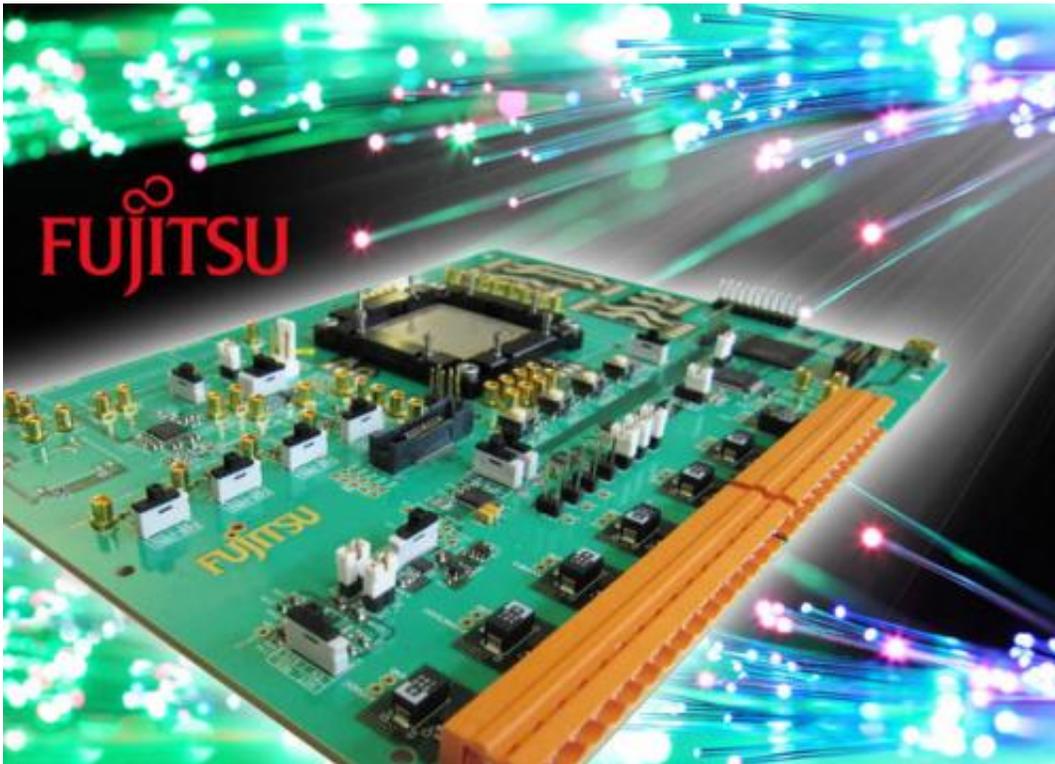


# First ADC device in family of 28nm CMOS converter solutions

March 12 2013

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Fujitsu Semiconductor Europe, a market-leading provider of high-speed data converters, has enabled the large-scale deployment of single-wavelength 100Gbps optical transport systems worldwide. Fujitsu's expertise in mixed-signal, thermal, power-optimisation and high-performance package design are key ingredients for providing SoC

ASIC solutions to system vendors, paving the way for the necessary upgrade to global networking infrastructure brought on by ever-increasing bandwidth demand and traffic flow.

This demand is expected to move the requirement for 100Gbps capacity lambdas from the long-haul network, running over a few thousand kilometres, to the mid-haul, or Metropolitan Area Network (MAN). Distances are shorter in Metro networks (up to a few hundred kilometres), but port densities are higher so mechanical and thermal constraints will push 100Gbps SoC designs to be correspondingly even more power-efficient. At the same time, expectations are that system solution providers will need to be supported by SoC designs that will increase the capacity and [spectral efficiency](#) in the core network. This, in turn, will demand higher sampling rate converters for higher-order modulation schemes.

## **Power-efficient 28nm converters**

Now in its third process technology generation for high-speed ADCs (Analogue-to-Digital Converter) and DACs (Digital-to-Analogue Converter), Fujitsu is launching the first ADC in a family of low power 28nm converters that will address system requirements for a range of different applications. The first ADC variant, developed in 28nm technology, supports sampling rates from 55 – 70GSps with scalable analogue bandwidth. It will be followed shortly by a DAC with the same sampling rate range. Subsequent variants, all available for system designs in 2013, will support sampling rates ranging from 28 to 90+ GSa/s. The converters can be used in a number of different channel-count configurations and all variants will be 8-bit and scale down in power based on sampling rate. The 28nm converters also scale down in power compared to the Fujitsu CHAIS converters offered in 40nm process technology.

Alongside the growing volume of 100Gbps long-haul optical transport deployments, there is a demand for future solutions based on advanced modulation techniques combined with high-speed, high-resolution low-power converters to address growing bandwidth demands in a number of sectors. This includes everything from inter- and intra-datacenter optical links for 100Gbps Ethernet over a few hundreds of meters to interconnect across a PCB or a backplane channel. As in the Metro transport market, this is pushing high-speed converter designs to be increasingly flexible and power-efficient. Building on over six years of design experience spanning three process technology nodes, Fujitsu continues to be at the forefront of analogue design to support the needs of these new and growing market challenges.

FSEU will be demonstrating its first 28nm ADC at the upcoming OFC/NFOEC conference, week of March 18th – 21st, in Anaheim, California.

Provided by Fujitsu

Citation: First ADC device in family of 28nm CMOS converter solutions (2013, March 12)  
retrieved 23 April 2024 from <https://phys.org/news/2013-03-adc-device-family-28nm-cmos.html>

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