

PRASAR BHARATI
BROADCASTING CORPORATION OF INDIA
DIRECTORATE GENERAL: ALL INDIA RADIO
(PLANNING & DEVELOPMENT UNIT)

F. No: 10th plan/Field Strength meter(Spec.)/9/4//2008-D(TD/FM)

Specification for Field Strength Meter (FM)

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N.B. :

1. The Tenderer shall submit complete Bill of material against technical bid without price as in Section III (A) & Section III (B) of AIR Specification (two bid system i.e. technical bid and commercial bid).

2. Each statement of this specification has to be complied with & supported by printed literature/data sheets from the manufacturer of the equipment by the tenderer, without which tender will be considered incomplete & is liable to be rejected. The tenderer should make a detailed offer.

3. All the technical details and schedule of requirement/material must be submitted and enclosed with the tender by the tenderer failing which the tender is liable to be rejected.

4. The tenderer shall submit the tender offer to AIR in the format given below .

| Sr. No. of AIR Spec. Section wise & Clause wise | Details of AIR Spec. | Make & Model No of the Equipment offered | Performance figures of equipment. | Compliance Yes/NO | Ref to tender page No. | Remarks |
|---|----------------------|--|-----------------------------------|-------------------|------------------------|---------|
| Section I | | | | | | |
| Section II | | | | | | |
| Section III(A) | | | | | | |
| Section III(B) | | | | | | |

5. Tenderer shall quote the rate / cost of individual items in the tender offer while submitting the offer for spares in commercial bid.

6. The complete technical compliance must be signed & stamped by the Original Equipment Manufacturer(OEM) of the equipment in the tender document. In case tender offer is from other than the Original Equipment Manufacturer, the tenderer must also sign & stamp each page of the compliance statement. The OEM & tenderers shall fill up their name in CAPITAL LETTERS, full address with pin code , phone number, fax number, e-mail address and with their full signatures , failing which the tender shall be liable for rejection.

7. Optional items shall not be counted for ranking purpose.

SECTION-I GENERAL SPECIFICATION

1.0 **SCOPE:** This specification lays down the general, technical and performance parameters requirement of the equipment to be used for the measurement of R.F. field strength of VHF FM transmitters.

The equipment should be simple in operation, fully solid state, portable type hand held battery operated with all standard accessories and fully tropicalised in order to ensure guaranteed performance under environmental conditions. **The equipment shall conform to international broadcasting measuring standards.**

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., Guarantee, 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:** Field Strength Meter will be accepted on the basis of OEM's test certificate of actual performance measurements as per standard International manufactures practice before dispatch to AIR.

1.3 DETAILS REQUIRED ALONG WITH TENDER

- (i) Complete technical compliance must be signed & stamped by the Original Equipment Manufacturer (OEM) of the equipment in the tender documents. Tel. No. Fax No. and E-mail address of the OEM should be given on first page of the tender document. In case tender offer is from other than Original Equipment Manufacturer, the Tenderer must also sign & stamp each page of the compliance statement.
- (ii) Complete technical information, details, parameters as mentioned in **Section -II (technical specifications)** as above are to be submitted with tender *by the tenderers*.
- (iii) Complete set of *Technical* drawings, giving full details and dimensions of equipment with complete list of items to be submitted with tender.
- (iv) A write up giving full working details and salient *technical* features of the equipment are to be submitted with tender by the tenderer.

A copy of tech. manuals including specifications of equipment and installation / operation instructions are to be forwarded with tender.

- (v) Para-wise & item-wise compliance statement should be forwarded with tender. Actual value *shall* be indicated. In case of deviation(s) the same may also be clearly stated. All information and details asked for must be forwarded with tender.
- (vi) In support of Tenderer's claim above, an "up-to-date" list of their customers is required to be submitted ***Names, Postal address, E-mail address and Fax numbers of customers must be indicated.***

1.4 EXPERIENCE (Supply):

Minimum 5 years experience of OEM in production of the products quoted.

1.5 INFORMATION TO BE SUPPLIED ALONGWITH EQUIPMENT:

(i) For each complete Field Strength meter **two** printed and duly bound copies of manuals and books for Operation, Maintenance, Fault diagnosis are to be supplied to consignee.

(ii) Three Complete set, of these documents i.e. **printed & duly bound** set of *Operation & Maintenance* manuals for each Field Strength meter against the order are required to be sent to the following officers / offices / places:

- (a) Zonal Offices (Project Wing) - 5 set (*one each for 5 Zones*)
- (b) Technical Library, P&D Unit, DG:AIR - 1 set
- (c) Staff Training Institute (Technical) - 1 set
- Total - 7 sets

One Soft copy of these documents is also required on CD for use with PC to be delivered to DE(Project), P & D Unit, DG AIR .

1.6 ISO CERTIFICATION: The tenderer should either be original equipment manufacturer or supply the equipment only from the original equipment manufacturer. Original equipment manufacturer should have ISO Certification for the manufacturing work and the documentary proof for the same are to be enclosed with the tender.

1.7 A list of required spares and tools etc. along-with item-wise price details are to be quoted separately(as optional) with tender by the tenderers.

1.8 **GUARANTEE:** 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 30 days at his own expense any component which becomes defective under normal operating conditions during 18 months from the date of acceptance of the equipment at respective site.
- (iii) A guarantee to supply all components for a period of 10 years from the date of acceptance of equipment at site, at rates at which these are being supplied by him to other customers & also should match prices of original manufactures of these components prevailing at the time.
- (iv) If at any stage, during next 10 years, the manufacturer stops production of this model of equipment, he shall intimate All India Radio in advance to enable the later to stock the critical items.

1.8 **_SERVICE FACILITY:** The Tenderer shall specify the repair/service facility available for the equipment in India with address, Phone/Fax nos. etc.

1.9 **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.

1.10 **DELIVERY OF EQUIPMENT:**

Within Three months from date of order.

SECTION - II TECHNICAL SPECIFICATION

2.1 DESIGN & GENERAL CONFIGURATION OF FIELD STRENGTH METER:

The field strength meter equipment should have following features;

- i) It should be rugged portable.
- ii) The system should have fully Digital synthesized tuning.
- iii) Digital display to facilitate various field strength measurements along with coordinates, date & time measurement.
- iv) Memory for Data ;storage and Retrieval. **Internal Memory recall and Display** of user defined frequencies
- v) Auto/Manual calibration and easy to operate.
- vi) Calibrated Antenna as an integral part.
- vii) Demodulator with built in loudspeaker to monitor and record the programme with suitable access.
- viii) Battery operated built in power source with chargeable batteries (*along with charger*) .
- ix) PC based automatic data collection and storage.
- x) Frequency of operation to be continuously displayed
- xi) The equipment should be provided with adequately protection of shielding against RF/EMI interference.
- x) Integrated GPS receiver for indicating geographic position (*6 figure coordinates*) of places along with date and Time .
- xi) Optional feature: Provision for scanning and reading the frequency with signal level within the selected frequency band and its storage along with geographic position.

2.2 TECHNICAL SPECIFICATION:

| S.No. | Technical Parameter | Specification |
|--------|----------------------------------|--|
| (i) | Frequency range | 50 Mhz to 550 Mhz |
| (ii) | Maximum frequency steps | 100 Khz |
| (iii) | RF Input | |
| | (a) Max. signal | 130 dB μ V (3.16 V) |
| | (b) Filter | Details to be given by the OEM & tenderer |
| (iv) | Field strength measurement range | 0 dB μ V to 90 dB μ V (in dB μ mode) |
| (v) | Measuring Unit | (dB μ V , dBm, μ V, mV) |
| (vi) | Tuning Method | synthesized tuning. |
| (vii) | (a) Front Panel Display | Graphics LC display with controlled back lighting. Clearly legible. |
| | (b) Display mode | Average & Peak |
| (viii) | Audio Detection/Outputs | Output for monitoring with front panel internal speaker with volume control & head phone jack (should disconnect speaker). Should also have socket/terminals for external speaker. |

| | | |
|--------|---|---|
| | | |
| (ix) | Accuracy | +/- 3 dB |
| (x) | Input/Output Ports: (a) Data output/control input jack (b) External R.F. calibration connector (c) External RF input connector | USB (for bidirectional) computer interface Details to be given by OEM Details to be given by OEM |
| (xi) | Environment Conditions: | |
| | (a) Ambient temperature for operation | 0°C to + 50°C |
| (xii) | Weight | ≤ 5 Kg |
| (xiii) | Dimensions | Details to be given by the OEM & tenderer |
| (xiv). | Application Software | Details to be given by the OEM & tenderer |
| (xv) | Protection against RF Interference | The equipment should be provided with adequately protection of shielding against RF/EMI interference & Details to be given by the OEM & tenderer. |
| (xvi) | Accessories | Details to be given by the OEM & tenderer |
| | (a)Battery | Details to be given by the OEM & tenderer |
| | (b)Battery backup | 5 hrs minimum |
| | (c)Battery charging time | Details to be given by the OEM & tenderer |
| | (d)AC Power supply for Battery charger with necessary sockets/connectors | -do- |
| | (e)Standard/calibrated antenna for transmission in all VHF band for circular & horizontal polarization | -do- |
| | (f) Soft Carrying Case | -do- |
| | (g) Necessary Connectors | -do- |
| | (h)All jack etc. | -do- |
| | (i) Any other item required for completeness of equipment | (Item wise details & part number to be given by OEM & tenderer) |
| (xvii) | AC supply Voltage for charger | Single Phase, 230 volt(rms) ±10% , 50 Hz ± 4% |

SECTION - III(A)

SCHEDULE OF REQUIREMENTS / MATERIALS (UNPRICED) [FOR ONE SET OF VHF FM Field strength Meter]

[PART- "A"]

| S NO. | Spec. clause ref. | Description | Qty |
|-------|----------------------------------|---|----------------|
| 3.0 | Sec.-II (Technical Spec.) | VHF FM Field Strength Meter Complete including standard/calibrated antenna with stand, Battery charger etc., interface cable for connecting PC as per AIR Spec. No: 10thplan/Field Strength Meter/FM/1/November/2008/-D (TD/FM) | 1 Set Complete |
| 3.1 | | Any other accessories offered for the completeness of the system (Items wise details of offered and included material , items & part are to be given by the tenderer) | 1 lot |

SECTION-III (B)

OPTIONAL ITEMS: [FOR ONE SET OF VHF FM Field strength Meter]

PART-"B"

| S NO. | Spec. clause ref. | Description | Qty |
|-------|-------------------|---|-------|
| 3.2 | Sec.-II | (Optional) Spares: (Items wise details of offered material are to be given by the tenderer) | 1 Set |
