NRT 400

4-Channel PMT Router for the TimeHarp 200 TCSPC-Board

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http://www.picoquant.com

- Easy connection of 4 PMT detectors to one TimeHarp 200 board
- Allowing simultaneous measurements on 4 channels
- Deadtime <70 ns
- Built-in Constant Fraction Discriminators, fully software controlled
- Built-in 16 dB pre-amplifiers
- Easy to install in the signal path with SMA-connectors
- Fully supported by TimeHarp 200 software
- Support of oscilloscope, integration and TTTR measurement mode

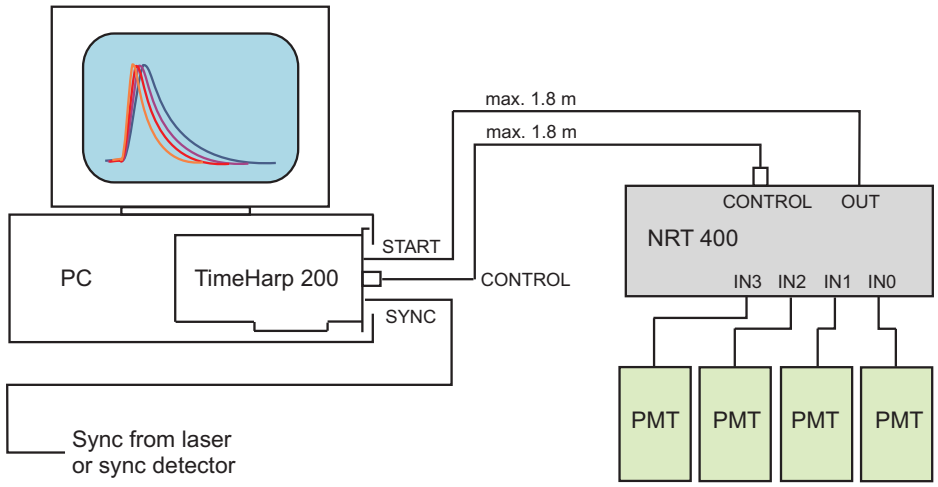
Applications

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

4-Channel PMT Router for the TimeHarp 200

The NRT 400 router is an accessory for the TimeHarp 200 TCSPC-board. The router permits to operate up to 4 PMT detectors quasi in parallel on one TimeHarp 200 board, allowing users to 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. For each channel the router has an integrated 16 dB inverting pre-amplifier and an independent Constant Fraction Discrimnators (CFD) which are fully software controlled. It is independently powered and supports 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 100 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. Using two detectors and TTTR mode it is possible to perform cross correlation FCS.

Typical set-up



Specifications

Electrical Parameters

Built-in pre-amplifier	16 dB
Input voltage range	-5 mV to -150 mV
Input trigger	Constant Fraction Discriminator (CFD)
CFD level range	0 to 400 mV (after inverting preamplifier)
CFD zero cross range	0 to 40 mV (after inverting preamplifier)
Dead time	<70 ns
Count cross talk	<0.01% @ 200k cps per channel
Output	+300 to +500 mV positive going pulse

Connectors

Input/Output	SMA female
Supply/Routing	HD Sub-D 15 pin dedicated for TimeHarp 200

Power Supply

Voltage	100 to 240 VAC
Current consumption	<400 mA

Software Support (with TimeHarp 200)

Supported modes	Oscilloscope, integration and TTTR

Dimensions

Width	240 mm
Depth	170 mm
Height	50 mm

Additionally available is the 4-channel TTL SPAD router “PRT 400” for the TimeHarp 200. Please ask for detailed information and data sheet **Please check our website for updated information.**.

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