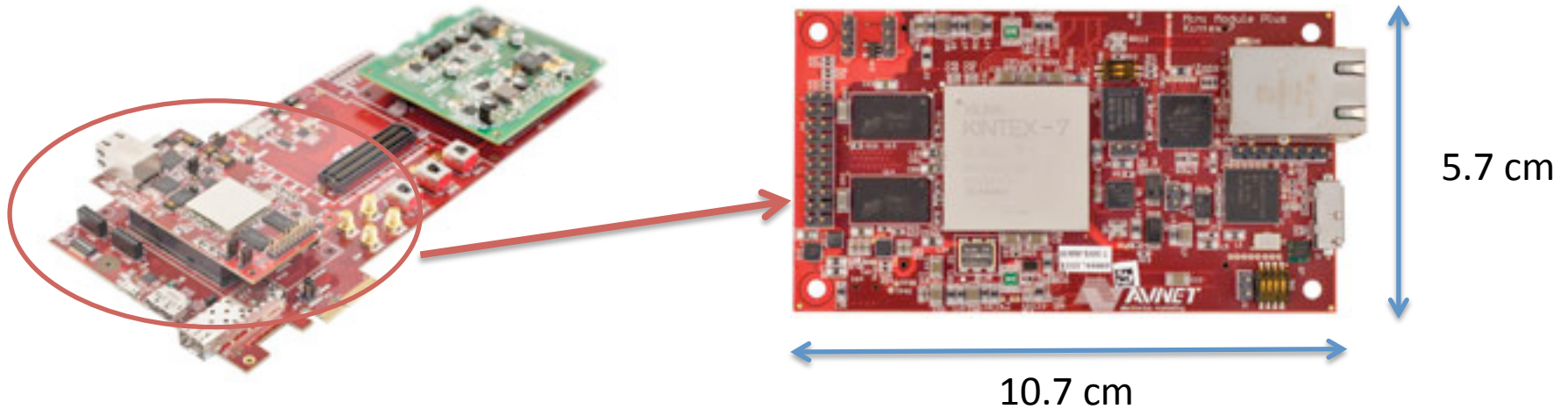


CLB development at INFN Genova

Vladimir Kulikovskiy

Hardware in the lab. FPGA.



- AVNET Mini-Module Plus Development Kit Supporting the Kintex-7 FPGA Family.
 - XC7K325T-1FFG676 FPGA
 - 256 MB DDR3 SDRAM 64 MB of Configuration/User Data Flash
 - 200 MHz LVDS Oscillator (system clock)
 - 10/100/1000 Ethernet PHY
 - equivalent to the Virtex 5 which was used in CLB

AGUAtech hydrophones



| Parameter / Model | Analog |
|--|-------------------------------|
| Linear freq. range (Hz) (3 dB var.) | 10 – 45k |
| Max Usable freq. (Hz) (6 dB var.) | 80k |
| Receiving Sensitivity (dB re 1V/ μ Pa) | -172 @ 1 kHz |
| Equivalent @1kHz Input Noise @30kHz (dB re 1 μ Pa/ \sqrt Hz) | +42 +40 |
| Output (10m long cable) | Analog Differential |
| Power Supply | 5-18 V _{DC} 14 mA |

| Parameter / Model | Digital |
|---|--------------------------------------|
| Linear freq. range (Hz) (3 dB var.) | 5 – 80k |
| Receiving Sensitivity High Gain (dB re 1V/ μ Pa) | -150 @ 1 kHz |
| Receiving Sensitivity Low Gain (dB re 1V/ μ Pa) | -180 @ 1 kHz |
| Equivalent @1kHz Input Noise @30kHz High Gain (dB re 1 μ Pa/ \sqrt Hz) | +37 +35 |
| Output (10m long cable) | Digital |
| Power Supply | 9-18 V _{DC} 12 V / 65 mA |

Plans

- Test already existing software
 - TDC
 - ...
- Develop AcouBoard
 - hardware interface
 - software for hydrophones, tiltmeter, T, compass, nanobeacons

Manpower

- Paolo Musico (coordination)
- Vladimir Kulikovskiy (software tests and development)
- A new physicist/engineer 2 years contract dedicated to the FPGA development (hardware, firmware) starting from March
- A new 2 years post doc starting from April
- A new PhD student Matteo Sanguineti
- Strong collaboration with group of LNS (G. Riccobene) and Bologna (S.Biagi, T. Chiarusi...)