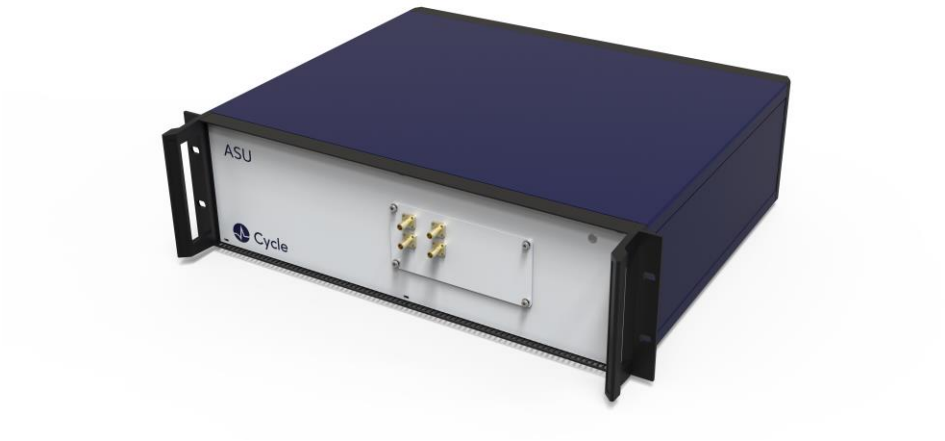
DATA SHEET

ASU

Analog Synchronization Unit



APPLICATIONS

- Jitter or phase measurement between pulsed lasers and microwave signals
- Synchronization between pulsed lasers and microwave signals
- Synchronization between microwave signals
- Synchronization for pump & probe experiments

BENEFITS

- **Lock fundamental and harmonic frequency at the same time**
- Digital phase detector for fundament lock
- 24-bit ADC with an integrated configurable digital filter for harmonic frequency locking

DESCRIPTION

The fully-automated ASU detects the time delay between an optical pulse train and the zero-crossings of a microwave signal. It generates a baseband signal that is proportional to the timing error between the two inputs, which in turn can be used in a phase locked loop configuration to synchronize a laser to a microwave source or vice versa or two microwave sources.

Parameters	Value	Unit	Comment
Output resolution	20	bit	1.25MS/s
Output voltage range	-/+10	V	Addition piezo amplifier upon request
Phase resolution	24	bit	360°/24^2 = 0.00002°
Control system	included		available in Epics, Tango…
Auto lock	included		
Dimensions (H x W x L)	420 x 300 x 171	mm	plus controller (if SD option is chosen): 19 in. rack mount
Weight	10-20	kg	depending on options
Requirements			
Fundamental RF input power (option)	0 to 7	dBm	up to 1.3 GHz.
Harmonic RF input power	7 to 15	dBm	up to 10 GHz.
Pulse repetition rate	< 10	GHz	BOMPD is tailored for the repetition rate of interest