

PRASAR BHARTI
BROADCASTING CORPORATION OF INDIA
DIRECTORATE GENERAL: DOORDARSHAN

Specifications for 16 X 16 SDI Video Routing switcher

Specifications No.: SD 12/2010

Dated: 31.05.10

1. SCOPE:

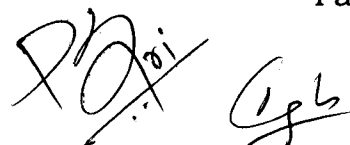
The specifications aim at the procurement of 16x16 SD SDI Video with embedded audio Routing Switcher along with control panels for use in Studio/OB Van set-up in Doordarshan Network.

2. GENERAL:

- (a) **The offered equipment should be from an internationally reputed manufacturer and the quoted model should be field proven and in use by leading broadcasters in various continents of the World. The bidder should essentially submit the list of the broadcasters to whom the quoted model has been supplied.**
- (b) The offered equipment should be able to be used for selection of anyone of the 16 Serial Digital Video with embedded audio input signals to 16 different destinations.
- (c) The Routing Switcher has to be offered with XY and Single Bus remote control panels.
- (d) The bill of material required is given in **Appendix-I**.
- (e) The equipment are being procured for various Doordarshan centres as per **Appendix-II**.

3. ESSENTIAL FEATURES:

- (a) The Routing Switcher electronics should be capable of being mounted in a standard 19" rack frame.
- (b) The switcher shall handle serial digital video signal with embedded audio for routing from input to output destinations. The switching should take place during the vertical interval period.



- (c) Remote control panels shall be table/rack mounted. Each one of these has to be mounted in different technical areas.
- (d) Each of the remote control panels should have dedicated button per source. The output of each remote control panel should have user configurable predefined destination.
- (e) There should be visual indication on all the control panels about the selected source and the destination information.
- (f) The Control Panels should be interconnected by suitable interface with the main electronics via data interface such as S-bus, IP/Ethernet and RS-232/422 etc. It should be possible to connect RCPs either in daisy chain or directly from main electronics for various control locations.
- (g) Cable length between RCP & main frame can go up to 300 meters. Tenderer should also quote for necessary control cable with matching connectors at both ends.
- (h) The system should have storage facilities for control information, so that in case of power supply failure, the status of the switcher output should remain unchanged when the power supply is restored.
- (i) The main electronics of the Routing Switcher should have redundant power supply.
- (j) The system quoted against this specification should be complete in all respects and should have the desired features.

4. TECHNICAL SPECIFICATIONS:

- (a) **Matrix size** : 16x16 SD-SDI signal with embedded Audio
- (b) **Remote control panel** : XY and Single Bus as detailed in essential features
- (c) **Video Input** : Component Serial Digital signal with embedded audio conforming to SMPTE 259-M, BNC, 75Ω, 270 Mbps, 800 m Vp-p, nominal
- (d) **Equalization** : Minimum 200 mtr. of Beldon 1694A or equivalent at 270 mbps.

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- (e) **Video output** : One or more with embedded audio conforming to SMPTE 259-M, BNC, 75Ω, 270 Mbps, 800 m Vp-p, nominal
- (f) **Return Loss** : >15 dB upto 270Mb/s throughout the switching chain
- (g) **Reference input** : Analog Black burst, 0.3Vp-p or SDI reference, BNC 75Ω
- (h) **Output jitter** : ≤0.2 UI
- (i) **Power Supply** : 230±5% V AC, 50 Hz
- (j) **Operating temperature** : 5°C to +40°C or better
- (k) **Relative Humidity:** : up to 90% Non condensing

5. **SOFTWARE:**

All the necessary software required for proper working of the system is to be supplied in original and should be licensed to Doordarshan with perpetual validity.

6. **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

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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. |
|---------------------|-----------|---------------------|--|---|---------------------------------------|---|---|
| | | | | | | | |

7. ACCESSORIES

All the required essential accessories such as various types of connectors, power cord etc. to be quoted essentially. Various types of interconnecting cables alongwith matching connectors at both ends, required with the system for its completeness, should also be included in the offer. All the **Optional items** may be quoted separately. The firm must provide enough details about optional items to decide its utility.

8. 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 each equipment.

9. 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.

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10. 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.

11. INSPECTION

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

12. 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.



Total Quantity Required: 31 Sets

Bill of Material per Set

| Sr. No. | Item | Qty. per Set |
|----------------|--|---------------------|
| 1) | 16 X 16 SDI Video with embedded audio Routing Switcher having redundant power supply unit | 1 no. |
| 2) | XY Remote Control Panel | 1 no. |
| 3) | Single Bus Remote Control Panel | 3 nos. |
| 4) | Control Cable of 30 meter length with necessary matching connectors at both ends for each XY Control Panel and each single bus control panel | 1 lot |
| 5) | Operation manual/User Guide/ Technical Manual/ Installation Manual etc. | 1 Set |
| 6) | Service & Maintenance Manuals | 1 Set |

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EQUIPMENT ARE BEING PROCURED FOR THE FOLLOWING DOORDARSHAN CENTRES

| Sl. No. | Zone | Location of Doordarshan Centre | Qty. |
|----------------|------------------------|---------------------------------------|----------------|
| 1. | North Zone (NZ) | Jammu | 1 set |
| 2. | | Chandigarh | 1 set |
| 3. | | Bareilly | 1 set |
| 4. | | Shimla | 1 set |
| 5. | | Allahabad | 1 set |
| 6. | | Mau | 1 set |
| 7. | East Zone (EZ) | 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. | South Zone (SZ) | Gulbarga | 1 set |
| 24. | | Pondicherry | 1 set |
| 25. | | Vijayavada | 1 set |
| 26. | | Portblair | 1 set |
| 27. | West Zone (WZ) | Panaji | 1 set |
| 28. | | Raipur | 1 set |
| 29. | | Rajkot | 1 set |
| 30. | | Pune | 1 set |
| 31. | | Indore | 1 set |
| TOTAL | | | 31 sets |

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