Next-generation wireless components

LDMOS UHF pallet amplifiers

Richardson Electronics Ltd. has announced two LDMOS UHF pallet amplifiers designed and manufactured by its European design and production center. The LDU401C provides 350 W at 1 dBcp and 90 Wrms for digital video broadcast applications. The LDU501C is rated at 450 W at 1 dBcp and 120 Wrms for DVB-T. Both products feature Motorola RF power devices and are mechanically compatible with Motorola's MRFA 2604. Both also operate from a supply voltage of 35 Vdc, within a frequency range of 470 MHz to 862 MHz and have a value of 50 Ω for input and output impedance.
Richardson Electronics Ltd.
(800) 348-5580
www.rell.com

Package-on-package solution

Spansion LLC, the Flash memory venture of Advanced Micro Devices (AMD) and Fujitsu Limited, is shipping package-on-package (PoP) Flash memory samples to customers that will enable them to deliver sleek, feature-rich wireless phones, PDAs, digital cameras and MP3 players. Spansion's PoP solution vertically combines discrete logic and memory packages for board space savings, lower pin-count, simplified system integration and enhanced performance. As a result, handset manufacturers can accommodate the growing demand for advanced features in their wireless products without having to increase their size and weight.

The PoP solutions measure approximately 1.4 mm in height and vertically combine a system memory package with a logic chipset package. PoP solutions enable a high degree of flexibility for designers, allowing virtually any POP-enabled memory package to be combined with any PoP-enabled logic chipset in a matter of weeks. PoP solutions also enable high yield use of logic and memory, and simplified test to help reduce time to market and maximize cost efficiency.

Spansion has the capability of delivering eight-die solutions in a 128-ball, 12 mm x 12 mm package with a 0.65-mm pitch. PoP's short trace lengths and low bus capacitance also help to overcome the signal integrity and timing issues associated with emerging 133 MHz dual-data rate (DDR) memory solutions. The company's approach reduces pin count and eliminates printed circuit board (PCB) routing between logic and memory, for reduced design complexity. The PoP solutions include the inherent benefits of its two-bit-per-cell MirrorBit technology. With the future availability of the ORNAND architecture, the company plans to extend the benefits of MirrorBit technology and believes it will be able to respond to the demand for mass storage solutions in wireless handsets and complement application processors with an optimized code and data storage solution.

Samples of 12 mm x 12 mm and 15 mm x 15 mm Flash memory PoP solutions are available for wireless phones and will vary in pricing depending on logic/memory densities and combinations.
Spansion LLC
(408) 962-2500
www.spansion.com

Low-power ADC

Maxim Integrated Products has announced the MAX19586, a 16-bit 80 Msps analog-to-digital converter (ADC) that achieves 80 dB or greater signal-to-noise ratio (SNR). The MAX19586 is suitable for high-performance broadband applications. Examples include cellular base-station transceiver systems (BTS), multicarrier and multistandard communication receivers, E911 location receivers, antenna array processing, and high-end test and measurement instrumentation. The spurious-free dynamic range (SFDR) performance eases filtering requirements, and less expensive filters reduce system costs. The large dynamic range can also be used to simplify system design by eliminating the need for variable gain attenuators (VGA) or automatic gain control (AGC) blocks in the receiver. This is especially important in systems where the receiver is expected to digitize both weak (far) and strong (near) signals. With more than 80 dB of dynamic range, the system can capture both signals without having to change gain ranges.

The MAX19586 is a 3.3 V ADC with a fully differential wideband track and hold (T/H) and a 16-bit converter core. Designed for excellent operation in the second Nyquist region, the MAX19586 is also optimized for use with high-IF input frequencies. This makes the part ideal for high-performance digital receivers. The part has a 1.8 V digital supply voltage and a 2.56 Vp-p full-scale input range. Power dissipation is 1.1 W. The MAX19586 also offers a noise floor of -82 dBFS and 96 dBc SFDR at an input frequency of 10 MHz (-2 dB input amplitude). This ADC can also sample input frequencies beyond 170 MHz. In subsampling applications, the MAX19586 offers superior performance at high IF (77.2dB SNR at an input frequency of 168MHz). The MAX19586 is packaged in a space-saving 56-pin QFN-EP. Pricing is $59.25 each for 1000-unit quantities.
Maxim Integrated Products
(408) 737-7600
www.maxim-ic.com

Single-chip mobile VoIP processor

Broadcom Corporation has announced a second-generation mobile voice-over-Internet protocol (VoIP) processor, the BCM1161, designed specifically for WiFi phones that feature advanced multimedia and telephony capabilities. This single-chip VoIP processor enables a new class of multimedia voice and video applications such as video streaming, digital cameras, video conferencing and data connectivity, all not available from the typical cordless phones used in homes today. Today's WiFi phones are beginning to leverage the convergence of VoIP and WLAN, enabling the handsets to not only provide leading-edge performance and features, but also to interoperate with new home entertainment appliances. To enhance VoIP phones, Broadcom chips feature advanced compression techniques for a superior audio experience.

The BCM1161 focuses on low-power and advanced multimedia functions, including polyphonic ring tone support, a two-Megapixel digital camera, voice record/playback and video clips record/playback. A variety of advanced telephony features are also supported, such as three-way conferencing, speakerphone support and high-fidelity voice capabilities through the use of Broadcom's BroadVoice technology. The new single chip integrates an ARM9-based CPU, analog voice codec with a direct microphone and high-output speaker interface, 262 k color LCD interface and a USB 2.0 interface. Broadcom's BCM1161 mobile VoIP processor is available.
Broadcom Corporatoin
(949) 450-8700
www.broadcom.com

WiMAX demo network

TeleCIS Wireless Inc. has deployed a "triple play" WiMAX demonstration network in Santa Clara, Calif. TeleCIS built the network to demonstrate the performance gains made possible by its advanced, standards-based (802.16-2004) WiMAX chip

design, which will enable service providers to achieve critical objectives for a profitable business model—namely, non-line-of-sight deployment and "self-installed" customer-premises equipment (CPE). In addition, the low power, small size and high performance of the TeleCIS solution based on the current standard will be built into laptops and PC cards, enabling the portable, or "nomadic," WiMAX market in the near future. TeleCIS installed a WiMAX base station on the top of its office building and equipped a van with VoIP phones, a video monitor and laptop PCs to create a triple play environment that represents both fixed CPE and portable devices. During "test drives," TeleCIS shows simultaneous, uninterrupted DVD-quality streaming video, high-speed Internet connection and VoIP telephony capability while moving within the demo network service area. During the demonstration, TeleCIS Rx Technologies performance enhancing features are "turned off" and comparisons can be seen between the TeleCIS solution and the WiMAX mandatory implementation.

TeleCIS Wireless Inc.
(408) 844-8040
www.telecis.com

Wireless chipsets

The next-generation picoArray series of flexible products for WiMAX and WCDMA infrastructure from **picoChip** will incorporate the ARM926EJ-S processor from ARM Limited, creating a single-chip, software-defined solution for advanced wireless systems. Combining ARM processor technology and picoChip's fully programmable signal processing array in an advanced 90 nm device reduces the cost of WiMAX deployment without compromising the flexibility essential for standards compliance and system performance enhancement. The cost-effective solution will enable carriers to build-out their infrastructure based on the current 802.16d WiMAX standard and quickly upgrade their equipment to support mobility once the new 802.16e standard is complete. WiMAX implementations are power-intensive and currently require increasing numbers of DSP or FPGA devices, with a consequent escalation of costs. With the ARM-powered picoChip offering, carriers will be able to bring mobile WiMAX services online in the shortest time frame possible. This will enable customers to maximize the benefit from the WiMAX standard with ubiquitous broadband Internet access and enhanced mobile multimedia services.

picoChip
(408) 467-3866
www.picochip.com

ZigBee protocol stack

Microchip Technology Inc. has announced its free ZigBee Protocol Stack now supports the Uniband Electronic Corporation (UBEC) uz2400 ZigBee/IEEE802.15.4 2.4GHz RF transceiver. Embedded systems designers can now use Microchip's ZigBee Stack with the UBEC uz2400 RF transceiver or the Chipcon CC2420 transceiver, providing increased design flexibility. Microchip offers the smallest and only free ZigBee stack, enabling lower development and system costs. Microchip has upgraded its ZigBee stack to version 3.3 to meet ZigBee specification version 1.0. The ZigBee standard is an industry protocol for wirelessly networked control and monitoring applications. To make it easy for engineers to design with the ZigBee protocol, Microchip features the PICDEM Z development platform based on Microchip's PIC18 high-performance microcontroller family, which supports ZigBee applications. Microchip's ZigBee stack is the only stack small enough to fit into a 16 Kbyte microcontroller, enabling low-cost sensors. The stack is sized at 33.7 Kbytes for a coordinator and 14.4 Kbytes for reduced-function devices. Microchip's PICDEM Z platform accelerates customer designs by providing hardware and a free ZigBee protocol stack that can be easily integrated into wireless products. Microchip offers more than 63 PIC18 eight-bit microcontrollers that support the ZigBee stack. Microchip's ZigBee Stack is available at no cost on the company's Web site. The PICDEM Z demonstration board is available for $199 each.

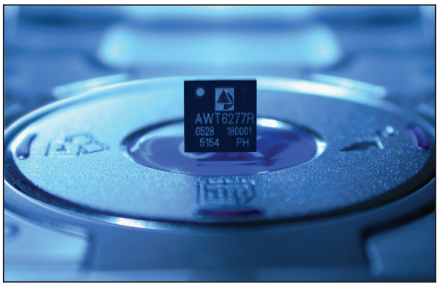
Microchip Technology Inc.
(480) 792-7200
www.microchip.com

Bluetooth stereo headphones

CSR's BlueCore3-Multimedia chip provides the Bluetooth connectivity behind Motorola's new feature-rich HT820 Bluetooth stereo headphones. The recently launched HT820 is planned for worldwide distribution in the second half of 2005 and will enable users to listen to stereo audio streamed wirelessly from a range of different devices, while remaining connected to a mobile phone for hands-free voice calling. The Motorola HT820 removes the need to carry headphones for listening to music and a separate mono Bluetooth headset for hands-free voice communication by integrating a microphone into the Bluetooth stereo headphones for use with voice calling. The advanced DSP technology within the BlueCore3-MM chip significantly reduces background noise and echo, and allows the headset to switch between paired devices. The headphones can receive music from any Bluetooth-enabled device that supports the new Advance Audio Distribution Profile (A2DP), thus widening the range of potential music sources.

CSR plc
(972) 238-2300
www.csr.com

WCDMA power amplifier family



Anadigics Inc. has introduced the AWT6272, the AWT6276 and the AWT6277. These three wideband CDMA (WCDMA) power amplifiers (PAs) offer power efficiency to extend battery life in mobile handsets and WCDMA-enabled notebook PC cards. The new high-efficiency-at-low-power (HELP) PAs offer full compliance with high-speed downlink packet access (HSDPA) requirements, while maintaining compatibility with Universal Mobile Telecommunications System (UMTS) data services to support the growing demand for mobile high-speed Internet services. Each amplifier covers a specific frequency band. The AWT6272 covers the 824 MHz to 849 MHz range. The 1850 MHz to 1910-MHz frequency band is covered by the AWT6276, and the AWT6277 operates from 1920 MHz to 1980 MHz.

Anadigics' HELP WCDMA PAs use the company's InGaP-Plus technology, which integrates bipolar and field-effect transistor (FET) structures on the same InGaP GaAs die. The HELP WCDMA PAs offer quiescent currents of 16 mA or lower, provide leakage currents of less than 1 µA, and are optimized for all output power levels to deliver 50% less average power consumption.

Anadigics Inc.
(908) 668-5000
www.anadigics.com