SDR Software Probes

Probe Toolbox for Waveform Development and Debug

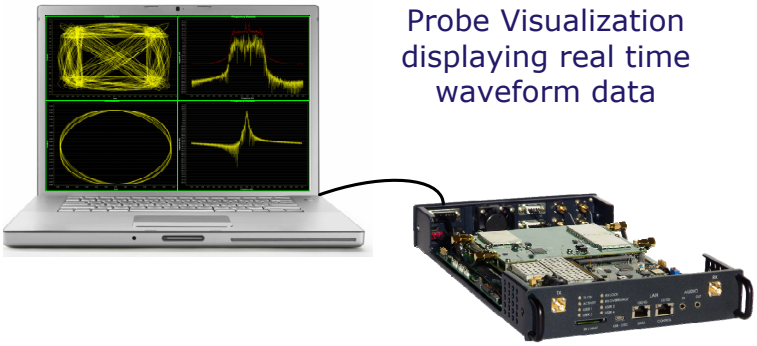
General Description

The DataSoft Probe Toolbox is designed to reduce turn around time for developing new waveforms on DataSoft SDR platforms, Thunder and Microburst, by providing a focused multi-processor debugging capability during integration.

The Probe Toolbox is a real-time debugging tool with the ability to prove and excite waveform elements, allowing piecemeal integration of waveform components one-by-one and validation of temporal, processor, and memory behaviors independently. Probe data is visualized with an internal visualizer, (ProbeViz), or through MATLAB/ Simulink, eliminating the need for 3rd party tooling licenses for data visualization.

Data probes allow monitoring or injection of real-time system flow data. **Resource probes** provide graphical or textual representation of memory and CPU utilization and resources. The **Latency probe** provides a graphical display of latency for user-defined probe points based on a uniform system time reference; while the **Traffic probe** will capture and display network traffic. An **SCA adapter probe** provides latency, traffic and data probes in an SCA core framework.

By using the Probe Toolbox, the porting engineer can study real-time data in any connected waveform with complete ease.



Probe Visualization displaying real time waveform data

Benefits

- Using the Probe Toolbox through the waveform porting cycle will
  - Increase engineer productivity
  - Reduce porting and integration effort
  - Decrease defect-error rates
  - Reduce time-to-deploy
  - Lower overall project cost and schedule risk
- With the Probe Toolbox, the waveform developer can study critical waveform and platform traffic on multiple processors and the interaction between the processors.

Features

- Data Probe
  - Inject or capture GPP/DSP stream data
  - Trigger multiple probe points
  - Capture block data
- Resource Probe
  - Memory and CPU utilization graphs
  - CPU resource detail
- Latency Probe
  - Capture and display timestamp information with a synchronized time base across the GPP/DSP
- Traffic Probe—available early 2014!
  - Capture and display network traffic
- SCA Adapter Probe—available 2014!
  - Integrated with PrismTech's Spectra Core Framework to show traffic, latency, and data in an SCA environment

Applications

- Validate waveform and platform data by applying probes at varying points in the GPP and DSP
- Gather data in heterogeneous multiprocessor environment

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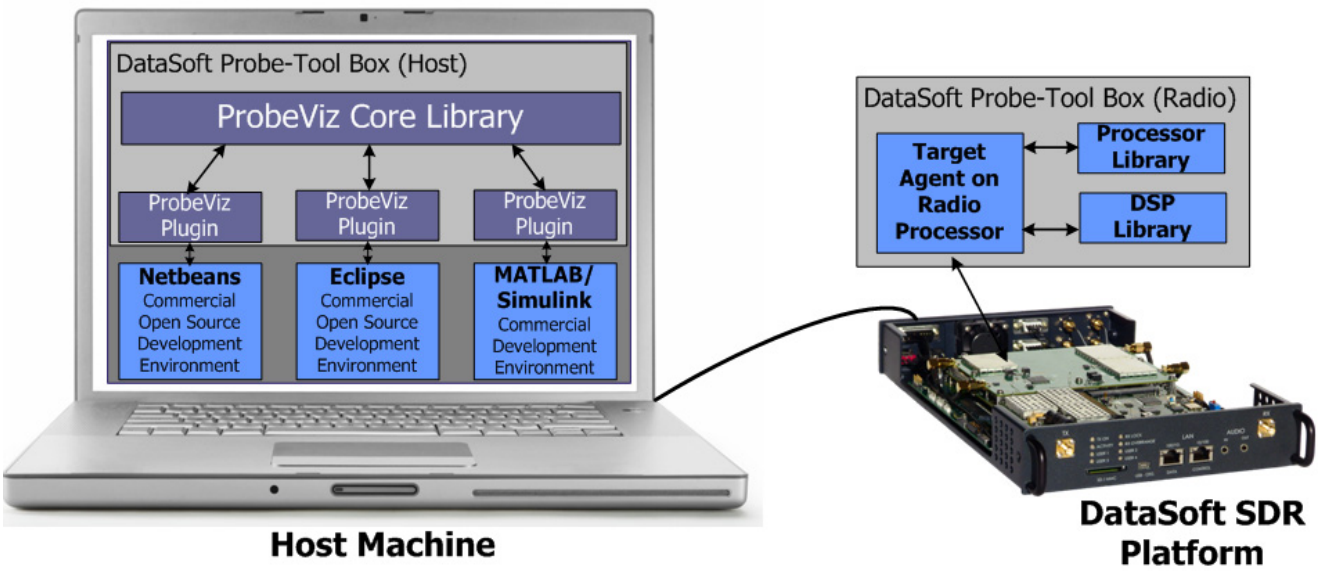
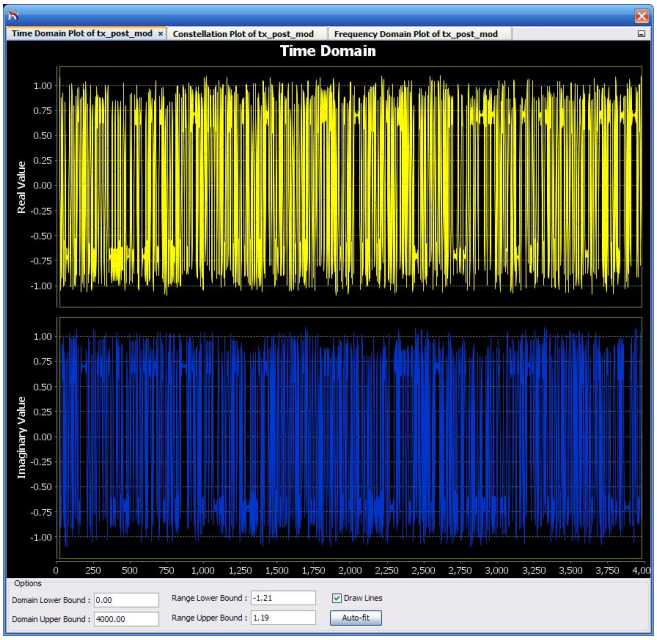
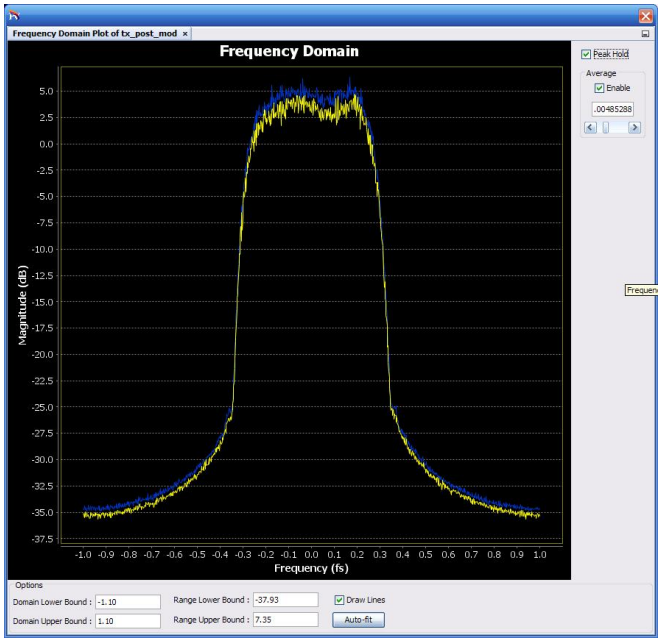
Probe Toolbox Configuration



Probe Visualizer Examples:



Real-time I&Q samples gathered with the data probe and displayed with ProbeViz (Time Domain)



Frequency domain plot with smoothing functions provides real-time spectrum analysis

About DataSoft

DataSoft provides flexible hardware and software tools for the development, test and operation of broadband wireless communications systems. Our tools are useful in R&D, rapid prototyping, technology demonstration, networking waveform development, cyber protection, API verification, SCA-compliance, test automation, and system integration. Our technology helps customers reduce development costs and improve time-to-market.

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