

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC166774 Page: 1 of 198

FCC Radio Test Report FCC ID: V7TPA7

Original Grant

Report No. : TB-FCC166774

Applicant : SHENZHEN TENDA TECHNOLOGY CO.,LTD

Equipment Under Test (EUT)

EUT Name : AV 1000 AC Wi-Fi Powerline Extender

Model No. : PA7

Serial Model No. : /

Brand Name : /

Receipt Date : 2019-05-30

Test Date : 2019-05-30 to 2019-06-16

Issue Date : 2019-06-17

Standards: FCC Part 15, Subpart E (15.407)

Test Method : ANSI C63.10: 2013

Conclusions : PASS

In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC and IC requirements

Test/Witness Engineer : Jason xu

Test/Witness Engineer : WAW SV

Approved& Authorized : furth.

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0



Contents

CON	NTENTS	2
1.	GENERAL INFORMATION ABOUT EUT	5
	1.1 Client Information	5
	1.2 General Description of EUT (Equipment Under Test)	5
	1.3 Block Diagram Showing the Configuration of System Tested	
	1.4 Description of Support Units	
	1.5 Description of Test Mode	8
	1.6 Description of Test Software Setting	
	1.7 Test Facility	10
2.	TEST SUMMARY	11
3.	TEST EQUIPMENT	12
4.	CONDUCTED EMISSION TEST	13
	4.1 Test Standard and Limit	13
	4.2 Test Setup	
	4.4 EUT Operating Mode	14
	4.5 Test Data	14
5.	RADIATED EMISSION TEST	15
	5.1 Test Standard and Limit	15
	5.2 Test Setup	
	5.3 Test Procedure	18
	5.4 EUT Operating Condition	18
	5.5 Test Data	18
6.	BAND EDGE EMISSIONS	19
	6.1 Test Standard and Limit	19
	6.2 Test Setup	
	6.3 Test Procedure	20
	6.4 EUT Operating Condition	20
	6.5 Test Data	20
7.	BANDWIDTH TEST	21
	7.1 Test Standard and Limit	21
	7.2 Test Setup	21
	7.3 Test Procedure	21
	7.4 EUT Operating Condition	22
	7.5 Test Data	22
8.	OUTPUT POWER TEST	23
	8.1 Test Standard and Limit	23
	8.2 Test Setup	23
	8.3 Test Procedure	23
	8.4 EUT Operating Condition	23



 ${\tt Report\ No.:\ TB-FCC166774}$

Page: 3 of 198

	8.5 Test Date	23
9.	POWER SPECTRAL DENSITY TEST	24
	9.1 Test Standard and Limit	24
	9.2 Test Setup	24
	9.3 Test Procedure	24
	9.4 EUT Operating Condition	25
	9.5 Test Data	25
10.	FREQUENCY STABILITY MEASUREMENT	26
	10.1 Test Standard and Limit	26
	10.2 Test Setup	26
	10.3 Test Procedure	26
	10.4 EUT Operating Condition	26
11.	ANTENNA REQUIREMENT	27
	11.1 Standard Requirement	27
	11.2 Antenna Connected Construction	
	11.3 Result	27
ATT	ACHMENT A CONDUCTED EMISSION TEST DATA	28
ATT	ACHMENT B RADIATED EMISSION TEST DATA	32
	ACHMENT C RESTRICTED BANDS REQUIREMENT AND BAND-EDGE 1	
	ACHMENT D BANDWIDTH TEST DATA	
ATT	ACHMENT E MAXIMUM OUTPUT POWER TEST DATA	168
	ACHMENT F POWER SPECTRAL DENSITY TEST DATA	
	ACHMENT GEREQUENCY STABILITY MEASUREMENT DATA	



Page: 4 of 198

Revision History

Report No.	Version	Description	Issued Date
TB-FCC166774	Rev.01	Initial issue of report	2019-06-17



Report No.: TB-FCC166774
Page: 5 of 198



1. General Information about EUT

1.1 Client Information

Applicant : SHENZHEN TENDA TECHNOLOGY CO.,LTD				
Address : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, District, Shenzhen, China. 518052				
Manufacturer		SHENZHEN TENDA TECHNOLOGY CO.,LTD		
Address		6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052		

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	AV 1000 AC Wi-Fi Powerline Extender				
Models No.	:	PA7				
Model Difference	:	1				
Product Description	:	Operation Freque U-NII-1: 5180MH U-NII-3: 5745MH RF Output Power: Antenna Gain: Modulation Type: Bit Rate of Transmitter:	Hz~5240MHz Hz~5825MHz U-NII-1: 802.11a: 14.641dBm 802.11n(HT20): 14.522dBm 802.11n(HT40): 14.653dBm 802.11ac(20): 14.763dBm 802.11ac(40): 14.547dBm 802.11ac(80): 14.490dBm see note(3) 802.11a: OFDM (QPSK, E) 802.11a: OFDM (QPSK, E) 802.11ac: OFDM (QPSK, E)	BPSK, 16QAM, 64QAM) BPSK, 16QAM, 64QAM,		
Power Rating	:	Input/Output: AC	C100V-240V,0.1A,50/60Hz			
Software Version	:	N/A				
Hardware Version	:	N/A				
Connecting I/O	:	Please refer to t	he User's Manual			



Page: 6 of 198

Port(S)

Note: More detailed features description, please refer to the manufacturer's specifications or the User's Manual.

Note:

(1) This Test Report is FCC Part 15, Subpart E(15.407) for 802.11a/n/ac, the test procedure follows the KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

(2) Channel List:

5G Band 5150~5250 MHz (U-NII-1)							
Frequency Band	Channel No.	Frequency	Channel No.	Frequency			
	36	5180 MHz	44	5220 MHz			
5180~5240 MHz	38	5190 MHz	46	5230 MHz			
Band 1	40	5200 MHz	48	5240 MHz			
	42	5210 MHz					

Remark:

For 20 MHz Bandwidth, use channel 36, 40, 44, 48.

For 40 MHz Bandwidth, use channel 38, 46.

For 80 MHz Bandwidth, use channel 42.

5G Band 5745~5825 MHz(U-NII-3)								
Frequency Channel No. Frequency Channel No. Frequency								
Band								
	149	5745 MHz	157	5785 MHz				
5745~5825 MHz	151	5755 MHz	159	5795 MHz				
Band 4	153	5765 MHz	161	5805 MHz				
	155	5775 MHz	165	5825 MHz				

Remark:

For 20 MHz Bandwidth, use channel 149, 153, 157, 161, 165.

For 40 MHz Bandwidth, use channel 151, 159.

For 80 MHz Bandwidth, use channel 155.



 ${\tt Report\ No.:\ TB-FCC166774}$

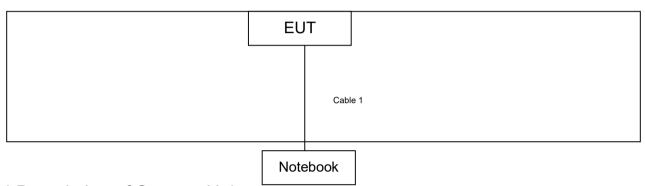
Page: 7 of 198

(3) Antenna information:

Antenna	Brand	Model Name	Туре	Antenna Gain(dBi)
NA : ANIT	TENIDA	N1/A	DIEA	2.3dBi (2.4GHz-2.4835GHz)
Main ANT.	TENDA	N/A	PIFA	4.1dBi (5.15GHz-5.85GHz)

1.3 Block Diagram Showing the Configuration of System Tested

TX Mode



1.4 Description of Support Units

Name	Model	Model S/N		Used "√"
Notebook	T60P	T60P 42W3244 Lenovo		√
Number	Shielded Type	Ferrite Core	Length	Note
Cable 1	NO	NO	9M	



Page: 8 of 198

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated

respectively.

espectively.					
For Conducted Test					
Final Test Mode Description			otion		
Mode 1		TX 802.	11a Mode		
		F	or Radiated Test		
Test Band	Final Tes	st Mode	Description		
	Mod	e 2	TX Mode 802.11a Mode Channel 36/40/48		
	Mod		TX Mode 802.11n(HT20) Mode Channel 36/40/48		
11 800 4	Mod	e 4	TX Mode 802.11n(HT40) Mode Channel 38/46		
U-NII-1	Mod	e 5	TX Mode 802.11ac(20) Mode Channel 36/40/48		
	Mod	e 6	TX Mode 802.11ac(40) Mode Channel 38/46		
	Mod	e 7	TX Mode 802.11ac(80) Mode Channel 42		
	Mod	e 8	TX Mode 802.11a Mode Channel 149/157/165		
	Mode 9		TX Mode 802.11n(HT20) Mode Channel 149/157/165		
U-NII-3	Mode	e 10	TX Mode 802.11n(HT40) Mode Channel 151/159		
U-INII-3	Mode	e 11	TX Mode 802.11ac(20) Mode Channel 149/157/165		
	Mode	12	TX Mode 802.11ac(40) Mode Channel 151/159		
	Mode	e 13	TX Mode 802.11ac(80) Mode Channel 155		

Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

802.11a Mode: OFDM (6 Mbps) 802.11n (HT20) Mode: MCS 8 802.11n (HT40) Mode: MCS 8 802.11a(20) Mode: MCS 1/Nss2 802.11a(40) Mode: MCS 1/Nss2 802.11a(80) Mode: MCS 6/Nss2

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a mobile unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.



Page: 9 of 198

1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN.

Test Software Version	Test Software Version MTool_2.0.1.7.exe						
U-NII-1							
Mode:	5180MHz	5200MHz	5240MHz				
IEEE 802.11a	40	40	40				
IEEE 802.11n (HT20)	40	40	40				
IEEE 802.11ac (20)	40	40	40				
Mode:	5190MHz	5230MHz					
IEEE 802.11n (HT40)	40	40					
IEEE 802.11ac (40)	40	40					
Mode:	5210MHz						
IEEE 802.11ac (80)	DEF						
	U-N	II-3					
Mode:	5745MHz	5785MHz	5825MHz				
IEEE 802.11a	40	40	40				
IEEE 802.11n (HT20)	40	40	40				
IEEE 802.11ac (20)	40	40	40				
Mode:	5755MHz	5795MHz					
IEEE 802.11n (HT40)	40	40					
IEEE 802.11ac (40)	40	40					
Mode:	5775MHz						
IEEE 802.11ac (80)	40						



Page: 10 of 198

1.7 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at:1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China.

At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



11 of 198 Page:

2. Test Summary

FCC Part 15 Subpart E(15.407)							
Standard Section Test Item Judgment Remains							
FCC	root nom	ouagment	Keman				
15.203	Antenna Requirement	PASS	N/A				
15.207	Conducted Emission	PASS	N/A				
15.407(b)	Band Edge Emissions	PASS	N/A				
15.407(a)	26dB Bandwidth&99% Bandwidth	PASS	N/A				
15.407(e)	6dB Bandwidth(only for UNII-3)	PASS	N/A				
15.407(a)	Peak Output Power	PASS	N/A				
15.407(a)	Power Spectral Density	PASS	N/A				
15.407(b)	Transmitter Radiated Spurious Emission	PASS	N/A				
15.407(g)	Frequency Stability	PASS	N/A				
Note: "/" for no requirement for this test item.							

N/A is an abbreviation for Not Applicable.



Page: 12 of 198

3. Test Equipment

Conducted Emission Test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul.18, 2018	Jul. 17, 2019
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul.18, 2018	Jul. 17, 2019
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul.18, 2018	Jul. 17, 2019
LISN	Rohde & Schwarz	ENV216	101131	Jul.18, 2018	Jul. 17, 2019
Test soft	Fala	EZ-EMC	V3.1	N/A	N/A
Radiation Emission	Test				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul.18, 2018	Jul. 17, 2019
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul.18, 2018	Jul. 17, 2019
Spectrum Analyzer	Rohde & Schwarz	FSVR	1311.006K40-100 945-DH	Feb. 10, 2019	Feb. 09, 2020
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Jan. 27, 2019	Jan. 26, 2020
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Jan. 27, 2019	Jan. 26, 2020
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.03, 2019	Mar. 02, 2020
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar.03, 2019	Mar. 02, 2020
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 14, 2018	Jul.13, 2019
Pre-amplifier	Sonoma	310N	185903	Mar.04, 2019	Mar. 03, 2020
Pre-amplifier	HP	8449B	3008A00849	Mar.03, 2019	Mar. 02, 2020
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.03, 2019	Mar. 02, 2020
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Test soft	Fala	EZ-EMC	V3.1	N/A	N/A
Antenna Conducted	Emission				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul.18, 2018	Jul. 17, 2019
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul.18, 2018	Jul. 17, 2019
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Oct. 15, 2018	Sep. 14, 2019
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Oct. 15, 2018	Sep. 14, 2019
DE Dower Constr	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Oct. 15, 2018	Sep. 14, 2019
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Oct. 15, 2018	Sep. 14, 2019
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Oct. 15, 2018	Sep. 14, 2019
Test soft	MWRFtest	MTS8310	V2.0	N/A	N/A



Page: 13 of 198

4. Conducted Emission Test

4.1 Test Standard and Limit

4.1.1Test Standard FCC Part 15.207

4.1.2 Test Limit

Conducted Emission Test Limit Part 15.207(a)

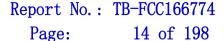
Eroguonov	Maximum RF Line Voltage (dBμV)		
Frequency	Quasi-peak Level	Average Level	
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

Conducted Emission Test Limit Part 15.207(b)

Frequency		Maximum RF Line Voltage (dBμV)	
		Quasi-peak Level	
0.535MHz~1.705MHz		60	

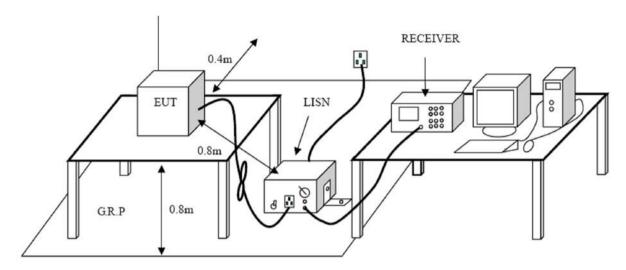
Notes:

- (1) For In-House BPL devices operating as unintentional radiators below 30MHz, the conducted emissions shall be measured in the 535-1705kHz band as specified in Section 15.207(b).
- (2) For In-House BPL devices operation as unintentional radiators above 30MHz, the conducted emission. shall be measured as specified in Section 15.207(a).
- (3) *Decreasing linearly with logarithm of the frequency.
- (4) The lower limit shall apply at the transition frequencies.
- (5) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.





4.2 Test Setup



4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

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

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

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

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 EUT Operating Mode

Please refer to the description of test mode.

4.5 Test Data

Please refer to the Attachment A.

15 of 198 Page:

5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.209

5.1.2 Test Limit

Radiated Emission Limits (9kHz~1000MHz)

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

Radiated Emission Limit (Above 1000MHz)

Frequency	Distance of 3m (dBuV/m)		
(MHz)	Peak	Average	
Above 1000	74	54	

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

Limits of unwanted emission out of the restricted bands

Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27(Note 2)	68.3
	10(Note 2)	105.3
	15.6(Note 2)	110.9
	27(Note 2)	122.3



Page: 16 of 198



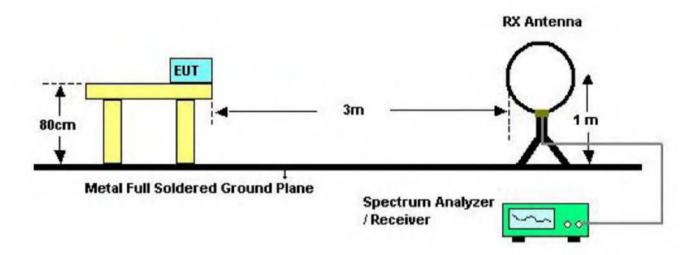
NOTE:

1, The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$\mathsf{E} = \frac{1000000\sqrt{30P}}{3}\,\mathsf{uV/m},\,\mathsf{where}\;\mathsf{P}\;\mathsf{is}\;\mathsf{the\;eirp\;(Watts)}$$

2, According to FCC 16-24,All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below theband edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above orbelow the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

5.2 Test Setup

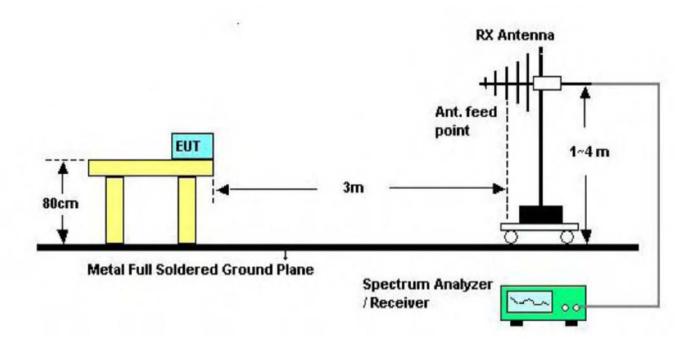


Below 30MHz Test Setup

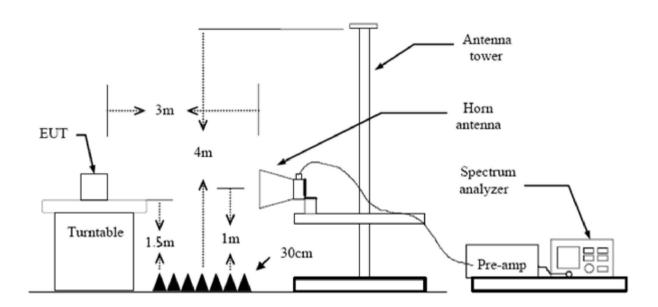




Page: 17 of 198



Below 1000MHz Test Setup



Above 1GHz Test Setup



Page: 18 of 198

5.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.

- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

5.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

Please refer to the Attachment B.



Page: 19 of 198

6. Band Edge Emissions

6.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.407(b)

6.1.2 Test Limit

Limits of unwanted emission out of the restricted bands

Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
	-27(Note 2)	68.3
	10(Note 2)	105.3
5725~5825	15.6(Note 2)	110.9
	27(Note 2)	122.3

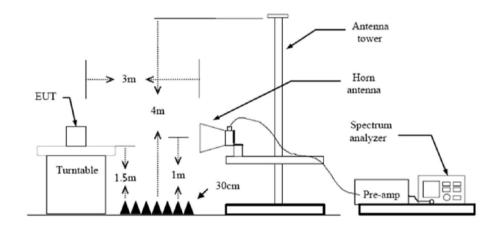
NOTE:

1, The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$\mathsf{E} = \frac{1000000\sqrt{30P}}{3}\,\mathsf{uV/m},\,\mathsf{where}\,\,\mathsf{P}\,\,\mathsf{is}\,\,\mathsf{the}\,\,\mathsf{eirp}\,\,\mathsf{(Watts)}$$

2, According to FCC 16-24,All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below theband edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above orbelow the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

6.2 Test Setup





Report No.: TB-FCC166774
Page: 20 of 198

Page:

6.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz. The EUT was placed on a rotating 0.8m high above the ground, the table was rotated 360 degrees to determine the position of the highest radiation.

- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.5 Test Data

Please refer to the Attachment C.



Page: 21 of 198

7. Bandwidth Test

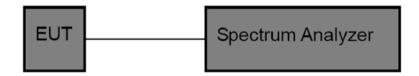
7.1 Test Standard and Limit

7.1.1 Test Standard FCC Part 15.407

7.1.2 Test Limit

FCC Part 15 Subpart C(15.407)/RSS-210			
Test Item	Limit	Frequency Range (MHz)	
		5150~5250	
26 Bandwidth	N/A	5250~5350	
		5500~5700	
6 dB Bandwidth	>500kHz	5725~5850	

7.2 Test Setup



7.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) The setting of the spectrum analyser as below:

26dB Bandwidth Test			
Spectrum Parameters	Setting		
Attenuation	Auto		
Span	>26 dB Bandwidth		
RBW	Approximately 1% of the emission bandwidth		
VBW	VBW>RBW		
Detector	Peak		
Trace	Max Hold		
Sweep Time	Auto		



Page: 22 of 198

6dB Bandwidth Test			
Spectrum Parameters	Setting		
Attenuation	Auto		
Span	>6 dB Bandwidth		
RBW	100 kHz		
VBW	VBW>=3*RBW		
Detector	Peak		
Trace	Max Hold		
Sweep Time	Auto		
	99% Occupied Bandwidth Test		
Spectrum Parameters	Setting		
Attenuation	Auto		
RBW	1% to 5% of the OBW		
VBW	≥ 3RBW		
Detector	Peak		
Trace	Max Hold		

7.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

7.5 Test Data

Please refer to the Attachment D.



Page: 23 of 198

8. Output Power Test

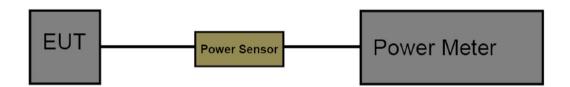
8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.407 (a)

8.1.2 Test Limit

FCC Part 15 Subpart E(15.407)/RSS-210				
Test Item	Frequency Range(MHz)			
Conducted Output Power	Fixed: 1 Watt (30dBm) Mobile and Portable: 250mW (24dBm)	5150~5250		
	250mW (24dBm)	5250~5350		
	250mW (24dBm)	5500~5700		
	1 Watt (30dBm)	5725~5850		

8.2 Test Setup



8.3 Test Procedure

The measurement is according to section 3 of KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

The EUT was connected to RF power meter via a broadband power sensor as show the block above.

8.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

8.5 Test Date

Please refer to the Attachment E.



Page: 24 of 198

9. Power Spectral Density Test

9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.407 (a)

9.1.2 Test Limit

FCC Part 15 Subpart E(15.407)					
Test Item Limit Frequency Range(M					
Power Spectral Density	Other than Mobile and Portable : 17dBm/MHz Mobile and Portable : 11dBm/MHz	5150~5250			
	11dBm/MHz	5250~5350			
	11dBm/MHz	5500~5700			
	30dBm/500kHz	5725~5850			

9.2 Test Setup



9.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement is according to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
 - (2) Set analyser centre frequency to transmitting frequency.
 - (3) Set the span to encompass the entire emissions bandwidth (EBW)(alternatively, the entire 99% OBW) of the signal.
 - (4) Set the RBW to: 1 MHz (5) Set the VBW to: 3 MHz
 - (6) Detector: RMS(7) Trace: Max Hold(7) Sweep time: auto
 - (8) Trace average at least 100 traces in power averaging.



Report No.: TB-FCC166774
Page: 25 of 198

(9) User the peak marker function to determine the maximum amplitude level within the RBW. Apply correction to the result if different RBW is used.

9.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

9.5 Test Data

Please refer to the Attachment F.



Page: 26 of 198

10. Frequency Stability Measurement

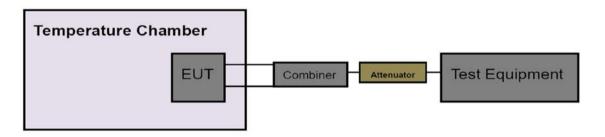
10.1 Test Standard and Limit

10.1.1 Test Standard FCC Part 15.407

10.1.2 Test Limit

FCC Part 15 Subpart C(15.407)										
Test Item	Limit	Frequency Range(MHz)								
	Specified in the user's manual, the transmitter	5150~5250								
Peak Excursion	center frequency	5250~5350								
Measurement	tolerance shall be ±20 ppm maximum for the 5	5500~5700								
	GHz band (IEEE 802.11n specification)	5725~5850								

10.2 Test Setup



10.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
 - (2) Set analyser centre frequency to transmitting frequency.
 - (3) Set the span to encompass the entire emissions bandwidth (EBW) of the signal.
 - (4) Set the RBW to: 10 kHz, VBW=10 kHz with peak detector and maxhold settings.
 - (5) The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
 - (6) Extreme temperature is 0°C~50°C

10.4 EUT Operating Condition

The EUT was set to continuously transmitting in continuously un-modulation transmitting mode. Please refer to the Attachment G.



Page: 27 of 198

11. Antenna Requirement

11.1 Standard Requirement

11.1.1 Standard FCC Part 15.203

11.1.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

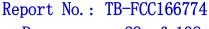
11.2 Antenna Connected Construction

The gains of the antenna used for transmitting is 4.1 dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

11.3 Result

The EUT antennas are PIFA Antenna. It complies with the standard requirement.

Antenna Type							
✓ Permanent attached antenna							
□ Unique connector antenna							
☐ Professional installation antenna							

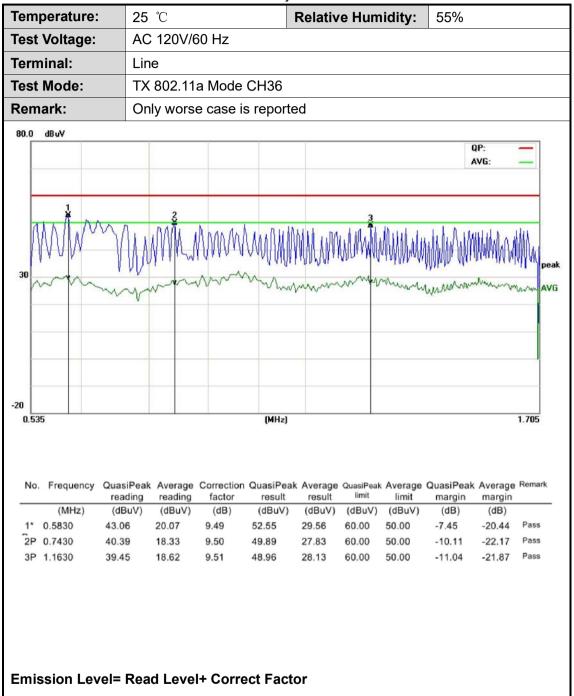


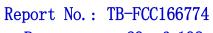


Page: 28 of 198

Attachment A-- Conducted Emission Test Data

Remark: All channels have been tested and Shows only the worst channels.







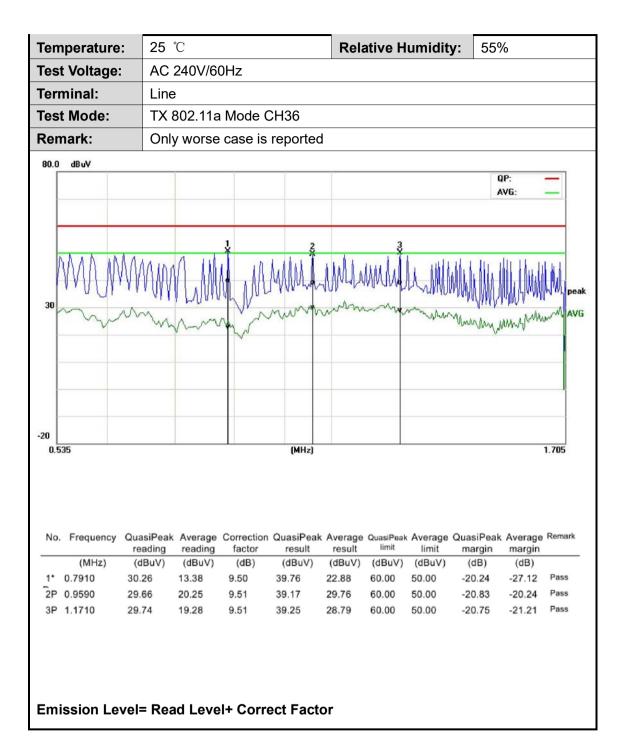
Page: 29 of 198

Temperature:	25 ℃		Relativ	e Humidity:	55%	
Test Voltage:	AC 120V/6	60 Hz			•	
Terminal:	Neutral					
Test Mode:	TX 802.11	a Mode CH36				
Remark:	Only wors	e case is repo	rted			
80.0 dBuV						
					QP AV	3
				6.00		-
17.111	Na it it.	3	l laterika	3 (L. T. J. Kalinala	ari vila	
1A A/VIVVAA	ATTAMAM MYY		A A A A A A A A A A A A A A A A A A A		Wal ravallalla	ре
30	Million	19.5 . 1 . 11	Mhaidaiti	ta a ri Datan Arki kledi.	i. JhMali i inter	Mad Mar in the
many	mum	manny "	mmm	morrowand	mymmyn	mungum AV
	J		22			
0.535	ļ.	(MHz	1			1,705
		•	•			
No. Frequency Q	uasiPeak Average	Correction QuasiPe	eak Average		QuasiPeak A	verage Remark
	reading reading (dBuV) (dBuV)	factor result (dB) (dBuV		limit limit (dBuV) (dBuV)	margin (dB)	margin (dB)
. ,	1.58 16.98	9.42 51.00	26.40	60.00 50.00	. ,	-23.60 Pass
-	0.69 18.45	9.43 50.12	27.88	60.00 50.00		-22.12 Pass
3P 1.1350 3	9.67 19.69	9.43 49.10	29.12	60.00 50.00	-10.90	-20.88 Pass
Emission Level	= Bood Love	L Correct For	oto r			
Emission Level	– Read Leve	it Correct Fac	JUT			





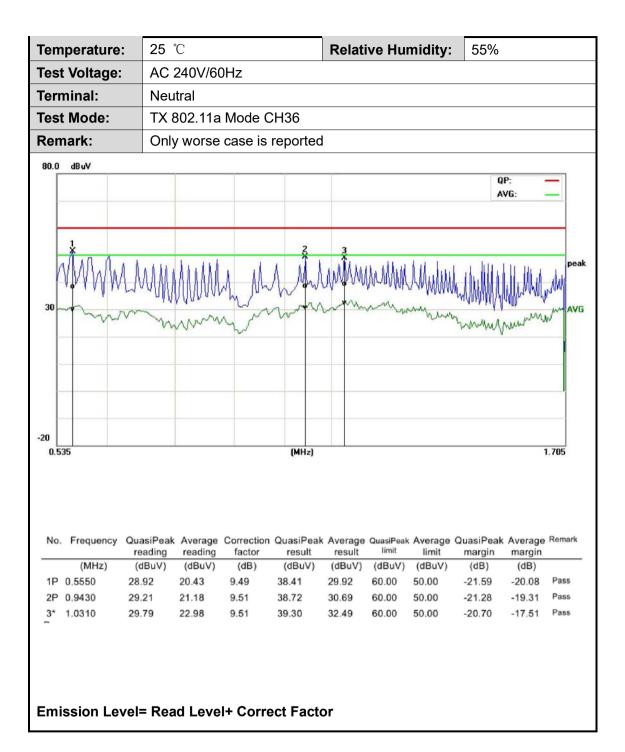
Page: 30 of 198







Page: 31 of 198







Page: 32 of 198

Attachment B-- Radiated Emission Test Data

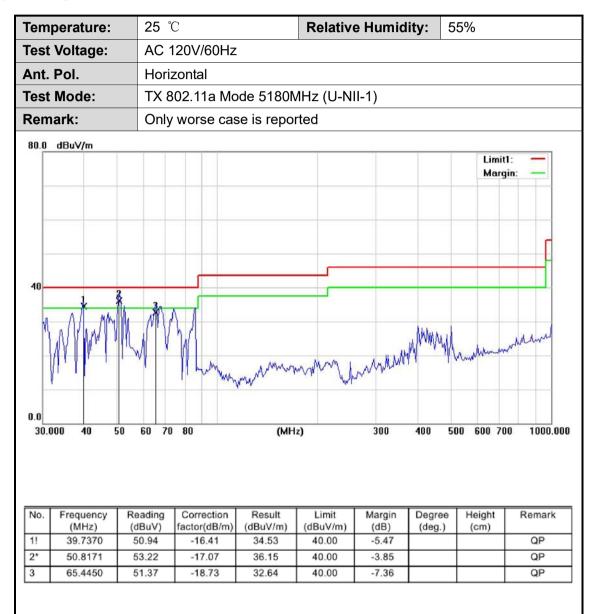
9 KHz~30 MHz

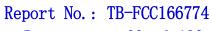
From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB

below the permissible value has no need to be reported.

30MHz~1GHz

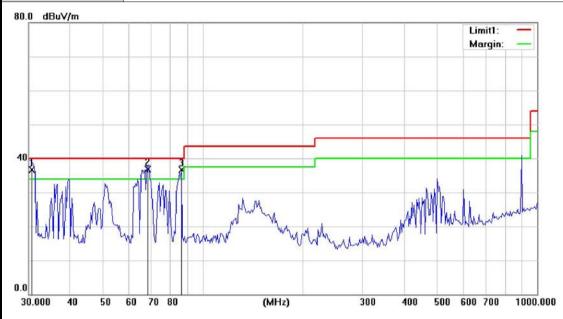






Page: 33 of 198

Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical						
Test Mode:	TX 802.11a Mode 5180M	TX 802.11a Mode 5180MHz (U-NII-1)					
Remark:	Only worse case is repor	ted					



No.	Frequency	Reading	Correction	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(deg.)	(cm)	
1!	30.6391	54.52	-17.83	36.69	40.00	-3.31			QP
2*	68.2635	56.09	-19.11	36.98	40.00	-3.02			QP
3!	86.0795	58.61	-21.88	36.73	40.00	-3.27			QP

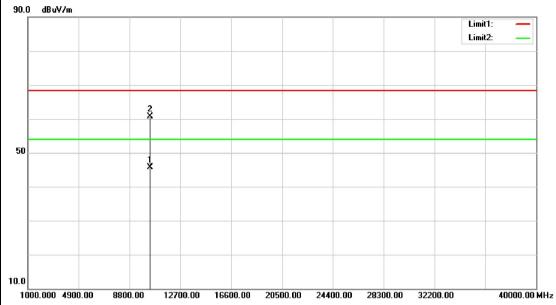




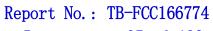
Page: 34 of 198

5180MHz-5250MHz(U-NII-1)

Temperature:	25 ℃	Relative Humidity:	55%						
Test Voltage:	AC 120V/60Hz								
Ant. Pol.	Horizontal	Horizontal							
Test Mode:	TX 802.11a Mode 5180M	Hz (U-NII-1)							
Remark:	No report for the emission	No report for the emission which more than 10 dB below the							
	prescribed limit.	prescribed limit.							
00.0									



No.	Frequency (MHz)		Correction factor(dB/m)		Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10363.164	25.72	19.95	45.67	54.00	-8.33			AVG
2*	10360.656	40.70	19.95	60.65	68.30	-7.65			peak

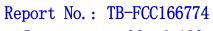




Page: 35 of 198

[em	perature:	25 ℃	Relative Humidity:	55%
Гest	Voltage:	AC 120V/60Hz		
\nt.	Pol.	Vertical		
est	Mode:	TX 802.11a Mode 5180N	ИНz (U-NII-1)	
₹em	ark:	No report for the emission	on which more than 10 o	dB below the
		prescribed limit.		
90.0	dBuV/m			
				Limit1: — Limit2: —
		2		
50				
20		*		
).0				
1000	0.000 4900.00 8	800.00 12700.00 16600.00 205	00.00 24400.00 28300.00 3	2200.00 40000.00 MF

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10358.454	25.06	19.96	45.02	54.00	-8.98			AVG
2*	10360.874	40.50	19.95	60.45	68.30	-7.85			peak

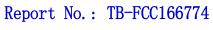




Page: 36 of 198

Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Horizontal		
est Mode:	TX 802.11a Mode 52	00MHz (U-NII-1)	
Remark:	No report for the emi prescribed limit.	ssion which more than 10 o	dB below the
90.0 dBuV/m			Limit1: —
	1		
50	*		
1000.000 4900.00	8800.00 12700.00 16600.00	20500.00 24400.00 28300.00 3	32200.00 40000.00 MF

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	10401.477	42.55	19.90	62.45	68.30	-5.85			peak
2	10402.387	26.67	19.91	46.58	54.00	-7.42			AVG

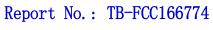




Page: 37 of 198

Temperature:		25 ℃		Relativ	e Humid	lity:	55%	
Tes	t Voltage:	AC 120V/60)Hz					
4nt	. Pol.	Vertical						
Tes	t Mode:	TX 802.11a	Mode 5200N	⁄IHz (U-N	III-1)			
Ren	nark:		or the emission			n 10 d	B below	the
		prescribed						
90.0	dBuV/m							
							Limi Limi	
-								
-		*						
50								
		*						
0.0								
	00.000 4900.00	B800.00 12700.00	16600.00 205	00.00 2440	0.00 28300	.00 32	200.00	40000.00 M

No.	Frequency (MHz)		Correction factor(dB/m)		Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	10400.457	40.54	19.91	60.45	68.30	-7.85			peak
2	10403.896	25.22	19.90	45.12	54.00	-8.88			AVG

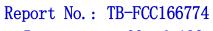




Page: 38 of 198

Ten	nperature:	25	25 ℃ Relative Humidity: 55%							
Tes	t Voltage:	AC	120V/60I	Hz						
Ant	. Pol.	Hor	izontal							
Tes	t Mode:	TX	302.11a I	Mode 52	40MHz	(U-NII-1)				
Rer	mark:		eport for scribed li		ssion wh	nich more	than 10	dB below	the	
90.0	dBuV/m									
									mit1: — mit2: —	
		Î								
50		1								
10.0										
10	00.000 4900.00	8800.00	12700.00	16600.00	20500.00	24400.00	28300.00 3	2200.00	40000.00 M	1Hz

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	10481.000	27.81	19.73	47.54	54.00	-6.46			AVG
2	10482.169	39.41	19.72	59.13	68.30	-9.17			peak

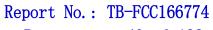




Page: 39 of 198

Temperature:25 °CRelative Humidity:55%										
Test	t Voltage:	AC	120V/60	Hz						
Ant.	Pol.	Vert	rtical							
Test	t Mode:	TX	802.11a	Mode 52	240MHz	(U-NII-1)			
Ren	nark:	No	report fo	r the em	ission wl	nich mor	e than 10	dB belo	ow the	
		pres	scribed li	mit.						
90.0	dBuV/m									
									Limit1: — Limit2: —	
		2								
50										
		1	:							
10.0										
100	0.000 4900.00	8800.00	12700.00	16600.00	20500.00	24400.00	28300.00	32200.00	40000.00 k	MHZ

No.	(MHz)	(dBuV)	factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(deg.)	(cm)	Remark
1	10479.427	24.84	19.72	44.56	54.00	-9.44			AVG
2*	10480.457	41.72	19.73	61.45	68.30	-6.85	· · · · · · · · · · · · · · · · · · ·		peak





Page: 40 of 198

Temp	perature:	25 ℃	Relative Humidity:	55%
Test '	Voltage:	AC 120V/60Hz		
Ant.	Pol.	Horizontal		
Test	Mode:	TX 802.11n(20) Mode 5	180MHz (U-NII-1)	
Rema	ark:	No report for the emission	on which more than 10 o	dB below the
		prescribed limit.		
90.0	dBuV/m			
				Limit1: — Limit2: —
		2 X		
50		1		
10.0				

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10359.467	27.58	19.96	47.54	54.00	-6.46			AVG
2*	10361.457	42.49	19.96	62.45	68.30	-5.85			peak





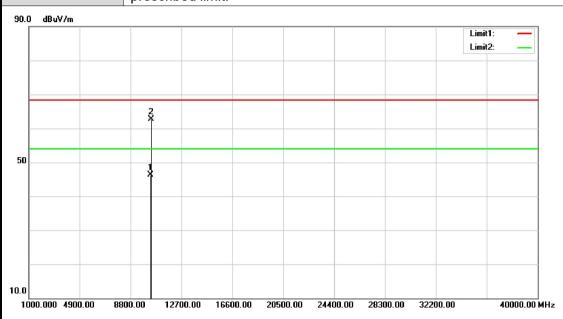
 Temperature:
 25 °C
 Relative Humidity:
 55%

 Test Voltage:
 AC 120V/60Hz

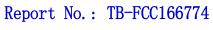
 Ant. Pol.
 Vertical

 Test Mode:
 TX 802.11n(20) Mode 5180MHz (U-NII-1)

 Remark:
 No report for the emission which more than 10 dB below the prescribed limit.



No.	Frequency (MHz)	(dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10358.453	26.32	19.96	46.28	54.00	-7.72			AVG
2*	10361.546	42.68	19.96	62.64	68.30	-5.66			peak

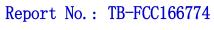




Page: 42 of 198

Ten	nperature:	25 ℃	Relative Humidity:	55%			
Tes	st Voltage:	AC 120V/60Hz					
Ant	t. Pol.	Horizontal					
Tes	t Mode: TX 802.11n(20) Mode 5200MHz (U-NII-1)						
Rer	mark:	No report for the emission prescribed limit.	on which more than 10 o	dB below the			
90.0) dBuV/m			Limit1: — Limit2: —			
		*					
50		*					
10.0							
	00.000 4900.00	8800.00 12700.00 16600.00 209	00.00 24400.00 28300.00 3	2200.00 40000.00 MHz			

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10400.192	41.43	19.91	61.34	68.30	-6.96			peak
2*	10402.641	28.70	19.91	48.61	54.00	-5.39			AVG

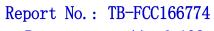




Page: 43 of 198

Ten	nperature:	25 ℃		Relative Humidity:	55%		
Tes	t Voltage:	AC 120V	/60Hz				
Ant	. Pol.	Vertical					
Test Mode: TX 802.11n(20) Mode 5200MHz (U-NII-1)							
Rer	mark:	No report	t for the emission	n which more than 10 o	dB below the		
		prescribe	ed limit.				
90.0	dBuV/m						
					Limit1: — Limit2: —		
		*					
50		*					
10.0							
	00.000 4900.00 8	800.00 12700	0.00 16600.00 2050	0.00 24400.00 28300.00 3	2200.00 40000.00 MHz		

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10399.561	42.90	19.91	62.81	68.30	-5.49			peak
2*	10401.947	28.70	19.91	48.61	54.00	-5.39			AVG

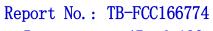




Page: 44 of 198

lem	nperature:		25 ℃			Relative Humidity: 55%					
Гes	Test Voltage: AC 120V/60Hz										
4nt	. Pol.		Horizon	tal							
Tes	t Mode:		TX 802.	11n(20)	Mode 52	240MHz	(U-NII-1)			
Ren	nark:		No repo	ort for the	emissio	on which	more th	an 10 d	dB belo	w the	
			prescrib	ed limit.							
90.0	dBuV/m										
										Limit1: — Limit2: —	
			2 X								
50			1								
10.0 100	00.000 4900.00	8800	D.00 127	00.00 1660	00.00 205	00.00 244	100.00 283	00.00 3	2200.00	40000.00 MH:	

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10478.249	27.56	19.73	47.29	54.00	-6.71		- 1	AVG
2*	10482.624	41.96	19.72	61.68	68.30	-6.62			peak

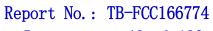




Page: 45 of 198

Tempera	iture:	25 ℃		Relative Humidity:	: 55%						
Test Volt	tage:	AC 120V/60Hz									
Ant. Pol.		Vertical	ertical								
Test Mod	de:	TX 802.11	TX 802.11n(20) Mode 5240MHz (U-NII-1)								
Remark: No report for the emission which more than 10 dB below the											
		prescribed	d limit.								
90.0 dBuV	/m										
					Limit1: — Limit2: —						
		2									
		2 X									
50											
ວບ		*									
10.0											

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10479.486	26.90	19.72	46.62	54.00	-7.38			AVG
2*	10482.269	41.60	19.72	61.32	68.30	-6.98			peak

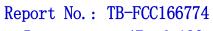




Page: 46 of 198

Temperature:	25 ℃	Relative Humidity:	55%							
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz								
Ant. Pol.	Horizontal	Horizontal								
Test Mode:	TX 802.11ac(20) Mode 5	X 802.11ac(20) Mode 5180MHz (U-NII-1)								
Remark:	No report for the emission	on which more than 10	dB below the							
	prescribed limit.									
90.0 dBuV/m										
			Limit1: —— Limit2: ——							
	¥									
50	2									
	*									
0.0	8800.00 12700.00 16600.00 205	00.00 24400.00 28300.00 3	32200.00 40000.00 MI							

No.	Frequency (MHz)	(dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	10358.429	43.88	19.96	63.84	68.30	-4.46			peak
2	10360.580	27.26	19.95	47.21	54.00	-6.79			AVG

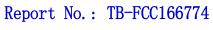




Page: 47 of 198

Temperature:	25 ℃	Relative Humidity:	55%						
Гest Voltage:	AC 120V/60Hz								
Ant. Pol.	Vertical								
est Mode:	TX 802.11ac(20) Mode 5	5180MHz (U-NII-1)							
Remark:	No report for the emission	on which more than 10	dB below the						
	prescribed limit.								
90.0 dBuV/m									
			Limit1: —— Limit2: ——						
	2 *								
	*								
50									
	*								
0.0									
1000.000 4900.00	8800.00 12700.00 16600.00 2050	00.00 24400.00 28300.00 3	2200.00 40000.00 MF						

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10361.849	24.33	19.96	44.29	54.00	-9.71			AVG
2*	10363.359	41.90	19.94	61.84	68.30	-6.46		i i	peak

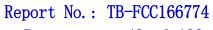




Page: 48 of 198

emperature: 25 °C Relative Humidity: 55%										
Test Voltage:	AC 120V/60Hz									
Ant. Pol.	Horizontal	orizontal								
Test Mode:	TX 802.11ac(20) Mode 5	TX 802.11ac(20) Mode 5200MHz (U-NII-1)								
Remark:	No report for the emission prescribed limit.	n which more than 10 c	dB below the							
90.0 dBuV/m			Limit1: — Limit2: —							
	1									
50	*									
10.0 1000.000 4900.00 8	800.00 12700.00 16600.00 2050	00.00 24400.00 28300.00 3	2200.00 40000.00 MHz							

NO.	(MHz)	(dBuV)	factor(dB/m)		(dBuV/m)	(dB)	(deg.)	(cm)	Remark
1	10398.957	39.77	19.91	59.68	68.30	-8.62		7	peak
2*	10401.950	27.74	19.91	47.65	54.00	-6.35			AVG





1000.000 4900.00

8800.00

12700.00

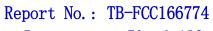
Page: 49 of 198

40000.00 MHz

Ter	emperature: 25 °C Relative Humidity: 55%						
Tes	st Voltage:	AC 120\	//60Hz				
An	t. Pol.	Vertical					
Tes	st Mode:	TX 802.	11ac(20) Mode 5	200MHz (U-NII-1)			
Re	mark:	No repo	rt for the emissio	n which more than	10 d	B below the	
		prescrib	ed limit.				
90.0) dBuV/m						
						Limit1: — Limit2: —	
		1 *					
50		2 *					

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	10398.497	39.57	19.92	59.49	68.30	-8.81			peak
2	10402.949	24.38	19.91	44.29	54.00	-9.71			AVG

16600.00 20500.00 24400.00 28300.00





Page: 50 of 198

Ten	nperatu	re:	25	$^{\circ}$			Re	lative	Humi	dity:	55%			
Tes	t Voltag	e:	AC	120V	60Hz									
Ant	. Pol.		Hor	izonta	ıl									
Tes	t Mode:		TX	TX 802.11ac(20) Mode 5240MHz (U-NII-1)										
Rer	nark:		No	report	for the	emis	sion w	hich n	nore th	an 10 d	dB belo	ow the)	
			pres	scribe	d limit.									
90.0	dBuV/m													ı
												Limit1: Limit2:		
			1											
50														
			3											
-														
-														
10.0	00 000 4000		200 00	12700	00 100	00.00	20500 00	24400	00 202	00.00 2	2200 00		10000 00 1	
10	DO.000 4900	.00 88	00.00	12700	.00 166	00.00	20500.00	24400.	.00 283	00.00 3	2200.00		40000.00 N	мHZ

No.	Frequency (MHz)		Correction factor(dB/m)		Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	10479.642	42.66	19.73	62.39	68.30	-5.91			peak
2	10481.650	23.20	19.72	42.92	54.00	-11.08			AVG

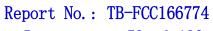




Page: 51 of 198

Tem	perature	2	5 ℃			Re	lative H	lumidity:	55%)			
Test	t Voltage:	А	C 120\	//60Hz	<u></u>								
Ant.	. Pol.	V	ertical										
Test	t Mode:	T.	TX 802.11ac(20) Mode 5240MHz (U-NII-1)										
Ren	nark:		o repo rescrib			sion wh	nich mor	e than 10	dB be	ow the			
90.0	dBuV/m									Limit1: Limit2:	_		
			*										
50			,										
			*										
10.0													
100	00.000 4900.00	8800.0	0 1270	00.00 1	6600.00	20500.00	24400.00	28300.00	32200.00	4	0000.00 M		

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	10478.659	41.90	19.73	61.63	68.30	-6.67			peak
2	10482.756	24.90	19.72	44.62	54.00	-9.38			AVG

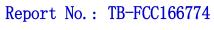




Page: 52 of 198

Ten	nperature:	25 ℃		Relative Humidity:	55%
Tes	t Voltage:	AC 120\	//60Hz		
Ant	. Pol.	Horizon	al		
Tes	t Mode:	TX 802.	11n (40) Mode 5	5190MHz (U-NII-1)	
Ren	nark:	No repo	rt for the emissi	on which more than 10	dB below the
		prescrib	ed limit.		
90.0	dBuV/m				
					Limit1: — Limit2: —
-					
		1			
		*			
50					
		*			
-					
10.0	00.000 4900.00 8	800.00 127	00.00 16600.00 20	500.00 24400.00 28300.00 3	32200.00 40000.00 MHz

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	10378.236	41.01	19.93	60.94	68.30	-7.36			peak
2	10382.367	26.44	19.93	46.37	54.00	-7.63			AVG





Page: 53 of 198

Temperature:25 ℃Relative Humidity:55%												
Test	t Voltage:	AC	120V/60I	Hz								
۱nt.	. Pol.	Vert	ical									
Test	t Mode:	TX 8	302.11n	(40) Mode	∍ 5190N	1Hz (U-I	VII-1)					
Ren	nark:	No r	No report for the emission which more than 10 dB below the									
		pres	cribed li	mit.								
90.0	dBuV/m											
									Limit1: Limit2:	_		
		2 *										
50		-										
		*										
0.0												
100	00.000 4900.00	8800.00	12700.00	16600.00	20500.00	24400.00	28300.00	32200.00		40000.00 MI		

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10378.945	24.44	19.93	44.37	54.00	-9.63			AVG
2*	10381.627	41.96	19.93	61.89	68.30	-6.41			peak

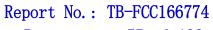


Page: 54 of 198



Ter	nperature:		25 ℃			Relativ	e Humidity:	55%					
Tes	t Voltage:		AC 120	V/60Hz									
Ant	t. Pol.		Horizor	ıtal									
Tes	st Mode:		TX 802.11n (40) Mode 5230MHz (U-NII-1)										
Rei	mark:		No repo	ort for the	e emissio	n which i	more than 10	dB bel	ow the				
			prescrib	ed limit.									
90.0) dBuV/m												
									Limit1: Limit2:				
			1 X										
			X										
50			2							_			
55			*										
10.0													
0.0000000000000000000000000000000000000	00.000 4900.00	880	0.00 12	700.00 166	600.00 2050	0.00 2440	0.00 28300.00	32200.00	400	000.00 MHz			
İ													

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10459.659	42.59	19.78	62.37	68.30	-5.93			peak
2*	10462.573	29.03	19.76	48.79	54.00	-5.21			AVG





2

10462.687

Page: 55 of 198

Temperature:		25 °C	C		Relativ	e Humid	lity:	55%				
Test Vo	tage:	AC 1	120V/60Hz	<u> </u>								
Ant. Po	l.	Verti	Vertical									
Test Mo	de:	TX 8	02.11n (40	0) Mode 5	230MHz	(U-NII-1)						
Remark	:	No re	eport for th	ne emissio	on which	more tha	n 10 dE	B below	the			
		pres	cribed limi	it.								
90.0 dBu\	//m	·										
								Limi Limi				
		1 *										
50		2										
		*										
0.0												
	4900.00	8800.00	12700.00 1	6600.00 205	00.00 2440	0.00 28300	NN 322	00.00	40000.00 MH			

Emission Level= Read Level+ Correct Factor

19.76

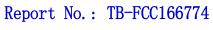
46.32

54.00

-7.68

26.56

AVG

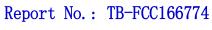




Page: 56 of 198

Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX 802.11ac (40) Mod	e 5190MHz (U-NII-1)					
Remark:	No report for the emiss prescribed limit.	sion which more than 10 o	0 dB below the				
90.0 dBuV/m							
			Limit1: — Limit2: —				
	2						
50	1						
10.0							
5.000.00.00	8800.00 12700.00 16600.00 2	20500.00 24400.00 28300.00 3	2200.00 40000.0				

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10382.957	25.88	19.93	45.81	54.00	-8.19			AVG
2*	10381.594	42.82	19.93	62.75	68.30	-5.55			peak





Page: 57 of 198

Temperature: 25 °C Relative Humidity: 55%				
Test Voltage:	AC 120V/60Hz			
Ant. Pol.	Vertical			
Test Mode:	TX 802.11ac (40)	Mode 5190MHz	(U-NII-1)	
Remark:	No report for the e	emission which m	nore than 10 dE	B below the
	prescribed limit.			
90.0 dBuV/m				
				Limit1: — Limit2: —
	2 X			
50	*			
10.0				
1000.000 4900.00	B800.00 12700.00 16600.	00 20500.00 24400.	00 28300.00 322	00.00 40000.00 MHz
No. Frequency	Reading Correction F	Result Limit	Margin Degree	Height Remark

10	10381.381	27.36	19.93	47.29	54.00	-6.71	AVG
2	10381.503	41.42	19.93	61.35	68.30	-6.95	peak

(dB)

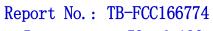
(deg.)

(cm)

(dBuV) factor(dB/m) (dBuV/m) (dBuV/m)

Emission Level= Read Level+ Correct Factor

(MHz)

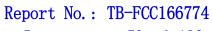




Page: 58 of 198

Ter	nperature:	25 ℃	Relative Humidity:	55%
Tes	st Voltage:	AC 120V/60Hz		
Ant	t. Pol.	Horizontal		
Tes	st Mode:	TX 802.11ac (40) Mode	e 5230MHz (U-NII-1)	
Rei	mark:	No report for the emiss prescribed limit.	ion which more than 10 o	dB below the
90.0) dBuV/m			
				Limit1: — Limit2: —
		2		
50				
30		×		
10.0				
10	000.000 4900.00 8	800.00 12700.00 16600.00 2	0500.00 24400.00 28300.00 3	2200.00 40000.00 MHz

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10459.957	26.04	19.77	45.81	54.00	-8.19			AVG
2*	10461.387	40.69	19.78	60.47	68.30	-7.83			peak

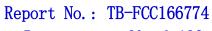




Page: 59 of 198

Temperature:	25 ℃	Relative Humidity:	55%							
Test Voltage:	AC 120V/60Hz									
Ant. Pol.	Vertical									
Test Mode:	TX 802.11ac (40) Mode	5230MHz (U-NII-1)								
Remark:	No report for the emissi		dB below the							
	prescribed limit.									
90.0 dBuV/m										
			Limit1: — Limit2: —							
	1									
	1 *									
50	2									
	×									
10.0										

	(MHz)	(dBuV)	factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(deg.)	(cm)	
1*	10458.618	41.75	19.78	61.53	68.30	-6.77			peak
2	10461.840	26.59	19.78	46.37	54.00	-7.63			AVG





1000.000 4900.00

8800.00

12700.00

Page: 60 of 198

40000.00 MHz

Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz							
Ant. Pol.	Horizontal							
Test Mode:	TX 802.11ac (80) Mod	(80) Mode 5210MHz (U-NII-1)						
Remark:	No report for the emis	sion which more than 10	dB below the					
	prescribed limit.							
90.0 dBuV/m								
			Limit1: — Limit2: —					
	2							
	2							
50								
	*							

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	10419.579	23.81	19.86	43.67	54.00	-10.33			AVG
2*	10422.842	38.78	19.85	58.63	68.30	-9.67			peak

16600.00 20500.00 24400.00 28300.00



Page: 61 of 198



Temperature: 25				Rela	ative Humidity:	55%
Tes	t Voltage:	AC 12	0V/60Hz			
An	t. Pol.	Vertica	al			
Tes	t Mode:	TX 802	2.11ac (80) N	/lode 5210M	1Hz (U-NII-1)	
Re	mark:		ort for the e	mission whic	ch more than 10) dB below the
90.0) dBuV/m					Limit1: —
		2 X				
50		*				
10.0						

No.	(MHz)	(dBuV)	factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(deg.)	(cm)	Remark
1*	10419.734	29.87	19.86	49.73	54.00	-4.27			AVG
2	10421.634	41.51	19.86	61.37	68.30	-6.93			peak

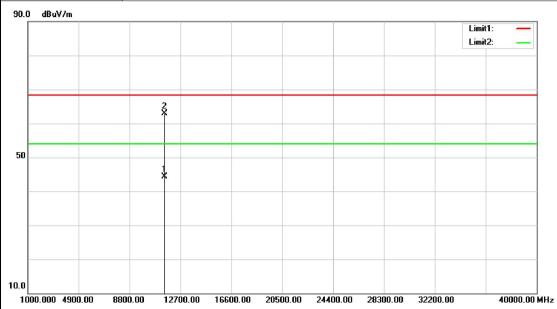




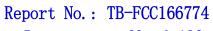
Page: 62 of 198

5745MHz-5825MHz(U-NII-3)

Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz							
Ant. Pol.	Horizontal							
Test Mode:	TX 802.11a Mode 5745M	IHz (U-NII-3)						
Remark:	No report for the emissio prescribed limit.	No report for the emission which more than 10 dB below the prescribed limit.						
00.0 40.377-	-							



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11489.562	24.06	20.33	44.39	54.00	-9.61			AVG
2*	11491.742	42.57	20.30	62.87	68.30	-5.43			peak

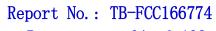




Page: 63 of 198

emperature:	25 ℃	°C Relative Humidity: 55%						
est Voltage:	AC 120V/60Hz							
Ant. Pol.	Vertical							
est Mode:	TX 802.11a Mode 5745M	802.11a Mode 5745MHz (U-NII-3)						
Remark:	No report for the emissio prescribed limit.	n which more than 10 o	dB below the					
90.0 dBuV/m			Limit1: —					
	*							
50	2							
1.00	8800.00 12700.00 16600.00 2050	0.00 24400.00 28300.00 3	2200.00 40000.00 M					

No.	Frequency (MHz)	(dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	(deg.)	Height (cm)	Remark
1*	11488.532	41.33	20.34	61.67	68.30	-6.63			peak
2	11493.267	26.09	20.28	46.37	54.00	-7.63			AVG

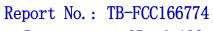




Page: 64 of 198

Ter	nperature:	25 ℃		Relative Humidity:	55%
Tes	st Voltage:	AC 120\	//60Hz		
An	t. Pol.	Horizont	al		
Tes	st Mode:	TX 802.	11a Mode 5785M	IHz (U-NII-3)	
Re	mark:	No repo prescrib		n which more than 10 o	dB below the
90.0) dBuV/m				Limit1:
50		1 ×			
10.0 10	000.000 49 00.00 88	000.00 1270	00.00 16600.00 2050	0.00 24400.00 28300.00 3	2200.00 40000.00 MHz

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11569.439	40.57	21.02	61.59	68.30	-6.71			peak
2	11572.681	25.30	21.07	46.37	54.00	-7.63	() ()	i i	AVG

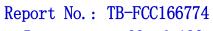




Page: 65 of 198

Tem	nperature:	25 ℃ Relative Humidity: 55%						
Tes	t Voltage:	AC 120V/	′60Hz					
Ant	. Pol.	Vertical						
Tes	t Mode:	TX 802.1	1a Mode 5785M	1Hz (U-NII-3)				
Ren	nark:	No report	for the emissio	n which more than 1	0 dB below the			
		prescribe	d limit.					
90.0	dBuV/m							
					Limit1: — Limit2: —			
-								
_								
		‡						
50		3						
-								
10.0								

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11571.734	41.78	21.05	62.83	68.30	-5.47			peak
2	11572.853	26.51	21.07	47.58	54.00	-6.42			AVG





Page: 66 of 198

Ten	nperature:	25 ℃		Relative Humidity:	tive Humidity: 55%						
Tes	t Voltage:	AC 120\	//60Hz								
Ant	t. Pol.	Horizont	tal								
Tes	t Mode:	TX 802.	11a Mode 5825M	IHz (U-NII-3)							
Rer	mark:	No repo	rt for the emissio	n which more than 10	dB below the						
		prescrib	ed limit.								
90.0) dBuV/m										
					Limit1: — Limit2: —						
		-									
		*									
50											
		2									
0.0											
	00.000 4900.00 8	800.00 1270	00.00 16600.00 2050	0.00 24400.00 28300.00 3	32200.00 40000.00 MHz						

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11651.275	40.42	20.94	61.36	68.30	-6.94			peak
2	11652.492	22.89	20.94	43.83	54.00	-10.17			AVG





Page: 67 of 198

Ter	nperature:	25 ℃		Relative Humi	dity:	55%
Tes	st Voltage:	AC 120\	//60Hz			
An	t. Pol.	Vertical				
Tes	st Mode:	TX 802.	11a Mode 5825M	IHz (U-NII-3)		
Rei	mark:	No repo prescrib	rt for the emissio ed limit.	n which more tha	an 10 c	IB below the
90.0	O dBuV/m					
		1				Limit1: — Limit2: —
50		*				

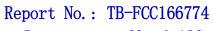
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11649.685	38.42	20.96	59.38	68.30	-8.92			peak
2*	11652.305	25.90	20.94	46.84	54.00	-7.16			AVG

12700.00 16600.00 20500.00 24400.00 28300.00

32200.00

Emission Level= Read Level+ Correct Factor

8800.00

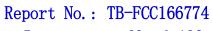




Page: 68 of 198

Ten	nperature:	25 ℃		Relative Humidity:	55%							
Tes	t Voltage:	AC 120V	AC 120V/60Hz									
Ant	t. Pol.	Horizonta	 al									
Tes	t Mode:	TX 802.1	TX 802.11n(20) Mode 5745MHz (U-NII-3)									
Rer	mark:	No repor	No report for the emission which more than 10 dB below the									
		prescribe	ed limit.									
90.0) dBuV/m											
					Limit1: — Limit2: —							
		*										
50		2										
		*										
0.0												
10	00.000 4900.00	8800.00 12700	0.00 16600.00 2050	0.00 24400.00 28300.00	32200.00 40000.00 MHz							

No.	Frequency (MHz)	Reading (dBu√)	Correction factor(dB/m)	(dBuV/m)	(dBuV/m)	Margin (dB)	(deg.)	Height (cm)	Remark
1	11491.043	39.42	20.31	59.73	68.30	-8.57			peak
2*	11492.873	28.34	20.29	48.63	54.00	-5.37			AVG

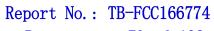




Page: 69 of 198

25 ℃	Relative Humidity:	55%
AC 120V/60Hz		
Vertical		
TX 802.11n(20) Mode 57	745MHz (U-NII-3)	
No report for the emission prescribed limit.	on which more than 10 c	dB below the
		Limit1: — Limit2: —
1 *		
2		
*		
8800.00 12700.00 16600.00 205	00.00 24400.00 28300.00 3;	2200.00 40000.00 MHz
	AC 120V/60Hz Vertical TX 802.11n(20) Mode 57 No report for the emission	AC 120V/60Hz Vertical TX 802.11n(20) Mode 5745MHz (U-NII-3) No report for the emission which more than 10 control prescribed limit.

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11489.344	41.48	20.33	61.81	68.30	-6.49			peak
2	11491.267	26.84	20.31	47.15	54.00	-6.85			AVG





Page: 70 of 198

Voltage: Pol. Mode:	Horizon												
Mode:		al			AC 120V/60Hz								
	TV 002			Horizontal									
	17 002.	TX 802.11n(20) Mode 5785MHz (U-NII-3)											
ark:	No repo	No report for the emission which more than 10 dB below the											
	prescrib	ed limit.											
dBuV/m													
							Limit1: Limit2:	_					
	2												
													
	*												
		dBuV/m	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dBuV/m Limit1: Limit2:					

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11571.247	26.77	21.04	47.81	54.00	-6.19			AVG
2*	11572.289	41.83	21.06	62.89	68.30	-5.41			peak

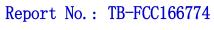




Page: 71 of 198

Tem	perat	ure:	25	$^{\circ}$				Rela	ative H	lumi	idity:	55%	6		
Tes	t Volta	age:	AC	120V/6	60Hz										
Ant	. Pol.		Ver	Vertical											
Tes	t Mod	e:	TX	802.11	n(20)	Mod	e 578	35MF	Hz (U-	NII-3)				
Ren	nark:			report scribed			ssior	n whi	ch mo	re th	an 10	dB be	elow t	he	
90.0	dBuV/i	n													,
													Limit Limit		
-															l
				2											
-				2											
50															
				*											
-															
-															-
10.0															
100	00.000 4	900.00	8800.00	12700.0	00 160	600.00	20500	0.00	24400.00	283	00.00	32200.00		40000.00	∟ MHz

No.	Frequency (MHz)		Correction factor(dB/m)		Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11568.564	23.37	21.02	44.39	54.00	-9.61			AVG
2*	11569.849	39.92	21.03	60.95	68.30	-7.35			peak

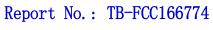




Page: 72 of 198

ıem	peratu	e:	25 °C						Re	lativ	⁄e Ηι	ımi	dity:	5	55%				
Test	t Voltag	e:	AC 1	20\	//60H	lz													
Ant.	Pol.		Horiz	ont	al														
Test	Mode:		TX 8	TX 802.11n(20) Mode 5825MHz (U-NII-3)															
Ren	nark:		No re				emis	ssio	n wh	ich	more	e tha	an 10	dB	belo	ow th	ne		
90.0	dBuV/m																		
																Limit1 Limit2			
				‡															
50																			
				*															
-																			
-																			
10.0	10.000 49 00	nn ss	300.00	1270	IN NN	16600	1 00	2050	IN NN	2440	IN NN	2830	n nn	3220	n nn		4000	00.00 MI	Hz

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11649.845	41.87	20.96	62.83	68.30	-5.47			peak
2	11652.905	23.35	20.94	44.29	54.00	-9.71			AVG

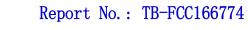




Page: 73 of 198

Ter	nperature:	25 ℃		Relative Humidity	: 55%
Tes	st Voltage:	AC 120V/6	60Hz		
An	t. Pol.	Vertical			
Tes	st Mode:	TX 802.11	n(20) Mode 58	25MHz (U-NII-3)	
Re	mark:	No report		n which more than 1	0 dB below the
90.0	O dBuV/m				Limit1: — Limit2: —
		*			
50		3			
10.0					

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11650.627	40.45	20.95	61.40	68.30	-6.90			peak
2	11651.735	23.54	20.94	44.48	54.00	-9.52			AVG

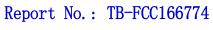




Page: 74 of 198

Temperature:	25 ℃		Relativ	e Humidit	y:	55%	
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX 802.11ac(20) Mode 5	745MHz	(U-NII-3)			
Remark:	No report for the	e emissio	n which r	nore than	10 d	B below t	he
	prescribed limit.						
90.0 dBuV/m							
						Limit Limit	
	2 *						
50							
30	*						
0.0							
1000.000 4900.00 88	800.00 12700.00 166	500.00 2050	0.00 24400).00 283 <u>0</u> 0.00	0 32	200.00	40000.00 MHz
No. Frequency F	Reading Correction	Result	Limit	Margin [Degree	e Height	Remark

No.	(MHz)		factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(deg.)	(cm)	Remark
1	11491.492	23.38	20.30	43.68	54.00	-10.32			AVG
2*	11492.397	41.55	20.29	61.84	68.30	-6.46			peak

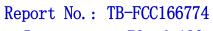




Page: 75 of 198

Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(20) Mode 5	5745MHz (U-NII-3)	
Remark:	No report for the emission prescribed limit.	on which more than 10 o	dB below the
90.0 dBuV/m			Limit1: ——
	*		
50	*		
0.0	8800.00 12700.00 16600.00 205	00.00 24400.00 28300.00 3	2200.00 40000.00 MHz

No.	Frequency (MHz)		Correction factor(dB/m)		Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11491.671	39.37	20.30	59.67	68.30	-8.63			peak
2	11493.833	23.40	20.28	43.68	54.00	-10.32			AVG

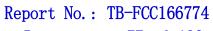




Page: 76 of 198

nt. Pol.	Horizontal					
est Mode:	TX 802.11ac	(20) Mode 5	785MHz (U-N	II-3)		
emark:	No report for prescribed li		n which more	than 10 c	IB below th	ie
00.0 dBuV/m					Limit1 Limit2	
	2					
50	*					
.0						
1000.000 4900.00	B800.00 12700.00	16600.00 2050	0.00 24400.00 2	8300.00 32	2200.00	40000.00 MF

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11570.840	25.33	21.04	46.37	54.00	-7.63			AVG
2*	11571.298	42.30	21.04	63.34	68.30	-4.96			peak

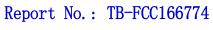




Page: 77 of 198

Ten	nperature:	25	$^{\circ}$		Rel	ative Hur	nidity:	55%	
Tes	t Voltage:	AC	120V/60	Hz					
Ant	. Pol.	Vert	ical						
Tes	t Mode:	TX 8	302.11a	c(20) Mod	de 5785N	⁄IHz (U-NI	I-3)		
Rer	nark:	Noı	report fo	r the emi	ssion wh	ich more t	than 10 d	dB below t	the
		pres	scribed I	imit.					
90.0	dBuV/m								
								Limi Limi	
			2 X						
50			1						
ľ									
10.0									
10	00.000 4900.00	8800.00	12700.00	16600.00	20500.00	24400.00 2	8300.00 3	2200.00	40000.00 MHz

No.	Frequency (MHz)		Correction factor(dB/m)		Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11571.634	23.74	21.05	44.79	54.00	-9.21			AVG
2*	11572.397	41.43	21.06	62.49	68.30	-5.81			peak

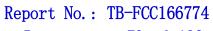




Page: 78 of 198

Ten	nperature:	25 ℃		Relative Humidity:	55%
Tes	t Voltage:	AC 120\	//60Hz		
Ant	. Pol.	Horizont	tal		
Tes	t Mode:	TX 802.	11ac(20) Mode 5	825MHz (U-NII-3)	
Rer	nark:	No repo	rt for the emissio	n which more than 10 o	dB below the
		prescrib	ed limit.		
90.0	dBuV/m				
					Limit1: — Limit2: —
		*			
50					
		*			
10.0					

No.	Frequency (MHz)		Correction factor(dB/m)		Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11650.384	40.64	20.95	61.59	68.30	-6.71			peak
2	11651.492	22.67	20.94	43.61	54.00	-10.39			AVG

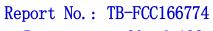




Page: 79 of 198

Temperature:	25 ℃	Relative Humidity:	55%							
Test Voltage:	AC 120V/60Hz									
Ant. Pol.	Vertical									
Test Mode:	TX 802.11ac(20) M	ode 5825MHz (U-NII-3)								
Remark:	No report for the er	mission which more than 10 o	dB below the							
	prescribed limit.	•								
90.0 dBuV/m										
			Limit1: — Limit2: —							
	*									
50	¾									
10.0										
0.000.00.00	8800.00 12700.00 16600.00	0 20500.00 24400.00 28300.00 3	2200.00 40000.00							

No.	Frequency (MHz)		Correction factor(dB/m)		Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11649.378	42.42	20.96	63.38	68.30	-4.92			peak
2	11652.756	25.03	20.94	45.97	54.00	-8.03			AVG

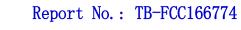




Page: 80 of 198

Temperature:	25 ℃		Relative Humidity:	55%						
Гest Voltage:	AC 120	V/60Hz								
Ant. Pol.	Horizon	ıtal								
Test Mode:	TX 802.	.11n(40) Mode	5755MHz (U-NII-3)							
Remark:		No report for the emission which more than 10 dB below the prescribed limit.								
90.0 dBuV/m										
				Limit1: — Limit2: —						
	1 *									
50	*									
0.0										
1000.000 4900.00	8800.00 127	700.00 16600.00 2	20500.00 24400.00 28300.00	32200.00 40000.00 MH						

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11511.375	41.14	20.34	61.48	68.30	-6.82	9		peak
2	11512.397	26.50	20.35	46.85	54.00	-7.15			AVG

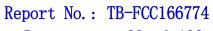




Page: 81 of 198

Temperature:	25 ℃	Relative Humidity:	55%						
Test Voltage:	AC 120V/60Hz								
Ant. Pol.	Vertical								
Test Mode:	TX 802.11n(40) Mode 57	755MHz (U-NII-3)							
Remark:	No report for the emission prescribed limit.	No report for the emission which more than 10 dB below the							
90.0 dBuV/m			Limit1: —— Limit2: ——						
50	2								
0.0	8800.00 12700.00 16600.00 2050	00.00 24400.00 28300.00 3	2200.00 40000.00 MHz						

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11509.610	24.46	20.33	44.79	54.00	-9.21			AVG
2*	11510.180	42.51	20.33	62.84	68.30	-5.46			peak

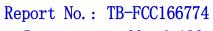




Page: 82 of 198

Temperature:	25 ℃	Relative Humidity:	55%							
Test Voltage:	AC 120V/60Hz									
Ant. Pol.	Horizontal									
Test Mode:	TX 802.11n(40) Mode 5795MHz (U-NII-3)									
Remark:	No report for the emission which more than 10 dB below the prescribed limit.									
90.0 dBuV/m			Limit1: — Limit2: —							
	2									
50	*									
0.0										

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11591.374	26.08	21.28	47.36	54.00	-6.64			AVG
2*	11592.836	41.64	21.30	62.94	68.30	-5.36			peak





Page: 83 of 198

Ten	nperature) :	25 °C	C			ı	Relati	ve Hu	ımidity	: 55%	%	
Гes	t Voltage):	AC 1	20V/6	0Hz								
A nt	. Pol.		Verti	cal									
Гes	t Mode:		TX 8	02.11r	1(40)	Mode	e 579	MHz	(U-N	II-3)			
Rer	mark:			No report for the emission which more than 10 dB below the prescribed limit.									
90.0	dBuV/m												
												Limit Limit	
				1 *									
50				<u>}</u>									
0.0													
10	00.000 4900.0	0 88	00.00	12700.00	166	00.00	20500.0	0 244	100.00	28300.00	32200.00	I.	40000.00

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11591.375	40.10	21.28	61.38	68.30	-6.92			peak
2	11592.496	25.52	21.29	46.81	54.00	-7.19			AVG

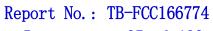




Page: 84 of 198

Гетр	erature:	25 ℃		Relativ	e Humidi	ty:	55%	
Test \	/oltage:	AC 120V	//60Hz					
Ant. F	Pol.	Horizonta	al					
est l	Mode:	TX 802.1	1ac(40) Mode :	5755MHz	(U-NII-3)			
Rema	nrk:	No repor	t for the emission	more than	10 d	B below	the	
90.0	dBuV/m							
							Limi Limi	
		2						
50								
		*						
1.0								
1000.0	000 4 900.00	800.00 12700	0.00 16600.00 20 <u>5</u>	500.00 2440	0.00 28300.0	10 32	200.00	40000.00 MH
No.			rection Result	Limit (dBuV/m)		Degree (deg.)	Height (cm)	Remark

	(MHZ)	(dBuV)	factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(deg.)	(cm)	
1	11512.836	26.01	20.36	46.37	54.00	-7.63			AVG
2*	11513.940	42.47	20.37	62.84	68.30	-5.46			peak

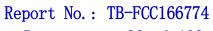




Page: 85 of 198

Temperature:		25 °	\mathbb{C}					Re	lativ	e H	umi	dity:		55%	ı				
Tes	st Voltaç	ge:	AC 1	AC 120V/60Hz															
An	t. Pol.		Verti	Vertical															
Tes	st Mode	:	TX 8	02.	11ac	(40)	Мо	de 5	755l	ИНz	(U-	NII-	3)						
Re	mark:		No r	еро	rt for	the	emi	ssio	n wh	nich	mor	e tha	an 10	dE	bel	ow t	he		
				crib	ed lir	mit.													
90.0 dBuV/m																			
1																Limit Limit			
ı																			
				2															
				2 X															
FO				72														-	
50				*															
10.0																			
10.0 10	 100.000 490	0.00 8	300.00	1270	00.00	1660	00.00	2050	0.00	2440	00.00	2830	00.00	3220	00.00		400	00.001	MHz
																		_ 3.03	

No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11510.378	27.51	20.33	47.84	54.00	-6.16			AVG
2	11511.952	41.47	20.35	61.82	68.30	-6.48			peak

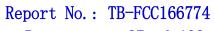




Page: 86 of 198

Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz							
Ant. Pol.	Horizontal							
Test Mode:	TX 802.11ac(40) Mode 57	95MHz (U-NII-3)						
Remark:	No report for the emission	which more than 10 o	B below the					
	prescribed limit.							
90.0 dBuV/m								
			Limit1: — Limit2: —					
	*							
50								
	2 *							
10.0								

No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11589.375	38.22	21.26	59.48	68.30	-8.82			peak
2	11592,348	23.00	21.29	44.29	54.00	-9.71			AVG

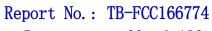




Page: 87 of 198

Temperature:	25 ℃	Relative Humidity:	55%						
Test Voltage:	AC 120V/60Hz								
Ant. Pol.	Vertical								
Test Mode:	TX 802.11ac(40) Mode 5795MHz (U-NII-3)								
Remark:	No report for the emission which more than 10 dB below the prescribed limit.								
90.0 dBuV/m									
			Limit1: — Limit2: —						
	*								
50									
	*								
10.0									

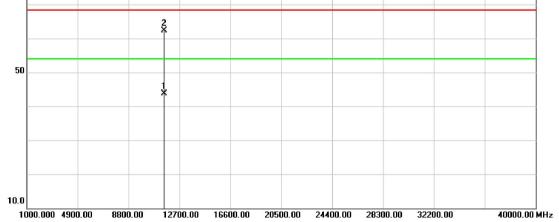
No.	Frequency (MHz)		Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1*	11591.820	40.09	21.29	61.38	68.30	-6.92			peak
2	11592.460	25.52	21.29	46.81	54.00	-7.19		9	AVG





Page: 88 of 198

Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz							
Ant. Pol.	Horizontal							
Test Mode:	TX 802.11ac(80) Mode 5	775MHz (U-NII-3)						
Remark:	No report for the emission which more than 10 dB below the							
	prescribed limit.							
90.0 dBuV/m								
			Limit1: —— Limit2: ——					



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	11551.634	22.86	20.82	43.68	54.00	-10.32			AVG
2*	11552.741	41.54	20.83	62.37	68.30	-5.93			peak





Page: 89 of 198

Temperature:	25 ℃ Relative Humidity: 55%										
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz									
Ant. Pol.	Vertical										
Test Mode:	TX 802.11ac(80	0) Mode 5	775MHz	(U-NII-3))						
Remark:	No report for the	e emissio	n which r	nore than	า 10 dE	B below t	he				
		No report for the emission which more than 10 dB below the prescribed limit.									
90.0 dBuV/m											
						Limit Limit					
	2 *										
	T T										
50											
	*										
10.0			00.00 24400	0.00 28300.		00.00					

Emission Level= Read Level+ Correct Factor

20.81

20.81

45.37

61.35

54.00

68.30

-8.63

-6.95

24.56

40.54

11550.583

11551.394

AVG peak