



सत्यम् शिवम् सुन्दरम्

**प्रसार भारती**  
**PRASAR BHARATI**  
**(Broadcasting Corporation of India)**  
दूरदर्शन महानिदेशालय  
**Directorate General: Doordarshan**  
दूरदर्शन भवन, कोपरनिकस मार्ग,  
**Doordarshan Bhawan, Copernicus Marg**  
नई दिल्ली - ११०००१  
**New Delhi – 110 001**

**File No. 19(2)2018-19E1 (P) TV**

**Dated: 14.06.2019**

**Subject:** Draft Specification for Procurement of 16.5"/17" High Definition LCD-TFT Video Monitor

The Draft specification of the upcoming tender is enclosed herewith to offer comments, if any by due date at e-mail address [ddpurchase401@yahoo.co.in](mailto:ddpurchase401@yahoo.co.in) or on following Address:

Dy. Director (Engg.)  
Room No. 403,  
Directorate General: Doordarshan,  
Doordarshan Bhawan,  
Copernicus Marg,  
New Delhi -110001 (India)  
Telephone: 011- **23114401**

Draft Specification : Procurement of 16.5"/17" High Definition LCD-TFT VideoMonitor

Specification no: SD 9/2019 Dated 12.06.2019

Due Date to offer Comments: **02.07.2019**

Encl.: As above

Praveen Kumar  
Dy. Director (Engg.)  
For DG: DD



PRASAR BHARATI  
India's Public Service Broadcaster  
DIRECTORATE GENERAL: DOORDARSHAN

**Specifications for 16.5"/17" High Definition LCD-TFT Video Monitor**

Specifications No.: SD 09/2019

Dated: 12.06.2019

**1. SCOPE:**

The specifications aim at the procurement of broadcast quality Full HD resolution (1920 x 1080 pixels) 16.5"/17" active matrix TFT-LCD monitor for professional monitoring applications in studio, outside broadcast (OB), acquisition and field production in Doordarshan network.

**2. GENERAL:**

- (a) The product of internationally reputed make, meeting the specifications and proven one in the broadcasting field only will be acceptable. The bidder should enclose the product specific user list of the broadcaster to whom the offered product has been supplied. **The tenders without the proper user list shall liable to be rejected.**
- (b) The make and model number of active matrix TFT LCD panel incorporated into the offered monitor, should be mentioned in the compliance statement and in the offered Bill of Material. A certificate from OEM in this respect along with the Data sheet of the active matrix TFT LCD panel used in the monitor should also be enclosed along with the Bid.
- (c) The offered product must have BIS certification. The copy of the same should be enclosed along with the bid.

**3. ESSENTIAL FEATURES:**

- (a) The offered monitor should incorporate high intensity, high contrast wide screen, wide viewing angle LCD Panel to view stable images from various angles: both horizontally and vertically, with no reduction in picture contrast, brightness and colour saturation.
- (b) The LCD panel of the offered monitor should have resolutions of 1920X1080 pixels in 16:9 aspect ratio. The offered monitor should support 16:9 and 4:3 aspect ratios of the video signal. The monitor should also support 1920X1080/50I (HD) and 720X576/50I (SD) video formats.
- (c) LCD colour monitor should accept SD and HD SDI input (detected automatically) as well as analog composite video input.

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- (d) The offered monitor should support embedded audio. It should also have analogue audio input and built in speaker for audio monitoring.
- (e) The offered monitor should have 10-bit signal processing.
- (f) The monitor should have 1:1 pixel mapping to display the pictures in the original resolution and aspect ratio of the input signal without any stretch and distortion.
- (g) The monitors should display various area markers, including a center marker, aspect markers, and safety zone marker.
- (h) It should have features of on-screen display of Waveform, audio level, closed caption and time code of incoming SDI signal.
- (i) It should have various I/P (Interlace to Progressive) conversion modes with minimum delay suitable to display fast moving images with no blur and jagged noise/effect.
- (j) The LCD monitor offered should have a minimum response time for facilitating viewing of fast moving picture like sports events without any delay.
- (k) It should support colour calibration/alignment utilities.
- (l) It should be possible for the user to select the industry standard colour temperature through menu to 3200K, 5600K and 6500k for matching colours and gradation of the monitor.
- (m) It should also have gamma compensation as of broadcast-standard CRT monitors.
- (n) It should have H/V delay function and blue only & monochrome mode.
- (o) The LCD panel should be coated with Anti-Reflection protection layer to provide high transmission rate of the internal light source and to keep the reflection from ambient light to a minimum.
- (p) The monitor should have an external remote control capability via Ethernet, serial or similar interface.
- (q) The offered monitor should have tally light with necessary interface.
- (r) The monitor should be light weight, robust, compact and rack mountable. It should have front panel controls to control the display parameters like brightness, contrast, colour saturation etc.
- (s) The offered monitor should function with standard AC 230 V, 50 Hz power supply or on DC supply. Power adapter required for DC operations as recommended by the OEM of the LCD monitor along with required cables should also be supplied.
- (t) The offered monitor should be rack mountable and hence necessary 19" mounting brackets should be supplied.

- (u) The Bill of Material required is given in **Appendix-I**. The bidder is required to provide the complete list of items & accessories etc. offered to meet the specifications requirement in the following proforma:

Sr. No.	Description/Name of the item	Make	Model	Part No., if any	Qty.
1.	2.	3.	4.	5.	6.

- (v) The equipment are being procured for various Doordarshan centres as per **Appendix-II**.

#### 4. TECHNICAL SPECIFICATIONS:

Sr. No.	Parameter	Specification
1)	Display size	: 16.5"/17" approx. diagonally
2)	Drive system	: TFT active matrix
3)	Resolution	: 1920 x 1080 pixels
4)	Colour reproduction	: 1.07 billion or better
5)	Response time (T <sub>on</sub> +T <sub>off</sub> )	: ≤20 ms or better
6)	Contrast ratio	: 1000:1 or better
7)	Viewing Angle	: 176 degrees in Horizontal & 176 degrees in Vertical or better
8)	Brightness	: 350 cd/sq.m or better
9)	Tally	: On Air Tally lamp mounted in the front panel of the monitor.
10)	Tally Input	: On a suitable connector
11)	Aspect ratio and approx. active display area of the LCD panel	: 16:9 (372X209mm approx.)
12)	Supported aspect ratios of video input	: 16:9 and 4:3 (auto detection)
13)	Video Inputs	: (i) <b>HD/ SD SDI: 2 or more</b> HD SDI SMPTE 292 in BNC, 1.485Gb/s, 0.8V pp across 75 ohms (1080/50I) or HD SDI SMPTE 274 M 2.97 Gb/s, 0.8V pp across 75 ohms (1080/50p) and SD SDI SMPTE 259 in BNC, 270Mb/s, 0.8V pp across 75 ohms, auto detection

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		(ii) <b>Analog: 1 or more</b> Composite (PAL) in BNC, 1 V p-p across 75 ohms
14)	Audio Inputs	: Mini jack/RCA
15)	Video Outputs	: (i) <b>HD/ SD SDI:</b> 1 or more SDI SMPTE 292 in BNC, 1.485Gb/s, 0.8V pp across 75 ohms (1080/50I) or HD SDI SMPTE 274 M 2.97 Gb/s, 0.8V pp across 75 ohms (1080/50p) and SDI SMPTE 259 in BNC, 270Mb/s, 0.8V pp across 75 ohms active loop through of selected input  (ii) <b>Analog O/P:</b> 1 or more Composite (PAL) in BNC, 1 V p-p across 75 ohms loop through.
16)	Audio Outputs	: Mini jack/RCA and built-in speaker
17)	Control I/O	: Serial (RS-232/422/485)/Ethernet/ GPI
18)	Power Consumption	: $\leq 50$ W
19)	Weight	: $\leq 7$ Kg (without stand and other accessories)
20)	Operating temperature	: 0 °C to +40 °C
21)	Storage temperature	: -20 °C to +60 °C (no condensing)
22)	Relative Humidity	: 30% to 80% (non-condensing)

## 5. ACCESSORIES:

All the accessories such as power cables, AC to DC adopter etc. required to complete the system should be offered by the firm. All the optional items should be quoted separately. Firm must provide enough details about such optional items to decide its utility.

## 6. COMPLIANCE:

- a) **A point by point full compliance statement laid down in the specifications from the principal manufacturer is to be enclosed along with the offer in the format given below. Mere signature on the copy of DD 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.
1	2	3	4	5	6	7	8

- b) In addition to above, a separate point by point compliance statement duly signed by the bidder in respect of all the points laid down in the specifications should also be submitted along with the bid by the bidder in the above mentioned proforma.

## 7. TECHNICAL LITERATURE:

One set of technical manuals/brochures of the offered equipment are required to be provided along with the tender to facilitate the technical evaluation, otherwise the tender is liable to be ignored. The successful bidder will have to supply a set of technical, user and installation manuals.

## 8. DEMONSTRATION:

If necessary, the bidder may be asked for demonstration of the offered system as part of the technical evaluation. In such case the bidder will have to make suitable arrangement for the demonstration of the offered system at Doordarshan Bhawan, New Delhi, on notice of 15 days. Accordingly the bidder should be in readiness for demonstration.

## 9. GUARANTEE:

- a) With reference to the clause no.8.2 of the "General Terms And Conditions (GTC)" under ANNEXURE-II of tender document, the complete system including all items/equipment should be guaranteed for **three years** of trouble free operation from the date of commissioning. In case of any item or equipment failure including software and hardware within this period shall be rectified or replaced free of cost to Doordarshan.
- b) The guarantee should cover all hardware, software and modules of the complete system.

## **10.DELIVERY PERIOD:**

The delivery period will be 03 months.

## **11.INSPECTION:**

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

## **12.ENCLOSURES:**

The bidder must necessarily upload the following documents along with the technical bid:

- a) Compliance statement with respect to all the points of the specifications duly signed by the OEM should be submitted for offered equipment/item(s) in the proforma mentioned in clause no. 6.(a). 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.
- b) A separate point by point compliance statement duly signed by the bidder in respect of all the points laid down in the specifications for the offered equipment/item(s) in the proforma mentioned in clause no. 6.(b).
- c) Technical manuals/detailed technical literature/catalogues for the offered equipment/item(s) for substantiating the model no. and technical specifications.
- d) Model specific user list of the offered product(s).
- e) OEM Certificate and Data sheet of the active matrix TFT LCD panel used in the monitor as required vide clause no. 2(b).
- f) BIS Certificate as required vide clause no. 2(c).
- g) 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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**INDICATIVE BILL OF MATERIAL (BOM) REQUIRED**

<b>Sl. Nos.</b>	<b>Detail of Items</b>	<b>Qty.</b>
1.	16.5"/17" Approx. LCD colour Monitor with Analog Composite (PAL) video, HD-SDI and SD- SDI inputs	92 Sets
2.	Brackets for mounting the above monitors in 19" rack	92 Sets
3.	Any other accessories like power cords, AC to DC Power adapter (if required) necessary to make the system fully functional	92 Sets
4.	Operation and Maintenance manual	92 Sets



Appendix-II

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

<b>Sr. Nos.</b>	<b>Zone</b>	<b>Location of Doordarshan Centre</b>	<b>Qty.</b>
1.	<b>North Zone (NZ)</b>	CPC, Delhi	15 Sets
2.		DD News, Delhi	77 Sets
		<b>TOTAL QTY.</b>	<b>92 Sets</b>

