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Analog Devices' DOCSIS 3.0-Compliant RF D/A Converter Operates at One-Third the Power of Competing Devices and Reduces PCB Space by 25 Percent

ADI's 14-bit AD9129 and 11-bit AD9119 D/A converters synthesize the full cable spectrum to reduce component count and simplify cable infrastructure design.

NORWOOD, Mass.--(BUSINESS WIRE)-- Analog Devices, Inc. ([ADI](http://www.analog.com)), a global leader in high-performance signal processing technology and the data converter market share leader*, today introduced two RF (radio frequency) D/A converters that are able to synthesize the entire downstream (transmit) cable spectrum from a single RF port. Supporting data rates up to 2.8 GSPS, the single-channel, 14-bit AD9129 and 11-bit AD9119 RF D/A converters allow cable operators to reduce the total system power and component count of CATV (CMTS) infrastructure equipment, simplify system design, and lower total bill of material costs. The new RF D/A converters support from one to as many as 158 CATV carriers and include an optional 2× interpolation filter that reduces output filtering complexity by effectively increasing the D/A converter update rate by a factor of two. In its Mix-Mode™ superNyquist operation, the AD9129 can reconstruct spectrally-pure RF carriers in the 2nd and 3rd Nyquist zones, eliminating a mixing stage while still maintaining exceptional dynamic range at up to 4.2 GHz.

- Download data sheet, view product page, and request samples: <http://www.analog.com/AD9129>
- Download data sheet, view product page, and request samples: <http://www.analog.com/AD9119>

"The AD9129 RF D/A converter utilizes ADI's patented quad-switch architecture to synthesize the full dc-to-1.4 GHz baseband output spectrum, which will greatly simplify and improve downstream DOCSIS 3.0-compliant transmitter design," said Carlton Lane, marketing manager, High-speed D/A Converter group, Analog Devices. "This D/A converter's new level of performance and functionality enables cable infrastructure equipment manufacturers to implement the complete downstream signal chain in a smaller footprint, at one-third the power, and using fewer signal chain components. These are all important design considerations in today's CMTS service environment."

More About the AD9129 14-bit RF D/A Converter

The AD9129 RF D/A converter enables industry leading direct RF synthesis performance with minimal loss of output power across its output spectrum. The device also enables dual-edge clocking operation, effectively increasing the converter update rate to 5.6 GSPS when configured for Mix-Mode or 2× interpolation mode. Its high dynamic range and bandwidth enable multicarrier generation up to 4.2 GHz. The device dissipates only 1.1 W at the full 2.8-GSPS D/A converter update rate.

The AD9129 includes a dual-port, source-synchronous LVDS (low-voltage differential signaling) interface that simplifies the data interface to a host FPGA or ASIC. On chip DLLs (delay-locked loops) optimize timing between different clock domains, while an SPI (serial peripheral interface) is used to configure the AD9129 and monitor the status of read-back registers.

AD9129/19 Single-channel D/A Converters Features and Benefits:

- D/A converter update rate of up to 5.6 GSPS
- Direct RF synthesis @ 2.8 GSPS data rate
 - DC-to-1.4 GHz in baseband mode
 - DC-to-1.0 GHz in 2× interpolation mode
 - 1.4-to-4.2 GHz in Mix-Mode
- 1 to 158 DOCSIS 3.0 carriers: 8 QAM carrier ACLR = > 69 dBc
- By-passable 2× interpolation filters
- Single/multicarrier IF or RF synthesis
- Low power: 1.1 W @ 2.8 GSPS (1.3 W @ 5.6 GSPS)

Pricing, Availability and Complementary Products

Product	Sample Availability	Production Release	Resolution (Bits)	Sample Rate (GSPS)	Price Each In 1,000 Quantities	Packaging
AD9129	Now	November 30	14	2.8	\$59.00 (Pb-free)	160-Ball CSP-BGA
AD9129	Now	November 30	14	2.8	\$69.00 (PbSn)	160-Ball CSP-BGA
AD9119	Now	November 30	11	2.8	\$49.00 (Pb-free)	160-Ball CSP-BGA

Other Analog Devices parts that are complementary to the AD9129 RF D/A converter are the ADF4351 wideband PLL (phase-locked loop) for use as the D/A converter clock, and the ADCLK925 low-jitter clock buffer.

- Get support at ADI's EngineerZone™ online DAC technical support community: http://ez.analog.com/community/data_converters/high-speed_dacs
- Learn more about ADI's high-speed D/A converter product portfolio at: <http://www.analog.com/en/digital-to-analog-converters/high-speed-da-converters/products/index.html>

About Analog Devices

Innovation, performance, and excellence are the cultural pillars on which Analog Devices has built one of the longest-standing, highest-growth companies within the technology sector. Acknowledged industry-wide as the world leader in data-conversion and signal-conditioning technology, Analog Devices serves over 60,000 customers, representing virtually all types of electronic equipment. Celebrating over 40 years as a leading global manufacturer of high-performance integrated circuits used in analog and digital signal processing applications, Analog Devices is headquartered in Norwood, Massachusetts, with design and manufacturing facilities throughout the world. Analog Devices' common stock is listed on the NASDAQ stock exchange under the ticker "ADI" and is included in the S&P 500 Index. <http://www.analog.com>

* *Analog Devices, Inc. leads the worldwide data converter market with a 48 percent share, according to industry analyst firm Databeans, Inc. in its market research report titled "2011 Data Converters." Analog Devices' 48 percent share is larger than the combined market share of the nearest eight competitors.*

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