FCC Test Report

Product Name	Handy Skin Sensor Ⅱ
Model No	HSS Ⅱ
FCC ID	2AO35-HSS2

Applicant	Moritex Corporation
Address	3-13-45, Senzui, Asaka-shi, Saitama 351-0024

Date of Receipt	Jan. 26, 2018
Issued Date	Mar. 15, 2018
Report No.	1810372R-RFUSP06V00
Report Version	V1.0

Testing Laboratory
3023

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
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Test Report

Issued Date: Mar. 15, 2018
Report No.: 1810372R-RFUSP06V00

Product Name	Handy Skin Sensor Ⅱ
Applicant	Moritex Corporation
Address	3-13-45, Senzui, Asaka-shi, Saitama 351-0024
Manufacturer	Moritex Corporation
Model No.	HSS Ⅱ
FCC ID.	2AO35-HSS2
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	SHISEIDO
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2017 ANSI C63.4: 2014, ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v02
Test Result	Complied

Documented By :

(Senior Adm. Specialist / Joanne Lin)

Tested By :

(Engineer / Kevin Liu)

Approved By :

(Director / Vincent Lin)

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Attachment 1: EUT Test Photographs
Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Handy Skin Sensor Ⅱ
Trade Name	SHISEIDO
FCC ID.	2AO35-HSS2
Model No.	HSS Ⅱ
Frequency Range	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz
Number of Channels	802.11a/n-20MHz: 19
Data Rate	Auto
Channel Control	802.11a: 6 - 54Mbps 802.11n: up to 150Mbps
Type of Modulation	OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	PCB Antenna
Antenna Gain	Refer to the table “Antenna List”
Micro USB Cable	Shielded, 1.7m, with one ferrite core bonded.
Adapter Cable	MFR: UNIFIVE, M/N: UBX310-0520 Input: AC 100-240V ~ 50/60Hz, 0.3A Output: DC 5V, 2A

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	株式会社モリテックス	SY-W40IE7028G060C-L01	PCB Antenna	-0.85dBi For 5150~5250 GHz -0.58dBi For 5250~5350 GHz 0.58dBi For 5470~5725 GHz

Note: The antenna of EUT is conforming to FCC 15.203.

802.11a/n-20MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz
Channel 52:	5260 MHz	Channel 56:	5280 MHz	Channel 60:	5300 MHz	Channel 64:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 120:	5600 MHz	Channel 124:	5620 MHz	Channel 128:	5640 MHz
Channel 132:	5660 MHz	Channel 136:	5680 MHz	Channel 140:	5700 MHz		

Note:

1. This device is a Handy Skin Sensor Ⅱ with a built-in 802.11a/b/g/n WLAN transceiver, the test report is for 5GHz WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
5. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 7.2Mbps) Mode 3: Charger

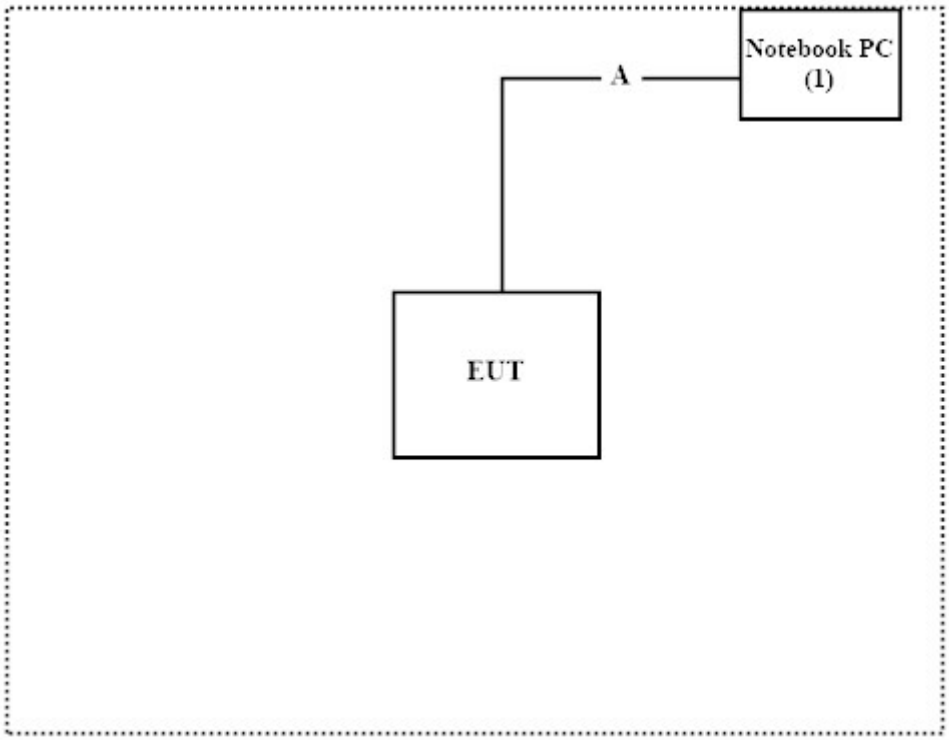
1.3. Tested System Datails

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	Inspiron 15 3000	GT5JPJ2	N/A

Signal Cable Type		Signal cable Description
A	Micro USB Cable	Shielded, 1.7m, with one ferrite core bonded.

1.4. Configuration of tested System



1.5. EUT Exercise Software

1. Setup the EUT as shown in Section 1.4.
2. Execute software “Ampak RFTestTool VER:5.5” on the EUT.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous Transmit.
5. Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en.aspx

Site Description: Accredited by TAF
Accredited Number: 3023

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E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW3023

1.7. List of Test Equipment

For Conduction measurements /ASR1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	EMI Test Receiver	R&S	ESR7	101601	2018.02.08	2019.02.07
X	Two-Line V-Network	R&S	ENV216	101306	2018.03.09	2019.03.08
X	Two-Line V-Network	R&S	ENV216	101307	2017.03.17	2018.03.16
X	Coaxial Cable	Quietek	RG400_BNC	RF001	2017.05.24	2018.05.23

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : QuieTek EMI 2.0 V2.1.113

For Conducted measurements /ASR4

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSV30	103464	2018.01.23	2019.01.22
X	Power Meter	Anritsu	ML2496A	1548003	2017.12.11	2018.12.10
X	Power Sensor	Anritsu	MA2411B	1531024	2017.12.11	2018.12.10
X	Power Sensor	Anritsu	MA2411B	1531025	2017.12.11	2018.12.10
	Bluetooth Tester	R&S	CBT	101238	2018.01.18	2019.01.17

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : QuieTek Conduction Test System V8.0.110

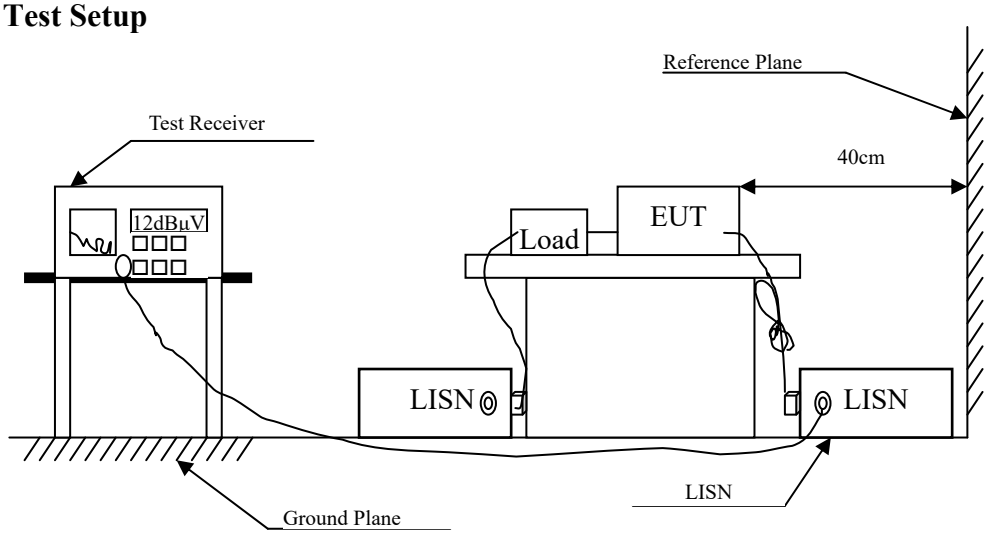
For Radiated measurements /ACB1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Loop Antenna	AMETEK	HLA6121	49611	2018.01.26	2019.01.25
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-675	2017.06.01	2018.05.31
X	Horn Antenna	ETS-Lindgren	3117	00203800	2017.11.10	2018.11.09
X	Horn Antenna	Com-Power	AH-840	101087	2017.05.24	2018.05.23
X	Pre-Amplifier	EMCI	EMC001330	980316	2017.05.16	2018.05.15
X	Pre-Amplifier	EMCI	EMC051835SE	980311	2017.05.17	2018.05.16
X	Pre-Amplifier	EMCI	EMC05820SE	980310	2017.05.17	2018.05.16
X	Pre-Amplifier	EMCI	EMC184045SE	980314	2017.05.17	2018.05.16
	Filter	MICRO TRONICS	BRM50702	G251	2017.08.30	2018.08.29
X	Filter	MICRO TRONICS	BRM50716	G188	2017.08.30	2018.08.29
X	EMI Test Receiver	R&S	ESR7	101602	2017.12.11	2018.12.10
X	Spectrum Analyzer	R&S	FSV40	101148	2017.12.11	2018.12.10
X	Coaxial Cable	SUHNER	SUCOFLEX 106	RF002	2017.05.25	2018.05.24
X	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2017.08.11	2018.08.10

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with "X" are used to measure the final test results.
3. Test Software version : QuieTek EMI 2.0 V2.1.113

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBµV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:2014 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.4. Uncertainty

±2.35dB

2.5. Test Result of Conducted Emission

Product : Handy Skin Sensor Ⅱ
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
Test Date : 2018/03/01

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 1					
Quasi-Peak					
0.150	9.611	34.281	43.892	-22.108	66.000
0.456	9.697	29.531	39.228	-18.029	57.257
2.227	9.758	35.065	44.823	-11.177	56.000
3.703	9.797	34.344	44.141	-11.859	56.000
7.845	9.896	17.821	27.717	-32.283	60.000
9.226	9.925	13.712	23.637	-36.363	60.000
Average					
0.150	9.611	24.486	34.097	-21.903	56.000
0.456	9.697	23.488	33.185	-14.072	47.257
2.227	9.758	28.278	38.036	-7.964	46.000
3.703	9.797	28.497	38.294	-7.706	46.000
7.845	9.896	12.653	22.549	-27.451	50.000
9.226	9.925	7.958	17.883	-32.117	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
Test Date	:	2018/03/01

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 2					
Quasi-Peak					
0.157	9.618	36.520	46.138	-19.662	65.800
0.204	9.680	36.097	45.777	-18.680	64.457
0.456	9.689	29.323	39.012	-18.245	57.257
2.121	9.751	34.036	43.787	-12.213	56.000
3.728	9.797	36.579	46.376	-9.624	56.000
7.546	9.884	16.221	26.106	-33.894	60.000
Average					
0.157	9.618	32.182	41.800	-14.000	55.800
0.204	9.680	32.800	42.480	-11.977	54.457
0.456	9.689	23.373	33.062	-14.195	47.257
2.121	9.751	28.480	38.231	-7.769	46.000
3.728	9.797	30.092	39.889	-6.111	46.000
7.546	9.884	10.954	20.838	-29.162	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
Test Date	:	2018/03/01

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 1					
Quasi-Peak					
0.157	9.626	37.408	47.034	-18.766	65.800
0.465	9.697	27.697	37.394	-19.606	57.000
2.238	9.762	35.980	45.742	-10.258	56.000
3.725	9.797	34.478	44.275	-11.725	56.000
7.618	9.894	17.756	27.650	-32.350	60.000
9.222	9.925	13.920	23.845	-36.155	60.000
Average					
0.157	9.626	31.584	41.210	-14.590	55.800
0.465	9.697	21.763	31.461	-15.539	47.000
2.238	9.762	29.321	39.083	-6.917	46.000
3.725	9.797	29.020	38.817	-7.183	46.000
7.618	9.894	12.741	22.635	-27.365	50.000
9.222	9.925	8.447	18.372	-31.628	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
Test Date	:	2018/03/01

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 2					
Quasi-Peak					
0.157	9.618	36.663	46.281	-19.519	65.800
0.204	9.680	36.240	45.919	-18.538	64.457
0.445	9.689	29.900	39.588	-17.983	57.571
2.231	9.760	34.706	44.466	-11.534	56.000
3.728	9.797	36.915	46.712	-9.288	56.000
7.843	9.896	17.203	27.099	-32.901	60.000
Average					
0.157	9.618	32.361	41.979	-13.821	55.800
0.204	9.680	32.795	42.475	-11.982	54.457
0.445	9.689	23.564	33.252	-14.319	47.571
2.231	9.760	28.672	38.432	-7.568	46.000
3.728	9.797	30.511	40.308	-5.692	46.000
7.843	9.896	11.787	21.683	-28.317	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
Test Date	:	2018/03/01

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 1					
Quasi-Peak					
0.157	9.626	36.963	46.589	-19.211	65.800
0.454	9.697	29.027	38.724	-18.590	57.314
2.186	9.752	33.869	43.621	-12.379	56.000
3.732	9.797	35.224	45.021	-10.979	56.000
7.769	9.895	17.712	27.607	-32.393	60.000
9.236	9.925	14.993	24.918	-35.082	60.000
Average					
0.157	9.626	31.776	41.402	-14.398	55.800
0.454	9.697	23.307	33.004	-14.310	47.314
2.186	9.752	28.768	38.520	-7.480	46.000
3.732	9.797	28.614	38.411	-7.589	46.000
7.769	9.895	12.453	22.348	-27.652	50.000
9.236	9.925	8.468	18.393	-31.607	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
Test Date	:	2018/03/01

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 2					
Quasi-Peak					
0.157	9.618	36.201	45.819	-19.981	65.800
0.204	9.680	35.146	44.826	-19.631	64.457
0.445	9.689	29.565	39.254	-18.317	57.571
2.233	9.761	35.007	44.768	-11.232	56.000
3.707	9.797	34.570	44.367	-11.633	56.000
7.811	9.895	17.681	27.576	-32.424	60.000
Average					
0.157	9.618	31.387	41.005	-14.795	55.800
0.204	9.680	31.670	41.349	-13.108	54.457
0.445	9.689	23.324	33.013	-14.558	47.571
2.233	9.761	28.026	37.787	-8.213	46.000
3.707	9.797	28.823	38.620	-7.380	46.000
7.811	9.895	12.109	22.004	-27.996	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 3: Charger
Test Date	:	2018/03/01

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 1					
Quasi-Peak					
0.150	9.611	52.230	61.841	-4.159	66.000
0.170	9.658	48.897	58.554	-6.875	65.429
0.204	9.681	46.449	56.129	-8.328	64.457
0.235	9.682	47.401	57.083	-6.488	63.571
0.267	9.684	44.011	53.695	-8.962	62.657
0.328	9.688	41.074	50.762	-10.159	60.921
0.415	9.694	38.147	47.841	-10.573	58.414
10.183	9.941	32.937	42.878	-17.122	60.000
Average					
0.150	9.611	27.705	37.316	-18.684	56.000
0.170	9.658	22.250	31.907	-23.522	55.429
0.204	9.681	23.021	32.701	-21.756	54.457
0.235	9.682	17.431	27.113	-26.458	53.571
0.267	9.684	16.410	26.094	-26.563	52.657
0.328	9.688	15.810	25.498	-25.423	50.921
0.415	9.694	20.286	29.980	-18.434	48.414
10.183	9.941	16.579	26.520	-23.480	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Conducted Emission Test
Power Line	:	Line 2
Test Mode	:	Mode 3: Charger
Test Date	:	2018/03/01

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 2					
Quasi-Peak					
0.152	9.607	52.630	62.237	-3.706	65.943
0.179	9.675	51.030	60.705	-4.466	65.171
0.211	9.680	46.837	56.518	-7.739	64.257
0.289	9.683	42.202	51.885	-10.144	62.029
0.326	9.685	42.142	51.826	-9.145	60.971
0.422	9.688	36.337	46.024	-12.205	58.229
9.006	9.913	31.598	41.511	-18.489	60.000
10.194	9.942	32.404	42.346	-17.654	60.000
Average					
0.152	9.607	28.443	38.050	-17.893	55.943
0.179	9.675	25.043	34.718	-20.453	55.171
0.211	9.680	21.178	30.858	-23.399	54.257
0.289	9.683	17.772	27.456	-24.573	52.029
0.326	9.685	18.734	28.418	-22.553	50.971
0.422	9.688	20.704	30.392	-17.837	48.229
9.006	9.913	17.224	27.137	-22.863	50.000
10.194	9.942	16.793	26.735	-23.265	50.000

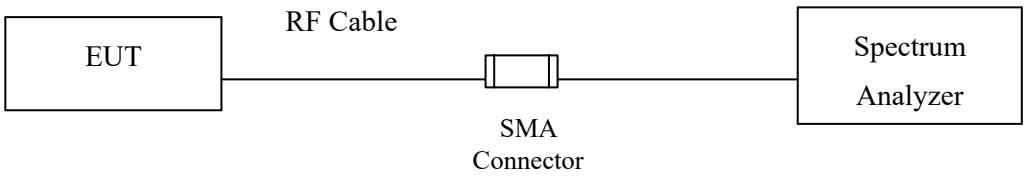
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Maximun conducted output power

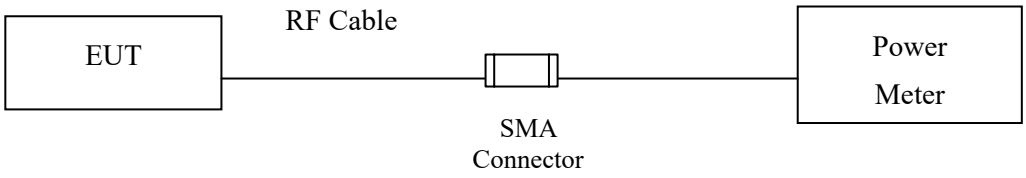
3.1. Test Setup

99% Occupied Bandwidth

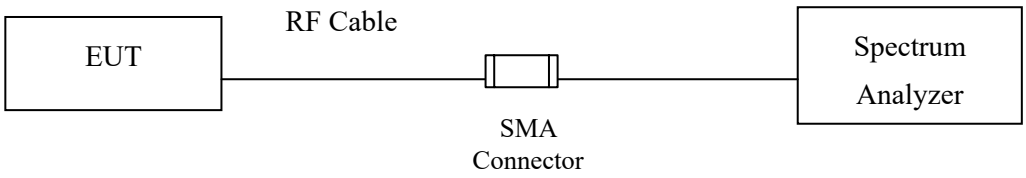


Conduction Power Measurement

Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac)



3.2. Limits

For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 99% emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

3.3. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater the 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)

802.11ac (BW=80MHz) Maximum conducted output power using KDB 789033 section E)2)b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep).

When transmitted signals consist of two or more non-contiguous spectrum segments (e.g., 80+80 MHz mode) or when a single spectrum segment of a transmission crosses the boundary between two adjacent U-NII bands, KDB 644545 D03 section D) procedure is used for measurements.

3.4. Uncertainty

Power Meter: ±0.95dB
Spectrum Analyzer: ±1.30dB

3.5. Test Result of Maximum conducted output power

Product : Handy Skin Sensor Ⅱ
Test Item : Maximum conducted output power
Test Mode : Mode 1: Transmit (802.11a-6Mbps)
Test Date : 2018/02/06

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
36	5180	4.35	--	--	--	--	--	--	--
44	5220	4.64	4.57	4.5	4.43	4.37	4.31	4.24	4.17
48	5240	4.89	--	--	--	--	--	--	--
52	5260	5.12	--	--	--	--	--	--	--
60	5300	5.59	5.52	5.45	5.38	5.31	5.25	5.19	5.12
64	5320	5.87	--	--	--	--	--	--	--
100	5500	6.92	--	--	--	--	--	--	--
116	5580	6.52	6.45	6.39	6.32	6.24	6.17	6.10	6.03
140	5700	6.10	--	--	--	--	--	--	--

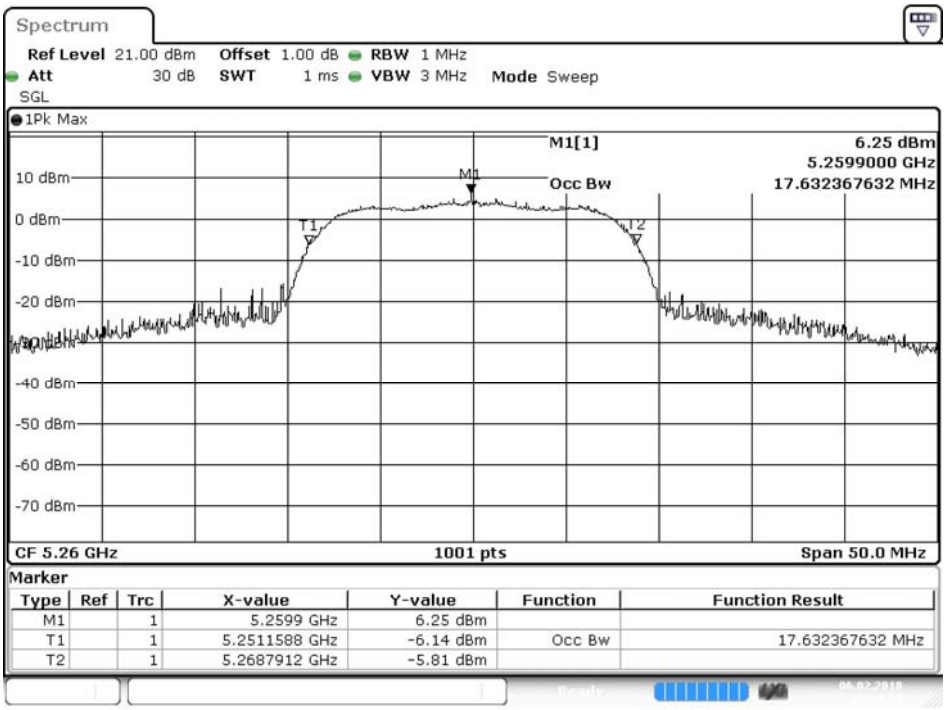
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	4.35	24	--
44	5220	--	4.64	24	--
48	5240	--	4.89	24	--
52	5260	17.632	5.12	24	23.46
60	5300	17.732	5.59	24	23.49
64	5320	17.682	5.87	24	23.48
100	5500	17.732	6.92	24	23.49
116	5580	17.782	6.52	24	23.50
140	5700	17.882	6.10	24	23.52

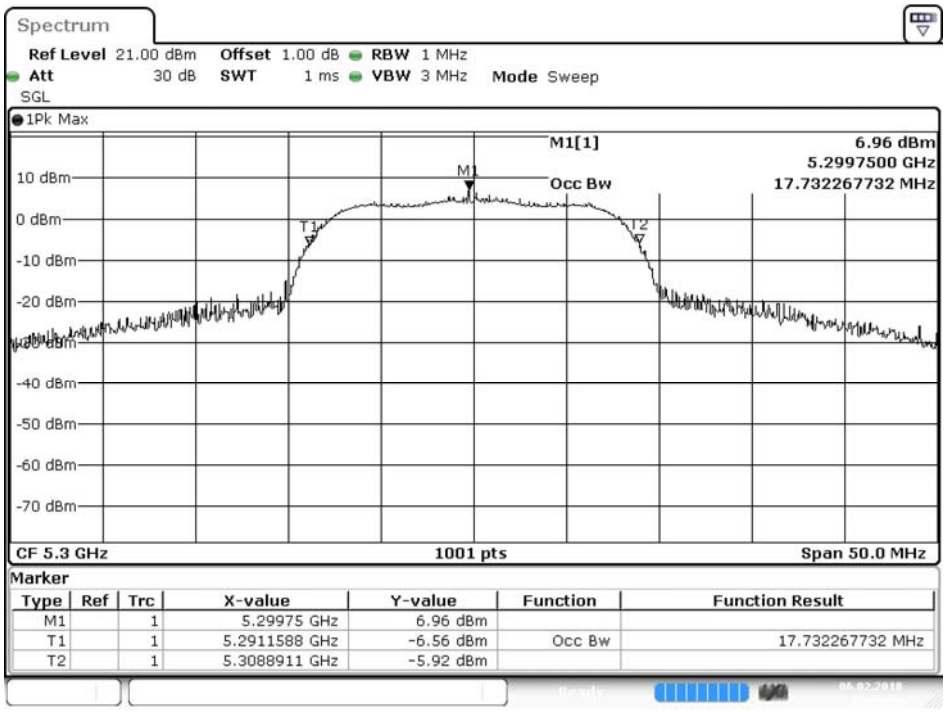
Note: Power Output Value =Reading value on average power meter + cable loss

99% Occupied Bandwidth:
Channel 52:



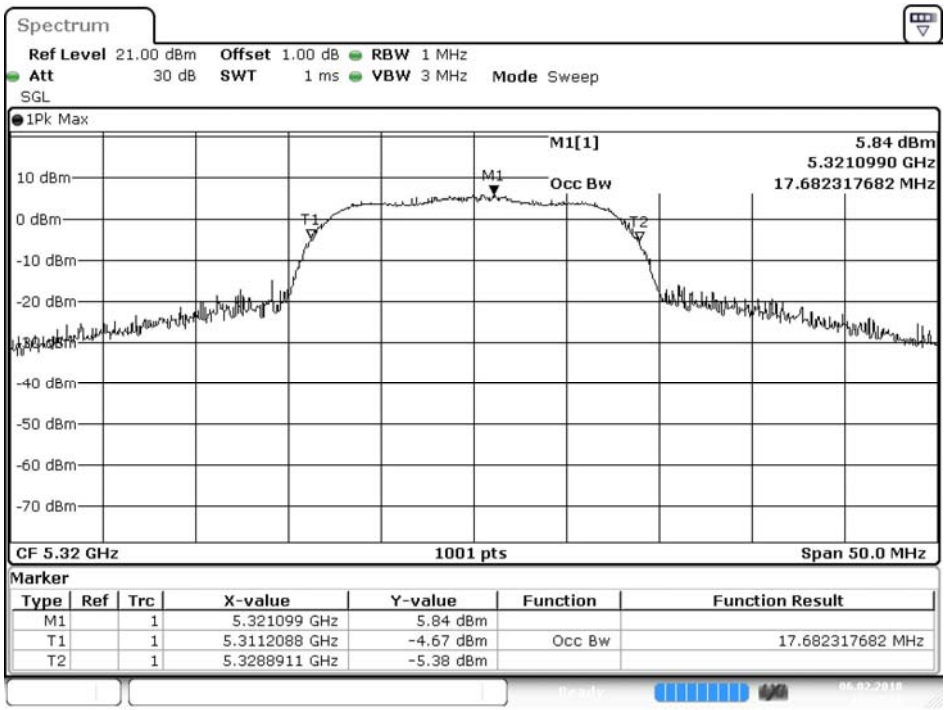
Date: 6.FEB.2018 10:14:36

Channel 60:



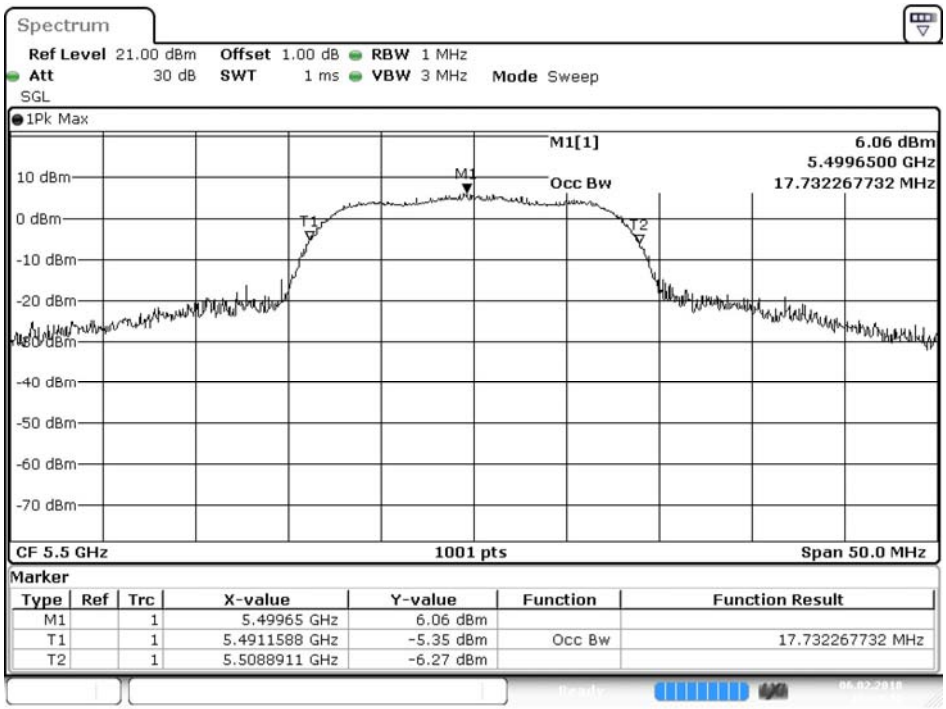
Date: 6.FEB.2018 10:16:03

Channel 64:



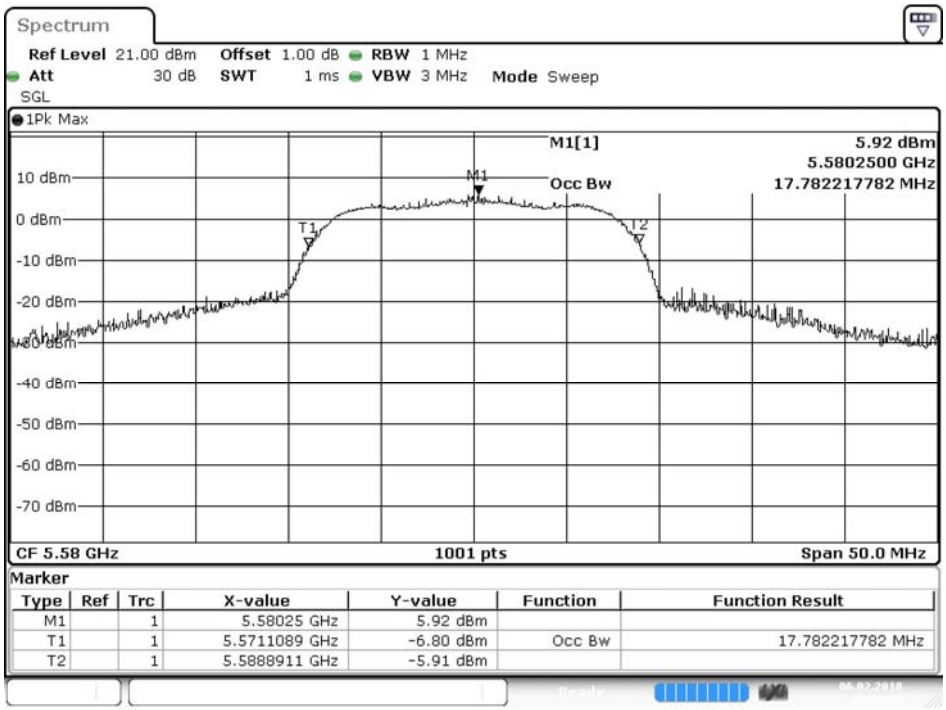
Date: 6.FEB.2018 10:17:27

Channel 100:



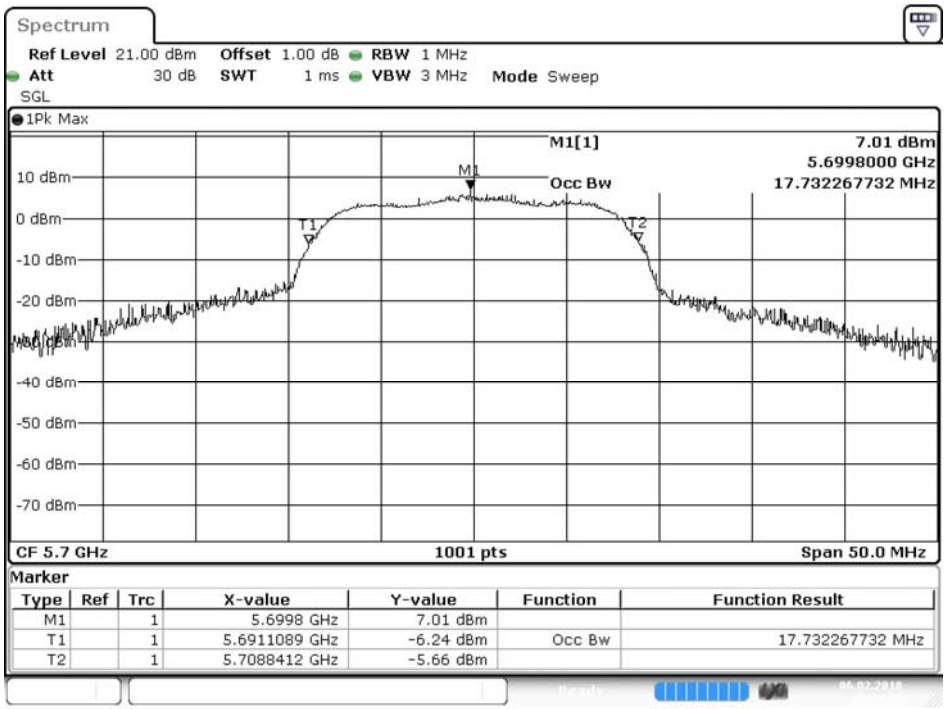
Date: 6.FEB.2018 10:18:49

Channel 116:



Date: 6.FEB.2018 10:20:20

Channel 140:



Date: 6.FEB.2018 10:23:29

Product : Handy Skin Sensor Ⅱ
Test Item : Maximum conducted output power
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2018/02/06

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2
		Measurement Level (dBm)							
36	5180	3.15	--	--	--	--	--	--	--
44	5220	3.46	3.40	3.33	3.27	3.20	3.13	3.08	3.01
48	5240	3.71	--	--	--	--	--	--	--
52	5260	3.95	--	--	--	--	--	--	--
60	5300	4.47	4.40	4.33	4.25	4.18	4.12	4.06	4.00
64	5320	4.7	--	--	--	--	--	--	--
100	5500	4.92	--	--	--	--	--	--	--
116	5580	4.46	4.39	4.32	4.25	4.19	4.13	4.06	3.99
140	5700	3.93	--	--	--	--	--	--	--

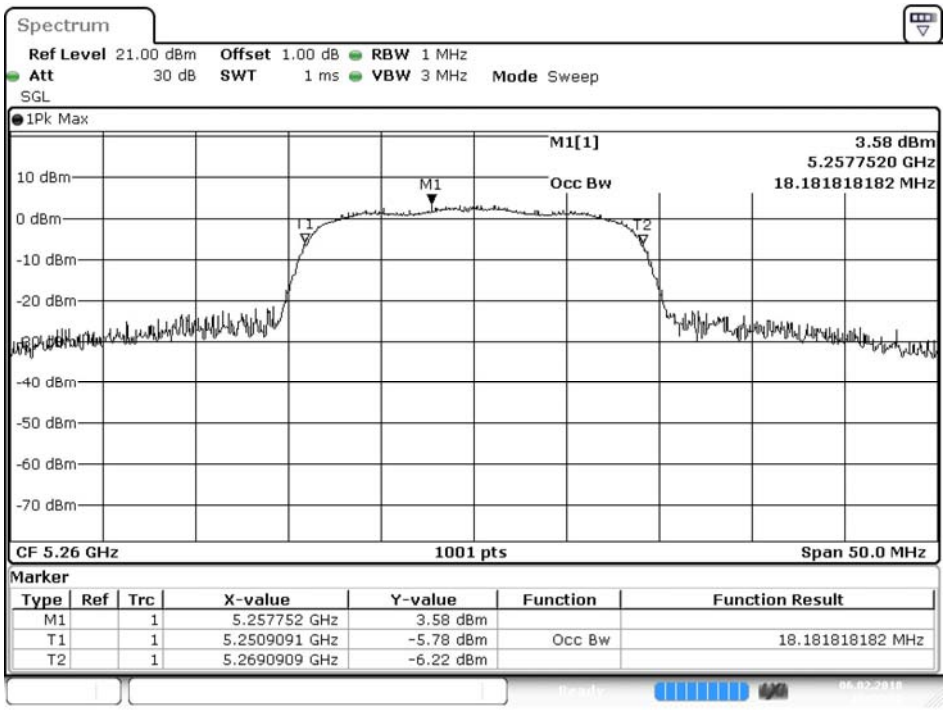
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	3.15	24	--
44	5220	--	3.46	24	--
48	5240	--	3.71	24	--
52	5260	17.732	3.95	24	23.49
60	5300	18.182	4.47	24	23.60
64	5320	18.282	4.7	24	23.62
100	5500	18.282	4.92	24	23.62
116	5580	18.382	4.46	24	23.64
140	5700	18.232	3.93	24	23.61

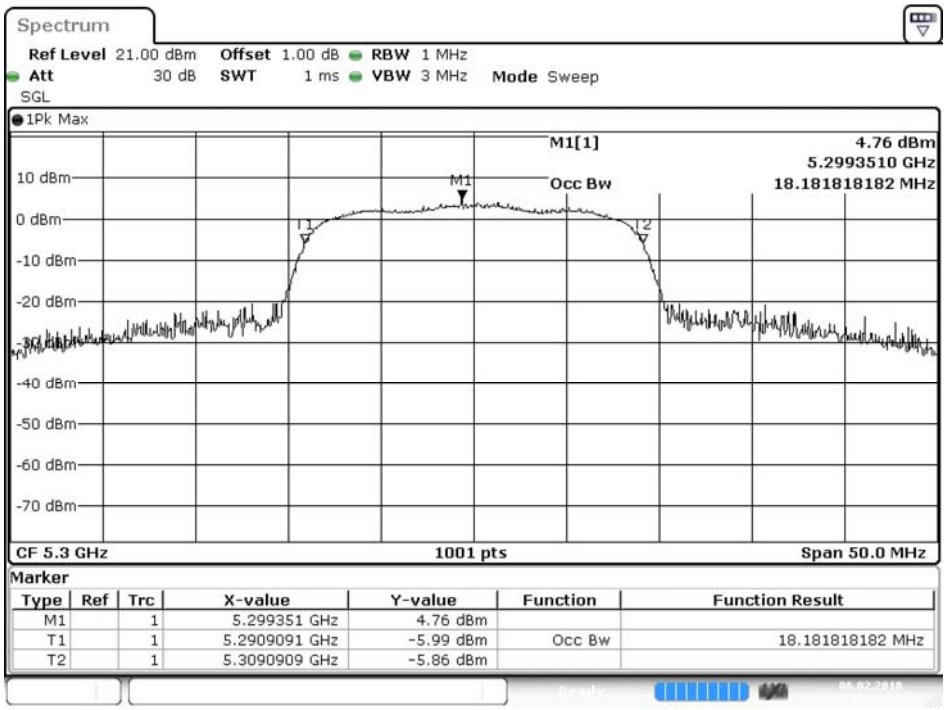
Note: Power Output Value =Reading value on average power meter + cable loss

99% Occupied Bandwidth:
Channel 52



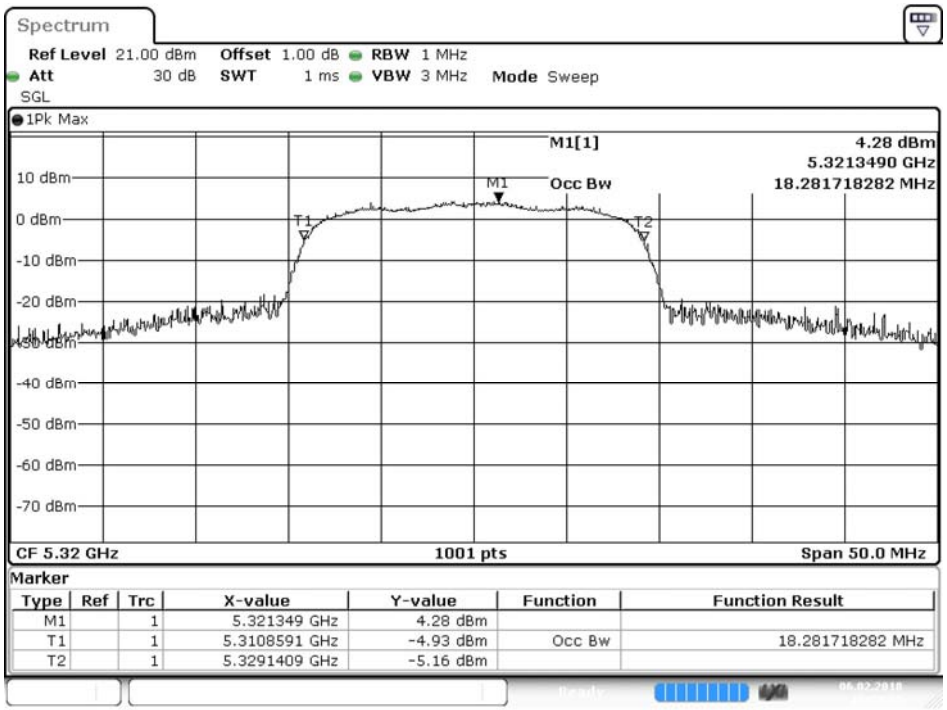
Date: 6.FEB.2018 10:30:28

Channel 60



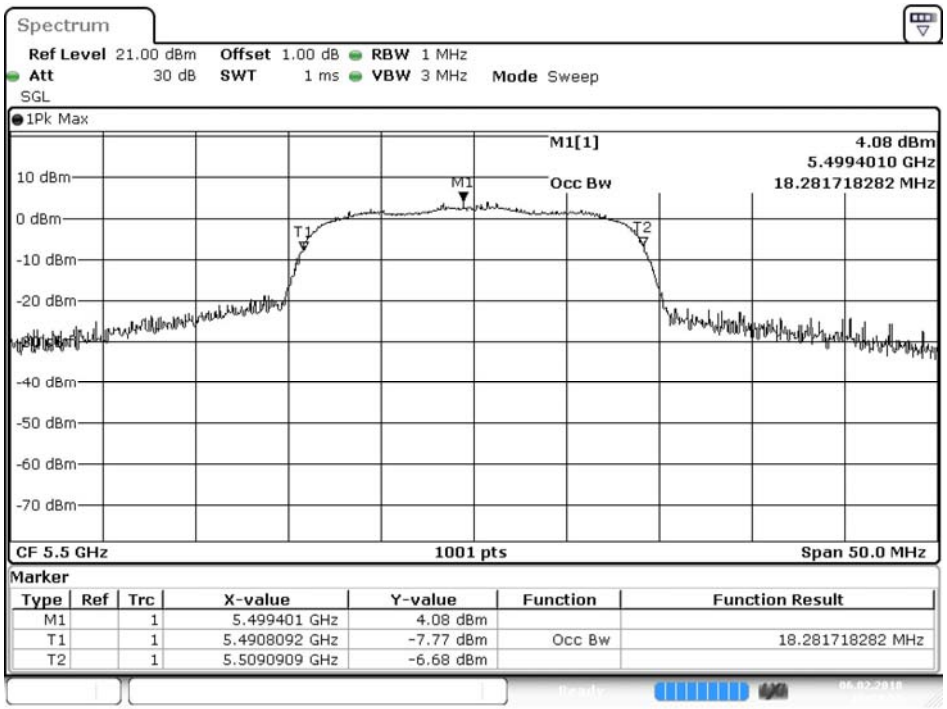
Date: 6.FEB.2018 10:31:59

Channel 64



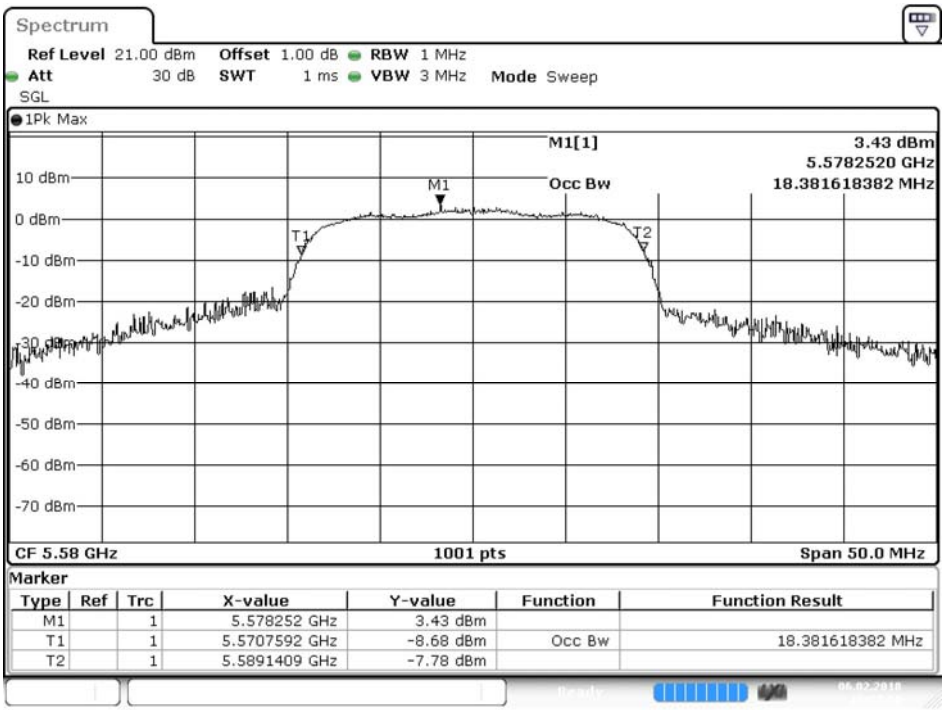
Date: 6.FEB.2018 10:33:30

Channel 100



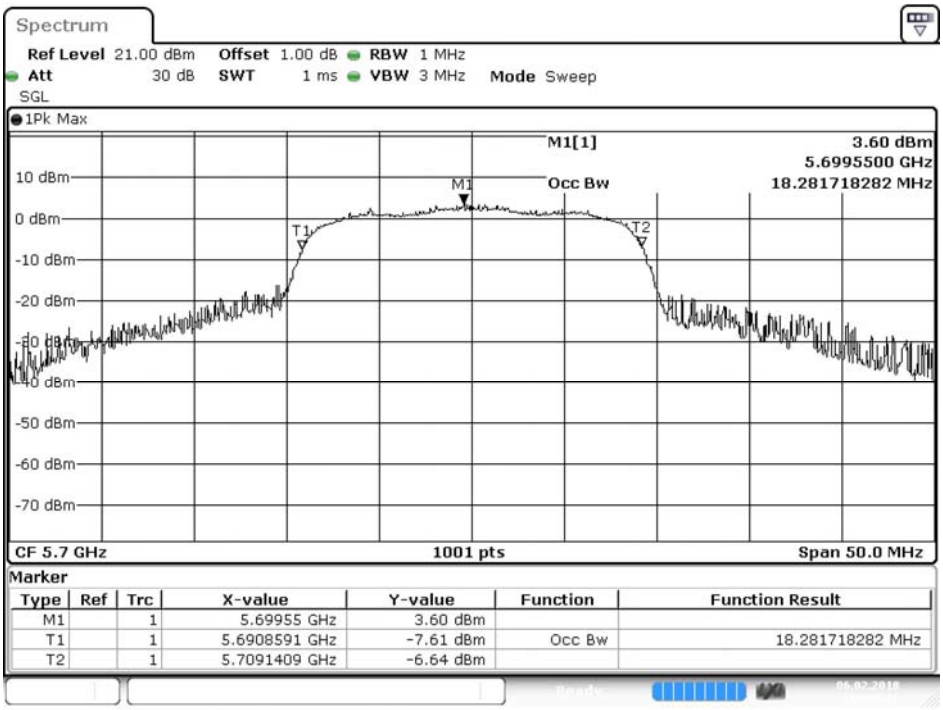
Date: 6.FEB.2018 10:34:55

Channel 116



Date: 6.FEB.2018 10:37:11

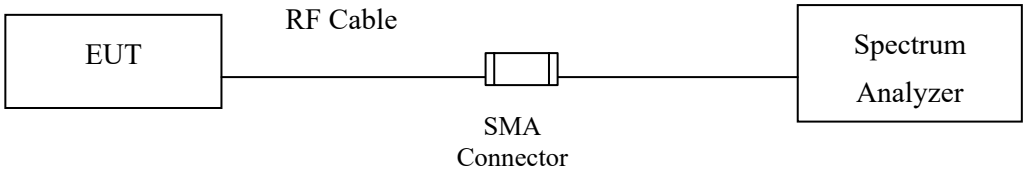
Channel 140



Date: 6.FEB.2018 10:40:12

4. Peak Power Spectral Density

4.1. Test Setup



4.2. Limits

For the band 5.15-5.25 GHz,
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-topoint U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.+

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

4.3. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.
The Peak Power Spectral Density using KDB 789033 section F) procedure, Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer.
SA-1 method is selected to run the test.
For the band 5.725-5.85 GHz, Scale the observed power level to an equivalent value in 500 kHz by adjusting (increase) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (500 kHz/100 kHz) = 6.98 dB.

4.4. Uncertainty

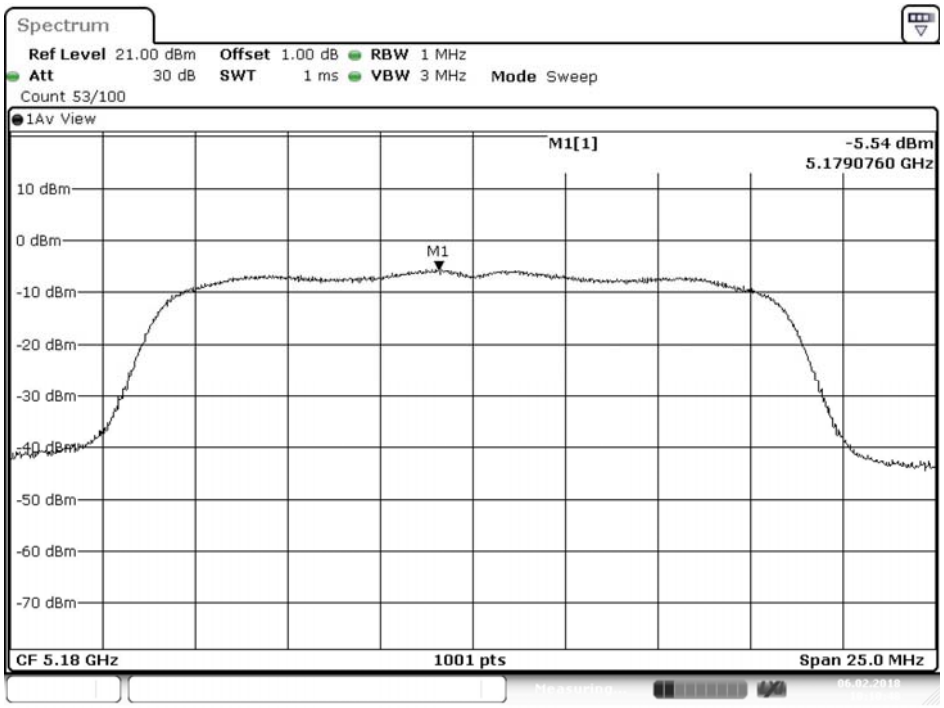
±1.30dB

4.5. Test Result of Peak Power Spectral Density

Product : Handy Skin Sensor Ⅱ
Test Item : Peak Power Spectral Density
Test Mode : Mode 1: Transmit (802.11a-6Mbps)
Test Date : 2018/02/06

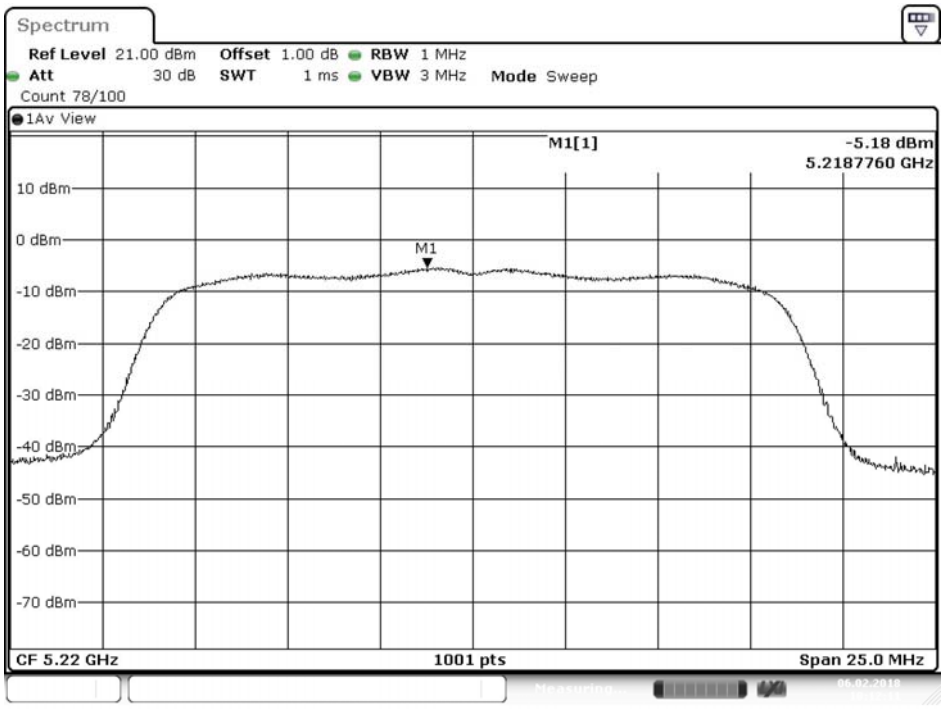
Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	-5.540	11	Pass
44	5220	6	-5.180	11	Pass
48	5240	6	-5.000	11	Pass
52	5260	6	-4.710	11	Pass
60	5300	6	-4.090	11	Pass
64	5320	6	-3.610	11	Pass
100	5500	6	-3.650	11	Pass
116	5580	6	-4.240	11	Pass
140	5700	6	-3.820	11	Pass

Channel 36:



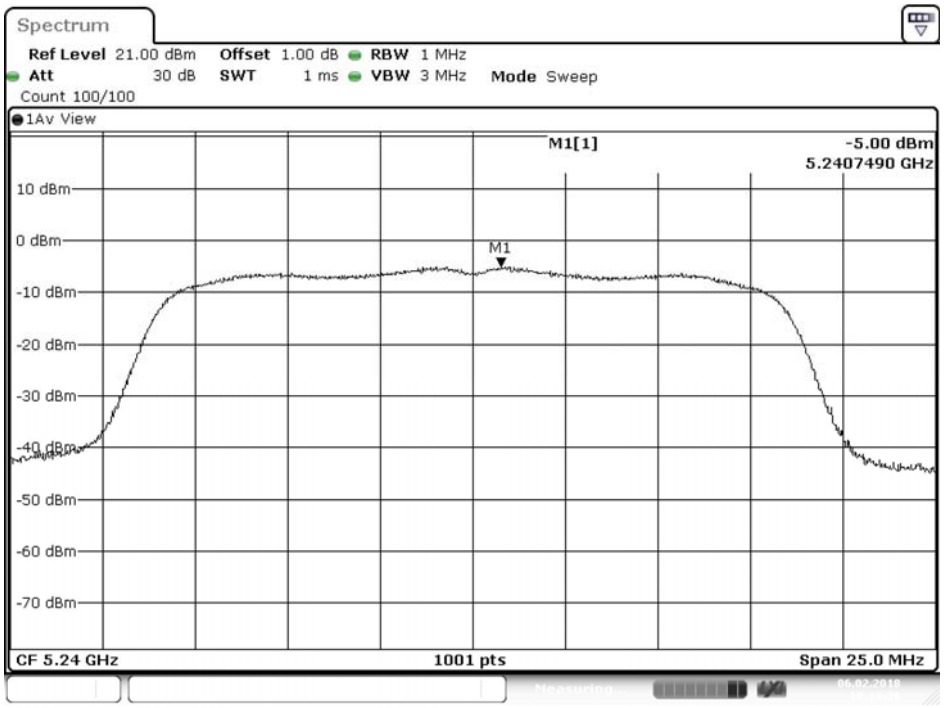
Date: 6.FEB.2018 10:10:48

Channel 44:



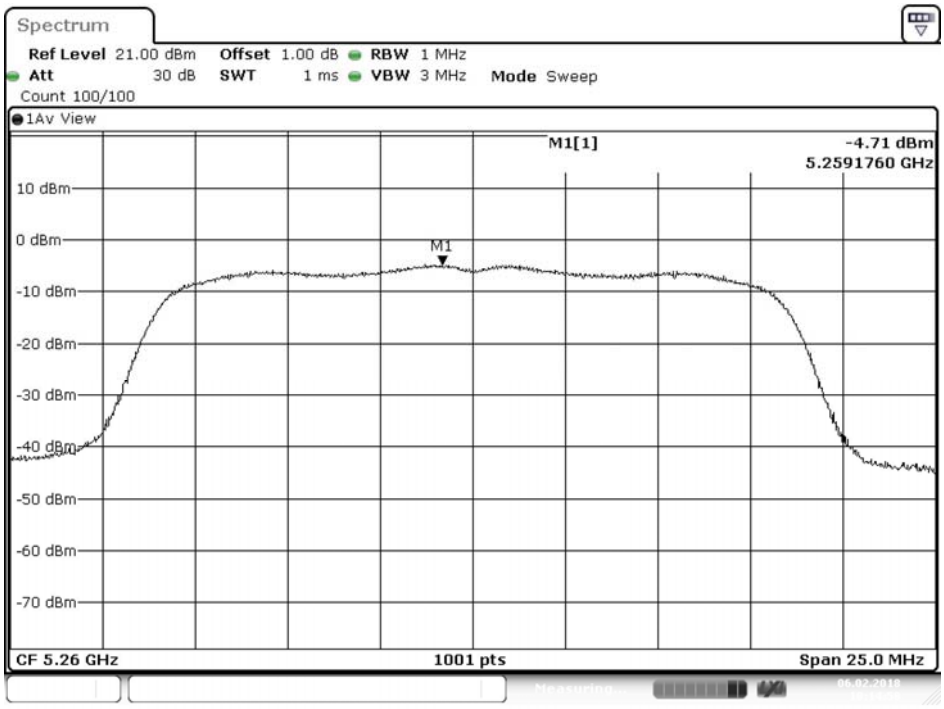
Date: 6.FEB.2018 10:12:11

Channel 48:



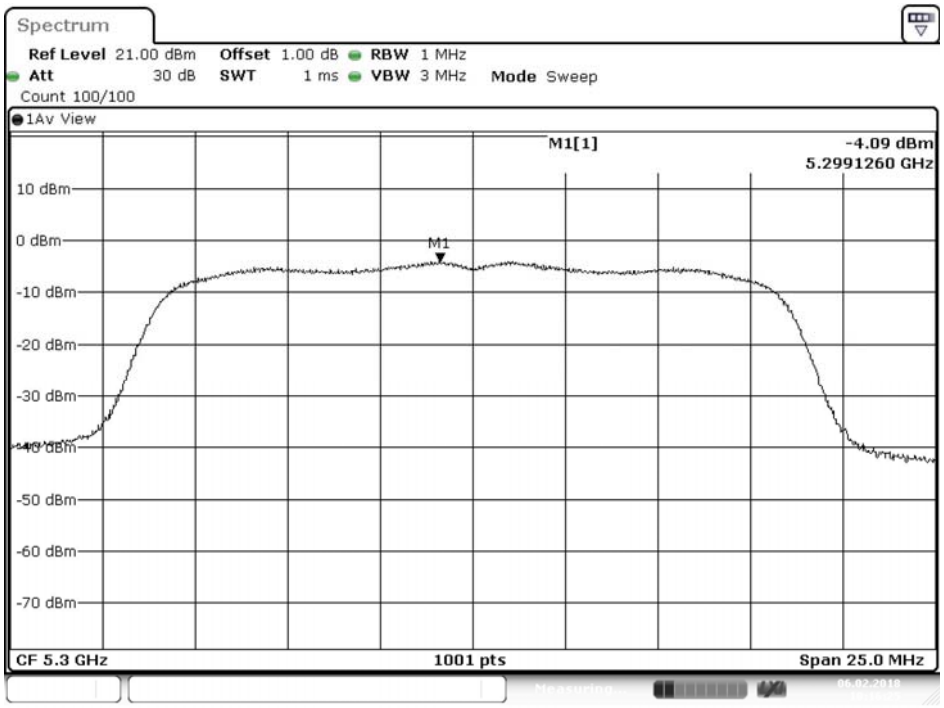
Date: 6.FEB.2018 10:13:38

Channel 52:



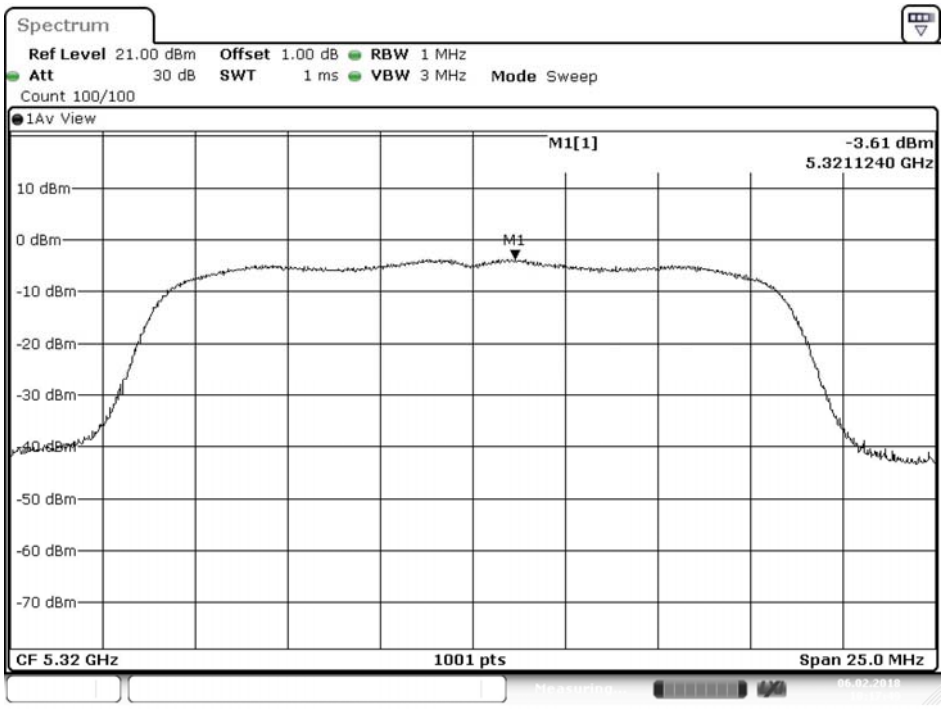
Date: 6.FEB.2018 10:14:58

Channel 60:



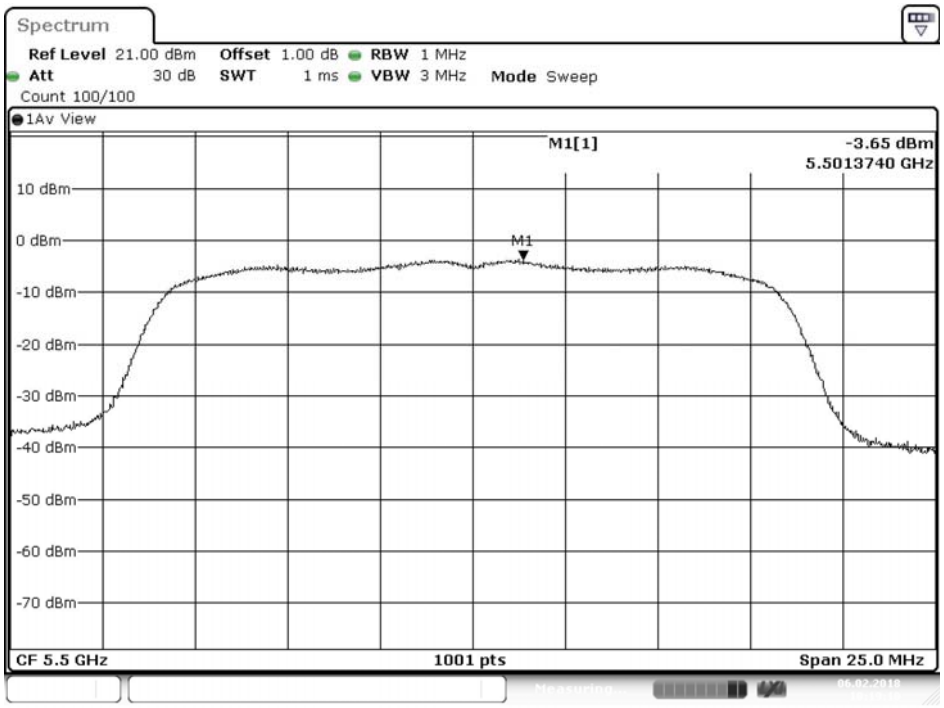
Date: 6.FEB.2018 10:16:25

Channel 64:



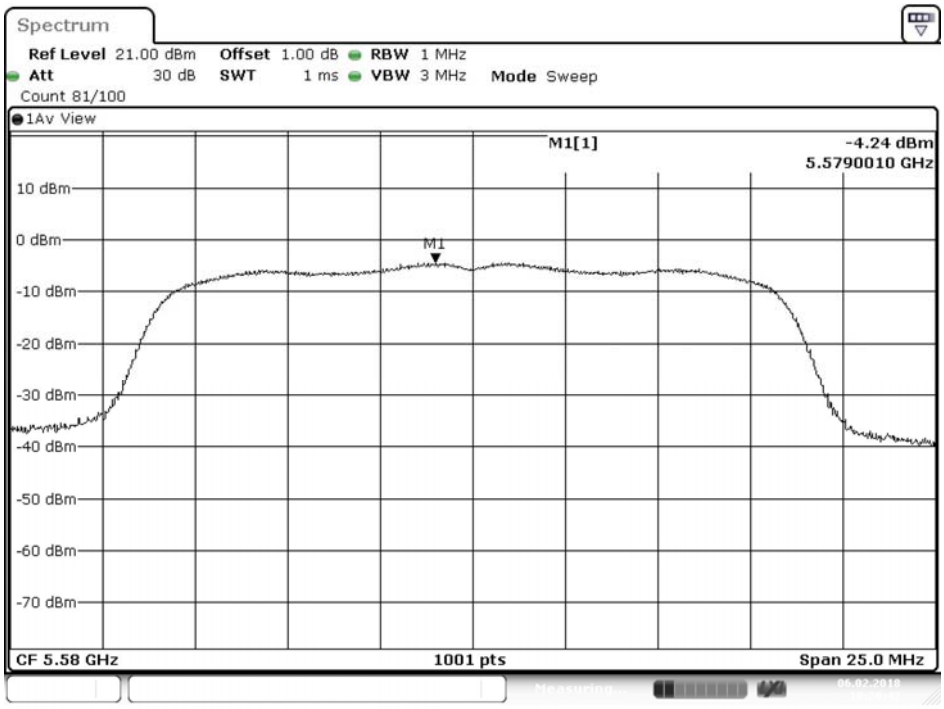
Date: 6.FEB.2018 10:17:49

Channel 100:



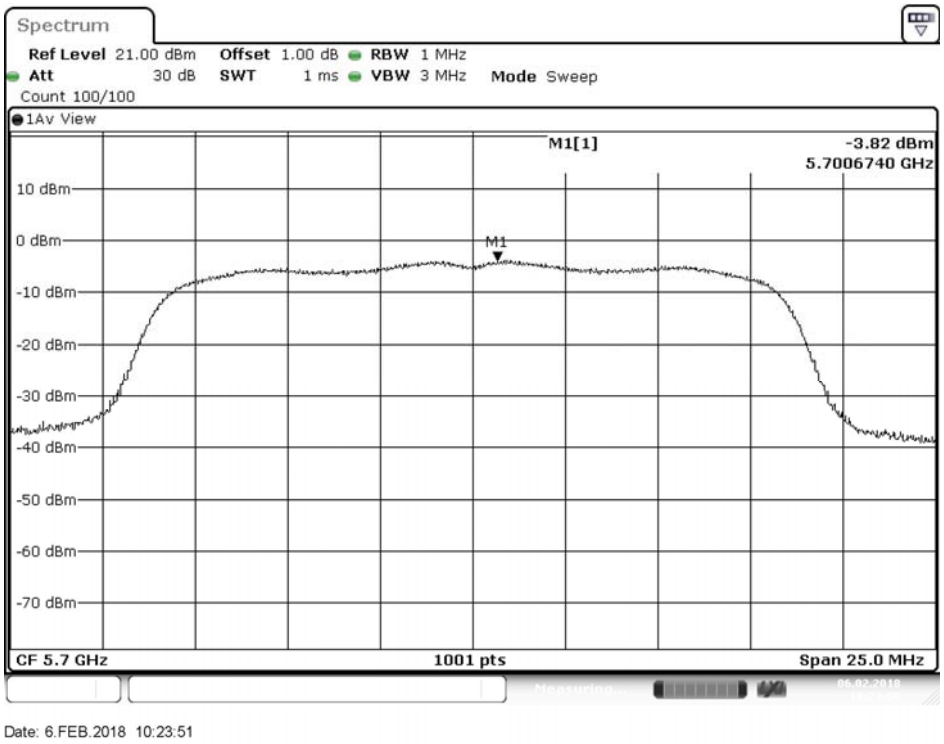
Date: 6.FEB.2018 10:19:11

Channel 116:



Date: 6.FEB.2018 10:20:43

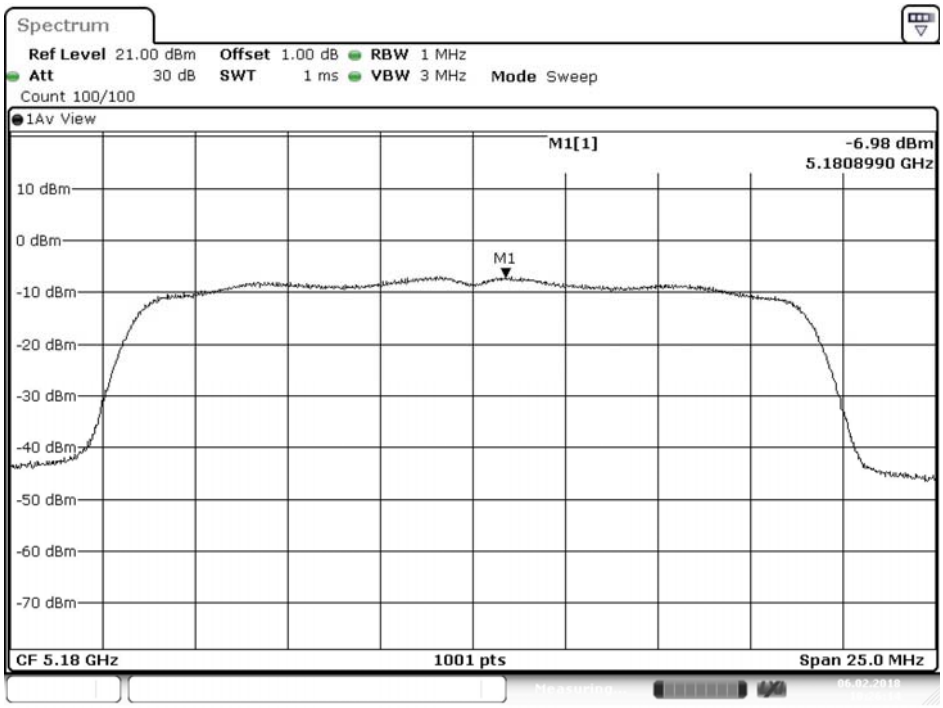
Channel 140:


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 1 MHz
Att 30 dB SWT 1 ms VBW 3 MHz Mode Sweep
Count 100/100
1Av View
M1[1]
-3.82 dBm
5.7006740 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.7 GHz
1001 pts
Span 25.0 MHz
Date: 6.FEB.2018 10:23:51

Product : Handy Skin Sensor Ⅱ
Test Item : Peak Power Spectral Density
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2018/02/06

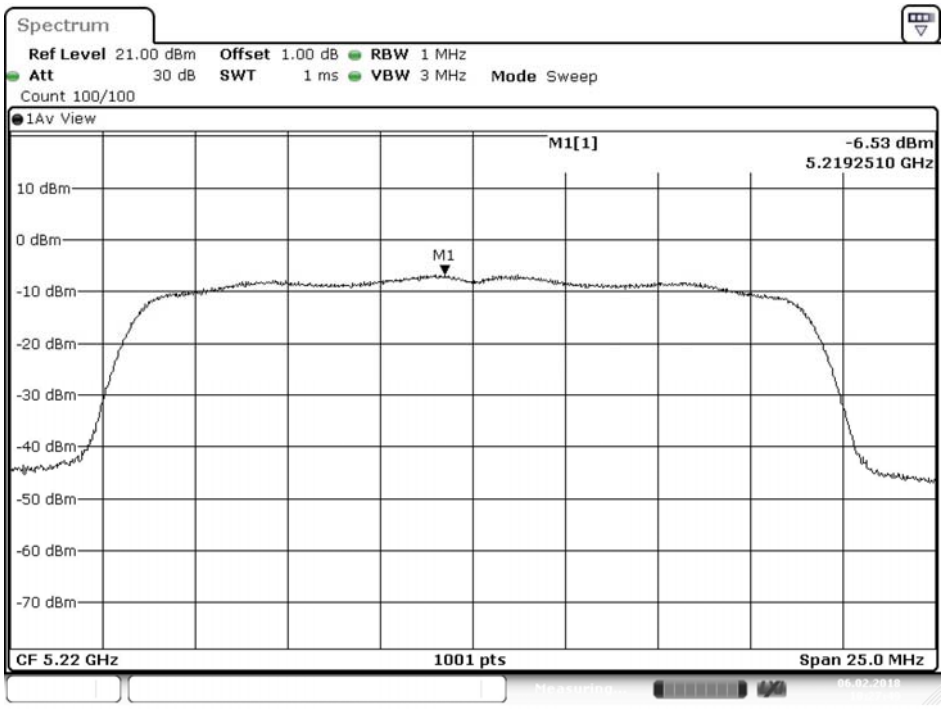
Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	-6.980	11	Pass
44	5220	6	-6.530	11	Pass
48	5240	6	-6.470	11	Pass
52	5260	6	-6.240	11	Pass
60	5300	6	-5.140	11	Pass
64	5320	6	-4.850	11	Pass
100	5500	6	-5.880	11	Pass
116	5580	6	-6.480	11	Pass
140	5700	6	-6.090	11	Pass

Channel 36



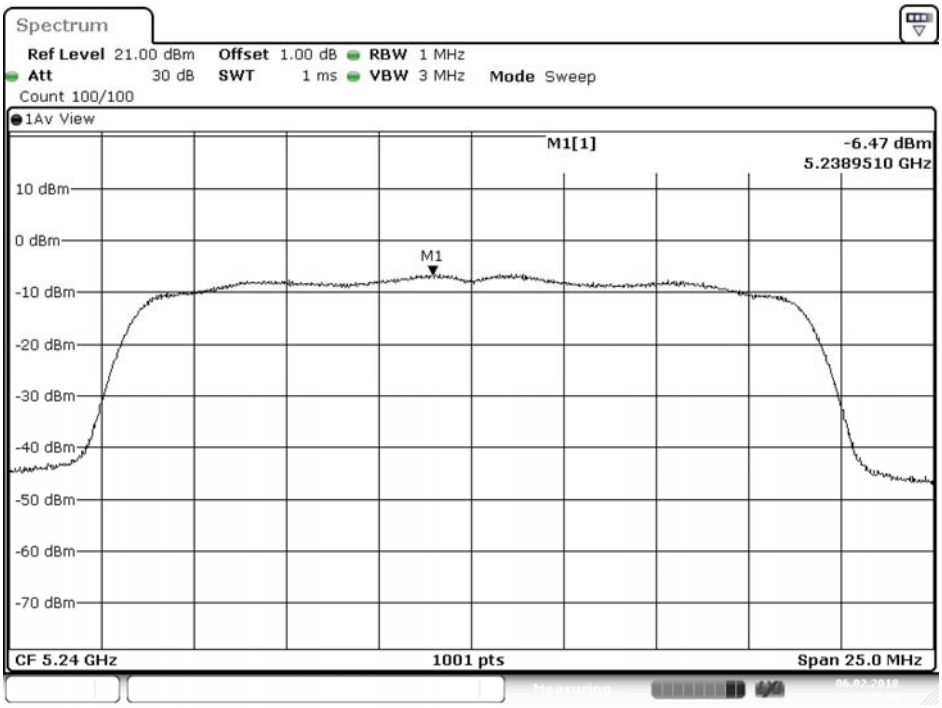
Date: 6.FEB.2018 10:26:14

Channel 44



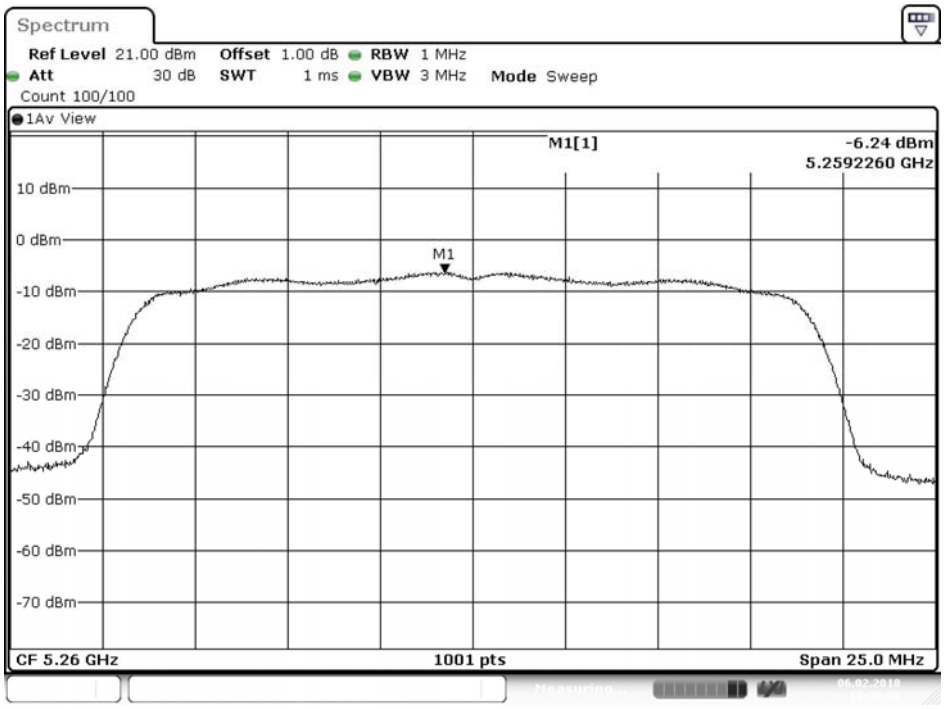
Date: 6.FEB.2018 10:27:50

Channel 48



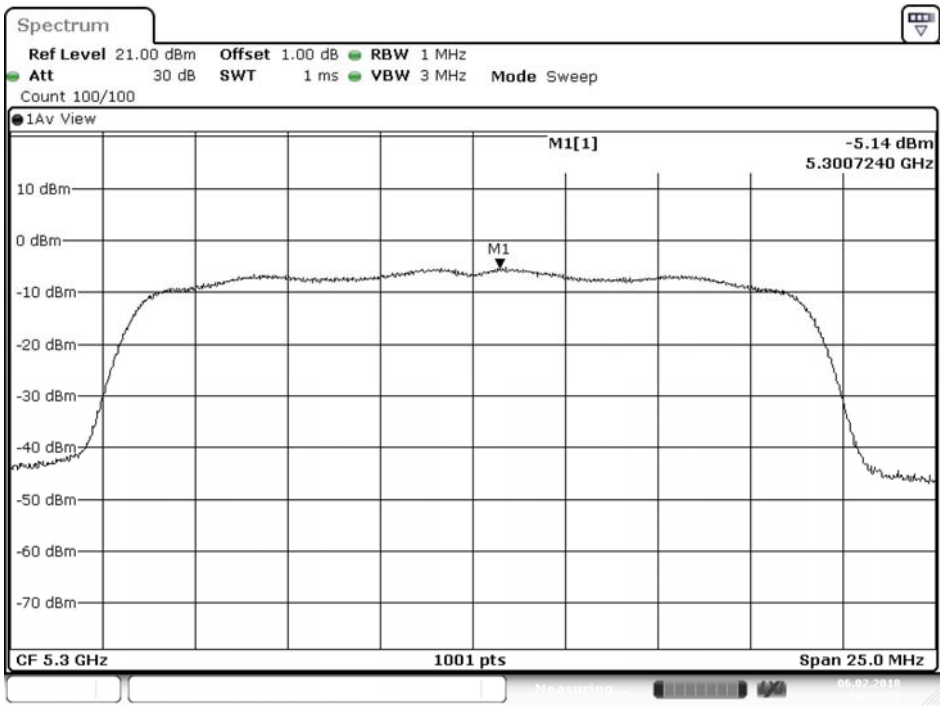
Date: 6.FEB.2018 10:29:24

Channel 52



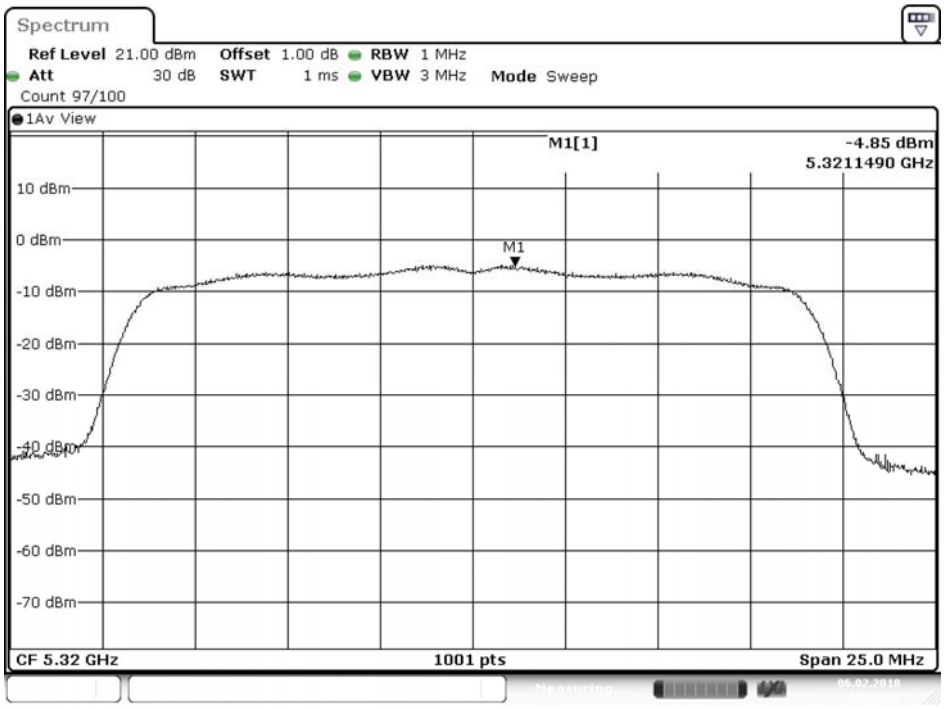
Date: 6.FEB.2018 10:30:50

Channel 60



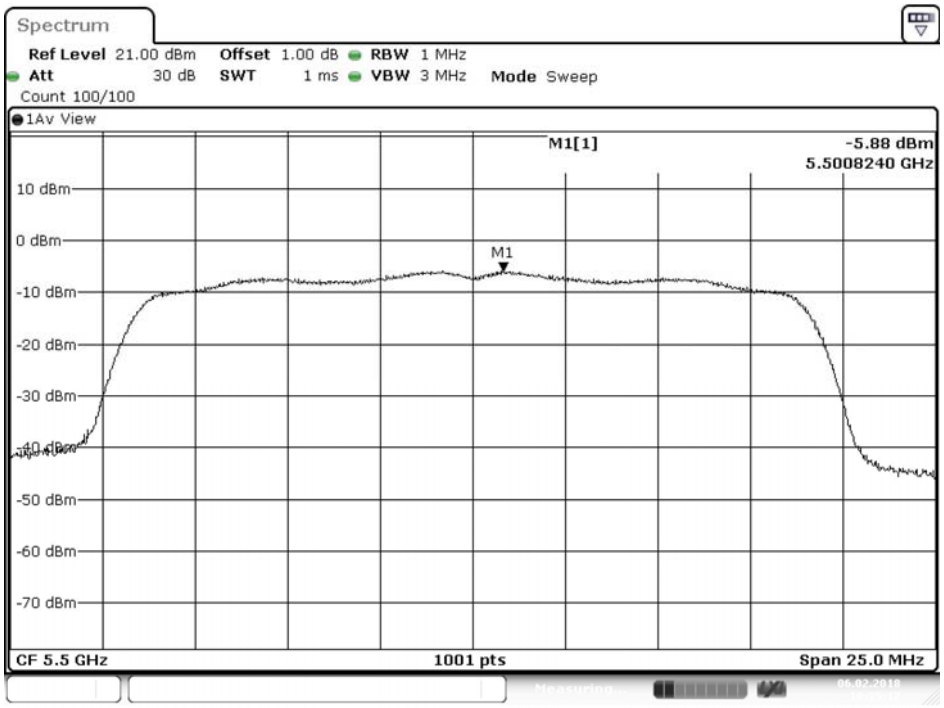
Date: 6.FEB.2018 10:32:22

Channel 64



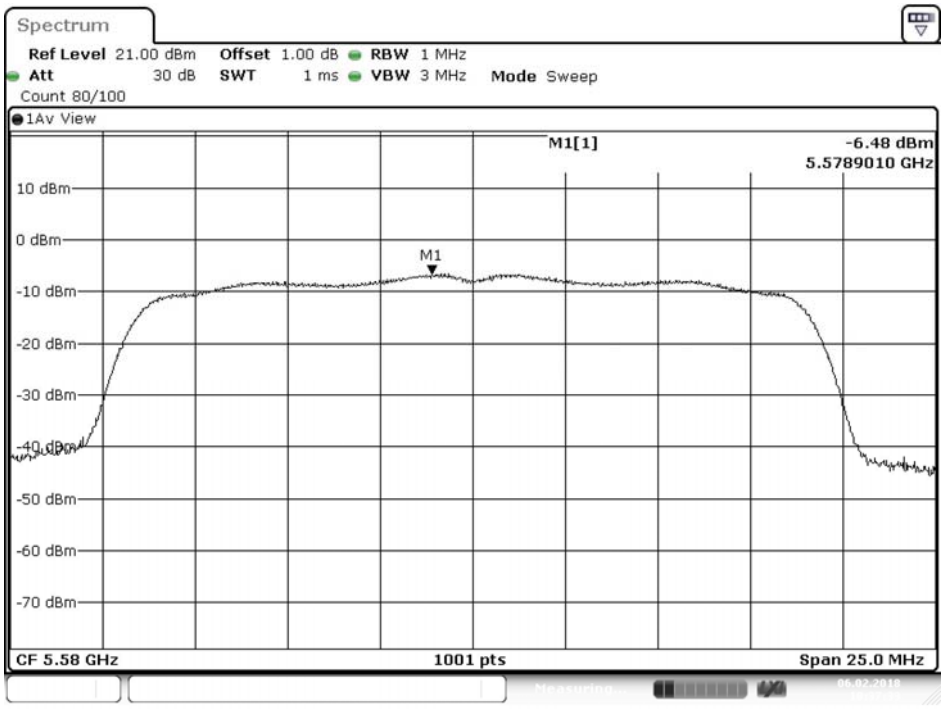
Date: 6.FEB.2018 10:33:52

Channel 100



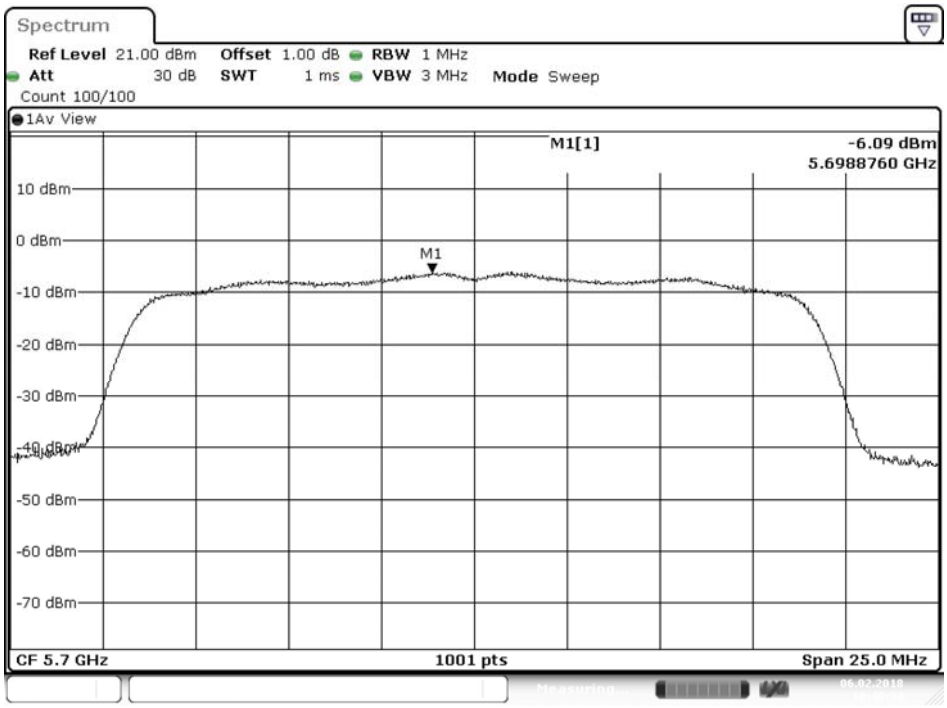
Date: 6.FEB.2018 10:35:17

Channel 116



Date: 6.FEB.2018 10:37:33

Channel 140

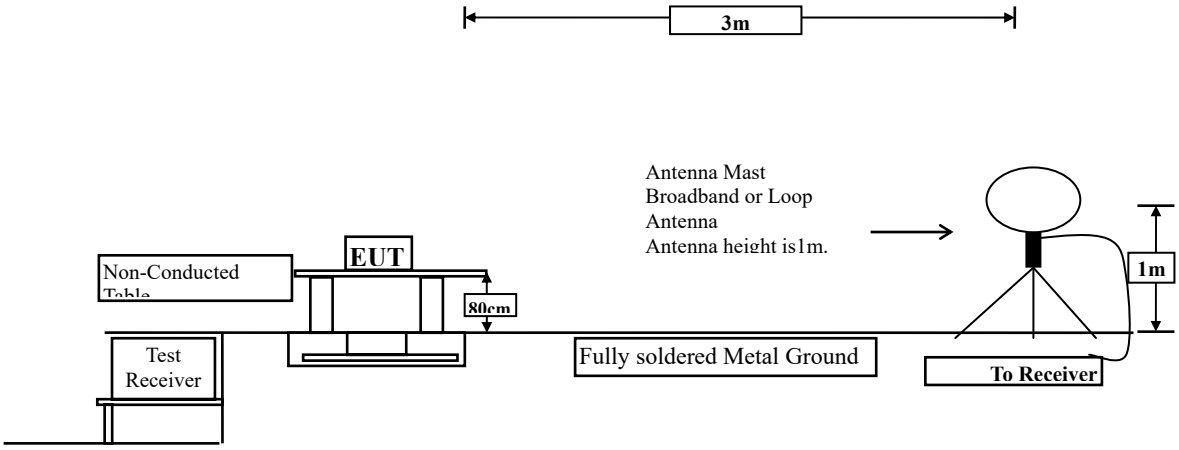


Date: 6.FEB.2018 10:40:34

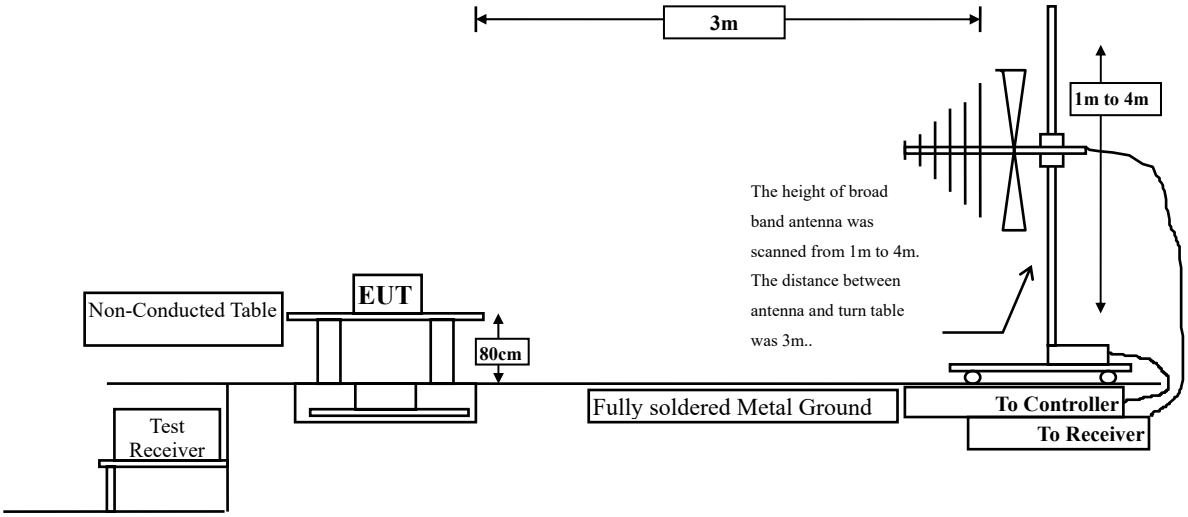
5. Radiated Emission

5.1. Test Setup

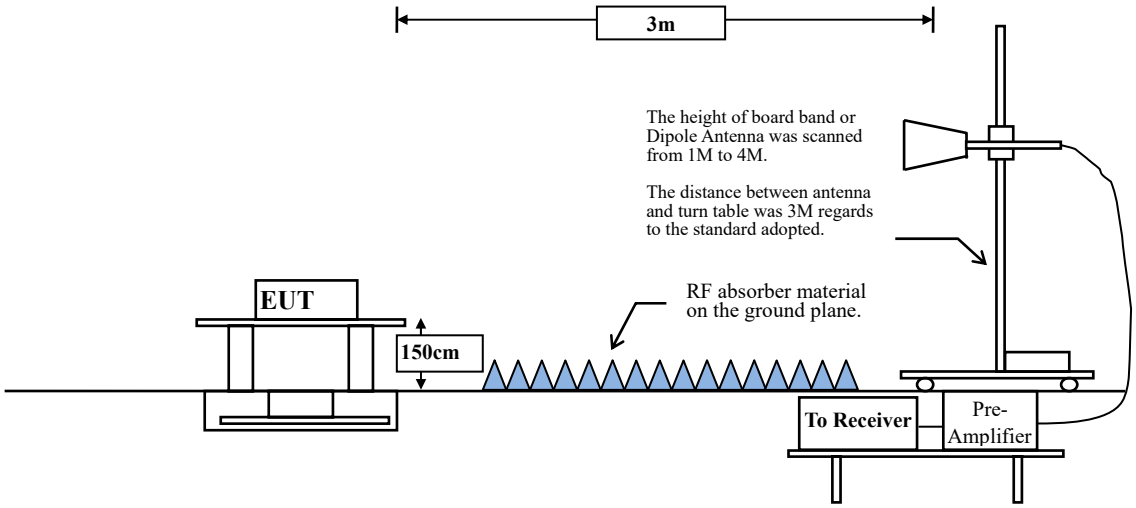
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



5.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBμV/m) = 20 log E field strength (uV/m)

5.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15.407 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The measurement frequency range form 9kHz - 10th Harmonic of fundamental was investigated.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW ≥ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW = 10Hz, when duty cycle ≥ 98 %

VBW ≥ 1/T, when duty cycle < 98 %

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	97.38	1.4000	714	10
802.11n20	96.15	1.3044	767	10

Note: Duty Cycle Refer to Section 8

5.4. Uncertainty

Horizontal polarization：

30-300MHz: ±4.08dB；300M-1GHz: ±3.86dB；1-18GHz: ±3.77dB；18-40GHz: ±3.98dB

Vertical polarization：

30-300MHz: ±4.81dB；300M-1GHz: ±3.87dB；1-18GHz：±3.83dB；18-40GHz: ±3.98dB

5.5. Test Result of Radiated Emission

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10360.000	3.504	42.320	45.825	-28.175	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10360.000	3.504	41.860	45.365	-28.635	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10440.000	3.544	41.460	45.004	-28.996	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10440.000	3.544	40.900	44.444	-29.556	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10480.000	3.639	41.690	45.330	-28.670	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10480.000	3.639	41.990	45.630	-28.370	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5260MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10520.000	3.670	42.550	46.220	-27.780	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10520.000	3.670	42.510	46.180	-27.820	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10600.000	3.746	42.130	45.876	-28.124	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10600.000	3.746	42.570	46.316	-27.684	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10640.000	3.806	42.550	46.356	-27.644	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10640.000	3.806	42.110	45.916	-28.084	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11000.000	4.343	41.400	45.743	-28.257	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11000.000	4.343	42.230	46.573	-27.427	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11160.000	4.723	42.740	47.463	-26.537	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11160.000	4.723	43.170	47.893	-26.107	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11400.000	5.312	39.930	45.241	-28.759	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11400.000	5.312	40.240	45.551	-28.449	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date	:	2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10360.000	3.504	43.730	47.235	-26.765	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10360.000	3.504	42.260	45.765	-28.235	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10440.000	3.544	42.020	45.564	-28.436	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10440.000	3.544	41.720	45.264	-28.736	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5240MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10480.000	3.639	42.090	45.730	-28.270	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10480.000	3.639	41.950	45.590	-28.410	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5260MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10520.000	3.670	42.620	46.290	-27.710	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10520.000	3.670	41.870	45.540	-28.460	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	:	Handy Skin Sensor Ⅱ
Test Item	:	Harmonic Radiated Emission Data
Test Mode	:	Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
Test Date	:	2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10600.000	3.746	43.470	47.216	-26.784	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10600.000	3.746	42.470	46.216	-27.784	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10640.000	3.806	42.550	46.356	-27.644	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
10640.000	3.806	42.900	46.706	-27.294	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11000.000	4.343	42.140	46.483	-27.517	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11000.000	4.343	41.690	46.033	-27.967	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11160.000	4.723	43.110	47.833	-26.167	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11160.000	4.723	42.580	47.303	-26.697	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)
Test Date : 2018/02/27

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11400.000	5.312	40.240	45.551	-28.449	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11400.000	5.312	40.740	46.051	-27.949	74.000
Average Detector:					
--					

Note:
1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Handy Skin Sensor Ⅱ
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)
Test Date : 2018/03/02

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
233.841	-12.250	44.176	31.927	-14.073	46.000
354.739	-8.623	45.025	36.402	-9.598	46.000
590.913	-3.286	31.342	28.056	-17.944	46.000
692.130	-1.808	31.462	29.654	-16.346	46.000
832.710	0.090	31.481	31.571	-14.429	46.000
997.188	2.178	35.782	37.961	-16.039	54.000
Vertical					
30.000	-12.125	47.776	35.651	-4.349	40.000
363.174	-8.388	38.767	30.379	-15.621	46.000
595.130	-3.184	34.576	31.391	-14.609	46.000
694.942	-1.755	36.091	34.336	-11.664	46.000
936.739	1.295	32.121	33.416	-12.584	46.000
995.783	2.154	36.556	38.710	-15.290	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Handy Skin Sensor Ⅱ
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)
Test Date : 2018/03/02

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
233.841	-12.250	44.176	31.927	-14.073	46.000
354.739	-8.623	45.025	36.402	-9.598	46.000
593.725	-3.219	32.277	29.059	-16.941	46.000
694.942	-1.755	37.013	35.258	-10.742	46.000
791.942	-0.419	37.639	37.220	-8.780	46.000
997.188	2.178	35.782	37.961	-16.039	54.000
Vertical					
30.000	-12.125	48.124	35.999	-4.001	40.000
363.174	-8.388	37.949	29.561	-16.439	46.000
593.725	-3.219	33.377	30.159	-15.841	46.000
693.536	-1.782	37.145	35.363	-10.637	46.000
936.739	1.295	30.694	31.989	-14.011	46.000
995.783	2.154	31.025	33.179	-20.821	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Handy Skin Sensor Ⅱ
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)
Test Date : 2018/03/02

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
232.435	-12.337	38.683	26.346	-19.654	46.000
361.768	-8.427	41.531	33.104	-12.896	46.000
455.957	-6.065	34.713	28.648	-17.352	46.000
693.536	-1.782	39.418	37.636	-8.364	46.000
791.942	-0.419	37.579	37.160	-8.840	46.000
1000.000	2.220	33.071	35.291	-18.709	54.000
Vertical					
30.000	-12.125	48.266	36.141	-3.859	40.000
363.174	-8.388	42.438	34.050	-11.950	46.000
551.551	-4.230	35.659	31.429	-14.571	46.000
693.536	-1.782	37.145	35.363	-10.637	46.000
936.739	1.295	30.778	32.073	-13.927	46.000
997.188	2.178	39.854	42.033	-11.967	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Handy Skin Sensor Ⅱ
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
Test Date : 2018/03/02

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
193.072	-13.391	46.777	33.386	-10.114	43.500
358.957	-8.505	47.242	38.737	-7.263	46.000
530.464	-4.669	35.527	30.858	-15.142	46.000
692.130	-1.808	38.091	36.283	-9.717	46.000
791.942	-0.419	37.327	36.908	-9.092	46.000
1000.000	2.220	36.178	38.398	-15.602	54.000
Vertical					
42.652	-10.960	45.644	34.684	-5.316	40.000
357.551	-8.546	39.820	31.274	-14.726	46.000
593.725	-3.219	35.998	32.780	-13.220	46.000
694.942	-1.755	36.318	34.563	-11.437	46.000
791.942	-0.419	32.473	32.054	-13.946	46.000
997.188	2.178	37.955	40.134	-13.866	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Handy Skin Sensor Ⅱ
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
Test Date : 2018/03/02

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
167.768	-10.766	40.701	29.935	-13.565	43.500
298.507	-9.933	42.801	32.868	-13.132	46.000
363.174	-8.388	42.937	34.549	-11.451	46.000
693.536	-1.782	36.702	34.920	-11.080	46.000
791.942	-0.419	38.332	37.913	-8.087	46.000
997.188	2.178	36.240	38.419	-15.581	54.000
Vertical					
30.000	-12.125	48.565	36.440	-3.560	40.000
364.580	-8.349	42.173	33.824	-12.176	46.000
551.551	-4.230	34.287	30.057	-15.943	46.000
693.536	-1.782	32.211	30.429	-15.571	46.000
936.739	1.295	30.216	31.511	-14.489	46.000
997.188	2.178	35.346	37.525	-16.475	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Handy Skin Sensor Ⅱ
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
Test Date : 2018/03/02

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
193.072	-13.391	46.454	33.063	-10.437	43.500
363.174	-8.388	37.669	29.281	-16.719	46.000
595.130	-3.184	32.694	29.509	-16.491	46.000
693.536	-1.782	40.406	38.624	-7.376	46.000
791.942	-0.419	36.214	35.795	-10.205	46.000
998.594	2.199	34.979	37.178	-16.822	54.000
Vertical					
30.000	-12.125	48.565	36.440	-3.560	40.000
364.580	-8.349	42.173	33.824	-12.176	46.000
595.130	-3.184	36.068	32.883	-13.117	46.000
696.348	-1.731	35.454	33.724	-12.276	46.000
865.043	0.511	31.055	31.565	-14.435	46.000
998.594	2.199	36.333	38.532	-15.468	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Handy Skin Sensor Ⅱ
Test Item : General Radiated Emission
Test Mode : Mode 3: Charger
Test Date : 2018/03/02

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
235.246	-12.163	46.708	34.546	-11.454	46.000
375.826	-8.022	43.919	35.897	-10.103	46.000
472.826	-5.776	41.134	35.358	-10.642	46.000
692.130	-1.808	38.218	36.410	-9.590	46.000
791.942	-0.419	32.889	32.470	-13.530	46.000
865.043	0.511	29.816	30.326	-15.674	46.000
Vertical					
30.000	-12.125	47.231	35.106	-4.894	40.000
215.565	-12.874	44.519	31.644	-11.856	43.500
395.507	-7.467	49.719	42.252	-3.748	46.000
479.855	-5.656	39.490	33.833	-12.167	46.000
692.130	-1.808	34.246	32.438	-13.562	46.000
960.638	1.605	33.022	34.627	-19.373	54.000

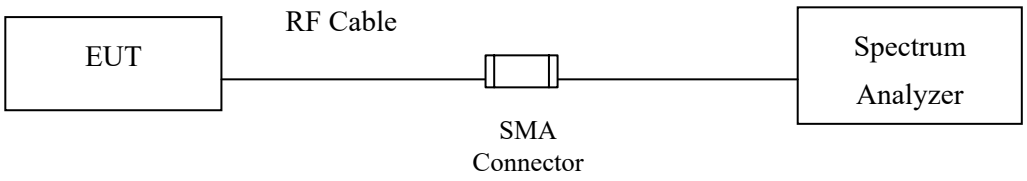
Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. No emission found between lowest internal used/generated frequency to 30MHz.

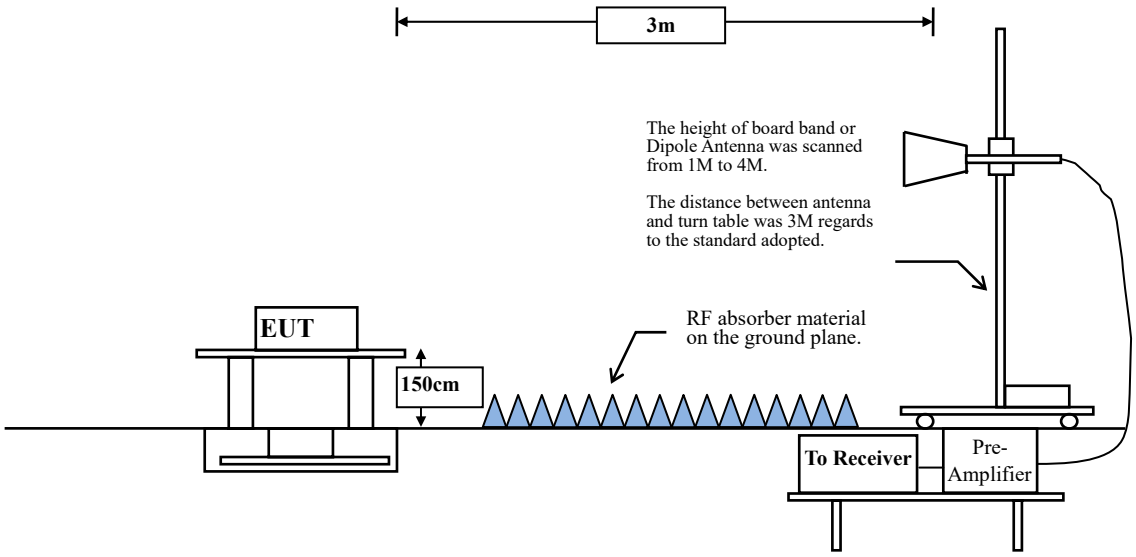
6. Band Edge

6.1. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



6.2. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBμV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBμV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW ≥ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW = 10Hz, when duty cycle ≥ 98 %

VBW ≥ 1/T, when duty cycle < 98 %

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	97.38	1.4000	714	10
802.11n20	96.15	1.3044	767	10

Note: Duty Cycle Refer to Section 8

6.4. Uncertainty

Conducted: ±1.23dB

Radiated:

Horizontal polarization：1-18GHz: ±3.77dB

Vertical polarization：1-18GHz : ±3.83dB

6.5. Test Result of Band Edge

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5148.841	18.331	41.889	60.219	74.00	54.00	Pass
36 (Peak)	5150.000	18.335	39.569	57.903	74.00	54.00	Pass
36 (Peak)	5180.000	18.402	78.047	96.449	--	--	--
36 (Average)	5150.000	18.335	21.136	39.470	74.00	54.00	Pass
36 (Average)	5179.130	18.400	65.074	83.474	--	--	--

Figure Channel 36: Horizontal (Peak)

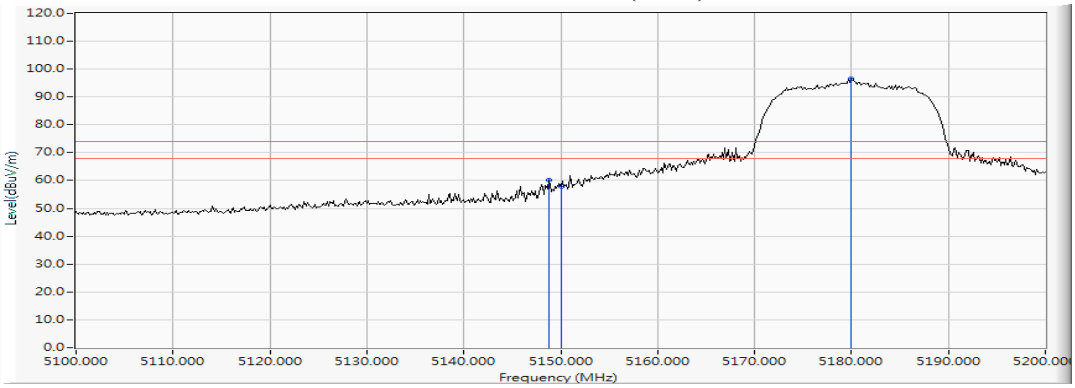
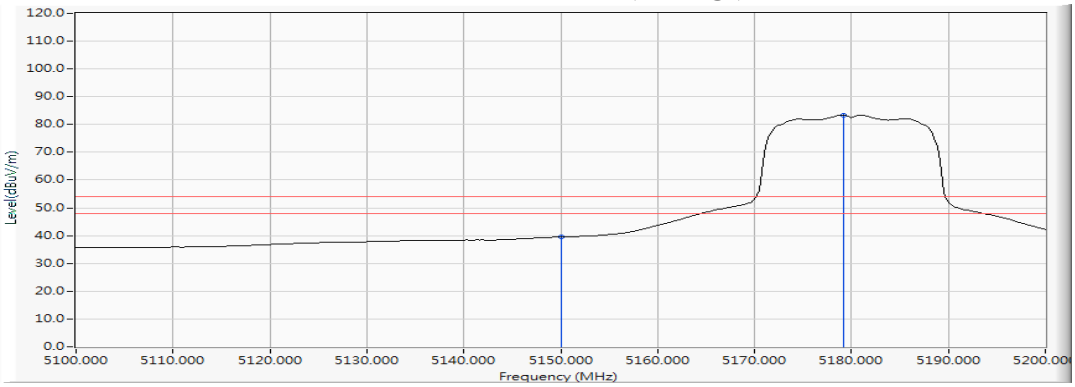


Figure Channel 36: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5149.275	18.331	38.817	57.149	74.00	54.00	Pass
36 (Peak)	5150.000	18.335	37.178	55.512	74.00	54.00	Pass
36 (Peak)	5180.000	18.402	75.641	94.043	--	--	--
36 (Average)	5150.000	18.335	19.747	38.081	74.00	54.00	Pass
36 (Average)	5180.870	18.405	61.788	80.193	--	--	--

Figure Channel 36: Vertical (Peak)

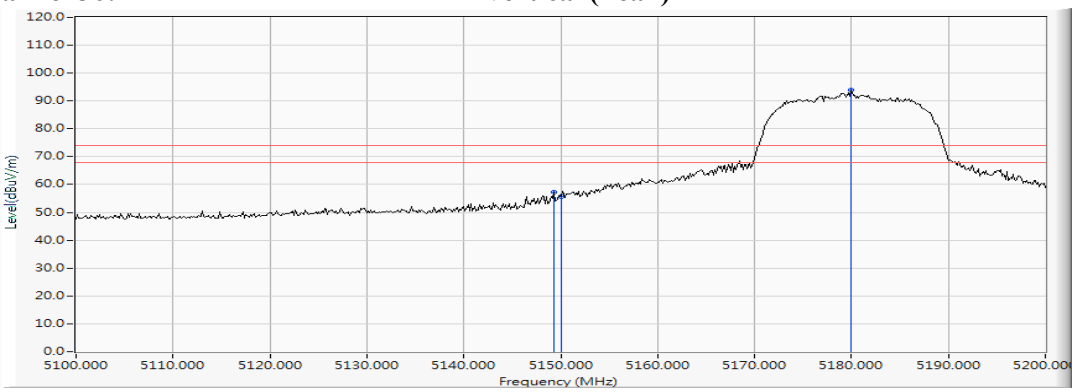
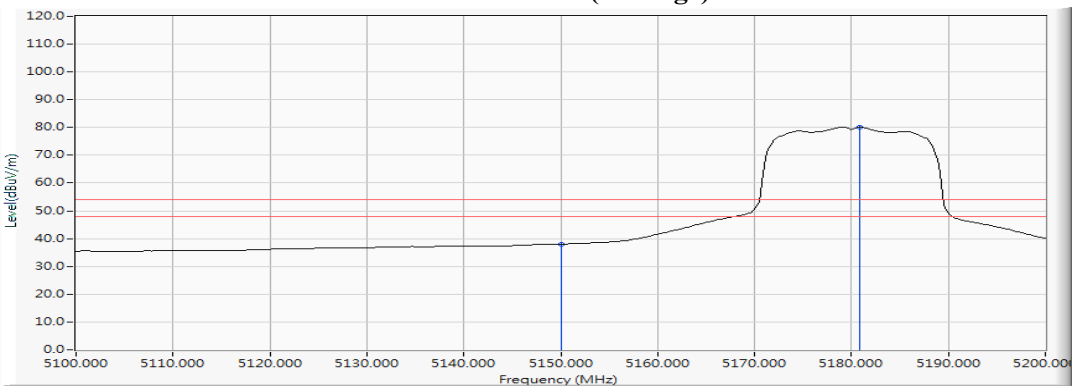


Figure Channel 36: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
64 (Peak)	5319.855	18.744	78.663	97.406	--	--	--
64 (Peak)	5350.000	18.833	41.143	59.976	74.00	54.00	Pass
64 (Average)	5320.870	18.745	65.017	83.762	--	--	--
64 (Average)	5350.000	18.833	19.969	38.802	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

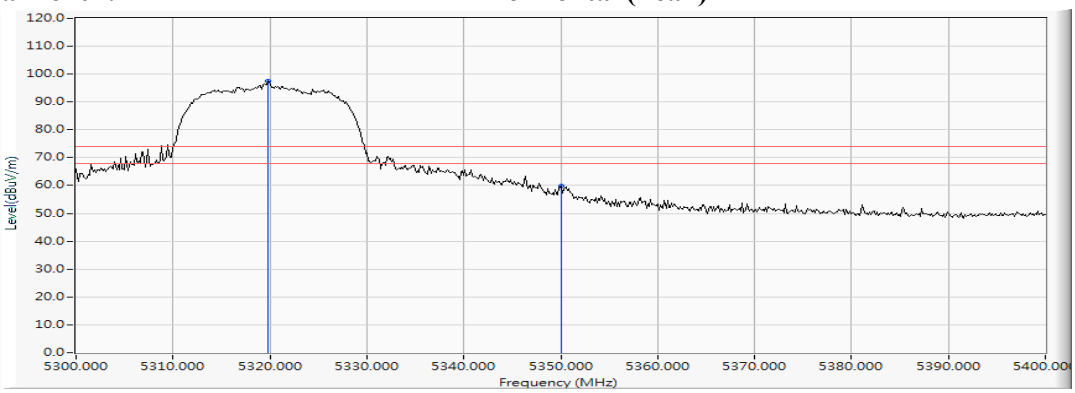
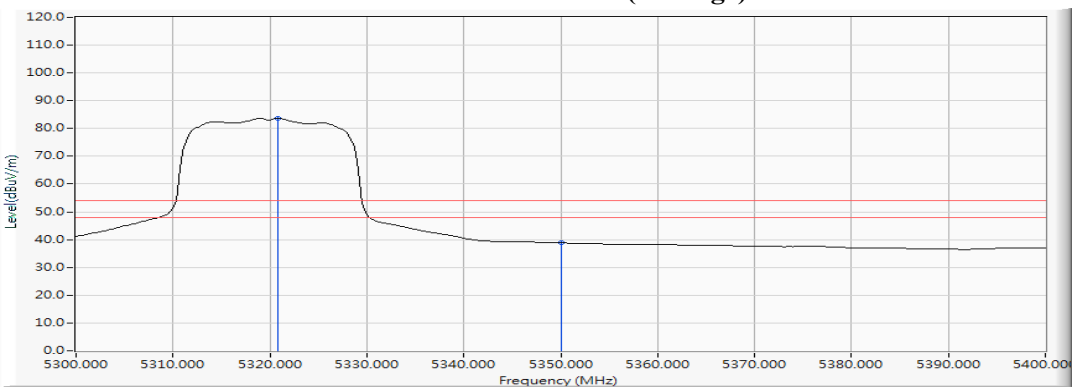


Figure Channel 64: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
64 (Peak)	5319.855	18.744	74.438	93.181	--	--	--
64 (Peak)	5350.000	18.833	34.662	53.495	74.00	54.00	Pass
64 (Peak)	5355.217	18.839	36.343	55.182	74.00	54.00	Pass
64 (Average)	5320.870	18.745	60.894	79.639	--	--	--
64 (Average)	5350.000	18.833	18.730	37.563	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

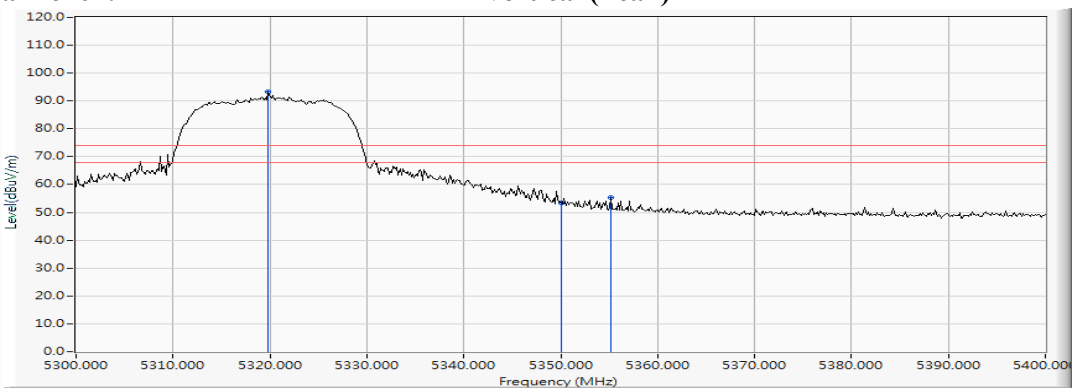
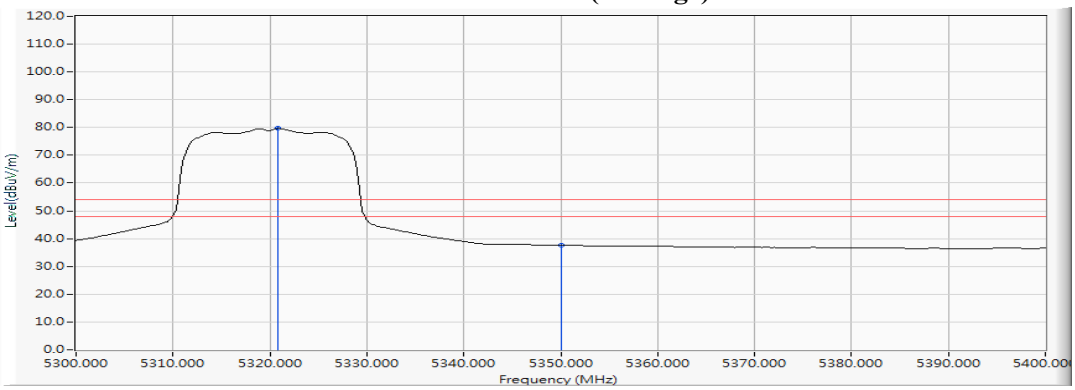


Figure Channel 64: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
100 (Peak)	5457.971	19.094	38.503	57.598	74.00	54.00	Pass
100 (Peak)	5460.000	19.097	37.216	56.313	74.00	54.00	Pass
100 (Peak)	5500.725	19.194	77.025	96.219	--	--	--
100 (Average)	5449.130	19.062	20.873	39.935	74.00	54.00	Pass
100 (Average)	5460.000	19.097	20.763	39.860	74.00	54.00	Pass
100 (Average)	5500.870	19.194	64.936	84.130	--	--	--

Figure Channel 100: Horizontal (Peak)

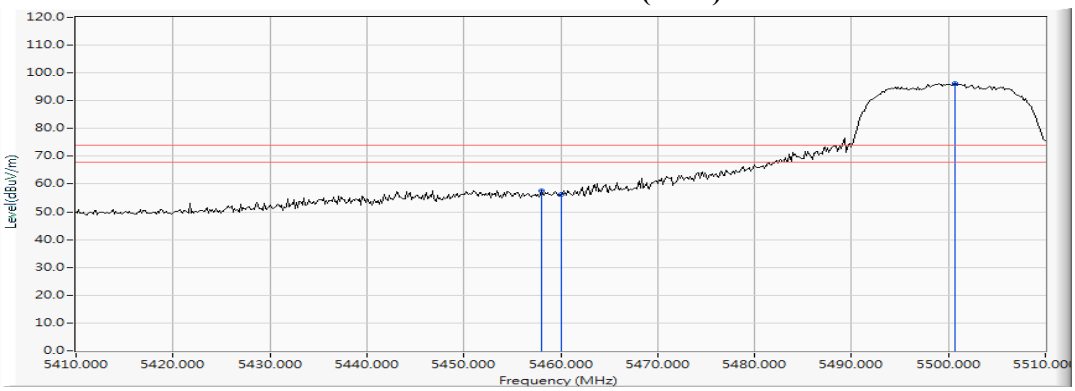
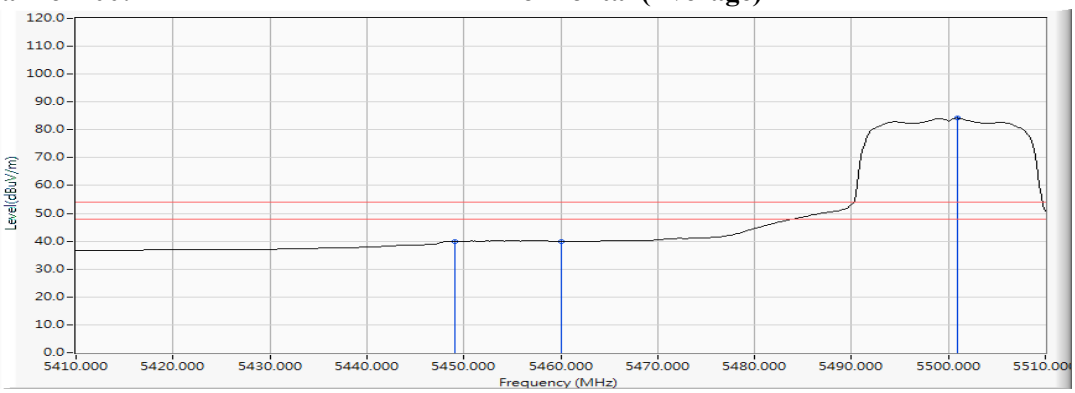


Figure Channel 100: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
100 (Peak)	5458.116	19.094	34.758	53.853	74.00	54.00	Pass
100 (Peak)	5460.000	19.097	34.369	53.466	74.00	54.00	Pass
100 (Peak)	5499.710	19.193	73.119	92.312	--	--	--
100 (Average)	5449.420	19.062	19.670	38.733	74.00	54.00	Pass
100 (Average)	5460.000	19.097	19.029	38.126	74.00	54.00	Pass
100 (Average)	5500.870	19.194	60.462	79.656	--	--	--

Figure Channel 100: Vertical (Peak)

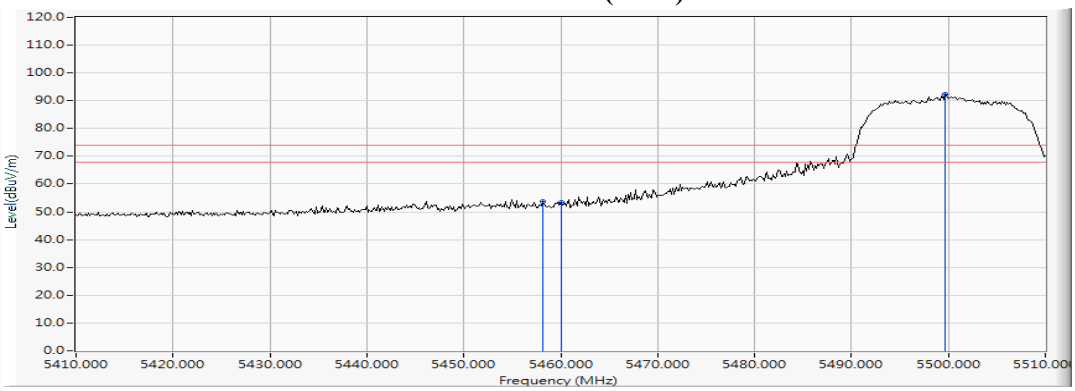


Figure Channel 100: Vertical (Average)

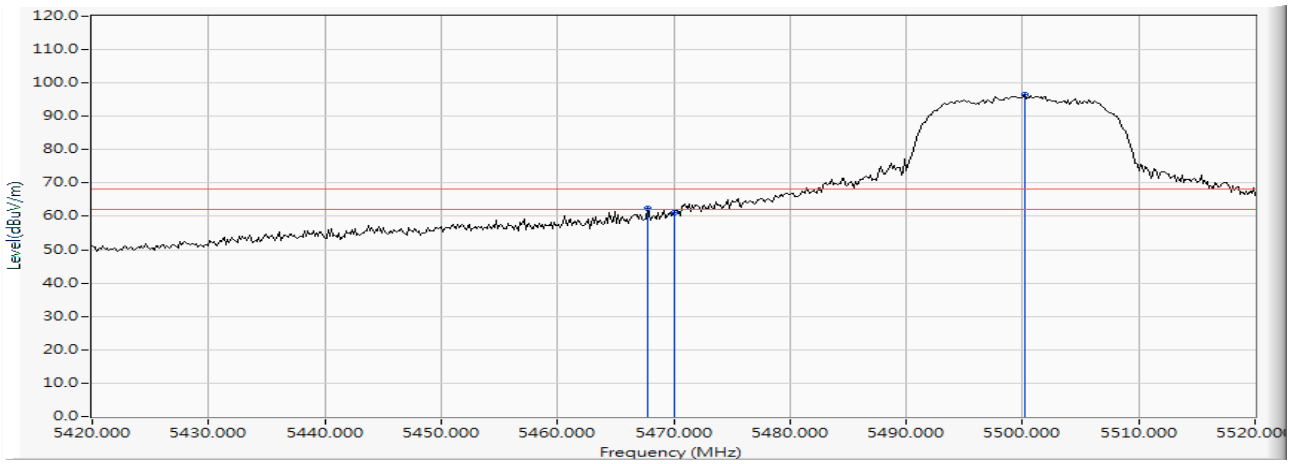
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

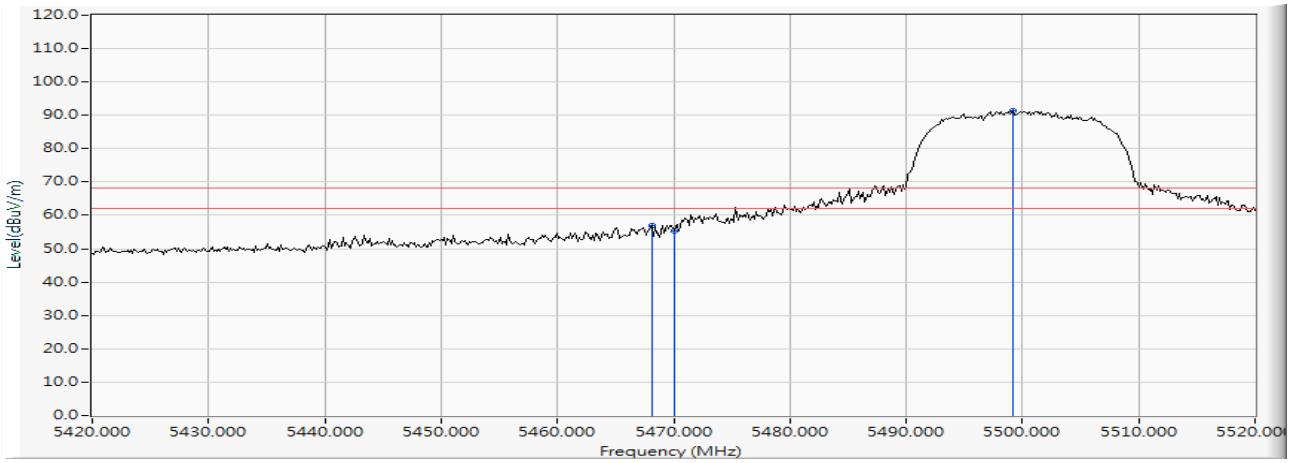
Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2018/02/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Horizontal	5467.826	19.107	43.267	62.374	-5.846	68.220	Pass
Horizontal	5470.000	19.110	42.022	61.132	-7.088	68.220	Pass
Horizontal	5500.145	19.193	77.364	96.557	--	--	--



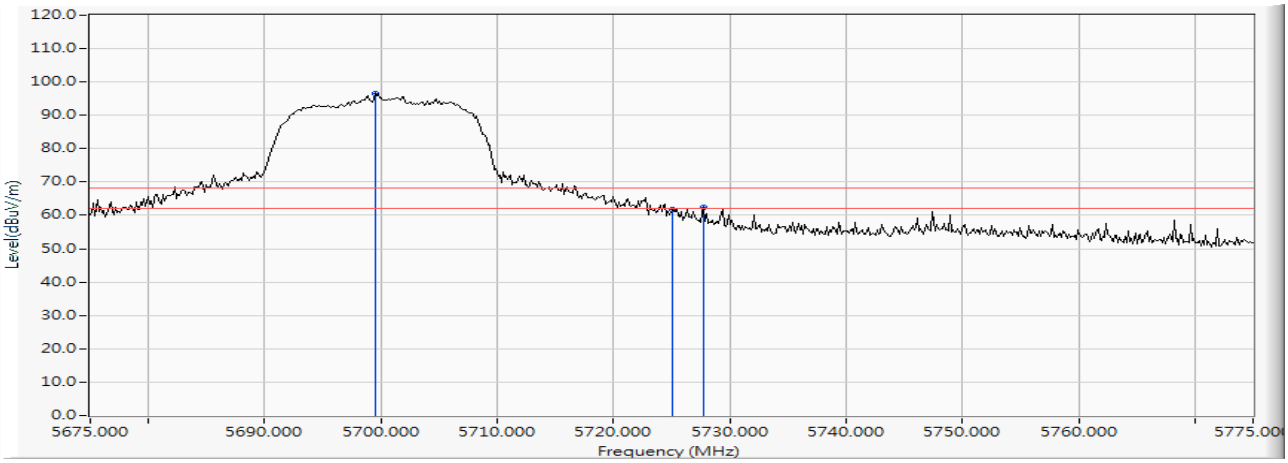
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Vertical	5468.116	19.108	37.963	57.071	-11.149	68.220	Pass
Vertical	5470.000	19.110	36.236	55.346	-12.874	68.220	Pass
Vertical	5499.130	19.192	72.052	91.245	--	--	--



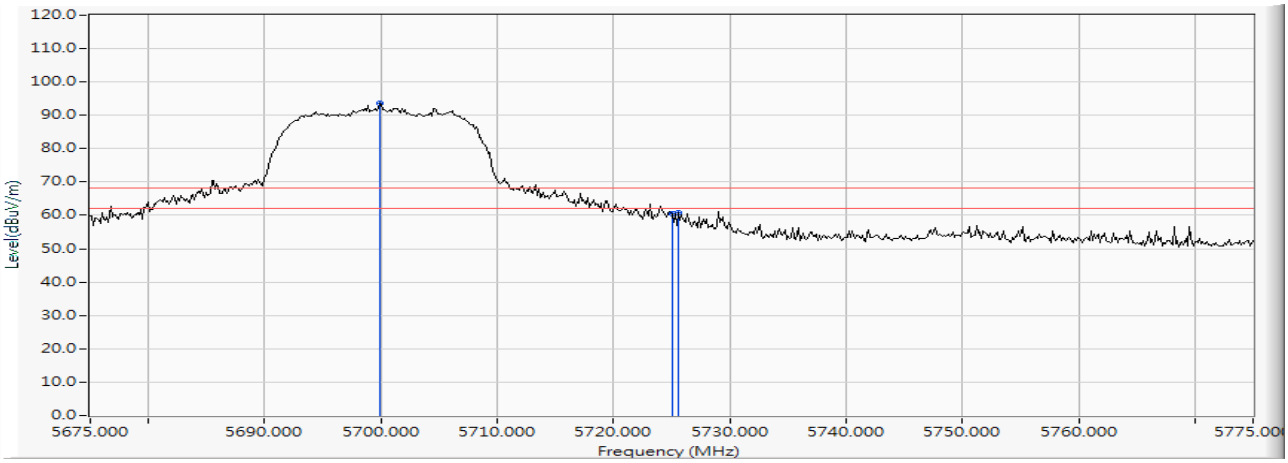
Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)
Test Date : 2018/02/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Horizontal	5699.493	19.657	77.003	96.661	--	--	--
Horizontal	5725.000	19.725	41.930	61.655	-6.565	68.220	Pass
Horizontal	5727.754	19.732	42.765	62.497	-5.723	68.220	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Vertical	5699.928	19.659	73.838	93.497	--	--	--
Vertical	5725.000	19.725	40.832	60.557	-7.663	68.220	Pass
Vertical	5725.580	19.727	40.939	60.666	-7.554	68.220	Pass



Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5149.275	18.331	38.531	56.863	74.00	54.00	Pass
36 (Peak)	5150.000	18.335	37.940	56.274	74.00	54.00	Pass
36 (Peak)	5177.971	18.397	76.540	94.936	--	--	--
36 (Average)	5150.000	18.335	19.141	37.475	74.00	54.00	Pass
36 (Average)	5179.130	18.400	63.646	82.046	--	--	--

Figure Channel 36: Horizontal (Peak)

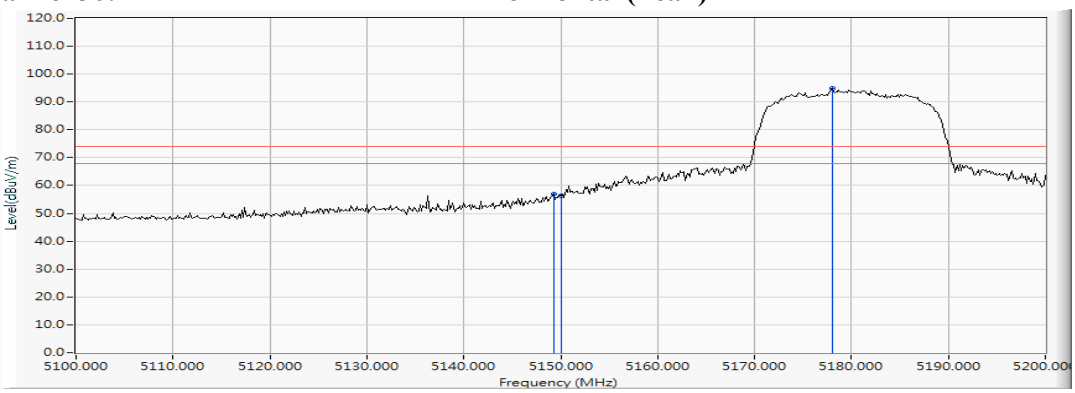
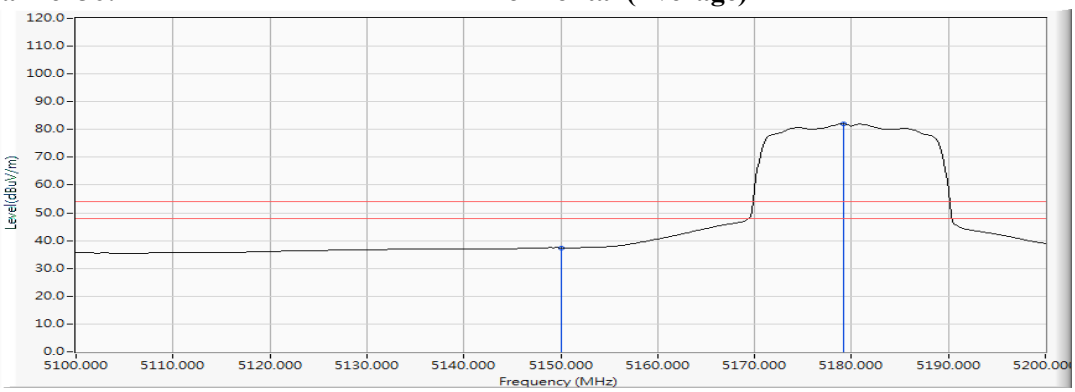


Figure Channel 36: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5148.841	18.331	36.029	54.359	74.00	54.00	Pass
36 (Peak)	5150.000	18.335	34.244	52.578	74.00	54.00	Pass
36 (Peak)	5177.971	18.397	72.898	91.294	--	--	--
36 (Average)	5150.000	18.335	18.175	36.509	74.00	54.00	Pass
36 (Average)	5179.130	18.400	60.296	78.696	--	--	--

Figure Channel 36: Vertical (Peak)

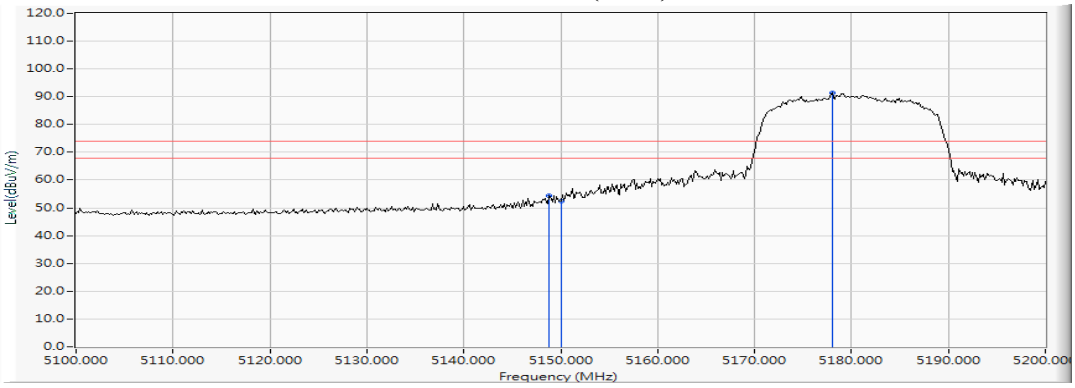
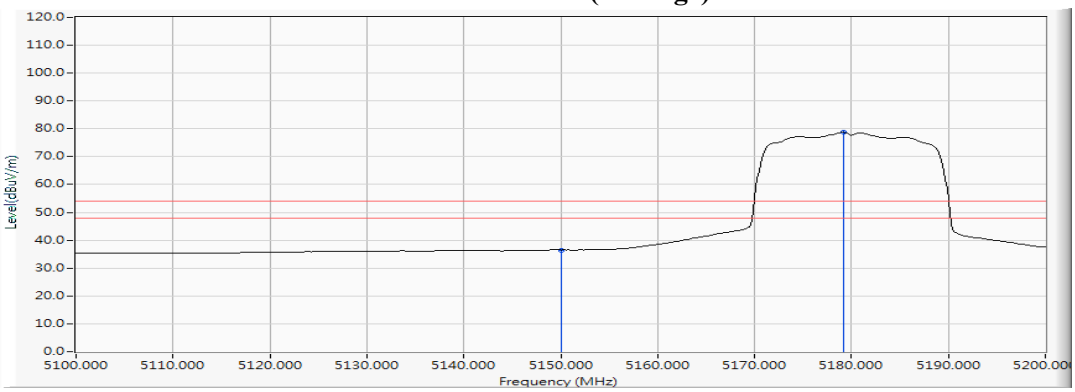


Figure Channel 36: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
64 (Peak)	5317.971	18.739	76.032	94.771	--	--	--
64 (Peak)	5350.000	18.833	34.749	53.582	74.00	54.00	Pass
64 (Peak)	5352.174	18.835	36.155	54.991	74.00	54.00	Pass
64 (Average)	5320.870	18.745	63.305	82.050	--	--	--
64 (Average)	5350.000	18.833	18.777	37.610	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

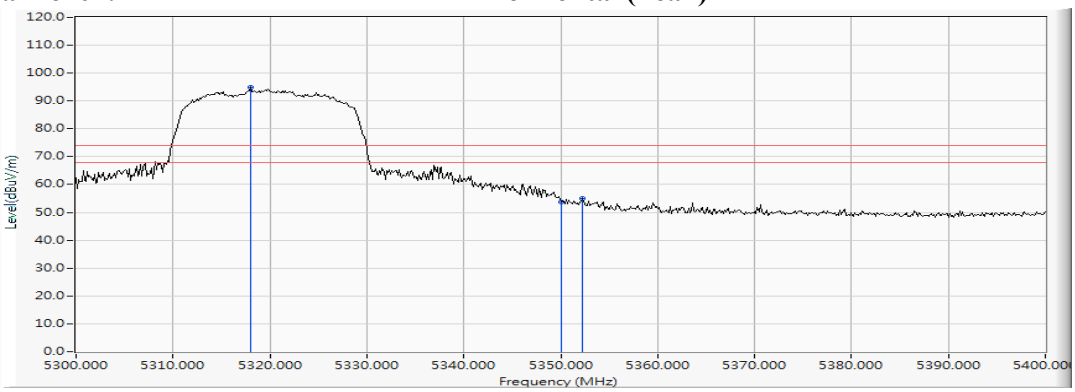
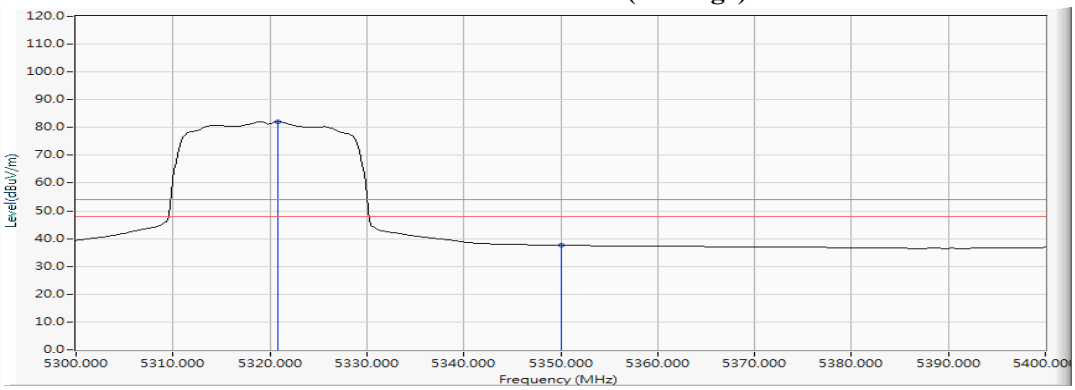


Figure Channel 64: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
64 (Peak)	5318.986	18.741	71.860	90.601	--	--	--
64 (Peak)	5350.000	18.833	33.438	52.271	74.00	54.00	Pass
64 (Peak)	5351.014	18.834	33.938	52.772	74.00	54.00	Pass
64 (Average)	5320.870	18.745	59.403	78.148	--	--	--
64 (Average)	5350.000	18.833	18.005	36.838	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

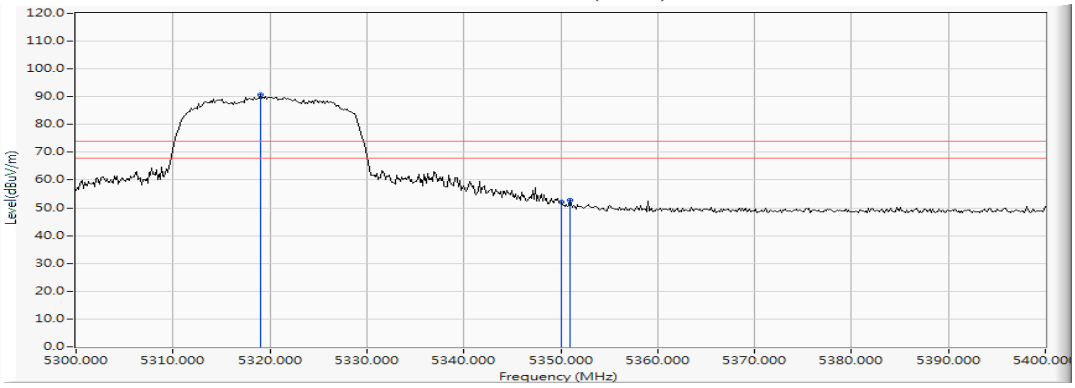
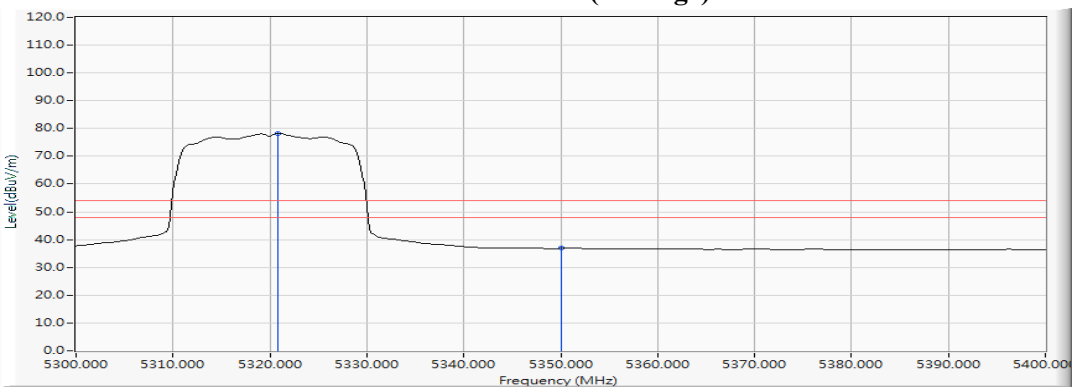


Figure Channel 64: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
100 (Peak)	5459.565	19.098	36.494	55.591	74.00	54.00	Pass
100 (Peak)	5460.000	19.097	32.966	52.063	74.00	54.00	Pass
100 (Peak)	5497.971	19.191	75.364	94.556	--	--	--
100 (Average)	5451.014	19.070	19.732	38.802	74.00	54.00	Pass
100 (Average)	5460.000	19.097	19.163	38.260	74.00	54.00	Pass
100 (Average)	5501.014	19.194	62.784	81.978	--	--	--

Figure Channel 100: Horizontal (Peak)

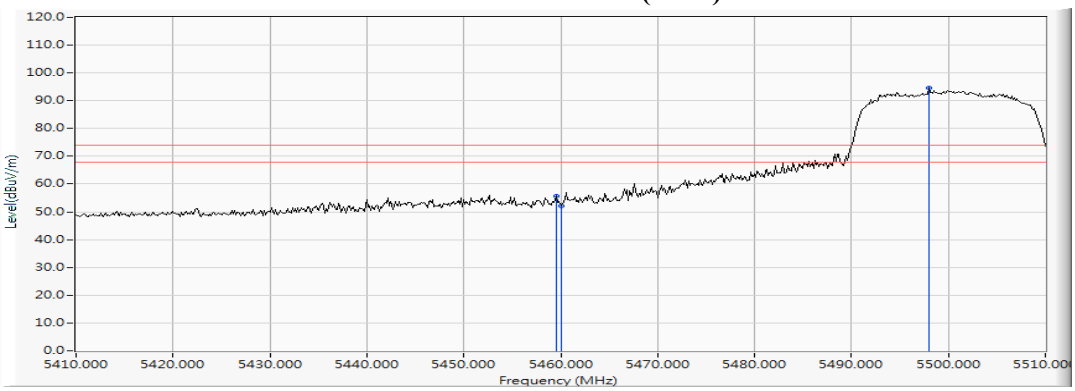
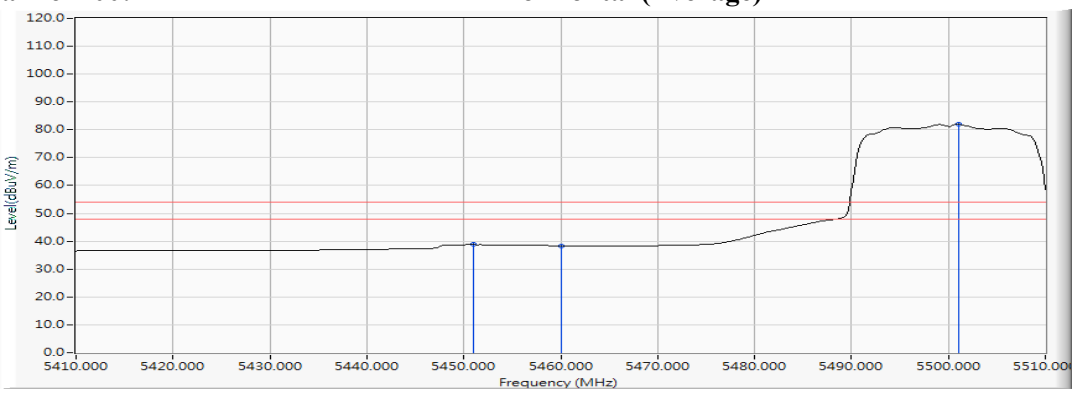


Figure Channel 100: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2018/02/26

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
100 (Peak)	5458.261	19.095	33.170	52.265	74.00	54.00	Pass
100 (Peak)	5460.000	19.097	32.754	51.851	74.00	54.00	Pass
100 (Peak)	5499.130	19.192	71.107	90.300	--	--	--
100 (Average)	5447.681	19.056	18.758	37.814	74.00	54.00	Pass
100 (Average)	5460.000	19.097	18.130	37.227	74.00	54.00	Pass
100 (Average)	5499.130	19.192	58.299	77.492	--	--	--

Figure Channel 100: Vertical (Peak)

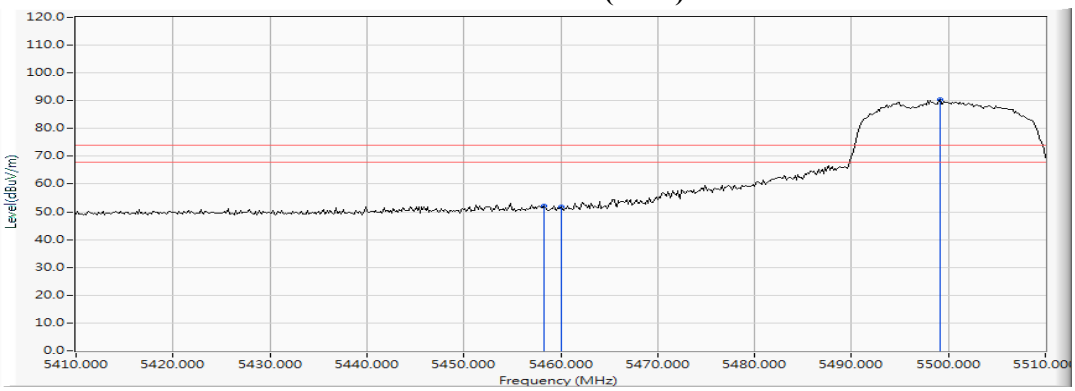
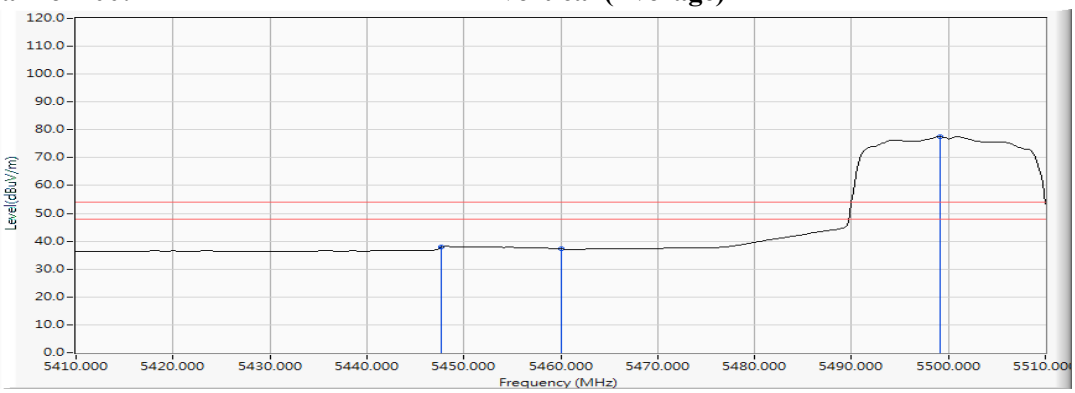


Figure Channel 100: Vertical (Average)



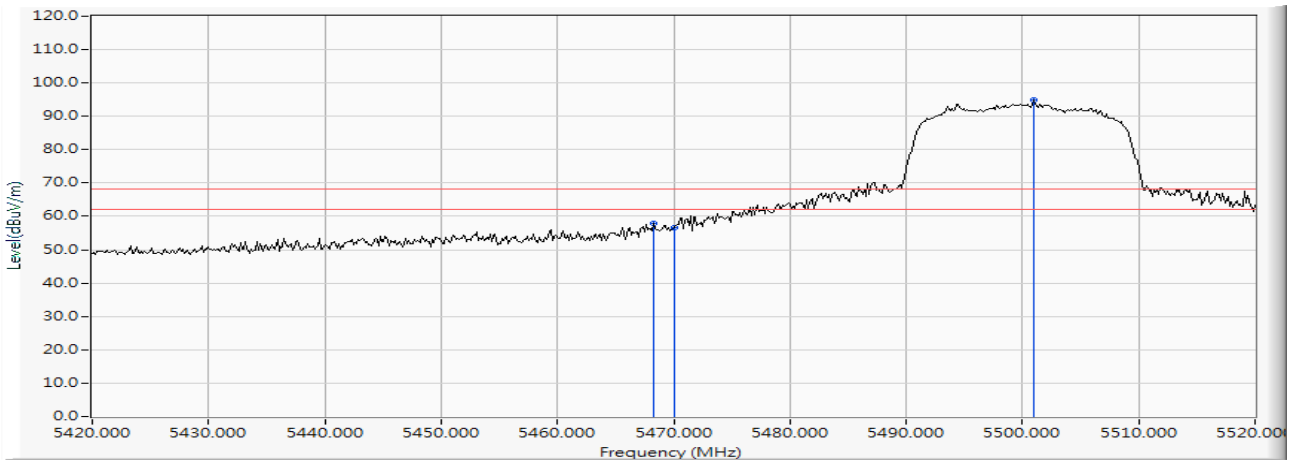
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

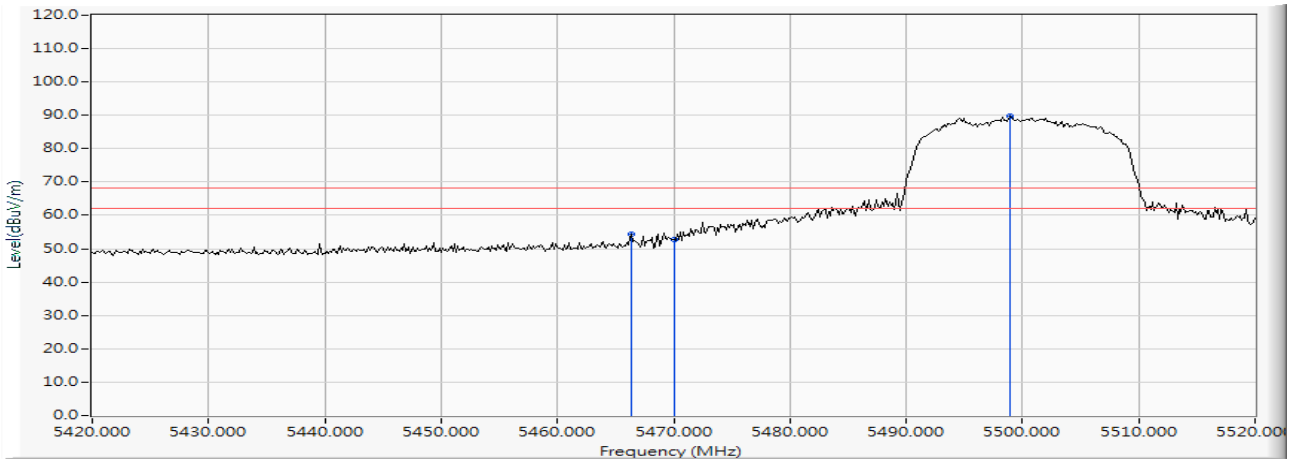
Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2018/02/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Horizontal	5468.261	19.108	38.919	58.027	-10.193	68.220	Pass
Horizontal	5470.000	19.110	37.659	56.769	-11.451	68.220	Pass
Horizontal	5501.014	19.194	75.627	94.821	--	--	--



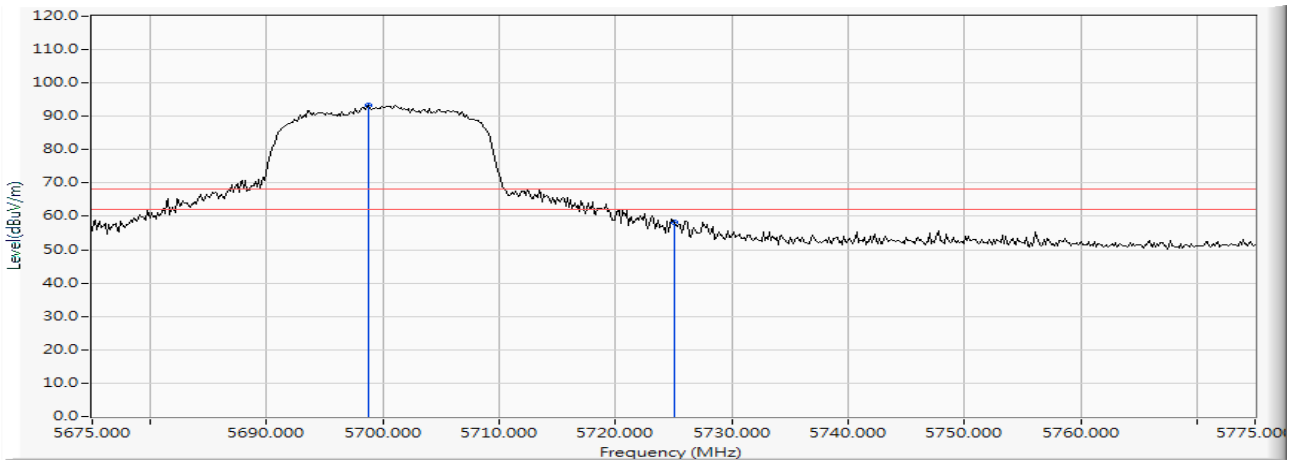
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Vertical	5466.377	19.105	35.304	54.409	-13.811	68.220	Pass
Vertical	5470.000	19.110	33.751	52.861	-15.359	68.220	Pass
Vertical	5498.986	19.192	70.507	89.700	--	--	--



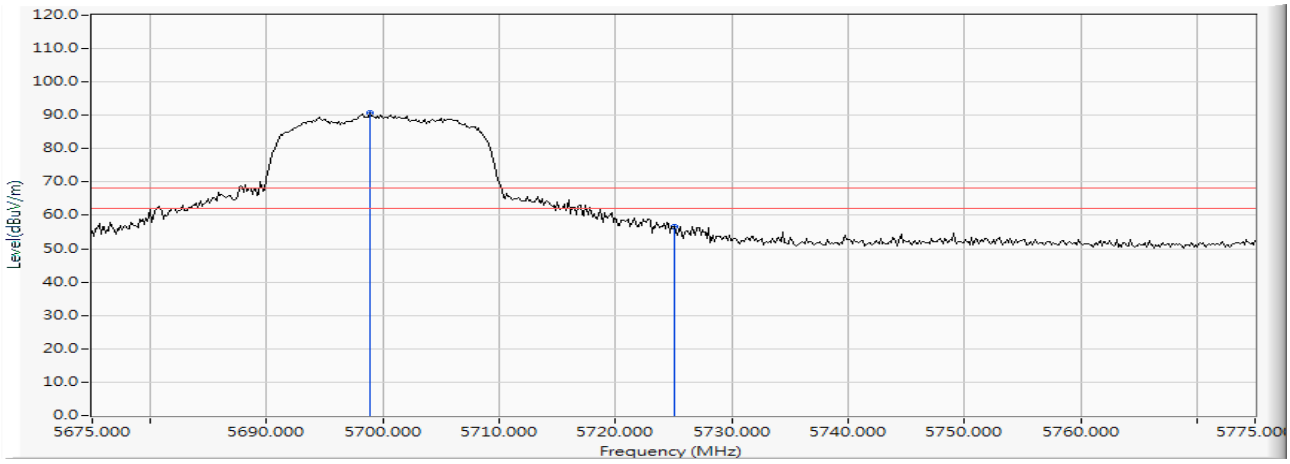
Product : Handy Skin Sensor Ⅱ
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)
Test Date : 2018/02/26

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Horizontal	5698.768	19.656	73.574	93.230	--	--	--
Horizontal	5725.000	19.725	38.662	58.387	-9.833	68.220	Pass

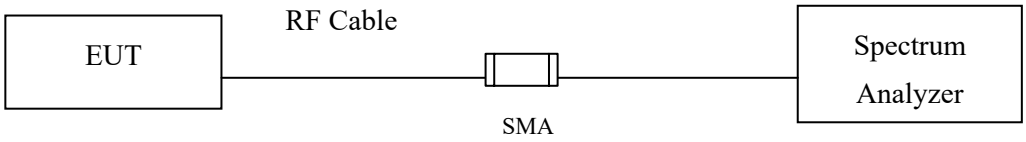


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Vertical	5698.913	19.657	71.025	90.681	--	--	--
Vertical	5725.000	19.725	37.048	56.773	-11.447	68.220	Pass



7. Duty Cycle

7.1. Test Setup



7.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to U-NII test procedure of KDB789033 for compliance to FCC 47CFR 15.407 requirements.

7.3. Uncertainty

± 2.31msec

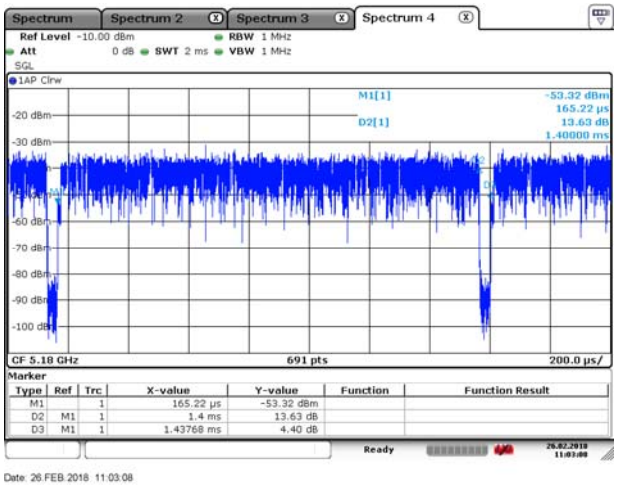
7.4. Test Result of Duty Cycle

Product : Handy Skin Sensor Ⅱ
Test Item : Duty Cycle
Test Mode : Transmit

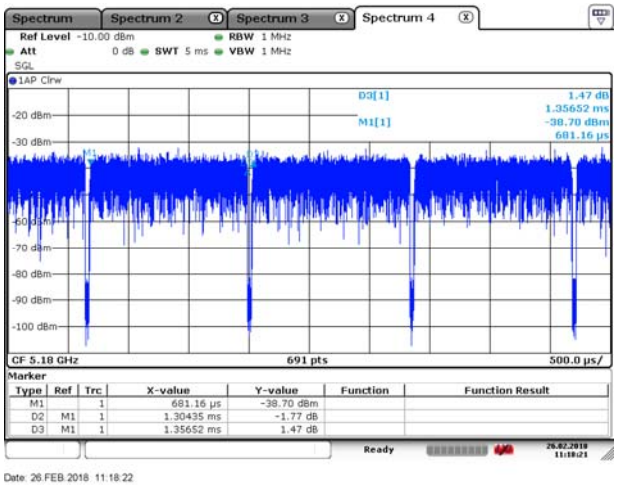
Duty Cycle Formula:
Duty Cycle = Ton / (Ton + Toff)
Duty Factor = 10 Log (1/Duty Cycle)
Results:

Mode	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11 a	1.4000	1.4377	97.38	0.12
802.11 n20	1.3044	1.3565	96.15	0.17

802.11a



802.11n20



8. EMI Reduction Method During Compliance Testing

No modification was made during testing.