



# **INDIAN INSTITUTE OF TECHNOLOGY dhArwAD** **ChikkamalligawAD, dhArwAD, KarnATaka - 580011**

## **For the “Supply and Installation of Time tagger & Thermocouple with temperature monitor”** **INDIAN INSTITUTE OF TECHNOLOGY DHARWAD**

### **NOTICE INVITING QUOTATIONS FOR LOCAL PURCHASE**

1.	Description	For the “Supply and Installation of Time tagger & Thermocouple with temperature monitor” INDIAN INSTITUTE OF TECHNOLOGY DHARWAD			
2.	Description & Quantity	Sl. No.	Description	QTY	
		1	Time tagger	1	
		2	Thermocouple with temperature monitor	1	
3.	Specifications	As per <b>Annexure</b> Given Below			
4.	Procurement Category	OH-35, Electronics Lab Equipment			
5.	Procurement Type	Local Purchase			
6.	<b>Submission of Quotation: by email to <a href="mailto:mmd.office@iitdh.ac.in">mmd.office@iitdh.ac.in</a> and <a href="mailto:armm@iitdh.ac.in">armm@iitdh.ac.in</a></b>				
7.	Cover No.	Cover Type	Description		
	1	Financial/ Price	Commercial Bid		
8.	Form of Contract	Buy/Supply			
9.	Bid Validity (Days):	30 Days			
10.	Period of Work/Delivery Period (Days)	Delivery period of materials 20 days			
11.	Payment Terms	Within 15 days from the date of delivery and receipt.			
12.	Delivery Location	IIT dhArwAD Permanent Campus, ChikkamalligawAD, dhArwAD-580011, Karnataka, India			
13.	Pin Code	580011			
14.	Quotation Inviting Authority:	Assistant Registrar (MMD), IIT dhArwAD Address: IIT dhArwAD Permanent Campus, ChikkamalligawAD, dhArwAD-580011, Karnataka, India			

**Annexure**

**Detailed Technical Specifications of the RF Spectrum analyzer setup accessories:**

**1. Timetagger (TDC1):**

**(Make: S-Fifteen Instruments or similar) along with below accessories**

<b>Accessories</b>	<b>Quantity</b>
Rigol Impedance Adapter 50 Ohm-ADP0150BNC or similar	2
GM 3012 3-Pin Universal Multi Plug Fast Charging Travel Adapter or similar	2
Passive 10X Voltage Probe Tektronix TPP0100 ,TPP0101 probes or similar	2
3 kVA Online UPS with minimum 30 minutes backup (on full load) with inbuilt SMF (Sealed Maintenance Free) batteries.	1

**Timetagger specifications:**

- Impedance:  $\leq 50$  Ohm (default) to 1k Ohm (selectable by jumpers)
- Input Standards: TTL and NIM types should be provided
- Minimal Pulse Width:  $\leq 2$ ns or Better
- Minimal Pulse Separation:  $\leq 2$ ns or Better
- Connector: SMA Only
- Absolute Maximum Input Amplitude:  $\pm 4.2$ V or better
- External Clock Reference Frequency: Should accept 9 to 11 MHz
- External Clock Reference: 100mVpp (min)
- Amplitude: 2.3Vpp (max)
- Clock Selection: Automatic or Manual selection provision must be present.
- Internal Clock Accuracy:  $<50$ ppm
- Maximal count rate: 80MHz in each channel
- Integration time: 1ms to 65535ms in steps of 1ms
- Pairwise Coincidences: Ch1-Ch3/Ch1-Ch4/Ch2-Ch3/Ch2-Ch4
- Timing Resolution:  $\leq 2$ ns
- Timestamp Bits: 32 (27 timing, 1 rollover, 4 channel bits) or better should be provided
- Timing Jitter:  $<200$ ps or better
- Maximal Event rate:  $<3$ Mevents/s average,  $<250$  M events/s in bursts of  $<512$  events
- Dead time between events: None
- Host Connection: USB CDC ACM class / virtual com port (no device driver necessary)
- Data Format: Text or binary
- Command: A Complete command list should be provided for open-source operation in Python and C to perform data collection and visualize real-time counts and coincidences.

**2. Thermocouple with temperature monitor:**

**(Make: RS PRO RS41 or similar)**

**Specifications:**

Wired Digital Thermometer, K Probe, 1 Input(s),  $+1300$  °C,  $+2000$  °F,  $+2000$  K Max,  $\pm 0.5\%$  +  $1$  °C,  $\pm 0.5\%$  +  $2$