

**SPECIFICATIONS FOR 16 CHANNEL ANALOGUE AUDIO MIXER**

Specifications No.: SD 09/2010

Dated: 21.05.2010

**1. SCOPE:**

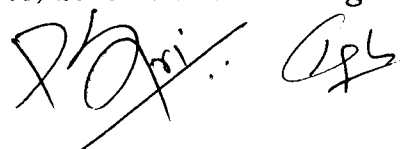
The specifications lay down the performance requirement of 16 channel Analogue Audio mixer for TV program production & transmission for studio/OB applications in Doordarshan Network.

**2. GENERAL:**

- 2.1 **The offered equipment should be from an internationally reputed manufacturer and the quoted model should be field proven and in use by leading broadcasters. The bidder should essentially submit the list of the broadcasters to whom the quoted model has been supplied. The tenders without the proper user list shall liable to be rejected out rightly.**
- 2.2 The product offered against these specifications should be highly reliable, user friendly & convenient to operate for optimum utilization of all the features.
- 2.3 It should be of broadcast quality and suitable for continuous operation. It should have provision for accepting both microphones as well as line inputs.

**3. ESSENTIAL FEATURES:**

- 3.1 The complement of equipment quoted against this tender should include all the essential accessories including power cord etc. to complete the configuration. The firm should certify the completeness of the offered system.
- 3.2 All Mic/Line inputs & outputs should be available on XLR connectors. If necessary, suitable breakout panel should be included in the offer.
- 3.3 The mixer should be desk mounting type.
- 3.4 It should be modular in construction having individual modules for each mono mic/line, stereo line, Master Fader, Group Fader, Monitor Module & Talkback etc.



- 3.5 The offered mixer should have 16 inputs including 4 stereo audio inputs. 12 inputs will be mono audio. The mono input modules should be capable of accepting Mic. as well as line inputs. All the 4 stereo modules should be stereo line modules.
- 3.6 The system should have provision for grouping of inputs in at least 4 groups.
- 3.7 The system should provide minimum one stereo output controllable by master fader.
- 3.8 All the switches should be either with gold plated/ silver plated contacts or electronic type.
- 3.9 Output of each input channel should be assignable to the master fader(s).
- 3.10 The input modules should have built in 3 band equalizers consisting of high, low and band pass.
- 3.11 The input module for handling stereo audio should have provision for channel swapping through L/R key or switching to mono individually for each channel.
- 3.12 Each mono input module should have completely separate Mic./ Line inputs. The Mic. input should be electronically/transformer coupled.
- 3.13 The input module should have provision for feeding 48 V phantom supply to each Mic. channel.
- 3.14 The input module should have provision for L/R pan position control.
- 3.15 The system should have provision for 4 or more Auxiliary outputs with pre/ post-fader selector.
- 3.16 Phase inversion provision should be available on all inputs modules.
- 3.17 The input module should have linear, high quality, 100mm long conductive plastic faders. Fader start signal should also be available.
- 3.18 The input module should have overload/peak indicator.
- 3.19 Pre-fader listening should be available on each channel.
- 3.20 The monitoring module should have provision for selection of sources (internal or external) and provision for selection of output monitoring devices such as speaker, headphone etc.
- 3.21 The system should have built in test generator and studio monitoring control. There should be provision to route talk back to all the AUX paths, Groups and also into the Studio.
- 3.22 The mixer should have a talk back microphone with amplifier.

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- 3.23 The mixer should have all necessary visual indications on the panel, which are essential during TV programme production & Transmission.
- 3.24 Output metering on Analogue VU meters should be available.
- 3.25 The system should have redundant power supply.
- 3.26 All necessary removable connectors/special connectors including XLR connectors & breakout panels, if required for proper utilization of the console in a professional TV Broadcast studio set- up should essentially be quoted.
- 3.27 The Bill of Material required is given in **Appendix-I**.
- 3.28 The equipment are being procured for various Doordarshan centres as per **Appendix-II**.

#### **4. TECHNICAL SPECIFICATIONS:**

##### **4.1 Input**

- (a) Input channels : 16 (4 stereo line inputs; 12 mono line/mic inputs)
- (b) Mic input impedance :  $\geq 1K \Omega$
- (c) Line input impedance :  $\geq 10K \Omega$

##### **4.2 Output**

- (a) Master Output : Min. one Stereo output
- (b) Impedance :  $< 70 \Omega$
- (c) Level : +4dBu

##### **4.3 Frequency Response:**

- with EQ switch off : Within +0.5 dB to -1.5 dB 20 Hz to 20 KHz

##### **4.4 Noise Performance:**

- (a) Equivalent Mic. input noise : -125 dBu or better
- (b) SNR at master output : 70 dB or better

**4.5 Total Harmonic Distortion** : 0.03% at 1 KHz or better

**4.6 Cross talk (channel to channel)**

- (a) Without pan pot : 70 dB or better
- (b) With pan pot : 55 dB or better

**4.7 Test Oscillator frequency** : 1 KHz and 10 KHz

**4.8 Power supply** : 230V± 5 %, 50 Hz

**4.9 Operating Temperature** : 5 to 40 Deg. Celsius

## **5. COMPLIANCE**

- (a) Any substandard equipment included in the offer may cause the rejection of complete offer with the sole responsibility of bidder.
- (b) The firm should provide the offered un-priced bill of material in electronic form also in addition to the hard copy for ease of technical evaluation.
- (c) **A point-by-point compliance statement from the principal manufacturer in respect of all the points laid down in these specifications is to be enclosed along with the offer in the format given below. Mere signature on the copy of the specifications shall not be accepted as a compliance statement.**

**The figures so mentioned should be supported by record of these in the technical literature enclosed with the tender and reference to the page number of enclosed literature for all features and technical specifications should be mentioned in the relevant column. Offers without the compliance statement or with incomplete compliance statement will liable to be rejected with the sole responsibility of the bidder. Any deviation from the specification detailed in the compliance statement is to be highlighted separately.**

Sr. No of DD specs.	DD specs.	Compliance (Yes/No)	Performance Fig. of equipment Offered.	Reference to the Page Number of enclosed literature	Deviations, in case of non-compliance	Optional items if any reqd. to make the sys. Compliant to DD specs.	Features in the offered Product which exceeds DD specs.

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## **6. ACCESSORIES**

All the essential accessories, such as various types of connectors, AC to DC power adopters, power cords etc. are required to be quoted essentially. All the Optional items may be quoted separately. The firm must provide enough details about optional items to decide its utility.

## **7. DOCUMENTATION**

One set of printed technical and operation & maintenance manuals for all the equipments are to be provided on non-returnable basis along with the tender to facilitate the technical evaluation, otherwise the tender is liable to be ignored. The successful bidder will have to supply one set of printed operation, service and maintenance manuals with respect to the equipment.

## **8. GUARANTEE**

- (a) The system should be guaranteed for two years of trouble free operation from the date of supply. In case of any equipment failure including software and hardware within this period, the same shall be rectified or replaced free of cost to Doordarshan.
- (b) The guarantee should cover all hardware, software and modules of the complete system.

## **9. DEMONSTRATION**

If necessary, the firm may be asked for demonstration of the offered system as part of the technical evaluation. In such case the firm will have to make suitable arrangement for the demonstration of the offered system at Doordarshan Bhawan, New Delhi, on notice of 7 days. Accordingly the firm should be in readiness for demonstration on a notice of 7 days.

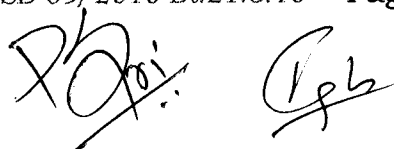
## **10. INSPECTION**

The equipment shall be subjected to inspection by Doordarshan officials at New Delhi.

## **11. ENCLOSURES**

The bidder must necessarily submit the following enclosures along with the technical bid:

- (a) Compliance statement with respect to all the points of the specifications duly signed by the OEM.



- (b) The reference to the page number of enclosed literature for all features and technical specifications should be essentially mentioned in the relevant column of the compliance statement.
- (c) Technical manuals/Detailed technical literature/catalogues for all the offered products for substantiating the model no. and technical specifications.
- (d) **Model specific broadcast user list of the offered product.**
- (e) Any other document mentioned elsewhere in the tender document.

**The tender is liable to be rejected in the absence of the above enclosures with the sole responsibility of the bidder.**

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**Total Quantity: 31 Sets**

**Bill of Material per set**

<b>Sr. Nos.</b>	<b>Description</b>	<b>Qty. per set</b>
1.	16 channel Audio Mixer with redundant power supply comprising the following modules:	1 Lot
(a)	Mono Mic/Line Modules	12 nos.
(b)	Stereo Line Module	4 nos.
(c)	Group Module for minimum 4 Group Outputs	1 Set
(d)	Stereo Master Module	1 no.
(e)	Monitor & Talkback Module	1 Set
(f)	A pair of moving coil VU Meter for monitoring	1 Set
(g)	Any other module/item to meet the specifications	1 Set
(h)	Gooseneck microphone for talkback, if required	1 no.
(i)	Suitable breakout panel with XLR male & female connectors, if required	1 Set
(j)	Set of cables with matching connectors, if required	1 Set
2.	Operation manual/User Guide/ Technical Manual/ Installation Manual etc.	1 Set
3.	Service & Maintenance Manuals	1 Set

**EQUIPMENT ARE BEING PROCURED FOR THE FOLLOWING  
DOORDARSHAN CENTRES**

<b>Sl. No.</b>	<b>Zone</b>	<b>Location of Doordarshan Centre</b>	<b>Qty.</b>
1.	<b>North Zone (NZ)</b>	Jammu	1 set
2.		Chandigarh	1 set
3.		Bareilly	1 set
4.		Shimla	1 set
5.		Allahabad	1 set
6.		Mau	1 set
7.	<b>East Zone (EZ)</b>	Daltonganj	1 set
8.		Mujjafarpur	1 set
9.		Ranchi	1 set
10.		PPC Guwahati	1 set
11.		Siliguri	1 set
12.		shillong	1 set
13.		Tura	1 set
14.		Kohima	1 set
15.		Itanagar	1 set
16.		Imphal	1 set
17.		Silchar	1 set
18.		Dibrughar	1 set
19.		Aizwal	1 set
20.		Agartala	1 set
21.	Sambalpur	1 set	
22.	Gangtok	1 set	
23.	<b>South Zone (SZ)</b>	Gulbarga	1 set
24.		Pondicherry	1 set
25.		Vijayavada	1 set
26.		Portblair	1 set
27.	<b>West Zone (WZ)</b>	Panaji	1 set
28.		Raipur	1 set
29.		Rajkot	1 set
30.		Pune	1 set
31.		Indore	1 set
<b>TOTAL</b>			<b>31 sets</b>

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