



EARTH STATION ANTENNAS

RF PERFORMANCE CHARACTERISATION BY EUTELSAT

12 February 2018



eutelsat

EARTH STATION ANTENNAS RF PERFORMANCE CHARACTERISATION BY EUTELSAT

GENERAL

This list aims at providing Eutelsat customers with guidance on the selection of the most appropriate earth station equipment to access the Eutelsat capacity.

Any antennas which are regularly deployed on the Eutelsat satellites may be eligible for being included in this list.

The criteria for inclusion are:

- Eutelsat is in possession of a full set of measured RF electrical characteristics,
- The antenna's RF performance fully meets the minimum Eutelsat requirements (EESS 502) at the characterisation's date,
- There is no known record of operational problems or interference issues related to this antenna.

Inclusion in the list is a decision which pertains uniquely and ultimately to Eutelsat alone.

At any moment a given antenna may be removed from the list, should Eutelsat deem necessary to do so.

As the data are not originating from a fully fledged type approval campaign, they are limited in scope and extent. Therefore this characterisation does not replace in any way the Eutelsat type approval program,

cfr. <http://www.eutelsat.com/files/contributed/satellites/pdf/typeapproval.pdf>

For a given antenna, additional RF characteristics not explicitly listed (e.g. other operating frequency bands) can be found at the URL address of the manufacturer datasheet, if available.

Notes:

- The characterisations dated before February 2011 may be subject to a review of the maximum allowed EIRP for the case where the orbital adjacent satellite separation would be less or equal to 2.5°.
- The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- Any change to the characterized configuration need to be notified to Eutelsat and may be subject to further tests.
- Transmissions in the 13.75 GHz to 14.00 GHz frequency band are subject to additional constraints imposed by the Radio Regulations. Antennas with diameters <1.2m are not supposed to operate in the 13.75 to 14.00 GHz frequency band.

This book provides information on the antenna static systems' performance only. This performance shall not be associated with the performance of auto-pointing systems, unless the latter has been duly characterised in the conditions referenced in the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf



Manufacturer:

VERTEX RSI

General Dynamics C4 Systems
2600 N. Longview Street
KILGORE, TX 75662
USA

Tel: +1 903 988 6102
Fax: +1 903 984 0555
mailto: robert.hoferer@gdsatcom.com

Antenna model:
2.4SFC-2712C**Diameter:**
2.4 m
2-ports feed**Standard:**
M**Characterisation date:**
22-06-2009**System Description:**

Light weight flyaway carbon fibre antenna - Front fed offset, 9 pieces, with mode generator two ports feed and rotary joint.

Maximum Allowed EIRP:

54.9 dBW/40kHz for digital carriers transmitted anywhere in the satellite receive contour of the C-band capacity of the Eutelsat satellites (EESS502, issue 11 rev 1, §6.1 refers).

Tx Frequency:

5.850 – 6.425 GHz

Rx Frequency:

3.625 – 4.200 GHz

Tx Gain:

41.9 dBi (typical at 6.000 GHz)

Rx Gain:

38.1 dBi (typical at 4.000 GHz)

Tx XPD:

>27.3 dB within -1 dB contour

Rx XPD:

>19.7 dB within -1 dB contour

Remarks:

Summary sheet based on the analysis of a Vertex test range report dated 7 January 2000.



Manufacturer:

VERTEX RSI

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mailto: robert.hoferer@gdsatcom.com

Antenna model:
2.4SFK-1575I**Diameter:**
2.4 m
2-ports feed**Standard:**
M**Characterisation date:**
22-06-2009**System Description:**

Light weight flyaway carbon fibre circular antenna - Front fed offset, 9 pieces, with mode generator two ports feed and rotary joint.

Maximum Allowed EIRP:

48.4 dBW/40kHz for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502, Issue 11 - Rev.0, § 6.1 refers).

Tx Frequency:
13.75-14.50 GHz**Rx Frequency:**
10.70-12.75 GHz**Tx Gain:**
48.9 dBi (typical at 14.00 GHz)**Rx Gain:**
46.6 dBi (typical at 11.00 GHz)**Tx XPD:**
>33 dB within -1 dB contour**Rx XPD:**
>27 dB within -1 dB contour**Remarks:**

Summary sheet based on the analysis of a Vertex test range report dated March-April 2000.

**Manufacturer:**

ND SatCom GmbH
P.O. Box
88039 Friedrichshafen
GERMANY
Tel : +49 7545 939 8725
Fax : +49 7545 939 8866

Website : www.ndsatcom.com
Email : christian.hauff@ndsatcom.com

Antenna model:

SkyRAY Compact 1500
SkyRAY Compact 1500 Plus
SkyRAY MAS 1500

Diameter:

1.2 m (See remark 4)

Standard:

M

Characterization date:

01-06-2011

Validity period:

See remark 6

System Description:

Antenna system based on the ERA type approved EA-A017 one piece 1.2 m Ku Diamond shape front fed offset antenna with mode generator, vehicle mounted.

The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers) :

37.0 dBW / 4 kHz (**static antenna performance**).

35.4 dBW / 4 kHz if the adjacent satellite separation is $\leq 2.5^\circ$ (**static antenna performance**).

35.2 dBW / 4 kHz (**autopointing antenna performance**)

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

43.8 dBi (average at 14.421 GHz)

Tx XPD:

>30 dB within -1 dB contour (**static**)

>27 dB within -1 dB contour (**auto-pointed**)

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 Characterisation performed via ESVA tests performed via satellite with the ERS of Aflenz on the 23rd August 2010.
- 3 Please refer to the following link for auto-pointing configuration details: http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The dimensions of the Ku Diamond antennas are 1.5mx1.5m, the equivalent circular diameter is 1.2m.
- 5 SkyRAY Compact/MAS 1500 is equipped with one HPA (400 Watt maximum), SkyRAY Compact 1500 Plus is equipped with two HPAs (400 Watt maximum for each).
- 6 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 7 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.

**Manufacturer:**

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P.O. Box
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GERMANY
Tel : +49 7545 939 8725
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Website : www.ndsatcom.com
Email : christian.hauff@ndsatcom.com

Antenna model:
SkyRAY MAS 1900

Diameter:
1.5 m (See remark 4)

Standard:
M
Characterisation date:
01-08-2011
Validity period:
See remark 6

System Description:

Antenna system based on the ERA type approved EA-A004 one piece 1.5 m Ku Diamond shape front fed offset antenna with mode generator, vehicle mounted.

The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers) :

37.4 dBW / 4 kHz (**static antenna performance**) for any adjacent satellite separation.

35.7 dBW / 4 kHz (**autopointing antenna performance**)

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.95 – 12.75 GHz

Tx Gain:

45.4 dBi (average at 14.25 GHz)

Tx XPD:

>35 dB within -1 dB contour (**static**)

>27.8 dB within -1 dB contour (**auto-pointed**)

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 Characterisation performed via ESVA tests performed via satellite with the ERS of Aflenz on the 30th June and 1st July 2011.
- 3 Please refer to the following link for auto-pointing configuration details: http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The dimensions of the Ku Diamond antennas are 1.9mx1.9m; the equivalent circular diameter is 1.5m.
- 5 SkyRAY MAS1900 can be equipped with one HPA (750 Watt maximum) or with two HPA's (750 Watt maximum for each).
- 6 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 7 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.

**Applicant:**

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 Website : www.eversat.eu
 Email : michelgomezhenry@eversat.eu

Antenna model:

LightAway

Diameter:

80 cm

Standard:

M

Characterization date:

12-03-2012

Validity period:

See remark 4

System Description:

Motorized antenna system based on a four segments carbon fiber 80 cm reflector, Ku-band Gregorian dual optics antenna, for Fly away applications.

Maximum Allowed EIRP:

37.8 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq 3.0^\circ$
 33.8 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.5^\circ$
 33.8 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$
 32.0 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers)

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

38.6 dBi (average at 14.25 GHz)

Rx Gain:

36.7 dBi (average at 11.70 GHz)

Tx XPD:

>31 dB within -1 dB contour

Rx XPD:

>30.0 dB within -1 dB contour

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 RF performance characterization was performed on one antenna unit at the Orange test range in La Turbie, France, on the 24 and 25 November 2011.
- 3 The LightAway may be equipped with one HPA of 200 Watt maximum. However Eutelsat reserves the right to request re-verification for HPA's ratings greater than 40 W.
- 4 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 5 Any change to the characterized configuration needs to be notified to Eutelsat and may be subject to further tests.
- 6 The antenna operator needs to call the Eutelsat CSC prior to any access to the Eutelsat space segment, to optimise the pointing parameters and the performance of the system.
- 7 Eversat states that the LightAway can be operated with wind speeds up to 72 Km/h.
- 8 The above characterization is valid for the static system. The verification of the auto-pointing performance has not been concluded yet.

**Applicant:**

VISLINK Communications Ltd
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Hertfordshire, HP2 7DE
United Kingdom
Tel :+ 44 (0) 1442 431 300
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Website : www.vislink.com
Email : Dave.melville@vislink.com

Antenna model:
FlyDrive 120

Diameter:
1.2 m

Standard:
M

Characterization date:
23-11-2011

Validity period:
See remark 5

System Description:

Antenna system based on Advent four segments 1.2 m Ku antenna with mode generator, for Fly away and Drive Away applications.

The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP: 45.0 dBW / 40 kHz for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers)

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

43.1 dBi (average at 14.25 GHz)

Rx Gain:

40.7 dBi (average at 11.70 GHz)

Tx XPD:

>32 dB within -1 dB contour

Rx XPD:

>23.4 dB within -1 dB contour

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 RF performance characterisation was performed on one antenna unit at the CTS test range in Leatherhead, UK, on the 22 and 23 August 2011.
- 3 Please refer to the following link for auto-pointing configuration details: http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 FlyDrive 120 can be equipped with one HPA (400 Watt maximum).
- 5 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 6 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.

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Antenna model:

Flydrive150

Diameter:
1.5 m

Standard:
M

Characterization date:
20-04-2012

Validity period:
See remark 4

System Description:

Antenna system based on Advent six segments carbon fibre front fed offset 1.5 m Ku antenna with mode generator two port feed manufactured by ERA Technology (Cobham Technical Services), for drive away applications.

Maximum Allowed EIRP for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

46.5 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$
44.5 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

45.6 dBi (average at 14.25 GHz)

Rx Gain:

43.4 dBi (average at 11.70 GHz)

Tx XPD:

>30 dB within -1 dB contour
>35 dB on axis

Rx XPD:

>21.7 dB within -1 dB contour

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 RF performance characterization was performed on one antenna unit at the CTS (Cobham Technical Services) test range in Leatherhead, UK, on the 16 February 2012.
- 3 Flydrive 150 can be equipped with 1:1 combined HPA (400 Watt maximum).
- 4 The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 5 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.
- 6 The above characterization is valid for the static system. The verification of the auto-pointing performance has not been concluded yet.

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Website : www.vislink.com
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Antenna model:

1.8 Newswift HD
Diameter:
 1.8 m

Standard:
 M

Characterization date:
 20-04-2012

Validity period:
 See remark 4

System Description:

Antenna system based on Advent solid carbon fibre front fed offset 1.8 m Ku antenna with mode generator two port feed manufactured by ERA Technology (Cobham Technical Services), for drive away applications.

Maximum Allowed EIRP for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

37.0 dBW / 4 kHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

46.4 dBi (average at 14.25 GHz)

Rx Gain:

44.1 dBi (average at 11.70 GHz)

Tx XPD:

>30 dB within -1 dB contour
 >35 dB on axis

Rx XPD:

>23.3 dB within -1 dB contour

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment
 (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 RF performance characterization was performed on one antenna unit at the CTS (Cobham Technical Services) test range in Leatherhead, UK, on the 14 February 2012.
- 3 1.8 Newswift HD can be equipped with 1:1 combined HPA (750 Watt maximum).
- 4 The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 5 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.
- 6 The above characterization is valid for the static system. The verification of the auto-pointing performance has not been concluded yet.

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Antenna model:

Mantis 2.4 m C-band

Diameter:

2.4 m

Standard:

M

Characterization date:

26-05-2014

Validity period:

See remark 4

Last test data submitted on:

19-06-2014

System Description:

Antenna system based on Advent 8 segments and a central hub carbon fibre, J-Hook center fed 2.4 m C-band antenna with two port feed circular polarization for fly-away/fixed applications.

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

32.6 dBW / 4 kHz for an orbital separation from the adjacent satellite $\geq 2.5^\circ$

40.0 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.0^\circ$

36.6 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.0^\circ$

Tx Frequency:

5.85 - 6.425 GHz

Rx Frequency:

3.60 - 4.20 GHz

Tx Gain:

41.3 dBi (average at 6.15 GHz)

Rx Gain:

36.7 dBi (average at 3.90 GHz)

Tx XPD: ≥ 26.2 dB on axis**Rx XPD:** ≥ 9.3 dB within -1 dB contour**G/T:**

17.0 dB/K at 3.95 GHz with LNB 60 dB Gain and 0.5 dB NF

Restrictions and remarks:

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance characterization was performed on one antenna unit at the CTS (Cobham Technical Services) test range in Leatherhead, UK, on the 24-26 March 2014.
- 3 The Mantis 2.4 m C-band antenna can be equipped with 1:1 HPA (750 Watt maximum).
- 4 The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 5 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.
- 6 The above characterization is valid for the static system. The verification of the auto-pointing performance has not been concluded yet.
- 7 In circular polarization operations, the J-Hook must be positioned so as to form an angle of $+45^\circ$ or -45° with respect to the Geostationary Satellite Arc as seen from the operations' site. This angle shall have a maximum deviation from the nominal 45° position of $\pm 17^\circ$.
- 8 The service quality in the receive side may be impaired because of the lowest RX XPD was found to be equal to 9.3 dB only.
- 9 It should be noted that without Wind Struts the Eutelsat specification is met up to 30mph (48km/h). For operations where higher wind speed may occur (e.g. the one quoted by EESS 502 i.e.: 75 km/h {45mph}) the fitting of dedicated Wind Struts is mandatory.

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Website : www.vislink.com
 Email : Dave.melville@vislink.com

Antenna model:

Mantis 2.4 m Ku-band

Diameter:

2.4 m

Standard:

M

Characterization date:

27-05-2014

Validity period:

See remark 4

Last test data submitted on:

19-06-2014

System Description:

Antenna system based on Advent 8 segments and a central hub carbon fibre, J-Hook center fed 2.4 m Ku-band antenna with two port linear polarization feed for fly-away/fixed applications.

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

37.7 dBW / 4 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$ (13.75-14.50 GHz)

44.1 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.0^\circ$ (14.00-14.50 GHz)

43.4 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.0^\circ$ (13.75-14.00 GHz)

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

48.5 dBi (average at 14.25 GHz)

Rx Gain:

47.0 dBi (average at 11.70 GHz)

Tx XPD:

≥ 31.7 dB within -1 dB contour

Rx XPD:

≥ 30.5 dB within -1 dB contour

G/T:

25.4 dB/K at 11.20 GHz with LNB 60 dB Gain and 0.7 dB NF

Restrictions and remarks:

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance characterization was performed on one antenna unit at the CTS (Cobham Technical Services) test range in Leatherhead, UK, on the 24-26 March 2014.
- 3 The Mantis 2.4 m Ku-band antenna can be equipped with 1:1 HPA (750 Watt maximum).
- 4 The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 5 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.
- 6 The above characterization is valid for the static system. The verification of the auto-pointing performance has not been concluded yet.
- 7 The antenna can only be used for operations on satellites whose polarization skew is comprised between: $\pm 28^\circ$; $90^\circ \pm 28^\circ$; $180^\circ \pm 28^\circ$; $270^\circ \pm 28^\circ$. Operations outside these regions are submitted to significant eirp density reductions and conditioned to the existence of a valid Eutelsat transmission plan.
- 8 It should be noted that without Wind Struts the Eutelsat specification is met up to 30mph (48km/h). For operations where higher wind speed may occur (e.g. the one quoted by EESS 502 i.e.: 75 km/h {45mph}) the fitting of dedicated Wind Struts is mandatory.

**Applicant:**

SVS SATELLITE SYSTEMS
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Tel : +90 216 329 56 00
Fax : +90 216 329 02 99

Website : <http://www.svstelekom.com.tr>
Email : abdullah.saglam@svstelekom.com.tr

Antenna model:

SVS SDC120

Diameter:

1.2 m

(See Remark 4)

Standard:

M

Characterisation date:

20-04-2012

Validity period:

See Remark 6

System Description:

Antenna system based on the CTS ERA type approved EA-A017 one piece 1.2 m Ku Diamond shape front fed offset antenna with mode generator, vehicle mounted.

The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP (static and auto-pointing antenna performance) for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers):

45.6 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$

39.7 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

43.6 dBi (average at 14.25 GHz)

Tx XPD:

>35.0 dB within -1 dB contour (**static**)

>35.0 dB within -1 dB contour (**auto-pointed**)

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment
(ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 Characterisation performed via ESVA tests performed via satellite with the ERS of Aflenz on the 24 January 2012.
- 3 Please refer to the following link for auto-pointing configuration details:
http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The physical dimensions of the Ku Diamond antennas are H1.52m x V1.36m.
- 5 SVS SDC 120 is equipped with one or two 1:1 redundant HPAs (400 Watt maximum).
- 6 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 7 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.

**Applicant:**

SVS SATELLITE SYSTEMS
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TURKEY

Tel : +90 216 329 56 00

Fax : +90 216 329 02 99

Website : <http://www.svstelekom.com.tr>

Email : abdullah.saglam@svstelekom.com.tr

Antenna model:

SVS SDC150

Diameter:

1.5 m

(See Remark 4)

Standard:

M

Characterisation date:

20-04-2012

Validity period:

See Remark 6

System Description:

Antenna system based on the CTS ERA type approved EA-A004 one piece 1.5 m Ku Diamond shape front fed offset antenna with mode generator, vehicle mounted.

The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers):

(static antenna performance):

47.5 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$

44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

(autopointing antenna performance):

37.0 dBW / 4 kHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$

44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

45.5 dBi (average at 14.25 GHz)

Tx XPD:

>31.7 dB within -1 dB contour **(static)**

>30.0 dB within -1 dB contour **(auto-pointed)**

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 Characterisation performed via ESVA tests performed via satellite with the ERS of Aflenz on the 24 January 2012.
- 3 Please refer to the following link for auto-pointing configuration details: http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The physical dimensions of the Ku Diamond antennas are H1.89m x V1.695m.
- 5 SVS SDC 150 is equipped with one or two 1:1 redundant HPAs (400 Watt maximum).
- 6 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 7 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.

**Applicant:**

PROSAT SOLUTIONS GMBH
Alfred-Nobel-Str. 5
55411 Bingen
GERMANY

Tel : +49 (0)6721 4008-0

Fax : +49 (0)6721 4008-27

Website : <http://www.prosat-solutions.de>

Email : Peter.Jakobsson@prosat-solutions.de

Antenna model:

D120M

Diameter:

1.2 m

(See Remark 4)

Standard:

M

Characterisation date:

20-04-2012

Validity period:

See Remark 6

System Description:

Antenna system based on the CTS ERA type approved EA-A017 one piece 1.2 m Ku Diamond shape front fed offset antenna with mode generator, vehicle mounted.

The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP (static and auto-pointing antenna performance) for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers):

45.6 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$

39.7 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

43.6 dBi (average at 14.25 GHz)

Tx XPD:

>35.0 dB within -1 dB contour (**static**)

>35.0 dB within -1 dB contour (**auto-pointed**)

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 Characterisation performed via ESVA tests performed via satellite with the ERS of Aflenz on the 24 January 2012.
- 3 Please refer to the following link for auto-pointing configuration details: http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The physical dimensions of the Ku Diamond antennas are H1.52m x V1.36m.
- 5 D120M is equipped with one or two 1:1 redundant HPAs (400 Watt maximum).
- 6 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 7 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.

**Applicant:**

PROSAT SOLUTIONS GMBH
Alfred-Nobel-Str. 5
55411 Bingen
GERMANY

Tel : +49 (0)6721 4008-0

Fax : +49 (0)6721 4008-27

Website : <http://www.prosat-solutions.de>

Email : Peter.Jakobsson@prosat-solutions.de

Antenna model:

D150M

Diameter:

1.5 m

(See Remark 4)

Standard:

M

Characterisation date:

20-04-2012

Validity period:

See Remark 6

System Description:

Antenna system based on the CTS ERA type approved EA-A004 one piece 1.5 m Ku Diamond shape front fed offset antenna with mode generator, vehicle mounted.

The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers):

(static antenna performance):

47.5 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$

44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

(autopointing antenna performance):

37.0 dBW / 4 KHz for an orbital separation of the adjacent satellite $> 2.0^\circ$

44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

45.5 dBi (average at 14.25 GHz)

Tx XPD:

>31.7 dB within -1 dB contour **(static)**

>30.0 dB within -1 dB contour **(auto-pointed)**

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 Characterisation performed via ESVA tests performed via satellite with the ERS of Aflenz on the 24 January 2012.
- 3 Please refer to the following link for auto-pointing configuration details: http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The physical dimensions of the Ku Diamond antennas are H1.89m x V1.695m.
- 5 D150M is equipped with one or two 1:1 redundant HPAs (400 Watt maximum).
- 6 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 7 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.

**Manufacturer:**

C-COM Satellite Systems Inc.
2574 Sheffield Rd,
Ottawa ON,
K1B 3V7
Canada
Tel: +1 613 745 4110
Fax: +1 613 745 7144

Website :<http://www.c-comsat.com>
mailto: bawada@c-comsat.com

Antenna model:

C-COM iNetVu 1201

Diameter:

1.2 m
2-ports feed

Standard:

M

Characterisation date:

06-11-2012

Validity period:

See Remark 5

System Description:

Motorised antenna system based on the Skyware Global 125 single piece 1.2 m SMC reflector. Front fed offset configuration with mode generator and rotary joint. Two ports die-cast OMT, linear polarisation.

HPA maximum permissible rating: 40 Watt.

Maximum Allowed EIRP:

42.0 dBW / 40 KHz for an orbital separation of the adjacent satellite > 2.0°
37.1 dBW / 40 KHz for an orbital separation of the adjacent satellite > 1.5°

for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 § 6.1 refers).

Tx Frequency:

14.00-14.50 GHz

Rx Frequency:

10.70-12.75 GHz

Tx Gain:

43.8 dBi (typical at 14.25 GHz)

Rx Gain:

42.0 dBi (typical at 11.70 GHz)

Tx XPD:

>29 dB within -1 dB contour
>32 dB on axis

Rx XPD:

>20 dB within -1 dB contour

Pointing error:

TBD

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>).
- 2 RF performance characterisation was performed on one antenna unit at the CTS (Cobham technical Services) test range in Leatherhead, UK, on the 3 March 2012.
- 3 Validation of the auto-deploy system, which is using the iNetVu Antenna Controller 7000, is subject to further tests.
- 4 Installation of HPA with a power >40 W is not authorised.
- 5 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 6 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.
- 7 Use in the band 13.75-14.00 GHz will be tolerated but may be subject to additional restrictions.

**Manufacturer:**

Japan Radio Co., Ltd.
NAKANO CENTRAL PARK EAST
4-10-1 Nakano, Nakano-ku, Tokyo 164-8570
JAPAN

Tel: + 81 3 6832 0981
Fax: + 81 3 6832 1842
Email: uchida.kazuhiro@jrc.co.jp

Antenna model:

NAY-199K

Antenna aperture dimensions:

Rectangular 653x501 mm
Equivalent circular aperture 0.59 m

Standard:

M

Characterization date:

17-12-2012

Validity period:

See Remark 2

Last test data submitted on:

16-10-2016

System Description:

Portable lightweight suitcase SNG Terminal– Multi-layer, strip line feed, microstrip patch array flat antenna- Tripod mount.

Models Characterized:

Standard configuration: linear orthogonal polarization with two HPA options:
40 W BUC CAH-1040 with LNB NHA 777S and Modem CHE-341A. Manual pointing mechanism NUT-45
80 W BUC CAH-1080 with LNB NHA 777S3 and Modem NTE-170 Manual pointing mechanism NUT-6000

Maximum Allowed EIRP:

For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

In the 14.00-14.50 GHz band:

32.8 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$
32.9 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.0^\circ$
34.7 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.5^\circ$
38.2 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 3.0^\circ$

In the 13.75-14.00 GHz band:

30.2 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$
32.1 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.5^\circ$
36.7 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 3.0^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.7-12.75 GHz

Tx Gain:

36.5 dBi (typical at 14.25 GHz)

Rx Gain:

34.9 dBi (typical at 11.7 GHz)

Tx XPD:

34.2 dB within -1 dB contour

Rx XPD:

>25.5 dB within -1 dB contour

G/T

11.5 dB/K @ 11.70 GHz 30 ° Elevation

Restrictions and remarks:

- 1 The RF performance characterization was performed on two antenna units, at the JRC test range of Mitaka, Japan on the 3-7 December 2012. Additional tests were made from 28 November 2013 to 28 January 2014 and from 7 to 13 October 2016 at the JRC test range of Nagano.
- 2 The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standards.
- 3 The antenna has to be aligned with the GSO arc along its 45° axis, never along its long or short sides.
- 4 Although that the antenna has primarily been designed for transmit operations, the service quality in the receive side may be impaired for satellite orbital separation less than 3°.

**Applicant:**

GENERAL DYNAMICS
SATCOM Technologies
2600 N. Longview Street
Kilgore, TX 75662
United States
Tel : +1 903 988 6107
Fax :+1 903 984 6867
[Website : www.gdsatcom.com](http://www.gdsatcom.com)

Contact point: alan.pollard@gdsatcom.com

Antenna model:

3.80 Meter VXK
3.80 Meter PMK
Diameter:
3.8 m

Standard:
M

Characterization date:
03-01-2013

Validity period:
See remark 2

System Description:

General purpose antenna for digital transmission up to higher rates. Dual offset Gregorian configuration. Bolt-together 12 panels 3.8 m aluminum main reflector. Broadband four-port DBS feed system. Pipe type mount in manual (PMK) or motorizable (VXK) version.

Models Available:

Four-port linear polarization DBS feed

Maximum Allowed EIRP:

For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502, § 6.1 refers):
47 dBW / 40 kHz for satellite orbital separations $\geq 1.5^\circ$

Tx Frequency:

17.30 – 18.40 GHz

Tx Gain:

54.4 dBi (typical at 17.85 GHz)

Tx XPD:

>30 dB within -1 dB contour

Rx Frequency:

10.70 - 12.75 GHz

Rx Gain:

50.9 dBi (typical at 11.70 GHz)

Rx XPD:

>33 dB within -1 dB contour

G/T: 30.6 dB/K at 11.70 GHz for a 70° K LNA @
30° Elevation

Restrictions and remarks:

- 1 The characterization tests were performed on the long test range of General Dynamics in Kilgore, Texas between the 4 and 14 June 2012.
- 2 The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 3 Any change to the characterized configuration needs to be notified to Eutelsat and may be subject to further tests.
- 4 The impact of the de-ice system on the RF performance of the antenna has not been tested.
- 5 For the four port Ku band configuration, refer to EA-A039; for the two port Ku band configuration, refer to EA-A015.

**Manufacturer:**

Holkirk Communications Ltd
Unit 17 Pulloxhill Business Park
Greenfield Road
Bedfordshire
United Kingdom
MK45 5EU

Tel: +44 (0) 1525 721118
Fax: +44 (0) 1525 719734
Email bob@holkirk.com
Web www.holkirk.com

Antenna model:

RM150

Antenna aperture dimensions:

1.5 m

Standard:

M

Characterization date:

01-03-2013

Validity period:

See remark 5

System Description:

Antenna system based on Holkirk single piece 1.5 m Ku reflector with mode generator, for drive away applications.

Models Characterized:

Standard configuration: linear orthogonal polarization.

Maximum Allowed EIRP:

For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

45.1 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.5^\circ$

41.6 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$

40.6 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.7-12.75 GHz

Tx Gain:

45.0 dBi (typical at 14.25 GHz)

Rx Gain:

42.6 dBi (typical at 11.7 GHz)

Tx XPD:

>30 dB within -1 dB contour

Rx XPD:

>22 dB within -1 dB contour

G/T (typical)

21.5 dB/K @ 11.2 GHz

Restrictions and remarks:

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog100.pdf> ESOG 110).
- 2 RF performance characterization was performed on one antenna unit at the CTS (Cobham Technical Services) test range in Leatherhead, UK, on the 3-4 October 2012.
- 3 Refer to http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf for auto-pointing configuration details.
- 4 The RM 150 can be equipped with 1+1 combined HPA (400 Watt maximum).
- 5 The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 6 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.
- 7 The characterization is restricted to direct pointing mode using received DVB carriers.

**Manufacturer:**

TRACSTAR SYSTEMS INC.
COBHAM ANTENNA SATCOM LAND SYSTEMS
1551 College Park Business Center Rd.,
Orlando, FL 32804 USA.

Tel: + 1 407 650 9054
Fax: + 1 407 650 9086

Website : <http://www.cobham.com/satcom>
mailto: Narcis.Vila@cobham.com or
Jackie.Rubie@cobham.com

Antenna model:

Cobham EXPLORER 7100 MB KU

Antenna aperture dimensions:

1 m

Standard:

M

Characterisation date:

18-02-2014

Validity period:

See remark 5

System Description:

Antenna system based on the AVL 1080KVH model, single piece 1.0 m reflector, for drive away applications.

Models Characterised:

Standard configuration: linear orthogonal polarisation, optional parallel polarisation.

Maximum Allowed EIRP:

For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

43.9 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.5^\circ$

42.4 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 2.0^\circ$

37.0 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq 1.5^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.7-12.75 GHz

Tx Gain:

41.9 dBi (typical at 14.25 GHz)

Rx Gain:

39.9 dBi (typical at 11.7 GHz)

Tx XPD:

≥ 26.2 dB within -1 dB contour

Rx XPD:

≥ 26.0 dB within -1 dB contour

G/T (typical)

19.4 dB/K @ 11.70 GHz

Restrictions and remarks:

- 1 The authorisation to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance characterisation was performed on one antenna unit at the CTS (Cobham Technical Services) test range in Leatherhead, UK, on the 18 November 2013.
- 3 Refer to <http://www.eutelsat.com/en/support/earth-stations/eutelsat-approved-equipment.html> for auto-pointing configuration details.
- 4 The Explorer 7100 is authorised for operations with one HPA up to 40 Watt maximum. Irrespective of their installed power rating, Cobham certifies that all HPAs being used with this antenna configuration are equipped with M&C and EIRP readout capabilities.
- 5 The characterisation's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 6 Any change to the characterised configuration needs to be notified to Eutelsat and may be subject to further tests.

**Manufacturer:**

ACTIA Telecom
 ZAC Es-Passants II
 2 rue Amiral Bérenger B.P. 90145
 35801 DINARD Cedex
 FRANCE

Tel: +33 (0) 2 22 75 01 55
 Fax : +33 (0) 2 99 46 47 27
 Email claude.blayonogret@actiatelecom.fr
 Web www.actiatelecom.com

Antenna model:

DEK120F/2P/100-2

Antenna aperture dimensions:

1.2 x 1.2 m

Standard:

M

Characterization date:

24-10-2016

Validity period:

See remark 4

Last RF test data submitted on:

28-01-2016

System Description:

2 ports antenna system based on Sat-Lite Agilis 1221, 4 Piece carbon fiber reflector, offset front-fed, for Fly away applications, manual non motorized pointing.

Models Characterized:

Standard configuration: linear orthogonal polarization.

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

In the 14.00-14.50 GHz band:

39.0 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

45.7 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.0^\circ$

In the 13.75-14.00 GHz band:

36.6 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

43.3 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.0^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.7-12.75 GHz

Tx Gain:

43.7 dBi (typical at 14.25 GHz)

Rx Gain:

42.0 dBi (typical at 11.7 GHz)

Tx XPD:

>31.3 dB within -1 dB contour

Rx XPD:

>19 dB within -1 dB contour

G/T (typical)

20.3 dB/K @ 11.85 GHz at 30° elevation

Remarks:

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/satellites/pdf/esog110.pdf> ESOG 110).
- 2 RF performance characterization was performed on one antenna unit at the Thales Alenia Space test range of Cannes, France on the 28 January 2016 and at the Actia premises in Dinard on the 8 September 2016.
- 3 The DEK120F/2P/100-2 can be equipped with 1+1 combined pole mounted HPA (100 Watt maximum).
- 4 The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard at the inspection date.
- 5 Any change to the characterized configuration needs to be notified to Eutelsat and may be subject to further tests.

Restriction:

- 6 During initial line-up, the polarization alignment process may expose the operator to Radio Frequency Electromagnetic Fields, Eutelsat may in no way be held responsible in case of related operator health hazard. Refer to the operator manual for instruction.
- 7 Operations of this antenna on satellites with a spacing less than 3° from the adjacent ones is not recommended for potential interference to adjacent services.

**Applicant:**

THRANE & THRANE A/S trading as COBHAM
SATCOM
Lundtoftegaardsvej 93D, 2800 Kgs.
Lyngby
DENMARK

Tel : +45 39 55 89 59

Website : www.cobham.com

Email : info@cobham.com

Antenna model:

EXPLORER 8100

Diameter:

1.0 m

Standard:

M

Characterization date:

23-02-2017

Validity period:

See remark 5

Last test data submitted on:

23-02-2017

System Description:

Antenna system based on a single piece carbon fibre reflector, front fed offset 1.0 m Ku antenna, with two port linear polarization feed, manufactured by Thrane & Thrane A/S trading as Cobham Satcom, for drive-away applications with HPA maximum permissible rating as per remark 4. The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link: http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

In the 14.00 - 14.50 GHz band:

36.1 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

39.8 dBW / 40 kHz for an orbital separation from the adjacent satellite $> 2.0^\circ$

43.4 dBW / 40 kHz for an orbital separation from the adjacent satellite $> 2.5^\circ$

In the 13.75 - 14.00 GHz band:

34.2 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

37.7 dBW / 40 kHz for an orbital separation from the adjacent satellite $> 2.0^\circ$

41.0 dBW / 40 kHz for an orbital separation from the adjacent satellite $> 2.5^\circ$

Tx Frequency:

13.75 - 14.50 GHz

Rx Frequency:

10.70 -12.75 GHz

Tx Gain:

41.4 dBi (average at 14.25 GHz)

Rx Gain:

39.6 dBi (average at 11.70 GHz)

Tx XPD:

≥ 25 dB within -1 dB contour

≥ 30.1 dB within +/- 0.1° de-pointing angle
with auto-pointing option

Rx XPD:

≥ 23.6 dB within -1 dB contour

≥ 29.5 dB within +/- 0.1° de-pointing angle
with auto-pointing option

G/T:

19.4 dB/K typ @ 11.70 GHz at 30° EI

Restrictions and remarks:

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance tests were performed on one antenna unit at the Thales Alenia Space test range of Cannes, France on the 20 February 2017.
- 3 Please refer to the following link for auto-pointing configuration details:
http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The EXPLORER 8100 comes in three standard configurations: No BUC, 8 and 20W BUC. Installation of HPAs with a power >50 W is not authorized
- 5 This Summary's validity is subject to regular submission of patterns to confirm that the system remains compliant with measured performance at the inspection date.
- 6 Any change to this configuration needs to be notified to Eutelsat and may be subject to further tests.
- 7 Wind load tests showed that the antenna can withstand wind speeds up to 112.4 Km/h.

**Applicant:**

THRANE & THRANE A/S trading as COBHAM
SATCOM
Lundtoftegaardsvej 93D, 2800 Kgs.
Lyngby
DENMARK

Tel : +45 39 55 89 59

Website : www.cobham.com

Email : info@cobham.com

Antenna model:

EXPLORER 8120

Diameter:

1.2 m

Standard:

M

Characterization date:

23-02-2017

Validity period:

See remark 5

Last test data submitted on:

23-02-2017

System Description:

Antenna system based on a single piece carbon fibre reflector, front fed offset 1.2 m Ku antenna, with two port linear polarization feed, manufactured by Thrane & Thrane A/S trading as Cobham Satcom, for drive-away applications, with HPA maximum permissible rating as per remark 4. The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link: http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

In the 14.00-14.50 GHz band:

39.1 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

34.6 dBW / 4 kHz (equivalent to 44.6 dBW/40 KHz) for an orbital separation from the adjacent satellite $> 2.0^\circ$

In the 13.75-14.00 GHz band:

36.3 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

42.4 dBW / 40 kHz for an orbital separation from the adjacent satellite $> 2.0^\circ$

Tx Frequency:

13.75 - 14.50 GHz

Rx Frequency:

10.70 -12.75 GHz

Tx Gain:

42.9 dBi (average at 14.25 GHz)

Rx Gain:

41.2 dBi (average at 11.70 GHz)

Tx XPD:

≥ 26 dB within -1 dB contour

≥ 32.6 dB within +/- 0.1° de-pointing angle
with auto-pointing option

Rx XPD:

≥ 26.9 dB within -1 dB contour

≥ 37.9 dB within +/- 0.1° de-pointing angle
with auto-pointing option

G/T:

20.8 dB/K typ @ 11.70 GHz at 30° EI

Restrictions and remarks:

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance tests were performed on one antenna unit at the Thales Alenia Space test range of Cannes, France on the 21 February 2017.
- 3 Please refer to the following link for auto-pointing configuration details:
http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The EXPLORER 8120 comes in three standard configurations: No BUC, 8 and 20W BUC. Installation of HPAs with a power >50 W is not authorized.
- 5 This Summary's validity is subject to regular submission of patterns to confirm that the system remains compliant with measured performance at the inspection date.
- 6 Any change to this configuration needs to be notified to Eutelsat and may be subject to further tests.
- 7 Wind load tests showed that the antenna can withstand wind speeds up to 92.8 Km/h.

**Applicant:**

HITACHI KOKUSAI ELECTRIC TURKEY
YAYINCILIK SİSTEMLERİ A.S.
Istanbul Endüstri ve Ticaret Serbest Bölgesi
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Tel :+ 90 216 394 84 84
Fax :+90 216 394 84 82

Website : <http://www.hitachi-kokusai.com.tr/>
Email : Corporate.HKT@tr.hitachi-kokusai.com

Antenna model:

PDA 150 Drive News

Diameter:

1.5 m x 1.35 m

Standard:

M

Characterization date:

23-05-2017

Last test data submitted on:

21-11-2017

System Description:

Antenna system for drive-away applications. Dual offset Gregorian configuration. Single piece carbon fibre reflector 1.5 m x 1.35 m, with two port linear polarization feed manufactured by PALS trading as Hitachi Kokusai Electric Turkey Broadcasting Systems with HPA maximum permissible rating as per remark 4.

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

In the 14.00 - 14.50 GHz band:

39.9 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

44.9 dBW / 40 kHz for an orbital separation from the adjacent satellite $> 2.0^\circ$

In the 13.75 - 14.00 GHz band:

37.2 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

42.4 dBW / 40 kHz for an orbital separation from the adjacent satellite $> 2.0^\circ$

Tx Frequency:

13.75 – 14.50 GHz

Rx Frequency:

10.70 – 12.75 GHz

Tx Gain:

43.9 dBi (average at 14.25 GHz)

Rx Gain:

42.5 dBi (average at 11.70 GHz)

Tx XPD:

≥ 29.5 dB within -1 dB contour

Rx XPD:

≥ 19 dB within -1 dB contour

G/T:

23.0 dB/K at 12.5 GHz with 23° K LNB @
20° Elevation

Restrictions and remarks:

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance characterization was performed on three antenna units at the CTS (Cobham Technical Services) test range in Leatherhead, UK, on the 24-27 November 2014.
- 3 Please refer to the following link for auto-pointing configuration details:
http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The PDA 150 Ku-band antenna is authorized to to operate with 1+1 HPAs with a power up to 400 W.
- 5 Any change to the characterized configuration needs to be notified to Eutelsat and may be subject to further tests.
- 6 Wind load tests showed that the antenna can withstand wind speeds up to 72 Km/h.

**Applicant:**

SATMISSION
Bultenvägen 5
952 61 Kalix,
SWEDEN

Tel : +46 923 137 10
Mob: +46 70 550 2109
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Email : conny.hedman@satmission.com

Antenna model:

SMP 155 DA

Antenna aperture dimensions:

1.54 m H x 1.39 m V

Standard:

M

Characterization date:

08-06-2017, revised on 21-12-2017

Validity period:

Temporary until 21-12-2018, see Remark 5

Last test data submitted on:

17-03-2016

System Description:

Antenna system for drive-away applications. Dual offset Gregorian configuration. Single piece carbon fibre reflector, with two port linear polarization feed, manufactured by Satmission with HPA maximum permissible rating as per remark 4. The detail of the characterization of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

In the 14.00 - 14.50 GHz band:

39.6 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

36.1 dBW / 4 kHz (equivalent to 46.1 dBW/40 KHz) for an orbital separation from the adjacent satellite $> 2.0^\circ$

In the 13.75 - 14.00 GHz band:

37.5 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

44.7 dBW / 40 kHz for an orbital separation from the adjacent satellite $> 2.0^\circ$

Tx Frequency:

13.75 - 14.50 GHz

Rx Frequency:

10.70 - 12.75 GHz

Tx Gain:

45.1 dBi (average at 14.25 GHz)

Rx Gain:

43.3 dBi (average at 11.70 GHz)

Tx XPD: ≥ 30.0 dB within -1 dB contour**Rx XPD:** ≥ 29.0 dB within -1 dB contour**G/T:**22.6 dB/K typical @ 11.70 GHz at 20° EI**Restrictions and remarks:**

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance tests were performed on one antenna unit at the Thales Alenia Space test range of Cannes, France on the 10 March 2016.
- 3 Please refer to the following link for auto-pointing configuration details:
http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The SMP 155 DA is authorized to operate with 1+1 HPAs with a power up to 400 W.
- 5 This temporary characterization is granted for a period of 1 year to allow Satmission to implement an EIRP readout system.
- 6 Any change to this configuration needs to be notified to Eutelsat and may be subject to further tests.
- 7 Wind load tests showed that the antenna can withstand wind speeds up to 72 Km/h.

**Applicant:**

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Antenna model:

SMP 125 DA

Antenna aperture dimensions:

1.20 m H x 1.25 m V

Standard:

M

Characterization date:

18-12-2017

Validity period:

Temporary until 1 year, see Remark 5

Last test data submitted on:

14-12-2017

System Description:

Antenna system for drive-away applications. Dual offset Gregorian configuration. Single piece carbon fibre reflector, with two port linear polarization feed, manufactured by Satmission with HPA maximum permissible rating as per remark 4. The detail of the characterisation of the antenna system with an auto-pointing configuration is available via the following link:

http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

In the 14.00 - 14.50 GHz band:

36.7 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

42.2 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.0^\circ$

45.3 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 3.0^\circ$

In the 13.75 - 14.00 GHz band:

34.3 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$

39.3 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.0^\circ$

40.0 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.5^\circ$

43.0 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 3.0^\circ$

Tx Frequency:

13.75 - 14.50 GHz

Rx Frequency:

10.70 -12.75 GHz

Tx Gain:

43.7 dBi (average at 14.25 GHz)

Rx Gain:

42.0 dBi (average at 11.70 GHz)

Tx XPD: ≥ 30.0 dB within -1 dB contour**Rx XPD:** ≥ 27 dB within -1 dB contour**G/T:**

20.7dB/K typ @ 11.70 GHz at 20° EI

Restrictions and remarks:

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance tests were performed on one antenna unit at the Politecnico di Torino test range on the 22-23 November 2017.
- 3 Please refer to the following link for auto-pointing configuration details:
http://www.eutelsat.com/files/contributed/satellites/pdf/Autopointing_Antennas.pdf
- 4 The SMP 125 DA is authorized to operate with 1+1 HPAs with a power up to 400 W.
- 5 This temporary characterization is granted for a period of 1 year to allow Satmission to implement an EIRP readout system and to validate the reflector surface accuracy.
- 6 Any change to this configuration needs to be notified to Eutelsat and may be subject to further tests.
- 7 Wind load tests showed that the antenna can withstand wind speeds up to 72 Km/h.

**Applicant:**

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Antenna model:

SMV 125 DA

Antenna aperture dimensions:

1.20 m H x 1.25 m V

Standard:

M

Characterization date:

09-02-2018

Validity period:

Temporary until 09-02-2019, see Remark 4

Last test data submitted on:

22-12-2017

System Description:

Antenna system for drive-away applications. Front Fed Offset configuration. Single piece carbon fibre reflector, with two port linear polarization feed, manufactured by Satmission with HPA maximum permissible rating as per remark 3. The antenna is not authorized to operate in auto acquisition mode.

Maximum Allowed EIRP: For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):

In the 14.00 - 14.50 GHz band:36.8 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$ 39.3 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.0^\circ$ 33.6 dBW / 4 kHz (equivalent to 43.6 dBW/40 KHz) for an orbital separation from the adjacent satellite $\geq 2.5^\circ$ **In the 13.75 - 14.00 GHz band:**34.5 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 1.5^\circ$ 37.5 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.0^\circ$ 41.5 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 2.5^\circ$ 41.7 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq 3.0^\circ$ **Tx Frequency:**

13.75 - 14.50 GHz

Rx Frequency:

10.70 -12.75 GHz

Tx Gain:

42.3 dBi (average at 14.25 GHz)

Rx Gain:

41.1 dBi (average at 11.70 GHz)

Tx XPD: ≥ 25 dB within -1 dB contour**Rx XPD:** ≥ 24 dB within -1 dB contour**G/T:**20.7 dB/K typical @ 11.70 GHz at 20° EI**Restrictions and remarks:**

- 1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. <http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf>, ESOG 110).
- 2 RF performance tests were performed on one antenna unit at the Politecnico di Torino test range on the 20-22 December 2017.
- 3 The SMV 125 DA is authorized to operate with 1 SSPA with a power up to 50 W.
- 4 This temporary characterization is granted for a period of 1 year to allow Satmission to implement an EIRP readout system and to validate the reflector surface accuracy.
- 5 Any change to this configuration needs to be notified to Eutelsat and may be subject to further tests.
- 6 Wind load tests showed that the antenna can withstand wind speeds up to 72 Km/h.
- 7 The worst excess in the receive side is 4.9 dB. The service quality in conjunction with operations in certain Rx bands and/or reduced orbital separations from the adjacent satellites may be impaired due to excessive Rx sidelobe level.