# PMS-400A

## 800 MHz Gated Photon Counter / Multiscaler

- **2 Counter Channels**
- **800 MHz Count Rate, 32 bit Resolution**
- **Direct Interfacing to most Detectors**
- **Multiscaler Mode: Up to 64k Time Channels, min. 250ns / Channel**
- **Gated Photon Counting: 1.5 ns min. Gate Pulse Width**
- **Event Recording Mode: Up to 32 k Events**
- **new** **32 bit Accumulation Counter for ultra-fast Accumulation**
- **On-Board Discriminators, Timing and Control Logics**
- **new** **PCI Board with fast DMA (Bus Master),**
- **Software for Windows 98, NT, 2k and XP, Parallel Operation of Several Modules Supported**
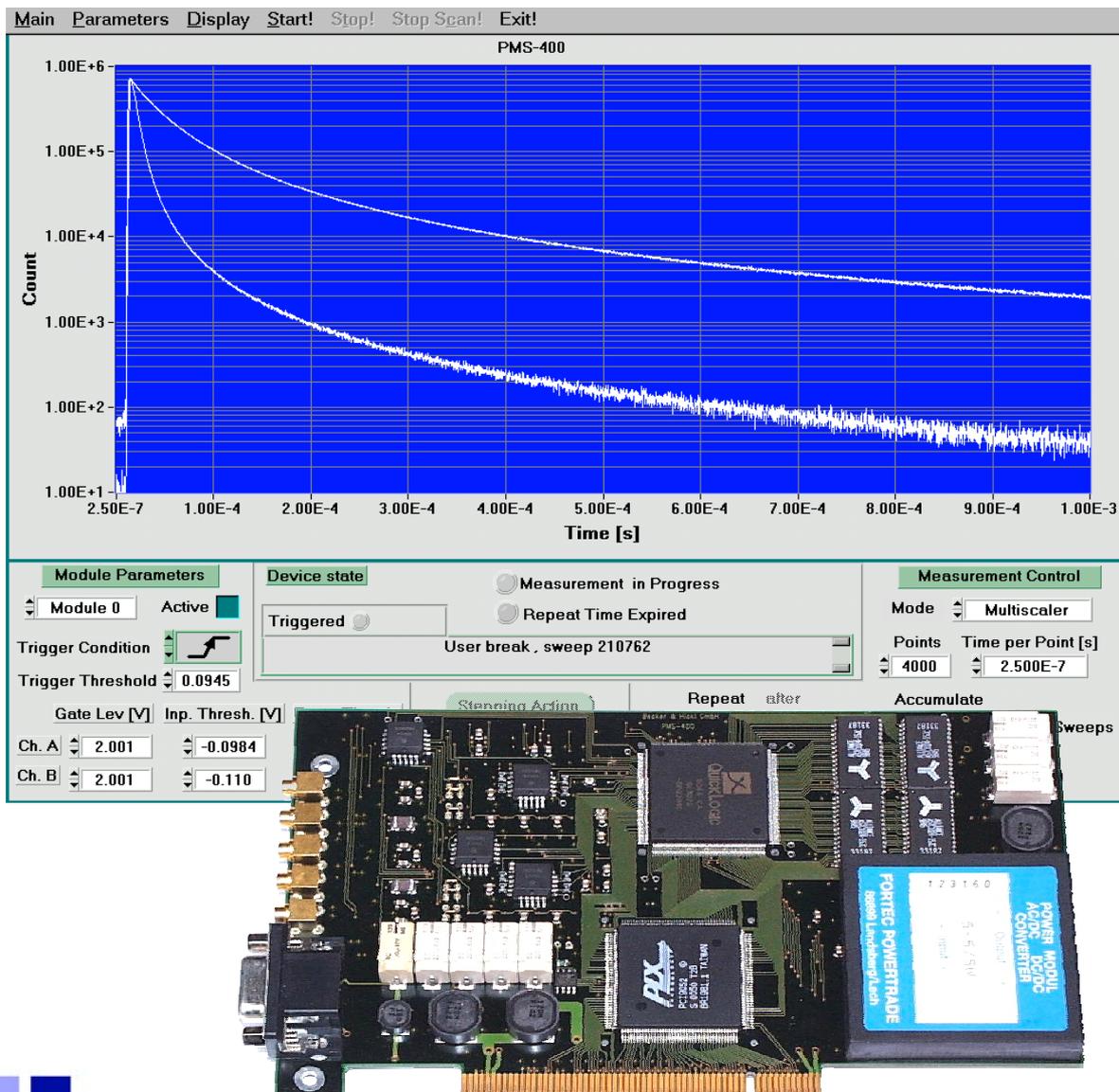
## Optical Transient Waveform Recording

The waveform of the light is measured with a resolution down to 250ns. Two signals can be recorded simultaneously. Applicable to luminescence decay of inorganic samples, phosphorescence, delayed fluorescence, chemoluminescence, LIDAR.

New: The PMS-400A provides a 32 bit accumulation counter which enables accumulation with virtually no dead time between sweeps ( < 100 ns ).

## Recording of Luminescence Spectra

The luminescence and the excitation light are recorded simultaneously. Corrected excitation spectra are obtained by calculating B/A.

## Single Molecule Detection

Recording of photon bursts. If the count rate inside a programmed time interval exceeds a programmed value, the number of photons and the time of the event ist stored.

## Gated Detection

The gate is opened during the laser pulse only.Events outside the laser pulses are suppressed. Exceptionally low background count rate.

## Gating off Scattering Pulses

The gate is closed during the laser pulses. Scattered photons during the laser pulses are suppressed, the luminescence photons outside the laser pulses are recorded.

## Specification (Typical Values)

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|---|---|
| Counter Channels | 2 |
| Count Rate (Input Amplitude 50mV, peak-peak) | 800 MHz |
| min. Count Pulse Width | 800 ps |
| min. Gate Width (Input Amplitude 200mV, peak-peak) | 1 ns |
| min Trigger Pulse Width | 1 ns |
| Discriminator Threshold (Count Inputs) | -1 V to +1 V in steps of 4 mV |
| Discriminator Threshold (Gate Inputs) | -2 V to +2 V in steps of 16 mV |
| Discriminator Threshold (Trigger Input) | -2 V to +2 V in steps of 16 mV |
| Input Connectors | MCX, 50 $\Omega$ |
| Counter Width | 32 bit |
| Accumululation Counter | 32 bit |
| Dead time between sweeps | < 100ns |
| No. of Time Bins | 64 k for each counter channel |
| Time / Bin | 250 ns to 100 000 s |
| Hardware Environment | Pentium PC |
| Software Environment | Windows 95, 98, 2000 or NT |
| Dimensions | 180 mm x 108 mm x 15 mm |