Northrop Grumman Introduces High Power GaN Amplifiers for Ka-band Satellite Communication Terminals

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REDONDO BEACH, Calif., June 3, 2014 /PRNewswire/ -- A pioneer in the design and fabrication of advanced semiconductors, Northrop Grumman Corporation (NYSE: NOC) has introduced two new high power gallium nitride (GaN) monolithic microwave integrated circuit (MMIC) power amplifiers for Ka-band satellite communication terminals and point-to-point digital communication links.

The APN228 and APN229 power amplifiers were developed with the company's proprietary GaN high-electron mobility transistor (HEMT) power process and provide unmatched saturated output power of 13 and 8 watts, respectively. These second-generation power amplifiers offer the highest power density of any existing Ka-band GaN product on the market.

The broadband, two-stage amplifiers operate from 27 to 31 GHz, and, when integrated in high efficiency solid-state power amplifiers (SSPAs), allow for higher data rate in communication systems.

"GaN-based SSPAs are a far more desirable solution to costly traveling-wave tubes which require more complex, higher voltage power supplies and a lengthier production time," said Frank Kropschot, general manager, Microelectronics Products and Services, Northrop Grumman Aerospace Systems.

"APN228 and APN229 will allow our customers to reduce the cost and complexity of power-combining, and offer a significant cost advantage compared to the current generation of Ka-band products," he added.

Product descriptions:

APN228:

- The APN228 is a 16.0 mm^2 GaN HEMT power amplifier that operates between 27 and 31 GHz.
- This MMIC PA provides 19.5 dB of linear gain, 41.2 dBm (13 W) of saturated output power and Power Added Efficiency (PAE) greater than 27 percent.
- Exhibits excellent linearity.
- Excellent option for next generation high power and efficiency SSPAs for commercial and military satellite applications.

APN229:

- The APN229 is a 7.41 mm^2 GaN HEMT power amplifier that operates between 27 and 31 GHz.
- This MMIC PA provides 20 dB of linear gain, 39 dBm (8 W) of saturated output power and PAE greater than 30 percent.
- Exhibits excellent linearity.
- Complimentary driver amplifier to the APN228.

Samples of these MMIC power amplifiers will be available by mid-July, and packaged versions will be available for sampling later this year. Information and data sheets on the Ka-band and other GaN power amplifiers are available online at: www.northropgrumman.com/mps

Northrop Grumman manufactures the power amplifiers at its state-of-the-art microelectronics wafer fabrication facility in Manhattan Beach. A Department of Defense Trusted Foundry, the facility uses advanced gallium nitride, gallium arsenide and indium phosphide semiconductor manufacturing processes.

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