

TENDER SPECIFICATION - VHF TRANSCEIVER (VEHICLE MOUNTED)

1. **Name of Equipment** : VHF Transceiver (Vehicle Mounted).
2. **Purpose** : For short distance point to point communication as well as communication via IP Link Digital Repeater Station Motorola Mototrbo™ SLR 8000.
3. **Quantity** : 05 (Five) complete Sets with all standard accessories.
4. **Type** : Marine Type or to be mentioned.
5. **Brand** : MOTOROLA/ ICOM/ Q-MAC.
6. **Model** : GM338/ IC-2730A/ 90MQ-MAC/ Latest production model (version/ series).
7. **Country of Origin** : USA/ Japan/ Australia.
8. **Country of Manufacturer** : USA/ Japan/ Australia/ EU countries/ New Zealand/ UK/ Singapore/ Malaysia/ Mexico/ Canada.
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** : 2025 or later.
12. **Classification/ Standard** : The offered items/ equipment under the scope of supply are to fulfil the requirement of MIL-STD (Dust, Shock, Vibration, Humidity, Fungus, Altitude) testing with latest method and procedure, Ingress Protection (IP54/55) 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 and OEM brochures.
13. The offered VHF Transceiver (Vehicle Mounted) sets must have following features:

Ser	Name	Description
<u>GENERAL</u>		
a.	Frequency coverage	136 - 174 MHz.
b.	Channel Capacity	100 Channels or more.
c.	Channel Spacing	6.25/12.5/25 KHz.
d.	Power Supply	12-14V DC.
e.	Current Drain (approx) Tx/ Rx	To be mentioned.
f.	Operating Temperature	Minimum -20°C to +55°C.
g.	Dimensions (L x W x H)	To be mentioned.
h.	Weight	To be mentioned.
j.	Protocol (TDMA/FDMA/CDMA)	Compatible with BN existing IP linking VHF Repeater Motorola Mototrbo™ SLR 8000.
k.	Life Expectancy of the Equipment	To be mentioned.



TRANSMITTER

l.	Power Output	45-50 Watt.
m.	Type of Emission	16K0F3E, 8K50F3E, 4K00F1D/F1E, 7K60FD, 7K60F1E, 7K60F1W. Or to be mentioned.
n.	Frequency Stability	$\pm 0.5 - 2.0$ ppm.

RECEIVER

p.	Sensitivity: a. at 12 dB SINAD b. at 5% BER	a. $0.3 \mu V$ 22-25 μV (typ.) Or to be mentioned. b. 18-19 μV (typ.) Or to be mentioned.
q.	Adjacent Channel Selectivity	50-80dB (typ.) Or to be mentioned.
r.	Spurious Rejection	70-80 dB Or to be mentioned.
s.	Intermediation	70-78 dB Or to be mentioned.
t.	Hum & Noise	± 40 dB @ 12.5kHz Or to be mentioned.
u.	Audio Output Power	3W or more.
v.	Audio Distortion @ rated audio	3% Typical or to be mentioned.

14. **Scope of Supply.** The Equipment for each VHF Transceiver (Vehicle Mounted) set is to be supplied fulfilling the technical specifications and complete in all respect with all required standard accessories and attachment which are required to obtain 100% performance of the sets whether it is mentioned in the Specification or not. A list of offered standard accessories to be attached with the quotation. In this regards the Bangladesh Navy (BN) reserve the right to reduce/ increase the quantity of item mentioned in the tender.

15. **Installation Materials.** Standard installation materials are to be provided for all equipment. List to be provided by the bidder.

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

17. **Standard Accessories.** Standard accessories and assemblies have to be included (all items and accessories) which are essential to operate the equipment whether those are mentioned in the specification or not. Without quoted the concerned bidder will be considered disqualified supplier. A list of such items/ accessories/ assemblies with itemized 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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18. **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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19. **Co-axial Cable.** 25 mtrs High quality co-axial feeder cable with minimum attenuation (approx 1 watt/10 mtr) is to be supplied with each set.



20. **Programming Kits/ Software.** 03 (Three) Sets of Programming Kits and Software is to be provided for programming/cloning the VHF Transceiver (Vehicle Mounted) sets and peripherals units.
21. **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.
22. **Documents.** The following documents are to be submitted with the offer:
- Certificate of assurance for minimum 10 years supply of spares with reasonable price.
 - Prices list of all replaceable spare parts that would be required for 05 years repair/maintenance with item wise price.
 - Brochure/Catalogue of the offered model of VHF Transceiver (Vehicle Mounted) sets.
 - Manufacturer'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 with the contract.
 - Certificate of Ingress protection (IP) standard.
 - Certificate of MIL-STD.
 - Radio Equipment Importer and Vendor Enlistment Certificate from BTRC (For Local Agent only).
23. **Manual.** Following documents in English are to be provided free of cost at the time of delivery:
- Operators Manual.** One set of operator's manual (covering major system units) to be provided with each VHF Transceiver (Vehicle Mounted) set.
 - Technical Manual.** One set of technical manuals (covering principle of design and operations, detail circuit diagram, trouble shooting flowchart, parts catalogue) is to be provided for each supplied VHF Transceiver (Vehicle Mounted) sets /accessories.
 - workshop level repair manual.** 02 sets of workshop level repair manual.
24. **Programming/ Test/ Commission.**
- Upon receipt of the consignment at Naval Stores Depot Chittagong, the Supplier's Engineer is to programme all VHF Transceiver (Vehicle Mounted) sets at BN Dockyard with given Frequencies in presence of BN reps. The supplier's Engineer is to show BN reps the procedure of programming the sets so that BN can reconfigure/reprogramme the sets any time later if requires. Thereafter "Bench Test" to be completed at BN Dockyard in presence of Supplier's Engineer.
 - "Bench Test" completed sets will be issued to various BN Units. The supplier's Engineer will install the sets with proper earthing in presence of BN personnel at respective BN Units as soon as possible and carryout necessary test/trials. The supplier's Engineer will show BN personnel routine operation and maintenance procedure of the sets. For the test trial and operation of the set, supplier shall provide all required items (equipment, accessories and other associated supporting materials including consultancy fee (if applicable)) at free of cost whether mentioned in contract or not. Supplier's Engineer will ensure the competency of BN personnel in operation and maintenance of the set.



- 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 letter by BN.
 - f. On satisfactory completion of installation, test and trial, BN will issue Final Acceptance Certificate.
25. **Warranty Support.**
- a. Warranty for three years or manufacturer standard whichever is higher by the principal/ manufacturer for trouble free operation of VHF Transceiver (Vehicle Mounted) 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.
 - b. 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.
26. **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.
27. **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).
28. **Port of Shipment.** The port of country of origin/ manufacturer/ principal. It is must be mentioned in the offer.
29. **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.
30. **Delivery Schedule.** Within 180 days after signing of contract.
31. **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.
32. **Consignee.** The Commanding Officer, Naval Stores Depot, Chattogram, New Mooring, Chattogram, Bangladesh/ Officer In-Charge, Naval Stores Sub Depot Dhaka, Namapara, Khilkhet, Dhaka-1229.
33. **Validity of Offer.** Offer should remain valid upto 30 June 2026.



34. **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.

35. **Price Quotation.** VHF Transceiver (Vehicle Mounted) sets price is to be quoted in FC without VAT/ TAX etc as follows:

- a. FOB price.
- b. Air/ Sea Freight.

36. **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).

37. **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:

- a. One certificate by the Original Equipment Manufacturer (OEM) in favour of the supplier/ local agent (in case of OEM as principal).
- b. 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.
- d. Quality Assurance Certificate (QAC) by the Original Equipment Manufacturer (OEM).

38. **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.

