

# **ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT CLASS II PC REPORT**



FCC Applicant:	Acer Incorporated 8F., No. 88, Sec. 1, Xintai 5th Rd., Xizhi, New Taipei City 22181, Taiwan (R.O.C)
Product Name:	7c Modular Platform
Brand Name:	acer
Model No.:	QSIP7180
Model Difference:	N/A
Report Number:	ER/2021/70041
FCC ID	HLZQSIP7180
Issue Date:	Sep. 07, 2021
Date of Test:	Jul. 22, 2021 ~ Sep. 01, 2021
Date of EUT Received:	Jul. 09, 2021

Approved By

### 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 comply with FCC rule part §15.407.

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

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Revision History				
Report Number	Revision	Description	Issue Date	Revised By
ER/2021/70041	Rev.00	Original.	Sep. 07, 2021	Yi-Shan Tsai

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### **GENERAL INFORMATION** 1

#### 1.1 **Product Description**

Product Name:	7c Modular Platform
Brand Name:	acer
Model No.:	QSIP7180
Model No. of Host:	N20Q7
Model Difference:	N/A
Hardware Version:	N/A
Firmware Version:	N/A
EUT Series No.:	N8DAISY005117007F37600 (Conducted) N8A4DWW0031241CABC7600 (Radiated)
Power Supply:	11.4Vdc from Rechargeable Li-polymer Battery Pack 19Vdc from AC/DC Adapter

#### 1.2 **Modulation & Data Rate**

Modulation type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 802.11ac only
Transistion Rate	802.11 a: 6.5 – 54 Mbps 802.11 n_20MHz: 6.5 – 144.4Mbps 802.11 n_40MHz: 13.5 – 300.0Mbps 802.11 ac_20MHz: 6.5 – 173.4Mbps 802.11 ac_40MHz: 13.5 – 400.0Mbps 802.11 ac_80MHz: 29.3 – 866.6Mbps

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#### 1.3 **Antenna Designation**

Antenna Type	Supplier	Main / Aux	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Worst Antenna Gain
		Main		5150~5250	-0.25	
			Main		5250~5350	-0.63
		IVIAILI	DQ6A15GC700	5470~5725	0.26	
PIFA	WNC			5725~5850	0.26	V
FIFA	Aux		DQUATSGC700	5150~5250	0.9	V
		Aux		5250~5350	0.9	V
			Aux	Aux	Aux	5470~5725
				5725~5850	-0.76	

### Note:

- Pre-scanned was done on the above antennas, measurements were demonstrated by using the an-1. tenna with the highest gain as the worst case scenarios.
- 2. Antenna information is provided by the applicant.

Freq.(MHz)	Directional Gain (dBi)
5150~5250	3.35
5250~5350	3.18
5470~5725	3.98
5725~5850	2.78

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#### 1.4 FCC

Wi-Fi	Frequency Range	Channels	Rated Power(Avg) (dBm) (Worst Case)	Modulation Technology
	5180~5240	4	21.18 dBm	OFDM
a n_HT	5260~5320	4	21.09 dBm	OFDM
ac_VHT 20M	5500~5720	12	20.76 dBm	OFDM
20101	5745-5825	5	20.92 dBm	OFDM
	5190~5230	2	20.73 dBm	OFDM
n_HT	5270~5310	2	20.88 dBm	OFDM
ac_VHT 40M	5510~5710	6	20.94 dBm	OFDM
	5755-5795	2	20.65 dBm	OFDM
	5210	1	15.56 dBm	OFDM
ac_VHT	5290	1	14.46 dBm	OFDM
80M	5530~5690	3	20.91 dBm	OFDM
	5775	1	20.74 dBm	OFDM

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#### 1.5 **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 ANSI C63.10:2013

#### **Test Facility** 1.6

Laboratory	Test Site Address	Test Site Name	FCC Designation number	IC CAB identifier
	No.134, Wu Kung Road, New Taipei Indus- trial Park, Wuku District, New Taipei City, Tai- wan.	SAC 1 SAC 3 Conduction 1 Conducted 1 Conducted 2 Conducted 3 Conducted 4 Conducted 5 Conducted 5 Conducted 7 Conducted 8 Conducted 9 Conducted 10	TW0027	
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	Conduction A SAC C SAC D SAC E Conducted A Conducted B Conducted C Conducted D Conducted F Conducted F Conducted H Conducted H Conducted J Conducted J Conducted J Conducted T S8997	TW0028	TW3702

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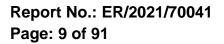
#### 1.7 **Special Accessories**

There are no special accessories used while test was conducted.

#### 1.8 **Equipment Modifications**

There was no modification incorporated into the EUT.

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# 2 SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

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)

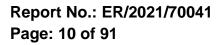
The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output 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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### 2.4 Measurement Results Explanation Example

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

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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2.5 **Configuration of Tested System** Fig. 2-1 Radiated Emission



Fig. 2-2 Conducted (Antenna Port) Configuration



### Table 2-1 Equipment Used in Tested System

ltem	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

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#### SUMMARY OF TEST RESULT 3

FCC Rules	Description Of Test	Result
§15.407(a)	Maximum Conducted Output Power	Compliant
§15.205 §15.209 §15.407(b)	Undesirable Radiated Emissions	Compliant

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#### **DESCRIPTION OF TEST MODES** 4

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

#### Operated band in 5250 MHz ~5350 MHz: Operated band in 5150 MHz ~5250 MHz: 20 M 20 M 40 M 40 M 80 M Freq Freq Freq Freq Freq CH CH CH CH CH (MHz) (MHz) (MHz) (MHz) (MHz) 42 36 5180 38 5190 5210 52 5260 54 5270 40 5200 5230 5280 62 5310 46 56 44 5220 60 5300 48 5240 5320 64

80 M					
СН	Freq (MHz)				
58	5290				

### Operated band in 5470 MHz ~5725 MHz:

CH

102

110

118

126

134

142

40 M

5710

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				
144	5720				

) M	80	D M
Freq (MHz)	СН	Fre (Mł
5510	106	55
5550	122	56
5590	138	56
5630		
5670		

М	20	M
Freq (MHz)	СН	F (N
5530	149	5
5610	153	57
5690	157	57
	161	58
	165	58

40 M				
СН	Freq (MHz)			
151	5755			
159	5795			

Freq

(MHz)

5745

5765

5785

5805

5825

80 M				
СН	Freq (MHz)			
155	5775			

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#### 4.2 The Worst Test Modes and Channel Details

- 1. 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 case.

The gevin UE is pre-scanned among below modes.

Modulation	Transmission Chain				Single Transmission Spatial	Multiple Transmission Spatial
🛛 802.11 a	$\boxtimes$ Ch0	🛛 Ch1	□ Ch2	🗆 Ch3	🗆 1TX	🛛 2TX
🛛 802.11 n	🛛 Ch0	🛛 Ch1	🗆 Ch2	□ Ch3		🛛 MIMO
🛛 802.11 ac	🛛 Ch0	🛛 Ch1	🗆 Ch2	🗆 Ch3		🛛 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.

#### 4.2.1 **RADIATED EMISSION TEST:**

	RADIATED EMISSION TEST (ABOVE 1 GHz)							
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT		
	5180~5240	36 to 48	44	OFDM	\ \ \			
802.11a	5260~5320	52 to 64	60		6	2TX		
	5500~5720	100 to 144	116		0	217		
	5745~5825	149 to 165	157					

Note: The field strength of radiation emission was measured as NB Plane for channel Low, Mid and High.

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#### ANTENNA PORT CONDUCTED MEASUREMENT: 4.2.2

CONDUCTED TEST							
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT	
	5180~5240 5260~5320	36 to 48 52 to 64	36,44,48 52,60,64	-			
802.11a	5500~5720	100 to 144	100,116,140,144	OFDM	6	2TX	
	5745~5825 5180~5240	149 to 165 36 to 48	149,157,165 36,44,48				
802.11n_HT20	5260~5320 5500~5720	52 to 64 100 to 144	52,60,64 100,116,140,144	OFDM	MCS8	MIMO	
	5745~5825	149 to 165	149,157,165				
802 11p HT/0	5190~5230 5270~5310	38 to 46 54 to 62	38,46 54,62		MCS8		
802.11n_HT40	5510~5670 5755~5795	102 to 142 151 to 159	102,110,134,142 151,159		MCSU		
802.11ac_VHT80	5210	42	42			МІМО	
	5290 5530~5610	58 106 to 138	58 106,122,138	OFDM	MCS0		
	5775	155	155	1			

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#### MEASUREMENT UNCERTAINTY 5

Test Items	Une	certain	ty
The Maximum Output Power Measurement	+/-	1	dB
Temperature	+/-	0.4	°C
Humidity	+/-	3.5	%
DC / AC Power Source	+/-	1	%

Radiated Spurious Emission Measurement Uncertainty					
	+/-	2.64	dB	9kHz~30MHz	
Polarization: Vertical	+/-	4.93	dB	30MHz - 1000MHz	
	+/-	4.81	dB	1GHz - 18GHz	
	+/-	4.52	dB	18GHz - 40GHz	
	+/-	2.64	dB	9kHz~30MHz	
Polarization: Horizontal	+/-	4.45	dB	30MHz - 1000MHz	
Polarization: Horizontal	+/-	4.81	dB	1GHz - 18GHz	
	+/-	4.52	dB	18GHz - 40GHz	

### 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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#### MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT 6

#### 6.1 **Standard Applicable**

### FCC

OPERZTION Band		EUT CATEGORY	LIMIT
	Access Point (Master device )1 Watt(30dBmFixed point-to-point Access Ponit1 Watt(30dBm $$ Mobile and portable client device250mW(23.98dBm) or 11d $$ $$ 250mW(23.98dBm) or 11d		1 Watt(30dBm)
Band U-NII-1 U-NII-2A U-NII-2C U-NII-3		Fixed point-to-point Access Ponit	1 Watt(30dBm)
		Mobile and portable client device	250mW(23.98dBm)
U-NII-2A			250mW(23.98dBm) or 11dBm+10 log B
U-NII-2C			250mW(23.98dBm) or 11dBm+10 log B
U-NII-3			1 Watt(30dBm)
power shall be			6 dBi are used, the Maximum transmit rection-al gain of the antenna exceeds 6

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### 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.

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

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

 $g_{j,k} = 10^{Gk/20}$  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.
- 2. 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.
- 5. Record the max. reading and add 10 log(1/duty cycle).
- 6. Repeat above procedures until all frequency (low, middle, and high channel) measured were complete.

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#### 6.3 **Measurement Equipment Used**

	Conducted Emission Test Site: Conducted 4									
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUM- BER	LAST CAL.	CAL DUE.					
EXA Spectrum Analyzer	Agilent	N9010A	MY54200716	10/20/2020	10/19/2021					
Power Meter	Anritsu	ML2496A	1804001	03/02/2021	03/01/2022					
Power Sensor	Anritsu	MA2411B	1726104	03/02/2021	03/01/2022					
Power Sensor	Anritsu	MA2411B	1726107	03/02/2021	03/01/2022					
Attenuator	Mini-Circuit	BW- S10W2+	4	12/16/2020	12/15/2021					
Attenuator	Mini-Circuit	BW- S10W2+	2	12/16/2020	12/15/2021					
DC Block	Mini-Circuits	BLK-18-S+	1	12/16/2020	12/15/2021					

#### 6.4 **Test Set-up**

EUT <u>Attenua</u>	r Power Sensor	Power Meter
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#### 6.5 **Measurement Result**

#### 6.5.1 Conducted output power (FCC)

802.11a\_2TX

	Frequency	Data	Avg. POW	/ER (dBm)	TOTAL	TOTAL	REQUIRED	DEOLU T
СН	(MHz)	Rate	CH 0	CH 1	POWER (dBm)	POWER (mW)	LIMIT (dBm)	RESULT
36	5180	6	17.58	16.88	20.34	108.196	23.98	PASS
44	5220	6	18.18	17.76	21.07	128.030	23.98	PASS
48	5240	6	18.23	17.92	21.18	131.093	23.98	PASS
52	5260	6	18.07	17.91	21.09	128.492	23.98	PASS
60	5300	6	18.17	17.54	20.96	124.866	23.98	PASS
64	5320	6	17.25	16.62	20.04	101.029	23.98	PASS
100	5500	6	17.42	17.43	20.52	112.799	23.98	PASS
116	5580	6	16.47	16.93	19.80	95.590	23.98	PASS
140	5700	6	17.44	17.24	20.44	110.642	23.98	PASS
144	5720	6	17.01	16.47	19.85	96.576	23.98	PASS
149	5745	6	17.42	17.77	20.70	117.397	30	PASS
157	5785	6	17.61	17.81	20.81	120.481	30	PASS
165	5825	6	17.71	17.44	20.68	116.819	30	PASS

### 802.11n\_HT20\_MIMO

	Frequency	Data	Avg. POW	Avg. POWER (dBm)		TOTAL	REQUIRED	
СН	(MHz)	Rate	CH 0	CH 1	POWER (dBm)	POWER (mW)	LIMIT (dBm)	RESULT
36	5180	MCS8	17.81	17.13	20.58	114.323	23.98	PASS
44	5220	MCS8	17.85	17.48	20.77	119.316	23.98	PASS
48	5240	MCS8	17.94	17.63	20.89	122.625	23.98	PASS
52	5260	MCS8	17.91	17.68	20.89	122.873	23.98	PASS
60	5300	MCS8	18.14	17.7	21.02	126.579	23.98	PASS
64	5320	MCS8	17.35	16.72	20.14	103.382	23.98	PASS
100	5500	MCS8	17.68	17.64	20.76	119.072	23.98	PASS
116	5580	MCS8	17.24	17.54	20.49	111.960	23.98	PASS
140	5700	MCS8	16.29	16.35	19.42	87.461	23.98	PASS
144	5720	MCS8	17.59	17.27	20.53	113.064	23.98	PASS
149	5745	MCS8	17.45	17.63	20.64	115.850	30	PASS
157	5785	MCS8	17.49	17.68	20.68	117.060	30	PASS
165	5825	MCS8	17.93	17.71	20.92	123.579	30	PASS

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### 802.11ac\_VHT20\_MIMO

СН	Frequency	Data	Avg. POV	VER (dBm)	TOTAL POWER	TOTAL POWER	REQUIRED LIMIT	RESULT
СП	(MHz)	Rate	CH 0	CH 1	(dBm)	(mW)	(dBm)	RESULT
36	5180	MCS0	17.69	17.06	20.48	111.801	23.98	PASS
44	5220	MCS0	17.63	17.08	20.46	111.218	23.98	PASS
48	5240	MCS0	17.59	17.14	20.47	111.400	23.98	PASS
52	5260	MCS0	17.72	17.25	20.59	114.535	23.98	PASS
60	5300	MCS0	18.02	17.44	20.84	121.275	23.98	PASS
64	5320	MCS0	17.01	16.44	19.83	96.214	23.98	PASS
100	5500	MCS0	17.21	17.22	20.31	107.474	23.98	PASS
116	5580	MCS0	16.81	17.13	20.07	101.648	23.98	PASS
140	5700	MCS0	15.84	15.86	18.95	78.488	23.98	PASS
144	5720	MCS0	17.48	17.21	20.45	110.851	23.98	PASS
149	5745	MCS0	17.53	17.75	20.74	118.561	30	PASS
157	5785	MCS0	17.48	17.73	20.70	117.621	30	PASS
165	5825	MCS0	17.65	17.48	20.66	116.516	30	PASS
02.11n_HT40_	MIMO							
СН	Frequency	Data	Avg. POV	VER (dBm)	TOTAL POWER	TOTAL POWER	REQUIRED LIMIT	RESULT
CII	(MHz)	Rate	CH 0	CH 1	(dBm)	(mW)	(dBm)	RESOLI
38	5190	MCS8	14.53	13.96	17.44	55.487	23.98	PASS
46	5230	MCS8	17.73	17.34	20.73	118.221	23.98	PASS
54	5270	MCS8	17.8	17.59	20.88	122.570	23.98	PASS
62	5310	MCS8	11	10.51	13.95	24.828	23.98	PASS
102	5510	MCS8	15.04	15.38	18.40	69.198	23.98	PASS
440	5550	1000	47.77	17.04	00.04	101.070	00.00	<b>D</b> 400

62	5310	IVIC So	11	10.51	13.95	24.828	23.98	PASS
102	5510	MCS8	15.04	15.38	18.40	69.198	23.98	PASS
110	5550	MCS8	17.55	17.94	20.94	124.078	23.98	PASS
134	5670	MCS8	17.03	16.98	20.19	104.536	23.98	PASS
142	5710	MCS8	17.59	17.45	20.71	117.784	23.98	PASS
151	5755	MCS8	17.25	17.57	20.60	114.829	30	PASS
159	5795	MCS8	17.34	17.58	20.65	116.125	30	PASS

### 802.11ac\_VHT40\_MIMO

CH	CH	Data	Avg. POW	Avg. POWER (dBm)		TOTAL POWER	REQUIRED LIMIT	RESULT
	(MHz)	Rate	CH 0	CH 1	POWER (dBm)	(mW)	(dBm)	RESULT
38	5190	MCS0	14.63	13.95	17.49	56.116	23.98	PASS
46	5230	MCS0	17.59	17.36	20.66	116.523	23.98	PASS
54	5270	MCS0	17.69	17.51	20.79	119.909	23.98	PASS
62	5310	MCS0	10.72	10.18	13.65	23.152	23.98	PASS
102	5510	MCS0	15.22	15.43	18.51	71.021	23.98	PASS
110	5550	MCS0	17.32	17.57	20.63	115.728	23.98	PASS
134	5670	MCS0	17.03	17.06	20.23	105.502	23.98	PASS
142	5710	MCS0	17.38	17.02	20.39	109.497	23.98	PASS
151	5755	MCS0	16.97	17.24	20.29	107.021	30	PASS
159	5795	MCS0	17.27	17.57	20.61	115.085	30	PASS

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### 802.11ac\_VHT80\_MIMO

CH	CH Frequency Data	Data	Avg. POW	Avg. POWER (dBm)		TOTAL POWER	REQUIRED LIMIT	RESULT
	(MHz)	Rate	CH 0	CH 1	POWER (dBm)	(mW)	(dBm)	RESULI
42	5210	MCS0	12.43	12.03	15.56	35.976	23.98	PASS
58	5290	MCS0	11.31	10.96	14.46	27.951	23.98	PASS
106	5530	MCS0	12.22	12.24	15.56	35.938	23.98	PASS
122	5610	MCS0	17.23	17.65	20.77	119.414	23.98	PASS
138	5690	MCS0	17.49	17.67	20.91	123.345	23.98	PASS
155	5775	MCS0	17.48	17.35	20.74	118.603	30	PASS

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# 7 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 5 MHz

APPLICABLE TO	EIRP LIMIT	FIELD STRENGTH AT 3m
15.407(b)(1)		
RSS-247 §6.2.1.2		
15.407(b)(2)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)
RSS-247 §6.2.2.2	FR27 (dBH/MHZ)	FR. 00.2 (00µV/III)
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.

\*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.

 $EIRP = ((E^*d)^2) / 30$ , 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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#### 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:

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.

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#### 7.2 **Measurement Equipment Used: TX**

Radiated Emission Test Site: SAC 3					
EQUIPMENT TYPE	MFR	MODEL NUM- BER	SERIAL NUM- BER	LAST CAL.	CAL DUE.
Horn Antenna	SCHWARZ- BECK	BBHA9170	184	12/11/2020	12/10/2021
Horn Antenna	SCHWARZ- BECK	BBHA9120D	1441	10/16/2020	10/15/2021
Bi-log Antenna	SCHWARZ- BECK	VULB9168	300	11/18/2020	11/17/2021
Loop Antenna	ETS.LIND- GREN	6502	148045	10/19/2020	10/18/2021
PXA Spectrum Ana- lyzer	Agilent	N9030A	MY53120760	04/27/2021	04/26/2022
EMI Test Receiver	R&S	ESCI	101338	03/22/2021	03/21/2022
Pre-Amplifier	HP	8449B	3008A00578	12/16/2020	12/15/2021
Pre-Amplifier	EMC Instru- ments	EMC184045B	980135	10/27/2020	10/26/2021
Pre-Amplifier	HP	8447D	2944A07676	12/16/2020	12/15/2021
Attenuator	Mini-Circuit	BW-S10W2+	4	12/16/2020	12/15/2021
Filter 5150-5350 MHz	Micro-Tronics	BRM50703	1	12/16/2020	12/15/2021
Filter 5470-5725 MHz	Micro-Tronics	BRM50704	1	12/16/2020	12/15/2021
Filter 5725-5875 MHz	Micro-Tronics	BRM50705	1	12/16/2020	12/15/2021
High Pass Filter	WI	WHKX7.0/18G- 8SS	45	12/16/2020	12/15/2021
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY2636/2	12/16/2020	12/15/2021
Coaxial Cable	Huber Suhner	SUCOFLEX 104	340057/4	12/16/2020	12/15/2021
Coaxial Cable	Huber Suhner	SUCOFLEX 104PEA	800052/2	12/16/2020	12/15/2021
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY2621/2	12/16/2020	12/15/2021
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY2617/2	12/16/2020	12/15/2021
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY2630/2	12/16/2020	12/15/2021
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY22962/2	12/16/2020	12/15/2021
Site Cal	SGS	SAC 3	N/A	01/01/2021	12/31/2021
Test Software	audix	e3	Ver. 6.11812c	N.C.R	N.C.R

NOTE: N.C.R refers to Not Calibrated Required.

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#### 7.3 Measurement Equipment Used: Bandedge

Radiated Emission Test Site: SAC C					
EQUIPMENT TYPE	MFR	MODEL NUM- BER	SERIAL NUM- BER	LAST CAL.	CAL DUE.
Horn Antenna	Schwarzbeck	BBHA9170	184	12/11/2020	12/10/2021
Horn Antenna	Schwarzbeck	BBHA9120D	1187	01/11/2021	01/10/2022
EMI Test Receiver	R&S	ESU 40	100363	04/28/2021	04/27/2022
Pre-Amplifier	EMC Instru- ments	EMC0011830	980199	11/19/2020	11/18/2021
Attenuator	Marvelous	WATT-218FS- 10	RF20	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

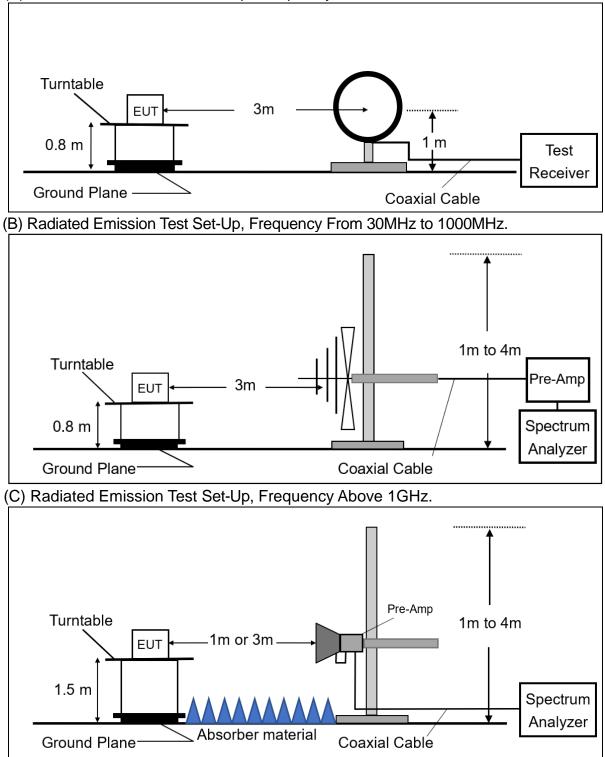
NOTE: N.C.R refers to Not Calibrated Required.

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### 7.4 Test SET-UP

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



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### 7.5 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=100 kHz and VBW=300 kHz for Peak Detector (PK) at frequency between 30MHz and 1 GHz.
- 7. Use receiver mode as RBW=120 kHz for Quasi-peak (QP) at frequency between 30MHz and 1 GHz.
- 8. 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.
- **9.** Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- **10.** And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- **11.** Repeat above procedures until all frequency measured were complete.

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### 7.6 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 StrengthRA = Reading AmplitudeAF = Antenna Factor CL = Cable Attenuation Factor (Cable Loss) AG = Amplifier Gain

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)

### 7.7 Test Results of Radiated Spurious Emissions from 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) was not reported.

Pre-scanned was done at frequency 5.47 GHz and 5.85 GHz for bandedge measurement of straddle channels 138, 142 and 144 which was 20dB lower than the limit per 15.31(o) & RSS-GEN §6.13.2 was not reported.

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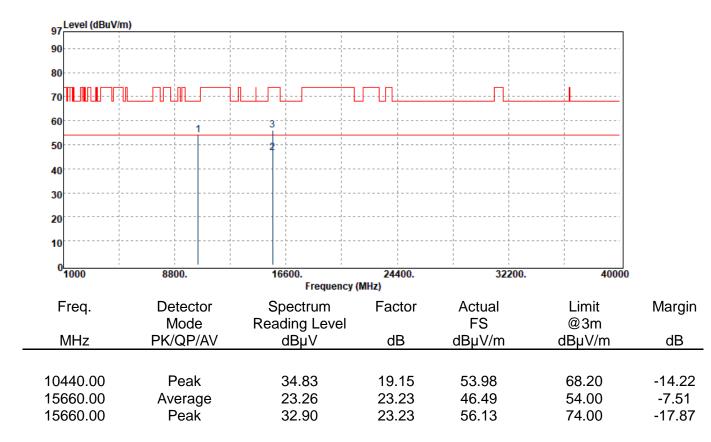
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#### 7.8 **Radiated Spurious Emission Measurement Result**

#### 7.8.1 Above 1GHz Worst-Case Data:

Report Number	:ER-2021-70041	Test Site	:SAC 3
Operation Mode	:802.11a	Test Date	:2021-08-12
Test Frequency	:5220 MHz	Temp./Humi.	:27.4/51
Test Mode	:Tx CH Mid	Antenna Pol.	:VERTICAL
EUT Pol	:NB Plane	Engineer	:Ricky Chen



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台灣檢驗科技股份有限公司	t (886-2) 2299-3279	f (886-2) 2298-0488	www.sgs.com.tw



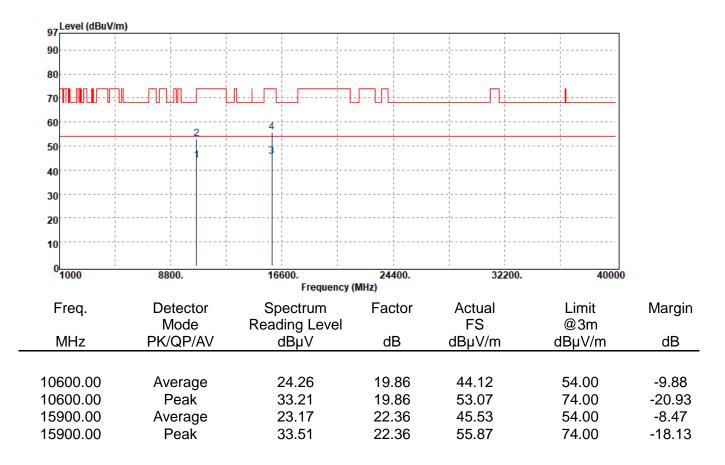
Report Number	:ER-2021-70041	Test Site	:SAC 3
Operation Mode	:802.11a	Test Date	:2021-08-12
Test Frequency	:5220 MHz	Temp./Humi.	:27.4/51
Test Mode	:Tx CH Mid	Antenna Pol.	:HORIZONTAL
EUT Pol	:NB Plane	Engineer	:Ricky Chen



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台灣檢驗科技股份有限公司	t (886-2) 2299-3279	f (886-2) 2298-0488	www.sgs.com.tw



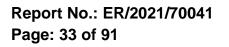
Report Number	:ER-2021-70041	Test Site	:SAC 3
Operation Mode	:802.11a	Test Date	:2021-08-12
Test Frequency	:5300 MHz	Temp./Humi.	:27.4/51
Test Mode	:Tx CH Mid	Antenna Pol.	:VERTICAL
EUT Pol	:NB Plane	Engineer	:Ricky Chen



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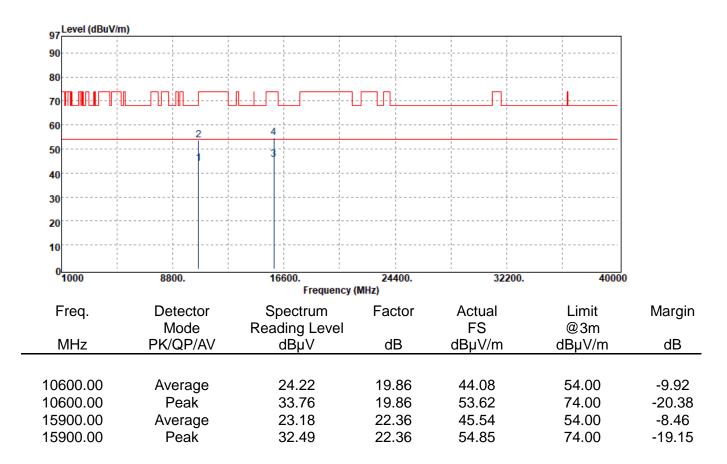
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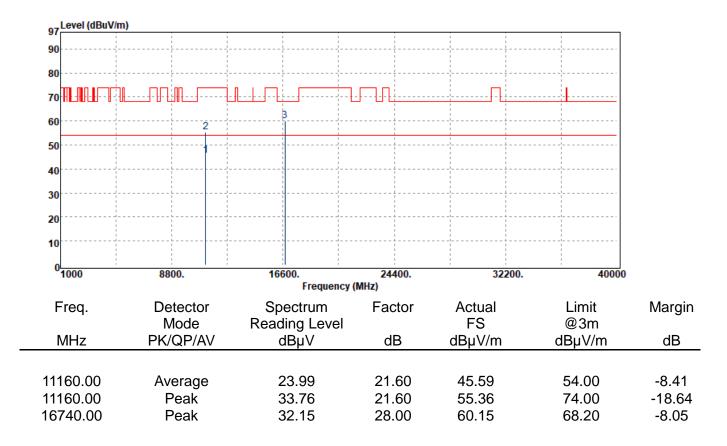
Report Number	:ER-2021-70041	Test Site	:SAC 3
Operation Mode	:802.11a	Test Date	:2021-08-12
Test Frequency	:5300 MHz	Temp./Humi.	:27.4/51
Test Mode	:Tx CH Mid	Antenna Pol.	:HORIZONTAL
EUT Pol	:NB Plane	Engineer	:Ricky Chen
		LIGUIEEI	INICITY OTHER



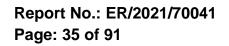
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Report Number	:ER-2021-70041	Test Site	:SAC 3
Operation Mode	:802.11a	Test Date	:2021-08-12
Test Frequency	:5580 MHz	Temp./Humi.	:27.4/51
Test Mode	:Tx CH Mid	Antenna Pol.	:VERTICAL
EUT Pol	:NB Plane	Engineer	:Ricky Chen

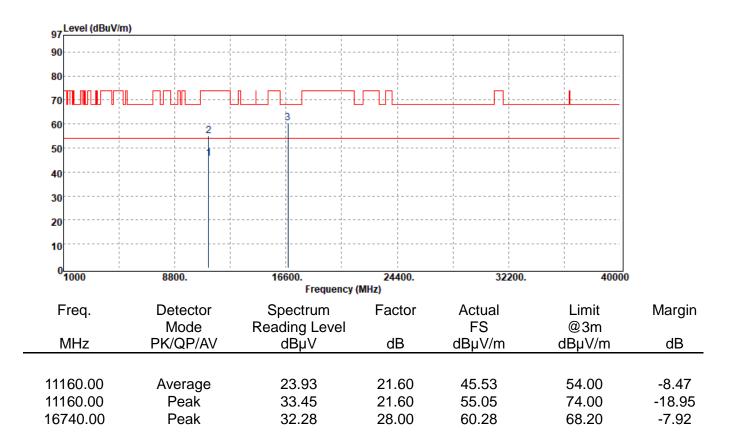


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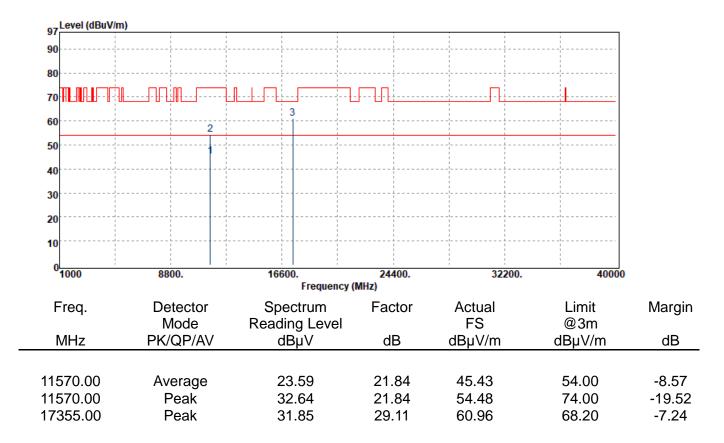
Report Number	:ER-2021-70041	Test Site	:SAC 3
Operation Mode	:802.11a	Test Date	:2021-08-12
Test Frequency	:5580 MHz	Temp./Humi.	:27.4/51
Test Mode	:Tx CH Mid	Antenna Pol.	:HORIZONTAL
EUT Pol	:NB Plane	Engineer	:Ricky Chen



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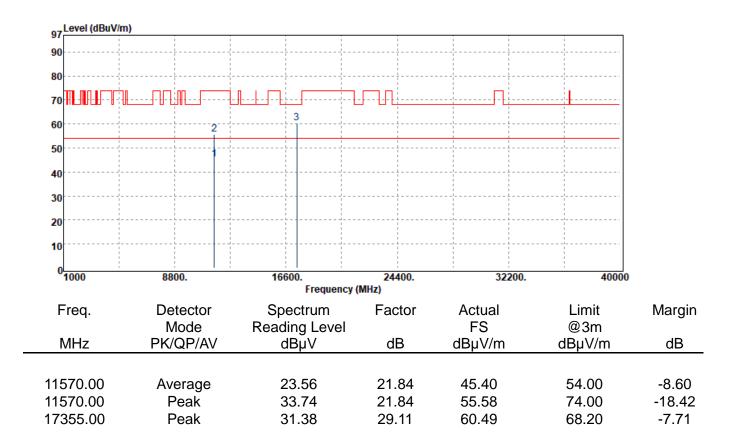
Report Number	:ER-2021-70041	Test Site	:SAC 3
Operation Mode	:802.11a	Test Date	:2021-08-12
Test Frequency	:5785 MHz	Temp./Humi.	:27.4/51
Test Mode	:Tx CH Mid	Antenna Pol.	:VERTICAL
EUT Pol	:NB Plane	Engineer	:Ricky Chen



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Report Number	:ER-2021-70041	Test Site	:SAC 3
Operation Mode	:802.11a	Test Date	:2021-08-12
Test Frequency	:5785 MHz	Temp./Humi.	:27.4/51
Test Mode	:Tx CH Mid	Antenna Pol.	:HORIZONTAL
EUT Pol	:NB Plane	Engineer	:Ricky Chen



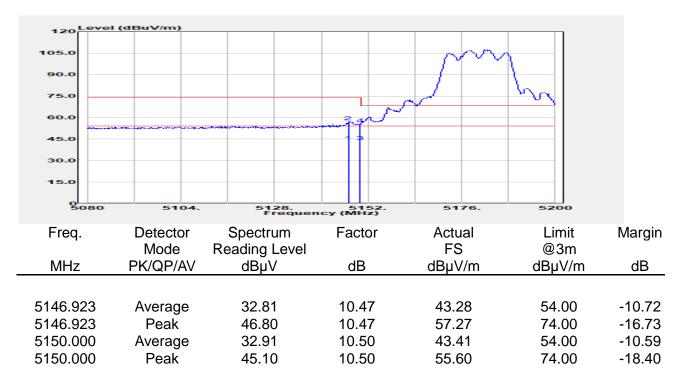
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Report No.: ER/2021/70041 Page: 38 of 91



## 7.8.2 Band edge falling to restricted band

Report Number	:ER/2021/70041	Test Site	:SAC C
Operation Mode	:802.11a / Band 1	Test Date	:2021-08-23
Test Frequency	:5180 MHz	Temp./Humi.	:22.5/58
Test Mode	:BE CH LOW	Antenna Pol.	:Vertical
EUT Pol	:NB Plane	Engineer	:Enzo Chang



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.SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041	Ie	st Site	SAC C	
Operation Mode	:802.11a /	Band 1	Те	est Date	:2021-08-23	
Test Frequency	:5180 MHz	Z	Те	mp./Humi.	:22.5/58	
Test Mode	:BE CH LC	W	Ar	ntenna Pol.	:Horizontal	
EUT Pol	:NB Plane		Er	ngineer	:Enzo Chang	
120 Level (d	BuV/m)					
105.0					~	
90.0				+/ $+$	- <u>\</u>	
75.0				and -	ma	
60.0			man 2 and			
45.0			13			
30.0						
15.0						
5080	5104.	5128. Frequen	5152. cy (MHz)	5176.	5200	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
		30µ V	42	dDpt/m	30,00,00	40
5147.885	Average	33.69	10.48	44.17	54.00	-9.83
5147.885	Peak	49.25	10.48	59.73	74.00	-14.27
5150.000	Average	32.91	10.50	43.41	54.00	-10.59
5150.000	Peak	47.64	10.50	58.14	74.00	-15.86

Tast Sita

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Report Number	:ER/2021/	/70041		Test Site	:SAC C	
Operation Mode	:802.11a/	Band 2		Test Date	:2021-08-23	
Test Frequency	:5320 MH	Z		Temp./Humi.	:22.5/58	
Test Mode	:BE CH H	IGH		Antenna Pol.	:Vertical	
EUT Pol	:NB Plane	)		Engineer	:Enzo Chang	
120 Level (di	BuV/m)					
90.0	$\gamma$					
75.0	h					
60.0		mangin	water and same			
45.0						
30.0						
15.0						
0 5310	5334.	5358. Frequen	5382. cy (MHz)	5406.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz F	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
				10.00	- /	
	Average Peak	32.36 44.95	11.54 11.54	43.90 56.49	54.00 74.00	-10.10 -17.51
5350.000 5355.385	Average	44.95 32.11	11.54	43.70	74.00 54.00	-17.51
5355.385	Peak	46.47	11.59	58.06	74.00	-15.94

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.SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041		lest Site	SAC C	
Operation Mode	:802.11a/	Band 2		Test Date	:2021-08-23	
Test Frequency	:5320 MH	Z		Temp./Humi.	:22.5/58	
Test Mode	:BE CH H	IGH		Antenna Pol.	:Horizontal	
EUT Pol	:NB Plane	•		Engineer	:Enzo Chang	
120 Level (d	BuV/m)					
105.0	$\gamma$					
90.0						
75.0	have					
60.0				man and a state	and the state of t	
45.0		13				
30.0						
15.0						
0 5310	5334.	5358. Frequen	5382. cy (MHz)	5406.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz F	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	32.68	11.54	44.22	54.00	-9.78
5350.000	Peak	44.90	11.54	56.43	74.00	-17.57
5353.077	Average Peak	32.59	11.57	44.16	54.00	-9.84
5353.077	reak	47.07	11.57	58.64	74.00	-15.36

Tast Sita

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/7 :802.11a / I :5500 MHz :BE CH LO :NB Plane	Band 3		Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-23 :22.5/58 :Vertical :Enzo Chang	
120 Level (d 105.0 90.0 75.0 60.0 45.0 30.0 15.0	BuV/m)					
9 5390	5414.	5438. Frequer	5462. icy (MHZ)	5486.	5510	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz F	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5448.461 5448.461 5460.000 5460.000 5469.615 5470.000	Average Peak Average Peak Peak	32.27 46.40 33.02 45.21 47.87	12.15 12.15 11.66 11.66 11.73	44.42 58.56 44.68 56.87 59.60	54.00 74.00 54.00 74.00 68.20	-9.58 -15.44 -9.32 -17.13 -8.60



Report Number Operation Mode Test Frequency Test Mode	:ER/2021/ :802.11a / :5500 MH :BE CH L0	Band 3 z		Test Site Test Date Temp./Humi. Antenna Pol.	:SAC C :2021-08-23 :22.5/58 :Horizontal	
EUT Pol	:NB Plane	,		Engineer	:Enzo Chang	
120 Level (d	BuV/m)					
105.0					m	
90.0						
75.0				and		
60.0		and an adaption to a start of the	an affer a	were		
45.0			18			
30.0						
15.0						
5390	5414.	5438. Frequen	5462. cy (MHz)	5486.	5510	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
		dDµv	<u>ub</u>	ασμνιπ	αθμν/m	<u>ub</u>
5458.846	Average	32.26	11.72	43.98	54.00	-10.02
5458.846	Peak	46.72	11.72	58.45	74.00	-15.55
5460.000	Average	32.36	11.66	44.02	54.00	-9.98
5460.000	Peak	45.12	11.66	56.79	74.00	-17.21
5469.615 5470.000	Peak Peak	48.72 47.13	11.73 11.73	60.44 58.86	68.20 68.20	-7.76 -9.34
0110.000	. oun			00.00	00.20	0.01

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SAC C



·ED/2021/700/1

Report Number

Report Number	:ER/2021/70	JU4 I	10	est Sile	.SAC C	
Operation Mode	:802.11a / B	and 3	Т	est Date	:2021-08-23	
Test Frequency	:5700 MHz		Т	emp./Humi.	:22.5/58	
Test Mode	:BE CH HIG	θH	А	ntenna Pol.	:Vertical	
EUT Pol	:NB Plane		E	ngineer	:Enzo Chang	
120 Level (d	lBuV/m)					
105.0	$\sim$					
90.0	+ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$ $+$			_		
75.0	- Vm					
60.0		Manna and	A	a martine and	- Maria Maria Maria	
45.0						
30.0						
15.0						
5690	5714.	5738. Frequen	5762. cy (MHz)	5786.	5810	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
		Reading Level	dD	FS dBu\//m	@3m	٩D
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.000	Peak	49.84	10.62	60.46	68.20	-7.74

Tost Sito

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SAC C



·ED/2021/700/1

Report Number

	Report Number	:ER/2021/7	0041	1	est Site	SACC	
(	Operation Mode	:802.11a / I	Band 3	Т	est Date	:2021-08-23	
-	Test Frequency	:5700 MHz		Т	emp./Humi.	:22.5/58	
-	Test Mode	:BE CH HIG	GH	A	ntenna Pol.	:Horizontal	
I	EUT Pol	:NB Plane		E	Ingineer	:Enzo Chang	
					•	-	
	120 Level (d	BuV/m)					
	105.0						
	90.0	$\left  \left\{ - \right\} \right $					
	75.0	linger					
	60.0		France and and				
	45.0						
	30.0						
	15.0						
	0 5690	5714.	5738. Frequen	5762. cy (MHz)	5786.	5810	
	Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
			Reading Level	dD	FS	@3m	٩D
-	MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
	5725.000	Peak	46.72	10.62	57.35	68.20	-10.85

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11a / :5720 MH: :BE CH 14 :NB Plane	Band 3-4 z 14		Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-23 :22.5/58 :Vertical :Enzo Chang	
120 Level ( 105.0 90.0 75.0 60.0	dBuV/m)		Λ			
45.0 30.0 15.0 5350	2 456 1 3 5480.	5610. Frequen	5740. cy (MHz)	5870.	6000	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5444.792 5444.792 5460.000 5460.000 5470.000 5480.000 5850.000 5966.667	Average Peak Average Peak Peak Peak Peak Peak	30.06 43.01 30.11 41.70 41.84 40.61 40.36 42.08	12.07 12.07 11.66 11.66 11.73 12.35 11.31 13.01	42.13 55.08 41.77 53.36 53.58 52.95 51.66 55.10	54.00 74.00 54.00 74.00 68.20 68.20 68.20 68.20	-11.87 -18.92 -12.23 -20.64 -14.62 -15.25 -16.54 -13.10

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	e :802.11a/	Band 3-4 z 14	T T A	ēst Site ēst Date ēmp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-23 :22.5/58 :Horizontal :Enzo Chang	
120 Level ( 105.0 90.0 75.0 60.0 45.0 30.0 15.0 5350	64BuV/m)	5610. Frequen	5740.	5870.		
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	-	dB
5443.750 5443.750 5460.000 5460.000 5470.000 5480.000 5850.000 5992.708	Average Peak Average Peak Peak Peak Peak Peak	30.06 43.03 30.09 41.26 40.93 41.20 39.75 42.37	12.05 12.05 11.66 11.66 11.73 12.35 11.31 13.26	42.11 55.08 41.75 52.93 52.67 53.54 51.05 55.63	54.00 74.00 54.00 74.00 68.20 68.20 68.20 68.20 68.20	-11.89 -18.92 -12.25 -21.07 -15.53 -14.66 -17.15 -12.57

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/7 :802.11a / :5745 MHz :BE CH LC :NB Plane	Band 4	•	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-23 :22.5/58 :Vertical :Enzo Chang	
160 Level (d 140.0 120.0 100.0 80.0 60.0 40.0 20.0 95600	BuV/m)			5724	5755	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	-	dB
5650.000 5700.000 5720.000 5725.000	Peak Peak Peak Peak	41.26 42.49 52.89 63.51	10.51 10.41 10.76 10.62	51.77 52.89 63.65 74.13	68.20 105.20 110.80 122.20	-16.43 -52.31 -47.15 -48.07



Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11a / :5745 MHz :BE CH LC :NB Plane	Band 4	-	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-23 :22.5/58 :Horizontal :Enzo Chang	
160 Level (d 140.0 120.0 100.0 80.0 60.0 40.0 20.0 9600	BuV/m)	5662.	5693. cy (MHz)	5724.	5755	
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
5650.000 5700.000 5720.000 5725.000	Peak Peak Peak Peak	40.64 42.08 51.28 61.62	10.51 10.41 10.76 10.62	51.14 52.48 62.05 72.25	68.20 105.20 110.80 122.20	-17.06 -52.72 -48.75 -49.95

.SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041	Ie	est Site	SAC C	
Operation Mode	:802.11a/	:802.11a / Band 4			:2021-08-23	
Test Frequency	:5825 MH	Z	Te	emp./Humi.	:22.5/58	
Test Mode	:BE CH H	IGH	A	ntenna Pol.	:Vertical	
EUT Pol	:NB Plane	•	E	ngineer	:Enzo Chang	
160 Level (d	BuV/m)	1				
120.0						
کم 100.0	m					
80.0	- Lu					
60.0		1			And and an and a second second	
40.0						
20.0						
0 5805	5839.	5873. Frequen	5907. cy (MHz)	5941.	5975	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	n dB
5850.000	Peak	49.08	11.31	60.39	122.20	
5855.000	Peak	44.47	11.61	56.08	110.80	-54.72
5875.000	Peak	41.24	12.08	53.32	105.20	-51.88
5925.000	Peak	40.78	12.98	53.76	68.20	-14.44

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.SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041	IE	est Site	SAC C	
Operation Mode	:802.11a /	Band 4	Te	est Date	:2021-08-23	
Test Frequency	:5825 MHz	2	Te	emp./Humi.	:22.5/58	
Test Mode	:BE CH HI	GH	Ar	ntenna Pol.	:Horizontal	
EUT Pol	:NB Plane		Er	ngineer	:Enzo Chang	
160 Level (d) 140.0 120.0 100.0 80.0 60.0 40.0 20.0	BuV/m)					
05805	5839.	5873. Frequen	5907. cy (MHz)	5941.	5975	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz F	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.000 5855.000 5875.000	Peak Peak Peak	48.21 43.59 41.97	11.31 11.61 12.08	59.51 55.20 54.05	122.20 110.80 105.20	-62.69 -55.60 -51.15
5925.000	Peak	40.85	12.98	53.83	68.20	-14.37

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11n2 :5180 MH: :BE CH LC :NB Plane	0 / Band 1 z DW		Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :22.6/57 :Vertical :Enzo Chang	
120 Level (d 105.0 90.0 75.0 60.0 45.0 30.0 15.0						
5080	5104.	5128. Frequen	5152. cy (MHz)	5176.	5200	
Freq. MHz I	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
5147.885 5147.885 5150.000 5150.000	Average Peak Average Peak	33.36 48.57 34.13 47.50	10.48 10.48 10.50 10.50	43.84 59.05 44.63 58.00	54.00 74.00 54.00 74.00	-10.16 -14.95 -9.37 -16.00

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:ER/2021/70041

**Report Number** 

Report Number	.ER/2021/	70041			.570.0	
Operation Mode	:802.11n2	0 / Band 1	-	Test Date	:2021-08-24	
Test Frequency	:5180 MH	Z	-	Temp./Humi.	:22.6/57	
Test Mode	:BE CH LO	WC		Antenna Pol.	:Horizontal	
EUT Pol	:NB Plane	•	I	Engineer	:Enzo Chang	
120 Level (d	dBuV/m)				<b>]</b>	
105.0				m	m	
90.0					-	
75.0				mont	lun	
60.0			m with and			
45.0			13			
30.0						
15.0						
05080	5104.	5128. Frequen	5152. cy (MHz)	5176.	5200	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5147.308	Average	34.76	10.48	45.24	54.00	-8.76
5147.308	Peak	49.59	10.48	60.07	74.00	-13.93
5150.000	Average	36.14	10.50	46.64	54.00	-7.36
5150.000	Peak	48.71	10.50	59.21	74.00	-14.79

Test Site

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/70 :802.11n20 / :5320 MHz :BE CH HIG :NB Plane	Band 2	- - /	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :22.6/57 :Vertical :Enzo Chang	
120 Level (d 105.0 90.0 75.0 60.0 45.0 30.0 15.0 95310	5334.	5358.		5406.		
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
		Reading Level dBµV	dB	FS dBµV/m	@3m	dB
5350.000 5350.000 5360.577 5360.577	Average Peak Average Peak	32.08 45.95 31.61 46.42	11.54 11.54 11.60 11.60	43.62 57.48 43.21 58.03	54.00 74.00 54.00 74.00	-10.38 -16.52 -10.79 -15.97

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/7 :802.11n20 :5320 MHz :BE CH HIC :NB Plane	/ Band 2	- - /	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :22.6/57 :Horizontal :Enzo Chang	
120 105.0 90.0 75.0 60.0 45.0 30.0 15.0	IBuV/m)					
0 5310	5334.	5358. Frequen	5382. cy (MHz)	5406.	5430	
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
5350.000 5350.000 5353.269 5353.269	Average Peak Average Peak	32.61 45.03 32.33 45.83	11.54 11.54 11.57 11.57	44.15 56.57 43.90 57.40	54.00 74.00 54.00 74.00	-9.85 -17.43 -10.10 -16.60

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11n2 :5500 MH :BE CH L0 :NB Plane	0 / Band 3 z OW		Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :22.6/57 :Vertical :Enzo Chang	
120 Level (d 105.0 90.0 75.0 60.0 45.0 30.0 15.0	BuV/m)					
0 5390	5414.	5438. Frequen	5462. cy (MHz)	5486.	5510	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz F	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5452.115 5452.115 5460.000 5460.000	Average Peak Average Peak	32.73 45.99 33.02 44.52	12.08 12.08 11.66 11.66	44.81 58.07 44.68 56.18	54.00 74.00 54.00 74.00	-9.19 -15.93 -9.32 -17.82
5469.615 5470.000	Peak Peak	46.72 45.99	11.73 11.73	58.45 57.72	68.20 68.20	-9.75 -10.48



Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11n2 :5500 MH :BE CH L0 :NB Plane	0 / Band 3 z OW		Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :22.6/57 :Horizontal :Enzo Chang	
120 Level (d 105.0 90.0 75.0 60.0 45.0 30.0 15.0 95390	1BuV/m)	5438.	5462.	56 486.	5510	
Freq.	Detector Mode	Spectrum	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	Reading Level dBµV	dB	го dBµV/m		dB
5455.000 5455.000 5460.000 5460.000 5467.692	Average Peak Average Peak Peak	32.23 47.39 32.41 44.64 48.77	11.93 11.93 11.66 11.66 11.72	44.16 59.32 44.07 56.31 60.48	54.00 74.00 54.00 74.00 68.20	-9.84 -14.68 -9.93 -17.69 -7.72
5470.000	Peak	48.71	11.73	60.44	68.20	-7.76

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·ED/2021/70044

Poport Number

Report Number	:ER/2021/70041		Test Sile	SAUL	
Operation Mode	:802.11n20 / Band	3	Test Date	:2021-08-24	
Test Frequency	:5700 MHz		Temp./Humi.	:22.6/57	
Test Mode	:BE CH HIGH		Antenna Pol.	:Vertical	
EUT Pol	:NB Plane		Engineer	:Enzo Chang	
			0	Ũ	
120 Level (d	BuV/m)	1 1 1			
105.0					
90.0					
75.0	home				
60.0	- The				
45.0					
30.0					
15.0					
9 5690	5714. 5	738. 5762 Frequency (MHz)	2. 5786.	5810	
Freq.	Detector Spec			Limit	Margin
MHz F	Mode Reading PK/QP/AV dB	•	FS dBu\//m	@3m dBu\//m	dB
	PK/QP/AV dB		dBµV/m	dBµV/m	UD
5725.000	Peak 51.	53 10.62	62.15	68.20	-6.05

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·ED/2021/700/1

Report Number

Report Number	:EK/2021/7004	:ER/2021/70041			SAUL	
Operation Mode	:802.11n20 / Ba	:802.11n20 / Band 3			:2021-08-24	
Test Frequency	:5700 MHz	:5700 MHz			:22.6/57	
Test Mode	:BE CH HIGH	:BE CH HIGH		Antenna Pol.	:Horizontal	
EUT Pol	:NB Plane			Engineer	:Enzo Chang	
					-	
120 Level (d	BuV/m)					
105.0						
90.0	-+  + - +					
75.0	line					
60.0		here any a second sure	Mary and the			
45.0						
30.0						
15.0						
0 5690	5714.	5738. Frequenc	5762. y (MHz)	5786.	5810	
Freq.		pectrum	Factor	Actual	Limit	Margin
		•	dP	-	-	dP
		ubμv	uD	υσμν/π	ασμν/π	uD
5725.000	Peak	49.67	10.62	60.29	68.20	-7.91
MHz F	Mode Rea PK/QP/AV	ding Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB

Tost Sito

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Report No.: ER/2021/70041 Page: 60 of 91

·SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041		lest Site	:SAC C	
Operation Mode	:802.11n2	:802.11n20 / Band 3-4			:2021-08-24	
•	·5720 MH	7	-	Temp /Humi	.22 6/57	
				•		
Test Mode	:BE CH 14	14	I	Antenna Pol.	:Vertical	
EUT Pol	:NB Plane	•	E	Engineer	:Enzo Chang	
120 Level (d	iBuV/m)					
105.0						
90.0						
75.0			$\left( \right)$			
60.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		2 L	and the second		
45.0	13					
30.0						
15.0						
5350	5480.	5610.	5740.	5870.	6000	
		Frequen				·
⊢req.			Factor			Margin
MHz		•	dB	-	-	dB
			40	dept/m	<u>abµ v/m</u>	40
5443 750	Average	30.08	12 05	42 13	54 00	-11.87
	•					-19.53
5460.000		30.09	11.66	41.75	54.00	-12.25
5460.000	Peak	40.80	11.66	52.46	74.00	-21.54
5470.000	Peak	41.76	11.73	53.50	68.20	-14.70
5480.000	Peak	40.66	12.35	53.00	68.20	-15.20
	Peak		11.31 13.41		68.20 68.20	-16.31
5988.542	Peak	41.97		55.39		-12.81
	Operation Mode Test Frequency Test Mode EUT Pol	Operation Mode :802.11n2   Test Frequency :5720 MH   Test Mode :BE CH 14   EUT Pol :NB Plane   Image: State of the state of	Operation Mode :802.11n20 / Band 3-4 Test Frequency :5720 MHz Test Mode :BE CH 144 EUT Pol :NB Plane	Operation Mode :802.11n20 / Band 3-4 Test Frequency :5720 MHz Test Mode :BE CH 144 EUT Pol :NB Plane I $f_{20}$ $f_{20}$ $f_$	Operation Mode:802.11n20 / Band 3-4Test DateTest Frequency:5720 MHzTemp./Humi.Test Mode:BE CH 144Antenna Pol.EUT Pol:NB PlaneEngineerImage: Colspan="2">Image: Colspan="2">EngineerImage: Colspan="2">Image: Colspan="2">Section Colspan="2">Freq.DetectorSpectrum ModeMHzPK/QP/AVS43.750Average30.0812.0542.135443.750Peak42.4212.055460.000Average30.0911.665470.000Peak41.7611.735480.000Peak40.6612.355480.000Peak40.6612.3553.00	Operation Mode:802.11n20 / Band 3-4Test Date:2021-08-24Test Frequency:5720 MHzTemp./Humi.:22.6/57Test Mode:BE CH 144Antenna Pol.:VerticalEUT Pol:NB PlaneEngineer:Enzo ChangImage: Source colspan="2">Image: Source colspan="2">Image: Source colspan="2">Source colspan="2">Antenna Pol.Source colspan="2">Colspan="2">Source colspan="2">Source colspan="2">Source colspan="2">Source colspan="2">Source colspan="2">Source colspan="2">Source colspan="2">Source colspan="2">Source colspan="2"Freq.DetectorSpectrum Mode PK/QP/AVFactor Actual BUVLimit @3m dBUV/mS443.750 AverageSource colspan="2">Source colspan="2"S443.750 AverageAverage 30.0812.05 42.13S443.750 AverageAverage 30.0911.66 41.75S443.750 AverageAverage 30.0930.08 11.66 41.7554.40 54.00 5460.000 5460.000 AverageSource colspan="2"Total colspan="2"Total colspan="2"Freq.DetectorSpectrum BUV/mAverage BUV/mSource cols

Tast Sita

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Report No.: ER/2021/70041 Page: 61 of 91



Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11n2 :5720 MH: :BE CH 14 :NB Plane	0 / Band 3-4 z 14	ר ר ק	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :22.6/57 :Horizontal :Enzo Chang	
120 Level (0 105.0 90.0 75.0 60.0 45.0			Д			
Freq.	Detector Mode PK/QP/AV	Spectrum Reading Level	Factor dB	Actual FS	Limit @3m	Margin dB
5432.292 5432.292 5460.000 5460.000 5470.000 5480.000 5850.000 5955.208	Average Peak Average Peak Peak Peak Peak Peak Peak	dBμV 30.02 42.73 30.10 41.15 41.02 40.55 39.55 42.01	11.61 11.61 11.66 11.66 11.73 12.35 11.31 13.23	dBµV/m 41.63 54.34 41.76 52.81 52.75 52.90 50.86 55.25	dBμV/m 54.00 74.00 54.00 74.00 68.20 68.20 68.20 68.20 68.20	-12.37 -19.66 -12.24 -21.19 -15.45 -15.30 -17.34 -12.95

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11n2 :5745 MH: :BE CH L0 :NB Plane	0 / Band 4 z DW	-	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :22.6/57 :Vertical :Enzo Chang	
160 Level (d 140.0 120.0 100.0 80.0 60.0 40.0 20.0 95600	BuV/m)	5662.	5693. cy (MHz)	5724	5755	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
5650.000 5700.000 5720.000 5725.000	Peak Peak Peak Peak	40.79 42.89 55.47 63.04	10.51 10.41 10.76 10.62	51.30 53.29 66.23 73.66	68.20 105.20 110.80 122.20	-16.90 -51.91 -44.57 -48.54



Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11n20 :5745 MHz :BE CH LO :NB Plane	D / Band 4 z DW		Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :22.6/57 :Horizontal :Enzo Chang	
160 Level (d) 140.0 120.0 100.0 80.0 60.0 40.0 20.0 9600	BuV/m)	5662.		5724.	5755	
		Frequen				
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz F	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5650.000 5700.000 5720.000 5725.000	Peak Peak Peak Peak	41.24 43.20 58.57 61.08	10.51 10.41 10.76 10.62	51.75 53.60 69.33 71.70	68.20 105.20 110.80 122.20	-16.45 -51.60 -41.47 -50.50



Report Number	:ER/2021/	70041	Tes	t Site	:SAC C	
Operation Mode	:802.11n2	0 / Band 4	Tes	t Date	:2021-08-24	
Test Frequency	:5825 MH	Z	Ten	np./Humi.	:22.6/57	
Test Mode	:BE CH H	IGH	Ante	enna Pol.	:Vertical	
EUT Pol	:NB Plane	•	Eng	jineer	:Enzo Chang	]
160 Level (d	BuV/m)					
140.0						
120.0	~~					
100.0						
80.0	have	3				
60.0		San and Summe		<b>4</b>		
40.0						
20.0						
5805	5839.	5873. Frequen		5941.	5975	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limi @3n	0
MHz	PK/QP/AV	dBµV	dB	dBµV/m		
5850.000	Peak	57.02	11.31	68.33	122.2	
5855.000 5875.000	Peak Peak	43.44 40.87	11.61 12.08	55.05 52.95	110.8 105.2	
5925.000	Peak	40.25	12.98	53.24	68.2	

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Report Number	:ER/2021	/70041	Te	est Site	:SAC C	
Operation Mode	:802.11n2	0 / Band 4	Te	est Date	:2021-08-24	
Test Frequency	:5825 MH	Z	Te	emp./Humi.	:22.6/57	
Test Mode	:BE CH H	IGH	A	ntenna Pol.	:Horizontal	
EUT Pol	:NB Plane	)	E	ngineer	:Enzo Chang	
160 Level (	dBuV/m)	_				
140.0						
120.0						
100.0						
80.0	have	7				
60.0		Jamman Burne		a farmana		
40.0						
20.0						
5805	5839.	5873. Frequen	5907. cy (MHz)	5941	5975	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	n dB
	<b>.</b> .	50.04		07.00	100.00	- 4 0 0
5850.000 5855.000	Peak Peak	56.61 43.27	11.31 11.61	67.92 54.88	122.20 110.80	
5875.000	Peak	43.27 40.74	12.08	54.60 52.82	105.20	
5925.000	Peak	40.98	12.98	53.96	68.20	-14.24

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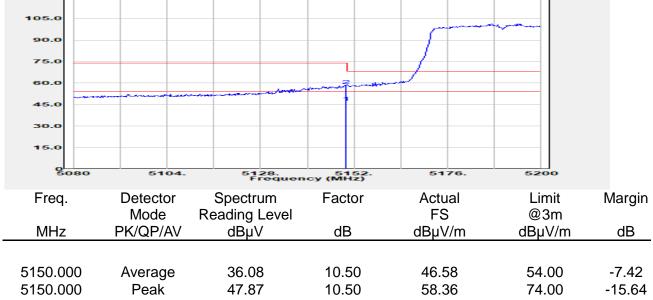


Report Number	:ER/2021/70041	Test Site	:SAC C
Operation Mode	:802.11n40 / Band 1	Test Date	:2021-08-24
Test Frequency	:5190 MHz	Temp./Humi.	:24.1/55
Test Mode	:BE CH LOW	Antenna Pol.	:Vertical
EUT Pol	:NB Plane	Engineer	:Ashton Chiu
120 Level (d	BuV/m)		
105.0			
90.0			
75.0		/	
60.0		man	
45.0			
30.0			
15.0			

	5080	5104.	5128. Frequen	5152. cy (MHz)	5176.	5200	
	Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
_	MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
-							
	5149.231	Average	34.00	10.49	44.49	54.00	-9.51
	5149.231	Peak	45.64	10.49	56.14	74.00	-17.86
	5150.000	Average	34.16	10.50	44.66	54.00	-9.34
	5150.000	Peak	44.65	10.50	55.14	74.00	-18.86



Report Number	:ER/2021/70041		Test Site		:SAC C	
Operation Mode	:802.11n40 / Band 1		Test Date		:2021-08-24	
Test Frequency	:5190 MHz		Temp./Hur	mi.	:24.1/55	
Test Mode	:BE CH LOW		Antenna P	ol.	:Horizontal	
EUT Pol	:NB Plane		Engineer		:Ashton Chiu	
120 Level (d	BuV/m)			-		



.SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041		lest Site	SAC C	
Operation Mode	:802.11n4	0 / Band 2		Test Date	:2021-08-24	
Test Frequency	:5310 MH	Z		Temp./Humi.	:24.1/55	
Test Mode	:BE CH H	IGH		Antenna Pol.	:Vertical	
EUT Pol	:NB Plane	)		Engineer	:Ashton Chiu	
120 Level (d	IBuV/m)					
90.0	Lunun					
75.0	- · ·	\				
60.0		hamman 24				
45.0						
30.0						
15.0						
0 5300	5324.	5348. Frequen	5372. cy (MHz)	5396.	5420	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	31.79	11.54	43.33	54.00	-10.67
5350.000	Peak	43.48	11.54	55.02	74.00	-18.98
5352.692	Average	32.16	11.56	43.72	54.00	-10.28
5352.692	Peak	44.68	11.56	56.24	74.00	-17.76
5352.692	•	44.68	11.56	56.24	74.00	-1

Tast Sita

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SAC C



·ED/2021/700/1

Report Number

Report Number	:ER/2021/70	041	I	est Sile	SAC C	
Operation Mode	:802.11n40 /	Band 2	Т	est Date	:2021-08-24	
Test Frequency	:5310 MHz		Т	emp./Humi.	:24.1/55	
Test Mode	:BE CH HIG	Н	A	Antenna Pol.	:Horizontal	
EUT Pol	:NB Plane		E	Engineer	:Ashton Chiu	
120 Level (d	IBuV/m)					
105.0						
90.0						
75.0						
60.0		anna ingrande	· · · · · · · · · · · · · · · · · · ·		And the second second	
45.0						
30.0						
15.0						
5300	5324.	5348. Frequen	5372. cy (MHz)	5396.	5420	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode R PK/QP/AV	leading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
		ασμν	UD	υυμν/Π	αυμνητι	
5350.000	Average	33.20	11.54	44.74	54.00	-9.26
5350.000	Peak	44.34	11.54	55.88	74.00	-18.12

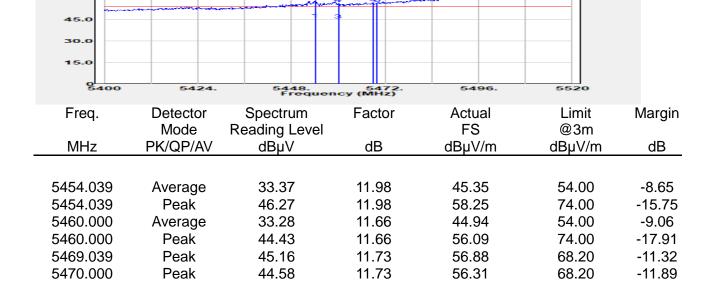
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75.0 60.0

Report Number	:ER/2021/70041	Test Site	:SAC C
Operation Mode	:802.11n40 / Band 3	Test Date	:2021-08-24
Test Frequency	:5510 MHz	Temp./Humi.	:24.1/55
Test Mode	:BE CH LOW	Antenna Pol.	:Vertical
EUT Pol	:NB Plane	Engineer	:Ashton Chiu
120 Level (d	BuV/m)		
105.0			
90.0			



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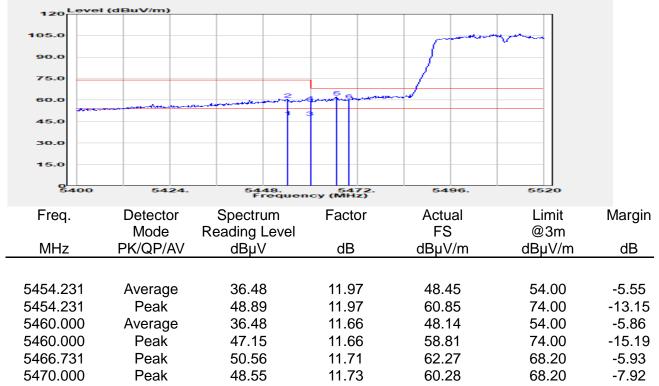
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Report Number	:ER/2021/70041	Test Site	:SAC C
Operation Mode	:802.11n40 / Band 3	Test Date	:2021-08-24
Test Frequency	:5510 MHz	Temp./Humi.	:24.1/55
Test Mode	:BE CH LOW	Antenna Pol.	:Horizontal
EUT Pol	:NB Plane	Engineer	:Ashton Chiu



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SAC C



·ED/2021/700/1

Report Number

Report Number	:ER/2021/70041			Test Sile	SAC C	
Operation Mode	:802.11n40 / I	Band 3		Test Date	:2021-08-24	
Test Frequency	:5670 MHz			Temp./Humi.	:24.1/55	
Test Mode	:BE CH HIGH	l		Antenna Pol.	:Vertical	
EUT Pol	:NB Plane			Engineer	:Ashton Chiu	
				C		
120 Level (d	BuV/m)					
105.0						
90.0						
75.0						
60.0		and the second	mynaster	mar had an a		
45.0					the second plane	
30.0						
15.0						
0 5660	5684.	5708. Frequen	5732. cy (MHz)	5756	5780	
Freq.		Spectrum	Factor	Actual	Limit	Margin
		ading Level	d٦	FS	@3m	٩D
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5725.000	Peak	47.33	10.62	57.95	68.20	-10.25

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SAC C



·ED/2021/700/1

Report Number

Report Number	:ER/2021/7004	-1		Test Sile	SAUC	
Operation Mode	:802.11n40 / B	and 3		Test Date	:2021-08-24	
Test Frequency	:5670 MHz			Temp./Humi.	:24.1/55	
Test Mode	:BE CH HIGH			Antenna Pol.	:Horizontal	
EUT Pol	:NB Plane			Engineer	:Ashton Chiu	
120 Level (d	BuV/m)					
105.0	manna					
90.0	$\left  \right\rangle$					
75.0	- ha	many many many many many many many many				
60.0			me man	manne	und designed and and and and and and and and and an	
45.0						
30.0						
15.0						
0 5660	5684.	5708. Frequenc	5732. y (MHz)	5756.	5780	
Freq.		pectrum	Factor	Actual	Limit	Margin
		ading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5305 000	Deels	<b>F</b> 4 40	40.00	<u> </u>	<u> </u>	0.40
5725.000	Peak	51.40	10.62	62.02	68.20	-6.18
5725.385	Peak	52.34	10.61	62.95	68.20	-5.25

Tost Sito

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Report Number Operation Mode Test Frequency Test Mode	:5710 MH :BE CH 14	0 / Band 3-4 z 42		Test Site Test Date Temp./Humi. Antenna Pol.	:SAC C :2021-08-24 :24.1/55 :Vertical	
EUT Pol	:NB Plane	)		Engineer	:Ashton Chiu	
120 Level (	dBuV/m)					
105.0			$\sim$			
90.0			1 1			
75.0			la have	u		
45.0				Mar Bar	A	
30.0	38					
15.0						
5350	5480.	5610. Frequer	5740. ICY (MHZ)	5870.	6000	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5458.333	Average	28.59	11.75	40.34	54.00	-13.66
5458.333 5460.000	Peak Average	40.34 28.90	11.75 11.66	52.09 40.56	74.00 54.00	-21.91 -13.44
5460.000	Peak	39.33	11.66	51.00	74.00	-23.00
5466.667	Peak	39.98	11.71	51.69	68.20	-16.51
5470.000	Peak	38.92	11.73	50.65	68.20	-17.55
5480.000	Peak	39.29	12.35	51.63	68.20	-16.57
5850.000 5982.292	Peak Peak	38.24 39.12	11.31 13.24	49.54 52.36	68.20 68.20	-18.66 -15.84

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Report No.: ER/2021/70041 Page: 75 of 91



Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11n4 :5710 MH :BE CH 14 :NB Plane	0 / Band 3-4 z 42	•	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :24.1/55 :Horizontal :Ashton Chiu	
	.ND I lane	-		Lingineer	.Ashton Chiu	
120 Level (	dBuV/m)					
90.0			$\square$			
75.0				<u></u>		
45.0				man and a second	- service - service -	
30.0						
15.0						
9 5350	5480.	5610. Frequen	5740. icy (MHz)	5870.	6000	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5432.292	Average	28.63	11.61	40.24	54.00	-13.76
5432.292	Peak	40.67	11.61	52.28	74.00	-21.72
5460.000	Average	28.96	11.66	40.62	54.00	-13.38
5460.000 5461.458	Peak Peak	38.66 39.41	11.66 11.67	50.33 51.09	74.00 68.20	-23.67 -17.11
5470.000	Peak	38.73	11.73	50.47	68.20	-17.11
5480.000	Peak	39.21	12.35	51.55	68.20	-16.65
5850.000	Peak	37.26	11.31	48.57	68.20	-19.63
5980.208	Peak	38.19	13.18	51.37	68.20	-16.83

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/7 :802.11n40 :5755 MHz :BE CH LC :NB Plane	) / Band 4	T T A	est Site est Date emp./Humi. ntenna Pol. ingineer	:SAC C :2021-08-24 :24.1/55 :Vertical :Ashton Chiu	
160 Level (d 140.0 120.0 100.0 80.0 60.0 40.0 20.0 5600	BuV/m)	5666. Frequen	5699. cy (MHz)	5732.	5765	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
<u> </u>	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5646.539 5650.000 5700.000 5720.000 5725.000	Peak Peak Peak Peak Peak	43.55 43.02 55.34 60.13 61.35	10.56 10.51 10.41 10.76 10.62	54.12 53.53 65.74 70.89 71.97	68.20 68.20 105.20 110.80 122.20	-14.08 -14.67 -39.46 -39.91 -50.23

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/7 :802.11n40 :5755 MHz :BE CH LO :NB Plane	) / Band 4	T T A	est Site est Date emp./Humi. ntenna Pol. ingineer	:SAC C :2021-08-24 :24.1/55 :Horizontal :Ashton Chiu	
160 Level (d) 140.0 120.0 100.0 80.0 60.0 40.0 20.0 5600	BuV/m)	See6. Frequen		5732.	5765	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5646.539 5650.000 5700.000 5720.000 5725.000	Peak Peak Peak Peak Peak	44.29 43.40 55.97 60.98 62.33	10.56 10.51 10.41 10.76 10.62	54.85 53.91 66.37 71.74 72.95	68.20 68.20 105.20 110.80 122.20	-13.35 -14.29 -38.83 -39.06 -49.25

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.SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041	IE	est Site	SAC C	
Operation Mode	:802.11n4	0 / Band 4	Те	est Date	:2021-08-24	
Test Frequency	:5795 MHz	Z	Те	mp./Humi.	:24.1/55	
Test Mode	:BE CH HI	IGH	Ar	ntenna Pol.	:Vertical	
EUT Pol	:NB Plane		Er	ngineer	:Ashton Chiu	
160 Level (d	BuV/m)		1			
140.0						
120.0		$-\downarrow$				
100.0						
80.0						
60.0		monoral Proposed and		4 5		
40.0						
20.0						
0 5785	5823.	5861. Frequen	5899.	5937.	5975	
Ene e	Detector	-		Astual	l insit	Manain
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz I	PK/QP/AV	dBµV	dB	dBµV/m	-	dB
		•		<b>I</b>		
5850.000	Peak	53.31	11.31	64.62	122.20	-57.58
5855.000	Peak	51.68	11.61	63.28	110.80	-47.52
5875.000	Peak	46.28	12.08	58.36	105.20	-46.84
5925.000	Peak	38.37	12.98	51.35	68.20	-16.85
5938.157	Peak	39.28	12.79	52.08	68.20	-16.12

Tast Sita

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SAC C



·ED/2021/700/1

Report Number

Report Number	:ER/2021/	70041	I	est Site	SAC C	
Operation Mode	:802.11n40	0 / Band 4	Т	est Date	:2021-08-24	
Test Frequency	:5795 MHz	<u>Z</u>	Т	emp./Humi.	:24.1/55	
Test Mode	:BE CH HI	GH	A	ntenna Pol.	:Horizontal	
EUT Pol	:NB Plane		E	Ingineer	:Ashton Chiu	
160 Level (d	BuV/m)		1			
140.0						
120.0		$-\downarrow$ $\downarrow$ $\downarrow$ $$				
100.0	~~~					
80.0						
60.0		Month in the marker and the	and a start and a start and a start and a start	4.5		
40.0						
20.0						
0 5785	5823.	5861. Frequen	5899. cy (MHz)	5937.	5975	
From	Detector			Actual	Limit	Morain
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	@3m	Margin
MHz F	PK/QP/AV	dBµV	dB	dBµV/m		dB
5850.000	Peak	54.84	11.31	66.15	122.20	-56.05
5855.000	Peak	53.13	11.61	64.74	110.80	-46.06
5875.000	Peak	47.86	12.08	59.94	105.20	-45.26
5925.000	Peak	39.30	12.98	52.28	68.20	-15.92
5930.849	Peak	40.55	13.14	53.69	68.20	-14.51

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Report Number	:ER/2021/70041	Test Site	:SAC C
Operation Mode	:802.11ac80 / Band 1	Test Date	:2021-08-24
Test Frequency	:5210 MHz	Temp./Humi.	:25.7/50
Test Mode	:BE CH LOW	Antenna Pol.	:Vertical
EUT Pol	:NB Plane	Engineer	:Ashton Chiu
120 Level (d	BuV/m)		
105.0			
90.0			
75.0			
60.0			
45.0			
30.0			
15.0			

5120	5140.		5180. ncy (MHz)	5200.	5220	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.000	Average	32.34	10.50	42.84	54.00	-11.16
5150.000	Peak	42.91	10.50	53.41	74.00	-20.59
	MHz 5150.000	Freq. Detector Mode MHz PK/QP/AV 5150.000 Average	Freque Freq. Detector Spectrum Mode Reading Level MHz PK/QP/AV dBµV 5150.000 Average 32.34	Frequency (MHz) Freq. Detector Spectrum Factor Mode Reading Level MHz PK/QP/AV dBµV dB 5150.000 Average 32.34 10.50	Frequency (MHz)Freq.DetectorSpectrumFactorActualModeReading LevelFSMHzPK/QP/AVdBµVdBdBµV/m5150.000Average32.3410.5042.84	Frequency (MHz)Freq.DetectorSpectrumFactorActualLimitModeReading LevelFS@3mMHzPK/QP/AVdBµVdBdBµV/m5150.000Average32.3410.5042.8454.00



Report Number	:ER/2021/70041	Test Site	:SAC C
Operation Mode	:802.11ac80 / Band 1	Test Date	:2021-08-24
Test Frequency	:5210 MHz	Temp./Humi.	:25.7/50
Test Mode	:BE CH LOW	Antenna Pol.	:Horizontal
EUT Pol	:NB Plane	Engineer	:Ashton Chiu
120 Level (d	BuV/m)		
105.0			
90.0			
75.0			
60.0	3		
45.0	3		
30.0			
15.0			
5120	5140. 5160. Frequence	5180. 5200 cy (MHz)	5220

		Frequen	cy (MHz)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5142.756	Average	31.39	10.44	41.83	54.00	-12.17
5142.756	Peak	43.19	10.44	53.63	74.00	-20.37
5150.000	Average	32.13	10.50	42.63	54.00	-11.37
5150.000	Peak	42.06	10.50	52.55	74.00	-21.45



Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/70041 :802.11ac80 / Ba :5290 MHz :BE CH HIGH :NB Plane	and 2	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :25.7/50 :Vertical :Ashton Chiu	
120 Level (d 105.0 90.0 75.0 60.0 45.0 30.0 15.0	5300.	5320, 5340 Frequency (MH2)	5360		
Freq.	Detector Spe	ectrum Factor	Actual	Limit	Margin
	Mode Readi	ling Level IBµV dB	FS dBµV/m	@3m dBµV/m	dB
5350.000 5350.000 5363.494 5363.494	Peak 4 Average 3	81.3311.5411.7311.5411.3111.4213.7411.42	42.87 53.26 42.73 55.16	54.00 74.00 54.00 74.00	-11.13 -20.74 -11.27 -18.84

·SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041		lest Site	SAC C	
Operation Mode	:802.11ac8	30 / Band 2		Test Date	:2021-08-24	
Test Frequency	:5290 MHz	2		Temp./Humi.	:25.7/50	
Test Mode	:BE CH HI	GH		Antenna Pol.	:Horizontal	
EUT Pol	:NB Plane			Engineer	:Ashton Chiu	
120	BuV/m)					
105.0						
90.0		many				
75.0		`				
60.0			No.			
45.0				B	and the second s	
30.0						
15.0						
•						
5280	5300.	5320. Frequen	5340 cy (MHz)	. 5360.	5380	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.000	Average	32.56	11.54	44.10	54.00	-9.90
5350.000	Peak	42.29	11.54	53.82	74.00	-20.18
5350.833	Average	33.35	11.54	44.89	54.00	-9.11
5350.833	Peak	43.68	11.54	55.23	74.00	-18.77

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:SAC C

:25.1/57 :Vertical

:2021-08-24

:Enzo Chang



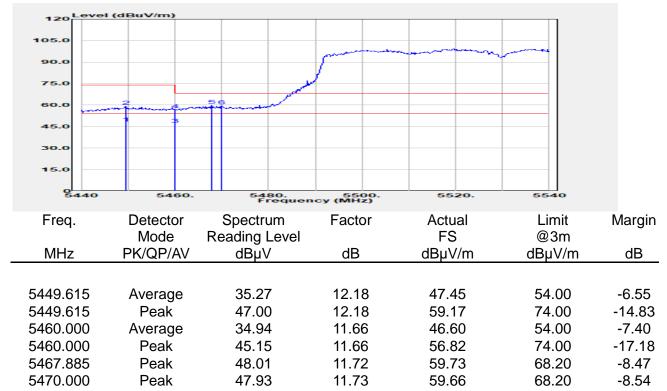
Report Number	:ER/2021/70041	Test Site
Operation Mode	:802.11ac80 / Band 3	Test Date
Test Frequency	:5530 MHz	Temp./Humi.
Test Mode	:BE CH LOW	Antenna Pol.
EUT Pol	:NB Plane	Engineer

120 Level	(dBuV/m)					
105.0						
90.0						
75.0						
60.0	mumming	man and a second				
45.0						
30.0						
15.0						
0 5440	5460.	5480. Frequer	5500. icy (MHz)	5520.	5540	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5459.551	Average	36.21	11.69	47.90	54.00	-6.10
5459.551	Peak	48.17	11.69	59.86	74.00	-14.14
5460.000	Average	36.38	11.66	48.04	54.00	-5.96
5460.000	Peak	46.29	11.66	57.96	74.00	-16.04
5469.327	Peak	47.84	11.73	59.57	68.20	-8.63
5470.000	Peak	46.47	11.73	58.20	68.20	-10.00

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Report Number	:ER/2021/70041	Test Site	:SAC C
Operation Mode	:802.11ac80 / Band 3	Test Date	:2021-08-24
Test Frequency	:5530 MHz	Temp./Humi.	:25.1/57
Test Mode	:BE CH LOW	Antenna Pol.	:Horizontal
EUT Pol	:NB Plane	Engineer	:Enzo Chang



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SAC C



·ED/2021/700/1

Report Number

Report Number	:ER/2021/	70041	10	est Site	SAC C	
Operation Mode	:802.11ac	80 / Band 3	Т	est Date	:2021-08-24	
Test Frequency	:5690 MH	7	т	emp./Humi.	:25.1/57	
				-		
Test Mode	:BE CH H	IGH	A	ntenna Pol.	:Vertical	
EUT Pol	:NB Plane	:	E	ngineer	:Enzo Chang	
120 Level (	dBuV/m)					
105.0						
			m			
90.0						
75.0		www	m	~ -		
60.0	2456	~~~		Wight		
45.0	13					
30.0						
15.0						
0 5350						
	5480.	5610. Frequen	5740. cy (MHz)	5870.		
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
N 41 1	Mode	Reading Level	10	FS	@3m	10
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5450.000	Average	32.10	12.19	44.29	54.00	-9.71
5450.000	Peak	43.74	12.19	55.92	74.00	-18.08
5460.000	Average	31.79	11.66	43.45	54.00	-10.55
5460.000	Peak	42.67	11.66	54.34	74.00	-19.66
5470.000 5480.000	Peak Peak	42.91 43.13	11.73 12.35	54.64 55.47	68.20 68.20	-13.56 -12.73
5850.000	Peak	43.13	12.35	54.52	68.20	-12.73
5853.125	Peak	44.97	11.50	56.47	68.20	-11.73
0000.120	i oun	11.07	11.00	00.17	00.20	

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11ac :5690 MH :BE CH H :NB Plane	80 / Band 3 z IGH		Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :25.1/57 :Horizontal :Enzo Chang	
120 Level (0 105.0 90.0 75.0 60.0 45.0 30.0 15.0 0 5350	dBu√/m) 2455, /* 18 18 5480.	5610. Frequen	5740. (MHz)	5870.	6000	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m		dB
5451.042 5451.042 5460.000 5460.000 5470.000 5480.000 5850.000 5851.042	Average Peak Average Peak Peak Peak Peak Peak	32.01 42.75 32.41 42.70 42.11 42.82 45.00 45.95	12.13 12.13 11.66 11.66 11.73 12.35 11.31 11.37	44.14 54.88 44.07 54.37 53.85 55.16 56.31 57.32	54.00 74.00 54.00 74.00 68.20 68.20 68.20 68.20	-9.86 -19.12 -9.93 -19.63 -14.35 -13.04 -11.89 -10.88

.SAC C



·ED/2021/70044

Poport Number

Report Number	:ER/2021/	70041		Test Site	:SAC C	
Operation Mode	:802.11ac8	80 / Band 4		Test Date	:2021-08-24	
Test Frequency	:5775 MHz	<u>Z</u>		Temp./Humi.	:25.1/57	
Test Mode	:BE CH LO	W		Antenna Pol.	:Vertical	
EUT Pol	:NB Plane			Engineer	:Enzo Chang	
160 Level (d	BuV/m)	- I - I				
140.0						
120.0						
100.0				m	m	
80.0		mar	norm	3-7-V		
60.0			- <b>u</b>			
40.0						
20.0						
5600	5637.	5674. Frequen	5711. cy (MHz)	5748.	5785	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
		dDpv	<u>ub</u>	dDpV/m	dbµv/m	<u>ub</u>
5636.763	Peak	54.07	10.75	64.82	68.20	-3.38
5650.000	Peak	53.54	10.51	64.05	68.20	-4.15
5700.000	Peak	58.89	10.41	69.30	105.20	-35.90
5720.000	Peak	63.32	10.76	74.08	110.80	-36.72
5725.000	Peak	65.80	10.62	76.43	122.20	-45.77

Tast Sita

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Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/ :802.11ac :5775 MH :BE CH L0 :NB Plane	80 / Band 4 z OW		Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :25.1/57 :Horizontal :Enzo Chang	
160 Level (d 140.0 120.0 100.0 80.0 60.0 40.0 20.0 5600	BuV/m)	5674	5711. Cy (MHz)	5748.	5785	
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBµV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
5643.285 5650.000 5700.000 5720.000 5725.000	Peak Peak Peak Peak Peak	54.90 54.86 62.85 62.77 66.20	10.61 10.51 10.41 10.76 10.62	65.52 65.37 73.25 73.53 76.82	68.20 68.20 105.20 110.80 122.20	-2.68 -2.83 -31.95 -37.27 -45.38



Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/70041 :802.11ac80 / Band 4 :5775 MHz :BE CH HIGH :NB Plane	Test Site Test Date Temp./Humi. Antenna Pol. Engineer	:SAC C :2021-08-24 :25.1/57 :Vertical :Enzo Chang	
160 Level (d 140.0 120.0 100.0 80.0 60.0 40.0 20.0 5775	5815. 5855. Freque	5895. 5935	. 5975	
Freq.	Detector Spectrum Mode Reading Level	Factor Actual FS	Limit @3m	Margin
MHz	PK/QP/AV dBµV	dB dBµV/n	-	dB
5850.000 5855.000 5875.000 5925.000 5930.769	Peak59.86Peak53.77Peak51.98Peak48.13Peak48.17	11.3171.1711.6165.3812.0864.0612.9861.1113.1561.31	122.20 110.80 105.20 68.20 68.20	-51.03 -45.42 -41.14 -7.09 -6.89



Report Number Operation Mode Test Frequency Test Mode EUT Pol	:ER/2021/7 :802.11ac8 :5775 MHz :BE CH HI :NB Plane	30 / Band 4	Ti Ti A	est Site est Date emp./Humi. ntenna Pol. ingineer	:SAC C :2021-08-24 :25.1/57 :Horizontal :Enzo Chang	
160 Level (d 140.0 120.0 100.0 80.0 60.0 40.0 20.0 5775	5815.	5855. Frequen	5895. cy (MHz)	5935.	5975	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.000 5855.000 5875.000 5925.000 5930.769	Peak Peak Peak Peak Peak	60.90 60.44 58.68 49.80 51.03	11.31 11.61 12.08 12.98 13.15	72.20 72.05 70.76 62.78 64.18	122.20 110.80 105.20 68.20 68.20	-50.00 -38.75 -34.44 -5.42 -4.02

~ End of Report ~

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