

DELTA Test Report



Radio parameter test to EU requirements of Explorer 300

Performed for Thrane & Thrane A/S

DANAK-198394

Project no.: A503898-1

Page 1 of 34

including 3 annexes

09 June 2006

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Title Radio parameter test to EU requirements of Explorer 300

Test object Explorer 300

Report no. DANAK-198394

Project no. A503898-1

Test period 10 to 18 May 2006

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Manufacturer Thrane & Thrane A/S

Specifications Sections 4.3.1 and 4.3.4 of EN 300 328 v1.6.1 (2004-11)
Section 4.2.1 of EN 301 681 V1.3.2 (2003-01)

Results The equivalent isotropic radiated power from the Bluetooth module of the test object was within the limits of EN 300 328.

The transmitter spurious emissions from the Bluetooth module of the test object was within the limits of EN 300 328.

The radiated unwanted emissions outside the band 1626.5 MHz to 1660.5 MHz (25 MHz to 4 GHz) was within the limits of EN 301 681.

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Date 09 June 2006


Responsible 
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DELTA

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1. Scope and summary of test

1.1 Scope

This report shows test results from tests performed on Thrane & Thrane Land Mobile Earth Station Explorer 300.

Explorer 300 is similar to Explorer 500. The tests performed on Explorer 300 have been limited to those considered relevant to verify compliance with the specifications. The tests performed on Explorer 500 are reported in DELTA Test Report A503514-1, DANAK-198182.

1.2 Summary of test results

Tests	Test methods	Results
Equivalent isotropic radiated power	Section 4.3.1 of EN 300 328 v1.6.1	Passed
Transmitter spurious emissions	Section 4.3.4 of EN 300 328 v1.6.1	Passed
Radiated unwanted emissions outside the band 1626.5 MHz to 1660.5 MHz (25 MHz to 4 GHz)	Section 4.2.1 of EN 301 681 v1.3.2	Passed

Abbreviations

Failed	:	The requirements are not met.
Passed	:	The requirements are met.
Not done	:	No test was performed.
N/A	:	Not applicable.
Not relevant	:	The test was not relevant for the test object.

The given results are based on a shared risk principle with respect to the measurement uncertainty.

1.3 Conclusion

The test objects mentioned in this report meet the requirements of the standards stated below as to the test phenomena mentioned above:

- Section 4.3.1 and 4.3.4 of:
EN 300 328 v1.6.1 (2004-11): Electromagnetic compatibility and Radio spectrum Matters (ERM); Data transmission equipment operating in the 2.4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.
- Section 4.2.1 of:
EN 301 681 v1.3.2 (2003-01): Satellite Earth Stations and Systems (SES); Harmonized EN for Mobile Earth Stations (MESs) of Geostationary mobile satellite systems, including handheld earth stations, for Satellite Personal Communications Networks (S-PCN) in the 1.5/1.6 GHz bands under the Mobile Satellite Service (MSS) covering essential requirements under article 3.2 of the R&TTE Directive.

The test results relate only to the objects tested.

2. Test objects and auxiliary equipment

2.1 Test object - Explorer 300

Category	Mobile Earth Station Equipment
Manufacturer	Thrane & Thrane A/S
Model / type	Explorer 300
Part no.	TT-3705A
Serial no.	E300EMC1
FCC ID	Rojexplorer-300
Supply voltage	10-16 VDC, 4-2.5 A via AC/DC adapter or 11.1 VDC via internal battery
Operational mode	Bluetooth or BGAN MES radio enabled

2.2 Test object - AC/DC Adapter

Category	Mobile Earth Station Equipment
Manufacturer	Thrane & Thrane A/S
Model / type	UP0501Q-15P
Part no.	-
Serial no.	CF300163
FCC ID	-
Supply voltage	100-240 VAC, 47-63 Hz, 2 A max
Operational mode	Normal

2.3 Auxiliary equipment - Phone HTI-840D

Manufacturer	HTI
Model / type	HTI-840D
Part no.	-
Serial no.	980401291
FCC ID	-

2.4 Auxiliary equipment - Laptop PC

Manufacturer	Dell
Model / type	Dell PP05L
Part no.	-
Serial no.	JYH3ROJ
FCC ID	-

3. General test conditions

3.1 Test setup during test

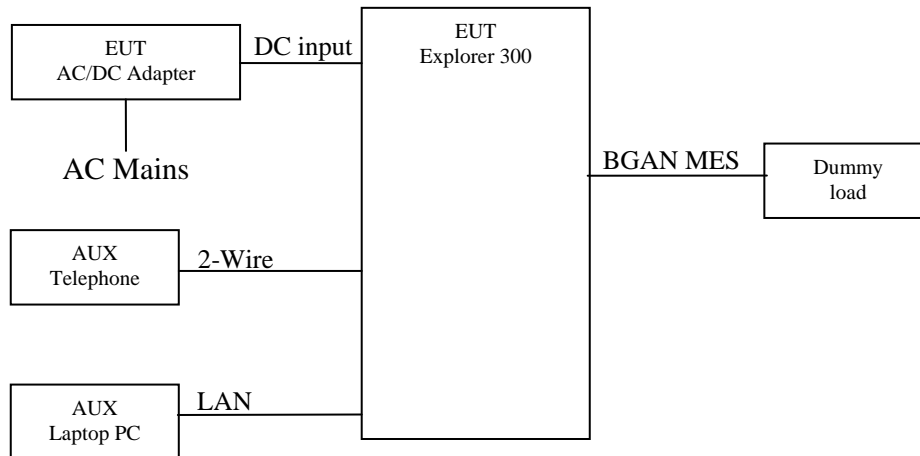


Figure 3.1 Test setup during test.

Measurements on the Bluetooth module (according to EN 300 328) were performed with the BGAN MES radio disabled.

Measurements on the BGAN MES radio (according to EN 301 681) were performed with the Bluetooth module disabled. The internal antenna was disabled and a dummy load was connected to the passive antenna connection used for test.

The Explorer 300 was controlled via test software on a Laptop PC connected to the Explorer 300 via an USB port. This USB port is only available during test and will be blocked, when the Explorer 300 is placed on the market.

During measurement of unwanted emissions outside the band 1626.5 MHz to 1660.5 MHz, the Laptop PC was pinging the LAN connection.

3.2 Radio product information

3.2.1 BGAN MES radio

The following specifications apply to the BGAN Mobile Earth Station (MES) radio of the Explorer 300.

Equipment type

The transceiver is a BGAN MES radio.

Modulation

QPSK/4 modulation.

Test modulation

During test a pseudo random QPSK/4 test signal was used.

Frequency range

Transmit: 1626.5 to 1660.5 MHz.

Receive: 1525 to 1559 MHz.

Power settings and antenna assemblies

The RF output power of the BGAN MES radio is 10.1 dBW +/- 1 dB.

The gain of the internal BGAN MES radio antenna is 10 dBi.

The test object is only to be used with the build-in antenna.

3.2.2 Bluetooth module

The following specifications apply to the Bluetooth interface of the Explorer 300.

Equipment type

The Explorer 300 uses a Bluetooth transceiver followed by a HPA to make it a Class 1 Bluetooth device (100 mW). The transceiver is Bluetooth Specification 1.2 qualified (Certificate B02153).

The Bluetooth interface is considered a secondary radio interface of the combined equipment Explorer 300. The primary radio interface is the BGAN MES radio.

Modulation

FHSS modulation (in accordance with Bluetooth Specification 1.2).

Test modulation

During test continuous RF transmission (CW) was used.

Channels

79 hopping channels (in accordance with Bluetooth Specification 1.2).

Frequency range

2400 to 2483.5 MHz.

Power settings and antenna assemblies

The test object has two power settings: 100 mW (default) and 10 mW. The 10 mW setting is for use in countries with local restrictions (i.e. France where the maximum EIRP is restricted to 10 mW in the frequency range 2454 to 2483.5 MHz).

The test object is only to be used with the build-in antenna.

4. Tests and results

4.1 Equivalent isotropic radiated power (EIRP)

Results

The measured EIRP was within the limits.

Test method

Specification: EN 300 328 Section 5.7.2.1

Limit: EN 300 328 Section 4.3.1.2.

The radiated measurements were performed in a semi-anechoic chamber. For each measurement the test specimen was rotated 0-360°. The antenna height above the ground plane was varied to maximize the measurement.

Measurement results

Frequency setting	Power setting	Antenna polarization	Measured EIRP [dBm]	EIRP limit [dBm]
2402 MHz	20 dBm	Vertical	12.2	20
	20 dBm	Horizontal	19.1	20
2481 MHz	20 dBm	Vertical	15.8	20
	20 dBm	Horizontal	20.0	20
2481 MHz	10 dBm	Vertical	4.9	10
	10 dBm	Horizontal	9.8	10

Comments

The Bluetooth module was transmitting a continuous RF transmission signal.
The BGAN MES radio was disabled.

Photos

See Annex 2.

Test record sheets

See Annex 3.

4.2 Transmitter spurious emissions

Results

The measured transmitter spurious emissions were within the limits.

Test method

Specification: EN 300 328 Section 5.7.5

Limit: EN 300 328 Section 4.3.4.2 (when operating)
 (the limit when in standby does not apply).

The radiated measurements were performed in a semi-anechoic chamber. For each measurement the test specimen was rotated 0-360°. The antenna height above the ground plane was varied to maximize the measurement.

Measurement results

In order to demonstrate compliance with the additional requirements of EN 300 328 with respect to EN 301 681 the spurious emissions were measured at the 2nd, 3rd, 4th and 5th harmonic of the operating frequency.

Frequency setting	Antenna polarization	Second harmonic [dBm]	Third harmonic [dBm]	Fourth harmonic [dBm]	Fifth harmonic [dBm]	Limit (operating) [dBm]
2402 MHz	Horizontal	-57.4	-55.9	-55.1	-51.8	-30
	Vertical	-58.1	-56.4	-55.8	-51.2	-30
2481 MHz	Horizontal	-57.7	-54.1	-53.3	-53.4	-30
	Vertical	-57.9	-55.4	-53.5	-52.9	-30

Comments

The transmitter spurious emissions were measured at the highest and the lowest transmitter frequency.

The Bluetooth module was transmitting a continuous RF transmission signal.

The power setting of the test specimen was 20 dBm.

The local oscillator frequency is 2 x (operating frequency).

The BGAN MES radio was disabled.

Photos

See Annex 2.

4.3 Radiated unwanted emissions outside the band 1626.5 MHz to 1660.5 MHz

Results

The measured unwanted emissions were within the limits.

Test method

Specification: EN 301 681 Section 5.2.1.4.5.6.2

Limit: EN 301 681 Section 4.2.1.2

The radiated measurements were performed in a semi-anechoic chamber. For each measurement the test specimen was rotated 0-360°. The antenna height above the ground plane was varied to maximize the measurement.

Comments

The radiated unwanted emissions were measured at the highest and the lowest transmitter frequency.

The BGAN MES radio was transmitting a pseudo random QPSK/4 test signal.

The Laptop PC was pinging the LAN connection.

The Bluetooth module was disabled.

Photos

See Annex 2.

Test record sheets

See Annex 4.

Annex 1

List of instruments

NO.	DESCRIPTION	MANUFACTURER	TYPE NO.
29461	ARTIFICIAL MAINS NETWORK	ROHDE & SCHWARZ	ESH2/Z5
29797	BILOG ANTENNA, 30-2000 MHz	CHASE ELECTRICS LTD	CBL 6111A
29861	EMI-SOFTWARE Ver. 1.60	ROHDE & SCHWARZ	ES-K1, PART: 1026.6790.02
29876	RIDGED GUIDE HORN ANTENNA, 1-12.75 (18) GHz	EMCO	3115
29916	AUTOMATIC TEST RECEIVER, 9 kHz - 2.75 GHz	ROHDE & SCHWARZ	ESCS 30 1102.4500.30
49037	BROADBAND MICROWAVE PREAMPLIFIER, 1-12.8 GHz	MITEQ / DELTA	AMF-5D-001128 -35-11P
49086	REMI EMISSION SOFTWARE PACKAGE v. 2.133, ROOM 5	NeWeTec	REMI
49321	SPECTRUM ANALYZER, 50GHz WITH OP- TION 006	HEWLETT-PACKARD	8565E
49421	IMPULSE VOLTAGE LIMITER	ROHDE & SCHWARZ	ESH3/Z2

Annex 2

Photos



Photo A2.1 Equivalent isotropic radiated power (EIRP), Bluetooth module.



Photo A2.2 Equivalent isotropic radiated power (EIRP), Bluetooth module.



Photo A2.3 Transmitter spurious emission, Bluetooth module.

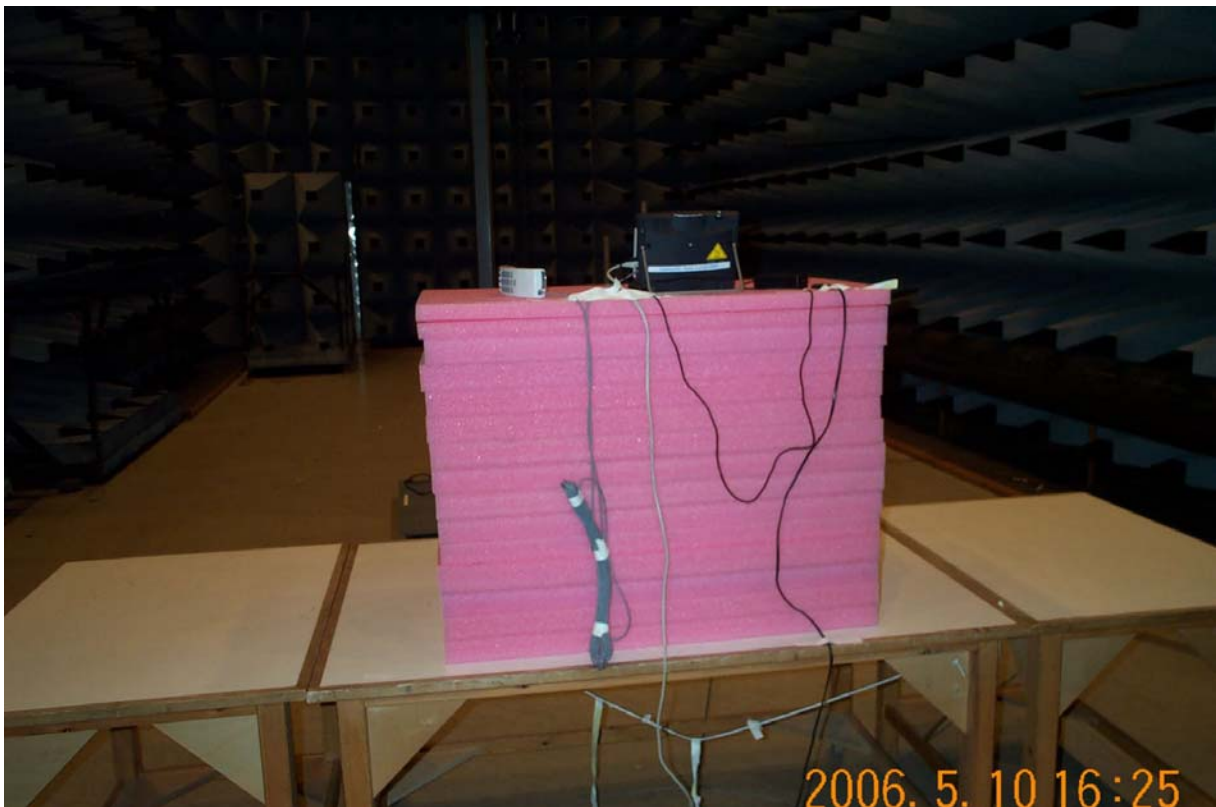


Photo A2.4 Transmitter spurious emission, Bluetooth module.



Photo A2.5 Radiated unwanted emission, BGAN MES radio.

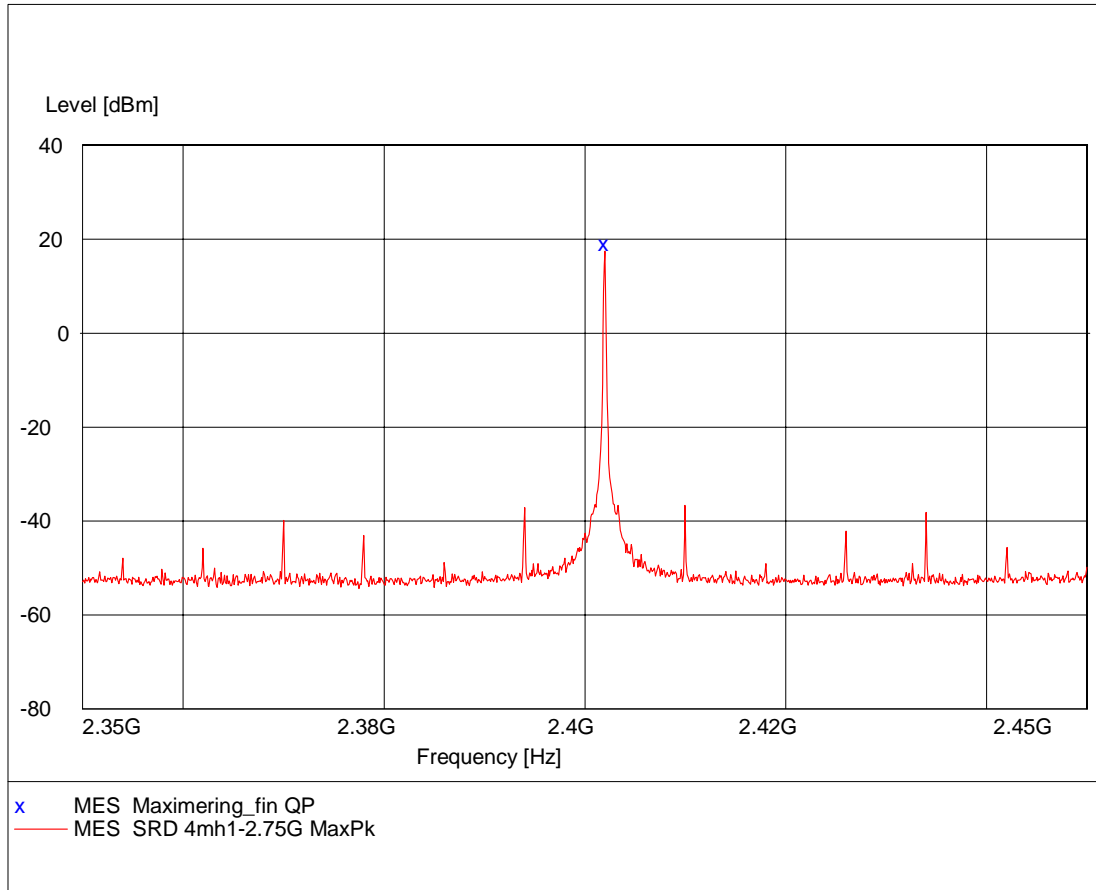


Photo A2.6 Radiated unwanted emission, BGAN MES radio.

Annex 3

Test record sheets regarding equivalent isotropic radiated power

EUT: Explorer 300 TT3705A
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 3 m horizontal
 Test Site: EMC-5
 Operator: CMT - A503898
 Test Specification: EN 300 328
 Comment: Sheet 3
 Start of Test: 2006-05-10 / 10:46:02

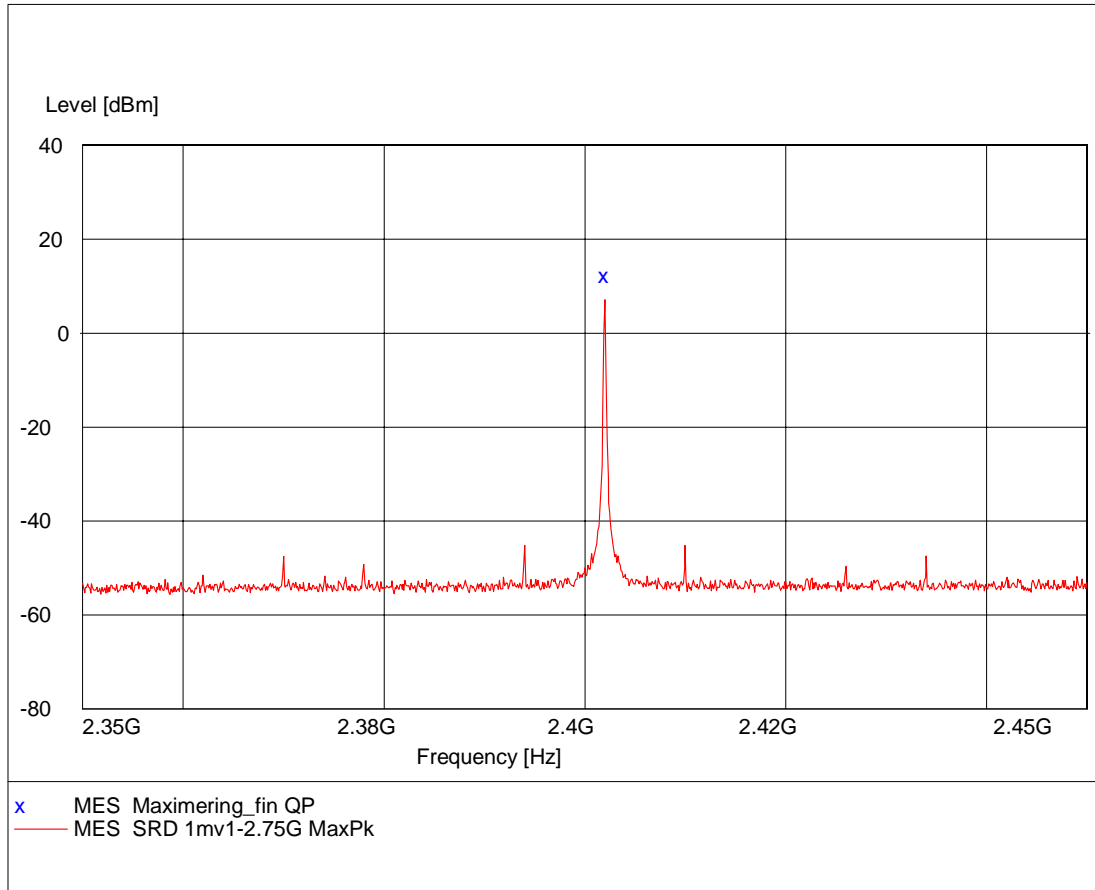


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-10 10:53

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
2402.000000	19.10	-59.6	20.0	0.9	144.0	303.00	---

EUT: Explorer 300 TT3705A
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 1 m vertical
 Test Site: EMC-5
 Operator: CMT - A503898
 Test Specification: EN 300 328
 Comment: Sheet 4
 Start of Test: 2006-05-10 / 11:06:57

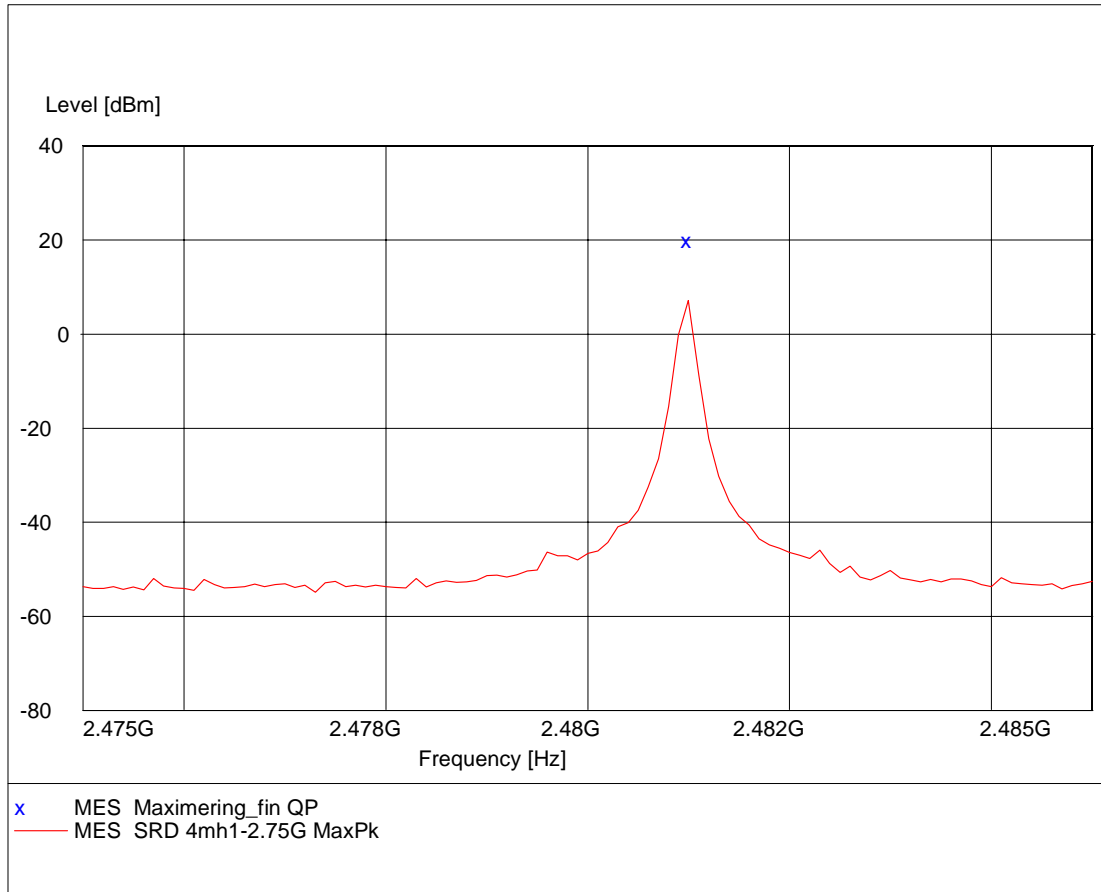


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-10 11:14

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
2402.000000	12.20	-58.8	20.0	7.8	147.0	257.00	---

EUT: Explorer 300 TT3705A
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 3 m horizontal
 Test Site: EMC-5
 Operator: CMT - A503898
 Test Specification: EN 300 328
 Comment: Sheet 6
 Start of Test: 2006-05-10 / 11:40:40

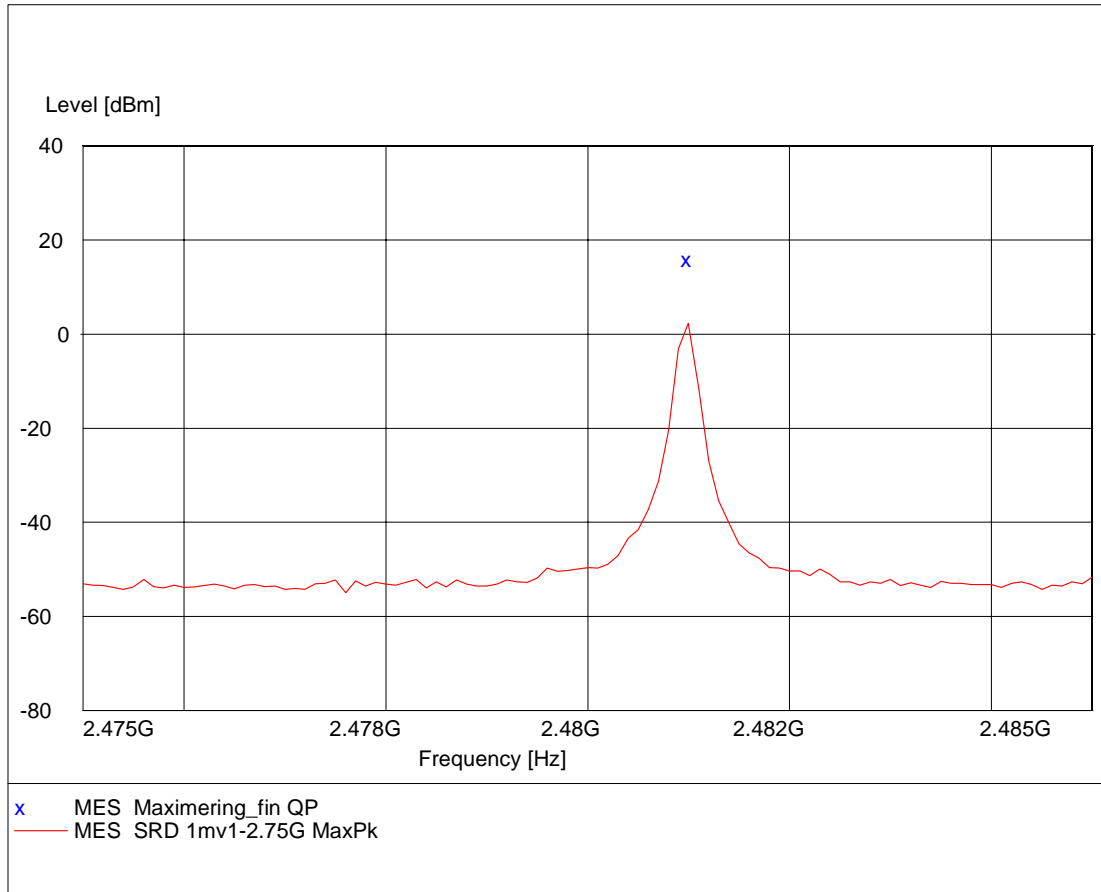


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-10 11:48

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
2480.990000	20.00	-58.8	20.00	0.0	151.0	304.00	---

EUT: Explorer 300 TT3705A
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 1 vertical
 Test Site: EMC-5
 Operator: CMT - A503898
 Test Specification: EN 300 328
 Comment: Sheet 5
 Start of Test: 2006-05-10 / 11:28:44

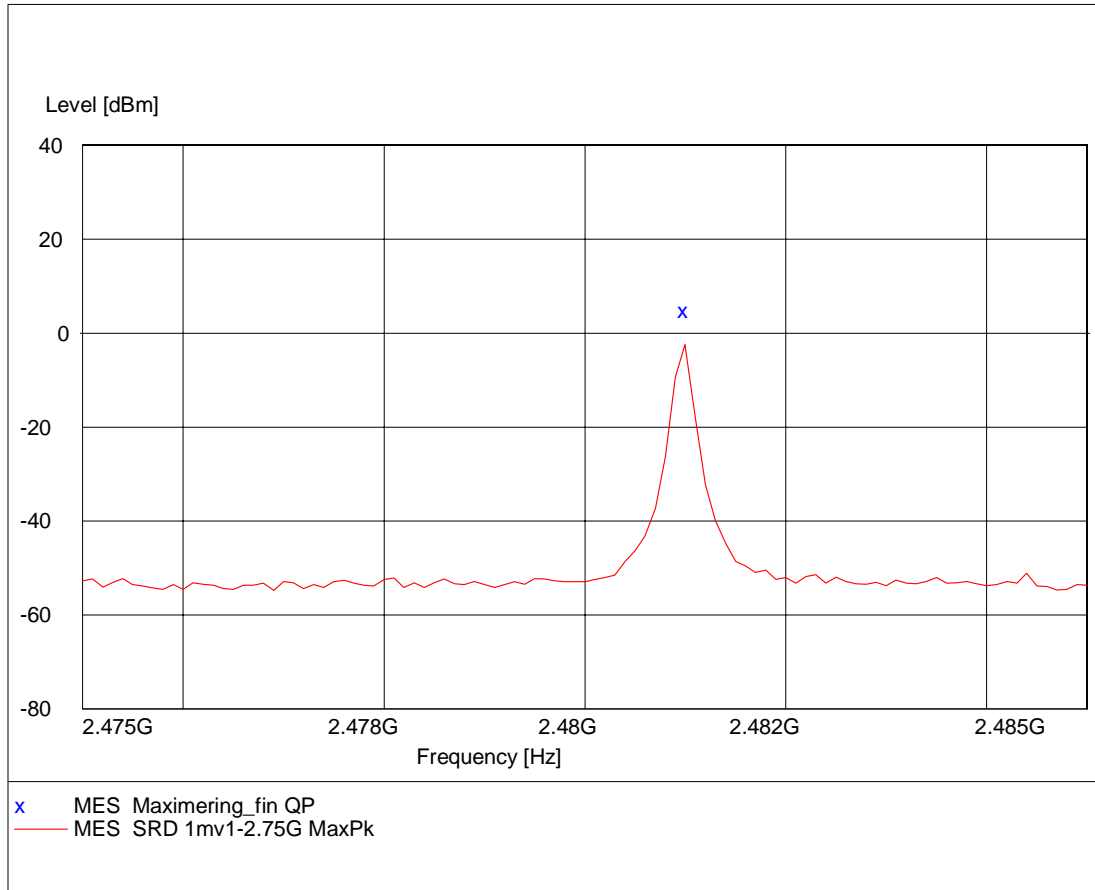


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-10 11:36

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
2480.990000	15.80	-58.3	20.00	4.2	134.0	274.00	---

EUT: Explorer 300 TT3705A. Bluetooth: 2481MHz
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 1 m vertical. Voltage: 230 VAC
 Test Site: EMC-5
 Operator: KKJ - A503898
 Test Specification: EN 300 328
 Comment: Sheet 23
 Start of Test: 2006-05-18 / 14:44:57

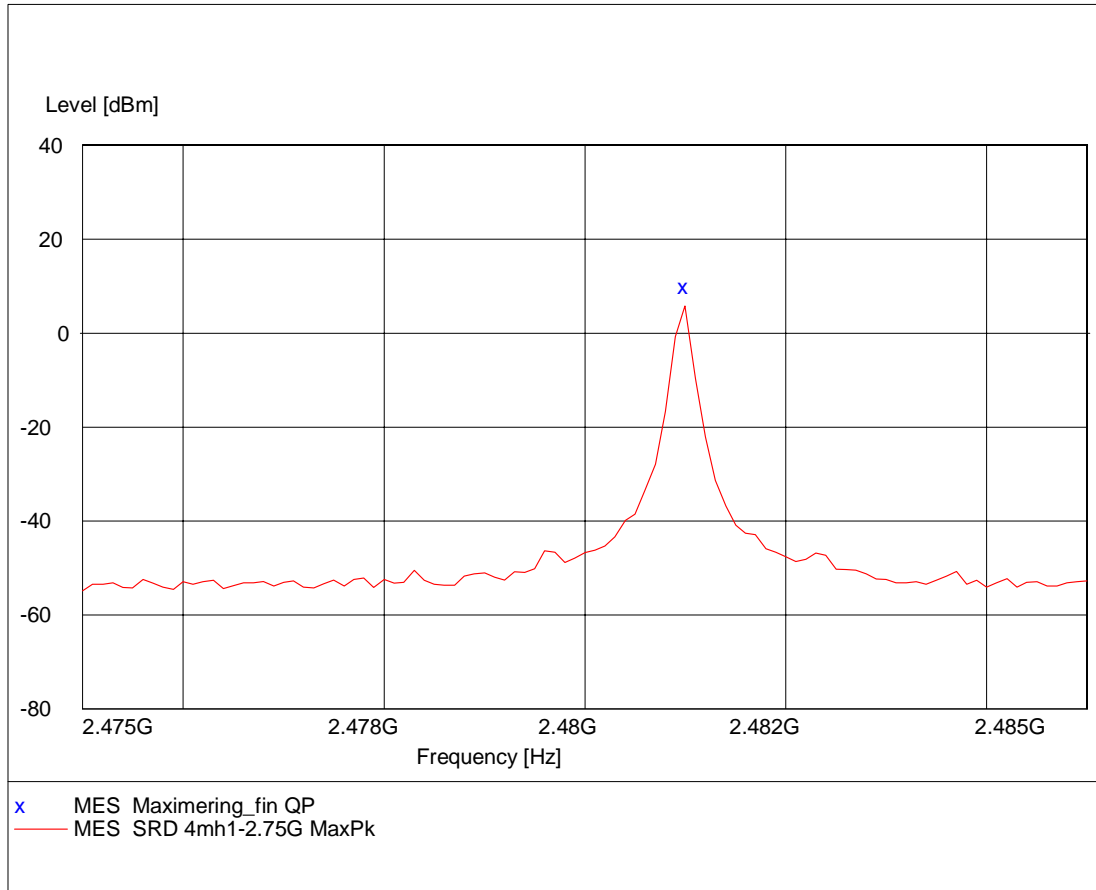


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-18 14:52

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
2480.990000	4.90	-64.8	10.0	-5.1	138.0	267.00	Vertical

EUT: Explorer 300 TT3705A. Bluetooth: 2481MHz
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 4 m horizontal. Voltage: 230 VAC
 Test Site: EMC-5
 Operator: KKJ - A503898
 Test Specification: EN 300 328
 Comment: Sheet 22
 Start of Test: 2006-05-18 / 14:30:57



MEASUREMENT RESULT: "Maximering_fin QP"

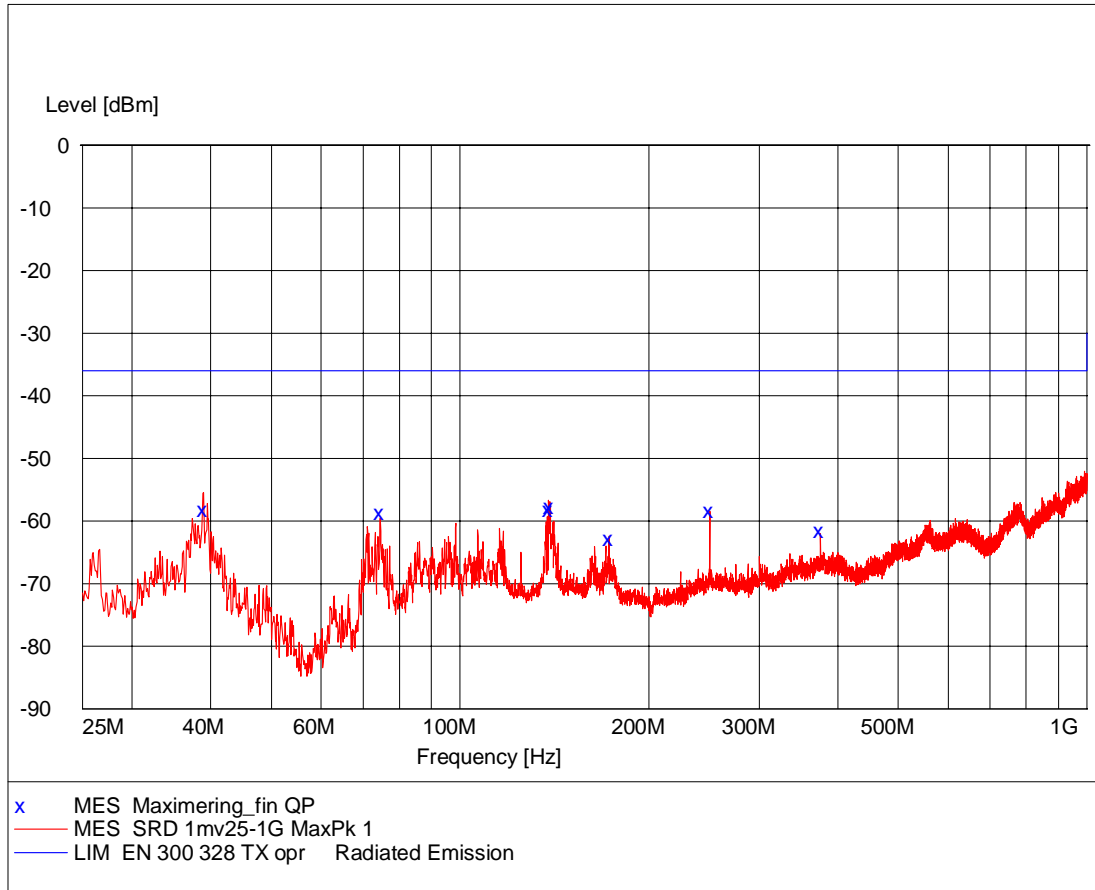
2006-05-18 14:39

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
2480.990000	9.80	-65.3	10.0	-0.2	101.0	276.00	Horizontal

Annex 4

Test record sheets regarding radiated unwanted emissions

EUT: Explorer 300 TT3705A. TXfreq: 1626,6 MHz
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 1 m vertical. Voltage: 230 VAC
 Test Site: EMC-5
 Operator: KKJ - A503898
 Test Specification: EN 300 328
 Comment: Sheet 18
 Start of Test: 2006-05-18

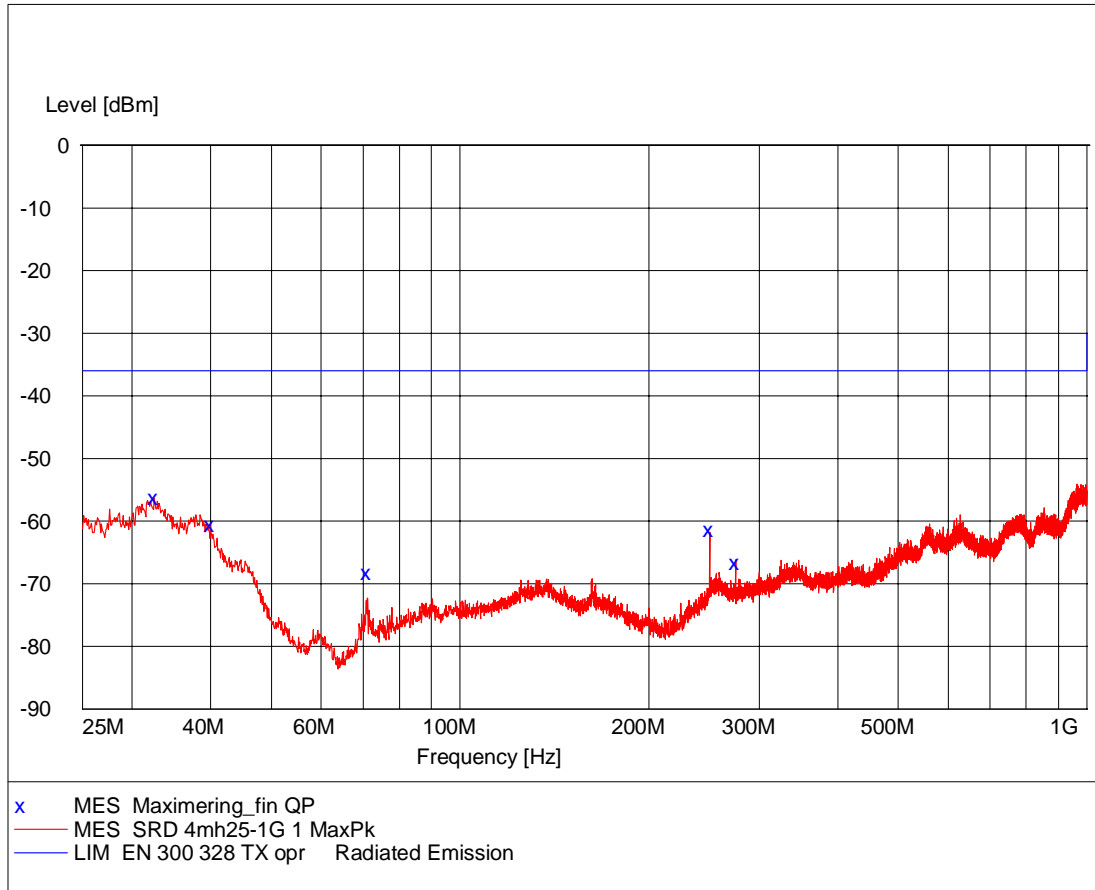


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-18 11:20

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
39.000000	-58.10	-75.6	-36.0	22.1	101.0	149.00	VERTICAL
74.570000	-58.70	-82.1	-36.0	22.7	400.0	18.00	VERTICAL
138.410000	-58.20	-74.6	-36.0	22.2	101.0	264.00	VERTICAL
139.210000	-57.60	-74.5	-36.0	21.6	111.0	255.00	VERTICAL
172.800000	-62.80	-75.7	-36.0	26.8	151.0	93.00	VERTICAL
249.990000	-58.30	-72.8	-36.0	22.3	112.0	337.00	VERTICAL
374.990000	-61.50	-69.2	-36.0	25.5	101.0	62.00	VERTICAL

EUT: Explorer 300 TT3705A. TXfreq: 1626,6 MHz
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 4 m horizontal. Voltage: 230 VAC
 Test Site: EMC-5
 Operator: KKJ - A503898
 Test Specification: EN 300 328
 Comment: Sheet 19
 Start of Test: 2006-05-18 / 11:24:40

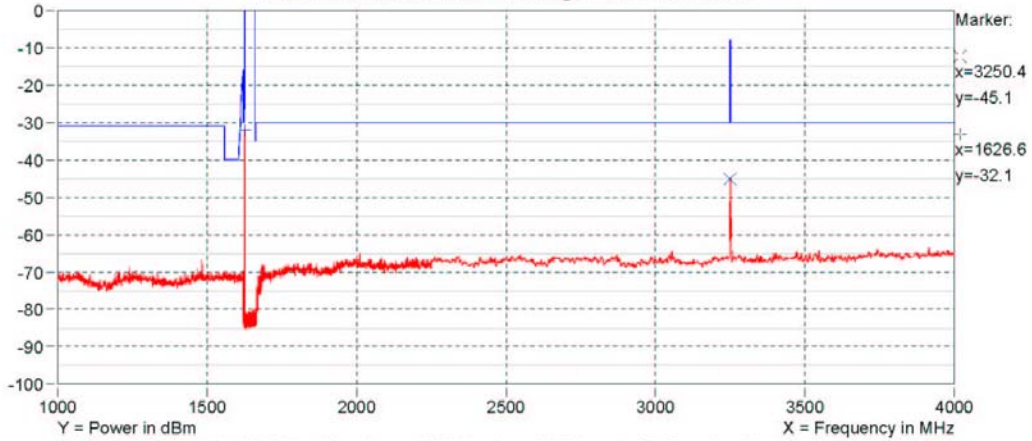


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-18 12:01

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
32.500000	-56.20	-60.7	-36.0	20.2	169.0	303.00	Horizontal
40.000000	-60.60	-65.3	-36.0	24.6	241.0	178.00	Horizontal
71.090000	-68.10	-82.2	-36.0	32.1	281.0	305.00	Horizontal
249.990000	-61.30	-74.1	-36.0	25.3	292.0	344.00	Horizontal
274.990000	-66.70	-75.1	-36.0	30.7	400.0	194.00	Horizontal

DELTA Electronics Testing, EMC Section.



Y = Power in dBm X = Frequency in MHz
to 1621.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1665.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 30 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1670.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 100 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1680.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 300 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1690.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 2250MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 4000MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Positive Peak, 300 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E

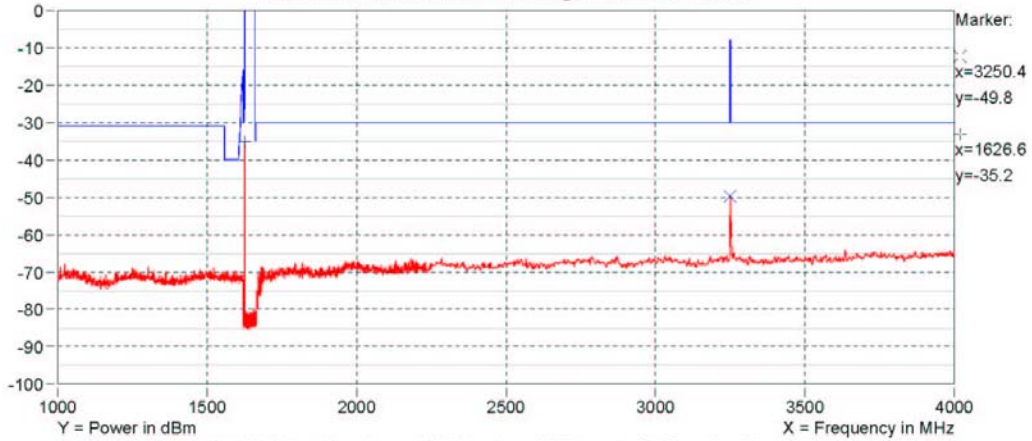
22-05-2006 08:52:19 File: SHEET15B.TO1, EUT 1
22-05-2006 08:52:38 File: SHEET15B.LM1, Limit 1, ETSI 301681

EUT: Explorer 300 TT3705A
Manufacturer: Thrane & Thrane
Operating Condition: ant 1-3 m vertical. TT 0-360 deg
Test Site: EMC-5
Test Specification: ETSI 310 681
Comment: Tx: 1626.6 MHz

Project no: A503898 - HEN

Sheet 15

DELTA Electronics Testing, EMC Section.



Y = Power in dBm X = Frequency in MHz
to 1621.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1665.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 30 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1670.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 100 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1680.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 300 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1690.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 2250MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 4000MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Positive Peak, 300 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E

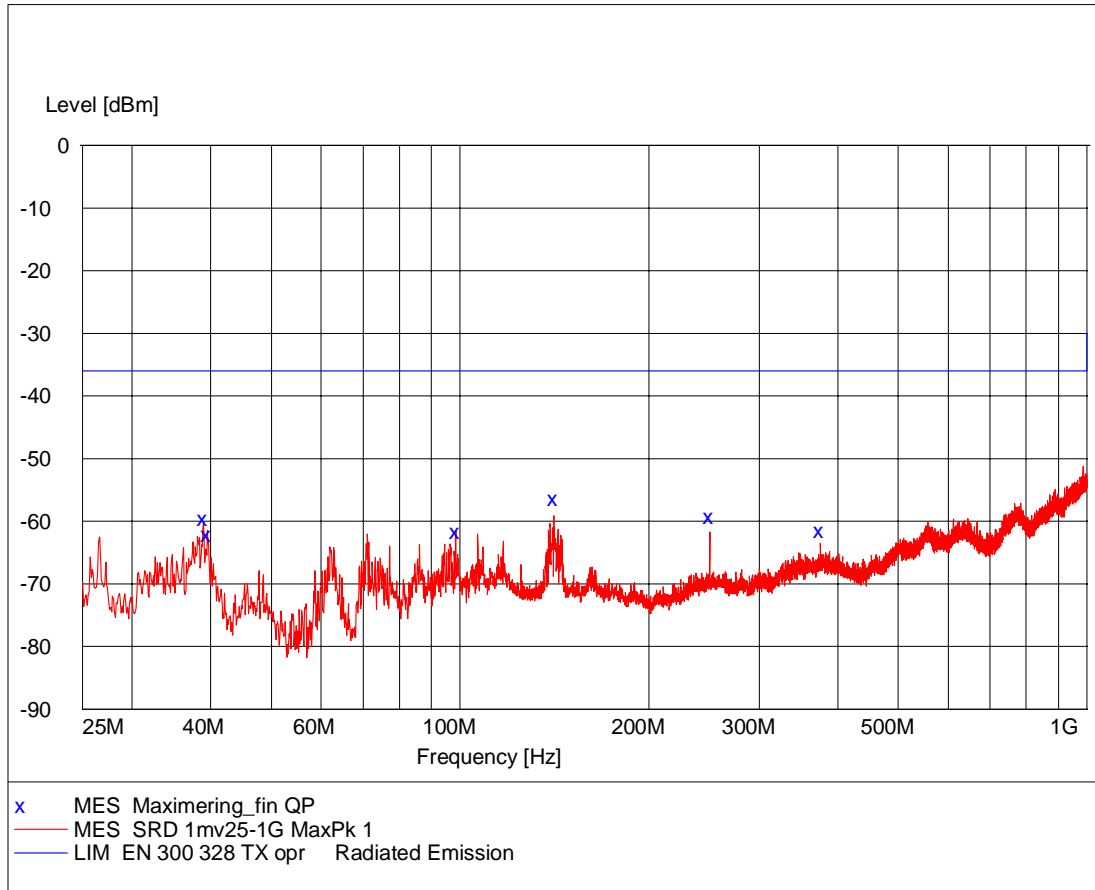
29-05-2006 12:00:43 File: SHEET14B.TO1, EUT 1
22-05-2006 08:52:38 File: SHEET14B.LM1, Limit 1, ETSI 301681

EUT: Explores 300 TT3705A
Manufacturer: Thrane & Thrane
Operating Condition: ant 1-3 m horizontal. TT 0-360 deg
Test Site: EMC-5
Test Specification: ETSI 301-681
Comment:

Project no: A503898 - HEN

Sheet 14

EUT: Explorer 300 TT3705A. TXfreq: 1660,4 MHz
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 1 m vertical. Voltage: 230 VAC
 Test Site: EMC-5
 Operator: KKJ - A503898
 Test Specification: EN 300 328
 Comment: Sheet 20
 Start of Test: 2006-05-18 / 12:17:31

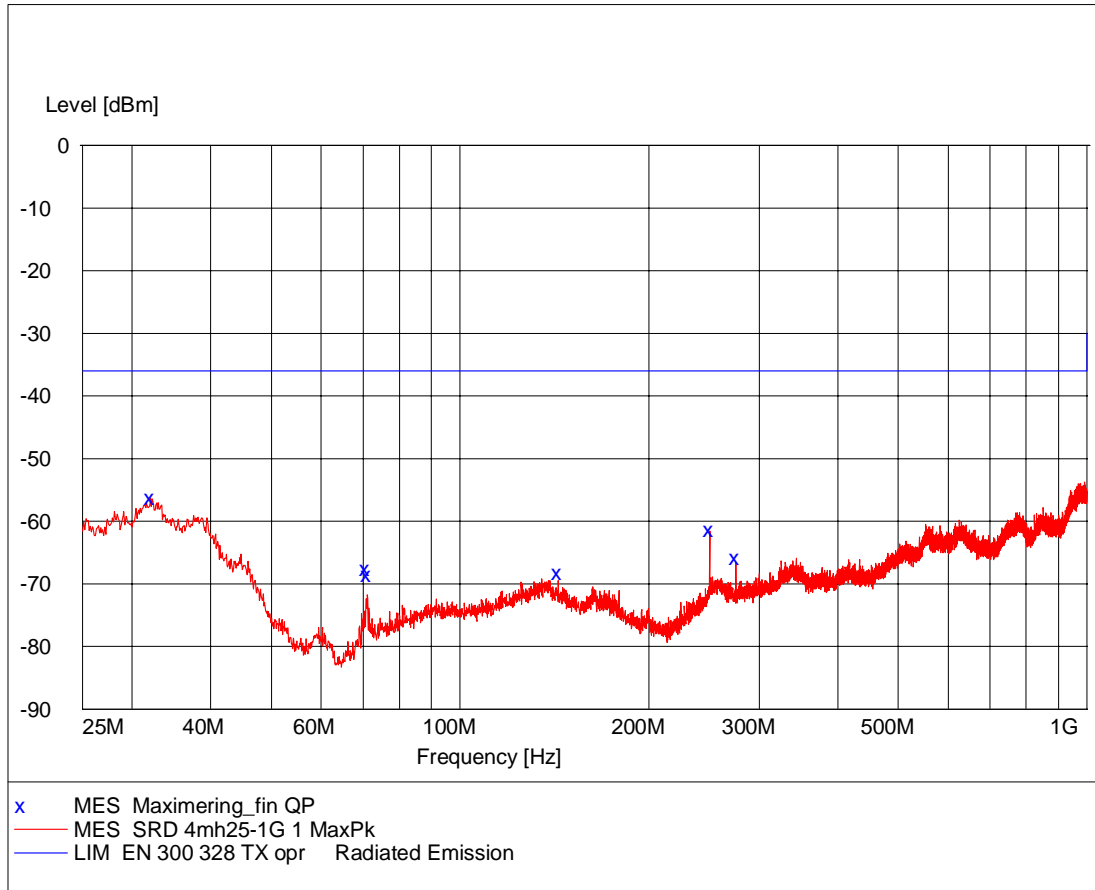


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-18 13:02

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
39.000000	-59.60	-75.6	-36.0	23.6	101.0	358.00	vertical
39.550000	-62.20	-76.3	-36.0	26.2	101.0	358.00	vertical
98.510000	-61.60	-77.7	-36.0	25.6	131.0	77.00	vertical
141.220000	-56.30	-74.6	-36.0	20.3	101.0	266.00	vertical
249.990000	-59.20	-72.8	-36.0	23.2	101.0	358.00	vertical
374.990000	-61.50	-69.2	-36.0	25.5	101.0	63.00	vertical

EUT: Explorer 300 TT3705A. TXfreq: 1660,4 MHz
 Manufacturer: Thrane & Thrane
 Operating Condition: Ant. 4 m horizontal. Voltage: 230 VAC
 Test Site: EMC-5
 Operator: KKJ - A503898
 Test Specification: EN 300 328
 Comment: Sheet 21
 Start of Test: 2006-05-18 / 13:18:33

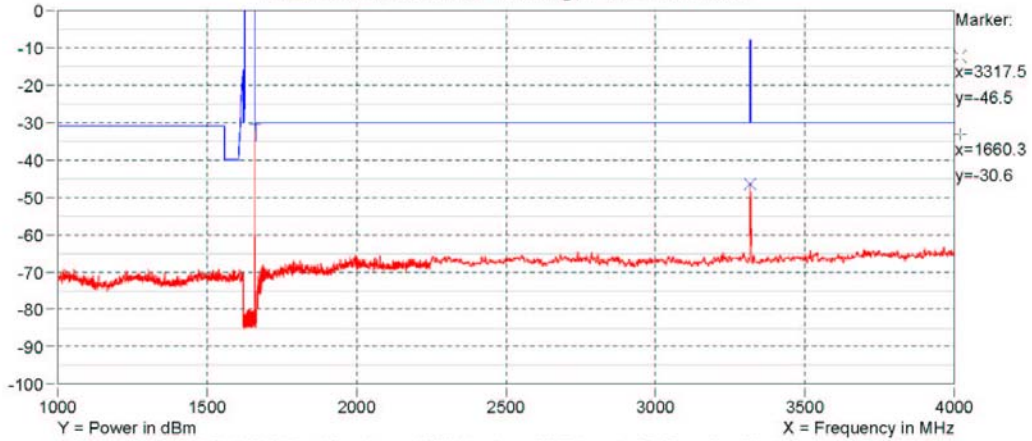


MEASUREMENT RESULT: "Maximering_fin QP"

2006-05-18 14:02

Frequency MHz	Level dBm	Transd dB	Limit dBm	Margin dB	Height cm	Azimuth deg	Polarisation
32.100000	-56.20	-60.6	-36.0	20.2	202.0	358.00	Horizontal
70.850000	-67.60	-82.4	-36.0	31.6	277.0	302.00	Horizontal
71.100000	-68.40	-82.2	-36.0	32.4	260.0	307.00	Horizontal
143.400000	-68.10	-75.6	-36.0	32.1	390.0	105.00	Horizontal
249.990000	-61.30	-74.1	-36.0	25.3	353.0	344.00	Horizontal
275.000000	-65.80	-75.1	-36.0	29.8	331.0	314.00	Horizontal

DELTA Electronics Testing, EMC Section.



to 1621.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preamplifier off, Hewlett Packard 8565E
to 1665.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 30 kHz, Level range 100 dB, Attenuation 0 dB, Preamplifier off, Hewlett Packard 8565E
to 1670.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 100 kHz, Level range 100 dB, Attenuation 0 dB, Preamplifier off, Hewlett Packard 8565E
to 1680.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 300 kHz, Level range 100 dB, Attenuation 0 dB, Preamplifier off, Hewlett Packard 8565E
to 1690.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preamplifier off, Hewlett Packard 8565E
to 2250MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preamplifier off, Hewlett Packard 8565E
to 4000MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Positive Peak, 300 kHz, Level range 100 dB, Attenuation 0 dB, Preamplifier off, Hewlett Packard 8565E

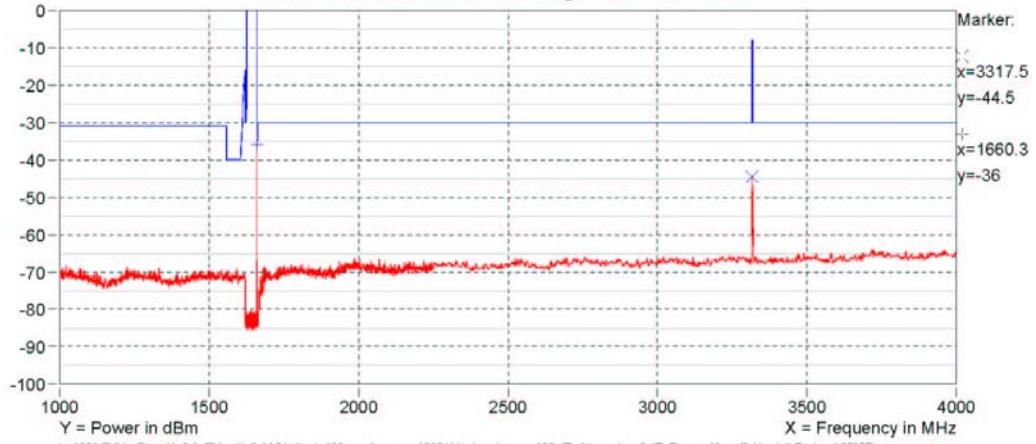
22-05-2006 08:55:12 File: SHEET16B.TO1, EUT 1
29-05-2006 12:05:10 File: SHEET16B.LM1, Limit 1, ETSI 301681

EUT: Explorer 300 TT3705A
Manufacturer: Thrane & Thrane
Operating Condition: ant 1-3 m vertical. TT 0-360 deg
Test Site: EMC-5
Test Specification: ETSI 310 681
Comment: Tx: 1660.4 MHz

Project no: A503898 - HEN

Sheet 16

DELTA Electronics Testing, EMC Section.



Y = Power in dBm
X = Frequency in MHz
to 1621.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1665.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 30 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1670.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 100 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1680.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 300 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 1690.5MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 2250MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Average: 1000 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E
to 4000MHz: Step: Y=0.1 dB lin, X=0.1 MHz lin, t=100 ms, Positive Peak, 300 kHz, Level range 100 dB, Attenuation 0 dB, Preampifier off, Hewlett Packard 8565E

22-05-2006 08:57:24 File: SHEET17B.TO1, EUT 1
22-05-2006 08:52:38 File: SHEET17B.LM1, Limit 1, ETSI 301681

EUT: Explorer 300 TT3705A
Manufacturer: Thrane & Thrane
Operating Condition: ant 1-3 m horizontal. TT 0-360 deg
Test Site: EMC-5
Test Specification: ETSI 310 681
Comment: Tx: 1660.4 MHz

Project no: A503898 - HEN

Sheet 17