Avago Expands Leading RF and Microwave Portfolio for Cellular Infrastructure Market with Two Low-Noise Amplifier Series

June 7, 2011

New LNA Series Debuting at IMS 2011 Deliver Superior Noise Figure and Linearity, Adding to Broad Range of High-Performance Solutions for Base Stations

BALTIMORE, Jun 07, 2011 (BUSINESS WIRE) -- Avago Technologies (Nasdaq: AVGO), a leading supplier of analog interface components for communications, industrial and consumer applications, today announced an expansion of its high-performance portfolio of RF and microwave components for cellular infrastructure applications with two new series of low-noise amplifiers (LNAs) here at the 2011 International Microwave Symposium. Featuring best-in-class noise performance and high linearity, the new MGA-63xP8 LNAs and ALM-11x36 fail-safe bypass LNA modules deliver improved receiver sensitivity for base transceiver stations (BTS) and tower mounted amplifiers (TMA) applications.

The MGA-63xP8 devices and ALM-11x36 modules expand the Avago market-leading LNA portfolio for BTS applications, which leverage the company's proprietary 0.25 um GaAs Enhancement-mode pHEMT process to deliver low noise figure and high linearity. As opposed to a broadband approach, Avago offers series of LNAs with each device optimized for superior end performance at specific frequency operation ranges. Both new LNA series exemplify this philosophy. Reflecting the portfolio's emphasis on integration, the ALM-11x36 modules can replace large discrete and surface-mount component counts in conventional designs, shortening design cycle time and providing board space savings.

"These two new LNA series, along with the other high-performance products we have introduced leading up to IMS 2011, demonstrate our commitment to extend our leading LNA portfolio for the wireless infrastructure market and raise the bar for noise figure and overall performance," said James Wilson, senior director of marketing for wireless products at Avago. "We continue to work with our customers to develop highly-integrated solutions that streamline the design process and help them to keep up with continuously evolving cellular standards."

Avago is exhibiting its complete RF and Microwave portfolio for cellular infrastructure applications at IMS 2011 in booth number 1602 at the Baltimore Convention Center from June 7-9. In addition to LNAs, the broad range of solutions in the portfolio includes Film Bulk Acoustic Resonator (FBAR) filters, gain blocks, driver amplifiers, and WaferCap amplifiers and detectors, as well as modules that integrate multiple technologies. Additionally, Avago is presenting live demonstrations of its recently announced AFEM-S257 RF front-end module (FEM) for WiMAX coexistence in mobile handset or portable PC applications.

The high-linearity MGA-63xP8 LNA series integrates active bias circuitry and a power down function, simplifying design by eliminating the need for external discrete components to perform the same functions. The series offers high-gain performance consistent across 700-2600 MHz, with the MGA-636P8 device operating from 450-1500MHz, while the MGA-637P8 and MGA-638P8 operate from 1500-2500 MHz and 2500-4000 MHz, respectively. The series thus supports all major cellular bands for GSM, CDMA and UMTS, as well as the next-generation LTE bands. The LNAs are housed in a common footprint miniature package measuring 2.0 by 2.0 by 0.75 mm. With a shared pin-out and layout of external matching network, the LNAs provide a common PCB layout for customers when used at different frequencies, therefore simplifying design. The performance and features of the series make them ideal to be used as second or third stage LNAs for cellular BTS radio cards, TMAs, combiners, repeaters and remote or digital radio heads.

The ALM-11x36 LNA modules are equipped with a fail-safe bypass function, which is especially critical for TMA applications to enable the LNA bidirectional bypass path during the absence of DC power supply. Their superior bypass isolation eliminates the possibility of oscillation issues, and the modules also feature low bypass insertion loss and high input and output return loss. All matching components are fully integrated within the modules and the 50 ohm RF input and output pins are already internally AC-coupled. This makes the modules easy to use, as the only external parts required are DC supply bypass capacitors. The series delivers optimum performance across a wide range of bands, with the ALM-11036 module covering 776-870 MHz, the ALM-11136 module covering 870-915 MHz, the ALM-11236 module covering 1710-1850 MHz and the ALM-11336 module covering 1850-1980 MHz. All the modules share the same compact 7.0 by 10.0 by 1.5 mm package and pin out configuration and are thus ideal for common platform designs.

The wireless infrastructure industry must provide optimum coverage with the best signal quality in a crowded spectrum. Receiver sensitivity is the most critical requirement in a BTS receiver's design, and LNA selection greatly affects the receiver's performance. For front-end design architectures with a bypass path, low noise figure (NF) and bypass insertion loss (IL) are the key design goals. Another key design factor is linearity, which affects the receiver's ability to distinguish between wanted and spurious signals that are closely spaced. Input third-order intercept, IIP3, is used to specify linearity. The MGA-63xP8 LNAs and ALM-11x36 LNA modules are equipped with superior performance as follows:

- MGA-636P8 - 0.44 dB NF and 23.7 dBm IIP3 (Typical at 700 MHz, 4.8V and 108 mA)
- MGA-637P8 - 0.52 dB NF and 22.5 dBm IIP3 (Typical at 1700 MHz, 4.8V and 75 mA)
- MGA-638P8 - 0.87 dB NF and 22.6 dBm IIP3 (Typical at 2500 MHz, 4.8V and 84 mA)
- ALM-11036 - 0.78 dB NF, 0.82 dB bypass IL and 21.3 dBm IIP3 (Typical at 849 MHz, 5V and 92 mA)
- ALM-11136 - 0.76 dB NF, 0.85 dB bypass IL and 22.0 dBm IIP3 (Typical at 915 MHz, 5V and 92 mA)
- ALM-11236 - 0.67 dB NF, 0.75 dB bypass IL and 17.3 dBm IIP3 (Typical at 1785 MHz, 5V and 99 mA)
- ALM-11336 - 0.72 dB NF, 0.78 dB bypass IL and 17.9 dBm IIP3 (Typical at 1980 MHz, 5V and 100 mA).

In related announcements prior to IMS 2011, Avago introduced:

- The ALM-12x24 series of high-power switch LNA modules dedicated for use in front-end receiver designs of TD-SCDMA and TD-LTE BTS applications
- The VMMK-3xxx series of RF amplifiers and detectors that leverage Avago WaferCap chip scale packaging technology for an ultra-small footprint of 1.0 by 0.5 by 0.25 mm
- The MGA-6x606 LNAs with bypass and shutdown functionality for lower current draw in WiFi and WiMAX data cards, handsets and other portable devices
- The two-stage MGA-13x16 LNAs that enable usage of a single LNA for reduced component count in GSM, CDMA and W-CDMA infrastructure applications such as BTS radio cards.

U.S. Pricing and Availability

The MGA-63xP8 LNAs ship in a surface mount 8-lead QFN package, and are priced starting at $2.69 each in 10,000 piece quantities. The ALM-11x36 LNA modules ship in a 36-lead MCOB package. The ALM-11036 modules are priced at $6.96 each in 10,000 piece quantities. Samples and production quantities are available now through the Avago direct sales channel and via worldwide distribution partners.

About Avago Technologies

Avago Technologies is a leading supplier of analog interface components for communications, industrial and consumer applications. By leveraging its core competencies in III-V compound and silicon semiconductor design and processing, the company provides an extensive range of analog, mixed signal and optoelectronics components and subsystems to approximately 40,000 end customers. Backed by strong customer service support, the company's products serve four diverse end markets: wireless communications, wired infrastructure, industrial and automotive electronics, and consumer and computing peripherals. Avago has a global employee presence and heritage of technical innovation dating back nearly 50 years to its Hewlett-Packard roots. Information about Avago is available on the Web at www.avagotech.com.

Follow Avago on Twitter at twitter.com/Avagotech.

NOTE TO EDITORS: Please direct reader inquiries to Avago Technologies at +1 800 235 0312, or e-mail us at support@avagotech.com.

SOURCE: Avago Technologies

Avago Technologies
Editorial:
Samer Bahou, Press Relations Manager
+1 408 435 7400
press.relations@avagotech.com