

**TENDER SPECIFICATION OF TESTER PROGRAMMABLE IC WITH ACCESSORIES - BN DYD/
RADIO & RADAR SHOP**

1. **Name of the Equipment.** Tester Programmable IC with Accessories.
2. **Purpose.** To test and measure the most elusive faults and correct functions of ICs. Additionally, it is to be capable to check the faults of unpowered PCBs.
3. **Quantity** : 01 (One) Complete set.
4. **Type** : Portable.
5. **Brand** : To be mentioned.
6. **Model** : To be mentioned
7. **Manufacturing Country** : USA, UK, France, Canada, Germany, Italy, Norway, Sweden, Korea and Japan (Country to be mentioned).
8. **Country of Origin** : USA, UK, France, Canada, Germany, Italy, Norway, Sweden, Korea and Japan (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** : 2025 or later.
13. **Qualification for Bidder.** Manufacturers of Tester Programmable IC or their authorized distributor/ agent can submit quotations through their authorized local agent enlisted in DGDP. In case of offer from distributor/ agent, certificate of dealership/ agencyship from 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 items should 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.
15. **User List.** List of users of the offered Tester Programmable IC is to be mentioned with full address. The list shall provide the name of various navies/ coastguards with respective model and brand of offered Tester Programmable IC. The Tester Programmable IC should be widely used by various navies/ coastguards. The user list shall be used for the assessment of the offer.
16. **Condition for Acceptance of Quotation.** The quotation has to have supporting documents (booklets, leaflets, catalogues, brochures etc) with details about offered Tester Programmable IC, If detailed information regarding specifications, manufacturer's manuals and catalogue for the quoted model of the Tester Programmable IC, spare parts, accessories, scope of supply, etc are not provided the quotation will not be accepted.
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).
18. **Classification/ Standard.** The offered item is to fulfill the requirement of IEEE/ IEC/ IMO and other competent internationally recognized standards. The applicable classification standard(s) of offered items are to be mentioned and should be well supported by the certificates/ OEM brochures.
19. **Additional Features Offered by Bidder.** The bidder may suggest and offer additional features for the offered Tester Programmable IC. In this case, Bidder is to explain the detailed advantage of that/ those features of the offered Tester Programmable IC.

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20. **Scope of Supply.**

- a. 01 x Tester Programmable IC with Accessories.
- b. Standard accessories and cable for immediate operation.
- c. Software and Backup Software.
- d. Special Tools (If Any).
- e. Certification and Reports.
- f. Manual/ Documentations.
- g. Foreign Training.
- e. Local Training.
- f. Test, Trial and Acceptance.

21. **General Features.** The item should have following features (but not limited to):

- a. Automated testing and troubleshooting.
- b. Digital functional test (in- and out-of-circuit).
- c. Analogue functional test (ICs and discrete devices).
- d. Graphical test GENERATOR.
- e. Live comparison.
- f. Digital and Analogue V-I test (2D & 3D).
- g. Analogue matrix V-I.
- h. Digital IC identifier.
- j. EPROM verifier.
- k. Short locator.
- l. Programmable Power Supply.
- m. High-precision measurement and diagnostics.

22. **Environmental Condition.**

- a. Ambient Operating Temperature : 5° C to + 55° C.
- b. Storage Temperature : To be mentioned.
- c. Relative Humidity : Up to 95 % (Non condensing).

23. **System Composition.** The Programmable IC Tester shall comprise of the following Configuration but not limited to:

- a. 01 X Board Fault Locator.
- b. 01 X Digital and Analogue IC Tester.
- c. 01 X Laptop Based Software Tool.
- d. 01 X Variable Power Supply.
- e. Test Cables and Test Clips.
- f. Licensed Software.

24. **Technical Specification.** The technical specification of the system is given below:

Ser	Description	Parameter	Remarks
a.	<u>Board Fault Locator.</u>		
1.	Digital IC tester	Number of I/O channels	64-256 or more
		Number of guard outputs	4 or 8
		Drive output voltage	TTL/ CMOS compatible
		Drive slew rate	>100V/μs or better
		Receive input	To be mentioned
		Input impedance	10k or better

Ser	Description	Parameter	Remarks
		Over Voltage protection	To be mentioned
2.	Power supply for board under test	-	Details to be mentioned
3.	Test modes	-	Details to be mentioned
4.	Test thresholds	-	Details to be mentioned
5.	Test Types	-	Details to be mentioned
6.	Test libraries	-	Details to be mentioned
7.	Short Locator	-	Details to be mentioned
8.	Digital V-I Test	-	Details to be mentioned
9.	Graphical Test Generator	-	Details to be mentioned
10.	IC Identifier	-	Details to be mentioned
11.	EPROM Verifier	-	Details to be mentioned
12.	Accessories.	Following accessories is to be included:	
		Automatic out-of-circuit adapter	To be mentioned
		1 x 64 way test cable	To be mentioned
		1 x 64 way split test cable	To be mentioned
		1 x V-I probe assembly	To be mentioned
		1 x BDO cable	To be mentioned
		1 x Short locator cable	To be mentioned
		1 x Ground clip	To be mentioned
		1 x PSU lead set	To be mentioned
b. Analogue IC Tester.			
16.	V-I Test Capability	Number of test channels	24 or more
		Test Voltage	2 V to 50 V peak to peak or more
		Voltage resolution	8 to 12 bits
		Test frequency	50 Hz to 10 kHz or better
		Test current	To be mentioned
		Pulse output	Positive, negative or bipolar for thyristors/ triacs
		Pulse amplitude	Adjustable to +/-10 V or more
		Calibration	Can be calibrated by user
17.	Analogue Functional Test Capability	Number of I/O channels	24 or more
		Measuring Range	To be mentioned
		Driver voltage resolution	To be mentioned
		Driver output current	To be mentioned
		Sensor input voltage	± 24 V Sensor
		Voltage protection	± 50 V
		Sensor voltage resolution	To be mentioned
		IC test capability	Op-amps, comparators, DACs, ADCs, switches and special function analogue ICs in-circuit
		IC test libraries	Analogue, discrete, package, user
18.	Accessories.	Following accessories should be included:	
		1 x SMD test tweezer set and adapters	To be mentioned
		1 x 24 way test clip and cable assembly	To be mentioned
		V-I probes and adapter	To be mentioned
		2 x Pulse leads	To be mentioned
		2 x Ground leads	To be mentioned
		3 x Discrete leads	To be mentioned
c.	Laptop based Software Tool.	One system controller laptop with appropriate control, test configuration and diagnostic software is to be provided with the system. The Laptop should have minimum configuration of core i7 processor (12 th or latest generation), 8GB RAM and 1TB of SSD or better	Details to be mentioned
d. Variable Power Supply.			



Ser	Description	Parameter	Remarks
19.	Logic Supply	Voltage	2.5V to 6V programmable, 7A or more
		Resolution	0.05 V or better
		Over voltage	4V to 6V programmable threshold or better
20.	Variable Positive Supply	Voltage	0 to +24V programmable, 1.5A or more
		Resolution	0.05V or better
21.	Variable Negative Supply	Voltage	0 to -24V programmable, 1.5A or more
		Resolution	0.05V or better
e. <u>Test Cables, Test Clips.</u>		Required number of Test Cables, Test Clips are to be provided by the supplier	Details to be mentioned

25. **Original Software & Backup Software.** Bidder shall provide all related 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 should 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.

26. **Standard Accessories.** Standard accessories such as test probe, test lead set, connectors, adapters, current coil and carrying case which are essential to install and operate the IC Tester whether those are mentioned in the specification or not, also to be supplied. The price of standard accessories is to be included in FOB value. However, item wise price list of such standard accessories is to be provided with the offer for reference or future procurement.

27. **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.

28. **Special Tools.** 01(One) set of special tools (If required) for operation, maintenance and repair of the item is to be included with the scope of supply of each set. List of special tools is to be provided with quotation indicating price of each item.

29. **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) Supply Assurance Certificate.
- (2) Guarantee and Warranty Certificates.
- (3) After Sales Service Support Certificate.

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

- (1) 'Quality Assurance Certificates' for each item and their associated equipment and instruments from OEM is to be provided.
- (2) 'FAT Certificates'.
- (3) Certificate of Genuine Product and Brand-New Item.
- (4) Guarantee and Warranty Certificates.
- (5) After Sales Service Support Certificate.

30. **Manual/ Documentation.** 01 (One) set of following documents and manuals in English are to be provided **at free of cost** at the time of delivery:

- a. Operating Manual.
- b. Technical Manual with Circuit Diagram (At last upto component level).
- c. Maintenance Manual.

- d. Parts Catalogue including Parts Identification List (PIL) and spare parts list.

31. **Brochures/ Booklet.** 01 (One) set of original Brochures/ Booklets in English having details technical information about the quoted of IC Tester is to be provided along with the quotation for evaluation/ assessment.

32. **Foreign Training.** The prime objective of foreign training at OEM premises is to develop compatible operator and maintainer. The supplier will provide operator and maintainers training to the nominated BN personnel at manufacturer's premises. Cost of both way air fare (Dhaka to manufacturer's premises and back) will be borne by the purchaser. Food, accommodation, training material and internal travel cost are to be arranged by the Supplier and the same is to be quoted separately. Training shall be provided in English Language as per the duration below:

Ser	Training	Remarks
1.	02 (Two) BN personnel for a duration of 05 working days regarding operation and maintenance of offered Tester is to be given.	The training should include all operational aspect of said item according to its feature. The details of training syllabus are to be provided with the offer

33. **Training Contents.** The objective of the training should include flowing but not limited to:

- BN personnel should have comprehensive knowledge on system overview, operation and its features and limitations. They should also acquire detailed knowledge and orientation about tester.
- BN personnel should 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.
- All BN personal should be completely aware of all hardware/ software including all kinds documentations related to the system.
- There should be a standard operating procedure for a small ready response team to address problems.
- BN personnel will be able to un-install, install, set to work, configure and minimum the whole system including all software used in the system.
- BN personnel will be able to do alignment, calibration, testing, tuning and software-based system check etc of the offered Tester.
- Lectures and training should focus on the following:
 - System Overview and system configuration.
 - System operation covering all functions.
 - Details about System architecture.
 - Hardware and software and their function, troubleshooting, backup software, system restoration (if crashed) etc.
 - Familiarization of manuals, publications and document which are to be provided.
 - Signal/ Power flow diagram.
 - Working principle with step by step procedure.
 - Repair and maintenance.
 - Fault finding and understanding error message.

34. **Local Training.** A group of operators/ technicians (about 05 (Five) 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 will be borne by Bidder. The cost of local training is to be quoted within the main price and showing separately for future reference.

35. **Delivery.**

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

36. **Shipment.**

- a. **Source of Supply.** The source of supply of the offered systems are to be mentioned. It should 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 seaworthy packing to ensure safe transit by sea. 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.

37. **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.

38. **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) during submission of last 20% payment for a value of **@.05% (Five percent) of the total CFR value** from any scheduled bank in Bangladesh in favour of The Senior Finance Controller (Navy), Sailors Colony, Lalasarai, Mirpur-14, Dhaka-1206, 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 Tester Programmable IC and other items (not withstanding 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 of the BIDDER 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 sale service should 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. 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.
39. **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.
40. **Test/ Trial and Acceptance.**
- a. On completion of local training Site Acceptance Test (SAT) is to be conducted at BN Dockyard. 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. On completion of satisfactory Test/ Trial and commissioning, an acceptance certificate will be issued by BN.
41. **Validity.** The offer shall remain valid till 30 June 2026.
42. **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 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 Landing (BL) must be issued by air lines/ shipping lines or authorized agent of shipping lines/ air lines against DGDP contract reference (after signing the contract). LC number, and Bangladesh bank registration number are to be mentioned in AWL/ BL. Freight amount must be shown separately otherwise only FCA value shall be paid. All documents to be submitted (01) original with at least (05) five copies other than bill of lading shall be (03) three original with (03) three 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' for (freight/ services amount to be shown separately (if applicable)) representing 80% of CFR value as stated in the contract.
 - (3) "Packing List" signed by the authorized representative of the shipping company or exporter.
 - (4) "Certificate of Origin" signed by the Manufacturer's Authorized Person/Authorized Official of the exported country.
 - (5) 'Manufacturer's Certificate' Signed by the MANUFACTURER/ SUPPLIER. Certifying that product has been produced as per technical data/ analytical data and specification as per contract.
 - (6) "Manufacturer's Warranty Certificate" Signed by the MANUFACTURER/ SUPPLIER.
 - (7) "Factory Acceptance Test (FAT)/ Pre-Shipment Inspection (PSI) Completion Certificate" signed by the SUPPLIER.
 - (8) 'Quality Assurance Certificate' (QAC) signed by the SUPPLIER.
 - (9) 'Shipment Clearance Letter' Signed by DGDP (Directorate General Defense Purchase, Dhaka, Bangladesh) as PURCHASER.



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

- (1) 'Supplier's Signed Commercial Invoice' for representing 20% of CFR value as stated in the contract.
- (2) 'Final Acceptance Certificate' issued by the PURCHASER after successful completion of installation, integration with related ship borne equipment, HAT, SAT and commissioning of system.
- (3) The bidder shall submit the relevant document of 5% BG of CFR value, which shall be released on submission of warranty completion certificate.

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

(1) **Factory Acceptance Test (FAT).** 100% cost of Factory Acceptance Test (FAT) shall be paid **after successful completion of Factory Acceptance Test (FAT)** and on submission of the following documents to the bank:

- (a) 'Factory Acceptance Test (FAT)' signed by the PURCHASER for the successful completion of the Factory Acceptance Test (FAT) in OEM premises.
- (b) 'Supplier's Signed Commercial Invoice' for representing 100% of Factory Acceptance Test (FAT) value as stated in the contract.

(2) **Foreign Training.** 100% cost of Foreign Training (Optional) shall be paid **after successful completion of foreign training** and on submission of the following documents to the bank:

- (a) 'Foreign Training Completion Certificate' signed by the PURCHASER for the successful completion of the Foreign Training in OEM premises.
- (b) 'Supplier's Signed Commercial Invoice' for representing 100% of Foreign Training value as stated in the contract.

(3) **Local Training.** 100% cost of Local Training shall be paid **after successful completion of local training** and on submission of the following documents to the bank:

- (a) 'Local Training Completion Certificate' Signed by the PURCHASER for the successful completion of the Local Training in Bangladesh.
- (b) 'Supplier's Signed Commercial Invoice' for 100% of Local Training value as stated in the contract.

(4) **Installation, Supervision and Setting to Work (STW).** 100% cost of Installation, Supervision and Setting to Work (STW) shall be paid **after successful completion** of Installation, Supervision and Setting to Work (STW) and on submission of the following documents to the bank:

- (a) Installation, Supervision and Setting to Work (STW) Signed by the PURCHASER for the successful completion of the Installation, Supervision and Setting to Work (STW) in Bangladesh.
- (b) 'Supplier's Signed Commercial Invoice' for 100% of Installation, Supervision and Setting to Work (STW) value as stated in the contract.

(5) **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 the following documents to the bank:

- (a) 'Final Test/ Trial and Acceptance' Signed by the PURCHASER for the successful completion of Final Test/ Trial and Acceptance in Bangladesh.
- (b) 'Supplier's Signed Commercial Invoice' for 100% of Test/ Trial and Acceptance value as stated in the contract.



43. **Price.** Price 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.

44. **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 will 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.

