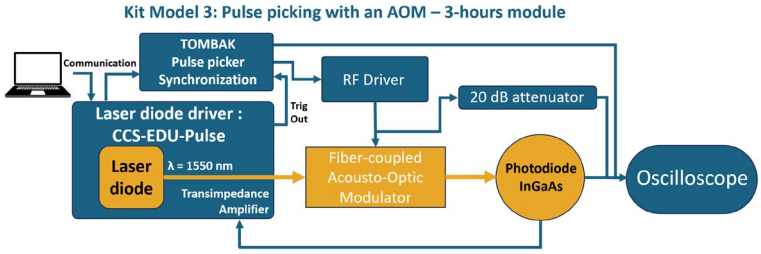
Educational kit: Laser light Modulation

Model 3: Laser pulse-picking with an AOM – **3 hours module**

Reference: **EDKIT-M3**

Objectives:

- Understand laser light modulation and the principle of pulse-picking with an AOM.
- Measure the rise/fall time.
- Control the pulse width / repetition rate of the pulse-picked signal.
- Measure the average and adjacent pulse extinction ratio.



What's in the box?

- 1* Laser diode and photodiode driver with thermal regulation: "CCS-Edu-Pulse"
- 1* 1550 nm fiber coupled butterfly laser diode with optical connector
- 1* 1550 nm AOM (80 MHz model)
- 1*RF driver (80 MHz model) + 24V power supply
- 1* fiber coupled InGaAs photodiode
- 1* Electrical 20 dB attenuator
- 1* 200 MHz Oscilloscope (option)

<photo kit>

SPECIFICATIONS	Unit	Min	Typ	Maximum
Laser diode*: DFB (1550LD-1-0-0)				
CW Output Power	mW			10
Center Wavelength	nm	1545	1550	1555
Operating Current	mA			70
Laser safety classification	Class 1M			
Fiber type (Connector) / Buffer diameter	SMF28 (SC/APC) / 900µm			
Diode driver: CCS-Educ-CW				
Diode driver with current limitation	Yes			
Laser diode thermal regulation	Yes			
Photodiode transimpedance amplifier	Yes			
GUI software with USB communication	Yes (Simplified version)			
Photodiode: InGaAS				
Sensitivity	A/W		0.93	
Dark current				
Tombak Pulse delay generator - See this page : pulse delay generator				
AOM : 1550AOM-1				
Material		TeO2		
Insertion loss (1st order)	dB	1.3	1.5	2.5
Rising time	ns			50
RF frequency	MHz		80	
Frequency shift	MHz		80	
RF Power	W		2.3	
AOM Driver: 80 MHz				
Synchro output (TTL or Analog)	Analog			
Output Frequency	MHz		80	
RF output power	W			3

*: See our tutorials: fiber coupled laser diode and fiber modulator basics

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