

FCC 47 CFR PART 15 SUBPART C

for

ACCESS POINT

Model: WA1505N,WA1300N,WA505N

Brand: UTT

<u>Test Report Number:</u> C160419Z04-RP1 Issued Date: June 2, 2016

Issued for

SHANGHAI UTT TECHNOLOGIES CO., LTD. Room 301, No.9 Building, No.518, Xinzhuan Rd., Songjianç District Shanghai,China

Issued by:

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 2, 2016	Initial Issue	ALL	Amzula Chen



TABLE OF CONTENTS

1	TEST CERTIFICATION	4
	TEST RESULT SUMMARY	
	EUT DESCRIPTION	
-	TEST METHODOLOGY	
-	4.1. DESCRIPTION OF TEST MODES	
5	SETUP OF EQUIPMENT UNDER TEST	
-	5.1. DESCRIPTION OF SUPPORT UNITS.	
	5.2. CONFIGURATION OF SYSTEM UNDER TEST	
6	FACILITIES AND ACCREDITATIONS	
	6.1. FACILITIES	9
	6.2. ACCREDITATIONS	9
	6.3. MEASUREMENT UNCERTAINTY	
7	FCC PART 15.247 REQUIREMENTS	.10
	7.1. POWER LINE CONDUCTED EMISSIONS MEASUREMENT	.10
	7.2. SPURIOUS EMISSIONS MEASUREMENT	.15
	7.3. 6dB BANDWIDTH MEASUREMENT	.65
	7.4. ANTENNA GAIN	.80
	7.5. PEAK OUTPUT POWER	. 82
	7.6. BAND EDGES MEASUREMENT	
	7.7. PEAK POWER SPECTRAL DENSITY MEASUREMENT1	112



1 TEST CERTIFICATION

Product	ACCESS POINT
Model	WA1505N,WA1300N,WA505N
Brand	UTT
Tested	April 19~June 2, 2016
Applicant	SHANGHAI UTT TECHNOLOGIES CO., LTD. Room 301, No.9 Building, No.518, Xinzhuan Rd., Songjiang District Shanghai, China
Manufacturer	SHANGHAI UTT TECHNOLOGIES CO., LTD. Room 301, No.9 Building, No.518, Xinzhuan Rd., Songjiang District Shanghai,China

APPLICABLE STANDARDS					
Standard	Test Type	Standard	Test Type		
15.207(a)	Power Line Conducted Emissions	15.247(d) 15.209(a)	 Spurious Emissions Conducted Measurement Radiated Emissions 		
15.247(a)(2)	6dB Bandwidth Measurement	15.247(b)(3) 15.247(b)(4)	Peak Power Measurement		
15.247(d)	Band Edges Measurement	15.247(e)	Peak Power Spectral Density		

We hereby certify that:

The above equipment was tested by Compliance Certification Services (Shenzhen) Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in **ANSI C63.10: 2013** and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247. The test results of this report relate only to the tested sample EUT identified in this report.

Approved by:

Say. Mu

Sunday Hu Supervisor of EMC Dept. Compliance Certification Services (Shenzhen) Inc.

Reviewed by:

Ruby Zhang Supervisor of Report Dept. Compliance Certification Services (Shenzhen) Inc.



2 TEST RESULT SUMMARY

	APPLICABLE STANDARDS				
Standard	Test Type	Result	Remark		
15.247(a)(2)	6dB Bandwidth Measurement	Pass	Meet the requirement of limit.		
15.247(b)(3) 15.247(b)(4)	Peak Power Measurement	Pass	Meet the requirement of limit.		
15.247(d)	Band Edges Measurement	Pass	Meet the requirement of limit.		
15.247(e)	Peak Power Spectral Density	Pass	Meet the requirement of limit.		
15.247(d) 15.209(a)	 Spurious Emissions Conducted Measurement Radiated Emissions 	Pass	Meet the requirement of limit.		
15.207(a)	Power line Conducted Emissions	Pass	Meet the requirement of limit.		

Note: 1. The statements of test result on the above are decided by the request of test standard only; the measurement uncertainties are not factored into this compliance determination.

2. The information of measurement uncertainty is available upon the customer's request.



3 EUT DESCRIPTION

Product	ACCESS POINT
Model Number	WA1505N,WA1300N,WA505N
Brand	UTT
Model Discrepancy	They are identical to each other except for market designation for marketing purpose.
Identify Number	C160419Z04-RP1
Received Date	April 19, 2016
Power Supply	POE or DC4.5V supplied by the adapter
Transmit PowerIEEE 802.11b mode:15.87dBm (Antenna 1) IEEE 802.11b mode: 12.42dBm (Antenna 2) IEEE 802.11g mode: 22.56dBm (Antenna 1) IEEE 802.11g mode: 19.04dBm (Antenna 2) IEEE 802.11n HT20 MHz mode: 23.26dBm(Combine with Antenna 1 and IEEE 802.11n HT40 MHz mode: 22.96dBm(Combine with Antenna 1 and IEEE 802.11n HT40 MHz mode: 22.96dBm(Combine with Antenna 1 and IEEE 802.11n HT40 MHz mode: 22.96dBm(Combine with Antenna 1 and IEEE 802.11n HT40 MHz mode: 22.96dBm(Combine with Antenna 1 and IEEE 802.11n HT40 MHz mode: 22.96dBm(Combine with Antenna 1 and IEEE 802.11n HT40 MHz mode: 22.96dBm(Combine with Antenna 1 and	
Modulation TechniqueIEEE 802.11b mode: DSSS(CCK,QPSK, BPSK) IEEE 802.11g mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT20 MHz mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT40 MHz mode: OFDM (BPSK/QPSK/16QAM/64QAM)	
Transmit Data Rate	IEEE 802.11b: 11Mbps(CCK) with fall back rates of 5.5/2/1Mbps IEEE 802.11g: 54Mbps with fall back rates of 48/36/24/18/12/9 /6Mbps IEEE 802.11n HT20: 130Mbps with fall back rates of 130/117/104/ 78/52/39/26/13Mbps IEEE 802.11n HT40: 270Mbps with fall back rates of 270/243/216/ 162/108/81/54/27Mbps
Number of Channels IEEE 802.11b mode: 11 Channels IEEE 802.11g mode: 11 Channels IEEE 802.11n HT20 MHz mode: 11 Channels IEEE 802.11n HT20 MHz mode: 11 Channels IEEE 802.11n HT20 MHz mode: 7 Channels	
AntennaAntenna 1: PCB Antenna with 4dBi gain (Max)SpecificationAntenna 2: PCB Antenna with 4dBi gain (Max)	
Channels Spacing IEEE 802.11b/g ,802.11n HT20/HT40 : 5MHz	
Temperature Range	-10°C ~ +50°C
Hardware Version	MT7620-A
Software Version	WA1505N-ENv2.8.0-160116.bin

Note: 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.

2. This submittal(s) (test report) is intended for FCC ID: <u>XPF-REG09-UTT</u> filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.



4 TEST METHODOLOGY

4.1. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Test Item	Test mode	Worse mode
Conducted Emission	Mode 1: 100Mbps	\boxtimes
Radiated Emission	Mode 1: TX	

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only, and power line conducted emission below 30MHz, which worst case was in normal link mode.

IEEE802.11b mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 1Mbps data rate were chosen for full testing.

IEEE802.11g mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11n HT20 MHz mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 13Mbps data rate were chosen for full testing.

IEEE 802.11n HT40 MHz mode: Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 27Mbps data rate were chosen for full testing.

126

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5 SETUP OF EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

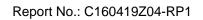
No.	Equipment	Model No.	Serial No.	FCC ID	Brand	Data Cable	Power Cord
1	Notebook	E335	N/A	DOC	Thinkpad	Shielded 1.50m	Unshielded 2.00m

Note:

Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5.2. CONFIGURATION OF SYSTEM UNDER TEST

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.





6 FACILITIES AND ACCREDITATIONS

6.1. FACILITIES

All measurement facilities used to collect the measurement data are located at No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd., Guan Lan Town, Baoan District, Shenzhen, China

The sites are constructed in conformance with the requirements of ANSI C63.10, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

USA	A2LA
China	CNAS

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA	FCC
Japan	VCCI(C-4815,R-4320,T-2317, G-10624)
Canada	INDUSTRY CANADA

Copies of granted accreditation certificates are available for downloading from our web site, <u>http://www.ccssz.com</u>

6.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Parameter	Uncertainty
Radiated Emission, 30 to 200 MHz Test Site : 966(2)	+/-3.6880dB
Radiated Emission, 200 to 1000 MHz Test Site : 966(2)	+/-3.6695dB
Radiated Emission, 1 to 8 GHz	+/-5.1782dB
Radiated Emission, 8 to 18 GHz	+/-5.2173dB
Conducted Emissions	+/-3.6836dB
Band Width	178kHz
Peak Output Power MU	+/-1.906dB
Band Edge MU	+/-0.182dB
Channel Separation MU	416.178Hz
Duty Cycle MU	0.054ms
Frequency Stability MU	226Hz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

The measured result is above (below) the specification limit by a margin less than the measurement uncertainty; it is therefore not possible to state compliance based on the 95% level of confidence. However, the result indicates that compliance (non-compliance) is more probable than non-compliance) with the specification limit.



7 FCC PART 15.247 REQUIREMENTS

7.1. POWER LINE CONDUCTED EMISSIONS MEASUREMENT

7.1.1. LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range	Limits (dBµV)		
(MHz)	Quasi-peak	Average	
0.15 to 0.50	66 to 56*	56 to 46*	
0.50 to 5	56	46	
5 to 30	60	50	

NOTE:

(1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

7.1.2. TEST INSTRUMENTS

	Condu	ucted Emission T	est Site		
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017
LISN(EUT)	ROHDE&SCHWARZ	ENV216	101543-WX	02/21/2016	02/20/2017
LISN	EMCO	3825/2	8901-1459	02/21/2016	02/20/2017
Temp. / Humidity Meter	VICTOR	HTC-1	N/A	02/21/2016	02/20/2017
Test S/W	FARAD		EZ-EMC/ CCS-3A	1-CE	

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request.

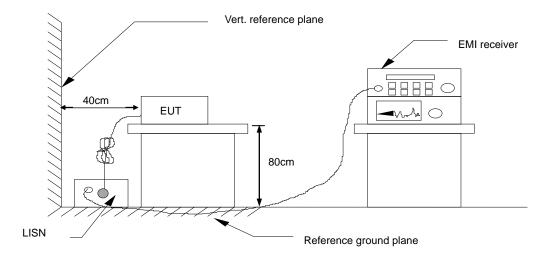


7.1.3. TEST PROCEDURES (please refer to measurement standard)

- The EUT and Support equipment, if needed, was placed on a non-conducted table, which is 0.8m above the ground plane and 0.4m away from the conducted wall.
- The test equipment EUT installed received AC main power, through a Line Impedance Stabilization Network (LISN), which supplied power source and was grounded to the ground plane. All support equipment power received from a second LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- The EUT test program was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The frequency range from 150 kHz to 30 MHz was searched. The test data of the worst-case condition(s) was recorded. Emission levels under limit 20dB were not recorded.



7.1.4. TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.1.5. DATA SAMPLE

	equency (MHz)		Average Reading (dBuV)		QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Margin	Remark (Pass/Fail)
Х	.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss

Result = Quasi-peak Reading/ Average Reading + Factor

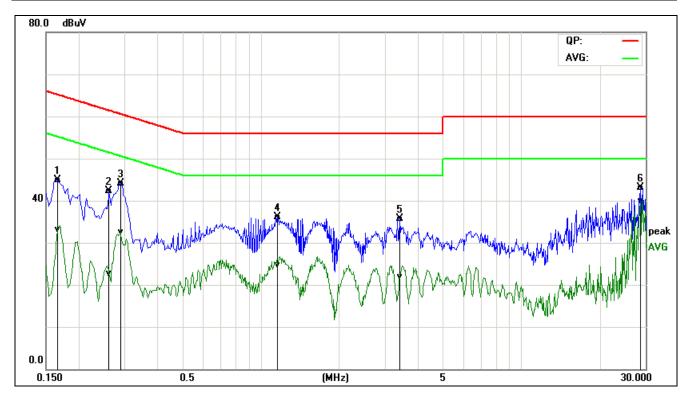
Limit = Limit stated in standard

Margin = Result (dBuV) – Limit (dBuV)



7.1.6. TEST RESULTS

		RBW,VBW	9 kHz
Environmental Conditions	22°C, 45% RH	Test Mode	Mode 1
Tested by	Jack Chen	Line	L1
Test Date	April 20, 2016		

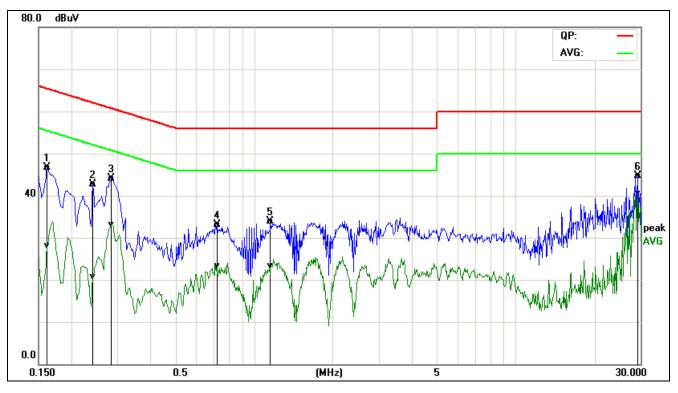


Frequency (MHz)		Average Reading (dBuV)		QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)	Line (L1/L2)
0.1660	35.22	23.24	9.78	45.00	33.02	65.15	55.16	-20.15	-22.14	Pass	L1
0.2620	32.42	12.92	9.81	42.23	22.73	61.36	51.37	-19.13	-28.64	Pass	L1
0.2900	34.20	22.65	9.82	44.02	32.47	60.52	50.52	-16.50	-18.05	Pass	L1
1.1620	26.23	14.81	9.91	36.14	24.72	56.00	46.00	-19.86	-21.28	Pass	L1
3.4340	25.74	11.89	10.00	35.74	21.89	56.00	46.00	-20.26	-24.11	Pass	L1
28.6860	32.73	29.41	10.40	43.13	39.81	60.00	50.00	-16.87	-10.19	Pass	L1

REMARKS: L1 = Line One (Live Line)



		RBW,VBW	9 kHz
Environmental Conditions	22°C, 45% RH	Test Mode	Mode 1
Tested by	Jack Chen	Line	L2
Test Date	April 20, 2016		



Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)	Line (L1/L2)
0.1620	36.85	18.28	9.88	46.73	28.16	65.36	55.36	-18.63	-27.20	Pass	L2
0.2420	32.79	10.74	9.89	42.68	20.63	62.02	52.03	-19.34	-31.40	Pass	L2
0.2860	34.31	23.30	9.89	44.20	33.19	60.64	50.64	-16.44	-17.45	Pass	L2
0.7220	23.12	13.41	9.89	33.01	23.30	56.00	46.00	-22.99	-22.70	Pass	L2
1.1580	24.07	13.43	9.91	33.98	23.34	56.00	46.00	-22.02	-22.66	Pass	L2
29.2340	34.26	30.10	10.40	44.66	40.50	60.00	50.00	-15.34	-9.50	Pass	L2



7.2. SPURIOUS EMISSIONS MEASUREMENT

7.2.1. CONDUCTED EMISSIONS MEASUREMENT

7.2.1.1. LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

§15.247(d) specifies that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:

If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3)requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.

If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3)requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

7.2.1.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY55370330	02/21/2016	02/20/2017

7.2.1.3. TEST PROCEDURE (please refer to measurement standard)

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

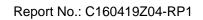
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

Measurements are made over the 10MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels. No emission found between lowest internal used/generated frequency to 10MHz, it is only recorded 10MHz to 26GHz.



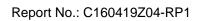
7.2.1.4. TEST RESULTS

eysight Spectrum Analyze	50 Ω DC	5.5GHZ)	ALIGN AUTO/NO RF	.og-Pwr	11:26:43 PM Jun 01, 2 TRACE 1 2 3 4 TYPE MWWW
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dB/div Ref 11. 0	00 dBm			Sweep 11.5	-34.128 dB
dB/div Ref 11. 00	00 dBm	Y FUNCTION 3.255 dBm		Sweep 11.5	-34.128 dE
dB/div Ref 11. 0	00 dBm	Y FUNCTION 3.255 dBm		Sweep 11.5	-34.128 dB 15.76 -15





RL	ctrum Analyzer - Sw RF 50 Ω		SE	NSE:INT		RF ype: Log-Pwr	01:25:24	PM Jun 01, 20
arker	3.2417800	P	NO: Fast Gain:Low	Trig: Free Run Atten: 10 dB		old:>1/1		DET P N N N
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	GH2 100 kHz		VBW :	300 kHz		Sw	eep 2.532 s	26.50 GI (1001 pt
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KR MODE TR		3.242 GHz						
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KR MODE TR 1 N 1 2 3 4 4 5 5		3.242 GHz						
MODE TR 1 N 1 2 3 - 3 - - 4 - - 5 - - 6 - - 7 - -		3.242 GHz						
KR MODE TR 1 N 1 2 3 4 4 5 6		3.242 GHz						



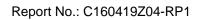


4760000000 GHz		INT ALI ig: Free Run tten: 10 dB	GN AUTO/NO RF Avg Type: Log-I Avg Hold:>1/1	^o wr	1:23:47 PM Jun 01, 201 TRACE 1 2 3 4 5 TYPE M WWW DET P N N N N
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			STATUS		
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→ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	VBW 300	D kHz		Sto	op 2.50000 GH 0 ms (1001 pts
A A A A A A A A A A A A A A A A A A A	VBW 300	D kHz		Sweep 4.80	op 2.50000 GH 0 ms (1001 pts
→ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	VBW 300	D kHz		Sweep 4.80	pp 2.50000 GH 0 ms (1001 pts
→ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	VBW 300	D kHz		Sweep 4.80	pp 2.50000 GH 0 ms (1001 pts
	11.00 dBm	11.00 dBm	11.00 dBm 11.00 dBm 1.00 dBm 1.0	11.00 dBm 11.00 dBm 1.00 dBm 1.0	11.00 dBm 11.00 dBm 11.00 dBm 1 1



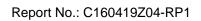
IEEE 802.11b mode (Antenna 2)

H Low	(10MHz ~:	20.3GF	12)				
	50 Ω DC 90000000 GHz	PNO: Fast FGain:Low	NSE:INT	ALIGN AUTO/NO RF Avg Type: Lo Avg Hold:>1/	og-Pwr 1	TR	PM Jun 01, 201 ACE 1 2 3 4 5 YPE M WWW DET P P P P P
	set 11 dB 1.00 dBm						215 GH 575 dBn
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9.0							-30.65.dB
9.0	1						
9.0					-kalmartagadystorget	างาาปกลายกลายกลายก	waterson
9.0 North and a start and a start a st	"n/" hepen/httl ladetstandigen/haibe		and the second	where the trade of the state of			
tart 0.01 GHz)/B)// (S woo		26.50 GH
Res BW 100 kH	ZX	Y		FUNCTION WIDTH		ep 2.532 s	(1001 pts
1 N 1 f 2	3.215 GHz	-51.575 di	Bm				
4 5 6							
8							
9 0 1							
SH Low ((2.31GHz	~2.430	GHz)	STATUS			•
B HLOW Keysight Spectrum Analy RL RF	zer - Swept SA 50 Ω DC 000000000 GHz	PNO: Fast	SHZ)	ALIGN AUTO/NO RF Avg Type: L Avg[Hold:>1,	og-Pwr 1	TR	PMJun 01, 201
Keysight Spectrum Analy RL RF arker 2 2.4000 D dB/div Ref 11	zer - Swept SA 50 Ω DC 000000000 GHz	SE	SHz)	ALIGN AUTO/NO RF Avg Type: L	11	۳ kr2 2.400	PMJun 01, 2016 ACE 1 2 3 4 5 YPE M WWW DET P P P P P
Ref Off	zer - Swept SA 50 Ω DC 0000000000 GHz iset 11 dB	PNO: Fast	SHZ)	ALIGN AUTO/NO RF Avg Type: L	11	۳ kr2 2.400	PMJun 01, 2016 ACE 1 2 3 4 5 YPE M WWW DET P P P P P
Keysight Spectrum Analy RL RF arker 2 2.4000 D dB/div Ref Off 9	zer - Swept SA 50 Ω DC 0000000000 GHz iset 11 dB	PNO: Fast	SHZ)	ALIGN AUTO/NO RF Avg Type: L	11	۳ kr2 2.400	PMJun 01, 2016 ACE 1 2 3 4 5 YPE M WWW DET P P P P P
Keysight Spectrum Analy RL RF arker 2 2.4000 0 dB/div Ref 1 9 0 0 0 0 0 0 0 0 0 0 0 0 0	zer - Swept SA 50 Ω DC 0000000000 GHz iset 11 dB	PNO: Fast	SHZ)	ALIGN AUTO/NO RF Avg Type: L	11	kr2 2.400 -54.3	PMJun 01, 2016 ACE [1 2 3 4 5 PPE M WWW DET P P P P P 0 00 GH; 892 dBn
Keysight Spectrum Alex RL RF arker 2 2.4000 bdB/div Ref 0 0 0 0 0 0	zer - Swept SA 50 Ω DC 0000000000 GHz iset 11 dB	PNO: Fast	SHZ)	ALIGN AUTO/NO RF Avg Type: L	M	kr2 2.400 -54.3	PMJun 01, 2016 ACE [1 2 3 4 5 PPE M WWW DET P P P P P 0 00 GH; 892 dBn
Revisit Spectrum Analy RL RF arker 2 2.4000 0 dB/div Ref 1 90 90 90 90 90 90 90 90 90 90 90 90 90	zer - Swept SA 50 Ω DC 0000000000 GHz iset 11 dB	PNO: Fast FGain:Low	SHZ)	ALIGN AUTO/NO RF Avg Type: L Avg Hold:>1.	11	kr2 2.400 -54.3	PMJun 01,2010 ACE [12:345 YPE] M WWWW DET P P PM DO GHZ B992 dBm
Keysight Spectrum Analysis RL FF arker 2 2.4000 block Ref Off 00 Fef 0ff	zer - Swept SA 50 Ω DC 100000000 GHz set 11 dB .00 dBm 	PNO: Fast FGain:Low	SHZ) NSEINT , Trig: Free Run Atten: 10 dB	ALIGN AUTO/NO RF Avg Type: L Avg Hold:>1.	M	kr2 2.400 -54.3	PMJun 01, 2016 ACE [1 2 3 4 5 PPE M WWW DET P P P P P 0 00 GH; 892 dBn
Koyight Spectrum Analy RL RF arker 2 2.4000 DeB/div Ref 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	zer - Swept SA 50 Ω DC 100000000 GHz set 11 dB 1.00 dBm 	PNO: Fast FGain:Low	SHZ)	ALIGN AUTO/NO RF Avg Type: L Avg Hold:>1.	M	kr2 2.400 -54.:	PMJun 01,2011 ACC[12 3 45 VPE[M VMWW DET P PP PP PP 30 00 GH; 392 dBm
Keysight Spectrum Analy RL FF arker 2 2.4000 Ref 0f 0 BF 0 BF/div 0 BF	zer-Swept SA 500 DC 100000000 GHz set 11 dB .00 dBm 	PNO: Fast FGain:Low	SHZ) NSEINT	ALIGN AUTO/NO RF Avg Type: L Avg Hold:>1.	M M P ² Sweep	rr -54. -54.	PMJun 01,2011 ACC[12 3 45 VPE[M VMWW DET P PP PP PP 30 00 GH; 392 dBm
Kongight Spectrum Analy RL Ref Ref Off Ref off OdB/div Ref of OdB/div Ref of <t< td=""><td>zer - Swept SA 50 Ω DC 100000000 GHz set 11 dB 1.00 dBm </td><td>PNO: Fast FGain:Low VBW : 10.650 dl</td><td>SHZ)</td><td>ALIGN AUTO/NO RF</td><td>M M P² Sweep</td><td>kr2 2.400 -54.1 په ۲۰۰۰ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲</td><td>PMJun 01,2011 ACC[12 3 45 VPE[M VMWW DET P PP PP PP 30 00 GH; 392 dBm</td></t<>	zer - Swept SA 50 Ω DC 100000000 GHz set 11 dB 1.00 dBm 	PNO: Fast FGain:Low VBW : 10.650 dl	SHZ)	ALIGN AUTO/NO RF	M M P ² Sweep	kr2 2.400 -54.1 په ۲۰۰۰ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲	PMJun 01,2011 ACC[12 3 45 VPE[M VMWW DET P PP PP PP 30 00 GH; 392 dBm
Keysight Spectrum Analy RL FF arker 2 2.4000 Ref 07 dB/div Ref 1 29	zer - Swept SA 50 0 DC 100000000 GHz 1 set 11 dB 1.00 dBm /~*///////	PNO: Fast FGain:Low VBW : 10.650 dl	SHZ)	ALIGN AUTO/NO RF	M M P ² Sweep	kr2 2.400 -54.1 په ۲۰۰۰ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲	PMJun 01,2011 ACC[12 3 45 VPE[M VMWW DET P PP PP PP 30 00 GH; 392 dBm
Keysight Spectrum Analy RL FF arker 2 2.4000 Ref 07 dB/div Ref 07 0 90 00 90 00 90 00 90 00 90 00 90 00 90 00 90 00 90 01 90 02 90 03 90 04 90 05 90 06 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90 90	zer - Swept SA 50 0 DC 100000000 GHz 1 set 11 dB 1.00 dBm /~*///////	PNO: Fast FGain:Low VBW : 10.650 dl	SHZ)	ALIGN AUTO/NO RF	M M P ² Sweep	kr2 2.400 -54.1 په ۲۰۰۰ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲	PMJun 01,201 CACE[12 3 45 VPE[MWWWW B92 dBn
Keysight Spectrum Analy RL FF arker 2 2.4000 Ref 07 dB/div Ref 1 29	zer - Swept SA 50 0 DC 100000000 GHz 1 set 11 dB 1.00 dBm /~*///////	PNO: Fast FGain:Low VBW : 10.650 dl	SHZ)	ALIGN AUTO/NO RF	M M P ² Sweep	kr2 2.400 -54.1 په ۲۰۰۰ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲	PMJun 01,201 CACE[12 3 45 VPE[MWWWW B92 dBn





RL RF 5	Swept SA D Ω DC	SENSE:		ALIGN AUTO/NO RF	e: Log-Pwr	02:09:45 P	□
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Ref Offset dB/div Ref 11.0						Mkr1 3.2 -52.6	42 GH 82 dB
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9.0							
art 0.01 GHz Res BW 100 kHz		VBW 300	kHz		Swe	Stop 2 eep 2.532 s (6.50 GH
R MODE TRC SCL	Х	Y	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	<u> </u>
1 N 1 f	3.242 GHz	-52.682 dBm					
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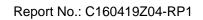


Keysight Spectrum Analyzer - Swep RL RF 50 Ω arker 1 3.294760000	DC	SEN	NSE:INT		AUTO/NO RF		02:11	:06 PM Jun 01, 20 TRACE 1 2 3 4 5 TYPE M WWW
	F	PNO: Fast 😱 Gain:Low	Trig: Free Atten: 10 d	Run dB	Avg Hold:>1	/1		DET PPPI
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9.0								
art 0.01 GHz Res BW 100 kHz		VBW 3	300 kHz			Swe		p 26.50 GH s (1001 pt
R MODE TRC SCL	Х	Y	FUN	CTION FUNC	TION WIDTH		FUNCTION VALUE	
N 1 f 2	3.295 GHz	-54.523 dE	Bm					
5 5								
5 7 8								
9 0								
3								
H High (2.4		~2.5G	Hz)		STATUS			
RL RF 50 Ω arker 1 2.462950000 Ref Offset 11 d	et SA DC 00000 GHZ IF IF		Hz)	Run	STATUS V AUTO/NO RF Avg Type: L Avg Hold:>1	/1	Mkr1 2.4	TRACE 1 2 3 4 1 TYPE MWWW DET P P P P
Keysight Spectrum Analyzer - Swep RL RF 50 Ω arker 1 2.46295000	t SA DC 0000 GHz IB Bm	PNO: Fast	NSE:INT	Run	N AUTO/NO RF	/1	Mkr1 2.4	12 1 PM Jun 01, 20 TRACE 1 2 3 4 TYPE M WWW DET P P P P I
Keysight Spectrum Analyzer - Swep RL RF 50 G arker 1 2.462950000 Ref Offset 11 c dB/div Ref 11.00 dl 9 0 0 0 0 0 0 0 0 0 0 0 0 0	BBm	PNO: Fast	NSE:INT	Run	N AUTO/NO RF	/1	Mkr1 2.4	1241 PM Jun 01, 201 TRACE 1 2 3 4 5 TYPE M WWW DET P P P P P
Keysight Spectrum Analyzer - Sweg RL OF So 02 arker 1 2.46295000 Ref Offset 11 of Ref Offset 11 of Ref 11.00 dl Ref 010 dl 9	BBm	PNO: Fast	NSE:INT	Run	N AUTO/NO RF	/1	Mkr1 2.4	141 РМ Jun 01, 20; ТПАСЕ [1 2 3 4 4 ТУРЕ [Михимини] 062 95 GH 1.160 dBi
Keysight Spectrum Analyzer - Swep RL RF ISO Ω arker 1 2.462950000 Ref Offset 11 c dB/div Ref 11.00 dl 00 00 00 00 00 00 00 00 00 0	BBm	PNO: Fast	NSE:INT	Run	N AUTO/NO RF	/1	Mkr1 2.4	141 РМ Jun 01, 20; ТПАСЕ [1 2 3 4 4 ТУРЕ [Михимини] 062 95 GH 1.160 dBi
Ref Offset 11 c	BBm	PNO: Fast	NSE:INT	Run	Auto/No RF Avg Type: L Avg/Hold:>1	/1	Mkr1 2.4	141 РМ Jun 01, 20 ТRACE [1 2 3 4 4 ТУРЕ [Михтирание] 62 95 GH 1.160 dBi
Keysight Spectrum Analyzer - Swep RL № Is 0 Ω arker 1 2.46295000 Ref Offset 11 α dB/div Ref 11.00 dl 00	BBm	PNO: Fast	NSE:INT Trig: Free Atten: 10	Run	Auto/No RF Avg Type: L Avg Hold:>1	/1	Mkr1 2.4 -1'	141 РМ Jun 01, 20 ТRACE [1 2 3 4 4 ТУРЕ [Михтирание] 62 95 GH 1.160 dBi
Ref Offset 11 c	BBm	PNO: Fast	NSE:INT Trig: Free Atten: 10	Run	Auto/No RF Avg Type: L Avg/Hold:>1	/1 	Mkr1 2.4 -1'	141 РМ Jun 01, 20 ТRACE [1 2 3 4 4 ТУРЕ [Михтирание] 62 95 GH 1.160 dBi
Keysight Spectrum Analyzer - Suep RL RF IS 0 arker 1 2.46295000 Biology Ref Offset 11 c dB/div Ref 11.00 dl 9 0 0 0 0 0 0 0 0 0 0 0 0 0	BBm	SEI PNO: Fast Gain:Low	NSE:INT Trig: Free Atten: 10	Run	Auto/No RF Avg Type: L Avg/Hold:>1	//	Mkr1 2.4 -1'	H1 PM Jun 0, 20 Prace[11, 24 / 1 TYPE M JUN 20 DET P P P P 62 95 GH 1.160 dBr 31:30 d 31:30 d
Keylight Spectrum Analyzer - Sweg RL OF SO 02 arker 1 2.462950001 Ref Offset 11 of Ref Offset 11 of dB/div Ref 11.00 dl Ref 00ffset 11 of 00	x SA DC GRZ DODO GHZ II II II II II II II II II I	PNO: Fast Gain:Low	NSE:INT Trig: Free Atten: 10 / Atten: 40	Run dB	Auto/No RF Avg Type: L Avg/Hold:>1	11	Mkr1 2.4 -1'	H1 PM Jun 0, 20 Prace[11, 24 / WWWW Det[P P P P] 62 95 GH 62 95 GH 31 20 d 31 20 d 31 20 d 2.50000 GH ns (1001 pt
Keysight Spectrum Analyzer - Swep RL RF ISO (2) ISO (BBm	VBW 3	NSE:INT Trig: Free Atten: 10 	Run dB	Auto/No RF Avg Type: L Avg/Hold:>1	11	Mkr1 2.4 -1' 	H1 PM Jun 0, 20 Prace[11, 24 / WWWW Det[P P P P] 62 95 GH 62 95 GH 31 20 d 31 20 d 31 20 d 2.50000 GH ns (1001 pt
Keysight Spectrum Analyzer Suege RL RF ISO 02 arker 1 2.462950000 ISO 02 Biddiv Ref Offset 11 0 ISO 02 IdB/div Ref 11.00 dl ISO 02	* SA DC 0000 GHz F IB Bm 1 1 MJ M M M M 2.462 95 GHz	VBW 3	NSE:INT Trig: Free Atten: 10 	Run dB	Auto/No RF Avg Type: L Avg/Hold:>1	11	Mkr1 2.4 -1' 	H1 PM Jun 0, 20 Prace[11, 24 / WWWW Det[P P P P] 62 95 GH 62 95 GH 31 20 d 31 20 d 31 20 d 2.50000 GH ns (1001 pt
Keyight Spectrum Analyzer - Swep RL Ref Offset 11 c dB/div Q	* SA DC 0000 GHz F IB Bm 1 1 MJ M M M M 2.462 95 GHz	VBW 3	NSE:INT Trig: Free Atten: 10 	Run dB	Auto/No RF Avg Type: L Avg/Hold:>1	11	Mkr1 2.4 -1' 	H1 PM Jun 01, 20 PROE[1], 23 Der[P P P P 62 95 GF 1.160 dB
Keysight Spectrum Analyzer Suege RL RF ISO 02 arker 1 2.462950000 ISO 02 Biddiv Ref Offset 11 0 ISO 02 IdB/div Ref 11.00 dl ISO 02	* SA DC 0000 GHz F IB Bm 1 1 MJ M M M M 2.462 95 GHz	VBW 3	NSE:INT Trig: Free Atten: 10 	Run dB	Auto/No RF Avg Type: L Avg/Hold:>1	11	Mkr1 2.4 -1' 	H1 PM Jun 0, 20 Prace[11, 24 / WWWW Det[P P P P] 62 95 GH 62 95 GH 31 20 d 31 20 d 31 20 d 2.50000 GH ns (1001 pt
Keyight Spectrum Analyzer - Swep arker 1 2.46295000 Ref Offset 11 c dB/div C <	* SA DC 0000 GHz F IB Bm 1 1 MJ M M M M 2.462 95 GHz	VBW 3	NSE:INT Trig: Free Atten: 10 	Run dB	Auto/No RF Avg Type: L Avg/Hold:>1	11	Mkr1 2.4 -1' 	H1 PM un 0, 20 Prace[11, 24 years) per P P P 1 62 95 GH 1.160 dB



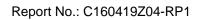
IEEE 802.11g mode (Antenna 1)

Ndiv Ref 11.00 dBm	rtrace [1 2 : Tryce www.pert P. N1 r1 3.215 C -47.765 d
Ref 1.00 dBm	-47.765 d
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X00E TEC[Sci. X Y FUNCTION FUNCTION WIDTH FUNCTION N 1 f 3.215 GHz -47.765 dBm	
status	
sight Spectrum Analyzer - Swept SA RF 50 Ω DC SENSE:INT ▲ ALIGN AUTO/NO RF C Cer 2 2.400000000000 GHz Avg Type: Log-Pwr	01:28:40 PM Jun 01 TRACE 1 2 : TYPE M W DET P N
PNO: Fast Trig: Free Run Avg Hold:>1/1 IFGain:Low Atten: 10 dB	2.400 00 0
PNO: Fast Trig: Free Run Avg Hold:>1/1 IFGain:Low Atten: 10 dB Mkr2 2	-28.465 d
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PNO: Fast Trig: Free Run Avg Hold:>1/1 IFGain:Low Atten: 10 dB Mkr2 2	-28.465 d
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PRO: Fast IFGain:Low Trig: Free Run Atten: 10 dB Avg Hold:>1/1 Ref Offset 11 dB 3/div Ref 11.00 dBm () ()	-28.465 d
Ref Offset 11 dB Mkr2 : Wdiv Ref 11.00 dBm	-28.465 d
Ref Offset 11 dB Ndiv Ref 11.00 dBm Atten: 10 dB 2 2 2 2 2 2 2 2 2 2 2 2 2	-28.465 d
Ref Offset 11 dB Mkr2 : 3/div Ref 10 dBm	-28.465 d
PRO: Fast IFGainLow Trig: Free Run Atten: 10 dB Avg Hold:>1/1 Ref Offset 11 dB Ref 11.00 dBm Mkr2 : 0 Image: State of the state	-28.465 d
Ref Offset 11 dB Mkr2 : 3/div Ref Offset 11 dB Image: State of the state of	-28.465 d
PRO: Fast IFGainLow Trig: Free Run Atten: 10 dB Avg Hold:>1/1 Ref Offset 11 dB Mkr2 : Sidiv Ref 11.00 dBm Image: Comparison of the second of the	-28.465 d
PRO: Fast IFGainLow Trig: Free Run Atten: 10 dB Avg Hold:>1/1 Ref Offset 11 dB Mkr2 : Sidiv Ref 11.00 dBm Image: Comparison of the second of the	-28.465 d
PRO: Fast IFGaintLow Trig: Free Run Atten: 10 dB Avg Hold>1/1 Ref Offset 11 dB Mkr2 : 3/div Ref 11.00 dBm	-28.465 d
PRO: Fast IFGainLow Trig: Free Run Atten: 10 dB Avg Hold:>1/1 Ref Offset 11 dB Ref 11.00 dBm Mkr2 : 0 Image: State of the state of t	-28.465 d

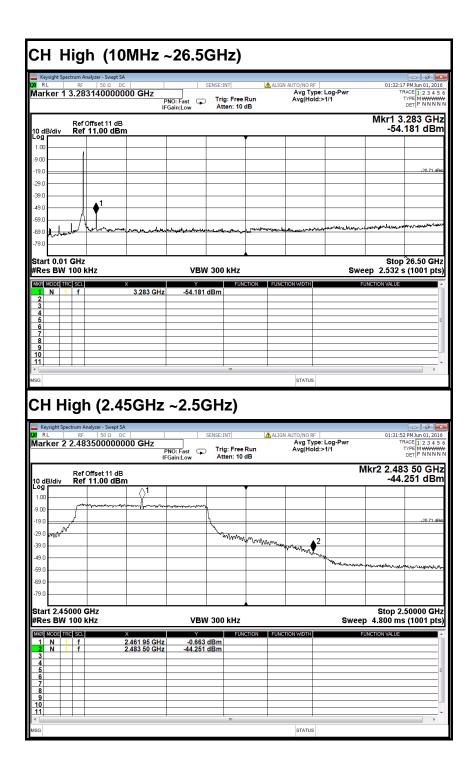




arker	Spectrum Analyzer - RF 50 1 3.241780	Ω DC 000000 GHz	SENSE	:INT ,	ALIGN AUTO/NO RF Avg Typ AvgiHol	e: Log-Pwr	TR	PM Jun 01, 20
) dB/div	Ref Offset Ref 11.0	IF 11 dB		tten: 10 dB			Mkr1 3. -52.	242 GH
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	01 GHz N/ 100 kHz		VBW 30	0 kHz		Sw	stop eep 2.532 s	26.50 GI (1001 pi
			Y	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
Res BN	TRC SCL	× 3.242 GHz	-52.292 dBm	1				
Res BN R Mode 1 N 2 3	TRC SCL		-52.292 dBm					
Res B1 (R MODE 1 N 2 3 4 5	TRC SCL		-52.292 dBm					
Res BN	TRC SCL		-52.292 dBm	Image: Constraint of the second sec				

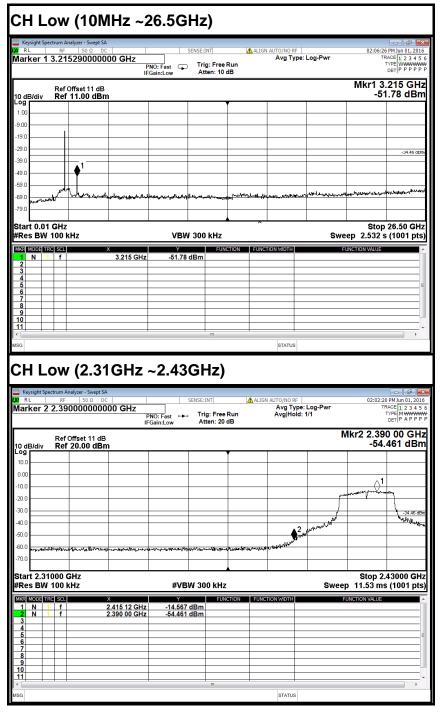


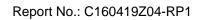






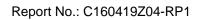
IEEE 802.11g mode (Antenna 2)



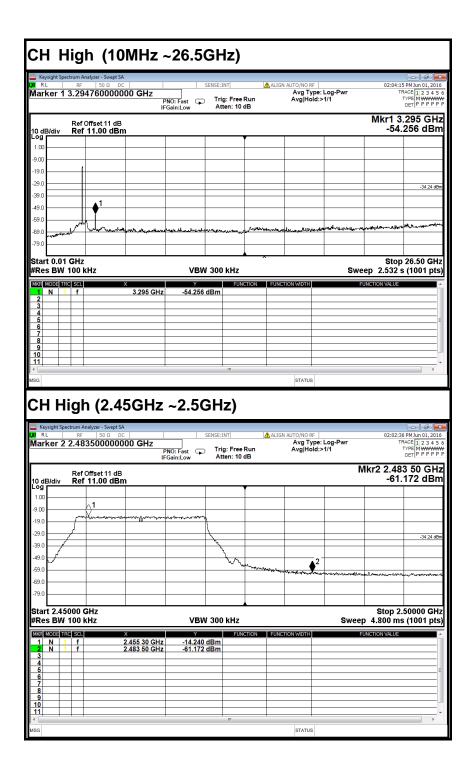




RL RF 50 Ω Irker 1 3.24178000		SENSE:	NT	ALIGN AUTO/NO R	F pe: Log-Pwr	т	0 PM Jun 01, 20 RACE 1 2 3 4
			g: Free Run ten: 10 dB	Avg Ho	id:>1/1		DET P P P P
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art 0.01 GHz	~					Stop	26.50 GI
es BW 100 kHz		VBW 300	kHz		Sw	eep 2.532	s (1001 pt
MODE TRC SCL	× 3.242 GHz	Y -53,355 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	



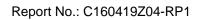






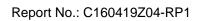
CH Low (10MHz ~26.5GHz) ysight Spectru 01:44:42 PM Jun 01, 201 TRACE 1 2 3 4 5 ALIGN A Marker 1 3.215290000000 GHz Avg Type: Log-Pwr Avg|Hold:>1/1 PNO: Fast Trig: Free Run IFGain:Low Atten: 10 dB TYPE MWWW DET P P P P F Mkr1 3.215 GHz -47.258 dBm Ref Offset 11 dB Ref 11.00 dBm 10 dB/div Log 1.0 18.63 dE 19. 29.0 39 ¢ 491 79.0 Stop 26.50 GHz Sweep 2.532 s (1001 pts) Start 0.01 GHz #Res BW 100 kHz VBW 300 kHz MKR MODE TRC SCL 3.215 GHz -47.258 dBm N 1 f <u>10</u> 11 STATUS CH Low (2.31GHz ~2.43GHz) Marker 2 2.400000000000 GHz Avg Type: Log-Pw Avg|Hold:>1/1 TYPE MWWW DET P P P P P Trig: Free Run Atten: 10 dB PNO: Fast G Mkr2 2.400 00 GHz -28.524 dBm Ref Offset 11 dB Ref 11.00 dBm) dB/div 1.00 -18.63 d 9 ¢ Stop 2.43000 GHz Sweep 11.53 ms (1001 pts) Start 2.31000 GHz #Res BW 100 kHz VBW 300 kHz MKR MODE TRC SCL 1.369 dBm -28.524 dBm N N 2.411 88 GHz 2.400 00 GHz 1 f <u>10</u> 11 STATUS

IEEE 802.11n HT20 MHz mode (Antenna 1)





RL	Spectrum Ar RF	alyzer - Swept SA 50 Ω DC			ENSE:INT		LIGN AUTO/NO RE		01:46:	💷 🗟 🛛
		17800000	00 GHz	NO: Fast Gain:Low	Trig: Free Atten: 10	Run		pe: Log-Pwr		TYPE MWWW DET P P P P
0 dB/div		Dffset 11 dB 11.00 dBn	n							8.242 GH .076 dB
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1 N 2 3 4 5 6 7										



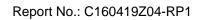


RL	trum Analyzer - Sw RF 50 ດ 3.2947600	2 DC 000000 GHz	PNO: Fast IFGain:Low	NSE:INT Trig: Free Run Atten: 10 dB	ALIGN AU	UTO/NO RF Avg Type: Avg Hold:>	Log-Pwr 1/1	01:48	8:21 PM Jun 01, 201 TRACE 1 2 3 4 5 TYPE M WWW DET P P P P P
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	igh (2	.45GHz	: ~2.5G			STATUS			
Keysight Speci RL isplay Li	trum Analyzer - Sv RF 50 Ω ne -20.36 Ref Offset 1	vept SA 2 DC dBm				UTO/NO RF Avg Type: Avg Hold:>	1/1	Mkr1 2.4	2:56 PM Jun 01,201 TRACE [1 2 3 4 5 TYPE M WWWW DET [P P P P P 161 95 GH
CH Hi	rrum Analyzer - Sv RF 50 S ne -20.36	vept SA 2 DC dBm	PNO: Fast	Hz)		UTO/NO RF	1/1	Mkr1 2.4	2:56 PM Jun 01, 201 TRACE [1 2 3 4 5 TYPE MWWWW DET P P P P I61 95 GH2
CH Hi	trum Analyzer - Sv RF 50 Ω ne -20.36 Ref Offset 1	vept SA 2 DC dBm 1 dB dBm	PNO: Fast	Hz)		UTO/NO RF	1/1	Mkr1 2.4	2:56 PM Jun 01, 201 TRACE [1 2 3 4 5 TYPE MWWWW DET P P P P I61 95 GH
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CHHi RL RL Display Li 0 dB/div 90 9.00 9.00 9.00 9.00 9.00 9.00 9.00	trum Analyzer - Sv RF 50 Ω ne -20.36 Ref Offset 1	vept SA 2 DC dBm 1 dB dBm	PNO: Fast	Hz)		UTO/NO RF [Avg Type: Avg Hold:>	1/1	Mkr1 2.4	2756 PM Jun 01,201 TRACE [1 2 3 4 5 TYPE MWWW DET P P P P P J61 95 GH 0,361 dBn
C H Hi Keysight Spect RL isplay Li 0 dB/div 9 0 0 0 0 0 0 0 0 0 0 0 0 0	trum Analyzer - Sv RF 50 Ω ne -20.36 Ref Offset 1	vept SA 2 DC dBm 1 dB dBm	PNO: Fast	Hz)		UTO/NO RF Avg Type: Avg Hold:>	1/1	Mkr1 2.4	7:56 PM Jun 01, 201 TRACE [12 3 4 5 TYPE WWW DET P P P P Bi61 95 GH. 0.361 dBn
CH Hi RL C RL C C dB/div C dB/di	trum Analyzer - Sv RF 50 Ω ne -20.36 Ref Offset 1	vept SA 2 DC dBm 1 dB dBm	PNO: Fast	Hz)		UTO/NO RF [Avg Type: Avg Hold:>	1/1	Mkr1 2.4	2755 PM Jun 01, 201 TRACE [1 2 3 4 5 TYPE [MWWW Der P P P P P 161 95 GH2 0.361 dBn
C dB/div 0 dB/d	trum Analyzer - Sv RF 50 Ω ne -20.36 Ref Offset 1	vept SA 2 DC dBm 1 dB dBm	PNO: Fast	Hz)		UTO/NO RF [Avg Type: Avg Hold:>	1/1	Mkr1 2.4	7:56 PM Jun 01, 201 TRACE [1 2 3 4 5 TYPE WWWW DET P P P P U61 95 GH; 0.361 dBn
CH Hi Reysight Spece RL Display Li 0. dB/div 9.00	trum Analyzer 5 50 5 RF 30 5 Ref Offset 11 Ref 11.00	vept SA 2 DC dBm 1 dB dBm	PNO: Fast	Hz)		UTO/NO RF [Avg Type: Avg Hold:>	1/1	Mkr1 2.4	
CHHi RL RL 0 dB/div 0 dB/div 0 dB/div 0 00 0 00 0 0 00 0 00 0 0 00 0 00 0 00 0 00 0 00 0 00 0 00 0 00	trum Analyzer Sar Ref Offset 1: Ref 11.00 	vept SA 2 DC dBm dBm ↓ 1 dB dBm ↓ 1 normalized interval normalized interval ↓ 1 ↓ ↓ 1 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	VBW	Hz)	Anorem a	UTO/NO RF [Avg Type: Avg Hold:>	1/1	Mkr1 2.4	2:56 PM Jun 01, 201 TRACE [1 2 3 4 5 TYPE W W W DET P P P P IG1 95 GH 0.361 dBn -20.36 dB -20.36 dB -2
CHHi Revight Spect RL N N N N N N N N N N N N N	trum Analyzer 50 Ref Offset 1: Ref 11.00 	xept SA 2 DC 1 dB dBm ↓ 1 dB 1 dBm ↓ 1 mmunous 1 mmunous	VBW :	Hz)		UTO/NO RF [Avg Type: Avg Hold:>	1/1	Mkr1 2.4	2:56 PM Jun 01, 201 TRACE [1 2 3 4 5 TYPE W W W DET P P P P IG1 95 GH 0.361 dBn -20.36 dB -20.36 dB -2
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CH Hi Reysight Spect RL 0 dB/div 0 dB/div 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	trum Analyzer 50 Ref Offset 1: Ref 11.00 	xept SA 2 DC 1 dB dBm ↓ 1 dB 1 dBm ↓ 1 mmunous 1 mmunous	VBW :	Hz)	Anorem a	UTO/NO RF [Avg Type: Avg Hold:>	1/1	Mkr1 2.4	2:56 PM Jun 01, 201 TRACE [1 2 3 4 5 DET[P P P P P IG1 95 GH 0.361 dBn -20 38 dB -20 3
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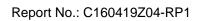
CH Low (10MHz ~26.5GHz) ysight Spectru 01:59:22 PM Jun 01, 2016 TRACE 1 2 3 4 5 TYPE M WWWW DET P P P P P ALIGN A Marker 1 3.215290000000 GHz Avg Type: Log-Pwr Avg|Hold:>1/1 PNO: Fast IFGain:Low Atten: 10 dB Mkr1 3.215 GHz -51.653 dBm Ref Offset 11 dB Ref 11.00 dBm 10 dB/div Log 1.0 19. 29.0 3.55 39 ٠ 491 Stop 26.50 GHz Sweep 2.532 s (1001 pts) Start 0.01 GHz #Res BW 100 kHz VBW 300 kHz MKR MODE TRC SCL 3.215 GHz -51.653 dBm N 1 f <u>10</u> 11 STATUS CH Low (2.31GHz ~2.43GHz) 58-58 PM Marker 2 2.400000000000 GHz Avg Type: Log-Pw Avg|Hold:>1/1 TYPE MWWW DET P P P P P Trig: Free Run Atten: 10 dB PNO: Fast G Mkr2 2.400 00 GHz -48.763 dBm Ref Offset 11 dB Ref 11.00 dBm 0 dB/div 1.00 9 -33.55 dE Stop 2.43000 GHz Sweep 11.53 ms (1001 pts) Start 2.31000 GHz #Res BW 100 kHz VBW 300 kHz MKR MODE TRC SCL -13.509 dBm -48.763 dBm N 1 f N 1 f 2.404 08 GHz 2.400 00 GHz <u>10</u> 11 STATUS

IEEE 802.11n HT20 MHz mode (Antenna 2)

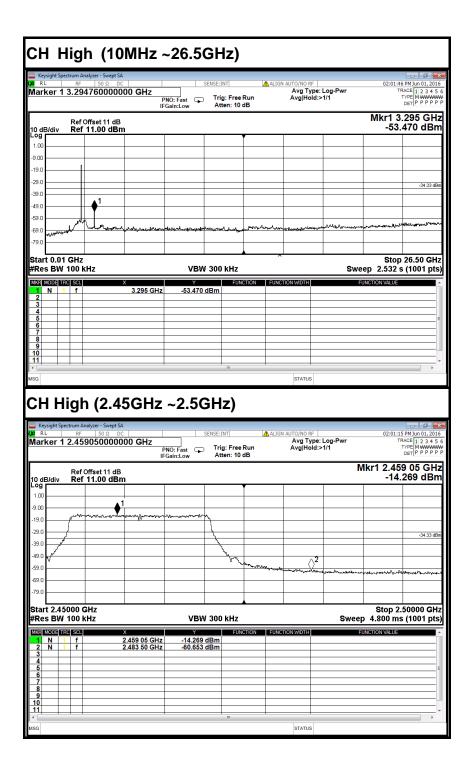




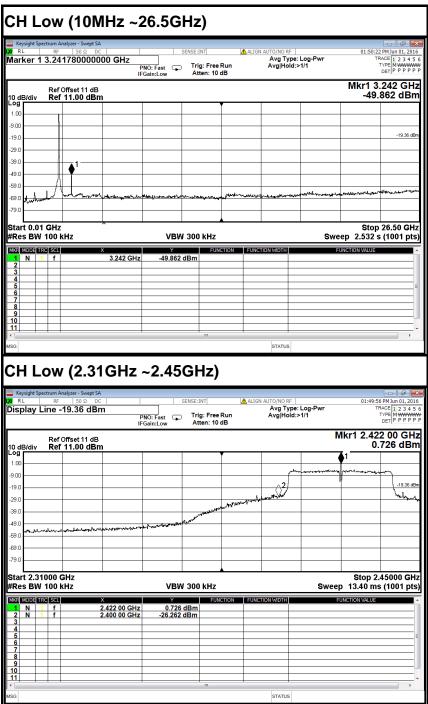
RL RF 50 arker 1 3.241780	000000 GHz	SENSE:I			e: Log-Pwr	TF	5 PM Jun 01, 20 RACE 1 2 3 4
	PNO: IFGair		g: Free Run ten: 10 dB	Avg Hold	1:>1/1		DET P P P P
Ref Offset ' dB/div Ref 11.00							.242 GH 846 dB
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art 0.01 GHz						^ Ot an	26.50 GH
Res BW 100 kHz		VBW 300	kHz		Sw	eep 2.532 s	
	X 3.242 GHz	Y -52.846 dBm	FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
R MODE TRC SCL	3.242 GHZ	-02.840 UBIII					
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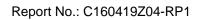






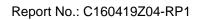


IEEE 802.11n HT40 MHz mode (Antenna 1)





RL tart Fr	req 10.	snalyzer - Swept SA 50 Ω DC .0000000 M	Hz Př	NO: Fast Gain:Low		Free Run : 10 dB	ALIGN	AUTO/NO RF Avg Typ Avg Hold	e: Log-Pwr l:>1/1	01:5	2:38 PM Jun 01, 201 TRACE 1 2 3 4 5 TYPE MWWW DET P P P P F
) dB/div		Offset 11 dB * 11.00 dBn	n								3.259 GH 4.113 dBr
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.00											
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9.0											
	01 GHz N 100			VBW	300 k	Hz			Sv		op 26.50 GH 2 s (1001 pts
1 N	TRC SCL		x 3.259 GHz	۲ -54.113 ر	iBm	FUNCTION	FUNCT	ION WIDTH		FUNCTION VALU	JE
2 3 4					-						
4 5 6					-						
7							-				
8											



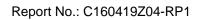


	RF 50 Ω 3.27310000	P	NO: Fast 😱 1	E:INT Frig: Free Run Atten: 10 dB		AUTO/NO RF Avg Type: Avg Hold:>	Log-Pwr 1/1		3:39 PM Jun 01, 20 TRACE 1 2 3 4 5 TYPE M WWW DET P P P P
) dB/div	Ref Offset 11 Ref 11.00 d								3.273 GH 4.062 dBr
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9.0									-20.34 dE
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9.0									
tart 0.01 Res BW ′			VBW 30	00 kHz			Swe		op 26.50 GH 2 s (1001 pt
KR MODE TRO	f	× 3.273 GHz	-54.062 dBr		N FUNC	TION WIDTH	F	UNCTION VALU	E
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4 5 6									
7 8									
9 0 1									
	+ +			m					•
	<u> </u>	43GHz	~2.5GI	Hz)		STATUS			
Keysight Spec	i gh (2. trum Analyzer - Swey <u>ℝF 50 Ω</u> 2.483500000	pt SA DC 10000 GHz F	SENS	HZ) E:INT Frig: Free Rur Atten: 10 dB		STATUS	Log-Pwr 1/1	01:53	3:20 PM Jun 01, 20
Keysight Spec	trum Analyzer - Swe RF 50 Ω	pt SA DC IOOOO GHz IF IF dB	SENS	E:INT		AUTO/NO RF	•1/1	1kr2 2.4	3:20 PM Jun 01, 201 TRACE 1 2 3 4 5 TYPE MWWW DET P P P P F
Keysight Spec	trum Analyzer - Swee	pt SA DC 00000 GHz F IF BM	SENS	E:INT		AUTO/NO RF	•1/1	1kr2 2.4	3:20 PM Jun 01, 201 TRACE 1 2 3 4 5 TYPE MWWW DET P P P P F
Keysight Species RL arker 2 0 dB/div 0 dB/div 0 dB/div 0 dB/div	trum Analyzer - Sweg RF 50 Ω 2.48350000 Ref Offset 11	pt SA DC IOOOO GHz IF IF dB	PNO: Fast Gain:Low	E:INT		AUTO/NO RF	•1/1 N	1kr2 2.4	3:20 PM Jun 01, 201 TRACE [1 2 3 4 5 TYPE MWWW DET P P P P P 8.210 dBr
Keysight Species RL arker 2 0 dB/div 29 .00 .00 .00 .00 .00	trum Analyzer - Swee	pt SA DC 00000 GHz F IF BM	PNO: Fast Gain:Low	E:INT	and the second	AUTO/NO RF	•1/1 N	1kr2 2.4 -2	3:20 PM Jun 01, 201 TRACE 1 2 3 4 5 TYPE MWWW DET P P P P P 83 50 GH 8.210 dBr -20.34 dB
Keysight Spec RL	trum Analyzer - Swee	pt SA DC 00000 GHz F IF BM	PNO: Fast Gain:Low	E:INT	and the second	Avg Type: Avg Hold:>	•1/1 N	1kr2 2.4 -2	3:20 PM Jun 01, 201 TRACE [] 2 3 4 5 TYPE [M WWW DET P P P P 8:3 50 GH 8:210 dBr -20:34 df
Keysight Spec RL	trum Analyzer - Swee	pt SA DC 00000 GHz F IF BM	PNO: Fast Gain:Low	E:INT	and the second	Avg Type: Avg Hold:>	•1/1 N	1kr2 2.4 -2	3:20 PM Jun 01,201 ТяхсЕ [1 2 3 4 5 туче [М мило рет [Р Р Р Р Р I83 50 GH 8.210 dBr
Keysight Spec	trum Analyzer - Swee	pt SA DC 00000 GHz F IF BM	PNO: Fast Gain:Low	E:INT	and the second	Avg Type: Avg Hold:>	•1/1 N	1kr2 2.4 -2	3:20 PM Jun 01, 201 TRACE 1 2 3 4 5 TYPE MWWW DET P P P P P 83 50 GH 8.210 dBr -20.34 dB
Keysight Spec RL arker 2 : 0 dB/div 0 g	trum Analyzer - Swee	pt SA DC 00000 GHz F IF BM	PNO: Fast Gain:Low	E:INT	and the second	Avg Type: Avg Hold:>	•1/1 N	1kr2 2.4 -2	3:20 PM Jun 01, 201 TRACE [] 2 3 4 5 TYPE [M WWW DET P P P P 8:3 50 GH 8:210 dBr -20:34 df
Reysight Spec RL arker 2 0 dB/div 0 0 </td <td>trum Analyzer - Swe RF 50 Q 2.48350000 Ref Offset 11 Ref 11.00 d 000 GHz</td> <td>pt SA DC 00000 GHz F IF BM</td> <td>PNO: Fast Gain:Low</td> <td>E:INT</td> <td>and the second</td> <td>Avg Type: Avg Hold:></td> <td>2= 2= 2= 2= 2= 2= 2= 2= 2= 2= 2= 2= 2= 2</td> <td>1kr2 2.4 -2 #~~!!**!**</td> <td>3:20 PM Jun 01, 20 TRACE [1 2:30 TRACE [1 2:30 T</td>	trum Analyzer - Swe RF 50 Q 2.48350000 Ref Offset 11 Ref 11.00 d 000 GHz	pt SA DC 00000 GHz F IF BM	PNO: Fast Gain:Low	E:INT	and the second	Avg Type: Avg Hold:>	2= 2= 2= 2= 2= 2= 2= 2= 2= 2= 2= 2= 2= 2	1kr2 2.4 -2 #~~!!**!**	3:20 PM Jun 01, 20 TRACE [1 2:30 TRACE [1 2:30 T
Reysight Spec RL arker 2: 0 dB/div 9 90	trum Analyzer - Swee RF 50 Ω 2.48350000 Ref Offset 11 Ref 11.00 d 0000 GHz 100 kHz 551	x	VO: Fast Gaint ow	Fight	and the second	Aug Type: Avg Type: Avg Hold:> ™k-typ-nort	1/1 N 2 2 2 5 5 5 5 5 5 1/1 1/1 1/1 1/1	1kr2 2.4 -2 #~~!!**!**	3:20 PM Jun 01, 20 TRACE [1 2:30 TRACE [1 2:30 DET M WWW DET P P P P 183 50 GH 8.210 dBr
Rkysight Spec RL arker 2 : 0 dB/div 0 dB/div 0 g0 91 92 93 94	trum Analyzer - Swe RF 50 Q 2.48350000 Ref Offset 11 Ref 11.00 d arr///	pt SA DC BDC F F BDC F F F F F F F F F F F F F	VBW 31	E:INT Frig: Free Rur Atten: 10 dB herefore a state of the state of	- VI	Aug Type: Avg Type: Avg Hold:> ™k-typ-nort	1/1 N 2 2 2 5 5 5 5 5 5 1/1 1/1 1/1 1/1	1kr2 2.4 -2 พระส ¹ รปูฟฟระป รtop 5 6.733 r	320 PM un 01, 20 TRACE [1: 32 M DET P PP P1 183 50 GH 8.210 dBr
Rkysight Spec RL arker 2 : 0 dB/div 0 dB/div 0 g <t< td=""><td>trum Analyzer - Swe RF 50 Q 2.48350000 Ref Offset 11 Ref 11.00 d 000 GHz 100 KHz 551</td><td>2,451 91 GHz</td><td>VBW 31</td><td>E:INT Frig: Free Rur Atten: 10 dB herefore a state of the state of</td><td>- VI</td><td>Aug Type: Avg Type: Avg Hold:> ™k-typ-nort</td><td>1/1 N 2 2 2 5 5 5 5 5 5 1/1 1/1 1/1 1/1</td><td>1kr2 2.4 -2 พระส¹รปูฟฟระป รtop 5 6.733 r</td><td>320 PM un 01, 20 TRACE [1: 32 M DET P PP P1 183 50 GH 8.210 dBr </td></t<>	trum Analyzer - Swe RF 50 Q 2.48350000 Ref Offset 11 Ref 11.00 d 000 GHz 100 KHz 551	2,451 91 GHz	VBW 31	E:INT Frig: Free Rur Atten: 10 dB herefore a state of the state of	- VI	Aug Type: Avg Type: Avg Hold:> ™k-typ-nort	1/1 N 2 2 2 5 5 5 5 5 5 1/1 1/1 1/1 1/1	1kr2 2.4 -2 พระส ¹ รปูฟฟระป รtop 5 6.733 r	320 PM un 01, 20 TRACE [1: 32 M DET P PP P1 183 50 GH 8.210 dBr
Reysight Spec RL arker 2: 0.00 90 <td>trum Analyzer - Swe RF 50 Q 2.48350000 Ref Offset 11 Ref 11.00 d 000 GHz 100 KHz 551</td> <td>2,451 91 GHz</td> <td>VBW 31</td> <td>E:INT Frig: Free Rur Atten: 10 dB herefore a state of the state of</td> <td>- VI</td> <td>Aug Type: Avg Type: Avg Hold:> ™k-typ-nort</td> <td>1/1 N 2 2 2 5 5 5 5 5 5 1/1 1/1 1/1 1/1</td> <td>1kr2 2.4 -2 พระส¹รปูฟฟระป รtop 5 6.733 r</td> <td>320 PM un 01, 20 TRACE [1: 32 M DET P PP P1 183 50 GH 8.210 dBr </td>	trum Analyzer - Swe RF 50 Q 2.48350000 Ref Offset 11 Ref 11.00 d 000 GHz 100 KHz 551	2,451 91 GHz	VBW 31	E:INT Frig: Free Rur Atten: 10 dB herefore a state of the state of	- VI	Aug Type: Avg Type: Avg Hold:> ™k-typ-nort	1/1 N 2 2 2 5 5 5 5 5 5 1/1 1/1 1/1 1/1	1kr2 2.4 -2 พระส ¹ รปูฟฟระป รtop 5 6.733 r	320 PM un 01, 20 TRACE [1: 32 M DET P PP P1 183 50 GH 8.210 dBr



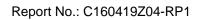
CH Low (10MHz ~26.5GHz) ysight Spectru 01:58:11 PM Jun 01, 2016 TRACE 1 2 3 4 5 TYPE M WWWW DET P P P P P ALIGN A Marker 1 3.241780000000 GHz Avg Type: Log-Pwr Avg|Hold:>1/1 PNO: Fast IFGain:Low Atten: 10 dB Mkr1 3.242 GHz -52.190 dBm Ref Offset 11 dB Ref 11.00 dBm 10 dB/div Log 1.0 19. 29.0 -36.22 d 39.0 491 Stop 26.50 GHz Sweep 2.532 s (1001 pts) Start 0.01 GHz #Res BW 100 kHz VBW 300 kHz MKR MODE TRC SCL 3.242 GHz -52.190 dBm N 1 f <u>10</u> 11 STATUS CH Low (2.31GHz ~2.45GHz) Avg Type: Log-Pw Avg|Hold:>1/1 TYPE MWWW DET P P P P P Trig: Free Run Atten: 10 dB PNO: Fast G Mkr2 2.400 00 GHz -45.877 dBm Ref Offset 11 dB Ref 11.00 dBm .0 19.1 -36.22 di ť <u>ارما</u> 49. 59 co 1 Start 2.31000 GHz #Res BW 100 kHz Stop 2.45000 GHz Sweep 13.40 ms (1001 pts) VBW 300 kHz MKR MODE TRC SCL N 1 f N 1 f 2.421 86 GHz 2.400 00 GHz -16.211 dBm -45.877 dBm STATUS

IEEE 802.11n HT40 MHz mode (Antenna 2)





arker 1 3	rum Analyzer - Swept S RF 50 Ω 0 8.241780000	000 GHz PN		:INT 4 rig: Free Run tten: 10 dB	ALIGN AUTO/NO RF Avg Typ Avg Hold	e: Log-Pwr i:>1/1	TR	PMJun 01, 20 ACE 1 2 3 4 TYPE MWWW DET P P P P
	Ref Offset 11 dE Ref 11.00 dB						Mkr1 3. -52.	.242 GH 472 dBi
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art 0.01 (0 4	00.00.01
			VBW 30	0 kHz		Sw	eep 2.532 s	26.50 GH (1001 pt
	o o na ne			FUNCTION	FUNCTION WIDTH		FUNCTION VALUE	
Res BW 1	SCL	X 3 242 CHz	-52 472 dBm		PONCTION WIDTH			
Res BW 1 R MODE TRO N 1		X 3.242 GHz	-52.472 dBm		PONCTION WIDTH			
Res BW 1 R MODE TRC N 1 2 3 4	SCL		-52.472 dBm		FONCTION WIDTH			
Res BW 1 R MODE TRG N 1 2 3 3 4 5 5	SCL		-52.472 dBm					
Res BW 1 R MODE TRC 1 N 2 3 4 5 6 7	SCL		-52.472 dBm					
Res BW 1 R MODE TRG N 1 2 3 3 4 5 5	SCL		Y -52.472 dBm					





RL	ctrum Analyzer - Swep RF 50 Ω 3.26827000	0000 GHz	SEI PNO: Fast Gain:Low	NSE:INT Trig: Free F Atten: 10 d	Run	AUTO/NO RF Avg Type: Avg Hold:>	Log-Pwr •1/1		5:47 PM Jun 01, 3 TRACE 1 2 3 TYPE M WW DET P P P
B/div	Ref Offset 11 Ref 11.00 d								3.268 G 3.715 dE
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rker 2	ctrum Analyzer - Sweg RF 50 Ω 2.48350000 Ref Offset 11	ot SA DC 0000 GHz IF IF	SE	Hz)	Run	N AUTO/NO RF	•1/1	Mkr2 2.4	5:25 PM Jun 01., TRACE [1 2 3 TYPE MWW DET P P P 183 50 G
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B/div	ctrum Analyzer - Sweg RF 50 Ω 2.48350000 Ref Offset 11	ot SA DC 0000 GHz IF IF	SE	Hz)	Run	AvgType: AvgIHold:	-1/1 	Mkr2 2.4	5:25 PMJun 01, 5:25 PMJun 01, TRACE [1 2 3 TVPE [NWW DET P PP 483 50 G 55.577 dE
Bl/div	ctrum Analyzer - Swey RF 50 Ω 2.48350000 Ref Offset 11	ot SA DC 0000 GHz IF IF	SE	Hz)	Run	AvgType: AvgIHold:	-1/1 	Mkr2 2.4	5:25 PMJun 01, 5:25 PMJun 01, TRACE [1 2 3 TVPE [NWW DET P PP 483 50 G 55.577 dE
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rker 2	Ctrum Analyzer - Sureg RF S0 Q 2.48350000 Ref Offset 11. Ref 11.00 d 000 GHz 100 KHz	ot SA DC 0000 GHz IF IF	VBW :	Hz)	Run	AvgType: AvgType: AvgHold:2	111	Mkr2 2.4	5:25 PM Jun 01, J 5:25 PM Jun 01, J 774CE [1 2 3 774CE [2 3 774CE
IB/div IB/div IB/div IB/div IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Ref Offset 11. Ref Offset 11. Ref 0 Units 11. Ref 0 Un	x SA DC	SE PNO: Fast Gain:Low	Hz)		AvgType: AvgType: AvgHold:2	111	Mkr2 2.4 -5	5:25 PM n01, TRACE [12] TRACE [12] 1749 MWW per P P P 483 50 G 5.5777 dl
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7.2.2. RADIATED EMISSIONS MEASUREMENT

7.2.2.1. LIMITS OF RADIATED EMISSIONS MEASUREMENT

According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (mV/m)	Measurement Distance (m)
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

- **Remark:** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.
- 1. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (µV/m at 3-meter)	Field Strength (dBµV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

NOTE:(1) The lower limit shall apply at the transition frequencies.

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



7.2.2.2. TEST INSTRUMENTS

Radiated Emission Test Site 966 (2)									
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration				
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	02/21/2016	02/20/2017				
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2016	02/20/2017				
Amplifier	EMEC	EM330	060661	03/18/2016	03/17/2017				
High Noise Amplifier	Agilent	8449B	3008A01838	02/21/2016	02/20/2017				
Loop Antenna	COM-POWER	AL-130	121044	09/25/2015	09/24/2016				
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2016	02/20/2017				
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2016	02/27/2017				
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2016	02/27/2017				
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R				
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R				
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R				
Controller	СТ	N/A	N/A	N.C.R	N.C.R				
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2016	02/20/2017				
Test S/W	FARAD		LZ-RF / CCS	S-SZ-3A2					

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.

Compliance Certification Services (Shenzhen) Inc.

7.2.2.3. TEST PROCEDURE (please refer to measurement standard)

- 1. The EUT is placed on a turntable, which is 0.8m or 1.5m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

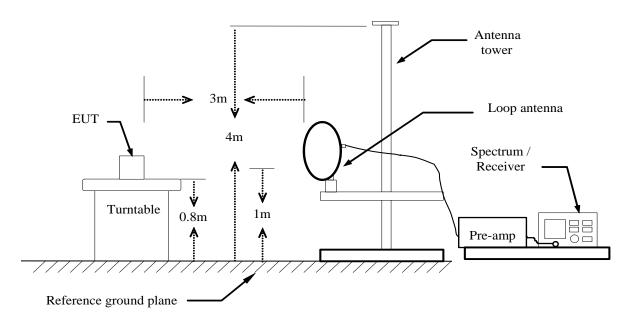
Above 1GHz:

- (a) PEAK: RBW=1MHz,VBW=3MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
- 7. Repeat above procedures until the measurements for all frequencies
- 8. are complete.

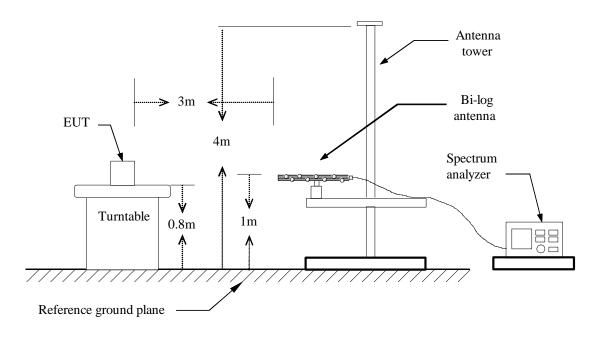


7.2.2.4. TEST SETUP

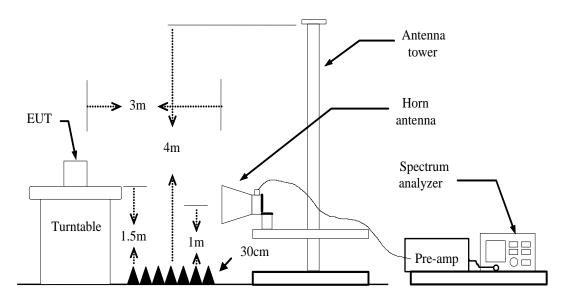
Below 30MHz



Below 1 GHz



Above 1 GHz



Compliance Certification Services (Shenzhen) Inc.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.



7.2.2.5. DATA SAPLE

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXX.XXXX	36.37	-12.20	24.17	40.00	-15.83	V	QP

Frequency (MHz)= Emission frequency in MHzReading (dBuV)= Uncorrected Analyzer / Receiver readingCorrect Factor (dB/m)= Antenna factor + Cable loss - Amplifier gainResult (dBuV/m)= Reading (dBuV) + Corr. Factor (dB/m)Limit (dBuV/m)= Limit stated in standard

Limit (dBuV/m) Margin (dB)

Q.P.

Q.P. Above 1GHz

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXXX.XXXX	62.09	-11.42	50.67	74.00	-23.33	V	Peak
XXXX.XXXX	49.78	-11.42	38.36	54.00	-15.64	V	AVG

= Result (dBuV/m) - Limit (dBuV/m)

= Quasi-peak Reading

Frequency (MHz) Reading (dBuV) Correction Factor (dB/m) Result (dBuV/m) Limit (dBuV/m) Margin (dB) Peak AVG

= Emission frequency in MHz

- = Uncorrected Analyzer / Receiver reading
- Correction Factor (dB/m) = Antenna factor + Cable loss Amplifier gain
 - = Reading (dBuV) + Corr. Factor (dB/m)

= Limit stated in standard

= Result (dBuV/m) – Limit (dBuV/m)

= Peak Reading

= Average Reading

Calculation Formula

Margin (dB) = Result (dBuV/m) – Limits (dBuV/m) Result (dBuV/m) = Reading (dBuV) + Correction Factor



7.2.2.6. TEST RESULTS

Below 1 GHz

Test Mode: TX

Test Mode: TXTested by: Jack Chen								
Ambient temperature: 24°CRelative humidity: 52% RHDate: May 13, 2016								
Frequency (MHz)	Reading (dBuV)	Correction Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole	Remark	•

(MHz)	(dBuV)	Factor (dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Pole (V/H)	Remark
62.0100	58.59	-24.32	34.27	40.00	-5.73	V	QP
110.5100	55.56	-21.79	33.77	43.50	-9.73	V	QP
312.2700	53.60	-19.12	34.48	46.00	-11.52	V	QP
545.0700	47.39	-13.19	34.20	46.00	-11.80	V	QP
591.6300	46.37	-13.01	33.36	46.00	-12.64	V	QP
822.4900	47.14	-10.44	36.70	46.00	-9.30	V	QP
200.7200	58.42	-22.64	35.78	43.50	-7.72	Н	QP
312.2700	55.45	-19.12	36.33	46.00	-9.67	Н	QP
512.0900	48.17	-14.22	33.95	46.00	-12.05	Н	QP
688.6300	49.71	-12.22	37.49	46.00	-8.51	Н	QP
929.1900	47.03	-9.61	37.42	46.00	-8.58	Н	QP
946.6500	48.00	-9.50	38.50	46.00	-7.50	Н	QP

**Remark: No emission found between lowest internal used/generated frequency to 30MHz.

Notes:

- 1. Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 2. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3. The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.

4. Frequency (MHz). Reading (dBμV/m) Correction Factor (dB) Limit (dBμV/m) Marrin (dB)	= Emission frequency in MHz = Receiver reading = Antenna factor + Cable loss – Amplifier gain = Limit stated in standard = Moasured (dBu)/(m) – Limits (dBu)/(m)
Margin (dB)	= Measured (dBμV/m) – Limits (dBμV/m)
Antenna Pol e(H/V)	= Current carrying line of reading



<u>Above 1 GHz</u> Antenna 1

Test Mode: TX / IEEE 802.11b(CH Low)

Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>

Tested	by:	<u>Jack</u>	<u>Chen</u>
Date	: Ma	av 17	2016

	An indent temperature. $\underline{24.0}$ Relative numbers, $\underline{32.0 \text{ Km}}$							
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark	
1882.000	55.87	-5.75	50.12	74.00	-23.88	V	peak	
3214.000	45.29	-1.00	44.29	74.00	-29.71	V	peak	
4843.000	42.09	4.47	46.56	74.00	-27.44	V	peak	
5572.000	41.50	5.90	47.40	74.00	-26.60	V	peak	
6877.000	41.17	7.50	48.67	74.00	-25.33	V	peak	
7777.000	41.05	9.22	50.27	74.00	-23.73	V	peak	
1882.000	52.30	-5.75	46.55	74.00	-27.45	Н	Peak	
3214.000	46.92	-1.00	45.92	74.00	-28.08	Н	peak	
4888.000	41.31	4.61	45.92	74.00	-28.08	Н	peak	
5986.000	40.95	6.07	47.02	74.00	-26.98	Н	peak	
6985.000	40.35	7.68	48.03	74.00	-25.97	Н	peak	
8002.000	40.26	9.65	49.91	74.00	-24.09	Н	peak	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

iest mode.			<u>iviia)</u>		Ie	Sieu by. <u>Ja</u>					
Ambient temperature: 24°CRelative humidity: 52% RHDate: May 17, 2016											
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark				
1882.000	57.56	-5.75	51.81	74.00	-22.19	V	Peak				
4375.000	42.29	2.91	45.20	74.00	-28.80	V	Peak				
5239.000	41.12	5.41	46.53	74.00	-27.47	V	Peak				
6085.000	42.19	6.22	48.41	74.00	-25.59	V	Peak				
7768.000	41.60	9.20	50.80	74.00	-23.20	V	Peak				
8020.000	40.42	9.64	50.06	74.00	-23.94	V	Peak				
	•			•		•					
1882.000	53.19	-5.75	47.44	74.00	-26.56	Н	Peak				
3250.000	46.71	-0.94	45.77	74.00	-28.23	Н	Peak				
5437.000	39.96	5.76	45.72	74.00	-28.28	Н	Peak				
6688.000	40.00	7.19	47.19	74.00	-26.81	Н	Peak				
7228.000	40.99	8.14	49.13	74.00	-24.87	Н	Peak				
7669.000	40.70	9.00	49.70	74.00	-24.30	Н	Peak				

Test Mode: TX / IEEE 802.11b (CH Mid)

Tested by: Jack Chen 7.2016

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

······································									
Ambient tem	H	Date: May 17, 2016							
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark		
1882.000	57.81	-5.75	52.06	74.00	-21.94	V	Peak		
4348.000	42.86	2.81	45.67	74.00	-28.33	V	Peak		
4978.000	41.99	4.91	46.90	74.00	-27.10	V	Peak		
5446.000	41.42	5.77	47.19	74.00	-26.81	V	Peak		
6922.000	41.17	7.57	48.74	74.00	-25.26	V	Peak		
7732.000	41.60	9.13	50.73	74.00	-23.27	V	Peak		
	•	•		·		•	•		
1882.000	51.15	-5.75	45.40	74.00	-28.60	Н	Peak		
3286.000	46.15	-0.88	45.27	74.00	-28.73	Н	Peak		
4627.000	41.11	3.76	44.87	74.00	-29.13	Н	Peak		
6220.000	41.75	6.44	48.19	74.00	-25.81	Н	Peak		
7624.000	40.42	8.92	49.34	74.00	-24.66	Н	Peak		
7912.000	41.39	9.48	50.87	74.00	-23.13	Н	Peak		
DEMADKO									

Test Mode: TX / IEEE 802.11b (CH High)

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Tested by: Jack Chen



Antenna 2

Test Mode: TX / IEEE 802.11b(CH Low)

Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>

Tested by: <u>Jack Chen</u> Date: May 17, 2016

				-			
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1324.0000	48.82	-7.34	41.48	74.00	-32.52	V	peak
3214.0000	52.51	-1.00	51.51	74.00	-22.49	V	peak
4825.0000	47.69	4.41	52.10	74.00	-21.90	V	peak
5689.0000	41.09	5.95	47.04	74.00	-26.96	V	peak
6940.0000	40.81	7.60	48.41	74.00	-25.59	V	peak
7939.0000	40.56	9.53	50.09	74.00	-23.91	V	peak
	·			•		•	
1747.0000	54.11	-6.38	47.73	74.00	-26.27	Н	Peak
3214.0000	51.80	-1.00	50.80	74.00	-23.20	Н	Peak
4825.0000	47.25	4.41	51.66	74.00	-22.34	Н	Peak
6805.0000	40.00	7.38	47.38	74.00	-26.62	Н	peak
7723.0000	41.33	9.11	50.44	74.00	-23.56	Н	peak
8425.0000	41.13	9.42	50.55	74.00	-23.45	Н	peak
		-					•

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Ambient tem	perature: 2	<u>24°C</u> Re	lative humi	dity: <u>52% R</u>	<u>.H</u>	Date: May	17, 2016			
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark			
4870.0000	43.51	4.56	48.07	74.00	-25.93	V	Peak			
3250.0000	52.92	-0.94	51.98	74.00	-22.02	V	Peak			
7750.0000	40.47	9.16	49.63	74.00	-24.37	V	Peak			
6949.0000	40.75	7.62	48.37	74.00	-25.63	V	Peak			
8722.0000	40.64	9.25	49.89	74.00	-24.11	V	Peak			
9496.0000	40.36	10.53	50.89	74.00	-23.11	V	Peak			
	•	•		·			•			
3250.0000	51.50	-0.94	50.56	74.00	-23.44	Н	Peak			
4870.0000	45.50	4.56	50.06	74.00	-23.94	Н	Peak			
5851.0000	40.58	6.02	46.60	74.00	-27.40	Н	Peak			
6949.0000	40.54	7.62	48.16	74.00	-25.84	Н	Peak			
7966.0000	40.55	9.58	50.13	74.00	-23.87	Н	Peak			
8560.0000	40.86	9.34	50.20	74.00	-23.80	Н	Peak			

Test Mode: TX / IEEE 802.11b (CH Mid)

Tested by: Jack Chen

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Ambient tem	mbient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>						
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3286.0000	52.64	-0.88	51.76	74.00	-22.24	V	Peak
4924.0000	44.28	4.73	49.01	74.00	-24.99	V	Peak
6031.0000	41.37	6.13	47.50	74.00	-26.50	V	Peak
6949.0000	40.99	7.62	48.61	74.00	-25.39	V	Peak
7228.0000	40.59	8.14	48.73	74.00	-25.27	V	Peak
7777.0000	40.78	9.22	50.00	74.00	-24.00	V	Peak
	•			•		•	
1747.0000	53.25	-6.38	46.87	74.00	-27.13	н	Peak
3286.0000	48.82	-0.88	47.94	74.00	-26.06	Н	Peak
4924.0000	46.12	4.73	50.85	74.00	-23.15	Н	Peak
6877.0000	41.16	7.50	48.66	74.00	-25.34	Н	Peak
7768.0000	41.42	9.20	50.62	74.00	-23.38	Н	Peak
8371.0000	40.75	9.45	50.20	74.00	-23.80	Н	Peak

Test Mode: TX / IEEE 802.11b (CH High)

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Tested by: Jack Chen



Antenna 1

Test Mode: TX / IEEE 802.11g(CH Low)

Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>

Tested by: <u>Jack Chen</u> Date: May 17, 2016

						-	
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1882.000	53.44	-5.75	47.69	74.00	-26.31	V	Peak
3214.000	46.22	-1.00	45.22	74.00	-28.78	V	Peak
4825.000	41.64	4.41	46.05	74.00	-27.95	V	Peak
6544.000	40.74	6.96	47.70	74.00	-26.30	V	Peak
6904.000	40.17	7.54	47.71	74.00	-26.29	V	Peak
7696.000	40.80	9.06	49.86	74.00	-24.14	V	Peak
	•	•		•	•	•	
1324.000	50.67	-7.34	43.33	74.00	-30.67	Н	Peak
3214.000	45.60	-1.00	44.60	74.00	-29.40	Н	Peak
4825.000	42.50	4.41	46.91	74.00	-27.09	Н	Peak
5833.000	41.75	6.01	47.76	74.00	-26.24	Н	Peak
7651.000	41.47	8.97	50.44	74.00	-23.56	Н	Peak
8596.000	41.75	9.32	51.07	74.00	-22.93	Н	Peak

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Ambient tem	Ambient temperature: 24°C Relative humidity: 52% RH Date: May 17, 201										
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark				
5113.000	41.27	5.18	46.45	74.00	-27.55	V	Peak				
1882.000	54.23	-5.75	48.48	74.00	-25.52	V	Peak				
5761.000	41.24	5.98	47.22	74.00	-26.78	V	Peak				
6976.000	40.54	7.66	48.20	74.00	-25.80	V	Peak				
8236.000	40.58	9.52	50.10	74.00	-23.90	V	Peak				
7570.000	41.04	8.81	49.85	74.00	-24.15	V	Peak				
	-						-				
1882.000	54.28	-5.75	48.53	74.00	-25.47	Н	Peak				
3250.000	45.62	-0.94	44.68	74.00	-29.32	Н	Peak				
5860.000	40.62	6.02	46.64	74.00	-27.36	Н	Peak				
6409.000	40.78	6.74	47.52	74.00	-26.48	Н	Peak				
7750.000	40.63	9.16	49.79	74.00	-24.21	Н	Peak				
8299.000	41.04	9.49	50.53	74.00	-23.47	Н	Peak				

Test Mode: TX / IEEE 802.11g (CH Mid)

Tested by: Jack Chen

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

		<u> </u>						
Ambient tem	Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>							
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark	
5590.000	41.76	5.91	47.67	74.00	-26.33	V	Peak	
6157.000	41.60	6.33	47.93	74.00	-26.07	V	Peak	
6967.000	40.66	7.65	48.31	74.00	-25.69	V	Peak	
7228.000	40.74	8.14	48.88	74.00	-25.12	V	Peak	
7579.000	40.43	8.83	49.26	74.00	-24.74	V	Peak	
8344.000	40.61	9.46	50.07	74.00	-23.93	V	Peak	
	•	•		•			·	
1882.000	50.80	-5.75	45.05	74.00	-28.95	Н	Peak	
3286.000	45.47	-0.88	44.59	74.00	-29.41	Н	Peak	
6535.000	40.13	6.95	47.08	74.00	-26.92	Н	Peak	
6976.000	41.38	7.66	49.04	74.00	-24.96	Н	Peak	
7543.000	41.39	8.76	50.15	74.00	-23.85	Н	Peak	
8209.000	41.18	9.54	50.72	74.00	-23.28	Н	Peak	
7543.000	41.39	8.76	50.15	74.00	-23.85	Н	Peak	

Test Mode: TX / IEEE 802.11g (CH High)

Tested by: Jack Chen

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "--- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Antenna 2

Test Mode: TX / IEEE 802.11g(CH Low)

Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>

Tested by: <u>Jack Chen</u> Date: May 17, 2016

	Dator <u>may</u>	11,2010					
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
3214.0000	53.37	-1.00	52.37	74.00	-21.63	V	Peak
3214.0000	52.38	-1.00	51.38	54.00	-2.62	V	AVG
4825.0000	46.44	4.41	50.85	74.00	-23.15	V	Peak
6229.0000	40.33	6.45	46.78	74.00	-27.22	V	Peak
6886.0000	40.23	7.52	47.75	74.00	-26.25	V	Peak
7741.0000	40.79	9.14	49.93	74.00	-24.07	V	Peak
8587.0000	41.02	9.33	50.35	74.00	-23.65	V	Peak
3214.0000	52.48	-1.00	51.48	74.00	-22.52	Н	Peak
4825.0000	56.56	4.41	60.97	74.00	-13.03	Н	Peak
4825.0000	45.90	4.41	50.31	54.00	-3.69	Н	AVG
5896.0000	40.50	6.04	46.54	74.00	-27.46	Н	Peak
6121.0000	41.16	6.28	47.44	74.00	-26.56	Н	Peak
7228.0000	41.94	8.14	50.08	74.00	-23.92	Н	Peak
7741.0000	40.89	9.14	50.03	74.00	-23.97	Н	Peak
DEMADKC							

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Test mode: 1X / IEEE 802.11g (CH Mid)									
Ambient tem	perature: 2	<u>24°C</u> Re	lative humi	dity: <u>52% R</u>	<u>H</u>	Date: <u>May</u>	<u>17, 2016</u>		
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark		
1882.0000	53.80	-5.75	48.05	74.00	-25.95	V	Peak		
3250.0000	53.52	-0.94	52.58	74.00	-21.42	V	Peak		
3250.0000	52.50	-0.94	51.56	54.00	-2.44	V	AVG		
4942.0000	41.28	4.79	46.07	74.00	-27.93	V	Peak		
5320.0000	41.32	5.55	46.87	74.00	-27.13	V	Peak		
6265.0000	40.55	6.51	47.06	74.00	-26.94	V	Peak		
7624.0000	40.89	8.92	49.81	74.00	-24.19	V	Peak		
	1			1		-			
1324.0000	50.97	-7.34	43.63	74.00	-30.37	Н	Peak		
3250.0000	55.33	-0.94	54.39	74.00	-19.61	Н	Peak		
3250.0000	52.31	-0.94	51.37	54.00	-1.69	Н	AVG		
4141.0000	42.01	2.09	44.10	74.00	-29.90	Н	Peak		
4870.0000	46.73	4.56	51.29	74.00	-22.71	Н	Peak		
6175.0000	41.54	6.36	47.90	74.00	-26.10	Н	Peak		
7660.0000	41.41	8.99	50.40	74.00	-23.60	Н	Peak		

Test Mode: TX / IEEE 802 11a (CH Mid)

Tested by: Jack Chen

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Ambient tem	perature: 2	<u>24°C</u> Re	lative humi	dity: <u>52% R</u>	<u>H</u>	Date: <u>May</u>	<u>17, 2016</u>			
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark			
3286.000	53.10	-0.88	52.22	74.00	-21.78	V	Peak			
3286.000	52.25	-0.88	51.37	54.00	-2.63	V	AVG			
5023.000	41.63	5.02	46.65	74.00	-27.35	V	Peak			
6076.000	40.70	6.20	46.90	74.00	-27.10	V	Peak			
6814.000	40.66	7.40	48.06	74.00	-25.94	V	Peak			
7534.000	41.30	8.74	50.04	74.00	-23.96	V	Peak			
7759.000	41.37	9.18	50.55	74.00	-23.45	V	Peak			
		1		1		1				
3286.000	54.95	-0.88	54.07	74.00	-19.93	Н	Peak			
3286.000	51.08	-0.88	50.20	54.00	-3.80	Н	AVG			
4375.000	41.89	2.91	44.80	74.00	-29.20	Н	Peak			
4924.000	45.06	4.73	49.79	74.00	-24.21	Н	Peak			
5842.000	40.74	6.01	46.75	74.00	-27.25	Н	Peak			
6562.000	40.57	6.99	47.56	74.00	-26.44	Н	Peak			
7750.000	41.25	9.16	50.41	74.00	-23.59	Н	Peak			

Test Mode: TX / IEEE 802 11a (CH High)

Tested by: Jack Chen

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "----" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

lest Mode:	est Mode: <u>TX / IEEE 802.11n HT20 MHz (CH Low)</u>							
Ambient terr	perature:	<u>24°C</u> Re	lative hum	idity: <u>52%</u>	<u>RH</u>	Date: May	<u>17, 2016</u>	
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark	
3214.000	52.93	-1.00	51.93	74.00	-22.07	V	Peak	
4816.000	41.79	4.38	46.17	74.00	-27.83	V	Peak	
5536.000	41.14	5.89	47.03	74.00	-26.97	V	Peak	
7210.000	40.10	8.11	48.21	74.00	-25.79	V	Peak	
7705.000	41.16	9.07	50.23	74.00	-23.77	V	Peak	
9073.000	42.07	9.31	51.38	74.00	-22.62	V	Peak	
1324.000	51.57	-7.34	44.23	74.00	-29.77	Н	Peak	
3214.000	54.05	-1.00	53.05	74.00	-20.95	Н	Peak	
3214.000	53.79	-1.00	52.79	54.00	-1.21	Н	AVG	
4825.000	49.34	4.41	53.75	74.00	-20.25	Н	Peak	
4825.000	37.02	4.41	41.43	54.00	-12.57	Н	AVG	
6463.000	41.23	6.83	48.06	74.00	-25.94	н	Peak	
7012.000	41.30	7.72	49.02	74.00	-24.98	Н	Peak	
7786.000	41.51	9.23	50.74	74.00	-23.26	Н	Peak	

Combine with Antenna 1 and Antenna 2 Test Mode: TX / IEEE 802 11p HT20 MHz (CH Low)

Tested by: Jack Chan

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode:	Test Mode: <u>TX / IEEE 802.11n HT20 MHz (CH Mid)</u>					Tested by: Ja	ack Chen
Ambient ten	Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>					Date: May	<u>17, 2016</u>
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1882.000	51.20	-5.75	45.45	74.00	-28.55	V	Peak
3250.000	53.82	-0.94	52.88	74.00	-21.12	V	Peak
3250.000	53.40	-0.94	52.46	54.00	-1.54	V	AVG
4879.000	41.55	4.59	46.14	74.00	-27.86	V	Peak
5329.000	40.88	5.57	46.45	74.00	-27.55	V	Peak
6544.000	41.83	6.96	48.79	74.00	-25.21	V	Peak
8677.000	41.49	9.28	50.77	74.00	-23.23	V	Peak
	r					1	
3250.000	54.83	-0.94	53.89	74.00	-20.11	Н	Peak
3250.000	51.30	-0.94	50.36	54.00	-3.64	Н	AVG
4870.000	47.19	4.56	51.75	74.00	-22.25	Н	Peak
6742.000	41.52	7.28	48.80	74.00	-25.20	Н	Peak
7255.000	40.99	8.20	49.19	74.00	-24.81	н	Peak
8137.000	41.20	9.57	50.77	74.00	-23.23	Н	Peak
8776.000	41.67	9.22	50.89	74.00	-23.11	Н	Peak
REMARKS							

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / EEE 802.11n HT20 MHz (CH High)

Tested by: Jack Chen

Ambient ten	Imbient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>					Date: May	<u>17, 2016</u>
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1882.000	55.03	-5.75	49.28	74.00	-24.72	V	Peak
3286.000	53.64	-0.88	52.76	74.00	-21.24	V	Peak
3286.000	53.19	-0.88	52.31	54.00	-1.69	V	AVG
5059.000	41.18	5.09	46.27	74.00	-27.73	V	Peak
6553.000	41.09	6.98	48.07	74.00	-25.93	V	Peak
7201.000	41.44	8.09	49.53	74.00	-24.47	V	Peak
7795.000	40.47	9.25	49.72	74.00	-24.28	V	Peak
3286.000	53.99	-0.88	53.11	74.00	-20.89	Н	Peak
3286.000	53.66	-0.88	52.78	54.00	-1.22	Н	AVG
4924.000	44.95	4.73	49.68	74.00	-24.32	Н	Peak
5473.000	41.39	5.82	47.21	74.00	-26.79	Н	Peak
6814.000	40.02	7.40	47.42	74.00	-26.58	Н	Peak
7237.000	41.00	8.16	49.16	74.00	-24.84	Н	Peak
8263.000	41.37	9.51	50.88	74.00	-23.12	Н	Peak
REMARKS:	•	•		•			

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



	Combine with Antenna 1 and Antenna 2 Test Mode: TX/ IEEE 802.11n HT40 MHz (CH Low) Tested by: Jack Chen								
Ambient ten	nperature:	<u>24°C</u> R	elative hum	nidity: <u>52%</u>	RH	Date: May	<u>17, 2016</u>		
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark		
1882.000	54.13	-5.75	48.38	74.00	-25.62	V	Peak		
3232.000	55.25	-0.97	54.28	74.00	-19.72	V	Peak		
3232.000	52.30	-0.97	51.33	54.00	-2.67	V	AVG		
4834.000	46.85	4.44	51.29	74.00	-22.71	V	Peak		
5752.000	41.69	5.98	47.67	74.00	-26.33	V	Peak		
6805.000	41.46	7.38	48.84	74.00	-25.16	V	Peak		
8452.000	41.94	9.40	51.34	74.00	-22.66	V	Peak		
	1	1	1	1		-			
3232.000	55.77	-0.97	54.80	74.00	-19.20	Н	Peak		
3232.000	53.65	-0.97	52.68	54.00	-1.32	н	AVG		
4843.000	47.35	4.47	51.82	74.00	-22.18	н	Peak		
6058.000	40.89	6.17	47.06	74.00	-26.94	Н	Peak		
6733.000	40.42	7.27	47.69	74.00	-26.31	Н	Peak		
7651.000	40.99	8.97	49.96	74.00	-24.04	Н	Peak		
8452.000	40.46	9.40	49.86	74.00	-24.14	Н	Peak		
REMARKS:	•	•	•	•		•			

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11n HT40 MHz (CH Mid)

Tested by: Jack Chen

Ambient ten	mbient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>						<u>17, 2016</u>
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1882.000	51.25	-5.75	45.50	74.00	-28.50	V	Peak
3250.000	53.32	-0.94	52.38	74.00	-21.62	V	Peak
3250.000	52.96	-0.94	52.02	54.00	-1.98	V	AVG
5068.000	41.33	5.10	46.43	74.00	-27.57	V	Peak
6814.000	40.16	7.40	47.56	74.00	-26.44	V	Peak
7588.000	40.28	8.85	49.13	74.00	-24.87	V	Peak
7750.000	40.85	9.16	50.01	74.00	-23.99	V	Peak
	•	•				•	
1324.000	49.61	-7.34	42.27	74.00	-31.73	н	Peak
3250.000	55.27	-0.94	54.33	74.00	-19.67	Н	Peak
3250.000	52.27	-0.94	51.33	54.00	-2.67	Н	AVG
4870.000	43.64	4.56	48.20	74.00	-25.80	Н	Peak
5572.000	40.64	5.90	46.54	74.00	-27.46	Н	Peak
6733.000	41.19	7.27	48.46	74.00	-25.54	Н	Peak
7741.000	40.53	9.14	49.67	74.00	-24.33	Н	Peak
REMARKS:							<u> </u>

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).

Test Mode:		Tested by: Ja	ack Chen				
Ambient temperature: <u>24°C</u> Relative humidity: <u>52% RH</u>					Date: May	<u>17, 2016</u>	
Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1765.000	50.94	-6.35	44.59	74.00	-29.41	V	Peak
3268.000	54.28	-0.91	53.37	74.00	-20.63	V	Peak
3268.000	53.85	-0.91	52.94	54.00	-1.06	V	AVG
4879.000	42.82	4.59	47.41	74.00	-26.59	V	Peak
5545.000	41.33	5.89	47.22	74.00	-26.78	V	Peak
6274.000	41.36	6.52	47.88	74.00	-26.12	V	Peak
6877.000	41.70	7.50	49.20	74.00	-24.80	V	Peak
1765.000	53.64	-6.35	47.29	74.00	-26.71	Н	Peak
3268.000	54.86	-0.91	53.95	74.00	-20.05	Н	Peak
3268.000	51.99	-0.91	51.08	54.00	-2.92	Н	AVG
5320.000	40.73	5.55	46.28	74.00	-27.72	н	Peak
6130.000	41.00	6.29	47.29	74.00	-26.71	н	Peak
6958.000	40.98	7.63	48.61	74.00	-25.39	Н	Peak
7939.000	40.38	9.53	49.91	74.00	-24.09	Н	Peak
REMARKS:		1	1		1		1

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m).



7.3. 6dB BANDWIDTH MEASUREMENT

7.3.1. LIMITS

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz.

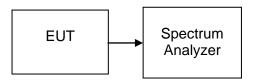
7.3.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	N9010A	MY55370330	02/21/2016	02/20/2017

7.3.3. TEST PROCEDURES (please refer to measurement standard)

- 8.1 Option 1:
 - a) Set RBW = 100 kHz.
 - b) Set the video bandwidth (VBW) \ge 3 x RBW.
 - c) Detector = Peak.
 - d) Trace mode = max hold.
 - e) Sweep = auto couple.
 - f) Allow the trace to stabilize.
 - g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.3.4. TEST SETUP





7.3.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	16140		PASS
Mid	2437	16120	>500	PASS
High	2462	15130		PASS

Test mode: IEEE 802.11b (Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	14750		PASS
Mid	2437	14780	>500	PASS
High	2462	14750		PASS

Test mode: IEEE 802.11g (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	3000		PASS
Mid	2437	3000	>500	PASS
High	2462	19600		PASS

Test mode: IEEE 802.11g (Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	19740	>500	PASS
Mid	2437	19930		PASS
High	2462	19700		PASS

Test mode: IEEE 802.11n HT20 MHz (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	3000		PASS
Mid	2437	3000	>500	PASS
High	2462	19740		PASS

Test mode: IEEE 802.11n HT20 MHz (Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	20190		PASS
Mid	2437	20220	>500	PASS
High	2462	20160		PASS

Test mode: IEEE 802.11n HT40 MHz (Antenna 1)

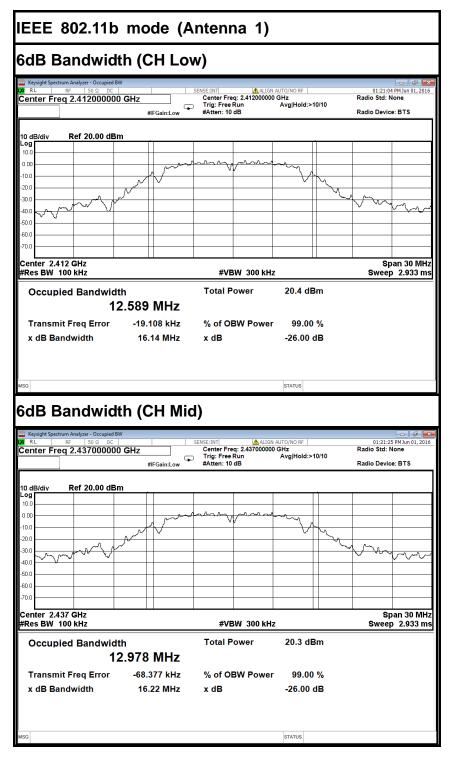
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	58250		PASS
Mid	2437	51790	>500	PASS
High	2452	56240		PASS

Test mode: IEEE 802.11n HT40 MHz (Antenna 2)

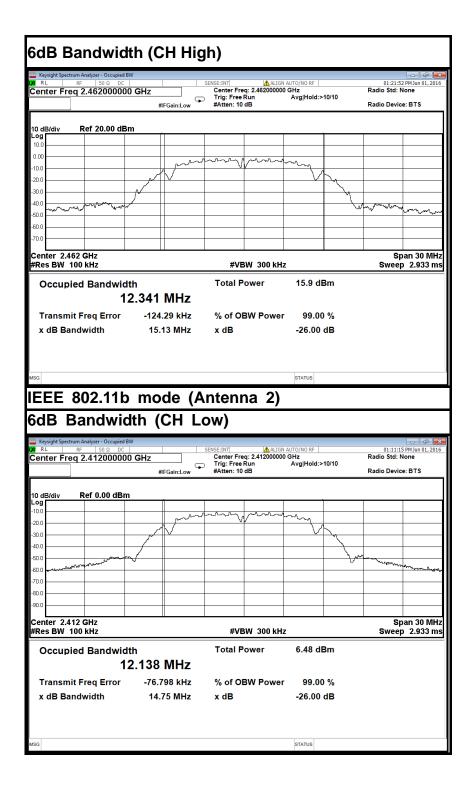
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	39360		PASS
Mid	2437	39640	>500	PASS
High	2452	39690		PASS



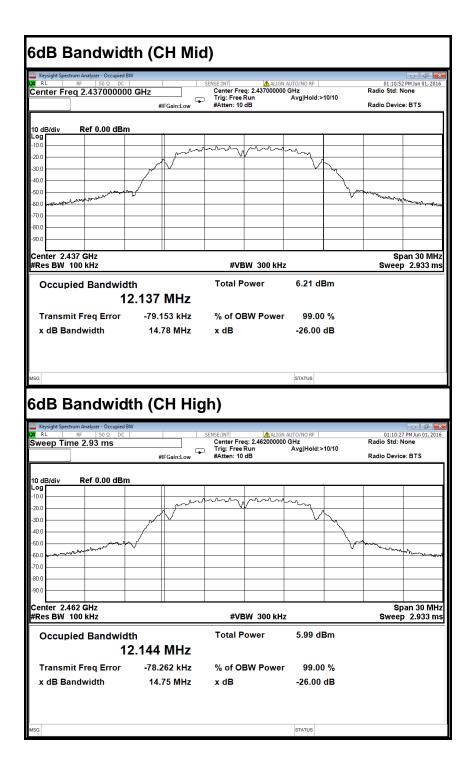
Test Plot







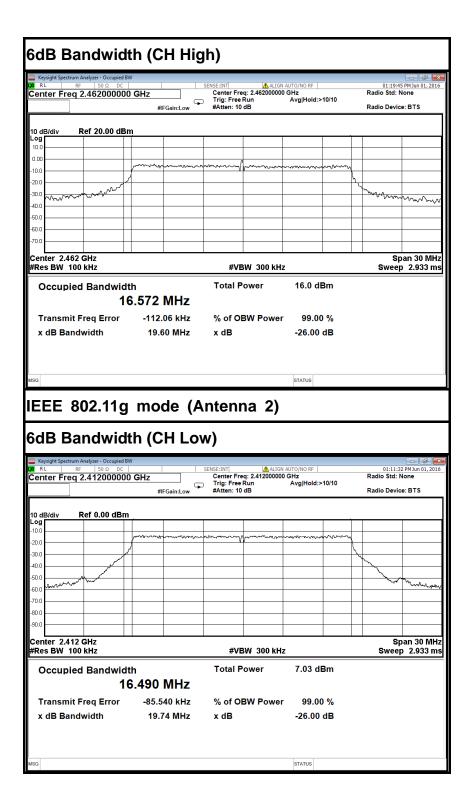




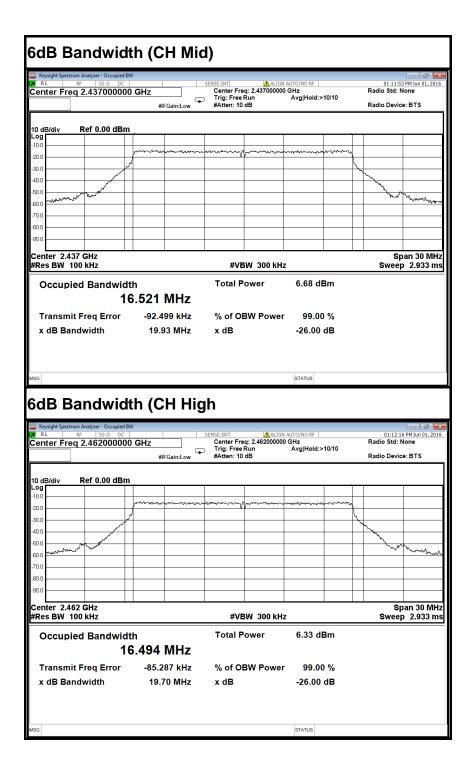


IEEE 802.11g mode (Antenna 1) 6dB Bandwidth (CH Low) un 01, 2016 Center Freq 2.412000000 GHz Center Freq: 2.412000000 GHz Trig: Free Run Avg|Hold:>10/10 #Atten: 10 dB Radio Std: None ٦ Radio Device: BTS #IFGain:Low Ref 20.00 dBm 0.0 10. mon ᠰᡐ᠇ᡗ᠆᠕ 20. man m 30. 40 50 Center 2.412 GHz #Res BW 100 kHz Span 30 MHz Sweep 2.933 ms #VBW 300 kHz **Total Power** 21.1 dBm **Occupied Bandwidth** 17.445 MHz Transmit Freq Error -74.359 kHz % of OBW Power 99.00 % x dB Bandwidth 30.00 MHz x dB -26.00 dB STATUS 6dB Bandwidth (CH Mid) 01:20:10 PMJun 01, 2016 Radio Std: None SENSE:INT ALIGN AUTO/NO RF Center Freq: 2.437000000 GHz Trig: Free Run Avg|Hold:>10/10 #Atten: 10 dB Center Freq 2.437000000 GHz #IFGain:Low Radio Device: BTS Ref 20.00 dBm 10 dB/div 0.00 10.1 when 20 www man 30. 50. 60. Center 2.437 GHz #Res BW 100 kHz Span 30 MHz #VBW 300 kHz Sweep 2.933 ms Total Power 20.5 dBm **Occupied Bandwidth** 18.039 MHz Transmit Freq Error -332.66 kHz % of OBW Power 99.00 % x dB Bandwidth 30.00 MHz x dB -26.00 dB STATUS











IEEE 802.11n HT20 MHz mode (Antenna 1) 6dB Bandwidth (CH Low) Keysight Spect SENSE:INT ALIGN AUTO/NO RF Center Freq: 2.412000000 GHz Trig: Free Run Avg|Hold:>10/10 #Atten: 10 dB 01:18:31 PM Jun 01, 2016 Radio Std: None Span 30.000 MHz #IFGain:Low Radio Device: BTS Ref 20.00 dBm 10 dB/div 0.0 10.0 20.0 $\sqrt{1}$ AAA~ <u>
</u> ᢦᢦᢦᡉᢦᢦᢍ 40. 50. 60.0 Center 2.412 GHz #Res BW 100 kHz Span 30 MHz #VBW 300 kHz Sweep 2.933 ms Total Power 21.3 dBm **Occupied Bandwidth** 18.204 MHz Transmit Freq Error -39.853 kHz % of OBW Power 99.00 % x dB Bandwidth 30.00 MHz x dB -26.00 dB STATUS 6dB Bandwidth (CH Mid) sight Spectru SENSE:INT ALIGN AUTO/NO RF Center Freq: 2.437000000 GHz Trig: Free Run #IFGain:Low #Atten: 10 dB 01:18:54 PM Jun 01, 2016 Radio Std: None Center Freq 2.437000000 GHz Radio Device: BTS Ref 20.00 dBm dB/div 10. 0.0 10.0 20.1 ᢍᢦᢦᡐᡐ www.w 60.0 Center 2.437 GHz #Res BW 100 kHz Span 30 MHz #VBW 300 kHz Sweep 2.933 ms Total Power 20.6 dBm **Occupied Bandwidth** 18.668 MHz Transmit Freq Error -320.68 kHz % of OBW Power 99.00 % x dB Bandwidth 30.00 MHz x dB -26.00 dB STATUS



