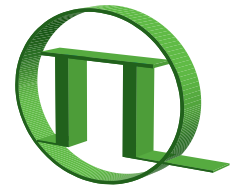


PHR 800

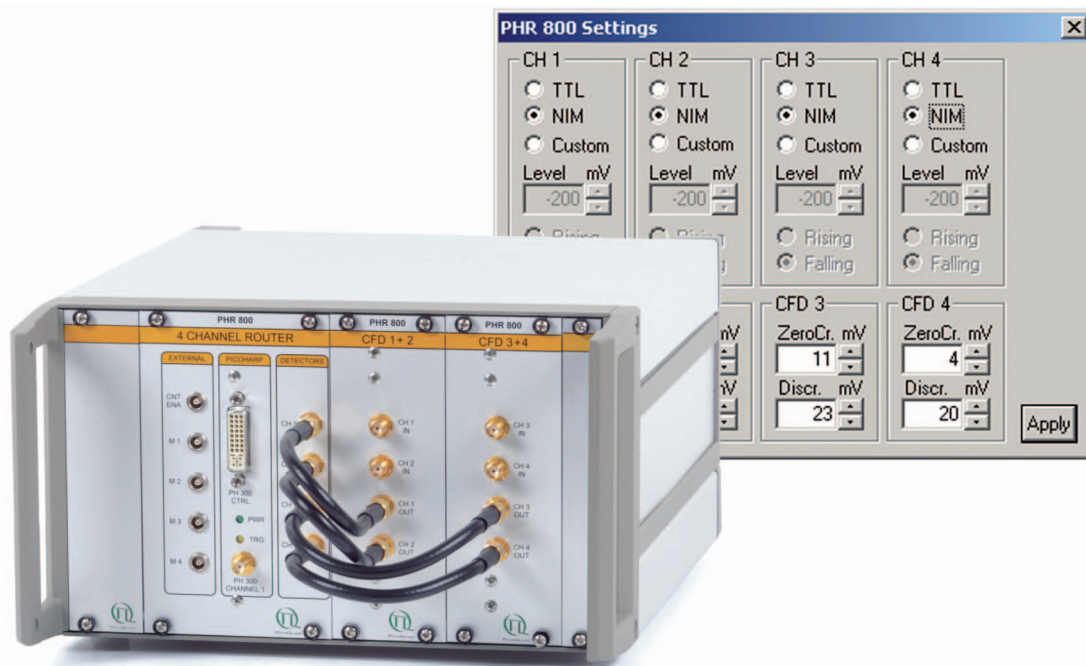


PICOQUANT
Unternehmen für optoelektronische
Forschung und Entwicklung

<http://www.picoquant.com>

Universal 4-Channel Detector Router for PicoHarp 300

- Allows simultaneous measurement of 4 detector signals
- Adjustable input polarity and trigger threshold
- Predefined settings for TTL or NIM signals provided by SPAD detectors
- Optional Constant Fraction Discriminators for PMTs and MCP-PMTs
- Supports histogramming and TTR measurement modes
- Fully supported by PicoHarp 300 and SymPhoTime software



Applications

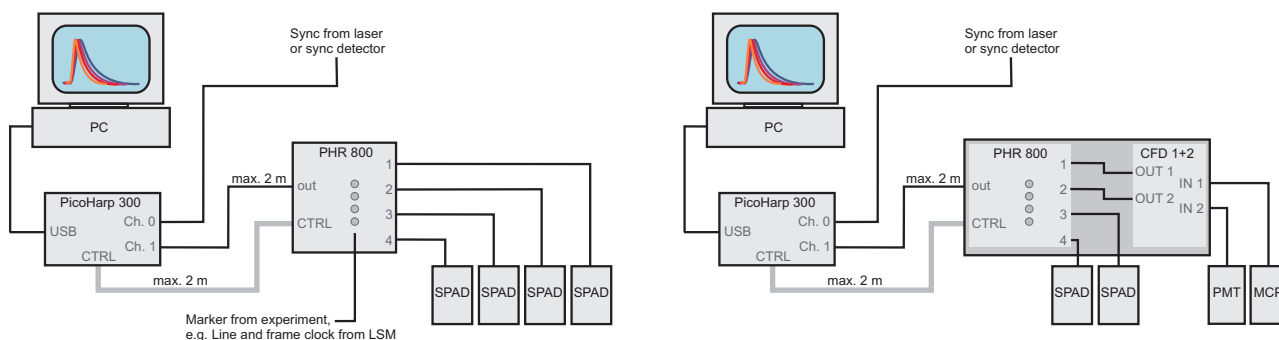
- Simultaneous recording for polarization anisotropy measurements
- Multi-colour Single Molecule Spectroscopy (SMS)
- Fluorescence Correlation Spectroscopy (FCS) of mixed fluorophores
- Burst Integrated Fluorescence Lifetimes (BIFL)
- Multi-colour Fluorescence Lifetime Imaging (FLIM)
- Diffuse Optical Tomography (DOT)

Universal 4-Channel Detector Router for PicoHarp 300

The four channel router PHR 800 is an accessory for the PicoHarp 300 Time-Correlated Single Photon Counting (TCSPC) System (from hardware revision 2.0). Using the PHR 800, users can connect up to 4 (even different) single photon detectors to perform simultaneous multi-channel time-resolved measurements. These can provide another valuable dimension of information, e.g. colour and/or polarization as well as improved collection efficiency. This permits sophisticated and fast multi-dimensional fluorescence detection methods in the life sciences or in general sensitive analytics. The 4-channel router supports both histogramming and Time-tagged Time-resolved (TTTR) mode. The latter allows the recording of each individual photon with its picosecond timing and the detector channel it came from. This permits ultimate flexibility in data analysis e.g. for burst detection or Fluorescence Correlation Spectroscopy (FCS) combined with fluorescence lifetime information. Using two or more detectors and TTTR mode it is possible to perform cross correlations in FCS. Up to four external synchronization signals can also be connected to the frontpanel of the PHR 800. They appear as marker signals in TTTR data files and allow e.g. to synchronize the data acquisition with the movement of a scanner for Fluorescence Lifetime Imaging (FLIM).

The settings of the PHR 800 can be adjusted through the software interface of the PicoHarp 300, the PicoHarp 300 Programming Library or the SymPhoTime software. This allows selection of the input polarity and the trigger threshold, so that almost any detector signal can be used. Standards supported are TTL and NIM from commonly used SPAD detectors. Dependent on the chosen configuration, the PHR 800 can optionally contain Constant Fraction Discriminators (CFD), separate for all four inputs and also adjustable by the software. This supports detectors with fluctuating pulse heights such as Photo Multiplier Tubes (PMT) and Multi Channel Plate (MCP)-PMT.

Setup examples



Specifications

Detector input

Impedance	50 Ohms
Trigger Level	-1.5 to +2.5V
Voltage Range	actual trigger level \pm 3V
Trigger Edge	falling or rising
Pulse width	>15 ns
Dead time	typ. 80 ns

External input

Count enable	TTL, 3 to 5V, high active
Marker 0 - 3	TTL, 3 to 5V, high or low active

Constant Fraction Discriminator (CFD)

CFD level range	0 to -800 mV
CFD zero cross range	0 to 20 mV
Input Impedance	50 Ohms
Output Signal Peak	typ. 700 mV
Output Signal Pulse width	typ. 30 ns

Connectors

PicoHarp 300 control port	DVI-I female
Input / Output	SMA female
Count enable & Marker Inputs	Lemo ERN.00.250.CTL

Power Consumption 110/240 VAC, 50/60 Hz, max. 25 W

Dimensions table top rack 310 × 235 × 140 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.

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