

**PRASAR BHARATI  
(BROADCASTING CORPORATION OF INDIA)  
DIRECTORATE GENERAL:ALL INDIA RADIO  
(P & D UNIT)**

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**Specification No : SSE 5022  
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**SPECIFICATION FOR DIGITAL AUDIO FIELD RECORDER (Revised)**

**1. GENERAL**

- 1.1** This specification is for Digital Audio Field Recorder for outdoor sound recordings, using removable compact flash memory card as a recording medium. The equipment shall be rugged and reliable to meet the stringent requirements of outdoor recording applications. The recorder shall be light-weight and designed to withstand tropical conditions
- 1.2** The tenderer must submit the following documents along with tender.
- (i)** A point to point compliance statement in **original as per the format attached as annexure-I** from the manufacturer of the equipment, highlighting deviations, if any, **on each and every clause of this specification**, duly signed by the manufacturer **and countersigned by the tenderer.**
  - (ii)** Name and address of the service agent of the manufacturer in India to provide after sales support.
  - (iii)** **A certificate in original from the original manufacturer that the tenderer has been authorized to quote the tender for All India Radio should be enclosed. No sub authorization will be allowed.**
- 1.3** The tenderer may be required to demonstrate the functioning of the equipment being offered in New Delhi, within three weeks from the date of issue of letter in this regard.
- 1.3.1** The tenderer must ensure that the tender is technically complete in all respects and all the above points have been complied fully.
- 1.4** **Incomplete tenders are liable to be rejected without any notice to the tenderer.**

## 2. CONFIGURATION

The recorder shall have at least one slot for compact flash memory card to enable recording on removable compact flash memory card. The recorder shall have the capability of being used in PCM linear digital (.WAV) and MP2 mode. The recorder shall be able to record both in stereo and mono modes, selectable by operator.

- 2.1 The buttons/switches for various operations like recording, play, pause, fast forward/cue, rewind/review should be provided on the front panel in logical layout clearly marked and should be quite sturdy for reliable operation.
  - 2.1.1 Necessary indicators showing the mode of operation, level, status of the battery , memory card capacity, recorded time and remaining time etc. should be available on the display panel.
  - 2.1.2 The recorder shall have XLR connector to plug in microphone.
  - 2.1.3 The recorder should have in built USB port for transfer of audio data to work station. The USB to USB lead for transfer is also to be provided.

## 3. FEATURES AND FACILITIES

The recorder shall be light - weight, reliable and with distinctly visible LCD display. It shall have the following **essential features and facilities**.

- i) Level indicators for programme level during recording/playback.
- ii) Operation controls shall be provided on the front panel and these should be sturdy and reliable.
- iii) Recording / playback and stop should easily be possible while on move.
- iv) Battery of adequate capacity **on full load** for at least **three hours** prior to low battery indication.
- v) Display of total recorded programme time & remaining recording time.
- vi) Low battery indication with audio alarm.
- vii) Facility to record either mono or stereo programme (switchable).
- viii) LCD display with minimum 240 X 160 dots and back light.

- ix) The recorder shall be capable of working on A/C mains (230 V  $\pm$  10 %, 48 Hz to 52 Hz) as well as on dry cells of size AA or AAA. Batteries shall be housed inside the recorder itself.

#### 4. TECHNICAL SPECIFICATION

##### 4.1 Recording/Play Mode

4.1.1	Recording media	Compact Flash Memory Card
4.1.2	Recording Format	16 bit PCM Linear Digital (.WAV) and MPEG1 Layer II
4.1.3	Sampling Rate (selectable)	Selectable sampling rates of 44.1KHz. and 48 KHz
4.1.4	Bit Rate (selectable)	64 128,192,256,384kbps for compressed mode recording

**4.2 Mono/Stereo** Selectable

##### 4.3 Power

4.3.1	Power Supply	Internal Battery AA or AAA (It should also be capable of working on AC Mains (230 V $\pm$ 10 % , 48 Hz to 52 Hz.)
4.3.2	Phantom power for microphone input	48 V switchable

##### 4.4 Input

4.4.1	Mike input connectors	XLR connectors
4.4.2	Mike Input Level(Nominal)	-60 dBu (ref 0dBu = 0.775 V)
4.4.3	Line input connector L/R	XLR or RCA jack
4.4.4	Line input level:-	
	a) nominal	0 dBu
	b) maximum for undistorted output	10 dBu
4.4.5	Input Impedance	a) For microphone input: $\geq$ 2 K $\Omega$ b) For line input: $\geq$ 5 K $\Omega$

#### 4.5 Output

4.5.1 Line output connector L/R XLR or RCA jack

4.5.2 Line output level :-

a) nominal 0 dBu

b) maximum for undistorted output 10 dBu

4.5.3 In-built USB Port for file transfer

#### 4.6 Monitoring

4.6.1 Headphone Output connector ¼ inch TRS phone jack with gold plated contacts.

4.6.2 Headphone Monitoring

- a) Stereo with level control facility
- b) Minimum output level 15mW+15mW
- c) Output impedance less than 50Ω

4.6.3 The recorder shall have an in-built monitoring speaker.

#### 4.7 Measurements

4.7.1 Frequency Response at Nominal input and output level 20 Hz – 20 KHz with respect to 1 KHz. within  $\pm$  1dB

4.7.2 THD + Noise at (20Hz.to 20KHz.)

a) Mic input for 10 dB above nominal output level  $\leq$  0.3 %

b) Line input for 10 dB above nominal output level  $\leq$  0.01 %

4.7.3 Signal to Noise Ratio

- a) Better than 75 dB unweighted at nominal line input and output level

- b) Better than 60 dB at –60 dBu input and 0 dBu output level

4.7.3 Inter channel Cross Talk 20 Hz to 20 KHz at 0 dBu input and 0 dBu output Better than 70 dB.

4.7.4 Weight (without batteries) Less than 2.0 kg.

## 5. CLIMATIC CONDITIONS

The unit shall be designed to work satisfactorily and meet all the specifications in tropical climate with dry temperature range of 0<sup>0</sup> C to 45<sup>0</sup> C and humid conditions of 40<sup>0</sup> C at 90% RH non-condensing. A test certificate from the manufacturer shall have to be produced.

## 6. ELECTRO MAGNETIC PROTECTION

The recorder may be used in the vicinity of radio frequency field; therefore, the recorder shall conform to the protection requirement relevant to electromagnetic phenomenon as per the guide lines FCC Class A.

## 7. GUARANTEE

The equipment shall be warranted for a period of at least one-year from the date of supply against any manufacturing and design defect. In case of failure within this warranty period the item shall be repaired/replaced free of cost.

## 8. SPARES

Essential spares may also be recommended and shall be quoted separately. The tenderer shall ensure availability of spares for the equipment in India for a minimum period of five-years from the date of supply.

The cost of these items shall not be considered for ranking of the bid.

## 9. ACCESSORIES

The equipment shall be supplied along with the following accessories:

- i) Carrying case for Portable Digital Audio Recorder provided by the Original Equipment Manufacturer - One no.
- ii) Compatible Compact flash memory card (as mentioned at Para 4.1.1 ) of minimum 1 GB capacity -Two no
- iii) USB to USB cord -One no.

- iv) Matched Stereo Headphone - one no.  
( Frequency response 20 Hz - 20 kHz, Impedance  $\leq$  600 ohms,  
Cable length  $\geq$  2 meters, THD at 115 dB SPL  $\leq$  0.5 %)
- v) Battery ( AA or AAA) - One set
- vi) AC power adopter (if not built in) -One no.

Cost of each and every accessory shall be quoted separately with make/model and supported by technical literature/specifications in case of accessories at Sl.No. (ii), (iv)

## 10. OPTIONAL ACCESSORIES

Hard shell attache case to carry the portable audio digital recorder along with accessories.

## 11. INSTRUCTION MANUAL

Two complete set of service and technical manuals for operation, maintenance and repair of the equipment shall be supplied along with each equipment. **One set shall be enclosed with the tender document.**

## 12. INSPECTION

- 12.1 The inspection of equipment will be carried out at the manufacturer/supplier's premises free of cost. All the necessary equipment for carrying out the inspection will be arranged by the manufacturer/supplier.

12.2 Certificates regarding electro-magnetic protection and climatic performance of the offered equipment from an approved Test House shall be produced at the time of inspection

(R.K. Budhraj)  
Dir. Engg. (MR)

(A. Shanmugam)  
Dir. Engg. (IT)

**ANNEXURE-I**

<b>S.No.</b>	<b>Para no. of AIR specification</b>	<b>Tenderer's solution</b>		
		<b>Complied (yes/no)</b>	<b>Actual figure of the offered product</b>	<b>Remarks</b>