



In This Issue

[New Atmel UC3L. The world's most efficient 32 bit micro.](#)

[Altera announces new Cyclone III LS FPGA.](#)

[STMicro's STM32 with Ethernet, USB OTG, CAN 2.0B and Audio Class I2S](#)

[Hittite Microwave introduces 12 new products.](#)

[Visit our website](#) | [Subscribe](#) | [Update profile](#) | [Unsubscribe](#) | [Send to friend](#)

Welcome to our July 2009 edition of Braemac Product News

Atmel Introduces AVR32 Microcontroller which Lowers Industry's Best Power Consumption by 63%



picoPower AVR32 AT32UC3L Microcontroller offers less than 0.48 mW/MHz Active and below 100 nA Sleep Mode, and has Embedded Capacitive Touch Peripheral and Event System that Eliminates Interrupt Handling and Guarantees Deterministic Response Time

Atmel announced today the availability of its 32-bit AT32UC3L AVR®32 microcontroller with Atmel's picoPower™ low power technology and embedded capacitive touch controller peripheral. The AT32UC3L is the industry's lowest power 32-bit MCU with less than 0.48 mW/MHz in active mode executing real-life applications. The device is also the first 32-bit microcontroller to feature a built-in capacitive touch interface, making the device suitable in a wide range of embedded applications. The introduction of AT32UC3L expands Atmel's 32-bit MCU portfolio consisting of ARM and AVR32 products.

picoPower technology sets new standard for 32-bit MCU power consumption.

Atmel's picoPower technology enables the AT32UC3L to operate on less than 1.5 μ A with the 32 KHz Real Time Clock active, and below 100 nA with all oscillators stopped. The device features Atmel's true 1.6V technology, which keeps the device fully operational in systems with supply voltage ranging from 1.62 to 3.60V.

Embedded Capacitive Touch Peripheral. The AT32UC3L's built in capacitive touch peripheral unit makes capacitive touch as easy as incorporating just another peripheral. The device supports capacitive touch buttons and sliders, and the hardware support enables the addition of capacitive touch to the application with no additional software overhead. The capacitive touch hardware also allows the microcontroller to wake up from sleep on touch.

Atmel's QTouch™ technology provides the industry's most robust touch solution with a high signal to noise ratio that improves the system's design margin, increases EMC performance and raises ESD tolerance. It is ideal for applications where reliability is required, such as consumer user interfaces, industrial and automotive applications and those where high moisture levels are present.

FlashVault Code Protection. The AT32UC3L also includes a brand new flash security technology named FlashVault. FlashVault allows the on-chip flash to be partially programmed and locked, creating secure on-chip storage for secret code and software intellectual property. Code stored in the FlashVault will execute as normal, but cannot be read, copied or debugged. This allows a device with FlashVault code protection to carry a piece of valuable software such as a math library or an encryption algorithm from a trusted location to a potentially untrustworthy partner where the rest of the source code can be developed, debugged and programmed.

Peripheral Event System Eliminates Interrupts Processing. In addition to capacitive touch and secure memory, the AT32UC3L brings numerous innovations into the 32-bit microcontroller space with new functionality, improved reliability, and reduced cost. The AT32UC3L introduces Atmel's Peripheral Event System for the first time on a 32-bit microcontroller. The innovative peripheral event system allows peripherals to send signals (events) directly to other peripherals without involving the CPU. By offloading to the peripheral event system the repetitive task of forwarding these events, the CPU will reduce drastically the time consuming handling of interrupts. This will free up more time for the CPU to handle other tasks in the application, and often allow the CPU to remain longer in one of the AVR32's many energy saving sleep modes.

Clock Failure Protection. The UC3L has a state-of-the art clock system with clock failure protection, Frequency Meter, Real Time Clock with Calendar mode, a precision crystal oscillator tuner and accurate Digital Frequency Locked Loop. The peripherals include a 9 channel 12-bit ADC and 8 channel Analog Comparator. And the device is the first microcontroller from Atmel to feature an 8-bit PWM output on every I/O pin.

[For further information click here.](#)



Altera Announces New Cyclone III LS FPGAs

Altera Ships Lowest Power FPGAs With Security Features Including Anti-Tamper, Design-Security and Design-Separation Capabilities

Expanding its leadership position in low-power solutions, [Altera Corporation](#) (NASDAQ: ALTR) today announced a new low-power FPGA family with security features. The new Altera® [Cyclone® III](#) LS FPGAs offer the highest logic, memory, and DSP density per board area. These devices are the lowest power FPGAs at less than 0.25W of static power for 200K logic elements (LEs). The Cyclone III LS FPGAs, which are shipping now, target power and board-space-sensitive applications in all market segments including military and industrial.

The security features of the Cyclone III LS FPGA include a comprehensive information-assurance design suite that offers anti-tamper, design-security and design-separation capabilities. To protect highly sensitive information, the Cyclone III LS FPGAs' anti-tamper features include JTAG port protection, tamper monitoring, and cyclical redundancy check (CRC). Offering another layer of protection, these devices feature a proven industry-standard AES 256-bit encryption key for design security. Where size, weight, and power (SWaP) requirements are crucial, the design-separation feature of the Cyclone III LS FPGA enables high-assurance and industrial-safety applications in a single chip through logic, routing and I/O bank separation.

"The secret to the Cyclone series' success has been a strong focus on customer applications, which allows Altera to supply the right mix of low power, high functionality, and small form-factor solutions," said Luanne Schirrmeister, senior director of component product marketing at Altera Corporation. "The introduction of the Cyclone III LS devices extends Altera's low-power leadership and specifically addresses the security needs that are paramount for the military and industrial markets. We're offering a complete solution that protects against IP theft and tampering."

Cyclone III LS FPGAs allow a single-chip solution for next-generation military applications such as software-defined radio (SDR), crypto-subsystems, and crypto modernization equipment where long battery life, density at the lowest power, and small board space are required. The additional security features of the Cyclone III LS FPGAs give designers of secure communications applications the assurance that their information will be protected with anti-tamper technology.

The unique features of the Cyclone III LS FPGA also provide the optimal solution for industrial applications, specifically motion control, Industrial Ethernet, and industrial safety. Using the design-separation feature lowers system power and increases integration while offering design [redundancy](#) for safety-critical applications. For detailed information on these new devices, see www.altera.com/pr/cycloneiii.

[For further information Click Here.](#)

STMicroelectronics Delivers STM32 Connectivity Line Microcontrollers with Ethernet, USB OTG, CAN2.0B, and Audio-Class I2S Peripherals

STMicroelectronics, a world leader in microcontrollers, has confirmed full production availability of its latest [STM32 Connectivity](#) Line microcontrollers built on the ARM Cortex™-M3 processor, as forecast when the company announced its new devices in March at Embedded World 2009.

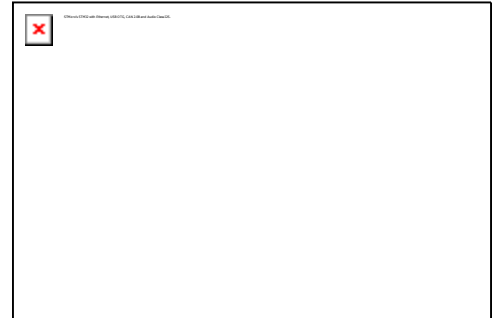
The STM32 Connectivity Line allows developers to take advantage of industry-standard 32-bit processing in designs requiring simultaneous Ethernet, USB, CAN and audio-class I2S capabilities. Two variants are available, including the STM32F105 series combining a Full-Speed USB 2.0 Host/Device/OTG peripheral and two CAN2.0B controllers with advanced filtering capabilities. The STM32F107 family adds a complete 10/100 Ethernet MAC with hardware support for the IEEE1588 Precise Time Protocol, enabling Ethernet connectivity for real-time applications. Dedicated buffers allow the USB OTG, the two CAN controllers and the Ethernet interfaces to operate simultaneously to satisfy communication-gateway applications, as well as a host of challenges requiring flexible, industry-standard connectivity.

Both families also support audio-class I2S communications which, combined with USB host and SPI capability, allows the micro to read music files from external storage such as a USB mass-storage device, an MP3 player or SD card, and decode and output audio via the I2S. Such features are required in home-audio products such as docking systems, alarm-clock/music players, and home theaters. The high processing power of the ARM Cortex-M3 allows developers to implement important functions such as the audio codec and human-interface functions such as display-data handling and the Play and Stop buttons in software, thereby saving additional external components.

"Our considerable expertise with ARM Cortex-M3 allows us to quickly introduce new products delivering the advantages of power-efficient operation, solid real-time performance, and innovative shared peripherals to an industry-standard core," said Jim Nicholas, STMicroelectronics Microcontrollers Division Manager. "With four STM32 families in full production, a new ultra-low-power STM32L MCU platform in development, and more innovations planned, our reliable roadmap enables customers to target established markets as well as emerging opportunities."

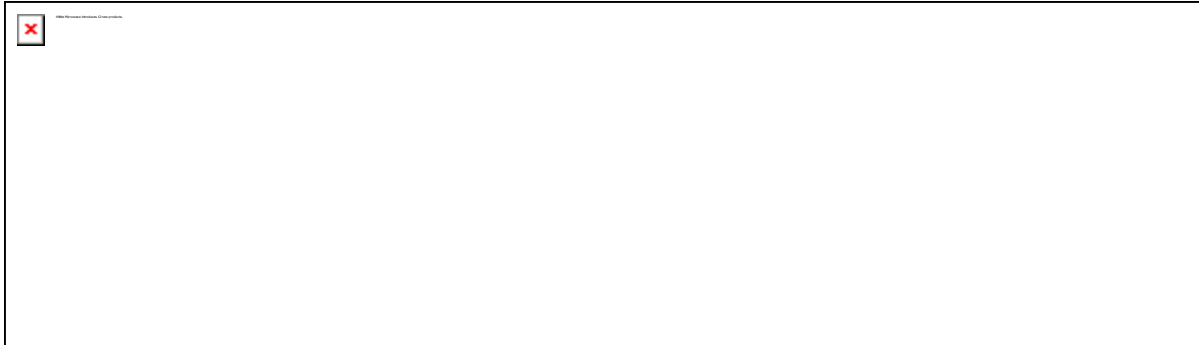
The STM32 Connectivity Line comprises 72MHz microcontrollers to fulfill requirements such as network accessibility, data logging, USB connectivity and peripheral extension, or field upgradeability. These requirements will serve products targeting industrial, medical, appliance, consumer, and building-services markets, such as PLCs, motor controls, patient monitors, motor controls, home audio, security systems, power meters and control panels.

A total of 70 STM32 variants are now in production, delivering pin-and-software compatible devices from 36MHz to 72MHz, with a broad selection of common peripherals to serve diverse applications, eight package options and on-chip Flash density from 16Kbyte to 512Kbyte.



[For further information click here.](#)

Hittite to Introduce 12 New Products at IMS 2009



Hittite Microwave Corporation, the world class supplier of complete MMIC based solutions for communication & military markets, today announced that it will introduce 12 new products at the 2009 IEEE MTT-S International Microwave Symposium and Exhibition.

Hittite's latest products include:

The [HMC701LP6CE](#) and the [HMC702LP6CE](#) are the latest additions to Hittite's PLL product line of integrated fractional-N synthesizer ICs designed to cover a wide range of applications from 10 kHz to 14 GHz, particularly those sensitive to phase noise and signal jitter. Each of these feature packed fractional-N synthesizers feature a 16-bit fractional divider, 24-bit delta-sigma modulator, 14-bit reference path divider, ultra low noise phase frequency detector (PFD), a precision controlled charge pump and extensive

access to various modes of operation via a GPO (General Purpose Output) bus.

The [HMC714LP5E](#) is a new, industry leading, integrated Dual Channel RMS Power Detector, which is capable of simultaneously measuring the instantaneous power (RF envelope) and the average true RMS power of any input RF signal from 0.1 to 3.9 GHz. Designed for high accuracy RF power signal measurement and control applications and ideal for dual-channel wireless infrastructure systems, the [HMC714LP5E](#) can be used with input signals having RMS values from -55 to +15 dBm and large crest factors with no accuracy degradation. Dual outputs provide a read of 'true-RMS' power with excellent channel matching and low temperature drift. Operating from a +5V supply, the [HMC714LP5E](#) is specified for operation from -40°C to +85°C, and is supplied in a 5x5 mm leadless SMT package.

The [HMC-C072](#) is an industry leading, connectorized Ultra Low Phase Noise Amplifier module designed to operate between 6 and 12 GHz, with 11 dB of gain, 4.5 dB noise figure and up to +22 dBm of output power from a single supply of +7V. The ultra low phase noise contribution of -167 dBc/Hz at 1 KHz offset enables superior modulation accuracy within transceiver architectures. The wideband distributed amplifier I/Os are internally matched to 50 Ohms and DC blocked for robust performance.

Low Noise Amplifiers

The [HMC566LP4E](#) is a high dynamic range GaAs pHEMT MMIC Low Noise Amplifier that is ideal for building transmit and receive signal chains in microwave radios. Housed in a SMT 4x4mm plastic package and operating from 28 to 36 GHz, the [HMC566LP4E](#) provides 21 dB of small signal gain, 2.8 dB of noise figure and output IP3 of +24 dBm. This self-biased LNA is ideal for SMT based assemblies due to its compact size, single +3V supply operation, and DC blocked RF I/Os. This versatile LNA can also be used to drive the LO port of many of Hittite's balanced, I/Q, and sub-harmonic mixers. The [HMC566LP4E](#) is also available in die form as the [HMC566](#).

The [HMC751LC4](#) is a high dynamic range GaAs pHEMT MMIC Low Noise Amplifier which operates from 17 to 27 GHz and provides 25 dB of small signal gain, 2.2 dB noise figure and output IP3 of +25 dBm. The [HMC751LC4](#) requires only 73 mA from a +4V single supply. P1dB output power of +13 dBm enables the LNA to function as a LO driver for balanced, I/Q or image reject mixers.

The [HMC752LC4](#) is a GaAs MMIC Low Noise Amplifier which operates from 24 to 28 GHz and provides 25 dB of small signal gain, 2.5 dB noise figure and output IP3 of +26 dBm, while requiring only 70 mA from a +3V supply. The P1dB output power of +13 dBm enables the LNA to function as a LO driver for balanced, I/Q or image reject mixers.

The [HMC753LP4E](#) is a GaAs MMIC Wideband, high linearity Low Noise Amplifier in a leadless 4x4mm plastic SMT package which operates from 1 to 11 GHz. The amplifier provides up to 17 dB of small signal gain, 1.5 dB noise figure, and output IP3 of +30 dBm, while requiring only 55 mA from a +5V supply. Ideal for high capacity microwave radios, the P1dB output power of up to +18 dBm enables this LNA to function as a LO driver for many of Hittite's balanced, I/Q, and image reject mixers.

Ideal for test and measurement applications, and driving the LO port of many of Hittite's mixers, the [HMC772LC4](#) is a GaAs MMIC HEMT Wideband Low Noise Amplifier which operates from 2 to 12 GHz, and is housed in a ceramic 4x4mm SMT package. The amplifier provides 15 dB of gain, 1.8 dB noise figure and +13 dBm of output power at 1 dB gain compression while requiring only 45 mA from a +4V supply. The [HMC772LC4](#) can be easily integrated into SMT based modules due to its small size and 50 Ohm matched I/Os.

The [HMC818LP4E](#) is a GaAs pHEMT Dual Channel Low Noise Amplifier that is ideal for Cellular/3G and LTE/WiMAX/4G basestation front-end receivers operating between 1.7 and 2.2 GHz. This amplifier is optimized to provide noise figure as low as 0.5 dB with up to 22 dB gain and +40 dBm output IP3 from a

single supply of +5V. Input and output return losses are excellent with minimal external components required.

Wideband LNA Modules

The [HMC-C059](#) is a GaAs MMIC pHEMT Low Noise Distributed Amplifier packaged in a miniature, hermetic connectorized module and operating between 1 and 12 GHz. The [HMC-C059](#) provides up to 16 dB of gain, 1.8 dB noise figure, and up to +17 dBm P1dB output power.

High Speed Digital Logic Modules

Packaged in a connectorized module, the [HMC-C062](#) is 1: 2 Fanout Buffer which supports data transmission rates up to 50 Gbps and clock frequencies as high as 30 GHz. The [HMC-C062](#) is ideal for OC-768 and SDH STM-256 equipment, short, intermediate, and long haul optical transmitter modules, and broadband test and measurement applications. Inputs to the device are terminated with 50 Ohms to ground, and may be either AC or DC coupled. The differential outputs may be either AC or DC coupled. Propagation delay is typically 270 ps, while rise and fall times are less than 11 ps. The [HMC-C062](#) operates from a -3.3V DC supply, exhibits 2 ps of deterministic jitter and consumes only 452 mW.

High Isolation Switch Modules

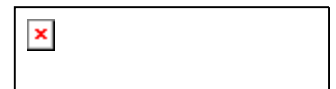
The [HMC-C071](#) is a general purpose DC to 20 GHz high isolation non-reflective GaAs MESFET SP4T switch housed in a miniature hermetic module with field replaceable SMA connectors. The switch features >42 dB isolation up to 12 GHz, and > 32 dB isolation up to 20 GHz. Ideal for a wide range of applications from fiber optics to radar, the [HMC-C071](#) also provides 2.8 dB of insertion loss up to 12 GHz, with 17 ns rise and fall times. A CMOS interface allows a single +5V bias voltage at only 1.4 mA.

Our Three Volume [2009 Designer's Guide Catalog](#) is available as well as an updated [June 2009 CD-ROM](#) catalog detailing over 750 products. New literature including the [June 2009 Product Selection Guide](#), [Newsletter](#) and [CD-ROM](#) can be obtained by visiting www.hittite.com.

[For further information Click Here.](#)

About Braemac

Braemac is Australia's largest electronic component distributor with offices throughout Australia, New Zealand, USA, Singapore, Hong Kong and the UK. Our product offer includes some of the world's most prestigious suppliers including Atmel, Altera, Hitachi (Renesas), STMicroelectronics, Cirrus Logic, Marvell and Wavecom which allows our customers to choose from a wide selection of quality, well recognised components. Visit Braemac Website



Contact Us

For further information, product data sheets and pricing, please contact your local Braemac sales representative. or email info@braemac.com.au

Braemac Pty Ltd
1/59-61 Burrows Road

Tel: 61 2 9550 6600
Fax: 61 2 9550 6377

Alexandria NSW 2015

info@braemac.com.au
www.braemac.com.au

If you wish to opt out from future messages please click the [Unsubscribe](#) link below.
[Click here to subscribe.](#)

 [Send to a Friend](#)

This email was sent by Braemac, 1/59-61 Burrows Road, Alexandria NSW 2015 to v.tohadze@braemac.com.au

[Unsubscribe](#)

