FCC RADIO TEST REPORT FCC 47 CFR PART 15 SUBPART C

Test Standard	FCC Part 15.247
FCC ID	M82-TREK734LTE
Brand name	ADVANTECH
Product name	Computer
Model No.	TREK-734
Test Result	Pass

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc.(Wugu Laboratory)



Approved by:

Here Clearing

Sam Chuang Manager Tested by:

eny Ching

Jerry Chuang Engineer



Revision History

Rev.	Issue Date	Revisions	Revised By
00	November 16, 2017	Initial Issue	Allison Chen
01	February 13, 2018	Modify KDB 558074 version to D01 v04 in P.8, P.14, P.19, P.21, P.26, P.37.	Allison Chen

Compliance Certification Services Inc. FCC ID: M82-TREK734LTE

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Advantech Co.Ltd. No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114, Taiwan, R.O.C.
Manufacturer	Advantech Co.Ltd. No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114, Taiwan, R.O.C.
Equipment	Computer
Model No.	TREK-734
Model Discrepancy	N/A
Received Date	October 23, 2017
Date of Test	November 10 ~ November 13, 2017
Output Power(W)	IEEE 802.11b mode: 0.0351 IEEE 802.11g mode: 0.0315 IEEE 802.11n HT 20 MHz mode: 0.0232
Power Supply	Tested: DC 12V I/P: 9~32Vdc, 10A Max



1.2 EUT CHANNEL INFORMATION

Frequency Range	2412MHz-2462MHz
Modulation Type	1. IEEE 802.11b mode: CCK 2. IEEE 802.11g mode: OFDM 3. IEEE 802.11n HT 20 MHz mode: OFDM
Bandwidth	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT 20 MHz mode: 11 Channels

Remark:

Refer as ANSI 63.10:2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested				
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation		
☐ 1 MHz or less	1	Middle		
□ 1 MHz to 10 MHz	2	1 near top and 1 near bottom		
🛛 More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom		

1.3 ANTENNA INFORMATION

Antenna Type	PIFA PCB Dipole Coils
Antenna Gain	Gain: -0.61dBi

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 1.2575
Emission bandwidth, 20dB bandwidth	+/- 1.4003
RF output power, conducted	+/- 1.1372
Power density, conducted	+/- 1.4003
3M Semi Anechoic Chamber / 30M~200M	+/- 4.0138
3M Semi Anechoic Chamber / 200M~1000M	+/- 3.9483
3M Semi Anechoic Chamber / 1G~8G	+/- 2.5975
3M Semi Anechoic Chamber / 8G~18G	+/- 2.6112
3M Semi Anechoic Chamber / 18G~26G	+/- 2.7389
3M Semi Anechoic Chamber / 26G~40G	+/- 2.9683
3M Semi Anechoic Chamber / 40G~60G	+/- 1.8509
3M Semi Anechoic Chamber / 60G~75G	+/- 1.9869
3M Semi Anechoic Chamber / 75G~110G	+/- 2.9651
3M Semi Anechoic Chamber / 110G~170G	+/- 2.7807
3M Semi Anechoic Chamber / 170G~220G	+/- 3.6437
3M Semi Anechoic Chamber / 220G~325G	+/- 4.2982

Remark:

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

2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

Test site	Test Engineer	Remark
AC Conduction Room		Not applicable, because EUT not connect to AC Main Source direct.
Radiation	Jerry Chuang	-
RF Conducted	Eric Lee	-

Remark: The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.6 INSTRUMENT CALIBRATION

RF Conducted Test Site						
Equipment Manufacturer Model S/N Cal Date Ca						
Power Meter	Anritsu	ML2495A	1012009	07/03/2017	07/02/2018	
Power Sensor	Anritsu	MA2411B	917072	07/03/2017	07/02/2018	
Spectrum Analyzer	R&S	FSV 40	101073	10/02/2017	10/01/2018	

3M 966 Chamber Test Site						
Equipment	Manufacturer	Model	S/N	Cal Date	Cal Due	
Bilog Antenna	Sunol Sciences	JB3	A030105	06/20/2017	06/19/2018	
Horn Antenna	EMCO	3117	00055165	02/20/2017	02/19/2018	
Pre-Amplifier	EMCI	EMC 012635	980151	08/01/2017	07/31/2018	
Pre-Amplifier	EMEC	EM330	060609	06/07/2017	06/06/2018	
Spectrum Analyzer	Agilent	E4446A	US42510252	12/05/2016	12/04/2017	
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R	
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R	
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R	

Remark: Each piece of equipment is scheduled for calibration once a year.

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment							
No.	No. Equipment Brand Model Series No. FCC ID						
	N/A						

Support Equipment					
No.	Equipment	Brand	Model	Series No.	FCC ID
1.	DC power supply	Motech	N/A	N/A	N/A

1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 558074 D01 v04.

2. TEST SUMMERY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.2	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	-
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
15.247(b)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Emission	Pass
15.247(d)	4.6	Radiation Band Edge	Pass
15.247(d)	4.6	Radiation Spurious Emission	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	IEEE 802.11b mode :1Mbps IEEE 802.11g mode :6Mbps IEEE 802.11n HT20 mode :MCS0
Test Channel Frequencies	IEEE 802.11b mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11g mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT20 mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2437MHz 3. Highest Channel : 2462MHz
Operation Transmitter	IEEE 802.11b mode :1T1R IEEE 802.11g mode :1T1R IEEE 802.11n HT20 mode :1T1R

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement Above 1G				
Test Condition	Test Condition Band edge, Emission for Unwanted and Fundamental			
Voltage/Hz	DC 12V			
Test Mode	Mode 1: EUT power by DC Source via cable.			
Worst Mode	🛛 🖂 Mode 1 🔲 Mode 2 🗌 Mode 3 🗌 Mode 4			
Worst Position	 Placed in fixed position. Placed in fixed position at X-Plane (E2-Plane) Placed in fixed position at Y-Plane (E1-Plane) Placed in fixed position at Z-Plane (H-Plane) 			
Worst Polarity	Horizontal 🛛 Vertical			

Radiated Emission Measurement Below 1G			
Test Condition Radiated Emission Below 1G			
Voltage/Hz DC 12V			
Test Mode Mode 1: EUT power by DC Source via cable.			
Worst Mode	🛛 Mode 1 🗌 Mode 2 🗌 Mode 3 🗌 Mode 4		

Remark:

1. The worst mode was record in this test report.

2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, Horizontal and Vertical for radiated measurement. The worst case(Y-Plane and Vertical) were recorded in this report

3. For below 1G, Radiation emission is performed the EUT transmit at the highest output power channel as worse case.

3.3 EUT DUTY CYCLE

Duty Cycle						
Configuration TX ON (ms) TX ALL (ms) Duty Cycle (%) Duty Factor(dB)						
802.11b	8.4400	8.4500	99.88%	0.01		
802.11g	1.4300	1.4400	99.31%	0.03		
802.11n HT20	1.3400	1.3500	99.26%	0.03		



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a)(2)

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	

* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI 63.10:2013 clause 6.2,

- 1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
- 2. EUT connected to the line impedance stabilization network (LISN)
- 3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



4.1.4 Test Result

Not applicable, because EUT not connect to AC Main Source direct.

4.2 6DB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

4.2.1 Test Limit

According to §15.247(a)(2)

6 dB Bandwidth :

Limit	Shall be at least 500kHz
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Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as KDB 558074 D01 v04, Section 8.1 and ANSI 63.10:2013 clause 6.9.2,

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth and 99% Bandwidth.
- 4. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup



4.2.4 Test Result

Test mode: IEEE 802.11b mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	14.0231		9.0870		
Mid	2437	13.9797		8.5652		≥500
High	2462	14.0231		9.0870		

Test mode: IEEE 802.11g mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	16.6714		16.0870		
Mid	2437	16.8017		15.8696		≥500
High	2462	16.8017		15.8696		

Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz						
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 1 OBW(99%) (MHz)	Chain 0 6dB BW (MHz)	Chain 1 6dB BW (MHz)	6dB limit (kHz)
Low	2412	17.8437		17.3043		
Mid	2437	17.8871		16.2174		≥500
High	2462	17.8437		17.5652		

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<u>Test Data</u>







4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b)

Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm) and the e.i.r.p. shall not exceed 4Watt(36 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

	☑ Antenna not exceed 6 dBi ÷ 30dBm
Limit	Antenna with DG greater than 6 dBi :
	[Limit = 30 – (DG – 6)]
	Point-to-point operation :

Average output power : For reporting purposes only.

4.3.2 Test Procedure

Test method Refer as KDB 558074 D01 v04, Section 9.1.2.

- 1. The EUT RF output connected to the power meter by RF cable.
- 2. Setting maximum power transmit of EUT.
- 3. The path loss was compensated to the results for each measurement.
- 4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup



4.3.4 Test Result

Peak output power :

	Wifi 2.4G								
Orafia	011	Freq.	powe	er set	PK Pow	er(dBm)	PK Total	PK Total	Limit
Coning	Сп	(MHz)	chain0	chain1	chain0	chain1	(dBm)	(W)	(dBm)
IEEE	Low	2412	22	-	15.45	-	15.45	0.0351	
802.11b Data rate:	Mid	2437	17	-	15.36	-	15.36	0.0344	
1 Mbps	High	2462	18.5	-	15.38	-	15.38	0.0345	
IEEE	Low	2412	15	-	14.98	-	14.98	0.0315	
802.11g Data rate:	Mid	2437	15	-	14.91	-	14.91	0.031	30
6Mbps	High	2462	13	-	14.92	-	14.92	0.031	
IEEE 802.11n HT20 Data rate: MCS 0	Low	2412	13	-	13.66	-	13.66	0.0232	
	Mid	2437	13	-	13.63	-	13.63	0.0231	
	High	2462	12	-	13.58	-	13.58	0.0228	

Average output power :

Wifi 2.4G								
Config	СН	Freq.	AV Pow	er(dBm)	AV Total Bower			
Config	GI	(MHz)	chain0	chain1	(dBm)			
IEEE	Low	2412	14.33	-	14.33			
802.11b Data rate:	Mid	2437	14.26	-	14.26			
1Mbps	High	2462	14.30	-	14.30			
IEEE	Low	2412	13.88	-	13.88			
802.11g Data rate:	Mid	2437	13.83	-	13.83			
6Mbps	High	2462	13.85	-	13.85			
IEEE 802.11n HT20	Low	2412	12.65	-	12.65			
	Mid	2437	12.55	-	12.55			
MCS 0	High	2462	12.58	-	12.58			

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e)

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

	Antenna not exceed 6 dBi : 8dBm
Limit	Antenna with DG greater than 6 dBi :
	[Limit = 8 – (DG – 6)]
	Point-to-point operation :

4.4.2 Test Procedure

Test method Refer as KDB 558074 D01 v04, Section 10.2

- 1. The EUT RF output connected to the spectrum analyzer by RF cable.
- 2. Setting maximum power transmit of EUT
- 3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
- 4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
- 5. Mark the maximum level.
- 6. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup



4.4.4 Test Result

Test mode: IEEE 802.11b mode / 2412-2462 MHz							
Channel	nel Frequency (MHz) Chain 0 Chain 1 Total PPSD PPSD (dBm) (dBm) (dBm)						
Low	2412	-9.39	-	-9.39			
Mid	2437	-9.11	-	-9.11	8		
High	2462	-8.25	-	-8.25			

Test mode: IEEE 802.11g mode / 2412-2462 MHz								
Channel	Frequency (MHz)	Limit (dBm)						
Low	2412	-11.10	-	-11.10				
Mid	2437	-11.76	-	-11.76	8			
High	2462	-11.65	-	-11.65				

Test mode: IEEE 802.11n HT 20 MHz mode / 2412-2462 MHz								
Channel	Frequency (MHz)	Frequency (MHz)Chain 0 PPSDChain 1 PPSDTotal 						
Low	2412	-11.85	-	-11.85				
Mid	2437	-13.25	-	-13.25	8			
High	2462	-13.56	-	-13.56				

Test Data







4.5 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d)

In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement 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).

4.5.2 Test Procedure

Test method Refer as KDB 558074 D01 v04, Section 11.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.

2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.

3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. f the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

4.5.3 Test Setup



4.5.4 Test Result

<u>Test Data</u>



















4.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency	Field Strength (microvolts/m)	Measurement Distance (metres)		
30-88	100	3		
88-216	150	3		
216-960	200	3		
Above 960	500	3		

4.6.2 Test Procedure

Test method Refer as KDB 558074 D01 v04, Section 12.1.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 30MHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

- 5. The SA setting following :
 - (1) Below 1G : RBW = 100kHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2) Above 1G:
 - (2.1) For Peak measurement : RBW = 1MHz, VBW ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.
 - (2.2) For Average measurement : RBW = 1MHz, VBW

If Duty Cycle \geq 98%, VBW=10Hz.

If Duty Cycle < 98%, VBW=1/T.

Configuration	Configuration Duty Cycle (%)		1/T (kHz)	VBW Setting
802.11b	100%	100.0000	-	10Hz
802.11g	99%	1.4300	-	10Hz
802.11n HT20	99%	1.3400	-	10Hz



4.6.3 Test Setup





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Above 1 GHz



4.6.4 Test Result

Band Edge Test Data



Test Mode	IEEE	IEEE 802.11b Low CH		Temperature:		24(°C))/ 33%RH
Test Item	Test Item Band		and Edge Test Date		est Date	Novemb	er 10, 2017
Polarize		Vertical		Tes	t Engineer	Jerry	Chuang
Detector		Average		Tes	st Voltage	D	C 12V
110.0 dBuV/m							
						Limit1: Limit2:	_
70						2	
							h
20.0	<u></u>				¥		
30.0 2310.000 2321.20	2332.40 23	43.60 2354.80	2366.00	2377.2	0 2388.40	2399.60	2422.00 MHz
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resu (dBuV	ult //m)	Limit (dBuV/m)	Margin (dB)	Remark
2389.184	35.98	-0.60	35.3	88	54.00	-18.62	AVG
2412.816	74.70	-0.52	74.1	8	-	-	AVG

Test Mode	IEEE	IEEE 802.11b High CH		Temp/Hum		24(°C)	/ 33%RH	
Test Item		Band Edge	;	Т	Test Date		November 10, 201	
Polarize		Vertical		Tes	st Engi	neer	Jerry	Chuang
Detector		Peak		Te	st Volt	age	DC	C 12V
120.0 dBu¥/m								
							Limit1: Limit2:	_
80								
	\							
		2			berra berra	14. 1		
	and a second of	vardsdallerd, and den den er	en a Marine and Andrew And	llennin gewenningen	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	waranoo waaanaa aa	hinnerski u Helinger (helinger)	ngahinumuni
40.0 2452.000 2462.00	2472.00 24	82.00 2492.00	2502.00	2512.0)0 2522	2.00 253	2.00	2552.00 MHz
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resi (dBuV	ult //m)	Li (dBı	mit JV/m)	Margin (dB)	Remark
2462.000	81.81	-0.37	81.4	4		-	-	peak
2487.000	50.38	-0.29	50.0)9	74	.00	-23.91	peak

Test Item Band Edge Test Date November 10 Polarize Vertical Test Engineer Jerry Chu Detector Average Test Voltage DC 12 ¹	6RH
Polarize Vertical Test Engineer Jerry Chu Detector Average Test Voltage DC 12 ¹ 110.0 d8w/m Imit: Imit: Imit: 0 0 0 0 0 0 10.0 d8w/m Imit: Imit: Imit: Imit: 0 0 0 0 0 0 0 10.0 d8w/m Imit: Imit: <t< td=""><td>, 2017</td></t<>	, 2017
Detector Average Test Voltage DC 12' 110.0 d8w/m	ang
	/
	_
	-
30.0 2452.000 2462.00 2472.00 2482.00 2492.00 2502.00 2512.00 2522.00 2532.00 2552.00	-
30.0 30.0 2452.000 2462.00 2472.00 2482.00 2492.00 2502.00 2512.00 2522.00 2532.00 2552.00	_
2452.000 2462.00 2472.00 2482.00 2492.00 2502.00 2512.00 2522.00 2532.00 2552.00	~
	 MHz
Frequency Beading Correct Besult Limit Margin	
(MHz) (dBuV) Factor (dBuV/m) (dBuV/m) (dB) R	emark
2461.200 78.47 -0.37 78.10	4VG
2523.600 36.34 -0.20 36.14 54.00 -17.86	4VG

Test Mode	IEEE	802.11g Lo	w CH	Те	mp/Hum	24(°∁)/ 33%RH	
Test Item		Band Edge	;	Te	est Date	Novemb	er 10, 2017
Polarize		Vertical		Test	Engineer	Jerry	Chuang
Detector		Peak		Tes	st Voltage	DC	C 12V
120.0 dBuV/m							
						Limit1: Limit2:	_
80							2
	19 have a shear with a surrouted we	har and the standard and an and a standard	warm and bird Ana and	1 which Alman		nhik	
40.0	, we want to be a state of the second state of	and a first state of the second s	ala a su a	and the second second	and a second second second		
2310.000 2321.20	2332.40 23	43.60 2354.80	2366.00	2377.20) 2388.40 23	99.60 2	2422.00 MHz
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resı (dBuV	ult //m)	Limit (dBuV/m)	Margin (dB)	Remark
2376.752	49.19	-0.64	48.5	55	74.00	-25.45	peak
2417.968	81.02	-0.51	80.5	51	-	-	peak

Test Mode	IEEE	802.11g Lo	w CH	Ten	/ 33%RH		
Test Item		Band Edge	;	Te	est Date	Novemb	er 10, 2017
Polarize		Vertical		Test	t Engineer	Jerry	Chuang
Detector		Average		Tes	st Voltage	DC	: 12V
110.0 dBuV/m							
						Limit1: Limit2:	_
70							2
20.0		······			¥		
2310.000 2321.20	2332.40 23	43.60 2354.80	2366.00	2377.20	0 2388.40 23	399.60 2	2422.00 MHz
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resu (dBuV	ult //m)	Limit (dBuV/m)	Margin (dB)	Remark
2390.000	35.98	-0.60	35.3	38	54.00	-18.62	AVG
2418.192	70.22	-0.51	69.7	'1	-	-	AVG

Test Mode	IEEE	802.11g Hi	gh CH	Те	mp/Hum		24(°C)	/ 33%RH
Test Item		Band Edge	•	Te	est Date		Novemb	er 10, 2017
Polarize		Vertical		Test	Enginee	r	Jerry	Chuang
Detector		Peak		Tes	st Voltage		DC	C 12V
120.0 dBuV/m								
							Limit1: Limit2:	_
1								
80								
	William .							
		MAZ Murden randed	housthanken dikaantin	shirts to attraction	all more thank and the second	non the star	withmound	na hallanna a
40.0			anad colling and the desired operation of the	kulu a ada atudu	ر بر الم	יר די קיישו איי איי איי	a ah ihishahan ar ihisha	ashuduna, shise
2452.000 2462.00	2472.00 24	82.00 2492.00	2502.00	2512.00) 2522.00	2532	.00	2552.00 MHz
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resı (dBuV	ult ⁄/m)	Limit (dBuV/m	ı)	Margin (dB)	Remark
2460.700	83.23	-0.37	82.8	36	-		-	peak
2484.200	51.37	-0.30	51.0)7	74.00		-22.93	peak

Test Mode	IEEE	802.11g Hi	gh CH	Ter	nperat	ure:	24(℃)	24(°C)/ 33%RH	
Test Item		Band Edge	•	Т	est Da	te	November 10, 201		
Polarize		Vertical		Tes	t Engir	neer	Jerry	Chuang	
Detector		Average		Te	st Volta	age	DC	C 12V	
110.0 dBuV/m									
							Limit1: Limit2:		
1									
70	γ								
		2							
20.0		*		·······		<u> </u>	+		
2452.000 2462.00	2472.00 24	82.00 2492.00	2502.00	2512.0	0 2522	.00 253	32.00	2552.00 MHz	
			2002.00	2012.0					
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resı (dBuV	ult //m)	Liı (dBu	mit ıV∕m)	Margin (dB)	Remark	
2463.000	72.67	-0.36	72.3	51		_	-	AVG	
2483.500	37.29	-0.30	36.9	9	54	.00	-17.01	AVG	

Test	Mode	IE	EE 802	2.11n HT CH	20 Low	г	ēmp/H	/ 33%RH			
Test	Item		Ba	and Edge	е		Test Da	ite	November 10, 201		
Pola	arize			Vertical		Те	st Engi	neer	Jerry	Chuang	
Dete	ector			Peak		Te	est Volt	age	DC	C 12V	
120.0	dBu¥/m										
									Limit1: Limit2:		
80										2	
_											
<i></i>	metallowtroposaa	hydrigen and the state of the s	w ^{hat} hishirada.aday	relevelensitrasteren	nkula na kana mana na kana na k	Antonionanton	mutherpolandersta	of the state of the	M		
40.0 2310	0.000 2321.20	233	2.40 234	13.60 2354	4.80 2366	.00 2377	.20 238	3.40 239	99.60	2422.00 MHz	
Freq (M	uency IHz)	Rea (dl	ading BuV)	Correct Factor (dB/m)	t R (dE	lesult BuV/m)	Li (dBi	mit ⊿V/m)	Margin (dB)	Remark	
2330	0.720	49	9.66	-0.79	4	8.87	74	.00	-25.13	peak	
2418	8.304	78	3.89	-0.51	7	'8.38		-	-	peak	
					•		-				

Test ItemBand EdgeTest DateNPolarizeVerticalTest EngineerDetectorAverageTest Voltage	November 10, 20
PolarizeVerticalTest EngineerDetectorAverageTest Voltage	Jerry Chuang
Detector Average Test Voltage	DO 4014
110.0 10.4/1-	DC 12V
IIU.U abuy/m	
	Limit1: — Limit2: —
70	
	\sim
30.0	
2310.000 2321.20 2332.40 2343.60 2354.80 2366.00 2377.20 2388.40 2399.60) 2422.00 MHz
Frequency (MHz)Reading (dBuV)Correct Factor 	Margin (dB) Remar
2388.848 36.06 -0.60 35.46 54.00	-18.54 AVG
2418.528 68.24 -0.51 67.73 -	- AVG

Test Mode	IEEE 802.1	1n HT20 Hi	igh CH	Т	emp/H	um	24(°(C)/ 33%RH	-
Test Item	Ba	nd Edge		-	Test Da	ite	Novem	ber 10, 20)17
Polarize	\	/ertical		Te	st Engi	neer	Jeri	y Chuang	
Detector		Peak		Te	est Volta	age	[DC 12V	
120.0 dBuV/m								1:	
	WWWWW	M. M. Marman and Marian a	Numitime-fail-see	Within	une per a de la constance de la	angter-contaction	utiontone		
40.0				0510					
Frequency (MHz)	Reading (dBuV)	82.00 2492.00 Correct Factor (dB/m)	2502.00 Rest (dBuV	2512. ult //m)	.uu 2522 Li (dBu	2.00 253 mit ⊿V/m)	Margin (dB)	2552.00 MHz	[.] k
2460.100	82.43	-0.37	82.0)6		-	-	peak	
2484.500	51.21	-0.30	50.9	91	74	.00	-23.09	peak	
	•		•		•		•	•	

Test Mode	IEEE 802.1	1n HT20 Hi	igh CH	Temperature:			24(°∁)/ 33%RH		
Test Item	Ba	nd Edge		Te	est Da	ite	Novemb	er 10, 2017	
Polarize	\	/ertical		Tes	t Engi	neer	Jerry	Chuang	
Detector	A	verage		Tes	st Volta	age	DC	; 12V	
110.0 dBuV/m									
							Limit1: Limit2:	_	
70									
		-							
		¥							
30.0									
2452.000 2462.0)O 2472.00 24	32.00 2492.00	2502.00	2512.0	0 2522	2.00 253	2.00	2552.00 MHz	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resı (dBuV	ult //m)	Li (dBu	mit ⊿V/m)	Margin (dB)	Remark	
2463.000	71.10	-0.36	70.7	'4		-	-	AVG	
2483.500	37.15	-0.30	36.8	85	54	.00	-17.15	AVG	
	-		-						

Below 1G Test Data

Test Mode		Mode 1		Te	Temp/Hum 24(°C)/ 33%				
Test Item	3	0MHz-1GH	lz	Т	est Da	ite	November 10, 201		
Polarize		Vertical		Tes	st Engi	neer	Jerr	y Chuang	
Detector		Peak		Те	st Volt	age	Ľ	DC 12V	
80.0 dBu¥/m							Limit1 Margi	:	
30 1 2 2		5	E1E 00	C12 00	. 700	00 000	6 X	1000.00	
30.000 127.00	224.00 32	1.00 418.00	515.00	612.00) 709.	00 806	.00	1000.00 MHZ	
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resu (dBuV	ult //m)	Li (dBı	mit JV/m)	Margin (dB)	Remark	
135.7300	45.22	-15.42	29.8	0	43	.50	-13.70	peak	
167.7400	43.20	-16.41	26.7	'9	43	.50	-16.71	peak	
210.4200	45.79	-16.37	29.4	-2	43	.50	-14.08	peak	
256.0100	45.71	-15.65	30.0	6	46	6.00	-15.94	peak	
331.6700	41.42	-13.37	28.0	5	46	00.00	-17.95	peak	
805.0300	29.78	-3.32	26.4	·6	46	.00	-19.54	peak	

Test Mode			Mode 1		Te	emp/Hum	۱	24(°C))/ 33%RH
Test Item			BOMHz-1GI	Hz	۲	est Date		Novemb	er 10, 2017
Polarize			Horizonta		Tes	st Engine	er	Jerry	Chuang
Detector			Реак		le	st Voltag	е	D	J 12V
80.0 dBu∀/m									
								Limit1: Margin:	_
30	1	2 3	4 X						
					5 X		6 X		
-20	224.0	0 32	21.00 418.00	515.00	612.00	709.00	806	5.00	1000.00 MHz
Frequency (MHz)	Read (dB	ding uV)	Correct Factor (dB/m)	Resu (dBuV	ılt /m)	Limit (dBuV/n	n)	Margin (dB	Remark
219.1500	46.	14	-17.26	28.8	8	46.00		-17.12	peak
256.9800	43.	94	-15.62	28.3	2	46.00		-17.68	peak
288.0200	42.	61	-14.19	28.4	2	46.00		-17.58	peak
323.9100	47.	10	-13.55	33.5	5	46.00		-12.45	peak
612.9700	27.	89	-6.56	21.3	3	46.00		-24.67	peak
752.6500	25.	44	-4.24	21.2	0	46.00		-24.80	peak

Above 1G Test Data

Test Mode	IEEE	802.11b Lo	w CH	Те	mp/H	um	24(°	°C)/ 33%RH
Test Item		Harmonic		Te	est Da	ite	Nover	nber 10, 201
Polarize	Dee	Vertical		Test	t Engi	neer	Jer	ry Chuang
Detector	Pea	ik and Aver	age	Tes	st voit	age		DC 12V
110.0 dBuV/m			Ì					a1.
							Lim	it2:
70								
30.0 1000.000 3550.00 Frequency (MHz)	6100.00 863 Reading (dBuV)	50.00 11200.00 Correct Factor (dB/m)) 13750.00 Resi (dBuV	16300.0 ult //m)	00 1889 Li (dBi	50.00 214 mit uV/m)	100.00 Margin (dB)	26500.00 MHz
4824.000	32.02	6.84	38.8	86	74	l.00	-35.14	4 peak
N/A								
omark:							1	I

Test Mode	e	IEEE	802.11	b Lo	w CH	T	emp/H	um	24(°	°C)/ 33%	RH
Test Item			Harmo	onic		[_]	Test Da	ate	Nover	<u>nber 10,</u>	2017
Polarize			Horizo	ntal		Tes	st Engi	neer	Jer	ry Chua	ng
Detector		Pe	ak and /	Avera	age	Ie	est voit	age		DC 12V	
110.0 dBu¥/m											
									Lim	it1: —	
									Lim	it2: —	
70											
10											
	1										
	Ý										
30.0											
1000.000 3550.	.00 61	00.00 8	650.00 1	1200.00	13750.00	16300).00 188	50.00 21	400.00	26500.00	MHz
Frequency (MHz)	Re (c	eading dBuV)	Corre Facto	ect or	Resu (BuV	lt m)	Li (dB	imit uV/m)	Margi (dB)	n Rer	nark
4824.000	3	31.88	<u>(uв/i</u> 6.84	1	38.7	2	74	1.00	-35.28	3 ре	eak
N/A											
11/7 (
marki											
fillain.											
1 Mea	suring	freque	encies fi	rom	1 GH7 ti	n the	10th h	armor	nic of hia	hest	
1. Mea fund	suring amen	g freque tal frea	encies fi uencv.	rom	1 GHz t	o the	10th h	narmon	nic of hig	hest	

2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode	;	IEE	E 802	.11b N	1id CH	1	Т	emp/⊦	lum		2	4(°C)	/ 33%	RH
Test Item			Har	monic	;			Test D	ate		Nov	<u>emb</u>	<u>er 10,</u>	201
Polarize			Ve	ertical			les	st Eng	ineei	r		Jerry	Chua	ng
Detector		P	eak ar	nd Ave	rage		Ie	est voi	tage			DC	; 12V	
110.0 dBuV/m														
												Limit1:	-	
												Limit2:		
70														
//														
	1													
	-×													
30.0														
1000.000 3550.	00 61	00.00	8650.00	11200.0	0 137	50.00	16300).00 188	350.00	214	00.00		26500.00	MHz
Frequency	Re	ading		orrect	F	Resul	t	L	.imit		Ма	rgin	De.	
(MHz)	(0	lBu)ັ	(C	actor IB/m)	(d	BuV/r	n)	(dB	uV/m)	(c	IB)	Rer	nark
4874.000	3	2.63	(5.97		39.60)	7	4.00		-34	1.40	pe	eak
N/A														
					+									
mark:														
emark: 1. Meas	surina	ı freat	Jencie	s from	1 GF	lz to	the	10th I	harm	oni	c of l	highe	st	

2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode		IEEE	802.11b I	Mid CH	Te	emp/H	um	24(°C	:)/ 33%RH
Test Item			Harmoni	С	Т	lest Da	ite	Novem	ber 10, 2017
Polarize			Horizonta	al	Tes	st Engi	neer	Jerr	y Chuang
Detector		Pea	k and Ave	erage	Te	est Volt	age	D	C 12V
110.0 dBuV/m								Limit1	-
70	1								
30.0									
1000.000 3550.0	10 61	00.00 865	0.00 11200	.00 13750.00	16300).00 1889	50.00 214	100.00	26500.00 MHz
Frequency (MHz)	Re (c	eading IBuV)	Correct Factor (dB/m)	Resi (dBuV	ult //m)	Li (dBı	mit ⊿V/m)	Margin (dB)	Remark
4874.000	3	1.62	6.97	38.5	59	74	.00	-35.41	peak
N/A									
emark:						J		1	

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode	IEEE 802.1	11b High CH	Temp/Hun	n 24(℃)	/ 33%RH
Test Item	Harr	monic	Test Date	Novemb	er 10, 2017
Polarize	Ver	rtical	Test Engine	er Jerry	Chuang
Detector	Peak and	d Average	Test Voltag	e DO	C 12V
110.0 dBuV/m					
				Limit1:	_
30.0	100.00 8650.00	11200.00 13750.00	16300.00 18850.0	0 21400.00	26500.00 MHz
Frequency R (MHz) (eading Fa dBuV) (dB	ctor (dBu\ B/m)	ult Limi //m) (dBuV/	t Margin (m) (dB)	Remark
4924.000 N/A	31.15 7	.09 38.2	24 74.0	0 -35.76	peak
Remark: 1. Measuring fundamer 2. For above	g frequencies tal frequency 1GHz,the E	s from 1 GHz i /. UT peak value	o the 10th har e was under a	monic of highe	est erefore the

Average value compliance with the average limit

Test Mode		IEEE 8	802.11b	High CH	Te	emp/H	um	24(°	C)/ 33%RH
Test Item			Harmon	nic	T	est Da	ate	Noven	nber 10, 201
Polarize			Horizon	tal	Tes	st Engi	neer	Jer	ry Chuang
Detector		Pea	k and A	/erage	le	st Volt	age		DC 12V
110.0 dBuV/m									
								Limi	t1: —
								Limi	t2: —
70									
	ţ								
30.0									
1000.000 3550.0	0 61	00.00 865	50.00 1120)0.00 13750.00	16300	.00 188	50.00 214	100.00	26500.00 MHz
_	_		Correct	· _					
Frequency (MHz)		eading ∃BuV)	Factor	Resu (dBu\	ult //m)	Li (dB)	imit uV/m)	Margir (dB	Remark
		- ,	(aB/m)			V ²			
4924.000	3	33.25	7.09	40.3	34	74	1.00	-33.66	6 peak
N/A									
	1								
				I		1		1	
emark:									

- fundamental frequency. 2. For above 1GHz,the EUT peak value was under average limit, therefore the
 - Average value compliance with the average limit

Те	est Mode		IEEE	E 802	.11g L	.ow C	H	Т	emp/⊦	lum		24 ((°C)/	′ 33%	RH
Te	est Item			Hai	moni	0		7	Fest Da	ate	1	Nove	mbe	er 10,	2017
F	Polarize			Ve	ertical		_	Tes	st Eng	ineer		Je	rry (Chua	ng
D	Detector		Pe	eak ar	nd Ave	erage		Te	est Vol	tage			DC	12V	
110.0	dBuV/m														
[Lin	nit1:	-	
												Lin	nit2:		
-															
			+												
70															
-													_		
		1 X											_		
20.0															
	00.000 3550.00	61	00.00 /	8650.00	11200.	00 137	50.00	16300).00 188	350.00	21400.	00	2	6500.00 N	4 Hz
Fre	quency	Re	ading	C	orrect		Resu	t	L	.imit		Margi	in	Der	n a vla
(MHz)	(d	BuV)	Г (С	actor IB/m)	(d	BuV/	m)	(dB	uV/m)		(dB)	1	Ren	nark
482	24.000	3	1.79		5.84		38.63	3	7	4.00		-35.3	7	pe	eak
	N/A														
				_											
ome	rk														
und	1. Measi	urina	ı freau	encie	s fron	n 1 Gł	-Iz to	the	10th I	harmo	onic	of hid	nhes	st	
	fundal	meni	tal fred	quenc	у.										

2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode	IEEE	802.11g Lo	w CH	Te	emp/Hum		24 (°	C)/ 33%F	RH
Test Item		Harmonic		T	est Date		Nover	<u>10, 2</u>	2017
Polarize		Horizontal		les		er	Jer	ry Chuan	g
Detector	Pea	ak and Aver	age	Ie	st voltage	9	L	JC 12V	
110.0 dBuV/m									
							Limi	:1: —	
							Limil	i2: —	
70									
	1								
	X								
30.0									
1000.000 3550.00	6100.00 8	650.00 11200.00) 13750.00	16300.	.00 18850.00	214	00.00	26500.00 MI	Ηz
_		Correct	_						
Frequency (MHz)	Reading (dBuV)	Factor	Resu (dBuV	ult //m)	Limit (dBuV/r	n)	Margin (dB)	Rem	ark
. ,		(dB/m)		. ,		'			
4824.000	31.80	6.84	38.6	64	74.00		-35.36	pea	ak
N/A									
			1						
		<u> </u>							
emark:									
emark:	uring freque	ncies from	1 GHz t	o the	10th harr	moni	ic of higl	hest	

2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Rev.01

		<u> </u>	id CH	Ten	ראר/Hum	24 (°C)/ 33%RH
lest item		Harmonic		Tes	st Date	Novemb	per 10, 201
Polarize	D	Vertical		Test	Engineer	Jerry	<u>Chuang</u>
Detector	Pe	ak and Aver	age	lest	Voltage	D	C 12V
110.0 dBuV/m						l imit1:	
						Limit2:	_
70							
	1 X						
30.0							
1000.000 3550.0	0 6100.00	8650.00 11200.00) 13750.00	16300.00	18850.00	21400.00	26500.00 MHz
Frequency (MHz)	Reading (dBuV)	Correct Factor	Resu (dBuV/	ılt /m)	Limit (dBuV/m)	Margin (dB	Remark
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resu (dBuV/	ılt /m)	Limit (dBuV/m) 74.00	Margin (dB	Remark
Frequency (MHz) 4874.000	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV) 38.0	ılt /m) 6	Limit (dBuV/m) 74.00	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV/ 38.0	llt /m) 6	Limit (dBuV/m) 74.00	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV 38.0	ilt /m) 6	Limit (dBuV/m) 74.00	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV) 38.0	llt /m) 6	Limit (dBuV/m) 74.00	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV) 38.0	Ilt /m) 6	Limit (dBuV/m) 74.00	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV 38.0	llt /m) 6	Limit (dBuV/m) 74.00	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV 38.0	Ilt /m) 6	Limit (dBuV/m) 74.00	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV) 38.0	o the 10	Limit (dBuV/m) 74.00	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV) 38.0	o the 10	Limit (dBuV/m) 74.00 Oth harmo	Margin (dB -35.94	Remark peak
Frequency (MHz) 4874.000 N/A	Reading (dBuV) 31.09	Correct Factor (dB/m) 6.97	Resu (dBuV) 38.0	ult /m) 6 0 the 10 e was u	Limit (dBuV/m) 74.00 0th harmo nder avera	Margin (dB -35.94 nic of highe	Remark peak

Peal	Harmonic Horizonta k and Ave	c 1	Tes	est Da	ite	Novem	<u>iber 10, 201</u>
Pea	Horizonta k and Ave	al	Tes			-	
Pea	k and Ave			st Engi	neer	Jeri	<u>y Chuang</u>
		erage	le	st Volt	age	L	JC 12V
						Limit	1: —
						Limit	2:
00.00 865	0.00 11200.	00 13750.00	16300	.00 188	50.00 214	00.00	26500.00 MHz
	Correct						
ading BuV)	Factor	Resi (dBuV	ult //m)	Li (dBi	mit JV/m)	Margin (B)	Remark
,	(aB/m)	`	,	、 	,	05.70	
31.33	6.97	38.3	30	/4	.00	-35.70	реак
Т							
		I		1		l .	
	00.00 865	a a a a a a a a b a a a a a a a b a a a a a a a a a a a b a a a a a a a a a a a b a a a a a a a b a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a a <	a a a a a a a a a a a a a a a a a a a a a a a a a a a	eading Correct Factor (dB/m) Result (dBuV/m) 31.33 6.97 38.30	Image: Second	a a	a a

fundamental frequency.2. For above 1GHz, the EUT peak value was under average limit, therefore the

Average value compliance with the average limit

Те	est Mod	е	IE	EE 8	302.1	1g H	igh C	Н	T	emp/ŀ	lum	2	4 (℃)/ 33%	βRΗ
<u> </u>	est Iten	า			Harr	nonic	;		7	Test D	ate	No	vemt	ber 10	, 201
+ 	olarize	<u>;</u>		Dee	Ver	tical		_			ineer		Jerry		ing
L	Detector	ſ		Pea	k and	a Ave	rage		IE	est vo	tage		D	C 12V	
110.0	dBuV/m														
[Limit1:	-	
													Limit2:		
70															
		1 X													
30.0	00 000 255		C100.00	005	0.00	11200.0	0 127	50.00	1000	00 10	050.00 21	400.00		20500.00	 MU_
10	00.000 3330	0.00	0100.00	003	0.00	11200.0	0 137	JU.UU	10300	.00 10	000.00 21	400.00		20300.00	MNZ
							-								
Fre	quency		Readii	ng	Cor	rect		Resu	lt		imit	М	argin	D .	
(MHz)		(dBu\	Ŋ	ra (dE	ctor B/m)	(d	BuV/	/m)	(dE	BuV/m)	(dB)	Ке	mark
492	24.000		32.4	5	7.	09		39.5	4	7	4.00	-3	4.46	p	eak
	N/A														
												+			
				-+								+			
				\rightarrow											
ema	rk:														
	1. Mea	asurir	ng fre	quer	ncies	from	1 Gł	-Iz to	o the	10th	harmon	ic of	highe	est	
	func	dame	ntal	frequ	ency		, 01	12 ((10 01	ingit	501	

2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test M	lode		IEEE	E 80	2.11g	g Hi	gh C	Η	7	ēm	ip/H	um		2	4 (°(C)/ 3	3%R	Н
Test I	tem			H	armo	nic				Tes	t Da	ate		Nov	/em	ber	10, 2	017
Pola	rize			H	orizo	ntal			Te	st E	Engi	nee	r		Jerr	y Ch		J
Dete	ctor		Pe	ak	and A	Aver	age		10	est	Volt	age			Ľ	DC 1	2V	
110.0 dBu	V/m																	
															Limit1	l: ·	-	
															Limit2	<u>2:</u>	_	
70																		
		1																
		Ĭ																
30.0																		
1000.000	3550.00	610)0.00	8650.0	0 11	200.00	137	50.00	1630	0.00	188	50.00	214	00.00		2650	0.00 M Hz	2
Frequen	CV	Ro	adina		Corre	ct		Racu	l+		1	imit		Ma	rain			
(MHz)	C y	(d	BuV)		Facto	or N	(d	BuV	/m)		(dB	uV/m)	(dB		Rema	rk
4924.00	00	3	1 70		7 09	•,		38.8	8		7/	1 00		-31	5 12		neal	
+524.00		0	1.75		1.00			00.0	0	+	7-	1.00		-0,	5.12	_	pear	` <u> </u>
IN/A				_						+-						_		
										_						_		
mark																		
1. 1	Measu	rina	freau	enc	ies fr	om	1 GF	-Iz to	o the	÷10)th h	arm	oni	c of l	hiah	est		
		nont	al frad	זבוור	ncv										2			

2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode	IEEE 802.1	1n HT20 Lo	ow CH	Te	emp/H	um	24 (°	C)/ 33%RH
Test Item	H	armonic		Т	est Da	ate	Novem	ber 10, 2017
Polarize		/ertical		Tes	st Engi	neer	Jeri	y Chuang
Detector	Peak a	and Averag	е	le	st Volt	age	L	DC 12V
110.0 dBuV/m								
			ĺ				Limit	1: —
							Limit	2:
70								
70								
	X							
30.0								
1000.000 3550.	00 6100.00 86	50.00 11200.00) 13750.00	16300	.00 188	50.00 214	400.00	26500.00 MHz
Frequency	Reading	Correct	Resu	ult	Li	mit	Margin	P. mork
(MHz)	(dBuV)	(dB/m)	(dBuV	// m)	(dBi	uV/m)	(dB)	n Illaik
4824.000	31.62	6.84	38.4	6	74	ł.00	-35.54	peak
N/A								
					1			

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode	IE	EE 802	2.11n HT CH	20 Low	Te	emp/H	um	24 (°C)/ 33%RH
Test Item		H	larmonic		Т	est Da	ate	Novem	oer 10, 201
Polarize		Н	orizonta	I	Tes	st Engi	neer	Jerry	/ Chuang
Detector		Peak	and Ave	rage	Те	st Volt	age	D	C 12V
110.0 dBuV/m									
								Limit1: Limit2:	
70									
	1 X								
30.0 1000.000 3550.0	10 6100	1.00 869	50.00 1120)0.00 13750.00	16300	.00 188	50.00 214	100.00	26500.00 MHz
Frequency (MHz)	Rea (dE	ding BuV)	Correct Factor (dB/m)	Resi (dBu\	ult //m)	Li (dB	imit uV/m)	Margin (dB)	Remark
4824.000	31	.14	6.84	37.9	98	74	4.00	-36.02	peak
N/A									
			<u> </u>	I		<u> </u>		1	
emark:									
1 Meas	surina :	freque	ncies fro	m 1 GH z 1	o the	10th k	armon	ic of hiah	act

2. For above 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Item Harmonic Test Date Novemb Polarize Vertical Test Engineer Jerry Detector Peak and Average Test Voltage DC 110.0 dBuV/m Imit: Imit: Imit: ////////////////////////////////////	Der 10, 201 / Chuang C 12V							
Polarize Vertical Test Engineer Jerry Detector Peak and Average Test Voltage D(110.0 dBuV/m	v Chuang C 12V							
Detector Peak and Average Test Voltage D(110.0 dBuV/m IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII								
110.0 dBdV/n 110.0 dBdV/n								
70								
70								
Image: state of the state								
20 0								
1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz								
Frequency (MHz)Reading (dBuV)Correct Factor (dB/m)Result (dBuV/m)Limit (dBuV/m)Margin (dB)	R mark							
4874.000 30.54 6.97 37.51 74.00 -36.49	peak							
N/A								
emark:	oot							

2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode	IEEE 802.11n HT20 Mid CH				emp/Hum	۱	24 (°C)/ 33%RH	
Test Item	Harmonic			Test Date			November 10, 2017	
Polarize	Horizontal			Test Engineer			Jerry	v Chuang
Detector	Peak and Average			Test Voltage			D	C 12V
110.0 dBuV/m							Limit1: Limit2:	
70								
30.0 1000.000 3550.	1 X 00 6100.00 86	50.00 11200.00) 13750.00	16300	.00 18850.00) 214	00.00	26500.00 MHz
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resı (dBuV	ult //m)	Limit (dBuV/	: m)	Margin (dB	Remark
4874.000	31.12	6.97	38.0)9	74.00)	-35.91	peak
N/A								
Bomark:							1	

- Remark:
 - 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
 - 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit

Test Mode	IEEE 802.11n HT20 High CH				emp/Hi	um	24 (°C)/ 33%RH		
Test Item	Harmonic			Т	Test Date			ber 10, 2017	
Polarize	Vertical			Test Engineer			Jerry Chuang		
Detector	Peak and Average				Test Voltage)C 12V	
110.0 dBuV/m									
						Limit1 Limit2	: — <u>2</u> —		
70									
10									
	1 *								
30.0									
1000.000 355	1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz								
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Resı (dBuV	ult L //m) (dB		mit ıV/m)	Margin (dB)	Remark	
4924.000	31.17	7.09	38.26		74.00		-35.74	peak	
N/A									
		<u> </u>							
кетагк: 1. Меа	Remark: 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest								
fund	damental freq	uency.	-	-	-		0.		
2. For	above 1GHz, erage value co	the EUT pe mpliance w	ak value vith the a	e was averac	under ne limit	averag	ge limit, t	herefore the	

Test Mode	IEEE 802.11n HT20 High CH				emp/H	C)/ 33%RH		
Test Item	Harmonic				est Da	ite	November 10, 2017	
Polarize	Horizontal				st Engi	neer	Jerry Chuang	
Detector	Peak and Average			Те	st Volt	age	D	C 12V
110.0 dBuV/m								
70								
30.0 1000.000 3550.	1 00 6100.00 86	50.00 11200.00) 13750.00	16300	.00 1885	50.00 214	00.00	26500.00 MHz
		Commont						
Frequency (MHz	Reading (dBuV)	Factor (dB/m)	Resu (dBuV	ult //m)	Li (dBu	mit ⊿V/m)	Margin (dB)	Remark
4924.000	32.51	7.09	39.6	60	74	.00	-34.40	peak
N/A								
Remark:								

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. For above 1GHz,the EUT peak value was under average limit, therefore the Average value compliance with the average limit