

Memo No.: 56.01.0000.046.007.76.2025-192

Date: August 11, 2025

Minutes of Pre-Proposal Meeting

Contract title: Supply, Installation and Commissioning of Equipment for Semiconductor Lab

Request For Bids No: EDGE-G13B1

Date and Time: 29 May 2025, 11.00 a.m.

Venue: Conference Room of EDGE Project.

The meeting commenced with a welcome note from the Project Director, Enhancing Digital Government and Economy (EDGE) Project, who greeted all participants (see *Attachment-1* for list of attendees) and requested Deputy Project Director to proceed.

The Deputy Project Director highlighted the key Purchaser Requirements, Procurement Milestones, Evaluation Process, and applicable Procurement Regulations to be followed during the procurement process. Members of the Procurement and Technical Team further elaborated on the specific requirements for this procurement.

The meeting was informed that this RFB comprises three lots as follows:

Lot-1: Supply, Installation and Commissioning Packaging Equipment for Semiconductor Lab at BUET,

Lot-2: Supply, Installation and Commissioning Testing Equipment for Semiconductor Lab at BUET and

Lot-3: Supply, Installation and Commissioning of Fabrication (FAB) Equipment for Semiconductor Lab at BUET.

The end user of all supplied goods will be an academic institution. The equipment will be utilized strictly for academic research purposes. Therefore, bidders are requested to apply the academic cost waiver when pricing their offers.

The meeting emphasized adherence to procurement timelines, submission deadlines, and evaluation procedures as per the RFB. Participants were informed that a Rated Criteria approach will be used to evaluate the non-price (technical) aspects of the bids. The techno-commercial evaluation will follow the following weightage for each lot:

- Technical Proposal: 30%
- Financial Proposal: 70%

Assessment Steps for each lot (as per ITP 32.4 of RFB) of Technical Evaluation:

Step 1 – Initial Compliance Check:

Only those bids that meet the **Purchaser's Technical Requirements** (as detailed in Section VII of the RFB) will proceed with detailed technical evaluation.

Step 2 – Rated Criteria Evaluation for three lots (as per PDS ITP 32.4 of RFB):

The technical evaluation will assign scores based on the following criteria, which collectively constitute 100% of the technical evaluation score (equivalent to 30% of the total bid evaluation):

| Sl.No. | Technical Factor | Weight in percentage (Weight in %) | Reference |
|--------|--------------------------------|---------------------------------------|--|
| 1 | Supply and Implementation Plan | 30% | Section IV – Bidding Forms: Additional Documents in accordance with ITB clause 11.2 |
| 2 | Training Plan | 40% | Section IV – Bidding Forms: Additional Documents in accordance with ITB clause 11.2 |
| 3 | After Sales Services Plan | 30% | Section IV – Bidding Forms: Additional Documents in accordance with ITB clause 11.2 |
| | Total | 100% | |

The detailed scoring methodology is provided in **Section III – Evaluation and Qualification Criteria** of the RFB.

Participants were reminded to submit their queries (if any) within 14 days of RFB publication. As of the date of this meeting, no queries were received via email or in person.

The Project Director opened the floor for questions. Queries raised during the meeting were noted for formal response. Participants were requested to submit any additional queries by 31 May 2025. The procuring entity will issue a written response in due time.

There being no further questions, the meeting concluded with a vote of thanks from the Project Director.



(Dr. Md. Taibur Rahman)
Project Director (Joint Secretary)



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Copy forwarded for kind information & necessary action with request to acknowledge receipt in writing within 2 days:

1.....

2. Office Copy



(Dr. Md. Taibur Rahman)
Project Director (Joint Secretary)



Attendance Sheet



Enhancing Digital Government and Economy (EDGE)
Bangladesh Computer Council (BCC)
Information And Communication Technology Division (ICTD)
Ministry Of Posts, Telecommunications and Information Technology
Youth Tower (Level-3, 4 and 5), Plot # 822/2, Rokeya Sarani, Dhaka-1216, Bangladesh
Phone: +880241001721, Fax: +880255006791, E-Mail: pd.edge@bcc.gov.bd, Website: www.bcc.gov.bd



Attendance Sheet (Firms Representative)

Pre-Bid Conference

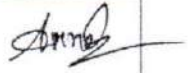

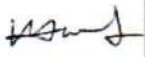
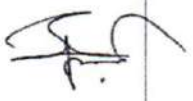
Contract Title: Supply, Installation and Commissioning of equipment for Semiconductor Device Characterization Lab

Package No: EDGE-G13B1

Date & Time: 29 May 2025 at 11:00 Bangladesh Time (BST=GMT +6:00 hours)

| SL | Name & Designation | Name of the Proposer/ Organization | Contact (Cell & Email) | Signature |
|----|--------------------|------------------------------------|---|-----------|
| 01 | Md. Abul Hasan. | Powercraft Energy Engineering | info@powercraftenergy.com 01790326282 | Hasan |
| 02 | Hasima Akter | Iconic Engineering Ltd. | hasima@iconic.com.bd 01977426630 info@iconic.com.bd | Hasim |
| 03 | Aman Ullah | Pico Labs Ltd. | info@pico.com.bd 01779886503 | Aman |
| 04 | Imran Najmi | Sterling Multi Technologies Ltd. | imran@sterlinginternationalgroup.com 01746-721887 | Imran |



| SL | Name & Designation | Name of the Proposer/ Organization | Contact (Cell & Email) | Signature |
|----|---------------------------------------|------------------------------------|---|---|
| 05 | Amrob Saha (Boni) | HS Engineering | 01749944197 project@hsengineering-bd.com |  |
| 06 | Alidur Rahman (Ranel) | Advance Technology Consortium Ltd. | 01303263843 ranel@atc-bd.com.bd | |
| 07 | Ananta Kumar Singha Senior Manager | Saffron Corporation Ltd. | 01720101733 anantasingha@saffroncorporation.com.bd |  anantaSingha@saffroncorporation.com.bd |
| 08 | NAWEED HUSSAIN | Smart think consortium | 01977101175 naweedbd@gmail.com |  |
| 09 | Rohir Uddin | Advance Technology Consortium Ltd. | 01819556755 survey@atc-bd.net |  |
| 10 | | | | |



**Responses of Queries for Supply, Installation and Commissioning of Equipment for Semiconductor Lab
Package No. EDGE-G13B1 (Comprising Three Lots)**

| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--|---|--|---|
| 1 | 2 | 3 | 4 | 5 |
| 1. | Section II: Bid Data Sheet (BDS) ITB 14.8 (a)(iii), (b)(ii) and (c)(v) Page no.: 44 | Final Destination (Project Site): For each lot Enhancing Digital Government and Economy (EDGE) Project Bangladesh University of Engineering and Technology (BUET) Basement of East Wing, ECE Building, West Palashi Campus, BUET, Dhaka 1205, Bangladesh. Customs duties and Value Added Taxes (CD-VAT) of the imported Goods under the Contract (incurred at the port of entry) will be paid by the Purchaser. However, customs formalities including appointment of, and payment to, Clearing and Forwarding (C&F) Agent shall be done by the Supplier. Port dues and all other charges shall be borne by the Supplier. The Supplier shall send the CD-VAT Assessment Report (Assessment Notice) of Customs Authorities to the Purchaser. The Purchaser will pay the assessed amount (CD - VAT) to the Government within 2 (two) weeks from received of assessment report. | As per our understanding, CD-VAT will be paid by the Purchaser. We kindly request further clarification on the following points: a. Is the supplier required to bear the costs for shipping, C&F services, offshore transport, and local transportation within Bangladesh? b. Will the purchaser reimburse all expenses supported by the submitted documents within 30 days? c. At what stage is the supplier expected to submit these documents to the purchaser for reimbursement? | Referring to PDS, ITB 14.8 (a)(iii), (b)(ii) and (c)(v). (a) Customs duties and Value Added Taxes (CD-VAT) of the imported Goods under the Contract (incurred at the port of entry) will be paid by the Purchaser. Initially, customs formalities including appointment of, and payment to, Clearing and Forwarding (C&F) Agent shall be done by the Supplier which will reimburse the by the Purchaser. Port dues and all other charges shall be borne by the Supplier. (b) Yes, the Purchaser will reimburse within 30 days. (c) At the contact execution stage, the supplier will submit these documents. |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--|--|--|--|
| 1 | 2 | 3 | 4 | 5 |
| | | The Supplier shall submit the supporting documents including appointment of, and payment to, Clearing and Forwarding (C&F) Agent and the Purchaser will reimburse the same, within 30 days. | | |
| 2. | Section II: Bid Data Sheet (BDS) ITB 17.2 (a) Page no.: 45 | <p>Manufacturer's authorization is: required for following items: For Lot-1: Not Applicable</p> <p>For Lot-2: Manufacturer's authorization is required for item no. 3, 4, 5, 6, 9 & 11</p> <p>For Lot-3: Manufacturer's authorization is required for item no. 1, 2, 3, 4 & 5</p> | <p>As a bidder, is it acceptable to submit an authorization letter issued by the manufacturer's authorized distributor, agent, partner, or reseller?</p> <p>In many cases, manufacturers do not issue authorization letters directly to bidders. Instead, they advise bidders to obtain such authorization through their authorized channel partners for supplying products in Bangladesh. Kindly advise.</p> | <p>Referring to Qualification Criteria (ITB 32.1) (g) and (h) for each lot.</p> <p>(g) Manufacturer's authorization: is required in accordance with BDS ITB 17.2 (a) of the RFB document.</p> <p>(f) where a manufacturer authorization is not required in accordance with BDS ITB 17.2 (a), the bidder shall submit documentation on its status as a supplier, to the satisfaction of the Purchaser (e.g. authorized dealer/reseller/distributor of the items).</p> |
| 3. | Section II: Bid Data Sheet (BDS) ITB 19.1 Page no.: 45-46 | <p>A Bid Security shall be required.</p> <p>For Lot-1: The amount and currency of the Bid Security shall be United States Dollar (US\$) 8,000.00 (US\$ Eight Thousand only) or an equivalent amount in any freely convertible currency or Bangladesh Taka (BDT) 944,000.00 (BDT Nine Hundred Forty-Four Thousand Only).</p> | <p>Request for Clarification on Bid Security for Joint Ventures (JV):</p> <p>a. In the case of a Joint Venture (JV), is it permissible for any individual member of the JV to submit the bid security on behalf of the entire JV?</p> <p>b. In some instances, a financial partner forms a JV with a technical partner, and the financial partner issues the bid security in their individual name, rather than in the name of the</p> | <p>Referring to ITB clause 19.8 of RFB Document.</p> <p>The Bid Security of a JV must be in the name of the JV that submits the Bid. If the JV has not been legally constituted into a legally enforceable JV at the time of Bidding, the Bid security shall be in the names of all future members as</p> |



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| 1 | 2 | 3 | 4 | 5 |
| | | <p>For Lot-2: The amount and currency of the Bid Security shall be United States Dollar (US\$) 30,900.00 (US\$ Thirty Thousand Nine Hundred only) or an equivalent amount in any freely convertible currency or Bangladesh Taka (BDT) 3,646,200.00 (BDT Three Million Six Hundred Forty-Six Thousand Two Hundred Only).</p> <p>For Lot-3: The amount and currency of the Bid Security shall be United States Dollar (US\$) 29,500.00 (US\$ Twenty-Nine Thousand Five Hundred only) or an equivalent amount in any freely convertible currency or Bangladesh Taka (BDT) 3,481,000.00 (BDT Three Million Four Hundred Eighty-One Thousand Only).</p> <p>Bid Security shall be issued by an internationally reputable Bank or Financial Institution. If an unconditional guarantee is issued by a Financial Institution located outside the Purchaser's Country, the issuing Financial Institution shall have a correspondent financial institution located in the Purchaser's Country to make security enforceable.</p> <p>Bid Security shall be submitted using the Bid Security Form included in Section IV.</p> <p>The Bidder shall furnish the Bid Security in favour of: Project Director, Enhancing</p> | JV. Would such a bid security be considered acceptable? | named in the letter of intent referred to in ITB 4.1 and ITB 11.5 of RFB Document. |



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| 1 | 2 | 3 | 4 | 5 |
| | | <p>Digital Government and Economy (EDGE) Project.</p> <p>Also, Bidders have the option of submitting one Bid Security for all lots (for the combined total amount of all lots) for which Bids have been submitted, however if the amount of Bid Security is less than the total required amount, the Purchaser will determine for which lot or lots the Bid Security amount shall be applied.</p> | | |
| 4. | <p>Section II: Bid Data Sheet (BDS)</p> <p>ITB 22.1</p> <p>Page no.:47</p> | <p>For <u>Bid submission purposes</u> only, the Purchaser's address is: Attention: Project Director, Enhancing Digital Government and Economy (EDGE) Project Address: Youth Tower (Level 5), 822/2, Rokeya Sarani, Dhaka-1216, Bangladesh</p> <p>The deadline for Bid submission is: Date: 01 July 2025 Time: 12.00 hours Bangladesh Standard Time (BST= GMT + 6:00) hours) Bidders shall not have the option of submitting their Bids electronically.</p> <p>The electronic bidding submission procedures shall be: not applicable.</p> | <p>In 2025, Eid-ul-Adha will be observed as a public holiday in Bangladesh, with an extended holiday period from June 5th to June 14th. Considering this 10-day holiday, we kindly request a 15-day extension of the bid submission deadline to ensure adequate preparation time.</p> | <p>Request acceptable.</p> <p>Bid submission deadline has been extended to 14 August 2025.</p> <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1</p> <p>Sl. No. 1 & 2</p> |
| 5. | <p>Section III – Evaluation and Qualification Criteria</p> | <p>Lot-1:</p> <p>(d) Specific Experience: The Bidder shall demonstrate that it has successfully completed with a minimum amount of contract value US\$</p> | <p>TECHNICAL PART for all LOT</p> <p>Request for Amendment:</p> | <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1</p> |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--|--|---|---------------------------------------|
| 1 | 2 | 3 | 4 | 5 |
| | TECHNICAL PART : Lot-1 Lot-2 Lot-3 Page no.:53 -57 | <p>0.4 million or equivalent amount under one (1) similar contract within the last five (5) years prior to bid submission deadline, that have been successfully and substantially completed and that are similar in nature and complexity to the Goods and Related Services under the Contract. The contract will be treated as similar, which includes similar type of items as described in Section VII Purchaser's Requirements/Digital Lab Equipment/High-end Computational Equipment. For a joint venture , this requirement may be met by all members combined.</p> <p>Lot-2: (d) Specific Experience: The Bidder shall demonstrate that it has successfully completed with a minimum amount of contract value US\$ 1.5 million or equivalent amount under two (2) similar contract(s) within the last five (5) years prior to bid submission deadline, that have been successfully and substantially completed and that are similar in nature and complexity to the Goods and Related Services under the Contract. The contract will be treated as similar, which includes similar type of items as described in Section VII Purchaser's Requirements/Digital Lab Equipment/High-end Computational Equipment. For a joint venture , this requirement may be met by all members combined.</p> | <p>We kindly request that the requirement of "five (5) years" be extended to "seven (7) years" to allow a broader pool of qualified bidders to participate in this tender. This amendment would help ensure a more competitive bidding process, which may ultimately benefit the project.</p> | <p>Sl. No. 1 & 2 of Each Lot.</p> |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--|---|--|--|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Lot-3:</p> <p>(d) Specific Experience: The Bidder shall demonstrate that it has successfully completed with a minimum amount of contract value US\$ 1.4 million or equivalent amount under two (2) similar contract(s) within the last five (5) years prior to bid submission deadline, that have been successfully and substantially completed and that are similar in nature and complexity to the Goods and Related Services under the Contract. The contract will be treated as similar, which includes similar type of items as described in Section VII Purchaser's Requirements/Digital Lab Equipment/High-end Computational Equipment. For a joint venture, this requirement may be met by all members combined.</p> | | |
| 6. | <p>Section VII - Schedule of Requirements</p> <p>3. Technical Specifications for all LOT.</p> <p>Page no.: 109-148</p> | | <p>Manufacturers continuously update and improve their product lines. In cases where the purchaser requests an older model that matches the required specifications, would it be acceptable to offer the latest updated model instead, considering the OEM has discontinued production of the requested older model?</p> | <p>The updated version of the product will be acceptable if it maintains compatibility with the specifications of the previous version that was discontinued within the past year.</p> |



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| 1 | 2 | 3 | 4 | 5 |
| 7. | <p>Section VII - Schedule of Requirements</p> <p>Lot-2:</p> <p>Item no:1 Item name: FTIR Spectrophotometer</p> <p>Page no:123</p> | <p>1. Brand: To be mentioned by the bidder;</p> <p>2. Country of Origin: To be mentioned by the bidder;</p> <p>3. Main Features:</p> <p>Spectral range: 7800-350cm</p> <p>Resolution: Better than 1.0cm</p> <p>Signal-to-noise ratio: 30000:1 (P-P value, 4cm, 1min scan)</p> <p>Wave-number accuracy: Better than 0.01cm</p> <p>Transmittance accuracy: Better than 0.5t%</p> <p>Interferometer: Non-orthogonal Michelson interferometer</p> <p>Data transmission interface: High-speed USB2.0 (compatible with USB3.0)</p> <p>Power supply: 100V-240V, 50/60Hz wide range power supply</p> <p>Compatible operating system: Windows XP, Windows Vista, Windows7, 8, 10, 11</p> <p>Sample compartment size: 190*160mm</p> <p>Instrument size: 450×350×210mm</p> <p>Weight: 14kg</p> | <p>None of the OEM will make spectrophotometer and Electronic test and measurement equipment together.</p> <p>Request to separate from Lot 2.</p> | <p>This item has been dropped. Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 5 of lot-2</p> |



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| 1 | 2 | 3 | 4 | 5 |
| 8. | <p>Section VII - Schedule of Requirements</p> <p>Lot-2:</p> <p>Item no:2</p> <p>Item name: BIO ONE 3D Bioprinter</p> <p>Page no:123</p> | <p>1. Brand: To be mentioned by the bidder;</p> <p>2. Country of Origin: To be mentioned by the bidder;</p> <p>3. Main Features:</p> <p>Printhead volume: 2.5mL Theoretical volume unit step: 0.1 µL Printhead dispensed volume CV: < 5% @ 10 µL for water Printhead temperature range: 0°C - RT ± 1°C Printhead flow rate range: 1 - 50 µL/sec Build surface compatibility: Petri dishes and multi-well plates (6 to 384 wells) Build volume: 130 mm x 80 mm x 50 mm Printbed temperature range: RT - 65 °C Photocuring system: 405 nm LED Calibration options: Manual and Automatic Linear positioning precision: XY: 10 µm, Z: 2.5 µm Software: DNA Studio Core Supported file formats: .gcode, .stl, .obj, .amf Desktop application compatibility: Windows 11 and Windows 10 Connectivity: USB, SD-card Operating temperature range: 15-30 °C Power supply: Input: 100-240VAC, 50/60Hz, 2.0A Output: 24VDC, 6.67A, 160W Outer dimensions (D x W x H): 325 mm x 370 mm x 380 mm Weight: 15 kg</p> | <p>None of the OEM will make 3D Bio printer and Electronic test and measurement equipment together.</p> <p>Request to separate from Lot 2.</p> | <p>This item has been dropped. Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No.6 of lot-2</p> |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
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| 1 | 2 | 3 | 4 | 5 |
| 9. | <p>Section VII - Schedule of Requirements</p> <p>Lot-2:</p> <p>Item no:3</p> <p>Item name: Wafer prober</p> <p>Page no:124-134</p> | <p>1. Brand: To be mentioned by the bidder;</p> <p>2. Country of Origin: To be mentioned by the bidder;</p> <p>3. Main Features:</p> <p>SemiProbe SA8 MP Probing System Multi-purpose probing system for various measurements. Designed for general purpose measurements. Field upgradeable for new modules/accessories.</p> <p>PS4L SA with DB Semiautomatic Probe System for Life (PS4L) Probe System with Dark Box. Architecture: Patented Probe System For Life (PS4L). Platform: Modular. Components: Interchangeable. Configuration: Configurable to meet application Upgrade Path: Perpetual field upgrade.</p> <p>PS4L SA8 High Voltage PS4L 200 mm (8") Semiautomatic Probing System configured for a High Voltage Application Probe System For Life (PS4L) Platform.</p> | <p>Specific brand name and Model mentioned. Specification tight to semiprobe. There are many probe station manufacturers in Industry who supplied to FAB. Moreover, they have</p> <p>Please remove it from Lot 2 or go for proprietary tender. This company is not giving proposal to any other vendor except Keysight.</p> | <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 7 of lot-2</p> |



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| 1 | 2 | 3 | 4 | 5 |
| | | <p>A-VIB-VIT-200-12006 30" x 36" x 2" (750 mm x 900 mm x 50 mm) Vibration Isolation Table with stainless steel Clean Top II Optical Breadboard. Stainless steel magnetic table top with M6 holes on 25 mm centers. Gimbal Piston Isolators. Thin-Wall Rolling Diaphragms. All-brass height control valves. Internal Piston Travel Restraints. Tiebar Gussets. Rugged and adjustable built in leveling feet and casters.</p> <p>A-PSL-STG-08-IT-1554 200 mm High Speed Programmable Stage with linear encoders for Probe System for Life. X-Y Travel: 210 mm x 210 mm, additional Y manual travel of 200 mm with loadstroke (chambered systems). Accuracy: ± 1.5 µm. Resolution: 0.1 µm. Repeatability: ± 0.5 µm. Max Speed: 70 mm/sec. 5 mm pitch leadscrew, Nema 17 brushless DC motor. Optical linear encoders. 4 Axes Controller with ethernet and RS232</p> | | |



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|---------|--------------------------------|---|-------------------------------|------------------|
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| | | <p>interface.</p> <p>Includes motor drivers, DC power supply, all required cables (10 ft.) software and 19" rack.</p> <p>Z Stage - Low profile with vertical lift.</p> <p>Travel: 15 mm.</p> <p>Accuracy: +/- 1 um.</p> <p>Resolution: 0.1 um.</p> <p>Repeatability: +/- 0.5 um.</p> <p>Wedge driven, NEMA 17 brushless DC motor, 0.95 Amps.</p> <p>Velocity: 24 mm/sec.</p> <p>Load: 10 kg.</p> <p>Theta - 8" Rotary Stage</p> <p>Travel: +/- 5 degrees (User Specified - could be more).</p> <p>Accuracy: ±0.0025 degrees.</p> <p>Repeatability: ± 0.0015 degrees.</p> <p>Resolution: 0.000752 degrees, 0.29 arc-secs.</p> <p>Max Speed: 7 degrees/sec</p> <p>Nema 17 brushless DC Motor, 0.95 Amps/phase</p> <p>A-CKT-TCA KIT-2125</p> <p>Thermal Chuck Adapter Kit for mounting Thermal chuck on prober. Includes thermal chuck adapter and cable routing kit. Thermal Chuck Adapter - is the mechanical interface between the chuck and wafer stage. Cable Routing Kit - keeps the heating and cooling cables moving in unison with the wafer stage.</p> | | |



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| 1 | 2 | 3 | 4 | 5 |
| | | <p>A-CKT-RN-200-+25 to 300-0002</p> <p>System: ATT Hot Chuck System A200H+25 to +300° C</p> <p>Chuck: 200 mm thermal chuck.</p> <p>Temperature Range: Ambient to +300° C</p> <p>Controller: A200 controller</p> <p>Temperature Stability: +/- 0.1° C</p> <p>Temperature Accuracy: +/- 0.5° C</p> <p>Heating Rate: +25°C to +300°C < 12 min</p> <p>Cooling Rate: +300C to +25° C < 11 min</p> <p>Temperature Uniformity: +25°C to +300°C < +/- 0.5k/0.5%</p> <p>Flatness/Parallelism: +25°C to +300°C < +/- 10 um</p> <p>Isolation: > 10 TOhm @ 25°C</p> <p>Capacitance: 1000 pF - standard, 100 pF - triax</p> <p>Maximum Voltage: 500 V at chuck top</p> <p>Interface: RS232 - standard</p> <p>Chuck Dimensions: Diameter - 203 mm, Height - 28 mm, Weight - 2750 g</p> <p>Plating: Nickel - standard, Gold - optional</p> <p>Controller Dimensions: 250 mm x 480 mm x 120 mm, Weight - 11.0 Kg</p> <p>Air Supply: 200 l/min @ 6 bar, Dewpoint < 0°C, oil-free</p> <p>Power Supply: 100-127/208-240 V 50/60 Hz, AC, 800VA</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>A-CKT-AOHV-G-200-30 04 ATT Hot Chuck High Voltage (HV) Triaxial AddOn Surface - 200 mm thermal chucks. Low Leakage/Noise Triaxial AddOn stack for 200 mm chucks. Ceramic Isolation: 2 layer. Gold Plated: thickness 2 um. Vacuum Holes with Vacuum Zones - 10 mm x 10 mm, 100 mm, 150 mm, 200 mm. Maximum Voltage: 10 KV (coaxial), 3 KV (triaxial). Maximum Current: 100 A. Chuck HV Cables ordered separately.</p> <p>A-CAC-HV-KEY-3KV-001 Triaxial 3 KV HV Keysight vacuum chuck cable. Features: Includes a Keysight 3 KV HV triaxial cable and connector. Customer can easily change.</p> <p>A-PLIFT-STSA200-0001 PS4L Platen Lift Kit for 200 mm systems. Includes PS4L platen with removable front wedge. Coarse and fine linear platen lift. Cover panels and switches included. Large, rigid and stable platen design. One piece platen, aluminum with steel skin. Platen size: 625 mm x 775 mm.</p> | | |



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| | | <p>Supports RF, DC, OPTO manipulators (up to 16). 6 mm linear lift via lever (coarse adjust). 300 um contact/separation stroke. Vacuum Manifold Kit compatibility. Probe card holder compatibility.</p> <p>A-SM-KIT-0001 A Stereozoom microscope mount, movement and adapter kit. Includes a universal post stand. Includes a 100 mm x 100 mm X-Y coaxial microscope movement. Independent axis locks are included. Includes a stereozoom microscope adapter. Optics ordered separately.</p> <p>A-OPT-FM-71-7520 Optem FUSION Micro-Imaging Lens System with Coaxial LED Illumination Modular 7:1 imaging system for probing, inspection, and metrology. Upgrade Path offers change out modules for form, function, and performance. Quickly and easily modified to meet performance envelopes. Varies optical magnification, video magnification, working distance, resolution, field of view, and depth of focus.</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Modifications can be done at the customer's site.</p> <p>7:1 zoom imaging adjusts magnification with c-mount camera adapter and 0.8x camera tube. Includes objective adapter and LED coaxial illuminator.</p> <p>Accepts objectives from Optem, Motic, Mitutoyo and Seiwa microscopes.</p> <p>Objectives and CCTV Camera sold separately.</p> <p>Minimum Configuration Specifications provided.</p> <p>Magnification ranges from 0.067x (low zoom) to 0.46x (high zoom).</p> <p>Resolution ranges from 14 lp/mm (low zoom) to 47 lp/mm (high zoom).</p> <p>Field of View (mm) with 2/3 camera - 131 x 98 mm (low zoom) to 19 x 14 mm (high zoom).</p> <p>A-OPT-CM-OBJ-2xLL-00 01</p> <p>2x Lower Lens - Fusion Zoom Tube, 100 FL, long working distance.</p> <p>A-OPT-FM-OBJADAP-00 01</p> <p>Fusion Objective Adapter.</p> <p>Allows compound microscope objectives to be used with zoom tube.</p> <p>Adapter inserts into the bottom of the zoom tube.</p> <p>Objective is inserted into the adapter.</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>A-OPT-CM-OBJ-10x-75 18 10x M PLAN APO, Infinity-Corrected Objective 0.30 Numerical Aperature (NA) 34 mm working distance (W.D.)</p> <p>A-CTV-SEN-15017 Complete CCTV System Includes HD-Output DVI Camera, 24" Color Monitor, HDMI Cable, Camera Adapter, Power Supply and Cables Digital HDMI Camera with direct connect to monitor Universal power supply and 12' (3.5 m) HDMI cable included 1/2" CMOS Sensor with 1080p (p = progressive scan) 1936 (H) x 1096 (V) still photo resolution Standard HDMI output "C" Mount Lens Mount 60 fps (frames per second) 24" (60 cm) Full HD Widescreen LCD flat panel monitor DVI and VGA Inputs to connect with HD devices 1080p HD resolution, 115-230 V, 50-60 Hz, HDMI and USB Input</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>A-CPC-SPC-W11 OS-0001 19" Rackmount Industrial PC ATX Motherboard Minimum System Configuration Processor: 3.1 GHz - Intel, 64 bit RAM: 8 GB DDR3 Hard Drive: 1 TB Includes Keyboard and Mouse Includes Windows 11 Operating System (x86) Ports - Six (6) USB 2.0, (2) and 3.0 (4), integrated LAN and RS-232 (2) Final PC configuration may vary based on application requirements</p> <p>A-CPC-GPIB-P-1001 SemiProbe GPIB Interface required. Must control SemiProbe probe system from an external device. PC, Unix, Instrument and more compatibility required. All necessary drivers and hardware included. PILOT Navigator Module (PNM) Core Software required. A-Monitor-24-V-15056 CCTV Color Monitor 24 inch (60 cm) Full HD Widescreen LCD flat panel monitor DVI and VGA Inputs 1080p HD resolution 115-230 V, 50-60 Hz</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------|---|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>HDMI Input USB Input</p> <p>A-SOF-PNM-14000 Computer control interface for semiautomatic and fully automatic probing systems. Table commands for saving and moving between X-Y-Z locations. Pilot control for station movement from computer console. Operator-friendly graphical user interface (GUI). Video image capture and wafer mapping availability in the Video module. Free upgrades for 1 year.</p> <p>A-SOF-PWMM-14010 SemiProbe PILOT Wafer Map Module automatically generates a mathematical equivalent of a wafer. Enables adding and removing die to mimic the actual wafer. Allows binning die based on pass/fail criterion. Equipped to rotate the wafer enabling back and front side inspection. Automatically transfers results to the front side wafer map. Automatically transfers bad die as marked. Wafer map files can be exported to Excel or</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|---|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>HTML. Requires SemiProbe Pilot Core Software V 1.0. Free upgrades for 1 year.</p> <p>A-SOF-PAAM-1402 SemiProbe PILOT AutoAlign Module (PAAM). For SemiProbe semiautomatic and fully automatic probing systems. Hardware and software to enable automatic 2-point alignment of the wafer to the prober stage. Alignment is completed with a single button touch or command line instruction. Requires SemiProbe PILOT Navigator Module (PNM) core software and Analog . Ensures repeatable wafer alignment. Eliminates manual alignment errors.</p> <p>A-ACC-MSTD-21007 Keyboard, Mouse and Monitor Stand. For use with SemiProbe rolltop dark box or vibration isolation table (VIT). Monitor stand will hold 1 or 2 monitors. Monitor and keyboard supports are adjustable in height. Allows user to ""tilt"" the monitors both inward for viewing.</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------|---|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Monitors swing in and out to positioning. Bolted to the frame of the vibration isolation table. (VIT) to isolate them from the probe system.</p> <p>A-MAN-MA-9000-80-M -C Complete MA-9000 Manipulator Kit. Includes manipulator body, magnetic base, adjustable probe arm faceplate and coaxial probe arm. Intended for precise probing and instrumentation for semiconductor and general scientific applications. 3-axis motion (X,Y & Z) with 13 mm (>0.500"") movement on each axis. Motion controlled by three 80 TPI in-line adjustment screws. Allows probing of a device or line < 5 um. Rigid enough to handle both DC and HF probe arms, probes and cables. Height: 92 mm (about 3.62""). Travel: X, Y, Z axis = 13 mm (>0.500""). Dimensions: (L,W,H) 95 x 38 x 92 mm (3.74" x 1.50" x 3.62"") - manipulator with magnetic base. Resolution: 80 TPI. Rear thumbscrew controls for X & Y movement. 1 M (3') coaxial cable terminated with a BNC coaxial male connector.</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|---|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>A-ARM-SPC-TAL-LV-91 01 Triaxial Probe Arm for SemiProbe Manipulator - Long Version Material: plated brass Cable length: 47"" (1194 mm) Cable type: Triaxial Connector: BNC - Triax Arm Reach: 14 cm (140 mm) Needle holder: 3 position collette (0, 30, 45 degree needle angle)</p> <p>A-ARM-HF-STD-WE-92 52 Planarity adjustable West/East HF long reach probe arm. Accommodates a variety of HF probes, differential probes, and multi-contact wedges. Compatible with GGB, Rosenberger, Formfactor, MPI and others. Probes ordered separately. Planarity adjustment located near the top of probe arm.</p> <p>A-ARM-HF-STD-NS-925 3 Planarity adjustable North/South HF long reach Probe Arm HF arm will accomodate a variety of HF probes Accommodates differential probes</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------|---|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Accommodates multi-contact wedges manufactured by GGB, Rosenberger, Formfactor, MPI and others Probes ordered separately Planarity adjustment is located near the top of the probe arm.</p> <p>A-ARM-FO-ADJ-9005 Description: SemiProbe Fiber Optic Array Holder Mounts on High Frequency (HF) arm Allows user to mount fiber optic to probe arm Fiber holder movable in X, Y, Z with roll and tilt Fiber locks into position after desired location</p> <p>A-ARM-HV-TRIAX-3KV-0002 High Voltage, 3 KV, Triaxial High Voltage Probe Arm for Agilent B1505A Includes HV probe arm and triaxial cable. Cable is 5' (1.5 m) and terminated with a triaxial BNC connector. HV probe tips not included, must be ordered separately.</p> <p>A-DC-HV-10KV-30-930 2 Tungsten Probe Tips 30 um radius. 42 mm in length.</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>25 probes per box. Suitable for low and high voltage applications (up to 10 KV). 30 um radius (60 um diameter).</p> <p>A-PCH-45-18004 4.5" Probe Card Holder (PCH) Assembly for PS4L and LA Probe Systems. Includes probe card theta adjustment. Theta adjustment positionable in 3 areas. PCH theta adjustment removable for probe clearance. Handles probe cards up to 4.5" (114 mm) wide and over 200 mm (12") long. Connector rail kit included.</p> <p>A-ACC-DBR2-WOB-200 -001 Dark Box without base - 200 mm Dark Box enclosure without base for mounting on a vibration isolation table (VIT) Perimeter structure added and mounted on brackets attached to VIT frame Mechanically isolated from the probe system For 200 mm probing and inspection systems and smaller Probe system is placed on the legs of the VIT frame Folding front door opens vertically and locks into place</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|---|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Rear removable door panel for easy access Interior clearance allows for options like laser cutter, emission microscope, etc Cutout for test equipment feed thru panels on each side One panel supplied with connectors, other panel blank Vacuum switch panel with individual toggle switches for chuck vacuum zones Customer to specify interconnect/feedthru panel type System ships with two blank panels if interconnect panel not purchased Accessories can be added separately</p> <p>A-ACC-DB-Light-ROW-0 01 Dark Box lighting system for setup High Brightness light inside of dark box Light can be turned on/off from outside</p> <p>A-ACC-DB-CRKR-0002 Cable Routing Kit Rack - Dark Box Purpose: Route cables from dark box and external accessories. Compatibility: Dark box and external accessories (thermal chuck, power supplies, control electronics, illuminator, cameras, optics, monitors, PC, mouse, etc.) Mounting: Mounts to vibration isolation table</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>frame. Hardware: Includes all mounting hardware.</p> <p>A-ACC-HVHC-IP-3KVKE Y-PU-0005 High Voltage/High Current Interface Kit Dark Box or Light Curtain compatibility Purdue University Custom Design Bulkhead feedthrough accommodation Keysight/Keithley safety interlock compatibility Adaptable interface kits for connector changes Measurements: Coax, triax, kelvin, high voltage, high current Interconnect Panel (IP) included IP Feedthroughs: Standard Coax (4), Standard Triax (4), 3KV Triaxial (3) Rubberized boot for cable passthrough Blank connector openings provided Keysight parametric analyzer safety connector included Safety interconnect cable</p> <p>Installation and Training Installation and Training at customer facility (International - Bangladesh - Includes travel, lodging, meals and two (2) days of on-site work for one (1) SemiProbe Field Service Engineer (FSE)</p> | | |

7



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|---|--|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | | - Training can include up to three (3) people Shipping Shipping Charges - FOB Destination – Bangladesh | | |
| 10. | Section VII - Schedule of Requirements Lot-2: Item no:4 Item name: Semiconductor Device Parameter Analyzer Page no:134-136 | 1. Brand: To be mentioned by the bidder; 2. Country of Origin: To be mentioned by the bidder; 3. Main Features: Current versus Voltage (IV) Measurement: Ranges of 0.1 fA - 1 A and 0.5 μ V - 200 V. IV Measurement Type: Spot, sweep, and time sampling measurements. Minimum Sampling Rate: 100 μ s for time sampling measurements. Pulsed Measurement Capability: Minimum pulse widths of 50 μ s (MCSMU) or 500 μ s (HPSMU, MPSMU, HRSMU). Current Resolution: 0.1 fA with ASU, MPSMU, or HRSMU. Analog-to-Digital Converters: High-resolution ADC or high-speed ADC for each SMU type. Capacitance Measurement: Supports CV, C-t, and C-f measurements. Capacitance Frequency Range: 1 kHz to 5 MHz. QS-CV Measurement: Quasi-Static Capacitance-Voltage with leakage current compensation. | Specifications are mentioned of Keysight with its nomenclature in catalogue. Please change the specifications there are better products in market | Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 8 of lot-2 |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>IV/CV Switching: Automated switching with SCUU, GSWU, or ASUS.</p> <p>Pulsed IV/Fast IV/Transient IV: High-speed and high-sensitivity measurement capability.</p> <p>Waveform Generation: Arbitrary waveform generation with 10 ns programmable resolution.</p> <p>Simultaneous Measurement: High-speed voltage/current measurement (200 MSa/s, 5 ns sampling rate).</p> <p>Pulse Generation Voltage: Up to ± 40 V voltage pulsing.</p> <p>Pulse Generation Capability: Single and two-level pulsing capability.</p> <p>Display: 15-inch touch screen.</p> <p>Measurement Modules: Configurable and upgradable with 10 slots.</p> <p>Interfaces: GPIB, USB, LAN, and VGA video output.</p> <p>Software: Required software compatible with the device.</p> <p>Operating System: Embedded Windows 10 or PC based operation.</p> <p>Operation: Intuitive GUI with keyboard, mouse, and touch screen operation.</p> <p>Application Tests: Furnished hundreds of ready-to-use application tests.</p> <p>Test Modes: Classic test mode for full instrument capability access.</p> <p>Data Analysis: Graphical display and analysis capabilities.</p> | | |

| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|---|---|--|--|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Database: Individualized built-in database (workspace).</p> <p>Curve Tracer Mode: Interactive real-time device characterization.</p> <p>Oscilloscope View: Pulsed voltage and current waveform viewing (MCSMU).</p> <p>Test Sequencing: Quick test mode supports sequencing without programming.</p> <p>Switching Matrices Control: GUI-based control</p> <p>Remote Control: Remote control function via LAN interface.</p> <p>Data Protection: Data backup and protection features for shared usage.</p> <p>Software Installation: Installable on multiple PCs.</p> | | |
| 11. | <p>Section VII - Schedule of Requirements</p> <p>Lot-2:</p> <p>Item no:5</p> <p>Item name: High Power Semiconductor Device Testing System</p> | <p>1. Brand: To be mentioned by the bidder;</p> <p>2. Country of Origin: To be mentioned by the bidder;</p> <p>3. Main Features:</p> <p>Parameters: Measures Ron, BV, Leakage, Vth, Vsat.</p> <p>Capacitance Measurement: Measures Ciss, Coss, Crss, Cies, Coes, Cres, Rg at high bias.</p> <p>Qg Curve: Measures for Nch MOSFETs and IGBTs.</p> <p>Power Loss: Measures conduction, driving, and switching.</p> | It is completely Keysight specifications. None other player in industry will provide this. | <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1</p> <p>Sl. No. 9 of lot-2</p> |



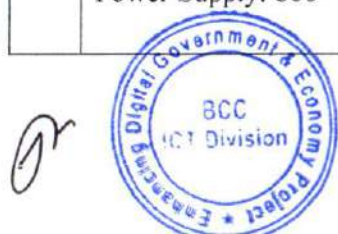
| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | Page no:136-137 | <p>Software: Required software compatible with the device.</p> <p>Datasheet Generation: Quick and automatic generation.</p> <p>Characterization: Supports quick evaluations of data sheet parameters.</p> <p>Voltage Range: 3kV.</p> <p>Current Range: 1500A.</p> <p>Thermal Test Range: -50 to +250 °C.</p> <p>Pulsing: Fast pulsing capability.</p> <p>Current Measurement: subnA level current measurement capability.</p> <p>Switching Circuitry: Integrated switching circuitry within test fixture.</p> <p>Automation: Supports thermal characterization.</p> <p>Temperature (Specification Conditions): 23 ±5 °C.</p> <p>Humidity (Specification Conditions): 20 to 70%, No condensation.</p> <p>Warm-up: Self-calibration after 40-minute warm-up.</p> <p>Temperature Stability: Ambient temperature changes less than ±1 °C after self-calibration.</p> <p>Calibration Period: 1 year.</p> <p>SMU Integration Time: 10 PLC (1 nA to 1 A range, voltage range), 200 µs (20 A range).</p> <p>ADC Averaging: 128 samples per 1 PLC.</p> <p>SMU Filter: ON (for MPSMU).</p> <p>Current Accuracy: Drain output current accuracy guaranteed after 20 seconds.</p> <p>Operating Temperature: +5 to +40 °C.</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|---|---|--|---|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Operating Humidity: 20 to 70%, No condensation.</p> <p>Thermo Stream Temperature (Air > +20): +20 to +30 °C.</p> <p>Thermo Stream Humidity (Air > +20): 20% to 70%, No condensation.</p> <p>Thermo Stream Temperature (Air < +20): +20 to +30 °C.</p> <p>Thermo Stream Humidity (Air < +20): 20 to 50%, No condensation.</p> <p>Thermal Plate Temperature: +5 to +30 °C.</p> <p>Thermal Plate Humidity: 20 to 70%, No condensation.</p> | | |
| 12. | <p>Section VII - Schedule of Requirements</p> <p>Lot-2:</p> <p>Item no:6</p> <p>Item name: Double Pulse Test (DPT) Set Up for Semiconductor Device</p> <p>Page no:137</p> | <p>1. Brand: To be mentioned by the bidder;</p> <p>2. Country of Origin: To be mentioned by the bidder;</p> <p>3. Main Features:</p> <p>Measurement Capabilities: Static and dynamic measurements for SiC and GaN WBG devices.</p> <p>DPT Technique: Employs double pulse test technique.</p> <p>Voltage Range: Operates at voltages greater than 1000V.</p> <p>Current Range: Operates at currents greater than 100A.</p> <p>High-Frequency Testing: Supports high-frequency testing in the gigahertz range.</p> <p>Low Leakage Measurement: Measures low leakage in the femto-ampere range.</p> <p>Pulsed Power: Provides pulsed power up to</p> | Specifications are again for Keysight. | <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1</p> <p>Sl. No. 10 of lot-2</p> |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>1500 A with 10 μs resolution.</p> <p>Measurement Techniques: Includes probe compensation, gain/offset adjustment, de-skewing, and common-mode noise rejection.</p> <p>Calibration: Semi-automated calibration routine for system gain and offset error correction.</p> <p>Safety Features: Ensures user safety with high voltage and current levels.</p> <p>Standards Compliance: Compliant with JEDEC standards.</p> | | |
| 13. | <p>Section VII - Schedule of Requirements</p> <p>Lot-2: Item no:7</p> <p>Page no:137</p> | <p>Item name: DC Power Supply: 800- V & 4A, 1kW power</p> | - | <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1</p> <p>Sl. No. 11 of lot-2</p> |
| 14. | <p>Section VII - Schedule of Requirements</p> <p>Lot-2 Item no:7</p> <p>Item name: DC Power Supply: 800-</p> | <p>1. Brand: To be mentioned by the bidder;</p> <p>2. Country of Origin: To be mentioned by the bidder;</p> <p>3. Main Features:</p> <p>DC Power Supply: 800V & 4A, 1kW Power Autoranging System DC Power Supplies: 5, 10, and 15 kW autoranging</p> <p>Programmable DC Power: Single-output for ATE applications</p> | <p>Specifications here are confusing. What is the power rating exactly looking for 1KW, 5, 10, or 15KW.</p> | <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1</p> <p>Sl. No. 12 of lot-2</p> |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|---|--|-------------------------------|--|
| 1 | 2 | 3 | 4 | 5 |
| | V & 4A, 1kW power Page no:138 | Output Characteristics: Wide range of voltage and current combinations at full power Stable Output Power: Built-in voltage and current measurements Output Range: 80 to 1500 V and 20 to 510 A I/O Interfaces: Multiple standard I/O interfaces Design: Compact 3U design Parallel Units: Create one power supply with > 100 kW Control: Built-in primary/secondary control Front-Panel Operation: Complete access via menu system Protection: Over-temperature, over-current, and over-voltage System Connections: GPIB, Ethernet/LAN, USB 2.0, and analog interfaces Compliance: LXI Core specification compliant Remote Access: Built-in Web server Integration: IVI-COM drivers, SCPI Parallel Operation: Connect up to ten identical units Programming: Analog voltage signal from 0 to 5 V or 0 to 10 V AC Input: 208 VAC or 400 VAC inputs | | |
| 15. | Section VII - Schedule of Requirements Lot-2: Item no:8 | Item name: DC Power Supply: 30V & 100A, 1 KW power | | Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 13 of lot-2 |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|---|--|--|--|
| 1 | 2 | 3 | 4 | 5 |
| | Page no:138-139 | | | |
| 16. | Section VII - Schedule of Requirements Lot-2: Item no:8 Item name: DC Power Supply: 30V & 100A, 1 KW power Page no:138-139 | 1. Brand: To be mentioned by the bidder; 2. Country of Origin: To be mentioned by the bidder; 3. Main Features: Power: 3300 W Output Voltage: 0 to 30 V. Output Current: 0 to 110 A. Input Voltage: 208 V - 400 V. Interfaces: LAN, USB, GPIB. Protective Devices: OVP, OCP, OTP, PFP, UVL. Ripple Current: 300 mArms. Number of Outputs: 1. Power Factor: 0.99 / 0.95. DC Output: DC Source. Additional Functions: Webserver Sense. Dimensions: 432.8 x 422.8 x 88 mm. Weight: 13 kg. Warranty: 3 years. | Power: 3000W Output Voltage: 0 to 80 V. Output Current: 0 to 60 A. Input Voltage: 208 V - 400 V. Interfaces: LAN, USB, GPIB. Protective Devices: OVP, OCP, OTP, Ripple Voltage(rms): 100mV Number of Outputs: 1. Power Factor: 0.99 DC Output: DC Source. | Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 14 of lot-2 |
| 17. | Section VII - Schedule of Requirements Lot-2: | 1. Brand: To be mentioned by the bidder; 2. Country of Origin: To be mentioned by the bidder; 3. Main Features: | We do not make VNA and Electronic test and measurement equipment together. Request to separate from Lot 2. | Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 15 & 16 of lot-2 |

| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|---|--|---|--|
| 1 | 2 | 3 | 4 | 5 |
| | Item no:9 Item name: Vector Network Analyzer for RF characterization (43.5 GHz) Page no:139 | No. of Ports: 2 or higher Maximum Frequency: 50 GHz Minimum Frequency: 900 kHz Type: Benchtop Dynamic Range: 124 dB Network Analyzer Series: PNA-X Most Advanced and Flexible Harmonics: -60 dBc | | |
| 18. | Section VII - Schedule of Requirements Lot-2: Item no:10 Item name: Precision Source Measure Units (SMU)/ Resistivity measurement Page no:139-140 | 1. Brand: To be mentioned by the bidder; 2. Country of Origin: To be mentioned by the bidder; 3. Main Features: Product Category: Source Measure Units - SMUs Source and measurement resolution: Down to 10 fA and 100 nV Measurement range: ± 210 V, ± 3 A (DC), ± 10.5 A (pulsed) Covers wide range of components. Voltage Range: 210 V Current Rating: 3 A Capacitance Range: 50 μ F Accuracy: 0.015 % AC Supply Voltage: 90 V to 264 V GUI: User-friendly front panel With 4.3 inch color LCD display Digitizing capability: 10 microsecond for | The mentioned specification are of Keysight B2900. Dimensions of products are mentioned. Page no of 28 of B2900 | Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 17 of lot-2 |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--|--|--|--|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>capturing fast transients. PC-based control software: For remote operation and automation. SCPI commands: Supports conventional and default SCPI commands for code compatibility. Form factor: Small with USB2.0, LAN, GPIB and digital I/O interfaces for easy integration. Width - mm: 260 mm Height - mm: 180 mm Length - mm: 480 mm</p> | | |
| 19. | <p>Section VII - Schedule of Requirements</p> <p>Lot-2:</p> <p>Item no:11</p> <p>Item name: High Bandwidth Digital Real-Time Oscilloscope (40 GHz)</p> <p>Page no:140</p> | <p>1. Brand: To be mentioned by the bidder;</p> <p>2. Country of Origin: To be mentioned by the bidder;</p> <p>3. Main Features: Bandwidth: 70 GHz minimum Channels: 4 full bandwidth channels ADC Resolution: 10 bit Sample Rate: 256 GSa/s on all channels Memory: Up to 2 Gpts Bandwidth Upgrade: Upgradable to 110 GHz Calibration: Optional on-site self-calibration module Clock Recovery: High-speed SDA and Clock Recovery included User Functions: User Defined functions included Connectors: 1 mm connector inputs</p> | <p>In item name bandwidth is requested 40GHz in specification its mentioned as 70GHz. However, It is completely Keysight favoured specifications Model-UXR</p> | <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 18 & 19 of lot-2</p> |
| 20. | <p>Section VII - Schedule of Requirements</p> | <p>1. Brand: To be mentioned by the bidder;</p> <p>2. Country of Origin: To be mentioned by the bidder;</p> | <p>This would injustice to party who do not have HAST.</p> | <p>Refer to the Addendum No. 1 to RFB No. EDGE-G13B1</p> |

| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
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| | Lot-2 Item no:12 Item name: Highly Accelerated Stress Test (HAST) Chamber Page no:140-141 | 3. Main Features: Temperature Range: 105°C to 142°C Humidity Range: 75 to 100%RH Interior Dimensions: 11.5" x 11.6" (diameter x depth) Exterior Dimensions: 25" x 33" x 58" (W x D x H) (420 lb.) Power Supply: 208V (±5% w/grounded neutral) 1Ø 60Hz, 15 Service Amps (12.5 FLA) Water Supply: Purified water for humidity & gravity drain Humidity Control: Unsaturated or saturated Humidity System: Multi-mode M System (wet bulb/dry bulb) Controller: Touch-screen with temperature, humidity, and count-down display (except 431M) Interface: Ethernet Language: English Specimen Power Terminals: 12, rated at AC/DC 125V, 1 Amp Water Tank: 10 liter humidity water supply Water Fill: Automatic fill Elevation: Advise if above 3,200 feet Shelves: Two stainless steel Mobility: Casters Door Lock: Push button Storage: Bottom storage space Safety: Overheat protector, Over pressure | | Sl. No. 20 of lot-2 |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--|--|-----------------------------------|---|
| 1 | 2 | 3 | 4 | 5 |
| | | protectors,Door lock safety mechanism,Contact relay for external alarm,Specimen power control terminal Standards Compliance: EIA/JEDEC Test Method A110 and 102C Warranty: One year | | |
| 21. | Section VII - Schedule of Requirements Lot-2: Item no:13 Item name: Tabletop Atomic Force Microscope (AFM) with 100 X 100 X 17 Scanner Page no:141-142 | 1. Brand: To be mentioned by the bidder; 2. Country of Origin: To be mentioned by the bidder; 3. Main Features: Scanner Specifications: Scanner Type: 100 X 100 X 17 XY Resolution: 0.010 nm XY Linearity: <0.1% Z Resolution: 0.003 nm Z Linearity: <0.1% XY Range: 100 µm XY Linearity Performance: <1% XY Resolution Closed Loop: <6 nm XY Resolution Open Loop: <1 nm Z Range: 17 µm Z Linearity Open Loop: <5% Z Linearity Closed Loop: <1% Z Sensor Noise: 1 nm Z Feedback Noise: <0.15 nm Actuator Type: Piezo Design: Modified Tripod XY Sensor Type: Strain Gauge Z Sensor Type: Strain Gauge | Incorrect mixture of the product. | This item has been dropped Refer to the Addendum No. 1 to RFB No. EDGE-G13B1 Sl. No. 21 of lot-2 |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------|--|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Electronic Control Specifications:</p> <p>XY Scan: 2 X 28-bits</p> <p>XY Linearization Control: 2 X 24-bits</p> <p>Z Axis Control: Analog</p> <p>Input Signal Bandwidth: 5 Mhz</p> <p>Z axis Signal Capture: 20 bits</p> <p>Phase Signal Capture: 2 X 16 bits</p> <p>L-R Signal Capture: 2 X 16 bits</p> <p>Amplitude Signal Capture: 2 X 16 bits</p> <p>Z Error Signal Capture: 2 X 16 bits</p> <p>Main Controller MPU: 80 Mz/105 DMIPS, 32 Bits (5-stage pipeline, Harvard architecture)</p> <p>Excitation/Modulation: Analog PLL, 0-800 Khz</p> <p>Communication: USB 2.0</p> <p>Optional Electronics Specifications:</p> <p>User Input Signal: 32 X 18 bits</p> <p>User Output: 32 X 18 bits</p> <p>User Monitor: 48 Lines, Digital IO</p> <p>Optional Controller MPU: 80 Mz/105 DMIPS, 32 Bits (5-stage pipeline, Harvard architecture)</p> <p>Software:</p> <p>Environment: LabVIEW or equivalent</p> <p>Operating System: Windows</p> <p>Image Acquisition: Real Time Display (2 of 8 channels)</p> <p>Control Parameters: PID, Setpoint, Range, Scan Rate - Yes</p> | | |



| Sl. No. | Page/ Clause Number/ Item Name | Page/Clause/ Requirement | Question/Clarification Sought | Project Response |
|---------|--------------------------------------|---|-------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| | | <p>Image Rotate: 0 and 90 degrees Laser Align: Yes Vibrating Freq. Display: Yes Force Distance: Yes Tip Approach: Yes Oscilloscope: Yes Image Store Format: Industry Standard Image Pixels: 16 X 16 to 1024 X 1024 H.V. Gain Control: XY and Z Real Time Display: Line Level, Light Shaded, Grey Color Pallet Calibration: System Window Probe Center: Yes Field of view: 2 x 2 mm to 300 x 300 µm Resolution: 20 µm to 2 µm Working Distance: 114 mm Magnification: 45X to 400X</p> <p>Top View Optic: Research Grade 45-400x, Mechanical 7:1 Zoom ratio, 5 MegaPixel CMOS Camera, 114 mm working distance, Coaxial LED illumination</p> | | |

Dr

