Doc No. : LITD 07 (23762) WC
Draft IS 14230: 2025
August 2025

BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

मसौदा भारतीय मानक
सी-बैंड परबलयी डिश एंटीना – विशिष्टि
(पहला पुनरीक्षण)

Draft Indian Standard

C - Band parabolic dish antenna – Specification

(First Revision)

LITD 07 Audio, Video and Multimedia Systems and Equipment Sectional Committee	**Last Date for Comments: 26 October 2025**

NATIONAL FOREWORD
(Formal clauses will be added later)

This Indian Standard may be adopted by the Bureau of Indian Standards, after the draft finalized by Audio, Video and Multimedia Systems and Equipment Sectional Committee would be approved by the Electronics and Information Technology Divisional Council.

This Standards was originally published in 1995. First revision has been taken up to incorporate technological advancement and keeping in mind usage of latest Spectrum. The following changes have been incorporate in this document:

1. The Electrical and Mechanical Parameters are specified for two dimensions of C-Band parabolic dish antenna.
2. Operating frequency and other parameters have also been updated.
3. The list of referred standards has been updated.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 'Rules for rounding off numerical values *(Second Revision)*'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

C-BAND PARABOLIC DISH ANTENNA — SPECIFICATION

1 SCOPE

This Indian Standard specifies electrical and mechanical parameters for C-Band parabolic dish antenna used for Cabled Distribution System for television and sound signals.

2 REFERENCES

The Standards listed below contains provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

	Title
13987 (Part 1):2012	RECEIVING ANTENNAS FOR SATELLITE BROADCAST TRANSMISSIONS IN THE 11/12 GHz BAND PART 1 ELECTRICAL MEASUREMENTS
13987 (Part 2):2018	Methods of Measurement on Receiving Antennas for Satellite Broadcast Transmission in the 11/12 GHz Band Part 2: Mechanical and Environmental Tests on Individual and Collective Receiving Antennas (First Revision)
14231 (Part 1)	Cabled distribution system for television and sound signals: Part 1 Safety requirements

3 PERFORMANCE REQUIREMENTS

3.1 Methods of Measurements

The general test conditions and methods of measurements shall be in accordance with IS 13987 (Part 1) and IS 13987 (Part 2)

3.2 Electrical and Mechanical Parameters

The requirements for various electrical and mechanical parameters for C-Band parabolic dish antenna shall be as given in Table 1 and Table 2.

3.3 Safety

The safety requirements of dish antenna shall conform to IS 14231 (Part 1).

4 MARKING

4.1 Each dish antenna shall be legibly and indelibly marked with at least the following information:

a) Indication of the source of manufacture,

b) Model designation and serial number, and

c) Diameter of the antenna.

4.2 Data to be published

The antenna manufacturer shall publish the following data for the wind pressure of P = 800 N/m^2:

a) The wind load of the antenna.

b) The minimum bending moment of the mast at the fixing points.

4.3 BIS Certification Marking

Standard Mark may be provided on the dish antenna. The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 2016 and the Rules and Regulations made thereunder. Details of conditions under which a licence for the use of Standard Mark may be granted to manufacturers and producers may be obtained from the Bureau of Indian Standards.

Table 1 Electrical and Mechanical Parameters
(Clause *3.2*)

(1)	(2)	(3)
Sl. No.	Parameters	Value
	Diameter	3.7 M
1	Operating frequency	3.7 to 4.2 Ghz
2	Gain at 4 GHz (diameter 3.6 m)	41.5 dbi, +/- 0.5db
3	3 dB beamwidth (for diameter 3.6 m)	Better than 1.4 degree
4	First side lobe	Better than – 20 dB
5	Feed arrangement	Prime focus
6	F/D ratio	0.35 to 0.4
7	Antenna mount	Azimuth elevation or polar Mount
8	Azimuth sweep	360 degrees
9	Elevation sweep	10 to 85 degrees
10	Antenna noise temperature	Better than 40 deg K at 45 deg Elevation
11	Antenna efficiency	60 percent, Min
12	Material mount	Zinc passivated or Galvanised
13	Reflector surface	Aluminum OR Fibre Reinforced Plastic
14	Wind Load Operational	Operational 80 km/h Survival 140 km/h
15	Mast pipe Diameter	Minimum 150 mn
16	Trusses (Double Rib)	Minimum 12 nos
17	Reflector Sheet Thickness	Minimum 0.4 mm
18	Reflector Porosity	0 to 25%
19	Locking Mechanism	Positive Axial & Radial Locking of Azimuth
20	Nut Bolts	Zinc Passivated / Stainless Steel / Trivalent / Galvanised
21	Feed Support	Tripod or Quadrapod Or Monopole
22	Focal Length variation in Feed Support possibility	up to 20mm variation
23	Reflector Paint	"Non Reflective Exterior Paint Recommended Colour White"

Table 2 Electrical and Mechanical Parameters
(Clause *3.2*)

(1)	(2)	(3)
Sl. No.	Parameters	Value
	Diameter	4.8M
1	Operating frequency	3.7 to 4.2 Ghz
2	Gain at 4 GHz	44 dbi +/- 0.5 db
3	3 dB beamwidth	Better than 1.1 degree
4	First side lobe	Better than - 20 dB
5	Feed arrangement	Prime focus
6	F/D ratio	0.35 to 0.4
7	Antenna mount	Azimuth over Elevation or Polar Mount
8	Azimuth sweep	360 degrees
9	Elevation sweep	10 to 85 degrees
10	Antenna noise temperature	Better than 35 deg K at 45 deg Elevation
11	Antenna efficiency	60 percent, Min
12	Material mount	Zinc Passivated or Galvanised
13	Reflector surface	Aluminum OR Fibre Reinforced Plastic
14	Wind Load Operational	Operational 80 km/h Survival 140 km/h
15	Mast pipe Diameter	Minimum 150 mm
16	Trusses (Double Rib)	Minimum 16 nos
17	Reflector Sheet Thickness	Minimum 0.4 mm
18	Reflector Porosity	0 to 25%
19	Locking Mechanism	Positive Axial & Radial Locking of Azimuth
20	Nut Bolts	Zinc Passivated / Stainless Steel / Trivalent / Galvanised
21	Feed Support	"Tripod or Quadrapod Or Monopole"
22	Focal Length variation in Feed Support possibility	up to 20mm variation
23	Reflector Paint	Non Reflective Exterior Paint Recommended Colour White

NOTES

1 Whenever antenna diameter is doubled, the antenna gain shall be increased by 6 dB and the beam width shall become half.

2 For satisfactory reflection of INSAT, the minimum gain should be 41 dB.

3 For special application requiring narrower beam width to avoid interferences F/D ratio of 0.32 is also permitted.