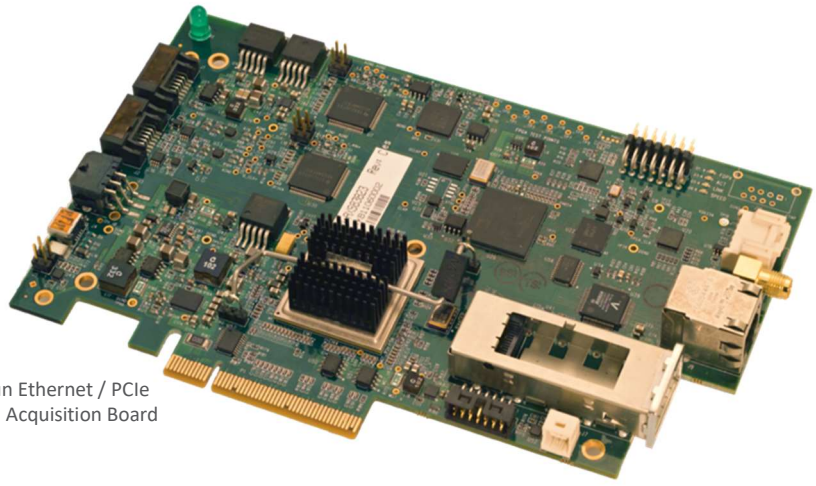
DATASHEET
Axsun OCT

~~500~~ MS/s Dual-Channel DAQ with Ethernet & PCIe Interface

Now at
900 MS/s!



Axsun Ethernet / PCIe
Data Acquisition Board

Axsun Data Acquisition

DAQ boards are **designed and optimized specifically for SS-OCT** systems powered by Axsun's market-leading swept laser engine. Avoid costly unknowns associated with interfacing a 3rd party general purpose digitizer: Axsun's solution frees your valuable resources to focus on your application and end-user experience.

Unmatched Portability

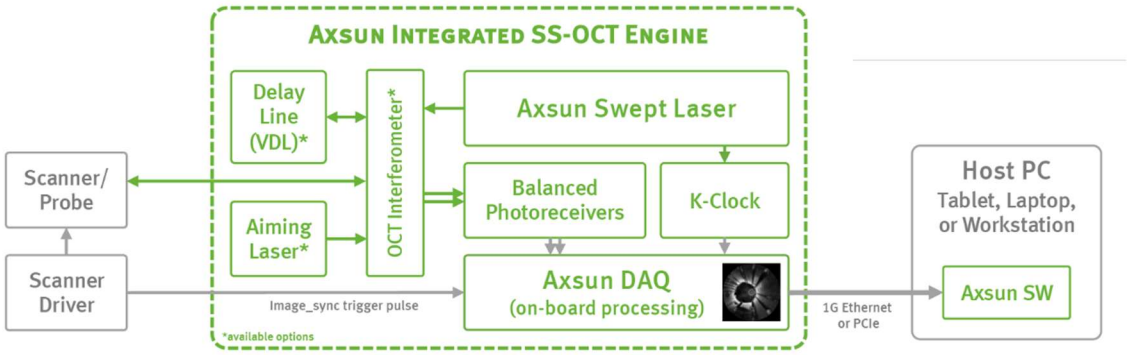
1G Ethernet or USB 3.0 interface and tight integration between the Axsun swept laser, k-clock, balanced photoreceivers, and DAQ facilitate a cost-effective SS-OCT imaging engine with **unprecedented ease of deployment** on mobile computing platforms.

OCT System Simplicity

Experience straightforward system integration with your application-specific scanner and OCT software. DAQ supports 2D/3D synchronization with your galvos, MEMS scanners, or rotational probes over a wide range of frame rates. On-board FPGA **streams processed OCT images** to offload your host CPU and your development team.

Reliability & Support

Axsun's products have logged **billions** of hours in networking, industrial monitoring, and OCT imaging systems around the world since 2001. Our products meet rigorous qualification standards and are supported by an engineering team with **decades of expertise** in OCT system technology and applications.



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EXCELITAS
TECHNOLOGIES®

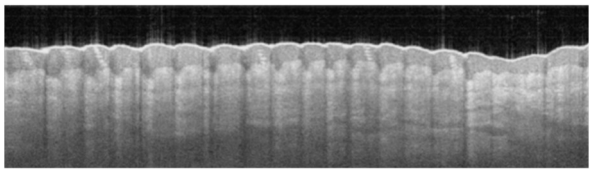
900 MS/s Dual-Channel DAQ with Ethernet & PCIe Interfaces

Specifications and Features

Real-Time Data Streaming Interface	Gigabit Ethernet / PCIe			CameraLink		
Common Applications	Low-cost tablet or laptop-based OCT systems, Plug-and-Play OCT system architectures			Easy upgrade to Swept Source OCT from spectrometer-based OCT systems		
Number of Channels	2			1		
ADC Resolution / ENOB, bits	12 / 10.2					
Sample Clocking & Sweep Triggering	Now **200 kHz** External k-clock input provided directly from laser engine Sweep trigger input provided directly from laser engine; passed thru on SMA output					
Compatible Axsun Lasers	50 or 100kHz; 1060, 1220 or 1310nm with k-clock & balanced photoreceiver options (OEM configurations only)					
	Min	*Typ*	*Max*	*Min*	*Typ*	*Max*
Sampling Rate (Internal or Ext K-clocked), MS/s	40		Now **900 MS/s** 550	40		370
Samples per A-line			2048	Depends on laser and scan depth		
OCT Signal Input Range (differential), V_{pp}			2.2 Now **4096**			2.2
Power Consumption (typ @ 25˚C), W		20	36		7	12
Power Supply Voltage (shared with laser), V	10.8	12	13.2	10.8	12	13.2
Supported Frame Rates (w/ 100kHz laser), fps	10		390	Depends on CameraLink frame grabber		
Host PC Interface Requirements	1Gbps Ethernet or USB 3.0 Port (1) or PCIe x8 slot			3rd party CameraLink frame grabber		
Control and Diagnostics Interface	Ethernet RJ-45, USB 2.0 mini-B receptacle			USB 2.0 mini-B receptacle		
External Image_sync Input	LVDS or LVCMOS, rising edge			Configured via 3rd party frame grabber		
Transmitted Data Format	Raw OCT fringe data, Processed OCT image, or any intermediate format			Raw OCT fringe data		
On-board FPGA-based OCT Image Processing (2)	Programmable Window Function, Dispersion Compensation, Background Subtraction, Fourier Transformation, Linear->Logarithmic Conversion, 2-Ch Polarization Mixing, and JPEG Compression (Ethernet only) Also **FPGA Resampling**			N/A		
Image Size	Depth: 1024 or 2048 pixels Width: 256 to 10000 pixels (depending on A-line rate and Frame rate)			Configured via 3rd party frame grabber		
Included Software	Configuration tool shared with Axsun laser, Quick-start tool for viewing real-time images, Drivers and SDK for integration into your GUI (Windows or Linux, 64-bit)			Configuration tool shared with Axsun laser (Windows XP or later)		
Environmental Requirements	10-50˚C, 10-90% humidity NC; fan included			10-50˚C, 10-90% humidity NC		
Mechanical Dimensions	0.75 x 4.5 x 7” (adds ≈¾” to height of standard Axsun laser in OEM configuration)					

(1) With a 1G Ethernet to USB 3.0 converter based on the Realtek RTL8153 chipset.
(2) Customer-specific FPGA development also available. Please contact us to discuss.

Integrated Balanced Photoreceivers	
Transimpedance Gain	30 kΩ (for 50 Ω single-ended) / 60 kΩ (for 100 Ω differential)
Noise Equivalent Power	12 pW/√Hz
Antialiasing Filter Bandwidth	Configured according to scan depth and laser specs
Fiber Input Connectors	FC/APC (2 per channel); fiber type determined by laser λ



About Excelitas Technologies

Excelitas Technologies® Corp. is a photonics technology leader focused on delivering innovative, high-performance, market-driven solutions to meet the lighting, optronics, detection, and optical technology needs of our OEM customers.

Serving a vast array of applications across biomedical, scientific, safety, security, consumer products, semiconductor, industrial manufacturing, defense, and aerospace sectors, Excelitas stands committed to enabling our customers’ success in their end-markets. Our photonics team consists of 7,000 professionals working across North America, Europe, and Asia, to serve customers worldwide.

For a complete listing of our global offices, visit www.excelitas.com/locations