

**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** : 2024 or later.
13. **Qualification of Bidder.** Manufacturer of Programmable IC Tester or their authorized distributor/ agent can submit offer through their authorized local agent enlisted in DGDP. In case of offer from authorized distributor/ agent, one additional certificate is to be submitted with the offer stating that the warranty, after sales support and training will be provided under the full responsibility of OEM. All authorization certificates and relevant certificate from OEM are to be submitted with the offer.
14. **Additional Features Offered by Bidder.** The bidder may suggest and offer additional features for the offered IC Tester. In this case, Bidder is to explain the detailed advantage of that/ those features of the offered Tester.
15. **Scope of Supply.**
  - a. 01 x Programmable IC Tester with Accessories.
  - b. Standard accessories and cable for immediate operation.
  - c. Software, Documentation and Certificates.
  - d. Foreign Training.
  - e. Local Training.
  - f. Test, Trial and Acceptance.
16. **General Features.** The item should have following features (but not limited to):
  - a. Digital functional test (in- and out-of-circuit).
  - b. Analogue functional Test (ICs and discrete devices).
  - c. Graphical test generator.
  - d. Live comparison.
  - e. Digital and analogue V-I test.
  - f. Analogue matrix V-I.
  - g. Digital IC identifier.



- h. EPROM verifier.
- j. Short locator.
- k. Test Flow manager.

17. 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).

18. 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 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.

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

Ser	Description	Parameter	Remarks
<b>a. Board Fault Locator.</b>			
1.	Digital IC tester	Number of I/O channels: 64-256 or more	To be mentioned
		Number of guard outputs: 4 or 8	To be mentioned
		Drive output voltage: TTL/ CMOS compatible	To be mentioned
		Drive slew rate: >100V/μs or better	To be mentioned
		Receive input	To be mentioned
		Input impedance: 10k or better	To be mentioned
		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.	<u>Accessories.</u>	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>b. Analogue IC Tester.</b>			
16.	V-I Test Capability	Number of test channels: 24 or more	To be mentioned
		Test Voltage: 2 V to 50 V peak to peak or more	To be mentioned
		Voltage resolution: 8 to 12 bits	To be mentioned

Ser	Description	Parameter	Remarks
		Test frequency: 50 Hz to 10 kHz or better	To be mentioned
		Test current	To be mentioned
		Pulse output: Positive, negative or bipolar for thyristors/ triacs	To be mentioned
		Pulse amplitude: Adjustable to +/-10 V or more	To be mentioned
		Calibration: Can be calibrated by user	To be mentioned
17.	Analogue Functional Test Capability	Number of I/O channels: 24 or more	To be mentioned
		Measuring Range	To be mentioned
		Driver voltage resolution	To be mentioned
		Driver output current	To be mentioned
		Sensor input voltage: +/- 24 V Sensor	To be mentioned
		Voltage protection: +/- 50 V	To be mentioned
		Sensor voltage resolution	To be mentioned
		IC test capability: Op-amps, comparators, DACs, ADCs, switches and special function analogue ICs in-circuit	To be mentioned
		IC test libraries: Analogue, discrete, package, user	To be mentioned
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 i5 processor (11 <sup>th</sup> generation), 8GB RAM and 1TB of SSD or better	Details to be mentioned
d.	<b>Variable Power Supply.</b>		
19.	Logic Supply	Voltage: 2.5V to 6V programmable, 7A or more	To be mentioned
		Resolution: 0.05 V or better	To be mentioned
		Over voltage: 4V to 6V programmable threshold or better	To be mentioned
20.	Variable Positive Supply	Voltage: 0 to +24V programmable, 1.5A or more	To be mentioned
		Resolution: 0.05V or better	To be mentioned
21.	Variable Negative Supply	Voltage: 0 to -24V programmable, 1.5A or more	To be mentioned
		Resolution: 0.05V or better	To be mentioned
e.	<b>Test Cables, Test Clips.</b>		Required number of Test Cables, Test Clips are to be provided by the supplier

20. **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.

21. **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.

22. **Optional Items.** Price of the following optional items/accessories are to be quoted separately. Buyer may select the spares as required from the list for procurement:

Ser	Name of Item	Qty	Price	Remarks
1.	External case with USB interface facility	01		

23. **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.

24. **Documents.** 01 (One) set of following documents and manuals in English are to be provided with the IC Tester at the time of delivery at free of cost:

- a. Operating Manual including configuration, setup and operation (step by step procedure with illustration) and description of all operation modes and menus with explanations.
- b. Technical Manual.
- c. Calibration and Test procedure.
- d. Parts Catalogue including Parts Identification List (PIL) and spare parts list.

25. **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.

26. **Condition for Acceptance of Quotation.** The quotation has to be supplied with required documents (booklets, Catalogues, Brochures etc) with details about offered IC Tester. If detailed information regarding specifications, manufacturer's manuals and catalogue for the quoted model of the IC Tester, spare parts, accessories, scope of supply, etc are not provided the quotation will not be accepted.

27. **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.

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

- a. 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.
- b. 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.

- c. All BN personal should be completely aware of all hardware/ software including all kinds documentations related to the system.
- d. There should be a standard operating procedure for a small ready response team to address problems.
- e. 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.
- f. BN personnel will be able to do alignment, calibration, testing, tuning and software-based system check etc of the offered Tester.
- g. Lectures and training should focus on the following:
- (1) System Overview and system configuration.
  - (2) System operation covering all functions.
  - (3) Details about System architecture.
  - (4) Hardware and software and their function, troubleshooting, backup software, system restoration (if crashed) etc.
  - (5) Familiarization of manuals, publications and document which are to be provided.
  - (6) Signal/ Power flow diagram.
  - (7) Working principle with step by step procedure.
  - (8) Repair and maintenance.
  - (9) Fault finding and understanding error message.

29. **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.

30. **Test, Trial and Acceptance.** The buyer will carry out installation, test and trial of the item at BN Dockyard, Chattogram in the presence of the supplier's representative. After a satisfactory test and trial an acceptance certificate will be signed jointly by the supplier's representative and buyer's representative.

31. **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.

32. **Delivery.**

- a. The supplied items are to be delivered within 09 (Nine) months after signing the contract to the following consignee:

The Commanding Officer  
Naval Stores Depot

or Officer In Charge  
Naval Stores Sub Depot Dhaka

New Mooring, Chattogram,  
Bangladesh

Naval Unit Khilkhhet  
Namapara, Dhaka-1229, Bangladesh

- b. In case of CFR, the supplier will carry the items from Chattogram sea port/ air port as applicable) to NSD Chattogram/ NSSD Dhaka (as applicable) at the cost and risk of supplier.
33. **Port of Shipment.** To be mentioned. Port of Shipment is from country of manufacturer, or country of origin.
34. **Source of Supply.** To be mentioned. Source of Supply is from country of manufacturer, or country of origin.
35. **Source of Raw Material.** To be mentioned.
36. **Guarantee of Supply of Spares.** The supplier is to give guarantee of continued supply of spares for at least 05 (Five) years at a reasonable price.
37. **Warranty.**
- a. 12 (Twelve) months manufacturer's warranty for trouble free operation is to be provided for the item from the date of acceptance by the buyer. If any component of the supplied items becomes defective during the warranty period, the warranty shall be extended automatically (for relevant component) for the period of the subject component remains defective.
- b. For warranty repair/ replacement, the supplier will collect the defective item from NSD, Chattogram/ 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.
38. **Certificates.** Following certificates and reports are to be provided in English for the offered Tester during delivery:
- a. Type approval certificates of classification society.
- b. Quality assurance certificates for the IC Tester in regard to its manufacturer and performance is to be provided.
- c. Factory Test Certificates.
- d. Certificate of genuine product and brand new item.
- e. Guarantee and warranty certificates.
39. **Validity.** The offer shall remain valid till 30 June 2025.
40. **Price.** Price of the each 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.
41. **Terms of Payment.** Letter of Credit will be opened for full amount of contract price in favor of the supplier for the complete scope of supply with the following terms of payment:
- a. 80% of CFR value will be released after shipment of all items and on submission of necessary documents as per DGDP rules.
- b. The remaining 20% of CFR value will be released after successful test and trial jointly carried out by the buyer's representative and supplier's representative and final acceptance of the IC tester by the purchaser.

- c. 100% cost of local training/ test, trial and acceptance will be released after satisfactory completion of each service upon submission of job completion certificate from purchaser.

42. **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.