
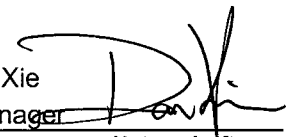


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Auftraggeber:		NeuroSky, Inc.			
<i>Client:</i>		125 South Market Street, #900, San Jose, CA 95113, USA			
Gegenstand der Prüfung: MindWave dongle					
<i>Test item:</i>					
Bezeichnung:		MW002	Certificate Number:		FCC ID: XG9MW2
<i>Identification:</i>			<i>Certificate Number</i>		IC : 8899A-MW002
Wareneingangs-Nr.:		173053282	Eingangsdatum:		May 24, 2010
<i>Receipt No.:</i>			<i>Date of receipt:</i>		
Prüfört:		TÜV Rheinland (Guangdong) Ltd. EMC Laboratory			Listed test laboratory according to FCC rules section 2.948 and RSS-Gen, for measuring devices.
<i>Testing location:</i>		Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650,			
		P. R. China			
Prüfgrundlage:		ANSI C63.4: 2003			
<i>Test specification:</i>		FCC Part 15: July 10, 2008, Subpart C section 15.107, 15.109, 15.207, 15.249			
		RSS-GEN Issue 2, June 2007			
		RSS-210 Issue 7, June 2007			
		RSS-102 Issue 2, November 2005			
Prüfergebnis:		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).			
<i>Test Result:</i>		<i>The test item passed the test specification(s).</i>			
Prüflaboratorium:		TÜV Rheinland (Guangdong) Ltd.			
<i>Testing Laboratory:</i>					
geprüft/ tested by:		kontrolliert/ reviewed by:			
<div style="display: flex; justify-content: space-between;"> <div> Ken Kuang <i>Oct. 15, 2010</i> Project Engineer </div> <div>  Unterschrift <i>Signature</i> </div> </div>		<div style="display: flex; justify-content: space-between;"> <div> Liangdong Xie <i>Oct. 15, 2010</i> Project Manager </div> <div>  Unterschrift <i>Signature</i> </div> </div>			
Datum	Name/Stellung	Unterschrift	Datum	Name/Stellung	Unterschrift
<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>	<i>Date</i>	<i>Name/Position</i>	<i>Signature</i>
Sonstiges/ Other Aspects:					
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>					

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Test Summary

FCC and IC test specification		Test items	Result
FCC rules	RSS rules		
Part 15 Per Section 15.107(a)	RSS-Gen Per Section 7.2.2	Receiver AC Power Conducted Emission	Pass
Part 15 Per Section 15.207(a)	RSS-Gen Per Section 7.2.2	Transmitter AC Power Conducted Emission	Pass
Part 15 Per Section 15.249(a)(d)(e)	RSS-210 Issue 7 Section A2.9	Transmitter Radiated Emission(fundamental and spurious)	Pass
Part 15 Per Section 15.109(a)	RSS-210 Issue 7 Section 2.3	Receiver Radiated Spurious Emission	Pass
Part 15 Per Section 15.203	--	Antenna Requirement	Pass
Part 2 Per Section 2.1049	RSS-GEN Issue 2 Section 4.6.1	20dB Bandwidth	Pass
Part 15 Per Section 15.205	RSS-210 Issue 7 Section 2.2	Band Edge Emission	Pass
--	RSS-102 Issue 2 Section 2.5.1	Exemption from Routine Evaluation Limits – SAR Evaluation	Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test result

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory

Guangzhou Auto Market, Yuan Gang Section of Guangshan Road
Guangzhou 510650

P. R. China

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2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Type	Manufacturer	S/N	Calibrated until	Calibrated Interval
EMI Test Receiver	ESCS30	Rohde & Schwarz	100316	2011-03-16	1 year
Artificial Mains Network	ESH2-Z5	Rohde & Schwarz	100114	2011-03-16	1 year
Pulse Limiter	ESH3-Z2	Rohde & Schwarz	100701	2011-03-16	1 year
EMI Test Receiver	ESCI-3	Rohde & Schwarz	100216	2011-03-16	1 year
Spectrum Analyzer	FSP30	Rohde & Schwarz	100286	2011-03-16	1 year
Loop Antenna	HFH2-Z2	Rohde & Schwarz	100111	2011-03-16	1 year
Trilog-Broadband Antenna	VULB9168	SCHWARZBECK MESS- ELEKTRONIK	209	2011-08-21	2 years
Double-Ridged Waveguide Horn Antenna	HF906	Rohde & Schwarz	100385	2011-08-24	2 years
Pre-amplifier	AFS42-00101800-25-S-42	MITEQ	1101599	2011-03-16	2 years
Band Reject Filter	BRM50702	Micro-Tronics	023	2011-03-16	2 years
Standard Gain Horn Antenna	3160-09	EMCO	21642	2014-06-26	5 years
Pre-amplifier	AFS33-18002650-30-8P-44	MITEQ	1108282	2011-03-16	2 years
3m Anechoic Chamber	N/A	Albatross Project GmbH	N/A	2011-03-16	1 year
Spectrum Analyzer	E4404B	Agilent	MY414 40753	2011-03-16	1 year

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

Uncertainty for conducted emissions measurements is $\pm 2.68\text{dB}$.

Uncertainty for radiated emissions measurements is $\pm 4.94\text{dB}$ (30MHz-1GHz), $\pm 4.88\text{dB}$ (>1GHz).

The reported expanded uncertainty is based on a standard uncertainty multiply by a coverage factor $k=2$, providing a level of confidence of approximately 95%.

2.6 Location of original data

The original copies of test data taken during actual testing were attached at Appendix 1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Guangdong) file for certification follow-up purposes.

2.7 Status of facility used for testing

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory; Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650, P. R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements, the register no. 833845

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory; Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou 510650, P. R. China is listed on Certification and Engineering Bureau of Canada, whose file number is IC 2932C.

3 General Product Information

MindWave is a brain-computer interface device which consists of a wireless headset (model: MW001) and a USB dongle (model: MW002).

The headset detects the brainwaves from the forehead and ear clip sensor. Brainwave signals are captured, converted to digital data, processed and transmitted wirelessly to the USB dongle. The USB dongle receives the transmitted signal and extracts the data to be used by the application software.

This report is for MW002 only.

3.1 Product Function and Intended Use

Refer to user manual for more information.

3.2 Ratings and System Details

Frequency range	:	2419.9MHz – 2470.9MHz (unlicensed ISM band)
Number of employed channels	:	256 channels
Modulation Type	:	MSK
Mode of RF Operation (Simplex/ Duplex)	:	Duplex
Type of antenna	:	Integral antenna
Power supply	:	DC 5V(via USB port)

* Channel center frequency point list (MHz):

2419.9999, 2420.1999, 2420.3998, 2420.5998, 2420.7997, 2420.9997, 2421.1996, 2421.3996, 2421.5995, 2421.7995, 2421.9994, 2422.1994, 2422.3993, 2422.5993, 2422.7992, 2422.9992, 2423.1991, 2423.3991, 2423.5990, 2423.7990, 2423.9989, 2424.1989, 2424.3988, 2424.5988, 2424.7987, 2424.9987, 2425.1986, 2425.3986, 2425.5985, 2425.7985, 2425.9984, 2426.1984, 2426.3983, 2426.5983, 2426.7982, 2426.9982, 2427.1982, 2427.3981, 2427.5981, 2427.7980, 2427.9980, 2428.1979, 2428.3979, 2428.5978, 2428.7978, 2428.9977, 2429.1977, 2429.3976, 2429.5976, 2429.7975, 2429.9975, 2430.1974, 2430.3974, 2430.5973, 2430.7973, 2430.9972, 2431.1972, 2431.3971, 2431.5971, 2431.7970, 2431.9970, 2432.1969, 2432.3969, 2432.5968, 2432.7968, 2432.9967, 2433.1967, 2433.3966, 2433.5966, 2433.7965, 2433.9965, 2434.1964, 2434.3964, 2434.5963, 2434.7963, 2434.9962, 2435.1962, 2435.3961, 2435.5961, 2435.7961, 2435.9960, 2436.1960, 2436.3959, 2436.5959, 2436.7958, 2436.9958, 2437.1957, 2437.3957, 2437.5956, 2437.7956, 2437.9955, 2438.1955, 2438.3954, 2438.5954, 2438.7953, 2438.9953, 2439.1952, 2439.3952, 2439.5951, 2439.7951, 2439.9950, 2440.1950, 2440.3949, 2440.5949, 2440.7948, 2440.9948, 2441.1947, 2441.3947, 2441.5946, 2441.7946, 2441.9945, 2442.1945, 2442.3944, 2442.5944, 2442.7943, 2442.9943, 2443.1942, 2443.3942, 2443.5941, 2443.7941, 2443.9940, 2444.1940, 2444.3940, 2444.5939, 2444.7939, 2444.9938, 2445.1938, 2445.3937, 2445.5937, 2445.7936, 2445.9936, 2446.1935, 2446.3935, 2446.5934, 2446.7934, 2446.9933, 2447.1933, 2447.3932, 2447.5932, 2447.7931, 2447.9931, 2448.1930, 2448.3930, 2448.5929, 2448.7929, 2448.9928, 2449.1928, 2449.3927, 2449.5927, 2449.7926, 2449.9926, 2450.1925, 2450.3925, 2450.5924, 2450.7924, 2450.9923, 2451.1923, 2451.3922, 2451.5922, 2451.7921, 2451.9921, 2452.1920, 2452.3920, 2452.5919, 2452.7919, 2452.9919, 2453.1918, 2453.3918, 2453.5917, 2453.7917, 2453.9916,

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2454.1916, 2454.3915, 2454.5915, 2454.7914, 2454.9914, 2455.1913, 2455.3913, 2455.5912, 2455.7912, 2455.9911, 2456.1911, 2456.3910, 2456.5910, 2456.7909, 2456.9909, 2457.1908, 2457.3908, 2457.5907, 2457.7907, 2457.9906, 2458.1906, 2458.3905, 2458.5905, 2458.7904, 2458.9904, 2459.1903, 2459.3903, 2459.5902, 2459.7902, 2459.9901, 2460.1901, 2460.3900, 2460.5900, 2460.7899, 2460.9899, 2461.1898, 2461.3898, 2461.5898, 2461.7897, 2461.9897, 2462.1896, 2462.3896, 2462.5895, 2462.7895, 2462.9894, 2463.1894, 2463.3893, 2463.5893, 2463.7892, 2463.9892, 2464.1891, 2464.3891, 2464.5890, 2464.7890, 2464.9889, 2465.1889, 2465.3888, 2465.5888, 2465.7887, 2465.9887, 2466.1886, 2466.3886, 2466.5885, 2466.7885, 2466.9884, 2467.1884, 2467.3883, 2467.5883, 2467.7882, 2467.9882, 2468.1881, 2468.3881, 2468.5880, 2468.7880, 2468.9879, 2469.1879, 2469.3878, 2469.5878, 2469.7878, 2469.9877, 2470.1877, 2470.3876, 2470.5876, 2470.7875, 2470.9875

Note:

1. The above information is declared by the manufacturer.
2. In this report:
Low Channel = 2419.9999MHz
Middle Channel = 2445.5937 MHz
High Channel = 2470.9875 MHz

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3.3 Independent Operation Modes

RF Transmitting and receiving

For further information refer to User Manual

3.4 Submitted Documents

Operation Description
Block Diagram
Schematics
FCC and IC label and its location
User Manual
Internal Photos
External Photos
Application form

4 Test Set-up and Operation Mode

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Refer to test set-up in chapter 5.

4.3 Special Accessories and Auxiliary Equipment

The dongle was tested together with the following device:

Device	Manufacture	Model	Serial no./ Version
Laptop	IBM	X60	L3-CG041 07/04

4.5 Test set-up

Diagram 1 of Configuration for Testing Radiated Emission below 30MHz

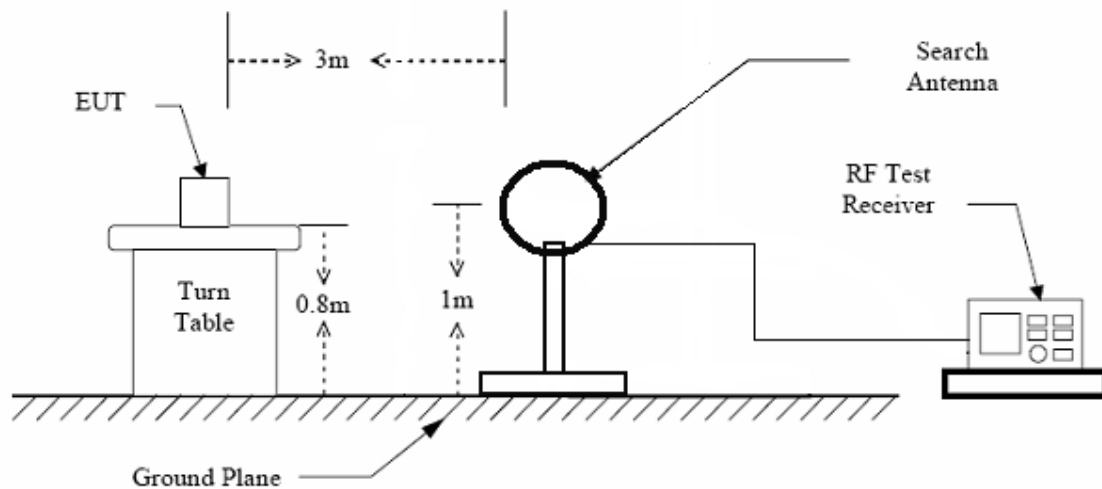


Diagram 2 of Configuration for Testing Radiated Emission from 30MHz to 1 GHz

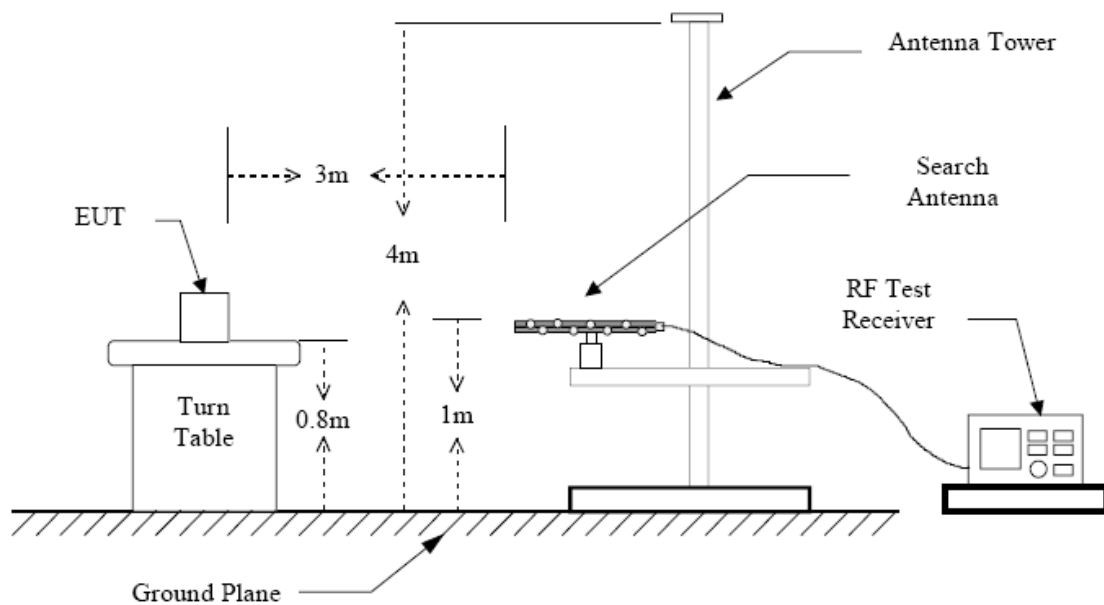


Diagram 3 of Configuration for Testing Radiated Emission above 1 GHz

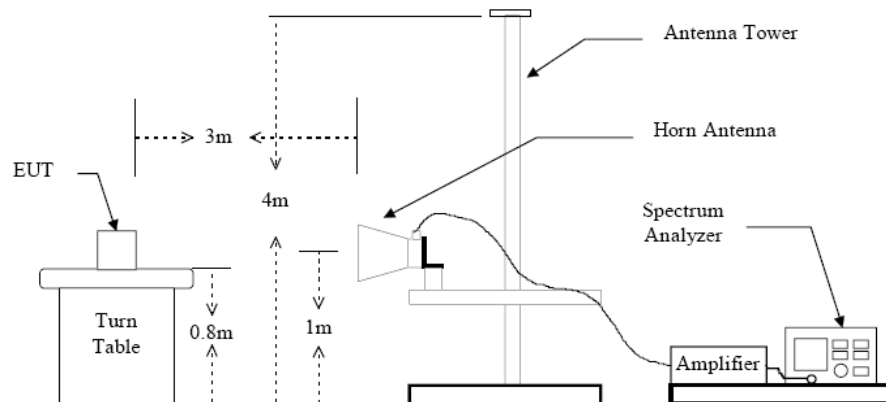


Diagram 4 of Measurement Equipment Configuration for Testing Conducted Emission

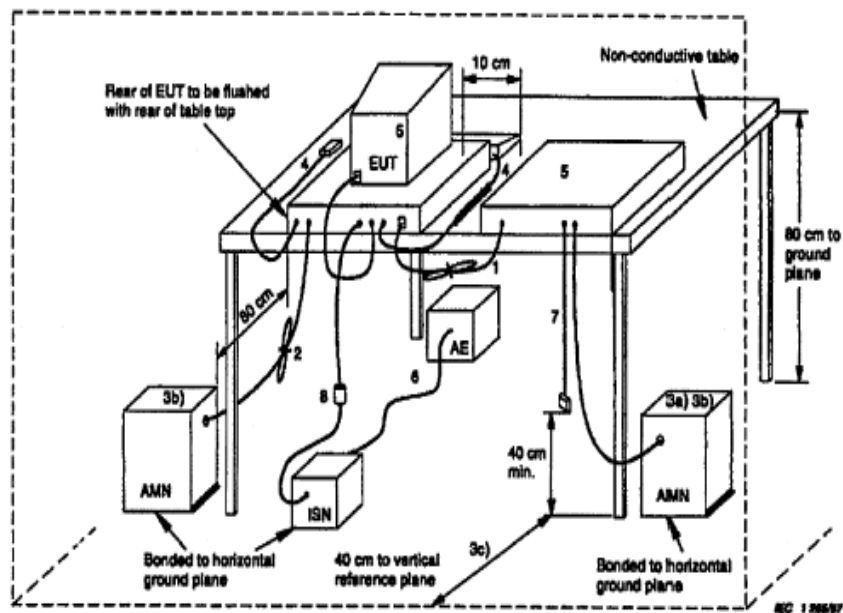
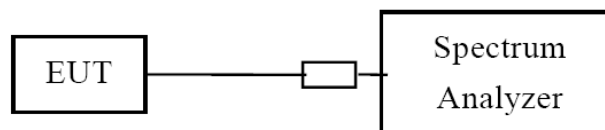


Diagram 4 of Configuration for Testing other test items



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5 Test Results

5.1 Conducted Emission on AC mains

RESULT:

Pass

Date of testing	:	Aug. 27, 2010, Sep. 21, 2010
Test specification	:	FCC Part 15 Per Section 15.107(a), 15.207(a) RSS-Gen Per Section 7.2.2
Limits	:	FCC Part 15 Per Section 15.107(a), 15.207(a) RSS-Gen Per Section 7.2.2, table 2
Test procedure	:	Procedure specified in ANSI C63.4/RSS-Gen were followed
Deviations from Standard Test procedures	:	None
Kind of test site	:	Shielded room
Operation mode	:	Rx mode, Tx mode
Power supply to host	:	AC 120V 60Hz
Temperature	:	21°C
Humidity	:	50%

Test procedure:

1. Place the EUT as specified in ANSI C63.4 Clause 7.2.1
2. Plug the LISN to a correct power source.
4. Connect the EUT to LISN and choose N or L1 on the LISN.
5. Connect ESCS30 and LISN via a 50-ohm coaxial cable and a pulse limiter then begin exploratory measurement as specified in ANSI C63.4 Clause 7.2.3
6. Make final measurement as specified in ANSI C63.4 Clause 7.2.4

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Table 2: Disturbance Voltage on AC Mains

Tx mode					
Frequency [MHz]	Line L/N	QP [dBμV]	AV [dBμV]	Quasi Peak Limit [dBμV]	Average Limit [dBμV]
0.150	L1	43.6	--	66.0	56.0
0.204	N	50.7	--	63.4	53.4
3.349	L1	36.3	--	56.0	46.0
3.831	N	37.0	--	56.0	46.0
4.038	N	38.9	--	56.0	46.0
4.105	L1	38.3	--	56.0	46.0
*)					
Rx mode					
Frequency [MHz]	Line L/N	QP [dBμV]	AV [dBμV]	Quasi Peak Limit [dBμV]	Average Limit [dBμV]
0.150	L1	44.6	--	66.0	56.0
0.204	L1	50.2	--	63.4	53.4
3.633	N	37.9	--	56.0	46.0
3.768	N	32.4	--	56.0	46.0
3.907	L1	37.9	--	56.0	46.0
3.970	N	28.6	--	56.0	46.0
*)					

*) Measurement is made from 150 kHz to 30 MHz. Disturbances other than those mentioned above are small or not detectable. Refer to appendix 1 for the test plot.

If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector may be omitted.

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5.2 Transmitter Radiated Emission (fundamental and spurious)

RESULT:

Pass

Date of testing	:	Sep.14, 2010
Test specification	:	FCC Part 15 Per Section 15.249(a)(d)(e) RSS-210 Per Section A2.9
Limits	:	FCC Part 15 Per Section 15.249(a)(d)(e) RSS-210 Per Section A2.9
Test procedure	:	Procedure specified in ANSI C63.4/RSS-Gen were followed
Deviations from Standard Test procedures	:	None
Kind of test site	:	3m Semi-anechoic chamber
Operation mode	:	Transmitting
Power supply	:	DC 5V (via USB port)
Temperature	:	23°C
Humidity	:	50%

Test procedure:

1. The EUT was placed on the top of a rotatable table 0.8 meters above the ground with 3-orthogonal direction and be kept close enough to the receiving antenna. The table was rotated 360 degrees to determine the suspected emission frequency and the position of the worst radiation case with both horizontal and vertical antenna polarization.
2. The EUT was then set 3 meters away from the receiving antenna, which was mounted on a variable-height antenna tower.
3. For each suspected emission frequency recorded in step 1, the EUT was arranged to its worst case and:
for tests below 30MHz the loop antenna is positioned with its plane vertical and the center of it is 1m above the ground. During the tests it is rotated about its vertical axis for maximum response at each azimuth about the EUT;
for tests above 30MHz the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to read the maximum emission.
4. The RBW and VBW of the test receiver were 120 kHz and 120 kHz for Quasi-peak detection at frequency below 1GHz.
The RBW and VBW of the test receiver were 1MHz and 3MHz for Peak detection at frequency above 1GHz.
For Average measurement at frequency above 1GHz. The resolution bandwidth of the test receiver was 1MHz, video bandwidth is 10Hz. If the peak value was below the AV limit, AV measurement was skipped.

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Table 3: Radiated Emission (Transmitting at low channel)

Frequency	QP	AV	PK	Polarity	Limit			Remark
					QP	AV	PK	
[MHz]	[dBμ V/m]			(H/V)	[dBμ V/m]			
264.05	39.3	--	--	H	46	N/A	N/A	
312.05	37.5	--	--	H	46	N/A	N/A	
2420.35	--	--	88.0	H	N/A	94	114	fundamental
4840.00	--	--	47.0	H	N/A	54	74	
7260.00	--	--	47.8	H	N/A	54	74	
216.00	26.5	--	--	V	46	N/A	N/A	
2420.35	--	--	87.0	V	N/A	94	114	fundamental
4840.00	--	--	50.7	V	N/A	54	74	
7260.00	--	--	49.4	V	N/A	54	74	
*)---								

Table 4: Radiated Emission (Transmitting at middle channel)

Frequency	QP	AV	PK	Polarity	Limit			Remark
					QP	AV	PK	
[MHz]	[dBμ V/m]			(H/V)	[dBμ V/m]			
264.05	40.2	--	--	H	46	N/A	N/A	
2445.12	--	--	86.7	H	N/A	94	114	fundamental
4891.00	--	--	46.5	H	N/A	54	74	
454.80	35.2	--	--	V	46	N/A	N/A	
2445.12	--	--	86.2	V	N/A	94	114	fundamental
1995.00	--	--	53.8	V	N/A	54	74	
4891.00	--	--	49.7	V	N/A	54	74	
*)---								

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Table 5: Radiated Emission (Transmitting at high channel)

Frequency	QP	AV	PK	Polarity	Limit			Remark
					QP	AV	PK	
[MHz]	[dBμ V/m]			(H/V)	[dBμ V/m]			
264.05	39.1	--	--	H	46	N/A	N/A	
2470.98	--	--	87.0	H	N/A	94	114	fundamental
1997.00	--	--	46.2	H	N/A	54	74	
4942.00	--	--	47.0	H	N/A	54	74	
452.90	35.4	--	--	V	46	N/A	N/A	
2470.98	--	--	85.2	V	N/A	94	114	fundamental
1661.00	--	--	52.8	V	N/A	54	74	
4942.00	--	--	51.2	V	N/A	54	74	
*)---								

*) Measurement is made from 12MHz to 26 GHz. Disturbances other than those mentioned above are small or not detectable.

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5.3 Receiver Radiated Spurious Emission

RESULT:

Pass

Date of testing : Sep. 14, 2010
 Test specification : FCC Part 15 Per Section 15.109(a)
 RSS-210 Per Section 2.3
 Limits : FCC Part 15 Per Section 15.109(a)
 RSS-Gen Per Section 6 table 1
 Test procedure : ANSI C63.4/RSS-Gen
 Deviations from Standard Test procedures : None
 Kind of test site : 3m Semi-anechoic chamber
 Operation mode : Receiving
 Power supply : DC 5V (via USB port)
 Temperature : 23°C
 Humidity : 50%

Test procedure:

1. The EUT was placed on the top of a rotatable table 0.8 meters above the ground with 3-orthogonal direction and be kept close enough to the receiving antenna. The table was rotated 360 degrees to determine the suspected emission frequency and the position of the worst radiation case with both horizontal and vertical antenna polarization.
2. The EUT was then set 3 meters away from the receiving antenna, which was mounted on a variable-height antenna tower.
3. For each suspected emission frequency recorded in step 1, the EUT was arranged to its worst case that the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to read the maximum emission.

Table 6: Receiver Radiated Emission (receiving at middle channel)

Frequency	QP	AV	PK	Polarity	Limit		
					QP	AV	PK
[MHz]	[dBµ V/m]			(H/V)	[dBµ V/m]		
264.05	34.3	--	--	H	46	N/A	N/A
1995.00	N/A	--	43.8	H	N/A	54	74
4891.00	N/A	--	43.5	H	N/A	54	74
1663.00	N/A	--	47.7	V	N/A	54	74
1990.00	N/A	--	50.1	V	N/A	54	74
4891.00	N/A	--	43.2	V	N/A	54	74

*) Measurement is made from 30 MHz to 8GHz. Disturbances other than those mentioned above are small or not detectable.

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5.4 Antenna requirement

RESULT:

Pass

Date of testing : ---
Test specification : FCC Part 15 Per Section 15.203

According to 15.203, intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

As the antenna is permanently mounted on RF Board, there is no possibility of replacement.

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5.5 20dB Bandwidth

RESULT:

Pass

Date of testing : Sep. 14, 2010
Test specification : FCC Part 2.1049
Limits : No limit
Deviations from Standard Test procedures : None
Test procedure : Procedure specified in ANSI C63.4/RSS-Gen were followed
Operation mode : Transmitting
Kind of test site : Shielded room
Power supply : DC 5V (via USB port)
Temperature : 23°C
Humidity : 50%

Test procedure:

1. Connect the antenna port of the EUT to the spectrum analyzer by a low lost cable.
2. Set the EUT to proper test mode with relative test software and hardware.
3. Spectrum analyzer setting: Centered Frequency= measured channel, RBW=10kHz, VBW>RBW.
4. Mark the peak power frequency point and the -20dB upper and lower frequency points.
5. Read the frequency delta value between the -20dB upper and lower frequency points.
6. Repeat step 2 to 5 until all the channels required are finished.

Table 7: 20dB Bandwidth

Channel	20dB Bandwidth (kHz)	99% occupied bandwidth (kHz)
Low	770	873
Mid	764	768
High	768	866

Please refer to Appendix 1 for the plot.

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5.6 Band Edge Emission

RESULT:

Pass

Date of testing	:	Sep. 14, 2010
Test specification	:	FCC Part 15 Per Section 15.205 RSS-210 Issue 7 2.2
Limits	:	FCC Part 15 Per Section 15.205 - The field strength of emissions appearing within restricted bands shall not exceed the limits shown in Section 15.209 RSS-210 Section 2.2 - Unwanted emissions falling into restricted bands of Table 1 shall meet Tables 2 and 3 limits
Deviations from Standard Test procedures	:	None
Test Procedure	:	Procedure specified in ANSI C63.4/RSS-Gen were followed
Kind of test site	:	3m Semi-anechoic chamber
Operation mode	:	Transmitting
Power supply	:	DC 5V(via USB port)
Temperature	:	23°C
Humidity	:	50%

Test procedure:

The band edge radiated emission was measured according to the procedure in clause 5.1 of this report.

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Table 8: Band Edges Emission in the Restricted Bands

Frequency [MHz]	PK [dB μ V/m]	AV [dB μ V/m]	Polarity (H/V)	PK limit [dB μ V/m]	AV limit [dB μ V/m]
2390.25	54.68	47.69	H	74	54
2483.5	55.23	51.10	V	74	54
Remark: --					

*** Note:** Please refer to the Appendix 1 for the plot.

Disturbances other than those mentioned above are small or not detectable.

5.7 Exemption from Routine Evaluation Limits – SAR Evaluation

RESULT:

Pass

Date of testing : Sep. 14, 2010
Test specification : RSS-102 Issue 2 Section 2.5.1
Limits : RSS-102 Issue 2 Section 2.5.1

SAR evaluation is required if the separation distance between the user and the device is less than or equal to 20 cm, except when the device operates:

above 2.2 GHz up to 3 GHz inclusively and its output power (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based time-averaged output power) is less than, or equal to 20 mW for General Public Use and 100 mW for Controlled Use

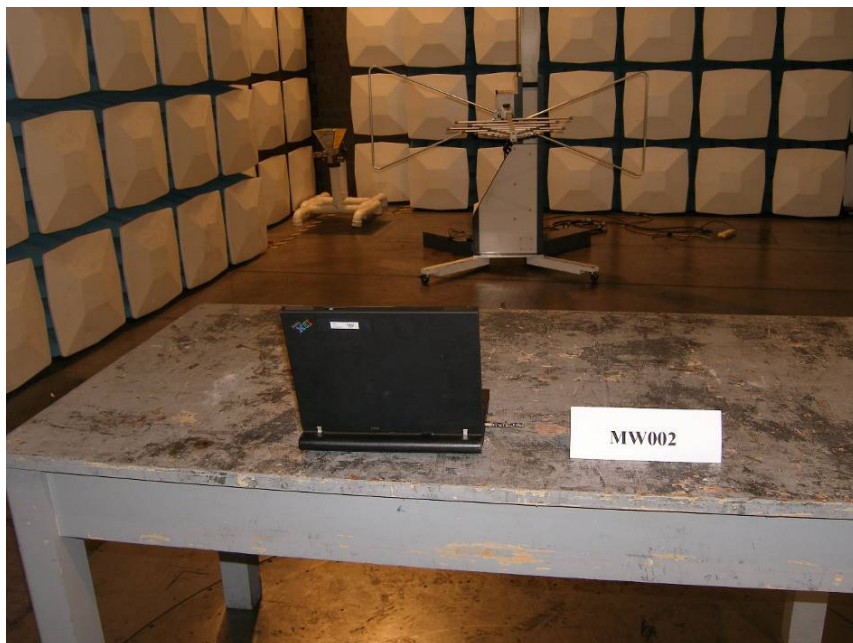
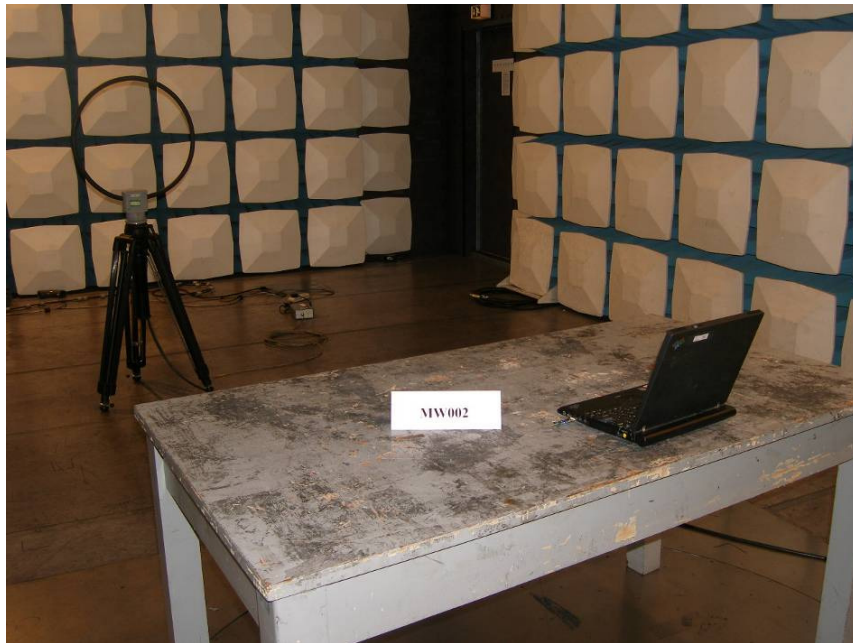
Table 9: e.i.r.p

Mode	Channel	Field strength	e.i.r.p	Limit
		(dBµV/m)	(mW)	(mW)
transmitting	Low	88.0	0.19	20
	Mid	86.7	0.14	20
	High	87.0	0.15	20

Since the calculation above showed the e.i.r.p of the device is less than 20mW, the SAR evaluation is not required.

6 Photographs of the Test Set-Up

Photograph 1: Set-up for Radiation Measurement below 1GHz



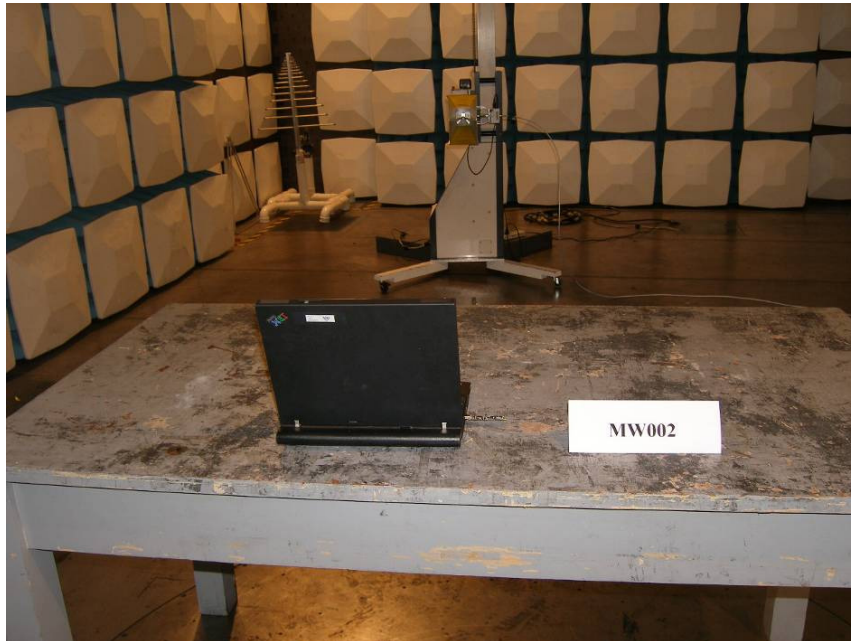
Note: The dongle was plugged to the USB port of laptop.

Prüfbericht - Nr.:
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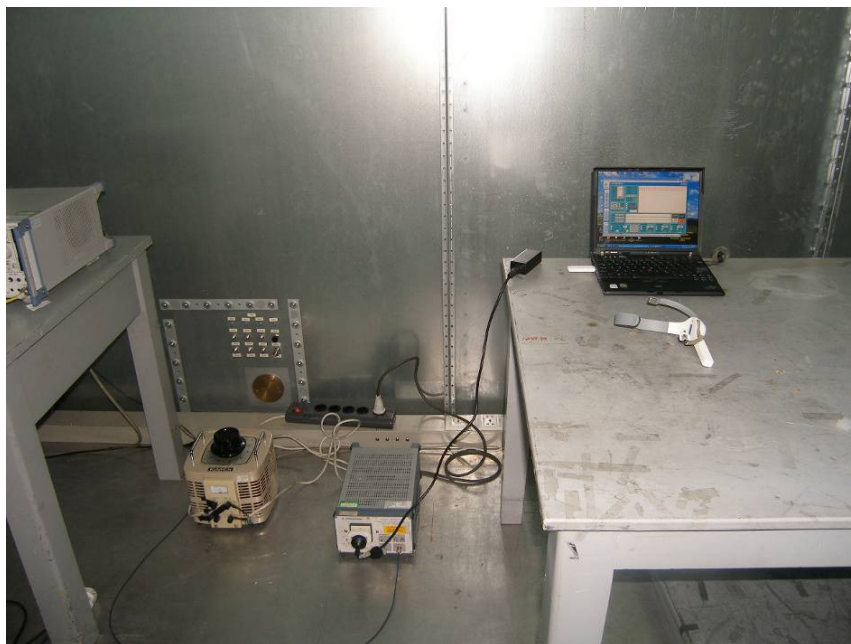
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Photograph 2: Set-up for Radiation Measurement above 1GHz



Photograph 3: Set-up for AC mains conducted emission



Note: The dongle was plugged to the USB port of laptop

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AC power conducted emission

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EMC Test Record (EMISSION)

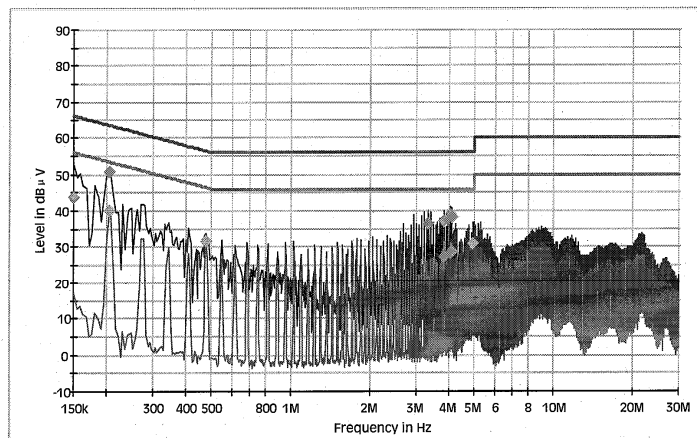
Test Information

Manufacturer: NeuroSky
Test Item: Wireless Headset
Identification: MW 002
Test Standard: FCC Part15.207
Test Detail: Conducted Emission
Operation Mode: Transmitting
Climate Condition: 23 °C; 54 %RH; 101 kPa.
Test Voltage/ Freq.: AC120 V/ 60Hz
Port / Line: AC Mains
Receipt No.: 173053282
Report No.: /
Result: Pass
Comment: /



Hardware Setup: 1phase LISN ESH3-Z5 to ESCS30
Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESCS 30



2010-8-27, 20:38:43

Tested by:



Reviewed by:



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EMC Test Record (EMISSION)

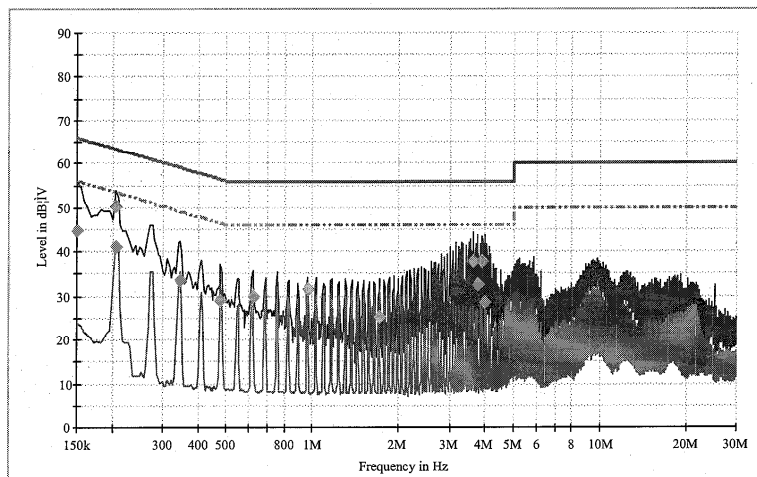
Test Information

Manufacturer:	NeuroSky
Test Item:	Wireless Headset Dongle
Identification:	MW 002
Test Standard:	FCC Part15.107
Test Detail:	Conducted Emission
Operation Mode:	Receiving
Climate Condition:	23 °C; 54 %RH; 101 kPa.
Test Voltage/ Freq.:	AC120 V/ 60Hz
Port / Line:	AC Mains
Receipt No.:	173053282
Report No.:	/
Result:	Pass
Comment:	/



Hardware Setup: 1phase LISN ESH3-Z5 to ESCS30
Level Unit: dB μ V

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESCS 30



2010-9-21, 19:30:15

Tested by:



Reviewed by:



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Band Edge Emission

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EMC Test Record (EMISSION)

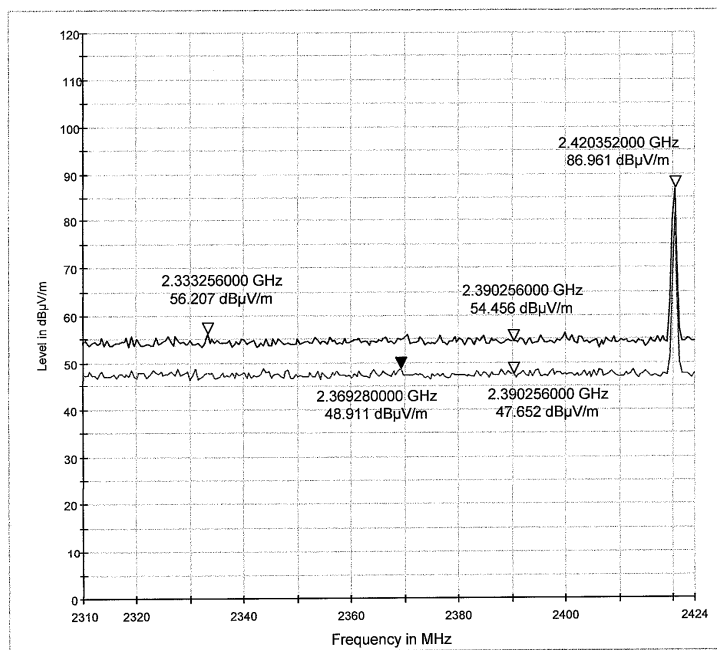
Test Information

Manufacturer: /
Test Item: USB dongle
Identification: MW002
Test Standard: FCC Part 15
Test Detail: Band edge
Operation Mode: Tx and Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage / Freq.: DC 5V
Receipt No.: 173053282
Report No.: /
Result: Pass
Comment: Test distance is 3m, Vertical

Subrange 1

Frequency Range: 2GHz – 3GHz
Receiver: TUV FSP 30
Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

Pre TUV 1 to 18G HF906



Date: 08/09/2010 - Time: 16:02:17

Tested by:



Reviewed by:



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EMC Test Record (EMISSION)

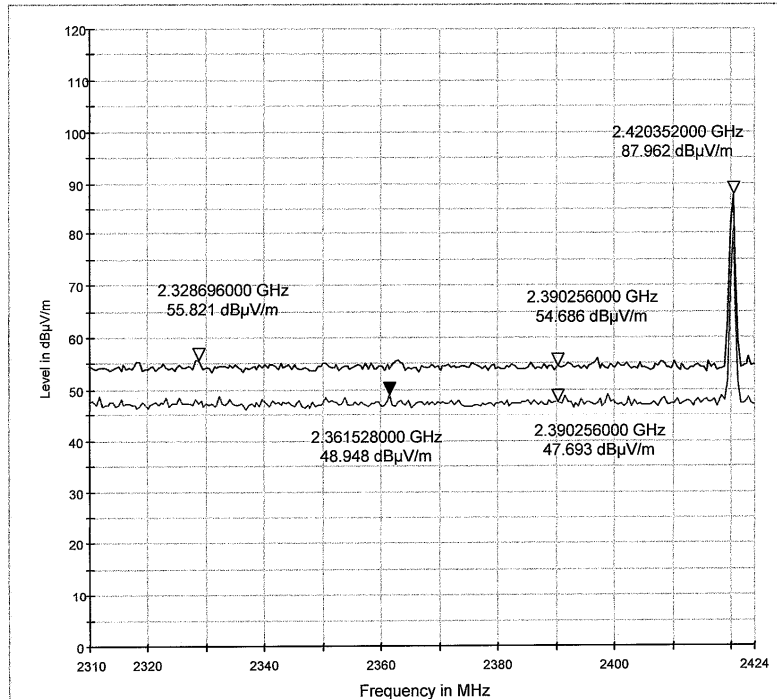
Test Information

Manufacturer: /
Test Item: USB dongle
Identification: MW002
Test Standard: FCC Part 15
Test Detail: Band edge
Operation Mode: Tx and Low channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage / Freq.: DC 5V
Receipt No.: 173053282
Report No.: /
Result: Pass
Comment: Test distance is 3m, Horizontal

Subrange 1

Frequency Range: 2GHz – 3GHz
Receiver: TUV FSP 30
Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

Pre TUV 1 to 18G HF906



Date: 08/09/2010 - Time: 15:57:41

Tested by:



Reviewed by:



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EMC Test Record (EMISSION)

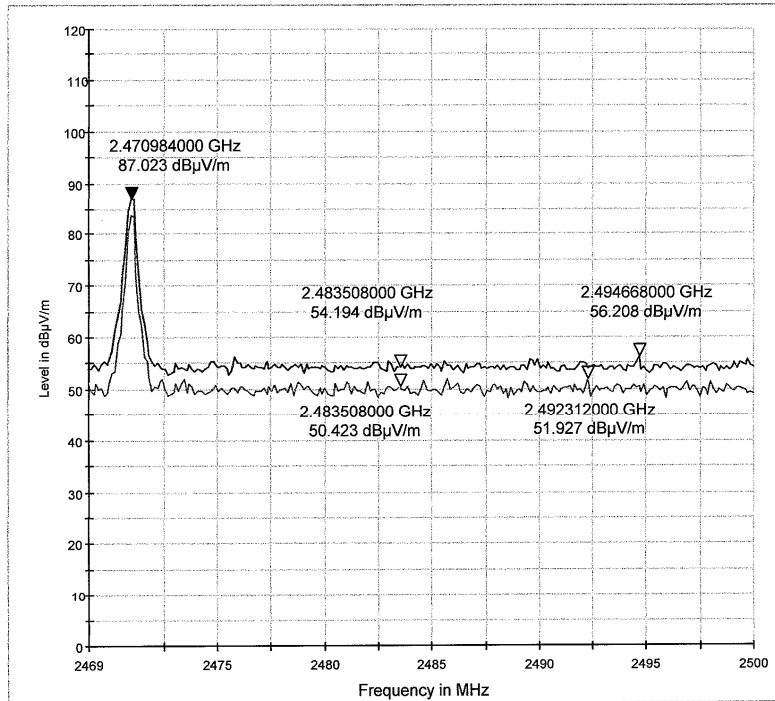
Test Information

Manufacturer: /
Test Item: USB dongle
Identification: MW002
Test Standard: FCC Part 15
Test Detail: Band edge
Operation Mode: Tx and High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage / Freq.: DC 5V
Receipt No.: 173053282
Report No.: /
Result:
Comment: Test distance is 3m, Horizontal

Subrange 1

Frequency Range: 2GHz – 3GHz
Receiver: TUV FSP 30
Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

Pre TUV 1 to 18G HF906



Date: 08/09/2010 - Time: 16:23:46

Tested by:



Reviewed by:



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EMC Test Record (EMISSION)

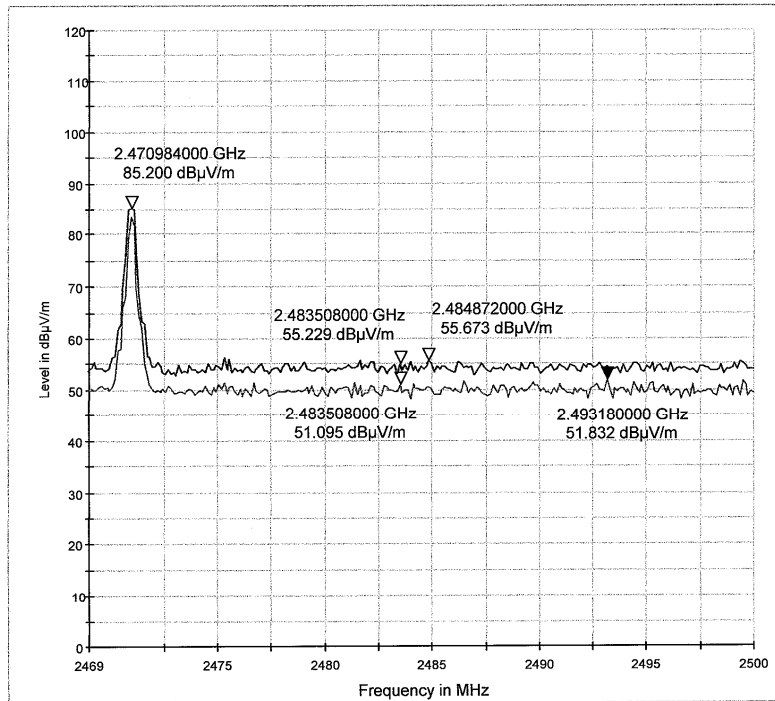
Test Information

Manufacturer: /
Test Item: USB dongle
Identification: MW002
Test Standard: FCC Part 15
Test Detail: Band edge
Operation Mode: Tx and High channel
Climate Condition: 23 °C; 50 %RH; 101 kPa.
Test Voltage / Freq.: DC 5V
Receipt No.: 173053282
Report No.: /
Result:
Comment: Test distance is 3m, Vertical



Subrange 1

Frequency Range: 2GHz – 3GHz
Receiver: TUV FSP 30
Transducer: TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

Pre TUV 1 to 18G HF906



Date: 08/09/2010 - Time: 16:10:53

Tested by:  Reviewed by: 

Prüfbericht - Nr.:

16026260 001

Test Report no.

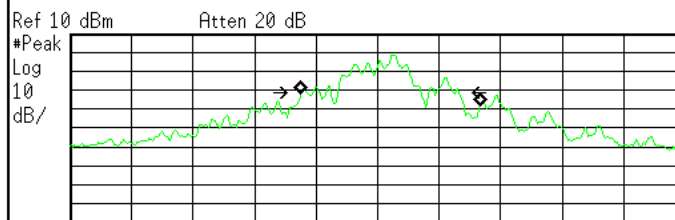
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20dB bandwidth (low channel)

 Agilent

Ch Freq 2.42 GHz Trig Free
Occupied Bandwidth



Occupied Bandwidth
872.8646 kHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error 62.999 kHz
x dB Bandwidth 770.080 kHz

Meas Setup

Avg Number

10
On Off

Avg Mode

Exp Repeat

Max Hold

On Off

Occ BW % Pwr

99.00 %

OBW Span

3.00000000 MHz

x dB

-20.00 dB

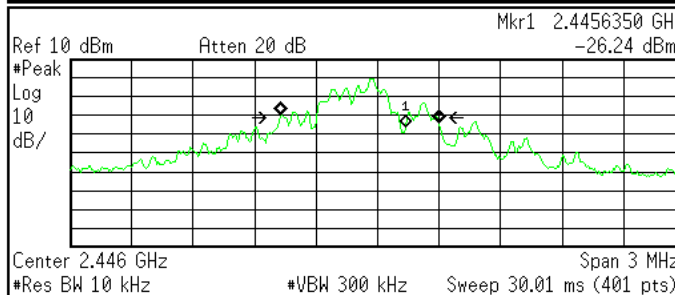
Optimize

Ref Level

20dB bandwidth (Middle channel)

 Agilent

Ch Freq 2.4455 GHz Trig Free
Occupied Bandwidth



Occupied Bandwidth
767.7516 kHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error -87.154 kHz
x dB Bandwidth 764.633 kHz

Span

Span

3.00000000 MHz

Span Zoom

Full Span

Zero Span

Last Span

Zone

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20dB bandwidth (High channel)

