

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## INTENTIONAL RADIATOR CERTIFICATION REFERENCING TEST DATA ACROSS SEPARATE EQUIPMENT VERIFICATION

OF

**Applicant:** Sharp Corporation, Mobile Communication B.U.  
2-13-1, Hachihonmatsu-lida, Higashi-hiroshima-shi,  
Hiroshima 739-0192, Japan

**Manufacturer:** Sharp Corporation  
1 Takumi-cho, Sakai-ku, Sakai-Shi, Osaka 590-8522, Japan

**Product Name:** Smart Phone

**Report Number:** ER/2018/90135

**FCC ID:** APYHRO00266

**FCC Rule Part:** §15.225  
§15.247, Cat: DSS & DTS  
§15.407, Cat: NII

**Issue Date:** Oct. 02, 2018

**Date of Test:** Aug. 01, 2018 ~ Sep. 07, 2018

**Date of EUT Received:** Aug. 01, 2018

**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.

**Tested By:**

*Marcus Tseng*

**Marcus Tseng / Sr. Engineer**

**Approved By:**

*CHUN-CHIEH, CHEN*

**CHUN-CHIEH, CHEN /**

**Asst. Supervisor**



Testing Laboratory  
0513

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## Revision History

Report Number	Revision	Description	Effectuated Page	Issue Date	Revised By
ER/2018/90135	Rev.00	Initial creation of document	All	Oct. 02, 2018	Yuri Tsai

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# 1 GENERAL INFORMATION

## 1.1 Product description

General:

Product Name:	Smart Phone
Hardware Version:	DVT
Software Version:	N/A
Power Supply:	3.85V from Rechargeable Li-ion Battery

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## 1.2 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.225

FCC Part 15, Subpart C §15.247

FCC Part 15, Subpart E §15.407

FCC KDB 558074 D01 DTS Meas. Guidance

KDB 789033 D02 v02r01 General UNII Test Procedures New Rules

ANSI C63.10:2013

Note: All test items have been performed and record as per the above standards.

## 1.3 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road,  
New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803

(TAF code 0513)

FCC Registration Numbers are: 509634 / TW0001

## 1.4 Special Accessories

There are no special accessories used while test was conducted.

## 1.5 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 Radiated Emissions for DXX

The EUT is placed on a turn table which is 0.8 m above ground plan. 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 hand-held transmitter (EUT) was rotated through one orthogonal axis 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.

#### 2.3.2 Radiated Emissions for DSS & DTS

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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### 2.3.2 Radiated Emissions for NII

The EUT is a placed on as turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plan. 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 Configuration of Tested System

Fig. 2-1 Radiated Emission Configuration (NFC& BT & BLE & WLAN)



Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	NFC Test Software	N/A	N/A	N/A	N/A	N/A
2.	Bluetooth Test Software	N/A	N/A	N/A	N/A	N/A
3.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A

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### 3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.225 (a)-(d)	Radiated Emission	Compliant
§15.247(d)	Radiated Spurious Emission	Compliant
§15.407(b)	Undesirable Radiated Emissions	Compliant

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## 4 DESCRIPTION OF TEST MODES

### 4.1 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 and receiving mode is programmed.
3. Investigation has been done base on the worst case of original FCC ID: APYHRO00265 for DXX, DSS, DTS and NII.

#### RADIATED EMISSION TEST:

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	Worst Case Position H / E1 / E2
NFC	1	1	ASK	-	H
Bluetooth	0 to 78	0,39,78	8-DPSK	3DH5	H
Bluetooth LE	0 to 39	0,19,39	GFSK	1	H
802.11b	1 to 11	1, 6, 11	DSSS	1	H
802.11g	1 to 11	1, 6, 11	OFDM	6	H
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	MCS 0	H
802.11a	100 to 140	116	OFDM	6	H
802.11n_HT20	100 to 140	116	OFDM	MCS 0	H
802.11n_HT40	102 to 134	134	OFDM	MCS 0	H
802.11ac_VHT80	106 to 122	106	OFDM	MCS 0	H

#### Note:

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

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## 5 MEASUREMENT UNCERTAINTY

Radiated Spurious Emission:

Measurement uncertainty (Polarization : <b>Vertical</b> )	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : <b>Horizontal</b> )	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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## 6 RADIATED SPURIOUS EMISSION MEASUREMENT

### 6.1 Measurement Equipment Used:

SGS SAC-III					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Bi-log Antenna	SCHWAZBECK	VULB9168	378	2017/12/29	2018/12/28
Horn Antenna	Schwarzbeck	BBHA9120D	1441	2017/08/04	2019/08/03
Horn Antenna	Schwarzbeck	BBHA9170	184	2017/12/12	2018/12/11
Loop Antenna	ETS.LINDGREN	6502	148045	2017/09/26	2018/09/25
3m Site NSA	SGS	966 chamber	N/A	2018/01/02	2019/01/01
Spectrum Analyzer	Agilent	E4446A	MY51100003	2018/05/15	2019/05/14
EMI Test Receiver	R&S	ESC17	100335	2018/02/02	2019/02/01
Pre-Amplifier	HP	8449B	3008A00578	2018/01/02	2019/01/01
Pre-Amplifier	HP	8447D	2944A07676	2018/01/02	2019/01/01
Pre-Amplifier	EMC Instruments	EMC184045B	980135	2017/10/27	2018/10/26
Attenuator	Mini-Circuit	BW-S10W2+	2	2018/01/02	2019/01/01
2GHz High Pass Filter	Micro-Tronics	HPM50110	36	2018/01/02	2019/01/01
Filter 5150-5350 MHz	Micro-Tronics	BRM50703	1	2018/01/02	2019/01/01
Low Loss Cable	Huber Suhner	966_RX	9	2018/01/02	2019/01/01
Notebook	Lenovo	L430	R9-X11BG	N/A	N/A

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

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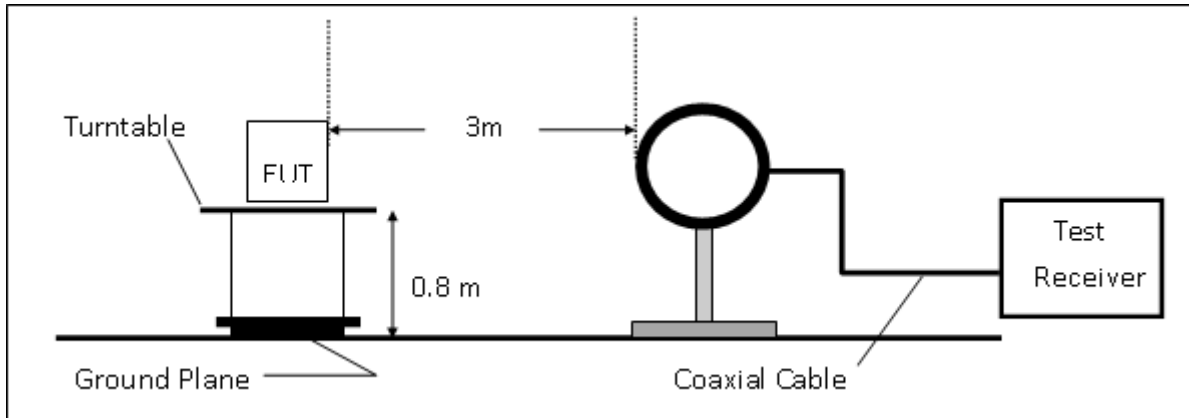
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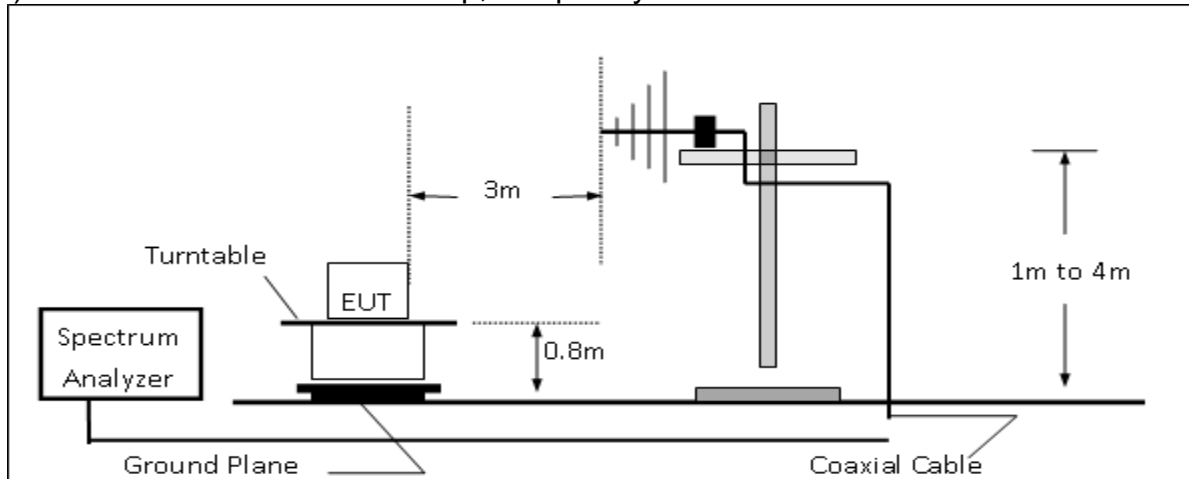
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## 6.2 Test SET-UP

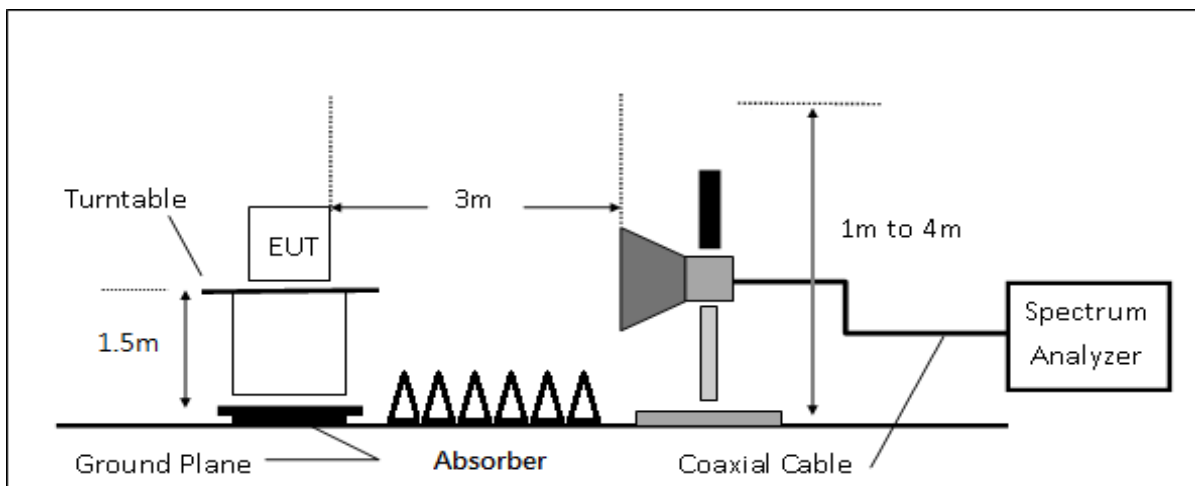
(A) Radiated Emission Test Set-Up Frequency Below 30MHz.



(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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### 6.3 Measurement Procedure

1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
2. The EUT was placed on a turn table with 1.5m for frequency > 1GHz above ground plane.
3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
5. When 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.
6. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
7. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
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. On spectrum, change spectrum mode in linear display mode, and reduce VBW = 10Hz if average reading is measured.
10. Repeat above procedures until all default test channel measured were complete.

### 6.4 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	

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

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

#### Note :

“F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

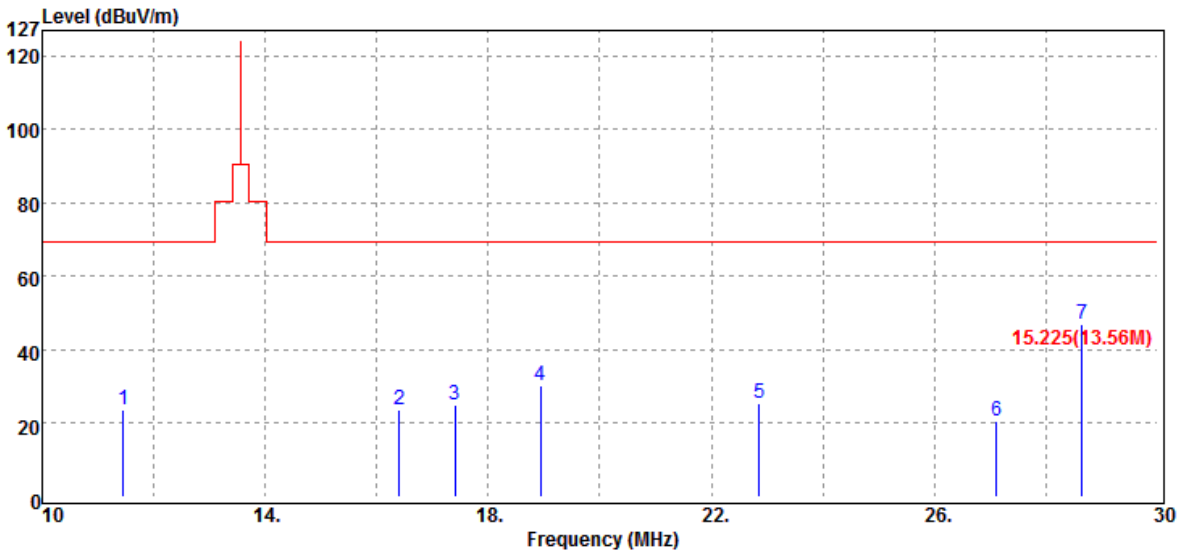
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### 6.5 Measurement Result

Operation Band	:NFC	Test Date	:2018-09-07
Fundamental Frequency	:13.56 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level	dB	FS	@3m	dB
MHz	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
11.46	Peak	12.16	11.47	23.63	69.54	-45.91
16.40	Peak	12.18	11.59	23.77	69.54	-45.77
17.40	Peak	13.29	11.61	24.90	69.54	-44.64
18.94	Peak	18.65	11.65	30.30	69.54	-39.24
22.86	Peak	14.47	10.90	25.37	69.54	-44.17
27.12	Peak	10.02	9.94	19.96	69.54	-49.58
28.64	Peak	37.45	9.62	47.07	69.54	-22.47

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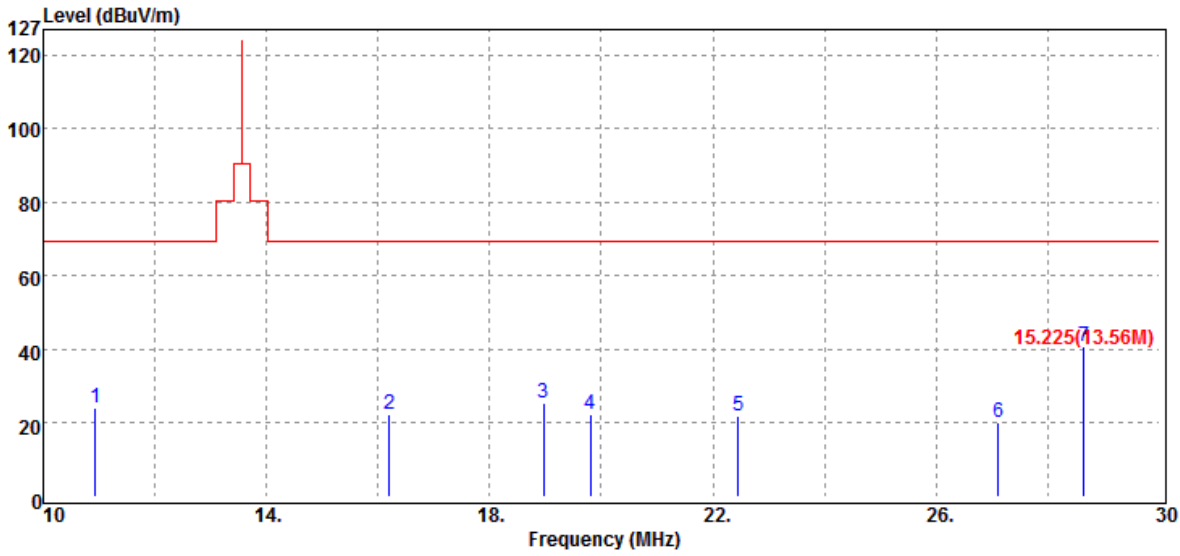
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Operation Band	:NFC	Test Date	:2018-09-07
Fundamental Frequency	:13.56 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



Freq. MHz	Detector Mode	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
10.94	Peak	12.58	11.45	24.03	69.54	-45.51
16.20	Peak	11.03	11.58	22.61	69.54	-46.93
18.96	Peak	13.99	11.65	25.64	69.54	-43.90
19.80	Peak	10.80	11.67	22.47	69.54	-47.07
22.46	Peak	11.00	10.99	21.99	69.54	-47.55
27.12	Peak	10.09	9.94	19.71	69.54	-49.83
28.64	Peak	31.13	9.62	40.75	69.54	-28.79

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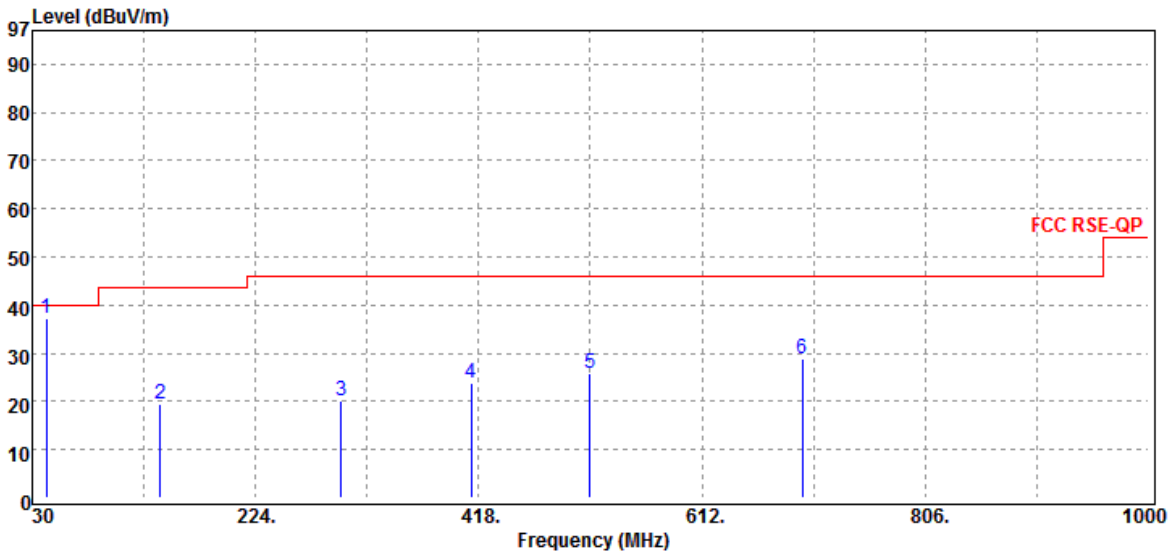
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Operation Band	:NFC	Test Date	:2018-09-07
Fundamental Frequency	:13.56 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



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
42.61	Peak	45.43	-8.05	37.38	40.00	-2.62
141.55	Peak	27.20	-7.88	19.32	43.50	-24.18
298.69	Peak	25.78	-5.55	20.23	46.00	-25.77
411.21	Peak	26.74	-2.97	23.77	46.00	-22.23
515.00	Peak	27.30	-1.43	25.87	46.00	-20.13
699.30	Peak	27.20	1.74	28.94	46.00	-17.06

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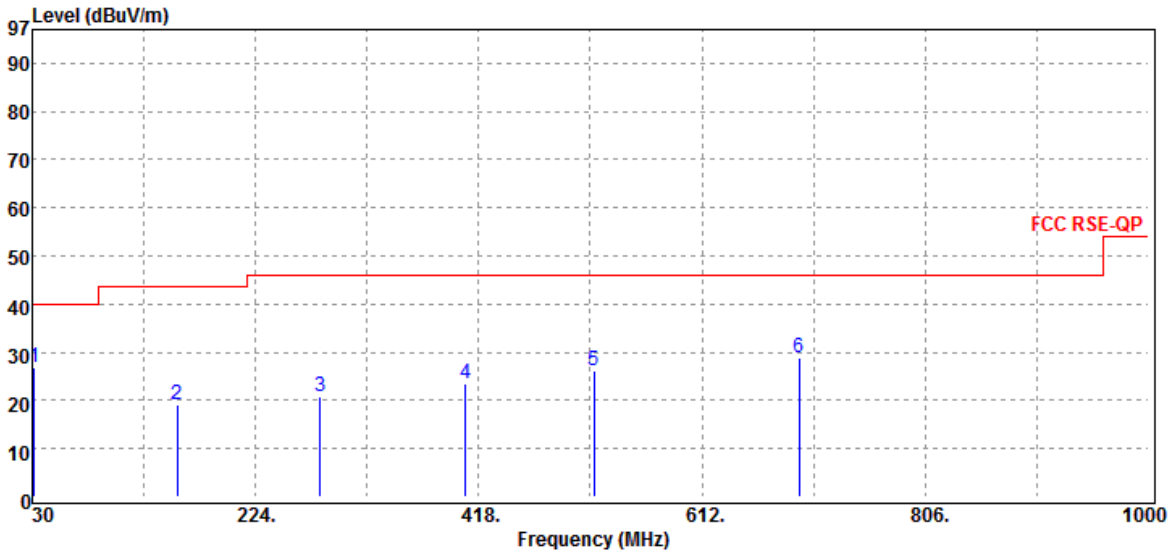
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Operation Band	:NFC	Test Date	:2018-09-07
Fundamental Frequency	:13.56 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



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
31.94	Peak	35.83	-8.88	26.95	40.00	-13.05
156.10	Peak	26.26	-7.24	19.02	43.50	-24.48
280.26	Peak	26.85	-6.12	20.73	46.00	-25.27
406.36	Peak	26.44	-2.93	23.51	46.00	-22.49
517.91	Peak	27.74	-1.46	26.28	46.00	-19.72
696.39	Peak	27.82	1.13	28.95	46.00	-17.05

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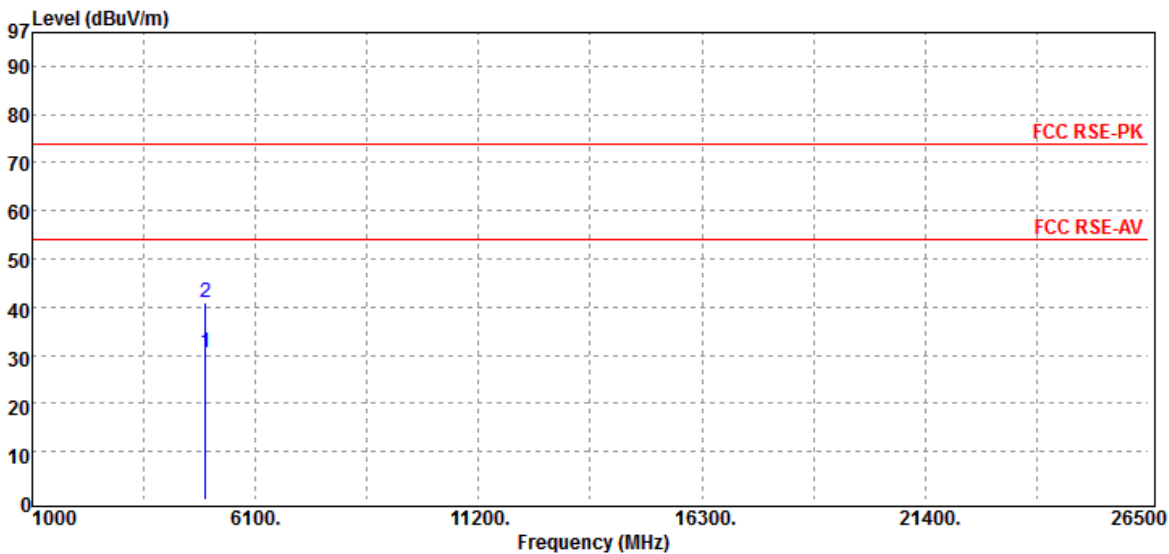
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Operation Band	:EDR(3M)	Test Date	:2018-09-05
Fundamental Frequency	:2480 MHz	Temp./Humi.	:23 deg_C / 62 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



Freq. MHz	Detector Mode	Spectrum Reading Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB
4960.00	Average	24.39	6.05	30.44	54.00	-23.56
4960.00	Peak	34.58	6.05	40.63	74.00	-33.37

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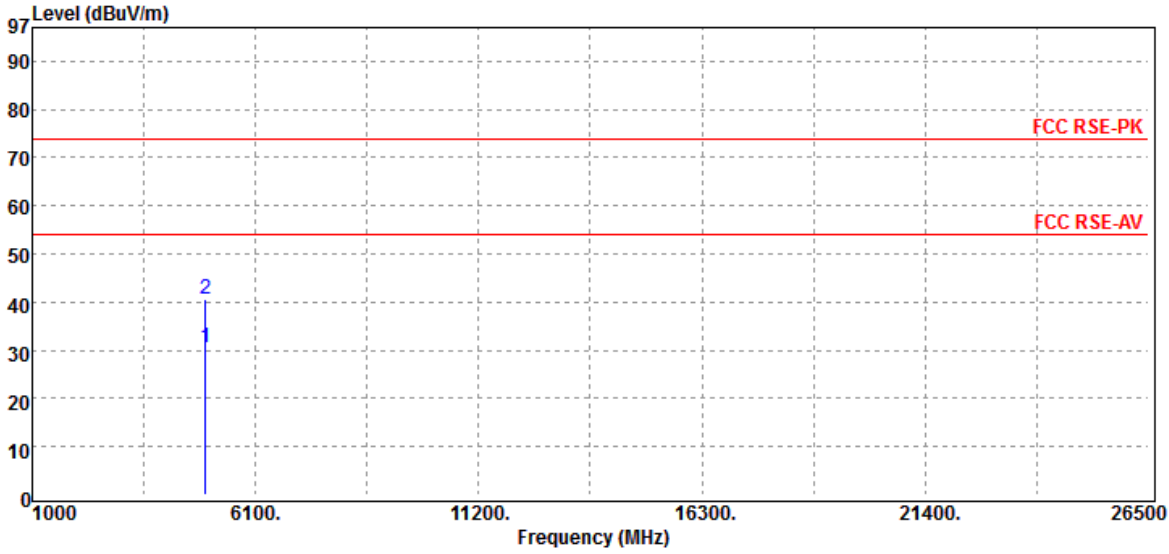
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Operation Band	:EDR(3M)	Test Date	:2018-09-05
Fundamental Frequency	:2480 MHz	Temp./Humi.	:23 deg_C / 62 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level	dB	FS	@3m	dB
	PK/QP/AV	dBμV		dBμV/m	dBμV/m	
4960.00	Average	24.59	6.05	30.64	54.00	-23.36
4960.00	Peak	34.70	6.05	40.75	74.00	-33.25

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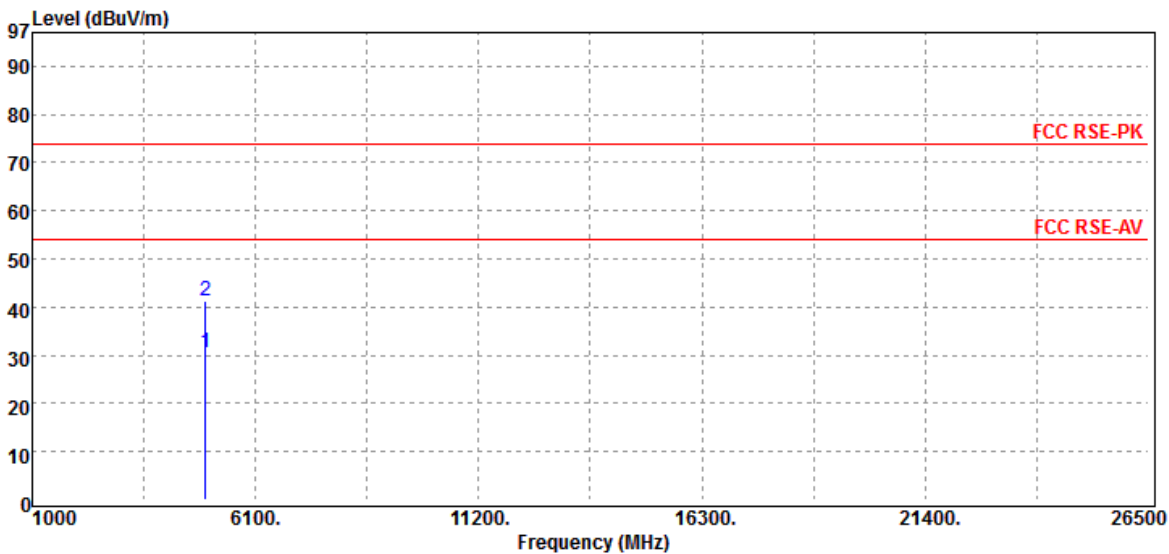
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Operation Band	:BLE	Test Date	:2018-09-05
Fundamental Frequency	:2480 MHz	Temp./Humi.	:21 deg_C / 61 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level	dB	FS	@3m	dB
MHz	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
4960.00	Average	24.45	6.05	30.50	54.00	-23.50
4960.00	Peak	35.28	6.05	41.33	74.00	-32.67

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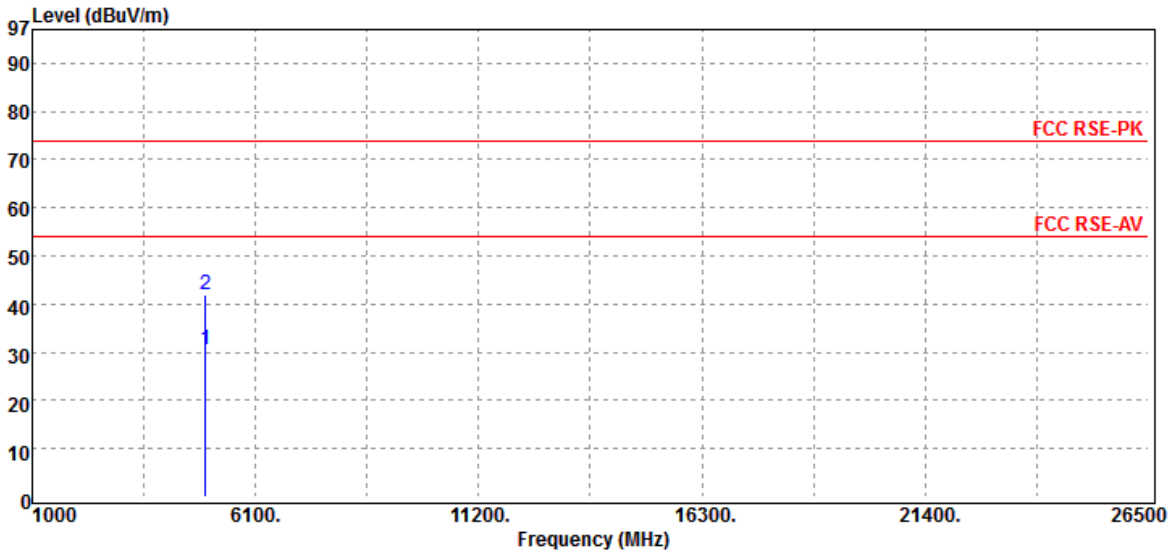
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Operation Band	:BLE	Test Date	:2018-09-05
Fundamental Frequency	:2480 MHz	Temp./Humi.	:21 deg_C / 61 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level	dB	FS	@3m	dB
MHz	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
4960.00	Average	24.52	6.05	30.57	54.00	-23.43
4960.00	Peak	34.67	6.05	40.72	74.00	-33.28

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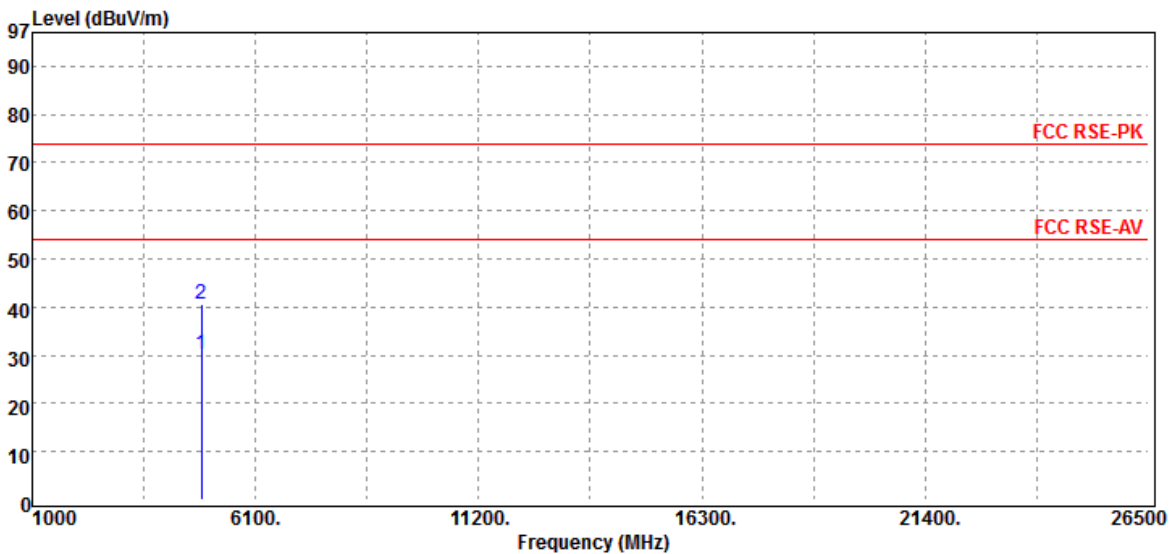
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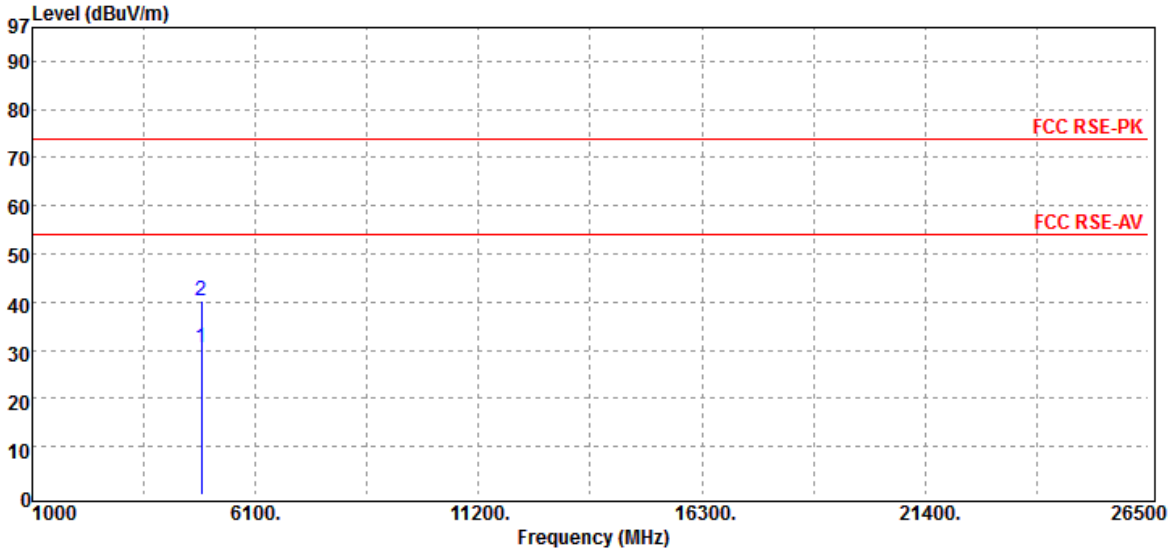
Operation Band	:802.11b	Test Date	:2018-09-05
Fundamental Frequency	:2437 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH MID	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level	dB	FS	@3m	dB
MHz	PK/QP/AV	dB $\mu$ V	dB	dB $\mu$ V/m	dB $\mu$ V/m	dB
4874.00	Average	24.44	5.85	30.29	54.00	-23.71
4874.00	Peak	34.61	5.85	40.46	74.00	-33.54

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Operation Band	:802.11b	Test Date	:2018-09-05
Fundamental Frequency	:2437 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH MID	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4874.00	Average	24.62	5.85	30.47	54.00	-23.53
4874.00	Peak	34.52	5.85	40.37	74.00	-33.63

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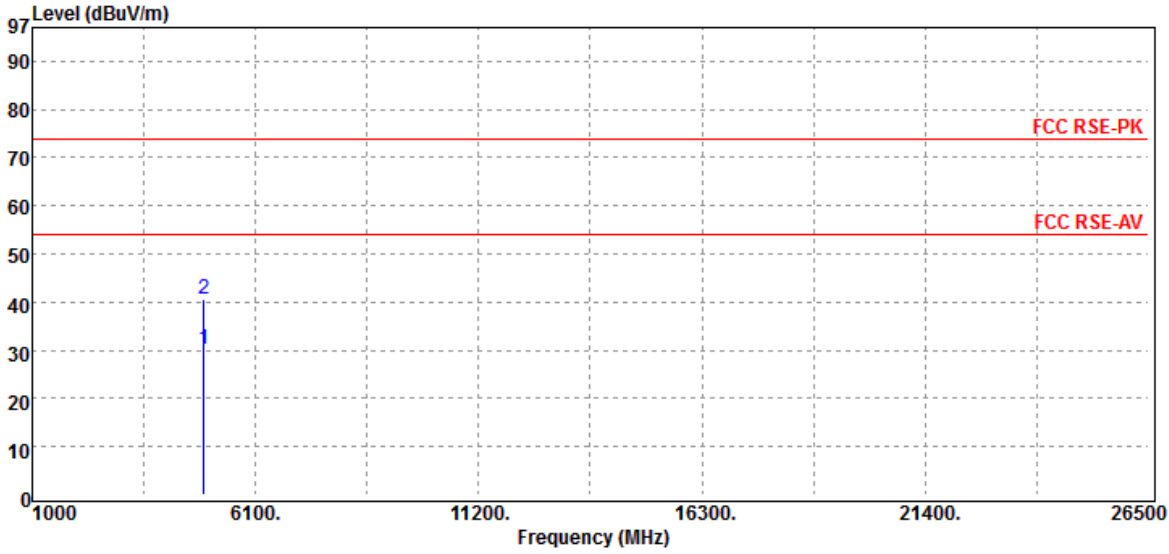
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Operation Band	:802.11g	Test Date	:2018-09-05
Fundamental Frequency	:2462 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



Freq. MHz	Detector Mode	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV/m	Limit @3m dBμV/m	Margin dB
4924.00	Average	24.42	5.82	30.24	54.00	-23.76
4924.00	Peak	34.63	5.82	40.45	74.00	-33.55

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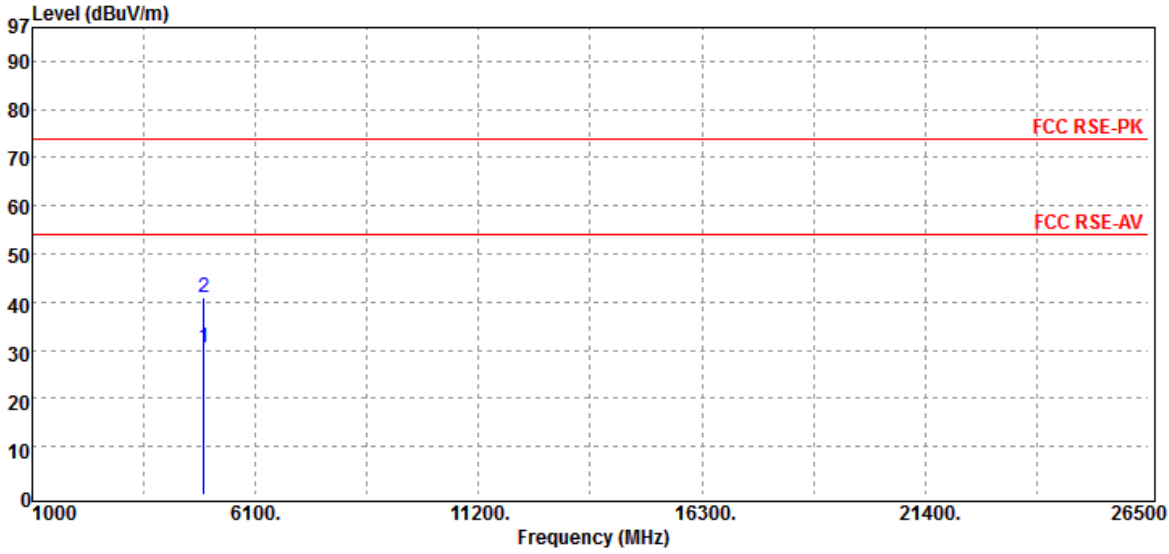
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Operation Band	:802.11g	Test Date	:2018-09-05
Fundamental Frequency	:2462 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4924.00	Average	24.62	5.82	30.44	54.00	-23.56
4924.00	Peak	35.28	5.82	41.10	74.00	-32.90

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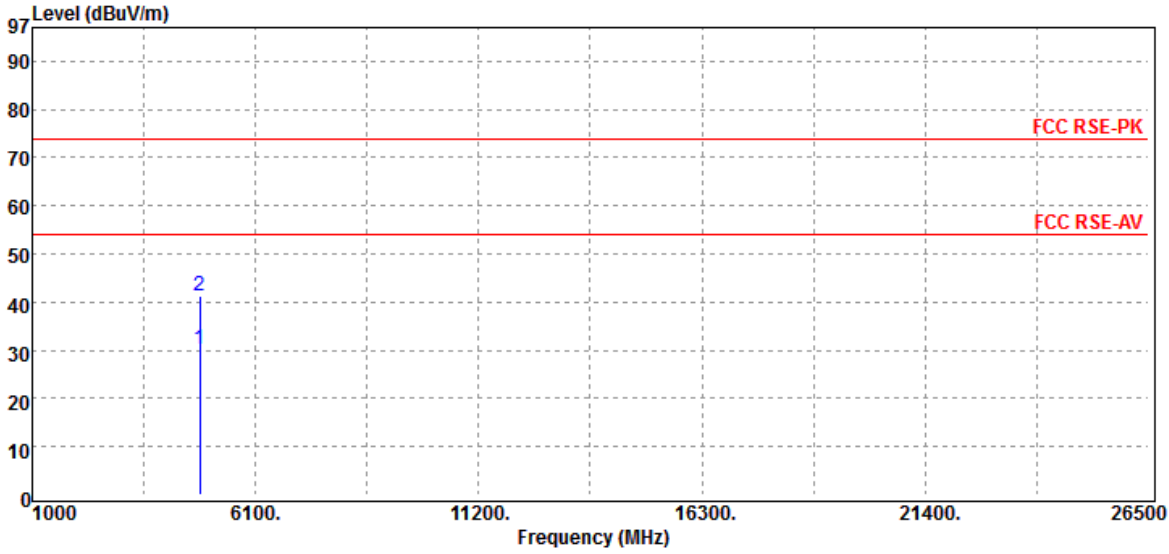
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Operation Band :802.11n20  
Fundamental Frequency :2412 MHz  
Operation Mode :Tx CH LOW  
EUT Pol. :H Plane

Test Date :2018-09-05  
Temp./Humi. :21 deg\_C / 62 RH  
Engineer :Tin  
Measurement Antenna Pol. :VERTICAL



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.00	Average	24.59	5.61	30.20	54.00	-23.80
4824.00	Peak	35.56	5.61	41.17	74.00	-32.83

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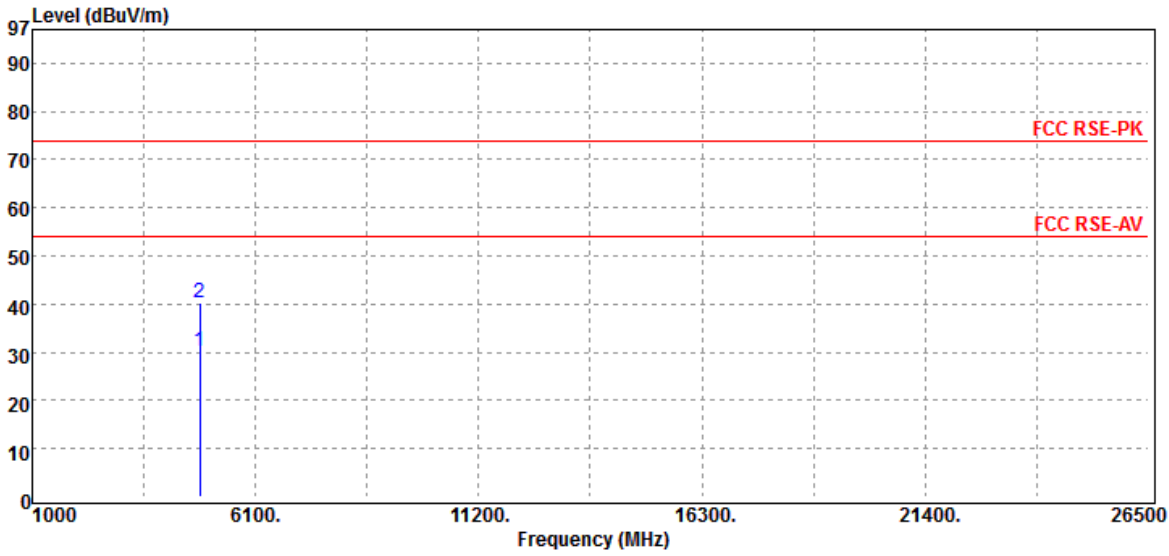
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Operation Band	:802.11n20	Test Date	:2018-09-05
Fundamental Frequency	:2412 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH LOW	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.00	Average	24.72	5.61	30.33	54.00	-23.67
4824.00	Peak	34.54	5.61	40.15	74.00	-33.85

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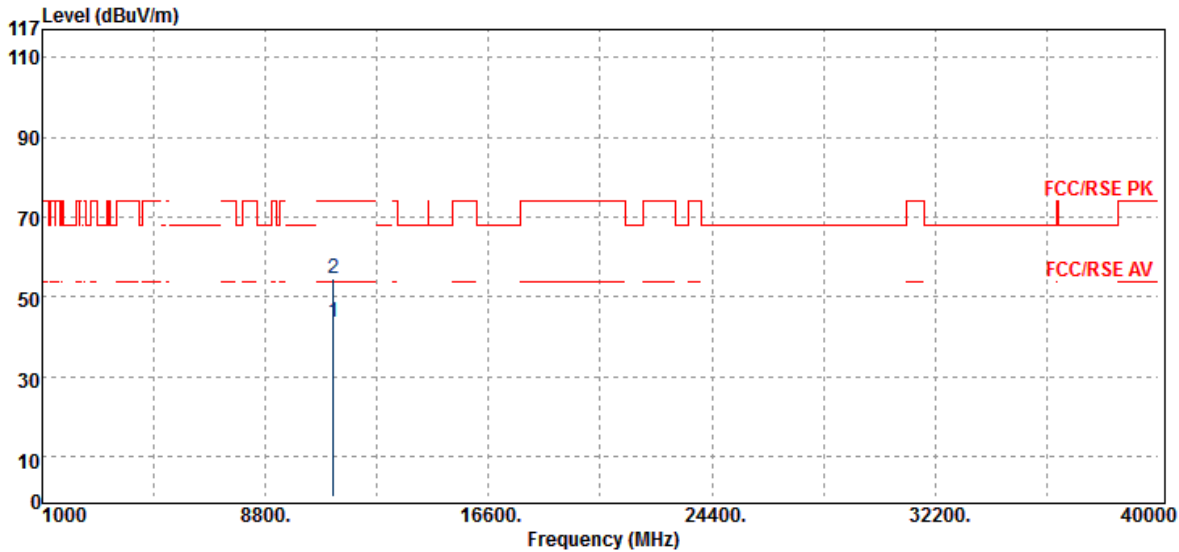
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Operation Band :802.11aB3  
 Fundamental Frequency :5580 MHz  
 Operation Mode :Tx CH MID  
 EUT Pol. :H Plane

Test Date :2018-09-05  
 Temp./Humi. :21 deg\_C / 62 RH  
 Engineer :Tin  
 Measurement Antenna Pol. :VERTICAL



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
11160.00	Average	21.43	22.31	43.74	54.00	-10.26
11160.00	Peak	32.46	22.31	54.77	74.00	-19.23

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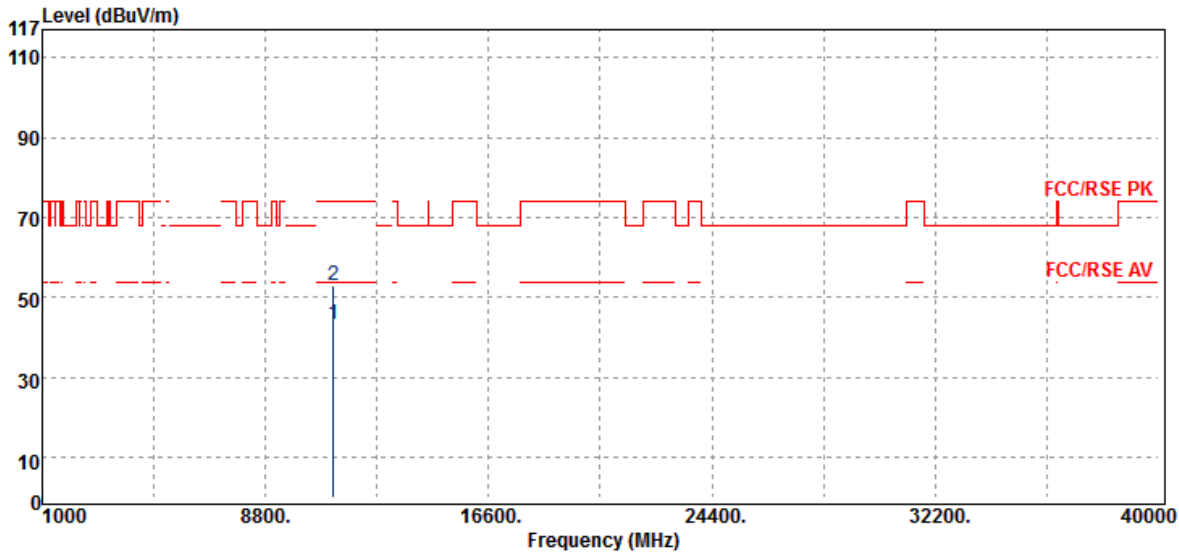
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Operation Band	:802.11aB3	Test Date	:2018-09-05
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH MID	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



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
11160.00	Average	21.53	21.51	43.04	54.00	-10.96
11160.00	Peak	31.62	21.51	53.13	74.00	-20.87

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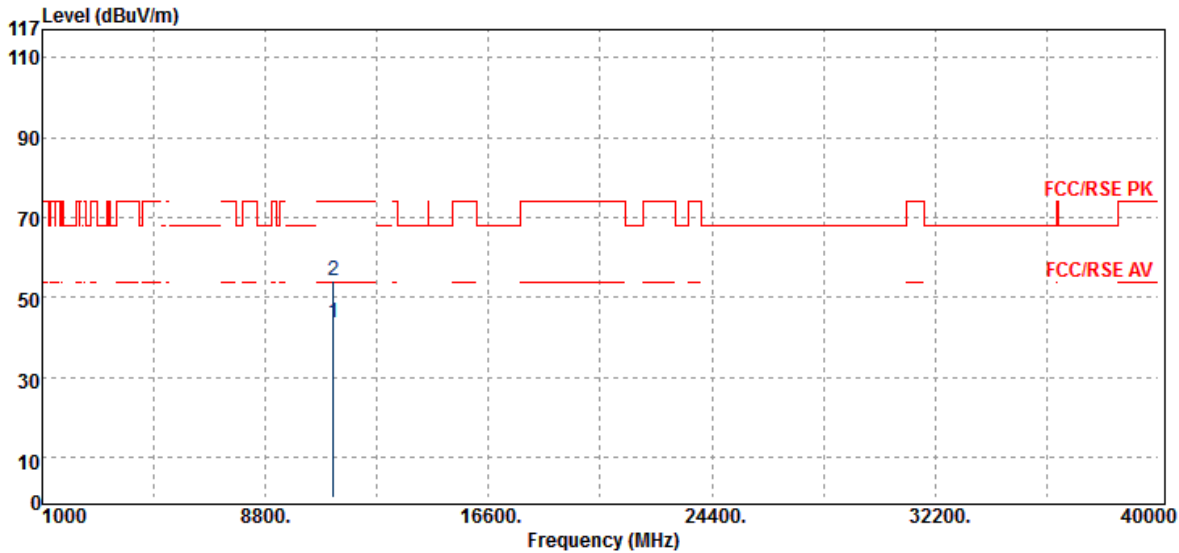
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Operation Band	:802.11n20B3	Test Date	:2018-09-05
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH MID	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



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
11160.00	Average	21.33	22.31	43.64	54.00	-10.36
11160.00	Peak	32.02	22.31	54.33	74.00	-19.67

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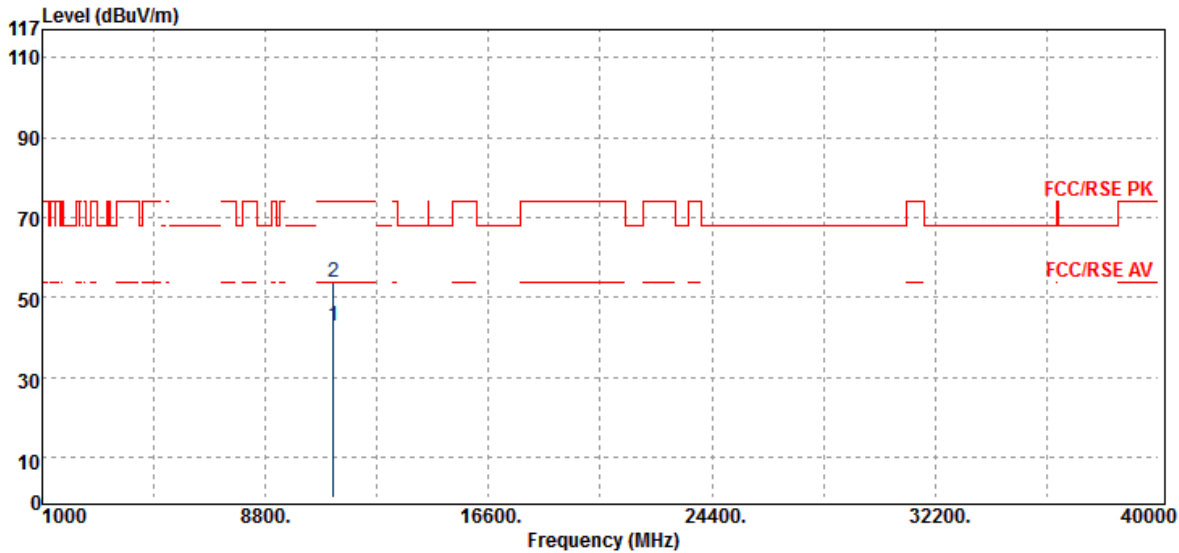
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Operation Band	:802.11n20B3	Test Date	:2018-09-05
Fundamental Frequency	:5580 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH MID	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



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
11160.00	Average	21.42	21.51	42.93	54.00	-11.07
11160.00	Peak	32.11	21.51	53.62	74.00	-20.38

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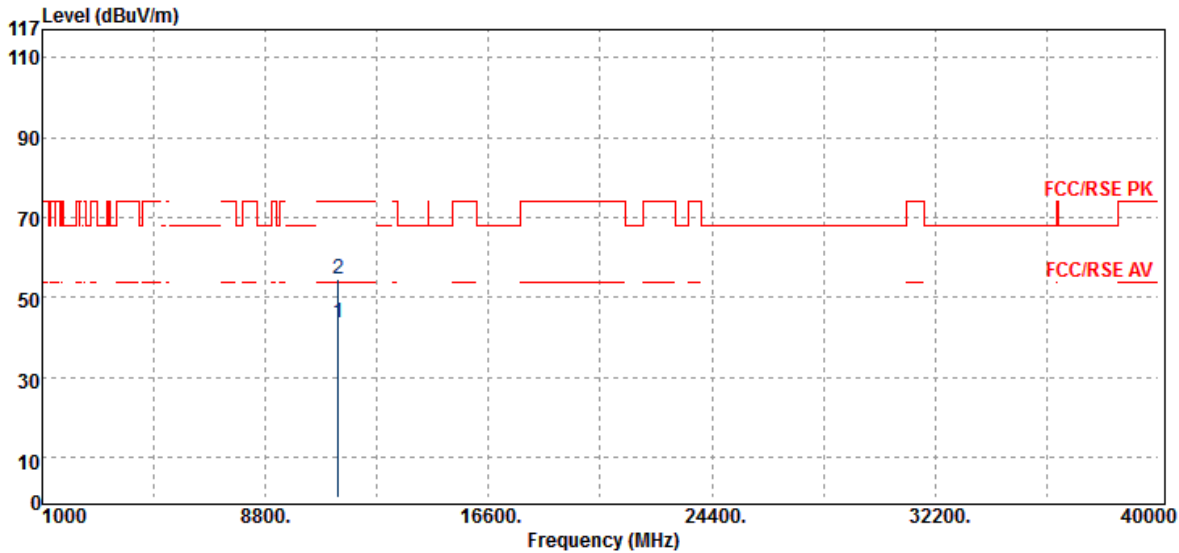
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Operation Band	:802.11n40B3	Test Date	:2018-09-05
Fundamental Frequency	:5670 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



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
11340.00	Average	21.33	22.34	43.67	54.00	-10.33
11340.00	Peak	32.13	22.34	54.47	74.00	-19.53

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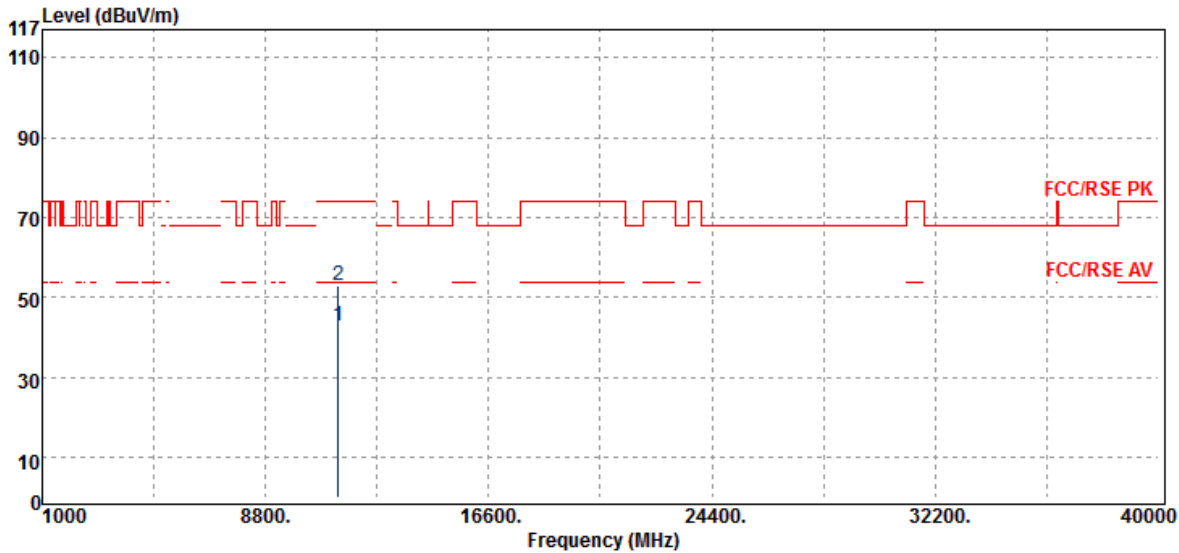
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Operation Band	:802.11n40B3	Test Date	:2018-09-05
Fundamental Frequency	:5670 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH HIGH	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



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
11340.00	Average	21.42	21.54	42.96	54.00	-11.04
11340.00	Peak	31.70	21.54	53.24	74.00	-20.76

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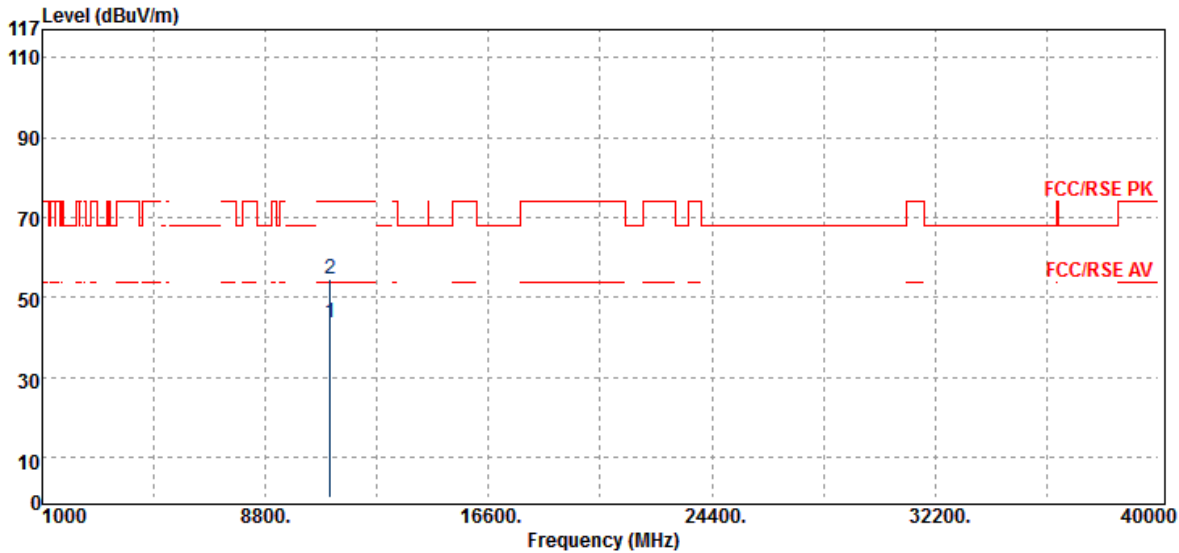
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Operation Band	:802.11ac80B3	Test Date	:2018-09-05
Fundamental Frequency	:5530 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH LOW	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:VERTICAL



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
11060.00	Average	21.30	22.41	43.71	54.00	-10.29
11060.00	Peak	32.11	22.41	54.52	74.00	-19.48

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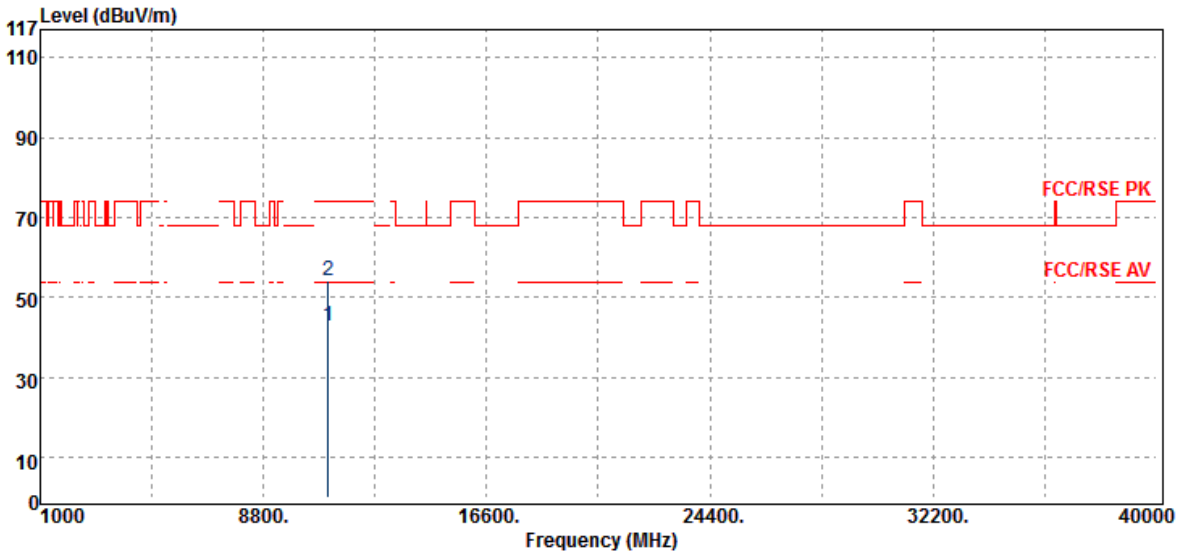
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Operation Band	:802.11ac80B3	Test Date	:2018-09-05
Fundamental Frequency	:5530 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH LOW	Engineer	:Tin
EUT Pol.	:H Plane	Measurement Antenna Pol.	:HORIZONTAL



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
11060.00	Average	21.35	21.53	42.88	54.00	-11.12
11060.00	Peak	32.79	21.53	54.32	74.00	-19.68

~ End of Report ~

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