

# **FCC Part 15C Measurement and Test Report**

#### For

# Rafisa Holdings Pte. Ltd

38 Shelford Road, #01-10 Watten Estate Condominium, Singapore,

#### 288431

FCC ID: 2AI2ZPROJECTOR

FCC Rule(s): FCC Part 15C

**Product Description: Projector** 

POCKETPICO MOBILE AND ROID

**Tested Model: PROJECTOR** 

**Report No.:** STR16068256I-1

**Tested Date:** 2016-06-18 to 2016-06-30

**Issued Date:** 2016-07-05

**Tested By:** Rode Liu / Engineer

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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: Rafisa Holdings Pte. Ltd

Address of applicant: 38 Shelford Road, #01-10 Watten Estate Condominium,

Singapore, 288431

Manufacturer: QINTEX-TECH CO., LTD

Address of manufacturer: 12/F, Tongfang Center Building, Shajing Center Street,

Baoan District, Shenzhen, China

General Description of EUT			
Product Name:	Projector		
Trade Name:	<b>PSCKETPICO</b>		
Model No.:	POCKETPICO MOBILE AND ROID PROJECTOR		
Adding Model(s):	/		
Rated Voltage:	DC 3.7V/5000mAh		
Power Adapter Model:	HP-5V/2.5A I/P: AC100-240V 50/60Hz 0.5A; O/P: DC 5V/2.5A		
Note: The test data is gathered from a production sample provided by the manufacturer.			

Technical Characteristics of EUT			
Support Standards:	802.11b, 802.11g, 802.11n		
Frequency Range:	2412-2462MHz		
RF Output Power:	9.38 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		

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#### 1.2 Test Standards

The following report is prepared on behalf of the Rafisa Holdings Pte. Ltd 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 C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices, and ANSI C63.4-2014, 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 measurement guide KDB 558074 D01 v03r05 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 2<sup>nd</sup> Road, Bao'an District, Shenzhen, P.R.C (518101).

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# 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 Ferrite

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

Auxiliary Equipment List and Details				
Description Manufacturer Model Serial Number				
Notebook	Lenovo	E23	EB12648265	

# 1.6 Measurement Uncertainty

Measurement uncertainty				
Parameter	Conditions	Uncertainty		
RF Output Power	Conducted	±0.42dB		
Occupied Bandwidth	Conducted	±1.5%		
Power Spectral Density	Conducted	±1.8dB		
Conducted Spurious Emission	Conducted	±2.17dB		
Conducted Emissions	Conducted	±2.88dB		
Transmitter Spurious Emissions	Radiated	±5.1dB		

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# 1.7 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	<b>Due Date</b>
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2016-06-04	2017-06-03
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2016-06-04	2017-06-03
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2016-06-04	2017-06-03
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2016-06-04	2017-06-03
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2016-06-04	2017-06-03
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2016-06-04	2017-06-03
SEMT-1042	Horn Antenna	ETS	3117	00086197	2016-06-04	2017-06-03
SEMT-1121	Horn Antenna	ETS	3116B	00088203	2016-06-04	2017-06-03
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2016-06-04	2017-06-03
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2016-06-04	2017-06-03
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2016-06-04	2017-06-03
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2016-06-04	2017-06-03



# 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
§15.205	Restricted Band of Operation	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)	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  $\S$  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.

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# 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 an integral antenna, fulfill the requirement of this section.

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# 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 Procedure**

According to the KDB 558074 D01 v03r05, such specifications require that the same method as used to determine the conducted output power shall also be used to determine the power spectral density. The test method of power spectral density as below:

- a) Set instrument center frequency to DTS channel center frequency.
- b) Set span to at least 1.5 times the OBW.
- c) Set RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- d) Set VBW  $\geq 3$  x RBW.
- e) Detector = power averaging (RMS) or sample detector (when RMS not available).
- f) Ensure that the number of measurement points in the sweep  $\geq 2 x \text{ span/RBW}$ .
- g) Sweep time = auto couple.
- h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
- i) Use the peak marker function to determine the maximum amplitude level.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

#### **5.3** Environmental Conditions

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

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# **5.4 Summary of Test Results/Plots**

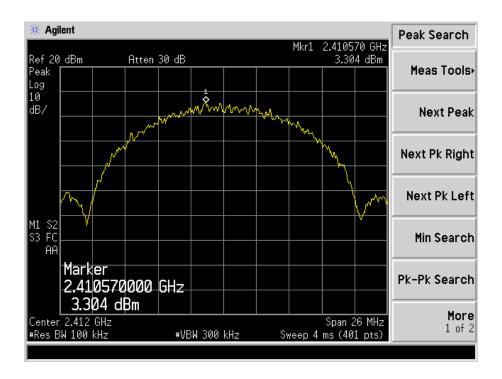
Test Mode	Test Channel MHz	Power Spectral Density dBm/100kHz	Limit dBm/3kHz
	2412	3.304	8
802.11b	2437	3.472	8
	2462	3.05	8
802.11g	2412	-3.216	8
	2437	-3.107	8
	2462	-3.609	8
	2412	-1.773	8
802.11n HT20	2437	-1.734	8
	2462	-1.952	8

Please refer to the following test plots:

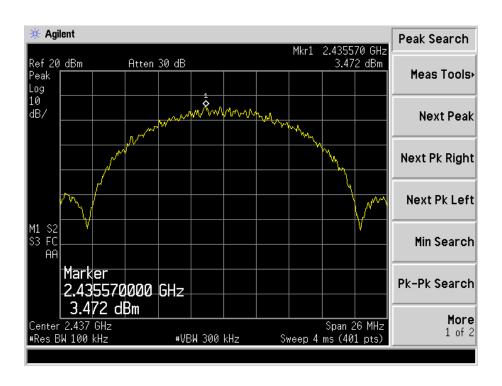
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#### 802.11b-Low Channel

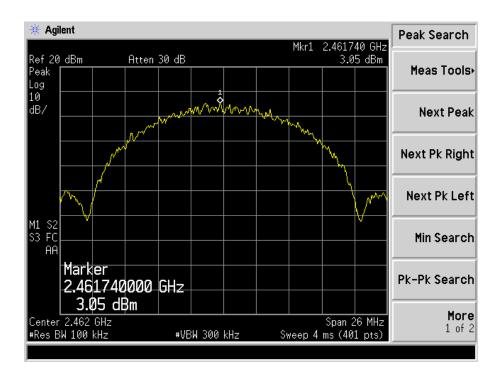


#### 802.11b-Middle Channel

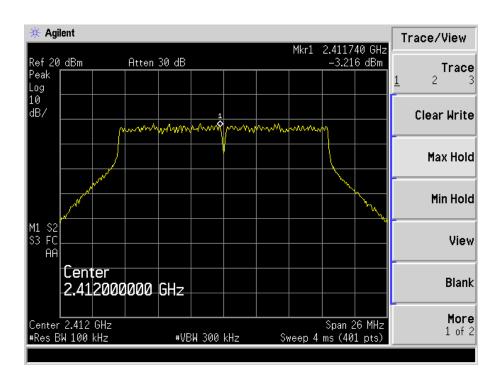




#### 802.11b-High Channel



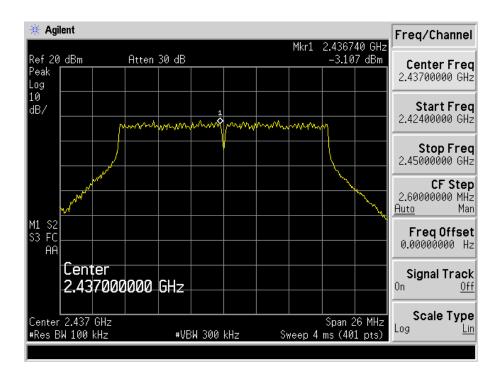
### 802.11g-Low Channel



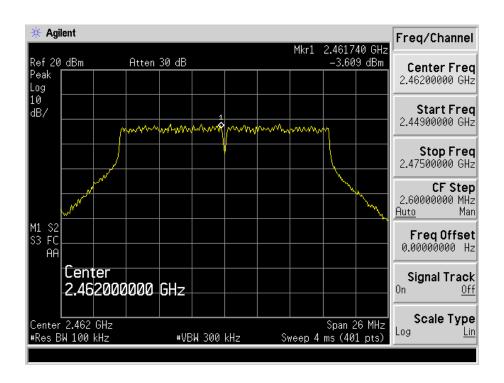
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#### 802.11g-Middle Channel

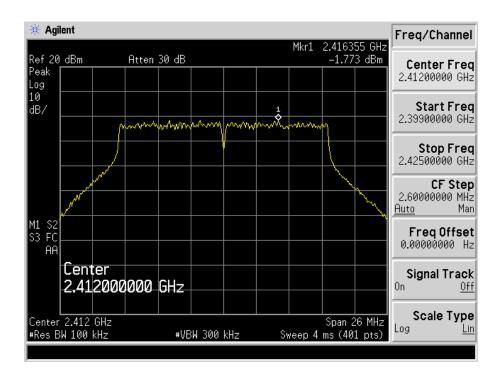


#### 802.11g-High Channel

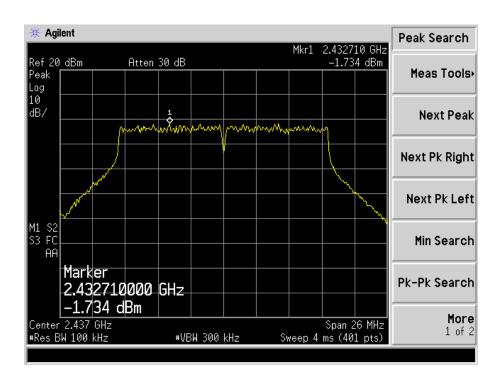




#### 802.11n-HT20-Low Channel

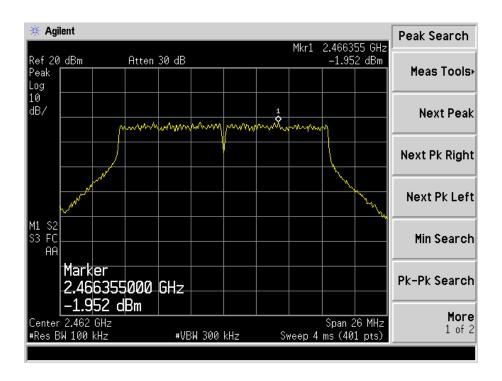


#### 802.11n-HT20-Middle Channel





# 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 Procedure**

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq$  3  $\times$  RBW.
- c) Detector = Peak.
- d) Trace mode =  $\max$  hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) 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.

#### **6.3 Environmental Conditions**

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

# 6.4 Summary of Test Results/Plots

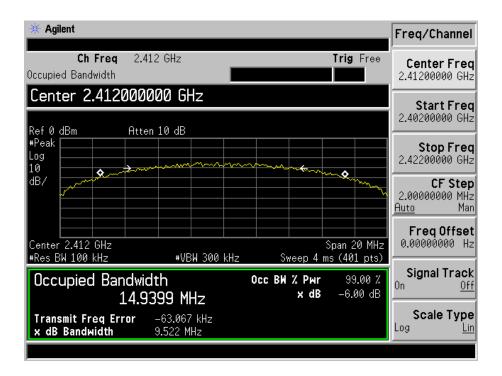
Test Mode	Test Channel	6 dB Bandwidth	99% Bandwidth	Limit
lest wide	MHz	kHz	kHz	kHz
	2412	9522	14939.9	≥500
802.11b	2437	9551	14937.9	≥500
	2462	10160	14964.2	≥500
	2412	16510	16422.5	≥500
802.11g	2437	16557	16447.6	≥500
	2462	16541	16442.7	≥500
	2412	16567	16442.8	≥500
802.11n-HT20	2437	16571	16454.7	≥500
	2462	16548	16435.8	≥500

Please refer to the following test plots:

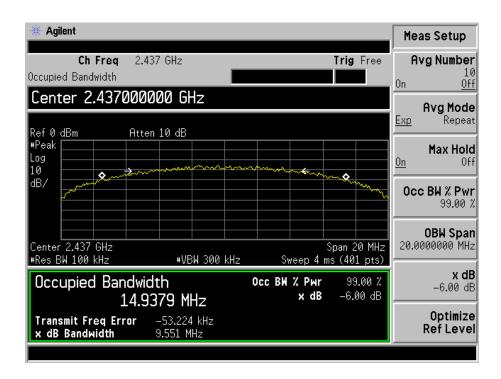
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#### 802.11b-Low Channel

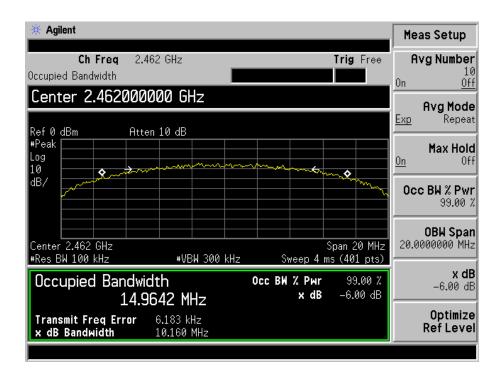


#### 802.11b-Middle Channel

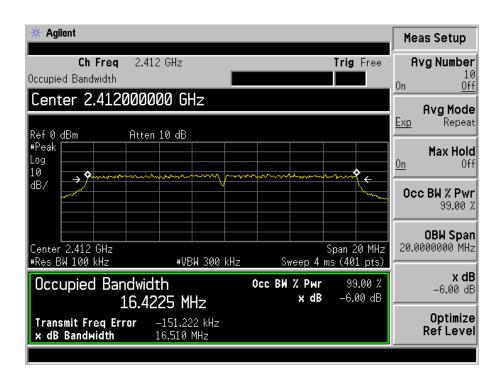




#### 802.11b-High Channel

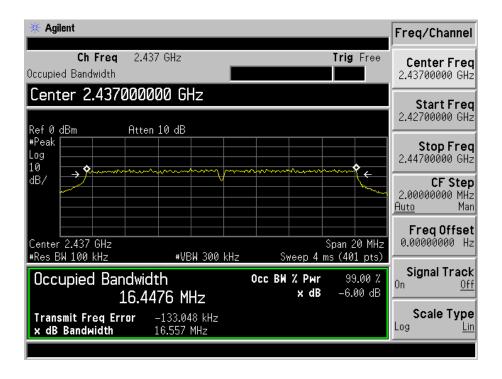


#### 802.11g-Low Channel

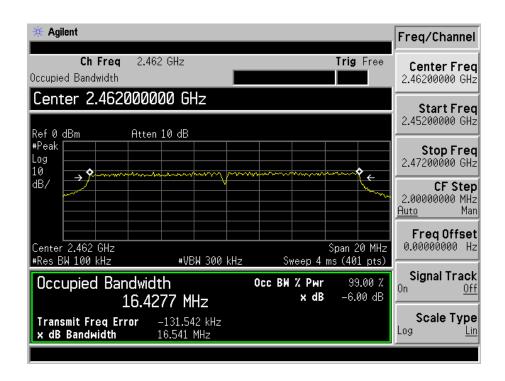




#### 802.11g-Middle Channel



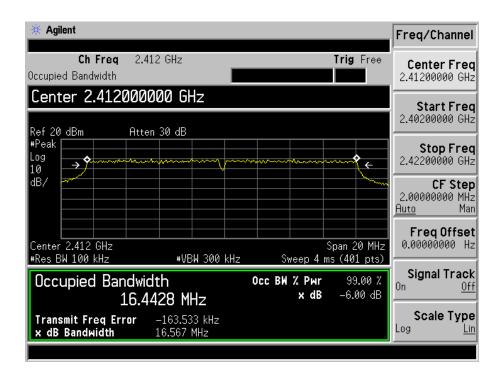
#### 802.11g-High Channel



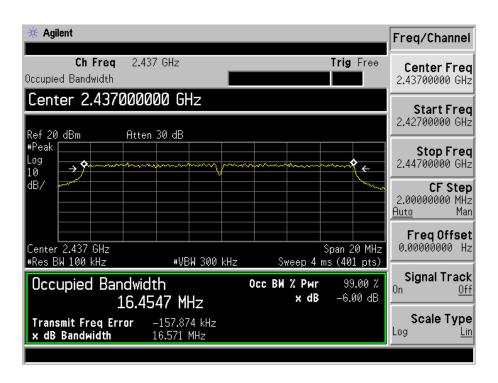
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#### 802.11n-HT20-Low Channel

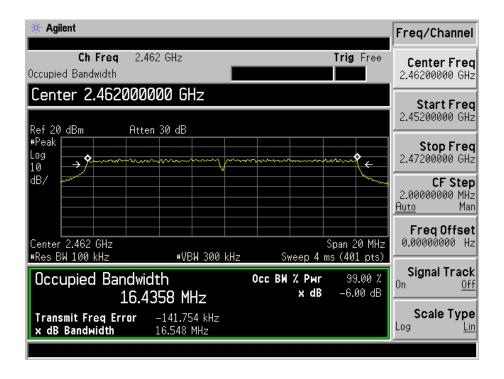


#### 802.11n-HT20-Middle Channel





#### 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 Procedure

According to the KDB-558074 D01 v03r05, 9.2.2.2, when this option is exercised, the measured power is to be referenced to the OBW rather than the DTS bandwidth

- a) Set span to at least 1.5 times the OBW.
- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
- c) Set VBW  $\geq 3 \times RBW$ .
- d) Number of points in sweep  $\geq 2 \times \text{span} / \text{RBW}$ . (This gives bin-to-bin spacing  $\leq \text{RBW}/2$ , so that narrowband signals are not lost between frequency bins.)
- e) Sweep time = auto.
- f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- g) If transmit duty cycle < 98 %, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".
- h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

#### 7.3 Environmental Conditions

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

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# 7.4 Summary of Test Results/Plots

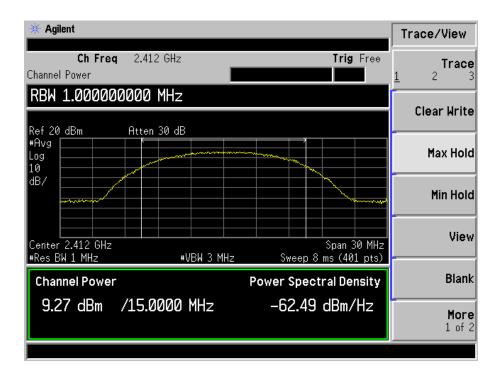
Test Mode	Frequency	Reading	Output Power	Limit
Test Mode	MHz	dBm	mW	$\mathbf{mW}$
	2412	9.27	8.45	1000
802.11b _ 11Mbps	2437	9.38	8.67	1000
	2462	8.57	7.19	1000
	2412	8.78	7.55	1000
802.11g_54Mbps	2437	8.54	7.14	1000
	2462	8.08	6.43	1000
	2412	8.55	8.45	1000
802.11n HT20_MCS7	2437	8.98	8.67	1000
	2462	8.67	7.19	1000

Please refer to the following test plots:

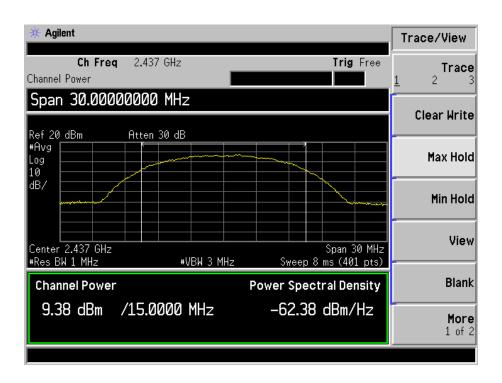
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#### 802.11b-11Mbps-Low Channel



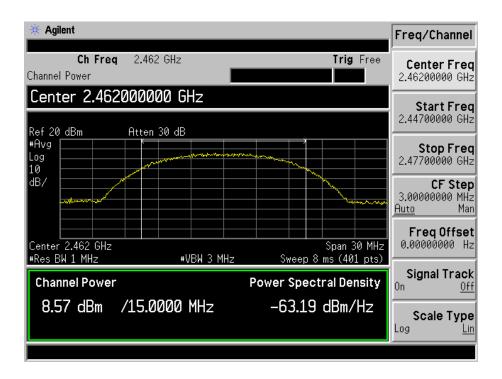
# 802.11b -11Mbps-Middle Channel



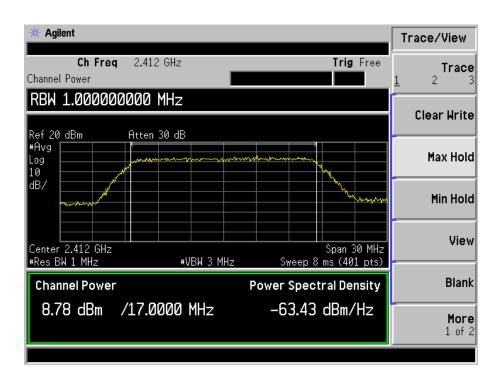
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#### 802.11b -11Mpbs-High Channel



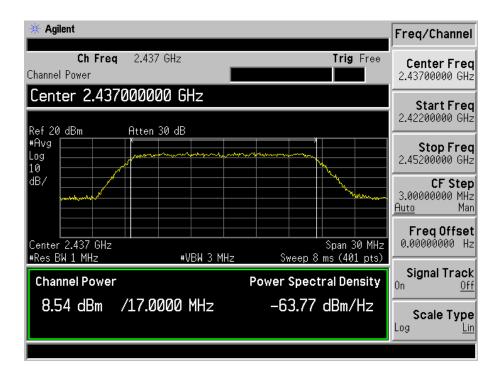
#### 802.11g-54Mbps-Low Channel



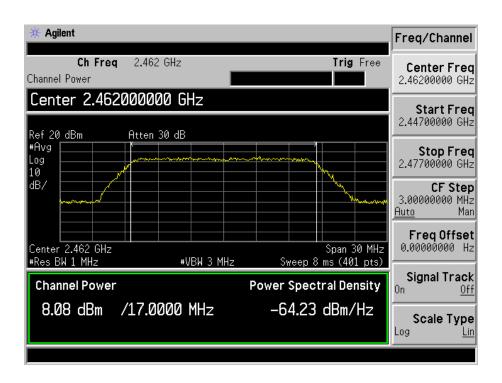
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#### 802.11g-54Mbps-Middle Channel



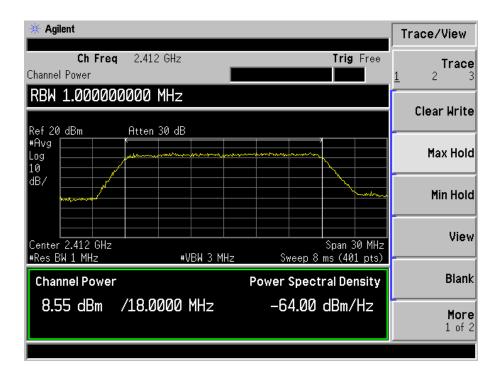
#### 802.11g-54Mpbs-High Channel



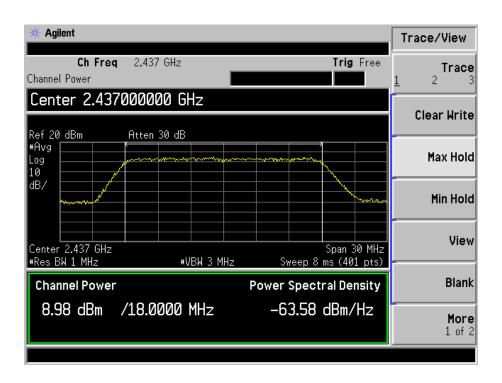
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#### 802.11n-HT20-MCS7-Low Channel



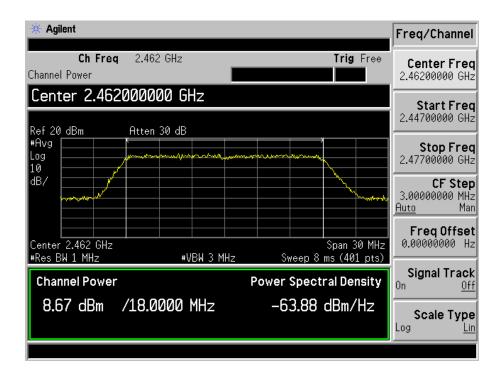
# 802.11n-HT20-MCS7-Middle Channel



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### 802.11n-HT20-MCS7-High Channel





# 8. Field Strength of Spurious Emissions

#### 8.1 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).

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.

#### **8.2 Test Procedure**

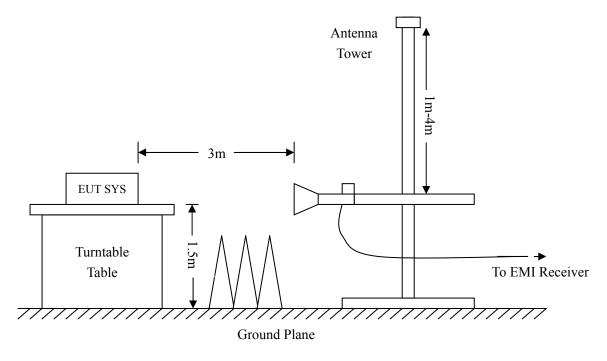
The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

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.



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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

### 8.3 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. The equation for margin calculation is as follows:

#### **8.4 Environmental Conditions**

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

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# **8.5 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)

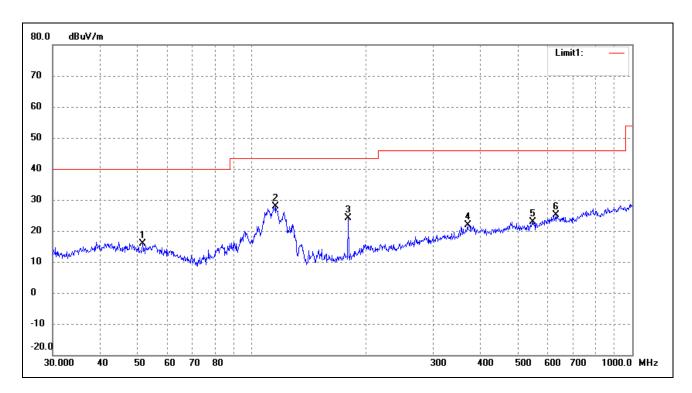
EUT: Projector

Tested Model: POCKETPICO MOBILE AND ROID PROJECTOR

Operating Condition: 802.11b Transmitting Low Channel-2412MHz

Comment: AC120V/60Hz; Adapter DC 5V

Test Specification: Horizontal

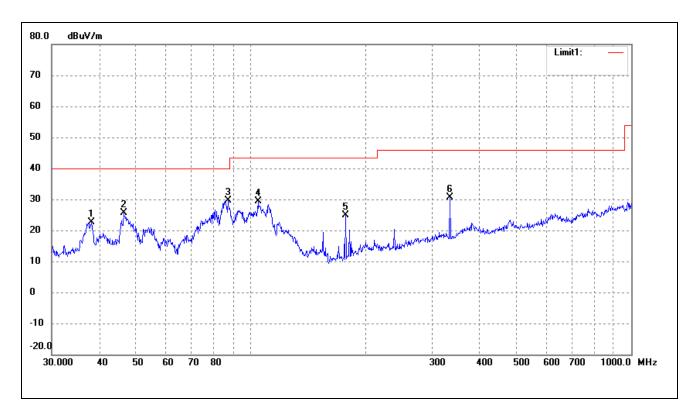


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	51.6616	24.52	-8.53	15.99	40.00	-24.01	100	100	peak
2	115.7256	39.26	-11.32	27.94	43.50	-15.56	150	100	peak
3	179.3864	35.56	-11.38	24.18	43.50	-19.32	178	100	peak
4	369.4047	24.56	-2.71	21.85	46.00	-24.15	210	100	peak
5	547.0977	24.56	-1.66	22.90	46.00	-23.10	254	100	peak
6	631.6884	24.32	0.93	25.25	46.00	-20.75	310	100	peak

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Test Specification: Vertical



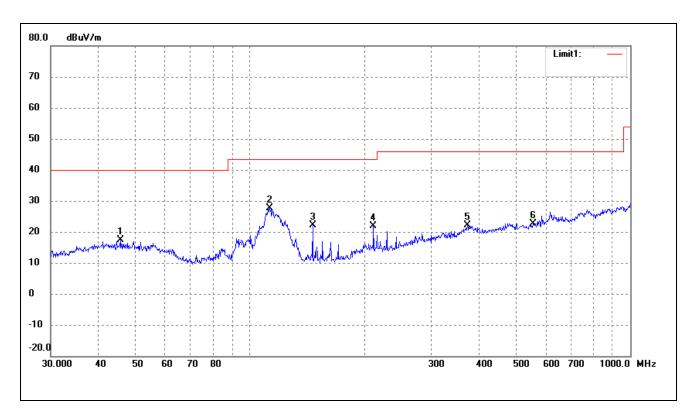
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.2120	30.67	-8.16	22.51	40.00	-17.49	114	100	peak
2	46.3402	33.78	-8.08	25.70	40.00	-14.30	270	100	peak
3	87.1117	42.33	-12.67	29.66	40.00	-10.34	360	100	peak
4	104.5361	40.49	-11.02	29.47	43.50	-14.03	116	100	peak
5	177.5092	36.26	-11.47	24.79	43.50	-18.71	175	100	peak
6	333.6867	35.58	-4.88	30.70	46.00	-15.30	200	100	peak



Operating Condition: 802.11b Transmitting Middle Channel-2437MHz

Comment: AC120V/60Hz; Adapter DC 5V

Test Specification: Horizontal

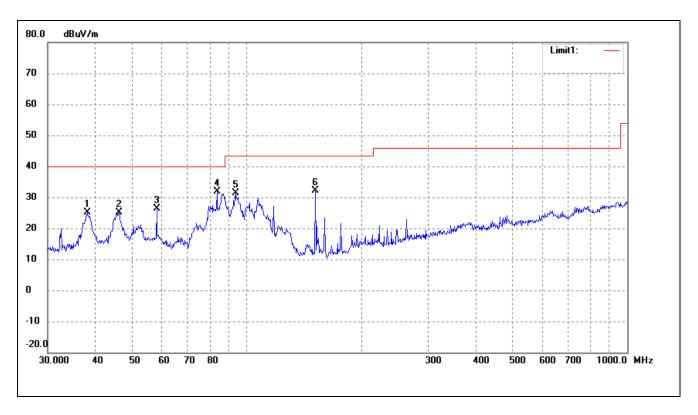


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	45.6948	25.32	-8.04	17.28	40.00	-22.72	178	100	peak
2	112.9196	38.94	-11.24	27.70	43.50	-15.80	224	100	peak
3	146.3735	34.64	-12.47	22.17	43.50	-21.33	160	100	peak
4	211.5265	30.59	-8.75	21.84	43.50	-21.66	290	100	peak
5	373.3112	24.67	-2.47	22.20	46.00	-23.80	300	100	peak
6	556.7744	24.20	-1.45	22.75	46.00	-23.25	310	100	peak

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Test Specification: Vertical



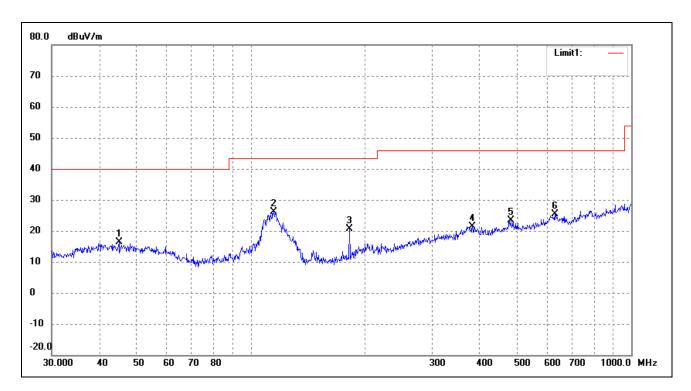
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.0783	33.45	-8.20	25.25	40.00	-14.75	256	100	peak
2	46.1780	33.20	-8.07	25.13	40.00	-14.87	360	100	peak
3	57.9993	35.71	-9.33	26.38	40.00	-13.62	360	100	peak
4	83.5222	44.15	-12.33	31.82	40.00	-8.18	360	100	peak
5	93.4402	43.71	-12.24	31.47	43.50	-12.03	270	100	peak
6	151.5972	44.55	-12.40	32.15	43.50	-11.35	360	100	peak



Operating Condition: 802.11b Transmitting High Channel-2462MHz

Comment: AC120V/60Hz; Adapter DC 5V

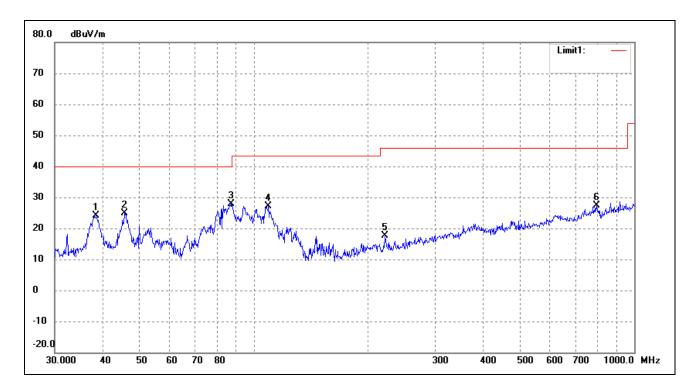
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	45.0583	24.40	-7.99	16.41	40.00	-23.59	176	100	peak
2	114.9169	37.49	-11.30	26.19	43.50	-17.31	255	100	peak
3	181.9202	31.75	-11.10	20.65	43.50	-22.85	360	100	peak
4	382.5879	23.67	-2.23	21.44	46.00	-24.56	178	100	peak
5	482.2156	24.56	-1.17	23.39	46.00	-22.61	280	100	peak
6	629.4772	24.47	0.99	25.46	46.00	-20.54	310	100	peak

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No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.4809	32.14	-8.08	24.06	40.00	-15.94	360	100	peak
2	45.6948	32.82	-8.04	24.78	40.00	-15.22	225	100	peak
3	87.1117	40.64	-12.67	27.97	40.00	-12.03	160	100	peak
4	109.4116	38.29	-11.15	27.14	43.50	-16.36	310	100	peak
5	221.3921	26.35	-8.80	17.55	46.00	-28.45	320	100	peak
6	796.1830	25.34	2.09	27.43	46.00	-18.57	206	100	peak



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

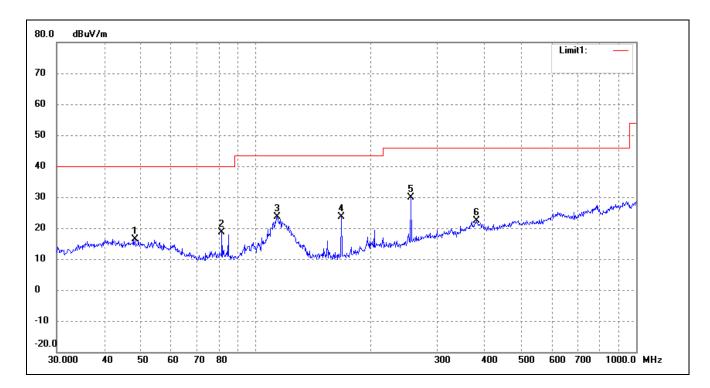
EUT: Projector

Tested Model: POCKETPICO MOBILE AND ROID PROJECTOR

Operating Condition: 802.11g Transmitting Low Channel-2412MHz

Comment: AC120V/60Hz; Adapter DC 5V

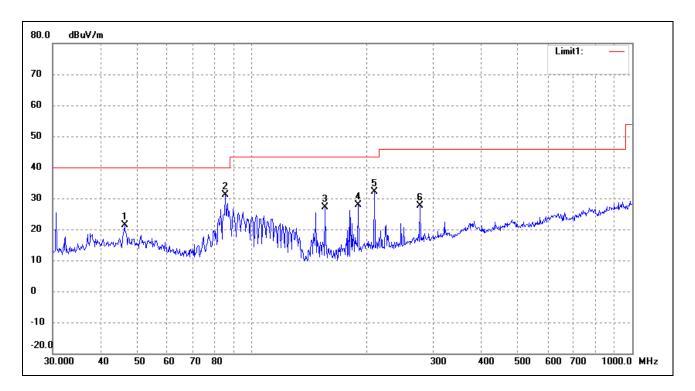
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	48.1626	24.55	-8.20	16.35	40.00	-23.65	174	100	peak
2	81.4970	30.66	-12.13	18.53	40.00	-21.47	160	100	peak
3	113.7143	35.00	-11.27	23.73	43.50	-19.77	320	100	peak
4	167.8243	35.55	-11.91	23.64	43.50	-19.86	360	100	peak
5	255.6231	37.02	-7.24	29.78	46.00	-16.22	301	100	peak
6	379.9141	24.45	-2.11	22.34	46.00	-23.66	325	100	peak

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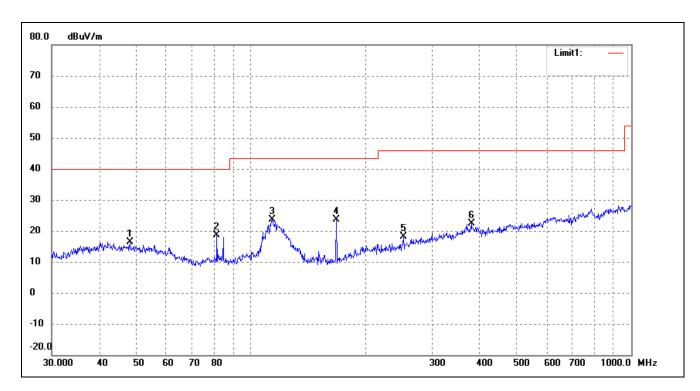
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	46.3402	29.36	-8.08	21.28	40.00	-18.72	177	100	peak
2	85.2981	43.68	-12.50	31.18	40.00	-8.82	90	100	peak
3	155.9101	39.56	-12.34	27.22	43.50	-16.28	336	100	peak
4	190.4050	37.94	-9.96	27.98	43.50	-15.52	360	100	peak
5	210.0482	40.90	-8.74	32.16	43.50	-11.34	301	100	peak
6	277.0935	33.94	-6.22	27.72	46.00	-18.28	208	100	peak



Operating Condition: 802.11g Transmitting Middle Channel-2437MHz

Comment: AC120V/60Hz; Adapter DC 5V

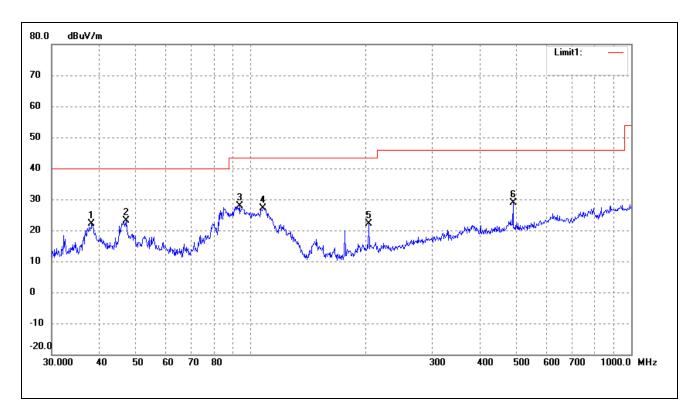
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	48.1626	24.55	-8.20	16.35	40.00	-23.65	270	100	peak
2	81.4970	30.66	-12.13	18.53	40.00	-21.47	164	100	peak
3	113.7143	35.00	-11.27	23.73	43.50	-19.77	228	200	peak
4	167.8243	35.55	-11.91	23.64	43.50	-19.86	130	200	peak
5	252.0627	25.60	-7.49	18.11	46.00	-27.89	360	100	peak
6	379.9141	24.45	-2.11	22.34	46.00	-23.66	360	100	peak

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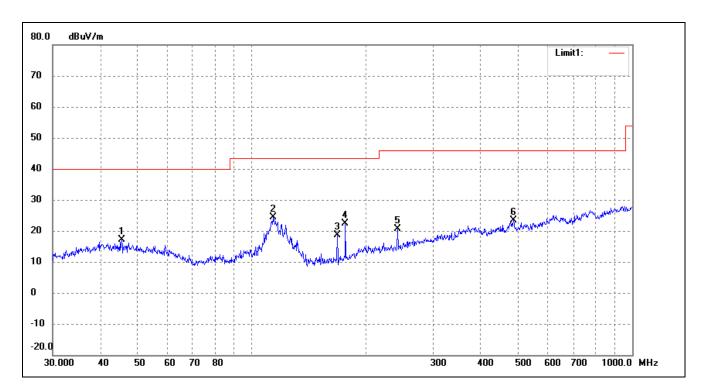
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.2120	30.21	-8.16	22.05	40.00	-17.95	360	100	peak
2	47.1599	31.35	-8.14	23.21	40.00	-16.79	255	100	peak
3	93.4402	40.11	-12.24	27.87	43.50	-15.63	270	100	peak
4	107.8877	38.26	-11.10	27.16	43.50	-16.34	180	100	peak
5	204.2377	30.87	-8.69	22.18	43.50	-21.32	210	100	peak
6	489.0269	30.53	-1.56	28.97	46.00	-17.03	330	100	peak



Operating Condition: 802.11g Transmitting High Channel-2462MHz

Comment: AC120V/60Hz; Adapter DC 5V

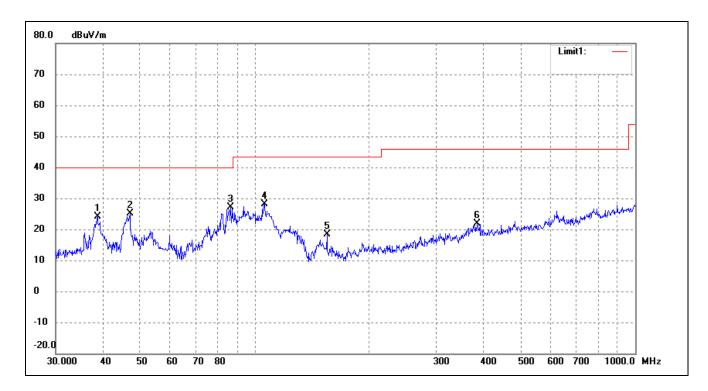
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	45.5348	25.26	-8.03	17.23	40.00	-22.77	270	100	peak
2	113.7143	35.59	-11.27	24.32	43.50	-19.18	51	200	peak
3	167.8243	30.50	-11.91	18.59	43.50	-24.91	360	200	peak
4	176.2686	33.96	-11.52	22.44	43.50	-21.06	360	100	peak
5	241.6763	28.73	-8.20	20.53	46.00	-25.47	300	200	peak
6	487.3151	24.73	-1.47	23.26	46.00	-22.74	350	100	peak

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No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	38.6161	32.16	-8.05	24.11	40.00	-15.89	360	100	peak
2	46.9948	33.14	-8.13	25.01	40.00	-14.99	180	100	peak
3	86.5029	39.67	-12.62	27.05	40.00	-12.95	225	100	peak
4	106.0126	39.26	-11.06	28.20	43.50	-15.30	67	100	peak
5	154.8205	30.83	-12.35	18.48	43.50	-25.02	304	100	peak
6	383.9318	24.15	-2.30	21.85	46.00	-24.15	330	100	peak



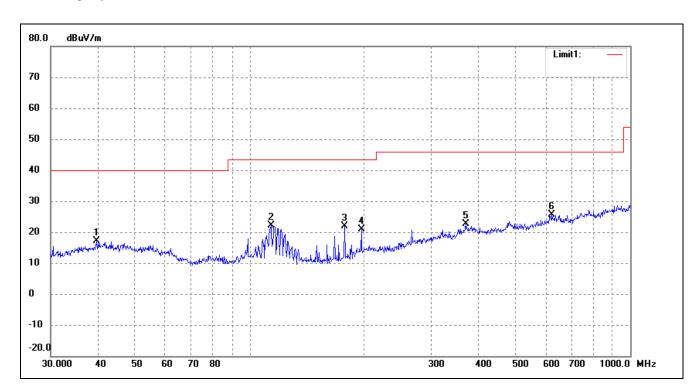
## Plot of Radiated Emissions Test Data (30MHz to 1GHz)

EUT: Projector

Tested Model: POCKETPICO MOBILE AND ROID PROJECTOR
Operating Condition: 802.11n-HT20 Transmitting Low Channel-2412MHz

Comment: AC120V/60Hz; Adapter DC 5V

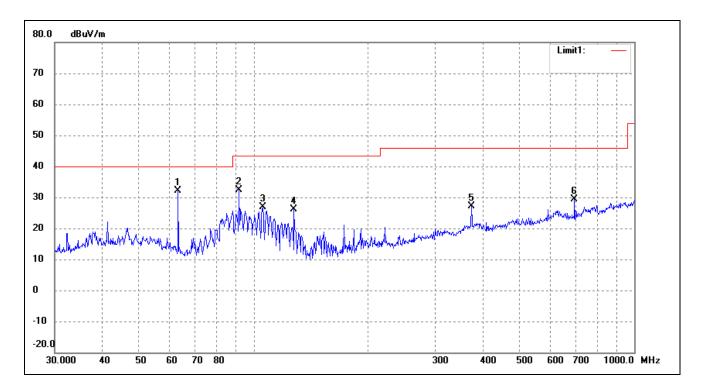
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	39.5757	24.81	-7.78	17.03	40.00	-22.97	260	100	peak
2	113.7143	33.30	-11.27	22.03	43.50	-21.47	131	200	peak
3	177.5092	33.42	-11.47	21.95	43.50	-21.55	285	200	peak
4	196.5098	29.96	-9.12	20.84	43.50	-22.66	224	100	peak
5	369.4047	25.27	-2.71	22.56	46.00	-23.44	251	200	peak
6	622.8900	24.41	1.16	25.57	46.00	-20.43	310	100	peak

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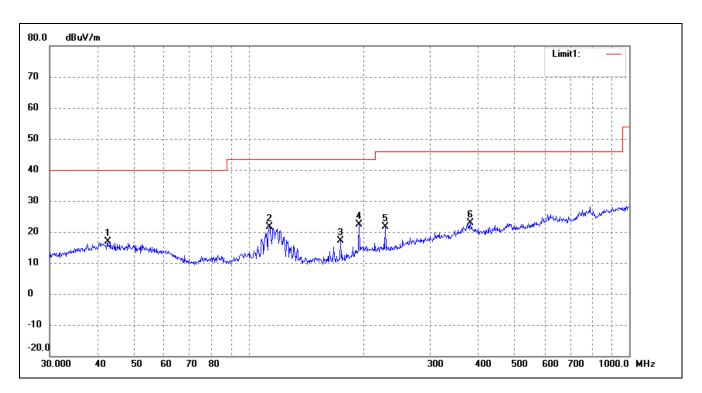
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	63.3132	42.86	-10.66	32.20	40.00	-7.80	155	100	peak
2	91.4949	44.91	-12.64	32.27	43.50	-11.23	197	100	peak
3	105.6415	38.01	-11.05	26.96	43.50	-16.54	310	100	peak
4	127.6645	38.11	-11.86	26.25	43.50	-17.25	229	100	peak
5	373.3112	29.68	-2.47	27.21	46.00	-18.79	130	100	peak
6	696.8567	29.28	0.10	29.38	46.00	-16.62	320	100	peak



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

Comment: AC120V/60Hz; Adapter DC 5V

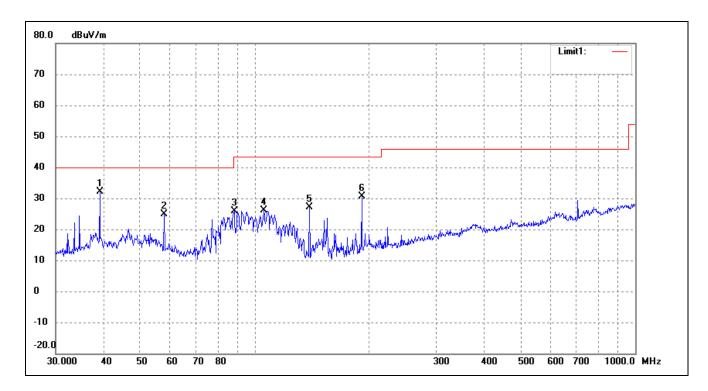
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	42.6000	24.76	-7.84	16.92	40.00	-23.08	274	100	peak
2	113.3163	32.82	-11.25	21.57	43.50	-21.93	116	100	peak
3	174.4241	28.80	-11.61	17.19	43.50	-26.31	82	100	peak
4	195.1365	31.72	-9.30	22.42	43.50	-21.08	134	100	peak
5	228.4904	30.35	-8.63	21.72	46.00	-24.28	210	100	peak
6	382.5879	25.07	-2.23	22.84	46.00	-23.16	324	100	peak

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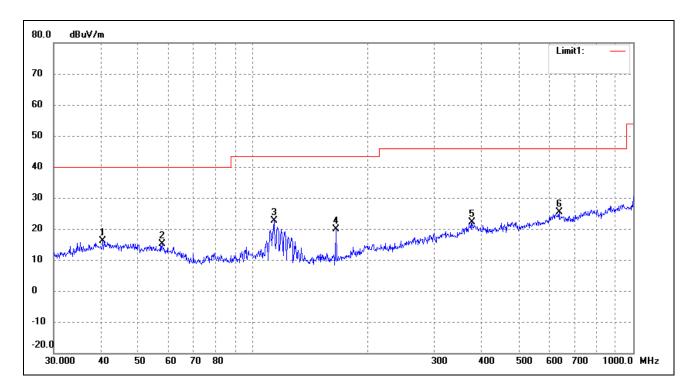
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	39.1616	40.00	-7.90	32.10	40.00	-7.90	264	100	peak
2	57.7962	34.20	-9.31	24.89	40.00	-15.11	110	100	peak
3	88.3421	38.66	-12.79	25.87	43.50	-17.63	136	100	peak
4	105.6415	37.27	-11.05	26.22	43.50	-17.28	90	100	peak
5	139.3613	39.62	-12.52	27.10	43.50	-16.40	210	100	peak
6	191.0738	40.57	-9.86	30.71	43.50	-12.79	351	100	peak



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

Comment: AC120V/60Hz; Adapter DC 5V

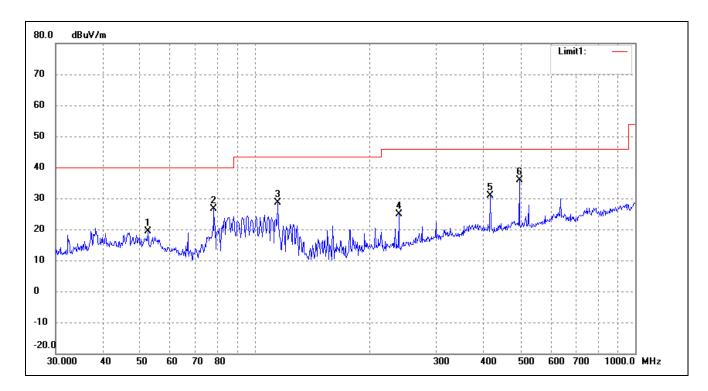
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	40.4172	23.74	-7.70	16.04	40.00	-23.96	360	100	peak
2	57.7962	24.51	-9.31	15.20	40.00	-24.80	112	100	peak
3	113.7143	33.83	-11.27	22.56	43.50	-20.94	180	200	peak
4	165.4867	31.84	-12.02	19.82	43.50	-23.68	270	200	peak
5	377.2591	24.46	-2.26	22.20	46.00	-23.80	300	100	peak
6	638.3686	24.54	0.76	25.30	46.00	-20.70	320	100	peak

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No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	52.3913	28.09	-8.63	19.46	40.00	-20.54	267	100	peak
2	78.1389	38.71	-12.15	26.56	40.00	-13.44	116	100	peak
3	114.9169	39.85	-11.30	28.55	43.50	-14.95	360	100	peak
4	239.1473	33.33	-8.35	24.98	46.00	-21.02	228	100	peak
5	416.1791	34.28	-3.43	30.85	46.00	-15.15	270	100	peak
6	495.9344	37.75	-1.96	35.79	46.00	-10.21	300	100	peak



# Spurious Emissions Above 1GHz

Test Mode: 802.11b

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
			Low Channe	el-2412MHz			•
4824.000	56.09	-3.87	52.22	74.00	-21.78	Н	PK
4824.000	38.84	-3.87	34.97	54.00	-19.03	Н	AV
7236.000	48.3	1.14	49.44	74.00	-24.56	Н	PK
7236.000	36.98	1.19	38.17	54.00	-15.83	Н	AV
4824.000	59.31	-3.86	55.45	74.00	-18.55	V	PK
4824.000	42.5	-3.86	38.64	54.00	-15.36	V	AV
7236.000	48.71	1.10	49.81	74.00	-24.19	V	PK
7236.000	39.94	1.10	41.04	54.00	-12.96	V	AV
			Middle Chan	nel-2437MHz			
4874.000	55.44	-3.74	51.7	74.00	-22.3	Н	PK
4874.000	38.19	-3.74	34.45	54.00	-19.55	Н	AV
7311.000	48.27	1.47	49.74	74.00	-24.26	Н	PK
7311.000	35.87	1.47	37.34	54.00	-16.66	Н	AV
4874.000	53.97	-3.74	50.23	74.00	-23.77	V	PK
4874.000	41.19	-3.74	37.45	54.00	-16.55	V	AV
7311.000	48.08	1.47	49.55	74.00	-24.45	V	PK
7311.000	36.08	1.47	37.55	54.00	-16.45	V	AV
			High Chann	el-2462MHz			
4924.000	55.82	-3.59	52.23	74.00	-21.77	Н	PK
4924.000	43.76	-3.59	40.17	54.00	-13.83	Н	AV
7386.000	45.78	1.79	47.57	74.00	-26.43	Н	PK
7386.000	35.83	1.79	37.62	54.00	-16.38	Н	AV
4924.000	53.24	-3.59	49.65	74.00	-24.35	V	PK
4924.000	43.34	-3.59	39.75	54.00	-14.25	V	AV
7386.000	46.19	1.79	47.98	74.00	-26.02	V	PK
7386.000	36.38	1.79	38.17	54.00	-15.83	V	AV



Test Mode: 802.11g

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector	
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V		
			Low Channe	el-2412MHz			•	
4824.000	54.5	-3.86	50.64	74.00	-23.36	Н	PK	
4824.000	43.23	-3.86	39.37	54.00	-14.63	Н	AV	
7236.000	49.42	1.10	50.52	74.00	-23.48	Н	PK	
7236.000	35.40	1.10	36.5	54.00	-17.5	Н	AV	
4824.000	55.19	-3.86	51.33	74.00	-22.67	V	PK	
4824.000	42.25	-3.86	38.39	54.00	-15.61	V	AV	
7236.000	49.62	1.10	50.72	74.00	-23.28	V	PK	
7236.000	36.54	1.10	37.64	54.00	-16.36	V	AV	
Middle Channel-2437MHz								
4874.000	55.60	-3.74	51.86	74.00	-22.14	Н	PK	
4874.000	43.68	-3.74	39.94	54.00	-14.06	Н	AV	
7311.000	47.68	1.47	49.15	74.00	-24.85	Н	PK	
7311.000	35.67	1.47	37.14	54.00	-16.86	Н	AV	
4874.000	57.67	-3.74	53.93	74.00	-20.07	V	PK	
4874.000	43.66	-3.74	39.92	54.00	-14.08	V	AV	
7311.000	48.66	1.47	50.13	74.00	-23.87	V	PK	
7311.000	35.63	1.47	37.1	54.00	-16.9	V	AV	
			High Chann	el-2462MHz				
4924.000	54.70	-3.59	51.11	74.00	-22.89	Н	PK	
4924.000	41.75	-3.59	38.16	54.00	-15.84	Н	AV	
7386.000	47.58	1.79	49.37	74.00	-24.63	Н	PK	
7386.000	35.73	1.79	37.52	54.00	-16.48	Н	AV	
4924.000	56.61	-3.59	53.02	74.00	-20.98	V	PK	
4924.000	43.69	-3.59	40.1	54.00	-13.9	V	AV	
7386.000	48.58	1.79	50.37	74.00	-23.63	V	PK	
7386.000	36.95	1.79	38.74	54.00	-15.26	V	AV	



Test Mode: 802.11n-HT20

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector	
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V		
			Low Channe	el-2412MHz				
4824.000	56.6	-3.86	52.74	74.00	-21.26	Н	PK	
4824.000	41.54	-3.86	37.68	54.00	-16.32	Н	AV	
7236.000	48.26	1.10	49.36	74.00	-24.64	Н	PK	
7236.000	35.44	1.10	36.54	54.00	-17.46	Н	AV	
4824.000	56.11	-3.86	52.25	74.00	-21.75	V	PK	
4824.000	44.18	-3.86	40.32	54.00	-13.68	V	AV	
7236.000	49.71	1.10	50.81	74.00	-23.19	V	PK	
7236.000	36.77	1.10	37.87	54.00	-16.13	V	AV	
Middle Channel-2437MHz								
4874.000	54.36	-3.74	50.62	74.00	-23.38	Н	PK	
4874.000	42.58	-3.74	38.84	54.00	-15.16	Н	AV	
7311.000	48.64	1.47	50.11	74.00	-23.89	Н	PK	
7311.000	33.76	1.47	35.23	54.00	-18.77	Н	AV	
4874.000	54.42	-3.74	50.68	74.00	-23.32	V	PK	
4874.000	42.42	-3.74	38.68	54.00	-15.32	V	AV	
7311.000	47.49	1.47	48.96	74.00	-25.04	V	PK	
7311.000	35.56	1.47	37.03	54.00	-16.97	V	AV	
			High Chann	el-2462MHz				
4924.000	53.55	-3.59	49.96	74.00	-24.04	Н	PK	
4924.000	43.42	-3.59	39.83	54.00	-14.17	Н	AV	
7386.000	48.87	1.79	50.66	74.00	-23.34	Н	PK	
7386.000	36.76	1.79	38.55	54.00	-15.45	Н	AV	
4924.000	55.66	-3.59	52.07	74.00	-21.93	V	PK	
4924.000	41.46	-3.59	37.87	54.00	-16.13	V	AV	
7386.000	48.59	1.79	50.38	74.00	-23.62	V	PK	
7386.000	35.86	1.79	37.65	54.00	-16.35	V	AV	

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

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### 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 Procedure

According to the KDB 558074D01 v03r04, 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 v03r05, 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.

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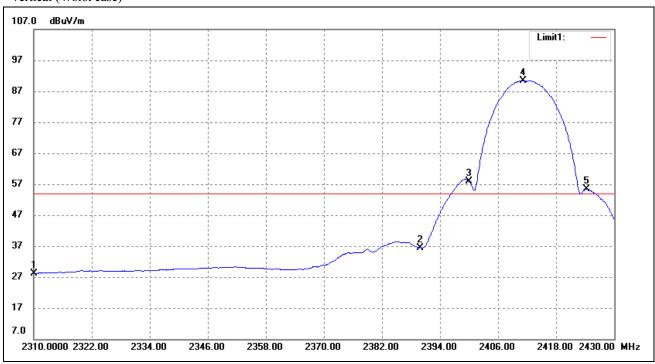
## 9.3 Environmental Conditions

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

# 9.4 Summary of Test Results/Plots

## 802.11b-Lowest Bandedge

Vertical (Worst case)



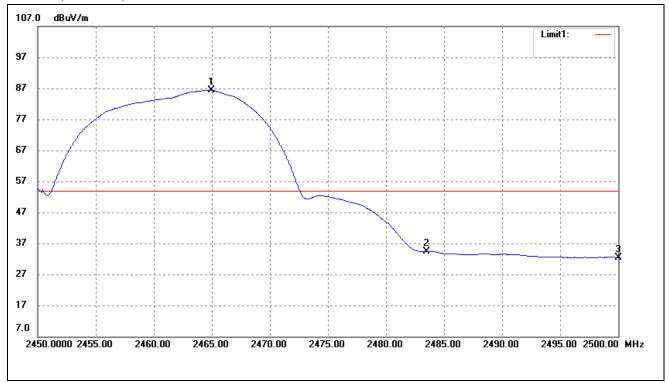
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	31.53	-3.35	28.18	54.00	-25.82	Average Detector
	2310.000	45.17	-3.35	41.82	74.00	-32.18	Peak Detector
2	2390.000	40.78	-4.29	36.49	54.00	-17.51	Average Detector
	2390.000	56.38	-4.29	52.09	74.00	-21.91	Peak Detector
3	2400.000	62.25	-4.40	57.85	Delta=32.59dBc		Average Detector
4	2411.160	94.88	-4.44	90.44			Average Detector

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# 802.11b-Highest Bandedge

## Vertical (Worst case)



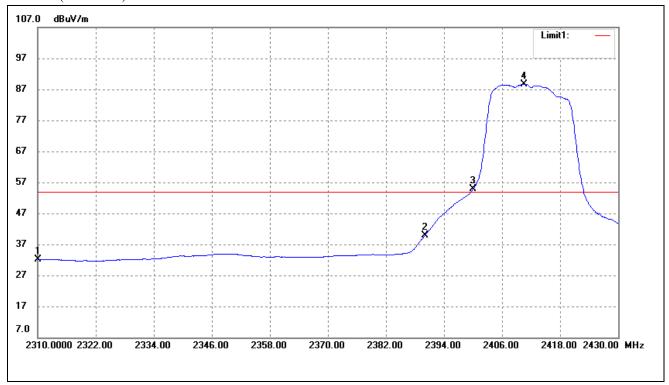
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2464.950	89.68	-3.29	86.39	/	/	Average Detector
	2463.650	97.45	-3.29	94.16	/	/	Peak Detector
2	2483.500	Dolto - 5	1 06 dD o	34.43	54.00	-19.57	Average Detector
	2483.500	Della – 3	Delta = 51.96dBc		74.00	-27.13	Peak Detector
3	2500.000	35.64	-3.20	32.44	54.00	-21.56	Average Detector
	2500.000	47.53	-3.20	44.33	74.00	-29.67	Peak Detector

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# 802.11g-Lowest Bandedge

## Vertical (Worst case)



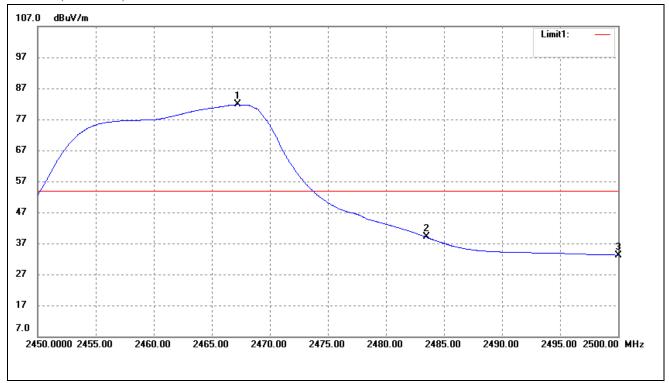
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	35.79	-3.69	32.10	54.00	-21.90	Average Detector
	2310.000	47.17	-3.69	43.48	74.00	-30.52	Peak Detector
2	2390.000	43.37	-3.49	39.88	54.00	-14.12	Average Detector
	2390.000	62.75	-3.49	59.26	74.00	-14.74	Peak Detector
3	2400.000	58.29	-3.46	54.83	Delta=33.78dBc		Average Detector
4	2410.560	92.04	-3.43	88.61			Average Detector

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# 802.11g-Highest Bandedge

## Vertical (Worst case)



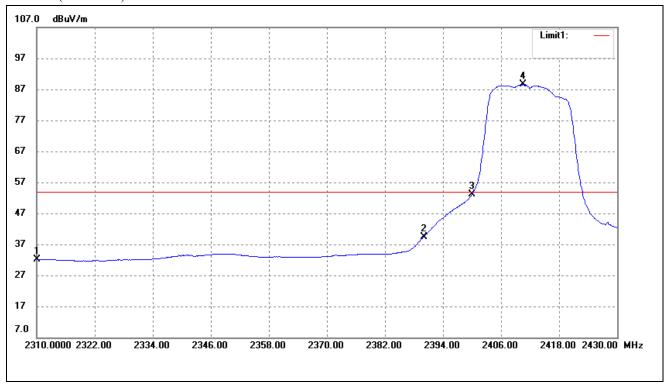
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
2	2467.250	85.08	-3.28	81.80	/	/	Average Detector
	2469.100	97.30	-3.28	94.02	/	/	Peak Detector
1	2483.500	Dolto - 4	) 774Da	39.03	54.00	-14.97	Average Detector
	2483.500	Della – 4.	Delta = 42.77dBc		74.00	-20.35	Peak Detector
3	2500.000	36.43	-3.20	33.23	54.00	-20.77	Average Detector
	2500.000	49.68	-3.20	46.48	74.00	-27.52	Peak Detector

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# 802.11n-HT20-Lowest Bandedge

### Vertical (Worst case)



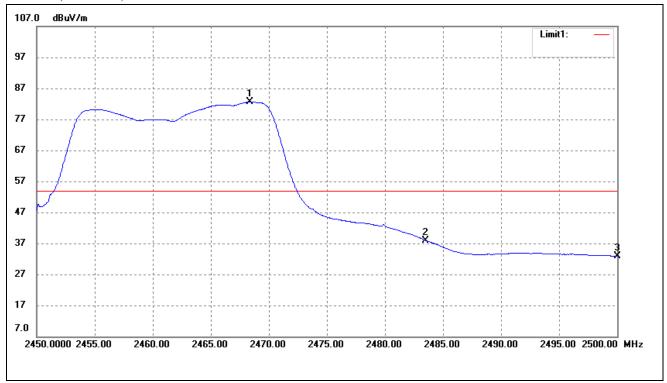
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	35.73	-3.69	32.04	54.00	-21.96	Average Detector
	2310.000	47.10	-3.69	43.41	74.00	-30.59	Peak Detector
2	2390.000	42.98	-3.49	39.49	54.00	-14.51	Average Detector
	2390.000	62.93	-3.49	59.44	74.00	-14.56	Peak Detector
3	2400.000	56.69	-3.46	53.23	Delta=35.28dBc		Average Detector
4	2410.560	91.94	-3.43	88.51			Average Detector

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# 802.11n-HT20-Highest Bandedge

## Vertical (Worst case)

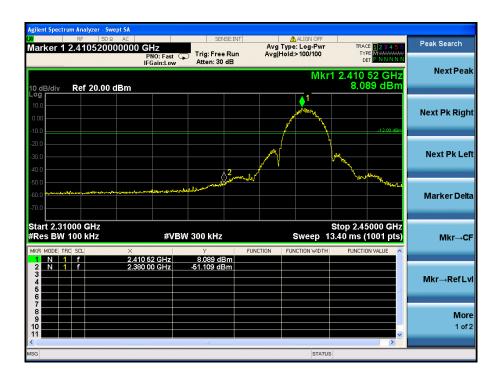


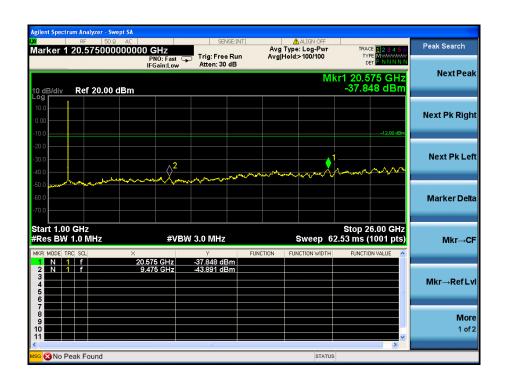
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2468.350	85.88	-3.28	82.60	/	/	Average Detector
	2469.150	97.31	-3.28	94.03	/	/	Peak Detector
2	2483.500	Dolto - 2	0.704Da	37.98	54.00	-16.02	Average Detector
	2483.500	Della – 3	Delta = 39.78dBc		74.00	-19.75	Peak Detector
3	2500.000	36.13	-3.20	32.93	54.00	-21.07	Average Detector
	2500.000	51.05	-3.20	47.85	74.00	-26.15	Peak Detector

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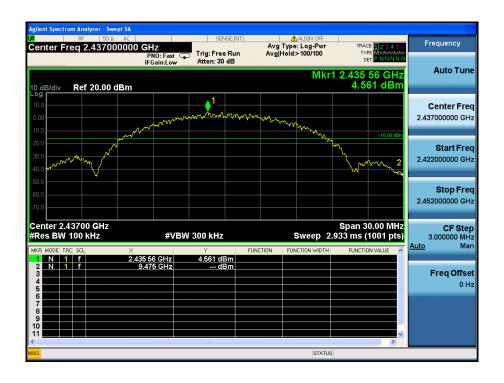
Out-of-Band and Spurious Emission (Conducted) 802.11b Low Channel

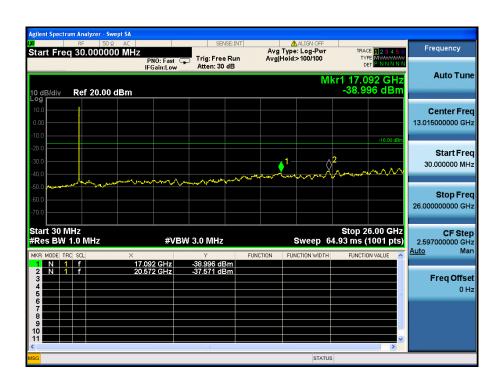






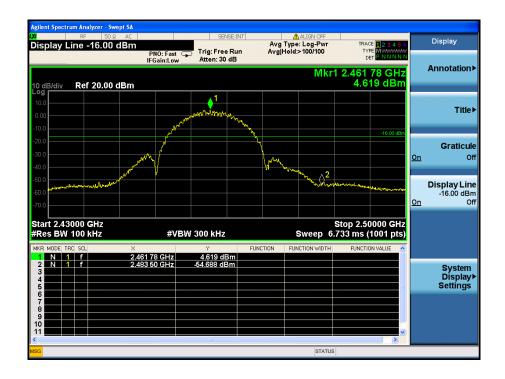
#### Middle Channel

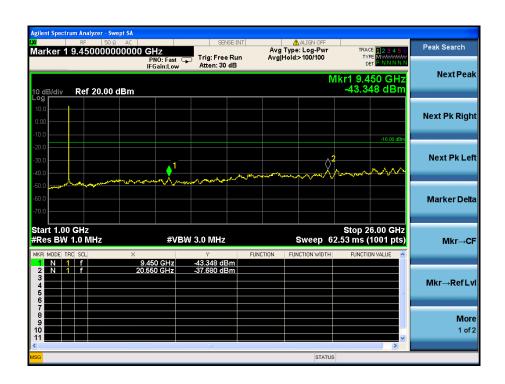






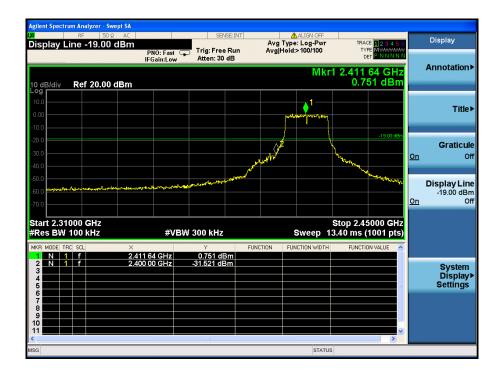
### High Channel

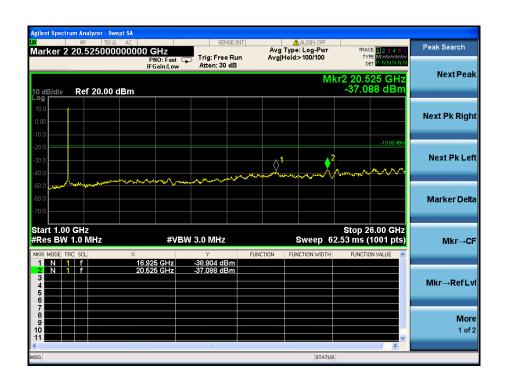






802.11g Low Channel

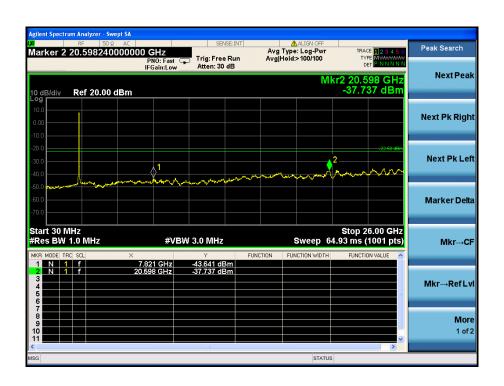






#### Middle Channel







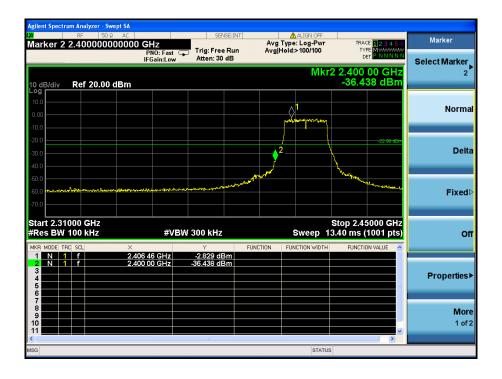
### High Channel

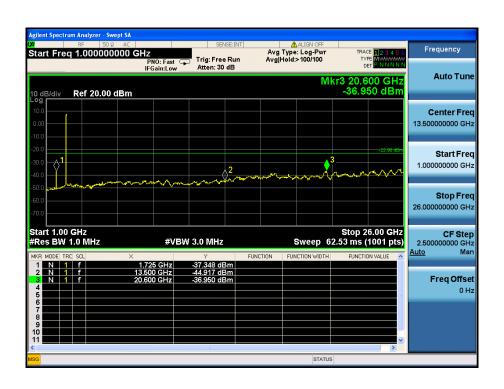






## 11n-HT20 Low Channel

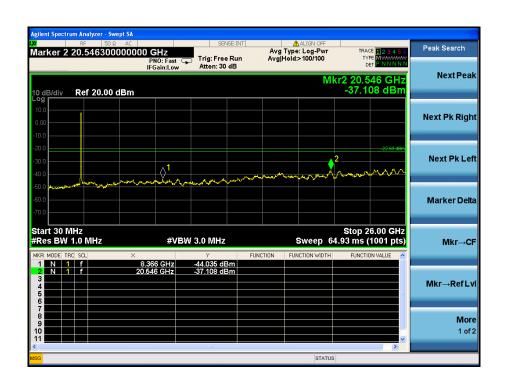






#### Middle Channel







### High Channel







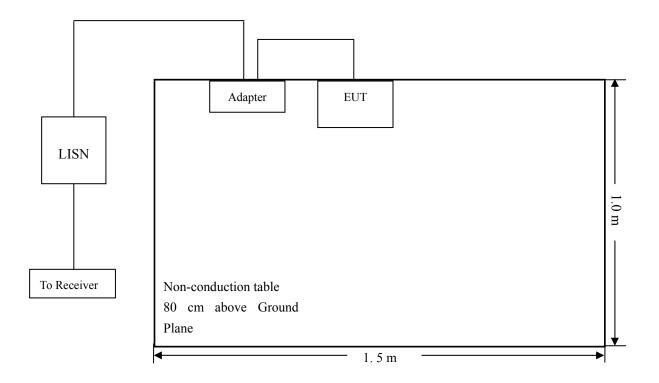
## 10. Conducted Emissions

### **10.1 Test Procedure**

The setup of EUT is according with per ANSI C63.4-2014 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.

## 10.2 Basic Test Setup Block Diagram



### **10.3 Environmental Conditions**

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

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# 10.4 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

# 10.5 Summary of Test Results/Plots

According to the data in section 10.6, the EUT <u>complied with the FCC Part 15.207</u> Conducted margin for this device, with the *worst* margin reading of:

-11.32 dB at 0.1900 MHz in the Neutral mode, Peak detector, 0.15-30MHz

### 10.6 Conducted Emissions Test Data

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### **Plot of Conducted Emissions Test Data**

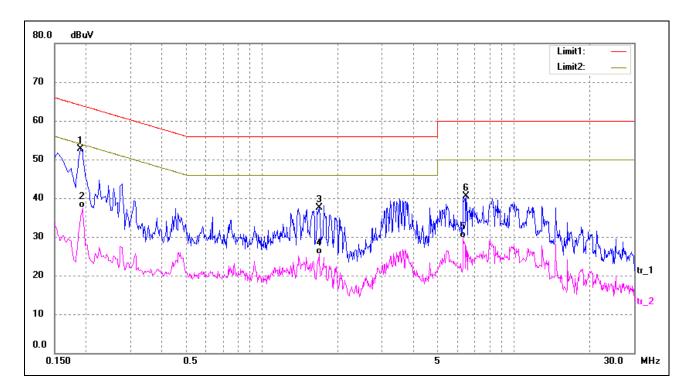
EUT: Projector

Tested Model: POCKETPICO MOBILE AND ROID PROJECTOR

Operating Condition: Transmitting(Wi-Fi)

Comment: AC120V/60Hz; Adapter DC 5V

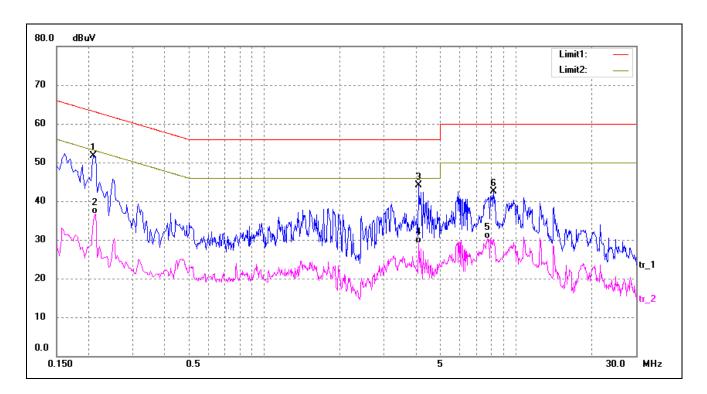
Test Specification: Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1900	43.22	9.50	52.72	64.04	-11.32	peak
2	0.1940	28.09	9.50	37.59	53.86	-16.27	AVG
3	1.6860	27.66	9.78	37.44	56.00	-18.56	peak
4	1.6860	15.80	9.78	25.58	46.00	-20.42	AVG
5	6.3100	19.39	10.27	29.66	50.00	-20.34	AVG
6	6.4740	30.27	10.28	40.55	60.00	-19.45	peak



Test Specification: Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.2100	42.13	9.50	51.63	63.21	-11.58	peak
2	0.2140	27.14	9.50	36.64	53.05	-16.41	AVG
3	4.1100	33.95	10.12	44.07	56.00	-11.93	peak
4	4.1180	18.97	10.12	29.09	46.00	-16.91	AVG
5	7.7140	20.01	10.31	30.32	50.00	-19.68	AVG
6	8.1900	32.14	10.32	42.46	60.00	-17.54	peak

## \*\*\*\*\* END OF REPORT \*\*\*\*\*