



सत्यम् शिवम् सुन्दरम्

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PRASAR BHARATI  
(Broadcasting Corporation of India)

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**Subject:** Draft Specification for Procurement of 1,20,000 DTH Receive Sets for Distribution in remote tribal and LWE areas.


The Draft specification of the upcoming tenders 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:

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Specification For: Draft Specification of Procurement of 1,20,000 DTH Receive Sets for Distribution in remote tribal and LWE areas.

Specification no: SATD/ 1.20 Lakh/Ku-Band DTH Receive System  
Due Date to offer Comments: **30.07.2019**

Encl.: As above (15 Pages)

  
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**Technical Specifications for**  
**Procurement of 1,20,000 DTH Receive Sets for distribution in remote,**  
**tribal and LWE areas**

**Spec No. : SATD/1.20 Lakh/Ku-Band DTH Receive System**

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## 1. Introduction

This document lays down technical specifications for supply of 1,20,000 DTH Receive Sets including STB & accessories alongwith dish antenna, LNBF, RF cable for distribution in remote, tribal and LWE areas.

## 2. Scope of Work

The scope of work shall include the supply of 1,20,000 DTH Receive Sets for distribution in remote, tribal and LWE areas. The list of consignee, where these 1,20,000 DTH receive sets are to be delivered is enclosed as Annexure-2.

## 3. Eligibility Criteria

The bidder shall meet the following eligibility criteria:

- 3.1) The bidder shall be Set Top Box (STB) manufacturer (OEM), who have been in principally authorised by Doordarshan for manufacturing and selling iCAS and iCAS (middleware) integrated STBs for reception of DD Free Dish DTH service. A documentary proof i.e., LOI (Letter of Intent) issued by Doordarshan to the STB manufacturer in this regard shall be submitted along with the bid documents.
- 3.2) The offered STB model should be BIS certified in accordance with the BIS Indian standard No: IS 15954: 2012 "DIGITAL SET TOP BOX FOR MPEG-4 DTH SERVICES — SPECIFICATION"
- 3.3) The bidder's offered STB model shall meet all the requirements mentioned in the DD's document "Terms and Conditions for STB OEMs to get authorisation to sell iCAS and DD approved Firmware/Middleware enabled DD Free Dish DTH Set Top Boxes" Spec No: SATD/Expansion of DTH/ Implementation of CAS\_STB authorization dated 3/09/2016 with latest amendments.
- 3.4) The offered STB model should have been successfully tested by Doordarshan.

## 4. Terms and Conditions

- 4.1) The offered STBs should have BIS certification marking along with DD Free Dish Logo printed on the cabinet.
- 4.2) The offered 0.6 Meter PDA should have DD Free Dish Logo marking printed on the reflector.

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- 4.3) The bidder shall provide after sales maintenance support in the form of direct service centres or franchisees or OEM service centres. A list of such maintenance support centre along with contact number and address for the offered equipments should be submitted along with the application.
- 4.4) The bidder shall offer one year Guarantee/warranty period on its offered equipments from the date of sale of to the end customer and shall submit a certificate/undertaking to provide after sales maintenance support for 5 years including 1 year Guarantee/warranty period either directly or through its authorised dealer/distributor.
- 4.5) The bidder shall have authorised dealer/distributor centres in India.
- 4.6) The bidder shall have service centres manned by Technical support staff in India to provide after sales support for its offered equipments.
- 4.7) The bidder/the authorised dealer/distributor of the bidder shall have their own call centre and e-commerce portal for direct sale and installation services for their offered DTH receive set in India.
- 4.8) The bidder shall ensure that Maximum Retail Price (MRP) of the complete DTH receiver set i.e. 60 cm Dish antenna, basic SD MPEG-4 DVB-S2 STB (as per technical specification given in clause no. 5) with Infra-red remote control, power supply unit (in case of external power supply adapter), minimum 1 meter RCA cable, LNBF and 15 meter RF cable shall not be more than Rs 1800/- per DTH receive set.
- 4.9) The bidder/the authorised dealer/distributor/maintenance service centre of the bidder shall not charge towards repair and maintenance of the DTH receive Set during the period of warranty. If any equipment of the offered DTH receive set is irreparable, then it should be replaced by the new equipment free of cost by the bidder/ the authorised dealer/distributor/maintenance service centre of the bidder within the warranty period.
- 4.10) The make, model, serial number for the offered equipments and DD Free Dish logo should be imprinted on the packing box of the equipments.
- 4.11) The bidder shall provide the user manual, safety notes and note explaining the process for registration and activation of the STB as stipulated/finalized by Doordarshan.
- 4.12) The bidder shall provide a manual or pamphlet containing instructions for operation.
- 4.13) The bidder shall offer 1 year warranty period for the complete DTH receive set (i.e. Dish antenna, LNBF, RF cable, STB, remote control handset, power supply adaptor etc). Physical damage to the DTH receive set shall not be covered under warranty. Charges for repair of DTH receive set after the warranty period shall be as per actual.

## 5. Technical Specifications:

### 5.1) MPEG-4 SD or HD, DVB-S2 Set Top Box

#### A. General Requirements:

- 1) The offered STB shall fully comply with the all the requirements mentioned in the DD's document "Terms and Conditions for STB OEMs to get authorisation to sell iCAS and DD approved Firmware/Middleware enabled DD Free Dish DTH Set Top Boxes" Spec No: SATD/Expansion of DTH/ Implementation of CAS\_STB authorization dated 3/09/2016 and latest amendments.

- 2) The offered Set Top Box must fully comply and conforming to the BIS Indian standard No: IS 15954 : 2012 "DIGITAL SET TOP BOX FOR MPEG-4 DTH SERVICES — SPECIFICATION" and must fulfil all the requirements mentioned against the clauses and sub clauses of BIS Indian standard No: IS 15954 at sl nos. 1, 2, 3, 3.1, 3.1.1, 3.1.2, 3.2, 3.3, 3.4, 4, 4.1, 4.2, 4.2.1, 5, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 6 and mandatory requirement of BIS Indian standard No: IS 15954 at sl. no. 3.1.3 (Specifications) and Table 1(Performance Requirements).

- 3) Apart from the above, the offered SD or HD STB must also comply to the Optional requirement mentioned against the clause No. 3.1.3.1, and clause No. 3.1.3.5 of BIS Indian standard No: IS 15954 with the following conditions:

**Clause No. 3.1.3.1 :** Capability to demodulate and decode DTH signals channel coded and modulated in accordance with the DVB-S2 Standard (EN 302307) should be capable of receiving signals emitted using the following modes:

- i) Backward compatible mode.
- ii) Constant coding and modulation (CCM).

**Clause No. 3.1.3.5 :** Subtitle Streams: Capability to receive and process subtitle streams compliant to EN 300 743.

- 4) The offered SD or HD STB must also comply to the Optional requirement mentioned in Table 1 at sl. no. (ii) and (iv) i.e. "As per DVB-S2 depending upon selected operation mode (see 3.1.1.1)"

- 5) Apart from the above, the offered SD or HD box must must also comply to the following :

- i) Optional requirement mentioned against the clause No. 3.1.3.2. of BIS Indian standard No: IS 15954.
- ii) Optional requirement mentioned against the clause No. 3.1.3.3. of BIS Indian standard No: IS 15954.



## B. Essential Features:

- 1) Advanced security supported chipset.
- 2) Allow software updates (operational software and programme list separately) via OTA.
- 3) Allow Over the Air secure software upgrade.
- 4) Language selection programmes broadcast in several languages.
- 5) Support 7- day EPG, Teletext, Subtitle.
- 6) Max 2000 TP and 4000 Programs restore.
- 7) Must support SD- 576p/576i/480p/480i video resolution for SD set top boxes or 720p/1080i/1080p for HD set top boxes.

## C. Technical Specifications:

S. No.	Parameter	Specifications
<b>1 Interface/Connectors :</b>		
1.1	Satellite input (Tuner)	1 x DVB-S2 input (for SD SD or HD set top box) 75 ohm, female connector
	a) Input level per carrier	a) -65dBm, Min to -25dBm, Max
	b) Input frequency range	b) 950 to 2150 MHz
	c) Symbol rate	c) 2 – 45 M Symbols/S
	d) RF input impedance	d) 75
	e) RF input return loss	e) 8 dB, Min
1.2	Video output	1 x RCA (for SD set top box) or 1x HDMI (for HD set top box)
1.3	Audio output	2x RCA (for SD set top box) or 1x Coaxial cable (Digital Audio for HD set top box)
1.4	Video recording and Playout	1x USB 2.0 port for SD or HD set top box
1.5	DVB-CI(Common Interface)	as per EN 50221 and TS 101699 (for SD or HD set top box)
1.6	To connect power supply unit	Power Jack (for SD or HD set top box)
1.7	Front panel Buttons	Min 5 buttons (Power, ch+, ch-, V+, V-).
1.8	Front Panel LED Indicator	Power, IR, signal
<b>2 Power Supply:</b>		
2.1	Power	Internal SMPS or External Adaptor
2.2	Voltage Range	Input 90-270 V

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2.3	AC Frequency	50 Hz $\pm$ 2 percent
2.4	Surge immunity	4 KV
2.5	Spike immunity	4 KV
2.6	Power consumption	Max 18 W
2.7	Output Voltage	12 V, 1.5 A (for External adaptor)
<b>3 Chipset and Memory:</b>		
3.1	Salient Features	a. Chip should support advanced security CAS. b. Chip should support secure boot process. c. Chip should support at least 3 level key ladder. d. There should be provision for black box integration.
3.2	Types of chipset	Mstar, Ali, etc.
3.3	Flash	Minimum 8 MB for SD set top Box or Minimum 16 MB(Mega Byte) for HD Set top Box
3.4	RAM	Minimum 64 MB DDR1/DDR2/DDR3 for SD set top Box or Minimum 128 MB DDR3 HD Set top Box.

## 5.2) 0.6 Meter Ku-Band offset solid Parabolic Dish Antenna, Low Noise Block down Converter-Feed and coaxial cable

### A. 0.60 mtr Ku-Band Satellite Receiver:

S. No.	Description of Parameter	Specifications
1	Ku-Band Rx frequency	Ku-band 10.7 to 12.7 GHz
2	Major Axis	Minimum 0.65 Meter
3	Minor Axis	Minimum 0.60 Meter
4	Dish type & Thickness	One panel (Single Reflector) Minimum 0.6mm
5	Reflector Optics	Offset Focus
6	Cross Polar isolation (on axis)	Better than 25 dB
7	Rx Gain @ 11.7 Ghz)	Minimum 35.5dBi
8	El. Movement	5 to 85°
9	Az. Movement	$\pm 180^\circ$
10	Wind loading capacity: a) Operational b) Survival	a)90 Km/Hour or better b)150 Km/Hour or better



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11	Operating temperature	-30°C to +60°C
12	Mount	Az. / El. type wall and roof mount
13	Polarization	Linear
14	Materials to be used for Reflector and Accessories	With high quality outdoor grade powder coated
15	Indigenously manufactured	Required

**B. Low Noise Block down Converter-Feed (LNB):**

S. No	Description	Specification
1	I/P Freq Range	Low Band : 10.70-11.70 GHz High Band : 11.70-12.75GHz
2	O/P Frequency Range	Low Band: 950-1950 MHz High Band: 1100-2150 MHz
3	Output connector type	75 ohms Female "F" – Connector
4	Input feed horn type	Linear, Optimized for Offset dish F/D ratio from 0.45 to 0.70
5	Noise Figure	0.5 - 0.8 db or better
6	LO	Low Band: 9.75GHz High Band:10.60GHz
7	LO stability	± 3 MHz (Max) over temperature range of -30 Deg C to +60 Deg C
8	Conversion Gain	55 dB Minimum
9	Cross Pole Isolation	20dB minimum
10	Insertion loss	< 0.2 dB
11	DC Operating Voltage	11.5 V to 19.0 VDC
12	Band Switching	Low Band: 0 khz High Band: 22khz ± 4 kHz
13	Operating Temperature	-30°C to +60°C

### C. Coaxial Cable:

S. No	Description	Specification
1	Cable type	RG 6 (Centre conductor should be copper material)
2	Characteristic Impedance	75 ohm
3	Type of "F" connector (I/O)	Professional grade "F" connector (Male at both ends)
4	Loss in dB per 100 feet At 950 MHz At 2150 MHz	8 dB/100 feet or better 11 dB/100 feet or better

### 6. Complement of Equipment for the DTH Receive Set:

- 6.1) The make and model/part no. of each and every equipment/item/installation material etc. should be clearly mentioned in the offered Bill of Material (BoM).
- 6.2) The suggestive Bill of Material (BOM) has been provided in **Annexure-1**. The bidder is required to provide the complete list of equipment, software and accessories etc. offered to meet the specifications requirement. The quantity of each item including sub-module etc. are to be specified clearly and compulsorily, failing which the bid is liable to be rejected summarily.
- 6.3) Any substandard equipment included in the offer may result into the rejection of complete offer with the sole responsibility of bidder.
- 6.4) The offer should also include the detailed technical brochure and technical manual containing all the technical specifications of all the offered equipment, accessories, and software etc.

### 7. General:

#### A. Compliance and Authorization:

- 1) The bidder must submit a point-by-point compliance statement in respect of all the points, sub-points and paras laid down in this specification from page 1 onwards along with the offer.

- 2) In addition to the above, compliance from respective OEMs (not from representative) in respect of all the equipments listed below should necessarily be given on their letter heads, in respect of all the points, sub-points and paras laid down in the specification of respective equipment.

- i) Digital Set Top Box
- ii) 60 cm PDA
- iii) Coaxial Cable
- iv) Ku Band LNBF

- 3) The OEM's authorization (not from representative) in respect of all the equipments listed above under Sr. No 7.A.2 should be given on their letter heads along with bid.
- 4) Mere signature on a copy of Doordarshan specifications shall not be accepted as a compliance statement.

- 5) Compliance statement in the format as indicated below shall only be accepted.

Sr. No.	DD specs.	Compliance (Yes/No)	Performance fig. of the offered equipment	Deviations, in Case of non-compliance	Features in the System offered Which exceed DD specs.	Page No.	Remarks

Offers without proper & duly completed compliance statement are liable to be rejected with the sole responsibility of STB OEM and no further claim/ correspondence will be entertained.

- 6) The manufacturer should also record the performance figures of the equipment offered in the quote for which the compliance statement is enclosed.
- 7) The compliance statement should be supported by highlighted record of these in the technical literature/data sheets enclosed with the tender and a clear reference to the attached supporting document should be given in the remarks column against each & every specs. Any offer without proper supporting document of each & every specs and containing only a commercial hand out/pamphlet is liable to be rejected.
- 8) Data sheets should be submitted in respect of all offered equipment. Any deviation from the specification detailed in the compliance statement is to be highlighted separately. Page no. of location of data sheet should be given in page no. column of the compliance statement.

- (15) (23)
- 9) Offers without proper & duly completed compliance statement are likely to be rejected with the sole responsibility of bidder and no further claim/ correspondence will be entertained.

#### **B. Documentation:**

- 1) One set of technical manual for all the equipment offered are to be uploaded along with bid. In addition, one set of hard copy of uploaded technical manual for all the equipment offered are also to be provided to facilitate the technical evaluation. In case, there is any discrepancy in the uploaded technical manual and hard copy of the technical manual, the uploaded technical manual shall prevail.
- 2) The successful bidder will have to supply four sets of printed technical and user manuals along with factory test report of all the offered equipment.
- 3) All the offered software should have perpetual validity and should be in the name of Doordarshan. All software backups should also be supplied on CD.

#### **C. Guarantee/Warranty and after sales support:**

- 1) All the offered equipment shall be guaranteed against any manufacturing defects for a period of one year from the date of supply. Physical damage to the DTH receive set/ STB shall not be covered under warranty.
- 2) Any parts failing during the guarantee period shall be repaired/replaced free of charge by the authorised dealer/distributor/maintenance service centre.
- 3) If any equipment of the offered/supplied DTH receive set is irreparable, then it should be replaced by the new equipment free of cost by the bidder/the authorised dealer/distributor/maintenance service centre of the bidder.
- 4) The bidder shall submit a certificate/undertaking to provide after sales maintenance support for 5 years including 1 year Guarantee/warranty period from the date of supply of the offered equipments either directly or through its authorised dealer/distributor.
- 5) It will be the responsibility of the bidder to ensure after-sale service and guarantee/warranty for the offered equipments from the manufacturers.
- 6) For repairing of any defective equipment during guarantee/warranty period, the defective module or equipment requiring repairs will be handed over to the nearest local office/authorized dealer/distributor/maintenance service centre of the bidder who will arrange repairs locally or send the defective module to OEM factory and send back after repairs. It is the responsibility of local office/authorized dealer/distributor of

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the bidder to arrange the repair/ replacement of faulty items during guarantee/warranty period.

- 7) Bidder shall provide the guarantee/warranty in respect of the offered equipment mentioned in Clause 7.A.2 through respective OEMs. A certificate, duly signed by the OEM on the OEM letterhead, in this regard of the respective equipment must be submitted with the offer by the bidder.
- 8) After completion of guarantee/ warranty period, After Sales Service support for additional 4 (four) years for the repairs/maintenance in respect of the equipment as mentioned in Clause 7.A.2 shall also be provided by the OEM either directly or through his representative in India. A certificate, duly signed by the OEM on the OEM letterhead, in this regard of the respective equipment must be submitted with the offer by the bidder.

#### **D. Inspection:**

All the equipments to be supplied against the supply order for this tender shall be subjected to pre-dispatch inspection at Delhi or at bidder's premises by Doordarshan officials appointed by Doordarshan Directorate. The successful bidder should produce the factory test reports of the offered equipments to facilitate inspection.

#### **E. Delivery Period:**

Four months from the date of issue of purchase order.

#### **F. Pre-Bid Conference:**

A pre bid conference on technical Specifications and other issues shall be held on date and time specified in the NIT. All prospective bidders may attend the pre bid conference to discuss their queries and suggestions. All the queries and suggestions should be sent to Doordarshan at least 2 days before the date of pre bid conference. No queries/ suggestions shall be entertained after pre bid conference. Amendments subsequent to the pre bid conference shall be sent to prospective bidders, who have purchased tender document by e-mail/fax/ post. It shall be bidder's responsibility to check for any amendments on Doordarshan website before submitting their duly completed bids.

#### **G. Check List and Enclosures:**

- 1) The bidders may ensure the following check list while submitting the bid including some important list of enclosures for ease of evaluation.



- (15) (21) (12)
- 2) Whether all documents related to fulfilment of the eligibility criteria at clause no. 2 have been submitted.
  - 3) Whether certificate for providing after sales maintenance support during the contract period i.e. 5 years including 1 year Guarantee/warranty period or at least three years from the date of sale of STB whichever is later has been provided.
  - 4) Whether point-by-point compliance statement of the bidder in respect of all the points, sub-points and Paras laid down in this specification from page 1 onwards along with the offer as given in Clause 8.A.5 has been included.
  - 5) Whether point-by-point compliance statement of OEM in respect of all the points, sub-points and Paras laid down in this specification of respective equipment and their authorization mentioned in clause no. 8.A.2, 8.A.3, 8.A.4 & 8.A.5 have been included. Authorization and compliance statement from OEMs will only be acceptable and not from the authorized dealer of the OEMs.
  - 6) Whether the BOM has been submitted in the prescribed format.
  - 7) Whether the page numbers of the relevant enclosed technical data sheet/manual against each parameter of the specifications have been given in the compliance statements.
  - 8) Whether the requisite undertakings for guarantee/warranty and after sales support by OEMs and bidder have been submitted.
  - 9) Ensure that no alternate item has been offered.
  - 10) Ensure that the relevant technical brochures containing all the parameters of technical specifications of all the offered equipment and accessories have been included with proper indexing for ease of identification.
  - 11) Ensure that the un-priced BOM has been included.
  - 12) Any other item mentioned elsewhere in the tender.

**Suggestive Bill of Material (BOM)**

Annexure-1

**For Procurement of DTH Receive Sets for distribution in remote, tribal and  
LWE areas**

Sr. No.	Description of the Item (Suggestive BOM)	Description of the Item Offered by the bidder	Qty. Per site	Total Qty	Make	Model
1.	Digital Set Top Box with Infra-red Remote control hand set, power cable, power supply adaptor (in case of external power supply), 1.0 meter RCA cable		1 Set	120000 sets		
2.	60 cm PDA alongwith universal mount (suitable for both roof and wall mount)		1 Set	120000 sets		
3.	Ku Band LNBF		1 No.	120000 Nos.		
4.	75 ohm low loss RG-6 RF Cable (15 meters) with F type male connectors on both sides		1 set	120000 sets		

## List of Consignees

State	Consignee Kendra/Nodal Officer of State Govt.
J&K	DDK Srinagar, DDK Jammu, DDK Leh
LWE States	Yet to be decided
North Eastern States	Yet to be decided

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