

## ALCOM TIPS FOR ELECTRONIC DESIGNERS



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### SEMICONDUCTORS

#### Industry's first ARM Cortex-M3 Flash MCU



**Cortex**  
Intelligent Processors by ARM  
brought to you by Atmel

Atmel's SAM3U series is the world's first 32-bit ARM Cortex M3 Flash microcontroller with high-speed 480 Mbps USB + Phy.

#### High-Speed USB

The SAM3U is the first Cortex M3 microcontroller with high-speed USB and an integrated transceiver for fast up/downloading of data, robust EMI tolerance, and plug-and-play high-speed serial interconnectivity.

#### High Performance

Features a 96 MHz maximum operating frequency and a high data-bandwidth architecture based on a 5-layer bus matrix with 22 DMA channels and distributed memory.

#### Dual-Bank Flash

Provides safe in-application programming (IAP) including the boot program.

#### 1.62 to 3.6V Operation

True 1.8V±10% operation extends device operation when running from two AA alkaline batteries.

#### Memory Protection Unit

Improves code protection and secures multi-application/task execution.

#### High-End Analog

Features a differential input and programmable gain amplifier (PGA) on a 12-bit 1 Msps ADC.

Datasheet: [ATSAM3U](#)

### Photo flash and backlight driver ICs optimise power efficiency in feature phone designs



AnalogicTech introduced a set of flash and backlight White LED (WLED) drivers for the highly competitive feature phone market. Offering new efficiencies in power usage in highly compact packages, the AAT3176 flash driver and the AAT3351 WLED driver help handset designers extend battery life and reduce product footprint.

Operating from a 2.7V to 5.5V input voltage, the AAT3176 flash driver IC supplies up to 500mA output current. The dual mode charge pump maximizes power efficiency by supporting both 1X and 2X operation and can be programmed across 16 distinct steps via AnalogicTech's patented S2Cwire™ (Simple Serial Control) interface. Delivered in the industry's smallest package for a 500mA flash driver IC – 20% smaller than comparable devices – the AAT3176 allows to build highly compact camera lighting solutions.

Datasheets: [AAT3351](#), [AAT3176](#)

### RF Transceiver Targets Radio Designers with High Performance and Flexibility



CML introduced a high performance integrated RF quadrature/low IF transceiver IC, which features an advanced image-reject up-conversion modulation system and flexible superheterodyne receiver. The new CMX991 is designed to meet the global requirements of electronics designers, who are searching for a low cost integrated transceiver device, which offers consistently precise RF signal processing. Specifically tailored for flexible operation from 1GHz right down to 100MHz, the transceiver addresses an area that is not adequately covered by existing devices on the market.

Datasheet: [CMX991](#)

### Embedded Wireless Solutions with 8051 MCU



Silabs announces a high-performance embedded wireless solution, the EZRadioPRO family and C8051F9xx serie low-power MCU. The EZradioPRO delivers a single-chip output power of up to +20 dBm and industry leading sensitivity (-118 dBm) hereby achieving the lowest overall system cost for frequencies from 240 to 960 MHz

[EZRadioPRO family](#)  
[C8051F9xx serie low-power MCU](#)

### Small Form Factor MCU C8051T606

**Highest Performance in  
a 2x2 mm<sup>2</sup>  
package!**



Silabs introduced the C8051T606 OTP MCU - its high level of integration makes it an optimal solution in applications such as communications bridges, LED lighting and system supply supervisors. The world's smallest MCU, it is a mixed-signal device that provides a high degree of functional density for programmable embedded.

Features:

- 25 MIPS 8051 CPU
- 8, 4, 2 or 1.5 kB one time programmable (OTP) code memory
- 56 or 128 B RAM
- 10-bit ADC
- Up to 8 digital I/O, 5 V tolerant
- 1.8–3.6 V supply
- –40 to 85 °C operating range
- On-chip debug
- 11-pin QFN (3x3 mm)
- 14-pin SOIC
- 10-pin QFN (2x2 mm)
- 10-pin MSOP

Datasheet: [C8051T606](#)

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## M2M & WIRELESS MODULES

**Digi Connect WAN 3G IA, Wireless WAN router ideal for utility, pipeline, traffic, industrial automation**



The Digi Connect WAN 3G IA provides support for both HSDPA and EVDO connections and features Class 1 Division 2 industrial certification. It also includes Modbus TCP support for easy connectivity to programmable logic controllers, Remote Terminal Units and other industrial devices. Additionally, the Digi Connect WAN 3G IA includes both Ethernet and serial ports, a terminal block for 9-30 VDC power, a din rail kit for mounting in industrial environments, and an industrial temperature rating of -25 to 75°C for GSM models and -30 to 75°C for CDMA models.

[Product Datasheet](#)  
[Digi Connect WAN features comparison chart](#)

**Industrial 6-Port Managed M12/IP68 Ethernet Switch**



Korenix JetNet 4506-M12 Wins 2009 COMPUTEX TAIPEI Design & Innovation (D&I) Awards!

The key features of JetNet 4506-M12:

- Exclusive double O-ring mechanical design for EN60529 waterproof standard.
- Complete system closure to avoid cabinet pressure



International  
Forum  
Design



COMPUTEX TAIPEI  
design & innovation awards 2009



difference to exceed dust-tight test of EN60529.

- One-piece aluminum ideal for heat dispersion to reach -25~70°C operating temp.
- Industrial anti-aging O-ring material prevents chemical gas entering cabinet for UL1604 hazardous anti-explosion test.
- Robust M12connector and 3-axis fixing pillar to reach 50G anti-vibration standard.
- Multi-layer electrical circuit design for low EMC requirement of DNV EN60945.
- Aluminum enclosure for EN60068-2-52 anti-saline erosion.
- Patented redundant ring design for hazardous applications.

Datasheet: [JetNet 4506-M12](#)

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## TFT & EMBEDDED COMPUTING

### 48-bit LVDS Supported EMX-945GSE Mini-ITX Motherboard with Atom N270 Platform



Avalue's new industrial Mini-ITX form factor motherboard, EMX-945GSE, is based on the Intel® Navy Pier platform, Atom™ N270 processor with mobile Intel® 945GSE express chipset, which is featuring the optimal performance with lowest energy waste. Particularly designed by Avalue, the EMX-945GSE supports both 48-bit LVDS and two channels of 18-bit LVDS with DVI interface (Refer to EMX-945GSE-DVI) for multi-display configurations according to customer's demands. It enables users have more flexibilities and possibilities on creating their own machines.

Datasheet: [EMX-945GSE-DVI](#)

### PCI/104-Express Single Board Computer Core 2 Duo Processor



The Cool XpressRunner-GS45 is the fastest PCI/104-Express processor module available. It brings the power of the Intel Core 2 Duo processor and the mobile GS45 chipset on a small 3.55 by 4.55 PCI/104-Express board. The chipset features an integrated GMA4500 graphics processor. Displays are connected using either VGA or dual channel LVDS interfaces. High definition audio with analog as well as digital inputs and outputs is available, too.

There is a Gigabit LAN port, 8 USB 2.0 host port and two serial interfaces capable of RS232 and RS485. Two SATA ports round the board's hardware features off.

All models of the Cool XpressRunner-GS45 are designed for an ambient temperature range of -20°C...+60°C. The 1GHz model is optionally available for operation in the full

extended temperature range of -40°C...+85°C.

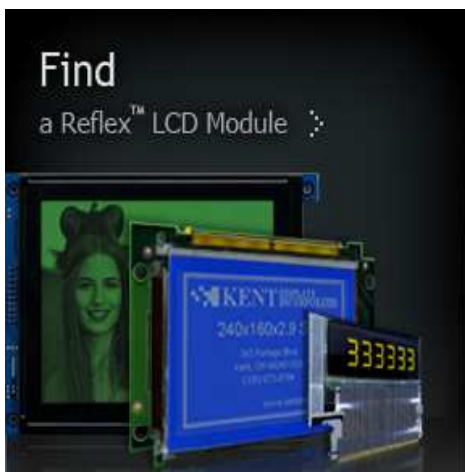
Datasheet: [Cool XpressRunner-GS45](#)



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## DISPLAYS & OPTO

### Reflex™ No Power LCDs



All Reflex LCDs retain an image without power and offer superior optical characteristics including sunlight-readability and wide viewing angles. These features, coupled with the flexibility, durability and exceptional thinness of plastic substrates provide a more versatile, sustainable medium than traditional paper and backlit LCDs, opening the door to a myriad of new display applications from electronic paper to electronic skins – and beyond!

To manufacture plastic LCDs, Kent Displays recently installed and commissioned a new roll-to-roll production line. A first of its kind in the LCD industry, the line is now in pilot production and fulfilling initial customer orders for LCD Writing Tablets. The roll-to-roll line will also produce LCDs for electronic skins, smartcards and other applications requiring flexibility, durability, and/or exceptional thinness. Datasheet: [Reflex](#), [eTablet](#)

### Active Matrix OLED (AMOLED) display solutions



Densitron announced the introduction of Active Matrix OLED (AMOLED) display solutions with Capacitive Touch Sensor technology. AMOLED displays from Densitron can now be supplied together with Capacitive Touch Screens, assembled and tested.

Capacitive technology comes with many benefits and is used in a wide range of applications, for instance, Point-of-Sale, and industrial control and handheld devices. With a transparency of over 90%, Capacitive Sensors allow the brightness and vibrant colours of AMOLED displays to stay true when fitted with touch screens.

Capacitive technology also offers a very high touch resolution that enables pinpoint touch detection and allows sensor activation by low force touch. Recalibration is not required to ensure accurate touch detection even when Capacitive Sensors are used under harsh environmental conditions. A glass or acrylic window of less than 1mm can be added onto the touch layer to waterproof and further protect the front of the Capacitive Sensor from scratch.

Datasheet: [3.45" Amoled](#)



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## PASSIVES & ELECTROMECHANICAL

### New Metal Switch with Ceramic Surface



The new MSM CS metal switch from SCHURTER is equipped with an actuator made of highly durable ceramic. Ceramic is a new technology employed in the production of an electro-mechanical switch. The new switch provides novel features that open up entirely new areas of application. The MSM CS is extremely robust and meets vandal-proof demands due to the low profile of the front structure (1.7 mm), the IP 69K protection class and the high level of impact resistance. The switch is available in 19 mm and 22 mm mounting diameters.

Datasheet: [MSM CS metal switch](#)

### Super Speed USB 3.0 Connector



The new connector series 829 provides data transfer rates of 4,8 Gbit/s – e.g. a speed 10 times faster than the previous USB 2.0 connectors (480Mbit/s)! The increase of the speed of the new USB 3.0 was absolutely necessary. The data transfer rate of the usually USB-operated hard discs and mass storages are already today 3 times faster than the maximum data transfer rate of USB 2.0. The higher data transfer rates are realized with a technique comparable to the PCI-Express or the Serial ATA. Therefore additional wire pairs and supplemental contacts are necessary.

W+P guarantees for the series 829 compatibility to the previous USB-headers. The 5 supplemental contacts are located in the back of the commonly used USB connector case.

The new USB 3.0 super speed connectors are high-speed

alternatives for the previously used USB 1.1 and USB 2.0 connectors. Attractive applications are e.g. in industrial controlling, embedded computing and peripheral devices. The connectors are available with 9 contacts as solder version in type A and B.  
Datasheet: [USB3 0-1](#), [USB3 0-2](#)

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## POWER CONVERSION

### 250W Power Supply



FSP Group's latest product, FSP250-60PFK, is an 80PLUS gold level certified 250-watt multi-output type power supply.

It features power factor correction (PFC) and Green Power Function of Aux Power with lots of patents. FSP250-60PFK at 20%, 50% and 100% of rated load can achieve 88%, 90%, 88% efficiency with a power factor correction (PFC) of greater than 90%. (80PLUS gold certification requires power supplies to achieve 87%, 90%, 87% efficiency at 20%, 50%, 100% loading points) Using Active-Clamp Reset and Resonant design technique, FSP250-60PFK represents high energy efficiency. In addition, FSP250-60PFK is also highly compatible with different systems in order to prevent system conflicts. Besides, FSP250-60PFK also comes with other special features including low EMI, low noise level, multiple circuit protection standards (OVP, OCP, SCP, OTP, OPP, UVP) and complete overlap loading function. Datasheet: [FSP250-60PFK](#)

### N2Power Releases New Compact AC-DC Power Supply Family



Seven models deliver output voltages from 12 to 56V, and up to four units can be wire-ORed together to increase the total main output power up to 1,400W. The XL375 family is designed for OEM applications such as industrial automation, telecommunications, gaming systems, security and surveillance systems, and network servers. The XL375 series delivers 375W of output power from just 16.5 square inches of system design real estate. Very low profile packaging yields more than 15W per cubic inch power density in less than 1U, making the system designer's job much easier.

Datasheet: [XL375](#)

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