

**PRASAR BHARATI
DIRECTORATE GENERAL: ALL INDIA RADIO
PLANNING & DEVELOPMENT UNIT**

SPECIFICATION DOCUMENT FOR MODULATION MONITOR (AM)

SPECIFICATION NO. : XPE-2
DATE OF APPROVAL : 14.06.10
DATE OF ISSUE : 14.06.10
APPROVAL FILE NO. : 14(11)2010-D (TD/MW)-PIE
NO. OF PAGES : 4

SUMMARY OF CONTENTS:

1. Section I : Technical specification of Equipment (P. No. 2-3)
2. Section II : Schedule of requirements (P.No.4)

N.B:1. The tenderer should go through all the clauses of this specification document carefully and should confirm clause-by-clause compliance clearly. Tenders received without clause by clause compliance are liable to be rejected.

2. The tenderer should indicate the items offered as per schedule of requirements, without cost details in technical bid to assess the completeness of offer against AIR's requirement.

(R.K.SAINI)
DY. DIRECTOR ENGG. (TD)

SECTION - I

TECHNICAL SPECIFICATION FOR MODULATION MONITOR (AM)

1. GENERAL:

The Equipment is to be used for measuring the modulation & carrier deviation level of A.M. broadcast transmitters in MW range. The equipment shall be simple in operation requiring no tuning. The instrument shall have efficient R.F. screening so that it can be operated in high R.F. field. It should be precise, compact, fully solid state & rugged. It shall conform to international broadcasting measuring equipment standards in all respects. The equipment should be self-contained, easy to set up, simple to use and efficient for working round-the-clock, 365 days a year and based on field-proven design.

2. DESIGN & GENERAL CONFIGURATION:

The equipment shall have:

1. Provision for modulation level and carrier deviation measurement.
2. Broadband demodulator for providing accurate performance measurements on AM transmitter.
3. Built in calibration for the accuracy of modulation reading.
4. Isolated out puts for modulation and carrier level alarms.
5. PC connectivity for easy transfer and documentation of data.
6. Separate negative and positive peak modulation indications.
7. Peak modulation indicator, range up to 130% for positive modulation with suitable incremental step.
8. Built in provision for safety against high RF voltage at the R.F. input

3. TECHNICAL PARAMETER:

1	R.F. Frequency Range	500KHz to 30MHz
2	R. F. Input	1 to 10Vrms
3	R.F. Input Impedance	50 Ω
4	Modulation meter range	0 to 130%
5	Modulation Accuracy	2.0%
6	Carrier Level adjustment Range	25-150%
7	General Alarm	Loss of Carrier
8	Audio Monitoring Output	+ 10dBm
9	Audio Test Output	(i) 0dBm, 600 Ohm (balanced) (ii) 2.5Vrms, BNC connector
10	Audio Frequency Response	± 0.5 dB, 30 Hz to 10 kHz
11	Total Harmonic Distortion(AF)	0.25% or less
12	Signal to Noise Ratio	75 dB or better

4. ENVIRONMENTAL:

a)	Operating Temperature	0° to 45°C
b)	Humidity (RH)	0 -95%, non-condensing
c)	Mounting	19" rack mounting

5. POWER SUPPLY:

a)	Voltage	230VAC±5%,
b)	Frequency	50Hz

6. DELIVERY OF EQUIPMENT:

The delivery of the entire equipment at AIR's transmitter site, shall be completed within **12 (Twelve)** months from the date of placement of order in case of INR Quote/ date of opening of LC in case of FOB quote.

7. TECHNICAL MANUALS:

Technical Manuals covering operating instruction, detailed circuit descriptions, schematic/circuit drawings for operation & maintenance/ service, in printed as well as electronic format, shall be supplied along with each equipment.

8. GUARANTEE:

The equipment shall be guaranteed for a minimum period of one year from the date of putting the equipment into service.

9. SPARES:

Essential and recommended spares (Discreet and Modules) shall be quoted separately. If not recommended the same may be specified.

10. ACCESSORIES:

The equipment shall be supplied along with all the standard accessories such as mating XLR connectors for input, output and power supply chord etc.

11. OPTIONS:

Optional items, if any may be quoted separately.

SECTION - II

SCHEDULE OF REQUIREMENTS / PRICES

AIR requires the following equipment as per specifications detailed under Sections I. The tenderer shall quote price of each item separately with necessary break-up details keeping in view the following:

- i. Make & Model of each item, to be indicated.
- ii. Indenter reserves the right to choose & decide the quantity of Equipments at the time of finalization of Tender.
- iii. All items mentioned in the Schedule under Sl. No. 1 to 2, will be taken in to consideration for ranking purpose where as all items mentioned in the Schedule under Sl. No. 3 to 4, will not be taken in to consideration for ranking purpose. However the tenderer must quote for all the items under the schedule of requirements.
- v. Present requirement is for the following stations:
 - 1) 20kW MW transmitter Guwahati'B', Delhi (VB), Barmer, Bikaner, Chennai (VB), Tawang
 - 2) 50kW MW transmitter Mumbai 'C'
 - 3) 100kW MW transmitter Vijaywada, Patna, Panaji, Ranchi, Mumbai'A', Mumbai'B', Pune, Tiruchirapalli, Varanasi, Kolkata B, Passighat
 - 4) 200kW MW transmitter Delhi'A', Ahemdabad, Bangalore, Dharwad, Jabalpur, Ajmer, Chennai 'A', Siliguri, Kolkata A, Itanagar
 - 5) 300kW MW transmitter Jammu, Dibrugarh, Suratgarh, Rajkot, Jalandhar, Lucknow

S. No.	Requirements for each site	Quantity
1	Modulation Monitor (AM) for AM-DRM transmitter complete with all standard accessories.	1 set
2	Technical Manuals	1 set
3	Spares (Discreet and Modules) recommended by the O.E.M	1 set
4	Optional items, if any	1 set