What's New in the USRP Hardware Driver 4.0

What is UHD?

The USRP Hardware Driver (UHD) is an open-source, common API across all Universal Software Radio Peripheral (USRP) devices.

What's New in UHD 4.0?

UHD 4.0 is a major step forward for UHD, delivering many critical bug fixes and features to enable advanced SDR applications today and tomorrow. UHD 4.0 is also one of the most tested releases. As a part of this release, we invested heavily in building up our internal automated test tools so each change that is made goes through rigorous validation before being published to the public repository. The combination gives you an SDR driver that is highly capable and stable.

RFNoC Datapath Architecture Updates

With UHD 4.0, RFNoC has undergone a major overhaul for improved usability, performance, and compatibility with tools like GNU Radio.

UHD 4.0 with RFNoC gives you enhancements and features to enable your SDR application development today and tomorrow.

Improved Radio Performance

- Increase channel bandwidth to 250 MSPS and beyond.
- Flexible bus width to increase throughput.
- Static routing for lower latency and higher throughput
- Updates to the NOC shell layer for improved latency and throughput.

FPGA Design Flow Enhancements

- Ability to scale to a larger number of user-defined blocks.
- Reduced FPGA resource utilization in many instances.

More Flexibility

- Architectural flexibility enables users to make more design tradeoffs.
- Allows the user to balance flexibility, resource utilization, and performance.

Improved User Experience

- Improved documentation with a full RFNoC Specification
- Power calibration utility API (requires external calibration reference)
- Python API enhancements with full Python 3 support.
- Stability improvements from new automated testing infrastructure.
- Use embedded series radios without programming the ARM processing with "Network Mode" over the RJ45

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