FCC TEST REPORT					
FCC ID: 2BAH2-G500					
Report No.	: <u>SSP25010168-2E</u>				
Applicant	: Maction Technologies (Shanghai) ,Ltd				
Product Name	: Dash Cam				
Model Name	: <u>G500</u>				
Test Standard	: FCC Part 15 Subpart E				
Date of Issue	: 2025-01-17				
CCUT					
Shenzhen CCUT Quality Technology Co., Ltd.					
1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China; (Tel.:+86-755-23406590 website: www.ccuttest.com)					
This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.					

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Test Report Basic Information

Applicant: Address of Applicant	Maction Technologies (Shanghai) ,Ltd Room 303, Building 11, No.358 Youdong Road, Minhang District, Shanghai, China			
Manufacturer : Address of Manufacturer:	Maction Technologies (Shanghai) ,Ltd Room 303, Building 11, No.358 Youdong Road, Minhang District, Shanghai, China			
Product Name	Dash Cam			
Brand Name	PAPAGO!			
Main Model	G500			
Series Models	G500 Plus, G520, G520 Plus			
	FCC Part 15 Subpart E			
	KDB 789033 D02 v02r01			
	ANSI C63.4-2014			
Test Standard	ANSI C63.10-2013			
Date of Test	2025-01-14 to 2025-01-16			
Test Result	Passed			
Tested By	Walker Wa (Walker Wu)			
Reviewed By	Lieber Ouyang (Lieber Ouyang)			
Authorized Signatory	Lahm Peng (Lahm Peng)			
Note : This test report is limited	to the above client company and the product model only. It may not be			
duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd All test data presented in				
this test report is only applicabl	e to presented test sample.			

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Revision History

Revision	Issue Date	Description	Revised By
V1.0	2025-01-17	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	Dash Cam			
Trade Name:	PAPAGO!			
Main Model:	G500			
Series Models:	G500 Plus, G520, G520 Plus			
Rated Voltage:	Car input: DC 12-24V, Output: DC 5V			
Battery:	-			
Test Sample No:	SSP25010168-1			
Hardware Version:	T2-MAIN-230D-V1.1			
Software Version:	PPG_G500_P014-20241224			
Note 1: The test data is gathered from a production sample, provided by the manufacturer.				

Note 2: The color of appearance and model name of series models listed are different from the main model, but the circuit and the electronic construction are the same, declared by the manufacturer.

Wireless Specification				
Winalaga Standard.	802.11a			
wineless standard:	802.11n(HT20/HT40)			
	802.11a/n (HT20):			
Operating Frequency	U-NII Band 4: 5745MHz to 5825MHz			
Operating Frequency:	802.11n (HT40):			
	U-NII Band 4: 5755MHz to 5795MHz			
Number of Channel:	Refer to the following channel list			
Modulation:	OFDM (BPSK, QPSK, BPSK, 16QAM, 64QAM, 256QAM)			
Antenna Gain:	2.3dBi			
Type of Antenna:	SMD Antenna			
Type of Device:	🗌 Portable Device 🛛 Mobile Device 🗌 Modular Device			

Channel List for UNII Band 4 (5725-5850MHz)							
802.11a/n/	/ac(20MHz)	802.11n/a	ac(40MHz)	802.11ac/	ax(80MHz)	(160MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	<u>5745</u>	151	<u>5755</u>				
153	5765	159	<u>5795</u>				
157	<u>5785</u>						
161	5805						
165	<u>5825</u>						

1.2 Test Setup Information

List of Test Modes					
Test Mode	Description		Remark		
TM1		802.11a	Band 4		
TM2		802.11n(HT20)	Band 4		
TM3		802.11n(HT40)	Ban	id 4	
-		-	-		
List and Detail	ls of Auxiliary	r Cable			
Descrip	otion	Length (cm)	Shielded/Unshielded	With/Without Ferrite	
-		-			
-					
List and Details of Auxiliary Equipment					
Descrip	otion	Manufacturer	Model	Serial Number	
-		-	-	-	
-		-			
Test Software & Power level setup of EUT					
Test Software Power level setup			vel setup		
VanDyke Software 40				0	

Note: The DUT was installed in a test fixture and this test fixture is connected to a laptop computer. The laptop computer was used to configure the EUT to continuously transmit at a specified output power using all different modes and modulation schemes, using the proprietary tool VanDyke Software.

1.3 Compliance Standards

Compliance Standards				
ECC Dout 15 Subport E	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES,			
FCC Part 15 Subpart E	Unlicensed National Information Infrastructure Devices			
All measurements contained in this	report were conducted with all above standards			
According to standards for test n	nethodology			
ECC Dout 15 Submout E	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES,			
FCC Part 15 Subpart E	Unlicensed National Information Infrastructure Devices			
	GUIDELINES FOR COMPLIANCE TESTING OF			
KDB 789033 D02 v02r01	UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES			
	PART 15, SUBPART E			
ANGL (62 A 201A	American National Standard for Methods of Measurement of Radio-Noise Emissions			
ANSI 003.4-2014	from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.			
ANSI 662 10 2012	American National Standard of Procedures for Compliance Testing of Unlicensed			
ANSI C03.10-2015	Wireless Devices			
Maintenance of compliance is the responsibility of the manufacturer or applicant. Any modification of the product, which				
result is lowering the emission, sho	uld be checked to ensure compliance has been maintained.			

1.4 Test Facilities

	Shenzhen CCUT Quality Technology Co., Ltd.				
Laboratory Name:	1F, Building 35, Changxing Technology Industrial Park, Yutang Street,				
	Guangming District, Shenzhen, Guangdong, China				
CNAS Laboratory No.:	L18863				
A2LA Certificate No.:	6893.01				
FCC Registration No:	583813				
ISED Registration No.:	CN0164				
All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing					
Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.					

1.5 List of Measurement Instruments

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date		
Conducted Emissions							
AMN	ROHDE&SCHWARZ	ENV216	101097	2024-08-07	2025-08-06		
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100242	2024-08-07	2025-08-06		
Test Cable	N/A	Cable 5	N/A	2024-08-07	2025-08-06		
EMI Test Software	FARA	EZ-EMC	EMEC-3A1+	N/A	N/A		
		Radiated Emission	IS				
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2024-08-07	2025-08-06		
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2024-08-07	2025-08-06		
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40-N	101692	2024-08-07	2025-08-06		
Amplifier	SCHWARZBECK	BBV 9743B	00251	2024-08-07	2025-08-06		
Amplifier	HUABO	YXL0518-2.5-45		2024-08-07	2025-08-06		
Amplifier	COM-MW	DLAN-18G-4G-02	10229104	2024-08-07	2025-08-06		
Loop Antenna	DAZE	ZN30900C	21104	2024-08-03	2025-08-02		
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2024-08-03	2025-08-02		
Horn Antenna	SCHWARZBECK	BBHA 9120D	02553	2024-08-03	2025-08-02		
Horn Antenna	COM-MW	ZLB7-18-40G-950	12221225	2024-08-03	2025-08-02		
Attenuator	QUANJUDA	6dB	220731	2024-08-07	2025-08-06		
Test Cable	N/A	Cable 1	N/A	2024-08-07	2025-08-06		
Test Cable	N/A	Cable 2	N/A	2024-08-07	2025-08-06		
Test Cable	N/A	Cable 3	N/A	2024-08-07	2025-08-06		
Test Cable	N/A	Cable 4	N/A	2024-08-07	2025-08-06		
Test Cable	N/A	Cable 8	N/A	2024-08-07	2025-08-06		
Test Cable	N/A	Cable 9	N/A	2024-08-07	2025-08-06		
EMI Test Software	FARA	EZ-EMC	FA-03A2 RE+	N/A	N/A		
Conducted RF Testing							
RF Test System	MWRFTest	MW100-RFCB	220418SQS-37	2024-08-07	2025-08-06		
Spectrum Analyzer	KEYSIGHT	N9020A	ATO-90521	2024-08-07	2025-08-06		
RF Test Software	MWRFTest	MTS 8310	N/A	N/A	N/A		
Laptop	Lenovo	ThlnkPad E15 Gen 3	SPPOZ22485	N/A	N/A		
DUT Test Software	VanDyke Software	Rtwpriv	N/A	N/A	N/A		

1.6 Measurement Uncertainty

Test Item	Conditions	Uncertainty	
Conducted Emissions	9kHz ~ 30MHz	±1.64 dB	
	9kHz ~ 30MHz	±2.88 dB	
Dadiated Emissions	30MHz ~ 1GHz	±3.32 dB	
Radiated Emissions	$1 \mathrm{GHz} \sim 18 \mathrm{GHz}$	±3.50 dB	
	18GHz ~ 40GHz	±3.66 dB	
Conducted Output Power	9kHz ~ 26GHz	±0.50 dB	
Occupied Bandwidth	9kHz ~ 26GHz	±4.0 %	
Conducted Spurious Emission	9kHz ~ 26GHz	±1.32 dB	
Power Spectrum Density	9kHz ~ 26GHz	±0.62 dB	

2. Summary of Test Results

FCC Rule	Description of Test Item	Result					
FCC Part 15.203	Antenna Requirement	Passed					
FCC Part 15.247(f)	RF Exposure(see the RF exposure report)	Passed					
FCC Part 15.207, 15.407(b)(9)	Conducted Emissions	N/A					
FCC Part 15.209, 15.407(b)(9), (10)	Radiated Emissions	Passed					
FCC Part 15.407(b)(10)	Band-edge Emissions(Radiated)	Passed					
FCC Part 15.407(a)(1), (2), (3)	Maximum Peak Conducted Output Power	Passed					
FCC Part 15.407(a)(2), (e)	Occupied Bandwidth	Passed					
FCC Part 15.407(a)(1), (2), (3)	Maximum Power Spectral Density	Passed					
FCC Part 15.407 (g)	Frequency Stability	Passed					
FCC Part 15.407 (h)	Transmit Power Control (TPC)	N/A					
FCC Part 15.407 (h)	Dynamic Frequency Selection (DFS)	N/A					
Passed: The EUT complies with the essential requirements in the standard Failed: The EUT does not comply with the essential requirements in the standard N/A: Not applicable							

3. Antenna Requirement

3.1 Standard and Limit

According to FCC Part 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. 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.

3.2 Test Result

This product has an SMD antenna, and the maximum antenna gain is 2.3dBi, fulfill the requirement of this section.

4. Conducted Emissions

4.1 Standard and Limit

According to the rule FCC Part 15.207, Conducted emissions limit, the limit for a wireless device as below:

Frequency of Emission	Conducted emis	ssions (dBuV)	
(MHz)	Quasi-peak	Average	
0.15-0.5	66 to 56	56 to 46	
0.5-5	56	46	
5-30	60	50	
Note 1: Decreases with the log	arithm of the frequency in the range 0.15 $lacksquare$	MHz to 0.5 MHz	
Note 2: The lower limit applies	at the band edges		

4.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.2.



Test Setup Block Diagram

a) The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

b) The following is the setting of the receiver
Attenuation: 10dB
Start Frequency: 0.15MHz
Stop Frequency: 30MHz
IF Bandwidth: 9kHz

c) 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 equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

d) 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.

e) 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.

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

g) For the actual test configuration, please refer to the related Item - photographs of the test setup.

4.3 Test Data and Results

Since the power supply of this product is used in the car, this mode does not need to be tested, so not applicable.

5. Radiated Emissions(Below 1GHz)

5.1 Standard and Limit

According to FCC Part 15.407(b)(9), Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in FCC Part 15.209.

Frequency of Emission	Field Strength	Measurement Distance
(MHz)	(micorvolts/meter)	(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
Note: The more stringent limit applies a	at transition frequencies.	

According to the rule FCC Part 15.209, Radiated emission limit for a wireless device as below:

Note: Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

5.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6.



Block Diagram of Radiated Emission Below 30MHz



Block Diagram of Radiated Emission From 30MHz to 1GHz

a) The EUT is placed on a turntable, which is 0.8m above ground plane for test frequency range blew 1GHz.

b) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.

c) Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 100 kHz

VBW \geq RBW, Sweep = auto

Detector function = peak

Trace = max hold

d) Follow the guidelines in ANSI C63.4-2014 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.e) For the actual test configuration, please refer to the related item - EUT test photos.

5.3 Test Data and Results

Both band4 all of the 802.11a, 802.11n modes have been tested, the EUT complied with the FCC Part 15.209 standard limit for a wireless device, and with the worst case 802.11a as below: Remark: Level = Reading + Factor, Margin = Level - Limit

Radia	ated E	ed Emission Test Data (30MHz to 1GHz)																
Teste	d Mo	de:				ТМ	1											
Test V	Voltag	e:				AC	120)V/	/60Hz									
Test A	Anten	na l	Polariz	zation	:	Ho	rizo	nta	al									
Rema	ark:																	
80.0	dB	uV/m	1															
70																		_
60		_																_
50												F	CC Part15	HE-Class	: B_30-	1000	Hz	Ч
50													argin -6 d					-1
40	<u> </u>														5		6 X	Ц
													3 ¥		×			
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0.0																		
30).000			6	0.00	1			1	(MHz)		3	00.00				10	00.000
No.	Fi	equ	ency	Rea	ding	Fi	acto	or		Limit	Margin	Detect	or Heigh	t Azimu	uth	'F	Remark	
			12) 8/3	(UB)	uv) 18	(u	B/III) 1			(UB)		100	328	., 2 E			
2		2.0 96.4	362	37.	23	-1	2.5	+ 1	20.24	43.50	-18.78	QP	100	348	, r 3 F			
3	3	12.1	794	39.	09	-7	7.57		31.52	46.00	-14.48	QP	100	358	3 F	,		
4	3	60.4	476	41.	62	-6	6.99		34.63	46.00	-11.37	QP	100	340) F	>		
5	↓ 5 * 7	52.8	3832	38.	57	-2	2.69		35.88	46.00	-10.12	QP	100	155	5 F	<u>}</u>		
6,	/	<i>٥١</i> .٤	513	39.	37	1	.36		40.93	46.00	-5.07	UP	100	348				



Note 1: this EUT was tested in 3 orthogonal positions and the worst case position data was reported. Note 2: Testing is carried out with frequency rang 9kHz to 1GHz. The measurements greater than 20dB below the limit from 9kHz to 30MHz.

6. Spurious Emissions(Above 1GHz)

6.1 Standard and Limit

According to FCC Part 15.407(b), Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15–5.25 GHz band: All emissions outside of the 5.15–5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25–5.35 GHz band: All emissions outside of the 5.15–5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47–5.725 GHz band: All emissions outside of the 5.47–5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating solely in the 5.725–5.850 GHz band: 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 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 27 dBm/MHz at 5 MHz above or below the band edge.

(5) The provisions of § 15.205 apply to intentional radiators operating under this section.

(6) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

6.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6.



Block Diagram of Radiated Emission Above 1GHz

a) The EUT is placed on a turntable, which is 1.5m above ground plane for test frequency range above 1GHz.

b) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.

c) Use the following spectrum analyzer settings: Span = wide enough to fully capture the emission being measured RBW = 1 MHz for $f \ge 1$ GHz VBW \ge RBW, Sweep = auto Detector function = peak Trace = max hold

d) Follow the guidelines in ANSI C63.4-2014 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

e) For the actual test configuration, please refer to the related item - EUT test photos.

6.3 Test Data and Results

Both band4 all of the 802.11a, 802.11n modes have been tested, the EUT complied with the FCC Part 15.407 standard limit, and with the worst case 802.11a, 802.11n_HT20 below: Remark: Level = Reading + Factor, Margin = Level - Limit

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector					
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	Peak					
	802.11a_Lowest Channel (5745MHz)											
11490	56.28	-4.34	51.94	74	-22.06	Н	Peak					
17235	57.94	-3.29	54.65	68.2	-13.55	Н	Peak					
11490	57.23	-4.34	52.89	74	-21.11	V	Peak					
17235	60.12	-3.29	56.83	68.2	-11.37	V	Peak					
		802.	11a_Highest C	hannel (5825N	/Hz)							
11650	58	-4.16	53.84	74	-20.16	Н	Peak					
17475	52.43	-2.53	49.9	68.2	-18.3	Н	Peak					
11650	56.88	-4.16	52.72	74	-21.28	V	Peak					
17475	54.03	-2.53	51.5	68.2	-16.7	V	Peak					
		802.11n	_20MHz_Lowe	st Channel (57	'45MHz)							
11490	55.67	-4.34	51.33	74	-22.67	Н	Peak					
17235	52.15	-3.29	48.86	68.2	-19.34	Н	Peak					
11490	54.38	-4.34	50.04	74	-23.96	V	Peak					
17235	60	-3.29	56.71	68.2	-11.49	V	Peak					
		802.11n	_20MHz_Highe	est Channel (58	325MHz)							
11650	56.68	-4.16	52.52	74	-21.48	Н	Peak					
17475	59.74	-2.53	57.21	68.2	-10.99	Н	Peak					
11650	57.55	-4.16	53.39	74	-20.61	V	Peak					
17475	59.16	-2.53	56.63	68.2	-11.57	V	Peak					

UNII Band 4

Note 1: this EUT was tested in 3 orthogonal positions and the worst case position data was reported. Note 2: Testing is carried out with frequency rang 1GHz to the tenth harmonics, If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit, so there is no record. Note 3: Above 18GHz not recorded for no spurious point have a margin of less than 6 dB with respect to the limits.

7. Band-edge Emissions(Radiated)

7.1 Standard and Limit

According to 15.407(b), Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15–5.25 GHz band: All emissions outside of the 5.15–5.35 GHz band shall

not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25–5.35 GHz band: All emissions outside of the 5.15–5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47–5.725 GHz band: All emissions outside of the 5.47–5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating solely in the 5.725-5.850 GHz band: All emissions shall be limited to a level of -27dBm/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 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 increasing linearly to a level of 27 dBm/MHz at the band edge.

7.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6 and section 6.10.



Test Setup Block Diagram

7.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.407 standard limit, and with the worst case as below:

Remark: Level = Reading + Factor, Margin = Level - Limit

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	Peak
5650	52.9	-12.3	40.6	68.2	-27.6	Н	Peak
5700	50.93	-12.16	38.77	105.6	-66.83	Н	Peak
5720	73.06	-12.09	60.97	110.8	-49.83	Н	Peak
5650	50.44	-12.3	38.14	68.2	-30.06	V	Peak
5700	53.43	-12.16	41.27	105.6	-64.33	V	Peak
5720	71.3	-12.09	59.21	110.8	-51.59	V	Peak

UNII Band 4_802.11a_Lowest Channel (5745MHz)

UNII Band 4_802.11a_Highest Channel (5825MHz)

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	Peak
5850	74.59	-11.72	62.87	122.2	-59.33	Н	Peak
5875	55.17	-11.64	43.53	110.8	-67.27	Н	Peak
5925	53.33	-11.5	41.83	68.2	-26.37	Н	Peak
5850	70.91	-11.72	59.19	122.2	-63.01	V	Peak
5875	57.11	-11.64	45.47	110.8	-65.33	V	Peak
5925	54.21	-11.5	42.71	68.2	-25.49	V	Peak

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	Peak
5650	52.45	-12.3	40.15	68.2	-28.05	Н	Peak
5700	51.12	-12.16	38.96	105.6	-66.64	Н	Peak
5720	70.79	-12.09	58.7	110.8	-52.1	Н	Peak
5650	52.65	-12.3	40.35	68.2	-27.85	V	Peak
5700	51.55	-12.16	39.39	105.6	-66.21	V	Peak
5720	68.12	-12.09	56.03	110.8	-54.77	V	Peak

UNII Band 4_802.11n_40MHz_Lowest Channel (5755MHz)

UNII Band 4_802.11n_40MHz_Highest Channel (5795MHz)

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	Peak
5850	73.28	-11.72	61.56	122.2	-60.64	Н	Peak
5875	57.85	-11.64	46.21	110.8	-64.59	Н	Peak
5925	52.64	-11.5	41.14	68.2	-27.06	Н	Peak
5850	74.8	-11.72	63.08	122.2	-59.12	V	Peak
5875	61.53	-11.64	49.89	110.8	-60.91	V	Peak
5925	54.56	-11.5	43.06	68.2	-25.14	V	Peak

Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit, so there is no record.

8. Maximum Conducted Output Power

8.1 Standard and Limit

According to 15.407(a): (1) For the band 5.15–5.25 GHz.

For an outdoor or indoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

For client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

(2) For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725–5.895 GHz: the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500–kHz band.

8.2 Test Procedure

A spectrum analyzer or similar device shall be used to observe a sample of the modulated transmitter's radio frequency power output.

1) A measurement instrument with an integrated channel bandwidth function may be used to

automate the test process.

2) Set center of frequency = operating frequency.

3) Connect the EUT to the RF input of the spectrum analyzer via a low loss RF cable

4) Set the RBW = 1MHz, VBW = 3MHz, Detector = RMS, Sweep = Auto.

- 5) Set the SPAN to 40MHz/80MHz/160MHz for 20MHz/40MHz/80MHz emission bandwidth mode.
- 6) Measure the highest amplitude appearing on spectral display and mark the value.
- 7) Repeat the above procedures until all frequency measured was complete.



Test Setup Block Diagram

8.3 Test Data and Results

Please refer to the appendix for details.

9. Occupied Bandwidth

9.1 Standard and Limit

According to 15.407(a), Within the 5.250–5.350 GHz and 5.470–5.725 GHz bands the 26 dB bandwidth shall be tested.

According to 15.407(e), Within the 5.725–5.850 GHz and 5.850–5.895 GHz bands, the minimum 6 dB bandwidth of U–NII devices shall be at least 500 kHz.

9.2 Test Procedure

According to the ANSI 63.10-2013, section 6.9, the emission bandwidth test method as follows.

- 1) Remove the antenna from the EUT and connect to the spectrum analyzer via a low loss RF cable.
- 2) Set the spectrum analyzer to any one measured frequency within its operating range.
- 3) 6dB: Set RBW = 100kHz, VBW ≥ [3 × RBW], Sweep = Auto.

26dB: Set RBW to $1\% \sim 5\%$ of bandwidth, VBW = RBW, Sweep = Auto.

4) Set a reference level on the measuring instrument equal to the highest peak value.

5) Measure the frequency difference of two frequencies that were attenuated 6dB or 26dB from the reference

level. Record the frequency difference as the emission bandwidth.

6) Repeat the above procedures until all frequencies measured were complete.



Test Setup Block Diagram

9.3 Test Data and Results

Please refer to the appendix for details.

10. Maximum Power Spectral Density

10.1 Standard and Limit

According to 15.407(a):

(1) For the band 5.15–5.25 GHz.

For an outdoor or indoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

For client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

(2) For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725–5.895 GHz: the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500–kHz band.

10.2 Test Procedure

1) Remove the antenna from the EUT and connect to the spectrum analyzer via a low loss RF cable.

2) Set the spectrum analyzer to any one measured frequency within its operating range.

3) Set RBW = 1MHz, VBW = 3MHz, Sweep = Auto, Detector = RMS.

4) Measure the highest amplitude appearing on spectral display and mark the value.

5) Repeat above procedures until all frequencies measured were complete.



10.3 Test Data and Results

Please refer to the appendix for details.

11. Frequency Stability

11.1 Standard and Limit

According to 15.407(g), Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

11.2 Test Procedure

Test is conducting under the description of ANSI C63.10-2013 section 6.8.





11.3 Test Data and Results

Mada	Frequency	Temperature	Voltage	Measured Frequency	Limit	Man di at
Mode	(MHz)	(°C)	(VAC)	(MHz)	(MHz)	verdict
			109	5744.912	5725 to 5850	Pass
		20	operature (°C) Voltage (VAC) Measured Frequence (MHz) 109 5744.912 20 121 5744.918 130 5744.913 -30 121 5744.913 -30 121 5744.913 -20 122 5744.913 -20 121 5744.918 -10 121 5744.919 0 121 5744.919 0 121 5744.919 0 121 5744.919 0 121 5744.919 0 121 5744.919 40 121 5744.919 40 121 5744.919 40 121 5784.933 20 121 5784.934 133 5784.933 -20 121 5784.937 30 121 5784.936 -20 121 5784.936 10 121 5784.936 50 121 5784.936	5725 to 5850	Pass	
			130	5744.913	5725 to 5850	Pass
		-30	121	5744.915	5725 to 5850	Pass
		-20	122	5744.918	5725 to 5850	Pass
	5745	-10	121	5744.919	5725 to 5850	Pass
		0	121	5744.914	5725 to 5850	Pass
		10	121	5744.911	5725 to 5850	Pass
		30	121	5744.919	5725 to 5850	Pass
		40	121	5744.912	5725 to 5850	Pass
Convior Waya		50	121	5744.919	5725 to 5850	Pass
Carrier wave			109	5784.933	5725 to 5850	Pass
		20	121	5784.934	5725 to 5850	Pass
	5785		133	5784.939	5725 to 5850	Pass
		-30	121	5784.938	5725 to 5850	Pass
		-20	121	5784.933	5725 to 5850	Pass
		-10	121	5784.94	5725 to 5850	Pass
		0	121	5784.94	5725 to 5850	Pass
		10	121	5784.937	5725 to 5850	Pass
		30	121	5784.939	5725 to 5850	Pass
		40	121	5784.936	5725 to 5850	Pass
		50	121	5784.936	5725 to 5850	Pass
			109	5824.912	5725 to 5850	Pass
		20	121	5824.914	5725 to 5850	Pass
			133	5824.913	5725 to 5850	Pass
		-30	121	5824.912	5725 to 5850	Pass
		-20	121	5824.911	5725 to 5850	Pass
	5825	-10	121	5824.913	5725 to 5850	Pass
		0	121	5824.911	5725 to 5850	Pass
		10	121	5824.913	5725 to 5850	Pass
		30	121	5824.914	5725 to 5850	Pass
		40	121	5824.913	5725 to 5850	Pass
		50	121	5824.927	5725 to 5850	Pass

***** END OF REPORT *****