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FCC RADIO TEST REPORT

Applicant's company	**AirTies Wireless Networks**
Applicant Address	Gülbahar Mah. Avni Dilligil Sok. Celik Is Merkezi ISTANBUL, 34394 Turkey
FCC ID	**Z3WAIR4920**
Manufacturer's company	**SHENZHEN GONGJIN ELECTRONICS CO.,LTD.**
Manufacturer Address	2F/3F/4F Baiying Building,1019#Naihai RD, Nanshan Dist., Shenzhen, Guangdong, CHINA

Product Name	2 Port Gigabit Ethernet 11ac/11n Wireless Router
Brand Name	AirTies
Model No.	Air 4920
Test Rule Part(s)	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Received Date	Oct. 22, 2014
Final Test Date	Mar. 04, 2015
Submission Type	Class II Change

Statement

Test result included is only for the IEEE 802.11n, IEEE 802.11b/g and IEEE 802.11a/ac of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2013**, **47 CFR FCC Part 15 Subpart C**, **KDB 558074 D01 v03r02**, **KDB 662911 D01 v02r01**, **KDB644545 D01 v01r02.**

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR490527-07AA	Rev. 01	Initial issue of report	Mar. 13, 2015

1. VERIFICATION OF COMPLIANCE

Product Name	:	2 Port Gigabit Ethernet 11ac/11n Wireless Router
Brand Name	:	AirTies
Model No.	:	Air 4920
Applicant	:	AirTies Wireless Networks
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart C § 15.247

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Oct. 22, 2014 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen
SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	6.06 dB
4.2	15.247(d)	Radiated Emissions	Complies	8.79 dB
4.3	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n/ac

Items	Description
Product Type	For 2.4GHz Band:WLAN (2TX, 2RX) For 5GHz Band:WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	see the below table for IEEE 802.11n/ac
Data Modulation	For 802.11n: OFDM (BPSK / QPSK / 16QAM / 64QAM) For 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n/ac
Frequency Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a/b/g

Items	Description
Product Type	WLAN (1TX, 1RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11a/g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54)
Frequency Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Beamforming Function	☒ With beamforming for 802.11n/ac in 5GHz.	☐ Without beamforming

Antenna and Band width

Antenna	Single (TX)			Two (TX)			Three (TX)		
Band width Mode	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz
IEEE 802.11a	V	X	X	X	X	X	X	X	X
IEEE 802.11b	V	X	X	X	X	X	X	X	X
IEEE 802.11g	V	X	X	X	X	X	X	X	X
IEEE 802.11n (2.4GHz)	X	X	X	V	V	X	X	X	X
IEEE 802.11n (5GHz)	X	X	X	X	X	X	V	V	X
IEEE 802.11ac	X	X	X	X	X	X	V	V	V

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20) (2.4GHz)	2	MCS0-15
802.11n (HT40) (2.4GHz)	2	MCS0-15
802.11n (HT20) (5GHz)	3	MCS0-23
802.11n (HT40) (5GHz)	3	MCS0-23
802.11ac (VHT20)	3	MCS 0-9/Nss1-3
802.11ac (VHT40)	3	MCS 0-9/Nss1-3
802.11ac (VHT80)	3	MCS 0-9/Nss1-3
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT support HT20 and HT40. Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT support VHT20, VHT40 and VHT80. Note 3: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac		

3.2. Accessories

Power	Brand	Model	Rating
Adapter	MOSO	MSP-C1000IC12.0-12B-US	Input: 100-240V~50/60Hz 0.5 max. Output: 12.0V, 1A

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	-	-	PCB Antenna	NA	2.5	-
2	Airgain	N2420S-T-G50U	PIFA Antenna	I-PEX	2.5	-
3	-	-	PCB Antenna	NA	-	0
4	-	-	PCB Antenna	NA	-	0
5	-	-	PCB Antenna	NA	-	0

Note: The EUT has five antennas. There are two antennas for 2.4GHz and three antennas for 5GHz.

<For 2.4GHz band>

For 802.11b/g mode:

Only Ant. 1 can be used as transmitting/receiving antenna.

For 802.11n mode:

Both Ant. 1 and Ant. 2 support transmit and receive functions.

Ant. 1 and Ant. 2 can transmit and receive signal simultaneously.

<For 5GHz band>

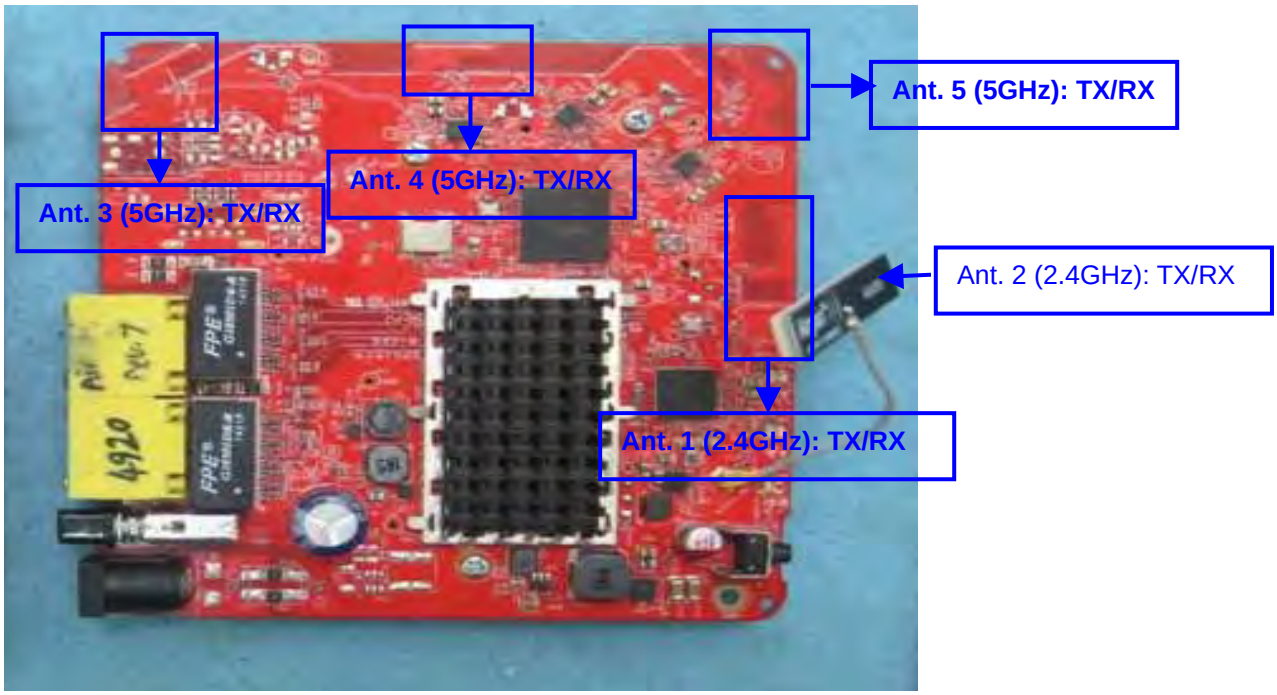
For 802.11a mode:

Only Ant. 3 can be used as transmitting/receiving antenna.

For 802.11n/ac mode:

Ant. 3, Ant. 4 and Ant. 5 support transmit and receive functions.

Ant. 3, Ant. 4 and Ant. 5 can transmit and receive signal simultaneously.



3.4. Table for Carrier Frequencies

For 2.4GHz Band:

There are two bandwidth systems.

For 20MHz bandwidth systems, use Channel 1~Channel 11.

For 40MHz bandwidth systems, use Channel 3~Channel 9.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz	-	-

For 5GHz Band:

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 151, 159.

For 80MHz bandwidth systems, use Channel 155.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5725~5850 MHz Band 4	149	5745 MHz	157	5785 MHz
	151	5755 MHz	159	5795 MHz
	153	5765 MHz	161	5805 MHz
	155	5775 MHz	165	5825 MHz

3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	Normal Link	-	-	-
Radiated Emissions Below 1GHz	Normal Link	-	-	-

3.6. Table for Testing Locations

Test Site Location				
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.			
TEL:	886-3-656-9065			
FAX:	886-3-656-9085			
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC File No.**
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC).

3.7. Table for Class II Change

This product is an extension of original report under Sporton project number: FR490527-05AA
Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
Remove USB and Audio ports, and the RF feature remains the same. Only an adapter (Brand: MOSO/ Model: MSP-C1000IC12.0-12B-US) is equipped.	1. AC Power Line Conducted Emissions 2. Radiated Emission <Below 1GHz> After evaluating, these test items should be tested and recorded in this report.

3.8. Table for Supporting Units

For Test Site No: 03CH01-CB <Below 1GHz>

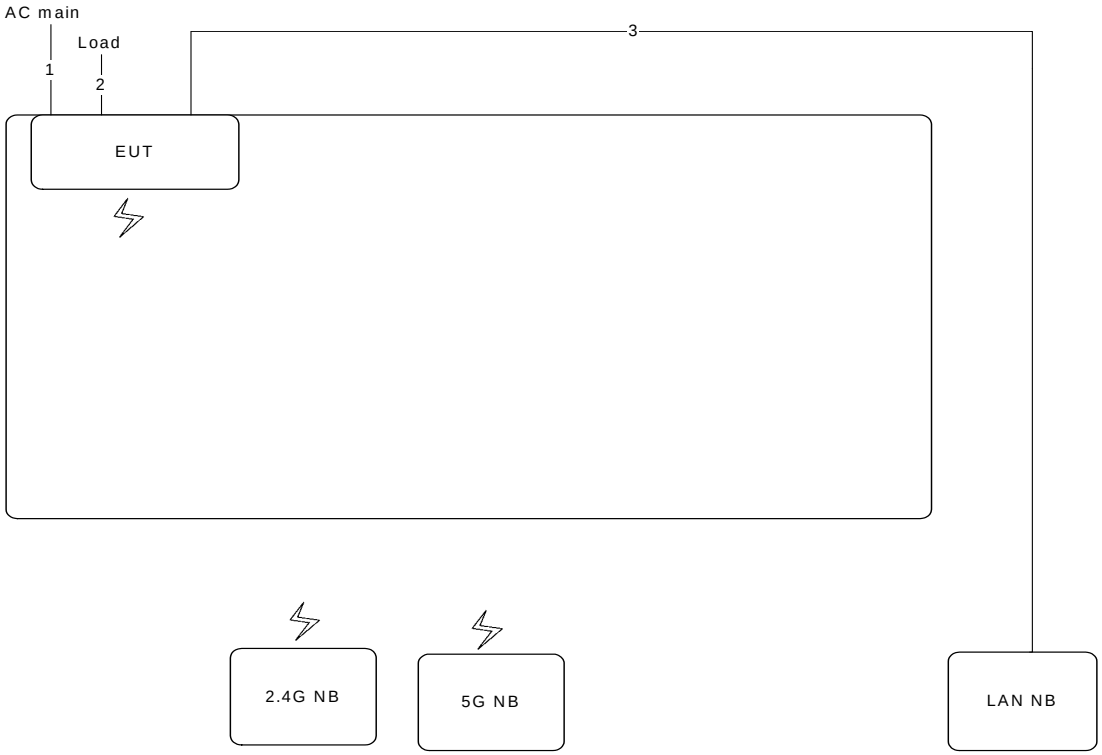
Support Unit	Brand	Model	FCC ID
NB	DELL	M1340	E2K4965AGNM
NB	DELL	E6430	DoC
NB	DELL	D420	E2KWM3945ABG

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
NB	DELL	E6430	DoC
NB	DELL	E6430	DoC
NB	DELL	E6430	DoC

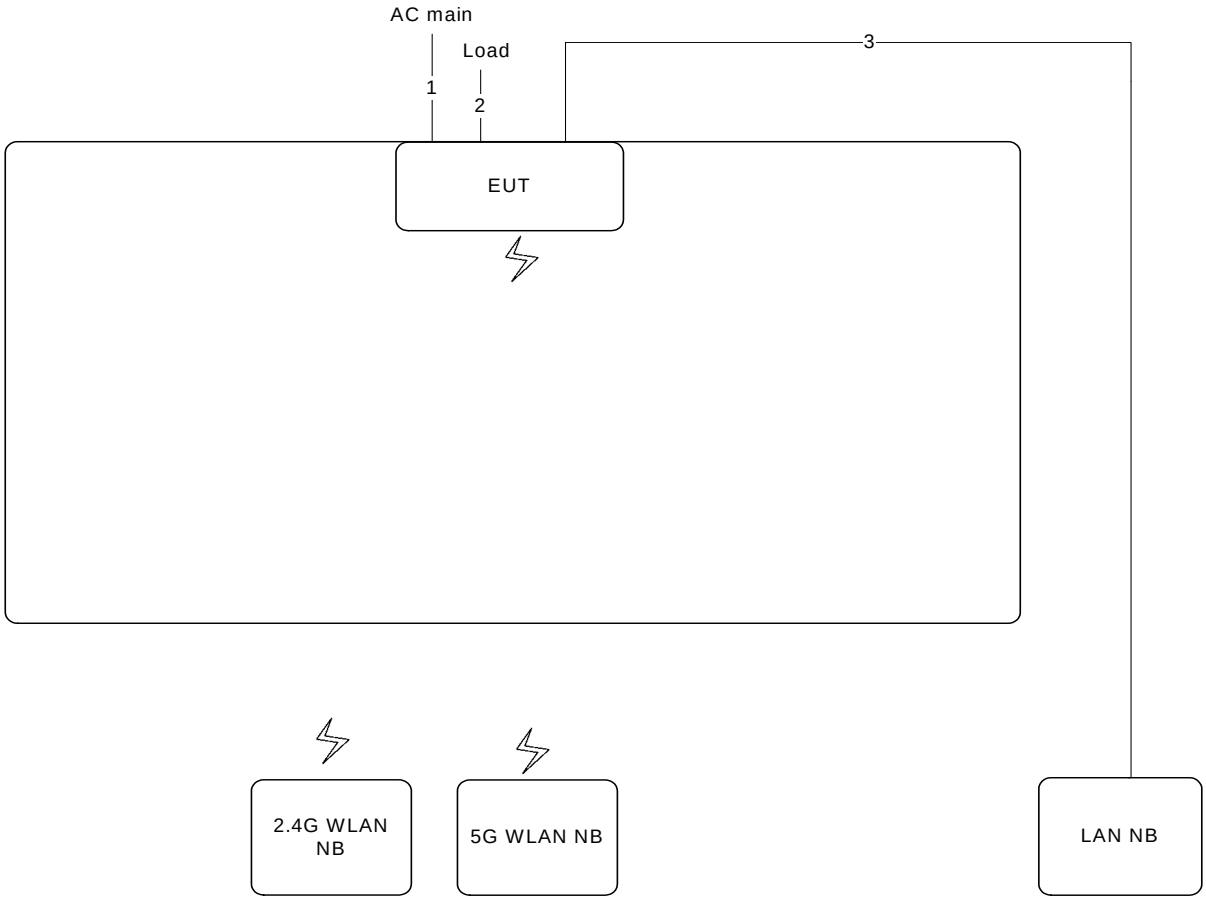
3.9. Test Configurations

3.9.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shielded	Length	Remark
1	Power cable	No	1.5m	-
2	RJ-45 cable	No	1.5m	Load
3	RJ-45 cable	No	10m	-

3.9.2. Radiation Emissions Test (Below1G) Configuration



Item	Connection	Shielded	Length	Remark
1	Power cable	No	1.5m	-
2	RJ-45 cable	No	1m	Load
3	RJ-45 cable	No	10m	-

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product which is designed to be connected to the 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 below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

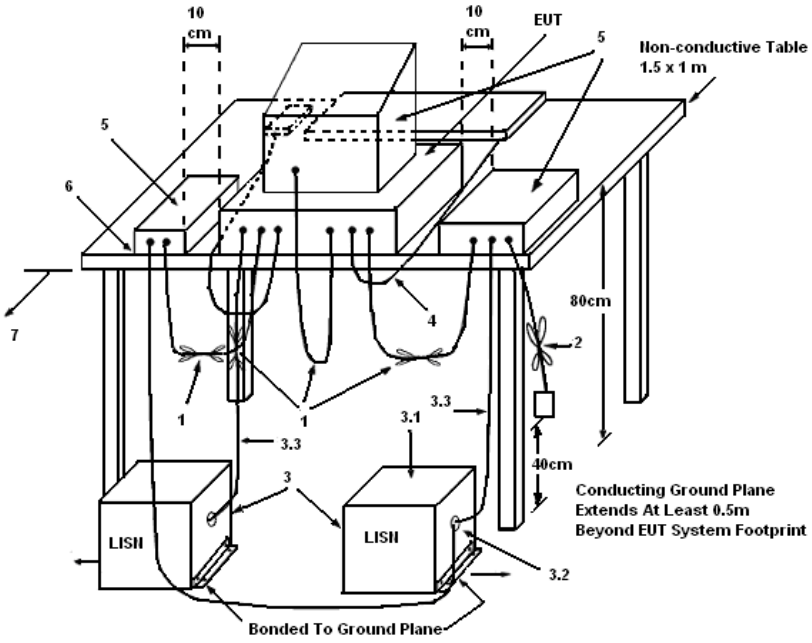
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

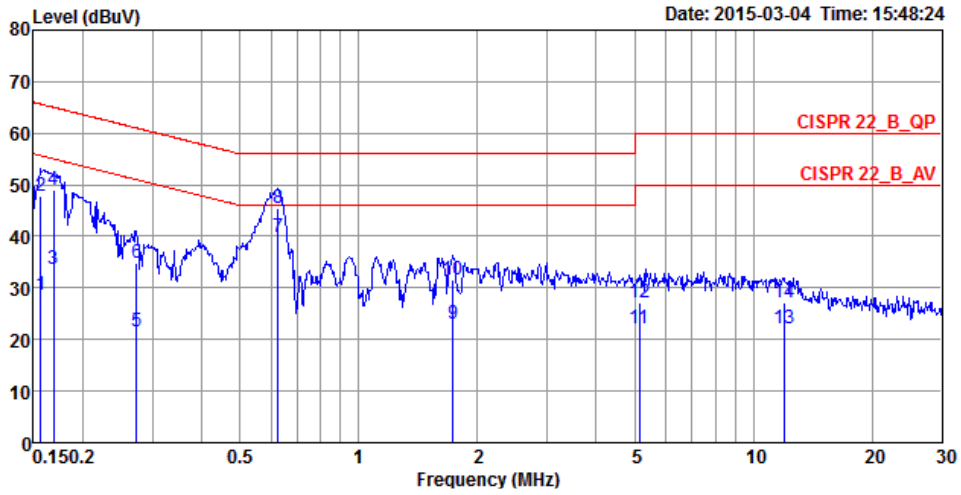
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

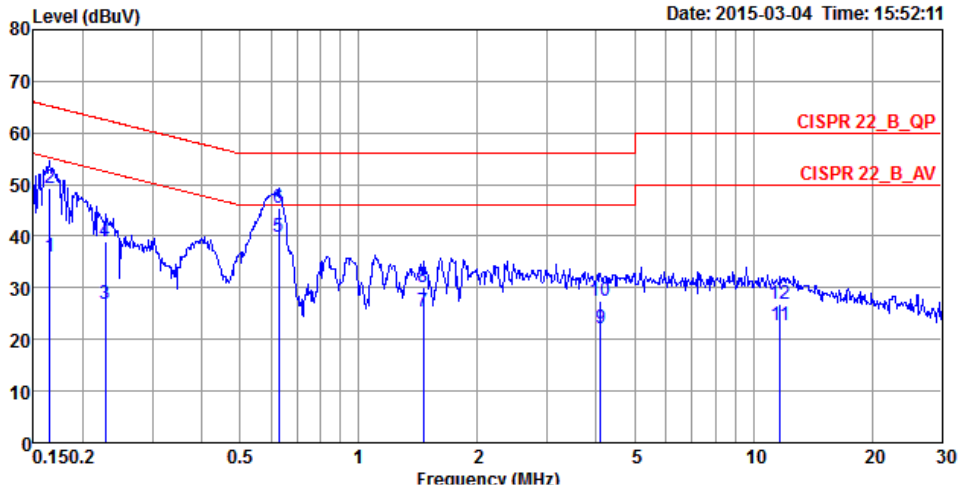
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	23℃	Humidity	57%
Test Engineer	Parody Lin	Phase	Line
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.16	28.55	-27.10	55.65	18.31	10.03	0.21	LINE	Average
2	0.16	47.80	-17.85	65.65	37.56	10.03	0.21	LINE	QP
3	0.17	33.63	-21.40	55.03	23.38	10.03	0.22	LINE	Average
4	0.17	49.08	-15.95	65.03	38.83	10.03	0.22	LINE	QP
5	0.27	21.56	-29.47	51.03	11.26	10.03	0.27	LINE	Average
6	0.27	34.97	-26.06	61.03	24.67	10.03	0.27	LINE	QP
7 pp	0.62	39.94	-6.06	46.00	29.61	10.02	0.31	LINE	Average
8 qp	0.62	45.46	-10.54	56.00	35.13	10.02	0.31	LINE	QP
9	1.73	23.02	-22.98	46.00	12.64	10.03	0.35	LINE	Average
10	1.73	31.64	-24.36	56.00	21.26	10.03	0.35	LINE	QP
11	5.14	22.15	-27.85	50.00	11.73	10.04	0.38	LINE	Average
12	5.14	27.19	-32.81	60.00	16.77	10.04	0.38	LINE	QP
13	11.93	22.26	-27.74	50.00	11.74	10.10	0.42	LINE	Average
14	11.93	27.04	-32.96	60.00	16.52	10.10	0.42	LINE	QP

Temperature	23℃	Humidity	57%
Test Engineer	Parody Lin	Phase	Neutral
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.17	35.90	-19.31	55.21	25.73	9.95	0.22	NEUTRAL	Average
2	0.17	49.16	-16.05	65.21	38.99	9.95	0.22	NEUTRAL	QP
3	0.23	26.77	-25.75	52.52	16.55	9.96	0.26	NEUTRAL	Average
4	0.23	39.07	-23.45	62.52	28.85	9.96	0.26	NEUTRAL	QP
5 pp	0.63	39.71	-6.29	46.00	29.52	9.88	0.31	NEUTRAL	Average
6 qp	0.63	45.35	-10.65	56.00	35.16	9.88	0.31	NEUTRAL	QP
7	1.46	25.31	-20.69	46.00	15.08	9.89	0.34	NEUTRAL	Average
8	1.46	30.07	-25.93	56.00	19.84	9.89	0.34	NEUTRAL	QP
9	4.09	22.08	-23.92	46.00	11.82	9.89	0.37	NEUTRAL	Average
10	4.09	27.48	-28.52	56.00	17.22	9.89	0.37	NEUTRAL	QP
11	11.68	22.61	-27.39	50.00	12.25	9.94	0.42	NEUTRAL	Average
12	11.68	26.84	-33.16	60.00	16.48	9.94	0.42	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. Radiated Emissions Measurement

4.2.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.2.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average
RBW / VBW (Emission in non-restricted band)	100kHz / 300kHz for peak

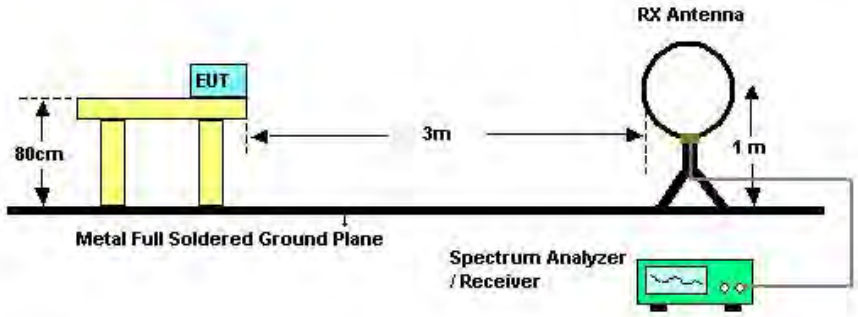
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RBW 120kHz for QP

4.2.3. Test Procedures

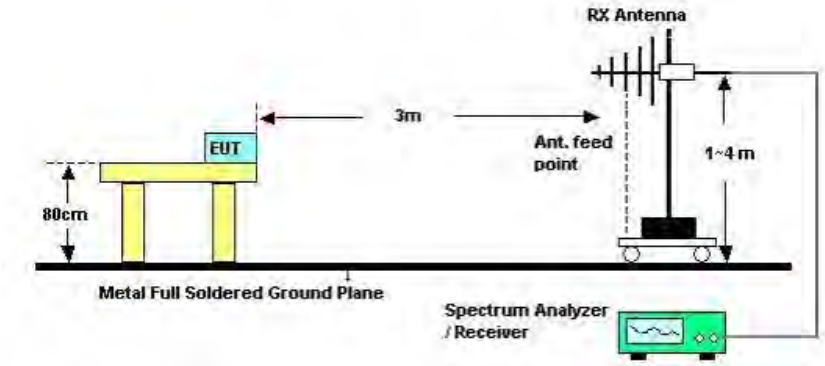
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 1/T VBW for average reading in spectrum analyzer.
7. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
8. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
9. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.2.4. Test Setup Layout

For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

4.2.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	26℃	Humidity	63%
Test Engineer	Andy Tsai	Configurations	Normal Link
Test Date	Mar. 02, 2015		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

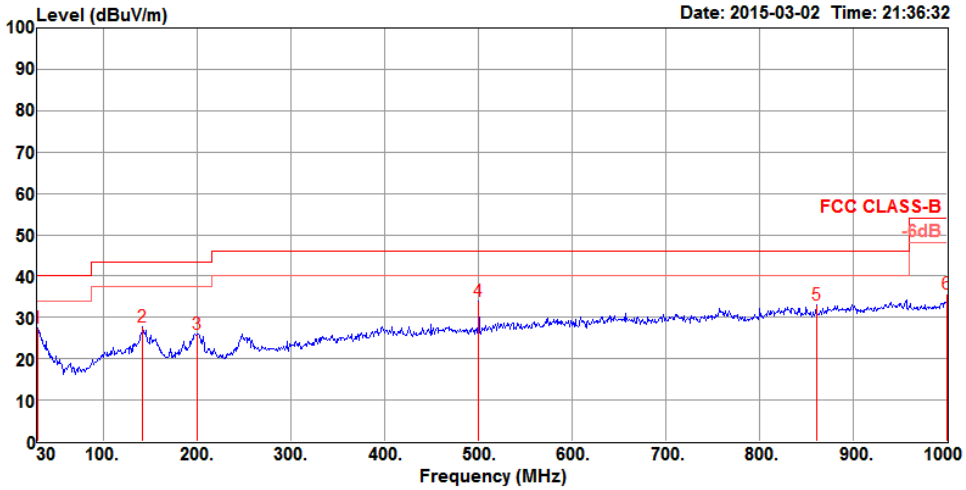
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.2.8. Results of Radiated Emissions (30MHz~1GHz)

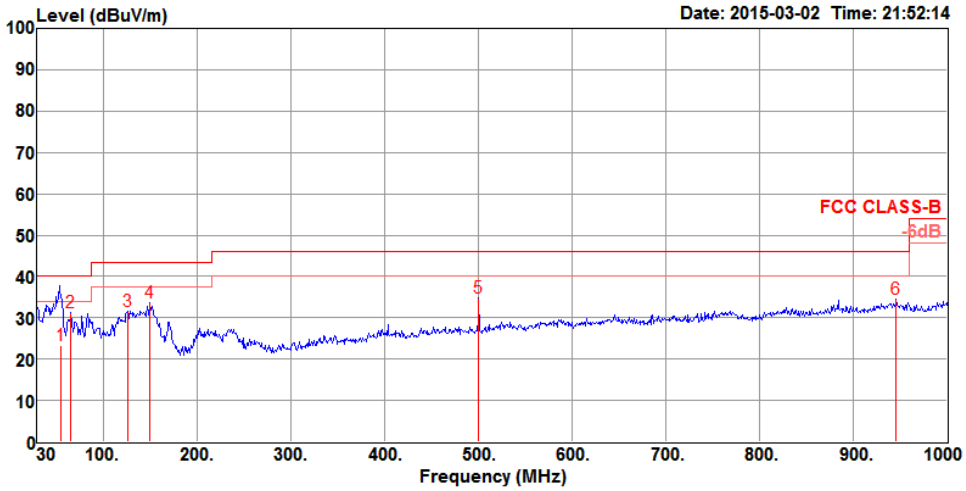
Temperature	26℃	Humidity	63%
Test Engineer	Andy Tsai	Configurations	Normal Link

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.00	27.38	40.00	-12.62	39.09	0.43	20.10	32.24	150	2	Peak	HORIZONTAL
2	142.52	27.86	43.50	-15.64	47.13	1.04	11.85	32.16	200	183	Peak	HORIZONTAL
3	199.75	26.12	43.50	-17.38	46.55	1.23	10.40	32.06	150	162	Peak	HORIZONTAL
4	500.45	34.06	46.00	-11.94	46.45	1.96	17.80	32.15	125	124	Peak	HORIZONTAL
5	860.32	32.94	46.00	-13.06	40.71	2.56	21.38	31.71	125	89	Peak	HORIZONTAL
6	1000.00	35.57	54.00	-18.43	40.91	2.73	22.30	30.37	100	44	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	54.31	23.39	40.00	-16.61	47.00	0.64	8.05	32.30	100	230	QP	VERTICAL
2	65.89	31.21	40.00	-8.79	55.99	0.70	6.84	32.32	150	0	Peak	VERTICAL
3	126.03	31.62	43.50	-11.88	50.16	0.97	12.74	32.25	100	128	Peak	VERTICAL
4	150.28	33.59	43.50	-9.91	53.48	1.07	11.19	32.15	100	176	Peak	VERTICAL
5	500.45	34.81	46.00	-11.19	47.19	1.96	17.81	32.15	100	214	Peak	VERTICAL
6	945.68	34.58	46.00	-11.42	40.98	2.68	21.97	31.05	200	108	Peak	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.3. Antenna Requirements

4.3.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. 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 the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.3.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100355	9kHz ~ 2.75GHz	Apr. 23, 2014	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 02, 2014	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 02, 2014	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	Dec. 03, 2014	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	May 26, 2014	Radiation (03CH01-CB)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jul. 28, 2014	Radiation (03CH01-CB
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Feb. 24, 2015	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 06, 2014	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESR26	101289	9kHz ~ 26GHz	Aug. 22, 2014	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N.C.R.	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO 2000	N/A	1 m ~ 4 m	N.C.R.	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 15, 2014	Radiation (03CH01-CB)

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%