

**DIRECTORATE GENERAL: ALL INDIA RADIO
(PLANNING & DEVELOPMENT UNIT)**

SPECIFICATION DOCUMENT OF DRM GENERAL PURPOSE RECEIVER

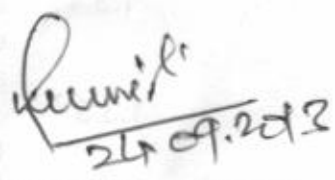
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N.B: 1. The tenderer should go through all the sections of these specifications carefully and should confirm clause-by-clause compliance of all the sections clearly. Tenders received without clause by clause compliance are liable to be rejected.

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


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SECTION - I GENERAL CONDITIONS OF TENDER / CONTRACT

1.0 GENERAL:

These specifications cover the supply of 800 (Eight Hundreds) **DRM GENERAL PURPOSE RECEIVERS** for monitoring of DRM/AM/FM broadcast, respectively, in stationary as well as in mobile mode.

1.1: BROAD SCOPE OF SUPPLIES/ SERVICES:

- (i) Established brand of General purpose DRM receiver.
- (ii) Set of manuals for all the above equipment.

1.2 LANGUAGE AND SYSTEM OF MEASURES:

All information supplied by the tenderer and all markings, notes, designations on the drawings and associated write-ups etc. shall be in "English" language.

All dimensions and units on drawings and all references to weights, measures and quantities shall be in "Metric" Units.

1.3. DOCUMENTS TO BE SUPPLIED ALONGWITH TENDER:

The tender and associated information shall be submitted in duplicate.

Sufficient information shall be furnished to enable AIR to adjudge the full merit of the offer.

- 1.3.1. Compliance statement on each and every clause of these specifications (in the order in which they appear in these specifications) indicating clearly whether or not the equipment and accessories offered conform to these specifications.

A tender without clause by clause compliance to these specifications is liable to be rejected.

- 1.3.2. All documents like pamphlets, data sheets, write-ups, drawings, block schematic etc. in support of compliance statement will be furnished in printed form.
- 1.3.3. An overall schematic of the equipment with details showing all interfaces.
- 1.3.4. Details of the internal test procedures/standards followed for quality control of the equipment offered and to supply a copy of ISO/equivalent standardization certification.
- 1.3.5. A general undertaking to accept / furnish the guarantees, which will be required to be complied by the contractor as listed under Clause 1.7.3 of Section- I.
- 1.3.6. An acceptance test procedure (ATP) duly approved by AIR, shall be the basis for acceptance of equipments. This should include environmental & ruggedness tests in addition to the technical performance parameters.
- 1.3.7. Any other information, which the tenderer feels relevant to his offer.

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1.4 DELIVERY OF EQUIPMENT:

The delivery of the entire equipment at AIR site (mentioned in the schedule of requirement) shall be completed within **04(four)** months from the date of placement of order in case of India Rupee quote. In case of FOB quote, the delivery of the entire equipment at AIR site shall be completed within **04(four)** months from the date of opening of the letter of credit. The equipments for each of the AIR sites shall be packed separately.

1.5 PACKING & MARKING DETAILS:

Please refer to the relevant para in the booklet "Instruction to bidders"

1.6 INSURANCE AGAINST WAR AND MARINE RISK:

Please refer to Commercial terms for transportation by Sea and Land up to site.

1.7 COMPLETENESS OF SUPPLIES, QUALITY & WORKMANSHIP OF MATERIAL USED, WARRANTEE & GUARANTEE AND AVAILABILITY OF SPARE:

An undertaking to accept the following terms and conditions along with those contained in para 8, P-45 of the Booklet "Instruction to bidders" with the exception of para 8.1.b of the Annexure II (General terms and conditions), shall be submitted along with tender.

1.7.1 Correctness, completeness shortages and damages of stores:

- (a) The stores will be complete in every respect with mountings, fittings, fixtures and standard accessories which are normally supplied even though not specifically mentioned in these specifications. The Contractor shall not be eligible for any additional payment in respect of such mounting, fitting and fixtures and accessories which are needed for safe and efficient operation of the equipment.
- (b) The Contractor shall arrange to replenish/repair all the items reported as shortage/damages free of cost to AIR and send the same to the ultimate consignee at the earliest, but not later than a period of one month from the date of such intimation from AIR. Payments for freight, insurance and other incidentals for such items shall be made by the Contractor. AIR shall not pay anything extra on this account.

1.7.2 Free replacement of components:

The Contractor shall furnish guarantee to make good, at his own expense, any equipment which becomes defective within 18 months from the date of receipt of last consignment at site or 12 months from the date of acceptance of the equipment at AIR sites, whichever is earlier. Manufacturer shall offer an exchange program to ship replacement equipment in advance from a service centre in exchange of defective equipment. This super cedes the para 8.1.b of the Annexure II

(General Terms and Conditions) of the "Instruction to Bidders".

1.7.3. Materials & workmanship:

- (i) Should any defect be noticed in the design, material and /or workmanship of any equipment, within a period of 18 months from the date of receipt of last consignment at site or within a period of 12 months from the date of acceptance of the equipment, whichever is earlier, it shall be replaced by the supplier free of cost, freight and insurance paid, to the ultimate consignee. All India Radio shall inform the supplier about any defects noticed. On receipt of such intimation, the supplier shall investigate the cause of defects and submit a report within 14 days and arrange rectification/replacement / modification of the defective equipment at AIR site without any cost to All India Radio. All such rectifications / replacements modification of the defective equipment based on report shall be done immediately, within a period not exceeding one month from the date of receipt of information by the supplier at no cost to AIR. If the supplier fails to take proper corrective action to repair/ replace the defective item/items satisfactorily within the period of one month as stated above, All India Radio shall be free to take such corrective action as may be deemed necessary, after giving notice to the supplier, at the risk and cost of the supplier. This supercedes para 8.1.b. of the Annexure II (General Terms and Conditions) of the "Instruction to bidders".
- (ii) In case the equipment falls short of the guaranteed performance level, All India Radio will be free to either reject the equipment completely or impose penalty on the supplier so as to recover the cost of the deficiency. However this does not entitle the supplier to deliberately supply substandard equipment or conceal the defects of the equipment supplied by Firm.

1.8 INSPECTION/ ACCEPTANCE:

1.8.1 Pre-dispatch Inspection / Acceptance Tests at manufacturer's/tender's Works:

- a) AIR will depute 2(two) engineers to carry out the inspection of the equipments at Manufacturer's/ tenderer's works, as per Acceptance Test Procedure (ATP) approved by AIR. The various tests to be performed and the measurements to be done will be to check the conformity of the equipment offered to these specifications and the various conditions of the A/T.
- b) The contractor shall give at least 2 (two) weeks' notice to AIR to carry-out the inspection, before the consignment is ready for inspection.
- c) The equipment manufacturer/ tenderer shall put up the equipment on the test bench, at his works, before AIR inspectors and shall provide, without any extra charge, the power supply, consumable materials, tools, testing instruments and labour etc. as considered necessary for the tests to be carried out at the manufacturer's premises.

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- d) The equipment shall be tested at the Mains Input Voltage and frequency specified against the various equipment in Section - II. Alternatively, the equipment shall be tested at the voltage and frequency available at the manufacturer's/ tenderer's works subject to an undertaking by the tenderer that the equipment shall be capable of being operated and tested successfully by AIR engineer at AIR site at the Mains Input Voltage and frequency specified in this Document in Section – II.
- e) The supplier shall ensure safety of AIR's Inspectors, while on Inspection at the equipment manufacturer's/ tenderer's works, against any accidental injury, accidents, death etc, at no cost to AIR.
- f) Acceptance Test will be done on 10% selected equipment of total supply selected on random basis.

1.9 AFTER-SALES SUPPORT:

The equipment manufacturer/contractor shall guarantee for the after-sales support for all the equipment offered under the contract for a minimum period of 02 years, after acceptance of the equipment. The details of the type of after-sales support and list of the various after-sales support centres in India and elsewhere shall be indicated in the tender.



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SECTION-II

(Technical parameters of equipments)

2.0 General

The section defines the technical parameters of the equipment capable of reception of AM, DRM and AM-DRM (SCS/MCS) Simulcast broadcast of AIR transmitters

2.1 DRM General Purpose Receiver:

This general purpose hand held all band portable radio receivers with screen & stereo speakers should have following Key features:-

S.NO.	FEATURES
2.2.1	The receiver should be able to receive DRM (MW/SW), AM(MW/SW), FM analogue (VHF band II) Services
2.2.2	The receiver should have Monochrome /Colour Display that can present at least 4 lines of text on the LCD simultaneously. It should be suitable for direct viewing from the front for outdoor usages.
2.2.3	The screen shall be capable of rendering at least all major scripts commonly used in India (Unicode).
2.2.4	DRM reception shall support all applicable modulation configurations (spectrum occupancy, robustness mode, MSC mode, MSC protection level.)
2.2.5	DRM packet mode decoding shall support enhanced packet mode option.
2.2.6	The receiver should support all standardized audio codecs and all configuration options for each codec (with automatic selection) as specified in the latest release of the DRM system specification like: <ul style="list-style-type: none"> a) ER-AAC+ b) CELP c) HVXC
2.2.7	The receiver should have dedicated front panel button/touch screen for selecting Bands (AM/FM), SW sub-bands (SW1/SW2/SW3) & DRM Mode.
2.2.8	The receiver should have dedicated front panel button/touch screen for selecting Services and should support all 4 services supported by DRM
2.2.9	The receiver should have a provision to support following external elements: <ul style="list-style-type: none"> a. Antenna connector (allowing switching between supplied antenna & external antenna feed). b. Connector for external memory, such as SD card/USB slot (read/write).
2.2.10	The receiver should have provision of: <ul style="list-style-type: none"> a) stereo speakers built-in or connected (shipped as part of receiver); b) analogue audio stereo output for stereo head-phones; c) should support digital audio output (e.g. S/PDIF, HDMI, etc.)
2.2.11	Auto as well Manual tuning (with 1 kHz increments for DRM in the AM bands, and a DRM auto-lock-in range of at least ± 0.7 kHz) should be

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	possible in the receiver.
2.2.12	The receiver should have a provision of minimum 40 programmable station presets (at least 10 for each mode: DRM, AM, FM) to enable storage of favorite stations.
2.13	The receiver should support selection of DRM services from service list (auto-scanning)
2.2.14	The receiver shall support up to 4 DRM Services per DRM Multiplex, each DRM Service being either a Data Service (consisting of one data service component) or an Audio Service (consisting of one audio component [optionally with DRM Text Messages] and PAD [programme associated data] data service components)
2.2.15	The receiver shall be capable of providing following DRM Service informations: a) presentation of full DRM Service label (upto 16 characters, upto 64 bytes, Unicode support); b) presentation of all DRM Service related signalling information (language, country of origin, audio programme type, etc.); c) ability to look-up announcement types supported by DRM Service
2.2.16	The receiver should support DRM text & data features such as DRM text messages, Journaline, EPG, Slide show etc.(In accordance with relevant latest ETSI standards)
2.2.17	The receiver should support Emergency Warning Feature provided by DRM services & it should have following key features : a. shall support DRM announcements, including type 'warning/alert'; b. for announcement types other than 'warning/alert' shall allow user to configure whether automatic switching to target service shall be carried out if required; c. in case 'warning/alert' is triggered for current DRM Service, shall switch automatically to and start presenting target DRM Service (emergency programme); d. while presenting emergency programme, shall automatically return to previously tuned DRM Service when 'warning/alert' trigger signal is discontinued; e. should support AFS (DRM alternative frequency signaling & switching), particularly in combination with 'warning/alert' announcements f. while presenting emergency programme, shall allow user to manually change volume or interrupt presentation and switch back to original service (even if 'emergency/alert' condition continues to be triggered);
2.2.18	The Multimedia playback of receiver should support mp3 and MPEG Extended HE-AAC (xHE-AAC) playback from external memory
2.2.19	The receiver should support a) instant recording of DRM transmissions to external memory in MDI format (full DRM Multiplex according to ETSI TS 102 820 v3.1.1 or newer) and/or RSCI (full DRM Multiplex plus reception statistics according to ETSI TS 102 349 v3.1.1 or newer); b) scheduled recording to external memory in MDI and/or RSCI format with manual and/or EPG based programming;

	c) playback of DRM Multiplex content from MDI and RSCI files stored on external memory; d) should support pause/resume of DRM transmissions (temporarily storing full DRM Multiplex in MDI format to external or internal memory), with pause/resume functionality accessible through touch screen or dedicated buttons on front panel
2.2.20	The receiver should have a built in Real time clock with on screen display of date & time.
2.2.21	The receiver should be capable of receiving DRM signals upto a field strength of 45dB μ V/meter.
2.2.22	The software of radio receiver (firmware, app, etc.) shall be upgradeable (for example via external memory)
2.2.23	The initial DRM functionality of receiver shall be compliant to DRM system specification ETSI ES 201 980 v3.2.1 or newer, ETSI TS 101 968 v1.3.1 or newer & for Journaline functionality shall be compliant to ETSI TS 102 979 v1.1.1 or newer. If updated versions of any of ETSI standards mentioned above are published by ETSI within 18 months after initial delivery of receivers, manufacturer shall make available requisite updates of receiver software to AIR within 6 months, covering any essential changes introduced by the new ETSI release of the DRM system specification (particularly with regards to audio codecs and the DRM Service structure);
2.2.24	Power Supply: - AC mains 230V/50 Hz. and Battery Operations with ON/OFF switch. The receiver should have Built-in rechargeable battery with a back up of at least six hours (When fully charged & disconnected from A.C.).
2.2.25	Environmental Conditions:
a.	Operating Temperature ----- 0 ⁰ C to 50 ⁰ C
b.	Relative Humidity ----- upto 95%

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SECTION-III**SCHEDULE OF REQUIREMENTS:****AIR REQUIRES THE FOLLOWING EQUIPMENTS AS PER TECHNICAL SPECIFICATIONS DETAILED UNDER SECTION I & II**

Item	Detailed Schedule of Material	Quantity
3.0	Supply of 800Nos of General purpose DRM Receivers along with standard accessories as per clause 2.1 of section II. The receivers shall be supplied to all the five Zonal offices & New Broadcasting House (New Delhi) as per details given below.	800Nos
3.1		
A.	North Zone	159Nos.
B.	South Zone	95 Nos.
C.	East Zone	58 Nos.
D.	West Zone	135 Nos.
E.	North East Zone	96 Nos.
F.	New Broadcasting House(New Delhi)	257 Nos.
3.2	Manuals for all above equipments	01No.per receiver.

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