

Technical Specifications of High power probe station**1.0 Bidder Eligibility Criteria-I**

Sl. No	Bidder Eligibility Criteria-I	Complied / Not Complied	Reference Page No.	Remarks, If any
1	The bidder/OEM should have supplied at least 5 similar items to IITs, NITs, IISERs, CSIR Labs or other Govt. R&D organizations in the last 10 years, PO copies or installation certificates along with contact details of end user need to be submitted as the proof of supply. IIT Madras reserves its right to verify the claims submitted by the bidder and the feedback from the previous customers will be part of technical evaluation.			

2.0 Technical Specifications II

S.no	Specifications	Complied / Not Complied	Reference Page No.
FEATURES /			
A) Operator safety and device protection			
1.	i) Safety category 1 interlocks on a dark box door		
2.	ii) Dedicated chuck design for highest isolation		
3.	iii) Unique high-voltage probe arm design with protected guard area		
B) Measurement accuracy			
4.	i) Low-noise test environment with EMI-shield concept extended for high-voltage, high-current and high-power applications		
5.	ii) Seamless integration with measurement equipment (power device analyzer Keysight B1505) for best measurement accuracy		
C) Low cost-of-ownership			
6.	i) Probe concept allows expansion for other applications such as RF (S-parameter) measurements		
7.	ii) Unique high-voltage and high-current probe arms designed for standard probe tips and/or replaceable HCP probe tips		
POWER HANDLING (CHUCK)			
8.	i) Maximum voltage: 3,000 V (triax) and 10 kV (coax)		

9.		ii) Maximum current: 100 A (pulsed)		
MEASUREMENT PERFORMANCE				
10.	Chuck (Triaxial Configuration)			
11.	i)	Chuck leakage	@ Ambient	
12.		a) 10V (typical)	100 fA	
13.		b) 3kV (typical)	10 pA	
14.	ii)	Chuck resistance	Ambient	
15.		a) Force-Guard (10 V)	25 TΩ	
16.		b) Force-Shield (10 V)	3 TΩ	
17.		c) Guard-Shield (10 V)	500 GΩ	
18.	ii i)	Probe leakage	Ambient	
19.		a) 10 V (typical)	< 10 fA	
20.		b) 3 kV (typical)	< 1 pA	
CHUCK SYSTEM (Non-Thermal)				
21.		i) Diameter: 150 mm		
22.		ii) DUT sizes supported: 10 mm x 10 mm, 2 inch, 4 inch and 6 inch wafers		
23.		iii) Surface: Gold-plated		
24.		iv) Supported wafer thickness: ≥100 μm		
25.		v) Configuration: Triaxial design		
26.		vi) Universal connector for high-voltage and high-current measurements		
INTERFACE WITH PARAMETER ANALYSER				
27.		(i) Complete kit for interfacing with power device analyzer Keysight B1505		

28.	(ii) Test equipment interface to mount power device analyzer Keysight B1505 accessories and protection adapters- 2 HV Triax measurement Feed-throughs, support for HV-bias-T		
29.	(iii) Mount for parameter analyzer module selector		
30.	(iv) Test Equipment Interface plate to mount accessories of ultra-high current/ultra-high voltage modules of power device analyzer Keysight B1505		
31.	VIBRATION ISOLATION PLATFORM		
32.	EMI-SHIELDED SAFETY ENCLOSURE MOUNTED ON VIBRATION PLATFORM		
33.	MECHANICAL PERFORMANCE		
	A) Chuck Stage		
34.	i) Travel: 155 mm x 155 mm (6 inch x 6 inch)		
35.	ii) Resolution: 5 μ m		
36.	iii) Planarity over 150 mm (6 inch): < 10 μ m		
37.	iv) Load stroke, Y axis: 90 mm		
38.	v) Z height adjustment range: 10 mm		
39.	vi) Z contact / separation / load stroke: 0-3 mm adjustable		
40.	vii) Theta travel (fine): $\pm 8^\circ$		
	B) Platen		
41.	i) Platen space (typical): Universal platen: space for up to eight positioners		
42.	ii) Z-Height adjustment range: Maximum 20 mm (depending on configuration)		
43.	iii) Minimum platen-to-chuck height: 16 mm (universal platen)		
44.	iv) Separation lift: 200 μ m		
45.	v) Separation repeatability: < 1 μ m		
46.	vi) Vertical rigidity / force: 5 μ m / 10 N (0.2 mils / 2.2 lb.)		

47.		vii) Accessory mounting: Magnetic		
C) Manual Microscope Stage (On Bridge)				
48.		i) Travel range: 50 mm x 50 mm (2 inch x 2 inch)		
49.		ii) Resolution: $\leq 5 \mu\text{m}$ (0.2 mils)		
50.		iii) Microscopes: For stereo microscopes with large working distance		
MICROSCOPE				
51.		i) Type: Trinocular stereo zoom		
52.		ii) Zoom range: 1 : 6.7		
53.		iii) Magnification: 15-100x		
54.		iv) Camera port For cameras with C-mount		
55.		v) Illumination: Long life-time LED ring light		
SAFETY				
56.		i) Interlock: Hardware (safety category 1)		
57.		ii) Interlock connector: BNC-Twinax (specific interlock cables available for various measurement instruments)		
RF positioners, tips and cables (compatible for DC and RF setup)				
58.		i) 6x Probe posnr, HV, 100tpi, magnetic base, left & RIGHT		
59.		(ii) HV/HC cables		
60.		iii) 2x High current probe holder with BNC connection and 5 replaceable probetips (up to 100A current)		
61.		iv) 6 probe holders with 2 x HVTriax and 3 x HV Coax (3KV) probes		
62.		v) 2 boxes of 12um and 25um tungsten needles (25 tips per box)		
63.		vi) 2x East/West RF arms		
64.		vii) High-voltage tesla chuck connection cable, high voltage chuck connector-Keysight		

65.	(viii) Hi-current probe holder (500V/10A DC/60A pulse) and isolation resistance >100G Phms @500V with cable and positioner capability		
66.	(ix) Tweezers, Tools and Accessories		
DIGITAL Camera with Monitor			
67.	1/2.8" CMOS with C-Mount and mounting thread - Capture Resolution on SD-card: Still image: 8.0MP (3840 x 2160) Video: Full HD 1920 x 1080 - Live Display Mode through out USB: 1920 x 1080 (Full HD) @ 30 frames per second or HDMI: 1920 x 1080 (Full HD) @ 60 frames per second - Pixel Size: 2.8 x 2.8 microns Data transfer: HDMI (1080p) and USB 2.0 - SD card slot (maximal: 32 GB) Motic Images Plus 3.0 application software for PC and Mac 24" LCD monitor: HDMI, DisplayPort, VGA inputs - 178° wide-angle view, C-RING, Dust cap, Macro Tube, power supply, 4-dot calibration slide		
68.	Warranty One year system warranty and Two years extended warranty should be included. 3-year Warranty on the probe station and its accessories (except probe tips) should be included		
69.	ON-SITE INSTALLATION AND TRAINING		
Terms and Conditions			
70.	Probe Station should be Compatible with power device analyzer Keysight B1505		
71.	Bidders must provide point-by-point compliance to all tendered Technical Specifications, Technical Requirements and Special Terms. Where required, vendor must provide compliance, deviation if any and requisite justification to meet tender requirements in total. Without such details, bids may be summarily rejected at discretion of IIT Madras.		
72.	Bids complying to only part requirements of tendered specifications are liable to be rejected. Bidder is accountable for supply, integration, installation, and support of all quoted parts including any third-party parts not manufactured by them, akin to a turnkey bid. All necessary authorizations must be obtained from third party/part suppliers confirming support to the primary bidder to quote, honour OEM warranty and support during integration, warranty period and for life of the product.		
73.	Vendors for probe stations must have their own technically equipped application engineer / engineering team to provide installation, training and after sales support.		

74.	Primary vendor OEM should have well established repair and calibration facility for all supplied main equipment within India.		
General Terms and Conditions			
	Equipment being tendered is intended for primary use in system, which will characterize high power device measurement set up and response acquired through dedicated probe station.		
	Only vendors with necessary experience and competence to supply, integrate and install such functional system with all its hardware and software components will be selected as eligible bidders.		
	Vendor to deliver the solution to meet the test needs for the intended research and development. Vendors may be asked to provide necessary evidence to establish their experience & expertise and it is at institute's discretion to accept/reject the same.		
	System should be equipped for wafer level, chip or SOC device characterization supplied with all specified accessories, probes, connectors, software, calibration fixtures & upgradable in future to test for semiconductor devices such as transistors, amplifiers, filters, other linear components to meet intended needs of the department in integrated and standalone modes.		
	Wherever called for within the specifications, the offered equipment must be upgradable to higher performance thresholds as defined.		
	Software supplied should be capable of functioning on equipment		
	High power probe station should be compatible with high power device measurement system		

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)