Serial ADC
For Unformatted Serial Data Links

Why it matters?

- Ultra low power consumption (225mW for 20Gbps, i.e. 2 channels of 10Gbps @ 112mW each)
- Tiny size (4mm QFN) on transmit side of data link
- Allows for ultra-compact, wearable or hand-held, battery operated sensors/collectors
- No need for co-locating DSP function at sensor
- Suitable for long distances over fiber, e.g. 80 km
- Implementable using either wired of wireless links

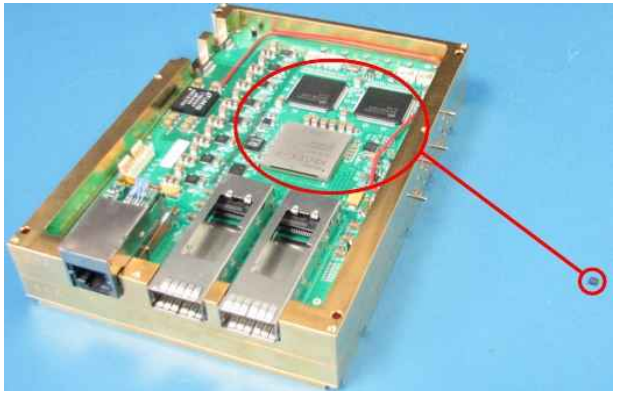
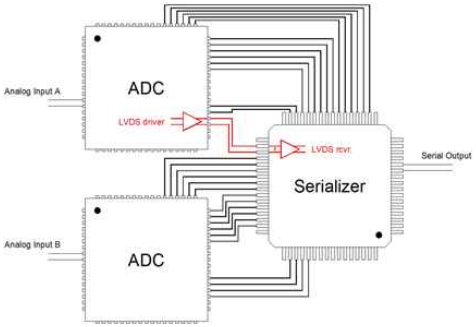
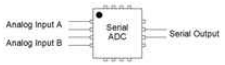


Image showing size reduction of conventional solution (two ADCs and Serializer) down to a 4mm QFN package containing "Serial ADC" ASIC

Conventional solution using off the shelf parts → Serial SADC ASIC under development





SADC serial rate = 56 Gbps
Resolution (dynamic) = 2-12 bits
Sample rate:
28 GS/s @ 2 bits
14 GS/s @ 4 bits
7 GS/s @ 8 bits
Analog Input BW = 15 GHz
Power dissipation = <500mW
Footprint = 4mm QFN

Key Milestones

- Technology Readiness Level (TRL) 6 - Aug 2018
- 10 Gbps proof-of-concept demonstrator built and tested 2016-2017
- In Development – ASIC design/build 2018-2019 suitable for 80+ km transmission via QSFP
- USPTO patent 8,688,617 – Apr 2014

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