

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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1. Each statement of this specification has to be complied with & supported by printed technical literature/data sheets from the manufacturer of the equipment by the tenderer along with Technical manual of the Field strength meter to assess to merit of the officer, without which tender will be considered incomplete & is liable to be rejected. The Tenderer should make a detailed offer while quoting for the Field strength meter.

2. The Tenderer shall submit schedule of material /requirement *without price as in Section III(A) & Section III(B)* of AIR Specification (two bid system i.e. technical bid and commercial bid).

3. All the technical details, Schematic drawings 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 clause by clause technical compliance in the tender offer to AIR in the format given below, failing which the tender shall be considered incomplete and shall be liable to be rejected.

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 from Section I to III 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 technical compliance statement from section I to III. 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 considered incomplete and 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., 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 and receipt of equipment at site in good condition.

1.3 DETAILS REQUIRED ALONG WITH TENDER

- (i) The complete technical compliance from Section I to III 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 technical compliance statement from section I to III. 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 considered in complete and shall be liable for rejection.
- (ii) Complete **printed technical literature/data sheets/detailed information** including technical manuals in support of compliance statement should be furnished for all the items of the tender from the manufacturer of the equipment to assess the full merit of the offer without which tender will be considered in complete and is liable to be rejected.

- (iii) Complete technical information, details, parameters as mentioned in **Section -II (technical specifications)** as above are to be submitted with tender *by the tenderers*.
- (iv) Complete set of *Technical* drawings, giving full details and dimensions of equipment with complete list of items to be submitted with tender.
- (v) 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.

- (vi) In support of Tenderer's claim an "up-to-date" list of their customers including their full address, Telephone/Fax No & E-mail address is required to be submitted along with complete set of actual performance figures *i.e. Performance measurement taken on Field Strength Meter are to be furnished along with the tender.*
Field Strength Meter shall be field proven for satisfactory operation. A supply record of *Field Strength Meter* year wise in the last 5 years may be enclosed by the tenderer.
- (vii) Country of origin , make, model are to given in tender by the tenderer.

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 or equivalent 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(un priced) 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 tender's offer and agreed to in the contract.
- (ii) A guarantee to make good within 30 days at tenderer 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 tenderer 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, tenderer shall intimate All India Radio in advance to enable the Indenter 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., E-mail 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 eight months (08) 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 on the equipment itself or on laptop with necessary software. Tenderer shall include all accessories like laptop and GPS receiver etc to make the system complete as per specification.
- 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 with mounting accessories, tripod , RF shielded cable and carrying case as an integral part.
- vii) Demodulator with built in loudspeaker to monitor the programme with suitable access for recording.
- 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.
- xii) Integrated or separate hand held GPS receiver with its own display or on laptop for indicating geographic position (*6 figure coordinates*) of places along with date and Time along with the facility to save the multiple readings. Provision should also be to connect with the computer. In case laptop is needed for display etc. to meet functional requirement of GPS receiver and field strength meter, tenderer is required to offer the complete system.
- xiii) Optional : Scanning and reading the frequency with signal level within the selected frequency band and its storage along with geographic position along with necessary software etc..

2.2 TECHNICAL SPECIFICATION:

S.No.	Technical Parameter	Specification
(i)	Frequency range	50 Mhz to 500 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, dB μ V/M)
(vi)	Tuning Method	synthesized tuning.

(vii)	(a) Front Panel Display (b) Display mode	Graphics LC display with controlled back lighting. Clearly legible. Average & Peak
(viii)	Audio Detection/Outputs	Output for monitoring with front panel internal speaker with volume control .
(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	Detail to be given by OEM Details to be given by OEM Details to be given by OEM
(xi)	Weight	To be mentioned by the tenderer
(xii)	Dimensions	Details to be given by the OEM & tenderer
(xiii).	Application Software	Details to be given by the OEM & tenderer
(xiv)	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.
(xv)	Following Accessories are to be offered	Technical Details to be given by the OEM & tenderer
	(a)Battery	Technical Details to be given by the OEM & tenderer
	(b)Battery backup	5 hrs minimum
	(c)Battery charging time	Technical Details to be given by the OEM & tenderer
	(d) Battery charger with necessary sockets/connectors	Technical Details to be given by the OEM & tenderer
	(e)Standard/calibrated antenna for transmission in all VHF band for circular, horizontal & vertical polarization with mounting accessories, tripod , RF shielded cable etc	Technical Details to be given by the OEM & tenderer
	(f) Soft Carrying Case	Technical Details to be given by the OEM & tenderer
	(g) Necessary Connectors	Technical Details to be given by the OEM & tenderer
	(h)All jack etc.	Technical Details to be given by the OEM & tenderer
	(i) Any other item required for completeness of equipment	(Item wise details & part number to be given by OEM & tenderer)
(xvi)	AC supply Voltage for charger	Single Phase, 230 volt(rms) \pm 10% , 50 Hz \pm 4%
(xvii)	Environmental conditions (i) Ambient temperature (ii) Humidity	0° to 50 °C 95% NC

SECTION - III(A)

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

S NO.	Description	Qty
3.0	VHF FM Field Strength Meter Complete as per AIR Spec. No: 10thplan/Field Strength Meter/FM/3/February/2010/-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 , including part number are to be given by the tenderer)	1 lot

SECTION-III (B)

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

S NO.	Description	Qty
3.2	(Optional) Spares: (<i>Items wise details of offered material including part number are to be given by the tenderer</i>)	1 Set
3.3	Optional : Scanning and reading the frequency with signal level within the selected frequency band and its storage with geographic position along with necessary software.	1 Set
