



# SPORTON International Inc.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.  
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / [www.sporton.com.tw](http://www.sporton.com.tw)

## FCC RADIO TEST REPORT

Applicant's company	CyberTAN Technology, Inc.
Applicant Address	No. 99, Park Avenue III, Science-based Industrial Park, Hsinchu, 308 Taiwan
FCC ID	N89-WAP371
Manufacturer's company	CyberTAN Technology, Inc.
Manufacturer Address	No. 99, Park Avenue III, Science-based Industrial Park, Hsinchu, 308 Taiwan

Product Name	Wireless-AC/N Dual Radio Point with Single Point Setup
Brand Name	CISCO
Model No.	WAP371
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz
Received Date	Sep. 09, 2015
Final Test Date	Nov. 04, 2015
Submission Type	Class II Change

### Statement

Test result included in this report is for the IEEE 802.11n and IEEE 802.11b/g 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 C63.10-2009, 47 CFR FCC Part 15 Subpart C, KDB558074 D01 v03r04 and KDB 662911 D01 v02r01.

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



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## History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR3O0832-06AA	Rev. 01	Initial issue of report	Mar. 24, 2016



## 1. VERIFICATION OF COMPLIANCE

Product Name : Wireless-AC/N Dual Radio Point with Single Point Setup  
Brand Name : CISCO  
Model No. : WAP371  
Applicant : CyberTAN Technology, Inc.  
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 Sep. 09, 2015 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.

A handwritten signature in blue ink, appearing to read 'Sam Chen', is written over a horizontal line.

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	3.03 dB
4.2	15.247(d)	Radiated Emissions	Complies	7.26 dB
4.3	15.203	Antenna Requirements	Complies	-

### 3. GENERAL INFORMATION

#### 3.1. Product Details

Items	Description
Product Type	IEEE 802.11b: WLAN (1TX, 2RX) IEEE 802.11g: WLAN (2TX, 2RX) IEEE 802.11n: WLAN (2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter or PoE
Modulation	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: see the below table
Data Modulation	IEEE 802.11b: DSSS (BPSK / QPSK / CCK) IEEE 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	IEEE 802.11b: DSSS (1/ 2/ 5.5/11) IEEE 802.11g: OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n: see the below table
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11 for 20MHz bandwidth ; 7 for 40MHz bandwidth
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description
Beamforming Function	<input type="checkbox"/> With beamforming <input checked="" type="checkbox"/> Without beamforming

#### Antenna and Band width

Antenna	Single (TX)		Two (TX)	
Band width Mode	20 MHz	40 MHz	20 MHz	40 MHz
IEEE 802.11b	V	X	X	X
IEEE 802.11g	X	X	V	X
IEEE 802.11n	X	X	V	V

### IEEE 11n Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	2	MCS 0-15
802.11n (HT40)	2	MCS 0-15
<p>Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT supports HT20 and HT40.</p> <p>Note 2: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n</p>		

### 3.2. Accessories

Power	Brand	Model	Rating
Adapter	LEI	MU24-Y120200-A1	Input: 100-240V ~ 50/60Hz 0.7A Output: 12V, 2.0A
Others			
RJ-45 cable*1: Non-shielded, 1.5m			
Cradle*1			

### 3.3. Table for Filed Antenna

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	Remark
1	GALTRONICS	2365-54480001R	PIFA Antenna	N/A	2.94	2.4GHz
2	GALTRONICS	2365-04610001R	PIFA Antenna	N/A	3.15	2.4GHz
3	GALTRONICS	2365-51670005R	PIFA Antenna	I-PEX	5.39	5GHz
4	GALTRONICS	2365-54480002R	PIFA Antenna	I-PEX	4.31	5GHz
5	GALTRONICS	2365-51670006R	PIFA Antenna	I-PEX	4.41	5GHz

Note: The EUT has five antennas.

#### For 2.4GHz function:

##### For IEEE 802.11b mode (1TX/2RX):

The EUT supports Ant. 1 and Ant. 2 with TX diversity function.

Ant. 1 generated the worst case than Ant. 2, so it is tested and recorded in the report.

Ant. 1 and Ant. 2 could receive simultaneously.

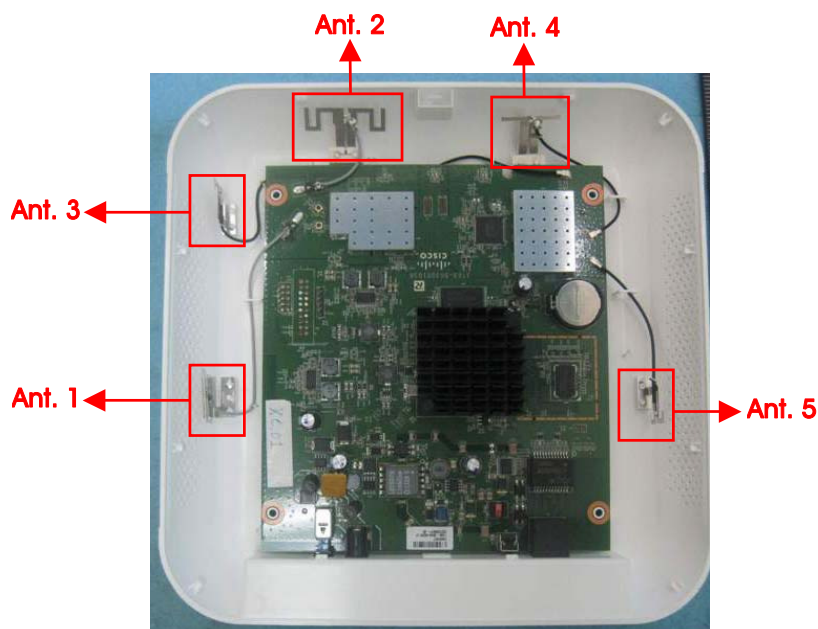
##### For IEEE 802.11g/n mode (2TX/2RX):

Ant. 1 and Ant. 2 could transmit/receive simultaneously.

#### For 5GHz function:

##### For IEEE 802.11a/n/ac mode (3TX/3RX):

Ant. 3, Ant. 4 and Ant. 5 could transmit/receive simultaneously.





### 3.4. Table for Carrier Frequencies

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	-	-

### 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	Ant.
AC Power Line Conducted Emissions	Normal Link	-	-	-
Radiated Emissions 9kHz~1GHz	Normal Link	-	-	-

Note: The EUT supports AP mode, Bridge mode and Client mode, after evaluating, AP mode and Bridge mode has been evaluated to be the worst case.

The following test modes were performed for all tests:

#### For AC Power Line Conducted Emissions test:

Mode 1. AP mode

Mode 2. Bridge mode\_2.4G

Mode 3. Bridge mode\_5G

Mode 3 is the worst case, so it was selected to record in this test report.

#### For Radiated Emissions 9kHz~1GHz test:

Mode 1. EUT Y axis - AP mode

Mode 2. EUT Z axis - AP mode

Mode 1 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3~Mode 4 will follow this same test mode.

Mode 3. EUT Y axis - Bridge mode\_2.4G

Mode 4. EUT Y axis - Bridge mode\_5G

Mode 1 is the worst case, so it was selected to record in this test report.

### 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
CO02-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 one reported under Sporton project number: FR3O0832AA.

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding a new adapter (Model No.: MU24-Y120200-A1). 2. Adding the Bridge mode and Client without radar detection mode.	1. AC Power Line Conducted Emissions. 2. Radiated Emissions 9kHz~1GHz.
3. Updating test rule of 5GHz band 1~4 to "New Rules" from "Old Rules".	It does not affect the 2.4GHz band radio test result.
4. Changing the DFS Firmware Version to "3.3.6.4" from "1.0.0.4".	No test case need redo.

### 3.8. Table for Supporting Units

For Test Site No: 03CH01-CB

Support Unit	Brand	Model	FCC ID
NB*3	DELL	E4300	DoC

For Test Site No: CO01-CB

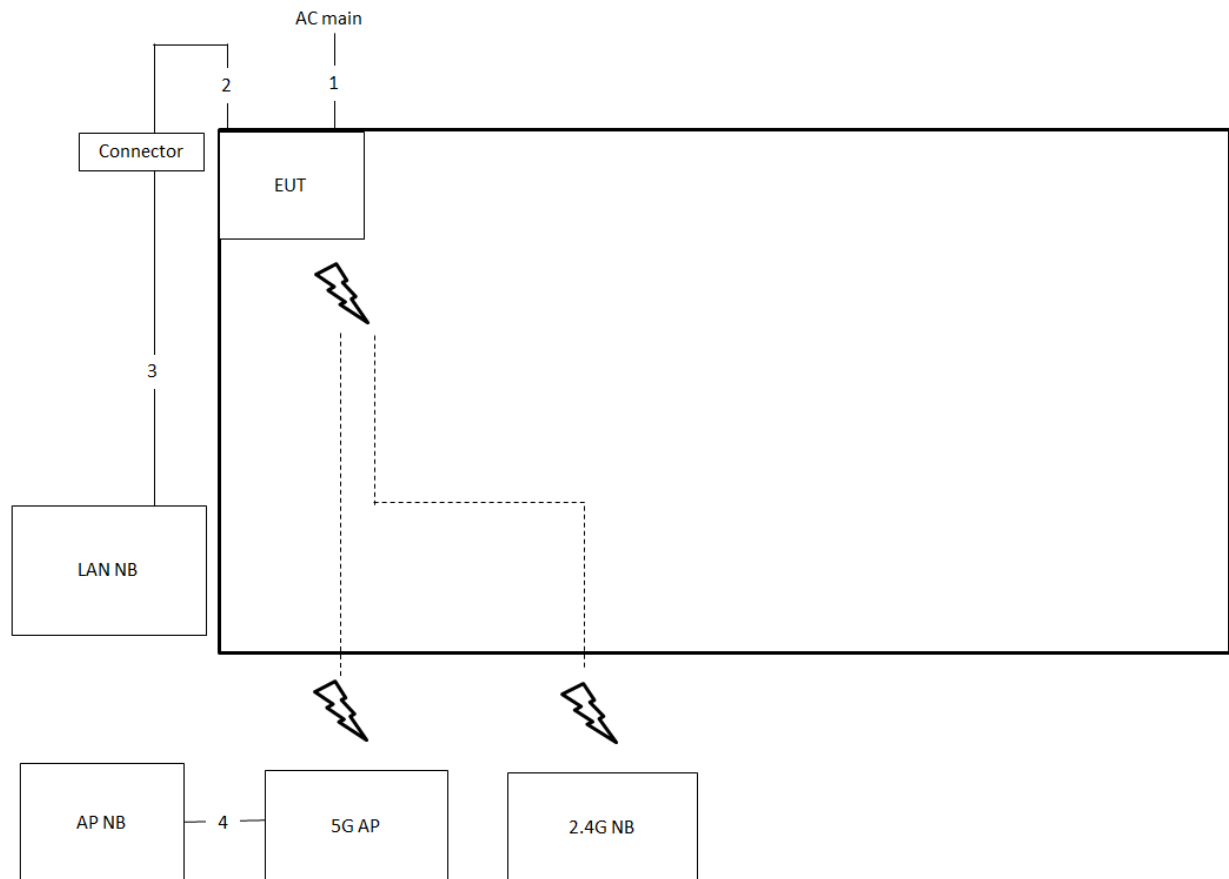
Support Unit	Brand	Model	FCC ID
NB*3	DELL	E6430	DoC
AP Router	Planex	GW-AP54SGX	KA220030603014-1

### 3.9. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

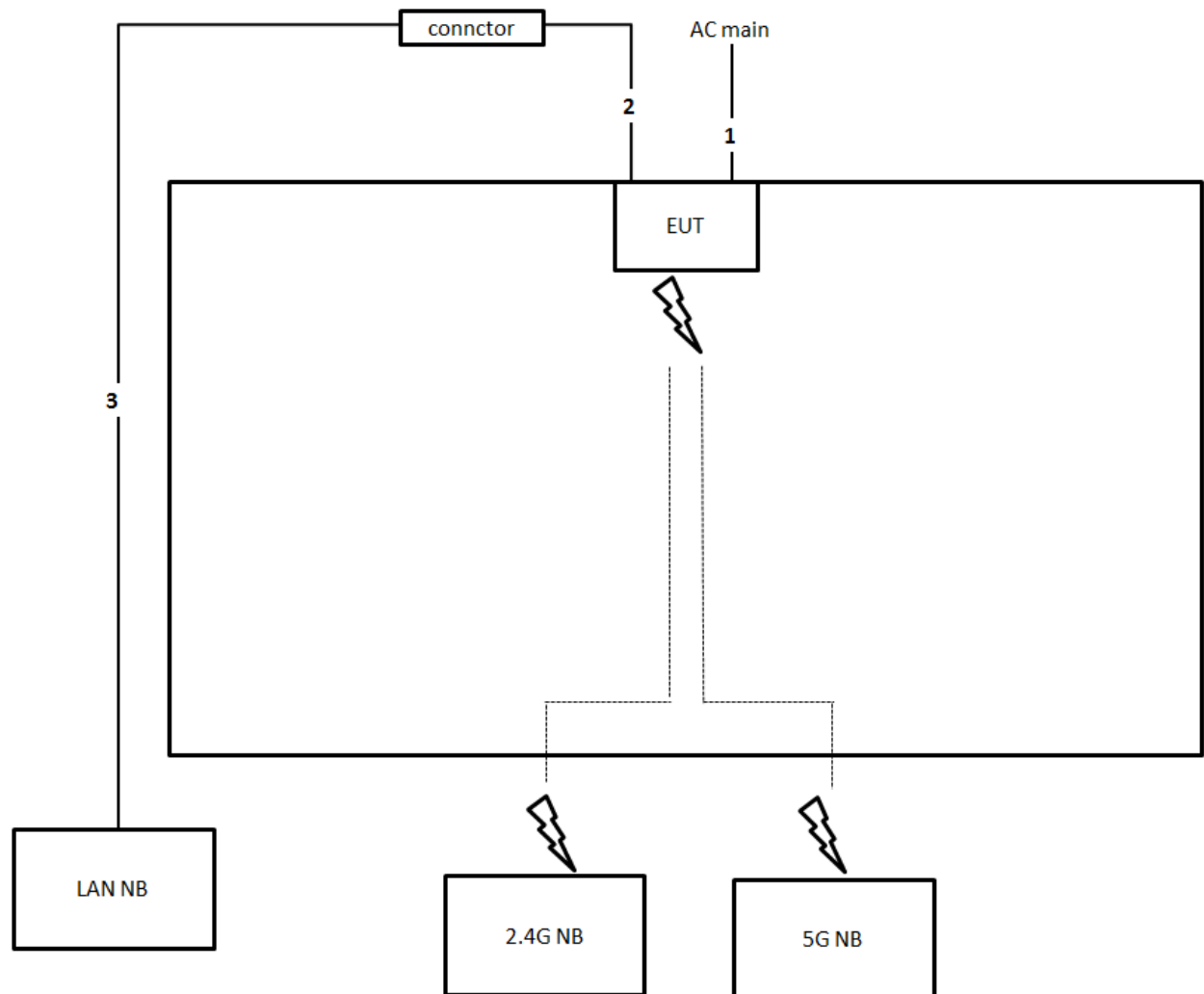
### 3.10. Test Configurations

#### 3.10.1. AC Power Line Conduction Emissions Test Configuration



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

### 3.10.2. Radiation Emissions Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	1.5m
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

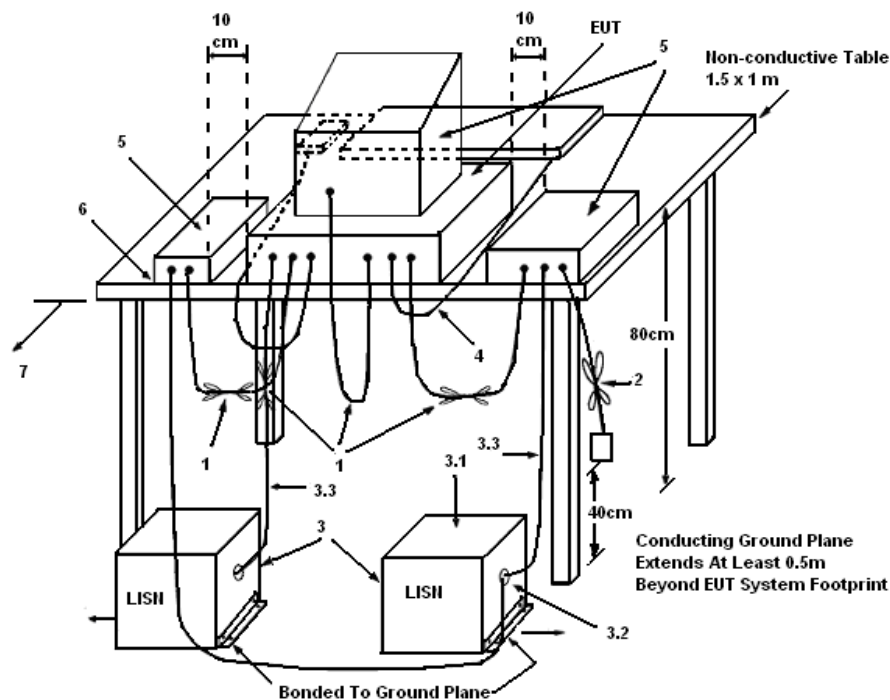
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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  $\Omega$ . 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

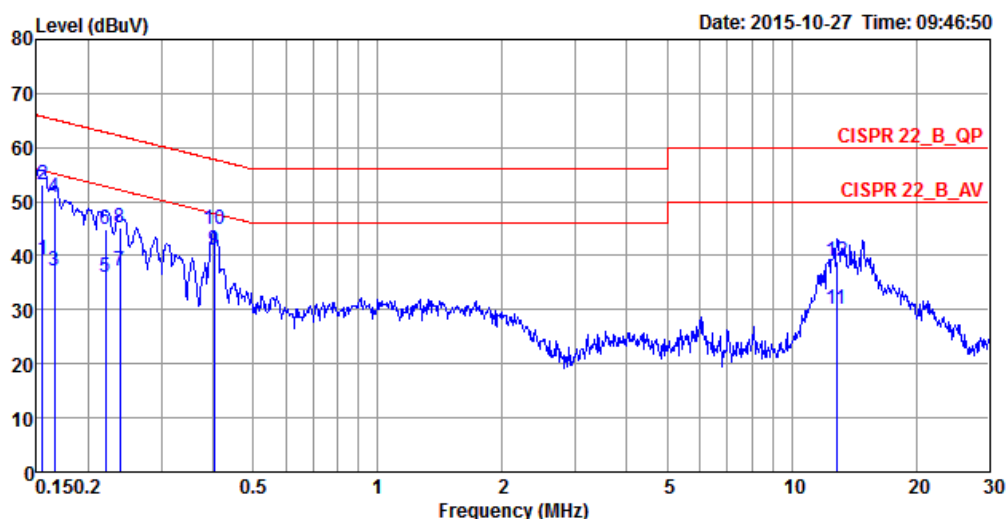
There is no deviation with the original standard.

#### 4.1.6. EUT Operation during Test

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

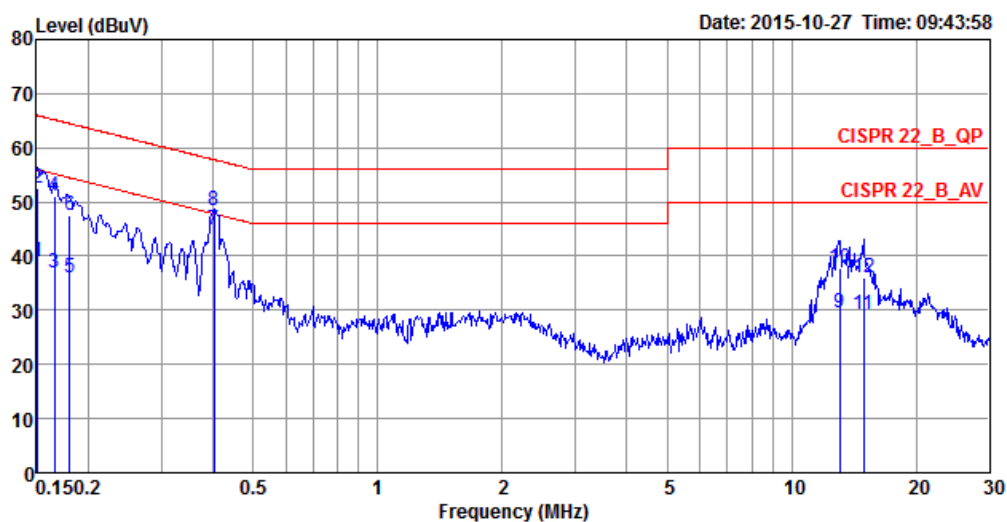
#### 4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	23°C	Humidity	59%
Test Engineer	Ryo Fan	Phase	Line
Configuration	Normal Link	Test Mode	Mode 3



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.1548	39.30	-16.44	55.74	29.15	9.98	Average	LINE
2	0.1548	53.15	-12.59	65.74	43.00	9.98	QP	LINE
3	0.1659	37.22	-17.94	55.16	27.07	9.98	Average	LINE
4	0.1659	50.83	-14.33	65.16	40.68	9.98	QP	LINE
5	0.2197	36.03	-16.80	52.83	25.87	9.97	Average	LINE
6	0.2197	45.00	-17.83	62.83	34.84	9.97	QP	LINE
7	0.2378	37.11	-15.06	52.17	26.95	9.97	Average	LINE
8	0.2378	45.14	-17.03	62.17	34.98	9.97	QP	LINE
9	0.4019	41.18	-6.63	47.81	31.00	9.98	Average	LINE
10	0.4019	45.00	-12.81	57.81	34.82	9.98	QP	LINE
11	12.8516	30.02	-19.98	50.00	19.36	10.25	Average	LINE
12	12.8516	38.95	-21.05	60.00	28.29	10.25	QP	LINE

Temperature	23°C	Humidity	59%
Test Engineer	Ryo Fan	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 3



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.1508	39.02	-16.94	55.96	28.87	9.98	Average	NEUTRAL
2	0.1508	52.55	-13.41	65.96	42.40	9.98	QP	NEUTRAL
3	0.1659	37.05	-18.11	55.16	26.90	9.98	Average	NEUTRAL
4	0.1659	51.01	-14.15	65.16	40.86	9.98	QP	NEUTRAL
5	0.1806	35.90	-18.56	54.46	25.74	9.97	Average	NEUTRAL
6	0.1806	47.66	-16.80	64.46	37.50	9.97	QP	NEUTRAL
7	0.4019	44.78	-3.03	47.81	34.60	9.98	Average	NEUTRAL
8	0.4019	48.40	-9.41	57.81	38.22	9.98	QP	NEUTRAL
9	13.0575	29.56	-20.44	50.00	18.93	10.22	Average	NEUTRAL
10	13.0575	37.71	-22.29	60.00	27.08	10.22	QP	NEUTRAL
11	14.9068	29.31	-20.69	50.00	18.64	10.24	Average	NEUTRAL
12	14.9068	36.14	-23.86	60.00	25.47	10.24	QP	NEUTRAL

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 (microvolts/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

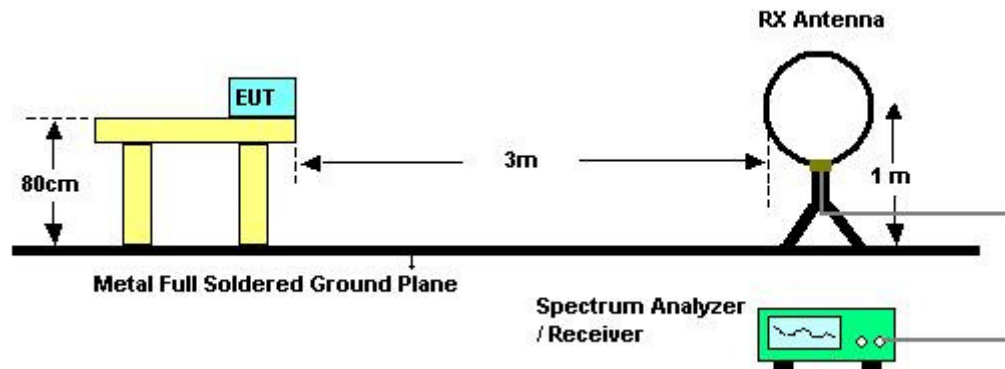
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

#### 4.2.3. Test Procedures

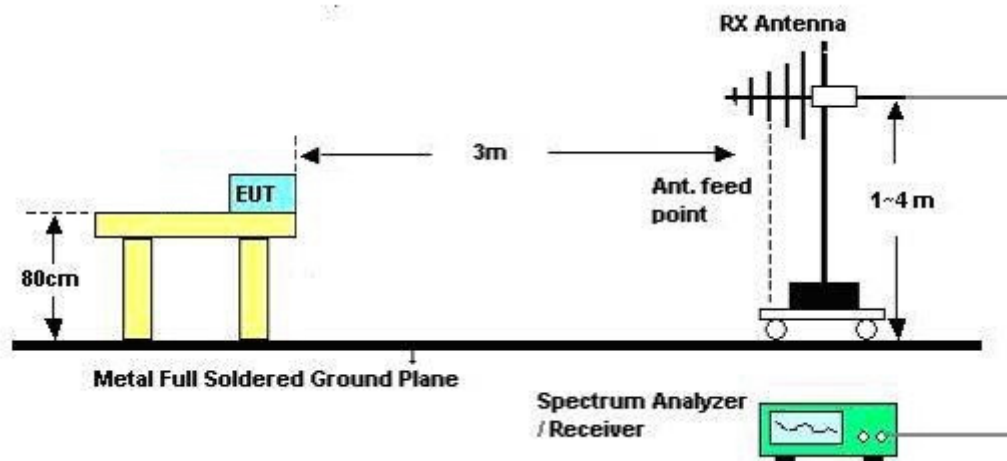
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 1m & 3m far away from the turntable.
2. Power on the EUT and all the supporting 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

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	23°C	Humidity	58%
Test Engineer	Ian Chen	Configurations	Normal Link
Test Date	Oct. 07, 2015	Test Mode	Mode 1

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

**Note:**

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

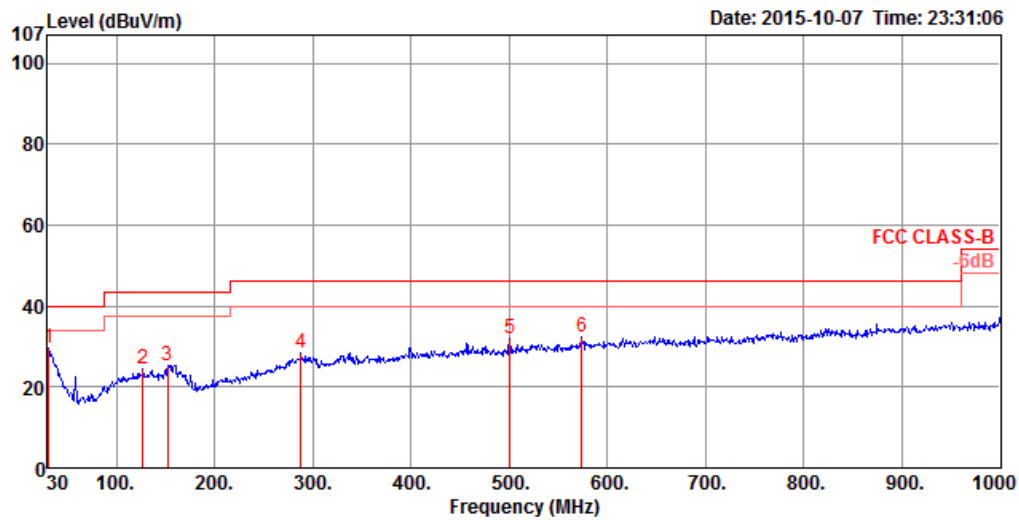
Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB);

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

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

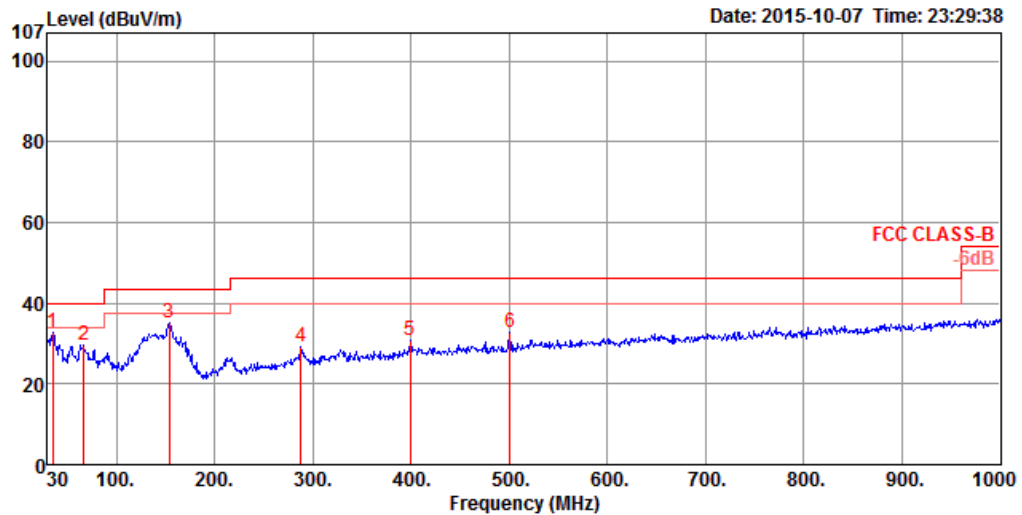
Temperature	23°C	Humidity	58%
Test Engineer	Ian Chen	Configurations	Normal Link
Test Mode	Mode 1		

##### Horizontal



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	cm	deg	
1	30.97	29.54	40.00	-10.46	42.27	0.52	32.64	19.39	HORIZONTAL	150	59	Peak
2	127.00	24.56	43.50	-18.94	43.34	1.15	32.56	12.63	HORIZONTAL	300	243	Peak
3	152.22	25.41	43.50	-18.09	45.62	1.26	32.56	11.09	HORIZONTAL	125	198	Peak
4	288.02	28.51	46.00	-17.49	45.69	1.68	32.52	13.66	HORIZONTAL	125	220	Peak
5	500.45	32.05	46.00	-13.95	44.62	2.21	32.61	17.83	HORIZONTAL	200	306	Peak
6	574.17	32.28	46.00	-13.72	43.80	2.35	32.67	18.80	HORIZONTAL	150	126	Peak

### Vertical



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	Pol/Phase	cm	deg	
1	34.85	32.74	40.00	-7.26	47.69	0.62	32.64	17.07	VERTICAL	150	69	Peak
2	66.86	29.49	40.00	-10.51	54.47	0.83	32.61	6.80	VERTICAL	200	173	Peak
3	154.16	34.99	43.50	-8.51	55.31	1.26	32.56	10.98	VERTICAL	100	310	Peak
4	288.02	29.04	46.00	-16.96	46.22	1.68	32.52	13.66	VERTICAL	100	128	Peak
5	399.57	30.84	46.00	-15.16	44.92	1.99	32.54	16.47	VERTICAL	300	215	Peak
6	500.45	32.69	46.00	-13.31	45.26	2.21	32.61	17.83	VERTICAL	300	303	Peak

### Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB 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
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 17, 2014	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 17, 2014	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 13, 2015	Conduction (CO02-CB)
COND Cable	Woken	Cable	01	0.15MHz ~ 30MHz	Dec. 01, 2014	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F	9561-F073	9kHz ~ 30MHz	Sep. 30, 2015	Conduction (CO02-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	May 06, 2015	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)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Oct. 27, 2015	Radiation (03CH01-CB)
EMI Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8.4GHz	Jan. 21, 2015	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Nov. 15, 2014	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 12, 2015*	Radiation (03CH01-CB)

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

“\*\*” Calibration Interval of instruments listed above is two years.

N.C.R. means Non-Calibration required.



## 6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%