

## ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

**Applicant:** dp smart technology  
No. 287-2, Sec. 3, Chengde Rd., Datong Dist., Taipei City 103,  
Taiwan

**Product Name:** 360 degree panoramic video camera

**Brand Name:** dp

**Model No.:** Rogy360

**Model Difference:** N/A

**Report Number:** ER/2019/B0043

**FCC ID:** 2AVSX-ROGY360

**FCC Rule Part:** §15.407, Cat: NII

**Issue Date:** Mar. 19, 2020

**Date of Test:** Nov. 22, 2019 ~ Feb. 27, 2020

**Date of EUT Re-  
ceived:** Nov. 22, 201

**We hereby certify that:**

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.

**Approved By:**



**Jim Chang / Manager**



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## Revision History

Report Number	Revision	Description	Issue Date	Remark
ER/2019/B0043	Rev.00	Original.	Mar. 19, 2020	Revised By: Stefanie Yu

### Note:

#### 1、Multiple Model numbers or Trademarks

The variant model numbers are assessed as identical in hardware and software to each other, hence all variants are fully covered by the test results in this test report without further verification test.

#### 2、Disclaimer

Variant information between model numbers is provided by the applicant, test results of this report are applicable to the sample EUT received.

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# 1 GENERAL INFORMATION

## 1.1 Product Description

Product Name:	360 degree panoramic video camera	
Brand Name:	dp	
Model No.:	Rogy360	
Model Difference:	N/A	
Hardware Version:	N/A	
Software Version:	N/A	
USB Cable	Model No.: 1Q19008191-DB, Supplier: SUNCA	
Power Supply:	3.6Vdc from Rechargeable Li-polymer Battery or 5 Vdc from AC/DC Adapter	
	Battery:	Model No.: NCR18650GA-3.6V, Supplier: Coppercell
	Adapter:	Model No.: E99-ACP0183-N022, Supplier: Channel Well
Modulation type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 802.11ac only	
Antenna Designation	Coupling Antenna 5150~5250MHz Gain: 3.33dBi (ANT1、2) 5725~5850MHz Gain: 2.73dBi (ANT1、2)	
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 72.2Mbps 802.11 n_40MHz: 13.5 - 150.0Mbps	802.11 ac_20MHz: 6.5 –86.7Mbps 802.11 ac_40MHz: 13.5 -200.0Mbps 802.11 ac_80MHz: 29.3 – 433.3Mbps

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## 1.2 FCC worst power

Wi-Fi 802.11	Frequency Range	Channels	Rated Power (Avg.) (dBm) (Worst case)	Modulation Technology
a	5150~5250	4	15.43	OFDM
	5725-5850	5	14.21	
n_HT ac_VHT 20M	5150~5250	4	HT: 15.05	OFDM
	5725-5850	5	HT: 13.80	
n_HT ac_VHT 40M	5150~5250	2	HT: 15.22	OFDM
	5725-5850	2	HT: 14.46	
ac_VHT 80M	5150~5250	1	VHT: 10.24	OFDM
	5725-5850	1	VHT: 12.24	

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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.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803

FCC Designation number: TW0001

ISED CAB identifier: TW0513

### 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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## 2 SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

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

### 2.2 EUT Exercise

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

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is 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 30 MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50  $\mu$ H/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 placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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## 2.4 Measurement Results Explanation Example

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

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

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

### 2.4.2 For all conducted test items:

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

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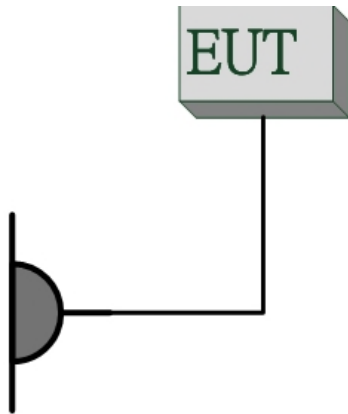
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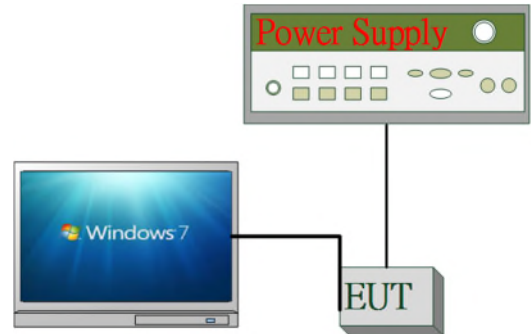


## 2.5 Configuration of Tested System

**Fig. 2-1 Radiated & Conducted (AC power-line) Emission configuration**



**Fig. 2-3 Conducted (AC powerline) Emission Configuration**



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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A
2.	Notebook	Lenovo	L430	R9-X11BG	N/A	N/A
3.	DC Power Supply	Agilent	E3640A	MY40005907	N/A	Un-shielded

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### 3 SUMMARY OF TEST RESULT

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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## 4 DESCRIPTION OF TEST MODES

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

#### Operated band in 5150 MHz ~5250 MHz:

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

40 M	
CH	Freq (MHz)
38	5190
46	5230

80 M	
CH	Freq (MHz)
42	5210

#### Operated band in 5745 MHz ~5850 MHz:

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

40 M	
CH	Freq (MHz)
151	5755
159	5795

80 M	
CH	Freq (MHz)
155	5775

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## 4.2 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case.  
The gevin UE is pre-scanned among below modes.

Modulation	Transmission Chain				Multiple Transmission Spatial
<input checked="" type="checkbox"/> 802.11 a	<input checked="" type="checkbox"/> Ch0	<input type="checkbox"/> Ch1	<input type="checkbox"/> Ch2	<input type="checkbox"/> Ch3	<input checked="" type="checkbox"/> 1TX
<input checked="" type="checkbox"/> 802.11 n	<input checked="" type="checkbox"/> Ch0	<input type="checkbox"/> Ch1	<input type="checkbox"/> Ch2	<input type="checkbox"/> Ch3	<input type="checkbox"/> SISO
<input checked="" type="checkbox"/> 802.11 ac	<input checked="" type="checkbox"/> Ch0	<input type="checkbox"/> Ch1	<input type="checkbox"/> Ch2	<input type="checkbox"/> Ch3	<input type="checkbox"/> SISO

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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#### 4.2.1 RADIATED EMISSION TEST:

RADIATED EMISSION TEST (BELOW 1 GHz)						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	AN-TENNA PORT
802.11a	5180~5240	36 to 48	44	OFDM	6	Ch0
	5745~5825	149 to 165	157			

RADIATED EMISSION TEST (ABOVE 1 GHz)						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	AN-TENNA PORT
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6	Ch0
	5745~5825	149 to 165	149,157,165			
802.11n_HT20	5180~5240	36 to 48	36,44,48		MCS8 / 0	SISO
802.11ac_VHT20	5745~5825	149 to 165	149,157,165			
802.11n_HT40	5190~5230	38 to 46	38,46		MCS8 / 0	SISO
802.11ac_VHT40	5755~5795	151 to 159	151,159			
802.11ac_VHT80	5210	42	42		MCS0	SISO
	5775	155	155			

#### 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 E1 position was reported.

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#### 4.2.2 ANTENNA PORT CONDUCTED MEASUREMENT:

CONDUCTED TEST						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	AN-TENNA PORT
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6	Ch0
	5745~5825	149 to 165	149,157,165			
802.11n_HT20	5180~5240	36 to 48	36,44,48		MCS8	SISO
	5745~5825	149 to 165	149,157,165			
802.11ac_VHT20	5180~5240	36 to 48	36,44,48		MCS0	SISO
	5745~5825	149 to 165	149,157,165			
802.11n_HT40	5190~5230	38 to 46	38,46		MCS8	SISO
	5755~5795	151 to 159	151,159			
802.11ac_VHT40	5190~5230	38 to 46	38,46		MCS0	SISO
	5755~5795	151 to 159	151,159			
802.11ac_VHT80	5210	42	42		MCS0	SISO
	5775	155	155			

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## 5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
26dB & 6dB Emission Bandwidth	+/- 123.36 Hz
The Maximum Output Power Measurement	+/- 0.96 dB
Peak Power Spectral Density Measurement	+/- 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	
<b>Polarization: Vertical</b>	9kHz~30MHz: +/-2.3dB
	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB
<b>Polarization: Horizontal</b>	9kHz~30MHz: +/-2.3dB
	30MHz - 167MHz: +/- 4.22dB
	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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## 6 CONDUCTED EMISSION TEST

### 6.1 Standard Applicable

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

Frequency range MHz	Limits dB(uV)	
	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 TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCI 7	1166.5950.07	07/04/2019	07/03/2020
LISN	SCHWARZ-BECK	NSLK 8127	8127-649	04/02/2019	04/01/2020
Test Software	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R	N.C.R
Coaxial Cables	N/A	WK CE Cable	N/A	01/02/2020	01/01/2021

### 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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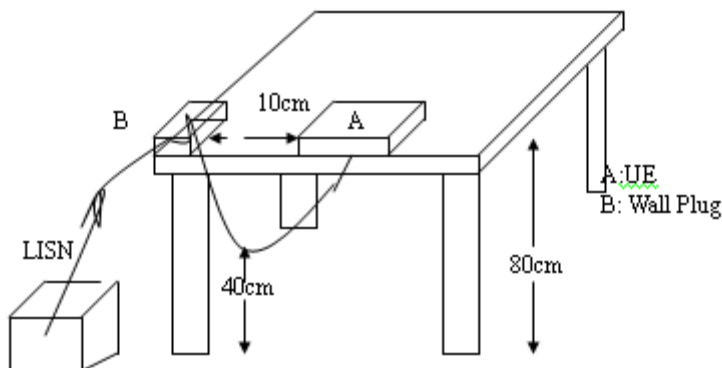
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## 6.4 Test SET-UP



## 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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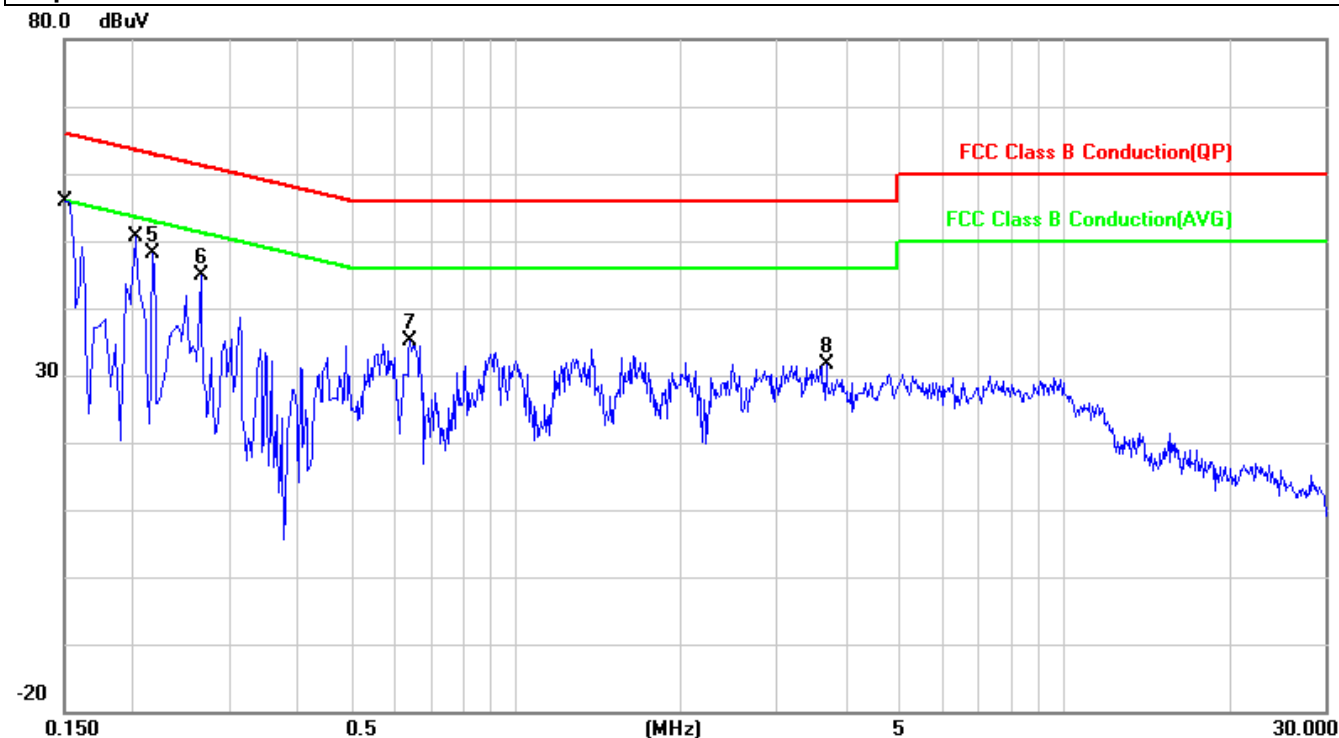
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## AC POWER LINE CONDUCTED EMISSION TEST DATA

Description:	Operation	Date:	2020/2/17
Line:	L1	Temp.(°C)/Hum.(%):	19.8(°C)/52%
Test Voltage:	AC 120V/60Hz	Test By:	Thomas
Report Number:	ER/2019/B0043		



No.	Mk.	Freq. ( MHz )	Reading ( dBuV )	Factor ( dB )	Measure- ment ( dBuV )	Limit ( dBuV )	Over ( dB )	Detector	Comment
1		0.1500	47.50	0.00	47.50	66.00	-18.50	QP	
2		0.1500	26.20	0.00	26.20	56.00	-29.80	AVG	
3		0.2020	42.40	0.01	42.41	63.53	-21.12	QP	
4		0.2020	28.50	0.01	28.51	53.53	-25.02	AVG	
5	*	0.2180	48.05	0.01	48.06	62.89	-14.83	peak	
6		0.2660	44.83	0.01	44.84	61.24	-16.40	peak	
7		0.6420	35.00	0.01	35.01	56.00	-20.99	peak	
8		3.6940	31.46	0.13	31.59	56.00	-24.41	peak	

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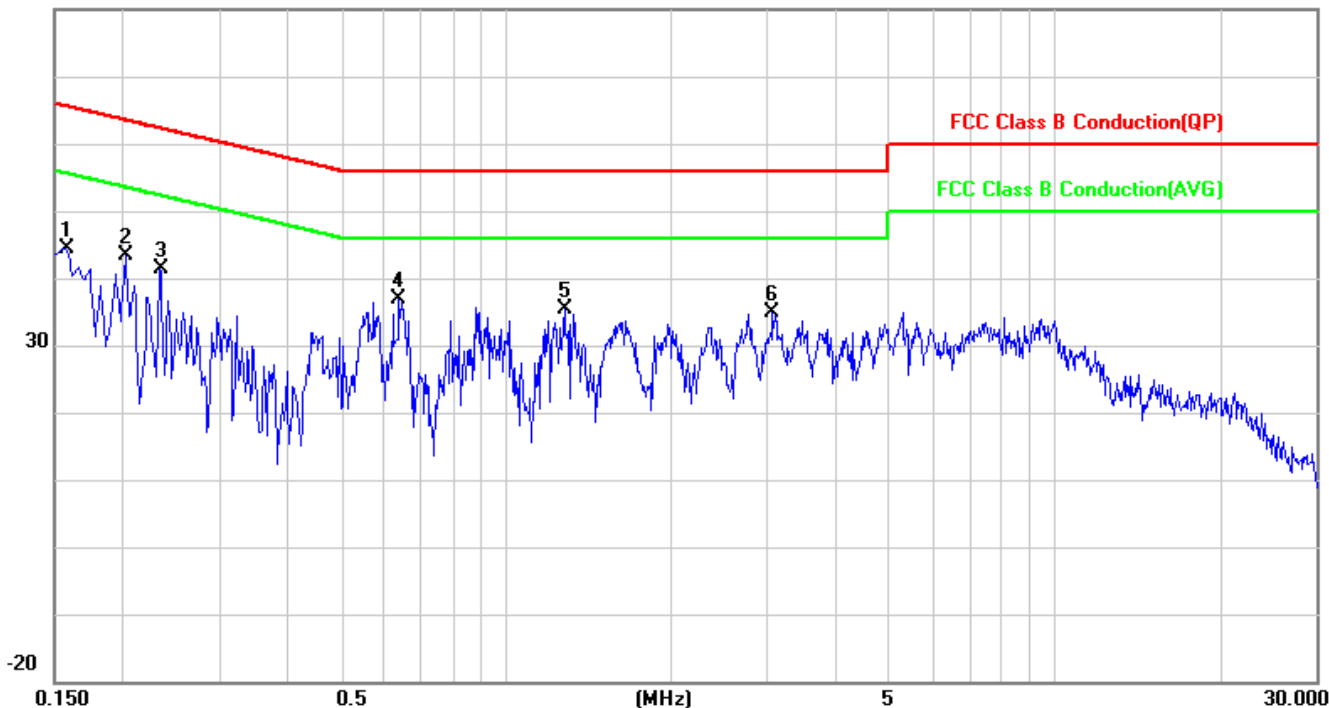
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**Description:** Operation  
**Line:** N  
**Test Voltage:** AC 120V/60Hz  
**Report Number:** ER/2019/B0043

**Date:** 2020/2/17  
**Temp.(°C)/Hum.(%):** 19.8(°C)/52%  
**Test By:** Thomas

80.0 dBuV



No.	Mk.	Freq. ( MHz )	Reading ( dBuV )	Factor ( dB )	Measure- ment ( dBuV )	Limit ( dBuV )	Over ( dB )	Detector	Comment
1		0.1580	44.30	0.00	44.30	65.57	-21.27	peak	
2		0.2020	43.38	0.01	43.39	63.53	-20.14	peak	
3		0.2340	41.35	0.01	41.36	62.31	-20.95	peak	
4	*	0.6380	36.97	0.01	36.98	56.00	-19.02	peak	
5		1.2820	35.35	0.03	35.38	56.00	-20.62	peak	
6		3.0580	34.88	0.10	34.98	56.00	-21.02	peak	

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## 7 DUTY CYCLE TEST SIGNAL

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	93.27	0.30	0.72	1.00
802.11n_20	92.81	0.32	0.77	1.00
802.11ac_20	92.89	0.32	0.76	1.00
802.11n_40	86.53	0.63	1.54	2.00
802.11ac_40	86.73	0.62	1.52	2.00
802.11ac_80	76.19	1.18	3.08	4.00

- ✓ Duty Cycle Factor:  $10 * \log(1/0.9327) = 0.3$
- ✓ Duty Cycle Factor:  $10 * \log(1/0.9281) = 0.32$
- ✓ Duty Cycle Factor:  $10 * \log(1/0.9289) = 0.32$
- ✓ Duty Cycle Factor:  $10 * \log(1/0.8653) = 0.63$
- ✓ Duty Cycle Factor:  $10 * \log(1/0.8673) = 0.62$
- ✓ Duty Cycle Factor:  $10 * \log(1/0.7619) = 1.18$

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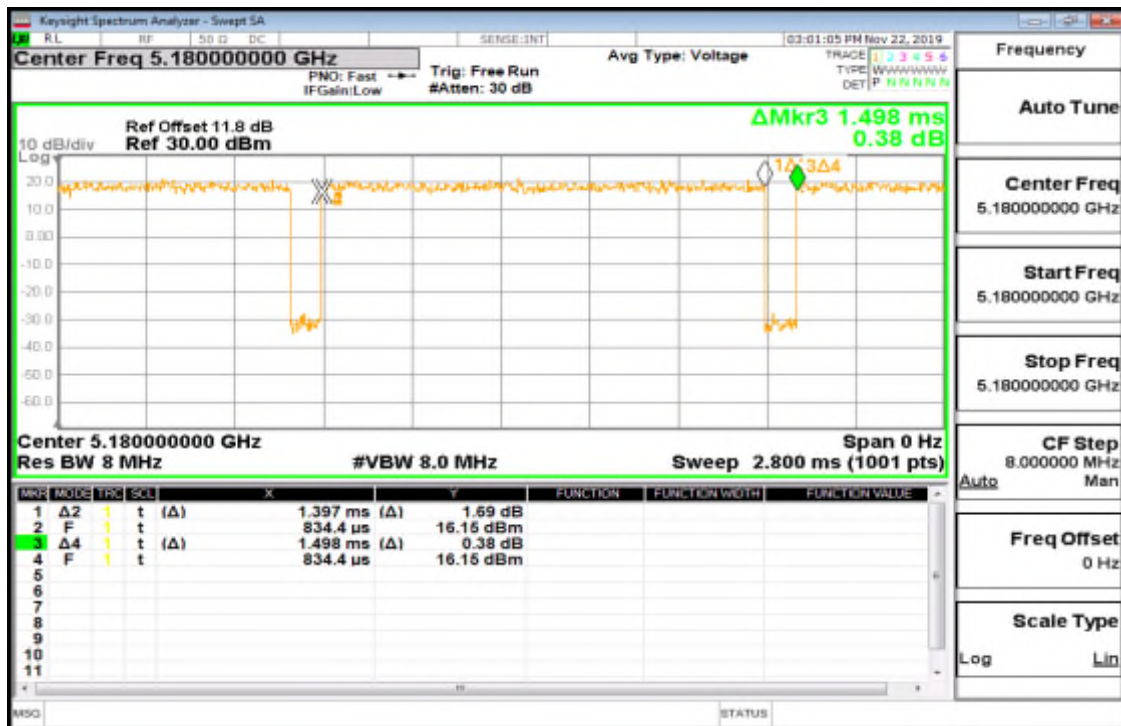
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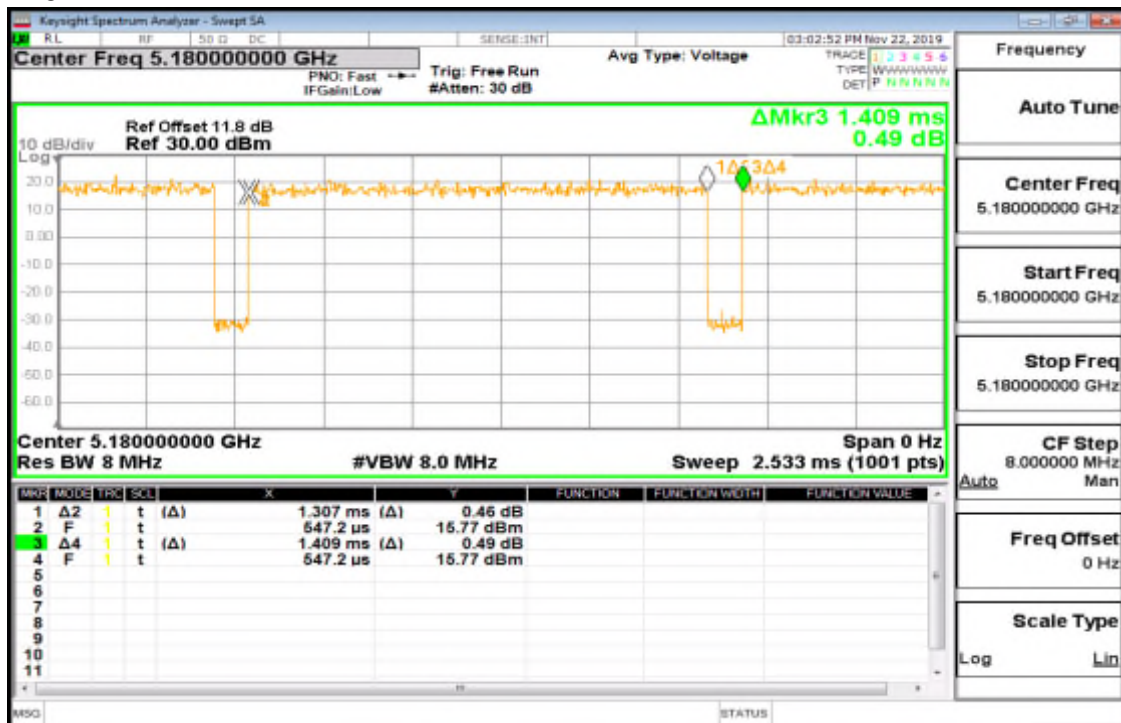
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## 7.2 DUTY CYCLE TEST SIGNAL MEASUREMENT RESULT

802.11a



802.11n HT20



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## 802.11ac VHT20



## 802.11n HT 40



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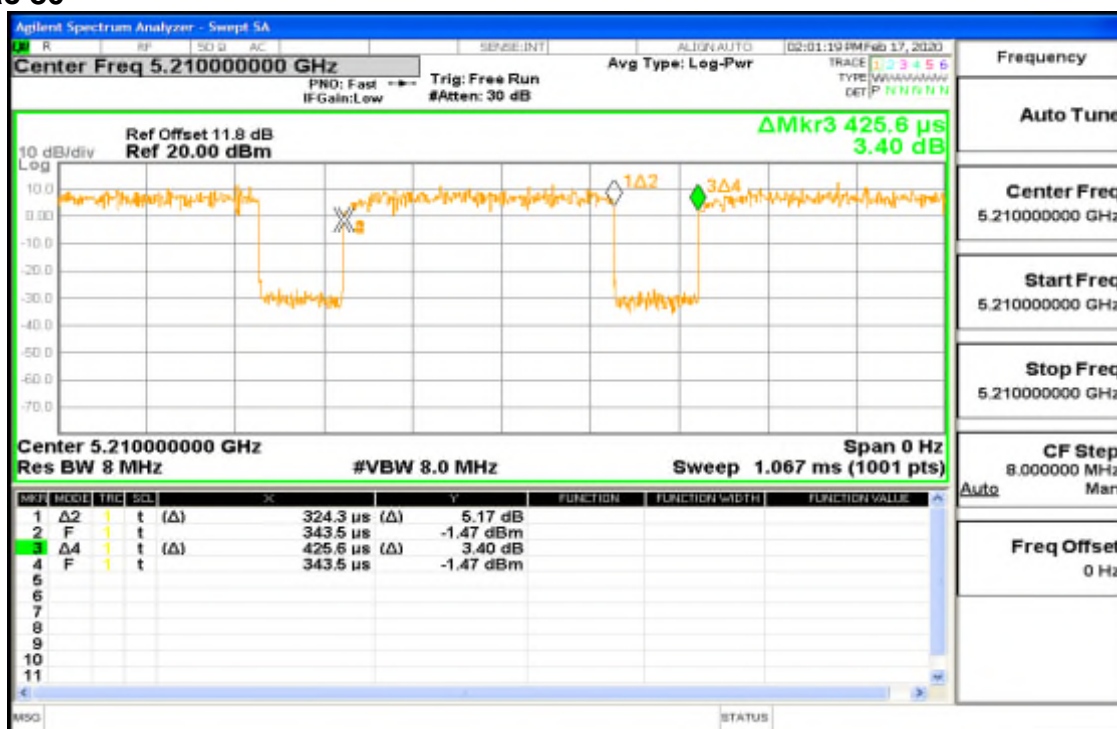
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## 802.11ac VHT 40



## 802.11 ac 80



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## 8 26DB & 6DB EMISSION BANDWIDTH MEASUREMENT

### 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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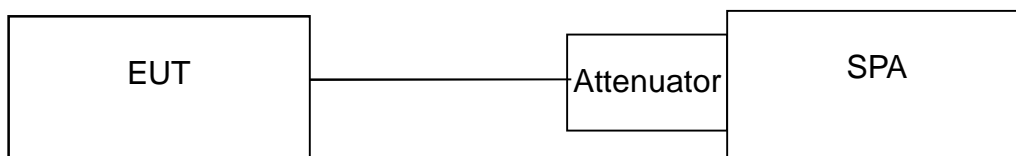
### 8.3 Measurement Equipment Used

SGS Conducted Room					
Name of Equip-ment	Manufacturer	Model	Serial Num-ber	Calibration Date	Calibra-tion Due
EXA Spectrum An-alyzer	Agilent	N9010A	MY50420195	05/02/2019	05/01/2020
DC Power Supply	Agilent	E3640A	MY40005907	10/22/2019	10/21/2020
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021
DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2019	01/04/2020

Note: The measurement was taken place with the long duration of the time, and additional equip-ment list as shown blow indicate those equipment of which has been subject to undertake the calibration in intermediate period of time of the measurement.

SGS Conducted Room					
Name of Equip-ment	Manufacturer	Model	Serial Num-ber	Calibration Date	Calibra-tion Due
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2020	01/01/2021

### 8.4 Test Set-up



### 8.5 Measurement Result

#### 8.5.1 FCC 26dB Bandwidth

802.11a_Ch0			802.11n_HT20_Ch0		
Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	21.19	13.261	5180	21.32	13.288
5220	21.86	13.397	5220	21.91	13.406
5240	23.22	13.659	5240	22.93	13.604

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802.11n\_HT40\_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	39.87	16.006	5210	80.71	19.069
5230	46.21	16.647			

802.11ac\_VHT80\_Ch0

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

802.11a\_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.31	12.125	5745	16.9	12.279
5785	16.31	12.125	5785	17	12.304
5825	16.36	12.138	5825	16.68	12.222

802.11n\_HT20\_Ch0

802.11n\_HT40\_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	35.59	15.513	5775	75.32	18.769
5795	35.69	15.525			

802.11ac\_VHT80\_Ch0

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### 8.5.3 99% BW Verification for DFS Function

802.11a_Ch0			802.11n_HT20_Ch0		
Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)	Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.40	< 5250	5240	5248.95	< 5250
5745	5736.75	> 5725	5745	5736.16	> 5725

802.11n_HT40_Ch0			802.11ac_VHT80_Ch0		
Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)	Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.15	< 5250	5210	5247.71	< 5250
5755	5736.95	> 5725	5775	5737.36	> 5725

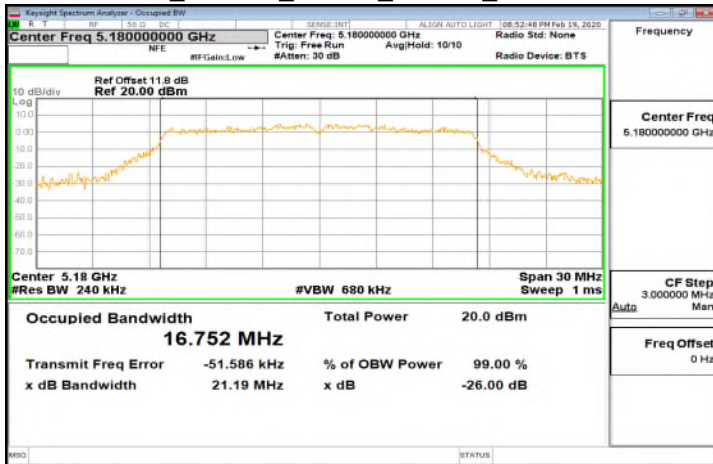
Please see next page for test plots.

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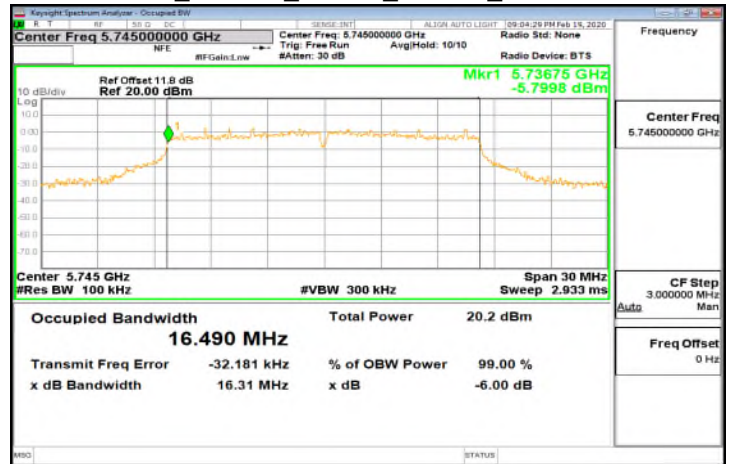
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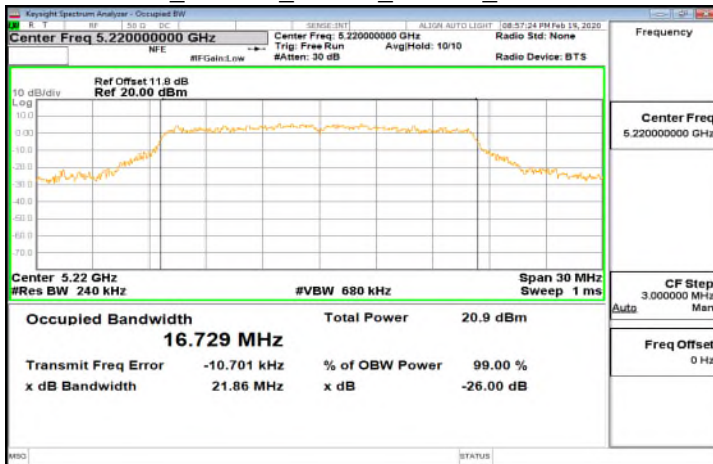
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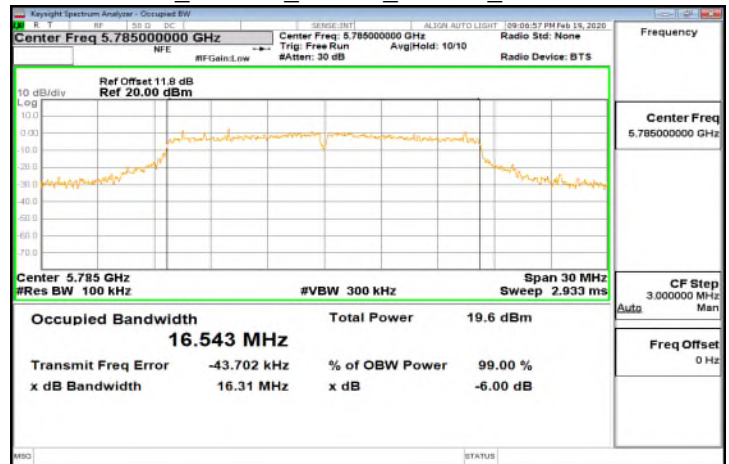
FCC 802.11a 20MHz\_Chain0\_5745MHz



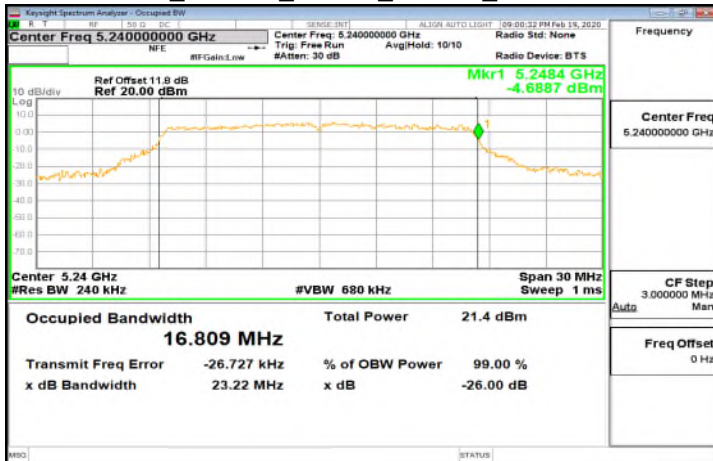
FCC 802.11a 20MHz\_Chain0\_5220MHz



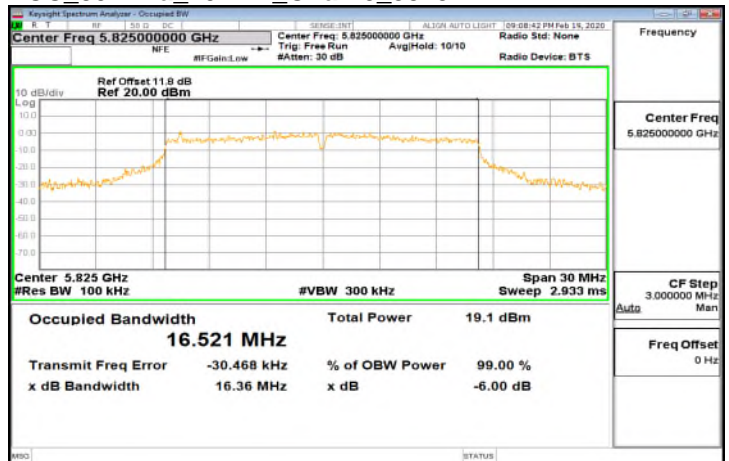
FCC 802.11a 20MHz\_Chain0\_5785MHz



FCC 802.11a 20MHz\_Chain0\_5240MHz



FCC 802.11a 20MHz\_Chain0\_5825MHz



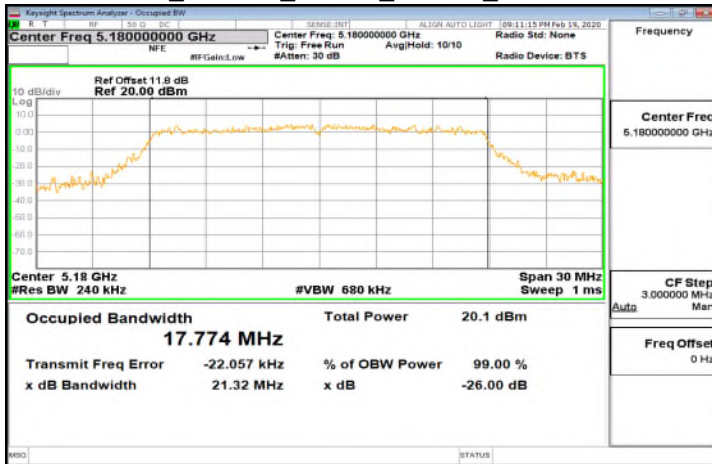
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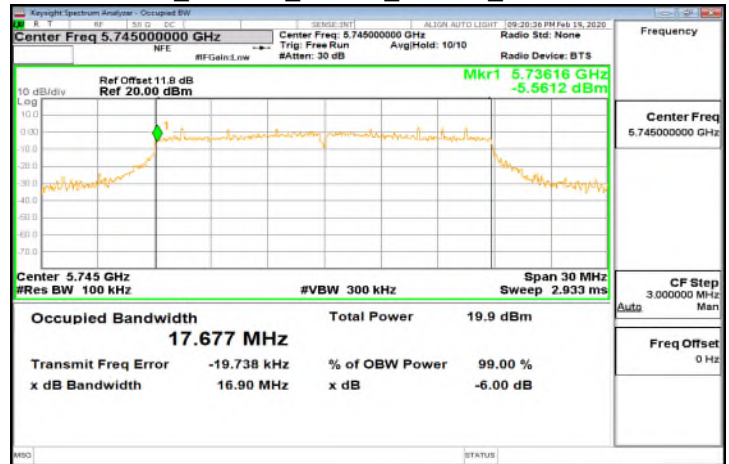
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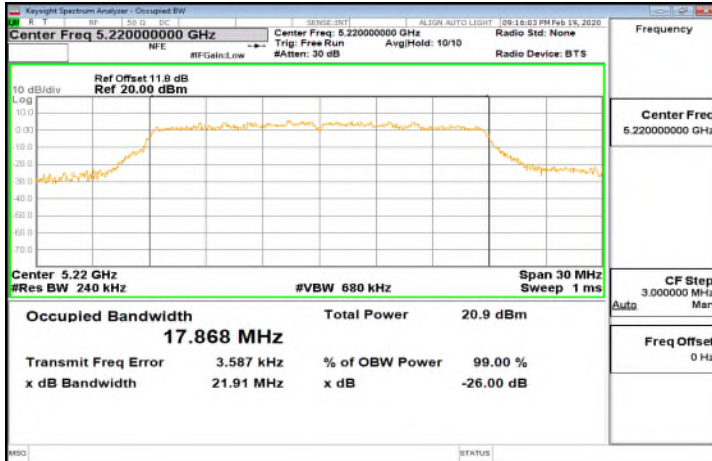
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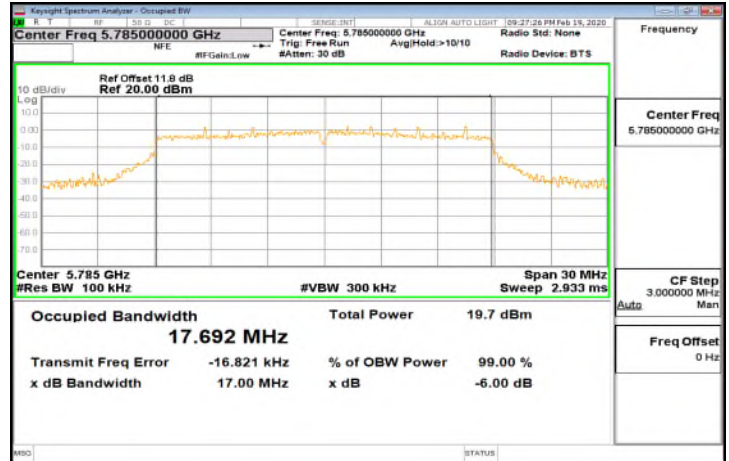
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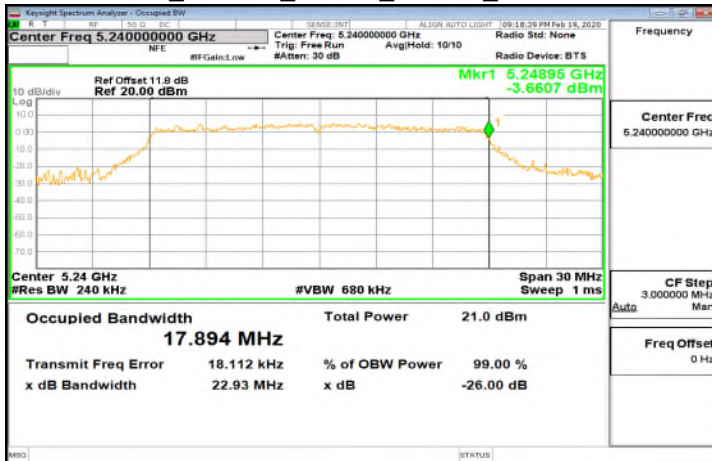
FCC 802.11n 20MHz\_Chain0\_5220MHz



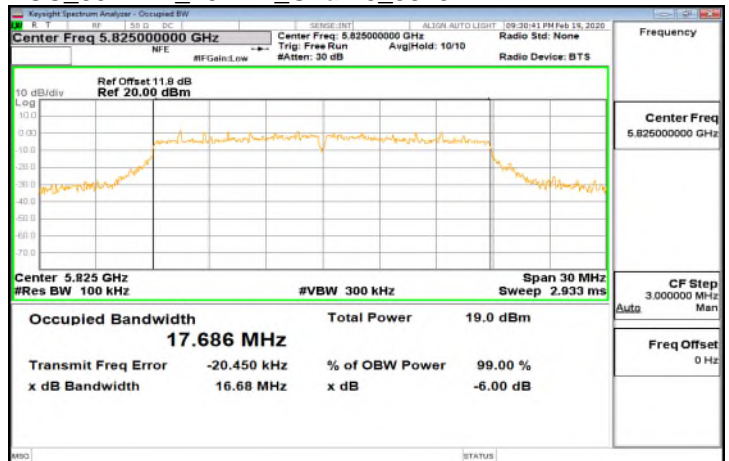
FCC 802.11n 20MHz\_Chain0\_5785MHz



FCC 802.11n 20MHz\_Chain0\_5240MHz



FCC 802.11n 20MHz\_Chain0\_5825MHz



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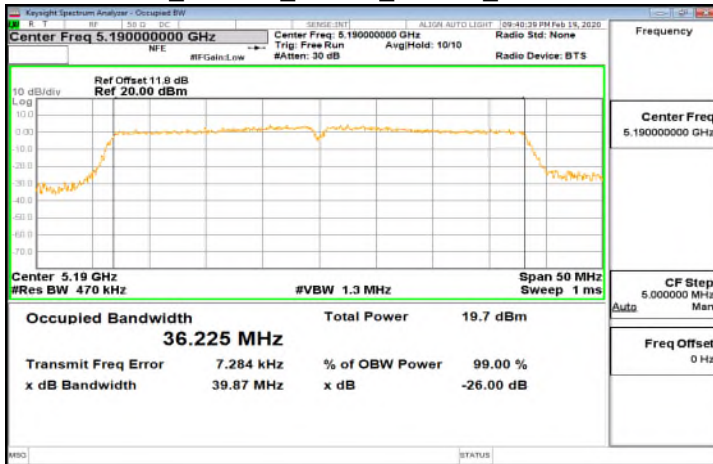
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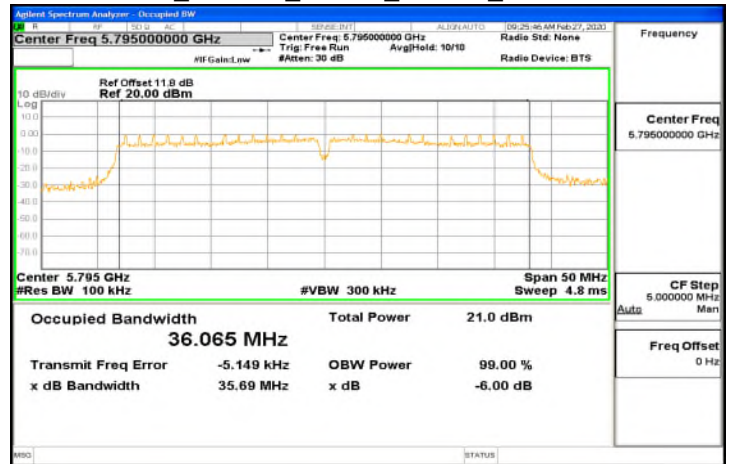
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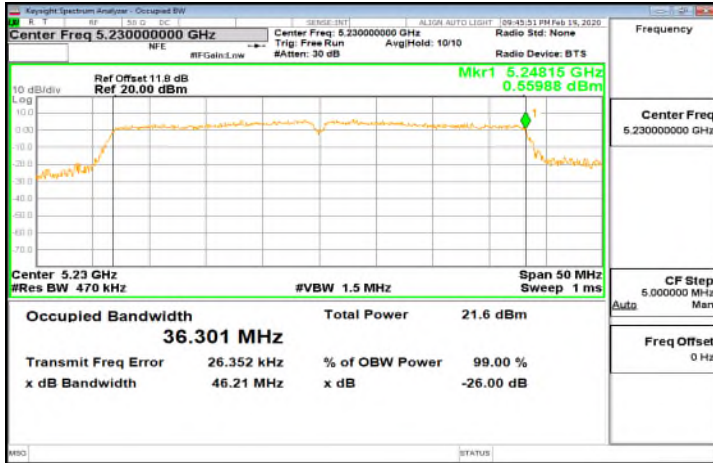
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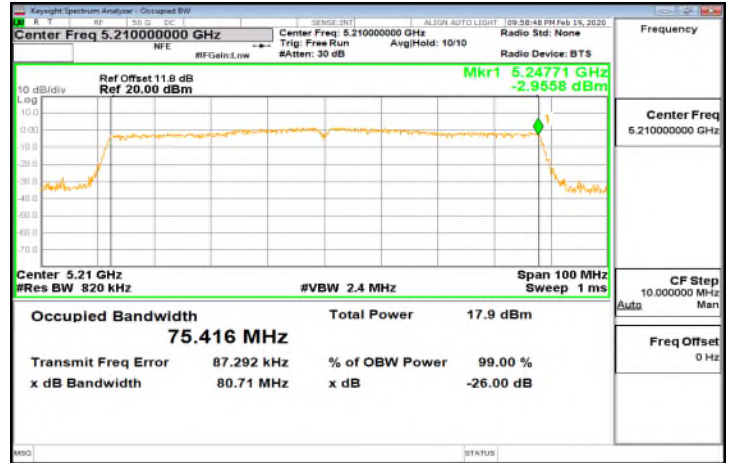
FCC 802.11n\_40MHz\_Chain0\_5795MHz



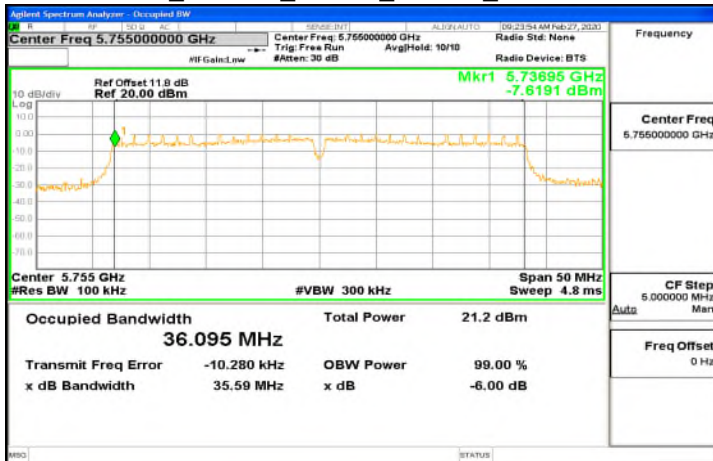
FCC 802.11n\_40MHz\_Chain0\_5230MHz



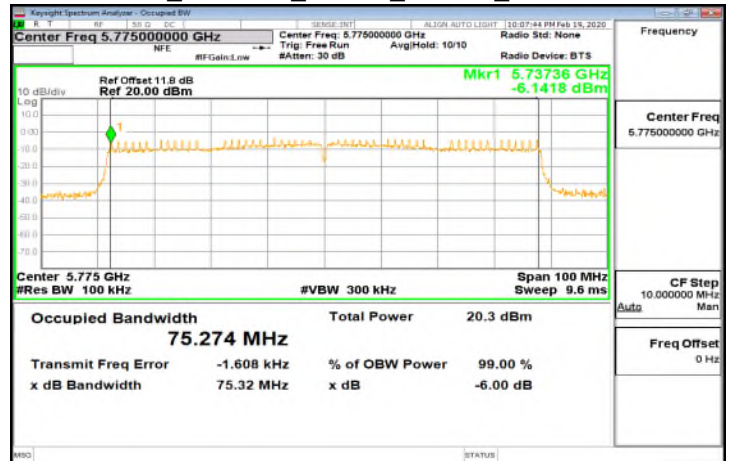
FCC 802.11ac\_80MHz\_Chain0\_5210MHz



FCC 802.11n\_40MHz\_Chain0\_5755MHz



FCC 802.11ac\_80MHz\_Chain0\_5775MHz



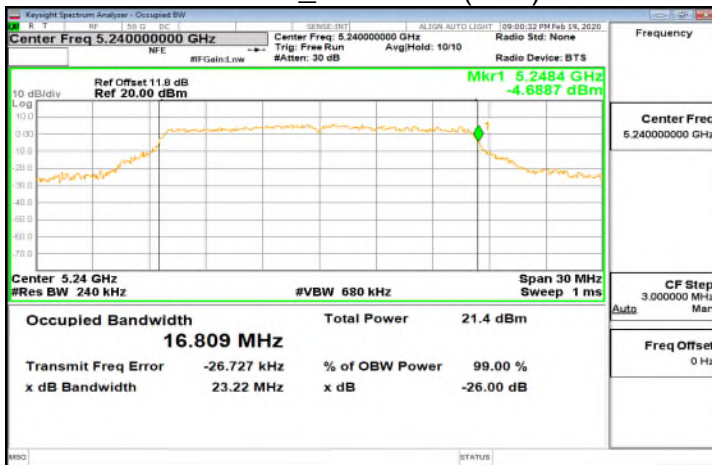
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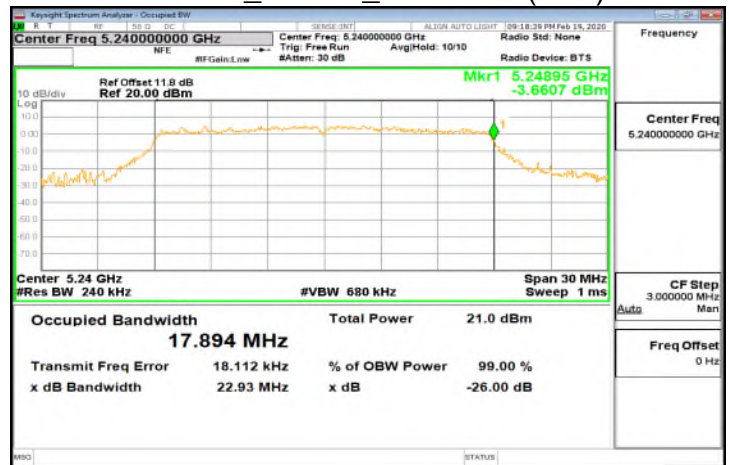
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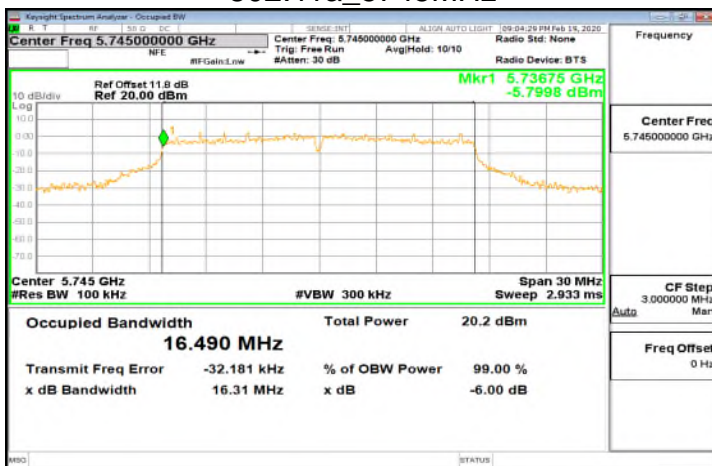
802.11a\_5240MHz (Ch0)



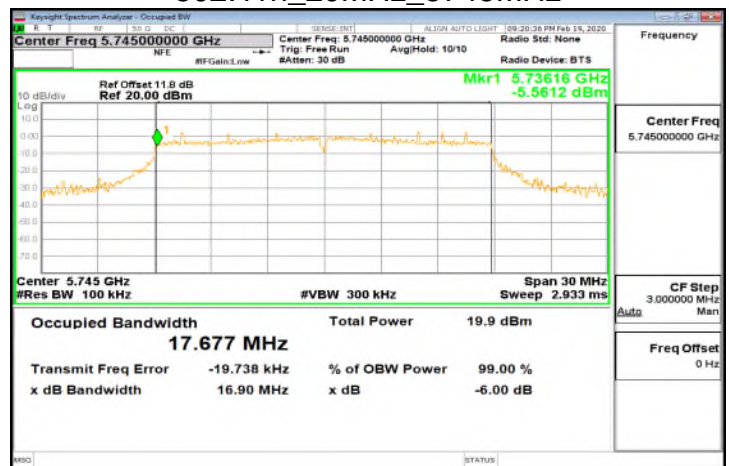
802.11n\_20MHz\_5240MHz (Ch0)



802.11a\_5745MHz



802.11n\_20MHz\_5745MHz



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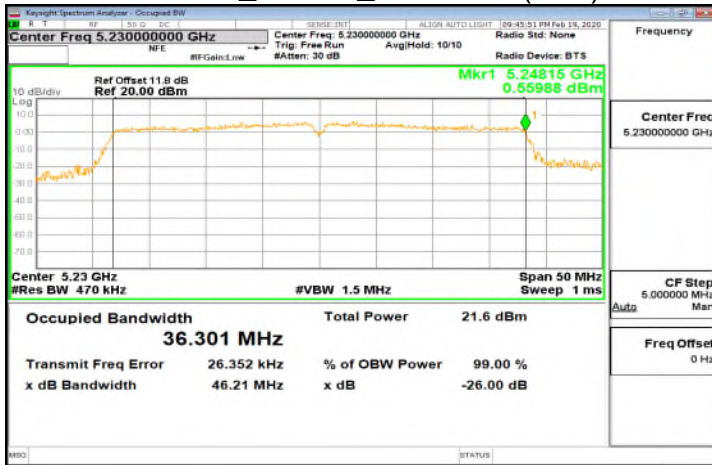
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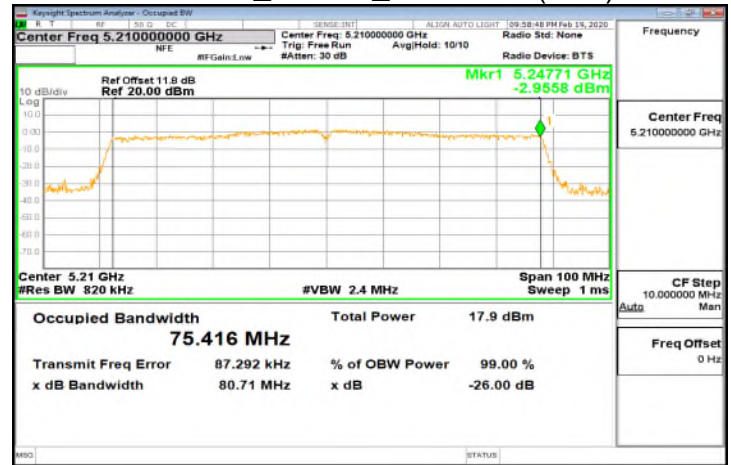
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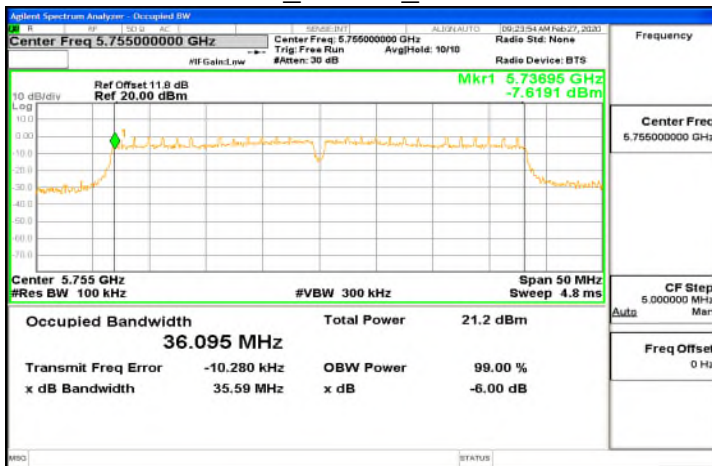
802.11n\_40MHz\_5230MHz (Ch0)



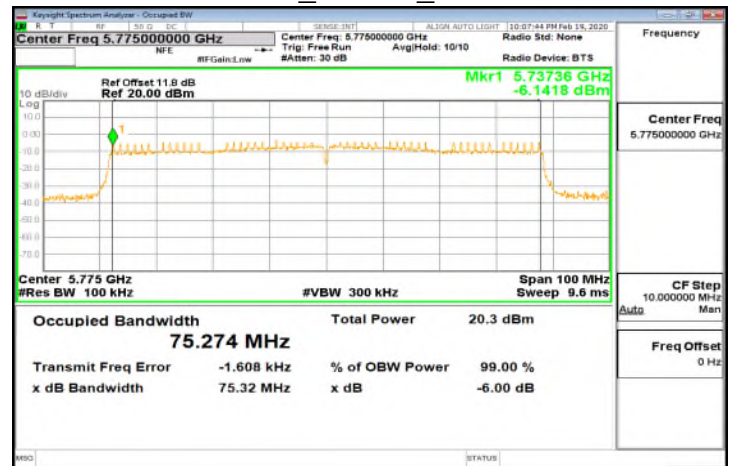
802.11ac\_80MHz\_5210MHz (Ch0)



802.11n\_40MHz\_5755MHz



802.11ac\_80MHz\_5775MHz



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## 9 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

### 9.1 Standard Applicable

#### FCC

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

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

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

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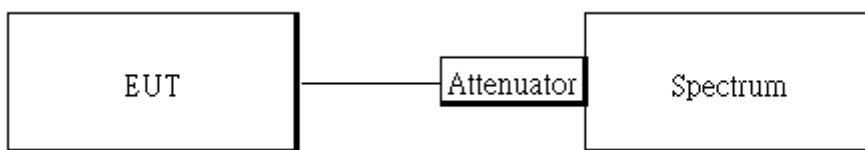
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### 9.3 Measurement Equipment Used

SGS Conducted Room					
Name of Equip-ment	Manufacturer	Model	Serial Num-ber	Calibration Date	Calibra-tion Due
Power Meter	Anritsu	ML2496A	1242004	11/05/2019	11/04/2020
Power Sensor	Anritsu	MA2411B	1207365	11/05/2019	11/04/2020
Power Sensor	Anritsu	MA2411B	1207368	11/05/2019	11/04/2020
DC Power Supply	Agilent	E3640A	MY40005907	10/22/2019	10/21/2020
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021

### 9.4 Test Set-up



### 9.5 Measurement Result

#### 9.5.1 Conducted output power (FCC)

##### 802.11a\_Ch0

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	6	14.76	29.940	23.98	PASS
44	5220	6	15.43	34.935	23.98	PASS
48	5240	6	15.37	34.455	23.98	PASS
149	5745	6	14.21	26.379	30	PASS
157	5785	6	13.93	24.732	30	PASS
165	5825	6	13.86	24.336	30	PASS

##### 802.11n\_HT20\_Ch0

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	14.41	27.632	23.98	PASS
44	5220	MCS0	15.05	32.019	23.98	PASS
48	5240	MCS0	14.78	30.089	23.98	PASS
149	5745	MCS0	13.80	24.011	30	PASS
157	5785	MCS0	13.50	22.408	30	PASS
165	5825	MCS0	13.45	22.152	30	PASS

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### 802.11ac\_VHT20\_Ch0

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	14.24	26.548	23.98	PASS
44	5220	MCS0	<b>14.91</b>	30.976	23.98	PASS
48	5240	MCS0	14.69	29.446	23.98	PASS
149	5745	MCS0	<b>13.63</b>	23.069	30	PASS
157	5785	MCS0	13.33	21.529	30	PASS
165	5825	MCS0	13.27	21.234	30	PASS

### 802.11n\_HT40\_Ch0

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	<b>15.30</b>	33.871	23.98	PASS
46	5230	MCS0	15.22	33.253	23.98	PASS
151	5755	MCS0	<b>14.46</b>	27.915	30	PASS
159	5795	MCS0	14.01	25.167	30	PASS

### 802.11ac\_VHT40\_Ch0

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	13.37	21.719	23.98	PASS
46	5230	MCS0	<b>15.04</b>	31.903	23.98	PASS
151	5755	MCS0	<b>14.34</b>	27.154	30	PASS
159	5795	MCS0	13.80	23.979	30	PASS

### 802.11ac\_VHT80\_Ch0

CH	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	MCS0	<b>10.24</b>	10.571	23.98	PASS
155	5775	MCS0	<b>12.24</b>	16.753	30	PASS

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## 10 MAXIMUM POWER SPECTRAL DENSITY

### 10.1 Standard Applicable

#### FCC

OPERZTION Band	EUT CATEGORY		LIMIT
U-NII-1		Access Point (Master device )	17dBm/ MHz
		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
If transmitting antennas of directional gain greater than 6 dBi are used, the Maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.			

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

### 10.2 Measurement Procedure

- Place the EUT on the table and set it in transmitting mode.
- The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules .
- Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
- 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)  
**For U-NII-3 Band:**  
Set RBW=500 kHz, VBW≥ 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)
- Use the cursor on spectrum to peak search the highest level of trace
- Record the max. reading and add 10 log(1/duty cycle).
- Repeat above procedures until all default test channel (low, middle, and high) was complete.

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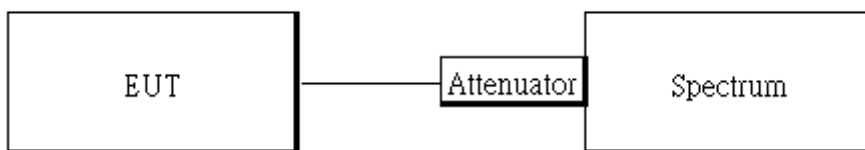
### 10.3 Measurement Equipment Used

SGS Conducted Room					
Name of Equip-ment	Manufacturer	Model	Serial Num-ber	Calibration Date	Calibra-tion Due
EXA Spectrum An-alyzer	Agilent	N9010A	MY50420195	05/02/2019	05/01/2020
DC Power Supply	Agilent	E3640A	MY40005907	10/22/2019	10/21/2020
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021
DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2019	01/04/2020

Note: The measurement was taken place with the long duration of the time, and additional equip-ment list as shown blow indicate those equipment of which has been subject to undertake the calibration in intermediate period of time of the measurement.

SGS Conducted Room					
Name of Equip-ment	Manufacturer	Model	Serial Num-ber	Calibration Date	Calibra-tion Due
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2020	01/01/2021

### 10.4 Test Set-up



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## 10.5 Measurement Result

### 10.5.1 Power spectral density

POWER DENSITY 802.11a MODE_Ch0					
Frequency (MHz)	PSD W/O Duty Factor (dBm)	Duty Factor	PSD With Duty Factor (dBm)	Limit (dBm)	Margin (dB)
5180.00	4.57	0.30	4.87	11.00	-6.13
5220.00	5.49	0.30	5.79	11.00	-5.21
5240.00	5.43	0.30	5.73	11.00	-5.27
5745.00	1.55	0.30	1.85	30.00	-28.15
5785.00	1.41	0.30	1.71	30.00	-28.29
5825.00	0.83	0.30	1.13	30.00	-28.87

POWER DENSITY 802.11n HT20 MODE_Ch0					
Frequency (MHz)	PSD W/O Duty Factor (dBm)	Duty Factor	PSD With Duty Factor (dBm)	Limit (dBm)	Margin (dB)
5180	4.06	0.32	4.38	11	-6.62
5220	4.76	0.32	5.08	11	-5.92
5240	4.92	0.32	5.24	11	-5.76
5745	0.67	0.32	0.99	30	-29.01
5785	-0.08	0.32	0.24	30	-29.76
5825	0.27	0.32	0.59	30	-29.41

POWER DENSITY 802.11n HT40 MODE_Ch0					
Frequency (MHz)	PSD W/O Duty Factor (dBm)	Duty Factor	PSD With Duty Factor (dBm)	Limit (dBm)	Margin (dB)
5190	0.13	0.63	0.76	11	-10.24
5230	1.96	0.63	2.59	11	-8.41
5755	-3.02	0.63	-2.39	30	-32.39
5795	-2.94	0.63	-2.31	30	-32.31

POWER DENSITY 802.11ac VHT80 MODE_Ch0					
Frequency (MHz)	PSD W/O Duty Factor (dBm)	Duty Factor	PSD With Duty Factor (dBm)	Limit (dBm)	Margin (dB)
5210	-5.57	1.18	-4.39	11	-15.39
5775	-6.78	1.18	-5.60	30	-35.60

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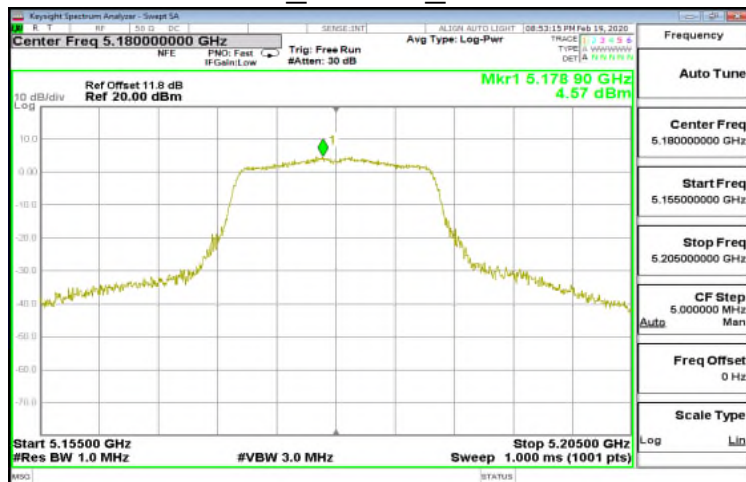
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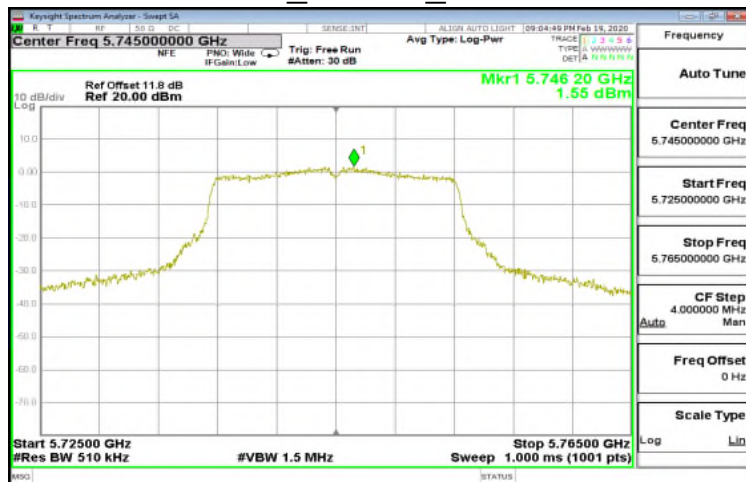
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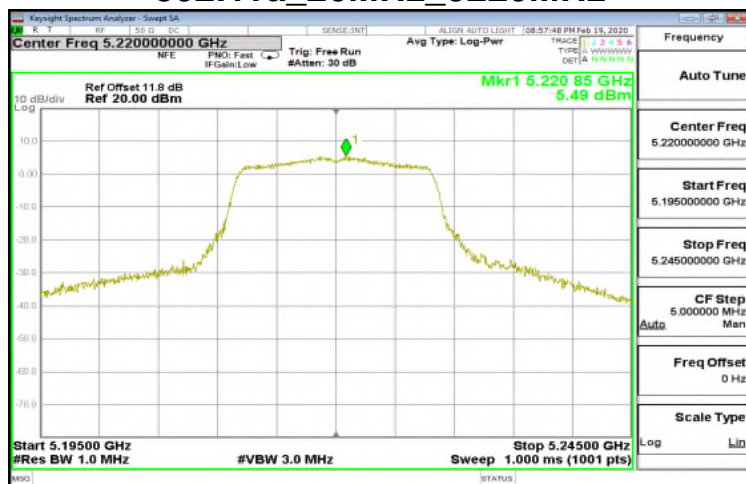
## 802.11a\_20MHz\_5180MHz



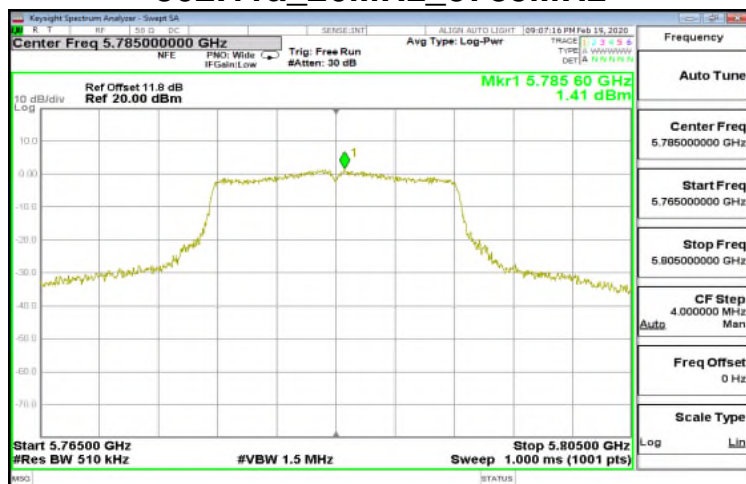
## 802.11a\_20MHz\_5745MHz



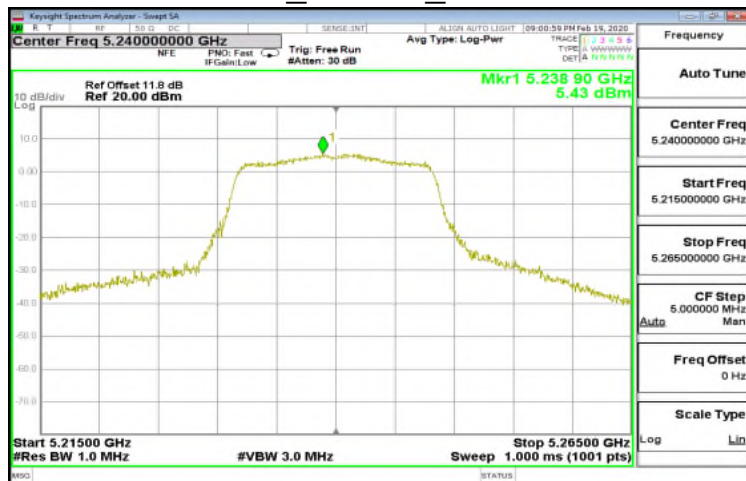
## 802.11a\_20MHz\_5220MHz



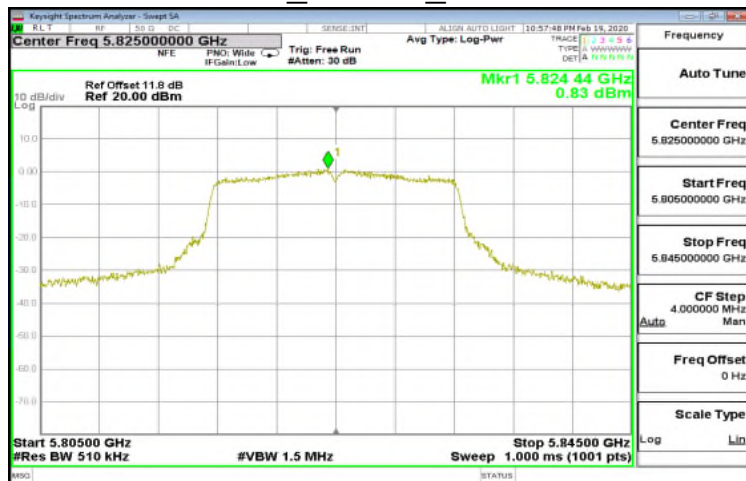
## 802.11a\_20MHz\_5785MHz



## 802.11a\_20MHz\_5240MHz



## 802.11a\_20MHz\_5825MHz



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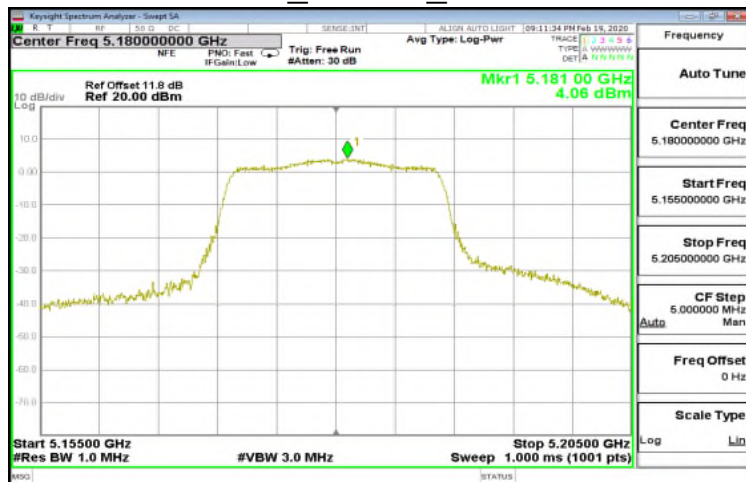
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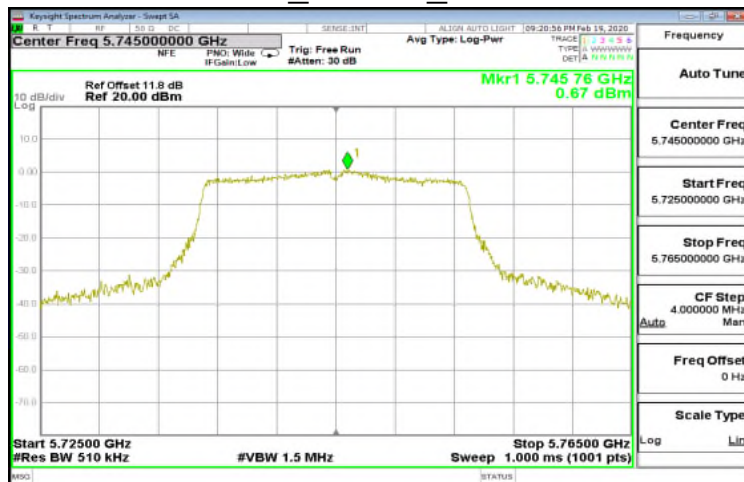
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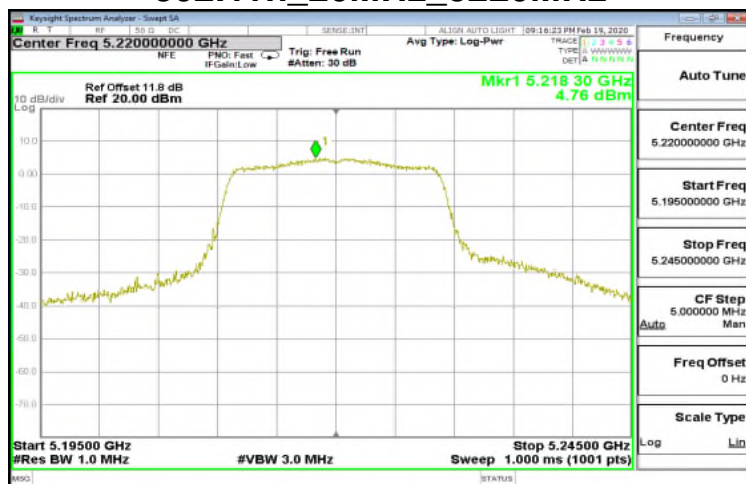
### 802.11n\_20MHz\_5180MHz



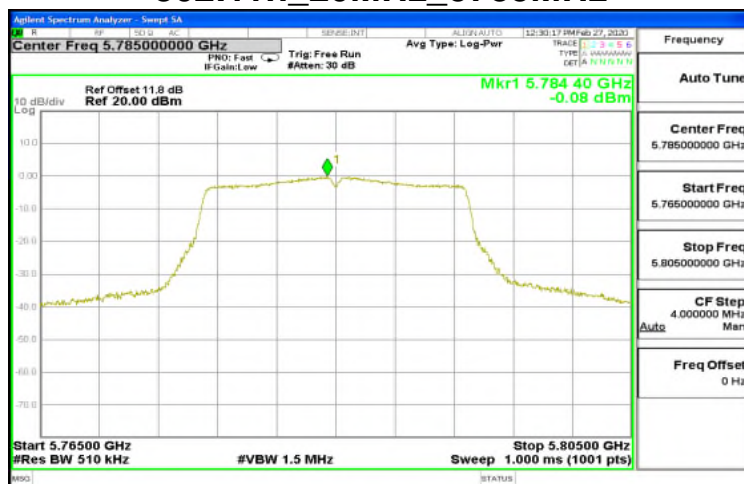
### 802.11n\_20MHz\_5745MHz



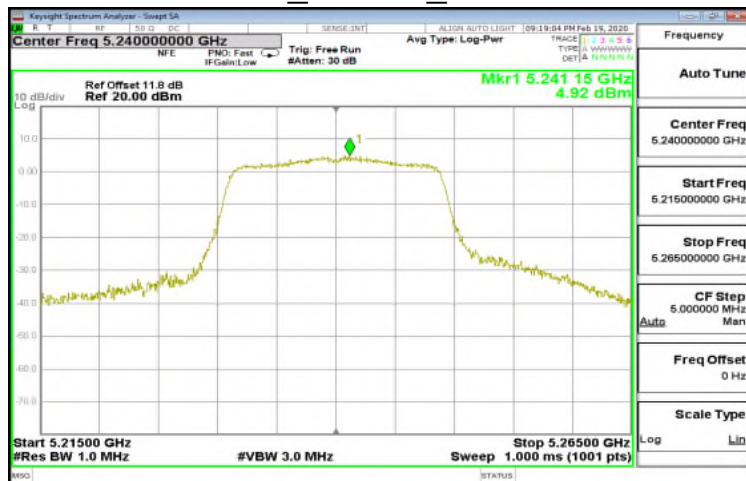
### 802.11n\_20MHz\_5220MHz



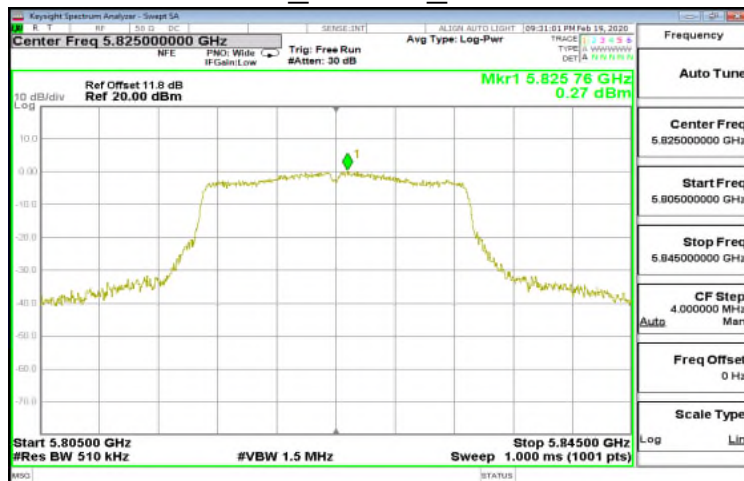
### 802.11n\_20MHz\_5785MHz



### 802.11n\_20MHz\_5240MHz



### 802.11n\_20MHz\_5825MHz



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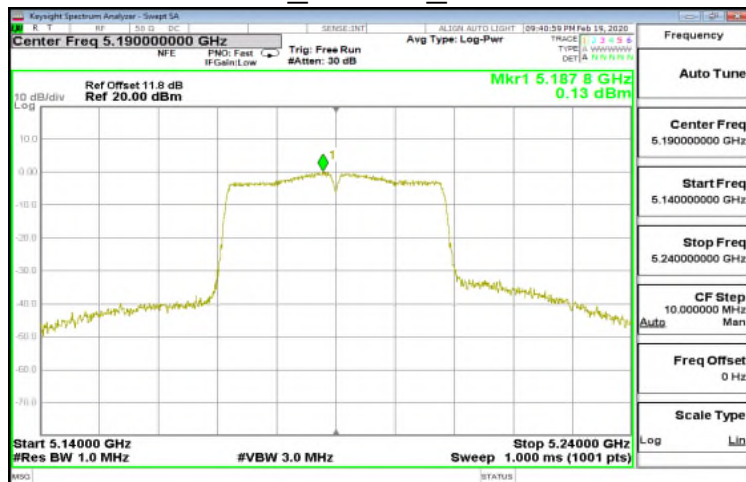
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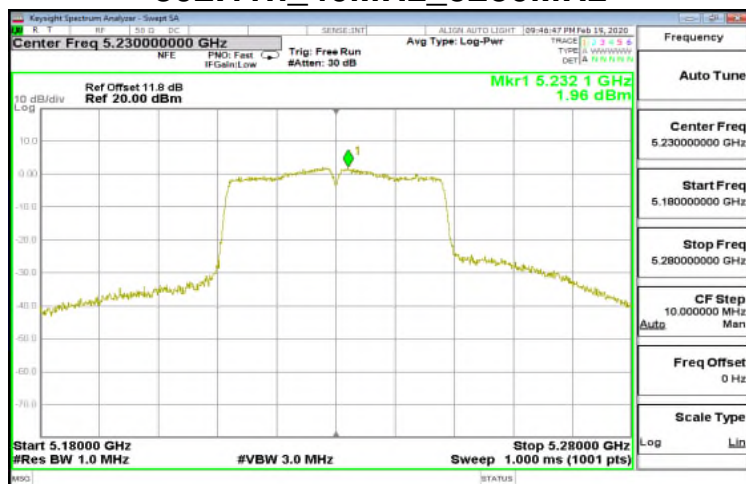
## 802.11n\_40MHz\_5190MHz



## 802.11n\_40MHz\_5795MHz



## 802.11n\_40MHz\_5230MHz



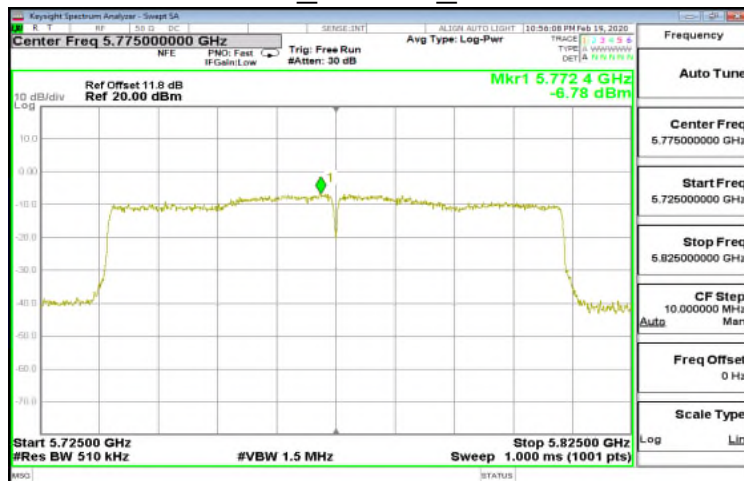
## 802.11ac\_80MHz\_5210MHz



## 802.11n\_40MHz\_5755MHz



## 802.11ac\_80MHz\_5775MHz



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## 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.

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

$EIRP = (E \cdot d)^2 / 30$ , 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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### 11.1.2 Spurious Emission

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

Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(KHz)	300
0.490-1.705	24000/F(KHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**Note:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBμV/m) = 20 log Emission level (dBμV/m)

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## 11.2 Measurement Equipment Used

SGS SAC-III					
Name of Equip-ment	Manufacturer	Model	Serial Num-ber	Calibration Date	Calibration Due
Horn Antenna	Schwarzbeck	BBHA9170	184	12/25/2019	12/24/2020
Horn Antenna	Schwarzbeck	BBHA9120D	D803	12/20/2019	12/19/2020
Bi-log Antenna	TESEO	CBL 6112D	35242 & AT-N0555	01/13/2020	01/12/2021
Loop Antenna	ETS.LINDGREN	6502	148045	10/15/2019	10/14/2020
Spectrum Ana-lyzer	Agilent	E4446A	MY51100003	10/23/2019	10/22/2020
EMI Test Re-ceiver	R&S	ESCI 7	1166.5950.07	07/04/2019	07/03/2020
Pre-Amplifier	EMC Instruments	EMC184045B	980135	01/02/2020	01/01/2021
Pre-Amplifier	EMC Instruments	EMC051825	980152	01/02/2020	01/01/2021
Pre-Amplifier	HP	8447D	2944A09469	01/02/2020	01/01/2021
Attenuator	Mini-Circuit	BW-S10W2+	4	01/02/2020	01/01/2021
Filter 5150-5350 MHz	Micro-Tronics	BRM50703	1	01/02/2020	01/01/2021
Filter 5725-5875 MHz	Micro-Tronics	BRM50705	1	01/02/2020	01/01/2021
High Pass Filter	WI	WHKX7.0/18G-8SS	45	01/02/2020	01/01/2021
Coaxial Cable	Huber Suhner	succoflex 102	MY2622/2	01/02/2020	01/01/2021
Coaxial Cable	Huber Suhner	succoflex 104A	800086/4a	01/02/2020	01/01/2021
Coaxial Cable	Huber Suhner	EMC 104-SM-SM-2000	160123	01/02/2020	01/01/2021

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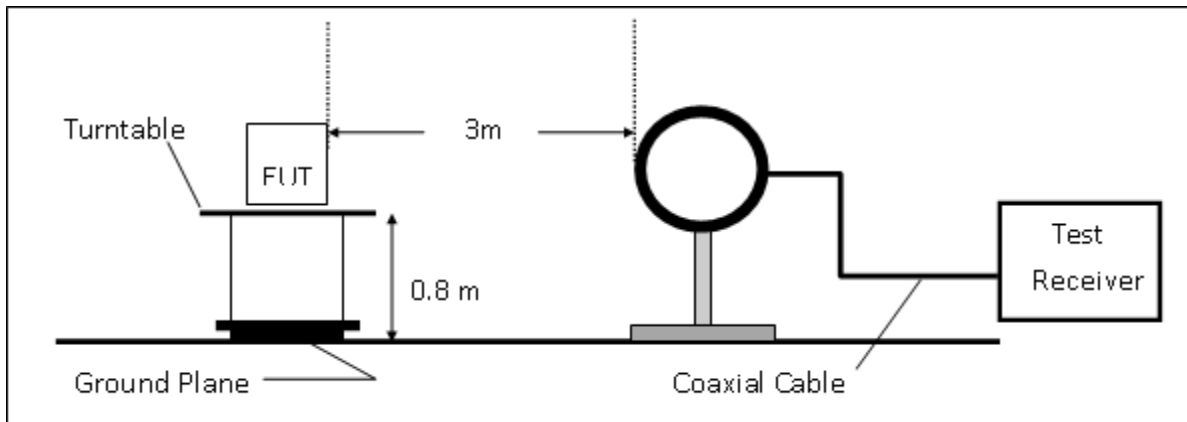
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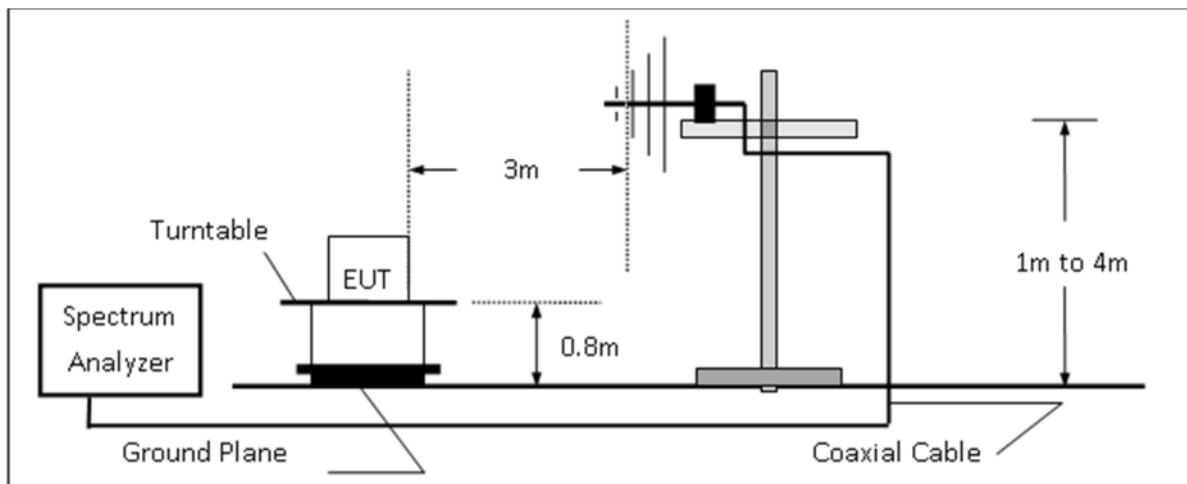
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## 11.3 Test SET-UP

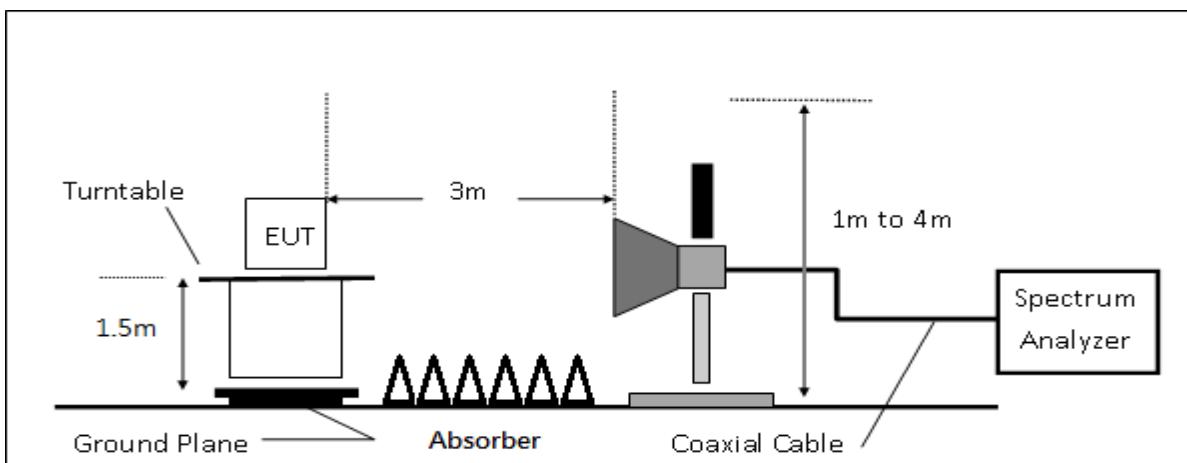
### (A) Radiated Emission Test Set-UP Frequency Below 30MHz.



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



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



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#### 11.4 Measurement Procedure

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

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## 11.5 Field Strength Calculation

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

$$FS = RA + AF + CL - AG$$

**Where** *FS* = Field Strength

*CL* = Cable Attenuation Factor (Cable Loss)

*RA* = Reading Amplitude

*AG* = Amplifier Gain

*AF* = Antenna Factor

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

*Actual FS(dBuV/m) = SPA. Reading level(dBuV) + Factor(dB)*

*Factor(dB) = Antenna Factor(dBuV/m) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)*

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

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

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## 11.7 Radiated Spurious Emission Measurement Result

### 11.7.1 Below 1GHz Worst-Case Data:

Report Number :ER/2019/B0043

Test Date :2020-02-27

Operation Mode :802.11a B1

Temp./Humi. :22.5/66

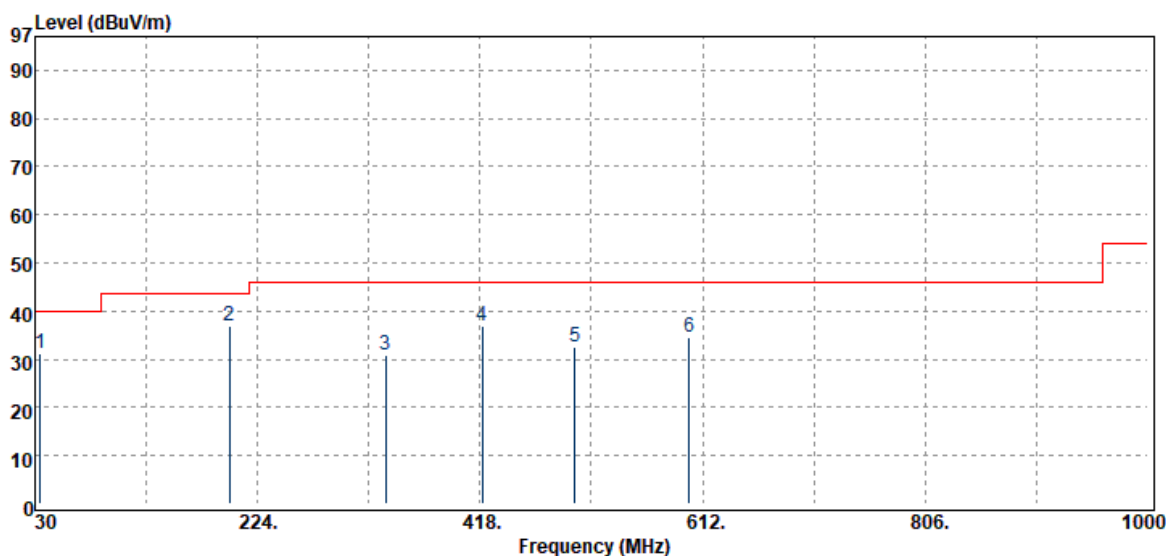
Test Frequency :5220 MHz

Antenna Pol. :VERTICAL

Test Mode :Tx CH Mid

Engineer :Thomas

EUT Pol :E1 Plane



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
34.85	Peak	37.76	-6.63	31.13	40.00	-8.87
199.75	Peak	49.17	-12.38	36.79	43.50	-6.71
335.55	Peak	38.55	-7.55	31.00	46.00	-15.00
419.94	Peak	41.49	-4.73	36.76	46.00	-9.24
500.45	Peak	36.82	-4.31	32.51	46.00	-13.49
600.36	Peak	37.90	-3.35	34.55	46.00	-11.45

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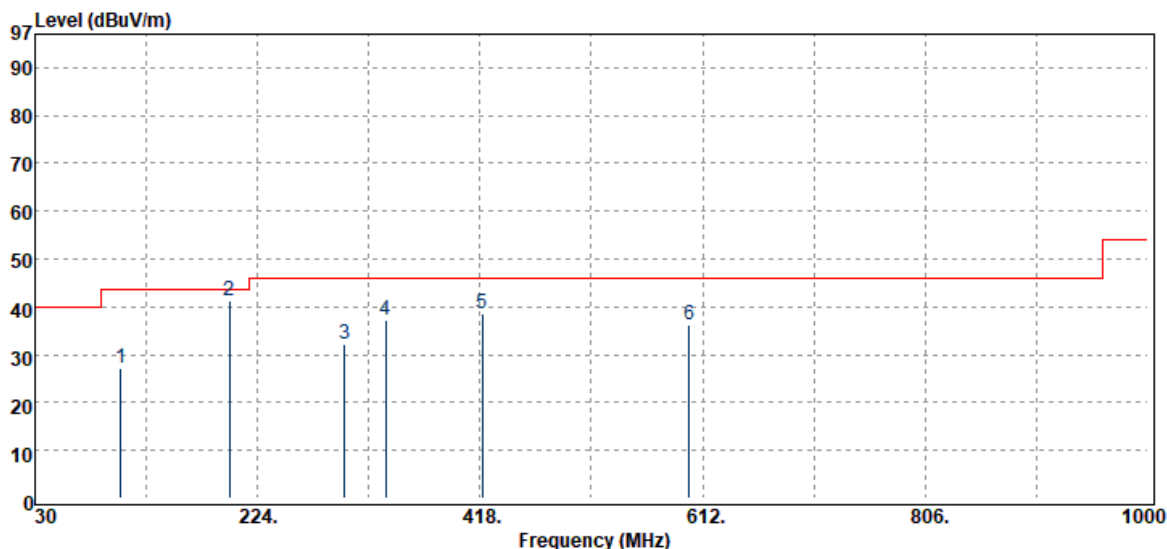
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Report Number :ER/2019/B0043  
Operation Mode :802.11a B1  
Test Frequency :5220 MHz  
Test Mode :Tx CH Mid  
EUT Pol :E1 Plane

Test Date :2020-02-27  
Temp./Humi. :22.5/66  
Antenna Pol. :HORIZONTAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
104.69	Peak	39.16	-12.00	27.16	43.50	-16.34
199.75	QP	53.65	-12.38	41.27	43.50	-2.23
299.66	Peak	40.75	-8.44	32.31	46.00	-13.69
335.55	Peak	44.69	-7.55	37.14	46.00	-8.86
419.94	Peak	43.21	-4.73	38.48	46.00	-7.52
600.36	Peak	39.53	-3.35	36.18	46.00	-9.82

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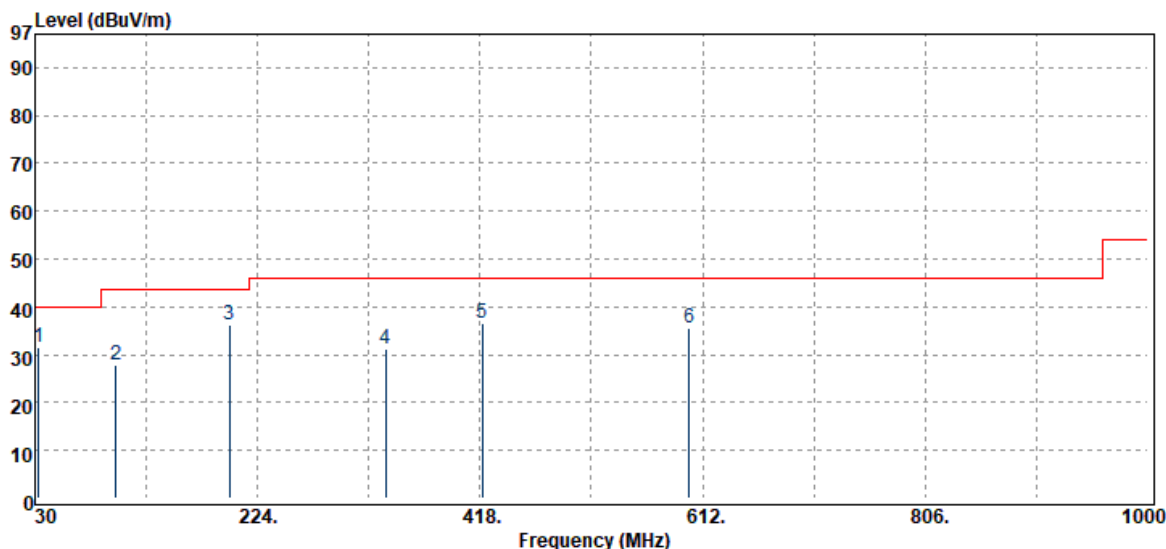
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Report Number :ER/2019/B0043  
Operation Mode :802.11a B4  
Test Frequency :5785 MHz  
Test Mode :Tx CH Mid  
EUT Pol :E1 Plane

Test Date :2020-02-27  
Temp./Humi. :22.5/66  
Antenna Pol. :VERTICAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
32.91	Peak	37.34	-5.85	31.49	40.00	-8.51
100.81	Peak	40.20	-12.39	27.81	43.50	-15.69
199.75	Peak	48.71	-12.38	36.33	43.50	-7.17
335.55	Peak	38.86	-7.55	31.31	46.00	-14.69
419.94	Peak	41.34	-4.73	36.61	46.00	-9.39
600.36	Peak	38.82	-3.35	35.47	46.00	-10.53

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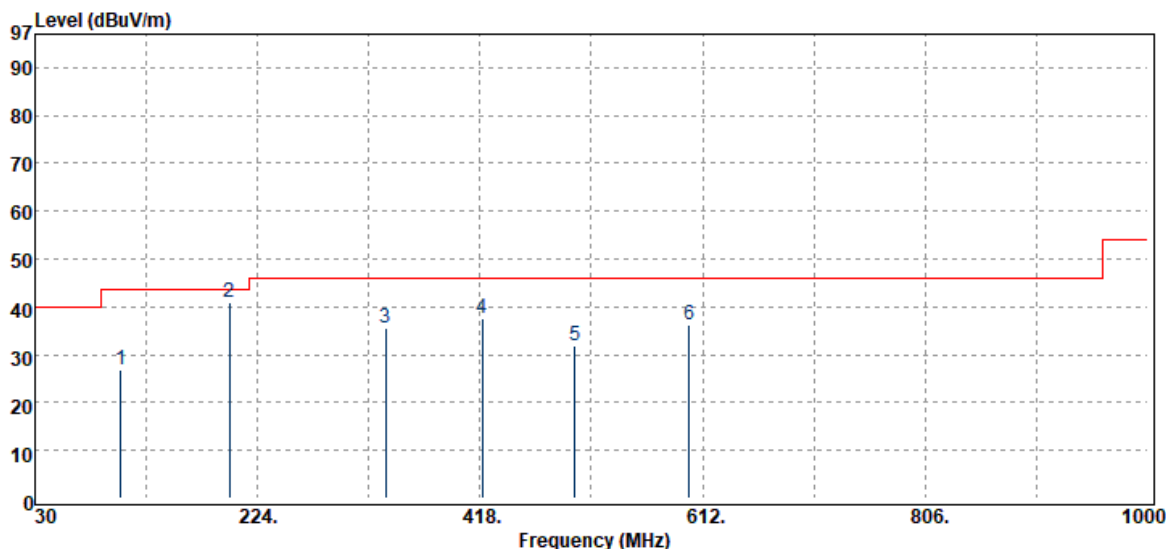
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Report Number :ER/2019/B0043  
Operation Mode :802.11a B4  
Test Frequency :5785 MHz  
Test Mode :Tx CH Mid  
EUT Pol :E1 Plane

Test Date :2020-02-27  
Temp./Humi. :22.5/66  
Antenna Pol. :HORIZONTAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
104.69	Peak	38.73	-12.00	26.73	43.50	-16.77
199.75	QP	53.20	-12.38	40.82	43.50	-2.68
335.55	Peak	43.28	-7.55	35.73	46.00	-10.27
419.94	Peak	42.30	-4.73	37.57	46.00	-8.43
500.45	Peak	36.11	-4.31	31.80	46.00	-14.20
600.36	Peak	39.73	-3.35	36.38	46.00	-9.62

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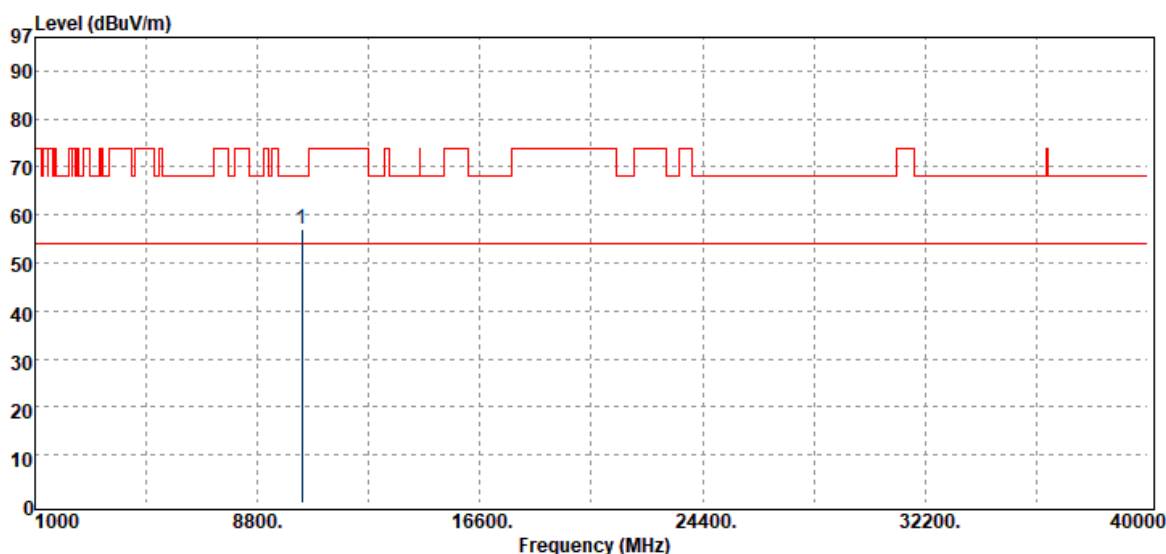
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## 11.7.2 Above 1GHz Worst-Case Data:

Report Number :ER/2019/B0043  
Operation Mode :802.11a B1  
Test Frequency :5180 MHz  
Test Mode :Tx CH Low  
EUT Pol :E1 Plane

Test Date :2020-01-08  
Temp./Humi. :22.3/65  
Antenna Pol. :VERTICAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10360.00	Peak	30.35	26.60	56.95	68.20	-11.25

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Report Number :ER/2019/B0043  
Operation Mode :802.11a B1  
Test Frequency :5180 MHz  
Test Mode :Tx CH Low  
EUT Pol :E1 Plane

Test Date :2020-01-08  
Temp./Humi. :22.3/65  
Antenna Pol. :HORIZONTAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10360.00	Peak	29.91	26.60	56.51	68.20	-11.69

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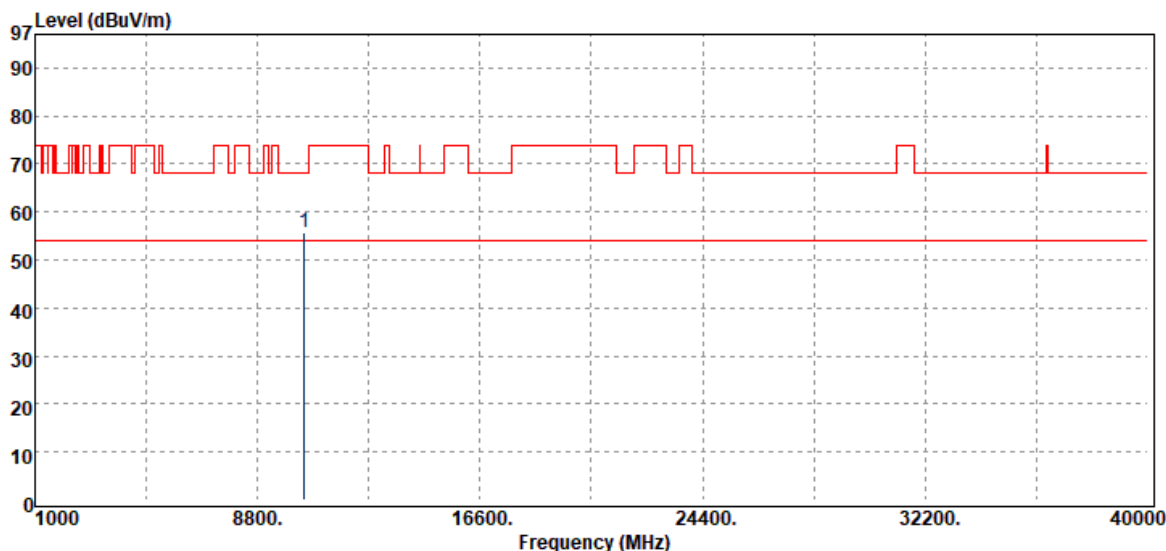
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B1  
 Test Frequency :5220 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10440.00	Peak	29.38	26.44	55.82	68.20	-12.38

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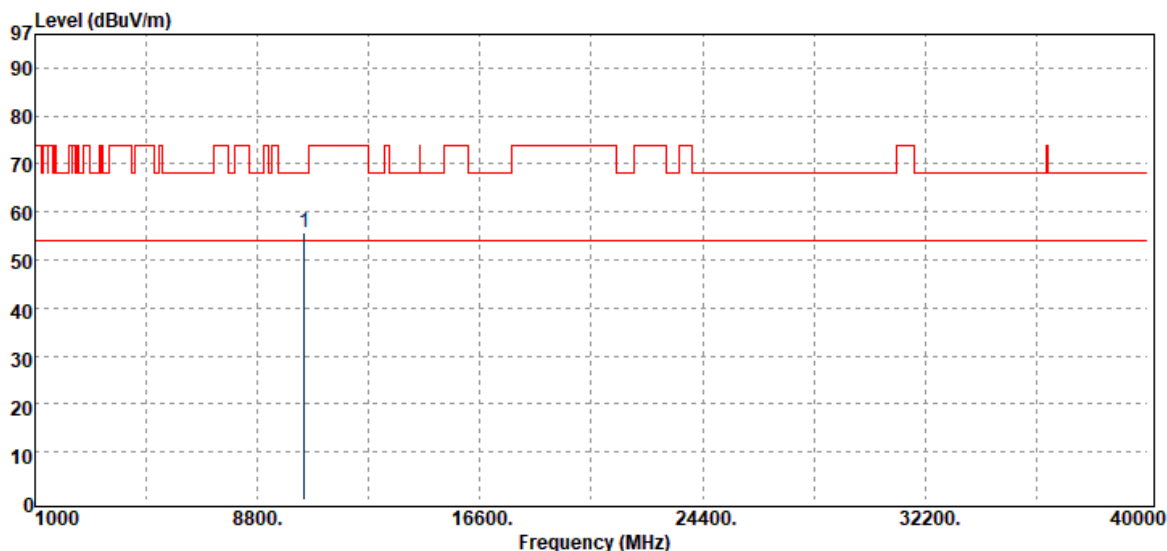
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B1  
 Test Frequency :5220 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10440.00	Peak	29.33	26.44	55.77	68.20	-12.43

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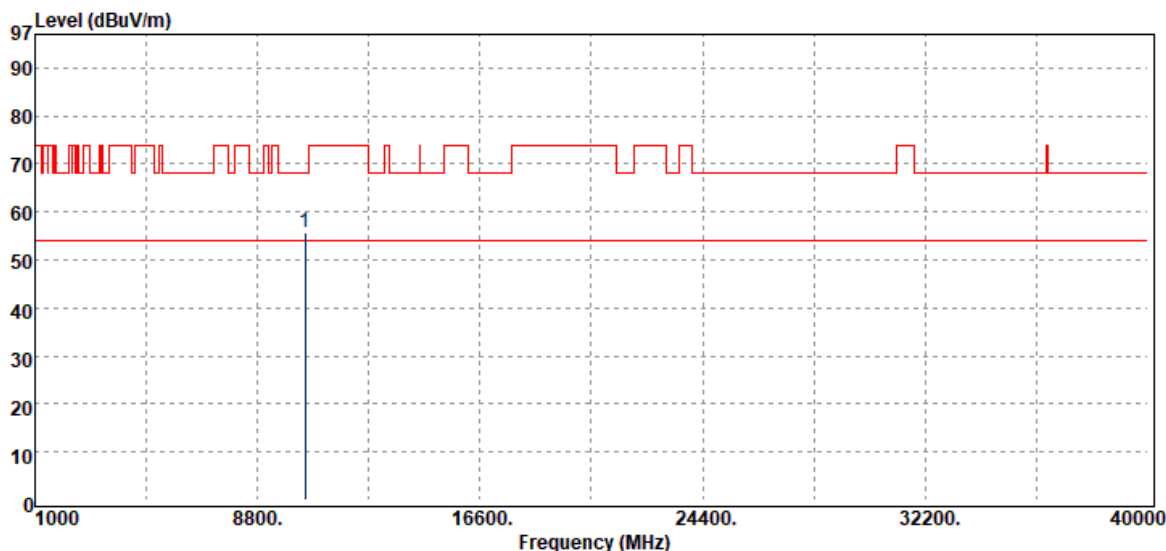
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B1  
 Test Frequency :5240 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10480.00	Peak	30.25	25.58	55.83	68.20	-12.37

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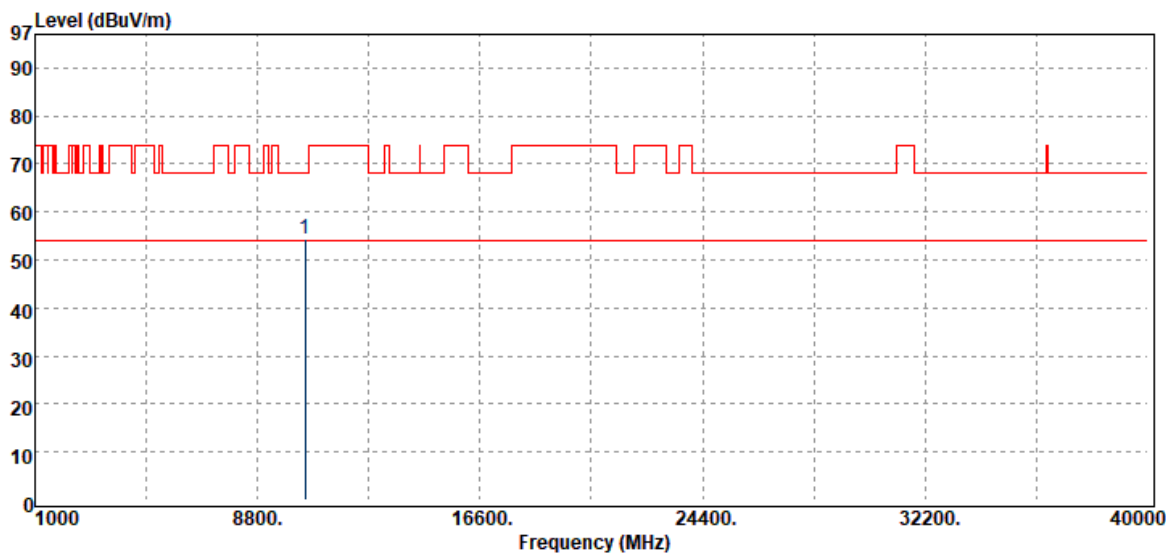
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B1  
 Test Frequency :5240 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10480.00	Peak	28.66	25.58	54.24	68.20	-13.96

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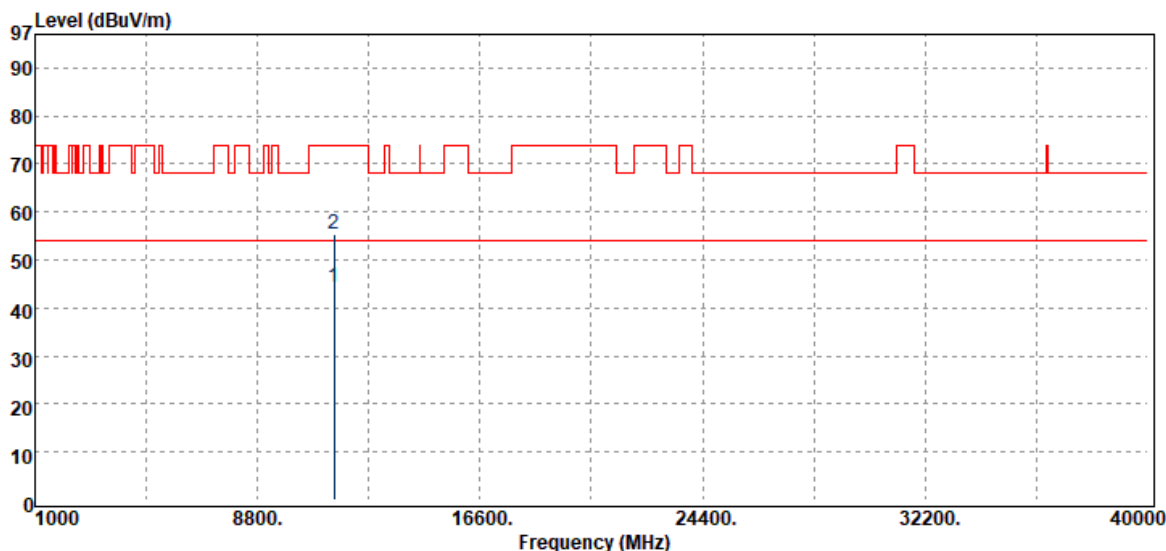
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B4  
 Test Frequency :5745 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
11490.00	Average	18.15	26.25	44.40	54.00	-9.60
11490.00	Peak	29.28	26.25	55.53	74.00	-18.47

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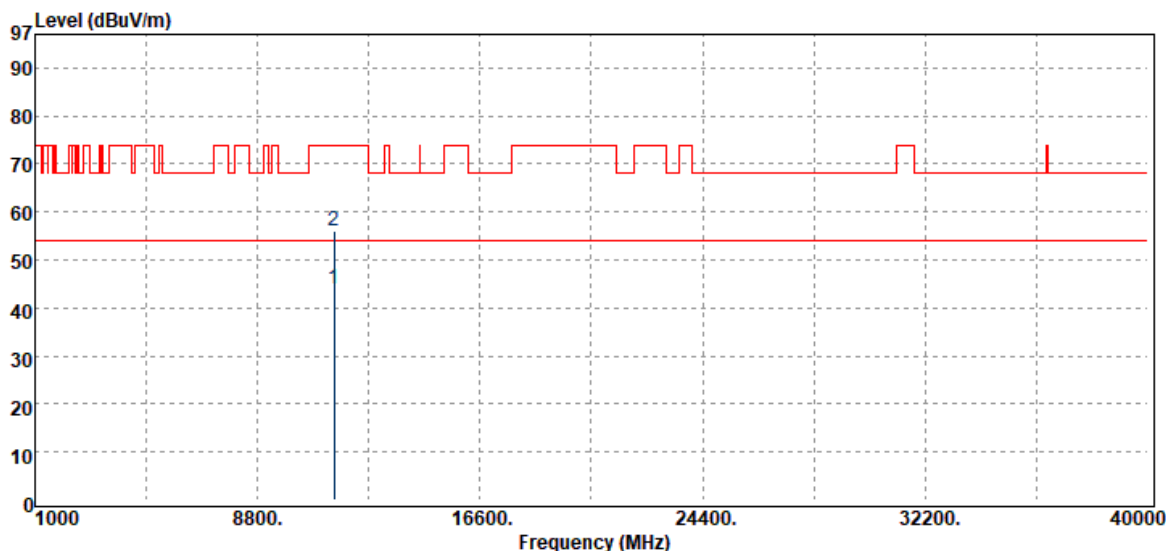
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B4  
 Test Frequency :5745 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11490.00	Average	17.86	26.25	44.11	54.00	-9.89
11490.00	Peak	29.74	26.25	55.99	74.00	-18.01

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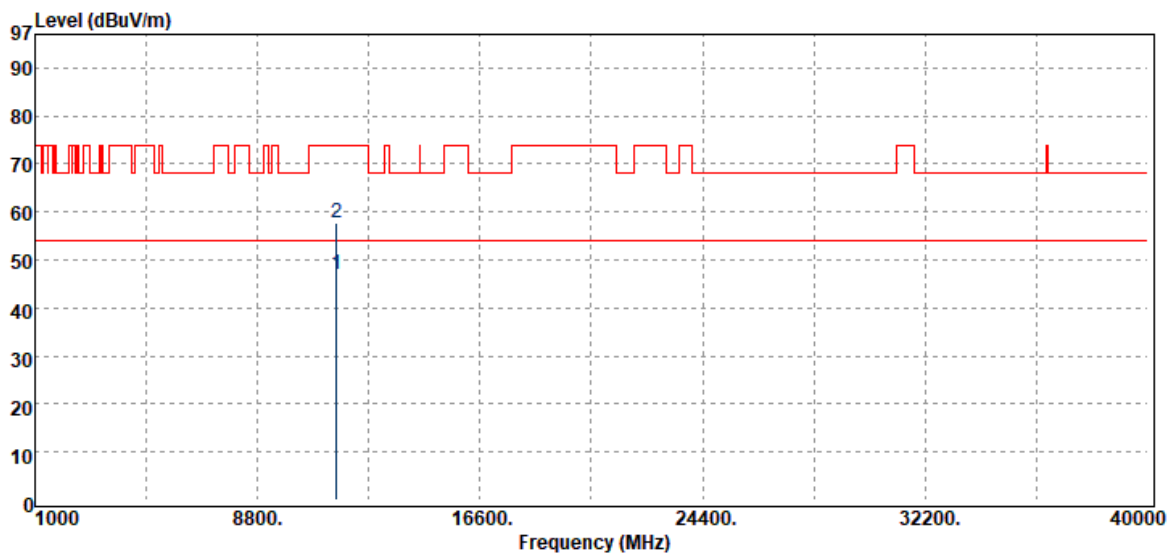
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B4  
 Test Frequency :5785 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
11570.00	Average	18.27	28.73	47.00	54.00	-7.00
11570.00	Peak	29.16	28.73	57.89	74.00	-16.11

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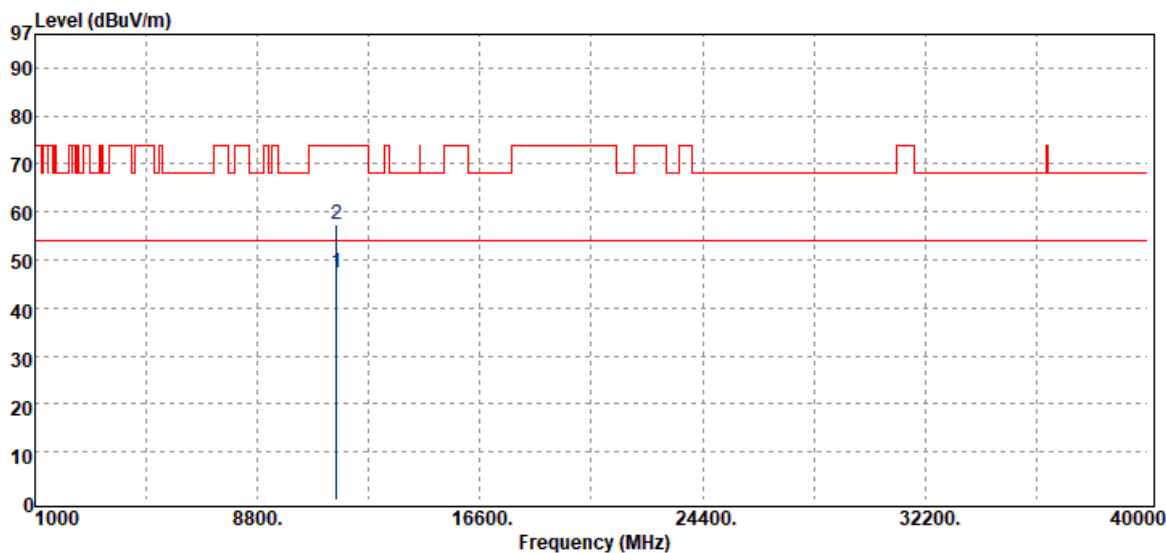
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B4  
 Test Frequency :5785 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11570.00	Average	18.67	28.73	47.40	54.00	-6.60
11570.00	Peak	28.52	28.73	57.25	74.00	-16.75

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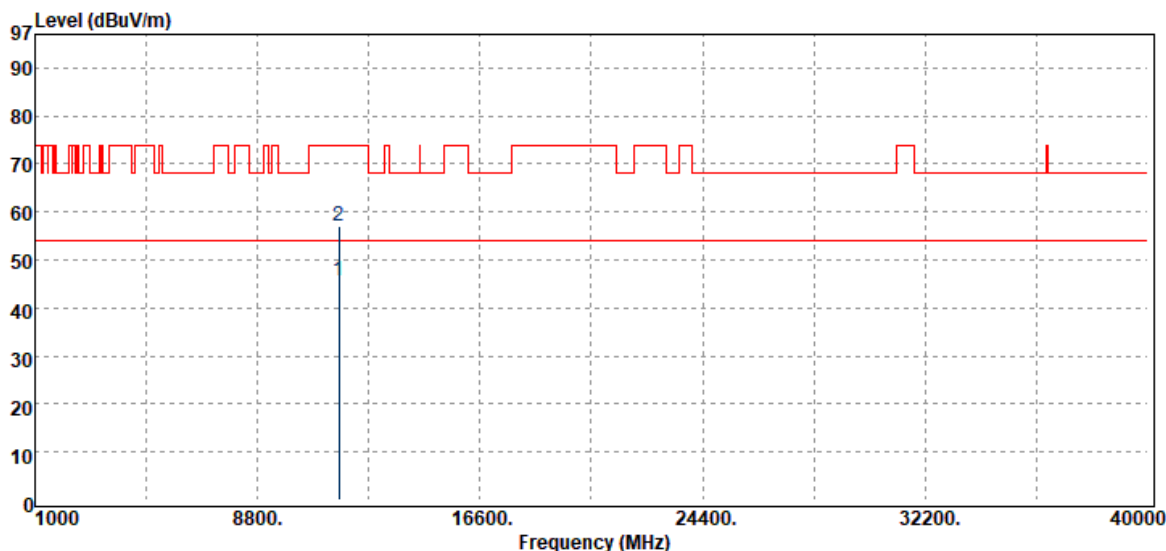
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B4  
 Test Frequency :5825 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
11650.00	Average	18.26	27.35	45.61	54.00	-8.39
11650.00	Peak	29.57	27.35	56.92	74.00	-17.08

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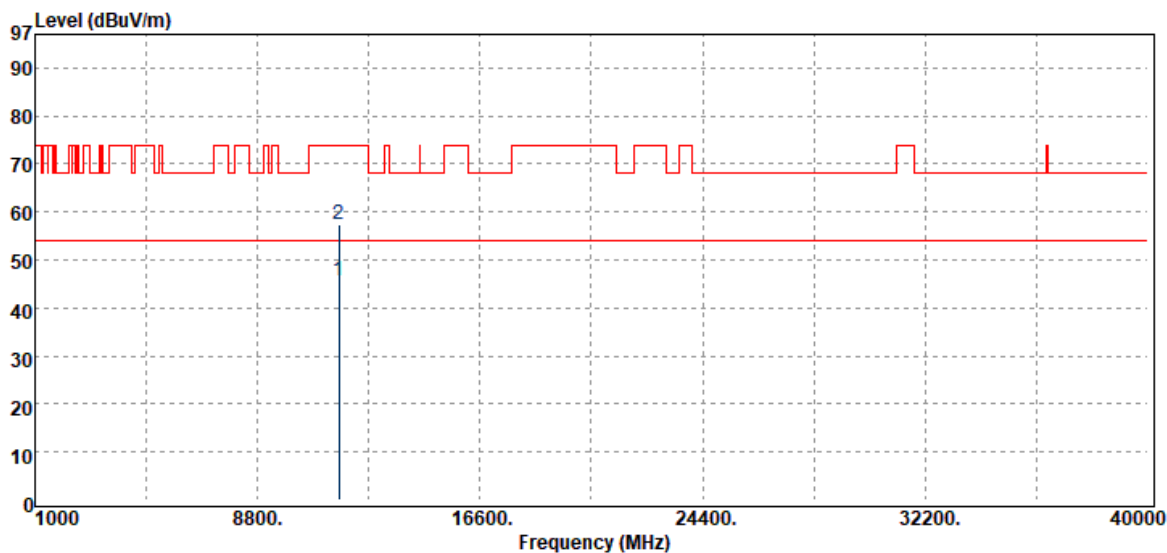
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Report Number :ER/2019/B0043  
 Operation Mode :802.11a B4  
 Test Frequency :5825 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11650.00	Average	17.77	28.03	45.80	54.00	-8.20
11650.00	Peak	29.27	28.03	57.30	74.00	-16.70

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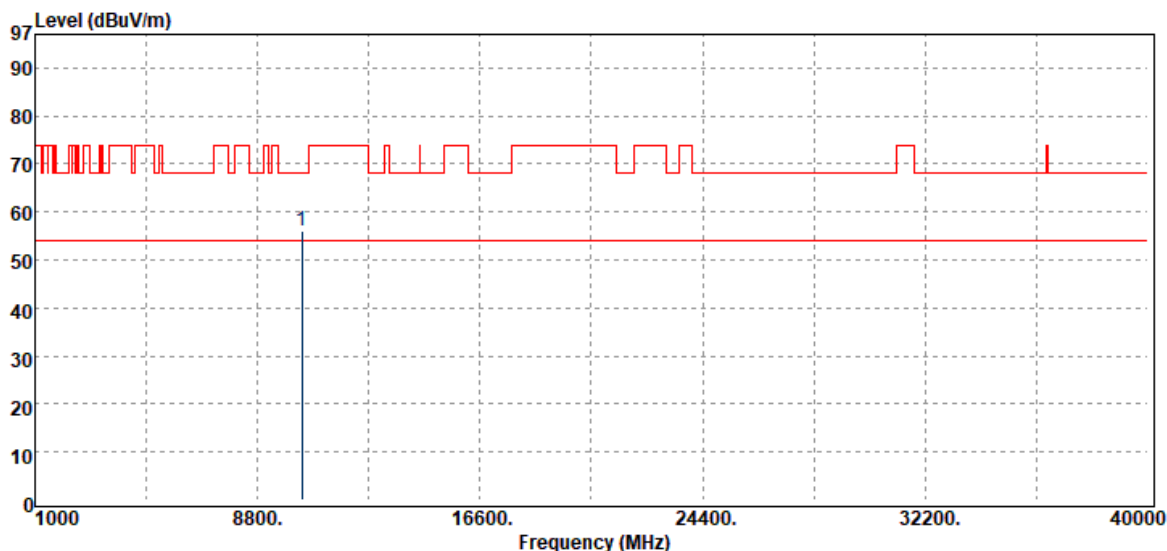
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Report Number :ER/2019/B0043  
Operation Mode :802.11n20 B1  
Test Frequency :5180 MHz  
Test Mode :Tx CH Low  
EUT Pol :E1 Plane

Test Date :2020-01-08  
Temp./Humi. :22.3/65  
Antenna Pol. :VERTICAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10360.00	Peak	29.58	26.60	56.18	68.20	-12.02

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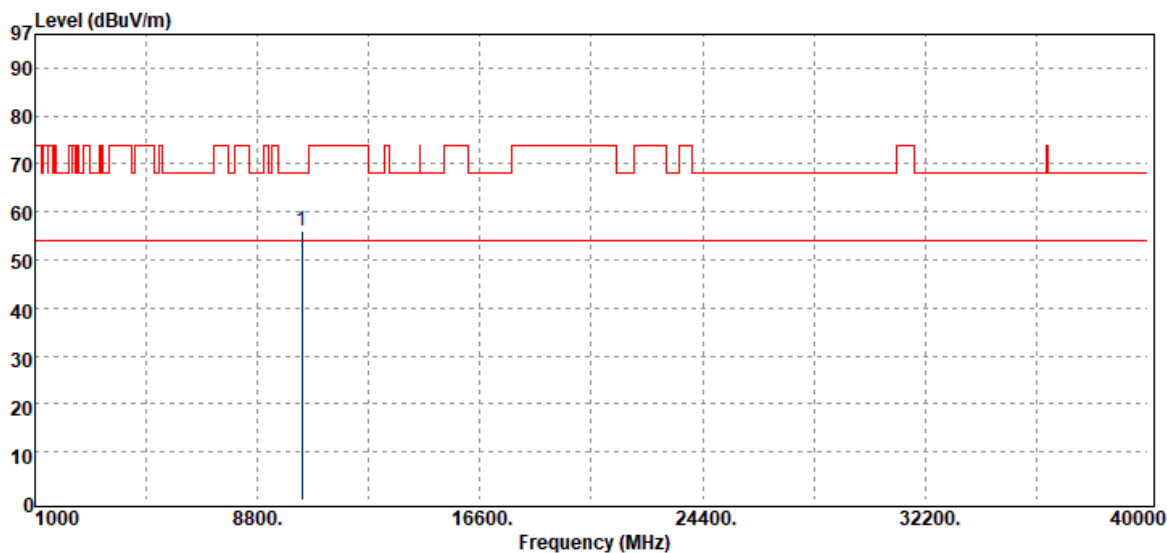
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B1  
 Test Frequency :5180 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10360.00	Peak	29.56	26.60	56.16	68.20	-12.04

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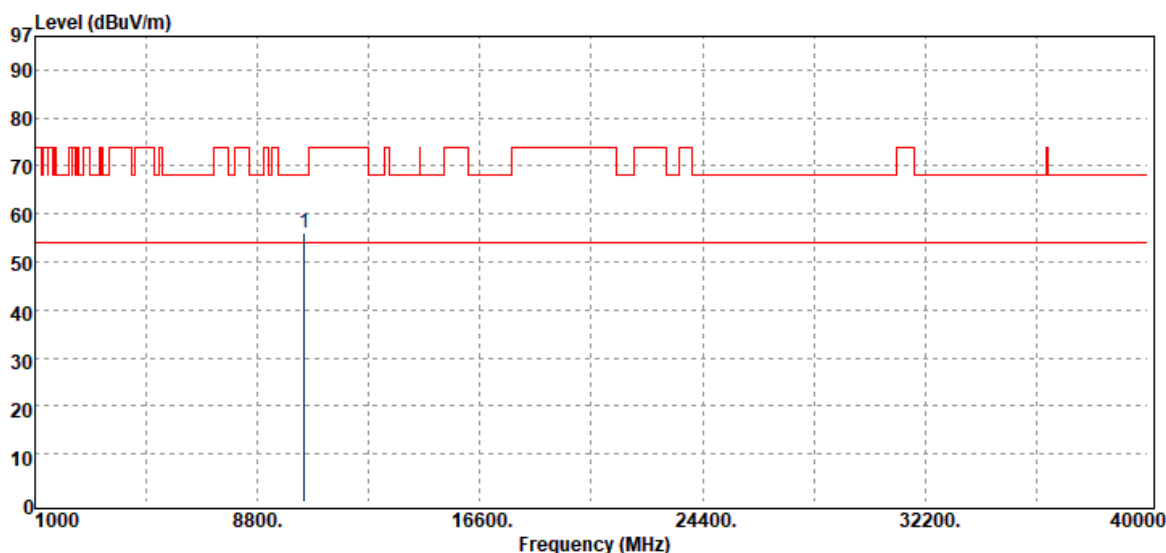
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Report Number :ER/2019/B0043  
Operation Mode :802.11n20 B1  
Test Frequency :5220 MHz  
Test Mode :Tx CH Mid  
EUT Pol :E1 Plane

Test Date :2020-01-08  
Temp./Humi. :22.3/65  
Antenna Pol. :VERTICAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10440.00	Peak	29.63	26.44	56.07	68.20	-12.13

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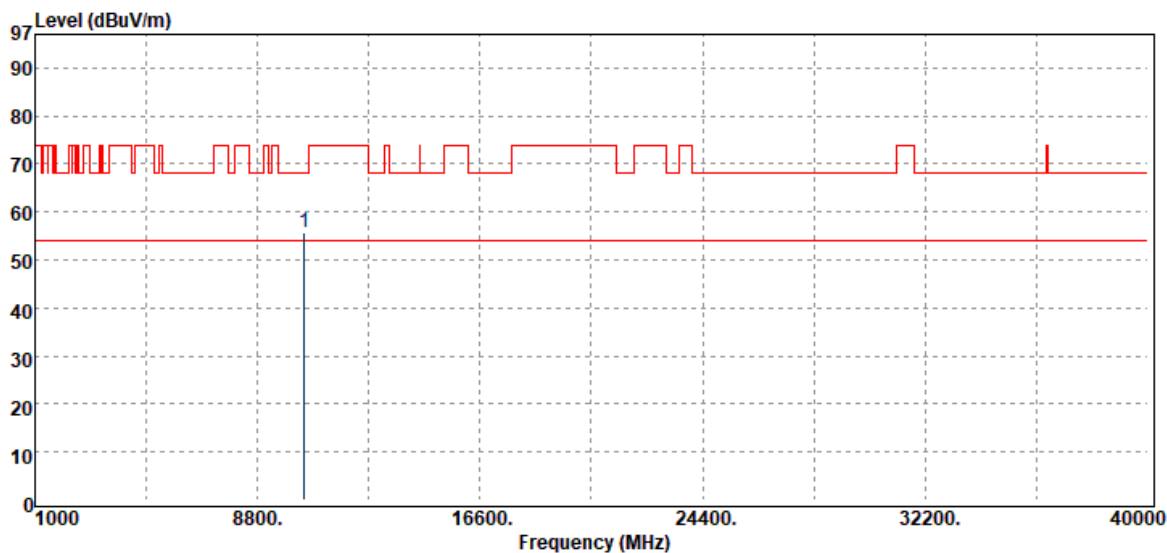
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B1  
 Test Frequency :5220 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10440.00	Peak	29.34	26.44	55.78	68.20	-12.42

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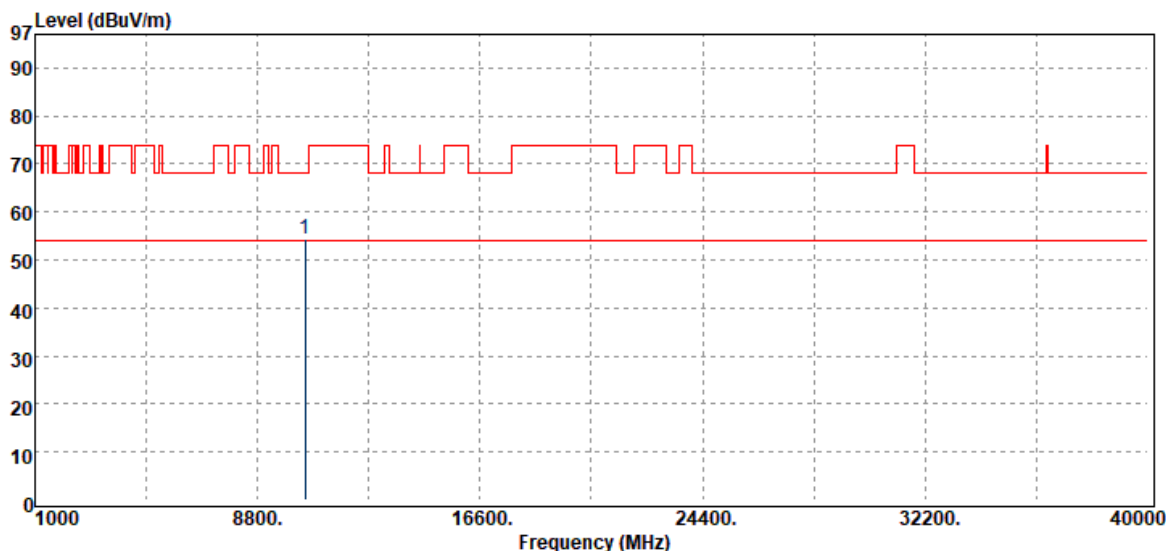
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B1  
 Test Frequency :5240 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10480.00	Peak	28.83	25.58	54.41	68.20	-13.79

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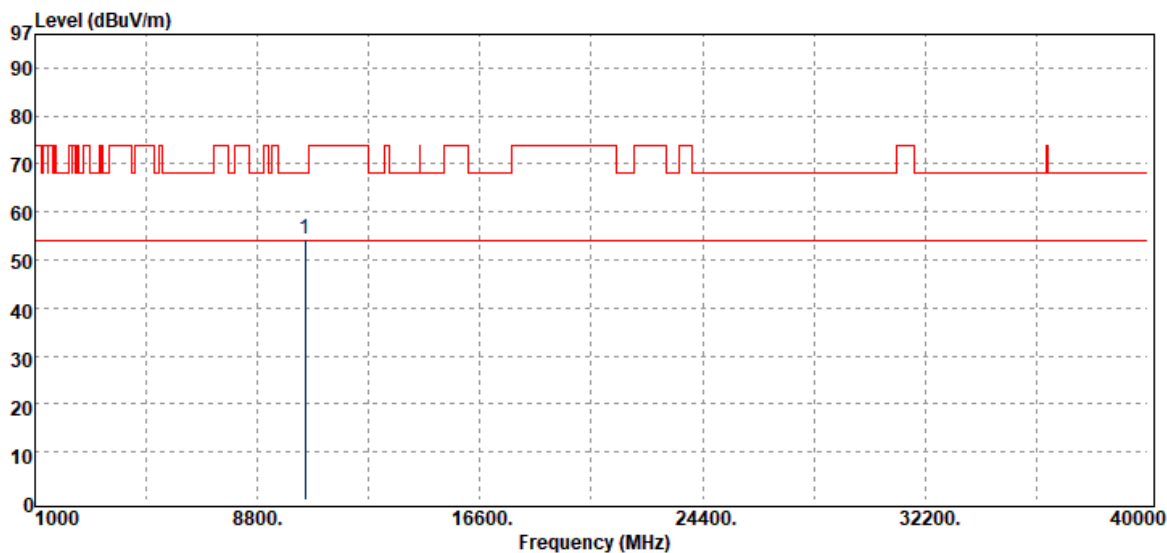
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B1  
 Test Frequency :5240 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10480.00	Peak	28.94	25.58	54.52	68.20	-13.68

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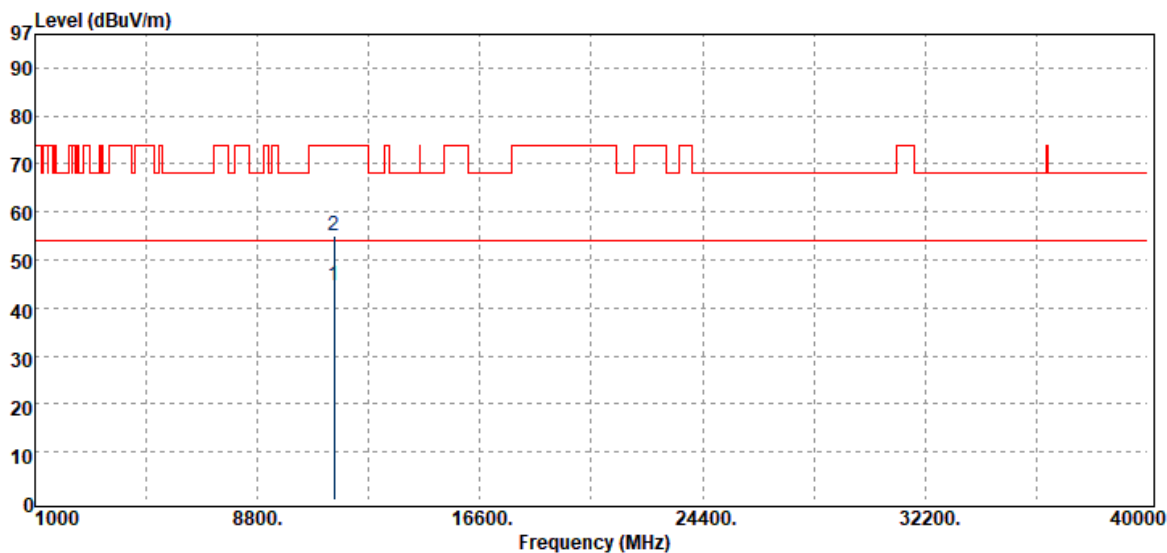
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B4  
 Test Frequency :5745 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
11490.00	Average	18.26	26.25	44.51	54.00	-9.49
11490.00	Peak	28.72	26.25	54.97	74.00	-19.03

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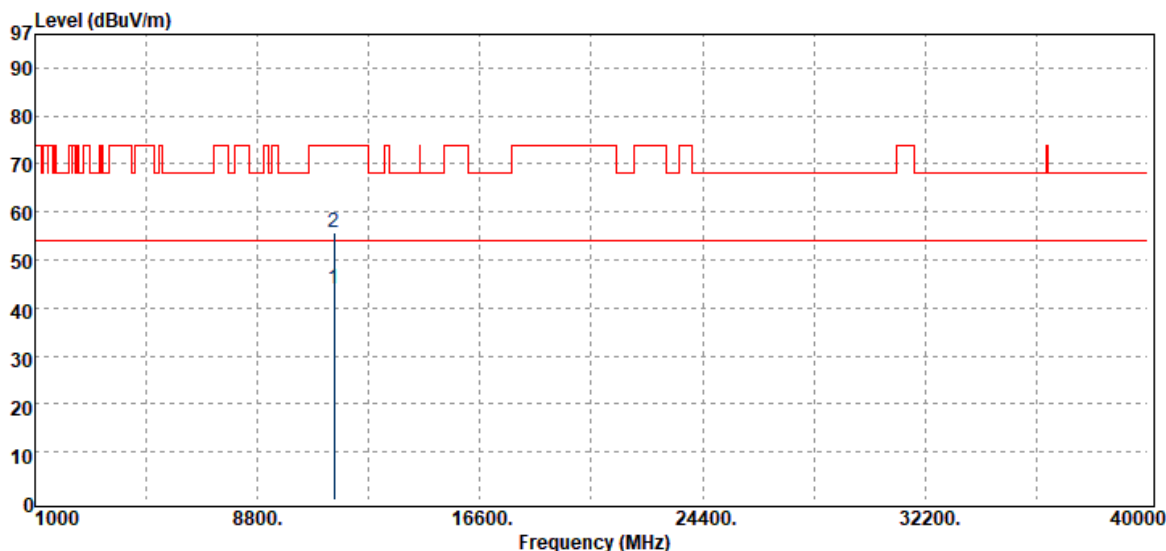
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B4  
 Test Frequency :5745 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11490.00	Average	17.73	26.25	43.98	54.00	-10.02
11490.00	Peak	29.36	26.25	55.61	74.00	-18.39

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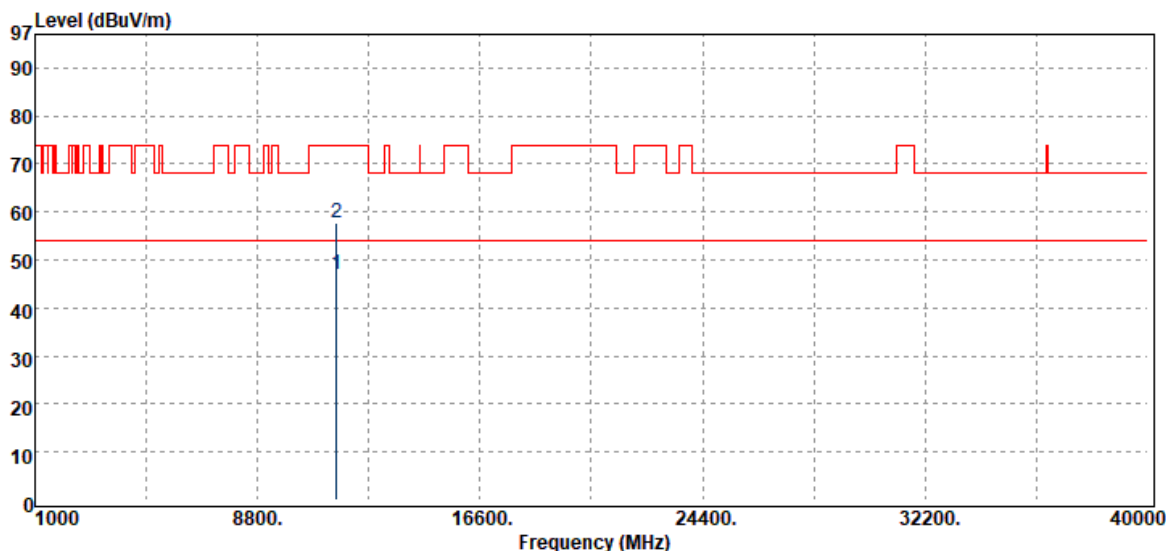
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B4  
 Test Frequency :5785 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
11570.00	Average	18.35	28.73	47.08	54.00	-6.92
11570.00	Peak	28.97	28.73	57.70	74.00	-16.30

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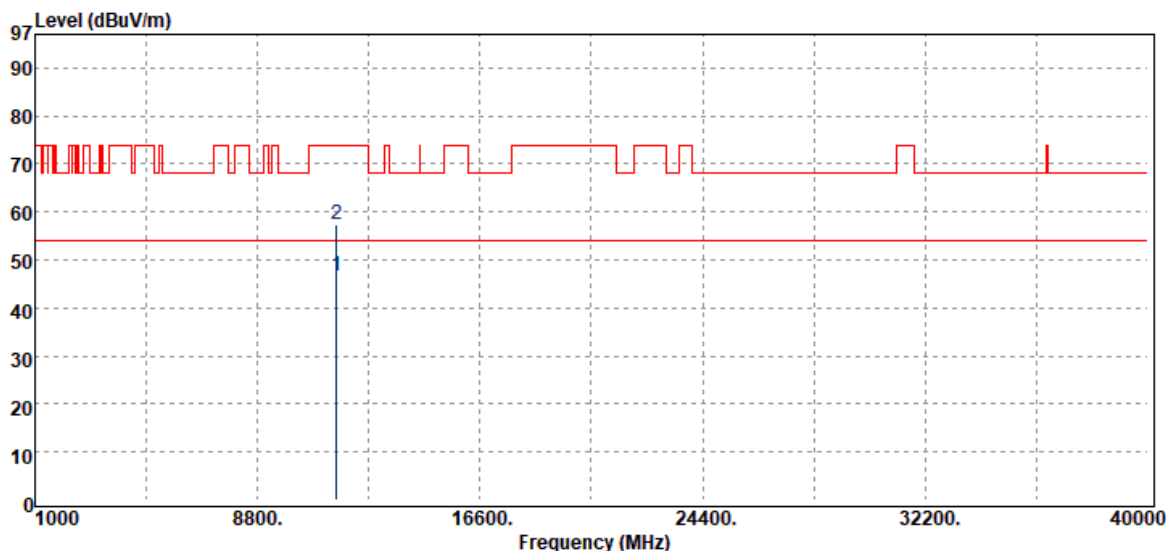
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B4  
 Test Frequency :5785 MHz  
 Test Mode :Tx CH Mid  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11570.00	Average	18.02	28.73	46.75	54.00	-7.25
11570.00	Peak	28.53	28.73	57.26	74.00	-16.74

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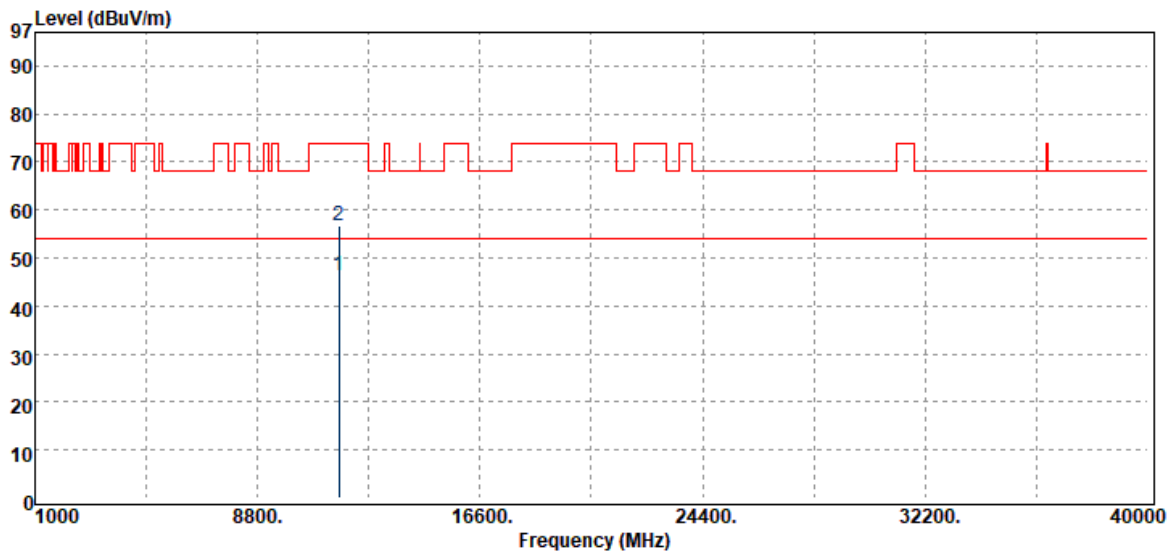
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B4  
 Test Frequency :5825 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
11650.00	Average	18.27	28.03	46.30	54.00	-7.70
11650.00	Peak	28.60	28.03	56.63	74.00	-17.37

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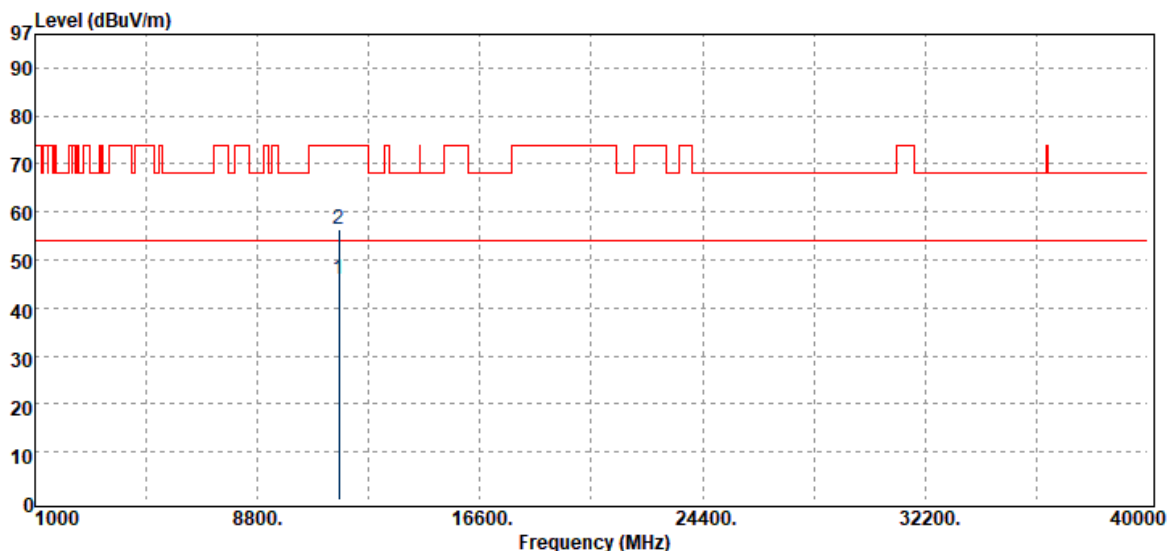
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20 B4  
 Test Frequency :5825 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11650.00	Average	17.85	28.03	45.88	54.00	-8.12
11650.00	Peak	28.30	28.03	56.33	74.00	-17.67

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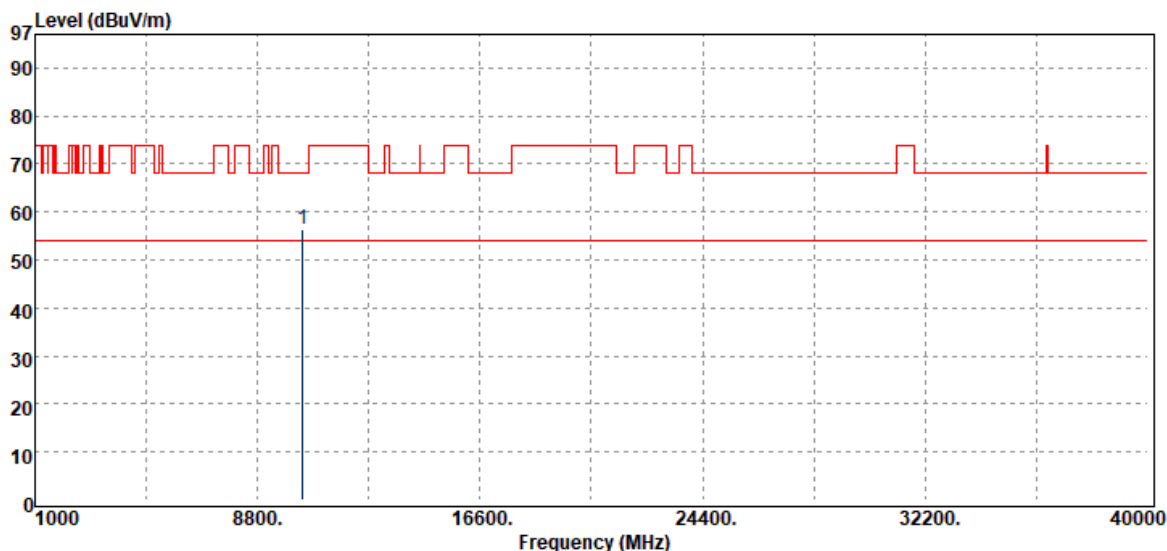
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40 B1  
 Test Frequency :5190 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10380.00	Peak	29.38	26.98	56.36	68.20	-11.84

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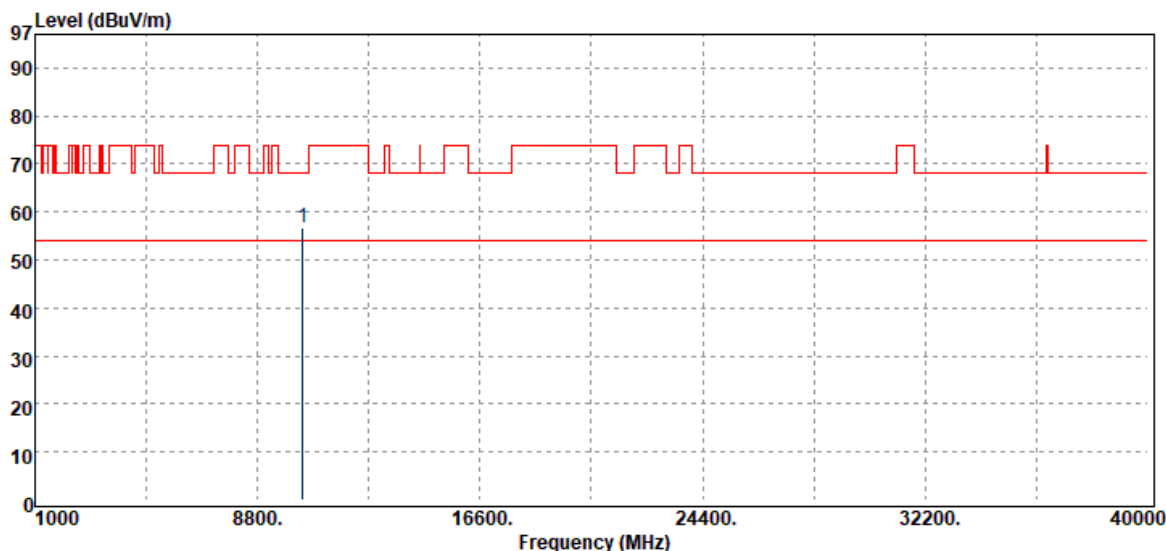
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40 B1  
 Test Frequency :5190 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
10380.00	Peak	29.60	26.98	56.58	68.20	-11.62

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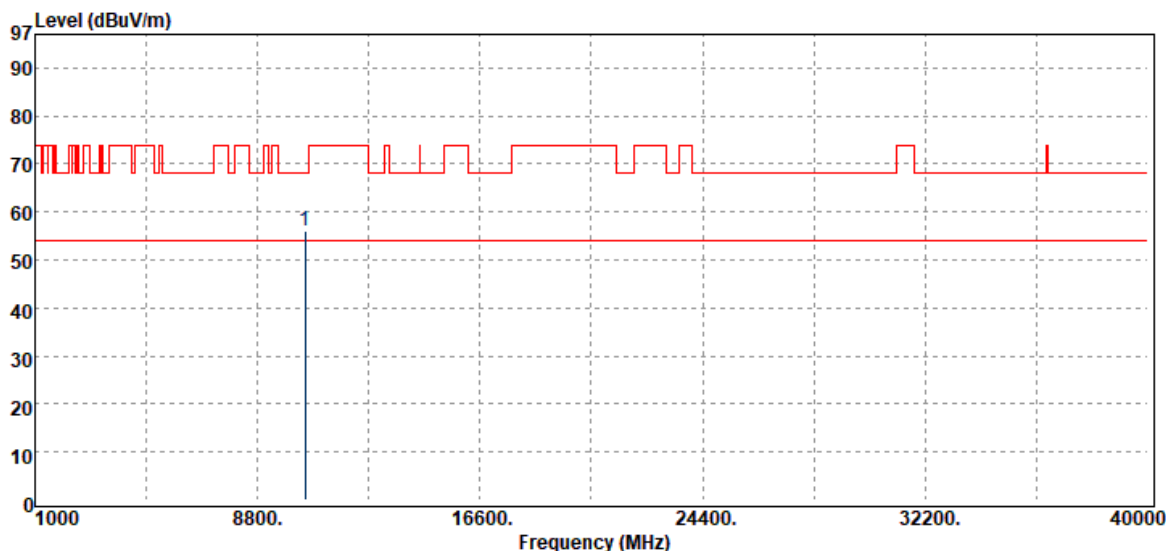
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40 B1  
 Test Frequency :5230 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10460.00	Peak	30.04	25.95	55.99	68.20	-12.21

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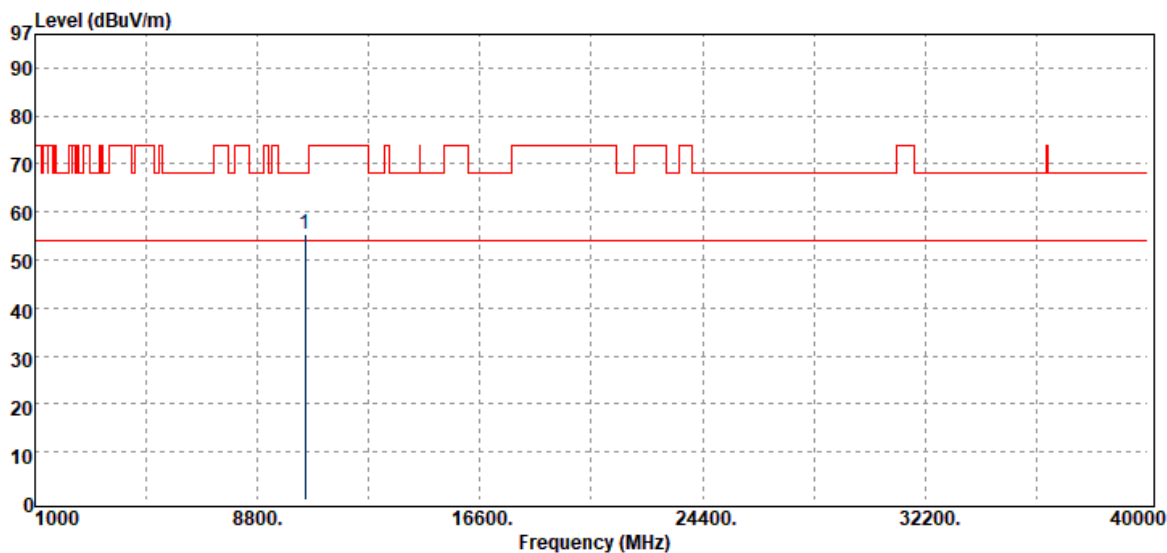
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Report Number :ER/2019/B0043  
Operation Mode :802.11n40 B1  
Test Frequency :5230 MHz  
Test Mode :Tx CH High  
EUT Pol :E1 Plane

Test Date :2020-01-08  
Temp./Humi. :22.3/65  
Antenna Pol. :HORIZONTAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10460.00	Peak	29.32	25.95	55.27	68.20	-12.93

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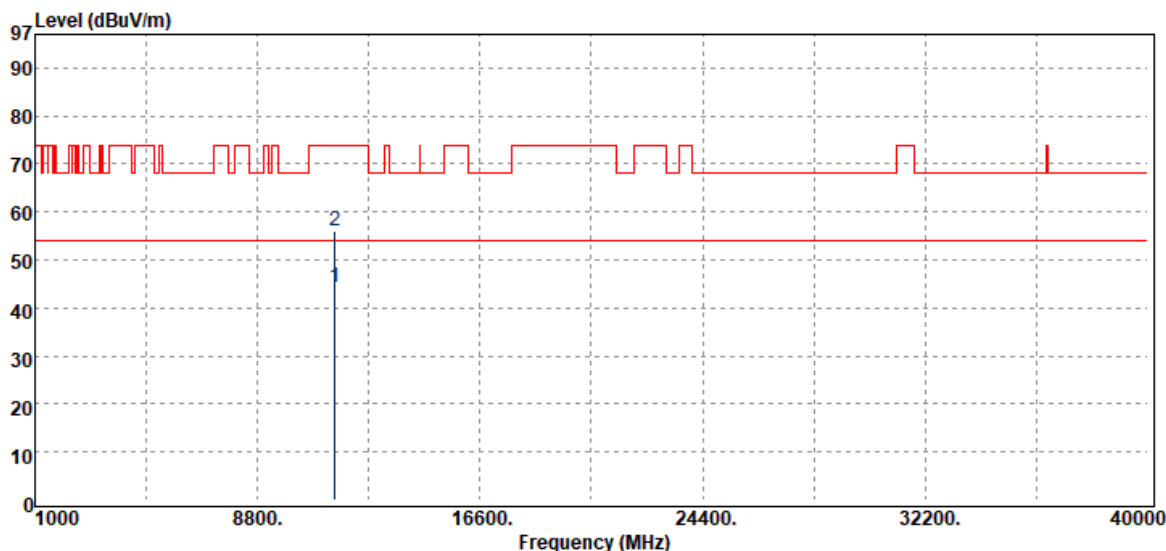
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40 B4  
 Test Frequency :5755 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
11510.00	Average	17.94	26.47	44.41	54.00	-9.59
11510.00	Peak	29.46	26.47	55.93	74.00	-18.07

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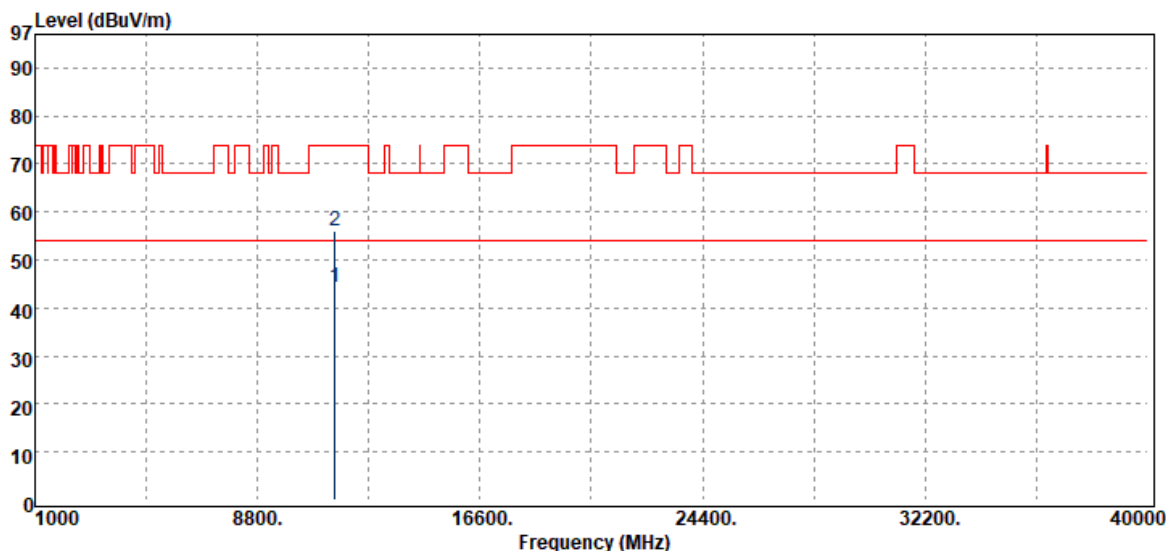
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40 B4  
 Test Frequency :5755 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11510.00	Average	17.71	26.47	44.18	54.00	-9.82
11510.00	Peak	29.69	26.47	56.16	74.00	-17.84

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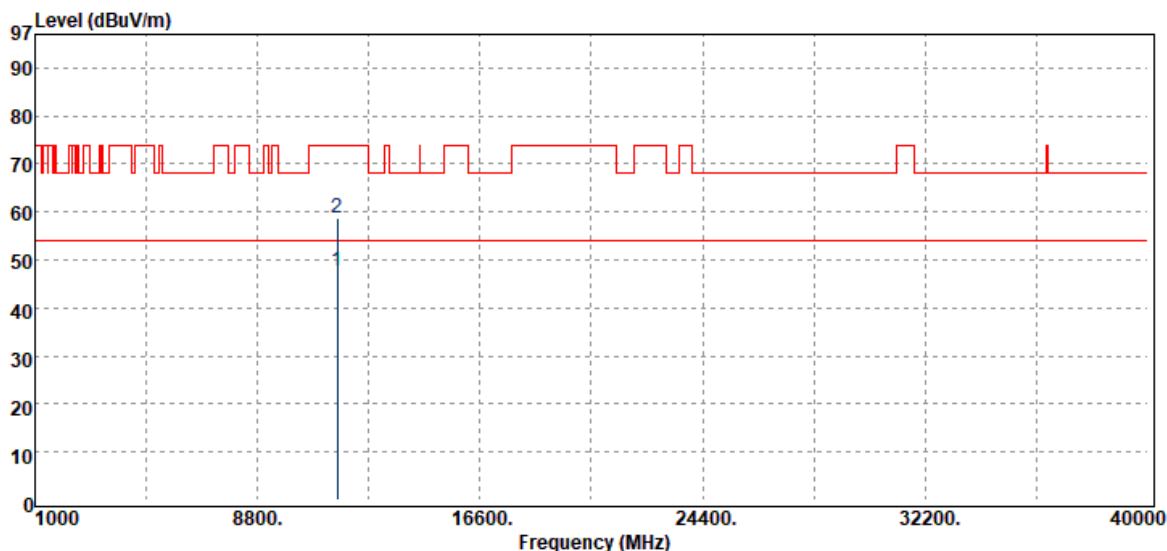
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40 B4  
 Test Frequency :5795 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
11590.00	Average	18.22	29.55	47.77	54.00	-6.23
11590.00	Peak	29.08	29.55	58.63	74.00	-15.37

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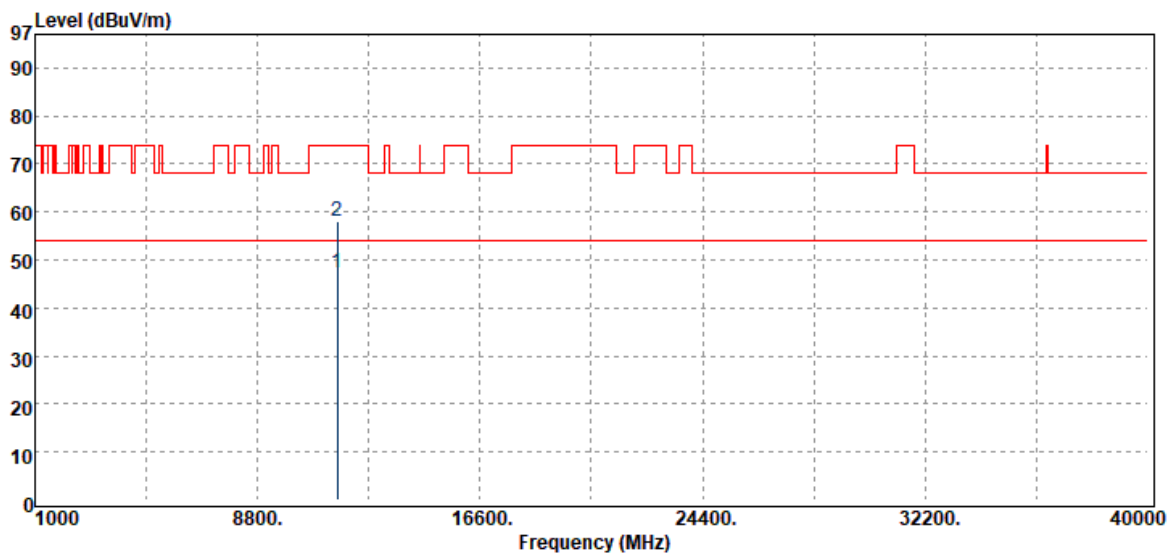
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40 B4  
 Test Frequency :5795 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11590.00	Average	17.81	29.55	47.36	54.00	-6.64
11590.00	Peak	28.43	29.55	57.98	74.00	-16.02

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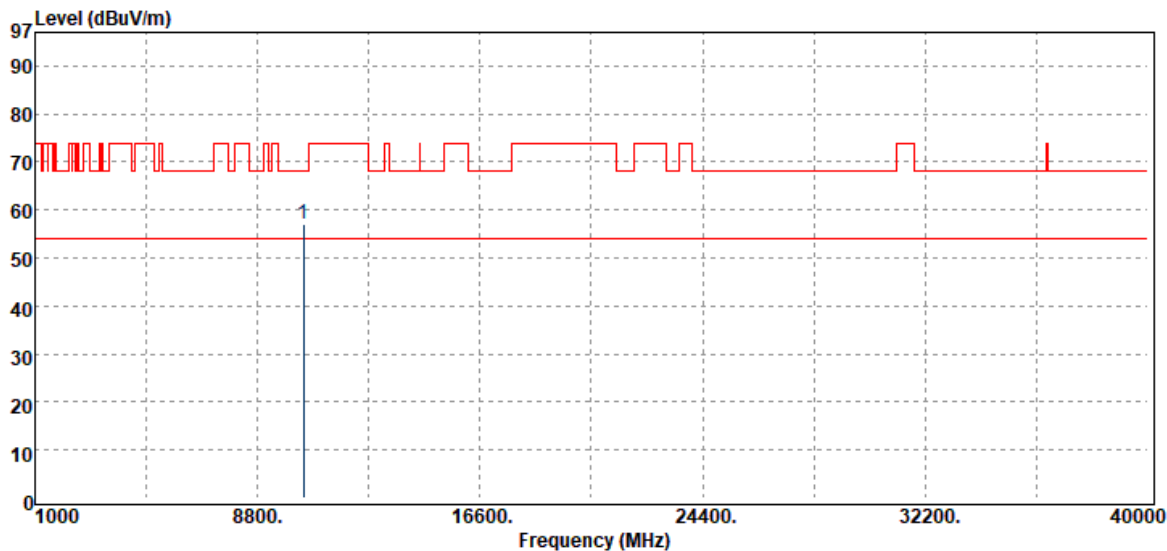
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Report Number :ER/2019/B0043  
 Operation Mode :802.11ac80 B1  
 Test Frequency :5210 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10420.00	Peak	30.11	26.92	57.03	68.20	-11.17

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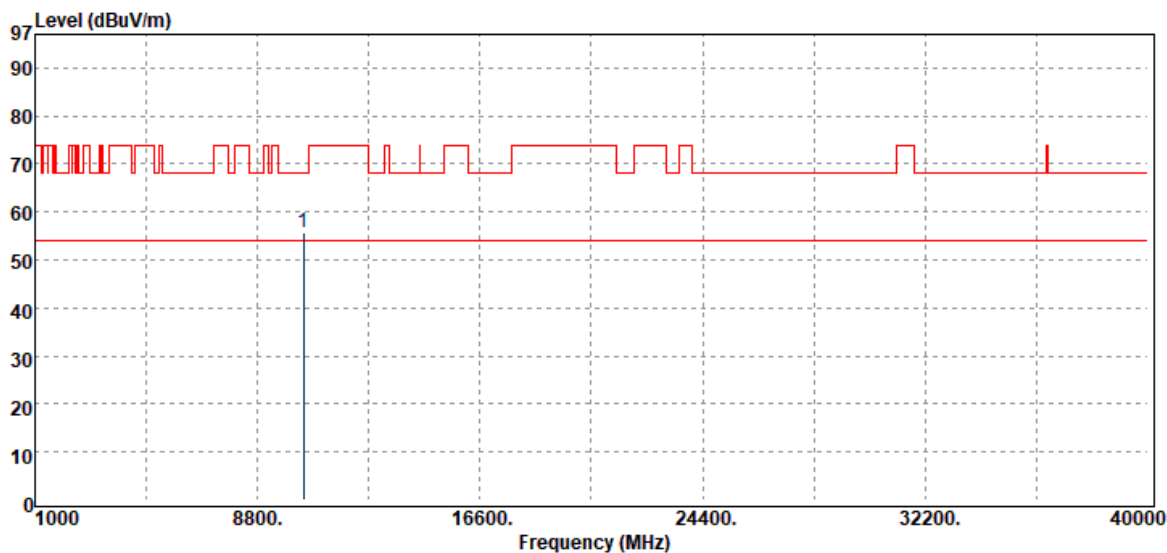
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Report Number :ER/2019/B0043  
 Operation Mode :802.11ac80 B1  
 Test Frequency :5210 MHz  
 Test Mode :Tx CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
10420.00	Peak	28.90	26.92	55.82	68.20	-12.38

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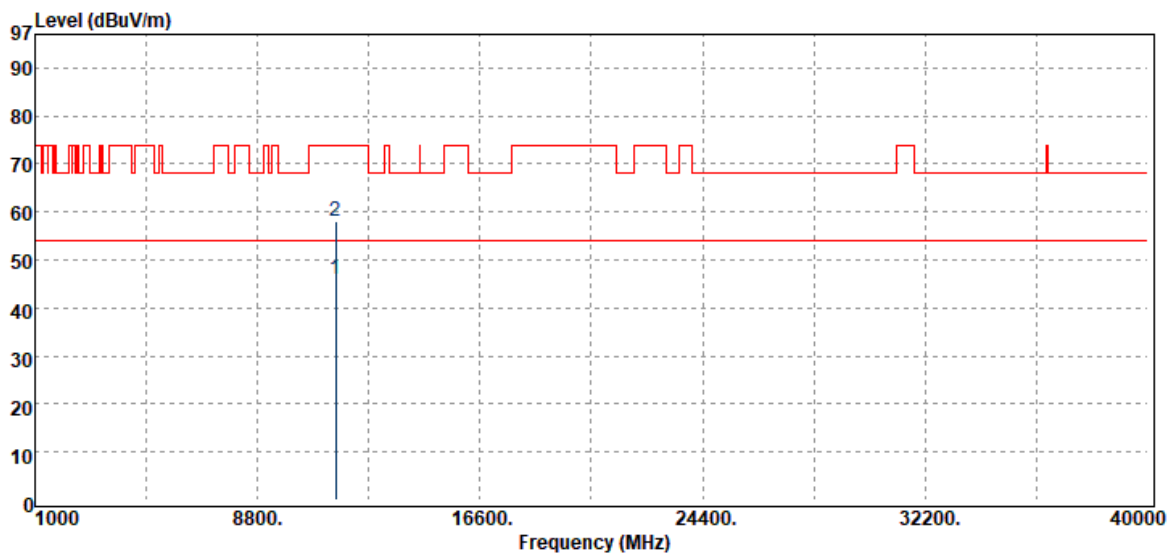
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Report Number :ER/2019/B0043  
 Operation Mode :802.11ac80 B4  
 Test Frequency :5775 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
11550.00	Average	18.19	27.91	46.10	54.00	-7.90
11550.00	Peak	30.04	27.91	57.95	74.00	-16.05

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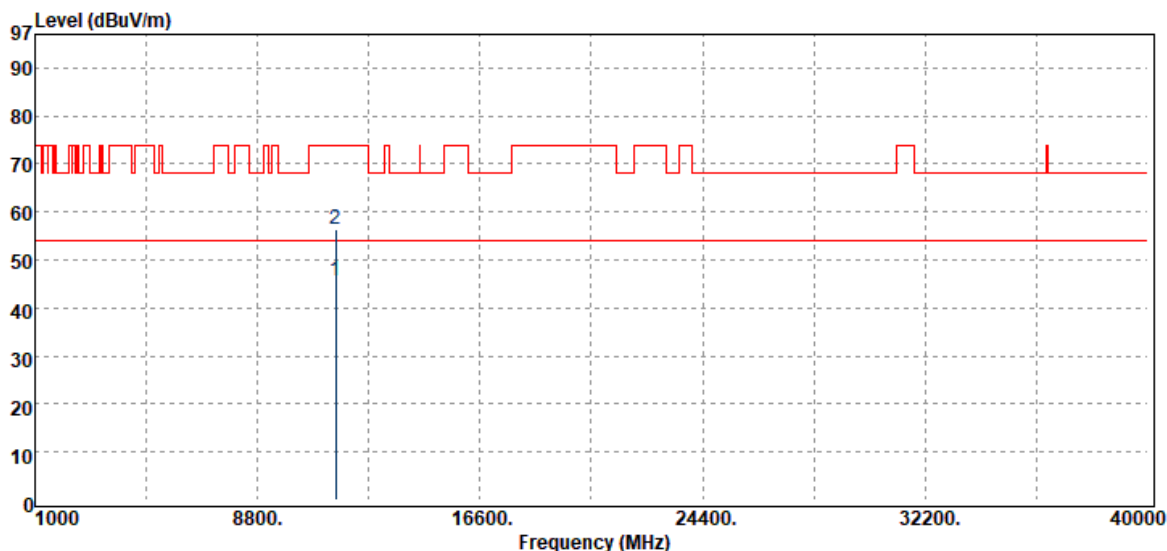
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Report Number :ER/2019/B0043  
 Operation Mode :802.11ac80 B4  
 Test Frequency :5775 MHz  
 Test Mode :Tx CH High  
 EUT Pol :E1 Plane

Test Date :2020-01-08  
 Temp./Humi. :22.3/65  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
11550.00	Average	17.76	27.91	45.67	54.00	-8.33
11550.00	Peak	28.41	27.91	56.32	74.00	-17.68

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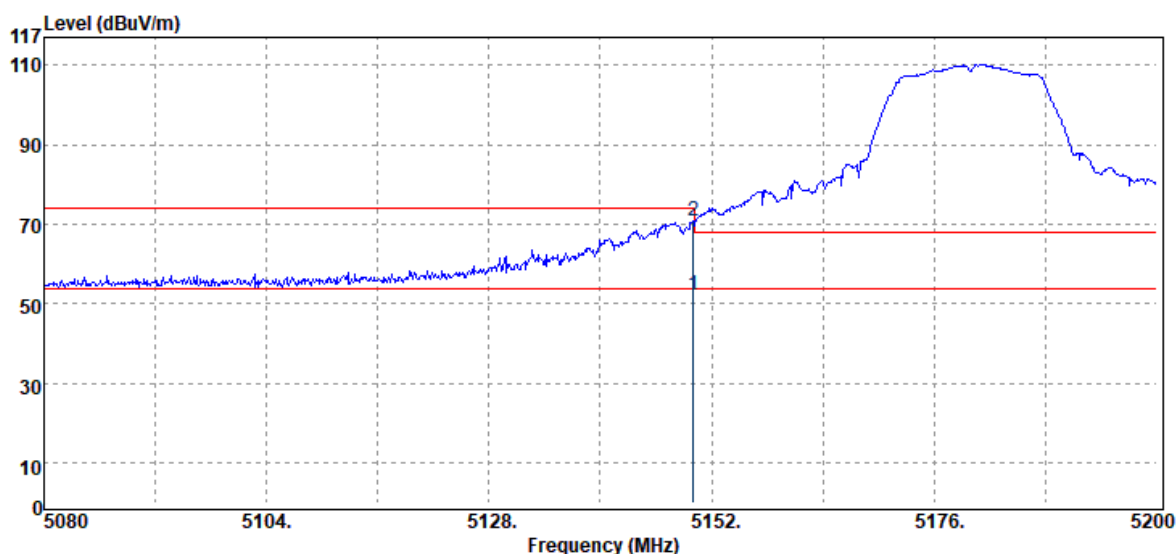
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### 11.7.3 Band edge falling to restricted band

Report Number	:ER/2019/B0043	Test Date	:2020-01-07
Operation Mode	:802.11aB1	Temp./Humi.	:21.6/69
Test Frequency	:5180 MHz	Antenna Pol.	:VERTICAL
Test Mode	:Bandedge CH Low	Engineer	:Thomas
EUT Pol	:E1 Plane		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
5150.00	Average	37.11	15.02	52.13	54.00	-1.87
5150.00	Peak	56.02	15.02	71.04	74.00	-2.96

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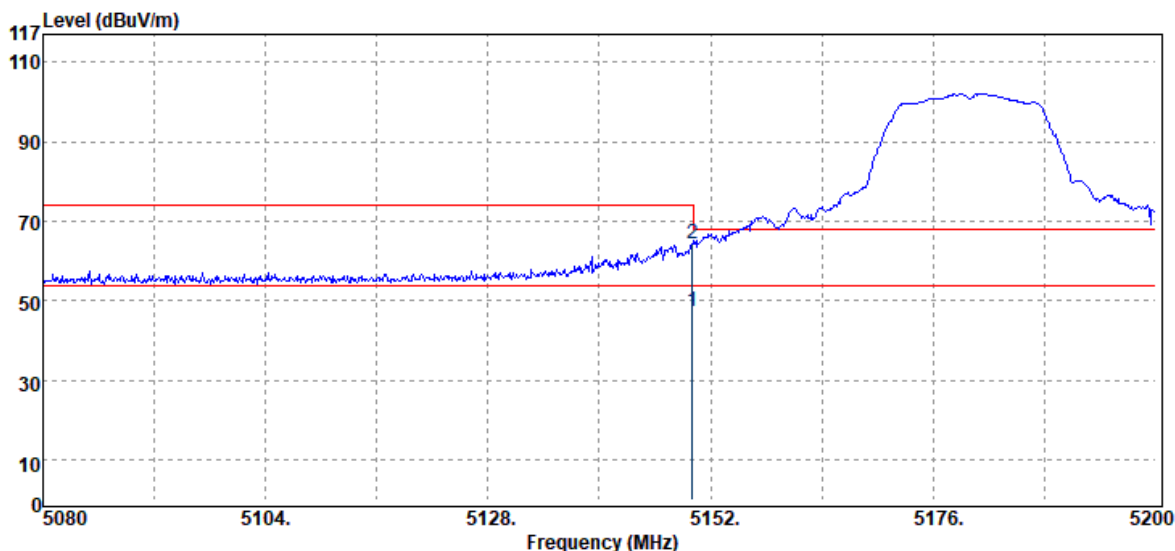
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Report Number :ER/2019/B0043  
 Operation Mode :802.11aB1  
 Test Frequency :5180 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5150.00	Average	32.49	15.02	47.51	54.00	-6.49
5150.00	Peak	49.39	15.02	64.41	74.00	-9.59

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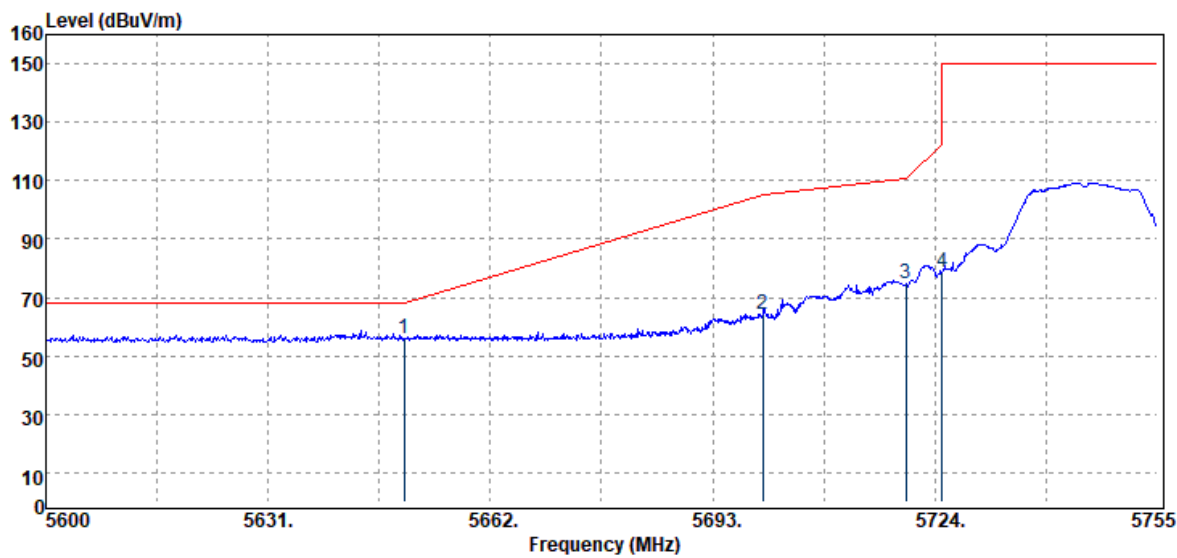
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Report Number :ER/2019/B0043  
 Operation Mode :802.11aB4  
 Test Frequency :5745 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
5650.00	Peak	40.61	15.24	55.85	68.20	-12.35
5700.00	Peak	48.89	15.17	64.06	105.20	-41.14
5720.00	Peak	59.35	15.37	74.72	110.80	-36.08
5725.00	Peak	63.36	15.42	78.78	122.20	-43.42

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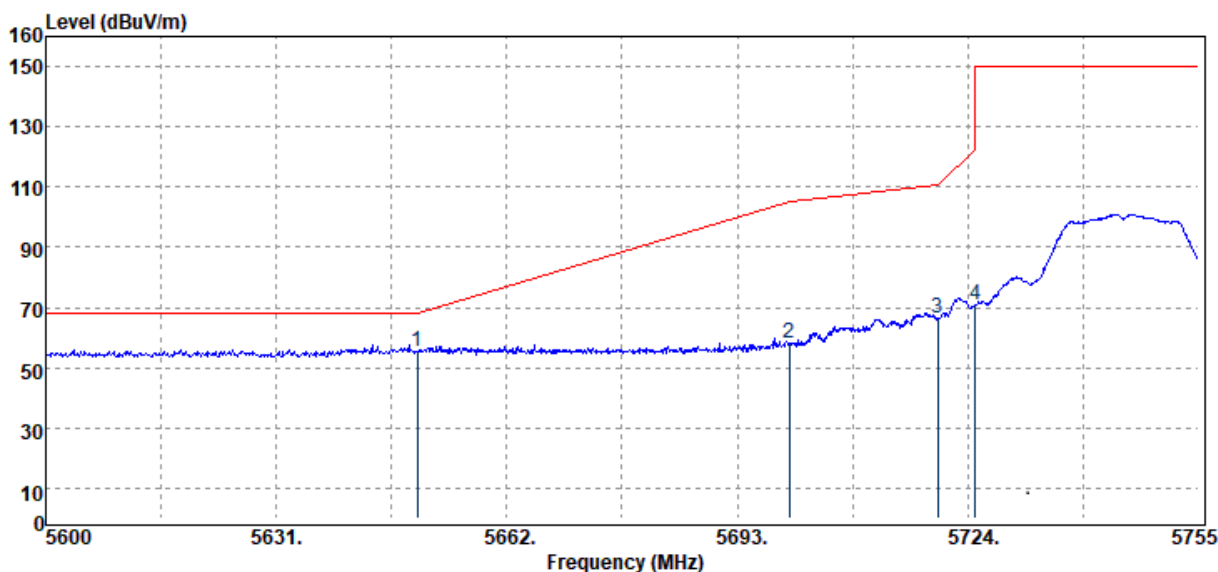
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Report Number :ER/2019/B0043  
 Operation Mode :802.11aB4  
 Test Frequency :5745 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
5650.00	Peak	40.26	15.24	55.50	68.20	-12.70
5700.00	Peak	42.75	15.17	57.92	105.20	-47.28
5720.00	Peak	50.92	15.37	66.29	110.80	-44.51
5725.00	Peak	55.51	15.42	70.93	122.20	-51.27

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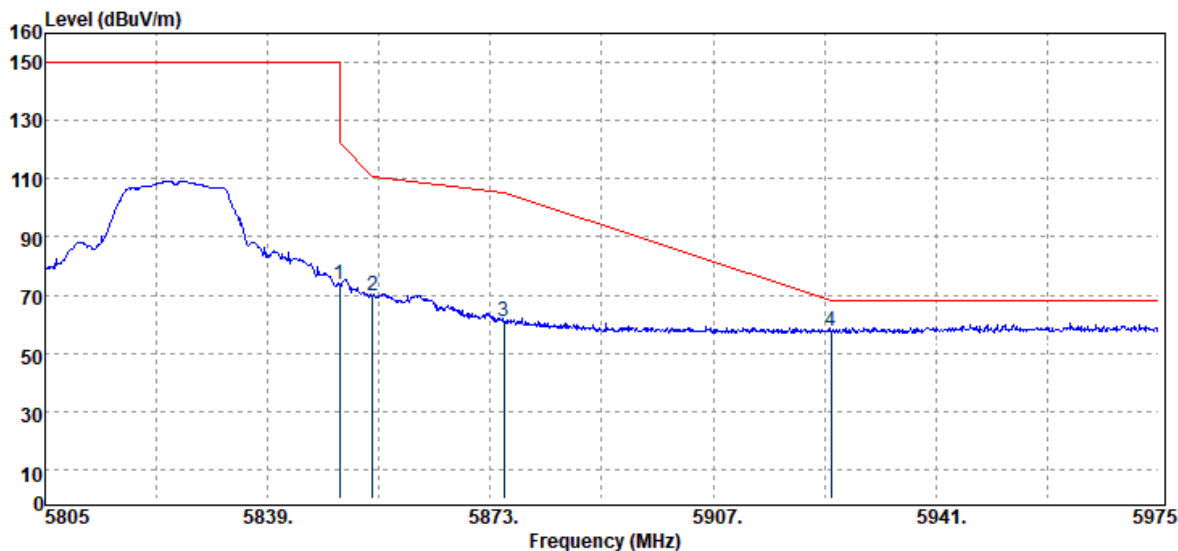
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Report Number :ER/2019/B0043  
 Operation Mode :802.11aB4  
 Test Frequency :5825 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
5850.00	Peak	57.13	16.24	73.37	122.20	-48.83
5855.00	Peak	53.74	16.26	70.00	110.80	-40.80
5875.00	Peak	44.57	16.33	60.90	105.20	-44.30
5925.00	Peak	41.21	16.41	57.62	68.20	-10.58

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Report Number :ER/2019/B0043

Operation Mode :802.11aB4

Test Frequency :5825 MHz

Test Mode :Bandedge CH Low

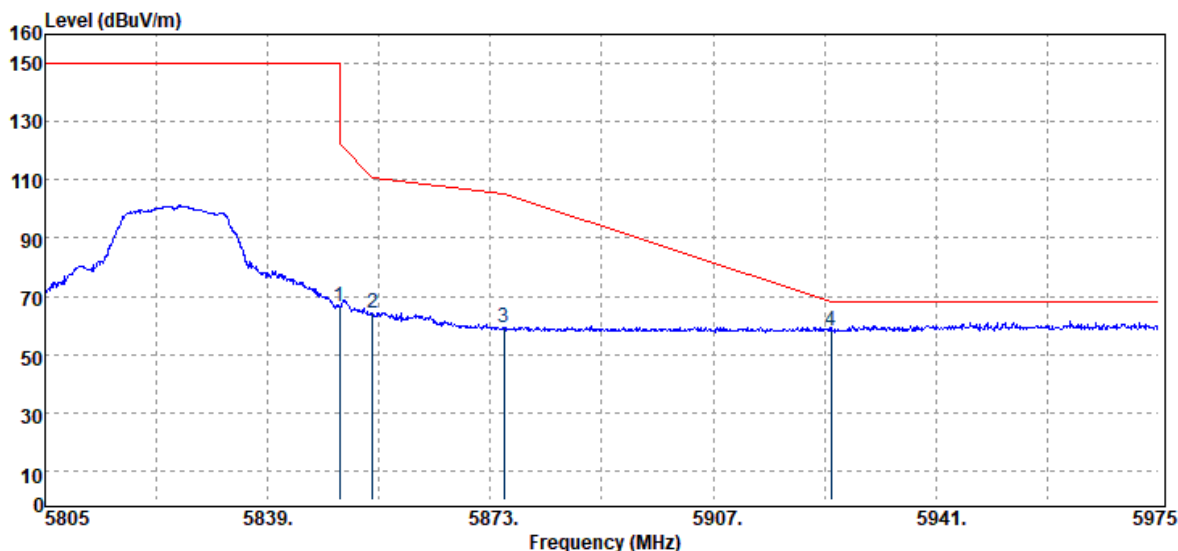
EUT Pol :E1 Plane

Test Date :2020-01-07

Temp./Humi. :21.6/69

Antenna Pol. :HORIZONTAL

Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5850.00	Peak	50.31	16.24	66.55	122.20	-55.65
5855.00	Peak	47.90	16.26	64.16	110.80	-46.64
5875.00	Peak	43.07	16.33	59.40	105.20	-45.80
5925.00	Peak	41.58	16.41	57.99	68.20	-10.21

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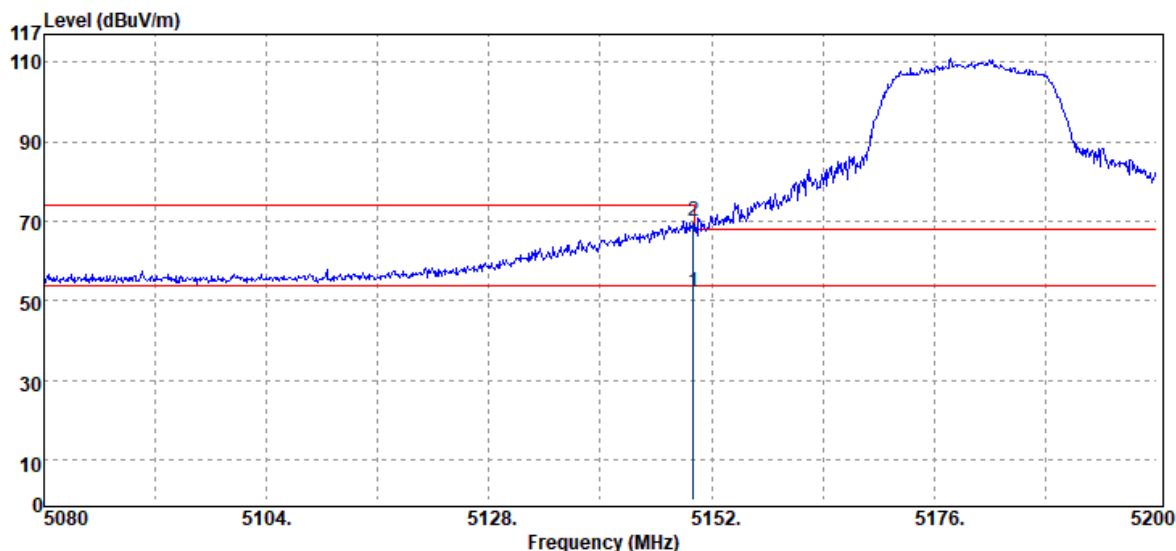
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20B1  
 Test Frequency :5180 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2019-12-10  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5150.00	Average	37.01	15.02	52.03	54.00	-1.97
5150.00	Peak	54.82	15.02	69.84	74.00	-4.16

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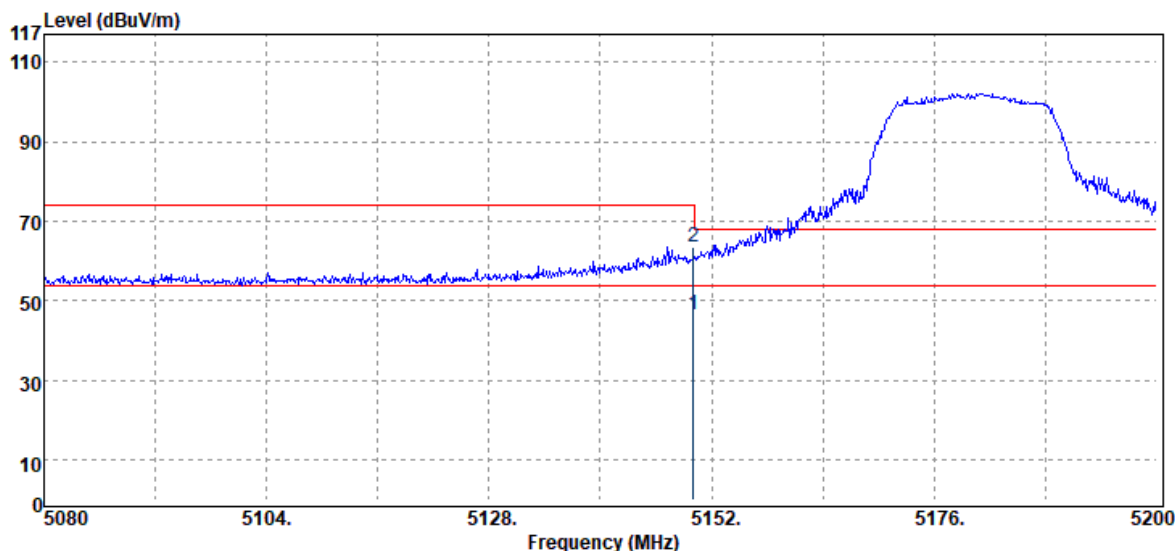
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20B1  
 Test Frequency :5180 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2019-12-10  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5150.00	Average	31.72	15.02	46.74	54.00	-7.26
5150.00	Peak	48.39	15.02	63.41	74.00	-10.59

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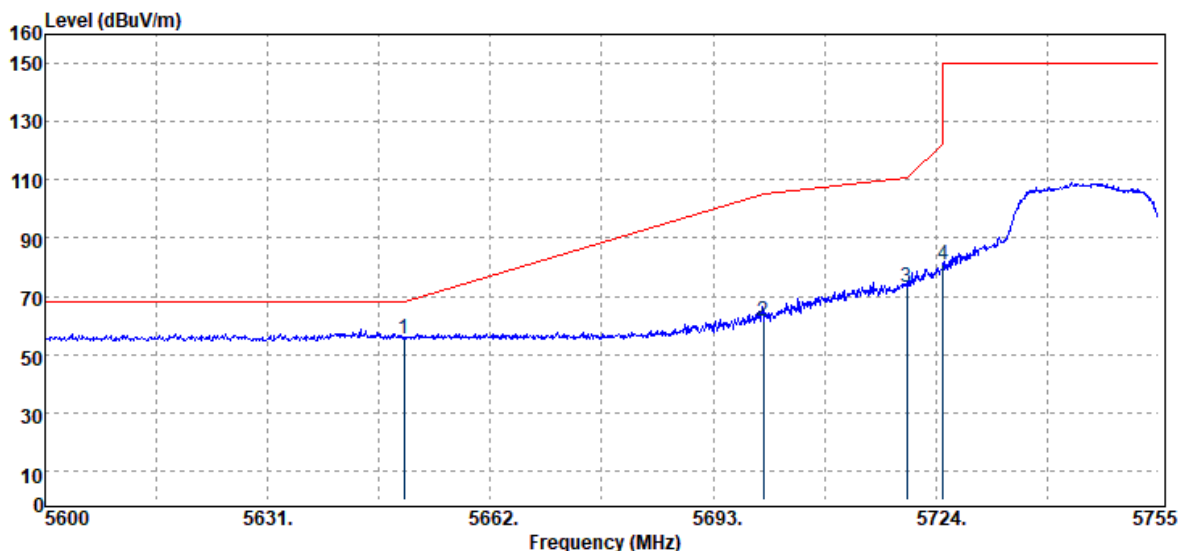
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20B4  
 Test Frequency :5745 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
5650.00	Peak	40.25	15.24	55.49	68.20	-12.71
5700.00	Peak	46.14	15.17	61.31	105.20	-43.89
5720.00	Peak	57.87	15.37	73.24	110.80	-37.56
5725.00	Peak	65.47	15.42	80.89	122.20	-41.31

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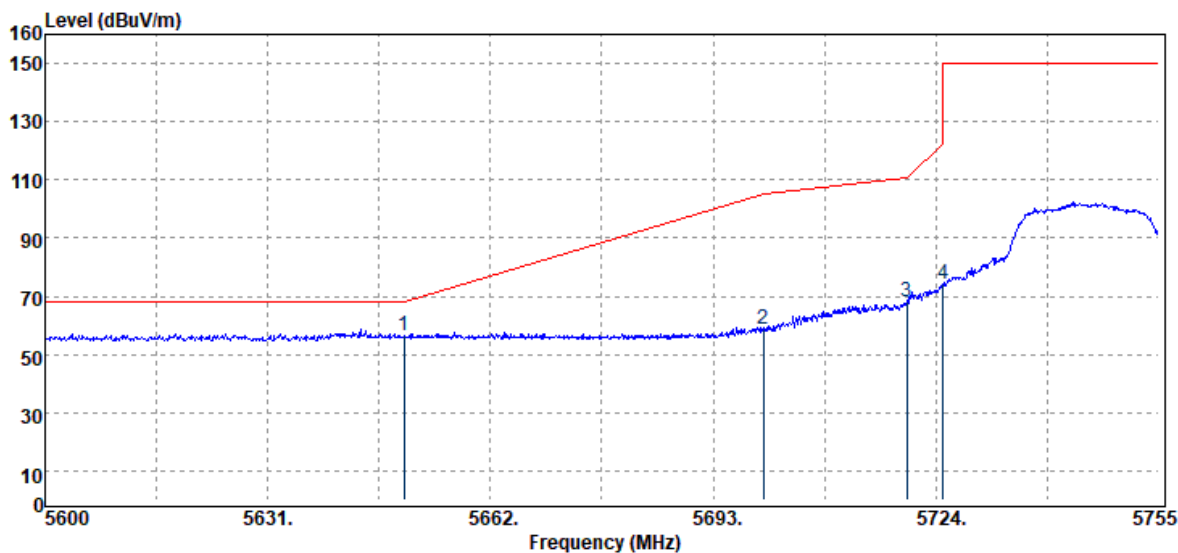
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20B4  
 Test Frequency :5745 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5650.00	Peak	41.41	15.24	56.65	68.20	-11.55
5700.00	Peak	43.69	15.17	58.86	105.20	-46.34
5720.00	Peak	52.92	15.37	68.29	110.80	-42.51
5725.00	Peak	58.97	15.42	74.39	122.20	-47.81

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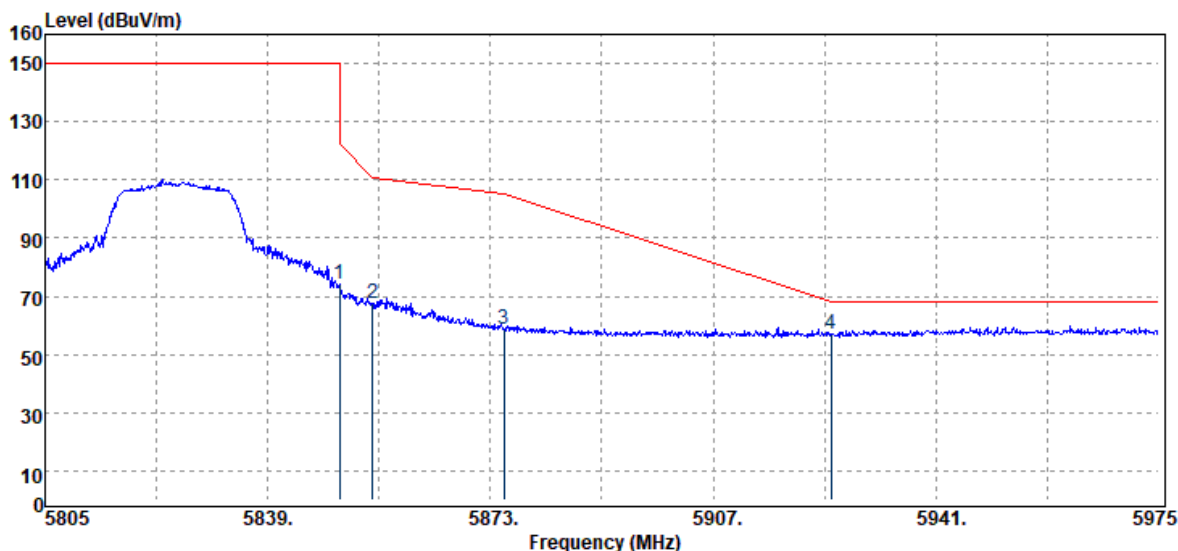
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20B4  
 Test Frequency :5825 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
5850.00	Peak	57.73	16.24	73.97	122.20	-48.23
5855.00	Peak	51.11	16.26	67.37	110.80	-43.43
5875.00	Peak	42.36	16.33	58.69	105.20	-46.51
5925.00	Peak	40.45	16.41	56.86	68.20	-11.34

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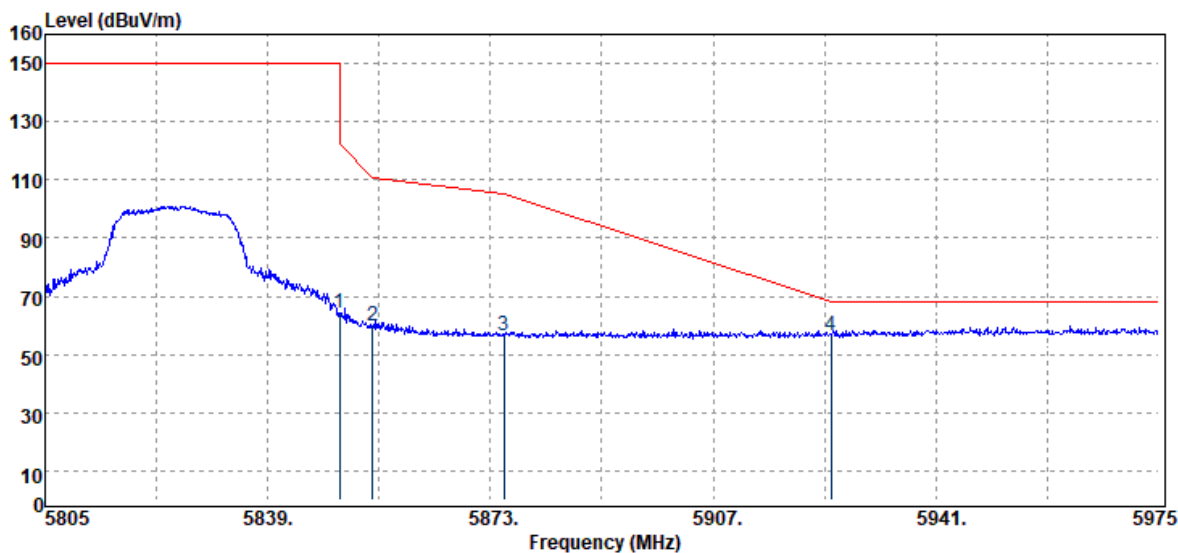
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n20B4  
 Test Frequency :5825 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5850.00	Peak	47.73	16.24	63.97	122.20	-58.23
5855.00	Peak	43.52	16.26	59.78	110.80	-51.02
5875.00	Peak	40.40	16.33	56.73	105.20	-48.47
5925.00	Peak	40.33	16.41	56.74	68.20	-11.46

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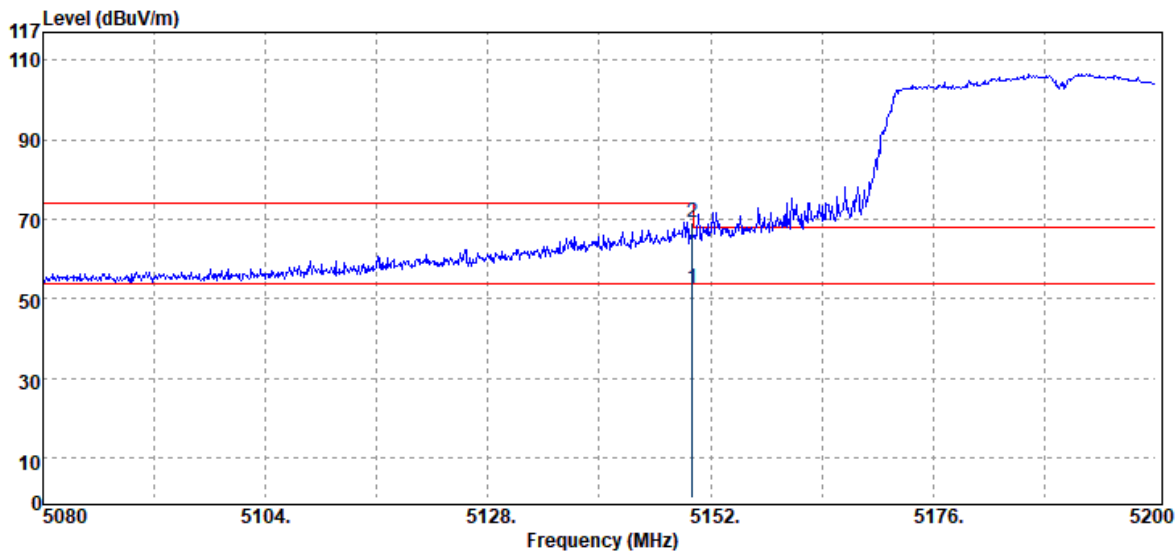
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40B1  
 Test Frequency :5190 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5150.00	Average	37.71	15.02	52.73	54.00	-1.27
5150.00	Peak	54.25	15.02	69.27	74.00	-4.73

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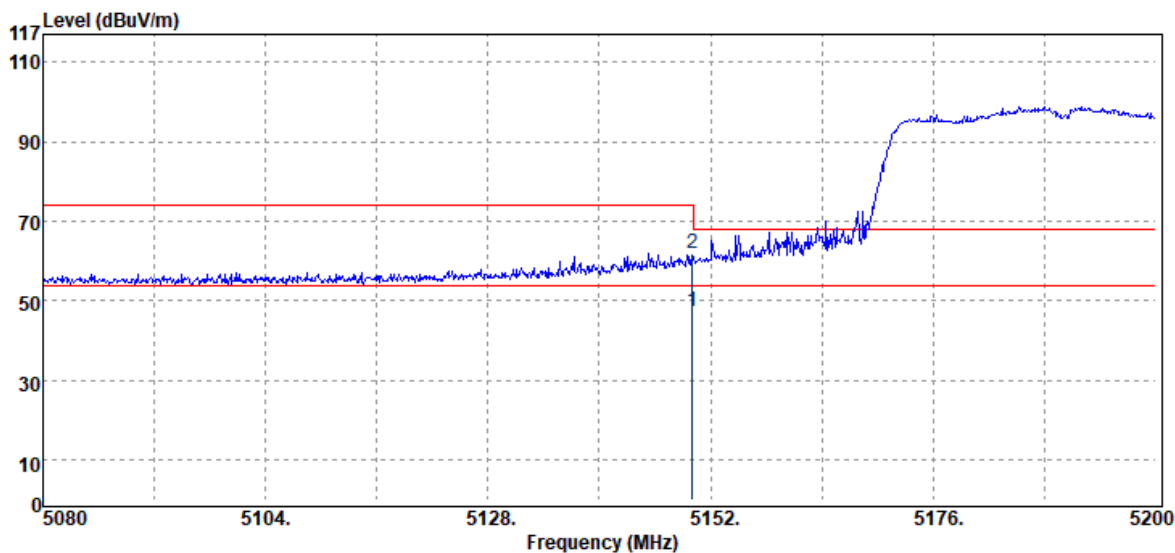
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40B1  
 Test Frequency :5190 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5150.00	Average	32.29	15.02	47.31	54.00	-6.69
5150.00	Peak	47.08	15.02	62.10	74.00	-11.90

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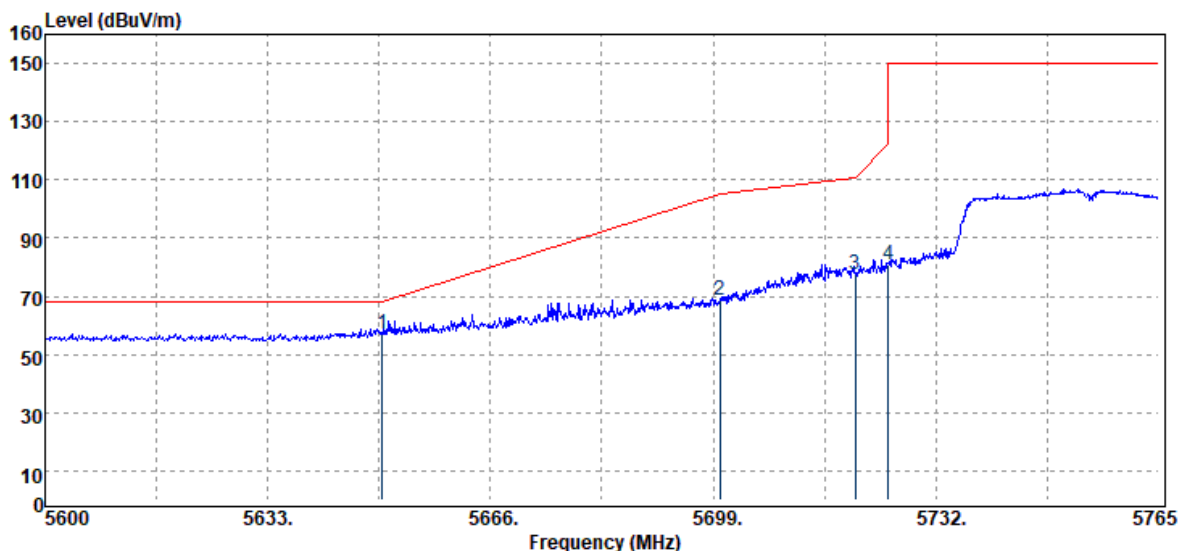
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Report Number :ER/2019/B0043  
Operation Mode :802.11n40B4  
Test Frequency :5755 MHz  
Test Mode :Bandedge CH Low  
EUT Pol :E1 Plane

Test Date :2020-01-07  
Temp./Humi. :21.6/69  
Antenna Pol. :VERTICAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBuV	Factor dB	Actual FS dBuV/m	Limit @3m dBuV/m	Margin dB
5650.00	Peak	41.97	15.24	57.21	68.20	-10.99
5700.00	Peak	53.65	15.17	68.82	105.20	-36.38
5720.00	Peak	62.41	15.37	77.78	110.80	-33.02
5725.00	Peak	65.60	15.42	81.02	122.20	-41.18

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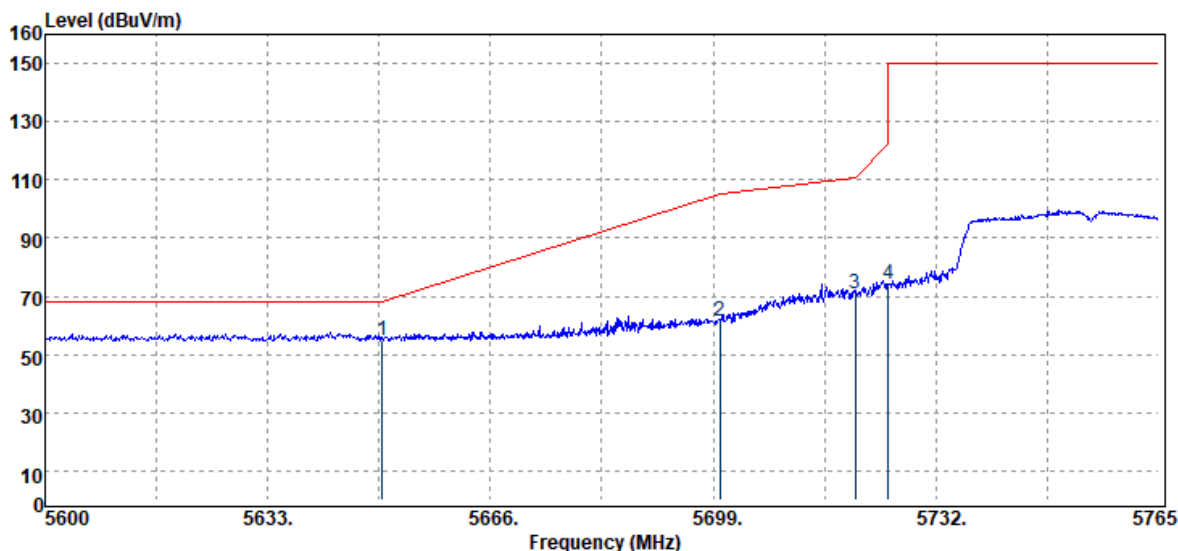
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40B4  
 Test Frequency :5755 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5650.00	Peak	39.80	15.24	55.04	68.20	-13.16
5700.00	Peak	46.17	15.17	61.34	105.20	-43.86
5720.00	Peak	55.76	15.37	71.13	110.80	-39.67
5725.00	Peak	58.75	15.42	74.17	122.20	-48.03

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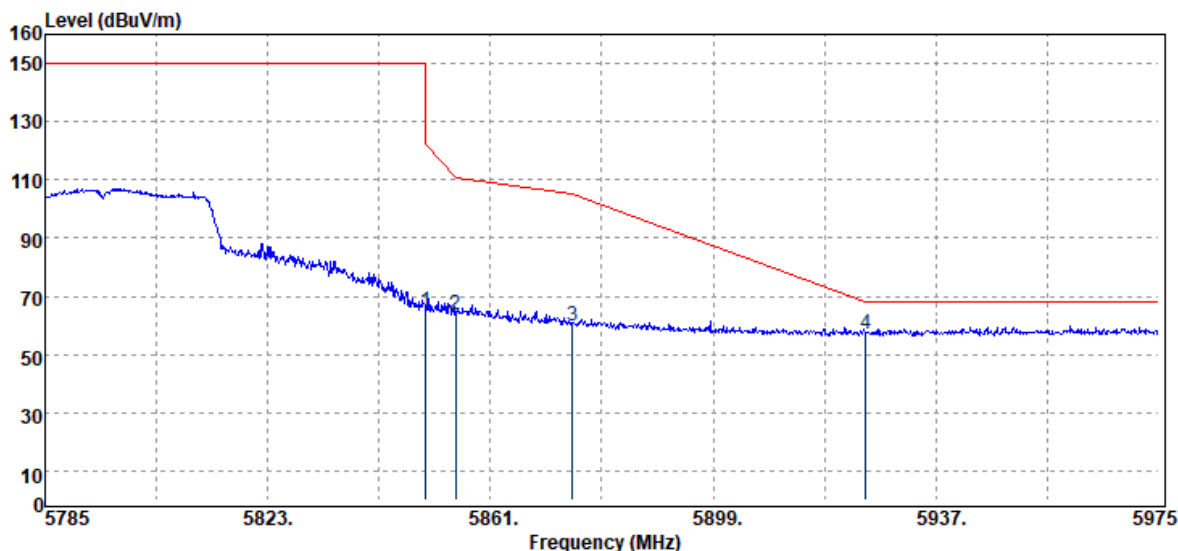
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40B4  
 Test Frequency :5795 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
5850.00	Peak	48.62	16.24	64.86	122.20	-57.34
5855.00	Peak	47.52	16.26	63.78	110.80	-47.02
5875.00	Peak	43.73	16.33	60.06	105.20	-45.14
5925.00	Peak	40.78	16.41	57.19	68.20	-11.01

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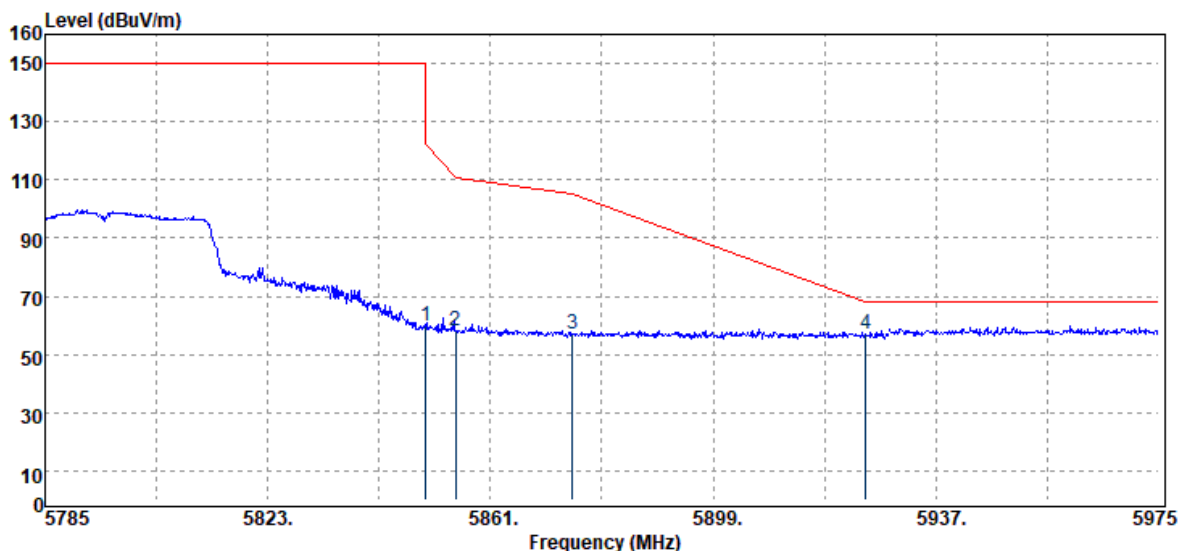
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Report Number :ER/2019/B0043  
 Operation Mode :802.11n40B4  
 Test Frequency :5795 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5850.00	Peak	43.59	16.24	59.83	122.20	-62.37
5855.00	Peak	42.04	16.26	58.30	110.80	-52.50
5875.00	Peak	40.44	16.33	56.77	105.20	-48.43
5925.00	Peak	40.54	16.41	56.95	68.20	-11.25

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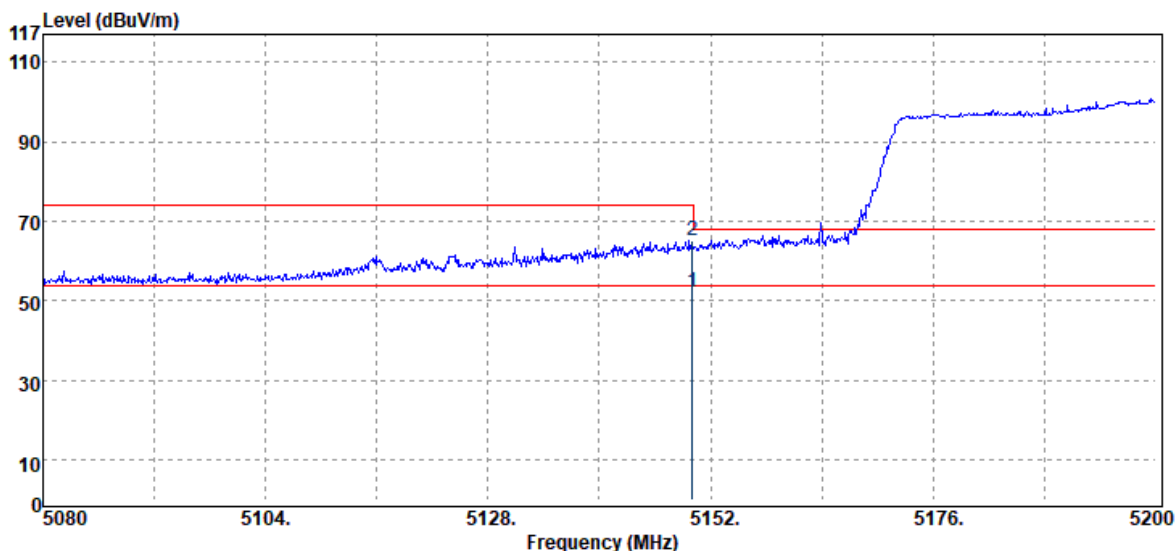
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Report Number :ER/2019/B0043  
Operation Mode :802.11ac80B1  
Test Frequency :5210 MHz  
Test Mode :Bandedge CH Low  
EUT Pol :E1 Plane

Test Date :2020-01-07  
Temp./Humi. :21.6/69  
Antenna Pol. :VERTICAL  
Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5150.00	Average	37.01	15.02	52.03	54.00	-1.97
5150.00	Peak	50.00	15.02	65.02	74.00	-8.98

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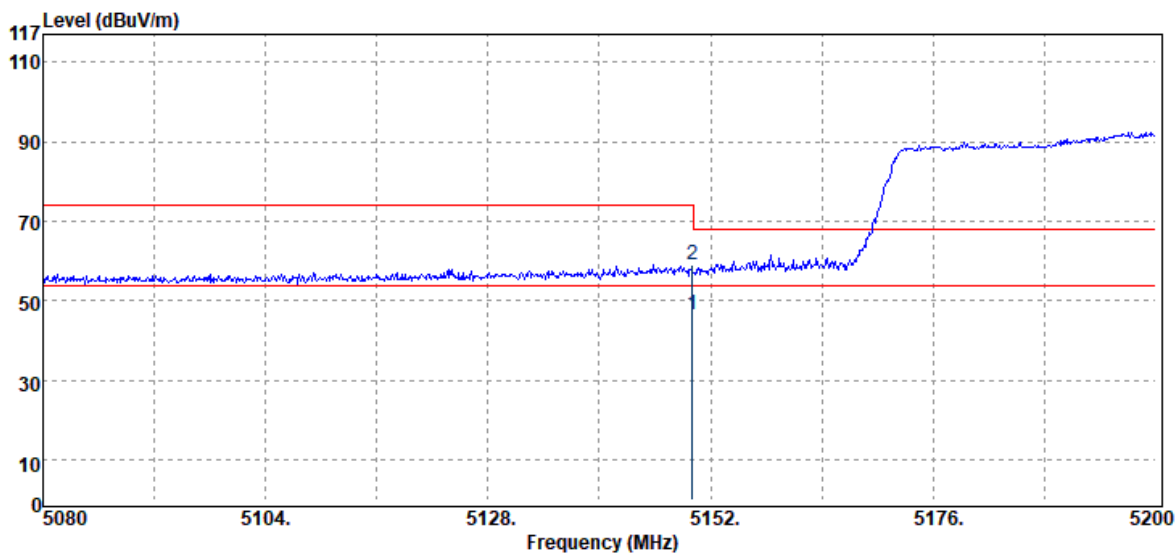
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Report Number :ER/2019/B0043  
 Operation Mode :802.11ac80B1  
 Test Frequency :5210 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5150.00	Average	31.41	15.02	46.43	54.00	-7.57
5150.00	Peak	43.90	15.02	58.92	74.00	-15.08

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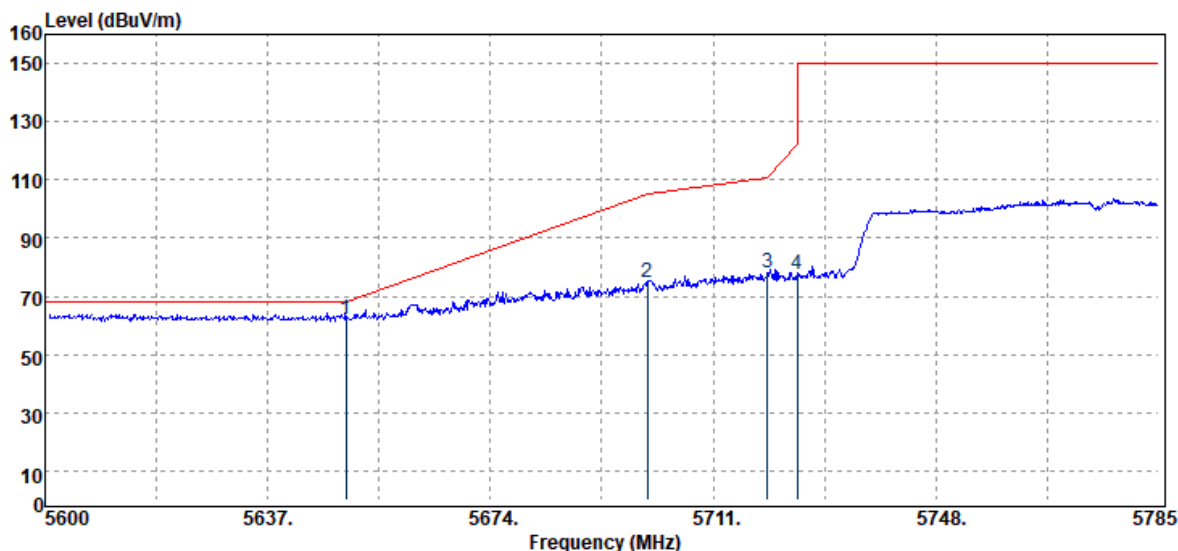
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Report Number :ER/2019/B0043  
 Operation Mode :802.11ac80B4  
 Test Frequency :5775 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
5650.00	Peak	46.52	15.24	61.76	68.20	-6.44
5700.00	Peak	59.38	15.17	74.55	105.20	-30.65
5720.00	Peak	62.43	15.37	77.80	110.80	-33.00
5725.00	Peak	61.82	15.42	77.24	122.20	-44.96

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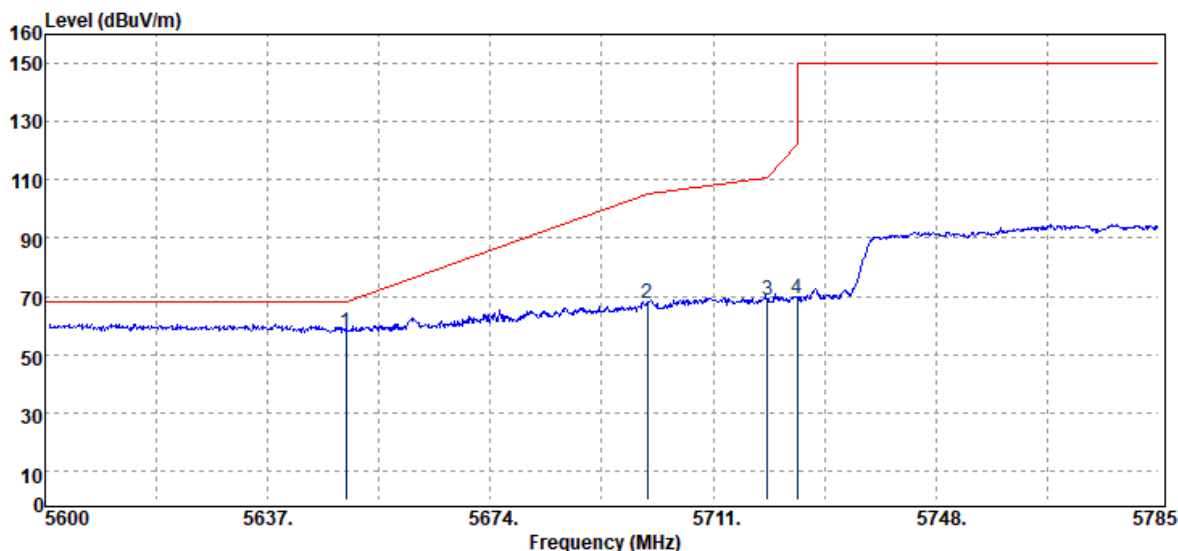
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Report Number :ER/2019/B0043  
 Operation Mode :802.11ac80B4  
 Test Frequency :5775 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :HORIZONTAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBUV	Factor dB	Actual FS dBUV/m	Limit @3m dBUV/m	Margin dB
5650.00	Peak	42.57	15.24	57.81	68.20	-10.39
5700.00	Peak	52.38	15.17	67.55	105.20	-37.65
5720.00	Peak	53.26	15.37	68.63	110.80	-42.17
5725.00	Peak	53.88	15.42	69.30	122.20	-52.90

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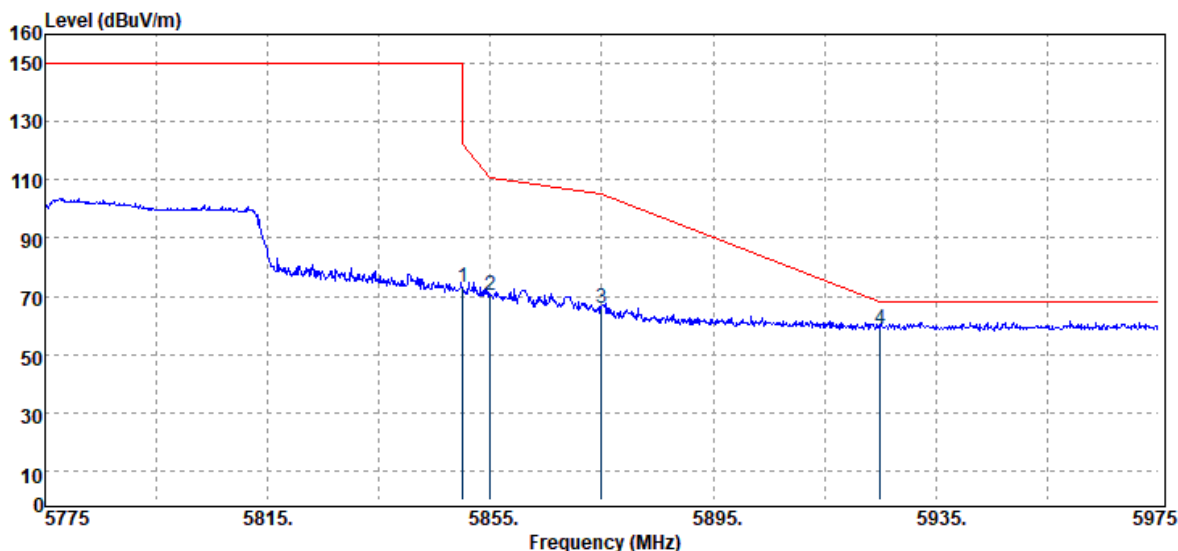
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Report Number :ER/2019/B0043  
 Operation Mode :802.11ac80B4  
 Test Frequency :5775 MHz  
 Test Mode :Bandedge CH Low  
 EUT Pol :E1 Plane

Test Date :2020-01-07  
 Temp./Humi. :21.6/69  
 Antenna Pol. :VERTICAL  
 Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
5850.00	Peak	56.58	16.24	72.82	122.20	-49.38
5855.00	Peak	54.08	16.26	70.34	110.80	-40.46
5875.00	Peak	49.28	16.33	65.61	105.20	-39.59
5925.00	Peak	42.26	16.41	58.67	68.20	-9.53

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Report Number :ER/2019/B0043

Operation Mode :802.11ac80B4

Test Frequency :5775 MHz

Test Mode :Bandedge CH Low

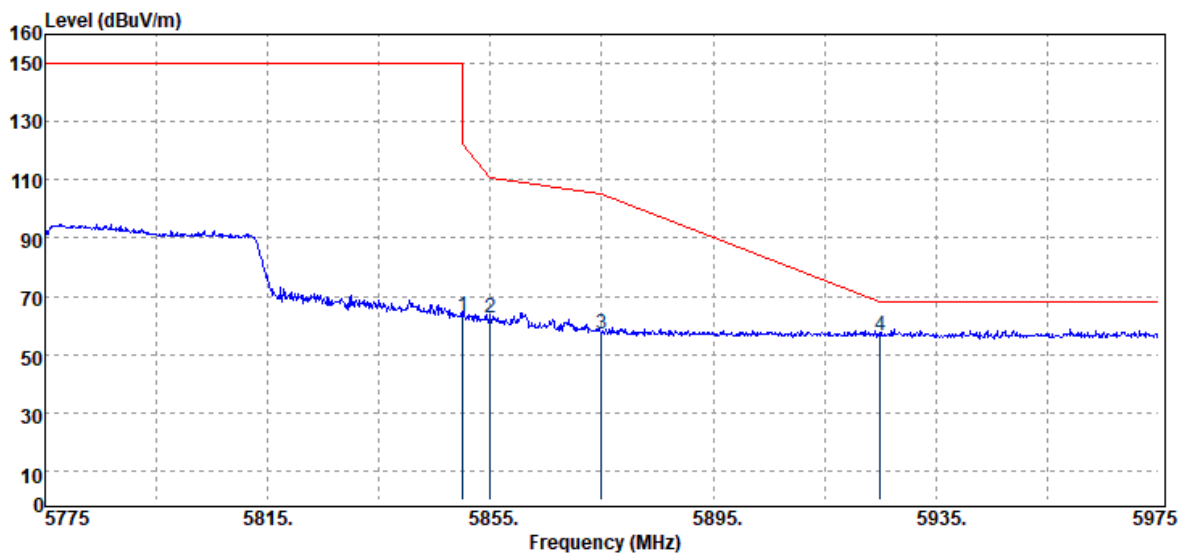
EUT Pol :E1 Plane

Test Date :2020-01-07

Temp./Humi. :21.6/69

Antenna Pol. :HORIZONTAL

Engineer :Thomas



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
5850.00	Peak	46.72	16.24	62.96	122.20	-59.24
5855.00	Peak	46.33	16.26	62.59	110.80	-48.21
5875.00	Peak	40.88	16.33	57.21	105.20	-47.99
5925.00	Peak	40.23	16.41	56.64	68.20	-11.56

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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 control-signal of ASK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

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## 13 FREQUENCY STABILITY

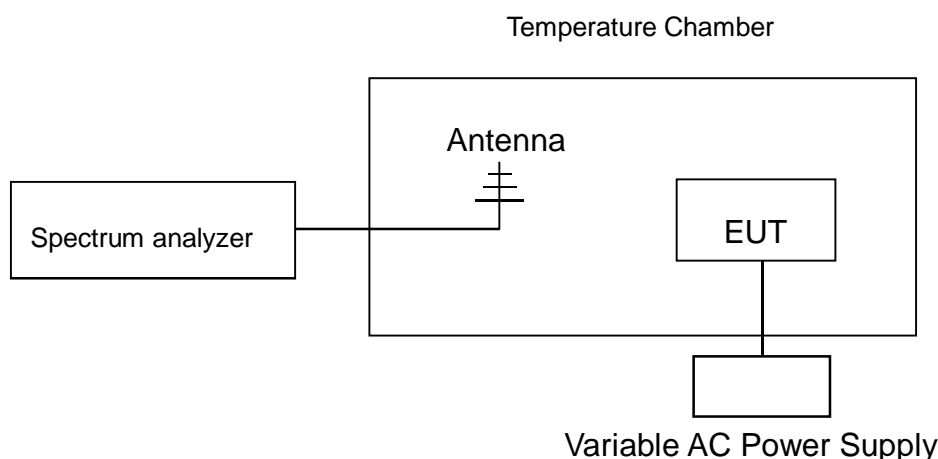
### 13.1 Standard Applicable

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.
4. 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



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### 13.1 Measurement Equipment Used:

SGS Conducted Room					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	05/02/2019	05/01/2020
DC Power Supply	Agilent	E3640A	MY40005907	10/22/2019	10/21/2020
Attenuator	Mini-Circuit	BW-S10W2+	2	01/02/2020	01/01/2021
DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2019	01/04/2020

Note: The measurement was taken place with the long duration of the time, and additional equipment list as shown blow indicate those equipment of which has been subject to undertake the calibration in intermediate period of time of the measurement.

SGS Conducted Room					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2020	01/01/2021

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## 13.2 Measurement Result

### Start up

Operation Mode	802.11 a	Test Date	2020.2.19
Temperature	: 21.5°C	Test By	Tom
Humidity	: 45%		

Test Temp.(°C)	Test Voltage(V)	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
0	5.5	36	5180	5,179.91000	0.00001737
	3.9	36	5180	5,179.95000	0.00000965
25	5	36	5180	5,180.03800	-0.00000734
40	5.5	36	5180	5,179.95600	0.00000849
	3.9	36	5180	5,180.02900	-0.00000560

### 2 minutes

Operation Mode	802.11 a	Test Date	2020.2.19
Temperature	: 21.5°C	Test By	Tom
Humidity	: 45%		

Test Temp.(°C)	Test Voltage(V)	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
0	5.5	36	5180	5,179.91100	0.00001718
	3.9	36	5180	5,180.05200	-0.00001004
25	5	36	5180	5,179.95600	0.00000849
40	5.5	36	5180	5,179.91600	0.00001622
	3.9	36	5180	5,180.00300	-0.00000058

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No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

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## 5 minutes

Operation Mode	802.11 a	Test Date	2020.2.19
Temperature	: 21.5°C	Test By	Tom
Humidity	: 45%		

Test Temp.(°C)	Test Voltage(V)	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
0	5.5	36	5180	5,180.07200	-0.00001390
	3.9	36	5180	5,179.95800	0.00000811
25	5	36	5180	5,179.94200	0.00001120
40	5.5	36	5180	5,179.94200	0.00001120
	3.9	36	5180	5,180.09400	-0.00001815

## 10 minutes

Operation Mode	802.11 a	Test Date	2020.2.19
Temperature	: 21.5°C	Test By	Tom
Humidity	: 45%		

Test Temp.(°C)	Test Voltage(V)	Channel	Measured Frequency (MHz)	Spectrum Frequency (MHz)	ΔFrequency (MHz)
0	5.5	36	5180	5,179.93900	0.00001178
	3.9	36	5180	5,180.08000	-0.00001544
25	5	36	5180	5,180.01200	-0.00000232
40	5.5	36	5180	5,180.01800	-0.00000347
	3.9	36	5180	5,179.91800	0.00001583

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## 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 with unique RF connector and no consideration of replacement. Please see EUT photo for details.

*~ End of Report ~*

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