

Page: 1 of 88

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT





CLASS II & IV PC REPORT

Applicant: HP INC

1501 PAGE MILL ROAD PALO ALTO, CA 94304, USA

Product Name: 7c Modular Platform

Brand Name: HP

Model No.: QSIP7180

Model Difference: N/A

Report Number: E2/2021/10105

FCC Rule Part: §15.407, Cat: U-NII

ISED RSS: RSS-247 issue 2 Feb. 2017

Issue Date: April 26, 2021

Date of Test: February 5, 2021 - April 19, 2021

Date of EUT Re- February 5, 2021

ceived:

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

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

Approved By:

Jay Lin / Asst. Supervisor

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Page: 2 of 88

Revision History					
Report Number	Revision	Description	Issue Date	Revised By	
E2/2021/10105	Rev.00	Original.	April 26, 2021	Elle Chang	

Note:

1 Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

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Page: 3 of 88

Contents

1	GENERAL INFORMATION	4
2	SYSTEM TEST CONFIGURATION	10
3	SUMMARY OF TEST RESULT	13
4	DESCRIPTION OF TEST MODES	14
5	MEASUREMENT UNCERTAINTY	17
6	MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	18
7	UNDESIRABLE RADIATED EMISSION MEASUREMENT	27
8	TRANSMISSION IN THE ABSENCE OF DATA	87
۵	ANTENNA DECLUDEMENT	00

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f (886-2) 2298-0488



Page: 4 of 88

GENERAL INFORMATION

1.1 **Product Description**

Product Name of Host:	Notebook Computer
Brand Name:	HP
Model No. of Host:	TPN-H101
Model Difference:	N/A
Hardware Version:	N/A
Software Version:	N/A
Model No. of WWAN/BT/WLAN Module:	QSIP7180
Class II & Class IV Permissive change:	7c Modular Platform INSTALLED IN Notebook Computer
Power Supply:	7.7Vdc from Rechargeable Li-ion Battery or 5 / 9 / 12 / 15 Vdc from AC/DC Adapter

1.2 **Modulation & Data Rate**

Modulation type:	64QAM, 16QAM, QPSK, BPSK for OFDM
	256QAM for OFDM in 802.11ac only
	802.11 a: 6.5 - 54 Mbps
	802.11 n_20MHz: 6.5 - 144.4 Mbps
Transition Date:	802.11 n_40MHz: 13.5 - 300 Mbps
Transition Rate:	802.11 ac_20MHz: 6.5 - 173.4 Mbps
	802.11 ac_40MHz: 13.5 - 400 Mbps
	802.11 ac_80MHz: 29.3 - 866.6 Mbps

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Page: 5 of 88

1.3 Antenna Designation

Antenna Type	Supplier	TX1 / TX2	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Worst Antenna Gain
		TX1	(MDA- LTE12LBLB-02- 001)	5150~5250	-1.27	V
	Inpaq -			5250~5350	-3.40	
				5470~5725	0.48	
PIFA				5725~5850	0.48	V
PIFA			(MDA- LTE12LBLB-02- 001)	5150~5250	-1.15	
				5250~5350	-0.41	V
				5470~5725	0.81	V
				5725~5850	-0.87	

Note: Pre-scanned was done on the above 2 antennas, main antenna results higher emission at 5GHz B1 and B4 and aux antenna results higher emission at 5GHz B2 and B3. Therefore, the completed set of measurement was done on the antenna to be presented on this test report.



Page: 6 of 88

1.4 FCC

WLAN 5 GHz

Wi-Fi	Frequency Range	Channels	Rated Power(Avg) (dBm) (Worst Case)	Modulation Technology
2	5180~5240	4	21.19 dBm	OFDM
a n_HT	5260~5320	4	21.16 dBm	OFDM
ac_VHT 20M	5500~5720	12	20.70 dBm	OFDM
20101	5745-5825	5	20.65 dBm	OFDM
	5190~5230	2	20.61 dBm	OFDM
n_HT	5270~5310	2	20.76 dBm	OFDM
ac_VHT 40M	5510~5710	6	20.74 dBm	OFDM
	5755-5795	2	20.50 dBm	OFDM
	5210	1	15.51 dBm	OFDM
ac_VHT 80M	5290	1	14.12 dBm	OFDM
	5530~5690	3	20.84 dBm	OFDM
	5775	1	20.45 dBm	OFDM

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Page: 7 of 88

1.5 ISED

WLAN 5 GHz for ISED(Slave)

Wi-Fi	Frequency Range	Channels	EIRP/Avg	Rated Power(EIRP/Avg) (dBm) (Worst Case)	Modulation Technology
2	5180~5240	4	EIRP	22.99 dBm	OFDM
a n_HT	5260~5320	4	Avg	21.16 dBm	OFDM
ac_VHT 20M	5500~5700	11	Avg	20.70 dBm	OFDM
ZOIVI	5745-5825	5	Avg	20.65 dBm	OFDM
n_HT ac_VHT 40M	5190~5230	2	EIRP	22.51 dBm	OFDM
	5270~5310	2	Avg	20.76 dBm	OFDM
	5510~5670	5	Avg	20.74 dBm	OFDM
	5755-5795	2	Avg	20.50 dBm	OFDM
	5210	1	EIRP	17.31 dBm	OFDM
ac_VHT 80M	5290	1	Avg	14.12 dBm	OFDM
	5530~5610	2	Avg	20.68 dBm	OFDM
	5775	1	Avg	20.45 dBm	OFDM

Note: As per guidance in presentation 2018-04-10-03 IC Certification updates of April 2018 TCB workshop, Client (Slave mode) devices without active scanning function, but with the cabability of operating in 5600-5650 MHz solely under the control of a certified master device meeting the requirement of RSS-247, are allowed in Canada.

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Page: 8 of 88

1.6 **Test Methodology of Applied Standards**

FCC Part 15, Subpart E §15.407

FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

RSS-247 issue 2 Feb. 2017

RSS-Gen. issue 5, Amendment 1, March 2019

ANSI C63.10:2013

1.7 **Test Facility**

SAC 1 SAC 3	
SAC 3	
Conduction 1	
Conducted 1	
Conducted 2	
No.134, Wu Kung Road, New Taipei Indus- Conducted 3	
trial Park, Wuku District, New Taipei City, Tai- Conducted 4 TW00	027
wan. Conducted 5	
Conducted 6	
Conducted 7	
Conducted 8	
Conducted 9	
Conducted 10	
SGS Taiwan Ltd. Conduction A	
Central RF Lab. SAC C	TW370
(TAF code 3702) SAC D	
SAC E	
Conducted A	
Conducted B	
Conducted C	
No.2, Keji 1st Rd., Guishan District, Taoyuan Conducted D	028
City, Taiwan 333 Conducted E	
Conducted F	
Conducted G	
Conducted H	
Conducted I	
Conducted J	
Conducted TS8997	

Note: Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.

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Page: 9 of 88

1.8 **Special Accessories**

There are no special accessories used while test was conducted.

1.9 **Equipment Modifications**

There was no modification incorporated into the EUT.

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Page: 10 of 88

SYSTEM TEST CONFIGURATION

EUT Configuration 2.1

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 **EUT Exercise**

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3 **Test Procedure**

2.3.1 Conducted Test (RF)

The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output characteristics as the fully tested port.

2.3.2 Radiated Emissions

The EUT is a placed on a turn table. For emissions testing at or below 1 GHz. the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max, emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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Page: 11 of 88

2.4 **Measurement Results Explanation Example**

Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz 2.4.1

Radiated emission below 30MHz is measured in a 9m*9m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

2.4.2 For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

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Page: 12 of 88

Configuration of Tested System 2.5

Fig. 2-1 Radiated Emission Configuration



Fig. 2-2 Conducted (Antenna Port) Emission Configuration

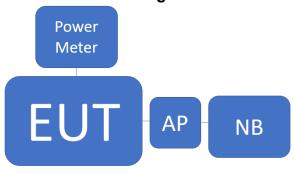


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A
2.	Notebook	Lenovo	L430	P0000195	N/A	N/A
3.	AP	ASUS	RT-AX88U	LAITHP0001 08	N/A	N/A
4.	Power Meter	Anritsu	ML2496A	1512003	N/A	N/A

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Page: 13 of 88

3 SUMMARY OF TEST RESULT

FCC Rules	IC Rules	Description Of Test	Result
§15.407(a)	RSS-247 §6.2.1~ 4 (1)	Maximum Conducted Output Power	Compliant
§15.205 §15.209 §15.407(b)	RSS-247 §6.2.1~ 4 (2)	Undesirable Radiated Emissions	Compliant

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Page: 14 of 88

DESCRIPTION OF TEST MODES

802.11a/n/ac operated in U-NII Bands 4.1

Operated band in 5150 MHz ~5250 MHz:

20 M				
СН	Freq (MHz)			
36	5180			
40	5200			
44	5220			
48	5240			

40 M				
СН	Freq			
Сп	(MHz)			
38	5190			
46	5230			

80	D M
СН	Freq (MHz)
42	5210

Operated band in 5250 MHz ~5350 MHz:

2	20 M					
СН	Freq (MHz)					
52	5260					
56	5280					
60	5300					
64	5320					

4	40 M				
СН	Freq (MHz)				
54	5270				
62	5310				

8	0 M
СН	Freq (MHz)
58	5290

160 M						
CH	Freq (MHz)					
50	5250					

Frea (MHz) 5775

Operated band in 5470 MHz ~5725 MHz:

2	20 M						
СН	Freq (MHz)						
100	5500						
104	5520						
108	5540						
112	5560						
116	5580						
120	5600						
124	5620						
128	5640						
132	5660						
136	5680						
140	5700						

40 M					
СН	Freq (MHz)				
102	5510				
110	5550				
118	5590				
126	5630				
134	5670				

80	M 0	16	60 M
СН	Freq (MHz)	СН	Fre (MH
106	5530	114	557
122	5610		

Operated band in 5745 MHz ~5850 MHz:

20 M					
СН	Freq (MHz)				
149	5745				
153	5765				
157	5785				
161	5805				
165	5825				

	11 12.		
4	0 M	80 N	
СН	Freq (MHz)	СН	
151	5755	155	577
159	5795		

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Page: 15 of 88

4.2 The Worst Test Modes and Channel Details

- The EUT has been tested under operating condition.
- 2. Test program used to control the EUT for staying in continuous transmitting mode is programmed.
- 3. Investigation has been done on all the possible configurations for searching the worst

The given UE is pre-scanned among below modes.

Modulation	Transmission Chain				Single Transmission Spatial	Multiple Transmission Spatial
⊠ 802.11 a	⊠ Ch0	⊠ Ch1	□ Ch2	□ Ch3	⊠ 1TX	⊠ 2TX
⊠ 802.11 n	⊠ Ch0	⊠ Ch1	☐ Ch2	□ Ch3	⊠ SISO	⊠ MIMO
⊠ 802.11 ac	⊠ Ch0	⊠ Ch1	☐ Ch2	□ Ch3	⊠ SISO	⊠ MIMO
□ 802.11 ax	□ Ch0	☐ Ch1	☐ Ch2	□ Ch3	□ SISO	☐ MIMO

4. Therefore, below summary is the modes of test configuration that yield the highest reading and generate the highest emission chosen to carry out the relevantly mandatory test items.

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Page: 16 of 88

RADIATED EMISSION TEST:

RADIATED EMISSION TEST (ABOVE 1 GHz)								
MODE	FREQUENCY	AVAILABLE	TESTED	MODULATION	DATA RATE	ANTENNA		
IVIODL	BAND (MHz)	CHANNEL	CHANNEL	INIODOLATION	(Mbps)	PORT		
	5180~5240	36 to 48	44		6	2TX		
802.11a	5260~5320	52 to 64	60	OFDM				
002.11a	5500~5720	100 to 144	116					
	5745~5825	149 to 165	157					

Note:

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11a/n/ac WLAN Transmitter for channel Low, Mid and High, the worst case E2 position was reported.

ANTENNA PORT CONDUCTED MEASUREMENT: 4.2.2

			CONDUCTED	TEST			
MODE	FREQUENCY	AVAILABLE	TESTED	MODULATION	DATA RATE	ANTENNA	
IVIODE	BAND (MHz)	CHANNEL	CHANNEL	INIODOLATION	(Mbps)	PORT	
	5180~5240	36 to 48	36,44,48				
802.11a	5260~5320	52 to 64	52,60,64	OFDM	6	2TX	
002.114	5500~5720	100 to 144	100, 116, 140	OI DIVI	U	217	
	5745~5825	149 to 165	149,157,165				
	5180~5240	36 to 48	36,44,48				
802.11n HT20	5260~5320	52 to 64	52,60,64	OFDM	MCS8	MIMO	
002.1111_11120	5500~5720	100 to 144	100, 116, 140	OI DIVI	IVICOO	IVIIIVIO	
	5745~5825	149 to 165	149,157,165				
	5190~5230	38 to 46	38,46				
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS8	MIMO	
002.1111_11140	5510~5670	102 to 142	102, 110, 134	OI DIVI	IVICOO	IVIIIVIO	
	5755~5795	151 to 159	151,159				
	5210	42	42				
802.11ac_VHT80	5290	58	58	OFDM	MCS0	MIMO	
002.1180_V11100	5530~5610	106 to 138	106, 122		IVIOOU		
	5775	155	155				

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Page: 17 of 88

MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
The Maximum Output Power Meas- urement	+/- 1 dB
Temperature	+/- 0.4 °C
Humidity	+/- 3.5 %
DC / AC Power Source	DC= +/- 1%, AC=+/- 1%

Radiated S	purio	us Emi	ssion N	leasurement Uncertainty
	+/-	2.64	dB	9kHz~30MHz: +-2.3dB
Polarization: Vertical	+/-	4.93	dB	30MHz - 1000MHz: +/- 3.37dB
Polarization: Vertical	+/-	4.81	dB	1GHz - 18GHz: +/- 4.04dB
	+/-	4.52	dB	18GHz - 40GHz: +/- 4.04dB
	+/-	2.64	dB	9kHz~30MHz: +-2.3dB
Polarization: Horizontal	+/-	4.45	dB	30MHz - 1000MHz: +/- 4.22dB
Polarization: Horizontal	+/-	4.81	dB	1GHz - 18GHz: +/- 4.08dB
	+/-	4.52	dB	18GHz - 40GHz: +/- 4.08dB

Note:

- 1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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Page: 18 of 88

MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

Standard Applicable 6.1

FCC

OPERZTION Band		EUT CATEGORY	LIMIT
		Access Point (Master device)	1 Watt(30dBm)
U-NII-1		Fixed point-to-point Access Ponit	1 Watt(30dBm)
	V	Mobile and portable client device	250mW(23.98dBm)
U-NII-2A			250mW(23.98dBm) or 11dBm+10 log B
U-NII-2C	V		250mW(23.98dBm) or 11dBm+10 log B
U-NII-3			1 Watt(30dBm)

If transmitting antennas of directional gain greater than 6 dBi are used, the Maximum transmit power shall be reduced by the amount in dB that the direction-al gain of the antenna exceeds 6 dBi.

ISED

OPERZTION FREQUENCY BAND	LIMIT
5150~5250 MHz	EIRP shall not exceed 200 mW or 10 + 10 log ₁₀ B, dBm
5250~5350 MHz	Conducted output power shall not exceed 250 mW or 11 +10 log ₁₀ B EIRP shall not exceed 1.0 W or 17 + 10 log ₁₀ B, dBm
5470-5600 MHz and 5650-5725 MHz	Conducted output power shall not exceed 250 mW or 11 +10 log ₁₀ B EIRP shall not exceed 1.0 W or 17 + 10 log ₁₀ B, dBm
5725~5850 MHz	Conducted output power shall not exceed 1 W

For equipment operating in the band **5725-5850** MHz, If transmitting antennas of directional gain greater than 6 dBi are used, the Maximum transmit power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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Page: 19 of 88

Note:

As per section F. 2). e). (ii) of FCC KDB 662911 D01

If antenna gains are not equal and each transmit antenna is driven by only one spatial stream, directional gain may be calculated by either of the following formulas.

• Directional Gain =
$$10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^{2}}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

NSS = the number of independent spatial streams of data;

NANT = the total number of antennas

 $g_{i,k} = 10^{Gk/20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

The antenna gain is not greater than 6 dBi. Therefore, reduction of power is not required.

6.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
- Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter
- 4. Power Meter is used as the auxiliary test equipment to conduct the output power measurement.
- Record the max. reading and add 10 log(1/duty cycle).
- Repeat above procedures until all frequency (low, middle, and high channel) measured were complete.

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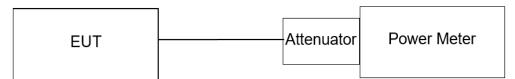


Page: 20 of 88

6.3 **Measurement Equipment Used**

	Conducted E	mission Tes	t Site: Conducte	ed C	
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUM- BER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010A	MY57120200	03/22/2021	03/21/2022
Power Meter	Anritsu	ML2496A	1512003	07/23/2020	07/22/2021
Power Sensor	Anritsu	MA2411B	1339378	07/23/2020	07/22/2021
Power Sensor	Anritsu	MA2411B	1339379	07/23/2020	07/22/2021
Attenuator	Marvelous	MVE2213- 10	RF09	11/19/2020	11/18/2021
Attenuator	Marvelous	MVE2213- 10	RF10	11/19/2020	11/18/2021
DC Block	PASTER- NACK	PE8210	RF151	11/19/2020	11/18/2021
Notebook	Lenovo	L430	P0000195	N/A	N/A
AP	ASUS	RT-AX88U	LAITHP000108	N/A	N/A

6.4 **Test Set-up**



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Page: 21 of 88

6.5 Measurement Result

6.5.1 Conducted output power (FCC)

802.11a 2TX

011	Frequency	Data	Power	Avg. POW	/ER (dBm)	TOTAL	TOTAL	REQUIRED	DEOLU T
СН	(MHz)	Rate	set	CH 0	CH 1	POWER (dBm)	POWER (mW)	LIMIT (dBm)	RESULT
36	5180	6	17	17.25	16.97	20.15	103.608	23.98	PASS
44	5220	6	19.5	18.25	17.76	21.05	127.456	23.98	PASS
48	5240	6	19.5	18.34	17.95	21.19	131.555	23.98	PASS
52	5260	6	19	17.94	17.61	20.82	120.776	23.98	PASS
60	5300	6	19.5	18.09	18.15	21.16	130.671	23.98	PASS
64	5320	6	18.5	17.11	17.09	20.14	103.316	23.98	PASS
100	5500	6	19	17.56	17.76	20.70	117.566	23.98	PASS
116	5580	6	17.5	16.85	16.62	19.78	95.021	23.98	PASS
140	5700	6	18.5	17.59	17.19	20.44	110.568	23.98	PASS
149	5745	6	18.5	17.47	17.44	20.50	112.117	30	PASS
157	5785	6	19	17.64	17.53	20.63	115.532	30	PASS
165	5825	6	19	17.94	17.26	20.65	116.278	30	PASS

802.11n HT20 MIMO

СН	Frequency	Data	Power	Avg. POW	/ER (dBm)	TOTAL	TOTAL	REQUIRED	RESULT
СП	(MHz)	Rate	set	CH 0	CH 1	POWER (dBm)	POWER (mW)	LIMIT (dBm)	RESULT
36	5180	MCS8	18.5	17.53	17.28	20.57	114.108	23.98	PASS
44	5220	MCS8	19	17.58	17.29	20.60	114.916	23.98	PASS
48	5240	MCS8	19	17.72	17.35	20.71	117.634	23.98	PASS
52	5260	MCS8	19	17.78	17.44	20.78	119.666	23.98	PASS
60	5300	MCS8	19	17.64	17.51	20.74	118.628	23.98	PASS
64	5320	MCS8	18.5	17.24	16.87	20.23	105.325	23.98	PASS
100	5500	MCS8	18.5	17.47	17.11	20.46	111.176	23.98	PASS
116	5580	MCS8	18.5	17.73	17.31	20.69	117.259	23.98	PASS
140	5700	MCS8	17	16.22	16.05	19.30	85.157	23.98	PASS
149	5745	MCS8	19	17.83	17.77	20.97	124.925	30	PASS
157	5785	MCS8	19	17.64	17.53	20.75	118.897	30	PASS
165	5825	MCS8	19	17.91	17.17	20.72	118.090	30	PASS

802.11ac_VHT20_MIMO

СН	Frequency	Data	Power	Avg. POW	Avg. POWER (dBm)		TOTAL POWER	REQUIRED LIMIT	RESULT
CH	(MHz)	Rate	set	CH 0	CH 1	POWER (dBm)	(mW)	(dBm)	RESULI
36	5180	MCS0	18.5	17.21	17.02	20.20	104.818	23.98	PASS
44	5220	MCS0	19	17.4	16.93	20.26	106.161	23.98	PASS
48	5240	MCS0	19.5	17.71	17.45	20.67	116.688	23.98	PASS
52	5260	MCS0	19.5	17.74	17.57	20.74	118.690	23.98	PASS
60	5300	MCS0	19.5	17.63	17.52	20.66	116.510	23.98	PASS
64	5320	MCS0	19	17.11	17.02	20.15	103.598	23.98	PASS
100	5500	MCS0	18.5	17.13	16.81	20.06	101.420	23.98	PASS
116	5580	MCS0	18.5	17.39	16.87	20.23	105.344	23.98	PASS
140	5700	MCS0	17	15.97	15.68	18.92	77.906	23.98	PASS
149	5745	MCS0	19.5	17.83	17.72	20.86	122.001	30	PASS
157	5785	MCS0	19.5	17.57	17.49	20.62	115.305	30	PASS
165	5825	MCS0	19.5	17.82	17.23	20.62	115.433	30	PASS

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Page: 22 of 88

802.11n HT40 MIMO

011	Frequency	Data	Power	Avg. POW	ER (dBm)	TOTAL	TOTAL	REQUIRED	DEC. II T
СН	(MHz)	Rate	set	CH 0	CH 1	POWER (dBm)	POWER (mW)	LIMIT (dBm)	RESULT
38	5190	MCS8	14.5	14.22	14.07	17.32	53.925	23.98	PASS
46	5230	MCS8	18.5	17.72	17.14	20.61	115.131	23.98	PASS
54	5270	MCS8	18.5	17.74	17.43	20.76	119.124	23.98	PASS
62	5310	MCS8	11.5	10.77	10.56	13.84	24.202	23.98	PASS
102	5510	MCS8	16	15.77	15.16	18.65	73.248	23.98	PASS
110	5550	MCS8	18	17.78	17.35	20.74	118.647	23.98	PASS
134	5670	MCS8	17.5	17.32	17.08	20.37	108.991	23.98	PASS
151	5755	MCS8	18	17.29	17.18	20.41	109.839	30	PASS
159	5795	MCS8	18.5	17.43	17.23	20.50	112.289	30	PASS

802.11ac VHT40 MIMO

011	Frequency	Data	Power	Avg. POW	Avg. POWER (dBm)		TOTAL	REQUIRED	DEQUIT
СН	(MHz)	Rate	set	CH 0	CH 1	POWER (dBm)	POWER (mW)	LIMIT (dBm)	RESULT
38	5190	MCS0	15.5	14.12	13.95	17.23	52.792	23.98	PASS
46	5230	MCS0	19.5	17.51	17.08	20.49	111.948	23.98	PASS
54	5270	MCS0	19.5	17.39	17.17	20.47	111.461	23.98	PASS
62	5310	MCS0	12	10.25	10.06	13.35	21.607	23.98	PASS
102	5510	MCS0	17	15.51	14.98	18.44	69.870	23.98	PASS
110	5550	MCS0	19	17.55	17.23	20.58	114.361	23.98	PASS
134	5670	MCS0	19	17.25	16.94	20.29	106.847	23.98	PASS
151	5755	MCS0	19	17.17	16.87	20.21	105.013	30	PASS
159	5795	MCS0	19.5	17.27	17.12	20.39	109.282	30	PASS

802.11ac VHT80 MIMO

СН	Frequency	Data	Power	Avg. POWER (dBm)		TOTAL POWER	TOTAL POWER	REQUIRED LIMIT	RESULT
СП	(MHz)	Rate	set	CH 0 C	CH 1	(dBm)	(mW)	(dBm)	RESULT
42	5210	MCS0	13.5	12.95	11.23	15.51	35.558	23.98	PASS
58	5290	MCS0	11.5	10.85	10.71	14.12	25.795	23.98	PASS
106	5530	MCS0	13	12.74	11.67	15.57	36.080	23.98	PASS
122	5610	MCS0	19	18.34	16.04	20.68	116.824	23.98	PASS
155	5775	MCS0	19	18.25	15.57	20.45	110.875	30	PASS

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Page: 23 of 88

6.5.2 ISED EIRP

802.11a 2Tx

002.11a_21	· A						
СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	20.15	1.800	21.95	156.817	23.01	PASS
44	5220	21.05	1.800	22.85	192.912	23.01	PASS
48	5240	21.19	1.800	22.99	199.116	23.01	PASS
52	5260	20.82	1.230	22.05	160.318	30	PASS
60	5300	21.16	1.230	22.39	173.452	30	PASS
64	5320	20.14	1.230	21.37	137.142	30	PASS
100	5500	20.70	3.660	24.36	273.076	30	PASS
116	5580	19.78	3.660	23.44	220.709	30	PASS
140	5700	20.44	3.660	24.10	256.820	30	PASS

802.11n_HT20_MIMO

СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	20.57	1.800	22.37	172.710	23.01	PASS
44	5220	20.60	1.800	22.40	173.932	23.01	PASS
48	5240	20.71	1.800	22.51	178.046	23.01	PASS
52	5260	20.78	1.230	22.01	158.844	30	PASS
60	5300	20.74	1.230	21.97	157.466	30	PASS
64	5320	20.23	1.230	21.46	139.808	30	PASS
100	5500	20.46	3.660	24.12	258.232	30	PASS
116	5580	20.69	3.660	24.35	272.361	30	PASS
140	5700	19.30	3.660	22.96	197.798	30	PASS

802.11ac_VHT20_MIMO

СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	20.20	1.800	22.00	158.648	23.01	PASS
44	5220	20.26	1.800	22.06	160.681	23.01	PASS
48	5240	20.67	1.800	22.47	176.614	23.01	PASS
52	5260	20.74	1.230	21.97	157.548	30	PASS
60	5300	20.66	1.230	21.89	154.655	30	PASS
64	5320	20.15	1.230	21.38	137.516	30	PASS
100	5500	20.06	3.660	23.72	235.573	30	PASS
116	5580	20.23	3.660	23.89	244.685	30	PASS
140	5700	18.92	3.660	22.58	180.956	30	PASS

802.11n_HT40_MIMO

СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	17.32	1.800	19.12	81.618	23.01	PASS
46	5230	20.61	1.800	22.41	174.257	23.01	PASS
54	5270	20.76	1.230	21.99	158.125	30	PASS
62	5310	13.84	1.230	15.07	32.126	30	PASS
102	5510	18.65	3.660	22.31	170.135	30	PASS
110	5550	20.74	3.660	24.40	275.585	30	PASS
134	5670	20.37	3.660	24.03	253.157	30	PASS

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Page: 24 of 88

802.11ac_VHT40_MIMO

СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	17.23	1.800	19.03	79.904	23.01	PASS
46	5230	20.49	1.800	22.29	169.440	23.01	PASS
54	5270	20.47	1.230	21.70	147.953	30	PASS
62	5310	13.35	1.230	14.58	28.681	30	PASS
102	5510	18.44	3.660	22.10	162.290	30	PASS
110	5550	20.58	3.660	24.24	265.632	30	PASS
134	5670	20.29	3.660	23.95	248.177	30	PASS

802.11ac_VHT80_MIMO

СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	15.51	1.800	17.31	53.820	23.01	PASS
58	5290	14.12	1.230	15.35	34.240	30	PASS
106	5530	15.57	3.660	19.23	83.805	30	PASS

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Page: 25 of 88

6.5.3 Conducted output power

802.11a 2Tx

СН	Frequency	_	AVERAGE POWER (dBm)		TOTAL POWER	REQUIRED LIMIT	RESULT
CII	(MHz)	CH 0	CH 1	POWER (dBm)	(mW)	(dBm)	RESOLI
52	5260	17.94	17.61	20.82	120.776	23.98	PASS
60	5300	18.09	18.15	21.16	130.671	23.98	PASS
64	5320	17.11	17.09	20.14	103.316	23.98	PASS
100	5500	17.56	17.76	20.70	117.566	23.98	PASS
116	5580	16.85	16.62	19.78	95.021	23.98	PASS
140	5700	17.59	17.19	20.44	110.568	23.98	PASS
149	5745	17.47	17.44	20.50	112.117	30	PASS
157	5785	17.64	17.53	20.63	115.532	30	PASS
165	5825	17.94	17.26	20.65	116.278	30	PASS

802.11n HT20 MIMO

СН	Frequency	AVERAGE POWER (dBm)		TOTAL POWER	TOTAL POWER	REQUIRED LIMIT	RESULT
	(MHz)	CH 0	CH 1	(dBm)	(mW)	(dBm)	RESOLI
52	5260	17.78	17.44	20.78	119.666	23.98	PASS
60	5300	17.64	17.51	20.74	118.628	23.98	PASS
64	5320	17.24	16.87	20.23	105.325	23.98	PASS
100	5500	17.47	17.11	20.46	111.176	23.98	PASS
116	5580	17.73	17.31	20.69	117.259	23.98	PASS
140	5700	16.22	16.05	19.30	85.157	23.98	PASS
149	5745	17.83	17.77	20.97	124.925	30	PASS
157	5785	17.64	17.53	20.75	118.897	30	PASS
165	5825	17.91	17.17	20.72	118.090	30	PASS

802.11ac_VHT20_MIMO

СН	Frequency		E POWER Bm)	TOTAL POWER	WER POWER	REQUIRED LIMIT	RESULT
5	(MHz)	CH 0	CH 1	(dBm)		(dBm)	KLOOLI
52	5260	17.74	17.57	20.74	118.690	23.98	PASS
60	5300	17.63	17.52	20.66	116.510	23.98	PASS
64	5320	17.11	17.02	20.15	103.598	23.98	PASS
100	5500	17.13	16.81	20.06	101.420	23.98	PASS
116	5580	17.39	16.87	20.23	105.344	23.98	PASS
140	5700	15.97	15.68	18.92	77.906	23.98	PASS
149	5745	17.83	17.72	20.86	122.001	30	PASS
157	5785	17.57	17.49	20.62	115.305	30	PASS
165	5825	17.82	17.23	20.62	115.433	30	PASS

802.11n_HT40_MIMO

СН	Frequency		AVERAGE POWER (dBm)		AL TOTAL ER POWER	REQUIRED LIMIT	RESULT
	(MHz)	CH 0	CH 1	POWER (dBm)	(mW)	(dBm)	RESOLI
54	5270	17.74	17.43	20.76	119.124	23.98	PASS
62	5310	10.77	10.56	13.84	24.202	23.98	PASS
102	5510	15.77	15.16	18.65	73.248	23.98	PASS
110	5550	17.78	17.35	20.74	118.647	23.98	PASS
134	5670	17.32	17.08	20.37	108.991	23.98	PASS
151	5755	17.29	17.18	20.41	109.839	30	PASS
159	5795	17.43	17.23	20.50	112.289	30	PASS

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Page: 26 of 88

802.11ac VHT40 MIMO

СН	Frequency	cv (dRm)		TOTAL POWER	REQUIRED LIMIT	RESULT	
OII	(MHz)	CH 0	CH 1	(dBm)	(mW)	(dBm)	INCOULT
54	5270	17.39	17.17	20.47	111.461	23.98	PASS
62	5310	10.25	10.06	13.35	21.607	23.98	PASS
102	5510	15.51	14.98	18.44	69.870	23.98	PASS
110	5550	17.55	17.23	20.58	114.361	23.98	PASS
134	5670	17.25	16.94	20.29	106.847	23.98	PASS
151	5755	17.17	16.87	20.21	105.013	30	PASS
159	5795	17.27	17.12	20.39	109.282	30	PASS

802.11ac_VHT80_MIMO

СН	Frequency	AVERAGE POWER (dBm)		TOTAL POWER	TOTAL POWER	REQUIRED LIMIT	RESULT
OII	(MHz)	CH 0	CH 1	(dBm)	(mW)	(dBm)	KESSET
58	5290	10.85	10.71	14.12	25.795	23.98	PASS
106	5530	12.74	11.67	15.57	36.080	23.98	PASS
122	5610	18.34	16.04	20.68	116.824	23.98	PASS
155	5775	18.25	15.57	20.45	110.875	30	PASS

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Page: 27 of 88

UNDESIRABLE RADIATED EMISSION MEASUREMENT

7.1 Standard Applicable

7.1.1 **Band Edge**

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 5.725-5.85 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, 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.

APPLICABLE TO	EIRP LIMIT	FIELD STRENGTH AT 3m	
15.407(b)(1) RSS-247 §6.2.1.2			
15.407(b)(2) RSS-247 §6.2.2.2	PK: -27 (dBm/MHz)	PK: 68.3 (dBµV/m)	
15.407(b)(3) RSS-247 §6.2.3.2			
	PK:-27 (dBm/MHz) *1	PK: 68.2(dBµV/m) *1	
15.407(b)(4)(i)	PK:10 (dBm/MHz) *2	PK:105.2 (dBµV/m) *2	
RSS-247 §6.2.4.2	PK:15.6 (dBm/MHz) *3	PK: 110.8(dBµV/m) *3	
	PK:27 (dBm/MHz) *4	PK:122.2 (dBµV/m) *4	

^{*1} beyond 75 MHz or more above of the bandedge.

EIRP = $((E*d)^2) / 30$, where E is the field in V/m, d is the measurement distance (3m), EIRP is the equivalent isotropically radiated power in Watts.

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^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.



Page: 28 of 88

7.1.2 **Spurious Emission**

Unwanted spurious emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

the radiated emission limits specified as below table.						
Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)				
0.009-0.490	2400/F(KHz)	300				
0.490-1.705	24000/F(KHz)	30				
1.705-30	30	30				
30-88	100	3				
88-216	150	3				
216-960	200	3				
Above 960	500	3				

Note:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level ($dB\mu V/m$) = 20 log Emission level ($\mu V/m$)

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Page: 29 of 88

7.2 Measurement Equipment Used

Radiated Emission Test Site: SAC C								
EQUIPMENT TYPE	MFR	MODEL NUM- BER	SERIAL NUM- BER	LAST CAL.	CAL DUE.			
Broadband Antenna	TESEQ	CBL 6112D	35240	09/08/2020	09/07/2021			
Horn Antenna	Schwarzbeck	BBHA9170	185	07/30/2020	07/29/2021			
Horn Antenna	Schwarzbeck	BBHA9120D	1187	01/11/2021	01/10/2022			
Loop Antenna	ETS.LIND- GREN	6502	143303	04/28/2020	04/27/2021			
EMI Test Receiver	R&S	ESU 40	100363	04/29/2020	04/28/2021			
Pre-Amplifier	EMC Instru- ments	EMC330	980096	11/19/2020	11/18/2021			
Pre-Amplifier	EMC Instru- ments	EMC0011830	980199	11/19/2020	11/18/2021			
Pre-Amplifier	EMC Instru- ments	EMC184045B	980135	10/27/2020	10/26/2021			
Attenuator	Marvelous	WATT-218FS- 10	RF20	11/19/2020	11/18/2021			
Band Rejection Filter	Micro-Tronics	G015	RF198	11/19/2020	11/18/2021			
Band Rejection Filter	Micro-Tronics	G016	RF199	11/19/2020	11/18/2021			
Band Rejection Filter	Micro-Tronics	G021	RF200	11/19/2020	11/18/2021			
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17388/4	11/19/2020	11/18/2021			
Coaxial Cable	Huber Suhner	RG 214/U	W22.03	11/19/2020	11/18/2021			
Test Software	audix	e3	20923 sgs Ver.9	N.C.R	N.C.R			

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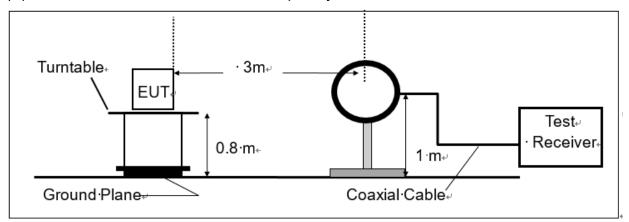
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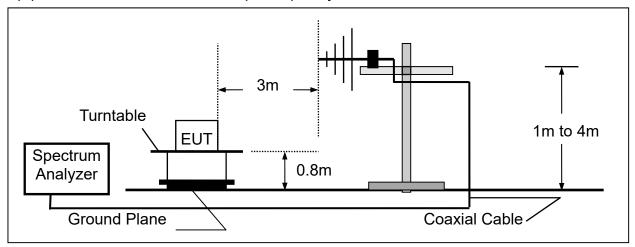
Page: 30 of 88

7.3 **Test SET-UP**

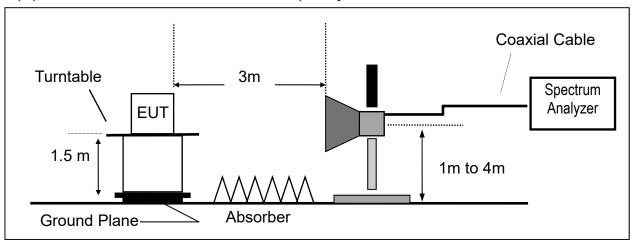
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



(B) Radiated Emission Test Set-Up, Frequency form 30MHz to 1000MHz



(C) Radiated Emission Test Set-UP Frequency Over 1 GHz



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Page: 31 of 88

7.4 Measurement Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules .
- **3.** The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 1GHz above ground plane.
- **4.** The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- **5.** EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- **6.** Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and Quasi-peak (QP) at frequency below 1 GHz.
- 7. At frequency above 1 GHz, Set the spectrum analyzer:
 - A. RBW=1 MHz, VBW=3 MHz for Peak Detector.
 - **B.** Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for **Average** Detector.
- **8.** Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- **9.** And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- **10.** Repeat above procedures until all frequency measured were complete.

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Page: 32 of 88

7.5 **Field Strength Calculation**

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

The limit of the emission level is expressed in dBuV/m, which converts 20*log(uV/m)

Actual $FS(dB\mu V/m) = SPA$. Reading level($dB\mu V$) + Factor(dB) $Factor(dB) = Antenna\ Factor(dB\mu V/m) + Cable\ Loss(dB) - Pre_Amplifier\ Gain(dB)$

7.6 Test Results of Radiated Spurious Emissions form 9 KHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) & RSS-GEN §6.13.2 was not reported.

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Page: 33 of 88

7.7 **Radiated Spurious Emission Measurement Result**

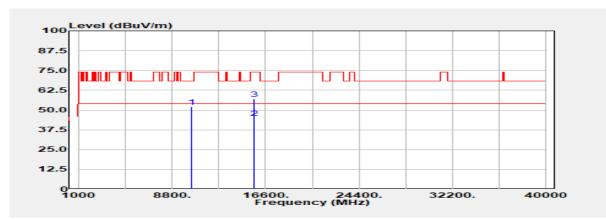
7.7.1 **Above 1GHz Worst-Case Data:**

Report Number Test Site :966 Chamber C :E2/2021/10105

Operation Mode Test Date :2021-03-27 :802.11a / Band 1

Test Frequency :5220 MHz Temp./Humi. :23.1/60 Test Mode :TX CH MID Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
10440.000	Peak	29.64	22.54	52.18	68.20	-16.02
15660.000	Average	19.04	25.83	44.87	54.00	-9.13
15660.000	Peak	31.05	25.83	56.88	74.00	-17.12

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Page: 34 of 88

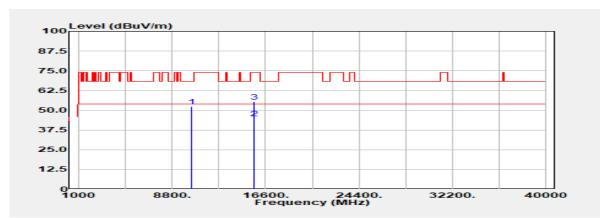
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11a / Band 1 **Test Date** :2021-03-27

Test Frequency :5220 MHz Temp./Humi. :23.1/60

Test Mode :TX CH MID Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dΒμV/m	dB
10440.000	Peak	30.08	22.54	52.62	68.20	-15.58
15660.000	Average	19.11	25.83	44.94	54.00	-9.06
15660.000	Peak	29.80	25.83	55.63	74.00	-18.37

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:E2 Plane

EUT Pol

Report No.: E2/2021/10105

Page: 35 of 88

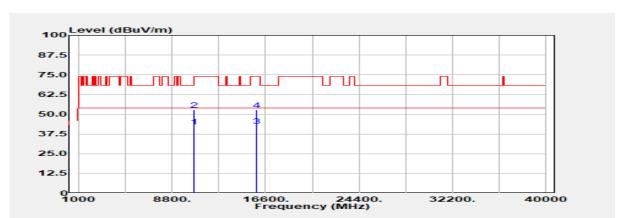
:Enzo Chang

Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11a / Band 2 **Test Date** :2021-03-27

Test Frequency :5300 MHz Temp./Humi. :23.1/60

Test Mode :TX CH MID Antenna Pol. :Vertical



Engineer

Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
10600.000	Average	19.18	23.11	42.29	54.00	-11.71
10600.000	Peak	29.83	23.11	52.94	74.00	-21.06
15900.000	Average	18.92	23.84	42.76	54.00	-11.24
15900.000	Peak	29.10	23.84	52.94	74.00	-21.06

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Page: 36 of 88

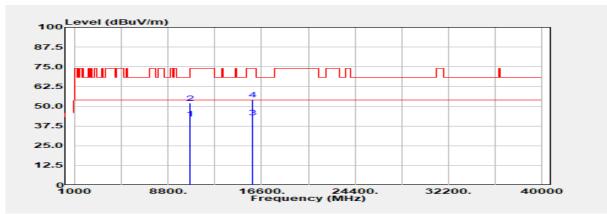
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11a / Band 2 **Test Date** :2021-03-27

Test Frequency :5300 MHz Temp./Humi. :23.1/60

Test Mode :TX CH MID Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
10600.000	Average	19.25	23.11	42.36	54.00	-11.64
10600.000	Peak	29.14	23.11	52.26	74.00	-21.74
15900.000	Average	19.02	23.84	42.86	54.00	-11.14
15900.000	Peak	30.54	23.84	54.37	74.00	-19.63

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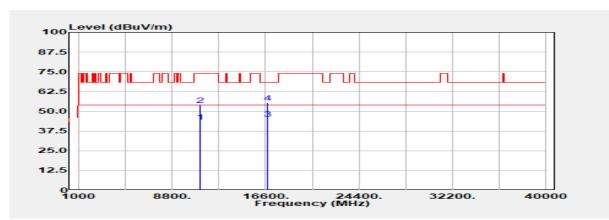
Page: 37 of 88

Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 3 **Test Date** :2021-03-27

Test Frequency :5580 MHz Temp./Humi. :23.1/60 Test Mode :TX CH MID Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
11160.000	Average	19.23	24.01	43.24	54.00	-10.76
11160.000	Peak	29.78	24.01	53.79	74.00	-20.21
16740.000	Average	19.01	26.11	45.12	54.00	-8.88
16740.000	Peak	29.18	26.11	55.29	68.20	-12.91

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Page: 38 of 88

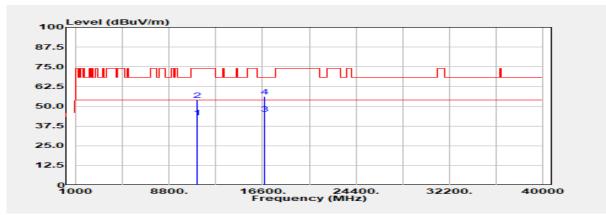
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 3 **Test Date** :2021-03-27

Test Frequency :5580 MHz Temp./Humi. :23.1/60

Test Mode :TX CH MID Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
11160.000	Average	19.16	24.01	43.17	54.00	-10.83
11160.000	Peak	29.87	24.01	53.88	74.00	-20.12
16740.000	Average	19.03	26.11	45.14	54.00	-8.86
16740.000	Peak	30.00	26.11	56.11	68.20	-12.09

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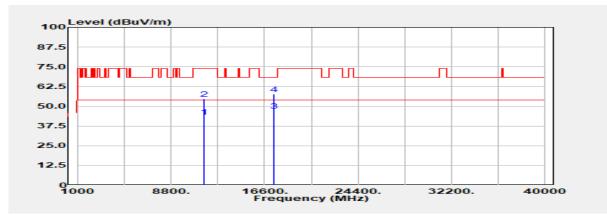
Page: 39 of 88

Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 4 **Test Date** :2021-03-27

Test Frequency :5785 MHz Temp./Humi. :23.1/60 Test Mode :TX CH MID Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
11570.000	Average	19.41	23.93	43.34	54.00	-10.66
11570.000	Peak	30.72	23.93	54.65	74.00	-19.35
17355.000	Average	19.08	27.97	47.05	54.00	-6.95
17355.000	Peak	29.71	27.97	57.69	68.20	-10.51

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Page: 40 of 88

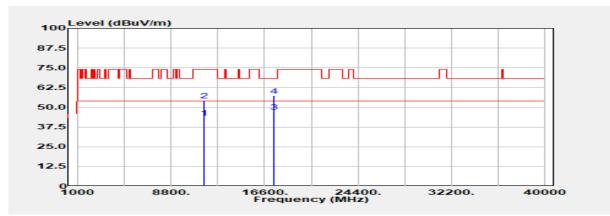
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 4 **Test Date** :2021-03-27

Test Frequency :5785 MHz Temp./Humi. :23.1/60

Test Mode :TX CH MID Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
11570.000	Average	19.50	23.93	43.43	54.00	-10.57
11570.000	Peak	30.33	23.93	54.26	74.00	-19.74
17355.000	Average	19.05	27.97	47.02	54.00	-6.98
17355.000	Peak	29.34	27.97	57.31	68.20	-10.89

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Page: 41 of 88

7.7.2 Band edge falling to restricted band

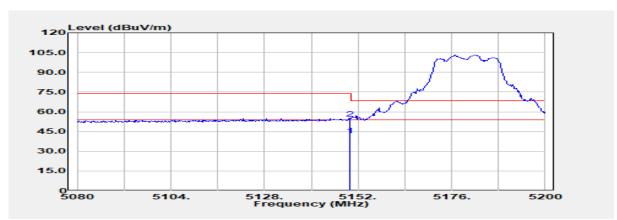
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11a / Band 1 Test Date :2021-03-26

Test Frequency :5180 MHz Temp./Humi. :22.4/64

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBμV/m	dB
5150.000	Average	31.71	10.50	42.21	54.00	-11.79
5150.000	Peak	44.28	10.50	54.78	74.00	-19.22

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Page: 42 of 88

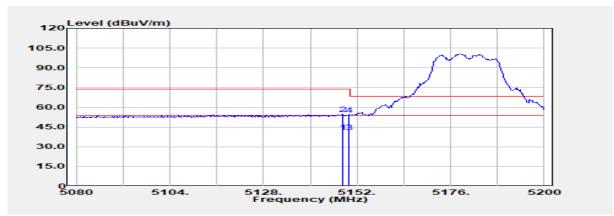
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11a / Band 1 Test Date :2021-03-26

Test Frequency :5180 MHz Temp./Humi. :22.4/64

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5148.269	Average	30.67	10.49	41.16	54.00	-12.84
5148.269	Peak	44.25	10.49	54.73	74.00	-19.27
5150.000	Average	30.69	10.50	41.19	54.00	-12.81
5150.000	Peak	44.00	10.50	54.50	74.00	-19.50

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Page: 43 of 88

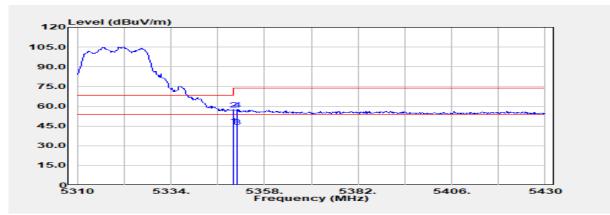
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11a / Band 2 Test Date :2021-03-26

Test Frequency :5320 MHz Temp./Humi. :22.4/64

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	33.54	11.54	45.08	54.00	-8.92
5350.000	Peak	45.86	11.54	57.40	74.00	-16.60
5350.961	Average	32.84	11.55	44.39	54.00	-9.61
5350.961	Peak	46.13	11.55	57.68	74.00	-16.32

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Page: 44 of 88

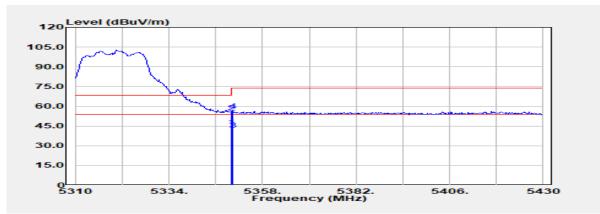
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 2 **Test Date** :2021-03-26

Test Frequency :5320 MHz Temp./Humi. :22.4/64

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	32.90	11.54	44.44	54.00	-9.56
5350.000	Peak	43.53	11.54	55.07	74.00	-18.93
5350.385	Average	30.64	11.54	42.18	54.00	-11.82
5350.385	Peak	45.11	11.54	56.65	74.00	-17.35

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Page: 45 of 88

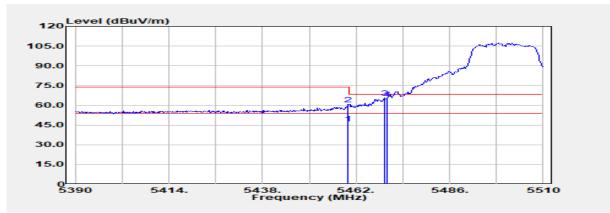
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11a / Band 3 Test Date :2021-03-27

Test Frequency :5500 MHz Temp./Humi. :23.2/54

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5460.000	Average	34.57	11.66	46.23	54.00	-7.77
5460.000	Peak	48.93	11.66	60.60	74.00	-13.40
5469.231	Peak	53.73	11.73	65.45	68.20	-2.75
5470.000	Peak	53.01	11.73	64.74	68.20	-3.46

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Page: 46 of 88

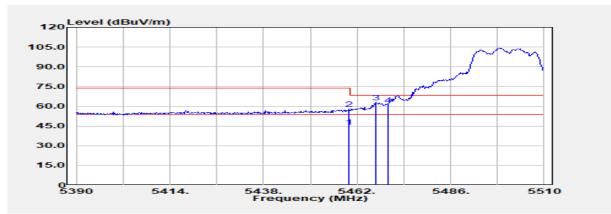
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 3 **Test Date** :2021-03-27

Test Frequency :5500 MHz Temp./Humi. :23.2/54

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5460.000	Average	32.79	11.66	44.45	54.00	-9.55
5460.000	Peak	46.44	11.66	58.10	74.00	-15.90
5466.731	Peak	51.24	11.71	62.95	68.20	-5.25
5470.000	Peak	49.46	11.73	61.19	68.20	-7.01

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Page: 47 of 88

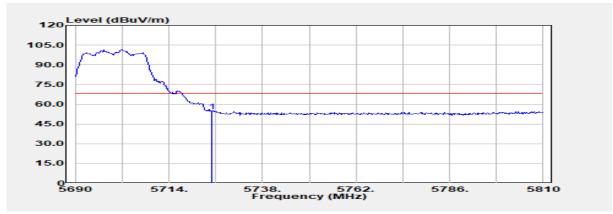
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11a / Band 3 Test Date :2021-03-26

Test Frequency :5700 MHz Temp./Humi. :22.4/64

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBμV/m	dB
		_				_
5725.000	Peak	44.23	10.62	54.85	68.20	-13.35

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Page: 48 of 88

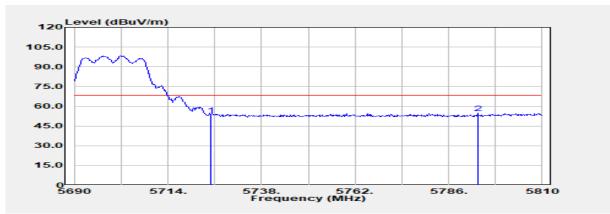
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 3 **Test Date** :2021-03-26

Test Frequency :5700 MHz Temp./Humi. :22.4/64

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5725.000	Peak	42.84	10.62	53.46	68.20	-14.74
5793.461	Peak	43.92	11.05	54.97	68.20	-13.23

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Page: 49 of 88

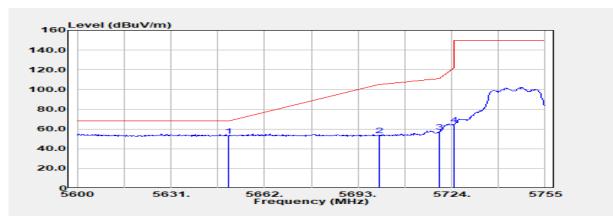
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 4 **Test Date** :2021-03-26

Test Frequency :5745 MHz Temp./Humi. :22.4/64

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5650.000	Peak	42.52	10.51	53.03	68.20	-15.17
5700.000	Peak	43.12	10.41	53.53	105.20	-51.67
5720.000	Peak	46.64	10.76	57.40	110.80	-53.40
5725.000	Peak	54.25	10.62	64.88	122.20	-57.32

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Page: 50 of 88

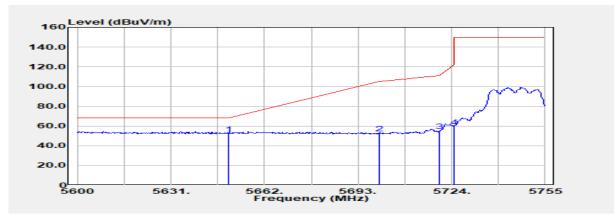
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 4 **Test Date** :2021-03-26

Test Frequency :5745 MHz Temp./Humi. :22.4/64

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5650.000	Peak	41.67	10.51	52.17	68.20	-16.03
5700.000	Peak	42.03	10.41	52.43	105.20	-52.77
5720.000	Peak	43.92	10.76	54.68	110.80	-56.12
5725.000	Peak	48.78	10.62	59.40	122.20	-62.80

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Page: 51 of 88

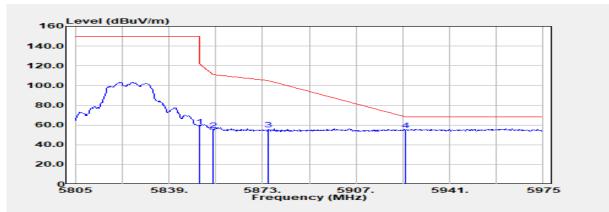
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 4 **Test Date** :2021-03-26

Test Frequency :5825 MHz Temp./Humi. :22.4/64

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBμV/m	dB
5850.000	Peak	47.02	11.31	58.33	122.20	-63.87
5855.000	Peak	43.57	11.61	55.18	110.80	-55.62
5875.000	Peak	43.34	12.08	55.42	105.20	-49.78
5925.000	Peak	41.76	12.98	54.74	68.20	-13.46

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Page: 52 of 88

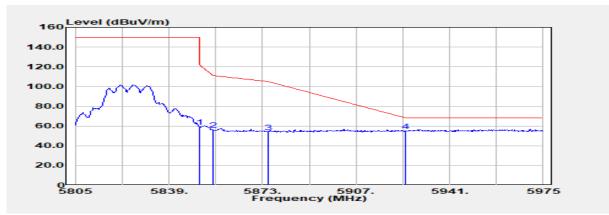
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11a / Band 4 **Test Date** :2021-03-26

Test Frequency :5825 MHz Temp./Humi. :22.4/64

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5850.000	Peak	48.12	11.31	59.43	122.20	-62.77
5855.000	Peak	44.40	11.61	56.01	110.80	-54.79
5875.000	Peak	41.85	12.08	53.93	105.20	-51.27
5925.000	Peak	41.73	12.98	54.71	68.20	-13.49

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Page: 53 of 88

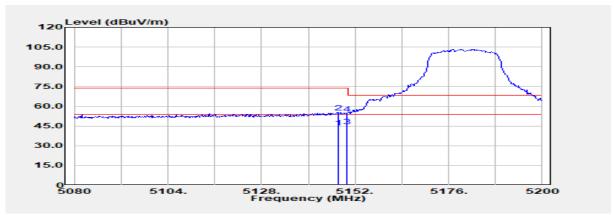
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n20 / Band 1 **Test Date** :2021-03-26

Test Frequency :5180 MHz Temp./Humi. :21.8/69

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5147.692	Average	33.60	10.48	44.08	54.00	-9.92
5147.692	Peak	44.82	10.48	55.30	74.00	-18.70
5150.000	Average	34.17	10.50	44.67	54.00	-9.33
5150.000	Peak	43.98	10.50	54.48	74.00	-19.52

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Page: 54 of 88

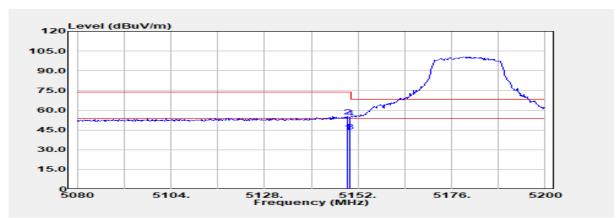
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n20 / Band 1 **Test Date** :2021-03-26

Test Frequency :5180 MHz Temp./Humi. :21.8/69

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5149.423	Average	32.99	10.49	43.48	54.00	-10.52
5149.423	Peak	44.80	10.49	55.29	74.00	-18.71
5150.000	Average	33.37	10.50	43.87	54.00	-10.13
5150.000	Peak	43.95	10.50	54.44	74.00	-19.56

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Page: 55 of 88

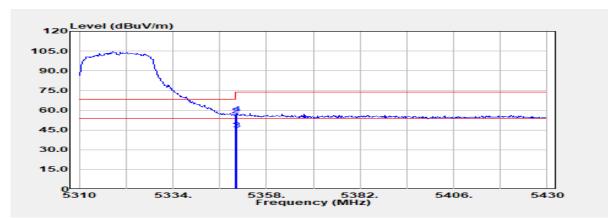
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11n20 / Band 2 Test Date :2021-03-26

Test Frequency :5320 MHz Temp./Humi. :21.8/69

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	33.55	11.54	45.09	54.00	-8.91
5350.000	Peak	44.84	11.54	56.38	74.00	-17.62
5350.385	Average	33.68	11.54	45.22	54.00	-8.78
5350.385	Peak	45.97	11.54	57.51	74.00	-16.49

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Page: 56 of 88

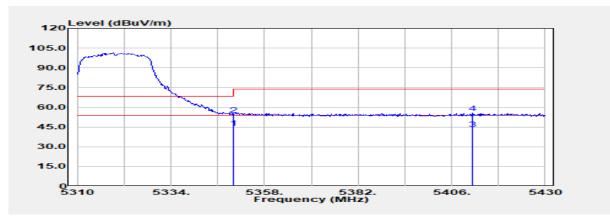
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11n20 / Band 2 Test Date :2021-03-26

Test Frequency :5320 MHz Temp./Humi. :21.8/69

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	32.83	11.54	44.37	54.00	-9.63
5350.000	Peak	42.80	11.54	54.33	74.00	-19.67
5411.346	Average	31.77	11.79	43.56	54.00	-10.44
5411.346	Peak	44.02	11.79	55.81	74.00	-18.19

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Page: 57 of 88

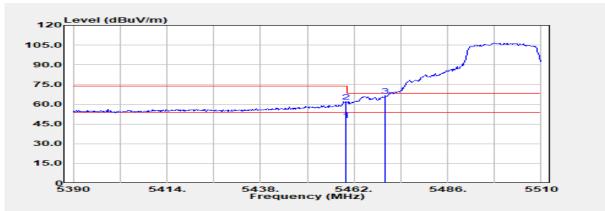
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n20 / Band 3 **Test Date** :2021-03-27

Test Frequency :5500 MHz Temp./Humi. :22.8/56

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5460.000	Average	36.29	11.66	47.95	54.00	-6.05
5460.000	Peak	50.30	11.66	61.96	74.00	-12.04
5470.000	Peak	54.78	11.73	66.51	68.20	-1.69

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Page: 58 of 88

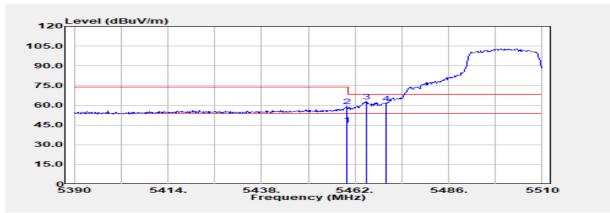
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n20 / Band 3 **Test Date** :2021-03-27

Test Frequency :5500 MHz Temp./Humi. :22.8/56

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBμV/m	dB
5460.000	Average	33.48	11.66	45.14	54.00	-8.86
5460.000	Peak	47.71	11.66	59.38	74.00	-14.62
5464.808	Peak	51.16	11.70	62.86	68.20	-5.34
5470.000	Peak	49.73	11.73	61.46	68.20	-6.74

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Page: 59 of 88

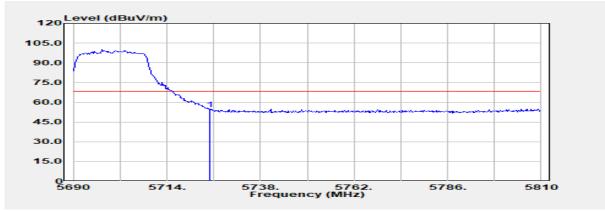
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11n20 / Band 3 Test Date :2021-03-27

Test Frequency :5700 MHz Temp./Humi. :21.3/67

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5725.000	Peak	43.98	10.62	54.60	68.20	-13.60

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Page: 60 of 88

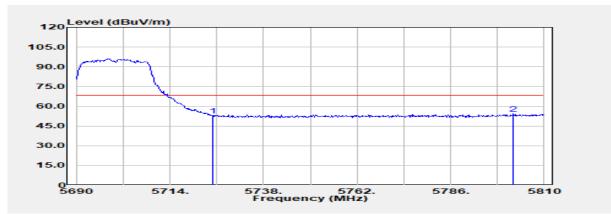
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11n20 / Band 3 Test Date :2021-03-27

Test Frequency :5700 MHz Temp./Humi. :21.3/67

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



	Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
_	MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
	5725.000	Peak	42.26	10.62	52.88	68.20	-15.32
	5802.115	Peak	42.45	11.67	54.12	68.20	-14.08

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Page: 61 of 88

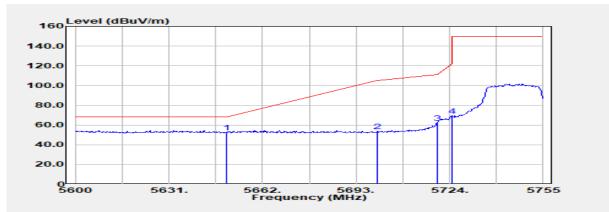
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11n20 / Band 4 Test Date :2021-03-27

Test Frequency :5745 MHz Temp./Humi. :21.3/67

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
5650.000	Peak	42.29	10.51	52.80	68.20	-15.40
5700.000	Peak	43.09	10.41	53.49	105.20	-51.71
5720.000	Peak	51.32	10.76	62.08	110.80	-48.72
5725.000	Peak	58.77	10.62	69.40	122.20	-52.80

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Page: 62 of 88

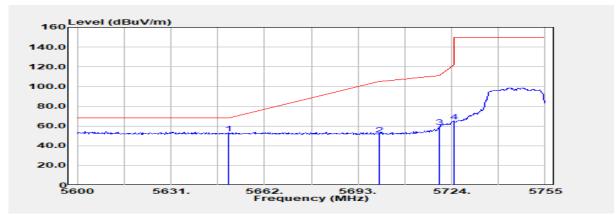
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n20 / Band 4 **Test Date** :2021-03-27

Test Frequency :5745 MHz Temp./Humi. :21.3/67

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5650.000	Peak	42.31	10.51	52.82	68.20	-15.38
5700.000	Peak	41.19	10.41	51.59	105.20	-53.61
5720.000	Peak	48.26	10.76	59.02	110.80	-51.78
5725.000	Peak	53.97	10.62	64.59	122.20	-57.61

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Page: 63 of 88

Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n20 / Band 4 **Test Date** :2021-03-27

Test Frequency :5825 MHz Temp./Humi. :21.3/67

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5850.000	Peak	51.14	11.31	62.45	122.20	-59.75
5855.000	Peak	44.39	11.61	56.00	110.80	-54.80
5875.000	Peak	42.85	12.08	54.93	105.20	-50.27
5925.000	Peak	41.74	12.98	54.72	68.20	-13.48

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Page: 64 of 88

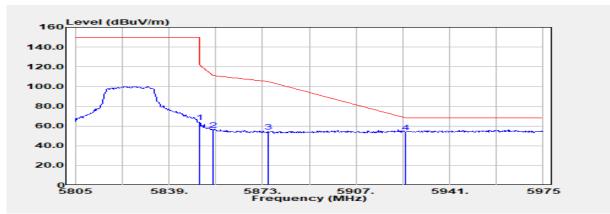
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n20 / Band 4 **Test Date** :2021-03-27

Test Frequency :5825 MHz Temp./Humi. :21.3/67

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5850.000	Peak	52.69	11.31	64.00	122.20	-58.20
5855.000	Peak	44.72	11.61	56.33	110.80	-54.47
5875.000	Peak	42.25	12.08	54.33	105.20	-50.87
5925.000	Peak	41.03	12.98	54.01	68.20	-14.19

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Page: 65 of 88

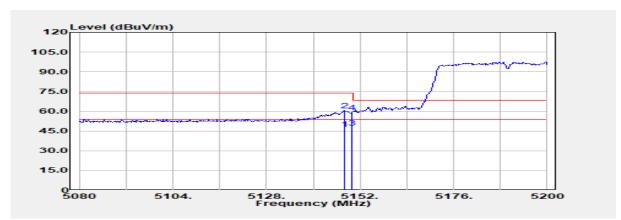
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n40 / Band 1 **Test Date** :2021-03-27

Test Frequency :5190 MHz Temp./Humi. :21.5/68

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5147.885	Average	36.21	10.48	46.69	54.00	-7.31
5147.885	Peak	50.00	10.48	60.49	74.00	-13.51
5150.000	Average	37.14	10.50	47.64	54.00	-6.36
5150.000	Peak	48.97	10.50	59.47	74.00	-14.53

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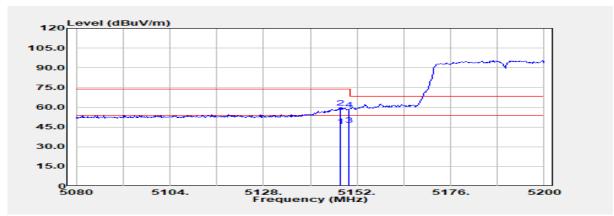
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n40 / Band 1 **Test Date** :2021-03-27

Test Frequency :5190 MHz Temp./Humi. :21.5/68

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5147.692	Average	35.31	10.48	45.79	54.00	-8.21
5147.692	Peak	49.38	10.48	59.86	74.00	-14.14
5150.000	Average	36.33	10.50	46.83	54.00	-7.17
5150.000	Peak	48.11	10.50	58.61	74.00	-15.39

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Page: 67 of 88

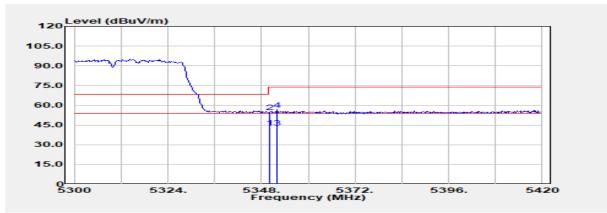
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11n40 / Band 2 Test Date :2021-03-27

Test Frequency :5310 MHz Temp./Humi. :21.5/68

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	31.59	11.54	43.13	54.00	-10.87
5350.000	Peak	43.05	11.54	54.59	74.00	-19.41
5352.115	Average	31.48	11.56	43.04	54.00	-10.96
5352.115	Peak	45.24	11.56	56.80	74.00	-17.20

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Page: 68 of 88

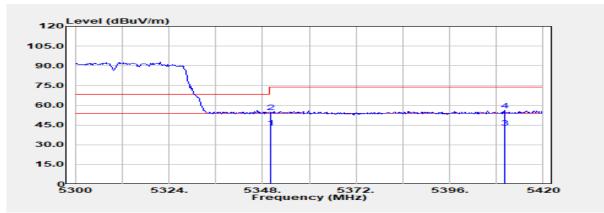
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Operation Mode :802.11n40 / Band 2 **Test Date** :2021-03-27

Test Frequency :5310 MHz Temp./Humi. :21.5/68

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
						_
5350.000	Average	31.39	11.54	42.93	54.00	-11.07
5350.000	Peak	43.17	11.54	54.71	74.00	-19.29
5410.000	Average	31.17	11.73	42.90	54.00	-11.10
5410.000	Peak	44.35	11.73	56.08	74.00	-17.92

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Page: 69 of 88

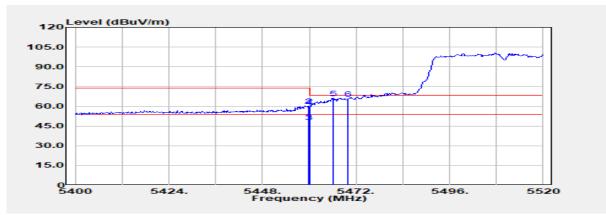
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n40 / Band 3 **Test Date** :2021-03-30

Test Frequency :5510 MHz Temp./Humi. :21.4/64

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5459.808	Average	36.49	11.67	48.16	54.00	-5.84
5459.808	Peak	48.62	11.67	60.29	74.00	-13.71
5460.000	Average	36.45	11.66	48.11	54.00	-5.89
5460.000	Peak	48.06	11.66	59.72	74.00	-14.28
5466.154	Peak	54.40	11.71	66.11	68.20	-2.09
5470.000	Peak	54.09	11.73	65.82	68.20	-2.38

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Page: 70 of 88

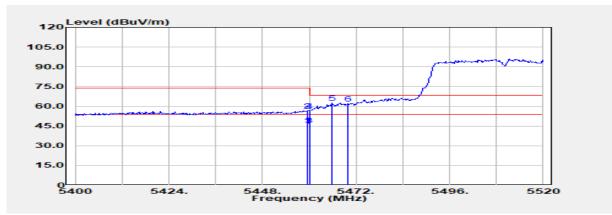
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n40 / Band 3 **Test Date** :2021-03-30

Test Frequency :5510 MHz Temp./Humi. :21.4/64

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
5459.423	Average	33.68	11.69	45.37	54.00	-8.63
5459.423	Peak	45.01	11.69	56.70	74.00	-17.30
5460.000	Average	33.89	11.66	45.55	54.00	-8.45
5460.000	Peak	44.84	11.66	56.50	74.00	-17.50
5465.961	Peak	50.80	11.70	62.50	68.20	-5.70
5470.000	Peak	50.09	11.73	61.82	68.20	-6.38

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Page: 71 of 88

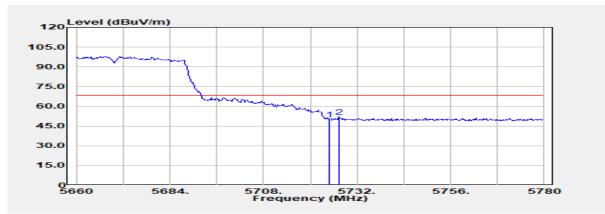
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11n40 / Band 3 Test Date :2021-03-27

Test Frequency :5670 MHz Temp./Humi. :23.5/64

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5725.000	Peak	39.50	10.62	50.12	68.20	-18.08
5727.308	Peak	41.49	10.56	52.05	68.20	-16.15

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Page: 72 of 88

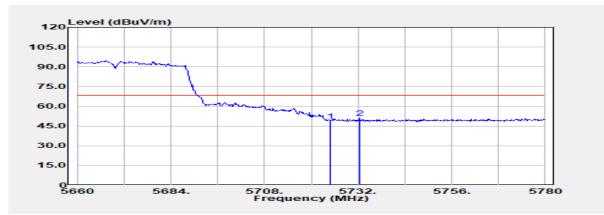
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n40 / Band 3 **Test Date** :2021-03-27

Test Frequency :5670 MHz Temp./Humi. :23.5/64

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5725.000	Peak	38.28	10.62	48.90	68.20	-19.30
5732.308	Peak	40.46	10.51	50.97	68.20	-17.23

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Page: 73 of 88

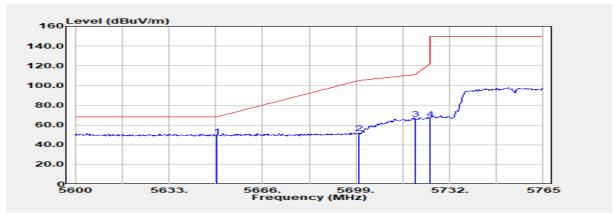
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n40 / Band 4 **Test Date** :2021-03-27

Test Frequency :5755 MHz Temp./Humi. :23.5/64

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
5650.000	Peak	38.60	10.51	49.11	68.20	-19.09
5700.000	Peak	41.73	10.41	52.13	105.20	-53.07
5720.000	Peak	55.64	10.76	66.40	110.80	-44.40
5725.000	Peak	55.96	10.62	66.58	122.20	-55.62

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Page: 74 of 88

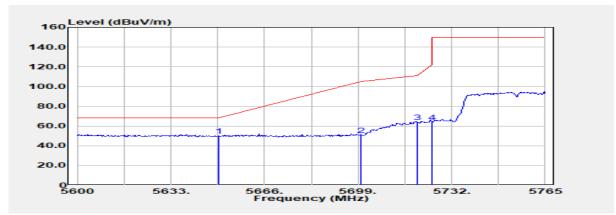
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n40 / Band 4 **Test Date** :2021-03-27

Test Frequency :5755 MHz Temp./Humi. :23.5/64

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5650.000	Peak	39.54	10.51	50.05	68.20	-18.15
5700.000	Peak	40.48	10.41	50.89	105.20	-54.31
5720.000	Peak	53.14	10.76	63.90	110.80	-46.90
5725.000	Peak	53.67	10.62	64.29	122.20	-57.91

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Page: 75 of 88

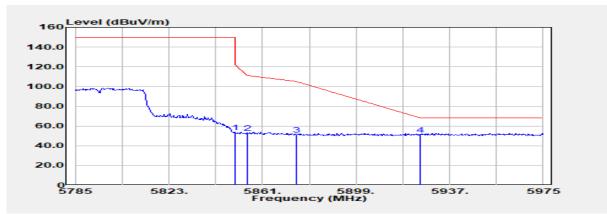
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11n40 / Band 4 Test Date :2021-03-27

Test Frequency :5795 MHz Temp./Humi. :23.5/64

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5850.000	Peak	42.52	11.31	53.83	122.20	-68.37
5855.000	Peak	41.70	11.61	53.31	110.80	-57.49
5875.000	Peak	39.41	12.08	51.49	105.20	-53.71
5925.000	Peak	38.29	12.98	51.27	68.20	-16.93

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Page: 76 of 88

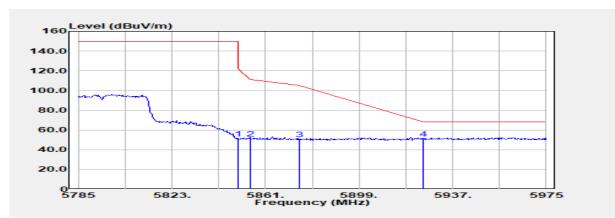
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11n40 / Band 4 **Test Date** :2021-03-27

Test Frequency :5795 MHz Temp./Humi. :23.5/64

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5850.000	Peak	39.74	11.31	51.05	122.20	-71.15
5855.000	Peak	39.75	11.61	51.36	110.80	-59.44
5875.000	Peak	38.53	12.08	50.61	105.20	-54.59
5925.000	Peak	38.27	12.98	51.25	68.20	-16.95

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Page: 77 of 88

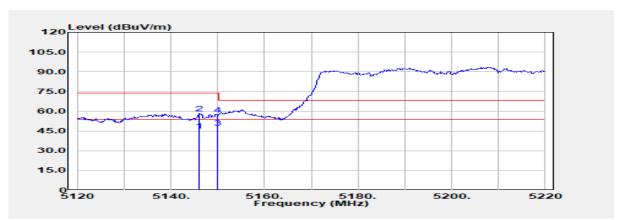
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11ac80 / Band 1 **Test Date** :2021-03-27

Test Frequency :5210 MHz Temp./Humi. :24.9/59

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5146.122	Average	34.89	10.47	45.36	54.00	-8.64
5146.122	Peak	47.92	10.47	58.39	74.00	-15.61
5150.000	Average	37.16	10.50	47.66	54.00	-6.34
5150.000	Peak	47.04	10.50	57.54	74.00	-16.46

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Page: 78 of 88

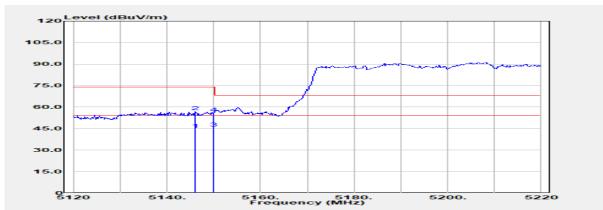
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11ac80 / Band 1 Test Date :2021-03-27

Test Frequency :5210 MHz Temp./Humi. :24.9/59

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5146.122	Average	34.10	10.47	44.57	54.00	-9.43
5146.122	Peak	46.48	10.47	56.95	74.00	-17.05
5150.000	Average	35.02	10.50	45.52	54.00	-8.48
5150,000	Peak	45.53	10.50	56.03	74.00	-17.97

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Page: 79 of 88

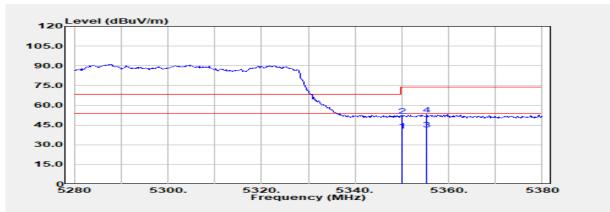
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11ac80 / Band 2 Test Date :2021-03-27

Test Frequency :5290 MHz Temp./Humi. :24.9/59

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	29.26	11.54	40.80	54.00	-13.20
5350.000	Peak	40.46	11.54	51.99	74.00	-22.01
5355.320	Average	30.24	11.59	41.83	54.00	-12.17
5355.320	Peak	41.45	11.59	53.04	74.00	-20.96

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Page: 80 of 88

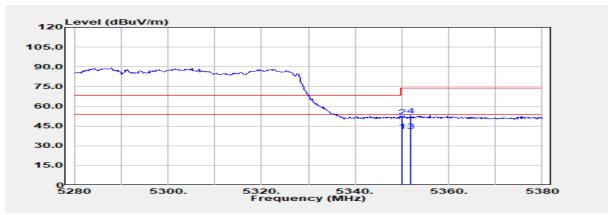
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11ac80 / Band 2 **Test Date** :2021-03-27

Test Frequency :5290 MHz Temp./Humi. :24.9/59

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	29.65	11.54	41.19	54.00	-12.81
5350.000	Peak	40.73	11.54	52.26	74.00	-21.74
5351.955	Average	29.48	11.56	41.04	54.00	-12.96
5351.955	Peak	41.62	11.56	53.18	74.00	-20.82

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Page: 81 of 88

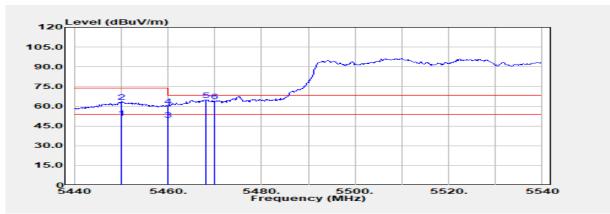
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11ac80 / Band 3 Test Date :2021-03-30

Test Frequency :5530 MHz Temp./Humi. :21.5/62

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5449.936	Average	38.84	12.19	51.03	54.00	-2.97
5449.936	Peak	51.20	12.19	63.39	74.00	-10.61
5460.000	Average	38.14	11.66	49.80	54.00	-4.20
5460.000	Peak	48.75	11.66	60.41	74.00	-13.59
5468.205	Peak	53.14	11.72	64.86	68.20	-3.34
5470.000	Peak	51.89	11.73	63.62	68.20	-4.58

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Page: 82 of 88

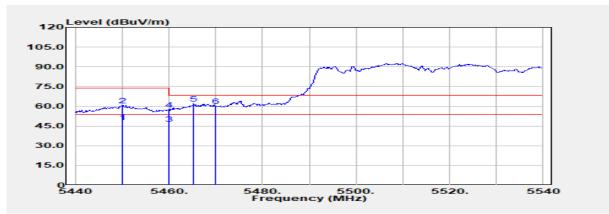
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11ac80 / Band 3 **Test Date** :2021-03-30

Test Frequency :5530 MHz Temp./Humi. :21.5/62

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Enzo Chang



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5449.936	Average	36.04	12.19	48.23	54.00	-5.77
5449.936	Peak	48.42	12.19	60.60	74.00	-13.40
5460.000	Average	34.78	11.66	46.44	54.00	-7.56
5460.000	Peak	45.95	11.66	57.62	74.00	-16.38
5465.320	Peak	50.47	11.70	62.17	68.20	-6.03
5470.000	Peak	48.40	11.73	60.13	68.20	-8.07

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Page: 83 of 88

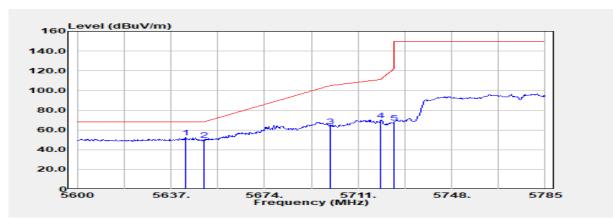
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11ac80 / Band 4 **Test Date** :2021-03-27

Test Frequency :5775 MHz Temp./Humi. :24.9/59

Test Mode :BE CH LOW Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5642.989	Peak	41.63	10.62	52.25	68.20	-15.95
5650.000	Peak	39.53	10.51	50.04	68.20	-18.16
5700.000	Peak	53.77	10.41	64.18	105.20	-41.02
5720.000	Peak	59.36	10.76	70.12	110.80	-40.68
5725.000	Peak	56.96	10.62	67.58	122.20	-54.62

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Page: 84 of 88

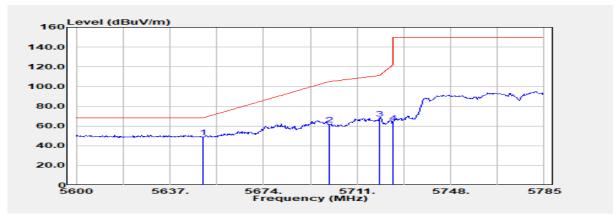
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11ac80 / Band 4 **Test Date** :2021-03-27

Test Frequency :5775 MHz Temp./Humi. :24.9/59

Test Mode :BE CH LOW Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5650.000	Peak	38.59	10.51	49.09	68.20	-19.11
5700.000	Peak	50.92	10.41	61.32	105.20	-43.88
5720.000	Peak	56.67	10.76	67.43	110.80	-43.37
5725.000	Peak	52.94	10.62	63.56	122.20	-58.64

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Page: 85 of 88

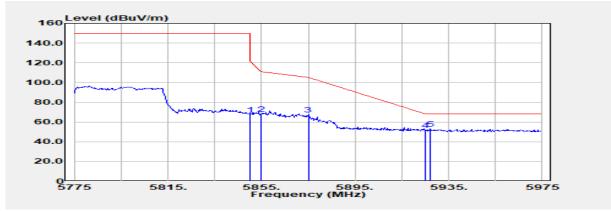
Report Number :E2/2021/10105 **Test Site** :966 Chamber C

Operation Mode :802.11ac80 / Band 4 **Test Date** :2021-03-27

Test Frequency :5775 MHz Temp./Humi. :24.9/59

Test Mode :BE CH HIGH Antenna Pol. :Horizontal

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμ̈V	dB	dBµV/m	dΒμV/m	dB
5850.000	Peak	56.27	11.31	67.58	122.20	-54.62
5855.000	Peak	56.80	11.61	68.41	110.80	-42.39
5875.000	Peak	55.48	12.08	67.57	105.20	-37.63
5925.000	Peak	39.02	12.98	52.00	68.20	-16.20
5926.923	Peak	40.22	13.06	53.28	68.20	-14.92

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Page: 86 of 88

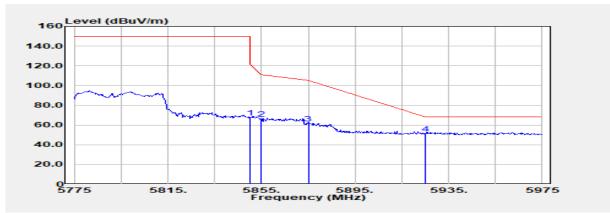
Report Number :E2/2021/10105 Test Site :966 Chamber C

Operation Mode :802.11ac80 / Band 4 Test Date :2021-03-27

Test Frequency :5775 MHz Temp./Humi. :24.9/59

Test Mode :BE CH HIGH Antenna Pol. :Vertical

EUT Pol :E2 Plane Engineer :Ashton Chiu



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
5850.000	Peak	56.40	11.31	67.70	122.20	-54.50
5855.000	Peak	54.54	11.61	66.15	110.80	-44.65
5875.000	Peak	49.55	12.08	61.64	105.20	-43.56
5925.000	Peak	38.26	12.98	51.24	68.20	-16.96

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Page: 87 of 88

8 TRANSMISSION IN THE ABSENCE OF DATA

8.1 Standard Applicable

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

8.2 Result

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ASK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

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Page: 88 of 88

ANTENNA REQUIREMENT

9.1 Standard Applicable

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device. According to §15.407, 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.

9.2 **Antenna Connected Construction**

The antenna is designed as permanently attached and no consideration of replacement. Please see EUT photo for details.

~ End of Report ~

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