

386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-339-9855 www.e-ctk.com

# **TEST REPORT For FCC**

Test Report No. : 2	2010110046
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Date of Issue : November 23, 2010

FCC ID : YZ2SMRF900-2

Model/Type No. : SMRF900-II

Kind of Product : CARU-M

Applicant : JAVA INFORMATION TECHNOLOGY Co.,Ltd.

Applicant Address : #6 Susung B/D 558-14, Samdo1-Dong, Jeju-Si, Jeju-Do, Korea

Manufacturer : JAVA INFORMATION TECHNOLOGY Co.,Ltd.

Manufacturer Address : #6 Susung B/D 558-14, Samdo1-Dong, Jeju-Si, Jeju-Do, Korea

Contact Person : Ki-Du, Joo / Development Manager

Telephone : +82-70-4015-6646

Received Date : November 05, 2010

Test period : Start : November 18, 2010 End : November 23, 2010

The test results presented in this report relate only to the object tested.

Tested by

Y. T. Lee

Young-taek, Lee Test Engineer

Date: November 23, 2010

Reviewed by

Young-Joon, Park Technical Manager

Date: November 23, 2010

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# REPORT REVISION HISTORY

Date	Revision	Page No
November 23, 2010	Issued (2010110046)	All

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# 1.0 General Product Description

Equipment model name : SMRF900-II

Serial number : Prototype

EUT condition : Pre-production, not damaged

Antenna type : Dipole antenna Gain 4 dBi

Frequency Range : 2412 Mhz – 2462 MHz (DSSS/OFDM)

RF output power : 10.50 dBm Peak Conducted (802.11b) : 10.40 dBm Peak Conducted (802.11g)

Number of channels : 11 (DSSS/OFDM)

Type of Modulation : CCK, DQPSK, DBPSK for DSSS

: 64QAM, 16QAM, QPSK, BPSK for OFDM

Transfer Rate : 11/5.5/2/1 Mbps for 802.11b

: 54/48/36/24/18/12/9/6 Mbps for 802.11g

Power Source : DC 7.5 V

# 1.1 Tested Frequency

	LOW	MID	HIGH
Frequency (MHz) For 802.11b	2412	2437	2462
Frequency (MHz) For 802.11g	2412	2437	2462

#### 1.2 Model Differences

Not applicable

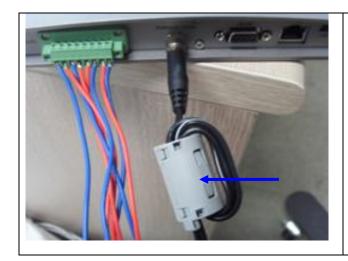
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#### 1.3 Device Modifications

The following modifications was applied by the applicant:



Fe	rrite	Core

Location	Manufacturer	Part no.	Tuns	
DC IN	TDK	ZCAT2132	2	
DC IN	TUK	-1130		

## 1.4 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.	FCC ID or DoC
NOTEBOOK COMPUTER	SAMSUNG Electronics Co., Ltd.	NT-R60Y	Z9GJ93GS302109B	DoC
AC/DC ADAPTOR	LI SHIN INTERNATIONAL ENTERPRISE CORP.	AD-6019	CNBA4400238AD2VH93E1986	-
WLAN DIPOLE ANTENNA	WINiZEN Co., Ltd.	W5E-WO-03	-	-
PATCH ANTENNA 1	NetHom Co., Ltd.	NT-919-CPO	-	-
PATCH ANTENNA 2	NetHom Co., Ltd.	NT-919-CPO	-	-

## 1.5 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

# 1.6 Test Facility

The measurement facility is located at 386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

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# **Laboratory Accreditations and Listings**

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	FC 805871
JAPAN	VCCI	10 meter Open Area Test Site and one conducted site.	<b>P.948, C-986, T-1843</b>
KOREA	ксс	EMI (10 meter Open Area Test Site and two conducted sites) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	No. 51, KR0025
International	KOLAS	EMC	KOLAS PARTING NO. 119 BIND

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# 2.0 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
15.247(a)	6 dB Bandwidth	> 500 kHz		С
15.247(b)	Maximum Output Power	< 1 Watt		С
15.247(d)	Conducted Spurious emission	> 20 dBc	Conducted	С
15.247(d)	Band Edge	> 20 dBc		
15.247(e)	Transmitter Power Spectral	< 8 dBm @ 3 kHz		С
	Density			С
15.209	Field Strength of Harmonics	< 54 dBuV (at 3 m)	Radiated	С
15.207	AC Conducted Emissions	EN 55022	Line Conducted	С

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:

- FCC Part 15.247, ANSI C63.4-2003

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#### 2.1 Technical Characteristic Test

#### 2.1.1 6dB Bandwidth

#### Procedure:

The bandwidth at 6dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is ( as close as possible to ) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

#### The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz Span = 40 MHz

 $VBW = 100 \text{ kHz} (VBW \ge RBW)$  Sweep = auto

Trace = max hold Detector function = peak

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#### **Measurement Data:**

Test mode: 802.11b, DSSS, 11Mbps

Frequency		Channel	Test Results		
Mode	e (MHz) No.		Measured Bandwidth (MHz)	Result	
	2412	1	10.79	Complies	
802.11b	2437	6	11.14	Complies	
	2462	11	11.23	Complies	

Test mode: 802.11g, OFDM, 24Mbps

Frequ	Frequency Channel	Test Results		
Mode	Mode (MHz) No		Measured Bandwidth (MHz)	Result
	2412	1	16.46	Complies
802.11g	2437	6	16.46	Complies
	2462	11	16.45	Complies

#### Minimum Standard:

6 dB Bandwidth > 500kHz

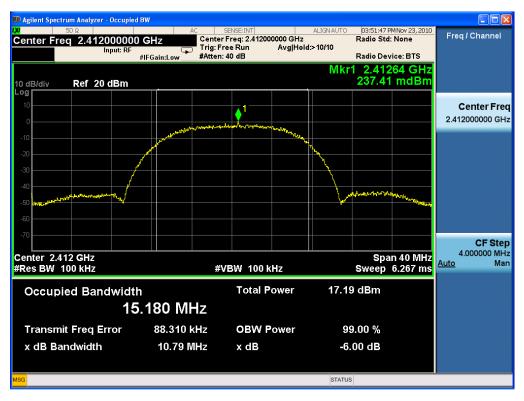
See next pages for actual measured spectrum plots.

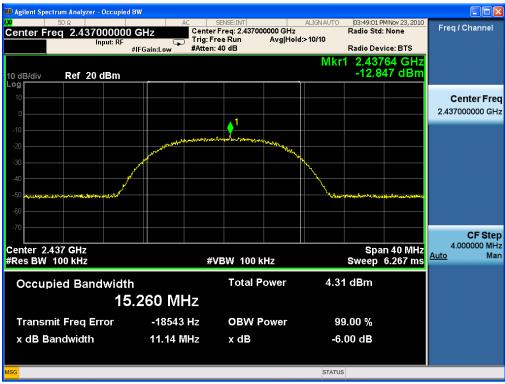
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#### 802.11b



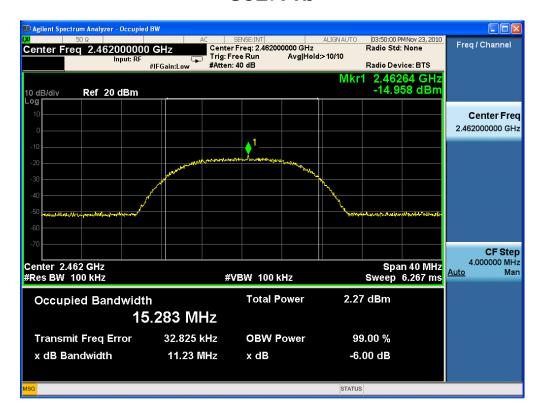


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## 802.11b

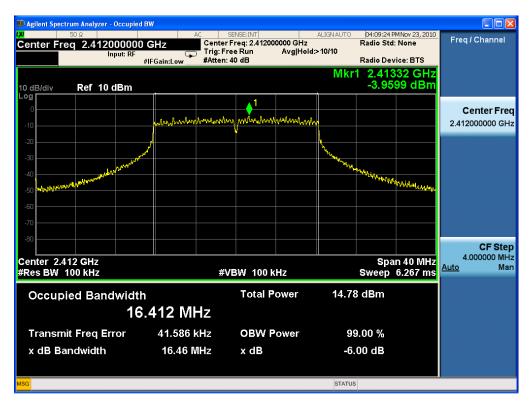


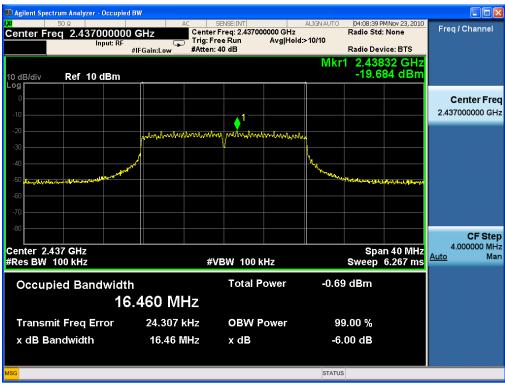
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## 802.11g



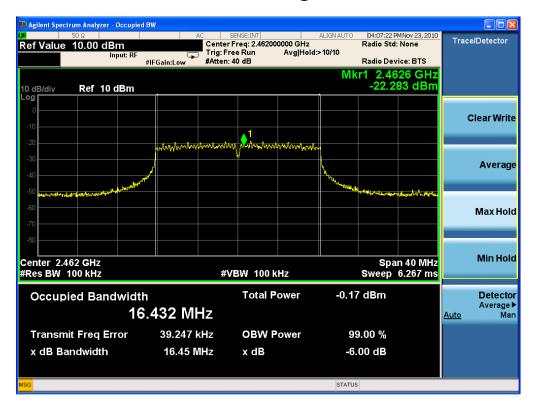


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# 802.11g



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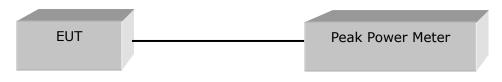
### 2.1.2 Maximum peak Conducted Output Power

#### **Test Location**

RF Test Room

#### **Test Procedures**

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.



Limit

< 1 W

#### **Test Results**

Test mode: 802.11b, DSSS, 11Mbps

Frequency (MHz)	Channel No.	Peak output power(dBm)	Limit	Result
2412	Low	10.50	30dBm	Complies
2437	Middle	-2.26	30dBm	Complies
2462	High	-2.64	30dBm	Complies

#### Remark.

The 802.11b data rate were set in 11Mbps, due to the highest RF output power.

Test mode: 802.11g, OFDM, 24Mbps

Frequency (MHz)	Channel No. Peak output power(dBm)		Limit	Result						
2412	Low	10.40	30dBm	Complies						
2437	Middle	-1.83	30dBm	Complies						
2462	High	-4.20	30dBm	Complies						

#### Remark.

The 802.11g data rate were set in 24Mbps, due to the highest RF output power.

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## 2.1.3 Power Spectral Density

#### Procedure:

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

The spectrum analyzer is set to:

RBW = 3 kHz  $VBW = (VBW \ge RBW)$ 

Sweep = 100 s (Span/3 kHz) Span = 300 kHzDetector function = peak Trace = max hold

Test mode: 802.11b, DSSS, 11 Mbps

103t 110d0 : 002:11b/ b000/ 11 11b/5								
ode	Frequency	Ch.	Test Results					
	(MHz)	CII.	dBm	Result				
802.11b	2412	1	-12.797	Complies				
	2437	6	-30.238	Complies				
	2462	11	-29.379	Complies				

Test mode: 802.11g, OFDM, 24 Mbps

Mode	Frequency	Ch	Test Results		
	(MHz)	Ch.	dBm	Result	
802.11g	2412	1	-19.404	Complies	
	2437	6	-29.905	Complies	
	2462	11	-34.669	Complies	

#### Minimum Standard:

Power Spectral Density	< 8dBm @ 3 kHz BW
------------------------	-------------------

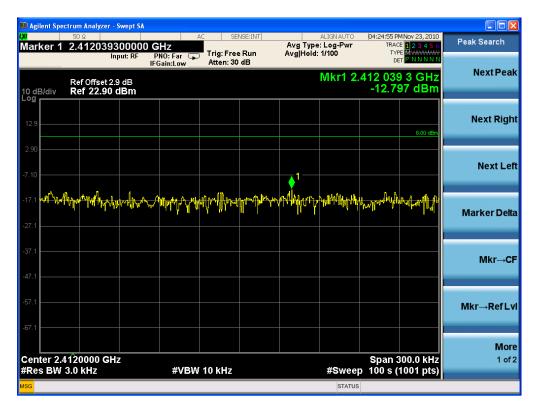
See next pages for actual measured spectrum plots.

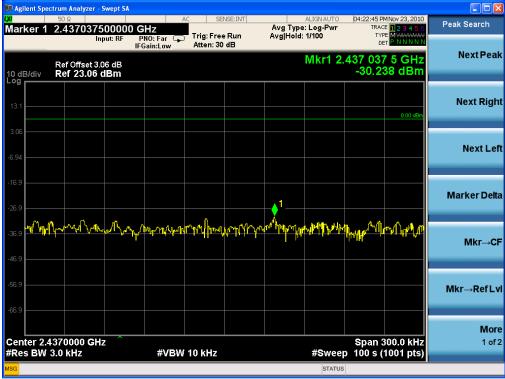
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# 802.11b Power Density Measurement



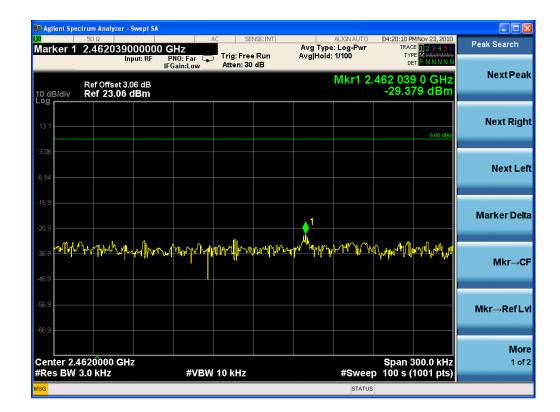


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# 802.11g Power Density Measurement





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### 2.1.4 Band - edge

#### **Procedure:**

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz VBW = 100 kHz

Span = 50 MHz Detector function = peak

Trace =  $\max$  hold Sweep = auto

#### Measurement Data: Complies

- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.

Minimum Standard:	> 20 dBc

See next pages for actual measured spectrum plots.

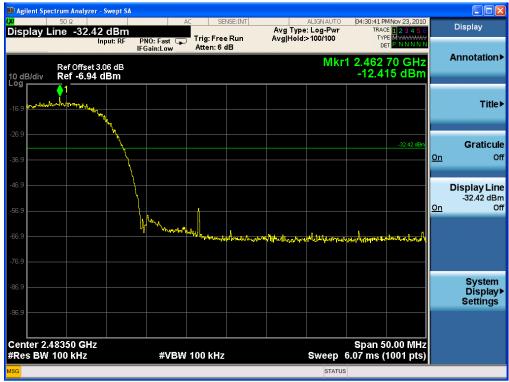
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## 802.11b Band-edge Measurements





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### Band – edge (at 20 dB blow) – Low channel (802.11b) Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic



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#### Band – edge (at 20 dB blow) – Mid channel (802.11b) Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic



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Band – edge (at 20 dB blow) – High channel (802.11b) Frequency Range = 30 MHz  $\sim 10^{th}$  harmonic



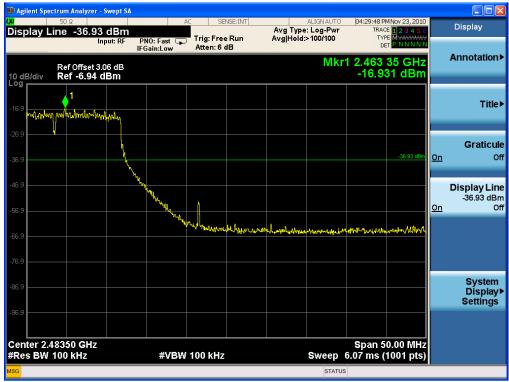
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### 802.11g Band-edge Measurements





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Band – edge (at 20 dB blow) – Low channel (802.11g) Frequency Range = 30 MHz  $\sim 10^{th}$  harmonic

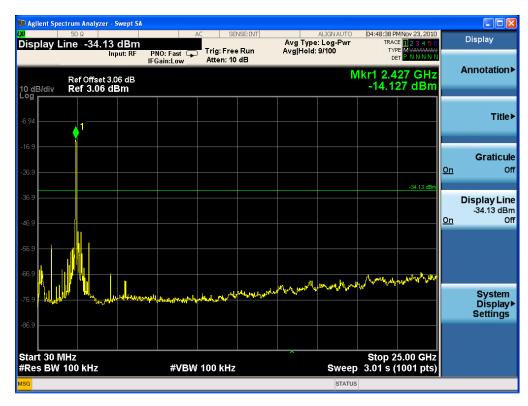


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## Band – edge (at 20 dB blow) – Mid channel (802.11g) Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic



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#### Band – edge (at 20 dB blow) – High channel (802.11g) Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic



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## 2.1.5 Field Strength of Emissions

#### **Test Location**

☐ Testing was performed at a test distance of 3 meter Open Area Test Site

#### **Test Procedures**

The height of the measuring antenna was varied between 1 to 4 m and the table was rotated a full revolution in order to obtain maximum values of the electric field intensity. The measurement was made in both the vertical and horizontal polarization, and the maximum value is presented in the report.

#### The spectrum analyzer is set to:

Center frequency = the worst channel

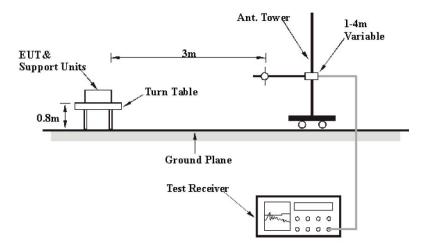
Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic

 $RBW = 120 \text{ kHz} (30 \text{ MHz} \sim 1 \text{ GHz}) \quad VBW \geq RBW$ 

= 1 MHz (1 GHz  $\sim 10^{th}$  harmonic)

Span = 100 MHz Detector function = Quasi-peak

Trace = max hold



#### Limit

### - 15.209(a)

	101203 (4)		
Frequency(MHz)		Field Strength uV/m@3m	Field Strength dBuV/m@3m
	30-88	100**	40
	88-216	150**	43.5
	216-960	200**	46
	Above 960	500	54

<sup>\*\*</sup> Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

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#### **Test Results**

Test mode: 802.11b, DSSS, 11Mbps

	,		
EUT	CARU-M	Measurement Detail	
Model	SMRF900-II	Frequency Range	Below 1000MHz
Mode	802.11b(Worst Case)	Detector function	Quasi-Peak

#### The requirements are:

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
396.44	42.8	3.2	Quasi-peak

#### **Test Data**

Frequency	Reading	Pol.	Height		Correction Factor		Result	Margin
[MHz]	[dBuV/m]		[m]	Antenna	Cable	[dBuV/m]	[dBuV/m]	[dB]
50.12	24.5	V	1.0	8.1	0.3	40.0	32.9	7.1
144.16	23.5	V	2.4	8.0	1.3	43.5	32.8	10.7
313.21	25.3	Н	1.5	11.7	2.5	46.0	39.5	6.5
348.38	26.3	V	1.3	12.7	2.6	46.0	41.6	4.4
350.00	17.7	V	1.0	12.7	2.6	46.0	33.0	13.0
396.44	26.1	V	1.0	13.9	2.8	46.0	42.8	3.2

H: Horizontal, V: Vertical

Result = Reading + Antenna + Cable

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#### **Test Results**

EUT	CARU-M	Measurement Detail				
Model	SMRF900-II	Frequency Range	1-25GHz			
Channel	Channel 1	Detector function	Peak			

#### Remarks

We have tested three mode (X, Y, Z). The worst mode (X axis) for final test.

The requirements are:

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
4824.00	50.9	3.1	Average

Test Data - 802.11b, DSSS, 11Mbps

Frequency	Readi [dBuV	٠	Pol.	Height	Correction Factor			Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
[MHz]	AV /	Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak		AV / Peak		AV / I	Peak
4824.00	41.7	60.1	V	1.4	32.7	34.9	11.4	54.0	74.0	50.9	69.3	3.1	4.7
7240.00	26.8	40.5	V	1.5	37.7	34.8	14.3	54.0	74.0	44.0	57.7	10.0	16.3

Test Data - 802.11g, OFDM, 24Mbps

Frequency	Reading [dBuV/m]	Pol.	Height	Correction Factor			Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]	
[MHz]	AV / Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak	AV / Peak	AV / Peak	
4824.00	40.7 57.6	V	1.5	32.7	34.9	11.4	54.0 74.0	49.9 66.8	4.1 7.2	
7244.00	26.8 44.1	V	1.5	37.7	34.8	14.3	54.0 74.0	44.0 61.3	10.0 12.8	

#### Restricted band edge test data

Measured frequency range: 2310-2390 MHz, 2483.5-2500 MHz

802.11b, DSSS, 11Mbps

Fraguency	Reading		Height		Correction		Limits	Result	Margin	
Frequency	[dBuV/m]	Pol.	neight		Factor		[dBuV/m]	[dBuV/m]	[dB]	
[MHz]	AV / Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak	AV / Peak	AV / Peak	
2379.40	35.0 45.4	V	1.3	28.2	35.3	7.4	54.0 74.0	35.3 45.7	18.7 28.3	
2377.60	34.4 45.9	V	1.4	28.2	35.3	7.4	54.0 74.0	34.7 46.2	19.3 27.8	

802.11q, OFDM, 24Mbps

Frequency	Reading [dBuV/m]	Pol.	Height	Correction Factor			Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]	
[MHz]	AV / Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak	AV / Peak	AV / Peak	
2381.60	34.0 44.8	V	1.4	28.2	35.3	7.4	54.0 74.0	34.3 45.1	19.7 28.9	
2375.60	34.3 44.4	٧	1.5	28.2	35.3	7.4	54.0 74.0	34.6 44.7	19.4 29.3	

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#### **Test Results**

EUT	CARU-M	Measurement Detail			
Model	SMRF900-II	Frequency Range	1-25GHz		
Channel	Channel 6	Detector function	Peak		

#### Remarks

We have tested three mode (X, Y, Z). The worst mode (X axis) for final test.

The requirements are:

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
4867.5	36.1	17.9	Average

Test Data - 802.11b, DSSS, 11Mbps

ſ	Eroguopov	Reading Height			Correction			Limits		sult	Mar	rgin		
	Frequency	[dBu	V/m]	Pol.	neigni		Factor	[dBuV/m]		[dBuV/m]		[dB]		
Į	[MHz]	AV .	/ Peak		[m]	Antenna	Amp. Gain	Cable	AV /	/ Peak	AV /	Peak	AV /	Peak
ĺ	4874.00	26.9	36.6	V	1.5	32.7	34.9	11.4	54.0	74.0	36.1	45.8	17.9	28.2
١														

Test Data - 802.11g, OFDM, 24Mbps

Fraguency	Rea	ding		Height		Correction		Limits		Res	sult	Mar	rgin
Frequency	[dBuV/m]		Pol.	Factor			[dBu	[dBuV/m] [dBuV/m]		[dB]			
[MHz]	AV .	/ Peak		[m]	m] Antenna Amp. Gain Cable		AV / Peak		AV / Peak		AV / Peak		
4875.00	25.4	37.0	V	1.4	32.7	34.9	11.4	54.0	74.0	34.6	46.2	19.4	27.8

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#### **Test Results**

EUT	CARU-M	Measurement Detail	
Model	SMRF900-II	Frequency Range	1-25GHz
Channel	Channel 11	Detector function	Peak

#### Remarks

We have tested three mode (X, Y, Z). The worst mode (X axis) for final test.

The requirements are:

Frequency	Measured Data	Margin	Remark
(MHz)	(dBuV/m)	(dB)	
4924.00	37.2	16.8	Average

Test Data - 802.11b, DSSS, 11Mbps

Frequency	Reading [dBuV/m]	Pol.	Height	Correction Factor			Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
[MHz]	AV / Peak		[m]	[m] Antenna Amp. Gain Cable AV / Peak		AV / Peak	AV / Peak		
4924.00	28.0 41.1	V	1.5	32.7	34.9	11.4	54.0 74.0	37.2 50.3	16.8 23.7

Test Data - 802.11g, OFDM, 24Mbps

Frequency	Reading		Height		Correction		Limits	Result	Margin
	[dBuV/m]	Pol.		Factor			[dBuV/m]	[dBuV/m]	[dB]
[MHz]	AV / Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak	AV / Peak	AV / Peak
4924.00	27.2 40.4	V	1.5	32.7	34.9	11.4	54.0 74.0	36.4 49.6	17.6 24.4

#### Restricted band edge test data

Measured frequency range : 2310-2390 MHz, 2483.5-2500 MHz

802.11b, DSSS, 11Mbps

Fragueray	Reading		Height		Correction			Result	Margin
Frequency	[dBuV/m]	Pol.	neight		Factor		[dBuV/m]	[dBuV/m]	[dB]
[MHz]	AV / Peak		[m]	Antenna Amp. Gain Cable			AV / Peak	AV / Peak	AV / Peak
No emission were detected at a level greater than 20dB belolow limit.									

802.11q, OFDM, 24Mbps

	Reading	Height			Correction		Limits	Result	Margin
Frequency	[dBuV/m]	Pol.	Height	Factor			[dBuV/m]	[dBuV/m]	[dB]
[MHz]	AV / Peak		[m]	Antenna	Amp. Gain	Cable	AV / Peak	AV / Peak	AV / Peak
No emission were detected at a level greater than 20dB belolow limit.									

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#### 2.1.6 AC Conducted Emissions

#### **Test Location**

Shielded Room

#### **Frequency Range of Measurement**

150 kHz to 30 MHz

#### **Instrument Settings**

IF Band Width: 9 kHz

#### **Test Procedures**

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

#### Limit

#### - 15.207(a)

Frequency	Conducted Limit (dBuV)				
(MHz)	Quasi-peak	Average			
0.15 ~ 0.5	66 to 56*	56 to 46*			
0.5 ~ 5	56	46			
5 ~ 30	60	50			

<sup>\*</sup> Decreases with the logarithm of the frequency.

#### **Test Results**

The requirements are:

#### 

Test mode: 802.11b, DSSS, 11Mbps(Worst Case)

1000 111000 1 002111	10/ 0000/ 11/ 10p3( 1	voise case)	
Frequency	Measured Data	Margin	Domark
(MHz)	(dBuV/m)	(dB)	Remark
0.1995	51.4	2.2	Average

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## Test Data - 802.11b(Worst Case)

[HOT]

#### Final Result 1

Frequency (MHz)	QuasiPeak (dB裂)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.199500	59.3	1000.0	9.000	On	L1	10.1	4.3	63.6
0.199500	59.3	1000.0	9.000	On	L1	10.1	4.3	63.6
0.267000	53.4	1000.0	9.000	On	L1	10.1	7.8	61.2
0.330000	47.1	1000.0	9.000	On	L1	10.1	12.4	59.5
0.663000	41.3	1000.0	9.000	On	L1	10.1	14.7	56.0
2.121000	39.6	1000.0	9.000	On	L1	9.9	16.4	56.0
8.421000	46.6	1000.0	9.000	On	L1	9.8	13.4	60.0
8.421000	44.4	1000.0	9.000	On	L1	9.8	15.6	60.0
12.196500	40.5	1000.0	9.000	On	L1	9.9	19.5	60.0
29.404500	40.1	1000.0	9.000	On	L1	10.1	19.9	60.0

## Final Result 2

	<u> </u>							
Frequency (MHz)	Average (dB킯)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.199500	50.7	1000.0	9.000	On	L1	10.1	2.9	53.6
0.199500	50.7	1000.0	9.000	On	L1	10.1	2.9	53.6
0.267000	44.9	1000.0	9.000	On	L1	10.1	6.3	51.2
1.725000	32.8	1000.0	9.000	On	L1	9.9	13.2	46.0
2.188500	33.6	1000.0	9.000	On	L1	9.9	12.4	46.0
2.652000	32.9	1000.0	9.000	On	L1	9.9	13.1	46.0
3.048000	31.9	1000.0	9.000	On	L1	9.8	14.1	46.0
8.421000	39.9	1000.0	9.000	On	L1	9.8	10.1	50.0
8.421000	36.4	1000.0	9.000	On	L1	9.8	13.6	50.0
11.724000	36.7	1000.0	9.000	On	L1	9.9	13.3	50.0

#### [NEUTRAL]

#### Final Result 1

Frequency (MHz)	QuasiPeak (dB鴷)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.199500	58.8	1000.0	9.000	On	N	10.0	4.8	63.6
0.199500	58.8	1000.0	9.000	On	N	10.0	4.8	63.6
0.262500	54.1	1000.0	9.000	On	N	10.0	7.3	61.4
0.330000	49.4	1000.0	9.000	On	N	10.1	10.1	59.5
0.658500	43.7	1000.0	9.000	On	N	10.1	12.3	56.0
0.726000	44.3	1000.0	9.000	On	N	10.1	11.7	56.0
1.648500	41.0	1000.0	9.000	On	N	9.9	15.0	56.0
8.448000	47.1	1000.0	9.000	On	N	9.8	12.9	60.0
8.448000	47.0	1000.0	9.000	On	N	9.8	13.0	60.0
12.138000	45.8	1000.0	9.000	On	N	9.9	14.2	60.0

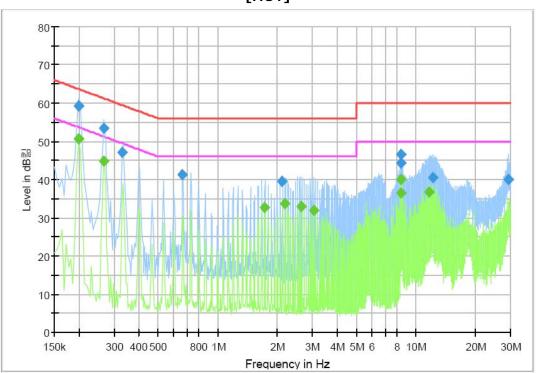
## Final Result 2

Frequency (MHz)	Average (dB킮)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB킮)
0.199500	51.4	1000.0	9.000	On	N	10.0	2.2	53.6
0.199500	51.1	1000.0	9.000	On	N	10.0	2.5	53.6
0.262500	47.0	1000.0	9.000	On	N	10.0	4.4	51.4
0.330000	42.7	1000.0	9.000	On	N	10.1	6.8	49.5
0.726000	37.8	1000.0	9.000	On	N	10.1	8.2	46.0
1.648500	35.5	1000.0	9.000	On	N	9.9	10.5	46.0
2.112000	35.7	1000.0	9.000	On	N	9.9	10.3	46.0
8.448000	40.3	1000.0	9.000	On	N	9.8	9.7	50.0
8.448000	38.6	1000.0	9.000	On	N	9.8	11.4	50.0
10.684500	33.6	1000.0	9.000	On	N	9.9	16.4	50.0

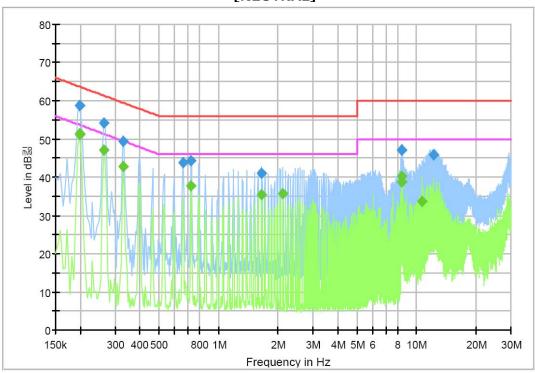
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## [HOT]



#### [NEUTRAL]



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# **APPENDIX A – Test Equipment Used For Tests**

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
1	Signal Analyzer	Agilent	N9020A	MY48011598	2011-11-12
2	Spectrum Analyzer	Rohde & Schwarz	FSP-30	100994	2011-11-12
3	EMI Test Receiver	Rohde & Schwarz	ESVS30	826638/008	2011-07-12
4	ULTRA Broadband Antenna	Rohde & Schwarz	HL562	361324/014	2011-11-18
5	LOOP ANTENNA	EMCO	6502	9107-2652	2012-10-29
6	Attenuator	HP	8498A	1801A06913	2011-11-15
7	EPM Series Power Meter	HP	E4418A	GB38272734	2011-11-12
8	Power Sensor	HP	8487A	3318A03524	2011-07-12
9	Audio Analyzer	HP	8903B	2747A03432	2011-11-12
10	ESG-D Series Signal Generator	Agilent	E4432B	US40054094	2011-11-12
11	SYNTHESIZED SWEEPER	HP	8341B	2819A01563	2011-11-12
12	Modulation Analyzer	HP	8901B	3438A05228	2011-11-16
13	Attenuator	HP	8494A	3308A33351	2011-11-15
14	Temp&Humi Chamber	Kunpoong	KP-1000	2002KP050041	2011-01-25
15	DC POWER SUPPLY	Agilent	E3632A	MY40011638	2011-11-12
16	EMC Analyzer	Agilent	E7405A	MY45110859	2011-01-25
17	Horn Antenna	ETS-Lindgren	3115	00078894	2010-12-18
18	Horn Antenna	ETS-Lindgren	3115	00078895	2010-12-18
19	Dipole Antenna	SCHWARZBECK	VHA 9103	VHA91032557	2010-11-27
20	Dipole Antenna	SCHWARZBECK	UHA 9105	UHA91052417	2010-11-27
21	OPT H64 AMPLIFIER	HP	8447F	3113A06814	2011-03-31
22	PREAMPLIFIER	Agilent	8449B	3008A02307	2011-11-16
23	Radio Communication Tester	Rohde & Schwarz	CMU200	106765	2011-02-23
24	Field Strength Meter	Rohde & Schwarz	ESHS30	862024/001	2011-03-08
25	LISN	Rohde & Schwarz	ESH3-Z5	100207	2010-12-15
26	LISN	EMCO	3825/2	9206-1971	2010-12-16

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