

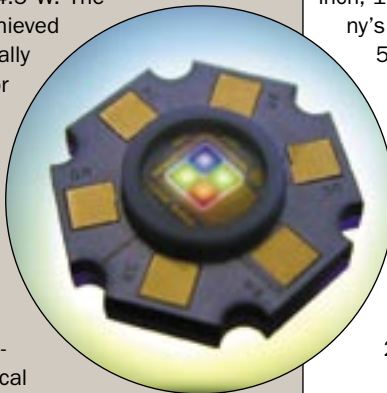
LED MODULE

PerkinElmer's All Color Ultrabright LED (ACULED) is a multi-use compact LED designed for specialty lighting applications, including automotive interior lighting, instrumentation backlighting, and luxury car accent lighting. The ACULED features a compact and highly developed optical design while the copper board provides for enhanced thermal management for the device's typical electrical power input of 4.5 W. The chip-on-board technology provides a white color mix achieved by close individual chip placement. Each color is individually addressable, resulting in the additional capability of color mixing, including variations on white light ranging in temperature from 1500 °K up to 15,000 °K.

The thermal resistance is less than 10 °K/W, proving superior to the RGB devices in conventional plastic encapsulation. The device is a Lambertian emitter with a 120° aperture and a red-green-blue-green four-die arrangement. The two green die are wired together in series, acting as a single enhanced element contributing to the quality of white light generation. Red, green and blue (RGB) are driven with a typical current of 350 mA. For board temperatures of 25 °C, the respective luminous intensities for these colors are 31 lm/W, 17 lm/W and 3 lm/W. The maximum power consumed by these colors (in the same order) reaches 1.05 W, 3.2 W and 1.8 W.

The LED chips are centrally mounted in a hexagonal package 14 mm wide. An evaluation kit is available for testing the device for specific applications. Pricing information is available.

PerkinElmer • (450) 424-3300 • <http://www.optoelectronics.perkinelmer.com>



OLED DISPLAY

OSRAM Opto Semiconductors has announced the newest addition to its Pictiva line of organic light-emitting diode (OLED) graphic display products. The 2.7-inch, 128 x 64 dot display is the company's solution to offering a lifetime of 55,000 hours. This enables OLED displays to enter the mainstream commercial, medical and industrial markets where high performance, wide viewing angles and long life are critical components.

The addition is OSRAM's largest-sized OLED offering, which ranges from 0.8 inches to 2.7 inches diagonally.

In addition to the 128 x 64 pixel graphics Pictiva display is an industry-standard 2.7 inches, enabling excellent readability and presentation of graphic and text images. Pricing for the Pictiva OLED display is comparable with LCD screens.

The 128 x 64, 2.7-inch Pictiva OLED display is available for \$19.50 in 1000-unit quantities. For more information, please contact an OSRAM sales representative at www.osram-os.com.

**OSRAM Opto Semiconductors
+49 896 2130 • www.osram.com**

FLASHPOINT M3 SHAREPLAYER

Xmultiple Technologies has introduced the FlashPoint MP3 SharePlayer. The SharePlayer empowers the user with the ability to copy MP3 files, data files and folders from one MP3 player to another by plugging the male USB connector into the female USB on the SharePlayer. With the MP3 player users have the capability to upload and download files while mobile and away from laptop or desktop computers.

With the FlashPoint MP3 SharePlayer the user connects his or her device directly to another user's MP3 player without the need for a PC. Integrated in the device is a chip that contains Sharing-On-The-Go (SOTG) firmware to provide the MP3 to MP3 upload

LOW-POWER A/D CONVERTERS

Microchip Technology Inc., a provider of microcontroller and analog semiconductors, has introduced the MCP3551 and MCP3553 delta-sigma, analog-to-digital converters (ADCs) with 22-bit resolution. The low-power devices are available in an eight-pin MSOP package. These delta-sigma units expand Microchip's line of SAR, dual-slope and display ADCs.

The ADCs feature low typical current consumption of 120 µA. The small MSOP package (3.1 mm x 3.1 mm x 1.18 mm) is ideal for space-constrained applications. The 22-bit resolution provides highly accurate measurements for consumer, industrial and instrumentation applications.

In addition, these devices offer integral non-linearity (INL) of ±2 ppm typical, power consumption of 0.85 mW maximum at 5 V, and output noise as low as 2.5 mV root mean square (RMS). They also offer automatic calibration with every conversion, and an extended temperature range of -40 °C to +125 °C. The MCP3551 has a sample rate of 13.75 samples per second and an effective resolution of 21.9 bits. The MCP3553 has a sample rate of 60 samples per second and an effective resolution of 20.6 bits.

The MCP3551 and MCP3553 ADCs target a variety of applications, including automotive sensor interfacing. To help engineers get started, Microchip is offering the MCP3551 Delta-Sigma ADC PICtail demonstration board (Part No. MCP3551DM-PCTL) at \$40. The board is now available. The MCP3551 and MCP3553 are also available for sampling and volume production. Pricing for each device in 10,000-unit quantities is \$3.27 in the eight-pin MSOP package and \$3.23 in the eight-pin SOIC package.

Microchip Technology • (480) 792-7200 • www.microchip.com

and download capability. Also integrated into the device is a female USB connector, which connects to the male USB connector of another MP3 Player. For MP3 players without a male USB connector built-in, a cable is provided to make this connection. Connecting and transmitting files and folders from one MP3 player to a FlashPoint MP3 SharePlayer is as simple as attaching the devices and pressing a button.

The FlashPoint MP3 SharePlayer is a lightweight; elegantly designed enclosure with a reflective piano finish available in white, black and gray. This thumb-sized MP3 Player has 512 MB, 1 GB, 2 GB and 4 GB storage capacity. The FlashPoint MP3 player also has the ability to download photographs from a digital camera or download pictures/data from a USB-enabled cell phone. Therefore, this device also serves as a communications tool to copy content while the user is remote from office or home.

Xmultiple Technologies

www.xmultiple.com • (805) 579-1100

VISION-BASED DRIVER-ASSIST SYSTEMS

STMicroelectronics and Mobileye N.V. have announced that the two companies are committed to developing, producing, and commercializing chips for the visual-aid driving-assistance segment of the automotive market.

The implementation of technology-based safety systems into the next-generation of road vehicles is increasingly being touted as a valuable instrument in the effort to reduce the high level of traffic accidents worldwide. According to the U.S. National Highway Traffic Safety Administration, there were estimated to be more than six million police-reported traffic crashes in the United States in 2004, in which more than 42,000 people were killed and approximately 2.7 million more were injured, despite a record-low fatality rate per 100 million vehicle miles of travel in the United States.

In a recent report on the main causes of road accidents from the Intelligent Traffic and User-Friendly Technol-

ogy-Driver Assistance, Active Safety (INVENT-FAS) research initiative in Germany: about 28% of accidents were caused in lane-merging or lane-crossing maneuvers; about 24% were rear-end collisions; and approximately 15% were due to a vehicle leaving the road. The study concluded that there should be a focus on technological solutions for collision warning, lane-departure warning and lane changing.

Driving-assistance technology is aimed at improving driver performance with automated features such as adaptive cruise control, lane-departure warning, lane-change assist and blind-spot detection, as well as vision-radar sensors for pre-crash, pedestrian protection, and in-cabin occupant detection. According to Allied Business Intelligence Inc., this segment of the automotive market is expected to grow significantly over the next few years.

For example, the worldwide market by 2008 for lane-departure warning products is predicted to be between 1.5 to 1.9 million units; and the adaptive cruise control market, also by 2008, is expected to be 2.8 to 3.3 million units with predicted market revenues of between \$1.8 and \$2.2 billion.

STMicroelectronics intends to manufacture Mobileye's EyeQ-1 system-on-chip and both companies will jointly develop the second-generation EyeQ-2. EyeQ-1 has been adopted by several first-tier suppliers and car manufacturers in Europe, the United States and Japan and will make its debut in after-market driver-assistance products in early 2006 and in 2007 model-year cars.

EyeQ-1 features lane-departure warning, forward-collision warning and vision/radar fusion for active safety. The successor, EyeQ-2, will add pedestrian-detection capabilities and will debut in late 2008 models.

Mobileye N.V. • www.mobileye.com • (248) 351-2683

FIRST CLASS D AMPLIFIERS

Texas Instruments has announced its first digital amplifiers designed to meet the high reliability and unique requirements of the automotive market. The TAS5414 and TAS5424 Class D amplifiers introduce the power efficiency of digital amplification for automotive audio applications, such as head units and external amplifiers. Specifically designed for the automotive market, the TAS5414 is a single-ended input amplifier and the TAS5424 has differential input, enabling it to achieve higher dynamic range performance in a challenging board signal routing environment. The two amplifiers let the designer select the optimum solution given their system performance and cost requirements.

The automotive digital amplifiers are ultra-efficient four-channel digital audio Class D amplifiers. At moderate power levels, Class A/B amplifiers provide at most 40% to 50% efficiency. With the TAS54x4 amplifiers, TI delivers 90% power efficiency at normal radio listening levels for automotive audio systems. Comparatively, two TAS54x4 amplifiers can provide eight channels of audio, while generating less heat than a four-channel Class A/B-based system, enabling a new class of cost-effective eight-channel audio systems that are lighter, smaller and more power efficient. EMI performance is important in automotive applications to prevent interference with control systems. With these automotive digital amplifiers, TI overcomes EMI at the source through architecture and process advancements, such as an enhanced digital PWM topology, optimized gate drive technology and patented AM interference avoidance. These features allow the TAS54x4 Class D amplifiers to meet automotive requirements, eliminating the need for expensive shielding and other EMI countermeasures. Currently sampling, the TAS5414 and TAS5424 are expected to be available for volume production in late 2006 and are scheduled to be AEC Q100 qualified at that time. Both devices have a PSOP3 package. The TAS5414IDKD has 36 pins and is priced at \$9.75, and the 44-pin TAS5424IDKD is \$10.50, both prices applying to 1000-unit quantities.

Texas Instruments • www.ti.com • (800) 336-5236

HIGH-POWER LED DRIVER

Linear Technology Corporation has introduced the LTC3783, a current-mode multitopology converter with constant-current PWM-dimming for driving high-power LED strings and clusters. Proprietary techniques provide extremely fast, true PWM load switching with no transient undervoltage or overvoltage issues. Applications for the LTC3783 include high-voltage LED arrays and backlighting, as well as voltage regulators automotive control systems.

Ratios of 3000:1 can be achieved digitally as true color PWM dimming guarantees color integrity of white and RGB LEDs. The LTC3783 allows an additional 100:1 dimming ratio using analog control.

This versatile controller can be used as a boost, buck, buck-boost, SEPIC or flyback converter, and as a constant-current/constant-voltage regulator. No-Rsense operation uses the on-resistance of a MOSFET to eliminate the current-sense resistor, increasing efficiency.

The LTC3783 operates from input supplies ranging from 3 V to 36 V and provides overvoltage protection while regulating output current. Integrated drivers for power and load MOSFET switches and an adjustable feedback voltage (0 V to 1.23 V based on 1% internal reference) make this part convenient for higher-power LED lighting applications. One resistor sets operating frequency from 20 kHz to 1 MHz. Moreover, to reduce switching noise interference, the LTC3783 is synchronizable to an external clock.

Programmable soft-start limits inrush current during startup, preventing input current spikes. The device also has adjustable output voltage protection. The LTC3783 is rated for operation from -40 °C to 85 °C with a maximum junction temperature of 125 °C. It is offered in 16-lead 5 mm x 4 mm DFN and TSSOP packages; 1000-piece pricing starts at \$2.85 each.

Linear Technology • www.linear.com • (408) 432-1900

EIGHT-BIT APPLICATION DEVELOPMENT

Freescale Semiconductor is simplifying eight-bit product development with the introduction of its CodeWarrior Development Studio for HC(S)08 Microcontrollers v5.0, giving designers and programmers the opportunity to work more efficiently and more economically.

The CodeWarrior Development Studio is the first of several Freescale Fast Track eight-bit development tools and resources planned for 2006. This latest version has been re-architected to include built-in features and utilities that improve ease of use, speed and accessibility over previous versions of CodeWarrior software development tools. All editions are available as downloads from Freescale's web site.

With more than 100 example projects to help programmers get started, the Fast Track CodeWarrior software tools emphasize usability and allow developers to create a working project in as few as seven mouse clicks. The tools also allow switching target microcontrollers and the debug/Flash programming connection in an open project.

The Fast Track CodeWarrior tools maximize performance with ANSI C/C++ and compact C++ compilers that include more than 60 advanced optimization strategies specifically designed to boost performance and reduce code size for the HC(S)08 architecture. The high level of functionality of the C compilers is easily accessible to first-time users, featuring an enhanced Windows operating system driven graphical user interface (GUI).

The new Device Initialization tool provides a fast and easy way to configure and generate initialization code. Programmers can add the code directly to their project or create a separate text file.

Other features include flash programming support, full chip visualization, a graphical source level debugger, and animated tutorials.

CodeWarrior Development Studio for HC(S)08 Microcontrollers v5.0 is available via download on Freescale's web site. The special edition, with limited 16K C compiler is free of charge. The standard edition is available for a suggested resale price of

\$2,394 and the professional edition has a suggested resale price of \$4,794.

Freescale Semiconductor
www.freescale.com • (512) 895-2000

AMPLIFIER

D2Audio has introduced the world's first and only full-bandwidth, real-time, all-digital feedback amplifier. This powerful closed-loop amplifier breakthrough, which will serve as D2Audio's revolutionary second-generation digital audio engine (DAE) IC platform, achieves a higher level of audio by constantly and automatically correcting the audio amplifier signal using a closed-loop technology, adjusting and optimizing the audio signal to correct for fluctuations within the audio system, or due to the speaker load. It also gives audio manufacturers an intelligent digital amplifier system with automatic fine tuning that even compensates for changes induced by low-cost, unregulated power supplies.

This real-time DSP-controlled all-digital amplifier feedback technology expands upon D2Audio's first-generation DAE-1 technologies, creating a new family of application-optimized IC's known as the Digital Audio Engine DAE-2 IC platforms. The DAE-2 IC platforms integrate a collection of capabilities, including full-bandwidth digital feedback and an advanced feed-forward or digital power supply correction capability.

The DAE-2 IC family, which is RoHS compliant, will launch with a family of three products: D2-91413-LR, D2-91413-LR and D2-91433-LR, targeting A/V receivers, multichannel amplifiers and automotive applications. These first DAE-2 IC platforms feature the following: advanced closed loop amplifier implementations, advanced digital power supply correction (DPSC), adaptive sample rate conversion and embedded digital signal processing (DSP). They will also feature scalable power and performance solutions and the D2Audio SoundSuite of immersive audio processing capabilities.

The three IC products are supported with comprehensive amplifier reference design platform packages.

D2Audio • www.d2audio.com
(512) 343-9301