Press Release

Contact

Doug Dickinson

24 GHz to 44 GHz Wideband Integrated Microwave Up & Downconverter Drive 28/39 GHz 5G Transceiver Performance & Small Size

Feb 26 2019 - Norwood, MA

Analog Devices announces the ADMV1013 and ADMV1014, a paired highly integrated microwave upconverter and downconverter, respectively. These ICs operate over a very wide frequency range with 50 Ω-match from 24 GHz up to 44 GHz, facilitating ease of design and reducing the costs of building a single platform that can cover all 5G mm Wave frequency bands including 28 GHz and 39 GHz. Additionally, the chipset is capable of flat 1 GHz RF instantaneous bandwidth supporting all broadband services as well as other ultra-wide bandwidth transceiver applications. Each upconverter and downconverter is highly integrated, comprising I (in-phase) and Q (quadrature-phase) mixers with on-chip programmable quadrature phase-shifter configurable for direct conversion to/from baseband (operable from DC to 6 GHz) or to an IF (operable from 800 MHz to 6 GHz). Also included on-chip are voltage variable attenuators, transmit PA driver (in the upconverter) and a receive LNA (in the downconverter), LO buffers with x4 frequency multiplier and programmable tracking filters. Most programmability functions are controlled via an SPI serial interface. Through this port, these chips also provide a unique capability for each upconverter and downconverter to correct its respective quadrature phase imbalance, hence the usually difficult to suppress sideband emission can be improved from a typical value of 32 dBc, by 10 dB or more. This results in an unmatched level of microwave radio performance. The combination of features provides unprecedented flexibility and ease of use while minimizing external components, enabling implementation of small form factor systems such as small cells.

Feedback

- View the ADMV1013 and ADMV1014 product pages, download the data sheets, order samples and evaluation boards: http://www.analog.com/ADMV1013 and http://www.analog.com/ADMV1014

The highly integrated ADMV1013 microwave upconverter and the ADMV1014 microwave downconverter are ideally suited for the microwave radio platforms that operate in the emerging 28 GHz and 39 GHz 5G wireless infrastructure bands. The converters' 1GHz bandwidth capability, along with the upconverter's OIP3 of more than 20 dBm that supports stringent modulation schemes such as 1024QAM, are necessary to enable multi-Gigabit wireless data. Moreover, the chipset benefits other applications such as satellite and earth station broadband communication links, aircraft radios, RF test equipment and radar systems. Their superb linearity and

image rejection performance are particularly compelling for improved range of microwave transceivers.

The ADMV1013 is offered in a 40-pin, 6mm x 6mm LGA, and the ADMV1014 is in a 32-pin, 5mm x 5mm LGA package. Samples and production quantities are available immediately. For more information, go to http://www.analog.com/ADMV1013 and http://www.analog.com/ADMV1014.

Summary of Features: ADMV1013 & ADMV1014

- RF Output Frequency — 24 GHz to 44 GHz
- I & Q Baseband Bandwidth — DC to 6 GHz
- LO Frequency (at 0 dBm Drive) — 5.4 GHz to 10.25 GHz
- Sideband Rejection — 32 dBc Typical
- High Output IP3 — 23 dBm at 28GHz
- Conversion Gain — 18 dB
- Voltage Variable Gain Range — 35 dB
- Carrier Leakage — -20 dBm at 28 GHz Typical

ADMV1014 Integrated Microwave Image-Reject Downconverter

- RF Input Frequency — 24 GHz to 44 GHz
- I & Q Baseband Bandwidth — DC to 6 GHz
- LO Frequency (at 0 dBm Drive) — 5.4 GHz to 10.25 GHz
- Image Rejection — 30 dBc Typical
- Input IP3 — 0 dB
- Cascaded Noise Figure — 5.5 dB
- Conversion Gain — 17 dB
- Voltage Variable Gain Range — 19 dB

Pricing & Availability

Product	Production Availability	Price Each per 1,000	Package
ADMV1013	Now	Starts at $90.79	40-Pin, 6mm x 6mm CSP
ADMV1014	Now	Starts at $88.37	32-Pin, 5mm x 5mm CSP

About Analog Devices

Analog Devices (Nasdaq: ADI) is a leading global high-performance analog technology company dedicated to solving the toughest engineering challenges. We enable our customers to interpret the world around us by intelligently bridging the physical and digital with unmatched technologies that sense, measure, power, connect and interpret. Visit http://www.analog.com

Subscribe to Analog Dialogue, ADI's monthly technical journal, at: http://www.analog.com/library/analogDialogue/

All registered trademarks and trademarks are the property of their respective owners.

Editor's Contact Information

Doug Dickinson
douglas.dickinson@analog.com