

Electronic Multiplexing

For Hamamatsu PDA based spectrometers (MMS, MCS series)

Mechanism: electronic switching of readout

Channels: up to 8 PDAs

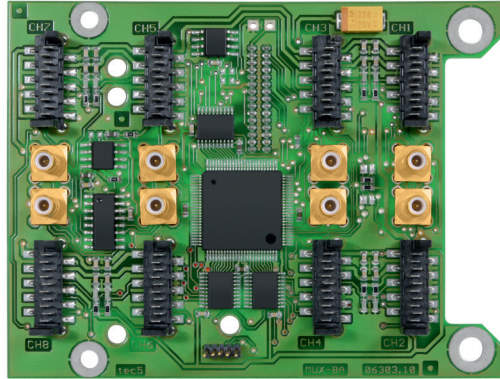
Time (Switch): 0 ms

Efficiency: 100%

Reproducibility: 100%

Cost: \$645 (MUX-8A)

Notes: Highest performance method. All spectrometers are read out simultaneously.



Opto-Mechanical Multiplexing

For all spectrometers

Mechanism: Mechanical shutter

Channels: up to 4

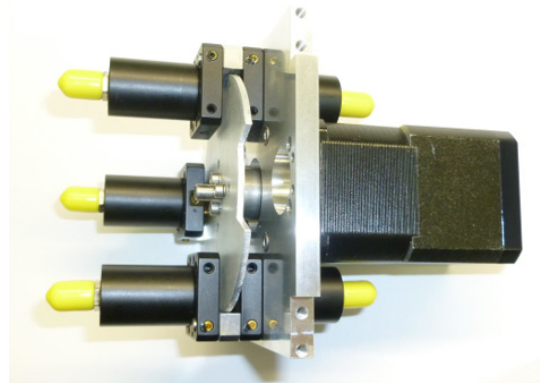
Time (Switch): ~ 0.5s

Efficiency: ~ 20% at 4ch

Reproducibility: 100%

Cost: \$2,300 (starting)

Notes: Efficiency drops with each channel. Reproducibility is excellent because no optical channels are moved.



Fiber-optic Switching

For all spectrometers

Mechanism: piezo-operated fiber-optic switch

Channels: up to 32

Time (Switch): ~ 15 ... 20 ms

Efficiency: ~ 75% at 4 ch, ~25% at 32 ch

Reproducibility: 99.7%

Cost: ~\$2,000 to ~\$15,000

Notes: Most flexible of all approaches; efficiency drop with each "cascade"; reproducibility: 0.1% short-term; 1-2% long-term.

