FCC Part 15C Measurement and Test Report

For

Noodle Head, Inc./Minno Tablets

3905 State St. Suite 7-239 Santa Barbara, CA 93105 USA

FCC ID: 2AATG-MINNO10

FCC Rule(s): FCC Part 15C

Product Description: Tablet PC

Tested Model: Minno 10

Report No.: <u>STR13088182I-2</u>

Tested Date: <u>2013-08-09 to 2013-09-09</u>

Issued Date: <u>2013-09-09</u>

Tested By: <u>Daniel Liu / Engineer</u>

Reviewed By: Lahm Peng / EMC Manager

Approved & Authorized By: <u>Jandy so / PSQ Manager</u>

Prepared By:

SEM.Test Compliance Service Co., Ltd

3/F, Jinbao Commerce Building, Xin'an Fanshen Road,

Bao'an District, Shenzhen, P.R.C. (518101)

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd

TABLE OF CONTENTS

1. GENERAL INFORMATION	3
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	
1.2 TEST STANDARDS	
1.4 Test Facility	
1.5 EUT SETUP AND TEST MODE	
2. SUMMARY OF TEST RESULTS	6
3. RF EXPOSURE	7
3.1 STANDARD APPLICABLE	
3.2 TEST RESULT.	
4. ANTENNA REQUIREMENT	8
4.1 Standard Applicable	
4.2 Evaluation Information	8
5. POWER SPECTRAL DENSITY	9
5.1 STANDARD APPLICABLE.	
5.2 TEST EQUIPMENT LIST AND DETAILS	
5.3 TEST PROCEDURE	
5.5 SUMMARY OF TEST RESULTS/PLOTS	
6. 6DB BANDWIDTH	
6.1 STANDARD APPLICABLE	
6.2 TEST EQUIPMENT LIST AND DETAILS	16
6.3 TEST PROCEDURE	
6.4 Environmental Conditions	
7. RF OUTPUT POWER	
7.1 STANDARD APPLICABLE	
7.3 TEST PROCEDURE	23
7.4 Environmental Conditions	
7.5 SUMMARY OF TEST RESULTS/PLOTS	
8. FIELD STRENGTH OF SPURIOUS EMISSIONS	
8.1 Measurement Uncertainty	
8.3 TEST EQUIPMENT LIST AND DETAILS	
8.4 Test Procedure	31
8.5 CORRECTED AMPLITUDE & MARGIN CALCULATION	
8.6 ENVIRONMENTAL CONDITIONS	
9. OUT OF BAND EMISSIONS	
9.1 STANDARD APPLICABLE	
9.2 TEST EQUIPMENT LIST AND DETAILS	
9.3 TEST PROCEDURE	
9.4 ENVIRONMENTAL CONDITIONS	
10. CONDUCTED EMISSIONS	
10.1 Measurement Uncertainty	
10.3 TEST PROCEDURE	64
10.4 BASIC TEST SETUP BLOCK DIAGRAM	
10.5 ENVIRONMENTAL CONDITIONS	
10.0 TEST RECEIVER SETUP	
10.8 CONDUCTED EMISSIONS TEST DATA	

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Noodle Head, Inc./Minno Tablets

Address of applicant: 3905 State St. Suite 7-239 Santa Barbara, CA 93105

USA

Manufacturer: SHENZHEN ALLDOCUBE TECHNOLOGY AND

SCIENCE CO.,LTD

Address of manufacturer: 4F/17Building,Pingshan Industrial Park,Middle of

Liuxian Road, Xili Town, Nanshan District,

Shenzhen, China.

Tablet PC
Tablet I C
Minno
Minno 10
/
Charger: DC 12V Battery: DC 3.7V
FJ-SW1202000U
Input: AC 100-240V,50/60Hz Output: DC 12V

Technical Characteristics of EUT	T .
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz
RF Output Power:	7.38 dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11
Channel Separation:	5MHz
Type of Antenna:	Integral
Antenna Gain:	0dBi
Lowest Internal Frequency	32.768kHz

1.2 Test Standards

The following report is prepared on behalf of the Noodle Head, Inc./Minno Tablets in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. The public notice KDB 558074 D01 V03 for digital transmission systems shall be performed also.

1.4 Test Facility

• FCC – Registration No.: 994117

SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

• Industry Canada (IC) Registration No.: 7673A

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

• CNAS Registration No.: L4062

Shenzhen SEM. Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List			
Test Mode	Description	Remark	
TM1	802.11b	2412MHz, 2437MHz, 2462MHz	
TM2	802.11g	2412MHz, 2437MHz, 2462MHz	
TM3	802.11n-HT20	2412MHz, 2437MHz, 2462MHz	

EUT Cable List and Details				
Cable Description Length (m) Shielded/Unshielded With / Without Fer				
USB Cable	0.8	Shielded	Without Ferrite	
Earphone Cable	1.2	Unshielded	Without Ferrite	

Special Cable List and Details					
Cable Description Length (m) Shielded/Unshielded With / Without Ferrite					
HDMI Cable	1.5	Shielded	Without Ferrite		

Auxiliary Equipment List and Details				
Description Manufacturer Model Serial Number				
Notebook	Lenovo	E23	EB12648265	
Monitor	DELL	U2410f	50642P246601H(B) ZL	

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 2.1093	RF Exposure	Compliant
§ 15.203; § 15.247(b)(4)(i)	Antenna Requirement	Compliant
§ 15.207(a)	Conducted Emission	Compliant
§ 15.247(e)	Power Spectral Density	Compliant
§ 15.247(a)(2)	6 dB Bandwidth	Compliant
§ 15.247(b)(3)	RF Output Power	Compliant
§ 15.209(a)(d)	Radiated Emission	Compliant
§ 15.247(d)	Band Edge (Out of Band Emissions) Complia	

N/A: not applicable

3. RF Exposure

3.1 Standard Applicable

According to \S 1.1307 and \S 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the RF Exposure Report.

4. Antenna Requirement

4.1 Standard Applicable

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

4.2 Evaluation Information

This product has a Internal antenna, fulfill the requirement of this section.

5. Power Spectral Density

5.1 Standard Applicable

According to 15.247(a)(1)(iii), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS100-4-20	/	2013-05-07	2014-05-06

5.3 Test Procedure

According to the KDB 558074 D01 V03, the test method of power spectral density as below:

- 1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 2. Set analyzer center frequency to DTS channel center frequency.
- 3. Set the span to 1.5 times the DTS channel bandwidth.
- 4. Set the RBW \geq 3 kHz.
- 5. Set the VBW \geq 3 x RBW.
- 6. Detector = peak.
- 7. Sweep time = auto couple.
- 8. Trace mode = max hold.
- 9. Allow trace to fully stabilize.
- 10. Use the peak marker function to determine the maximum amplitude level.
- 11. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.4 Environmental Conditions

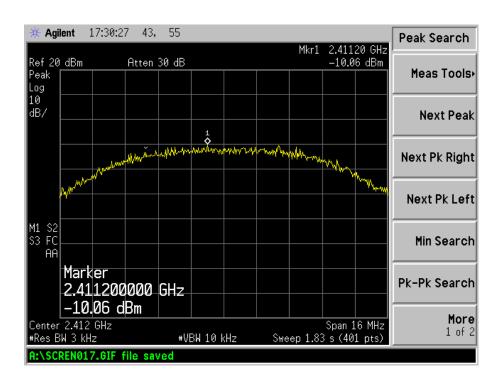
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results/Plots

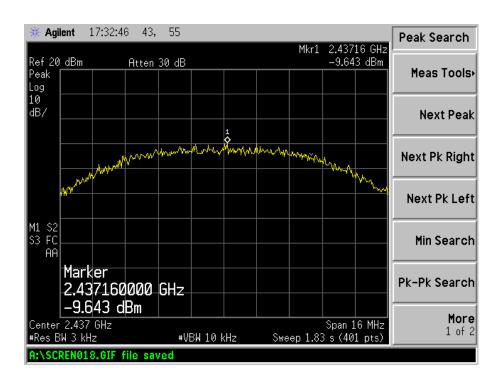
Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
	2412	-10.06	8
802.11b	2437	-9.643	8
	2462	-9.821	8
802.11g	2412	-15.76	8
	2437	-15.29	8
	2462	-15.56	8
	2412	-14.78	8
802.11n HT20	2437	-13.74	8
	2462	-13.32	8

Please refer to the following test plots:

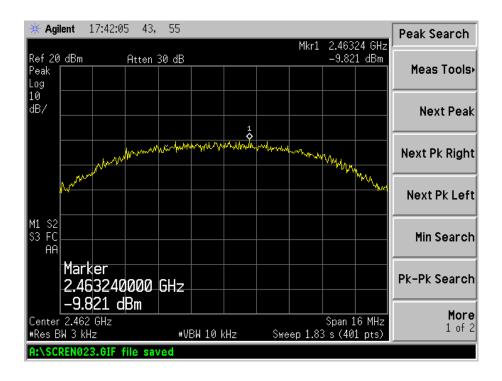
802.11b-Low Channel



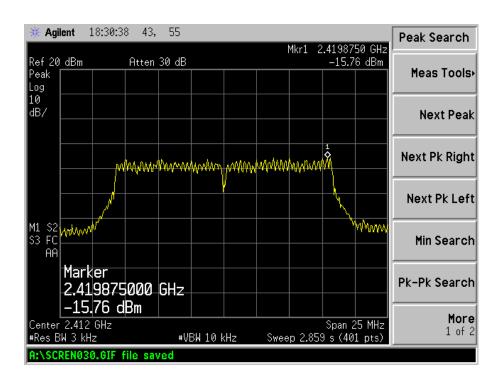
802.11b-Middle Channel



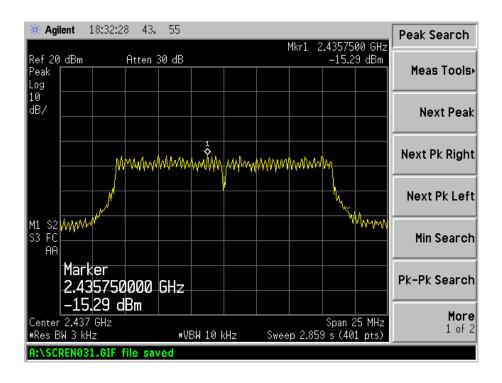
802.11b-High Channel



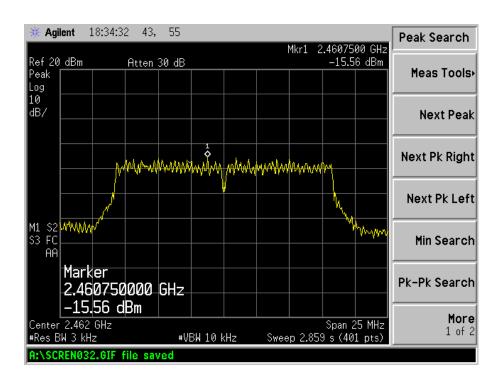
802.11g-Low Channel



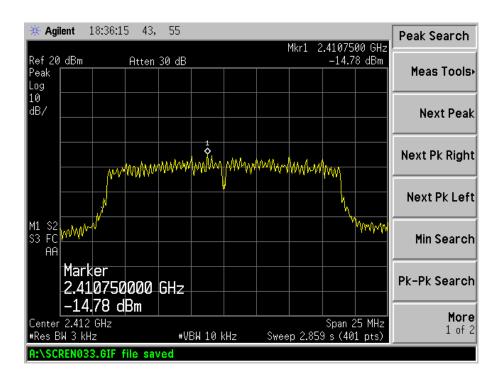
802.11g-Middle Channel



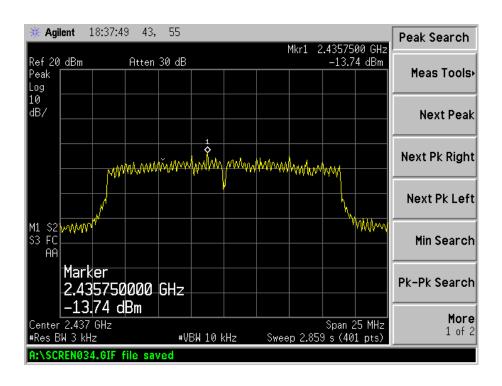
802.11g-High Channel



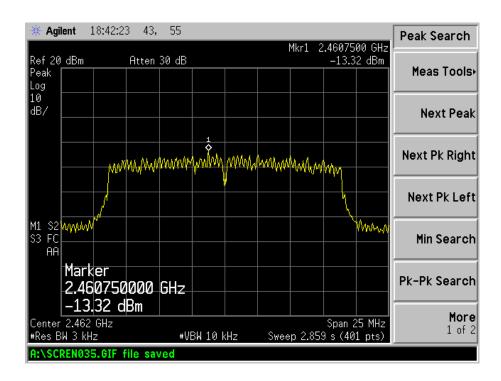
802.11n-HT20-Low Channel



802.11n-HT20-Middle Channel



802.11n-HT20-High Channel



6. 6dB Bandwidth

6.1 Standard Applicable

According to 15.247(a)(2). Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

6.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS100-4-20	/	2013-05-07	2014-05-06

6.3 Test Procedure

- 1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 2. Set resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 100 kHz.
- 3. Set the video bandwidth (VBW) \geq 3 x RBW.
- 4. Detector = Peak.
- 5. Trace mode = \max hold.
- 6. Sweep = auto couple.
- 7. Allow the trace to stabilize.
- 8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission..

6.4 Environmental Conditions

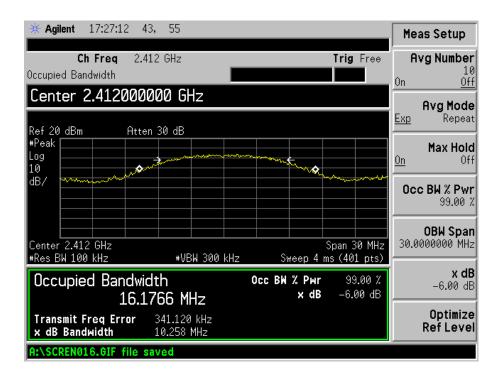
Temperature:	25° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

6.5 Summary of Test Results/Plots

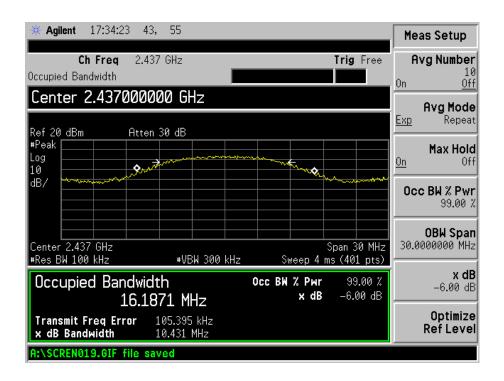
Test Mode	Test Channel MHz	6 dB Bandwidth kHz	99% Bandwidth kHz	Limit kHz
	2412	10258.0	16176.6	500
802.11b	2437	10431.0	16187.1	500
	2462	10295.0	15382.5	500
	2412	16548.0	16586.9	500
802.11g	2437	16520.0	16563.0	500
	2462	16513.0	16534.2	500
	2412	17504.0	17573.6	500
802.11n-HT20	2437	17073.0	17605.2	500
	2462	17317.0	17595.9	500

Please refer to the following test plots:

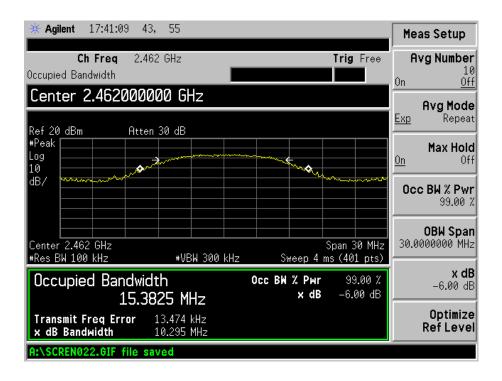
802.11b-Low Channel



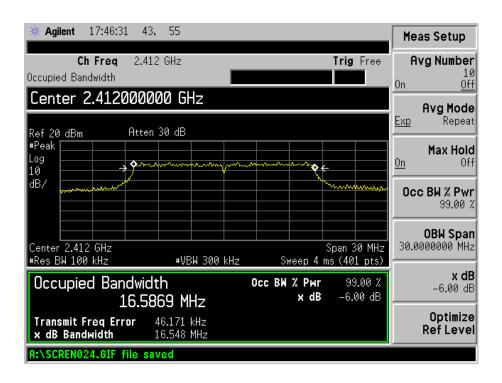
802.11b-Middle Channel



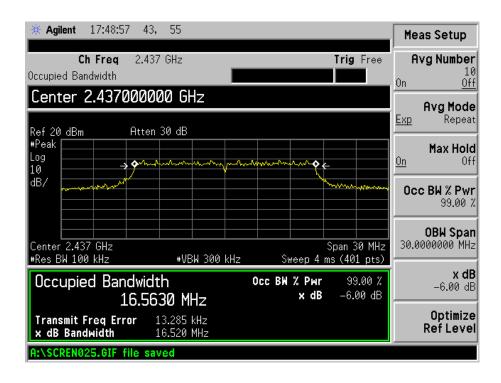
802.11b-High Channel



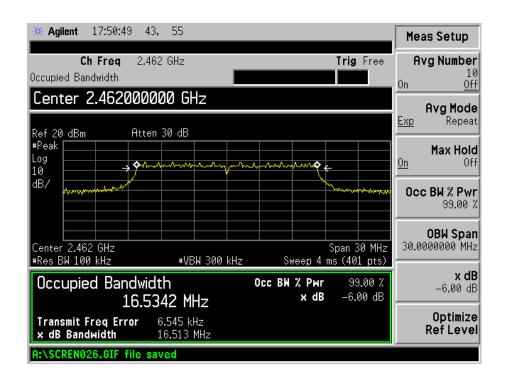
802.11g-Low Channel



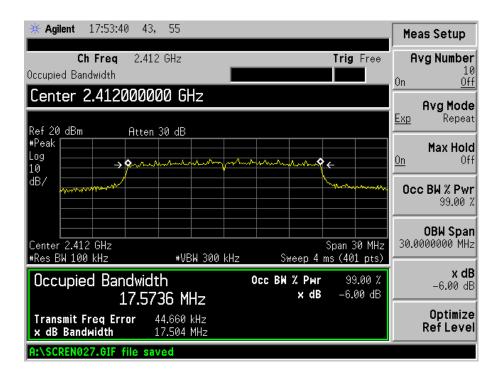
802.11g-Middle Channel



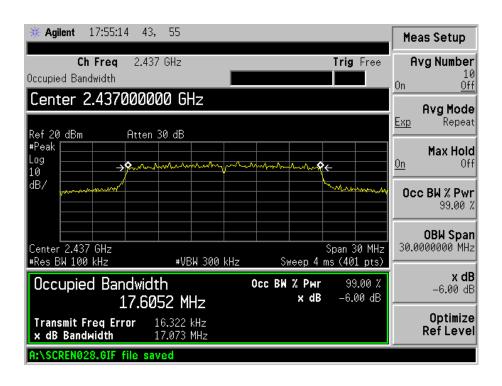
802.11g-High Channel



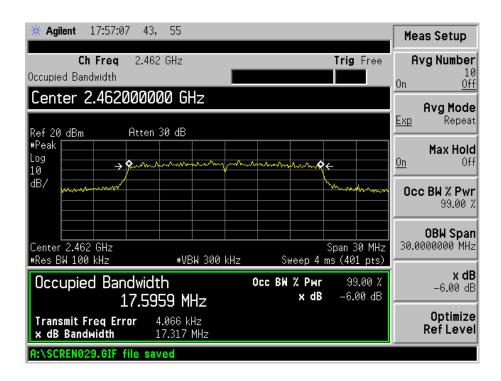
802.11n-HT20-Low Channel



802.11n-HT20-Middle Channel



802.11n-HT20-High Channel



7. RF Output Power

7.1 Standard Applicable

According to 15.247(b)(3). For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

7.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	Agilent	E4402B	US41192821	2013-05-07	2014-05-06
Attenuator	ATTEN	ATS100-4-20	/	2013-05-07	2014-05-06

7.3 Test Procedure

According to section 15.247(b)-power output of the KDB-558074 D01 V03 (2013), 8.1.2 Option 2 (channel integration method) this procedure should only be used when the maximum available RBW of the spectrum/signal analyzer is less than the DTS bandwidth.

- 1. Set the RBW = maximum available (at least 1 MHz).
- 2. Set the VBW = $3 \times RBW$ or maximum available setting (must be $\geq RBW$).
- 3. Set the span to fully encompass the DTS bandwidth.
- 4. Detector = peak.
- 5. Sweep time = auto couple.
- 6. Trace mode = max hold.
- 7. Allow trace to fully stabilize.
- 8. Use the spectrum analyzer's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some analyzers, this may require a manual override to ensure use of peak detector).

7.4 Environmental Conditions

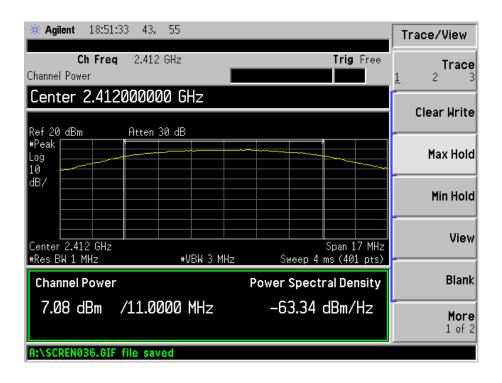
Temperature:	26° C
Relative Humidity:	57%
ATM Pressure:	1011 mbar

7.5 Summary of Test Results/Plots

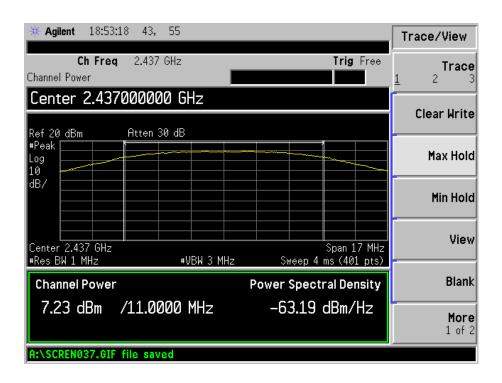
Test Mode	Frequency	Reading	Output Power	Limit
Test Mode	MHz	dBm	mW	mW
	2412	7.08	5.11	1000
802.11b _ 11Mbps	2437	7.23	5.28	1000
	2462	7.38	5.47	1000
	2412	5.43	3.49	1000
802.11g_54Mbps	2437	5.66	3.68	1000
	2462	5.70	3.72	1000
	2412	4.42	2.77	1000
802.11n HT20_MCS7	2437	4.78	3.01	1000
	2462	4.48	2.81	1000

Please refer to the following test plots:

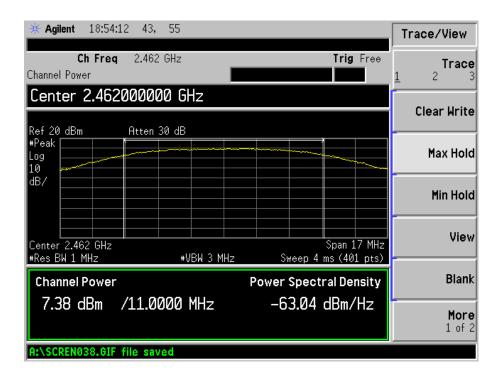
802.11-11Mbps-Low Channel



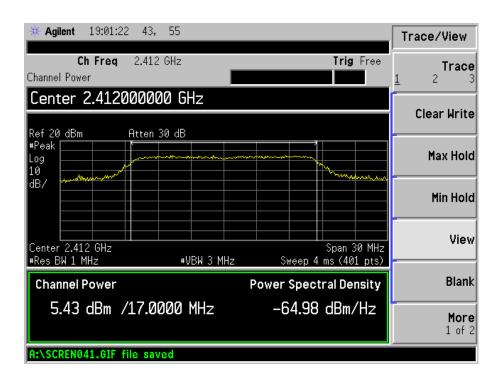
802.11b -11Mbps-Middle Channel



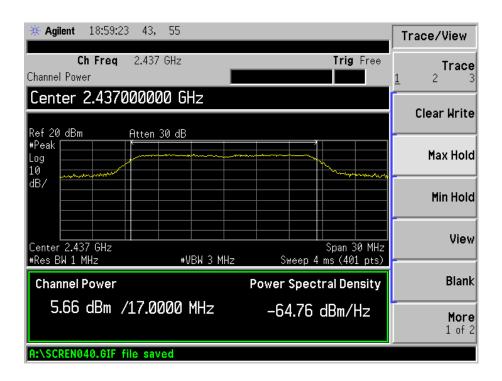
802.11b -11Mpbs-High Channel



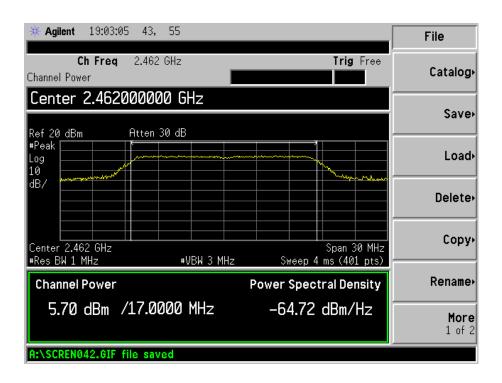
802.11g-54Mbps-Low Channel



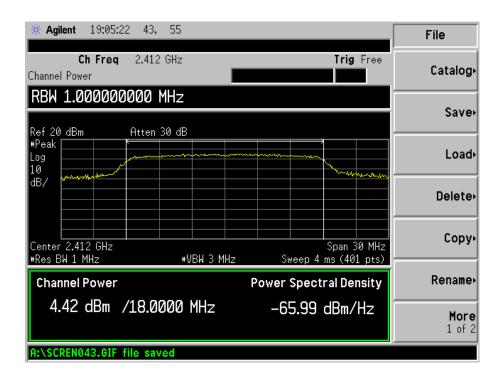
802.11g-54Mbps-Middle Channel



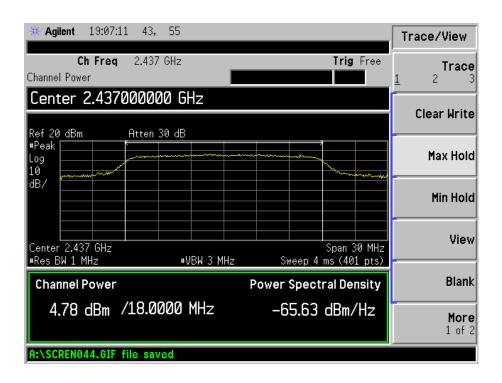
802.11g-54Mpbs-High Channel



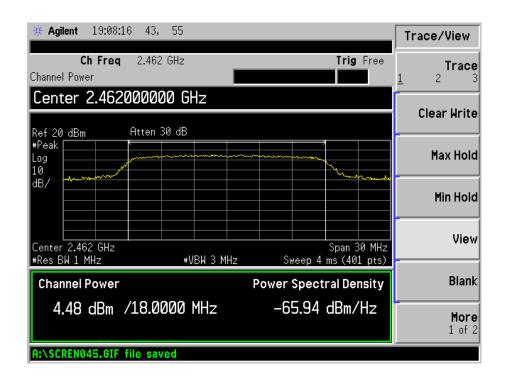
802.11n-HT20-MCS7-Low Channel



802.11n-HT20-MCS7-Middle Channel



802.11n-HT20-MCS7-High Channel



8. Field Strength of Spurious Emissions

8.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is +5.10 dB.

8.2 Standard Applicable

According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

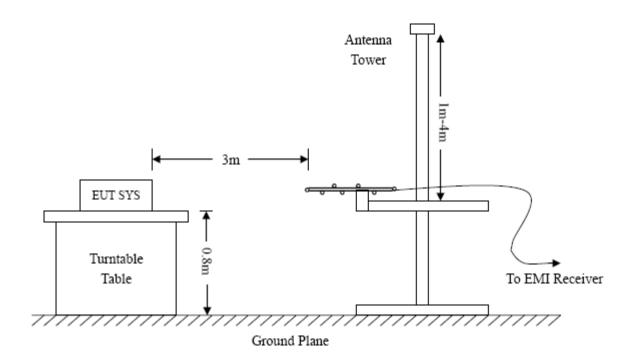
8.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Horn Antenna	ETS	3117	00086197	2013-04-20	2014-04-19
Horn Antenna	ETS	3116B	00088203	2013-04-20	2014-04-19
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2013-04-20	2014-04-19

8.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.



Frequency:9kHz-30MHz	Frequency:30MHz-1GHz	Frequency: Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW = 30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = \max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

8.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of $-6dB\mu V$ means the emission is $6dB\mu V$ below the maximum limit for Class B. The equation for margin calculation is as follows:

8.6 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

8.7 Summary of Test Results/Plots

According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst cases:

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

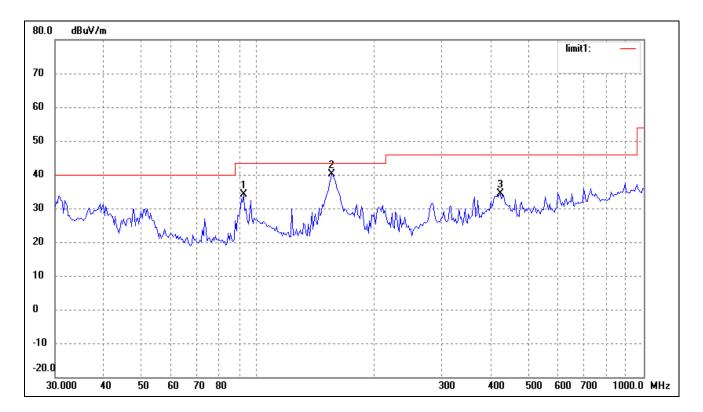
Plot of Radiated Emissions Test Data (30MHz to 1GHz)

EUT: Tablet PC
Tested Model: Minno 10

Operating Condition: 802.11b Transmitting Low Channel-2412MHz

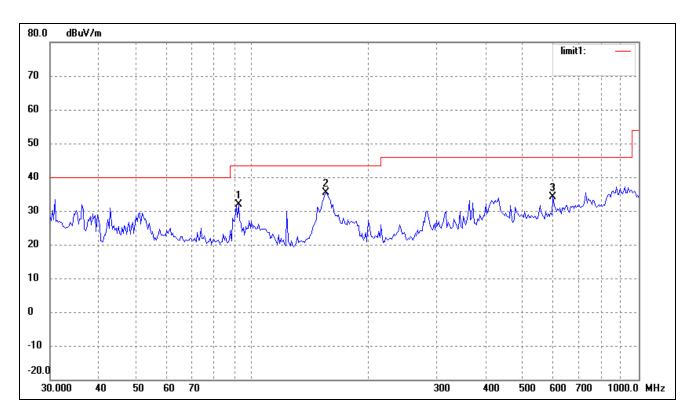
Comment: DC 3.7V

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	92.1388	29.26	4.89	34.15	43.50	-9.35	360	100	peak
2	155.9101	36.59	3.61	40.20	43.50	-3.30	360	100	peak
3	425.0280	23.47	10.84	34.31	46.00	-11.69	360	100	peak

Test Specification: Vertical

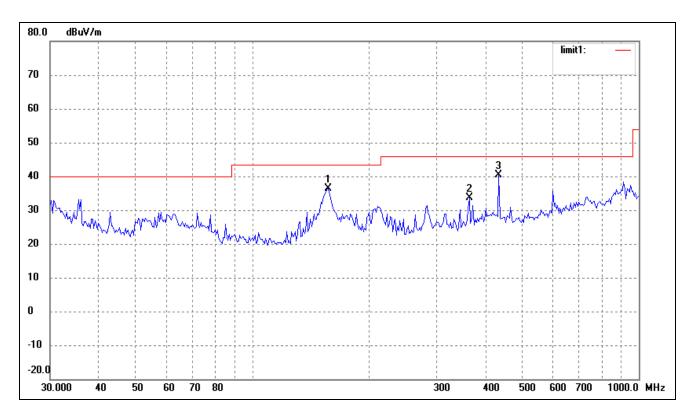


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	92.1388	27.04	4.89	31.93	43.50	-11.57	360	100	peak
2	154.8205	31.71	3.59	35.30	43.50	-8.20	360	100	peak
3	599.3213	19.40	14.76	34.16	46.00	-11.84	360	100	peak

Operating Condition: 802.11b Transmitting Middle Channel-2437MHz

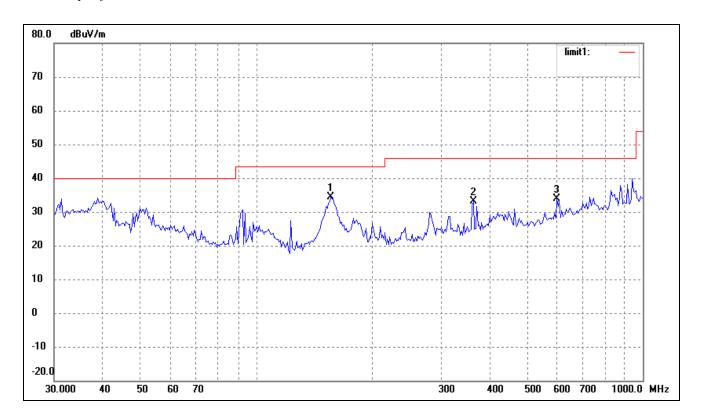
Comment: DC 3.7V

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	157.0074	32.82	3.63	36.45	43.50	-7.05	360	100	peak
2	364.2595	22.93	10.68	33.61	46.00	-12.39	360	100	peak
3	434.0651	29.21	11.10	40.31	46.00	-5.69	360	100	peak

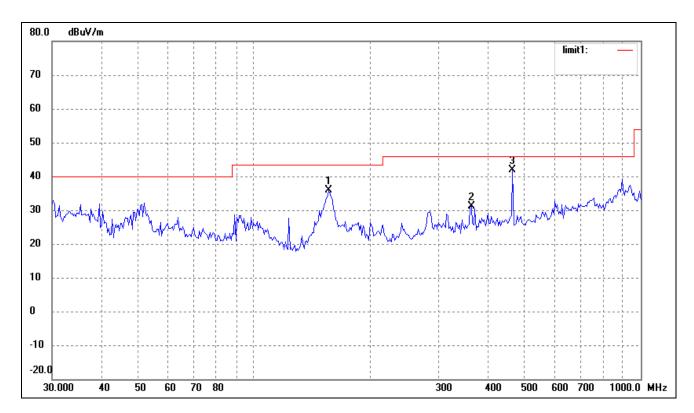
Test Specification: Vertical



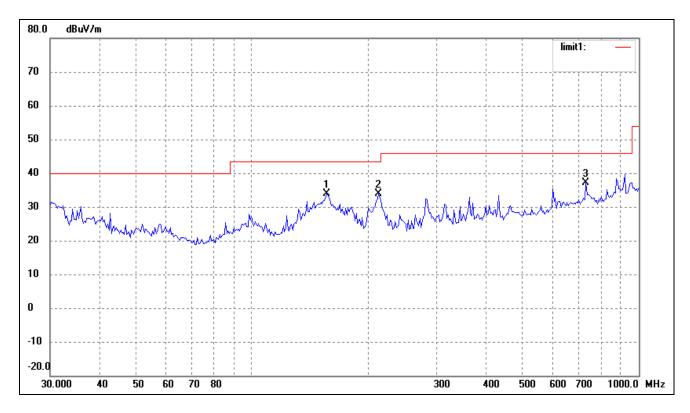
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	155.9101	30.82	3.61	34.43	43.50	-9.07	360	100	peak
2	364.2595	22.49	10.68	33.17	46.00	-12.83	360	100	peak
3	599.3213	19.19	14.76	33.95	46.00	-12.05	360	100	peak

Operating Condition: 802.11b Transmitting High Channel-2462MHz

Comment: DC 3.7V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	155.9101	32.26	3.61	35.87	43.50	-7.63	360	100	peak
2	364.2595	20.41	10.68	31.09	46.00	-14.91	360	100	peak
3	465.5994	30.15	11.69	41.84	46.00	-4.16	360	100	peak



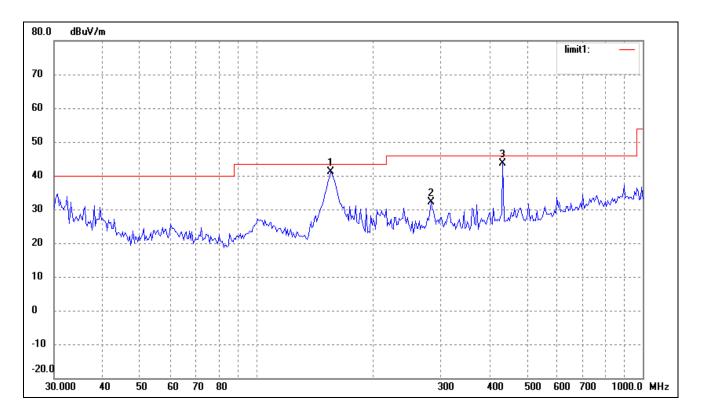
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	155.9101	30.25	3.61	33.86	43.50	-9.64	360	100	peak
2	212.2695	28.53	5.44	33.97	43.50	-9.53	360	100	peak
3	729.3583	19.89	17.31	37.20	46.00	-8.80	360	100	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

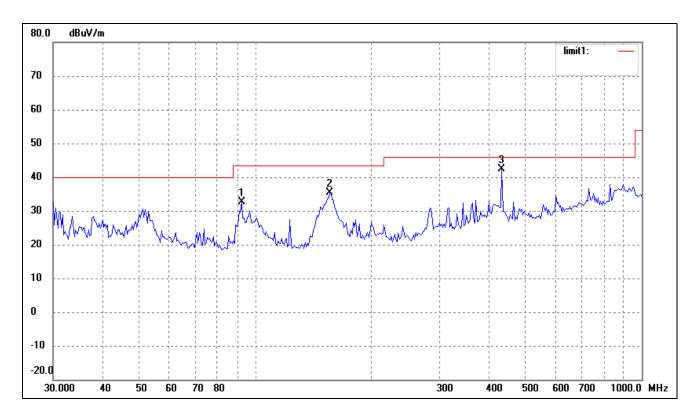
EUT: Tablet PC
Tested Model: Minno 10

Operating Condition: 802.11g Transmitting Low Channel-2412MHz

Comment: DC 3.7V



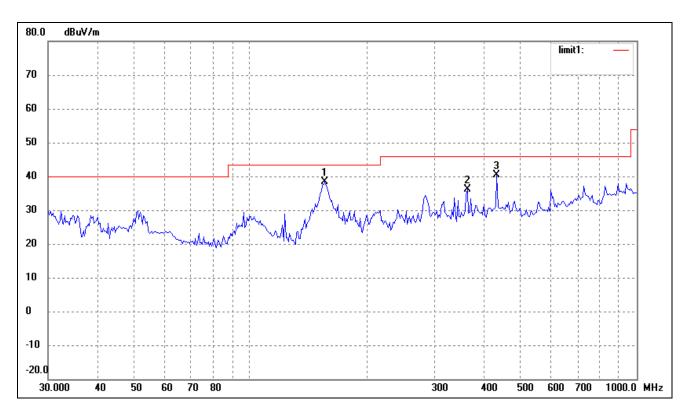
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	155.9101	37.60	3.61	41.21	43.50	-2.29	360	100	peak
2	282.9852	22.78	9.38	32.16	46.00	-13.84	360	100	peak
3	434.0651	32.49	11.10	43.59	46.00	-2.41	360	100	peak



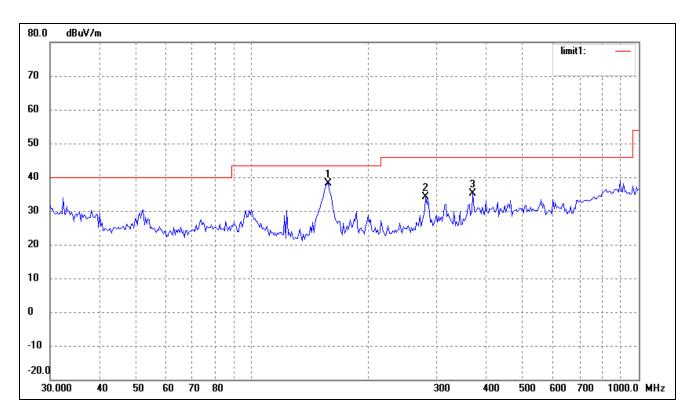
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	92.1388	27.71	4.89	32.60	43.50	-10.90	360	100	peak
2	155.9101	31.81	3.61	35.42	43.50	-8.08	360	100	peak
3	434.0651	31.39	11.10	42.49	46.00	-3.51	360	100	peak

Operating Condition: 802.11g Transmitting Middle Channel-2437MHz

Comment: DC 3.7V



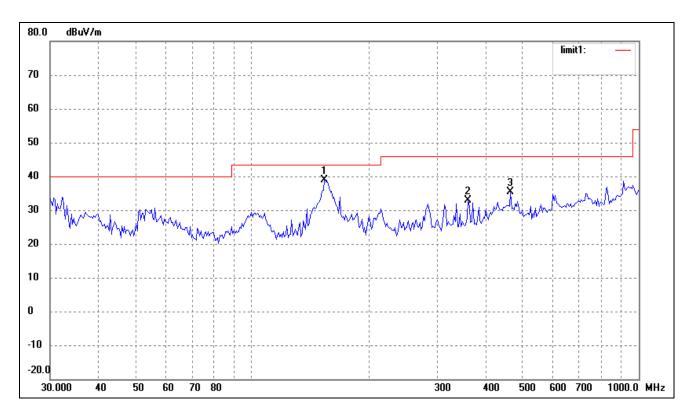
	No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
		(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
Ī	1	155.9101	34.67	3.61	38.28	43.50	-5.22	360	100	peak
Ī	2	364.2595	25.45	10.68	36.13	46.00	-9.87	360	100	peak
	3	434.0651	29.30	11.10	40.40	46.00	-5.60	360	100	peak



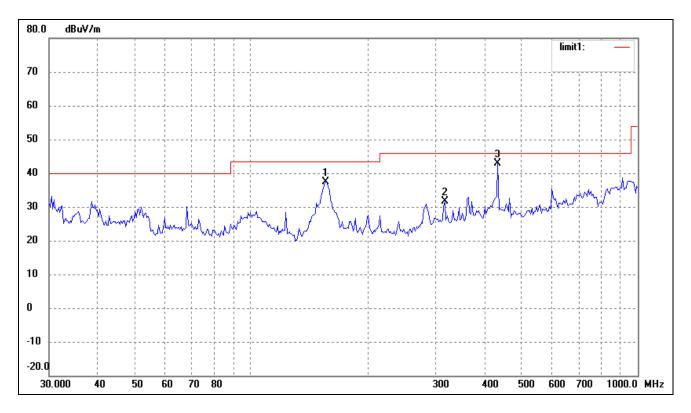
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	157.0074	34.56	3.63	38.19	43.50	-5.31	360	100	peak
2	281.0075	24.94	9.29	34.23	46.00	-11.77	360	100	peak
3	372.0045	24.43	10.65	35.08	46.00	-10.92	360	100	peak

Operating Condition: 802.11g Transmitting High Channel-2462MHz

Comment: DC 3.7V



	No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
Ī		(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
ſ	1	153.7385	35.36	3.59	38.95	43.50	-4.55	360	100	peak
ſ	2	361.7139	22.20	10.69	32.89	46.00	-13.11	360	100	peak
	3	465.5994	23.81	11.69	35.50	46.00	-10.50	360	100	peak



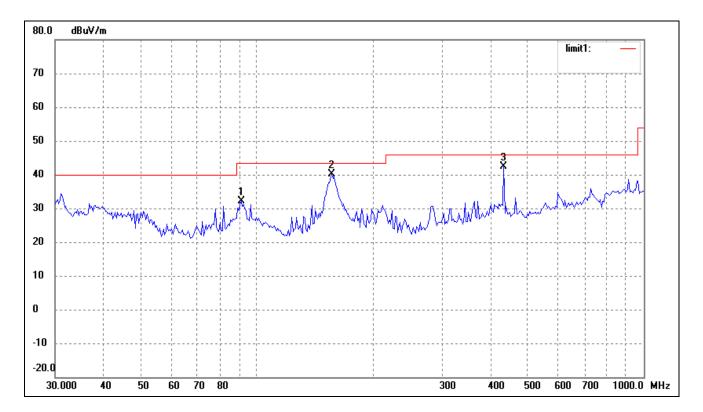
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	155.9101	33.68	3.61	37.29	43.50	-6.21	360	100	peak
2	316.5890	21.17	10.44	31.61	46.00	-14.39	360	100	peak
3	434.0651	31.66	11.10	42.76	46.00	-3.24	360	100	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

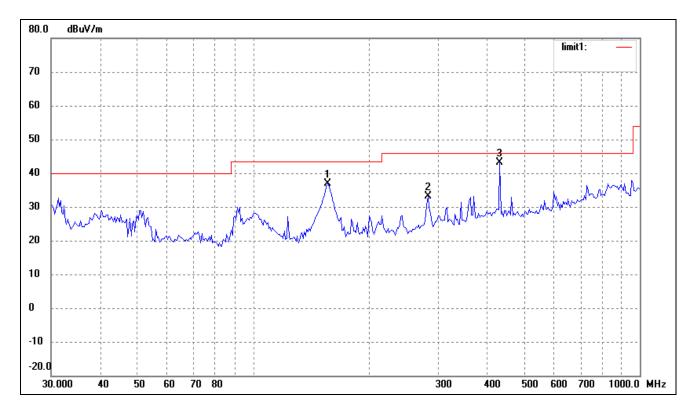
EUT: Tablet PC
Tested Model: Minno 10

Operating Condition: 802.11n-HT20 Transmitting Low Channel-2412MHz

Comment: DC 3.7V



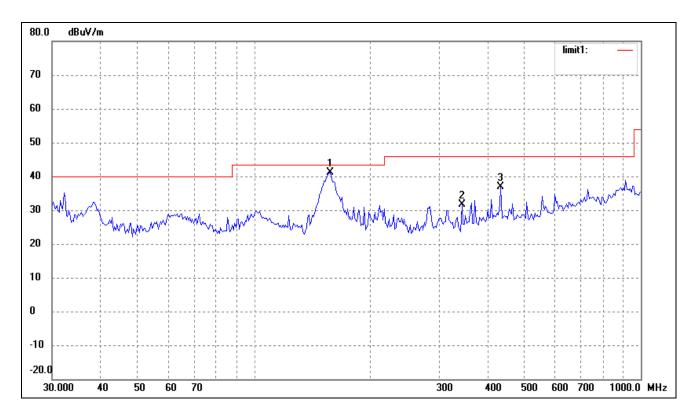
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	90.8554	27.50	4.58	32.08	43.50	-11.42	360	100	peak
2	155.9101	36.49	3.61	40.10	43.50	-3.40	360	100	peak
3	434.0651	31.23	11.10	42.33	46.00	-3.67	360	100	peak



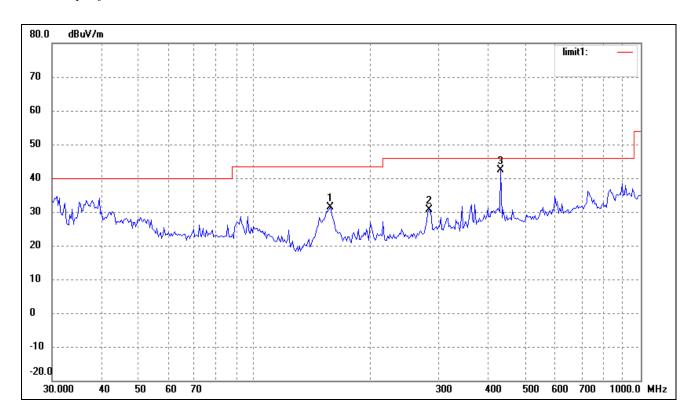
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	155.9101	33.39	3.61	37.00	43.50	-6.50	360	100	peak
2	282.9852	23.79	9.38	33.17	46.00	-12.83	360	100	peak
3	434.0651	32.06	11.10	43.16	46.00	-2.84	360	100	peak

Operating Condition: 802.11n-HT20 Transmitting Middle Channel-2437MHz

Comment: DC 3.7V



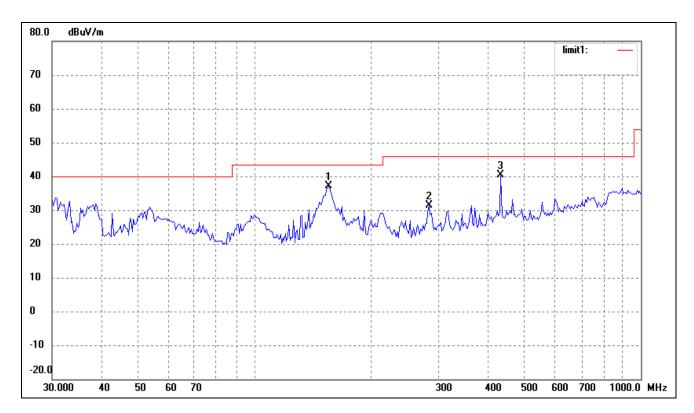
	No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
		(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
ſ	1	157.0074	37.45	3.63	41.08	43.50	-2.42	360	100	peak
ſ	2	344.3855	21.29	10.23	31.52	46.00	-14.48	360	100	peak
	3	434.0651	25.68	11.10	36.78	46.00	-9.22	360	100	peak



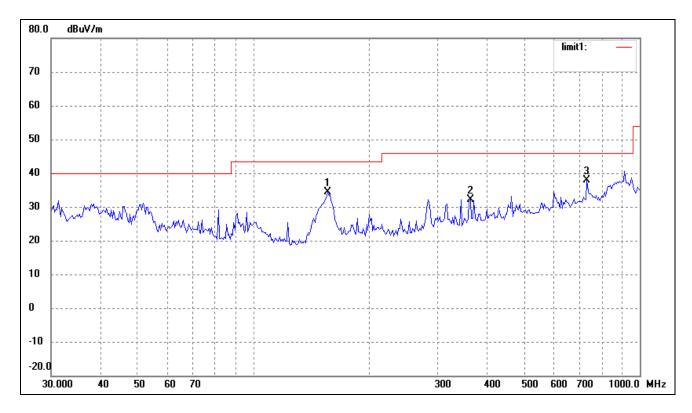
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	157.0074	27.65	3.63	31.28	43.50	-12.22	360	100	peak
2	282.9852	21.35	9.38	30.73	46.00	-15.27	360	100	peak
3	434.0651	31.23	11.10	42.33	46.00	-3.67	360	100	peak

Operating Condition: 802.11n-HT20 Transmitting High Channel-2462MHz

Comment: DC 3.7V



1	No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
		(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
	1	155.9101	33.57	3.61	37.18	43.50	-6.32	360	100	peak
	2	282.9852	22.07	9.38	31.45	46.00	-14.55	360	100	peak
	3	434.0651	29.29	11.10	40.39	46.00	-5.61	360	100	peak



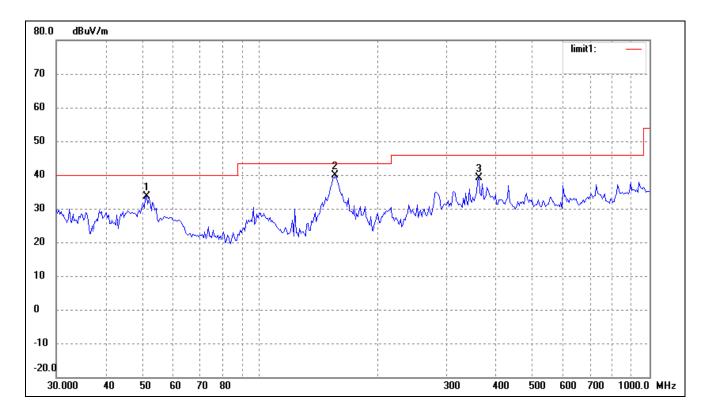
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	155.9101	30.85	3.61	34.46	43.50	-9.04	360	100	peak
2	364.2595	21.47	10.68	32.15	46.00	-13.85	360	100	peak
3	729.3583	20.61	17.31	37.92	46.00	-8.08	360	100	peak

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

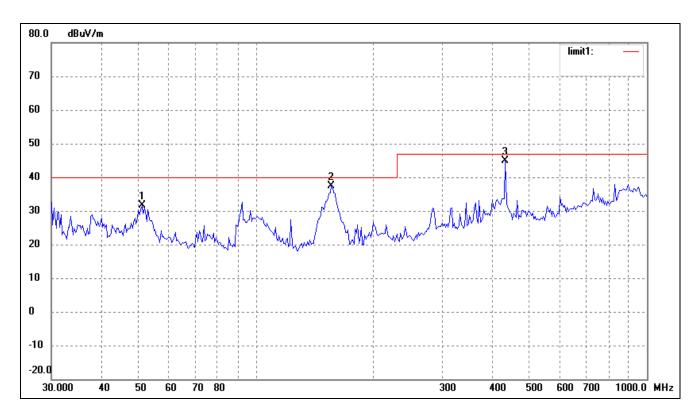
EUT: Tablet PC
Tested Model: Minno 10

Operating Condition: BT & WIFI Transmitting (with the Worst Channl)

Comment: DC 3.7V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	51.1208	27.15	6.51	33.66	40.00	-6.34	360	100	peak
2	155.9100	36.17	3.61	39.78	43.50	-3.72	360	100	peak
3	364.2595	28.45	10.68	39.13	46.00	-6.87	360	100	peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	51.1208	25.12	6.51	31.63	40.00	-8.37	360	100	peak
2	155.9101	33.81	3.61	37.42	40.00	-2.58	360	100	peak
3	434.0651	33.89	11.10	44.99	47.00	-2.01	360	100	peak

Spurious Emissions Above 1GHz

Test Mode: 802.11b

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
			Low Channe	el-2412MHz			
4824	44.65	0.57	45.22	74.00	-28.78	Н	PK
4824	38.31	0.57	38.88	54.00	-15.12	Н	AV
7236	44.77	3.69	48.46	74.00	-25.54	Н	PK
7236	32.88	3.69	36.57	54.00	-17.43	Н	AV
4824	47.60	0.57	48.17	74.00	-25.83	V	PK
4824	34.52	0.57	35.09	54.00	-18.91	V	AV
7236	45.52	3.69	49.21	74.00	-24.79	V	PK
7236	31.07	3.69	34.76	54.00	-19.24	V	AV
			Middle Chan	nel-2437MHz			
4874	45.19	0.64	45.83	74.00	-28.17	Н	PK
4874	33.78	0.64	34.42	54.00	-19.58	Н	AV
7311	44.83	3.75	48.58	74.00	-25.42	Н	PK
7311	32.79	3.75	36.54	54.00	-17.46	Н	AV
4874	44.59	0.64	45.23	74.00	-28.77	V	PK
4874	40.51	0.64	41.15	54.00	-12.85	V	AV
7311	44.49	3.75	48.24	74.00	-25.76	V	PK
7311	32.71	3.75	36.46	54.00	-17.54	V	AV
			High Chann	el-2462MHz			
4924	47.16	0.72	47.88	74.00	-26.12	Н	PK
4924	34.11	0.72	34.83	54.00	-19.17	Н	AV
7386	44.93	3.81	48.74	74.00	-25.26	Н	PK
7386	32.71	3.81	36.52	54.00	-17.48	Н	AV
4924	43.50	0.72	44.22	74.00	-29.78	V	PK
4924	36.31	0.72	37.03	54.00	-16.97	V	AV
7386	46.23	3.81	50.04	74.00	-23.96	V	PK
7386	32.62	3.81	36.43	54.00	-17.57	V	AV

Test Mode: 802.11g

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
			Low Channe	el-2412MHz			•
4824	45.45	0.57	46.02	74.00	-27.98	Н	PK
4824	33.31	0.57	33.88	54.00	-20.12	Н	AV
7236	45.20	3.69	48.89	74.00	-25.11	Н	PK
7236	32.90	3.69	36.59	54.00	-17.41	Н	AV
4824	46.63	0.57	47.20	74.00	-26.80	V	PK
4824	37.66	0.57	38.23	54.00	-15.77	V	AV
7236	45.58	3.69	49.27	74.00	-24.73	V	PK
7236	33.01	3.69	36.70	54.00	-17.30	V	AV
			Middle Chan	nel-2437MHz			
4874	45.19	0.64	45.83	74.00	-28.17	Н	PK
4874	33.24	0.64	33.88	54.00	-20.12	Н	AV
7311	45.14	3.75	48.89	74.00	-25.11	Н	PK
7311	32.84	3.75	36.59	54.00	-17.41	Н	AV
4874	45.59	0.64	46.23	74.00	-27.77	V	PK
4874	38.51	0.64	39.15	54.00	-14.85	V	AV
7311	45.27	3.75	49.02	74.00	-24.98	V	PK
7311	32.95	3.75	36.70	54.00	-17.30	V	AV
			High Chann	el-2462MHz			
4924	47.16	0.72	47.88	74.00	-26.12	Н	PK
4924	34.11	0.72	34.83	54.00	-19.17	Н	AV
7386	44.93	3.81	48.74	74.00	-25.26	Н	PK
7386	32.71	3.81	36.52	54.00	-17.48	Н	AV
4924	43.50	0.72	44.22	74.00	-29.78	V	PK
4924	36.31	0.72	37.03	54.00	-16.97	V	AV
7386	46.23	3.81	50.04	74.00	-23.96	V	PK
7386	32.62	3.81	36.43	54.00	-17.57	V	AV

Test Mode: 802.11n-HT20

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
			Low Chann	el-2412MHz			
4824	45.99	0.57	46.56	74.00	-27.44	Н	PK
4824	33.37	0.57	33.94	54.00	-20.06	Н	AV
7236	45.38	3.69	49.07	74.00	-24.93	Н	PK
7236	32.91	3.69	36.60	54.00	-17.40	Н	AV
4824	49.71	0.57	50.28	74.00	-23.72	V	PK
4824	38.61	0.57	39.18	54.00	-14.82	V	AV
7236	45.09	3.69	48.78	74.00	-25.22	V	PK
7236	32.72	3.69	36.41	54.00	-17.59	V	AV
			Middle Chan	nel-2437MHz			
4874	45.10	0.64	45.74	74.00	-28.26	Н	PK
4874	33.75	0.64	34.39	54.00	-19.61	Н	AV
7311	45.59	3.75	49.34	74.00	-24.66	Н	PK
7311	32.64	3.75	36.39	54.00	-17.61	Н	AV
4874	44.88	0.64	45.52	74.00	-28.48	V	PK
4874	33.52	0.64	34.16	54.00	-19.84	V	AV
7311	44.77	3.75	48.52	74.00	-25.48	V	PK
7311	32.70	3.75	36.45	54.00	-17.55	V	AV
			High Chann	el-2462MHz			
4924	45.61	0.72	46.33	74.00	-27.67	Н	PK
4924	33.29	0.72	34.01	54.00	-19.99	Н	AV
7386	45.24	3.81	49.05	74.00	-24.95	Н	PK
7386	32.71	3.81	36.52	54.00	-17.48	Н	AV
4924	44.81	0.72	45.53	74.00	-28.47	V	PK
4924	35.80	0.72	36.52	54.00	-17.48	V	AV
7386	43.02	3.81	47.83	74.00	-26.17	V	PK
7386	32.60	3.81	36.41	54.00	-17.59	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3^{th} Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured. The measurements greater than 20dB below the limit from 9kHz to 30MHz.

9. Out of Band Emissions

9.1 Standard Applicable

According to §15.247 (d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

9.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2013-05-07	2014-05-06
EMI Test Receiver	R&S	ESVB	825471/005	2013-05-07	2014-05-06
Pre-amplifier	Agilent	8447F	3113A06717	2013-05-07	2014-05-06
Pre-amplifier	Compliance Direction	PAP-0118	24002	2013-05-07	2014-05-06
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-04-20	2014-04-19
Horn Antenna	ETS	3117	00086197	2013-04-20	2014-04-19

9.3 Test Procedure

According to the KDB 558074, the band-edge radiated test method as follows:

Set span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation (2310MHz to 2420MHz for low bandedge, 2460MHz to 2500MHz for the high bandedge)

RBW = 1MHz, VBW = 1MHz for peak value measured

RBW = 1MHz, VBW = 10Hz for average value measured

Sweep = auto; Detector function = peak/average; Trace = max hold

All the trace to stabilize, set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Those emission must comply with the 15.209 limit for fall in the restricted bands listed in section 15.205. Note that the method of measurement KDB publication number: 913591 may be used for the radiated bandedge measurements.

According to the KDB 558074 D01 V03, the conducted spurious emissions test method as follows:

- 1. Set start frequency to DTS channel edge frequency.
- 2. Set stop frequency so as to encompass the spectrum to be examined.
- 3. Set RBW = 100 kHz.
- 4. Set VBW \geq 300 kHz.
- 5. Detector = peak.
- 6. Trace Mode = \max hold.
- 7. Sweep = auto couple.
- 8. Allow the trace to stabilize (this may take some time, depending on the extent of the span).
- 9. Use peak marker function to determine maximum amplitude of all unwanted emissions within any 100 kHz bandwidth.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in section 8.1. Report the three highest emissions relative to the limit.

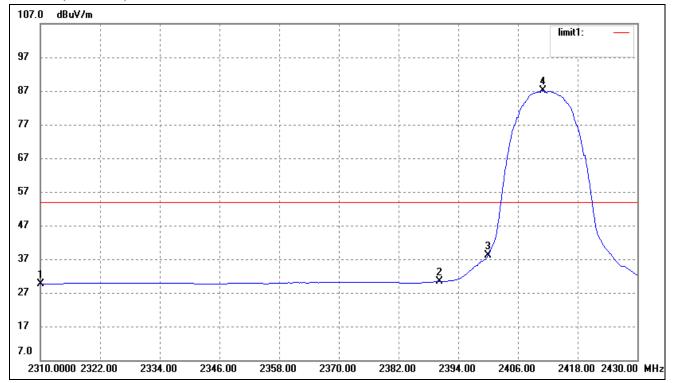
9.4 Environmental Conditions

Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.5 Summary of Test Results/Plots

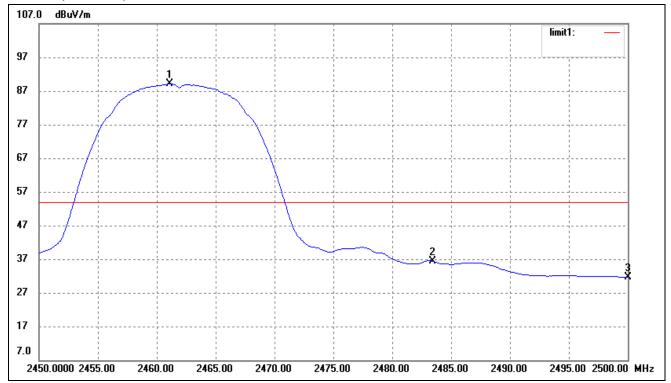
Please refer to the test plots as below.

802.11b-Lowest Bandedge



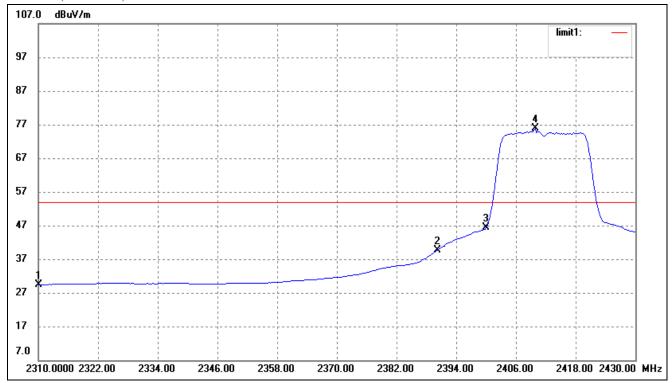
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	33.25	-3.71	29.54	54.00	-24.46	Average Detector
	2310.000	46.03	-3.71	42.32	74.00	-31.68	Peak Detector
2	2390.000	33.86	-3.54	30.32	54.00	-23.68	Average Detector
	2390.000	45.86	-3.54	42.32	74.00	-31.68	Peak Detector
3	2400.000	41.56	-3.51	38.05	Delta = 49.09 dBc		Average Detector
4	2411.122	90.62	-3.48	87.14			Average Detector

802.11b-Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2461.809	92.48	-3.37	89.11	/	/	Average Detector
	2461.809	103.19	-3.37	99.82	/	/	Peak Detector
2	2483.500	Dalta - A	54.73dBc	34.38	54.00	-19.62	Average Detector
	2483.500	Dena – :	54./3uBc	45.09	74.00	-28.91	Peak Detector
3	2500.000	34.89	-3.28	31.61	54.00	-22.39	Average Detector
	2500.000	48.85	-3.28	45.57	74.00	-28.43	Peak Detector

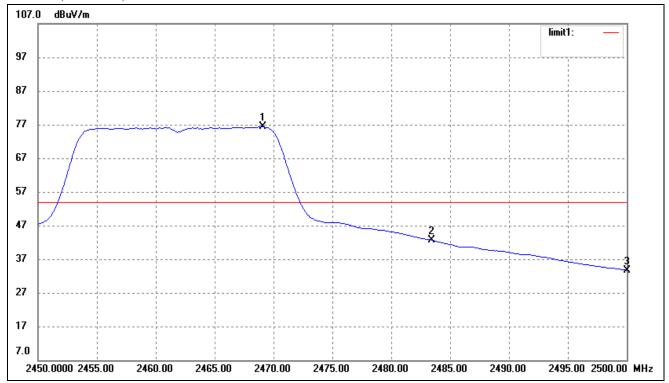
802.11g-Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	33.12	-3.71	29.41	54.00	-24.59	Average Detector
	2310.000	45.83	-3.71	42.12	74.00	-31.88	Peak Detector
2	2390.000	43.19	-3.54	39.65	54.00	-14.35	Average Detector
	2390.000	67.35	-3.54	63.81	74.00	-10.19	Peak Detector
3	2400.000	49.90	-3.51	46.39	Delta = 29	9.44 dBc	Average Detector
4	2409.901	79.31	-3.48	75.83	/	/	Average Detector

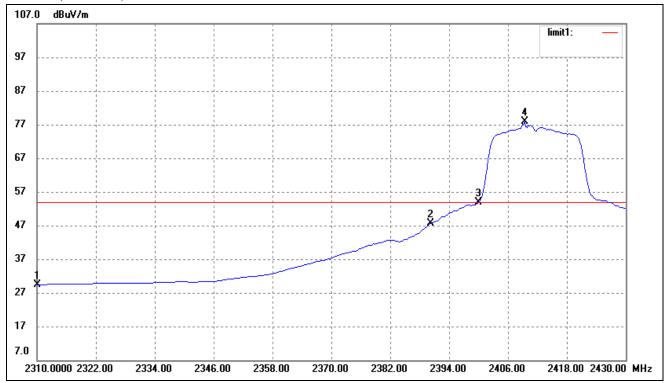
F:\Daniel\RE-1.db #824

802.11g-Highest Bandedge



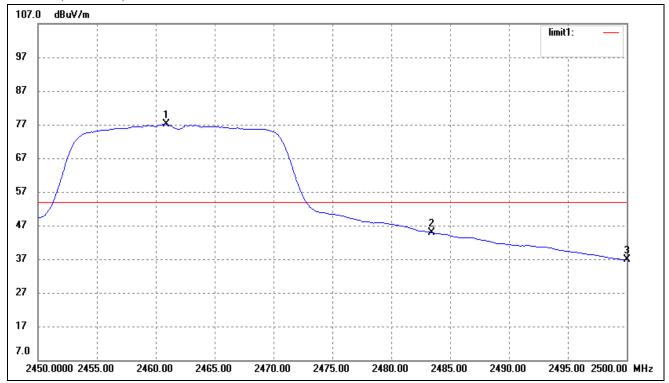
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2469.180	79.67	-3.35	76.32	/	/	Average Detector
	2469.180	103.27	-3.36	99.91	/	/	Peak Detector
2	2483.500	Delta = 42.96dBc		33.36	54.00	-20.64	Average Detector
	2483.500			56.95	74.00	-17.05	Peak Detector
3	2500.000	36.98	-3.28	33.70	54.00	-20.30	Average Detector
	2500.000	65.23	-3.28	61.95	74.00	-12.05	Peak Detector

802.11n-HT20-Lowest Bandedge



No.	Frequency	Reading	Correct	Result	Limit Margin Remark		Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	33.10	-3.71	29.39	54.00	-24.61	Average Detector
	2310.000	47.09	-3.71	43.38	74.00	-30.62	Peak Detector
2	2390.000	51.16	-3.54	47.62	54.00	-6.38	Average Detector
	2390.000	77.14	-3.54	73.60	74.00	-0.40	Peak Detector
3	2400.000	57.42	-3.51	53.91	Delta = 23.94 dBc		Delta = 22.63 dBc
4	2409.413	81.33	-3.48	77.85			Average Detector

802.11n-HT20-Highest Bandedge



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2460.914	80.60	-3.37	77.23	/	/	Average Detector
	2460.914	104.42	-3.37	101.05	/	/	Peak Detector
2	2483.500	Delta = 39.53dBc		37.70	54.00	-16.30	Average Detector
	2483.500			61.52	74.00	-12.48	Peak Detector
3	2500.000	40.06	-3.28	36.78	54.00	-17.22	Average Detector
	2500.000	66.32	-3.28	63.04	74.00	-10.96	Peak Detector

10. Conducted Emissions

10.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

10.2 Test Equipment List and Details

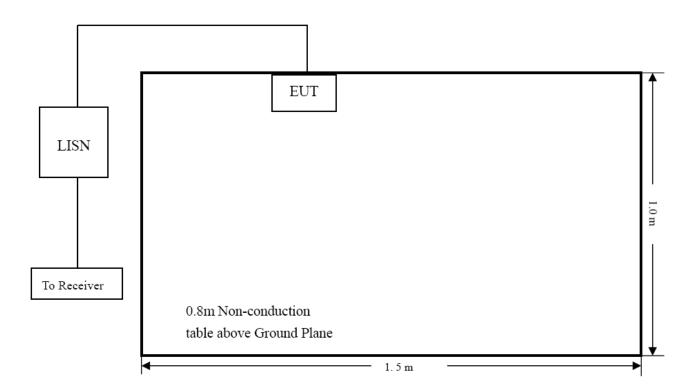
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2013-05-07	2014-05-06
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2013-05-07	2014-05-06
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2013-05-07	2014-05-06

10.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

10.4 Basic Test Setup Block Diagram



10.5 Environmental Conditions

Temperature:	25 °C	
Relative Humidity:	52%	
ATM Pressure:	1012 mbar	

10.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency	150 kHz
Stop Frequency	30 MHz
Sweep Speed	
IF Bandwidth	10 kHz
Quasi-Peak Adapter Bandwidth	9 kHz
Quasi-Peak Adapter Mode	Normal

10.7 Summary of Test Results/Plots

According to the data in section 9.8, the EUT <u>complied with the FCC Part 15.207</u> Conducted margin for a Class B device, with the *worst* margin reading of:

-10.13 dB at 2.058 MHz in the Line mode, peak detector, 0.15-30MHz

10.8 Conducted Emissions Test Data

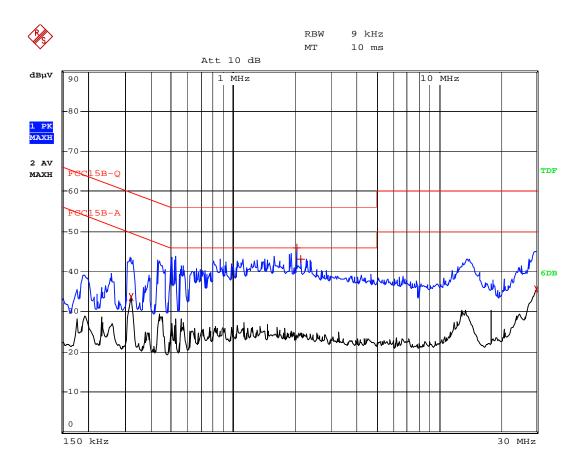
Plot of Conducted Emissions Test Data

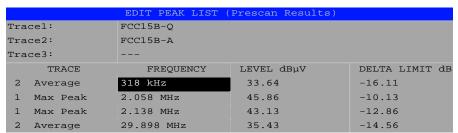
EUT: Tablet PC
Tested Model: Minno 10

Operating Condition: Transmitting(Wi-Fi)

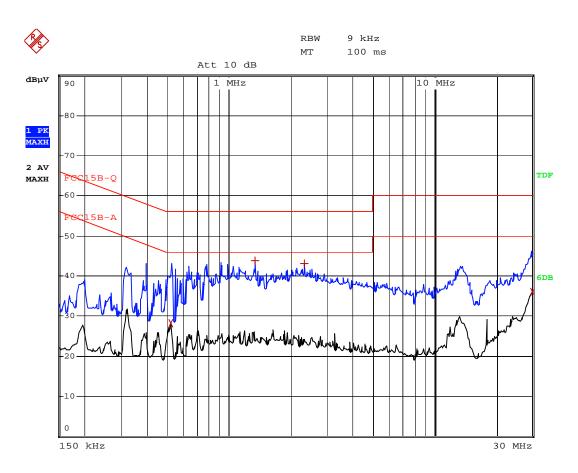
Comment: AC 120V/60Hz; Adapter DC 12V

Test Specification: Line





Test Specification: Neutral



	EDIT PEAK LIST	r (Prescan Results)					
Tracel:	FCC15B-Q	FCC15B-Q					
Trace2:	FCC15B-A	FCC15B-A					
Trace3:							
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB				
2 Average	522 kHz	28.20	-17.79				
1 Max Peak	1.338 MHz	43.77	-12.22				
1 Max Peak	2.33 MHz	43.03	-12.96				
2 Average	29.858 MHz	36.04	-13.95				

***** END OF REPORT *****