INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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Ref. PR No. 1000058130 Rfx. No. 6100003211

Item Description: **4P TCSPC module System (Qty: 01 No.)**

Sr. No.	Description	Value / Range	Technical Compliance (YES / NO)	Additional Information (if any)
1.	**General Overview & Architecture** Plug-and-play time tagger and Time-Correlated Single Photon Counting (TCSPC) unit with independent input channels and extremely fast signal processing via USB 3.0 interface.	Compact, robust, and reliable time tagging and TCSPC device with 1 to 4 independent detection channels and 1 common synchronization input.		
2.	**Time Resolution & Precision** Base time resolution and timing jitter specification (RMS) across single and multiple channels.	Base resolution: 1 ps Timing Jitter: 2 ps RMS (single channel), 3 ps RMS (across channels)		
3.	**Dead Time & Count Rates** System dead time characteristics and sustained count rate performance over USB 3.0.	Dead time: < 680 ps (edge trigger), no dead time across channels Total sustained count rate: 85 Mcps (sum over all input channels) Peak count rate per input channel: 1.47×10^9 cps (for burst durations up to 1000 events)		
4.	**Histogrammer Specifications** Count depth, maximum time bins, full scale time range, and acquisition time capabilities via GUI and DLL.	Count depth: 32 bits (4,294,967,295 counts) Max time bins: 65,536 (GUI), 524,288 (DLL) Full scale time range: 65,536 ps to 549.7 ms (GUI), up to 4.398 s (DLL) Acquisition time: 1 ms to 100 h		

5.	**TTTR (Time-Tagged Time-Resolved) Engine** T2 and T3 mode resolution parameters, FIFO buffer depth, and sustained throughput.	Configurable as edge triggers (for SNSPDs) or Constant Fraction Discriminators - CFD (for HPDs / MCPs) Common sync channel trigger rate up to 640 MHz		
6.	**Trigger Methods & Input Circuitry** Configurable input trigger configurations for different detector types (e.g., SNSPDs, HPDs, MCPs).	Configurable as edge triggers (for SNSPDs) or Constant Fraction Discriminators - CFD (for HPDs / MCPs) Common sync channel trigger rate up to 640 MHz		
7.	**External Marker Inputs** Number of external marker inputs and electrical threshold levels.	Number of inputs: 4 HIGH level: > 1.7 V (< 50 ns rise/fall, pulse width > 50 ns) LOW level: < 1.1 V (< 50 ns rise/fall, pulse width > 50 ns), max 5 V		
8.	**System Operation & Interfaces** PC connection interface, minimum system requirements, operating	PC interface: USB 3.0 (5 Gbps) OS compatibility: Windows 10 / 11 Power consumption: < 25 W Dimensions: 305 × 240 × 95 mm Weight: 2.5 kg		
9.	**Warranty**	1 year		
10.	**Installation**	Installation and demo required		