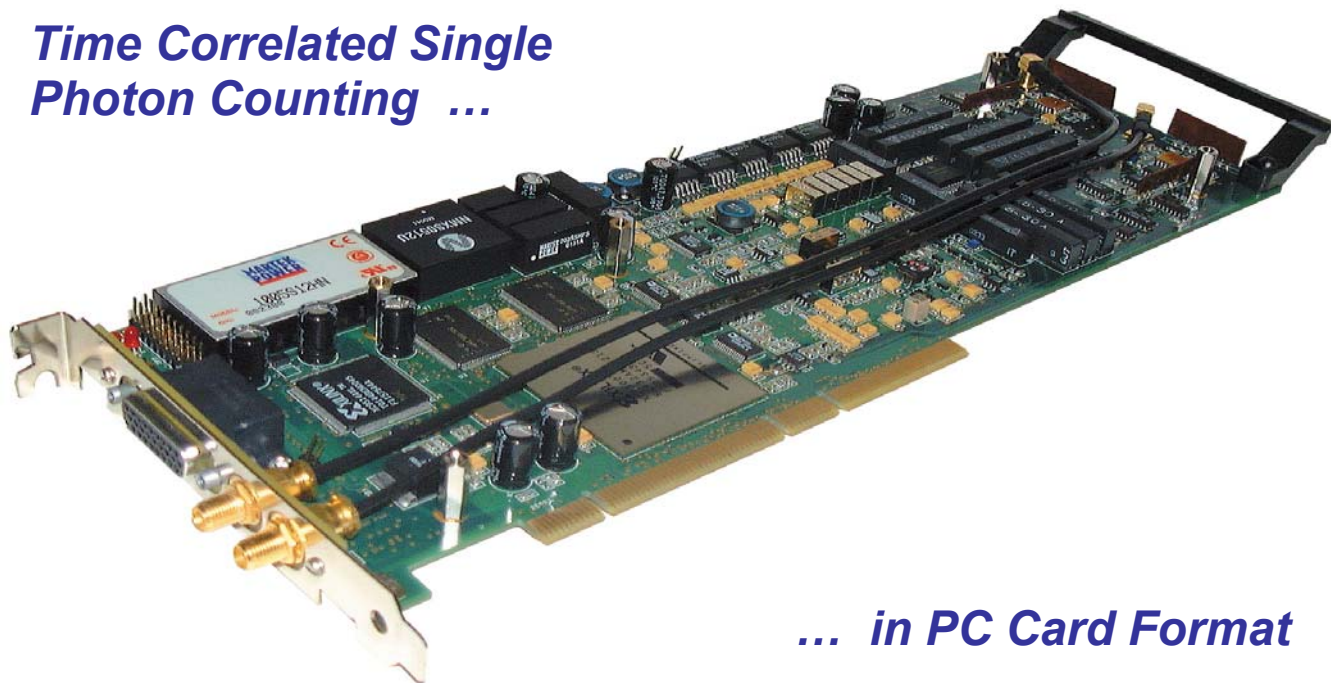


TCC900

 EDINBURGH
INSTRUMENTS

Time Correlated Single Photon Counting ...



... in PC Card Format

The TCC900 is a plug-in computer card incorporating all the electronic modules required for Time Correlated Single Photon Counting (TCSPC). The card features constant fraction discriminators, variable delays, time to amplitude converter, analogue to digital converter and large memory.

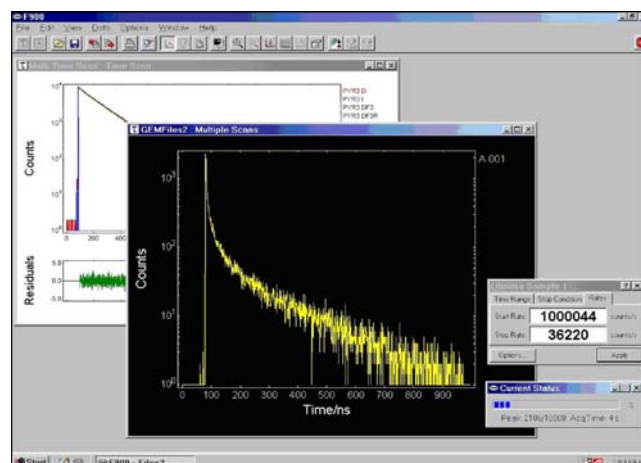
The TCC900 card transforms a historically complex and cumbersome TCSPC set-up into no more than a pulsed light source, a detector and a PC. All that is required for TCSPC measurements is a trigger pulse from the excitation light source and the output from a single photon counting detector, connected to the START and STOP inputs on the TCC900 respectively.

The performance of the TCC900 card surpasses that obtained using even the best conventional timing electronics.

All the important operating parameters of the TCC900 are fully computer controlled. This includes discriminator thresholds, zero crossing levels, frequency dividers, shifting delays and time offsets, time range and number of data channels, switch between forward and reverse mode and stop conditions.

The TCC900 can be supplied with full data acquisition and analysis software, either as a stand alone module or as part of a fluorescence lifetime spectrometer from Edinburgh Instruments. The card can also be supplied with a software development kit for easy OEM integration.

- PCI interface
- Time ranges from 2.5ns to 50µs full scale
- Time resolution from 610fs/ch
- Ultra-low time jitter < 25ps
- Forward and reverse modes
- Exceptional differential non-linearity
- Integrated shifting delays
- Comprehensive software for WINDOWS™
- Extensive data analysis libraries



TCC900 Technical Specification

START and STOP Inputs

Type	Constant Fraction Discriminator
Input Pulse Height	-10mV to -1000mV
Threshold	0 to -500mV
Zero Crossing	-50mV to +50mV
Constant Fraction	0.3, fixed
Constant Fraction Delay	Plug-in Delay
Frequency Divider	1, 2, 4, 8
Input Connectors	SMA, 50 Ω
Jitter	<25ps (for pulses -50mV and greater)

Data Acquisition

Type	Time to Amplitude Converter (TAC) and 40MHz Flash Analogue Digital Converter with Error Correction
Modes of Operation	Forward or Reverse
Full Time Range	2.5ns to 50,000ns
Number of Channels	512, 1024, 2048, 4096
Minimum time per Channel	610fs
Shifting Delay	0 to 200ns
Dead Time	400ns
Maximum Counts per Time Channel	2 ³²
Differential Non-linearity of TAC & ADC	<0.2% (RMS) over >90% of time range (synchronization frequency to 1MHz) <0.5% (RMS) over >90% of time range (synchronization frequency to 80MHz)

Computer Interface

Computer Interface	PCI, 32 bit, 33 MHz, Plug and Play
Dimensions	315 x 107 x 20 (mm)
Power Requirements	3W @ +3.3V, 12W @ +5V, 6W @ +12V
Auxiliary Connector	26 way high density, \pm 5V, \pm 12V

Software

Applications	F900, T900
DLL	Software Development Kit
Operating System	WINDOWS 95, 98, 2000, XP, NT

Edinburgh Instruments has a policy of continuing product development and reserve the right to amend specifications without prior notice. July 2003



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