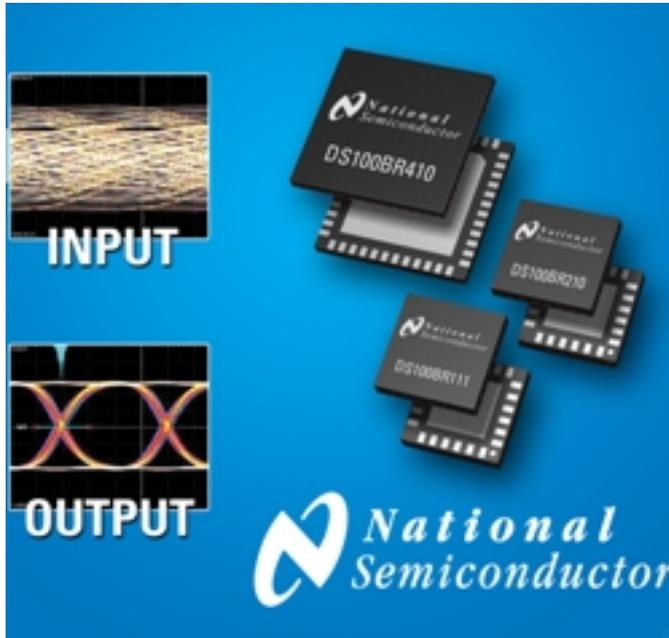


National Semiconductor's 10 Gbps Repeaters Double Signal Conditioning at Half the Power



and deliver twice the reach (20 meters over 24-AWG cable) of current industry solutions.

Powered by National's third-generation SiGe BiCMOS process, National's 10 Gbps repeater family extends interconnect reach and enables higher data bandwidth up to 10.3125 Gbps by performing both receive equalization and transmit de-emphasis to compensate for channel loss in data center and high-performance communication systems. Target applications include high-speed active cable assemblies and FR-4 backplanes using serial protocols such as 10 GbE, Fibre Channel, XAUI, CPRI and Infiniband. The repeaters also support SAS/SATA out of band (OOB) signaling for storage applications.

The explosion of multimedia content on the Internet, cloud computing, and the advent of multi-core virtualized servers are pushing interface bandwidth requirements in modern data center systems. However, interconnect length remains the same, posing power and signal integrity issues. National's signal conditioners embedded inside the active copper cable assemblies and backplane boards ensure signal integrity, reduce system power consumption and lower interconnect cost compared to optical alternatives.

National's 10 Gbps repeaters enable these active copper solutions to consume 4x lower power and 2x longer reach than competitive cabling solutions through the use of a new SiGe BiCMOS process, which produces high bandwidth and low noise transistors that enable low jitter and ultra-low power. The quad DS100BR410 is well-suited for high density connectors such as QSFP and CXP, while the DS100BR111 is designed for single lane SFP+ connectors.

National's 10 Gbps Repeater Family

The DS100BR410 includes four unidirectional channels and delivers 55 mW/channel typical power consumption, while supporting a 2.5V single-supply voltage. It extends interconnect reach by performing both receive equalization (up to 36 dB boost) and transmit de-emphasis (-9 dB) on each of its channels to compensate for channel loss. This allows for maximum flexibility in physical placement within a system.

The DS100BR210 with two unidirectional channels and the DS100BR111 with one bidirectional lane (one transmit, one receive channel) feature 65 mW per channel typical power consumption and support 3.3V and 2.5V supplies. Both devices perform receive equalization up to 36 dB gain and transmit de-emphasis of -12dB. All three repeaters allow powering down of unused channels, and apply signal conditioning settings via pin setting or SMBus (I2C compliant).

For more information on National's 10 Gbps repeater family, please visit <http://www.national.com/datacom> [1]. To see a video demonstration of active copper cables, visit <http://tinyurl.com/ActiveCopper> [2].

Pricing and Availability

Available now, the DS100BR410 is offered in a 7 mm by 7 mm, 48-pin leadless LLP® package and is priced at \$13 in 1,000-unit quantities. The DS100BR210 and DS100BR111 will be sampling in early March 2011 and are offered in 4 mm by 4 mm, 24-pin LLP packages with pricing at \$6.95 each, both in 1,000-unit quantities.

For more information or to order samples and an evaluation board, visit www.national.com/pf/DS/DS100BR410.html [3], www.national.com/pf/DS/DS100BR210.html [4] and www.national.com/pf/DS/DS100BR111.html [5].

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Links:

[1] <http://www.national.com/datacom>

[2] <http://tinyurl.com/ActiveCopper>

[3] <http://www.national.com/pf/DS/DS100BR410.html>

[4] <http://www.national.com/pf/DS/DS100BR210.html>

[5] <http://www.national.com/pf/DS/DS100BR111.html>