

# PHR 402 / 403



**PICOQUANT**  
Unternehmen für optoelektronische  
Forschung und Entwicklung

<http://www.picoquant.com>

## 4-Channel TTL / NIM SPAD Router for PicoHarp 300

- Easy connection of 4 detectors to one PicoHarp 300
- Supports detectors with TTL (PHR 402) or NIM (PHR 403) pulses
- Allows simultaneous measurements on 4 channels
- Easy to install in the signal path with SMA-connectors
- Fully supported by PicoHarp 300 software
- Support of Oscilloscope, Integration and TTTR measurement mode



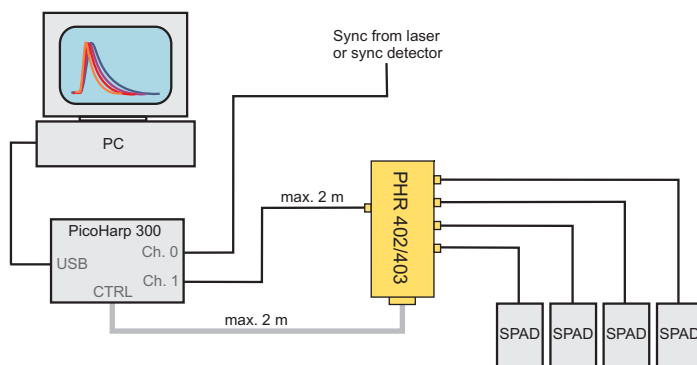
## Applications

- Simultaneous recording of anisotropy or different spectral information
- Multi-colour Single Molecule Spectroscopy (SMS)
- Multi-colour Fluorescence Lifetime Imaging (FLIM)
- Fluorescence Correlation Spectroscopy (FCS) of mixed fluorophores
- Diffuse Optical Tomography (DOT)

## 4-Channel TTL / NIM SPAD Router for PicoHarp 300

The PHR 402 and PHR 403 are accessories for the PicoHarp 300 TCSPC unit. They permit to operate up to 4 detectors with either TTL output (PHR 402) or with NIM output (PHR 403) quasi in parallel on one PicoHarp 300. Typical detectors used are the SPCM-AQR-Series from Perkin Elmer or the PDM-Series from Micro-Photon-Devices (MPD). With the PHR 402 / PHR 403 users can collect fluorescence lifetime decays on multiple channels simultaneously. This permits simplified collection of e.g. polarization dependent data as well as sophisticated new multi-dimensional fluorescence detection methods in the life sciences or in general sensitive analytics, down to the single molecule level. The 4-channel routers are powered by the PicoHarp 300 and support both histogramming and Time-tagged Time-resolved (TTTR) mode. The latter allows the recording of each individual photon with its picosecond timing, the arrival time at ns resolution and the detector channel it came from. This permits ultimate flexibility in data analysis e.g. for single molecule burst detection or Fluorescence Correlation Spectroscopy (FCS) combined with fluorescence lifetime information. For users that require full flexibility in their detector configuration, the PHR 800 is available, which supports almost any detector signal.

### Setup example



### Specifications

#### Electrical Parameters

##### Input

- PHR 402 ..... TTL, >15 ns pulse duration, pulse height >2.5 V
- PHR 403 ..... NIM, >25 ns pulse duration

Dead time ..... typ. 80 ns

Count cross talk ..... <0.01% @ 200k cps per channel

##### Output

- PHR 402 ..... -500 to -750 mV negative going pulse
- PHR 403 ..... -250 to -400 mV negative going pulse

#### Connectors

Input / Output ..... SMA female  
 Supply / Routing ..... HD Sub-D 15 pin dedicated for PicoHarp 300

#### Power Supply (from PicoHarp 300)

Voltage ..... 4.75 to 5.25 V  
 Current consumption ..... <100 mA

#### Software Support (with PicoHarp 300)

Supported modes ..... Oscilloscope, Integration and TTTR

#### Dimensions

Width ..... 157 mm (with flange)  
 Depth ..... 47 mm  
 Height ..... 25 mm

All Information given here is reliable to our best knowledge. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications and external appearances are subject to change without notice. Trademarks or corporate names are used for explanation and identification, to the owner's benefit and without intent to infringe.

© PicoQuant GmbH, April 2010



PicoQuant GmbH  
 Rudower Chaussee 29 (IGZ)  
 D-12489 Berlin  
 Germany

Phone +49-(0)30-6392-6929  
 Telefax +49-(0)30-6392-6561  
 Email info@picoquant.com  
 WWW http://www.picoquant.com