# FCC RADIO TEST REPORT

# FCC ID: 2BBAWPFD-002

Sample : Automatic Pet Feeder

Trade Name : N/A

Main Model: PFD-002 PRO

Additional Model : PTM-701

Report No.: ZKT23051709ER-63

# **Prepared for**

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# **Prepared by**

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# **TEST RESULT CERTIFICATION**

Applicant	Shenzhenbenfendianzishangwuyouxiangongsi
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Manufacturer	Shenzhen Ipetmon Creative Technology Co., Ltd.
Address	5th Floor, Building B, Honghengtai High-tech Park, Shangcun, Gongming Street, Guangming District, Shenzhen
Product description	
Product:	Automatic Pet Feeder
Trade Name:	N/A
Model Name:	PFD-002 PRO, PTM-701
Test Methods	FCC Rules and Regulations Part 15 Subpart C Section 15.407 ANSI C63.10: 2013

This device described above has been tested by Shenzhen ZKT Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report. This report shall not be reproduced except in full, without the written approval of UNI, this document may be altered or revised by Shenzhen ZKT Technology Co., Ltd., personnel only, and shall be noted in the revision of the document.

Date of Test	
Date (s) of performance of tests	May 17, 2023 ~ May 31, 2023
Date of Issue:	May 31, 2023
Test Result	Pass

Prepared by:

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# **1 TEST SUMMARY**

# 1.1 TEST PROCEDURES AND RESULTS

ltem	FCC Rules	Description Of Test	Result
1	FCC Part 15.407	6dB Bandwidth	Pass
2	FCC Part 15.407	Emission Bandwidth	Pass
3	FCC Part 15.407	Maximum conducted output power	Pass
4	FCC Part 15.407	Conducted Spurious Emission	Pass
5	FCC Part 15.407	Maximum Conducted Output Power Density	Pass
6	FCC Part 15.209	Radiated Emission	Pass
7	FCC Part 15.407	Band Edges	Pass
8	FCC Part 15.207	Line Conduction Emission	Pass
9	FCC Part 15.203	Antenna Requirement	Pass

Note:

"N/A" denotes test is not applicable in this Test Report.

#### **1.2 TEST FACILITY**

Test Firm	•	Shenzhen ZKT Technology Co., Ltd.
	•	

Address : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19. The testing quality system of our laboratory meets with ISO/IEC-17025 requirements. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

Designation Number: CN1299

The EMC Laboratory has been accredited by A2LA, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

FCC Registration Number: 692225

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission.

IC Registration Number: 27033

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada.

# **1.3 MEASUREMENT UNCERTAINTY**

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

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## A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
UNI	ANSI -	9kHz ~ 150kHz	2.96
		150kHz ~ 30MHz	2.44

## B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
		9kHz ~ 30MHz	2.50
UNI AN	ANSI	30MHz ~ 1000MHz	4.80
	-	1000MHz ~ 18000MHz	4.13

# C. RF Conducted Method:

Item	Measurement Uncertainty
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
Uncertainty of spurious emissions, conducted	$U_{c} = \pm 2 \%$
Uncertainty of Occupied Channel Bandwidth	$U_{c} = \pm 2 \%$

# **1.4 ENVIRONMENTAL CONDITIONS**

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 °C
Relative Humidity:	30~60 %
Air Pressure:	950~1050 hPa

# **2 GENERAL INFORMATION**

# 2.1 GENERAL DESCRIPTION OF EUT

Product:	Automatic Pet Feeder
Trade Name:	N/A
Main Model:	PFD-002 PRO
Additional Model:	PTM-701
Model Difference:	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: PFD-002 PRO.
Operation Frequency:	Band 1: 5150 MHz~5250MHz; Band 4: 5725 MHz~5850MHz
Modulation Type:	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM, OFDM
Maximum Peak Conducted Output Power:	Band 1: 14.57dBm; Band 4: 14.63dBm
Antenna Type:	PCBAntenna
Antenna Gain:	Band 1: 1.97dBi; Band 4: -0.76dBi
Battery:	N/A
Adapter:	Model: QL010-0501000UU Input: 100-240V~, 50/60Hz, 0.45A Output: DC 5.0V, 1.0A
Power Source:	DC 5V from adapter or DC 6.0V from battery

Frequency Band	Channel Number	Frequency	Frequency Band	Channel Number	Frequency
5150 MHz~ 5250MHz	36	5180 MHz	5725 MHz~ 5850MHz	149	5745 MHz
	38	5190 MHz		151	5755 MHz
	40	5200 MHz		153	5765 MHz
	42	5210 MHz		155	5775 MHz
	44	5220 MHz		157	5785 MHz
	46	5230 MHz		159	5795 MHz
	48	5240 MHz		165	5825MHz

# 2.2 CARRIER FREQUENCY OF CHANNELS

Note: For 20MHz bandwidth system use Channel 36, 40, 48, 149, 157, 165; For 40MHz bandwidth system use Channel 38, 46, 151, 159.

# 2.3 TEST MODE

Mode	Tested channel	Modulation	Date rate(Mbps)
802.11a/n20	36, 40, 48, 149, 157, 165	OFDM	6Mbps/MCS0
802.11n40	38, 46, 151, 159	OFDM	MCS0

Note:

- 1. The EUT has been set to operate continuously on tested channel individually, and the EUT is operating at its maximum duty cycle>or equal 98%.
- 2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.

# 2.4 DESCRIPTION OF THE TEST MODES

During the measurement the environmental conditions were within the listed ranges:

	Normal Voltage	DC 5V
Voltage	High Voltage	DC 5.5V
	Low Voltage	DC 4.5V
	Normal Temperature	24°C
Other	Relative Humidity	55 %
	Air Pressure	989 hPa

Note: All modes were test at Normal Voltage, High Voltage, and Low Voltage, only the worst results of Normal Voltage was reported in the test report.

# 2.5 TEST SETUP

Operation of EUT during Radiation testing:



Operation of EUT during RF Conducted testing:



#### 2.6 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

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

ltem	Equipment	Model No.	Cable Length(cm)	Remark
1	Automatic Pet Feeder	PFD-002 PRO	1.5m	EUT

Note:

1. The support equipment was authorized by Declaration of Confirmation.

2. All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

# 2.7 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
		Conduction Em	issions Measuremer	nt	
1	Conducted Emission Test Software	EZ-EMC	Ver.CCS-3A1-CE	N/A	N/A
2	AMN	Schwarzbeck	NNLK8121	8121370	2023.09.22
3	AAN	TESEQ	T8-Cat6	38888	2023.09.22
4	Pulse Limiter	CYBRTEK	EM5010	E115010056	2024.05.30
5	EMI Test Receiver	Rohde&Schwarz	ESCI	101210	2023.09.22
		Radiated Emis	sions Measurement		
1	Radiated Emission Test Software	EZ-EMC	Ver.CCS-03A1	N/A	N/A
2	Horn Antenna	Sunol	DRH-118	A101415	2023.09.27
3	Broadband Hybrid Antenna	Sunol	JB1	A090215	2024.02.26
4	PREAMP	HP	8449B	3008A00160	2023.09.22
5	PREAMP	HP	8447D	2944A07999	2024.05.30
6	EMI TEST RECEIVER	Rohde&Schwarz	ESR3	101891	2023.09.22
7	VECTOR Signal Generator	Rohde&Schwarz	SMU200A	101521	2023.09.22
8	Signal Generator	Agilent	E4421B	MY4335105	2023.09.22
9	MXA Signal Analyzer	Agilent	N9020A	MY50510140	2023.09.22
10	MXA Signal Analyzer	Keysight	N9020A	MY51110104	2023.09.22
11	RF Power sensor	DARE	RPR3006W	15100041SNO88	2024.05.30
12	RF Power sensor	DARE	RPR3006W	15100041SNO89	2024.05.30
13	RF power divider	Anritsu	K241B	992289	2023.09.22
14	Wideband radio communication tester	Rohde&Schwarz	CMW500	154987	2023.09.22
15	Active Loop Antenna	Com-Power	AL-130R	10160009	2024.05.30
16	Broadband Hybrid Antennas	Schwarzbeck	VULB9163	VULB9163#958	2023.09.22
17	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1680	2024.05.30
18	Horn Antenna	A-INFOMW	LB-180400-KF	J211060660	2023.09.27
19	Microwave Broadband Preamplifier	Schwarzbeck	BBV 9721	100472	2023.09.22
20	Signal Generator	Agilent	N5183A	MY47420153	2023.09.22
21	Spctrum Analyzer	Rohde&Schwarz	FSP 40	100501	2023.09.22
22	Power Meter	KEYSIGHT	N1911A	MY50520168	2023.09.22
23	Frequency Meter	VICTOR	VC2000	997406086	2023.09.22
24	DC Power Source	HYELEC	HY5020E	055161818	2023.09.22

# **3 CONDUCTED EMISSION**

# 3.1 TEST LIMIT

For unintentional device, according to § 15.207(a) Line Conducted Emission Limits is as following

_	Maximum RF Line Voltage (dB V)						
	CLA	SS A	CLASS B				
(11112)	Q.P.	Ave.	Q.P.	Ave.			
0.15~0.50	79	66	66~56*	56~46*			
0.50~5.00	73	60	56	46			
5.00~30.0	73	60	60	50			

\* Decreasing linearly with the logarithm of the frequency. For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

#### 3.2 TEST SETUP



## 3.3 TEST PROCEDURE

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is placed on a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5. All support equipments received AC power from a second LISN, if any.
- 6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

## 3.4 TEST RESULT

#### PASS

Remark:

- 1. All modes were test at Low, Middle, and High channel, only the worst result of Band 1 802.11a Low Channel was reported for below 1GHz test.
- 2. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, and test data recorded in this report.

Temperature:	<b>24</b> ℃	Relative Humidity:	48%		
Test Date:	May 23, 2023	Pressure:	1010hPa		
Test Voltage:	AC 120V, 60Hz	C 120V, 60Hz Phase:			
Test Mode:	Transmitting mode of Band 1 802.11a 5180MHz				



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.4154	29.77	9.64	39.41	57.54	-18.13	peak	Ρ	
2 *	0.4154	21.04	9.64	30.68	47.54	-16.86	AVG	Ρ	
3	0.1544	31.83	9.53	41.36	65.76	-24.40	peak	Ρ	
4	0.1544	12.03	9.53	21.56	55.76	-34.20	AVG	Р	
5	0.8295	23.76	9.63	33.39	56.00	-22.61	peak	Ρ	
6	0.8295	14.26	9.63	23.89	46.00	-22.11	AVG	Р	
7	1.7159	22.63	9.66	32.29	56.00	-23.71	peak	Ρ	
8	1.7159	14.12	9.66	23.78	46.00	-22.22	AVG	Ρ	
9	0.2670	27.75	9.69	37.44	61.21	-23.77	peak	Ρ	
10	0.2670	16.10	9.69	25.79	51.21	-25.42	AVG	Ρ	
11	0.2129	29.25	9.71	38.96	63.09	-24.13	peak	Р	
12	0.2129	11.55	9.71	21.26	53.09	-31.83	AVG	Ρ	

Remark: Factor = Insertion Loss + Cable Loss, Result = Reading + Factor, Margin = Result – Limit.

Temperature:	<b>24</b> ℃	Relative Humidity:	48%		
Test Date:	May 23, 2023	Pressure:	1010hPa		
Test Voltage:	AC 120V, 60Hz	Phase:	Neutral		
Test Mode:	Transmitting mode of Band 1 802.11a 5180MHz				



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2085	27.07	9.71	36.78	63.26	-26.48	peak	Ρ	
2	0.2085	9.93	9.71	19.64	53.26	-33.62	AVG	Р	
3	0.4065	30.45	9.64	40.09	57.72	-17.63	peak	Ρ	
4 *	0.4065	21.98	9.64	31.62	47.72	-16.10	AVG	Ρ	
5	0.8295	23.81	9.63	33.44	56.00	-22.56	peak	Ρ	
6	0.8295	13.96	9.63	23.59	46.00	-22.41	AVG	Ρ	
7	1.7070	23.08	9.66	32.74	56.00	-23.26	peak	Р	
8	1.7070	13.86	9.66	23.52	46.00	-22.48	AVG	Р	
9	2.3280	23.01	9.69	32.70	56.00	-23.30	peak	Ρ	
10	2.3280	13.48	9.69	23.17	46.00	-22.83	AVG	Ρ	
11	2.9849	22.24	9.62	31.86	56.00	-24.14	peak	Ρ	
12	2.9849	12.45	9.62	22.07	46.00	-23.93	AVG	Ρ	

Remark: Factor = Insertion Loss + Cable Loss, Result = Reading + Factor, Margin = Result – Limit.

# **4 RADIATED EMISSION**

## 4.1 TEST LIMIT

For unintentional device, according to §15.209(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/m )	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F (kHz)		Quasi-peak	300
0.490MHz-1.705MHz	24000/F (kHz)	-	Quasi-peak	30
1.705MHz-30MHz	30	-	Quasi-peak	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 16Hz	500	54.0	Average	3
Above 1GHz	500	74.0	Peak	3

Limit calculation and transfer to 3m distance as showed in the following table:

Frequency	Limit	Distance
(MHz)	(dBuV/m)	(m)
0.009-0.490	20log(2400/F(KHz))+40log(300/3)	3
0.490-1.705	20log(24000/F(KHz))+40log(30/3)	3
1.705-30.0	69.5	3
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

For intentional device, according to §15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.2
5250~5350	-27	68.2
5470~5725	-27	68.2
	-27(Note 2)	68.2
5725 5950	10(Note 2)	105.2
5725~5650	15.6(Note 2)	110.8
	27(Note 2)	122.2

#### Limits of unwanted emission out of the restricted bands

#### NOTE:

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

## $1000000\sqrt{30P}$

E= <sup>3</sup> uV/m, where P is 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 the band 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 or below 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.

# 4.2 TEST SETUP

1. Radiated Emission Test-Up Frequency Below 30MHz





2. Radiated Emission Test-Up Frequency 30MHz~1GHz

3. Radiated Emission Test-Up Frequency Above 1GHz



# 4.3 TEST PROCEDURE

- 1. Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.
- 7. The test frequency range from 9kHz to 25GHz per FCC PART 15.33(a).

Note: For battery operated equipment, the equipment tests shall be performed using a new battery.

# 4.4 TEST RESULT

PASS

Remark:

- 1. All modes were test at Low, Middle, and High channel, only the worst result of band 1 802.11a Low Channel was reported for below 1GHz test.
- 2. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, and test data recorded in this report.

#### Radiated emission below 30MHz

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

#### Below 1GHz Test Results:

Temperature:	<b>24</b> ℃	Relative Humidity:	48%		
Test Date:	May 23, 2023	Pressure:	1010hPa		
Test Voltage:	AC 120V, 60Hz	AC 120V, 60Hz Phase:			
Test Mode:	Transmitting mode of band 1 802.11a 5180MHz				



Remark: Absolute Level = Reading Level + Factor, Margin = Absolute Level – Limit Factor = Ant. Factor + Cable Loss – Pre-amplifier

Temperature:	<b>24</b> ℃	Relative Humidity:	48%	
Test Date:	May 23, 2023	Pressure:	1010hPa	
Test Voltage:	AC 120V, 60Hz	Phase:	Vertical	
Test Mode:	Transmitting mode of band 1 802.11a 5180MHz			



Remark: Absolute Level = Reading Level + Factor, Margin = Absolute Level – Limit Factor = Ant. Factor + Cable Loss – Pre-amplifier

#### Remark:

1. Radiated emission test from 9KHz to 10th harmonic of fundamental was verified, emission from 9kHz to 30MHz are more than 20dB below the limit, so it was not recorded in this report.

- 2. \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- 3. The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120kHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10kHz.

#### Radiated emission above 1GHz

Temperature	25°C	<b>Relative Humidity</b>	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a 5180MHz	Antenna	Horizontal/Vertical

# RADIATED EMISSION ABOVE 1GHZ-Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type	
10360.042	47.63	9.14	56.77	68.20	-11.43	peak	
15540.063	41.54	10.22	51.76	74.00	-22.24	peak	
15540.063	40.32	10.22	50.54	54.00	-3.46	AVG	
Remark:							
Factor = Anten	Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
10360.042	46.93	9.14	56.07	68.20	-12.13	peak
15540.063	42.32	10.22	52.54	74.00	-21.46	peak
15540.063	31.85	10.22	42.07	54.00	-11.93	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Temperature	25°C	<b>Relative Humidity</b>	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a 5200MHz	Antenna	Horizontal/Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
10400.042	46.54	9.14	55.68	68.20	-12.52	peak
15600.063	41.62	10.22	51.84	74.00	-22.16	peak
15600.063	31.78	10.22	42.00	54.00	-12.00	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
10400.042	46.25	9.14	55.39	68.20	-12.81	peak
15600.063	41.04	10.22	51.26	74.00	-22.74	peak
15600.063	32.69	10.22	42.91	54.00	-11.09	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Temperature	25°C	<b>Relative Humidity</b>	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a 5240MHz	Antenna	Horizontal/Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
10480.042	46.54	9.27	55.81	68.20	-12.39	peak
15720.063	41.69	10.38	52.07	74.00	-21.93	peak
15720.063	33.51	10.38	43.89	54.00	-10.11	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier						

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
10480.042	43.21	9.27	52.48	68.20	-15.72	peak
15720.063	41.85	10.38	52.23	74.00	-21.77	peak
15720.063	33.69	10.38	44.07	54.00	-9.93	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Temperature	25°C	<b>Relative Humidity</b>	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a 5745MHz	Antenna	Horizontal/Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin				
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type			
11490.042	46.96	9.42	56.38	74.00	-17.62	peak			
11490.042	38.73	9.42	48.15	54.00	-5.85	AVG			
17235.063	41.32	10.51	51.83	68.20	-16.37	peak			
Remark:									
Factor = Anten	Factor = Antenna Factor + Cable Loss – Pre-amplifier								

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin				
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type			
11490.042	45.63	9.42	55.05	74.00	-18.95	peak			
11490.042	37.25	9.42	46.67	54.00	-7.33	AVG			
17235.063	40.39	10.51	50.90	68.20	-17.30	peak			
Remark:									
Factor = Antenna Factor + Cable Loss – Pre-amplifier.									

Temperature	25°C	<b>Relative Humidity</b>	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a 5785MHz	Antenna	Horizontal/Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type		
11570.042	46.96	9.42	56.38	74.00	-17.62	peak		
11570.042	34.32	9.42	43.74	54.00	-10.26	AVG		
17355.063	41.85	10.51	52.36	68.20	-15.84	peak		
Remark:								
Factor = Anten	na Factor + Cab	e Loss – Pre-a	mplifier.					

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type		
11570.042	46.25	9.42	55.67	74.00	-18.33	peak		
11570.042	34.81	9.42	44.23	54.00	-9.77	AVG		
17355.063	41.79	10.51	52.30	68.20	-15.90	peak		
Remark:								
Factor = Antenna Factor + Cable Loss – Pre-amplifier.								

Temperature	25°C	<b>Relative Humidity</b>	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a 5825MHz	Antenna	Horizontal/Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin				
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type			
11650.042	46.88	9.62	52.92	74.00	-21.02	peak			
11650.042	37.61	9.62	45.05	54.00	-8.95	AVG			
17475.063	42.82	10.75	47.61	68.20	-26.39	peak			
Remark:									
Factor = Anten	Factor = Antenna Factor + Cable Loss – Pre-amplifier.								

#### RADIATED EMISSION ABOVE 1GHZ-Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type		
11650.042	48.37	9.62	53.55	74.00	-20.45	peak		
11650.042	36.94	9.62	47.64	54.00	-6.36	AVG		
17475.063	41.81	10.75	48.61	68.20	-25.39	peak		
Remark:								
Factor = Antenna Factor + Cable Loss – Pre-amplifier.								

**Note:** All test channels had been tested. The 802.11a is the worst case and recorded in the test report. Other frequencies radiation emission from 1GHz to 40GHz at least have 20dB margin and not recorded in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Limit-Level.

The "Factor" value can be calculated automatically by software of measurement system.

rest result for band edge emission at restricted bands						
Temperature	25°C	<b>Relative Humidity</b>	60%			
Pressure	960hPa	Test Voltage	Normal Voltage			
Test Mode	802.11a 5180MHz	Antenna	Horizontal			

#### Test result for band edge emission at restricted bands

#### Test Graph for Peak Measurement



#### Test Graph for Average Measurement

Agilent	Spectru	m Ana	lyzer - Swept S	A									
LXI R		RF	50 Ω A	C		SENSE:II	JT		ALIG	NAUTO		03:58:3	2 PM May 25, 2023
Star	t Freq	5.0	0000000	) GHz	PNO: Fast ↔ FGain:Low	. Trig Att	j:Freel en:30 d	Run IB		Avg Type: Avg Hold:	RMS 100/100	т	TYPE A WANNANA DET A NNNNN
10 dE	3/div	Ref	126.99 d	3µV							N	/lkr1 5.17 106.2	7 18 GHz 206 dBµV
LOG 117 -													1
107 : 97.0 :													
87.0 : 77.0 :													
67.0											ر 2_	- And A	- hand
67.U 47.0	,			+	· · · · · · · · · · · · · · · · · · ·								54.00 dBµV
37.0													
Stari #Res	5.000 BW 1	10 G 1.0 N	Hz AHz		#VE	W 3.0	MHz	:			Swee	Stop : p 1.066 ms	5.2000 GHz s (1000 pts)
MKR N	IODE TRO	SCL f		× 5 177 18 GHz	Y 106 206	dBuV	FUN	CTION	FUNCTIO	IN WIDTH	1	FUNCTION VALUE	_
2 3	N 1	f		5.150 00 GHz	52.973	dBµV							
4 5 6													3
7													
9 10 11													~
<							10						>
MSG										STATUS			

Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a 5180MHz	Antenna	Vertical

Test Graph for Peak Measurement



#### Test Graph for Average Measurement



Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n40 5190MHz	Antenna	Horizontal

 
Aginati Spectrum Analyzer - Swept SA
OP 13104 FM May 25, 2023

Start Freq 5.000000000 GHz
Freq 30 AC
SENEEINT
ALIONAUTO
04:13:04 FM May 25, 2023

Start Freq 5.000000000 GHz
PN0: Fast IFGaint.low
Trig: Free Run Atten: 30 dB
Avg Type: Log-Pwr Avg Type:

#### Test Graph for Peak Measurement





Temperature	25°C	Relative Humidity	60%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n40 5190MHz	Antenna	Vertical

Test Graph f	for Peak Meas	urement
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## Test Graph for Average Measurement



Note: 1. All the 20MHz bandwidth modulation had been tested, the 802.11a at 5180MHz was the worst case and record in his test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 at 5190MHz was the worst case and record in his test report.

2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer.

3. Only the data of band edge emission at the restricted band 4.5GHz-5.15GHz and

5.35GHz-5.46GHz record in the report. Other restricted band 7.25GHz-7.77GHz were considered as ambient noise. No recording in the test report.

4. The sideband standard of Band 4 frequency band is not defined, the transmitted signal does not fall in the restricted band, and the edge signal is far away from the edge of other restricted bands, and it is not recorded in the report.

# **5 OCCUPIED BANDWIDTH**

# 5.1 TEST LIMIT

The bandwidth at 26dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in KDB 789033 D02, and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.

FCC Part 15 Subpart C(15.407)				
Test Item	Limit	Frequency Range(MHz)		
		5150~5250		
26 dB Bandwidth	N/A	5250~5350		
		5470~5725		
6 dB Bandwidth	>500kHz	5725~5850		

# 5.2 TEST PROCEDURE

-6dB bandwidth (DTS bandwidth):

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on operation frequency individually.
- 3. Set RBW = 100kHz.
- 4. Set the VBW  $\geq$ 3\*RBW. Detector = Peak. Trace mode = max hold.
- 5. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.

99% occupied bandwidth:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set Span = approximately 1.5 to 5 times the OBW, centered on a nominal channel The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak
- 4. Set SPA Trace 1 Max hold, then View.

-26dB Bandwidth:

- 1. Set RBW = approximately 1% of the emission bandwidth.
- 2. Set the VBW > RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.

5. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

Note: The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

# 5.3 TEST SET-UP



# 5.4 TEST RESULT

PASS

Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.15-5.25 GHz					
Test Mode	Test Channel	99% Occupied	-26dB Bandwidth	Limits (MHz)	Pass or Fail
	(MHz)	Bandwidth (MHz)	(MHz)		
802.11a	5180	16.618	21.04	N/A	Pass
	5200	16.565	20.69	N/A	Pass
	5240	16.540	20.75	N/A	Pass
802.11n20	5180	16.566	20.80	N/A	Pass
	5200	16.581	20.86	N/A	Pass
	5240	16.593	21.03	N/A	Pass
802.11n40	5190	35.831	38.14	N/A	Pass
	5230	35.822	37.99	N/A	Pass

Test Data of Occupied Bandwidth and DTS Bandwidth for band 5.725-5.85 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	DTS Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5745	16.516	16.53	0.5	Pass
	5785	16.429	16.51	0.5	Pass
	5825	16.441	16.55	0.5	Pass
802.11n20	5745	16.487	16.52	0.5	Pass
	5785	16.438	16.50	0.5	Pass
	5825	16.435	16.52	0.5	Pass
802.11n40	5755	35.929	36.36	0.5	Pass
	5795	35.886	36.37	0.5	Pass


#### Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.15-5.25 GHz



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Agilant Spectrum Analyzer - Occupied	RW			
Agnenic spectrum Analyzer - Occupied T		SENSE:INT	ALIGNAUTO	01:32:53 PM May 25, 2023
Center Freq 5.19000000	0 GHz	Center Freq: 5.190000 Trig: Free Run	000 GHz Avg Hold:>10/10	Radio Std: None
	#IFGain:Low	#Atten: 40 dB		Radio Device: BTS
10 JD JD JD Dof 20 00 dB				
Log				
20.0				
10.0				
10.00		the second second second second	-	
-20.0	and a second		And a start of the	
-30.0		ļ		
-40.0				
-50.0				white and the second states and the second
-60.0				
Center 5 19 GHz				Snan 60 MHz
#Res BW 200 kHz		#VBW 620 k	ίHz	Sweep 1.867 ms
Occupied Bandwid	th	Total Power	11 8 dBm	
Occupied Bandwid		Total Tower		
	S.85 I WIEZ			
Transmit Freq Error	48.750 kHz	OBW Power	99.00 %	
x dB Bandwidth	38.14 MHz	x dB	-26.00 dB	
MSG			STATUS	
DOM			514105	
	802.11n40	ANT1 5190 N	ACS0 OBW	
Agrient Spectrum Analyzer - Occupied	BW			
Agrient Spectrum Analyzer - Occupied $ X  R   RF   50 \Omega AC$		SENSE:INT		01:33:16 PM May 25, 2023 Radio Std: None
Agrent Spectrum Analyzer - Occupied W R RF 50 Ω AC Center Freq 5.230000000	BW 0 GHz	SENSE:INT Center Freq: 5.230000 Trig: Free Run	ALIGNAUTO 000 GHz Avg Hold:>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrient Spectrum Analyzer - Occupied R RF 50 Ω AC Center Freq 5.230000000	BW 0 GHz #IFGain:Low	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 1000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Aguent Spectrum Analyzer - Occupied 2	BW 0 GHz #IFGain:Low	SENSE:INT Center Freq: 5.230000 Trig:Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrent Spectrum Analyzer - Occupied N R RF 50 Q AC Center Freq 5.230000000 10 dB/div Ref 30.00 dB	BW 0 GHz #IFGain:Low	SENSE:INT   Center Freq: 5.230000 ⊃ Trig:Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrent Spectrum Analyzer - Occupied Od R RF 50 Ω AC Center Freq 5.230000000 10 dB/div Ref 30.00 dB 20 0	BW 0 GHz #IFGain:Low	SENSE:INT     Center Freq: 5.23000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrent Spectrum Analyzer - Occupied Od R RF 50.2 AC Center Freq 5.230000000( 10 dB/div Ref 30.00 dB) 200 10.0 0.00	BW 0 GHz #IFGain:Low	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrent Spectrum Analyzer - Occupied Od R RF 50.2 AC Center Freq 5.2300000001 10 dB/div Ref 30.00 dBj 20 0 10 0 -10 0	BW O GHZ #IFGain:Low	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrent Spectrum Analyzer - Occupied Od R RF 500 AC Center Freq 5.230000000 10 dB/div Ref 30.00 dBr Log 20.0 10.0 -20.0	BW O GHZ #IFGain:Low m 	SENSE:INT Center Freq: 5.230000 Trig:Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrent Spectrum Analyzer - Occupied Od R RF 500 AC Center Freq 5.230000000 10 dB/div Ref 30.00 dBr Log 20.0 10.0 -0.00 -10.0 -20.0 -30.0	BW #IFGain:Low m	SENSE:INT Center Freq: 5.230000 Trig:Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Aguent Spectrum Analyzer - Occupied (X) R RF 50.2 AC Center Freq 5.230000000 10 dB/div Ref 30.00 dBr Log 20 0 10 0 20 0 -10 0 -20 0 -30 0 -40 0 - grap Atheboorthycourter	BW D GHz #IFGain:Low m 	SENSE:INT Center Freq: 5.230000 Trig:Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold:>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreen Spectrum Analyzer - Occupied (X) R RF 502 AC Center Freq 5.230000000 10 dB/div Ref 30.00 dB Log 200 10 0 -00 -00 -00 -00 -00 -00 -00	BW D GHz #IFGain:Low m 	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrent Spectrum Analyzer - Occupied Od R RF 50 Q AC Center Freq 5.2300000000 10 dB/div Ref 30.00 dB/ 200 10 0 200 -10 0 -20 0 -30 0 -40 0 -50 0	BW D GHz #IFGain:Low	SENSE:INT Center Freq: 5.23000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied      OX    RF    50.0    AC      Center Freq 5.230000000    Freq 5.230000000    Freq 5.230000000    Freq 5.230000000      10    Bell    Ref 30.00 dBr    Freq 5.230000000    Freq 5.230000000      10    Bell    Ref 30.00 dBr    Freq 5.230000000    Freq 5.23000000000    Freq 5.23000000000    Freq 5.23000000000000000000000000000000000000	BW O GHZ #IFGain:Low m 	SENSE:INT Center Freq: 5.23000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied      OX    RF    50.2    AC      Center Freq 5.230000001    Ref 30.00 dBr    AC      10 dB/div    Ref 30.00 dBr    AC      20.0    AC    AC      30.0    AC    AC      40.0    AC    AC      40.0 <th< td=""><td>BW O GHZ #IFGain:Low m </td><td>SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB</td><td>ALIGNAUTO 000 GHz Avg Hold&gt;10/10</td><td>01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS</td></th<>	BW O GHZ #IFGain:Low m 	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied      OX    RF    SO2    AC      Center Freq 5.230000001    Ref 30.00 dBi    Ref 30.00 dBi      Log    Image: Control of the second secon	BW O GHZ #IFGain:Low m m m m m m m m m m m m m	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB #VBW 620 k #VBW 620 k	ALIGNAUTO 000 GHz Avg Hold>10/10 1	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied      OX    RF    SO2    AC      Center Freq 5.230000000    SO2    AC      IO    dB/div    Ref 30.00 dBr      Log    Control    Control    Control      20.0    Control    Control    Control    Control      10    dB/div    Ref 30.00 dBr    Control    Control <thcontrol< th="">    Control    <thc< td=""><td>BW D GHZ #IFGain:Low m th 5.822 MHz</td><td>SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB</td><td>ALIGNAUTO 000 GHz Avg Hold&gt;10/10</td><td>01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS</td></thc<></thcontrol<>	BW D GHZ #IFGain:Low m th 5.822 MHz	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied      OX    RF    SO2    AC      Center Freq 5.230000000    Freq 5.23000000000    Freq 5.23000000000000000000000000000000000000	BW O GHZ #IFGain:Low m th 5.822 MHz 38 151 LHz	SENSE:INT Center Freq: 5.23000 Trig: Free Run #Atten: 40 dB #VBW 620 k Total Power	ALIGNAUTO 000 GHz Avg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied () R RE 502 AC Center Freq 5.230000000 10 dB/div Ref 30.00 dB Log 200 10 dB/div Ref 30.00 dB 200 10 dB/div Ref 30.00 dB 200 200 200 200 200 200 200 20	BW D GHz #IFGain:Low m m th 5.822 MHz 38.151 kHz 38.151 kHz	SENSE:INT Center Freq: 5,23000 Trig: Free Run #Atten: 40 dB #VBW 620 k Total Power OBW Power	ALIGNAUTO 000 GHz Avg Hold>10/10 	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agrent Spectrum Analyzer - Occupied (M. R. Ref. 502. AC Center Freq 5.230000000 10 dB/div Ref 30.00 dB Log 200 10 0 10 0 200 200 10 0 200 200 200 200 200 200 200	BW D GHz #IFGain:Low m m th 5.822 MHz 38.151 kHz 37.99 MHz	SENSE:INT Center Freq: 5.23000 Trig: Free Run #Atten: 40 dB #VBW 620 k Total Power OBW Power x dB	ALIGNAUTO 000 GHz Avg Hold>10/10 	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied      OX    RF    50.2    AC      Center Freq 5.230000001    Ref 30.00 dBr    AC      Log    Ref 30.00 dBr    AC      20.0    Ref 30.00 dBr    Ref 30.00 dBr      20.0    Ref 30.00 dBr	BW D GHz #IFGain:Low m m th 5.822 MHz 38.151 kHz 37.99 MHz	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB #VBW 620 k Total Power OBW Power x dB	ALIGNAUTO 000 GHz Avg Hold>10/10 	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agene is Spectrum Analyzer - Occupied      QM    RF    50.2    AC      Center Freq 5.230000000    Ref 30.00 dBi    Ref 30.00 dBi      Log    Ref 30.00 dBi    Ref 30.00 dBi      Cog    Ref 30.00 dBi    Ref 30.00 dBi      Cool    Ref 30.00 dBi    Ref 30.00 dBi      Coccupied Bandwidti    Ref 30.00 dBi      Cocupied Bandwidth    Ref 30.00 dBi	BW 0 GHz #IFGain:Low m m th 5.822 MHz 38.151 kHz 37.99 MHz	SENSE:INT Center Freq: 5.23000 Trig: Free Run #Atten: 40 dB #VBW 620 k Total Power OBW Power x dB	ALIGNAUTO 000 GH2 Avg Hold>10/10 4vg Hold>10/10 4vg Hold>10/10 4vg Hold>10/10 4vg Hold>10/10 4vg Hold>10/10	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied    Via Ref  50.2    Center Freq 5.230000000    10 dB/div  Ref    Log  20.0    10.0  0.00    10.0  0.00    10.0  0.00    10.0  0.00    10.0  0.00    10.0  0.00    20.0  0.00    30.0  0.00    40.0	BW D GHz #IFGain:Low m m th 5.822 MHz 38.151 kHz 37.99 MHz	SENSE:INT Center Freq: 5.230000 Trig: Free Run #Atten: 40 dB #VBW 620 k Total Power OBW Power x dB	ALIGNAUTO 000 GHz Avg Hold>10/10 1	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agreent Spectrum Analyzer - Occupied      OX    RF    SO2    AC      Center Freq 5.230000000    Freq 5.23000000000    Freq 5.23000000000000000000000000000000000000	BW 0 GHz #IFGain:Low m th 5.822 MHz 38.151 kHz 37.99 MHz	SENSE:INT Center Freq: 5,23000 Trig: Free Run #Atten: 40 dB #VBW 620 k Total Power OBW Power x dB	ALIGNAUTO 000 GHz Avg Hold>10/10 4 vg	01:33:16 PM May 25, 2023 Radio Std: None Radio Device: BTS





802.11a\_ANT1\_5825\_6Mbps\_OBW





Agilent Spectrum Analyzer - Occupied	1 BW			
🗱 R RF 50Ω AC		SENSE:INT Center Freg: 5.755000	ALIGNAUTO	09:52:53 PM May 25, 2023 Radio Std: None
	#IEGain:Low	⊃ Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE	3m			
20.0				
10.0				
0.00				
-10.0	And the second and the second of the second	mathematican provinces	and allow the stand of the stan	nan
-30.0		Ŵ		
-40.0				Www. Mary mary mary
-50.0				
-60.0				
Center 5.755 GHz		#\/B\M_200 P	·U-7	Span 60 MHz Swaap 7 467 ms
#Res BW TOO KHZ		#VBW J00K		Sweep 7.407 ms
Occupied Bandwic		Iotal Power	11.6 dBm	
	5.929 WIHZ			
Transmit Freq Error	20.519 kHz	OBW Power	99.00 %	
x dB Bandwidth	38.45 MHz	x dB	-26.00 dB	
MSG			STATUS	
	802.11n40	ANT1 5755 N	ACS0 OBW	
Agilent Spectrum Analyzer - Occupied	i BW		_	
🕅 R RF 50 Ω AC Center Freg 5.79500000	00 GHz	SENSE:INT Center Freg: 5.795000	ALIGNAUTO	09:54:43 PM May 25, 2023 Radio Std: None
	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
	#IFGain:Low	⊃ Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE	#IFGain:Low	⊖ Trig: Free Run #Atten: 30 dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log	#IFGain:Low	⊖ Trig: Free Run #Atten: 30 dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dB	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dB Log 20.0 10.0 .000	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 20.0 10.0 .000 -10.0 -20.0	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 200 10.0 -10.0 -20.0 -30.0	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 200 10.0 .000 .100 .200 .300 .400	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 20.0 10.0 .00 .00 .00 .00 .00 .00 .00 .00	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 20.0 10.0 .000 .000 .000 .000 .000 .000	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold.>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 200 10.0 .0000 .000 .000 .000 .000 .000	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div    Ref 30.00 dE      Log	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 200 100 0.00 -10.0 -20.0 -30.0 40.0 -50.0 -40.0 -50.0 -40.0 -50.0	#IFGain:Low	Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 200 100 000 	#IFGain:Low	Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 200 100 000 	#IFGain:Low	Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power y dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dB Log 20 0 10 0 10 0 20 0 10 0 20 0 2	#IFGain:Low	Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power x dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dB Log 200 100 0.00 -100 -200 -300 -400 -400 -500 -400 -500 -400 -500 -400 -50	#IFGain:Low	Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power x dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dB Log 200 100 100 200 200 200 200 200	#IFGain:Low	Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power x dB	Avg Hold>10/10	Radio Device: BTS
10 dB/div Ref 30.00 dE Log 200 100 000 -100 -200 -200 -300 -400 -200 -300 -400 -20	#IFGain:Low	Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power x dB	Avg Hold>10/10 Avg Hold>10/10	Radio Device: BTS









Agilent Spectrum Analyzer - Occupied	d BW	SENSE:INT	ALIGN AUTO	09:53:19 PM May 25, 2023
Center Freq 5.7550000	00 GHz	Center Freq: 5.755000 Trig: Free Run	000 GHz AyalHold:>10/10	Radio Std: None
	#IFGain:Low	#Atten: 30 dB		Radio Device: BTS
10 dB/div Ref 30.00 d	<u>3m</u>			
20.0				
10.0				
0.00				
20.0	annew Marina and an and	unanteren producere		n na
-30.0		Ŵ		
-40.0				With Mildo Willoh on Anala
-50.0				and and an article and and a second second
-60.0				
Center 5.755 GHz				Span 60 MHz
#Res BW 100 kHz		#VBW 300 k	Hz	Sweep 7.467 ms
Occupied Bandwid	dth	Total Power	11.3 dBm	
	35.914 MHz			
T		0.014/	00.00.00	
Transmit Freq Error	22.879 KHz	OBW Power	99.00 %	
x dB Bandwidth	36.36 MHz	x dB	-6.00 dB	
MSG			STATUS	
	802 11n40 Δ	NITA EZEE NAC	NON DEODIN	
	002.11140_/		CS0_DISBW	
Agilent Spectrum Analyzer - Occupied	1 BW		CSO_DTSBW	
Agilent Spectrum Analyzer - Occupied      M    R    SO Ω    ACC      Center Freq 5.79500000    SO Ω    ACC	1 BW	SENSE:INT Center Freq: 5.7950000	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None
Agilent Spectrum Analyzer - Occupied (X R R RE 50.0 AC Center Freq 5.79500000	d BW 00 GHz #IFGain:Low	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGNAUTO AVg Hold:>10/10	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupier 20 R RF 50 Ω AC Center Freq 5.79500000	00 GHz #IFGain:Low	INTI	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupier M R RF 50 Ω AC Center Freq 5.79500000 10 dB/div Ref 30.00 dE	00 GHz #IFGain:Low	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupier	300 GHz #IFGain:Low	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGN AUTO AVg Hold>10/10	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied X R RF 50 2 AC Center Freq 5.79500000 10 dB/div Ref 30.00 dE 20 0 10 0	BW #IFGain:Low #IFGain:Low	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied      Val    RF    50.0    AC      Center Freq 5.79500000      10 dB/div    Ref 30.00 dE      20.0    10.0      10.0    0.00	3 BW #IFGain:Low	INT I	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied      QC    R    RE    50.0. AC      Center Freq 5.79500000      10 dB/div    Ref 30.00 dE      20 0    0    0      10 0    0.00    0	a BW DO GHZ #IFGain:Low	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGN AUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupier      M    R    RE    50 Ω    Ac      Center Freq 5.79500000	Bm	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied      M    RF    50 Ω    Acc      Center Freq 5.79500000    Context    Context<	Bm	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied      X    R    RF    50 9    AC      Center Freq 5.79500000      10 dB/div    Ref 30.00 dE      Log    20.0    10.0      10.0	a BW DO GHZ #IFGain:Low	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGN AUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupier      X    RF    S0.9    AC      Center Freq 5.79500000      10    dB/div    Ref 30.00 dE      Log    Ref 30.00 dE      20.0    Ref 30.00 dE      10.0    Ref 30.00 dE      20.0    Ref 30.00 dE      30.0    Ref 30.00 dE      40.0    Ref 30.00 dE      50.0    Ref 30.00 dE	a BW DO GHZ #IFGain:Low	SENSE:INT Center Freq: 5,7950000 Trig: Free Run #Atten: 30 dB	ALIGN AUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupier      X    R    S0 0    AC      Center Freq 5.79500000    S0 0    AC      10    B/div    Ref 30.00 dE    AC      Log	a BW DO GHZ #IFGain:Low	INTI3733IVIC	ALIGNAUTO   ALIGNAUTO   000 GHz Avg Hold:>10/10	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupiet      X    R    SD 0 AC      Center Freq 5.79500000    SD 0 AC      10    dB/div    Ref 30.00 dB      20    SD 0 AC      10    dB/div    Ref 30.00 dB      20    SD 0 AC      10    Gamma Action Ac	a BW DO GHZ #IFGain:Low	SENSE:INT      Center Freq: 5.7950000      Trig: Free Run      #Atten: 30 dB	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied      27    R    S0.2    AC      Center Freq 5.79500000    S0.2    AC      10    dB/div    Ref 30.00 dE      10    dB/div    Ref 30.00 dE      20.0	a BW DO GHZ #IFGain:Low	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB	ALIGNAUTO	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied      X    R    S0.9    AC      Center Freq 5.79500000    S0.9    AC      10    dB/div    Ref 30.00 dE      Log    Ref 30.00 dE    Ref 30.00 dE      20.0    Ref 30.00 dE    Ref 30.00 dE      10.0    Ref 30.00 dE    Ref 30.00 dE      20.0    Ref 30.00 dE	a BW D0 GHZ #IFGain:Low #IFGain:Low Bm and a state of the state	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power	ALIGNAUTO ALIGNAUTO 0000 GHz Avg Hold>10/10 1000 GHz Avg Hold>10/10 1000 GHz Avg Hold>10/10 1000 GHz Avg Hold>10/10 1000 GHz 1000 GHZ	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied      10    RF    50.0    AC      10    dB/div    Ref    30.00    dE      10.0	a BW D0 GHz #IFGain:Low Bm Alth 35.894 MHz	SENSE:INT Center Freq: 5.795000 Trig: Free Run #Atten: 30 dB	ALIGN AUTO ALIGN AUTO D000 GHz Avg Hold>10/10 Hz Hz 11.1 dBm	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent.Spectrum Analyzer    Occupied      20    RF    50.0    AC      10    dB/div    Ref    30.00    dE      100	a BW D0 GHz #IFGain:Low 3m 3m 4th 55.894 MHz -14.254 kHz	SENSE:INT Center Freq: 5.795000 Trig: Free Run #Atten: 30 dB	ALIGNAUTO ALIGNAUTO D00 GHz Avg Held>10/10 Avg Held>10/10 Hz 11.1 dBm 99.00 %	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agient Spectrum Analyzer - Occupied Center Freq 5.79500000 Center Freq 5.79500000 Center Freq 5.79500000 Center 5.795 GHz #Res BW 100 kHz Occupied Bandwid Cartansmit Freq Error x dB Bandwidth	a BW DO GHz #IFGain:Low Bm am am am am am am am am am a	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power x dB	ALIGNAUTO ALIGNAUTO AVg Held>10/10 Avg Held>10/10 Hz 11.1 dBm 99.00 % -6.00 dB	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied Center Freq 5.79500000 Center Freq 5.79500000 Center S.795 GHz #Res BW 100 kHz Occupied Bandwidth	ath 35.894 MHz -14.254 kHz 36.37 MHz	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power x dB	ALIGNAUTO AVg Hold>10/10	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Aglient Spectrum Analyzer - Occupied Center Freq 5.79500000 10 dB/div Ref 30.00 dE 200 10 dB/div Ref 30.00 dE 200 200 200 200 200 200 200 200 200 20	a BW D0 GHz #IFGain:Low 3m 3m 3m 4 3m 4 3m 4 3m 4 3m 4 3m 4 5 3m 4 5 5 8 9 4 8 5 8 9 4 8 4 8 5 8 9 4 8 8 4 8 8 4 8 8 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power x dB	ALIGNAUTO AVgjHold>10/10 AVgjHold>10/10 Hz 11.1 dBm 99.00 % -6.00 dB	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS
Agilent Spectrum Analyzer - Occupied Center Freq 5.79500000 10 dB/div Ref 30.00 dE Log 20.0 10.0 000 -10.0 -20.0 -30.0 -40.0 -40.0 -40.0 -40.0 -40.0 -50.0 -40.0 -60.0 Center 5.795 GHz #Res BW 100 kHz Occupied Bandwidt Cartansmit Freq Error x dB Bandwidth	a BW D0 GHz #IFGain:Low 3m 3m 4 BW 3m 4 BW 4 BW 3m 4 BW 4 BW	SENSE:INT Center Freq: 5.7950000 Trig: Free Run #Atten: 30 dB #VBW 300 k Total Power OBW Power x dB	ALIGNAUTO AVg Hold>10/10 AVg Hold>10/10 Hz 11.1 dBm 99.00 % -6.00 dB	09:54:19 PM May 25, 2023 Radio Device: BTS
Agilent Spectrum Analyzer    Occupied      20    RF    50.0    AC      10 dB/div    Ref 30.00 dE    10    10    10      10 dB/div    Ref 30.00 dE    10    10    10    10      10 dB/div    Ref 30.00 dE    10 <td>a BW DO GHZ #IFGain:Low 3m 3m 4 BW 3m 3m 4 BW 3m 4 BW 4 BW</td> <td>SENSE:INT Center Freq: 5,795000 Trig: Free Run #Atten: 30 dB</td> <td>ALIGN AUTO ALIGN AUTO D000 GHz Avg Hold&gt;10/10 Hz 11.1 dBm 99.00 % -6.00 dB</td> <td>09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS</td>	a BW DO GHZ #IFGain:Low 3m 3m 4 BW 3m 3m 4 BW 3m 4 BW 4 BW	SENSE:INT Center Freq: 5,795000 Trig: Free Run #Atten: 30 dB	ALIGN AUTO ALIGN AUTO D000 GHz Avg Hold>10/10 Hz 11.1 dBm 99.00 % -6.00 dB	09:54:19 PM May 25, 2023 Radio Std: None Radio Device: BTS

# 6 MAXIMUM CONDUCTED OUTPUT AVERAGE POWER SPECTRAL DENSITY

# 6.1 TEST LIMIT

FCC CFR Title 47 Part 15 Subpart E Section 15.407(a):

FCC Part 15 Subpart E(15.407)				
Test Item	Limit	Frequency Range(MHz)		
	Other than Mobile and			
	Portable : 17dBm/MHz			
	Mobile and Portable :	5150~5250		
Power Spectral Density	11dBm/MHz			
	11dBm/MHz	5250~5350		
	11dBm/MHz	5470~5725		
	30dBm/500kHz	5725~5850		

# 6.2 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 UNII 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.
- (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.
- NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

# 6.3 TEST SET-UP

Same as 5.3.

#### 6.4 EQUIPMENT USED

Same as Radiated Emission Measurement.

# 6.5 TEST RESULT

PASS

Те	Test Data of Conducted Output Power Density for band 5.15-5.25 GHz				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail	
	5180	5.442	11	Pass	
802.11a	5200	5.460	11	Pass	
	5240	6.051	11	Pass	
	5180	4.722	11	Pass	
802.11n20	5200	4.677	11	Pass	
	5240	4.801	11	Pass	
802 11p40	5190	1.376	11	Pass	
002.111140	5230	0.361	11	Pass	

	Test Data of Conducted Output Power Density for band 5.725-5.85 GHz					
	Test	Average Power	Average Power	Limits	Pass or	
l est Mode	Channel	Density(dBm/100kHz)	Density(dBm/500kHz)	(dBm/500kHz)	Fail	
	5745	-5.126	1.864	30	Pass	
802.11a	5785	-5.508	1.482	30	Pass	
	5825	-4.825	2.165	30	Pass	
	5745	-6.326	0.664	30	Pass	
802.11n20	5785	-6.110	0.880	30	Pass	
	5825	-6.154	0.836	30	Pass	
902 11p40	5755	-10.074	-3.084	30	Pass	
002.111140	5795	-10.521	-3.531	30	Pass	

Note:1. Power density(dBm/500kHz) = Power density(dBm/100kHz) +10\*log(500/100).



#### Test Graphs of Conducted Output Power Spectral Density for band 5.15-5.25 GHz









### Test Graphs of Conducted Output Power Spectral Density for band 5.725-5.85 GHz







# 7 AVERAGE OUTPUT POWER

# 7.1 TEST LIMIT

FCC CFR Title 47 Part 15 Subpart E Section 15.407(a):

FC	C Part 15 Subpart E(15.407)	
Test Item	Limit	Frequency Range(MHz)
	Fixed: 1 Watt (30dBm)	
	Mobile and Portable:	5150~5250
	250mW (24dBm)	
Conducted Output Power	250mW (24dBm)	5250~5350
	250mW (24dBm)	5470~5725
	1 Watt (30dBm)	5725~5850

# 7.2 TEST PROCEDURE

- 1. The EUT was tested according to according to section 3 of KDB 789033 D02 General UNII Test Procedures New Rules V02r01.
- 2. The maximum conducted output power may be measured using a broadband AVG RF power meter.
- 3. Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor.
- 4. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.
- 5.Record the measurement data.

# 7.3 TEST SET-UP

#### AVERAGE POWER SETUP



# 7.4 EQUIPMENT USED

Same as Radiated Emission Measurement.

# 7.5 TEST RESULT

PASS

	Test Data of Cond	ducted Output Power for band 5.15-	5.25 GHz	
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
	5180	14.57	23.98	Pass
802.11a	5200	14.55	23.98	Pass
	5240	14.56	23.98	Pass
	5180	13.02	23.98	Pass
802.11n20	5200	13.01	23.98	Pass
	5240	13.01	23.98	Pass
802 11n40	5190	11.82	23.98	Pass
002.11140	5230	11.79	23.98	Pass

	Test Data of Conducted Output Power for band 5.725-5.85 GHz				
Test Mede	Test Channel	Average Power	Limits	Deep or Foil	
Test Mode	(MHz)	(dBm)	(dBm)	Pass of Fall	
	5745	14.63	30	Pass	
802.11a	5782	14.52	30	Pass	
	5825	14.55	30	Pass	
	5745	13.21	30	Pass	
802.11n20	5782	13.20	30	Pass	
	5825	13.20	30	Pass	
802 11p40	5755	11.93	30	Pass	
002.11140	5795	11.92	30	Pass	

# 8 CONDUCTED SPURIOUS EMISSION

# 8.1 TEST LIMIT

Applicable Limits	Channel
-27dBm/MHz	5150MHz-5250MHz
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more a bove or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at 5 MHz above or below the band edge.	5725MHz-5850MHz

# 8.2 TEST SETUP

Same as 5.3

# 8.3 TEST PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Trace 1 Max hold, then View.
- **Note:** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

# 8.4 TEST RESUL

#### PASS

Note: All the 20MHz bandwidth modulation had been tested, the 802.11a was the worst case and record in this test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 was the worst case and record in this test report.

# Test Graphs of Spurious Emissions outside of the 5.15-5.35 GHz band for transmitters operating in the 5.15-5.25 GHz band



802.11a\_ANT1\_5180\_6Mbps\_Frequency Band 2



802.11a\_ANT1\_5180\_6Mbps\_Frequency Band 4

Agilent Spectrum Analyzer - Swept SA			
Marker 1 38.603753458449 G	HZ D: Fast Trig: Free Run	Avg Type: Log-Pwr TRACE 123 Avg Hold:>100/100 TYPE MW	Peak Search
10 dB/div Ref 10.00 dBm	Atten: 20 dB	Mkr1 38.603 8 0 -48.551 d	GHZ NextPeak Bm
0.00			Next Pk Right
-10.0			Next Pk Left
-30.0		-30	Marker Delta
-40.0	trans states - cardelites & steart all		<sup>খ্যা</sup> mrr Mkr→CF
-60.0			Mkr→RefLyl
-80.0			More
Start 27.000 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	Stop 40.000 Sweep 22.00 ms (30000	GHz pts)
802 11:	ANT1 5180 6M	ons Frequency Band 4	5
Agilent Spectrum Analyzer - Swept SA	<u></u>		,
040 R RF 50Ω AC Start Freq 30.000000 MHz	PNO: Fast IFGain:Low Atten: 30 d	ALIGNAUTO Avg Type: Log-Pwr Run Avg Hold>100/100 B	12:09:02 PM May 26, 2023 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P S N N N N
10 dB/div Ref 20.00 dBm			Mkr1 924.01 MHz -57.949 dBm
10.0			
0.00			
-10.0			
-20.0			
-30.0			
-50.0			
-60.0	n a fan e here y fri heren en ferster te briter servere V fri here beine en	terretina (Sausa, Janasa, Janasa, Janas serretina yana da kata kata da paka antifesi da p	analy of the presence of the last of the last of the presence
-70.0	a de ser, la constante a de la juliana del de la constante de la constante de la constante de la constante de s		
Start 30.0 MHz #Res BW 100 kHz	#VBW 300 kHz	Sweep	Stop 1.0000 GHz 294.0 ms (30000 pts)
MSG		STATUS	

802.11a\_ANT1\_5240\_6Mbps\_Frequency Band 1



802.11a\_ANT1\_5240\_6Mbps\_Frequency Band 3



802.11a\_ANT1\_5240\_6Mbps\_Frequency Band 5



802.11n40\_ANT1\_5190\_MCS0\_Frequency Band 2



802.11n40\_ANT1\_5190\_MCS0\_Frequency Band 4

Agilent Spectrum Analyzer - Swept SA	CENCETAIT			
Marker 1 38.777959265309 GHz PNO: F	ast C Trig: Free Run	Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 123456 TYPE MWWWW	Peak Search
10 dB/div Ref 10.00 dBm	Low Atten: 20 dB	Mkr1	38.778 0 GHz -48.579 dBm	Next Peak
0.00				Next Pk Right
-10.0				Next Pk Left
-30.0			-30.00 dBm	Marker Delta
-50.0 <mark>Mala de la <sup>10</sup> y 141, com parte de la 11 pa</mark>			( The specific term of the second	Mkr→CF
-70.0				Mkr→RefLvl
-80.0 Start 27.000 GHz		2 2 2	top 40.000 GHz	More 1 of 2
#Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 22.00 STATUS	) ms (30000 pts)	
802.11n40	) ANT1 5190 M	ICS0 Frequen	cy Band 5	
••=				
Agilent Spectrum Analyzer - Swept SA				
Agilent Spectrum Analyzer - Swept SA	PNO: Fast Free IFGain:Low Atten: 30	ALIGNAUTO Avg Type Run Avg Hold; dB	1 Log-Pwr 100/100	12:05:20 PM May 26, 2023 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P S N N N N
Agilent Spectrum Analyzer - Swept SA      02 R    RF    50 Ω    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm	PNO: Fast IFGain:Low Atten: 30	ALIGNAUTO Avg Type Run Avg Holda dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 2 3 4 5 6 TYPE MUMANNAN DET P S NN N 1 776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA	PNO: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Holda dB	Log-Pwr 100/100	12:05:20 PM May 26, 2023 TRACE 12:3 4 5 6 TYPE MWANNAN DET P SNNN 1 776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA	PNO: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Hold: dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:3 4 5 6 TYPE MWANNAN DET P SNNN 1 776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      M    RF    50 Ω    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm      Log      10.0      .000	PNO: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Hold: dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:3-4 5 0 TYPE MWWWWW DET P 5 NULLIN 1776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      M    RF    50 Ω    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm      -00	PNO: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Hold: dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:3-4 5 0 TYPE MWWWWW DET P 5 NUMM 1776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      M    RF    50 Ω    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm      Log	PNO: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Hold: dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:3-45 0 TYPE MWWWW DET 5 SILLING 1776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      M    RF    50 Ω    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm      Log	PN0: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Hold: dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:3-45 0 TYPE MWWWW DEF DEMNIN 1776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      XR    RF    SD Ω    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm      00	PNO: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Hold: dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:3-45 6 TYPE MWWWWW DEF D S NININ 1 776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      XX    RF    SO Ω    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm      00	PNO: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Hold: dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:345 G TYPE MWWWWW DEF D SNNNN 1776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      X    RF    SO Ω    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm      0 g	PNO: Fast IFGain:Low Trig: Free Atten: 30	ALIGNAUTO Avg Type Run Avg Hold: dB	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:23 4 5 G TYPE WWWWW DEF SNNNN 1776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      XX    RF    SO Q    AC      Start Freq 30.000000 MHz      Io dB/div    Ref 20.00 dBm      Io data    Io data      Io data    Io data    Io data    Io data      Io data    Io data    Io data    Io data      Io data    Io data    Io data    Io data      Io data    Io data <thio data<="" th="">    Io data</thio>	PNO: Fast IFGain:Low Trig: Free Atten: 30 Atten: 40 Atten: 40	ALIGNAUTO Avg Type Run Avg Hold: dB	1 1 1 1 1 1 1 1 1 1 1 1 1 1	12:05:20 PM May 26, 2023 TRACE 12:2:4:5:6 TYPE WWWWW DEF SNNNN 1.776.54 MHz -59.663 dBm
Agilent Spectrum Analyzer - Swept SA      Q2    RF    SD Q    AC      Start Freq 30.000000 MHz      10 dB/div    Ref 20.00 dBm      000	PNO: Fast PRO: Fast IFGain: Low Trig: Free Atten: 30 Atten: 30 Atten: 40 Atten: 40	ALIGNAUTO Avg Type Run Avg Hold: Avg	Log-Pwr 100/100 Mkr1	12:05:20 PM May 26, 2023 TRACE 12:3-4 5 0 TYPE MAXIMUM DET 5:0.663 dBm 1776.54 MHz -59.663 dBm 1000000000000000000000000000000000000

802.11n40\_ANT1\_5230\_MCS0\_Frequency Band 1





# Test Graphs of Spurious Emissions outside of the 5.725-5.85 GHz band for transmitters operating in the 5.725-5.85 GHz band




larker 1	RF 51 37.65992	0 Ω DC 21997400	GHz	SEN	NSE:INT	Avg Type Avg Hold:	: Log-Pwr >100/100	TR	ACE 123	456	Peak Se	arch
0 dB/div	Ref 20.0	0 dBm	FGain:Low	Atten: 30	) dB		Mkr	1 37.6 -37.	<sup>рет р</sup> м м 59 9 С 254 d	Hz Bm	Nex	xt Pea
og											Next P	k Rigl
D.00												
10.0											Next	Pk Le
0.0									27.0	00 cfBm	Marke	er Del
0.0								<b>♦</b> <sup>1</sup>	-213		_	
0.0	the file the s	ne e Hatalina a ta		Latel Constant		i li rega de la interna Protocia de la compositione					м	kr→C
0.0											Mkr→	RefL
0.0												
								Stop 4	0.000 /			<b>Мо</b> 1 от
tart 27.0	00 GHz									GHz		
tart 27.0 Res BW	000 GHz 1.0 MHz		#VBW	/ 3.0 MHz		S	weep 22	2.00 ms (	(30000	GHz pts)		
tart 27.0 Res BW	000 GHz 1.0 MHz	802.1	#VBW	73.0 MHz	45 6M	s bps F	status	ncv B	(30000 and 5	GHz pts)		
tart 27.0 Res BW	000 GHz 1.0 MHz rum Analyzer - RF 50	802.1 Swept SA	#vвw 1а_АМ	/ 3.0 MHz T1_574	45_6M	s bps_F	weep 22 status requei	ncy Ba	(30000 and 5	GHz pts)	:28:13 PM Ma	y 26, 20
tart 27.0 Res BW IG Iglent Spect R tart Fre	000 GHz 1.0 MHz rum Analyzer - RF 50 q 30.0000	802.1 Swept 5A D Q AC D O MHz	#VBW 1a_AN PNO: IFGain	/ 3.0 MHz T1_574 Fast ⊊	45_6M vse:int Trig: Free F Atten: 30 d	S bps_F	Weep 22 STATUS requer ALIGN AUTO Avg Ty AvgIHo	100 ms 1 100 ms	and 5	GHz pts)	:28:13 PM Ma TRACE TYPE M DET	y 26, 20 2 3 4 5 WWW S N N 1
tart 27.0 Res BW	2000 GHz 1.0 MHz rum Analyzer RF 50 eq 30.0000 Ref 20.00	802.1 Swept SA DO MHZ	#VBW	T1_574	45_6M vse:int Trig: Free F Atten: 30 d	s bps_F	WEED 22 STATUS TEQUEI ALIGNAUTO Avg Ty Avg]Ho	2.00 ms ( .00 m	and 5	SHz pts) 12 Mkr1	:28:13 PM Ma TRACE DET P 968.38 59.963	y 26, 20 2 3 4 WMA S N N F
tart 27.0 Res BW	000 GHz 1.0 MHz rum Analyzer RF St eq 30.0000 Ref 20.0	802.1 Swept SA 3 Q AC 000 MHz 0 dBm	#VBW	/ 3.0 MHz <u> T1_57</u> <sup>∠</sup> Fast ← :Low	45_6M vsedvrt Trig: Free F Atten: 30 d	s bps_F	Weep 22 STATUS ICCQUEI ALIGNAUTO AvgIHo	ncy Ba	and 5	SHz pts) 12 Mkr1	:28:13 PM Ma TRACE 1 TYPE M DET P 968.38 59.963	926, 20 2 3 4 5 WWW SNN1 SNN1 SNN1 SNN1 SNN1 SNN1 SNN1
tart 27.0 Res BW	000 GHz 1.0 MHz rum Analyzer - RF 50 q 30.0000 Ref 20.00	802.1 Swept SA Э Ω AC DOO MHZ	#VBW	f 3.0 MHz T1_574 Fast Low	45_6M vse.int Trig: Free F Atten: 30 d	S bps_F Run B	Weep 22 STATUS ICCQUEI ALIGNAUTO AvgIHo	.00 ms ( .00 ms	and 5	SHz pts) 12 Mkr1	:28:13 PM Ma TRACE 1 TYPE M DET 9 968.38 59.963	926,20 23349 SNNN SNNN BMH dBi
tart 27.0 Res BW	2000 GHz 1.0 MHz rum Analyzer - RF 50 q 30.0000 Ref 20.00	802.1 Swept SA D Ω AC D 00 MHz	#VBW	f 3.0 MHz T1_574 Fast ♀	45_6M VSE:INT Trig: Free P Atten: 30 d	S bps_F	ALIGNAUTO AVg Ty AvgHo	.00 ms (	and 5	II2 Mkr1	:28:13 PM Ma TRACE TYPE I 968.38 59.963	926,20 2949 SNN1 SNN1 dB1
tart 27.0 Res BW	2000 GHz 1.0 MHz rum Analyzer - RF 50 q 30.0000 Ref 20.00	802.1 Swept SA D Q AC D OD MHZ	#VBW	f 3.0 MHz T1_574 Fast ♀	45_6M vse:IVT Trig: Free F Atten: 30 d	s bps_F	ALIGNAUTO	.00 ms (	and 5	Hz pts) 12 Mkr1	:28:13 PM Ma TRACE TYPE I 968.38 59.963	y26,20 2349 5NNN 5NNN <b>6B</b>
tart 27.0 Res BW	2000 GHz 1.0 MHz rum Analyzer - RF 50 cq 30.0000 Ref 20.00	802.1 Swept SA D R AC D O MHz 0 dBm	#VBW	Fast	45_6M vse:nv1 Trig: Free F Atten: 30 d	Sun B	Weep 22 STATUS TEQUEL ALIGN AUTO Avg Ty AvgHo	.00 ms (	and 5	3Hz pts) 12 Mkr1	:28:13 PM MM TRACE TYPE T DET P 968.38 59.963	926,20 2349 SNNM SNNM GNNM GNNM
tart 27.0 Res BW	000 GHz 1.0 MHz rum Analyzer = RF 50 cq 30.00000 Ref 20.00	802.1 Swept SA DR AC DOO MHZ 0 dBm	#VBW	Fast	45_6M vse:inti Trig: Free F Atten: 30 d	Sun B	weep 22 status requer Augnauto AvgTy AvgHo	.00 ms (	and 5	3Hz pts) 12 Mkr1	:28:13 PM MA TRACE 1 TYPE 1 968.38 59.963	926,200 2345 SNN1 3NN1 4BI
tart 27.0 Res BW	000 GHz 1.0 MHz rum Analyzer - 50 Ref 20.00 Ref 20.00	802.1 Swept SA 3 Q AC 00 MHz 0 dBm	#VBW	Fast	45_6M vse:INT Trig: Free F Atten: 30 d	S bps_F Run B	Veep 22 STATUS ICOULT ALIGNAUTO AvgIHo	.00 ms (	and 5	3Hz pts) 12 Mkr1	:28:13 PM MM TRACE 1 TYPE M DET P 968.39 59.963	y 26, 20 2 3 4 5 3 NN1 3 MH dBI
tart 27.0 Res BW  ignor Spectr  glient Spectr  a  b dB/div  g  0  c  b dB/div  g  c  c  c  c  c  c  c  c  c  c  c  c  c	2000 GHz 1.0 MHz rum Analyzer RF 50 G 30.0000 Ref 20.00 	802.1 Swept SA D Q MHz 0 dBm	#VBW	4 3.0 MHz T1_574 Fast 1.000	45_6M vse:nvt Trig: Free F Atten: 30 d	Sun Bun Sun B		.00 ms ( .00	and 5	BHz pts)	28:13 PM MM TRACE 1 TYPE M DET P 968.38 59.963	y 26, 20 2 3 4 9 3 MH d Bi
tart 27.0 Res BW	000 GHz 1.0 MHz rum Analyzer - Si Ref 20.00 Ref 20.00 Ref 20.00	802.1 Swept SA DO MHZ 0 dBm	#VBW	Fast	45_6M vse:nt  Trig: Free F Atten: 30 d	S bps_F Run B	ALIGNAUTO ALIGNAUTO AvgIHo	100 ms ( 100 ms	and 5	SHz pts)	228:13 PM MM TRACE TYPE M DET P 968.38 -59.963	926, 20 23345 SNNN 3 MH dBi

802.11a\_ANT1\_5825\_6Mbps\_Frequency Band1\_\_\_\_\_



R art Fre	RF   50 Ω eq 5.9300000	AC 00 GHz	PNO: F	ast 🖵	SE:INT Trig: Free Ru	n AL	IGN AUTO Avg Type Avg Hold:	: Log-Pwr >100/100		12:21:19 PM May 26, 20 TRACE 1 2 3 4 TYPE M <del>WWW</del> DET P S N N
	B-6.00.00.4		IFGain:	Low	Atten: 50 dB				Mkr1	26.455 0 GH
	Ref 20.00 di	sm								-02.175 dB
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.o <mark>tetişt</mark> i										
.0										
.0										
art 5.93	3 GHz									Stop 27.00 GH
les BW	1.0 MHz			#VBW	3.0 MHz		PLITATS	Swee	p 64.0	0 ms (30000 pi
·										
		00.44	- 4 6 17	4 500					4	
Agilent Spe	ctrum Analyzer - Swept	02.11	a_ANT	1_582	25_6Mb	ps_Fre	equenc	y Band	4	
Agilent Spe arker 1	8 sctrum Analyzer - Swept RF 50 Ω 38.6687556	502.11 sa DC 25188 G PN	a_ANT Hz 0: Fast	1_582 sen Trig: Free	25_6Mb	ps_Fre Avg Type: L Avg Hold:>1	equenc	TRACE	4 2 3 4 5 6	Peak Search
Agilent Spe arker 1	8 ctrum Analyzer - Swept RF 50 Ω 1 38.66875556	502.11 SA DC 25188 G PN IFG	a_ANT Hz O: Fast - ain:Low	SEN Trig: Free Atten: 30	25_6Mb se:int Run /	ps_Fre Avg Type: L Avg Hold:>1	equenc Log-Pwr 100/100 Mkr1	TRACE	4 2 3 4 5 6 WWWW N N N N GHz	Peak Search Next Pe
Agilent Spe arker 1 dB/div	8 ctrum Analyzer - Swept RF 50 Ω 38.66875556 Ref 20.00 dB	302.11 SA DC 25188 G PN IFG 3m	a_ANT Hz O: Fast 🌩 ain:Low	1_582 sen Trig: Free Atten: 30	25_6Mb se:int Run dB	ps_Fre	equenc Log-Pwr 100/100 Mkr1	TRACE 1 TYPE M 38.668 8 -37.265	4 2 3 4 5 6 VNNNN GHz dBm	Peak Search Next Pe
Agilent Spe arker 1 dB/div	8 strum Analyzer - Swept RF 50 Ω 38.66875556 Ref 20.00 dB	302.11; sa pc 25183 G PN IFG 3m	a_ANT	Trig: Free Atten: 30	25_6Mb se:int Run dB	ps_Fre	equenc Log-Pwr 100/100 Mkr1	TRACE 1 TYPE DET 38.668 8 -37.265	4	Peak Search Next Pe Next Pk Rig
Agilent Spe arker 1 dB/div g	8 RF 50 Ω 38.6687556 Ref 20.00 dB	02.11; sa pc 25188 G PN iFG 3m	a_ANT Hz 0: Fast () ain:Low	Trig: Free Atten: 30	25_6Mb se:int Run dB	ps_Fre	equenc Log-Pwr 100/100 Mkr1	TRACE D TYPE 38.668 8 -37.265	4 2 3 4 5 6 NNNNN GHz dBm	Peak Search Next Pe Next Pk Rig
Agilent Spe	8 RF 50 Ω 33.6687556 Ref 20.00 dB	302.11 SA DC 25188 G PN IFG 3m	a_ANT Hz 0: Fast () ain:Low	Trig: Free Atten: 30	25_6Mb se:int Run dB	ps_Fre	equenc Log-Pwr 100/100 Mkr1	TRACE DET TYPE 38.668 8 -37.265	4 SHZ dBm	Peak Search Next Pe Next Pk Rig Next Pk Lu
Agilent Spe arker 1 dB/div g	8 RF 50Ω 38.6687556	02.11; sa pc 25188 G PN IFG 3m	a_ANT Hz 0: Fast () ain:Low	1_582 sen Trig: Free Atten: 30	25_6Mb se:INT Run dB	ps_Fre	equenc	TRACE 1 TYPE 338,668 8 -37.265	4	Peak Search Next Pe Next Pk Rig Next Pk Li
Agilent Spe arker 1 dB/div g 0.0 0.0	8 RF 50 Ω 38.6687556 Ref 20.00 df	302.11; sa pc 25188 G PN IFG 3m	A_ANT D: Fast ain:Low	1_582 sen Trig: Free Atten: 30	25_6Mb	ps_Fr6	equenc	TRACE 1 TYPE 38.668 8 -37.265	4 3456 500 500 6Hz dBm 27.00 dBm	Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De
Agilent Spe arker 1 dB/div g 0.0 0.0 0.0 0.0	8 etrum Analyzer - Swept RF 50 Ω 38.666875556 Ref 20.00 dB	02.11; sa pc 25188 G PN IFG 3m	a_ANT Hz O:Fast () ain:Low	1_582 SEN Trig: Free Atten: 30	25_6Mb	Avg Type: L Avg Hold:>1	equenc Log-Pwr 100/100 Mkr1	TRACE 1 TYPE 0 38.668 8 -37.265	4	Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De
Agilent Spe arker 1 dB/div 9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	8	02.11; sa pc 25188 G PN iFG 3m	a_ANT	1_582 SEN Trig: Free Atten: 30	25_6Mb	PS_Fre	equenc	TRACE UT TYPE 0 38.668 8 -37.265		Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De
Agilent Spe arker 1 dB/div g 0.0 0.0 0.0 0.0 0.0 0.0 0.0	8	02.11: sa pc 25188 G PN iFG 3m	a_ANT	1_582 SEN Trig: Free Atten: 30	25_6Mb	PS_Fre	equenc	TRACE TYPE 38.668 8 -37.265		Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De Mkr→Ref L
Agilent Spe arker 1 g B/div g 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	8 sctrum Analyzer - Swept RF   50 Ω 138.666875556 Ref 20.00 dB 0	02.11; sa pc 25188 G PN IFG 3m	a_ANT	1_582 SEN Trig: Free Atten: 30	25_6Mb	PS_Fre	equenc	TRACE 1 TYPE 338,668 8 -37.265		Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De Mkr-A
Agilent Spe arker 1 dB/div g 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	8 ectrum Analyzer - Swept RF 50 Ω 38.666875556 Ref 20.00 dB	302.11; sa pc 25188 G PN IFG 3m	A_ANT	1_582	25_6Mb	Avg Type: L Avg Hold:>1	equenc	TRACE U TYPE DET 38.668 8 -37.265	4	Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De Mkr→Ref L
Agilent Spe arker 1	8 etrum Analyzer - Swept RF 50 Ω 38.668775563 Ref 20.00 dB 0 0 0 Hz 1.0 MHz	02.11; sa pc 25188 G PN IFG 3m	A_ANT	1_582 SEN Trig: Free Atten: 30	25_6Mb	ps_Fre	equenc	EY Band	4 3 4 5 6 WNNNN GHZ dBm 27 00 dBm 27 00 dBm 27 00 dBm 0 GHZ 0 GHZ 0 pts)	Peak Search Next Pe Next Pk Rig Next Pk Lu Marker De Mkr→Ref L Mkr→Ref L





rker 1 3	RF 50 9	Ω DC 3313944 (	GHz	Si Tria: Fr			e: Log-Pwr	TRAC	E 1 2 3 4	5 6 F	eak Search
		F IF	PNO: Fast G Gain:Low	Atten: 3	ee Run 30 dB	AvgiHold	:>100/100	DE	PNNN	NN	Next Pe
lB/div	Ref 20.00	dBm					Mkr	1 37.54	9 4 GF 75 dB	iz m	NEXTFE
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	5	802.11	n40_A	NT1_5	5755_N	NCS0_	Freque	ency Ba	and5		
nt Spectrum	n Analyzer - So	802.11	n40_A	NT1_5		ACS0_	Freque	ency Ba	and5	12:34:	:49 PM May 26, 20
nt Spectrum	Analyzer - So RF 50 : 30.00000	802.11 wept SA Ω AC DO MHZ	n40_A	NT1_5	5755_N ENSE:INT Trig: Free	ACS0_	ALIGN AUTO Avg Ty Avg Ito	PICY Ba	and5	12:34:	49 PM May 26, 20 TRACE 1 2 3 4 3 TYPE MWAWA DET P SN NI
nt Spectrum	n Analyzer - Sv RF 50 : 30.00000	802.11 wept SA & AC DO MHz	n40_A PNO: IFGain	NT1_5	ENSE:INT Trig: Free Atten: 30	MCSO_ Run dB	ALIGN AUTO Avg T) Avg Ho	PICY Ba	and5 r	12:34: Ikr1 80	49 PM May 26, 20 TRACE 1 2 3 4 5 TYPE MWWW DET P SN N 02.05 MH
nt Spectrum Int Freq IB/div F	1 Analyzer - So RF 50 30.00000 Ref 20.00	802.11 wept SA 2 AC DO MHz dBm	n40_A PNO: IFGair	NT1_5 Fast	5755_N ENSE:INT Trig: Free Atten: 30	ACS0_ Run dB	Freque	Pency Ba	and5 r	12:34: Ikr1 8( -55	19 PM May 26, 20 TRACE 2 3 4 3 TYPE MWWW DET P S NNT 02.05 MH 0.472 dB
nt Spectrum rt Freq B/div	2 Analyzer - So RF 50 30.00000 Ref 20.00	802.11 wept SA 2 AC 00 MHz dBm	n40_A PNO: IFGair	NT1_5	ENSE:INT Trig: Free Atten: 30	ACSO_ Run dB	ALIGNAUTO Avg T) Avg Ho	Pincy Ba	and5	12:34: Ikr1 80 -59	49 PM May 26, 20 TRACE TYPE DET P S N N 02.05 MH 0.472 dB1
nt Spectrum rt Freq B/div F	Analyzer - Si RF 50 30.00000	BO2.11 wept SA ₽ AC DO MHz dBm	n40_A PNO: IFGain	NT1_5	5755_N ENSE:INT Trig: Free Atten: 30	ACSO_		rpe: Log-Pwi id>100/100	and5	12:34; Ikr1 8( -5§	49 PM May 26, 20 TRACE 11 2 3 4 1 TYPE MWHWW per P ≤ NM1 02.05 MH 3.472 dB1
nt Spectrum rt Freq IB/div F	{ Analyzer - Sy RF 500 30.00000 Ref 20.00	BO2.11	n40_A PNO: IFGair	NT1_5	5755_N ENSE:INT Trig: Free Atten: 30	ACSO_	Freque	rpe: Log-Pwi Id>100/100	and5	12:34: Ikr1 80 -5§	49 PM May 26, 20 TRACE 2 3 4 B TYPE SNNH 02.05 MH 9.472 dB
nt Spectrum rt Freq B/div	Analyzer - St RF 50 30.00000 Ref 20.00	BO2.11 wept SA Q AC DO MHz	n40_A PNO: IFGain	NT1_5	ST55_N ENSE:INT Trig: Free Atten: 30	ACSO_	Freque Alignauto Avg Tr Avgitte	rpe: Log-Pwi id>100/100	and5	12:34: Ikr1 8/ -5§	49 PM May 26, 20 TRACE [] 3 3 4 8 TYPE M SNNN 02.05 MH 3.472 dB1
nt Spectrum rt Freq B/div F	8 Analyzer - Si RF 500 30.00000	BO2.11 wept SA R AC DO MHz dBm	n40_A PNO: IFGair	NT1_5 Fast ♀	5755_N ENSE:INT Trig: Free Atten: 30	ACSO_	Freque	rpe: Log-Pwr Id> 100/100	and5	12:34: Ikr1 84 -55	49 PM May 26, 20 TRACE 2 3 49 TYPE WWWW 02.05 MH 0.472 dB
nt Spectrum	Analyzer - Si RF 50 30.00000 Ref 20.00	BO2.11	n40_A PNO: IFGair	NT1_5	ENSE:INT Trig: Free Atten: 30	ACSO_	ALIGNAUTO Avg Tj Avg Ho	rpe: Log-Pwi id>100/100	and5	12:34: Ikr1 80 -59	49 PM May 26, 20 TRACE 23 4 B TYPE MWWWW DET PS NMH 02.05 MH 9.472 dB
nt Spectrum rt Freq B/div F	Analyzer - Si           RF         50:           30.00000	802.11 wept SA ac DO MHz dBm	n40_A PNO: IFGain	NT1_5 Fast ♀	Trig: Free Atten: 30	ACSO_		PPE: Log-Pwi Id>100/100	n M	12:34: Ikr1 8 -5§	49 PM May 26, 20 TRACE 1 2 3 4 Type Musilian Der P SIMI 9.472 dBi
B/div F	Analyzer - Si RF 50 30.00000 Ref 20.00	BO2.11	n40_A PNO: IFGait	NT1_t	5755_N ENSE:INT Trig: Free Atten: 30	ACSO_		rpe: Log-Pwi id>100/100	and5	12:34: Ikr1 80 -59	49 PM May 26, 200 TRACE 12 3 4 9 Type SNNN 02.05 MH 9.472 dBt
nt Spectrum rt Freq	Analyzer - Si           RF         50:           30.00000	802.11 wept SA a AC DO MHZ dBm	n40_A PNO: IFGain	NT1_t	Trig: Free Atten: 30	ACSO		rpe: Log-Pwi id:>100/100	and5 r M	12:34: Ikr1 8 -5§	49 PM May 26, 20 TRACE 1 2 3 4 4 TYPE 1 2 3 4 4 OZ.05 MH 9.472 dB1 9.472 dB1
nt Spectrum rt Freq B/div F	Ref 20.00	BO2.11 wept SA 2 AC OO MHZ dBm	n40_A PNO: IFGair	NT1_5 Fast ↔ Low	5755_N ENSE:INT Trig: Free Atten: 30			rpe: Log-Pwr Id> 100/100	and 5	12:34: Ikr1 8( -59	49 PM May 26, 20 TRACE 2 3 49 TYPE MWWWW 02.05 MH 0.472 dBr 0.472 dBr
nt.Spectrum rt Freq B/div F	Analyzer - Si           RF         50:           30.00000         30:           Ref         20:00           Analyzer - Si         30:00000           Analyzer - Si         30:0000           Analyzer - Si         30:0000	BO2.11	n40_A PNO: IFGain	NT1_5	S755_N Trig: Free Atten: 30			rpe: Log-Pwi id>100/100	2 1	12:34:	49 PM May 26, 20 TRACE [] 2 3 4 8 YPE MWWWW PET P SINIT 02.05 MH 9.472 dB1 9.472 dB1 9.472 dB1
nt Spectrum rt Freq B/div F	Analyzer - Si           RF         50:           30.00000         30:           Ref         20:00           a:         1	802.11 wept SA 2 AC 0 MHz dBm 4 4 4 4 4 4 4 4 4 4 4 4 4	n40_A PNO: IFGair	NT1_5	ST55_N ENSE:INT Trig: Free Atten: 30			rpe: Log-Pwr rpe: Log-Pwr Id> 100/100	and 5	12:34: Ikr1 8( -5(	49 PM May 26, 20 TRACE 12 3 49 TYPE 23 49 9 3 49 9 4 72 dB 9 7 7 7 dB 9 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
nt Spectrum rt Freq B/div F	Ref 20.00	BO2.11 wept SA C AC DO MHZ dBm dBm	n40_A PNO: IFGain	NT1_f	S755_N ENSE:INT Trig: Free Atten: 30			rpe: Log-Pwi id>100/100	veep 2	12:34: Ikr1 8 -59	49 PM May 26, 20 TRACE    2 3 4 8 TYPE    2 3 4 8 TYPE    2 3 4 8 10 2.05 MH 3.472 dB1 3.472 dB1 4.10000 GH 5 (30000 GH





## **9 ANTENNA REQUIREMENT**

Standard Applicable:

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Connected Construction The antenna used in this product is a PCB Antenna.

ANTENNA:



## 10 PHOTO OF TEST RADIATED EMISSION



30MHz-1000MHz



Above 1GHz

## CONDUCTED EMISSION



## **RF CONDUCTED**



\*\*\*End of Report\*\*\*