

TENDER SPECIFICATION - VHF/ UHF TRANSCEIVER (NARROW BAND)

1. **Name of Equipment** : VHF/ UHF Transceiver (Narrow Band).
2. **Purpose** : For short range communication among various units/ ships.
3. **Quantity** : 05 (Five) complete sets with all associated accessories.
4. **Type** : Marine Type.
5. **Brand** : ICOM / ROHDE & SCHWARZ.
6. **Model** : ID-5100A/ M3SR/ Latest production model/ Version/ Series.
7. **Country of Origin** : Japan/ Germany.
8. **Country of Manufacturer** : Japan/ Germany.
9. **Original Equipment Manufacturer (OEM)** : Name & Full address with e-mail of OEM is to be mentioned.
10. **Supplier** : Name & Full address with e-mail of supplier is to be mentioned.
11. **Year of Manufacturing** : 2024 or later.
12. **Classification/Standard** : The offered items/ equipment under the scope of supply are to fulfil to the requirement of IEEE/IEC/IMO and other 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.
13. **Date of Introduction of the Offered Model in the Market** : To be mentioned.
14. **Qualification of Bidders** : Only the principle or their genuine manufacturer's or authorised dealer can submit quotations through their authorised agents enlisted at DGDP. In all cases manufacturer's certificate of authorisation has to be submitted with the offer.
15. **Scope of Supply** : The equipment for each VHF/UHF Transceiver (Narrow Band) set is to be supplied fulfilling the technical specifications and complete in all respect with all required standard accessories (i.e Hand Microphone, Remote Control Unit, DC Power Cable, Mounting Kit, External Speaker, Microphone Hanger, Remote Control Bracket, Extension cable set, Power Supply Unit, Mounting Base for Transceiver, Discone type wide band Antenna, Foam Helix Cable, Heavy duty AC power strip etc) which are required to obtain 100% performance of the sets whether it is mentioned in the tender specification or not.



16. **Technical Specification.** must have following features:

The offered VHF/UHF Transceivers (Narrow Band)

Ser	Name	Description
<u>GENERAL</u>		
a.	Range coverage	Minimum 25 KM.
b.	Frequency coverage	a. TX: (1) 137 – 174 MHz. (2) 400 – 470 MHz. b. RX: (1) 118 – 174 MHz. (2) 375 – 550 MHz.
c.	Type of emission	F2D, F3E & F7W or to be mentioned.
d.	Usable temperature range	Minimum –10°C to +55°C.
e.	Frequency stability (–10°C to +60°C on the basis of 25°C)	± 2.5 ppm or better.
f.	Digital Tx speed	4.8 kbps or more.
g.	Voice coding speed	2.4 kbps or more.
h.	Antenna impedance	50 Ω.
j.	Memory channels	1000 channels or more.
k.	Power supply Requirement	12-15 V DC (±15%).
l.	Power supply Unit (AC to DC Converter)	Input (115-240)V AC, Output (12-15) V DC
m.	Dimensions (W X H X D) (projections not included)	To be mentioned.
n.	Weight (approx)	To be mentioned.
p.	Life Expectancy of the Equipment	To be mentioned.
<u>Transmitter</u>		
q.	Output power	25-50W.
r.	Spurious emissions	Less than – 60 dBc.
s.	Maximum frequency deviation	±5.0/±2.5 KHz (FM wide/narrow) or better.
t.	External MIC impedance	600Ω (8-pin modular jack)
u.	Modulation system	(FM, FM-N- FM Reactance modulation) (DV-GMSK Reactance modulation) or to be mentioned



<u>Receiver</u>		
v.	Sensitivity	<u>FM (12dB SINAD)</u> a. 137 MHz to 159.995 MHz : 0.32 μ V or less. b. 160 MHz to 174 MHz : 0.56 μ V or less. c. 375 MHz to 399.995 MHz: 0.56 μ V or less. d. 400 MHz to 499.995 MHz: 0.32 μ V or less. <u>AM 10dBS/N</u> : 118 MHz to 136.995 MHz: 1.0 μ V or less. <u>DV</u> (at BER 1%): less than 0.28 μ V
w.	Selectivity	<u>FM Wide</u> . More than 60dB. <u>FM Narrow</u> . More than 55dB. <u>DV</u> . More than 50dB.
x.	Audio output power (at 10% distortion with an 8 Ω load)	More than 2.0 W.
y.	External speaker impedance	8 Ω .
<u>Others</u>		
z.	Supporting Documents	All supporting document (ICD, booklets, leaflet, catalogue, brochure, drawing etc) and detailed particulars of the offered item.

17. **Programming Kits/ Software.** Five sets of original programming kit and software are to be provided for programming/cloning the VHF/ UHF Transceiver (Narrow Band) sets and peripherals units.

18. **Programming.** Upon receipt of the consignment at Naval Stores Depot Chattogram, the supplier's engineer is to assist BN reps to programme the set at BN Dockyard with given frequencies. The supplier's engineer is to show BN personnel, the procedure of programming the set so that BN personnel can reconfigure/ re-programme the set any time later if required. Thereafter "Bench Test" is to be conducted at BN Dockyard in presence of supplier's engineer.

19. **Co-axial Cable.** 50 mtrs high quality co-axial feeder cable (RG59 + 2 power wires solid copper core) with minimum attenuation (approx 1 watt per 10 mtr) is to be supplied with each set.

20. **Installation, Test/ Trial & Acceptance.**

a. The supplier will install the set with proper earthing in presence of BN personnel at respective BN Unit as soon as possible and carryout necessary test and trials. The Supplier's Engineer will show BN personnel about routine operation and maintenance procedure of the set. During the installation, test and trials, Supplier will provide additional materials required for full functioning of the set if otherwise not mentioned in this contract at free of cost.

b. If any component of the supplied set is found defective during installation, test and trial they are to be replaced immediately by new ones free of cost (including freight, insurance and all other cost). BN is to return the defective equipment after receiving the replaced item.



- c. Cost for installation is to be quoted and borne by the supplier.
- d. Any damage to on board existing equipment, items, machineries are to be compensated by bidder during installation and make the damage items operational with its full functionality.
- e. Installation, test and trial must be completed within 30 working days by supplier after issuing allocation by BN.
- f. On satisfactory completion of installation, test and trial, BN will issue Final Acceptance Certificate.

21. **Installation Materials.** Standard installation materials are to be provided for all equipment. List to be provided with offer.

22. **Tools/ Test Equipment.** Special tools, test equipment and kits necessary for maintenance/repair are to be quoted, indicating item wise price.

23. **Standard Accessories.** Standard accessories and assemblies will include all items and accessories, which are essential to operate the equipment whether those are mentioned in the specification or not. A list of such items/ accessories/ assemblies with Itemised price is to be included in the quotation as follows:

Ser	Part Number/ Model	Description	Brand	Country of Origin	Country of Manufacturer	Qty (EA)	Unit Price	Total Amount	Remarks
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24. **Price of Optional accessories.** Unit prices for optional accessories are to be quoted separately as follows:

Ser	Part Number/ Model	Description	Brand	Country of Origin	Country of Manufacturer	Qty (EA)	Unit Price	Total Amount	Remarks
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25. **Quality Assurance Certificate.** The Quality assurance certificate (QAC) in respect of the associated equipment in regard to its manufacturing and performance is to be provided by the manufacturer at the time of delivery.

26. **Documents.** The following documents are to be submitted with the offer:

- a. Certificate of assurance for minimum 10 years supply of spares with reasonable price.
- b. Original brochure/catalogue of the offered model of VHF/ UHF Transceiver (Narrow Band) sets.
- c. Manufacturer's/ distributor's/ agent's/ dealer's certificate mentioning that the supplier (enlisted bidder) is being authorised for this quotation/ offer and will be liable to fulfil all contractual obligation if the firm is awarded contract.
- d. Quality Assurance Certificate (QAC) by the Original Equipment Manufacturer



27. **Manual.** Following documents in English are to be provided free of cost at the time of delivery:
- Operators Manual.** One set of original operator's manual (covering major system units) to be provided with each VHF/ UHF Transceiver (Narrow Band) sets.
 - Technical Manual.** One set of original technical manuals (covering principle of design and operations, detail circuit diagram, trouble shooting flowchart, parts catalogue) for each supplied VHF/ UHF Transceiver (Narrow Band)/ accessories to be provided.
 - Workshop Level Repair Manual.** Two sets of original workshop level repair manual.
28. **Warranty Support.**
- Warranty for three years or manufacturer standard whichever is higher by the principal/ manufacturer for trouble free operation of VHF/ UHF Transceiver (Narrow Band) set and its accessories wef the date of final acceptance by (CINS) BN. If any component of the supplied item becomes defective during the warranty period, the warranty (for defective component) shall be extended automatically for the period of the subject component remains defective. Moreover, in case of any defective item(s) or component if the whole set defective or non-operational then the whole warranty of the said set shall be extended automatically for the period of subject component remains defective.
 - For warranty repair/ replacement, the supplier will collect the defective item from NSD, Chittagong/ 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.
29. **Extension of Warranty.** During the warranty period, if the item/ equipment remains non-operational for any action pending by the supplier, the warranty period will be extended for the same period. The warranty covers all parts and labour (including service engineer's cost) throughout the warranty period.
30. **After Sale Service.** Local agent has to be authorized by manufacturer/ principal/ dealer in the territory of Bangladesh to provide after sale service within warranty period and thereafter as and when required (at least 10 years) (Assurance certificate to be submitted with the offer for at least 10 years).
31. **Compliance Matrix.** Bidder will submit a Compliance Matrix with the offer stating "COMPLIANT" or "NON COMPLIANT" against every Clause and Sub-Clause of this Specification. All "COMPLIANT" statements are to be explained adequately and should be supported by technical brochures/documentation. Insufficient documentation shall be considered as disqualification. (If required, a set of Technical /Operator Manual may be included with the offer).
32. **Certificate and Document of Authentication.** The concerned supplier must provide following original certificate(s)/ document(s) as applicable with the quotation and during delivery of items as regard to the genuinity of source and item(s) in order to establish chain of links from the original source to supply of items:
- One certificate by the Original Equipment Manufacturer (OEM) in favour of the supplier/ local agent (in case of OEM as principal).
 - Two certificates, one by the OEM to authorized agent and other by the authorized agent to supplier/ local agent (in case of authorized agent as principal).



c. Three certificates, first one by OEM to authorized agent, second one by authorized agent to sub-agent and third one by sub-agent to supplier/ local agent (in case of sub-agent as principal). If the supplier/ local agent is unable to obtain the first certificate (by OEM to authorized agent), then it has to produce relevant document to prove agency-ship of its claimed agent of the recognized manufacturer.

33. **Delivery Schedule.** Within 180 days after signing of contract.
34. **Delivery Destination.** The supplier will arrange delivery of all items to the NSD Chattogram. All sea/ air port formalities, customs clearance, transportation etc to be completed/ arranged by supplier. BN may be asked for necessary certificates/ documents.
35. **Consignee.** The Commanding Officer, Naval Stores Depot, Chattogram, New Mooring, Chattogram, Bangladesh/ Officer In-charge, Naval Stores Sub Depot Dhaka, Namapara Khilkhet, Dhaka 1229.
36. **Port of Shipment.** The port of country of origin/ manufacturer/ principal. It is must be mentioned in the offer.
37. **Source of supply.** The source of supply is to be from the country of manufacturer or country of origin/ principal (To be mentioned).
38. **Validity of Offer.** Offer should remain valid up to 30 June 2025.
39. **Terms of Payment.** 80% of total CPT/ CFR value will be paid on completion of shipment of the contracted goods. Remaining 20% payment and 100% installation cost will be made on production of "Acceptance Certificate" rendered by BN following successful test and trial upon delivery of items as per contract.
40. **Price Quotation.** VHF/ UHF Transceiver (Narrow Band) sets price is to be quoted in FC without VAT/ Tax etc as follows:
a. FOB price.
b. Air/ Sea Freight.
41. **Compliance Statement.** A compliance statement fulfilling all the requirement of the tender is to be submitted for evaluation of the quotations. An incomplete compliance statement may attribute to cancellation of the offer. If any clause of this specification does not commensurate with offered item, the deviation has to be spelt out clearly.

