

RF TEST REPORT



Report No.: 14021149-FCC-R3

Supersede Report No.: N/A

Applicant	Beneworld International (HK) Co., Limited		
Product Name	7inch Tablet PC		
Main Model	BW9		
Test Standard	FCC Part 15.247: 2014, ANSI C63.10: 2009		
Test Date	November 11 to November 13, 2014		
Issue Date	November 14, 2014		
Test Result	☒ Pass ☐ Fail		
Equipment complied with the specification	☒		
Equipment did not comply with the specification	☐		
			
Deon Dai Test Engineer	Alex Liu Checked By		
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Issued by:
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Laboratories Introduction

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In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
14021149-FCC-R3	NONE	Original	November 14, 2014

2. Customer information

Applicant Name	Beneworld International (HK) Co., Limited
Applicant Add	Unit 04, 7/F, Bright Way Tower, No. 33 Mong Kok Road, Kowloon, Hong Kong
Manufacturer	Shenzhen Beneworld Technology Co. Ltd.
Manufacturer Add	Building 3, Huangtian Industrial Park, Xixiang, Baoan District, Shenzhen, Guangdong, China

3. Test site information

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	986914
IC Test Site No.	4842B-1
Test Software	Labview of SIEMIC version 1.0

4. Equipment under Test (EUT) Information

Description of EUT:	7inch Tablet PC
Main Model:	BW9
Serial Model:	BW7D9, BW7D19, BW7D29, BW7D61, BW7D62, BW7D66, BW7D68, BW7D69, BW7D70, BW7D71
Date EUT received:	November 03, 2014
Test Date(s):	November 11 to November 13, 2014
Conducted AV Power (dBm)	17.88 dBm(802.11b)
Antenna Gain:	GSM850: -0.46 dBi PCS1900: 1.19 dBi UMTS-FDD Band II: 1.3 dBi Bluetooth/ WIFI&BLE: 1.56 dBi
Type of Modulation:	GSM / GPRS: GMSK UMTS-FDD: QPSK 802.11b/g/n: DSSS/OFDM Bluetooth: GFSK& π /4DQPSK&8DPSK BLE: GFSK
RF Operating Frequency (ies):	GSM850 TX : 824.2 ~ 848.8 MHz; RX : 869.2 ~ 893.8 MHz PCS1900 TX : 1850.2 ~ 1909.8 MHz; RX : 1930.2 ~ 1989.8 MHz UMTS-FDD Band II TX : 1852.4 ~ 1907.6 MHz; RX : 1932.4 ~ 1987.6 MHz 802.11b/g/n(20M): 2412-2462 MHz(TX/RX) 802.11n(40M): 2422-2452 MHz (TX/RX) Bluetooth&BLE: 2402-2480 MHz(TX/RX)
Number of Channels:	299CH (PCS1900) and 124CH (GSM850) UMTS-FDD Band II : 277CH 802.11b/g/n(20M): 11CH 802.11n(40M): 7CH Bluetooth: 79CH BLE: 40CH
Port:	USB Port, Earphone Port
Input Power:	Adapter: Model: XHY050200UUCH Input: AC 100-240V 50/60Hz 0.5A MAX Output: DC 5V 2.0A BATTERY: 3.7V 5200mAh
Trade Name :	N/A
FCC ID:	2AANC-BENEWORLD-BW9
Note: the difference between these models please refer to Annex E. DECLARATION OF SIMILARITY.	

5. Test Summary

The product was tested in accordance with the following specifications.
All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§ 15.247 (i), §2.1093	RF Exposure	Compliance
§ 15.203	Antenna Requirement	Compliance
§ 15.247 (a)(2)	DTS (6 dB&20 dB) CHANNEL BANDWIDTH	Compliance
§ 15.247(b)(3)	Conducted Maximum Output Power	Compliance
§ 15.247(e)	Power Spectral Density	Compliance
§ 15.247(d)	Band-Edge & Unwanted Emissions into Non-Restricted Frequency Bands	Compliance
§ 15.207 (a),	AC Power Line Conducted Emissions	Compliance
§ 15.205, §15.209, § 15.247(d)	Radiated Spurious Emissions & Unwanted Emissions into Restricted Frequency Bands	Compliance

Measurement Uncertainty

Emissions		
Test Item	Description	Uncertainty
Radiated Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	3.952dB

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6. Measurements, Examination And Derived Results

6.1 RF Exposure

The EUT is a portable device, thus requires please refer to SIEMIC SAR Report: 14021149-FCC-H.

6.2 Antenna Requirement

Applicable Standard

According to § 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules.

§15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

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

Antenna Connector Construction

The EUT has 2 antennas:

A PIFA antenna for Bluetooth/BLE/WIFI, the gain is 1.56 dBi for Bluetooth/BLE/WIFI.

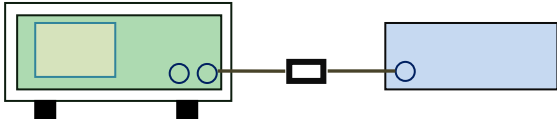
A PIFA antenna for GSM and UMTS, the gain is -0.46 dBi for GSM850, the gain is 1.19 dBi for PCS1900, 1.3 dBi for UMTS-FDD Band II.

Result: Compliance.

6.3 DTS (6 dB&20 dB) Channel Bandwidth

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 13, 2014
Tested By :	Deon Dai

Spec	Item	Requirement	Applicable
§ 15.247(a)(2) RSSGen (4.6.1)	a)	6dB BW≥500kHz;	☒
	b)	20dB BW: For FCC reference only; required by IC.	☒

Test Setup	 Spectrum Analyzer EUT
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Test Procedure	558074 D01 DTS Meas Guidance v03r02, 8.1 DTS bandwidth <u>6dB Emission bandwidth measurement procedure</u> - Set RBW = 100 kHz. - Set the video bandwidth (VBW) ≥ 3 x RBW. - Detector = Peak. - Trace mode = max hold. - Sweep = auto couple. - Allow the trace to stabilize. 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. <u>20dB bandwidth</u> C63.10 Occupied Bandwidth (OBW=20dB bandwidth) - Set RBW = 1%-5% OBW. - Set the video bandwidth (VBW) ≥ 3 x RBW. - Set the span range between 2 times and 5 times of the OBW. - Sweep time=Auto, Detector=PK, Trace=Max hold. - Once reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e., the widest) bandwidth. Unless otherwise specified for an unlicensed wireless device, measure the bandwidth at the 20 dB level with respect to the reference level.
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Remark	
Result	☒ Pass ☐ Fail
Test Data	☒ Yes ☐ N/A
Test Plot	☒ Yes (See below) ☐ N/A

6dB Bandwidth measurement result

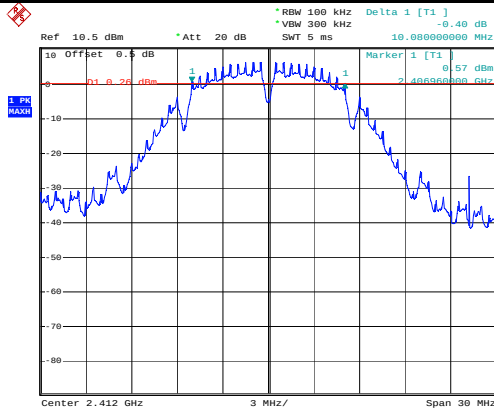
Type	Test mode	CH	Freq (MHz)	Result (MHz)	Limit (MHz)	Result
6dB BW	802.11b	Low	2412	10.08	≥ 0.5	Pass
		Mid	2437	10.08	≥ 0.5	Pass
		High	2462	10.08	≥ 0.5	Pass
	802.11g	Low	2412	15.42	≥ 0.5	Pass
		Mid	2437	15.48	≥ 0.5	Pass
		High	2462	15.60	≥ 0.5	Pass
	802.11n(20M)	Low	2412	15.43	≥ 0.5	Pass
		Mid	2437	15.54	≥ 0.5	Pass
		High	2462	15.48	≥ 0.5	Pass
	802.11n(40M)	Low	2422	35.40	≥ 0.5	Pass
		Mid	2437	35.40	≥ 0.5	Pass
		High	2452	35.40	≥ 0.5	Pass

20 dB Bandwidth measurement result

Type	Test mode	CH	Freq (MHz)	Result (MHz)	Limit (MHz)	Result
20dB BW	802.11b	Low	2412	14.34	≥ 0.5	Pass
		Mid	2437	14.34	≥ 0.5	Pass
		High	2462	14.40	≥ 0.5	Pass
	802.11g	Low	2412	17.70	≥ 0.5	Pass
		Mid	2437	17.70	≥ 0.5	Pass
		High	2462	17.76	≥ 0.5	Pass
	802.11n(20M)	Low	2412	18.54	≥ 0.5	Pass
		Mid	2437	18.48	≥ 0.5	Pass
		High	2462	18.48	≥ 0.5	Pass
	802.11n(40M)	Low	2422	37.40	≥ 0.5	Pass
		Mid	2437	37.20	≥ 0.5	Pass
		High	2452	37.20	≥ 0.5	Pass

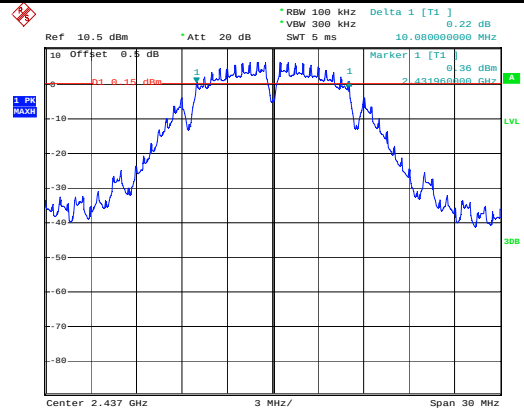
Test Plots

6dB Bandwidth measurement result



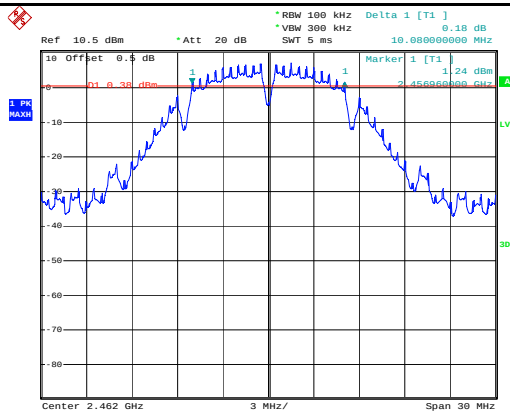
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6dB Bandwidth - Low CH 2412 - 802.11b



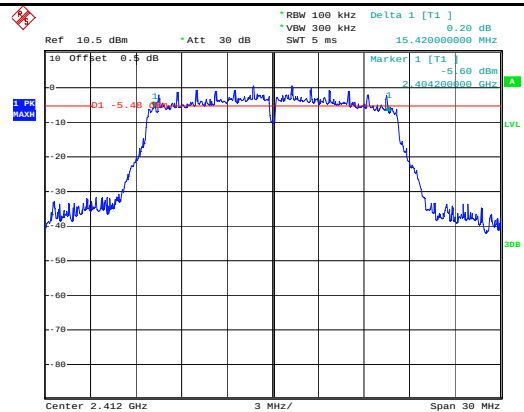
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6dB Bandwidth - Mid CH 2437 - 802.11b



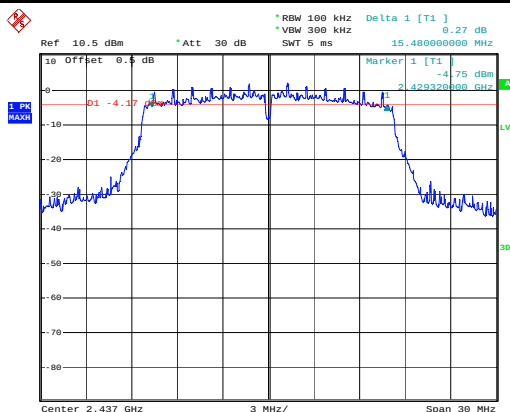
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6dB Bandwidth - High CH 2462 - 802.11b



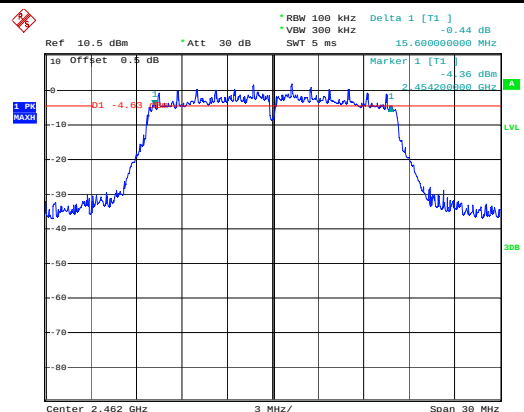
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6dB Bandwidth - Low CH 2412 - 802.11g



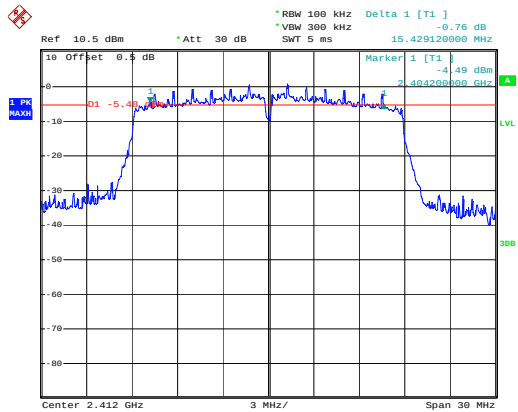
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6dB Bandwidth - Mid CH 2437 - 802.11g



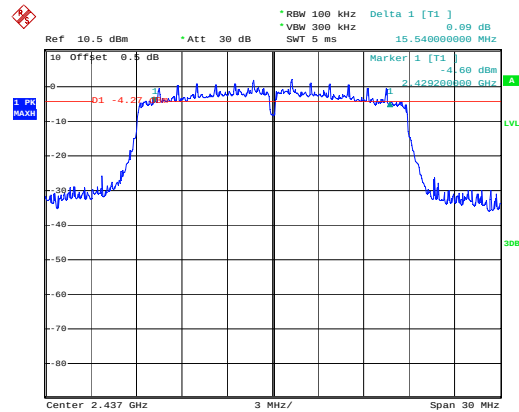
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6dB Bandwidth - High CH 2462 - 802.11g



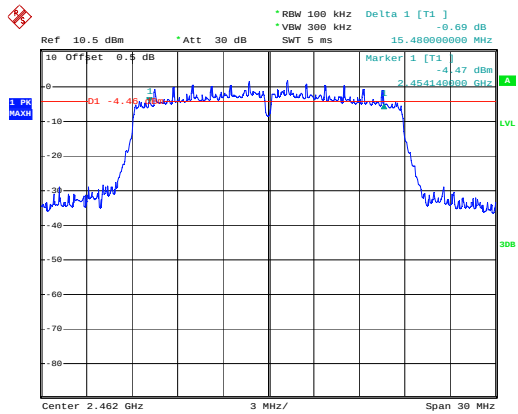
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6dB Bandwidth - Low CH 2412 - 802.11n(20M)



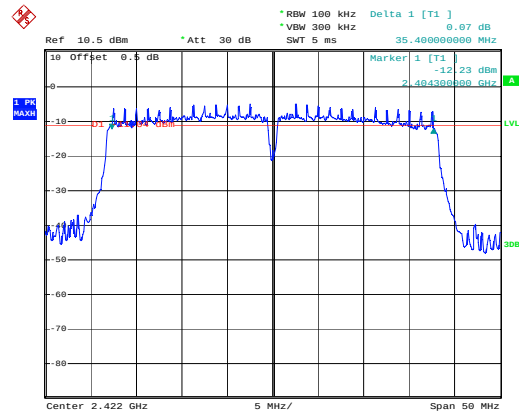
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6dB Bandwidth - Mid CH 2437- 802.11n(20M)



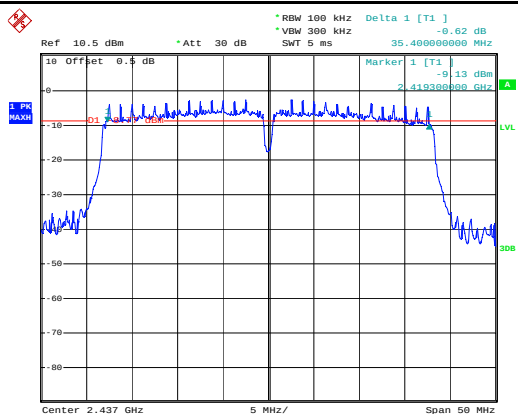
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6dB Bandwidth - High CH 2462 - 802.11 n(20M)



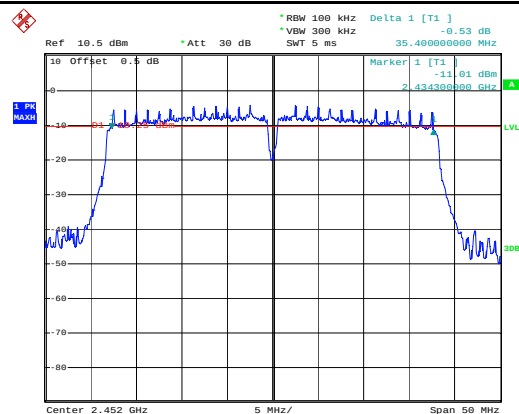
Date: 13.NOV.2014 19:19:31

6dB Bandwidth - Low CH 2422 - 802.11n(40M)



Date: 13.NOV.2014 19:22:04

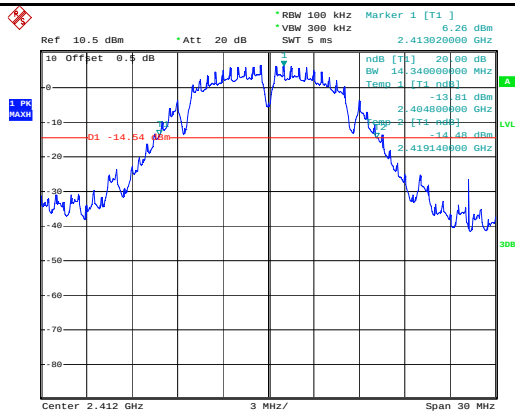
6dB Bandwidth - Mid CH 2437- 802.11n(40M)



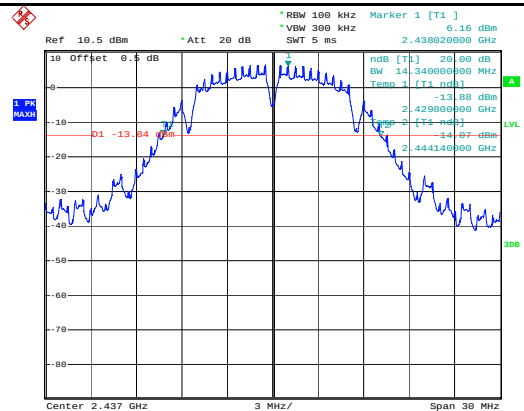
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6dB Bandwidth - Mid CH 2452- 802.11n(40M)

20dB Bandwidth measurement result

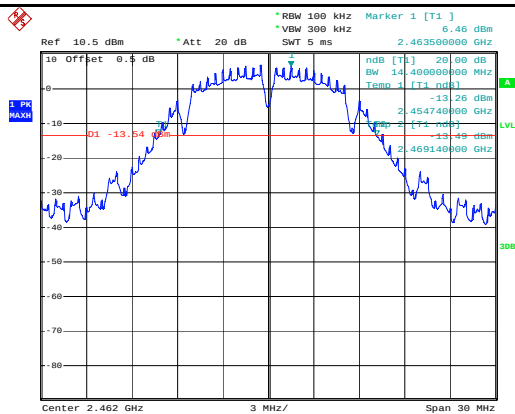


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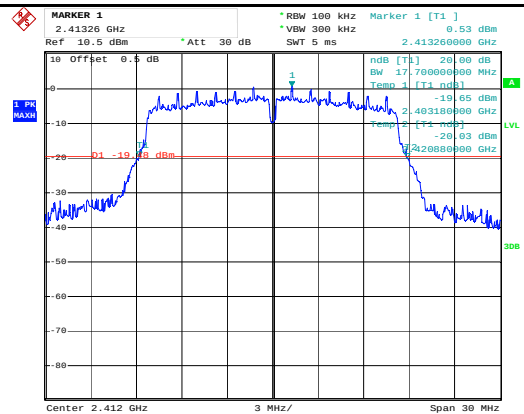
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20dB Bandwidth - Low CH 2412 - 802.11b



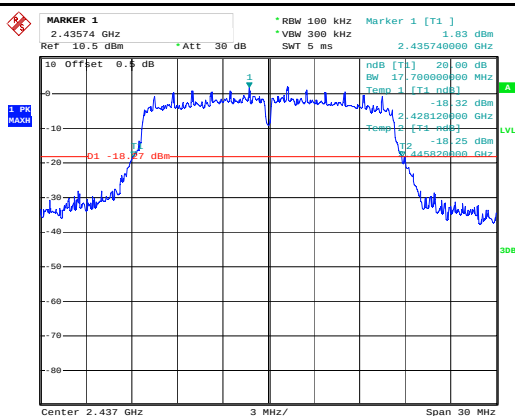
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20dB Bandwidth - Mid CH 2437 - 802.11b



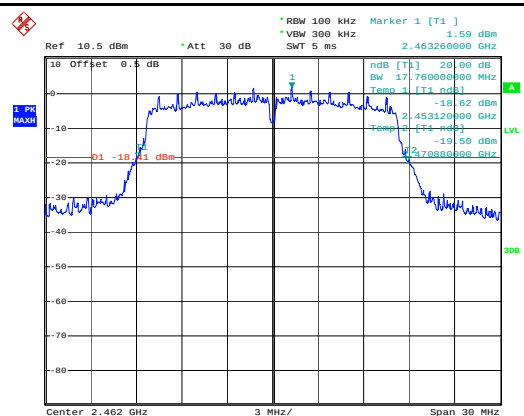
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20dB Bandwidth - High CH 2462 - 802.11b



Date: 13.NOV.2014 19:03:52

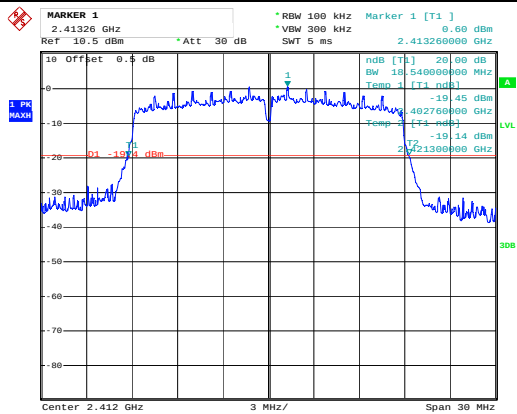
20dB Bandwidth - Low CH 2412 - 802.11g



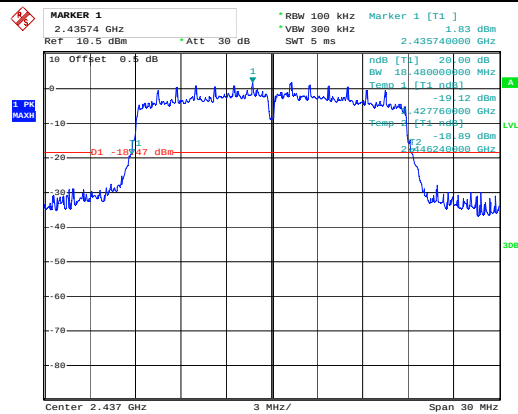
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20dB Bandwidth - Mid CH 2437 - 802.11g

20dB Bandwidth - High CH 2462 - 802.11g

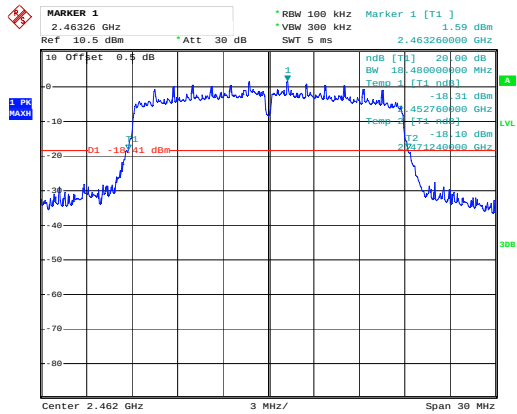


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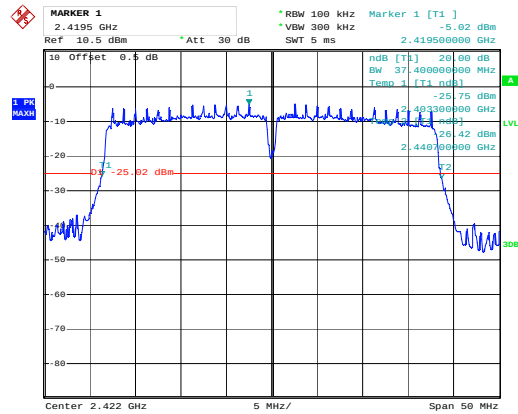
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20dB Bandwidth - Low CH 2412 - 802.11n(20M)



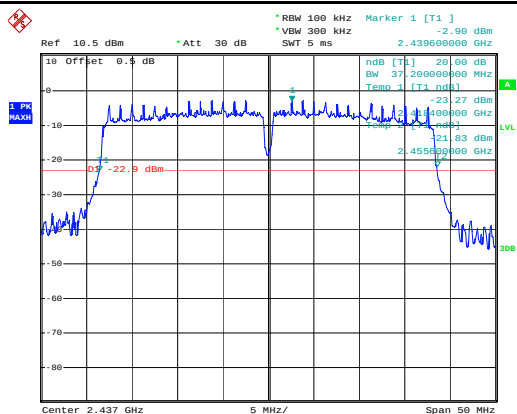
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20dB Bandwidth - Mid CH 2437- 802.11n(20M)



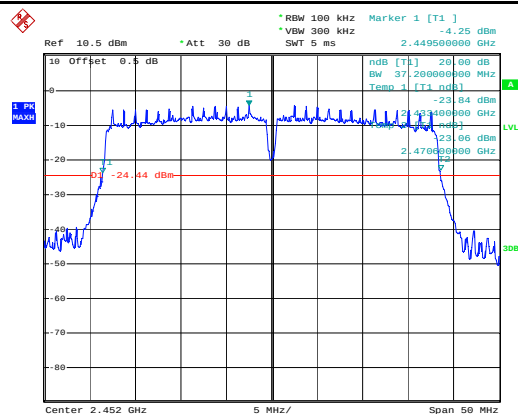
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20dB Bandwidth - High CH 2462 - 802.11 n(20M)



Date: 13.NOV.2014 19:20:30

20dB Bandwidth - Low CH 2422 - 802.11n(40M)



Date: 13.NOV.2014 19:21:02

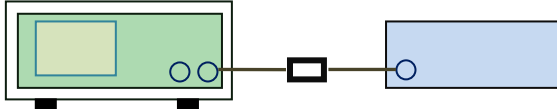
20dB Bandwidth - Mid CH 2437- 802.11n(40M)

20dB Bandwidth - Mid CH 2452- 802.11n(40M)

6.4 Maximum Output Power

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 13, 2014
Tested By :	Deon Dai

Requirement(s):

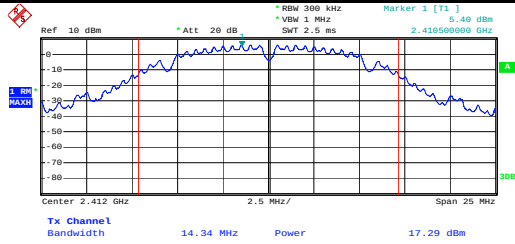
Spec	Item	Requirement	Applicable
§15.247(b) (2),RSS210 (A8.4)	a)	FHSS in 2400-2483.5MHz with ≥ 75 channels: ≤ 1 Watt	☐
	b)	FHSS in 5725-5850MHz: ≤ 1 Watt	☐
	c)	For all other FHSS in the 2400-2483.5MHz band: ≤ 0.125 Watt.	☐
	d)	FHSS in 902-928MHz with ≥ 50 channels: ≤ 1 Watt	☐
	e)	FHSS in 902-928MHz with ≥ 25 & < 50 channels: ≤ 0.25 Watt	☐
	f)	DSSS in 902-928MHz, 2400-2483.5MHz, 5725-5850MHz: ≤ 1 Watt	☒
Test Setup	 Spectrum Analyzer EUT		
Test Procedure	558074 D01 DTS MEAS Guidance v03r02, 9.1.2 Integrated band power method Maximum output power measurement procedure - 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 $\geq 2 \times$ span / RBW. (This gives bin-to-bin spacing $\leq$ 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 $\geq 98\%$, 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.		
Remark			
Result	☒ Pass ☐ Fail		
Test Data	☒ Yes ☐ N/A		
Test Plot	☒ Yes (See below) ☐ N/A		

Output Power measurement result

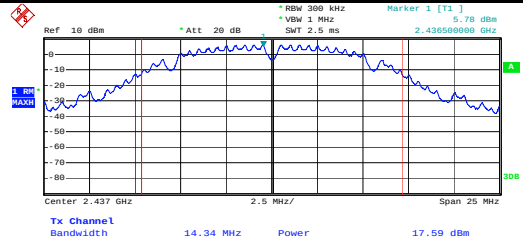
Type	Test mode	CH	Freq (MHz)	Conducted AV Power (dBm)	Limit (dBm)	Result
Output power	802.11b	Low	2412	17.29	30	Pass
		Mid	2437	17.59	30	Pass
		High	2462	17.88	30	Pass
	802.11g	Low	2412	14.46	30	Pass
		Mid	2437	16.26	30	Pass
		High	2462	15.62	30	Pass
	802.11n(20M)	Low	2412	14.56	30	Pass
		Mid	2437	16.04	30	Pass
		High	2462	15.81	30	Pass
	802.11n(40M)	Low	2422	10.12	30	Pass
		Mid	2437	12.55	30	Pass
		High	2452	10.96	30	Pass

Test Plots

Output Power measurement result

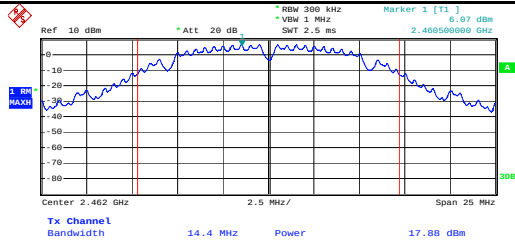


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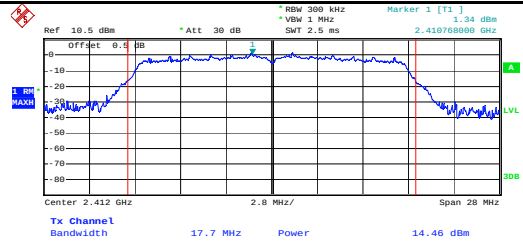
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Output power - Low CH 2412 - 802.11b



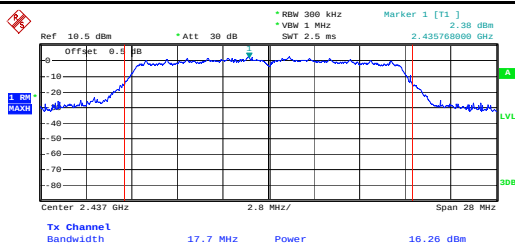
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Output power - Mid CH 2437 - 802.11b



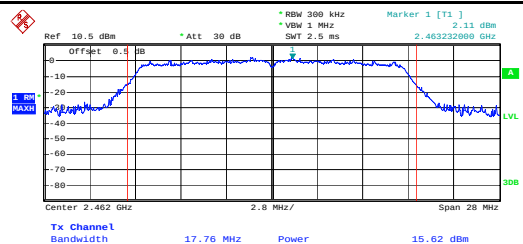
Date: 13.NOV.2014 19:06:23

Output power - High CH 2462 - 802.11b



Date: 13.NOV.2014 19:07:01

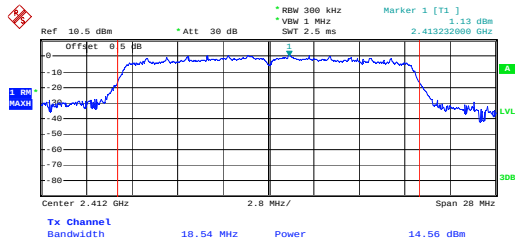
Output power - Low CH 2412 - 802.11g



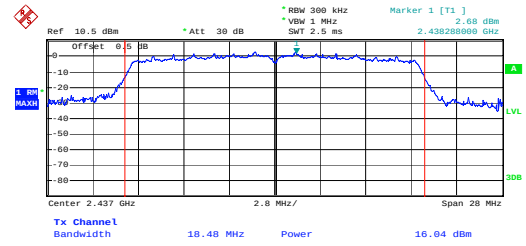
Date: 13.NOV.2014 19:07:45

Output power - Mid CH 2437 - 802.11g

Output power - High CH 2462 - 802.11g

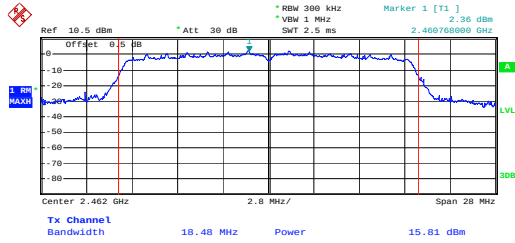


Date: 13.NOV.2014 19:15:44



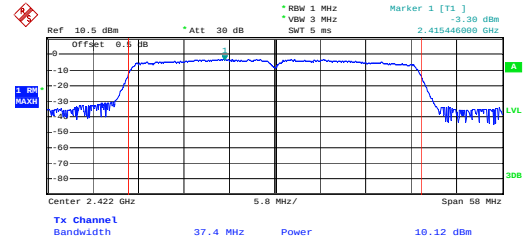
Date: 13.NOV.2014 19:16:29

Output power - Low CH 2412 - 802.11n(20M)



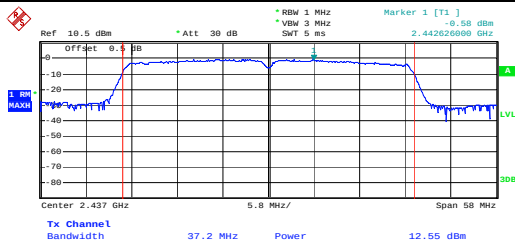
Date: 13.NOV.2014 19:17:03

Output power - Mid CH 2437 - 802.11 n(20M)



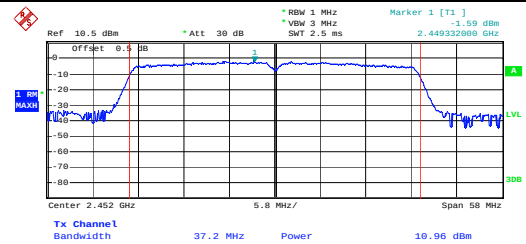
Date: 13.NOV.2014 19:27:21

Output power - High CH 2462 - 802.11 n(20M)



Date: 13.NOV.2014 19:26:50

Output power - Low CH 2422 - 802.11n(40M)



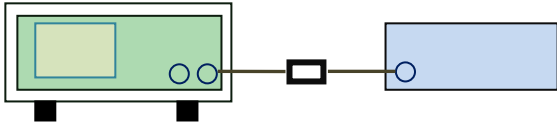
Date: 13.NOV.2014 19:26:13

Output power - Mid CH 2437 - 802.11 n(40M)

Output power - High CH 2452 - 802.11 n(40M)

6.5 Power Spectral Density

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 13, 2014
Tested By :	Deon Dai

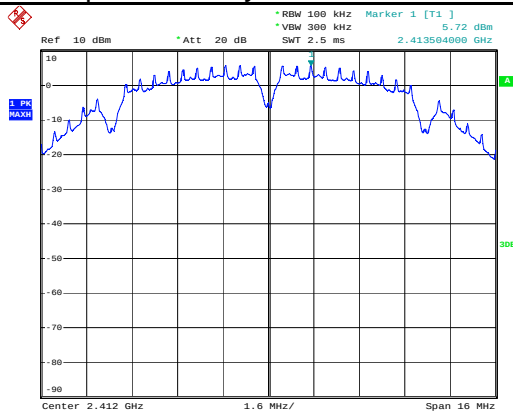
Spec	Item	Requirement	Applicable
§15.247(e)	a)	The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.	☒
Test Setup	 Spectrum Analyzer EUT		
Test Procedure	558074 D01 DTS MEAS Guidance v03r02, 10.2 power spectral density method power spectral density measurement procedure - a) Set analyzer center frequency to DTS channel center frequency. - b) Set the span to 1.5 times the DTS bandwidth. - c) Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$. - d) Set the VBW $\geq 3 \times \text{RBW}$. - e) Detector = peak. - f) Sweep time = auto couple. - g) Trace mode = max hold. - h) Allow trace to fully stabilize. - i) Use the peak marker function to determine the maximum amplitude level within the RBW. - j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.		
Remark			
Result	☒ Pass ☐ Fail		
Test Data	☒ Yes ☐ N/A		
Test Plot	☒ Yes (See below) ☐ N/A		

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Type	Test mode	CH	Freq (MHz)	PSD (dBm)	Limit (dBm)	Result
PSD	802.11b	Low	2412	5.72	8	Pass
		Mid	2437	5.42	8	Pass
		High	2462	5.55	8	Pass
	802.11g	Low	2412	0.72	8	Pass
		Mid	2437	2.23	8	Pass
		High	2462	1.44	8	Pass
	802.11n(20M)	Low	2412	0.96	8	Pass
		Mid	2437	1.65	8	Pass
		High	2462	1.84	8	Pass
	802.11n(40M)	Low	2422	-5.15	8	Pass
		Mid	2437	-2.60	8	Pass
		High	2452	-4.18	8	Pass

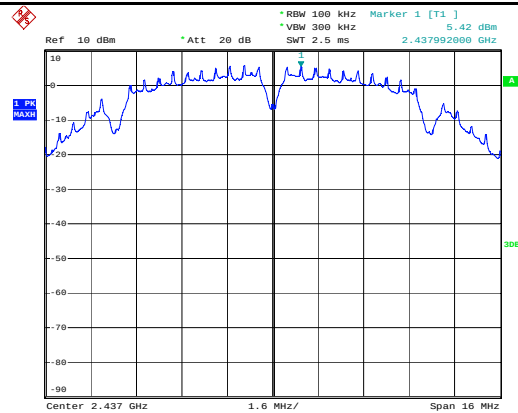
Test Plots

Power Spectral Density measurement result



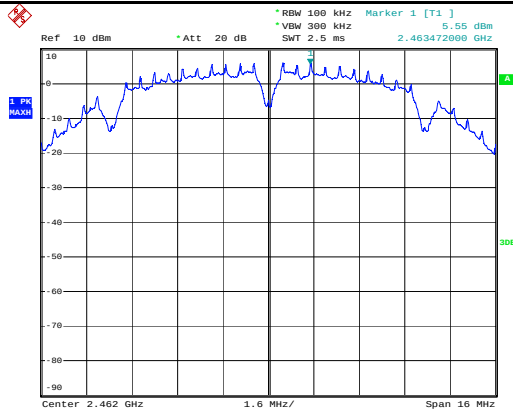
Date: 13.NOV.2014 18:59:55

PSD - Low CH 2412 - 802.11b



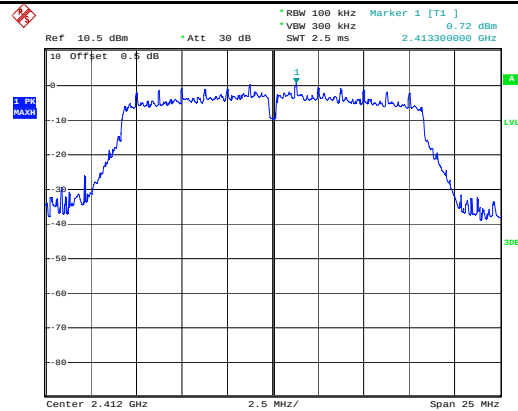
Date: 13.NOV.2014 19:00:18

PSD - Mid CH 2437 - 802.11b



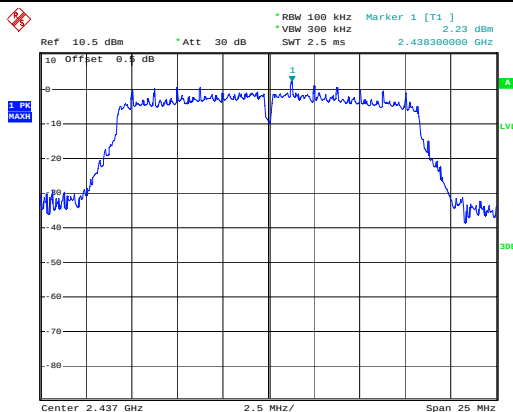
Date: 13.NOV.2014 19:00:38

PSD - High CH 2462 - 802.11b



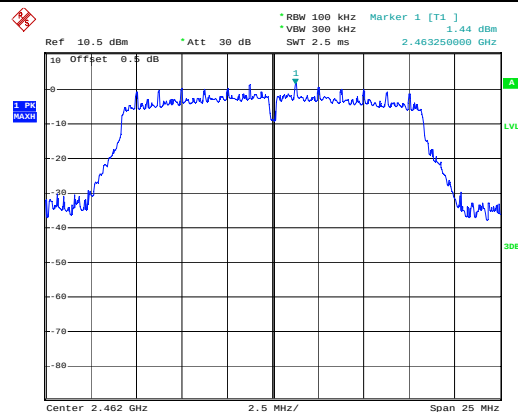
Date: 13.NOV.2014 19:09:17

PSD - Low CH 2412 - 802.11g



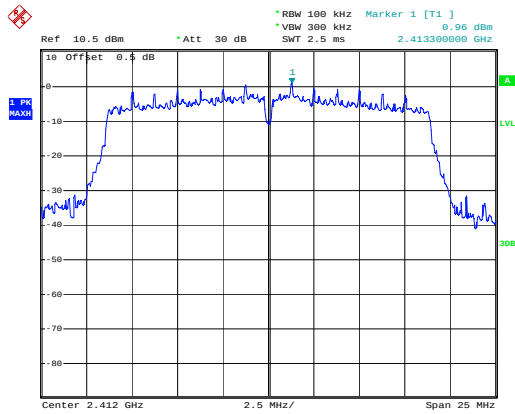
Date: 13.NOV.2014 19:09:44

PSD - Mid CH 2437 - 802.11g

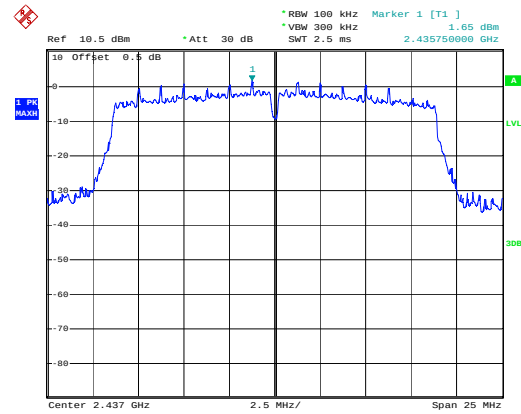


Date: 13.NOV.2014 19:10:12

PSD - High CH 2462 - 802.11g



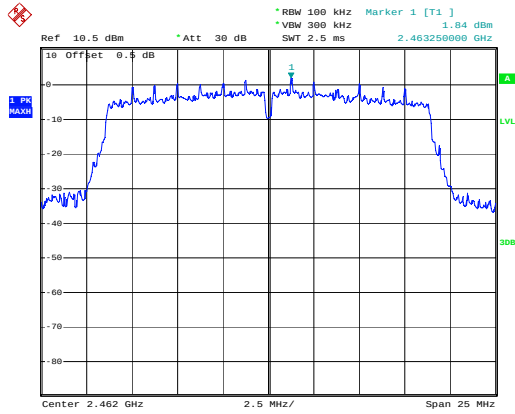
Date: 13.NOV.2014 19:18:41



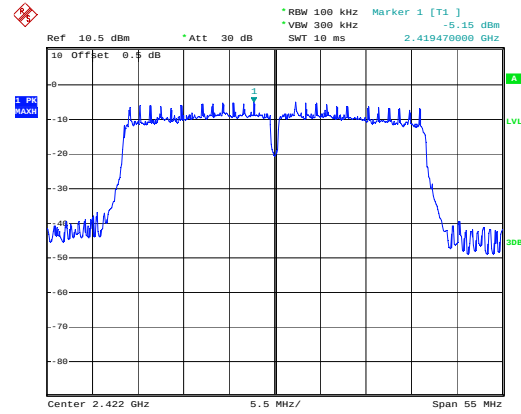
Date: 13.NOV.2014 19:18:15

PSD - Low CH 2412 - 802.11n(20M)

PSD - Mid CH 2437 - 802.11 n(20M)



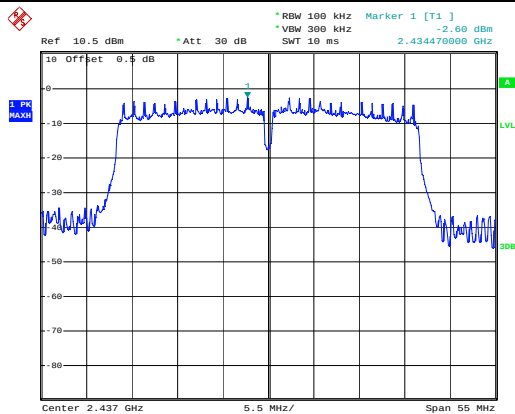
Date: 13.NOV.2014 19:17:52



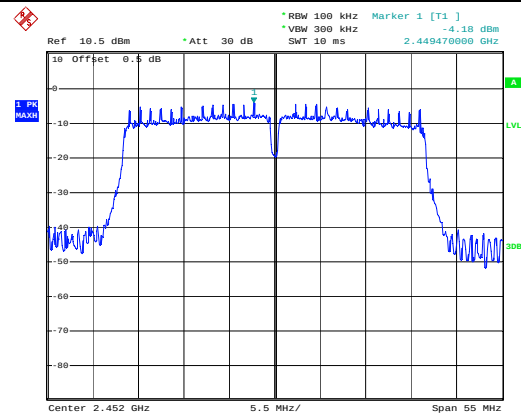
Date: 13.NOV.2014 19:23:46

PSD - High CH 2462 - 802.11 n(20M)

PSD - Low CH 2422 - 802.11n(40M)



Date: 13.NOV.2014 19:23:15



Date: 13.NOV.2014 19:24:05

PSD - Mid CH 2437 - 802.11 n(40M)

PSD - High CH 2452 - 802.11 n(40M)

6.6 Band-Edge & Unwanted Emissions into Non-Restricted Frequency Bands

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 13, 2014
Tested By :	Deon Dai

Requirement(s):

Spec	Item	Requirement	Applicable
§15.247(d)	a)	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.	☒

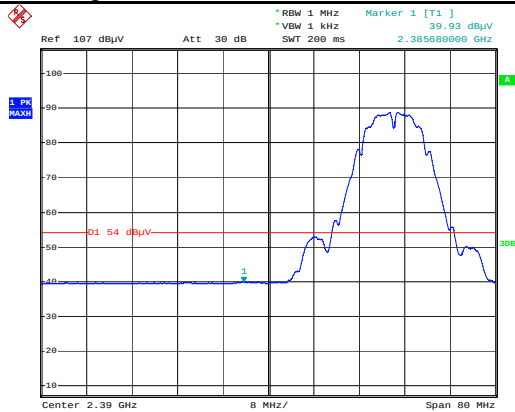
Test Setup	
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Test Procedure	Radiated Method Only 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator. 2. Position the EUT without connection to measurement instrument. Put it on the Rotated table and turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range. 3. First, set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge, check the emission of EUT, if pass then set Spectrum Analyzer as below: a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi Peak detection at frequency below 1GHz. b. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz. c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth for Average detection (AV) as below at frequency above 1GHz. ■ 1/T kHz (Duty cycle < 98%) □ 10 Hz (Duty cycle > 98%) 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency. 5. Repeat above procedures until all measured frequencies were complete.
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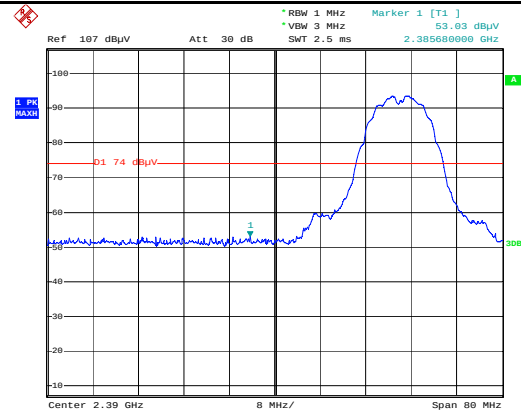
Remark	
Result	☒ Pass ☐ Fail
Test Data	☒ Yes ☐ N/A
Test Plot	☒ Yes (See below) ☐ N/A

Test Plots

Band Edge measurement result

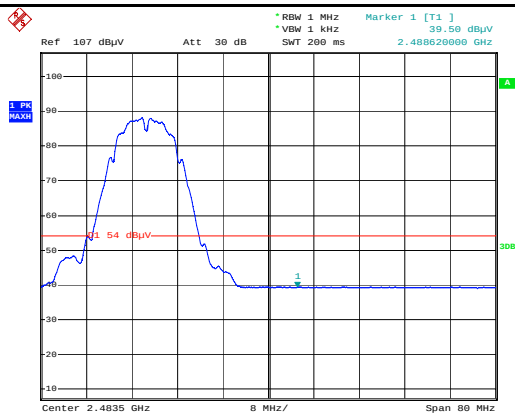


Date: 13.NOV.2014 19:39:00



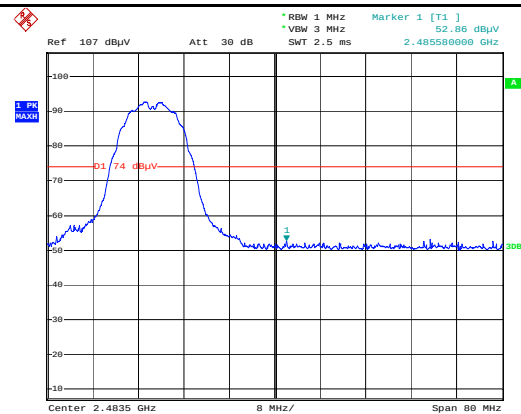
Date: 13.NOV.2014 19:36:18

Band Edge, Left Side (Average) - 802.11b



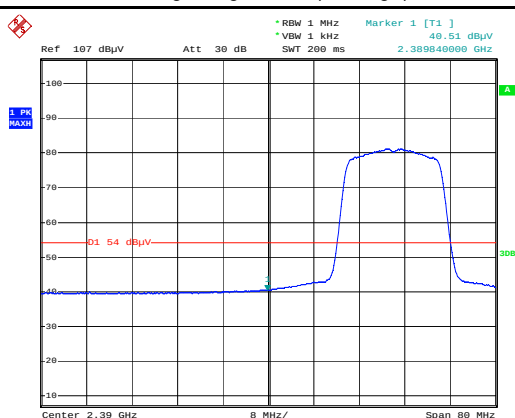
Date: 13.NOV.2014 19:45:03

Band Edge, Left Side (Peak) - 802.11b



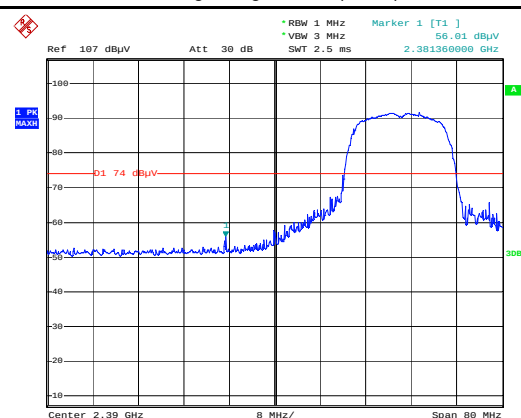
Date: 13.NOV.2014 19:42:34

Band Edge, Right Side (Average) - 802.11b



Date: 13.NOV.2014 19:54:19

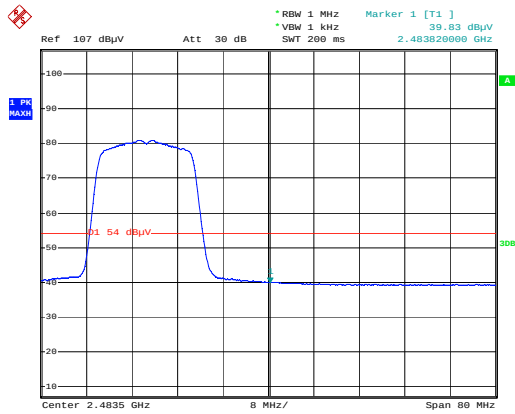
Band Edge, Right Side (Peak) - 802.11b



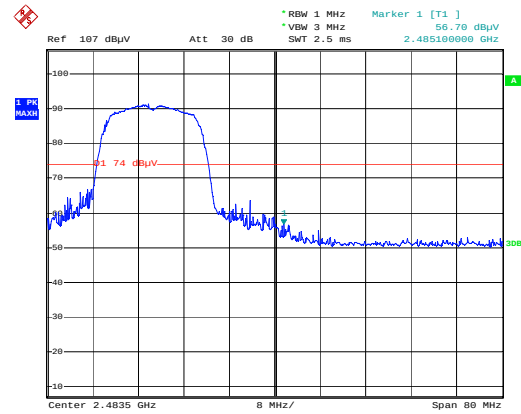
Date: 13.NOV.2014 19:50:48

Band Edge, Left Side (Average) - 802.11g

Band Edge, Left Side (Peak) - 802.11g



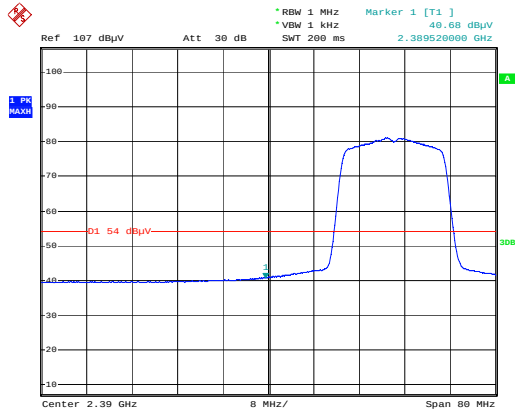
Date: 13.NOV.2014 19:59:17



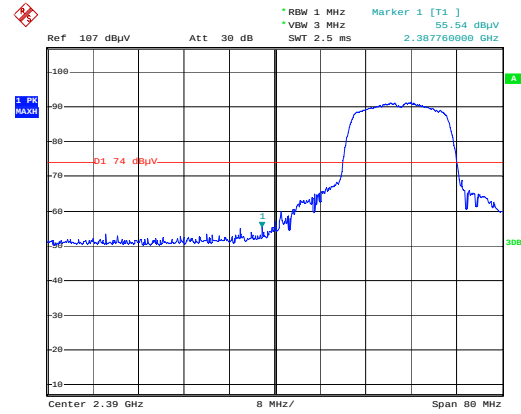
Date: 13.NOV.2014 19:57:49

Band Edge, Right Side (Average) - 802.11g

Band Edge, Right Side (Peak) - 802.11g



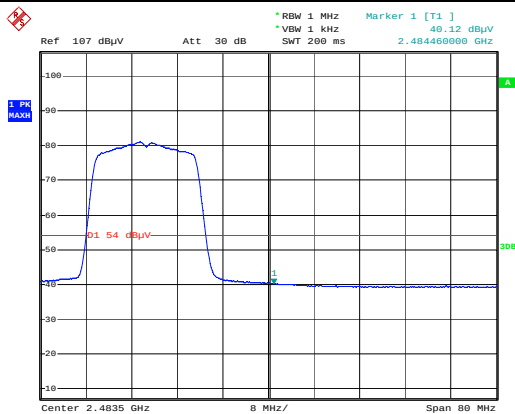
Date: 13.NOV.2014 20:14:05



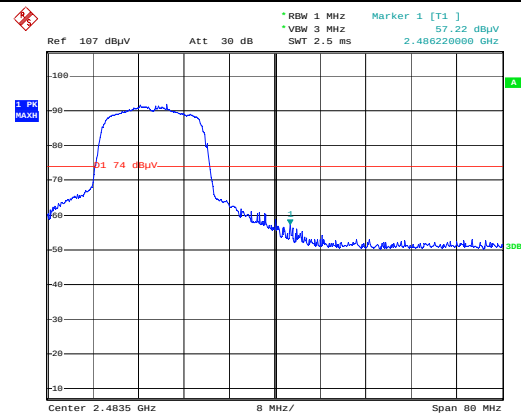
Date: 13.NOV.2014 20:11:33

Band Edge, Left Side (Average) - 802.11n(20M)

Band Edge, Left Side (Peak) - 802.11n(20M)



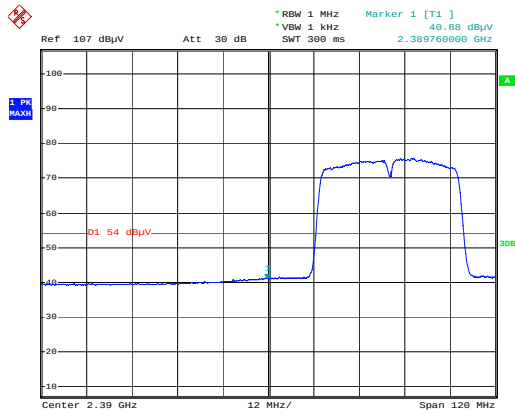
Date: 13.NOV.2014 20:08:16



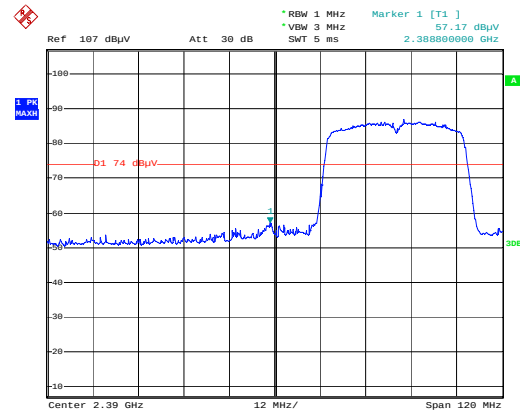
Date: 13.NOV.2014 20:05:40

Band Edge, Right Side (Average) - 802.11n(20M)

Band Edge, Right Side (Peak) - 802.11n(20M)



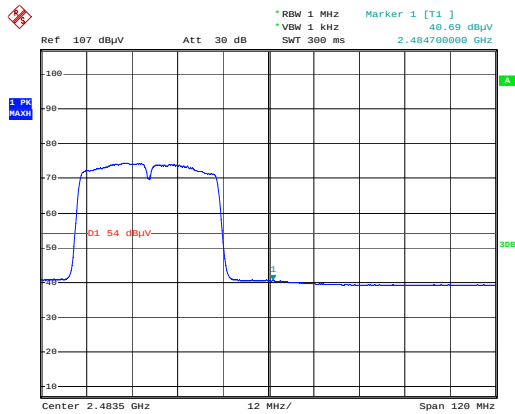
Date: 13.NOV.2014 20:22:17



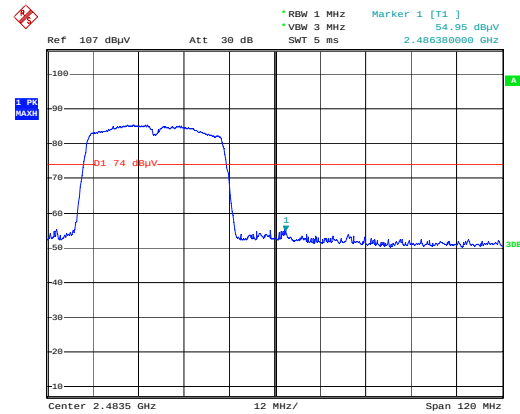
Date: 13.NOV.2014 20:18:48

Band Edge, Left Side (Average) - 802.11n(40M)

Band Edge, Left Side (Peak) - 802.11 n(40M)



Date: 13.NOV.2014 20:28:03



Date: 13.NOV.2014 20:25:36

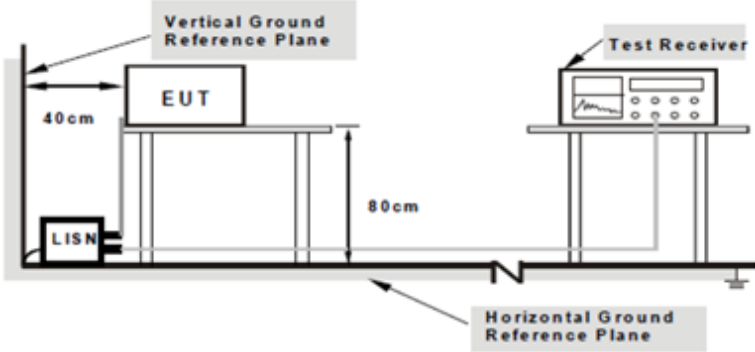
Band Edge, Right Side (Average) - 802.11 n(40M)

Band Edge, Right Side (Peak) - 802.11 n(40M)

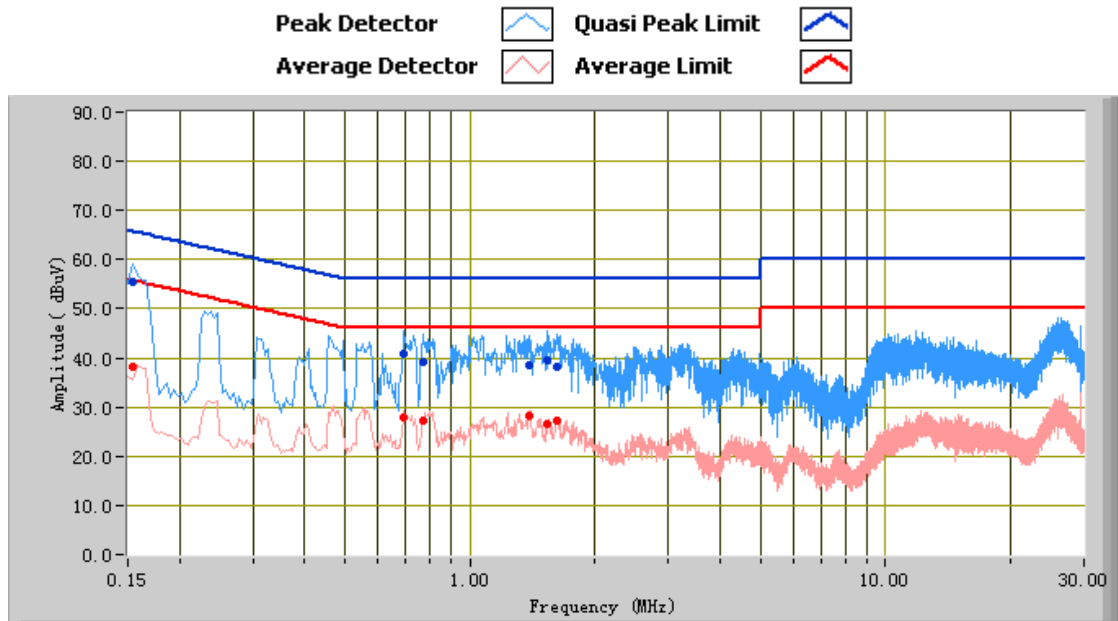
6.7 AC Power Line Conducted Emissions

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 11, 2014
Tested By :	Deon Dai

Requirement(s):

Spec	Item	Requirement	Applicable														
47CFR§15.207, RSS210 (A8.1)	a)	For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu]H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.	☒														
		<table><tr><th rowspan="2">Frequency ranges (MHz)</th><th colspan="2">Limit (dBµV)</th></tr><tr><th>QP</th><th>Average</th></tr><tr><td>0.15 ~ 0.5</td><td>66 – 56</td><td>56 – 46</td></tr><tr><td>0.5 ~ 5</td><td>56</td><td>46</td></tr><tr><td>5 ~ 30</td><td>60</td><td>50</td></tr></table>		Frequency ranges (MHz)	Limit (dBµV)		QP	Average	0.15 ~ 0.5	66 – 56	56 – 46	0.5 ~ 5	56	46	5 ~ 30	60	50
		Frequency ranges (MHz)			Limit (dBµV)												
				QP	Average												
		0.15 ~ 0.5		66 – 56	56 – 46												
0.5 ~ 5	56	46															
5 ~ 30	60	50															
Test Setup	 Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.																
		Procedure	- The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table. - The power supply for the EUT was fed through a 50W/50mH EUT LISN, connected to filtered mains. - The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. - All other supporting equipment were powered separately from another main supply. - The EUT was switched on and allowed to warm up to its normal operating condition. - A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver. - High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz. - Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).														
			Remark	Different RF configuration has been evaluated but not much difference was found. The data presented here is the worst case data with EUT under 802.11n(20M)-2437MHz mode.													
Result	☒ Pass☐ Fail																
Test Data	☒ Yes☐ N/A																
Test Plot	☒ Yes (See below)☐ N/A																

Test Mode: Transmitting Mode

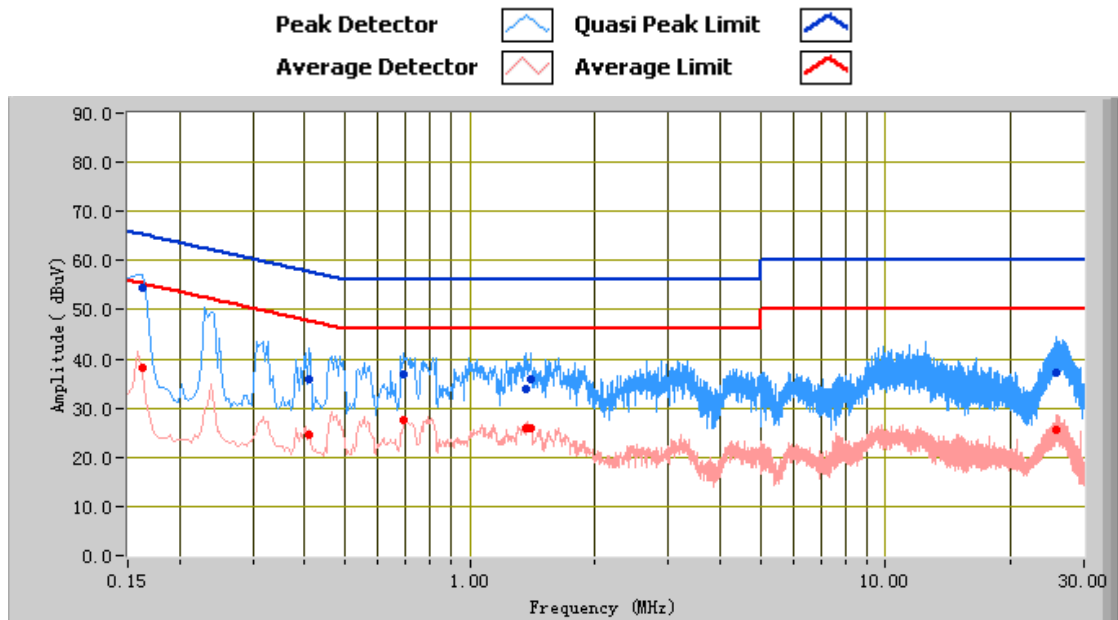


Test Data

Phase Line Plot at 120Vac, 60Hz

Frequency (MHz)	Quasi Peak (dBμV)	Limit (dBμV)	Margin (dB)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Factors (dB)
0.15	55.36	65.78	-10.42	38.05	55.78	-17.73	12.16
0.69	41.01	56.00	-14.99	27.93	46.00	-18.07	10.93
1.53	39.51	56.00	-16.49	26.56	46.00	-19.44	10.79
1.62	38.27	56.00	-17.73	27.17	46.00	-18.83	10.80
0.77	39.23	56.00	-16.77	27.37	46.00	-18.63	10.87
1.39	38.41	56.00	-17.59	28.10	46.00	-17.90	10.76

Test Mode: Transmitting Mode



Test Data

Phase Neutral Plot at 120Vac, 60Hz

Frequency (MHz)	Quasi Peak (dBμV)	Limit (dBμV)	Margin (dB)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Factors (dB)
0.16	54.51	65.36	-10.86	38.19	55.36	-17.17	12.04
1.40	35.71	56.00	-20.29	25.82	46.00	-20.18	10.79
1.37	33.72	56.00	-22.28	25.98	46.00	-20.02	10.78
0.69	36.79	56.00	-19.21	27.41	46.00	-18.59	10.92
0.41	35.88	57.65	-21.76	24.52	47.65	-23.13	11.20
25.80	37.35	60.00	-22.65	25.72	50.00	-24.28	11.76

6.8 Radiated Spurious Emissions

Temperature	20°C
Relative Humidity	50%
Atmospheric Pressure	1019mbar
Test date :	November 11, 2014
Tested By :	Deon Dai

Requirement(s):

Spec	Item	Requirement	Applicable										
47CFR§15.247(d) , RSS210 (A8.5)	a)	Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges <table><tr><th>Frequency range (MHz)</th><th>Field Strength (µV/m)</th></tr><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></table>	Frequency range (MHz)	Field Strength (µV/m)	30 – 88	100	88 – 216	150	216 960	200	Above 960	500	☒
	Frequency range (MHz)	Field Strength (µV/m)											
	30 – 88	100											
	88 – 216	150											
216 960	200												
Above 960	500												
b)	For non-restricted band, 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 or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required ☒ 20 dB down ☐ 30 dB down	☒											
c)	or restricted band, emission must also comply with the radiated emission limits specified in 15.209	☒											

Test Setup	
------------	--

Procedure	- The EUT was switched on and allowed to warm up to its normal operating condition. - The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: - Vertical or horizontal polarization (whichever gave the higher emission level over a full rotation of the EUT) was chosen. - The EUT was then rotated to the direction that gave the maximum emission. - Finally, the antenna height was adjusted to the height that gave the maximum emission. - The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi Peak detection at frequency below 1GHz. - The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with
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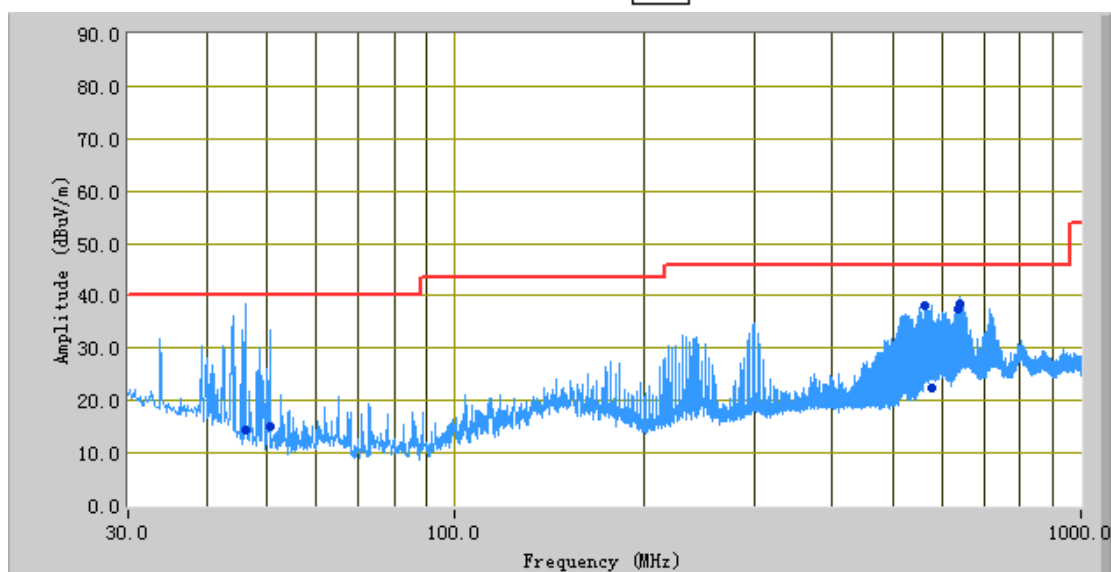
Test Report No.	14021149-FCC-R3
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	Peak detection for Peak measurement at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz with Peak detection for Average Measurement as below at frequency above 1GHz. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.
Remark	Different RF configuration has been evaluated but not much difference was found. The data presented here is the worst case data with EUT under 802.11n(20M)-2437MHz mode.
Result	☒ Pass ☐ Fail
Test Data	☒ Yes ☐ N/A
Test Plot	☒ Yes (See below) ☐ N/A

Test Mode: Transmitting Mode

(Below 1GHz)

Peak Detector 
Quasi Peak Limit 



Test Data

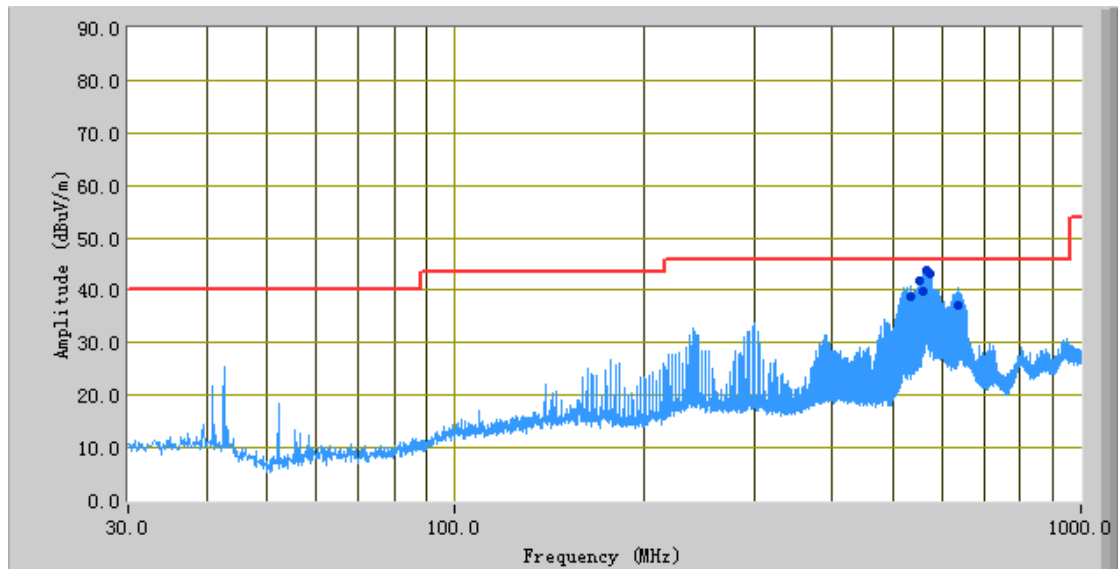
Vertical Polarity Plot @3m

Frequency (MHz)	Quasi Peak (dBμV/m)	Azimuth	Polarity (H/V)	Height (cm)	Factors (dB)	Limit (dBμV/m)	Margin (dB)
46.01	14.34	310.00	V	398.00	-32.47	40.00	-25.66
641.18	38.32	257.00	V	118.00	-21.37	46.00	-7.68
50.58	15.15	275.00	V	110.00	-34.64	40.00	-24.85
564.43	38.24	227.00	V	103.00	-25.82	46.00	-7.76
638.19	37.33	360.00	V	120.00	-21.47	46.00	-8.67
578.19	22.27	118.00	V	109.00	-24.77	46.00	-23.73

Test Mode: Transmitting Mode

(Below 1GHz)

Peak Detector 
Quasi Peak Limit 



Test Data

Horizontal Polarity Plot @3m

Frequency (MHz)	Quasi Peak (dBμV/m)	Azimuth	Polarity (H/V)	Height (cm)	Factors (dB)	Limit (dBμV/m)	Margin (dB)
567.37	43.84	205.00	H	171.00	-23.03	46.00	-2.16
573.29	43.32	201.00	H	168.00	-22.61	46.00	-2.68
558.40	39.82	30.00	H	217.00	-23.67	46.00	-6.18
552.67	41.68	210.00	H	176.00	-24.07	46.00	-4.32
534.98	38.74	229.00	H	194.00	-25.50	46.00	-7.26
635.31	36.99	27.00	H	192.00	-20.79	46.00	-9.01

Test Mode:	Transmitting Mode
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Note: Other modes were verified, only the result of worst case basic rate mode was presented.

Mode: 802.11(20M)

Low Channel (2412 MHz)

Frequency (MHz)	Substituted level (dBμV/m)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4824	32.25	AV	V	33.83	4.87	24	46.95	54	-7.05
4824	43.21	PK	V	33.83	4.87	24	57.91	74	-16.09
4824	30.54	AV	H	33.83	4.87	24	45.24	54	-8.76
4824	44.92	PK	H	33.83	4.87	24	59.62	74	-14.38

Middle Channel (2437 MHz)

Frequency (MHz)	Substituted level (dBμV/m)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4874	31.52	AV	V	33.83	4.87	24	46.22	54	-7.78
4874	42.41	PK	V	33.83	4.87	24	57.11	74	-16.89
4874	31.25	AV	H	33.83	4.87	24	45.95	54	-8.05
4874	45.25	PK	H	33.83	4.87	24	59.95	74	-14.05

High Channel (2462 MHz)

Frequency (MHz)	Substituted level (dBμV/m)	Detector (PK/AV)	Polarity (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
4924	32.08	AV	V	33.9	4.87	24	46.85	54	-7.15
4924	44.15	PK	V	33.9	4.87	24	58.92	74	-15.08
4924	31.91	AV	H	33.9	4.87	24	46.68	54	-7.32
4924	44.54	PK	H	33.9	4.87	24	59.31	74	-14.69

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
R&S EMI Test Receiver	ESPI3	101216	09/27/2014	09/26/2015	☒
V-LISN	ESH3-Z5	838979/005	09/27/2014	09/26/2015	☒
INFOMW Antenna (1 ~18GHz)	JXTXLB-10180	J2031081120092	10/09/2014	10/08/2015	☒
SIEMIC Labview Conducted Emissions software	V1.0	N/A	N/A	N/A	☒
RF conducted test					
R&S EMI Receiver	ESPI3	101216	09/27/2014	09/26/2015	☒
Power Splitter	1#	1#	02/02/2014	02/01/2015	☒
Hp Spectrum Analyzer	8563E	3821A09023	09/27/2014	09/26/2015	☒
Temperature/Humidity Chamber	1007H	N/A	01/07/2014	01/06/2015	☒
Radiated Emissions					
Hp Spectrum Analyzer	8563E	3821A09023	09/27/2014	09/26/2015	☒
R&S EMI Receiver	ESPI3	101216	09/27/2014	09/26/2015	☒
Antenna (30MHz~6GHz)	JB6	A121411	04/15/2014	04/14/2015	☒
EMCO Horn Antenna (1 ~18GHz)	3115	N/A	10/09/2014	10/08/2015	☒
INFOMW Antenna (1 ~18GHz)	JXTXLB-10180	J2031081120092	10/09/2014	10/08/2015	☒
Horn Antenna (18~40GHz)	AH-840	101013	04/22/2014	04/22/2015	☒
Microwave Pre-Amp (18~40GHz)	PA-840	181250	05/29/2014	05/28/2015	☒
Hp Agilent Pre-Amplifier	8447F	1937A01160	10/27/2014	10/26/2015	☒
MITEQ Pre-Amplifier (0.1 ~ 18GHz)	AMF-7D- 00101800-30- 10P	1451709	10/27/2014	10/26/2015	☒
SIEMIC Labview Radiated Emissions software	V1.0	N/A	N/A	N/A	☒

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph EUT Internal Photo



All Packages – Front View

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Front View of EUT



Rear View of EUT

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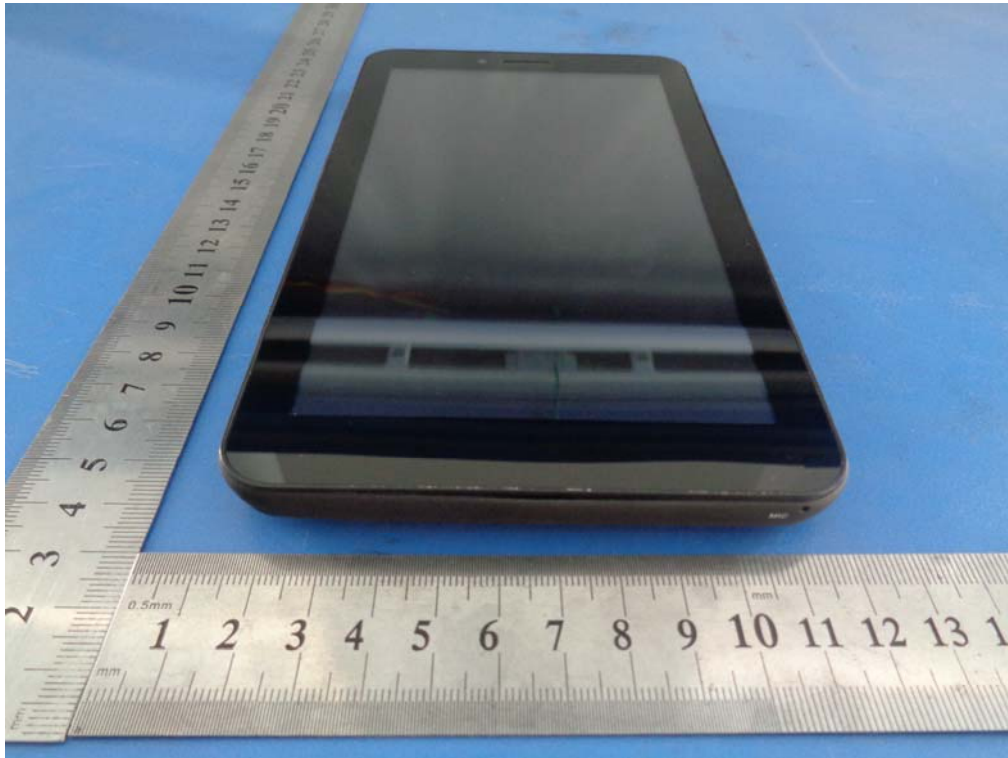


Top View of EUT

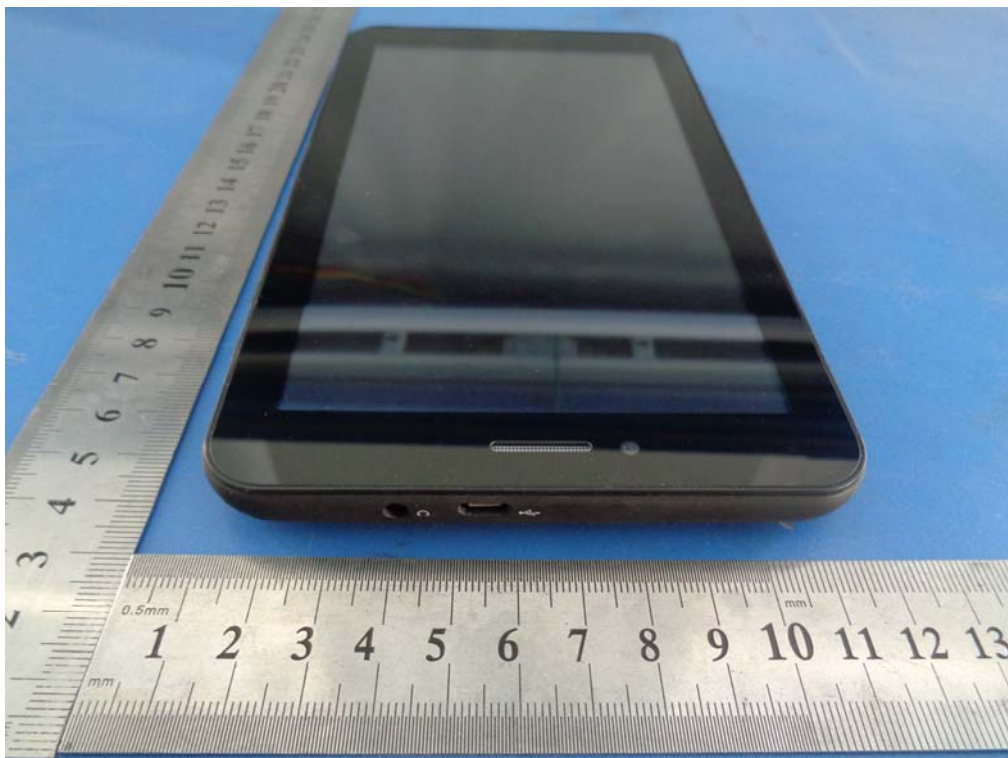


Bottom View of EUT

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Left View of EUT

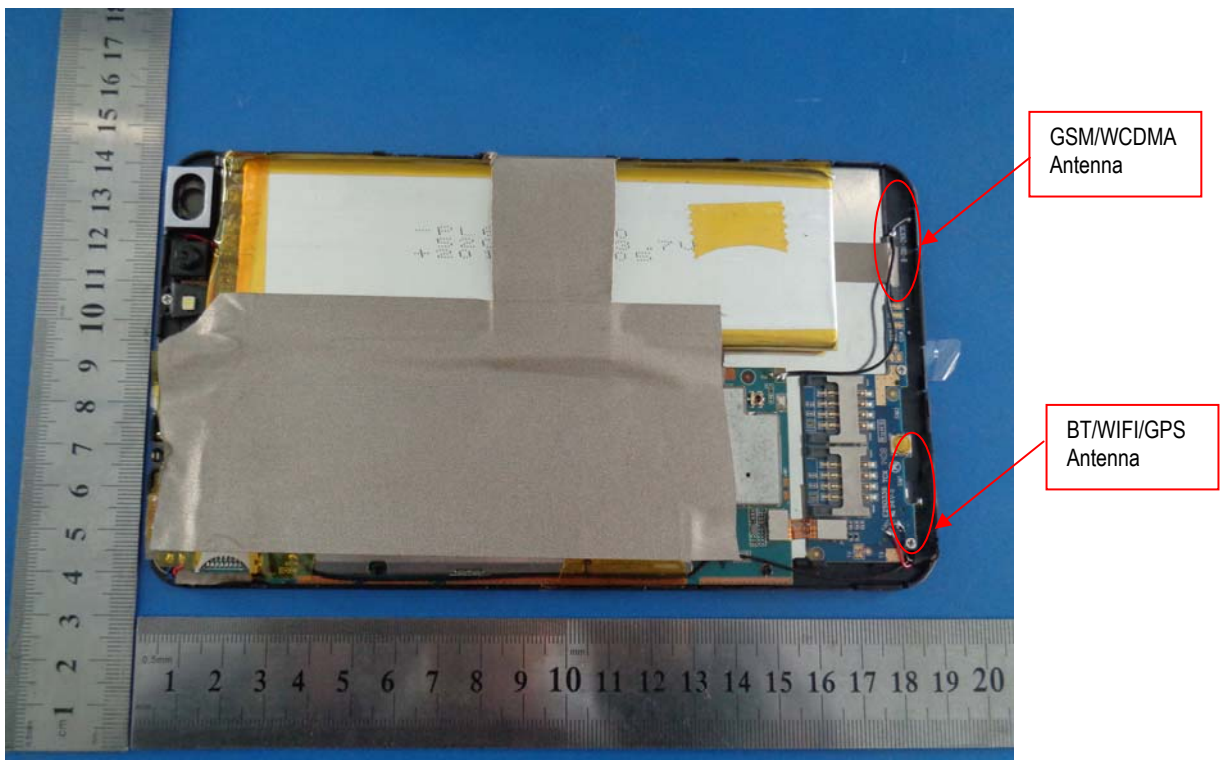


Right View of EUT

Annex B.ii. Photograph EUT Internal Photo



Uncover- Front View 1

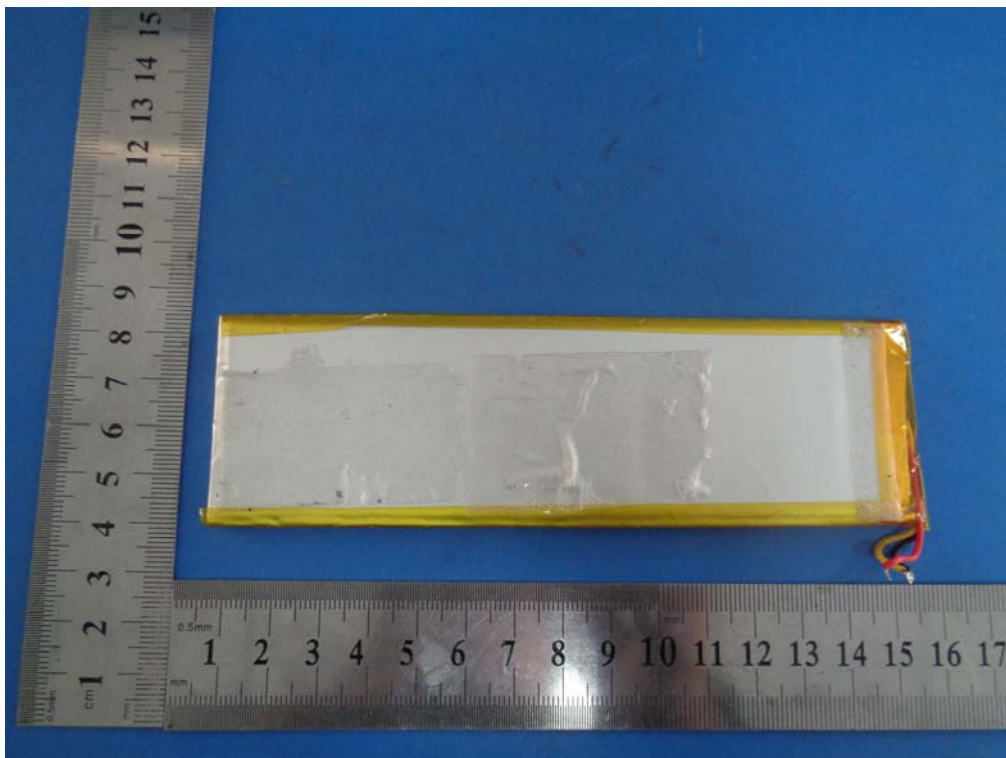


Uncover- Front View 2

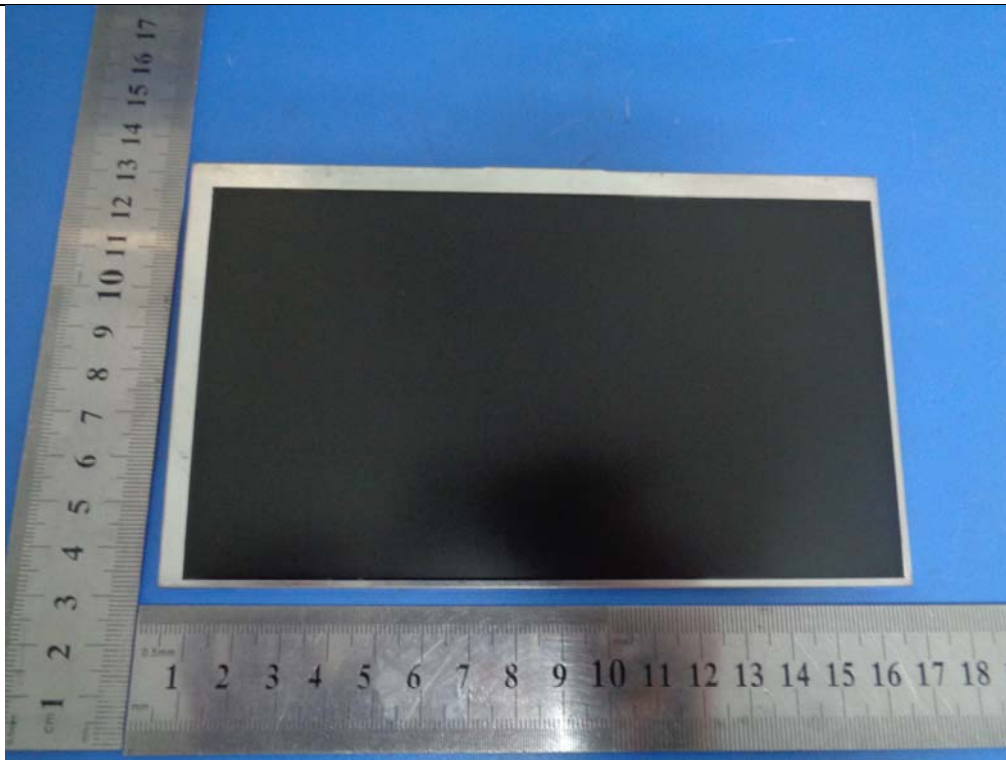
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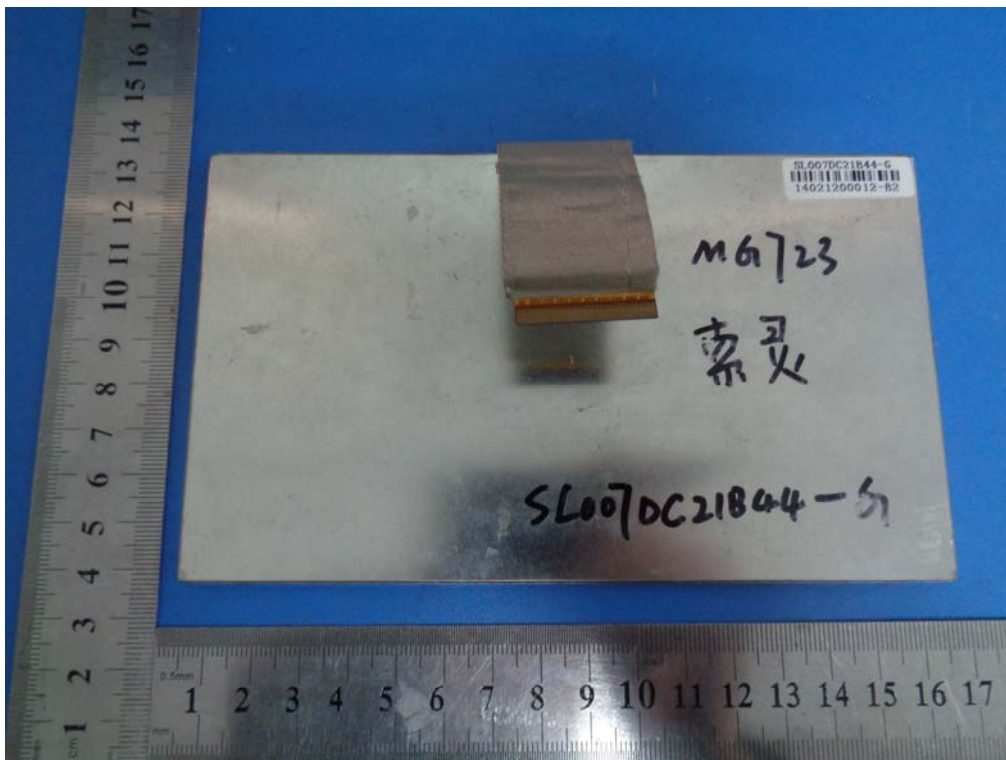
Battery- Front View



Battery- Rear View

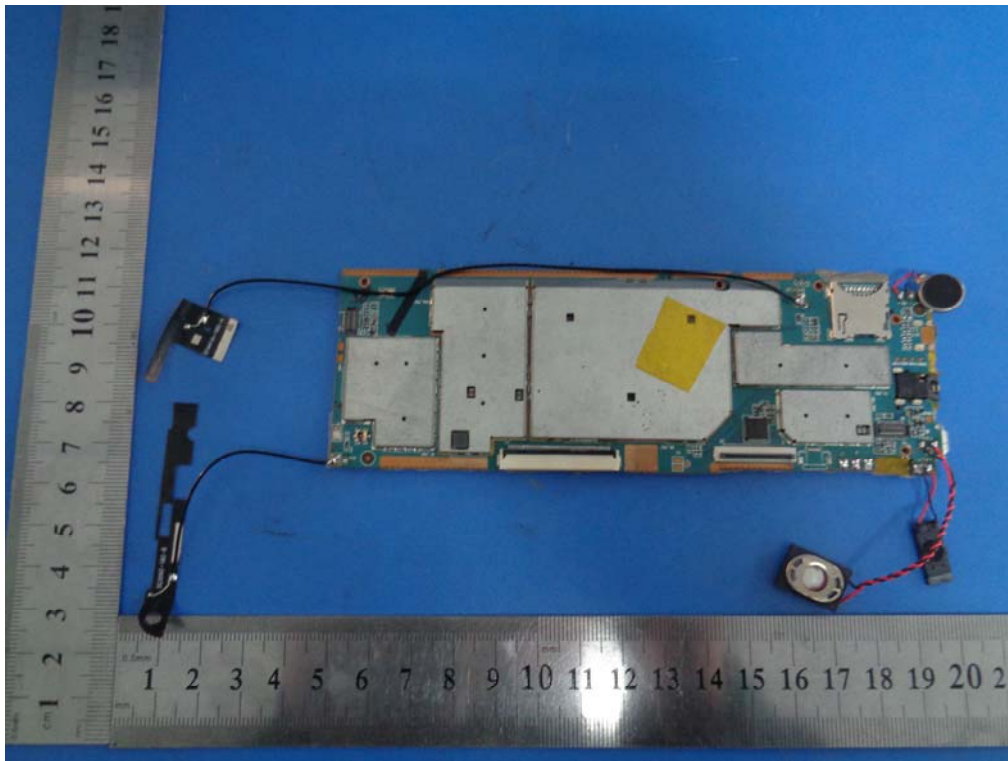


LCD – Front View

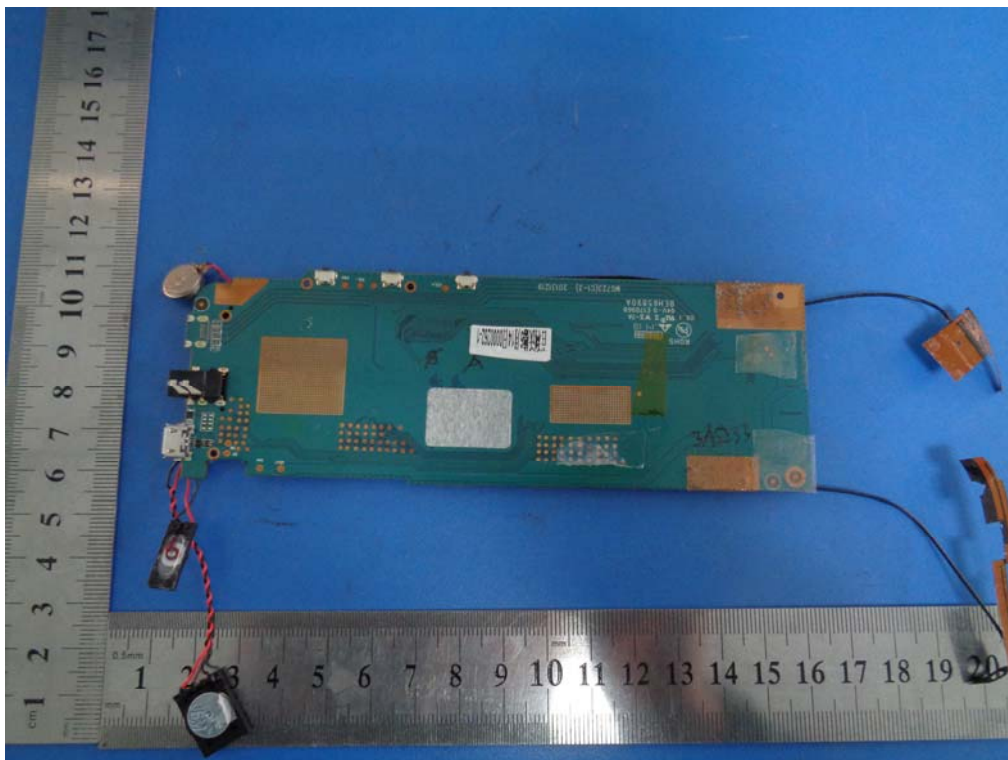


LCD – Rear View

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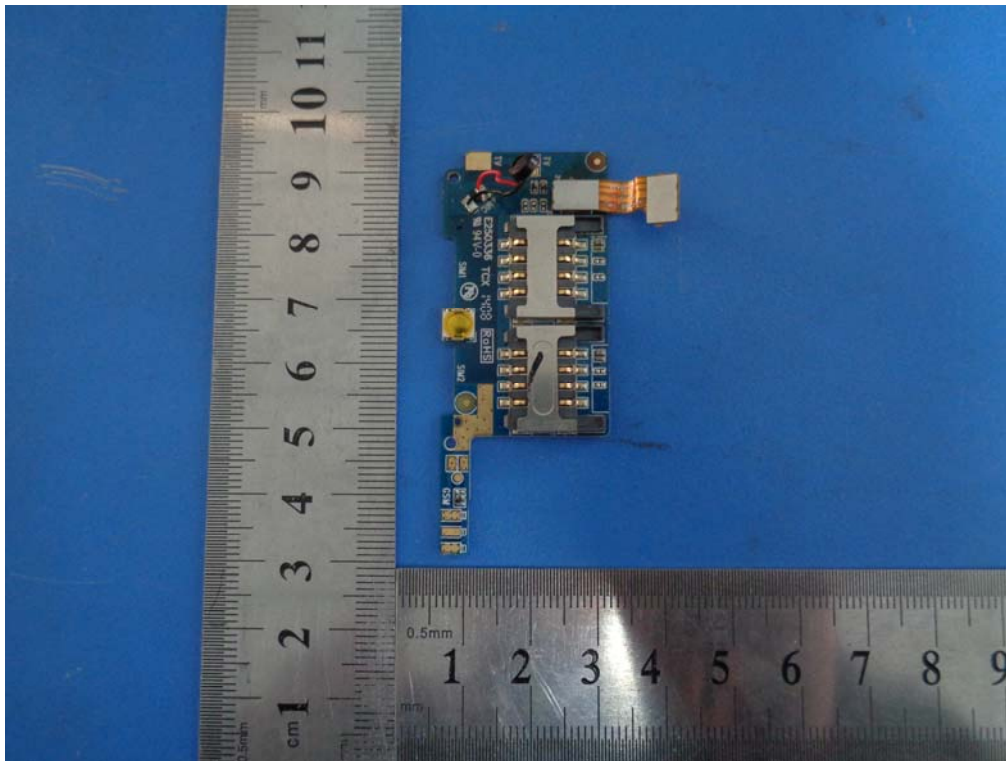


EUT PCB 1 – Front View

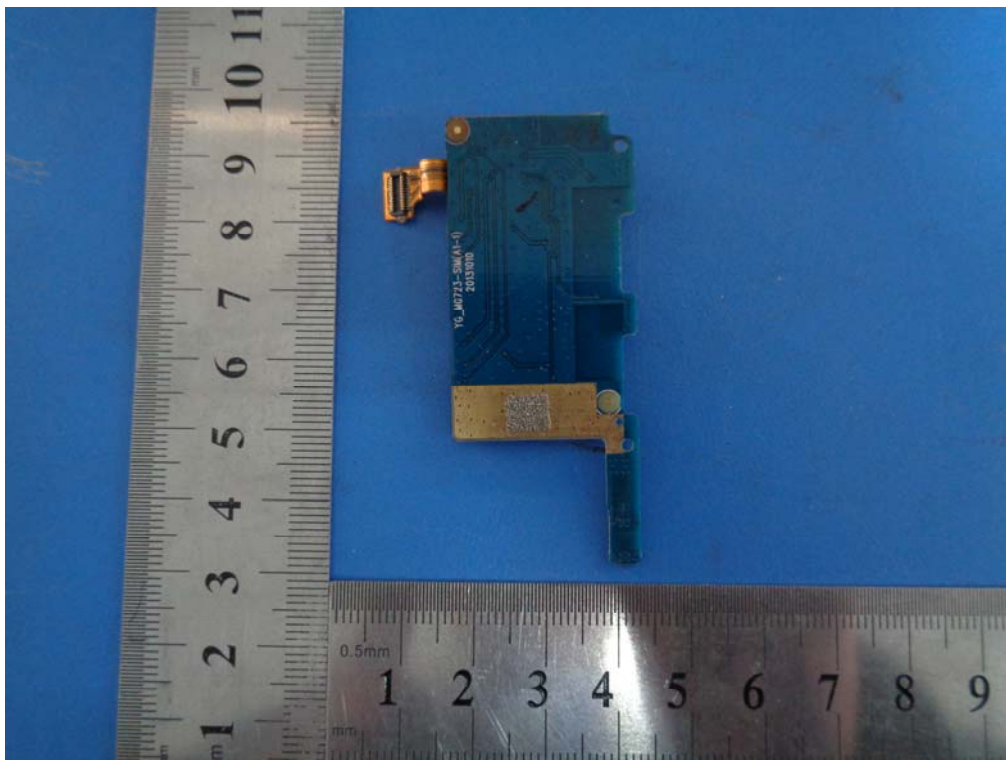


EUT PCB 1 – Rear View

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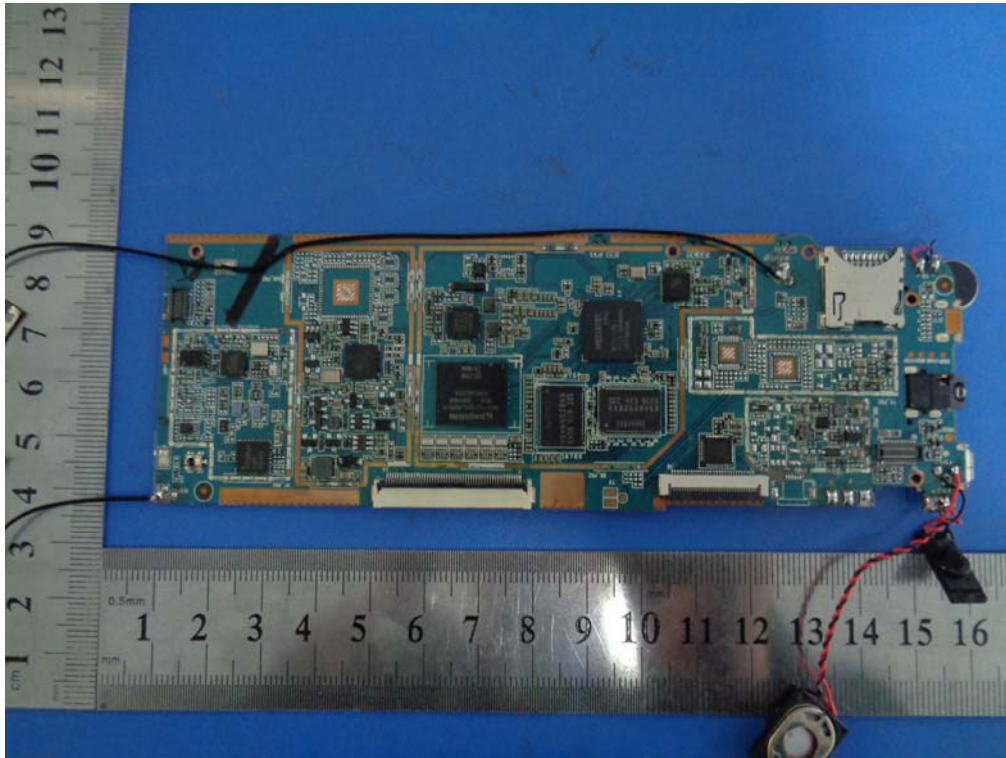


EUT PCB 2 – Front View



EUT PCB 2 – Rear View

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EUT PCB 1 – Without Shielding Front View

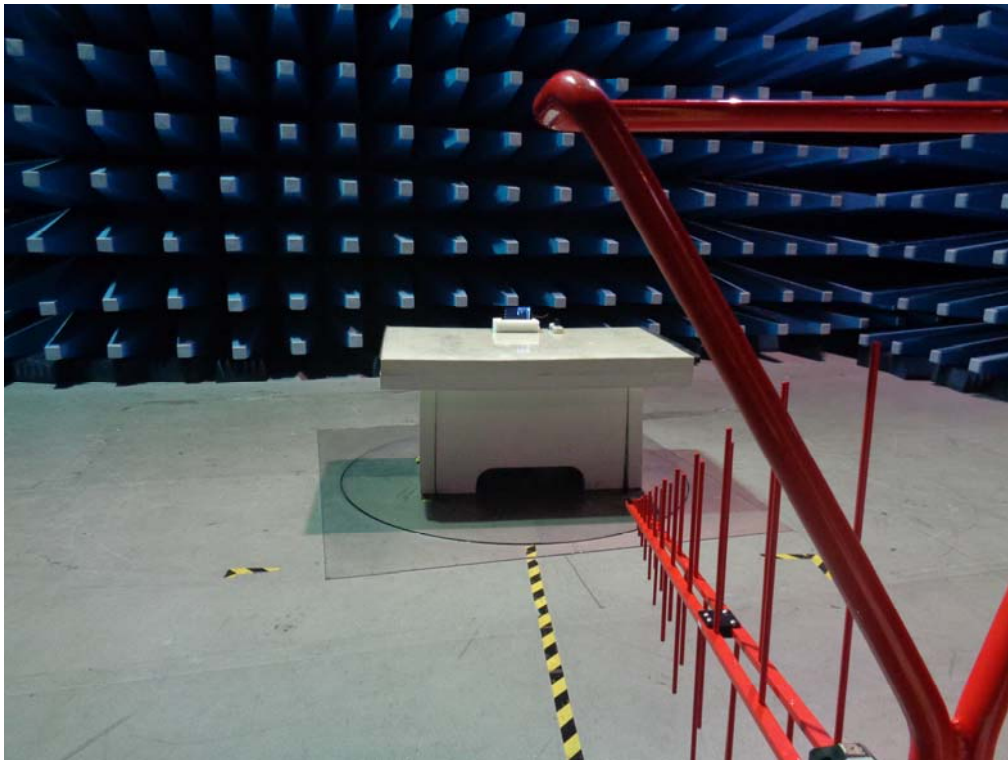
Annex B.iii. Photograph: Test Setup Photo



Conducted Emissions Test Setup – Front View



Conducted Emissions Test Setup – Side View



Radiated Spurious Emissions Test Setup Below 1GHz

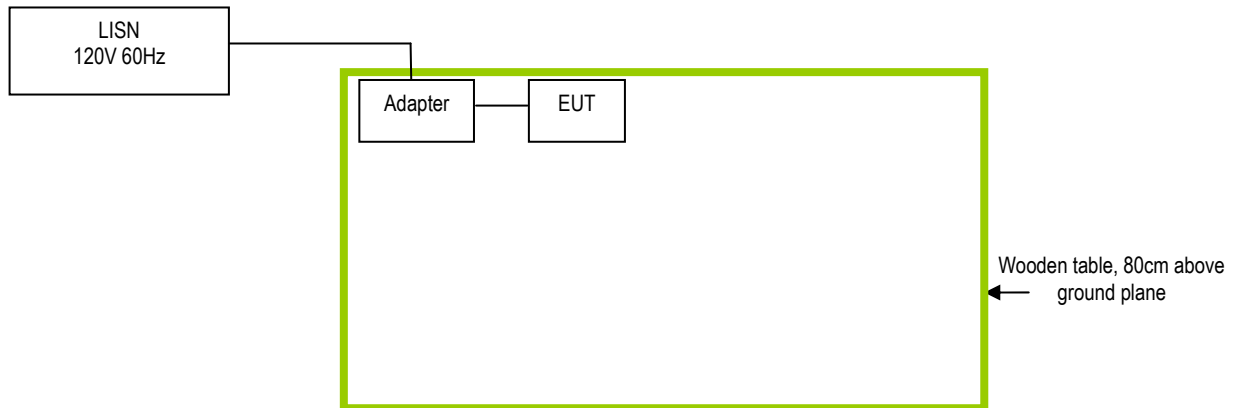


Radiated Spurious Emissions Test Setup Below 1GHz

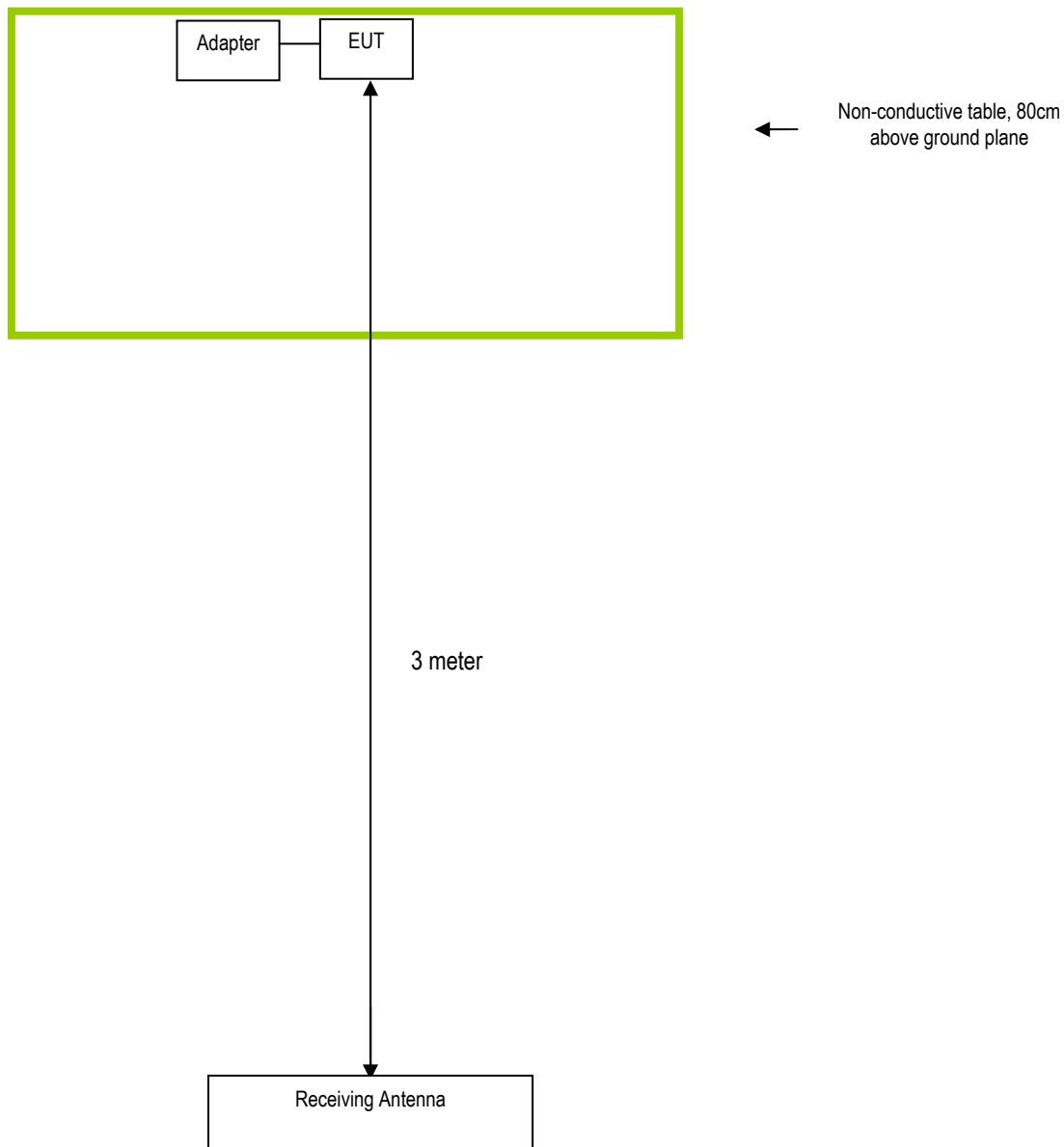
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.i. TEST SET UP BLOCK

Block Configuration Diagram for AC Line Conducted Emissions



Block Configuration Diagram for Radiated Emissions



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Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Manufacturer	Equipment Description	Model	Calibration Date	Calibration Due Date
N/A	N/A	N/A	N/A	N/A

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Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see attachment

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Annex E. DECLARATION OF SIMILARITY

Beneworld International(HK) Co., Limited

HK: Unit 04, 7/F, Bright Way Tower, No. 33 Mong Kok Road, Kowloon, Hong Kong
TEL: +852-69172443/ 30772819 **FAX:** +852-30772819

Statement

To whom it may concern

Date: November 18, 2014

We hereby state that the 7inch Tablet PC of our model number BW9 and serial numbers BW7D9, BW7D19, BW7D29, BW7D61, BW7D62, BW7D66, BW7D68, BW7D69, BW7D70, BW7D71 have the same constructions, circuit diagram and PCB layout. Only model name are different.

Sincerely,

Stephen Tang