



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION

PR NO. 1000053335

RFx No. 6100002729

Technical specifications for IV Analyzer with Pulse Waveform Generator (1 Unit)

- The equipment and accessories have to be supplied and installed at IIT Bombay by the same tenderer to ensure guaranteed operation, technical support/service during the warranty period and after-sales calibration/ repairs/ maintenance.
- All the necessary consumables, tools/ accessories of the equipment should be supplied at the time of delivery and should be available in India for future maintenance/ procurement.

Sr. No.	Description	Value / Range	Technical Compliance (YES / NO)	Additional Information (if any)
A	Technical Specifications (Specific):			
1	A parametric analyzer with the below specifications are required	Main instrument should have at least 10 slots and should allow upgrading with more SMUs if empty slots are available. Must have a inbuilt touch screen 15 inch display. Must include necessary number of 3m cables for connections.		
2	Ground Unit	A separate ground unit should be available with at least 4A sink current independent of the 10 slots.		
3	Future Upgrade	Must be upgradable to 10kV and 1500A or more in future using the same main-frame.		
4	Two modules with below specifications:			
4.1	Maximum voltage range and resolution (force)	±100V with a resolution of 5mV with a maximum current of 20mA at 100V		
4.2	Minimum voltage range and resolution (force)	±0.5V with a resolution of 25µV with a maximum current of 100mA		
4.3	Maximum voltage range and resolution (measurement)	±100V with a resolution of 100µV with a maximum current of 20mA at 100V		
4.4	Minimum voltage range and resolution (measurement)	±0.5V with a resolution of 0.5µV with a maximum current of 100mA		
4.5	Maximum current range and resolution (force)	±100mA with a resolution of 5µA and maximum voltage of atleast 20V		
4.6	Minimum current range and resolution (force)	±10 pA with a resolution of 5 fA and maximum voltage of 100V		
4.7	Maximum current range and resolution (measurement)	±100 mA with a resolution of 100nA and maximum voltage of atleast 20V		
4.8	Minimum current range and resolution (measurement)	±10 pA with a resolution of 1fA and maximum voltage of 100V		
4.9	Pulse width range for pulsed measurement	500µs to 2 s		
5	Two modules with below specifications:			
5.1	Maximum voltage range and resolution (force)	±100V with a resolution of 5mV with a maximum current of 20mA at 100V		

5.2	Minimum voltage range and resolution (force)	±0.5V with a resolution of 25µV with a maximum current of 100mA		
5.3	Maximum voltage range and resolution (measurement)	±100V with a resolution of 100µV with a maximum current of 20mA at 100V		
5.4	Minimum voltage range and resolution (measurement)	±0.5V with a resolution of 0.5µV with a maximum current of 100mA		
5.5	Maximum current range and resolution (force)	±100mA with a resolution of 5µA and maximum voltage of atleast 20V		
5.6	Minimum current range and resolution (force)	±1 nA with a resolution of 50 fA and maximum voltage of 100V		
5.7	Maximum current range and resolution (measurement)	±100 mA with a resolution of 100nA and maximum voltage of atleast 20V		
5.8	Minimum current range and resolution (measurement)	±1 nA with a resolution of 1fA and maximum voltage of 100V		
5.9	Pulse width range for pulsed measurement	500µs to 2 s		
5.10	Two modules with below specifications:			
5.11	Capable of doing PBTI and NBTI reliability measurements	Should be available		
5.12	Capable of generating any waveform patterns using internal arbitrary linear waveform generator	Should be available		
5.13	No. of channels	2		
5.14	Voltage force range	Up to 10 V with 0 Ohm source impedance		
5.15	Waveform Timing Resolution	10 ns minimum		
5.16	Minimum pulse width	100 ns		
5.17	Minimum current range	1 µA		
5.18	Minimum current resolution	2 nA		
5.19	Sampling Rate	200 MSa/s		
6	General			
6.1	Should have convenient user interface preferably windows based			
6.2	Interface for remote control	GPIB, LAN		
6.3	Built in Memory should be available			
6.4	The instrument software/firmware should have both offline and online capability			
6.7	The software/firmware should be capable to control the instrument from external PC			
6.8	Should have readymade setups for most commonly used setups	Should atleast include Id-Vg, Id-Vd, capacitance, QSCV for CMOS Ic-Vc, diode, Gummel plot, breakdown, hfe, capacitance for BJT		
6.9	Should have capability to sweep the source using the scroll knob on the instrument enabling real time device characterization			
B	Key Generic Requirements:			
1	Soft copies of the technical brochures and the website reference for the same must be included in the bid.			
2	A declaration from the manufacturer stating that the service support/ spares will be made available for the equipment for at least 5 years from the date of installation.			
3	The tenderer should provide at least 3 nos. of soft copies of PO (not older than 3 years) of similar or higher specification supplied within India (at least ONE should be from a premier Government Institution or Government organization or PSU.			
4	A duly signed detailed User List (at least 3 nos.) with the concerned person's valid contact details in India where the instrument is still in the operational condition must be provided. (Format enclosed)			

5	Only New Equipment is to be Quoted (No Quote for Refurbished equipment). All the equipment should be supplied with the necessary accessories, starter-kit to start using the equipment.		
6	During technical evaluation of the bids, if required then the vendor will have to give offline demonstration of the quoted model with all the options and accessories required to meet the tender specifications, with the prior intimation. Demonstration of instruments doesn't guarantee the award of contract.		
7	After-sales service support for repair/ replacement of non-functional parts should be available in India (including all services under warranty).		
8	Warranty will commence from the date of the satisfactory installation of the equipment and the tenderer should give the warranty declaration.		
9	One-year Standard warranty		