

FCC Part 15C Measurement and Test Report

For

TOPICON HK LTD

Room 2113-2114, Tower C, Huangdu Plaza, Yitian Road, Futian District, Shenzhen, China

FCC ID: 2AHAF-MDT7P

FCC Rule(s): FCC Part 15C

Product Description: GPS product

Tested Model: MDT7P

Report No.: STR16018178I-3

Tested Date: 2016-01-22 to 2016-03-18

Issued Date: 2016-03-18

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



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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: TOPICON HK LTD

Address of applicant: Room 2113-2114, Tower C, Huangdu Plaza, Yitian

Road, Futian District, Shenzhen, China

Manufacturer: TOPICON HK LTD

Address of manufacturer: Room 2113-2114, Tower C, Huangdu Plaza, Yitian

Road, Futian District, Shenzhen, China

General Description of EUT	
Product Name:	GPS product
Trade Name:	CalAmp
Model No.:	MDT7P
Adding Model(s):	MDT7PXXX(XXX=0-100), MDT720, MDT730
Hardware Version:	Calamp_2.8.7
Software Version:	MDT720-V40
Rated Voltage:	AC 120V/60Hz
Power Adapter Model:	K-E30502000E1

Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model MDT7P, but the circuit and the electronic construction do not change, declared by the manufacturer.

Technical Characteristics of EU	Т
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz
RF Output Power:	15.32 dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11
Channel Separation:	5MHz
Type of Antenna:	Integral
Antenna Gain:	3 dBi
Lowest Internal Frequency	32.768KHz



1.2 Test Standards

The following report is prepared on behalf of the TOPICON HK LTD in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

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

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

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices, and ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. The measurement guide KDB 558074 D01 v03r04 for digital transmission systems shall be performed also.

1.4 Test Facility

FCC - Registration No.: 934118

Shenzhen SEM. Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

Industry Canada (IC) Registration No.: 11464A

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

CNAS Registration No.: L4062

Shenzhen SEM. Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101).



1.5 EUT Setup and Test Mode

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

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

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

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

Auxiliary Equipment List and Details				
Description Manufacturer Model Serial Number				

1.6 Measurement Uncertainty

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

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1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2015-06-17	2016-06-16
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2015-06-17	2016-06-16
Amplifier	Agilent	8447F	3113A06717	2015-06-17	2016-06-16
Amplifier	C&D	PAP-1G18	2002	2015-06-17	2016-06-16
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2015-06-17	2016-06-16
Horn Antenna	ETS	3117	00086197	2015-06-17	2016-06-16
Horn Antenna	ETS	3116B	00088203	2015-06-17	2016-06-16
Loop Antenna	Schwarz beck	FMZB 1516	9773	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-06-17	2016-06-16
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-06-17	2016-06-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-06-17	2016-06-16



2. SUMMARY OF TEST RESULTS

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

N/A: not applicable



3. RF Exposure

3.1 Standard Applicable

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

3.2 Test Result

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



4. Antenna Requirement

4.1 Standard Applicable

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

4.2 Evaluation Information

This product has an integral antenna, fulfill the requirement of this section.



5. Power Spectral Density

5.1 Standard Applicable

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

5.2 Test Procedure

According to the KDB 558074 D01 v03r04, such specifications require that the same method as used to determine the conducted output power shall also be used to determine the power spectral density. The test method of power spectral density as below:

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

5.3 Environmental Conditions

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



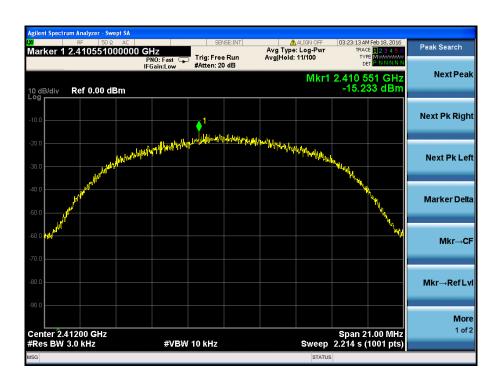
5.4 Summary of Test Results/Plots

Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
	2412	-15.233	8
802.11b	2437	-14.561	8
	2462	-14.718	8
802.11g	2412	-17.748	8
	2437	-17.167	8
	2462	-17.276	8
	2412	-19.198	8
802.11n HT20	2437	-18.984	8
	2462	-19.355	8

Please refer to the following test plots:



802.11b-Low Channel

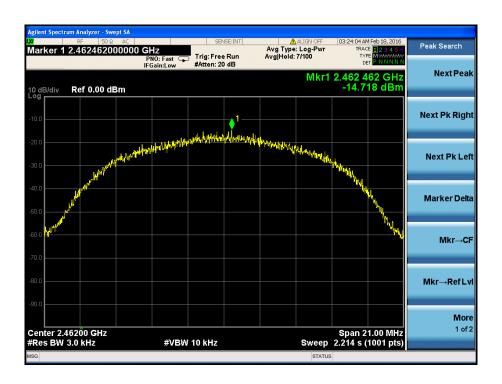


802.11b-Middle Channel

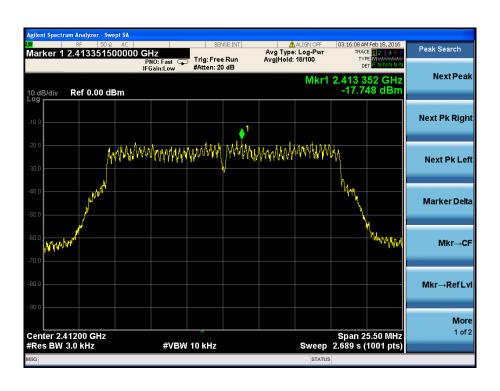




802.11b-High Channel



802.11g-Low Channel

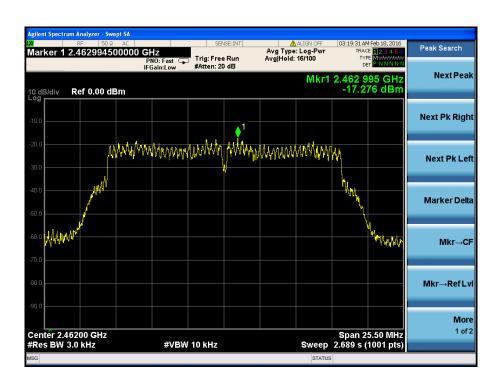




802.11g-Middle Channel

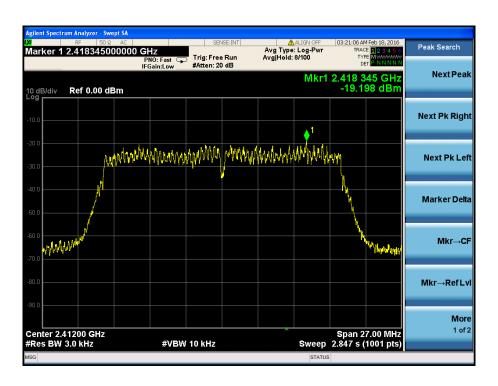


802.11g-High Channel

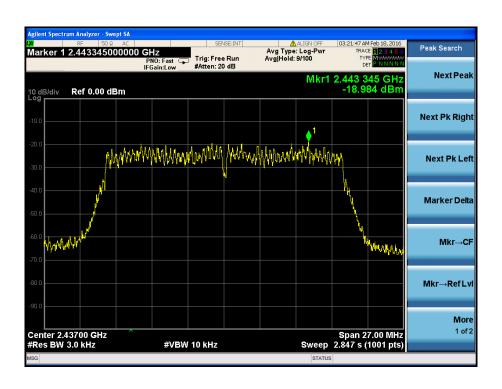




802.11n-HT20-Low Channel

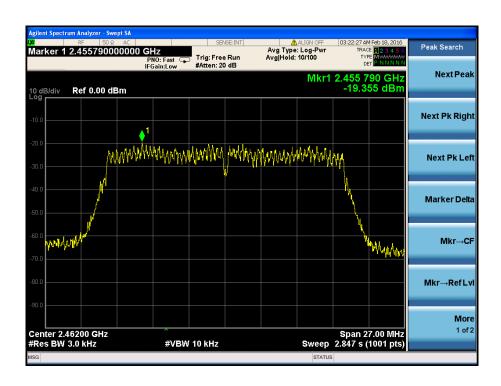


802.11n-HT20-Middle Channel





802.11n-HT20-High Channel





6. 6dB Bandwidth

6.1 Standard Applicable

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

6.2 Test Procedure

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times RBW$.
- c) Detector = Peak.
- d) Trace mode = \max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.3 Environmental Conditions

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

6.4 Summary of Test Results/Plots

Test Mode	Test Channel	6 dB Bandwidth	99% Bandwidth	Limit
1050 111040	MHz	kHz	kHz	kHz
	2412	9124	13816	≥500
802.11b	2437	8450	13803	≥500
	2462	9968	13795	≥500
	2412	16460	16427	≥500
802.11g	2437	16440	16424	≥500
	2462	16430	16413	≥500
	2412	17740	17675	≥500
802.11n-HT20	2437	17720	17671	≥500
	2462	17720	17675	≥500

Please refer to the following test plots:



802.11b-Low Channel



802.11b-Middle Channel





802.11b-High Channel



802.11g-Low Channel





802.11g-Middle Channel



802.11g-High Channel





802.11n-HT20-Low Channel

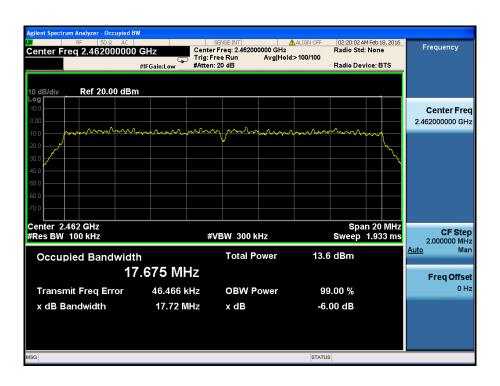


802.11n-HT20-Middle Channel





802.11n-HT20-High Channel





7. RF Output Power

7.1 Standard Applicable

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

7.2 Test Procedure

According to the KDB-558074 D01 v03r04, 9.2.2.2, when this option is exercised, the measured power is to be referenced to the OBW rather than the DTS bandwidth

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

7.3 Environmental Conditions

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

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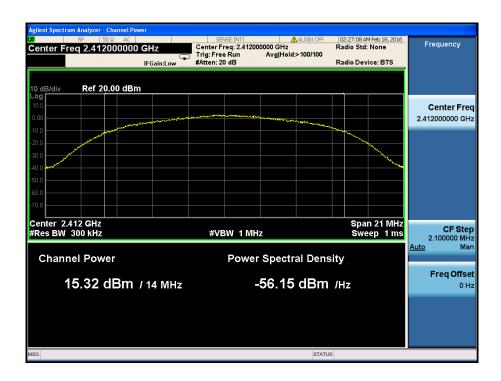
7.4 Summary of Test Results/Plots

Test Mode	Frequency	Reading	Output Power	Limit
Test Mode	MHz	dBm	mW	mW
	2412	15.32	34.0408	1000
802.11b _ 11Mbps	2437	15.14	32.6588	1000
	2462	14.63	29.0402	1000
	2412	14.67	29.3089	1000
802.11g_54Mbps	2437	14.07	25.5270	1000
	2462	14.02	25.2348	1000
	2412	12.49	17.7419	1000
802.11n HT20_MCS7	2437	12.81	19.0985	1000
	2462	12.41	17.4181	1000

Please refer to the following test plots:



802.11b-11Mbps-Low Channel

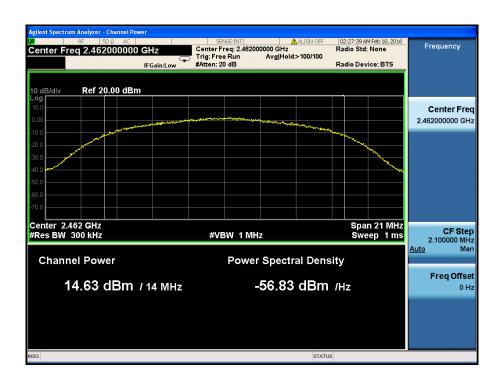


802.11b -11Mbps-Middle Channel





802.11b -11Mpbs-High Channel

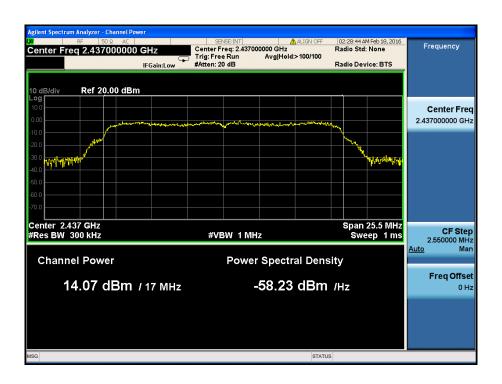


802.11g-54Mbps-Low Channel





802.11g-54Mbps -Middle Channel

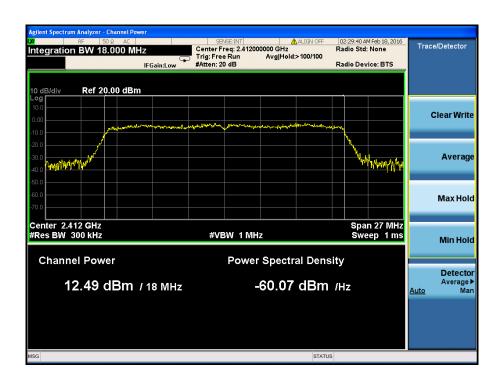


802.11g-54Mbps -High Channel

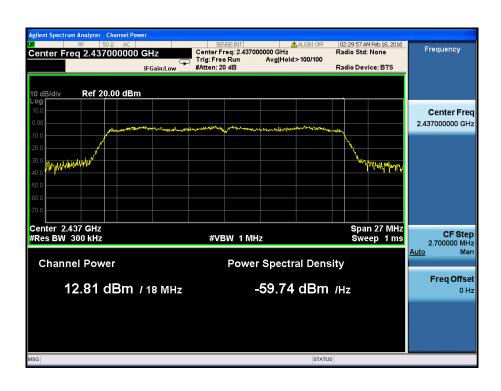




802.11n-HT20-MCS7-Low Channel



802.11n-HT20-MCS7-Middle Channel





802.11n-HT20-MCS7-High Channel





8. Field Strength of Spurious Emissions

8.1 Standard Applicable

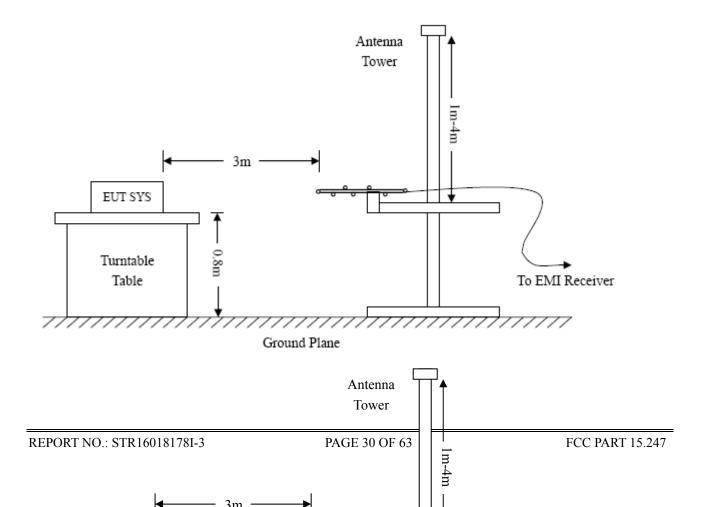
According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within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

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

8.2 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

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





Frequency:9kHz-30MHz Frequency:30MHz-1GHz Frequency:Above 1GHz

RBW=10KHz, RBW=120KHz, RBW=1MHz,

VBW=30KHz VBW=300KHz VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto Sweep time= Auto Sweep time= Auto Trace = \max hold Trace = \max hold Trace = \max hold

Detector function = peak, QP Detector function = peak, AV

8.3 Corrected Amplitude & Margin Calculation

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

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

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

Margin = Corr. Ampl. – FCC Part 15 Limit

8.4 Environmental Conditions

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

8.5 Summary of Test Results/Plots

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

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



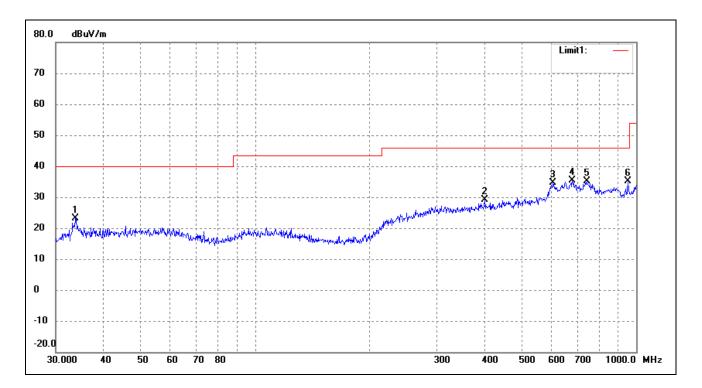
Plot of Radiated Emissions Test Data (30MHz to 1GHz)

EUT: GPS product
Tested Model: MDT7P

Operating Condition: 802.11b Transmitting Low Channel-2412MHz

Comment:

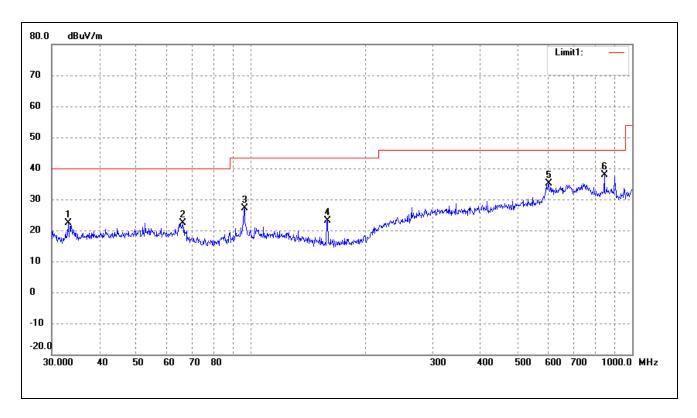
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.7986	18.94	4.21	23.15	40.00	-16.85	114	100	peak
2	400.4319	15.94	13.12	29.06	46.00	-16.94	270	100	peak
3	605.6592	15.64	18.92	34.56	46.00	-11.44	360	100	peak
4	679.9600	16.04	19.26	35.30	46.00	-10.70	116	100	peak
5	742.2587	15.70	19.45	35.15	46.00	-10.85	100	100	peak
6	952.0937	18.85	16.29	35.14	46.00	-10.86	360	100	peak



Test Specification: Vertical



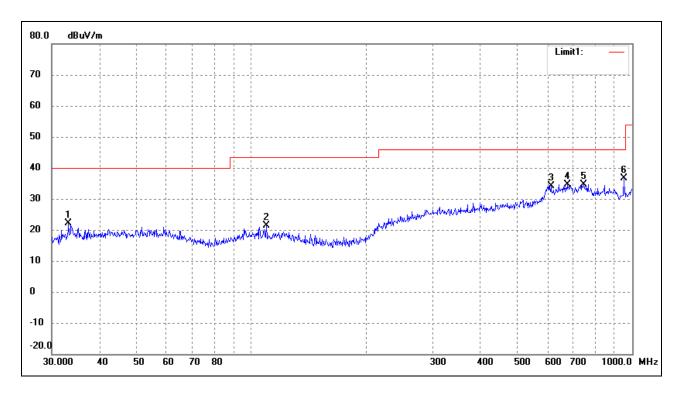
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.0949	18.21	4.10	22.31	40.00	-17.69	61	100	peak
2	66.2661	18.29	4.01	22.30	40.00	-17.70	124	100	peak
3	96.0986	22.56	4.53	27.09	43.50	-16.41	169	100	peak
4	158.6676	20.58	2.66	23.24	43.50	-20.26	195	100	peak
5	603.5392	16.08	19.06	35.14	46.00	-10.86	241	100	peak
6	845.0878	20.28	17.49	37.77	46.00	-8.23	268	100	peak



Operating Condition: 802.11b Transmitting Middle Channel-2437MHz

Comment:

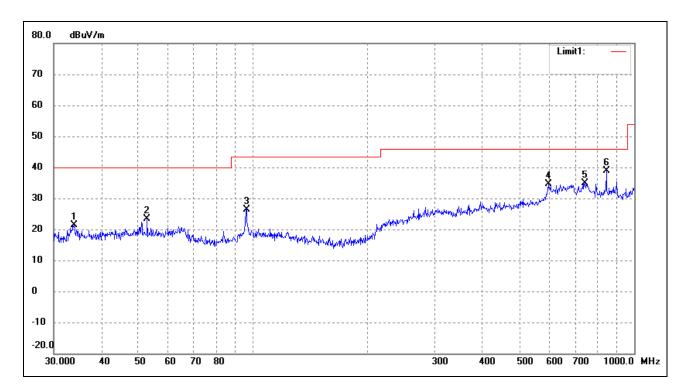
Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.2111	17.91	4.12	22.03	40.00	-17.97	62	100	peak
2	109.7960	16.26	5.07	21.33	43.50	-22.17	124	100	peak
3	612.0642	15.75	18.48	34.23	46.00	-11.77	169	100	peak
4	675.2078	15.70	18.99	34.69	46.00	-11.31	252	100	peak
5	747.4825	15.50	19.20	34.70	46.00	-11.30	294	100	peak
6	952.0937	20.33	16.29	36.62	46.00	-9.38	335	100	peak



Test Specification: Vertical



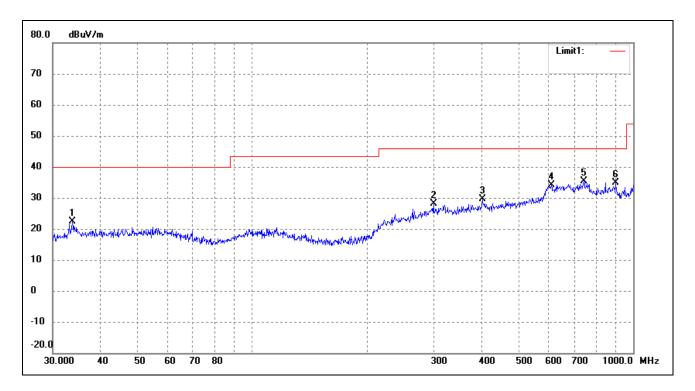
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.9174	17.21	4.23	21.44	40.00	-18.56	45	100	peak
2	52.7599	17.97	5.30	23.27	40.00	-16.73	76	100	peak
3	96.0986	21.91	4.53	26.44	43.50	-17.06	98	100	peak
4	595.1327	16.12	18.41	34.53	46.00	-11.47	138	100	peak
5	742.2586	15.43	19.45	34.88	46.00	-11.12	169	100	peak
6	845.0878	21.41	17.49	38.90	46.00	-7.10	224	100	peak



Operating Condition: 802.11b Transmitting High Channel-2462MHz

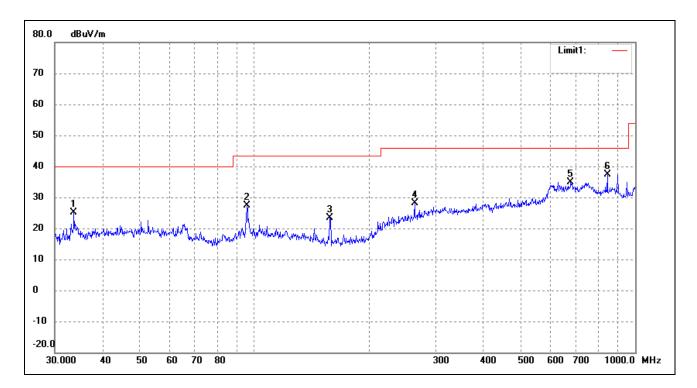
Comment:

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.7986	18.05	4.21	22.26	40.00	-17.74	33	100	peak
2	299.3158	15.97	12.15	28.12	46.00	-17.88	120	100	peak
3	401.8385	16.57	13.06	29.63	46.00	-16.37	69	100	peak
4	609.9215	15.56	18.63	34.19	46.00	-11.81	156	100	peak
5	742.2586	15.84	19.45	35.29	46.00	-10.71	261	100	peak
6	900.1473	18.08	16.84	34.92	46.00	-11.08	299	100	peak





No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.6802	21.03	4.19	25.22	40.00	-14.78	42	100	peak
2	95.7622	22.87	4.48	27.35	43.50	-16.15	88	100	peak
3	158.1123	20.72	2.68	23.40	43.50	-20.10	147	100	peak
4	263.8190	17.85	10.29	28.14	46.00	-17.86	186	100	peak
5	677.5798	15.73	19.13	34.86	46.00	-11.14	235	100	peak
6	845.0878	20.01	17.49	37.50	46.00	-8.50	261	100	peak

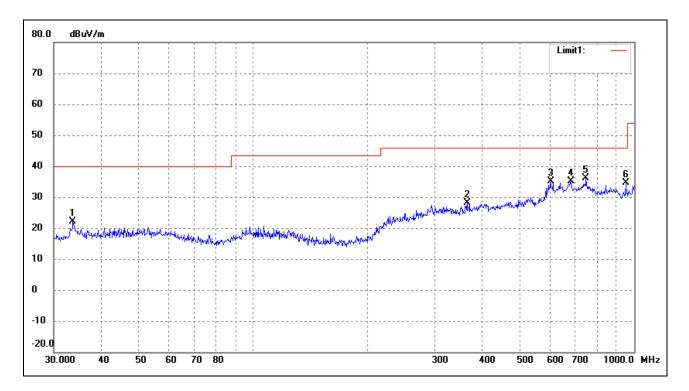


Plot of Radiated Emissions Test Data (30MHz to 1GHz)

EUT: GPS product
Tested Model: MDT7P

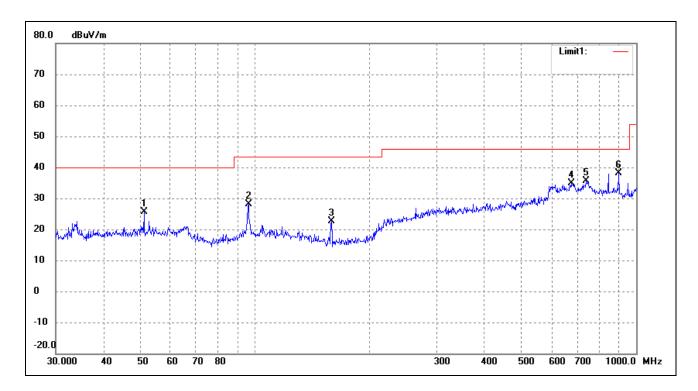
Operating Condition: 802.11g Transmitting Low Channel-2412MHz

Comment: DC 3.7V



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.6802	17.93	4.19	22.12	40.00	-17.88	90	100	peak
2	364.2595	15.84	12.24	28.08	46.00	-17.92	154	100	peak
3	603.5392	16.17	19.06	35.23	46.00	-10.77	320	100	peak
4	682.3484	16.07	19.08	35.15	46.00	-10.85	360	100	peak
5	747.4825	16.89	19.20	36.09	46.00	-9.91	174	100	peak
6	952.0937	18.26	16.29	34.55	46.00	-11.45	160	100	peak



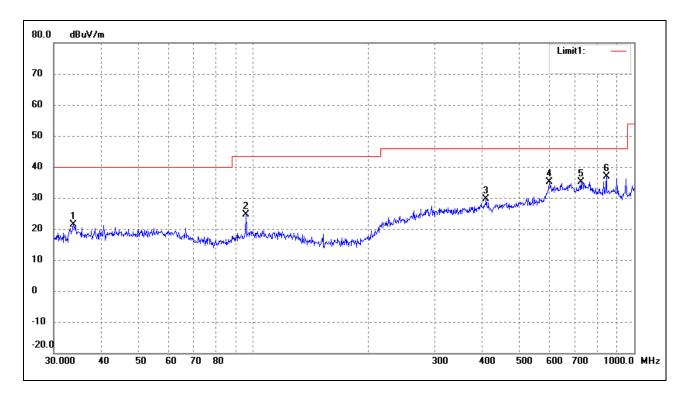


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	51.1208	20.33	5.27	25.60	40.00	-14.40	336	100	peak
2	96.0986	23.61	4.53	28.14	43.50	-15.36	254	100	peak
3	158.6676	20.03	2.66	22.69	43.50	-20.81	35	100	peak
4	675.2078	15.81	18.99	34.80	46.00	-11.20	360	100	peak
5	739.6604	16.03	19.53	35.56	46.00	-10.44	177	100	peak
6	900.1473	21.29	16.84	38.13	46.00	-7.87	90	100	peak



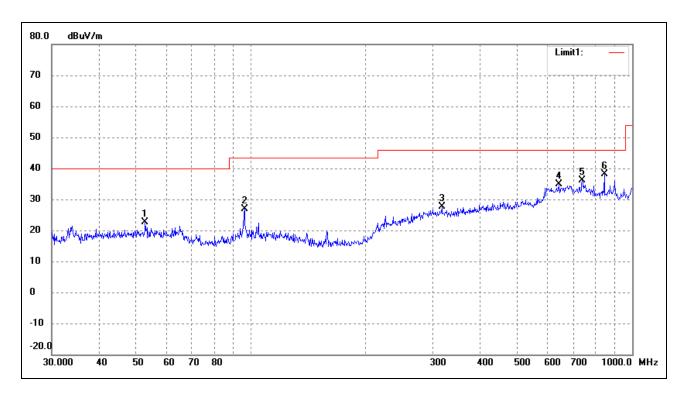
Operating Condition: 802.11g Transmitting Middle Channel-2437MHz

Comment:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.7986	17.26	4.21	21.47	40.00	-18.53	90	100	peak
2	95.7622	20.20	4.48	24.68	43.50	-18.82	164	100	peak
3	408.9460	16.88	12.80	29.68	46.00	-16.32	228	200	peak
4	599.3212	15.89	19.19	35.08	46.00	-10.92	130	200	peak
5	724.2611	16.61	18.62	35.23	46.00	-10.77	360	100	peak
6	845.0878	19.29	17.49	36.78	46.00	-9.22	270	100	peak



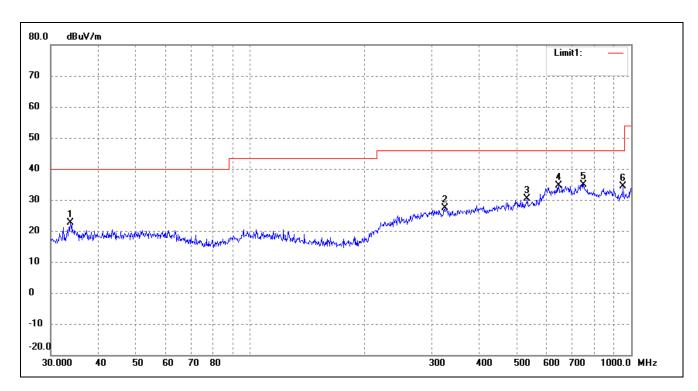


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	52.7599	17.45	5.30	22.75	40.00	-17.25	360	100	peak
2	96.0986	22.32	4.53	26.85	43.50	-16.65	59	100	peak
3	316.5889	15.31	12.28	27.59	46.00	-18.41	114	100	peak
4	642.8613	16.40	18.55	34.95	46.00	-11.05	180	100	peak
5	739.6604	16.72	19.53	36.25	46.00	-9.75	255	100	peak
6	845.0878	20.76	17.49	38.25	46.00	-7.75	270	100	peak



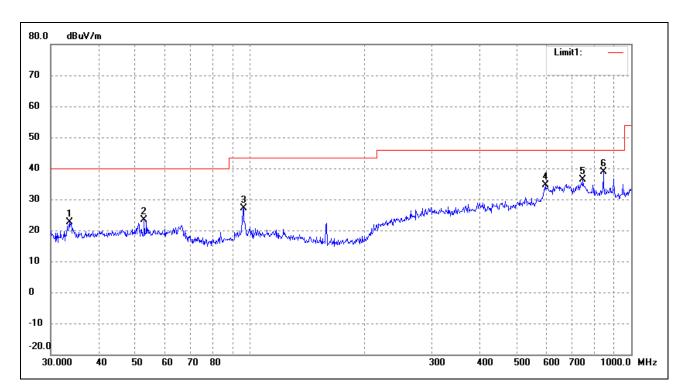
Operating Condition: 802.11g Transmitting High Channel-2462MHz

Comment:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.7986	18.35	4.21	22.56	40.00	-17.44	270	100	peak
2	324.4560	15.13	12.16	27.29	46.00	-18.71	100	200	peak
3	533.8320	16.11	14.32	30.43	46.00	-15.57	156	200	peak
4	645.1195	16.18	18.50	34.68	46.00	-11.32	360	100	peak
5	750.1082	15.89	19.09	34.98	46.00	-11.02	51	200	peak
6	952.0937	18.18	16.29	34.47	46.00	-11.53	360	100	peak





No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.5623	18.35	4.17	22.52	40.00	-17.48	26	100	peak
2	52.7599	17.97	5.30	23.27	40.00	-16.73	80	100	peak
3	96.0986	22.65	4.53	27.18	43.50	-16.32	126	100	peak
4	595.1327	16.12	18.41	34.53	46.00	-11.47	180	100	peak
5	747.4825	17.29	19.20	36.49	46.00	-9.51	235	100	peak
6	845.0878	21.41	17.49	38.90	46.00	-7.10	268	100	peak

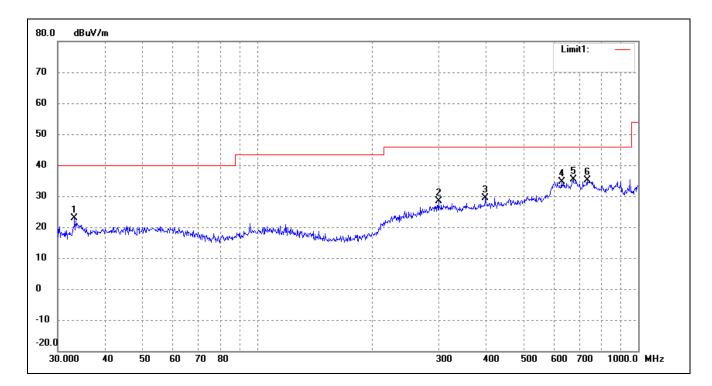


Plot of Radiated Emissions Test Data (30MHz to 1GHz)

EUT: GPS product
Tested Model: MDT7P

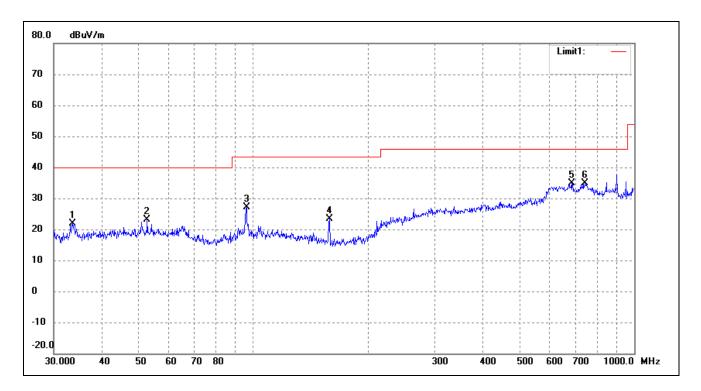
Operating Condition: 802.11n-HT20 Transmitting Low Channel-2412MHz

Comment:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.2112	18.84	4.12	22.96	40.00	-17.04	260	100	peak
2	299.3158	16.27	12.15	28.42	46.00	-17.58	68	200	peak
3	397.6334	16.45	13.03	29.48	46.00	-16.52	135	200	peak
4	629.4772	16.48	18.25	34.73	46.00	-11.27	224	100	peak
5	675.2080	16.43	18.99	35.42	46.00	-10.58	131	200	peak
6	734.4913	15.98	19.22	35.20	46.00	-10.80	285	100	peak



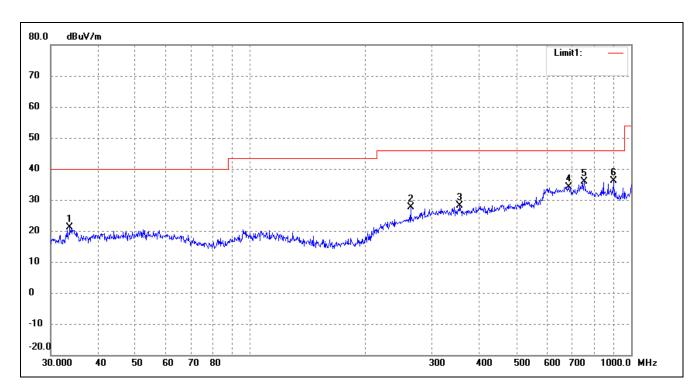


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.5623	17.81	4.17	21.98	40.00	-18.02	155	100	peak
2	52.7599	17.87	5.30	23.17	40.00	-16.83	197	100	peak
3	96.0986	22.70	4.53	27.23	43.50	-16.27	310	100	peak
4	158.6676	20.81	2.66	23.47	43.50	-20.03	88	100	peak
5	684.7454	15.85	18.91	34.76	46.00	-11.24	130	100	peak
6	742.2586	15.36	19.45	34.81	46.00	-11.19	229	100	peak



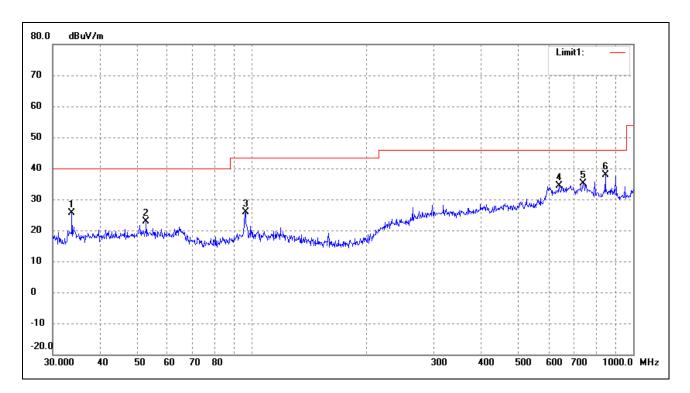
Operating Condition: 802.11n-HT20 Transmitting Middle Channel-2437MHz

Comment:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.6802	17.02	4.19	21.21	40.00	-18.79	274	100	peak
2	263.8190	17.32	10.29	27.61	46.00	-18.39	38	100	peak
3	354.1831	15.99	12.10	28.09	46.00	-17.91	116	100	peak
4	684.7454	15.23	18.91	34.14	46.00	-11.86	165	100	peak
5	752.7432	16.90	18.98	35.88	46.00	-10.12	82	100	peak
6	900.1473	19.17	16.84	36.01	46.00	-9.99	134	100	peak



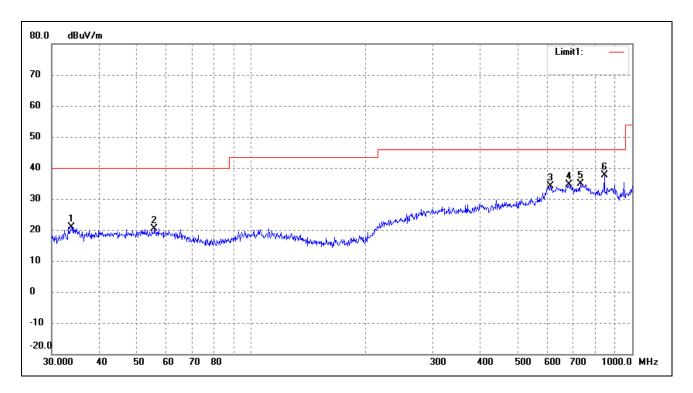


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.6802	21.35	4.19	25.54	40.00	-14.46	39	100	peak
2	52.7600	17.48	5.30	22.78	40.00	-17.22	124	100	peak
3	96.0986	21.34	4.53	25.87	43.50	-17.63	.83	100	peak
4	638.3686	15.82	18.56	34.38	46.00	-11.62	147	100	peak
5	739.6604	15.48	19.53	35.01	46.00	-10.99	195	100	peak
6	845.0878	20.47	17.49	37.96	46.00	-8.04	256	100	peak



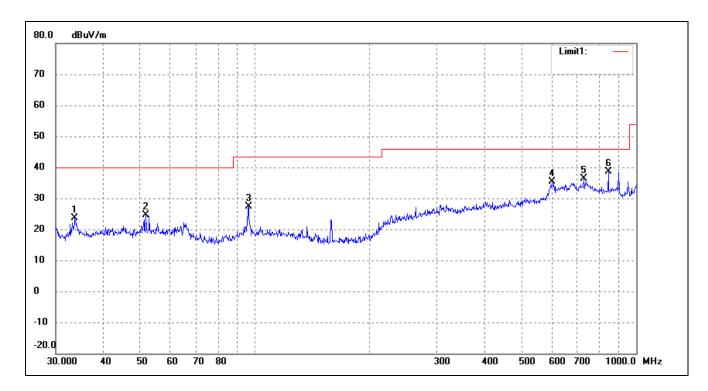
Operating Condition: 802.11n-HT20 Transmitting High Channel-2462MHz

Comment:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.7986	16.67	4.21	20.88	40.00	-19.12	360	100	peak
2	55.8046	15.17	5.33	20.50	40.00	-19.50	86	100	peak
3	609.9215	15.62	18.63	34.25	46.00	-11.75	168	200	peak
4	682.3484	15.46	19.08	34.54	46.00	-11.46	270	200	peak
5	731.9202	15.77	19.08	34.85	46.00	-11.15	112	100	peak
6	845.0878	20.03	17.49	37.52	46.00	-8.48	180	100	peak





No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	33.6802	19.46	4.19	23.65	40.00	-16.35	62	100	peak
2	51.6616	19.28	5.29	24.57	40.00	-15.43	125	100	peak
3	96.0986	22.84	4.53	27.37	43.50	-16.13	89	100	peak
4	601.4265	16.10	19.22	35.32	46.00	-10.68	228	100	peak
5	729.3583	17.54	18.92	36.46	46.00	-9.54	267	100	peak
6	845.0878	21.04	17.49	38.53	46.00	-7.47	116	100	peak



Spurious Emissions Above 1GHz

Test Mode: 802.11b

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector	
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V		
			Low Chann	el-2412MHz			•	
4824.000	54.07	-3.87	50.20	74.00	-23.80	Н	PK	
4824.000	38.81	-3.87	34.94	54.00	-19.06	Н	AV	
7236.000	46.32	1.14	47.46	74.00	-26.54	Н	PK	
7236.000	34.93	1.19	36.12	54.00	-17.88	Н	AV	
4824.000	57.31	-3.86	53.45	74.00	-20.55	V	PK	
4824.000	40.52	-3.86	36.66	54.00	-17.34	V	AV	
7236.000	49.11	1.10	50.21	74.00	-23.79	V	PK	
7236.000	37.42	1.10	38.52	54.00	-15.48	V	AV	
Middle Channel-2437MHz								
4874.000	54.72	-3.74	50.98	74.00	-23.02	Н	PK	
4874.000	39.91	-3.74	36.17	54.00	-17.83	Н	AV	
7311.000	47.76	1.47	49.23	74.00	-24.77	Н	PK	
7311.000	33.11	1.47	34.58	54.00	-19.42	Н	AV	
4874.000	53.95	-3.74	50.21	74.00	-23.79	V	PK	
4874.000	40.89	-3.74	37.15	54.00	-16.85	V	AV	
7311.000	47.98	1.47	49.45	74.00	-24.55	V	PK	
7311.000	34.07	1.47	35.54	54.00	-18.46	V	AV	
			High Chann	el-2462MHz				
4924.000	55.81	-3.59	52.22	74.00	-21.78	Н	PK	
4924.000	41.72	-3.59	38.13	54.00	-15.87	Н	AV	
7386.000	46.33	1.79	48.12	74.00	-25.88	Н	PK	
7386.000	34.86	1.79	36.65	54.00	-17.35	Н	AV	
4924.000	54.99	-3.59	51.40	74.00	-22.60	V	PK	
4924.000	42.08	-3.59	38.49	54.00	-15.51	V	AV	
7386.000	47.91	1.79	49.70	74.00	-24.30	V	PK	
7386.000	35.11	1.79	36.90	54.00	-17.10	V	AV	



Test Mode: 802.11g

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector	
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V		
			Low Chann	el-2412MHz				
4824.000	55.55	-3.86	51.69	74.00	-22.31	Н	PK	
4824.000	42.26	-3.86	38.40	54.00	-15.60	Н	AV	
7236.000	48.41	1.10	49.51	74.00	-24.49	Н	PK	
7236.000	34.42	1.10	35.52	54.00	-18.48	Н	AV	
4824.000	55.96	-3.86	52.10	74.00	-21.90	V	PK	
4824.000	42.62	-3.86	38.76	54.00	-15.24	V	AV	
7236.000	49.21	1.10	50.31	74.00	-23.69	V	PK	
7236.000	35.50	1.10	36.60	54.00	-17.40	V	AV	
Middle Channel-2437MHz								
4874.000	55.12	-3.74	51.38	74.00	-22.62	Н	PK	
4874.000	43.23	-3.74	39.49	54.00	-14.51	Н	AV	
7311.000	47.31	1.47	48.78	74.00	-25.22	Н	PK	
7311.000	35.25	1.47	36.72	54.00	-17.28	Н	AV	
4874.000	57.06	-3.74	53.32	74.00	-20.68	V	PK	
4874.000	43.88	-3.74	40.14	54.00	-13.86	V	AV	
7311.000	48.41	1.47	49.88	74.00	-24.12	V	PK	
7311.000	35.33	1.47	36.80	54.00	-17.20	V	AV	
			High Chann	el-2462MHz				
4924.000	54.01	-3.59	50.42	74.00	-23.58	Н	PK	
4924.000	40.72	-3.59	37.13	54.00	-16.87	Н	AV	
7386.000	47.16	1.79	48.95	74.00	-25.05	Н	PK	
7386.000	34.79	1.79	36.58	54.00	-17.42	Н	AV	
4924.000	56.18	-3.59	52.59	74.00	-21.41	V	PK	
4924.000	42.64	-3.59	39.05	54.00	-14.95	V	AV	
7386.000	48.51	1.79	50.30	74.00	-23.70	V	PK	
7386.000	35.92	1.79	37.71	54.00	-16.29	V	AV	



Test Mode: 802.11n-HT20

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector		
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V			
			Low Chann	el-2412MHz					
4824.000	55.65	-3.86	51.79	74.00	-22.21	Н	PK		
4824.000	40.56	-3.86	36.70	54.00	-17.30	Н	AV		
7236.000	47.21	1.10	48.31	74.00	-25.69	Н	PK		
7236.000	34.42	1.10	35.52	54.00	-18.48	Н	AV		
4824.000	56.73	-3.86	52.87	74.00	-21.13	V	PK		
4824.000	43.11	-3.86	39.25	54.00	-14.75	V	AV		
7236.000	49.25	1.10	50.35	74.00	-23.65	V	PK		
7236.000	35.76	1.10	36.86	54.00	-17.14	V	AV		
	Middle Channel-2437MHz								
4874.000	54.11	-3.74	50.37	74.00	-23.63	Н	PK		
4874.000	42.46	-3.74	38.72	54.00	-15.28	Н	AV		
7311.000	48.72	1.47	50.19	74.00	-23.81	Н	PK		
7311.000	33.11	1.47	34.58	54.00	-19.42	Н	AV		
4874.000	54.95	-3.74	51.21	74.00	-22.79	V	PK		
4874.000	42.69	-3.74	38.95	54.00	-15.05	V	AV		
7311.000	48.47	1.47	49.94	74.00	-24.06	V	PK		
7311.000	35.21	1.47	36.68	54.00	-17.32	V	AV		
			High Chann	el-2462MHz					
4924.000	53.92	-3.59	50.33	74.00	-23.67	Н	PK		
4924.000	43.21	-3.59	39.62	54.00	-14.38	Н	AV		
7386.000	48.35	1.79	50.14	74.00	-23.86	Н	PK		
7386.000	36.16	1.79	37.95	54.00	-16.05	Н	AV		
4924.000	55.79	-3.59	52.20	74.00	-21.80	V	PK		
4924.000	41.47	-3.59	37.88	54.00	-16.12	V	AV		
7386.000	48.12	1.79	49.91	74.00	-24.09	V	PK		
7386.000	35.35	1.79	37.14	54.00	-16.86	V	AV		

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



9. Out of Band Emissions

9.1 Standard Applicable

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

9.2 Test Procedure

According to the KDB 558074D01 v03r04, the band-edge radiated test method as follows:

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

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

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

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

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

According to the KDB 558074 D01 v03r04, the conducted spurious emissions test method as follows:

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

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



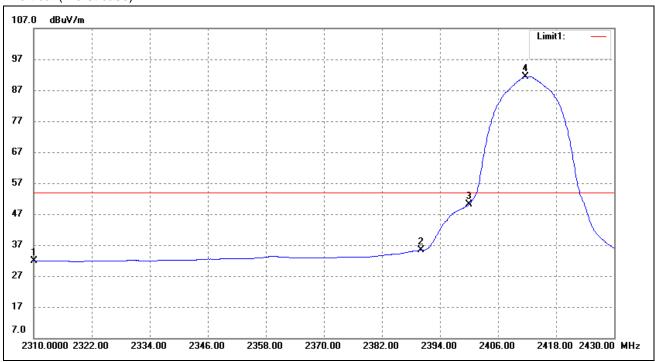
9.3 Environmental Conditions

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

9.4 Summary of Test Results/Plots

802.11b-Lowest Bandedge

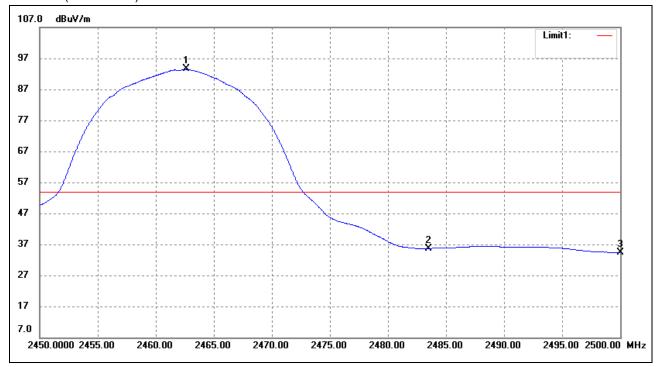
Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	35.66	-3.80	31.86	54.00	-22.14	Average Detector
	2310.000	46.35	-3.80	42.55	74.00	-31.45	Peak Detector
2	2390.000	38.32	-3.00	35.32	54.00	-18.68	Average Detector
	2390.000	51.07	-3.00	48.07	74.00	-25.93	Peak Detector
3	2400.000	52.95	-2.90	50.05	54.00	-3.95	Average Detector
	2400.000	63.57	-2.90	60.67	74.00	-13.33	Peak Detector



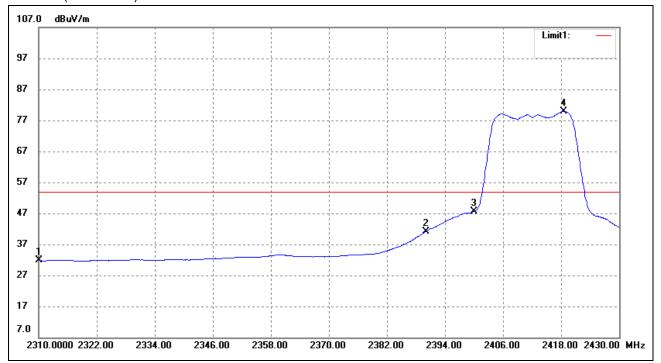
802.11b-Highest Bandedge Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2462.650	96.09	-2.58	93.51	/	/	Average Detector
	2462.700	107.46	-2.58	104.88	/	/	Peak Detector
2	2483.500	Dolto - 5	0.15dPa	34.36	54.00	-19.64	Average Detector
	2483.500	Della = 5	Delta = 59.15dBc		74.00	-28.27	Peak Detector
3	2500.000	36.72	-2.40	34.32	54.00	-19.68	Average Detector
	2500.000	48.94	-2.40	46.54	74.00	-27.46	Peak Detector



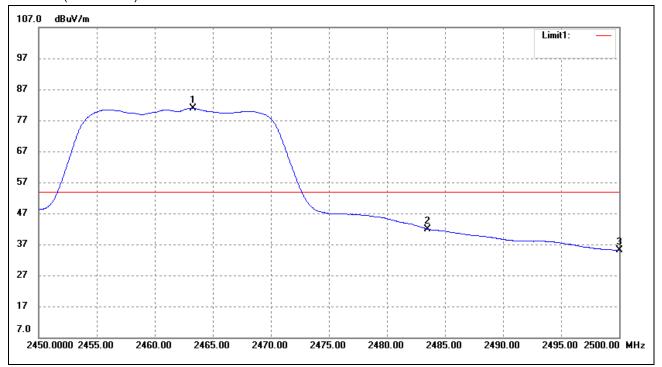
802.11g-Lowest Bandedge Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	35.57	-3.80	31.77	54.00	-22.23	Average Detector
	2310.000	50.95	-3.80	47.15	74.00	-26.85	Peak Detector
2	2390.000	44.14	-3.00	41.14	54.00	-12.86	Average Detector
	2390.000	71.75	-3.00	68.75	74.00	-5.25	Peak Detector
3	2400.000	50.53	-2.90	47.63	54.00	-6.37	Average Detector
	2400.000	80.62	-2.90	77.72	74.00	3.72	Peak Detector



802.11g-Highest Bandedge Vertical (Worst case)

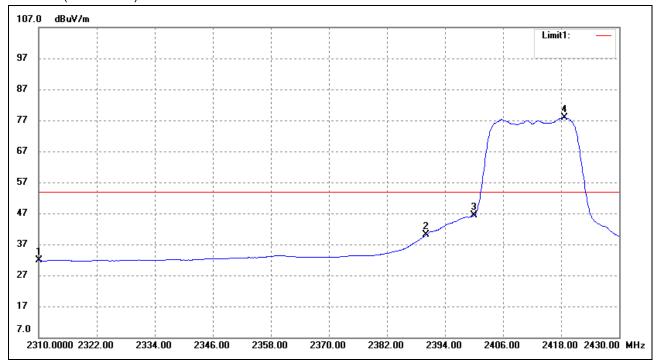


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
2	2463.300	83.51	-2.58	80.93	/	/	Average Detector
	2463.850	106.06	-2.57	103.49	/	/	Peak Detector
1	2483.500	Dolto 4	4 20dBa	36.63	54.00	-17.37	Average Detector
	2483.500	Della = 4	Delta = 44.30dBc		74.00	-14.67	Peak Detector
3	2500.000	37.46	-2.40	35.06	54.00	-18.94	Average Detector
	2500.000	65.27	-2.40	62.87	74.00	-11.13	Peak Detector



802.11n-HT20-Lowest Bandedge

Vertical (Worst case)

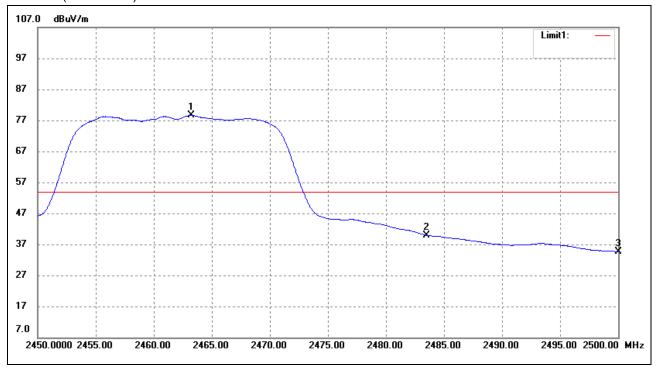


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2310.000	35.63	-3.80	31.83	54.00	-22.17	Average Detector
	2310.000	48.59	-3.80	44.79	74.00	-29.21	Peak Detector
2	2390.000	43.02	-3.00	40.02	54.00	-13.98	Average Detector
	2390.000	68.28	-3.00	65.28	74.00	-8.72	Peak Detector
3	2400.000	49.23	-2.90	46.33	54.00	-7.67	Average Detector
	2400.000	78.95	-2.90	76.05	74.00	2.05	Peak Detector



802.11n-HT20-Highest Bandedge

Vertical (Worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2463.250	81.17	-2.58	78.59	/	/	Average Detector
	2463.450	103.54	-2.58	100.96	/	/	Peak Detector
2	2483.500	Dolto 4	2 72dDa	34.87	54.00	-19.13	Average Detector
	2483.500	Della = 4.	Delta = 43.72dBc		74.00	-16.85	Peak Detector
3	2500.000	37.07	-2.40	34.67	54.00	-19.33	Average Detector
	2500.000	62.04	-2.40	59.64	74.00	-14.36	Peak Detector



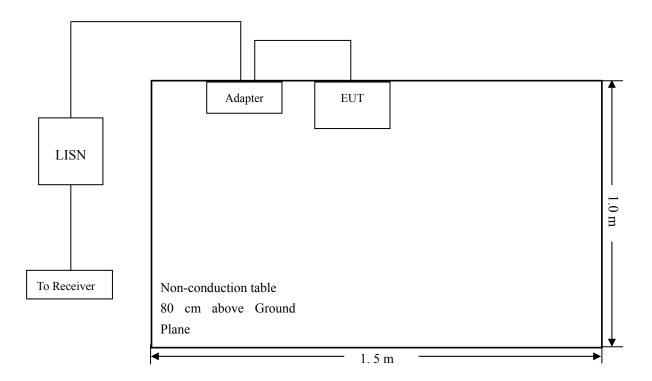
10. Conducted Emissions

10.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.207 Limit.

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

10.2 Basic Test Setup Block Diagram



10.3 Environmental Conditions

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



10.4 Test Receiver Setup

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

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

10.5 Summary of Test Results/Plots

According to the data in section 10.7, the EUT <u>complied with the FCC Part 15.207</u> Conducted margin for this device, with the *worst* margin reading of:

-6.72 dB at 0.154 MHz in the Line mode, Peak detector, 0.15-30MHz

10.6 Conducted Emissions Test Data



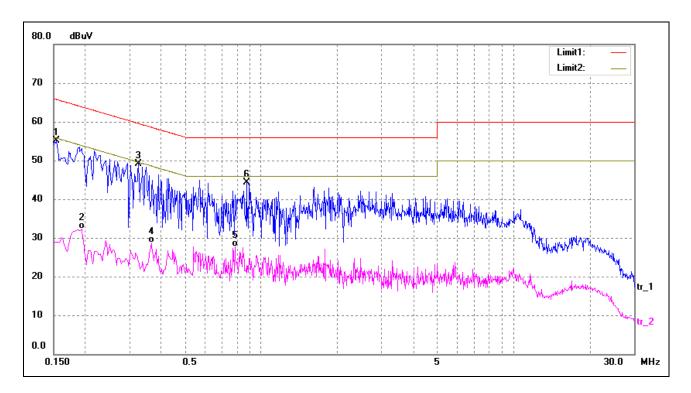
Plot of Conducted Emissions Test Data

EUT: GPS product
Tested Model: MDT7P

Operating Condition: Transmitting(Wi-Fi)

Comment:

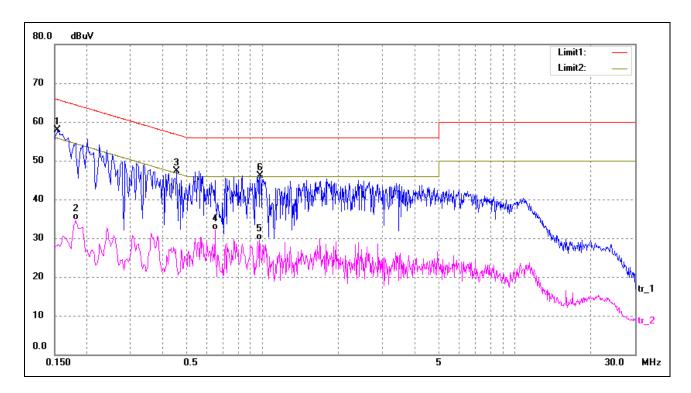
Test Specification: Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1	0.1532	45.57	9.50	55.07	65.82	-10.75	peak
2	0.1940	22.73	9.50	32.23	53.86	-21.63	AVG
3*	0.3260	39.70	9.50	49.20	59.55	-10.35	peak
4	0.3660	19.20	9.50	28.70	48.59	-19.89	AVG
5	0.7860	18.04	9.63	27.67	46.00	-18.33	AVG
6	0.8740	34.74	9.65	44.39	56.00	-11.61	peak



Test Specification: Live



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1540	48.42	9.50	57.92	65.78	-7.86	peak
2	0.1820	25.14	9.50	34.64	54.39	-19.75	AVG
3	0.4580	37.75	9.53	47.28	56.73	-9.45	peak
4	0.6500	22.42	9.60	32.02	46.00	-13.98	AVG
5	0.9780	19.74	9.67	29.41	46.00	-16.59	AVG
6	0.9820	36.52	9.68	46.20	56.00	-9.80	peak

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