



Produkte
Products

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<i>Test Report No.:</i>		<i>Page 1 of 53</i>	
Auftraggeber: Mitutoyo Corporation			
<i>Client:</i> 20-1, Sakado 1-Chome, Takatsu-ku, Kawasaki-shi, Kanagawa 213-8533, Japan			
Gegenstand der Prüfung: Wireless Communication System			
<i>Test item:</i>			
Bezeichnung: 02AZD810D (U-WAVE-R)	Serien-Nr.: 1999999984, 1999999969		
<i>Identification:</i>	<i>Serial No.:</i>		
Wareneingangs-Nr.: 213082671	Eingangsdatum: 2008-08-20		
<i>Receipt No.:</i>	<i>Date of receipt:</i>		
Prüfart: 4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan			
<i>Testing location:</i>			
Prüfgrundlage: 47 CFR Part 15.247 (Subpart: C), October 1, 2007			
<i>Test specification:</i> ANSI C63.4-2003			
Measurement of Digital Transmission Systems Operating under Section 15.247			
RSS-210 (Issue 7): 2007			
RSS-Gen (Issue 2): 2007			
Prüfresultat: Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).			
<i>Test Result:</i> The test item passed the test specification(s).			
Prüflaboratorium: TÜV Rheinland Japan Ltd. - Global Technology Assessment Center			
<i>Testing Laboratory:</i> 4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan			
geprüft/ tested by:		kontrolliert/ reviewed by:	
			
2008-10-06	T. Sauter / Inspector	2008-10-06	M. Zietz / Reviewer
Datum	Name/Stellung	Datum	Name/Stellung
<i>Date</i>	<i>Name/Position</i>	<i>Date</i>	<i>Name/Position</i>
Unterschrift	Unterschrift	Unterschrift	Unterschrift
<i>Signature</i>	<i>Signature</i>	<i>Signature</i>	<i>Signature</i>
Sonstiges / Other Aspects:			
This test report deals with the intentional radiator portion of the tested product. Unintentional radiator aspects are covered by test reports 12604525 002 and 003.			
Abkürzungen: P(ass) = entspricht Prüfgrundlage		Abbreviations: P(ass) = passed	
F(ail) = entspricht nicht Prüfgrundlage		F(ail) = failed	
N/A = nicht anwendbar		N/A = not applicable	
N/T = nicht getestet		N/T = not tested	
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.			
<i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>			

TEST SUMMARY

3.2.1 VOLTAGE REQUIREMENTS, FCC 15.31(E)

RESULT: PASS

3.2.2 ANTENNA REQUIREMENTS, FCC 15.203, FCC 15.204 AND RSS-GEN 7.1.4

RESULT: PASS

5.1.1 CONDUCTED OUTPUT POWER AT ANTENNA TERMINALS, FCC 15.247(B)(3) AND RSS-210 A8.4(4)

RESULT: PASS

5.1.2 6dB BANDWIDTH, FCC 15.247(A)(2) AND RSS-210 A8.2(A)

RESULT: PASS

5.1.3 99% BANDWIDTH, RSS-GEN 4.6.1

RESULT: N/A

5.1.4 CONDUCTED SPURIOUS EMISSION, FCC 15.247(D) AND RSS-210 A8.5

RESULT: PASS

5.1.5 PEAK POWER SPECTRAL DENSITY, FCC 15.247(E) AND RSS-210 A8.2(B)

RESULT: PASS

6.1.1 MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE OF TRANSMITTER, FCC 15.207 AND RSS-GEN 7.2.2

RESULT: PASS

6.2.1 MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE OF RECEIVER, FCC 15.107 AND RSS-GEN 7.2.2

RESULT: PASS

7.1.1 BAND EDGE RADIATED EMISSION, FCC 15.247(D) AND RSS- 210 2.2

RESULT: Pass

7.1.2 RADIATED EMISSION, OUT-OF-BAND AND SPURIOUS EMISSION, FCC 15.247(D), FCC 15.205, FCC 15.209, RSS-210 2.2, RSS-210 A8.5 AND RSS-GEN 7.2.1

RESULT: PASS

7.2.1 RADIATED EMISSION OF RECEIVER, FCC 15.109, RSS-210 2.2, RSS-210 2.6, RSS-210 A8.5, RSS-GEN 7.2.3.2

RESULT: PASS

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1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report.

2. Test Sites

2.1 Test Facilities

TÜV Rheinland Japan Ltd. - Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan

The used test equipment is in accordance with CISPR 16 for measurement of radio interference.

The Federal Communication Commission has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance with the requirements of section 2.948 of the FCC rules.

The description of the test facility is listed under FCC registration number 299054.

The Industry Canada has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance. The description of the test facility is listed under O.A.T.S filing number 3466B.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Model Name	Serial Number	Equipment ID	Calibrated until
For Antenna Conducted Emission					
Spectrum Analyzer	Rohde & Schwarz	FSP30	10006/030	BT-8017	2009-08
High Frequency Power Supply	Takasago	AA500F	3030395066	Y3-0473	N/A
Peak Power Meter	Agilent	N19118	MY45101408	-	2009-01
Wideband Power Sensor (50MHz-18GHz)	Agilent	N1921A	MY45241752	-	2009-01
Digital Multimeter	Yokogawa	755501 -1-M/C1	12WC42892 M	TL-9070	2009-07
For Conducted Emission					
Receiver	Rohde & Schwarz	ESU 40	100029	RF-0021	2009-02
Two-Line V-Network (LISN)	Rohde & Schwarz	ENV216	100276	RF-0016	2009-05
For Radiated Emission					
Receiver	Rohde & Schwarz	ESU 8	100025	RF-0020	2009-02
Receiver	Rohde & Schwarz	ESU 40	100029	RF-0021	2009-02
RF Selector (10m)	Toyo Corporation	NS4900	0703-182	RF-0029	2009-05
Low Noise Pre-Amplifier	TSJ	MLA-10K01-B01-35	1370750	RF-0253	2009-05
3dB Attenuator 50Ohm	Tamagawa Electronics Co., Ltd.	CFA-01	-	RF-0265	2009-05
Band Reject Filter	Nitsuki	NF-49BT	027	RF-0131	2008-12
Microwave Preamplifier, 1-8GHz	Toyo Corporation	TPA0108-40	0634	RF-0052	2008-12
Trilog Antenna	Schwarzbeck	VULB9168	0245	RF-0019	2009-05
Biconical Antenna	EMCO	3110B	9603-2379	RF-0207	2009-03
Broad Band Horn Antenna (1-10GHz)	Schwarzbeck	BBHA9120B	419	RF-0050	2009-05
Double Ridged Broadband Horn Antenna (2-18GHz)	Toyo Corporation	HAP06-18W	00000025	RF-0065	2009-05
Broad Band Horn Antenna (18-26.5GHz)	Toyo Corporation	HAP18-26N	00000010	RF-0070	2009-05
Constant Voltage Constant Frequency Stabilizers					
CVCF (Shielded Room)	NF Corporation	ESU2000S	9075612	RF-0210	N/A
CVCF Booster (Shielded Room)	NF Corporation	ESU2000B	9074403	RF-0211	N/A

2.3 Measurement Uncertainty

Table 2: Emission Measurement Uncertainty

Measurement Type	Frequency	Uncertainty
Conducted Emission	150kHz - 30MHz	$\pm 1.4\text{dB}$
Antenna Port Conducted Emissions	< 1GHz	$\pm 0.39\text{dB}$
	> 1GHz	$\pm 0.68\text{dB}$
Radiated Emission (Horizontal Orientation)	30MHz - 1GHz	$\pm 4.8\text{dB}$
	> 1GHz	$\pm 5.2\text{dB}$
Radiated Emission (Vertical Orientation)	30MHz - 1GHz	$\pm 4.2\text{dB}$
	> 1GHz	$\pm 5.2\text{dB}$

3. General Product Information

3.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a IEEE802.15.4 unit, which is to be used with personal computers (PC, laptop or desktop type). Measurement data from e.g. a calipper are transmitted via a DTS U-WAVE-T unit attached to a measurement tool to the EUT connected to a PC. The measurement tool and the PC are not part of the EUT.

3.2 System Details

Radio standard:	IEEE 802.15.4
Specified power output:	0dBm (max. peak power: 1mW)
Antenna gain:	-5 dBi
Antenna type:	Pattern antenna
Mounting type:	Internal
Frequency range:	2405 – 2475 MHz
Number of channel:	15
Channel spacing:	5 MHz
Modulation type:	DSSS, OQPSK
FCC Classification:	DTS
Classification:	G1D
System Input Voltage:	DC 5.0V (USB bus power system)
Protection Class:	III

3.2.1 Voltage Requirements, FCC 15.31(e)

RESULT: **PASS**

The EUT has an internal voltage regulator to supply the RF circuit. Hence it complies with the power supply requirements.

3.2.2 Antenna Requirements, FCC 15.203, FCC 15.204 and RSS-Gen 7.1.4

RESULT: **PASS**

The EUT has an internal antenna which is not user accessible. Hence it complies with the requirements.

3.3 Clock Frequencies

The EUT generates internally the following clock frequencies:

6 MHz
8 MHz
16 MHz

3.4 Independent Operation Modes

The system was configured for testing in a typical fashion (as a customer would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.4:2003. Testing was performed at the lowest operating frequency (2405 MHz), the operating frequency in the middle of the specified frequency band (2440 MHz) and the highest operating frequency (2475 MHz).

The basic operation modes are:

- A. EUT transmits (TX mode), with full power, at lowest Channel (2405 MHz), modulation ON, continuous data streaming with 100% duty cycle.
- B. EUT transmits (TX mode), with full power, at middle Channel (2440 MHz), modulation ON, continuous data streaming with 100% duty cycle.
- C. EUT transmits (TX mode), with full power, at highest Channel (2475 MHz), modulation ON, continuous data streaming with 100% duty cycle.
- D. EUT receives (RX mode), on middle Channel (2440 MHz), continuously.

3.5 Noise Suppressing Parts

None mentioned explicitly.

4. Test Set-up and Operation Modes

4.1 Test Methodology

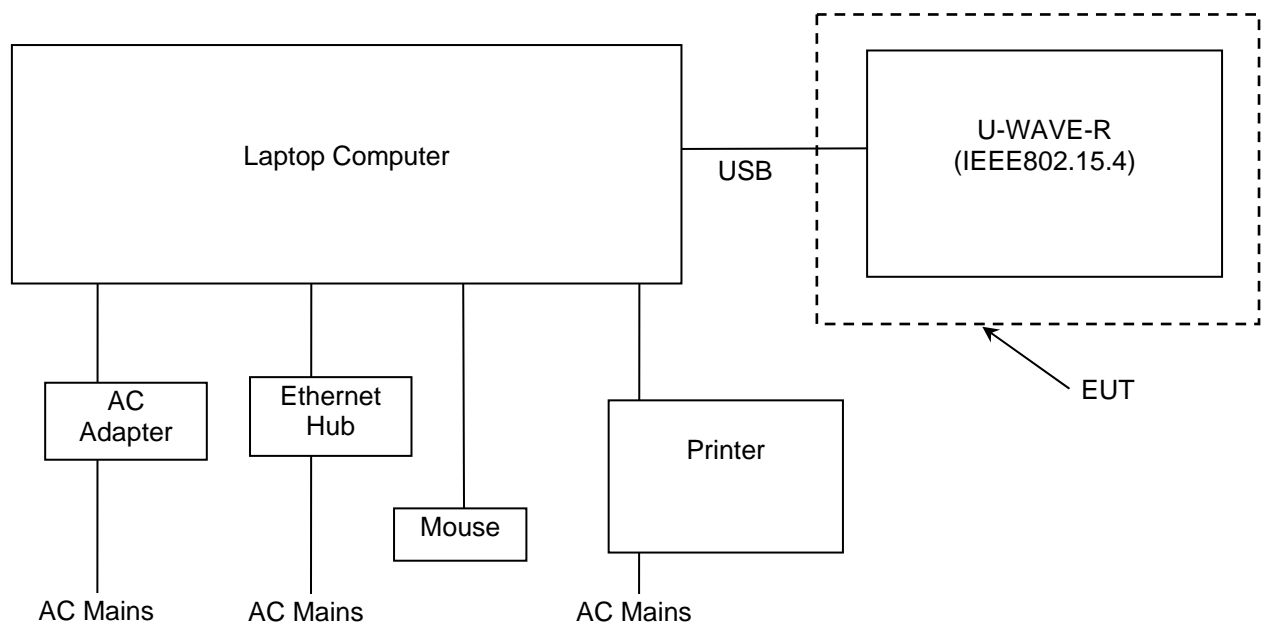
The test methodology used is based on the requirements of 47 CFR Part 15, sections 15.31, 15.33, 15.35, 15.205, 15.209 and Measurement of Digital Transmission Systems Operating under Section 15.247.

The test methods, which have been used, are based on ANSI C63.4:2003 and RSS-Gen.

For details, see under each test item.

4.2 Physical Configuration for Testing

Figure 1: Test setup



In the sample for conducted tests, the antenna was replaced by a 50Ω antenna connector.

The printer was only used for the measurement of the AC mains conducted and radiated emissions of the receiver.

For more details, refer to section: Photographs of the Test Set-Up.

4.3 Test Operation and Test Software

Software used for testing: U-WAVEPAK v1.002 by Mitutoyo Corporation.

This software was running on the external PC. It was used to enable on the EUT the test operation modes listed in section 3.4 as appropriate.

4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

1. Product: Laptop Computer
Manufacturer: IBM
Model: R40e (2684)
Rated Voltage: DC 16V
Input Current: 4.5A
Serial Number: 99-DAY92 04/06
2. Product: AC Adapter for Laptop Computer
Manufacturer: IBM
Model: 08K8204
Rated Voltage: AC 100 - 240V
Input Current: 1.5 - 0.9A
Frequency: 50/60Hz
Serial Number: 11S08K8204Z1Z6LV45B51U
3. Product: Mouse
Manufacturer: Dell
Model: MO58UC
Serial Number: G0601Z20
4. Product: Ethernet Hub
Manufacturer: Buffalo
Model: Giga Switching Hub, LSW3-GT-5NS(D1)
Rated Voltage: AC 100V
Input Power: 5W
Frequency: 50/60Hz
Serial Number: 16485784211186
5. Product: Printer
Manufacturer: Hewlett Packard
Model: C4224A
Rated Voltage: AC 100-127V
Input Current: 3A
Frequency: 50/60Hz
Serial Number: USDG022308

4.5 Countermeasures to achieve EMC Compliance

No additional measures were employed to achieve compliance.

5. Test Results Conducted Testing at Antenna Port

For conducted tests, the antenna was replaced by a 50Ω antenna connector.

5.1.1 Conducted Output Power at Antenna Terminals, FCC 15.247(b)(3) and RSS-210 A8.4(4)

RESULT:

PASS

Date of testing: 2008-09-18

Ambient temperature: 25 °C

Relative humidity: 50 %

Atmospheric pressure: 1013hPa

Requirements:

For systems using digital modulation in the 2400-2483.5MHz band, the maximum peak output power is 1W (30dBm).

Test procedure:

ANSI C63.4-2003, RSS-Gen 4.8 and Measurement of Digital Transmission Systems
Operating under Section 15.247.

The maximum peak output power (conducted) was measured directly at the antenna connector with the power meter. The final measurement takes into account the loss generated by the short cable provided by the EUT manufacturer to support the antenna connector.

The highest emission amplitudes relative to the appropriate limit were recorded in this report.

Table 3: Conducted Output Power at Normal Voltage DC 5.0V

Frequency [MHz]	Reading [dBm]	Cable Loss [dB]	Output [dBm]	Output [mW]	Limit [mW]	Limit [dBm]	Margin [dB]
2405	-2.27	0.16	-2.11	0.62	1000	30	32.11
2440	-1.77	0.16	-1.61	0.69	1000	30	31.61
2475	-1.38	0.17	-1.21	0.76	1000	30	31.21

Notes: Output = Reading + Cable loss
 $\text{mW} = 10^{(\text{dBm}/10)}$
 $\text{dBm} = 10 \times \log(\text{mW})$

5.1.2 6dB Bandwidth, FCC 15.247(a)(2) and RSS-210 A8.2(a)

RESULT:

PASS

Date of testing: 2008-09-18

Ambient temperature: 25°C

Relative humidity: 49%

Atmospheric pressure: 1013hPa

Requirements:

For systems using digital modulation in the 2400-2483.5MHz band, the minimum 6dB bandwidth shall be at least 500 kHz.

Test procedure:

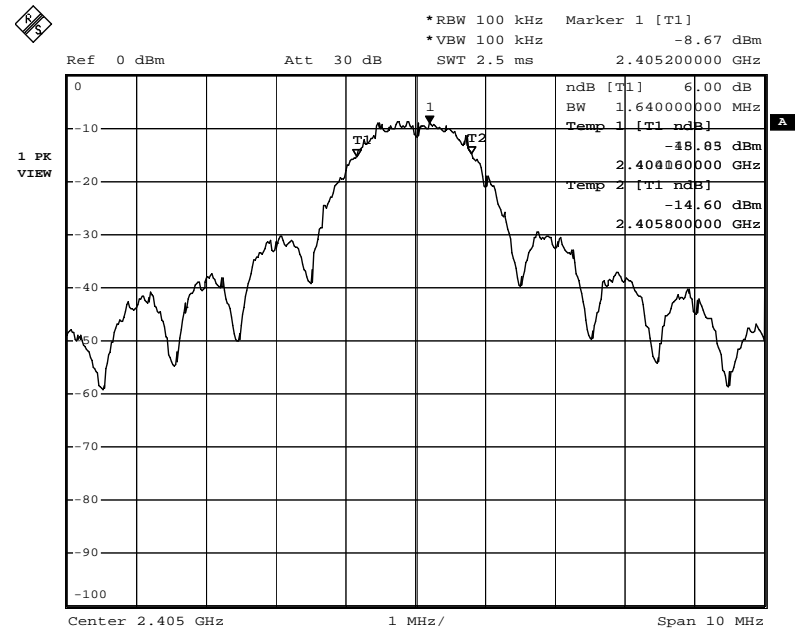
ANSI C63.4-2003, RSS-Gen 4.6.2

The antenna connector was connected to a spectrum analyzer. The spectrum analyzer resolution bandwidth was set to 1% of the SPAN (10MHz). The 6dB Bandwidth was measured by using the DELTA MARKER function of the analyzer.

Table 4: 6dB Bandwidth

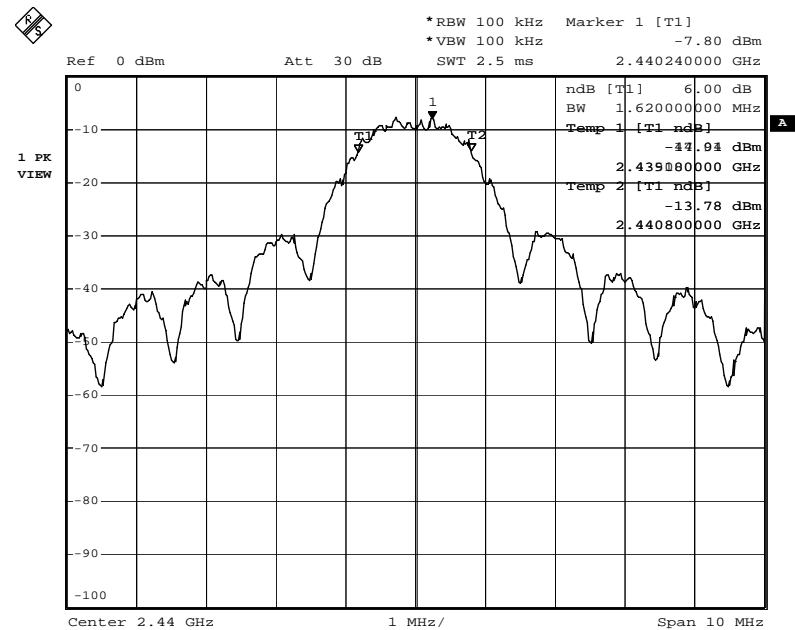
Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2405	1.64	500
2440	1.62	500
2475	1.60	500

Figure 2: 6dB Bandwidth, Mode A (2405MHz)



Comment A: FCC 6dB Bandwidth
Date: 18.SEP.2008 16:17:43

Figure 3: 6dB Bandwidth, Mode B (2440MHz)



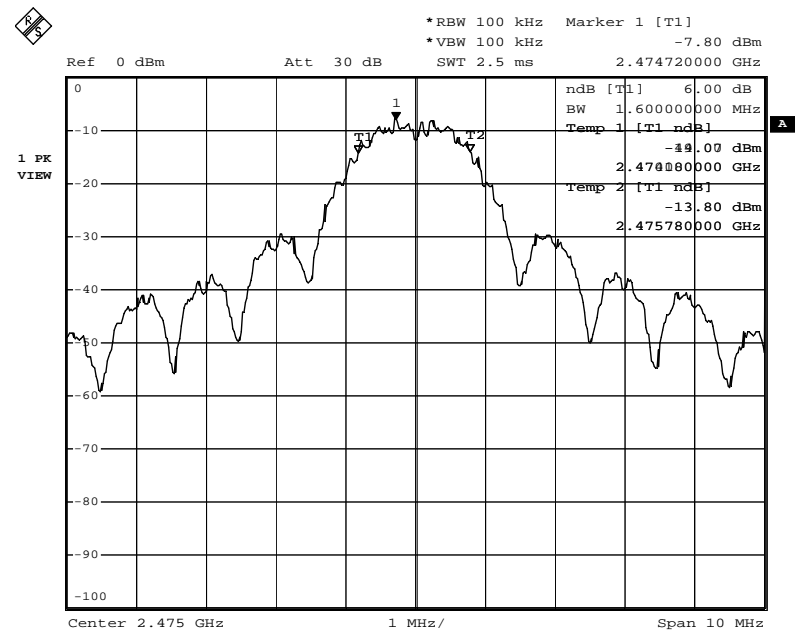
Comment A: FCC 6dB Bandwidth
Date: 18.SEP.2008 16:16:16

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Figure 4: 6dB Bandwidth, Mode C (2475MHz)



Comment A: FCC 6dB Bandwidth
Date: 18.SEP.2008 16:17:04

5.1.3 99% Bandwidth, RSS-Gen 4.6.1

RESULT:

N/A

Date of testing: 2008-09-18

Ambient temperature: 25°C

Relative humidity: 49%

Atmospheric pressure: 1013hPa

Requirements:

The 99% bandwidth shall be reported according to RSS-Gen 4.6.1.

Test procedure:

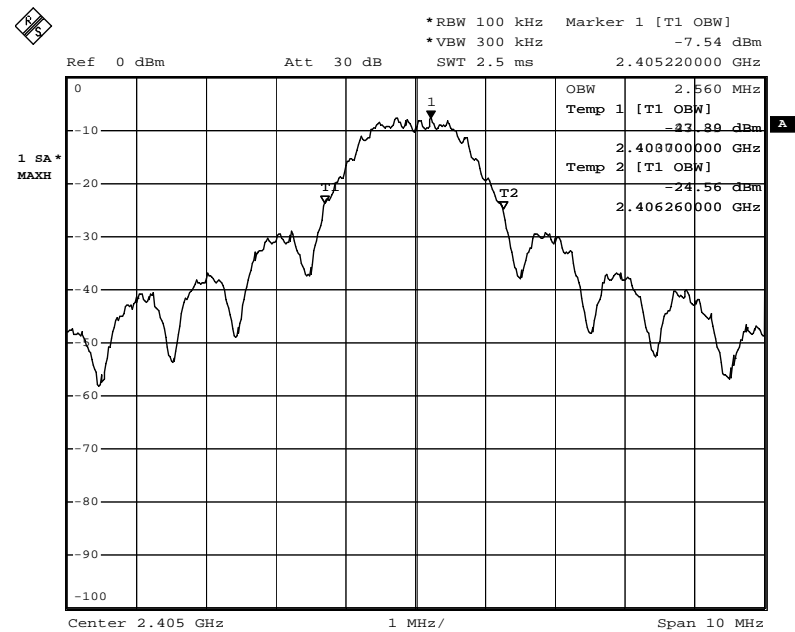
RSS-Gen 4.6.1

The antenna connector was connected to a spectrum analyzer. The spectrum analyzer resolution bandwidth was set to 1% of the SPAN (10MHz). The 99% Bandwidth was measured by using the OBW function of the analyzer with a 99% coverage setting.

Table 5: 99% Bandwidth

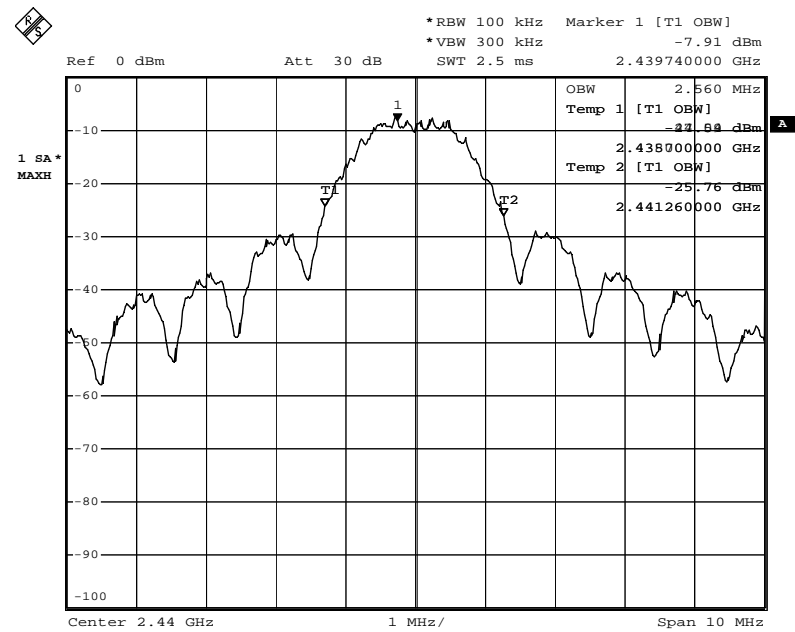
Frequency (MHz)	99% Bandwidth (MHz)
2405	2.56
2440	2.56
2475	2.56

Figure 5: 99% Bandwidth, Mode A (2405MHz)



Comment A: 99% Bandwidth
Date: 18.SEP.2008 16:24:44

Figure 6: 99% Bandwidth, Mode B (2440MHz)



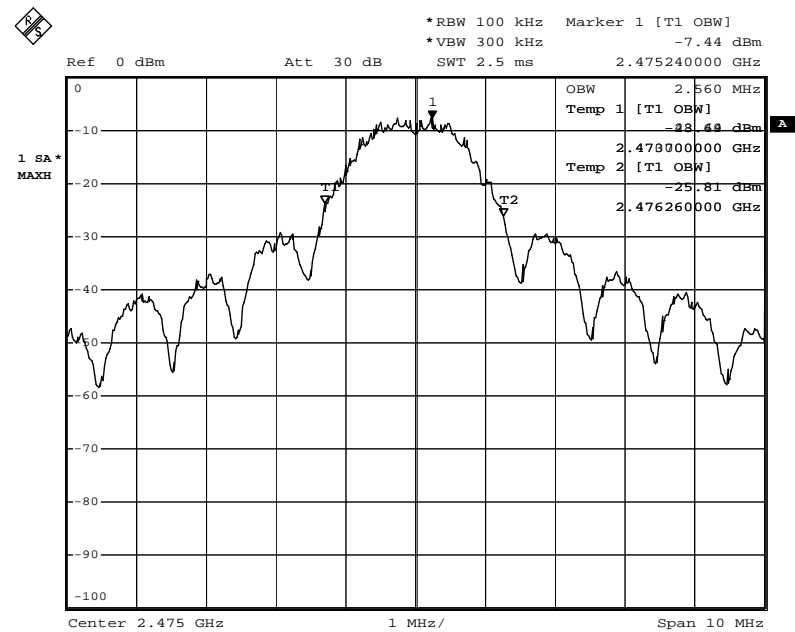
Comment A: 99% Bandwidth
Date: 18.SEP.2008 16:26:44

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Figure 7: 99% Bandwidth, Mode C (2475MHz)



Comment A: 99% Bandwidth
Date: 18.SEP.2008 16:27:32

5.1.4 Conducted Spurious Emission, FCC 15.247(d) and RSS-210 A8.5

RESULT:

PASS

Date of testing: 2008-09-18

Ambient temperature: 25°C

Relative humidity: 49%

Atmospheric pressure: 1013hPa

Requirements:

In any 100 kHz bandwidth outside the frequency band, the RF power shall be at least 20 dB below that of the maximum in-band 100 kHz emission.

Test procedure:

ANSI C63.4-2003, RSS-Gen 4.9 and Measurement of Digital Transmission Systems Operating under Section 15.247.

A spectrum analyzer was connected to the antenna port of the transmitter. Analyzer Resolution Bandwidth was set to 100 kHz. For each channel investigated, the in-band and out-of-band emission measurements were performed. The out-of-band emissions were measured from 30 MHz to 25 GHz (10th harmonics).

The final measurement takes into account the loss generated by all the involved cables, including the short cable provided by the EUT manufacturer to support the antenna connector.

Table 6: Conducted Spurious Emission, Mode A (2405MHz)

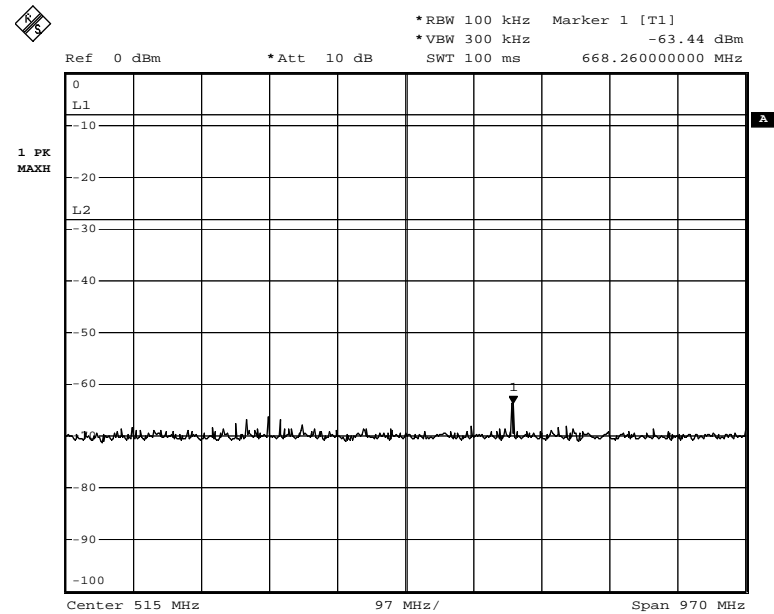
Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
668.26	-63.44	0.69	-62.75	-26.77	35.98
1384	-66.65	1.00	-65.65	-26.77	38.88
2405	-8.09	1.32	-6.77	N/A	N/A
2552	-63.49	1.37	-62.12	-26.77	35.36
4816	-47.31	1.89	-45.42	-26.77	18.66
9620	-65.88	2.62	-63.26	-26.77	36.49
15360	-62.00	3.14	-58.86	-26.77	32.09
24670	-60.12	4.10	-56.02	-26.77	29.26

Notes: Limit = Reading of fundamental + Correction factor – 20dB

Emission level = Reading + Correction factor

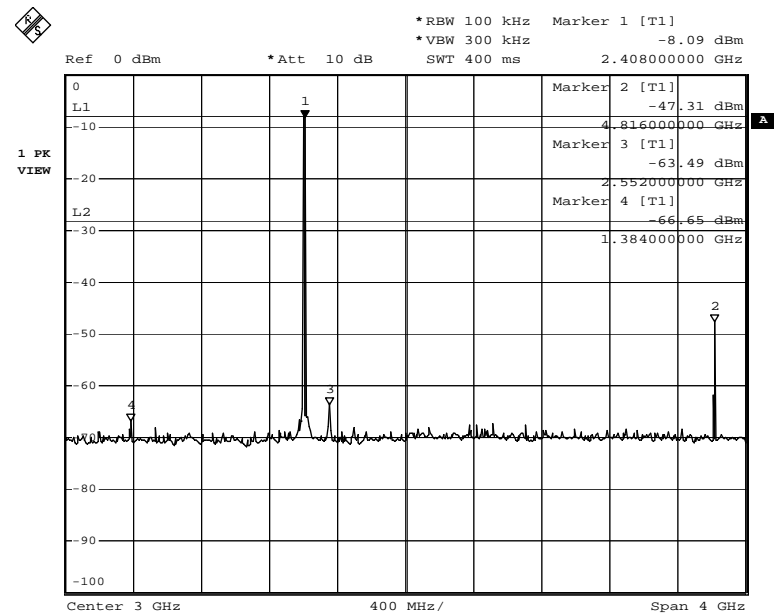
Correction factor = Total cable loss

Figure 8: Spurious Emission from 30MHz to 1GHz, Mode A (2405MHz)



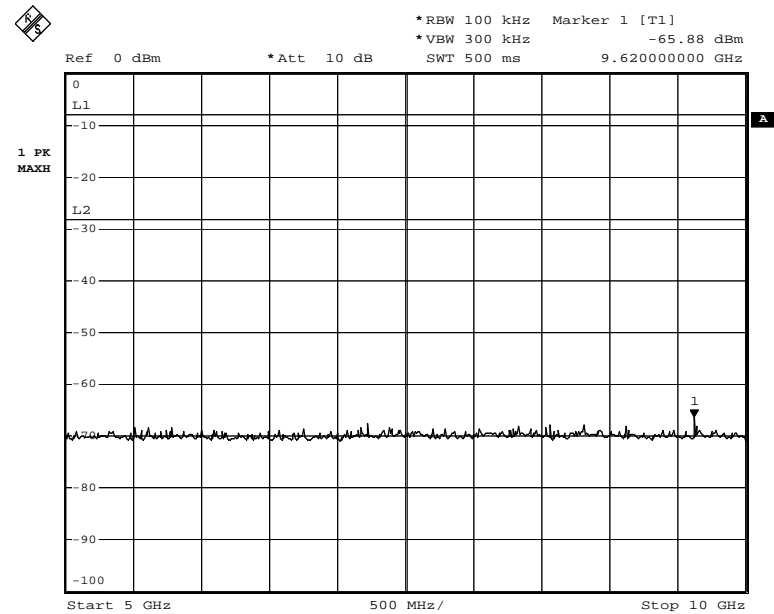
Comment A: FCC Conducted SpuriousH{
L1=-8.09dBm, L2=-28.09dBm
Date: 18.SEP.2008 17:00:39

Figure 9: Spurious Emission from 1 to 5GHz, Mode A (2405MHz)



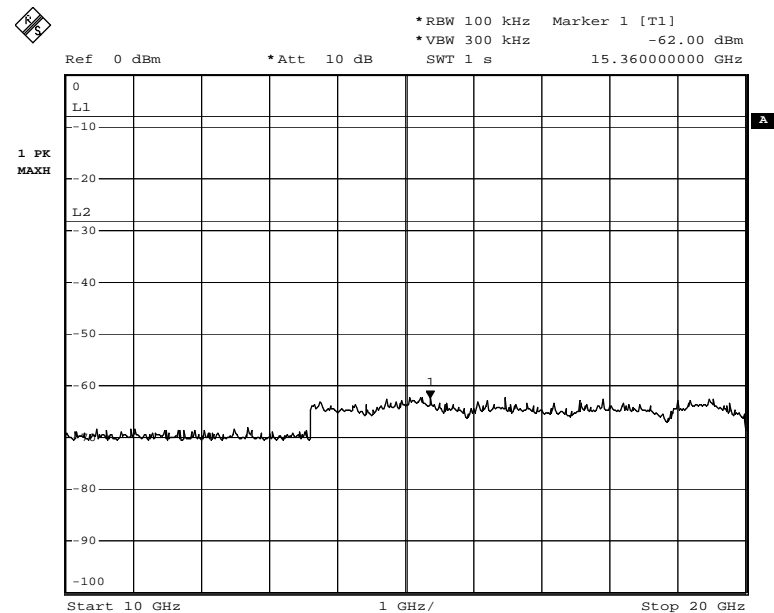
Comment A: FCC Conducted SpuriousH{
L1=-8.09dBm, L2=-28.09dBm
Date: 18.SEP.2008 16:57:21

Figure 10: Spurious Emission from 5 to 10GHz, Mode A (2405MHz)



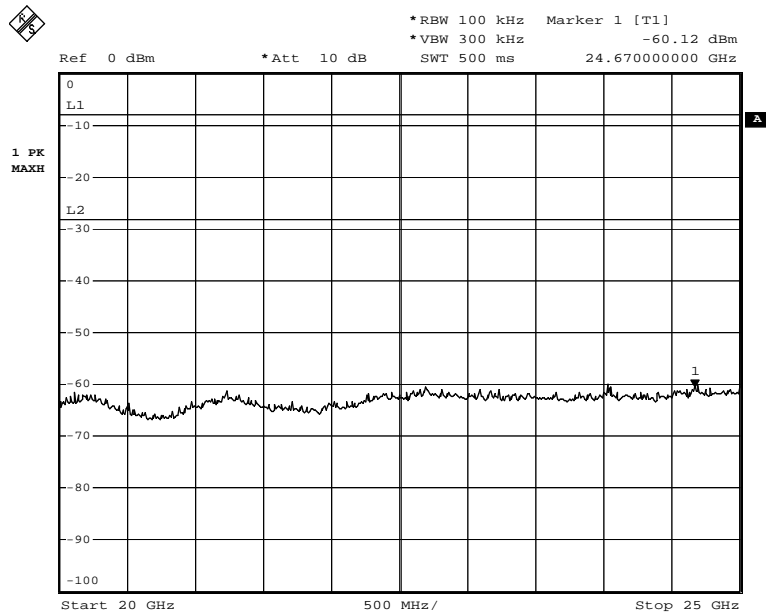
Comment A: FCC Conducted SpuriousH{
L1=-8.09dBm,L2=-28.09dBm
Date: 18.SEP.2008 17:06:26

Figure 11: Spurious Emission from 10 to 20GHz, Mode A (2405MHz)



Comment A: FCC Conducted SpuriousH{
L1=-8.09dBm,L2=-28.09dBm
Date: 18.SEP.2008 17:02:55

Figure 12: Spurious Emission from 20 to 25GHz, Mode A (2405MHz)



Comment A: FCC Conducted SpuriousH(
L1=-8.09dBm, L2=-28.09dBm
Date: 18.SEP.2008 17:04:00

Table 7: Conducted Spurious Emissions, Mode B (2440MHz)

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
288.02	-66.88	0.45	-66.43	-26.72	39.70
303.54	-65.08	0.47	-64.61	-26.72	37.89
319.06	-66.77	0.48	-66.29	-26.72	39.57
703.18	-63.47	0.71	-62.76	-26.72	36.04
2440	-8.06	1.34	-6.72	N/A	N/A
4880	-48.87	1.89	-46.98	-26.72	20.26
9760	-66.67	2.68	-63.99	-26.72	37.27
19520	-61.93	3.48	-58.45	-26.72	31.73
24820	-60.30	3.84	-56.46	-26.72	29.74

Notes: Limit = Reading of fundamental + Correction factor – 20dB
Emission level = Reading + Correction factor
Correction factor = Total cable loss

Figure 13: Spurious Emission from 30MHz to 1GHz, Mode B (2440MHz)

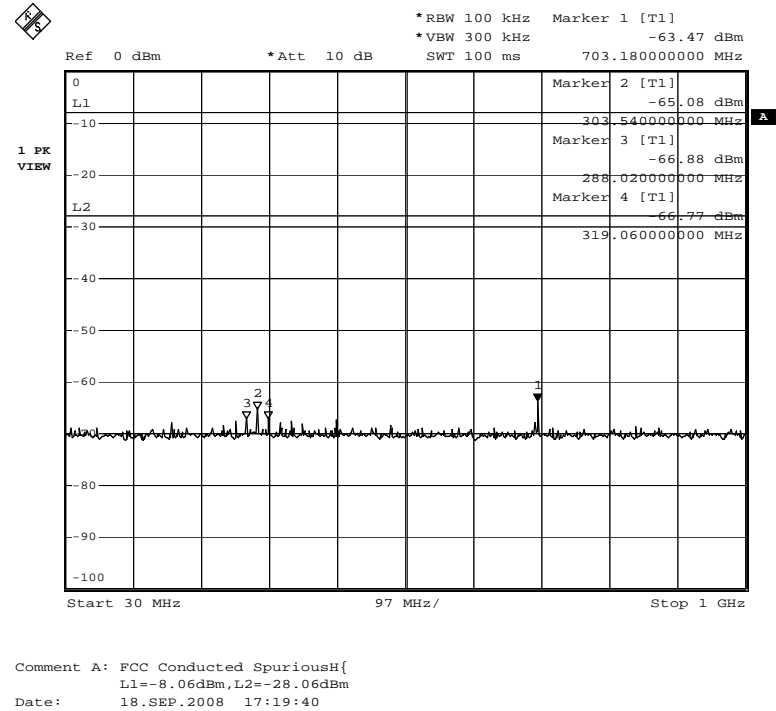
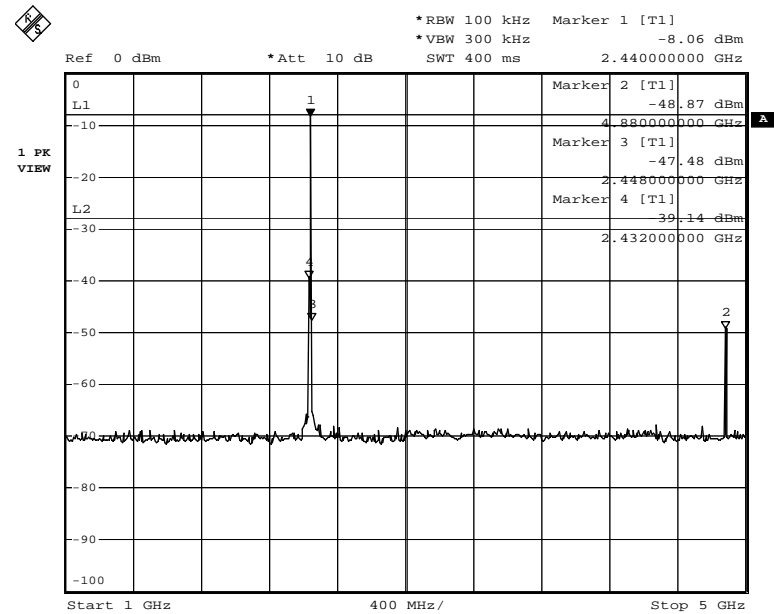
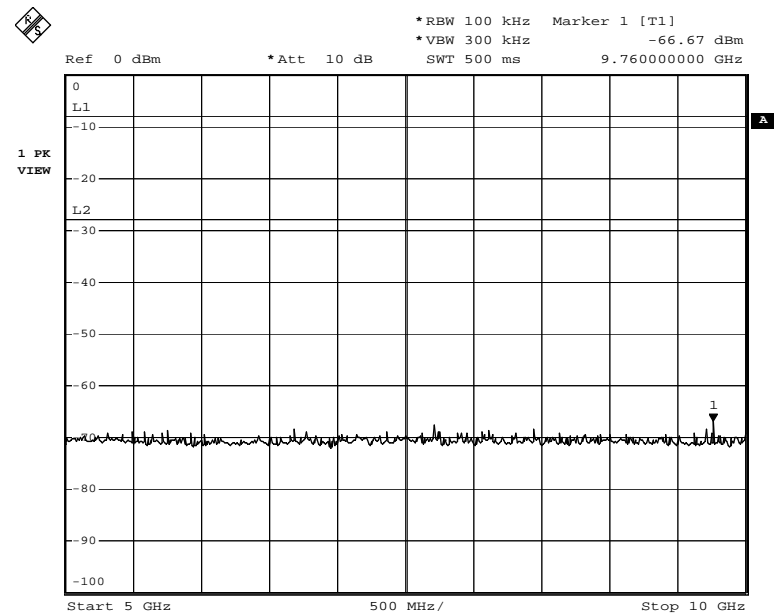


Figure 14: Spurious Emission from 1 to 5GHz, Mode B (2440MHz)



Comment A: FCC Conducted SpuriousH{
L1=-8.06dBm, L2=-28.06dBm
Date: 18.SEP.2008 17:15:52

Figure 15: Spurious Emission from 5 to 10GHz, Mode B (2440MHz)



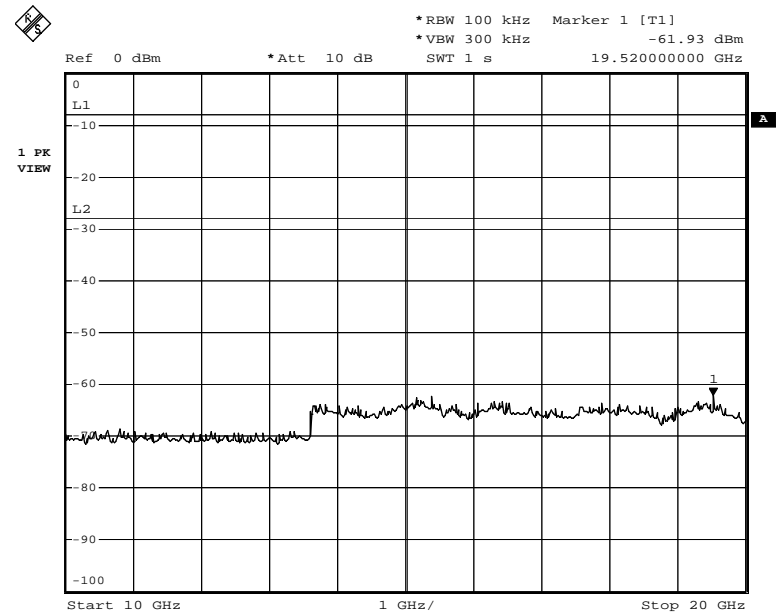
Comment A: FCC Conducted SpuriousH{
L1=-8.06dBm, L2=-28.06dBm
Date: 18.SEP.2008 17:21:49

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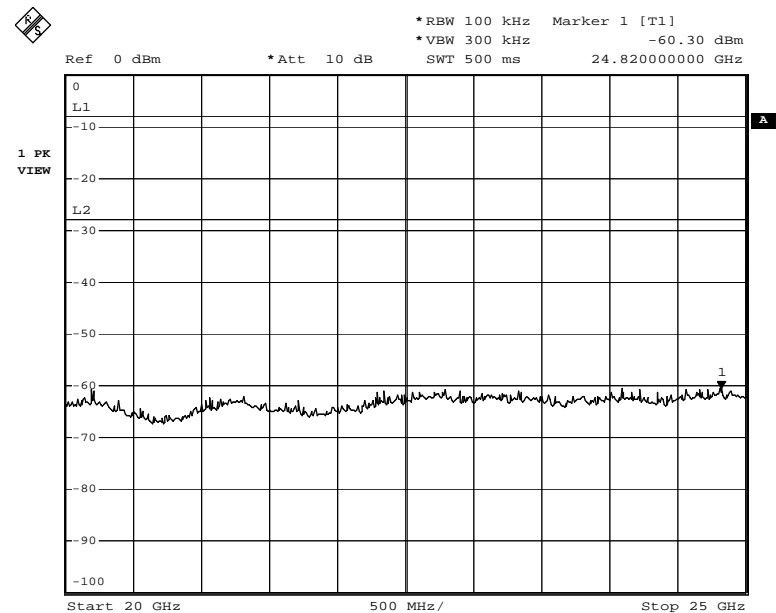
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Figure 16: Spurious Emission from 10 to 20GHz, Mode B (2440MHz)



Comment A: FCC Conducted SpuriousH{
L1=-8.06dBm,L2=-28.06dBm
Date: 18.SEP.2008 17:23:35

Figure 17: Spurious Emission from 20 to 25GHz, Mode B (2440MHz)



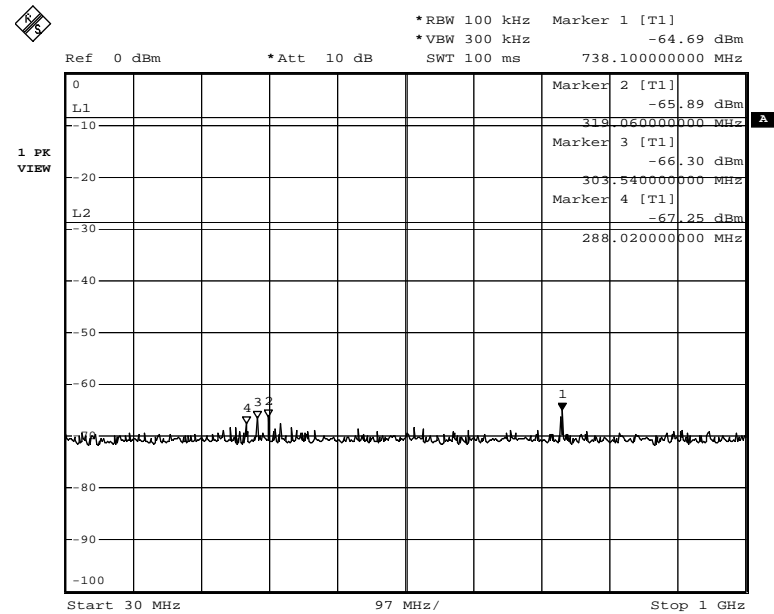
Comment A: FCC Conducted SpuriousH{
L1=-8.06dBm,L2=-28.06dBm
Date: 18.SEP.2008 17:28:14

Table 8: Conducted Spurious Emissions, Mode C (2475MHz)

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
288.02	-67.25	0.45	-66.80	-27.30	39.50
303.54	-66.3	0.47	-65.83	-27.30	38.53
319.06	-65.89	0.48	-65.41	-27.30	38.12
738.1	-64.69	0.73	-63.96	-27.30	36.66
1424	-65.98	1.03	-64.95	-27.30	37.65
2475	-8.64	1.34	-7.30	N/A	N/A
2624	-62.68	1.38	-61.30	-27.30	34.00
4952	-50.30	1.91	-48.39	-27.30	21.10
9900	-67.27	2.74	-64.53	-27.30	37.23
19560	-62.4	3.48	-58.92	-27.30	31.62

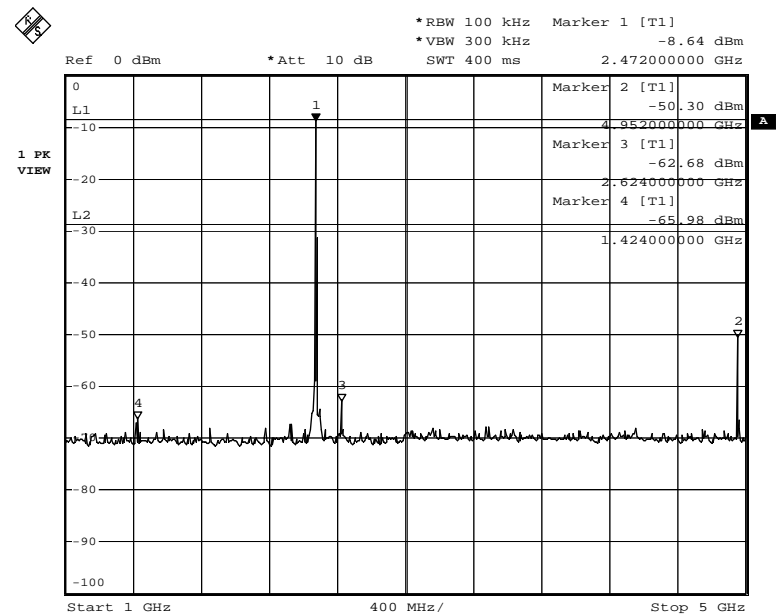
Notes: Limit = Reading of fundamental + Correction factor – 20dB
Emission level = Reading + Correction factor
Correction factor = Total cable loss

Figure 18: Spurious Emission from 30MHz to 1GHz, Mode C (2475MHz)



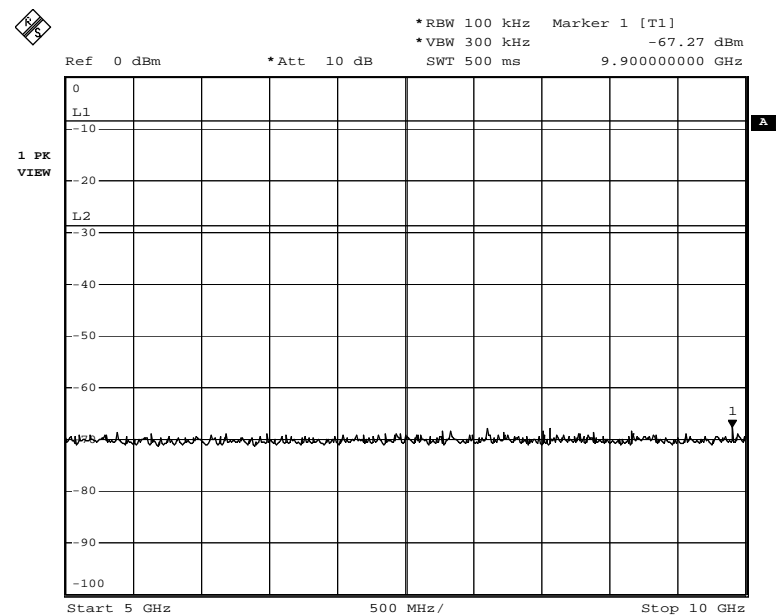
Comment A: FCC Conducted SpuriousH(
L1=-8.64dBm, L2=-28.64dBm
Date: 18.SEP.2008 17:36:15

Figure 19: Spurious Emission from 1 to 5GHz, Mode C (2475MHz)



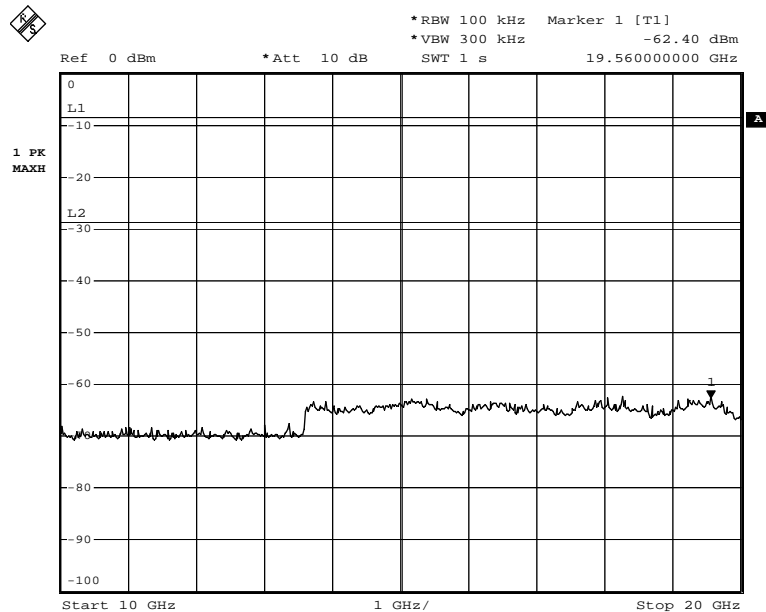
Comment A: FCC Conducted SpuriousH{
L1=-8.64dBm,L2=-28.64dBm
Date: 18.SEP.2008 17:33:33

Figure 20: Spurious Emission from 5 to 10GHz, Mode C (2475MHz)



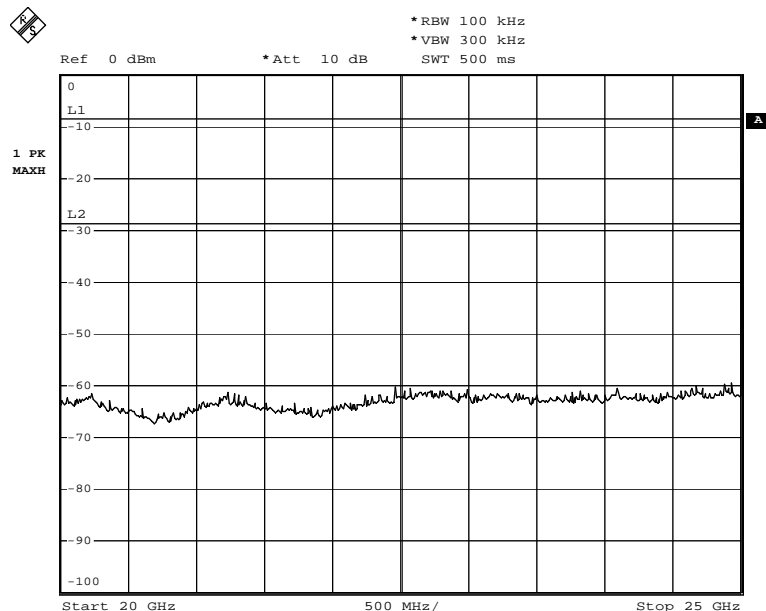
Comment A: FCC Conducted SpuriousH{
L1=-8.64dBm,L2=-28.64dBm
Date: 18.SEP.2008 17:37:53

Figure 21: Spurious Emission from 10 to 20GHz, Mode C (2475MHz)



Comment A: FCC Conducted SpuriousH{
L1=-8.64dBm, L2=-28.64dBm
Date: 18.SEP.2008 17:39:01

Figure 22: Spurious Emission from 20 to 25GHz, Mode C (2475MHz)



Comment A: FCC Conducted SpuriousH{
L1=-8.64dBm, L2=-28.64dBm
Date: 18.SEP.2008 17:40:16

5.1.5 Peak Power Spectral Density, FCC 15.247(e) and RSS-210 A8.2(b)

RESULT:

PASS

Date of testing: 2008-09-18

Ambient temperature: 25°C

Relative humidity: 49%

Atmospheric pressure: 1013hPa

Requirements:

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

Test procedure:

ANSI C63.4-2003 and Measurement of Digital Transmission Systems Operating under Section 15.247.

A spectrum analyzer was connected to the antenna port of the transmitter. Analyzer Resolution Bandwidth was set to 3kHz. The Video Bandwidth was set to 10kHz, and the sweep time was set to 500sec.

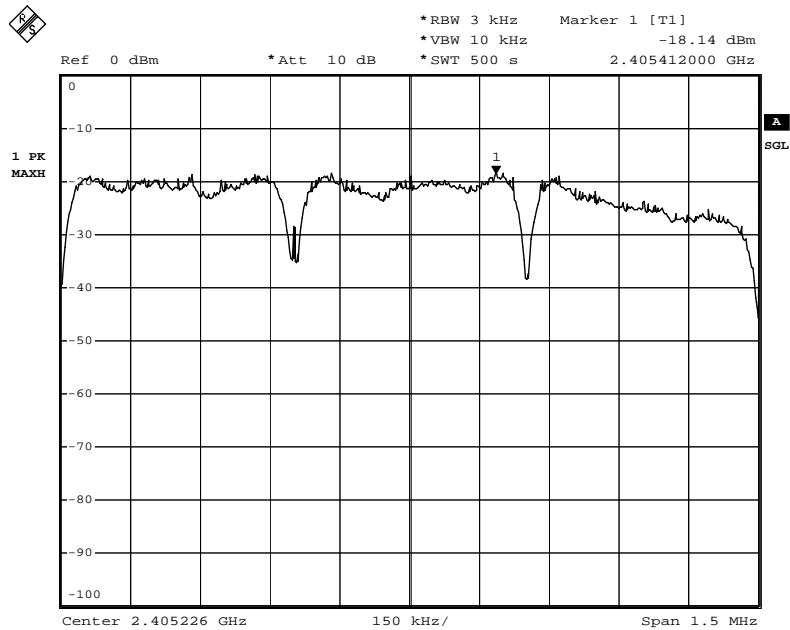
The final measurement takes into account the loss generated by all the involved cables, including the short cable provided by the EUT manufacturer to support the antenna connector.

Table 9: Peak Power Spectral Density

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Power Density [dBm]	Limit [dBm]	Margin [dB]
2405.412	-18.14	1.32	-16.82	8	24.82
2440.425	-18.29	1.17	-17.12	8	25.12
2475.413	-18.04	1.18	-16.86	8	24.86

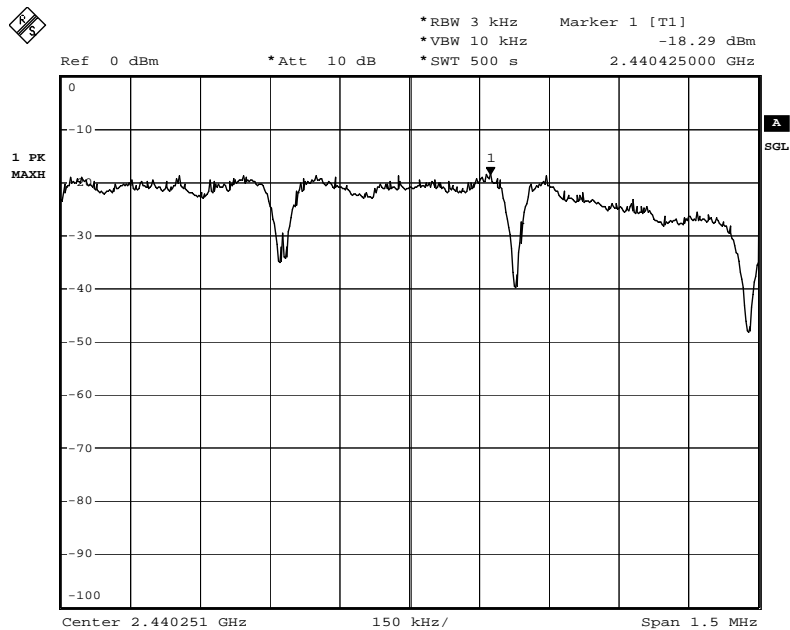
Notes: Power density = Reading + Correction factor
Correction factor = Total cable loss

Figure 23: Power Spectral Density, Mode A (2405MHz)



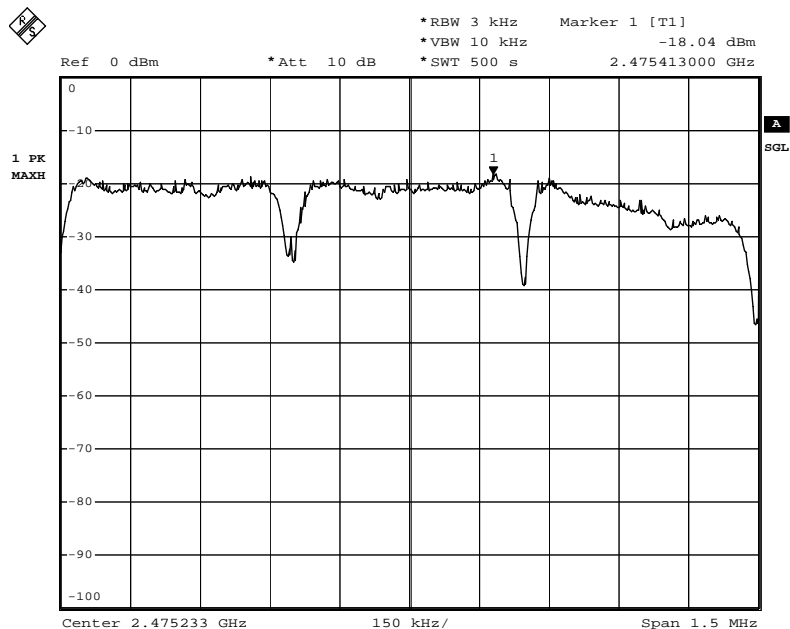
Comment A: FCC Power Spectral Density
Date: 18.SEP.2008 18:02:45

Figure 24: Power Spectral Density, Mode B (2440MHz)



Comment A: FCC Power Spectral Density
Date: 18.SEP.2008 18:26:12

Figure 25: Power Spectral Density, Mode C (2475MHz)



Comment A: FCC Power Spectral Density
Date: 18.SEP.2008 18:42:22

6. Test Results AC Mains Conducted Emission

6.1 AC Mains Conducted Emission of Transmitter

6.1.1 Mains Terminal Continuous Disturbance Voltage of Transmitter, FCC 15.207 and RSS-Gen 7.2.2

RESULT: **PASS**

Date of testing: 2008-09-19

Ambient temperature: 24°C

Relative humidity: 67%

Atmospheric pressure: 1010hPa

Frequency range: 0.15 – 30MHz

Kind of test site: Shielded Room

Requirements:

The AC power line on any frequency within the band 150 kHz to 30MHz shall not exceed the limits specified in FCC 15.207 and RSS-Gen 7.2.2.

Test procedure:

ANSI C63.4-2003

The EUT was placed on a wooden table raised 80cm above the reference ground plane. A vertical conducting plane of the screened room was located 40cm to the rear of the EUT. The AC adapter of the laptop computer was connected to a Line Impedance Stabilization Network (LISN) / Artificial Mains Network (AMN).

The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude and frequency in order to ensure that maximum emission amplitudes were attained.

The measurements were performed using a CISPR quasi-peak detector and average detector.

Disturbances other than those mentioned are small or not detectable.

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Table 10: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode A

Freq. [MHz]	Phase	Reading QP [dB(μV)]	Reading AV [dB(μV)]	Factor [dB]	Level QP [dB(μV)]	Level AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
0.15199	L1	37.5	12.8	9.6	47.1	22.4	65.9	55.9	18.8	33.5
0.16189	L1	35.9	11.7	9.6	45.5	21.3	65.4	55.4	19.9	34.1
0.22456	L1	41.3	29.6	9.6	50.9	39.2	62.6	52.6	11.7	13.4
20.77793	L1	25.6	19.8	10.2	35.8	30	60	50	24.2	20
0.15066	N	37.8	12.8	9.6	47.4	22.4	66	56	18.6	33.6
0.16063	N	36.3	11.8	9.6	45.9	21.4	65.4	55.4	19.5	34
0.16724	N	35.1	11.3	9.6	44.7	20.9	65.1	55.1	20.4	34.2
0.1891	N	32.4	10.5	9.6	42	20.1	64.1	54.1	22.1	34
0.22185	N	39.2	27.8	9.6	48.8	37.4	62.7	52.7	13.9	15.3
0.33407	N	26.6	17.6	9.7	36.3	27.3	59.3	49.3	23	22
21.11186	N	29.6	23.6	10.3	39.9	33.9	60	50	20.1	16.1

Notes: Level QP = Reading QP + Factor

Level AV = Reading AV + Factor

Table 11: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode B

Freq. [MHz]	Phase	Reading QP [dB(μV)]	Reading AV [dB(μV)]	Factor [dB]	Level QP [dB(μV)]	Level AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
0.15367	L1	36.4	12.1	9.6	46	21.7	65.8	55.8	19.8	34.1
0.17678	L1	32.9	10.6	9.6	42.5	20.2	64.6	54.6	22.1	34.4
0.22239	L1	40.5	28.7	9.6	50.1	38.3	62.7	52.7	12.6	14.4
21.11857	L1	29.7	24.5	10.2	39.9	34.7	60	50	20.1	15.3
0.15087	N	36.7	12.2	9.6	46.3	21.8	66	56	19.7	34.2
0.16131	N	35	11.3	9.6	44.6	20.9	65.4	55.4	20.8	34.5
0.22735	N	39.7	27.8	9.6	49.3	37.4	62.5	52.5	13.2	15.1
0.33664	N	29.4	19	9.7	39.1	28.7	59.3	49.3	20.2	20.6
20.89149	N	25.3	20.1	10.3	35.6	30.4	60	50	24.4	19.6

Notes: Level QP = Reading QP + Factor

Level AV = Reading AV + Factor

Table 12: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode C

Freq. [MHz]	Phase	Reading QP [dB(μV)]	Reading AV [dB(μV)]	Factor [dB]	Level QP [dB(μV)]	Level AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
0.15089	L1	36.8	12.3	9.6	46.4	21.9	66	56	19.6	34.1
0.17304	L1	33.7	10.7	9.6	43.3	20.3	64.8	54.8	21.5	34.5
0.22533	L1	41.5	29.8	9.6	51.1	39.4	62.6	52.6	11.5	13.2
21.34284	L1	27.9	23.6	10.2	38.1	33.8	60	50	21.9	16.2
0.15744	N	36	11.9	9.6	45.6	21.5	65.6	55.6	20	34.1
0.17741	N	33.1	10.6	9.6	42.7	20.2	64.6	54.6	21.9	34.4
0.22306	N	40.9	28.9	9.6	50.5	38.5	62.7	52.7	12.2	14.2
0.33708	N	29.5	19	9.7	39.2	28.7	59.3	49.3	20.1	20.6
20.88778	N	22.8	17	10.3	33.1	27.3	60	50	26.9	22.7

Notes: Level QP = Reading QP + Factor

Level AV = Reading AV + Factor

6.2 AC Mains Conducted Emission of Receiver

6.2.1 Mains Terminal Continuous Disturbance Voltage of Receiver, FCC 15.107 and RSS-Gen 7.2.2

RESULT:

PASS

Date of testing:	2008-09-19
Ambient temperature:	24°C
Relative humidity:	67%
Atmospheric pressure:	1010hPa
Frequency range:	0.15 – 30MHz
Equipment classification:	Class B
Kind of test site:	Shielded Room

Requirements:

The AC power line on any frequency within the band 150 kHz to 30MHz shall not exceed the limits specified in FCC 15.107(a) and RSS-Gen 7.2.2.

Test procedure:
ANSI C63.4-2003

The EUT was placed on a wooden table raised 80cm above the reference ground plane. A vertical conducting plane of the screened room was located 40cm to the rear of the EUT. The AC adapter of the laptop computer was connected to a Line Impedance Stabilization Network (LISN) / Artificial Mains Network (AMN).

The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude and frequency in order to ensure that maximum emission amplitudes were attained.

The measurements were performed using a CISPR quasi-peak detector and average detector.

Disturbances other than those mentioned are small or not detectable.

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Table 13: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode D

Freq. [MHz]	Phase	Reading QP [dB(μV)]	Reading AV [dB(μV)]	Factor [dB]	Level QP [dB(μV)]	Level AV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin QP [dB]	Margin AV [dB]
0.15307	L1	36.5	13.2	9.6	46.1	22.8	65.8	55.8	19.7	33
0.16535	L1	34.5	11.9	9.6	44.1	21.5	65.2	55.2	21.1	33.7
0.22576	L1	41.3	31.3	9.6	50.9	40.9	62.6	52.6	11.7	11.7
0.34261	L1	24.1	17.7	9.7	33.8	27.4	59.1	49.1	25.3	21.7
21.00756	L1	28.4	24.4	10.2	38.6	34.6	60	50	21.4	15.4
0.15091	N	36.7	13.5	9.6	46.3	23.1	65.9	55.9	19.6	32.8
0.16723	N	34.2	11.7	9.6	43.8	21.3	65.1	55.1	21.3	33.8
0.22439	N	41.7	30.2	9.6	51.3	39.8	62.7	52.7	11.4	12.9
20.66812	N	26.7	20.4	10.3	37	30.7	60	50	23	19.3

Notes: Level QP = Reading QP + Factor
Level AV = Reading AV + Factor

7. Test Results Radiated Emission

7.1 Radiated Emission of Transmitter

7.1.1 Band Edge Radiated Emission, FCC 15.247(d) and RSS- 210 2.2

RESULT:

Pass

Date of testing: 2008-09-17

Ambient temperature: 24°C

Relative humidity: 62%

Atmospheric pressure: 1009hPa

Measurement distance: 3m

Kind of test site: Semi Anechoic Chamber

Requirements:

Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a) and RSS-210 2.7 (Table 1), must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-210 2.7 (Table 2 and 3).

Test procedure:

ANSI C63.4-2003, RSS-Gen 4.9, 4.10 and Measurement of Digital Transmission Systems Operating under Section 15.247

Measurements were made in a Semi Anechoic Chamber at a measurement distance of 3m. The EUT was placed on a nonconductive turntable 0.8m above the ground plane. The EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level.

Measurements were taken using both horizontal and vertical antenna polarizations for 3 EUT orientations (X, Y and Z).

Peak (1 MHz RBW/VBW) and average (1 MHz RBW/10 Hz VBW) radiated measurements were taken with a suitable span to encompass the peak of the fundamental.

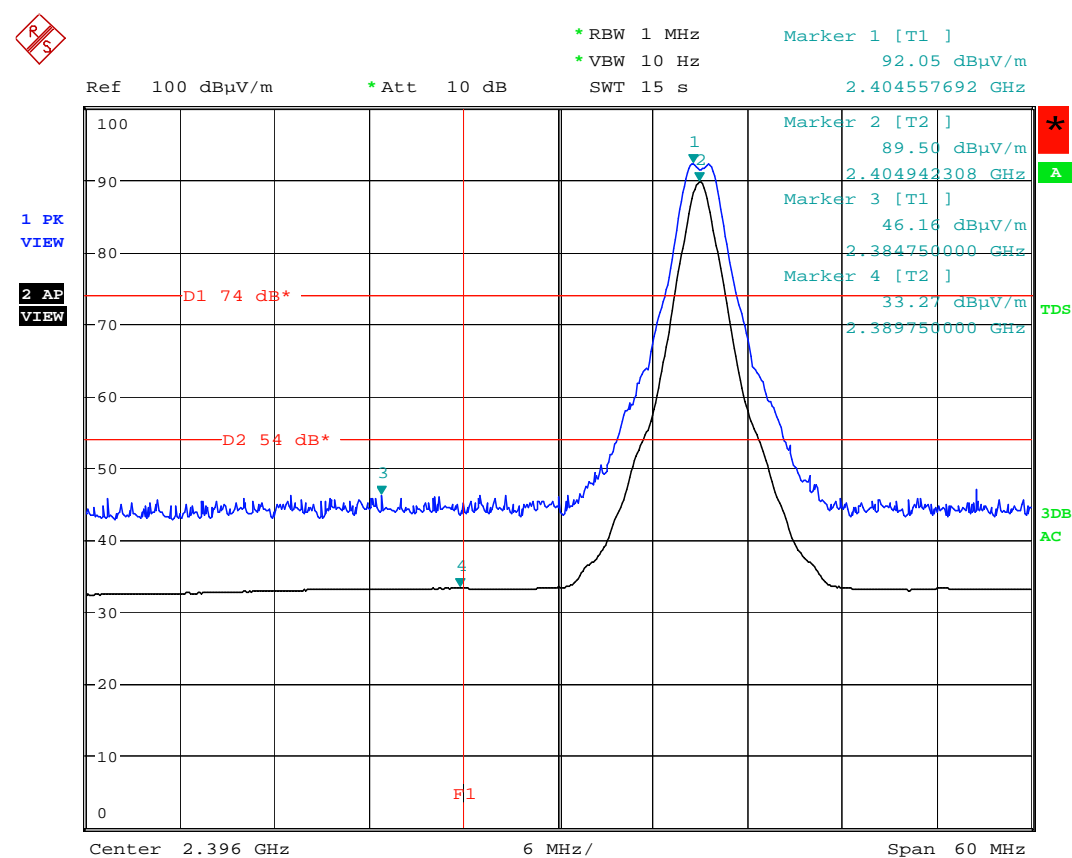
The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

Table 14: Band Edge Radiated Emission

Operating Frequency [MHz]	EUT / Antenna Orient.	Peak Value [dBuV/m]	Average Value [dBuV/m]	Peak Limit [dBuV/m]	Average Limit [dBuV/m]	Peak Margin [dB]	Average Margin [dB]
2405	Y / H	46.16	33.27	74	54	27.84	20.73
2475	X / V	47.33	34.03	74	54	26.67	19.97

Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.
Average limit in dBuV/m is calculated as follows: Average limit = 20 x log(500uV/m).
Peak limit in dBuV/m is calculated as follows: Peak limit = Average limit + 20dB.

Figure 26: Band Edge Radiated Emission, Mode A (2405MHz), Peak and Average



Band Edge (Lo), Hor, Mode A, Position Y
Direct/Fundamental
Date: 17.SEP.2008 22:24:57

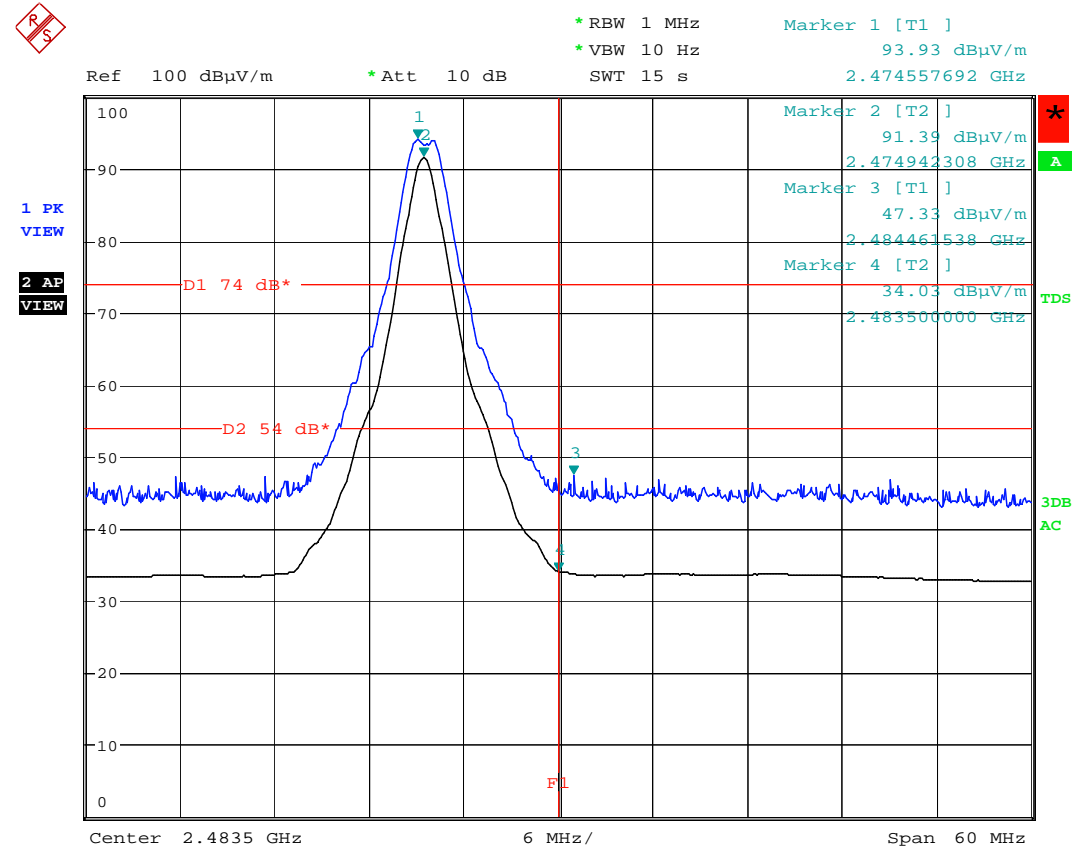
Note: The upper trace shows the peak value and the lower trace shows the average value.

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Figure 27: Band Edge Radiated Emission, Mode C (2475MHz), Peak and Average



Band Edge (Hi), Vert, Mode C, Position X
Direct/Fundamental
Date: 17.SEP.2008 22:31:25

Note: The upper trace shows the peak value and the lower trace shows the average value.

7.1.2 Radiated Emission, Out-of-Band and Spurious Emission, FCC 15.247(d), FCC 15.205, FCC 15.209, RSS-210 2.2, RSS-210 A8.5 and RSS-Gen 7.2.1

RESULT:

PASS

Date of testing: 2008-09-16, 2008-09-17

Ambient temperature: 24, 24°C

Relative humidity: 65, 62%

Atmospheric pressure: 1007, 1009hPa

Frequency range: 30MHz – 25GHz

Measurement distance: 3m

Kind of test site: Semi Anechoic Chamber

Requirements:

The emissions from the intentional radiator shall not exceed the field strength specified in FCC 15.209(a) and RSS-210 2.7.

Test procedure:

ANSI C63.4-2003, RSS-Gen 4.9, 4.10 and Measurement of Digital Transmission Systems Operating under Section 15.247

Before final measurements of radiated emissions were made in Semi Anechoic Chamber, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the EUT orientation (X, Y, Z) were varied in order to ensure that maximum emission amplitudes were attained.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Final radiated emission measurements were made at 3m. The spectrum was examined from 30 MHz to the 10th harmonic of the highest fundamental transmitter frequency (25 GHz).

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

For frequencies between 30MHz and 1GHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1GHz, emissions were measured using following settings: Peak: RBW=1MHz, VBW=1MHz, Average: RBW=1MHz, VBW=10Hz.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Emissions other than those mentioned are small or not detectable.

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Table 15: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode A

Freq. [MHz]	EUT / Antenna Orientation	Reading QP [dB(μV)]	Factor [dB(1/m)]	Level QP [dB(μV/m)]	Limit [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
42.239	Y / V	53.5	-25.9	27.6	40	12.4	101	222
125.019	Y / V	56.3	-24.4	31.9	43.5	11.6	102	252
144.003	Y / H	58.8	-23.1	35.7	43.5	7.8	137	291
250.03	Y / H	60.4	-18.2	42.2	46	3.8	133	220
265.16	Y / H	55.3	-17.3	38	46	8	126	266
397.953	Y / H	55.5	-18.4	37.1	46	8.9	108	107
530.389	Y / H	55.1	-15.1	40	46	6	156	310
664.118	Y / V	46.8	-12.9	33.9	46	12.1	111	29
931.585	Y / V	48.3	-10	38.3	46	7.7	125	304

Note: Level QP = Reading QP + Factor

Table 16: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode B

Freq. [MHz]	EUT / Antenna Orientation	Reading QP [dB(μV)]	Factor [dB(1/m)]	Level QP [dB(μV/m)]	Limit [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
48.235	Y / V	65.3	-26.8	38.5	40	1.5	100	64
143.981	Y / H	64.2	-23.1	41.1	43.5	2.4	142	268
199.808	Y / H	55	-20.2	34.8	43.5	8.7	164	268
266.272	Y / H	56.7	-17.2	39.5	46	6.5	127	272
397.911	Z / H	53	-18.4	34.6	46	11.4	109	113
530.191	Z / H	52.6	-15.1	37.5	46	8.5	157	321
663.387	Z / V	43.8	-13	30.8	46	15.2	119	51
927.792	Z / V	41.9	-10	31.9	46	14.1	101	267

Note: Level QP = Reading QP + Factor

Table 17: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode C

Freq. [MHz]	EUT / Antenna Orientation	Reading QP [dB(μV)]	Factor [dB(1/m)]	Level QP [dB(μV/m)]	Limit [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
48.248	Z / V	61.3	-26.8	34.5	40	5.5	100	65
112.668	Z / V	55.2	-24.9	30.3	43.5	13.2	102	215
143.976	Z / H	61	-23.1	37.9	43.5	5.6	141	260
195.545	Z / H	52.1	-20.5	31.6	43.5	11.9	170	248
265.372	Z / H	55.5	-17.3	38.2	46	7.8	125	275
397.767	X / V	54.7	-18.3	36.4	46	9.6	101	227
530.58	X / H	53	-15	38	46	8	160	317
929.671	X / H	40.2	-9.9	30.3	46	15.7	168	16

Note: Level QP = Reading QP + Factor

Table 18: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode A

Freq. [MHz]	EUT / Antenna Orientation	Level AV [dB(μV/m)]	Level PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]
1063.488	Y / V	24.9	39.2	54	74	29.1	34.8
1460.026	Y / V	29	43.3	54	74	25	30.7
4810.414	Y / V	47.5	55.5	54	74	6.5	18.5
12922.07	X / V	30	43.9	54	74	24	30.1

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Table 19: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode B

Freq. [MHz]	EUT / Antenna Orientation	Level AV [dB(μV/m)]	Level PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]
1065.869	Y / V	26.3	40.4	54	74	27.7	33.6
1597.658	Y / V	26.2	40.7	54	74	27.8	33.3
4879.991	Y / V	42.9	51.5	54	74	11.1	22.5
9759.59	X / V	26.8	40.6	54	74	27.2	33.4

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Table 20: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode C

Freq. [MHz]	EUT / Antenna Orientation	Level AV [dB(μV/m)]	Level PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]
1063.185	Y / V	24.2	40.8	54	74	29.8	33.2
4950.758	Y / V	43.2	53	54	74	10.8	21

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

7.2 Radiated Emission of Receiver

7.2.1 Radiated Emission of Receiver, FCC 15.109, RSS-210 2.2, RSS-210 2.6, RSS-210 A8.5, RSS-Gen 7.2.3.2

RESULT:

PASS

Date of testing: 2008-09-17, 2008-09-18

Ambient temperature: 24, 24°C

Relative humidity: 62, 71%

Atmospheric pressure: 1009, 1013hPa

Frequency range: 30MHz – 25GHz

Equipment classification: Class B

Measurement distance: 3m

Kind of test site: Semi Anechoic Chamber

Requirements:

The emissions from the unintentional radiator shall not exceed the field strength specified in 15.109(a) and RSS-210 Table 2 (and RSS-Gen Table 1).

Test procedure:

ANSI C63.4-2003, RSS-Gen 4.9, 4.10

Before final measurements of radiated emissions were made in Semi Anechoic Chamber, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the EUT orientation (X, Y, Z) were varied in order to ensure that maximum emission amplitudes were attained.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Final radiated emission measurements were made at 3m. The spectrum was examined from 30 MHz to the 10th harmonic of the highest fundamental transmitter frequency (25 GHz).

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

For frequencies between 30MHz and 1GHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1GHz, emissions were measured using following settings: Peak: RBW=1MHz, VBW=1MHz, Average: RBW=1MHz, VBW=10Hz.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Emissions other than those mentioned are small or not detectable.

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Table 21: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode D

Freq. [MHz]	EUT / Antenna Orientation	Reading QP [dB(μV)]	Factor [dB(1/m)]	Level QP [dB(μV/m)]	Limit [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
48.239	Y / V	62.2	-26.8	35.4	40	4.6	103	254
143.989	Y / V	60	-23.4	36.6	43.5	6.9	100	174
250.03	Y / H	55.4	-18.2	37.2	46	8.8	138	197
265.482	Y / H	58.7	-17.3	41.4	46	4.6	123	265
384.007	X / H	57.1	-18.8	38.3	46	7.7	100	166
530.606	X / H	51.5	-15	36.5	46	9.5	100	41
700.094	X / V	45.6	-12.6	33	46	13	205	26
932.938	X / H	40.7	-9.8	30.9	46	15.1	123	189

Note: Level QP = Reading QP + Factor

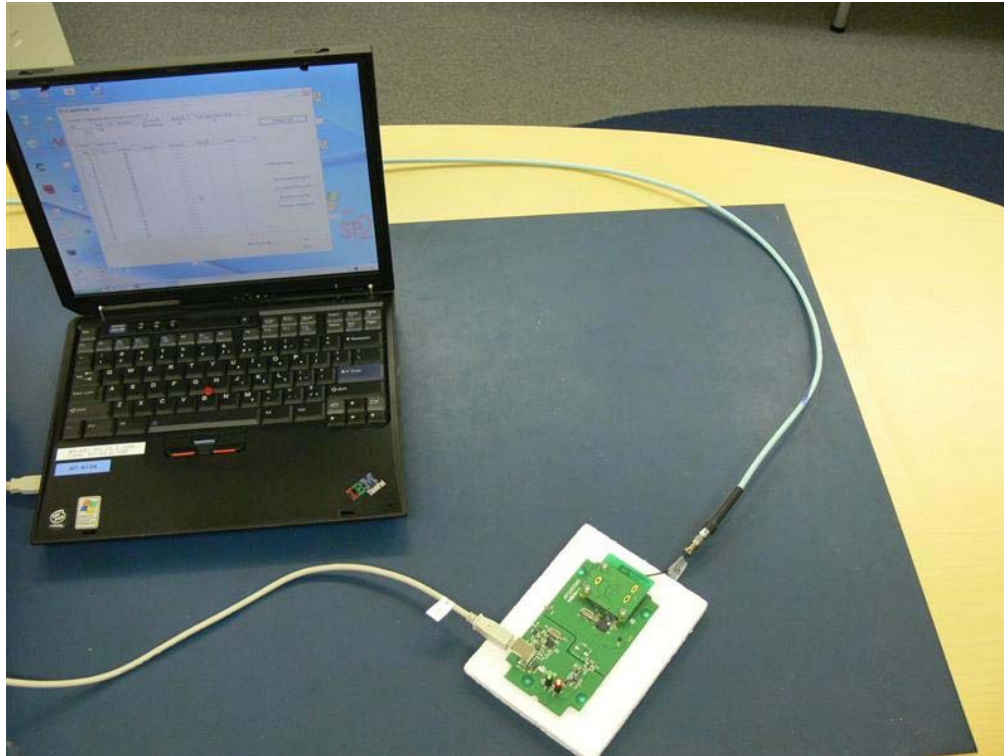
Table 22: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode D

Freq. [MHz]	EUT / Antenna Orientation	Level AV [dB(μV/m)]	Level PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]
1000.002	X / V	40.8	53.5	54	74	13.2	20.5
1326.938	X / V	28.7	43.9	54	74	25.3	30.1

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

8. Photographs of test setup

Photograph 1: Set-up for Conducted Emissions at Antenna Port



Photograph 2: Set-up for Radiated Emission, EUT Configuration X-Axis



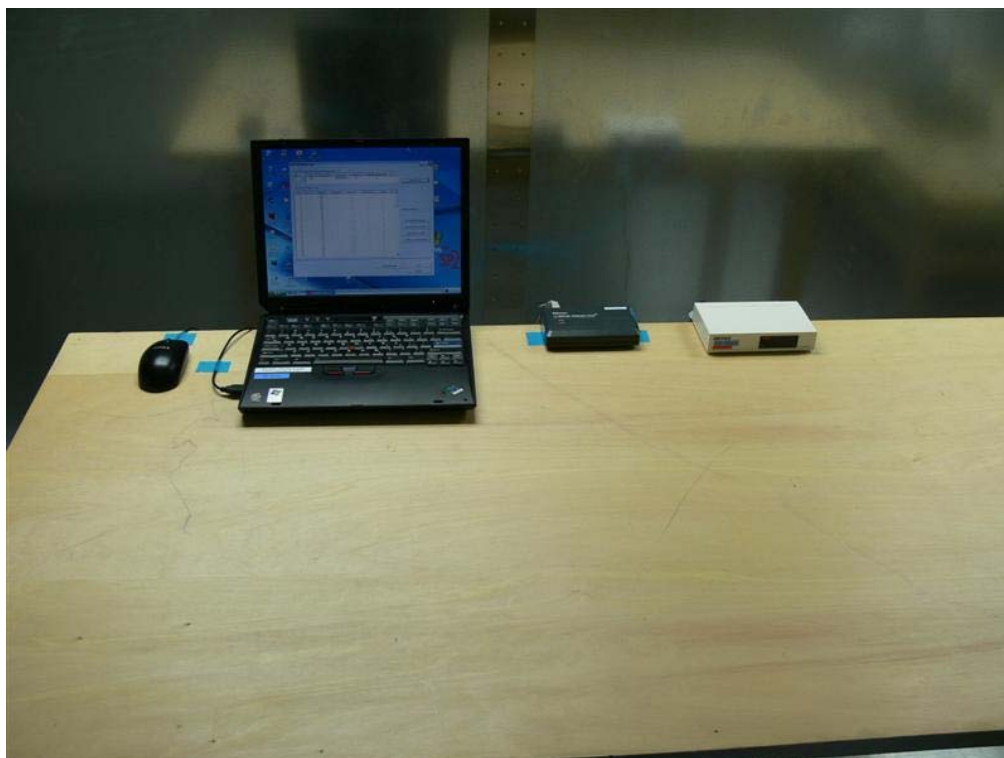
Photograph 3: Set-up for Radiated Emission, EUT Configuration Y-Axis



Photograph 4: Set-up for Radiated Emission, EUT Configuration Z-Axis



Photograph 5: Set-up for AC Mains Conducted Emission of Transmitter, Front View



Photograph 6: Set-up for AC Mains Conducted Emission of Transmitter, Rear View



Photograph 7: Set-up for AC Mains Conducted Emission of Receiver, Front View



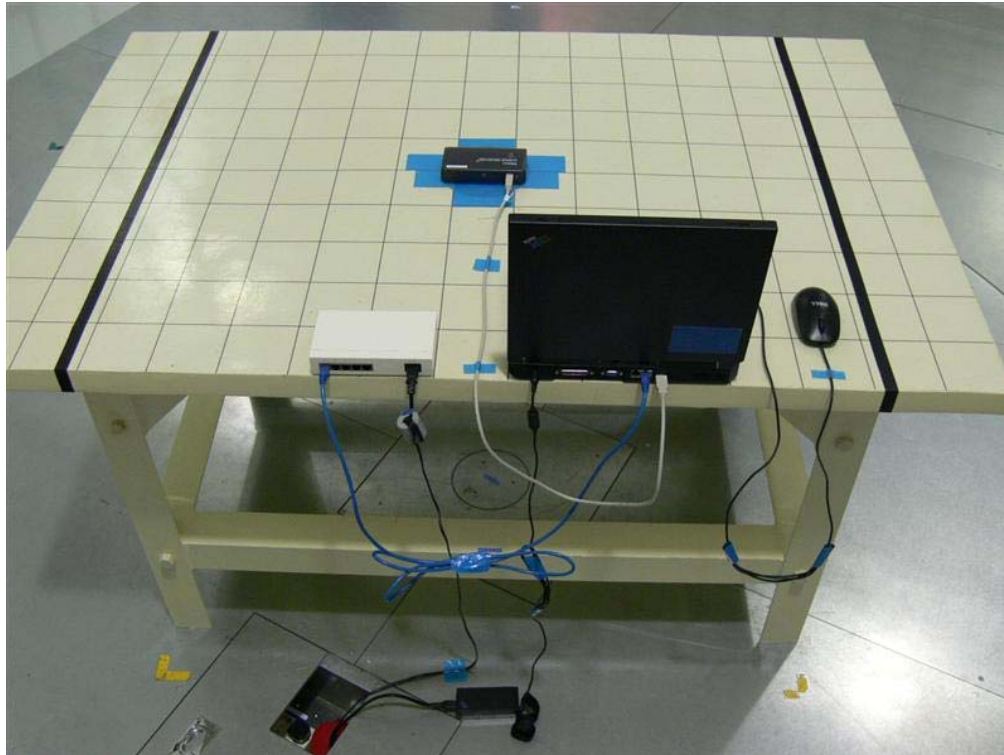
Photograph 8: Set-up for AC Mains Conducted Emission of Receiver, Rear View



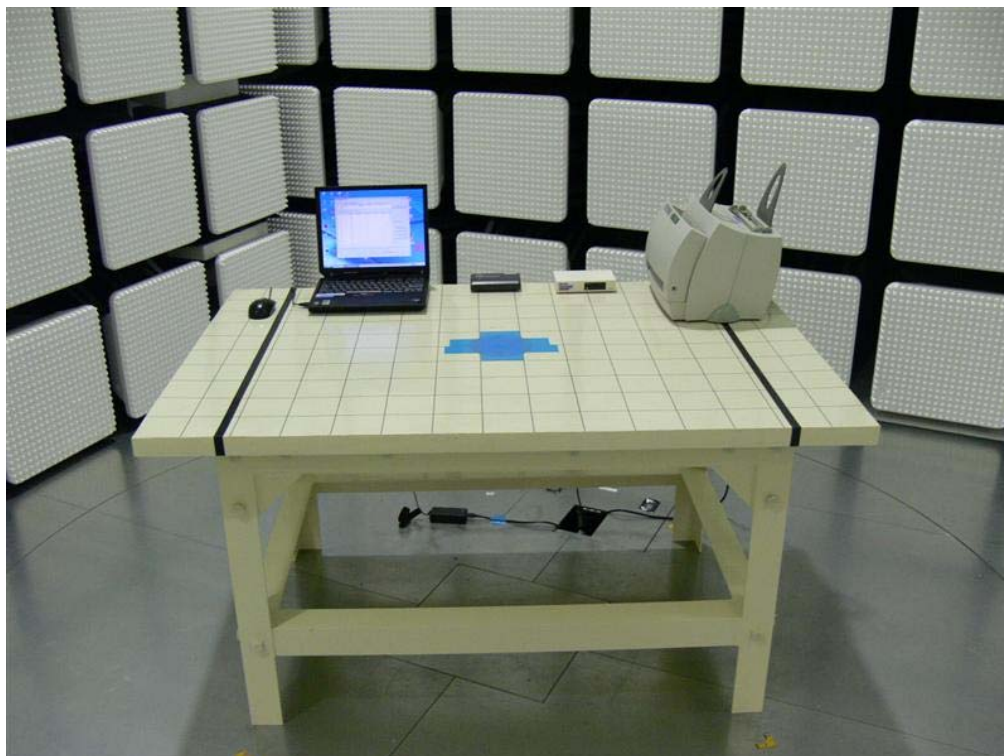
Photograph 9: Set-up for Radiated Emission of Transmitter, Front View



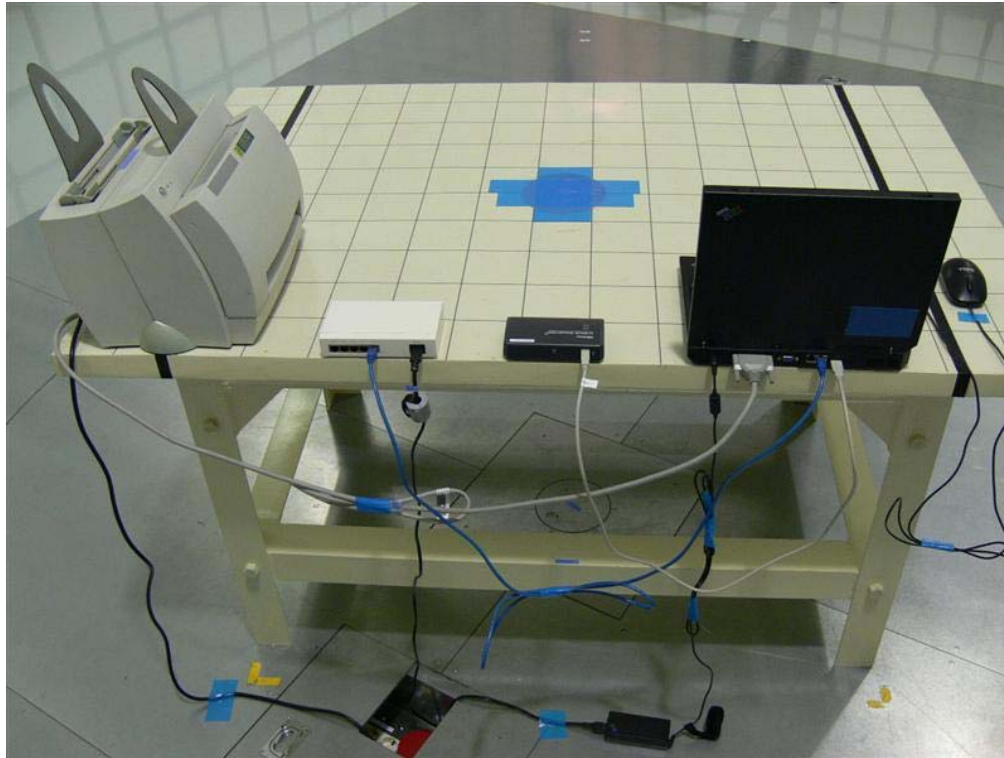
Photograph 10: Set-up for Radiated Emission of Transmitter, Rear View



Photograph 11: Set-up for Radiated Emission of Receiver, Front View



Photograph 12: Set-up for Radiated Emission of Receiver, Rear View



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