



Report No: FCC 1512023-01 File reference No: 2016-04-29

Applicant: Speech Processing Solutions GmbH

Product: Smart Voice Recorder

Model No: PSP1000, PSPXXXX (Remark: "X" denotes 0 to 9 or A to Z or

Blank, In accordance with buyer coder)

Trademark: PHILIPS

Test Standards: FCC Part 15.247

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.10, FCC Part 15 Subpart C, Paragraph 15.247 regulations for the evaluation of

ruragraph 13.217 regulations for the evaluation

electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: April 29, 2016

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES

Room 512-519, 5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen, Guangdong, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timewaytech.com

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Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAL-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The 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. Registration No.: 899988.

IC- Registration No.: IC5205A-02

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-02.

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1.0 General Details

Test Lab Details 1.1

SHENZHEN TIMEWAY TESTING LABORATORIES. Name:

Address: Room 512-519,5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen,

Guangdong China

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A-02

For 3m & 10 m OATS

1.2 Applicant Details

Applicant: Speech Processing Solutions GmbH

Address: Gutheil-Schoder Gasse 8-12,1100 Vienna, Austria

Telephone: +43 1 60529 1742 +43 1 60529 1268 Fax:

1.3 Description of EUT

Product: Smart Voice Recorder

Manufacturer: Shenzhen Jingwah Information Technology Co., Ltd.

Address: 4F, Bldg, 4, Jing Hua Square, Jinghua Street, Shennan Road Centre, Shenzhen,

Guangdong, China

Brand Name: **PHILIPS** Model Number: PSP1000

Additional Model Number: PSPXXXX (Remark: "X" denotes 0 to 9 or A to Z or Blank, In accordance with

buyer coder)

IEEE 802.11b: DSSS (CCK, QPSK, DBPSK) Type of Modulation

IEEE 802.11g/n (HT20): OFDM(64QAM, 16QAM, QPSK, BPSK)

Frequency range IEEE802.11b/g/n (HT20): 2412-2462MHz

Channel Spacing 5MHz for IEEE 802.11b/g/n(HT20) Air Data Rate IEEE 802.11b: 11, 5.5, 2, 1 Mbps

IEEE 802.11g: 54, 48,36, 24, 18, 12, 9, 6 Mbps

IEEE 802.11n HT20: 150, 135, 117, 104, 78, 65, 58.5, 52, 39, 26, 19.5, 13, 6.5 Mbps

Frequency Selection By software

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Channel Number IEEE 802.11b/g/n (HT20): 11 Channels

Antenna: Integral Antenna and the maximum Gain of this antenna is 2.0dBi;

Model No.: KA23-0502000DEU Power Adapter

Input: 100-240V, 50/60Hz, 0.35A; Output: DC5V, 2000mA

1.4 Submitted Sample: 1 Samples

1.5 Test Duration

2015-12-07 to 2016-04-29

1.6 Test Uncertainty

Conducted Emissions Uncertainty = 3.6dB

Radiated Emissions Uncertainty =4.7dB

Test Engineer 1.7

The sample tested by

Print Name: Terry Tang

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2.0 Test Equipments					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2015-08-22	2016-08-21
TWO Line-V-NETW	R&S	EZH3-Z5	100294	2015-08-22	2016-08-21
TWO Line-V-NETW	R&S	EZH3-Z5	100253	2015-08-22	2016-08-21
Ultra Broadband ANT	R&S	HL562	100157	2015-08-23	2016-08-22
ESDV Test Receiver	R&S	ESDV	100008	2015-08-22	2016-08-21
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2015-08-22	2016-08-21
System Controller	CT	SC100	-		
Printer	EPSON	РНОТО ЕХЗ	CFNH234850		
Computer	IBM	8434	1S8434KCE99BLXLO*	-	-
Loop Antenna	EMCO	6502	00042960	2015-08-23	2016-08-22
ESPI Test Receiver	R&S	ESI26	838786/013	2015-08-22	2016-08-21
3m OATS			N/A	2015-08-24	2016-08-23
Horn Antenna	R&S	BBHA 9170	BBHA9170265	2015-08-24	2016-08-23
Horn Antenna	R&S	BBHA 9120D	9120D-631	2015-08-24	2016-08-23
Power meter	Anritsu	ML2487A	6K00003613	2015-08-22	2016-08-21
Power sensor	Anritsu	MA2491A	32263	2015-08-22	2016-08-21
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2015-08-23	2016-08-21
LISN	AFJ	LS16C	10010947251	2015-08-22	2016-08-21
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2015-08-23	2016-08-22
9*6*6 Anechoic			N/A	2015-08-24	2016-08-23
EMI Test Receiver	RS	ESCS30	100139	2015-08-22	2016-08-21

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3. DESCRIPTION OF TEST MODES

IEEE 802.11b, 802.11g, 802.11n (HT20) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode: 11Mbps data rate (worst case) was chosen for full testing. IEEE 802.11g mode: 54Mbps data rate (worst case) was chosen for full testing. IEEE 802.11n (HT20) mode: 6.5Mbps data rate (worst case) were chosen for full testing

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD and average power across all the data rates, bandwidths, modulations and spatial stream modes.

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3.0 **Technical Details**

3.1 **Summary of test results**

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107 & 15.207	Conducted Emission Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.247(a)(2) Limit	Spectrum bandwidth of a Orthogonal Frequency Division Multiplex System Limit: 6dB bandwidth>500kHz	PASS	Complies
FCC Part 15, Paragraph 15.247(b)	Maximum peak output power Limit: max. 30dBm	PASS	Complies
FCC Part 15, Paragraph 15.109,15.205 & 15.209	Transmitter Radiated Emission Limit: Table 15.209	PASS	Complies
FCC Part 15, Paragraph 15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Complies
FCC Part 15, Paragraph 15.247(d)	Out of Band Emission and Restricted Band Radiation Limit: 20dB less than peak value of fundamental frequency Restricted band limit: Table 15.209	PASS	Complies

3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247 and ANSI C63.4:2014 AND ANSI C63.10:2013

4.0 **EUT Modification**

No modification by Shenzhen Timeway Technology Consulting Co., Ltd

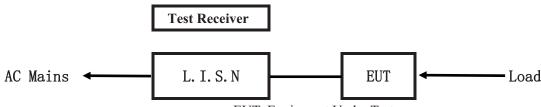
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5.0 **Power Line Conducted Emission Test**

5.1 Schematics of the test

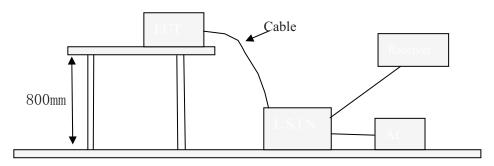


EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4-2014.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2014. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

EUT A.

Device	Manufacturer	Model	FCC ID
Smart Voice Recorder	Shenzhen Jingwah Information	PSP1000, PSPXXXX	2AD4M-PSP1
Smart voice Recorder	Technology Co., Ltd.	F3F1000, F3FAAAA	2AD4WI-F5F1

В. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable
	-		-	

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5.4 **EUT Operating Condition**

Operating condition is according to ANSI C63.4-2014.

- Α Setup the EUT and simulators as shown on follow
- В Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207 and 15.107

<u> </u>							
Frequency	Class A Lim	its (dB µ V)	Class B Lim	nits (dB µ V)			
(MHz)	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level			
$0.15 \sim 0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*			
$0.50 \sim 5.00$	73.0	60.0	56.0	46.0			
5.00 ~ 30.00	73.0	60.0	60.0	50.0			

Notes:

- 1. *Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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A: Conducted Emission on Live Terminal (150kHz to 30MHz)

EUT Operating Environment

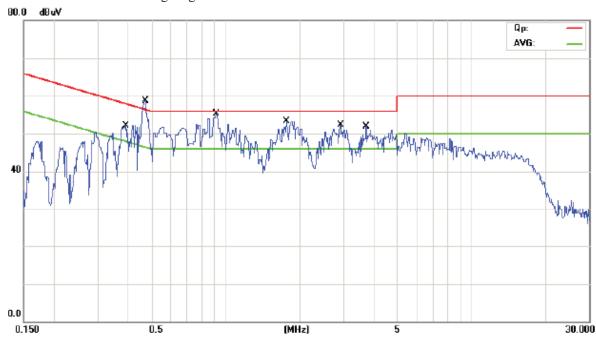
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep WIFI Transmitting

Equipment Level: Class B

Results: PASS

Please refer to following diagram for individual



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1		0.3901	37.40	11.25	48.65	58.06	-9.41	QP	
2		0.3901	7.80	11.25	19.05	48.06	-29.01	AVG	
3	*	0.4662	41.80	11.33	53.13	56.58	-3.45	QP	
4		0.4662	13.30	11.33	24.63	46.58	-21.95	AVG	
5		0.9110	34.00	11.81	45.81	56.00	-10.19	QP	
6		0.9110	2.80	11.81	14.61	46.00	-31.39	AVG	
7		1.7566	34.70	12.20	46.90	56.00	-9.10	QP	
8		1.7566	6.20	12.20	18.40	46.00	-27.60	AVG	
9		2.8982	32.50	12.66	45.16	56.00	-10.84	QP	
10		2.8982	6.10	12.66	18.76	46.00	-27.24	AVG	
11		3.6880	30.70	12.98	43.68	56.00	-12.32	QP	
12		3.6880	3.50	12.98	16.48	46.00	-29.52	AVG	

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B: **Conducted Emission on Neutral Terminal (150kHz to 30MHz)**

EUT Operating Environment

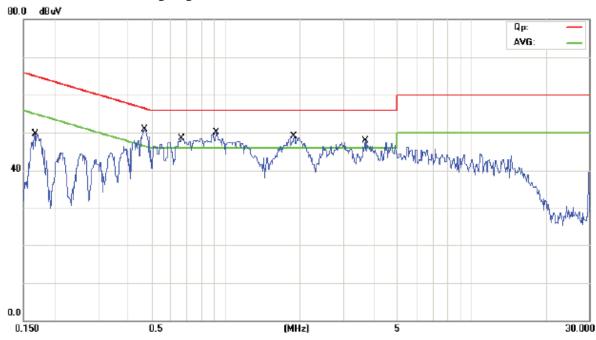
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep WIFI Transmitting

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector	Comment
1	0.1666	35.40	11.02	46.42	65.13	-18.71	QP	
2	0.1666	7.10	11.02	18.12	55.13	-37.01	AVG	
3 *	0.4648	37.80	11.33	49.13	56.61	-7.48	QP	
4	0.4648	12.40	11.33	23.73	46.61	-22.88	AVG	
5	0.6646	31.20	11.54	42.74	56.00	-13.26	QP	
6	0.6646	0.60	11.54	12.14	46.00	-33.86	AVG	
7	0.9131	32.70	11.81	44.51	56.00	-11.49	QP	
8	0.9131	0.50	11.81	12.31	46.00	-33.69	AVG	
9	1.8934	32.50	12.26	44.76	56.00	-11.24	QP	
10	1.8934	4.60	12.26	16.86	46.00	-29.14	AVG	
11	3.6735	27.30	12.97	40.27	56.00	-15.73	QP	
12	3.6735	0.60	12.97	13.57	46.00	-32.43	AVG	

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6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10–2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=1MHz VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup Distance = 3m Computer Pre -Amplifier EUT Turn-table Receiver

- 6.2 Configuration of The EUT
 Same as section 5.3 of this report
- 6.3 EUT Operating Condition
 Same as section 5.4 of this report.

The report refers only to the sample tested and does not apply to the bulk.

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6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequencies in restricted band are complied to limit on Paragraph 15.209 and 15.109

	-	<u> </u>
Frequency Range (MHz)	Distance (m)	Field strength (dB µ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 2. In the Above Table, the higher limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

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Test result

General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal/Vertical (30MHz----1000MHz)

Keep WIFI Transmitting EUT set Condition:

Results: Pass

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
191.920	28.56	Н	43.50
359.960	35.60	Н	46.00
240.040	32.84	Н	46.00
172.440	29.29	V	43.50
360.000	35.86	V	46.00
479.200	38.43	V	46.00

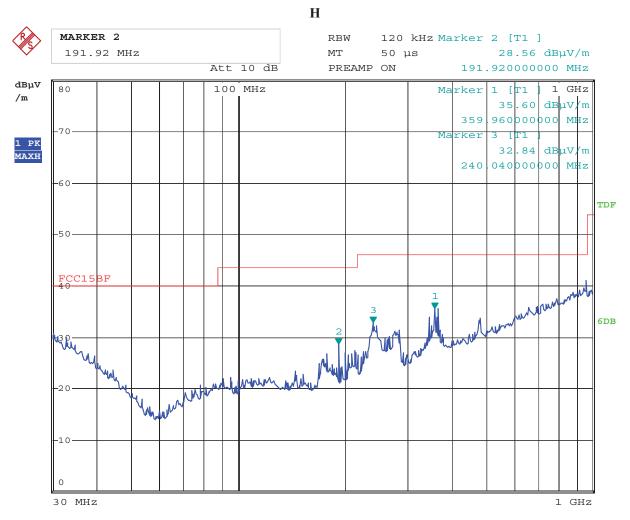
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Test Figure:



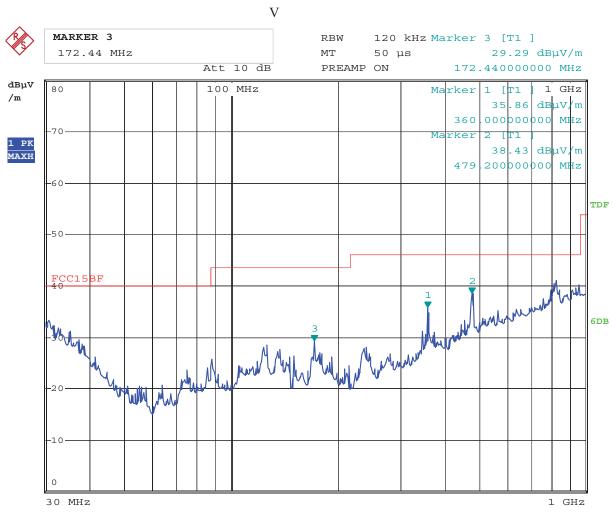
22.APR.2016 17:44:58 Date:

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Test Figure:



22.APR.2016 17:48:10 Date:

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Operation Mode: Transmitting under CH01 for 11g at 54Mbps

1		0 1		
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)	
4824.00	50.78 (PK)	Н	74(Peak)/ 54(AV)	
4824.00	50.82 (PK)	V	74(Peak)/ 54(AV)	
7236.00		H/V	74(Peak)/ 54(AV)	
9648.00		H/V	74(Peak)/ 54(AV)	
12060		H/V	74(Peak)/ 54(AV)	
14472		H/V	74(Peak)/ 54(AV)	
16884		H/V	74(Peak)/ 54(AV)	
19296		H/V	74(Peak)/ 54(AV)	
21708		H/V	74(Peak)/ 54(AV)	
24120		H/V	74(Peak)/ 54(AV)	

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11g mode 54Mbps

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Operation Mode: Transmitting under CH06 for 11g at 54Mbps

	0	0 1	
Frequency (MHz)	Level@3m (dB \u03ba V/m)	Antenna Polarity	Limit@3m (dB \(\mu \) V/m)
4874.00	52.32 (PK)	V	74(Peak)/ 54(AV)
4874.00	52.47 (PK)	Н	74(Peak)/ 54(AV)
7311.00		H/V	74(Peak)/ 54(AV)
9748.00		H/V	74(Peak)/ 54(AV)
12185		H/V	74(Peak)/ 54(AV)
14622		H/V	74(Peak)/ 54(AV)
17059		H/V	74(Peak)/ 54(AV)
19496		H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11g mode 54 Mbps

Operation Mode: Transmitting under CH11 for 11g at 54Mbps

1	0	0 1	
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
4924	51.58 (PK)	Н	74(Peak)/ 54(AV)
4924	51.14 (PK)	V	74(Peak)/ 54(AV)
7368		H/V	74(Peak)/ 54(AV)
9848		H/V	74(Peak)/ 54(AV)
12310		H/V	74(Peak)/ 54(AV)
14772		H/V	74(Peak)/ 54(AV)
17234		H/V	74(Peak)/ 54(AV)
19696		H/V	74(Peak)/ 54(AV)
22158		H/V	74(Peak)/ 54(AV)
24620		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11g mode at 54 Mbps

Date: 2016-04-29

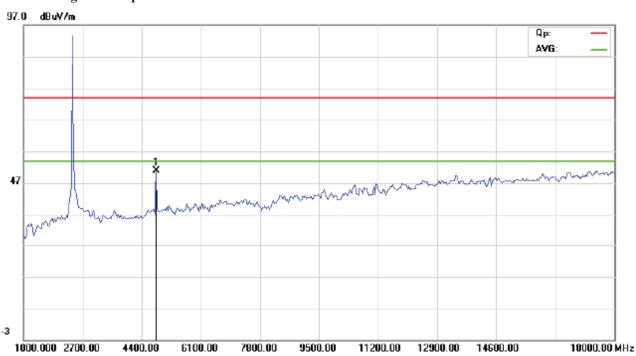


Please refer to the following test plots for details:

CH01 for 11g at 54Mbps: Horizontal



CH01 for 11g at 54Mbps: Vertical



The report refers only to the sample tested and does not apply to the bulk.

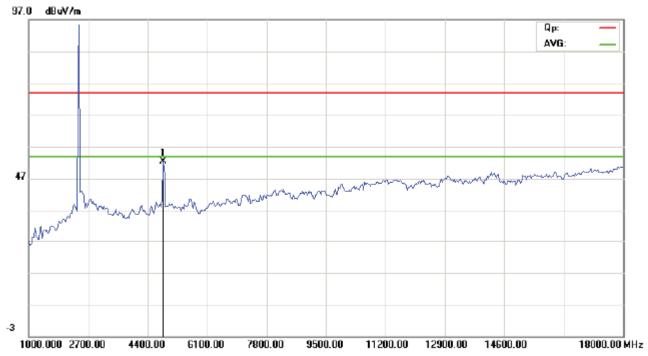
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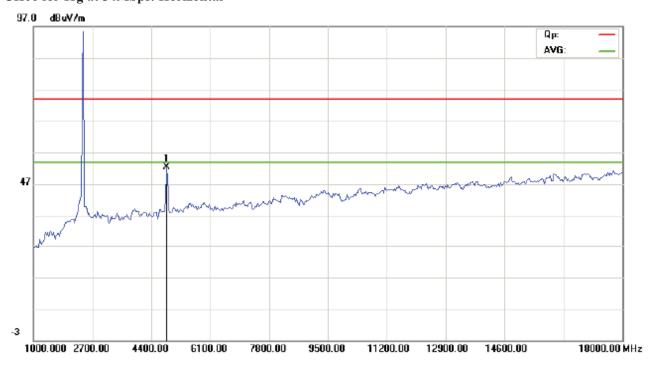
Date: 2016-04-29



CH06 for 11g at 54Mbps: Vertical



CH06 for 11g at 54Mbps: Horizontal



The report refers only to the sample tested and does not apply to the bulk.

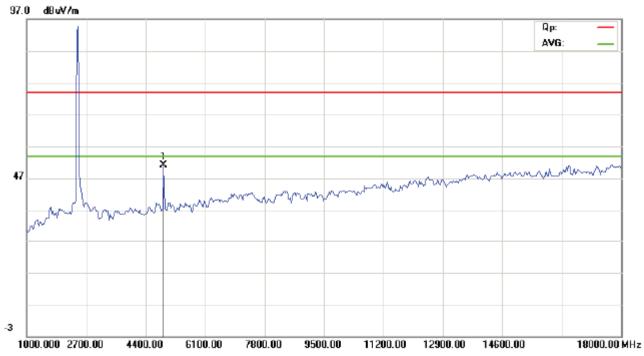
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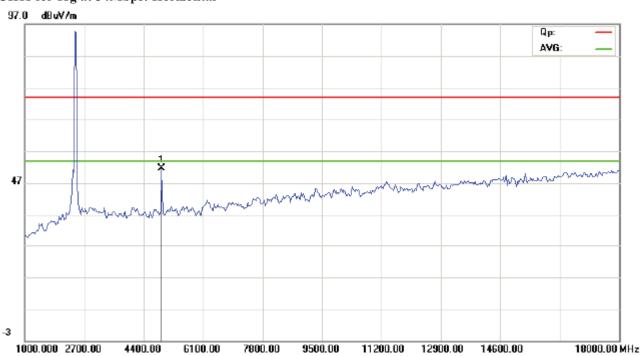
Date: 2016-04-29



CH11 for 11g at 54Mbps: Vertical



CH11 for 11g at 54Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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Operation Mode: Transmitting under CH01 for 11b at 11Mbps

1	0	1		
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)	
4824.00	50.82 (PK)	Н	74(Peak)/ 54(AV)	
4824.00	50.59 (PK)	V	74(Peak)/ 54(AV)	
7236.00		H/V	74(Peak)/ 54(AV)	
9648.00		H/V	74(Peak)/ 54(AV)	
12060		H/V	74(Peak)/ 54(AV)	
14472		H/V	74(Peak)/ 54(AV)	
16684		H/V	74(Peak)/ 54(AV)	
19296		H/V	74(Peak)/ 54(AV)	
21708		H/V	74(Peak)/ 54(AV)	
24120		H/V	74(Peak)/ 54(AV)	

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode 11Mbps

Operation Mode: Transmitting under CH06 for 11b at 11Mbps

Frequency (MHz)	Level@3m (dB \u03ba V/m)	Antenna Polarity	Limit@3m (dB \(\mu \)V/m)	
4874.00	51.62 (PK)	Н	74(Peak)/ 54(AV)	
4874.00	50.58 (PK) V		74(Peak)/ 54(AV)	
7311.00		H/V 74(Peak)/ 54(A		
9748.00		H/V	74(Peak)/ 54(AV)	
12185		H/V	74(Peak)/ 54(AV)	
14622		H/V	74(Peak)/ 54(AV)	
17059		H/V	74(Peak)/ 54(AV)	
19496		H/V	74(Peak)/ 54(AV)	
21933		H/V	74(Peak)/ 54(AV)	
24370		H/V	74(Peak)/ 54(AV)	

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode 11Mbps

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Operation Mode: Transmitting under CH11 for 11b at 11Mbps

1	0		
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \(\mu \)V/m)
4924	52.29 (PK)	Н	74(Peak)/ 54(AV)
4924	50.13 (PK)	V	74(Peak)/ 54(AV)
7368		H/V	74(Peak)/ 54(AV)
9848		H/V	74(Peak)/ 54(AV)
12310		H/V	74(Peak)/ 54(AV)
14772		H/V	74(Peak)/ 54(AV)
17234		H/V	74(Peak)/ 54(AV)
19696		H/V	74(Peak)/ 54(AV)
22158		H/V	74(Peak)/ 54(AV)
24620		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode at 11Mbps

Date: 2016-04-29

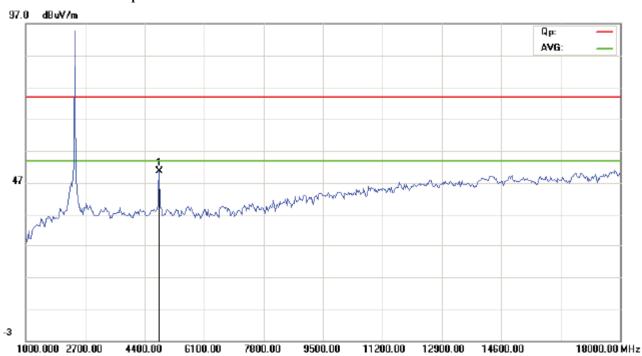


Please refer to the following test plots for details:

CH01 for 11b at 11Mbps: Horizontal



CH01 for 11b at 11Mbps: Vertical



The report refers only to the sample tested and does not apply to the bulk.

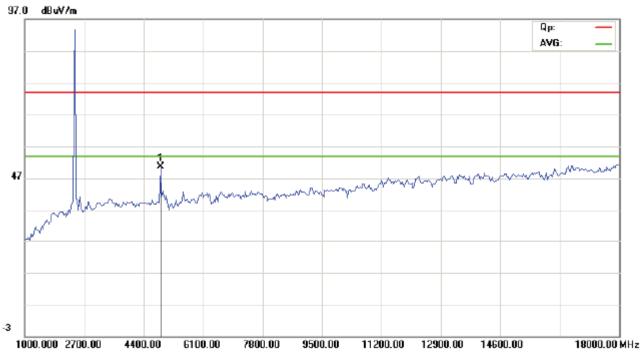
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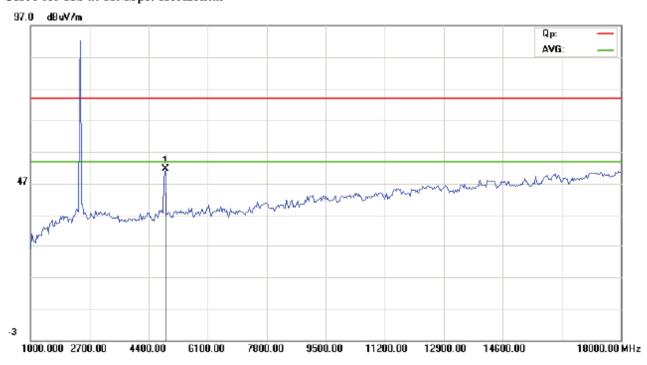
Date: 2016-04-29



CH06 for 11b at 11Mbps: Vertical



CH06 for 11b at 11Mbps: Horizontal



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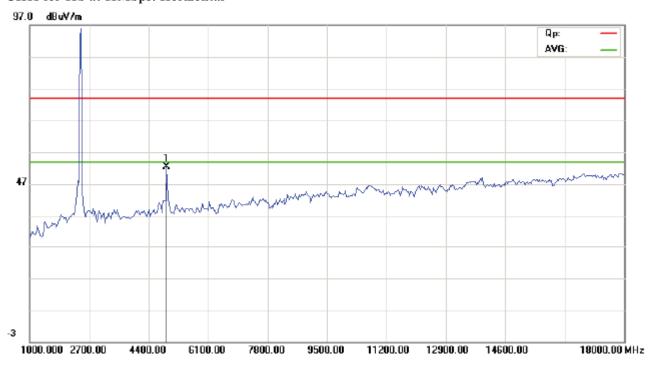
Date: 2016-04-29



CH11 for 11b at 11Mbps: Vertical



CH11 for 11b at 11Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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Operation Mode: Transmitting under CH01 for 11n HT20 at 6.5Mbps

1	0		1
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
4824.00	51.85 (PK)	Н	74(Peak)/ 54(AV)
4824.00	51.10 (PK)	V	74(Peak)/ 54(AV)
7236.00		H/V	74(Peak)/ 54(AV)
9648.00		H/V	74(Peak)/ 54(AV)
12060		H/V	74(Peak)/ 54(AV)
14472		H/V	74(Peak)/ 54(AV)
16684		H/V	74(Peak)/ 54(AV)
19296		H/V	74(Peak)/ 54(AV)
21708		H/V	74(Peak)/ 54(AV)
24120		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT20) mode 6.5Mbps

Operation Mode: Transmitting under CH06 for 11n HT20 at 6.5Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)	
4874.00	51.54 (PK)	Н	74(Peak)/ 54(AV)	
4874.00	52.19 (PK)	V	74(Peak)/ 54(AV)	
7311.00		H/V	74(Peak)/ 54(AV)	
9748.00		H/V	74(Peak)/ 54(AV)	
12185		H/V	74(Peak)/ 54(AV)	
14622		H/V	74(Peak)/ 54(AV)	
17059		H/V	74(Peak)/ 54(AV)	
19496		H/V	74(Peak)/ 54(AV)	
21933		H/V	74(Peak)/ 54(AV)	
24370		H/V	74(Peak)/ 54(AV)	

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT20) mode 6.5Mbps

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Operation Mode: Transmitting under CH11 for 11n HT20 at 6.5Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)	
4924	51.69 (PK)	Н	74(Peak)/ 54(AV)	
4924	51.64 (PK)	V	74(Peak)/ 54(AV)	
7368		H/V	74(Peak)/ 54(AV)	
9848		H/V	74(Peak)/ 54(AV)	
12310		H/V	74(Peak)/ 54(AV)	
14772		H/V	74(Peak)/ 54(AV)	
17234		H/V	74(Peak)/ 54(AV)	
19696		H/V	74(Peak)/ 54(AV)	
22158		H/V	74(Peak)/ 54(AV)	
24620		H/V	74(Peak)/ 54(AV)	

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

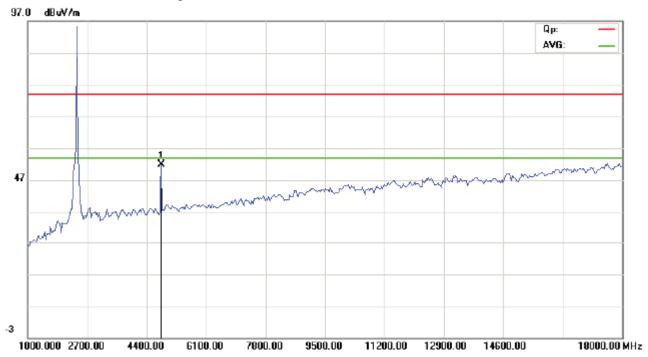
3. For 802.11n (HT20) mode 6.5Mbps

Date: 2016-04-29

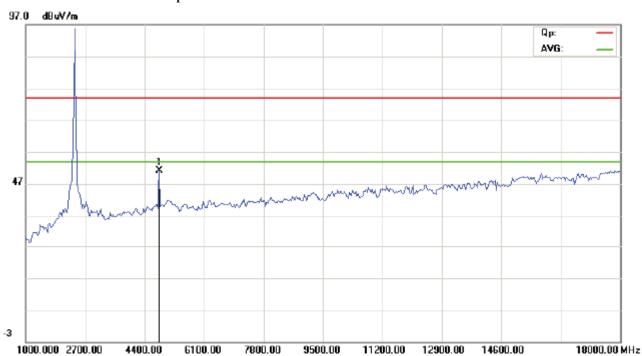


Please refer to the following test plots for details:

CH01 for 11n HT20 at 6.5Mbps: Horizontal



CH01 for 11n HT20 at 6.5Mbps: Vertical



The report refers only to the sample tested and does not apply to the bulk.

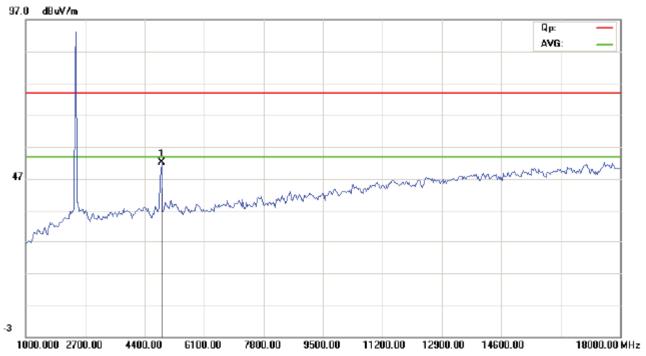
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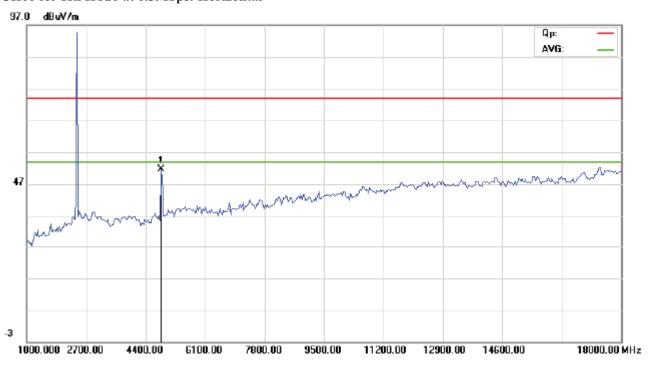
Date: 2016-04-29



CH06 for 11n HT20 at 6.5Mbps: Vertical



CH06 for 11n HT20 at 6.5Mbps: Horizontal



The report refers only to the sample tested and does not apply to the bulk.

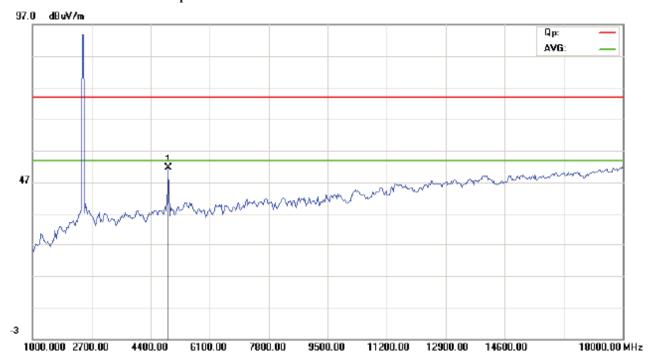
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CH11 for 11n HT20 at 6.5Mbps: Vertical



CH11 for 11n HT20 at 6.5Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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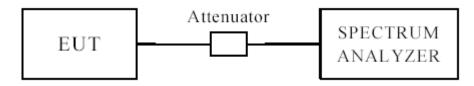
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7.0 6dB Bandwidth Measurement

7.1 Test Setup



7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

7.3 Test Procedure

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW) \geq 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.4 Test Result

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6dB Occupied Bandwidth

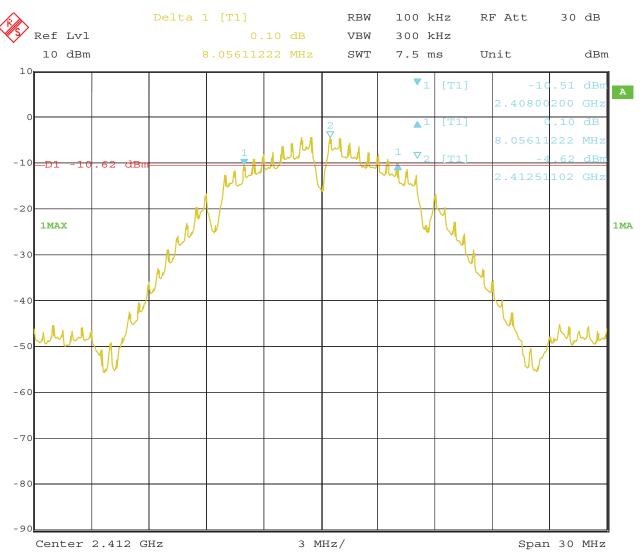
EUT		Smart Voice Recorder Model P		PS	SP1000			
Mode		802	2.11b		Input Voltage		DC3.7V	
Temperati	ure	24 d	leg. C,		Humidity		56% RH	
Channel		nel Frequency (MHz)	Data Transfer Rate (Mbps)	6 dl	B Bandwidth (MHz)	N	Minimum Limit (MHz)	Pass/ Fail
1		2412	1		8.06		0.5	Pass
6		2437	1		8.06		0.5	Pass
11		2462	1		8.06		0.5	Pass
1		2412	11		7.45		0.5	Pass
6		2437	11		7.45		0.5	Pass
11		2462	11		7.45		0.5	Pass

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1. 802.11b at 1Mbps of CH01

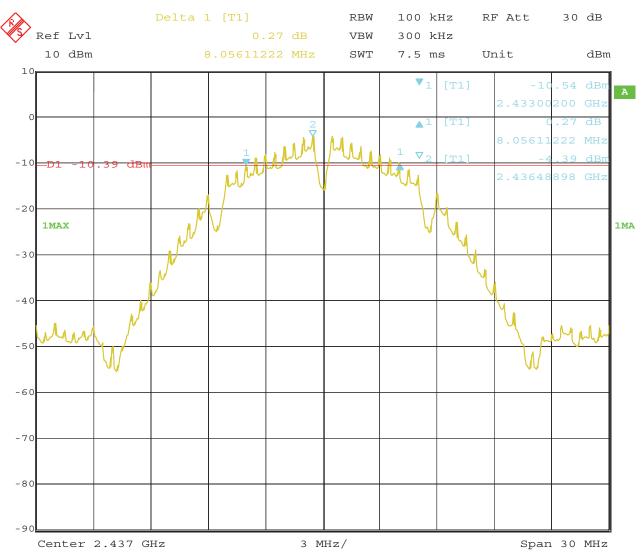


Date: 13.APR.2016 16:13:34 Report No.: FCC1512023-01 Page 36 of 98

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2. 802.11b at 1Mbps of CH06

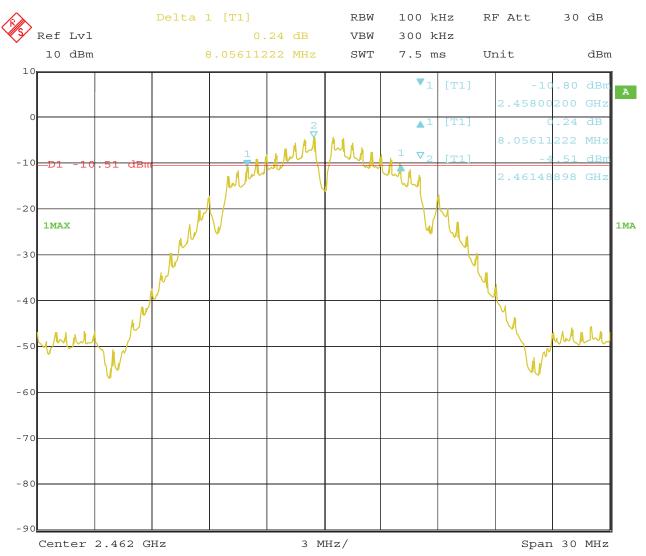


13.APR.2016 16:37:48 Report No.: FCC1512023-01 Page 37 of 98

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3. 802.11b at 1Mbps of CH11

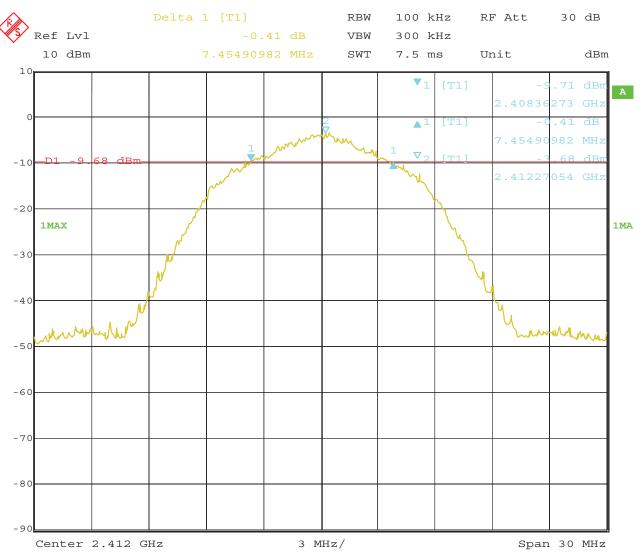


Date: 13.APR.2016 17:12:03 Report No.: FCC1512023-01 Page 38 of 98

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4. 802.11b at 11Mbps of CH01

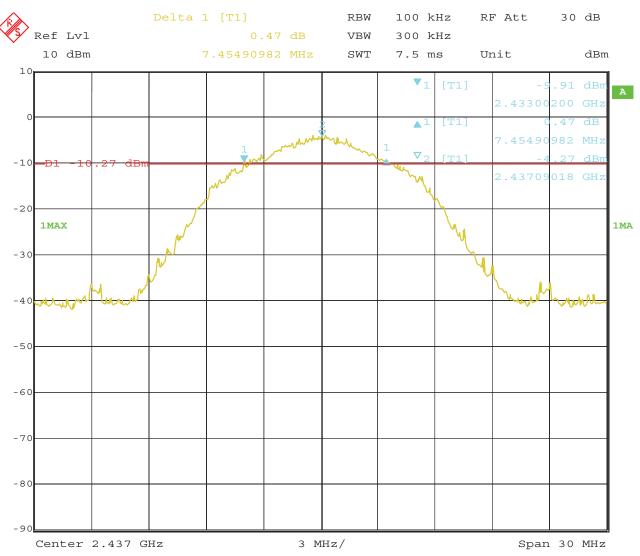


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5. 802.11b at 11Mbps of CH06

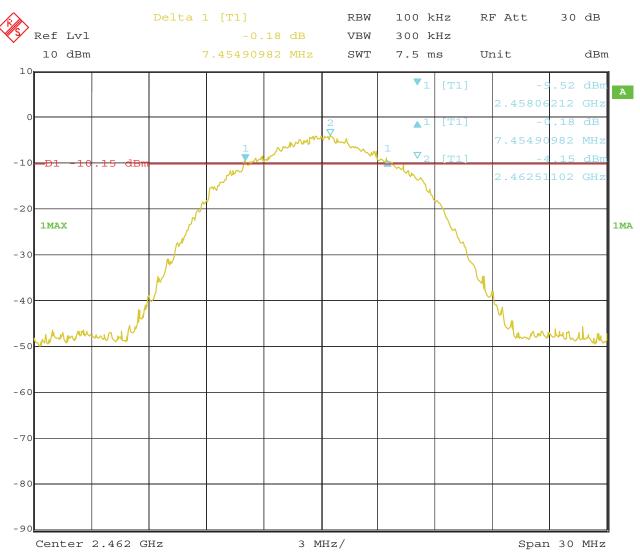


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6. 802.11b at 11Mbps of CH11



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Date: 2016-04-29



6dB Occupied Bandwidth

EUT	Smart Voice Recorder Model			PSP1000				
Mode	de 802.11g Input Voltage			DC3.7V				
Temperat	ure	24 (deg. C,		Humidity		56%	% RH
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	6 dE	B Bandwidth M. (MHz)		Iinimum Limit (MHz)	Pass/ Fail
1		2412	54		15.09		0.5	Pass
6		2437	54		15.45		0.5	Pass
11		2462	54		15.09		0.5	Pass

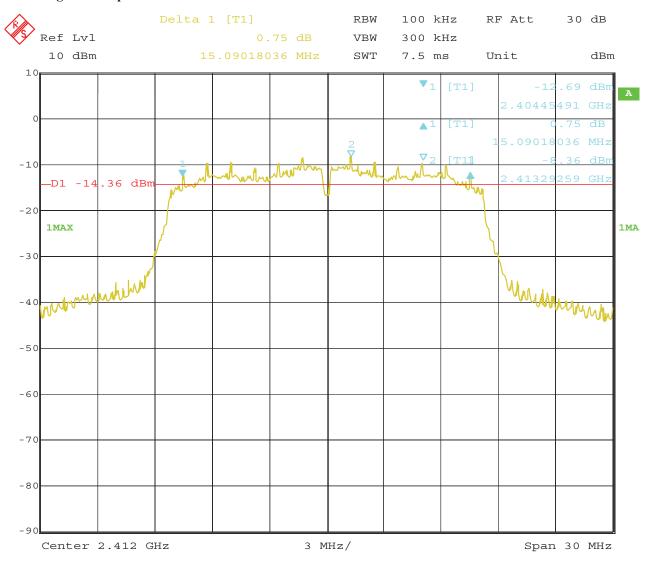
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Date: 2016-04-29



Test Plots:

1. 802.11g at 54Mbps of CH01



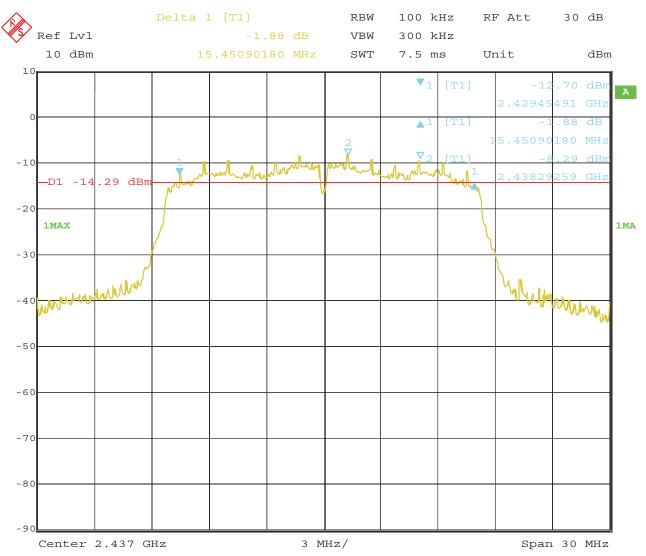
13.APR.2016 16:24:37 Date:

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2. 802.11g at 54Mbps of CH06

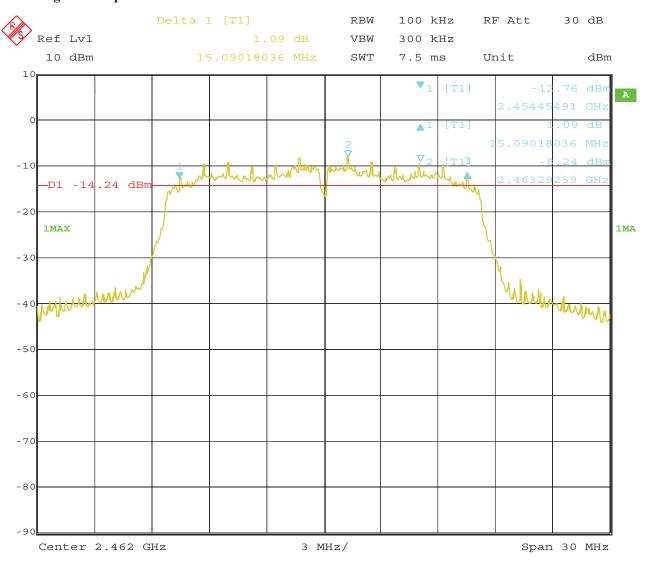


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Date: 2016-04-29



3. 802.11g at 54Mbps of CH11



Date: 13.APR.2016 17:19:51

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Date: 2016-04-29



6dB Occupied Bandwidth

EUT	Smart Voice Recorder Model			PSP1000				
Mode		802.11n HT20 Input Voltage			DC3.7V			
Temperat	ure	24 de	eg. C,		Humidity			% RH
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	6	dB Bandwidth M (MHz)		finimum Limit (MHz)	Pass/ Fail
1		2412	6.5M		16.95		0.5	Pass
6		2437	6.5M		16.95		0.5	Pass
11		2462	6.5M		16.95		0.5	Pass

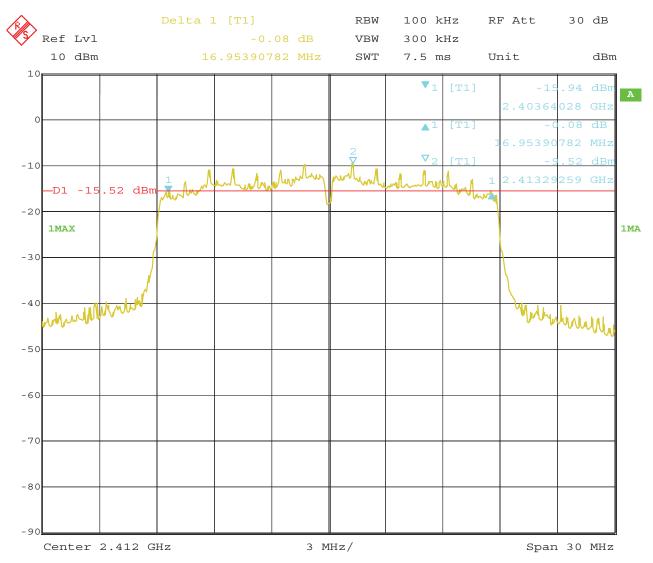
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Date: 2016-04-29



Test Plots:

1. 802.11n at HT20 of CH01



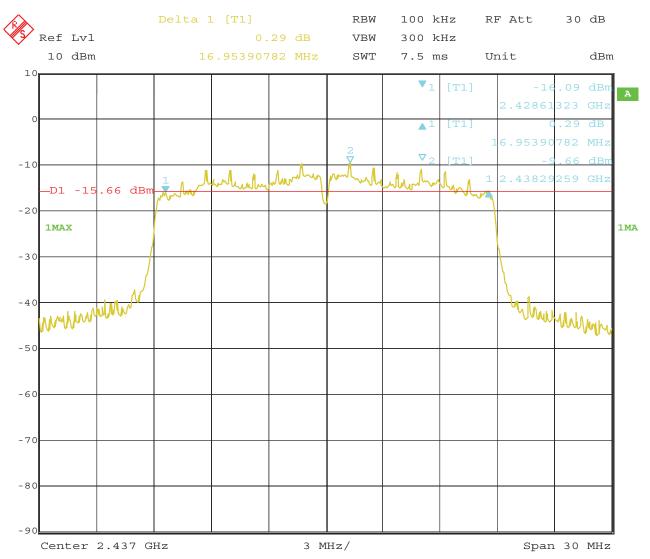
13.APR.2016 17:42:09 Date:

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Date: 2016-04-29



2. 802.11n at HT20 of CH06

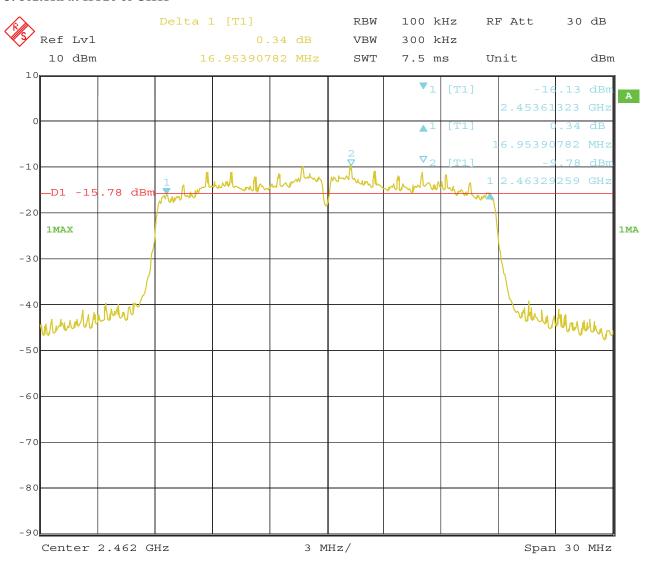


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Date: 2016-04-29



3. 802.11n at HT20 of CH11



Date: 13.APR.2016 17:35:53 Report No.: FCC1512023-01

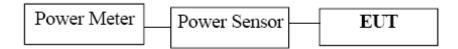
Date: 2016-04-29



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8. Maximum Output Power

8.1 Test Setup



8.2 Limits of Maximum Output Power

The Maximum Output Power Measurement is 30dBm.

8.3 Test Procedure

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the Peak power was measured

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8.4Test Results

EUT	EUT Smart Voice Re		decorder Model			PSP1000	
Mode	Mode 802.11b)	Input Voltage		DC3.7V	
Temperat	ure	24 deg. (C,	Humidity 56		56% RH	
Channel	Cha	annel Frequency (MHz)		ver Output Bm)	Po	wer Limit (dBm)	Pass/ Fail
1		2412	8.81		30		Pass
6		2437	8.80		30		Pass
11		2462	8.	8.65		30	Pass

Note: 1. At finial test to get the worst-case emission at 11Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

EUT	EUT Smart Voice Re		decorder Model			PSP1000	
Mode	Mode 802.11g Input Voltag		ige	DC3.7V			
Temperati	ure	24 deg. (C,	Humidity	У	4	56% RH
Channel	Cha	1		ver Output Bm)	P	ower Limit (dBm)	Pass/ Fail
1		2412	9.	9.38		30	Pass
6		2437	9.	.62		30	Pass
11		2462		.39		30	Pass

Note: 1. At finial test to get the worst-case emission at 54Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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EUT		Smart Voice Recorder		Model		PSP1000	
Mode		802.11n (HT20)		Input Voltage		DC3.7V	
Temperati	ure	24 deg. (C, Humidity 569		66% RH		
Channel	Cha	annel Frequency (MHz)	Max. Powe	r Output (dBm)		wer Limit (dBm)	Pass/ Fail
1		2412		9.35		30	Pass
6		2437		9.01		30	Pass
11		2462		8.91		30	Pass

Note: 1. At finial test to get the worst-case emission at 6.5Mbps of 11n HT20 for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

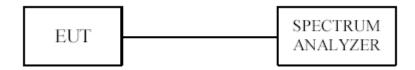
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9. Power Spectral Density Measurement

9.1 Test Setup



9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

9.3 Test Procedure

- 1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
- 2. Set the RBW = 10 kHz.
- 3. Set the VBW \geq 30 kHz.
- 4. Set the span to 1.5 times the DTS channel bandwidth.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11. The resulting peak PSD level must be ≤ 8 dBm.

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9.4Test Result

EUT		Smart Voice Recor		Model		PSP1000		
Mode	ode 802.11b 11Mbps		Input Voltage		DC3.7V			
Temperat	ure	24 deg.	C,	Humidity		5	6% RH	
Channel	Cha	annel Frequency	Final RF F			ximum Limit	Pass/ Fail	
		(MHz)	(0	lBm)			(dBm)	
			11	Mbps				
1		2412	-1	-14.36			8	Pass
6		2437	-1	13.91			8	Pass
11		2462	-1	4.06			8	Pass

EUT	EUT Smart Voice Reco		ecorder	Model		PSP1000		
Mode	Mode 802.11b 1Mb		/lbps	ops Input Voltage		DC3.7V		
Temperati	perature 24 deg. C, Humidity			56% RH				
Channel	Cha	Channel Frequency Final RF Power		ower	Level	Maximum Limit		Pass/ Fail
Chamilei	Channel (MHz)		in (dBm)			(dBm)		
			1	Mbps				
1		2412	-1	3.61			8	Pass
6		2437	-1	12.79			8	Pass
11		2462	-1	13.67			8	Pass

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EUT	EUT Smart Voice Recorder Model		Model	PS	SP1000	
Mode	Mode 802.11g 54Mbps Input Voltage		D	C3.7V		
Temperat	ure	24 deg. (C,	Humidity	56	5% RH
Channel	Cha	annel Frequency (MHz)		Power Level in (dBm)	Maximum Limit (dBm)	Pass/ Fail
	•		5	54Mbps		
1		2412	-	-17.63	8	Pass
6		2437	-16.96		8	Pass
11		2462	-	-16.56	8	Pass

EUT	EUT Smart Voice Re		ecorder Model			PSP1000	
Mode 802.11n HT20 6.5Mbps Input Vo		Input Voltage		DC3.7V			
Temperati	ure	re 24 deg. C, Humidity			56% RH		
Channel	Cha	annel Frequency (MHz)	Final RF Power Level (dBm)		Maximum Li (dBm)	Maximum Limit Pass (dBm)	
				HT20			
1		2412	-18.02		8		Pass
6		2437	-17.24		8		Pass
11		2462	-	-18.57	8		Pass

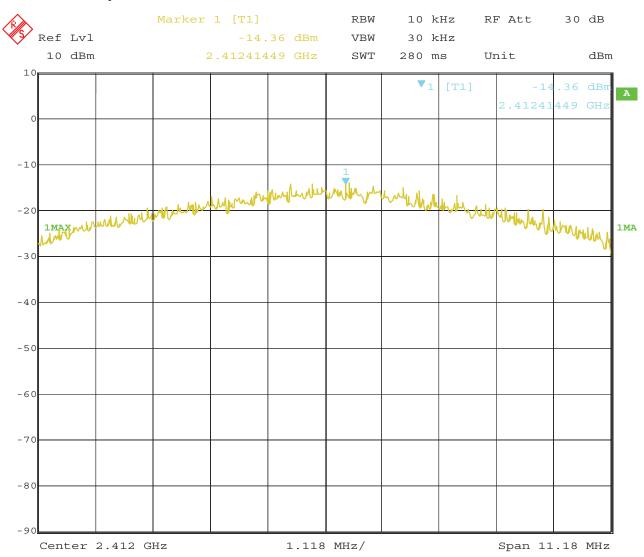
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9.5 Photo of Power Spectral Density Measurement

1.802.11b at 11Mbps of CH01



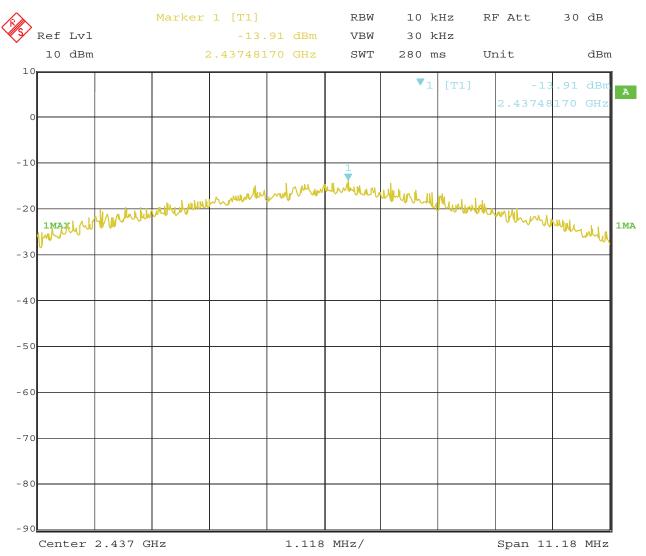
13.APR.2016 18:48:08 Date:

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2. 802.11b at 11Mbps at CH06

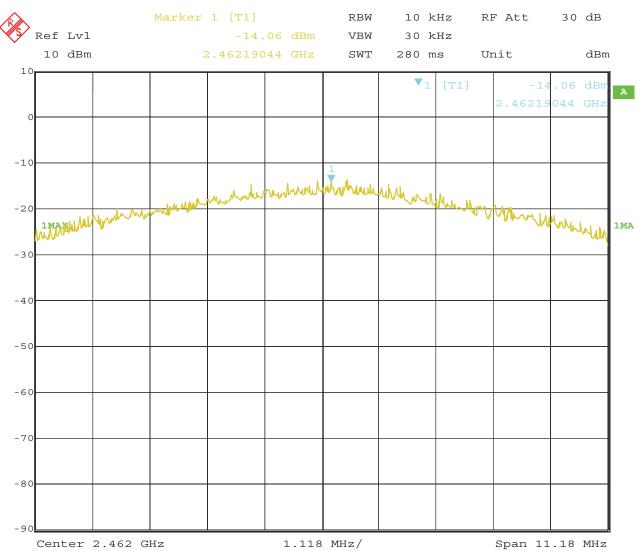


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3. 802.11b at 11Mbps of CH11

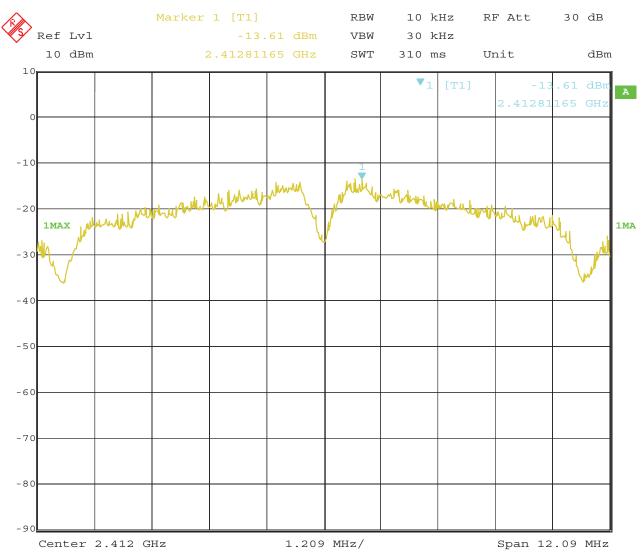


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4. 802.11b at 1Mbps of CH1



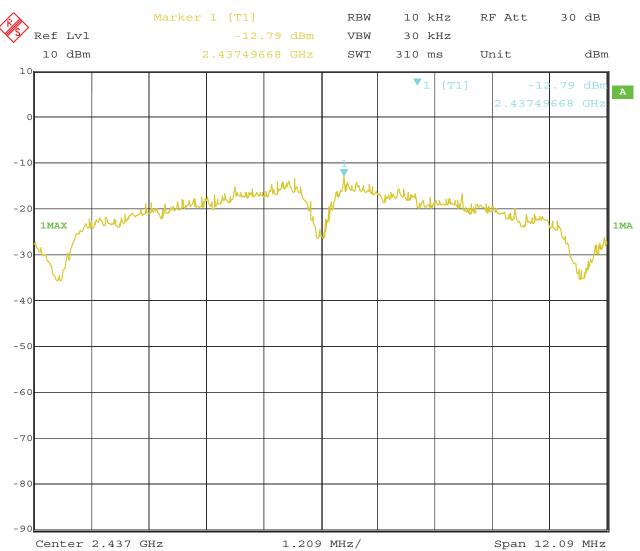
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5. 802.11b at 1Mbps of CH6



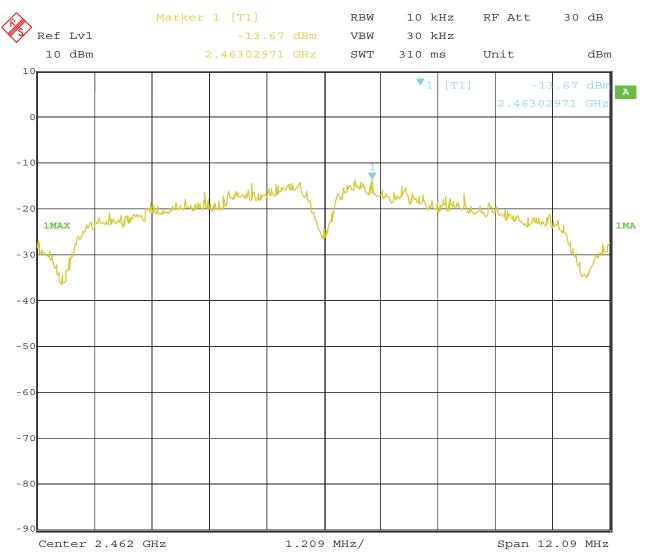
Date: 13.APR.2016 18:50:14

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6. 802.11b at 1Mbps of CH11

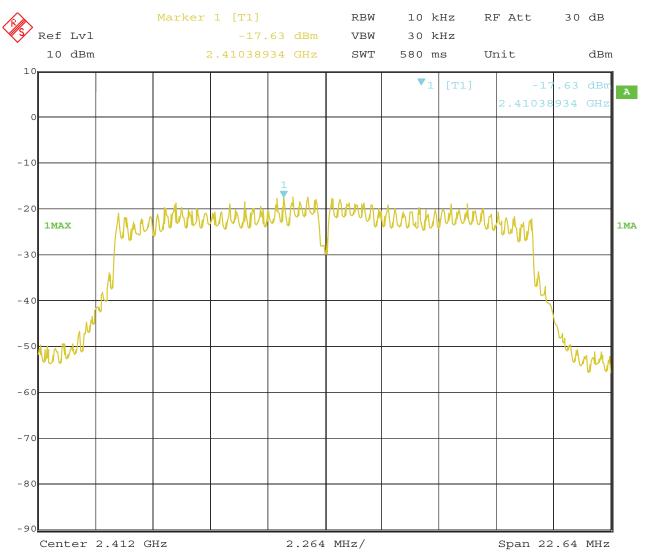


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7. 802.11g at 54Mbps of CH1

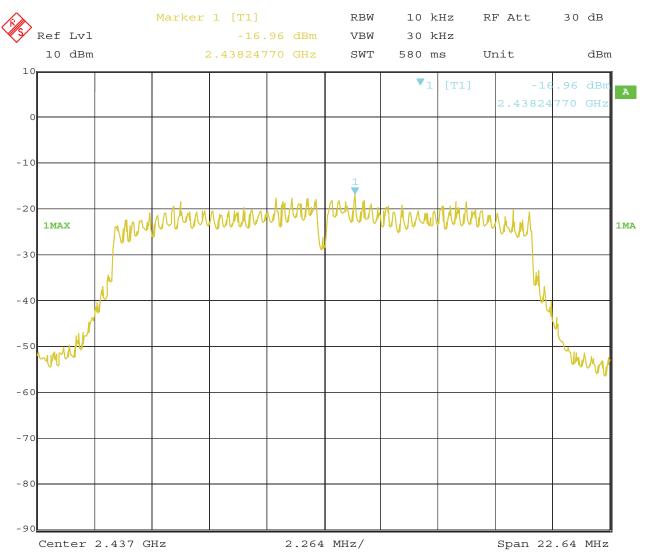


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8. 802.11g at 54Mbps of CH6

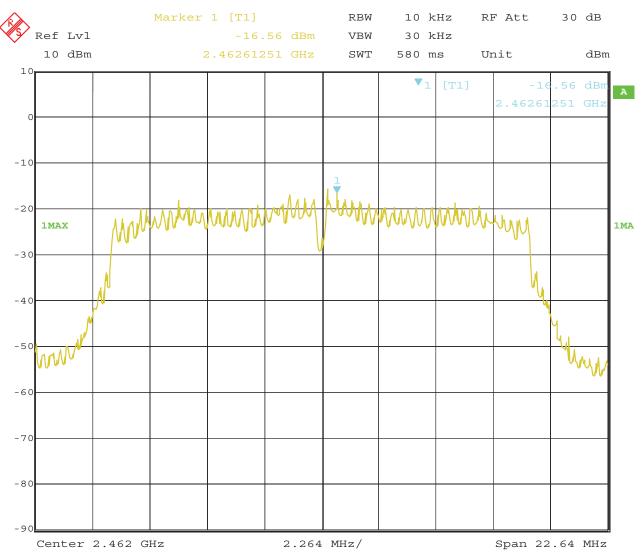


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9. 802.11g at 54Mbps of CH11

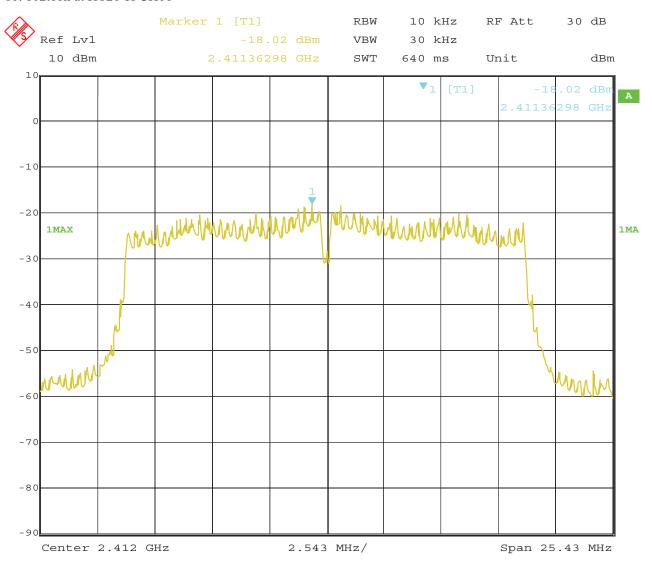


Date: 13.APR.2016 18:52:24 Report No.: FCC1512023-01 Page 64 of 98

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10. 802.11n at HT20 of CH01

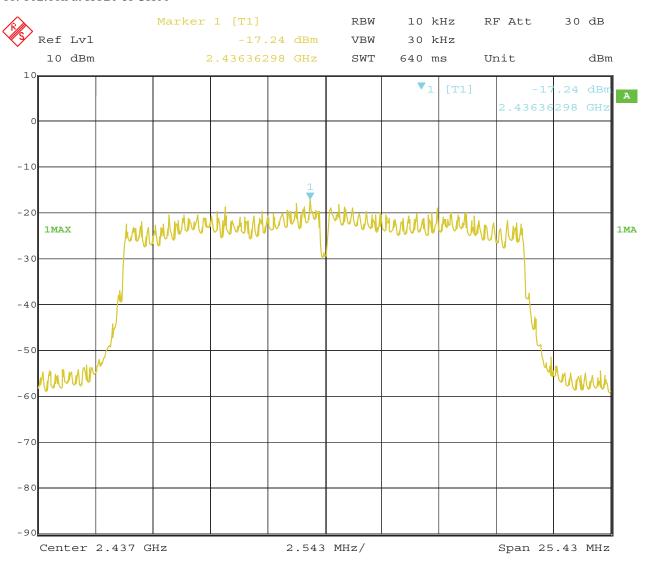


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11. 802.11n at HT20 of CH06

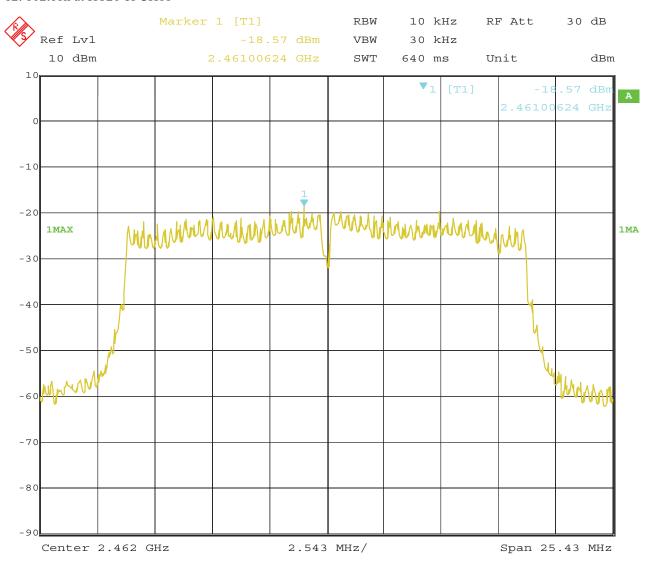


Date: 13.APR.2016 18:55:24 Report No.: FCC1512023-01 Page 66 of 98

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12. 802.11n at HT20 of CH11



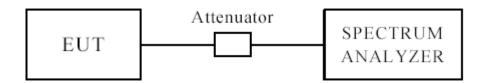
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10 Out of Band Measurement

10.1 Test Setup for band edge



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

10.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

10.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test.(Peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=1MHz and RMS detector)

For bandage test, the spectrum set as follows: RBW=100, VBW=300 kHz. A conducted measurement used

10.4 Test Result

Please see next pages

Note: 1. this is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), after pre-test. It was found that the worse radiated emission was get at the lying position. the worse case was recorded

- 2. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.
- 3. H and V polarity all have been tested for radiated emission test, only worse case is reported.

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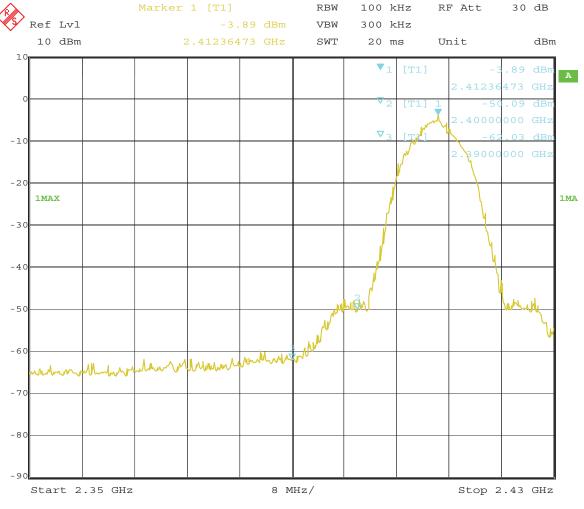
For 802.11b mode

CH01 at 11Mbps

Band-edge and Restricted band Measurement 10.4

EUT	Smart Vo	oice Recorder	Model	PSP1000
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2400	PK (dBµV/m)	61.6	T ::4	$74(dB\mu V/m)$
	AV (dBμV/m)	42.8	Limit	$54(dB\mu V/m)$
2390	PK (dBμV/m)	45.5	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)		Liiiit	$54(dB\mu V/m)$

Test Figure:



13.APR.2016 18:59:34

Note: The Max. FS in Restrict Band are measured in conventional method.

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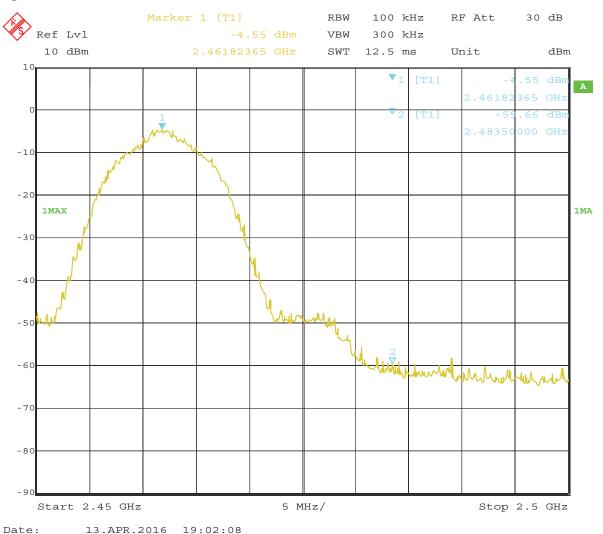


CH11 at 11Mbps

10.4 Band-edge and Restricted band Measurement

EUT	Smart V	oice Recorder	Model	PSP1000
Mode	Keeping	g Transmitting	Input Voltage	DC3.7V
Temperature	24	deg. C,	Humidity	56% RH
Test Result:		Pass	Detector	PK
2483.5	PK (dBμV/m)	K (dBμV/m) 48.7		74(dBμV/m)
	AV (dBμV/m)		Limit	54(dBμV/m)

Test Figure:



Note: The Max. FS in Restrict Band are measured in conventional method.

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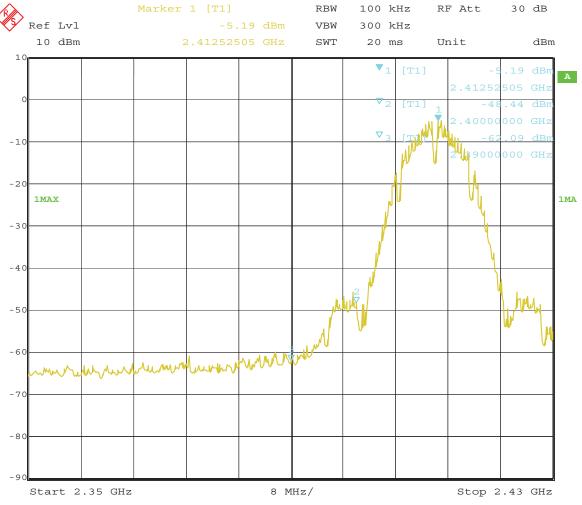
For 802.11b mode

CH01 at 1Mbps

Band-edge and Restricted band Measurement 10.4

EUT	Smart Voice Recorder		Model	PSP1000
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2400	PK (dBµV/m)	61.0	T ::4	$74(dB\mu V/m)$
	AV (dBμV/m)	42.3	Limit	$54(dB\mu V/m)$
2390	PK (dBμV/m)	44.6	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)		Liffillt	$54(dB\mu V/m)$

Test Figure:



13.APR.2016 18:59:07

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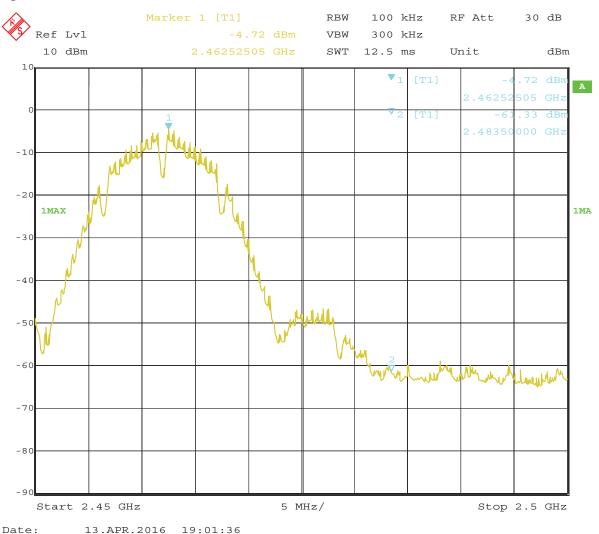


CH11 at 1Mbps

10.4 Band-edge and Restricted band Measurement

EUT	Smart Voice Recorder		Model	PSP1000
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBμV/m)	47.3	Limit	74(dBμV/m)
	AV (dBμV/m)			54(dBμV/m)

Test Figure:



Note: The Max. FS in Restrict Band are measured in conventional method.

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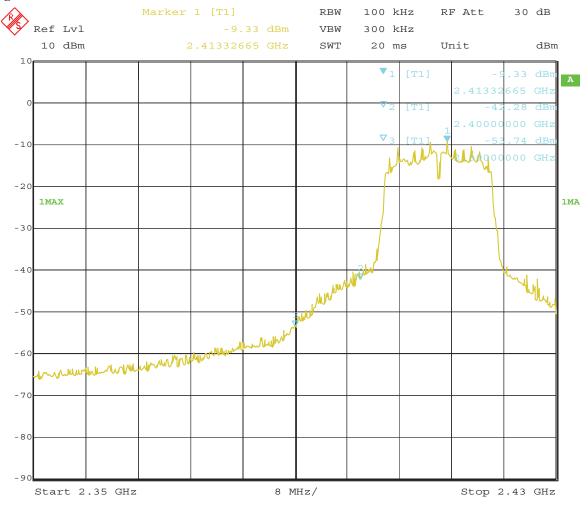
For 802.11g mode

CH01 at 54Mbps

Band-edge and Restricted band Measurement 10.4

EUT	Smart Voice Recorder		Model	PSP1000
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2400	PK (dBµV/m)	62.8	T ::4	$74(dB\mu V/m)$
	AV (dBμV/m)	43.3	Limit	$54(dB\mu V/m)$
2390	PK (dBµV/m)	48.9	Limit	74(dBµV/m)
	AV (dBμV/m)			$54(dB\mu V/m)$

Test Figure:



13.APR.2016 19:00:06

Note: The Max. FS in Restrict Band are measured in conventional method.

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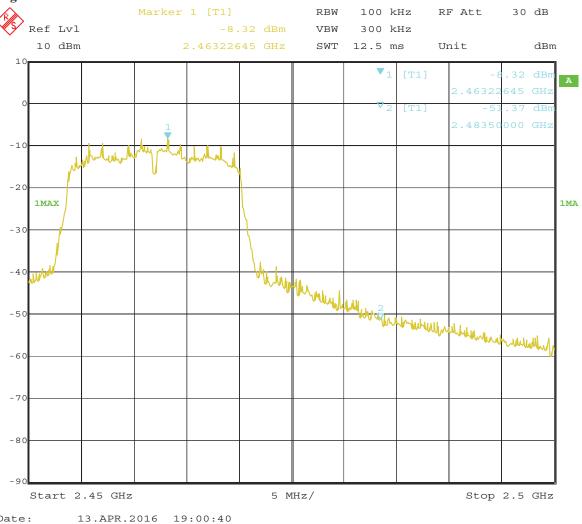


CH11 at 54Mbps

10.4 Band-edge and Restricted band Measurement

EUT	Smart Voice Recorder		Model		PSP1000	
Mode	Keeping Transmitting		Input Voltage		DC3.7V	
Temperature	24 deg. C,		Humidity		56% RH	
Test Result:	Pass		Detector		PK	
2483.5	PK (dBμV/m)	55.8	T,	$74(dB\mu V/m)$		
	AV (dBμV/m)	37.1	Limit		$54(dB\mu V/m)$	

Test Figure:



Note: The Max. FS in Restrict Band are measured in conventional method.

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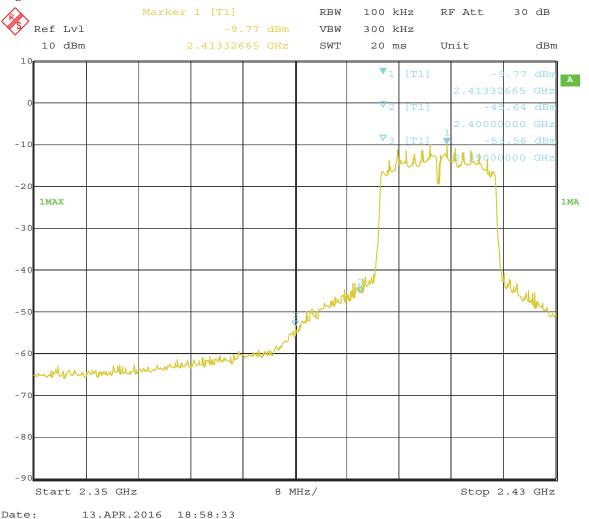
For 802.11n (HT20) mode

CH01 at 6.5Mbps

Band-edge and Restricted band Measurement 10.4

EUT	Smart Voice Recorder		Model	PSP1000
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2400	PK (dBµV/m)	62.3	T ::4	74(dBμV/m)
	AV (dBμV/m)	44.1	Limit	54(dBμV/m)
2390	PK (dBμV/m)	47.9	Limit	74(dBµV/m)
	AV (dBμV/m)		Limit	54(dBµV/m)

Test Figure:



Note: The Max. FS in Restrict Band are measured in conventional method.

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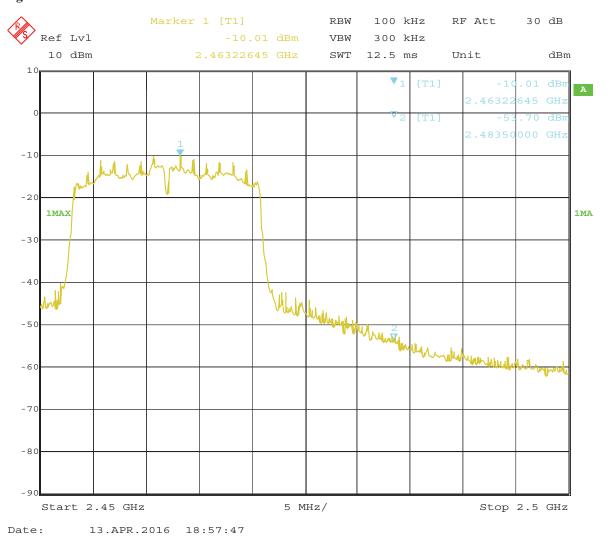


CH11 at 6.5Mbps

10.4 Band-edge and Restricted band Measurement

EUT	Smart Voice Recorder		Model	PSP1000
Mode	Keeping Transmitting		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBμV/m)	56.9	T,	$74(dB\mu V/m)$
	AV (dBμV/m)	37.6	Limit	54(dBµV/m)

Test Figure:



Note: The Max. FS in Restrict Band are measured in conventional method.

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11.0 Antenna Requirement

11.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

11.2 Antenna Connected construction

Integral antenna used. The maximum Gain of the antennas is 2.0dBi.

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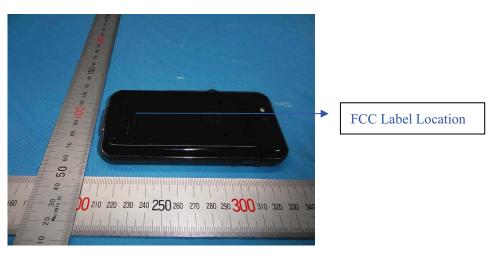
12.0 FCC ID Label

FCC ID: 2AD4M-PSP1

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



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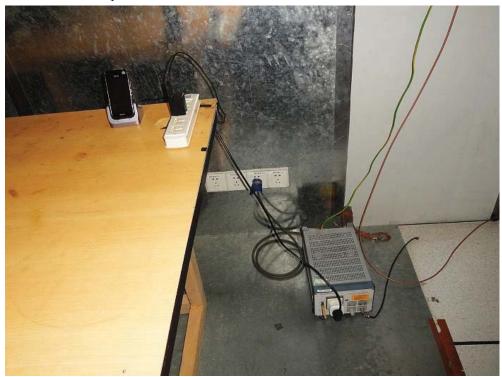
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13.0 Photo of testing

Conducted Emission Test Setup:

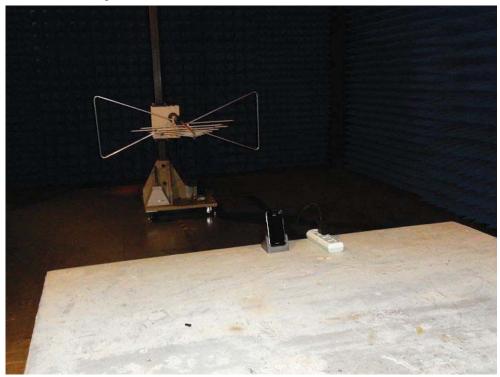


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Radiated Emission Test Setup:





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Photographs - EUT

Outside view





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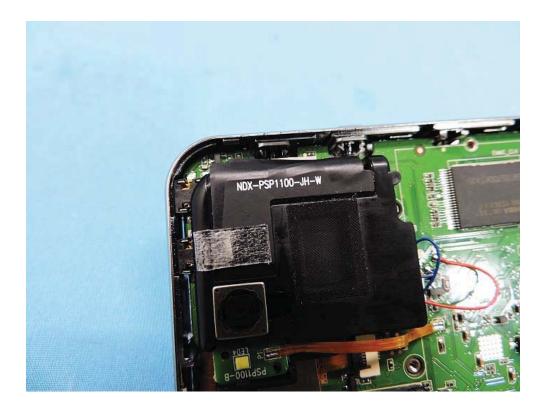
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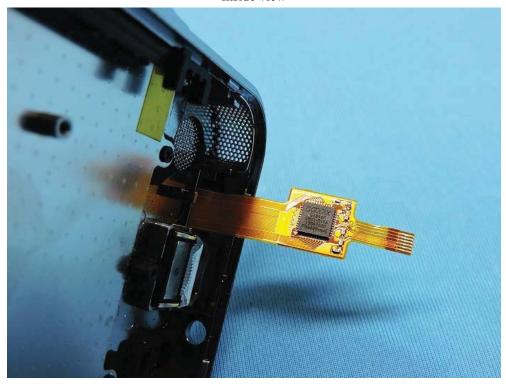
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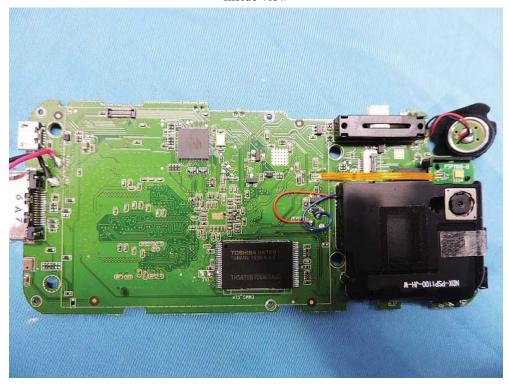
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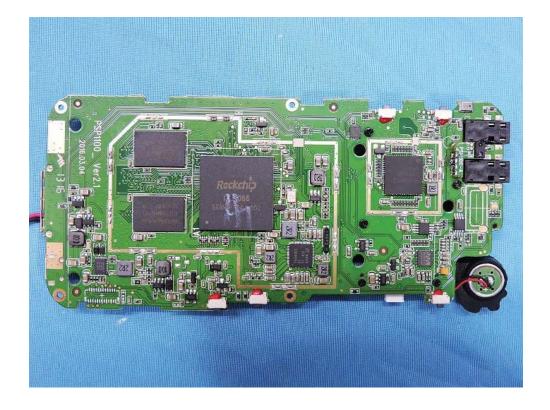
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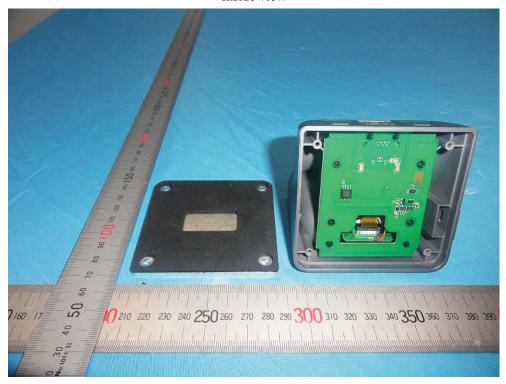
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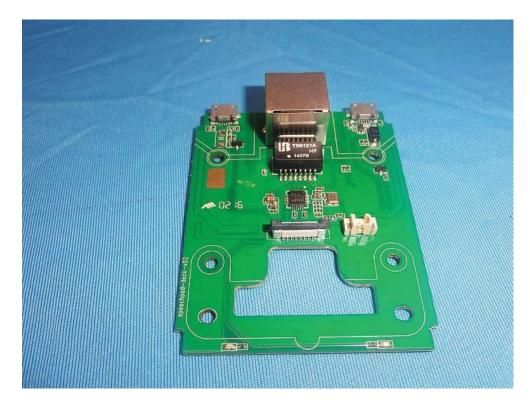
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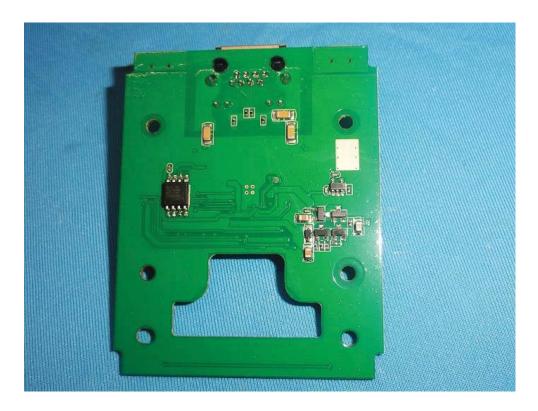
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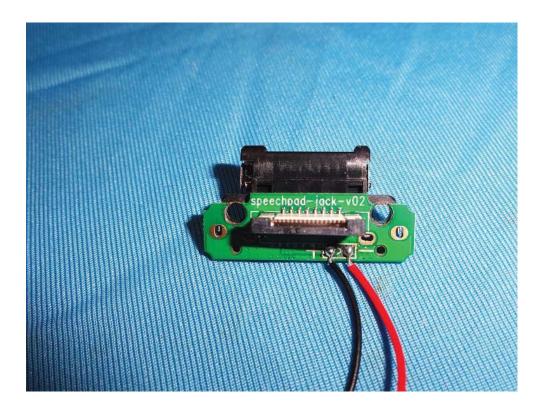
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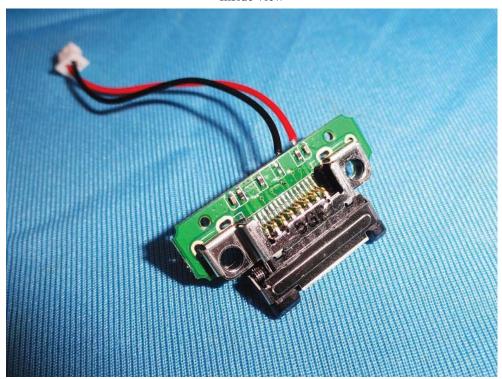
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End of the report