# APPLICATION FOR CERTIFICATION On Behalf of INVENTEC BESTA CO., LTD.

Electronic Dictionary Model No.: CD-920 FCC ID: U6OCA012

Brand: BESTA

Prepared for: INVENTEC BESTA CO., LTD.

10FL., No.36, Lane 513, Rui Guang Road,

Nei Hu Dist., Taipei 114, Taiwan

Prepared by: AUDIX Technology Corporation

**EMC** Department

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File Number : C1M1306243 Report Number : EM-F1020466

Date of Test : Jul. 02, 2013 ~ Jul. 05, 2013

Date of Report : Jul. 05, 2013

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# TEST REPORT CERTIFICATION

Applicant : INVENTEC BESTA CO., LTD.

EUT Description : Electronic Dictionary

FCC ID : U6OCA012

(A) Model No. : CD-920(B) Serial No. : N/A(C) Brand : BESTA

(D) Power Supply : (1)DC 5V (Via USB)

(2)DC 5V (Via Switching Power Supply)

(3)DC 3.7V (Via Battery)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C, Oct. 2012 (FCC CFR 47 Part 15C, §15.205, §15.207, §15.209 and §15.247) AND ANSI C63.4:2003

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 subpart C limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the requirements of FCC standards.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test: Jul. 02, 2013 ~ Jul. 05, 2013 Date of Report: Jul. 05, 2013

Producer: Tira ) drang

Signatory:

(Tina Huang/Administrator)

(Leon Liu/Deputy General Manager)

# 1. GENERAL INFORMATION

# 1.1. Description of Device (EUT)

Product	Electronic Dictionary
Model Number	CD-920
Serial Number	N/A
Brand Name	BESTA
Applicant	INVENTEC BESTA CO., LTD. 10FL., No.36, Lane 513, Rui Guang Road, Nei Hu Dist., Taipei 114, Taiwan
FCC ID	U6OCA012
Wireless LAN Module	RL-UM02BS
Fundamental Range	802.11b/g: 2412MHz ~ 2462MHz 802.11n-HT20: 2412MHz ~ 2462MHz 802.11n-HT40: 2422MHz ~ 2452MHz
Frequency Channel	802.11b/g: 11 channels 802.11n-HT20: 2.4GHz: 11 channels 802.11n-HT40: 2.4GHz: 7 channels
Radio Technology	802.11b: DSSS Modulation (DBPSK/DQPSK/CCK) 802.11g: OFDM Modulation (BPSK/QPSK/16QAM/64QAM) 802.11n: OFDM Modulation (SISO) (BPSK/QPSK/16QAM/64QAM)
Data Transfer Rate	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps
Switching Power Supply (2Pin)	Something High Electric (Xiamen) Co., Ltd. M/N: P12USB050200 US Input: AC 100-240V~, 50/60Hz, 0.3A; Output: DC 5.0V, 2.0A USB Cable: Shielded, Detachable, 0.9m, Bonded a ferrite core +Shielded, Undetachable, 1.0m
Earphone	Non-Shielded, Detachable, 1.0m
Date of Receipt of Sample	Jun. 21, 2013
Date of Test	Jul. 02, 2013 ~ Jul. 05, 2013

# 1.2. Antenna Information

Antenna Part	Manufacture	Antenna Type	Peak Gain		
Number			Frequency	Max Gain	
WLAN	Magic Wireless Technology	РСВ	2400MHz	0.62dBi	
Antenna P/N: HWGA01-LAP			2450MHz	1.25dBi	
4002	CO., LTC.		2500MHz	1.28dBi	

# 1.3. Data Rate Relative to Peak Output Power

802.11b					
Channel	Modulation	Date Rate (Mbps)	Power (dBm)		
1	BPSK	1	12.20		
1	BPSK	2	12.19		
1	QPSK	5.5	12.19		
1	QPSK	11	12.17		

	802.11g				
Channel	Modulation	Date Rate (Mbps)	Power (dBm)		
1	BPSK	6	12.07		
1	BPSK	9	12.12		
1	QPSK	12	12.17		
1	QPSK	18	12.18		
1	16-QAM	24	12.14		
1	16-QAM	36	12.21		
1	64-QAM	48	12.20		
1	64-QAM	54	12.18		

802.11n-HT20					802.11n-HT40		
Channel	Modulation	Date Rate (Mbps)	Power (dBm)	Channel	Modulation	Date Rate (Mbps)	Power (dBm)
1	BPSK	6.5	12.01	3	BPSK	6.5	12.02
1	QPSK	13	12.07	3	QPSK	13	12.08
1	QPSK	19.5	12.11	3	QPSK	19.5	12.11
1	16-QAM	26	12.14	3	16-QAM	26	12.13
1	16-QAM	39	12.17	3	16-QAM	39	12.16
1	64-QAM	52	12.19	3	64-QAM	52	12.20
1	64-QAM	58.6	12.21	3	64-QAM	58.6	12.24
1	64-QAM	65	12.24	3	64-QAM	65	12.27

# 1.4. Test Configuration for Each Test Item

Test Item	802.11b	802.11g	802.11n-HT20	802.11n-HT40	
Test Item	Data Rate for Test (Mbps)				
6db Bandwidth	1	6	6.5	6.5	
Maximum Peak Output Power	1	6	6.5	6.5	
Emission Limitations	1	6	6.5	6.5	
Band Edges	1	6	6.5	6.5	
Power Spectral Density	1	6	6.5	6.5	

# 1.5. Tested Supporting System Details

# 1.5.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Notebook PC	ASUS	N20	N/A	FCC DoC Approved
2.	Power Socket	N/A	N/A	N/A	N/A
3.	SD Card	N/A	E408G1138	N/A	N/A

# 1.5.2. Cable Lists

No.	Cable Description Of The Above Support Units		
	Adapter: ASUS, M/N: SADP-65NB BB		
1.	AC Power Cord: Non-Shielded, Detachable, 1.8m  DC Power Cord: Non-Shielded, Undetachable, 1.8m		
	DC Power Cord: Non-Shielded, Undetachable, 1.8m		
2.	AC Power Cord: Non-Shielded, Detachable, 1.8m		

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# 1.6. Description of Test Facility

Name of Firm : **AUDIX Technology Corporation** 

**EMC** Department

No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan, R.O.C.

Test Site : No. 8 Shielded Room &

(C8/Semi-AC) No. 53-11, Dingfu, Linkou Dist.,

New Taipei City 244, Taiwan, R.O.C.

**Semi-Anechoic Chamber** 

No. 53-11, Dingfu, Linkou Dist.,

New Taipei City 244, Taiwan, R.O.C.

May 11, 2012 Renewal on

Federal Communication Commission

Registration Number: 90993

NVLAP Lab. Code : 200077-0

TAF Accreditation No : 1724

# 1.7. Measurement Uncertainty

Test Item	Frequency Range Uncertainty (di	
Conduction Test	150kHz~30MHz	±1.73dB
	30MHz~300MHz	± 2.91dB
Radiation Test	300MHz~1000MHz	± 2.74dB
(Distance: 3m)	Above 1GHz	± 5.02dB

Remark: Uncertainty =  $ku_c(y)$ 

Test Item	Uncertainty
6dB Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dBm
Emission Limitations	± 0.13dB
Band edges	± 0.13dB
Power spectral density	± 0.13dB

# 2. CONDUCTED EMISSION MEASUREMET

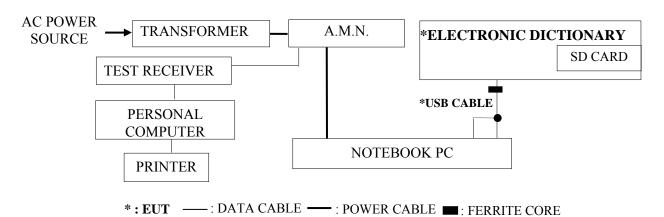
# 2.1. Test Equipment

The following test equipment was used during the conducted emission measurement: (No. 8 Shielded Room)

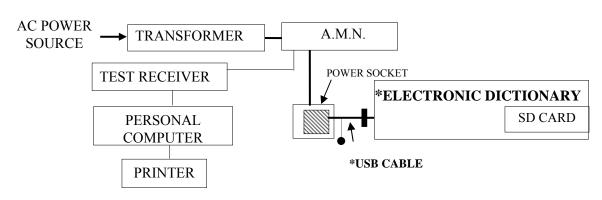
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCS30	100265	Aug. 24, 12'	Aug. 23, 13'
2.	A.M.N.	R&S	ESH2-Z5	100366	Mar. 19, 13'	Mar. 18, 14'

# 2.2. Block Diagram of Test Setup

#### 2.2.1. Link NB Mode



#### 2.2.2. Stand-Alone (charging) Mode:



\*: EUT —: DATA CABLE —: POWER CABLE =: FERRITE CORE

: SWITCHING POWER SUPPLY

# 2.3. Powerline Conducted Emission Limit [§15.207, Class B]

Frequency	Maximum RF Line Voltage		
	Quasi-Peak Level Average Leve		
150kHz ~ 500kHz	$66 \sim 56 \ dB\mu V$	$56 \sim 46 \ dB\mu V$	
500kHz ~ 5MHz	56 dBμV	46 dBμV	
5MHz ~ 30MHz	60 dBμV	50 dBμV	

Remark 1. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2. The lower limit applies at the band edges.

# 2.4. Operating Condition of EUT

- 2.4.1. Set up the EUT and simulator as shown on 2.2.
- 2.4.2. To turn on the power of all equipment.
- 2.4.3. Link NB Mode: The Electronic Dictionary (EUT) upload/downloaded data into/from the PC system via the USB cable.
- 2.4.4. Stand-Alone (charging) Mode: The Electronic Dictionary (EUT) charging with Switching Power Supply via the USB cable.
- 2.4.5. The other peripheral devices were driven and operated in turn during all testing.

#### 2.5. Test Procedure

The EUT (Link Notebook PC or Switching Power Supply) was placed on the table which was above the ground by 80cm and it's Notebook PC's adapter power cord or its Switching Power Supply power cord connected to the AC mains through an Artificial Mains Network (A.M.N.). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to ANSI C63.4-2003 regulation during conducted measurement.

The bandwidth of the R&S Test Receiver ESCS30 was set at 9kHz.

The frequency range from 150kHz to 30MHz was checked.

All the final readings from Test Receiver were measured with the Quasi-Peak detector and Average detector. Remark: If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

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# 2.6. Conducted Emission Measurement Results

#### PASSED.

(All the emissions not reported below are too low against the prescribed limits.)

EUT with following test modes was performed during this section testing and all the test results are attached in next pages.

EUT: Electronic Dictionary Model No.: CD-920

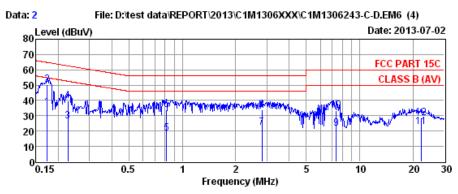
Test Date: Jul. 02, 2013 Temperature: 25 Humidity: 62%

#### The details are as follows:

Mada	Tost Waltaga	Operation of FLIT	Reference Test Data No.		
Mode	Test Voltage	Operation of EUT	Neutral	Line	
1	AC 120V/60Hz (Via Notebook)	Operating (Link NB)	# 2	# 1	
2	AC 120V/60Hz (Via Switching Power Supply)	Charge	# 4	# 3	



Email:emc@audixtech.com



: No.8 Shielded Room Site no. Data no. : 2 Dis. / Ant. : Ant. pol. : NEUTRAL ESH2-Z5 366

: FCC PART 15C Limit

Env. / Ins. : 25\*C / 62% ESCS (265) Engineer : Jack\_Wu

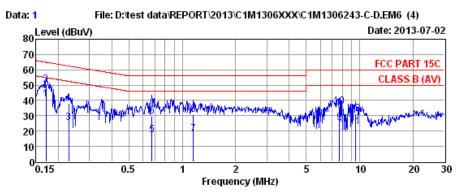
: CD-920 Power Rating: 120Vac/60Hz Test Mode : Operating

		AMN.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBµV)	(dBµV)	(dBµV)	(dB)	
							40.44	
1	0.173	0.10	0.04	35.56	35.70	54.81	19.11	Average
2	0.173	0.10	0.04	50.04	50.18	64.81	14.63	QP
3	0.227	0.10	0.04	26.59	26.73	52.57	25.84	Average
4	0.227	0.10	0.04	39.73	39.87	62.57	22.70	QP
5	0.817	0.18	0.05	18.57	18.80	46.00	27.20	Average
6	0.817	0.18	0.05	33.45	33.68	56.00	22.32	QP
7	2.809	0.20	0.10	21.78	22.08	46.00	23.92	Average
8	2.809	0.20	0.10	33.71	34.01	56.00	21.99	QP
9	7.368	0.27	0.17	21.27	21.71	50.00	28.29	Average
10	7.368	0.27	0.17	33.10	33.54	60.00	26.46	QP
11	22.180	0.50	0.26	21.90	22.66	50.00	27.34	Average
12	22.180	0.50	0.26	27.78	28.54	60.00	31.46	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Reading.



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: No.8 Shielded Room Site no. Data no. : 1 Dis. / Ant. : ESH2-Z5 366 Ant. pol. : LINE

: FCC PART 15C Limit

Env. / Ins. : 25\*C / 62% ESCS (265) Engineer : Jack\_Wu

: CD-920 Power Rating: 120Vac/60Hz Test Mode : Operating

		AMN.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Le∨el	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBµV)	(dBµV)	(dBµV)	(dB)	
				40.54	40.60			
1	0.170	0.10	0.04	40.54	40.68	54.94	14.26	Average
2	0.170	0.10	0.04	50.33	50.47	64.94	14.47	QP
3	0.229	0.10	0.04	25.23	25.37	52.48	27.11	Average
4	0.229	0.10	0.04	37.90	38.04	62.48	24.44	QP
5	0.675	0.16	0.04	17.04	17.24	46.00	28.76	Average
6	0.675	0.16	0.04	29.34	29.54	56.00	26.46	QP
7	1.153	0.20	0.06	17.53	17.79	46.00	28.21	Average
8	1.153	0.20	0.06	30.26	30.52	56.00	25.48	QP
9	7.687	0.27	0.17	25.03	25.47	50.00	24.53	Average
10	7.687	0.27	0.17	35.55	35.99	60.00	24.01	QP
11	9.451	0.29	0.19	22.48	22.96	50.00	27.04	Average
12	9.451	0.29	0.19	30.74	31.22	60.00	28.78	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Reading.



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#### Data: 4 File: D:\test data\REPORT\2013\C1M1306XXX\C1M1306243-C-D.EM6 (4) 80 Level (dBuV) Date: 2013-07-02 70 FCC PART 15C 60 CLASS B (AV) 50 40 30 20 10 0.15 0.5 2 5 10 20 30 Frequency (MHz)

: No.8 Shielded Room Site no. Data no. : 4 Dis. / Ant. : Ant. pol. : NEUTRAL ESH2-Z5 366

: FCC PART 15C Limit

Env. / Ins. : 25\*C / 62% ESCS (265) Engineer : Jack\_Wu

: CD-920 Power Rating: 120Vac/60Hz Test Mode : Charge

		AMN.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBµV)	(dBµV)	(dBµV)	(dB)	
1	0.183	0.10	0.04	16.83	16.97	54.33	37.36	Average
2	0.183	0.10	0.04	38.57	38.71	64.33	25.62	QP
3	0.375	0.10	0.04	22.69	22.83	48.39	25.56	Average
4	0.375	0.10	0.04	34.94	35.08	58.39	23.31	QP
5	0.497	0.12	0.04	21.94	22.10	46.05	23.95	Average
6	0.497	0.12	0.04	36.46	36.62	56.05	19.43	QP
7	0.665	0.15	0.04	14.68	14.87	46.00	31.13	Average
8	0.665	0.15	0.04	29.05	29.24	56.00	26.76	QP
9	0.958	0.19	0.05	13.44	13.68	46.00	32.32	Average
10	0.958	0.19	0.05	27.23	27.47	56.00	28.53	QP
11	6.252	0.25	0.15	10.91	11.31	50.00	38.69	Average
12	6.252	0.25	0.15	25.47	25.87	60.00	34.13	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Reading.



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#### Data: 3 File: D:\test data\REPORT\2013\C1M1306XXX\C1M1306243-C-D.EM6 (4) 80 Level (dBuV) Date: 2013-07-02 70 FCC PART 15C 60 CLASS B (AV) 50 40 30 20 10 0 0.15 0.5 2 5 10 20 30 Frequency (MHz)

: No.8 Shielded Room Site no. Data no. : 3 Dis. / Ant. : ESH2-Z5 366 Ant. pol. : LINE

: FCC PART 15C Limit

Env. / Ins. : 25\*C / 62% ESCS (265) Engineer : Jack\_Wu

: CD-920 Power Rating: 120Vac/60Hz Test Mode : Charge

		AMN.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Le∨el	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBµV)	(dBµV)	(dBµV)	(dB)	
1	0.193	0.10	0.04	27.81	27.95	53.89	25.94	Average
2	0.193	0.10	0.04	41.87	42.01	63.89	21.88	QP
3	0.266	0.10	0.04	19.79	19.93	51.25	31.32	Average
4	0.266	0.10	0.04	30.38	30.52	61.25	30.73	QP
5	0.499	0.12	0.04	23.91	24.07	46.01	21.94	Average
6	0.499	0.12	0.04	36.98	37.14	56.01	18.87	QP
7	0.755	0.17	0.04	21.04	21.25	46.00	24.75	Average
8	0.755	0.17	0.04	31.03	31.24	56.00	24.76	QP
9	1.289	0.20	0.06	15.19	15.45	46.00	30.55	Average
10	1.289	0.20	0.06	23.31	23.57	56.00	32.43	QP
11	6.285	0.25	0.15	11.08	11.48	50.00	38.52	Average
12	6.285	0.25	0.15	25.37	25.77	60.00	34.23	QP
								_

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Reading.

# 3. RADIATED EMISSION MEASUREMENT

# 3.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

# 3.1.1. For Frequency Range 30MHz~1000MHz (at Semi-Anechoic Chamber)

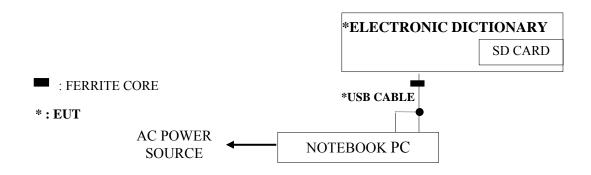
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 08, 12'	Aug. 06, 13'
2.	Test Receiver	R & S	ESCS30	100338	Jul. 01, 13'	Jun. 30, 14'
3.	Amplifier	HP	8447D	2944A06305	Feb. 29, 13'	Feb. 28, 14'
4.	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 02, 13'	Mar. 04, 14'
5.	Log Periodic Antenna	Schwarzbeck	UHALP9108- A	0810	Mar. 02, 13'	Mar. 04, 14'

# 3.1.2. For Frequency Above 1GHz (at Semi-Anechoic Chamber)

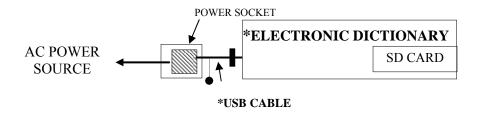
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 07, 12'	Aug. 06, 13'
2.	Test Receiver	R & S	ESCS30	100338	Jul. 01, 13'	Jun. 30, 14'
3.	Pre-Amplifier	HP	8449B	3008A02678	Mar. 08, 13'	Mar. 07, 14'
4.	2.4GHz Notch Filter	K&L	7NSL10-2441. 5E130.5-00	1	Jun. 13, 13'	Jun. 12, 14'
5.	3.5G High Pass Filter	Microware Circuits	H3G018G1	484796	Jun. 13, 13'	Jun. 12, 14'
6.	Horn Antenna	EMCO	3115	9112-3775	May 07, 13'	May 06, 14'
7.	Horn Antenna	EMCO	3116	2653	Oct. 15, 12'	Oct. 14, 13'

# 3.2. Test Setup

# 3.2.1. Block Diagram of connection between EUT and simulators **(TX Mode)**



# (Charge Mode)

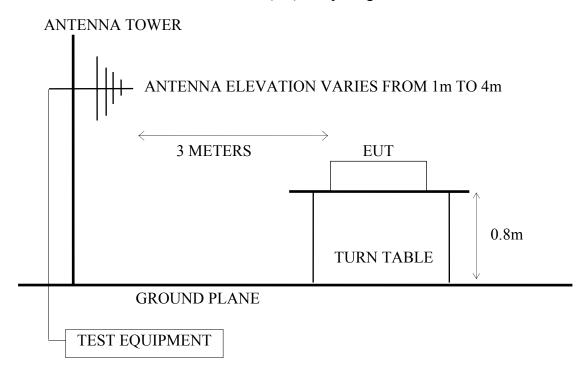


: FERRITE CORE

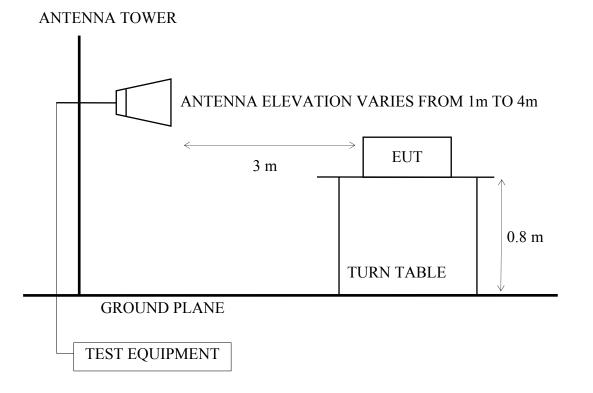
: SWITCHING POWER SUPPLY

\*: **EUT** 

# 3.2.2. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



# 3.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for above 1GHz



# 3.3. Radiated Emission Limits (§15.209, RSS-210 §2.7/Table 2)

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMITS			
MHz	Meters	μV/m	dBµV/m		
30 ~ 88	3	100	40.0		
88 ~ 216	3	150	43.5		
216 ~ 960	3	200	46.0		
Above 960	3	500	54.0		
Above 1000	3	74.0 dBµV/m (Peak)			
		54.0 dBμV/m (Average)			

Remark: (1) Emission level ( $dB\mu V/m$ ) = 20 log Emission level ( $\mu V/m$ )

- (2) The tighter limit applies at the edge between two frequency bands.
- (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.
- (4) The limits in this table are based on CFR 47 Part 15.205(a)(b) and Part 15.209 (a).
- (5) The over 1GHz limit, FCC limit is used based on CFR 47 Part 15.35(b) and Part 15.205(b) & Part 15.209(e) and Part 15.207(c).

# 3.4. Operating Condition of EUT

- 3.4.1. The Electronic Dictionary (EUT) can be operated with battery (DC 3.7V), USB port (DC 5V) or switching power supply (120Vac transfer to DC 5V), after pre-scanning stand(x), lie(y) and side(z) axes that x axis is the worst axis. We do TX test in stand configuration and associated with USB to connect to notebook, and associated with switching supply for charge mode.
- 3.4.2. Charge mode: The Electronic Dictionary (EUT) charging with Switching Power Supply via the USB cable.
- 3.4.3. TX Mode: The test program "adb.exe" was used to enable the EUT to transmit data at different channel frequency individually.
- 3.4.4. The EUT supports 802.11b/g/n-HT20/n-HT40 modes, we performed pre-scan high, middle, low channels for each mode for spurious emission and listed the worst channel of each mode in test report.
- 3.4.5. The worst channel of each mode as following:

Mode	Type of Network	Channel
1.	802.11b	CH 1
2.	802.11g	CH 1
3.	802.11n-HT20	CH 6
4.	802.11n-HT40	CH 9

#### 3.5. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna such as calibrated biconical and log-periodical antenna or horn antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-2003 regulation.

The bandwidth of the R&S Test Receiver was set at 120kHz. (For 30MHz to 1000MHz)

The resolution bandwidth and video bandwidth of test spectrum analyzer is 1MHz for peak detection (PK) at frequency above 1GHz.

The resolution bandwidth of test spectrum analyzer is 1MHz and the video bandwidth is 10Hz for average detection (AV) at frequency above 1GHz.

The frequency range from 30MHz to 25GHz (Up to 10<sup>th</sup> harmonics from fundamental frequency) was checked. 30MHz to 1000MHz was measured with Quasi-Peak detector.

Pursuant to ANSI C63.4 8.3.1.2, when peak value complies with the average limit, we didn't perform measurement in average detector.

FCC ID: U6OCA012

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#### 3.6. Test Results

#### PASSED.

(All emissions not reported for there is no emission be found.)

#### For Frequency Range 30MHz~1000MHz:

The EUT with following test modes was performed during this section testing and all the test results are listed in section 3.6.1.

EUT: Electronic Dictionary M/N: CD-920

Test Date: Jul. 05, 2013 Temperature: 26 Humidity: 61%

No.	Test Veltage	Tyma	Chamal	Engarranas	Test Mode	Reference Test Data No.	
NO.	Test Voltage	Type	Channel Frequency		Test Mode	Horizontal	Vertical
1	AC 120V/60Hz (Via Switching Power Supply)		1		Charge	# 2	# 1
2		802.11b	CH 11	2462MHz		# 12	# 11
3	DC 5V	802.11g	CH 11	2462MHz	Tuonamit	# 12	# 11
4	(Via NB)	802.11n-HT20	CH 11	2462MHz	Transmit	# 12	# 11
5		802.11n-HT40	CH 9	2452MHz		# 14	# 13

<sup>\*</sup> Above all final readings were measured with Quasi-Peak detector.

#### For Frequency above 1GHz:

Remark: The emissions (up to 25GHz) not reported are too low to be measured.

#### For Restricted Bands:

The EUT was tested in restricted bands and all the test results are listed in section 3.6.2. (The restricted bands defined in part 15.205(a))

No.	Tast Valtaga	Tyma	C1 1	Г	T4 M- 1-	Reference Test Data No.		
NO.	Test Voltage	Type	Cnannei	Frequency	Test Mode	Horizontal	Vertical	
1		802.11b	CH 6	2412MHz		# 3, # 4	#1,#2	
2		802.110	CH 11	2462MHz		# 7, # 8	# 5, # 6	
3		802.11g	CH 6	2412MHz		# 3, # 4	#1,#2	
4	DC 5V		CH 11	2462MHz	Transmit	# 7, # 8	# 5, # 6	
5	(Via NB)	802.11n-HT20	CH 6	2412MHz	Hansiiii	# 3, # 4	#1,#2	
6		802.11n-H120	CH 11	2462MHz		# 7, # 8	# 5, # 6	
7		902 11n UT40	CH 2	2422MHz		# 3, # 4	#1,#2	
8		802.11n-HT40	CH 9	2452MHz		# 7, # 8	# 5, # 6	

#### 3.6.1. For 30-1000MHz Frequency Range Measurement Results

#### Charge

Site no. : A/C Chamber Data no. : 2

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26°C/61% Wenbin yang

EUT : CD-920 Power Rating : AC120V Test Mode : CHARGE

	_	Factor	Loss	Reading	Emission Level (dBµV/m)		_	Remark
2	710.940	23.54	6.51	23.60	26.58 26.26 31.83	46.00	19.74	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 1

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26℃/61% Wenbin\_yang

EUT : CD-920 Power Rating : AC120V Test Mode : CHARGE

	_	Factor	Loss	Reading	Emission Level (dBµV/m)		_	Remark
2	704.150	23.56	6.60	24.03	25.95 26.80 31.11	46.00	19.20	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

#### 802.11b, Transmit, Frequency: 2462MHz

Site no. : A/C Chamber Data no. : 12

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26℃/61% Wenbin\_yang

EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462 b

	Freq.	Factor		Reading	Emission Level (dBµV/m)		_	Remark
1	218.180	21.91	3.20	3.55	28.66	46.00	17.34	OP
	504.330				30.97			
3	745.860	22.91	6.65	1.50	31.06	46.00	14.94	QP
4	830.250	24.75	7.10	-0.17	31.68	46.00	14.32	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 11

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26℃/61% Wenbin\_yang

EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462 b

	Freq.	Factor		Reading	Emission Level (dBµV/m)		_	Remark
1	207.510	21.88	3.12	6.44	31.43	43.50	12.07	QP
2	553.800	19.40	6.80	2.93	29.13	46.00	16.87	QP
3	697.360	23.32	6.50	-0.14	29.68	46.00	16.32	QP
4	959.260	26.38	7.60	-2.87	31.11	46.00	14.89	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official

#### 802.11g, Transmit, Frequency: 2462MHz

Site no. : A/C Chamber Data no. : 12

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26°C/61% Wenbin\_yang

EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462 g

	Freq. (MHz)	Factor	Loss	Reading	Emission Level (dBµV/m)			Remark
1	192.960	21.66	3.00	5.60	30.26	43.50	13.24	QP
2	484.930	18.80	6.20	2.01	27.00	46.00	19.00	QP
3	649.830	21.50	6.30	-0.33	27.46	46.00	18.54	QP
4	830.250	24.75	7.10	-0.61	31.23	46.00	14.77	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 11

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26°C/61% Wenbin\_yang

EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462 g

	_	Factor		_	Emission Level (dBµV/m)		_	Remark
1	165.800	20.93	2.70	3.44	27.07	43.50	16.43	QP
2	483.960	18.84	6.14	3.71	28.69	46.00	17.31	QP
3	697.360	23.32	6.50	0.66	30.48	46.00	15.52	QP
4	961.200	26.50	7.60	-3.42	30.68	54.00	23.32	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

#### 802.11n-HT20, Transmit, Frequency: 2462MHz

Site no. : A/C Chamber Data no. : 12

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26℃/61% Wenbin\_yang

EUT : CD-920 Power Rating : DC5V

Test Mode : TX2462 n20

	Freq.	Factor		Reading	Emission Level (dBµV/m)		_	Remark
1	192.960				28.58		14.92	~
2					30.87 34.03		15.13	QP QP
4	828.310	24.62	7.10	3.61	35.33	46.00	10.67	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 11

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26°C/61% Wenbin yang

EUT : CD-920 Power Rating : DC5V

Test Mode : TX2462 n20

	Freq.	Factor		Reading	Emission Level (dBµV/m)	_	Remark
2	166.770 415.090 697.360 828.310	16.99 23.32	5.10 6.50	2.02 0.02			QP QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

#### 802.11n-HT40, Transmit, Frequency: 2452MHz

Site no. : A/C Chamber Data no. : 14

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26℃/61% Wenbin\_yang

EUT : CD-920 Power Rating : DC5V

Test Mode : TX2452 n40

	_	Factor	Loss	Reading	Emission Level (dBµV/m)		_	Remark
2	551.860	19.23	6.80	1.33	32.52 27.35 31.13	46.00		QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

 The emission levels that are 20dB below the official limit are not reported.

Site no. : A/C Chamber Data no. : 13

Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL

Limit : FCC PART-15C

Env. / Ins. : E4446A 26°C/61% Wenbin yang

EUT : CD-920 Power Rating : DC5V

Test Mode : TX2452 n40

	_	Factor	Loss	Reading	Emission Level (dBµV/m)		_	Remark
2	504.330	19.02	6.62	2.60	26.17 28.24 29.13	46.00	17.76	QP

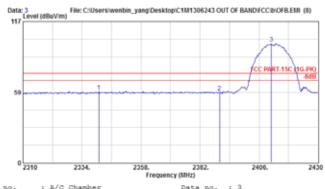
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

#### 3.6.2. Restricted Bands Measurement Results

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: Electronic Dictionary Humidity: 61%

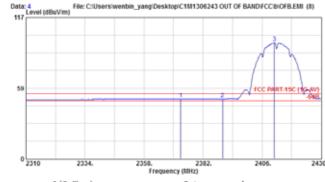
Test Mode: 802.11b, Transmit, Channel: 01, Frequency: 2412MHz



Site no. : A/C Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC FART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61\* Wenbin\_yang
EUT : CD-920
Fower Rating : DC5V
Test Mode : TX2412

	Freq.	Factor		Reading	Emission Level (dBµV/m)	Limits		Remark	
1	2340.840	28.36	6.28	58.76	59.13	74.00	14.87	Peak	
2	2390.000	28.47	6.34	57.58	58.12	74.00	15.88	Peak	
3	2411.040	28.51	6.36	98.24	98.84	74.00	-24.84	Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC FART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/61% Wenbin\_yang
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2412

	Freq.	Factor			Emission Level (dBµV/m)			Remark
2	2372.880 2390.000 2411.040	28.47	6.34	48.81 48.83 95.23	49.29 49.36 95.83	54.00 54.00 54.00	4.64	

61%

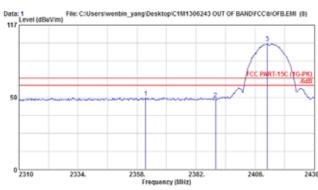
Humidity:

Date of Test: Jul. 05, 2013 Temperature: 26

Test Mode: 802.11b, Transmit, Channel: 01, Frequency: 2412MHz

**Electronic Dictionary** 

EUT:

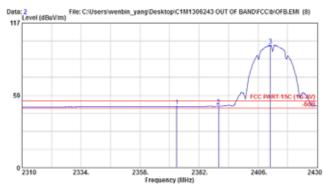


Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920
Power Rating : DC5V
Teat Model : TV2412 Data no. : 1 Ant. pol. : VERTICAL Wenbin\_yang

Test Mode

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limite	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dBµV)	(dBµV/m)	(dBµV/m)	(dB)	
1	2361.480	28.40	6.30	23.79	58.49	74.00	15.51	Peak
2	2390.000	28.47	6.34	22.00	56.81	74.00	17.19	Peak
3	2411.040	28.51	6.36	67.36	102.23	74.00	-28.23	Peak
	2	(MHz) 1 2361.480 2 2390.000	Freq. Factor	Freq. Factor Loss (MHz) (dB/m) (dB) 1 2361.480 28.40 6.30 2 2390.000 28.47 6.34	(MHz) (dB/m) (dB) (dBμV)  1 2361.480 28.40 6.30 23.79 2 2390.000 28.47 6.34 22.00	Freq. Factor Loss   Reading   Level   (MRz)   (dB/m)   (dB)   (dBμV)   (dBμV/m)	Freq. Factor Loss   Reading   Level   Limits   (MRz)   (dB/m)   (dB)   (dBμV)   (dBμV/m)   (dBμV/m)   (dBμV/m)     2361.480   28.40   6.30   23.79   58.49   74.00     2390.000   28.47   6.34   22.00   56.81   74.00	Freq.   Factor Loss   Reading   Level   Limits   Margin   (dBμν)   (dBμν/m)   (dBμν/m)   (dBμν/m)   (dBμν/m)   (dBμν/m)   (dBμν/m)   (dBμν/m)   1   2361.480   28.40   6.30   23.79   58.49   74.00   15.51   2   2390.000   28.47   6.34   22.00   56.81   74.00   17.19

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26 C/61%
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2412 Data no. : 2 Ant. pol. : VERTICAL Wenbin\_yang

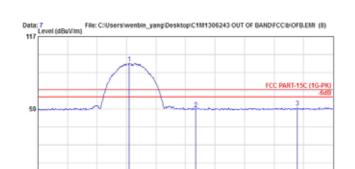
	Freq.	Pactor		Reading	Emission Level (dBµV/m)			Remark
2	2372.880 2390.000 2411.040	28.47	6.34			54.00 54.00 54.00	4.48	

Date of Test: Jul. 05, 2013 Temperature: 26 **Electronic Dictionary** Humidity: 61% EUT:

802.11b, Transmit, Channel: 11, Frequency: 2462MHz

2510.

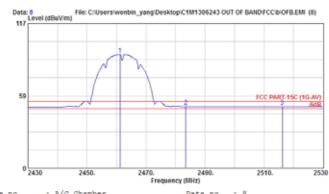
Test Mode:



2470. 24 Frequency (MHz) Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462 Data no. : 7 Ant. pol. : HORIZONTAL Wenbin\_yang

	Freq.		Loss	Reading	Emission Level (dBµV/m)			Remark
1 :	2460.900	28.62	6.42	94.79	95.55	74.00	-21.55	Peak
2	2483.500	28.66	6.45	57.41	50.23	74.00	15.77	Peak
3 :	2517.900	28.76	6.49	58.47	59.41	74.00	14.59	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/61\*
EUT : CD-920 Data no. Data no. : 8 Ant. pol. : HORIZONTAL Wenbin\_yang Power Rating : DC5V Test Mode : TX2462

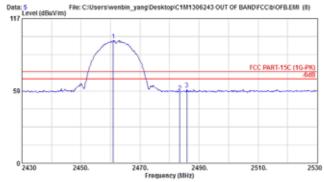
 Freq.	Pactor	Reading	Level (dBµV/m)		Remark
2461.200		 91.39	92.15		Average
2483.500 2516.200		48.75 48.90	49.56	54.00	Average

Date of Test: Jul. 05, 2013 Temperature: 26 EUT: **Electronic Dictionary** Humidity: 61%

Test Mode:

Data: 5 117 Level (dBaVIm) File: C:Users\uendin\_yang\Desktop\C1M1306243 OUT OF BAND\u00e4FCC\u00e4\U00d6FB.EM\u00e4 (8)

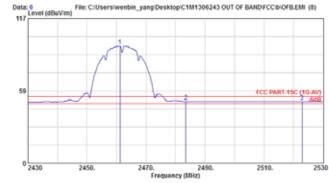
802.11b, Transmit, Channel: 11, Frequency: 2462MHz



Site no. : A/C Chamber Dis. / Ant. : 3m 3115(4927) Limit : FCC PART-15C (1G-PK) Env. / Ins. : E4446A 26°C/61% EUT : CD-920 Data no. : 5 Ant. pol. : VERTICAL Data no. Wenbin\_yang Power Rating : DC5V

Ant. Cable Emission Freq. Factor Loss (dB/m) (dB) Reading (dBµV) Level Limits Margin Remark (dBpV/m) (dBpV/m) (dB) 6.42 98.52 6.45 56.74 6.45 58.96 99.28 57.56 59.78 2460.900 2483.500 28.62 28.66 74.00 74.00 16.44 Peak 2485.900 28.66 74.00 14.22

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



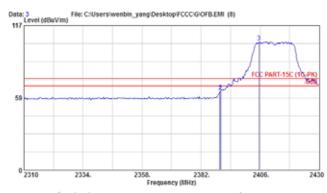
Site no. : A/C Chamber
Die. / Ant. : 3m 3115 (4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E446A 26°C/618
EUT : CD-920 Data no. : 6 Ant. pol. : VERTICAL Wenbin\_yang Power Rating : DC5V Test Mode : TX2462

	Freq.	Pactor		Reading	Emission Level (dBµV/m)			Remark
1	2461.200	28.62	6.42	94.10	94.85	54.00	-40.85	Average
2	2483.500	28.66	6.45	40.02	49.64	54.00	4.36	Average
3	2522.900	28.81	6.50	48.84	49.85	54.00	4.15	Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: Electronic Dictionary Humidity: 61%

Test Mode: 802.11g, Transmit, Channel: 01, Frequency: 2412MHz

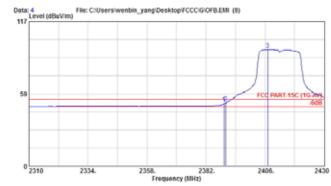


Site no. : A/C Chamber Data no. : 3
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PARR-15C (1G-PK)
Env. / Ins. : E4446A 26°C/618 Wenbin\_yang
EUT : CD-920
Power Rating : DC5V

Ant. Cable Emission
Freq. Factor Loss Reading Level Limits Margin Remark
(MMIZ) (dB/m) (dB) (dBpW) (dBpW/m) (dBpW/m) (dB)

1 2389.680 28.47 6.34 28.48 63.30 74.00 10.70 Feak 2 2390.000 28.47 6.34 28.53 63.35 74.00 10.65 Feak 3 2405.640 28.51 6.36 68.78 103.65 74.00 -29.65 Feak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



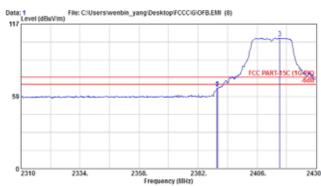
Site no. : A/C Chamber Data no. : 4
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/618
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2412

	Freq.	Pactor			Level (dBµV/m)			Remark
1	2389.320	28.47	6.34	15.64	50.45	54.00	3.55	Average
2	2390.000	28.47	6.34	16.25	51.06	54.00	2.94	Average
	2407.080			59.38	94.25	64.00	-40 05	Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: **Electronic Dictionary** Humidity: 61%

Test Mode: 802.11g, Transmit, Channel: 01, Frequency: 2412MHz

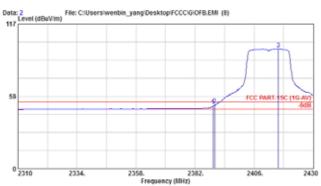


Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC FART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920
Power Rating : DC5V
Teat Model : TV2412 Data no. : 1 Ant. pol. : VERTICAL Wenbin\_yang

Test Mode

				Cable		Emission			
		Freq.	Factor	Loss	Reading	Level	Limite	Margin	Remark
		(MHz)	$(dB/\pi)$	(dB)	(dBµV)	(dBµV/m)	(dBuV/m)	(dB)	
	1	2389.680	28.47	6.34	29.86	64.68	74.00	9.32	Peak
	2	2390.000	28.47	6.34	30.28	65.09	74.00	8.91	Peak
1	3	2415.240	28.51	6.36	71.07	105.94	74.00	-31.94	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26 C/61%
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2412 Data no. : 2 Ant. pol. : VERTICAL Wenbin\_yang

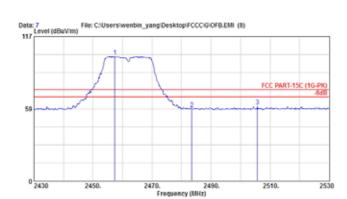
		Factor		Reading	Emission Level (dBµV/m)			Remark
2	2389.320 2390.000 2415.840	28.47	6.34	16.43	51.24	54.00 54.00 54.00	2.76	Average

 Date of Test :
 Jul. 05, 2013
 Temperature:
 26

 EUT:
 Electronic Dictionary
 Humidity:
 61%

802.11g, Transmit, Channel: 11, Frequency: 2462MHz

Test Mode:

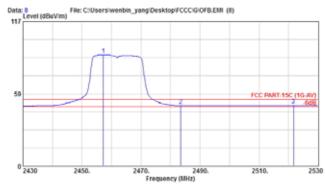


Site no. : A/C Chamber Data no. : 7
Dis. / Ant. : 3m 3115 (4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/618 Wenbin\_yang
EUT
Power Rating : DC5V
Test Mode : TX2462

Ant. Cable Emission

	Freq. (MHz)	Pactor			Level (dBµV/m)			Remark
1	2457.400	28.62	6.42	66.27	101.31	74.00	-27.31	Peak
2	2483.500	28.66	6.45	23.34	58.46	74.00	15.54	Peak
3	2505.700	28.76	6.48	25.12	60.36	74.00	13.64	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



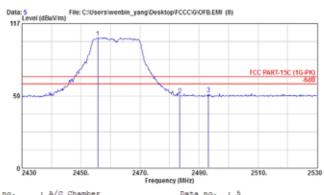
Site no. : A/C Chamber Data no. : 8
Dis. / Ant. : 3m 3115(4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/618 Wenbin\_yang
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462

Freq.	Pactor		Reading	Emission Level (dBµV/m)			Remark
1 2457.200 2 2483.500 3 2521.700	28.66	6.45	13.82		54.00 54.00 54.00	5.07	Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: Electronic Dictionary Humidity: 61%

Test Mode: 802.11g, Transmit, Channel: 11, Frequency: 2462MHz

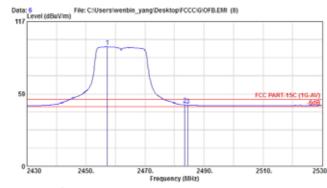


Site no. : A/C Chamber Data no. : 5
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PARR-15C (1G-PK)
Env. / Ins. : E4446A 26°C/618 Wenbin\_yang
EUT : CD-920
Power Rating : DC5V

Ant. Cable Emission
Freq. Factor Loss Reading Level Limits Margin Remark
(MHz) (dB/m) (dB) (dBpV) (dBpV/m) (dBpV/m) (dB)

1 2455.700 28.62 6.42 70.69 105.73 74.00 -31.73 Peak 2 2483.500 28.66 6.45 24.08 59.19 74.00 14.81 Peak 3 2493.200 28.70 6.46 24.77 59.93 74.00 14.07 Peak

Remarks: 1. Emission Level= Antenna Factor \* Cable Loss \* Reading.
2. The emission levels that are 20dB below the official limit are not reported.



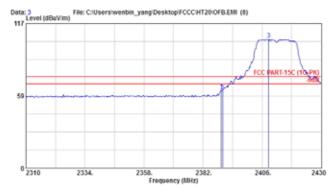
Site no. : A/C Chamber Data no. : 6
Dis. / Ant. : 3m 3115(4927) Ant. pol. : VERTICAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/618
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462

	Freq. (MHz)	Pactor		Reading	Level (dBµV/m)			Remark
1	2457.200	28.62	6.42	61.66	96.71	54.00	-42.71	Average
2	2483.500	28.66	6.45	14.43	49.54	54.00	4.46	Average
3	2484.500	28.66	6.45	14.26	49.38	54.00	4.62	Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: **Electronic Dictionary** Humidity: 61%

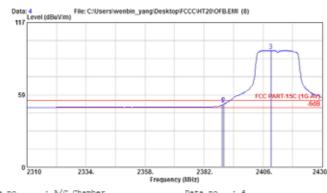
Test Mode: 802.11n-HT20, Transmit, Channel: 01, Frequency: 2412MHz



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2412 Data no. : 3 Ant. pol. : HORIZONTAL Wenbin\_yang

	Freq.	Pactor		Reading	Emission Level (dBpV/m)			Remark
1	2389.440	28.47	6.34	28.30	63.11	74.00	10.89	Peak
2	2390.000	28.47	6.34	27.18	61.99	74.00	12.01	Peak
3	2408.640	28.51	6.36	69.31	104.18	74.00	-30.18	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/61\*
EUT : CD-920 Data no. : 4 Ant. pol. : HORIZONTAL Wenbin\_yang

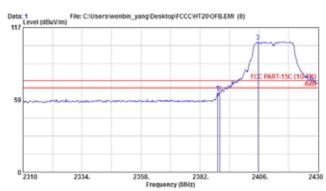
Power Rating : DC5V Test Mode : TX2412

	Freq.	Pactor		Reading	Level (dBµV/m)			Remark
1	2389.440	28.47	6.34	15.56	50.38	54.00	3.62	Average
2	2390.000	28.47	6.34	16.06	50.87	54.00	3.13	Average
3	2409.240	28.51	6.36	59.60	94.48	54.00	-40.48	Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: **Electronic Dictionary** Humidity: 61%

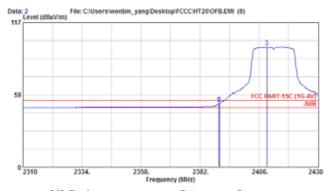
Test Mode: 802.11n-HT20, Transmit, Channel: 01, Frequency: 2412MHz



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2412 Data no. : 1 Ant. pol. : VERTICAL Wenbin\_yang

	Freq. (MHz)		Loss	Reading	Emission Level (dBµV/m)			Remark
2	2389.080 2390.000 2405.640	28.47	6.34	29.78 29.44 70.94	64.60 64.25 105.81	74.00 74.00 74.00	9.40 9.75 -31.81	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



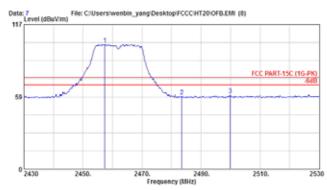
Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/61\*
EUT : CD-920 Data no. : 2 Ant. pol. : VERTICAL Wenbin\_yang Power Rating : DC5V Test Mode : TX2412

	Factor	Loss	Reading	Emission Level (dBµV/m)			Remark
1 2389.560 2 2390.000 3 2409.240	28.47	6.34	16.79	51.60	54.00 54.00 54.00	2.40	Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: **Electronic Dictionary** Humidity: 61%

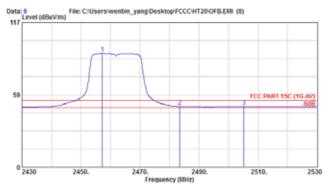
Test Mode: 802.11n-HT20, Transmit, Channel: 11, Frequency: 2462MHz



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462 Data no. : 7 Ant. pol. : HORIZONTAL Wenbin\_yang

	Freq. (MHz)	Factor		Reading	Emission Level (dBµV/m)			Remark
2	2457.400 2483.500 2499.900	28.66	6.45	66.20 23.61 24.88	101.25 58.72 60.05	74.00 74.00 74.00	15.28	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/61\*
EUT : CD-920 Data no. : 8 Ant. pol. : HORIZONTAL Wenbin\_yang

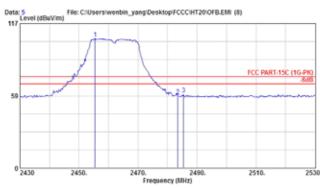
Power Rating : DC5V Test Mode : TX2462

	Freq.	Factor			Emission Level (dBµV/m)			Remark
1	2457.200	28.62	6.42	56.99	92.03	54.00	-38.03	Average
2	2483.500	28.66	6.45	13.84	48.96	54.00	5.04	Average
3	2505.200	28.76	6.48	13.59	48.83	54.00	5.17	Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: **Electronic Dictionary** Humidity: 61%

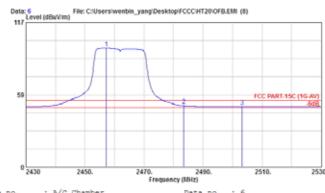
Test Mode: 802.11n-HT20, Transmit, Channel: 11, Frequency: 2462MHz



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920
Power Rating : DC5V
Test Mode : TX2462 Data no. : 5 Ant. pol. : VERTICAL Wenbin\_yang

	Freq.	Pactor			Emission Level (dBuV/m)			Remark
								Dank
	2455.400 2483.500				105.12 58.23	74.00		
3 2	2485.400	28.66	6.45	24.57	59.68	74.00	14.32	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



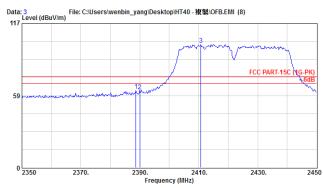
Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/61\*
EUT : CD-920 Data no. : 6 Ant. pol. : VERTICAL Data no. Wenbin\_yang Power Rating : DC5V Test Mode : TX2462

	Freq.	Pactor			Emission Level (dBµV/m)			Remark
1	2457.200	28.62	6.42	61.45	96.49	54.00	-42.49	Average
2	2483.500	28.66	6.45	14.43	49.54	54.00	4.46	Average
3	2503.200	28.70	6.47	13.73	48.90	54.00	5.10	Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: Electronic Dictionary Humidity: 61%

Test Mode: 802.11n-HT40, Transmit, Channel: 3, Frequency: 2422MHz

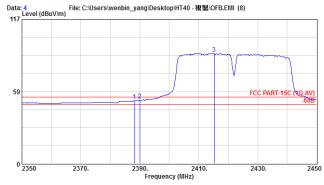


Site no. : A/C Chamber Data no. : 3
Dis. / Ant. : 3m 3115 (4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61% Wenbin\_yang
EUT : CD-920

Power Rating : DC5V Test Mode : TX2422

		Factor	Loss	Reading	Emission Level (dBµV/m)			Remark
2	2388.700 2390.000 2410.700	28.47	6.34	27.16	62.51 61.98 99.71	74.00 74.00 74.00	12.02	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



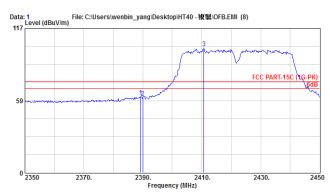
Site no. : A/C Chamber Data no. : 4
Dis. / Ant. : 3m 3115 (4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/61% Wenbin\_yang
EUT : CD-920

EUT : CD-920
Power Rating : DC5V
Test Mode : TX2422

	Freq.		Loss	Reading	Emission Level (dBµV/m)			Remark
2	2388.200 2390.000 2415.200	28.47	6.34	16.02 16.45 54.41	50.83 51.26 89.29	54.00	2.74	Average Average Average

Date of Test: Jul. 05, 2013 Temperature: 26 EUT: **Electronic Dictionary** Humidity: 61%

Test Mode: 802.11n-HT40, Transmit, Channel: 3, Frequency: 2422MHz

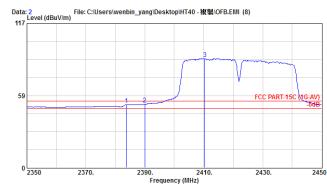


Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920 Data no. : 1 Ant. pol. : VERTICAL Wenbin\_yang

Power Rating : DC5V Test Mode : TX2422

		Factor	Loss	Reading	Emission Level (dBµV/m)			Remark
2	2389.200 2390.000 2410.700	28.47	6.34	25.87	61.85 60.68 101.21	74.00 74.00 74.00	13.32	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26°C/61%
EUT : CD-920 Data no. : 2 Ant. pol. : VERTICAL Wenbin\_yang Power Rating : DC5V Test Mode : TX2422

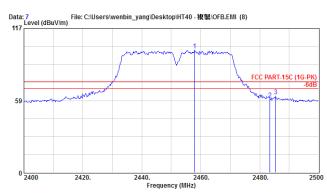
	Freq.		Loss		Emission Level (dBµV/m)			Remark
1 2 3	2383.700 2390.000 2410.400	28.47	6.34	16.18 16.64 53.40	50.94 51.45 88.27	54.00	3.06 2.55 -34.27	Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. The emission levels that are 20dB below the official limit are not reported.

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: Electronic Dictionary Humidity: 61%

Test Mode: 802.11n-HT40, Transmit, Channel: 9, Frequency: 2452MHz

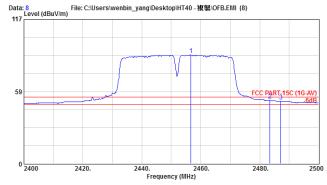


Site no. : A/C Chamber Data no. : 7
Dis. / Ant. : 3m 3115 (4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-PK)
Env. / Ins. : E4446A 26°C/61% Wenbin\_yang
EUT : CD-920

Power Rating : DC5V Test Mode : TX2452

		Factor	Loss	Reading	Emission Level (dBµV/m)			Remark
2	2457.900 2483.500 2485.400	28.66	6.45	24.57	99.30 59.69 62.22	74.00 74.00 74.00	14.31	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber Data no. : 8
Dis. / Ant. : 3m 3115 (4927) Ant. pol. : HORIZONTAL
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E446A 26°C/61% Wenbin\_yang
EUT : CD-920

EUT : CD-920
Power Rating : DC5V
Test Mode : TX2452

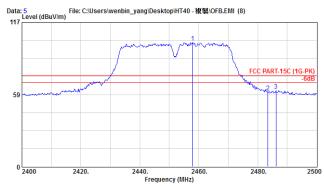
Freq. (MHz)	Factor		Reading	Emission Level (dBµV/m)			Remark
1 2456.700 2 2483.500 3 2487.200	28.66	6.45		88.10 51.24 50.73	54.00	2.76	Average Average Average

Date of Test: Jul. 05, 2013 Temperature: 26

EUT: **Electronic Dictionary** Humidity: 61%

Test Mode:

## 802.11n-HT40, Transmit, Channel: 9, Frequency: 2452MHz

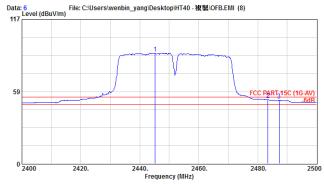


: A/C Chamber : 3m 3115(4927) : FCC PART-15C (1G-PK) : E4446A 26°C/61% : CD-920 Site no. Dis. / Ant. Limit Data no. : 5 Ant. pol. : VERTICAL Env. / Ins. Wenbin\_yang

Power Rating : DC5V Test Mode : TX2452

Emission Ant. Cable Freq. Factor Loss (dB/m) (dB) Level Limits Marg: (dBµV/m) (dBµV/m) (dB) Reading Limits Margin Remark (dBµV) 28.62 28.66 6.42 65.70 6.45 25.29 100.75 60.41 74.00 -26.75 Peak 74.00 13.59 Peak 2457.900 2483.500 3 2486.200 28.66 6.45 26.71 61.82 74.00 12.18 Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. The emission levels that are 20dB below the official limit are not reported.



Site no. : A/C Chamber
Dis. / Ant. : 3m 3115(4927)
Limit : FCC PART-15C (1G-AV)
Env. / Ins. : E4446A 26 C/61%
EUT : CD-920 Data no. : 6
Ant. pol. : VERTICAL Wenbin\_yang

Power Rating : DC5V

	Freq.	Factor		Reading	Emission Level (dBµV/m)			Remark
1	2445.200	28.59	6.40	54.64	89.63	54.00	-35.63	Average
2	2483.500	28.66	6.45	16.69	51.80	54.00	2.20	Average
3	2487.300	28.66	6.45	16.19	51.30	54.00	2.70	Average

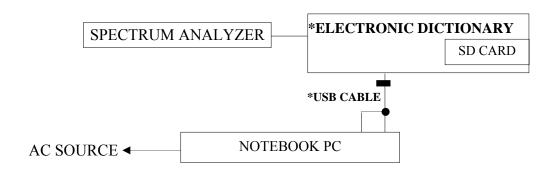
#### 4. 6dB BANDWIDTH MEASUREMENT

## 4.1. Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Oct. 17, 12'	Oct. 16, 13'

#### 4.2. Block Diagram of Test Setup



**\*:EUT** ■: FERRITE CORE

## 4.3. Specification Limits [§15.247(a)(2)]

The minimum 6dB bandwidth shall be at least 500kHz.

## 4.4. Operating Condition of EUT

The test program "adb.exe" was used to enable the EUT to transmit data at different channel frequency individually.

#### 4.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with 1.5% EBW, VBW≥3xRBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

The measurement guideline was according to KDB 558074 D01 V03.

## 4.6. Test Results

**PASSED.** All the test results are attached in next pages.

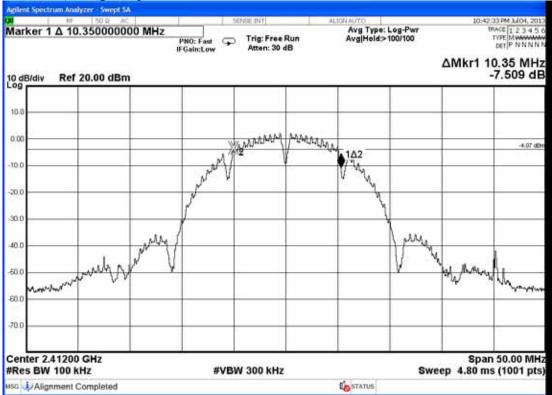
## 4.6.1. WLAN Function

Test Date: Jun. 28, 2013 Temperature: 25 Humidity: 57%

Mode	Type of Network	Channel	Frequency	6dB Bandwidth
1		CH 1	2412MHz	10.35 MHz
2	802.11b	CH 6	2437MHz	10.10 MHz
3		CH 11	2462MHz	10.10 MHz
4		CH 1	2412MHz	16.60 MHz
5	802.11g	CH 6	2437MHz	16.60 MHz
6		CH 11	2462MHz	16.60 MHz
7	802.11n-HT20	CH 1	2412MHz	16.60 MHz
8		CH 6	2437MHz	16.60 MHz
9		CH 11	2462MHz	16.60 MHz
10	802.11n-HT40	CH 3	2422MHz	37.75 MHz
11		CH 6	2437MHz	37.75 MHz
12		CH 9	2452MHz	37.75 MHz

[Limit: least 500kHz]





802.11b, Frequency: 2437MHz



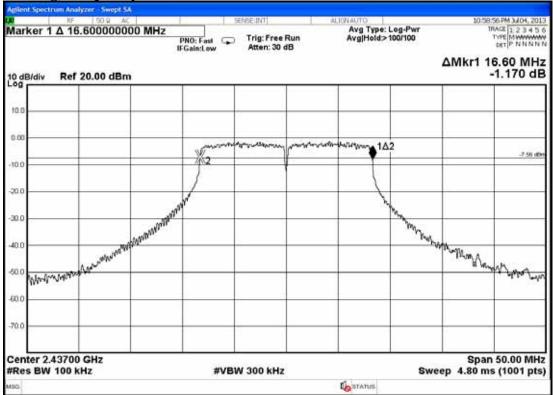




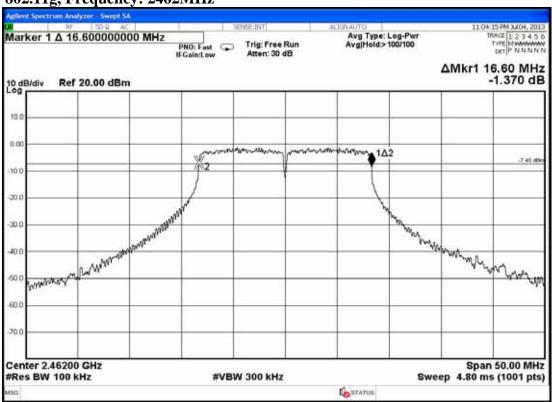
802.11g, Frequency: 2412MHz



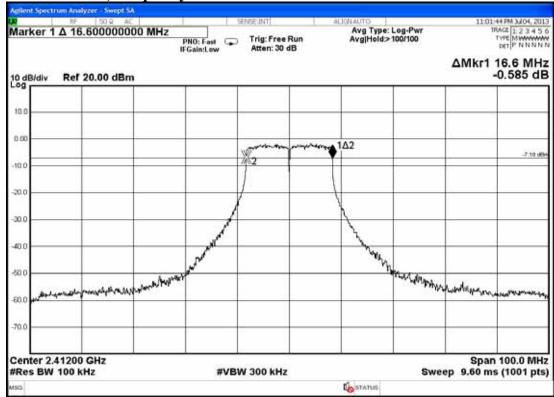




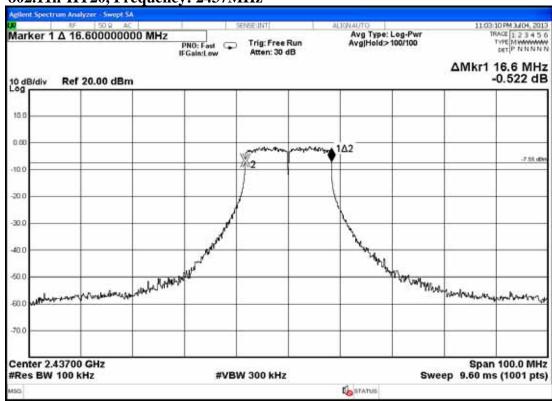
#### 802.11g, Frequency: 2462MHz



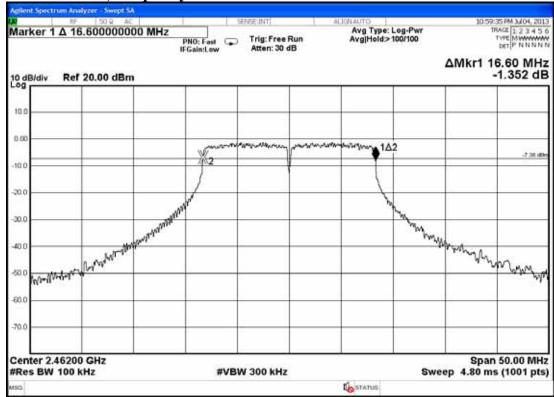




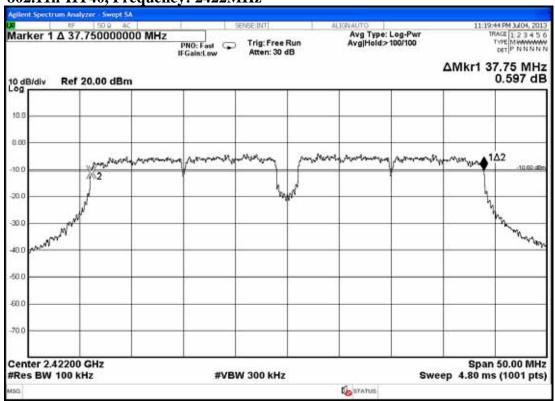
802.11n-HT20, Frequency: 2437MHz



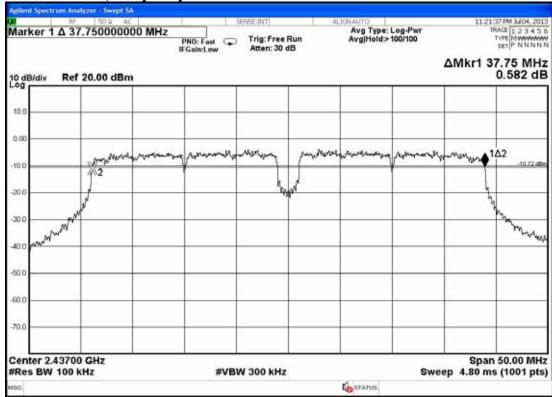




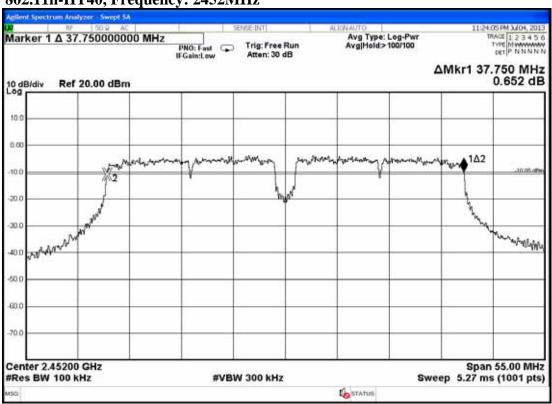
802.11n-HT40, Frequency: 2422MHz







#### 802.11n-HT40, Frequency: 2452MHz



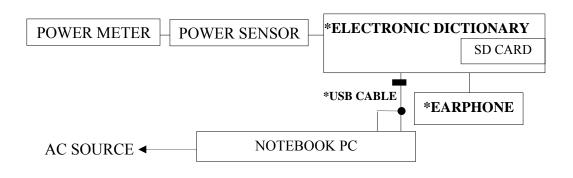
#### 5. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

## 5.1. Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Power Meter	Anritsu	ML2495A	1145008	Oct. 30, 12'	Oct. 29, 13'
2.	Power Sensor	Anritsu	MA2411B	1126096	Oct. 30, 12'	Oct. 29, 13'

#### 5.2. Block Diagram of Test Setup



\*: EUT ■: FERRITE CORE

## 5.3. Specification Limits [§15.247(b)-(3)]

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5MHz is: 1Watt. (30dBm)

## 5.4. Operating Condition of EUT

The test program "adb.exe" was used to enable the EUT to transmit data at different channel frequency individually.

#### 5.5. Test Procedure

The transmitter output was connected to the power sensor and record the reading of power meter.

The measurement guideline was according to KDB 558074 D01 V03.

## 5.6. Test Results

**PASSED.** All the test results are listed below.

## 5.6.1. WLAN Function

Test Date: Jun. 28, 2013 Temperature: 25 Humidity: 57%

Test Mode	Channel	Frequency	Output Power(dBm)		
1000 141000	Citating	(MHz)	Peak	Average	
	CH 1	2412	14.51	12.20	
802.11b	СН 6	2437	14.64	12.52	
	CH 11	2462	14.51	12.55	
	CH 1	2412	21.42	12.07	
802.11g	CH 6	2437	21.69	12.48	
	CH 11	2462	21.78	12.49	
	CH 1	2412	20.96	12.01	
802.11n-HT20	СН 6	2437	21.24	12.44	
	CH 11	2462	21.33	12.42	
	CH 3	2422	20.88	12.02	
802.11n-HT40	CH 6	2437	21.04	12.47	
	CH 9	2452	21.38	12.50	

[Limit: 1Watt. (30dBm)]

## 6. EMISSION LIMITATIONS MEASUREMENT

Pursuant to KDB  $558074\ D01\ V03$  that emission levels below limits specified in 15.209 would not be required.

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#### 7. BAND EDGES MEASUREMENT

## 7.1. Test Equipment

The following test equipment was used during the band edges measurement:

Iter	n Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Oct. 17, 12'	Oct. 16, 13'

#### 7.2. Block Diagram of Test Setup

The same as section.4.2.

## 7.3. Specification Limits [§15.247(c)]

The highest level should be at least 20 dB below reference level as measured in section 8.6.

#### 7.4. Operating Condition of EUT

The test program "adb.exe" was used to enable the EUT to transmit data at different channel frequency individually.

#### 7.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. Set both RBW=100 kHz and VBW to 300kHz with suitable frequency span including 100kHz bandwidth from band edge.

The measurement guideline was according to KDB 558074 D01 V03.

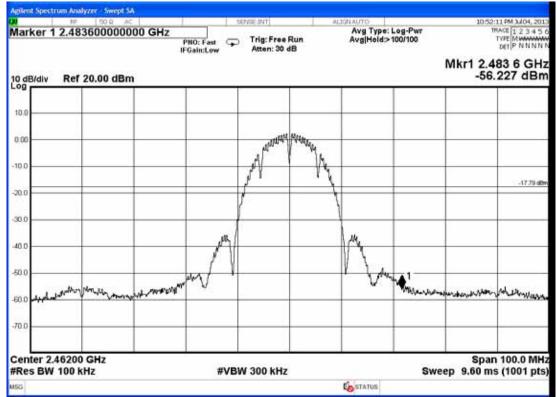
#### 7.6. Test Results

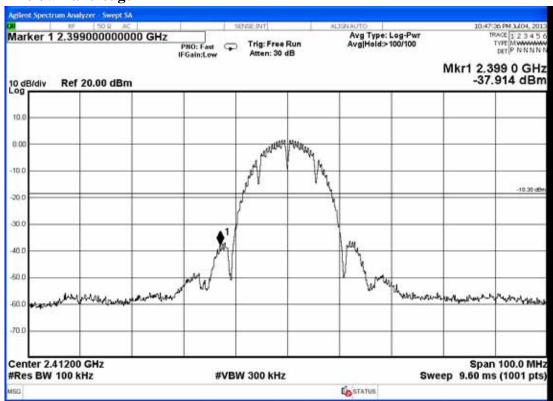
**PASSED.** All the test results are attached in next pages.

#### 7.6.1. WLAN Function

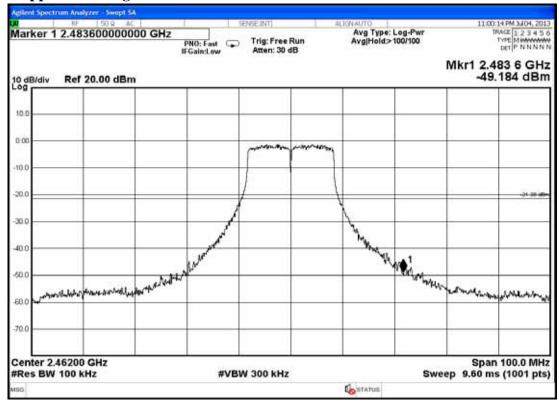
Test Date: Jun. 28, 2013 Temperature: 25 Humidity: 57%

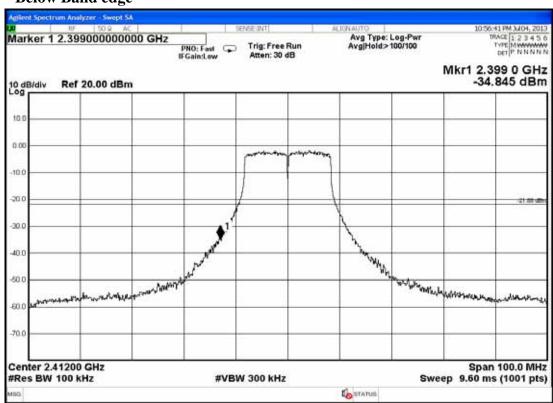
802.11b Upper Band edge



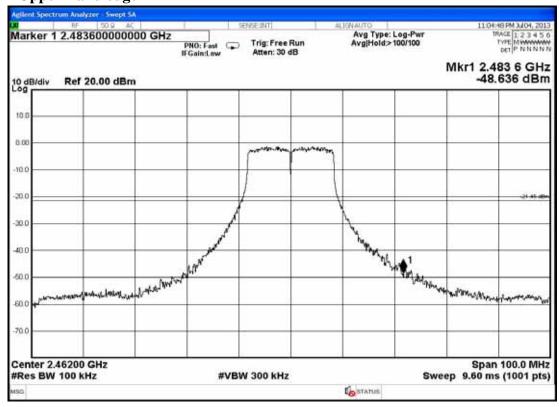


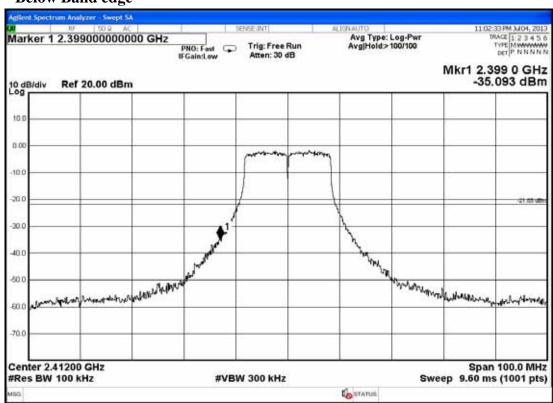
802.11g Upper Band edge



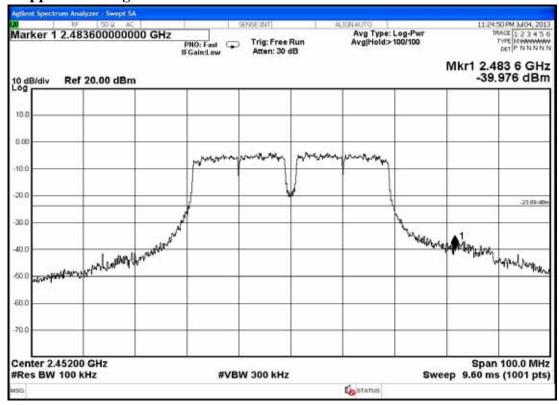


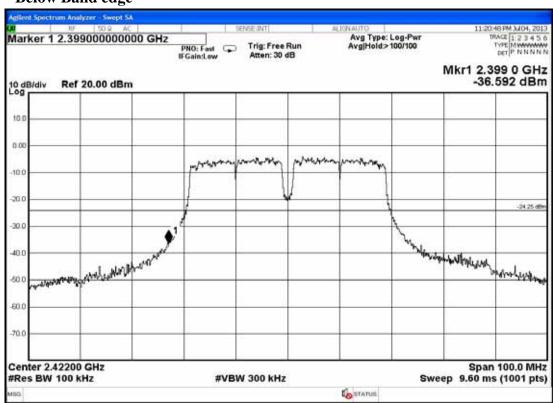
802.11n-HT20 Upper Band edge





#### DTS 802.11n-HT40 Upper Band edge





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#### 8. POWER SPECTRAL DENSITY MEASUREMENT

## 8.1. Test Equipment

The following test equipment was used during the power spectral density measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	N9030A-544	US51350140	Oct. 17, 12'	Oct. 16, 13'

## 8.2. Block Diagram of Test Setup

The same as section.4.2.

## 8.3. Specification Limits [§15.247(d)]

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band.

## 8.4. Operating Condition of EUT

The test program "adb.exe" was used to enable the EUT to transmit data at different channel frequency individually.

#### 8.5. Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using 100kHz RBW and ≥300kHz VBW, set sweep time = Auto.

The measurement guideline was according to KDB 558074 D01 V03.

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## 8.6. Test Results

**PASSED.** All the test results are attached in next pages.

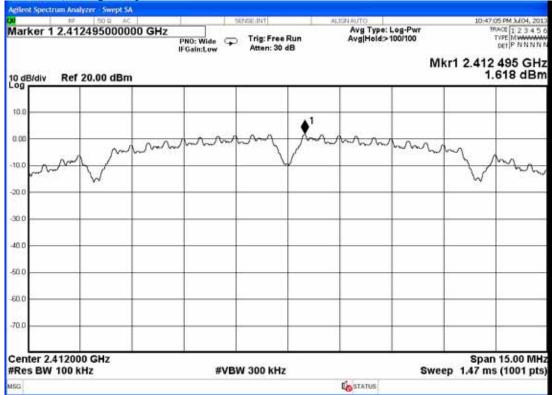
## 8.6.1. WLAN Function

Test Date: Jun. 28, 2013 Temperature: 25 Humidity: 57%

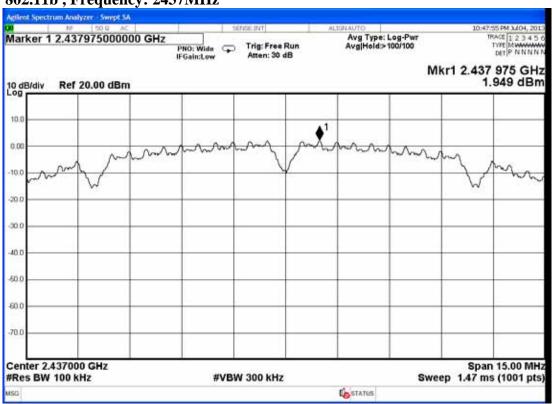
Mode	Type of Network	Channel	Frequency	Power Spectral Density
1		CH 1	2412MHz	1.618 dBm
2	802.11b	CH 6	2437MHz	1.949 dBm
3		CH 11	2462MHz	2.203 dBm
4		CH 1	2412MHz	-1.879 dBm
5	802.11g	CH 6	2437MHz	-1.485 dBm
6		CH 11	2462MHz	-1.390 dBm
7		CH 1	2412MHz	-1.851 dBm
8	802.11n-HT20	CH 6	2437MHz	-1.551 dBm
9		CH 11	2462MHz	-1.445 dBm
10		CH 3	2422MHz	-4.259 dBm
11	802.11n-HT40	CH 6	2437MHz	-3.948 dBm
12		CH 9	2452MHz	-3.890 dBm

[Limit: 8dBm]

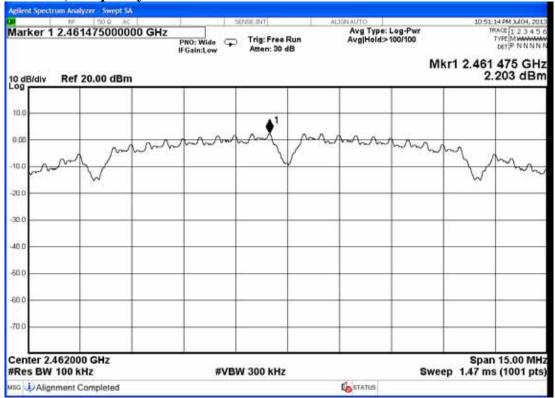




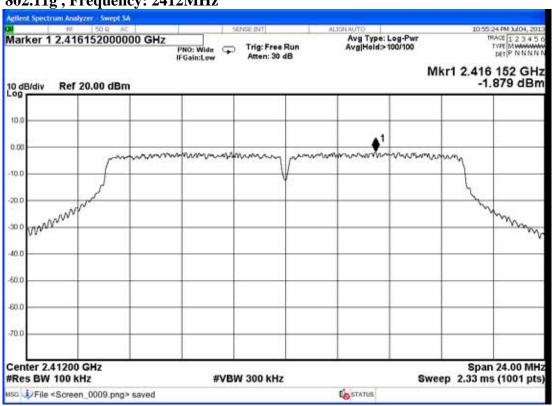
#### 802.11b, Frequency: 2437MHz



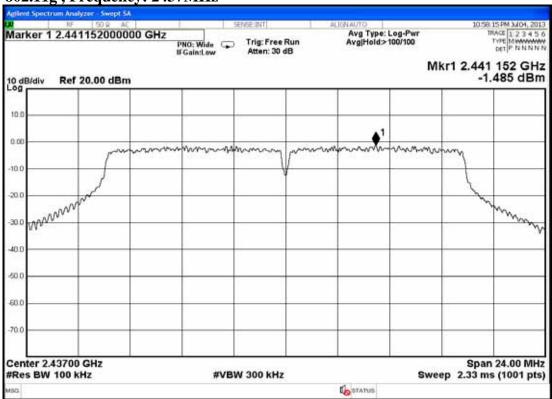




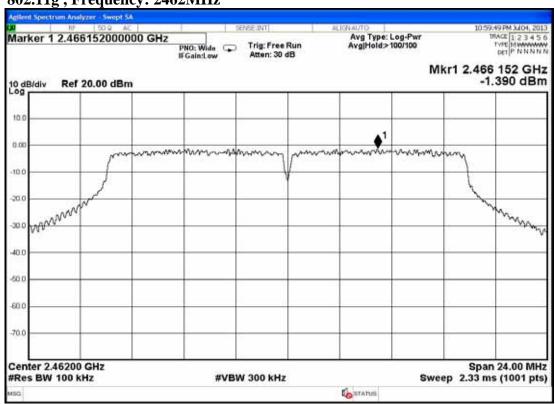
#### **802.11g** , Frequency: **2412MHz**



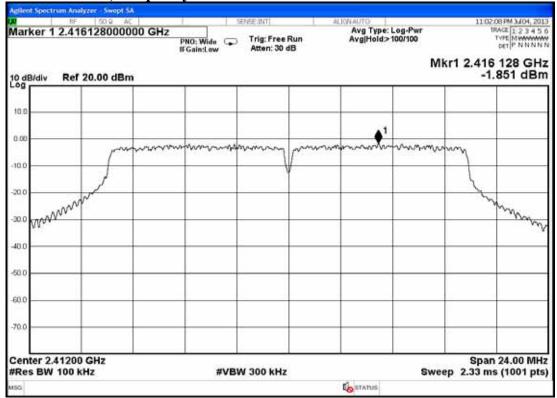
802.11g, Frequency: 2437MHz



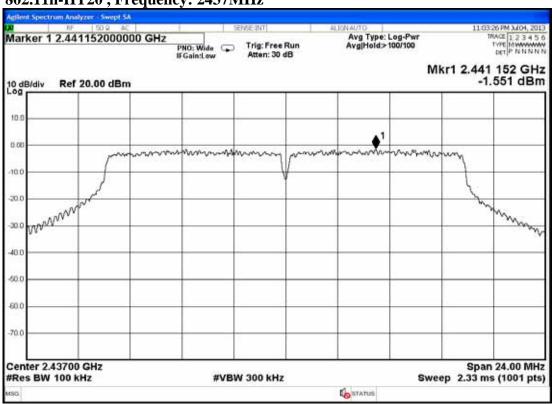
802.11g, Frequency: 2462MHz



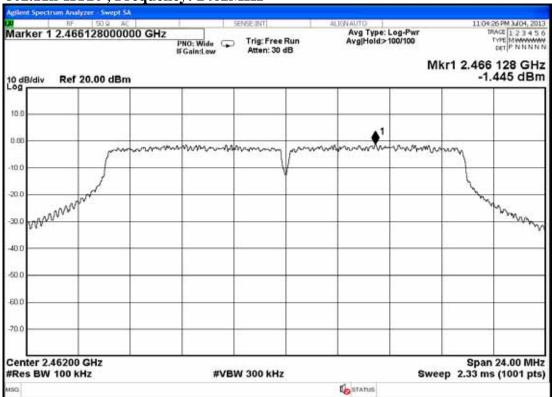




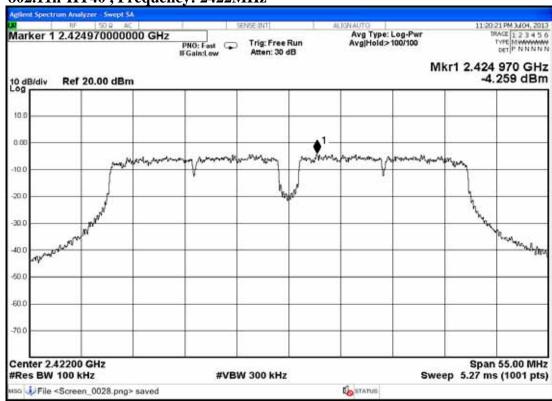
#### 802.11n-HT20, Frequency: 2437MHz

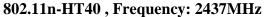


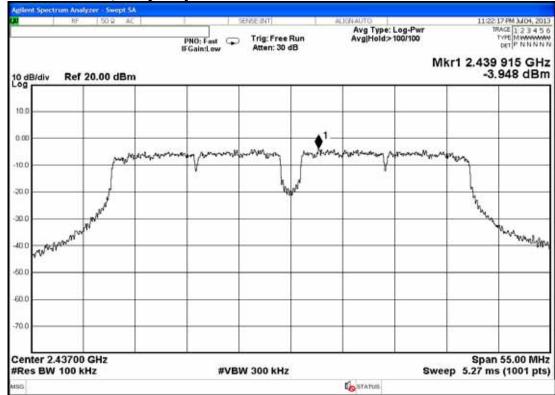
802.11n-HT20, Frequency: 2462MHz



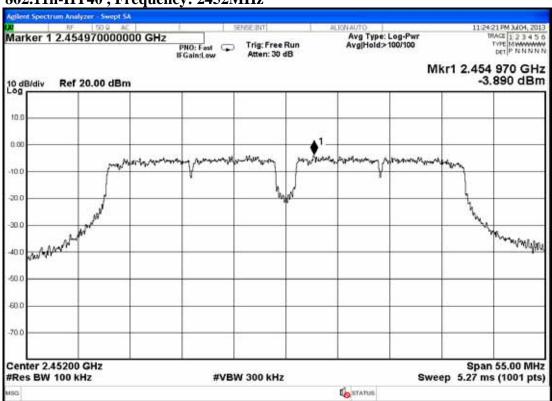
802.11n-HT40, Frequency: 2422MHz







#### 802.11n-HT40, Frequency: 2452MHz



## 9. DEVIATION TO TEST SPECIFICATIONS

[NONE]

## 10.PHOTOGRAPHS

# 10.1.Photos of Conducted Disturbance Measurement Link NB Mode



FRONT VIEW OF CONDUCTED MEASUREMENT



BACK VIEW OF CONDUCTED MEASUREMENT

## **Stand-Alone Mode**

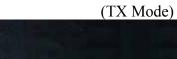


FRONT VIEW OF CONDUCTED MEASUREMENT



BACK VIEW OF CONDUCTED MEASUREMENT

# 10.2. Photos of Radiated Measurement at Semi-Anechoic Chamber 10.2.1.Frequency Below 1GHz







10.2.2.Frequency Above 1GHz



10.3. Photo of Section RF Conducted Measurement

