NXP Achieves Breakthrough Noise Figure Performance

NXP Semiconductors

NXP Semiconductors N.V. (NASDAQ: NXPI [1]) hasannounced the availability of a new family of extreme-broadband amplifiers, applicable for CATV, broadcast TV, satellite systems, and general ISM applications – the BGA3012 [2], BGA3015, [3] and BGA3018 [4]. Delivering outstanding performance on key parameters including high P1dB and OIP3, very low noise figures, 5 and 8V supply voltage operation and a superior ESD rating, these amplifiers are suitable for applications that require robustness and outstanding gain, noise and linearity performance, providing end users with improved reception quality and higher bandwidth. NXP will showcase the extreme-broadband amplifiers as part of a live demo this week at MTT-S International Microwave Symposium (IMS 2013) (Booth 1709).

Consisting of three gain level types, BGA3012, BGA3015 and BGA3018 with 12 dB, 15 dB and 18 dB gain respectively, the extreme-broadband amplifiers outperform comparable GaAs devices in noise figure performance by 5dB and input power rating by more than 20 dB. Based on NXP’s industry-leading QUBiC4 (BiCMOS) technology, the high integration and reduced footprint of this extreme-broadband amplifier family saves on BOM costs, improves reliability and offers significant savings in manufacturing expenditure. With a superior ESD rating of 2 kV compared with competitor solutions, the amplifiers are easy to adopt in current and future designs.

Complementing NXP’s existing portfolio of CATV infrastructure products, this new

extreme-broadband amplifier family is well-suited for a variety of broadband TV distribution system applications, such as FTTH (fiber to the home), home gateways and set-top-boxes. Extending performance across a very wide frequency range – from 5 MHz up to 2.6 GHz – the devices' improved low-end frequency performance makes them suitable as both forward and return path amplifiers, removing the need for customers to purchase multiple solutions.

"Building on our market-leading expertise in CATV infrastructure solutions, we've designed a multi-purpose family of devices that offers customers excellent signal, power and noise figure performance," said Jarek Lucek, business development manager, High Performance RF, NXP Semiconductors. "The very broad frequency range that these devices work over makes them exceptionally versatile. For example, with the increased use of wireless devices in home, indoor antennas can suffer from interference, which impacts on the quality and breadth of channel reception – the excellent output IP3 performance of our extreme-broadband amplifiers means that much of this interference can be mitigated."

Features

- High linear performance of OIP3 40 dBm
- Extremely high output capability P1dB of 22 dB
- Maximum input power of >20 dBm Operation frequency band from 5 – 2600 MHz
- Operation supply voltages from 5 to 8V
- Optimized for third order (IP3/CTB) and second order distortion (IP2/CSO)
- Very low noise figure, remains low down to 5 MHz
- Fixed biasing in SOT89 package

Links

- Product and application board information:

www.nxp.com/pip/BGA3012 [5]

www.nxp.com/pip/BGA3015 [3]

www.nxp.com/pip/BGA3018 [4]

- Application notes on reverse and wideband amplification [6]
- Tech support FAQ in the NXP RF Small Signal Engineers' Corner: http://community.nxp.com/ [7]
- NXP RF Manual, 17th Edition: http://www.nxp.com/rfmanual [8]

Source URL (retrieved on *12/21/2013 - 7:20am*):
http://www.wirelessdesignmag.com/news/2013/06/nxp-achieves-breakthrough-noise-figure-performance

Links:
[1] https://www.google.com/finance?q=NASDAQ:NXPI
[2] http://www.nxp.com/pip/BGA3012
[3] http://www.nxp.com/pip/BGA3015
[4] http://www.nxp.com/pip/BGA3018
[5] http://www.nxp.com/pip/BGA3012%0d
[6] http://www.nxp.com/technical-support-portal/#/tid=50812,sid=50828,bt=,tab=applicationnotes,p=1,rpp=,sc=,so
[7] http://community.nxp.com/
[8] http://www.nxp.com/rfmanual