



Synthetic Test Platform

Syntronic R&D
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Research Project Introduction

Vinnova and Syntronic financed research project

- Telecom standard: LTE and future standards
- Modular
- Increase performance
- Shorten test time for spectrum measurements
- "Easy" to adapt to customer applications
- Real time spectrum measurements



Synthetic Test Platform

Research Project Introduction

Phase 1 Proof of concept

- LTE RBS
- Recorded measurements
- DL Measurements: EVM and spectral analysis
- UL Measurements: Rx sensitivity
- Use commercial digitizer and arbitrary waveform generator

Phase 2 and 3

- Develop ADAC board for real time hardware support
- Real time software engine
- MIMO
- Additional telecom standards: HSPA, WCDMA, GSM-EDGE....
- RF Performance verification





Identified Test Applications

- Design verification
- RF Performance verification
- System verification
- Manufacturing test
- Repair test
- Simulation platform

Identified Market Opportunities

- Telecom
- Wireless
- Industrial
- Medical
- Defence



Synthetic Test Platform

Expected Project Outcome

- Increase competence
- Shorten time to market for implementation of new standards
- Offer test solutions in new technique areas
- Provide SDT expertise to our customers
- New customers



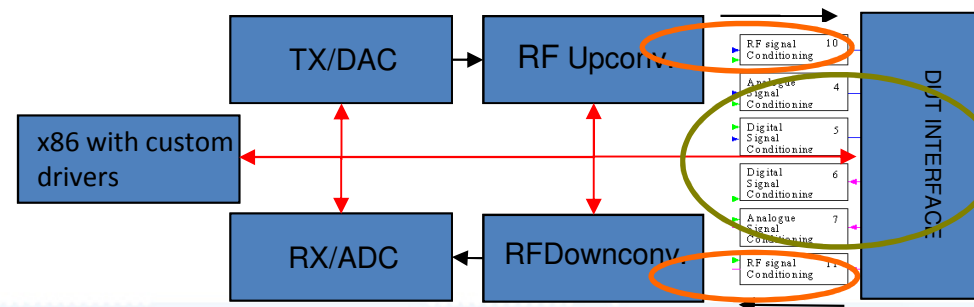


Benefits

- Soft signal analysis and signal generation
- Real time spectrum analyzer
- Hardware and Software Scalable
- Easy to optimize for the Device Under Test (DUT)
- Easy to upgrade with new technology
- Platform expandable with future standards

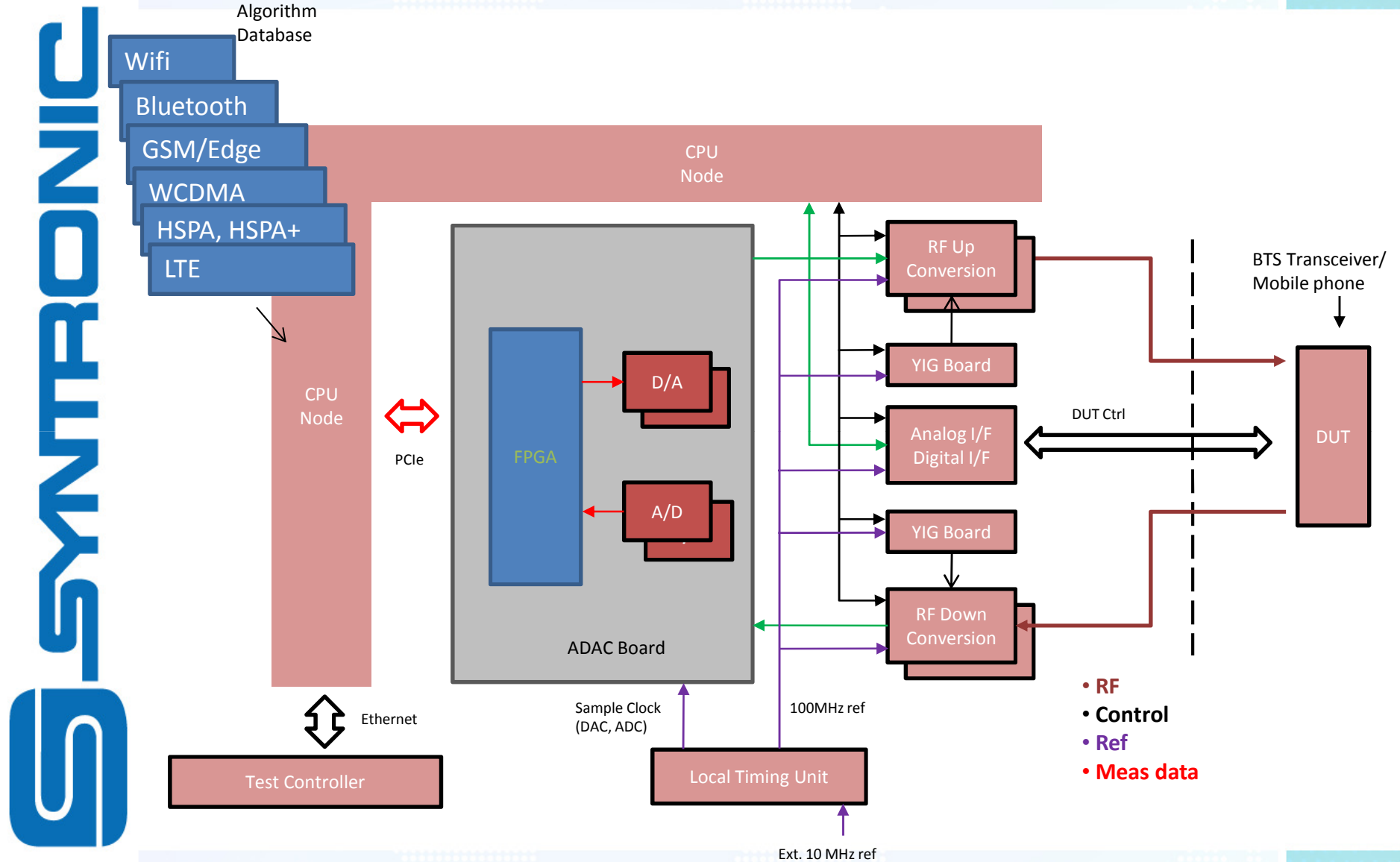
Development challenges

- 500 MHz up and down converter RF hardware
- High speed A/D and D/A converter board with 1.1 GHz analog bandwidth
- Real time hardware and software platform
- Signal processing and math engine
- Generation of both multicarrier and single carrier signals



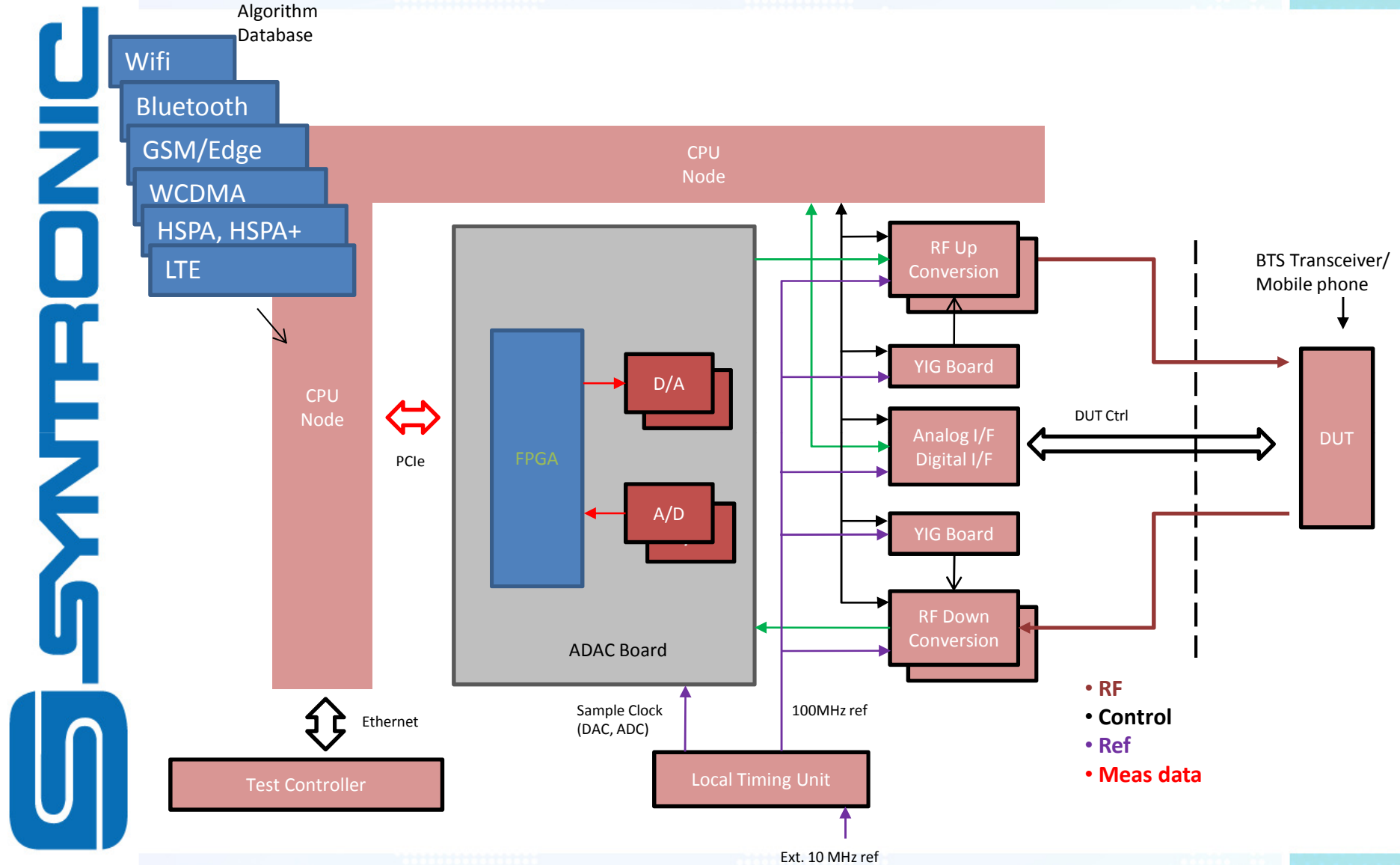
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System Overview



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System Overview



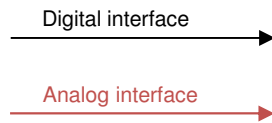
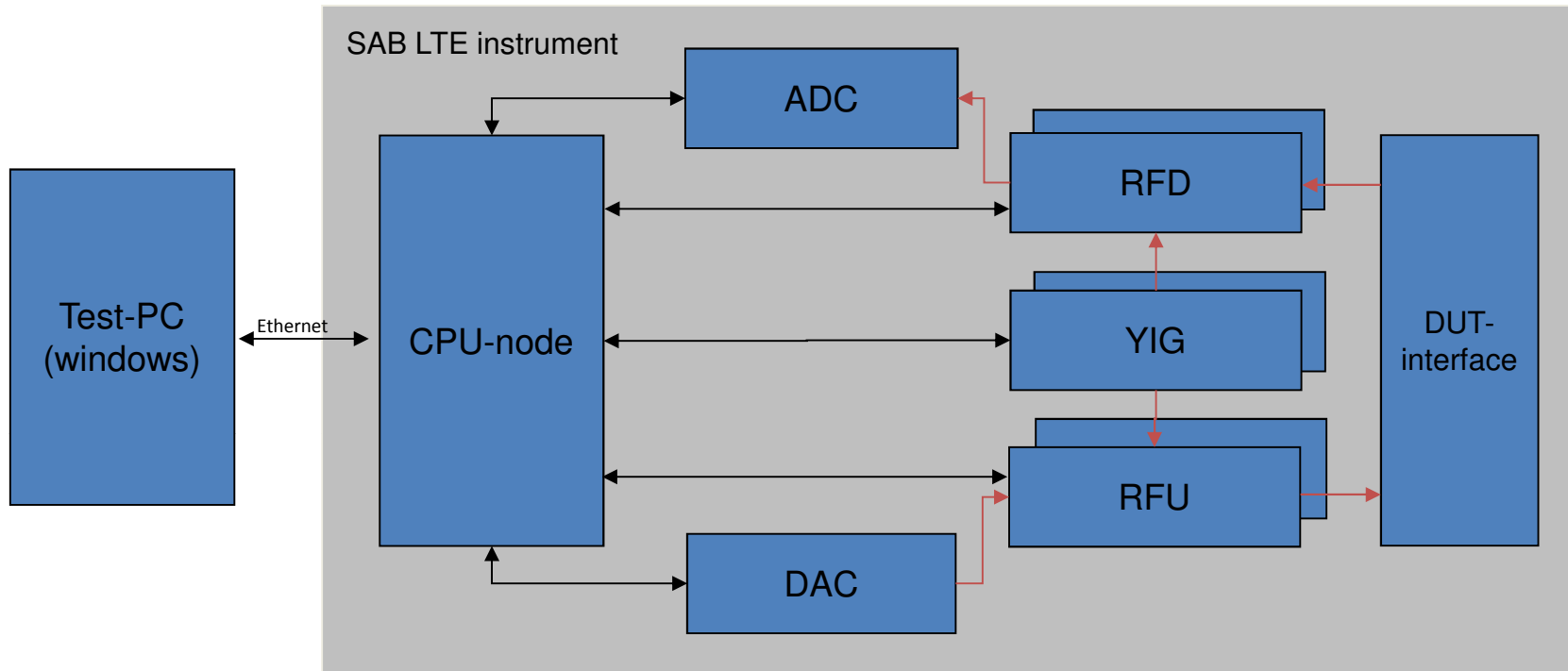
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Hardware System Overview

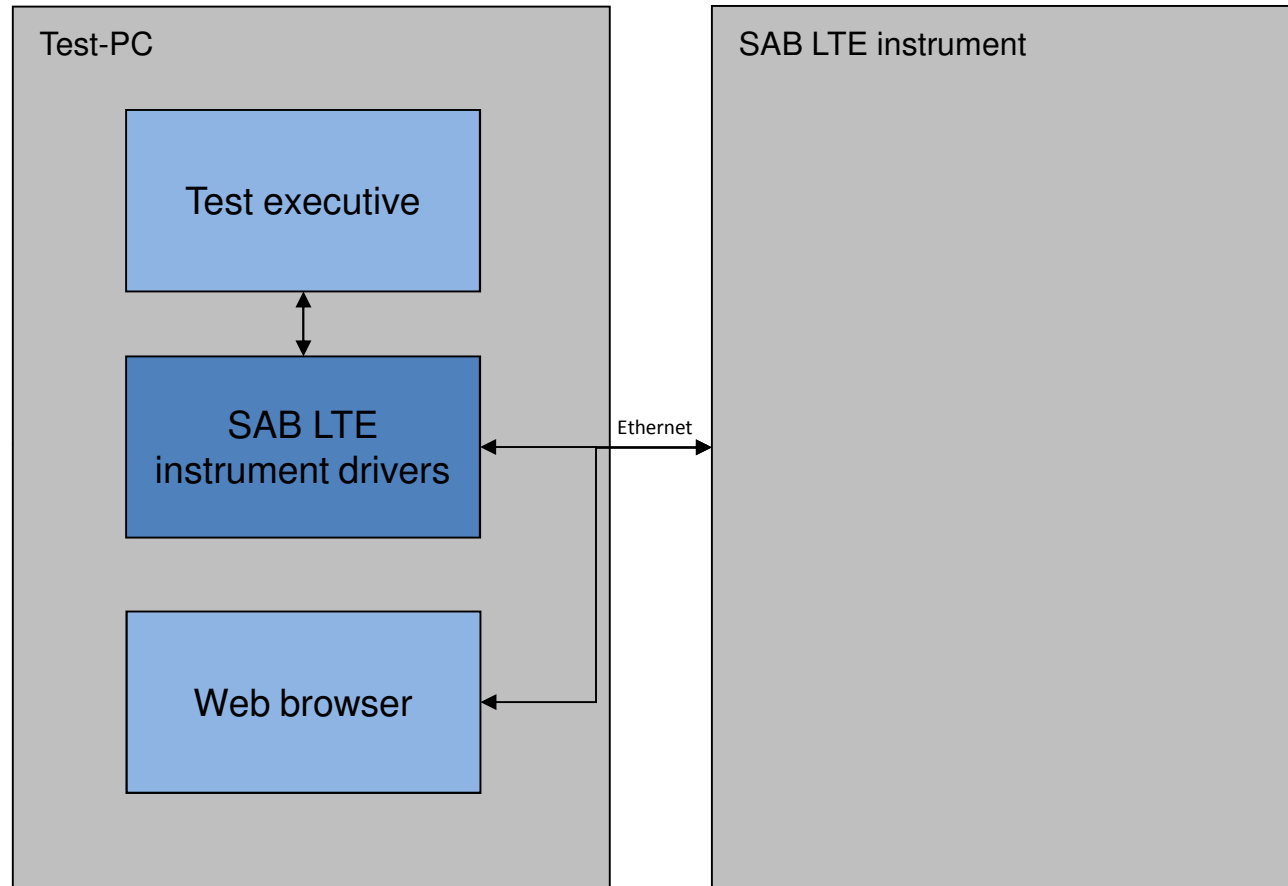
- RF Down Converter
- YIG Control
- Local Timing Unit
- Frequency Planning



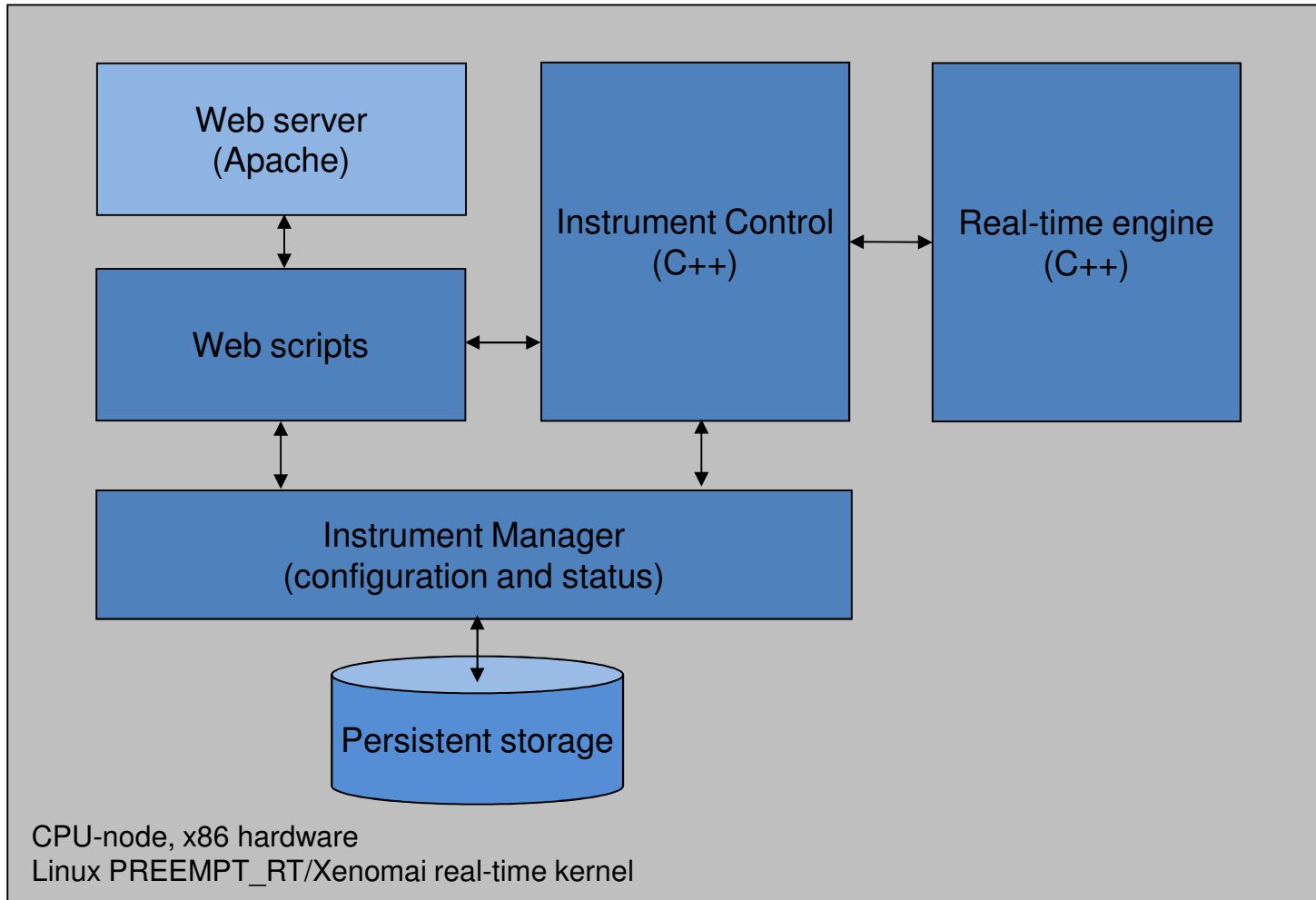
Software System Overview (Phase 1)



Test PC Software Overview



Test PC Software Overview cont..

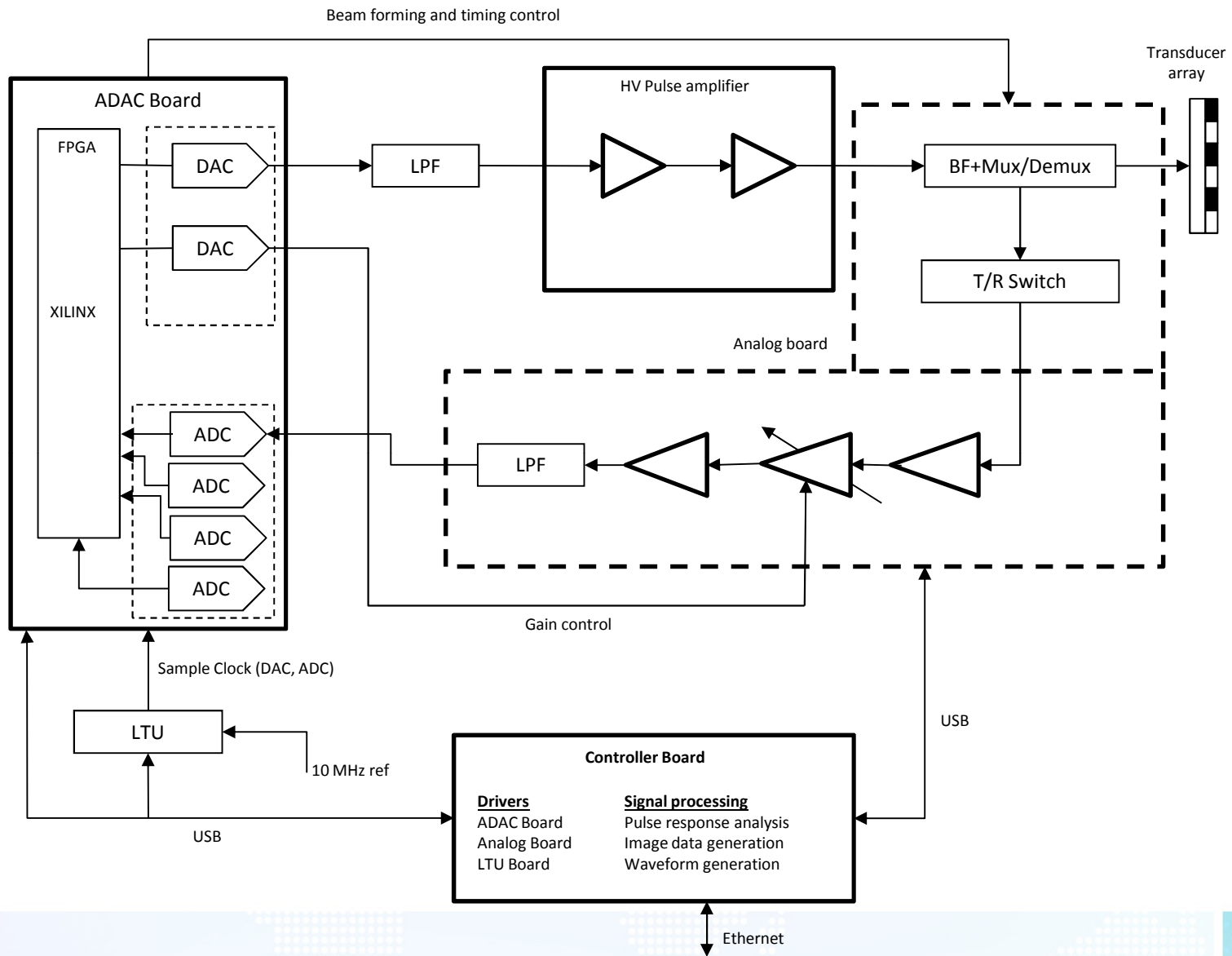


Additional Applications



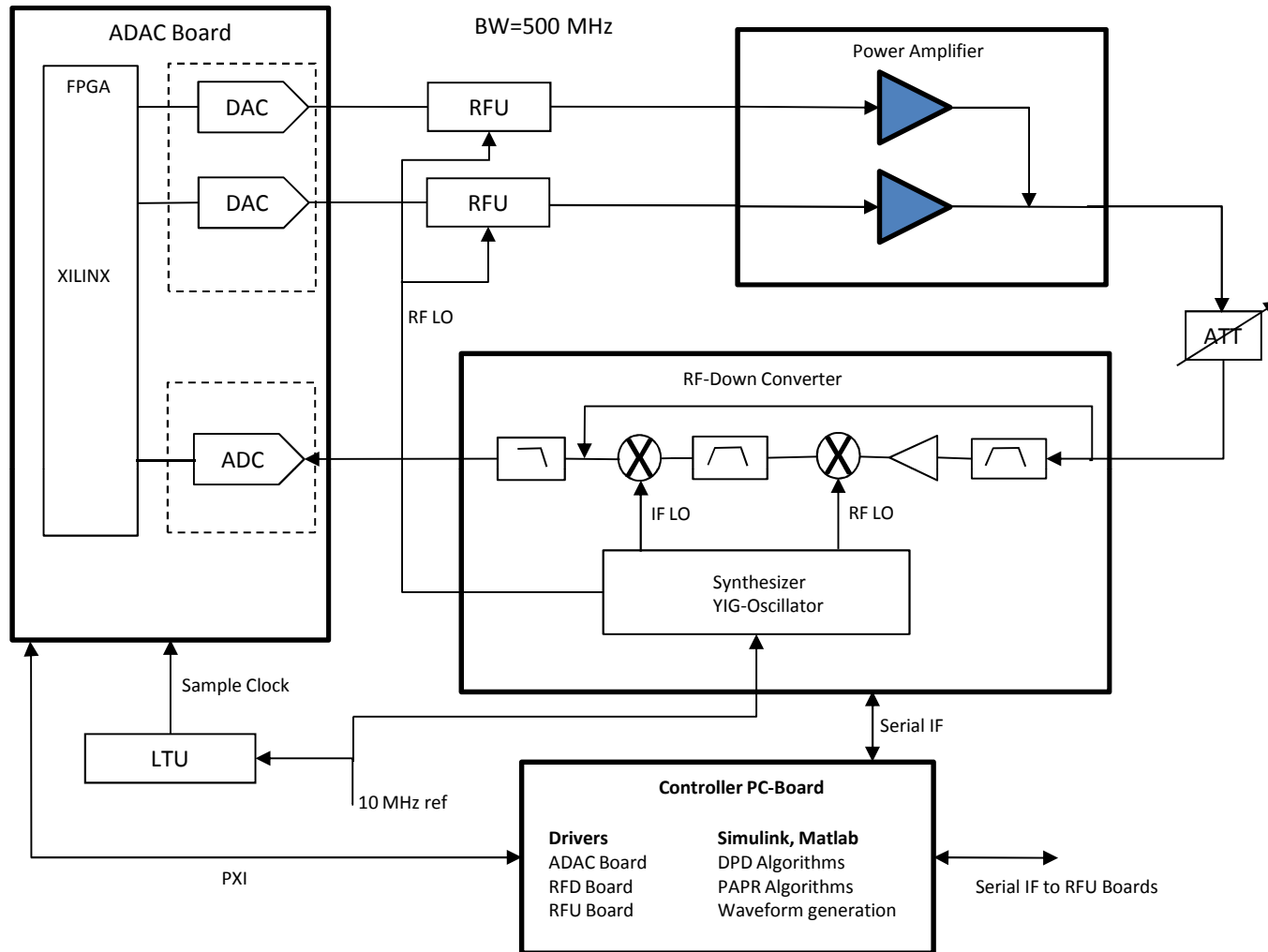
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Industrial Ultra Sonic Test Platform



Synthetic Test Platform

Digital Pre-distortion Platform



Synthetic Test Platform



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