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Report On

Limited FCC CFR 47 Parts 15B, 15C and 87 Testing of the
Thales Aerospace Division
Inmarsat Class 6 SDU

COMMERCIAL-IN-CONFIDENCE

FCC ID: KV6TFS-SDU82155D

Document 75903406 Report 02 Issue 2 October 2008

TUV Product Service Ltd, Octagon House, Concorde Way, Segensworth North,
Fareham, Hampshire, United Kingdom, PO15 5RL
Tel: +44 (0) 1489 558100. Website: www.tuvps.co.uk

REPORT ON

FCC CFR 47 Parts 15B, 15C and 87 Testing of the
Thales Aerospace Division
Inmarsat Class 6 SDU

Document 75903406 Report 02 Issue 2

October 2008

PREPARED FOR

Thales Aerospace Division
86 Bushey Road
Raynes Park
London
SW20 0JW

PREPARED BY

S Hartley
Test Engineer

APPROVED BY

J Adams
Authorised Signatory

M J Hardy
Authorised Signatory

DATED 27 October 2008

This report has been re-issued as Issue 2 to correct the model number.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47: Parts 15 B, and 87. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

S C Hartley A R Hubbard S Bennett

Product Service

CONTENTS

Product Service

SECTION 1

REPORT SUMMARY

FCC CFR 47 Parts 15B, 15C and 87 Testing of the
Thales Aerospace Division
Inmarsat Class 6 SDU

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Thales Aerospace Division Inmarsat Class 6 SDU to the requirements of FCC CFR 47 Part 15B 2006, FCC CFR 47 Part 15C 2006 and FCC CFR 47 Part 87 2006, for the series of tests carried out.

Objective	To perform FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification/Test Plan, for the series of tests carried out.
Manufacturer	Thales Avionics Ltd
Model Number(s)	82155D30C
Serial Number(s)	10070
Software Version	Test
Hardware Version	D30G
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 15B 2006 FCC CFR 47 Part 15C 2006 FCC CFR 47 Part 87: 2006
Test Plan/Issue/Date	Thales Document: T-145 Issue B 18 Feb 2008
Incoming Release Date	Declaration of Build Status 01 April 2008
Order Number Date	AW000017 15 August 2008
Start of Test	01 August 2008
Finish of Test	09 August 2008
Name of Engineer(s)	A R Hubbard S C Hartley S Bennett
Related Document(s)	ANSI C63.4 2003. Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz

Product Service

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results in accordance with FCC CFR 47 Part 15B 2006, is shown below.

Configuration 1 - As supplied							
Section	Spec Clause	Test Plan Clause	Test Description	Mode	Mod State	Result	Base Standard
2.1	15.109	Clause 8.2	Radiated Emissions (Enclosure Port)	TX		N/A	ANSI C63.4.2003
				RX	0	Pass	

A brief summary of results in accordance with FCC CFR 47 Part 15C 2006, is shown below.

Configuration 1 - As supplied							
Section	Spec Clause	Test Plan Clause	Test Description	Mode	Mod State	Result	Base Standard
2.2	15.209, 15.205	Clause 8.2	Radiated Emissions (Enclosure Port)	TX	0	Pass	ANSI C63.4.2003
				RX		N/A	

A brief summary of results in accordance with FCC CFR 47 Part 87 2006, is shown below.

Configuration 1 - As supplied							
Section	Spec Clause	Test Plan Clause	Test Description	Mode	Mod State	Result	Base Standard
2.3	87.133	Clause 8.2	Frequency Stability Test	TX	0	Pass	-

N/A – Not Applicable

Product Service

1.3 DECLARATION OF BUILD STATUS

MAIN EUT			
MANUFACTURING DESCRIPTION	Top Flight Satcom SDU 82155		
MANUFACTURER	Thales Avionics Ltd		
TYPE	82155D30C		
PART NUMBER	N/A		
SERIAL NUMBER	10070		
HARDWARE VERSION	D30G		
SOFTWARE VERSION	Test		
TRANSMITTER OPERATING RANGE	1626.5 to 1662.5 MHz		
RECEIVER OPERATING RANGE	1525 to 1559 MHz		
COUNTRY OF ORIGIN	United Kingdom		
INTERMEDIATE FREQUENCIES	110 MHz		
ITU DESIGNATION OF EMISSION	G1D		
HIGHEST INTERNALLY GENERATED FREQUENCY	3325 MHz		
OUTPUT POWER (W or dBm)	30W		
FCC ID	KV6TFS-SDU82155D		
INDUSTRY CANADA ID	Non assigned		
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	Airborne voice and data communication using Inmarsat BGAN-X satellite communication services		
ANCILLARIES (if applicable)			
MANUFACTURING DESCRIPTION	DLNA		
MANUFACTURER	Com Dev Ltd		
TYPE	Type A		
PART NUMBER	82138A01A		
SERIAL NUMBER	4403093		
COUNTRY OF ORIGIN	Canada		

Signature Colin Appleyard
Date 19 August 2008
Declaration of Build Status Serial Number 10070

Product Service

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Thales Aerospace Division Inmarsat Class 6 SDU as shown in the photograph below. A full technical description can be found in the Manufacturers documentation.

Satellite Data Unit

Product Service

1.4.2 Test Configuration

Configuration 1: As supplied

The EUT was configured in accordance with FCC CFR 47 Part 15B 2006, FCC CFR 47 Part 15C 2006 and FCC CFR 47 Part 87: 2006.

1.4.3 Modes of Operation

Modes of operation of each EUT during testing were as follows:

Mode 1 - Tx The SDU was tuned to the bottom (1626.6 MHz), middle (1643.5 MHz) and top channel (1660.4 MHz) and the output power adjusted to maximum for each case.

Mode 2 - Rx The SDU was tuned to the middle channel (1643.5 MHz) and made to transmit, and then the transmitter was commanded off.

Information on the specific test modes utilised are detailed in the test procedure for each individual test.

Product Service

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure, test laboratories or an open test area as appropriate.

The EUT consists of one module: the Satellite Data Unit (SDU) powered by a 115V, 400Hz AC main supply and cooled by separate external 24V DC fans. The EUT was controlled by RS232 and Ethernet from test equipment external to the test chamber.

The tests detailed in this report met the above test requirements.

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.7 MODIFICATION RECORD

No modifications were made to the EUT during testing.

Product Service

SECTION 2

TEST DETAILS

FCC CFR 47 Parts 15B, 15C and 87 Testing of the
Thales Aerospace Division
Inmarsat Class 6 SDU

Product Service

2.1 RADIATED EMISSIONS (ENCLOSURE PORT)

2.1.1 Specification Reference

FCC CFR 47 Part 15B: 2006, Clause 15.109
Thales Document: T-145 Issue B 18 Feb 2008, Clause 8.2

2.1.2 Equipment Under Test

Inmarsat Class 6 SDU, S/N: 10070

2.1.3 Date of Test and Modification State

02 and 09 August 2008 - Modification State 0

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of ANSI C63.4.2003

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 2

2.1.6 Environmental Conditions

	02 August 2008	09 August 2008
Ambient Temperature	21°C	20°C
Relative Humidity	58%	48%
Atmospheric Pressure	1009mbar	1011mbar

Product Service

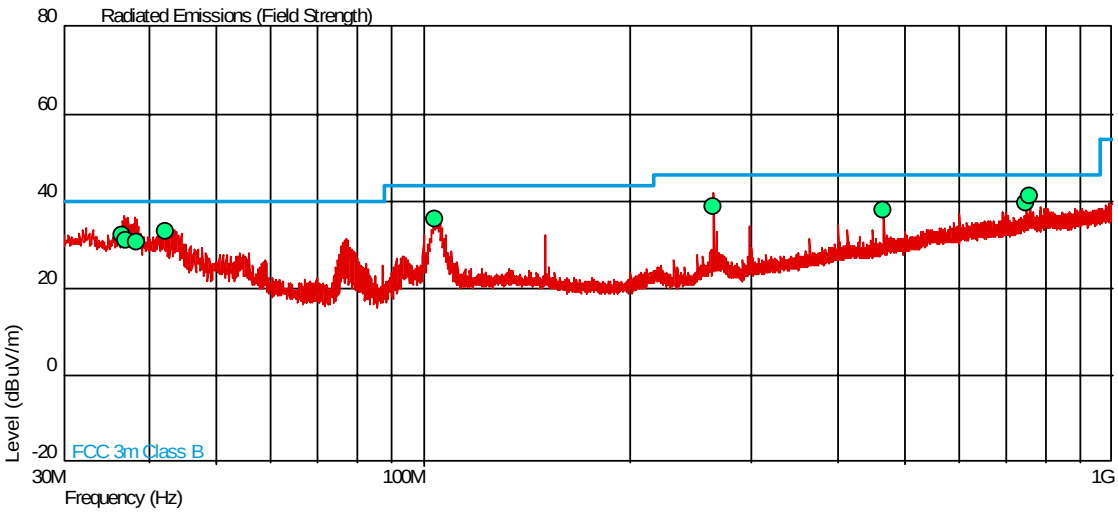
2.1.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 15B: 2006 for Radiated Emissions (Enclosure Port).

The test results are shown below.

Configuration 1 - Mode 2

30MHz to 1GHz



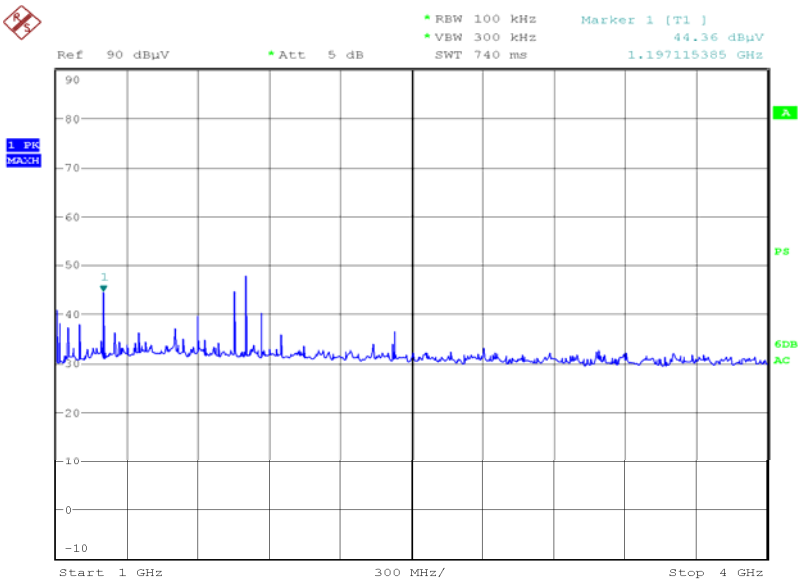
Frequency (MHz)	QP Level (dBuV/m)	QP Level (uV/m)	QP Limit (dBuV/m)	QP Limit (uV/m)	QP Margin (dBuV/m)	QP Margin (uV/m)	Angle (Deg)	Height (m)	Polarity
36.612	32.2	40.7	40.0	100.0	-7.8	-59.3	309	1.00	Vertical
37.004	31.1	35.9	40.0	100.0	-8.9	-64.1	165	1.00	Vertical
38.335	30.4	33.1	40.0	100.0	-9.6	-66.9	346	1.00	Vertical
42.316	33.0	44.7	40.0	100.0	-7.0	-55.3	67	1.00	Vertical
103.775	35.9	62.4	43.5	150.0	-7.6	-87.6	174	1.00	Vertical
264.006	38.7	86.1	46.0	200.0	-7.3	-113.9	299	1.00	Horizontal
466.653	37.9	78.5	46.0	200.0	-8.1	-121.5	181	1.00	Vertical
750.001	39.6	95.5	46.0	200.0	-6.4	-104.5	148	1.00	Horizontal
759.007	41.1	113.5	46.0	200.0	-4.9	-86.5	135	1.00	Horizontal

1GHz to 17GHz

Frequency GHz	Antenna Polarisation	Antenna Height cm	EUT Arc degrees	Result dBµV/m	Level (uV/m)	Limit dBµV/m	Limit (uV/m)	Margin dB	Margin (uV/m)	Result
1.200	Vertical	103	142	41.1	113.5	74.0	5000.0	-32.9	-4886.5	Pass
1.200	Vertical	103	142	35.0	56.2	54.0	500.0	-19.0	-443.8	Pass
1.750	Vertical	100	176	43.7	153.1	74.0	5000.0	-30.3	-4846.9	Pass
1.75	Vertical	100	176	39.0	89.1	54.0	500.0	-15.0	-410.9	Pass
1.800	Vertical	100	180	44.7	171.8	74.0	5000.0	-29.3	-4828.2	Pass
1.800	Vertical	100	180	41.8	123.0	54.0	500.0	-12.2	-377.0	Pass

1GHz to 4GHz

Vertical



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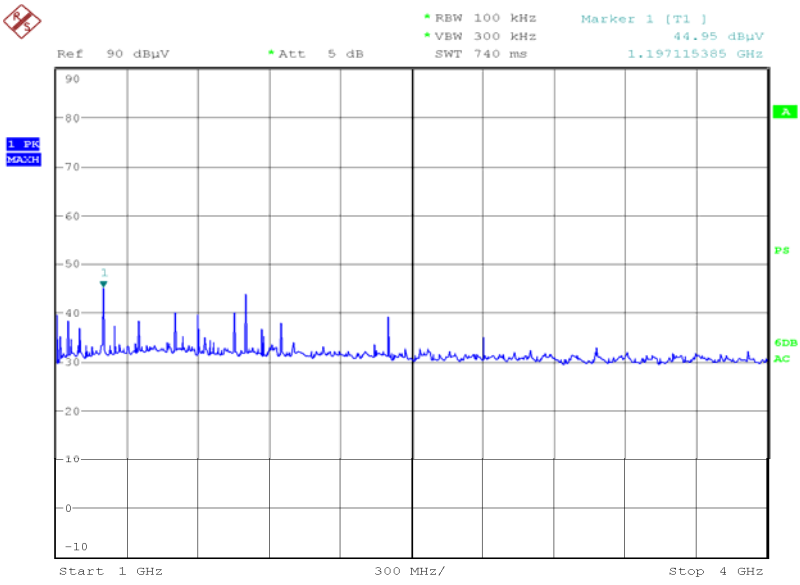

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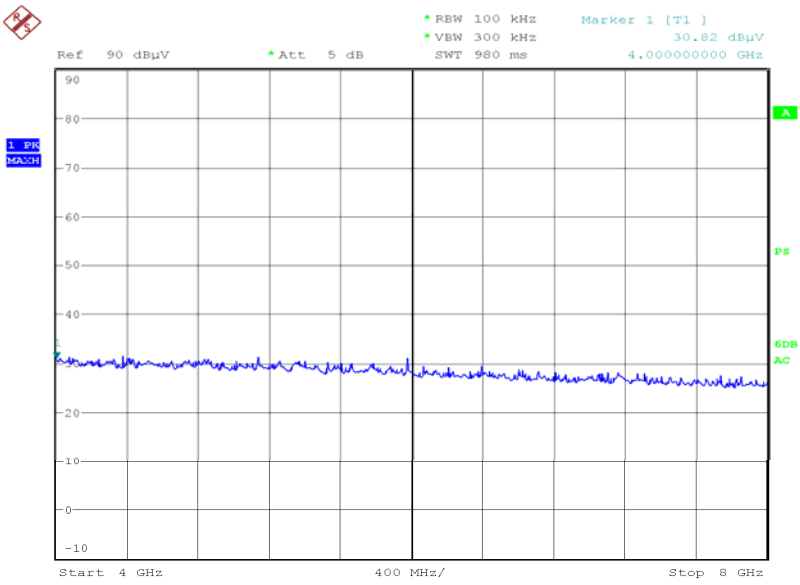
4GHz to 8GHz

Vertical



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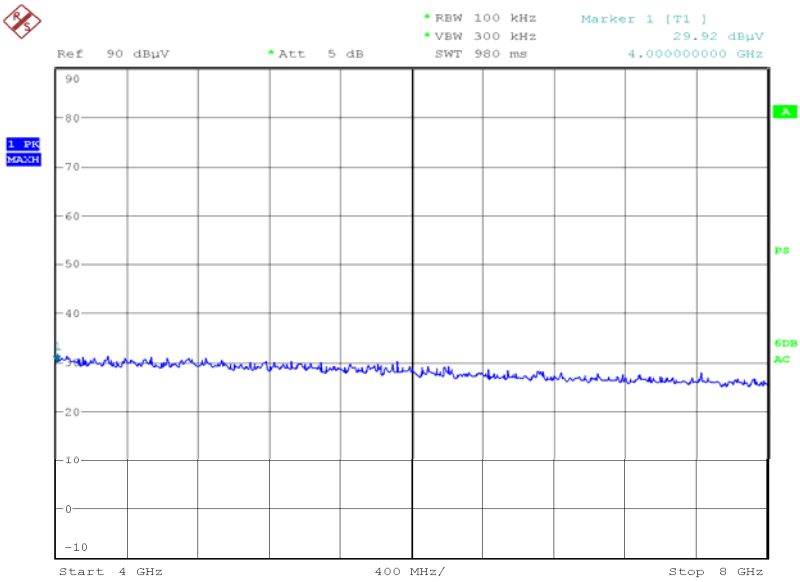

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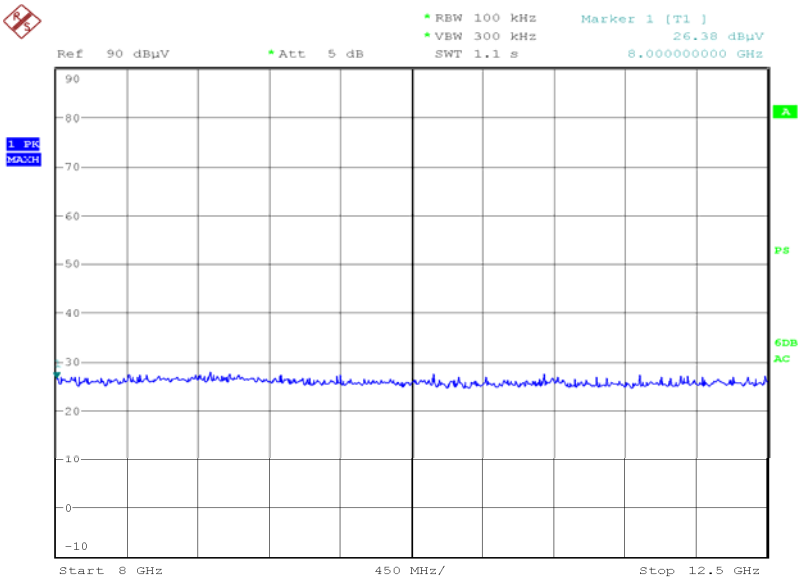
8GHz to 12.5GHz

Vertical



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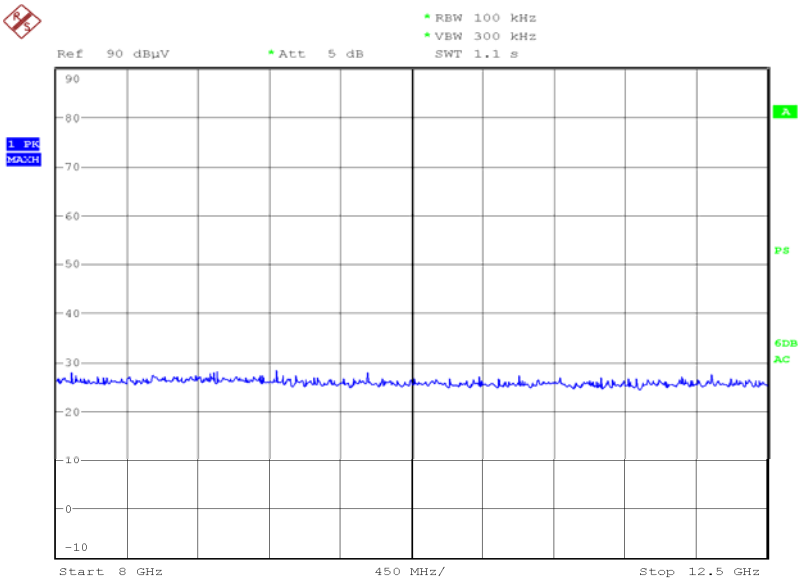

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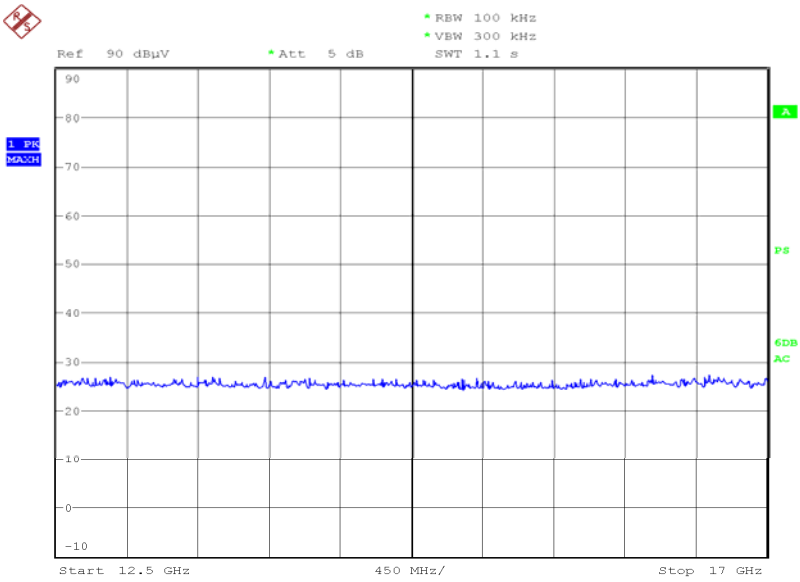
12.5GHz to 17GHz

Vertical



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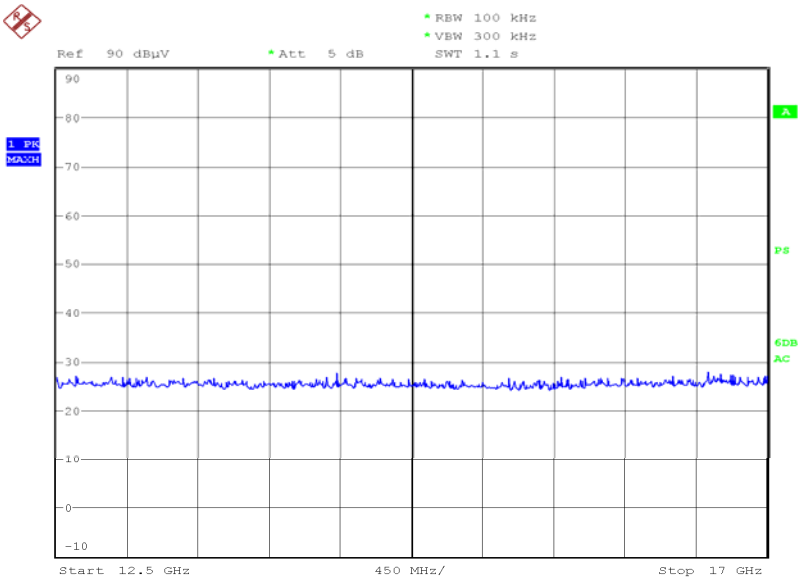

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2.2 RADIATED EMISSIONS (ENCLOSURE PORT)

2.2.1 Specification Reference

FCC CFR 47 Part 15C: 2006, Clause 15.209, 15.205
Thales Document: T-145 Issue B 18 Feb 2008, Clause 8.2

2.2.2 Equipment Under Test

Inmarsat Class 6 SDU, S/N: 10070

2.2.3 Date of Test and Modification State

02 and 09 August 2008 - Modification State 0

2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1

2.2.6 Environmental Conditions

	02 August 2008	09 August 2008
Ambient Temperature	21°C	20°C
Relative Humidity	58%	48%
Atmospheric Pressure	1009mbar	1011mbar

Product Service

2.2.7 Test Results

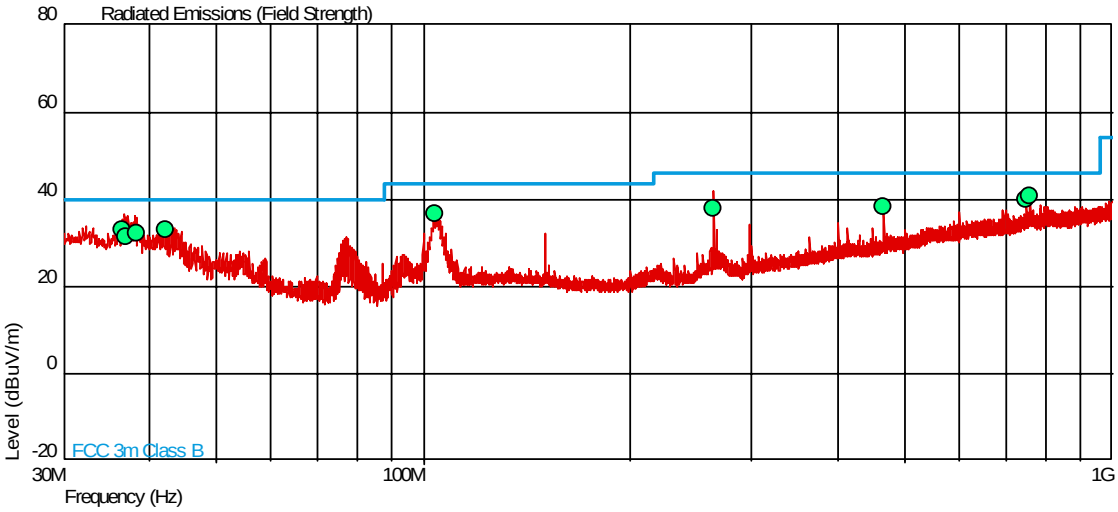
For the period of test the EUT met to meet the requirements of FCC Part 15.209: 2006 for Radiated Emissions (Enclosure Port).

The test results are shown below.

Configuration 1 - Mode 1

Middle Channel

30MHz to 1GHz



Frequency (MHz)	QP Level (dBuV/m)	QP Level (uV/m)	QP Limit (dBuV/m)	QP Limit (uV/m)	QP Margin (dBuV/m)	QP Margin (uV/m)	Angle (Deg)	Height (m)	Polarity
36.605	33.0	44.7	40.0	100.0	-7.0	-55.3	56	1.00	Vertical
37.006	31.3	36.7	40.0	100.0	-8.7	-63.3	320	1.00	Vertical
38.409	32.1	40.3	40.0	100.0	-7.9	-59.7	188	1.00	Vertical
42.308	32.9	44.2	40.0	100.0	-7.1	-55.8	35	1.00	Vertical
103.771	36.6	67.6	43.5	150.0	-6.9	-82.4	185	1.00	Vertical
264.004	37.7	76.7	46.0	200.0	-8.3	-123.3	304	1.00	Horizontal
466.652	38.5	84.1	46.0	200.0	-7.5	-115.9	187	1.00	Vertical
750.000	40.0	100.0	46.0	200.0	-6.0	-100.0	125	1.00	Horizontal
759.005	40.6	107.2	46.0	200.0	-5.4	-92.8	167	1.00	Horizontal

Product Service

1GHz to 17GHz

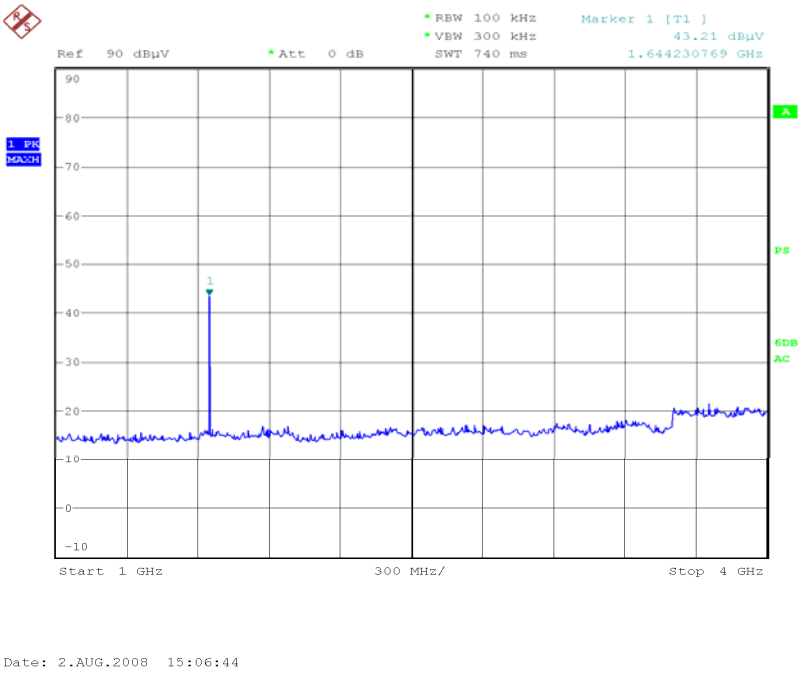
Frequency GHz	Antenna Polarisation	Antenna Height cm	EUT Arc degrees	Result dBµV/m	Level (uV/m)	Limit dBµV/m	Limit (uV/m)	Margin dB	Margin (uV/m)	Result
6.577	Horizontal	100	228	53.3	462.4	74.0	5000.0	-20.7	-4537.6	Pass
6.577	Horizontal	100	228	47.1	226.5	54.0	500.0	-6.9	-273.5	Pass

Product Service

Configuration 1 - Mode 1

1GHz to 4GHz

Vertical



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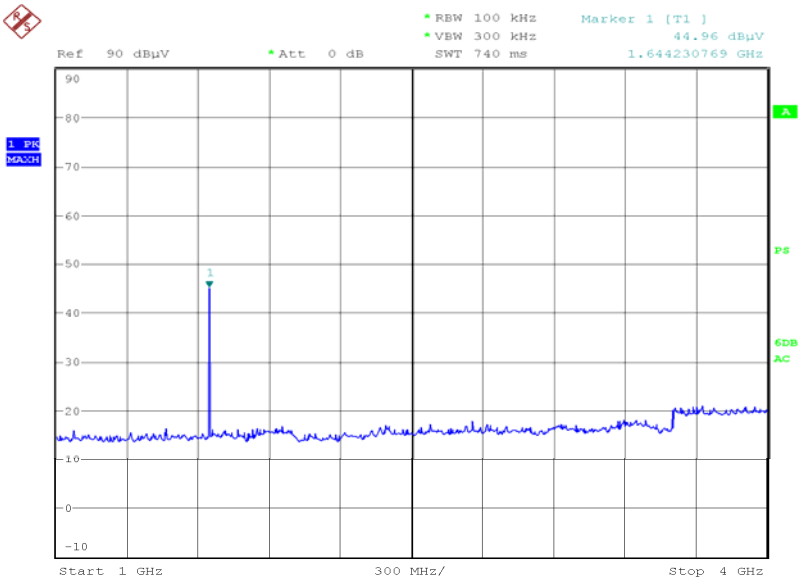

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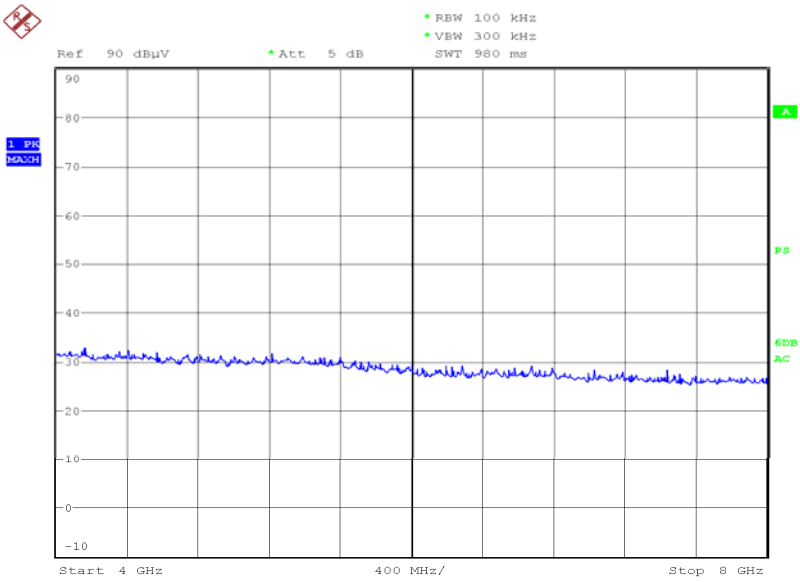
4GHz to 8GHz

Vertical



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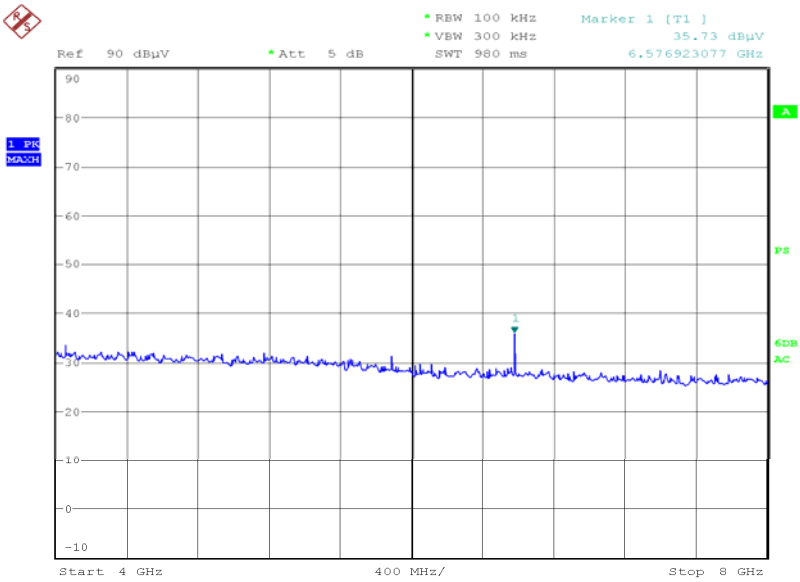

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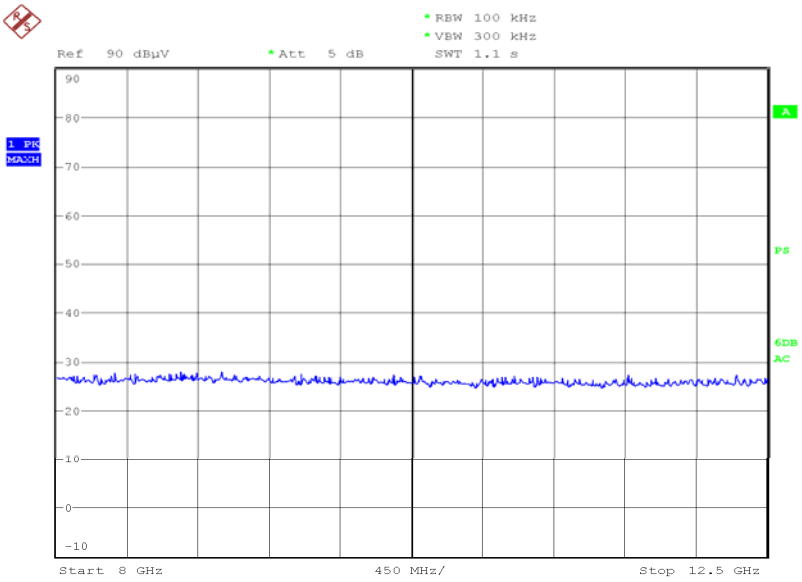
8GHz to 12.5GHz

Vertical



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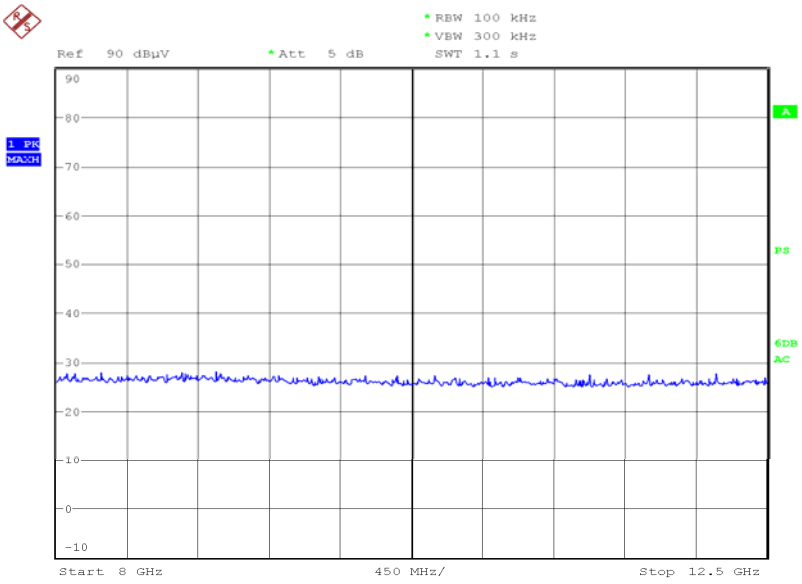

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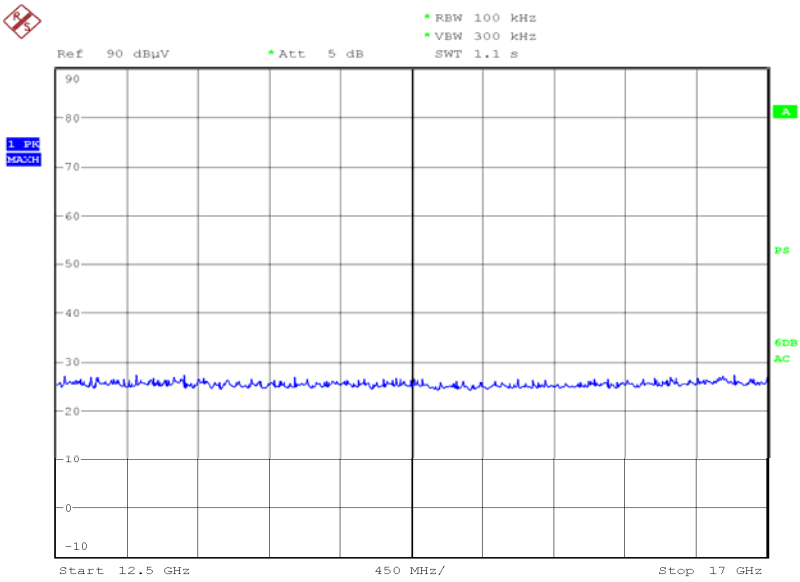
Product Service

12.5GHz to 17GHz

Vertical



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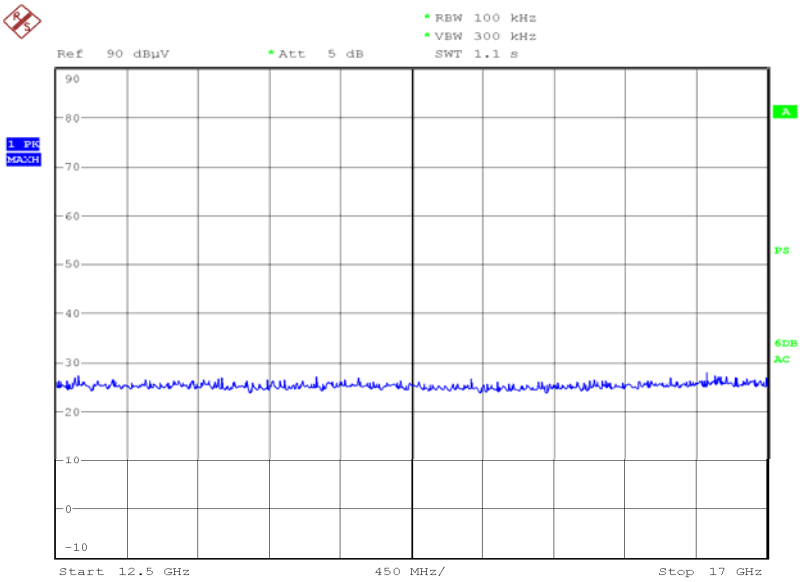

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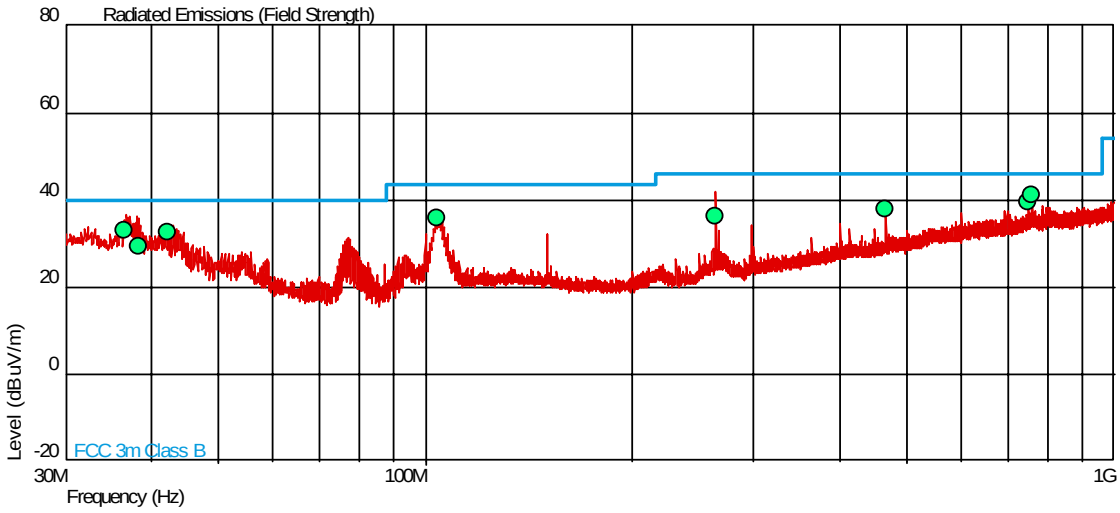
Product Service

Configuration 1 - Mode 1

Bottom Channel

30MHz to 1GHz



Frequency (MHz)	QP Level (dBuV/m)	QP Level (uV/m)	QP Limit (dBuV/m)	QP Limit (uV/m)	QP Margin (dBuV/m)	QP Margin (uV/m)	Angle (Deg)	Height (m)	Polarity
36.600	32.9	44.2	40.0	100.0	-7.1	-55.8	62	1.00	Vertical
38.404	29.5	29.9	40.0	100.0	-10.5	-70.1	319	1.00	Vertical
42.312	32.5	42.2	40.0	100.0	-7.5	-57.8	107	1.00	Vertical
103.711	35.8	61.7	43.5	150.0	-7.7	-88.3	162	1.00	Vertical
264.003	36.5	66.8	46.0	200.0	-9.5	-133.2	298	1.00	Horizontal
466.650	37.8	77.6	46.0	200.0	-8.2	-122.4	204	1.00	Vertical
750.001	39.6	95.5	46.0	200.0	-6.4	-104.5	154	1.00	Horizontal
759.000	41.2	114.8	46.0	200.0	-4.8	-85.2	139	1.00	Horizontal

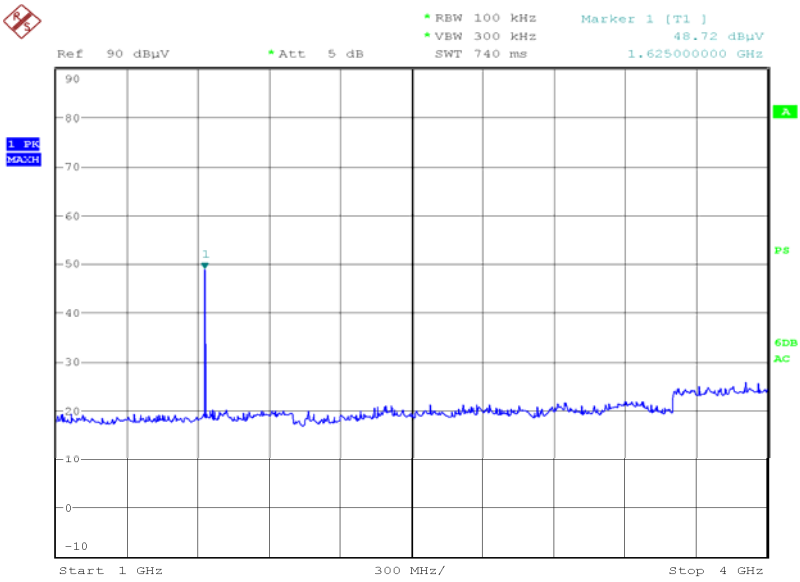
1GHz to 17GHz

Frequency GHz	Antenna Polarisation	Antenna Height cm	EUT Arc degrees	Result dBµV/m	Level (uV/m)	Limit dBµV/m	Limit (uV/m)	Margin dB	Margin (uV/m)	Result
6.506	Horizontal	100	202	51.8	389.1	74.0	5000.0	-22.2	-4610.9	Pass
6.506	Horizontal	100	202	44.0	158.5	54.0	500.0	-10.0	-341.5	Pass

Product Service

1GHz to 4GHz

Vertical



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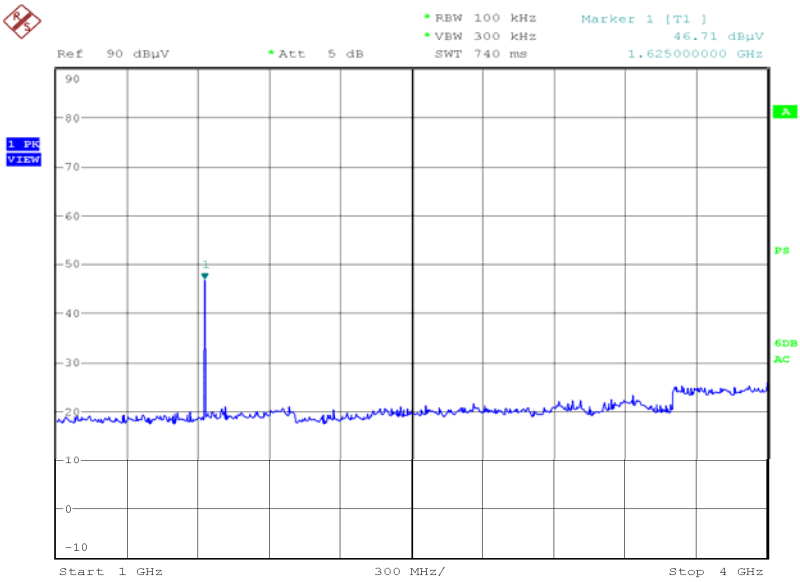

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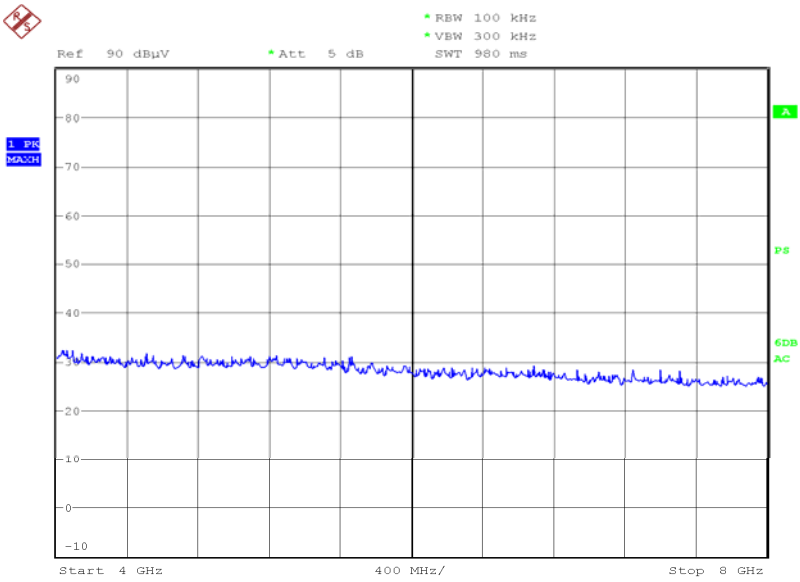
4GHz to 8GHz

Vertical



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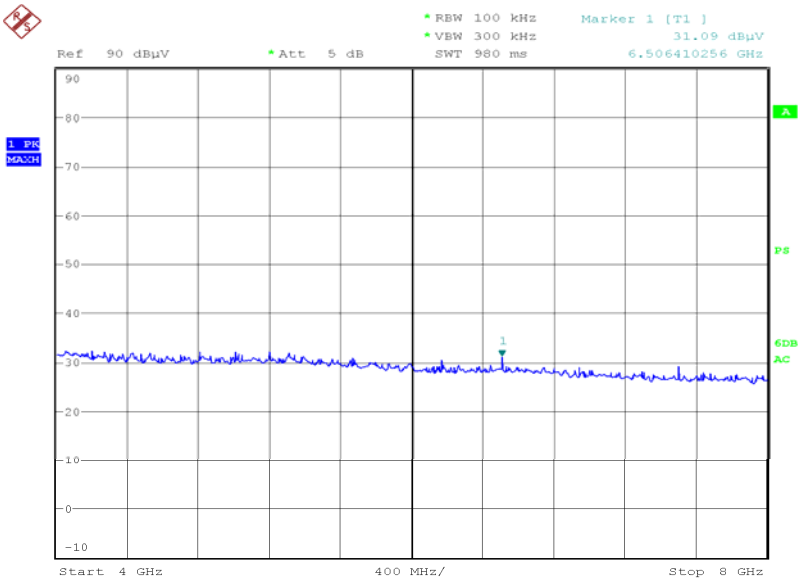

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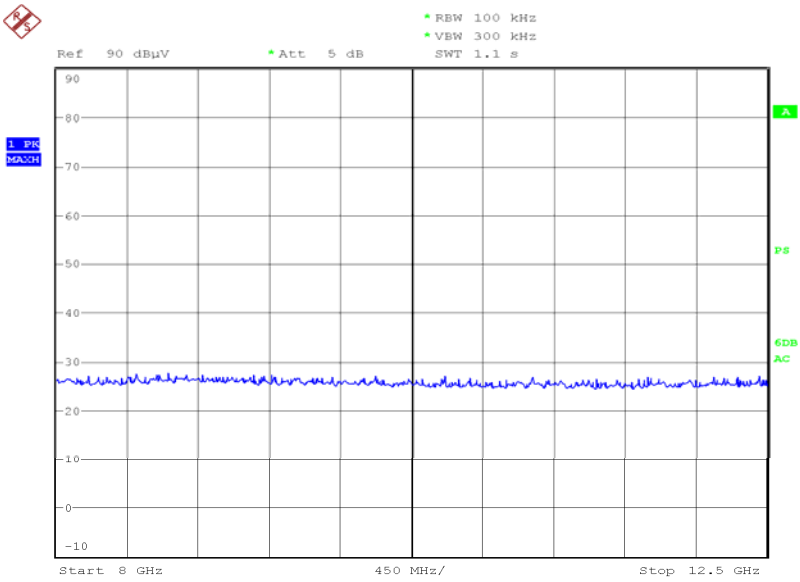
8GHz to 12.5GHz

Vertical



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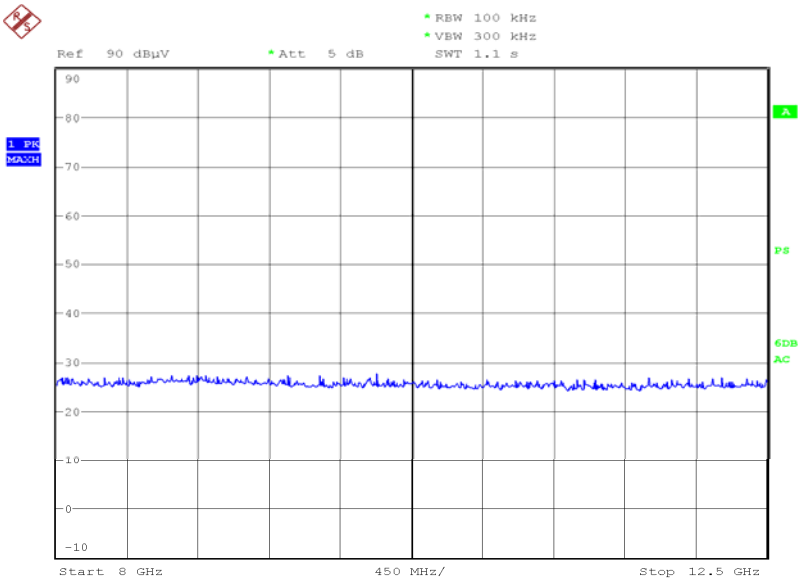
Horizontal



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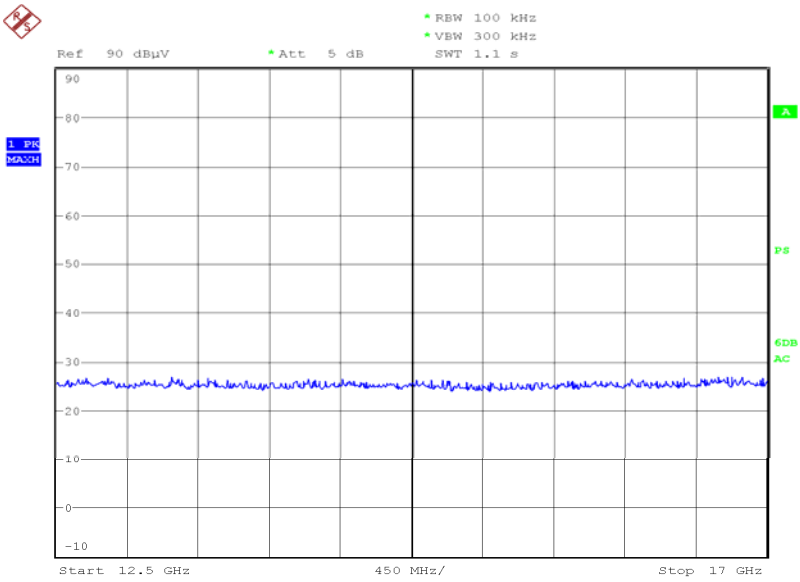
Product Service

12.5GHz to 17GHz

Vertical



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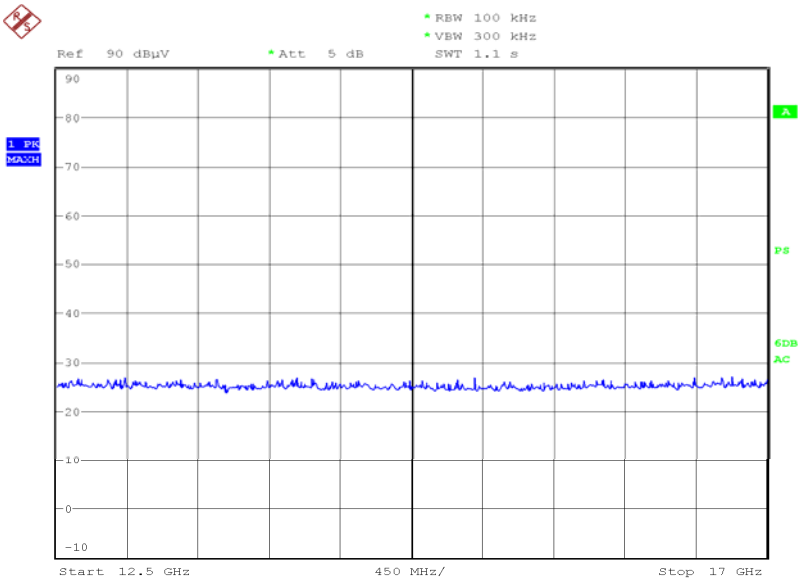

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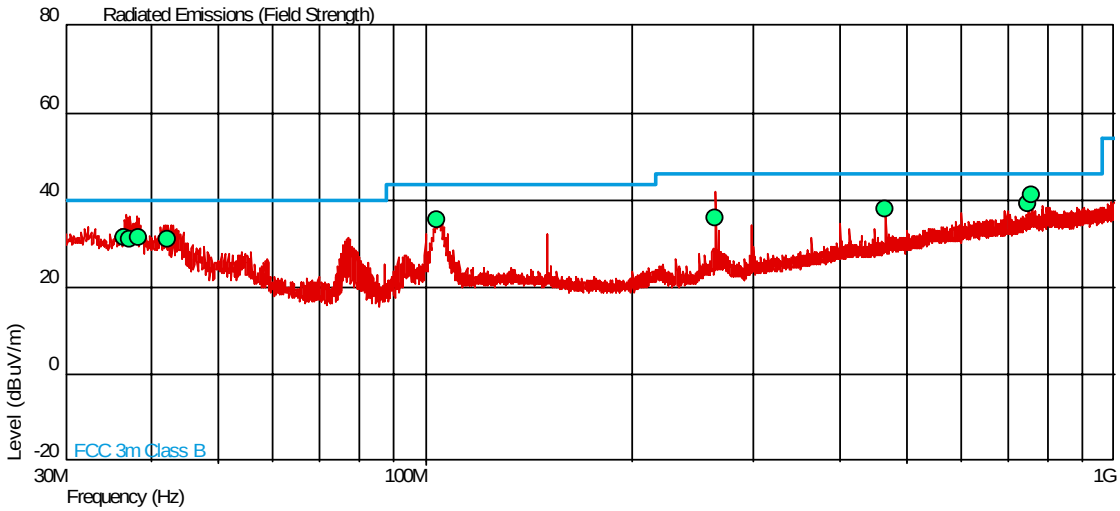
Product Service

Coniguration 1 – Mode 1

Top Channel

30MHz to 1GHz



Frequency (MHz)	QP Level (dBuV/m)	QP Level (uV/m)	QP Limit (dBuV/m)	QP Limit (uV/m)	QP Margin (dBuV/m)	QP Margin (uV/m)	Angle (Deg)	Height (m)	Polarity
36.602	31.6	38.0	40.0	100.0	-8.4	-62.0	78	100.00	Vertical
37.273	31.0	35.5	40.0	100.0	-9.0	-64.5	298	100.00	Vertical
38.406	31.5	37.6	40.0	100.0	-8.5	-62.4	306	100.00	Vertical
42.315	31.2	36.3	40.0	100.0	-8.8	-63.7	117	100.00	Vertical
103.685	35.5	59.6	43.5	150.0	-8.0	-90.4	294	100.00	Vertical
264.001	36.0	63.1	46.0	200.0	-10.0	-136.9	301	100.00	Horizontal
466.652	37.8	77.6	46.0	200.0	-8.2	-122.4	197	100.00	Vertical
750.000	39.0	89.1	46.0	200.0	-7.0	-110.9	152	100.00	Horizontal
759.004	41.1	113.5	46.0	200.0	-4.9	-86.5	136	100.00	Horizontal

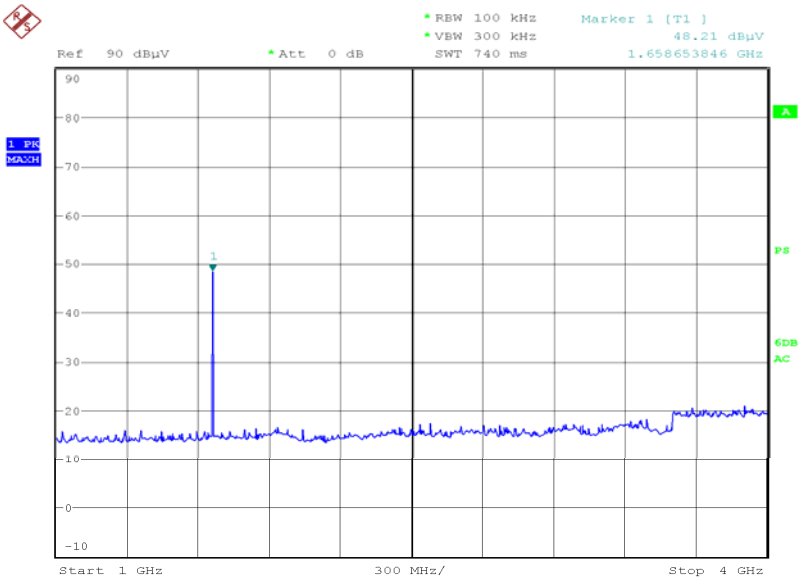
1GHz to 17GHz

Frequency GHz	Antenna Polarisation	Antenna Height cm	EUT Arc degrees	Result dBµV/m	Level (uV/m)	Limit dBµV/m	Limit (uV/m)	Margin dB	Margin (uV/m)	Result
6.642	Horizontal	100	222	53.2	457.1	74.0	5000.0	-20.8	-4542.9	Pass
6.642	Horizontal	100	222	45.4	186.2	54.0	500.0	-8.6	-313.8	Pass

Product Service

1GHz to 4GHz

Vertical



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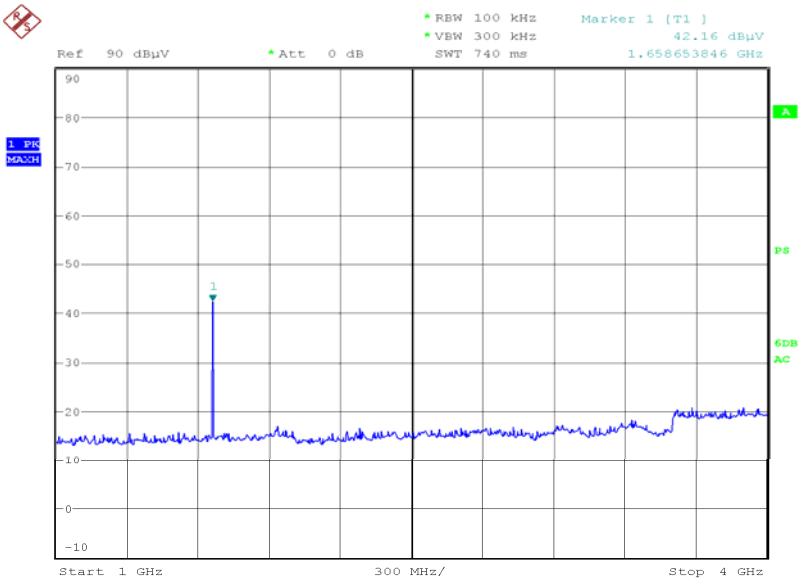

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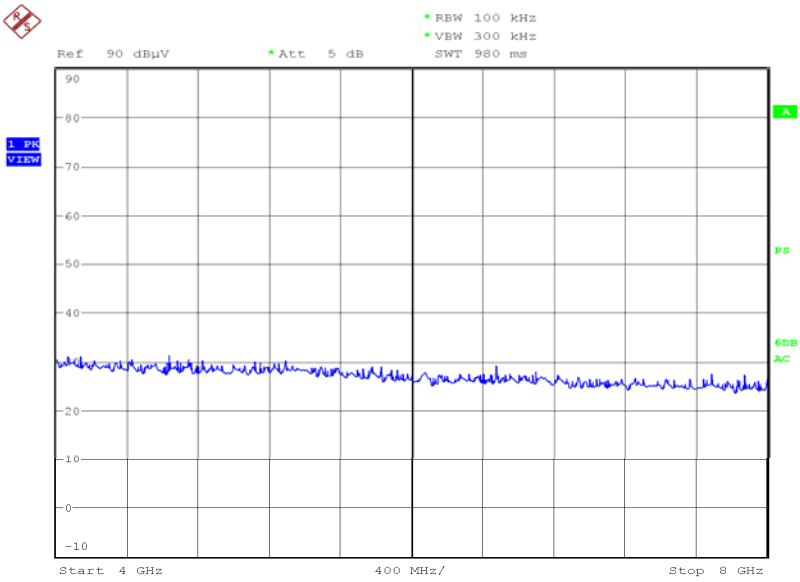
Product Service

4GHz to 8GHz

Vertical



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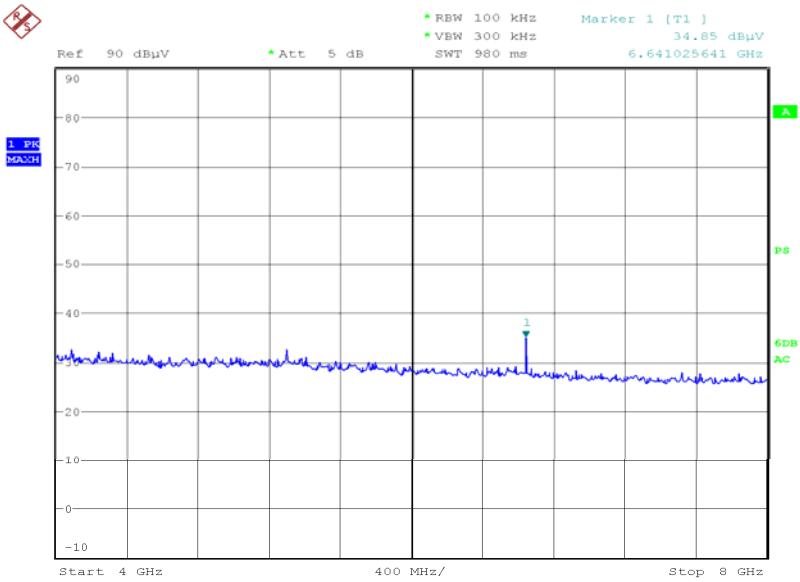

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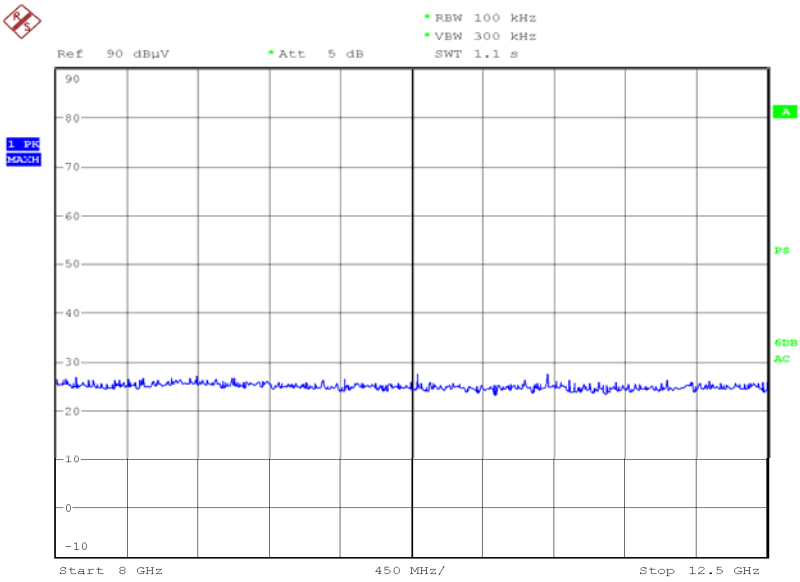
8GHz to 12.5GHz

Vertical



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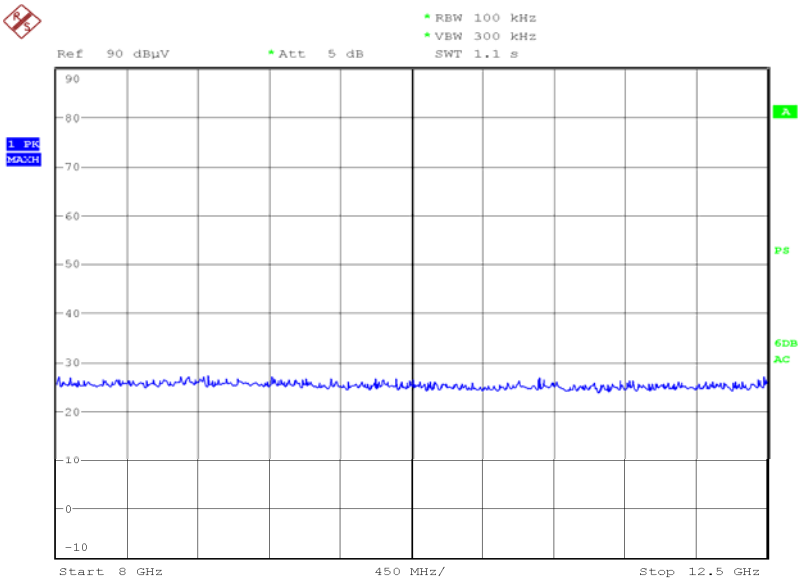

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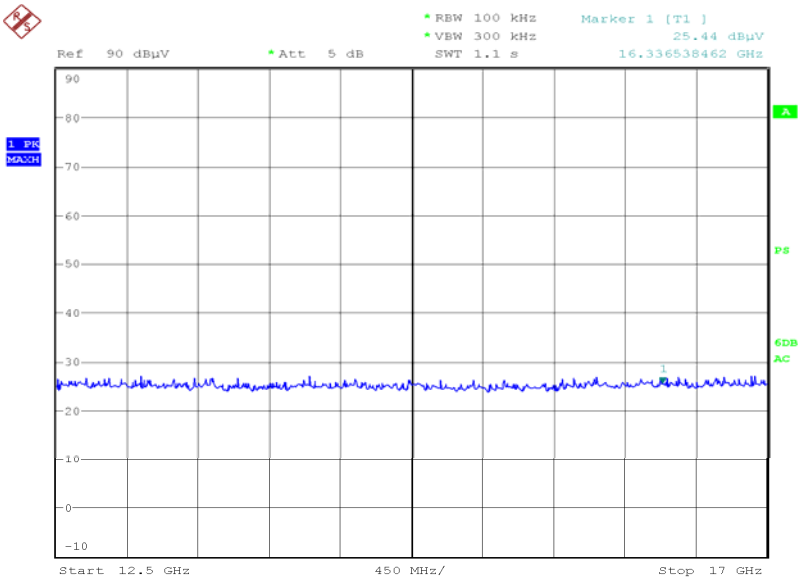
Product Service

12.5GHz to 17GHz

Vertical



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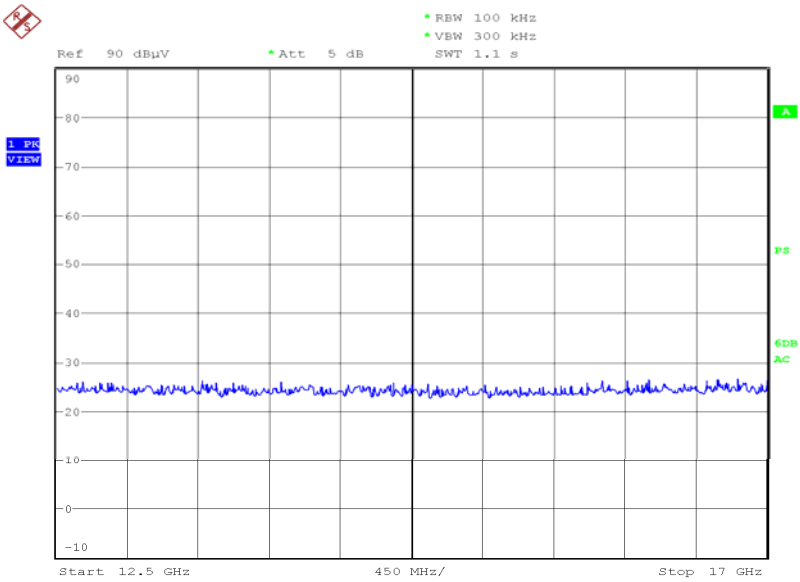
Horizontal



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2.3 FREQUENCY STABILITY TEST

2.3.1 Specification Reference

FCC CFR 47 Part 87: 2006, Clause 87.133
Thales Document: T-145 Issue B 18 Feb 2008, Clause 8.2

2.3.2 Equipment Under Test

Inmarsat Classic Aero SDU, S/N: 10070 without FMHPA

2.3.3 Date of Test and Modification State

15 August 2008 - Modification State 0

2.3.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.3.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of FCC CFR 47 Part 87: 2006.

The EUT was connected to a Frequency Counter via 40dB of attenuation. The Frequency Counter was also connected to a calibrated 10MHz frequency standard. The EUT was switched on and set to transmit an unmodulated carrier. Measurements were made between -20°C and +50°C in 10°C increments. At +20°C the voltage was varied by 15% in accordance with 2.1055(d)(i).

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1

2.3.6 Environmental Conditions

	15 August 2008
Ambient Temperature	28.3°C
Relative Humidity	31.7%

Product Service

2.3.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 87: 2006 for Frequency Stability.

The test results are shown below.

Configuration 1 - Mode 1

115V AC, 400Hz

Test Conditions		Frequency Drift (Hz)		
Temperature Interval(ºC)	Supply Voltage	1626.6 MHz	1643.5 MHz	1660.4 MHz
- 20	V_{nom} (115 V AC)	-51	-80	-70
- 10	V_{nom} (115 V AC)	-58	-86	-77
0	V_{nom} (115 V AC)	-62	-90	-80
+ 10	V_{nom} (115 V AC)	-70	-99	-89
T_{nom} (+ 20)	V_{min} (97 V AC)	-78	-106	-97
	V_{nom} (115 V AC)	-78	-106	-97
	V_{max} (133 V AC)	-78	-106	-97
+ 30	V_{nom} (115 V AC)	-97	-115	-106
+ 40	V_{nom} (115 V AC)	-94	-123	-114
+ 50	V_{nom} (115 V AC)	-102	-131	-121

Limit	±160 Hz

Product Service

SECTION 3

TEST EQUIPMENT USED

Product Service

3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.1 and 2.2EMC - Radiated Emissions					
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	235	12	2-Sep-2008
Dual Power Supply Unit	Thurlby	PL320	288	-	TU
Pre-Amplifier	Phase One	PS04-0085	1532	-	TU
Pre-Amplifier	Phase One	PS04-0086	1533	-	TU
Screened Room (5)	Rainford	Rainford	1545	36	11-Feb-2011
Mast Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Turntable/Mast Controller	EMCO	2090	1607	-	TU
High Pass Filter (4GHz)	RLC Electronics	F-100-4000-5-R	2773	-	OP Mon
Filter (Hi Pass)	Lorch	9HP7-7000-SR	2833	12	31-Oct-2008
Antenna (Bilog)	Chase	CBL6143	2904	24	28-Nov-2009
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	12	25-Jul-2009
Compliance 3 Emissions	Schaffner	C3e Software V.4.00.00	3274	-	N/A - Software
EMI Receiver	Rohde & Schwarz	ESU26	3581	12	20-Jul-2009
Section 2.3 Radio (Tx) - Frequency Characteristics					
Counter	Hewlett Packard	53181A	159	12	22-May-2009
True RMS Multimeter	Fluke	79 Series III	411	12	7-Jul-2009
Power Passport: 50, 60 or 400Hz Power Supply	Behlman Hauppauge	P1350-CE	1434	-	TU
Climatic Chamber	Climatec	Climatec 1	2124	12	5-Nov-2008
Attenuator (dc - 18GHz)	Suhner	6810.17.B	2966	12	20-Mar-2009
Data Logger	Pico Technology Ltd	TC-08	3264	12	4-Jun-2009
Thermocouple	Unknown	Type T	3415	24	8-Feb-2009
Rubidium Frequency Standard	Symmetricom	8040C	3490	12	21-Feb-2009

TU – Traceability Unscheduled
OP Mon – Output monitored using calibrated equipment.

Product Service

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	Frequency / Parameter	MU
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1dB*
Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3dB*
Conducted Emissions, LISN	150kHz to 30MHz Amplitude	3.2dB*
Conducted Emissions, ISN	150kHz to 30MHz Amplitude	2.1dB
Substitution Antenna, Radiated Field	30MHz to 18GHz Amplitude	2.6dB
Discontinuous Interference	150kHz to 30MHz Amplitude	3.0dB*
Interference Power	30MHz to 300MHz Amplitude	3.0dB*
Radiated E-Field Susceptibility	26MHz to 2.5GHz Test Amplitude	1.4dB†
Conducted Susceptibility	100kHz to 250MHz Amplitude	1.8dB†
Power Frequency Magnetic Field	50Hz/60Hz Amplitude	0.45%
Magnetic Emissions	9kHz to 30MHz Amplitude	3.4dB*
Magnetic Field/Flux iaw EN 50366	10Hz to 400kHz	2.64%
Harmonics and Flicker	The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3	—
Mains Voltage Variations and Interrupts	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11	—
Fast Transient Burst	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	—
Electrostatic Discharge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-2	—
Surge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-5	—
Vehicle Transients	The test was applied using proprietary equipment that meets the requirements of ISO 7637-1 and 2	—
Compass Safe Distance	Azimuth Accuracy	0.10°

Worst case error for both Time and Frequency measurement 12 parts in 10^6.

* In accordance with CISPR 16-4
† In accordance with UKAS Lab 34

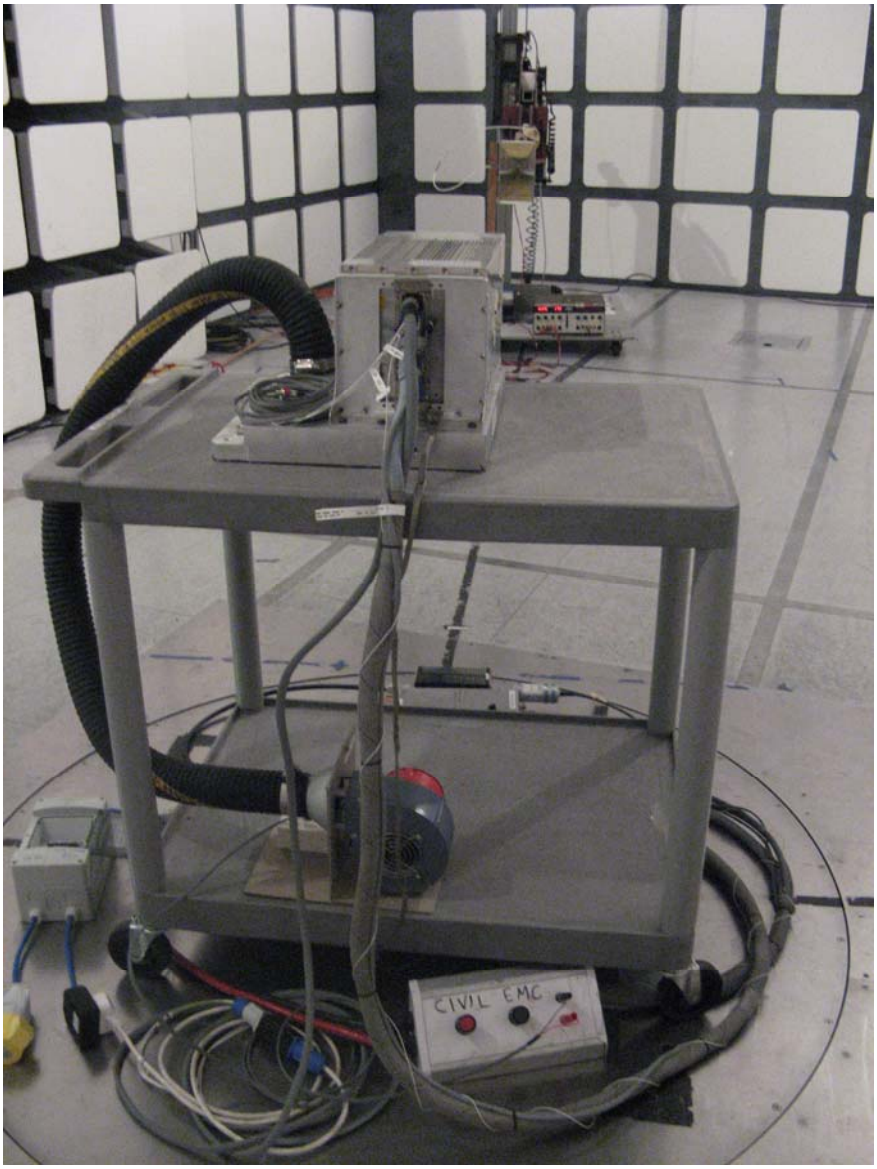
Product Service

SECTION 4

PHOTOGRAPHS

4.1 TEST SET UP PHOTOGRAPHS

Radiated Emissions – 30MHz to 1GHz



Radiated Emissions – 1GHz to 18GHz

Product Service

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

Product Service

5.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

UKAS TESTING 0141

This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).