

Accelerate your OCT project with four processing channels!



- **A fully engineered swept-source Optical Coherence Tomography (OCT) processing system, saves you valuable project time & resources**
- **Unique four-channel design, for more powerful experiments**
- **Incorporates the popular and acclaimed Santec HSL-2000 swept-source laser**
- **Optional LabVIEW source code user license available, for complete control over your experiment**

System Description

The PS1301 OCT processing system is ideal for researchers who need to build their swept-source OCT experiments quickly, and do not want to use valuable project time & resources developing their own system. Why re-invent the wheel? Just connect your video signals and start capturing data!

The unique multi-channel design enables collection of data from multiple OCT channels simultaneously (or even from other types of sensor).

The Michelson Diagnostics software not only captures and displays data from all four channels, it stores processed OCT images AND all raw A-line data to disc, giving the user the ability to apply their own processing algorithms. Furthermore, a LabVIEW source code license is optionally available to users who need the additional flexibility to add controls for other equipment in their experiment.

Contact us now for a quotation!

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PS1301 OCT Processing System, comprising:

- Michelson Diagnostics pre-installed 'Image4' swept-source OCT processing and display software
- Santec HSL-2000-10-MDL, configured to 10 kHz A-line sweep rate
- Dell Precision T3400 3 GHz Core2Duo workstation (or latest equivalent) with 19" Flat Panel Display
- Spectrum M2i.4022 4-channel 20 MHz data acquisition card
- National Instruments NI PC1-6221 multifunction DAQ card

Inputs:

- Up to four analogue video signals via SMB connector

Outputs:

- Swept-wavelength light, via FC/APC connector
- Analogue galvanometer drive via 37 pin D-Sub connector

PS1301 OCT Processing System Specification	
OCT System type:	Swept-source Fourier-Domain OCT
Light source:	HSL-2000-10-MDL (Wider sweep range)
Laser peak power:	≥ 15 mW
Laser centre wavelength:	1305 ± 15 nm
Laser wavelength sweep range (>3mW):	≥ 150 nm
Axial optical resolution (in tissue):	< 10 μ m
A-line rate:	10 kHz
Frame rate:	1.9 fps (5 mm scan width)

Additional add-on options:

• Four-channel Optics Interface

Users can of course purchase their own balanced receiver modules from third party suppliers. However, an alternative is the Michelson Diagnostics four-channel optics interface. This comprises a power supply, five detectors and an ultra-low-noise balancing pre-amplifier.

Four-channel Optics Interface Specification	
Bandwidth:	10 MHz
Gain:	10 k Ω (100 μ A input gives 1 V output)
Mean input-referred current noise:	3 pA/ \sqrt Hz (over 0 to 10 MHz band)
Total output voltage noise:	81 μ V rms (over 0 to 10 MHz band)

The interface accepts five optical inputs via standard FC/APC connectors. Four of these are from the 'detection arm' of interferometers. The fifth is the 'balance channel' obtained from the source.

• Motorized Stage

The motorized stage option includes control software integrated into the Image4 application for multi-slice image capture. One or two stages can be controlled.



Motorised stage & controller

Motorized Stage Specification	
Positioning accuracy:	< 1 μ m
Displacement range:	25 mm
Displacement speed:	50 to 250 μ m / sec

• Source Code User License

Advanced users may be interested in customizing the OCT processing system, for example by adding controls for other equipment that forms part of the experiment. To facilitate this, access to the LabVIEW source code is provided as an option.