

PRASAR BHARATI
[Broadcasting Corporation of India]
OFFICE OF The Additional Director General(E)(SZ)
ALL INDIA RADIO & DOORDARSHAN
Swamy Sivananda Salai, Chennai-600005

NO.ADG(E)(SZ)/PUR/ 47 /PI Rack/2011-12

Dated 08.09.11

SUB: Limited Tender FOR SUPPLY OF Stereo & Digital Programme Input Rack cum Monitoring Racks - 6 Nos.

Sealed tenders are hereby invited for and on behalf of the President of India from reputed Manufacturers/firms for **Supply of Stereo & Digital Programme Input Rack cum Monitoring Racks - 6 Nos** to AIR Stations.

Sl. No	Description	Quantity	Remarks
1	Supply of Stereo & Digital Programme Input Rack cum Monitoring Racks to AIR Stations 1. Adilabad 2. Chitradurga 3. Kothakudem 4. Cochin 5. Mehboobnagar 6. Pondicherry	6 Nos	***

***** Consignees:**

1. Assistant Director(E)/ Installation officer, All India Radio, Adilabad
2. Dy. Director(E)/ Installation officer, All India Radio, Chitradurga
3. Dy. Director(E)/ Installation officer, All India Radio, Kothakudem
4. Dy. Director(E)/ Installation officer, All India Radio, Cochin
5. Dy. Director(E)/ Installation officer, All India Radio, Mehboobnagar
6. Dy. Director(E)/ Installation officer, All India Radio, Pondicherry

2. The tender shall consist of two bid system:

(a) TECHNICAL BID:

Technical bid should contain the confirmation to the enclosed technical specifications **along with requisite EMD**. The tenderer should enclose necessary Technical phamlets of the equipment quoted. This should be submitted in a separate sealed envelope with **"TECHNICAL BID"** written on it.

(b) **COMMERCIAL BID:**

The commercial bid should contain the price bid and acceptance of the commercial terms and conditions of this tender document. The price should be quoted for free delivery of materials at respective destinations. This should be submitted in a separate sealed envelope with "**COMMERCIAL BID**" written on the envelope.

The above mentioned envelopes should be enclosed and submitted in another large size envelope duly sealed and superscribed with "**Limited Tender for supply of Stereo & Digital Programme Input Rack cum Monitoring Racks and date of opening**".

The tender will be received at this office of The Addl. Director General(E)(SZ), AIR & DD, Swami Sivananda Salai, Chennai-5 up to **1200 hrs. on 29.09.2011.** The technical bid with EMD will be opened on the same day at **1500 hrs.** The commercial bid of technically qualified tenders will be opened on **07.10.2011 1500 hrs** or **any other suitable date** that may be intimated to the bidders.

In case tender opening date falls on a holiday, the bids will be received and opened at the same specified time on next working day. Bids received late or submitted after the scheduled specified time on scheduled date will not be entertained and will be returned back unopened.

3. **EMD:** Earnest Money amounting **Rs.42,000/-** (Rupees Forty Two Thousand Only) in the form of Demand Draft on Nationalized Bank drawn in favour of ADG(E)(SZ), AIR & DD, Chennai-5 should accompany the Technical Bid of the tender. EMD by means of Bank guarantee or any other mode of payment other than DD shall not be accepted. Tenders without EMD shall be summarily rejected and their technical cum commercial bid will not be opened at the time of tender opening. **(No exemption for payment of EMD is accepted by this office)**
4. **VALIDITY:** The tender shall be kept valid for six months **(180 days)** from the date of opening.
5. **PRICES:** The prices quoted should be firm and for free delivery at site inclusive of transit insurance, excise duty and entry tax and other tax, if any, should be quoted separately. Tenderers should quote in figures as well as in words the amounts tendered by them. In the case of illiterates, the rates or the amounts tendered should be attested by a witness. Breakup of prices for individual/ whole units should be specified wherever possible, instead of bunching all units together.
6. **DUTIES AND TAXES:**
 - (a) **EXCISE DUTY:**

The prices should contain an element of Excise Duty which should be indicated separately. Any statutory variation in the Excise Duty taking place after acceptance of tender within the delivery date will be adjusted by the purchaser on production of documentary proof.
 - (b) **SALES TAX/VAT:**

The prices should be exclusive of ST/CST/VAT. The prevailing rate of ST/CST/VAT should be clearly mentioned in the tender. The following certificates are to be submitted by the supplier along with the bills.

"Certified that the goods on which the sales tax has been charged have not been exempted under central sales tax act of the rules made thereunder. The amount charged on account of Sales Tax/VAT on these goods is not more than what is payable under provision of the relevant act or the rules made thereunder".

"Certified that we are registered as dealers in the State under registration No..... for the purpose of Sales Tax. Any Statutory variation in ST/VAT taking place after acceptance of tender within the delivery date will be adjusted by the purchaser. For this purpose, Government order should be produced".

7. **PAYMENT:** 100 % Payment on receipt of stores in good condition at the destination.
8. **TERMS OF DELIVERY:**
The materials should be delivered to the consignees of the respective AIR Stations.
9. **DELIVERY PERIOD:**
Tenderer may note that the entire work shall be completed within **90 days** from the date of the supply order.
10. **PAYING AUTHORITY:** The Addl. Director general(E)(SZ)
All India Radio & Doordarshan
Swami Sivananda Salai
Chennai-600 005
11. **SECURITY DEPOSIT:** The successful bidder shall furnish performance guarantee at the rate of 10% of the contract value in favour of ADG(E)(SZ), AIR & DD, Chennai-5 in the form of cash/DD payable at Chennai/bank guarantee from any nationalised bank valid upto the end of the warranty period of the contract.
12. **RETURN OF EMD:**
EMD of all but the last three tenderer will be returned back within 10 days of opening of tenders. EMD of the remaining two tenderer other than that of the successful tenderer will be returned after finalising the tender.
13. **Insurance:** The supplier is responsible for safe delivery of equipments in good condition at the destination and the purchaser will not pay separately for transit insurance.
14. **IT CLEARANCE CERTIFICATE:**
PAN No. TIN No, Sales Tax Registration No shall be submitted along with the tender.
15. **Penalty clause:** If the contractor is unable to complete the supply within the stipulated time, the purchaser may at his option allow such additional time as may be considered justified with/without penalty and without altering the terms and conditions of the order. In the event of failure of the contractor to complete the supply within the stipulated time or extended time, the purchaser has the right to impose penalty of Rs.350/- per week or part thereof for every Rs.100000/- of the total contract value. The contractor's liability for delay, however, shall not exceed 5% of the total contract value.
16. **Specifications:**
Detailed specification comprising important instructions/notes to the Tenderers, General specifications, Technical specifications, Inspection, Warranty, Schedule of equipments, Suggestive drawing is enclosed.

17. Inspection:

Inspection will be carried as detailed in the specifications.

18. Warranty:

The equipments shall carry warranty for any failure under normal working conditions as detailed in the specifications.

19. After sales service:

The Tenderer shall specify the repair/service facility available for the equipment in India with address, Phone/Fax nos, E-mail etc. The supply of Rack may require after sales services. Therefore full details of facilities for carrying out after sale service may be given.

20. Experience:

Supply of similar equipments to AIR/DD installations or other organizations shall be enclosed.

21. ACCEPTANCE/REJECTION OF TENDER:

The acceptance of a tender will rest with the Addl. Director General(E)(SZ), AIR & DD, Chennai-5 who does not bind himself to accept the lowest tender and reserves to himself the authority to reject any or all of the tenders received without assigning any reason.

22. GENERAL:

Canvassing in connection with tender is strictly prohibited and the tenders submitted by tenderness who resort to canvassing will be rejected.

Yours faithfully,

(C.Mookan)
Director (E)
For Addl. DG(E)(SZ)

Encl.:-

Specification of Stereo & Digital Programme Input rack cum Monitoring rack comprising

1. Summary of contents	:		- Page 1 - 2
2. Section 1.0	:	General Specifications	- Page 3 - 6
3. Section 2.0	:	Technical Specifications	- Page 7 - 19
4. Section 3.0	:	Inspection	- Page 20 - 21
5. Section 4.0	:	Schedule of Requirement	- Page 22 - 24
6. Suggestive Drawing	:		- 1 sheet

**SPECIFICATION FOR SUPPLY OF STEREO & DIGITAL PROGRAMME INPUT CUM
MONITORING RACK
(FOR VHF FM TRANSMITTER SET UP)**

Specification No.: Stereo & Digital PI Rack/1/May/2010-D(TD/FM)

(Total number of pages -23 Nos + Drawing no. TM-15913)

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SECTION 1.0 GENERAL SPECIFICATIONS	(Page Number 3 to 6)
SECTION 2.0 TECHNICAL SPECIFICATIONS	(Page number 7 to 19)
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SECTION 4.0 SCHEDULE OF REQUIREMENT/MATERIAL FOR SUPPLY	(Page number 22 to 23)

N.B.:

1. The Tenderer should submit schedule of material / requirement of Supply without price in the same format as given as in Section 4.0 of indenter Specification in the technical bid, failing which the tender shall be considered incomplete and is liable to be rejected.

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

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 should submit the tender offer to AIR in the format given below Section wise & clauses wise in respect of all the sections of technical specifications along with columns number 5 “ ref to tender page No. by the tenderer as per the offer of the tenderer” in the format given below , in details to assess the full merit of the officer, failing which tenderer shall be considered incomplete and is liable to be rejected.

SPECIFICATION No. Stereo & Digital P1 Rack /1/May/2010-D(TD/FM)

Sr.No.of AIR Spec. Section Wise & Clause Wise (1)	Details of AIR Spec. Part/Section Wise & clause wise (2)	Make & Model Equipment Offered (3)	Compliance Yes /No (4)	Ref.to tender page No. by the tenderer as per the offer of the tenderer (5)	Remarks (6)
Section-I Clause wise					
Section –II Clause wise					
Section – III Clause					
Section –IV Clause wise					

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

6. The complete Technical specification (section wise & clause wise) compliance statement along with schedule of requirements/materials(unpriced) must be signed & stamped on each page by the Original Equipment manufacturer (OEM) of the equipment in the tender document including the clarifications, if any, asked by the Indenter, In case tender officer is from other than the Original Equipment Manufacturer, the tenderer must also sign & stamp each page of the complete Technical specification (section wise & clause wise) compliance statement including the clarification, if any, asked by the Indenter, failing which the tender shall be considered incomplete and is liable to be rejected . The OEM & tenderers should fill up their name in CAPITAL LETTERS, full address with pin code, phone number, fax number, e-mail address and with their full signatures.

7. The complete tender shall be page numbered.

8. Optional items will not be considered for ranking purposes.

9. The authorization and Gaurantee must be given by Original Equipment Manufacturer(OEM) on their letter head pad duly signed & stamped on each page. In case tender offer is from other then the Original Equipment Manufacturer, the tenderer must also give Gaurantee on their letter head pad duly signed & stamped on each page, failing which the tender shall be considered incomplete and is liable to be rejected. The authorization and Gaurantee will be considered from Original Equipment Manufacturer(OEM) and Gaurantee from tendereronly. The authorization and Gaurantee other than OEM and gaurantee other than tenderer in the tender will not be considered and the tender shall be considered incomplete and is liable to be rejected.

10. Any change in the AIR Technical Specification format or language or in parameters or of any other nature including the deletion of technical specification clause, words, lines in the technical compliance statement as mentioned in clause 6 as above by Original Equipment Manufacturer/tenderer will not be acceptable to Indenter and the tenderer is liable to be rejected.

11. Tenderers may please note that no clarifications may be asked by the Indenter regarding Indenter technical specifications, so all the tenderers may submit their tender offers accordingly.

GENERAL SPECIFICATIONS:

SECTION – 1.0

GENERAL SPECIFICATION:

1.0 Please refer tender documents for general term and conditions of contract for supply including all the commercial aspects like. Packing and Packing List, Insurance 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.**

2.0 INSPECTION: Detailed inspection will be carried out at Tenderer's System Integrator's works by representatives of Indenter as per detail given in Section 3.0 Complete specifications and details will be checked and value of all parameter values will be measured. The acceptance to this Section 3.0 has to be clearly stated by the Tenderer.

Prior intimation for carrying out Inspection at Tenderer's System Integrator's works is to be given by the tenderer to the indenter at least 2 weeks in advance.

The Tenderer's System Integrator's shall put up the complete set up of Stereo & Digital Programme Input-Cum-Monitoring Rack at his premises before the representatives of Indenter for carrying out the acceptance tests. Expenses for inspection charges, if any is to be quoted by the tenderer.

The expenditure towards To and Fro journey, lodging, boarding & DA in respect of Inspector will be borne by Indenter.

2.1 Inspection at Tenderer's System Integrator's works: Inspection for Stereo & Digital Programme Input-Cum-Monitoring Rack will be carried out by the representative of Indenter at Tenderer's System Integrator's works before dispatch to site.

Before giving the call for inspection to the Indenter, the Tenderer should satisfy themselves that the offered equipment etc, are as per the AIR Specification Tenderer should submit one set of complete performance figures of all equipment as per AIR Specification to the Indenter before Inspection at Tenderer's System Integrator's works by the Indenter.

2.2 The tenderer will clearly state and mention the name of place of the tenderer's System Integrator's works in the tender offer, failing which the tenderer, will be considered incomplete and is liable to be rejected.

2.3 OEM test certificates duly stamped and signed by OEM in respect of all equipment as per Specification are to be submitted by the tenderer to the indenter before giving call for inspection.

2.4 **Acceptance Test Procedure (ATP)** Will be submitted by the Tenderer within 15 days of placement of order for approval of Indenter in respect of Stereo & Digital Programme Input-Cum-Monitoring Rack as per Specification for the approval of Indenter. This will include all tests so as to assess the performance of the equipment as per specification.

2.5 Inspection will be carried out as per approval ATP.

3.0 Stereo & Digital Programme input-Cum-Monitoring Rack all equipment and Items of supply as per AIR specification shall be used for round the clock continuous operation without any interruption in VHF FM broadcast service at AIR station for FM transmitter/studio setup.

4.0 All information supplied by the tenderer & all markings, notes, designation on the drawings & associated write-ups shall be in “English language” only.

All dimensions on drawings and all references to weights and measures and quantities shall be in metric units.

5.0 **INFORMATION TO BE SUPPLIED WITH THE TENDER :**

5.1 Compliance statement as per AIR specification, parawise, for each clause.

5.2 Complete printed technical literature/data sheet/ detailed information including technical manual of Stereo & Digital Programme input-Cum-Monitoring Rack as per specification from the Original Equipment Manufacturer (OEM) in support of compliance statement should be furnished for all the items of the tender, to assess the full merit of the offer, without which the tender will be considered incomplete and is liable for rejection.

5.3 Descriptive information giving complete details of equipment offered.

5.4 Stereo & Digital Programme Input-Cum-Monitoring Rack schematic Block diagram & full schematic drawings.

5.5 Detailed Schedule of Requirement/Materials offered for Supply of the Stereo & Digital Programme Input-Cum-Monitoring Rack should be in conformity with Specification without any change in format without price(un-priced) failing which the tender shall be considered incomplete and will be liable for rejection. **The tenderer must quote all items.**

5.6 Country of origin, make, type, model number in respect of all items should be submitted along with the name & address of their vendors.

5.7 Layout plan and full construction details of Stereo & Digital Programme Input-Cum-Monitoring Rack including dimension, weights (overall sizes) & photographs/illustrations of the interior of the Stereo & Digital Programme Input-Cum-Monitoring Rack. This should include characteristics affecting the environment, for example: EMI, tentative accommodation plan with elevations for Stereo & Digital Programme Input-Cum-Monitoring Rack. This information should be in CD form also.

5.8 In support of Tenderer's claim an “up-to-date” list of their customers alongwith complete set of actual performance figures i.e, Stereo & Digital Programme Input-Cum-Monitoring Rack.

Performance measurement taken shall be furnished along with the tender. A supply record of Stereo & Digital Programme Input-Cum-Monitoring Rack / Stereo programme Input-Cum-Monitoring Rack in the last 5 years (Stereo Programme Input-Cum-Monitoring Rack shall be field proven for satisfactory operation) may be enclosed by the tenderer. Names, Address and Fax numbers of customers must be indicated.

6.0 **INFORMATION TO BE SUPPLIED BY THE TENDERER AFTER
AWARD OF SUPPLY ORDER**

One set of Technical manuals (for Installation, testing, commissioning, Operation & Maintenance, including Theory of operation and fault diagnosis, printed and duly bound for Stereo & Digital Programme Input-Cum-Monitoring Rack & all auxiliary Equipment shall be supplied to the Director Engineering (Project) within one month of Acceptance of Tender.

All the details should be complete and exhaustive. One Soft copy of these documents is also required on CD for use with PC.

7.0 **INFORMATION TO PRICEDE DESPATCH OF EQUIPMENT**

Following information should be supplied to the Indenter and each of the consignee, one months prior to dispatch of Equipment.

- a) Detailed list of equipment under dispatch.
- b) Photograph showing location of components in the various units and sub units with item numbers marked thereon.

8.0 **INFORMATION TO BE SUPPLIED ALONGWITH EQUIPMENT**

8.1 One set of Technical manuals (for Installation, testing, commissioning. Operation & Maintenance, including Theory of operation and fault diagnosis, printed and duly bound for Stereo & Digital Programme Input-Cum-Monitoring Rack & all auxiliary Equipment along with one soft copy of CD & Inspection Report of the inspection carried out at Tenderer's System Integrator's Works) shall be supplied as per Specification to each consignee.

8.2 Three Complete set, of these documents as per 8.1, against the order for Digital (AES/EBU) & Stereo Programme Input-Cum-Monitoring Rack are required to be sent to (irrespective of number of Stereo & Digital Programme Input-Cum-Monitoring Rack ordered). The following officers / offices / places.

8.2.1 DE (Project)	- 1 Set
8.2.2 Zonal Office (Project Wing)	- 1 Set
8.2.3 Zonal Office (Maintenance Wing	- 1 Set
Total	- 3 Set

9.0 **DELIVERY OF EQUIPMENT**

Within four months from date of placing of order.

10.0 The final equipment lay out and Jack wiring drawing shall be submitted by the tenderer within 15 days from the date of placement of order for approval.

only after approval of the equipment lay out and jack wiring drawing, the racks shall be wired by the tenderer.

11.0 **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 or 12 months from the date of commissioning at site whichever is earlier.
- 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.

12.0

PACKING AND PACKING LISTS

All the equipment should be securely and properly packed to withstand transit hazards Equipment packing shall be fit for against ingress of moisture. Packing slips giving details of the items contained in each package shall be placed inside the package in a water proof envelop to enable easy identification and should contain cross references to item/part numbers of installation drawings/components lists. Copies of packing slips and other details should be sent separately to respective consignee and also to The Director Engg.(Project).

13.0

AFTER SALES SERVICE : SERVICE FACILITY:

The Tenderer shall specify the repair/service facility available for the equipment in India with address. Phone/Fax nos. E-mail etc. The supply of Rack may require after sales services. Therefore full details of facilities for carrying out after sale service may be given.

14.

POWER SUPPLY FOR ALL INDOOR EQUIPMENT

Operating Line Voltage	AC Single Phase: 230 Volts \pm 10%
Frequency	50 Hz \pm 4%
Power Factor	Better than 0.9

15.

AMBIENT CONDITIONS FOR ALL INDOOR EQUIPMENT:

Operating temperature range	0°C to 45° C
Relative Humidity	95% non-condensing.
Working altitude	upto 3000 meters AMSL

SECTION 2.0 TECHNICAL SPECIFICATION

STEREO & DIGITAL PROGRAMME INPUT CUM MONITORING RACK

1.0 The Stereo & Digital Programme Input-Cum-Monitoring Rack should be suitable for :

- i) Feeding stereo programmes to VHF FM transmitters.
- ii) Feeding Digital input/programmes to VHF Fm transmitters.
- iii) Metering and monitoring of different programme inputs as per (i) and (ii) as above as well as signal at intermediate points in the audio chain and also detected signals.

Detailed specifications of rack and individual equipment are given below.

2.1 GENERAL AND BRIEF DESCRIPTION OF REQUIREMENT.

2.1 Suggestive block schematic (Drg. No. TM-15913) of the Stereo & Digital Programme Input-Cum-Monitoring Rack is enclosed for reference. However tenderer is required to provide complete equipment schematic diagram, wiring diagram and other technical details of the offered Stereo & Digital Programme Input-Cum-Monitoring Rack.

2.2 All audio lines from the jacks & Equipment are to be connected to a terminal block to be located near the bottom of the rack for external feeding of cables by the indenter. All the equipment are to be properly earthed with the existing equipment earthing system in the transmitter hall.

2.3 RFI/EMI filter shall be provided at mains input of the Stereo & Digital Programme Input-Cum-Monitoring Rack as per relevant standard provisions for effective rejection of the interference from the high power transmitters operating in the premises.

These Stereo & Digital Programme Input-Cum-Monitoring Rack will be used in High Power Transmitter halls (upto 250 KW transmitter RF output power) i.e. the rack with full complement of equipment as to operate in a high RF field. As such all the specifications of the individual equipment as well as the full chain, are to remain valid in high RF field.

2.4 The main Rack will be used to install various equipment as per in Schedule of material/requirement for supply (unpriced). The rack will be of standards 19" equipment width size. The frame of the rack shall be of high quality extruded aluminum or high grade steel material as per IS code amended up to date. The aluminum profiles shall be either anodized or powder coated and the steel parts shall give pleasing and aesthetic look and superior and long lasting paint finish. The rack is to be of sturdy design. The thickness of main frame section shall be greater than or equal to 1.6 mm and for covers greater than or equal to 1.2mm.

The overall load capacity of the rack should be more than or equal to 250Kg. The width shall be suitable for mounting of standard 19" equipment. Doors shall be provided on the rear side and shall have louvers and exhaust fan to facilitate proper ventilation.

The approximately overall size of rack shall be 2250(H) (Usable height 42 U) x 550 (W) x 700 (D)mm. The final equipment lay out and Jack wiring drawing is required to be submitted by the tenderer and got approved from the Indenter after the placement of Supply Order.

2.5 The rack shall be fitted with jack strips (2 nos jack strip for analogue and 2 nos. Jack strip for digital) as per specification. Separate jack strips shall be provided for digital and stereo inputs.

2.6 Blank panels for above rack shall be supplied for coverage of blank space in the racks.

2.7 Other requirements/features.

i)	AC main power Supply	Single phase as per section 1.0.
ii)	Ambient conditions	Single phase as per section 1.0.
iii)	Protection against RF	The equipment is to be provided with adequate interference shielding so as to perform satisfactory operation in the transmitter hall which houses other high power medium wave FM transmitter.
iv)	Accessories	The equipment shall be supplied complete with all mating connectors, input output cords and power supply cords. Lamps and cooling fans are to be fixed in the rack.
v)	The rack is to be supplied complete with all cabling/wiring/connectors.	
vi)	The equipment shall be completely modular in design for easy maintenance and replacement. Photographs showing exterior and interior of each equipment to be forwarded with tender.	
vii)	Spares: Essential and recommended spares components shall be quoted separately bases on failure pattern. a) Cooling fan b) Any other item as per recommendation of Manufacture.	
viii)	Earthing & RF Shielding: An earth terminal shall be provided in the rack body for connecting audio earth connection. RF Shielding shall be provided by the tenderer.	
ix)	The following equipment will also be installed in this rack in addition to equipment/items mentioned in Schedule of material/requirement for supply (un-priced):Broadcast Processor(2Nos),Mod monitor & Tone generator.	
x)	<u>AC POWER SUPPLY DISTRIBUTION</u> The power supply distribution is to be provided with an MCB in the incoming circuit near bottom of rack. Necessary RF filter is to be provided. The entire system is to operate on single phase supply. 5/15 Amps. 3 pin sockets are to be provided at different levels for various equipment.	
xi)	<u>DC SUPPLY (OPTIONAL):</u> In case any of the Rack equipment is to operate on a separate DC Supply, one such unit is to be offered as spare and price are to be quoted separately as optional.	

3.0 SPECIFICATIONS OF STEREO & DIGITAL PROGRAMME INPUT CUM MONITORING RACK

3.1 STEREO MODE :

i)	Input	6 nos. active balanced for L & R separately
ii)	Level Nominal	-6 to 6dBu (adjustable in steps of 1.0 dB)
	Level Maximum	+ 20 dBu
iii)	Input Impedance	600 ohms, balanced & floating or higher than 10K ohm
iv)	Output at selection	4 no., L & R balanced & floating
v)	Nominal Level	+ 6 dBu
vi)	Distortion (30 Hz to 20 KHz)	Better than 0.1%
vii)	Impedance	600 ohm balanced or less than 50 ohm
viii)	Frequency response (30 Hz to 20 KHz)	Better than +/- 0.5 dB
ix)	Inter Channel Cross talk at 15 KHz between any two Unrelated channel.	Better than 70 dB
x)	Phase difference, L/R	Better than 3 degrees
xi)	S/N (rms) unweighted (30 Hz to 20 KHz)	Better than 80 dB

3.2 DIGITAL MODE:

i)	Configuration :	Stereo AES/EBU standard, 24-bit resolution
ii)	Sampling Rate:	32, 44.1 or 48 KHz automatically selected
iii)	Connector :	XLR-type, female, EMI-suppressed
iv)	Input reference level	Variable within the range of -20.0 to 0.0dBFS

4.0 Stereo & Digital Input Selector (BALANCED) (Solid State based):

Different STEREO & DIGITAL programme inputs dual selector (Solid State based) Will be available at input of the rack. The above selector shall select one of these Programmes at the output. Selected position will be indicated by LED's/bar graph.

4.1 STEREO INPUT SELECTOR (Solid State based):

Technical Parameters

i)	Number of Stereo Inputs	6 nos. with XLR connectors
ii)	Output requirement	4 nos. XLR connector
iii)	Selection	By push buttons with solid state or relay switching. With memory
iv)	Indication by	LED's
v)	Input/Output Isolation	90 dB
vi)	Output/Input Isolation	90 dB
vii)	Frequency response	Better than +/- 0.5 dB

	(30 Hz to 20 KHz)	
viii)	Distortion (30 Hz to 20 KHz)	Better than 0.1%
ix)	S/N (rms) unweighted (30 Hz to 20 KHz)	Better than 80 dB

4.2 Digital INPUT SELECTOR (Solid State based):

Different Digital programme inputs selector (Solid State based) will be available at input of the rack. The above selector shall select one of these programmes at 4 independent outputs. Selected position will be indicated by LED's/ self illuminated switch.

Technical Parameters:

i)	Configuration	Stereo AES/EBU standard, 24-bit resolution
ii)	Number of Digital inputs	5nos. with XLR connectors
iii)	Output requirement	4 nos. with XLR connector
iv)	Sampling Rate:	32,44.1 or 48 KHz automatically selected.
v)	Selection	By push buttons with solid state or relay switching, with memory.
vi)	Indication by	LED's / Bargraph
vii)	Impedance	110 Ohm

5.0 Metering & Monitoring selector for STEREO & DIGITAL INPUT (Solid State based):

5.1 Metering Selector: This selector is to be used for selecting any one of the Digital & Stereo inputs for the purpose of metering. Selected position is to be indicated by LED Display/bar graph. Necessary D/A solidstate converters are to be included and provided by the tenderer.

5.1.1 Stereo Mode:

i)	Number of Input	1 no. XLR connector
ii)	Selection	By push buttons for stereo or digital mode
iii)	Indication by	LED Display

5.1.2 Digital Mode:

i)	Configuration:	Stereo AES/EBU standard, 24-bit resolution
ii)	Number of Input	1 no. XLR connector
iii)	Selection	By push buttons for stereo of digital mode
iv)	Indication by	LED Display

5.2 Metering Selector: This selector is to be used for selecting any one of the Digital & Stereo inputs for the purpose of metering. Selected position is to be indicated by LED Display/bar graph. Necessary D/A solidstate converters are to be included and provided by the tenderer.

5.2.1 Stereo Mode:

i)	Number of Input	2 nos. XLR connector
ii)	Selected Output	1no. XLR connector
iii)	Selection	By switch

5.2.2 Digital Mode:

i)	Configuration:	Stereo AES/EBU standard, 24-bit resolution
ii)	Number of Input	1 no. XLR connector
iii)	Selected Output	1no. XLR connector

6.0 PRECISION, INSTRUMENT QUALITY,STEREO DISPLAY UNIT:

The levels of selected signals are to be indicated on L&R bar graphs. Indication should be by VU meter / PPM (peak programme meter) using selector switch. Selection should not load the circuit.

6.1	Indication by	LED bar graph minimum of 20 elements, in three colours.
6.2	Value	Peaks, with selector switch
6.3	Measuring range	-20 to 24 dBu switchable pad/pads may be provided to change the reference level of bar graph as the maximum level to be displayed is + 24 dBu.
6.4	Resolution	Better than 2 dBu in the range -20 to 0 dBu & 1 dBu in range 0 dBu to + 24 dBu.
6.5	Frequency response	Better than +/- 0.1 dBu (30 Hz to 20 KHz)

7.0 STEREO & DIGITAL MONITORING AMPLIFIER

The monitoring amplifier is to be provided for monitoring of programme as selected by the selector switch and will be provided with a set of 2 high quality speakers for L/R channels.

7.1 SPECIFICATION FOR 40 WATTS STEREO & DIGITAL MONITORING AMPLIFIER:

7.1.1 **GENERAL:**

This specification pertains to professional STEREO & DIGITAL monitoring amplifier for use in transmitter centers.

The amplifier shall be able to deliver an output of 40 Watt RMS and 200 Watt Peak Music Power Out put (PMPO) per channel with both channel driven at 1 Khz at nominal input level.

The amplifier shall be capable of continuous operation round the clock without degradation in performance. Amplifier will operate on AC main single phase power supply as per section 1.0.

7.1.2 **Technical :**

The amplifier shall essentially have the following features:

7.1.2.1	<u>Protection against current over-loads:</u> The amplifier should mute in case of overload and revert to normal functioning once overload ceases to exist.
7.1.2.2	<u>Protection against thermal overload:</u> Temperature of power pack and heat sinks of both Channels should be monitored and the amplifier should get muted with a visual indication whenever temperature exceeds permissible limits. In case of excessive temperature of heat sinks, the amplifier should be protected by fuse blow up or by any other suitable measures.
7.1.2.3	Monitoring amplifier output should be continuously monitored for DC components or very low frequency components which might endanger speakers If present for longer durations. Amplifier output should get blocked in such an eventuality.
7.1.2.4	The amplifier should have protection against open circuit, full short circuit, ultrasonic frequency and high RF fields.
7.1.2.5	It should be switchable to stereo and dual mono operating modes.
7.1.2.6	Necessary function switches such as volume/gain control, low and high filters should be available on front panel. These controls shall be rugged and reliable.

7.1.3	INPUTs :	
7.1.3.1	No. of inputs (stereo)	1 No. (30 Hz to 15 KHz)
7.1.3.2	Input level	-10 dBu to + 10 dBu for rated output
7.1.3.3	Input impedance	Better than 10K Ohms (balanced)
7.1.3.4	CMRR (20 Hz -20 KHz)	Better than 60 dB
7.1.4	OUTPUT:	
7.1.4.1	Power Output	40 Watt RMS at 8 Ohms nominal impedance at suitable terminals.
7.1.4.2	Frequency Response with reference to 1 KHz over the entire range (40 Hz to 15 KHz)	Better than +/- 0.5 dB
7.1.4.3.	Total Harmonic Distortion at 1KHz	Better than 0.25% at rated output.

7.1.4.4	Signal to Noise Ratio with input shorted and at rated output unweighted rms) at 0 dBu input. (20 Hz – 20 KHz)	Better than 80 dB
7.1.4.5	Damping Factor	Better than 75 into 8 ohm at <1 KHz
7.1.4.6	Level difference between the channels	Equal to or less than 0.5 dB
7.1.4.7	Phase difference between the channels	Better than 20 degree (40 Hz to 15 KHz)
7.1.4.8	Inter channel cross talk at 15 KHz	Better than 70 dB at nominal level.

7.1.5	DIGITAL AUDIO INPUT	
7.1.5.1	Configuration:	Stereo AES/EBU standard, 24-bit resolution.
7.1.5.2	Sampling Rate:	32, 44.1 or 48 KHz automatically selected.
7.1.5.3	Connector:	XLR-type, female, EMI suppressed.
7.1.5.4	Input reference level	Variable within the range of -20.0 to dB FS

7.1.7 ACCESSORIES:

All necessary accessories like connection cords and connectors shall be supplied along with the units. The standard accessories should be clearly mentioned in the tender also, optional accessories, if considered useful/recommended by the supplier, should be quoted separately with technical details.

7.1.8 MECHANICAL:

The amplifier should be 19” rack mounting type for mounting in a rack.

8.0. SPECIFICATION FOR STEREO LOUDSPEAKERS SYSTEM

8.1 GENERAL:

The loudspeaker system shall be high fidelity two way speaker system based on state of the art technology. The enclosure of the speaker shall be of rugged structure and of attractive design.

The front grill attached to the enclosure shall be attractively designed, acoustically transparent and shall be fixed rigidly so that it does not vibrate.

The tender should submit typical plots of Impedance vs. Frequency, Amplitude vs. Frequency, Phase vs. frequency and polar pattern.

8.2 TECHNICAL SPECIFICATIONS:

8.2.1 POWER HANDLING CAPACITY:

The power handling capacity of each speaker should not be less than continuous RMS : 100 Watts (for each channel)

8.2.2 Frequency Response: The speaker system should have frequency response within ± 3 dB between 45 Hz to 20 KHz with respect to 1 KHz. The frequency response curve shall be submitted with tender and shall be supplied with each unit.

8.2.3 Over load Protection: The speaker should be protected against momentary peak overloads upto 6 dB above rated power handling capacity.

8.2.4 Nominal Impedance:

Nominal Impedance of 8 ohms shall be offered. An impedance Vs, frequency plot shall be Submitted with tender and shall be supplied with each unit.

8.2.5 Sensitivity : At 1 watt input (2.8 Volts across 8 ohm), each speaker system shall produce SPL of 90 dB or more at a distance of 1 M on axis.
Distance of apparent acoustic source behind front surface shall be specified.

8.2.6 Directivity: The Q-factor of the speaker system shall be specified. Polar response of the Speaker system shall be supplied for both horizontal and vertical plane in each unit.

8.2.7 Matching :

The two loud speakers shall conform to the above requirements and shall be a matched pair as regards their sensitivity, frequency response, phase response and polar pattern.

8.2.8 .Phase Response:

The system should behave as a frequency independent time delay, phase Vs. frequency response curve shall be submitted with tender.

8.2.9. Dimensions, finish and weight of the speaker shall be specified by the tenderer.

8.2.10. Accessories: Matching transformer as required shall be supplied with the unit.

9.0 .STUDIO HEAD PHONES:

9.1 GENERAL: The head phone shall be designed to reproduce full audio spectrum faithfully (without any colouration) for quality monitoring in broadcast studios. It shall be light weight in construction and shall have provision or stereo/mono monitoring. Left and right ear-pieces shall be matched to reproduce stereo images correctly. The provision shall exist for parallel wiring of the left and right systems for mono monitoring.

9.2. ELECTRICAL REQUIREMENTS:

The head phone shall conform to the following electrical requirements.

9.2.1	Frequency range	The head phone shall reproduce faithfully a range of 40- 16000 Hz. A typical frequency response curve shall be submitted along with the tender.
9.2.2	Electrical impedance	2x600 Ohms \pm 10%
9.2.3	Sensitivity at 1 KHz	90 dB SPL for 1 mw input
9.2.4	Max-power handling capacity	200 mw.
9.2.5	Total harmonic distortion	\leq 1% at max. permissible input level.

9.3. MECHANICAL REQUIREMENTS:

The diaphragm may be made of hard poly vinyl chloride or similar material and housed in polysterene housing. The ear cushions shall be circumaural and may have foam filled material. The headphone shall be comfortable for extended use.

The head phone shall further conform to the following mechanical requirements.

9.3.1 The head strap shall be of spring steel wire encased in or supported by leather or flexible plastic and the length shall be adjustable.

9.3.2. Average pressure on ears: Max 4 N

9.3.3. Cord of at least 1.6 m length shall be provided. The cord may be detachable.

9.3.4. Standard stereo/mono phone plug 6.35 mm dia shall be provided as required.

9.3.5. Weight of the head phone without cord shall not exceed 250 grams.

10.0 STEREO AF JACK STRIP PANELS

STEREO AF JACK STRIP PANELS

10.1 GENERAL DESCRIPTION:

The stereo audio jack strip panels shall be used for stereo audio patching and termination in Broadcast Studios. The jack strip shall be of 2U height containing 20 jacks in each of two rows (one for left and other for right signal). The jack strip shall be suitable for mounting on standard 19" equipment rack. There shall be provision for fixing of removable legend strip with plastic cover on top/bottom of the jacks. The jack strip shall be wired with twin core shielded audio cable conforming to AIR specifications.

All inner and outer contacts of jacks shall be wired to the tag block. Inter connections shall be made at the tag block.

The length of audio cable bunch shall be such that the jack strips can be mounted at a height of 1500 mm or below for full size racks through proper routing of cable bunch. The wiring bunches shall be neatly laid and clamped to the body of the rack with adequate flexibility affording pulling of jack strip outside the rack on its front without strain on cables for attending to jack wiring. The wires shall be suitable marked with ferrules on both ends for easy identification.

10.2 JACK STRIP SPECIFICATIONS:

Jack Panel	: General purpose black phenolic resin
Frame	: Plated, steel or aluminum
End Bracket and side Strip	: Cold rolled plated steel or aluminum
Designation Channel	: On top/bottom of jack strip
Marking Strip	: White plastic, matt finish
Marking Strip Cover	: Clear extruded plastic
No. of Jacks in each row	: 20, placed at equal distance centre to centre

10.3 JACK CONSTRUCTION:

The jack shall have rugged steel frame, press welded with copper alloy corrosion resistant springs. The contact shall be of welded crossbar palladium/gold for providing reliable, low resistance and long life contact. The jack shall be 20 point jack providing break on both wires and an isolated offset earthing lug. The jacks shall have solder tinned lug terminals. Make type and technical details and drawings of jacks are to be supplied with the tender.

10.3.1 TECHNICAL SPECIFICATION OF JACKS

- i) Electrical :
 - (a) Contact resistance : 0.05 ohms maximum
 - (b) Insulation Resistance : 1000 mega ohms min
 - (c) Dielectric withstanding : 500 VRMS AC Voltage

ii) MECHANICAL:

- a) Bushings : Plated copper alloy bushings to accept standard 6.35 mm/
0.25 inch dia plug
- b) Insertion Force : 7 lb (3.17 kg) maximum
- c) Withdrawal Force : 1.5 lb (0.679 kg) maximum
- d) Life : Min. 20,000 insertion/withdrawal cycles
- e) Vertical Spacing : 0.625 ± 0.01 inch centre between jacks for stereo

11.0 STEREO AF PATCH CORDS

STEREO AF PATCH CORDS:

Two jacks will be jointed together to form Stereo Set. Colour of Jacks/Sleeves and audio cables will be different to indicate L/R clearly.

11.1 PATCH CORDS WITH MATCHING PLUGS:

These shall be supplied in lengths of 3' and 6' with 6.35mm/0.25 inch dia twin plugs at both ends of the patch cord. Individual plugs will have tip, ring and sleeve construction with complete continuity of thermoplastic insulation between plug elements. Two of these plugs are to be placed into handles to provide a twin-plug at each end of the patch cord. The two are electrically independent 3 conductor plugs spaced 0.625 inch centre to centre, with self-alignment feature. The plugs shall be made of Nickel-plated brass with black Bakelite molded cover.

The patch cord shall be made of 14/68 standard copper wire covered with insulating material with 98% tinned copper braided shielding and black thermoplastic outer braid woven over insulated conductors and shield. Make, Type, origin and technical specification of patch cords are to be submitted along with the tender.

12.0 RF CONNECTOR:

RF CONNECTOR:-

4 Nos of RF connectors are also to be provided. These are to be used for feeding RF power to Demodulators or Analyzer. These connectors are to be of BNC type.

13.0 DISTRIBUTION AMPLIFIERS:

The analogue stereo and digital distribution amplifier will be used for feeding an analogue stereo and digital programme to various destinations.

The analogue stereo distribution amplifier should be a solid state audio amplifier having one stereo input and 4 separate individually adjustable stereo outputs.

The digital distribution amplifier should be a solid state having one digital input and 4 separate digital outputs.

13.1 Analogue Stereo Distribution Amplifier:

1. INPUT IMPEDANCE

Input impedance shall be ≥ 10 k ohm (balanced).

2. INPUT LEVEL

- a) Nominal : 0 dBu
- b) Maximum : + 20 dBu

3. GAIN

Shall have adjustable gain of ± 5 dB with respect to nominal setting.

4. OUTPUT LEVEL

- a) Nominal : 0 dBu
- b) Maximum : + 20 dBu

5. OUTPUT IMPEDANCE

Output impedance shall be ≤ 50 ohm (balanced)

6. FREQUENCY RESPONSE

± 0.5 dB in frequency range of 40 Hz to 20 kHz.

7. TOTAL HARMONIC DISTORTION

Less than 0.1% at nominal level (1 KHz) and less than 0.5% at maximum output level. (Terminated into a load of 600 ohm) throughout the audio frequency range of 40Hz to 20kHz.

8. SIGNAL TO NOISE RATIO AT NOMINAL INPUT/OUTPUT, RMS UNWEIGHTED (22 Hz -22kHz)

≥ 90 dB

9. INTER OUTPUT LOADING

- (a) If one of the outputs gets short circuited, the level on the rest of outputs shall not fall by more than 0.3 dB.
- (b) If two of the outputs got short circuited, the level on each of the remaining outputs shall not fall by more than 0.6 dB.

10. INTER-CHANNEL PHASE DIFFERENCE

Not more than 5 degree in frequency range of 125 Hz to 10 KHz and 10 degree from 40 Hz to 20 KHz.

11. INTER-CHANNEL LEVEL DIFFERENCE

With in ± 0.5 dB, from 40 Hz to 20 KHz

12. INTER-CHANNEL CROSS TALK

Equal to or better than 60 dB at 20 KHz at nominal level.

13. INPUT/OUTPUT CONNECTORS

Input and all outputs shall be on 3-Pin XLR connectors.

13.2 Digital distribution amplifier:

	DIGITAL AUDIO INPUT	
i	Configuration:	Stereo AES/EBU standard, 24-bit resolution.
ii	Sampling Rate:	32, 44.1 or 48 KHz automatically selected
iii	Connector:	XLR-type, female, EMI-suppressed
iv	Input reference level	Variable within the range of -20 to 0 dBFS

	DIGITAL AUDIO OUTPUT	
i	Configuration:	Stereo AES/EBU standard.
ii	Sampling Rate:	32, 44.1 or 48 KHz selected in software
iii	Connector:	XLR-type, Male, EMI-suppressed
iv	Input reference level	110 Ohm

14.0. AUDIO WIRING:

AUDIO WIRING: All audio wiring will be carried out with high quality 2 core shielded Teflon multi strand tinned copper Audio Cable. Technical details of the offered audio cable is required to be enclosed with tender by the tenderer.

14.1 GENERAL DESCRIPTION:

This cable is required for wiring of jack strips in audio equipments racks in Broadcast studios/Transmitting stations.

14.2 CORES:

Two cores, twisted. Each core conductor to be formed of 7 strands of 0.193mm dia (36 SWG) annealed tinned copper wire conforming to IS 8130/1976 or higher number of strands of thinner gauge to give equivalent core cross section for better flexibility.

14.3.CORE INSULATION

Each core conductor shall have PVC insulation of minimum radial thickness of 0.3mm, conforming to type I of IS 5831/1970. The cores shall be color coded black and red or any other distinguishing color code.

14.4. FINISH AND SHIELDING:

The two cores shall be twisted together so as to give circular cross section to the cable for maximum flexibility. The shielding shall consist of about 80 strands of minimum 40 SWG annealed tinned copper wires closely woven in groups of 4-6 strands to give at least 98% coverage.

14.5. SHEATH:

The sheath over the shielding shall be of PVC of nominal thickness of 0.3mm conforming to type 6 of IS 5831/1970.

14.6. OVERALL DIMENSION:

The outer diameter of the cable shall be 3.5mm or less

SECTION 3.0: INSPECTION

The Inspection for acceptance of Stereo & Digital Programme Input-Cum-Monitoring Rack will be carried out at the Tenderer's System Integrator Works as mentioned in the tender offer under SECTION-1.0. All facilities like complete set of measuring instruments, power supply, manual assistance etc., will be provided by the tenderer without any additional charges. Complete set of instruments will be made available in advance and the list of these measuring instruments along with their set ups may be forwarded along with the ATP.

The tenderer shall put up all the stereo & Digital programme Input-Cum-Monitoring Rack for Inspection in lots of N Numbers (total numbers as per order) out of which 10% randomly selected stereo & Digital programme Input-Cum-Monitoring Rack shall be inspected in details and measurements shall be taken.

Complete details and specifications of the stereo & Digital programme Input-Cum-Monitoring Rack will be checked and all parameter values will be measured.

All other associated equipment and items will be accepted on the basis of Original Equipment Manufacturer's (OEM) Test Certificates (as per AIR Specification) duly signed and stamped on the letter head of the OEM, failing which original equipment Manufacturer's (OEM) Test Certificates will be considered incomplete and equipment offered by the firm is liable to be rejected.

However, operational & functional checking of all the stereo & digital Programme Input-Cum-Monitoring Rack shall be carried out as per mutually agreed ATP.

Exhaustive checking/measurements will be carried out so as to completely check the compliance of the Stereo & Digital programme Input-Cum-Monitoring Rack with the requirement as projected in the specifications. It is mandatory that all parameters are checked, measurements are carried out in advance and these details, notes and figures are available at the Tenderer's System Integrator Works as mentioned in the tender offer under SECTION-I at the time of inspection. These performance reports shall also be submitted to All India Radio before giving call of inspection at least 2 weeks in advance.

The inspection for acceptance of the complete stereo & digital Programme Input-cum-Monitoring Rack will be carried out in accordance with Acceptance Test Procedure (ATP). Complete details and specifications of the stereo & Digital Programme Input-Cum-Monitoring Rack will be checked and all parameter values will be measured.

The complete Acceptance Test Procedure (ATP) will be prepared by the tenderer and submitted for approval. This procedure after modification (if required during the process, of approval shall form the basis for performance/Inspection Tests to be carried out. ATP will also indicate full details of set up for measuring/testing equipment to be deployed during the performance Measurement/Inspection Test at factory.

Following Information should also form part of above data which will also be checked for each stereo & Digital programme Input-Cum- Monitoring Rack during inspection by indenter's representative at Tenderer's System integrator Works as mentioned in the tender offer under SECTION-1.0:-

1. Make and type of Stereo & Digital Programme Input-Cum-Monitoring Rack for different modes of operation, accessories and spares.
2. Dimension of Stereo & Digital programme Input-Cum-Monitoring Rack, sub units and accessories.
3. Working/operation of all sub-units and accessories.
4. System configuration check and completeness of Stereo & Digital Programme Input-Cum-Monitoring Rack.
5. Checking meter reading and calibration.
6. Measurements of all parameters as per specification.
7. Checking of control/protection system of Stereo & Digital Programme Input-Cum-Monitoring Rack.
8. Checking of all power levels, meters, display graph etc.
9. Measurement of levels in the whole AF and RF chain.
10. Checking of test points.
11. Checking of all spares, PCBs modules for the respective stereo & Digital Programme Input-Cum-Monitoring Rack.
12. Checking of operation of Stereo & Digital Programme Input-Cum-Monitoring Rack for different modes of operation.

SECTION-4 SCHEDULE OF MATERIAL/REQUIREMENT FOR SUPPLY

(Unpriced)(For one set of Stereo & Digital Programme Input-Cum-Monitoring Rack)

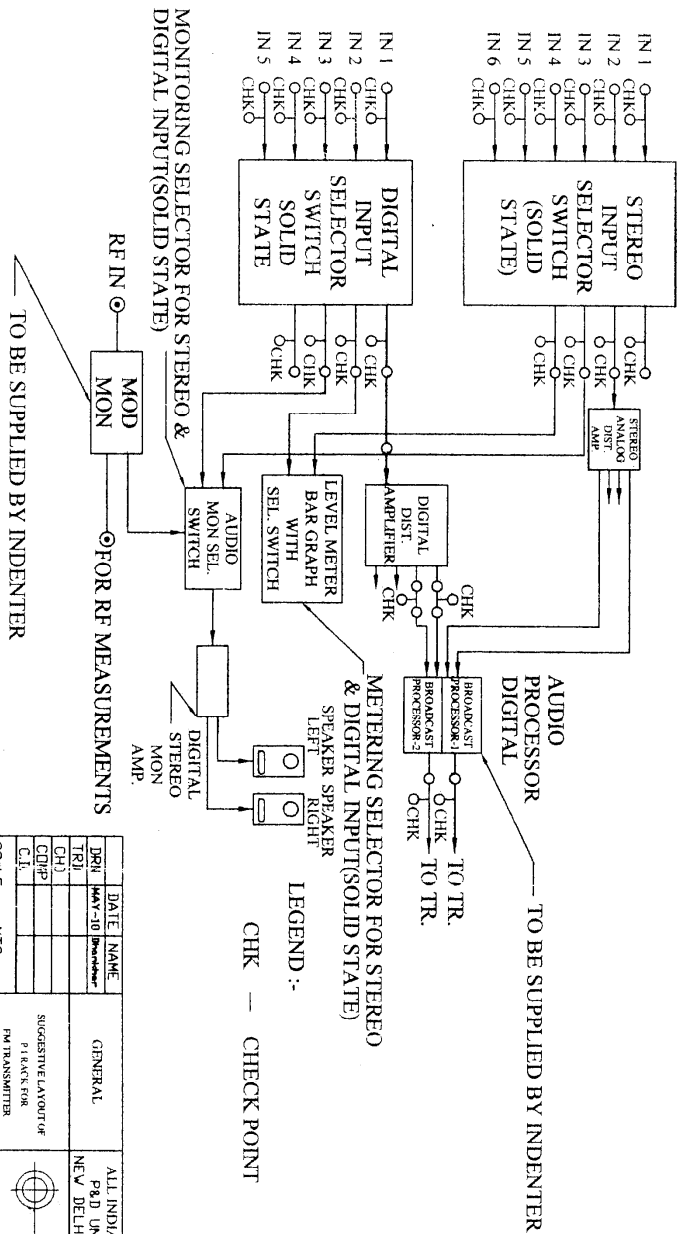
Sl. No.	Description	Quantity
1.0	Stereo & Digital Programme Input-Cum-Monitoring Rack broadly comprising of following equipments and items and as per AIR specification No. Stereo & Digital PI Rack/1/May/2010-D(TD/FM)	1 Set complete
i	Stereo programme input selector switch (solid state based)	
ii	Digital programme input selector switch(solid state based)	
iii	Stereo & Digital metering selector (solid state based) with D/A convertor for stereo & digital input.	
iv	Stereo & Digital monitoring selector (solid state based) with D/A convertor for stereo & digital input.	
v	Level display unit/bar graph	
vi	Stereo & Digital Monitoring Amplifier	
vii	High quality stereo speaker	
viii	Stereo AF jack panels of 20 jacks each (2 set)	
ix	Digital AF jack panels of 20 jacks each (2 set)	
x	RF Patch panel	
xi	Stereo AF Patch cords (4 set)	
xii	Digital stereo AF patch cords (4 set)	
xiii	Stereo Distribution Amplifier – 1 No.	
xiv	Digital Distribution amplifier-1 No.	
xv	Power supply cables, audio cables and connectors for each individual equipment and one spare cord-1 Lot.	
2.0	One set of Technical manuals (for installation, testing, commissioning, operation & Maintenance, including Theory of operation and fault diagnosis printed and duly bound for stereo & Digital Programme Input-Cum-Monitoring Rack & all auxillary Equipment along with one soft copy on CD shall be supplied as per specification to DE(project).	1 Set.
3.0	One set of Technical manuals (for Installation, testing, commissioning, Operation & Maintenance, including Theory of operation and fault diagnosis printed and duly bound for stereo & Digital Programme Input-Cum-Monitoring Rack & all auxillary Equipment along with one soft copy on CD & Inspection report of the inspection carried out at Tenderer's System Integrator's Works shall be supplied as per Specification to each consignee.	1Set.
4.0	Three Complete sets, of these documents as per 2.0, against the order for stereo & Digital programme Input-Cum-Monitoring Rack are required to be sent to (irrespective of number of Stereo & Digital Programme Input-Cum-Monitoring Rack ordered), to the following officers places: (i) DE (Project) - 1 Set. (ii) Zonal Office (Project Wing) - 1 Set (iii) Zonal Office (Maintenance wing) -1 Set. Total=3 Sets.	3Sets.

**SECTION-4 SCHEDULE OF MATERIAL/REQUIREMENT FOR SUPPLY
(OPTIONAL INCLUDING ESSENTIAL AND RECOMMENDED SPARES)**

(Un priced) (For one set of Stereo & Digital Programme Input-Cum-Monitoring Rack)

S.No.	Description	Quantity
1.0	Cooling fans complete	1 No.
2.0	DC Supply: In case any of the Rack equipment is to operate on a separate DC Supply, one such unit is to be offered as spare and price are to be quoted separately as optional.	1 No.
3.0	Any other items as per recommendation of manufacture	1 Lot.

**SUGGESTIVE DRG. FOR STEREO & DIGITAL PROGRAMME INPUT CUM MONITORING
RACK
FOR FM TR. PROJECTS AT TV SITE / SEPERATE SITES**



DATE	NAME
DRG	10/10/2000
TRD	
CHK	
CDR	
CL	
SCALE	NTS

APPROVED:-

DRG No. TM-15913

DRG No. TM-15913

ALL INDIA RADIO
NEW DELHI, INDIA

SUGGESTIVE LAYOUT OF
PI RACK FOR
FM TRANSMITTER
AND TV SITES