
9 April 2024 FPGA Meetup

ORI • 09.04.20XX

Overview

Expected delivery

OPV4UPR August 2024

Neptune August 2024

Recent progress

- PLUTO SDR OPV Transmitter
- GPP OPV4UPR Transceiver
independent of GNU Radio

Biggest risk

Lack of documentation

Progress - GPP OPV UPR

Accomplishment 1

- Original March 2023 Prototype restored and working in Remote Lab West
- University of Puerto Rico to confirm in their lab.

Accomplishment 2

- Conversion of prototype GPP code to a version that no longer relies on GNU Radio for deployment is in progress.
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Progress - Opulent Voice HDL

Accomplishment 1

- Simulink transmitter model is producing the correct signals for MSK.
- The testbench for the receiver was converted into an HDL Coder target for a transmitter for UPR.

Accomplishment 2

- The new receiver design (Massey-Hodgart) is in progress but not working yet. We need help here.
 - It's now clear that the traditional IQ DDC receiver design can be completed with some of the recent work from the Massey-Hodgart design. (to-do!)
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Attention areas

PLUTO SDR

- Modifying the HDL reference design errors out even with identical-to-HDL designs.
- Documentation from ADI is 404, nothing in internet archive, nothing from ADI (customer support and EZ). Very disappointing.

Neptune

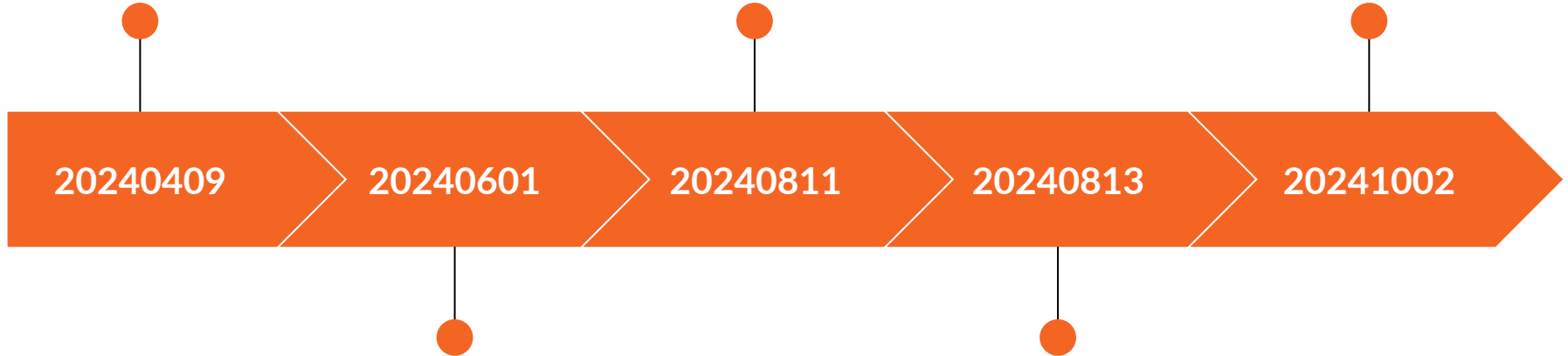
- Two articles submitted to QEX (any alternative?)
 - HDL coming along with lots of parts helping OPV, such as the preamble transmission.
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Schedule

today!

DEFCON 32
demonstrations at RF
Village

Digital Update for
Microwave in
Vancouver, BC,
Canada



Major milestone with
UPR for sounding
rocket launch for OPV

Sounding rocket
launch from UPR for
OPV.

Next steps

Assignment 1

Publish a method of integrating our IP into HDL reference designs that avoids the errors we've encountered. PFB works, OPV doesn't. Why?

Assignment 2

Fully support the UPR launch

Assignment 3

Demonstrate all our work, technical and regulatory, at DEFCON and DUM.

Goals for next meeting

1. What have we done
2. What do we plan to do
3. Are there any roadblocks
4. What resources are needed
