



Solidago

160 Gbps UDP Event Generator / Networked Instrumentation Emulator



The Solidago UDP Event Generator is a high-performance UDP streaming system that emulates an array of digitizers or data acquisition systems.

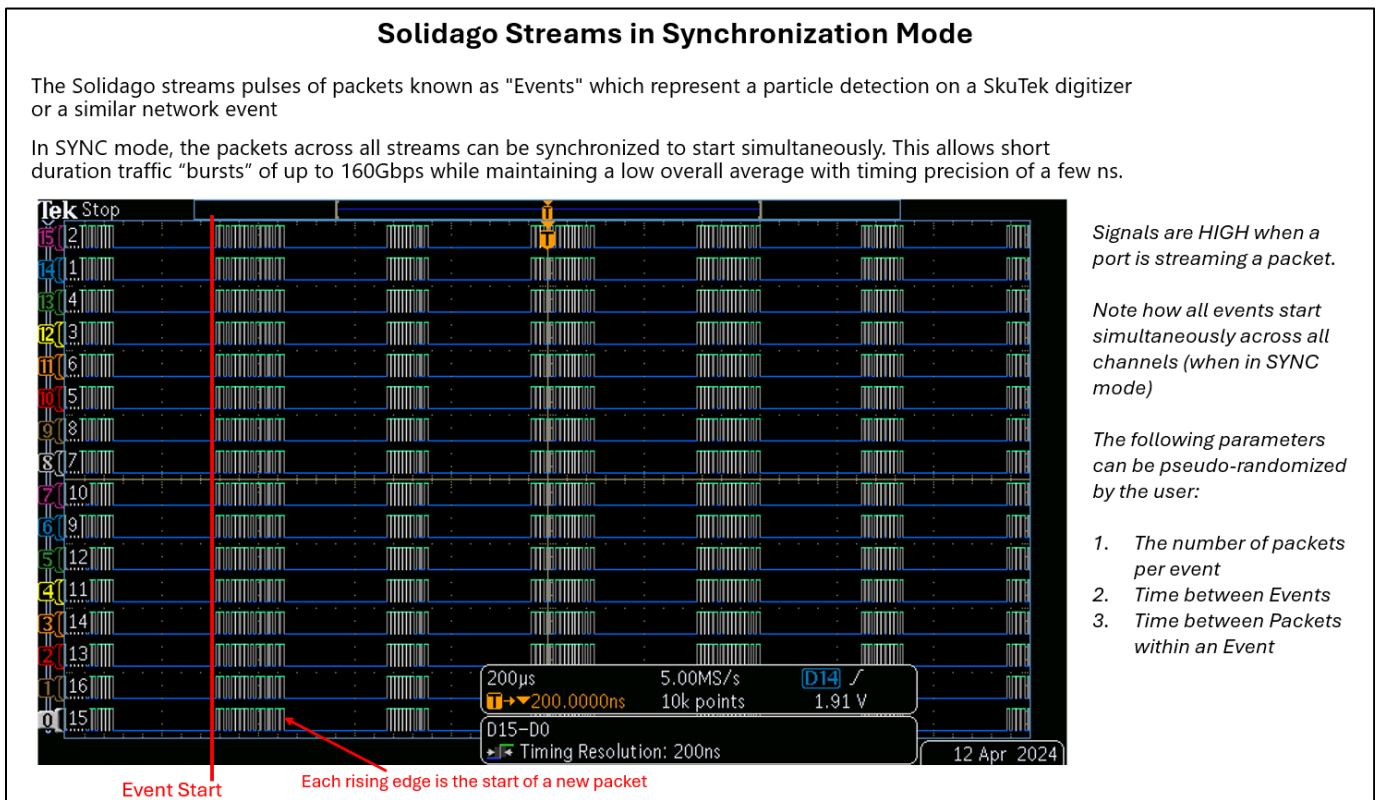
The Solidago can generate sixteen 10 Gbps UDP streams with configurable packet and event formats. The FPGA-based streaming system means no tuning is required to generate performant data streams. An easy to web-based GUI can be used to control the unit, and a REST API is available for programmatic control. Front panel I/O allows the user to monitor streaming behavior in real-time, trigger or veto events using an external source, or synchronize multiple Solidagos units together.

Solidago was originally developed to generate 160 Gbps data streams to stress-test SkuTek 100 Gbps data management systems but was so useful that we developed it as a spinoff product. It is ideal for developing data management solutions or for stress-testing networking hardware.

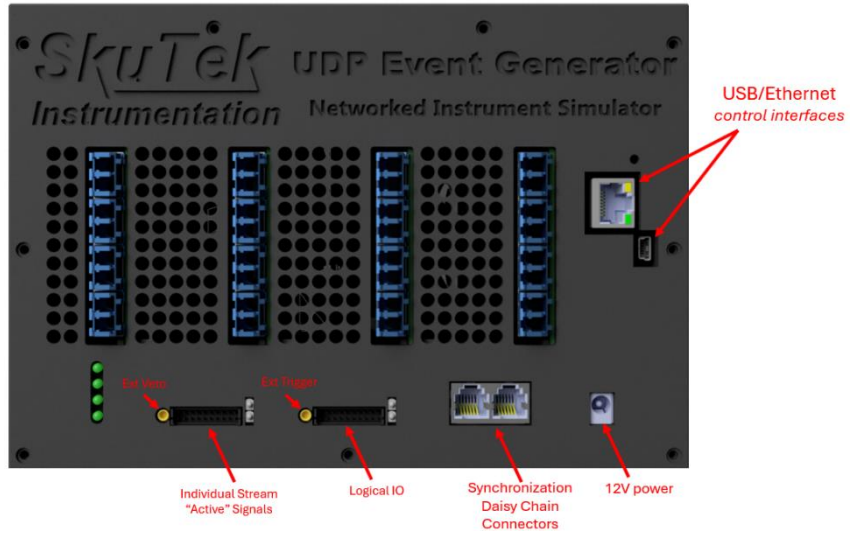
Emulation of Clock-Synchronized Digitizers

Solidago can emulate the behavior of 16 clock-synchronized digitizers.

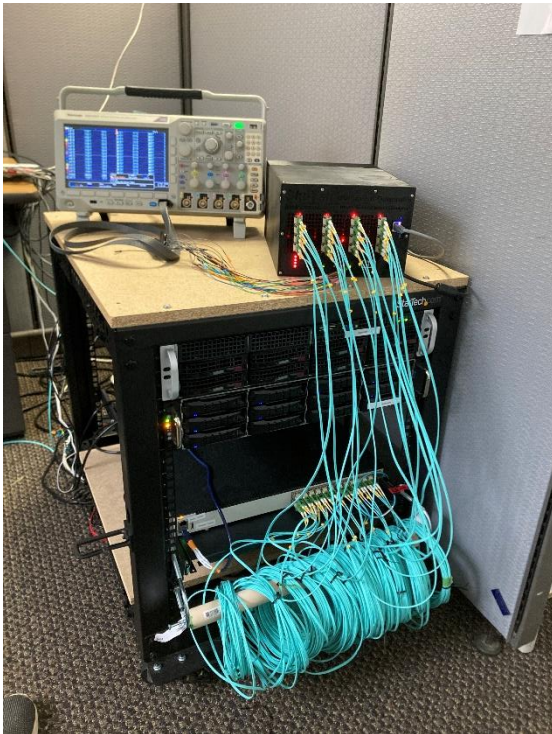
Instruments that utilize a synchronized clock across their electronics or global trigger system may stream their data flows across multiple ports. The short-term effect is a “burst” of very high-speed network traffic that may over-saturate network buffers and cause packet loss – even if the long-term average packet rate is manageable. It is impossible to emulate this level of synchronization in software, but Solidago can accomplish it using our FPGA-based streaming.



Gallery



(left) Picture of Solidago's front panel
(right) Annotated Rendering of Front Panel IO



Solidago during qualification in SkuTek's high performance networking testbeds

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SkuTek Instrumentation
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Quick Specs

Solidago	
Number of 10G-capable streams	16
Network interfaces	16x 10G SFP+ (UDP Streams) 1x RJ-45 Ethernet (control)
Control / User Interface	REST API (programmatic control) Web-GUI
Rackmountable?	No, however, fits on a 4U shelf in server rack.
Logical I/O	Trigger / Veto Events (LVTTTL) Individual port "active" signals (HIGH when packet is streaming) (LVTTTL) Synchronization Daisy Chain Connectors
Minimum streaming speed (net)	0 Gbps
Maximum streaming speed (net)	160 Gbps
Customizable Features	Packet / Event format, software, enclosure, etc. (customization may increase quote price)

About the Name

All SkuTek Data Management products are named after a plant native to the Rochester NY area. Solidago is named after the *Solidago* genus, better known as goldenrod. *Solidago* plants are keystone species in the United States and critical food sources for American wildlife. Our team chose this name to demonstrate our ongoing commitment to environmentalism and responsible land usage.

About SkuTek Instrumentation

We are a small company dedicated to serving physics researchers worldwide. We specialize in high-speed Data Acquisition systems and Digital Pulse Processing electronics. Our product line comprises the whole data acquisition chain: detectors, digitizers, firmware pulse processing, and data management for scientific big-data applications.

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