

प्रसारभारती/PrasarBharati
(भारतकालोकसेवाप्रसारक)
(India's Public Service Broadcaster)
आकाशवाणीमहानिदेशालय /Directorate General: All India Radio
योजनाएवंविकासएकक, आकाशवाणीभवन, संसदमार्ग, नईदिल्ली-110001
P & D Unit, AkashvaniBhawan, SansadMarg, New Delhi-110001

File No. Specification-4bayAntenna-9/4/2022-D(TD/FM)

Dated 14.11.2022

Subject: Specification for supply of 4 bay VHF FM Antenna -regarding Industry feedback & budgetary quotes.

DG: AIR is planning for procurement of Supply of 4 Bay VHF FM Antenna along-with associated equipments, items & accessories, on open tender basis. Draft technical specification is enclosed for reference.

In this regard, the Prospective bidders from India are requested to give their industry feedback (if any) on the above referred draft Specifications up to 28.11.2022. To get an estimated cost, the Prospective bidders from India are also requested to give their budgetary quote for the above referred subject up to 28.11.2022.

Industry feedback (if any) and budgetary quote may be sent to this Directorate at the following e-mail addresses.

murugan_k@prasarbharati.gov.in
rnahar@prasarbharati.gov.in
manzoor@prasarbharati.gov.in
yogendraair@prasarbharati.gov.in

Encl: As above.


14-11-2022

योगेंद्र पाल सिंह/(Y.P. Singh)

सहायक अभियन्ता/Assistant Engineer (FM)

कृते महानिदेशक/ for Director General

To,

1. Prasar Bharati web-site
2. The Prospective Bidders
3. DDG (E-Purchase), P&D Unit, DG: AIR, New Delhi


14-11-2022

कृते महानिदेशक/ for Director General

PRASAR BHARATI
(India's Public Service Broadcaster)
DIRECTORATE GENERAL: ALL INDIA RADIO
(PLANNING & DEVELOPMENT UNIT)

File No. Specification-4bayAntenna-9/4/2022-D(TD/FM)

SPECIFICATION FOR SUPPLY OF 4-BAY VERTICALLY POLARIZED SIDE MOUNT (POLE TYPE) VHF FM ANTENNA

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A. ESSENTIAL REQUIREMENT FOR THE TENDERERS:

- The tenderer should submit Schedule of Requirements/Materials for Supply without *price in the same format as given in AIR Specification* in the technical bid, failing which, the tender shall be considered incomplete and is liable to be rejected.

(ii) It is also mandatory to mention ***Make & Model of the offered equipment*** in the Schedule of Requirements/Materials of supply, failing which, the tender shall be considered incomplete and is liable to be rejected.
- Each statement of the technical specification has to be complied with & supported by printed technical literature, technical data sheets, schematic drawings and technical manuals from the manufacturer of the equipment by the tenderer to assess the full merit of the offer, failing which, the tender shall be considered incomplete and is liable to be rejected.
- The tenderer should submit the tender offer to AIR in the format given below, Section wise & Clause wise, in respect of all the Sections of technical specifications to assess the full merit of the offer, failing which, the

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676712/2022/FM Design - P&D Unit

Specification No: 4-BAY VHF FM ANTENNA/08/Sept/2022/-D (TD/FM)

tender shall be considered incomplete and is liable to be rejected.

S. No. of AIR Specifications (Section wise & Clause wise) (1)	Details of AIR Specifications (Part/ Section wise & Clause wise) (2)	Compliance (Yes/No) (3)	The page no. of the tender offer, where the information/ supporting document is available. (4)	Remarks (5)
Section-I Clause wise				
Section-II Clause wise				
Section-III Clause wise				

4. The tenderer should also quote the rate/cost of individual items in the tender offer while submitting the offer in respect of spares (**OPTIONAL**) in commercial bid.
5. The complete technical specification (Section wise & Clause wise) compliance statement along with Schedule of Requirements/Materials (un-priced) must be signed & stamped by the respective OEM in the tender document including the clarifications, if any, asked by AIR. In case, tender offer is from other than the OEM, the tenderer must also sign & stamp of the complete technical specification compliance statement (Section wise & Clause wise) including the clarifications, if any, asked by AIR, failing which, the tender shall be considered incomplete and is liable to be rejected. The OEMs & tenderer should mention their names in CAPITAL LETTERS & designation of the signatories, full address with pin code, phone number, fax number, E-mail etc.
6. All the volumes of the entire tender offer must be page numbered.
7. The authorization and guarantee must be given by OEM on their letter head pad, duly signed & stamped. In case, tender offer is from other than the OEM, the tenderer must also give guarantee on their letter head pad, duly signed & stamped, failing which, the tender shall be considered incomplete and is liable to be rejected. The authorization and guarantee other than OEM and guarantee other than tenderer in the tender offer will not be considered and is liable to be rejected.
8. Any change/modifications in the AIR technical specifications format, language, technical parameters or of any other nature including the deletion of clause, words, lines in the technical compliance statement by the OEM/ tenderer will not be acceptable to AIR and the tender is liable to be rejected.
9. **Optional items will not be considered for ranking purpose.**

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B. ESSENTIAL ELIGIBILITY CRITERIA FOR TENDERERS:

a. **The tenderer shall be from India only.**

b. The tenderer should either be the OEM of VHF FM Antenna or their authorized representative/dealer.

c. In case tenderer is the authorized representative/dealer, the tenderer must be in the business of sales and supply of VHF FM Antenna/TV Antenna for last **three** years or more **OR** must be an authorized representative/dealer of any OEM of VHF FM Antenna/TV Antenna for last three years or more. Documentary evidence to support this must be provided.

d. (i). The OEM of the VHF FM Antenna must have an experience of manufacturing and supplying 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna of power rating not less than 10 kW for **at least last 5 years**. Documentary evidence to support this must be provided.

(ii). The OEM should have supplied FM antenna to reputed/public broadcasters. The OEM must provide the details of past supply record **(in the format given below)** for at least 10 Nos. of such VHF FM Antenna of power rating not less than 10 kW, supplied during last five years ending last day of the month previous to the one in which the tender is invited.

Supply order Number with date	Antenna type & Model	Power rating of VHF FM Antenna	Quantity supplied	Name of the Customers/broadcasters with full postal address including e-mail addresses to whom VHF FM Antenna was supplied.
(1)	(2)	(3)	(4)	(5)

(ii). All India Radio reserves the right to get performance feedback of the antenna from any of the above broadcasters named by the tenderer/OEM.

(iv) Copies of Supply order/completion certificates/delivery challans/invoice of at least 05 Nos., out of 10 Nos. of such FM antenna of power rating not less than 10 kW submitted by the tenderer in above format, are also to be enclosed by the tenderer.

e. The OEM of the offered VHF FM Antenna must have his local office/authorized representative/dealer in India for after sales support. **A certificate as per Annexure-I** duly signed by the OEM as well as local office/authorized representative/dealer must be submitted with the offer. Copy of Agreement/MoU executed between OEMs and their authorized representative/dealer duly signed by both, must also be submitted with the offer.

f. The OEM must have his own test bench including test field, rotating tower, suitable receiving equipments for measuring various parameters and their analysis. The tenderer must submit the necessary supporting documents along with detailed drawings, photographs etc. of the test set up facilities at tenderer/OEM Works/Site, failing which the tender is liable to be rejected.

SECTION-I

GENERAL SPECIFICATIONS:

1.0 The 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna as per AIR specification shall be used for round the clock for continuous operation without any interruption in VHF FM broadcast service at AIR station for FM transmitter/studio setup. The offered equipment/items as per specification shall be field proven for satisfactory operation.

1.1 Please refer tender documents for general terms and conditions of contract for supply including all the commercial aspects like, Packing and packing list, Insurance and Marine Risk etc. Payment terms, Penalty/Compensation for delay, Damages and liabilities, Time Period and Extension for Delay, Foreclosure of contract due to Abandonment or Reduction in scope of supply, Cancellation of contract in full or part, Recovery of security deposit, Performance Guarantee, Unsatisfactory workmanship, Damages incurred during transit, tenderer liable for damages, Defects, Recovery of compensation, Ensuring payment and amenities, tenderer to indemnify Government against Patent Rights, Release of security deposit, Safety Code, insurance from manufacturer's works/factory to respective site etc. **i.e. in totality.**

1.2 INSPECTION:

- a. Detailed inspection of complete VHF FM Antenna system will be carried out at Manufacturer's works by **two engineers** of All India Radio as per details given in section III
- b. Prior intimation for carrying out inspection at OEM's works is to be given by the tenderer to All India Radio at least **6 weeks** in advance when the equipments are likely to be ready for inspection.
- c. For AIR inspecting engineers, expenses towards to and fro air journey, boarding, lodging etc. will be borne by All India Radio.
- d. The complete Acceptance Test Procedure/Protocol (ATP) will be prepared by the OEM of the VHF FM Antenna and other equipment/items as per Section-IV (A&B) and submitted to DDG (E) (FM), P&D Unit, DG: AIR for approval within one month of issue of Acceptance of Tender. ATP will also indicate full details of setup for measuring/testing equipments to be deployed during the performance measurements/inspection at factory. The **approved ATP** shall form the basis for performance measurements/inspection to be carried out.

1.3 INFORMATION TO BE SUPPLIED WITH THE TENDER:

- (i) A compliance statement to the complete specifications of AIR, Para wise, for each clause as per the format given above in clause A.3.
- (ii) Complete printed technical literature/data sheet/schematic drawings/detailed information including technical manual of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna and

associated equipments/items as per Section-IV (A&B) from the Original Equipment Manufacturer (OEM) in support of compliance statement should be furnished for all the items of the tender, to assess the full merit of the offer, without which the tender offer will be considered incomplete and is liable for rejection.

- (iii) Detailed Schedule of Requirements/Materials offered for the supply of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna, associated equipments & accessories should be in conformity with Section-IV (A&B) without any change in the format without price, failing which, the tender will be considered incomplete and is liable for rejection. The tenderer must quote all items.
- (iv) Descriptive information and complete details of each equipment offered shall be given by the tenderer.
- (v) Country of Origin, Make, Type & Model of all the offered items should be mentioned including the name & address of their vendors.
- (vi) A copy of the Technical Manual must be enclosed with technical bid for assessing the complete 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna. The Technical Manual must include at least the details given below:
 - (a) General description of the offered 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna, block diagram/schematic drawings etc.
 - (b) A suggestive drawing with dimensions in metres for installation of the 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna system with all allied equipment.
 - (c) Diagrams showing the isometric view of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna and allied equipment with dimensions in metres.
 - (d) Installation Manual & drawings with dimensions in respect of offered equipment.
 - (e) Photograph of the 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna.
 - (f) **All Do's and Don'ts which are essential for safe Installation, Operation & Maintenance of the 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna.**

1.4 INFORMATION TO BE SUPPLIED BY THE TENDERER WITHIN ONE MONTH AFTER ISSUE OF ACCEPTANCE OF TENDER:

One set of Technical Manuals (for Installation, Testing, Commissioning, Operation & Maintenance, including theory of operation and fault diagnosis) **COLOUR** printed and duly bound for 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna along with associated equipment, items & accessories along with soft copy on Pan drive must be supplied to “Dy. Director General (Engg.) (FM), P & D Unit, DG: AIR, New Delhi-110001” for examination and approval.

1.5 INFORMATION TO PRECEDE DESPATCH OF EQUIPMENT:

Following information should be supplied to the Dy. Director General (Engg.) (FM), P & D Unit, DG: AIR and each of the consignee, two months prior to dispatch of Equipment:

- a) Detailed list of equipment under dispatch.
- b) Photograph showing location of various units/subunits with item numbers marked thereon.

1.6 DOCUMENTS TO BE SUPPLIED ALONGWITH EQUIPMENT:

- i. 2 set of Technical manuals (for Installation, Testing, Commissioning, Operation & Maintenance, including theory of operation and fault diagnosis) **COLUR** printed and duly bound for 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna along with associated equipment, items & accessories and inspection report with soft copy on Pan drive shall be supplied.
- ii. One set of the manuals shall also be supplied as per giving details.
For the following Offices/Officers-One set of hard copy along with soft copy on pen drive for each offices/officers :- DDG(E-FM), DDG(E-TM), of P&D unit, DG:AIR, Zonal Offices (Maintenance Wing of concerned zones), Zonal Offices(Project Wing of concerned zones), Technical Library(P&D Unit), R&D & NABM (T) New Delhi.

1.7 GUARANTEE:

The tenderer shall submit with his tender an undertaking to accept the following guarantees:

- (i) A guarantee that the equipment supplied will be in accordance with these specifications, varied only to the extent stated in his tender and agreed to in the contract.
- (ii) A guarantee to make good within **15 days** at tenderer's expense, if any component which becomes defective under normal operating conditions within 36 months from the date of acceptance of Equipment at respective site. If the tenderer failed to rectify the fault within the stipulated period of 15 days, the guarantee period for that particular site equipments/items would be extended corresponding to the outage period.
- (iii) A guarantee to supply all components for a **period of ten years** from the date of acceptance of Equipment at site, at rates at which these are being supplied by him to other customers and also should match prices of original manufactures of these components prevailing at that time.
- (iv) If at any stage during next 10 years, the manufacturer stops production of this model of Equipment, The Tendere/OEM shall intimate All India Radio in advance to enable the latter to stock the critical items.

1.8 LANGUAGE/UNITS:

All information supplied by the tenderer & all markings, notes, designation on the drawings & associated write-ups shall be in "**English language**" only.

All dimensions, units on drawings, all references to weights, measures & quantities shall be in MKS.

1.9 DELIVERY OF EQUIPMENT:

Six (06) months from the date of issue of Acceptance of Tender.

1.10 PACKING AND PACKING LISTS:

All the equipment should be securely and properly packed to withstand transit hazards. Equipment packing shall be fit for sea freight and incorporate adequate protection against ingress of moisture. Packing slips giving details of the items contained in each package shall be placed inside the package in a water proof envelop to enable easy identification and should contain cross references to item/part

numbers of installation drawings/components lists. Copies of packing slips and other details should be sent separately to respective consignee and also to The Dy. Director General (Engg.) (FM), P & D Unit, DG: AIR, New Delhi.

1.11 INSURANCE AND MARINE RISKS ETC:

Please refer to commercial terms.

1.12 MAINTENANCE SUPPORT AND SPARES:

- (a) The minimum recommended essential spares shall be quoted separately by the tenderer.
- (b) The minimum recommended essential spares may be based on predicted rate of failure.
- (c) In case, the tenderer quotes the optional items as 'a set', the details of the components/items offered in the 'set' must be spelt out clearly including their Make & Model and quantity.

1.13 LOCAL REPRESENTATIVE/DEALER:

- a. After sales service and maintenance support of the VHF FM Antenna should be available in India through the local office/Representative/Dealer even after the guarantee period is over and throughout the life of the VHF FM Antenna as certified by the OEM.
- b. Documentary evidence about local after sales support for the VHF FM Antenna system must be provided with the offer. The address, contact details of local office/representative, details of technical staff, their qualification and experience etc. must also be provided with the offer.
- c. Copy of agreement/MoU in this regard between OEMs and their local representative/dealer **and signed by both** must be submitted with the offer.
- d. In case, any item of VHF FM Antenna system requires repairing at works/factory, the same would be handed over to local office/Representative/Dealer of OEM/tenderer in India, who would arrange export of the item to works/factory and re-import in India after repairs.
- e. The local office/authorized representative/dealer will be the nodal point for resolving issues related to after sales support. It is the responsibility of local office/authorized representative/dealer to arrange the repair/replacement of faulty items. Any module of VHF FM Antenna or other equipment requiring repairs will be repaired. If it is not feasible to repair the module at site, the same will be collected from the site by local office/authorized representative/dealer that will arrange repairs locally. The cost of transportation, repairs etc. shall be borne by the tenderer during the guarantee period.
- f. After sales support for the repairs/maintenance of VHF FM Antenna system after the completion of guarantee period, shall also be provided by the respective OEM of the VHF FM Antenna and other associated equipments through their local offices/authorized representatives/dealers in India.
- g. The details of technical facilities available with local office/authorized representative/dealer for after sales support such as test bench, necessary test & measuring equipment and photographs thereof, must be provided in the technical bid.
- h. At the discretion of AIR, the representative(s) of AIR may visit the works of local office/authorized representative/dealer of OEM in India to ensure/verify that adequate technical infrastructure is available for after sales service for timely resolving the issues related to attending/replacing the equipments. Tenders from the tenderers who failed to meet these criteria shall be considered incomplete and is liable to be rejected.

SECTION-II**TECHNICAL SPECIFICATIONS:****1.0 INTRODUCTION:**

The 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna is required for use with FM transmitters of All India Radio for multi frequency operation as well as single frequency operation in tropical condition of heavy rain fall, high humidity and desert region. Two or more transmitters (FM 2Tx. of different frequencies) may be combined and fed to this antenna.

The tenderer is required to offer complete Antenna System, comprising of Dipoles, Inter bay RF coaxial air dielectric feeders/Rigid lines, Power Splitters, Fine Tuning arrangement (on site) and other accessories for the completeness of offered Antenna System.

- 1.1 The Antenna will be installed on the pipe (75 mm inner dia. category 'C') on 50 M tower/60 M tower. Refer drawing No. TM- 16779.
- 1.2 Following equipment and items will be provided by AIR.
- 1.2.1 The transmitter conforming to ITU-R standards.
- 1.2.2 RF coaxial foam dielectric cable, rigid lines (for inter connections of transmitter in the transmitter hall), Dummy load and RF coaxial switch (for selection of Antenna or Dummy load) etc.
- 1.2.3 Self-supporting latticed steel tower.
- 1.2.4 A GI pipe of 75 mm inner dia. category 'C' is installed on the tower by AIR for fixing the 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna system.

All the items required for the completeness of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna system offered by the tenderer and its mounting for optimum performance shall be supplied by the tenderer except equipment and items mentioned above in para No.1.2.1, 1.2.2, 1.2.3 and 1.2.4.

2.0 ELECTRICAL PARAMETERS:

- 2.1.1 Polarization:** VERTICAL
- 2.1.2 Input impedance:** 50 Ω unbalanced
- 2.1.3 Frequency band:** 88 MHz-108 MHz
- 2.1.4 VSWR**

2.1.4.1 Less than 1.3 for 88-108 MHz.

2.1.4.2 Less than 1.2 for 100 to 105 MHz.

2.1.4.3 Less than 1.1 for Operating Frequency (between 100-104 MHz) intimated later at the time of placement of the order

2.1.4.4 *VSWR and Return Loss Value (dB) in Graph form over the entire frequency range (88 MHz-108 MHz) to be enclosed with the tender.

- 2.1.5 **Continuous Average Power rating:** 10 kW
- 2.1.6 **Downward beam tilt:** 1° for entire Operating Frequency Range i.e. (88 MHz –108 MHz)
- 2.1.7 **Null filling:** Required, 10%
- 2.1.8 **Antenna Gain:** ≥ 7.5 dBd
- 2.1.8.1 ***Antenna gain** (in dBd): Antenna gain over the entire frequency range of 88 MHz - 108 MHz shall be enclosed with the tender.
- 2.1.8.2 *** Radiation pattern in vertical Plane (0° to $\pm 90^\circ$):** Radiation pattern in vertical Plane (in dB) should be enclosed with the tender.
- 2.1.8.3 ***Radiation pattern in Horizontal plane (0° to 360°):** Radiation pattern in Horizontal plane (in dB) should be enclosed with tender.(Beam width should be 360°)
- 2.1.9 **No. of vertical Bays:** 4
- 2.1.10 **Spacing between Bays:** Approximately 0.7λ to 0.8λ . Actual distance to be indicated in tender, and a full Engineering drawing to be enclosed.
- 2.1.11 **Antenna Mounting details:** The FM antenna will be mounted on 50 M or higher tower after installation the GI pipe (75 mm inner dia. Category 'C') on tower.
- 2.1.12 The four (4) dipoles of the FM Antenna will be mounted on a 75 mm inner dia. category 'C' GI pipe on one face of the tower. Expected field pattern (circular polarization) with such a supporting tower should be submitted alongwith the tender. Details for carrying out field adjustments for ensuring that actual Radiation Pattern (Horizontal and Vertical plane) conforms to AIR specification, **if any**, in the field **or** at site are to be enclosed with the tender.
- 2.1.13 **Inter-bay feeding/Feed System:** Full details of Feeding arrangement and the engineering drawings with dimensions along-with the details of inter-connecting RF co-axial foam dielectric cables/rigid lines etc. to be submitted with the tender. The entire feeding system should be adequately protected against heavy rainfall, extreme daily temperature variance.

**These technical parameters are to be supported by printed technical literature, technical data sheets & technical manuals from the OEM by the tenderer to assess the merit of the offer, failing which the tender shall be considered incomplete and is liable to be rejected. The tenderer should make a detailed offer.*

2.2. MECHANICAL DETAILS (ANTENNA SYSTEM):

- (i) Antenna Weight (with support hardware) ≤ 160 Kg
- (ii) Antenna Wind Load: ≤ 240 Kg
- (iii) Maximum Wind Speed: 198 kmph
- (iv) Antenna aperture height: ≤ 12000 mm

2.2.2 **External material of Dipoles and rigid feed lines:** Exterior of dipoles will be made of stainless steel or Marine Brass. Rigid lines will be made of Marine Brass or Copper.

2.2.3 **Internal material (for Power Divider, Rigid lines & interconnecting feed cables/ lines):** Inner lines of Dipoles/Power divider should be copper or Brass. All electrical contacts will be silver plated. All inners and bullets of connecting head or mating head will be made of Beryllium copper and must be silver plated. Insulators will be made of virgin Teflon.

2.2.4 **Dipole input:** Each Dipole input should have 7/8" EIA connection

2.2.5 **Ambient Temperature/RH:** -5° C to 50° C, RH 95% Non-Condensing.

2.2.6 **Input connector:** Main power divider of antenna system: To match with 1-5/8" EIA Flange connector, RF output of FM transmitter will be available through the 1-5/8" EIA Flange connector mounted on 1-5/8" RF coaxial Foam type cable.

2.2.7 **Set of clamps:** Suitable clamps for dipoles, Power Divider/Splitter and RF coaxial foam dielectric cables / rigid lines etc. are to be included in the offer and the mechanical details (weight, dimension & materials used etc.) be indicated in the tender.

2.2.8 The entire Antenna System should be adequately protected against heavy rain fall & humid climate of tropical region. Each component/Sub system of the Antenna System should be adequately protected for extreme weather conditions. The Antenna system should also be well protected against dust as well as desert conditions of extreme day and night temperature variations.

SECTION-III**INSPECTION DETAILS**

The inspection for acceptance of the Complete 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna system will be carried out at the Manufacturer's Works by **two Engineers** of All India Radio (AIR) in accordance with Acceptance Test Procedure/Protocol(ATP). All facilities like complete set of measuring instruments, power supply, manual assistance etc. will be provided by the manufacturer.

The tenderer shall put up all the 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna system for inspection. Complete details and specifications of the above Antenna System will be checked and all parameter values will be measured. Inspection period shall be one working day for each Antenna system.

Exhaustive checking and measurements will be carried out so as to completely check the compliance of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna System and its sub systems as per approved ATP (based on AIR as well as OEM specifications).

It is mandatory that all these testing/measurements of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna System as per parameters in Section-II at any three frequencies including operating frequency(s) in the VHF band i.e. 88 MHz to 108 MHz, are carried out well in advance as per approved ATP. These must be submitted to All India Radio along with the call for inspection of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna well in advance for analyzing etc. These measurement details, graphical printouts and figures must also be available at the factory at the time of inspection.

Following information should also form part of above data which will also be checked for each 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna during inspection by AIR representative **at manufacturer's works:**

1.0 Origin of Country, Make, Type and Model of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna, its accessories and spares.

SECTION-IV (A)**SCHEDULE OF REQUIREMENTS/MATERIALS (UN-PRICED) {FOR ONE SET OF 4-BAY VERTICALLY POLARIZED SIDE MOUNT (POLE TYPE) VHF FM ANTENNA}**

S. NO.	Description	Make & Model	Unit	Qty
1.	4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna system complete as per AIR Specification including Power divider/splitter, fine tuning arrangement, antenna clamps etc. with technical manuals as per AIR Specification.		Set Complete	1Set Complete
2.	Any other items/hardware materials etc. offered for the completeness of the above antenna system. (Item wise details of the offered items/hardware materials etc. shall be given by the tenderer)		Lot	1 Lot
3.	Inspection charges at manufacturer's works of VHF FM Antenna as per AIR specification.		Lot	1 Lot

SECTION-IV (B)**SPARES (OPTIONAL) {FOR ONE SET OF 4-BAY VERTICALLY POLARIZED SIDE MOUNT (POLE TYPE) VHF FM ANTENNA}**

S. NO.	Description	Make & Model	Unit	Qty
1.0	List of recommended spares and any other accessories. (Items wise details of offered material including part number are to be given by the tenderer)		Set Complete	1 Set Complete
2.0	(a) "O" ring		Set	1 Set
	(b) Main RF Power Splitter [1 input -4 output}		No.	1 No.
	(c) Connectors assorted sizes		Set	1 Set
	(d) RF branch distributors foam dielectric cables		Set	1 Set
	(e) Dipole		No.	2 Nos.
	(f) Other miscellaneous items.		Lot	1 Lot
3.0	Any other items/hardware etc. offered for the completeness of the above antenna system. (Item wise details of the offered items/hardware materials etc. shall be given by the tenderer)		Lot	1 Lot

All India Radio at its own discretion may procure spares for a value not exceeding 10% of the cost of equipments. The tenderer should quote all the essential spares.

ANNEXURE-I**PERFORMA FOR INFORMATION ABOUT LOCAL OFFICE FOR AFTER SALES SUPPORT**

1.	Address of Office : Telephone : Fax No. : E-mail Address :	
2.	Address for communication (if different)	
3.	Legal Status (Authorized Representative/ liaison office/registered company etc.)	
4.	Name & Address of Local official	
5.	Brief details of Technical facilities available for after sales support	
6.	Main line of business, specialization and number of years of operation	
7.	Total number of permanent technical employees including their designation and qualification	
8.	Details of Agreement/MoU for after sales support with OEM (Copy must be provided with the offer)	Date of Agreement: Executed at : Executed by :

Annexure-II

* Places for Supply of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna

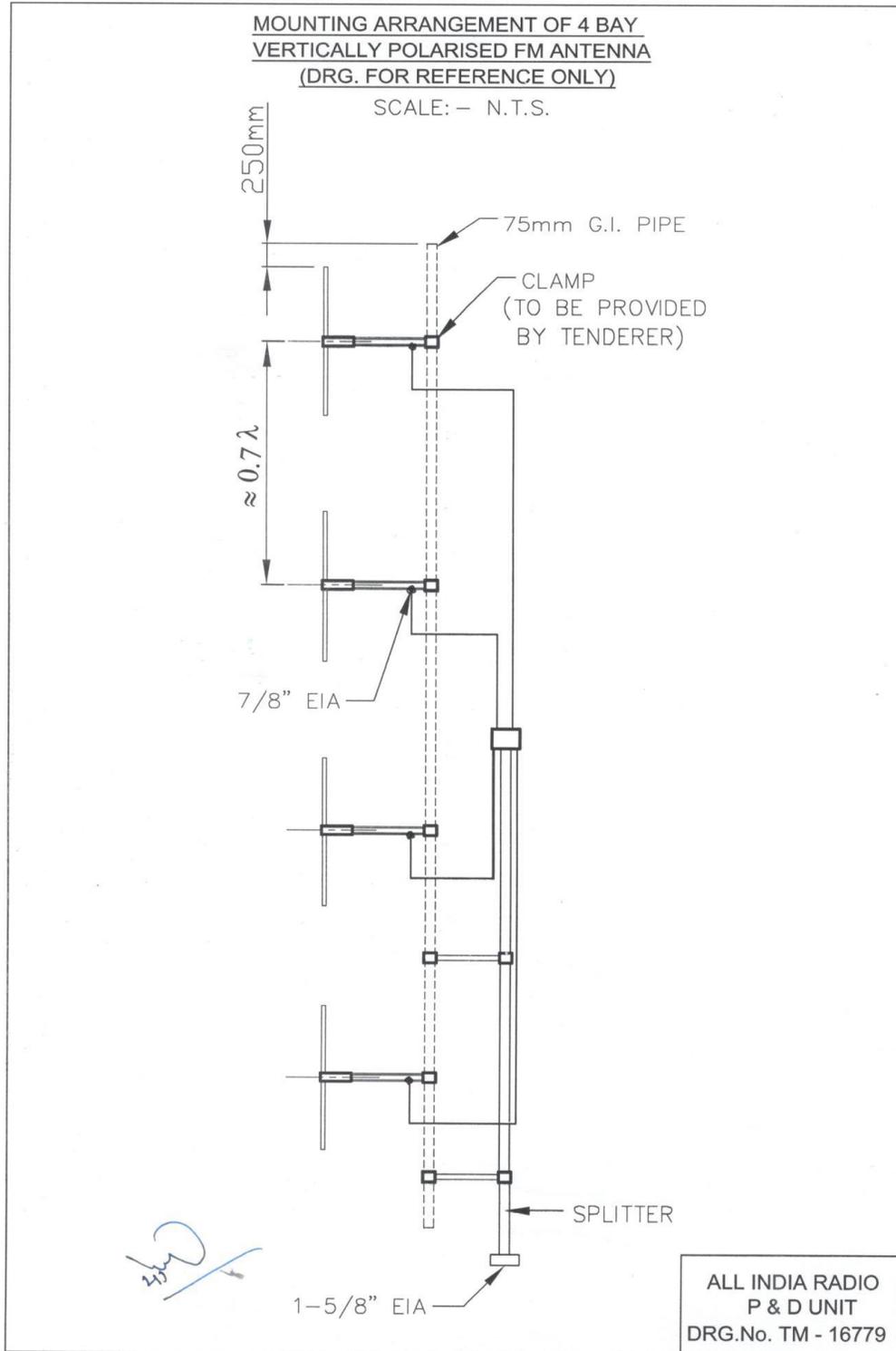
To be used anywhere in India

* Revised List of Places for Supply of 4-Bay Vertically Polarized Side Mount (Pole Type) VHF FM Antenna

Location list will be provided at the time of the Tender.

S. No.	Name of Places	State/UT
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

* Place may change and order will be provided on the basis of actual requirement at that time.



Manish Gupta, AE

Y.P. Singh, AE

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Rajendra Nahar, DE

K. Murugan, DDG(E)