

APPLICATION CERTIFICATION FCC Part 15C On Behalf of HONG KONG NATURAL SOUND ELECTRONICS LIMITED

MID Model No.: PC1016BXC, Trio Stealth G5 10

FCC ID: PWK-PC1016BXC

Prepared for Address	:	HONG KONG NATURAL SOUND ELECTRONICS LIMITED FLAT/RM M 4/F CONTINENTAL MANSION 300
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Report Number	:	ATE20151401
Date of Test	:	Jun 25-Jul 06,2015
Date of Report	:	Jul 07,2015



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Test Report Certification

Applicant: HONG KONG NATURAL SOUND ELECTRONICS LIMITEDManufacturer: Natural Sound Electronics (Shenzhen) Co., Ltd.EUT Description: MID(A) MODEL NO.: PC1016BXC, Trio Stealth G5 10

- (B) SERIAL NO.: N/A
- (C) POWER SUPPLY: DC 5V (Power by Adapter)&DC 3.7V (Battery)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.10: 2013

The EUT was tested according to DTS test procedure of Jun 05, 2014 KDB558074 D01 DTS Meas Guidance v03r02 for compliance to FCC 47CFR 15.247 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : Date of Report:

Prepared by :

Jun 25-Jul 06,2015 Jul 07,2015

(Eric Zhang, Engineer)

Approved & Authorized Signer :

(Sean Liu, Manager)



1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	MID
Model Number	:	PC1016BXC, Trio Stealth G5 10 Note: These samples are same except for the model number is difference. So we prepare the PC1016BXC for test
Frequency Range	:	802.11b/g/n(20MHz): 2412-2462MHz 802.11n(40MHz): 2422-2452MHz Bluetooth 4.0: 2402-2480MHz
Number of Channels	:	802.11b/g/n (20MHz):11 802.11n (40MHz): 7 Bluetooth 4.0: 40
Antenna Gain	:	0dBi
Power Supply	:	DC 5V (Power by adapter)&DC 3.7V(Battery)
Adapter	:	Model number: AW010WR-0500200UU Input: AC 100-240V; 50/60Hz 0.4A Output: DC 5V/2A USB line: Non-shielded, Non-detachable, 1.5m
Modulation mode	:	GFSK DSSS,OFDM
Applicant	:	HONG KONG NATURAL SOUND ELECTRONICS LIMITED
Address	:	FLAT/RM M 4/F CONTINENTAL MANSION 300 KING'S ROAD HONG KONG
Manufacturer	:	Natural Sound Electronics (Shenzhen) Co., Ltd.
Address	:	4th Building, Xinyuan Industrial Zone, Gushu Village, Bao'an District, Shenzhen, China
Date of sample received Date of Test	:	Jun 25,2015 Jun 25-Jul 06,2015



1.2. Carrier Frequency of Channels

802.11b, 802.11g, 802.11n (20MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437		

802.11n (40MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
		07	2442
		08	2447
03	2422	09	2452
04	2427		
05	2432		
06	2437		

1.3. Special Accessory and Auxiliary Equipment

n.a.

1.4.Description of Test Facility

EMC Lab	:	Accredited by TUV Rheinland Shenzhen
		Listed by FCC The Registration Number is 752051
		Listed by Industry Canada The Registration Number is 5077A-2
		Accredited by China National Accreditation Committee for Laboratories The Certificate Registration Number is L3193
Name of Firm Site Location	:	ACCURATE TECHNOLOGY CO. LTD F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China



1.5.Measurement Uncertainty					
Conducted Emission Expanded Uncertainty	=	2.23dB, k=2			
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2			
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2			
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2			



2. MEASURING DEVICE AND TEST EQUIPMENT

Kind of equipment	Manufacturer	Туре	S/N	Calibrated dates	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 10, 2015	One Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 10, 2015	One Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 10, 2015	One Year
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 10, 2015	One Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2015	One Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2015	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2015	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan. 15, 2015	One Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 10, 2015	One Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 10, 2015	One Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 10, 2015	One Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 10, 2015	One Year
Switch Unit with OSP-B157	Rohde & Schwarz	OSP120	101130	Jan. 10, 2015	One Year

Table 1: List of Test and Measurement Equipment



3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: 1.802.11b Transmitting mode

Low Channel: 2412MHz Middle Channel: 2437MHz High Channel: 2462MHz

2.802.11g Transmitting mode

Low Channel: 2412MHz Middle Channel: 2437MHz High Channel: 2462MHz

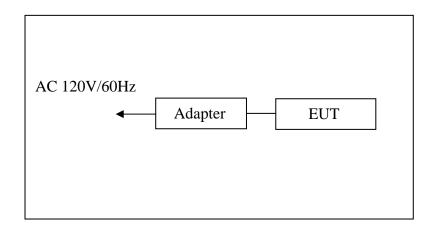
3.802.11n (20MHz) Transmitting mode

Low Channel: 2412MHz Middle Channel: 2437MHz High Channel: 2462MHz

4.802.11n (40MHz) Transmitting mode

Low Channel: 2422MHz Middle Channel: 2437MHz High Channel: 2452MHz **5. Charging**

3.2.Configuration and peripherals





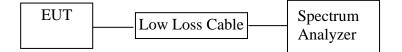
4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.247(a)(2)	6dB Bandwidth Test	Compliant
Section 15.247(e)	Power Spectral Density Test	Compliant
Section 15.247(b)(3)	Maximum Peak Output Power Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.247(d) Section 15.209	Radiated Spurious Emission Test	Compliant
Section 15.247(d)	Conducted Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	Compliant
Section 15.203	Antenna Requirement	Compliant



5. 6DB BANDWIDTH MEASUREMENT

5.1.Block Diagram of Test Setup



5.2. The Requirement For Section 15.247(a)(2)

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

5.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.4. Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

- 5.4.2.Turn on the power of all equipment.
- 5.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

5.5.Test Procedure

- 1. Set resolution bandwidth (RBW) = 100 kHz.
- 2. Set the video bandwidth (VBW) \geq 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



5.6.Test Result

The test was performed with 802.11b					
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)		
Low	2412	10.07	> 0.5MHz		
Middle	2437	10.12	> 0.5MHz		
High	2462	10.12	> 0.5MHz		

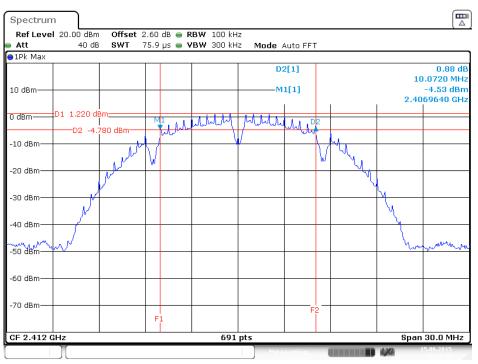
The test was performed with 802.11g					
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)		
Low	2412	16.41	> 0.5MHz		
Middle	2437	16.41	> 0.5MHz		
High	2462	16.41	> 0.5MHz		

The test was performed with 802.11n (Bandwidth: 20 MHz)					
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)		
Low	2412	17.67	> 0.5MHz		
Middle	2437	17.67	> 0.5MHz		
High	2462	17.67	>0.5MHz		

The test was per	The test was performed with 802.11n (Bandwidth: 40 MHz)					
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)			
Low	2422	36.04	> 0.5MHz			
Middle	2437	35.89	> 0.5MHz			
High	2452	35.89	> 0.5MHz			

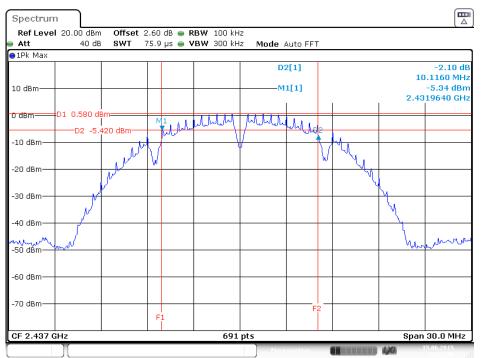
The spectrum analyzer plots are attached as below.



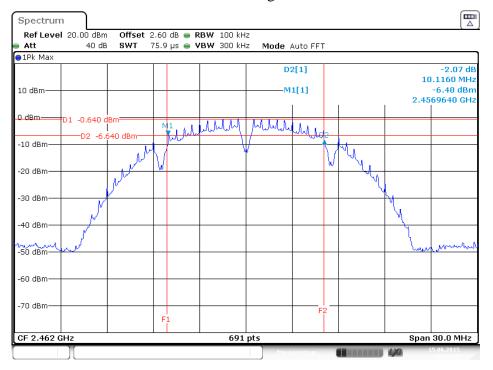


802.11b Channel Low 2412MHz



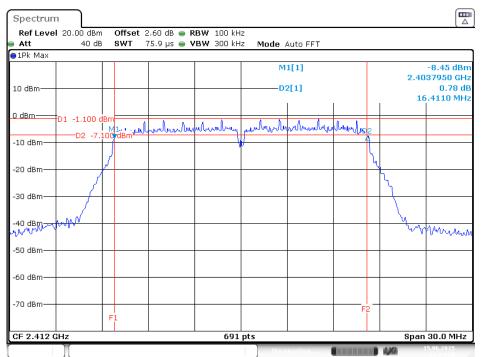




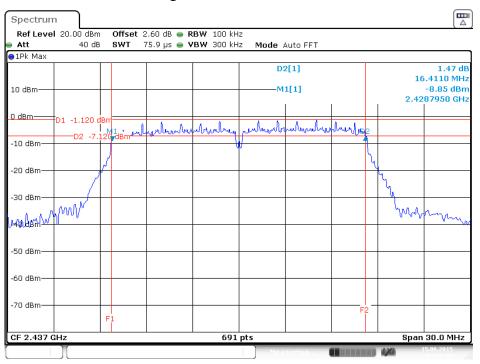






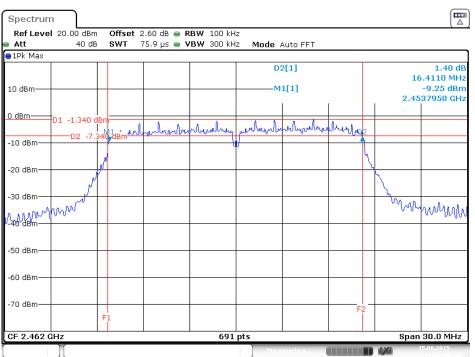




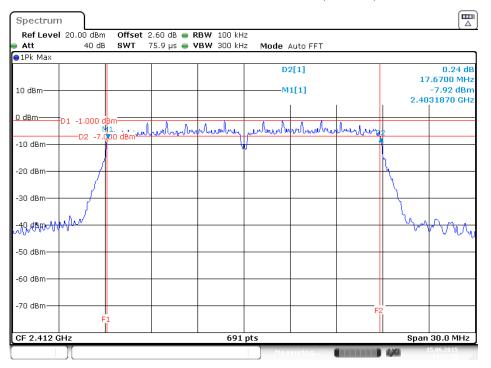




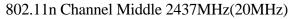


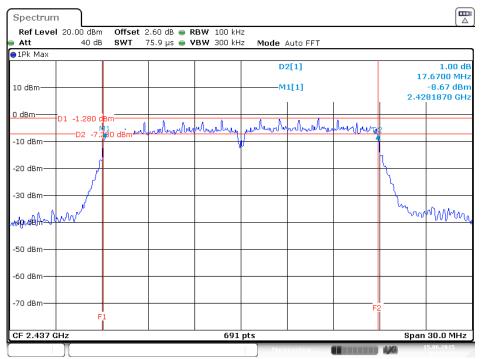




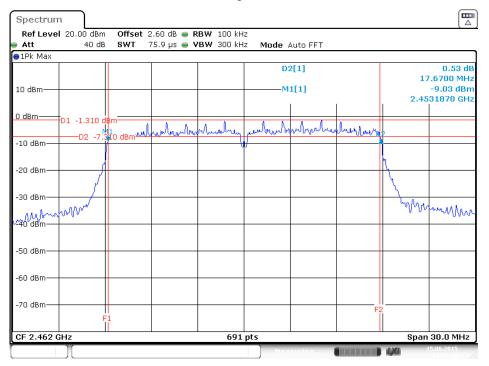


802.11n Channel Low 2412MHz (20MHz)

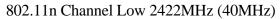


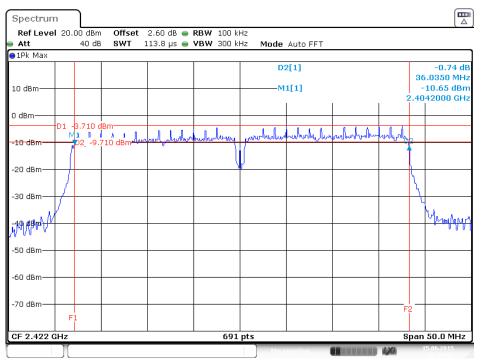






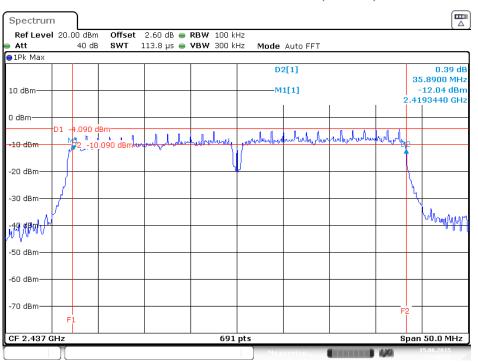
802.11n Channel High 2462MHz(20MHz)

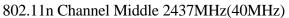


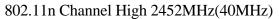


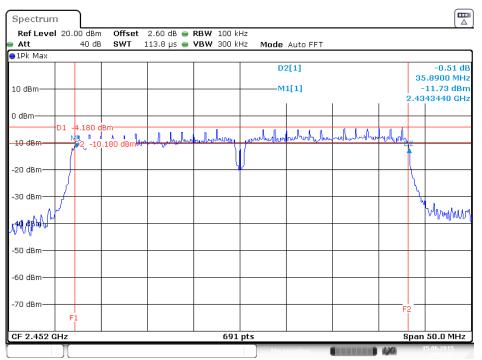








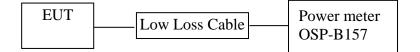






6. MAXIMUM OUTPUT POWER

6.1.Block Diagram of Test Setup



6.2. The Requirement For Section 15.247(b)(3)

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

6.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

- 6.4.2.Turn on the power of all equipment.
- 6.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

6.5.Test Procedure

- 6.5.1.The EUT was tested according to DTS test procedure of Jun 05, 2014 KDB558074 D01 DTS Meas Guidance v03r02 for compliance to FCC 47CFR 15.247 requirements.
- 6.5.2. The transmitter output was connected to the power meter through a low loss cable.
- 6.5.3.Measurement the maximum Peak output power.



6.6.Test Result

The test was per	The test was performed with 802.11b				
ChannelFrequency (MHz)Peak Output Power(dBm)Peak Output Power(mW)Limits dBm / W					
Low	2412	8.84	7.66	30 dBm / 1 W	
Middle	2437	9.05	8.04	30 dBm / 1 W	
High	2462	8.93	7.82	30 dBm / 1 W	

The test was performed with 802.11g					
Channel	Frequency (MHz)	Peak Output Power(dBm)	Peak Output Power(mW)	Limits dBm / W	
Low	2412	7.69	5.87	30 dBm / 1 W	
Middle	2437	7.48	5.60	30 dBm / 1 W	
High	2462	8.04	6.37	30 dBm / 1 W	

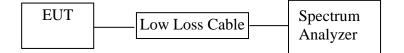
The test was performed with 802.11n (20MHz)				
ChannelFrequency (MHz)Peak Output Power(dBm)Peak Output Power(mW)Limits dBm / W				
Low	2412	6.57	4.54	30 dBm / 1 W
Middle	2437	6.84	4.83	30 dBm / 1 W
High	2462	6.14	4.11	30 dBm / 1 W

The test was per	The test was performed with 802.11n (40MHz)					
Channel	Frequency (MHz)	Peak Output Power(dBm)	Peak Output Power(mW)	Limits dBm / W		
Low	2422	5.28	3.37	30 dBm / 1 W		
Middle	2437	5.64	3.66	30 dBm / 1 W		
High	2452	5.47	3.52	30 dBm / 1 W		



7. POWER SPECTRAL DENSITY MEASUREMENT

7.1.Block Diagram of Test Setup



7.2. The Requirement For Section 15.247(e)

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

7.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.4. Operating Condition of EUT

7.4.1.Setup the EUT and simulator as shown as Section 7.1.

- 7.4.2.Turn on the power of all equipment.
- 7.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

7.5.Test Procedure

- 7.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 7.5.2.Measurement Procedure PKPSD:

This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS channel bandwidth.



- 3. Set the RBW 3 kHz \leq RBW \leq 100 kHz.
- 4. Set the VBW \geq 3 x RBW.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 7.5.3.Measurement the maximum power spectral density.

7.6.Test	Result
----------	--------

The test was performed with 802.11b					
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)		
Low	2412	-19.25	8 dBm		
Middle	2437	-18.72	8 dBm		
High	2462	-18.25	8 dBm		

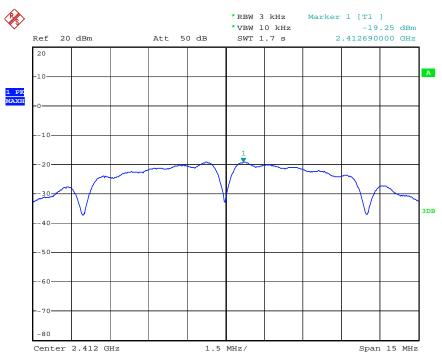
The test was performed with 802.11g					
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)		
Low	2412	-23.88	8 dBm		
Middle	2437	-24.52	8 dBm		
High	2462	-23.79	8 dBm		

The test was performed with 802.11n (20MHz)					
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)		
Low	2412	-24.54	8 dBm		
Middle	2437	-25.50	8 dBm		
High	2462	-24.74	8 dBm		

The test was performed with 802.11n (40MHz)					
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)		
Low	2422	-29.52	8 dBm		
Middle	2437	-29.55	8 dBm		
High	2452	-30.52	8 dBm		

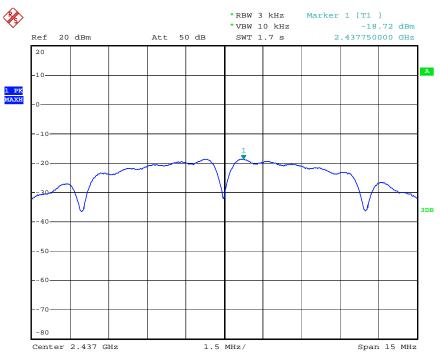
The spectrum analyzer plots are attached as below.



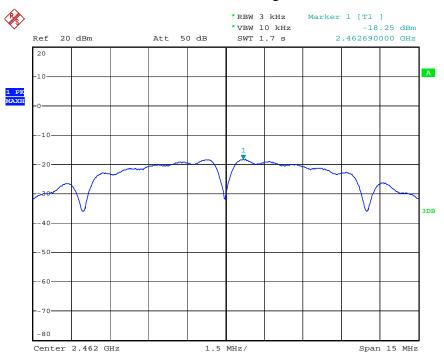


802.11b Channel Low 2412MHz



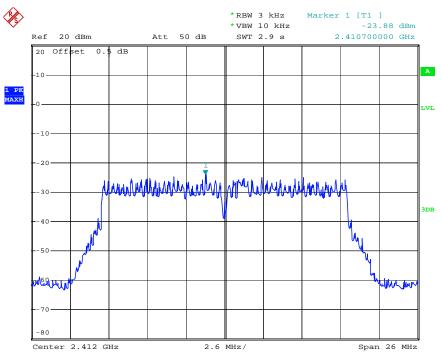




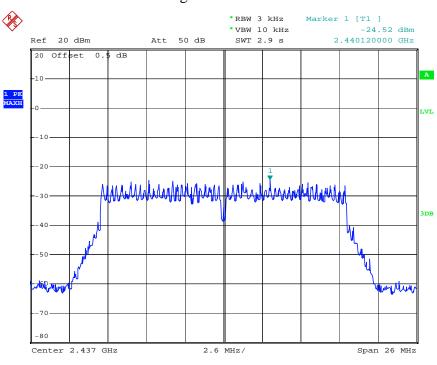


802.11b Channel High 2462MHz

802.11g Channel Low 2412MHz

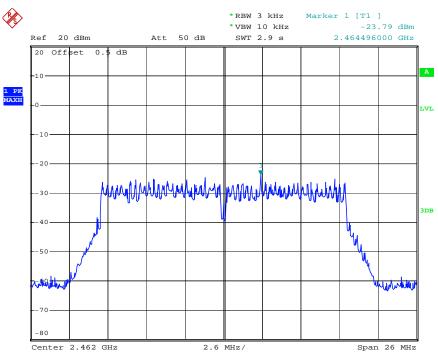




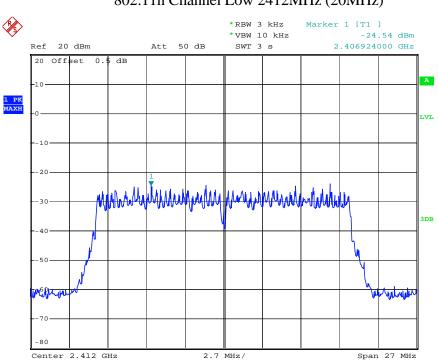


802.11g Channel Middle 2437MHz



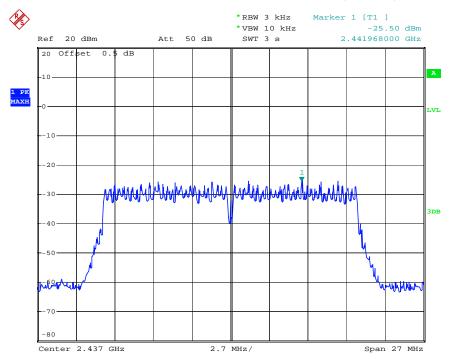




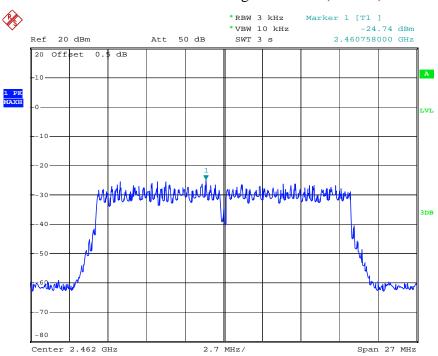


802.11n Channel Low 2412MHz (20MHz)

802.11n Channel Middle 2437MHz (20MHz)

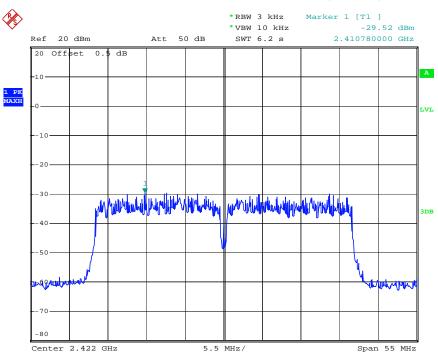




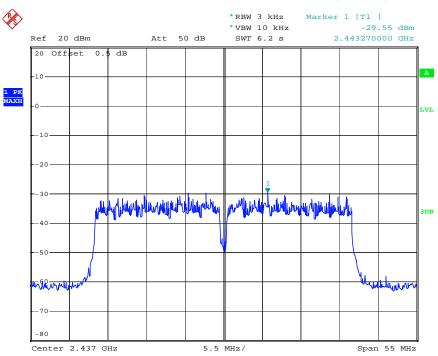


802.11n Channel High 2462MHz(20MHz)

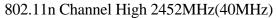


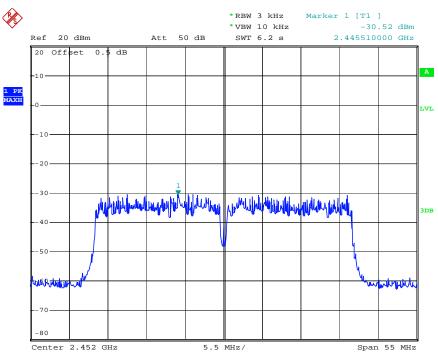






802.11n Channel Middle 2437MHz(40MHz)

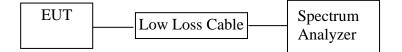






8. BAND EDGE COMPLIANCE TEST

8.1.Block Diagram of Test Setup



8.2. The Requirement For Section 15.247(d)

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

8.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4. Operating Condition of EUT

- 8.4.1.Setup the EUT and simulator as shown as Section 8.1.
- 8.4.2.Turn on the power of all equipment.
- 8.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz MHz. We select 2412MHz, 2462MHz and 2422MHz, 2452MHz TX frequency to transmit.

8.5.Test Procedure

Conducted Band Edge:



Page 30 of 94

- 8.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 8.5.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

Radiate Band Edge:

- 8.5.3. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
- 8.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 8.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 8.5.6. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

RBW=1MHz, VBW=1MHz

8.5.7.The band edges was measured and recorded.

8.6.Test Result

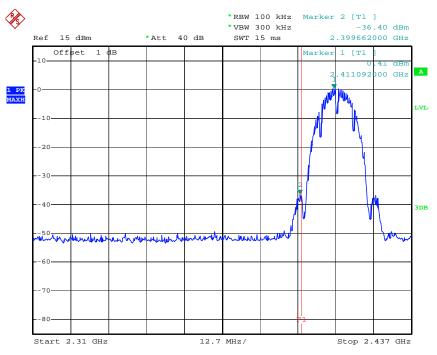
The test was performed with 8	302.11b					
Frequency Result of Band Edge Limit of Band Edge						
(MHz)	(dBc)	(dBc)				
2412	36.81	> 20dBc				
2462	50.12	> 20dBc				

The test was performed with	802.11g						
Frequency Result of Band Edge Limit of Band Edge							
(MHz)	(dBc)	(dBc)					
2412	32.63	> 20dBc					
2462	44.59	> 20dBc					

The test was performed with 8	802.11n (20MHz)						
Frequency (MHz)							
2412	30.32	> 20dBc					
2462	44.17	> 20dBc					

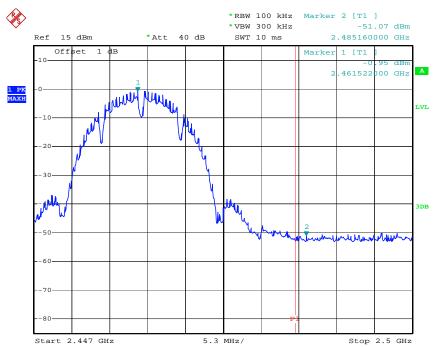
The test was performed with 8	802.11n (40MHz)					
FrequencyResult of Band EdgeLimit of Band Edge						
(MHz)	(dBc)	(dBc)				
2422	27.13	> 20dBc				
2452	43.12	> 20dBc				



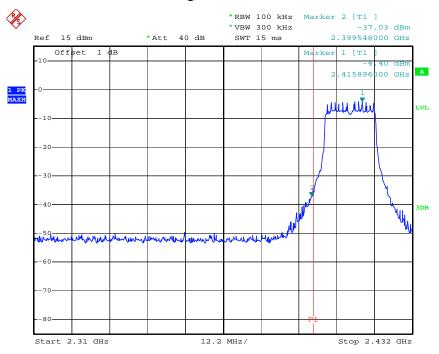


802.11b Channel Low 2412MHz



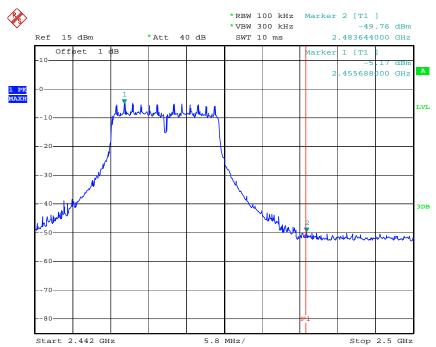




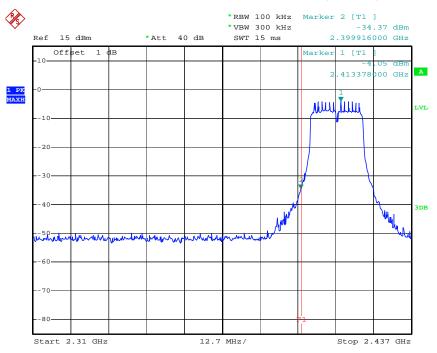


802.11g Channel Low 2412MHz

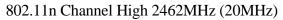


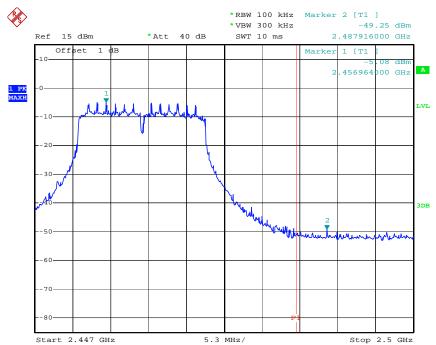




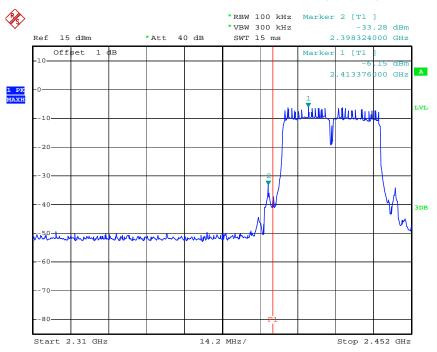


802.11n Channel Low 2412MHz (20MHz)

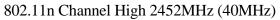


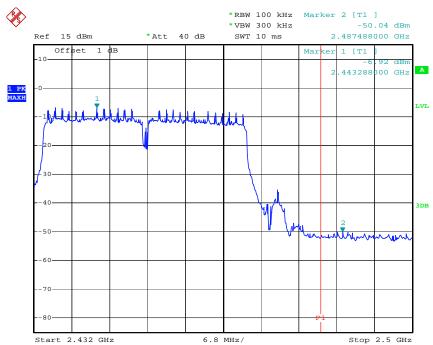






802.11n Channel Low 2422MHz (40MHz)







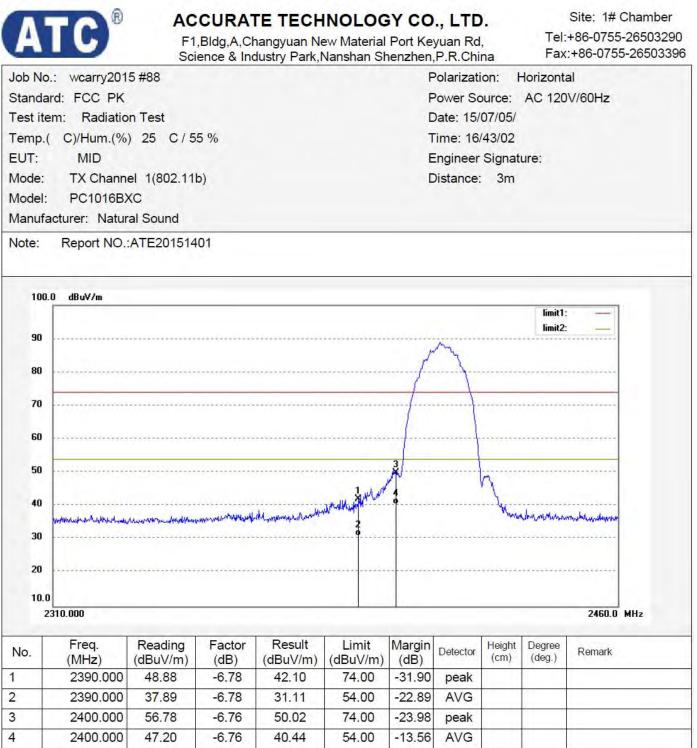
Radiated Band Edge Result

Note:1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.



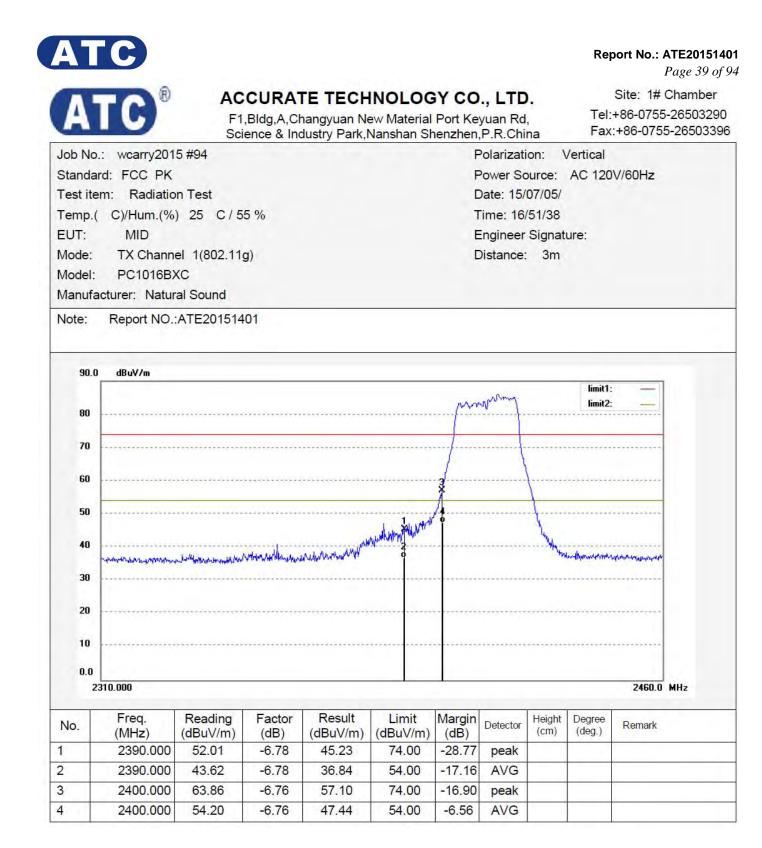
	C									port No.: ATE2015 Page 36
A	IC [®]	F1	Bldg,A,Cl	TE TECH hangyuan Ne dustry Park,l	ew Material	Port Ke	yuan Rd		Tel:	Site: 1# Chambe +86-0755-265032 :+86-0755-265033
Job No.	: wcarry201	1					Polarizati		/ertical	
Standard: FCC PK					Power Source: AC 120V/60Hz					
Test ite	m: Radiatio	n Test				0	Date: 15/	07/05/		
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Model:	PC1016B>									
Manufa	cturer: Natur	al Sound								
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1	2390.000	50.98	-6.78	44.20	74.00	-29.80	peak			
2	2390.000	41.21	-6.78	34.43	54.00	-19.57	AVG			
		50.07	-6.76	52.91	74.00	-21.09	peak		1.	
3	2400.000	59.67	-0.70	52.91	74.00	-21.09	peak	1		

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-		Sci		dustry Park,					Fax	:+86-0755-26	503396
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	ard: FCC PK						Power So		AC 120	V/60Hz	
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No.		46.35	-6.54	39.81	74.00	-34.19	peak			1	
	2483.500	and the second			E4 00	-24.14	AVG			\$	
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No. 1 2 3		36.40 44.18	-6.54 -6.50	29.86 37.68	74.00	-36.32	peak				



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Report No.: ATE20151401 Page 38 of 94 Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

		SCI	ence & inc	dustry Park,	vansnan Sr	ienznen,	P.R.Chi	na	I UA	
Job No.	.: wcarry201	5 #91				F	Polarizati	ion: H	Horizonta	al
Standa	rd: FCC PK					0F	ower So	ource:	AC 120	V/60Hz
Fest ite	m: Radiatio	n Test				10	Date: 15/	07/05/		
Femp.(	C)/Hum.(%	) 25 C/5	5 %			Т	ime: 16	/47/23		
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	2483.550	43.33	-6.54 -6.54	36.79 27.58	74.00	-37.21	peak			
No. 1 2 3			-6.54 -6.54 -6.50	36.79 27.58 36.72	74.00 54.00 74.00	-37.21 -26.42 -37.28	AVG peak			



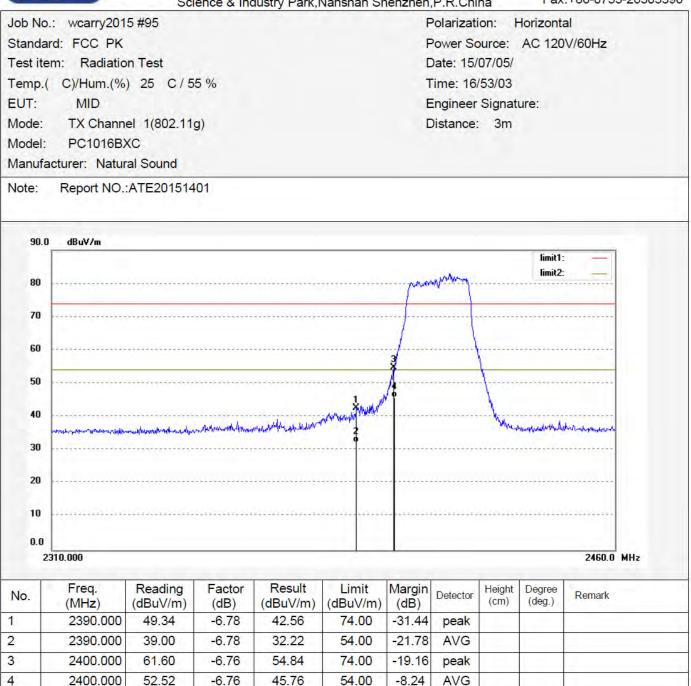


F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Report No.: ATE20151401

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Site: 1# Chamber

Tel:+86-0755-26503290 Fax:+86-0755-26503396



_	TC [®]	F1	,Bldg,A,Cl	<b>TE TECH</b> hangyuan Ne dustry Park,I	ew Material	Port Ke	yuan Rd			+86-075	Page 41 o Chamber 5-2650329 55-2650339
Job No	o.: wcarry201	5 #92				F	Polarizati	on: H	lorizonta	al	
Standa	ard: FCC PK					F	Power Sc	ource:	AC 120	V/60Hz	
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80 70 60 50 40 30 20 10. NO.	0 2430.000 Freq. (MHz) 2483.550	Reading (dBuV/m) 43.90	(dB) -6.54	(dBuV/m) 37.36	(dBuV/m) 74.00	(dB) -36.64	Detector	2 D Height	limit2:	2500.1	
80 70 60 50 40 30 20 10.	.0 2430.000 Freq. (MHz)	Reading (dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Detector	2 D Height	limit2:	2500.1	

_	TC [®]	F1	,Bldg,A,C	TE TECH hangyuan Ne dustry Park,l	ew Material	Port Ke	yuan Rd	,		Page 42 oj Site: 1# Chamber +86-0755-2650329 :+86-0755-2650339
	b.: wcarry201	5 #93					Polarizat		/ertical	
	ard: FCC PK	-					Power So		AC 120	W/60Hz
	em: Radiatio						Date: 15/			
	( C)/Hum.(%	) 25 C/5	5 %				ime: 16			
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1	2483.550	47.25	-6.54	40.71	74.00	-33.29	peak			
	2483.550	37.74	-6.54	31.20	54.00	-22.80	AVG			
2	2405.550									
2 3	2500.000	43.71	-6.50	37.21	74.00	-36.79	peak	12.11		



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China *Page 43 of 94* Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20151401

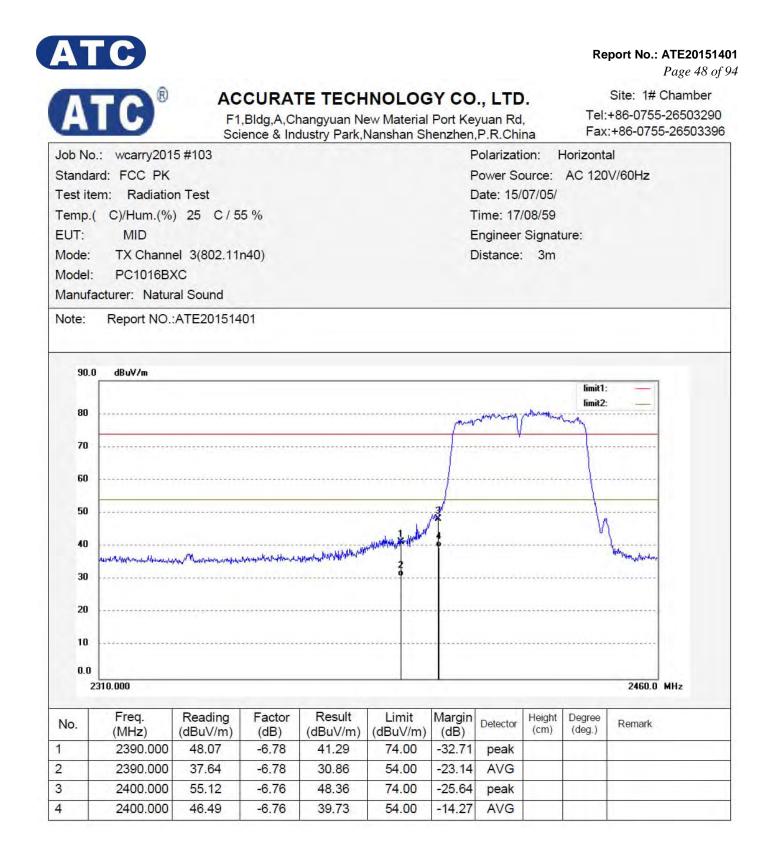
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	2390.000	46.87	-6.78	40.09	74.00	-33.91	peak			
5	2390.000	35.87	-6.78	29.09	54.00	-24.91	AVG			
-	2400.000	59.53	-6.76	52.77	74.00	-21.23	peak			

-		F1	Bldg,A,C	<b>TE TECH</b> hangyuan Ne dustry Park,I	ew Material	Port Ke	yuan Rd	,	Tel:	Site: 1# +86-0755	ATE201514 Page 44 of 9 Chamber 5-26503290 5-26503396
Standa Test ite Temp.( EUT: Mode: Model:		on Test ) 25 C / 5 el 1(802.11) KC				F C T E	Polarizati Power Sc Date: 15/ Time: 16/ Engineer Distance:	ource: 07/05/ /57/17 Signat		V/60Hz	
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1	2390.000	51.00	-6.78	44.22	74.00	-29.78	peak				
2	2390.000	42.62	-6.78	35.84	54.00	-18.16	AVG				
3	2399.850	63.49	-6.76	56.73	74.00	-17.27	peak				
4	2399.850	53.45	-6.76	46.69	54.00	-7.31	AVG				

		F1	,Bldg,A,C	TE TECH hangyuan No dustry Park,l	ew Material	Port Ke	yuan Rd		Tel:	port No.: ATE201 Page 45 Site: 1# Chamb +86-0755-26503 :+86-0755-26503	5 <i>of</i> 9 er 290
Job No	o.: wcarry201	5 #98				F	Polarizati	ion: \	/ertical		
Standa	rd: FCC PK					F	Power Sc	ource:	AC 120	V/60Hz	
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Model:											
Manufa	acturer: Natur	al Sound									
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	2483.550	48.30	-6.54	41.76	74.00	-32.24		1	1		
2	2483.550	38.69	-6.54	32.15	54.00	-21.85					
3	2500.000	44.20	-6.50	37.70	74.00	-36.30	peak	1 - 1			
4	2500.000	34.13	-6.50	27.63	54.00	-26.37	AVG				

									Re	-	<b>TE201514</b> Page 46 of 2
	B	AC	CURA	TE TECH	NOLOG	Y CO	LTD	).		Site: 1# C	hamber
A	TC)®	F1	Bldg,A,C	hangyuan Ne dustry Park,I	ew Material	Port Ke	yuan Rd	I,			26503290 -26503396
Job No	.: wcarry201	5 #99				F	Polarizat	ion: H	Horizonta	al	
Standa	rd: FCC PK					F	ower So	ource:	AC 120	V/60Hz	
Test ite	m: Radiatio	n Test				0	Date: 15/	07/05/			
Temp.(	C)/Hum.(%)	) 25 C/5	5 %			Ţ	ime: 16	/59/57			
EUT:	MID					E	Ingineer	Signat	ure:		
Mode:	TX Channe	el 11(802.1	1n20)			C	)istance:	: 3m			
Model:											
Manufa	acturer: Natur	al Sound									
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2	430.000									2500.0	112
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2483.550	43.12	-6.54	36.58	74.00	-37.42	peak				
2	2483.550	34.10	-6.54	27.56	54.00	-26.44	AVG				
3	2500.000	42.92	-6.50	36.42	74.00	-37.58	peak				
4	2500.000	33.67	-6.50	27.17	54.00	-26.83	AVG				

									Re	port No.: A [·] P	<b>TE201514</b> age 47 of 9
	B	AC	CURA'	TE TECH	NOLOG	Y CO	., LTD			Site: 1# Ch	namber
A	TC)®			hangyuan N						+86-0755-2 :+86-0755-2	
Job No	.: wcarry201		ence & In	dustry Park,I	Nanshan Sr		P.R.Chi Polarizati		/ertical	.100-07-05-2	200000000
	ard: FCC PK	5#102					ower Sc				
	em: Radiatio	n Test					Date: 15/		AC 120	V/00H2	
	( C)/Hum.(%		5 %				ime: 17/				
EUT:	MID	) 20 070	5 /0				Engineer		ure:		
Mode:		el 3(802.11	n40)				)istance:		ur o.		
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20 10 0.0 2 No.	Freq. (MHz) 2390.000	(dBuV/m) 54.36				(dB) -26.42	peak				Hz
20 10 0.0 2 No. 1 2	Freq. (MHz) 2390.000 2390.000	(dBuV/m) 54.36 45.67	(dB) -6.78 -6.78	(dBuV/m) 47.58 38.89	(dBuV/m) 74.00 54.00	(dB) -26.42 -15.11					Hz
20 10 0.0 2 No.	Freq. (MHz) 2390.000	(dBuV/m) 54.36	(dB) -6.78	(dBuV/m) 47.58	(dBuV/m) 74.00	(dB) -26.42	peak				Hz



	C								Re	port No.: Al Pa	<b>E201514</b> age 49 of
	B	AC	CURA	TE TECH	NOLOG	Y CO	LTD			Site: 1# Ch	namber
A	<b>IC</b> [®]	F1	,Bldg,A,Cl	hangyuan Ne	ew Material	Port Ke	yuan Rd			+86-0755-2	
	: wcarry201		ence & Inc	dustry Park,I	vansnan Sr		P.R.Chi Polarizati		Horizonta		200000000
	rd: FCC PK	5#100					Power Sc				
	m: Radiatio	n Test					Date: 15/		AG 120	00112	
	C)/Hum.(%)		5 %				Time: 17/				
EUT:	MID	, 20 0,0					Engineer		ure:		
Mode:	TX Channe	el 9(802.11	n40)				Distance:				
Model:	PC1016B>										
Manufa	cturer: Natur	al Sound									
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0.0	430.000									2500.0 M	
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No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2483.550	44.38	-6.54	37.84	74.00	-36.16					
2	2483.550	34.77	-6.54	28.23	54.00	-25.77	AVG				
3	2500.000	43.06	-6.50	36.56	74.00	-37.44	peak				
4	2500.000	33.67	-6.50	27.17	54.00	-26.83	AVG				

	C								Re	port No.: ATE2015140 Page 50 of 9
	R	40	CURA			Y CO				Site: 1# Chamber
A	<b>IC</b> [®]	F1	,Bldg,A,C	hangyuan Ne dustry Park,I	ew Material	Port Ke	yuan Rd	Ι,		+86-0755-26503290 :+86-0755-26503396
Job No.	: wcarry201						Polarizati		/ertical	
Standar	d: FCC PK					F	Power So	ource:	AC 120	V/60Hz
Test iter	m: Radiatio	n Test				i.	Date: 15/	07/05/		
Temp.(	C)/Hum.(%	) 25 C/5	5 %			1	Time: 17	/05/01		
EUT:	MID					E	Engineer	Signat	ure:	
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Model:	PC1016B>									
Manufa	cturer: Natur	al Sound								
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No. T	Freq.	Reading	Factor	Result	Limit	Margin	Deterio	Height	Degree	Denied
No.	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Delector	(cm)	(deg.)	Remark
	2483.550	47.66	-6.54	41.12	74.00	-32.88				
					E4 00	-21.75	AVG			
2	2483.550	38.79	-6.54	32.25	54.00	1	1 9 3 1 4 3 A	1222	12	
1 2 3 4	2483.550 2500.000 2500.000	38.79 44.33 35.67	-6.54 -6.50 -6.50	32.25 37.83 29.17	54.00 74.00 54.00	-21.75 -36.17 -24.83	peak			



## 9. RADIATED SPURIOUS EMISSION TEST

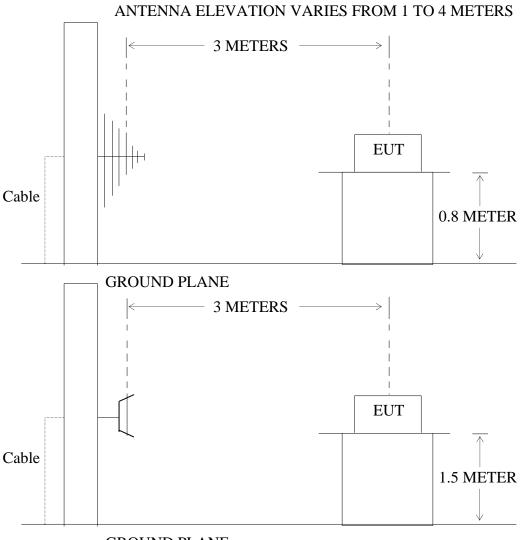
#### 9.1.Block Diagram of Test Setup

9.1.1.Block diagram of connection between the EUT and peripherals



Setup: Transmitting mode

9.1.2.Semi-Anechoic Chamber Test Setup Diagram



GROUND PLANE



#### 9.2. The Limit For Section 15.247(d)

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

#### 9.3.Restricted bands of operation

#### 9.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
$^{1}0.495-0.505$	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	$(^{2})$
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

 2 Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



#### 9.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 9.5. Operating Condition of EUT

- 9.5.1.Setup the EUT and simulator as shown as Section 9.1.
- 9.5.2.Turn on the power of all equipment.
- 9.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

#### 9.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna.

For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the floor on a support that is RF transparent for the frequencies of interest. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

When average radiated emissions measurements are specified there is also a limit on the peak emissions level which is 20 dB above the applicable maximum permitted average emission limit

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz Peak detector above 1GHz RBW (1 MHz), VBW (3MHz) for Peak measurement RBW (1 MHz), VBW (10Hz) for AV measurement

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.



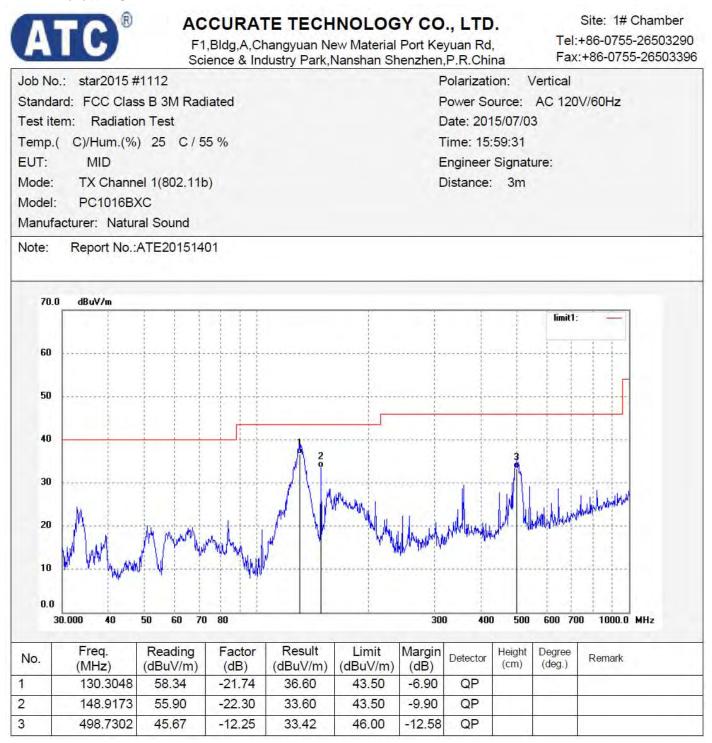
#### 9.7. The Field Strength of Radiation Emission Measurement Results

Note: 1. The fundamental radiated emissions were reduced by Band Reject Filter in the attached plots.

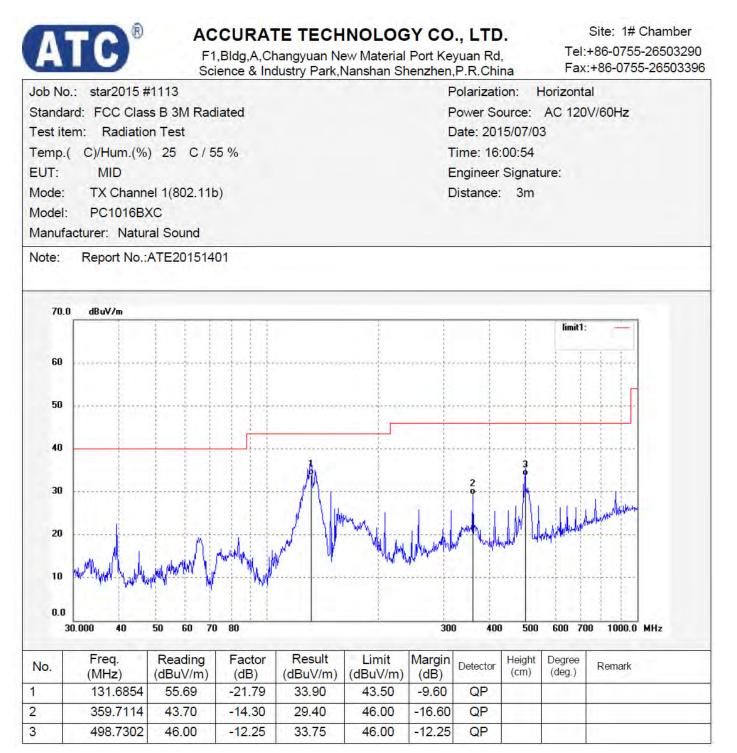
2. The EUT is tested radiation emission at each test mode(802.11 b/g/n) in three axes. The worst emissions are reported in all test mode and channels.

3. The 18-25GHz emissions are not reported, because the levels are too low against the limit.

Below 1G









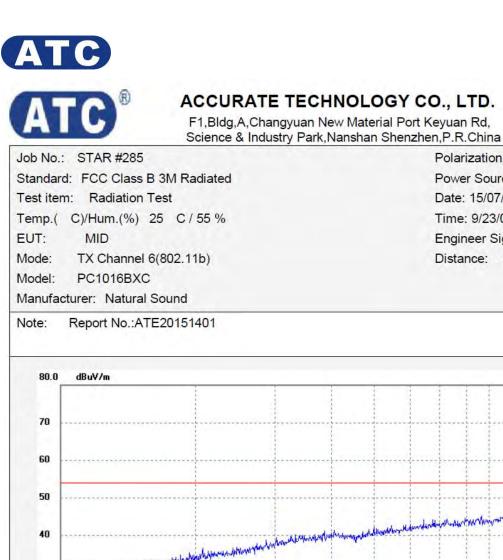






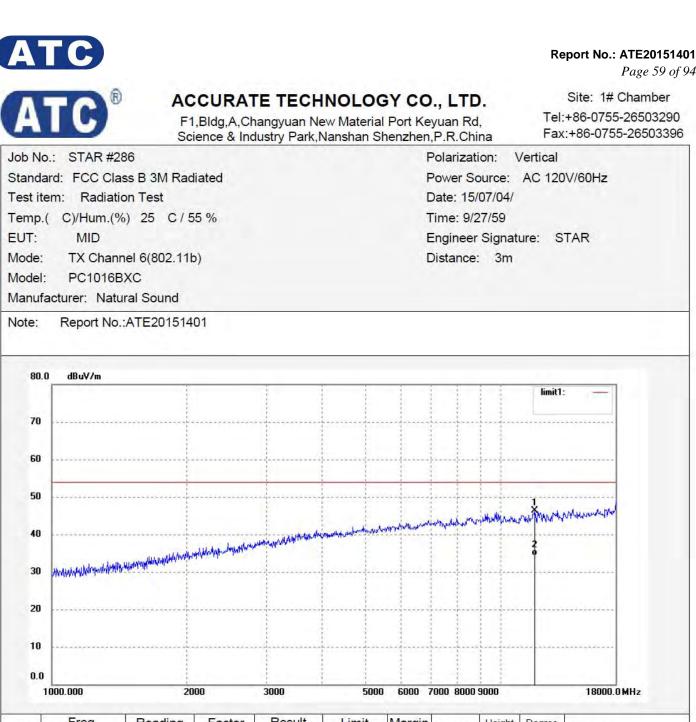
F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

Job No	: STAR #28	4				F	olarizati	on: H	orizonta	al
Standa	rd: FCC Clas	s B 3M Rad	iated			F	ower So			
	m: Radiatio		enen				)ate: 15/		100.000	And the Association
	C)/Hum.(%)		5 %			Т	ime: 9/1	8/33		
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Model:	PC1016B)		-							
Manufa	cturer: Natur	al Sound								
Note:	Report No.:/	ATE201514	01							
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1	15310.072	35.98	11.48	47.46	54.00	-6.54	peak			
2	15310.072	26.67	11.48	38.15	54.00	-15.85	AVG	1		



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ob No	D.: STAR #28	5				F	Polarizati	ion: I	Horizont	al
Standa	ard: FCC Clas	s B 3M Rad	liated			F	Power So	ource:	AC 120	V/60Hz
Test ite	em: Radiatio	n Test				[	Date: 15/	07/04/		
Temp.	( C)/Hum.(%	) 25 C/5	55 %			-	Time: 9/2	23/09		
EUT:	MID					I	Engineer	Signat	ure: S	TAR
Mode:	TX Chann	el 6(802.11	b)			I	Distance:	3m		
Model:	PC1016B)	KC								
Manuf	acturer: Natur	al Sound								
Note:	Report No .:.	ATE201514	01							
80.	) dBuV/m									
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	000.000	20	000	3000	5000	6000	7000 8000	9000		18000.0 MHz
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1	14160.705	35.61	11.24	46.85	54.00	-7.15	peak			-
2	14160.705	26.44	11.24	37.68	54.00	-16.32	AVG		ļ	



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	11906.073	39.93	6.41	46.34	54.00	-7.66	peak			
2	11906.073	27.90	6.41	34.31	54.00	-19.69	AVG			

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F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber Tel:+86-0755-26503290

oh No	.: STAR #28			dustry Park,			Polarizat		/ertical	
	rd: FCC Clas		iated				Power So			V/60H-
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	15533 000	35.14	11.30	46.44	54.00	-7.56	peak			
L1.1	15577.899	33.14	11.50	40.44	54.00	1.00	pean			

Report No.: ATE20151401

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F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Page 61 of 94 Site: 1# Chamber

Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.	: STAR #28	8				F	Polarizati	ion: H	Horizonta	al	
standar	d: FCC Clas	s B 3M Rad	iated			F	Power Sc	ource:	AC 120	V/60Hz	
est ite	m: Radiatio	n Test				0	Date: 15/	07/04/			
emp.(	C)/Hum.(%	) 25 C/5	5 %			1	Fime: 9/3	3/20			
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	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)			(cm)	(deg.)	Normany	
	11906.073	39.87	6.41	46.28	54.00	-7.72	peak				
	11906.073	29.64	6.41	36.05	54.00	-17.95	AVG				

Report No.: ATE20151401



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

Report No.: ATE20151401

Page 62 of 94

Site: 1# Chamber Tel:+86-0755-26503290

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No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
	12798.243	38.23	7.60	45.83	54.00	-8.17	peak				



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China **Report No.: ATE20151401** *Page 63 of 94* 

Site: 1# Chamber

Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No	.: STAR #29	0				F	Polarizati	ion: \	/ertical	
Standa	rd: FCC Clas	s B 3M Rad	iated			F	ower So	ource:	AC 120	V/60Hz
Test ite	m: Radiatio	n Test				C	Date: 15/	07/04/		
Temp.(	C)/Hum.(%)	) 25 C/5	5 %			1	Time: 9/4	1/54		
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No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	16174.372	34.82	11.79	46.61	54.00	-7.39	peak			
	16174.372	26.00	11.79	37.79	54.00	-16.21	AVG			



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Job No.	: STAR #29	1				E	olarizati	on: \	/ertical	
Standa	d: FCC Clas	s B 3M Rad	iated			F	ower So	ource:	AC 120	V/60Hz
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emp.(	C)/Hum.(%	) 25 C/5	5 %			Т	ime: 9/4	5/48		
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/lanufa	cturer: Natur	al Sound								
Note:	Report No.:	ATE201514	01							
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7 - 1	13173.558	37.07	8.28	45.35	54.00	-8.65	peak			
			8.28	35.94	54.00	-18.06	AVG			



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Page 65 of 94

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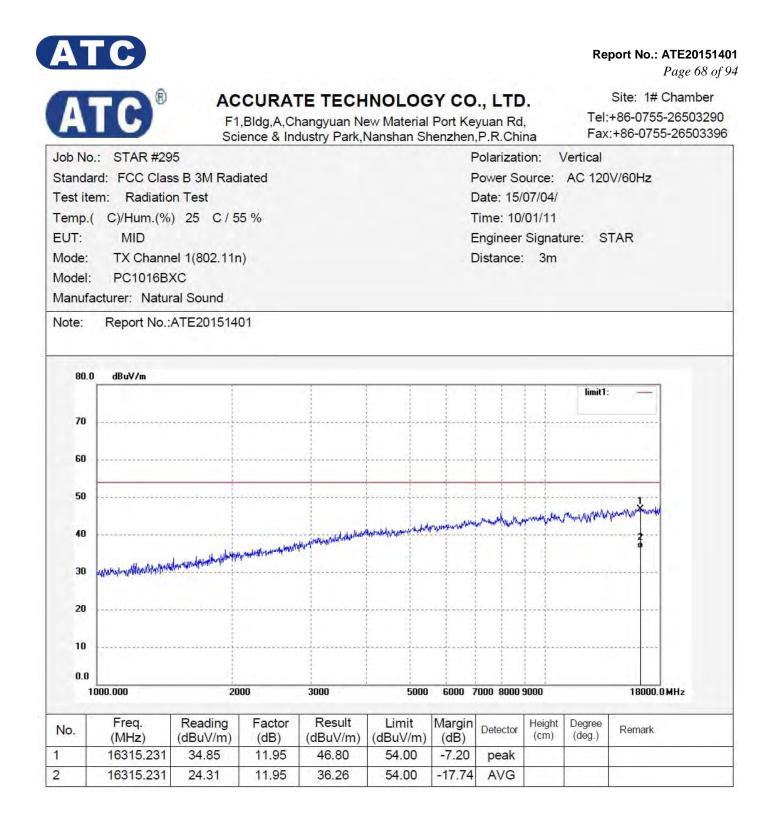
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Standa	d: FCC Clas	s B 3M Rad	iated			F	Power Sc	ource:	AC 120	V/60Hz	
est ite	m: Radiatio	n Test				C	Date: 15/	07/04/			
emp.(	C)/Hum.(%	) 25 C/5	5 %			1	Time: 9/4	8/47			
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1.1	14450.131	33.47	12.73	46.20	54.00	-7.80	peak				
	14450.131	24.60	12.73	37.33	54.00	-16.67	AVG				



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

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	13288.284	36.41	8.56	44.97	54.00	-9.03	peak				
	13288.284	25.66	8.56	34.22	54.00	-19.78	AVG				







F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Report No.: ATE20151401

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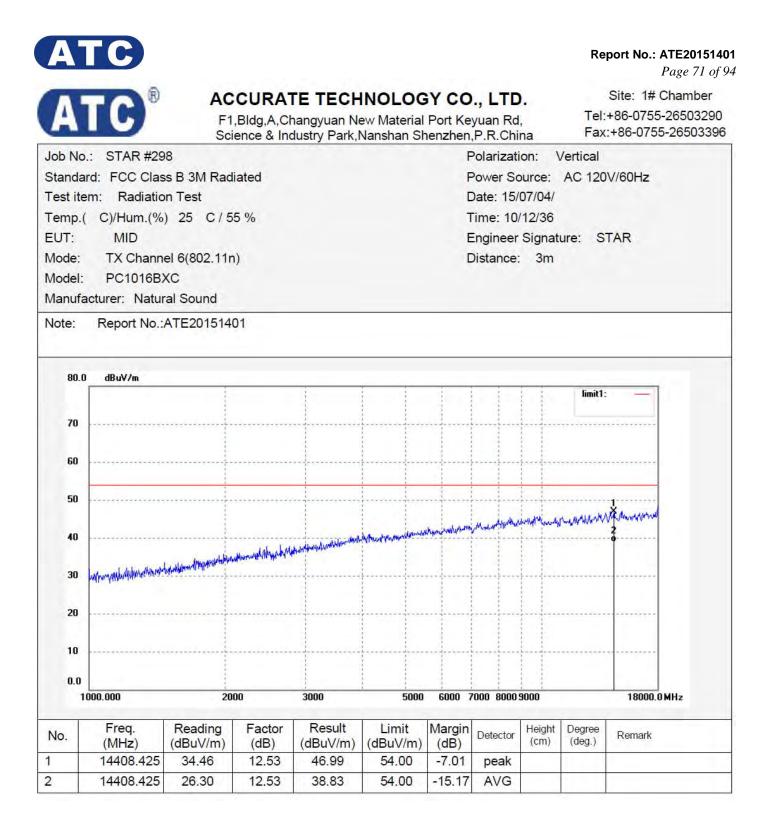
		Sc	ience & In	dustry Park,	Nanshan Sh	nenzhen	P.R.Chi	na	Fax	:+86-0755-2650339
lob No.	: STAR #29	6				F	Polarizati	on: I	Horizont	al
Standar	rd: FCC Clas	s B 3M Rad	liated			F	Power Sc	ource:	AC 120	V/60Hz
est ite	m: Radiatio	n Test				E	Date: 15/	07/04/		
emp.(	C)/Hum.(%	) 25 C/5	5 %			1	Time: 10/	04/48		
EUT:	MID					E	Ingineer	Signat	ure: S	TAR
Node:	TX Chann	el 1(802.11r	ו)			C	Distance:	3m		
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	13797.088	36.73	9.87	46.60	54.00	-7.40	peak			
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F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Report No.: ATE20151401 Page 70 of 94 Site: 1# Chamber Tel:+86-0755-26503290

Fax:+86-0755-26503290

lob No	.: STAR #29	7				F	Polarizati	on: H	Horizonta	al
Standa	rd: FCC Clas	s B 3M Rad	iated			F	ower So	ource:	AC 120	V/60Hz
Fest ite	m: Radiatio	n Test				C	Date: 15/	07/04/		
Temp.(	C)/Hum.(%	) 25 C/5	5 %			т	Time: 10/	08/47		
EUT:	MID					E	Engineer	Signat	ure: S	TAR
Node:	TX Chann	el 6(802.11r	1)			0	Distance	3m		
Nodel:	PC1016B	xc								
Manufa	cturer: Natur	al Sound								
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No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
	11140.310	40.74	5.65	46.39	54.00	-7.61	peak			
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F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China **Report No.: ATE20151401** *Page 72 of 94* 

Site: 1# Chamber

Tel:+86-0755-26503290 Fax:+86-0755-26503396

		Sc	ience & In	dustry Park,	Nanshan Sh	nenzhen	,P.R.Chi	na	Fax	:+86-0755-2650339		
lob No.	o.: STAR #299							Polarization: Vertical				
tandard: FCC Class B 3M Radiated							Power Source: AC 120V/60Hz					
Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 55 %							Date: 15/07/04/					
							Time: 10/14/15					
EUT:	ode: TX Channel 11(802.11n)							Engineer Signature: STAR Distance: 3m				
Node:												
Nodel: PC1016BXC												
/lanufa	cturer: Natur	ral Sound										
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No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark		
	14119.835	34.82	11.02	45.84	54.00	-8.16	peak	21.1				
	14119.835	24.97	11.02	35.99	54.00	-18.01	AVG	2.2.2	1.1.1.1.			



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

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Job No	.: STAR #30	0				F	Polarizat	ion: H	lorizonta	al
Standa	rd: FCC Clas	s B 3M Rad	iated			F	Power So	ource:	AC 120	V/60Hz
Test ite	m: Radiatio	n Test				C	Date: 15/	07/04/		
Temp.(	C)/Hum.(%	) 25 C/5	5 %			1	Time: 10	/17/02		
EUT:	MID					E	Engineer	Signat	ure: S	TAR
Mode:	TX Chann	el 11(802.11	n)			C	Distance	3m		
Model:	PC1016B	xc								
Manufa	acturer: Natur	al Sound								
Note:	Report No.:	ATE201514	01							
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1	18000.000	29.11	18.80	47.91	54.00	-6.09	peak	-		
2	18000.000	20.90	18.80	39.70	54.00	-14.30	AVG		-	



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China *Page 74 of 94* Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20151401

Job No	.: STAR #30	1				F	Polarizat	ion: H	Horizonta	al
Standa	rd: FCC Clas	s B 3M Rad	liated			F	Power So	ource:	AC 120	V/60Hz
Test ite	em: Radiatio	n Test				C	Date: 15/	07/04/		
Temp.(	C)/Hum.(%	) 25 C/5	5 %			1	Time: 10	/22/54		
EUT:	MID					E	Engineer	Signat	ure: S	TAR
Mode:	TX Chann	el 3(802.11)	n)40MHz			C	Distance	3m		
Model:	PC1016B	xc								
Manufa	acturer: Natur	al Sound								
Note:	Report No.:	ATE201514	01							
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	Freq.	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
No.	(MHz)	(ab a viiii)								
No. 1	(MHZ) 14618.166	33.40	12.74	46.14	54.00	-7.86	peak	-		



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Report No.: ATE20151401 Page 75 of 94 Site: 1# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No	.: STAR #30	2				F	Polarizati	on: \	/ertical	
Standa	rd: FCC Clas	s B 3M Rad	iated			F	ower So	ource:	AC 120	)V/60Hz
lest ite	m: Radiatio	n Test					Date: 15/			
emp.(	C)/Hum.(%	) 25 C/5	5 %			Т	ime: 10/	25/41		
EUT:	MID						ngineer		ure: S	TAR
Mode:		el 3(802.11n	)40MHz				)istance:			
Model:										
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Note:	Report No.:	ATE201514(	01							
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No.	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
	13365.322	36.94	8.74	45.68	54.00	-8.32	peak			
2	13365.322	25.90	8.74	34.64	54.00	-19.36	AVG			

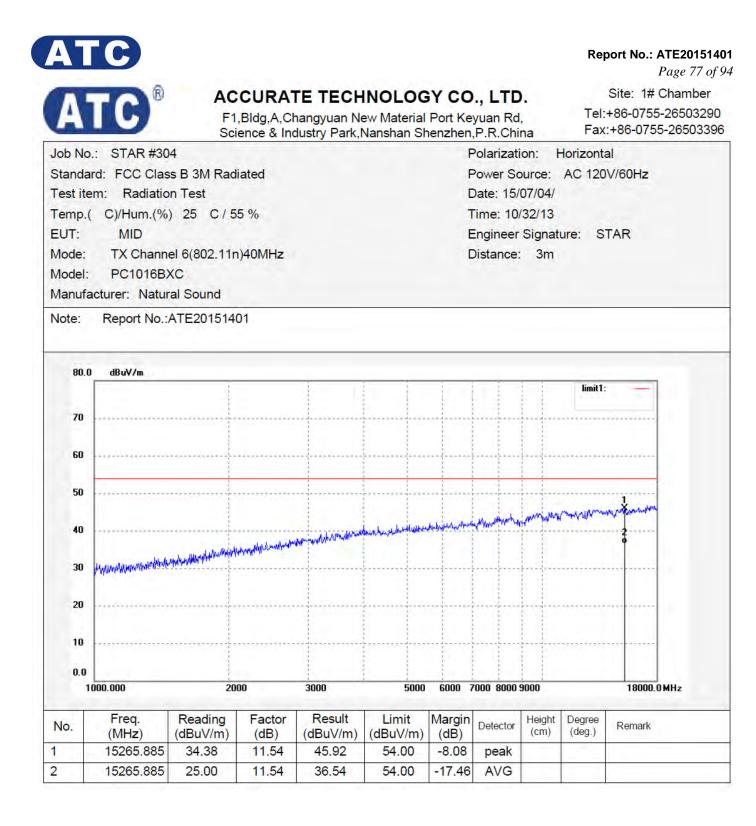


F1.Bldg.A.Changyuan New Material Port Keyuan Rd.

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Report No.: ATE20151401

ob No	.: STAR #30	3				F	Polarizat	ion: \	/ertical		
tanda	rd: FCC Clas	s B 3M Rad	iated			F	Power So	ource:	AC 120	V/60Hz	
	m: Radiatio						Date: 15/		1.10.125	1. S. 1. S.	
	C)/Hum.(%		5 %				Time: 10				
UT:	MID						Engineer		ure: S	TAR	
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T	Freq.	Reading	Factor	Result	Limit	Margin		Height	Degree	B	
lo.	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Detector	(cm)	(deg.)	Remark	
	14408.425	34.25	12.53	46.78	54.00	-7.22	peak				
	14408.425	24.97	12.53	37.50	54.00	-16.50	AVG	1			



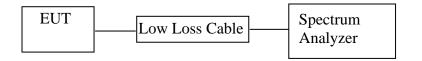






# **10. CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST**

#### 10.1.Block Diagram of Test Setup



### 10.2. The Requirement For Section 15.247(d)

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

#### 10.3.EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 10.4. Operating Condition of EUT

- 10.4.1.Setup the EUT and simulator as shown as Section 10.1.
- 10.4.2.Turn on the power of all equipment.
- 10.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.



# 10.5.Test Procedure

- 10.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 10.5.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz (below 1GHz).
- 10.5.3.Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz (above 1GHz).
- 10.5.4. The Conducted Spurious Emission was measured and recorded.

### 10.6.Test Result

#### Pass.

The spectrum analyzer plots are attached as below.



 $\sim$ 

### TX 802.11b Channel Low 2412MHz

Spectrum											
Ref Level			2.60 dB (								
Att Att	40 dB	SWT	265 ms (	∎ VBW	300 kHz	Mode /	\uto Sv	veep			
●1Pk Max●2P	Pk Max										
						M	4[1]				-39.81 dBn
10 dBm										2	0.0450 GH:
M1						M	1[1]				-0.43 dBn 2.4240 GH;
0 dBm											2.4240 GH2
-10 dBm											
-20 dBm											
-30 dBm								мз	M4		
-40 dBm		M2							<b>T</b>		
	warman	ununteh	n wor	montere	Jun marke	Munderstrak	nn	m	monter	monuture	hummun
-90'demal	Marchan										
-60 dBm											
-70 dBm											
Start 30.0 M	IHz				691 p	ts				Stop	o 26.5 GHz
Marker											
Type Ref	Trc	X-valu	e	Y-	value	Funct	tion		Fund	tion Result	t
M1	1		124 GHz		-0.43 dBm						
M2	1		366 GHz		43.61 dBm						
M3 M4	1		)53 GHz )45 GHz		39.54 dBm 39.81 dBm						
121-4		20.0			59.01 UBIII						
	Л					Mea		- 1		1,70	15:06:2015

### TX 802.11b Channel Middle 2437MHz

Spectr	um														
Ref Le	vel	20.00	dBm	Offset	2.60 dB	🔵 RBV	/ 100 kHz	z							· · · ·
🔵 Att		4	0 dB	SWT	265 ms	🕳 уву	<b>V</b> 300 kHz	z į	Mode /	Auto S	weep				
😑 1Pk Ma	×●2	Pk Ma×	:												
									M	4[1]					-39.44 dBm
10 dBm-														1	L8.0920 GHz
	м1								M	1[1]					-0.64 dBm
0 dBm—	<b>T</b>				_										2.4240 GHz
-10 dBm-													_		
-20 dBm-					-			-							
-30 dBm-										мз	M4				
-40 dBm-				M2						-					
-40 0011		والاستعادية		unitra	men re	June	and menta	whe	now	nhh	run	monthling	mor	weber	nongoongeneration
-so tem	when	Marine	~ ~~~												
-60 dBm-	_				_								_		
-70 dBm-	-														
Start 30	M	1Hz			1	I	691	pts						Sto	p 26.5 GHz
Marker															
Type	Ref	Trc		X-valu	e	Y	-value		Func	tion	1	F	unctio	n Resu	lt 🛛
M1		1		2.4	424 GHz		-0.64 dBi	m							
M2		1			538 GHz		43.21 dBi								
M3		1			.33 GHz		-39.31 dBi								
M4		1		18.	092 GHz		-39.44 dBi	m							
									Mea	suring				61	15.06.2015



### TX 802.11b Channel High 2462MHz

Spectrum Ref Level	20.00	iBm <b>Offse</b> t	t 2.60 dB	PRW	100 kHz						
Att		)dB SWT	265 ms 🧉			Mode /	Auto Si	waan			
)1Pk Max⊜2			200 110 4		000 1012	moue /	hato of	леер			
						M	4[1]				-38.87 dBn
10 dBm											18.0530 GH
						M	1[1]				-1.31 dBn
0 dBm			_							1	2.4620 GH
I											
-10 dBm											
-20 dBm											
-30 dBm											
-30 ubiii						N	13	M4			
-40 dBm		M2	_				<b>y</b>	Molina			
	werter	nonuntu	man	when	www.www.www	winner	ma	and advan	John Mary	moun	mound
,50-tBh	ware -										
-60 dBm											
-70 dBm											
-70 ubiii											
Start 30.0 N	1HZ				691 pts	5				S	top 26.5 GHz
1arker	Trc	¥			value	Fund	•!	1	<b>F</b>	ction Res	
Type Ref M1	1	X-va	.462 GHz		-1.31 dBm	Func	uun		Fun	COULT KES	ouit
M2	1		.791 GHz		1.61 dBm						
MЗ	1	16	.061 GHz		39.19 dBm						
M4	1	18	053 GHz	-3	38.87 dBm						
	10					1	-	-			15.06.2015

# TX 802.11g Channel Low 2412MHz

Spectru	m												
Ref Lev	el :	20.00	dBm	Offset	2.60 dB	🔵 RBW	100 kHz						
🗎 Att		40	) dB	SWT	265 ms	🔵 VBW	300 kHz	Mode .	Auto S	weep			
⊖1Pk Max	●2F	^o k Max											
								M	4[1]				-39.41 dBm
10 dBm-												:	20.1220 GHz
								M	1[1]				-1.86 dBm
0 dBm—	11				_								2.4240 GHz
	II.												
-10 dBm—													
-20 dBm—					-								
-30 dBm—	+												
40 - 10				M2				1	13		M4		
-40 dBm—			4	un Ad .		الكر أمر أم		the shardsourt	mu	wh	wohnty	mon	mound
~50'd8m ^{///}	hur	monu	~~~~	more suit	munu								
Ngo dom													
-60 dBm—	_				-								
-70 dBm—	-												
Start 30.	0 M	Hz					691 p	ts		I		Sto	p 26.5 GHz
Marker													
	lef	Trc		X-valu	le.	Y-	value	Func	tion	1	Fun	ction Resu	lt (
M1		1			424 GHz		-1.86 dBm						
M2		1		6.	676 GHz		42.73 dBm						
MЗ		1			061 GHz		40.47 dBm	_					
M4		1		20.	122 GHz	-3	39.41 dBm						
·								Mea	surin <u>a</u>			100	15.06.2015
	· ·												



### TX 802.11g Channel Middle 2437MHz

Spectrum										
Ref Level	20.00	dBm Offset	2.60 dB (	RBW	100 kHz					
🕨 Att	40	DdB SWT	265 ms 🌘	VBW	300 kHz	Mode /	Auto SN	weep		
●1Pk Max●2P	Pk Max									
						M	4[1]		-	39.40 dBm
10 dBm									19	9.4320 GHz
TO GDIII						M	1[1]			-5.47 dBm
0 dBm			_						2	2.4240 GHz
Ţ										
-10 dBm			_							
-20 dBm										
0.0 - 10										
-30 dBm							мз	M4		
-40 dBm		M2								
		monuthe	and a starter	num	mound	man	nnw	whitehours	wohnun	whether he
	www.									
-60 dBm										
-70 dBm										
Start 30.0 M	IHz				691 pt	s			Stop	26.5 GHz
Marker										
Type Ref	Trc	X-valı	le l	Y-	value	Func	tion	Fur	nction Result	
M1	1		424 GHz		-5.47 dBm					
M2	1		983 GHz		13.22 dBm					
M3	1		789 GHz		39.36 dBm					
M4	1	19.	432 GHz	-3	39.40 dBm					
	П					Mea	suring.		1,70	5.06.2015

# TX 802.11g Channel High 2462MHz

Spectr	um											
Ref Le	vel			t 2.60 dB								
Att			db SWT	265 ms 🧉	• VBW	300 kHz	Mode /	Auto S	weep			
∋1Pk Ma	X@2F	Pk Max										
							M	4[1]				-37.98 dB
10 dBm-	_			_			<u> </u>					18.0920 GI
							M	1[1]				-2.51 dB
0 dBm—	M1											2.4620 GI
	- II											
-10 dBm												
-20 dBm												
-30 dBm-												
50 abiii							P	из	M4			
-40 dBm-			M					T b at at	~~~~	L MArs		
	11.		al more the	mount	merved	unahum	when	www.	~v w	wwwhu	howw	wowwwwwww
450°dBmi	Maria	-W *** .	-									
-60 dBm												
-70 dBm·												
-70 ubm												
Start 30	).0 M	Hz				691 pt	S					Stop 26.5 GH
Marker	-					-		_			-	
	Ref		X-va			value	Func	tion		Fun	ction Re	sult
M1 M2		1		2.462 GHz 7.136 GHz		-2.51 dBm 43.59 dBm						
M3		1		16.1 GHz		43.39 UBM 39.03 dBm						
M4		1	18	3.092 GHz		37.98 dBm						
				1		1					4.965	15.06.2015
		Л					, nea				1 AV	



### TX 802.11n Channel Low 2412MHz (20MHz)

Spectrum											
Ref Level	20.00	dBm Offset	2.60 dB (	● RBW	100 kHz						
🛛 Att	40	dB SWT	265 ms (	e vbw	300 kHz	Mode /	Auto SN	veep			
●1Pk Max●:	2Pk Max										
						M	4[1]				-39.74 dBm
10 dBm										1	8.0920 GHz
						M	1[1]				-1.45 dBm
0 dBm 🕂 🔻			_							1	2.4240 GHz
-10 dBm			-								
-20 dBm											
-30 dBm											
-30 0811							мз	M4			
-40 dBm		M2	_				IVI3	. Ar	. 1 . 4.		
	dete	umarten	man and the	mon	, where the way	hornan	"Vi~"	ann Ar	www.	when	human
~50 dBm	drama -	· ·									
-60 dBm											
70 40											
-70 dBm											
Start 30.0	MHz				691 p	ts				Sto	p 26.5 GHz
Marker											
Type Ref		X-val			value	Func	tion		Fund	tion Resul	t
M1	1		424 GHz		-1.45 dBm						
M2 M3	1		.791 GHz .368 GHz		13.02 dBm 10.67 dBm						
M4	1		.308 GH2 .092 GHz		ғо.07 авт 39.74 dBm						
	7					<u>_</u>	_			4.147	15 06 2015
						Mea				LAN .	

### TX 802.11n Channel Middle 2437MHz (20MHz)

Spectrum										
Ref Level	20.00	dBm Offset	2.60 dB (	RBW	100 kHz					
🛛 Att	40	dB SWT	265 ms (	VBW	300 kHz	Mode /	Auto Si	weep		
⊖1Pk Max⊕2	2Pk Max									
						M	4[1]			-39.74 dBm
10 dBm										21.7690 GHz
TO GBIII						M	1[1]			-2.50 dBm
0 dBm 🛄										2.4240 GHz
i den T										
-10 dBm										
-20 dBm 🕂										
-30 dBm 🕂										
		M2					мз		M4	
-40 dBm					moun	mount	Now	an manager	mysterien	mademarke
southingh	whenthe	where we want the second	which	m	mun				. Carpen	~~ [ · · · · · ·
-60 dBm										
oo abiii										
-70 dBm										
Start 30.0 M					601					
	MHZ				691 pi	5			51	top 26.5 GHz
Marker	1 - 1					1 -		1 =		
Type Ref		X-valu			value	Func	tion	F F	unction Res	ult
M1 M2	1		424 GHz 523 GHz		-2.50 dBm 43.58 dBm					
M2 M3	1		368 GHZ		+3.58 UBM 40.44 dBm					
M4	1		769 GHz		39.74 dBm					
	7					·	_		-	15.06.2015
						Mea			670	



### TX 802.11n Channel High 2462MHz (20MHz)

Spectru	m	٦.											
Ref Lev	el 20.					100 kHz							
Att 🗧		40 0	ib SWT	265 ms	VBW	300 kHz	Mode /	Auto SN	weep				
●1Pk Max(	●2Pk M	∕lax											
							M	4[1]				-40.01 dBm	
10 dBm				_							2	0.3900 GHz	
							м	1[1]			-3.24 dBm		
0 dBm — 📈	1											2.4620 GHz	
4 <b>a</b> 1 <b>b</b>													
-10 dBm—													
-20 dBm—													
-30 dBm—				+								+	
			M2						MЗ	M4			
-40 dBm—			mulition				mound	www	www.	Mound	w Munghunge	manufler	
"58rd8m"~··	Juim	much	And and the state	man	Concension of	and more of	/ •••						
1000 GD111													
-60 dBm—				-									
-70 dBm—				-								+	
Start 30.0	MHz					691 p	ts				Sto	p 26.5 GHz	
Marker													
	ef   Ti		X-valu			value	Func	tion		Fund	tion Resu	t	
M1		1		462 GHz		-3.24 dBm							
M2	_	1		6.6 GHz		13.20 dBm							
M3 M4		1		092 GHz		39.84 dBm 40.01 dBm	_						
TIN		-	20	.59 dHz		FOTO I UDIN	· · ·	_				15.06.2015	
							Mea				1/0	14:07:24	

### TX 802.11n Channel Low 2422MHz (40MHz)

Specti	um											
Ref Le	evel	20.00	dBm Offse	et 2.60 dB	🔵 RBW	100 kHz						
🗎 Att		40	dB SWT	265 ms	🔵 VBW	300 kHz	Mode /	Auto SN	weep			
⊖1Pk Ma	ax⊜2l	Pk Max										
							M	4[1]		-3	39.56 dBm	
10 dBm-										19	.4320 GHz	
TO UBIII-							M	1[1]			-4.79 dBm	
0 dBm—										2	.4240 GHz	
o ubili	T											
-10 dBm												
10 0.011												
-20 dBm												
-30 dBm	· <b></b>			_								
								MЗ	M4			
-40 dBm	·		<u>M2</u>				. 1.4.4	And Anna	monuting	here a		
		Jahren 1	olymour the	mound	mount	who when	whiteward	1	an advance of	on Manun	manner	
~50 dent	phi (pro	V										
-60 dBm												
-70 dBm												
Start 3	0.0 M	1Hz				691 p	ts			Stop	26.5 GHz	
Marker												
Type	Ref	Trc	X-va	alue	Y-	value	Func	tion	Fur	ction Result	1	
M1		1		2.424 GHz	-	-4.79 dBm						
M2		1		6.638 GHz	- 4	43.57 dBm						
MЗ		1	1	6.713 GHz	-3	39.48 dBm						
M4		1	1	9.432 GHz	-3	39.56 dBm						
		)[					Mea	surina.		1.420	5.06.2015	



### TX 802.11n Channel Middle 2437MHz (40MHz)

Spectrum											
Ref Level			2.60 dB (								
Att 🗧		D dB SWT	265 ms (	• VBW	300 kHz	Mode /	uto S۱	veep			
●1Pk Max●2	2Pk Ma×	1									
						M	4[1]				-40.43 dBm
10 dBm										2	0.0070 GHz
10 dbiii						M	1[1]				-5.63 dBm
0 dBm			_								2.4240 GHz
Ţ											
-10 dBm			_								
-20 dBm											
0.0 10											
-30 dBm											
-40 dBm		M2					M3		M4		
		1. Junna	manual	maun	un martin	manusher	nnw	www	water you	when the	anoneme
W 20 HBM	and a second and	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~									
-60 dBm			_								
-70 dBm											
Start 30.0 M	MHz				691 pi	ts				Sto	p 26.5 GHz
Marker					<u> </u>						
Type   Ref	Trc	X-valı	ue	Y-	value	Func	tion		Fund	tion Resu	t
M1	1		424 GHz		-5.63 dBm						
M2	1	5.	795 GHz	-4	43.46 dBm						
M3	1		751 GHz		40.20 dBm						
M4	1	20.	007 GHz	-4	40.43 dBm						
						Mea	suring.			120	15.06.2015

### TX 802.11n Channel High 2452MHz (40MHz)

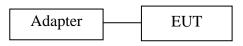
Spect	rum															
Ref Le	evel	20.00	dBm	Offset	2.60 dB	RBW	' 100 kHz	:								
🔵 Att		40	) dB 🔅	SWT	265 ms	VBW	/ 300 kHz	: Mo	de A	uto Sv	veep					
😑 1Pk Ma	ax⊜2l	Pk Max														
									Ma	[1]					-38.	77 dBm
10 dBm-																000 GHz
TO UBIII									M1	[1]						32 dBm
0 dBm—															2.46	520 GHz
	T															
-10 dBm	·				_										_	
-20 dBm											-				-	
-30 dBm										10						
-40 dBm				42						13		M4				
-40 aBn				Juryun		.b. 01. 01-	wanter	maher	your	tru	w Nor	hurber	بر منه ما	money	m	warn
<b>,,50'd</b> 8m	hallon	سليميلي	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- Berry	man	and and a										
- abii	·															
-60 dBm															_	
-70 dBm															_	
Start 3	0.0 M	IHz					691 p	ots						St	00 26	.5 GHz
Marker																
Type	Ref	Trc		X-valu	e	Y-	value	F	unct	ion		F	uncti	on Res	ult	1
M1		1			462 GHz		-5.32 dBn									
M2		1		6.2	255 GHz	-	44.09 dBn	n								
MЗ		1		1	6.1 GHz	-	38.77 dBn	n								
M4		1		19.7	739 GHz	-	39.46 dBn	n								
									Meas	uring.	1			Х	15.06	.2015



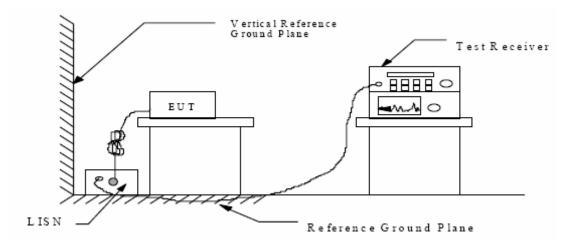
# 11.AC POWER LINE CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.207(A)

### 11.1.Block Diagram of Test Setup

11.1.1.Block diagram of connection between the EUT and simulators



### 11.1.2.Shielding Room Test Setup Diagram



### 11.2.The Emission Limit

Frequency	Limit $dB(\mu V)$					
(MHz)	Quasi-peak Level	Average Level				
0.15 - 0.50	66.0 - 56.0 *	56.0 - 46.0 *				
0.50 - 5.00	56.0	46.0				
5.00 - 30.00	60.0	50.0				

* Decreases with the logarithm of the frequency.



### 11.3.Configuration of EUT on Measurement

The equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 11.4.Operating Condition of EUT

11.4.1.Setup the EUT and simulator as shown as Section 11.1.

- 11.4.2.Turn on the power of all equipment.
- 11.4.3.Let the EUT work in (Charging) mode measure it.

### 11.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

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

11.6.Power Line Conducted Emission Measurement Results

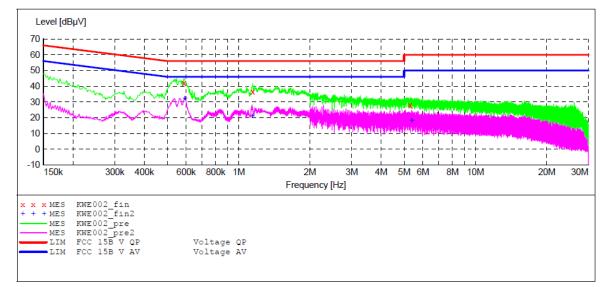


#### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT:	MID M/N:PC1016BXC					
Manufacturer:	Natural Sound					
Operating Condition:	WIFI					
Test Site:	2#Shielding Room					
Operator:	star					
Test Specification:	N 120V/60Hz					
Comment:	Report No.:ATE20151401					
Start of Test:	2015-7-2 / 10:11:33					

#### SCAN TABLE: "V 150K-30MHz fin"

Short Description:	_	SUB_STD_VTERM2 1.70					
Start Stop	Step	Detector	Meas.	IF	Transducer		
Frequency Frequency	Width		Time	Bandw.			
150.0 kHz 30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	LISN(ESH3-Z5)		
		Average					



#### MEASUREMENT RESULT: "KWE002_fin"

2015-7-2 10:13							
Frequency				2	Detector	Line	PE
MHz	dBµV	dB	dBµV	dB			
0.588000	41.90	11.5	56	14.1	QP	N	GND
1.148000	36.50	11.6	56	19.5	QP	Ν	GND
5.303000	28.10	11.8	60	31.9	QP	Ν	GND

#### MEASUREMENT RESULT: "KWE002_fin2"

2015-7-2 10:13 Frequency MHz			Limit dBµV	Margin dB	Detector	Line	PE
0.592000 1.140000 5.379500	32.40 20.90 18.20	11.5 11.6 11.8	46	13.6 25.1 31.8	AV	N N N	GND GND GND

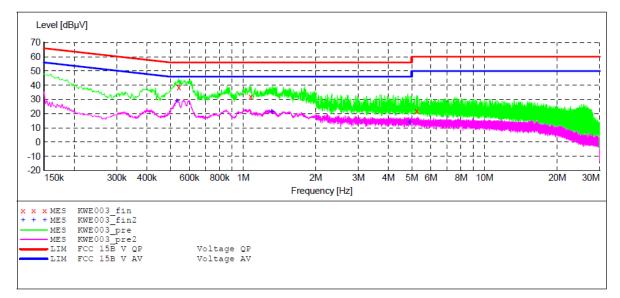


#### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT:	MID M/N:PC1016BXC					
Manufacturer:	Natural Sound					
Operating Condition:	WIFI					
Test Site:	2#Shielding Room					
Operator:	star					
Test Specification:	L 120V/60Hz					
Comment:	Report No.:ATE20151401					
Start of Test:	2015-7-2 / 10:16:22					

#### SCAN TABLE: "V 150K-30MHz fin"

Short Desc	ription:		SUB_STD_VTE	RM2 1.70		
Start	Stop	Step	Detector	Meas.	IF	Transducer
Frequency	Frequency	Width		Time	Bandw.	
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	LISN(ESH3-Z5)
			Average			



#### MEASUREMENT RESULT: "KWE003 fin"

2015-7-2 10:17

Frequency MHz	Level dBµV	Limit dBµV	Margin dB	Detector	Line	PE
0.542000 1.076000 5.244500	31.80	56		ÕР	L1 L1 L1	GND GND GND

#### MEASUREMENT RESULT: "KWE003 fin2"

2015-7-2 10:17 Frequency MHz				Margin dB	Detector	Line	PE
0.532000 1.316000 4.889000	28.80 21.50 14.00	11.5 11.6 11.8	46 46 46	24.5	AV	L1 L1 L1	GND GND GND

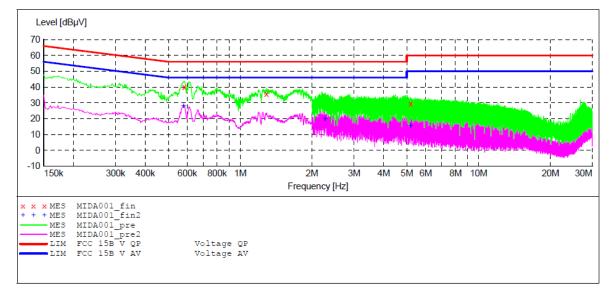


#### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT:	MID M/N:PC1016BXC
Manufacturer:	Natural Sound
Operating Condition:	WIFI
Test Site:	2#Shielding Room
Operator:	star
Test Specification:	L 240V/60Hz
Comment:	Report No.:ATE20151401
Start of Test:	2015-7-3 / 9:14:12

#### SCAN TABLE: "V 150K-30MHz fin"

Short Descri	SUB_STD_VTERM2 1.70					
Start S	top Ste	∋p	Detector	Meas.	IF	Transducer
Frequency F	requency Wid	dth		Time	Bandw.	
150.0 kHz 3	0.0 MHz 4.	5 kHz	QuasiPeak	1.0 s	9 kHz	LISN(ESH3-Z5)
			Average			



#### MEASUREMENT RESULT: "MIDA001_fin"

2015-7-3 9:16 Frequency MHz	Level dBµV		Limit dBµV	Margin dB	Detector	Line	PE
0.582000 1.290000 5.190500	35.60	11.5 11.6 11.8	56	15.8 20.4 30.3	QP	L1 L1 L1	GND GND GND

#### MEASUREMENT RESULT: "MIDA001 fin2"

2015-7-3 9:16 Frequency MHz	Level dBµV		Limit dBµV	Margin dB	Detector	Line	PE
0.578000 2.265500 5.181500	27.90 19.70 15.60	11.5 11.7 11.8		18.1 26.3 34.4	AV	L1 L1 L1	GND GND GND

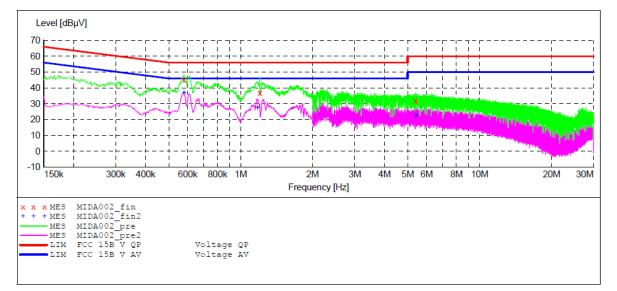


#### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT:	MID M/N:PC1016BXC
Manufacturer:	Natural Sound
Operating Condition:	WIFI
Test Site:	2#Shielding Room
Operator:	star
Test Specification:	N 240V/60Hz
Comment:	Report No.:ATE20151401
Start of Test:	2015-7-3 / 9:16:56

#### SCAN TABLE: "V 150K-30MHz fin"

Short Description:				SUB_STD_VTER	RM2 1.70		
	Start	Stop	Step	Detector	Meas.	IF	Transducer
	Frequency	Frequency	Width		Time	Bandw.	
	150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	LISN(ESH3-Z5)
				Average			



#### MEASUREMENT RESULT: "MIDA002 fin"

2015-7-3 9:18 Frequency MHz	Level dBµV		Limit dBµV	Margin dB	Detector	Line	PE
1.202000	36.80	11.5 11.6 11.8	56	10.8 19.2 28.1	ÕР	N N N	GND GND GND

#### MEASUREMENT RESULT: "MIDA002_fin2"

2015-7-3 9:18 Frequency MHz	Level dBµV		Limit dBµV	Margin dB	Detector	Line	PE
0.578000	36.90	11.5	46	9.1	AV	N	GND
1.176000	27.70	11.6	46	18.3		N	GND
5.402000	22.60	11.8	50	27.4		N	GND



# **12.ANTENNA REQUIREMENT**

### 12.1.The Requirement

According to Section 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.

### 12.2.Antenna Construction

Device is equipped with unique antenna, which isn't displaced by other antenna. Therefore, the equipment complies with the antenna requirement of Section 15.203.

