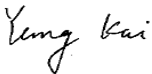



Prüfbericht - Nr.: 16800383 001 <i>Test Report No.:</i>		Seite 1 von 43 Page 1 of 43			
Auftraggeber: <i>Client:</i>	Siemens AG Hofmannstr.51,Munich,Germany				
Gegenstand der Prüfung: <i>Test item:</i>	SiPARK Sub-1G Module				
Bezeichnung: <i>Identification:</i>	Sub-915	Serien-Nr.: <i>Serial No.:</i>	Engineering sample		
Wareneingangs-Nr.: <i>Receipt No.:</i>	1143005323	Eingangsdatum: <i>Date of receipt:</i>	2010-12-30		
Zustand des Prüfgegenstandes bei Anlieferung: Condition of test item at delivery:	The sample is ok for test and not damaged.				
Prüfört: <i>Testing location:</i>	Refer to section 1.1				
Prüfgrundlage: <i>Test specification:</i>	FCC Part 15 Subpart C Section 15.207 FCC Part 15 Subpart C Section 15.209 FCC Part 15 Subpart C Section 15.247				
Prüfergebnis: <i>Test Result:</i>	Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test item passed the test specification(s).</i>				
Prüflaboratorium: <i>Testing Laboratory:</i>	Refer to section 1.1				
geprüft/ tested by:	kontrolliert/ reviewed by:				
2012-3-22 Yang, Kai/PE 	2012-3-22	Sun, Lixun/Reviewer			
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges/ Other Aspects:					
Abkürzungen: P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet		Abbreviations: P(ass) = passed F(ail) = failed N/A = not applicable 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 item. 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

4.1.1 ANTENNA REQUIREMENT*RESULT: Passed***4.1.2 PEAK OUTPUT POWER***RESULT: Passed***4.1.3 6dB BANDWIDTH***RESULT: Passed***4.1.4 CONDUCTED SPURIOUS EMISSIONS IN 100KHZ BANDWIDTH***RESULT: Passed***4.1.5 POWER SPECTRAL DENSITY***RESULT: Passed***4.1.6 SPURIOUS EMISSION***RESULT: Passed***4.2.1 CONDUCTED EMISSIONS***RESULT: Passed***4.3.1 ELECTROMAGNETIC FIELDS***RESULT: Passed*

Contents

1.	TEST SITES	4
1.1	TEST FACILITIES	4
1.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	4
1.3	TRACEABILITY	5
1.4	CALIBRATION	5
1.5	MEASUREMENT UNCERTAINTY	5
2.	GENERAL PRODUCT INFORMATION	6
2.1	PRODUCT FUNCTION AND INTENDED USE	6
2.2	RATINGS AND SYSTEM DETAILS	6
2.3	INDEPENDENT OPERATION MODES	7
2.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	7
2.5	SUBMITTED DOCUMENTS	7
3.	TEST SET-UP AND OPERATION MODES	8
3.1	PRINCIPLE OF CONFIGURATION SELECTION	8
3.2	TEST OPERATION AND TEST SOFTWARE	8
3.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	8
3.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	9
3.5	TEST SETUP DIAGRAM	9
4.	TEST RESULTS	11
4.1	TRANSMITTER REQUIREMENT & TEST SUITES	11
4.1.1	<i>Antenna Requirement</i>	<i>11</i>
4.1.2	<i>Peak Output Power</i>	<i>12</i>
4.1.3	<i>6dB Bandwidth</i>	<i>15</i>
4.1.4	<i>Conducted Spurious Emissions in 100kHz Bandwidth</i>	<i>18</i>
4.1.5	<i>Power Spectral Density</i>	<i>23</i>
4.1.6	<i>Spurious Emission</i>	<i>26</i>
4.2	EMISSION IN THE FREQUENCY RANGE UP TO 30 MHZ	37
4.2.1	<i>Conducted emissions</i>	<i>37</i>
4.3	RADIO FREQUENCY EXPOSURE COMPLIANCE	40
4.3.1	<i>Electromagnetic Fields</i>	<i>40</i>
5.	PHOTOGRAPHS OF THE TEST SET-UP	41
6.	LIST OF TABLES	43
7.	LIST OF FIGURES	43
8.	LIST OF PHOTOGRAPHS	43

1. Test Sites

1.1 Test Facilities

Laboratory: The State Radio_Monitoring_Center Testing (SRTC) (FCC Registration No.: 910917)

Address: No.98 BeiLishi Road, Xicheng District, Beijing 100037

The used test equipment is in accordance with CISPR 16-1 for measurement of radio interference.

1.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Spurious Radiated Emissions				
Bi-log Antenna	Rohde & Schwarz	HL562	100016	2012-08-20
Horn Antenna	Rohde & Schwarz	HF906	100030	2012-08-20
EMI Test Receiver	Rohde & Schwarz	ESI40	100015	2012-08-20
Pre/Power Amplifier	Rohde & Schwarz	HP2800	800584	2012-08-20
Radio Frequency Test Suite				
EMI Test Receiver	Rohde & Schwarz	ESI40	100015	2012-08-20
Conducted Emissions				
EMI Receiver	SCHAFFNER	SMR4503	29	2012-12-23
LISN	SCHAFFNER	NNB42	04/10158	2012-12-21

1.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology P.R. China) or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

1.4 Calibration

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

1.5 Measurement Uncertainty

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

Table 2: Measurement Uncertainty

Items		Extended Uncertainty
RE (30-1000MHz)	Field strength (dBuV/m)	$U=\pm 4.94\text{dB}$, $k=2$, $\sigma=95\%$
RE (1-12.75GHz)	Field strength (dBuV/m)	$U=\pm 4.34\text{dB}$, $k=2$, $\sigma=95\%$
CE	Disturbance Voltage (dBuV)	$U=\pm 2.56\text{dB}$, $k=2$, $\sigma=95\%$

2. General Product Information

2.1 Product Function and Intended Use

The EUT (equipment under test) is a SiPARK Sub-1G Module that to be installed in parking places to detect the parking status. The flush-mounted GS will detect the presence of vehicle above it and report the current parking status to the parking management system by wireless communication.

2.2 Ratings and System Details

Table 3: Rating of EUT

Kind of Equipment:	SiPARK Sub-1G Module
Type Designation:	Sub-915
FCC ID	ZSJ-1391-700
Rated Input Voltage	DC 3.3V

Table 4: Technical Specification

Item	Description
Operating Frequency band	902-928MHz
Channel Number	13
Channel Center Frequency	903.0 MHz, 905.0 MHz, 907.0 MHz, 909.0 MHz, 911.0 MHz, 913.0 MHz, 915.0 MHz, 917.0 MHz, 919.0 MHz, 921.0 MHz, 923.0 MHz, 925.0 MHz, 927.0MHz
Modulation	GFSK
Antenna Connection Type	Unique connector (RP-SMA)
Max. Antenna Gain (dBi)	2

2.3 Independent Operation Modes

The basic operation modes are:

- A. On, transmitting
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. Off

2.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

2.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document
- Circuit Diagram
- Instruction Manual
- Rating Label

3. Test Set-up and Operation Modes

3.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use. And prior to the measurements, the test object operated about 5 minutes (warm-up) in order to stabilize its operating conditions and to ensure reliable measurement values.

3.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2003.

The software SmartRF_Studio_7 v1.0.3 was used during the test.

3.3 Special Accessories and Auxiliary Equipment

Table 5: Test Auxiliary Equipments

No.	Name	Model	Manufactory
1	Notebook computer	Probook6550B	HP
2	Repeater	WN-R-915	Siemens

3.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

3.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

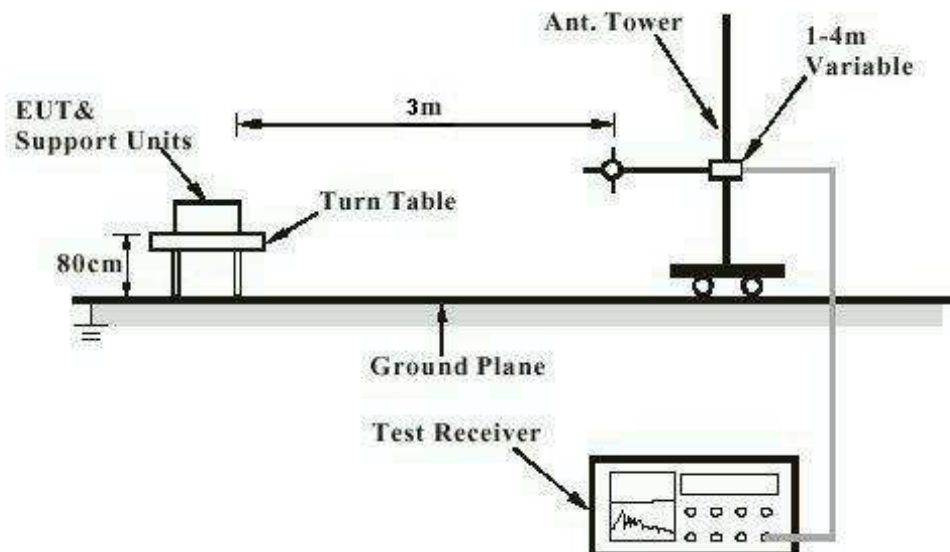


Diagram of Measurement Equipment Configuration for Conduction Measurement

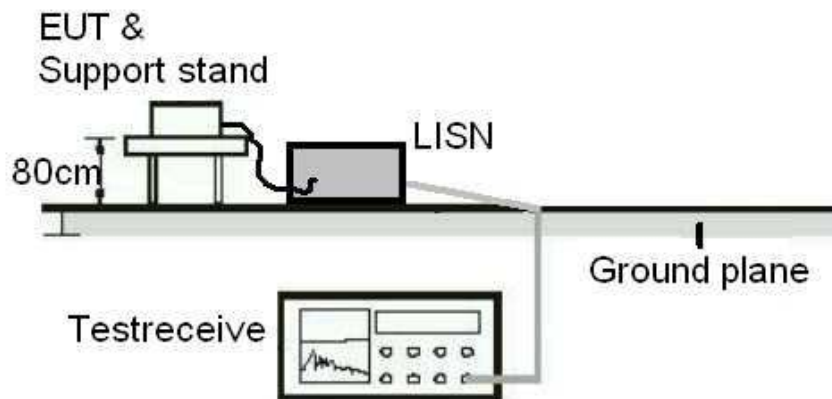
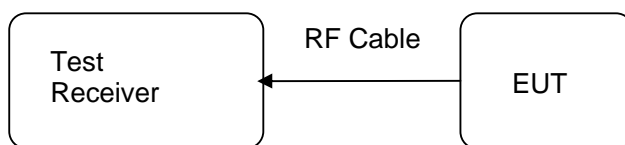


Diagram of Measurement Equipment Configuration for Transmitter Measurement



4. Test Results

4.1 Transmitter Requirement & Test Suites

4.1.1 Antenna Requirement

RESULT: **Passed**

Test date	:	2011-04-29
Test standard	:	FCC Part 15.247(b)(4) and Part 15.203
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has a unique connector (RP-SMA), which ensures that no antenna other than that furnished by the responsible party shall be used with the device. The directional gain of antenna is 2dBi. Therefore the EUT is considered sufficient to comply with the provision.

4.1.2 Peak Output Power

RESULT:
Passed

Test date : 2011-04-29
 Test standard : FCC Part 15.247(b)(3)
 Basic standard : ANSI C63.4: 2003
 Limit : 1 Watt
 Kind of test site : Shielded room

Test setup

Test Channel : Low/ Middle/ High
 Operation Mode : A
 Ambient temperature : 24°C
 Relative humidity : 53%
 Atmospheric pressure : 101 kPa

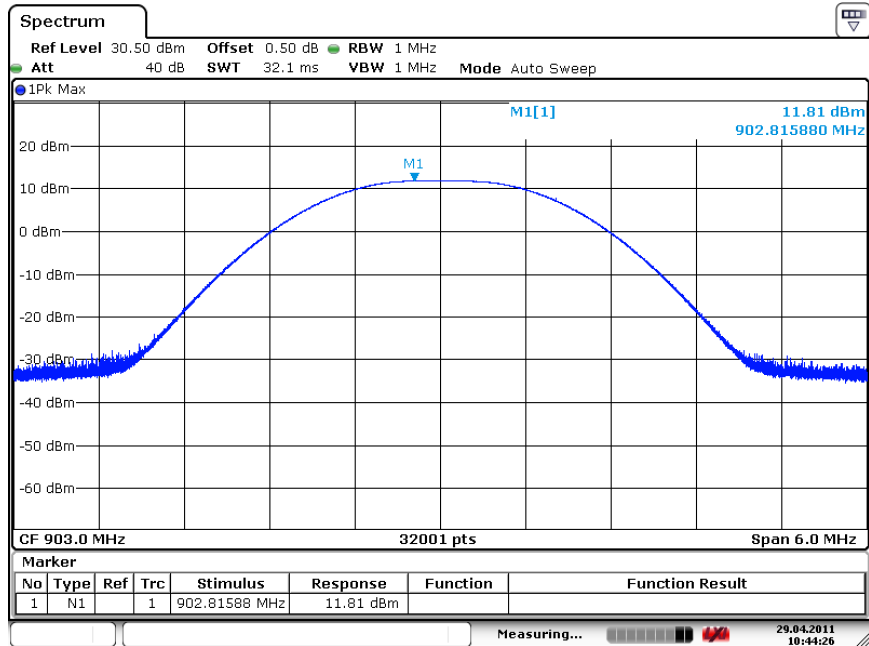
Table 6: Test result of Peak Output Power

Channel	Channel Frequency (MHz)	Peak Output Power		Limit (W)
		(dBm)	(mW)	
Low Channel	903	11.81	15.17	1
Middle Channel	915	12.62	18.28	1
High Channel	927	15.20	33.11	1

Note: The cable attenuation is 1dB, which was added previously in the reading value.

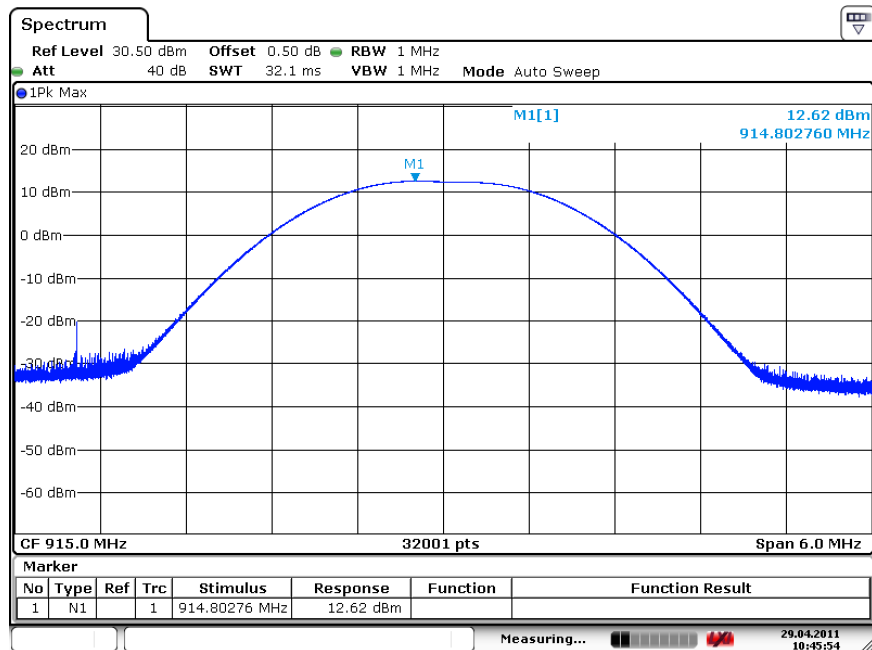
Test Graph of Peak Output Power

Low Channel

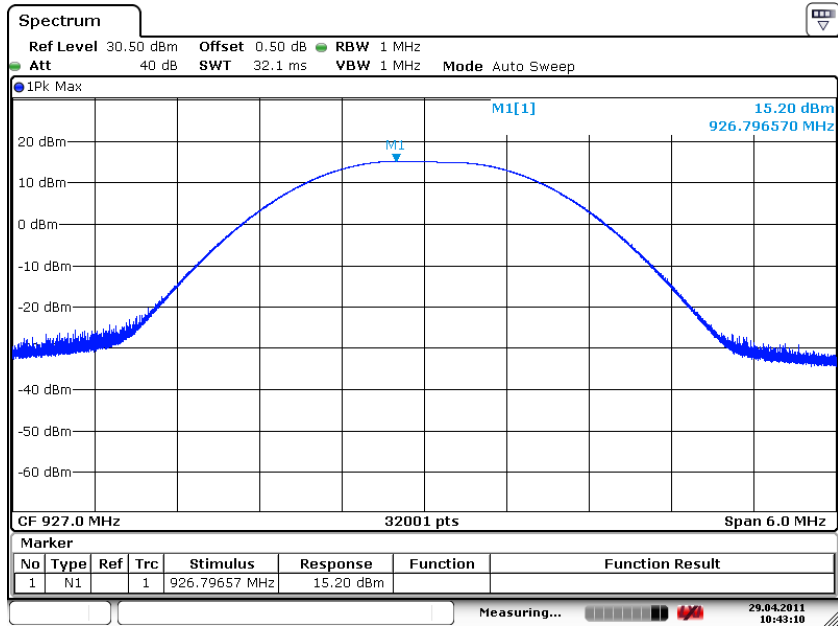


Date: 29.APR.2011 10:44:26

Middle Channel



Date: 29.APR.2011 10:45:54

High Channel


Date: 29.APR.2011 10:43:10

4.1.3 6dB Bandwidth

RESULT:**Passed**

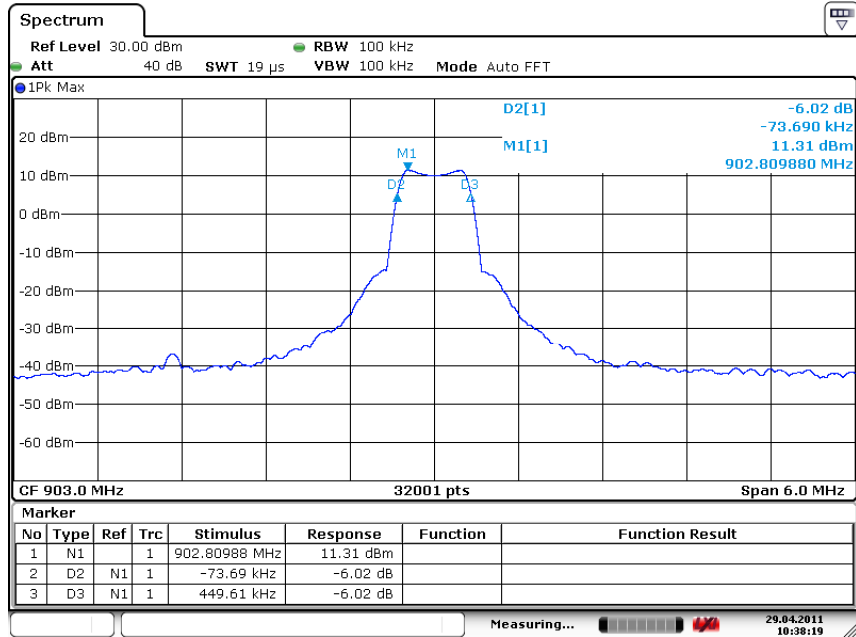
Date of testing : 2011-04-29
Test standard : FCC Part 15.247(a)(2)
Basic standard : ANSI C63.4: 2003
Kind of test site : Shielded room

Test setup

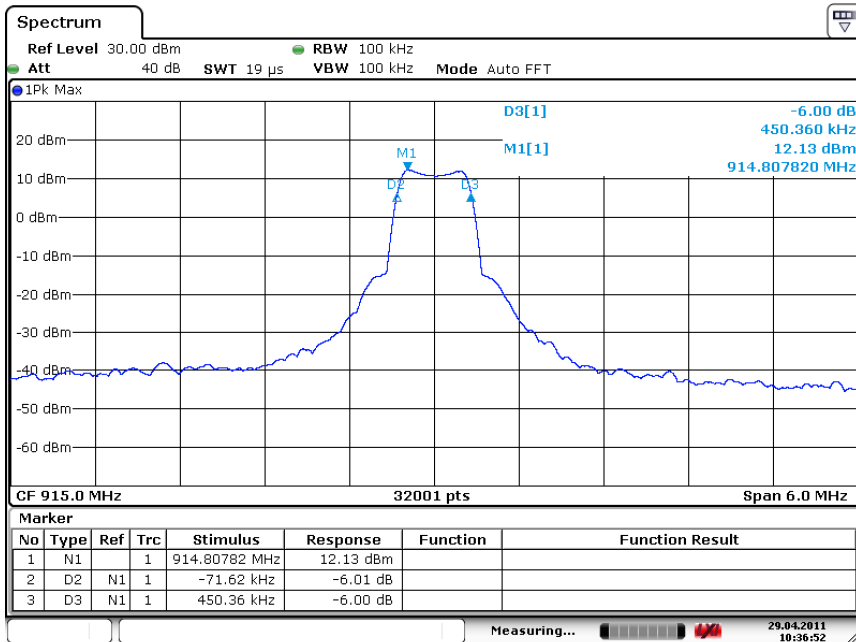
Test Channel : Low/ Middle/ High
Operation Mode : A
Ambient temperature : 24°C
Relative humidity : 53%
Atmospheric pressure : 101 kPa

Table 7: Test result of 6dB Bandwidth

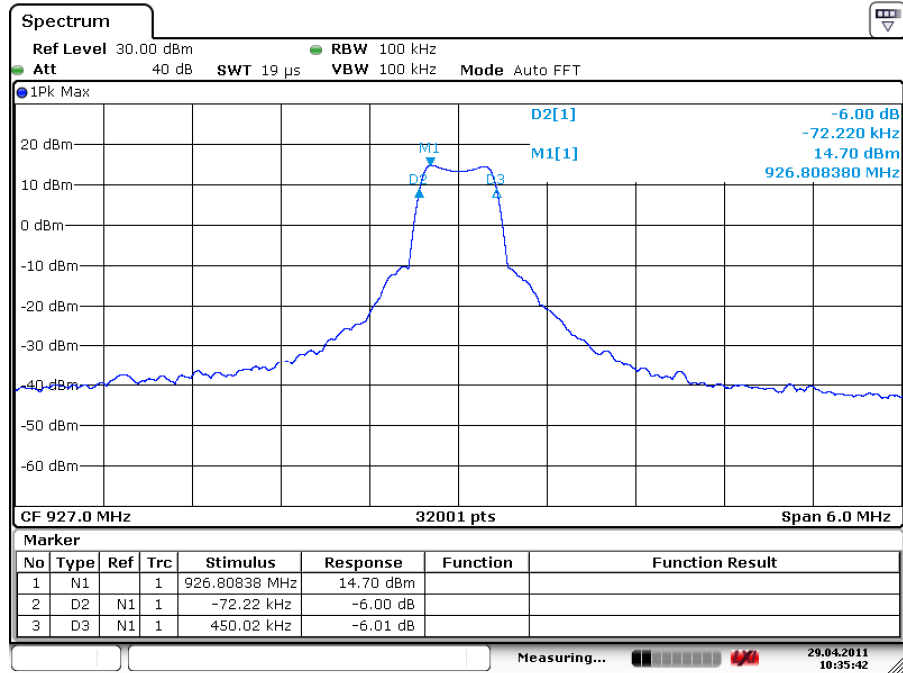
Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)	Limit(kHz)
Low Channel	903	523.3	>500
Mid Channel	915	521.97	>500
High Channel	927	522.24	>500

Test Graph of 6dB Bandwidth
Low Channel


Date: 29.APR.2011 10:38:19

Middle Channel


Date: 29.APR.2011 10:36:52

High Channel


Date: 29.APR.2011 10:35:42

4.1.4 Conducted Spurious Emissions in 100kHz Bandwidth

RESULT:**Passed**

Date of testing : 2011-04-29
Test standard : FCC part 15.247(d)
Basic standard : ANSI C63.4: 2003
Limit : 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);
In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site : Shield room

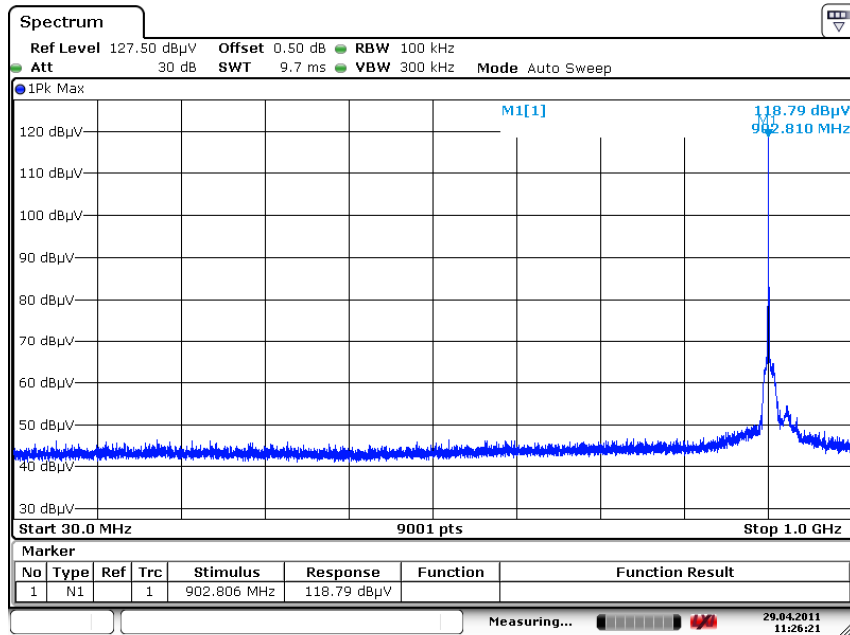
Test setup

Test Channel : Low/ Mid/High
Operation mode : A
Ambient temperature : 24°C
Relative humidity : 53%
Atmospheric pressure : 101 kPa

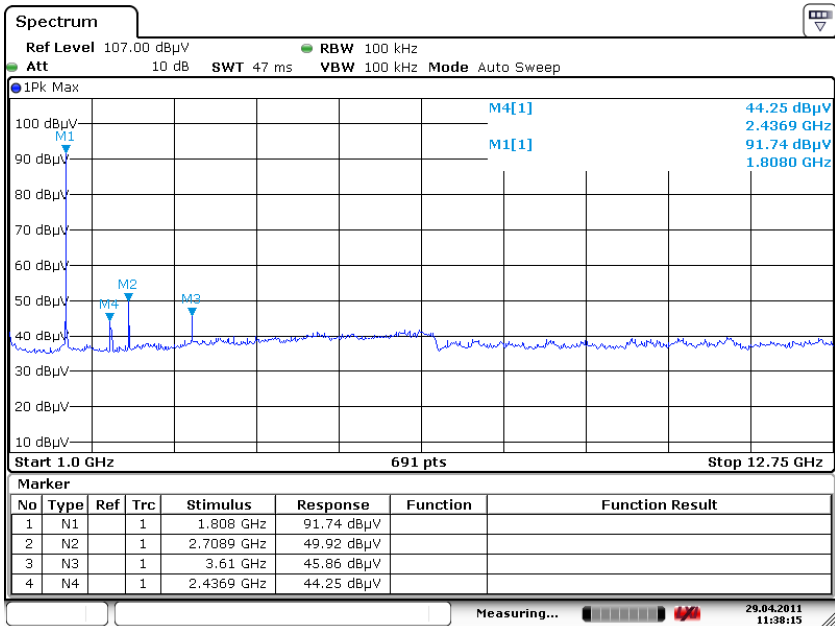
All emissions are more than 20dB below fundamental, details refer to following test Graph, and compliance is achieved as well.

Test Graph of Conducted Spurious Emissions measured in 100kHz Bandwidth

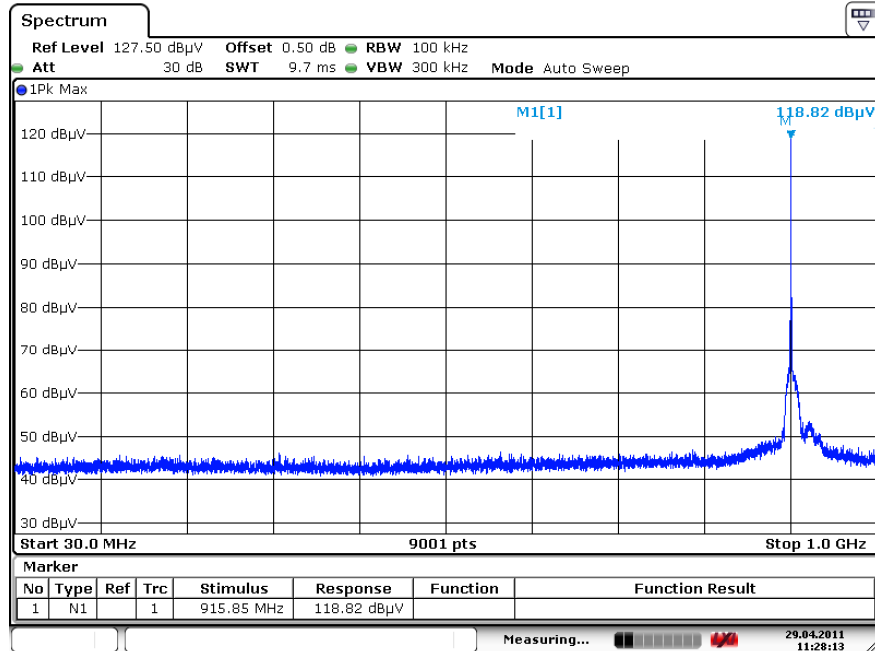
Low Channel



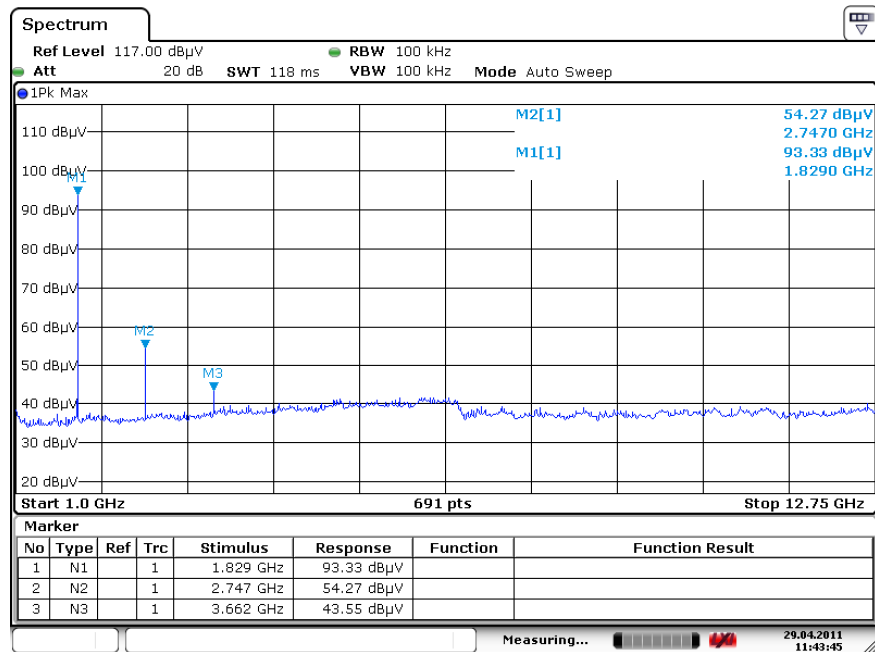
Date: 29.APR.2011 11:26:21



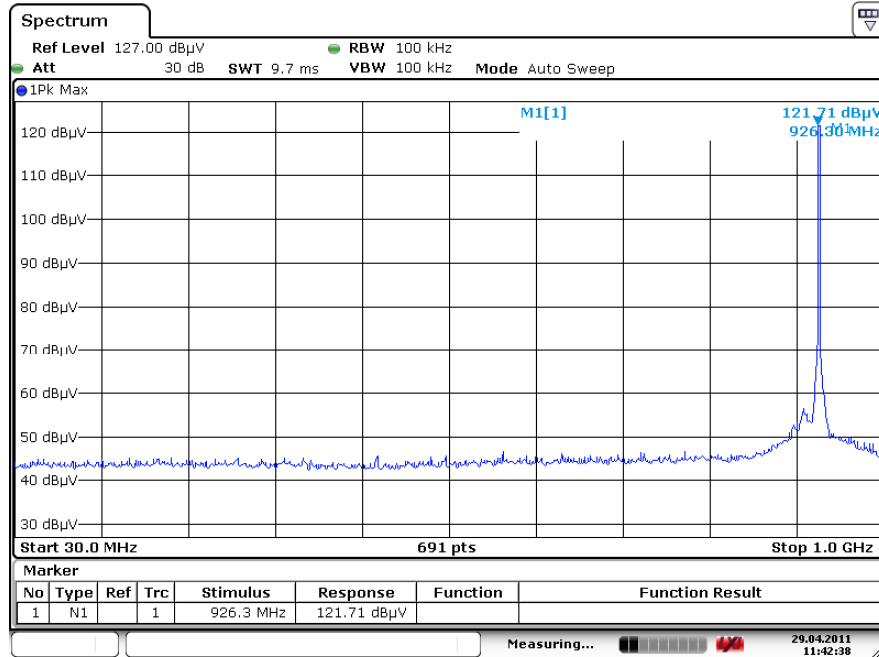
Date: 29.APR.2011 11:38:15

Middle Channel


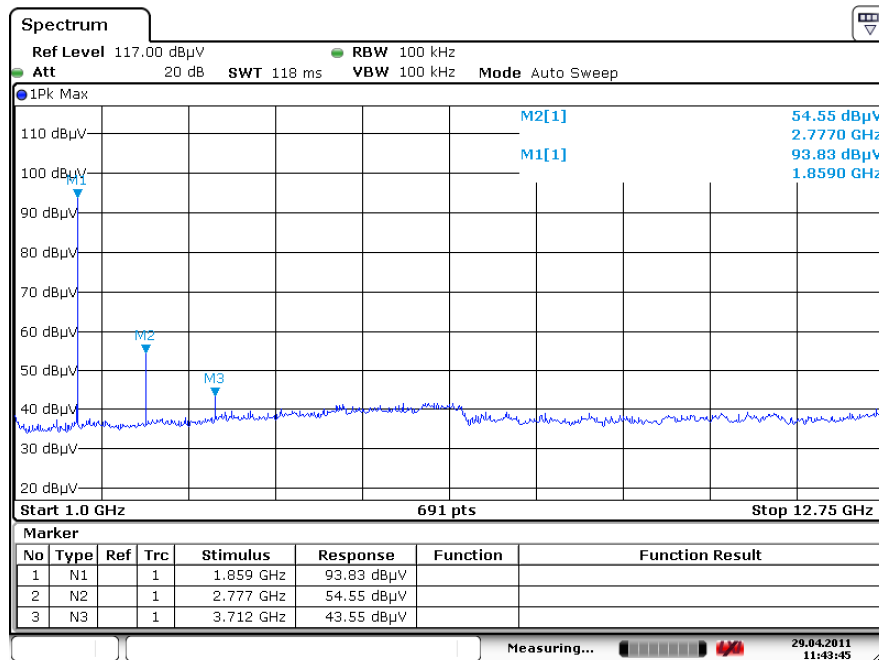
Date: 29.APR.2011 11:28:13



Date: 29.APR.2011 11:43:45

High Channel


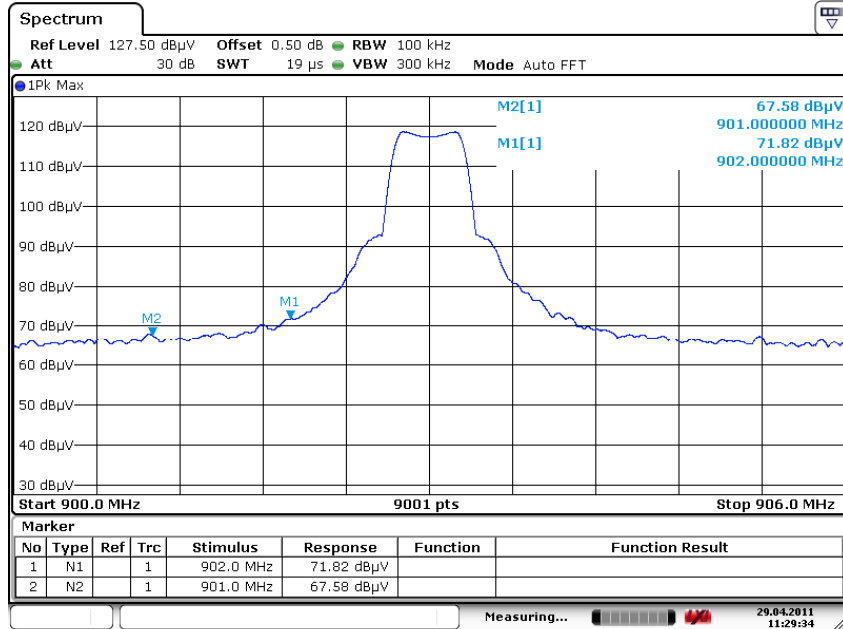
Date: 29.APR.2011 11:42:37



Date: 29.APR.2011 11:43:45

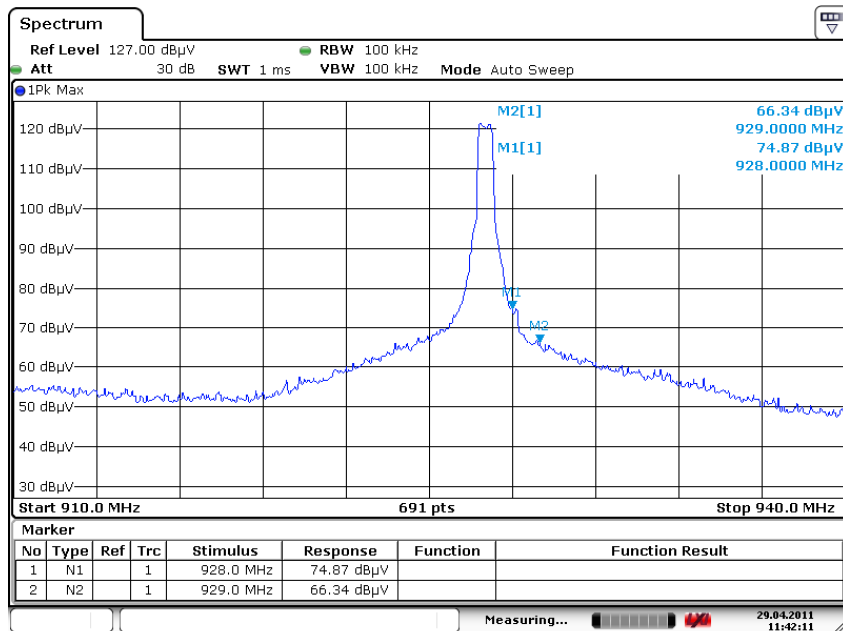
Test Graph of Band Edge measured in 100kHz Bandwidth

Low Channel



Date: 29.APR.2011 11:29:34

High Channel



Date: 29.APR.2011 11:42:11

4.1.5 Power Spectral Density

RESULT:
Passed

Date of testing : 2011-04-29
 Test standard : FCC part 15.247(e)
 Basic standard : ANSI C63.4: 2003
 Limits : 8.0 dBm (in any 3kHz band)
 Kind of test site : Shield room

Test Setup

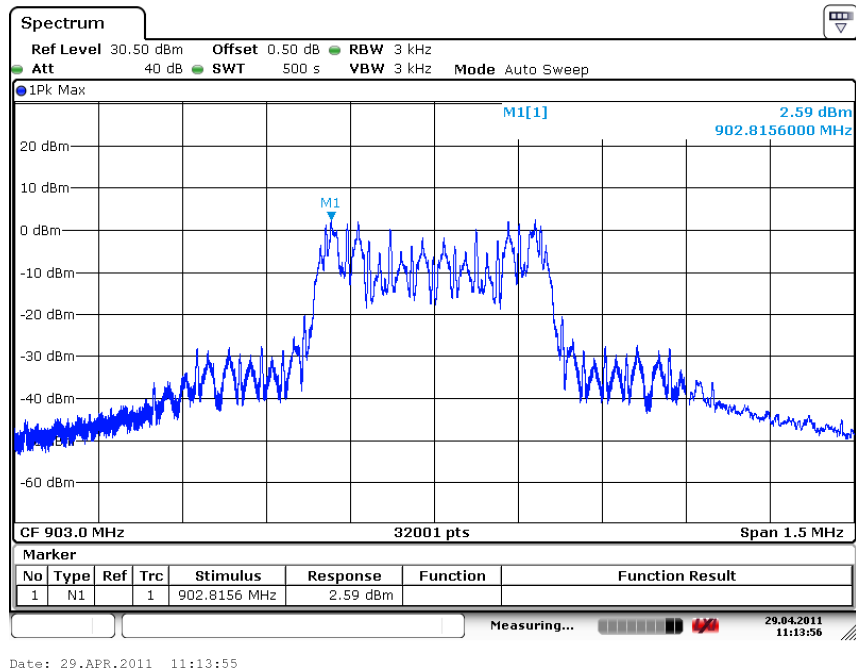
Test Channel : Low/ Middle/ High
 Operation mode : A
 Ambient temperature : 24°C
 Relative humidity : 53%
 Atmospheric pressure : 101 kPa

Table 8: Test result of power spectral density

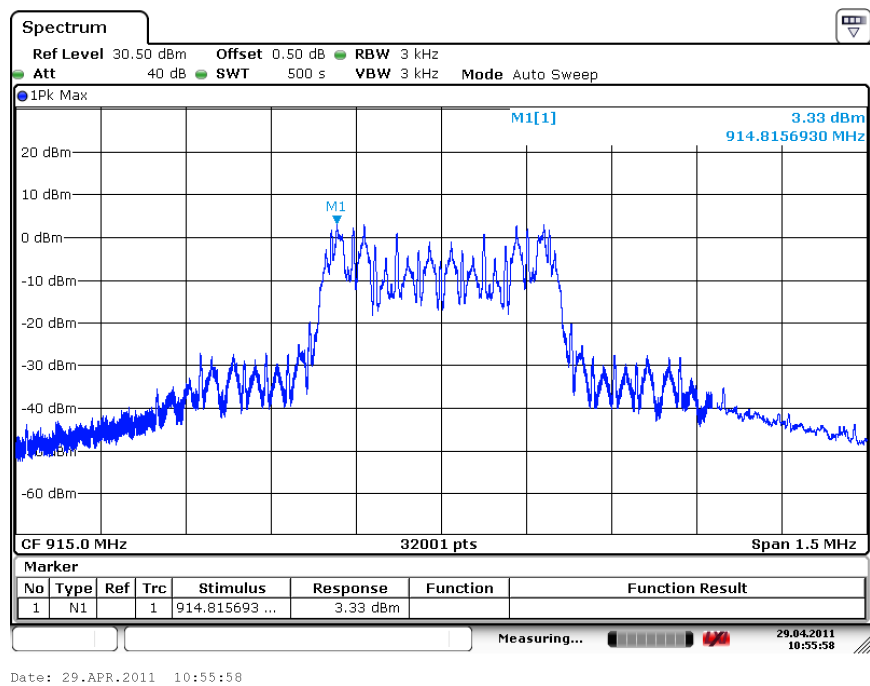
Maximum power spectral density			
Low Channel (dBm/3kHz)	Middle Channel (dBm/3kHz)	High Channel (dBm/3kHz)	Limit (dBm/3kHz)
2.59	3.33	5.86	8

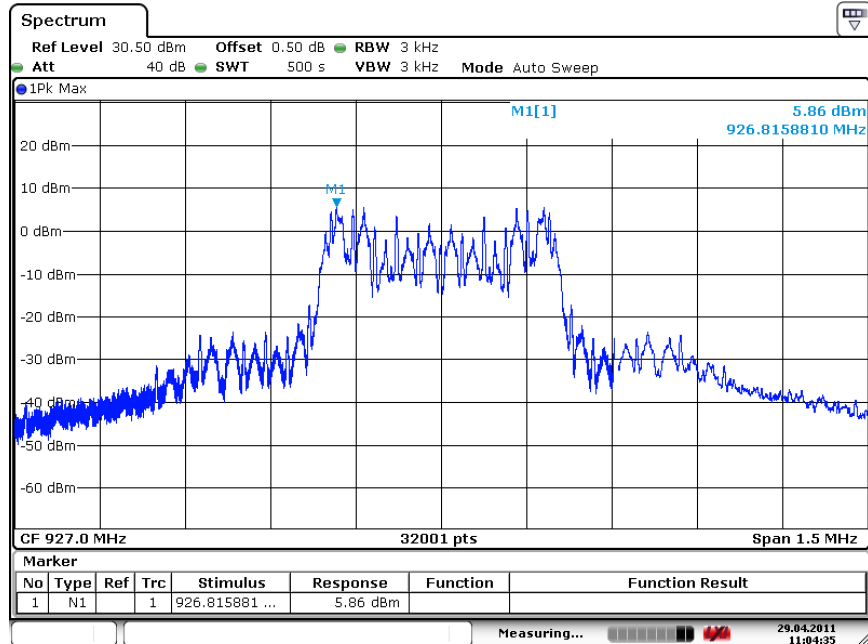
Test Graph of Power Spectral Density

Low Channel



Middle Channel



High Channel


Date: 29.APR.2011 11:04:35

4.1.6 Spurious Emission

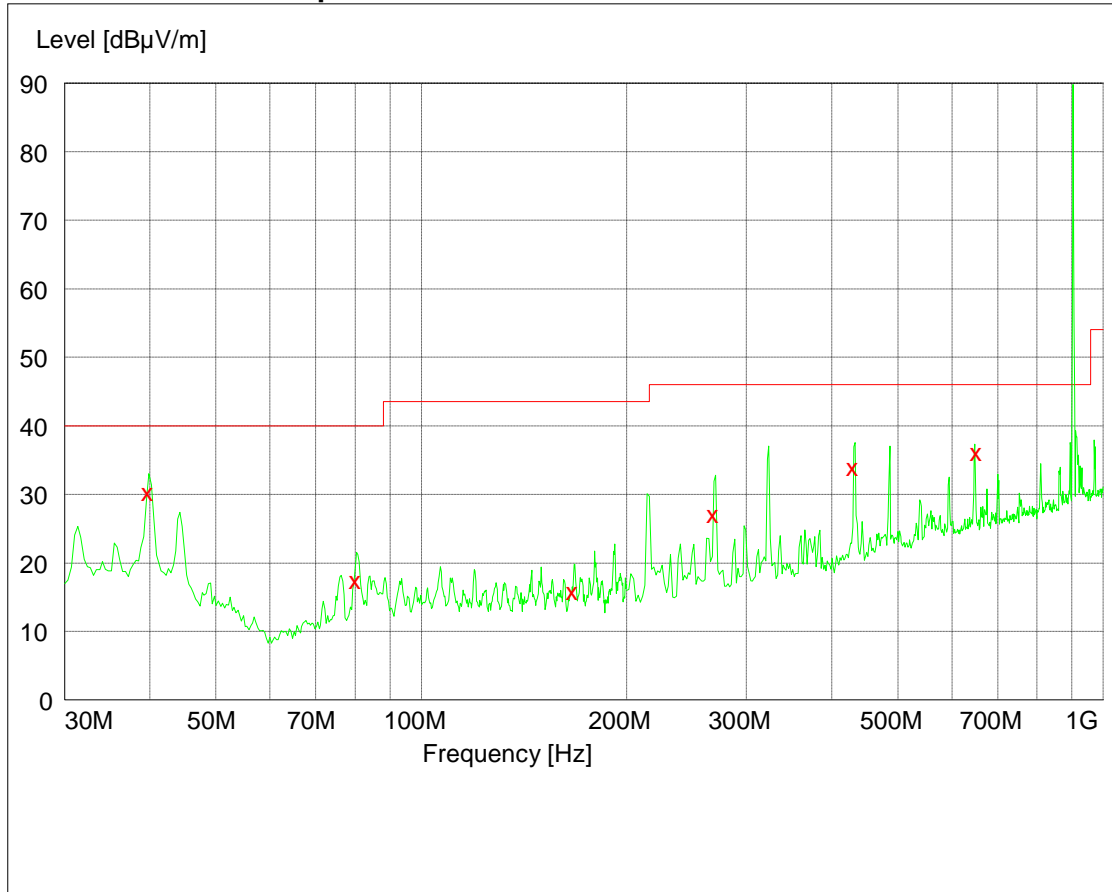
RESULT:**Passed**

Date of testing : 2011-07-28
Test standard : FCC part 15.247(d)
Basic standard : ANSI C63.4: 2003
Limits : Refer to 15.209(a)
Kind of test site : 3m Semi-Anechoic Chamber

Test setup

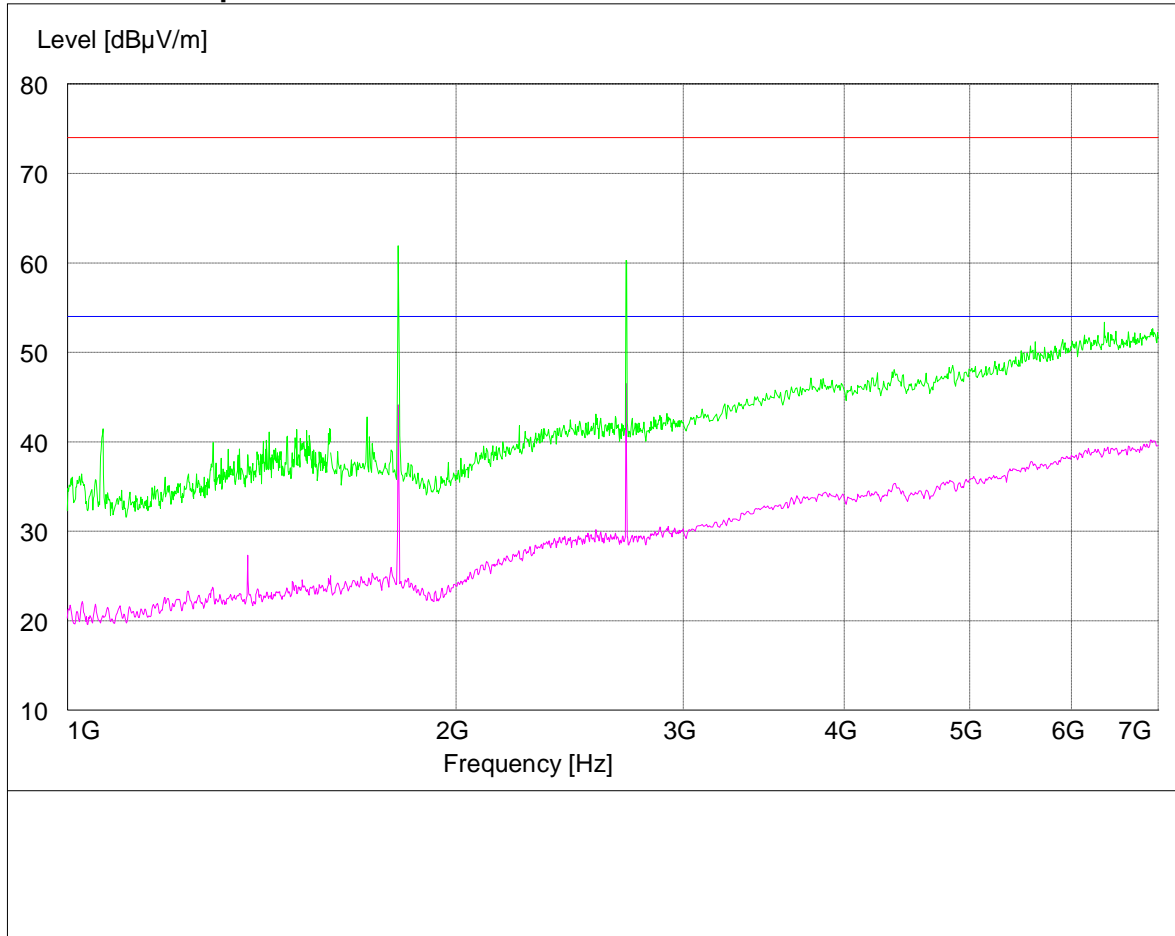
Test Channel : Low/ Middle/ High
Operation mode : A
Ambient temperature : 23°C
Relative humidity : 51%
Atmospheric pressure : 100 kPa

During the test, the wooden table was rotated 360° around and the antenna was varied from 1m to 4m to find the maximum disturbance. The test was performed with the antenna both in its horizontal and vertical polarizations. The following figures and tables were those measured by an automatic measurement system. The vertical results are marked with red, and the horizontal ones are marked with blue. Plots of the band edge are also shown.

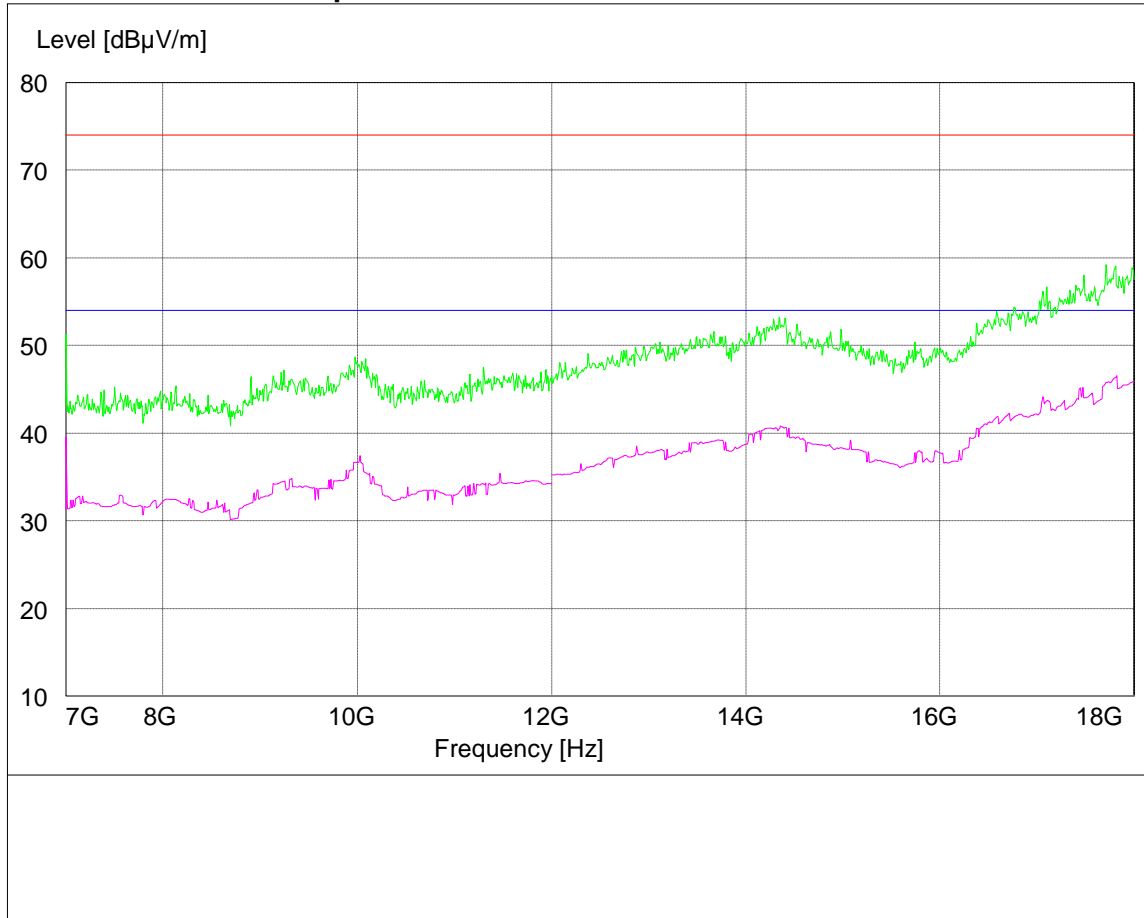
Figure 1: Spurious emission measurement results, low channel, 30-1000MHz, vertical and horizontal polarization


Final quasi-peak measurement result:

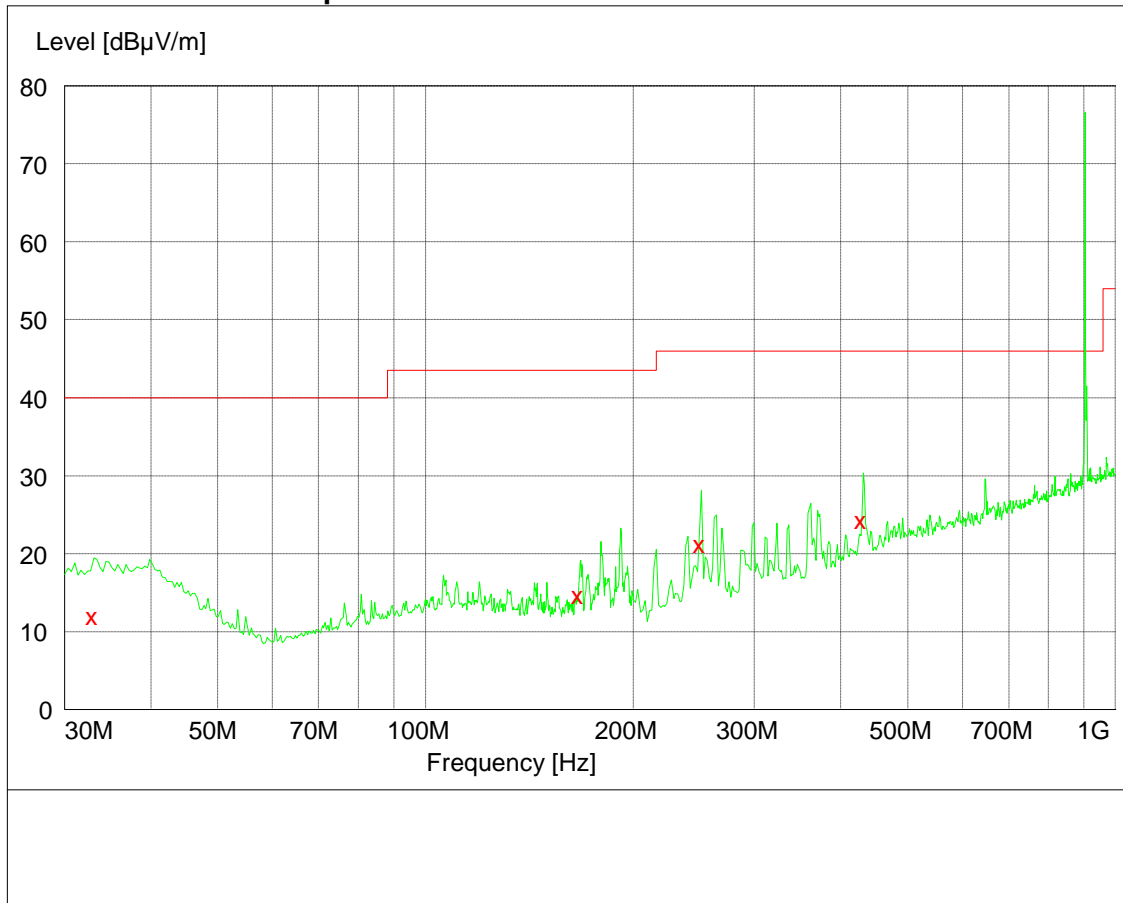
Frequency(MHz)	polarization (horizontal H/ vertical V)	Height(m) (cm)	Angle (°)	Limit (dBuV/m)	Level (dBuV/m)	Margin (QP) dB
40.120	H	200.0	250.5	40.0	30.50	9.5
80.680	H	200.0	232.0	40.0	17.60	22.4
167.980	V	200.0	318.2	43.5	16.10	27.4
270.400	H	100.0	132.7	46.0	27.40	18.6
432.700	V	100.0	152.1	46.0	34.20	11.8
647.294	H	100.0	165.0	46.0	35.74	10.26

Figure 2: Spurious emission measurement results, low channel, 1-7GHz, vertical and horizontal polarization

Final measurement result:

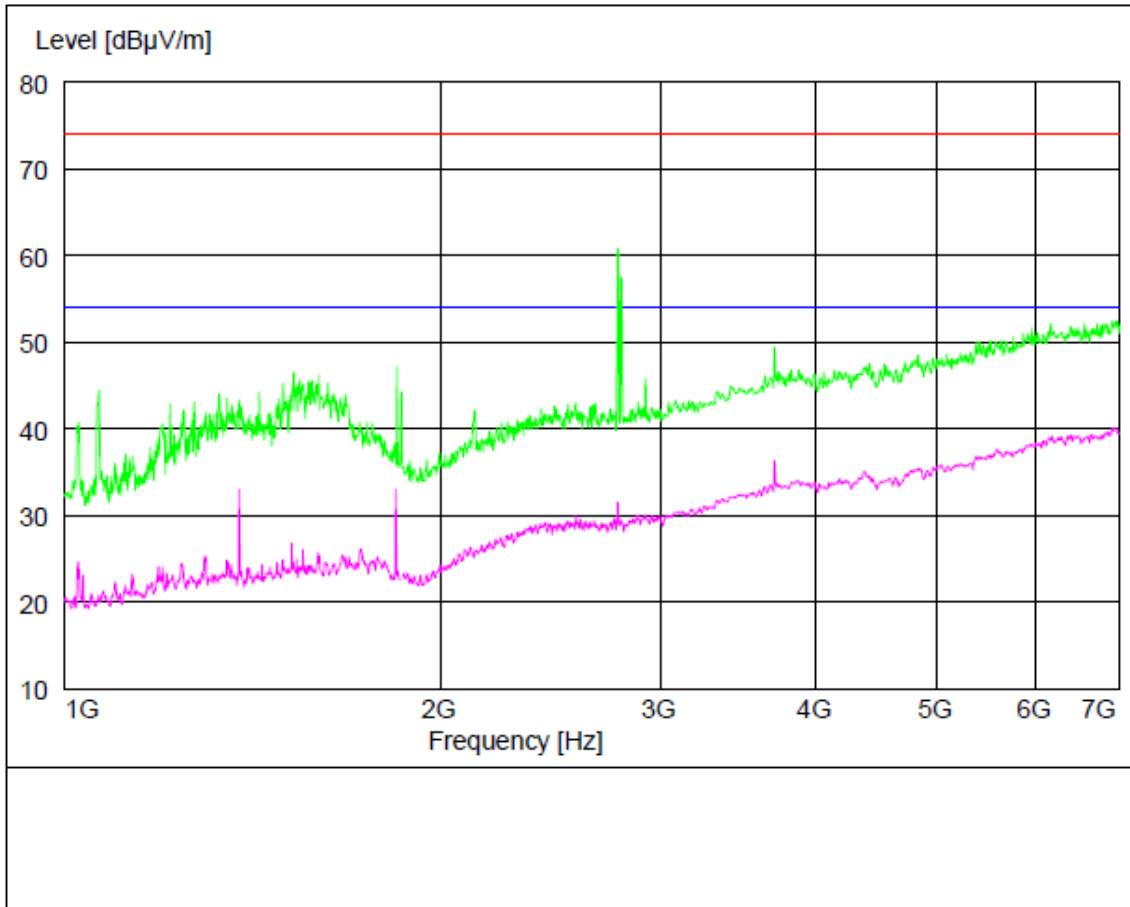
Frequency(MHz)	polarization (horizontal H/ vertical V)	Detector	Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
1804.809	H	Peak	74.0	61.90	12.1
1804.809	H	AV	54.0	44.18	9.82
2708.216	V	Peak	74.0	60.26	13.74
2708.216	V	AV	54.0	46.58	7.42
1066.132	H	Peak	74.0	41.43	32.57
1706.613	V	Peak	74.0	42.81	31.19
1520.641	V	AV	54.0	25.16	28.84

Figure 3: Spurious emission measurement results, low channel, 7-18GHz, vertical and horizontal polarization

Final measurement result:

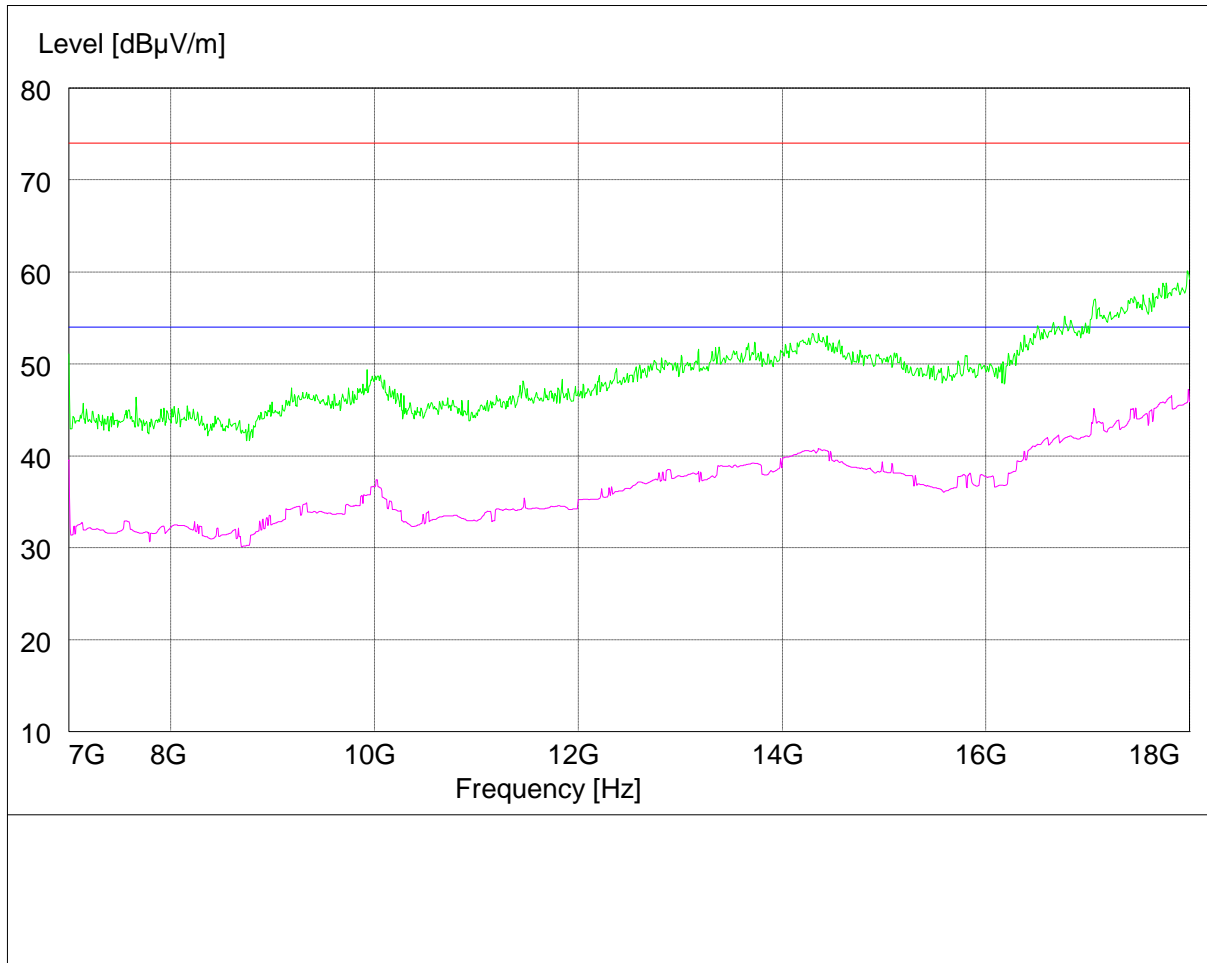
Frequency(MHz)	polarization (horizontal H/ vertical V)	Detector	Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
9214.428	V	Peak	74.0	46.91	27.09
9915.831	H	Peak	74.0	47.76	26.24
10026.052	V	AV	54.0	37.38	16.62

Figure 4: Spurious emission measurement results, mid channel, 30-1000MHz, vertical and horizontal polarization

Final measurement result:

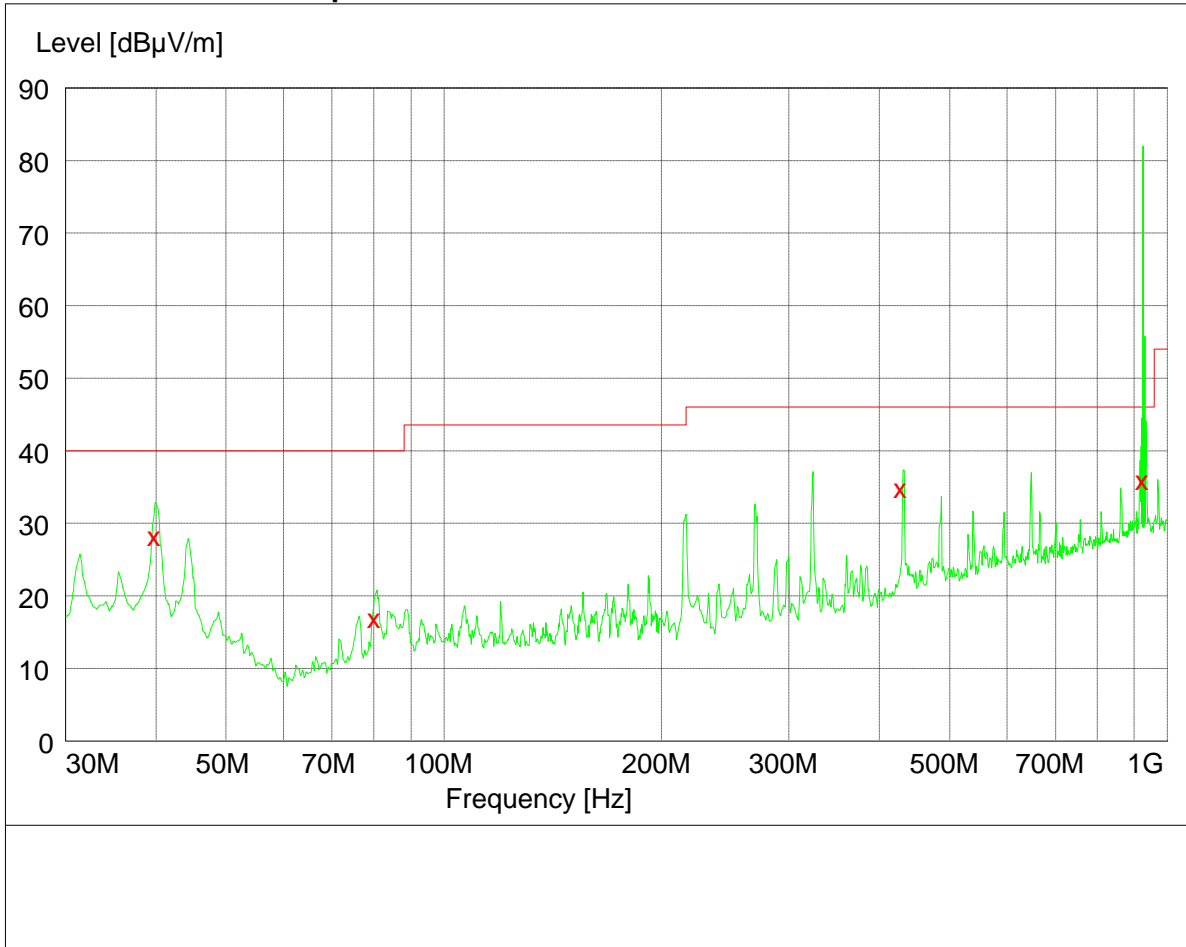
Frequency(MHz)	polarization (horizontal H/ vertical V)	Height(m) (cm)	Angle (°)	Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
33.160000	V	200.0	3.9	40.0	12.10	27.9
167.620000	V	200.0	186.8	43.5	14.80	28.7
251.440000	H	100.0	271.2	46.0	21.30	24.7
431.020000	H	100.0	94.7	46.0	24.50	21.5

Figure 5: Spurious emission measurement results, mid channel, 1-7GHz, vertical and horizontal polarization

Final measurement result:

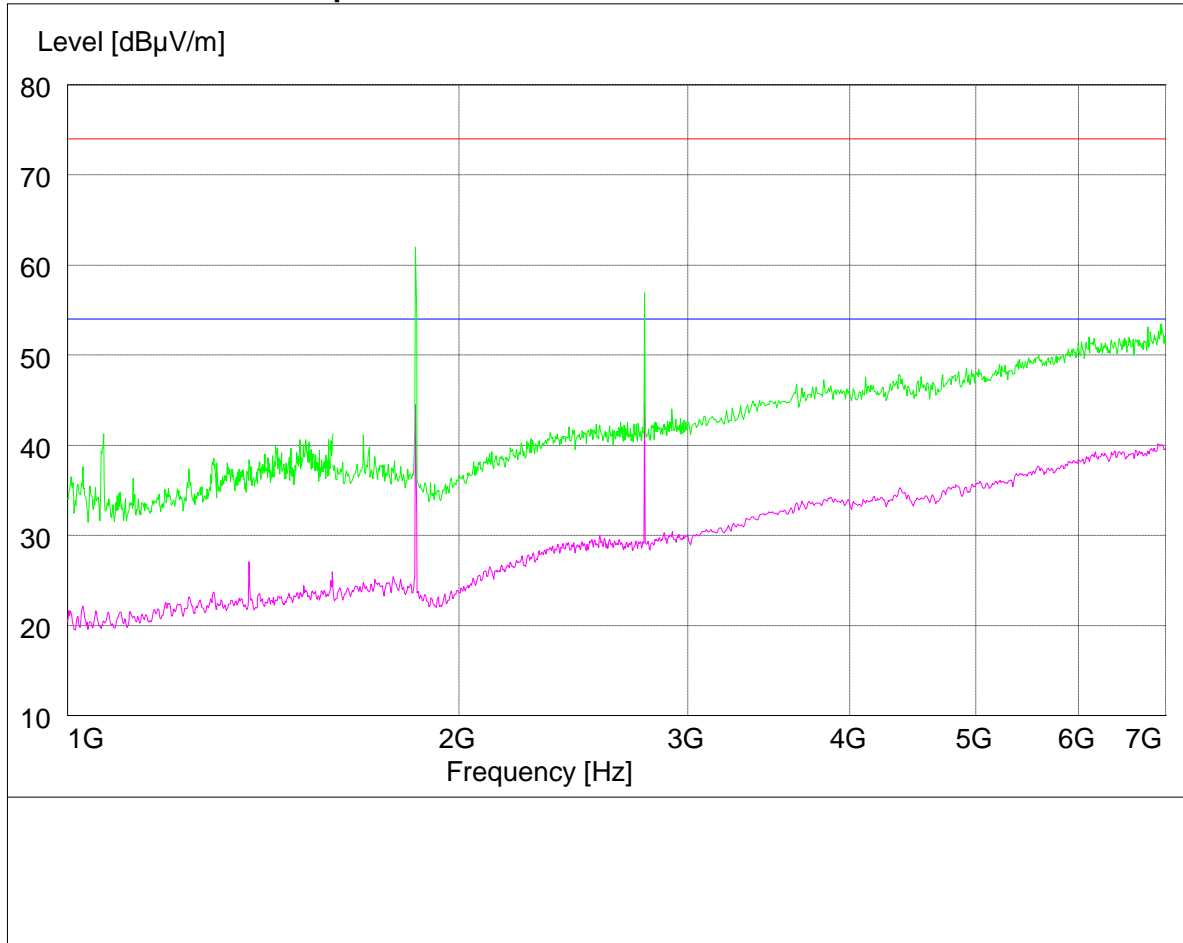
Frequency(MHz)	polarization (horizontal H/ vertical V)	Detector	Limit (dBuV/m)	Level (dBuV/m)	Margin (QP) dB
1830.505	H	Peak	74.0	47.14	26.86
1830.505	H	AV	54.0	33.13	20.87
2745.162	V	Peak	74.0	60.24	13.76
2745.162	V	AV	54.0	31.09	22.91
3705.410	V	Peak	74.0	49.41	24.59
3705.410	V	AV	54.0	36.37	17.63
1270.541	H	Peak	74.0	43.08	30.92

Figure 6: Spurious emission measurement results, mid channel, 7-18GHz, vertical and horizontal polarization

Final measurement result:

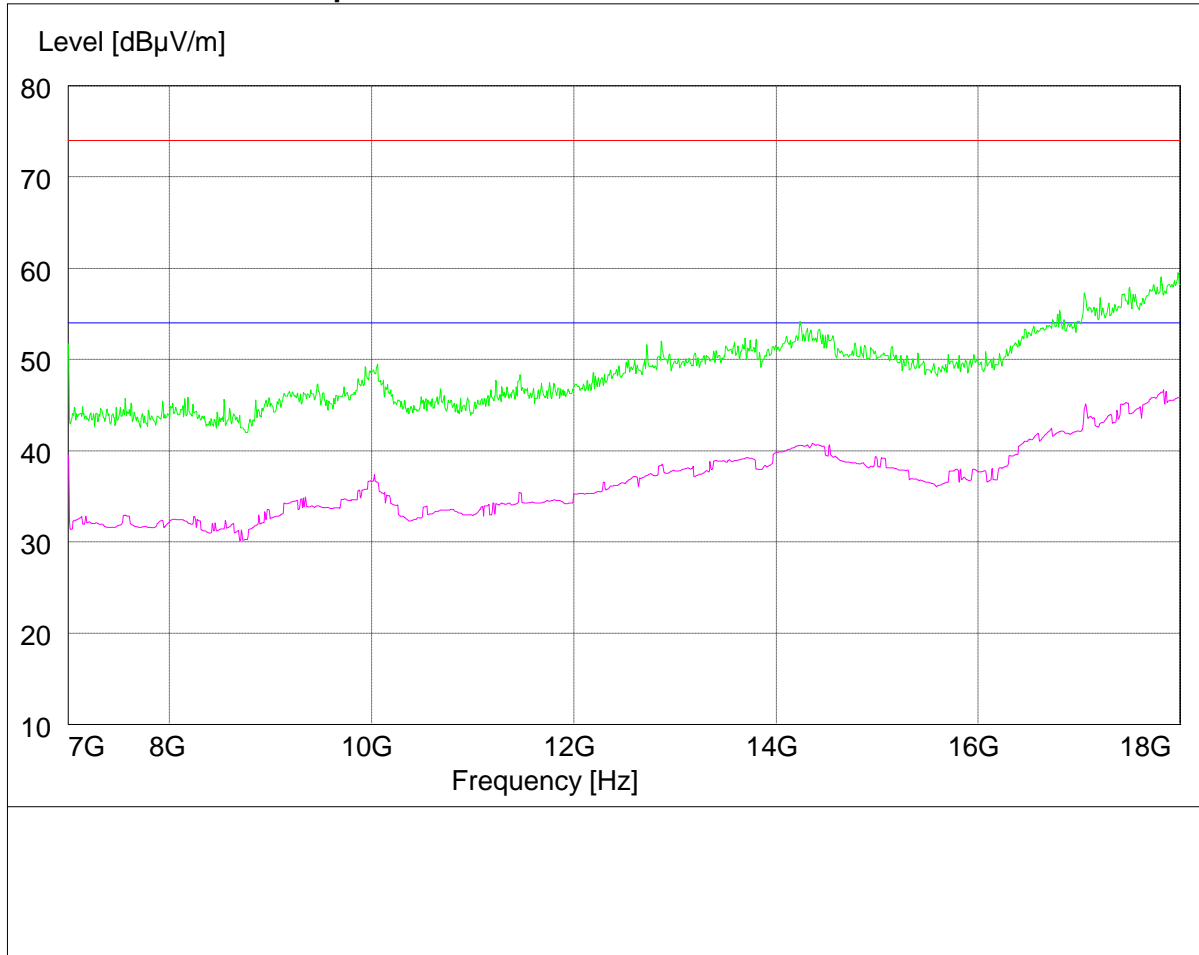
Frequency(MHz)	polarization (horizontal H/ vertical V)	Detector	Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
7621.242	V	Peak	74.0	45.18	28.82
7921.843	V	AV	54.0	32.35	21.65

Figure 7: Spurious emission measurement results, high channel, 30-1000MHz, vertical and horizontal polarization

Final measurement result:

Frequency(MHz)	polarization (horizontal H/ vertical V)	Height(m) (cm)	Angle (°)	Limit (dBµV/m)	Level (dBµV/m)	Margin (dB)
40.120	H	100.0	93.9	40.0	28.50	11.5
80.680	H	100.0	188.2	40.0	17.20	22.8
431.020	V	100.0	4.7	46.0	35.10	10.9
930.620	V	100.0	182.1	46.0	36.20	9.8

Figure 8: Spurious emission measurement results, high channel, 1-7GHz, vertical and horizontal polarization

Final measurement result:

Frequency(MHz)	polarization (horizontal H/ vertical V)	Detector	Limit (dBuV/m)	Level (dBuV/m)	Margin (dB)
1852.505	V	Peak	74.0	61.97	12.03
1852.505	V	AV	54.0	44.50	9.50
2781.162	V	Peak	74.0	56.93	17.07
2781.162	V	AV	54.0	44.79	9.21

Figure 9: Spurious emission measurement results, high channel, 7-18GHz, vertical and horizontal polarization

Final measurement result:

Frequency(MHz)	polarization (horizontal H/ vertical V)	Detector	Limit (dBµV/m)	Level (dBµV/m)	Margin (dB)
7661.322	H	Peak	74.0	46.36	27.64
7891.783	H	AV	54.0	32.11	21.89

Prüfbericht - Nr.: 16800383 001
Test Report No.

Seite 36 von 43
Page 36 of 43

Band Edge measurement results

No significant harmonic emissions detected at the lower (614MHz) and upper (960MHz) restricted band.

4.2 Emission in the Frequency Range up to 30 MHz

4.2.1 Conducted emissions

RESULT:**Passed**

Date of testing	:	2011-07-29
Test standard	:	FCC Part 15.207
Basic standard	:	ANSI C63.4: 2003
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207
Kind of test site	:	Shield room

Test setup

Input Voltage	:	AC 120V 60Hz(through the repeater)
Operation Mode	:	A
Earthing	:	Not Connected
Ambient temperature	:	23°C
Relative humidity	:	51%
Atmospheric pressure	:	100 kPa

The measurement setup was made in a shielded room.

The measurement equipment like test receivers, quasi-peak detector, average detector and LISN are in compliance with CISPR 16-1 series standards and ANSI C63.4-2003. The tested object was operated under its rated voltage and its rated frequency. Prior to the measurements the test object operated about 5 minutes (warm-up) in order to stabilize its operating conditions and to ensure reliable measurement values.

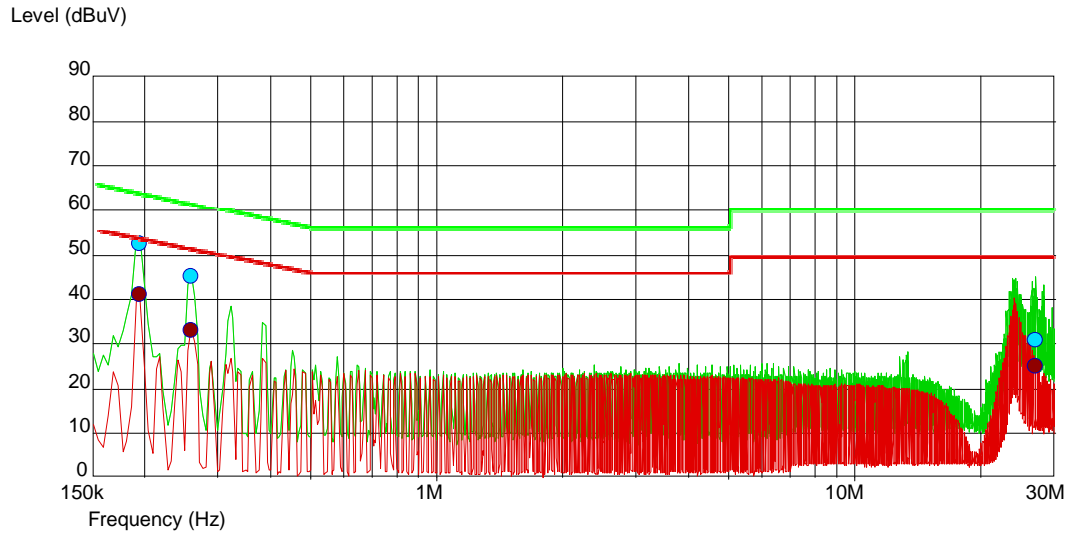
Furthermore an internal calibration with the test receiver was conducted prior to each measurement.

The EUT was set 0.8m away from the LISN. The cord longer than necessary to be connected to the LISN was folded forth and back parallel so as to form a bundle with a length between 0.3m and 0.4m.

As the Sub-1G module's power is fed to the repeater, which is connected to the AC mains in daily use, this test is performed with the repeater.

The interference voltage was determined while measuring the line conductor by turns.

The following figures and tables were those measured by an automatic measuring system. A preview test was first made with peak detector. Final test with quasi-peak detector and average detector was only performed at these critical frequencies found via preview test.

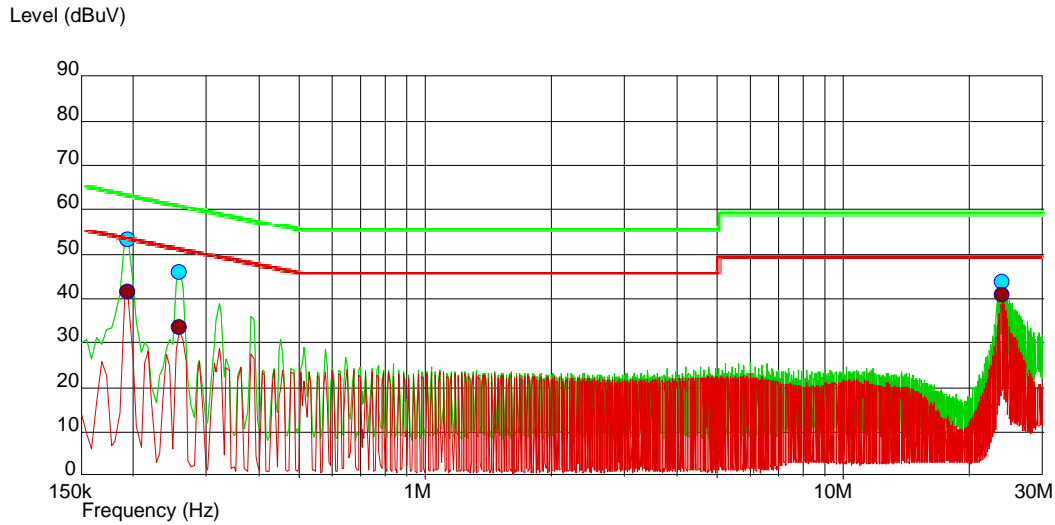
Figure 10: Conducted emission measurement results, Line L


Final quasi-peak measurement results:

Frequency(Hz)	Level(dBuV)	Limit(dBuV)	Margin(dB)	Detector	RBW(Hz)
195.0 k	52.64	63.81	11.17	QP	9.0 k
258.0 k	45.35	61.48	16.13	QP	9.0 k
27.0015 M	30.94	60.00	29.06	QP	9.0 k

Final average measurement results:

Frequency(Hz)	Level(dBuV)	Limit(dBuV)	Margin(dB)	Detector	RBW(Hz)
195.0 k	41.04	53.81	12.77	AVERAGE	9.0 k
258.0 k	33.06	51.48	18.42	AVERAGE	9.0 k
27.0015 M	25.08	50.00	24.92	AVERAGE	9.0 k

Figure 11: Conducted emission measurement results, Line N

Final quasi-peak measurement results:

Frequency(Hz)	Level(dBuV)	Limit(dBuV)	Margin(dB)	Detector	RBW(Hz)
195.0 k	53.08	63.81	10.73	QP	9.0 k
258.0 k	45.85	61.48	15.63	QP	9.0 k
24.0 M	43.90	60.00	16.1	QP	9.0 k

Final average measurement results:

Frequency(Hz)	Level(dBuV)	Limit(dBuV)	Margin(dB)	Detector	RBW(Hz)
195.0 k	41.61	53.81	12.2	AVERAGE	9.0 k
258.0 k	33.54	51.48	17.94	AVERAGE	9.0 k
24.0 M	40.68	50.00	9.32	AVERAGE	9.0 k

4.3 Radio Frequency Exposure Compliance

4.3.1 Electromagnetic Fields

RESULT:**Passed**

Date of testing : 2011-07-29
Test standard : FCC KDB publication 447498

Test setup

Since maximum peak output power of the transmitter is $<60/f$ (GHz) mW, i.e. $33.11\text{mW} < 64.72 (=60/0.927)$ mW, hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01: Mobile Portable RF Exposure.

5. Photographs of the Test Set-Up

Photograph 1: Set-up for Spurious Emissions 30MHz – 1GHz



Photograph 2: Set-up for Spurious Emissions 1GHz – 12.75GHz



Photograph 3: Set-up for Conducted Emissions



6. List of Tables

Table 1: List of Test and Measurement Equipment	4
Table 2: Measurement Uncertainty	5
Table 3: Rating of EUT	6
Table 4: Technical Specification.....	6
Table 5: Test Auxiliary Equipments.....	8
Table 6: Test result of Peak Output Power	12
Table 7: Test result of 6dB Bandwidth	15
Table 8: Test result of power spectral density.....	23

7. List of Figures

Figure 1: Spurious emission measurement results, low channel, 30-1000MHz, vertical and horizontal polarization	27
Figure 2: Spurious emission measurement results, low channel, 1-7GHz, vertical and horizontal polarization	28
Figure 3: Spurious emission measurement results, low channel, 7-18GHz, vertical and horizontal polarization	29
Figure 4: Spurious emission measurement results, mid channel, 30-1000MHz, vertical and horizontal polarization	30
Figure 5: Spurious emission measurement results, mid channel, 1-7GHz, vertical and horizontal polarization	31
Figure 6: Spurious emission measurement results, mid channel, 7-18GHz, vertical and horizontal polarization	32
Figure 7: Spurious emission measurement results, high channel, 30-1000MHz, vertical and horizontal polarization	33
Figure 8: Spurious emission measurement results, high channel, 1-7GHz, vertical and horizontal polarization	34
Figure 9: Spurious emission measurement results, high channel, 7-18GHz, vertical and horizontal polarization	35
Figure 10: Conducted emission measurement results, Line L	38
Figure 11: Conducted emission measurement results, Line N	39

8. List of Photographs

Photograph 1: Set-up for Spurious Emissions 30MHz – 1GHz.....	41
Photograph 2: Set-up for Spurious Emissions 1GHz – 12.75GHz.....	41
Photograph 3: Set-up for Conducted Emissions	42