

TENDER SPECIFICATION OF MULTI PRODUCT CALIBRATOR – COMSUB & COMNAV

1. **Name of the Equipment.** Multi Product Calibrator.
2. **Purpose.** The Multi Product Calibrator shall be used to calibrate a wide range of electrical test equipment. It shall provide accurate sourcing of DC/ AC Voltage, DC/ AC Current, Resistance, Capacitance and Thermocouple signals, along with simulation of Pressure and Temperature sensors when paired with accessories.
3. **Quantity** : 02 (Two) Complete sets.
4. **Type** : To be mentioned.
5. **Brand** : To be mentioned.
6. **Model** : To be mentioned
7. **Manufacturing Country** : USA, UK, EU, Canada, Switzerland and Norway (Country to be mentioned).
8. **Country of Origin** : USA, UK, EU, Canada, Switzerland and Norway (Country to be mentioned).
9. **Original Equipment Manufacturer (OEM)** : Name and full address with e-mail of OEM to be mentioned.
10. **Supplier/ Principal/ Bidder** : Name and full address with e-mail of Supplier/ Principal/ Bidder to be mentioned.
11. **Local agent** : Name & full address with e-mail of supplier/ local agent is to be mentioned.
12. **Year of Manufacturing** : 2026 or later.
13. **Qualification for Bidder.** Manufacturers of the Multi Product Calibrator or their authorized distributor/ agent can submit quotations through their authorized local agent enlisted in DGDP. In case of offer from foreign trading company/ distributor/ agent, certificate of dealership/ agency-ship from Original Equipment Manufacturer (OEM) is to be submitted with the offer. In this regard, the **following certificates are to be submitted with the offer** (if not OEM):
 - a. Authorization Certificate from OEM.
 - b. Supply Assurance Certificate from OEM.
14. **Equipment Manufacturer and Reliability/ Requirement.** The newly installed items shall be brand new, unused and of recent model, proven reliability in the field of operation. The supplier shall ensure the continuity of the operation and availability of necessary spares for at least 15 years each in case of obsolete model over time. **Certification is to be attached with the offer.**
15. **User List.** List of users of the offered Multi Product Calibrator shall be mentioned with full address. The Multi Product Calibrator shall be widely used by various navies/ coastguards and the same shall be included in the user list submitted with the offer. The user list shall be used for the assessment of the offer.
16. **Condition for Acceptance of Quotation.** The quotation is to have supporting documents (booklets, catalogues, brochures etc) and active weblink demonstrating the details about offered equipment/ item.
17. **Acceptance/ Rejection of Bid.** DGDP/ BN reserves the right to accept or reject any bid or to terminate the bidding process and reject all bids at any time prior to the contract award (without thereby incurring any liability to the BIDDER).



RESTRICTED

18. **Certification.** The offered item is to fulfill the requirements of ISO/ IEC/ CE (IEC 61010-1: Overvoltage Category II, Pollution Degree 2; IEC 61010-2-030) etc. Moreover, Calibration Certificate from accredited Calibration lab must be provided along with the Equipment.

19. **Additional Features Offered by Bidder.** The bidder may suggest and offer additional features for the offered Multi Product Calibrator. In this case, Bidder is to explain the detailed advantage of that/ those features of the offered Multi Product Calibrator.

20. **Scope of Supply.**

- a. 02 x complete sets of Multi Product Calibrator with Essential Accessories.
- b. Special Tools (If any).
- c. Certification and Reports.
- d. Manual/ Documentation.
- e. Local Training.
- f. Test, Trial and Acceptance.

21. **General Features.** The Multi Product Calibrator shall have following features (but not limited to):

- a. Modern user interface with large color touch screen and visual connection management improve usability and reduce errors.
- b. Easily calibrate devices that measure AC/ DC voltage, AC/ DC current, resistance, temperature and capacitance.
- c. 30 A continuous current output that can be expanded for calibrating clamp meters with optional current coil.
- d. Source and measure both DC and AC voltages.
- e. Visual Connection Management Terminals.
- f. Variable Resistance outputs.
- g. Source variable capacitance.
- h. Simulate and measure thermocouple and Resistance Temperature Detectors (RTDs).
- j. Isolated Terminal Block.
- k. Touch Screen Display.
- l. Thermocouple Connector.
- m. Operate and Standby Mode.
- n. Calculator Keyboard.
- p. Trigger.
- q. Multiplier Keys.
- r. Outputs Units.

22. **Environmental Condition.**

- a. Ambient Operating Temperature : 5⁰ C to + 50⁰ C.



- b. Storage Temperature : To be mentioned.
- c. Relative Humidity : Up to 95 % (Non condensing).

23. **Technical Specification.**

Ser	Description	Required Parameter
DC Voltage		
1.	Range	0V to ± 1020 V DC or better
2.	Resolution	10nV or better
3.	Max Burden	20 mA or better
4.	Best Uncertainty	$\pm 0.0024\%$ or better
AC Voltage		
5.	Range	1 mV to 1020V or better
6.	Resolution	10nV or better
7.	Frequency Range	3Hz to 500KHz or better
8.	Max Burden	20mA or better
9.	Best Uncertainty	$\pm 0.078\%$ or better
DC Current (Continuous)		
10.	Range	0 A to ± 30.2 A or better
11.	Resolution	0.1nA or better
12.	Max Burden	10V or better
13.	Best Uncertainty	$\pm 0.0085\%$ or better
AC Current (Continuous)		
14.	Range	10 μ A to ± 30.2 A or better
15.	Resolution	1nA or better
16.	Frequency Range	3Hz to 30KHz or better
17.	Max Burden	7V or better
18.	Best Uncertainty	$\pm 0.0.16\%$ or better
Resistance		
19.	Range	0 Ω to 1200 M Ω or better
20.	Resolution	0.0001 Ω or better
21.	Best Uncertainty	$\pm 0.005\%$ or better
Capacitance		
22.	Range	0pF to 120mF or better
23.	Resolution	0.1pF or better
24.	Max Allowable Voltage/ Current	10V/ 130mA peak or better
25.	Best Uncertainty	$\pm 0.19\%$ or better
AC and DC Power		
26.	Range	1mW to 30 KW or better
DC Voltage Dual Output		
27.	Range	0V to ± 7 V or better
AC Voltage Dual Output		
28.	Range	10mV to 5V, 45Hz to 10KHz or better
Other Functions		
29.	Frequency Range	0.01 Hz to 2 MHz or better
30.	Frequency Accuracy	± 2.5 ppm or better
31.	RTD (Source) Range	-200 to 800°C or better
32.	RTD (Source) Type	Pt 100, Pt 200, Pt 500, Pt 1000, Cu 10, Cu 50, Cu 100, Ni120 or more
33.	Thermocouple Range (Source and Measure)	-250°C to 2300°C or more
34.	Thermocouple Type (Source and Measure)	B, C, E, J, K, L, N, R, S, T, U or more
35.	TC Connection	Multi Connector



RESTRICTED

Ser	Description	Required Parameter
36.	Display	Shall have large color display with Touch Screen
37.	Visual Connection Management	Shall have visual connection guidance to avoid connection mistakes
38.	Reverse Voltage Protection	Shall have reverse power protection feature for at least up to ± 250 V peak to have safety protection against common user errors
39.	Interface Port	Ethernet, RS-232, GPIB, USB or more
40.	Accessories (Not limited to)	a. 02 x 50 Turn Current coil b. 02 x Thermocouple Test Lead set with Case c. 02 x Set of standard DUT with Traceable Calibration Software d. 02 x Autocal Adapter e. 02 x Transport Case f. 02 x Power Cord and Adapters g. 02 x Calibration Software

24. **Original Software & Backup Software.** Bidder shall provide all necessary original software (lifetime license version), Calibration Software along with backup software to BN and step by step procedure for installation. In case of software crash, BN personnel shall be able to install the back-up software to restore the whole system using step by step procedure. Bidder shall provide backup copy of software in CDs/DVDs/portable drive along with instruction and password for installation during delivery.

25. **Standard Accessories.** Standard accessories must include every item and accessories, which are essential to make the offered item operational with full functionality. Such standard accessories are to be supplied by the bidder within the scope of the supply, but the item-wise prices are to be shown separately for reference.

26. **Optional Items/ Spares.** A list of OEM recommended Items/ Spares (if any) are to be quoted separately mentioning item-wise price. The buyer may select item/ items from the proposed list.

27. **Certificate and Reports.**

a. Following certificates and reports are to be provided in English for the offered item including associated equipment/ accessories **with the offer**:

- (1) All necessary standard/classification certificates mentioned in the offer (as per para 18).
- (2) Authorization Certificate (as per para 13.a).
- (3) Supply Assurance certificate (as per para 13.b).
- (4) Guarantee (as per para 35.c) and warranty certificates (as per para 35.a).
- (5) After-sales service certificate (as per para 35.d).

b. Following certificates and reports are to be provided in English for the offered item including associated equipment/ accessories **during delivery**:



RESTRICTED

- (1) All necessary standard/classification certificates mentioned in the offer (as per para 18).
- (2) 'Quality Assurance Certificates' for each item and their associated equipment and instruments from OEM is to be provided.
- (3) Certificate of Genuine Product and Brand-New Item.
- (4) After Sales Service Support Certificate.
- (5) Supply Assurance certificate (as per para 13.b).
- (6) Guarantee (as per para 35.c) and warranty certificates (as per para 35.a).
- (7) After-sales service certificate (as per para 35.d).

28. **Manual/ Documentation.** The manuals and documents are to be provided as per defence standard. The following 02 (two) sets of documents and manuals in English shall be provided at the time of delivery at free of cost:

- a. Category 1 - Operating Manual.
- b. Category 2 – Technical Manual with Circuit Diagram (At least up to component level).
- c. Category 3 – Maintenance Manual.
- d. Category 4 – Parts Catalogue with parts Identification List (PIL).

29. **Brochures/ Booklet.** 01 (One) set of original Brochures/ Booklets in English and authentic web links with detailed technical information about the quoted Multi Product Calibrator are to be provided with the quotation for evaluation/ assessment.

30. **Local Training.** A group of operators/ technicians (about 10 (Ten) BN personnel) has to be trained locally in Bangladesh for 05 (Five) working days by the Manufacturer/ Supplier's engineer/ representative on completion of installation and Test/ Trial of the offered equipment. The details of training contents/ syllabus are to be provided with the offer. Cost of air fare, accommodation, food and internal transportation (including to and from work site and hotel) of the Manufacturer/ Supplier's engineer/ representative shall be borne by Bidder. The cost of local training is to be quoted within the main price and showing separately for future reference.

31. **Training Objectives and Contents.** The objective of the training shall include the following but not limited to:

- a. BN personnel shall have comprehensive knowledge on system overview, operation and its features and limitations.
- b. Maintainer shall know which level of maintenance they can do, what kind of tools and skill needs to be used to carry out maintenance works as per OEM recommended maintenance system/schedule.
- c. All BN Personnel shall be completely aware of all hardware/ software including all kinds documentations related to the system.
- d. There shall be a standard operating procedure for a small ready response team to address problems.
- e. BN maintainer group shall be able to un-install, install, set to work, configure and minimum the whole system including all software used in the system.
- f. BN maintainer group shall be able to do alignment, calibration, testing, tuning and software-based system check etc of the offered Multi Product Calibrator.



RESTRICTED

g. Lectures and training shall focus on the following:

- (1) System Overview and system configuration.
- (2) System operation covering all functions.
- (3) Details about System architecture.
- (4) Operational flow chart.
- (5) Hardware and software and their function, troubleshooting, backup software, system restoration (if crashed) etc.
- (6) Familiarization of manuals, publications and document which are to be provided.
- (7) Signal/ Power flow diagram.
- (8) Working principle with step by step procedure.
- (9) Repair and maintenance.
- (10) Fault finding and understanding error message.

32. **Delivery.**

- a. **Delivery Time.** The items shall be delivered within **09 (Nine)** months after signing the contract.
- b. **Place of Delivery:** NSD Chattogram.
- c. In case of CFR/ CPT the supplier shall carry the items from sea/ airport (as applicable) to NSD, Chattogram at the cost and risk of supplier.

33. **Shipment.**

- a. **Source of Supply.** The source of supply of the offered systems are to be mentioned. It shall be from the country of manufacturer or country of origin.
- b. **Port of Shipment:** To be mentioned. The port of shipment is to be from the country of manufacturer or country of origin.
- c. **Consignee.** The supplied item shall be the following consignee:

The Commanding Officer Naval Stores Depot New Mooring, Chattogram, Bangladesh BIN-002349278-0503	or	Officer In Charge Naval Stores Sub Depot Dhaka Naval Unit Khilkhet Namapara, Dhaka-1229, Bangladesh
--	----	--
- d. All items are to be brand new and to be delivered in sea/ airworthy packing to ensure safe transit by sea/ air. Certificates in this regard are to be provided during delivery.
- e. All packages are to have packing notes showing their contents in detail and all packages shall be marked with the name and address of the consignee and gross weight.

34. **Project Timeline.** The project timeline indication month-wise event is to be provided with the offer and another reviewed project time line with project implementation plan is to be submitted after 15 days of signing the contract.



35.

Warranty, Guarantee and After Sales Service.**a. Warranty.**

(1) 12 (Twelve) months manufacturer's warranty for trouble free operation is to be provided for the item from the date of acceptance by the purchaser. If any component and submit of the supplied items becomes defective during the warranty period, the overall warranty shall be extended automatically for the period of subject component remains defective.

(2) For warranty repair/ replacement, the supplier shall collect the defective item from NSD, Chittagong/ NSD Khulna/ NSSD, Dhaka (as applicable) and re-supply the same to collecting place after warranty repair or for replacement within 90 (ninety) days from the date of defect at no cost to the purchaser.

b. Bank Guarantee (BG) for Warranty. The bidder shall issue a Bank Guarantee (BG) of **@ 05% (Five percent) of the total CFR/ CPT value** during submission of the bill for the last 20% payment from any scheduled bank in Bangladesh in favour of The Senior Finance Controller (Navy), Sailors Colony, Lalasarai, Mirpur-14, Dhaka-1205, representing Bangladesh Navy, Peoples Republic of Bangladesh, information to The Directorate General Defence Purchase, Ministry of Defence, Peoples Republic of Bangladesh. This BG shall remain valid until the warranty period of the Multi Product Calibrator (notwithstanding minor deficiencies which would be mutually settled and agreed between purchaser and bidder) in Bangladesh, and it shall expire on receipt of **Warranty Completion Certificate**. If the contractual obligation warrants the extension of the validity of the BG, the bidder shall remain liable to do so at its own cost. In case of material failure, the bidder is to fulfill its contractual obligation as per the terms and conditions of the contract, the BG in full or part thereof may be forfeited at the discretion of the purchaser.

c. Guarantee. The supplier is to give guarantee of continued supply of spares for at least 10 (Ten) years at a reasonable price (not exceeding 3% per year). Certificate is to be submitted with the offer.

d. After Sales Service. After sales service shall be available with the local agent of supplier and is to be provided as and when required for indefinite period or at least 15 years after the installation at a cost mutually agreed by the supplier and the purchaser. If any system, equipment etc becomes obsolete or out of production during or after the installation period (at least upto 15 years), the supplier is to submit alternative of same/ improved version for selecting the suitable replacement.

36. Technical Support. Technical support is to be provided to solve any maintenance and operational problem arising with the item for a considerable period (To be mentioned). An assurance by the Bidder stating agreement in this respect is to be submitted with the offer.

37. Test/ Trial and Acceptance.

a. A Site Acceptance Test (SAT) is to be conducted at COMSUB and COMNAV. BN may provide available facilities for the test. All consumables and special tools/ test equipment for the SAT is to be provided by the supplier.

b. Final acceptance certificate shall be provided by CINS on completion of successful SAT.

38. Validity. The offer shall remain valid till 30 June 2027.

39. Terms of Payment. Payment shall be made through an Irrevocable Letter of Credit (LC). LC shall be opened at the expense of the PURCHASER and **100% LC** value shall be made operative in favour of Supplier. CFR value being the value of the supplied goods, payment shall be made as under:

a. 1st Installment. 80% of CFR/ CPT value shall be paid **after shipment of hardware and software** and on submission of the following documents to the bank:

(1) Original Airway Bill (AWL)/ Bill of Lading (BL) must be issued by air lines/ shipping lines or authorized agent of shipping lines/ air lines against DGDP contract



RESTRICTED

reference (after signing the contract). LC number and Bangladesh bank registration number shall be mentioned in AWL/ BL. Freight amount must be shown separately; otherwise only FCA value shall be paid. The Bill of lading is to be submitted in three (03) original with three (03) copies. Rest all documents are to be submitted one (01) original with at least five (05) copies. In addition to this, following shall also be considered:

- (a) Name of the carrier must be indicated in AWL/ BL.
- (b) Must be signed by carrier or a named agent for/ on behalf of the carrier.
- (2) 'Supplier's Signed Commercial Invoice' representing 80% of CFR/ CPT value as stated in the contract (freight/ services amount is to be shown separately, if applicable).
- (3) 'Packing List' signed by the authorized representative of the shipping company or exporter.
- (4) 'Certificate of Origin' signed by the Manufacturer's Authorized Representative/ Authorized Official of the exported country.
- (5) 'Manufacturer's Certificate' signed by the manufacturer/ supplier, certifying that the product has been manufactured as per technical data/ analytical data and specification in the contract.
- (6) 'Manufacturer's Warranty Certificate' signed by the manufacturer/ supplier.
- (7) 'Quality Assurance Certificate' (QAC) signed by the supplier.
- (8) 'Shipment Clearance Letter' signed by DGDP (Directorate General Defense Purchase, Dhaka, Bangladesh) as purchaser.

b. **2nd Installment.** 20% of CFR/ CPT value shall be paid **after successfully commissioning the system** and on submission of the following documents to the bank:

- (1) 'Final Acceptance Certificate' issued by the purchaser after successful completion of installation, integration with related ship borne equipment, HAT, SAT and commissioning of the item.
- (2) The bidder shall submit the relevant document of 5% BG of CFR/ CPT value, which shall be released on submission of warranty completion certificate.

c. **Installment of Training and Services.**

- (1) **Local Training.** 100% cost of Local Training shall be paid **after successful completion of local training** and on submission of 'Local Training Completion Certificate' signed by the purchaser.
- (2) **Installation, Supervision and Setting to Work (STW).** 100% cost of Installation, Supervision and Setting to Work (STW) shall be paid after successful completion of the mentioned works and on submission of relevant completion certificate signed by the purchaser.
- (3) **Test/ Trial and Acceptance.** 100% cost of Test/ Trial and Acceptance shall be paid **after successful completion** of final Test/ Trial and Acceptance and on submission of 'Final Test/ Trial and Acceptance Certificate' signed by the purchaser for the successful completion of Final Test/ Trial and Acceptance in Bangladesh.

40. **Price.** Price breakdown of the item of the total offer is to be shown separately (e.g. price of the main equipment, additional accessories, Installation, local training, warranty/ guarantee etc) and then grand total of the foreign currency to be shown on the original offer submitted by the bidder. Moreover, if the item is imported against this tender, price to be quoted without import duties.



RESTRICTED

41. **Compliance Statement.** A clear and complete compliance statement of the tender supported by the product catalogue and Brochure with necessary specification and drawing/ diagram is to be submitted for evaluation of the quotation. Incomplete compliance statement shall attribute to cancellation of the offer. If any clause of this specification does not commensurate with offered item practically, the deviation has to be spelt out clearly.