FCC Part 15C
Measurement and Test Report

For

Bulltech Electronic Products S.L

Gran Via, 64, 2-1, 28013 Madrid, Spain.

FCC ID: 2AAM3SYRENI500

FCC Rule(s):	FCC Part 15C
Product Description:	Mobile phone
Tested Model:	Syreni 500
Report No.:	STR13128307I-1
Tested Date:	2014-01-02 to 2014-01-04
Issued Date:	2014-01-10
Tested By:	Silin Chen / Engineer
Reviewed By:	Lahm Peng / EMC Manager
Approved & Authorized By:	Jandy so / PSQ Manager

Prepared By:

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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 Shenzhen SEM. Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Bulltech Electronic Products S.L
Address of applicant:	Gran Via, 64, 2-1, 28013 Madrid, Spain.
Manufacturer:	Gipo Holdings Limited
Address of manufacturer:	East 1201, Phase II, Tian'an Hi-tech Plaza, Futian District, Shenzhen, China

General Description of EUT	
Product Name:	Mobile phone
Brand Name:	SZENIO, GIPO, AKAI, XION, Everaj
Model No.:	Syreni 500
Adding Mode:	PHA-5880, XI-CE600, U5, U6, Syreni 550
Software Version:	Hugiga HWA860 20131214-190427
Hardware Version:	A25_MB_V2.0
Rated Voltage:	DC 3.7V
Battery:	1900mAh
Power Adaptor:	Input 100-240V, 50/60Hz, Output DC 5V
Device Category:	Portable Device
The EUT is GSM850/900/PCS1800/1900, WCDMA Band I, Band V network mobile phone. the mobile phone is intended for speech and Multimedia Message Service (MMS) transmission. It is equipped with GPRS class 12 for GSM850 and GSM1900 and Bluetooth, Wi-Fi, and camera functions. The EUT has two SIM sockets while with the same RF circuit and function controlled by the firmware software. For more information see the following datasheet	
The test data is gathered from a production sample, provided by the manufacturer. The other model listed in the report has different appearance only of Syreni 500 without circuit and electronic construction changed, declared by the manufacturer.	

Technical Characteristics of EUT	
Wi-Fi	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2472MHz for 11b/g/n-HT20 2422-2462MHz for 11n-HT40
RF Output Power:	17.46dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels	13 for 802.11b/g/n(HT20) 9 for 802.11b/g/n(HT40)
Channel Separation:	5MHz
Type of Antenna:	Internal Antenna
Antenna Gain:	0.3dBi
Lowest Internal Frequency of EUT:	32.768kHz

1.2 Test Standards

The following report is prepared on behalf of the Bulltech Electronic Products S.L 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.: 934118**
  Shenzhen SEM.Test Technology 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 934118.

- **Industry Canada (IC) Registration No.: 11464A**
  The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**
  Shenzhen SEM.Test Technology 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 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd 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, 2442MHz, 2472MHz
TM2	802.11g	2412MHz, 2442MHz, 2472MHz
TM3	802.11n-HT20	2412MHz, 2442MHz, 2472MHz
TM4	802.11n-HT40	2422MHz, 2442MHz, 2462MHz

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

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

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)	Compliant

N/A: not applicable

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 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 SAR 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 integral 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 v03r01, the test method of power spectral density as below:

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span to 1.5 times the DTS bandwidth.
c) Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ 3 RBW.
e) Detector = peak.
f) Sweep time = auto couple.
g) Trace mode = max hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.
j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.4 Environmental Conditions

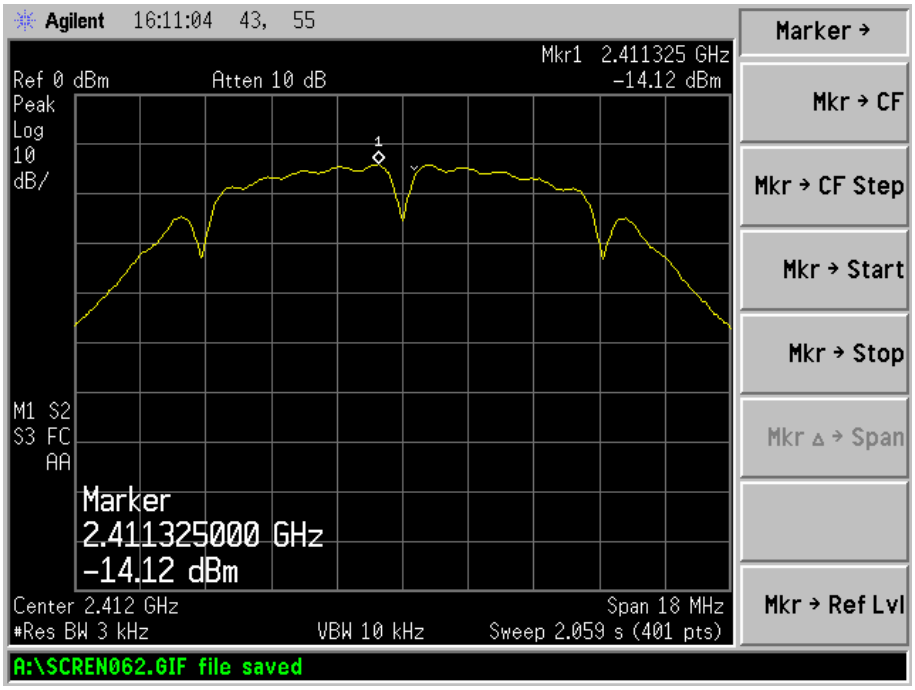
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.5 Summary of Test Results/Plots

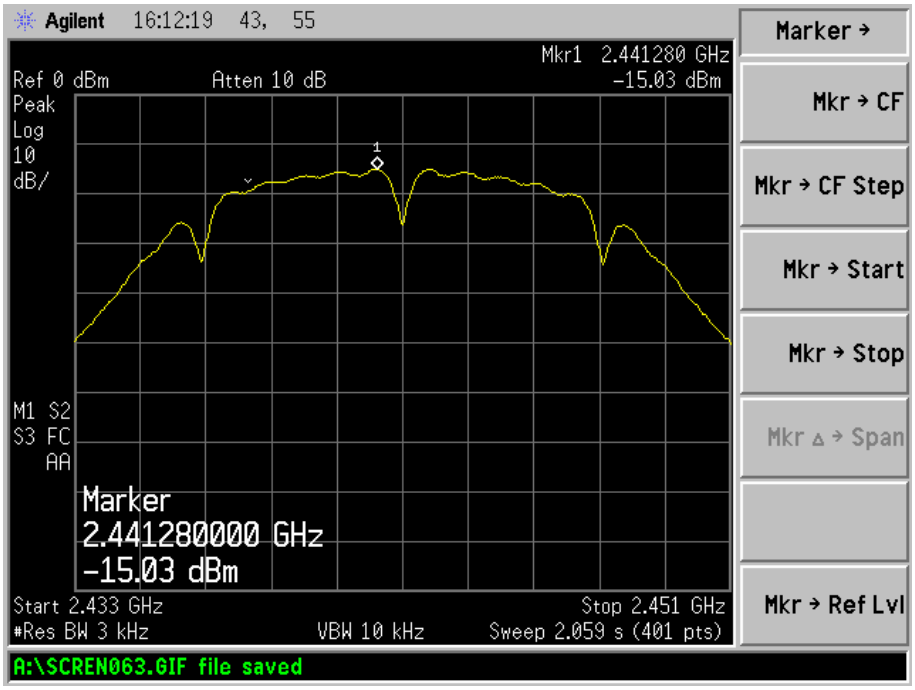
Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
802.11b	2412	-14.12	8
	2442	-15.03	8
	2472	-16.28	8
802.11g	2412	-18.60	8
	2442	-20.09	8
	2472	-20.74	8
802.11n HT20	2412	-19.03	8
	2442	-19.66	8
	2472	-19.82	8
802.11n HT40	2422	-18.55	8
	2442	-20.03	8
	2462	-20.45	8

Please refer to the following test plots:

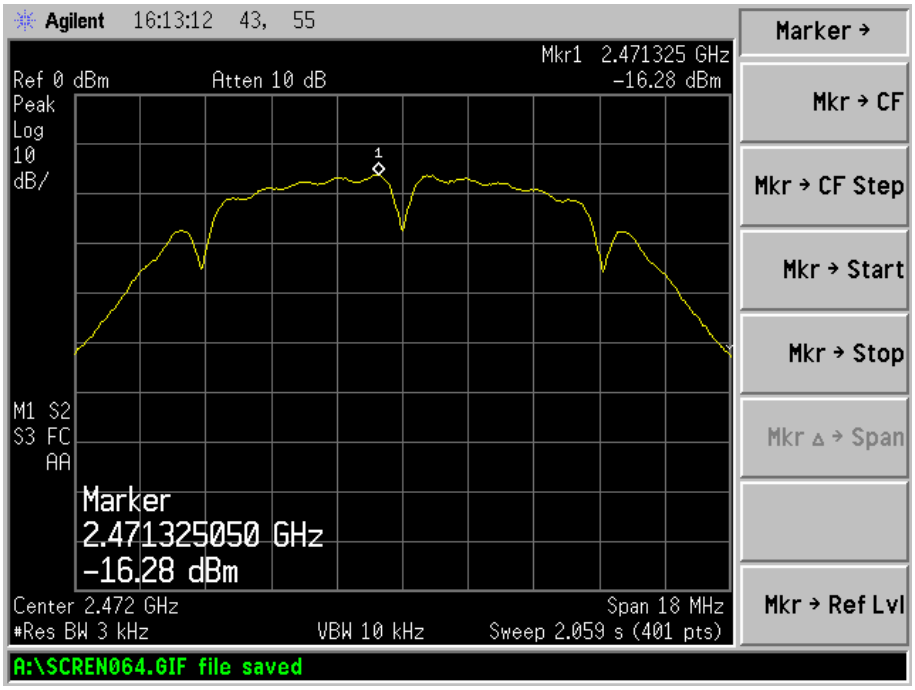
802.11b-Low Channel



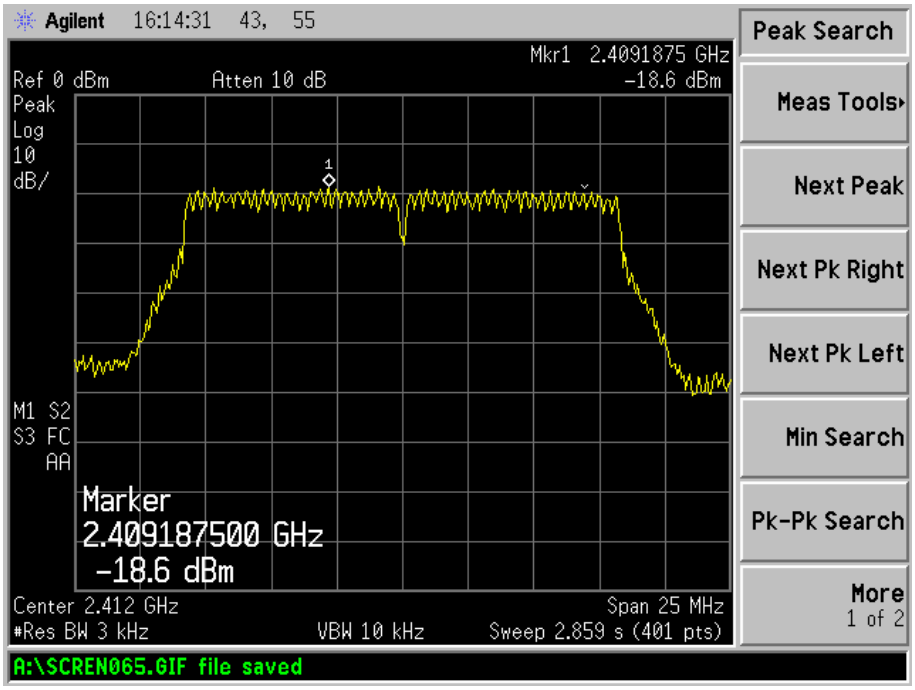
802.11b-Middle Channel



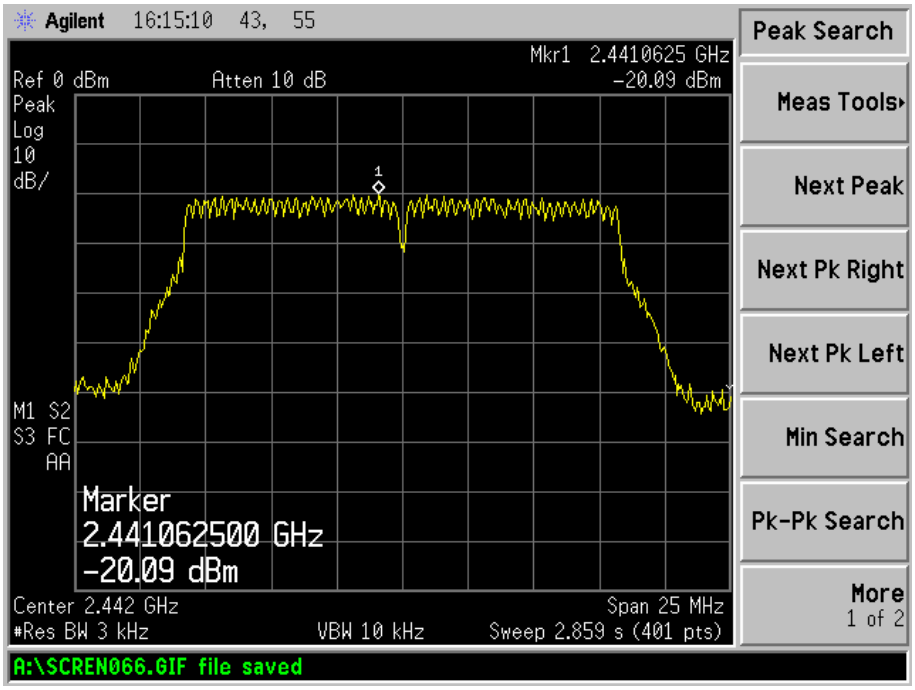
802.11b-High Channel



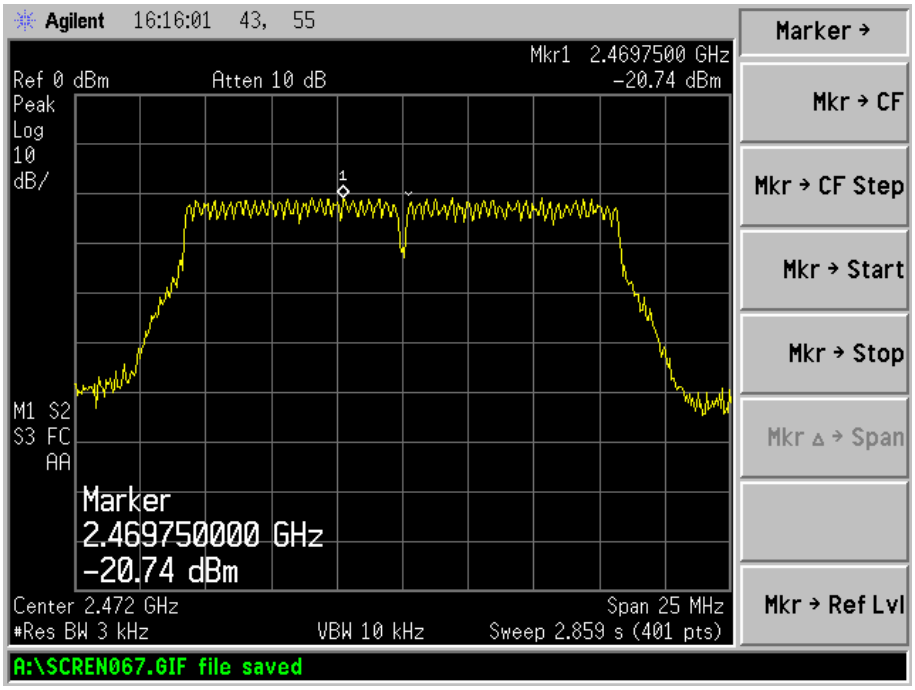
802.11g-Low Channel



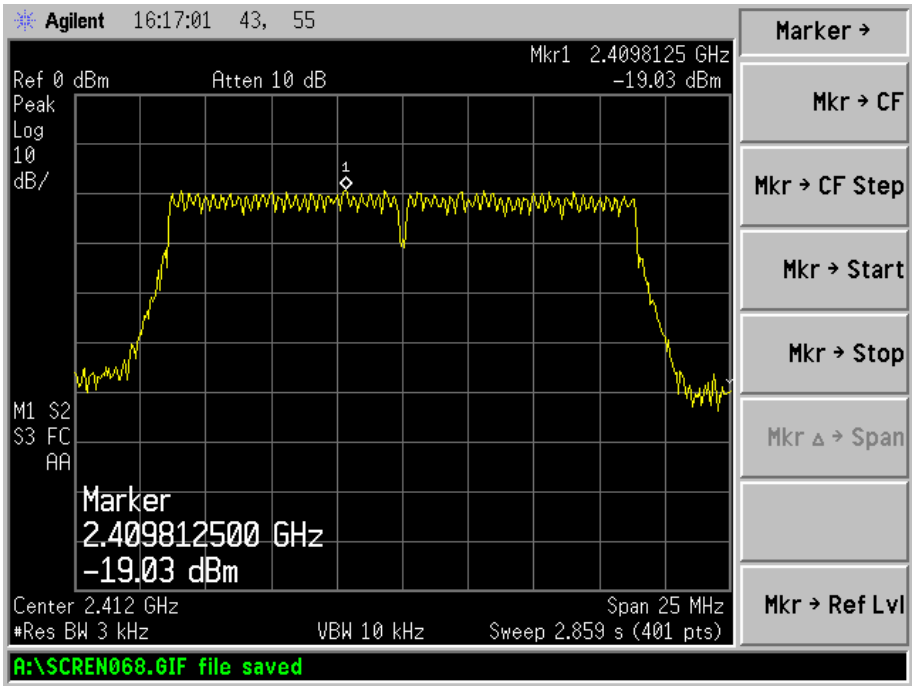
802.11g-Middle Channel



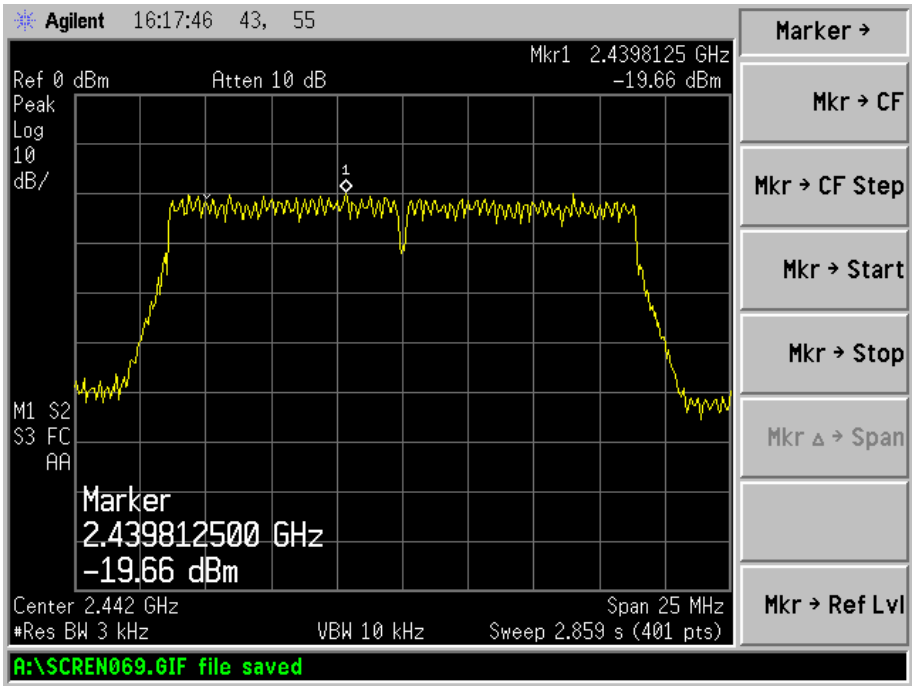
802.11g-High Channel



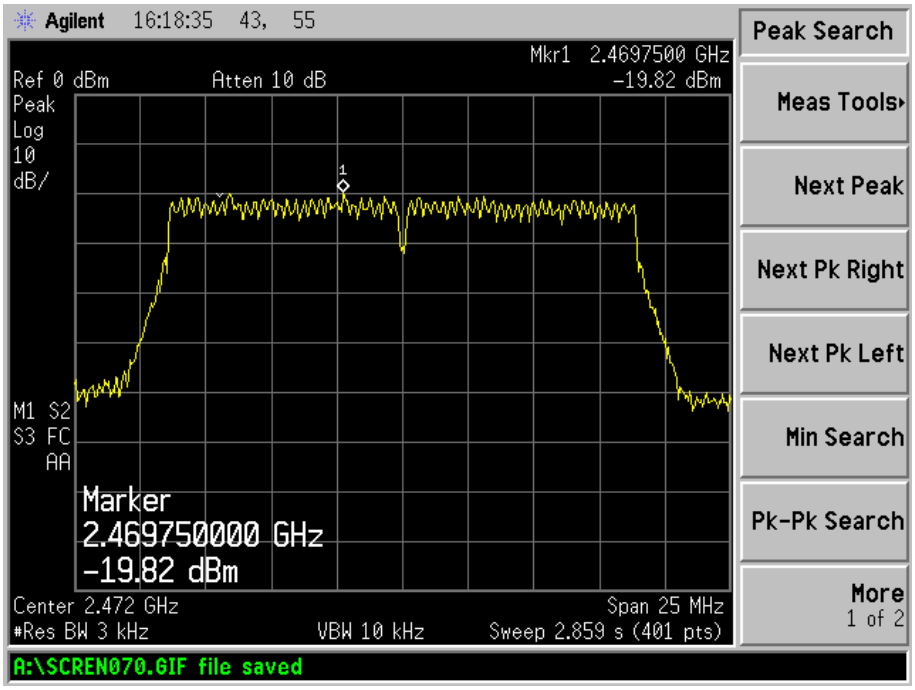
802.11n-HT20-Low Channel



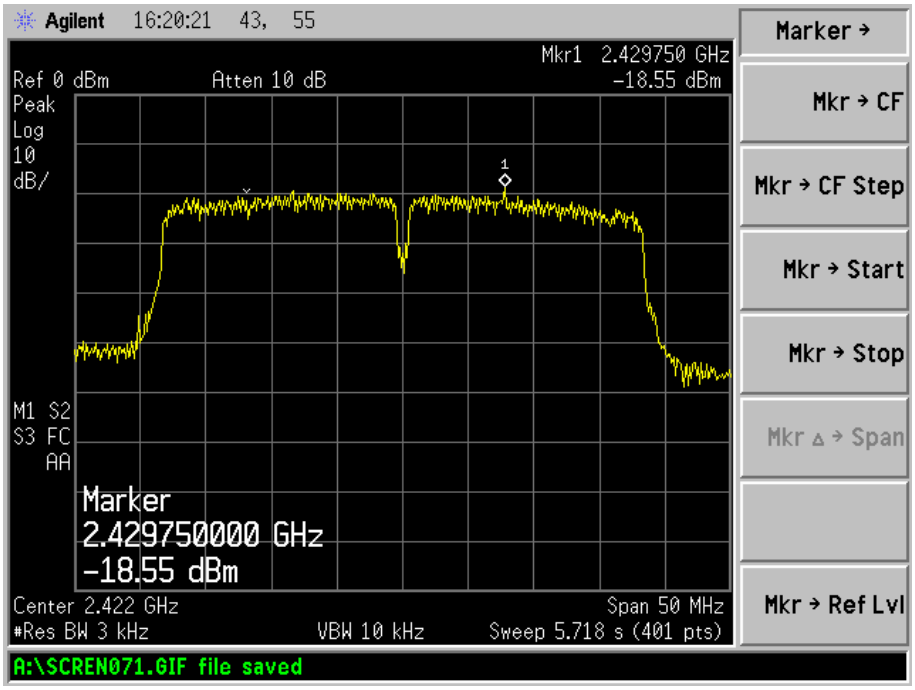
802.11n-HT20-Middle Channel



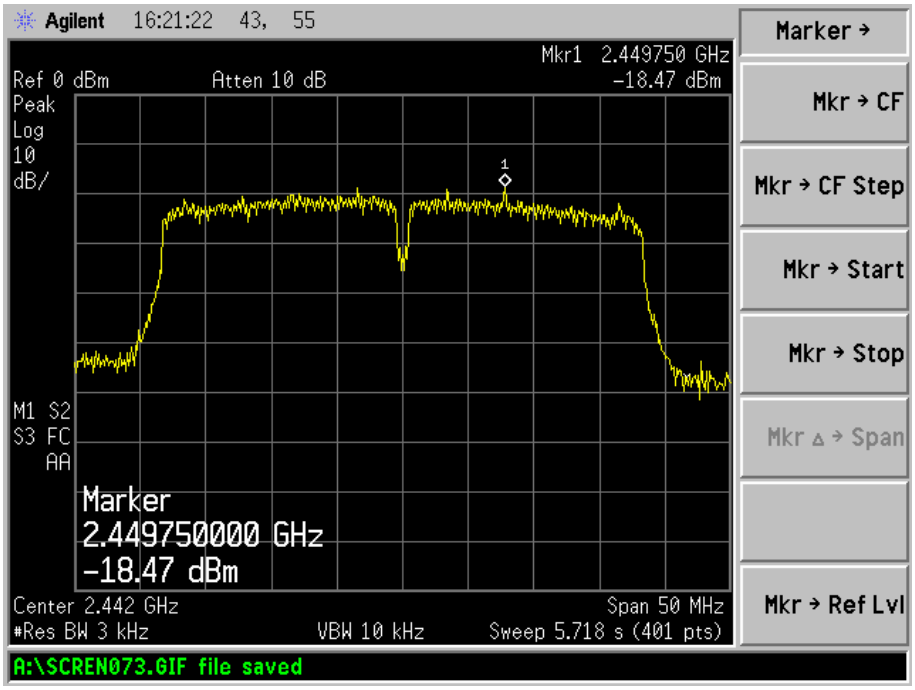
802.11n-HT20-High Channel



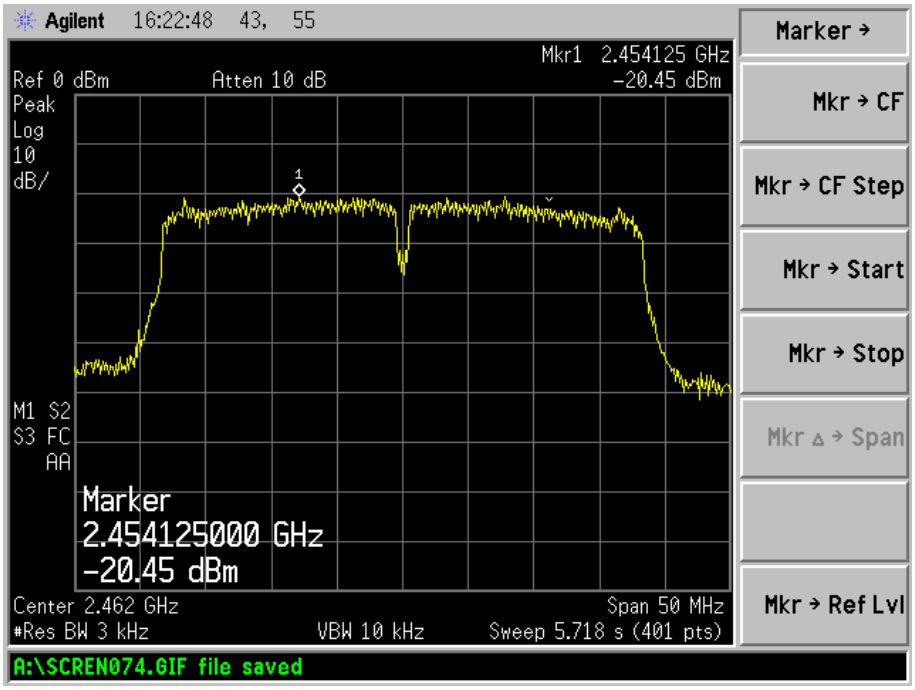
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-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 RBW = 100 kHz.
3. Set the video bandwidth (VBW) ≥ 3XRBW.
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 frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.4 Environmental Conditions

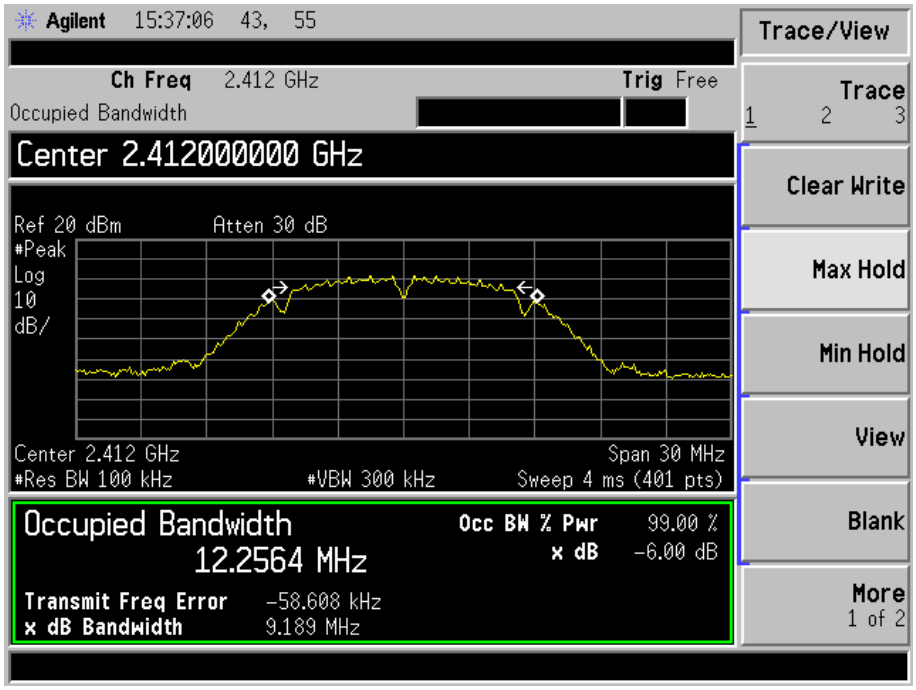
Temperature:	25° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

6.5 Summary of Test Results/Plots

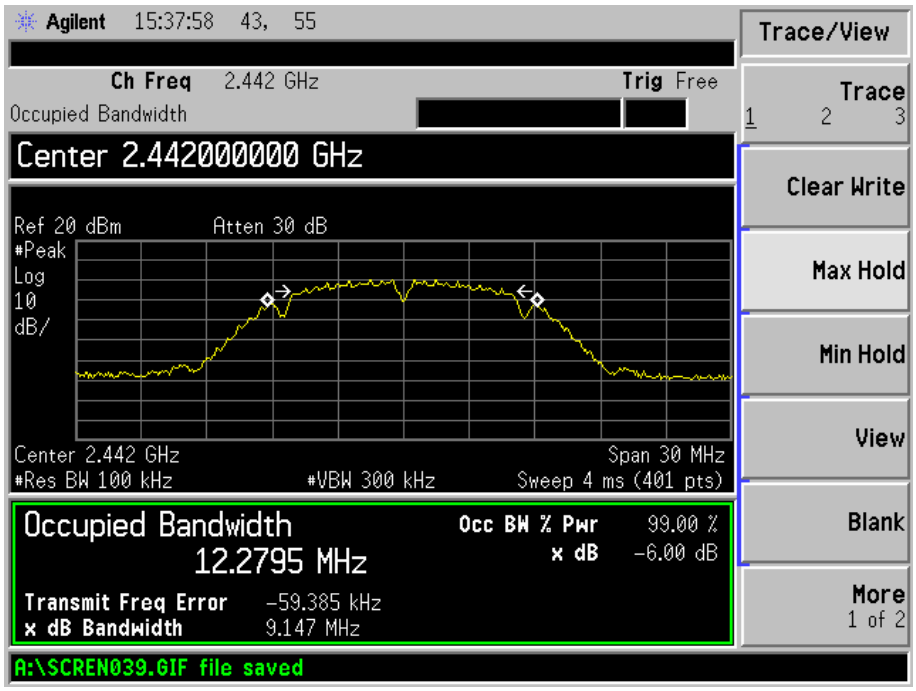
Test Mode	Test Channel MHz	6 dB Bandwidth kHz	99% Bandwidth kHz	Limit kHz
802.11b	2412	9189.0	12256.4	500
	2442	9147.0	12279.5	500
	2472	9192.0	12258.8	500
802.11g	2412	16557.0	16467.1	500
	2442	16592.0	16512.2	500
	2472	16592.0	16525.3	500
802.11n-HT20	2412	17774.0	17630.3	500
	2442	17794.0	17625.4	500
	2472	17860.0	17643.3	500
802.11n-HT40	2422	36210.0	35789.8	500
	2442	36302.0	35816.2	500
	2462	36186.0	35811.3	500

Please refer to the following test plots:

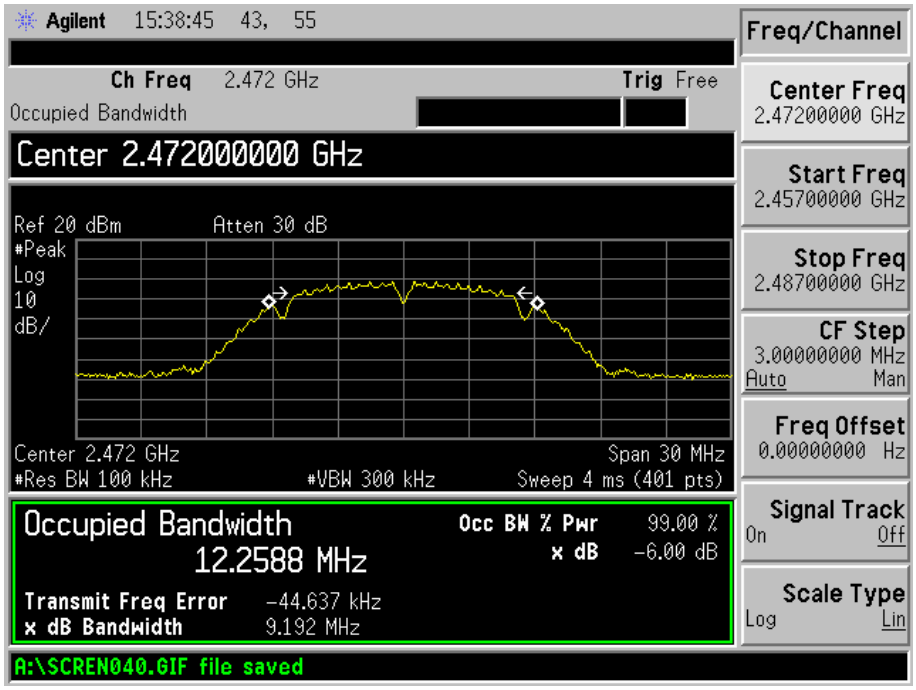
802.11b-Low Channel



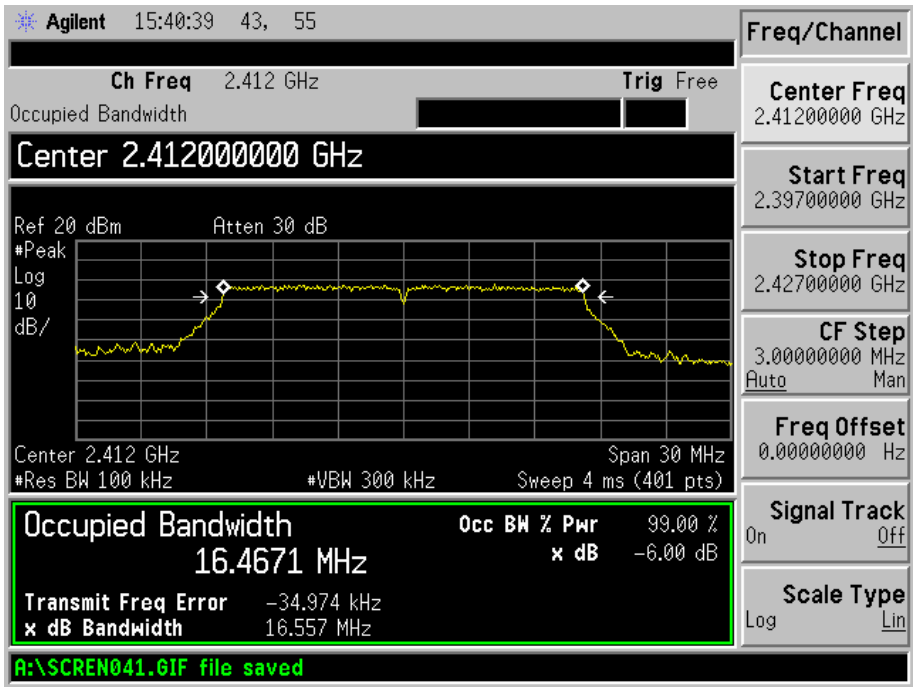
802.11b-Middle Channel



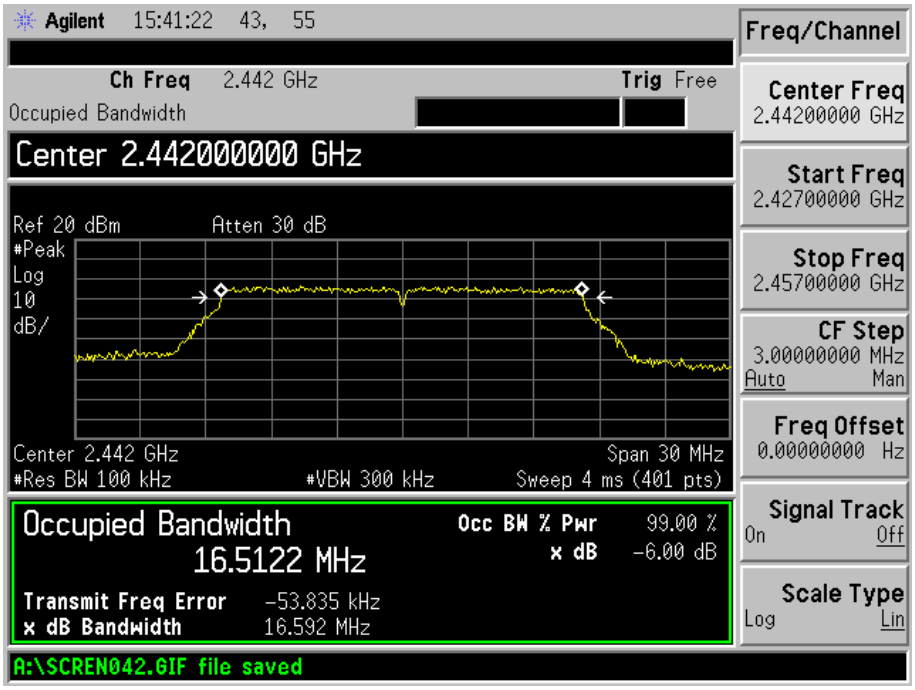
802.11b-High Channel



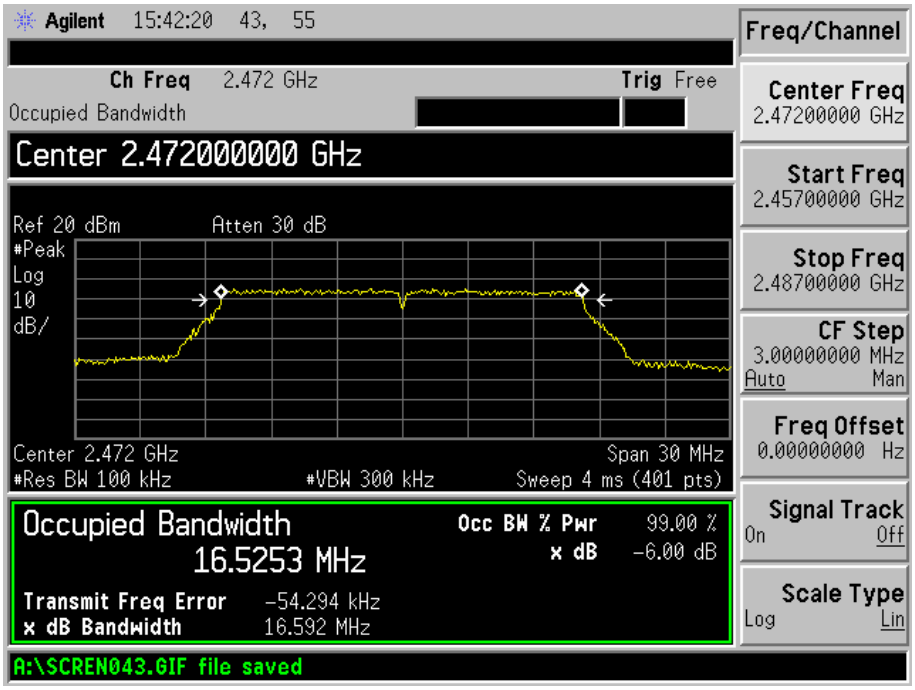
802.11g-Low Channel



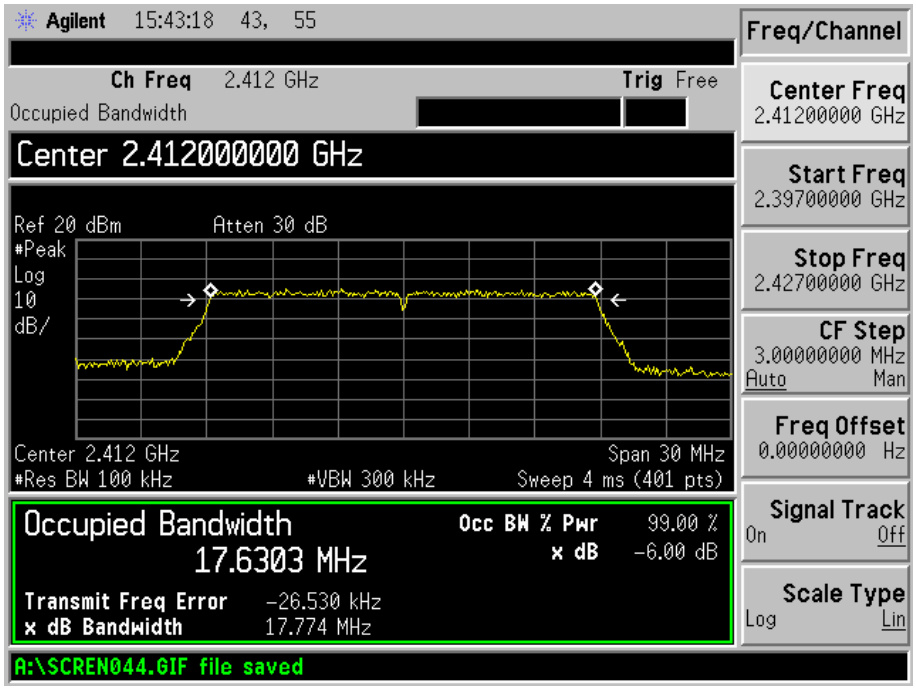
802.11g-Middle Channel



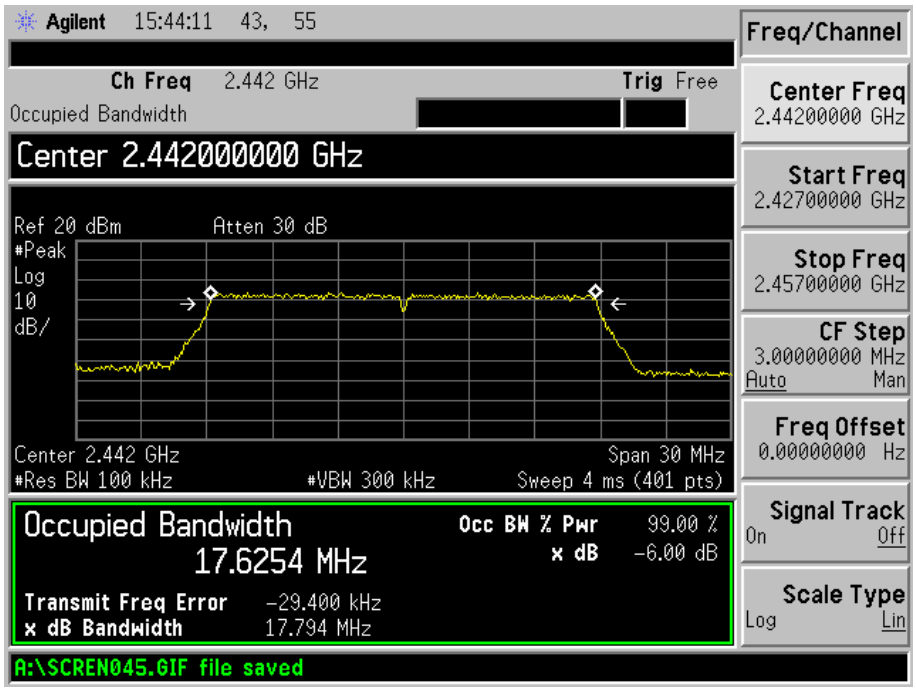
802.11g-High Channel



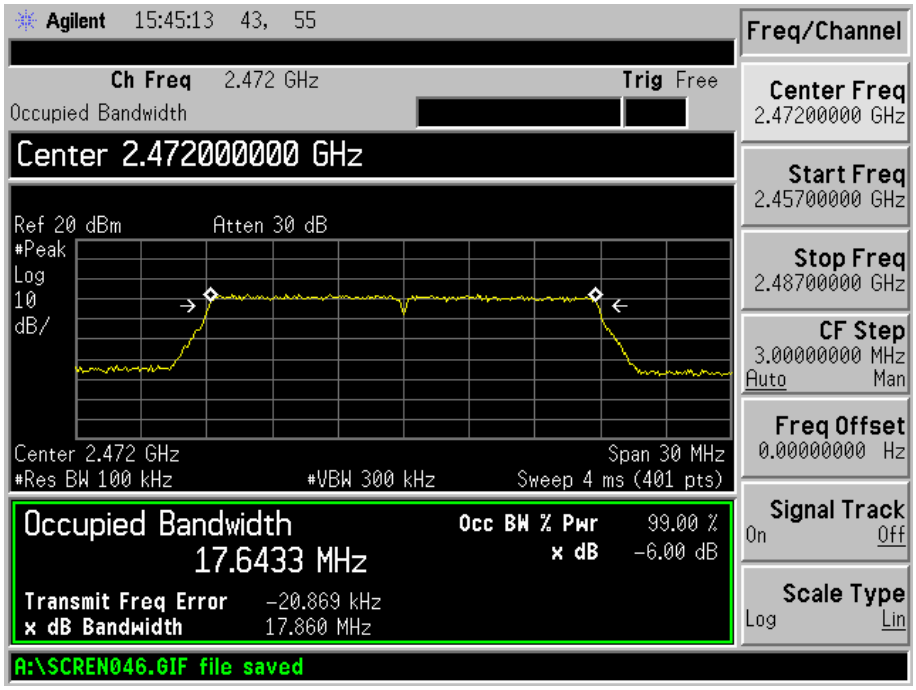
802.11n-HT20-Low Channel



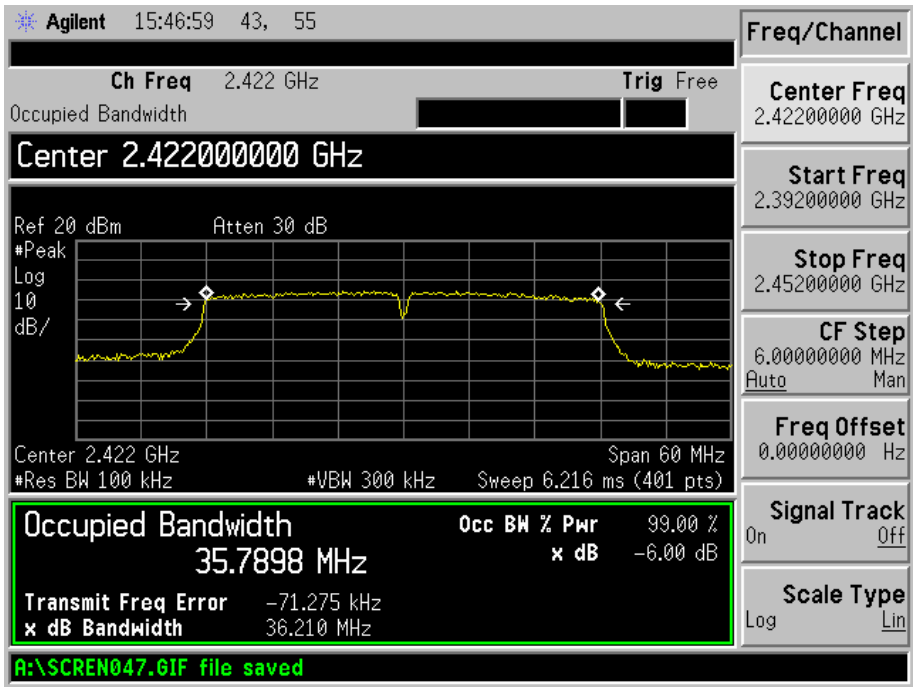
802.11n-HT20-Middle Channel



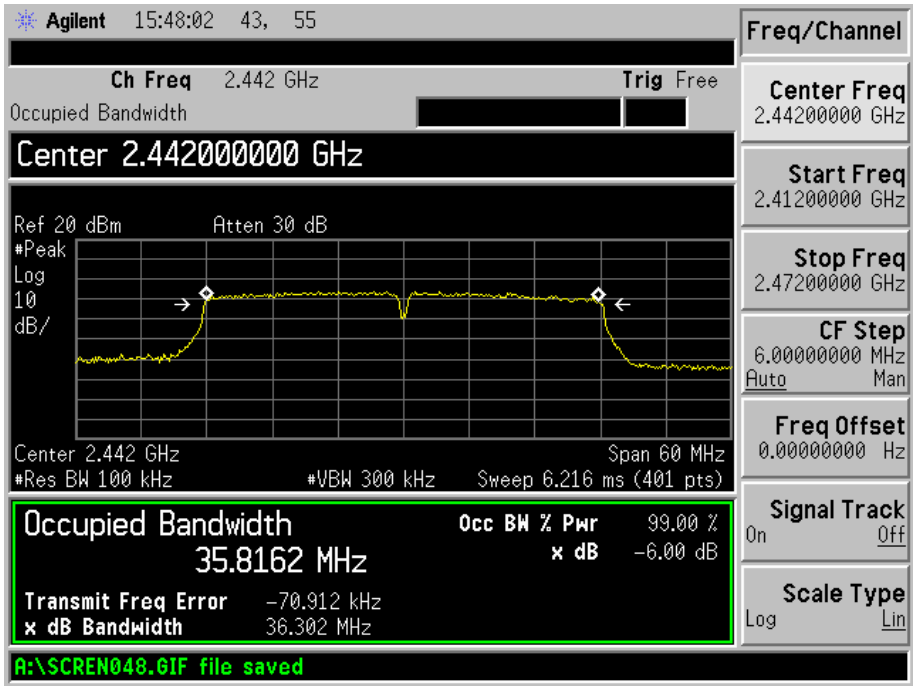
802.11n-HT20-High Channel



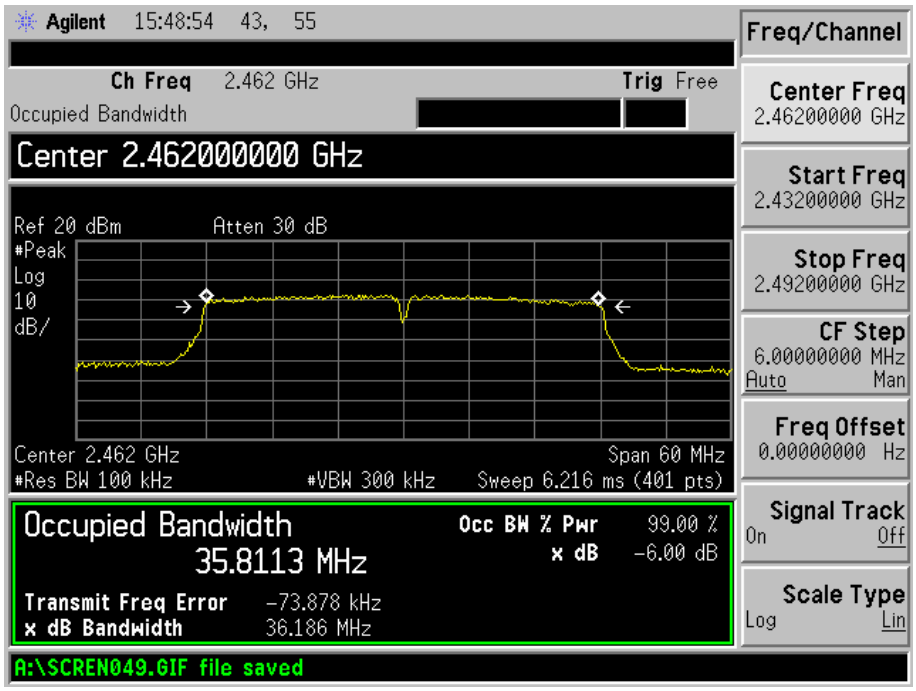
802.11n-HT40-Low Channel



802.11n-HT40-Middle Channel



802.11n-HT40-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 theKDB 558074 D01 v03r01, 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 = 1 MHz.
2. Set the VBW ≥ 3 RBW
3. Set the span ≥ 1.5 x DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector). If the instrument does not have a band power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS bandwidth.

7.4 Environmental Conditions

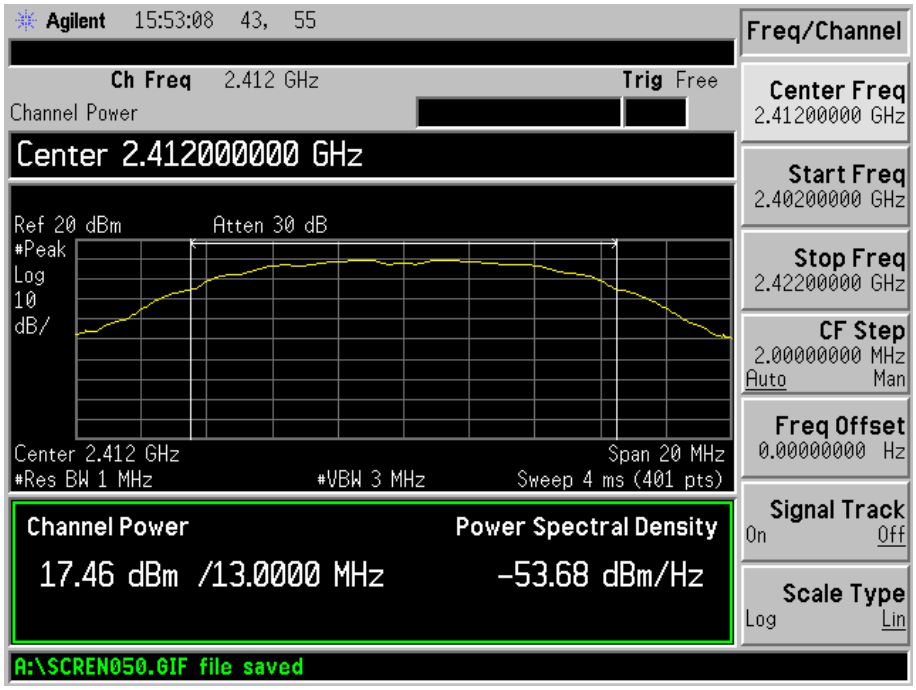
Temperature:	26° C
Relative Humidity:	57%
ATM Pressure:	1011 mbar

7.5 Summary of Test Results/Plots

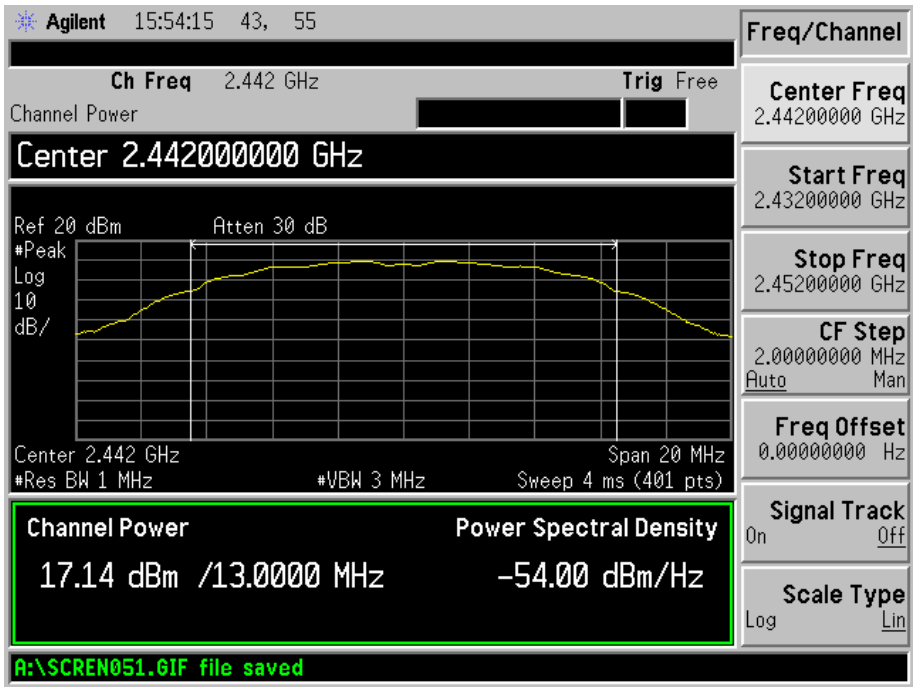
Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
802.11b _ 11Mbps	2412	17.46	55.7186	1000
	2442	17.14	51.7607	1000
	2472	16.70	46.7735	1000
802.11g_54Mbps	2412	15.94	39.2645	1000
	2442	15.91	38.9942	1000
	2472	14.84	30.4789	1000
802.11n HT20_MCS7	2412	15.06	32.0627	1000
	2442	14.39	27.4789	1000
	2472	14.02	25.2348	1000
802.11n HT40_MCS7	2422	14.94	31.1889	1000
	2442	14.26	26.6686	1000
	2462	14.46	27.9254	1000

Please refer to the following test plots:

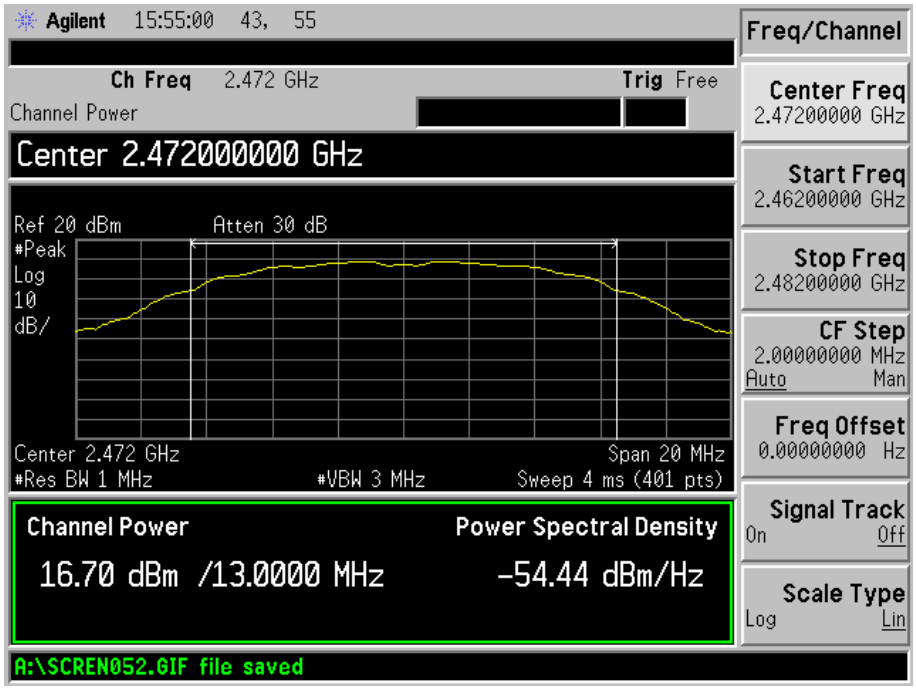
802.11-11Mbps-Low Channel



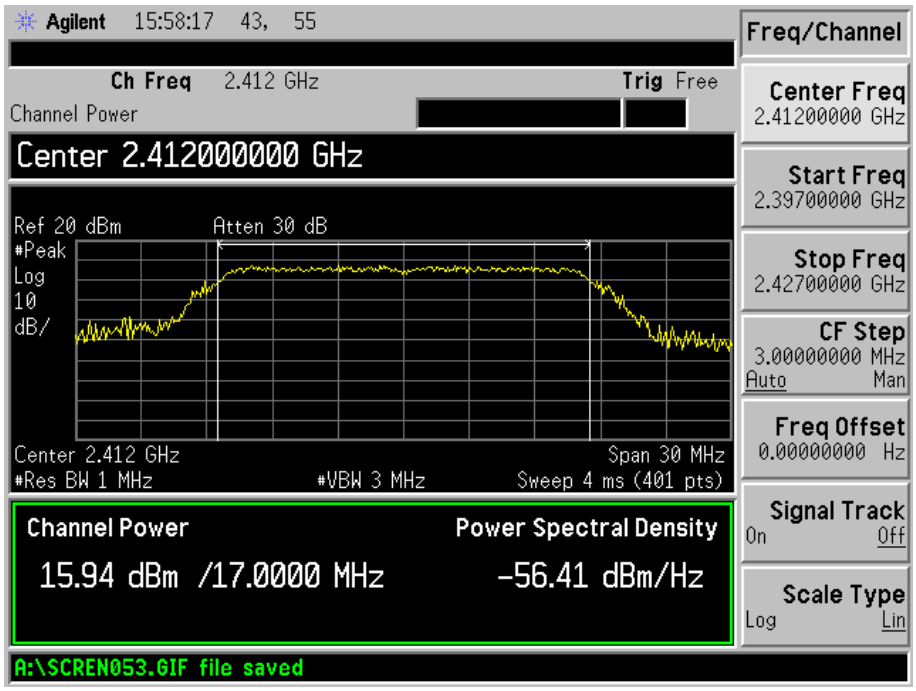
802.11b -11Mbps-Middle Channel



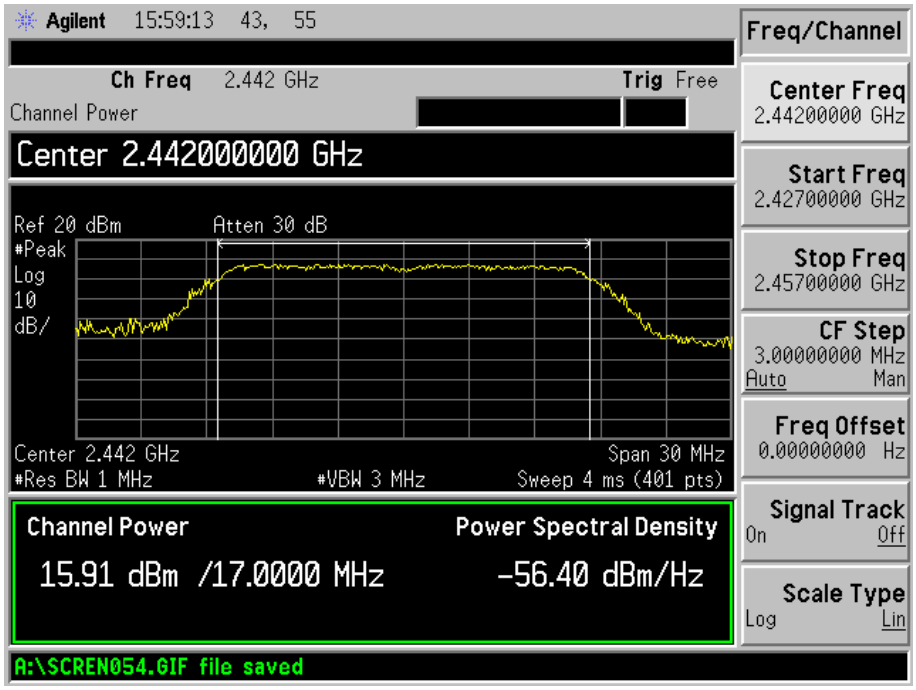
802.11b -11Mpbs-High Channel



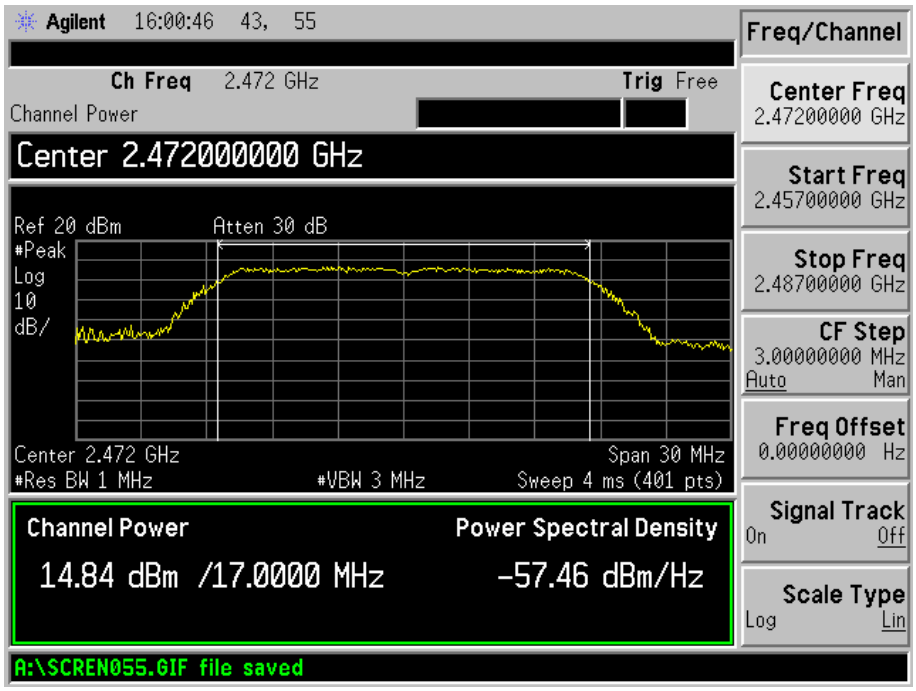
802.11g-54Mbps-Low Channel



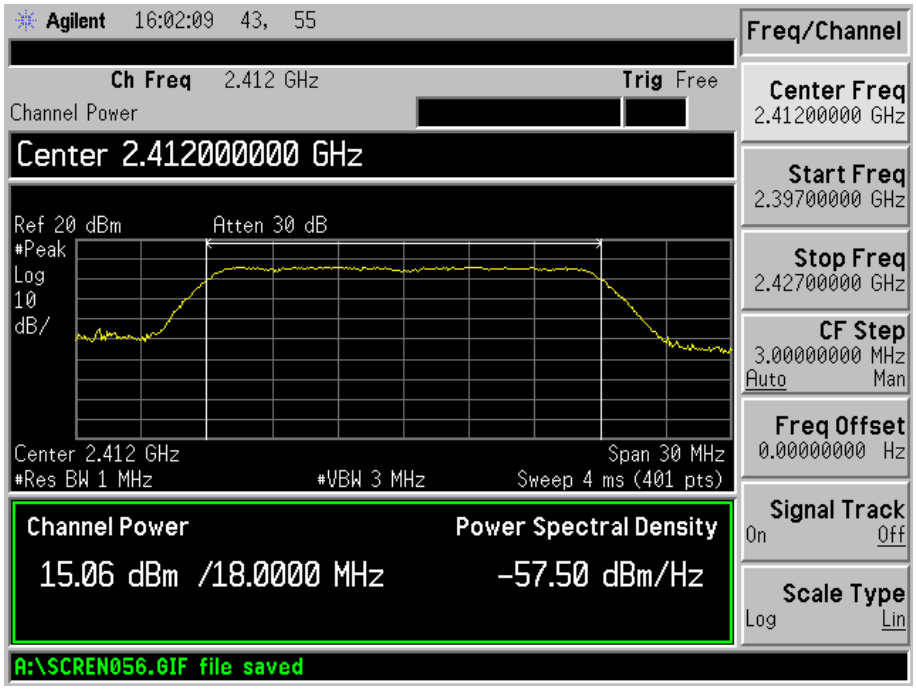
802.11g-54Mbps-Middle Channel



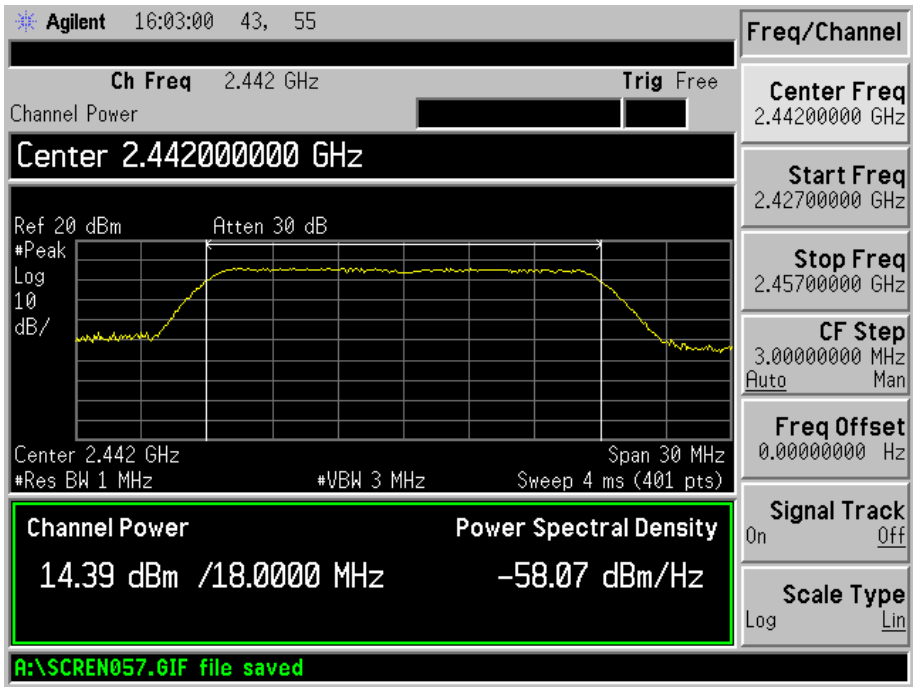
802.11g-54Mpbs-High Channel



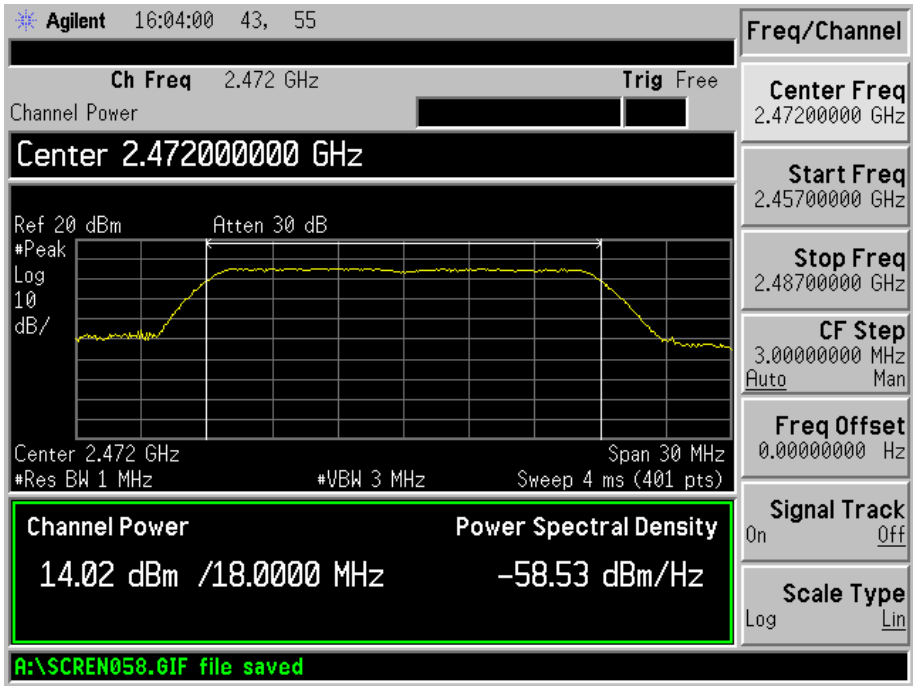
802.11n-HT20-MCS7-Low Channel



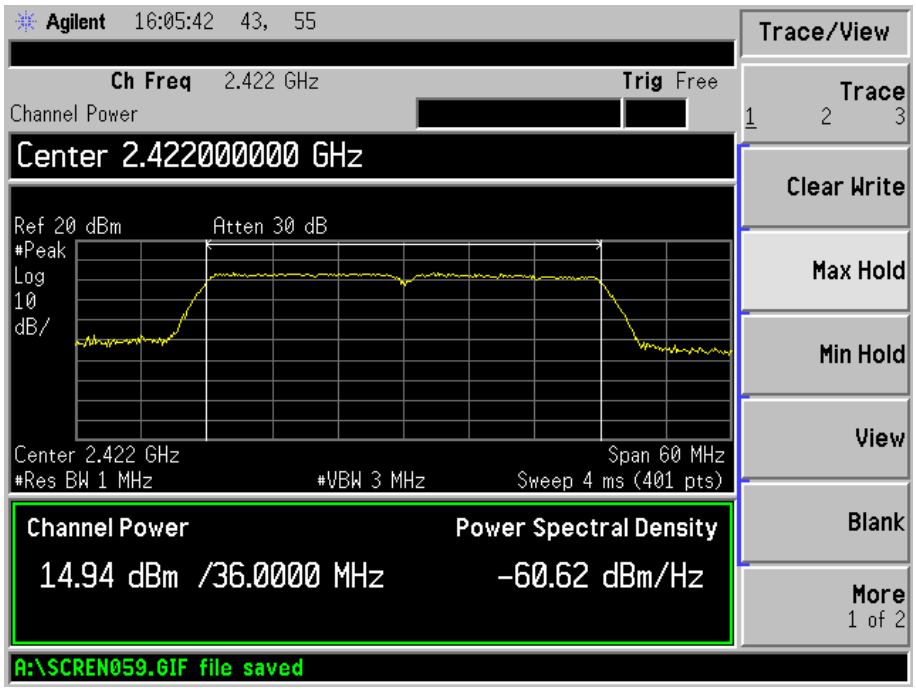
802.11n-HT20-MCS7-Middle Channel



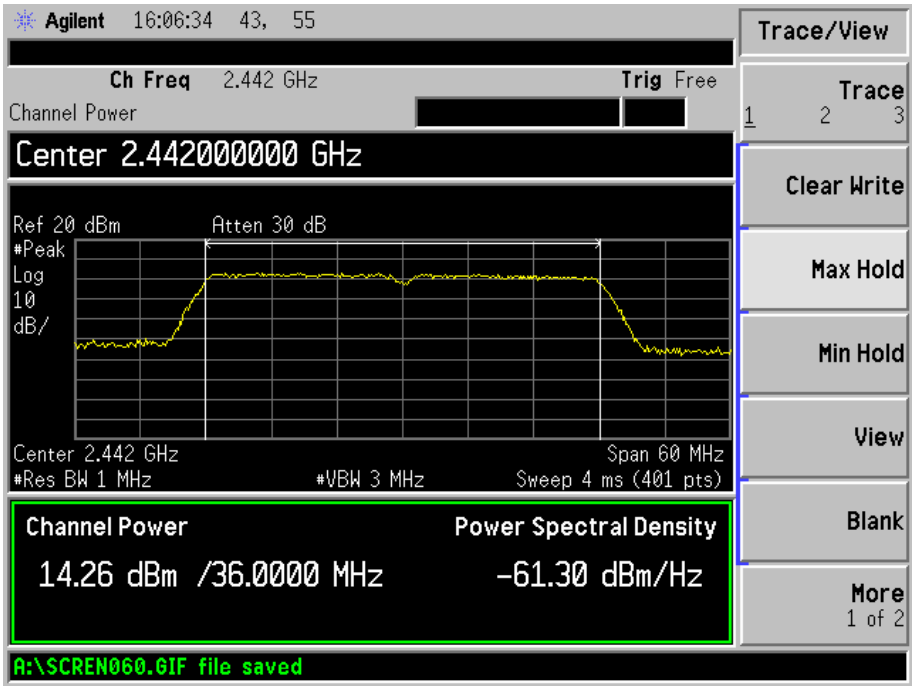
802.11n-HT20-MCS7-High Channel



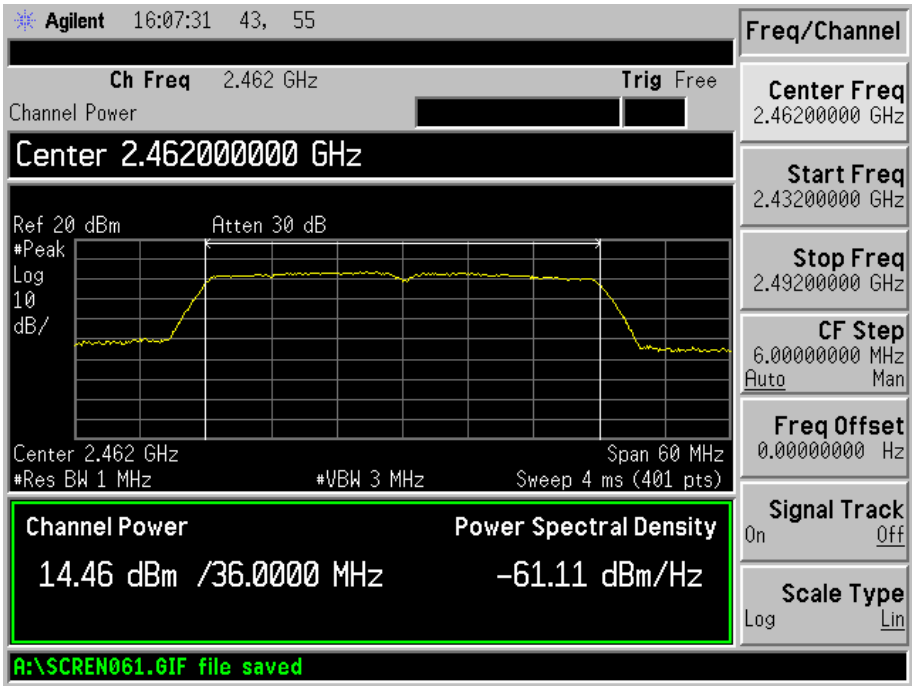
802.11n-HT40-MCS7-Low Channel



802.11n-HT40-MCS7-Middle Channel



802.11n-HT40-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).

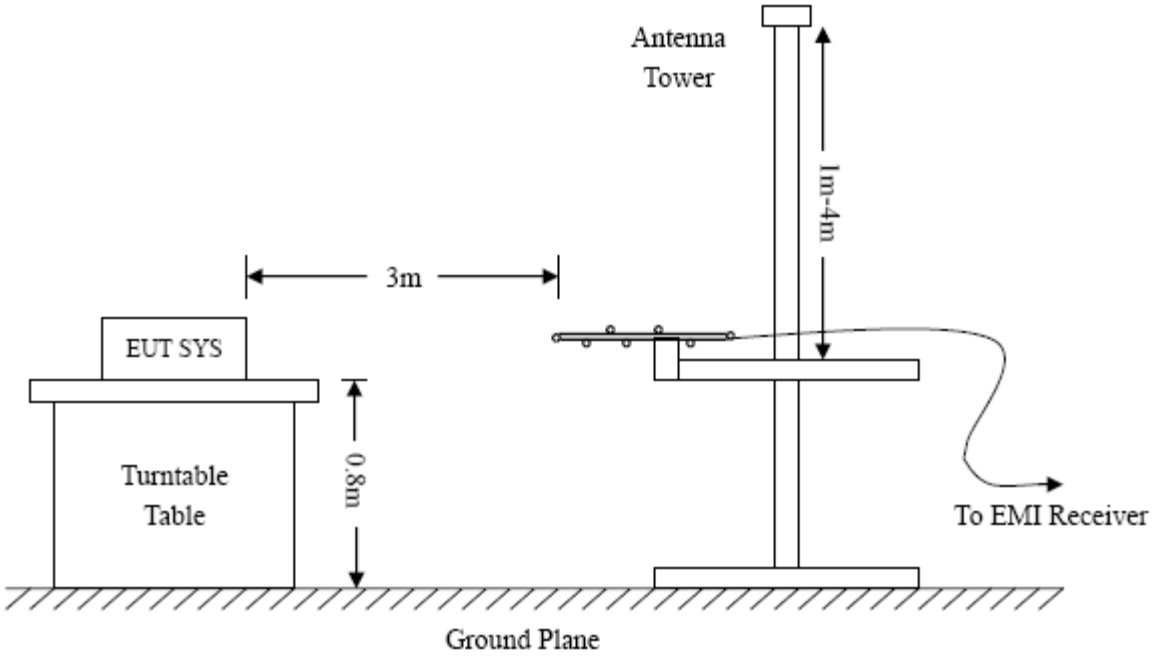
The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

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:

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – Ampl. Gain

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

Margin = Corr. Ampl. – FCC Part 15 Limit

8.6 Environmental Conditions

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

8.7 Summary of Test Results/Plots

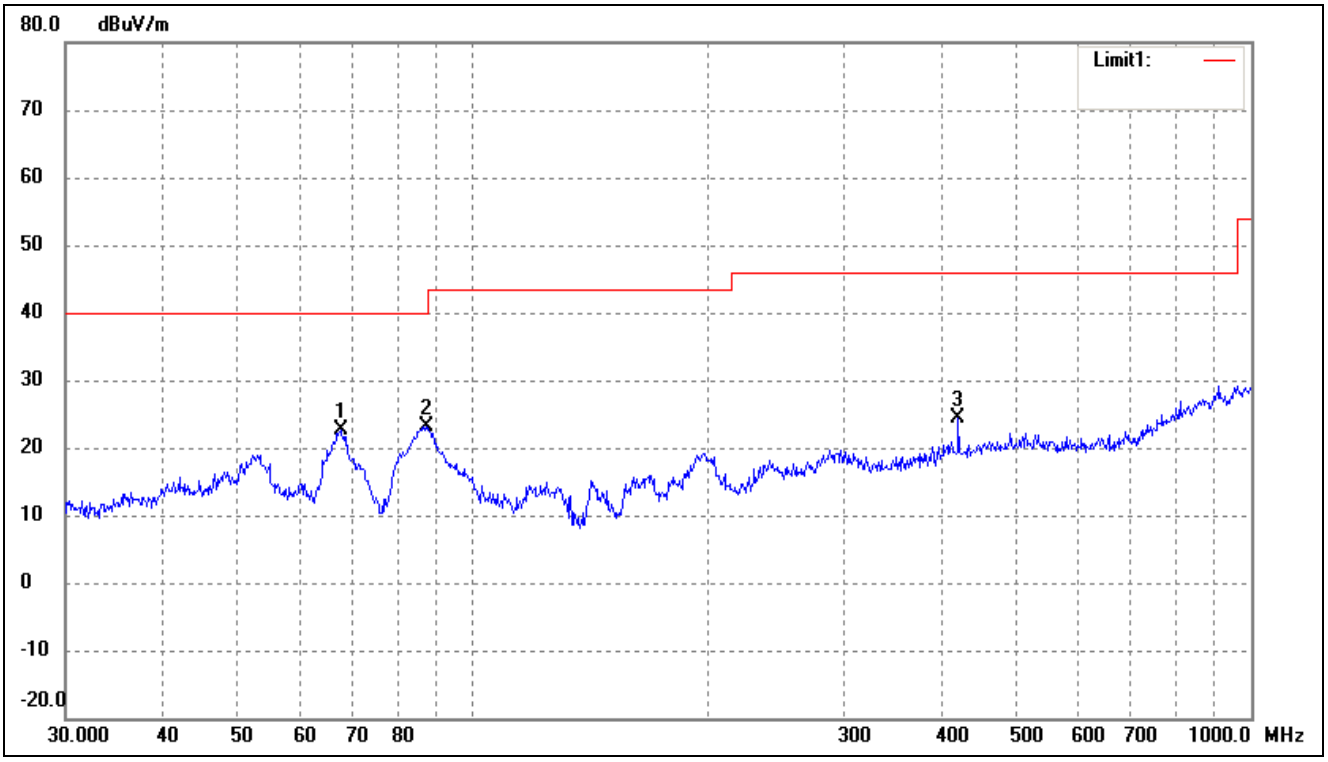
According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst cases:

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)

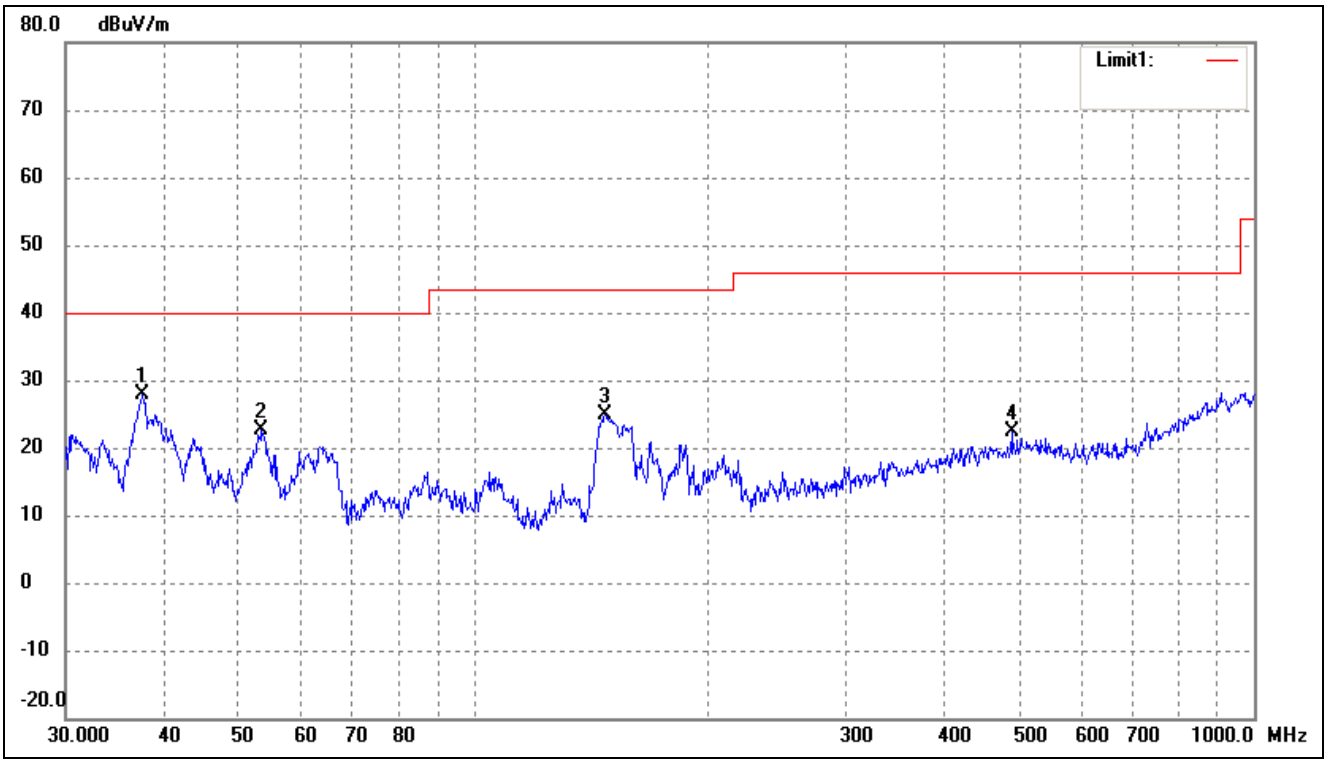
EUT: *Mobile phone*
Tested Model: *Syreni 500*
Operating Condition: *802.11b Transmitting Low Channel-2412MHz*
Comment: *DC 3.7 V*

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	67.6751	33.25	-10.70	22.55	40.00	-17.45	0	100	peak
2*	87.1117	35.18	-11.99	23.19	40.00	-16.81	0	100	peak
3	420.5803	26.73	-2.46	24.27	46.00	-21.73	0	100	peak

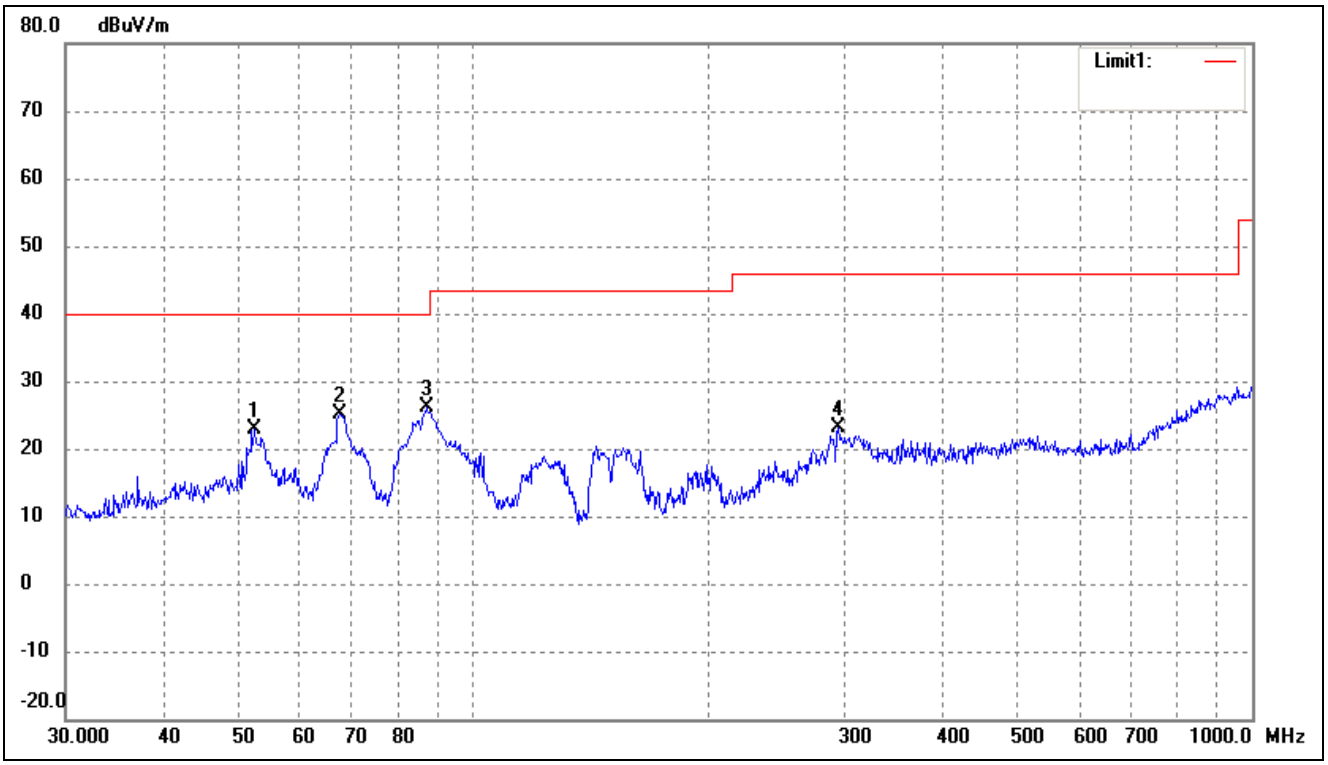
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	37.6798	36.76	-8.97	27.79	40.00	-12.21	0	100	peak
2	53.5052	30.52	-7.80	22.72	40.00	-17.28	0	100	peak
3	147.4036	37.91	-13.00	24.91	43.50	-18.59	0	100	peak
4	489.0269	23.74	-1.37	22.37	46.00	-23.63	0	100	peak

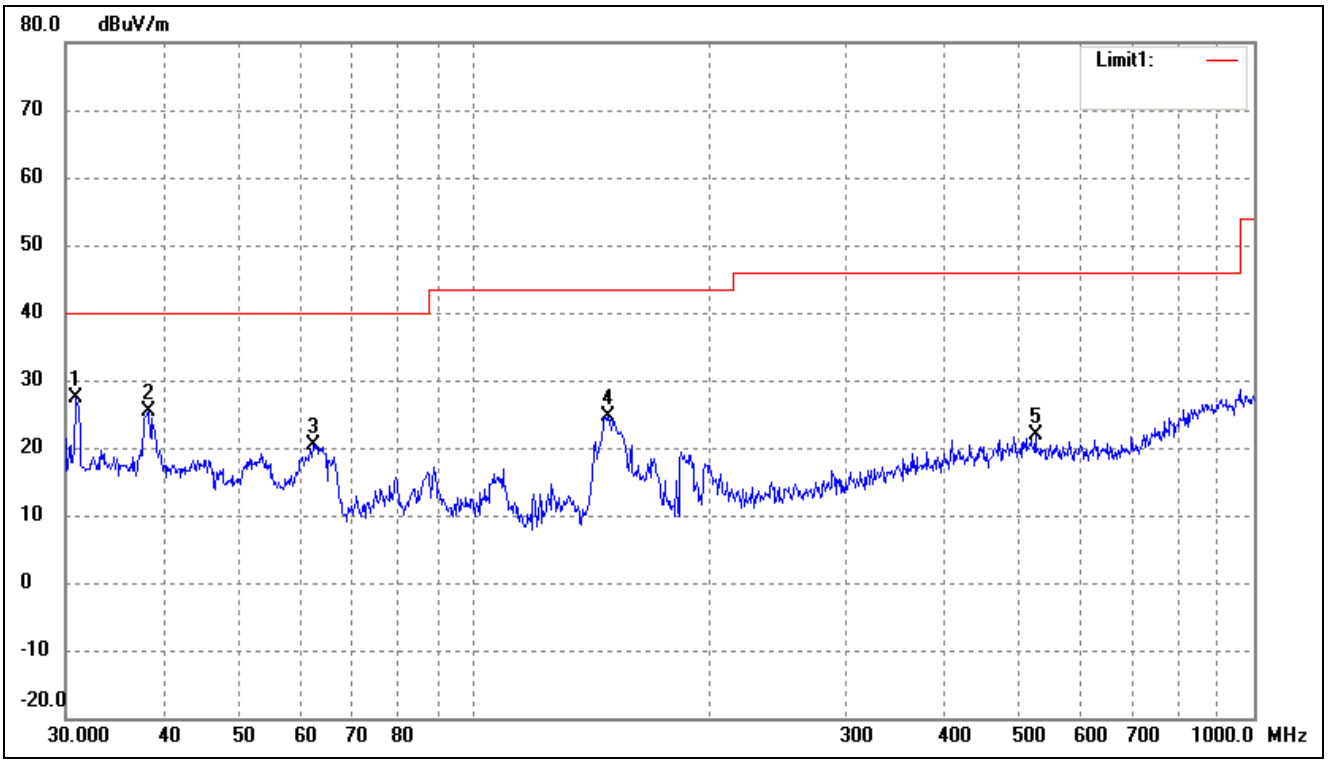
Operating Condition: *802.11b Transmitting Middle Channel-2442MHz*
Comment: *DC 3.7V*

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	52.3913	30.52	-7.68	22.84	40.00	-17.16	0	100	peak
2	67.4382	35.63	-10.61	25.02	40.00	-14.98	0	100	peak
3*	87.1117	38.22	-11.99	26.23	40.00	-13.77	0	100	peak
4	294.1137	29.43	-6.32	23.11	46.00	-22.89	0	100	peak

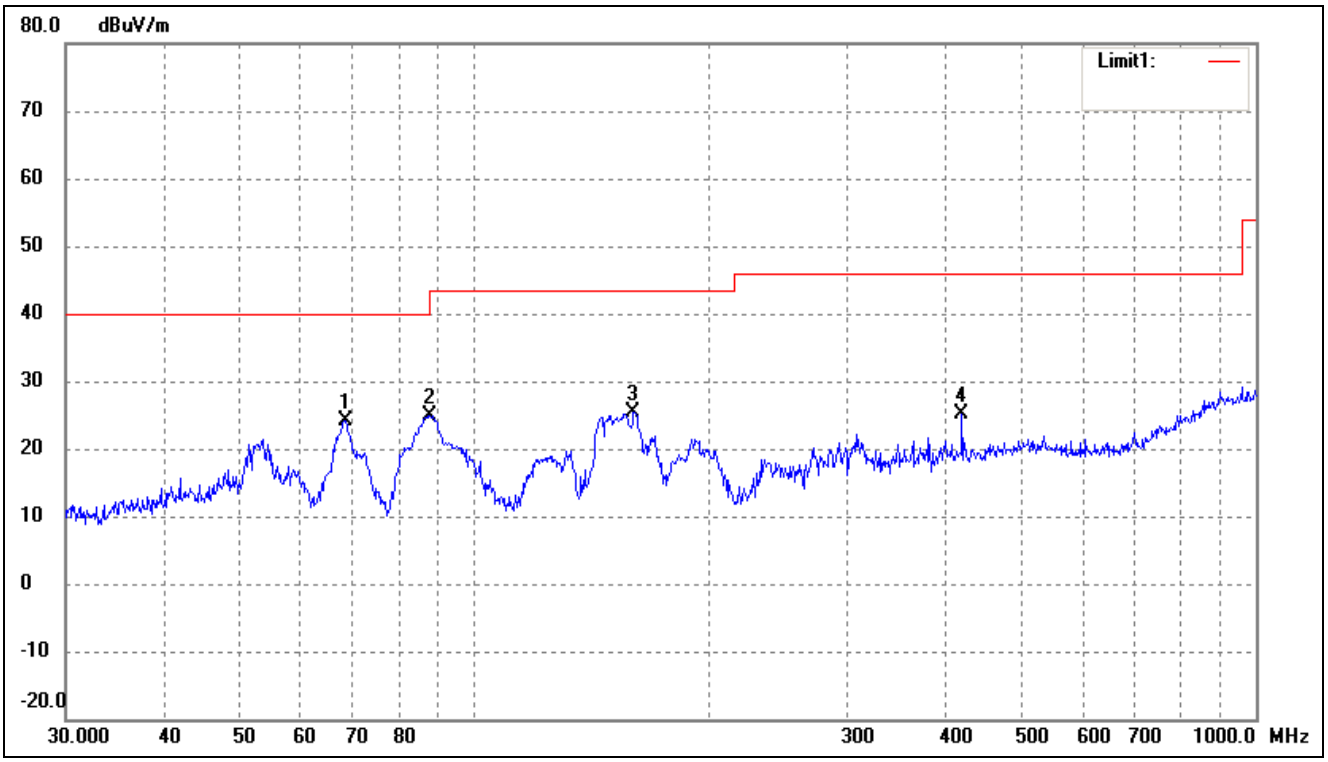
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	30.9619	37.94	-10.60	27.34	40.00	-12.66	0	100	peak
2	38.3462	34.18	-8.77	25.41	40.00	-14.59	0	100	peak
3	62.4314	29.83	-9.42	20.41	40.00	-19.59	0	100	peak
4	148.4410	37.55	-12.98	24.57	43.50	-18.93	0	100	peak
5	524.5541	22.39	-0.51	21.88	46.00	-24.12	0	100	peak

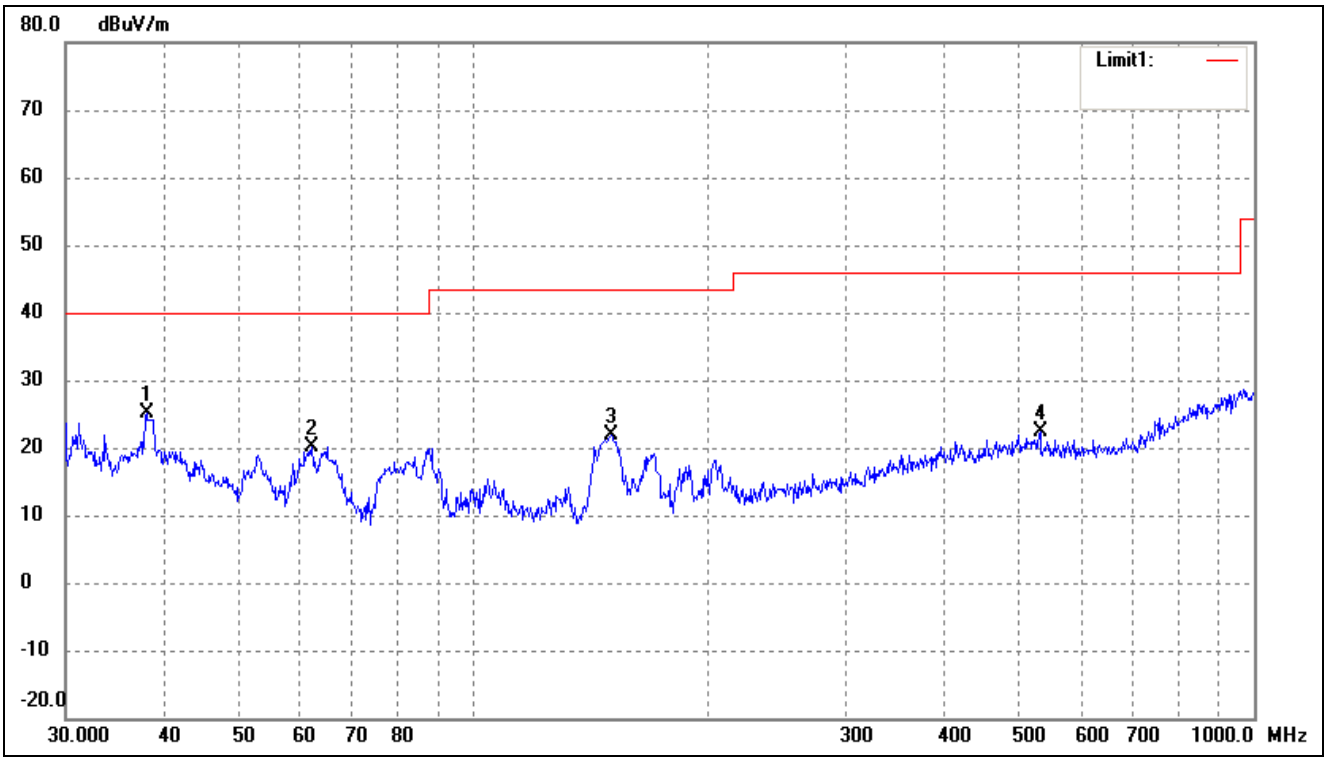
Operating Condition: *802.11b Transmitting High Channel-2472MHz*
Comment: *DC 3.7V*

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	68.3908	35.24	-11.01	24.23	40.00	-15.77	0	100	peak
2*	87.7248	36.77	-11.81	24.96	40.00	-15.04	0	100	peak
3	159.7844	37.85	-12.35	25.50	43.50	-18.00	0	100	peak
4	420.5803	27.63	-2.46	25.17	46.00	-20.83	0	100	peak

Test Specification: *Vertical*

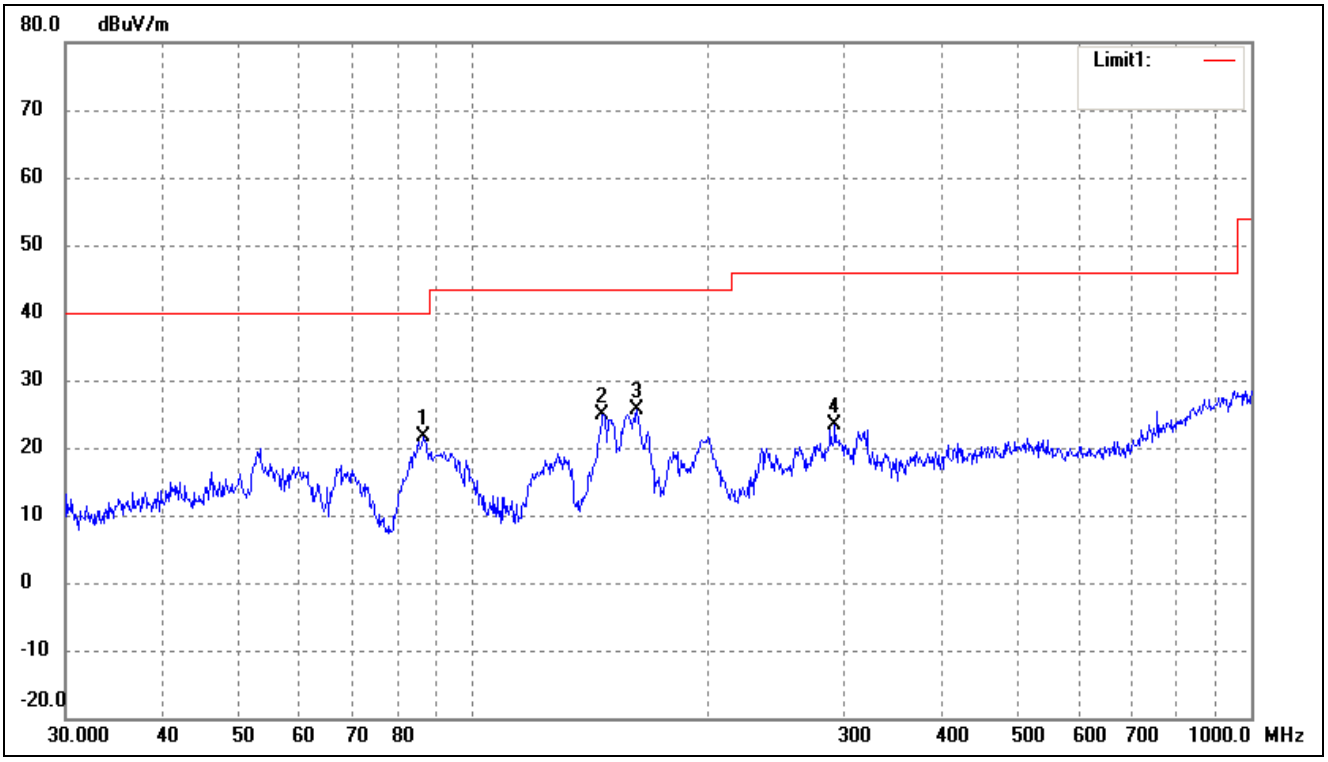


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	38.0783	34.05	-8.83	25.22	40.00	-14.78	0	100	peak
2	61.9951	29.56	-9.35	20.21	40.00	-19.79	0	100	peak
3	150.0108	34.91	-12.95	21.96	43.50	-21.54	0	100	peak
4	531.9635	22.67	-0.32	22.35	46.00	-23.65	0	100	peak

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

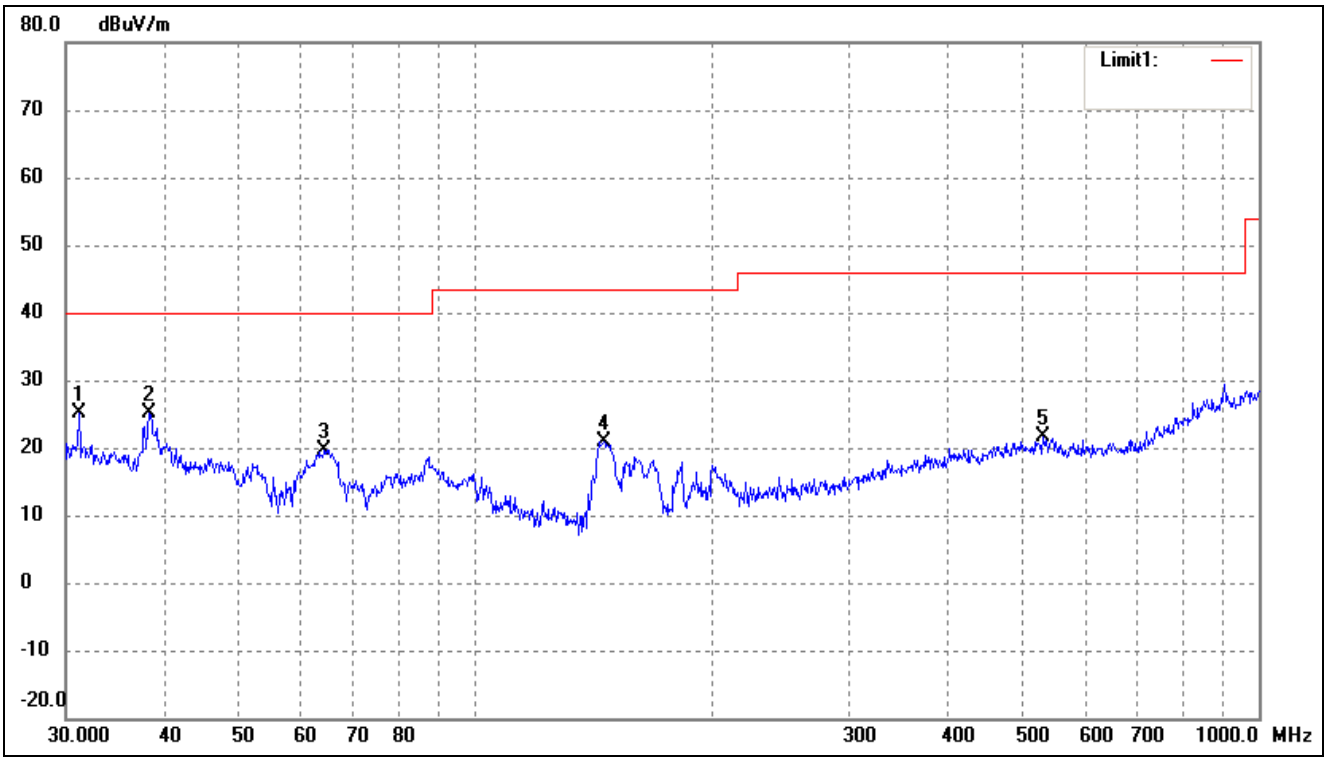
EUT: *Mobile phone*
Tested Model: *Syreni 500*
Operating Condition: *802.11g Transmitting Low Channel-2412MHz*
Comment: *DC 3.7V*

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	86.5029	33.69	-12.16	21.53	40.00	-18.47	0	100	peak
2	146.8877	37.84	-13.02	24.82	43.50	-18.68	0	100	peak
3*	162.6106	37.82	-12.22	25.60	43.50	-17.90	0	100	peak
4	292.0583	29.64	-6.37	23.27	46.00	-22.73	0	100	peak

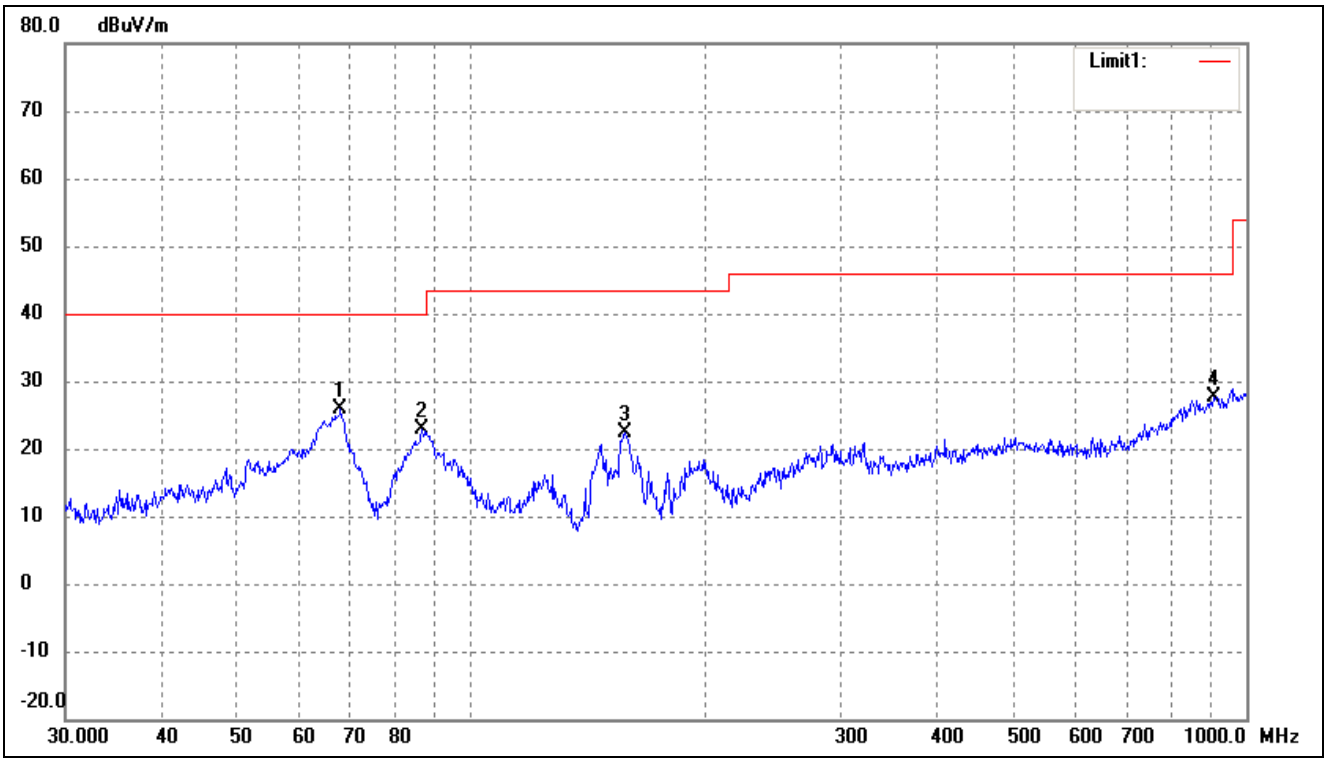
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	31.1798	35.82	-10.60	25.22	40.00	-14.78	0	100	peak
2	38.3462	33.97	-8.77	25.20	40.00	-14.80	0	100	peak
3	64.2075	29.47	-9.72	19.75	40.00	-20.25	0	100	peak
4	145.8611	33.99	-13.04	20.95	43.50	-22.55	0	100	peak
5	530.1014	22.08	-0.35	21.73	46.00	-24.27	0	100	peak

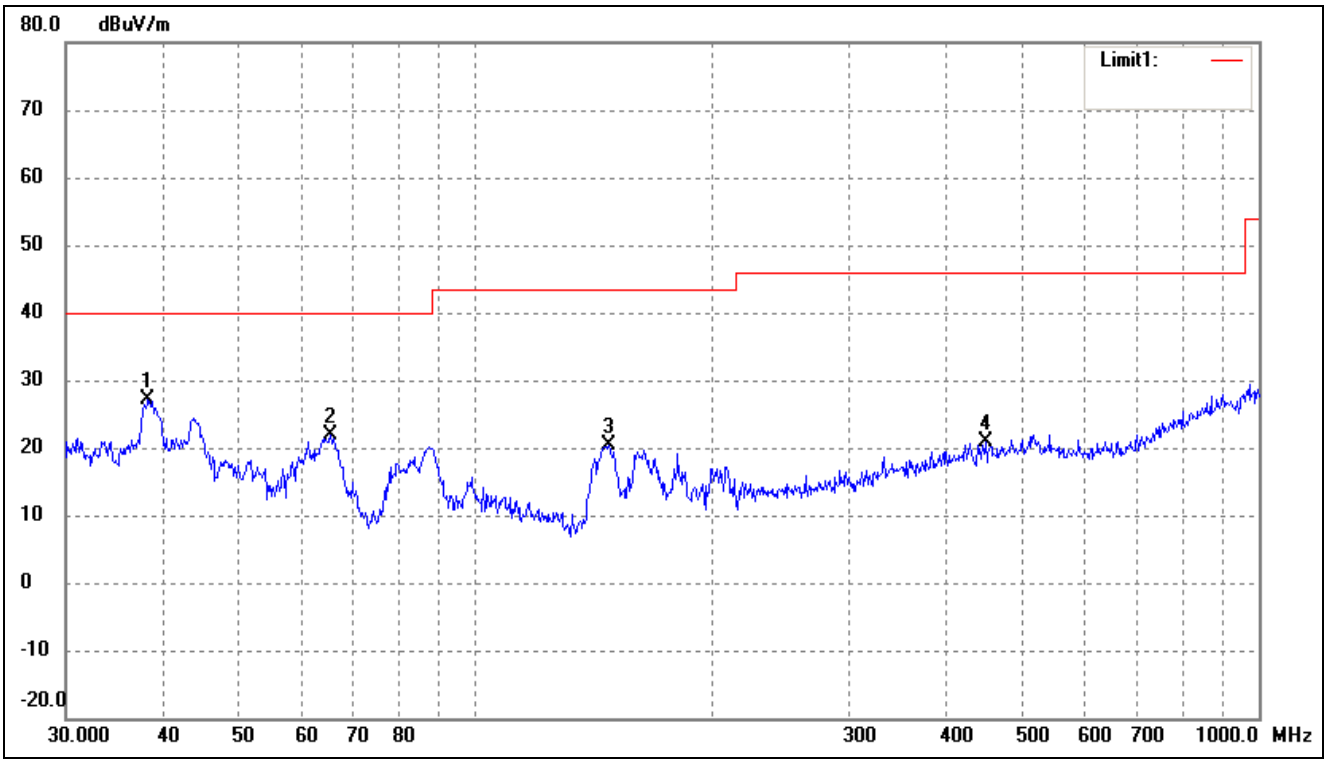
Operating Condition: *802.11g Transmitting Middle Channel-2442MHz*
Comment: *DC 3.7V*

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*	67.9129	36.58	-10.80	25.78	40.00	-14.22	0	100	peak
2	86.5029	34.95	-12.16	22.79	40.00	-17.21	0	100	peak
3	158.1123	34.75	-12.45	22.30	43.50	-21.20	0	100	peak
4	906.4824	22.18	5.45	27.63	46.00	-18.37	0	100	peak

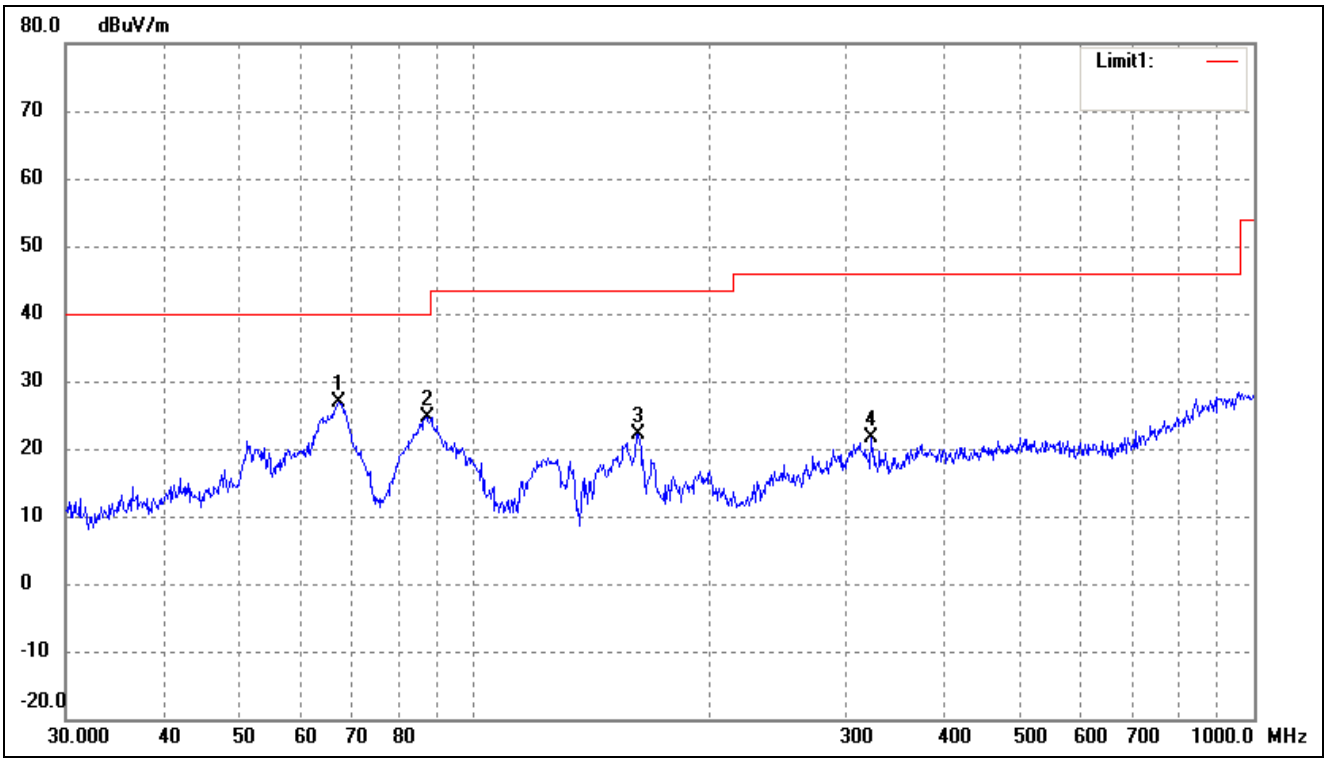
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	38.2120	35.89	-8.80	27.09	40.00	-12.91	0	100	peak
2	65.3432	31.73	-9.90	21.83	40.00	-18.17	0	100	peak
3	147.9214	33.37	-12.99	20.38	43.50	-23.12	0	100	peak
4	447.9822	23.11	-2.19	20.92	46.00	-25.08	0	100	peak

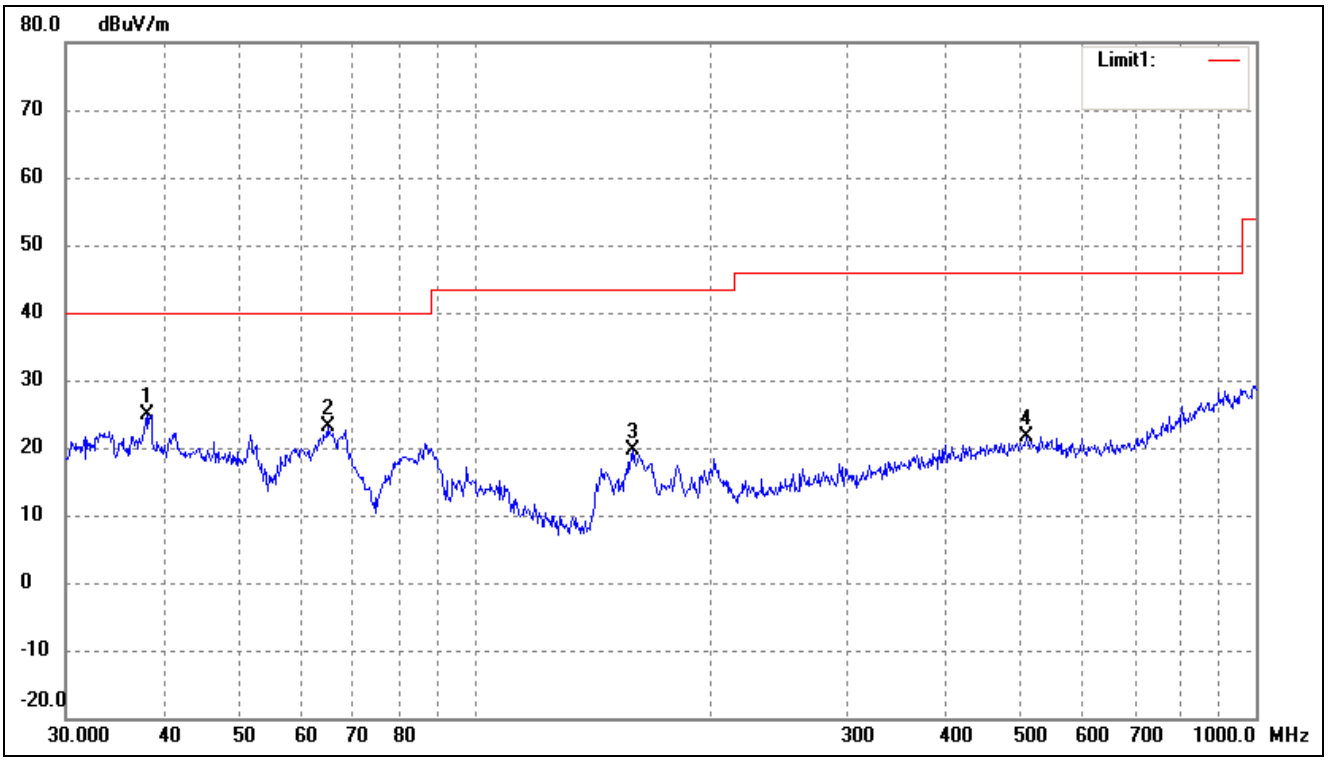
Operating Condition: *802.11g Transmitting High Channel-2472MHz*
Comment: *DC 3.7V*

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*	67.2022	37.50	-10.51	26.99	40.00	-13.01	0	100	peak
2	87.1117	36.60	-11.99	24.61	40.00	-15.39	0	100	peak
3	162.6106	34.36	-12.22	22.14	43.50	-21.36	0	100	peak
4	323.3204	27.02	-5.36	21.66	46.00	-24.34	0	100	peak

Test Specification: *Vertical*

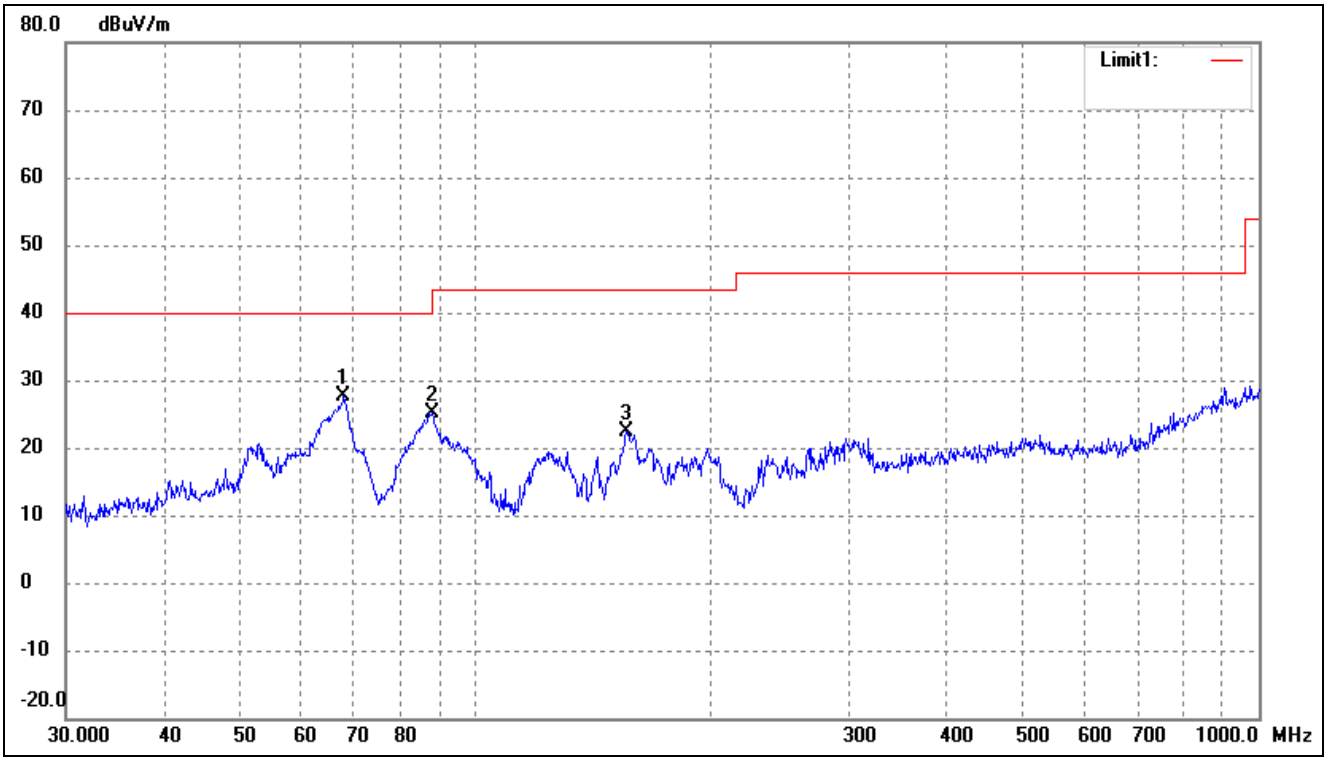


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	38.0783	33.77	-8.83	24.94	40.00	-15.06	0	100	peak
2	64.8865	32.97	-9.83	23.14	40.00	-16.86	0	100	peak
3	159.7844	31.93	-12.35	19.58	43.50	-23.92	0	100	peak
4	508.2582	22.61	-0.92	21.69	46.00	-24.31	0	100	peak

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

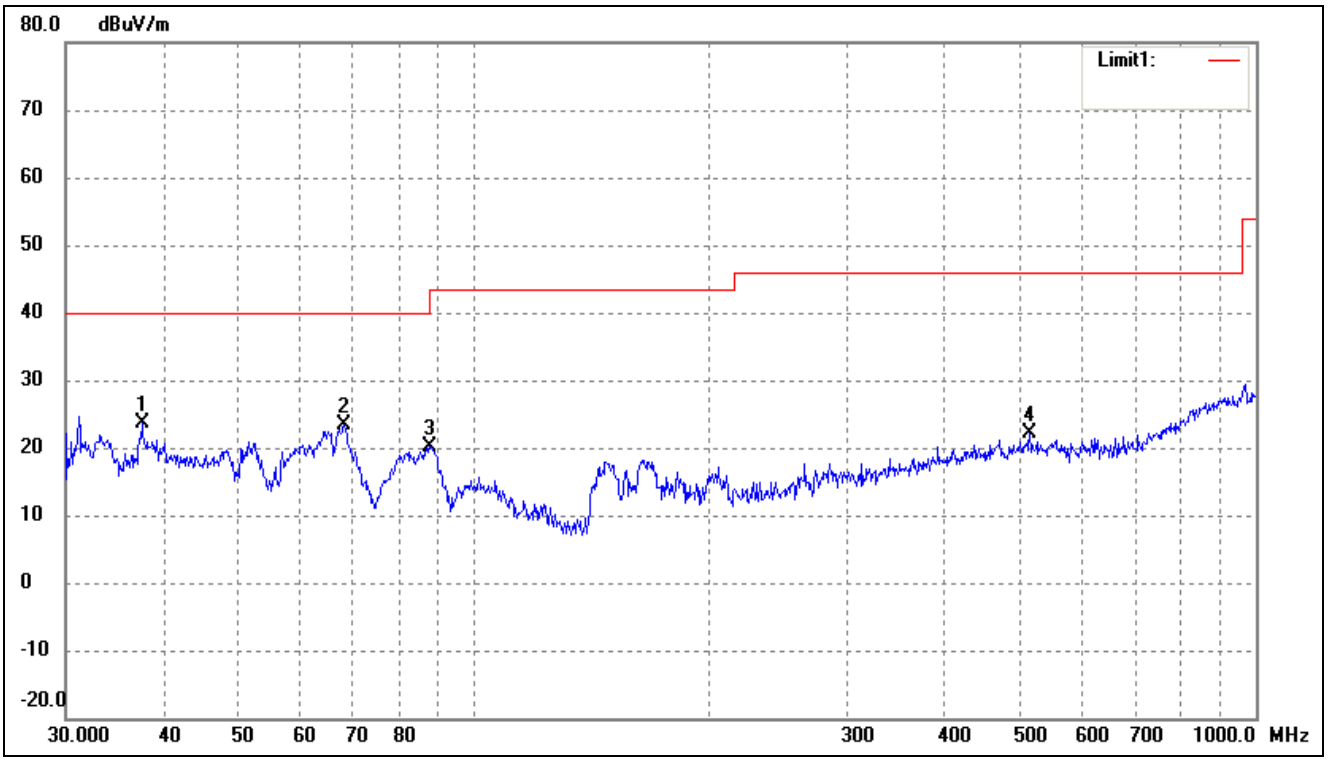
EUT: *Mobile phone*
Tested Model: *Syreni 500*
Operating Condition: *802.11n-HT20 Transmitting Low Channel-2412MHz*
Comment: *DC 3.7V*

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*	67.9129	38.48	-10.80	27.68	40.00	-12.32	0	100	peak
2	88.0329	36.81	-11.73	25.08	43.50	-18.42	0	100	peak
3	155.9101	34.99	-12.59	22.40	43.50	-21.10	0	100	peak

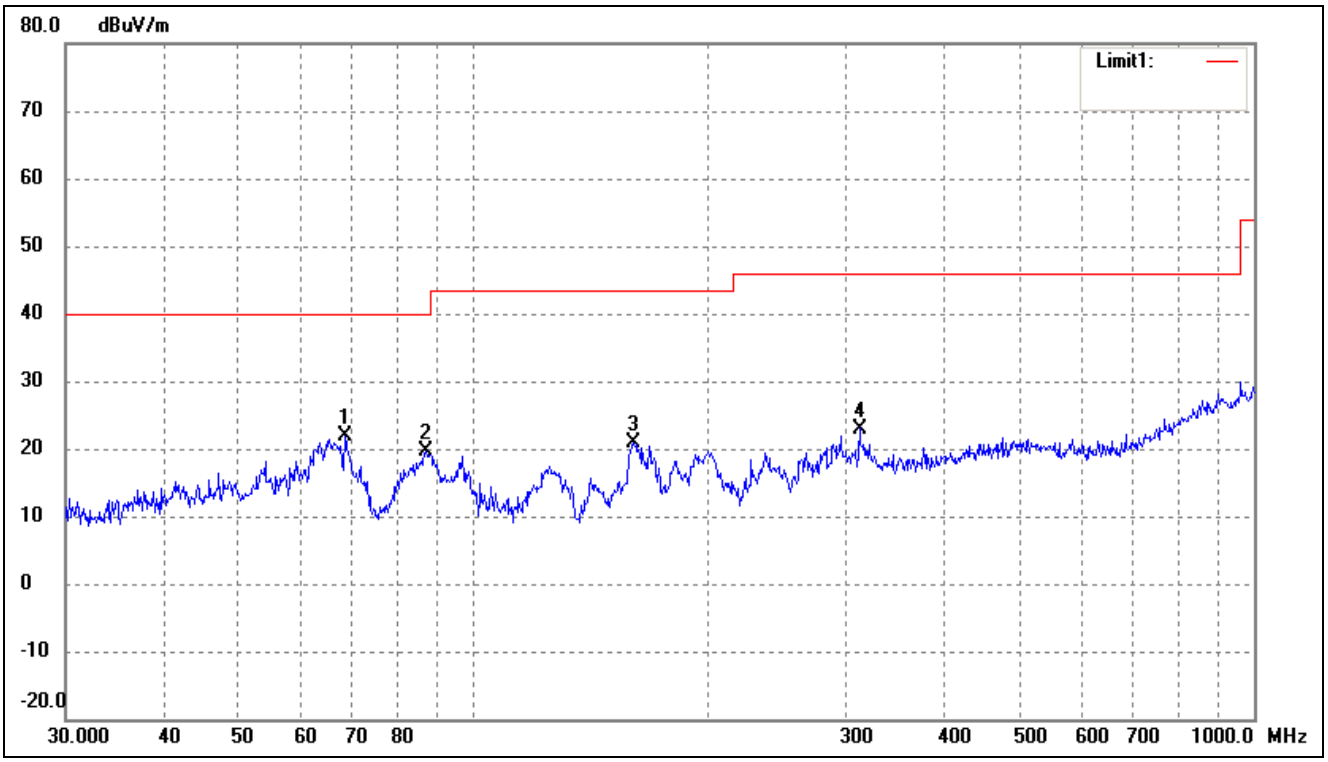
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	37.5479	32.70	-9.01	23.69	40.00	-16.31	0	100	peak
2	68.1514	34.25	-10.91	23.34	40.00	-16.66	0	100	peak
3	87.7248	32.01	-11.81	20.20	40.00	-19.80	0	100	peak
4	513.6331	23.03	-0.79	22.24	46.00	-23.76	0	100	peak

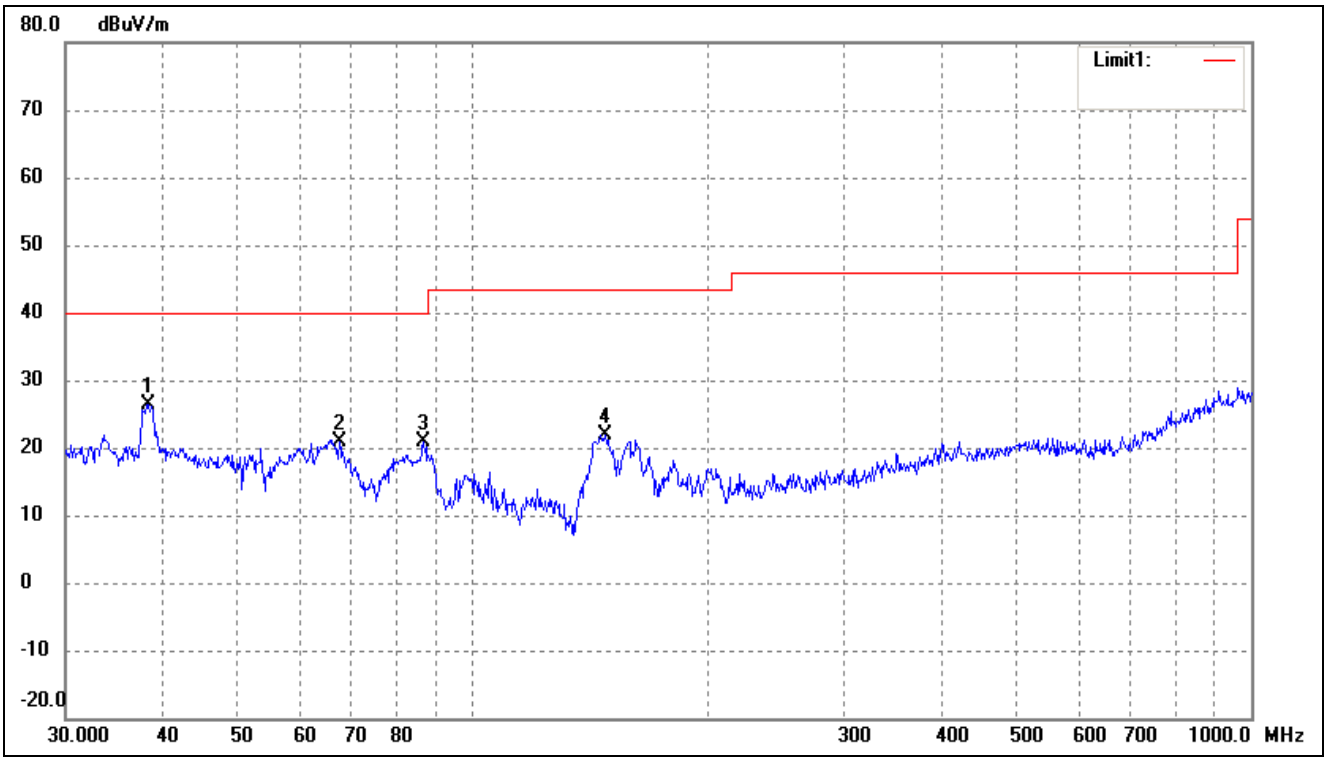
Operating Condition: *802.11n-HT20 Transmitting Middle Channel-2442MHz*
Comment: *DC 3.7V*

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*	68.3908	32.83	-11.01	21.82	40.00	-18.18	0	100	peak
2	86.8068	31.74	-12.08	19.66	40.00	-20.34	0	100	peak
3	160.3457	33.12	-12.32	20.80	43.50	-22.70	0	100	peak
4	312.1794	28.78	-5.78	23.00	46.00	-23.00	0	100	peak

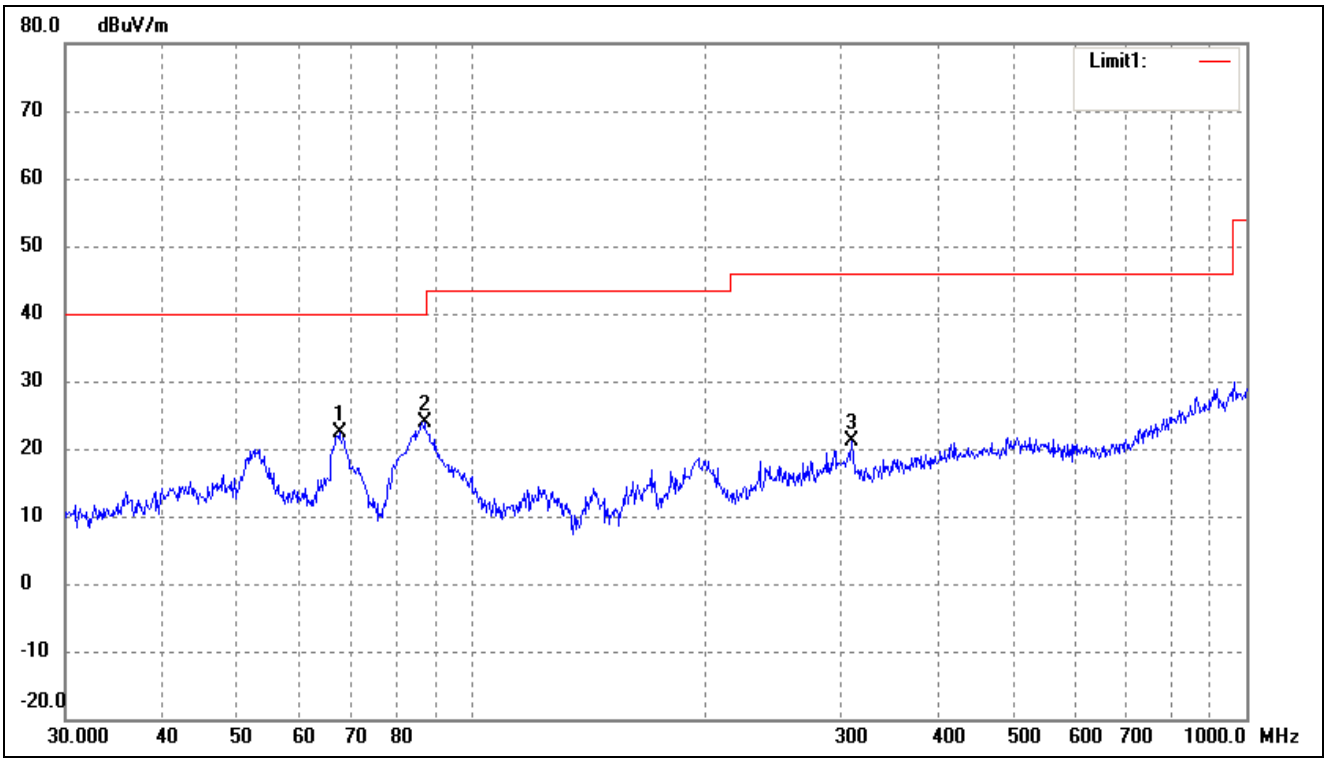
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	38.3462	35.14	-8.77	26.37	40.00	-13.63	0	100	peak
2	67.4382	31.50	-10.61	20.89	40.00	-19.11	0	100	peak
3	86.5029	32.93	-12.16	20.77	40.00	-19.23	0	100	peak
4	147.9214	34.95	-12.99	21.96	43.50	-21.54	0	100	peak

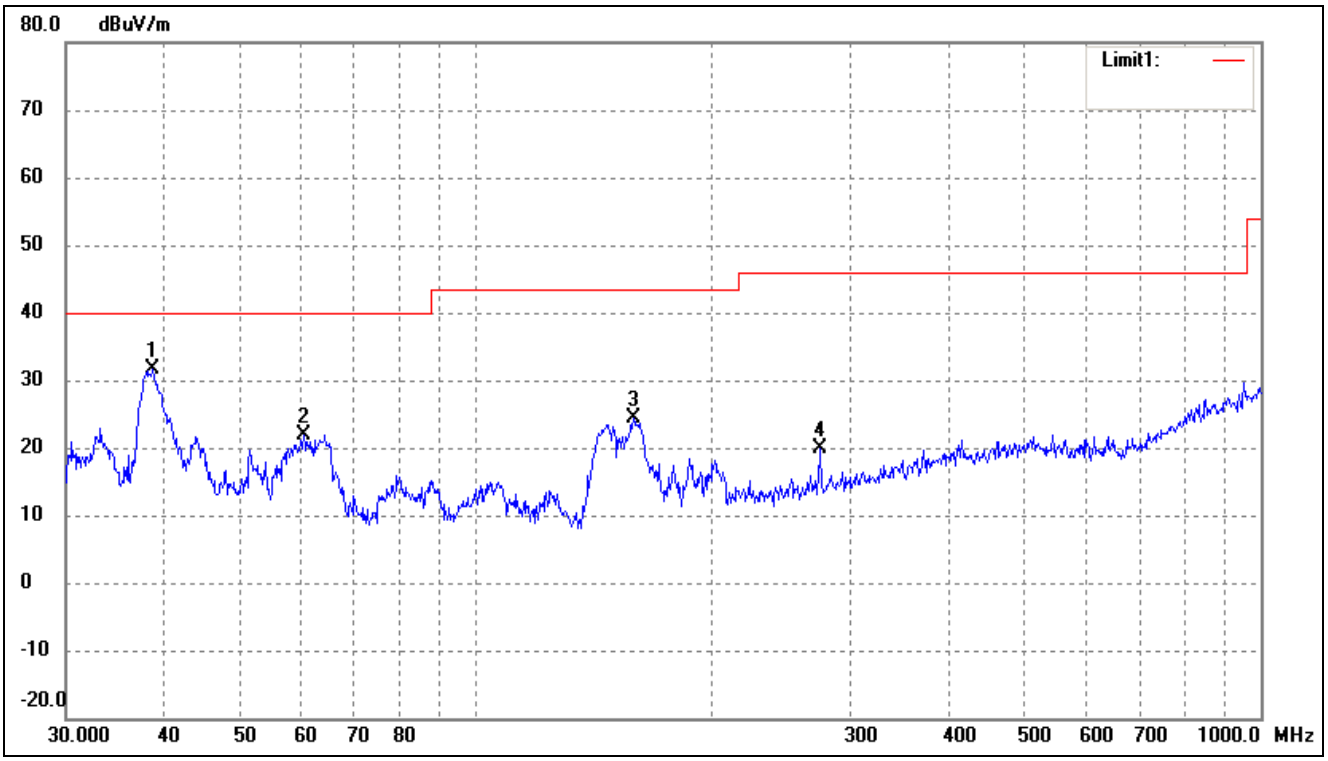
Operating Condition: *802.11n-HT20 Transmitting High Channel-2472MHz*
Comment: *DC 3.7V*

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	67.6751	32.97	-10.70	22.27	40.00	-17.73	0	100	peak
2*	87.1117	35.83	-11.99	23.84	40.00	-16.16	0	100	peak
3	309.9977	27.01	-5.85	21.16	46.00	-24.84	0	100	peak

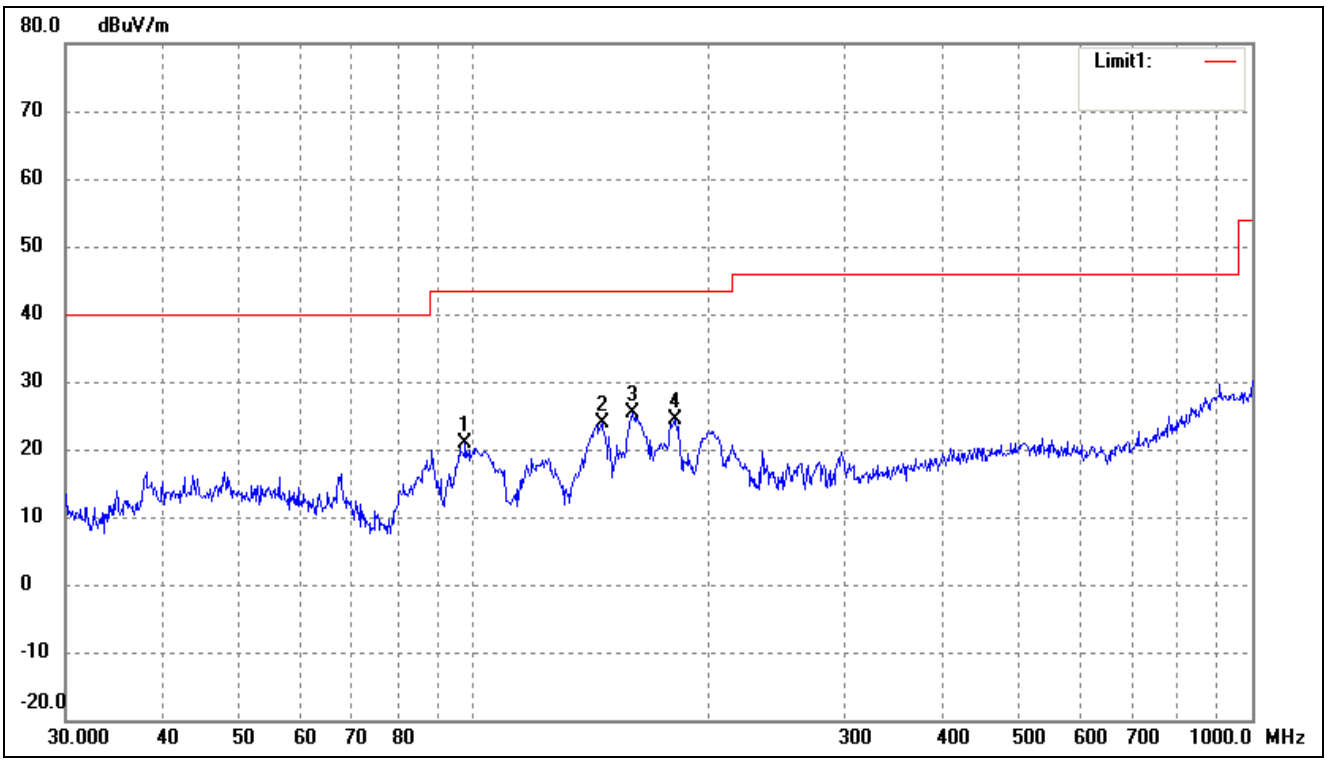
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	38.7518	40.24	-8.70	31.54	40.00	-8.46	0	100	peak
2	60.2801	30.88	-9.07	21.81	40.00	-18.19	0	100	peak
3	158.6677	36.83	-12.42	24.41	43.50	-19.09	0	100	peak
4	274.1939	26.81	-6.84	19.97	46.00	-26.03	0	100	peak

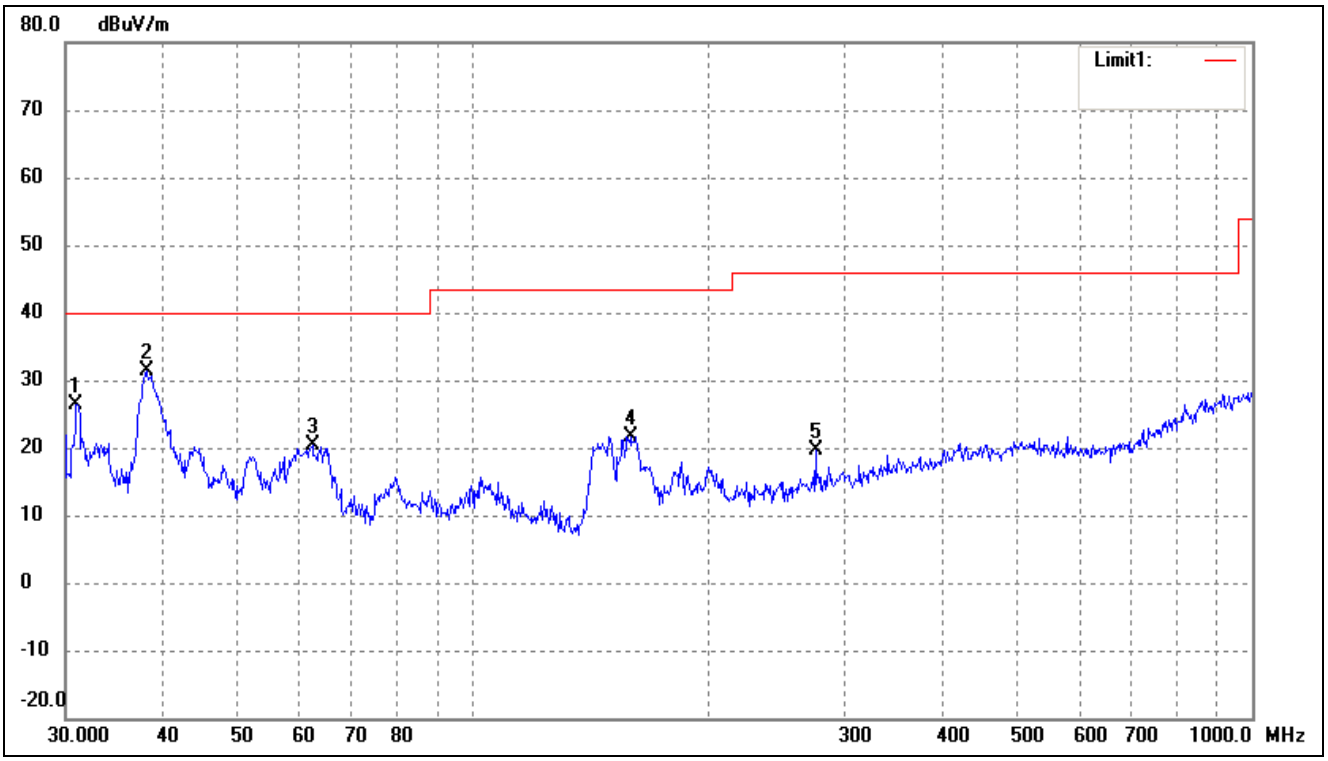
EUT: *Mobile phone*
Tested Model: *Syreni 500*
Operating Condition: *802.11n-HT40 Transmitting Low Channel-2422MHz*
Comment: *DC 3.7V*

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	97.7983	30.61	-9.82	20.79	43.50	-22.71	0	100	peak
2	146.3735	36.89	-13.03	23.86	43.50	-19.64	0	100	peak
3*	160.3457	37.81	-12.32	25.49	43.50	-18.01	0	100	peak
4	181.9202	35.20	-10.93	24.27	43.50	-19.23	0	100	peak

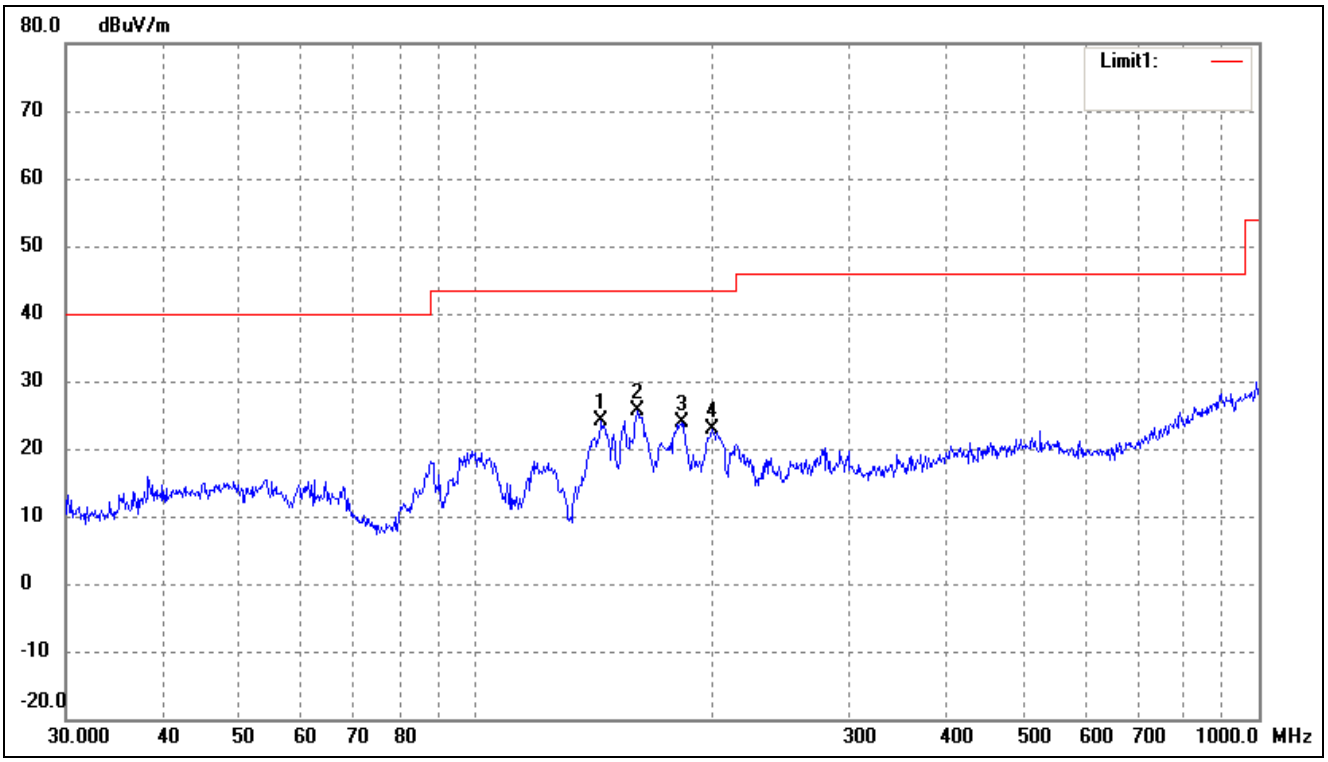
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1	30.9619	37.07	-10.60	26.47	40.00	-13.53	0	100	peak
2*	38.0783	40.13	-8.83	31.30	40.00	-8.70	0	100	peak
3	62.2128	29.73	-9.39	20.34	40.00	-19.66	0	100	peak
4	159.2251	34.02	-12.38	21.64	43.50	-21.86	0	100	peak
5	275.1570	26.54	-6.81	19.73	46.00	-26.27	0	100	peak

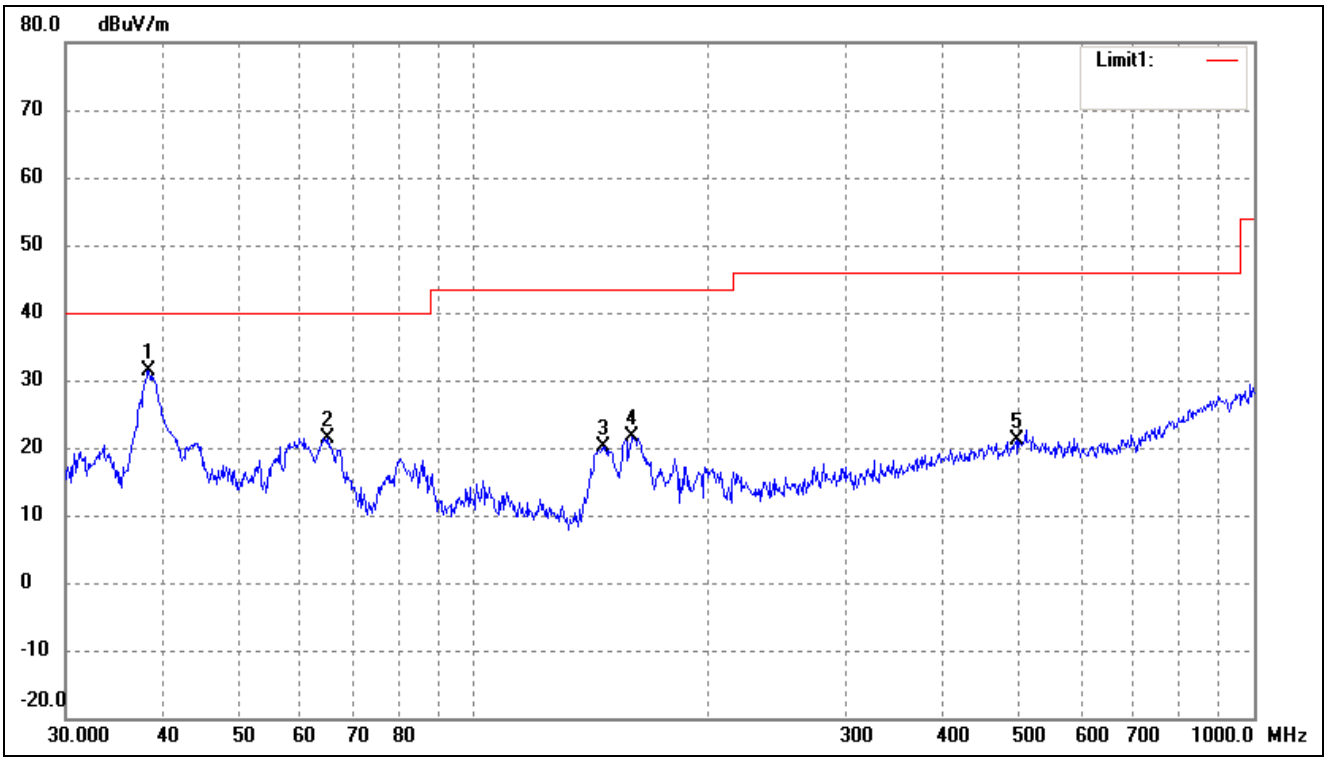
Operating Condition: *802.11n-HT40 Transmitting Middle Channel-2442MHz*
Comment: *DC 3.7V*

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	144.8418	37.19	-13.06	24.13	43.50	-19.37	0	100	peak
2*	160.9089	37.88	-12.29	25.59	43.50	-17.91	0	100	peak
3	183.2005	34.55	-10.79	23.76	43.50	-19.74	0	100	peak
4	200.6881	31.86	-9.06	22.80	43.50	-20.70	0	100	peak

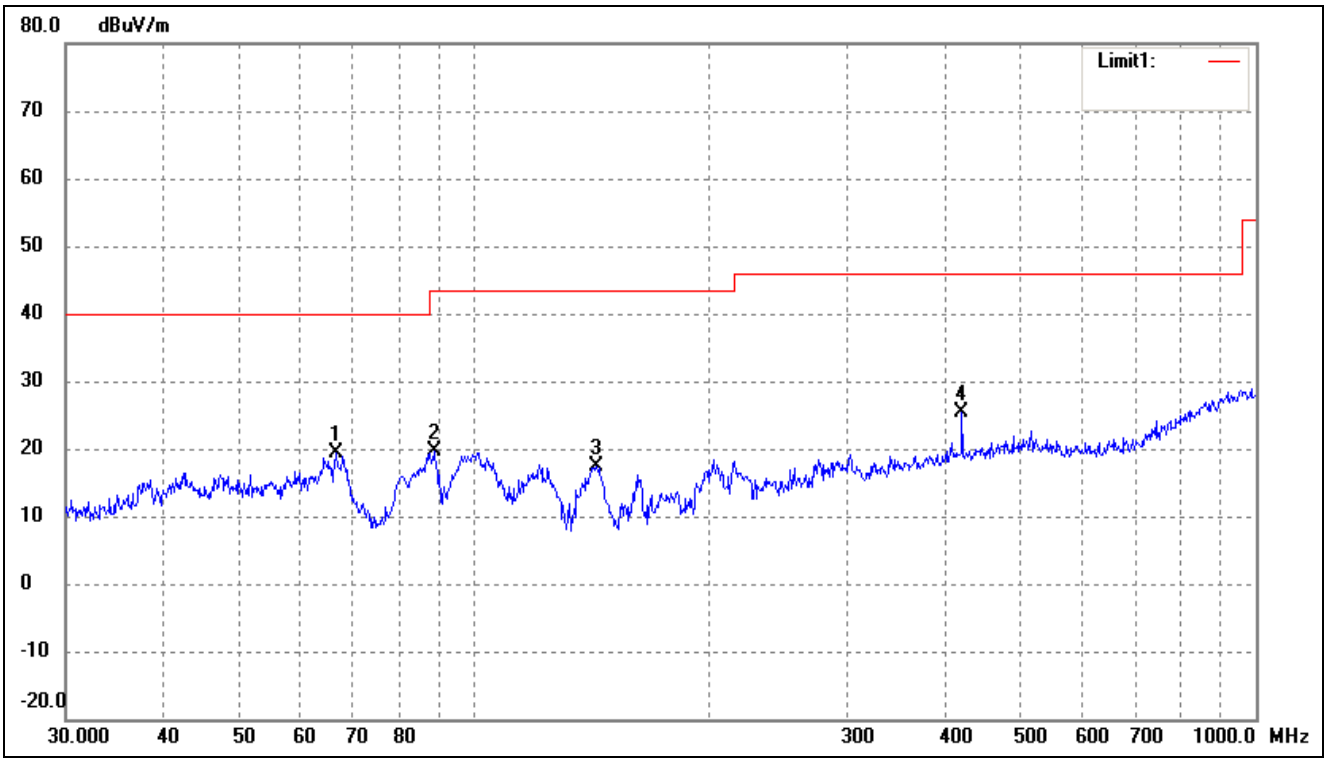
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(。)	(cm)	
1*	38.3462	40.24	-8.77	31.47	40.00	-8.53	0	100	peak
2	65.1145	31.31	-9.86	21.45	40.00	-18.55	0	100	peak
3	146.3735	33.21	-13.03	20.18	43.50	-23.32	0	100	peak
4	159.7844	33.87	-12.35	21.52	43.50	-21.98	0	100	peak
5	495.9344	22.41	-1.22	21.19	46.00	-24.81	0	100	peak

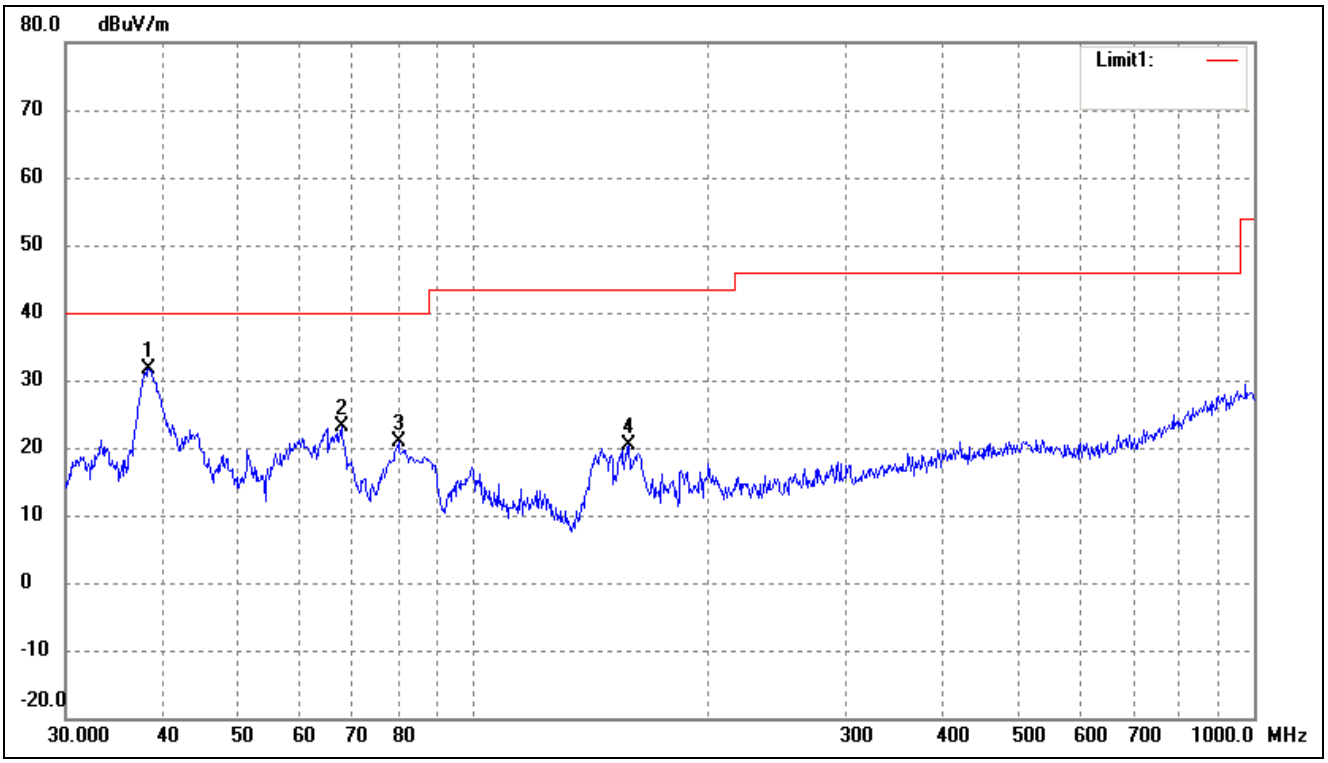
Operating Condition: *802.11n-HT40 Transmitting High Channel-2462MHz*
Comment: *DC 7.4V*

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*	66.4989	29.71	-10.21	19.50	40.00	-20.50	0	100	peak
2	88.9639	31.09	-11.46	19.63	43.50	-23.87	0	100	peak
3	143.3261	30.39	-13.09	17.30	43.50	-26.20	0	100	peak
4	420.5803	27.96	-2.46	25.50	46.00	-20.50	0	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*	38.3462	40.44	-8.77	31.67	40.00	-8.33	0	100	peak
2	67.6751	33.91	-10.70	23.21	40.00	-16.79	0	100	peak
3	80.0806	34.46	-13.49	20.97	40.00	-19.03	0	100	peak
4	158.1123	32.79	-12.45	20.34	43.50	-23.16	0	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 Channel-2412MHz							
4824	44.12	0.57	44.69	74.00	-29.31	H	PK
4824	33.52	0.57	34.09	54.00	-19.91	H	AV
7236	46.84	3.69	50.53	74.00	-23.47	H	PK
7236	38.45	3.69	42.14	54.00	-11.86	H	AV
4824	43.20	0.57	43.77	74.00	-30.23	V	PK
4824	33.63	0.57	34.20	54.00	-19.80	V	AV
7236	48.50	3.69	52.19	74.00	-21.81	V	PK
7236	37.19	3.69	40.88	54.00	-13.12	V	AV
Middle Channel-2442MHz							
4884	44.90	0.66	45.56	74.00	-28.44	H	PK
4884	32.01	0.66	32.67	54.00	-21.33	H	AV
7326	47.95	3.76	51.71	74.00	-22.29	H	PK
7326	36.41	3.76	40.17	54.00	-13.83	H	AV
4884	44.41	0.66	45.07	74.00	-28.93	V	PK
4884	31.99	0.66	32.65	54.00	-21.35	V	AV
7326	48.51	3.76	52.27	74.00	-21.73	V	PK
7326	37.4	3.76	41.16	54.00	-12.84	V	AV
High Channel-2472MHz							
4944	43.17	0.74	43.91	74.00	-30.09	H	PK
4944	32.14	0.74	32.88	54.00	-21.12	H	AV
7416	47.74	3.83	51.57	74.00	-22.43	H	PK
7416	35.71	3.83	39.54	54.00	-14.46	H	AV
4944	43.52	0.74	44.26	74.00	-29.74	V	PK
4944	32.17	0.74	32.91	54.00	-21.09	V	AV
7416	49.58	3.83	53.41	74.00	-20.59	V	PK
7416	36.97	3.83	40.80	54.00	-13.20	V	AV

Test Mode: 802.11g

Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2412MHz							
4824	43.22	0.57	43.79	74.00	-30.21	H	PK
4824	33.44	0.57	34.01	54.00	-19.99	H	AV
7236	51.85	3.69	55.54	74.00	-18.46	H	PK
7236	38.08	3.69	41.77	54.00	-12.23	H	AV
4824	43.41	0.57	43.98	74.00	-30.02	V	PK
4824	33.42	0.57	33.99	54.00	-20.01	V	AV
7236	51.08	3.69	54.77	74.00	-19.23	V	PK
7236	37.86	3.69	41.55	54.00	-12.45	V	AV
Middle Channel-2442MHz							
4884	44.60	0.66	45.26	74.00	-28.74	H	PK
4884	32.02	0.66	32.68	54.00	-21.32	H	AV
7326	50.42	3.76	54.18	74.00	-19.82	H	PK
7326	36.66	3.76	40.42	54.00	-13.58	H	AV
4884	43.90	0.66	44.56	74.00	-29.44	V	PK
4884	31.96	0.66	32.62	54.00	-21.38	V	AV
7326	53.12	3.76	56.88	74.00	-17.12	V	PK
7326	38.75	3.76	42.51	54.00	-11.49	V	AV
High Channel-2472MHz							
4944	43.28	0.74	44.02	74.00	-29.98	H	PK
4944	31.87	0.74	32.61	54.00	-21.39	H	AV
7416	48.11	3.83	51.94	74.00	-22.06	H	PK
7416	37.07	3.83	40.90	54.00	-13.10	H	AV
4944	41.50	0.74	42.24	74.00	-31.76	V	PK
4944	32.04	0.74	32.78	54.00	-21.22	V	AV
7416	48.19	3.83	52.02	74.00	-21.98	V	PK
7416	36.98	3.83	40.81	54.00	-13.19	V	AV

Test Mode: 802.11n-HT20

Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2412MHz							
4824	42.52	0.57	43.09	74.00	-30.91	H	PK
4824	33.62	0.57	34.19	54.00	-19.81	H	AV
7236	36.52	3.69	40.21	74.00	-33.79	H	PK
7236	34.01	3.69	37.70	54.00	-16.30	H	AV
4824	43.82	0.57	44.39	74.00	-29.61	V	PK
4824	33.65	0.57	34.22	54.00	-19.78	V	AV
7236	54.17	3.69	57.86	74.00	-16.14	V	PK
7236	37.36	3.69	41.05	54.00	-12.95	V	AV
Middle Channel-2442MHz							
4884	45.17	0.66	45.83	74.00	-28.17	H	PK
4884	31.94	0.66	32.60	54.00	-21.40	H	AV
7326	48.62	3.76	52.38	74.00	-21.62	H	PK
7326	38.35	3.76	42.11	54.00	-11.89	H	AV
4884	44.60	0.66	45.26	74.00	-28.74	V	PK
4884	32.02	0.66	32.68	54.00	-21.32	V	AV
7326	53.52	3.76	57.28	74.00	-16.72	V	PK
7326	38.46	3.76	42.22	54.00	-11.78	V	AV
High Channel-2472MHz							
4944	42.76	0.74	43.50	74.00	-30.50	H	PK
4944	31.98	0.74	32.72	54.00	-21.28	H	AV
7416	50.45	3.83	54.28	74.00	-19.72	H	PK
7416	38.35	3.83	42.18	54.00	-11.82	H	AV
4944	42.40	0.74	43.14	74.00	-30.86	V	PK
4944	32.14	0.74	32.88	54.00	-21.12	V	AV
7416	54.24	3.83	58.07	74.00	-15.93	V	PK
7416	39.20	3.83	43.03	54.00	-10.97	V	AV

Test Mode: 802.11n-HT40

Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2422MHz							
4844	42.52	0.60	43.12	74.00	-30.88	H	PK
4844	33.30	0.60	33.9	54.00	-20.10	H	AV
7266	46.53	3.72	50.25	74.00	-23.75	H	PK
7266	34.11	3.72	37.83	54.00	-16.17	H	AV
4844	43.25	0.60	43.85	74.00	-30.15	V	PK
4844	31.56	0.60	32.16	54.00	-21.84	V	AV
7266	44.36	3.72	48.08	74.00	-25.92	V	PK
7266	43.32	3.72	47.04	54.00	-6.96	V	AV
Middle Channel-2442MHz							
4884	44.21	0.66	44.87	74.00	-29.13	H	PK
4884	32.01	0.66	32.67	54.00	-21.33	H	AV
7326	35.98	3.76	39.74	74.00	-34.26	H	PK
7326	24.30	3.76	28.06	54.00	-25.94	H	AV
4884	53.86	0.66	54.52	74.00	-19.48	V	PK
4884	41.84	0.66	42.50	54.00	-11.5	V	AV
7326	45.92	3.76	49.68	74.00	-24.32	V	PK
7326	34.31	3.76	38.07	54.00	-15.93	V	AV
High Channel-2462MHz							
4924	43.62	0.72	44.34	74.00	-29.66	H	PK
4924	32.04	0.72	32.76	54.00	-21.24	H	AV
7386	35.25	3.81	39.06	74.00	-34.94	H	PK
7386	24.11	3.81	27.92	54.00	-26.08	H	AV
4924	52.63	0.72	53.35	74.00	-20.65	V	PK
4924	43.24	0.72	43.96	54.00	-10.04	V	AV
7386	45.03	3.81	48.84	74.00	-25.16	V	PK
7386	43.31	3.81	47.12	54.00	-6.88	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3th 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 ≥ 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

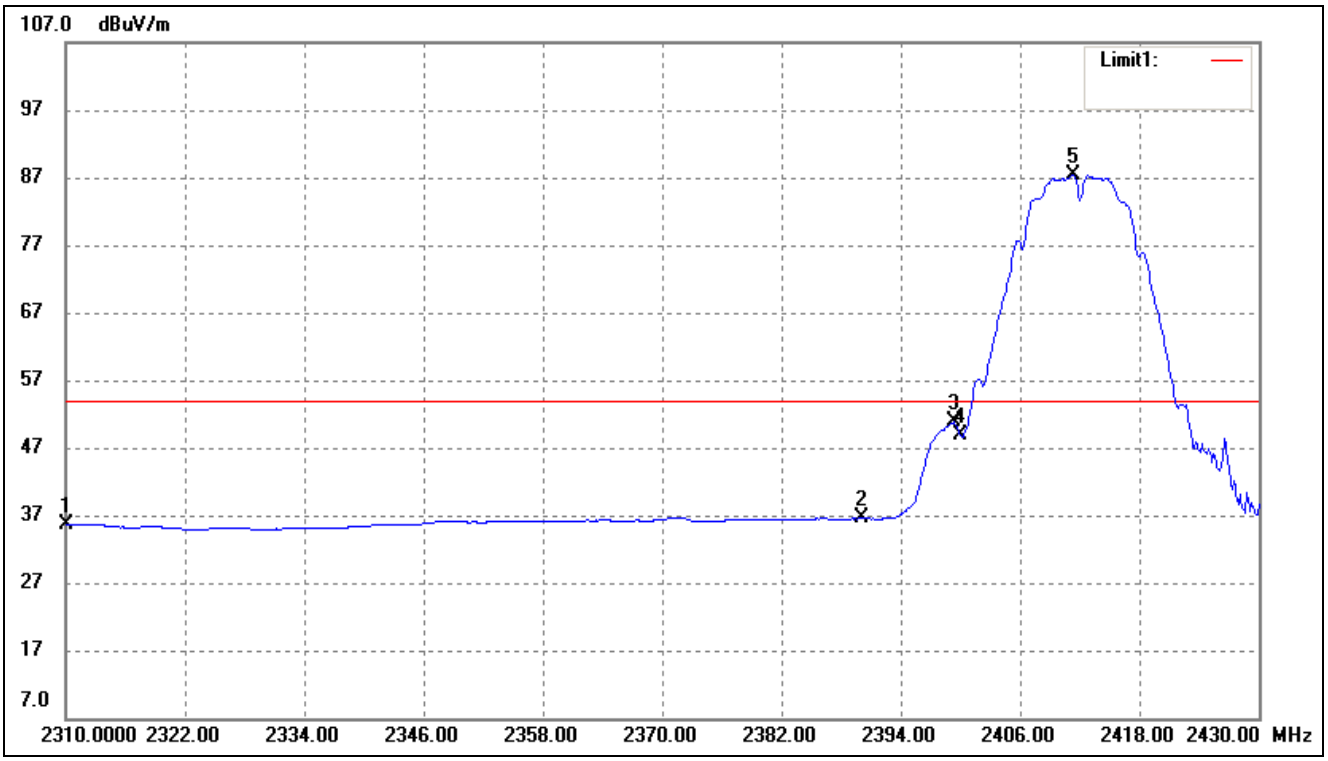
Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

9.5 Summary of Test Results/Plots

Please refer to the test plots as below.

802.11b-Lowest Bandedge

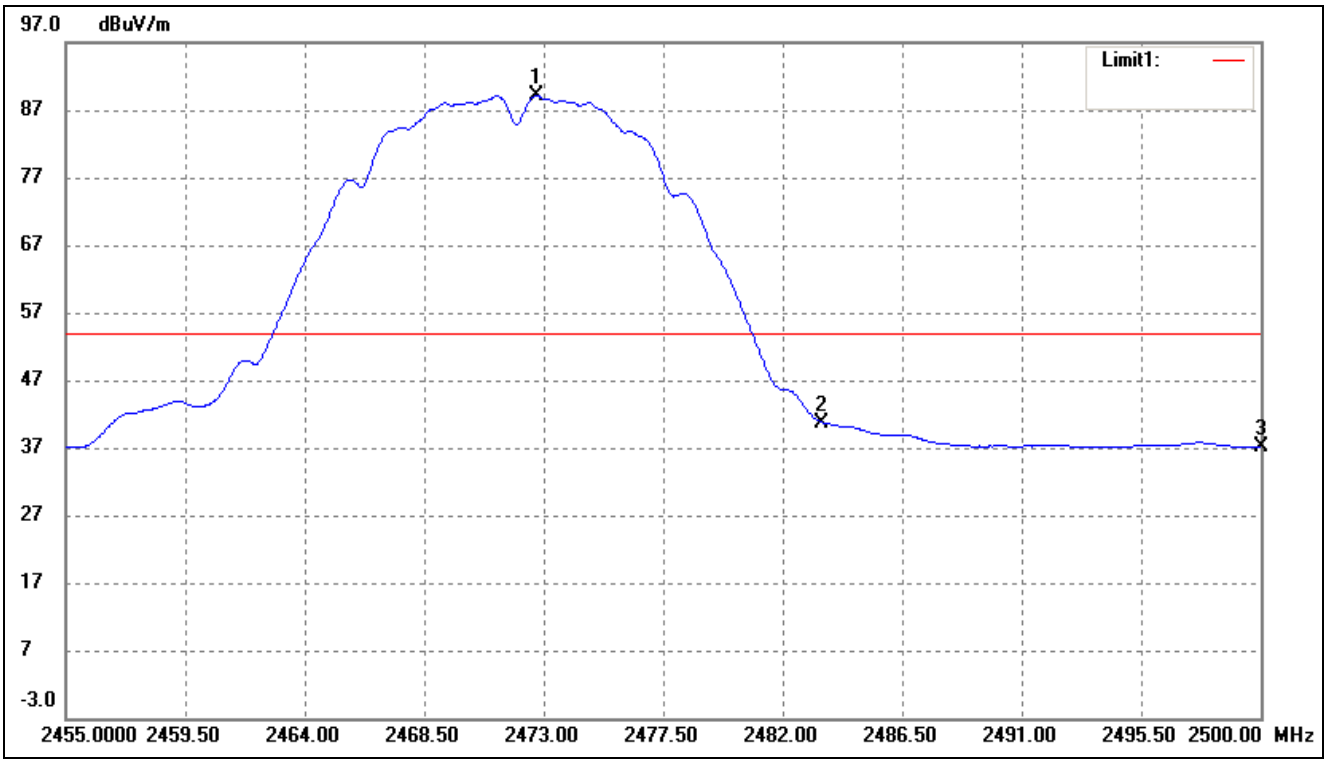
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	19.28	16.34	35.62	54.00	-18.38	Average Detector
	2310.000	28.46	16.34	44.80	74.00	-29.20	Peak Detector
2	2390.000	19.54	17.03	36.57	54.00	-17.43	Average Detector
	2390.000	28.43	17.03	45.46	74.00	-28.54	Peak Detector
3	2399.280	33.66	17.10	50.76	54.00	-3.24	Average Detector
	2398.320	38.81	17.10	55.91	74.00	-18.09	Peak Detector
4	2400.000	31.68	17.11	48.79	Delta=38.62dBc		Average Detector
5	2411.280	70.22	17.19	87.41			Average Detector

802.11b-Highest Bandedge

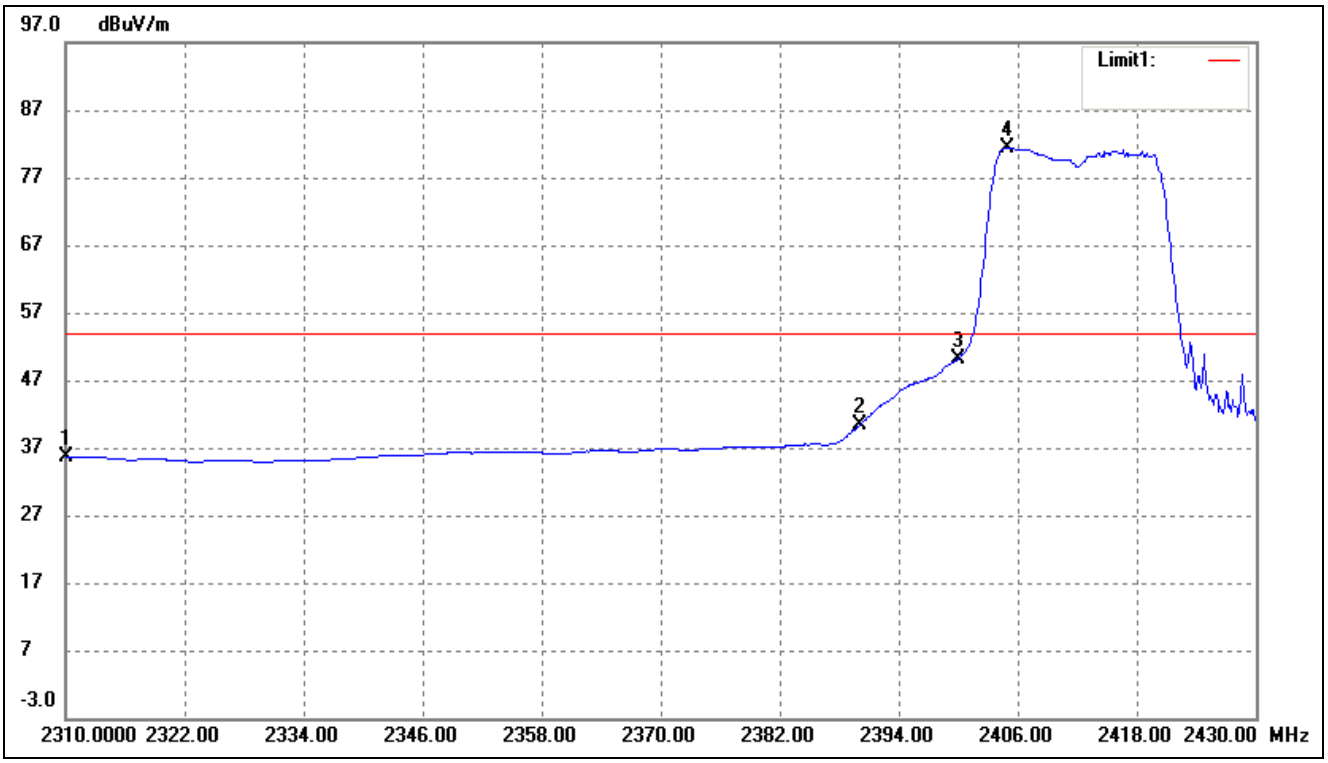
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2472.730	71.49	17.66	89.15	/	/	Average Detector
	2472.730	92.64	17.66	110.30	/	/	Peak Detector
2	2483.500	Delta=48.41 dBc		40.74	54.00	-13.26	Average Detector
	2483.500			61.89	74.00	-12.11	Peak Detector
3	2500.000	19.19	17.86	37.05	54.00	-16.95	Average Detector
	2500.000	35.07	17.86	52.93	74.00	-21.07	Peak Detector

802.11g-Lowest Bandedge

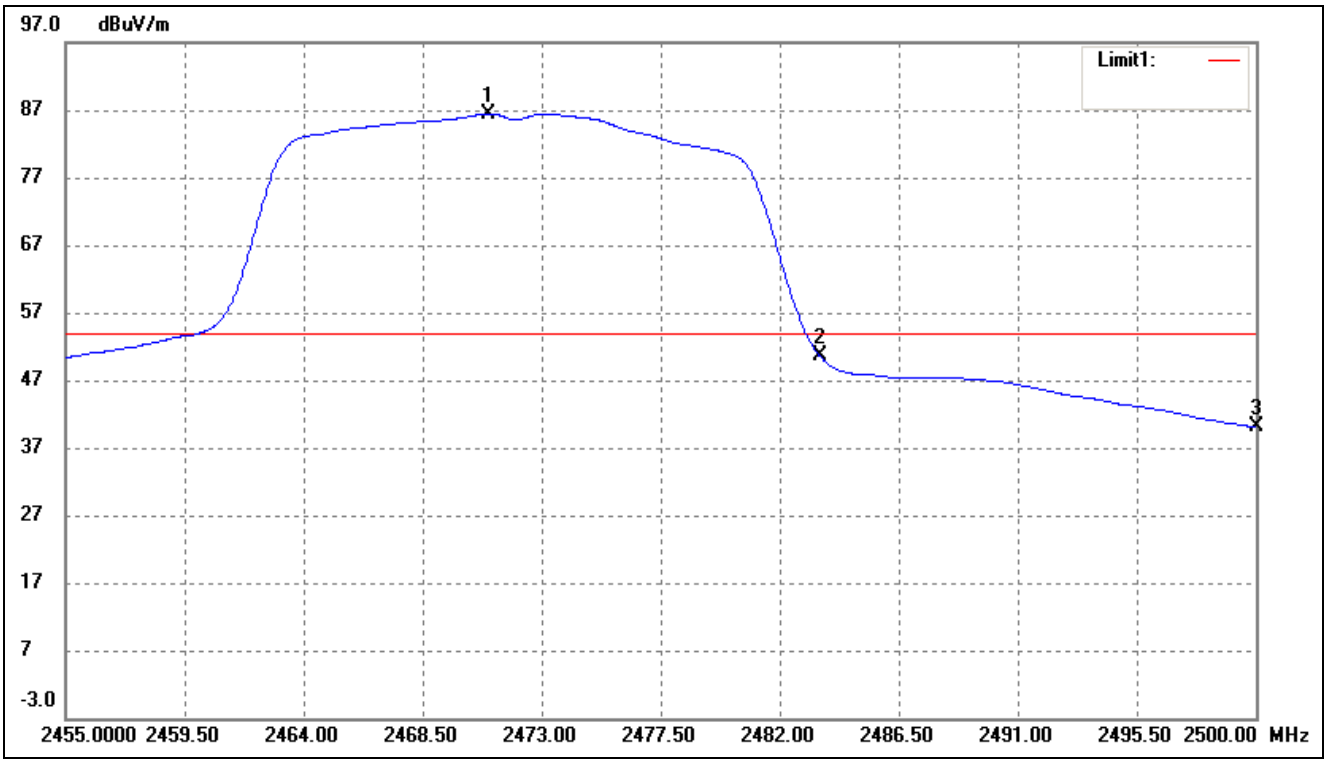
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	19.29	16.34	35.63	54.00	-18.37	Average Detector
	2310.000	30.15	16.34	46.49	74.00	-27.51	Peak Detector
2	2390.000	23.34	17.03	40.37	54.00	-13.63	Average Detector
	2390.000	37.56	17.03	54.59	74.00	-19.41	Peak Detector
3	2400.000	33.11	17.11	50.22	Delta=31.28 dBc		Average Detector
4	2404.920	64.36	17.14	81.50			Average Detector

802.11g-Highest Bandedge

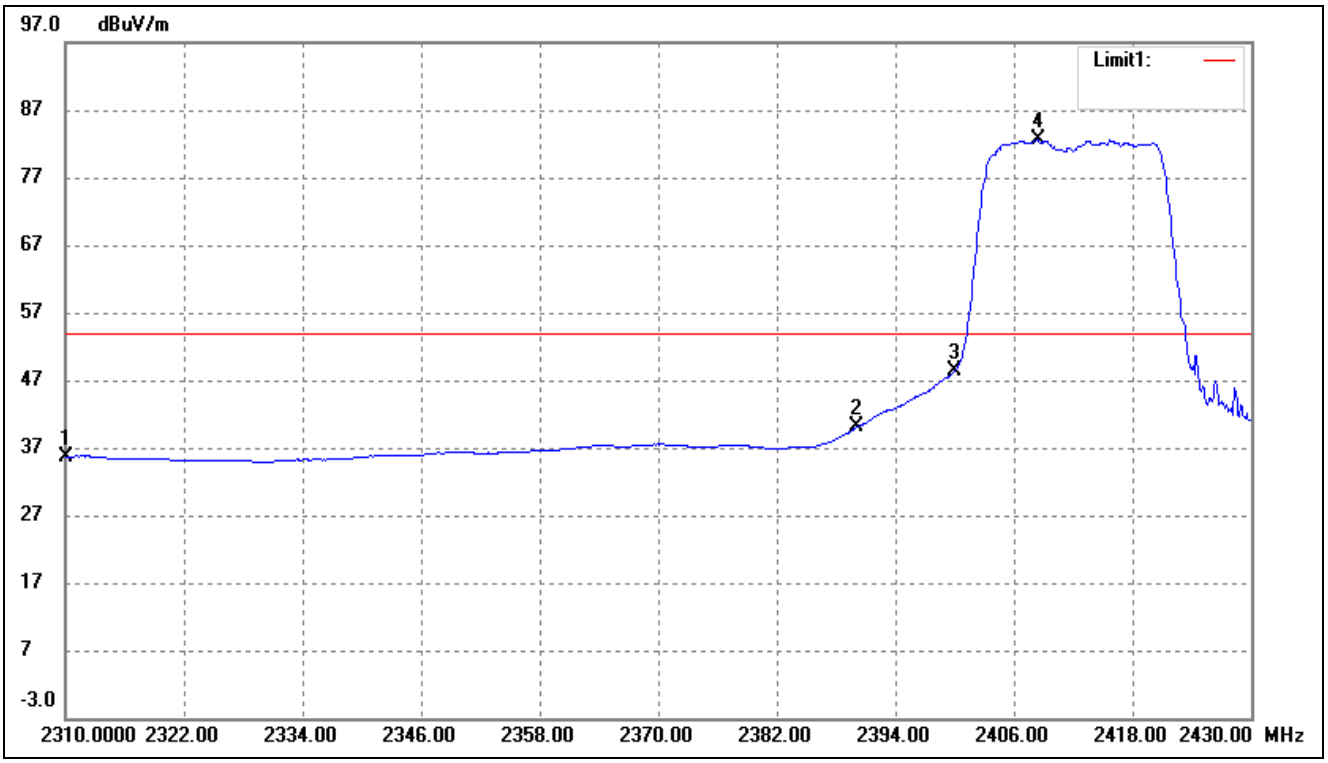
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2470.975	68.84	17.64	86.48	/	/	Average Detector
	2470.975	90.00	17.64	107.64	/	/	Peak Detector
2	2483.500	Delta=35.95 dBc		50.53	54.00	-3.47	Average Detector
	2483.500			71.69	74.00	-2.31	Peak Detector
3	2500.000	22.22	17.86	40.08	54.00	-13.92	Average Detector
	2500.000	41.50	17.86	59.36	74.00	-14.64	Peak Detector

802.11n-HT20-Lowest Bandedge

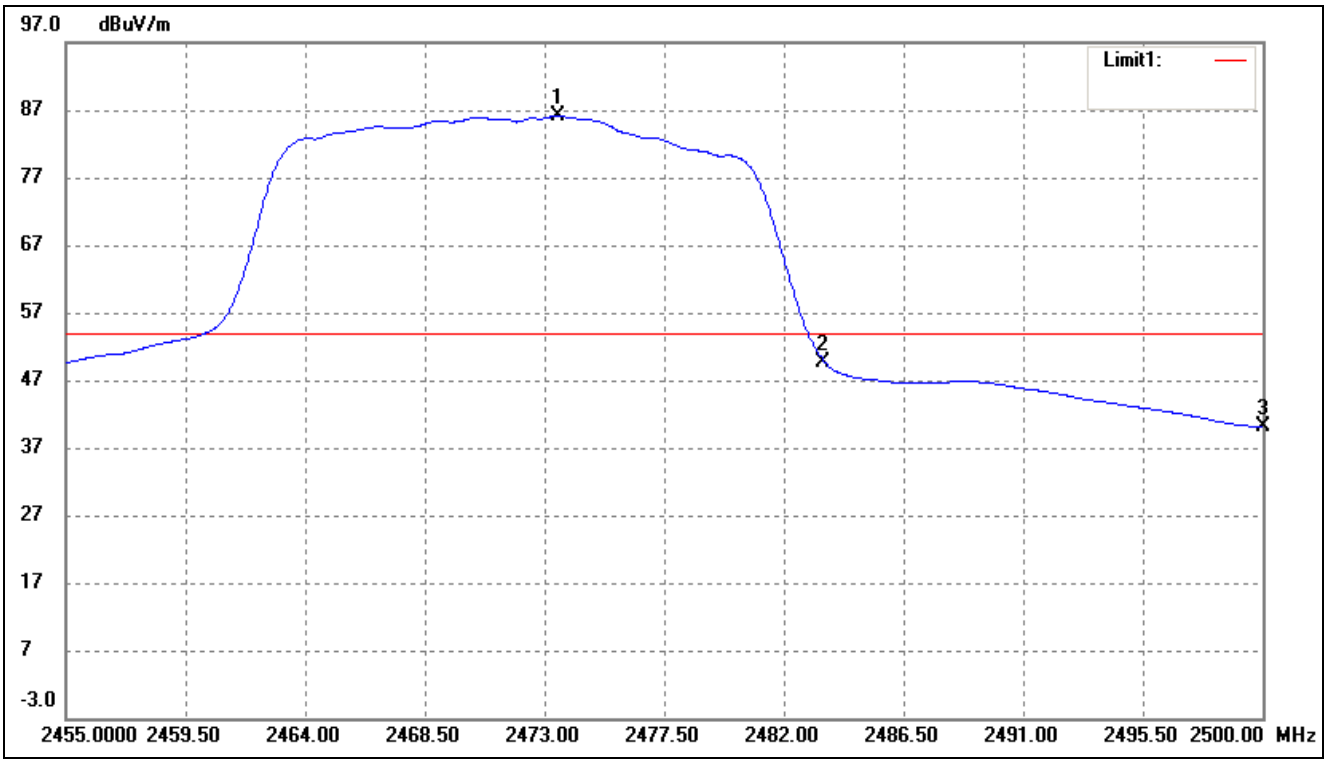
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	19.31	16.34	35.65	54.00	-18.35	Average Detector
	2310.000	38.78	16.34	55.12	74.00	-18.88	Peak Detector
2	2390.000	22.99	17.03	40.02	54.00	-13.98	Average Detector
	2390.000	44.23	17.03	61.34	74.00	-12.66	Peak Detector
3	2400.000	31.20	17.11	48.31	Delta=34.4dBc		Average Detector
4	2408.400	65.55	17.16	82.71			Average Detector

802.11n-HT20-Highest Bandedge

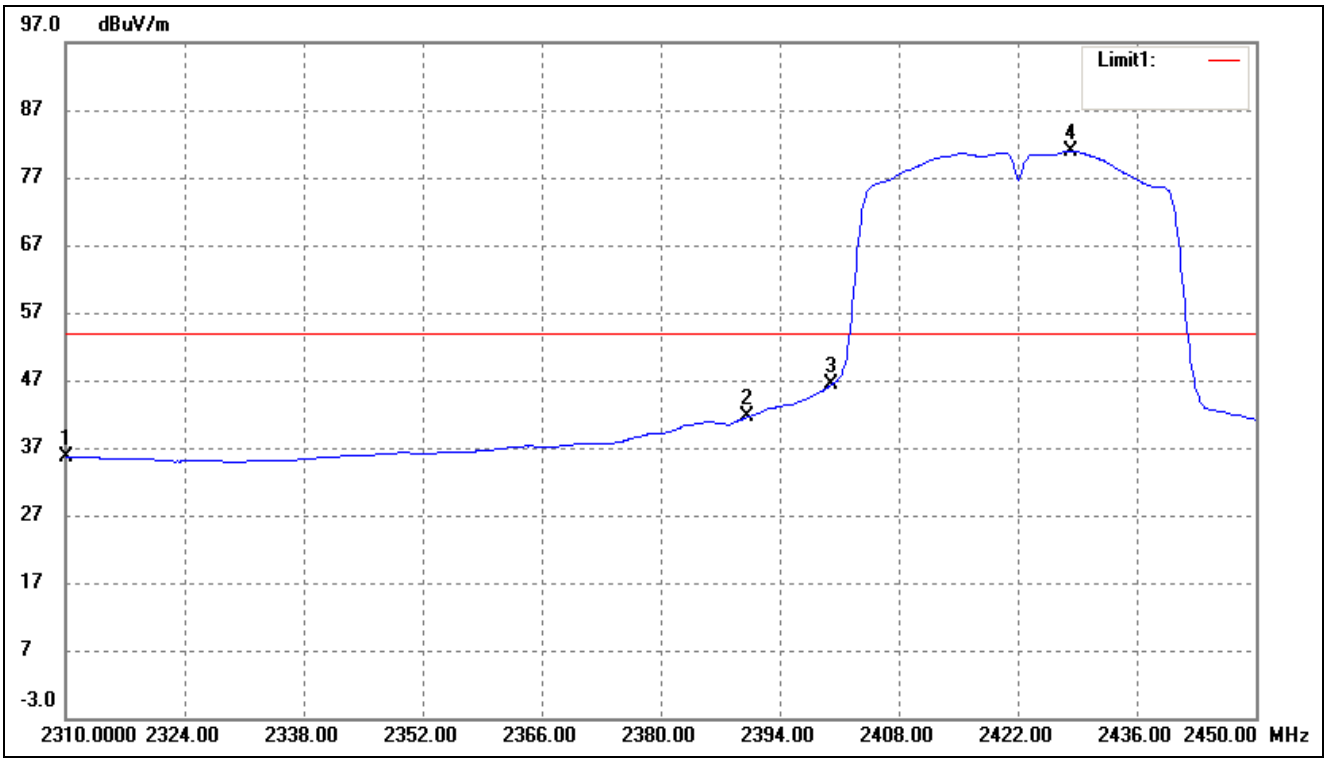
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2473.495	68.50	17.66	86.16	/	/	Average Detector
	2473.495	89.73	17.66	107.39	/	/	Peak Detector
2	2483.500	Delta=49.71 dBc		49.71	54.00	-4.29	Average Detector
	2483.500			57.68	74.00	-16.32	Peak Detector
3	2500.000	22.20	17.86	40.06	54.00	-13.94	Average Detector
	2500.000	41.99	17.86	59.85	74.00	-14.15	Peak Detector

802.11n-HT40-Lowest Bandedge

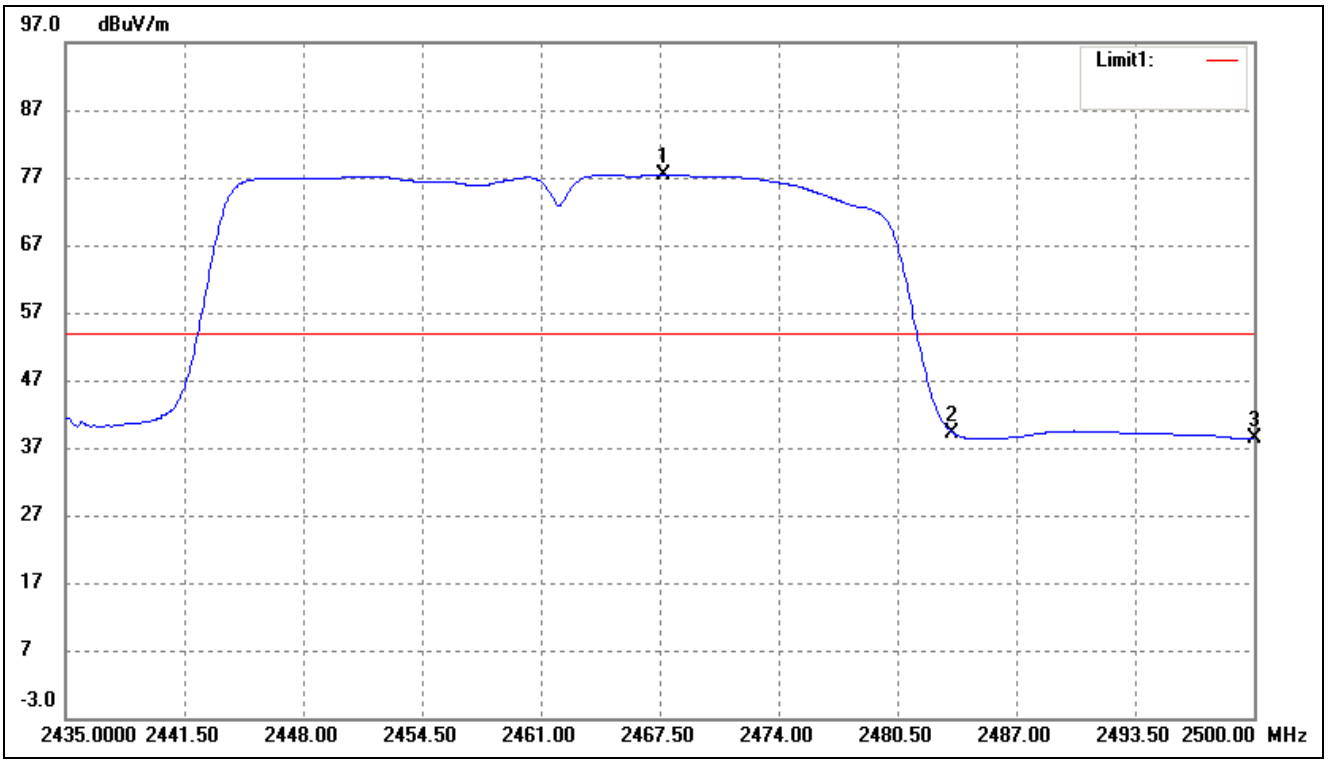
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	19.30	16.34	35.64	54.00	-18.36	Average Detector
	2310.000	39.81	16.34	56.15	74.00	-17.85	Peak Detector
2	2390.000	24.52	17.03	41.55	54.00	-12.45	Average Detector
	2390.000	45.88	17.03	62.91	74.00	-11.09	Peak Detector
3	2400.000	29.20	17.11	46.31	Delta=34.65 dBc		Average Detector
4	2428.160	63.65	17.31	80.96			Average Detector

802.11n-HT40-Highest Bandedge

Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2467.695	59.86	17.61	77.47	/	/	Average Detector
	2467.695	81.62	17.61	99.23	/	/	Peak Detector
2	2483.500	Delta=38.29 dBc		39.18	54.00	-14.82	Average Detector
	2483.500			60.94	74.00	-13.06	Peak Detector
3	2500.000	20.49	17.86	38.35	54.00	-15.65	Average Detector
	2500.000	41.50	17.86	59.36	74.00	-14.64	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.

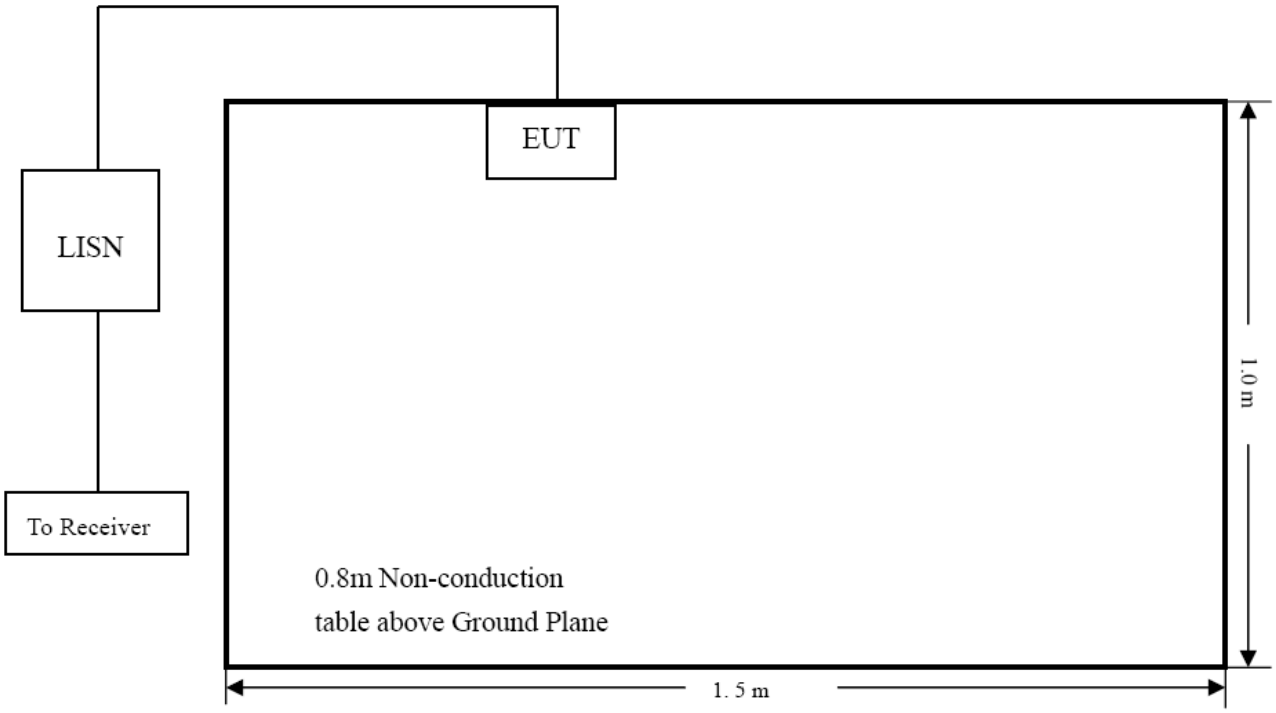
10.2 Test Equipment List and Details

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 ..... Auto
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 complied with the FCC Part 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

-17.24 dB at 0.546 MHz in the **Line** mode**, Average** detector, **0.15-30MHz**

10.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

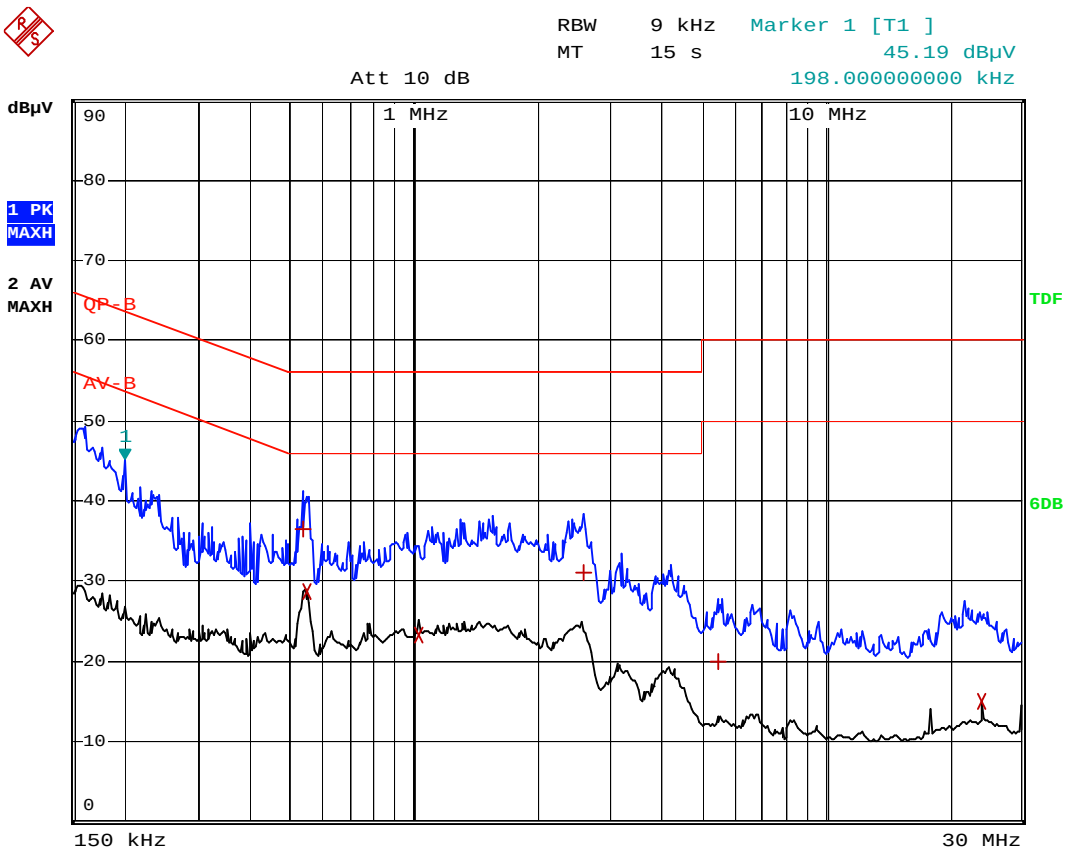
EUT: *Mobile phone*

Tested Model: *Syreni 500*

Operating Condition: *Transmitting(Wi-Fi)*

Comment: *AC 120V/60Hz; Adapter DC 5V*

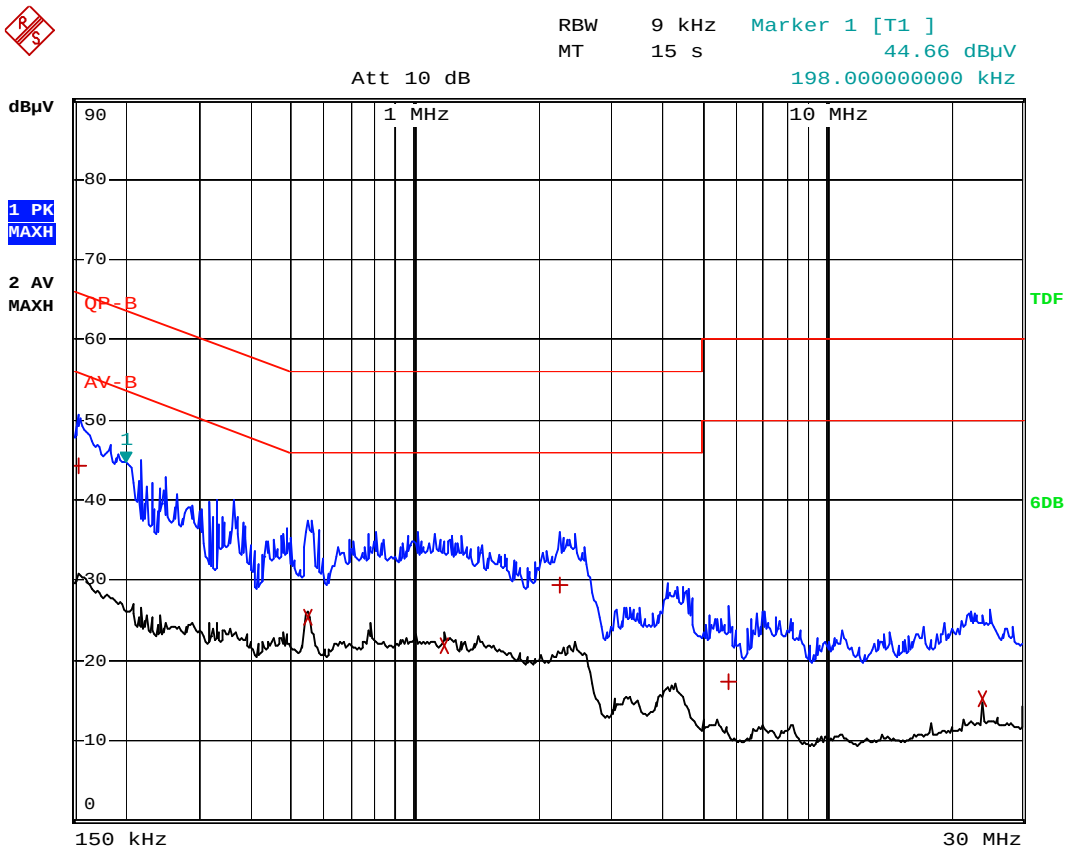
Test Specification: *Line*



EDIT PEAK LIST (Final Measurement Results)

Trace1:		QP-B		
Trace2:		AV-B		
Trace3:		---		
TRACE		FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	538 kHz	36.45	-19.55
2	Average	546 kHz	28.75	-17.24
2	Average	1.03 MHz	23.18	-22.82
1	Quasi Peak	2.598 MHz	31.02	-24.97
1	Quasi Peak	5.526 MHz	19.97	-40.02
2	Average	23.99 MHz	15.05	-34.94

Test Specification: *Neutral*



EDIT PEAK LIST (Final Measurement Results)

Trace1:	QP-B
Trace2:	AV-B
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	154 kHz	44.38	-21.39
2 Average	546 kHz	25.44	-20.55
2 Average	1.186 MHz	21.89	-24.10
1 Quasi Peak	2.254 MHz	29.34	-26.66
1 Quasi Peak	5.79 MHz	17.36	-42.63
2 Average	23.99 MHz	15.32	-34.67

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