

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

Applicant:	Askey Computer Corporation 10F, No 119, JianKang Rd., Zhonghe Dist., New Taipei City, Taiwan 23585
Product Name:	Cat 12 Indoor CPE
Brand Name:	Verizon
Model No.:	ASK-RTL108
Model Difference:	N/A
Report Number:	E2/2019/B0014
FCC ID:	H8N-ASK-RTL108
FCC Rule Part:	§15.407, Cat: NII
Issue Date:	Mar. 04, 2020
Date of Test:	Nov. 26, 2019 ~ Mar. 04, 2020
Date of EUT Re- ceived:	Nov. 26, 2019
We hereby certify tha	it:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory 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.

Chun Chieh Chen / Supervisor



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Revision History					
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E2/2019/B0014	Rev.00	Original.	Mar. 04, 2020	Revised By: Yuri Tsai	

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#### **GENERAL INFORMATION** 1

### **1.1 Product Description**

Product Name:	Cat 12 Indoor	CPE			
Brand Name:	Verizon				
Model No.:	ASK-RTL108				
Model Difference:	N/A				
Hardware Version:	REV 3.0				
Software Version:	N/A				
	12Vdc from A	12Vdc from AC/DC Adapter			
Power Supply:	Adapter:1. Model No.:PS24L120K2000UD, Supplier: FLYPOWER 2. Model No.:WB-24J12FU, Supplier: Asian Power Devices Inc.				
Modulation type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 802.11ac only				
Antenna Designation	PIFA Antenna 5150~5250MHz Gain: 3.26dBi (ANT1) / 3.54dBi (ANT2) 5725~5850MHz Gain: 3.04dBi (ANT1) / 2.61dBi (ANT2)				
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 144.4Mbps 802.11 n_40MHz: 13.5 – 300.0Mbps 802.11 ac_20MHz: 6.5 –173.3Mbps 802.11 ac_40MHz: 13.5 –400.0Mbps 802.11 ac_80MHz: 29.3 – 866.7Mbps				

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### 1.2 FCC worst power

Wi-Fi 802.11	Frequency Range	Channels	Rated Power (Avg.) (dBm) (Worst case)	Modulation Technology	
	5150~5250	4	22.09	OFDM	
а	5725-5850	5	20.91	OFDIVI	
n_HT ac_VHT	5150~5250	4	HT:21.83	OFDM	
20M	5725-5850	5	HT: 20.97	OFDIM	
n_HT ac_VHT	5150~5250	2	HT: 22.01	OFDM	
40M	5725-5850	2	HT:21.35		
ac_VHT	5150~5250	1	VHT: 16.96	OFDM	
80M	5725-5850	1	VHT:20.11		

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## 1.3 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

### 1.4 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory (TAF code 0513) No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333

FCC Designation number: TW0002

### 1.5 Special Accessories

There are no special accessories used while test was conducted.

### **1.6 Equipment Modifications**

There was no modification incorporated into the EUT.

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#### SYSTEM TEST CONFIGURATION 2

### 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 Emissions

The EUT is a placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50uH/50 ohm of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

## 2.3.2 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.

### 2.3.3 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

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.

### Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

### 2.5 Configuration of Tested System

## Fig. 2-1 Radiated Emission configuration & Conduction (AC Power Line)



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



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
2.	Notebook	Lenovo	T460p	P0001013	Shielded	Unshielded

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#### SUMMARY OF TEST RESULT 3

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.403(i) §15.407(e)	26 dB & 6dB Emission Bandwidth	Compliant
§15.407(a)	Maximum Conducted Output Power	Compliant
§15.407(a)	Power Spectral Density	Compliant
§15.205 §15.209 §15.407(b)	Undesirable Radiated Emissions	Compliant
§15.407(c)	Transmission in case of Absence of Information	Compliant
§15.407(g)	Frequency Stability	Compliant
§15.203 §15.407(a)	Antenna Requirement	Compliant

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# **DESCRIPTION OF TEST MODES**

## 4.1802.11a/n/ac operated in U-NII Bands

Operated band in				
2	20 M			
СН	Freq		C	
	(MHz)			
36	5180		e.	
40	5200		4	
44	5220			
48	5240			

n 51	<u>n 5150 MHz</u> ~5 <u>250 MHz:</u>					
40 M			8	0 M		
СН	Freq (MHz)		СН	Freq (MHz)		
38	5190		42	5210		
46	5230					

Operated band in 5745 MHz ~5850 MHz:							
2	20 M		4	0 M		8	0 M
СН	Freq (MHz)		СН	Freq (MHz)		СН	Freq (MHz)
149	5745		151	5755		155	5775
153	5765		159	5795			
157	5785				•		
161	5805						
165	5825						

## 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	Multiple Transmission Spatial
⊠ 802.11 a	🖾 Ch0 🖾 Ch1 🗆 Ch2 🗆 Ch3	⊠ 2TX
🛛 802.11 n	🛛 Ch0 🖾 Ch1 🗆 Ch2 🗆 Ch3	🛛 MIMO
⊠ 802.11 ac	$\boxtimes$ Ch0 $\boxtimes$ Ch1 $\square$ Ch2 $\square$ 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.

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

RADIATED EMISSION TEST (BELOW 1 GHz)									
MODE	FREQUEN- CY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTEN- NA PORT			
802.11a	5180~5240	36 to 48	36,44,48		6	2TX			
002.11a	5745~5825	149 to 165	149,157,165	OFDM		217			
802.11ac_VHT80	5210	42	42		MCS0	MIMO			
	5775	155 155		IVIC30					

	RADIATED EMISSION TEST (ABOVE 1 GHz)										
MODE	FREQUEN- CY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTEN- NA PORT					
802.11a	5180~5240	36 to 48	36,44,48		6	2TX					
002.11a	5745~5825	149 to 165	149,157,165		0	217					
802.11n_HT20	5180~5240	36 to 48	36,44,48		MCS8 / 0	MIMO					
802.11ac_VHT20	5745~5825	149 to 165	149,157,165	OFDM	10/030/0						
802.11n_HT40	5190~5230	38 to 46	38,46		MCS8 / 0	MIMO					
802.11ac_VHT40	5755~5795	151 to 159	151,159		10/030/0						
802.11ac_VHT80	5210	42	42	]	MCS0	MIMO					
	5775	155	155		10030						

### 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.

### **4.2.2ANTENNA PORT CONDUCTED MEASUREMENT:**

	CONDUCTED TEST										
MODE	FREQUENCY	AVAILABLE	TESTED	MODULATION	DATA RATE	ANTENNA					
IVIODE	BAND (MHz)	CHANNEL	CHANNEL	MODULATION	(Mbps)	PORT					
802.11a	5180~5240	36 to 48	36,44,48		6	2TX					
002.11a	5745~5825	149 to 165	149,157,165		0	217					
002 11p UT20	5180~5240	36 to 48	36,44,48		MCS8	МІМО					
802.11n_HT20	5745~5825	149 to 165	149,157,165		IVIC So						
	5180~5240	36 to 48	36,44,48		MCS0	МІМО					
802.11ac_VHT20	5745~5825	149 to 165	149,157,165	OFDM	IVIC30						
000 11p UT40	5190~5230	38 to 46	38,46		MCS8						
802.11n_HT40	5755~5795	151 to 159	151,159		IVIC So	MIMO					
	5190~5230	38 to 46	38,46		MCS0	МІМО					
802.11ac_VHT40	5755~5795	151 to 159	151,159		IVIC30						
002 11co \/UT00	5210	42	42	]	MCS0	МІМО					
802.11ac_VHT80	5775	155	155	]	IVIC50						

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#### **MEASUREMENT UNCERTAINTY** 5

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
26dB & 6dB Emission Bandwidth	+/- 123.36 Hz
The Maximum Output Power Meas- urement	+/- 0.96 dB
Peak Power Spectral Density Meas- urement	+/- 1.67 dB
Frequency Stability	+/- 123.36 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC=+/- 0.2%

Radiated Spurious Emission Measurement Uncertainty						
	9kHz~30MHz: +-2.3dB					
	30MHz - 180MHz: +/- 3.37dB					
Polarization: Vertical	180MHz -417MHz: +/- 3.19dB					
Polarization. vertical	0.417GHz-1GHz: +/- 3.19dB					
	1GHz - 18GHz: +/- 4.04dB					
	18GHz - 40GHz: +/- 4.04dB					
	9kHz~30MHz: +-2.3dB					
	30MHz - 167MHz: +/- 4.22dB					
Polarization: Horizontal	167MHz -500MHz: +/- 3.44dB					
	0.5GHz-1GHz: +/- 3.39dB					
	1GHz - 18GHz: +/- 4.08dB					
	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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#### CONDUCTED EMISSION TEST 6

## 6.1 Standard Applicable

Frequency range within 150 kHz to 30 MHz shall not exceed the Limit table as below.

Frequency range	Limits dB(uV)			
MHz	Quasi-peak	Average		
0.15 to 0.50	66 to 56	56 to 46		
0.50 to 5	56	46		
5 to 30	60	50		

Note

1. The lower limit shall apply at the transition frequencies

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### 6.2 Measurement Equipment Used

Conducted Emission Test Site								
EQUIPMENT	EQUIPMENT MFR MODEL SERIAL LAST CAL DU							
TYPE		NUMBER	NUMBER	CAL.				
LISN	TESEQ	NNB 51	36076	02/13/2019	02/12/2020			
EMI Test Receiver	R&S	ESCI	101342	04/26/2019	04/25/2020			

## 6.3 EUT Setup

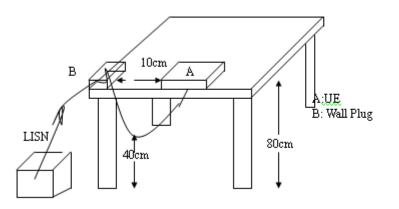
- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The LISN was connected with 120Vac/60Hz power source.

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## 6.4 Test SET-UP



### 6.5 Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all phases of power being supplied by given UE are completed.

### 6.6 Measurement Result

Note: Refer to next page for measurement data and plots. Note2: The \* reveals the worst-case results that closet to the limit.

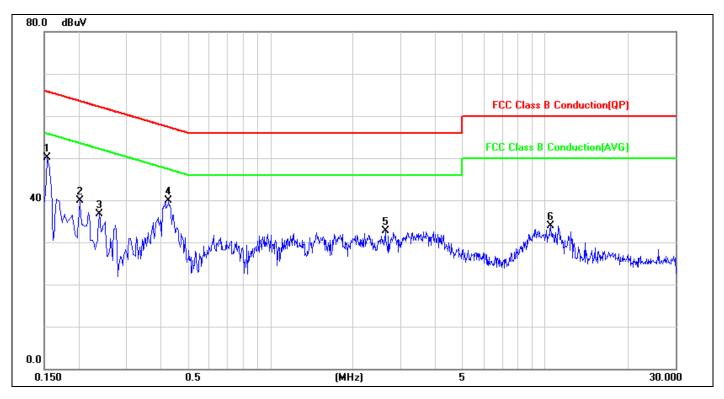
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### AC POWER LINE CONDUCTED EMISSION TEST DATA

Description:	Operation (5G)	Date:	2019/12/18
Line:	L1	Temp.(°C)/Hum.(%):	22.6(°C)/69%
Test Voltage: Reoprt Number: Note:	AC 120V/60Hz E2/2019/B0014 Adapter - PS24L120K2000UD	Test By:	Kailin



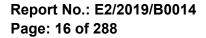
Na	MI	Freq.	Reading	Factor	Measurement	Limit	Over	Detector
No.	Mk.	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	Detector
1	*	0.1540	30.55	19.47	50.02	65.78	-15.76	peak
2		0.2020	20.26	19.55	39.81	63.53	-23.72	peak
3		0.2380	17.19	19.58	36.77	62.17	-25.40	peak
4		0.4260	20.14	19.71	39.85	57.33	-17.48	peak
5		2.6340	12.83	19.97	32.80	56.00	-23.20	peak
6		10.5260	14.01	19.97	33.98	60.00	-26.02	peak

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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.tw.sgs.com



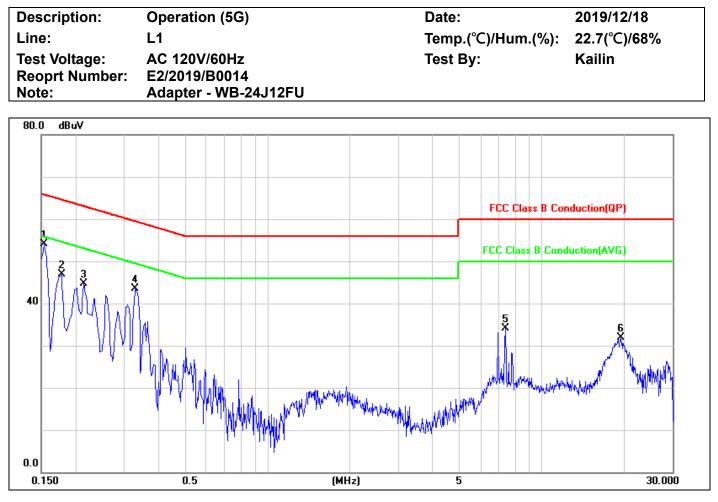


Description:	Operation (5G)	Date:	2019/12/18
Line: Test Voltage: Reoprt Number: Note:	N AC 120V/60Hz E2/2019/B0014 Adapter - PS24L120ł	Test B	(°C)/Hum.(%): 22.6(°C)/69% y: Kailin
80.0 dBu¥			
			FCC Class B Conduction(QP) FCC Class B Conduction(AVG)
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0.0	0.5	(MHz) 5	30.000

No	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector
No.	IVIK.	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	Detector
1		0.1620	27.97	19.71	47.68	65.36	-17.68	peak
2		0.1722	25.68	19.73	45.41	64.85	-19.44	peak
3		0.2180	20.82	19.79	40.61	62.89	-22.28	peak
4	*	0.4300	20.12	19.92	40.04	57.25	-17.21	peak
5		3.8860	13.74	20.16	33.90	56.00	-22.10	peak
6		9.7300	13.26	20.20	33.46	60.00	-26.54	peak

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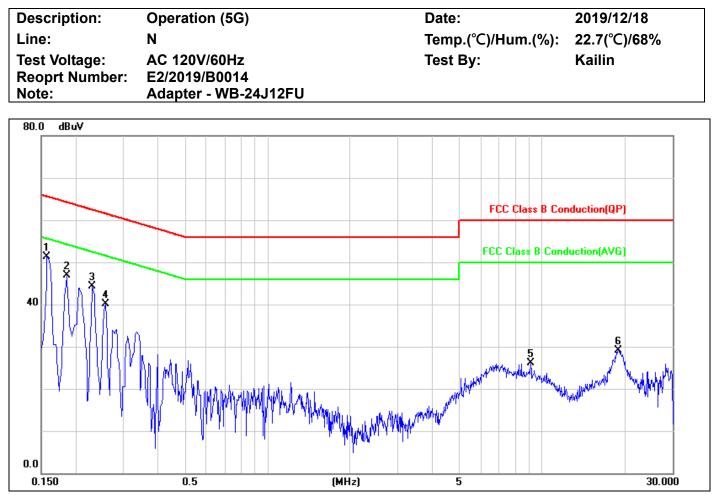


No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector
		(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	*	0.1540	54.03	0.04	54.07	65.78	-11.71	peak
2		0.1780	46.75	0.09	46.84	64.58	-17.74	peak
3		0.2140	44.55	0.13	44.68	63.05	-18.37	peak
4		0.3300	43.45	0.13	43.58	59.45	-15.87	peak
5		7.3780	33.61	0.42	34.03	60.00	-25.97	peak
6		19.4340	31.02	0.87	31.89	60.00	-28.11	peak

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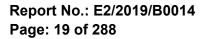




No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector
		(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	*	0.1580	51.31	0.04	51.35	65.57	-14.22	peak
2		0.1860	46.75	0.08	46.83	64.21	-17.38	peak
3		0.2300	44.23	0.11	44.34	62.45	-18.11	peak
4		0.2580	39.98	0.11	40.09	61.50	-21.41	peak
5		9.1540	25.84	0.36	26.20	60.00	-33.80	peak
6		19.0300	28.59	0.55	29.14	60.00	-30.86	peak

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#### **DUTY CYCLE TEST SIGNAL** 7

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

### 7.1 Measurement Procedure:

- 1. Set span = Zero
- 2. RBW = 8MHz
- 3. VBW = 8MHz,
- 4. Detector = Peak

Duty Cycle:

Mode	Duty Cycle (%) =Ton / (Ton+Toff)	Duty Factor (dB) =10*log ( 1/Duty Cycle )	1/T (kHz)	VBW setting (kHz)
802.11a	95.06	0.22	0.48	1.00
802.11n_20	84.55	0.73	1.02	2.00
802.11ac_20	84.55	0.73	1.02	2.00
802.11n_40	82.23	0.85	2.02	3.00
802.11ac_40	82.23	0.85	2.02	3.00
802.11ac_80	81.46	0.89	2.16	3.00

Duty Cycle Factor: 10 \* log(1/0.9506) = 0.22 Duty Cycle Factor: 10 \* log(1/0.8455) = 0.73 Duty Cycle Factor: 10 \* log(1/0.8455) = 0.73 Duty Cycle Factor: 10 \* log(1/0.8223) = 0.85 Duty Cycle Factor: 10 \* log(1/0.8223) = 0.85 Duty Cycle Factor: 10 \* log(1/0.8146) = 0.89

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### 7.2 DUTY CYCLE TEST SIGNAL MEASUREMENT RESULT

### 802.11a

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Stop Fre 5.18000000 GF			*											0
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### 802.11n HT20

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### 802.11n HT 40

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200	and a	A		100	4-14+2		5.210000000 GHz
40.0							Stop Freq
-66.0			_				5.21000000 GHz
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5 6 7 8 9 10					_		
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#### 26DB & 6DB EMISSION BANDWIDTH MEASUREMENT 8

### 8.1 Standard Applicable

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C. The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

### 8.2 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.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the Antenna port to the spectrum analyzer.
  - 3.a. 26dB Band width Measurement: Set the spectrum analyzer as 1% of emission BW Sweep=auto, Detector = Peak, Trace Mode = Max Hold. Manually readjust RBW until the RBW/EBW ratio is 1% based on EBW as observed on the result of pre-sequence measurement.
  - 3.b. Mark the peak frequency and -26dB (upper and lower) frequency.
- 4. Repeat the procedures as list above until all test default channels (low, middle, and high) are completed.
- 5. Minimum Emission Bandwidth for the band 5.725-5.850GHz. a. Set the spectrum analyzer as RBW = 100 kHz, VBW = 3\*RBW. Span = 30M/50MHz, Detector=Peak, Sweep=auto b. Mark the peak frequency and -6dB (upper and lower) frequency.

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### 8.3 Measurement Equipment Used

	SGS Conducted Room									
Name of Equip- ment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due					
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020					
Spectrum Analyzer	Agilent	N9010A	MY57120200	03/06/2019	03/05/2020					
Attenuator	11/20/2019	11/19/2020								

### 8.4 Test Set-up



### 8.5 Measurement Result

### 8.5.1 FCC 26dB Bandwidth

802.11a	_Ch0		802.11a	802.11a_Ch1				
Freq. (MHz)	· BW · ·			26dB BW (MHz)	10 Log (B) (dB)			
5180	21.57	13.339	5180	19.48	12.896			
5220	23.81	13.768	5220	20.93	13.208			
5240	23.63	13.735	5240	21.44	13.312			

### 802.11n\_HT20\_Ch0

#### 26dB 26dB 10 Log (B) Freq. Freq. BW BW (MHz) (dB) (MHz) (MHz) (MHz) 5180 21.23 13.269 5180 19.76 5220 21.26 13.276 5220 23.75

13.290

#### 802.11ac VHT20 Ch0

5240

21.33

#### 802.11ac VHT20 Ch1

5240

20.15

802.11n\_HT20\_Ch1

10 Log (B)

(dB)

12.958

13.757

13.043

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	19.9	12.989	5180	20.38	13.092
5220	21.43	13.310	5220	19.89	12.986
5240	20.45	13.107	5240	20.27	13.069

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802.11n	_HT40_Cł	10	802.11n _HT40_Ch1				
Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)		
5190	39.53	15.969	5190	40.15	16.037		
5230	41.27	16.156	5230	40.67	16.093		

#### 802.11ac VHT40 Ch0

802.11ac VHT40 Ch1

Freq. (MHz)	 26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	 26dB BW (MHz)	10 Log (B) (dB)
5190	39.67	15.985	5190	39.96	16.016
5230	46.27	16.653	5230	41.31	16.161

#### 802.11ac \_VHT80\_Ch0

802.11ac \_VHT80\_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	81.32	19.102	5210	81.31	19.101

### 8.5.2 6dB Bandwidth (5725 MHz~ 5850 MHz) measure with Peak detector for FCC

802.11a	_Ch0		802.11a	_Ch1	
Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	15.05	11.775	5745	15.55	11.917
5785	15.81	11.989	5785	15.09	11.787
5825	14.43	11.593	5825	16.28	12.117

#### 802.11n\_HT20\_Ch0

802.11n\_HT20\_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	15.92	12.019	5745	15.74	11.970
5785	15.41	11.878	5785	14.06	11.480
5825	16.91	12.281	5825	15.87	12.006

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#### 802.11ac\_VHT20\_Ch0

#### 802.11ac\_VHT20\_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.3	12.122	5745	15.45	11.889
5785	13.26	11.225	5785	15.29	11.844
5825	17.34	12.390	5825	15.58	11.926

#### 802.11n\_HT40\_Ch0

6dB Freq. 10 Log (B) BW (dB) (MHz) (MHz) 5755 35.05 15.447 5755 15.095 5795 5795 32.32

Freq. (MHz)	6dB BW (MHz)	10 Log (dB)
----------------	--------------------	----------------

33.84

35.14

(B)

15.294

15.458

14.921

802.11n HT40 Ch1

### 802.11ac VHT40 Ch0

6dB 10 Log (B) Freq. BW (MHz) (dB) (MHz) 5755 32.86 15.167 5795 31.32 14.958 5795

	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
	5755	33.84	15,294

31.05

802.11ac VHT40 Ch1

### 802.11ac \_VHT80\_Ch0

#### 802.11ac \_VHT80\_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	71.37	18.535	5775	67.63	18.301

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### 8.5.3 99% BW Verification for DFS Function

802.11	a_Ch0		802.11a_Ch1					
Freq. (MHz)	Measured Freq. (MHz)	Freq. (MHz)		Measured Freq. (MHz)	Limit (MHz)			
5240	5248.18	< 5250	5240	5248.16	< 5250			
5745	5736.86	> 5725	5745	5736.85	> 5725			

Limit

(MHz)

< 5250

> 5725

802.11n	_HT20_Ch0		802.11n	_HT20_Ch1		
Freq. (MHz)	Measured Freq. (MHz)	Limit Freq. (MHz) (MHz)		Measured Freq. (MHz)	Limit (MHz)	
5240	5248.74	< 5250	5240	5248.74	< 5250	
5745	5736.28	> 5725	5745	5736.26	> 5725	

802.11ac\_VHT20\_Ch0

802.11ac\_VHT20\_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)	Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.73	< 5250	5240	5248.73	< 5250
5745	5736.27	> 5725	5745	5736.26	> 5725

### 802.11ac \_VHT40\_Ch0

802.11n \_HT40\_Ch0

Freq.

(MHz)

5230 5755 Measured

Freq.

(MHz)

5247.93

5737.09

802.11ac \_VHT40\_Ch1

802.11n \_HT40\_Ch1

Freq.

(MHz)

5230

5755

Measured

Freq.

(MHz) 5247.92

5737.10

Limit

(MHz)

< 5250

> 5725

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)	Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5247.94	< 5250	5230	5247.89	< 5250
5755	5737.15	> 5725	5755	5737.07	> 5725

#### 802.11ac \_VHT80\_Ch0

802.11ac \_VHT80\_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Freq. Limit Freq.		Measured Freq. (MHz)	Limit (MHz)
5210	5247.48	< 5250	5210	5247.40	< 5250
5775	5737.55	> 5725	5775	5737.44	> 5725

Please see next page for test plots.

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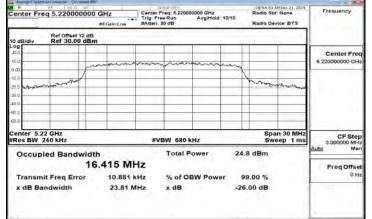
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### FCC 802.11a 20MHz Chain0 5180MHz

Center Fre	g 5.18000		00 GH	iz Saln±nw	Center Trig: F	Freq: 5.18000 ree Run :: 30 dB	AvgiHald	10/10	1	Radio St	Mitter 21, 2019 d: None vice: BTS	Frequency
10 dB/div	Ref Offset Ref 30.0			_								
20.0				e en la	ano.	-						Center Fr 5.180000000 G
0.00 10.0 20.0	اللومارموري. 100 مرمارموري	1	AND AND A					MICK.	1	* Andrea	anguake on When	
-30.0		1									a - state of Polity	1.
50.0			-	-								
Center 5.1 #Res BW					#	VBW 680	Hz				an 30 MHz eep 1 ms	CF Sto 3.000000 M
Occup	led Band			72 M	Hz	Total P	ower	2:	3.8	dBm		Auto M
Transm	it Freq Err	or		-3.873	kHz	% of O	BW Powe	r	99	.00 %		0
x dB Ba	ndwidth			21.57 1	MHz	x dB		-2	6.0	00 dB		

### FCC\_802.11a\_20MHz\_Chain0\_5220MHz



### FCC\_802.11a\_20MHz\_Chain0\_5240MHz

Separate Spanter	ert Anunyter - Occilla	est BW		1 212						AM Days 21, 2019	
Center Free			112	Center Freq Trig: Free R #Atten: 30 d	5.24000 un	AvgiHold	10/10		Radio St		Frequency
10 dB/div	Ref Offset 12 Ref 30.00						M			818 GHz 066 dBm	
20.0		mas	and	wanty	un chana	-M-man	mm	1		-	Center Fred 5.240000000 GHz
-10.0 -20.0 Mary-marks	monorm							6	-Tony Paper	non the partition of	
30,0 48.0				-							
-60.0 Center 5.24	GH2				_				Sn	an 30 MHz	
#Res BW 24				#VBW	680 k	Hz		_		eep 1 ms	CF Step 3.000000 MHz
Occupie	ed Bandw	idth		т	otal P	ower	23	3.7	dBm		Auto Man
			355 MH	S							Freq Offset
Transmit x dB Ban	Freq Erro	r	-12.881 kH 23.63 MH		dB	3W Powe			.00 %.		0 44
x dB Ban	dwidth		23.63 MH	z x	OB		-2	0.0	JU GB		
MIKO							in	105			-

#### FCC 802.11a 20MHz Chain0 5745MHz

Avancent Speed	Ar Seg R	87W)		anatan			an-th-the	Miles 21 2019	0.200
enter Fre	eq 5.74500000	MEGainLow	Center Trig: F	Freq: 5,74500 ree Run : 30 dB	AvgiHald	10/10	Radio Sto Radio De	None	Frequency
0 dB/div	Ref Offset 12 d Ref 30.00 de		_			м	kr1 5.736 -2.71	386 GHz 29 dBm	
20.0		1		1.7.16		-			Center Fred 5.745000000 GH:
0.00 10.0 20.0	1	(conversion)	-	and barrenson	and a second second	1.	houndas		
30.0 48.0 90.0				-				N.Coperation	
Center 5.7				VBW 3001				in 30 MHz 2.933 ms	Cr step
	led Bandwid			Total P		2	2.0 dBm	2.933 115	3.000000 MH Auto Mar
Transm	it Freq Error	6.287 M		% of O	BW Powe	er	99.00 %		Freq Offse 0 Hi
x dB Ba	indwidth	15.05 M	MHz	x dB			6.00 dB		1

#### FCC\_802.11a\_20MHz\_Chain0\_5785MHz

Frequency		Radio Dev		10/10	0000 GH± AvgiHald		Center F	HZ. Gaintow		q 5.78500	ter Fre
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CF Step 3.000000 MHa	n 30 MHz 2.933 ms			_	Hz	SW 300 k	#VI				ter 5.78 s BW 1
Auto Man		dBm	2.1	2	ower	Total P			vidth	ed Band	ccupi
Freq Offset 0 Hz		.00 %	99	er	W Pow	% of OF		-13.542		Freg Err	ransmi
		00 dB				x dB		15.81 N		dwidth	

### FCC\_802.11a\_20MHz\_Chain0\_5825MHz

Expedit System Analyze - Occupied	EW/							
Center Freq 5.82500000	MFSainLow	Center Fre Trig: Free #Atten: 30	Run	0000 GHz AvgiHold	10/10	Radio Std Radio Dev		Frequency
10 dB/div Ref 30.00 dE							(	
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-18.8	na dina an	merilian	wingenfiner	hallowatica				
20 0 Another And And And					_	Maryans	Populations	
-60.0				_	_			
Center 5.825 GHz #Res BW 100 kHz		#VB	W 300 H	Hz			n 30 MHz 2.933 ms	CF Step 3.000000 MH
Occupied Bandwid	ith 6.298 MH		Total P	ower	2	1.1 dBm		Auto Mar Freq Offse
Transmit Freq Error	-20.089 k		% of OI	BW Powe	r	99.00 %		0 Hi
x dB Bandwidth	14.43 MI	Hz	x dB			6.00 dB		

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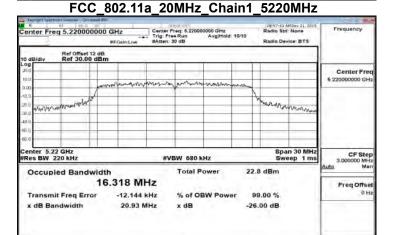
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### FCC 802.11a 20MHz Chain1 5180MHz

Center Fre	q 5.18000	000	0 GHz MFGain	Low	Center Fr		0000 GHz AvgiHold	10/10	1	Radio Std		Frequency
10 dB/div	Ref Offset 1 Ref 30.00										()	
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-10.00		1	M. Walton	- alternation of	and the stand of	Per a parte	al when the second s	and marked	Y			
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-50.0	-	-							-		_	
60.0 Center 5.11								-			n 30 MHz	CFSter
#Res BW 2	20 kHz	-			#VE	BW 620 k					ep 1 ms	3.000000 MH
Occupi	ed Bandy		th 6.25	7 MH	łz	Total P	ower	2	2.3	dBm		Freq Offset
Transmi x dB Bar	it Freq Erro ndwidth	or		.541 k 9.48 M		% of Of x dB	BW Powe		-	.00 %. 00 dB		0 Hz



### FCC\_802.11a\_20MHz\_Chain1\_5240MHz

R Center Fred	a 5.24000	DC	GHz	Center F	req: 5.24000					AM Dec 21, 2029	Frequency
			mFISalinLow	#Atten:		AvgiHold: 1	0110	Ra	dio De	vice: BTS	
10 dB/div	Ref Offset 1 Ref 30.00	12 dB dBm					M			816 GHz 024 dBm	
.0g 200								1	_	-	Center Free 5 240000000 GH
0.00		for	encompromision	hunn	human	townshipson a	this				
	cadel	1						has		1-21	
0 m	alan an				-			140	wh	- shaken and	
10 D	-	-	-		-		-	+		-	
90.0				-							
Center 5.24 Res BW 23				#V	BW 680 k	Hz	-	-		an 30 MHz eep 1 ms	CF Step 3.000000 MH
Occupie	ed Bandy	width			Total P	ower	22	.7 dE	3m	_	Auto Mar
Couple	ou build		.319 MH	łz							Freq Offse
Transmit	Freg Erro	or	-15.540 k	Hz	% of OF	W Power	1	99.00	%		0 H
x dB Ban	dwidth		21.44 M	Hz	x dB		-2	6.00	dB		
100							100	_			

#### FCC 802.11a 20MHz Chain1 5745MHz

Averant Speet	their Analyzer - Occu	Isenet BTW/			anautri					Mbw: 21, 2019	
enter Fre	eq 5.745000	0000	GHz MFGalmLow	Trig: F	Freq: 5,74500 Free Run :: 30 dB	AvgiHald	10/10	5	Radio Std	None	Frequency
0 dB/div	Ref Offset 1 Ref 30.00						M	kr		85 GHz 25 dBm	
200 100		1									Center Free 5.745000000 GH
		James	(what we want a	- www.	Marrie Marrie	all a policies of		N	1		
ai û	mannadana	-			-					www.www	
enter 5.7 Res BW				#	VBW 3001	Hz	-			n 30 MHz 2.933 ms	3.000000 mm
Occup	ied Bandv			Ηz	Total P	ower	11	8.9	dBm		Auto Mar Freq Offse
	nit Freq Erro andwidth	or	#VBW 300 kHz         Sweep 2.933 ms           Total Power         18.9 dBm           297 MHz         Freq Ol	он							

#### FCC\_802.11a\_20MHz\_Chain1\_5785MHz

Frequency		Radio Std Radio Dev		t ald: 10/10			Center F	iz Saintow	000 GH	5.78500	ter Fred
	()									Ref Offset 1 Ref 30.00	3/div
Center Fre 5.785000000 GH					1						
	-	_	m.	reprise	anio contrato	headow	- and all all	home and the second s	man		_
		WANNUP -	1	-	-			_	-	venturhealtre	N400-1004
				-			-				
CF Step	n 30 MHz 2.933 ms				Hz	300 H	#V				ter 5.78 BW 10
Auto Ma		dBm	20.4		ower	Total P	-		ldth	d Bandy	ccupie
Freq Offse							Iz	20 MH	16.3		
0 H		.00 %	99	wer	BW Pow	% of O	Hz	1.154 k	r	Freq Erro	ansmit
		00 dB	-6.			x dB	Hz	15.09 M		width	dB Ban

### FCC\_802.11a\_20MHz\_Chain1\_5825MHz

Concentration and											
Center Freq 5.			Hz FGainLow	Center	Freq: 5,8250 ree Run 30 dB	AvgiHald	10/10	3	Radio Std		Frequency
10 dB/div Re	ef Offset 1 ef 30.00						_				
20.0 10.0					-						Center Free 5.825000000 GHz
0.00 -10.0		haven	monuple. NO	honomitry	Annas	and an and the second		$V^{-1}$			
20.0 30.0 WWWWWICK 40.0	en the		-					n,	m.y-191/m.y	mananta	
-60.0		-									
Center 5.825 G #Res BW 100 P				#1	/BW 300	kHz				n 30 MHz 2.933 ms	CF Step 3.000000 MHz
Occupied	Bandy		353 M		Total I	Power	20	0.1	dBm		Auto Man
Transmit Fr	req Erro	1.000	-4.638	100	% of C	BW Powe	ər	99	.00 %		Freq Offsel 0 Hz
x dB Bandw	vidth		16.28 M	AHz	x dB		1	-6.0	00 dB		1

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### FCC 802.11n 20MHz Chain0 5180MHz

Frequency	Mbec 21, 2019	Radio Std		0000 GHz	eq: 5.18000		U	0000 G	5 19000	Renter Free
		Radio Dev	10/10	AvgiHold	Run		FGainLow		3.10000	anter Pres
	(							12 dB 0 dBm	Ref Offset Ref 30.00	dB/div
Center Freq			-							20
5.18000000 6412		-	anon really	- Antonian	who have no	sources	and the second	an star		00
	wannow	man					1		manner	10
	4. 4.2									0.0
IHz CF Ste 3.0000000 GH 3.0000000 HH Auto Mar Freq Offse		1.1	-	-						1 Q
			_		-		-			0.0
CF Step 3.000000 MHz	eep 1 ms			Hz	SW 680 k	#V				enter 5.18 Res BW 2
Auto Man	-	dBm	23.5	ower	Total P		6	width	d Band	Occupie
Freq Offset						Ηz	502 Mł	17.5		
0 Hz		.00 %	r 99	W Powe	% of Of	kHz	-13.745	or	Freq Err	Transmit
		00 dB	-26.		x dB	Hz	21.23 N		dwidth	x dB Bar

# FCC\_802.11n\_20MHz\_Chain0\_5220MHz



### FCC\_802.11n\_20MHz\_Chain0\_5240MHz

Frequency	Mittae: 21, 2019 d: None wice: BTS	Radio Std	10/10	AvgiHold	tter Freq: 5.240 g: Free Run ten: 30 dB	Trig	0000 GH	g 5.24000	Center Fre
	874 GHz 294 dBm		Mk					Ref Offset Ref 30.00	10 dB/div
Center Free 5.240000000 GH		1		uner	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mmmm		-	20.0
	ame was	Luna	and they					mant	0.00 -10.0 -20.0
									-30,0 -46 D -80 0
CF Step 3.000000 MH	an 30 MHz eep 1 ms			kHz	#VBW 680				Center 5.2 #Res BW
Auto Mar		0 dBm	24.	Power	Total			ed Band	Occup
Freq Offse 0 H		9.00 % .00 dB		BW Powe	% of 0 x dB	88 MHz -3.727 kHz 21.33 MHz		it Freq Erro ndwidth	
		18	10010						60

#### FCC 802.11n 20MHz Chain0 5745MHz

	Mber 21, 2019				100 - 201				At 1 20 G	Avanual Speed
Frequency	None	Radio Std Radio Dev	10/10	AvgiHold	req: 5,74500	Center	Hz FGainLow	00000 G	q 5.74500	enter Fre
	61 dBm		Mkr						Ref Offset Ref 30.0	0 dB/div
Center Freq 5.745000000 GHz			horston	antwayer	Juniterite	-	and the second	1 Praviliana		200 100 020
	MANY ANNI	Margarage and						é	per and and and	10 0 20 0 30 0 40 0
CF Step	n 30 MHz 2.933 ms		_		BW 300 k				15 GHz	Center 5.7
3.000000 MHz Auto Mar	2.933 1115	9 dBm	21.9		Total P				ed Band	
Freq Offsel 0 Hz		9.00 % .00 dB		BW Powe	% of Of x dB	kHz	446 MI -12.793 I 15.92 N		t Freq Err ndwidth	Transm x dB Ba

#### FCC\_802.11n\_20MHz\_Chain0\_5785MHz

R Center Fre	ng 5.785000	0000 G	Hz Galin£nw	Center F		0000 GHz AvgiHold	10/10	Radio Std		Frequency
10 dB/div	Ref Offset 1 Ref 30.00								-1	
.0g 200 100 0.00		ywastawaan			Januar	mun	mitaller			Center Freq 5,785000000 GHz
ип 200 300 фосустац 460 500	orthought							www.	NHW SHOW	
enter 5.7 Res BW				#VI	300 K	Hz			n 30 MHz 2.933 ms	CF Step 3.000000 MH3
Occup	led Bandy		58 MH	łz	Total P	ower	21.8	8 dBm		Auto Man Freq Offset
	Transmit Freq Error -26.652 dB Bandwidth 15.41									0 Hz

### FCC\_802.11n\_20MHz\_Chain0\_5825MHz

Expected Spatterer Analyze - Occ	Workd BW/		19-22-23/1								
Center Freq 5.82500	Mitter 21, 2019 1: None vice: BTS	Frequency									
10 dB/div Ref 30.00	Ref Officet 12 dB 10 dB/div Ref 30.00 dBm - 9g I										
200								Center Free 5.825000000 GHz			
9.00 10.0	www.www.www.	- the second	Wirmer	a water and	ermon very la						
210 30.0 Norway Anna Marka		_	-			" innorth	naun fan fan fan fan fan fan fan fan fan fa				
eo 0 au 0								1			
Center 5.825 GHz Res BW 100 kHz		#V	BW 300 K	Hz			an 30 MHz 2.933 ms	CF Step 3.000000 MH			
Occupied Band			Total P	ower	21.2	2 dBm		Auto Mar			
Transmit Freg Err	17.462 N			BW Pow		9.00 %		Freq Offse			
x dB Bandwidth	16.91		x dB	BW POW		00 dB					

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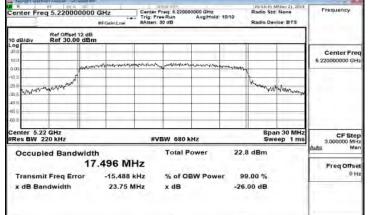
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### FCC 802.11n 20MHz Chain1 5180MHz

Center Fre	Mbac 21, 2019 : None rice: BTS	Frequency								
10 dB/div	Ref Offset 1 Ref 30.00		_						-1	
200			min	the state	-					Center Freq 5.180000000 GHz
-10.00		- marine	and the state	4.1000 Pr (14			- Contraction	ų į		
20.0	N	_		1	-		-	An		
Anymour DO	y www.	-		-	-	-		White	Unarrow	
46.0					-					
40 Q	-	-				-		-		
60.0								1		
Center 5.18 #Res BW 2				#VE	W 680 k	Hz			n 30 MHz ep 1 ms	CF Step 3.000000 MHz
Occupi	ed Bandy	width	_		Total P	ower	21.	dBm	_	Auto Man
		17.4	22 MH	łz						Freq Offset
Transmi	t Freq Erro	or .	10.146	Hz	% of Of	W Pow	er 99	9.00 %		0 Hz
x dB Bar	ndwidth		19.76 M	Hz	x dB		-26	00 dB		

### FCC\_802.11n\_20MHz\_Chain1\_5220MHz



#### FCC\_802.11n\_20MHz\_Chain1\_5240MHz

<b>R</b> 1	HI DIE C	DC 1		3102 310			AM Date 21, 2019	-
Center Fre	q 5.240000	MFGalmLnw	Trig: F	Freq: 5.240000000 G Free Run Avgi h: 30 dB	Hz Hold: 10/10	Radio St	d: None vice: BTS	Frequency
10 dB/div	Ref Offset 12 Ref 30.00		-		N	lkr1 5.24 -0.0822	874 GHz 247 dBm	
20.0 10.0 0.00		mannam	-nowna	mannin	-			Center Freq 5.240000000 GHz
-100 200 300 <b>D-1</b> 2-20	www.					Suman	harmen	
-50.0 -50.0 Center 5.24 #Res BW 2				VBW 620 kHz			an 30 MHz eep 1 ms	CF Step
Occupi	ed Bandw	idth		Total Power	2	2.4 dBm		Auto Man
		17.484 N	IHz					Freq Offset
Transmi x dB Ba	it Freq Errol ndwidth	-4.05 20.15		% of OBW P x dB		99.00 % 26.00 dB		0 Hz
(IRO)						w105		-

#### FCC 802.11n 20MHz Chain1 5745MHz

Frequency		Radio Sto Radio De	10/10	AvgiHold		Center F	anter freq 5.745000000 Griz							
	626 GHz 42 dBm													
Center Fre 5.745000000 GH					-			1		0 0 0				
			American	noninoalmp	Lenner		involutions	man						
	Manuti	Summer Ser		_			-	at 1	www.www.www.w	a alanteri				
										0				
CF Ste 3.000000 MH	n 30 MHz 2.933 ms			Hz	W 300 H	#V				enter 5.7 tes BW				
Auto Ma		dBm	18.6	ower	Total P				led Band	Occup				
Freq Offse		99.00 %		Sector Strategy and the				17.489 MHz Transmit Freq Error -16.566 kHz						
		00 dB	-6.		x dB	AHz	15.74 N	1	ndwidth	x dB Ba				

#### FCC\_802.11n\_20MHz\_Chain1\_5785MHz

R Center Fre	enter Freg 5.7855000000 GHz Trig Free Run Avgilidid 1910 MFGainLuw Arguna Avgilidid 1910 Ratio Device BTS									
10 dB/div	Ref Offset Ref 30.00								()	
200	-									Center Freq 5.785000000 GHz
10.00		www.	a Agenta & Marking Con	mouthing	Californi De 190	roomle	number			
20.0 30.0 <b>705.44+1/</b> 4	up to a twee of			-				Martyna	Assessme	
40.0 40.0										
Center 5.7 Res BW 1				#VE	SW 300 K	Hz			n 30 MHz 2.933 ms	CF Step 3.000000 MHz
Occupi	led Band	width			Total P	ower	19.9	dBm	_	<u>Auto</u> Man
6			91 Mł	100			6.72	0.5		Freq Offset
	it Freq Err ndwidth	or	-6.486 H		% of Of x dB	BW Powe		00 dB		UHZ

### FCC\_802.11n\_20MHz\_Chain1\_5825MHz

Karpenett Splatterer ing	myzer - Occilated BW/									
Center Freq 5.	825000000	GHz MFGalmLnw	Center Fr		0000 GHz AvgiHald	10/10	Radio Std		Frequency	
10 dB/div Re	f Offset 12 dB							()		
20.0						-			Center Free 5.825000000 GH	
0.00	1000 March	half free all all and	number	protocological	www.		N			
20 0 30 0 thanking the	MAN MARK			-			Mary wash	and the second		
48.8 -80.0										
Center 5.825 G #Res BW 100 k			#VE	300 K	Hz			n 30 MHz 2.933 ms	CF Step 3.000000 MH	
Occupied				Total P	ower	20.	4 dBm		Auto Mar	
		.504 MI	Ηz						Freq Offse	
Transmit Fr		3.749			BW Powe		9.00 %		0 Hz	
x dB Bandw	idth	15.87 N	IHZ	x dB		-6	.00 dB		1.1.1	
last.									-	

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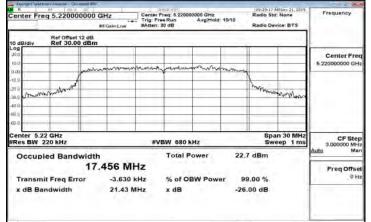
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### FCC 802.11ac 20MHz Chain0 5180MHz

Center Fre	Frequency									
10 dB/div	Ref Offset 1 Ref 30.00						_		1)	
200					D.a. to					Center Freq 5.180000000 GHz
-10.0		mont	Warmun +++ 20/2	- water and	Protocont	and the first of		1		
	- marine			-				Minne		
30.0 AAAAA	Variation		-	-		-	-	n	Marrison and	
46.0	-					-	-	-	-	
-60.0										
10										
Center 5.18 #Res BW 2				#VE	SW 620 H	Hz			eep 1 ms	CF Step 3.000000 MHz
Occupi	ed Bandy	width			Total P	ower	22.	5 dBm		Auto Man
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			171 MH	-Iz						Freq Offset
Transmi	t Freg Erro		-5.243		% of O	BW Powe	er 91	9.00 %		0 Hz
x dB Bar			19.90 M		x dB			00 dB		

### FCC\_802.11ac\_20MHz\_Chain0\_5220MHz



### FCC 802.11ac 20MHz Chain0 5240MHz

R	AP 200	DOD OUL	1 Center	Fred: 5.240000	000 00-		Radio St	AH Date 21, 2019	Frequency
Center Fre	rg 5.240000	MFISalinLow	Trig: F	Free Run 1: 30 dB	AvgiHold: 10	10		vice: BTS	
10 dB/div	Ref Offset 12 Ref 30.00					Mkr		873 GHz 192 dBm	
200		Manan	mond	m - uniter	Manhada		1		Center Freq 5.240000000 GHz
0.00 -10.0 -20.0	A A	Phyllip and an		1		and and a	When		
48.0	wanturn	_					1.4	ulutorum.A	
-60.0			-			_			
Center 5.2 #Res BW 2			#	VBW 620 kk	łz			an 30 MHz /eep 1 ms	CF Step 3.000000 MHz
Occupi	led Bandw	ldth	_	Total Po	wer	22.7	dBm		Auto Man
		17.463 N	IHz						Freq Offset
Transm	it Freq Error	-11.679	kHz	tz % of OBW Power			.00 %	0 Hz	
x dB Ba	ndwidth	20.45	MHz	x dB		-26.	00 dB		
NIC						=73105		_	

#### FCC 802.11ac 20MHz Chain0 5745MHz

Frequency	Radio Std: None Radio Device: BTS		10/10	Zenze diri Center Fred: 6,745000000 GHz Trig: Free Run AvgiHold: 10/10 #Atten: 30 dB				criter ring strasbood on the							
	88 dBm		Mkr						Ref Offset 12 dB dB/div Ref 30.00 dBn						
Center Free 5.745000000 GH		V	Anustra	na hala ang panang	jonaando	and an and and	and the second second	Lufor							
	- happy white	and a start						~	Workshand	o a ywww a o					
CF Step 3.000000 MH Áuto Ma	n 30 MHz 2.933 ms			Hz	SW 300 k	#V				enter 5.7 tes BW					
Freq Offse		5 dBm	21.	ower	Total P	Hz	461 M		ed Band	Occup					
он		9.00 % .00 dB						Fransmit Freq Error -18.638 kHz dB Bandwidth 16.30 MHz							

#### FCC\_802.11ac\_20MHz\_Chain0\_5785MHz

Cen	ter Freg	Frequency									
		Ref Offset Ref 30.00								= -0	
.0g 20.0 10.0 0.00			ungener	harry	-		orogenidaes	MVing Mary			Center Freq 5.78500000 GHz
10 0 20 0 30 0 46 0	www.	Muserserver	1			4			1	h-mentan	
	ter 5.785									n 30 MHz	CF Step
-	s BW 10 Occupie	d Band	width		#V	Total F		21.0	5 dBm	2.933 ms	3.000000 MHz Auto Man
		Freq Err		499 Mi -23.355	kHz		BW Powe		9.00 %		Freq Offset 0 Hz
×	dB Band	dwidth		13.26 M	MHZ	x dB		-6.	00 dB		1

### FCC\_802.11ac\_20MHz\_Chain0\_5825MHz

Expedit Spatner Analyze - Oc				ar stril				AM Day: 21, 2019	
Center Freq 5.8250	Frequency								
Ref Offset 10 dB/div Ref 30.0								-1	
20.0									Center Free 5.825000000 GH
0.00 -10.0	moreson	down and a share have a	monormany	penditions		W. Charlower			
200 300 mphoradompharana fantaria 400							Mary	mounte	
80.0									
Center 5.825 GHz #Res BW 100 kHz			#VE	SW 300 H	Hz			an 30 MHz 2.933 ms	CF Step 3.000000 MH
Occupied Band		12 M	47	Total P	ower	21.2	2 dBm		Auto Mar
Transmit Freq Er		24.071		% of Of	BW Pow	er 99	.00 %		Freq Offse 0 H
x dB Bandwidth		17.34 N	IHz	x dB		-6.	00 dB		

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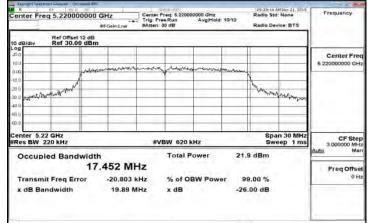
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### FCC 802.11ac 20MHz Chain1 5180MHz

Frequency		Radio Std Radio Dev	10/10	Center Freq: 5.18000000 GHz Trig: Free Run AvgiHold: 10/10 #Atten: 30 dB				nter Freq 5.180000000 GHz #FGaint.nw Ref Offset 12 dB						
	1								Ref Offset	0 dB/div				
Center Fre 5.180000000 GH											20.0			
			-	-londer-sources	- the start with	ben his Martha	manne	mann		0.00				
	1.	Ma				-	1	1	ward	20.0				
	and the second second	and have			-	-	-	+	an month	SD.0 manna				
			-							48.9				
					-	_	-	-		5D.0				
CF Ste 3.000000 MH	n 30 MHz ep 1 ms			Hz	SW 680 K	#VE				Center 5.18 Res BW 2				
Auto Ma	_	8 dBm	21.8	ower	Total P			width	ed Band	Occupi				
Freq Offse	100					Ηz	59 MH	17.4						
0 H		9.00 %	er 99	W Powe	% of Of	Hz	-8.799	ror	Freq Erre	Transmi				
		00 dB	-26		x dB	Hz	20,38 M		dwidth	x dB Bar				

### FCC\_802.11ac\_20MHz\_Chain1\_5220MHz



### FCC\_802.11ac\_20MHz\_Chain1\_5240MHz

R Center Fre	g 5.240000	000 GHz	Trig: F	r Freq: 5 240000000 GHz Free Run AvgiHala 1: 30 dB	10/10	Radio De		Frequency
10 dB/div	Ref Offset 12 Ref 30.00	dBm			Mkr	1 5.24	873 GHz 34 dBm	
20.0				an marine and the marine		1		Center Freq 5.240000000 GHz
0.00 -10.0 20.0 30.0 24/54-/*	f f	Veral land and the				-	American	
Center 5.24				VBW 680 kHz			an 30 MHz eep 1 ms	CF Step 3.000000 MHz
Occupi	ed Bandw	ldth		Total Power	22,4	4 dBm	-	Auto Man
Transmi x dB Ba	it Freq Erro ndwidth			% of OBW Pow x dB		9.00 %. .00 dB		Freq Offset 0 Hz
80								

#### FCC 802.11ac 20MHz Chain1 5745MHz

0.00	Mbw: 21, 2019				ear ann				Ant Inc.	Second Space		
Frequency	None	enter Freg 5,745000000 GHz Center Freg 5,74500000 GHz Radio Std: None Trig: Free Run Avg Hold: 10/10 Radio Device: BTS										
	626 GHz 16 dBm		Mkr						Ref Offset Ref 30.00	10 dB/div		
Center Fred 5.745000000 GHz			-		-					20.0		
			humming	attentions	dermon	nor any starts	singer and a	Lowyour		10.00		
	Winna	pro asister					-	1	Materia	20.0 30.0 ANNIM		
										40.0		
CF Step 3.000000 MH	n 30 MHz 2.933 ms			Hz	300 k	#VI				Center 5.7 Res BW		
Auto Mar Freq Offse		4 dBm	18,4	ower	Total P	Hz	471 MI		ed Band	Occup		
0 Hi		9.00 %	r 99				Transmit Freq Error -5.551 kHz					
		8b 00.	-6.		x dB	MHz	15.45 N		ndwidth	x dB Ba		

#### FCC\_802.11ac\_20MHz\_Chain1\_5785MHz

R Center Fre	ng 5.78500	0000 GH	Hz GalmLow	Center Fred: 5.785000000 GHz Trig: Free Run AvgiHald: 10/10 #Atten: 30 dB			10/10	Radio Std		Frequency
0 dB/div	Ref Offset Ref 30.00								-1	
09 200 100										Center Freq 5.78500000 GHz
0.00 10.0		removed	anterna	manual	Junissia	17 minute	mm			
20.0 <b>////////</b>	and the second			-				- manine	and the state	
48 0 80 0 60 0									_	
Center 5.7 Res BW				#VE	300 k	Hz			n 30 MHz 2.933 ms	CF Step 3.000000 MHz
Occup	led Band	width			Total P	ower	19.8	3 dBm	_	Auto Man
		17.5	14 MH	łz						Freq Offset
	ransmit Freq Error -12.975 dB Bandwidth 15.29 M									0 Hz
x dB Ba	indwidth		15.29 M	HZ	x dB		-0.	00 dB		

### FCC\_802.11ac\_20MHz\_Chain1\_5825MHz

Exemptit Spatterer Analyzer - Occupied By	γ).							
Center Freq 5.82500000	GHz #F5ainLow	Center Freq: 6.825000000 GHz Trig: Free Run Avg Hold: 10/10 #Atten: 30 dB				Radio Std		Frequency
Ref Offset 12 dB 10 dB/div Ref 30.00 dBn	0						-1	
20.0								Center Free 5.825000000 GH
-10.0	remain a company	manner	prospering and	andersegues		1		
20 0 30 0 yohnwahahawaya	_	_				muril	-	1.1
		-						
Center 5.825 GHz #Res BW 100 kHz		#VB	W 300 K	Hz			n 30 MHz 2.933 ms	CF Step 3.000000 MH
Occupied Bandwidt	h 7.513 MH	-	Total P	ower	20,4	4 dBm		Auto Mar
Transmit Freg Error	HZ % of OBW Power 99.00 %						Freq Offse 0 H	
x dB Bandwidth	15.58 M	Hz	x dB		-6.	00 dB		1

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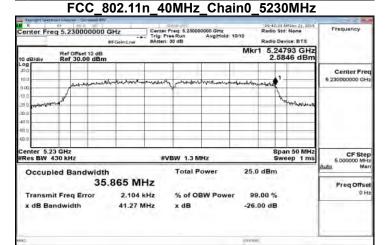
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### FCC 802.11n 40MHz Chain0 5190MHz

Frequency		Radio Std: None Radio Device: BTS			Center Freq: 6.19000000 GHz Trig: Free Run AvgiHold: 10/10 #Atten: 30 dB				R or sea be and the sea of the se							
	]								12 dB 0 dBm			B/div				
Center Fre 5.190000000 GH					-		anothing strateging									
		1	in the s			n n	and and		Card See Prov	ANDE	1					
	" Tothe words to	1									start	and makes				
		-	-				_		-	-						
									-							
CF Ste 5.000000 MH	n 50 MHz eep 1 ms			_	Hz	W 1.2 N	#VE					ter 5.1 s BW				
Auto Ma		n	dBr	23.1	ower	Total P			width	Band	led E	ccup				
Freq Offse							-Iz	91 Mł	35.7							
0.1		6	.00 1	r 99	W Powe	% of O	Hz	-48.736	or	q Err	it Fre	ransm				
		в	00 dl	-26.		x dB	Hz	39.53 N		dth	ndw	dB Ba				



### FCC\_802.11n\_40MHz\_Chain0\_5755MHz

Center Fre	q 5.755000000	1 40112	Center Freq: 5.75500 Trig: Free Run #Atten: 30 dB	AvgiHold: 10/10	Radio 5	Std: None Device: BTS	Frequency.
10 dB/div	Ref Offset 12 dB Ref 30.00 dBr					3709 GHz 1073 dBm	
20.0 10.0			howkery syngerthe	had a second second	and for	_	Center Freq 5.755000000 GHz
-10.0	Alexandration		- Maria	a - index among a	a series and the series of the	-	
20 0 30 0 \$\$4444	and the second s				1	manghanghan	
-50.0					-		
Center 5.75 Res BW 1			#VBW 3001	(Hz		pan 50 MHz eep 4.8 ms	CF Step 5,00000 MHz
Occupi	ed Bandwidt	th	Total P	ower	23.9 dBm		Auto Man
	38	5.817 MH	z				Freq Offset
Transmi	t Freq Error	-24.307 kH	z % of O	BW Power	99.00 %		0 Hz
x dB Bar	ndwidth	35.05 MH	z xdB		-6.00 dB		
					1100	_	

#### FCC\_802.11n\_40MHz\_Chain0\_5795MHz

R	Weight Settlementweiger - Consider WY         21122 dVT         [09-46/33 MIber 21, 2019           Parter Freg 5.795000000 GHz         Center Freg: 5.795000000 GHz         Radio Std: None           Trig: Free Run         AvgiHald: 1010         Radio Std: None										
		mFGainLow	#Atten: 3		Sec. 1	10.14	Radio	Dev	ice: BTS		
0 dB/div	Ref Offset 12 di Ref 30.00 dB					_			= -1		
<b>og</b> 100						-				Center Fred 5.79500000 GHz	
0.00	-	terning and failhed	whentyn	Apolation	human	and outry laws	Indiana	7			
0 11 0 20 0 0 00000000000000000000000000	wet		_			_		Ing	Mum Printee		
ai 0		-	-							· · · · ·	
enter 5.7 Res BW			17/1	SW 300 k		-			n 50 MHz p 4.8 ms	CF Step	
	led Bandwid	th		Total P		22.9	dBm	_	9 4.0 113	5,000000 MHz Auto Mar	
	3	5.736 MH	1z							Freq Offset	
Transm	ransmit Freq Error -28.343 kHz				Hz % of OBW Power 9			6		0 Hz	
x dB Ba	indwidth	32.32 M	Hz	x dB		-6.0	00 dE	3			

### FCC\_802.11n\_40MHz\_Chain1\_5190MHz

Frequency	None	Inter Freg 5.190000000 GHz Inter Freg 5.19000000 GHz IntGalacLow Addition 2010 State 201													
								et 12 dB		dB/div					
Center Freq 5.19000000 GHz			manulu	with party	man	manuly	yo water and	o o o							
		X			V				1						
	the states		_							a good and a second					
							-	-		0					
CF Step 5.000000 MH	n 50 MHz ep 1 ms			Hz	3W 1.3 M	#VI				enter 5.1 Res BW 4					
Auto Man		Total Power 22.6 dBm						Occupied Bandwidth 35.772 Mi							
Freq Offset 0 Hz		.00 %	99	We have the second of the				Transmit Freq Error -30.687 kHz							
		00 dB	-26.		x dB	AHz	40.15 M		ndwidt	x dB Ba					

### FCC\_802.11n\_40MHz\_Chain1\_5230MHz

Keyworth Splatterent Analyzer - Occuber	e 6W				
Center Freq 5.2300000	Trig:	Freq: 5,230000000 GHz Free Run AvgiHold: n: 30 dB	10/10 Radio	Std: None Device: BTS	Frequency
10 dB/div Ref 30.00 d				24792 GHz 5971 dBm	
200 100 000		ay management	manuman	1	Center Free 5 230000000 GH
10.0 20.0 30.0				Harman	
40 0 60 0					
Center 5.23 GHz Res BW 430 kHz		VBW 1.3 MHz		Span 50 MHz Sweep 1 ms	CF Stej 5.000000 MH
Occupied Bandw		Total Power	23.9 dBm		Auto Mai
Transmit Freq Error x dB Bandwidth	35.830 MHz -61.348 kHz 40.67 MHz	% of OBW Powe x dB	er 99.00 % -26.00 dB		Freq Offse 0H

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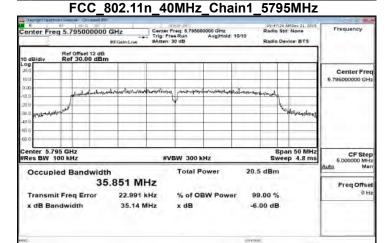
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### FCC 802.11n 40MHz Chain1 5755MHz

Concert Spage							
Center Fre	eq 5.755000000	GHz Center Trig F	Freq: 5,755000 Free Run 1: 30 dB	AvgiHold: 10/10	Radio 5	itd: None Itd: None Device: BTS	Frequency
10 dB/div	Ref Offset 12 dB Ref 30.00 dBn	0				7371 GHz 794 dBm	
20.0		-1				-	Center Free 5.755000000 GH
0.00 \0.0 20.0	Mapleman	- have reconcerned and have been been been been been been been be	up manualan	manutulpopulsus	manning		
30.0 40.0 marghan	Ancount			1	A Manager		
sn p 60.0						_	
Center 5.7 Res BW 1		#	VBW 300 ki	Hz		oan 50 MHz eep 4.8 ms	CF Ster 5.000000 MH
Occupi	led Bandwidt 35	h 5.799 MHz	Total Po	ower	19.0 dBm		Auto Mar Freq Offse
Transm	it Freq Error	-48.308 kHz	08 kHz % of OBW Power				0 H
x dB Ba	andwidth	33.84 MHz					1



### FCC\_802.11ac\_40MHz\_Chain0\_5190MHz

Kaynetti Spatharrian					nar swi			1000 400	as AM Dec		
Center Freq 5.	19000	0000 G	Hz Galint.nw	Center F	Center Freq: 5.19000000 GHz Trig: Free Run AvgiHold: 10/10 #Atten: 30 dB				Std: Nor Device:	ne	Frequency
	f Offset	12 dB 0 dBm			_		_			=0	
20.0 10.0	-	an and	mernedens	******	million	www.waydonseect./s	Alamatas				Center Freq 5.19000000 GHz
10.0 20.0 30.0 ml					v				1 Aug	Huran	
40 D 50 Q										and color	
Center 5.19 GH Res BW 430 k				#VI	BW 1.2 N	IHz			pan 5 weep	0 MHz 1 ms	CF Step
Occupied	Band	width			Total P	ower	21.2	2 dBm			Auto Man
35.787 MHz Transmit Freg Error -6.028 kHz								99.00 %			Freq Offset
Transmit Fr x dB Bandw	x dB Bandwidth 39.67 MHz					% of OBW Power 9 x dB -26					
era :							17910			-	

#### FCC 802.11ac 40MHz Chain0 5230MHz

Ald frage 21, 2019	100-50-04				2					Report Spath
d: None	Radio Std: None Radio Device: BTS		Center Freq: 5.230000000 GHz Trig: Free Run Avg/Hold: 10/10		Center Fre	Center Freg 5.230000000 GHz Cent				
	"	will makery	winewheredist	mappe	June Marine	walkand		A-444		20 20 20
Manimola	X							1	es d	
										10 10
			Hz	SW 1.3 M	#VE					enter 5.2 Res BW 4
Occupied Bandwidth Total Power 24.3 dBm										
	d: None pulse: BTS 794 GHz 273 dBm Miskatery an 50 MHz	Radio Device: B13 1.0273 dBm 1.0273 dBm 1.0273 dBm 1.0273 dBm Span 50 MHz Sweep 1 ms 3 dBm 9.00 %	Radio Str. None Radio Device: BTS Mkr1 5,24794 GHz 1,0273 dBm Mkr1 6,24794 GHz 1,0273 dBm Span 50 MHz Sweep 1 ms 24.3 dBm	Avgilialisi 1910 Avgilialisi 1910 Radio Device: BTS Mkr1 5.24794 GHz 1.0273 dBm Avgilialisi 1910 Mkr1 5.24794 GHz 1.0273 dBm Avgilialisi 1910 Span 50 MHz Span 50 MHz Sweep 1 ms ower 24.3 dBm BW Power 99.00 %	Radio Ster. Hone Radio Ster. Hone Radio Device: BTS Mkr1 5.24794 GHz 1.0273 dBm my sector of the sec	Conter Free 6.23000000 GHz Trig: Free Kalo Serie Hone Radio Device: BTS Radio Device: BTS Radio Device: BTS Radio Device: BTS RAdio Device: BTS RAdio Serie: Hone Radio Device: BTS RAdio Serie: Hone Radio Device: BTS Radio Device:	Image: Acceleration of the second s	Total Power     24.3 dBm       Span 50 MHz       Width     Total Power       Span 50 MHz       Span 50 MBZ	Image: Section of the sectio	are determined     are determine

### FCC\_802.11ac\_40MHz\_Chain0\_5755MHz

Center Fre	tter Freg 5.755000000 GHz Center Freg 7.55000000 GHz Radio Stati None #FGendum Augustation State: 30 dB Augustation Radio Device: BTS					ne	Frequency				
Ref Offset 12 dB Mkr1 5.73715 GHz 0 dB/div Ref 30.00 dBm -6.3657 dBm											
og 20.0 	• <sup>1</sup>	. Auruda	upmountur	-	nime-mark	et martelate	-	-			Center Free 5.755000000 GH
	1									4Mmb4r	
enter 5.7 Res BW				#VI	300 k	iHz			ipan 50 reep 4		CF Ster 5.000000 MH
Occupied Bandwidth 35.707 MHz				łz	Total P	ower	22.4	dBm			Auto Mar Freq Offse
	it Freq Er ndwidth	TOF	-28.919 k 32.86 M		% of OE x dB	BW Powe		00 %			0 H

### FCC\_802.11ac\_40MHz\_Chain0\_5795MHz

Expedit Statement-Analyzer - Occupied	8W/	312.00			Mber 21 2019	
Center Freq 5.7950000	Frequency					
10 dB/div Ref 30.00 dB						
20.0						Center Free 5.796000000 GH
	eral (contraction and and a contraction of the con	un hannenenenenenenen.	r-gal-services	whenen		
200 300 017417414747474					The state of the s	
-60 a						1
Center 5.795 GHz #Res BW 100 kHz		VBW 300 kHz			an 50 MHz ap 4.8 ms	CF Step 5,000000 MHz
Occupied Bandwig	th 5.831 MHz	Total Power	21	.6 dBm		Auto Mar
Transmit Freq Error	-45.793 kHz	% of OBW Pow	ver 9	9.00 %		Freq Offse 0 Hi
x dB Bandwidth	31.32 MHz	x dB	-	5.00 dB		

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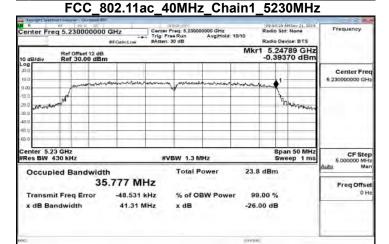
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### FCC 802.11ac 40MHz Chain1 5190MHz

Supreme Speet	HT 20 G UC	W		a na Uvr			100.41		10 11 10-10	0.2.2
Center Fre	ng 5.19000000	MEGalint.nw	Center Trig: Fr	Center Freq: 5.190000000 GHz Trig: Free Run AvgiHold: 10/10 #Atten: 30 dB			Radio Std: None Radio Device: BTS			Frequency
Ref Offset 12 dB 10 dB/div Ref 30.00 dBm										
20.0 10.0										Center Freq 5.19000000 GHz
0.00 -10.0	Automa	e in 18 million of	Nr#4.0417	Varman		un an hair	the big to the second	1	-	
30.0 Amy Alt	r.			-				~	hermon	
-48.0		_	_	-						
-60.0	0 CH2							Pna	50 MH2	CF Step
	Center 5.19 GHz Span 50 MHz #Res BW 430 kHz #VBW 1.3 MHz Sweep 1 ms									
Occup	led Bandwidt			Total Power 21.				n		Auto Man
	35	5.715 Mł	lz							Freq Offset
Transm	it Freq Error	error -27.669 kHz % of OBW Power	9 kHz % of OBW Power 99.00 %		% of OBW Power	Hz % of OBW Power	9.00 %		0 Hz	
x dB Ba	indwidth	39.96 M	Hz	x dB		-26	5.00 dE	в		
										L



### FCC\_802.11ac\_40MHz\_Chain1\_5755MHz

Keynostit Spectrem Analyze - Occupied	EW/		_			
Center Freg 5.7550000	Trig	Freq: 5.755000000 GHz FreeRun AvgiHold: n: 30 dB	10/10	ladio Std: Ladio Devi		Frequency
Ref Offset 12 c 10 dB/div Ref 30.00 dl						
200 100 000				-		Center Fred 5.755000000 GHz
10.0 Suchard	and the second	nd monitorianounter	almonto	may		
200 30.0 40.0 80.0				10	n alland	
-50.0 -60.0 Center 5.755 GHz				Enar	50 MHz	
#Res BW 100 kHz	4	VBW 300 kHz			4.8 ms	CF Step 5,000000 MHz Auto Man
Occupied Bandwi	dth	Total Power	18.8 d	Bm		
	35.857 MHz					Freq Offset
Transmit Freq Error	-45.728 kHz	% of OBW Powe	r 99.0	0 %		0 Hz
x dB Bandwidth	33.84 MHz	x dB	-6.00	dB		
eino :			19105			

#### FCC 802.11ac 40MHz Chain1 5795MHz

Key-ont Spectrom Analyze - Occupied BW		a near stirl			09.57	05.41	Hur 21 2010	
R enter Freg 5.795000000 GHz Center Freg 7.59500000 GHz Freg S.79500000 GHz enter Freg 7.59500000 GHz enter Freg 7.595000000 GHz enter Freg 7.59500000 GHz enter Freg 7.595000000 GHz enter Freg 7.59500000 GHz enter Freg 7.595000000 GHz enter Freg 7.595000000 GHz enter Freg 7.595000000 GHz enter Freg 7.59500000 GHz enter Freg 7.595000000 GHz enter Freg 7.5950000000 GHz enter Freg 7.5950000000 GHz enter Freg 7.5950000000 GHz enter Freg 7.59500000000000000000000000000000000000								Frequency
Ref Offset 12 dB 10 dB/div Ref 30.00 dBm								
>g	-	-		-				Center Freq 5.795000000 GHz
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10 20 Alathanananary	-	-				The second	a Hausslams	
0.0						_		
enter 5.795 GHz Res BW 100 kHz	#\	BW 3001	Hz				n 50 MHz p 4.8 ms	CF Step 5.000000 MH
Occupied Bandwidth	Occupied Bandwidth Total Power 19.8 dBm 35.845 MHz							Auto Mar
	17 kHz	State of the State of the			99.00 %			Freq Offset 0 Hz
x dB Bandwidth 31.0	5 MHz	x dB		-6.	00 dB	E.		

#### enter Freq 5.210000000 GHz Freque 00 GHz Avg|Hold: 10/10 Mkr1 5.24748 GHz Ref Offset 12 dl Ref 30.00 dB -1.0288 dBr Center Fre 5.210000000 G 5.21 GHz W 820 kHz Span 100 MH Sweep 1 m CF Step #VBW 2.4 MHz BW 100 Total Power 21.8 dBn Occupied Bandwidth 74.968 MHz Freq Offse -54.418 kHz 0H Transmit Freq Error % of OBW Power 99.00 % x dB dB Bandwidth 81.32 MHz -26.00 dB

FCC\_802.11ac\_80MHz\_Chain0\_5210MHz

### FCC\_802.11ac\_80MHz\_Chain0\_5775MHz

Expedit Spathers Analyze - Occased BW					
Center Freg 5.775000000 0	Trig:	Freq: 6,775000000 GHz FreeRun AvgiHold: n: 30 dB	Radio S	td: None evice: BTS	Frequency
10 dB/div Ref 30.00 dBm					
00 100				_	Center Free 5.775000000 GH
	multiplication	very ratestation phone laight	without advantage	,	
20 0 30 0 augustus alter				Variation	
en 0 60.0					_
Center 5.775 GHz Res BW 100 kHz		VBW 300 kHz		ep 9.6 ms	CF Ster 10.000000 MH
Occupied Bandwidth		Total Power	23.6 dBm		Auto Mar
	892 MHz	% of OBW Powe	r 99.00 %		Freq Offse
Transmit Freq Error x dB Bandwidth	-134.89 kHz 71.37 MHz	% of OBW Powe x dB	-6.00 dB		

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### FCC\_802.11ac\_80MHz\_Chain1\_5210MHz

Karpenter Spinster	nert-Hamyter - Occupied	8W/			
Center Fre	g 5.21000000	Trig	Freq 5.210000000 GHz FreeRun AvgiHold 10 n: 30 dB	Radio Std: None Radio Device: BTS	Frequency
10 dB/div	Hz m				
20.0 10.0 0.00	menaninals	unnun den sen ann an			Center Freq 5.210000000 GHz
-10 0 -20 0 -30 0 -40 0	, el			Muran	4.0
-60.0 Center 5.2 #Res BW 8			VBW 2.4 MHz	Span 100 M Sweep 1 r	Cr step
	led Bandwid		Total Power	21.4 dBm	Auto Man
Coodp.	an annantin	4.792 MHz			Freq Offset
	it Freq Error ndwidth	-216.53 kHz 81.31 MHz	% of OBW Power x dB	99.00 % -26.00 dB	0 Hz
NING				1×102	1

### FCC\_802.11ac\_80MHz\_Chain1\_5775MHz

err Animyter - Occulated BW		
g 5.775000000 GHz Center Freq 5.775000000 GHz Rad	dio Std: None dio Device: BTS	Frequency
	5.73744 GHz 10.429 dBm	
		Center Free 5.775000000 GHz
I would be south the bold and be south on south on the add add	ritury	
	remaintar	
5 GHz	Span 100 MHz	
	Sweep 9.6 ms	CF Step 10.000000 MHz Auto Man
ed Bandwidth Total Power 19.3 dB 75.124 MHz	Im	FreqOffset
t Freq Error -30.187 kHz % of OBW Power 99.00 ndwidth 67.63 MHz x dB -6.00 d		0 Hz
#79705		-

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# 9 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

## 9.1 Standard Applicable

## FCC

OPERZTION Band		EUT CATEGORY	LIMIT
	$\checkmark$	Access Point (Master device)	1 Watt(30dBm)
U-NII-1		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	$\checkmark$		1 Watt(30dBm)
If transmitting	anter	nnas of directional gain greater than	6 dBi are used, the Maximum transmit

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.

## Note:

As per FCC KDB 662911 D01

Unequal antenna gains, with equal transmit powers. For antenna gains given by G1, G2, ..., GN dBi.

(i) If transmit signals are correlated, then Directional gain

= 10 log[(10<sup>G1/20</sup> + 10<sup>G2/20</sup> + ... + 10<sup>GN/20</sup>)<sup>2</sup>/N<sub>ANT</sub>] dBi

[Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

The antenna gain is grater than 6 dBi in MIMO mode, therefore the limit needs to be reduced as below:

	Effective Legacy Gain (dBi)	Conducted Power Limit (dBm)
UNII-1	6.41	29.59
U-NII-3	5.84	30.00

## 9.2 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 .
- 3. 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.

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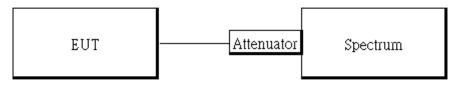


- 5. Record the max. reading and add 10 log(1/duty cycle).
- Repeat above procedures until all frequency (low, middle, and high channel) measured 6. were complete.

## 9.3 Measurement Equipment Used

	SGS Conducted Room											
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due							
Power Meter	Anritsu	ML2496A	1804002	03/26/2019	03/25/2020							
Power Sensor	Anritsu	MA2411B	1726105	03/26/2019	03/25/2020							
Power Sensor	Anritsu	MA2411B	1726106	03/26/2019	03/25/2020							
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020							

## 9.4 Test Set-up



## 9.5 Measurement Result

## 9.5.1Conducted output power (FCC)

## **CDD Mode**

## 802.11a\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	6	18.77	75.336	30	PASS
44	5220	6	18.97	78.886	30	PASS
48	5240	6	18.86	76.913	30	PASS
149	5745	6	17.77	59.841	30	PASS
157	5785	6	18.02	63.387	30	PASS
165	5825	6	17.89	61.518	30	PASS

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## 802.11a Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	6	19.05	80.353	30	PASS
44	5220	6	19.08	80.910	30	PASS
48	5240	6	19.01	79.616	30	PASS
149	5745	6	17.90	61.660	30	PASS
157	5785	6	16.49	44.566	30	PASS
165	5825	6	16.60	45.709	30	PASS

### 802.11a 2Tx

СН	Frequency	Data	rg. POWER (dB		TOTAL	TOTAL	REQUIRED	<b>DE0111 T</b>
	(MHz)	Rate	CH 0	CH 1	POWER (dBm)	POWER (mW)	LIMIT (dBm)	RESULT
36	5180	6	18.2	19.3	22.02	159.200	29.59080328	PASS
44	5220	6	18.7	19.1	22.08	161.619	29.59080328	PASS
48	5240	6	18.7	19	22.09	161.765	29.59080328	PASS
149	5745	6	17.7	17	20.58	114.184	30	PASS
157	5785	6	18.3	16.9	20.87	122.188	30	PASS
165	5825	6	18.2	17	20.91	123.196	30	PASS

## 802.11n\_HT20\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	18.37	68.689	30	PASS
44	5220	MCS0	18.63	72.927	30	PASS
48	5240	MCS0	18.58	72.092	30	PASS
149	5745	MCS0	17.48	55.961	30	PASS
157	5785	MCS0	17.91	61.785	30	PASS
165	5825	MCS0	17.84	60.798	30	PASS

### 802.11n\_HT20\_Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	18.70	74.112	30	PASS
44	5220	MCS0	18.82	76.188	30	PASS
48	5240	MCS0	18.83	76.364	30	PASS
149	5745	MCS0	17.93	62.071	30	PASS
157	5785	MCS0	17.58	57.265	30	PASS
165	5825	MCS0	16.92	49.191	30	PASS

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#### 802.11n\_HT20\_MIMO

	Frequency	Data	rg. POWER (dB			TOTAL	REQUIRED	
СН	(MHz)	Rate	СН 0	CH 1	POWER (dBm)	POWER (mW)	LIMIT (dBm)	RESULT
36	5180	MCS8	17.2	18.8	21.82	152.140	29.59080328	PASS
44	5220	MCS8	17.8	18.4	21.83	152.484	29.59080328	PASS
48	5240	MCS8	17.7	18.4	21.83	152.519	29.59080328	PASS
149	5745	MCS8	17.5	16.5	20.79	120.014	30	PASS
157	5785	MCS8	17.8	16.5	20.94	124.140	30	PASS
165	5825	MCS8	17.7	16.7	20.97	125.102	30	PASS

#### 802.11ac\_VHT20\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	18.32	67.903	30	PASS
44	5220	MCS0	18.58	72.092	30	PASS
48	5240	MCS0	18.54	71.431	30	PASS
149	5745	MCS0	17.42	55.193	30	PASS
157	5785	MCS0	17.86	61.078	30	PASS
165	5825	MCS0	17.99	62.934	30	PASS

#### 802.11ac VHT20 Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	18.58	72.092	30	PASS
44	5220	MCS0	18.78	75.489	30	PASS
48	5240	MCS0	18.80	75.838	30	PASS
149	5745	MCS0	17.86	61.078	30	PASS
157	5785	MCS0	17.50	56.219	30	PASS
165	5825	MCS0	17.05	50.686	30	PASS

#### 802.11ac\_VHT20\_MIMO

СН	Frequency (MHz)	Data	vg. POWER (dB		TOTAL POWER	TOTAL	REQUIRED	RESULT
		Rate	СН 0	CH 1		POWER (mW)	LIMIT (dBm)	RESULI
36	5180	MCS0	17.5	18.5	21.78	150.702	29.59080328	PASS
44	5220	MCS0	17.8	18.1	21.67	146.920	29.59080328	PASS
48	5240	MCS0	18.3	17.8	21.79	151.086	29.59080328	PASS
149	5745	MCS0	17.2	16.7	20.71	117.662	30	PASS
157	5785	MCS0	17.9	16.3	20.92	123.484	30	PASS
165	5825	MCS0	17.9	16.4	20.96	124.639	30	PASS

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## 802.11n\_HT40\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	18.61	72.606	30	PASS
46	5230	MCS0	18.70	74.126	30	PASS
151	5755	MCS0	18.01	63.237	30	PASS
159	5795	MCS0	18.24	66.676	30	PASS

### 802.11n\_HT40\_Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	19.01	79.610	30	PASS
46	5230	MCS0	18.95	78.518	30	PASS
151	5755	MCS0	18.10	64.561	30	PASS
159	5795	MCS0	16.96	49.656	30	PASS

#### 802.11n\_HT40\_MIMO

СН	Frequency	Data	rg. POWER (dB		TOTAL POWER	TOTAL POWER	REQUIRED LIMIT	RESULT
	(MHz)	Rate	СН 0	CH 1	(dBm)	(mW)	(dBm)	RESULT
38	5190	MCS8	16	16.4	20.05	101.114	29.59080328	PASS
46	5230	MCS8	18.2	18.1	22.01	158.875	29.59080328	PASS
151	5755	MCS8	17.1	17.8	21.31	135.240	30	PASS
159	5795	MCS8	17.9	17.1	21.35	136.522	30	PASS

#### 802.11ac\_VHT40\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	18.15	65.309	30	PASS
46	5230	MCS0	18.57	71.940	30	PASS
151	5755	MCS0	17.92	61.940	30	PASS
159	5795	MCS0	18.25	66.830	30	PASS

#### 802.11ac VHT40 Ch1

сн	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	18.21	66.217	30	PASS
46	5230	MCS0	18.92	77.978	30	PASS
151	5755	MCS0	17.98	62.801	30	PASS
159	5795	MCS0	17.21	52.598	30	PASS

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#### 802.11ac VHT40 MIMO

сн	Frequency (MHz)	Data Rate	rg. POW CH 0		TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	14	15	18.39	69.092	29.59080328	PASS
46	5230	MCS0	17.8	18.5	21.97	157.546	29.59080328	PASS
151	5755	MCS0	17.5	17.4	21.30	134.897	30	PASS
159	5795	MCS0	18.3	16.5	21.32	135.600	30	PASS

#### 802.11ac\_VHT80\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	MCS0	16.55	45.191	30	PASS
155	5775	MCS0	17.04	50.589	30	PASS

#### 802.11ac VHT80 Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	MCS0	16.88	48.759	30	PASS
155	5775	MCS0	17.42	55.215	30	PASS

#### 802.11ac\_VHT80\_MIMO

СН	Frequency (MHz)	Data	rg. POWER (dB		TOTAL POWER	TOTAL POWER	REQUIRED LIMIT	RESULT
			СН 0	CH 1	(dBm)	(mW)	(dBm)	
42	5210	MCS0	12.5	13.6	16.96	49.609	29.59080328	PASS
155	5775	MCS0	15.8	16.6	20.11	102.573	30	PASS

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## **Beamforming Mode**

### 802.11a\_Ch0

сн	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	6	16.69	46.666	30	PASS
44	5220	6	16.66	46.345	30	PASS
48	5240	6	16.64	46.132	30	PASS
149	5745	6	16.68	46.559	30	PASS
157	5785	6	16.60	45.709	30	PASS
165	5825	6	16.84	48.306	30	PASS

## 802.11a Ch1

СН	– Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	6	16.75	47.315	30	PASS
44	5220	6	16.77	47.534	30	PASS
48	5240	6	16.68	46.559	30	PASS
149	5745	6	16.81	47.974	30	PASS
157	5785	6	16.95	49.545	30	PASS
165	5825	6	16.93	49.318	30	PASS

## 802.11a\_2Tx

СН	Frequency (MHz)	Data Rate	Avg. POWER (dBm)		TOTAL	TOTAL	REQUIRED	
			СН 0	CH 1	(dBm)	POWER (mW)	LIMIT (dBm)	RESULT
36	5180	6	16	16.9	19.69	93.042	29.59080328	PASS
44	5220	6	15.9	17	19.74	94.272	29.59080328	PASS
48	5240	6	15.8	17	19.70	93.268	29.59080328	PASS
149	5745	6	16.6	16.4	19.73	93.899	30	PASS
157	5785	6	16.9	16.4	19.91	97.893	30	PASS
165	5825	6	16.7	16.5	19.80	95.419	30	PASS

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### 802.11n\_HT20\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	16.87	48.628	30	PASS
44	5220	MCS0	16.85	48.405	30	PASS
48	5240	MCS0	16.85	48.405	30	PASS
149	5745	MCS0	16.88	48.740	30	PASS
157	5785	MCS0	16.84	48.293	30	PASS
165	5825	MCS0	16.69	46.654	30	PASS

## 802.11n\_HT20\_Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	16.95	49.532	30	PASS
44	5220	MCS0	16.97	49.761	30	PASS
48	5240	MCS0	16.96	49.646	30	PASS
149	5745	MCS0	16.94	49.418	30	PASS
157	5785	MCS0	16.89	48.852	30	PASS
165	5825	MCS0	16.91	49.078	30	PASS

## 802.11n\_HT20\_MIMO

СН	Frequency (MHz)	Data Rate			POWER	TOTAL POWER	REQUIRED LIMIT	RESULT
		Mate	CH 0	CH 1	(dBm)	(mW)	(dBm)	
36	5180	MCS8	15.7	16.6	19.91	98.038	29.59080328	PASS
44	5220	MCS8	15.8	16.7	19.97	99.391	29.59080328	PASS
48	5240	MCS8	15.8	16.6	19.96	99.093	29.59080328	PASS
149	5745	MCS8	16	16.3	19.85	96.637	30	PASS
157	5785	MCS8	16.5	16	19.98	99.499	30	PASS
165	5825	MCS8	16.3	16	19.93	98.441	30	PASS

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### 802.11ac\_VHT20\_Ch0

сн	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	16.85	48.405	30	PASS
44	5220	MCS0	16.77	47.521	30	PASS
48	5240	MCS0	16.84	48.293	30	PASS
149	5745	MCS0	16.76	47.412	30	PASS
157	5785	MCS0	16.74	47.194	30	PASS
165	5825	MCS0	16.66	46.333	30	PASS

## 802.11ac\_VHT20\_Ch1

сн	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	16.91	49.078	30	PASS
44	5220	MCS0	16.86	48.516	30	PASS
48	5240	MCS0	16.92	49.191	30	PASS
149	5745	MCS0	16.84	48.293	30	PASS
157	5785	MCS0	16.86	48.516	30	PASS
165	5825	MCS0	16.89	48.852	30	PASS

## 802.11ac\_VHT20\_MIMO

сн	Frequency (MHz)	Data Rate	CĤ	OWER 3m) CH	IUIAL	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	<b>0</b> 15.4	16.5	19.70	93.288	29.59080328	PASS
44	5220	MCS0	15.3	16.4	19.61	91.484	29.59080328	PASS
48	5240	MCS0	15.3	16.3	19.56	90.303	29.59080328	PASS
149	5745	MCS0	15.8	16	19.68	92.903	30	PASS
157	5785	MCS0	16.2	15.8	19.75	94.460	30	PASS
165	5825	MCS0	16	15.8	19.62	91.526	30	PASS

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### 802.11n\_HT40\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	13.20	20.892	30	PASS
46	5230	MCS0	16.92	49.201	30	PASS
151	5755	MCS0	16.85	48.414	30	PASS
159	5795	MCS0	16.95	49.542	30	PASS

### 802.11n\_HT40\_Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	13.36	21.676	30	PASS
46	5230	MCS0	16.97	49.770	30	PASS
151	5755	MCS0	16.98	49.885	30	PASS
159	5795	MCS0	16.97	49.770	30	PASS

## 802.11n\_HT40\_MIMO

СН	Frequency	Data	Avg. POWER (dBm)		TOTAL POWER		REQUIRED LIMIT	RESULT
	(MHz)	Rate	СН 0	CH 1		(mW)	(dBm)	RECOLI
38	5190	MCS8	12.3	13	16.48	44.458	29.59080328	PASS
46	5230	MCS8	15.4	16.2	19.69	93.117	29.59080328	PASS
151	5755	MCS8	15.2	16.8	19.95	98.930	30	PASS
159	5795	MCS8	16.2	15.7	19.82	96.022	30	PASS

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### 802.11ac\_VHT40\_Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	13.06	20.229	30	PASS
46	5230	MCS0	16.71	46.878	30	PASS
151	5755	MCS0	16.74	47.203	30	PASS
159	5795	MCS0	16.77	47.530	30	PASS

### 802.11ac\_VHT40\_Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	13.13	20.557	30	PASS
46	5230	MCS0	16.79	47.750	30	PASS
151	5755	MCS0	16.82	48.081	30	PASS
159	5795	MCS0	16.84	48.303	30	PASS

## 802.11ac VHT40 MIMO

СН	Frequency (MHz)	Data Rate	Avg. P (dB CH 0		IOTAL	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	12.2	12.8	16.37	43.376	29.59080328	PASS
46	5230	MCS0	15.1	16.3	19.62	91.712	29.59080328	PASS
151	5755	MCS0	15.2	16.7	19.87	97.038	30	PASS
159	5795	MCS0	16.1	15.7	19.76	94.583	30	PASS

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## 802.11ac VHT80 Ch0

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	MCS0	11.30	13.491	30	PASS
155	5775	MCS0	16.53	44.984	30	PASS

## 802.11ac VHT80 Ch1

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	MCS0	11.45	13.965	30	PASS
155	5775	MCS0	16.63	46.032	30	PASS

## 802.11ac VHT80 MIMO

СН	Frequency	Data	(dE	3m)	TOTAL POW-	TOTAL POWER	REQUIRED LIMIT	RE- SULT	
	(MHz)	(MHz) Rate CH CH 0 1		CH 1	ER (dBm)	(mW)	(dBm)	SULT	
42	5210	MCS0	10.9	10.2	14.48	28.086	29.59080328	PASS	
155	5775	MCS0	15.8	15.5	19.52	89.594	30	PASS	

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# **10 MAXIMUM POWER SPECTRAL DENSITY**

#### 10.1 Standard Applicable

## FCC

OPERZTION Band		EUT CATEGORY	LIMIT
	$\checkmark$	Access Point (Master device)	17dBm/ MHz
U-NII-1		Fixed point-to-point Access Ponit	
		Mobile and portable client device	11dBm/ MHz
U-NII-2A			11dBm/ MHz
U-NII-2C			11dBm/ MHz
U-NII-3			30dBm/ 500kHz
	ity sh		an 6 dBi are used, the Maximum power 8 that the directional gain of the antenna

## Note:

As per FCC KDB 662911 D01

Unequal antenna gains, with equal transmit powers. For antenna gains given by G1, G2, ..., GN dBi.

(i) If transmit signals are correlated, then Directional gain

=  $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N_{ANT}] dBi$ 

[Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

The antenna gain is grater than 6 dBi in MIMO mode, therefore the limit needs to be reduced as below:

	Effective Legacy Gain (dBi)		PSD Limit
UNII-1	6.41	16.59	dBm/MHz
U-NII-3	5.84	30.00	dBm/500 kHz

## **10.2 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.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum

## 4. For U-NII1, U-NII-2A, U-NII-2C Band:

Set RBW=1MHz, VBW=3MHz, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

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## For U-NII-3 Band:

Set RBW=500 kHz, VBW $\geq$  3RBW, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

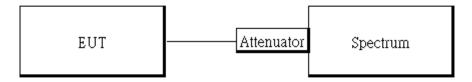
- 5. User the cursor on spectrum to peak search the highest level of trace
- 6. Record the max. reading and add 10 log(1/duty cycle).
- 7. Repeat above procedures until all default test channel (low, middle, and high) was complete.
- 8. 802.11n/ac MIMO mode: offset is set following "measure and add 10 Log (N)" on spectrum to measure the PSD for MIMO mode. Offset = cable loss + 10 log (N), where N is number of transmitting antenna. N=3 for this given application.

## Note: For the test of PSD at MIMO mode, the highest emission of worst case employing Measure and add 10 log (N) technical is reported on this report after the comparison between Main Antenna at single transmitting mode and Aux that yields the higher value. The MIMO transmitting mode produces higher value of outcome

## 10.3 Measurement Equipment Used

	SGS Conducted Room					
Name of Equip- ment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due	
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020	
Spectrum Ana- lyzer	Agilent	N9010A	MY57120200	03/06/2019	03/05/2020	
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020	

## 10.4 Test Set-up



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#### 10.5 **Measurement Result**

## 10.5.1 Power spectral density

	POWER DE	NSITY 802	.11a MODE		
Frequency (MHz)	PSD W/O Duty Factor (dBm)	PSD With Duty Duty Factor Factor (dBm)		Limit (dBm)	Margin (dB)
5180.00	10.56	0.22	10.78	16.59	-5.81
5220.00	10.96	0.22	11.18	16.59	-5.41
5240.00	10.43	0.22	10.65	16.59	-5.94
5745.00	5.76	0.22	5.98	30.00	-24.02
5785.00	5.75	0.22	5.97	30.00	-24.03
5825.00	4.98	0.22	5.20	30.00	-24.80

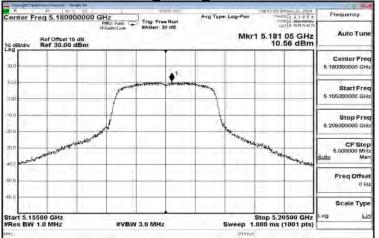
	POWER DENS	ITY 802.11	n HT20 MC	DE	
Frequency (MHz)	PSD W/O Duty Factor (dBm)	Duty Factor	PSD With Duty Factor (dBm)	Limit (dBm)	Margin (dB)
5180	9.88	0.73	10.61	16.59	-5.98
5220	11.04	0.73	11.77	16.59	-4.82
5240	10.00	0.73	10.73	16.59	-5.86
5745	5.49	0.73	6.22	30	-23.78
5785	5.24	0.73	5.97	30	-24.03
5825	4.96	0.73	5.69	30	-24.31

	POWER DENS	ITY 802.11	n HT40 MC	DE	
Frequency (MHz)	PSD W/O Duty Factor (dBm)	Duty Factor	PSD With Duty Factor (dBm)	Limit (dBm)	Margin (dB)
5190	5.1	0.85	5.95	16.59	-10.64
5230	7.05	0.85	7.90	16.59	-8.69
5755	-0.72	0.85	0.13	30	-29.87
5795	3.17	0.85	4.02	30	-25.98

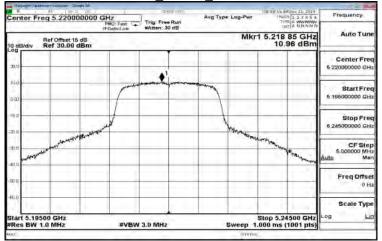
F	POWER DENSITY 802.11ac VHT80 MODE						
Frequency (MHz)	PSD W/O Duty Factor (dBm)	Duty Factor	PSD With Duty Factor (dBm)	Limit (dBm)	Margin (dB)		
5210	1.00	0.89	1.89	16.59	-14.70		
5775	-3.29	0.89	-2.40	30	-32.40		



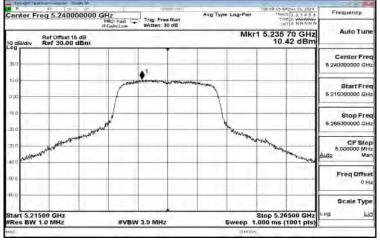
#### 802.11a 20MHz 5180MHz



#### 802.11a\_20MHz\_5220MHz



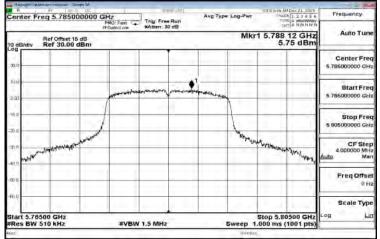
#### 802.11a\_20MHz\_5240MHz



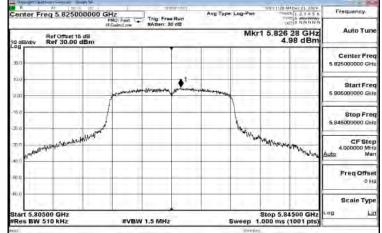
#### nter Freg 5.745000000 GHz PNO: Fest Hatter: 30 dB Fret AM Dec 21, 2019 Ave Type: Log-Pw ncy. Auto Tu Mkr1 5.743 08 GHz 5.76 dBm Ref Offset 15 dB Ref 30.00 dBm Center Fre 45000000 GI • Start Fre 5.725000000 G Stop Fre Vha CF Step 4.000000 MH Mar Freq Offse 0 Ĥ Scale Typ Start 5.72500 GHz #Res BW 510 kHz Stop 5.76500 GHz Sweep 1.000 ms (1001 pts) #VBW 1.5 MHz

802.11a 20MHz 5745MHz

#### 802.11a\_20MHz\_5785MHz



# 802.11a\_20MHz\_5825MHz



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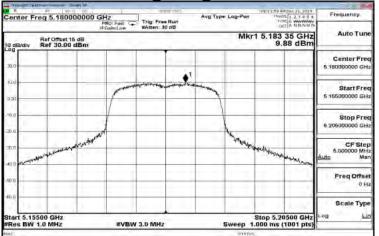
台灣檢驗科技股份有限公司

t (886-2) 2299-3279

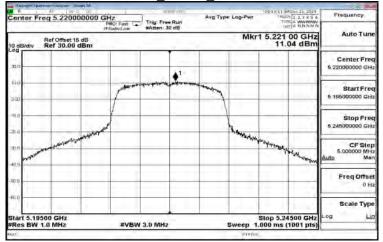
f (886-2) 2298-0488



#### 802.11n 20MHz 5180MHz



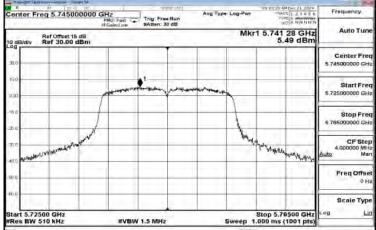
#### 802.11n\_20MHz\_5220MHz



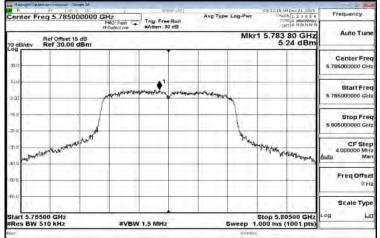
#### 802.11n\_20MHz\_5240MHz

Report Spattory Amount - Sound St			109-10:07 AM Dec 21, 2019	
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min Start 5.21500 GHz #Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 1	Stop 5.26500 GHz .000 ms (1001 pts)	Scale Type
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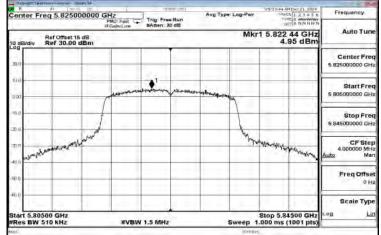
# 802.11n 20MHz 5745MHz Avg Type: Log-Pw



#### 802.11n\_20MHz\_5785MHz



### 802.11n\_20MHz\_5825MHz



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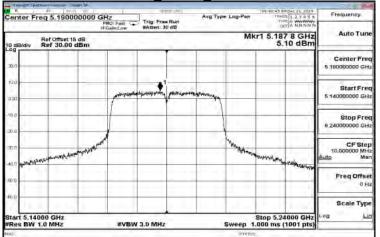
台灣檢驗科技股份有限公司

t (886-2) 2299-3279

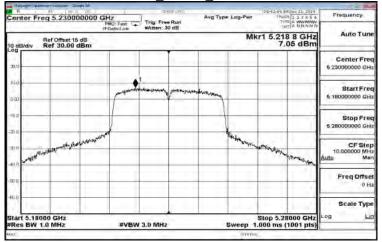
f (886-2) 2298-0488



#### 802.11n 40MHz 5190MHz



#### 802.11n\_40MHz\_5230MHz



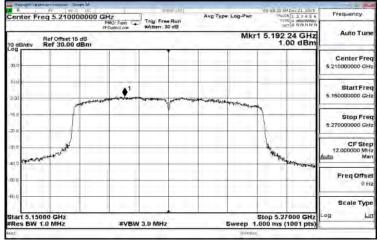
### 802.11n\_40MHz\_5755MHz

72.8	19-45-05-AM Dwc 21, 2019				ear strif			41 H	terry Anny per-Se	Concentrations
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802.11n 40MHz 5795MHz

#### 802.11ac\_80MHz\_5210MHz



#### 802.11ac\_80MHz\_5775MHz

Frequency	MD=: 21 2019 Dt 1 2 3 = 5 + C A MANNA	TNA	e Log-Pwr	Avg Typ	Free Run	Trig F	HZ NO: Fest	0000 G	5.77500	r Freq	Cent
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Center Fre 5.775000000 GH											30.0
Start Fre 5.725000000 GH						<u></u>					10.0 1.00
Stop Fre 5 82500000 GH		and the second	1989 - <sup>200</sup> 940 - 74, 100, 198	hre there all a	and support	Careton Anatom	ana Juliana	a yan Malanda Ana	-		-10.0
CF Ste 10.000000 MH Auto Ma	- Hertorywy								(	a fail for shirt	30.0
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Scale Typ						_			-		-10.0
	2500 GHz (1001 pts)	.000 ms	Sweep 1.		1Hz	V 1.5 MH	#VBV			5.72500 BW 510	

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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



# 11 UNDESIRABLE RADIATED EMISSION MEASUREMENT

#### 11.1 Standard Applicable

## 11.1.1 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.

m)
)*1
า) *2
า) *3
n) *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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#### 11.2 **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:

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

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#### 11.3 **Measurement Equipment Used**

	SGS SAC-III								
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due				
Broadband An- tenna	SCHWAZBECK	VULB 9168	9168-617	11/04/2019	11/03/2020				
Horn Antenna	Schwarzbeck	BBHA9170	185	08/07/2019	08/06/2020				
Horn Antenna	Schwarzbeck	BBHA9120D	1341	06/12/2019	06/11/2020				
Loop Antenna	ETS.LINDGREN	6502	143303	04/25/2019	04/24/2020				
3m Site NSA	SGS	966 chamber D	N/A	07/12/2019	07/11/2020				
Spectrum Ana- lyzer	KEYSIGHT	N9010A	MY54510568	06/10/2019	06/09/2020				
Pre-Amplifier	<b>EMC</b> Instruments	EMC184045B	980135	11/20/2019	11/19/2020				
Pre-Amplifier	<b>EMC</b> Instruments	EMC9135	980234	11/20/2019	11/19/2020				
Pre-Amplifier	<b>EMC</b> Instruments	EMC12630SE	980271	11/20/2019	11/19/2020				
Attenuator	Woken	WATT-218FS-10	RF25	11/20/2019	11/19/2020				
High Pass Filter	R&S	F13 HPF 3GHz	RF64	11/20/2019	11/19/2020				
Low Pass Filter	EWT	EWT-56-0019	RF46	11/20/2019	11/19/2020				
Notch Filter	EWT	EWT-54-0038	RF55	11/20/2019	11/19/2020				
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17388/4	11/20/2019	11/19/2020				
Coaxial Cable	Huber Suhner	RG 214/U	W22.03	11/20/2019	11/19/2020				
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17413/4	11/20/2019	11/19/2020				



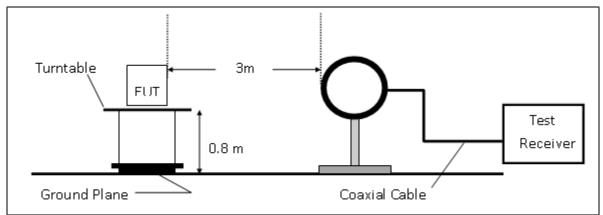
## **Measurement Equipment Used For Simultaneous**

	SGS SAC-III							
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due			
Broadband An- tenna	SCHWAZBECK	VULB 9168	9168-617	11/04/2019	11/03/2020			
Broadband An- tenna	TESEQ	CBL 6112D	35240	09/09/2019	09/08/2020			
Horn Antenna	Schwarzbeck	BBHA9120D	1187	01/10/2020	01/09/2021			
Horn Antenna	Schwarzbeck	BBHA9170	185	08/07/2019	08/06/2020			
Horn Antenna	Schwarzbeck	BBHA9120D	1341	06/12/2019	06/11/2020			
3m Site NSA	SGS	966 chamber D	N/A	07/12/2019	07/11/2020			
Spectrum Ana- lyzer	KEYSIGHT	N9010A	MY54510568	06/10/2019	06/09/2020			
Pre-Amplifier	EMC Instruments	EMC330	980096	11/20/2019	11/19/2020			
Pre-Amplifier	<b>EMC</b> Instruments	EMC0011830	980199	11/20/2019	11/19/2020			
Pre-Amplifier	<b>EMC</b> Instruments	EMC184045B	980135	11/20/2019	11/19/2020			
Pre-Amplifier	<b>EMC</b> Instruments	EMC9135	980234	11/20/2019	11/19/2020			
Pre-Amplifier	<b>EMC</b> Instruments	EMC12630SE	980271	11/20/2019	11/19/2020			
Highpass Filter	Micro Tronics	BRM50701-01	G008	11/20/2019	11/19/2020			
High Pass Filter	Micro-Tronics	G003	RF99	11/20/2019	11/19/2020			
Notch Filter	Woken	EWT-54-0037	RF54	11/20/2019	11/19/2020			
Notch Filter	Woken	EWT-54-0038	RF55	11/20/2019	11/19/2020			
Lowpass Filter	Woken	EWT-56-0019	RF46	11/20/2019	11/19/2020			
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17388/4	11/20/2019	11/19/2020			
Coaxial Cable	Huber Suhner	RG 214/U	W22.03	11/20/2019	11/19/2020			
Coaxial Cable	Huber Suhner	SUCOFLEX 104	MY17413/4	11/20/2019	11/19/2020			
Radio Commu- nication Analyer	Anritsu	MT8821C	6262044739	12/06/2019	12/05/2020			

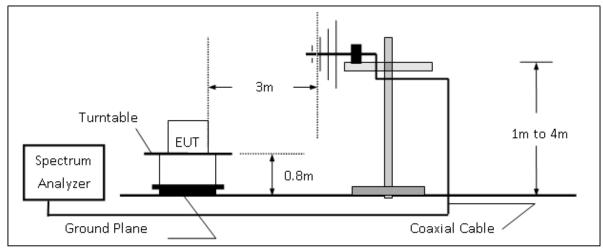


#### Test SET-UP 11.4

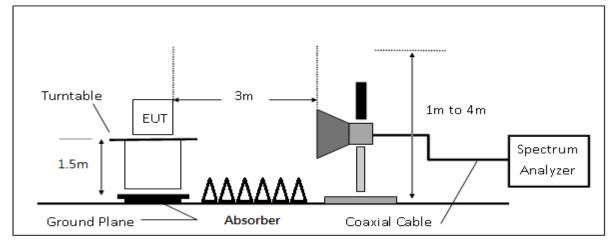
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



## (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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#### 11.5 **Measurement Procedure**

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules . 2.
- 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.
- Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) 6. and Quasi-peak (QP) at frequency below 1 GHz.
- Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency 7. above 1 GHz.
- Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 8. 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
- Maximum procedure was performed on the six highest emissions to ensure EUT com-9. pliance.
- 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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## **11.6 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 Strength* RA = Reading Amplitude AF = 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)  $Factor(dB) = Antenna Factor(dB\mu V/m) + Cable Loss(dB) - Pre_Amplifier Gain(dB)$ 

#### 11.7 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) was not reported.

#### 11.8 **Radiated Spurious Emission Measurement Result**

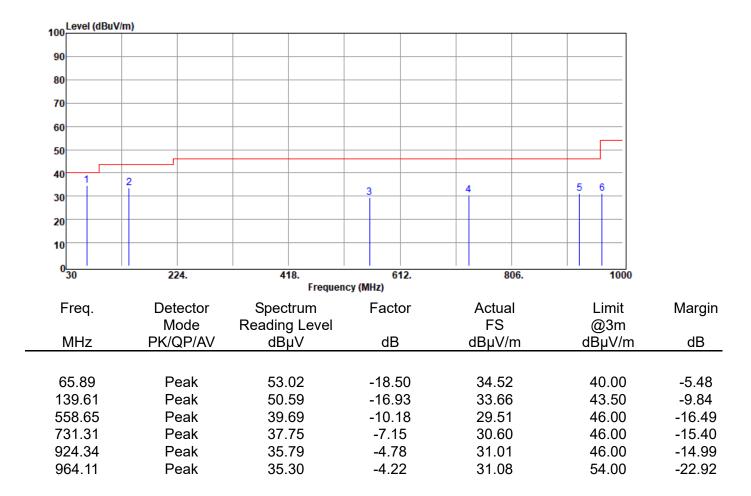
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only



#### 11.9 **Below 1GHz Worst-Case Data:**

## **CDD Mode**

Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 1	Temp./Humi.	:23.4/62
Test Channel	:5220 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

:2019-12-16

-12.49

-13.52

-11.49

-16.04

-13.84

-21.90

40.00

43.50

43.50

46.00

46.00

54.00

Test Date



:E2/2019/B0014

**Report Number** 

63.95

114.39

134.76

730.34

745.86

993.21

Peak

Peak

Peak

Peak

Peak

Peak

repert talliser		50011		leet Bate	.2010 12 10	
Operation Mode	:802.11a /	Band 1		Temp./Humi.	:23.4/62	
Test Channel	:5220 MHz	2		Antenna Pol.	:HORIZONT/	۹L
Test Mode	:TX CH MI	D		Engineer	:Kailin	
EUT Pol	:E2 Plan			J.		
100 Level (dBuV/m)						
100						
90						
80						
70						
60						
50						
<b>40</b>				45	6	
30 1 -						
20						
10						
0 <mark></mark>	224.	418.	612.	806.	1000	
		Frequenc				
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB

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45.60

49.15

49.37

37.10

39.02

36.19

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-18.09

-19.17

-17.36

-7.14

-6.86

-4.09

27.51

29.98

32.01

29.96

32.16

32.10

:2019-12-16

Margin

dB

-5.53

-10.16

-17.64

-17.96

-14.71 -22.15

40.00

43.50

46.00

46.00

46.00

54.00

Test Date



:E2/2019/B0014

**Report Number** 

62.98

141.55

311.30

479.11

745.86

993.21

100 Level (dBuV/m) 90 90 80 70 70	
90 80	
80	
60	
50	
40     1     2     5     6       30     3     4     5     6	
0 <mark>30 224. 418. 612. 806. 1000 Frequency (MHz)</mark>	
Freq. Detector Spectrum Factor Actual Limit Mode Reading Level FS @3m	I
$MHz PK/QP/AV dB\mu V dB dB\mu V/m dB\mu V/m$	

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52.48

50.13

43.54

39.28

38.15

35.94

Peak

Peak

Peak

Peak

Peak

Peak

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-18.01

-16.79

-15.18

-11.24

-6.86

-4.09

34.47

33.34

28.36

28.04

31.29

31.85

:2019-12-16

Test Date



:E2/2019/B0014

**Report Number** 

(opent Hambel				reet Bate	.2010 12 10	
Operation Mode	:802.11a /	Band 4		Temp./Humi.	:23.4/62	
lest Channel	:5785 MHz	<u>.</u>		Antenna Pol.	:HORIZONTAL	
Fest Mode	:TX CH MI	D		Engineer	:Kailin	
EUT Pol	:E2 Plan					
100 Level (dBuV/m)						
90						
80						
70						
60						
50						
40					6	
30 1 2 3				5		
20						
10						
0 <mark></mark>	224.	418.	612.	806.	1000	
		Frequence	y (MHz)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level	٩D	FS dBull/m	@3m	٩D

	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
66.86	Peak	49.95	-18.59	31.36	40.00	-8.64
120.21	Peak	49.87	-18.75	31.12	43.50	-12.38
143.49	Peak	49.34	-16.70	32.64	43.50	-10.86
213.33	Peak	46.71	-18.66	28.05	43.50	-15.45
745.86	Peak	37.71	-6.86	30.85	46.00	-15.15
965.08	Peak	37.13	-4.20	32.93	54.00	-21.07



30 20 10

Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 1	Temp./Humi.	:23.4/62
Test Channel	:5210 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		
100 Level (dBuV/m)			
90			

3

			1 I		1	
0 <mark></mark>	224.	418.	612.	806.	1000	
		Frequenc	;y (MHz)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
•	Mode	Reading Level		FS	@3m	U
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
				•	•	
61.04	Peak	53.35	-17.68	35.67	40.00	-4.33
132.82	Peak	51.76	-17.61	34.15	43.50	-9.35
479.11	Peak	42.32	-11.24	31.08	46.00	-14.92
568.35	Peak	39.05	-9.77	29.28	46.00	-16.72
745.86	Peak	38.54	-6.86	31.68	46.00	-14.32
835.10	Peak	37.82	-6.19	31.63	46.00	-14.37

5

6

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



Report Number Operation Mode Test Channel Test Mode EUT Pol	n Mode :802.11ac80 / Band 1 innel :5210 MHz de :TX CH LOW			Test Date Temp./Humi. Antenna Pol. Engineer	:2019-12-16 :23.4/62 :HORIZONTAL :Kailin
100 Level (dBuV/m)			1		
90					
80					
70					
60					
50					
40 1 2				4 5	6

0 <mark></mark> 30	224.	418.	612.	806.	1000	
		Frequenc	(MHZ)			
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
119.24	Peak	51.78	-18.85	32.93	43.50	-10.57
140.58	Peak	50.00	-16.88	33.12	43.50	-10.38
594.54	Peak	38.91	-9.03	29.88	46.00	-16.12
802.12	Peak	36.88	-6.20	30.68	46.00	-15.32
873.90	Peak	37.14	-5.76	31.38	46.00	-14.62
956.35	Peak	38.07	-4.40	33.67	46.00	-12.33

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



30 20 10 3

Report Number	:E2/2019/B0014					Test Da	ate	:2019-12	2-16
Operation Mode	:802.11ac80 /	Band 4	ļ			Temp./	Humi.	:23.4/62	
Test Channel	:5775 MHz					Antenr	na Pol.	:VERTIC	AL
Test Mode	lode :TX CH LOW					Engine	er	:Kailin	
EUT Pol :E2 Plan									
100_Level (dBuV/m)									
90									
80									

0	224.	418.	612.	806.	1000	
		Frequenc	;y (MHz)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	-
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
65.89	Peak	51.16	-18.50	32.66	40.00	-7.34
131.85	Peak	50.87	-17.71	33.16	43.50	-10.34
209.45	Peak	49.58	-18.70	30.88	43.50	-12.62
358.83	Peak	41.18	-13.95	27.23	46.00	-18.77
456.80	Peak	39.76	-11.34	28.42	46.00	-17.58
955.38	Peak	38.27	-4.43	33.84	46.00	-12.16

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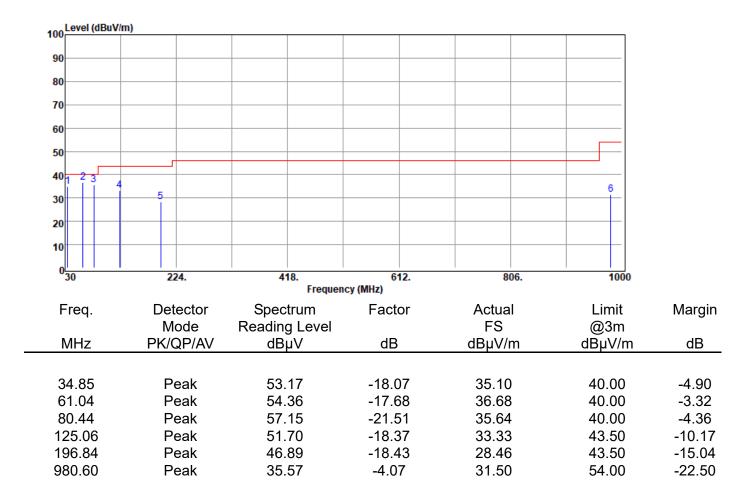
Report Number Operation Mode Test Channel Test Mode EUT Pol	Operation Mode:802.11ac80 / Band 4Test Channel:5775 MHzTest Mode:TX CH LOW			Test Date Temp./Humi. Antenna Pol. Engineer	:2019-12-16 :23.4/62 :HORIZONTAL :Kailin	
100 Level (dBuV/m)						
90 80						
70						
60 50						
40						
30	2 3			4 5	6	

30	224.	418. Frequenc	612. ;y (MHz)	806.	1000	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
62.98	Peak	46.44	-18.01	28.43	40.00	-11.57
158.04	Peak	48.91	-16.21	32.70	43.50	-10.80
311.30	Peak	44.24	-15.18	29.06	46.00	-16.94
736.16	Peak	38.14	-7.15	30.99	46.00	-15.01
844.80	Peak	38.43	-6.19	32.24	46.00	-13.76
977.69	Peak	36.77	-4.10	32.67	54.00	-21.33



## **Beamforming Mode**

Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 1	Temp./Humi.	:21.4/60
Test Channel	:5220 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

:2020-01-08

-19.14

-17.00

-23.02

46.00

46.00

54.00

Test Date



:E2/2019/B0014

**Report Number** 

658.56

856.44

968.96

Peak

Peak

Peak

Operation Mode Test Channel Test Mode EUT Pol	e :802.11a / :5220 MHz :TX CH MI :E2 Plan	Ζ		Temp./Humi. Antenna Pol. Engineer	:21.4/60 :HORIZONT/ :Kailin	AL
100 Level (dBuV/m	1)					
90						
80						
70						
60						
50	ſ					
40	3			5	6	
30	2		4			
20						
10						
030	224.	418.	612.	806.	1000	
		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
07 70	Deale	45.00	47 75	00.07	40.00	44.00
37.76	Peak	45.82	-17.75	28.07	40.00	-11.93
158.04	Peak	40.43	-16.21	24.22	43.50	-19.28
196.84	Peak	50.02	-18.43	31.59	43.50	-11.91

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35.12

35.13

35.08

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-8.26

-6.13

-4.10

26.86

29.00

30.98

:2020-01-08

Test Date



:E2/2019/B0014

**Report Number** 

893.30

Peak

Operation Mode Test Channel Test Mode EUT Pol	:802.11a / :5785 MHz :TX CH MI :E2 Plan	Z		Temp./Humi. Antenna Pol. Engineer	:21.4/60 :VERTICAL :Kailin	
100 Level (dBuV/m)						
90						
80						
70						
60						
50						
40						
40 2 3 30	4			5	5	
20						
10						
0 <mark></mark> 30	224.	418. Frequen	612. cy (MHz)	806.	1000	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
·	Mode	Reading Level		FS	@3m	Ū
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
F7 40		F0 70	47 45	00 57	40.00	0.40
57.16	Peak	53.72	-17.15	36.57	40.00	-3.43
80.44	Peak	56.03	-21.51	34.52	40.00	-5.48
112.45 196.84	Peak	52.82 46.73	-19.27 -18.43	33.55 28.30	43.50 43.50	-9.95
728.40	Peak	46.73 36.64		28.30 29.46		-15.20
120.40	Peak	30.04	-7.18	29.40	46.00	-16.54

38.36

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-5.39

32.97

46.00

-13.03

:2020-01-08

-13.01

-9.78

-18.88

-16.05

-23.28

43.50

43.50

46.00

46.00

54.00

Test Date

30.49

33.72

27.12

29.95

30.72



:E2/2019/B0014

**Report Number** 

119.24

196.84

500.45

749.74

966.05

Peak

Peak

Peak

Peak

Peak

Operation Mode Test Channel Test Mode EUT Pol	:802.11a / I :5785 MHz :TX CH MII :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:21.4/60 :HORIZONT/ :Kailin	AL.
100 Level (dBuV/m)						
90						
80						
70						
60						
50						
40						
30	3	4		5	6	
20						
10						
0 <mark>30</mark>	224.	418. Frequen	612. cy (MHz)	806.	1000	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
37.76	Peak	46.26	-17.75	28.51	40.00	-11.49

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49.34

52.15

38.23

36.70

34.90

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-18.85

-18.43

-11.11

-6.75

-4.18

:2020-01-08

Margin

Test Date



:E2/2019/B0014

**Report Number** 

peration Mode	:802.11ac8			Temp./Humi.	:2020 01
est Channel	:5210 MHz			Antenna Pol.	
est Mode	:TX CH LO	W		Engineer	:Kailin
EUT Pol	:E2 Plan			-	
100 Level (dBuV/m)				1	
90					
80					
70					
60					
50					
40 1 2				56	
30	3 4				
20					
10					
0 <mark>30</mark>	224.	418. Frequen	612. cy (MHz)	806.	1000
Freq.	Detector	Spectrum	Factor	Actual	Limit

	rieq.	Mode	Reading Level	Tactor	FS	@3m	margin
-	MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
		<b>_</b> .				10.00	
	61.04	Peak	53.76	-17.68	36.08	40.00	-3.92
	119.24	Peak	53.96	-18.85	35.11	43.50	-8.39
	196.84	Peak	46.59	-18.43	28.16	43.50	-15.34
	228.85	Peak	43.86	-17.89	25.97	46.00	-20.03
	733.25	Peak	43.35	-7.17	36.18	46.00	-9.82
	745.86	Peak	41.98	-6.86	35.12	46.00	-10.88

6



30

20 10 2

3

Report Number	:E2/2019/B0	014			Test Da	ate	:2020-01	-08
Operation Mode	:802.11ac80	/ Band	1		Temp./	Humi.	:21.4/60	
Test Channel	:5210 MHz				Antenn	a Pol.	:HORIZO	ONTAL
Test Mode	:TX CH LOW	/			Engine	er	:Kailin	
EUT Pol	:E2 Plan							
100 Level (dBuV/m)								
90								
80								
00								

0 <u></u> 30	224.	418. Frequenc	612. ;y (MHz)	806.	1000	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
118.27	Peak	47.78	-18.88	28.90	43.50	-14.60
194.90	Peak	52.16	-18.40	33.76	43.50	-9.74
337.49	Peak	38.65	-14.00	24.65	46.00	-21.35
500.45	Peak	38.67	-11.11	27.56	46.00	-18.44
749.74	Peak	36.36	-6.75	29.61	46.00	-16.39
987.39	Peak	35.03	-4.08	30.95	54.00	-23.05

:2020-01-08

Test Date



:E2/2019/B0014

**Report Number** 

peration Mode	:802.11ac8			Temp./Humi.	:2020 01
est Channel	:5775 MHz			Antenna Pol.	:VERTICA
est Mode	:TX CH LO	W		Engineer	:Kailin
UT Pol	:E2 Plan				
100 Level (dBuV/m)		1	1		
90					
80					
70					
60					
50					
40 2 3	J				
30	4			5	6
20					
10					+
0 <mark></mark> 30	224.	418. Frequer	612. hcy (MHz)	806.	1000
Freg.	Detector	Spectrum	Factor	Actual	Limit

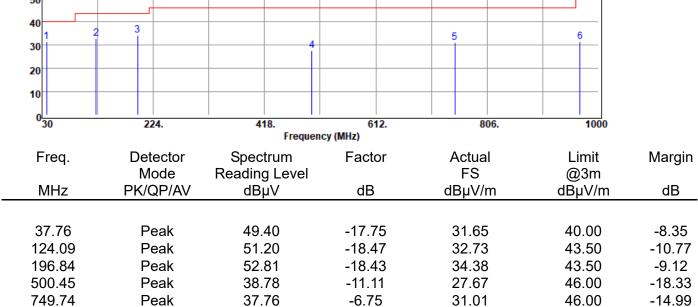
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
55.22	Peak	53.83	-17.05	36.78	40.00	-3.22
80.44	Peak	56.98	-21.51	35.47	40.00	-4.53
117.30	Peak	52.67	-18.96	33.71	43.50	-9.79
196.84	Peak	47.11	-18.43	28.68	43.50	-14.82
791.45	Peak	34.66	-6.13	28.53	46.00	-17.47
967.99	Peak	34.88	-4.13	30.75	54.00	-23.25



967.99

Peak

Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:21.4/60
Test Channel	:5775 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		
100 Level (dBuV/m)		 1	
90			
80			
70			
60			
50			



-4.13

31.35

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

35.48

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54.00

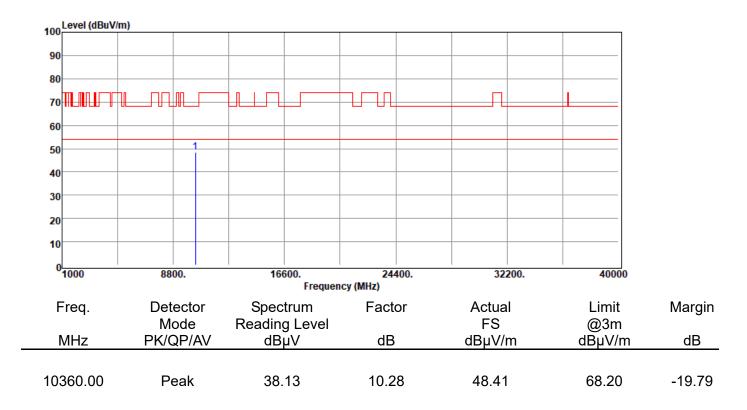
-22.65



## 11.9.1 Above 1GHz Worst-Case Data:

## **CDD Mode**

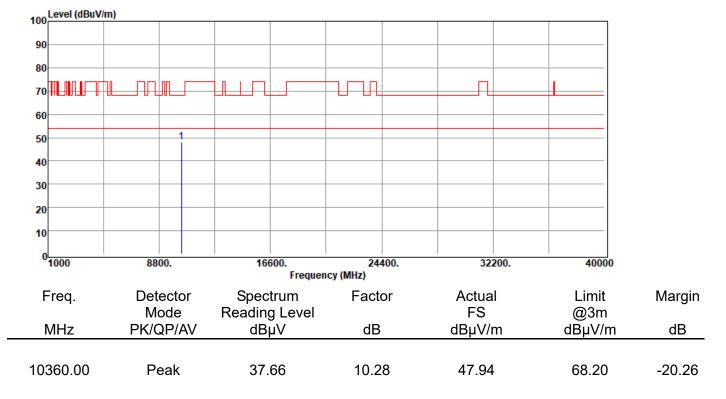
Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 1	Temp./Humi.	:23.2/59
Test Channel	:5180 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

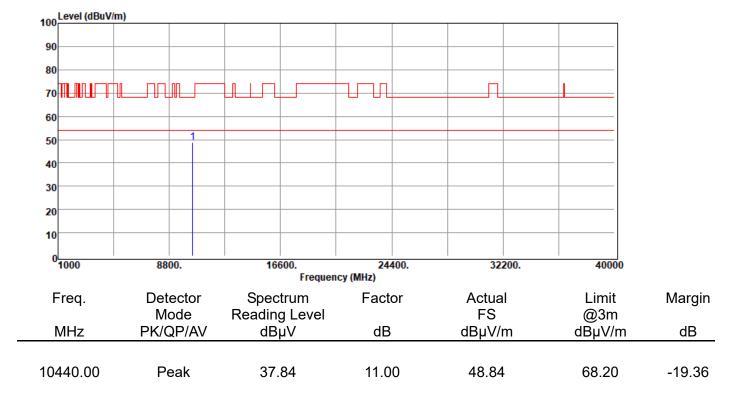


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 1	Temp./Humi.	:23.2/59
Test Channel	:5180 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



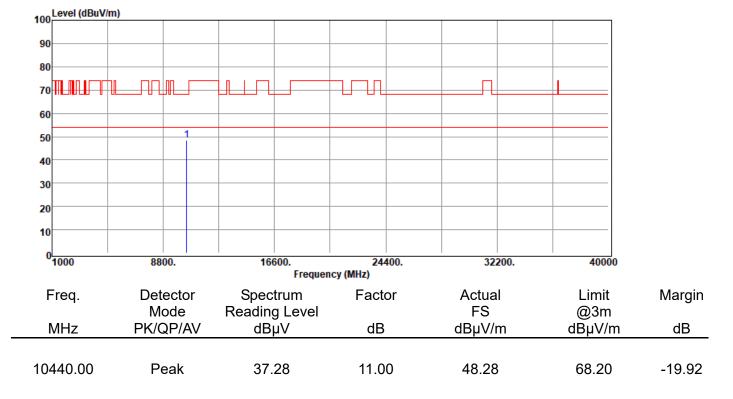


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 1	Temp./Humi.	:23.2/59
Test Channel	:5220 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



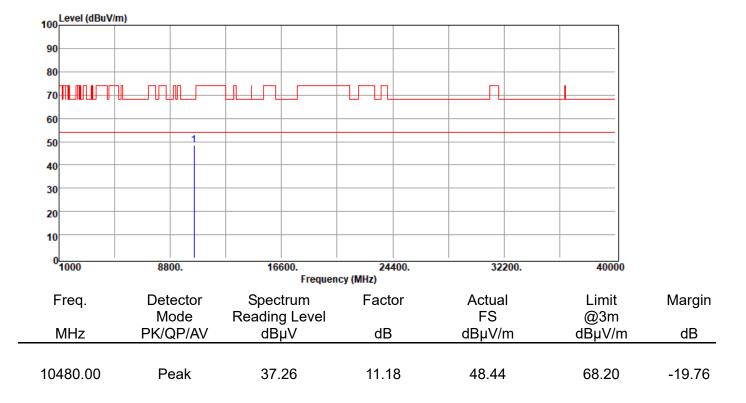


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 1	Temp./Humi.	:23.2/59
Test Channel	:5220 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



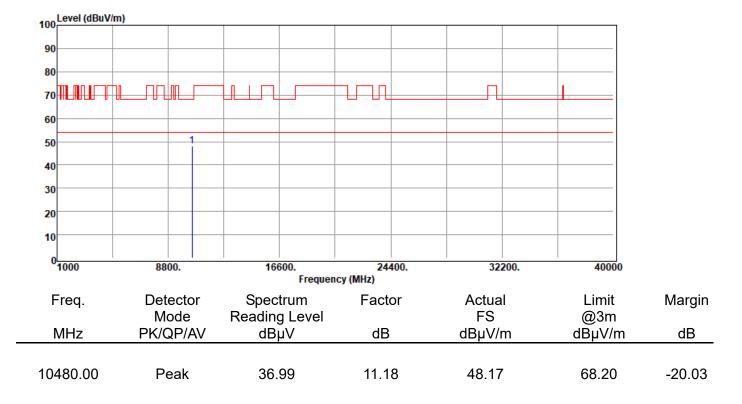


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 1	Temp./Humi.	:23.2/59
Test Channel	:5240 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



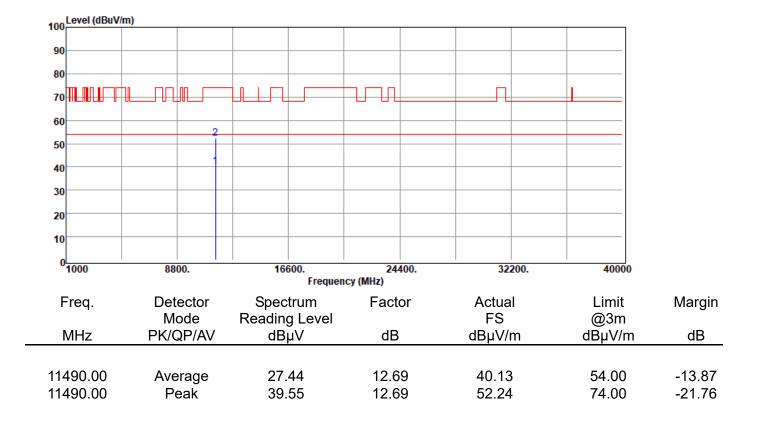


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 1	Temp./Humi.	:23.2/59
Test Channel	:5240 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



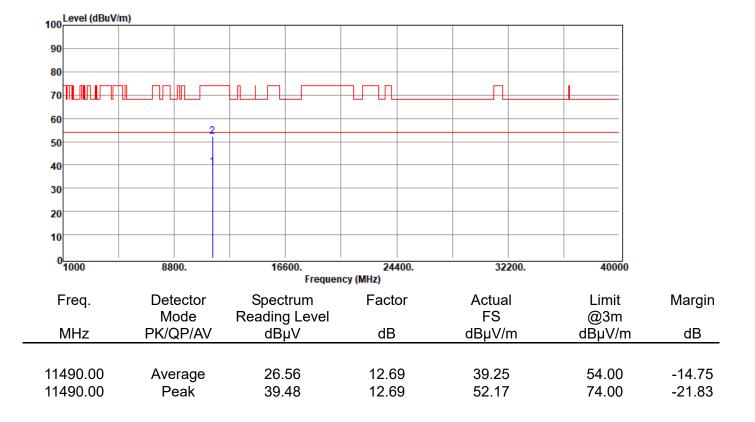


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 4	Temp./Humi.	:23.2/59
Test Channel	:5745 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



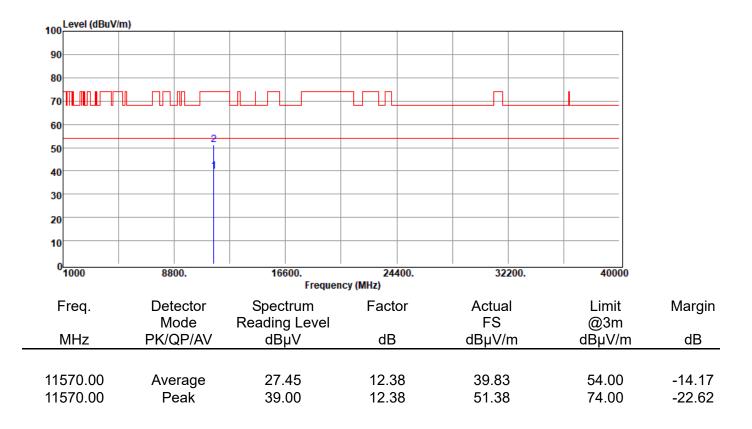


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 4	Temp./Humi.	:23.2/59
Test Channel	:5745 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



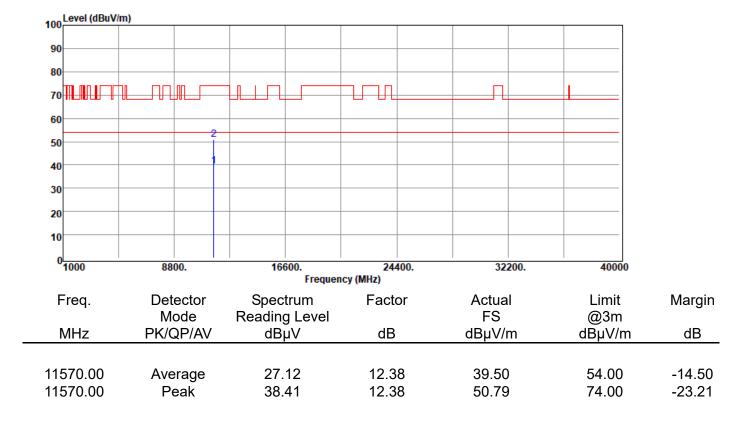


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 4	Temp./Humi.	:23.2/59
Test Channel	:5785 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



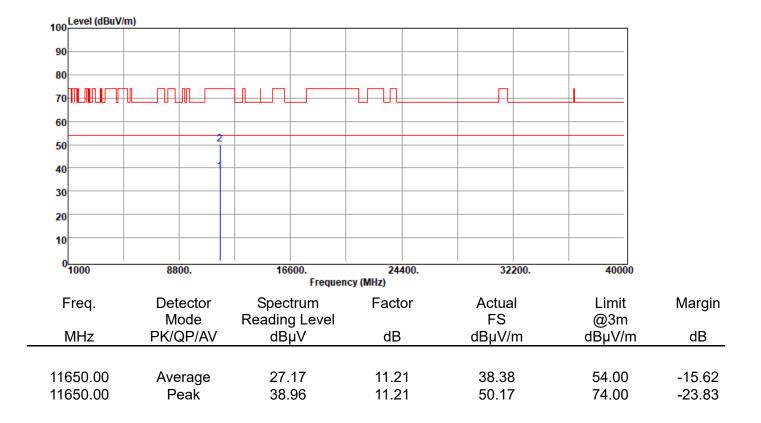


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 4	Temp./Humi.	:23.2/59
Test Channel	:5785 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



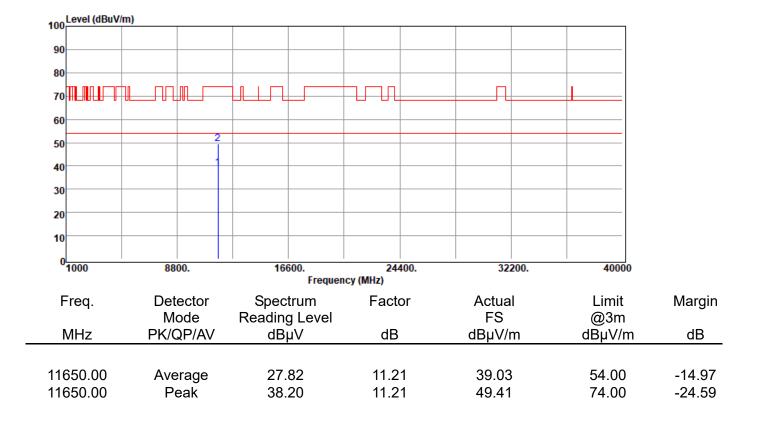


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 4	Temp./Humi.	:23.2/59
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



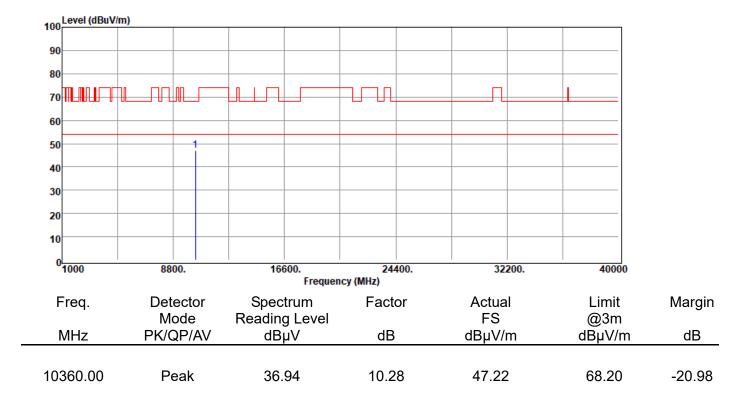


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11a / Band 4	Temp./Humi.	:23.2/59
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



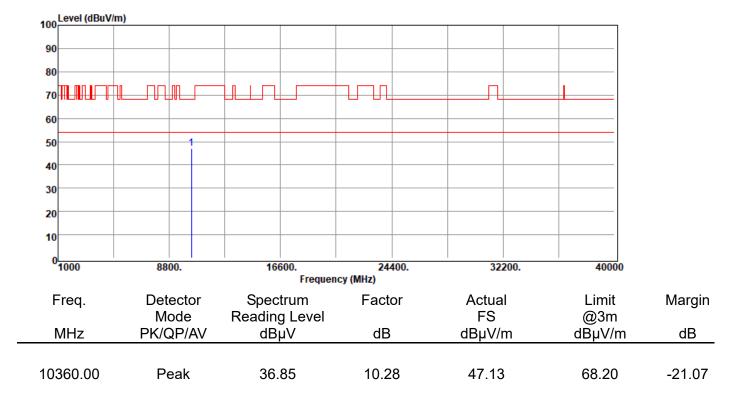


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5180 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



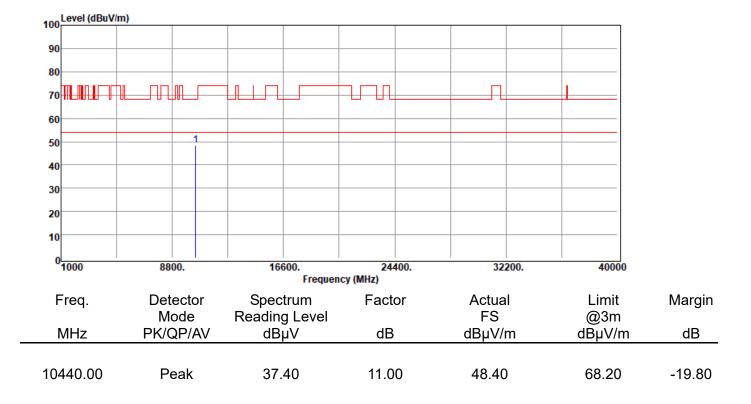


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5180 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



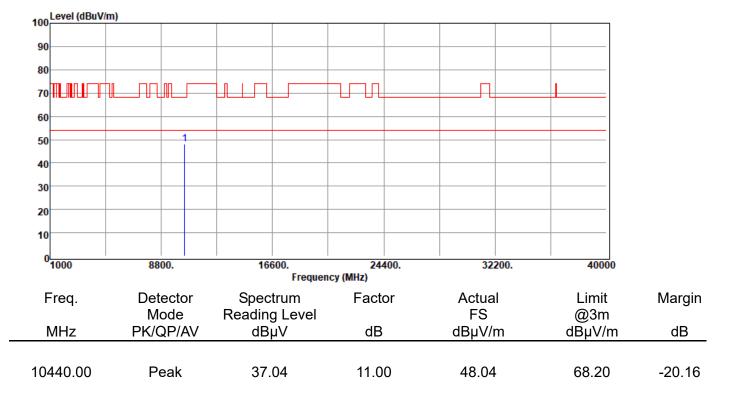


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5220 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



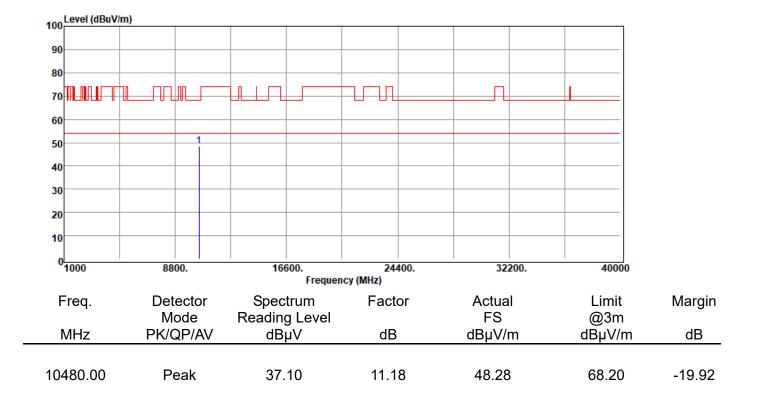


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5220 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		





Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5240 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



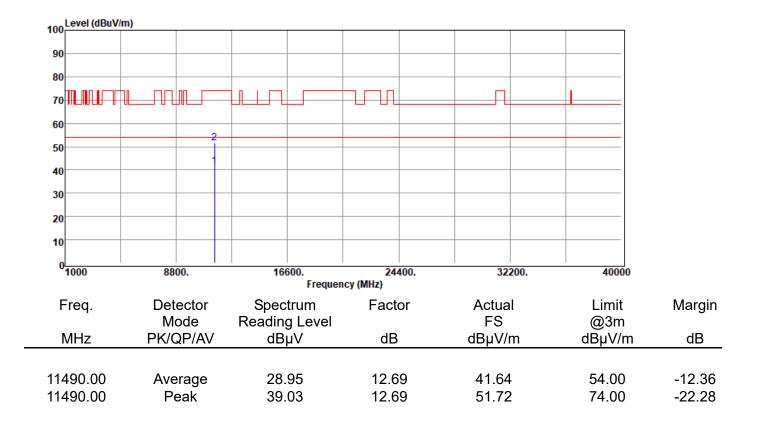


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5240 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



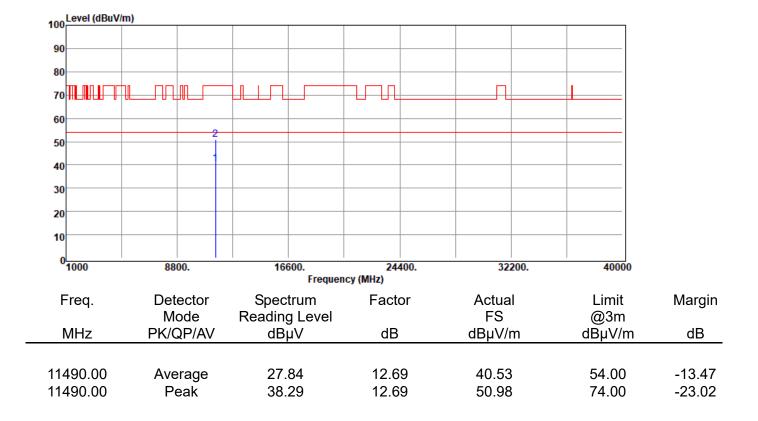


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5745 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



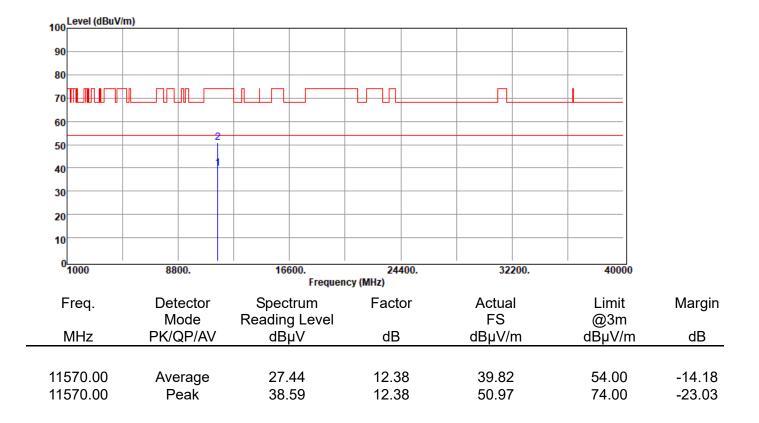


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5745 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



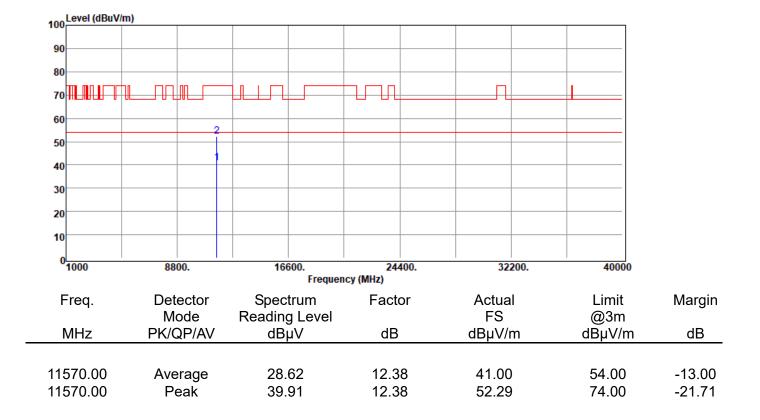


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5785 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



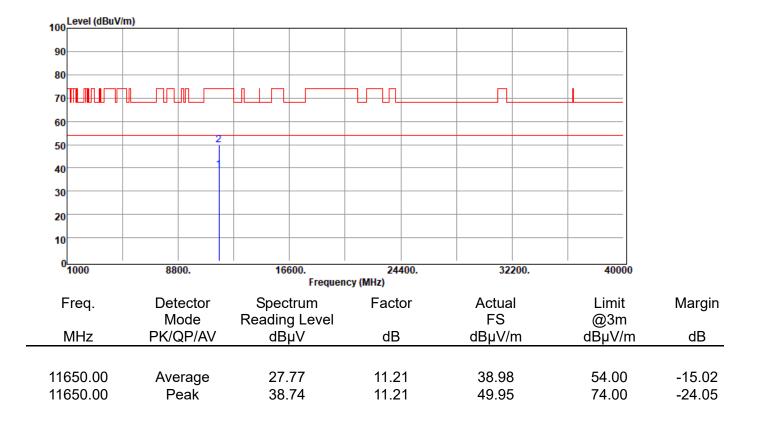


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5785 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



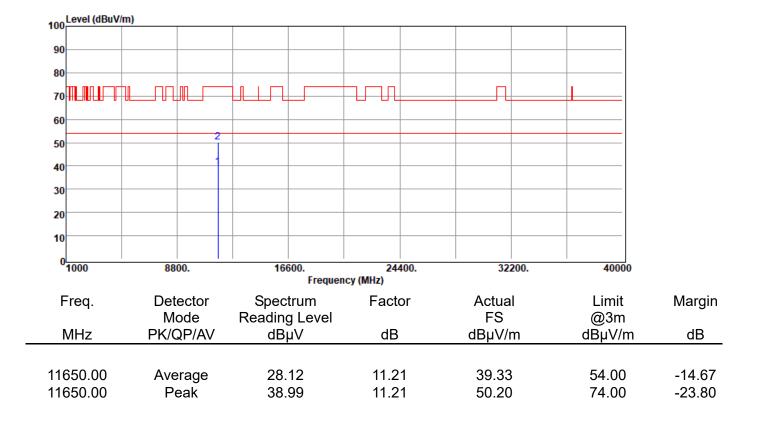


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



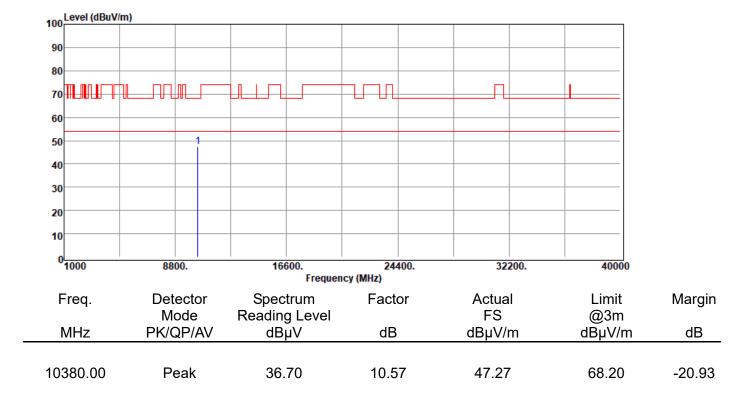


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



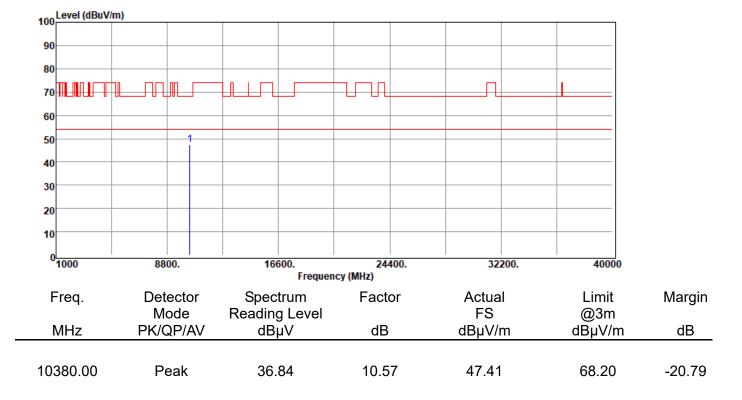


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5190 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



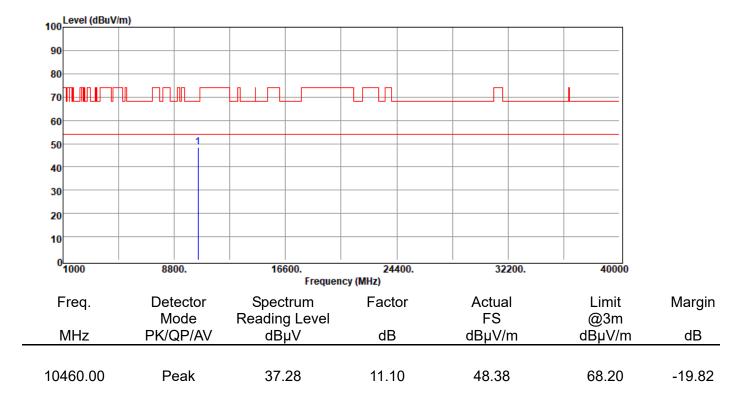


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5190 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



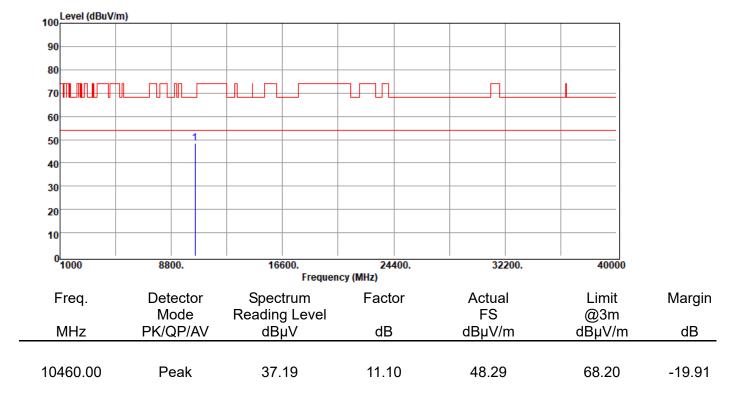


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5230 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



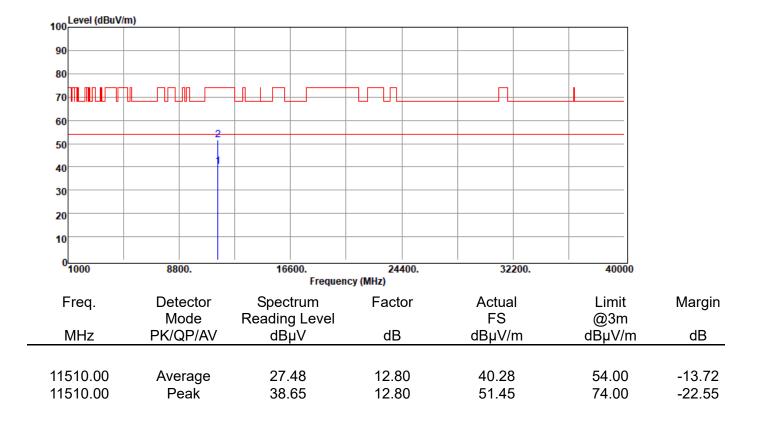


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5230 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



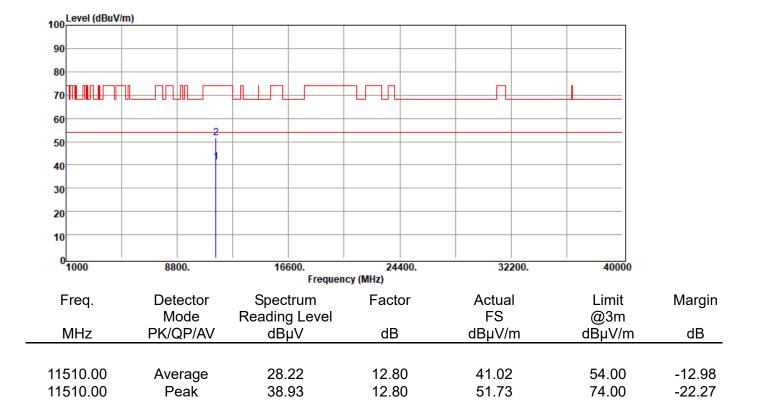


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5755 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



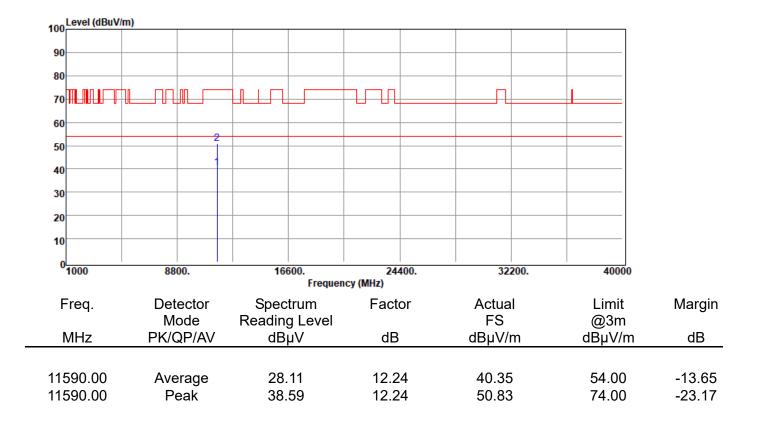


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5755 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



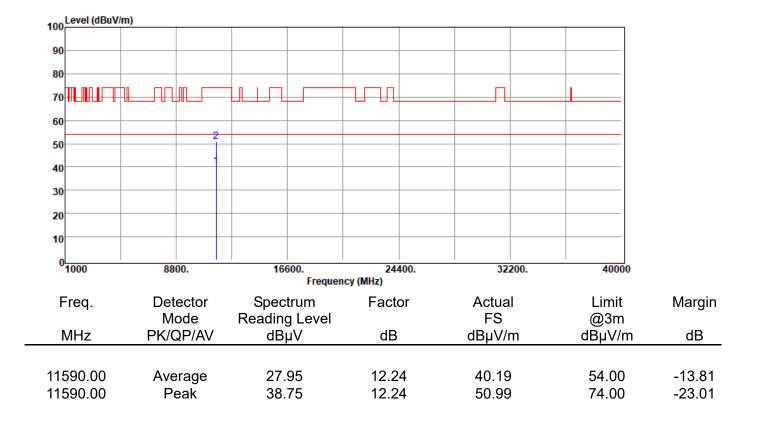


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5795 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



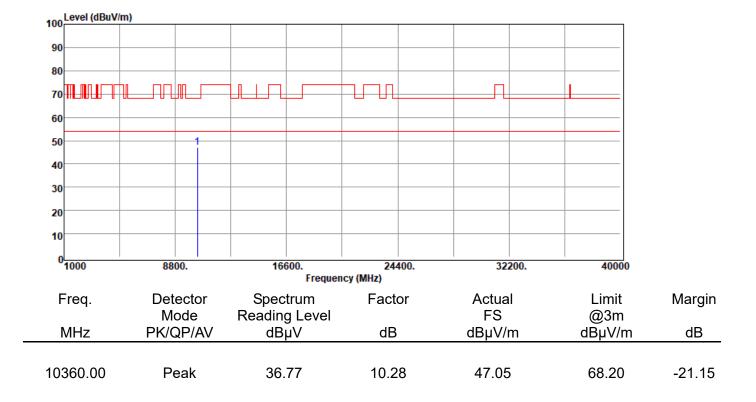


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5795 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



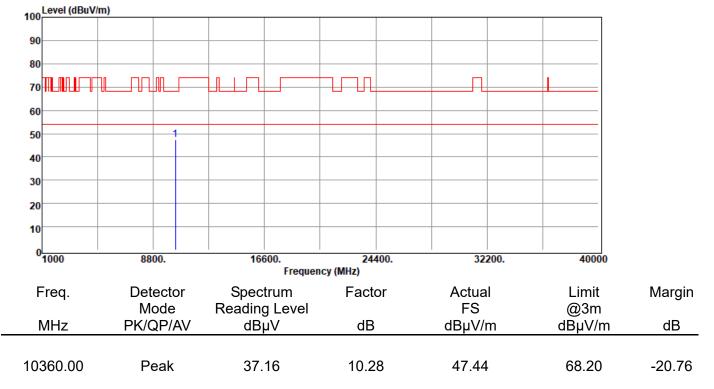


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5180 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



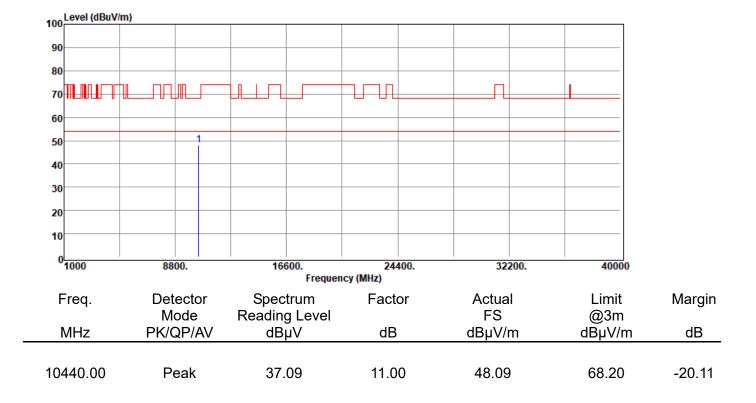


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5180 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



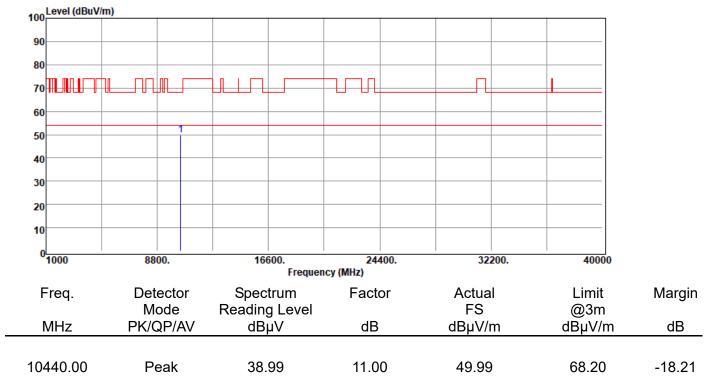


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5220 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



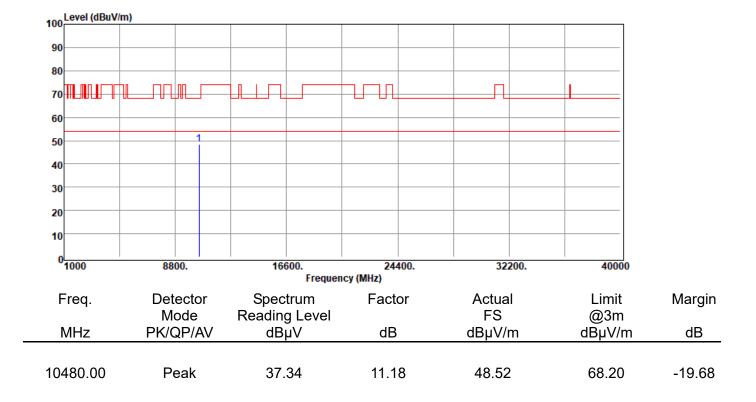


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5220 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



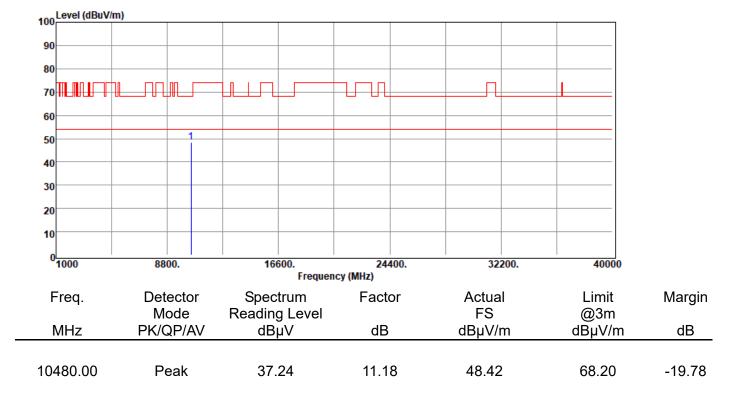


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5240 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



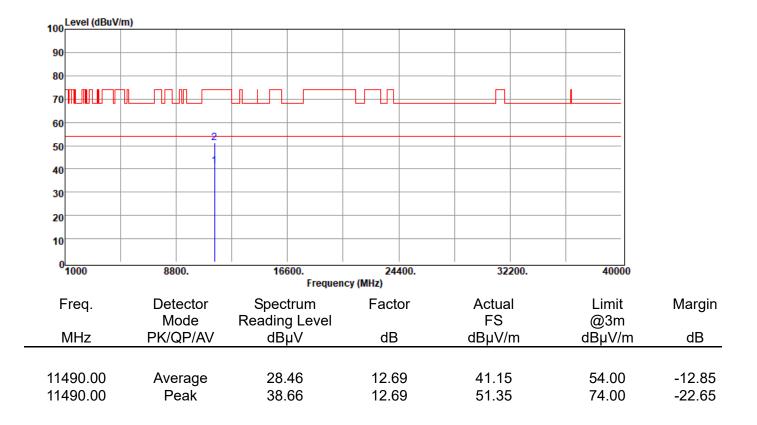


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:23.1/60
Test Channel	:5240 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



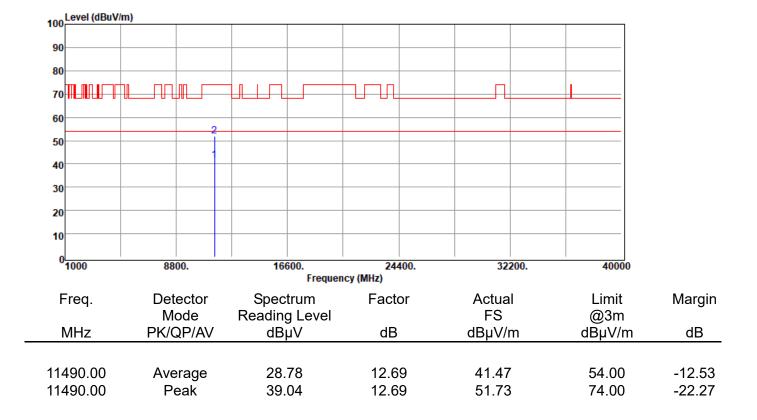


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5745 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



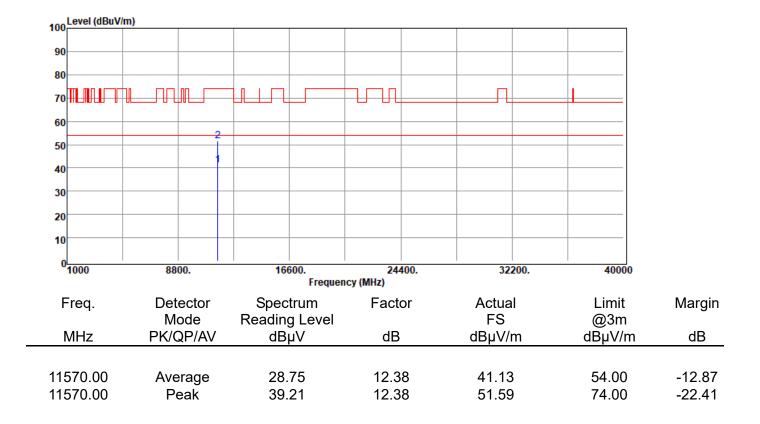


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5745 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



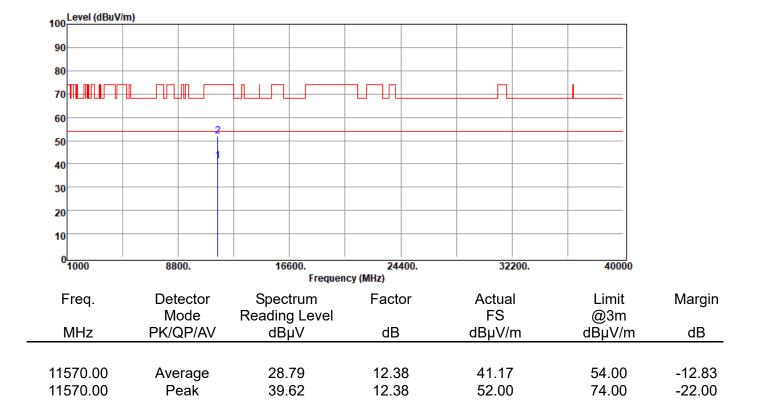


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5785 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



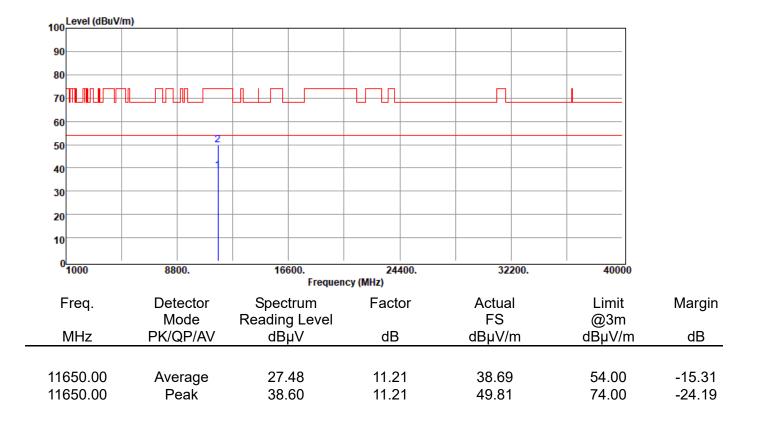


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5785 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



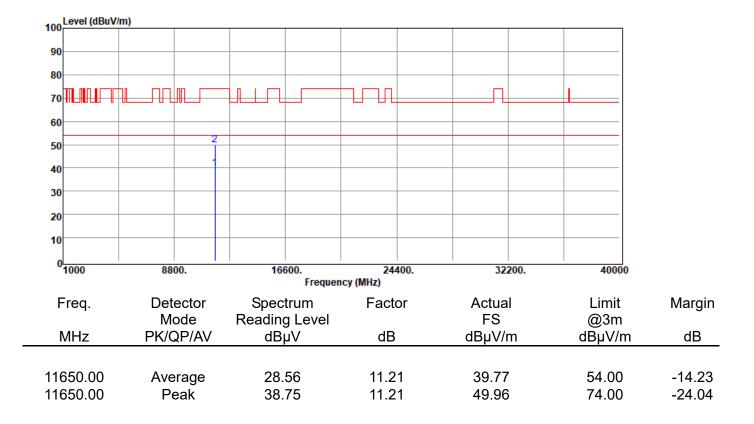


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



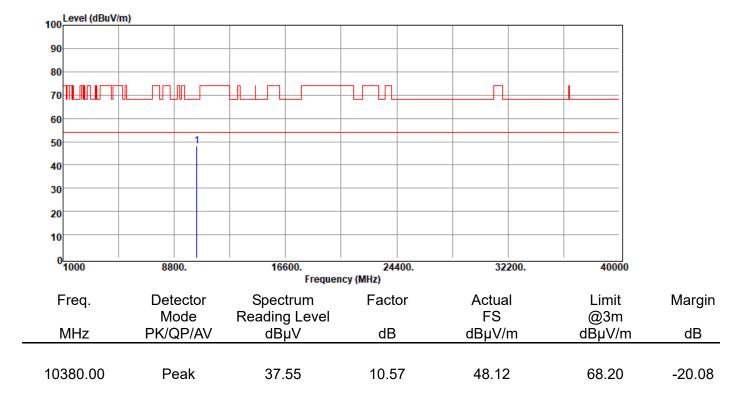


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:23.1/60
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



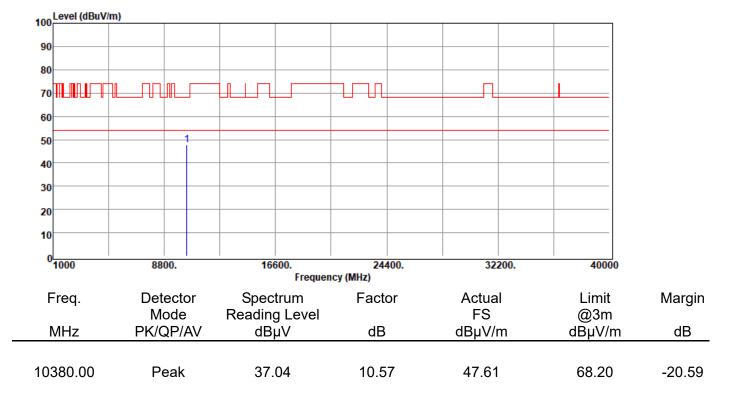


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 1	Temp./Humi.	:23.3/61
Test Channel	:5190 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



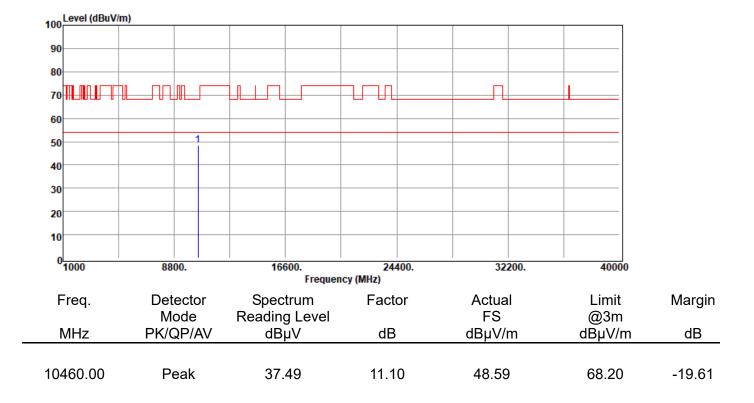


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 1	Temp./Humi.	:23.3/61
Test Channel	:5190 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



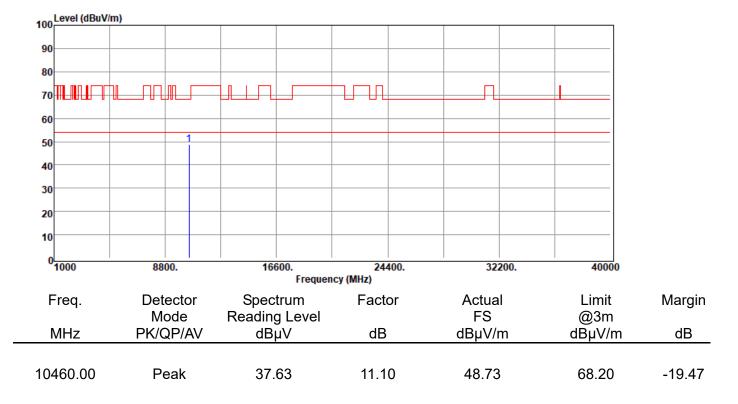


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 1	Temp./Humi.	:23.3/61
Test Channel	:5230 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



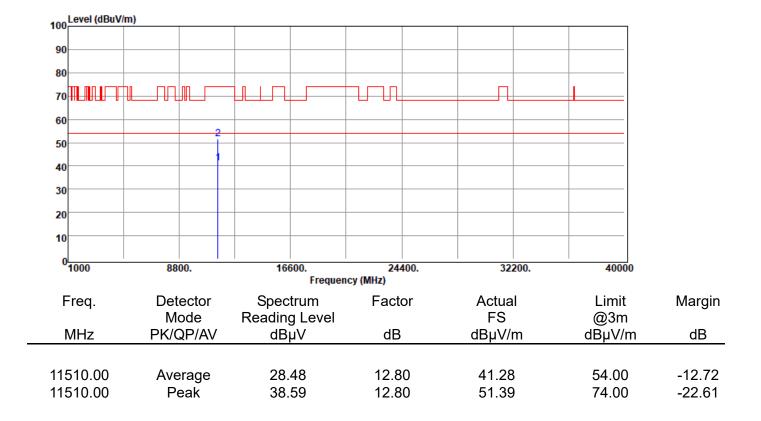


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 1	Temp./Humi.	:23.3/61
Test Channel	:5230 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



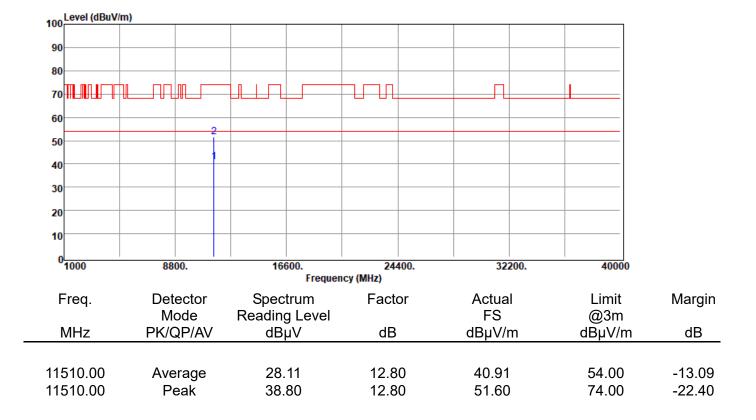


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:23.3/61
Test Channel	:5755 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



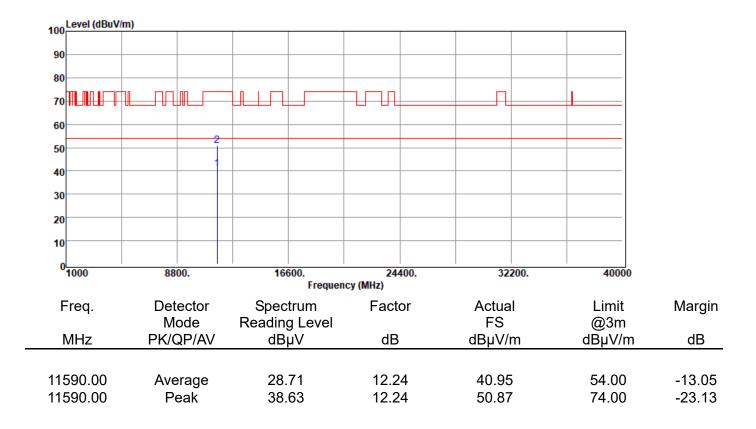


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:23.3/61
Test Channel	:5755 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



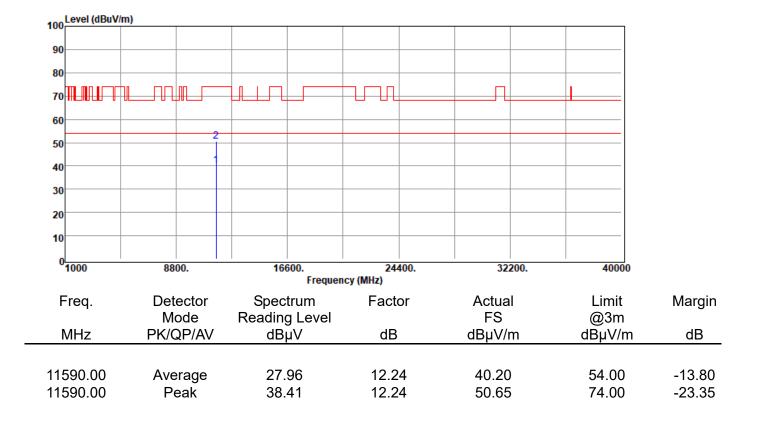


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:23.3/61
Test Channel	:5795 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



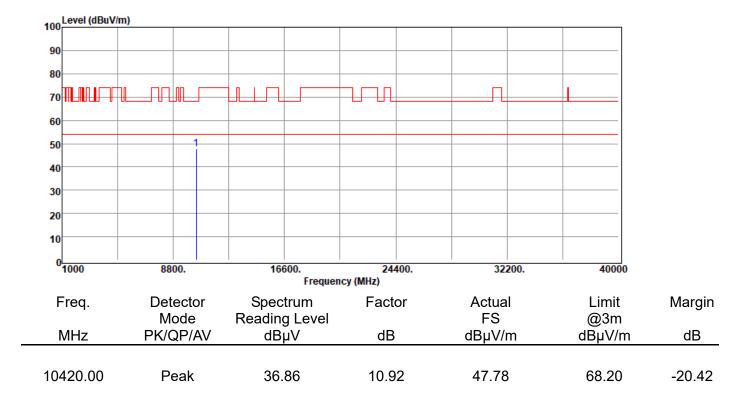


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:23.3/61
Test Channel	:5795 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



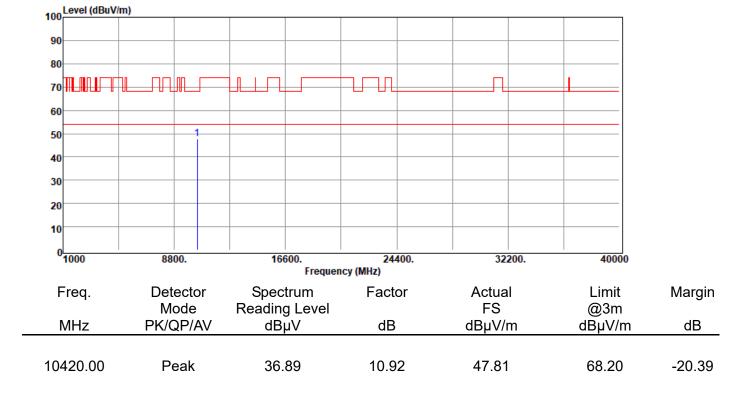


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 1	Temp./Humi.	:23.3/61
Test Channel	:5210 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



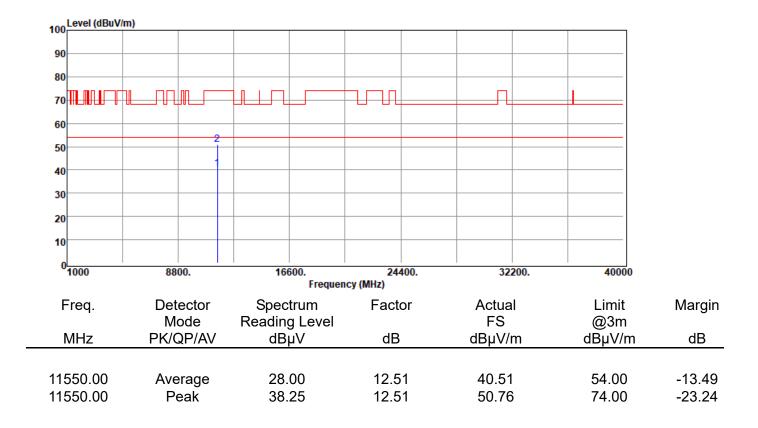


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 1	Temp./Humi.	:23.3/61
Test Channel	:5210 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



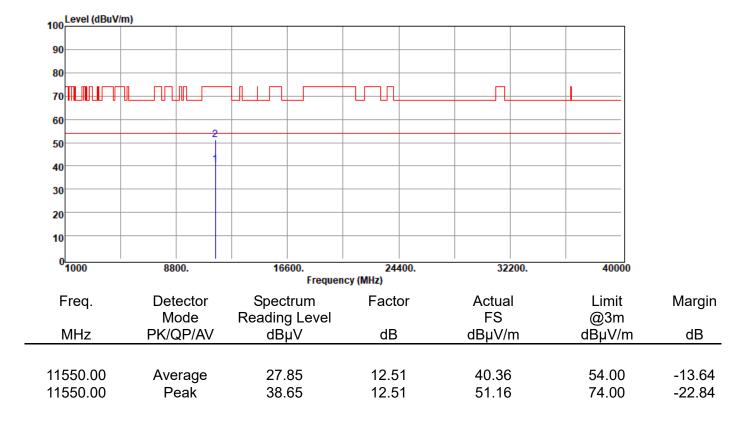


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:23.3/61
Test Channel	:5775 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		





Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:23.3/61
Test Channel	:5775 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		

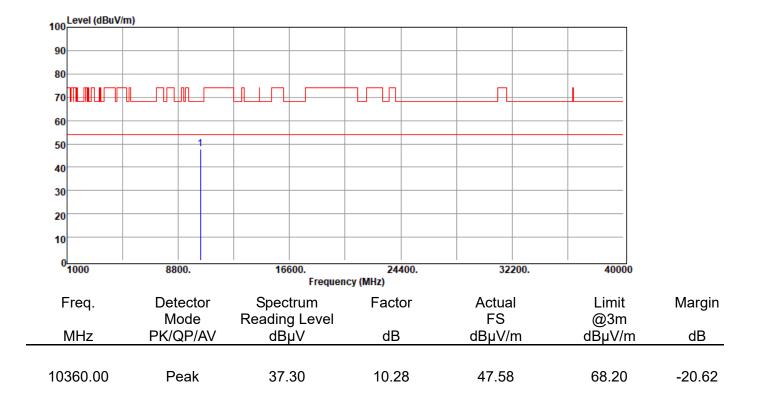




## **Beamforming Mode**

Report Number	:E2/2019/B0014
Operation Mode	:802.11a / Band 1
Test Channel	:5180 MHz
Test Mode	:TX CH LOW
EUT Pol	:E2 Plan

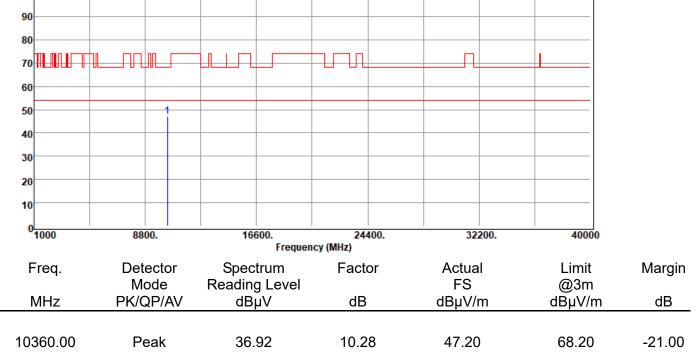
Test Date	:2020-01-08
Temp./Humi.	:21.3/62
Antenna Pol.	:VERTICAL
Engineer	:Kailin



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

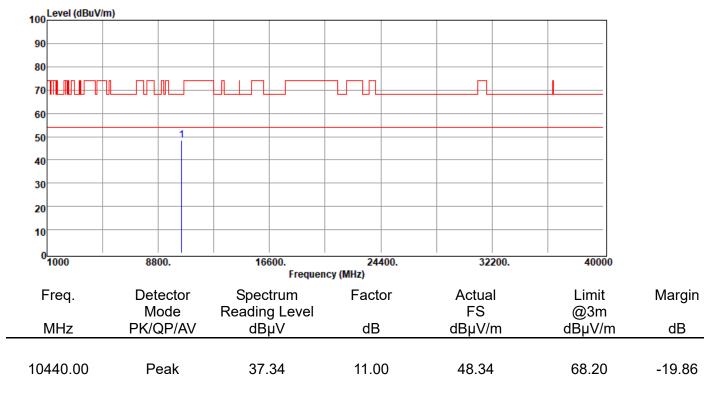


Report Number	:E2/2019/B	0014		Test Da	ate	:2020-01	-08
Operation Mode	:802.11a/E	Band 1		Temp./ł	Humi.	:21.3/62	
Test Channel	:5180 MHz			Antenn	a Pol.	:HORIZO	ONTAL
Test Mode	:TX CH LO	W		Engine	er	:Kailin	
EUT Pol	:E2 Plan						
100 Level (dBuV/m)							
100							



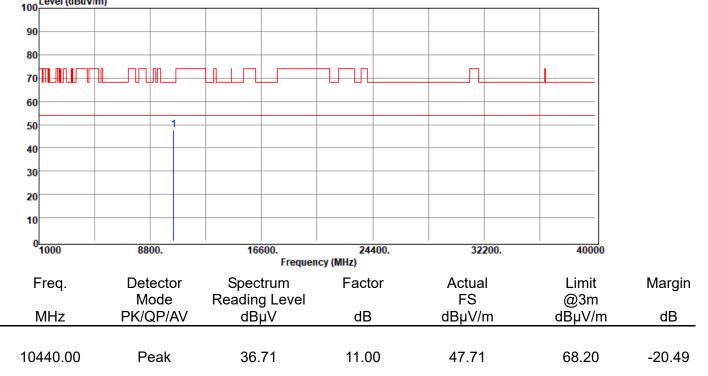


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5220 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



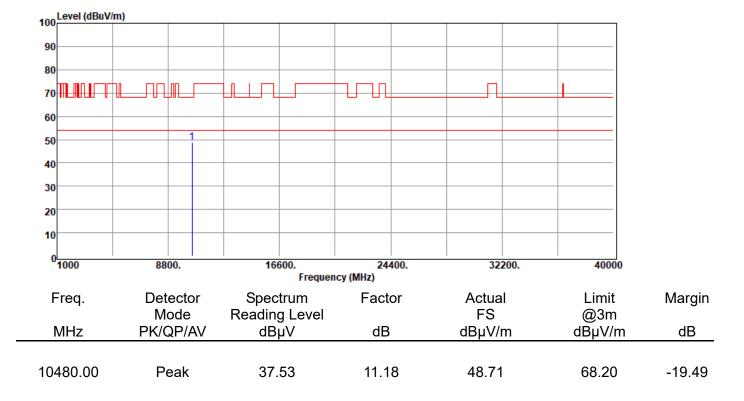


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5220 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		
l evel (dBuV/m)			



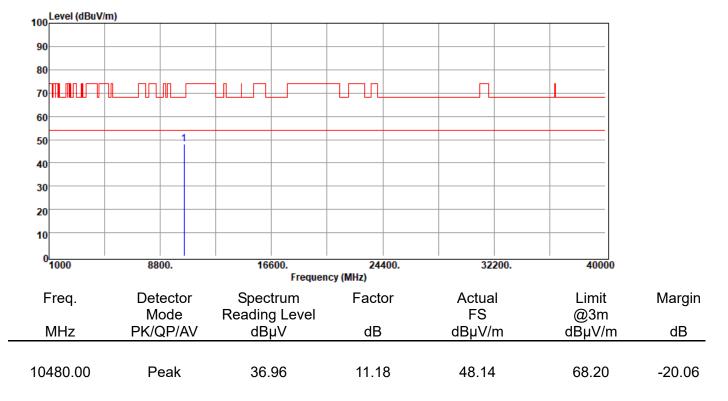


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5240 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



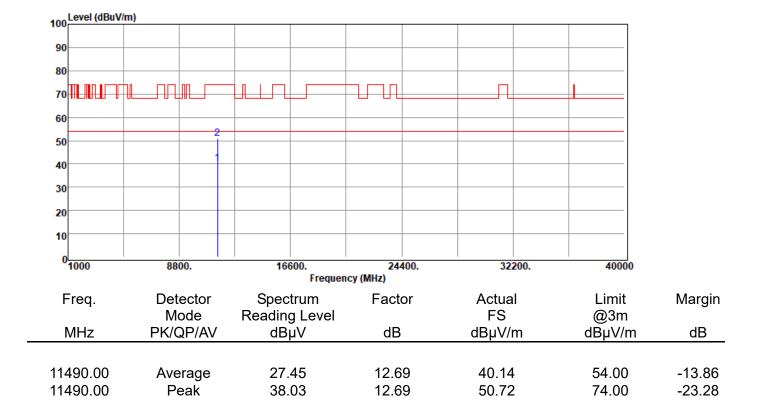


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5240 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



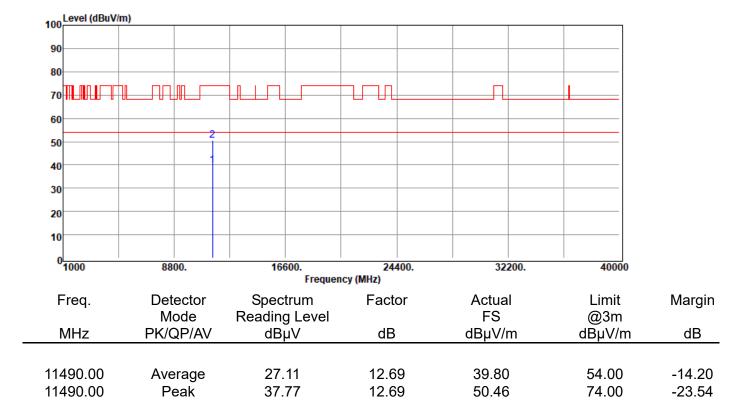


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 4	Temp./Humi.	:21.3/62
Test Channel	:5745 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



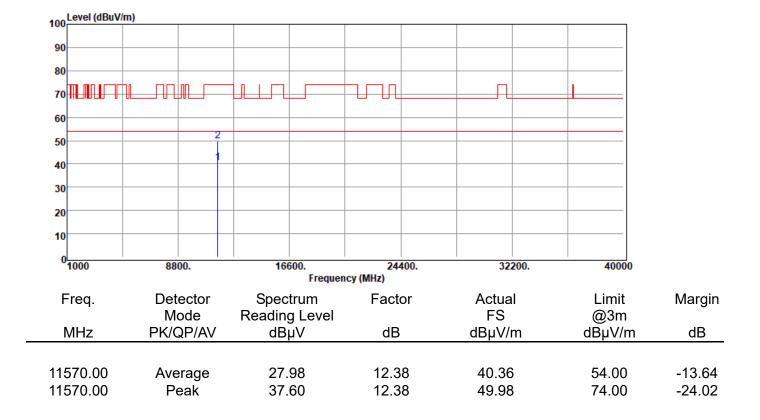


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 4	Temp./Humi.	:21.3/62
Test Channel	:5745 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



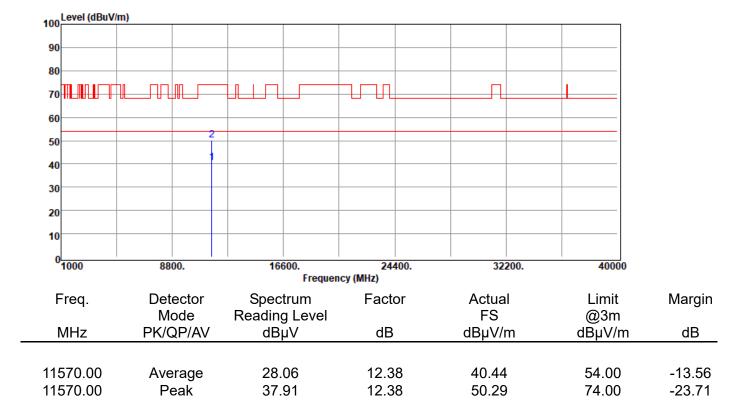


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 4	Temp./Humi.	:21.1/61
Test Channel	:5785 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



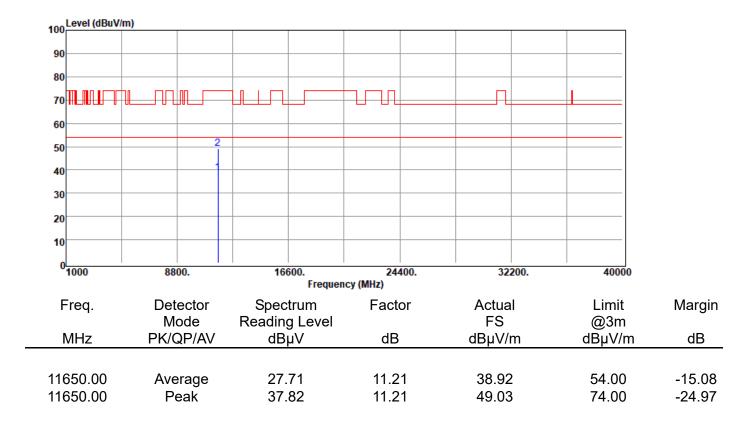


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 4	Temp./Humi.	:21.1/61
Test Channel	:5785 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



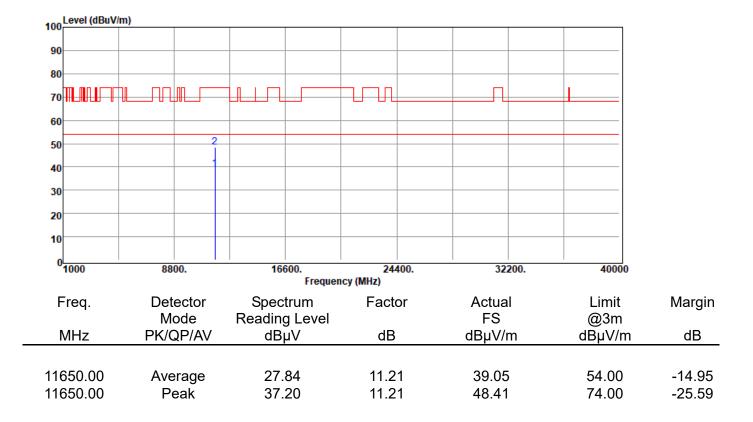


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 4	Temp./Humi.	:21.1/61
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



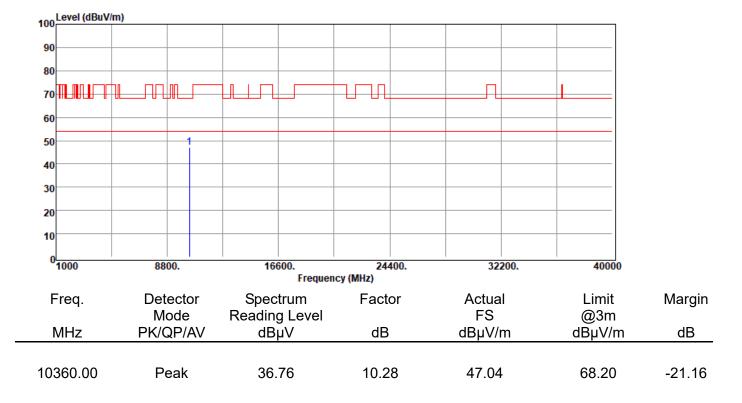


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11a / Band 4	Temp./Humi.	:21.1/61
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



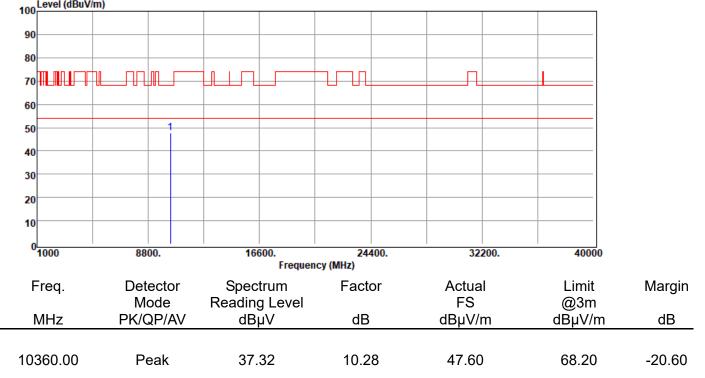


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:21.1/61
Test Channel	:5180 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



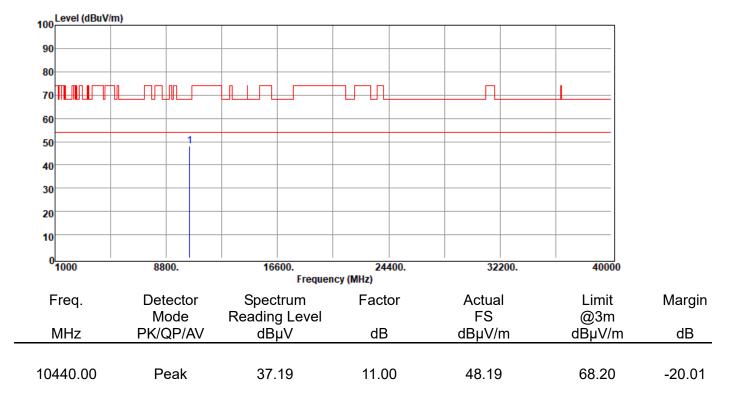


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:21.1/61
Test Channel	:5180 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		
Level (dBuV/m)			



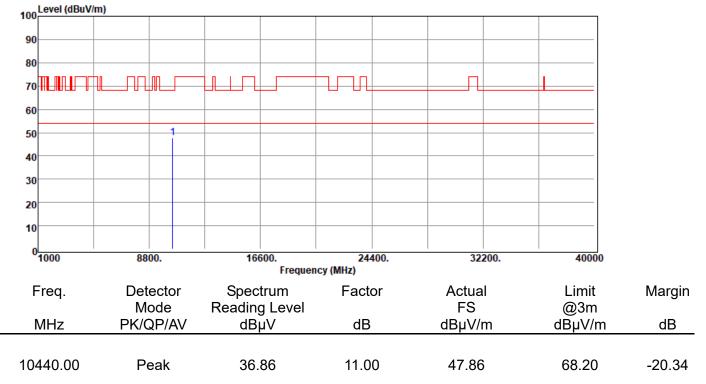


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:21.1/61
Test Channel	:5220 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



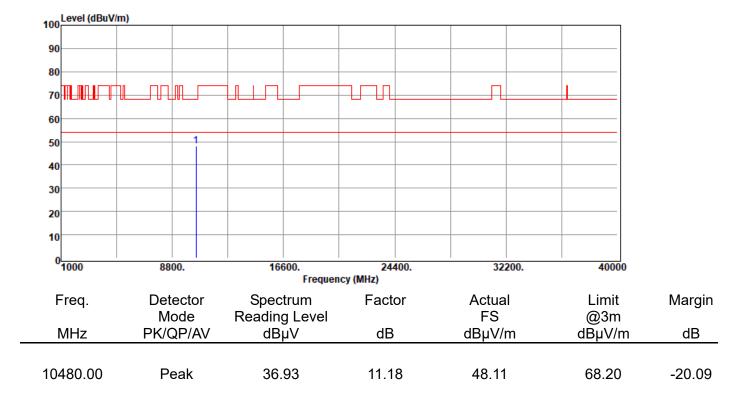


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:21.1/61
Test Channel	:5220 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		
Lovel (dBuV/m)			



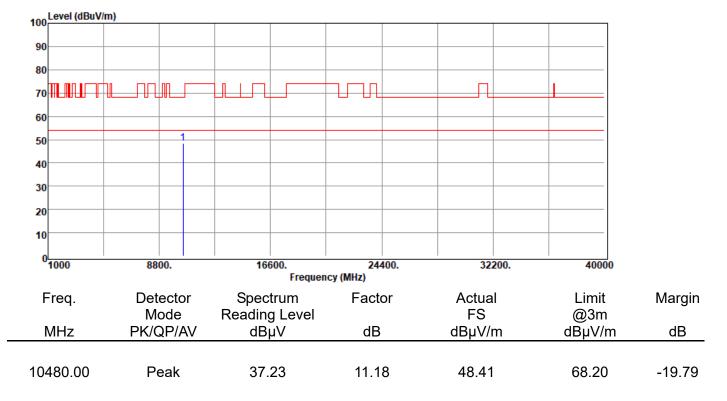


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:21.1/61
Test Channel	:5240 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



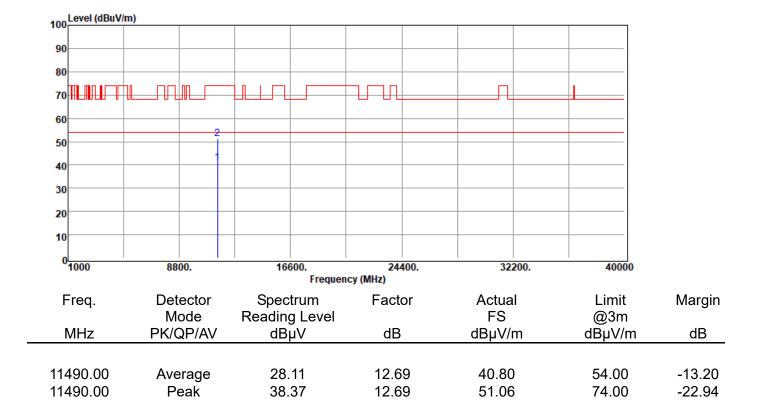


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 1	Temp./Humi.	:21.1/61
Test Channel	:5240 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



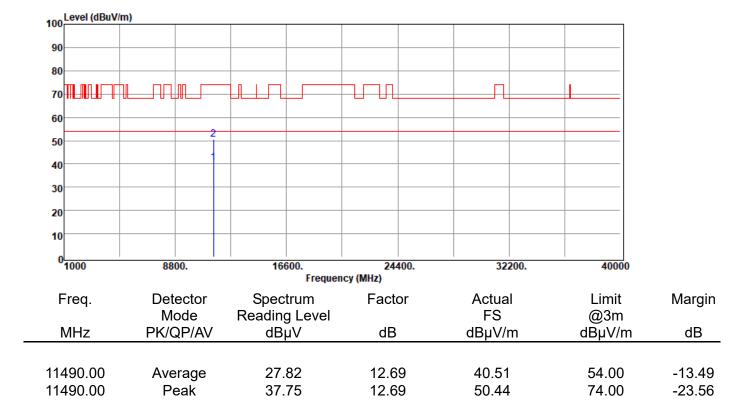


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5745 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



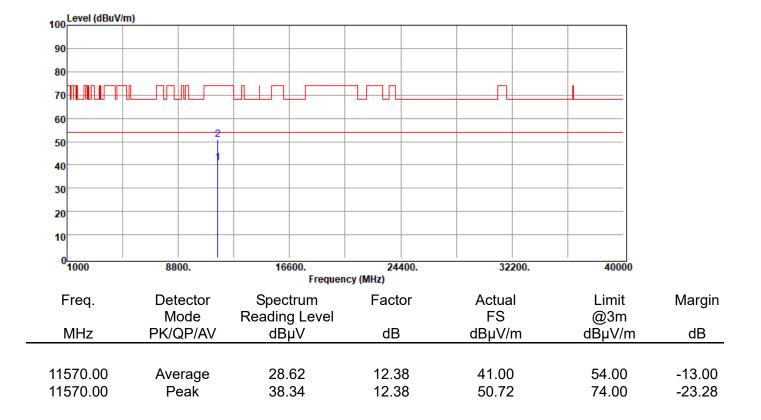


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5745 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



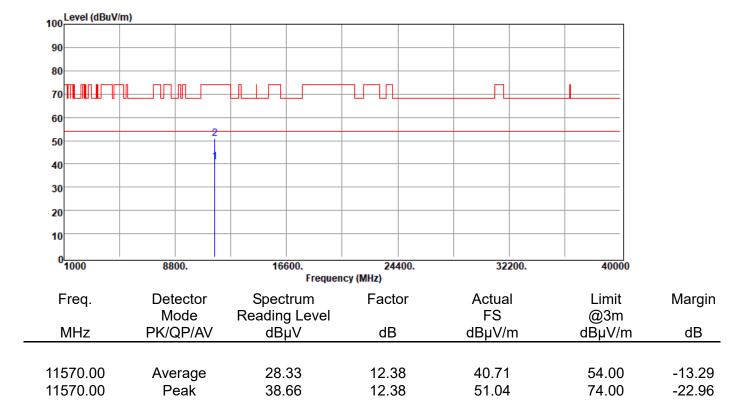


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5785 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



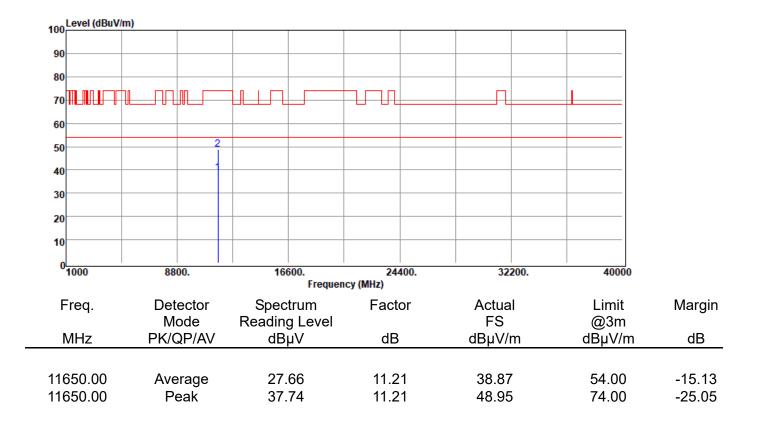


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5785 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



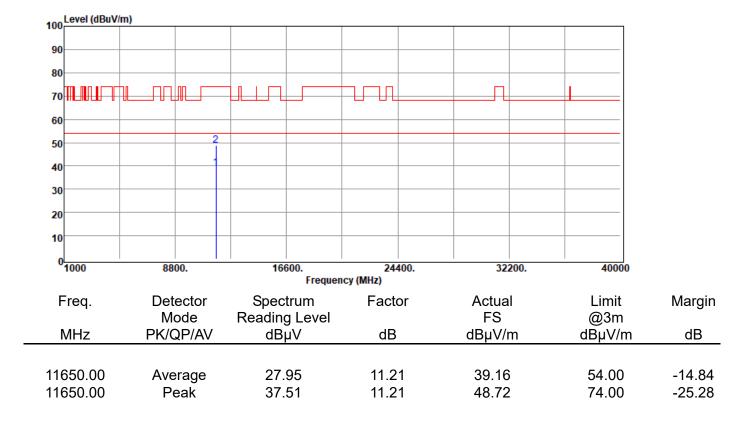


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



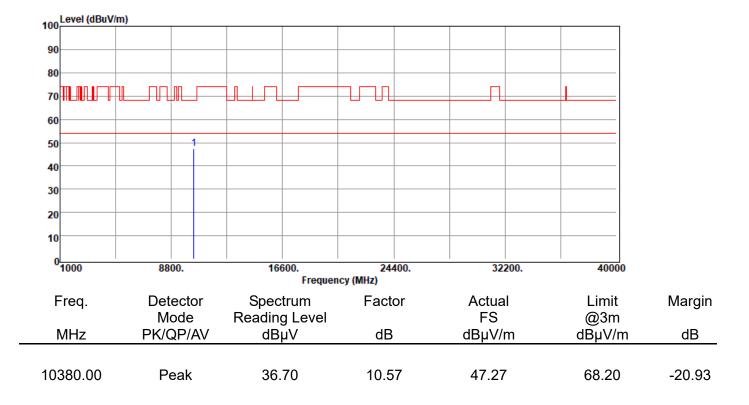


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



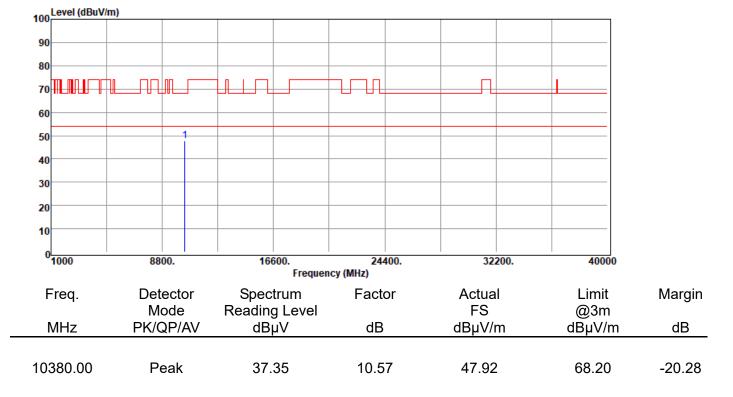


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:21.3/63
Test Channel	:5190 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



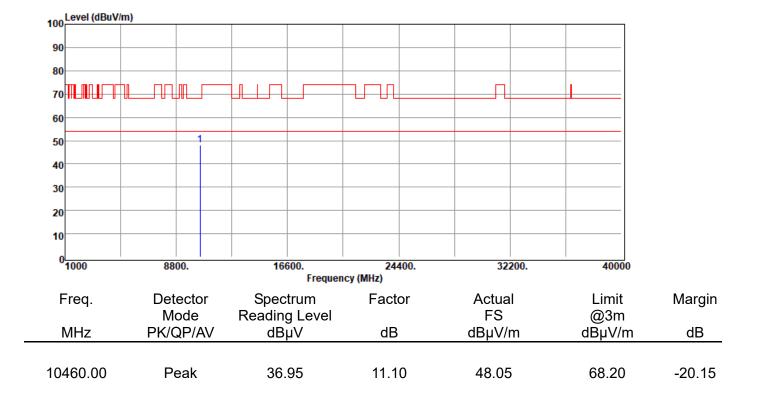


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:21.3/63
Test Channel	:5190 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



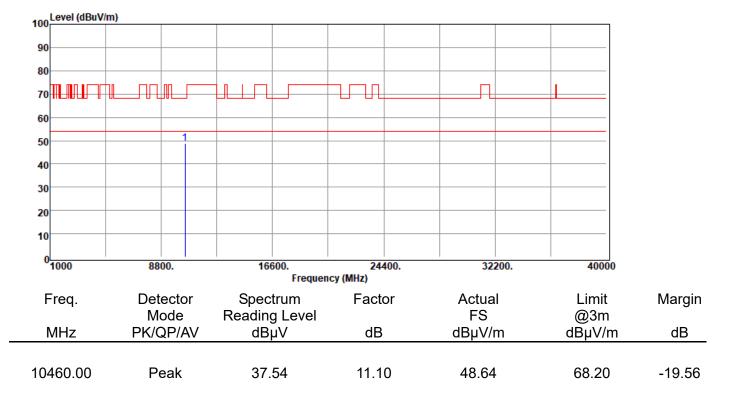


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:21.3/63
Test Channel	:5230 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



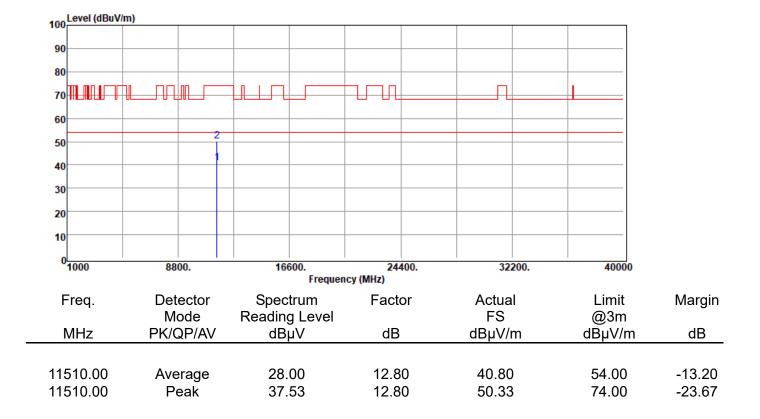


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:21.3/63
Test Channel	:5230 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



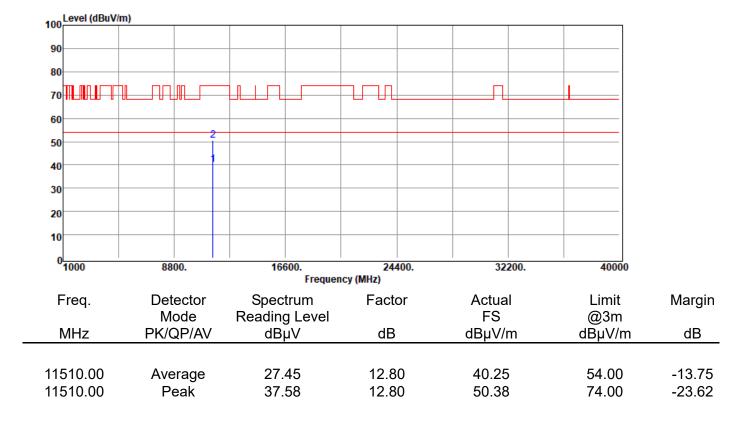


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5755 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



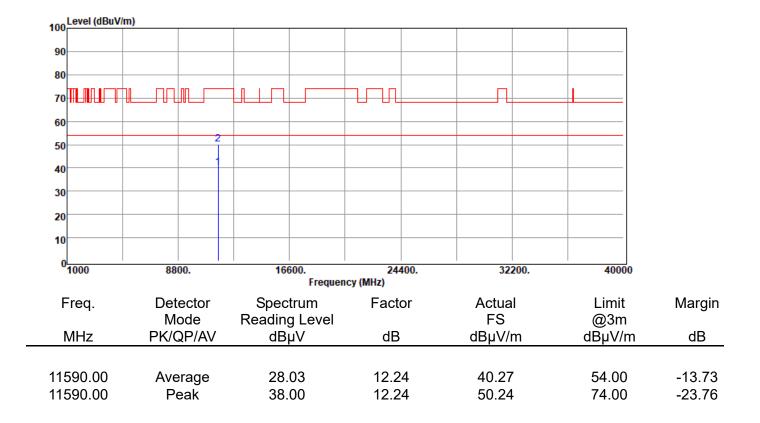


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5755 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



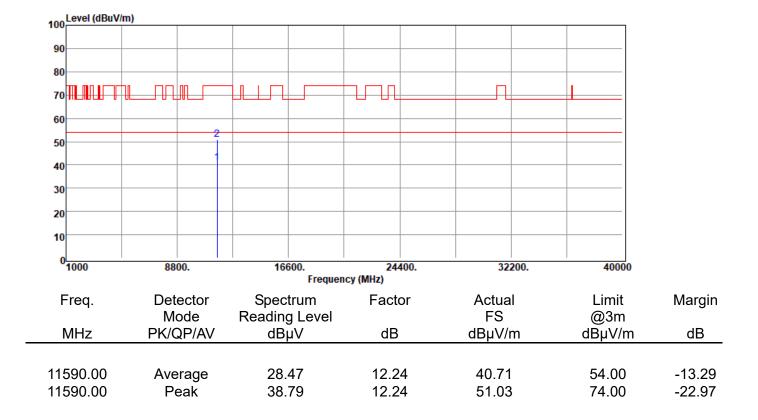


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5795 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



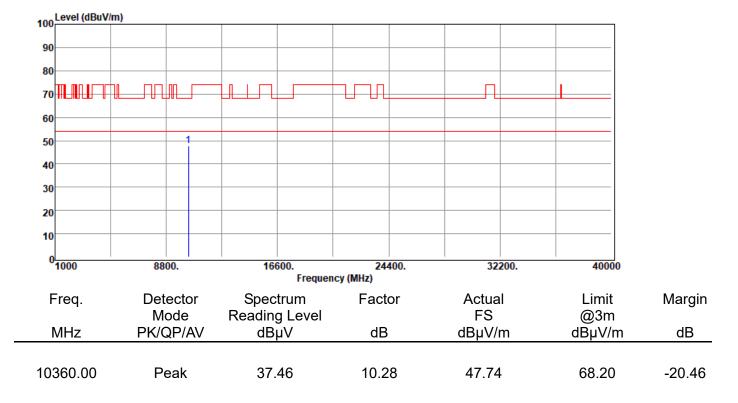


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:21.3/63
Test Channel	:5795 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



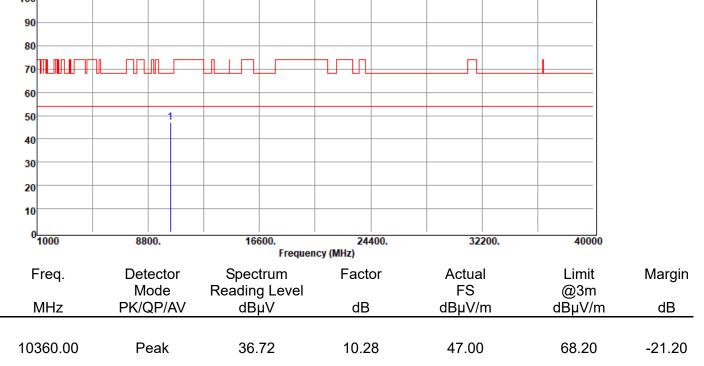


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5180 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



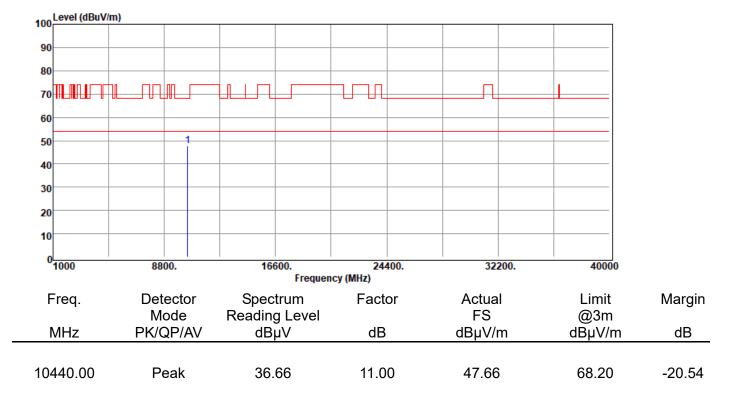


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5180 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		
100 Level (dBuV/m)			



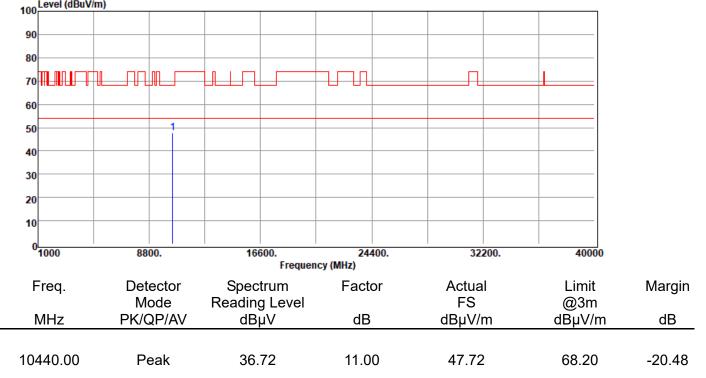


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5220 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



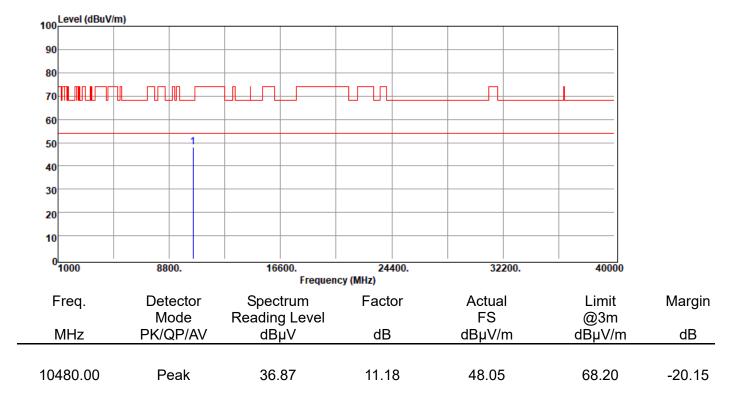


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5220 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		
Level (dBuV/m)			



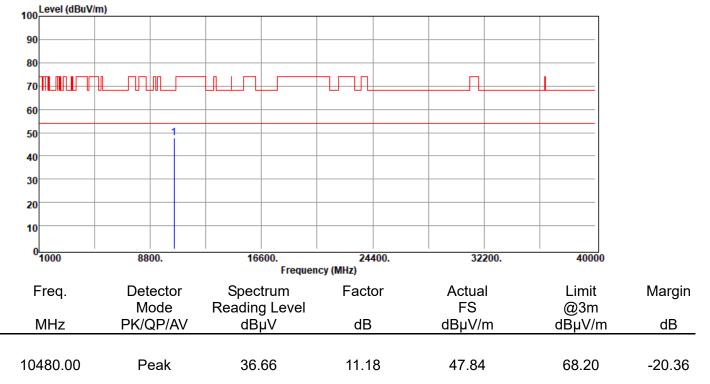


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5240 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



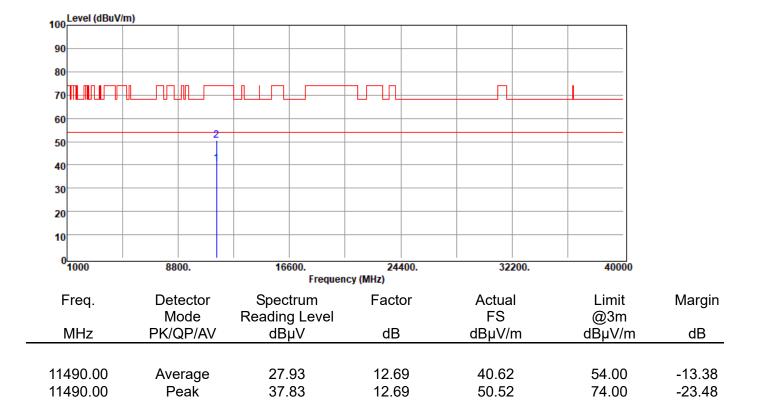


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 1	Temp./Humi.	:21.3/62
Test Channel	:5240 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



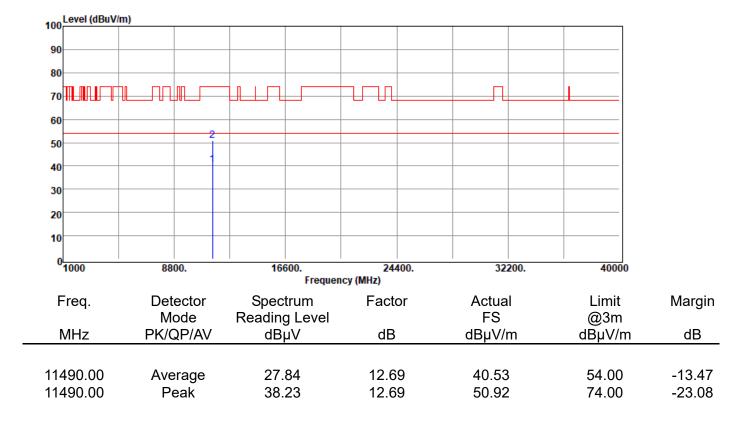


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:21.3/62
Test Channel	:5745 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



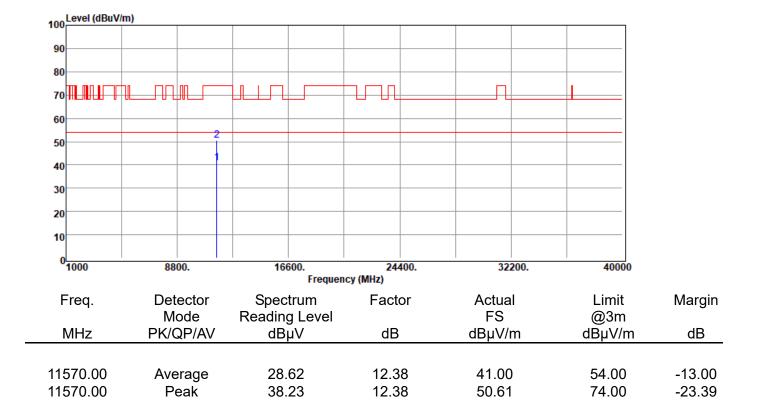


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:21.3/62
Test Channel	:5745 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



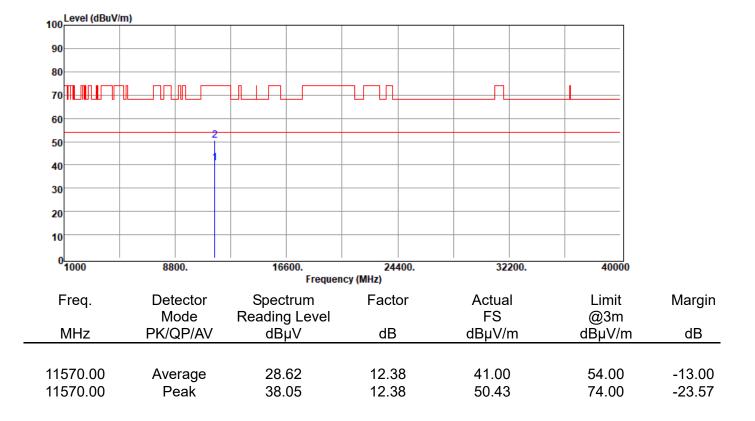


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5785 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



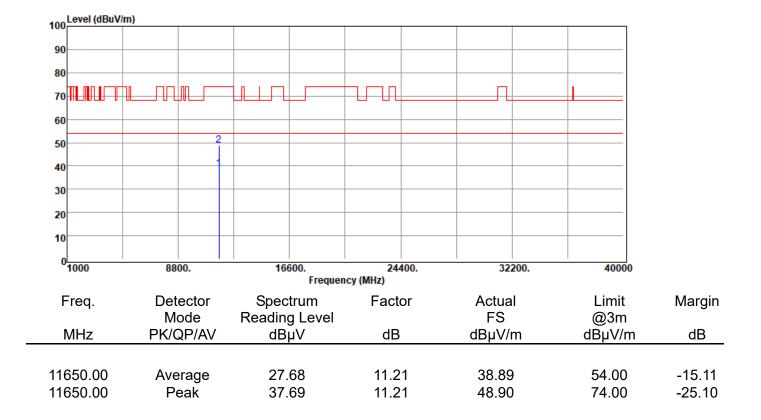


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5785 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH MID	Engineer	:Kailin
EUT Pol	:E2 Plan		



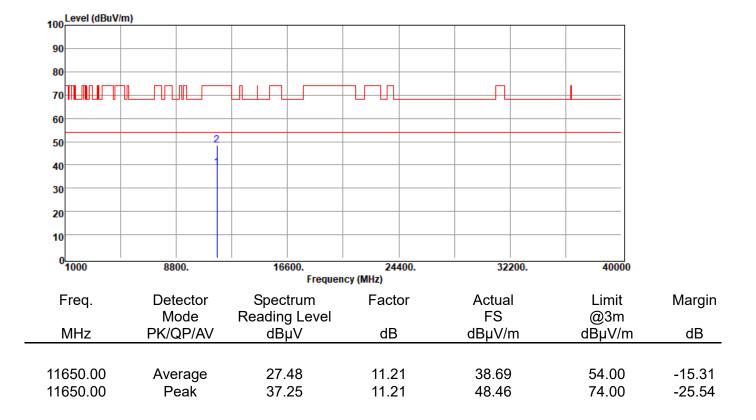


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



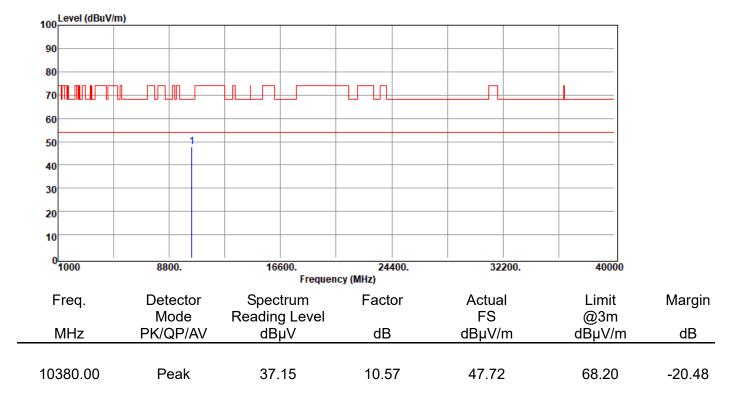


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



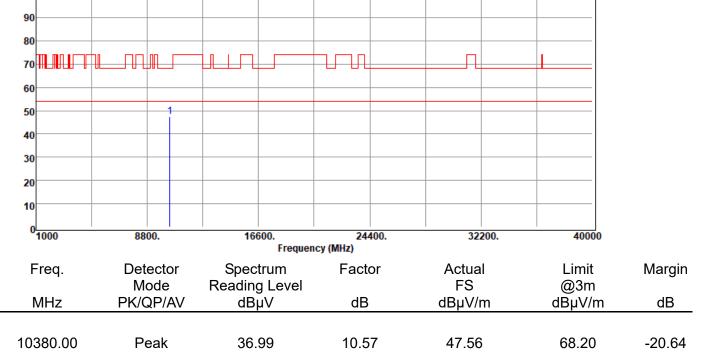


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac40 / Band 1	Temp./Humi.	:21.2/61
Test Channel	:5190 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



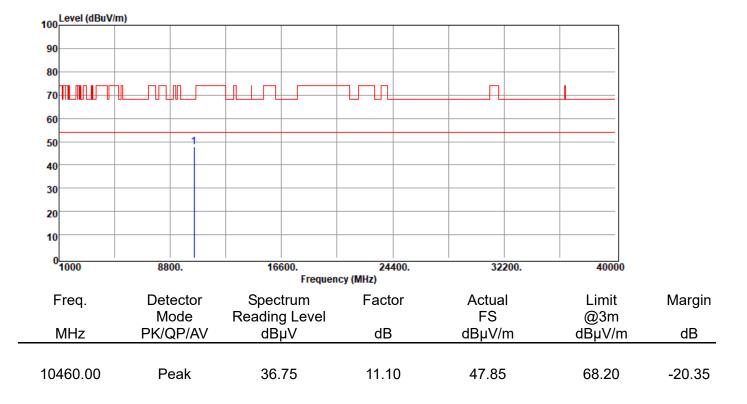


Report Number	:E2/2019/B	0014			Test Da	ate	:2020-01	-08
Operation Mode	:802.11ac4	0 / Band	1		Temp./	Humi.	:21.2/61	
Test Channel	:5190 MHz				Antenr	na Pol.	:HORIZO	ONTAL
Test Mode	:TX CH LO	W			Engine	er	:Kailin	
EUT Pol	:E2 Plan							
100 Level (dBuV/m)								
100								1



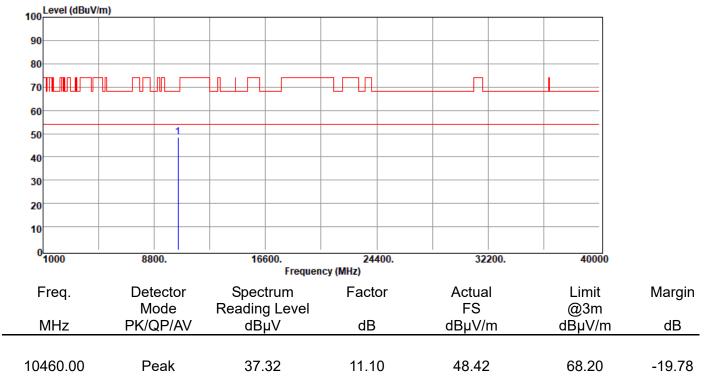


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac40 / Band 1	Temp./Humi.	:21.2/61
Test Channel	:5230 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



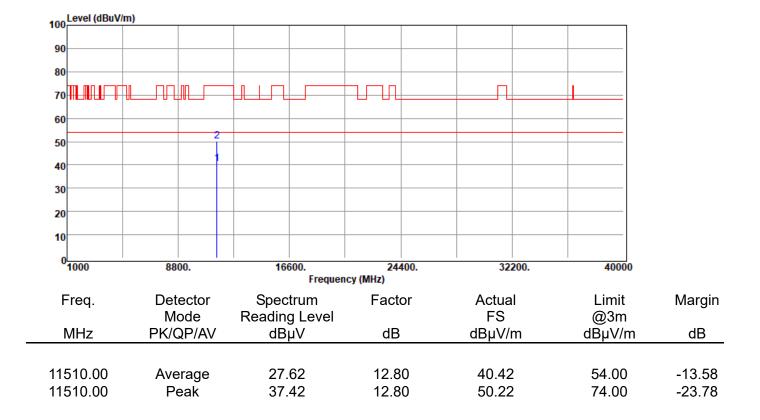


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac40 / Band 1	Temp./Humi.	:21.2/61
Test Channel	:5230 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



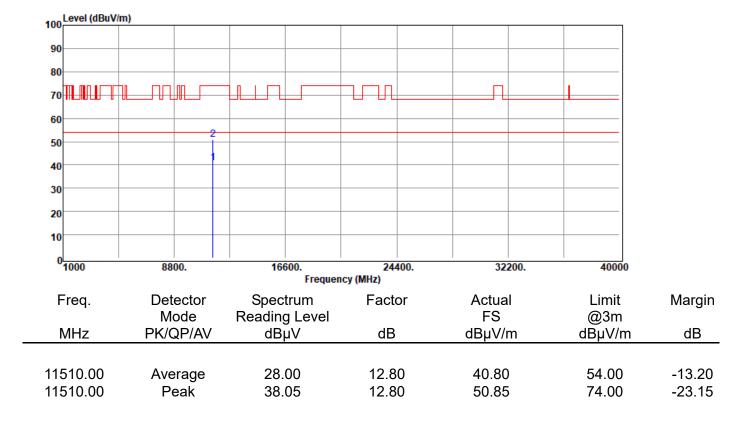


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5755 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



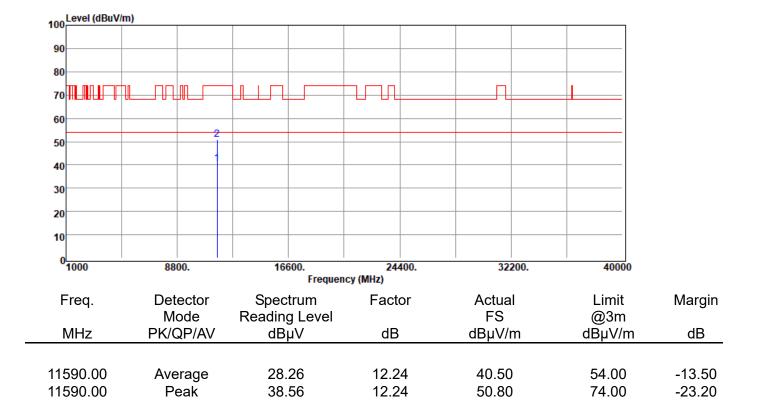


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5755 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



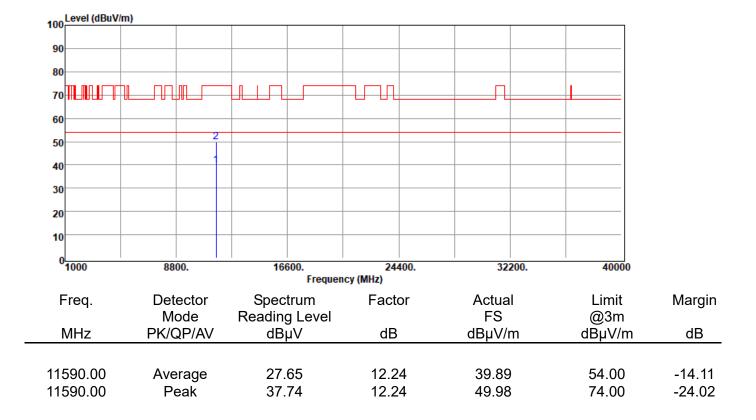


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5795 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



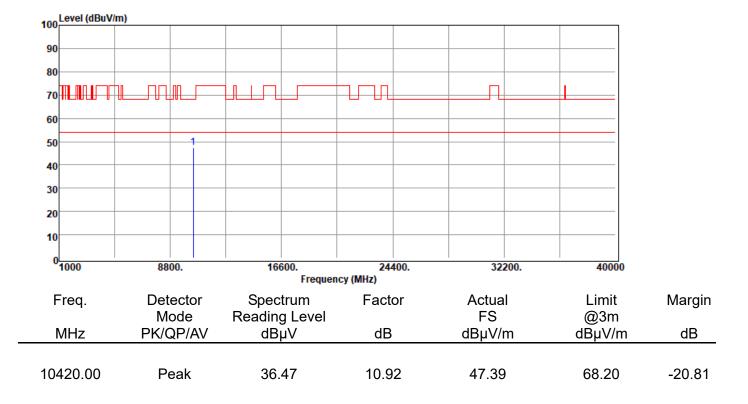


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5795 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



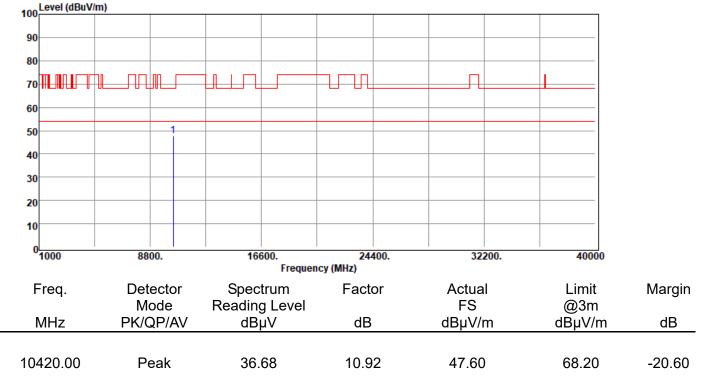


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac80 / Band 1	Temp./Humi.	:21.2/61
Test Channel	:5210 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



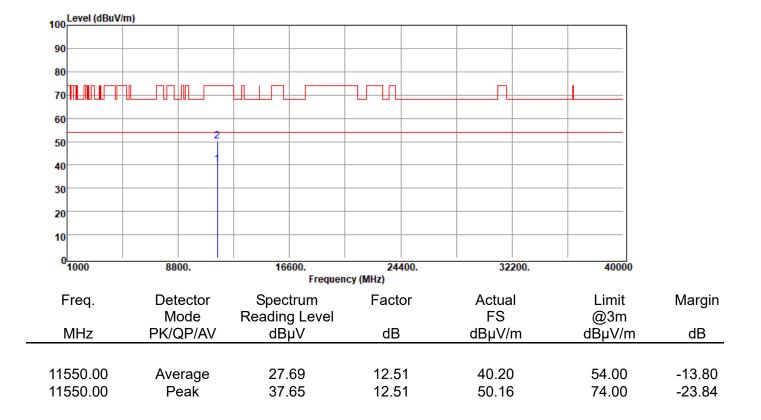


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac80 / Band 1	Temp./Humi.	:21.2/61
Test Channel	:5210 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		
Level (dBuV/m)			



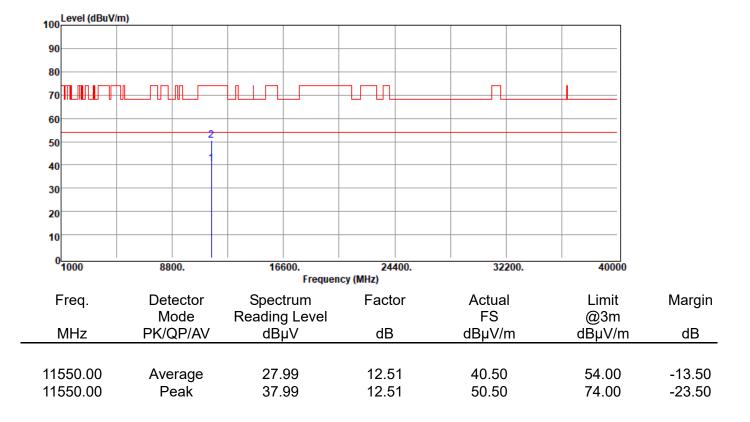


Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5775 MHz	Antenna Pol.	:VERTICAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		





Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:21.2/61
Test Channel	:5775 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:TX CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		





## Simultaneous (5G WIFI + WWAN)

Report Number	:E2/2019/B0014
Operation Mode	:802.11a Band 1+ LTE B2
Test Frequency	:5220 MHz + 1860 MHz
Test Mode	:TX CH MID + LOW
EUT Pol	:E2 Plan

Test Date	:2020-03-04
Temp./Humi.	:20.7/68
Antenna Pol.	:VERTICAL
Engineer	:Kailin

00 Level (dBuV/	m)					
90						
80						
80						
70	4					
60 2	4					
50	6					
40						
30						
20						
10						
0 <mark>1000</mark>	8800.	16600. Frequen	24400.	32200.	40000	
_		-				
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
		·		1	1	
3720.00	Average	18.27	32.56	50.83	54.00	-3.17
3720.00	Peak	28.15	32.56	60.71	74.00	-13.29
5580.00	Average	17.01	36.00	53.01	54.00	-0.99
5580.00	Peak	26.55	36.00	62.55	74.00	-11.45
5560.00	Feak	20.00	50.00	02.55	74.00	11.10
0440.00	Average	26.82	11.00	37.82	54.00	-16.18



Report Number Operation Mod Test Frequence Test Mode EUT Pol	de :802. y :5220	) MHz CH MII	0014 and 1+ LTE B2 + 1860 MHz D + LOW			Test Da Temp./ Antenr Engine	Humi. na Pol.	:2020-03- :20.7/68 :HORIZO :Kailin	
100 Level (dBuV	/m)								
90									
80									
70 2	4								
60 2	3								
50		6							
40		-5							
30									
20									
10									
0	8800.		16600. Freque	244 ency (MHz)	0 <b>0</b> .	32	200.	40000	
Freq.	Detec	ctor	Spectrum	Facto	r	Actua	I	Limit	Margin
	Mod		Reading Level			FS		@3m	-
MHz	PK/QF	P/AV	dBµV	dB		dBµV/ı	n	dBµV/m	n dB
			40.07	00 5				54.00	0.47
3720.00 3720.00	Avera Pea		18.27 27.61	32.56 32.56		50.83 60.17		54.00 74.00	-3.17 -13.83
5580.00	Avera		17.04	36.00		53.04		74.00 54.00	-13.83 -0.96
5580.00	Pea		26.05	36.00		62.05		74.00	-11.95
10440.00	Avera		26.75	11.00		37.75		54.00	-16.25
10440.00	Pea	k	38.12	11.00	)	49.12	2	74.00	-24.88

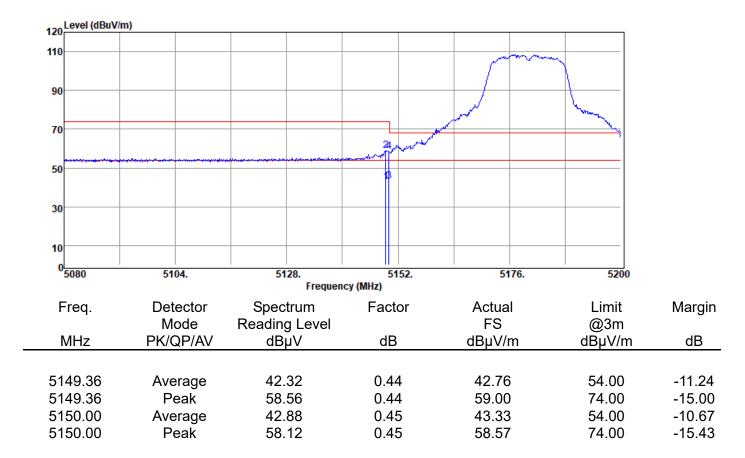


## 11.9.2 Band edge falling to restricted band

## **CDD Mode**

Report Number	:E2/2019/B0014
Operation Mode	:802.11a / Band 1
Test Channel	:5180 MHz
Test Mode	:BE CH LOW
EUT Pol	:E2 Plan

Test Date	:2019-12-13
Temp./Humi.	:22.4/56
Antenna Pol.	:VERTICAL
Engineer	:Kailin



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



Report Number	:E2/2019/E	80014		Test Date	:2019-12-13	
Operation Mode	:802.11a/	Band 1		Temp./Humi.	:22.4/56	
Test Channel	:5180 MHz			Antenna Pol.	:HORIZONTA	AL.
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
120 Level (dBuV/m)						
110						
90					hun	
70					- m	
10			2 minute			
50	ranar ang mang mangar tanakat pang mangan karana ang p	hard to a second a second and the second	8			
30						
10						
05080	5104.	5128.	5152.	5176.	5200	
3000		Frequen	icy (MHz)			
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5149.60	Average	45.23	0.44	45.67	54.00	-8.33
5149.60 5150.00	Peak Average	63.26 45.59	0.44 0.45	63.70 46.04	74.00 54.00	-10.30 -7.96
5150.00	Peak	62.55	0.45	63.00	74.00	-11.00

Test Date



:E2/2019/B0014

**Report Number** 

Operation Moo Test Channel Test Mode EUT Pol	de :802.11a / :5240 MHz :BE CH HI :E2 Plan	<u>r</u>		Temp./Humi. Antenna Pol. Engineer	:22.4/56 :VERTICAL :Kailin	
120 Level (dBuV	/m)					
110						
70	hong hong		2			
50		ninennessennessen in seiden sin s	andre dre de anterne anterne de la constance d La constance de la constance de	ud dage og lærenser her her en særten særte som er her her her her her her her her her		
30						
10						
0 5230	5270.	5310. Frequen	5350. cy (MHz)	5390.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00 5350.00	Average Peak	38.79 53.95	0.17 0.17	38.96 54.12	54.00 74.00	-15.04 -19.88

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode	:802.11a / :5240 MHz :BE CH HI	Band 1		Temp./Humi. Antenna Pol. Engineer	:22.4/56 :HORIZONTA :Kailin	AL.
EUT Pol	:E2 Plan					
120 Level (dBuV/m)						
110						
70	he have been a series					
50		San de Normania de Caracteria presidente da constructiva de la del	4 	an you have a description of the description of the second s	and the second	
30						
10						
0 5230	5270.	5310. Frequenc	5350. sy (MHz)	5390.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00 5350.00	Average Peak	38.95 53.85	0.17 0.17	39.12 54.02	54.00 74.00	-14.88 -19.98

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode	:802.11a / I	Band 4		Temp./Humi.	:22.4/56	
Test Channel	:5745 MHz			Antenna Pol.	:VERTICAL	
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
160 Level (dBuV/m)						
150						
130						
110						
90				a more a		
70				- Aunt		
50			2 marine and a started and the start of the	aumente in the second sec		
30						
10						
05645	5667.	5689. Frequer	5711. ncy (MHz)	5733.	5755	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5650.00	Peak	53.03	0.69	53.72	68.20	-14.48
5700.00	Peak	53.47	1.00	54.47	105.20	-50.73
5720.00	Peak	58.57	0.99	59.56	110.80	-51.24
5725.00	Peak	66.50	0.98	67.48	122.20	-54.72

Test Date



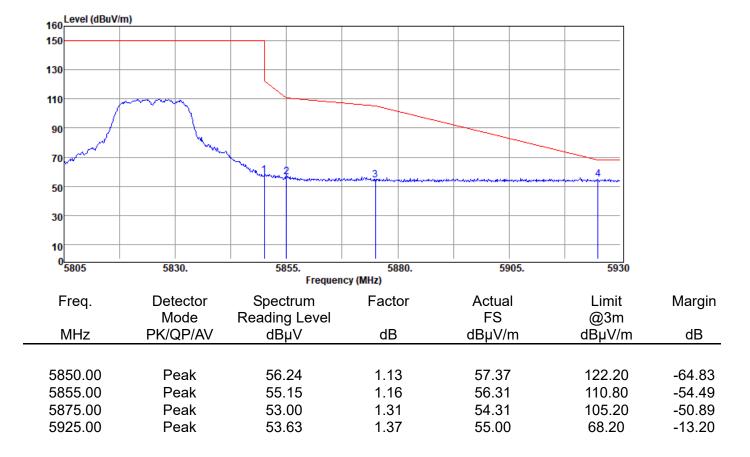
:E2/2019/B0014

**Report Number** 

Operation Mode	:802.11a / l			Temp./Humi. Antenna Pol.	:22.4/56 :HORIZONT/	<b>N</b> 1
						٩L
Test Mode	:BE CH LC	)VV		Engineer	:Kailin	
EUT Pol	:E2 Plan					
160 Level (dBuV/m)						
160						
150						
130						
110					and the second second	
					$  \rangle \rangle$	
90				i not		
70				3		
	and descent free above a second as a second	www.www.www.www.		- Andrew		
50						
30						
10						
0	5667.	5689.	5711.	5733.	5755	
5045	5007.	5689. Frequenc		5733.	5755	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	-
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5650.00	Peak	52.96	0.69	53.65	68.20	-14.55
5700.00	Peak	53.42	1.00	54.42	105.20	-50.78
5720.00 5725.00	Peak Peak	60.04 71.69	0.99 0.98	61.03 72.67	110.80 122.20	-49.77 -49.53
0120.00	i can	71.03	0.00	12.01	122.20	



Report Number	:E2/2019/B0014	Test Date	:2019-12-13
Operation Mode	:802.11a / Band 4	Temp./Humi.	:22.4/56
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



5930



130

110

90

70

50

30

10 0 5805

5830.

Report Number	:E2/2019/B0014		Test Date	:2019-12-13
Operation Mode	:802.11a / Band 4		Temp./Humi.	:22.4/56
Test Channel	:5825 MHz		Antenna Pol.	:HORIZONTAL
Test Mode	:BE CH HIGH		Engineer	:Kailin
EUT Pol	:E2 Plan			
160 Level (dBuV/m)				
150				
150				

Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.00	Peak	57.06	1.13	58.19	122.20	-64.01
5855.00	Peak	56.14	1.16	57.30	110.80	-53.50
5875.00	Peak	53.55	1.31	54.86	105.20	-50.34
5925.00	Peak	51.97	1.37	53.34	68.20	-14.86

Frequency (MHz)

5855.

3

5880.

5905.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:802.11n2( :5180 MHz :BE CH LC :E2 Plan	<u>r</u>		Temp./Humi. Antenna Pol. Engineer	:22.4/56 :VERTICAL :Kailin	
130 Level (dBuV/m)						
120						
100						
80				Marked .	Marrie William	
60			a manager Strand and the Contraction of the Contrac			
40			1			
20						
0 5080	5104.	5128. Frequent	5152. cv (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
		I		·		
5150.00	Average	42.66 54.97	0.45	43.11 55.42	54.00 74.00	-10.89 -18.58
5150.00	Peak	34.97	0.45	00.4Z	74.00	-10.00

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:802.11n20 :5180 MHz :BE CH LO :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:22.4/56 :HORIZONTA :Kailin	L
130 Level (dBuV/m)						
120						
100						
80				www.	how	
60		مالا در الان مالي من من ماليا مركز من	and the second and the second se			
40			1			
20						
05080	5104.	5128.	5152.	5176.	5200	
5000	5104.	Frequence		5170.	5200	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Average	44.98	0.45	45.43	54.00	-8.57
5150.00	Peak	57.65	0.45	58.10	74.00	-15.90

74.00

-19.75

Test Date

54.25



:E2/2019/B0014

Report Number

5350.00

Peak

Operation Mode Test Channel Test Mode EUT Pol	:802.11n2( :5240 MHz :BE CH HI :E2 Plan	2		Temp./Humi. Antenna Pol. Engineer	:22.4/56 :VERTICAL :Kailin	
120 Level (dBuV/m)						
110						
90						
70	M					
50	June market wards	Marina and a second and a second	2 normation of the second second second	u daga dipageaga understation of the one of	ange or the Britting Constant of The Association	
30			1			
40						
10						
0 5230	5270.	5310. Frequer	5350. Icy (MHz)	5390.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Average	38.88	0.17	39.05	54.00	-14.95

0.17

54.08

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mod Test Channel Test Mode EUT Pol	de :802.11n20 :5240 MHz :BE CH HI :E2 Plan	2		Temp./Humi. Antenna Pol. Engineer	:22.4/56 :HORIZONT/ :Kailin	AL.
120 Level (dBuV	/m)	1				
110						
90						
70	- Ward ward -		2	4		
50		2000 - 2000	ndertildeternerner um die feitung für gernernen.	heren and and a second and a second	Conference (all and the second difference of	
30						
10						
0 <sup>L</sup> 5230	5270.	5310. Frequer	5350. icy (MHz)	5390.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00 5350.00	Average Peak	38.95 52.88	0.17 0.17	39.12 53.05	54.00 74.00	-14.88 -20.95
5374.00 5374.00	Average Peak	38.90 53.32	0.45 0.45	39.35 53.77	54.00 74.00	-14.65 -20.23

-14.35

-50.65

-50.06

-54.43

68.20

105.20

110.80

122.20

Test Date

53.85

54.55

60.74

67.77



:E2/2019/B0014

**Report Number** 

5650.00

5700.00

5720.00

5725.00

Peak

Peak

Peak

Peak

Opera	ation Mode	:802.11n	20 / Band 4		Temp./Humi.	:22.4/56	
Test C	Channel	:5745 Mł	Ηz		Antenna Pol.	:VERTICAL	
Test N	lode	:BE CH I	_OW		Engineer	:Kailin	
EUT F	Pol	:E2 Plan					
160	Level (dBuV/m)						
150							
130							
110							
90							
70	1			سيندر د	3 Aurona and a second		
50	and the state and		and the many second second and a first of the second second different different second second different different	for the second start of th			
30							
10							
	5645	5667.	5689.	5711.	5733.	5755	
			Frequen	icy (MHz)			
F	req.	Detector	Spectrum	Factor	Actual	Limit	Margin
ſ	MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
			I		· · ·		

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

53.16

53.55

59.75

66.79

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0.99

0.98

122.20

-52.56

Test Date



:E2/2019/B0014

**Report Number** 

5725.00

Peak

Operation Mode	:802.11n20	) / Band 4		Temp./Humi.	:22.4/56	
Test Channel	:5745 MHz	2		Antenna Pol.	:HORIZONT/	AL .
Test Mode	:BE CH LC	)W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
160 Level (dBuV/m)						
150						
130						
110						
90						
70				4		
50		and the manufacture of the mathematical and the second sec	- Langer States adal and the states			
30						
10 0 5645	5007		5744	F722		
5045	5667.	5689. Frequen	5711. icy (MHz)	5733.	5755	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
		J.: -		p	[-:	
5650.00	Peak	54.31	0.69	55.00	68.20	-13.20
5700.00 5720.00	Peak Peak	53.58 59.96	1.00 0.99	54.58 60.95	105.20 110.80	-50.62 -49.85
5720.00	r can	00.00	0.00	00.00	110.00	

68.66

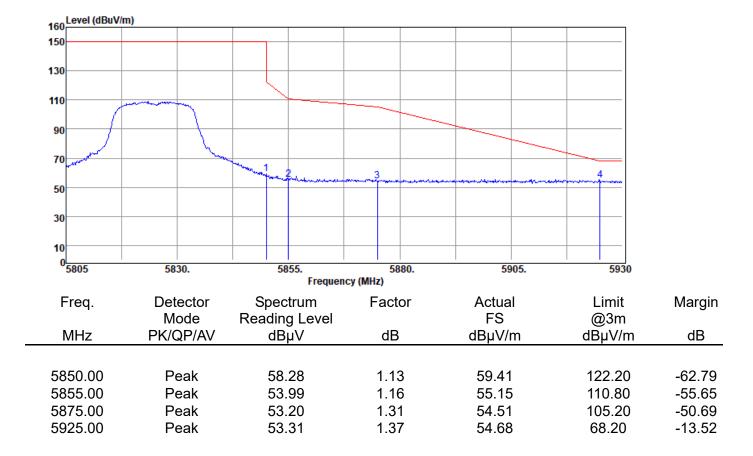
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0.98

69.64

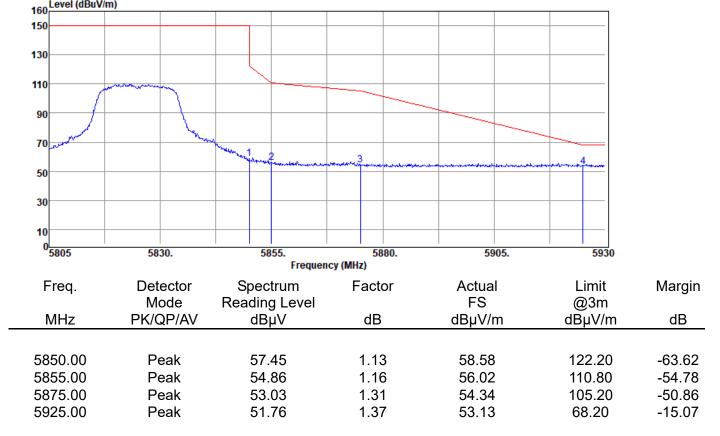


Report Number	:E2/2019/B0014	Test Date	:2019-12-13
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:22.4/56
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		





Report Number	:E2/2019/B0014	Test Date	:2019-12-13
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:22.4/56
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		
Lovel (dBuV/m)			



Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode	:802.11n4(	) / Band 1		Temp./Humi.	:22.4/56	
Test Channel	:5190 MHz	2		Antenna Pol.	:VERTICAL	
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
120 Level (dBuV/m)						
110						
90						
70				www.		
	an marginal providence	monor many many many	man and an and and and and and and and an			
50						
30						
10						
0 5080	5104.	5128.	<u>5152.</u>	5176.	5200	
			cy (MHz)			
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5150.00	Average	48.78	0.45	49.23	54.00	-4.77
5150.00	Peak	66.29	0.45	66.74	74.00	-7.26

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode	:802.11n40	) / Band 1		Temp./Humi.	:22.4/56	
Test Channel	:5190 MHz	<u>.</u>		Antenna Pol.	:HORIZONT/	AL.
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan			-		
120 Level (dBuV/m)						
120						
110						
90						
			24	and weather		
70		and when and when the	month of the families			
on-themportal	and many after a set		13			
50						
30						
50						
10						
05080	5104.	5128.	5152.	5176.	5200	
			cy (MHz)			
Freq.	Detector	Spectrum	Factor	Actual FS	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	rs dBµV/m	@3m dBµV/m	dB
		p ·				
5149.00	Average	52.79	0.44	53.23	54.00	-0.77
5149.00	Peak	72.54	0.44	72.98	74.00	-1.02
5150.00	Average	52.89	0.45	53.34	54.00	-0.66
5150.00	Peak	72.04	0.45	72.49	74.00	-1.51

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Report Number	:E2/2019/B0014	Test Date	:2019-12-13
Operation Mode	:802.11n40 / Band 1	Temp./Humi.	:22.4/56
Test Channel	:5230 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		
120 Level (dBuV/m)			
110			
month			
90			
- I Va			

www.white-photo-photo-photo-

5220	5262.	5304.	5346.	5388.	5430	
		Frequenc	y (MHz)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
•	Mode	Reading Level		FS	@3m	Ū
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Average	39.02	0.17	39.19	54.00	-14.81
5350.00	Peak	57.47	0.17	57.64	74.00	-16.36
5422.02	Average	39.26	0.97	40.23	54.00	-13.77
5422.02	Peak	58.71	0.97	59.68	74.00	-14.32

2

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Test Date



:E2/2019/B0014

**Report Number** 

peration Mode est Channel est Mode	:802.11n40 :5230 MHz :BE CH HIC			Temp./Humi. Antenna Pol. Engineer	:22.4/56 :HORIZONTA :Kailin
UT Pol	:E2 Plan				
120 Level (dBuV/m)			1		
110 many damaged	<u></u>				
90					
70	Marked and a Marker and and	eregenter and an and a second period			
			mandrage and service and services and	- A	manumente
50			1	3	
30					
10					
0 5220	5262.	5304. Frequen	5346. icy (MHz)	5388.	5430
Freq.	Detector	Spectrum	Factor	Actual	Limit

Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
 MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Average	39.11	0.17	39.28	54.00	-14.72
5350.00	Peak	57.90	0.17	58.07	74.00	-15.93
5388.42	Average	38.96	0.63	39.59	54.00	-14.41
5388.42	Peak	58.85	0.63	59.48	74.00	-14.52

Test Date



:E2/2019/B0014

Report Number

5725.00

Peak

Operation Mode Test Channel Test Mode EUT Pol		:802.11n4( :5755 MHz :BE CH LC :E2 Plan	2			Temp./H Antenna Enginee	a Pol.	:22.4/56 :VERTICAL :Kailin	
1co Lev	vel (dBuV/m)								
150									
130									
110				+				y	
90									
70	with more than the	and a state of the second	and with the second and the second and the second	man many all mark	34				
50	17497-174-174-174-174-174-174-174-174-174-17								
30									
10									
0 <mark></mark> 564	45	5669.	5693. Freque	5717 ency (MHz)	•	574	1.	5765	
Fre	eq.	Detector	Spectrum	Factor		Actual		Limit	Margin
		Mode	Reading Level			FS		@3m	
MF	lz	PK/QP/AV	dBµV	dB		dBµV/m	)	dBµV/m	dB
5650	0 00	Peak	59.47	0.69		60.16		68.20	-8.04
5700		Peak	64.59	1.00		65.59		105.20	-39.61
5720	0.00	Peak	70.93	0.99		71.92		110.80	-38.88

71.44

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0.98

72.42

122.20

-49.78

Test Date



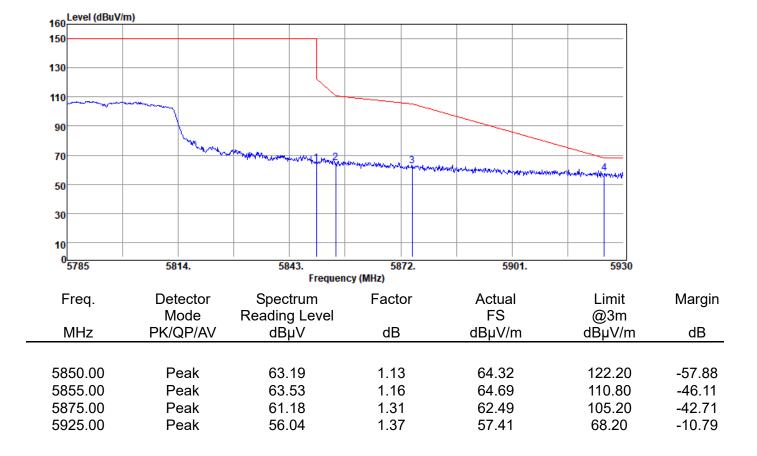
:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:802.11n40 :5755 MHz :BE CH LO\ :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:22.4/56 :HORIZONT/ :Kailin	AL.
160 Level (dBuV/m)						
150						
130						
110					-	
90						
70		www.markenantheranger	www.man.			
50	and and a second se	www.hearth.				
30						
10 0 5645	5669.	5693.	5717.	5741.	5765	
5045	5009.		ncy (MHz)	5741.	5705	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
		- /				
5650.00 5700.00	Peak Peak	61.33 64.61	0.69 1.00	62.02 65.61	68.20 105.20	-6.18 -39.59
5720.00	Peak Peak	64.61 71.97	0.99	72.96	105.20	-39.59 -37.84
5725.00	Peak	72.87	0.98	73.85	122.20	-48.35



Report Number	:E2/2019/B0014	Test Date	:2019-12-13
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:22.4/56
Test Channel	:5795 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		





90

70

50

30

10

Report Number	:E2/2019/B0014				Test Date	:2019-12	2-13
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:22.4/56				
Test Channel	:5795 MHz				Antenna Pol.	:HORIZ	ONTAL
Test Mode	:BE CH HIGH	Engineer	:Kailin				
EUT Pol	:E2 Plan						
160 Level (dBuV/m)							_
150							
130							
110							

			1.1						
5785	5814.	5843.	5872.	5901.	5930				
Frequency (MHz)									
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin			
	Mode	Reading Level		FS	@3m	_			
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB			
5850.00	Peak	65.17	1.13	66.30	122.20	-55.90			
5855.00	Peak	64.07	1.16	65.23	110.80	-45.57			
5875.00	Peak	60.96	1.31	62.27	105.20	-42.93			
5925.00	Peak	57.64	1.37	59.01	68.20	-9.19			

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:802.11ac2 :5180 MHz :BE CH LC :E2 Plan	<u>.</u>		Temp./Humi. Antenna Pol. Engineer	:23.1/59 :VERTICAL :Kailin	
130 Level (dBuV/m)						
120						
100						
80				les borres	hourst	
60	and the second	munore and and applied for an and	2 de la constante de la consta			
40			15			
20						
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
F440 70	<b>A</b>		0.44	42.00	F 4 00	40.04
5148.76 5148.76	Average Peak	43.55 65.51	0.44 0.44	43.99 65.95	54.00 74.00	-10.01 -8.05
5150.00	Average	44.01	0.44	44.46	54.00	-8.03 -9.54
5150.00	Peak	64.23	0.45	64.68	74.00	-9.32

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode	:802.11ac2	0 / Band 1		Temp./Humi.	:23.1/59	
Test Channel	:5180 MHz	<u>.</u>		Antenna Pol.	:HORIZONT/	۹L
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
130 Level (dBuV/m)						
120						
				1 por	$\uparrow$	
100						
80			down a		and the second	
00			and and			
60		and the state of t				
			18			
40						
20						
0 5080	5104.	5128.	5152.	5176.	5200	
	5, , ,	-	cy (MHz)			
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5149.36	Average	46.99	0.44	47.43	54.00	-6.57
5149.36	Peak	71.74	0.44	72.18	74.00	-1.82
5150.00 5150.00	Average Peak	47.66 70.97	0.45 0.45	48.11 71.42	54.00 74.00	-5.89 -2.58
0100100	1 Can	10101	0.10			2.00

74.00

-20.69

Test Date

53.31



:E2/2019/B0014

Report Number

5350.00

Peak

Operation Moo Test Channel Test Mode EUT Pol	de :802.11ac2 :5240 MHz :BE CH HI :E2 Plan	<u>.</u>		Temp./Humi. Antenna Pol. Engineer	:23.1/59 :VERTICAL :Kailin	
120 Level (dBuV	/m)					
110						
90	harry					
70	All a marked and a marked					
50	hippy and the second	Here also had have a stranger of the state o	2 rowords: Another Another	alder an		
30						
10						
0 <mark>5230</mark>	5270.	5310. Frequer	5350. ncy (MHz)	5390.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Average	39.59	0.17	39.76	54.00	-14.24

53.14

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Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:802.11ac20 :5240 MHz :BE CH HIC :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:23.1/59 :HORIZONTA :Kailin	۸L
120 Level (dBuV/m)						
110						
90	<u> </u>					
70	The second second		2			
50		and a second sec	enerieliteteen literaaling gebruike gebruike gebruike gebruike gebruike gebruike gebruike gebruike gebruike geb	an a		
30						
10						
0 <mark>5230</mark>	5270.	5310. Frequen	5350. Icy (MHz)	5390.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00 5350.00	Average Peak	39.34 53.89	0.17 0.17	39.51 54.06	54.00 74.00	-14.49 -19.94

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

-37.27

-39.11

110.80

122.20

Test Date



:E2/2019/B0014

**Report Number** 

5720.00

5725.00

Peak

Peak

Operation Mod	e :802.11ac2	20 / Band 4		Temp./Humi.	:23.1/59	
Test Channel	:5745 MHz	<u> </u>		Antenna Pol.	:VERTICAL	
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
160 Level (dBuV/i	m)					
150						
130						
110						
110						
90				3		
70		withinking	Real March and a strain of the state of the			
50	Harponnagogageathrachtain	an an and a second s				
30						
10 0 5645	5667.	5689.	5711.	5733.	5755	
3043	5007.		cy (MHz)	5155.	5155	
Freq.	Detector	Spectrum	Factor	Actual FS	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	dBµV/m	@3m dBµV/m	dB
		•		•	•	
5650.00	Peak	54.43	0.69	55.12	68.20	-13.08
5700.00	Peak	59.32	1.00	60.32	105.20	-44.88

72.54

82.11

0.99

0.98

73.53

Test Date



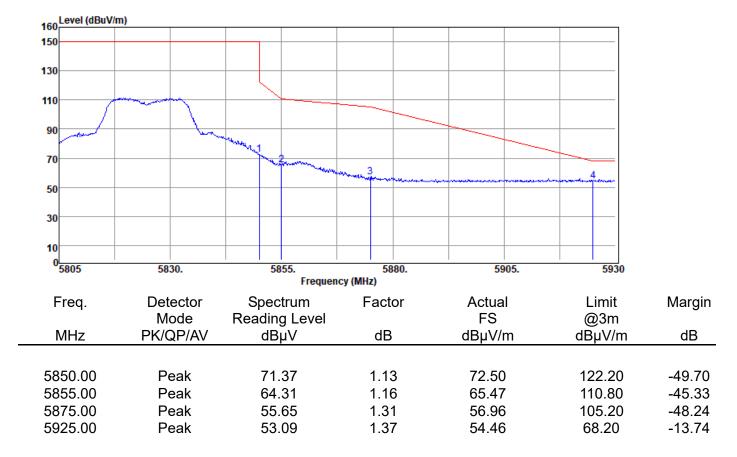
:E2/2019/B0014

**Report Number** 

Operation Mode	:802.11ac2	0 / Band 4		Temp./Humi.	:23.1/59	
Test Channel	:5745 MHz			Antenna Pol.	:HORIZONT/	AL .
Test Mode	:BE CH LO	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
160 Level (dBuV/m)						
150						
130						
110					many	
90				- Aller - Contraction of the Con		
701		and the second s	normal and a start and			
50	aya dagada ya ku sa ka sa k					
30						
10						
0 <mark>5645</mark>	5667.	5689. Frequence	5711. cy (MHz)	5733.	5755	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
	<b>_</b> .					10.00
5650.00 5700.00	Peak Peak	55.22 59.77	0.69 1.00	55.91 60.77	68.20 105.20	-12.29 -44.43
5720.00	Peak	71.81	0.99	72.80	105.20	-44.43 -38.00
5725.00	Peak	84.62	0.98	85.60	122.20	-36.60



Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac20 / Band 4	Temp./Humi.	:23.1/59
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



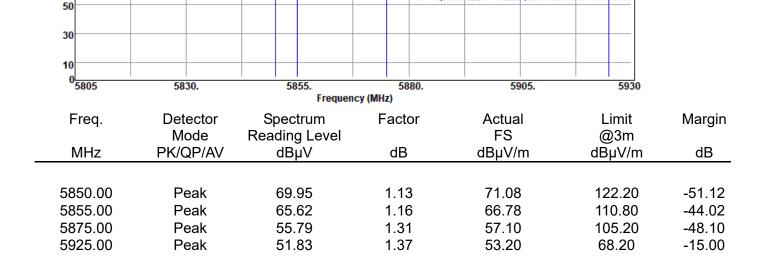


110

90

70

Report Number	:E2/2019/B0014			Test Date	:2019-12	-16
Operation Mode	:802.11ac20 / Bar	nd 4		Temp./Humi.	:23.1/59	
Test Channel	:5825 MHz			Antenna Pol.	:HORIZO	NTAL
Test Mode	:BE CH HIGH	Engineer	:Kailin			
EUT Pol	:E2 Plan					
160 Level (dBuV/m)			 			
150						
130						



3

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

-7.87

74.00

Test Date



:E2/2019/B0014

**Report Number** 

5150.00

Peak

:802.11ac4	l0 / Band 1		Temp./Humi.	:23.1/59	
:5190 MHz	<u>r</u>		Antenna Pol.	:VERTICAL	
:BE CH LC	W		Engineer	:Kailin	
:E2 Plan					
			manna	warmen	
			~~~		
		and the second s			
al manage and the second s	to manage the set of a set of the set	1			
E404		E452			
5104.			5170.	5200	
Detector	Spectrum	Factor	Actual	Limit	Margin
		dB			dB
		30			
	:5190 MHz :BE CH LC :E2 Plan	5104. 5128. Frequer Detector Mode Reading Level	:5190 MHz :BE CH LOW :E2 Plan	:5190 MHz :BE CH LOW :E2 Plan	:5190 MHz :BE CH LOW :E2 Plan

0.45

66.13

65.68

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:802.11ac4 :5190 MHz :BE CH LO :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:23.1/59 :HORIZONT/ :Kailin	AL.
120 Level (dBuV/m)				- <u>,</u>	·	
110					-	
90			2			
70		Mary and a second a	www.			
50	production and participation of the second		13			
30						
10						
0 5080	5104.	5128. Frequen	5152. Icy (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
5149.12 5149.12	Average Peak	45.89 72.90	0.44 0.44	46.33 73.34	54.00 74.00	-7.67 -0.66
5149.12	Average	45.86	0.44	46.31	74.00 54.00	-0.66
5150.00	Peak	70.72	0.45	71.17	74.00	-2.83

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:802.11ac4 :5230 MHz :BE CH HIC :E2 Plan		I			Temp./ Antenr Engine	a Pol.	:23.0/58 :VERTICA :Kailin	۹L
LOTTO									
120 Level (dBuV/m)									
110									
90	\								
70	Cartaphine and an and				_				
		Margaret weeks were	and the second second	H. P. Reff	2			and the second strategy and second as	
50				a de la superiorde	1	~*************************************	an an Indiana an Indian		
30									
10									
<sup>0</sup> 5220	5262.	530		53 icy (MHz)	46.	53	88.	5430	

Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00 5350.00	Average Peak	40.62 53.60	0.17 0.17	40.79 53.77	54.00 74.00	-13.21 -20.23

74.00

-20.57

Test Date



:E2/2019/B0014

**Report Number** 

5350.00

Peak

Operation Mode	:802.11ac4	0 / Band 1		Temp./Humi.	:23.0/58	
Test Channel	:5230 MHz			Antenna Pol.	:HORIZONT/	۹L
Test Mode	:BE CH HI	GH		Engineer	:Kailin	
EUT Pol	:E2 Plan					
120 Level (dBuV/m)						
110						
90	homen					
70	- marine way					
		Marken where where and the second	. 2			
50			Harrison and the formation	and a second and a s	and the second	
30						
10						
0 5220	5262.	5304.	5346.	5388.	5430	
		Frequer	icy (MHz)			
Freq.	Detector Mode	Spectrum	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	Reading Level dBµV	dB	dBµV/m	@3m dBµV/m	dB
5350.00	Average	40.62	0.17	40.79	54.00	-13.21

0.17

53.43

53.26

-27.78

-40.46

110.80

122.20

Test Date



:E2/2019/B0014

**Report Number** 

5720.00

5725.00

Peak

Peak

Operation	Mode	:802.11ac	40 / Band 4			Temp./ł	Humi.	:23.0/58	
Test Chan	nel	:5755 MH	z			Antenna	a Pol.	:VERTICA	AL.
Test Mode	;	:BE CH LO	WC			Engine	er	:Kailin	
EUT Pol		:E2 Plan							
160 Level	(dBuV/m)								
150									
130									
110							~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
90					- Jon to				
70				and an and a second					
50	and market	more and the second second							
30									
10 0 5645									
-5645		5669.	5693. Fre	5 equency (MHz)	717.	574	11.	5765	
Freq.		Detector	Spectrum	Fac	tor	Actual		Limit	Margin
MHz		Mode PK/QP/AV	Reading Lev dBµV	el dE	2	FS dBµV/m	n	@3m dBµV/m	dB
			σομν	uL	,			αυμν/π	
5650.0	00	Peak	53.56	0.6	9	54.25		68.20	-13.95
5700.0	)0	Peak	65.18	1.0	0	66.18		105.20	-39.02

82.03

80.76

0.99

0.98

83.02

Test Date



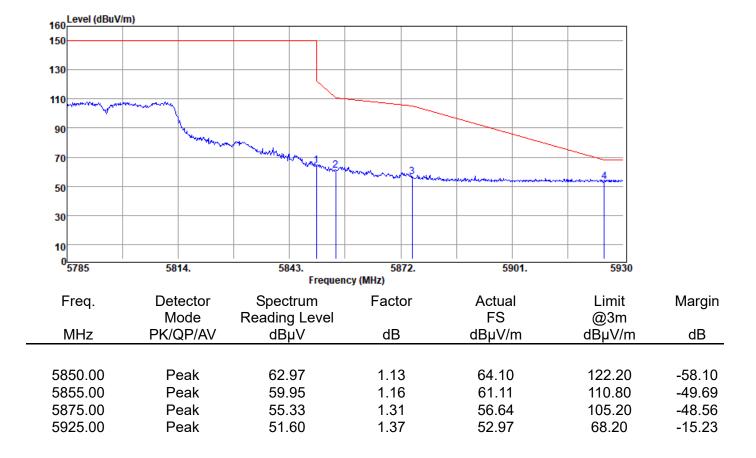
:E2/2019/B0014

**Report Number** 

160       Level (dBuV/m)         150	Operation Mode Test Channel Test Mode EUT Pol	:802.11ac4 :5755 MHz :BE CH LO :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:23.0/58 :HORIZONT/ :Kailin	AL.
	Level (dBuV/m)						
110							
	130						
	110						
90 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	110						
	90			3 - 4	North Contraction		
70 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	70		2 martin 2 m				
50 50 50 50 50 50 50 50 50 50 50 50 50 5	50	and the base of the state of th					
30	30						
10							
0 5645 5669. 5693. 5717. 5741. 5765 Frequency (MHz)	0 <mark>5645</mark>	5669.			5741.	5765	
Freq.DetectorSpectrumFactorActualLimitMarginModeReading LevelFS@3m	Freq.			Factor			Margin
MHz PK/QP/AV dBµV dB dBµV/m dBµV/m dB	MHz			dB			dB
5650.00         Peak         54.40         0.69         55.09         68.20         -13.11							
5700.00 Peak 66.44 1.00 67.44 105.20 -37.76							
5720.00Peak82.600.9983.59110.80-27.215725.00Peak83.050.9884.03122.20-38.17							

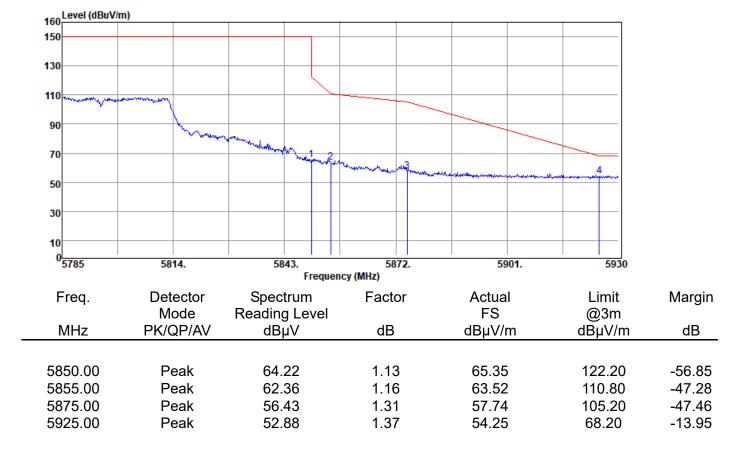


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:23.0/58
Test Channel	:5795 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



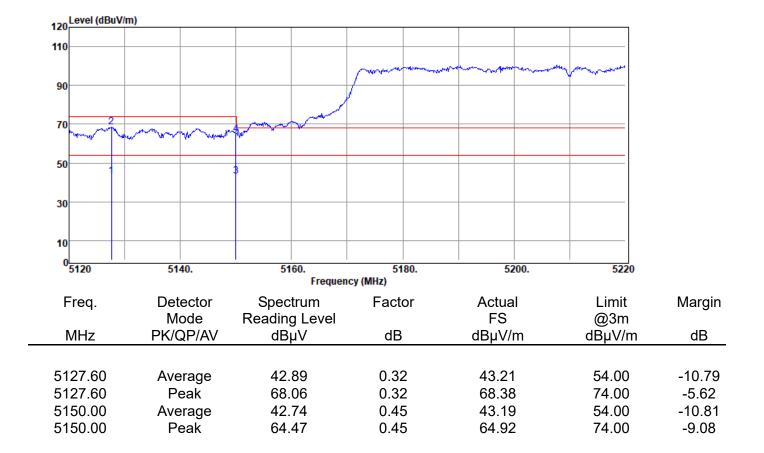


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:23.0/58
Test Channel	:5795 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



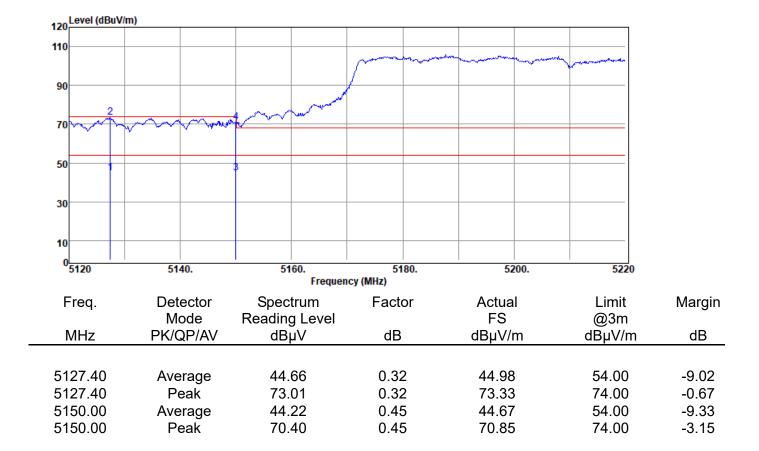


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 1	Temp./Humi.	:23.0/58
Test Channel	:5210 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



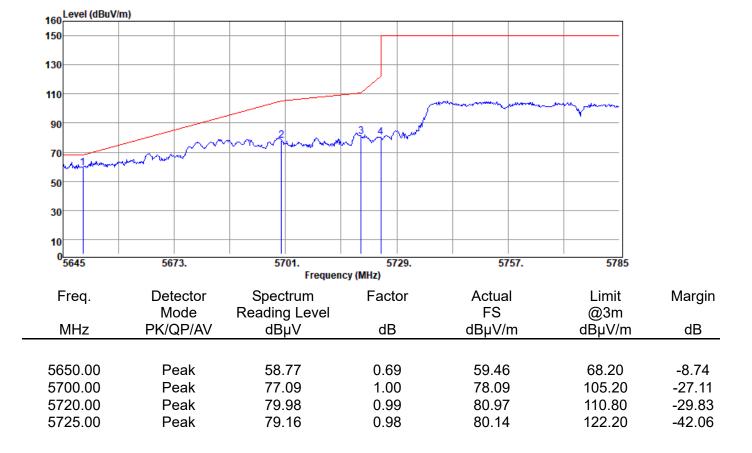


:E2/2019/B0014	Test Date	:2019-12-16
:802.11ac80 / Band 1	Temp./Humi.	:23.0/58
:5210 MHz	Antenna Pol.	:HORIZONTAL
:BE CH LOW	Engineer	:Kailin
:E2 Plan		
	:802.11ac80 / Band 1 :5210 MHz :BE CH LOW	:802.11ac80 / Band 1Temp./Humi.:5210 MHzAntenna Pol.:BE CH LOWEngineer





Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:23.0/58
Test Channel	:5775 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



Test Date



:E2/2019/B0014

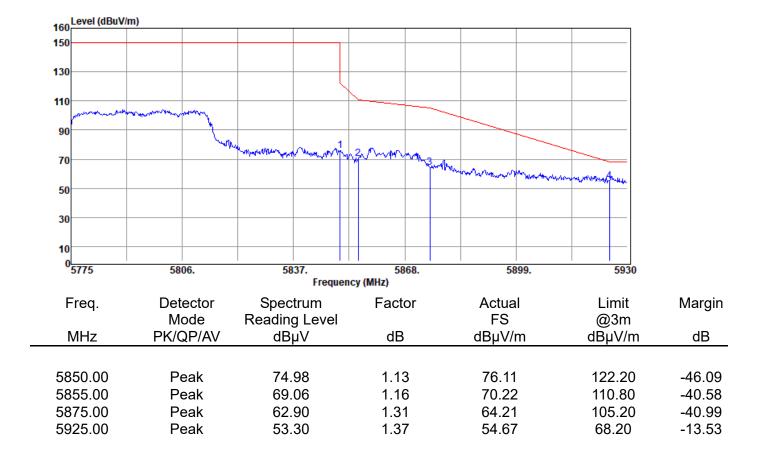
**Report Number** 

peration Mode est Channel	:802.11ac80 / Band :5775 MHz	14			Temp./H Antenna	ı Pol.	:23.0/58 :HORIZONTA
st Mode	:BE CH LOW				Enginee	er	:Kailin
JT Pol	:E2 Plan						
160 Level (dBuV/m)							
150							
130							
110							
				l prove	underse with the	and the second second	and some sources
90		Ama	3 4	and a			
70	with the the	The way	and a mark of	1 MIC			
70 ward and a how when the	20. 18						
50							
30							
10							
°5645	5673.	5701. Frequen		729.	575	7.	5785

Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBµV/m	Limit @3m dBµV/m	Margin dB
	FIVQFIAV	ασμν	UD	ασμν/m	ασμν/π	UD
5650.00	Peak	57.27	0.69	57.96	68.20	-10.24
5700.00	Peak	74.24	1.00	75.24	105.20	-29.96
5720.00	Peak	81.14	0.99	82.13	110.80	-28.67
5725.00	Peak	79.81	0.98	80.79	122.20	-41.41

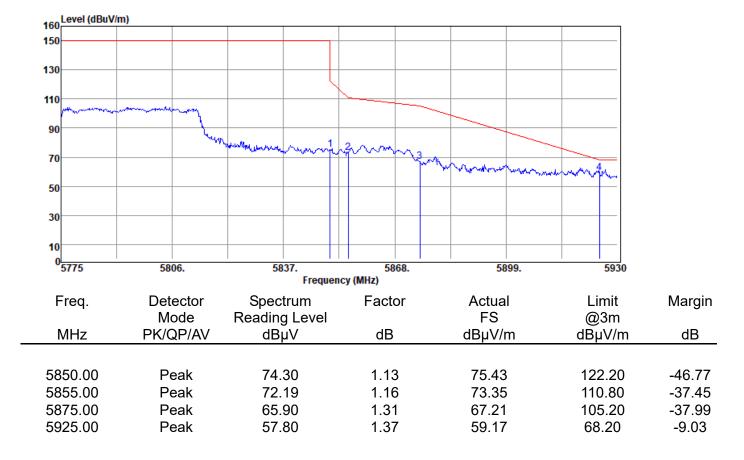


Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:23.0/58
Test Channel	:5775 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		





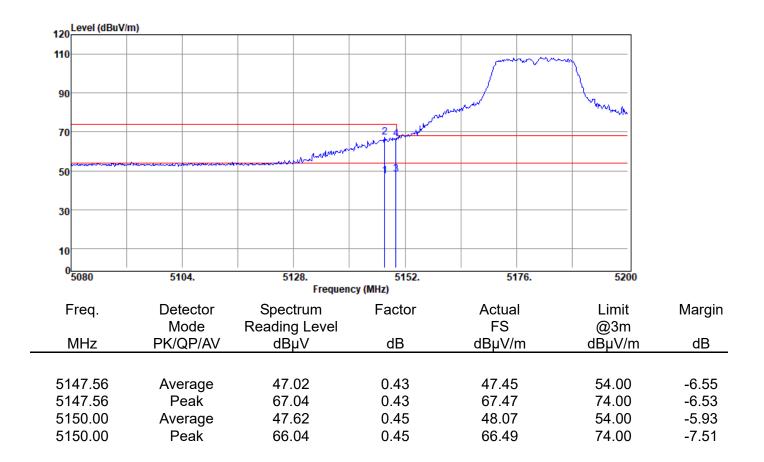
Report Number	:E2/2019/B0014	Test Date	:2019-12-16
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:23.0/58
Test Channel	:5775 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		





## **Beamforming Mode**

Report Number	:E2/2019/B0014	Test Date	:2020-01-07
Operation Mode	:802.11a / Band 1	Temp./Humi.	:21.9/68
Test Channel	:5180 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Test Date



:E2/2019/B0014

**Report Number** 

Report Number	.EZ/2019/D	0014		Test Date	.2020-01-07	
Operation Mode	:802.11a / Band 1			Temp./Humi.	:21.9/68	
Test Channel	:5180 MHz			Antenna Pol.	:HORIZONTA	AL.
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan			-		
l evel (dBuV/m)						
120 Level (dBuV/m)						
110				- marker man		
90			- Andrew	Jung	monter	
70			24 miles			
		a how want of the				
50			13			
30						
10						
0 5080	5104.	5128. Frequen	5152. cv (MHz)	5176.	5200	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
1109.	Mode	Reading Level	1 40101	FS	@3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5148.16	Average	49.62	0.44	50.06	54.00	-3.94
5148.16	Peak	69.15	0.44	69.59	74.00	-4.41
5150.00 5150.00	Peak	Average50.660.45Peak67.720.45		51.11 68.17	54.00 74.00	-2.89 -5.83
0100.00	, our	0	0.10	00.11	1 1.00	0.00

Test Date



:E2/2019/B0014

Report Number

Operation Moo Test Channel Test Mode EUT Pol	de :802.11a / :5240 MHz :BE CH HI :E2 Plan	Temp./Humi. Antenna Pol. Engineer	:21.9/68 :VERTICAL :Kailin			
120 Level (dBuV	/m)					
110						
90	half and and a second s					
70	Josephine March and				4	
50		W man was a second	<del>non an internet sono</del>		3	
30						
10						
0 <mark>5230</mark>	5270.	5310. Frequen	5350. icy (MHz)	5390.	5430	
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	Average	39.98	0.17	40.15	54.00	-13.85
5350.00 5412.60	Peak Average	52.16 39.45	0.17 0.88	52.33 40.33	74.00 54.00	-21.67 -13.67
5412.60	Peak	53.73	0.88	54.61	74.00	-19.39

Test Date



:E2/2019/B0014

**Report Number** 

	2/2013/L	.L2/2019/D0014			.2020-01-07	
Operation Mod	e :802.11a /	:802.11a / Band 1			:21.9/68	
Test Channel	:5240 MHz	:5240 MHz			:HORIZONT/	4L
Test Mode	:BE CH HI	GH		Engineer	:Kailin	
EUT Pol	:E2 Plan					
Lovel (dDv)//						
120 Level (dBuV/i	n)					
110						
90						
50	man have been a second					
70	Mary Mary					
	What have been a second and a second and a second a secon	man	2 <sup>4</sup>			
50			13			
30						
10						
0 <mark>5230</mark>	5270.	5310.	5350.	5390.	5430	
		Frequen				
Freq.	Detector Mode	Spectrum	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	Reading Level dBµV	dB	dBµV/m	dBµV/m	dB
		I		I		
5350.00	Average	39.91	0.17	40.08	54.00	-13.92
5350.00	Peak	52.35	0.17	52.52	74.00	-21.48
5351.40	Average	40.03	0.18	40.21	54.00	-13.79
5351.40	Peak	53.90	0.18	54.08	74.00	-19.92

Test Date



:E2/2019/B0014

**Report Number** 

Operati Test Ch Test Mc EUT Po	ode	:802.11a /   :5745 MHz :BE CH LC :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:21.9/68 :VERTICAL :Kailin	
160	evel (dBuV/m)						
150							
130							
110							
90					Amon		
70			June 2	markan	31		
50							
30							
10							
0 <mark>56</mark>	645	5667.	5689. Frequen	5711. cy (MHz)	5733.	5755	
Fre	eq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
M	Hz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
	0.00	Peak	53.04	0.69	53.73	68.20	-14.47
	0.00	Peak	59.35	1.00	60.35	105.20	-44.85
	0.00	Peak	70.69	0.99	71.68	110.80	-39.12
572	5.00	Peak	80.68	0.98	81.66	122.20	-40.54

Test Date



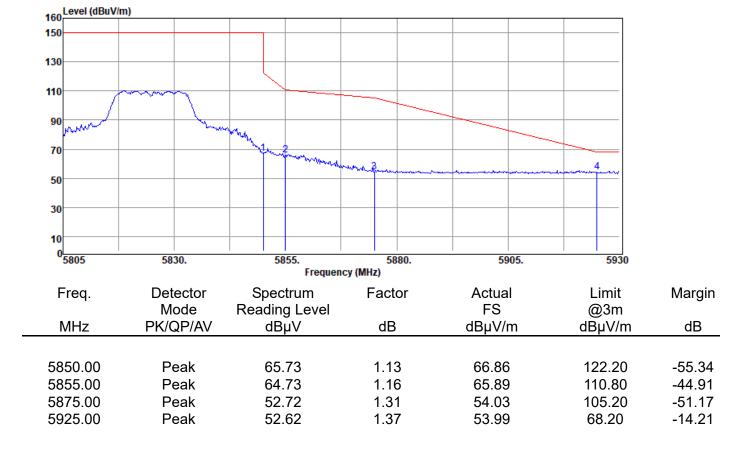
:E2/2019/B0014

**Report Number** 

repertitatio		0014		Tool Balo	.2020 01 01	
Operation Mode :802.11a / Band 4		Temp./Humi.	:21.9/68			
Test Channel	t Channel :5745 MHz		Antenna Pol.	:HORIZONT/	۹L	
Test Mode	st Mode :BE CH LOW		Engineer	:Kailin		
EUT Pol	:E2 Plan					
160 Level (dBuV/m	)					
150						
420						
130						
110						
90				A una	<u> </u>	
70			a sa m	3 million		
101		hard	win white			
50						
30						
10						
05645	5667.	5689.	5711.	5733.	5755	
		Frequen	cy (MHz)			
Freq.	Detector	Spectrum	Factor	Actual FS	Limit	Margin
MHz	Mode Reading Level Hz PK/QP/AV dBµV dB		dB	dBµV/m	@3m dBµV/m	dB
5650.00	Peak	53.65	0.69	54.34	68.20	-13.86
5700.00	Peak	58.52	1.00	59.52	105.20	-45.68
5720.00 5725.00	Peak Peak	74.09 81.58	0.99 0.98	75.08 82.56	110.80 122.20	-35.72 -39.64
5725.00	reak	01.00	0.90	02.00	122.20	-39.04



Report Number	:E2/2019/B0014	Test Date	:2020-01-07
Operation Mode	:802.11a / Band 4	Temp./Humi.	:21.9/68
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		





70

50

30

10

Report Number	:E2/2019/B0014	Test Date	:2020-01-07
Operation Mode	:802.11a / Band 4	Temp./Humi.	:21.9/68
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		
160 Level (dBuV/m)			
150			
130			
110			
90	Market .		

м

5805	5830.	5855. 5880. 5905. 593( Frequency (MHz)			5930		
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5850.00	Peak	70.66	1.13	71.79	122.20	-50.41	
5855.00	Peak	67.45	1.16	68.61	110.80	-42.19	
5875.00	Peak	55.53	1.31	56.84	105.20	-48.36	
5925.00	Peak	52.02	1.37	53.39	68.20	-14.81	

3

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:5180 MHz	:802.11n20 / Band 1			:22.1/67 :VERTICAL :Kailin	
130 Level (dBuV/m	)					
120						
100				man		
80				and the second s		
60			2 martin and a start			
40	1		1			
20						
0 5080	5104.	5128. Frequent	5152.	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
5150.00 5150.00	Average Peak	43.81 59.22	0.45 0.45	44.26 59.67	54.00 74.00	-9.74 -14.33

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mod Test Channel Test Mode EUT Pol	:5180 MHz	:802.11n20 / Band 1 :5180 MHz :BE CH LOW :E2 Plan		Temp./Humi. Antenna Pol. Engineer	:22.1/67 :HORIZONT/ :Kailin	AL
130 Level (dBuV/	m)					
120						
				howwwww	m	
100						
80					hundred	
			2 martin Charles			
60			MAN MAN			
40						
20						
0 5080	5104.	5128.	5152.	5176.	5200	
5060	5104.		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
		I		1		
5149.60	Average	45.84	0.44	46.28	54.00	-7.72
5149.60	Peak	63.90	0.44	64.34	74.00	-9.66
5150.00	Average	46.62	0.45	47.07	54.00	-6.93
5150.00	Peak	62.51	0.45	62.96	74.00	-11.04

74.00

-19.62

Test Date



:E2/2019/B0014

Report Number

.11n20 / Band 1		Temp./Humi.	:22.1/67	
		•		
0 MHz	Antenna Pol.	:VERTICAL		
CH HIGH		Engineer	:Kailin	
		5		
	1			
man and a second				
" WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	2	4		
		3		
. 5310. Freque	5350.	5390.	5430	
		Actual	Limit	Margin
	Facioi			warym
P/AV dBµV	dB	dBµV/m	dBµV/m	dB
•				
age 39.48	0.17	39.65	54.00	-14.35
ak 52.39	0.17	52.56	74.00	-21.44
age 39.89	0.83	40.72	54.00	-13.28
	CH HIGH Plan	CH HIGH Plan	CH HIGH Plan Plan Engineer Plan Engineer CH HIGH Plan Engineer En	CH HIGH       Engineer       :Kailin         Plan       Image: State of the s

53.55

Peak

5406.40

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0.83

Test Date

54.06

74.00

-19.94



:E2/2019/B0014

**Report Number** 

5381.00

Peak

Opera	tion Mode	Mode :802.11n20 / Band 1		Tem	p./Humi.	:22.1/67					
Test C	hannel	:52	:5240 MHz		Ante	nna Pol.	:HORIZO	NTAL			
Test M	lode	:BE	E CH HIG	GH				Eng	neer	:Kailin	
EUT F	Pol	:E2	Plan								
120	Level (dBuV/n	n)									
110	man										
	( )										
90	\	When									
		Whene	ma .								
70			e wanter the w	Manuth							
50				- my my	Honorman				and the second second		
								3			
30											
10											
U	5230	52	70.	53	10. Frequer	53 Icy (MHz)	50.		5390.	5430	
F	req.		ector	Spec		Fact	or	Act		Limit	Margin
	41.1-		ode	Reading	-			F:		@3m	
N	ИНz	PK/C	QP/AV	dB	JV	dB		dBµ	v/m	dBµV/m	dB
53	50.00	Ave	rage	40.	62	0.1	7	40.	79	54.00	-13.21
	50.00		eak	51.		0.1		51.		74.00	-22.18
53	81.00	Ave	Average				4	40.80		54.00	-13.20

53.52

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122.20

-42.97

Test Date



:E2/2019/B0014

**Report Number** 

5725.00

Peak

•		:802.11n2( :5745 MHz :BE CH LC :E2 Plan	Z		Temp./Humi. Antenna Pol. Engineer		
400	Level (dBuV/m)						
160							
130							
110						many	
90					/	<u> </u>	
					3 do manun		
70	1			2 martin			
50							
30							
10							
	5645	5667.	5689. Freque	5711. ency (MHz)	5733.	5755	
Freq.		Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	5
	MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5650.00		Peak	52.43	0.69	53.12	68.20	-15.08
	00.00	Peak	55.65	1.00	56.65	105.20	-48.55
57	20.00	Peak	68.04	0.99	69.03	110.80	-41.77

78.25

0.98

Test Date



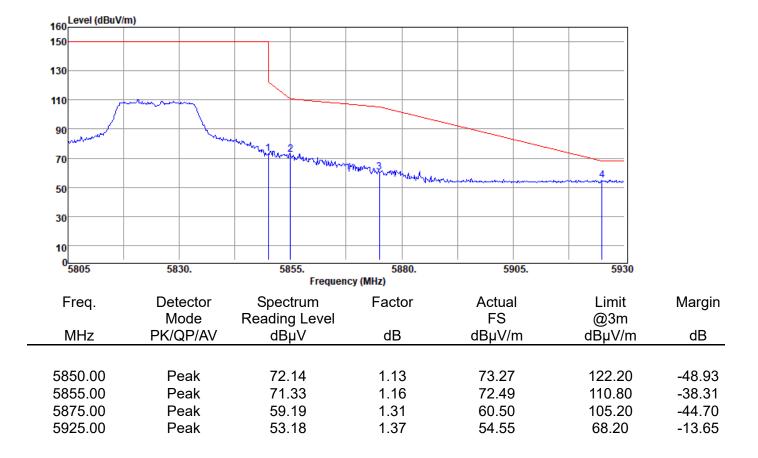
:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol		:802.11n20 / Band 4 :5745 MHz :BE CH LOW :E2 Plan			Temp.// Antenn Engine	a Pol. :HORIZO	
460	_evel (dBuV/m)						
150							
130-							
110							
90					3		
70				way white was derented	1-2 <sup>-</sup>		
50	-sur - runnet - und		man and and and a second				
30							
10							
00 5645 5667. 5689. 5711. 5733. 5755 Frequency (MHz)						5	
F	req.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	
N	/Hz	PK/QP/AV	dBµV	dB	dBµV/r	n dBµV/ı	m dB
	50.00	Peak	53.21	0.69	53.90		
	00.00	Peak	61.41	1.00	62.41	105.20	
	20.00	Peak	73.86	0.99	74.85		
5/2	25.00	Peak	82.31	0.98	83.29	122.20	0 -38.91



Report Number	:E2/2019/B0014	Test Date	:2020-01-07
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:22.1/67
Test Channel	:5825 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		





70

50

30

10 0

Report Number	:E2/2019/B0014	Test Date	:2020-01-07	
Operation Mode	:802.11n20 / Band 4	Temp./Humi.	:22.1/67	
Test Channel	:5825 MHz	Antenna Pol.	:HORIZONTAL	
Test Mode	:BE CH HIGH	Engineer	:Kailin	
EUT Pol	:E2 Plan			
160 Level (dBuV/m)				
150				
130				
110				
90	Marrie and Ma			

<sup>0</sup> 5805	5830.	5855. Frequenc	5880. ;y (MHz)	5905.	5930		
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5850.00	Peak	76.32	1.13	77.45	122.20	-44.75	
5855.00	Peak	73.07	1.16	74.23	110.80	-36.57	
5875.00	Peak	64.06	1.31	65.37	105.20	-39.83	
5925.00	Peak	52.82	1.37	54.19	68.20	-14.01	
5925.00	Peak	52.82	1.37	54.19	68.20	-	

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-2.28

-1.61

54.00

74.00

Test Date



:E2/2019/B0014

**Report Number** 

5150.00

5150.00

Average

Peak

Operation Mode	:802.11n40	/ Band 1		Temp./Humi.	:22.3/66	
Test Channel	:5190 MHz			Antenna Pol.	:VERTICAL	
Test Mode	:BE CH LO	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
120 Level (dBuV/m)						
110						
90						
70			and the second s	mont		
70		. when	W Charlow			
50 h	with more thank the					
30						
10						
0	5104.	5128.	5152.	5176.	5200	
3000	5104.		ncy (MHz)	5110.	5200	
Freq.	Detector Mode	Spectrum	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	Reading Level dBµV	dB	rs dBµV/m	@3m dBµV/m	dB

51.27

71.94

0.45

0.45

51.72

74.00

-1.57

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode Test Channel Test Mode EUT Pol	:802.11n40 :5190 MHz :BE CH LC :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:22.3/66 :HORIZONT/ :Kailin	ΑL
120 Level (dBuV/m)						
110				- Aman		
90				Much with		
70		munterent	when the second se			
50	,,	//////////////////////////////////////				
30						
10						
0 <sup></sup> 5080	5104.	5128. Freque	5152. ncy (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
5150.00	Average	52.93	0.45	53.38	54.00	-0.62

0.45

72.43

71.98

Peak

5150.00

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-14.12

-21.77

-13.55

-19.77

54.00

74.00

54.00

74.00

Test Date



:E2/2019/B0014

**Report Number** 

5350.00

5350.00

5394.72

5394.72

Average

Peak

Average

Peak

Operation Mode	:802.11n40	/ Band 1		Temp./Humi.	:22.3/66		
Test Channel	:5230 MHz			Antenna Pol.	:VERTICAL	VERTICAL	
Test Mode	:BE CH HIG	ЭH		Engineer	:Kailin		
EUT Pol	:E2 Plan						
120 Level (dBuV/m)							
110 VIL							
90							
	munde						
70	M. a. M. a. M.						
	an marked and the second	Michinhaman and a second and a s	2	4			
50				3			
20							
30							
10							
0 5220			<u> </u>		<u> </u>		
5220	5262.	5304. Frequer	5346. ncy (MHz)	5388.	5430		
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
	Mode	Reading Level		FS	@3m	-	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	

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39.71

52.06

39.75

53.53

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0.17

0.17

0.70

0.70

39.88

52.23

40.45

Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode	:802.11n40	:802.11n40 / Band 1			:22.3/66	
Test Channel	:5230 MHz			Antenna Pol.	:HORIZONT/	AL.
Test Mode	:BE CH HIG	GH		Engineer	:Kailin	
EUT Pol	:E2 Plan					
120 Level (dBuV/m)						
110						
	,					
90	$\left\{ - \right\}$					
	mound					
70	- market my					
50		My marker marker			4	
50			1		3	
30						
10						
0 5220	5262.	5304. Frequen	5346.	5388.	5430	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
ricq.	Mode	Reading Level	1 actor	FS	@3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
		10.10	0.47	40.00	54.00	40.74
5350.00 5350.00	Average Peak	40.12 51.98	0.17 0.17	40.29 52.15	54.00 74.00	-13.71 -21.85
5411.73	Average	39.80	0.88	40.68	54.00	-21.85
5411.73	Peak	53.44	0.88	54.32	74.00	-19.68

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-13.96

-40.28

-30.78

-41.66

68.20

105.20

110.80

122.20

Test Date

54.24

64.92

80.02

80.54



:E2/2019/B0014

**Report Number** 

5650.00

5700.00

5720.00

5725.00

Operation Mode	:802.11n40 /	Band 4		Temp./Humi.	:22.3/66	
Test Channel	:5755 MHz			Antenna Pol.	:VERTICAL	
Test Mode	:BE CH LOW	V		Engineer	:Kailin	
EUT Pol	:E2 Plan					
160 Level (dBuV/m)						
150						
130						
110				Junior	- manual	
90			marked	formant		
70		man water the	for the mark			
50 50	number deserves world with					
30						
10 0 5645						
5645	5669.	5693. Frequen	5717. icy (MHz)	5741.	5765	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
		αυμν				uD

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

53.55

63.92

79.03

79.56

Peak

Peak

Peak

Peak

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0.69

1.00

0.99

Test Date



:E2/2019/B0014

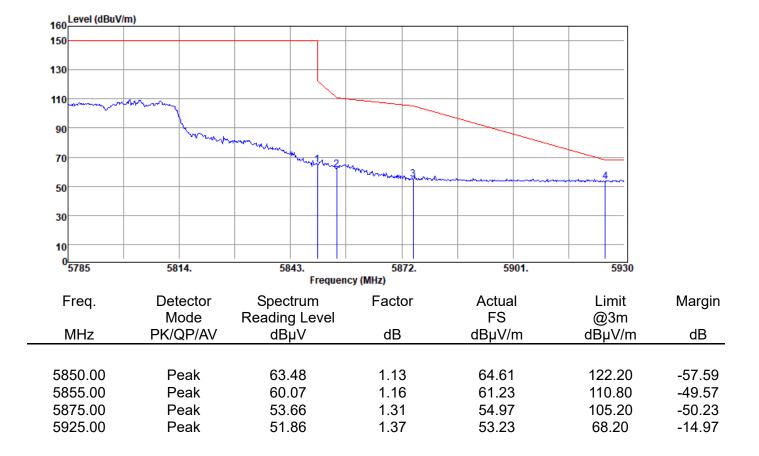
**Report Number** 

Operation Mode	:802.11n40	/ Band 4		Temp./Humi.	:22.3/66	
Test Channel	:5755 MHz			Antenna Pol.	:HORIZONT/	4L
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
Lovel (dBuV/m)						
160 150						
130						
110				Jun market		
90			1.3.Mrt	to-warmed		
70		Marman Mar Rever	Mark Marken Marken			
	many man	Mannahan				
50						
30						
10						
0 5645	5669.	5693. Ereque	5717. ncy (MHz)	5741.	5765	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
1104.	Mode	Reading Level		FS	@3m	margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5050.00	<b>D</b> 1	50.00	0.00	50 57	~~~~~	44.00
5650.00 5700.00	Peak Peak	52.88 65.92	0.69 1.00	53.57 66.92	68.20 105.20	-14.63 -38.28
5720.00	Peak	79.56	0.99	80.55	110.80	-30.25
5725.00	Peak	82.24	0.98	83.22	122.20	-38.98

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Report Number	:E2/2019/B0014	Test Date	:2020-01-07
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:22.3/66
Test Channel	:5795 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		

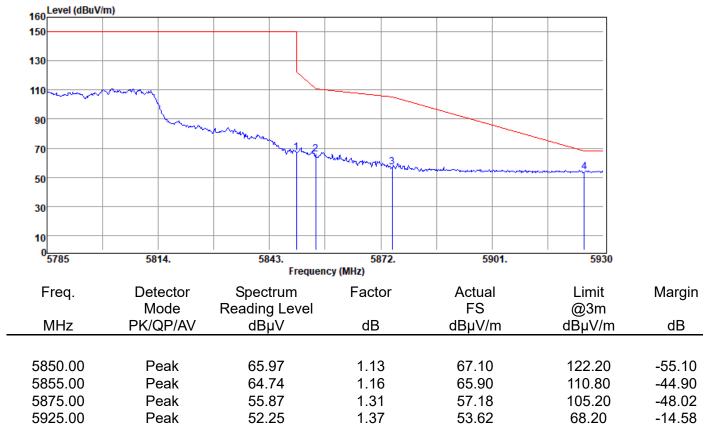


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Report Number	:E2/2019/B0014	Test Date	:2020-01-07
Operation Mode	:802.11n40 / Band 4	Temp./Humi.	:22.3/66
Test Channel	:5795 MHz	Antenna Pol.	:HORIZONTAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



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Test Date



:E2/2019/B0014

**Report Number** 

Test Chan	Operation Mode:802.11ac20 / Band 1Test Channel:5180 MHzTest Mode:BE CH LOWEUT Pol:E2 Plan				Temp./ Antenr Engine	a Pol.	:21.7/63 :VERTIC :Kailin	AL	
130	(dBuV/m)								
120									
100						~~~	~~~~	<u>\</u>	
80					- where	~		1mg	
60				mullenin	and mark and				
40				1					
20									
0 <sup>L</sup> 5080	1	5104.	5128. Freque	51 ency (MHz)	52.	51	76.	5200	)
Freq		Detector Mode	Spectrum Reading Level	Fact	or	Actua FS	I	Limit @3m	Margin
MHz		PK/QP/AV	dBµV	dB		dBµV/r	n	dBµV/n	n dB
5150.0 5150.0		Average Peak	43.06 64.34	0.48 0.48		43.51 64.79		54.00 74.00	-10.49 -9.21

Test Date



:E2/2019/B0014

**Report Number** 

•		:518 :BE	2.11ac2 80 MHz CH LC Plan		1 Temp./Humi. Antenna Pol. Engineer			:21.7/63 :HORIZONTAL :Kailin			
130	Level (dBuV/m)										
120											
100								$\int$	mpman		
80							M	Walt		Junut	
60					- Margaret	may martin	an and a second s				
40											
20											
0	5080	510	4.	512		51 ncy (MHz)	52.	5'	176.	5200	)
F	req.		ector ode	Spect Reading		Facto	or	Actua FS	I	Limit @3m	Margin
N	MHz		P/AV	dBµ		dB		dBµV/	m	dBµV/n	n dB
	49.60 49.60	Ave Pe	rage ak	47.9 67.0		0.44 0.44		48.39 67.45		54.00 74.00	-5.61 -6.55
	50.00		rage	48.2		0.45		48.68		54.00	-5.32
	50.00		eak	64.3	81	0.45	5	64.76	6	74.00	-9.24

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74.00

-20.19

Test Date

53.81



:E2/2019/B0014

**Report Number** 

5350.00

Peak

Operation Mode	e :802.11ac	:802.11ac20 / Band 1		Temp./Humi.	:21.7/63		
Test Channel	:5240 MH	Z		Antenna Pol.	:VERTICAL		
Test Mode	:BE CH H	IGH		Engineer	:Kailin		
EUT Pol	:E2 Plan						
120 Level (dBuV/n	n)						
110							
90	Lan.						
70	and the second						
70	and the second second	hon When What and the shower when					
50		What was a second and a second	2 Hoursenand Jacobian Service	when the second s			
			1				
30							
10							
0 5230	5270.	5310. Frequence	5350. cy (MHz)	5390.	5430		
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB	
			dD	ασμνλη	αυμν/π		
5350.00	Average	40.06	0.17	40.23	54.00	-13.77	
		50.04	0.47	50.04	74.00	00.40	

53.64

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Test Date



:E2/2019/B0014

**Report Number** 

Operation Mode	:802.11ac2	20 / Band 1		Temp./Humi. :21.7/63			
Test Channel	:5240 MHz			Antenna Pol.	:HORIZONT/	NI	
Test Mode	:BE CH HI	GH		Engineer	:Kailin		
EUT Pol	:E2 Plan						
Lovel (dBuV/m	<b>`</b>						
120 Level (dBuV/m	/						
110							
90	m						
	www						
70		h					
		Marked and a second	2	4			
50			1	3			
30							
10							
0 <mark>5230</mark>	5270.	5310. Frequen	5350. cy (MHz)	5390.	5430		
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin	
	Mode	Reading Level		FS	@3m		
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
	_						
5350.00	Average	41.06	0.17	41.23	54.00	-12.77	
5350.00 5390.00	Peak	53.88 40.97	0.17 0.65	54.05 41.62	74.00 54.00	-19.95 -12.38	
5390.00	Average Peak	40.97 54.37	0.65	55.02	74.00 74.00	-12.30	
0000.00	i can	01.07	0.00	00.02	11.00	10.00	

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-43.84

-47.24

110.80

122.20

Test Date



:E2/2019/B0014

Report Number

5720.00

5725.00

Peak

Peak

Operat Test C Test M EUT P	ode	:802.11ac2 :5745 MHz :BE CH LC :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:21.7/63 :VERTICAL :Kailin	
160	.evel (dBuV/m)						
150							
130							
110						more	
90							
70					3 martin Mart		
50	-			- Markelan -			
30							
10							
	645	5667.	5689. Frequent	5711. cv (MHz)	5733.	5755	
F	req.	Detector	Spectrum	Factor	Actual	Limit	Margin
Ν	1Hz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
			•		•	1	
	50.00	Peak	51.53	0.69	52.22	68.20	-15.98
570	00.00	Peak	53.52	1.00	54.52	105.20	-50.68

65.97

73.98

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0.99

0.98

66.96

Test Date



:E2/2019/B0014

**Report Number** 

Test Channel :574	.11ac20 / Band 4 5 MHz CH LOW Plan	Temp./Humi. Antenna Pol. Engineer	:21.7/63 :HORIZONTA :Kailin	۱L	
160 Level (dBuV/m)					
150					
130					
110					
90			August		
70		3	Andreastic		
		and marked and			
50					
30					
0 <mark>5645 5667</mark>		5711. ncy <mark>(MHz</mark> )	5733.	5755	
Freq. Dete		Factor	Actual	Limit	Margin
Мос	5		FS	@3m	
MHz PK/QF	P/AV dBµV	dB	dBµV/m	dBµV/m	dB
5050.00	. 50.70	0.00			40.70
5650.00 Pea		0.69	54.47	68.20	-13.73
5700.00 Pea 5720.00 Pea		1.00 0.99	61.49 74.27	105.20 110.80	-43.71 -36.53
5725.00 Pea		0.99	81.37	122.20	-30.55

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110

90

70

50

30

10

Report Number	:E2/2019/B0014			Test Date	:2020-01-08
Operation Mode	:802.11ac20 / Band 4	1	Temp./Humi.	:21.7/63	
Test Channel	:5825 MHz		Antenna Pol.	:VERTICAL	
Test Mode	:BE CH HIGH	:Kailin			
EUT Pol	:E2 Plan				
160 Level (dBuV/m)				1	
150					
130					

5805	5830.	5855.	5880.	5905.	5930	
		Frequenc	y (MHz)			
Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.00	Peak	75.11	1.13	76.24	122.20	-45.96
5855.00	Peak	72.38	1.16	73.54	110.80	-37.26
5875.00	Peak	63.93	1.31	65.24	105.20	-39.96
5925.00	Peak	53.08	1.37	54.45	68.20	-13.75

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Test Date



:E2/2019/B0014

**Report Number** 

•		:5825 I :BE CH	:5825 MHz					-	/Humi. na Pol. eer	:21.7/63 :HORIZC :Kailin	DNTAL
400	Level (dBuV/r	n)									
160											
130											
110				$\rightarrow$							
90	mum		many	n.1. 2							
70					and the second	monunger	way way way and				
50								www.www.			
30											
10											
0	5805	5830.	1	5855.		ncy (MHz)	5880.	5	905.	593	D
	req.	Detecto Mode	Re	Spectru ading L			ctor	Actua FS		Limit @3m	Margin

MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.00	Peak	74.38	1.13	75.51	122.20	-46.69
5855.00	Peak	73.67	1.16	74.83	110.80	-35.97
5875.00	Peak	63.13	1.31	64.44	105.20	-40.76
5925.00	Peak	52.57	1.37	53.94	68.20	-14.26

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Test Date



:E2/2019/B0014

**Report Number** 

5150.00

Peak

-		nnel :5190 MHz				:21.7/63 :VERTICAL :Kailin	
120	Level (dBuV/m)						
110							
90							
					mum		
70				24 minutes	pulu de la companya de la		
50	an Marin and a low of a low of		more and a her man and a good of the	13			
30							
10							
0	5080	5104.	5128.	5152.	5176.	5200	
			-	ncy (MHz)			
F	req.	Detector	Spectrum	Factor	Actual	Limit	Margin
	MHz	Mode	Reading Level	dB	FS dBu\//m	@3m dBu\//m	dB
	VITIZ	PK/QP/AV	dBµV	UD	dBµV/m	dBµV/m	UD
51	48.76	Average	48.26	0.44	48.70	54.00	-5.30
	48.76	Peak	67.51	0.44	67.95	74.00	-6.05
	50.00	Average	48.49	0.45	48.94	54.00	-5.06

67.19

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0.45

67.64

74.00

-6.36

54.00

74.00

54.00

74.00

-3.69

-0.81

-2.64

-4.41

Test Date



:E2/2019/B0014

**Report Number** 

5147.20

5147.20

5150.00

5150.00

Average

Peak

Average

Peak

•		:519 :BE	:802.11ac40 / Band 1 :5190 MHz :BE CH LOW :E2 Plan				Temp./Humi. Antenna Pol. Engineer		:21.7/63 :HORIZC :Kailin	ONTAL		
120	Level (dBuV/m)											
110										m		
											human	
90												
						2		1. 1. Mar and Marker and	W <sup>er</sup>			
70					and have	wM	m <sup>a</sup> ll	Wanner				
50				Branktandh								
30												
10												
	5080	E40			20		E4	52.	 	176		
	0000	510	4.	51	28. Frequer	ncy (MHz		JZ.	5.	176.	520	U
F	req.	Dete		Spec		Fa	acto	or	Actua	al	Limit	Margin
N		Mo		Reading			٩D		FS	~	@3m	
r	MHz	PK/Q	r/AV	dB	uv		dB		dBµV/	[]]	dBµV/n	n dB

0.43

0.43

0.45

0.45

50.31

73.19

51.36

69.59

Unless otherwise stated the results shown in this test r	eport refer only to the sample(s	s) tested and such sample(s) ar	re retained for 90 days only
	cport refer only to the sample(s		To rotalliou for 30 days only.

49.88

72.76

50.91

69.14

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-13.36

-19.26

54.00

74.00

Test Date



:E2/2019/B0014

**Report Number** 

5376.87

5376.87

Average

Peak

Operation Mo Test Channel Test Mode EUT Pol	:5230 BE C	:802.11ac40 / Band 1 :5230 MHz :BE CH HIGH :E2 Plan					:21.7/63 :VERTICA :Kailin	AL
120 Level (dBu	ıV/m)							
110								
90	+							
70	Mon	when he was a second						
50		W www.www.www.	~	man and a state	4		a and an	
30								
10								
0 <sup>L</sup> 5220	5262.	53	04. Frequency	5346. (MHz)	1	5388.	5430	
Freq.	Detect Mode			Factor	Actu FS		Limit @3m	Margin
MHz	PK/QP/			dB	dBµ∖	//m	dBµV/m	dB
5350.00	Avera			0.17	40.8		54.00	-13.12
5350.00	Peal	k 52.	18	0.17	52.3	55	74.00	-21.65

40.15

54.25

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0.49

0.49

40.64

74.00

-19.61

Test Date

54.39



:E2/2019/B0014

**Report Number** 

5404.17

Peak

Operation Mod	de :802.11	ac40 / Band 1		Temp./ŀ	Humi. :21.7/63	
Test Channel	:5230 N	1Hz		Antenna	a Pol. :HORIZO	ONTAL
Test Mode	:BE CH	HIGH		Engine	er :Kailin	
EUT Pol	:E2 Pla	n				
120 Level (dBuV	//m)					
110 mm						
90						
70	" www.ft	minit where a sure of the second s				
50		- Www.ehrender.			4	
50					3	
30						
10						
0 <sup>L</sup> 5220	5262.	5304. Freq	5346. Juency (MHz)	538	8. 543	0
Freq.	Detector		Factor	Actual		Margin
MHz	Mode PK/QP/A	Reading Leve V dBµV	el dB	FS dBµV/m	@3m n dBµV/r	
			40			
5350.00	Average	e 40.51	0.17	40.68	54.00	-13.32
5350.00	Peak	52.08	0.17	52.25	74.00	
5404.17	Average	e 40.22	0.81	41.03	54.00	-12.97

53.58

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-38.70

-28.82

-38.23

105.20

110.80

122.20

Test Date



:E2/2019/B0014

**Report Number** 

5700.00

5720.00

5725.00

Operation Mode	e :802.11ac4	10 / Band 4		Temp./Humi.	:21.5/64	
Test Channel	:5755 MHz	2		Antenna Pol.	:VERTICAL	
Test Mode	:BE CH LC	) W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
160 Level (dBuV/n	1)					
150						
130						
110						
90			mand down have ment	when where		
70		ma warman and				
50	un marken and					
30						
30						
10						
0 <mark>5645</mark>	5669.	5693. Frequer	5717. icy (MHz)	5741.	5765	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level	dB	FS dBu\//m	@3m dBµV/m	dB
		dBµV	UD	dBµV/m	սերչյա	uD
5650.00	Peak	54.07	0.69	54.76	68.20	-13.44

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65.50

80.99

82.99

Peak

Peak

Peak

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1.00

0.99

0.98

66.50

81.98

Test Date



:E2/2019/B0014

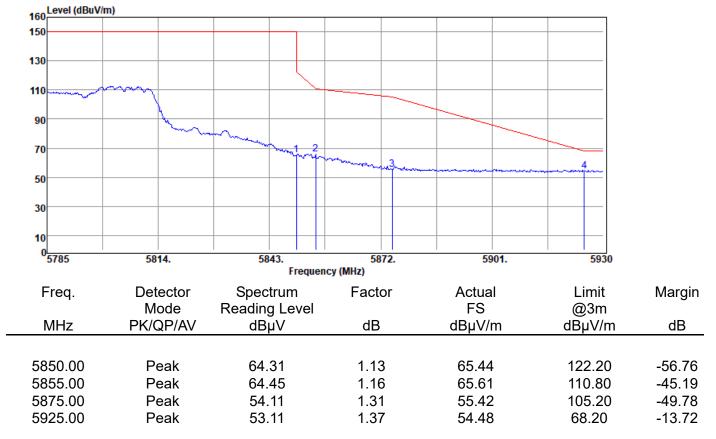
**Report Number** 

Operation Mode	·802 11ac4	0 / Band 4		Temp./Humi.	:21.5/64	
•		:802.11ac40 / Band 4		•		A 1
Test Channel	:5755 MHz			Antenna Pol.	:HORIZONT	4L
Test Mode	:BE CH LC	)W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
Lovel (dBuV/m)						
160 Level (dBuV/m)						
150						
130						
110						
					J. annual	
90				My When the		
70		2	mound			
1 million	munperena	amour and many				
50						
30						
10						
05645	5669.	5693. Freque	5717. ncy (MHz)	5741.	5765	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	5
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5650.00	Peak	52.98	0.69	53.67	68.20	-14.53
5700.00	Peak	66.86 80.11	1.00	67.86 81.10	105.20 110.80	-37.34 -29.70
5720.00 5725.00	Peak Peak	80.11	0.99 0.98	83.84	122.20	-29.70 -38.36
0720.00	r cur	02.00	0.00	00.04	122.20	00.00

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Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac40 / Band 4	Temp./Humi.	:21.5/64
Test Channel	:5795 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		



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·2020\_01\_08

Test Date



·E2/2010/P001/

Report Number

30

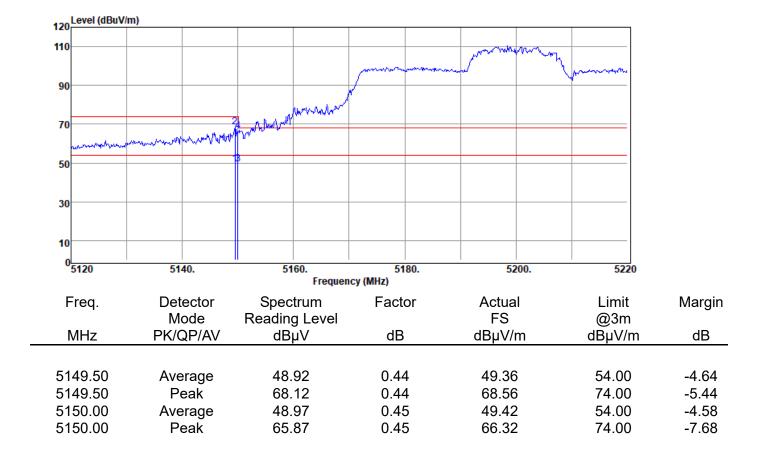
10

кероп мито	er :Ez	2/2019/B	0014					Test D	ale	:2020-0	1-08
Operation Mo	de :80	)2.11ac4	0 / Band	4				Temp./	/Humi.	:21.5/64	
Test Channel	:57	795 MHz						Antenr	na Pol.	:HORIZO	ONTAL
Test Mode	:Bl	E CH HIC	ЭH					Engine	er	:Kailin	
EUT Pol	:E	2 Plan									
160	V/m)										_
150											
130											
110											
90		han									
70				www.	m ngm	man and water of	3			<u> </u>	
50							Mumun	when a manual		4	

5785	5814.	5843.	5872.	5901.	5930	
		Frequenc	;y (MHZ)			
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5850.00	Peak	65.86	1.13	66.99	122.20	-55.21
5855.00	Peak	64.18	1.16	65.34	110.80	-45.46
5875.00	Peak	56.17	1.31	57.48	105.20	-47.72
5925.00	Peak	53.10	1.37	54.47	68.20	-13.73
5925.00	Реак	53.10	1.37	54.47	68.20	-13.7



Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac80 / Band 1	Temp./Humi.	:21.5/64
Test Channel	:5210 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH LOW	Engineer	:Kailin
EUT Pol	:E2 Plan		

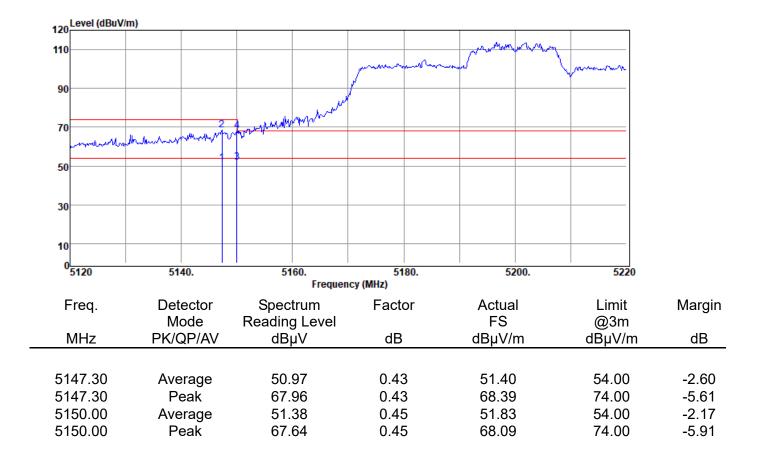


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E2/2019/B0014	Test Date	:2020-01-08
802.11ac80 / Band 1	Temp./Humi.	:21.5/64
5210 MHz	Antenna Pol.	:HORIZONTAL
BE CH LOW	Engineer	:Kailin
E2 Plan		
	802.11ac80 / Band 1 5210 MHz BE CH LOW	Bit is a second of the secon



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-34.95

-32.70

-45.45

105.20

110.80

122.20

Test Date



:E2/2019/B0014

**Report Number** 

5700.00

5720.00

5725.00

Peak

Peak

Peak

Operation Mod	de :802.11ac8	80 / Band 4		Temp./Humi.	:21.5/64	
Test Channel	:5775 MHz	<u>.</u>		Antenna Pol.	:VERTICAL	
Test Mode	:BE CH LC	W		Engineer	:Kailin	
EUT Pol	:E2 Plan					
160 Level (dBuV/	/m)					
150						
130						
110					-	
90			with a wat			
70	the weeks and more than	man 2 minutes and	www.			
50						
30						
10	5070				570 5	
0 5645	5673.	5701. Frequer	5729. ncy <mark>(MHz)</mark>	5757.	5785	
Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB
			40		a De Mini	40
5650.00	Peak	57.41	0.69	58.10	68.20	-10.10

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69.25

77.11

75.77

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1.00

0.99

0.98

70.25

78.10

Test Date



:E2/2019/B0014

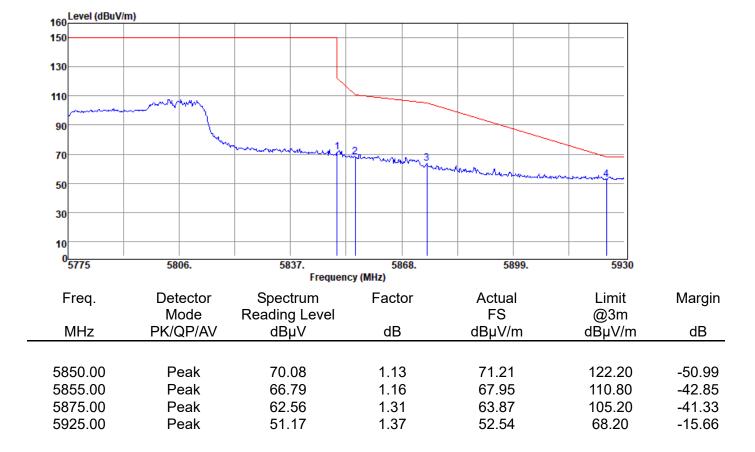
**Report Number** 

•		:802.11ac8 :5775 MHz :BE CH LC :E2 Plan			Temp./Humi. Antenna Pol. Engineer	:21.5/64 :HORIZONT/ :Kailin	AL
160	Level (dBuV/m)						
150							
130							
110							
				$ \int $			
90			2 - Zammanna	m Jan 4mm mm			
70 50	mon	yarahli waaanaa					
30							
10							
	5645	5673.	5701. Freque	5729. 5729. ncy (MHz)	5757.	5785	
F	req.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
	MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
<b>-</b> -							
	50.00	Peak	61.76	0.69	62.45	68.20	-5.75
	00.00	Peak	74.23 81.44	1.00	75.23 82.43	105.20	-29.97
	20.00 25.00	Peak Peak	81.44 79.49	0.99 0.98	82.43 80.47	110.80 122.20	-28.37 -41.73
51	20.00	i oun	10.10	0.00	00.17	122.20	-1.70

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Report Number	:E2/2019/B0014	Test Date	:2020-01-08
Operation Mode	:802.11ac80 / Band 4	Temp./Humi.	:21.5/64
Test Channel	:5775 MHz	Antenna Pol.	:VERTICAL
Test Mode	:BE CH HIGH	Engineer	:Kailin
EUT Pol	:E2 Plan		

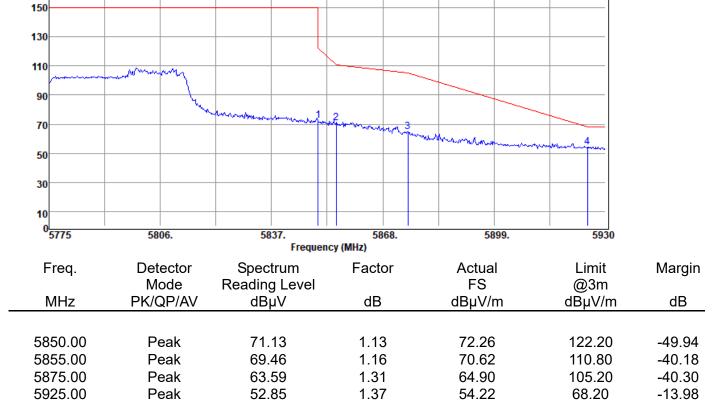


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Report Number	:E2/2019/B0014	Ļ		Test Date	:2020-01-08
Operation Mode	:802.11ac80 / B	and 4		Temp./Humi.	:21.5/64
Test Channel	:5775 MHz			Antenna Pol.	:HORIZONTAL
Test Mode	:BE CH HIGH			Engineer	:Kailin
EUT Pol	:E2 Plan				
160 Level (dBuV/m)					
100					



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# 12 TRANSMISSION IN THE ABSENCE OF DATA

#### 12.1 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.

# 12.2 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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# **13 FREQUENCY STABILITY**

#### 13.1 Standard Applicable

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

#### 13.2 **Measurement Procedure**

- 1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
- 2. Set EUT as normal operation.
- 3. Turn the EUT on and couple its output to spectrum.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
- 6. Repeat step with the temperature chamber set to the lowest temperature.

#### 13.3 Test SET-UP

Antenna EUT Spectrum analyzer

**Temperature Chamber** 

Variable AC Power Supply

#### 13.4 Measurement Equipment Used:

SGS Conducted Room						
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due	
DC Block	PASTERNACK	PE8210	RF32	11/20/2019	11/19/2020	
Spectrum Ana- lyzer	Agilent	N9010A	MY57120200	03/06/2019	03/05/2020	
Attenuator	Marvelous	MVE2213-10	RF31	11/20/2019	11/19/2020	

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#### 13.5 Measurement Result

### Start up

Operation Mode	802.11 a	Test Date	20191221
Temperature	: 22.4°C	Test By	Henry
Humidity	: 72%		

Test Temp.(℃)	Test Voltage(V)	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-20	13.8	36	5180	5,180.02683	-0.00000518
-20	10.8	36	5180	5,180.01913	-0.00000369
25	12	36	5180	5,180.01489	-0.0000288
45	13.8	36	5180	5,180.03000	-0.00000579
40	10.8	36	5180	5,180.02240	-0.00000432

## 2 minutes

Operation Mode	802.11 a	Test Date	20191221
Temperature	: 22.4°C	Test By	Henry
Humidity	: 72%		

Test Temp.(℃)	Test Voltage(V)	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-20	13.8	36	5180	5,180.03043	-0.00000587
-20	10.8	36	5180	5,180.02863	-0.00000553
25	12	36	5180	5,180.02463	-0.00000475
45	13.8	36	5180	5,180.02157	-0.00000416
40	10.8	36	5180	5,180.01974	-0.00000381



# 5 minutes

Operation Mode	802.11 a	Test Date	20191221
Temperature	: 22.4°C	Test By	Henry
Humidity	: 72%		

Test Temp.(℃)	Test Voltage(V)	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-20	13.8	36	5180	5,180.02418	-0.00000467
-20	10.8	36	5180	5,180.02370	-0.00000457
25	12	36	5180	5,180.02184	-0.00000422
45	13.8	36	5180	5,180.03074	-0.00000593
40	10.8	36	5180	5,180.02160	-0.00000417

## 10 minutes

Operation Mode	802.11 a	Test Date	20191221
Temperature	: 22.4°C	Test By	Henry
Humidity	: 72%		

Test Temp.(℃)	Test Voltage(V)	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
-20	13.8	36	5180	5,180.01858	-0.00000359
-20	10.8	36	5180	5,180.02415	-0.00000466
25	12	36	5180	5,180.02729	-0.00000527
4 5	13.8	36	5180	5,180.03192	-0.00000616
45	10.8	36	5180	5,180.02402	-0.00000464



# **14 ANTENNA REQUIREMENT**

#### 14.1 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.

# 14.2 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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