



Product Service

RF - TEST REPORT

Report Number : **68/850.9.011.01** Date of Issue: 27 March 2009

Model : **PC-88012N**

Product Type : Notebook Computer

Applicant : Wanlida Group Co., Ltd.

Address : No. 618 Jiahe Road, Wanlida Industry Zone,
Xiamen Fujian, China 361006

Production Facility : Wanlida Group Co., Ltd.

Address : Wanlida Industry Zone, Nanjing, Fujian, China 363601

Test Result : **Positive** **Negative**

Total pages including
Appendices : 45

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2 Details about the Test Laboratory

Details about the Test Laboratory

Company name: Jiangsu TÜV Product Service Ltd. – Shenzhen Branch
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Metrology and Quality Inspection building,
Central Section of LongZhu Road,
Nan Shan,
Shenzhen,

Telephone: 86 755 2694 1599
Fax: 86 755 2694 1545

3 Description of the Equipment Under Test

Description of the Equipment Under Test

Product: Notebook Computer

Model no.: PC-88012N

Serial number: NIL

Options and accessories: NIL

Rating: DC 12V 3A, 36W
AC Adaptor:
Model: MPA-12030
Input: 100-240V ~ 50/60Hz 1.0A MAX
Output: 12V DC 3A

Antenna: One integral antenna inside enclosure of EUT, NOT accessible by end user
Antenna gain: 1.5dBi

RF Transmission
Frequency: 2412-2462MHz

Description of the EUT: NIL

Auxiliary Equipment and Cable Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
LCD monitor	Lenovo	9227-AE1	V1TDB38
Keyboard	Lenovo	SK-8825 (L)	02553778
Mouse	Lenovo	MO28UOL	4418011108
Headphone	Ouyun	OH601	----
USB flash drive	Kingston	Data Traveller	----
SD card	Kingston	SD4/4GBFE	----
VGA cable	Lenovo	Shield	140cm
AC Power cable	Lenovo	Unshield	180cm



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4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

5 Summary of Test Results

Technical Requirements				
FCC Part 15 Subpart C				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
15.207 Conducted Emission AC Power Port	8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247 (b) (1) Conducted peak output power	12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(d) Band edge compliance of RF emissions	14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(d) Spurious RF conducted emissions	22	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(d) 15.209 Spurious radiated emissions	27	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(a)(2) 6dB bandwidth	33	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(e) Power spectral density	39	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: SMFPC88012N filing to comply with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C Rules.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: 7 Jan 2009

Testing Start Date: 10 Feb 2009

Testing End Date: 10 March 2009

- TÜV SÜD CHINA, SHENZHEN BRANCH -

Reviewed by:

Prepared by:

Paul Yu
EMC Project Manager

Tammy Chen
EMC Assistant Project Manager

7 Technical Requirement

7.1 Conducted Emission

Test Method

- 1 The EUT was placed on a table, which is 0.8m above ground plane
- 2 The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
- 3 Maximum procedure was performed to ensure EUT compliance
- 4 A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions from both sides of AC line

Limit

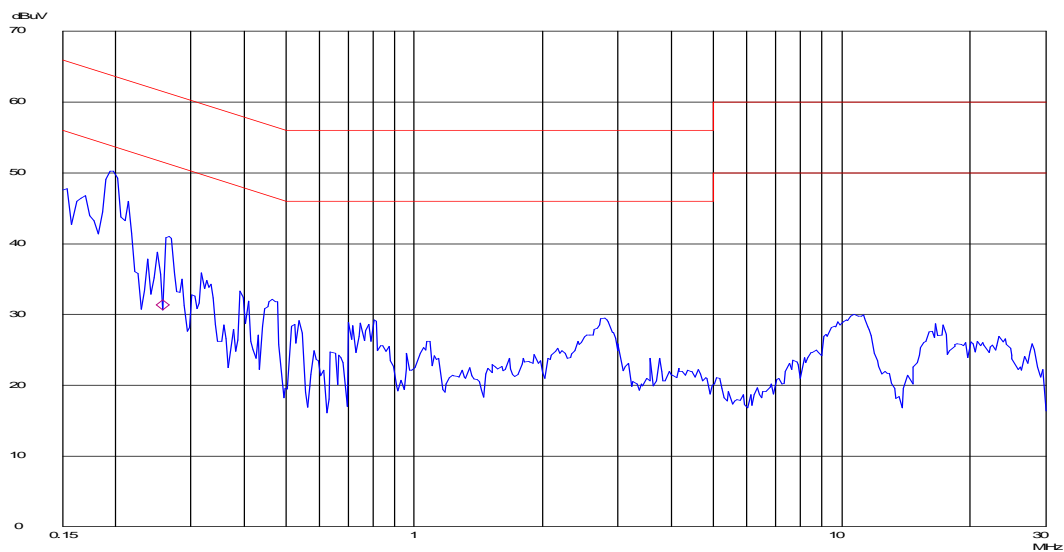
Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

Conducted Emission

Conducted Disturbance

EUT: M/N:PC-88012N
 Op Cond: WIFI
 Test Spec: L
 Comment: AC 120V/60Hz



Frequency MHz	Cable Loss dB	Reading dBµV	QP Test result dBµV	QP Limit dBµV	Margin dB
0.168	9.8	31.3	41.1	65.1	24
0.201	9.8	32.5	42.3	63.6	21.3
0.335	9.8	22.1	31.9	59.3	27.4
0.441	9.8	19.4	29.2	57.0	27.8
0.553	9.9	24.2	34.1	56	21.9
0.879	9.9	22.3	32.2	56	23.8

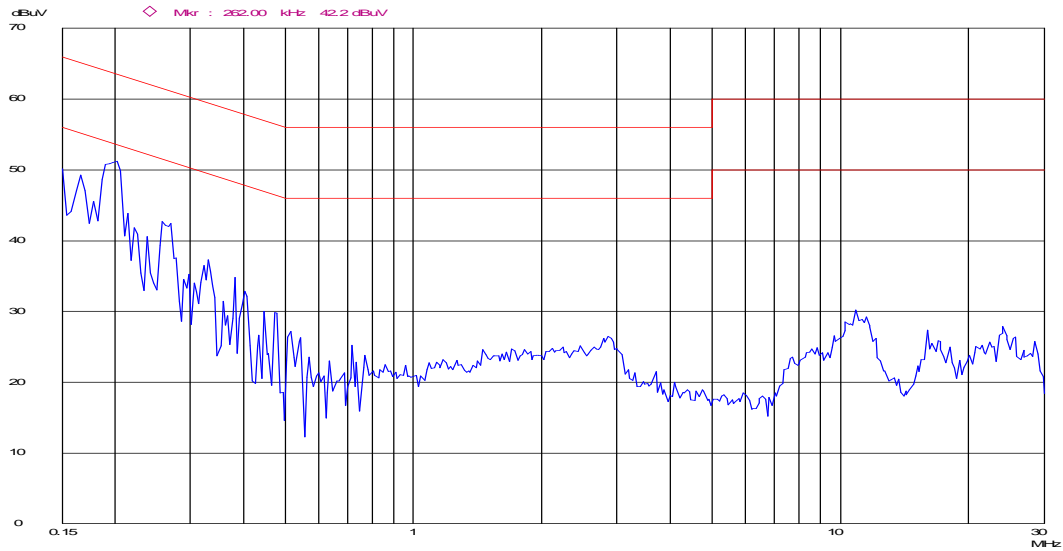
Frequency MHz	Cable Loss dB	Reading dBµV	AV Test result dBµV	AV Limit dBµV	Margin dB
0.168	9.8	20.1	29.9	55.1	25.2
0.201	9.8	14.3	24.1	53.6	29.5
0.335	9.8	16.3	26.1	49.3	23.2
0.441	9.8	9.7	19.5	47	27.5
0.553	9.9	17.2	27.1	46	18.9
0.879	9.9	15.6	25.5	46	20.5

Remark: Test Result= Reading + Cable Loss

Conducted Emission

Conducted Disturbance

EUT: M/N:PC-88012N
 Op Cond: WIFI
 Test Spec: N
 Comment: AC 120V/60Hz



Frequency MHz	Cable Loss dB	Reading dBµV	QP Test result dBµV	QP Limit dBµV	Margin dB
0.161	9.8	30.6	40.4	65.4	25
0.196	9.8	33.5	43.3	63.8	20.5
0.354	9.8	22.5	32.3	58.9	26.6
0.416	9.8	20.5	30.3	57.5	27.2
0.587	9.9	25.5	35.4	56	20.6
0.881	9.9	23.2	33.1	56	22.9

Frequency MHz	Cable Loss dB	Reading dBµV	AV Test result dBµV	AV Limit dBµV	Margin dB
0.161	9.8	20.5	30.3	55.4	25.1
0.196	9.8	15.7	25.5	53.8	28.3
0.354	9.8	14.9	24.7	48.9	24.2
0.416	9.8	13.9	23.7	47.5	23.8
0.587	9.9	14.9	24.8	46	21.2
0.881	9.9	14.2	24.1	46	21.9

Remark: Test Result= Reading + Cable Loss



Test Equipment List

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	Dec 23 2009
AMN	Rohde & Schwarz	ESH3-Z5	100229	Dec 23 2009
AMN	Rohde & Schwarz	ENV216	100042	Dec 23 2009

7.2 Conducted peak output power

Test Method

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the peak power detection.

Limits for conducted peak output power measurements

Frequency Range MHz	Limit W	Limit dBm
2400-2483	≤1	≤30

Conducted peak output power

DSSS mode QPSK modulation 11Mbps data rate Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
CH1 2412MHz	15.73	Pass
CH2 2442MHz	16.31	Pass
CH3 2462MHz	16.31	Pass

OFDM mode BPSK modulation 6Mbps data rate Test Result

Frequency MHz	Conducted Peak Output Power dBm	Result
CH1 2412MHz	14.85	Pass
CH2 2442MHz	15.13	Pass
CH3 2462MHz	15.12	Pass



Product Service

Test Equipment

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESPI3	100244	Dec 23 2009

7.3 Band edge compliance of RF emissions

Test Method

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW and VBW to 1MHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength.

The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW and VBW to 100kHz, to measure the conducted peak band edge.

Limits

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Frequency MHz	Limit Average dBuV/m	Limit Peak dBuV/m
Below 2390 Above 2483.5	54	74



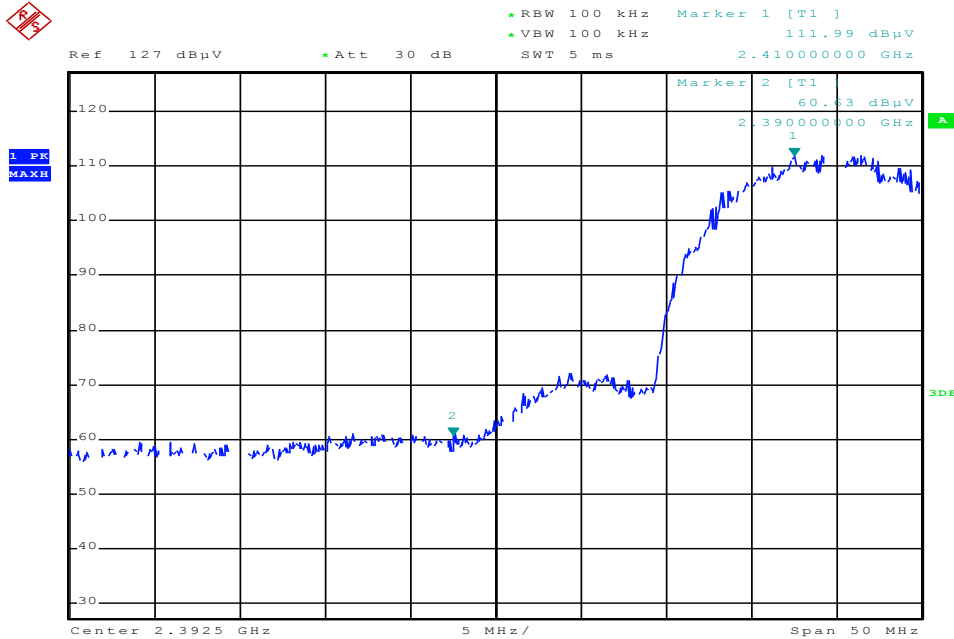
Band edge compliance of RF emissions

DSSS mode QPSK modulation 11Mbps data rate Test Result

Maximum Carrier Field strength

Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Reading dBuV	Emission Level dBuV/m	Polarization	Limit dBuV/m	Detector	Result
2412.000	5.6	28.5	58.6	92.7	Horizontal	---	PK	---
2412.000	5.6	28.5	51.1	85.2	Horizontal	---	AV	---
2462.000	5.6	28.5	60.3	94.4	Horizontal	---	PK	---
2462.000	5.6	28.5	53.5	87.6	Horizontal	---	AV	---

Lower Edge PK plot



Date: 17.FEB.2009 02:55:44

Max carrier field strength PK 92.7dBuV/m, AV 85.2dBuV/m
 At 2.390GHz, the deviation of PK plot is 51.36dB
 The field strength at 2.390GHz PK 41.34dBuV/m
 Which fulfill the requirement of PK 74dBuV/m, AV 54dBuV/m.
 PK plot shows compliance with the AV limit, AV plot is omitted.



Band edge compliance of RF emissions

OFDM mode BPSK modulation 6Mbps data rate Test Result

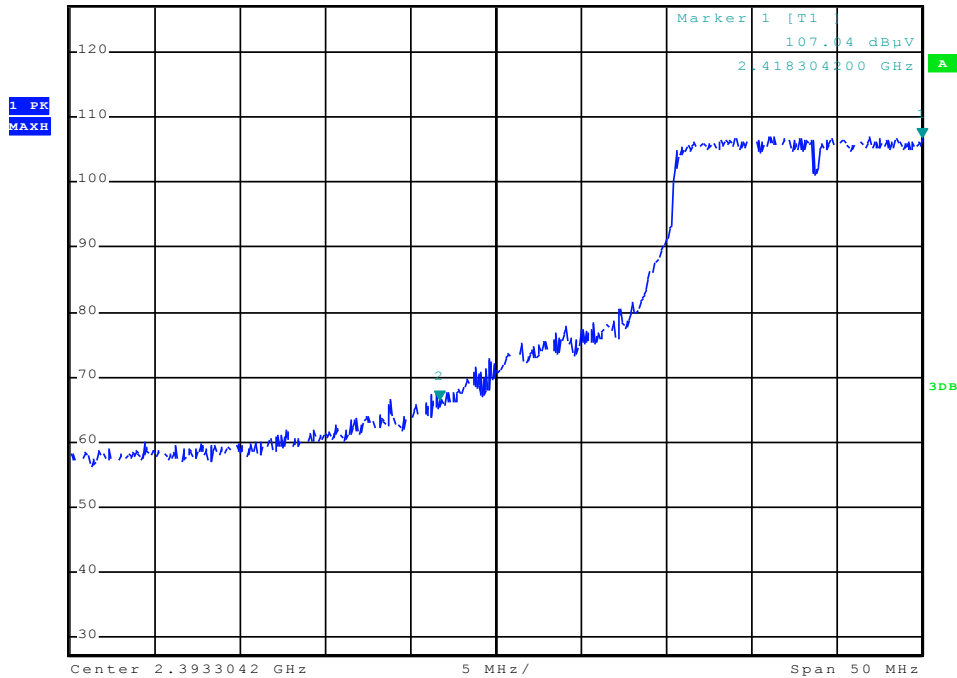
Maximum Carrier Field strength Carrier Field strength

Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Reading dBuV	Emission Level dBuV/m	Polarization	Limit dBuV/m	Detector	Result
2412.000	5.6	28.5	57.4	91.5	Horizontal	---	PK	---
2412.000	5.6	28.5	49.3	83.4	Horizontal	---	AV	---
2462.000	5.6	28.5	60.0	94.1	Horizontal	---	PK	---
2462.000	5.6	28.5	51.5	85.6	Horizontal	---	AV	---

Lower Edge PK Plot



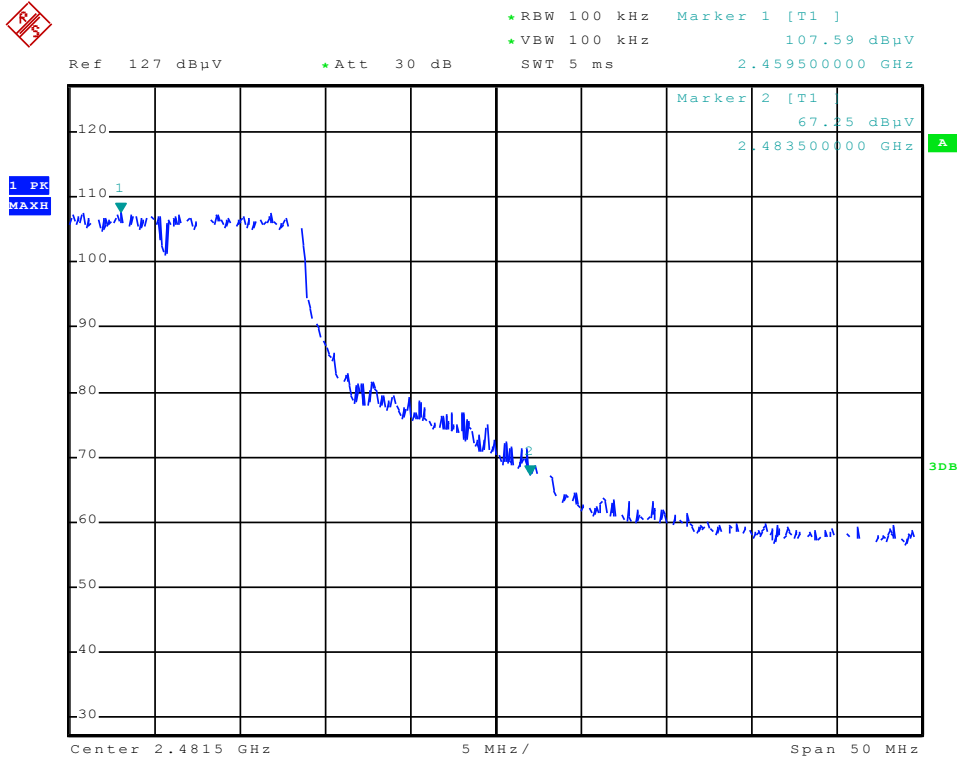
Ref 127 dBµV Att 30 dB RBW 100 kHz Marker 2 [T1]
 VBW 100 kHz 66.38 dBµV
 SWT 5 ms 2.390000000 GHz



Date: 17.FEB.2009 02:52:35

Max carrier field strength PK 91.5dBuV/m, AV 83.4dBuV/m
 At 2.390GHz, the deviation of PK plot is 40.66dB
 The field strength at 2.390GHz PK 50.84dBuV/m
 Which fulfill the requirement of PK 74dBuV/m, AV 54dBuV/m.
 PK plot shows compliance with the AV limit, AV plot is omitted.

Upper Edge PK Plot



Date: 17.FEB.2009 02:58:57

Max carrier field strength PK 94.1dBuV/m, AV 85.6dBuV/m
 At 2.4835GHz, the deviation of PK plot is 40.34dB
 The field strength at 2.4835GHz PK 53.76dBuV/m
 Which fulfill the requirement of PK 74dBuV/m, AV 54dBuV/m.
 PK plot shows compliance with the AV limit, AV plot is omitted.



Test Equipment List

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESPI3	100244	Dec 23 2009

7.4 Spurious RF conducted emissions

Test Method

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the peak power detection.

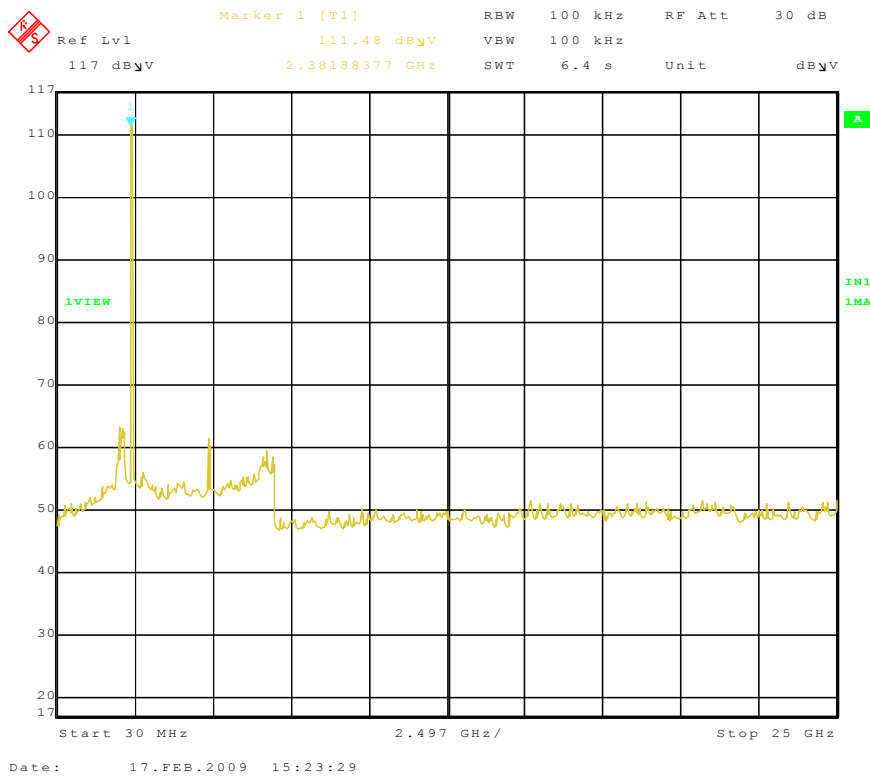
Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The resolution bandwidth(RBW) and the video bandwidth (VBW) of the spectrum analyzer were respectively set to 100kHz and 100kHz.

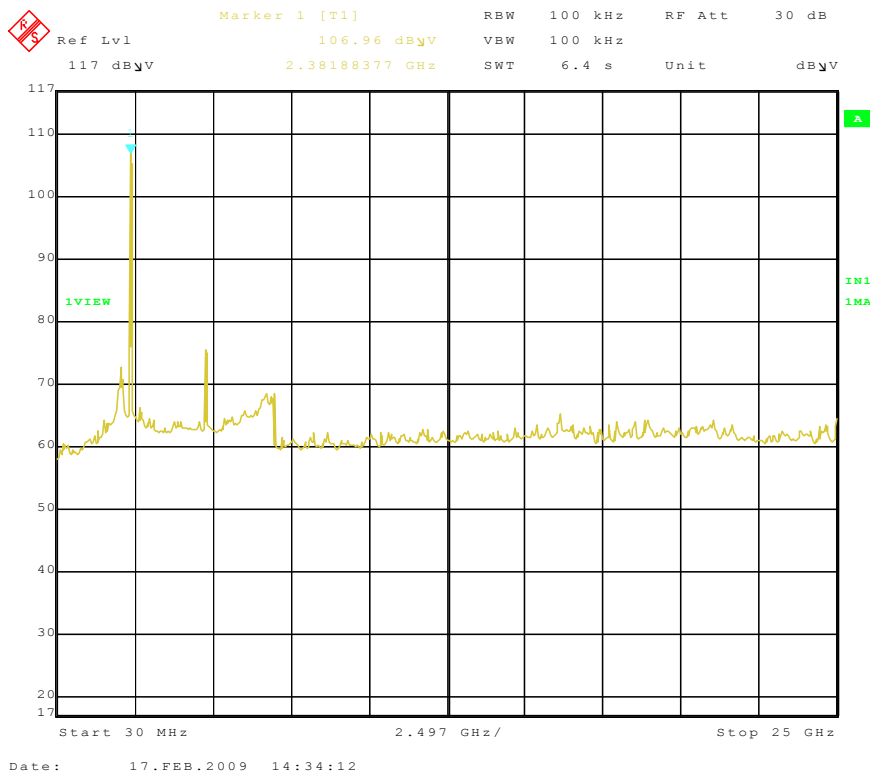
Limit

Frequency Range MHz	Limit (dBc)
1000-25000	-20

Spurious RF conducted emissions 2462MHz



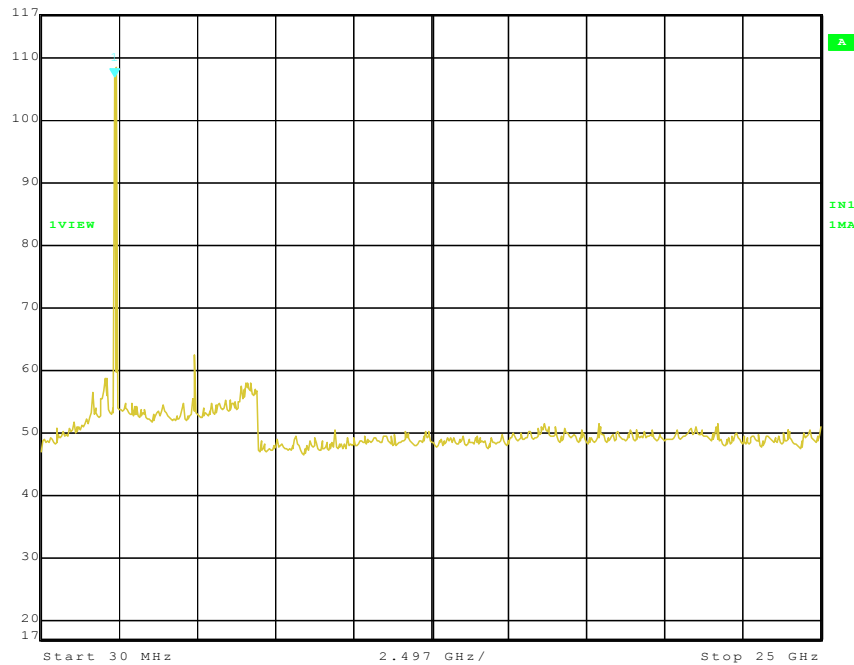
OFDM mode BPSK modulation 6Mbps data rate Test Result 2412MHz



Spurious RF conducted emissions

2442MHz

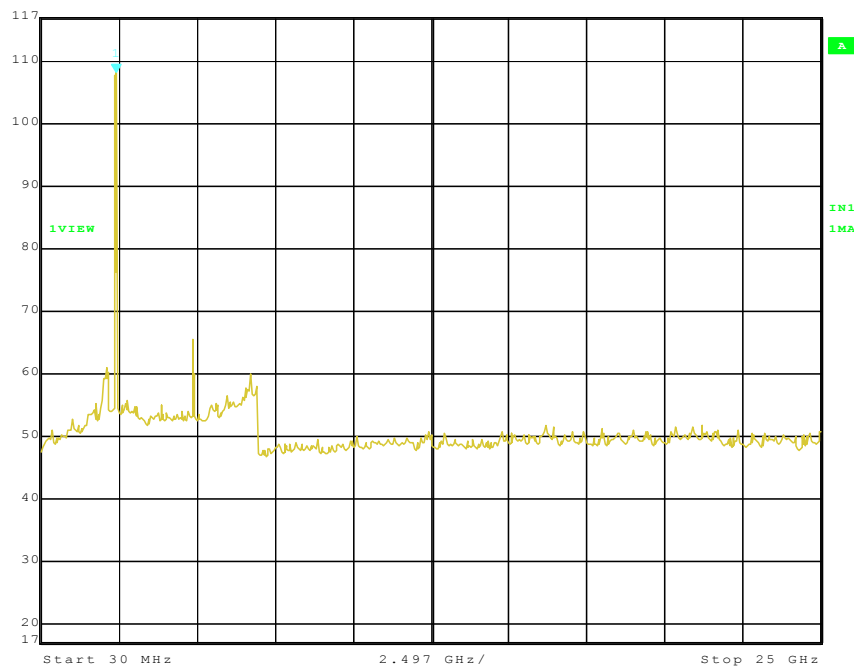
	Ref Lvl	Marker 1 [T1]	RBW	100 kHz	RF Att	30 dB
	117 dB μ V	106.81 dB μ V	VBW	100 kHz		
		2.38188377 GHz	SWT	6.4 s	Unit	dB μ V



Date: 17.FEB.2009 15:21:09

2462MHz

	Ref Lvl	Marker 1 [T1]	RBW	100 kHz	RF Att	30 dB
	117 dB μ V	108.10 dB μ V	VBW	100 kHz		
		2.43192385 GHz	SWT	6.4 s	Unit	dB μ V



Date: 17.FEB.2009 15:22:49



Product Service

Test Equipment List

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
EMI Test Receiver	Rohde & Schwarz	ES126	838786/013	Dec 23 2009

7.5 Spurious radiated emissions

Test Method

- 1 The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2 The turntable shall be rotated for 360 degrees to determine the position of maximum emission level
- 3 EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4 Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5 Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Limit

Frequency MHz	Field Strength uV/m	Field Strength dB μ V/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

**Radiated Emission****DSSS mode QPSK modulation 11Mbps data rate CH1 2412MHz Test Result**

Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Reading dBuV	Emission Level dBuV/m	Polarization	Limit dBuV/m	Detector	Result
31.343	0.9	18.8	13.0	32.7	Horizontal	40	QP	Pass
98.331	1.6	11.9	24.3	37.8	Horizontal	43.5	QP	Pass
31.793	0.9	18.8	13.5	33.2	Vertical	40	QP	Pass
180.934	2.2	9.8	26.5	38.5	Vertical	43.5	QP	Pass
1300.009	4.4	28.5	14.1	48.1	Horizontal	74	PK	Pass
1300.009	4.4	28.5	13.2	47.2	Horizontal	54	AV	Pass
2133.376	5.3	28.5	13.3	47.1	Horizontal	74	PK	Pass
2133.376	5.3	28.5	12.7	46.5	Horizontal	54	AV	Pass
4824.884	4.2	33.3	11.7	48.8	Horizontal	74	PK	Pass
4824.884	4.2	33.3	10.1	47.2	Horizontal	54	AV	Pass
7236.541	4.2	36.4	8.2	48.4	Horizontal	74	PK	Pass
7236.541	5.2	36.4	7.3	47.5	Horizontal	54	AV	Pass
9648.562	5.2	37.5	6.5	47.8	Horizontal	74	PK	Pass
9648.562	6.0	37.5	5.6	46.9	Horizontal	54	AV	Pass
12060.514	6.0	38.4	----	----	Horizontal	74	PK	Pass
12060.514	7.0	38.4	----	----	Horizontal	54	AV	Pass
14472.542	7.0	42.6	----	----	Horizontal	74	PK	Pass
14472.542	7.6	42.6	----	----	Horizontal	54	AV	Pass

DSSS mode QPSK modulation 11Mbps data rate CH7 2442MHz Test Result

Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Reading dBuV	Emission Level dBuV/m	Polarization	Limit dBuV/m	Detector	Result
1300.009	4.4	25.1	9.4	38.9	Horizontal	74	PK	Pass
1300.009	4.4	25.1	1.6	31.1	Horizontal	54	AV	Pass
2133.376	5.3	28.5	12.5	46.3	Horizontal	74	PK	Pass
2133.376	5.3	28.5	4.0	37.8	Horizontal	54	AV	Pass
4884.433	4.3	33.3	12.1	49.2	Horizontal	74	PK	Pass
4884.433	4.3	33.3	10.0	47.1	Horizontal	54	AV	Pass
7326.512	5.2	36.4	8.6	48.8	Horizontal	74	PK	Pass
7326.512	5.2	36.4	6.2	46.4	Horizontal	54	AV	Pass
9768.438	6.0	37.5	5.0	46.3	Horizontal	74	PK	Pass
9768.438	6.0	37.5	3.2	44.5	Horizontal	54	AV	Pass
12210.322	7.0	38.4	----	----	Horizontal	74	PK	Pass
12210.322	7.0	38.4	----	----	Horizontal	54	AV	Pass
14652.279	7.6	41.1	----	----	Horizontal	74	PK	Pass
14652.279	7.6	41.1	----	----	Horizontal	54	AV	Pass

**Radiated Emission**

DSSS mode QPSK modulation 11Mbps data rate CH11 2462MHz Test Result

Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Reading dBuV	Emission Level dBuV/m	Polarization	Limit dBuV/m	Detector	Result
1300.009	4.4	25.1	9.6	39.1	Horizontal	74	PK	Pass
1300.009	4.4	25.1	2.7	32.2	Horizontal	54	AV	Pass
2133.376	5.3	28.5	12.5	46.3	Horizontal	74	PK	Pass
2133.376	5.3	28.5	4.4	38.2	Horizontal	54	AV	Pass
4924.723	4.3	33.3	15.1	52.2	Horizontal	74	PK	Pass
4924.723	4.3	33.3	10.6	47.7	Horizontal	54	AV	Pass
7386.564	5.2	36.4	9.2	49.4	Horizontal	74	PK	Pass
7386.564	5.2	36.4	7.9	48.1	Horizontal	54	AV	Pass
9848.331	6.0	37.5	7.5	48.8	Horizontal	74	PK	Pass
9848.331	6.0	37.5	0.8	42.1	Horizontal	54	AV	Pass
12310.651	6.9	38.4	----	----	Horizontal	74	PK	Pass
12310.651	6.9	38.4	----	----	Horizontal	54	AV	Pass
14772.289	7.6	41.1	----	----	Horizontal	74	PK	Pass
14772.289	7.6	41.1	----	----	Horizontal	54	AV	Pass

Remark:

- (1) Emission Level= Cable Loss(include amplifier factor) + Antenna Factor + Reading
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.

Radiated Emission

OFDM mode BPSK modulation 6Mbps data rate CH1 2412MHz Test Result

Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Reading dBuV	Emission Level dBuV/m	Polarization	Limit dB μ V/m	Detector	Result
146.633	2.1	11.3	24.8	38.2	Vertical	43.5	QP	Pass
220.441	2.6	10.6	5.0	18.1	Vertical	46	QP	Pass
200.032	2.4	10.3	24.6	37.3	Horizontal	46	QP	Pass
280.150	2.8	13.4	4.4	20.6	Horizontal	46	QP	Pass
2324.501	5.5	28.5	14.1	48.1	Horizontal	74	PK	Pass
2324.501	5.5	28.5	13.2	47.2	Horizontal	54	AV	Pass
2133.452	5.3	28.5	13.3	47.1	Horizontal	74	PK	Pass
2133.452	5.3	28.5	12.7	46.5	Horizontal	54	AV	Pass
4824.552	4.2	33.3	11.7	48.8	Horizontal	74	PK	Pass
4824.552	4.2	33.3	10.1	47.2	Horizontal	54	AV	Pass
7236.220	5.2	36.4	8.2	48.4	Horizontal	74	PK	Pass
7236.220	5.2	36.4	7.3	47.5	Horizontal	54	AV	Pass
9648.407	6.0	37.5	2.5	43.8	Horizontal	74	PK	Pass
9648.407	6.0	37.5	-5.5	35.8	Horizontal	54	AV	Pass
12060.377	7.0	38.4	----	----	Horizontal	74	PK	Pass
12060.377	7.0	38.4	----	----	Horizontal	54	AV	Pass
14472.262	7.6	42.6	----	----	Horizontal	74	PK	Pass
14472.262	7.6	42.6	----	----	Horizontal	54	AV	Pass

OFDM mode BPSK modulation 6Mbps data rate CH7 2442MHz Test Result

Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Reading dBuV	Emission Level dBuV/m	Polarization	Limit dB μ V/m	Detector	Result
1300.009	4.4	25.1	9.1	38.6	Horizontal	74	PK	Pass
1300.009	4.4	25.1	2.6	32.1	Horizontal	54	AV	Pass
2133.376	5.3	28.5	11.1	44.9	Horizontal	74	PK	Pass
2133.376	5.3	28.5	1.9	35.7	Horizontal	54	AV	Pass
4884.448	4.3	33.3	14.0	51.1	Horizontal	74	PK	Pass
4884.448	4.3	33.3	7.1	44.2	Horizontal	54	AV	Pass
7326.312	5.2	36.4	8.3	48.5	Horizontal	74	PK	Pass
7326.312	5.2	36.4	7.1	47.3	Horizontal	54	AV	Pass
9768.304	6.0	37.5	6.4	47.7	Horizontal	74	PK	Pass
9768.304	6.0	37.5	5.1	46.4	Horizontal	54	AV	Pass
12210.276	7.0	38.4	----	----	Horizontal	74	PK	Pass
12210.276	7.0	38.4	----	----	Horizontal	54	AV	Pass
14652.257	7.6	41.1	----	----	Horizontal	74	PK	Pass
14652.257	7.6	41.1	----	----	Horizontal	54	AV	Pass

**Radiated Emission**

OFDM mode BPSK modulation 6Mbps data rate CH11 2462MHz Test Result

Frequency MHz	Cable Loss dB	Antenna Factor dB/m	Reading dBuV	Emission Level dBuV/m	Polarization	Limit dB μ V/m	Detector	Result
1300.009	4.4	25.1	10.2	39.7	Horizontal	74	PK	Pass
1300.009	4.4	25.1	1.8	28.5	Horizontal	54	AV	Pass
2133.376	5.3	28.5	11.4	45.2	Horizontal	74	PK	Pass
2133.376	5.3	28.5	2.5	36.3	Horizontal	54	AV	Pass
4924.333	4.3	33.3	11.1	48.2	Horizontal	74	PK	Pass
4924.333	4.3	33.3	8.9	46.0	Horizontal	54	AV	Pass
7386.187	5.2	36.4	8.3	48.5	Horizontal	74	PK	Pass
7386.187	5.2	36.4	5.5	45.7	Horizontal	54	AV	Pass
9848.543	6.0	37.5	5.7	47.0	Horizontal	74	PK	Pass
9848.543	6.0	37.5	4.4	45.7	Horizontal	54	AV	Pass
12310.789	6.9	38.4	----	----	Horizontal	74	PK	Pass
12310.789	6.9	38.4	----	----	Horizontal	54	AV	Pass
14772.116	7.6	41.1	----	----	Horizontal	74	PK	Pass
14772.116	7.6	41.1	----	----	Horizontal	54	AV	Pass

Remark:

- (1) Emission Level= Cable Loss(include amplifier factor) + Antenna Factor + Reading
- (2) Data of measurement within this frequency range shown “-” in the table above means the reading of emissions are attenuated more than 20db below the permissible limits or the field strength is too small to be measured.



Test Equipment List

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
EMI Test Receiver	Rohde & Schwarz	ES126	838786/013	Dec 23 2009
Bilog Antenna	Chase	CBL6112B	2591	Dec 23 2009
Signal Generator	Rohde & Schwarz	SMR20	100047	Dec 23 2009
Antenna	Schwarzbeck	VUBA9117	115	Dec 23 2009
Horn Antenna	Rohde & Schwarz	HF906	100013	Dec 23 2009

7.6 6 dB bandwidth

Test Method

- 1 Place the EUT on the table and set it in the transmitting mode.
- 2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3 Mark the peak frequency and -6dB (upper and lower) frequency.

Limit

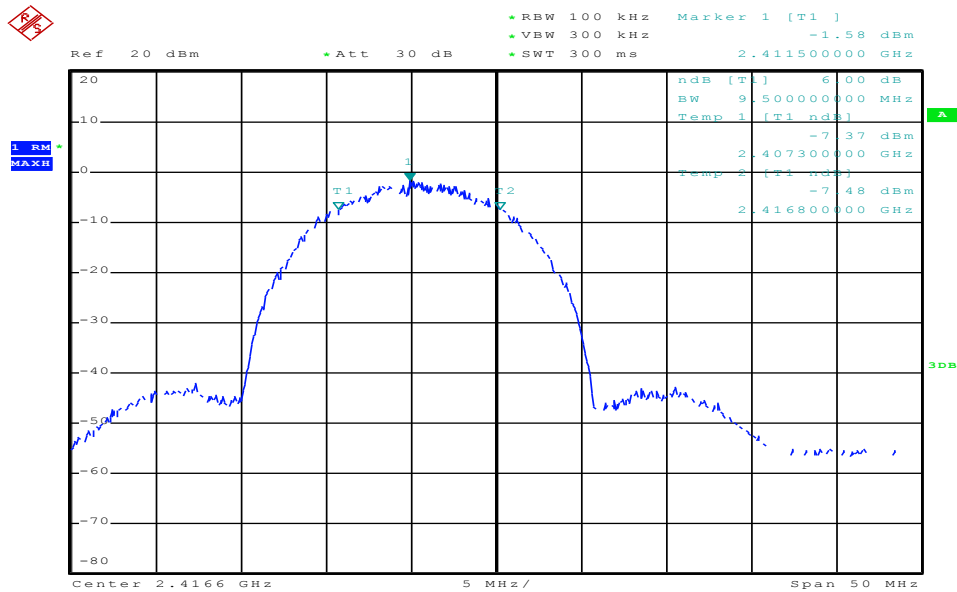
Limit [kHz]

≥ 500

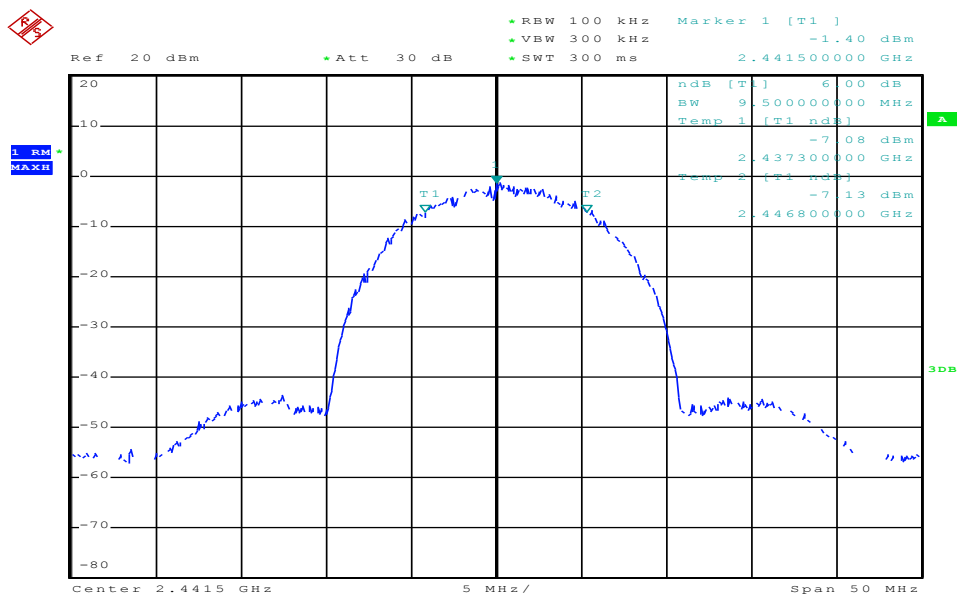
6 dB bandwidth

DSSS mode QPSK modulation 11Mbps data rate Test Result

Frequency MHz	Bandwidth kHz	Limit kHz	Result
2412	12200	≥ 500	Pass
2442	12200	≥ 500	Pass
2462	11800	≥ 500	Pass

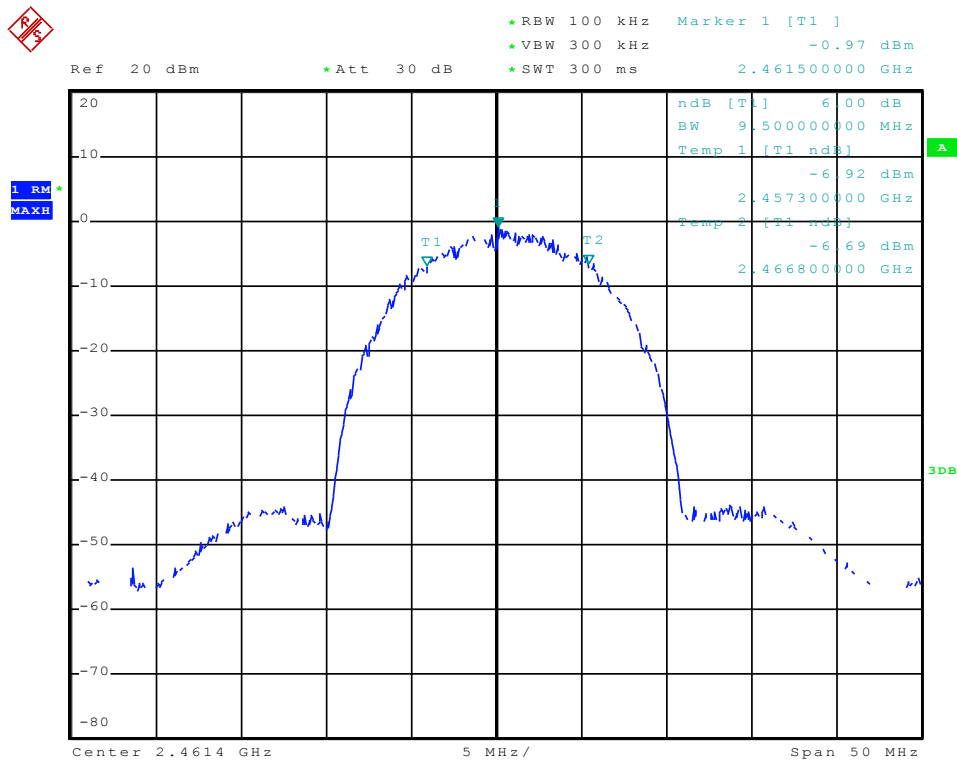


Date: 17.FEB.2009 02:39:24



Date: 17.FEB.2009 02:38:43

6 dB bandwidth

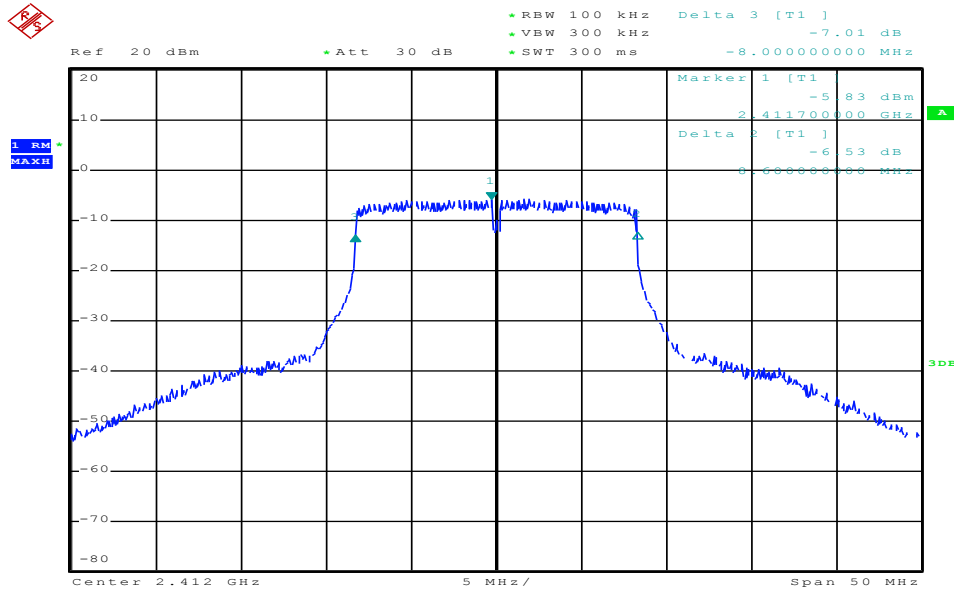


Date: 17.FEB.2009 02:37:57

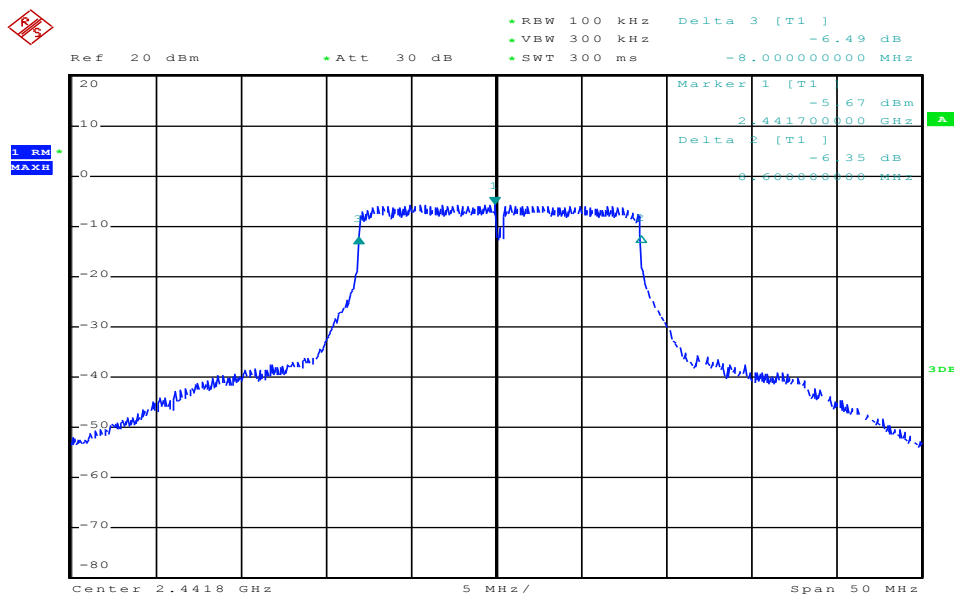
6 dB bandwidth

OFDM mode BPSK modulation 6Mbps data rate Test Result

Frequency MHz	Bandwidth kHz	Limit kHz	Result
2412	16600	≥ 500	Pass
2442	16600	≥ 500	Pass
2462	16600	≥ 500	Pass

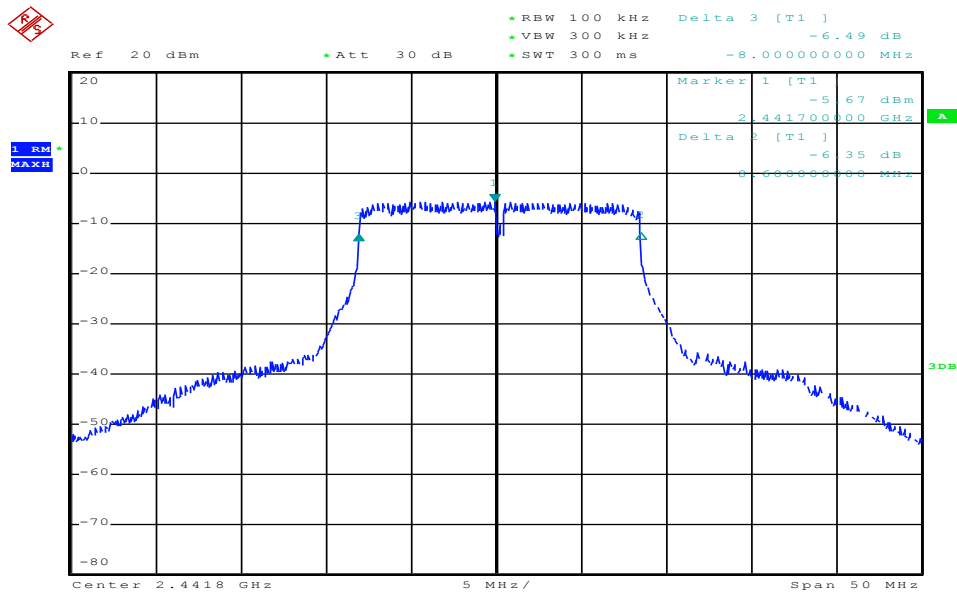


Date: 17.FEB.2009 02:33:53



Date: 17.FEB.2009 02:35:09

6 dB bandwidth



Date: 17.FEB.2009 02:35:09



Product Service

Test Equipment

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESPI3	100244	Dec 23 2009



7.7 Power spectral density

Test Method

- 1 Place the EUT on the table and set it in transmitting mode. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 2 Set the spectrum analyzer as RBW = 3 kHz, VBW = 10 kHz, Span = 300kHz, Sweep = 100 s
- 3 Record the max reading.

Limit

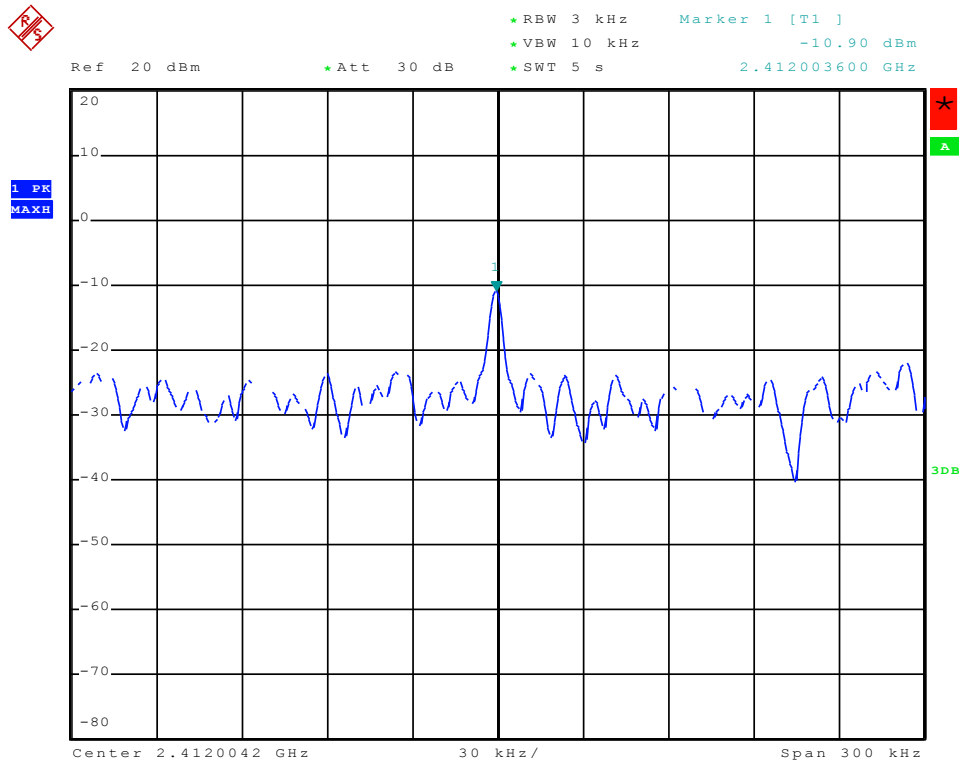
Limit
dBm / 3 kHz

8

Power spectral density

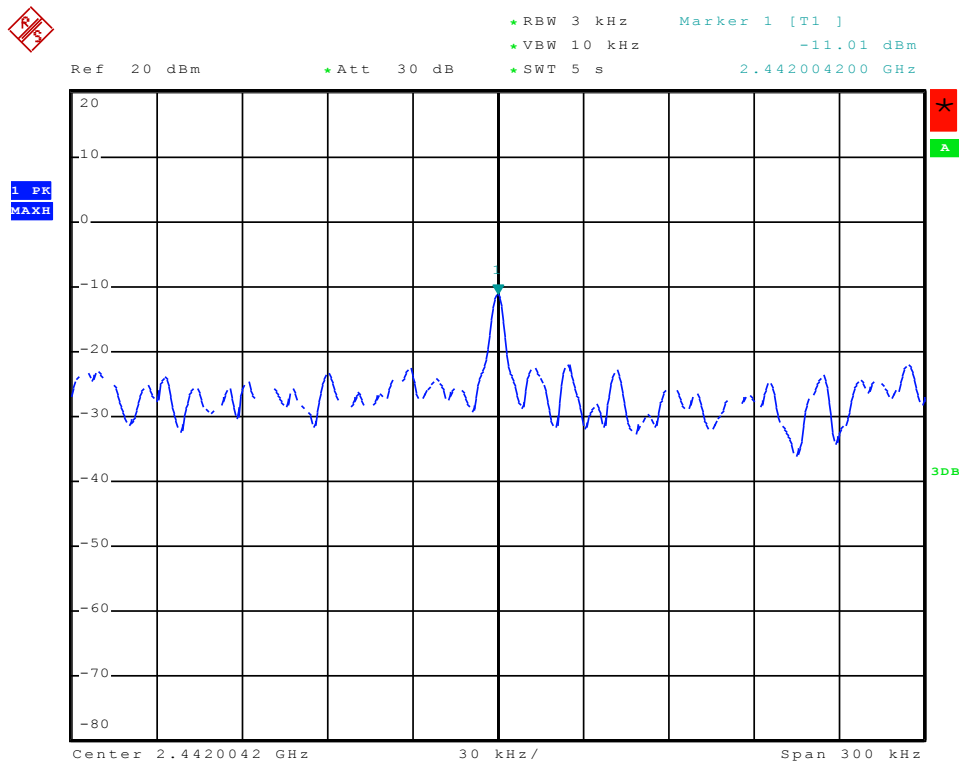
DSSS mode QPSK modulation 11Mbps data rate Test Result

Frequency MHz	P dBm	Result
2412	-10.90	Pass
2442	-11.01	Pass
2462	-11.03	Pass

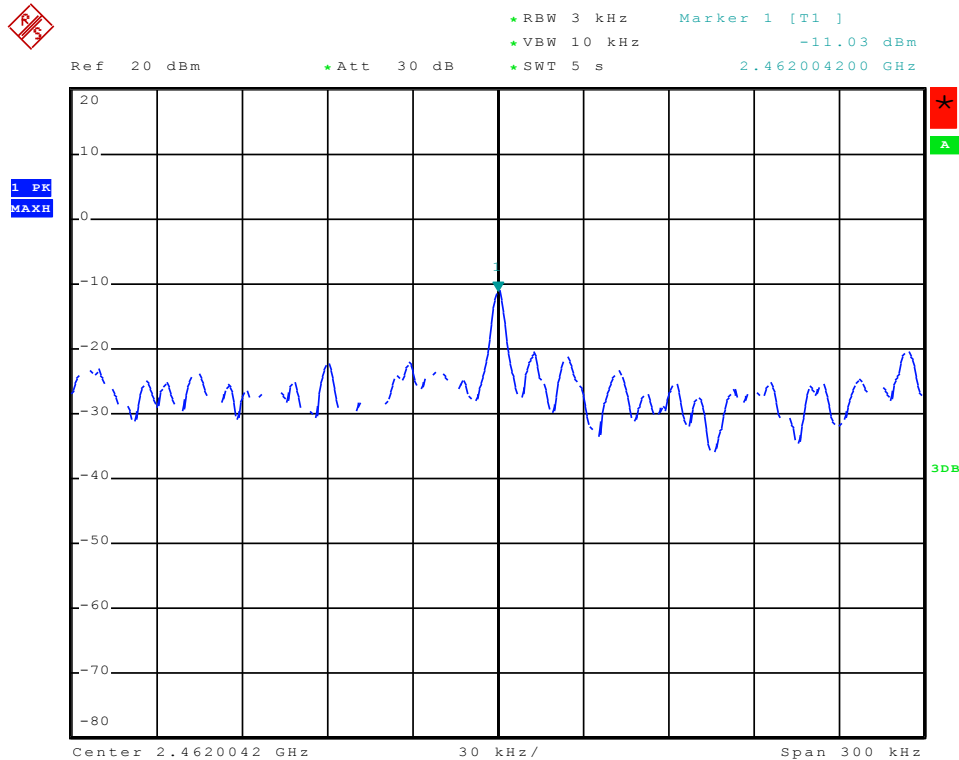


Date: 17.FEB.2009 02:48:56

Power spectral density



Date: 17.FEB.2009 02:48:02

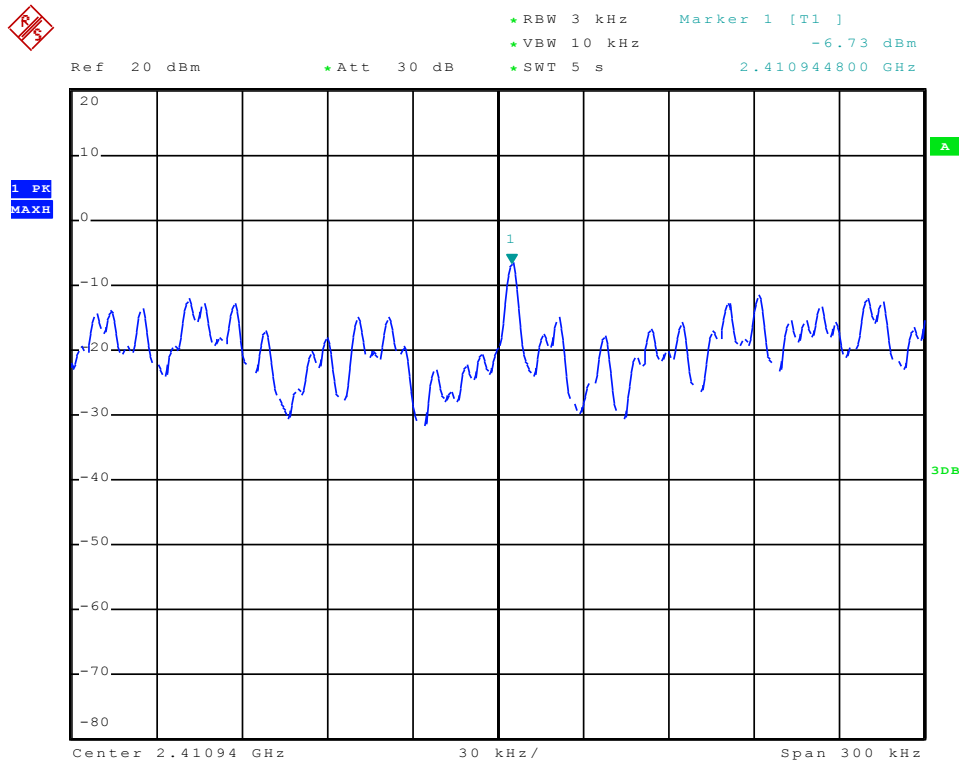


Date: 17.FEB.2009 02:47:11

Power spectral density

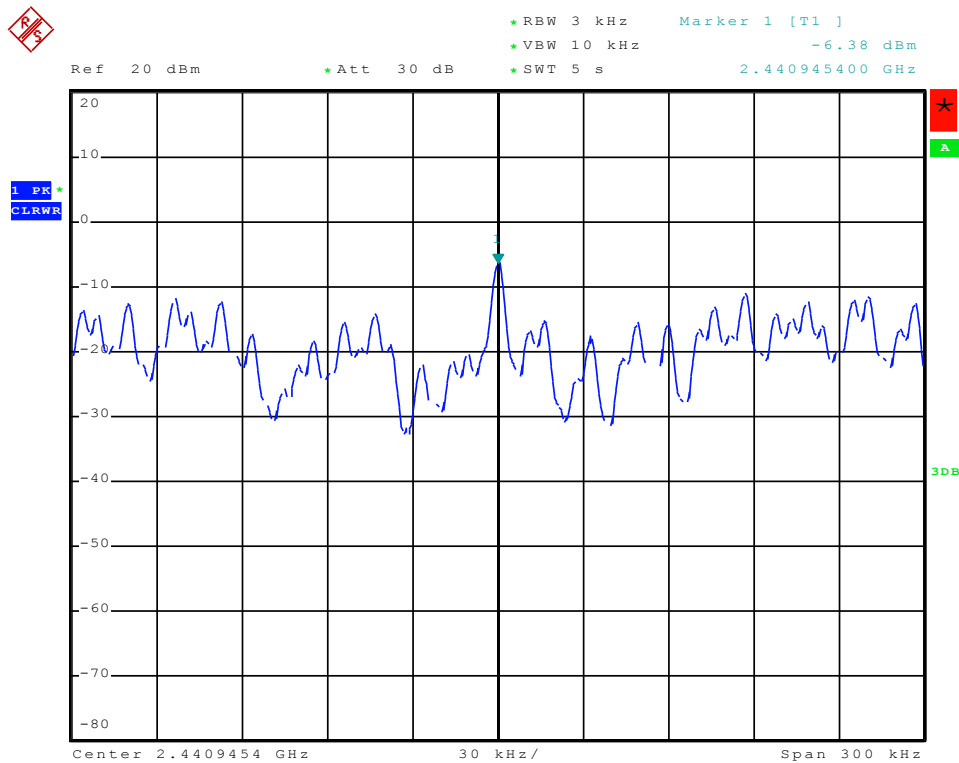
OFDM mode BPSK modulation 6Mbps data rate Test Result

Frequency MHz	P dBm	Result
2412	-6.73	Pass
2442	-6.38	Pass
2462	-17.42	Pass

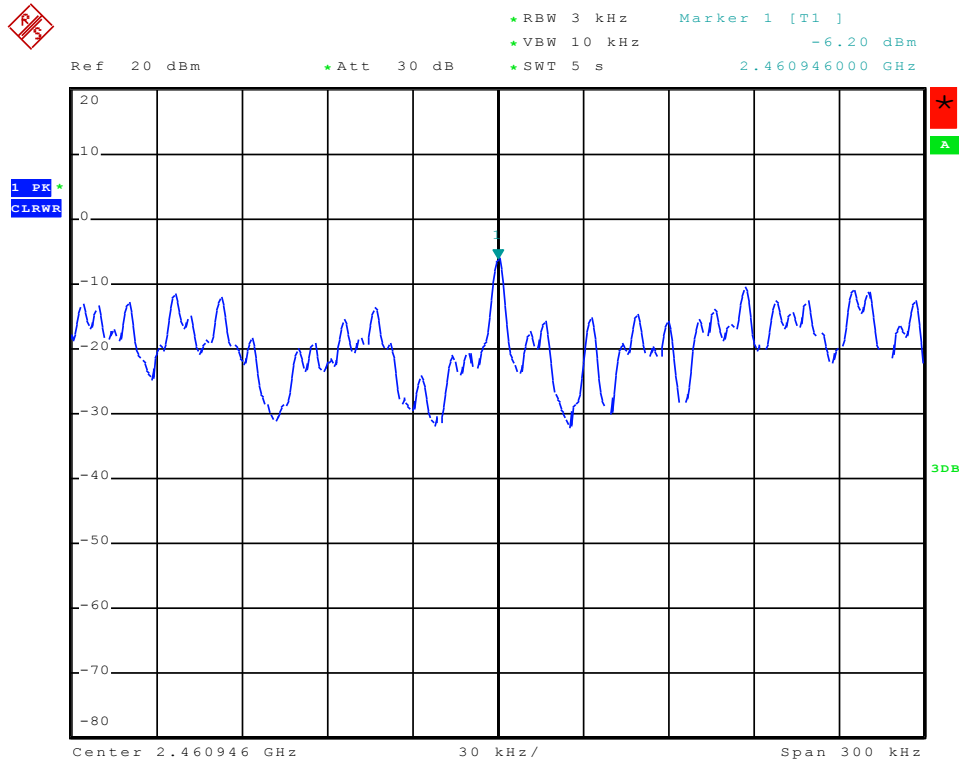


Date: 17.FEB.2009 02:43:17

Power spectral density



Date: 17.FEB.2009 02:44:42



Date: 17.FEB.2009 02:46:02



Product Service

Test Equipment

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESPI3	100244	Dec 23 2009



8 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

Items		Extended Uncertainty
RE	Field strength (dB μ V/m)	U=4.6dB; k=2(30MHz-1GHz)
CE	Disturbance Voltage (dB μ V)	U=3.3dB; k=2