a temperature range from -20 to +70 degrees Celsius.

The TFT's impress by outstanding visual performance and an optimized viewing direction for 6 o'clock. By using latest LED technology the power consumption can be decreased below 1.5 W. Hitachi specified the brightness of the VGA with typical 350 cd/m². and the QVGA model with typical 400 cd/m². The contrast is 350:1

Hitachi assures 100 % compatibility to the previous models. This grants the most comfortable upgradeability. The outline dimension, the pinout and the interface remain unchanged.

The dimensions are 131.0 x 102.2 mm x 10.9 mm (width x height x depth). The active area measures 115.2 x 86.4 mm (width x height).

All panels are optionally available with resistive touch sensor.

Displays

Gleichmann Electronics and Chi Mei Optoelectronics: A year of successful cooperation



CMO Displays

One year after signing a pan-European distribution agreement, the Taiwanese TFT-LCD manufacturer Chi Mei Optoelectronics (CMO) and Gleichmann Electronics report a positive development. "It is not an easy task to establish a display manufacturer - who in Europe during the past years has stood out primarily because of its competitively priced IT and consumer display products - as a successful brand in the industrial sector within only twelve months.

The fact that, despite economic crisis, we were able to reach this ambitious goal with our partner CMO is mainly due to the product philosophy of CMO, which is characterized by advanced technology, high quality, long-term availability and competitive prices," expressed Gerhard Becker, Manager Product Marketing Displays & Systems at Gleichmann Electronics. CMO is also very pleased with the results of the cooperation thus far. "Gleichmann Electronics' high level of design-in competence and many years of experience with industrial display solutions fit perfectly with our product strategy orientation," said Mr. Dundee Hsieh, Sales Manager at CMO.

Chi Mei Corporation established Chi Mei Optoelectronics (CMO) in 1998. CMO was the first Taiwanese TFT-LCD company with its own color filter production capabilities. The company is known for high-quality and cost-effective IT and consumer display products. Today, CMO employs more than 37,000 persons and with around 63 million panels sold last year is the second largest TFT-LCD manufacturer in Taiwan and ranks

fourth worldwide among the leading TFT display manufacturers. However, in 2010, with the planned merger with Innolux Display Corporation, also based in Taiwan, the new company Chimei Innolux would then move up into third place in the world rankings.

In the meantime, the awareness that high quality does not necessarily mean high price is increasingly recognized by industrial customers. Examples of this are CMO's new 26 cm (10.4 Inch) and 30 cm (12.1 Inch) TFT displays - manufactured using Super MVA technology - with extra long-life LED backlight, a viewing angle of 88° from all sides and a contrast ratio of up to 1500:1.

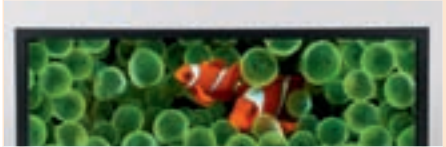
Further highlights are the new 17 cm (7.0 Inch) and 20 cm (8.0 Inch) TFTs with WVGA resolution, a brightness of 500 cd/m² and an operating temperature range from -30 to +80°C, which are manufactured in TN technology and provided with LED backlight.

A 12 V LED driver circuit is already integrated in the electronics of the majority of panels with LED backlight technology. For other voltages, however, this can be bypassed and the displays can be driven with the customer's own driver circuit. "Apart from CMO, there are currently few manufacturers that have such displays in their portfolio and especially not with an availability of five years," added Gerhard Becker.

Lately Gleichmann Electronics expanded its family of industrial displays with LED backlight with the addition of 26 cm (10.4 Inch) SVGA, 33 cm (13.3 Inch) WXGA, 38 cm (15.0 Inch) XGA types as well as 35 cm (14.1 Inch) and 39 cm (15.4 Inch) panels with WXGA resolution.

Displays

"Stretched Panels" from Tovis

Tovis 96 cm (37,9 Inch)
Stretched Display 2010

Yong Beom Kim, CEO of Tovis Co. Ltd., who founded the enterprise in 1998, also believes that the demand for "stretched panels" will continue to increase rapidly over the coming years. Initially focused on the production of display modules for mobile telephones and open frame monitors for the gaming market, Tovis therefore wants to continue to rapidly expand this business area with new product lines and technically competent distribution partners.

Gleichmann Electronics will present the product range for the first time in Hall 9 / Booth 9-463 at embedded world 2010. This range of products currently includes ten different panel sizes from 15 cm (6.2 Inch) to 125 cm (49.5 Inch) with various resolutions, whereby the two recently introduced 96 cm (37.9 Inch) and 72 cm (28.4 Inch) panels with heights from 234 mm and 296 mm respectively, manufactured from future-oriented Full HD displays, are particularly well suited for all types of travel and air passenger information.

All of Tovis' displays feature ultra-wide horizontal and vertical viewing angles of 178°. In addition, all larger displays have a brightness of greater than 400cd/m² and are therefore also suited for use in bright lit environments. The first high-brightness version with 1000 cd/m² has been announced for the first quarter of 2010.

The various TFT displays can be provided by Gleichmann Electronics, depending on the needs, as: module (LVDS input), open frame monitor (RGB/DVI input) or also complete monitor with enclosure. Furthermore, for a minimum quantity of a few hundred, Gleichmann Electronics and Tovis also offer additional customer-specific panels.

Displays

26 cm (10.4 Inch) TFT LCDs with VGA Resolution and LED backlight



NEC Displays

In addition to the currently available 26 cm (10.4 Inch) TFT color LCDs with 6 bit RGB TTL (CMOS) interface and CCFL backlight, Gleichmann Electronics now expands its product portfolio with four models with VGA resolution and long-life LED backlight from NEC Electronics.

The model NL6448BC33-70 is provided with a clear polarizer surface. An anti-glare ver-

sion - part number NL6448BC33-70D - is also available. Both displays have a luminance (typical) of 450 cd/m² and power consumption of 3.7 W.

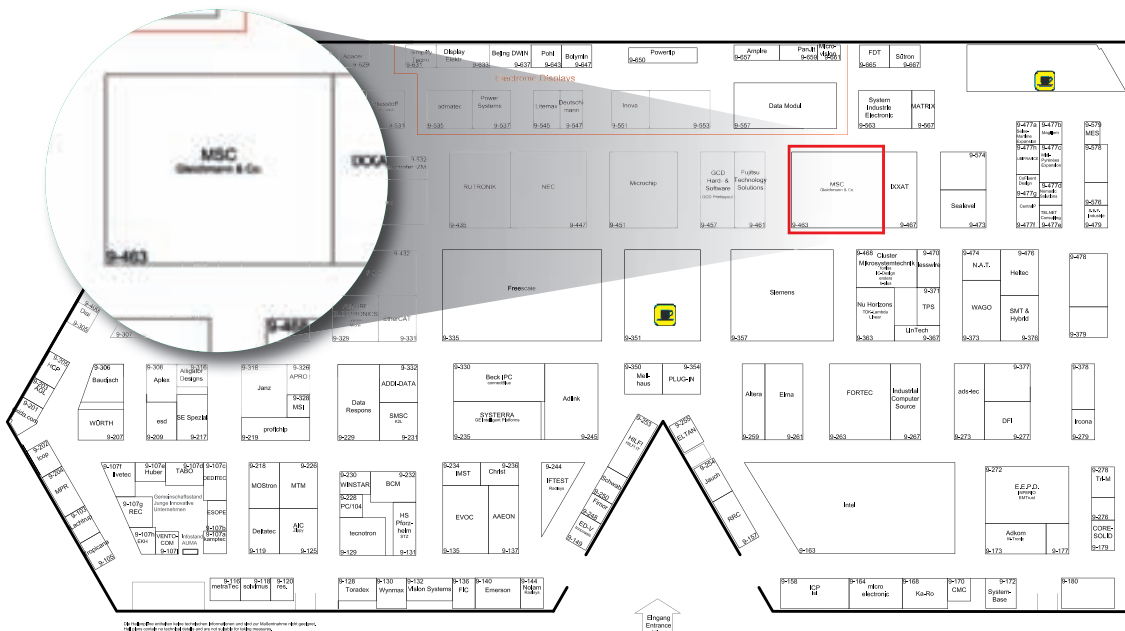
The high brightness, sun-readable TFT with Natural Light Technology (NLT) NL6448BC33-70C and the non-reflective, high brightness version NL6448BC33-70F with 900 cd/m² are twice as bright. The power consumption is 6.4 W for each model. Due to their wide operating temperature range, both models are also ideally suited for use in automotive applications. All displays have an outstanding contrast ratio of 900:1 in common. Thanks to this, images in high quality can be displayed even under severe environmental conditions. Furthermore, the new 26 cm (10.4 Inch) TFT LCDs with long-life LED backlight are also ideally suited for outdoor use due to the wide operating temperature range

from -30 to +80°C. LED backlight, in contrast to conventional CCFL backlight, guarantees a high visual presentation quality and long operating life, especially at low temperatures. At high temperatures, the new LED backlights - with an average life of 70,000 hours at 25°C and not less than 50,000 hours at 50°C ambient temperature - are almost equal to CCFL backlight.

The four new 26 cm (10.4 Inch) TFT LCDs with VGA resolution and long-life LED backlight are mechanically compatible with their CCFL counterparts NL6448BC33-64, NL6448BC33-64D and NL6448BC33-64C.

displays@msc-ge.com

We are looking forward welcoming you at our booth no. 463 located in hall 9.



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