PORTFOLIO OF CHARACTERIZED ANTENNAS

Aircraft, Drive-Away, Fixed, Fly-Away, Maritime

November 2023

eutelsat GROUP

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Porfolio of Characterized Antennas

Aircraft, Drive Away, Fixed, Fly Away, Maritime

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.

Note: The Applicant/Manufacturer company name may have changed since a certificate was issued, or the company may have an associated trade name. The alphabetical order of the listed products may therefore be affected.
For example, some products now marketed as "Cobham" may be listed under the "Seatel", "Tracstar", or "Thrane & Thrane" section.

CHARACTERIZED ANTENNAS

Aircraft

Characterization – Aircraft

Applicant:

IPR – Italiana Ponti Radio SRL
via Ca' Bassa 67
21100 Varese Italy
Office: +39 0332 331417

Contact: Roberto Ballerio
mailto: roberto.ballerio@ipreurope.com

Certificate:
CH-AIR-IPR-037-580

Antenna model:
D-ATKS Ku band Satcom 37cm antenna
auto-tracking antenna for avionic applications

Diameter:
37 cm

Standard:
M

Characterization Date:
15-06-2021

Last test data submitted on:
24-05-2021

System Description:
The "D-ATKS Ku Band Satcom Antenna" is a Ku band linear polarization 37 cm antenna for aircrafts applications. The circular antenna is based on displaced-axis ellipse optic and is equipped of 2 axis conical scanning with motorized polarization adjustment. The f/D = 0.268 and the feeder is equipped with a 2 ports OMT. The antenna is equipped with 40W SSPA. The usage if 60W is also authorized as soon as it can be integrated in the antenna mount.

The antenna has been tested without radome. The usage of radome could be subject to further restrictions.

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

Frequency bands	13.75 – 14.00 GHz	14.00- 14.50 GHz
≥ 1.5°	22.7 [dBW/40KHz]	24.7 [dBW/40KHz]

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain (at BUC flange):
31.4 dBi (typical at 14.25 GHz)

Tx XPD:
≥ 30 dB within -1 dB contour (worst case)

Rx Frequency:
10.7 – 12.75 GHz

Rx Gain:
30.7 dBi (typical at 11.70 GHz)

Rx XPD:
≥ 30 dB within -1 dB contour (worst case)

G/T:
10.0 dB/K theoretical assuming LNB NF=0.9 dB.

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) The measurements for type approval was performed at the test range of Thales Alenia Space in Cannes (France) on 24th May 2021 on one sample.
3) The type approval must be coordinated with the transmission plans operated the Eutelsat fleet.
4) The efficiency (without the post HPA insertion losses of 1.4 dB) of the dish is 62 %, estimated at 14.25 GHz.
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) The transmission in the band 13.75-14.00 GHz for antennas with a diameter < 1.2 m is subject to the ITU radio regulations in force.

CHARACTERIZED ANTENNAS

Drive Away

Characterization – Drive Away

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.

Characterization DA - Auto-pointing

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
(See Remark 4)

Standard:
M

Characterisation date:
03-05-2012

Validity period:
See Remark 6

System Description:
Auto-pointing 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 polarization.
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

Pointing error:
< 0.4°

Polarization error:
< 1.4°

Tx XPD:
>25 dB within -1 dB contour

Rx XPD:
Not measured

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 26-27 March 2013.
2 The system has been validated with three different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.
3 Transmission cannot be authorized until the peaking process is completed.
4 The physical dimensions of Skyware Global 125 antennas are H1.23m x V1.37m.
5 Installation of HPA with a power >40 W is not authorized.
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 need to be notified to Eutelsat and may be subject to further tests.
8 The maximum tilt angle of the antenna when in operations is limited to angles <10°.

Characterization – Drive Away

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

Certificate:
CH-DOP-CCO-120-742

Antenna model:
C-COM iNetVu 1202

Diameter:
1.2 m
2-ports feed

Standard:
M

Characterization date:
08-02-2023

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 polarization. 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 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 CTS (Cobham technical Services) test range in Leatherhead, UK, on the 3 March 2012, on the model iNetVu 1201. This Characterization, for the model iNetVu 1202, is an extension of the iNetVu 1201 Characterization. Only the back structure has been changed.
3 The auto-deploy system iNetVu Antenna Controller 7715 has been already tested with the Ka-74G.
4 Installation of HPA with a power >40 W is not authorized.
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 characterized 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:
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 ≥ 2.5°
41.6 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.0°
40.6 dBW / 40 kHz for an orbital separation of the adjacent satellite ≥ 1.5°

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 next page for autopointing 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.

Characterization DA - Auto-pointing

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

Diameter:
1.5 m

Standard:
M

Characterisation date:
05-07-2012

Validity period:
See Remark 5

System Description:
Auto-pointing antenna system based on the Holkirk single piece 1.5 m Ku reflector. Front fed offset configuration with mode generator and rotary joint.
For drive away applications with HPA maximum permissible rating of 400 Watt.

Maximum Allowed EIRP:
45.1 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.5°
41.6 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.0°
40.6 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

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

Pointing error:
< 0.2°

Polarization error:
< 1.5°

Tx XPD:
$\geq$30 dB within -1 dB contour

Rx XPD:
Not measured

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 21-22 May 2013.

2 The system has been validated with three different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.

3 Transmission cannot be authorized until the peaking process is completed.

4 Installation of HPAs with a power up to 400 Watt is authorized.

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 need to be notified to Eutelsat and may be subject to further tests.

7 The maximum tilt angle of the antenna when in operations is limited to angles $\leq$10°.

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 next page.

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 ≤ 2.5° (**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 next page for auto-pointing configuration details.
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.

Characterization – Drive Away

Applicant:

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

Characterisation date:
01-06-2011
Validity period:
See Remark 6

System Description:
Auto-pointing system based on the ERA type approved EA-A017 one piece 1.2 m Ku diamond shape offset antenna with mode generator, vehicle mounted, working with ND SatCom antenna controller ACU 4100 or ACU 5020 series and either a ND SatCom SkyWAN modem or a commercial IRD Tandberg TT1260 or equivalent as pointing device.

Maximum Allowed EIRP:

35.2 dBW / 4 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:
10.95 - 12.75 GHz

Pointing error:
Azimuth and Elevation $\leq$ 0.1°
Polarisation $\leq$2.1°

Tx XPD:
>27 dB within -1 dB contour

Rx XPD:
>27 dB within -1 dB contour

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 23rd August 2010.
2 The system has been validated with two different Eutelsat satellites, both with an angle of the polarisation plane equal to 3.5°.
3 Transmission cannot be authorised until the peaking process is completed.
4 The dimensions of the Ku Diamond antennas are 1.5mx1.5m, the equivalent circular diameter is 1.2m
5 SkyRAY MAS/Compact 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 need to be notified to Eutelsat and may be subject to further tests.

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 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 next page.

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 page for auto-pointing configuration details.
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.

Characterization DA - Auto-pointing

Applicant:

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 MAS 1900

Diameter:
1.5 m
(See Remark 4)

Standard:
M

Characterisation date:
01-08-2011
Validity period:
See Remark 6

System Description:
Auto-pointing system based on the ERA type approved EA-A004 one piece 1.5 m Ku diamond shape offset antenna with mode generator, vehicle mounted, working with ND SatCom antenna controller ACU 5020 series and either a ND SatCom SkyWAN modem or a commercial IRD Tandberg Rx1290 or equivalent as pointing device.

Maximum Allowed EIRP:

35.7 dBW / 4 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:
10.95 - 12.75 GHz

Pointing error:
Azimuth and Elevation $\leq$ 0.16°
Polarisation $\leq$2.0°

G/T:
23.9 dB/K @12.661 GHz for 35° Elevation

Tx XPD:
>27.8 dB within -1 dB contour
>30.0 dB within the de-pointing angle

Rx XPD:
Not measured

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 30th June and 1st July 2011.
2 The system has been validated with three different Eutelsat satellites, with angles of the polarisation plane equal to either 0° or 3.5°.
3 Transmission cannot be authorized until the peaking process is completed.
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). The tests were performed on a configuration with two HPAs of 400 W mounted on the back frame of the antenna.
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 need to be notified to Eutelsat and may be subject to further tests.

Characterization – Drive Away

Applicant:
PALS ELEKTRONIK SAN VE TIC AS.
Dudullu OSB, 1. Cadde 18/1 34775 Umraniye
Istanbul / TURKEY
Tel: +90 216 540 72 57
Contact: Bertug Sucu - bertug@pals.com.tr

Antenna model:
PDA 150 Drive News

Diameter:
1.5 m x 1.35m

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 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 > 1.5°
44.9 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
In the 13.75 - 14.00 GHz band:
37.2 dBW / 40 kHz for an orbital separation from the adjacent satellite > 1.5°
42.4 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°

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 page for auto-pointing configuration details.
4 The PDA 150 Ku-band antenna is authorized to operate with 1+1 HPAs with a power up to 400 Watt.
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.
7 This Characterization was initially released for Hitachi Kokusai Electric Turkey. The transfer to Pals Elektronik is dated 21 September 2023. Pals Elektronik have confirmed that no additional change to the initial Characterization has been applied.

Characterization DA - Auto-pointing

Applicant:
PALS ELEKTRONIK SAN VE TIC AS.
Dudullu OSB, 1. Cadde 18/1 34775 Umraniye
Istanbul / TURKEY
Tel: +90 216 540 72 57
Contact: Bertug Sucu – bertug@pals.com.tr

Antenna model:
PDA 150 Drive News

Diameter:
1.5 m x 1.35m

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 with HPA maximum permissible rating as per remark 4. ACU model: PAC 450.

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 > 1.5°
44.9 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
In the 13.75 - 14.00 GHz band:
37.2 dBW / 40 kHz for an orbital separation from the adjacent satellite > 1.5°
42.4 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
< 0.4°

Polarization error:
< 2.0°

Tx XPD:
> 30 dB within -1 dB contour

Rx XPD:
> 29 dB within -1 dB contour

Remarks:

1 Auto-pointing tests were performed via satellite from Aflenz with the ERS of Aflenz on the 19-20 April 2017. RF performance tests were performed on three antenna unit at the at the CTS (Cobham Technical Services) test range in Leatherhead, UK, on the 24-27 November 2014.

2 The PDA 150 ACU auto-pointing system has been validated with three different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.

3 Transmission is not authorized until the peaking process is completed.

4 The PDA 150 is authorized 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 This Characterization was initially released for Hitachi Kokusai Electric Turkey Broadcasting Systems. The transfer to Pals Elektronik is dated 22 September 2023. Pals Elektronik have confirmed that no change was done since the initial Characterization.

Characterization – Drive Away

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 next page.

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 ≥ 2.0°
39.7 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

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 page for auto-pointing configuration details.
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.

Characterization DA - Auto-pointing

Applicant:

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Alfred-Nobel-Str. 5
55411 Bingen
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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:
Auto-pointing 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, working with ProSat antenna controller AKS200A series.

Maximum Allowed EIRP 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°
39.7 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
Azimuth and Elevation $\leq$ 0.2°
Polarisation $\leq$ 0.7°

G/T:
22.0 dB/K @10.95 GHz for 42° Elevation

Tx XPD:
>35 dB within -1 dB contour

Rx XPD:
Not measured

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 1-2 March 2012.
2 The system has been validated with four different Eutelsat satellites, with angles of the polarisation plane equal to either 0° or 3.5°.
3 Transmission cannot be authorized until the peaking process is completed.
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 need to be notified to Eutelsat and may be subject to further tests.

Applicant:

PROSAT SOLUTIONS GMBH
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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 next page.

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 ≥ 2.0°
44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

(autopointing antenna performance):

37.0 dBW / 4 KHz for an orbital separation of the adjacent satellite > 2.0°
44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

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 page for auto-pointing configuration details.
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.

Characterization DA - Auto-pointing

Applicant:

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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:
Auto-pointing 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, working with ProSat antenna controller AKS200A series.

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 for an orbital separation of the adjacent satellite $\geq$ 2.0°
44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
Azimuth and Elevation $\leq$ 0.2°
Polarisation $\leq$ 1.2°

G/T:
22.6 dB/K @10.95 GHz for 42° Elevation

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
Not measured

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 23-26 January 2012.
2 The system has been validated with three different Eutelsat satellites, with angles of the polarisation plane equal to 3.5°.
3 Transmission cannot be authorized until the peaking process is completed.
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 need to be notified to Eutelsat and may be subject to further tests.

Characterization – Drive Away

Applicant:

SATMISSION
Bultenvägen 5
952 61 Kalix,
SWEDEN

Tel : +46 923 137 10
Mob: +46 70 3206567
Website **:** www.satmission.com
Email : urban.gustavsson@satmission.com

Antenna model:
SMP 125 DA
Antenna aperture dimensions:
1.20 m H x 1.25 m V
Standard:
M
Characterization date:
29-06-2018
Validity period:
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 next page.

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 ≥ 1.5°
43.0 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
45.5 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°
In the 13.75 - 14.00 GHz band:
34.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
39.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
40.0 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°
43.0 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
44.0 dBi (average at 14.25 GHz)

Tx XPD:
≥ 30.0 dB within -1 dB contour

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
42.0 dBi (average at 11.70 GHz)

Rx XPD:
≥ 27 dB within -1 dB contour

G/T:
20.7dB/K typical @ 11.70 GHz at 20° El

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 page for auto-pointing configuration details.
4 The SMP 125 DA is authorized to operate with 1+1 HPAs with a power up to 400 W.
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 72 Km/h.

Characterization DA - Auto-pointing

Applicant:

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952 61 Kalix,
SWEDEN

Tel : +46 923 137 10
Mob: +46 70 3206567
Website : www.satmission.com
Email : urban.gustavsson@satmission.com

Antenna model:
SMP 125 DA
Antenna aperture dimensions:
1.20 m H x 1.25 m V
Standard:
M
Characterization date:
26-06-2018
Validity period:
See Remark 5
Last test data submitted on:
07-12-2017

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. ACU manufactured by RCI model RC4000. HPA model: Space Path.

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 ≥ 1.5°
42.2 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
45.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°
In the 13.75 - 14.00 GHz band:
34.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
39.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
40.0 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°
43.0 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
≤ 0.35°

Polarization error:
≤ 1.9°

Tx XPD:
≥ 30 dB within -1 dB contour

Rx XPD:
≥ 27 dB within -1 dB contour

Remarks:

1 Auto-pointing tests were performed via satellite from Kalix, Sweden with the ERS of Aflenz on the 6-7 December 2017. RF performance tests were performed on one antenna unit at the Politecnico di Torino Test Range on the 22-23 November 2017.
2 The SMP 125 DA ACU auto-pointing system has been validated with three different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.
3 Transmission is not authorized until the peaking process is completed.
4 The SMP 125 DA is authorized to operate with 1+1 HPAs with a power up to 400 W.
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 the characterised configuration need to be notified to Eutelsat and may be subject to further tests.
7 The test campaign was performed with the antenna using a built-in inclinometer; use of the 3-axis compass is not recommended.

Characterization – Drive Away

Applicant:

SATMISSION
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SWEDEN

Tel : +46 923 137 10
Mob: +46 70 3206567
Website : www.satmission.com
Email : urban.gustavsson@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
Validity period:
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 characterisation of the antenna system with an auto-pointing configuration is available in the next page.

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 ≥ 1.5°
36.1 dBW /4 kHz (equivalent to 46.1 dBW/40 KHz) for an orbital separation from the adjacent satellite > 2.0°
In the 13.75 - 14.00 GHz band:
37.5 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
44.7 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
45.1 dBi (average at 14.25 GHz)

Tx XPD:
≥ 30.0 dB within -1 dB contour

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
43.3 dBi (average at 11.70 GHz)

Rx XPD:
≥ 29.0 dB within -1 dB contour

G/T:
22.6 dB/K typ @ 11.70 GHz at 20° El

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 page for auto-pointing configuration details.
4 The SMP 155 DA is authorized to operate with 1+1 HPAs with a power up to 400 W.
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 72 Km/h.

Characterization DA - Auto-pointing

Applicant:

SATMISSION
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952 61 Kalix,
SWEDEN

Tel : +46 923 137 10
Mob: +46 70 3206567
Website : www.satmission.com
Email : urban.gustavsson@satmission.com

Antenna model:
SMP 155 DA
Antenna aperture dimensions:
1.54 m H x 1.39 m V
Standard:
M
Characterization date:
26-06-2018
Validity period:
See Remark 5
Last test data submitted on:
12-10-2017

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. ACU manufactured by RCI model RC4000.
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°
36.1 dBW /4 kHz (equivalent to 46.1 dBW/40 KHz) for an orbital separation from the adjacent satellite > 2.0°
In the 13.75 - 14.00 GHz band:
37.5 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 1.5°
44.7 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
$\leq$ 0.3°

Polarization error:
$\leq$ 0.75°

Tx XPD:
$\geq$ 30 dB within -1 dB contour

Rx XPD:
$\geq$ 29 dB within -1 dB contour

Remarks:

1 Auto-pointing tests were performed via satellite from Kalix with the ERS of Aflenz on the 9-10 May 2017 and the 12 October 2017. RF performance tests were performed on one antenna unit at the Thales Alenia Space test range of Cannes, France on the 10 March 2017.
2 The SMP 155 DA ACU auto-pointing system has been validated with four different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.
3 Transmission is not authorized until the peaking process is completed.
4 The SMP 155 DA is authorized to operate with 1+1 HPAs with a power up to 400 W.
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 the characterised configuration need to be notified to Eutelsat and may be subject to further tests.
7 The test campaign was performed with the antenna using a built-in inclinometer; use of the 3-axis compass is not recommended.

Applicant:

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Mob: +46 70 3206567
Website : www.satmission.com
Email : urban.gustavsson@satmission.com

Antenna model:
SMV 125 DA
Antenna aperture dimensions:
1.20 m H x 1.25 m V
Standard:
M
Characterization date:
29-06-2018
Validity period:
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 ≥ 1.5°
39.3 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
33.6 dBW / 4 kHz (equivalent to 43.6 dBW/40 KHz) for an orbital separation from the adjacent satellite > 2.5°
In the 13.75 - 14.00 GHz band:
34.5 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
37.5 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
41.5 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°
41.7 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
42.3 dBi (average at 14.25 GHz)

Tx XPD:
≥ 25 dB within -1 dB contour

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
41.1 dBi (average at 11.70 GHz)

Rx XPD:
≥ 24 dB within -1 dB contour

G/T:
20.7dB/K typ @ 11.70 GHz at 20° El

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 Summary's validity is subject to regular submission of patterns to confirm that the system remains compliant with measured performance at the inspection date.
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.

Characterization – Drive Away

Applicant:

SVS SATELLITE SYSTEMS
Esenkent Mahallesi Baraj Yolu Caddesi
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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 in the next page.

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

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 page for auto-pointing configuration details.
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.

Characterization DA - Auto-pointing

Applicant:

SVS SATELLITE SYSTEMS
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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:
Auto-pointing 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, working with SVS antenna controller AKS200A series.

Maximum Allowed EIRP 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°
39.7 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
Azimuth and Elevation $\leq$ 0.2°
Polarisation $\leq$ 0.7°

G/T:
22.0 dB/K @10.95 GHz for 42° Elevation

Tx XPD:
>35 dB within -1 dB contour

Rx XPD:
Not measured

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 1-2 March 2012.
2 The system has been validated with four different Eutelsat satellites, with angles of the polarisation plane equal to either 0° or 3.5°.
3 Transmission cannot be authorized until the peaking process is completed.
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 need to be notified to Eutelsat and may be subject to further tests.

Applicant:

SVS SATELLITE SYSTEMS
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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 in the next page.

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 ≥ 2.0°
44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

(autopointing antenna performance):

37.0 dBW / 4 kHz for an orbital separation of the adjacent satellite ≥ 2.0°
44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

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 page for auto-pointing configuration details.
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.

Characterization DA - Auto-pointing

Applicant:

SVS SATELLITE SYSTEMS
Esenkent Mahallesi Baraj Yolu Caddesi
Emirgan Sokak No:3
34776 Umraniye/ISTANBUL
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:
Auto-pointing 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, working with SVS antenna controller AKS200A series.

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 for an orbital separation of the adjacent satellite $\geq$ 2.0°
44.9 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
Azimuth and Elevation $\leq$ 0.2°
Polarisation $\leq$ 1.2°

G/T:
22.6 dB/K @10.95 GHz for 42° Elevation

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
Not measured

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 23-26 January 2012.
2 The system has been validated with three different Eutelsat satellites, with angles of the polarisation plane equal to 3.5°.
3 Transmission cannot be authorized until the peaking process is completed.
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 need to be notified to Eutelsat and may be subject to further tests.

Characterization – Drive Away

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 in the next page.

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 ≥ 1.5°
39.8 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
43.4 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.5°
In the 13.75 - 14.00 GHz band:
34.2 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
37.7 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
41.0 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.5°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
41.4 dBi (average at 14.25 GHz)

Tx XPD:
≥ 25 dB within -1 dB contour
≥ 30.1 dB within +/- 0.1° de-pointing angle with auto-pointing option

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
39.6 dBi (average at 11.70 GHz)

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° El

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 page for auto-pointing configuration details.
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.

Characterization DA - Auto-pointing

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.

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°
39.8 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
43.4 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.5°
In the 13.75 - 14.00 GHz band:
34.2 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 1.5°
37.7 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
41.0 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.5°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
$\leq$ 0.1°

Polarization error:
< 1.2°

Tx XPD:
$\geq$ 30.1 dB within +/- 0.1° de-pointing angle

Rx XPD:
$\geq$ 23.6 dB within -1 dB contour
$\geq$ 29.5 dB within +/- 0.1° de-pointing angle with auto-pointing option

Remarks:

1 Auto-pointing tests were performed via satellite from Lyngby with the ERS of Aflenz on the 25-27 January 2017. RF performance tests were performed on one antenna unit at the Thales Alenia Space test range of Cannes, France on the 20 February 2017.
2 The EXPLORER ACU auto-pointing system has been validated with three different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.
3 Transmission is not authorized until the peaking process is completed.
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 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 need to be notified to Eutelsat and may be subject to further tests.

Characterization – Drive Away

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 page.

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 ≥ 1.5°
34.6 dBW / 4 kHz (equivalent to 44.6 dBW/40 KHz) for an orbital separation from the adjacent satellite > 2.0°

In the 13.75-14.00 GHz band:
36.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
42.4 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
42.9 dBi (average at 14.25 GHz)

Tx XPD:
≥ 26 dB within -1 dB contour
≥ 32.6 dB within +/- 0.1° de-pointing angle with auto-pointing option

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
41.2 dBi (average at 11.70 GHz)

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° El

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 page for auto-pointing configuration details.
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.

Characterization DA - Auto-pointing

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.

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 ≥ 1.5°
34.6 dBW / 4 kHz (equivalent to 44.6 dBW/40 KHz) for an orbital separation from the adjacent satellite > 2.0°
In the 13.75-14.00 GHz band:
36.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
42.4 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
≤ 0.1°

Polarization error:
< 1.0°

Tx XPD:
≥ 32.6 dB within +/- 0.1° de-pointing angle

Rx XPD:
≥ 26.9 dB within -1 dB contour
≥ 37.9 dB within +/- 0.1° de-pointing angle with auto-pointing option

Remarks:

1 Auto-pointing tests were performed via satellite from Lyngby with the ERS of Aflenz on the 25-27 January 2017. RF performance tests were performed on one antenna unit at the Thales Alenia Space test range of Cannes, France on the 21 February 2017.
2 The EXPLORER ACU system has been validated with three different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.
3 Transmission is not authorized until the peaking process is completed.
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 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 need to be notified to Eutelsat and may be subject to further tests.

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 ≥ 2.5°
42.4 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.0°
37.0 dBW / 40 kHz for an orbital separation of the adjacent satellite ≥ 1.5°

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain:
41.9 dBi (typical at 14.25 GHz)

Tx XPD:
≥26.2 dB within -1 dB contour

Rx Frequency:
10.7-12.75 GHz

Rx Gain:
39.9 dBi (typical at 11.7 GHz)

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 tonext page for autopointing 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:

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

Diameter:
1 m

Standard:
M

Characterisation date:
18-02-2014

Validity period:
See Remark 5

System Description:
Auto-pointing antenna system based on the AVL 1080KVH model, single piece 1.0 m reflector and TracStar controller. Front fed offset configuration.
For drive away applications with HPA maximum permissible rating of 40 W.

Maximum Allowed EIRP:
43.9 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.5°
42.4 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.0°
37.0 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:
13.75-14.50 GHz

Rx Frequency:
10.70-12.75 GHz

Pointing error:
≤ 0.4°

Polarisation error:
< 1.2°

Tx XPD:
≥25 dB within -1 dB contour

Rx XPD:
Not measured

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 18-19 November 2013.
2 The system has been validated with three different Eutelsat satellites, with angles of the polarisation plane equal to 3.5°. Satellite reference mode has been tested.
3 Transmission is not authorised until the peaking process is completed.
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 need to be notified to Eutelsat and may be subject to further tests.
7 The maximum tilt angle of the antenna when in operations is limited to angles <10°. To ensure successful operations in tilt conditions, a tilt calibration procedure has to be performed in factory for each unit manufactured.

Characterization – Fly/Drive

Applicant:

VISLINK Communications Ltd
27 Maylands Avenue
Hemel Hempstead
Hertfordshire, HP2 7DE
United Kingdom
Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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 in the next page.

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 page for auto-pointing configuration details.

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.

Characterization FDA - Auto-pointing

Applicant:

VISLINK Communications Ltd
27 Maylands Avenue
Hemel Hempstead
Hertfordshire, HP2 7DE
United Kingdom
Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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:
Auto-pointing system based on the Advent four segments 1.2 m Ku antenna with mode generator, for Fly away and Drive Away applications, working with Advent antenna controller ACU 5000 series and Advent Lynx 5100 Video Exciter/IRD.

Maximum Allowed EIRP:

45 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

Pointing error:
Azimuth and Elevation $\leq$ 0.3°
Polarisation $\leq$1.1°

G/T:
17.7 dB/K @11.121 GHz for 30° Elevation

Tx XPD:
>33.8 dB at boresight
>32.0 dB within -1 dB contour

Rx XPD:
>23.4 dB within -1 dB contour

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 22 and 23 August 2011.

2 The system has been validated with three different Eutelsat satellites, with angles of the polarisation plane equal to 3.5°.

3 Transmission cannot be authorized until the peaking process is completed.

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 need to be notified to Eutelsat and may be subject to further tests.

Characterization – Fly/Drive

Applicant:

VISLINK Communications Ltd
27 Maylands Avenue
Hemel Hempstead
Hertfordshire, HP2 7DE
United Kingdom

Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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

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 ≥ 2.0°
44.5 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

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.

Characterization – Drive Away

Applicant:

VISLINK Communications Ltd
27 Maylands Avenue
Hemel Hempstead
Hertfordshire, HP2 7DE
United Kingdom

Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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

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 ≥ 1.5°

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.

CHARACTERIZED ANTENNAS

Fixed

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

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 ≥ 1.5°

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.

CHARACTERIZED ANTENNAS

Fly Away

Characterization – Fly Away

Applicant:

AvL Technologies, Inc.
15 North Merrimon Avenue
Ashville, NC 28804
USA

Web site: https://www.avltech.com
Contact point: Ryan Cox
Voice: +1 828 210 3543
Email: rcox@avltech.com

Certificate:
CH-FLY-AVL-155-719
Antenna model:
AVL 1515 Ku
Diameter:
1.55 m
Standard:
M
Characterization Date:
13/01/2023
Last test data submitted on:
11/11/2022

System Description:
Fly-away antenna, with manual pointing system, equipped with a BUC of maximum 55 W. Circular reflector of 1.55 m, made of four pieces from carbon fiber material. Offset front fed configuration. Single optic feed, linear polarized, with one Tx and one RX ports.

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

Orbital Satellite Separation	13.75 – 14.00 [GHz]	14.00 - 14.50 [GHz]
≥ 1.5°	41 [dBW/40 KHz]	40.9 [dBW/40 KHz]
≥ 2°	45.4 [dBW/40 KHz]	45.6 [dBW/40 KHz]
≥ 2.5°	45.4 [dBW/40 KHz]	45.5 [dBW/40 KHz]
≥ 3°	45.4 [dBW/40 KHz]	47.2 [dBW/40 KHz]

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
45.5 dBi (worst case at 14.00 GHz)

Tx XPD:
≥ 29.6 dB within -1 dB contour (worst case at 13.75 GHz V-Pol)

Pointing and wind load error:
< 0.2°

Rx Frequency:
11.20 – 12.75 GHz

Rx Gain:
44.1 dBi (worst case at 11.80 GHz)

Rx XPD:
≥ 38.5 dB at boresight and at 12.50 GHz in H-Pol

G/T:
23.5 dB/K measured at 11.85 GHz, NF of the LNB amounts to 0.69 dB

Restrictions and remarks:

1) The access is assumed to be in TDMA mode on digital carriers of maximum 10 MSym/s
2) 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).
3) This Characterization has been performed at the test range of Catapult (Oxford, UK) in November 2022.
4) The Characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard.

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 ≥ 1.5°
45.7 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
In the 13.75-14.00 GHz band:
36.6 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
43.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain:
43.7 dBi (typical at 14.25 GHz)

Tx XPD:
>31.3 dB within -1 dB contour

Rx Frequency:
10.7-12.75 GHz

Rx Gain:
42.0 dBi (typical at 11.7 GHz)

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.

Characterization – Fly Away

Applicant:

DataPath International AB
Vågögatan 6 P.O. Box 1261
164 29 Kista,
SWEDEN

Tel : +46 8 728 5000
Mob: +46 703 555 424
Website : www.datapath.com
Email : mikael.borin@datapath.com

Antenna model:
CCT200 Fly-Away
Antenna aperture dimensions:
2.0 m H x 1.6 m V
Standard:
M
Characterization date:
24-06-2019
Validity period:
see Remark 5
Last test data submitted on:
24-05-2019

System Description:
Antenna system for Fly-Away applications. Offset Gregorian configuration. Six segment carbon fibre reflector, with two port linear polarization feed, manufactured by DataPath 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:
41.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
46.8 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
46.9 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°
In the 13.75 - 14.00 GHz band:
39.1 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
44.4 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
45.5 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
46.0 dBi (average at 14.25 GHz)

Tx XPD:
>30 dB within -1 dB contour

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
44.4 dBi (average at 11.70 GHz)

Rx XPD:
>30 dB within -1 dB contour

G/T:
23.6 dB/K typ @ 11.85 GHz at 20° El

Restrictions and remarks:

1 The authorization to operate the terminal is conditioned to the approval to access the Eutelsat S.A. Space Segment (ref. https://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf, ESOG 110).
2 RF performance tests were performed on one antenna unit at the Catapult test range in Harwell, UK the 22-23 May 2018.
3 Please refer to the following page for auto-pointing configuration details.
4 The CCT200 is authorized to operate with 1 HPA with a power up to 50 W (feed-boom mounted) or 400 W (located on the ground).
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 72 Km/h when operated with the wind stakes set into place.

Characterization FA - Auto-pointing

Applicant:
DataPath International AB
Vågögatan 6 P.O. Box 1261
164 29 Kista,
SWEDEN

Tel : +46 8 728 5000
Mob: +46 703 555 424
Website **:** www.datapath.com
Email : mikael.borin@datapath.com

Antenna model:
CCT200 Fly-Away
Antenna aperture dimensions:
2.0 m H x 1.6 m V
Standard:
M
Characterization date:
24-06-2019
Validity period:
see Remark 4
Last test data submitted on:
14-01-2021

System Description:
Antenna system for Fly-Away applications. Offset Gregorian configuration. Six segment carbon fibre reflector, with two port linear polarization feed, manufactured by DataPath with HPA maximum permissible rating as per remark 5.

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:
41.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
46.8 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
46.9 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°
In the 13.75 - 14.00 GHz band:
39.1 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
44.4 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
45.5 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 -12.75 GHz

Pointing error:
≤ 0.1°

Max Polarization error:
≤ 1.5°

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>30 dB within -1 dB contour

G/T:
23.6 dB/K typ @ 11.85 GHz at 20° El

Remarks:

1 Auto-pointing tests were performed via satellite from Kista, Sweden with the ERS of Aflenz on the 22-24 May 2019. RF performance tests were performed on one antenna unit at the Catapult in Harwell, UK on the 22-23 May 2018.

2 The DataPath CCT 200 ACU auto-pointing system has been validated with three different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.

3 Transmission is not authorized until the peaking process is completed.

4 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, and any ACU update should be described by the release note.

5 The DataPath CCT200 is authorized to operate with HPAs with a power up to 400 W.

6 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.

7 Any change to the characterised configuration need to be notified to Eutelsat and may be subject to further tests.

Characterization – Fly Away

Applicant:

EVERSAT
Orsay Parc - 86, rue de Paris - Bat. Erable
91400 Orsay - FRANCE
Tel: +33 (0) 177 932 140
Fax: +33 (0) 169 289 356
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 ≥ 3.0°
33.8 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.5°
33.8 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.0°
32.0 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:
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.

Characterization – Fly Away

Applicant:

Holkirk Communication Ltd
19 Kennith Way, Wilstead Industrial Park,
Bedfordshire, UK, M45 3PD

Tel: +44 (0) 1525 721118
Fax: +44 (0) 1525 719734

Contact: Bob Holcombe
mailto: bob@holkirk.com

Certificate:
CH-FLY-HOL-120-595

Antenna model:
TP120 Fly Away antenna

Diameter:
120 cm

Standard:
M

Characterization Date:
05-01-2022

Last test data submitted on:
08-11-2021

System Description:
The TP120 by Holkirk is a 120cm Ku band Fly Away antenna, with offset front fed optic (f/D = 0.78). The feed polarization is linear (2 ports). The carbon fibre reflector is segmented (6 pieces). The antenna can be motorized for auto-pointing with a ACU (AIM) or use manual pointing.

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

Frequency bands	13.75 – 14.00 GHz	14.00- 14.50 GHz
≥ 1.5°	36.3 [dBW/40KHz]	38.9 [dBW/40KHz]
≥ 2.0°	41.0 [dBW/40KHz]	42.6 [dBW/40KHz]
≥ 2.5°	41.1 [dBW/40KHz]	43.3 [dBW/40KHz]

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain (at BUC flange):
43.5 dBi (typical at 14.25 GHz)

Tx XPD:
≥ 30 dB within -1 dB contour (worst case)

Rx Frequency:
10.70 - 12.75 GHz

Rx Gain:
41.33 dBi (typical at 11.70 GHz)

Rx XPD:
≥ 22.9 dB within -1 dB contour (worst case)

G/T:
21.0 dB/K theoretical assuming LNB NF=0.9 dB at 11.70 GHz and 30° 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 The measurements for Characterization have been done at the at the test range of Catapult, Didcot, Oxfordshire, UK, on 2nd November 2021 on one sample.

3 The efficiency of the dish is 70 %, estimated at 14.25 GHz.

4 The mounting structure should be stabilized applying ballasts or anchors.

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.

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 ≥ 1.5°
32.9 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
34.7 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°
38.2 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

In the 13.75-14.00 GHz band:
30.2 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
32.1 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°
36.7 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain:
36.5 dBi (typical at 14.25 GHz)

Tx XPD:
34.2 dB within -1 dB contour

Rx Frequency:
10.7-12.75 GHz

Rx Gain:
34.9 dBi (typical at 11.7 GHz)

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°.

Characterization – Fly Away

Applicant:
ReQuTech AB
Universitetsvägen 14
Linköping Science park
SE 58330, Linköping
SWEDEN

Tel : +46722303380

Website **:** www.requtech.se
Email : omid.sotoudeh@requtech.se

Antenna model:
PICO75

Diameter:
0.75 m

Standard:
M

Characterization date:
23-01-2020

Validity period:
see remark 4

Last test data submitted on:
14-01-2021

System Description:
Antenna system based on 5 piece carbon fibre reflector, front fed offset 0.75 m Ku antenna, with two port linear polarization feed, manufactured by ReQuTech, for fly-away applications with HPA maximum permissible rating as per remark 3.

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:
31.9 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
33.7 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°
38.6 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

In the 13.75 - 14.00 GHz band:
29.9 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
32.0 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°
38.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
37.9 dBi (average at 14.25 GHz)

Tx XPD:
≥ 28.2 dB within -1 dB contour

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
38.1 dBi (average at 11.70 GHz)

Rx XPD:
≥ 27.7 dB within -1 dB contour

G/T:
19.0 dB/K typ. @ 11.45 GHz at 30° El

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 13 December 2019.

3 Installation of HPAs with a power >50 W is not authorized.

4 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.

5 The transmission in the band 13.75-14.00 GHz for antennas with a diameter < 1.2 m is subject to the ITU radio regulations in force.

Characterization – Fly Away

Applicant:
ReQuTech AB
Universitetsvägen 14
Linköping Science park
SE-58330, Linköping
SWEDEN

Tel : +46722303380

Website **:** www.requtech.se
Email : omid.sotoudeh@requtech.se

Antenna model:
PICO120

Diameter:
1.2 m

Standard:
M

Characterization date:
23-01-2020

Validity period:
See remark 4

Last test data submitted on:
17-03-2022 (wind load)

System Description:
Antenna system based on 5 piece carbon fibre reflector, front fed offset 1.2 m Ku antenna, with two port linear polarization feed, manufactured by ReQuTech, for fly-away applications with HPA maximum permissible rating as per remark 3.

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:

35.7 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
40.0 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
43.2 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°
43.7 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 3.0°

In the 13.75 - 14.00 GHz band:
34.1 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
38.2 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
41.9 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
41.7 dBi (average at 14.25 GHz)

Tx XPD:
≥ 27.5 dB within -1 dB contour

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
41.8 dBi (average at 11.70 GHz)

Rx XPD:
≥ 27.2 dB within -1 dB contour

G/T:
22.8 dB/K typ. @ 11.45 GHz at 30° El

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 12 December 2019.

3 Installation of HPAs with a power >50 W is not authorized.

4 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.

5 In order to anchor and stabilize the mount against the wind, please refer to the user manual for choosing the recommended belts.

Characterization – Fly Away

Applicant:

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

Tel : +45 39 55 88 00

Website : www.cobham.com
Email : info@cobham.com

Antenna model:
EXPLORER 6100

Diameter:
1.0 m

Standard:
M

Characterization date:
07-10-2019

Validity period:
See remark 6

Last test data submitted on:
05-09-2019

System Description:
Antenna system based on 7 piece carbon fibre reflector, Axisymmetric 1.0 m Ku antenna, with one Tx and two Rx ports linear polarization feed, manufactured by Thrane & Thrane A/S trading as Cobham Satcom, for fly-away applications with HPA maximum permissible rating as per remark 3.
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:
35.2 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
38.3 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
40.7 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°

In the 13.75 - 14.00 GHz band:
33.5 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
36.8 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
39.2 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.5°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
41.6 dBi (average at 14.25 GHz)

Tx XPD:
≥ 30.2 dB within -1 dB contour

Rx Frequency:
10.70 -12.75 GHz

Rx Gain:
39.9 dBi (average at 11.70 GHz)

Rx XPD:
≥ 34.1 dB within -1 dB contour

G/T:
19.5 dB/K typ. @ 11.70 GHz at 30° El

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 3-5 September 2019.

3 The EXPLORER 6100 comes in three standard configurations: without BUC, 8W and 20W BUC. Installation of HPAs with a power >50 W is not authorized.

4 Please refer to the following page for auto-pointing configuration details.

5 The worst sidelobe excess in the near region receive side is 6 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 levels.

6 This temporary Characterization is granted until the 31 December 2020 to allow Cobham to implement an EIRP monitoring system.

7 The transmission in the band 13.75-14.00 GHz for antennas with a diameter < 1.2 m is subject to the ITU radio regulations in force.

8 Wind load tests showed that the antenna can withstand wind speeds up to 43.2 Km/h only.

Characterization FA - Auto-pointing

Applicant:

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

Tel : +45 39 55 88 00

Website **:** www.cobham.com
Email : info@cobham.com

Antenna model:
EXPLORER 6100
Diameter:
1.0 m
Standard:
M
Characterization date:
23-01-2020
Validity period:
See remark 5
Last test data submitted on:
09-12-2019

System Description:
Antenna system based on 7 piece carbon fibre reflector, Axisymmetric 1.0 m Ku antenna, with one Tx and two Rx ports linear polarization feed, manufactured by Thrane & Thrane A/S trading as Cobham Satcom, for fly-away applications 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:
35.2 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 1.5°
38.3 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.0°
40.7 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.5°

In the 13.75 - 14.00 GHz band:
33.5 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 1.5°
36.8 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.0°
39.2 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.5°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Pointing error:
$\leq$ 0.1°

Polarization error:
$\leq$ 3.5°

Tx XPD:
$\geq$ 25.0 dB within -1 dB contour

Rx XPD:
$\geq$ 34.1 dB within -1 dB contour

Remarks:

1 Auto-pointing tests were performed via satellite from Lyngby with the ERS of Aflenz on the 09 December 2019. RF performance tests were performed on one antenna unit at the Politecnico di Torino test range on the 3-5 September 2019.
2 The EXPLORER ACU system has been validated with three different Eutelsat satellites, with angles of the polarization plane equal to 3.5°.
3 Transmission is not authorized until the peaking process is completed.
4 The EXPLORER 6100 comes in three standard configurations: without BUC, 8 and 20W BUC. Installation of HPAs with a power >50 W is not authorized.
5 The Characterisation's validity is granted as far as the static system, and 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 need to be notified to Eutelsat and may be subject to further tests.
7 The transmission in the band 13.75-14.00 GHz for antennas with a diameter < 1.2 m is subject to the ITU radio regulations in force.

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
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:
2.4SFK-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.

Characterization – Fly/Drive

Applicant:

VISLINK Communications Ltd
27 Maylands Avenue
Hemel Hempstead
Hertfordshire, HP2 7DE
United Kingdom
Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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 in the next page.

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 page for auto-pointing configuration details.

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.

Characterization FDA - Auto-pointing

Applicant:

VISLINK Communications Ltd
27 Maylands Avenue
Hemel Hempstead
Hertfordshire, HP2 7DE
United Kingdom
Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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:
Auto-pointing system based on the Advent four segments 1.2 m Ku antenna with mode generator, for Fly away and Drive Away applications, working with Advent antenna controller ACU 5000 series and Advent Lynx 5100 Video Exciter/IRD.

Maximum Allowed EIRP:

45 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

Pointing error:
Azimuth and Elevation $\leq$ 0.3°
Polarisation $\leq$1.1°

G/T:
17.7 dB/K @11.121 GHz for 30° Elevation

Tx XPD:
>33.8 dB at boresight
>32.0 dB within -1 dB contour

Rx XPD:
>23.4 dB within -1 dB contour

Remarks:

1 Tests have been performed via satellite with the ERS of Aflenz on the 22 and 23 August 2011.

2 The system has been validated with three different Eutelsat satellites, with angles of the polarisation plane equal to 3.5°.

3 Transmission cannot be authorized until the peaking process is completed.

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 need to be notified to Eutelsat and may be subject to further tests.

Characterization – Fly/Drive

Applicant:

VISLINK Communications Ltd
27 Maylands Avenue
Hemel Hempstead
Hertfordshire, HP2 7DE
United Kingdom

Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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

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 ≥ 2.0°
44.5 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

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.

Characterization – Fly Away

Applicant:

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Hemel Hempstead
Hertfordshire, HP2 7DE
United Kingdom
Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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

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 ≥ 2.5°
40.0 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 2.0°
36.6 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.0°

Tx Frequency:
5.85 - 6.425 GHz

Tx Gain:
41.3 dBi (average at 6.15 GHz)

Tx XPD:
≥26.2 dB on axis

Rx Frequency:
3.60 - 4.20 GHz

Rx Gain:
36.7 dBi (average at 3.90 GHz)

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° 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 +/-17°.
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.

Characterization – Fly Away

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Hertfordshire, HP2 7DE
United Kingdom
Tel :+ 44 (0) 1442 431 300
Fax :+44 (0) 1442 431 301

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 ≥ 1.5° (13.75-14.50 GHz)
44.1 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.0° (14.00-14.50 GHz)
43.4 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.0° (13.75-14.00 GHz)

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain:
48.5 dBi (average at 14.25 GHz)

Tx XPD:
≥31.7 dB within -1 dB contour

Rx Frequency:
10.70 – 12.75 GHz

Rx Gain:
47.0 dBi (average at 11.70 GHz)

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: +/-28°; 90°+/-28°;180°+/-28°; 270°+/-28°. 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.

CHARACTERIZED ANTENNAS

Maritime

Manufacturer:
C2SAT communications AB
Dalvägen 16, 3rd floor
SE-169 56 SOLNA
SWEDEN

Tel: + 46 (0) 8 705 95 00
Fax:+ 46 (0) 8 705 95 81
mailto:jan.otterling@c2sat.se
http://www.C2SAT.com

Antenna model:
1.2m Ku II
Antenna aperture dimensions:
1.2 m
Standard:
M
Characterization date:
09-01-2012
Revision 1 date:
30-07-2012

System Description:
Stabilized maritime carbon fiber antenna – prime focus configuration – sandwich composite radome. Four axis stabilization platform with conical RF tracking.
BUC: Codan 6908 EX 8W rating
LNB: SMW Q-PLL type C or B.

Models Characterized:
Standard configuration: dual linear orthogonal polarization

Maximum Allowed EIRP:

For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
41.3 dBW / 40 kHz for an orbital separation of the adjacent satellite ≥ 2.5°
40.2 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.0°
36.6 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
42.2 dBi (typical at 14.25 GHz)

Tx XPD:
>30.5 dB within -1 dB contour

Rx Frequency:
10.7-12.75 GHz

Rx Gain:
40.5 dBi (typical at 11.7 GHz)

Rx XPD:
>28.2 dB within -1 dB contour

G/T (measured with radome)
19.4 dB/K @ 20 ° elevation

Remarks:
1-The characterization uniquely refers to the RF electrical performance.

2-The validation of the performance of the tracking system and operations of the antenna when installed on a vessel is out of the scope of this summary. More information about this can be found on the manufacturer web site http://www.C2SAT.com

3-The RF performance characterization was performed on two antenna units with radome, at the Combitech test range of Arboga, Sweden, on the 8 and 15 June 2011.

4-C2SAT will insert in the ITSA (Integrated Tactical and Sensor Assembly) a look-up table with the polarization skew of the Eutelsat satellites, to protect against the mishandling of polarization skew values by installers.

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.

Restriction:
The isolation at 1.5° of the level of the Rx sidelobes from the level of the boresight is 7.8 dB (worst case at 10.7 GHz, 6.9 dB excess to the EESS Gain mask). The service quality in conjunction with operations in certain Rx bands and/or reduced orbital separations from the adjacent satellites may be impaired. Nevertheless, these operations may be exceptionally authorized according to a valid Eutelsat transmission plan.

Characterization – Maritime

Applicant:

EPAK GmbH
Spinnereistr. 7, 04179 Leipzig,
GERMANY

Tel: +49-341-2120260
Fax:+49-341-2120266

Web site: https://www.epak.de
Contact: Felix Kriehmigen
Mailto: fkriehmigen@epak.de

Certificate:
CH-MAR-EPK-090-676
Antenna model:
0.9m DSi9-Ku Pro
Diameter:
90 cm
Standard:
M
Characterization Date:
31-07-2023
Last test data submitted on:
05/07/2023

System Description:
The 0.9m DSi9-Ku Pro (product number 13284) by EPAK is a 90cm Ku band maritime antenna, 2 ports linear feed, with ring focus optic. The antenna is motorized (4 axis tracking) and the polarization tracking is done by rotating the full feed subsystem with reference to the main reflector.

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

Frequency bands	13.75 – 14.00 GHz	14.00- 14.50 GHz
≥ 1.5°	33.3 [dBW/40KHz]	35.3 [dBW/40KHz]
≥ 2.0°	35.3 [dBW/40KHz]	37.3 [dBW/40KHz]
≥ 2.5°	37.0 [dBW/40KHz]	39.5 [dBW/40KHz]

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain (at BUC flange):
39 dBi (typical at 14.25 GHz)

Tx XPD:
≥ 31.9 dB within -1 dB contour (worst case)

Rx Frequency:
10.70 – 12.75 GHz

Rx Gain:
37.5 dBi (typical at 11.70 GHz)

Rx XPD:
≥ 34.2 dB within -1 dB contour (worst case)

G/T:
17.0 dB/K theoretical assuming LNB NF=0.8 dB.

Restrictions and remarks:

1) The authorization to operate the terminal is conditioned to the approval to access the Eutelsat t S.A. Space Segment (ref.http://www.eutelsat.com/files/contributed/satellites/pdf/esog110.pdf, ESOG 110) with valid transmission plan.
2) The measurements for Characterization were done at the at the test range of Catapult, Didcot, Oxfordshire, UK, on 29th November 2022 on one sample. Tests were done with the radome on. These measurements were completed with integration and mobility tests and reported on 5 July 2023.
3) The antenna pointing system is compliant with EESS 502 specification for acceleration up to 140°/s^2 as per manufacturer specifications, and for ACU software version releases later than 12/05/2023.
4) This antenna system is compatible with the Eutelsat managed service “Advance Ku”.
5) The efficiency of the dish is 46 %, estimated at 14.25 GHz. Furthermore, the antenna gain is strongly penalized around 14.05 GHz and 14.45 GHz.
6) 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.
7) The transmission in the band 13.75-14.00 GHz for antennas with a diameter < 1.2 m is subject to the ITU radio regulations in force.

Manufacturer:

Intellian Technologies, Inc.
7th Floor, Dongik Building,
98 Nonhyun-Dong Gangnam-Gu,
Seoul, 135-010
Korea

Tel: +82-2-511-2244
Fax:+82-2-511-2235
mailto: wendy@intelliantech.com

Antenna model:
V60

Diameter:
60 cm

Standard:
Nomenclature M-x

Characterisation date:
06-04-10

System Description:
Stabilised maritime antenna – splash feed cassegrain – composite foam radome. Three axis stabilization platform with conical scanning tracking.
BUC NJRC or Codan 4-6-8 W with integrated LNB.

Models Available:
Standard configuration: 13.75-14.50 GHz linear orthogonal polarization.

Maximum Allowed EIRP:

31.5 dBW / 40 kHz for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502, Issue 12 - Rev.1, § 6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
38.1 dBi (typical at 14.25 GHz)

Rx Gain:
35.8 dBi (typical at 12.50 GHz)

Tx XPD:
>26 dB within -1 dB contour

Rx XPD:
>28 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance.
The validation of the performance of the tracking system and the operations of the antenna when installed on a vessel is out of the scope of this summary. More information about this can be found on the manufacturer web site: http://www.intelliantech.com
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc.) and BPSK modulation for the ship-to-shore carrier.
3
The characterization was performed on one antenna unit with radome, at the LACE test range of Politecnico di Torino, Italy, on the 15th March 2010.

Manufacturer:

Intellian Technologies, Inc.
7th Floor, Dongik Building,
98 Nonhyun-Dong Gangnam-Gu,
Seoul, 135-010
Korea

Tel: +82-2-511-2244
Fax:+82-2-511-2235
mailto: wendy@intelliantech.com

Antenna model:
V80G

Diameter:
83 cm

Standard:
Nomenclature M-x

Characterization date:
16-12-2011

System Description:
Stabilised maritime antenna – ring focus ADE with shaped reflector – honeycomb radome. Three axis stabilization platform with conical scanning tracking.
BUC NJRC 8W NJT5218NM or Codan 4-6-8 W with integrated LNB SMW, Type H.

Models Available:
Standard configuration: 13.75-14.50 GHz linear orthogonal polarisation

Maximum Allowed EIRP:

For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
34.8 dBW / 40 kHz for an orbital separation of the adjacent satellite ≥ 2.5°
33.5 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.0°
32.5 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
39.5 dBi (typical at 14.25 GHz)
Tx XPD:
≥24.9 dB within -1 dB contour

Rx Frequency:
10.95 - 12.75 GHz
See restrictions below
Rx Gain:
36.5 dBi (typical at 11.70 GHz)
Rx XPD:
≥22.1 dB within -1 dB contour
G/T
16 dB/K @30° Elevation

Remarks:
1
The characterization uniquely refers to the RF electrical performance.
The validation of the performance of the tracking system and operations of the antenna when installed on a vessel is out of the scope of this summary. More information about this can be found on the manufacturer web site http://www.intelliantech.com
2
The RF performance characterization was performed on one antenna unit with radome, at the Politecnico di Torino test range, Italy, on the 27-28 October 2011.

Restriction:
The worst excess to the EESS Gain mask at 1.5° is 5.7 dB; the worst excess to the EESS Gain mask at 3° is 1.0 dB at 10.95 GHz, both in Azimuth V Polarization.
The service quality in conjunction with operations in certain Rx bands and/or reduced orbital separations from the adjacent satellites may be impaired. Nevertheless, these operations may be exceptionally authorized according to a valid Eutelsat transmission plan.

Manufacturer:

Intellian Technology, Inc.
2nd Floor, Dongik Building,
98 Nonhyun-Dong Gangnam-Gu,
Seoul, 135-010
Korea

Tel: +82-31-379-1072
Fax:+82-10-5197-4718
mailto: ciona.lee@intelliantech.com

Antenna model:
v100

Diameter:
103 cm

Standard:
M

Characterization date:
30-04-2013

Revision Date:
18-11-2013

System Description:
Stabilised maritime antenna – ring focus with shaped carbon fiber reflector – Sandwich foam pre-preg five layers radome. Three axis stabilization platform with conical RF tracking.
BUC NJRC 8 W with integrated LNB.

Models Characterized:
Standard configuration: 13.75-14.5 GHz linear orthogonal polarization with co-polarized and cross-polarized signal reception.

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
40.8 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 2.5°
39.7 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.0°
36.8 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 – 14.50 GHz

Rx Frequency:
10.70-12.75 GHz

Tx Gain:
41.6dBi (typical at 14.25 GHz)

Rx Gain:
39.4 dBi (typical at 11.7 GHz)

Tx XPD:
31 dB within -1 dB contour

Rx XPD:
>35 dB within -1 dB contour

G/T (measured with radome)
19.6 dB/K @ 12.75 GHz

Remarks:

1. The manufacturer states that the RMS pointing error is less than 0.4° for the following ship motions:
   Roll = $\pm$ 25° @ 6 sec periods
   Pitch = $\pm$ 15° @ 6 sec periods
   Yaw = $\pm$ 8° @ 6 sec periods
2. The RF performance characterization was performed on one antenna unit with radome, at the France Telecom test range of La Turbie, France on the 24-26 April 2013.
3. Intellian has inserted in the ACU software a look-up table with the polarization skew of the Eutelsat satellites, to protect against the mishandling of polarization skew values by installers. The transmission of the HPA is muted from the ACU when the maximum pointing error exceeds 0.4°, by sending an ACU command to a BUC capable of M&C functions.
4. The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standards.

Manufacturer:

Intellian Technologies, Inc.
7th Floor, Dongik Building,
98 Nonhyun-Dong Gangnam-Gu,
Seoul, 135-010
Korea

Tel: +82-2-511-2244
Fax:+82-2-511-2235
mailto: wendy@intelliantech.com

Antenna model:
V110

Diameter:
105 cm

Standard:
M

Characterization date:
05-07-2010

System Description:
Stabilised maritime antenna – splash feed cassegrain – composite foam radome. Three axis stabilization platform with conical scanning tracking.
BUC NJRC or Codan 4-6-8 W with integrated LNB.

Models Available:
Standard configuration: 13.75-14.50 GHz linear orthogonal polarization.

Maximum Allowed EIRP:

40.3 dBW / 40 kHz for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502, Issue 12 - Rev.1, § 6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
41.7 dBi (typical at 14.25 GHz)

Tx XPD:
>28 dB within -1 dB contour

Rx Frequency:
12.50 - 12.75 GHz
See restrictions below (*)

Rx Gain:
39.8 dBi (typical at 12.50 GHz)

Rx XPD:
>30 dB (*) within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance.
The validation of the performance of the tracking system and the operations of the antenna when installed on a vessel is out of the scope of this summary. The manufacturer states that operations of the tracking is such that the pointing error is less than +/-0.2° for the following ship motions:
Roll = +/-20° at 8-12 sec periods
Pitch = +/-10° at 6-12 sec periods
2
The characterization was performed on one antenna unit with radome, at the France Telecom test range of La Turbie, France, on the 15-18 June 2010.

Restrictions:
(*) The service quality, in conjunction with operations in Rx bands other than 12.50 – 12.75 GHz, may be significantly impaired. Nevertheless, these operations may be exceptionally authorized according to a valid Eutelsat transmission plan.

Manufacturer:

Intellian Technology, Inc.
18-7, Jinvisandan-ro, Jinwi-myeon (Chungo-ri)
Pyeogtaek-si, Gyeonggi-do, 17709
Korea

Tel: +82-31-379-1000
mailto: martin.kweon@intelliantech.com

Antenna model:
v100NX (V5-11-UXXX)
Diameter:
105 cm
Standard:
M
Characterization date:
13-06-2019
Validity period:
see Remark 4
Last test data submitted on:
29-05-2019

System Description:
Stabilised maritime antenna – Cassegrain ring focus with spinned Aluminum reflector – Sandwich foam pre-preg five layers radome. Three axis stabilization platform with conical RF tracking.
BUC NJT 8 W (16W and 25 W option).

Models Characterized:
Standard configuration: 13.75-14.5 GHz three ports feed linear orthogonal polarization with co-polarized and cross-polarized signal reception.

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:
36.0 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 1.5°
38.6 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.0°
41.6 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.5
In the 13.75-14.00 GHz band:
33.1 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 1.5°
34.9 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.0°
38.9 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.5°

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain:
41.6 dBi (average at 14.25 GHz)

Tx XPD:
$\geq$ 30.2 dB within -1 dB contour

Rx Frequency:
10.70 – 12.75 GHz

Rx Gain (co-polar and cross-polar ports):
40.6 dBi (average at 11.70 GHz)

Rx XPD :
$\geq$ 27.3 dB within -1 dB contour (co-polar)

G/T:
20.04 dB/K typ @ 12.75 GHz at 30° El

Remarks:
1. The manufacturer states that the RMS pointing error is less than 0.2° for the following ship motions:
   Roll = $\pm$ 25° @ 6 sec periods
   Pitch = $\pm$ 15° @ 6 sec periods
   Yaw = $\pm$ 8° @ 6 sec periods
2. The RF performance characterization was performed on one antenna unit with radome, at the Thales Alenia Space test range of Cannes, France on the 27-29 May 2019.
3. Intellian has inserted in the ACU software a look-up table with the polarization skew of the Eutelsat satellites, to protect against the mishandling of polarization skew values by installers. The transmission of the HPA is muted from the ACU when the maximum pointing error exceeds 0.2°, by sending an ACU command to a BUC capable of M&C functions.
4. The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standards.
5. The worst sidelobe excess in the near region receive side is 7.16 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 levels. Nevertheless, to achieve the required service quality the level of the outroute carrier may need to be increased according to a valid Eutelsat transmission plan.
6. The transmission in the band 13.75-14.00 GHz for antennas with a diameter <1.2 m is subject to the ITU radio regulations in force.

Manufacturer:
JOTRON AS

Dølasletta 7
NO – 3408 TRANBY
NORWAY

Tel: + 47 33 13 97 00
Fax:+ 47 32 84 55 30
mailto:svein.skyttemyr@jotron.com
web: www.jotron.com

Antenna model:
B85

Antenna aperture dimensions:
85 cm

Standard:
Nomenclature M-x

Characterization date:
05-07-2013

System Description:
Stabilised maritime antenna – Ring focus ADE (Axially Displaced Ellipse) with shaped sub-reflector configuration – Sandwich foam radome. Four axis stabilization platform with conical RF tracking.
BUC various. Maximum rating 8W
LNB various
OMT Jotron

Models Characterized:
Standard configuration: linear orthogonal polarization with co-polarized or cross-polarized signal reception option.

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
35.3 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 2.5°
34.0 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.0°
33.4 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 – 14.50 GHz

Rx Frequency:
10.95-12.75 GHz

Tx Gain:
40.33 (typical at 14.25 GHz)

Rx Gain:
36.6 dBi (typical at 11.7 GHz)

Tx XPD:
26 dB within -1 dB contour

Rx XPD:
26 dB within -1 dB contour

G/T (measured with radome)
16.2 dB/K @ 11.70 GHz @ 30 ° Elevation

Remarks:
1. The manufacturer states that the RMS pointing error is less than 0.30° for the following ship motions:
   Roll = +/-24° in a period of 10 sec
   Pitch = +/-10° in a period of 8 sec
   Yaw = +/-8° in a period of 20 sec
2. The RF performance characterization was performed on one antenna unit with radome, at the Politecnico of Torino, Italy on the 28-29 May 2013.
3. The transmission of the HPA is muted from the ACU via a DC switch when the maximum pointing error exceeds 0.5°.
4. The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standards.

Restrictions:
The worst excess in the receive side (+/-10°) to the EESS Gain mask is 4.7 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 levels. Nevertheless, to achieve the required service quality the level of the outroute carrier may need to be increased according to a valid Eutelsat transmission plan.

Manufacturer:

KNS Inc.
1314 Gwanpyeong-dong, Yuseong-gu,
Daejeon, 305-509

S. KOREA

Tel: +82 42 932 0351
Fax: +82 42 932 0353
mailto :bwjin@kns-kr.com

Antenna model:
Supertrack Z6Mk2

Diameter:
60 cm

Standard:
Nomenclature M-x

Characterization date:
24-04-09

System Description:
Interactive maritime antenna -splash feed cassegrain – composite foam radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

30.4 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
36.4 dBi (typical at 14.25 GHz)

Rx Gain:
35.0 dBi (typical at 12.50 GHz)

Tx XPD:
>27 dB within -1 dB contour

Rx XPD:
>27 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer's web site: http://www.kns-kr.com
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

Manufacturer:

KNS Inc.
1314 Gwanpyeong-dong, Yuseong-gu,
Daejeon, 305-509

S. KOREA

Tel: +82 42 932 0351
Fax: +82 42 932 0353
mailto :bwjin@kns-kr.com

Antenna model:
Supertrack Z8

Diameter:
85 cm

Standard:
Nomenclature M-x

Characterization date:
27-03-08

System Description:
Interactive maritime antenna -splash feed cassegrain – composite foam radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

32.3 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
38.3 dBi (typical at 14.25 GHz)

Rx Gain:
38 dBi (typical at 12.50 GHz)

Tx XPD:
>35 dB within -1 dB contour

Rx XPD:
>32 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer's web site: http://www.kns-kr.com
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

Manufacturer:

KVH Industries, Inc.
50 Enterprise Center
Middletown, RI 02842
USA

Tel: +1 401-847-3327
Fax:+1 401-849-0045
mailto: info@kvh.com

Antenna model:
V3

Diameter:
37 cm

Standard:
Nomenclature M-x

Characterization date:
10-08-2011
Validity period:
See remark 3

System Description:
Stabilized maritime antenna – ring focus dual reflector antenna – ABS, single layer radome (∅: 39.4 cm, H: 44.7 cm) . Three axis stabilization platform with conical scanning tracking.
3 Watt BUC NJRC NJT5116Fand Invacom VSAT PLL LNB with Tx reject filter SPV-65SM.

Models Available:
Standard configuration: 13.75-14.50 GHz linear orthogonal polarization

Maximum Allowed EIRP:
20.7 dBW / 40 kHz -10*log N (where N is the number of carriers transmitted in the same 40 KHz band) for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers) for any satellite adjacent separation (**).

Tx Frequency:
13.75 - 14.50 GHz
See restrictions below (*)

Rx Frequency:
11.70 - 12.75 GHz
See restrictions below (*)

Tx Gain:
33.2 dBi (typical at 14.25 GHz)

Rx Gain:
30.4 dBi (typical at 11.70 GHz)

Tx XPD:
>32.8 dB within -1 dB contour

Rx XPD:
>27.1 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance.
The validation of the performance of the tracking system and the operations of the antenna when installed on a vessel is out of the scope of this summary. The manufacturer states that operations of the tracking are such that the pointing error is less than +/-1.5° for the following ship motions:
+/- 25 degrees Roll @ 8 second period,
+/- 15 degrees Pitch @ 5 second period,
+/- 8 degrees Yaw @50 second period.
2
The characterization was performed on one antenna unit with radome, at the LACE Outdoor Test Range of Politecnico of Torino, on the 18-20 May 2011.
3
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.
4
Any change to the characterized configuration needs to be notified to Eutelsat and may be subject to further tests.

Restrictions:
(*) The antenna can only operate in conjunction with spread spectrum systems, e.g. the Viasat ArcLight CDMA.
(**) The Rx isolation from boresight at 3° is 1.2 dB: to ensure the downlink quality of service, the outroute carrier shall use spread spectrum techniques.

Manufacturer:

KVH Industries, Inc.
50 Enterprise Center
Middletown, RI 02842
USA

Tel: +1 401-847-3327
Fax: +1 401-849-0045
mailto: info@kvh.com

Antenna model:
KVH-60 cm

Diameter:
60 cm

Standard:
Nomenclature M-x

Characterization date:
25-07-08

System Description:
Interactive maritime antenna -splash feed cassegrain - plastic radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

31.1 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
14.00 - 14.50 GHz

Rx Frequency:
11.70 - 12.75 GHz

Tx Gain:
36.6 dBi (typical at 14.25 GHz)

Rx Gain:
35.4 dBi (typical at 12.50 GHz)

Tx XPD:
>35 dB within -1 dB contour

Rx XPD:
>35 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer's web site: http://www.kvh.com
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

Manufacturer:

MAC
MICRO ADVANCED COMMUNICATIONS S.R.L.
Via B. Spinoza, 5
20131 MILANO
ITALY

Tel: +39 02 706411
Fax:+39 02 70641120
mailto : carlo.muzio@mac.fastwebnet.it

Antenna model:
ISA 75

Diameter:
75 cm

Standard:
M

Characterization date:
10-02-09

System Description:
Interactive maritime antenna –Axisymmetric circular front fed – General Dynamics OMT - Fiberglass/Honeycomb 100 cm radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

35.7 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
36.5 dBi (typical at 14.25 GHz)

Rx Gain:
35.6 dBi (typical at 12.50 GHz)

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>30 dB within -1 dB contour

Remarks:

The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on this web site: http://www.sitmar.it

Applicant:

MITSUBISHI ELECTRIC CORPORATION
2-7-3, Marunouchi Chiyoda-ku, Tokyo
100-8310, Japan
Tel : +81-3-3218-3346
Fax : +81-3-3218-9492
Website : http://global.mitsubishielectric.com

Contact point:
Sato.Hiroyuki@ea.mitsubishielectric.co.jp

Certificate:
EA-V060

Antenna:
MVA60

Diameter:
0.62 m

Standard:
M

Approval date:
15-06-2012

System Description:
Stabilized maritime antenna equipped with linear polarized three ports feed (one Tx and two Rx) for the standard configuration and option 3; two ports feed for options 1 and 2, consisting of 0.6 m ring focus aluminum antenna with backfire feedhorn, with 750 mm diameter sandwich foam radome, with three axis stabilization platform and polarization axis and a conical scanning tracking. BUC 8 W NJRC model NJT5118NTME (Standard) and model NJT5218NTME (Option 2 and 3), LNA Mitsubishi Electric RB256718-G01.

Models Available:

Standard configuration (MVA60-DS8):	14.00-14.50 GHz Tx and Rx orthogonal and parallel polarization
Option 1 (MVA60-DE8)	:14.00-14.50 GHz Tx and Rx orthogonal polarization
Option 2 (MVA60-SS8)	:13.75-14.50 GHz Tx extended band and Rx orthogonal
Option 3 (MVA60-SE8)	:13.75-14.50 GHz Tx extended band and Rx orthogonal and parallel polarization

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502, § 6.1 refers):
31.0 dBW / 40 kHz for satellite orbital separations $\geq$ 1.5°
32.1 dBW / 40 kHz for satellite orbital separations $\geq$ 2.5°
33.2 dBW / 40 kHz for satellite orbital separations $\geq$ 3°

Tx Frequency:
13.75 - 14.50 GHz
Tx Gain:
37.3 dBi (typical at 14.25 GHz)
Tx XPD:
>30 dB within -1 dB contour

Rx Frequency:
10.70 - 12.75 GHz
Rx Gain:
35.6 dBi (typical at 11.70 GHz)
Rx XPD:
>26 dB within -1 dB contour
G/T: 15.0 dB/K at 12.50 GHz (parallel port)
15.5 dB/K at 12.50 GHz (orthogonal port)

Remarks:
1-Operations of the tracking has been tested on a Sea Simulator, with pointing error <0.2°.
Roll = $\pm$ 30°/7 sec; Pitch= $\pm$ 10°/5 sec; Yaw= $\pm$ 4°/14 sec.
In case of tracking error >0.2°, the ACU will directly inhibit transmission of the BUC.
2-The type approval tests were performed on three units with radome at the test range of Tsukaguchi, Japan between the 9 and 18 May 2012.
3-The worst excess of the EESS masks in the Rx side is equal to 8.4 dB (10.70 GHz) hence the service quality in the receive side may be impaired. Nevertheless, these operations may be exceptionally authorized according to a valid transmission plan.
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 polarization skew of the Eutelsat satellites is automatically taken into account in the ACU software via pre-programmed look-up tables.

Applicant:

MITSUBISHI ELECTRIC CORPORATION
2-7-3, Marunouchi Chiyoda-ku
Tokyo 100-8310
Japan

Tel : +81 3 3218 3346
Fax : +81 3 3218 9492
Website : http://global.mitsubishielectric.com

Certificate:
EA-V056

Antenna:
Ku Mate

Diameter:
1 m

Standard:
M

Approval date:
21-12-2009

Revision 1 date:
17-05-2011

System Description:
Stabilised maritime antenna consisting of 1 m ring focus Gregorian aluminum antenna with fiberglass radome, with three axis stabilization platform and polarization axis and a conical scanning tracking. BUC 8 W NJRC model NJT5118NT, LNA Mitsubishi RB256718.

Models Available:
Standard configuration: 14.00-14.50 GHz linear orthogonal polarisation
Option 1 : Tx and Rx parallel.
Option 2 : 13.75 GHz extended band
Option 3 : Tx and Rx parallel and 13.75 GHz extended band

Maximum Allowed EIRP:

39.7 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:
40.9 dBi (typical at 14.25 GHz)

Rx Gain:
39.8 dBi (typical at 12.75 GHz)

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>30 dB within -1 dB contour

Remarks:
1
Operations of the tracking has been tested on a Sea Simulator, with rms pointing error <0.2°.

Roll	=+/-30°/7sec and 24.2°/sec²
Pitch	=+/-10°/5sec and 15.8°/sec²
Yaw	=+/-4°/14sec and 0.8°/sec²

2
Measured G/T= 18.4 dB/K @ 12.5 GHz, 30° Elevation

Applicant:

MITSUBISHI ELECTRIC CORPORATION
2-7-3, Marunouchi Chiyoda-ku, Tokyo
100-8310, Japan
Tel : +81-3-3218-3346
Fax : +81-3-3218-9492
Website : http://global.mitsubishielectric.com

Contact point:
Sato.Hiroyuki@ea.mitsubishielectric.co.jp

Certificate:
EA-V059

Antenna:
SX 5410 Ku Mate

Diameter:
1.2 m

Standard:
M

Approval date:
16-12-2011

System Description:
Stabilised maritime antenna equipped with three ports feed (one Tx and two Rx) for the standard configuration and option 3; two ports feed for options 1 and 2, consisting of 1.2 m ring focus aluminum antenna with backfire feedhorn, with 1.57 m sandwich foam radome, with three axis stabilization platform and polarization axis and a conical scanning tracking. BUC 8 W NJRC model NJT5118NTME (Standard) and model NJT5218NTME (Option 2 and 3), LNA Mitsubishi Electric RB256718-G01.

Models Available:
Standard configuration (SX 5410):14.00-14.50 GHz linear orthogonal and parallel polarization.
Option 1 (SX 5400) : Tx and Rx orthogonal.
Option 2 (SX 5420) : 13.75 GHz extended band orthogonal.
Option 3 (SX 5430) : Tx and Rx orthogonal and parallel pol. and 13.75 GHz ext. band.

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502, § 6.1 refers):
38.3 dBW / 40 kHz for satellite orbital separations $\geq$ 1.5°.
41.4 dBW / 40 kHz for satellite orbital separations $\geq$ 2°.

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Tx Gain:
41.9 dBi (typical at 14.25 GHz)

Rx Gain:
41.6 dBi (typical at 11.70 GHz)

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>28 dB within -1 dB contour

G/T: 20.5 dB/K at 11.70 GHz

Remarks:
1
Operations of the tracking has been tested on a Sea Simulator, with pointing error <0.2°.
Roll = $\pm$ 30°/7 sec.
Pitch = $\pm$ 10°/5 sec.
Yaw = $\pm$ 4°/20 sec.
In case of tracking error >0.2°, the ACU will directly inhibit transmission of the BUC.
2
The type approval tests were performed on three units with radome at the test range of Ofuna, Japan between the 26 September and the 1 October 2011.
3
The worst excess of the EESS masks in the Rx side is equal to 7.2 dB at 1.5°, 10.70 GHz in Elevation V polarization. The service quality in the receive side may be impaired for operations on satellites with less than 2.5° orbital separation from the adjacent one. Nevertheless, these operations may be exceptionally authorized according to a valid transmission plan.

Manufacturer:

NAVISYSTEM
V. Fondacci 269
Z.I. Montramito
55054 MASSAROSA (Lu)
ITALY

Tel: +39 0584-425454
Fax: +39 0584 434386
mailto : b.locatori@navisystem.com

Antenna model:
Navisystem 75

Diameter:
70 cm

Standard:
Nomenclature M-x

Characterization date:
29-07-08

System Description:
Interactive maritime antenna -splash feed cassegrain - VTR radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

29.6 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
36 dBi (typical at 14.25 GHz)

Rx Gain:
35.2 dBi (typical at 12.75 GHz)

Tx XPD:
>35 dB within -1 dB contour

Rx XPD:
>32 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer web site: http://www.navisystem.com.
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

Manufacturer:

NAVISYSTEM
V. Fondacci 269
Z.I. Montramito
55054 MASSAROSA (Lu)
ITALY

Tel: +39 0584-425454
Fax: +39 0584 434386
mailto : b.locatori@navisystem.com

Antenna model:
Navisystem 85

Diameter:
81 cm

Standard:
Nomenclature M-x

Characterization date:
30-07-08

System Description:
Interactive maritime antenna -splash feed cassegrain - VTR radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

33.8 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
37.8 dBi (typical at 14.25 GHz)

Rx Gain:
37.5 dBi (typical at 12.50 GHz)

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>26 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer web site: http://www.navisystem.com.
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

Manufacturer:

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Antenna model:
Navisystem 95

Diameter:
95 cm

Standard:
Nomenclature M-x

Characterization date:
04-08-08

System Description:
Interactive maritime antenna -splash feed cassegrain - VTR radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

34.3 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
39.3 dBi (typical at 14.25 GHz)

Rx Gain:
Not measured

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>30 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer's web site: http://www.navisystem.com.
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

Applicant:

ORBIT Communication Systems Ltd
8 D Hatzoran St. P.O.B 8657
Netanya,
4250608 ISRAEL

Tel: + 972-9-8922-701
Cel: + 972-54-4242627
Fax:+ 972-9-8922-820
mailto: yoav.barzilay@orbit-cs.com

Certificate:
EA-A033

Antenna:
OrSat AL-7103-Ku Mk II

Diameter:
1.15m

Standard:
M

Approval date:
06-04-2007

Revision 2 date:
02-10-2008

System Description:
Stabilised maritime antenna consisting of OrSat 1.15m dual offset Gregorian composite material antenna with single piece foam or honeycomb radome, with three axis stabilization platform and a conical scanning tracking. Can support transceivers 4 W, 8 W, 16 and 20 W rating.

Models Available:
AL-7103-Ku-Mk II with two standard configurations: with ERA OMT and Tx Reject Filter or Orbit Integrated RF front-end.

Maximum Allowed EIRP:

39.3 or 41.3* dBW / 40 kHz 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:
10.95 - 12.75 GHz

Tx Gain:
42.3 dBi (typical at 14.25 GHz)

Rx Gain:
41.0 or 40.2* dBi (typical at 12.50 GHz)

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>35 dB within -1 dB contour

Remarks:
1
Operations of the tracking has been tested on a Sea Simulator.
RMS pointing error 0.12° at 3σ for the following ship maximum velocity and acceleration:
Roll =11°/sec and 4°/sec²
Pitch =18°/sec and 19°/sec²
Yaw = 5°/sec and 0.3°/sec²

2
(*) applies to the configuration using the Orbit Integrated RF front-end

Characterization – Maritime

Manufacturer:

ORBIT Communication Systems Ltd
8 D Hatzoran St. P.O.B 8657
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4250608 ISRAEL

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Fax:+ 972-9-8922-820
mailto: yoav.barzilay@orbit-cs.com

Antenna model:
AL-7107

Antenna aperture dimensions:
201x220 cm

Standard:
M

Characterization date:
17-10-2011

System Description:
Stabilised maritime antenna – dual optics gregorian – sandwich foam radome. Four axis stabilization platform with conical RF tracking.

PLL LNB Norsat.
Integrated front end ORBIT.
BUC Codan 20, 40, W; Terrasat 40 W and Agilis 40 W.

Models Characterized:
Standard configuration: C-Band 5.85-6.425 GHz circular orthogonal polarisation

Maximum Allowed EIRP:

37.1 dBW / 40 kHz for digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 §6.1 refers).

Tx Frequency:
5.85 – 6.425 GHz

Rx Frequency:
3.625 – 4.2 GHz

Tx Gain:
38.3 dBi (typical at 6.15 GHz)

Rx Gain:
36.7 dBi (typical at 3.95 GHz)

Tx XPD:
>19.4 dB within -1 dB contour

Rx XPD:
>16.3 dB within -1 dB contour

G/T (measured with radome)

17.9 dB/K @ 30 ° Elevation, 3.95 GHz

Remarks:

1
The dynamic tests were performed at the 3-axis Orbit sea simulator on the 26 May 2011. The RMS pointing error is less than 0.2° for the following ship motions:

Roll = 10°/sec and 4°/sec²
Pitch = 8.9°/sec and 4.7°/sec²
Yaw = 3.2°/sec

2
The RF performance characterization was performed on one antenna unit with radome, at the Orbit Test Range in Netanya, Israel on the 4-5 September 2011.

Restriction:
The isolation at 3° of the level of the Rx sidelobes from the level of the boresight is comprised between 20 dB and 13.9 dB (worst case at 3.625 GHz, 4.5 dB excess to the EESS Gain mask); the isolation at 1.5° is 3.6 dB (worst case at 3.625 GHz, 7.3 dB excess the EESS Gain mask). The service quality in conjunction with operations in certain Rx bands and/or reduced orbital separations from the adjacent satellites may be impaired. Nevertheless, these operations may be exceptionally authorized according to a valid Eutelsat transmission plan.

Manufacturer:

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Fax:+ 972-9-8922-820

mailto: yoav.barzilay@orbit-cs.com

Antenna model:
OceanTRx4-500 (Ku)
Antenna aperture dimensions:
1.15 m
Standard:
M
Characterization date:
05-01-2017
Validity period:
See remark 4
Last test data submitted on:
14-01-2020

System Description:
Stabilized maritime antenna system linear polarization, lighter version of Orsat AL-7103-Ku-Mk II, consisting of a 1.15m dual offset Gregorian composite material antenna, with single piece 5 layers honeycomb sandwich radome type C. Three axis stabilization platform with conical RF tracking. HPA / Block upconverters (BUC) 8, 16, 25 and 40 W rating.
Philtech LNB or equivalent.
Integrated front end ORBIT.

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:
37.9 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 1.5°
40.6 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.0°
In the 13.75-14.00 GHz band:
35.0 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 1.5°
38.4 dBW / 40 kHz for an orbital separation from the adjacent satellite $\geq$ 2.0°

Tx Frequency:
13.75 – 14.50 GHz

Rx Frequency:
10.70 – 12.75 GHz

Tx Gain:
41.9 dBi (typical at 14.25 GHz)

Rx Gain:
40.1 dBi (typical at 11.70 GHz)

Tx XPD:
>27 dB within -1 dB contour

Rx XPD:
>27.4 dB within -1 dB contour

G/T (measured with radome)
19.4 dB/K @ 40° Elevation, 11.70 GHz

Restrictions and remarks:

1. The manufacturer measured an RMS pointing error less than 0.16° for the following ship motions:
   Roll = Sinusoidal +/-28° amplitude over 8 second half-period
   Pitch = Sinusoidal +/-16° amplitude over 6 second half-period
   Yaw = Linear +/- 80° amplitude over 25 second half-period
2. The RF performance characterization was performed on one antenna unit with radome, at the Orbit test range in Netanya during the month of August 2016.
3. Orbit has inserted in their ACU software a look-up table with the polarization skew of the Eutelsat satellites, to protect against the mishandling of polarization skew values by installers. The transmission of the HPA (BUC) is muted from the ACU when the maximum pointing error exceeds 0.5°, by initialization of a mute command to the BUC through its M&C.
4. The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standards.

Manufacturer:

RADIO MARINE S.p.A.
c/o Sviluppo Italia Liguria
ex palazzina Omsav - Zona Porto
17100 - Savona
ITALY

Tel: +39 019 838 7134
Fax: +39 019 807 983
mailto: fp@radio-marine.com

Antenna model:
Radiomarine BroadBand80

Diameter:
80 cm

Standard:
Nomenclature M-x

Characterization date:
07-11-08

System Description:
Interactive maritime antenna; splash feed cassegrain. Carbon fibre antenna. fiberglass radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

33.0 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
39.0 dBi (typical at 14.25 GHz)

Rx Gain:
37.9 dBi (typical at 12.50 GHz)

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>35 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer web site: http://www.radio-marine.com
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

Manufacturer:

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4030 Nelson Avenue
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94520
USA

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mailto : Timothy.OConnor@cobham.com

Antenna model:
USAT24

Diameter:
60 cm

Standard:
Nomenclature M-x

Characterization date:
16-01-09

System Description:
Interactive maritime antenna -splash feed cassegrain – three layers 27 inches radome. Two axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

31.9 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
37.0 dBi (typical at 14.25 GHz)

Rx Gain:
35.9 dBi (typical at 12.50 GHz)

Tx XPD:
>25 dB within -1 dB contour

Rx XPD:
>30 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer web site: http://www.seatel.com. The manufacturer advises that this antenna is not suitable for operations in rough seas.
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

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Antenna model:
2406

Diameter:
60 cm

Standard:
Nomenclature M-x

Characterization date:
14-01-09

System Description:
Interactive maritime antenna -splash feed cassegrain – three layers 34 inches radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

32.2 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
37.2 dBi (typical at 14.25 GHz)

Rx Gain:
36.1 dBi (typical at 12.50 GHz)

Tx XPD:
>25 dB within -1 dB contour

Rx XPD:
>25 dB within -1 dB contour

Remarks:
1
The characterization uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer web site: http://www.seatel.com.
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

Manufacturer:

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4030 Nelson Avenue
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94520
USA

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Fax:+ 1 925 798 7986
Website: http://www.cobham.com/seatel
Contact point: Darren.Manning@cobham.com

Antenna model:
3011W

Diameter:
75 cm

Standard:
Nomenclature M-x

Characterization date:
04-07-2012

System Description:
Stabilised maritime antenna – ring focus cassegrain – sandwich composite foam radome. Four axis stabilization platform with conical scanning tracking.
BUC Various (NJRC, Codan, Comtech, Terrasat, Gilat) 4-8-16-20-40 W with integrated SMW Q-PLL LNB.

Models Available:
Standard configuration: 13.75-14.50 GHz linear orthogonal polarization
Option 1 : TX and RX parallel

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
35.1 dBW / 40 kHz for an orbital separation of the adjacent satellite ≥ 3.0°
35.1 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.5°
32.4 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 2.0°
32.3 dBW / 40 KHz for an orbital separation of the adjacent satellite ≥ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Tx Gain:
38.8 dBi (typical at 14.25 GHz)

Tx XPD:
≥27.5 dB within -1 dB contour

Rx Frequency:
10.70 - 12.75 GHz
See restrictions below

Rx Gain:
36.8 dBi (typical at 11.70 GHz) side port
37.0 dBi (typical at 11.70 GHz) back port

Rx XPD:
>30 dB within -1 dB contour

G/T
16.7 dB/K @30° Elevation at 12.2 GHz

Remarks:
1-The characterization uniquely refers to the RF electrical performance.
The validation of the performance of the tracking system and operations of the antenna when installed on a vessel is out of the scope of this summary. More information about this can be found on the manufacturer web site http://www.seatel.com
2-The RF performance characterization was performed on one antenna unit with radome, at the CTS test range of Leatherhead, UK, on the 8-9 February 2012.
3-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.

Restriction:
The worst excess in the receive side to the EESS Gain mask is 8.6 dB.
The service quality in conjunction with operations in certain Rx bands and/or reduced orbital separations from the adjacent satellites may be impaired. Nevertheless, these operations may be exceptionally authorized according to a valid Eutelsat transmission plan.

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Website: http://www.cobham.com/seatel
Contact points: Darren.Manning@cobham.com

Antenna model:
3612

Diameter:
90 cm

Standard:
Nomenclature M-x

Characterization date:
05-07-2013

System Description:
Stabilised maritime antenna – splash feed axi-symmetric – three layers 1.27 m diameter radome manufactured by Ace Composites on SEATEL design. Three axis stabilization platform with conical scanning tracking.
BUC Various (NJRC, Codan, Comtech, Terrasat, Gilat) 4-8-16-40 Watt with integrated SMW Q-PLL or NJRC LNB.

Models Available:
Standard configuration : 13.75-14.50 GHz linear orthogonal polarization.
Option 1 : Tx and Rx parallel.

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
38.0 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.5°
35.5 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.0°
34.7 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Tx Gain:
40.6 dBi (typical at 14.25 GHz)

Rx Gain:
39.3 dBi (typical at 11.70 GHz)

Tx XPD:
$\geq$28.5 dB within -1 dB contour

Rx XPD:
$\geq$28.5 dB within -1 dB contour

G/T (measured with radome):
18.1 dB/K @ 12.20 GHz

Remarks:
1- The characterization uniquely refers to the RF electrical performance.
The validation of the performance of the tracking system and operations of the antenna when installed on a vessel is out of the scope of this summary. More information about this can be found on the manufacturer web site http://www.cobham.com/seatel.
2- The RF performance characterization was performed on one antenna unit with radome, at the ITT Exelis test range of Loop Canyon, California US, on the 10-18 March 2013.

Restriction:
The worst excess in the receive side to the EESS Gain mask is 5.4 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 levels. Nevertheless, to achieve the required service quality the level of the outroute carrier may need to be increased according to a valid Eutelsat transmission plan.

Manufacturer:

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Antenna model:
4006

Diameter:
1 m

Standard:
M

Characterization date:
25-09-08

System Description:
Interactive maritime antenna -splash feed cassegrain – three layers 50 inches radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

39.2 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
40.6 dBi (typical at 14.25 GHz)

Rx Gain:
39.8 dBi (typical at 12.50 GHz)

Tx XPD:
>26 dB within -1 dB contour

Rx XPD:
>30 dB within -1 dB contour

Remarks:

Operations of the tracking have been tested on a Sea Simulator.

Pointing error less than +-0.2° for the following ship motions:
Roll =+-20 degrees at 8-12 sec periods
Pitch =+-10 degrees at 6-12 sec periods

Manufacturer:

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Antenna model:
4009

Diameter:
1 m

Standard:
M

Characterization date:
01-12-09

System Description:
Interactive maritime antenna -splash feed cassegrain – three layers 50 inches radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

39.2 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
40.6 dBi (typical at 14.25 GHz)

Rx Gain:
39.8 dBi (typical at 12.50 GHz)

Tx XPD:
>26 dB within -1 dB contour

Rx XPD:
>30 dB within -1 dB contour

Remarks:

Operations of the tracking have been tested on a Sea Simulator.

Pointing error less than +-0.2° for the following ship motions:
Roll =+-20 degrees at 8-12 sec periods
Pitch =+-10 degrees at 6-12 sec periods

Manufacturer:

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Certificate:
EA-V058

Antenna model:
5009 StdM Mk2

Diameter:
1.2 m

Standard:
M

Approval date:
08-12-10

System Description:
Stabilised maritime antenna – splash feed axi-symmetric cassegrain – feed manufactured by ERA Technology (Cobham Technical Services) - three layers 1.68 m diameter radome manufactured by Ace Composites on Sea Tel design. Three axis stabilization platform with conical scanning tracking.

8 Watt CODAN BUC, referenced as 6908-WE-48EX-CE.

Models Available:
Standard configuration: 13.75-14.50 GHz linear orthogonal polarization.
Option 1 : Tx and Rx parallel.

Maximum Allowed EIRP:

40.6 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:
42.4 dBi (typical at 14.25 GHz)

Rx Gain:
41.0 dBi (typical at 12.75 GHz)

Tx XPD:
>30 dB within -1 dB contour
>35 dB within maximum pointing error

Rx XPD:
>30 dB within -1 dB contour
>35 dB within maximum pointing error

Conditions and remarks:
1
Submission on at least a yearly basis of measurement results for at least one production unit.
2
Operations of the tracking has been tested with the antenna (without radome) on a Sea Simulator, with rms pointing error <0.2°.

Roll	= +/-20°/8 sec
Pitch	= +/-4°/8 sec
Yaw	= +/-6°/8 sec

3
Measured G/T= 19.3 dB/K @ 12.50 GHz, 31.2° Elevation.

Manufacturer:
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Tel: + 1 925 798 7979
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Website: http://www.cobham.com/seatel
Contact points: Darren.Manning@cobham.com

Antenna model:
6012

Diameter:
1.5 m

Standard:
M

Characterization date:
05-07-2013

System Description:
Stabilised maritime antenna – splash feed axi-symmetric–- three layers 1.93 m diameter radome manufactured by Ace Composites on SEATEL design. Three axis stabilization platform with conical scanning tracking.
BUC Various (NJRC, Codan, Comtech, Terrasat, Gilat) 4-8-16-40 Watt with integrated SMW Q-PLL or NJRC LNB.

Models Available:
Standard configuration : 13.75-14.50 GHz linear orthogonal polarization.
Option 1 : Tx and Rx parallel.

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
43.2 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.0°
40.5 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Tx Gain:
44.3 dBi (typical at 14.25 GHz)

Rx Gain:
42.9 dBi (typical at 11.70 GHz)

Tx XPD:
$\geq$28.5 dB within -1 dB contour

Rx XPD:
$\geq$28.5 dB within -1 dB contour

G/T (measured with radome):
21.9 dB/K @ 12.20 GHz

Remarks:
1-The characterization uniquely refers to the RF electrical performance.
The validation of the performance of the tracking system and operations of the antenna when installed on a vessel is out of the scope of this summary. More information about this can be found on the manufacturer web site http://www.cobham.com/seatel.
2-The RF performance characterization was performed on one antenna unit with radome, at the ITT Exelis test range of Loop Canyon, California US, on the 12-18 March 2013.

Restriction:
The worst excess in the receive side to the EESS Gain mask is 4.5 dB.
The service quality in conjunction with operations with reduced orbital separations from the adjacent satellites may be impaired due to excessive Rx sidelobe levels. Nevertheless, to achieve the required service quality the level of the outroute carrier may need to be increased according to a valid Eutelsat transmission plan.

Manufacturer:

SITEP Italia Spa
V. Vincinella 14 (loc. Ponzano)
19035 SANTO STEFANO MAGRA (SP)
ITALY

Tel: +39 0187 695911
Fax: +39 0187 630503
mailto : p.salutari@sitep.it

Antenna model:
CommSat80

Diameter:
80 cm

Standard:
Nomenclature M-x

Characterization date:
18-09-08

System Description:
Interactive maritime antenna -splash feed cassegrain - honeycomb radome. Three axis stabilization platform with conical scanning tracking.

Maximum Allowed EIRP:

31.6 dBW/40kHz for digital carriers at the satellite receive contours of 0 dB/K (EESS502, issue 12 rev 1, §6.1 refers).

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.95 - 12.75 GHz

Tx Gain:
38.1 dBi (typical at 14.25 GHz)

Rx Gain:
36.5 dBi (typical at 12.50 GHz)

Tx XPD:
>28 dB within -1 dB contour

Rx XPD:
>28 dB within -1 dB contour

Remarks:
1
The characterisation uniquely refers to the RF electrical performance which was assessed in a professional test range facility.
The validation of the performance of the tracking subsystem and the operations of the antenna when installed on a ship is out of the scope of this summary. More information about this can be found on the manufacturer web site: http://www.sitep.it
2
This antenna should normally be used in both transmit and receive sides in conjunction with spread spectrum or CDMA modems. The association of this antenna with SCPC/TDMA modems is conditioned to the existence of a Eutelsat valid transmission plan (e.g. with high efficiency FEC (1/3, 1/4, etc) and BPSK modulations for the ship-to-shore carrier).

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:
SAILOR 600 Ku
Diameter:
0.65 m
Standard:
Nomenclature M-x
Characterization date:
19-05-2017
Validity period:
See remark 4
Last test data submitted on:
23-02-2017

System Description:

Stabilized maritime antenna one Tx port, two (co-polar and cross-polar) Rx ports; splash feed Gregorian. Hydroformed aluminum reflector. Tuned multi-layer sandwich radome. Three axis stabilization platform with conical scanning tracking.
BUC: NexGenWave 6 W; LNB: Thrane & Thrane.

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:
31.6 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
31.7 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
33.5 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.5°
35.6 dBW / 40 kHz for an orbital separation from the adjacent satellite > 3.0°
In the 13.75-14.00 GHz band:
29.6 dBW / 40 kHz for an orbital separation from the adjacent satellite ≥ 1.5°
29.7 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.0°
31.9 dBW / 40 kHz for an orbital separation from the adjacent satellite > 2.5°
32.9 dBW / 40 kHz for an orbital separation from the adjacent satellite > 3.0°

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain:
37.6 dBi (average at 14.25 GHz)
Tx XPD:
≥ 35 dB within -1 dB contour

Rx Frequency:
10.70 – 12.75 GHz

Rx Gain (co-polar and cross-polar ports):
35.8 dBi (average at 11.70 GHz)
Rx XPD :
≥ 30.2 dB within -1 dB contour (co-polar)
≥ 31 dB within -1 dB contour (cross-polar)
G/T:
15.9 dB/K typ @ 11.70 GHz at 30° El

Restrictions and remarks:

1. The manufacturer states that the RMS pointing error is less than 0.2° for the following ship motions:
   Roll = ± 30°/6s
   Pitch = ± 15°/5s
   Yaw = ± 10°/8s
2. The RF performance characterization was performed on one antenna unit with radome, at the Thales Alenia Space test range of Cannes, France on the 21-23 February 2017.
3. Cobham has inserted in the ACU software a look-up table with the polarization skew of the Eutelsat satellites, to protect against the mishandling of polarization skew values by installers. The transmission of the HPA is muted from the ACU when the maximum pointing error exceeds 0.5°, by cutting off the 10 MHz reference.
4. The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standards.
5. The worst sidelobe excess in the near region receive side is 7.15 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 levels. Nevertheless, to achieve the required service quality the level of the outroute carrier may need to be increased according to a valid Eutelsat transmission plan.
6. The transmission in the band 13.75-14.00 GHz for antennas with a diameter <1.2 m is subject to the ITU radio regulations in force.

Manufacturer:
Thrane & Thrane A/S
trading as Cobham SATCOM
Lundtoftegaardsvej 93 D
DK-2800 Kgs. Lyngby
DENMARK

Tel: + 45 39 55 88 00
Fax:+ 45 39 55 88 88
Website: http://www.cobham.com/lyngby

Antenna model:
SAILOR 800 VSAT 407008A-00500

Antenna aperture dimensions:
83 cm

Standard:
M

Characterization date:
09-10-2013

System Description:
Stabilized maritime antenna – ring focus Gregorian configuration – Sandwich foam RTM (Resin Transfer Molding) radome. Three axis stabilization platform with conical RF tracking.
BUC NextGenWave 6W rating
LNB PhilTech
OMT Thrane & Thrane TT 60-131011.

Models Characterized:
Standard configuration: linear orthogonal polarization with co-polarized or cross-polarized signal reception option.

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
38.6 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 2.5°
34.2 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.0°
34.0 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 – 14.50 GHz

Tx Gain:
40.0dBi (typical at 14.25 GHz)

Tx XPD:
$\geq$ 31.7 dB within -1 dB contour

Rx Frequency:
10.70-12.75 GHz

Rx Gain:
37.9 dBi (typical at 11.7 GHz)

Rx XPD:
$\geq$ 30.5 dB within -1 dB contour

G/T (measured with radome)
18.2 dB/K @ 12.75 GHz 30 ° Elevation

Remarks:

1. The manufacturer states that the RMS pointing error is less than 0.20° for the following ship motions:
   Roll = 30° in a period of 6 sec
   Pitch = 15° in a period of 4 sec
   Yaw = 10° in a period of 10 sec
2. The RF performance characterization was performed on one antenna unit with radome, at the CTS test range of Leatherhead, UK, on the 21-22 August 2013.
3. The transmission of the HPA is muted from the ACU when the maximum pointing error exceeds 0.5°, by inhibiting the 10 MHz reference signal to the BUC.
4. Thrane & Thrane has inserted in the ACU software a look-up table with the polarization skew of the Eutelsat satellites, to protect against the mishandling of polarization skew values by installers.
5. The characterization's validity is subject to regular submission of patterns to confirm that the system remains complaint with the Eutelsat standards.

Restrictions:

1. The worst excess in the receive side (+/-10°) to the EESS Gain mask is 6.3 dB @ 3°.
   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 levels. Nevertheless, to achieve the required service quality the level of the outroute carrier may need to be increased according to a valid Eutelsat transmission plan.

Characterization – Maritime

Manufacturer:
Thrane & Thrane A/S
Lundtoftegaardsvej 93 D
DK-2800 Kgs. Lyngby
DENMARK

Tel: + 45 39 55 88 00
Fax:+ 45 39 55 88 88
mailto:info@thrane.com

Antenna model:
SAILOR 900 VSAT 407009B-00500
and 407009E-00500

Antenna aperture dimensions:
1.03 m

Standard:
M

Characterization date:
30-04-2013

Last update:
19-01-2017

System Description:
Stabilised maritime antenna – ring focus Gregorian configuration – Sandwich foam pre-preg layers radome. Three axis stabilization platform with conical RF tracking.
BUC 407009B-0500 NextGenWave 8W rating
407009E-0500 NextGenWave 20W rating
LNB Philtech
OMT Thrane & Thrane TT 60-131011

Models Characterized:
Standard configuration: linear orthogonal polarization with co-polarized or cross-polarized signal reception option.

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
39.8 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 2.5°
39.6 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.0°
35.6 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

Tx Frequency:
13.75 – 14.50 GHz

Rx Frequency:
10.70-12.75 GHz

Tx Gain:
41.1dBi (typical at 14.25 GHz)

Rx Gain:
40.2 dBi (typical at 11.7 GHz)

Tx XPD:
>30 dB within -1 dB contour

Rx XPD:
>30 dB within -1 dB contour

G/T (measured with radome)
19.9 dB/K @ 12.75 GHz 30 ° Elevation

Remarks:

1-The manufacturer states that the RMS pointing error is less than 0.20° for the following ship motions:

Roll = 30° in a period of 6 sec

Pitch = 15° in a period of 4 sec

Yaw = 10° in a period of 10 sec

2-The RF performance characterization was performed on one antenna unit with radome, at the France Telecom test range of La Turbie, France on the 18-20 April 2013.

3-Thrane & Thrane has inserted in the ACU software a look-up table with the polarization skew of the Eutelsat satellites, to protect against the mishandling of polarization skew values by installers.

4-The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standards.

Restrictions:

The use of Rx band 10.7 to 10.95 GHz may be subject to impairments because the isolation of the sidelobes at 3° from the boresight is less than 20 dB at 10.70 GHz (17.8 dB). Nevertheless these operations may be exceptionally authorized according to a valid Eutelsat transmission plan.

Manufacturer:
Thrane & Thrane A/S
Lundtoftegaardsvej 93 D
DK-2800 Kgs. Lyngby
DENMARK

Tel: + 45 39 55 88 00
Fax:+ 45 39 55 88 88
mailto:info@thrane.com

Antenna model:
SAILOR 900 VSAT 407009A-00500

Antenna aperture dimensions:
1.05 m

Standard:
M

Characterization date:
16-11-2012

System Description:
Stabilised maritime antenna – ring focus Gregorian configuration – sandwich foam RTM (Resine Transfer Molding) radome. Three axis stabilization platform with conical RF tracking.
BUC NextGenWave 8W rating
LNB Philtech
OMT Thrane & Thrane TT 60-131011

Models Characterized:
Standard configuration: linear orthogonal polarization with co-polarized or cross-polarized signal reception option.

Maximum Allowed EIRP:
For digital carriers transmitted at the satellite receive contour of 0 dB/K (EESS 502 refers):
40.0 dBW / 40 KHz for an orbital separation of the adjacent satellite $\geq$ 2.0°
36.1 dBW / 40 kHz for an orbital separation of the adjacent satellite $\geq$ 1.5°

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:
40.1 dBi (typical at 11.7 GHz)

Tx XPD:
>35 dB within -1 dB contour

Rx XPD:
>31.1 dB within -1 dB contour

G/T (measured with radome)
19.9 dB/K @ 12.75 GHz 30 ° Elevation

Remarks:
1-The manufacturer states that the RMS pointing error is less than 0.20° for the following ship motions:
Roll = 30° in a period of 6 sec
Pitch = 15° in a period of 4 sec
Yaw = 10° in a period of 10 sec

2-The RF performance characterization was performed on one antenna unit with radome, at the France Telecom test range of La Turbie, France on the 23-25 October 2012.

3-Thrane & Thrane will insert in the ACU software a look-up table with the polarization skew of the Eutelsat satellites, to protect against the mishandling of polarization skew values by installers.

4-The characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standards.

Restriction:
The use of Rx band 10.7 to 10.95 GHz may be subject to impairments because the isolation of the sidelobes at 3° from the boresight is less than 20 dB at 10.70 GHz (16.4 dB). Nevertheless these operations may be exceptionally authorized according to a valid Eutelsat transmission plan.

Characterization - Maritime

Applicant:

Henrik O. Christensen
Thrane & Thrane A/S trading as Cobham SATCOM
Lundtoftegaardsvej 93D
2800 Kgs. Lyngby
Denmark
voice: +453955880
email: info@cobham.com

Certificate:
CH-MAR-COB-103-589
Antenna model:
Sailor 1000 XTR Ku
Diameter:
1.03 m
Standard:
M
Characterization Date:
07/12/2021
Last test data submitted on:
06/10/2021 (antenna); 21/11/2023 (BUC)

System Description:
Maritme Antenna with auto-pointing system, conical scanning (Conscan), with one Tx port and two RX ports. It provides a F/D ratio of 0.291, it is equipped with a radome and a BUC of max 25 W.

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

Frequency (GHz)	13.75 GHz	14.00 GHz	14.25 GHz	14.50 GHz
Satellite sep. ≥ 1.5°	34.4 dBW/40KHz	34.0 dBW/40KHz	35.8 dBW/40 KHz	35.3 dBW/40 KHz
Satellite sep. ≥ 2.0°	38.5 dBW/40 KHz	38.3 dBW/40KHz	39.6 dBW/40KHz	38.3 dBW/40KHz
Satellite sep. ≥ 2.5°	39.9 dBW/40KHz	39.5 dBW/40KHz	42.7 dBW/40KHz	42.8 dBW/40KHz
Satellite sep. ≥ 3°	39.9 dBW/40KHz	39.5 dBW/40KHz	42.1 dBW/40KHz	41.5 dBW/40KHz

Tx Frequency:
13.75 - 14.50 GHz

Rx Frequency:
10.70 - 12.75 GHz

Tx Gain:
40.9 dBi (typical at 14 GHz)

Rx Gain:
40.4 dBi (typical at 11.50 GHz)

Tx XPD:
≥ 36.9 dB within -1 dB contour (worst case at 14.00 GHz)

Rx XPD:
≥ 26.9 dB at boresight and at 10.7 GHz in H-Pol (Port 1)

Pointing and wind load error:
< 0.2°

G/T:
20.7 dB/K theoretical at 11.75 GHz, NF of 0.8 dB, LNB gain equal to 54 dB, radome losses of 0.12 dB

Restrictions and remarks:

1) The access is assumed to be in TDMA mode on digital carriers of maximum 10 MSym/s
2) 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).
3) This Characterization was performed at the test range of Catapult in Harwell Campus (Oxford, UK) between September and October 2021. It was reviewed on November 2023 to allow 25 Watt BUC.
4) The Characterization's validity is subject to regular submission of patterns to confirm that the system remains compliant with the Eutelsat standard.

ANNEX 1

THE POLARISATION SKEW OF THE EUTELSAT SATELLITES USING DUAL LINEAR POLARISATION

GENERAL

The linear polarisation planes (defined as X and Y and orthogonal to each other) of most of the Eutelsat satellites are not parallel/orthogonal to the equatorial plane.

For historical reasons, the polarisation planes are inclined by an angle with respect to the equatorial plane. This angle is referenced as the polarisation skew.

This value is of fundamental importance for the following types of antennas, whenever the polarisation alignment is performed in open loop (calculated):

- Earth Stations on Vessels (ESVs)
- Satcom-On -The Move (SOTM)
- Auto-pointing antennas

If the pointing and polarisation alignment software of an antenna falling in the categories above did not take duly into account this value of skew, the polarisation discrimination achieved at the end of the alignment would suffer a major degradation with respect to the value which the antenna optics could theoretically yield, with a consequent high risk of interference to other services on the opposite polarisation and the achievable performance would not be met.

VALUE OF THE SKEW OF THE EUTELSAT SATELLITES

The reference X-polarisation is defined as that polarisation whose plane makes an angle of 93.535° in an anti-clockwise direction, looking towards the earth, about a reference vector with respect to a plane containing this vector and the pitch axis. The reference vector is defined as the vector from the satellite in the direction 0.21° towards west and 6.07° towards north in satellite coordinates.

The reference Y-polarisation is defined as that polarisation whose plane is orthogonal to the X-polarisation plane and the reference vector defined above.

In other words the skew of the Eutelsat satellites is **+3.535°, clock-wise** when looking at the satellite from the earth, from anywhere on the meridian (**in the northern hemisphere**) corresponding to the orbital location of the satellite.

In the southern hemisphere the skew of the Eutelsat satellites is **+183.535°, clock-wise**, from anywhere on the meridian corresponding to the orbital location of the satellite.

There are six satellites of the Eutelsat fleet using linear polarisation which make

exception. These are:

SESAT 2,
EUTELSAT 5 WA,
Telstar 12.
EUTELSAT 172A

for which the skew is 0.0 °

EUTELSAT SATELLITES USING DUAL CIRCULAR POLARISATION

To provide additional guidance to the development of automatic pointing and polarisation alignment systems of antennas, it must be noted that Eutelsat operates part of the payload capacity of the following satellites:

EUTELSAT 5WA

EUTELSAT 36A

in dual circular polarisation

and part of the payload capacity

of: Telstar-12

in left hand circular polarisation

Antenna References			
Characterization	**Manufacturer**	**Size**	**Antenna Model**
CH-FLY-ACT-120-531	ACTIA Telecom	1.2	Agilis 1221 (Sat-Lite Tech.)
CH-FLY-AVL-155-719	AVL	1.55	1515
CH-DOP-CCO-120-510	C-COM Satellite Systems Inc.	1.2	iNetVu 1201 Driveaway
CH-DOP-CCO-120-742	C-COM Satellite Systems Inc.	1.2	iNetVu 1202 Driveaway
CH-MAR-C2S-120-544	C2SAT	1.2	1.2m Ku II
CH-DOP-COB-100-526	Cobham	1	Explorer 7100
CH-FLY-DAT-200-532	DataPath	2	CCT200
CH-MAR-EPK-090-676	EPAK GmbH	0.9	0.9m DSi9-Ku Pro
CH-FLY-EVE-080-533	Eversat	0.8	LightAway
CH-DOP-HOL-150-512	Holkirk Communications Ltd.	1.5	RM150
CH-FLY-HOL-120-595	Holkirk Communications Ltd.	1.2	TP120
CH-AIR-IPR-037-580	IPR Italiana Ponti Radio	0.37	D-ATKS Aircraft
CH-MAR-ITL-060-545	Intellian Technologies, Inc.	0.6	V60
CH-MAR-ITL-083-546	Intellian Technologies, Inc.	0.83	v80G
CH-MAR-ITL-103-547	Intellian Technologies, Inc.	1.03	v100
CH-MAR-ITL-105-548	Intellian Technologies, Inc.	1.05	v110
CH-MAR-ITL-105-549	Intellian Technologies, Inc.	1.05	v100NX (V5-11-UXXX)
CH-FLY-JRC-059-534	Japan Radio Co., Ltd.	0.65	NAY-199K
CH-MAR-JOT-085-550	Jotron	0.85	B85
CH-MAR-KNS-060-551	KNS	0.6	Supertrack Z6MK2
CH-MAR-KNS-085-552	KNS	0.85	Supertrack Z8
CH-MAR-KVH-037-553	KVH	0.37	V3
CH-MAR-KVH-060-554	KVH	0.6	KVH-60cm
CH-MAR-MAC-075-555	M.A.C	0.75	ISA75
CH-DOP-NDS-120-513	ND SatCom AG	1.2	SkyRAY MAS 1500-ERA
CH-DOP-NDS-120-514	ND SatCom AG	1.2	SkyRAY Compact 1500 Plus-ERA
CH-DOP-NDS-120-515	ND SatCom AG	1.2	SkyRAY Compact 1500-ERA
CH-DOP-NDS-150-516	ND SatCom AG	1.5	SkyRay MAS 1900-ERA
CH-MAR-NAV-070-560	Navisystem	0.7	Navisystem 75
CH-MAR-NAV-081-561	Navisystem	0.81	Navisystem 85
CH-MAR-NAV-095-562	Navisystem	0.95	Navisystem 95
CH-MAR-ORB-115-565	Orbit	1.15	OceanTRx4 500 Ku-Band
CH-MAR-ORB-220-564	Orbit	2.2	AL-7107 C-Band
CH-DOP-PAL-150-511	Pals Elektronik Ltd.	1.5	PDA-150
CH-DOP-PST-120-517	ProSat Solutions	1.52	D120M
CH-DOP-PST-150-518	ProSat Solutions	1.89	D150M
CH-MAR-RMN-080-566	Radio Marine S.p.A.	0.6	Radiomarine BroadBand80
CH-FLY-RQT-075-535	ReQuTech AB	0.75	0.75m PICO75 2PL KuBand
CH-FLY-RQT-120-536	ReQuTech AB	1.2	PICO120
CH-DOP-SVS-120-522	SVS	1.52	SDC120-Ku
CH-DOP-SVS-150-523	SVS	1.89	SDC150-Ku Integrated 15 Ku ERA
CH-DOP-SMN-120-519	Satmission	1.25	SMP 125DA
CH-DOP-SMN-120-521	Satmission	1.25	SMV 125DA
CH-DOP-SMN-155-520	Satmission	1.54	SMP 155
CH-MAR-COB-060-567	Seatel (Cobham)	0.6	USAT 24

CH-MAR-COB-060-568	Seatel (Cobham)	0.6	2406
CH-MAR-COB-075-569	Seatel (Cobham)	0.75	3011W
CH-MAR-COB-090-570	Seatel (Cobham)	0.9	3612
CH-MAR-COB-100-571	Seatel (Cobham)	1	4006
CH-MAR-COB-100-572	Seatel (Cobham)	1	4009
CH-MAR-COB-150-574	Seatel (Cobham)	1.5	6012
CH-MAR-SIT-080-575	Sitep Italia S.P.A.	0.8	CommSat80
CH-DOP-COB-100-524	Thrane & Thrane (Cobham)	1	Explorer 8100 Ku
CH-DOP-COB-120-525	Thrane & Thrane (Cobham)	1.2	Explorer 8120 Ku
CH-FLY-COB-100-537	Thrane & Thrane (Cobham)	1	Explorer 6100 Ku
CH-MAR-COB-065-576	Thrane & Thrane (Cobham)	0.65	Sailor 600 Ku
CH-MAR-COB-083-577	Thrane & Thrane (Cobham)	0.83	Sailor 800 VSAT 407008A-00500
CH-MAR-COB-103-578	Thrane & Thrane (Cobham)	1.03	Sailor 900 VSAT 407009B-00500
CH-MAR-COB-103-589	Thrane & Thrane (Cobham)	1.03	Sailor 1000 XTR Ku
CH-MAR-COB-105-579	Thrane & Thrane (Cobham)	1.05	Sailor 900 VSAT 407009A-00500
CH-FLY-VER-240-538	Vertex	2.4	2.4m SFC-2712C
CH-FLY-VER-240-539	Vertex	2.4	2.4 SFK-1575i
CH-FXA-GDS-380-530	Vertex	3.8	3.8 PMK
CH-DOP-VSL-180-529	Vislink	1.8	Newswift 180 HD
CH-FLY-VSL-120-527	Vislink	1.2	Flydrive 120
CH-FLY-VSL-150-528	Vislink	1.5	Flydrive 150
CH-FLY-VSL-240-542	Vislink	2.4	Mantis 240 C
CH-FLY-VSL-240-543	Vislink	2.4	Mantis 240

Notes:

-“**Characterization”** is an antenna validation process applied to small production series up to a few dozen units. The tests performed are the same as for Type Approval but they are done on a single sample.

The list above gives the references for CHARACTERIZED ANTENNAS & VSATS

-“**Type Approval”** is a process of quality monitoring for large production series of antennas and VSATs. The tests are performed initially on 3 samples randomly selected from the production series and are submitted to the tests described in ESOG 120. Periodically, in time, the quality is checked by repeating a subset of the tests on other production samples.

Please refer to TYPE APPROVED ANTENNAS & VSATS regarding Type Approved systems.

Eutelsat is one of the world's leading and most experienced operators of communications satellites.

Our extensive network of high-performance satellites, located between 133° West and 174° East, provides capacity to clients that include broadcasters and broadcasting associations, pay-TV operators, video, data and Internet service providers, enterprises and government agencies.

Eutelsat's satellites provide ubiquitous coverage of Europe, the Middle East, Africa, Asia-Pacific and the Americas, enabling video, data, broadband and government communications to be established irrespective of a user's location.

Headquartered in Paris, with offices and teleports around the globe, Eutelsat represents a workforce of 1,200 men and women from 46 countries who are experts in their fields and work with clients to deliver the highest quality of service.
fields and work with clients to deliver the highest quality of service.

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