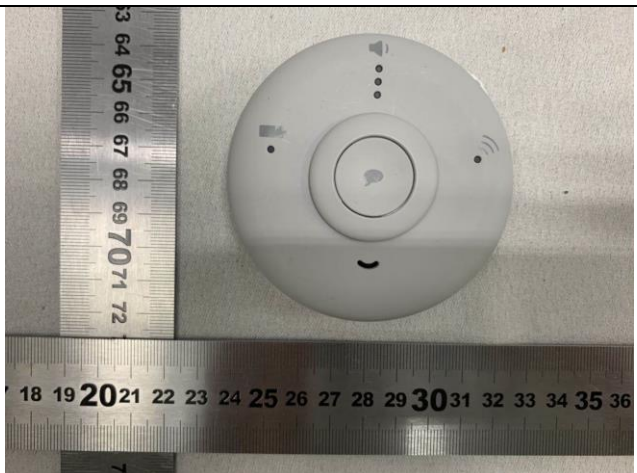




<b>Prüfbericht-Nr.:</b> <i>Test Report No.:</i>	<b>60380903 001</b>	<b>Auftrags-Nr.:</b> <i>Order No.:</i>	<b>244197745</b>	<b>Seite 1 von 57</b> <i>Page 1 of 57</i>	
<b>Kunden-Referenz-Nr.:</b> <i>Client Reference No.:</i>	<b>412131</b>	<b>Auftragsdatum:</b> <i>Order date.:</i>	<b>03.01.2020</b>		
<b>Auftraggeber:</b> <i>Client:</i>	<b>IKEA of Sweden AB</b> BOX 702 SE-343 81 Älmhult Sweden				
<b>Prüfgegenstand:</b> <i>Test item:</i>	<b>UNDIKA Baby Monitor</b>				
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	<b>E1901P</b> <b>FCC ID: FHO-E1901P</b> <b>IC: 10912A-E1901P</b>				
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	<b>Complete test</b>				
<b>Prüfgrundlage:</b> <i>Test specification:</i>	<b>FCC CFR47 Part 15, Subpart C Section 15.247</b> <b>KDB 558074 D01 15.247 Meas Guidance v05r02</b> <b>RSS-Gen Issue 5, Amendment 1, March 2019</b> <b>RSS-247 Issue 2, February 2017</b> <b>ANSI C63.10: 2013</b>				
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	<b>24.04.2020</b>				
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	<b>A002814908-004</b>				
<b>Prüfzeitraum:</b> <i>Testing period:</i>	<b>Refer to test report</b>				
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	<b>TÜV Rheinland (Shanghai) Co., Ltd.</b>				
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	<b>TÜV Rheinland (Shanghai) Co., Ltd.</b>				
<b>Prüfergebnis*:</b> <i>Test result*:</i>	<b>Pass</b>				
<b>geprüft von / tested by:</b>		<b>kontrolliert von / reviewed by:</b>			
					
<b>Datum</b> <i>Date</i>	<b>15.07.2020</b>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>15.07.2020</b>	<b>Unterschrift</b> <i>Signature</i>
<b>Name/Stellung</b> <i>Name/Position</i>	<b>Hongfei Wu / PE</b>		<b>Name/Stellung</b> <i>Name/Position</i>	<b>Elliot Zhang / Reviewer</b>	
<b>Sonstiges / Other:</b>					
HVIN: E1901P					
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>			<b>Prüfmuster vollständig und unbeschädigt</b> <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet			Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested		
<p><b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b></p> <p><i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>					

## TEST SUMMARY

**5.1.1 ANTENNA REQUIREMENT***RESULT: Pass***5.1.2 20DB & 99% BANDWIDTH***RESULT: Pass***5.1.3 PEAK OUTPUT POWER***RESULT: Pass***5.1.4 FREQUENCY SEPARATION***RESULT: Pass***5.1.5 NUMBER OF HOPPING FREQUENCY***RESULT: Pass***5.1.6 TIME OF OCCUPANCY***RESULT: Pass***5.1.7 CONDUCTED BAND-EDGE***RESULT: Pass***5.1.8 CONDUCTED SPURIOUS EMISSIONS***RESULT: Pass***5.2.1 CONDUCTED EMISSION***RESULT: Pass***5.3.1 RADIATED BAND-EDGE***RESULT: Pass***5.3.2 RADIATED SPURIOUS EMISSION***RESULT: Pass*

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## 1. General Remarks

### 1.1 Complementary Materials

Null.

## 2. Test Sites

### 2.1 Test Facilities

TÜV Rheinland (Shanghai) Co., Ltd.

Shanghai TUV Rheinland Building No. 177, 178 Lane 777, West Guangzhong Rd, Jing'an District, Shanghai, China

The used test equipment is in accordance with CISPR 16 for measurement of radio interference.

The Federal Communications Commission has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance with the requirements of section 2.948 of the FCC rules. The description of the test facility is listed under FCC registration number 958801.

The Innovation, Science and Economic Development Canada has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance. The description of the test facility is listed under chambers filing number 2932F.

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

Instrument	Manufacturer	Type No.	Asset No.	Cali. Due Date
3m Anechoic Chamber	Frankonia	SAC3	FJ129002	13.05.2022
EMI Test Receiver	R&S	ESCI	100280	31.10.2020
Spectrum Analyzer	R&S	FSV40	101258	31.10.2021
BiLog Antenna	Teseq	CBL 6112D	40530	13.02.2021
Log-periodic Antenna	R&S	HL050	100692	16.02.2021
Preamplifier	Taiwan EMC Instruments Corporation	EMC051845SE	980612	05.03.2021
Broadband Horn Antenna	Schwarzbeck	BBHA 9170	9170-305	09.07.2021
Preamplifier	Taiwan EMC Instruments Corporation	EMC184045SE	980596	05.03.2021
Spectrum Analyzer	Keysight	N9020A	MY54500180	09.05.2021
DC Power Supply	ALLPOWER	ADC50-20	99223	12.10.2020
Thermohygrometer	Testo	608-H1	1241320614	13.10.2020

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

**Table 2: Measurement Uncertainty**

Measurement Type	Frequency	Uncertainty
Antenna Port Conducted Emission	< 1GHz	±0.39dB
	> 1GHz	±0.68dB
Radiated Emission	9kHz - 30MHz	±2.93 dB
	30MHz - 1GHz	±5.34dB
	> 1GHz	±5.40dB

### 3. General Product Information

#### 3.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a baby monitor (parent unit) which support other 2.4GHz wireless technology.  
 For details refer to the User Manual and Circuit Diagram.

#### 3.2 Ratings and System Details

**Table 3: Technical Specification of EUT**

General Description of EUT	
Product Name:	UNDVKA Baby Monitor
Brand Name:	IKEA
Technical Specification of Parent Unit	
Model No.:	E1901P
Rated Voltage:	USB DC 5V or 3xAAA Battery
Frequency Range:	2405.377~2477.569MHz
Channel Number:	36 (Hopping Frequency)
Modulation Type:	GFSK
Antenna Type:	PCB antenna
Antenna Gain:	2.85 dBi

**Table 4: Hopping Channel List**

Channel No.	Frequency [MHz]	Channel No.	Frequency [MHz]	Channel No.	Frequency [MHz]
1	2405.377	13	2430.465	25	2455.041
2	2407.425	14	2432.513	26	2457.089
3	2409.473	15	2434.561	27	2459.137
4	2411.521	16	2436.609	28	2461.185
5	2413.569	17	2438.657	29	2463.233
6	2415.617	18	2440.705	30	2465.281
7	2417.665	19	2442.753	31	2467.329
8	2419.713	20	2444.801	32	2469.377
9	2421.761	21	2446.849	33	2471.425
10	2423.809	22	2448.897	34	2473.473
11	2425.857	23	2450.945	35	2475.521
12	2427.905	24	2452.993	36	2477.569

### 3.3 Independent Operation Modes

Table 5: Test Modes

Test Mode	Channel	Frequency [MHz]
TM1	1	2405.377
TM2	18	2440.705
TM3	36	2477.569
TM4	Hopping	2405.377~2477.569
Test Mode	Description	
TM5	Communicating and charging via adaptor	
TM6	Communicating and charging with Baby Unit via adaptor	

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

### 3.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document
- Circuit Diagram
- Instruction Manual
- Rating Label



## 4. Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

### 4.3 Special Accessories and Auxiliary Equipment

Table 6: Auxiliary Equipment

Equipment	Module No.	Manufacture
Baby Unit	E1901B	IKEA
Adaptor	MDY-09-EK	Xiaomi

### 4.4 Countermeasures to achieve EMC Compliance

Null.

## 5. Test Results

### 5.1 Conducted Testing at Antenna Port

#### 5.1.1 Antenna Requirement

**RESULT:**
**Pass**

According to the manufacturer declared, the EUT has one PCB antenna, the directional gain of antenna is 2.85 dBi and the antenna is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

**Table 7: Antenna Requirement**
**FCC 15.203 – Antenna Requirement 1**

**Requirement:** No antenna other than that furnished by the responsible party shall be used with the device

**Results:** Antenna type: PCB antenna

**Verdict:** PASS

**FCC 15.204 – Antenna Requirement 2**

**Requirement:** An intentional radiator may be operated only with the antenna with which it is authorized. If an antenna is marketed with the intentional radiator, it shall be of a type which is authorized with the intentional radiator.

**Results:** Only one integral antenna can be used

**Verdict:** PASS

**RSS-Gen 6.3 – External Control**

**Requirement:** The device shall not have any external controls accessible to the user that enable it to be adjusted, selected or programmed to operate in violation of the limits prescribed in the applicable RSS.

**Results:** The device does not have any transmitter external controls accessible to the user that can be adjusted and operated in violation of the limits of this standard.

**Verdict:** PASS

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**RSS-Gen 8.3 – Antenna Requirement**

Requirement: When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacture.

Results:

a) Antenna Type:	PCB Antenna
b) Manufacture:	N/A
c) Model No.:	N/A
d) Gain with reference to an isotropic radiator:	2.85 dBi

Verdict: PASS

### 5.1.2 20dB & 99% Bandwidth

**RESULT:**
**Pass**

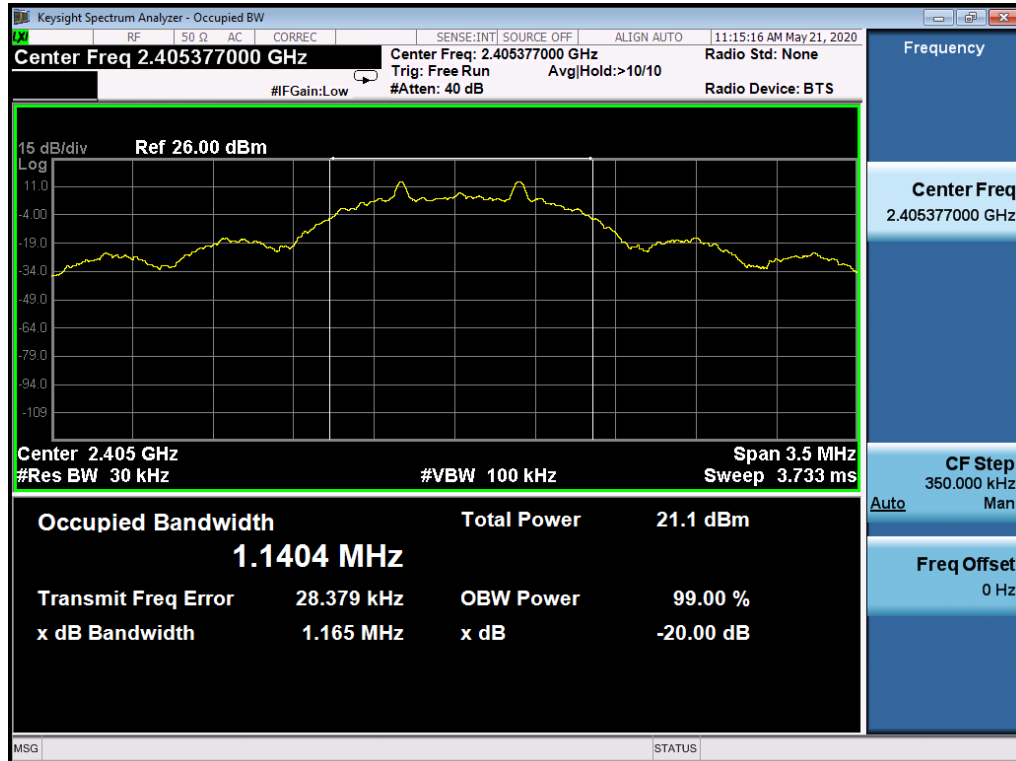
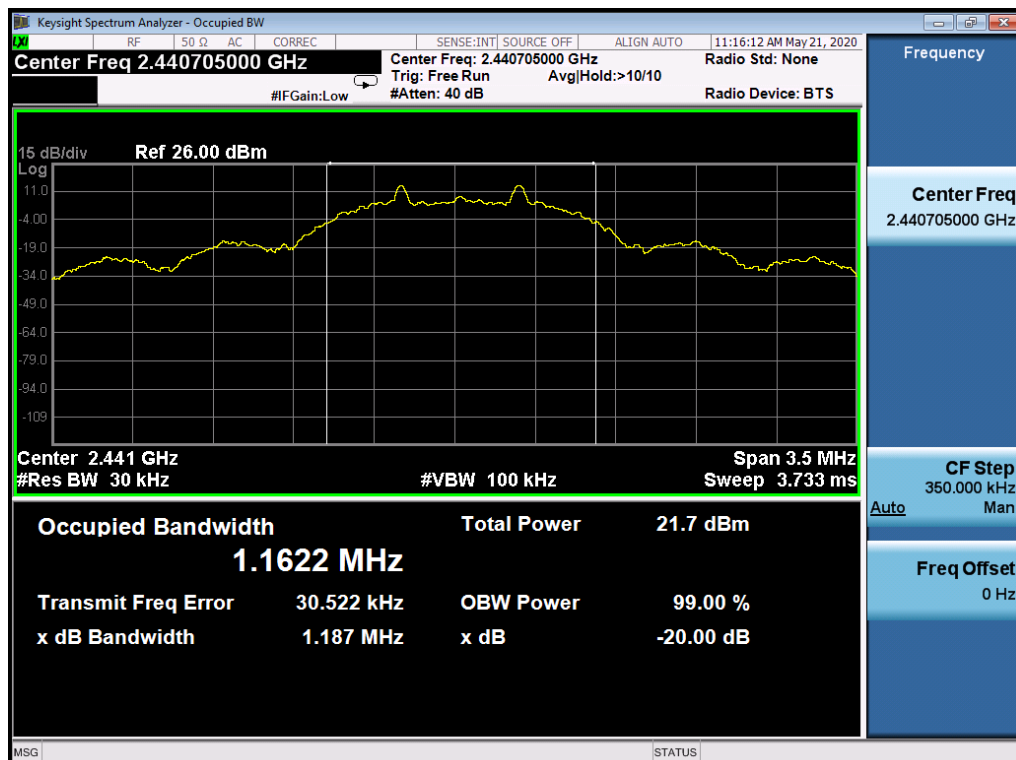
Date of testing : 21.05.2020  
 Ambient temperature : 23.2°C  
 Relative humidity : 38.5%  
 Atmospheric pressure : 101kPa  
 Test requirement : FCC Part 15.247(a)(1)  
 Clause 5.1(a) of RSS-247 Issue 2 February 2017  
 Test procedure : KDB 558074 D01v05r02  
 ANSI C63.10: 2013  
 Test voltage : DC 5V (USB)  
 Test modes applied : TM1 to TM3

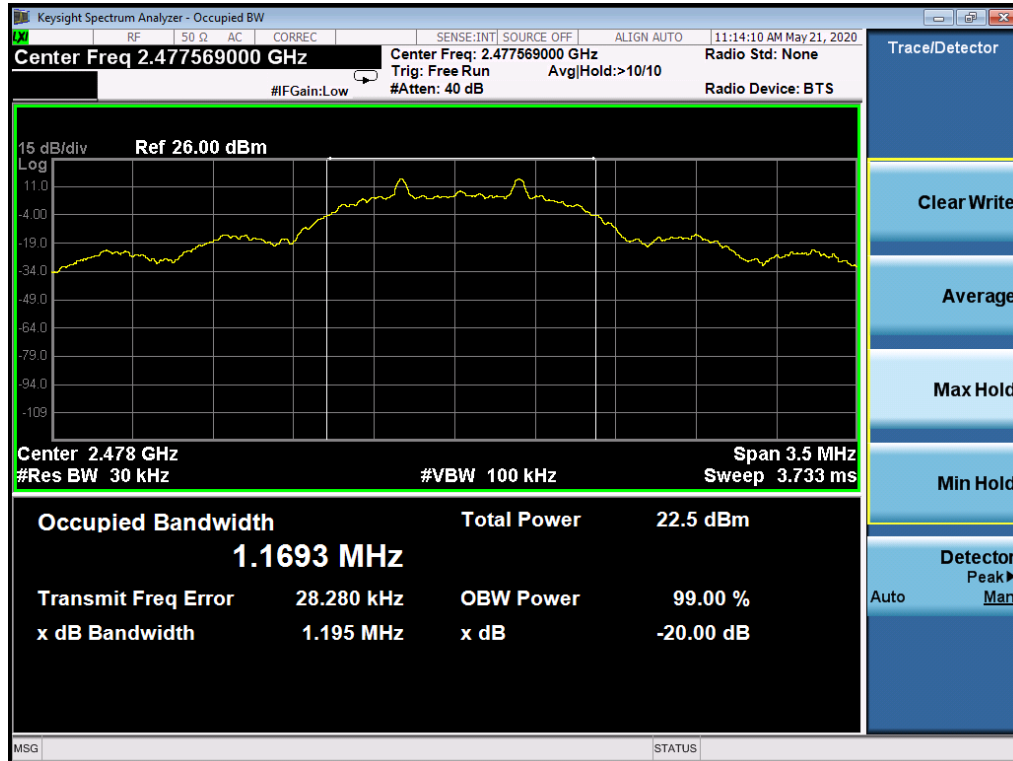
**Table 8: 20dB & 99% Bandwidth**

Test Mode	CH.	Freq. [MHz]	20dB Bandwidht [MHz]	99% Bandwidth [MHz]
TM1	1	2405.377	1.165	1.1404
TM2	18	2440.705	1.187	1.1622
TM3	36	2477.569	1.195	1.1693

**Note:**

For frequency hopping systems operating in the 2400 – 2483.5MHz band, no bandwidth limit is specified. The test data is provide for reference.  
 And according to FCC, when the occupied bandwidth limit is not stated in the applicable FCC or reference measurement method, the transmitted signal band width shall be reported as the 99% emission bandwidth.

**Figure 1: 20dB & 99% Bandwidth, TM1**

**Figure 2: 20dB & 99% Bandwidth, TM2**


**Figure 3: 20dB & 99% Bandwidth, TM3**


### 5.1.3 Peak Output Power

**RESULT:**
**Pass**

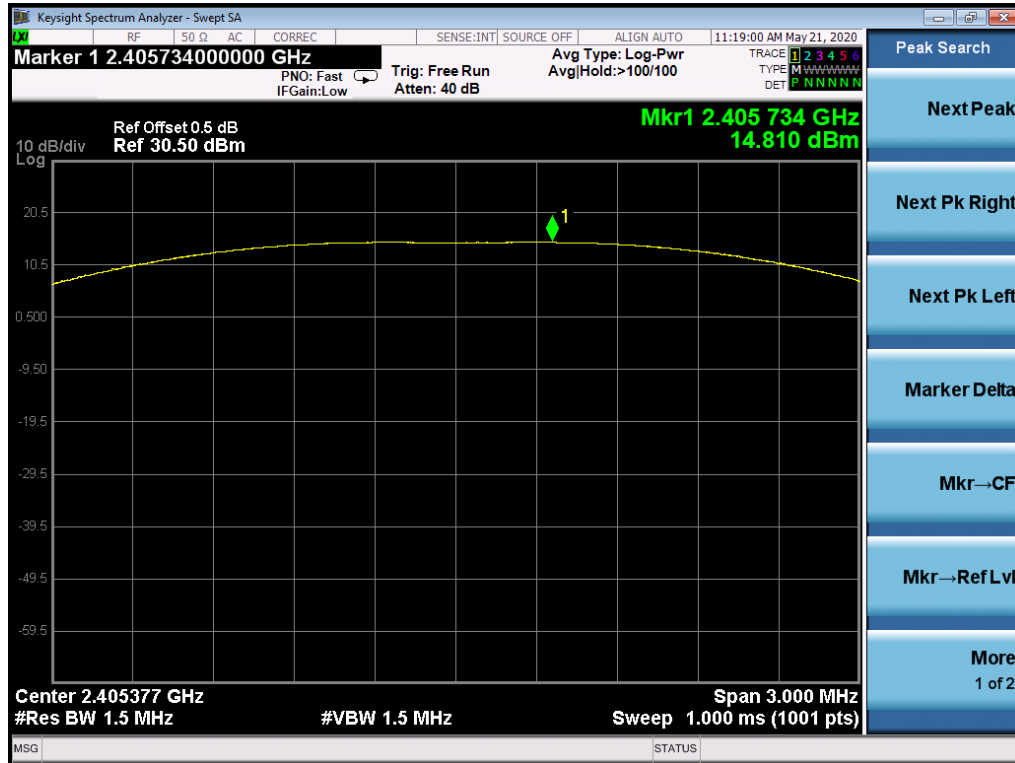
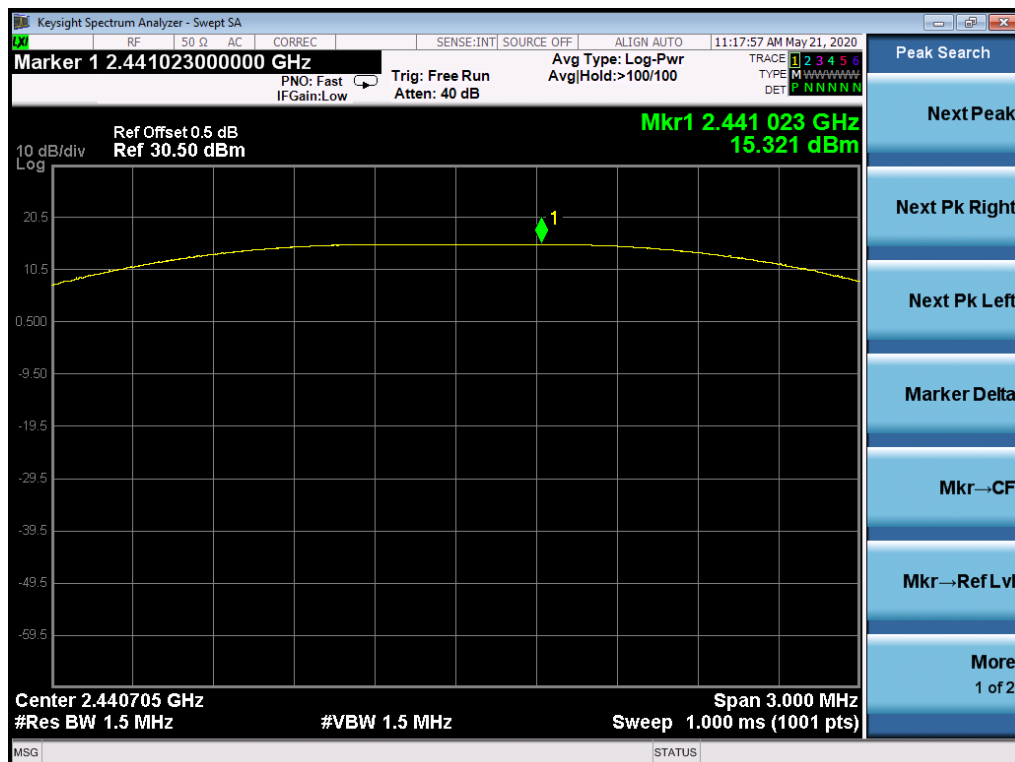
Date of testing : 21.05.2020~22.05.2020  
 Ambient temperature : 23.2°C  
 Relative humidity : 38.5%  
 Atmospheric pressure : 101kPa  
 Test requirement : FCC Part 15.247(b)(1)  
 Clause 5.4(b) of RSS-247 Issue 2 February 2017  
 Test procedure : KDB 558074 D01v05r02  
 ANSI C63.10: 2013  
 Test voltage : DC 5V (USB)  
 Test modes applied : TM1 to TM3

**Table 9: Peak Output Power**

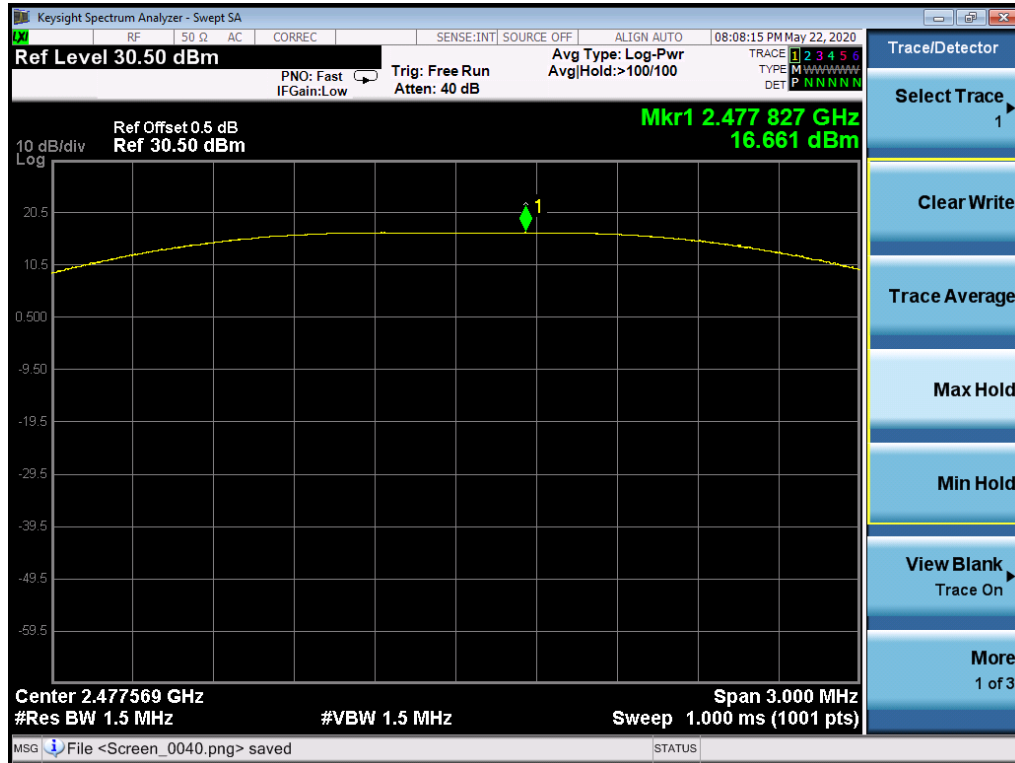
Test Mode	Antenna Gain [dBi]	CH.	Freq. [MHz]	Maximum Peak Conducted Output Power [dBm]	Peak Conducted Output Power Limit [dBm]	Maximum EIRP [dBm]	EIRP Limit [dBm]
TM1	2.85	1	2405.377	14.810	20.969	17.660	26.969
TM2		18	2440.705	15.321	20.969	18.171	26.969
TM3		36	2477.569	16.661	20.969	19.511	26.969

Note:

$$\text{EIRP} = \text{Peak Conducted Output Power} + \text{Antenna Gain}$$

**Figure 4: Peak Output Power, TM1**

**Figure 5: Peak Output Power, TM2**




**Figure 6: Peak Output Power, TM3**


## 5.1.4 Frequency Separation

**RESULT:****Pass**

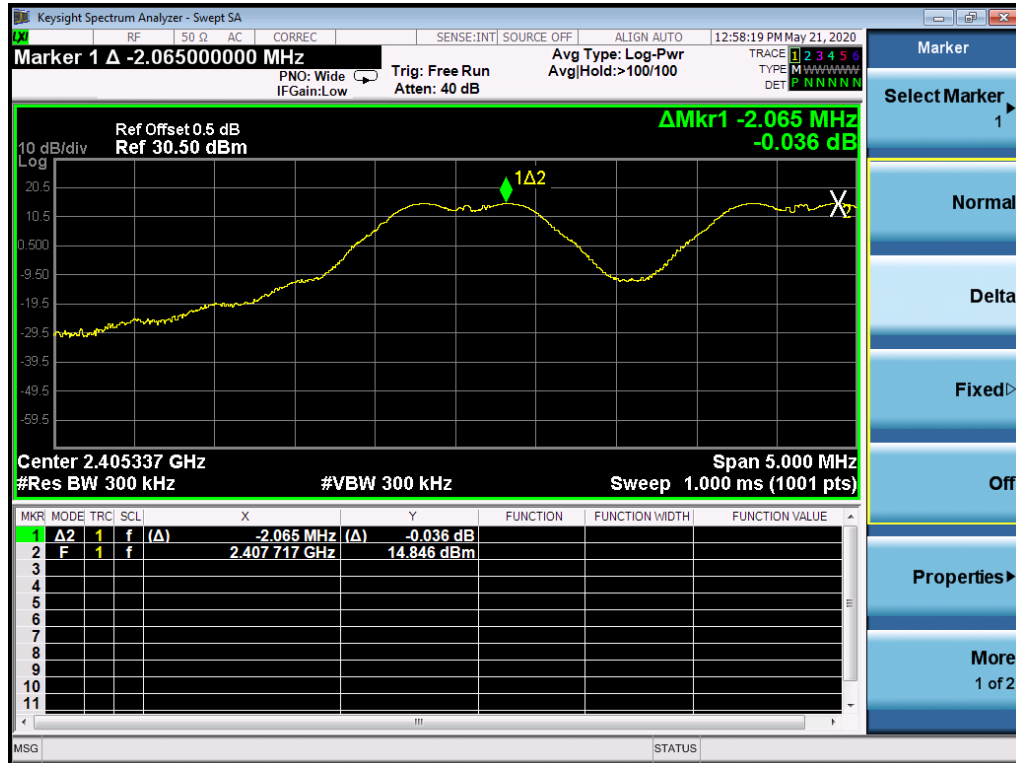
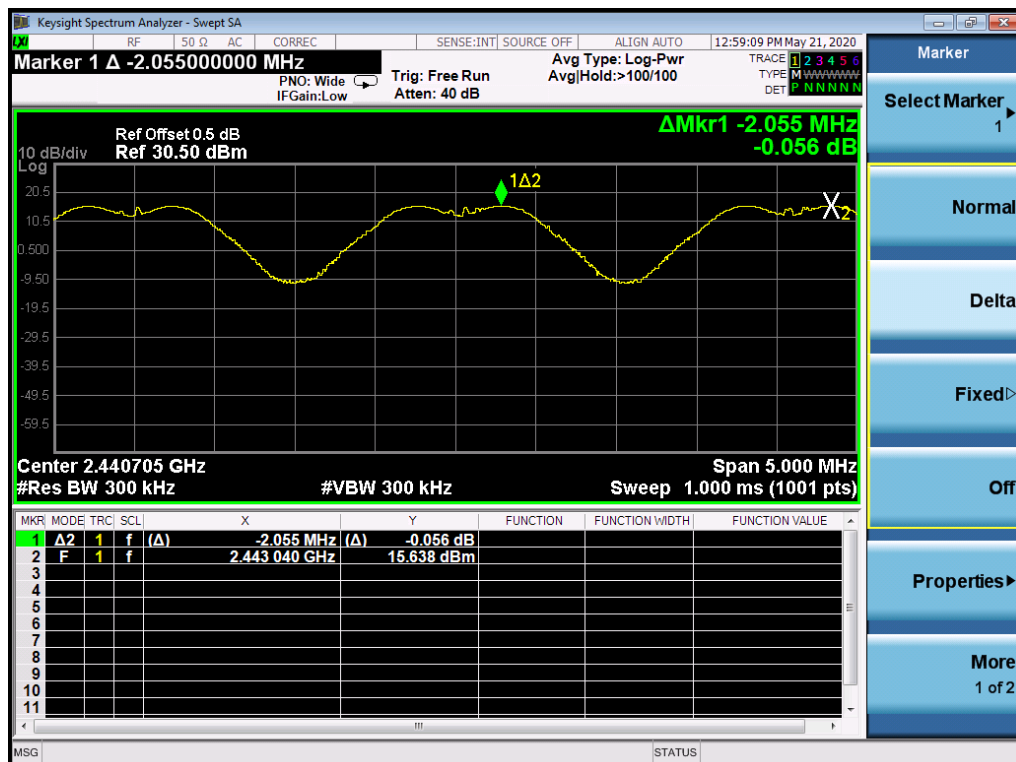
Date of testing : 21.05.2020  
Ambient temperature : 23.2°C  
Relative humidity : 38.5%  
Atmospheric pressure : 101kPa  
Test requirement : FCC Part 15.247(a)(1)  
Clause 5.1(b) of RSS-247 Issue 2 February 2017  
Test procedure : KDB 558074 D01v05r02  
ANSI C63.10: 2013  
Test voltage : DC 5V (USB)  
Test modes applied : TM4

**Table 10: Frequency Separation**

Test Mode	CH.	Frequency [MHz]	Frequency Separation [MHz]	Limit [MHz]
TM4	1	2405.377	2.065	≥0.777
	18	2440.705	2.055	≥0.791
	36	2477.569	2.045	≥0.797

**Note:**

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

**Figure 7: Frequency Separation, TM4, observation CH1**

**Figure 8: Frequency Separation, TM4, observation CH18**




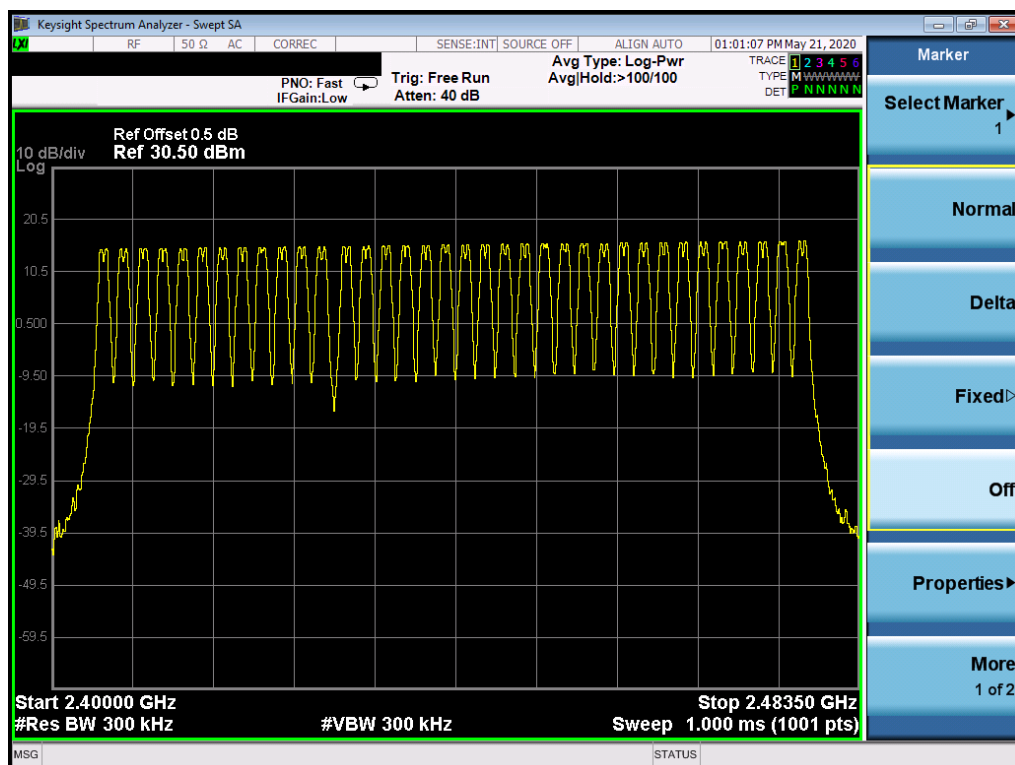
### 5.1.5 Number of Hopping Frequency

**RESULT:**
**Pass**

Date of testing	: 21.05.2020
Ambient temperature	: 24.4°C
Relative humidity	: 36.1%
Atmospheric pressure	: 101kPa
Test requirement	: FCC 15.247(a)(1)(iii) Clause 5.1(d) of RSS-247 Issue 2 February 2017
Test procedure	: KDB 558074 D01v05r02 ANSI C63.10: 2013
Test voltage	: DC 5V (USB)
Test modes applied	: TM4

**Table 11: Number of Hopping Frequency**

Frequency Range	Measured Quantity of Hopping Channel	Limit
2402 to 2480	36	≥15

**Figure 10: Number of Hopping Frequency**


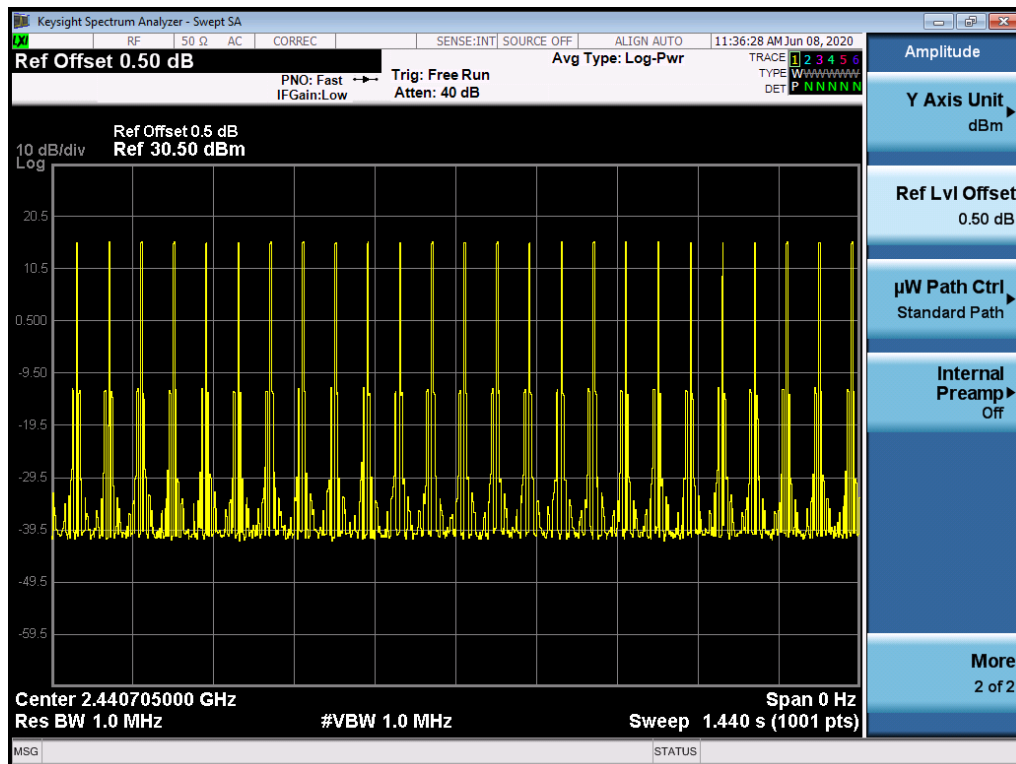
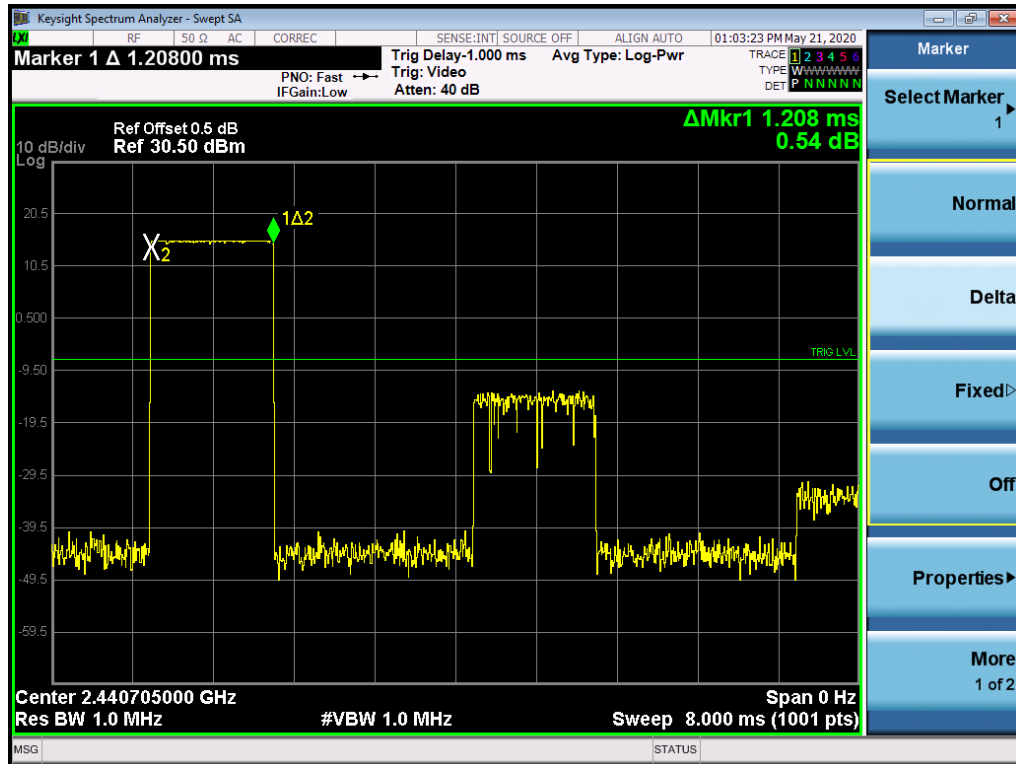
## 5.1.6 Time of Occupancy

**RESULT:****Pass**

Date of testing : 21.05.2020~08.06.2020  
Ambient temperature : 26.2°C  
Relative humidity : 32.7%  
Atmospheric pressure : 101kPa  
Test requirement : FCC 15.247(a)(1)(iii)  
Clause 5.1(d) of RSS-247 Issue 2 February 2017  
Test procedure : KDB 558074 D01v05r02  
ANSI C63.10: 2013  
Test voltage : DC 5V (USB)  
Test modes applied : TM4

**Table 12: Time of Occupancy**

Test Mode	CH.	Frequency [MHz]	Packet Duration [ms]	Hops over Occupancy Time [Hops]	Time of Occupancy [ms]	Limit [ms]
TM4	18	2440.705	1.208	250	302	400

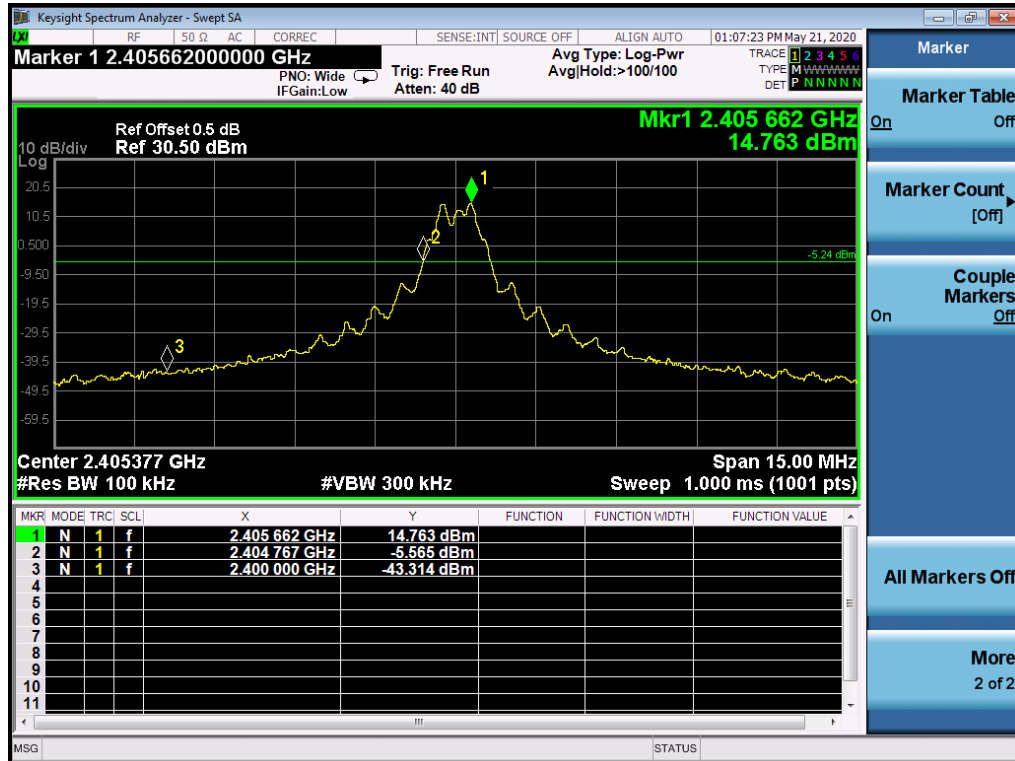
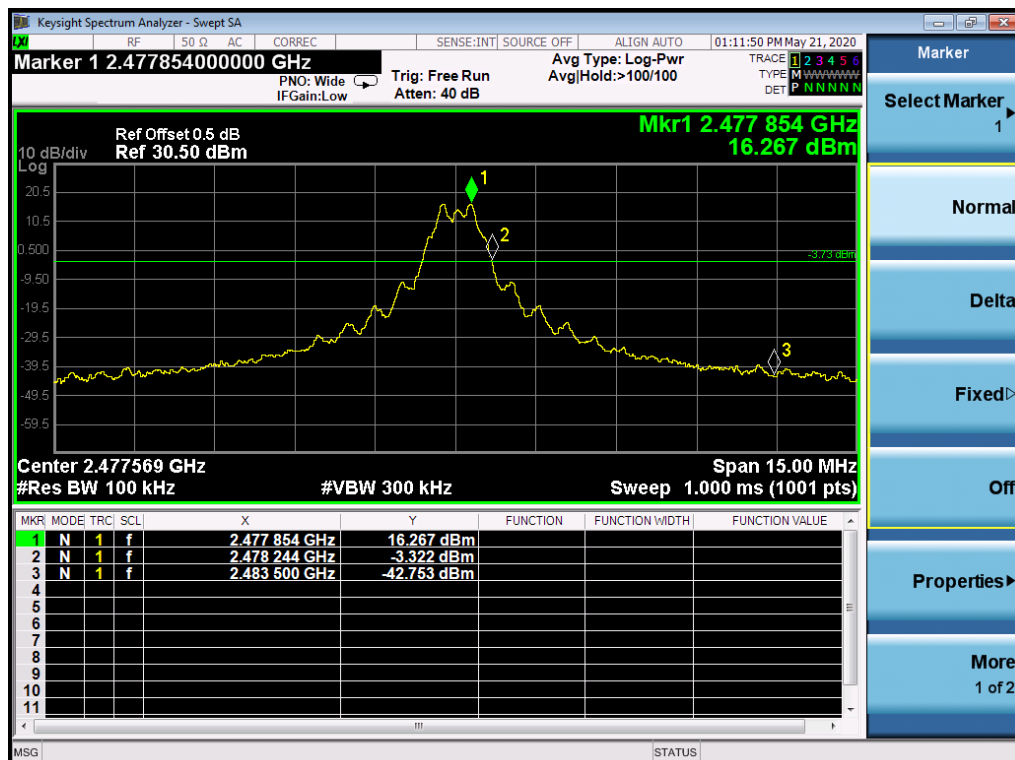
**Figure 11: Time of Occupancy, TM4, observation CH18**


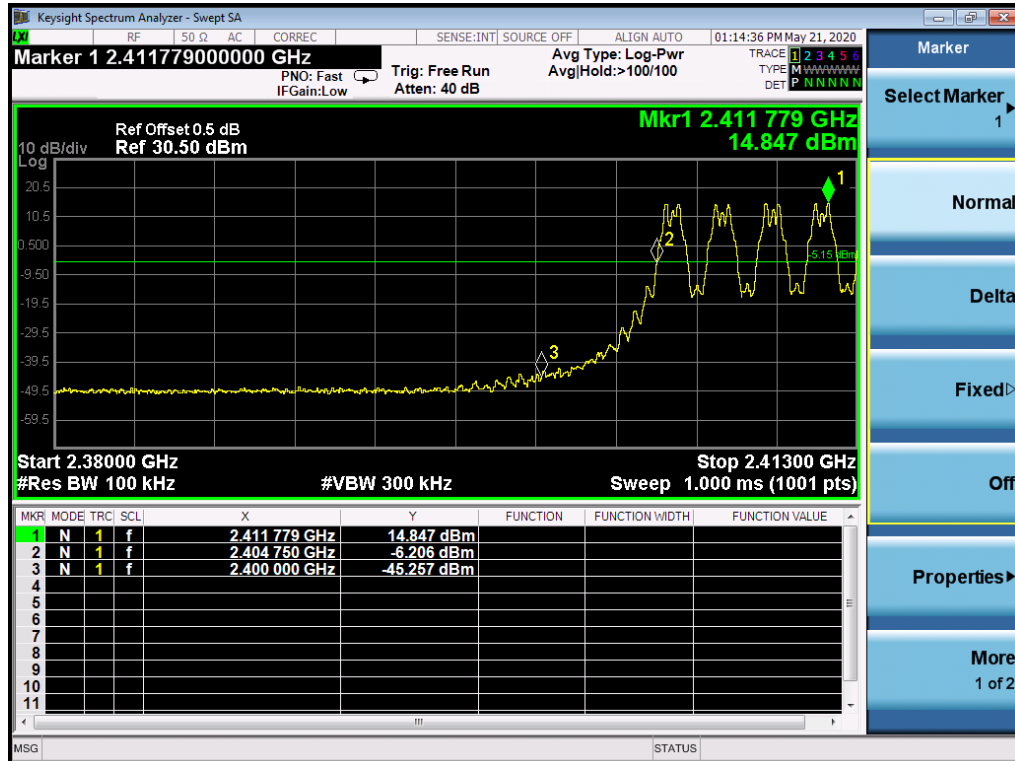
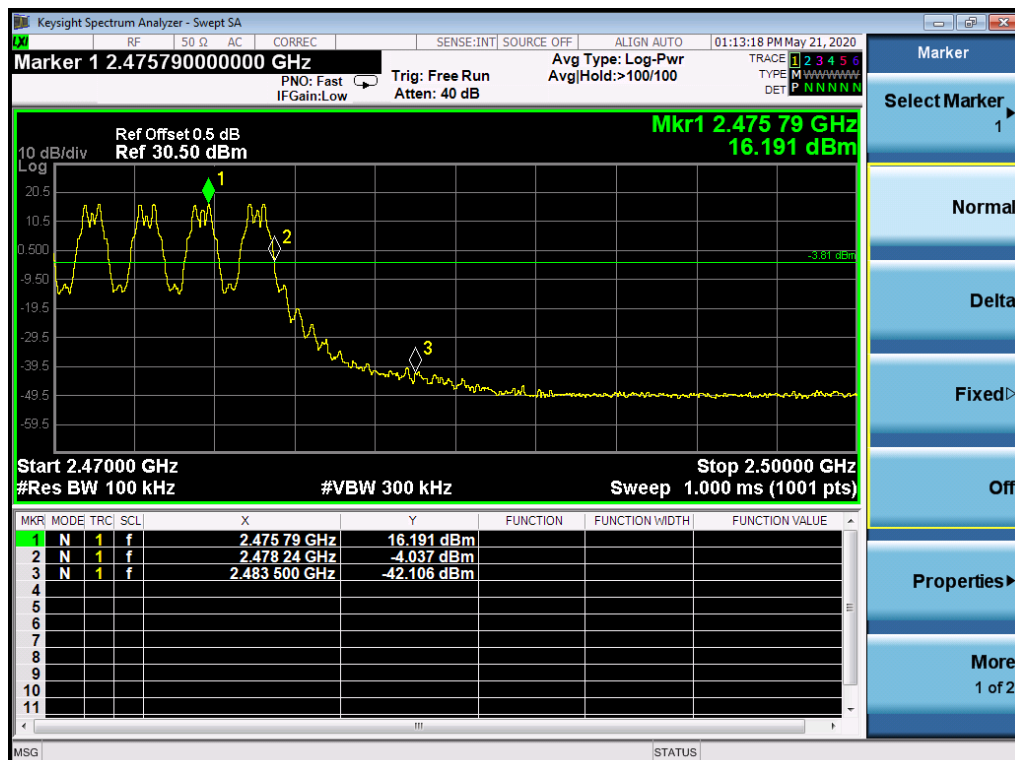
## 5.1.7 Conducted Band-Edge

**RESULT:****Pass**

Date of testing	:	21.05.2020
Ambient temperature	:	26.1°C
Relative humidity	:	32.7%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC 15.247(d) Clause 5.5 of RSS-247 Issue 2 February 2017
Test procedure	:	KDB 558074 D01v05r02 ANSI C63.10: 2013
Test voltage	:	DC 5V (USB)
Test modes applied	:	TM1, TM3, TM4



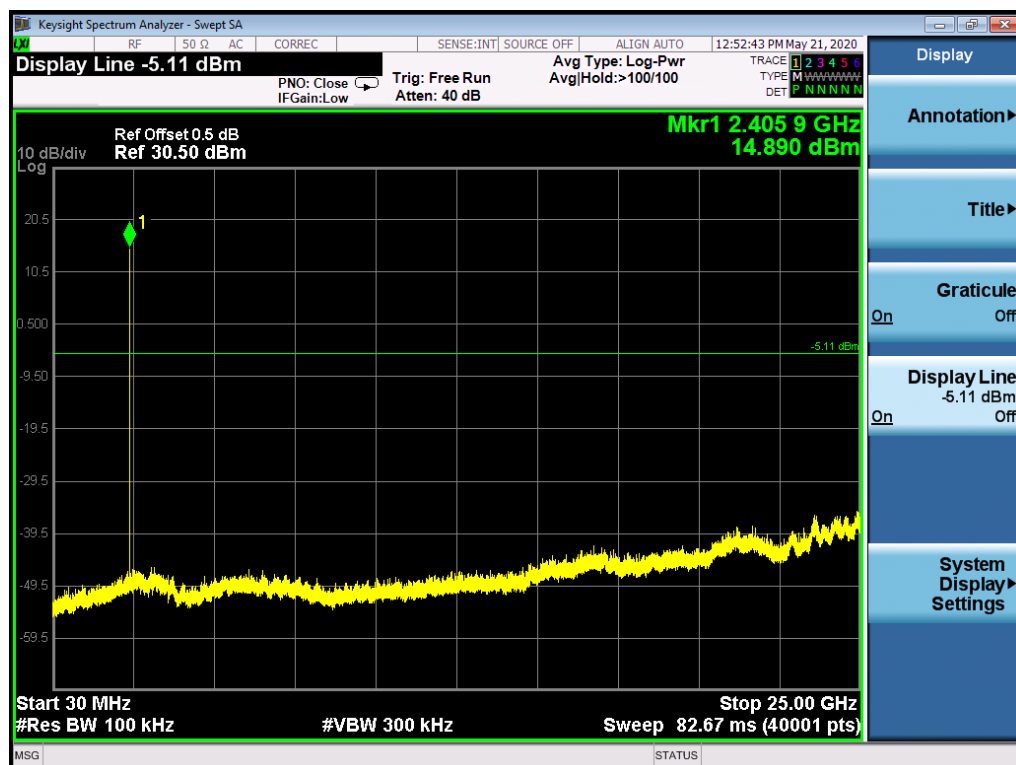
**Figure 12: Conducted Band-Edge, TM1**

**Figure 13: Conducted Band-Edge, TM3**


**Figure 14: Conducted Band-Edge, TM4 lower band**

**Figure 15: Conducted Band-Edge, TM4, higher band**


### 5.1.8 Conducted Spurious Emissions

**RESULT:**
**Pass**

Date of testing	:	21.05.2020
Ambient temperature	:	25.8°C
Relative humidity	:	33.8%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC 15.247(d) Clause 5.5 of RSS-247 Issue 2 February 2017
Test procedure	:	KDB 558074 D01v05r02 ANSI C63.10: 2013
Test voltage	:	DC 5V (USB)
Test modes applied	:	TM1 to TM3

**Figure 16: Conducted Spurious Emission, TM1**


**Figure 17: Conducted Spurious Emission, TM2**

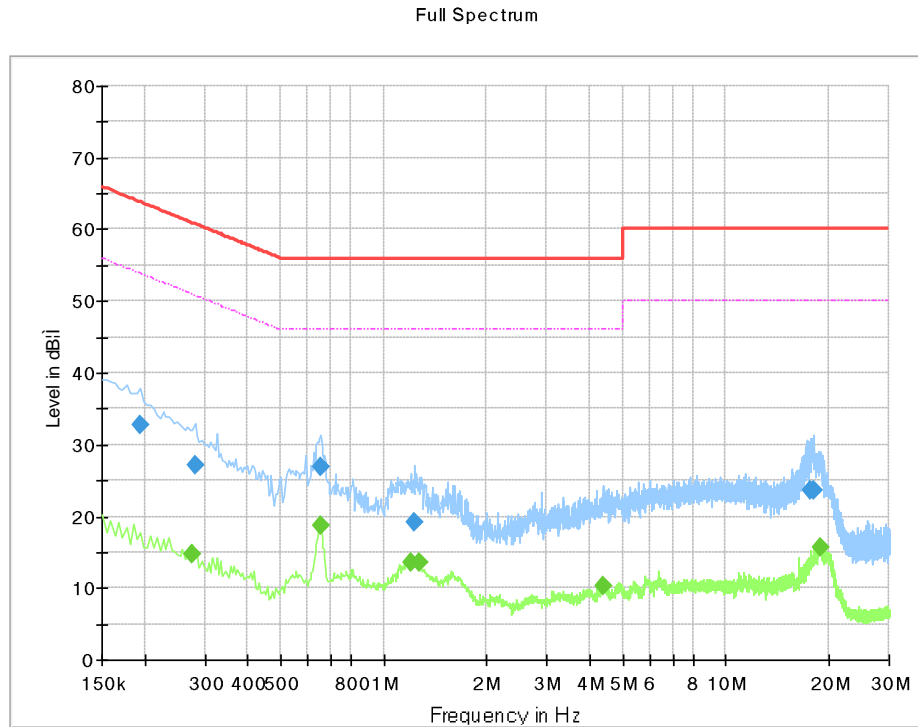
**Figure 18: Conducted Spurious Emission, TM3**


## 5.2 Emission in the Frequency Range up to 30MHz

### 5.2.1 Conducted Emission

**RESULT:****Pass**

Date of testing	:	01.06.2020~02.06.2020
Ambient temperature	:	23.6°C
Relative humidity	:	45.3%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC 15.207(a) Clause 8.8 of RSS-Gen Issue 5, March 2019
Test procedure	:	KDB 558074 D01v05r02 ANSI C63.10: 2013
Test voltage	:	AC 120V, 60Hz
Test modes applied	:	TM5, TM6

**Figure 19: Conducted Emission, TM5, L**

**QP Result**

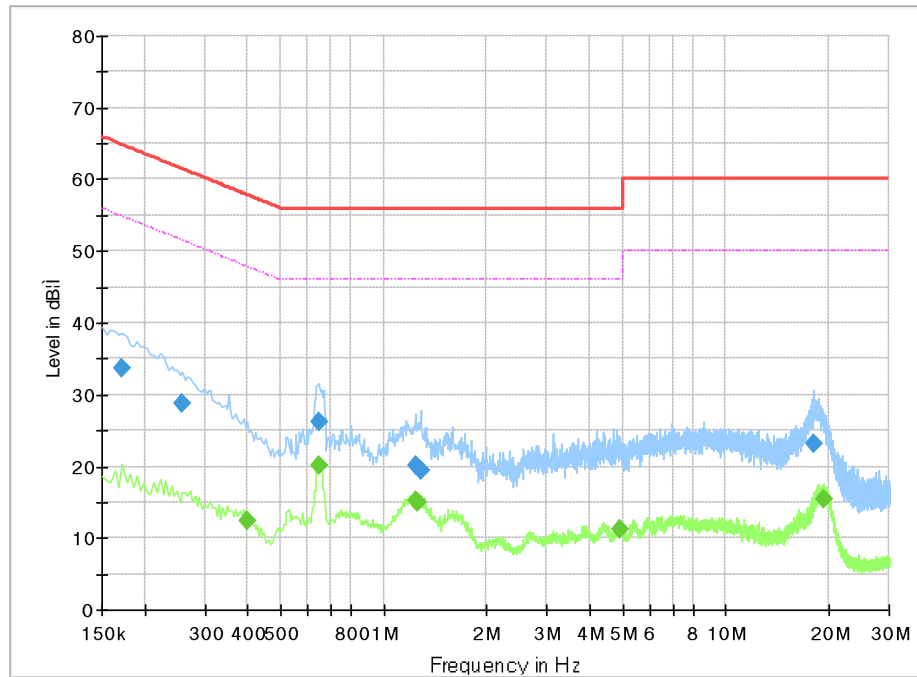
Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.195000	32.67	63.82	31.15	1000.0	9.000	L1	9.5
0.280500	27.23	60.80	33.57	1000.0	9.000	L1	9.6
0.654000	26.89	56.00	29.11	1000.0	9.000	L1	9.6
1.234500	19.16	56.00	36.84	1000.0	9.000	L1	9.6
17.655000	23.60	60.00	36.40	1000.0	9.000	L1	10.2
18.010500	23.73	60.00	36.27	1000.0	9.000	L1	10.2

**AV Result**

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.276000	14.63	50.94	36.31	1000.0	9.000	L1	9.6
0.654000	18.72	46.00	27.28	1000.0	9.000	L1	9.6
1.207500	13.46	46.00	32.54	1000.0	9.000	L1	9.6
1.266000	13.49	46.00	32.51	1000.0	9.000	L1	9.6
4.407000	10.28	46.00	35.72	1000.0	9.000	L1	9.7
18.991500	15.57	50.00	34.43	1000.0	9.000	L1	10.2

**Figure 20: Conducted Emission, TM5, N**

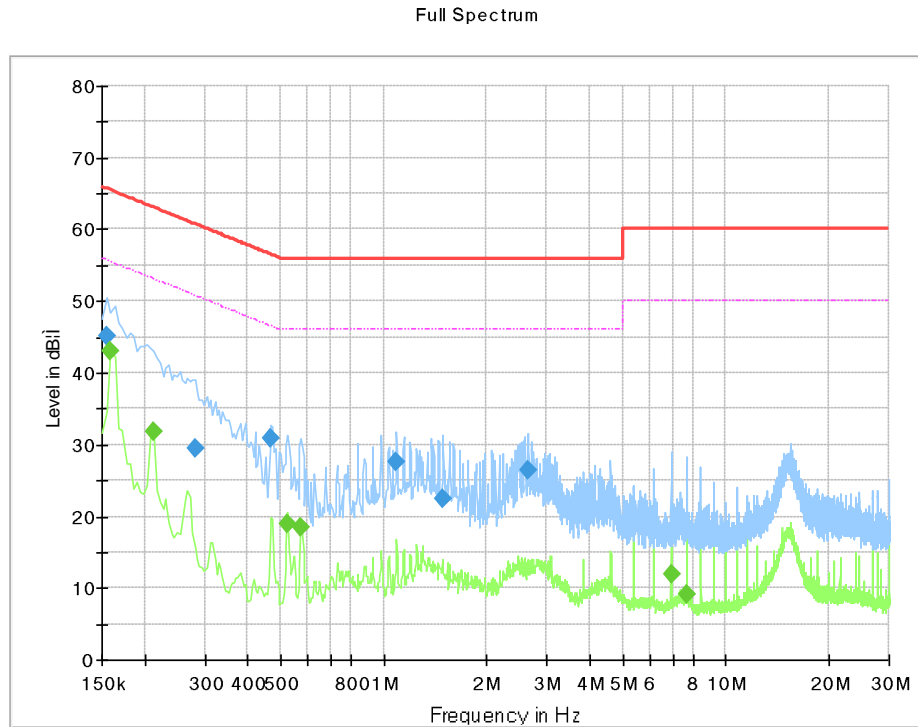
Full Spectrum


**QP Result**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.172500	33.75	64.84	31.09	1000.0	9.000	N	9.5
0.258000	28.71	61.50	32.78	1000.0	9.000	N	9.5
0.645000	26.11	56.00	29.89	1000.0	9.000	N	9.6
1.239000	20.10	56.00	35.90	1000.0	9.000	N	9.6
1.284000	19.40	56.00	36.60	1000.0	9.000	N	9.6
18.163500	23.22	60.00	36.78	1000.0	9.000	N	10.1

**AV Result**

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.397500	12.44	47.91	35.46	1000.0	9.000	N	9.6
0.645000	20.18	46.00	25.82	1000.0	9.000	N	9.6
1.239000	15.15	46.00	30.85	1000.0	9.000	N	9.6
1.261500	15.03	46.00	30.97	1000.0	9.000	N	9.6
4.884000	11.12	46.00	34.88	1000.0	9.000	N	9.6
19.266000	15.33	50.00	34.67	1000.0	9.000	N	10.1

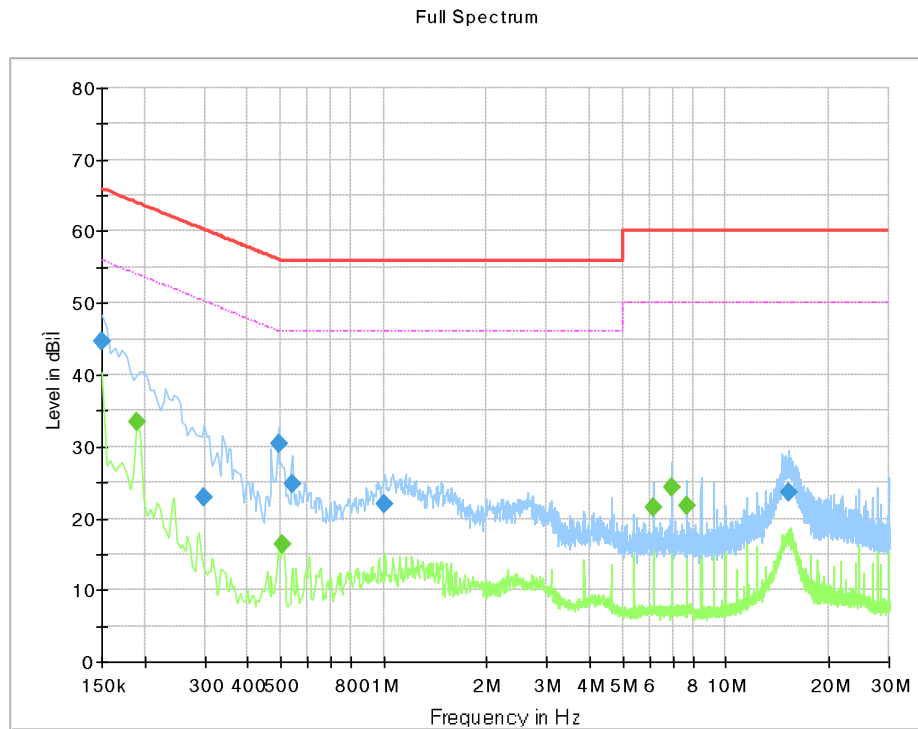
**Figure 21: Conducted Emission, TM6, L**

**QP Result**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.154500	45.26	65.75	20.50	1000.0	9.000	L1	9.5
0.280500	29.45	60.80	31.35	1000.0	9.000	L1	9.6
0.469500	30.99	56.52	25.53	1000.0	9.000	L1	9.6
1.090500	27.55	56.00	28.45	1000.0	9.000	L1	9.6
1.491000	22.54	56.00	33.46	1000.0	9.000	L1	9.6
2.643000	26.38	56.00	29.62	1000.0	9.000	L1	9.7

**AV Result**

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.159000	43.11	55.52	12.41	1000.0	9.000	L1	9.5
0.213000	31.70	53.09	21.38	1000.0	9.000	L1	9.5
0.523500	18.93	46.00	27.07	1000.0	9.000	L1	9.6
0.573000	18.38	46.00	27.62	1000.0	9.000	L1	9.6
6.918000	11.83	50.00	38.17	1000.0	9.000	L1	9.8
7.683000	9.03	50.00	40.97	1000.0	9.000	L1	9.8



**Figure 22: Conducted Emission, TM6, N**

**QP Result**

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	44.69	66.00	21.31	1000.0	0.200	N	9.5
0.298500	22.92	60.28	37.36	1000.0	9.000	N	9.5
0.492000	30.30	56.13	25.83	1000.0	9.000	N	9.6
0.541500	24.89	56.00	31.11	1000.0	9.000	N	9.6
1.009500	21.92	56.00	34.08	1000.0	9.000	N	9.6
15.238500	23.54	60.00	36.46	1000.0	9.000	N	9.9

**AV Result**

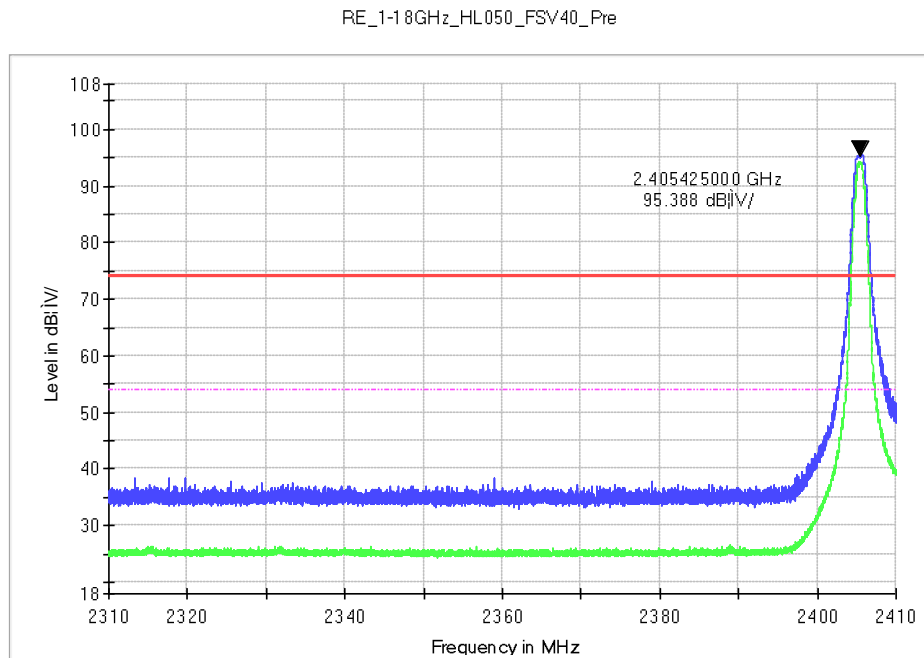
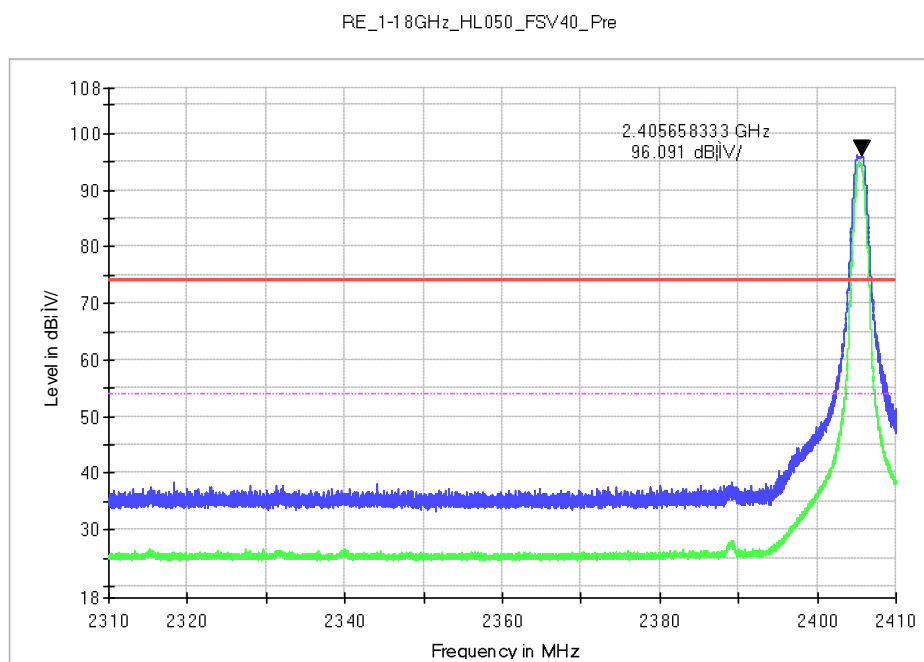
Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.190500	33.37	54.02	20.65	1000.0	9.000	N	9.5
0.505500	16.41	46.00	29.59	1000.0	9.000	N	9.6
6.157500	21.60	50.00	28.40	1000.0	9.000	N	9.7
6.927000	24.33	50.00	25.67	1000.0	9.000	N	9.7
7.696500	21.82	50.00	28.18	1000.0	9.000	N	9.7

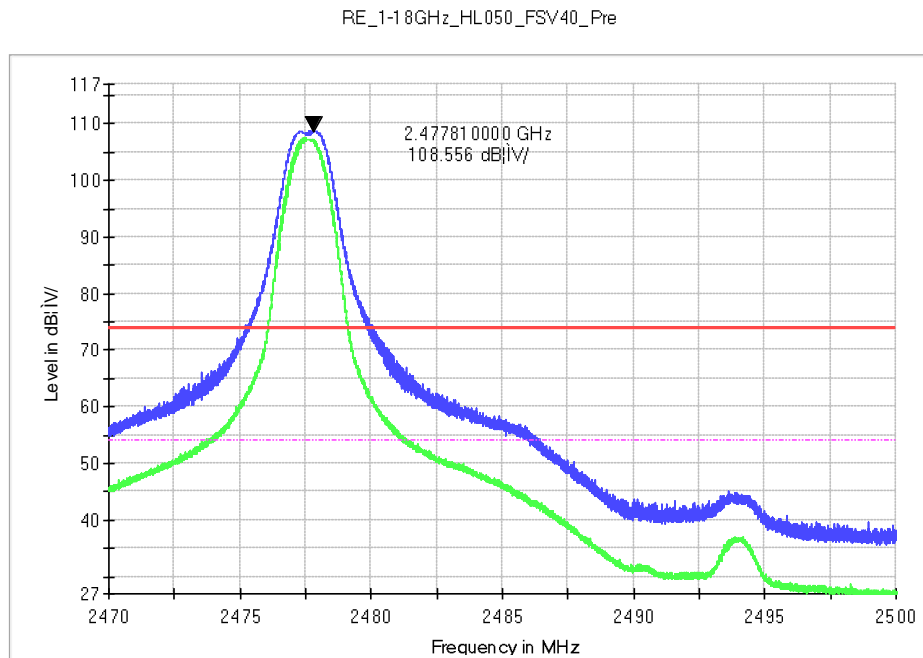
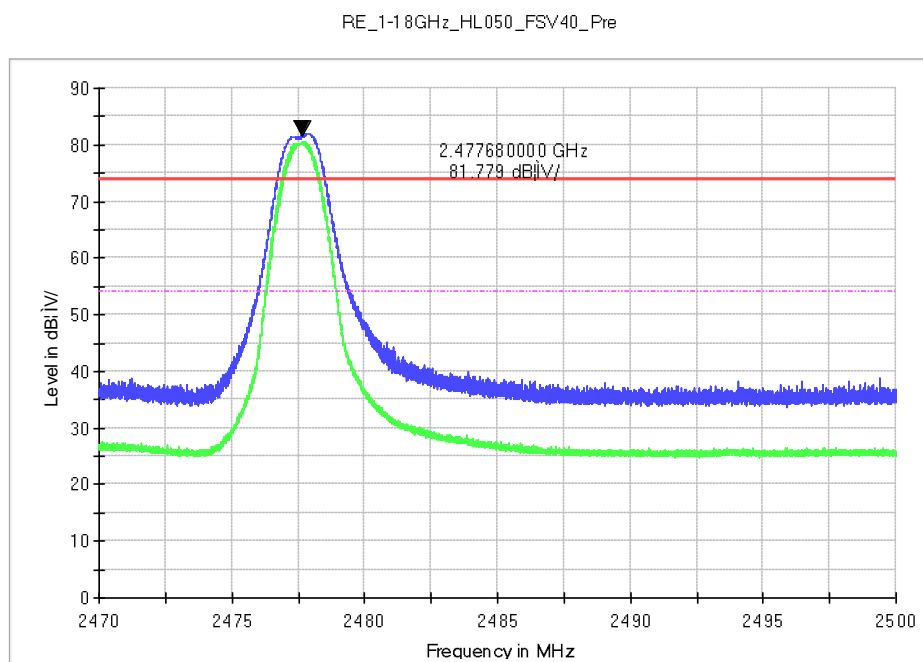
## 5.3 Emission in the Frequency Range above 30MHz

### 5.3.1 Radiated Band-Edge

**RESULT:****Pass**

Date of testing	:	01.06.2020
Ambient temperature	:	26.1°C
Relative humidity	:	32.7%
Atmospheric pressure	:	101kPa
Test requirement	:	FCC 15.247(d) FCC 15.205(a) FCC 15.209(a) Clause 5.5 of RSS-247 Issue 2 February 2017 Clause 8.90 of RSS-Gen Issue 5, March 2019 Clause 8.10 of RSS-Gen Issue 5, March 2019
Test procedure	:	KDB 558074 D01v05r02 ANSI C63.10: 2013
Test voltage	:	AC 120V, 60Hz
Test modes applied	:	TM1, TM3

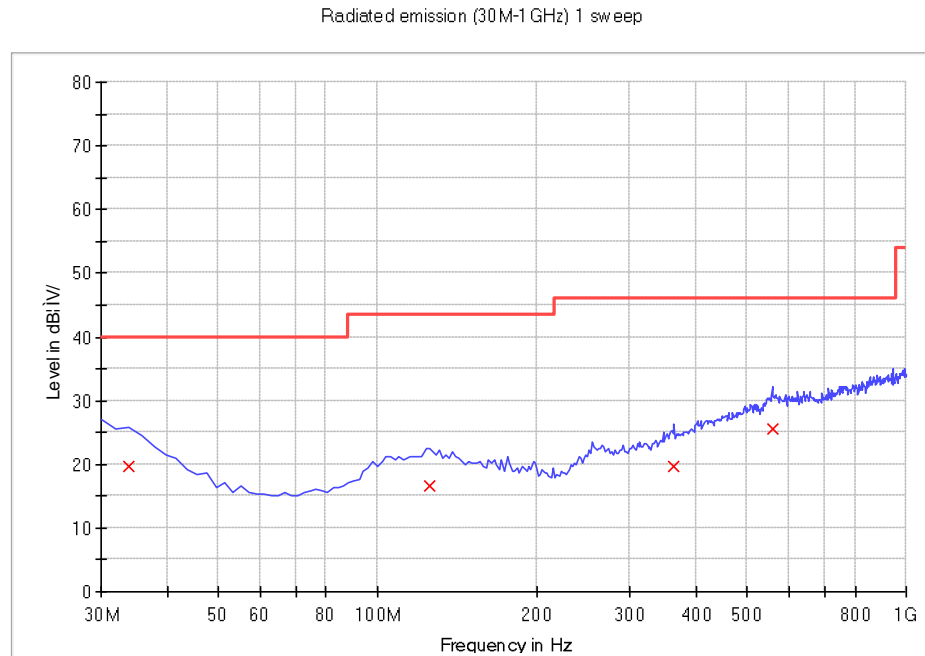
**Figure 23: Radiated Band-Edge, TM1, H**

**Figure 24: Radiated Band-Edge, TM1, V**


**Figure 25: Radiated Band-Edge, TM3, H**

**Figure 26: Radiated Band-Edge, TM3, V**


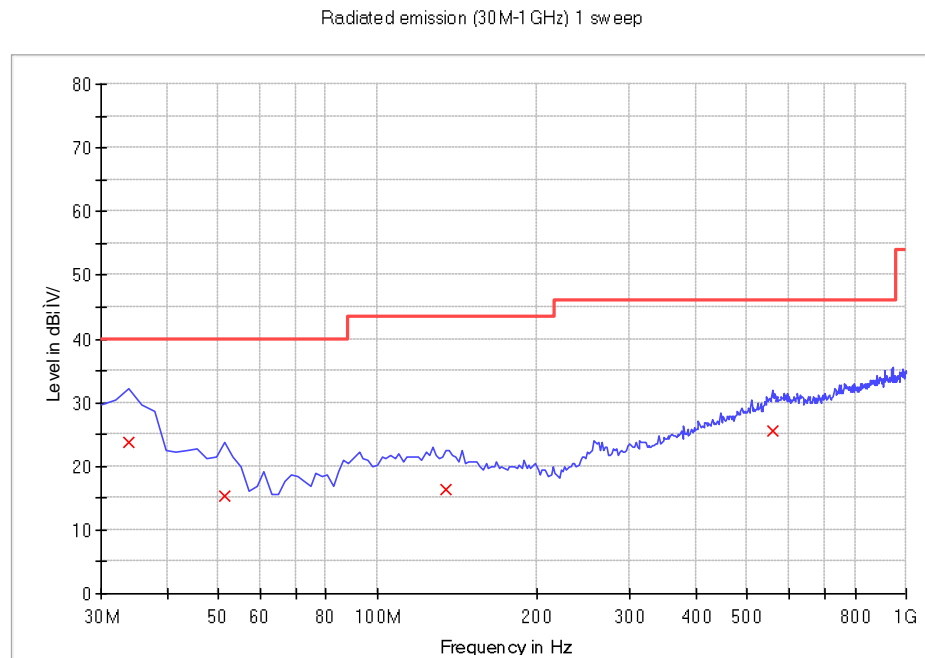
### 5.3.2 Radiated Spurious Emission

**RESULT:****Pass**

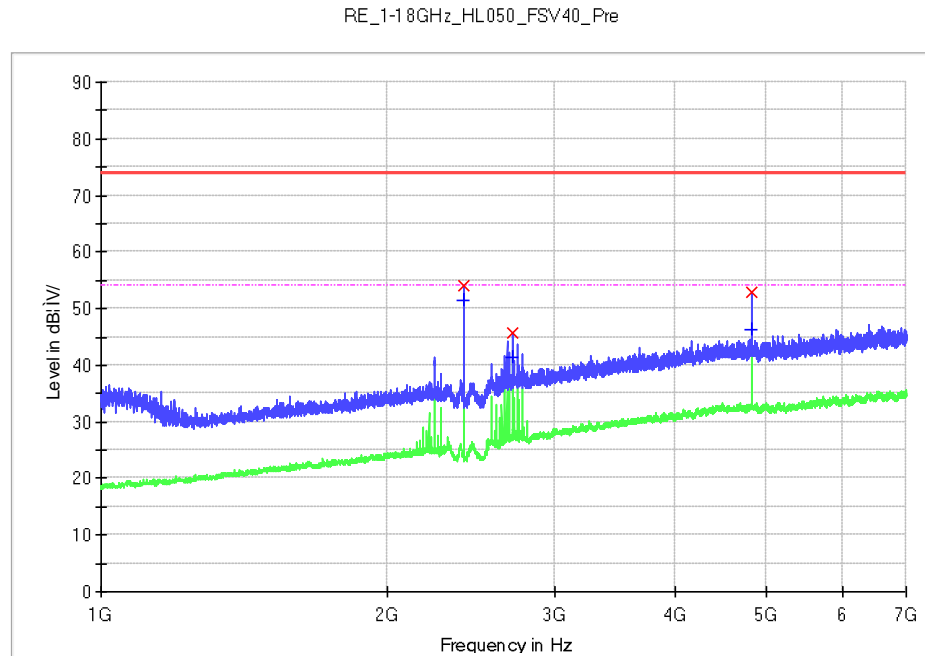
Date of testing : 01.06.2020~02.06.2020  
Ambient temperature : 23.2°C  
Relative humidity : 38.5%  
Atmospheric pressure : 101kPa  
Test requirement : FCC Part 15.209(a)  
FCC Part 15.247(d)  
RSS-247 Issue 2, February 2017, Clause 5.5  
RSS-Gen Issue 5, Amendment 1, March 2019, Clause 8.9  
Test procedure : KDB 558074 D01v05r02  
ANSI C63.10: 2013  
Test voltage : AC 120V, 60Hz  
Test modes applied : TM1 to TM3  
Kind of test site : 3m Anechoic Chamber

**Figure 27: Radiated Spurious Emission, TM1, 30MHz to 1GHz, H**


Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
33.887776	19.6	H	23.4	20.4	40.0
125.250501	16.5	H	18.8	27.0	43.5
364.348697	19.6	H	21.8	26.4	46.0
558.737475	25.5	H	26.3	20.5	46.0

**Figure 28: Radiated Spurious Emission, TM1, 30MHz to 1GHz, V**


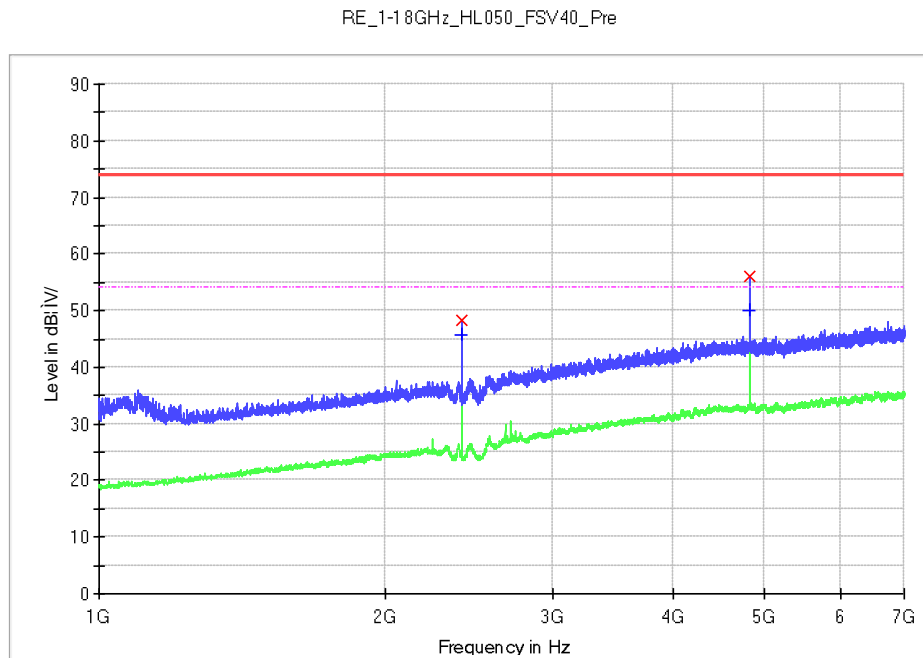
Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
33.887776	23.7	V	23.4	16.3	40.0
51.382766	15.5	V	14.1	24.5	40.0
134.969940	16.3	V	18.4	27.2	43.5
558.737475	25.5	V	26.3	20.5	46.0

**Figure 29: Radiated Spurious Emission, TM1, 1GHz to 7GHz, H**


Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2405.000000	54.2	H	-14.4	N/A	N/A
2700.000000	45.8	H	-13.1	28.2	74.0
4810.500000	52.9	H	-6.5	21.1	74.0

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2405.000000	51.5	H	-14.4	N/A	N/A
2700.000000	41.3	H	-13.1	12.7	54.0
4810.500000	46.4	H	-6.5	7.6	54.0



**Figure 30: Radiated Spurious Emission, TM1, 1GHz to 7GHz, V**


Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2405.000000	48.2	V	-14.4	N/A	N/A
4810.000000	56.1	V	-6.5	17.9	74.0

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2405.000000	45.8	V	-14.4	N/A	N/A
4810.000000	50.0	V	-6.5	4.0	54.0

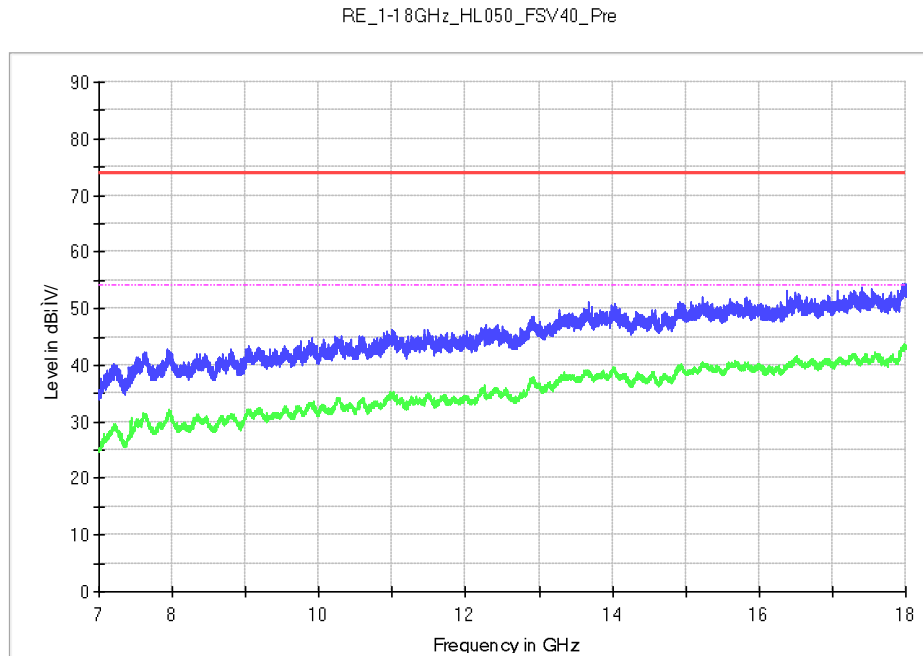
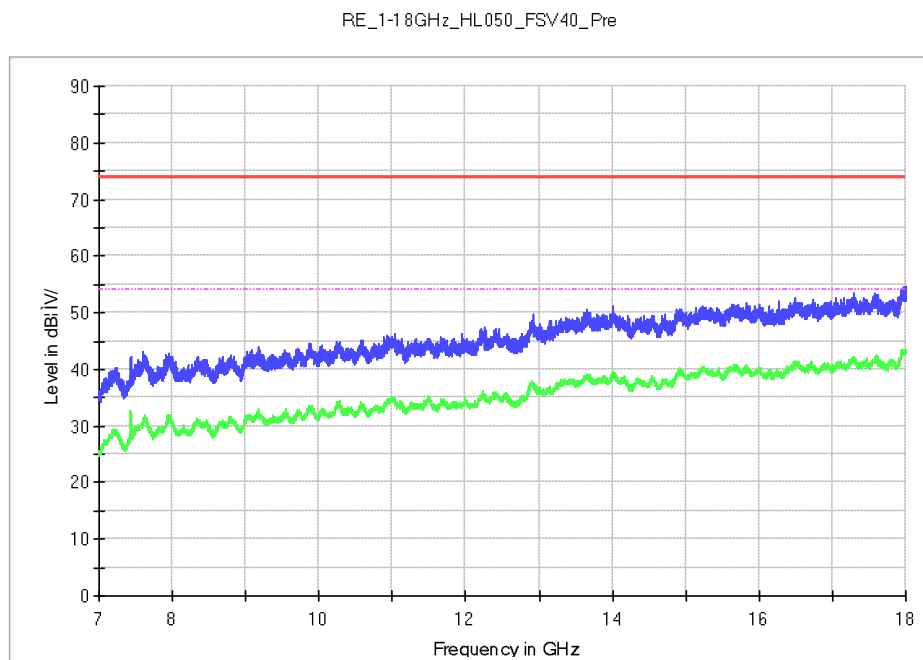
**Figure 31: Radiated Spurious Emission, TM1, 7GHz to 18GHz, H**

**Figure 32: Radiated Spurious Emission, TM1, 7GHz to 18GHz, V**


Figure 33: Radiated Spurious Emission, TM1, 18GHz to 25GHz, H

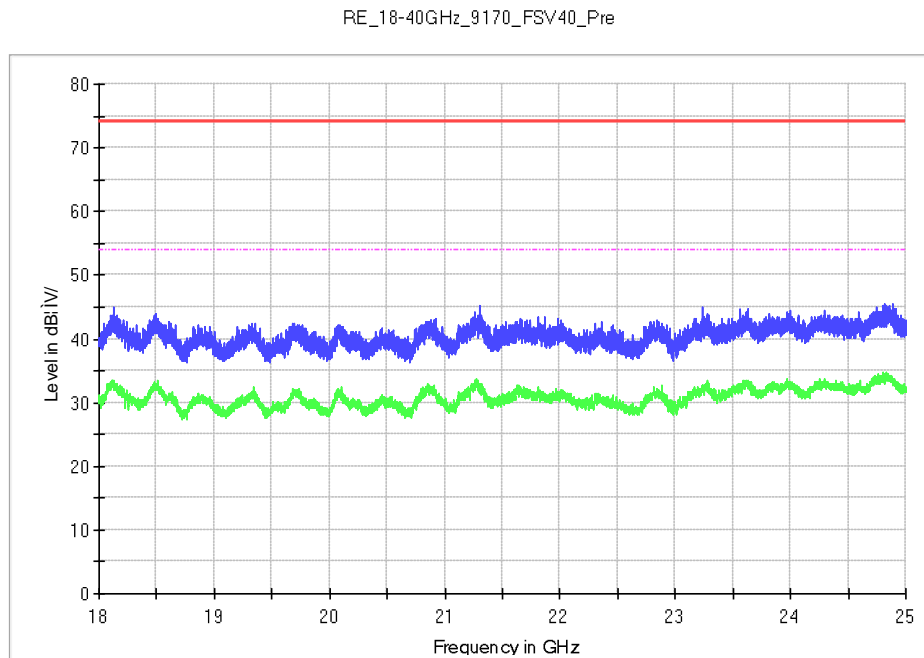
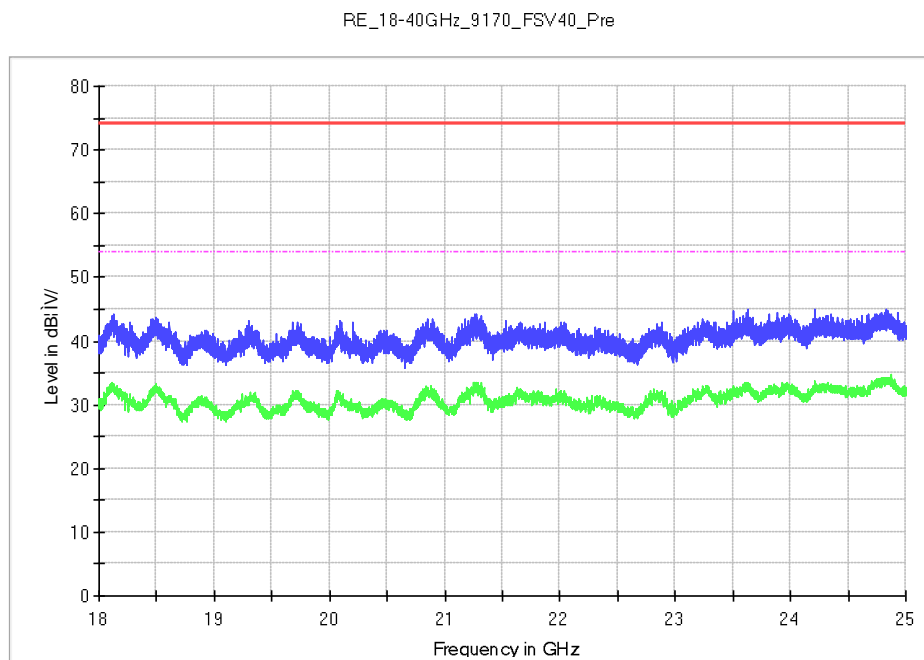
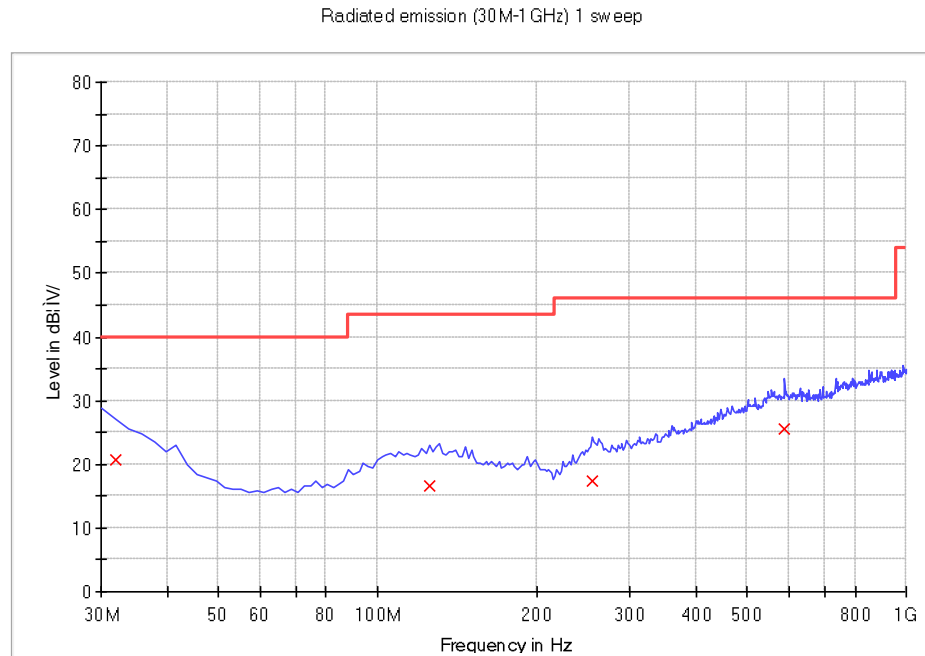
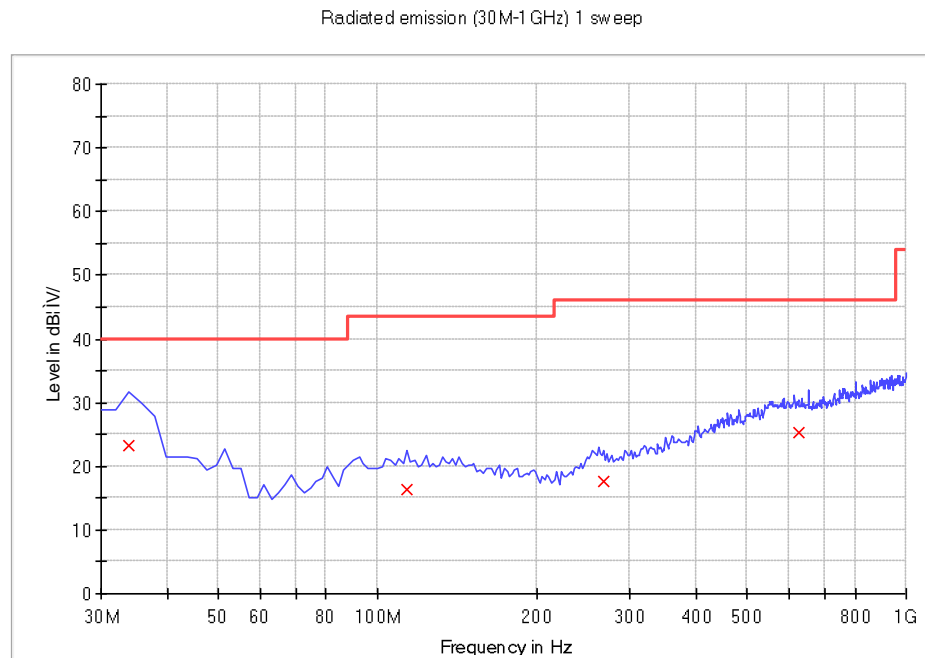


Figure 34: Radiated Spurious Emission, TM1, 18GHz to 25GHz, V

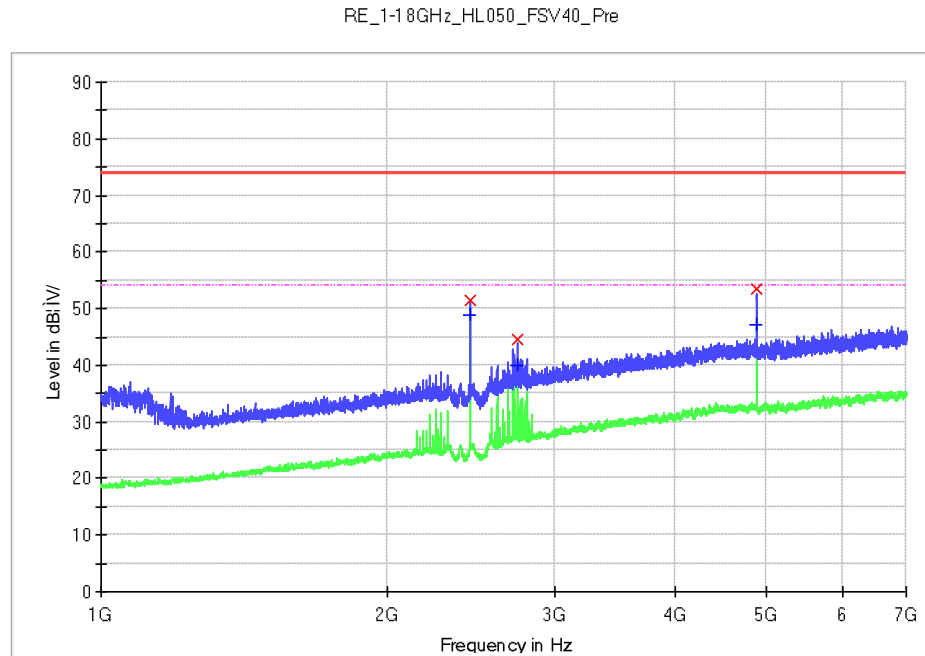


**Figure 35: Radiated Spurious Emission, TM2, 30MHz to 1GHz, H**


Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
31.943888	20.8	H	24.5	19.2	40.0
125.250501	16.5	H	18.8	27.0	43.5
255.490982	17.4	H	20.1	28.6	46.0
589.839679	25.6	H	26.3	20.4	46.0

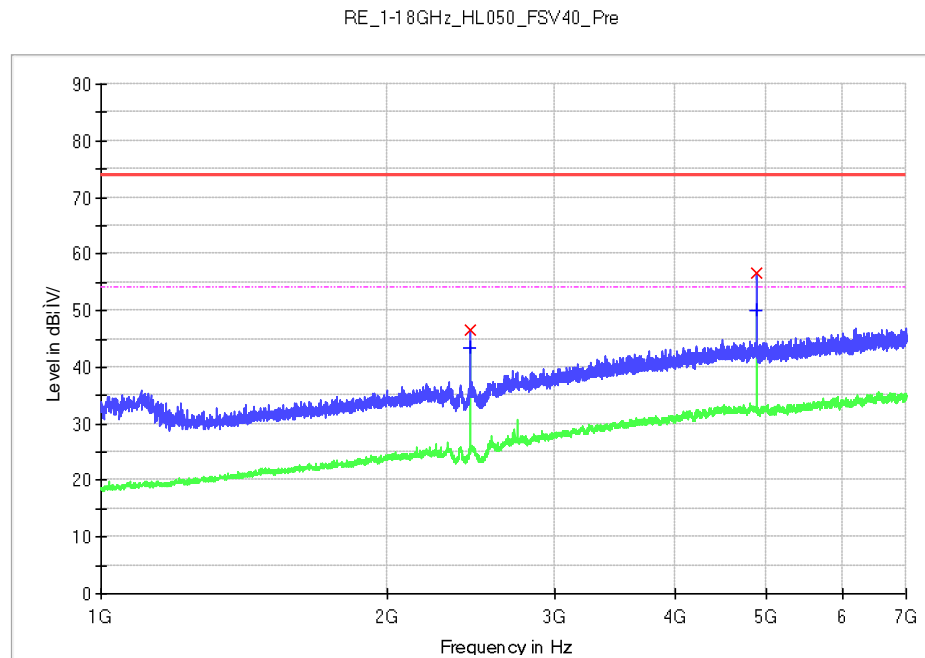
**Figure 36: Radiated Spurious Emission, TM2, 30MHz to 1GHz, V**


Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
33.887776	23.3	V	23.4	16.7	40.0
113.587174	16.3	V	18.6	27.2	43.5
267.154309	17.7	V	20.3	28.3	46.0
624.829659	25.3	V	26.2	20.7	46.0

**Figure 37: Radiated Spurious Emission, TM2, 1GHz to 7GHz, H**


Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2440.500000	51.5	H	-14.3	N/A	N/A
2735.000000	44.5	H	-12.9	29.5	74.0
4881.000000	53.4	H	-6.5	20.6	74.0

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2440.500000	48.8	H	-14.3	N/A	N/A
2735.000000	40.1	H	-12.9	13.9	54.0
4881.000000	47.1	H	-6.5	6.9	54.0

**Figure 38: Radiated Spurious Emission, TM2, 1GHz to 7GHz, V**


Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2440.500000	46.5	V	-14.3	N/A	N/A
4882.000000	56.7	V	-6.5	17.3	74.0

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2440.500000	43.5	V	-14.3	N/A	N/A
4882.000000	50.1	V	-6.5	3.9	54.0

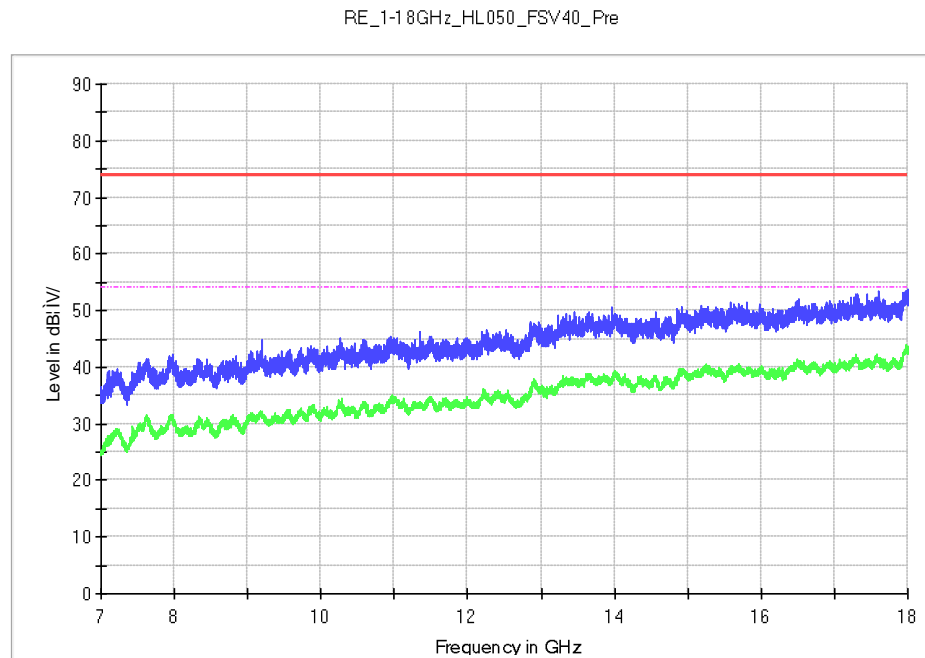
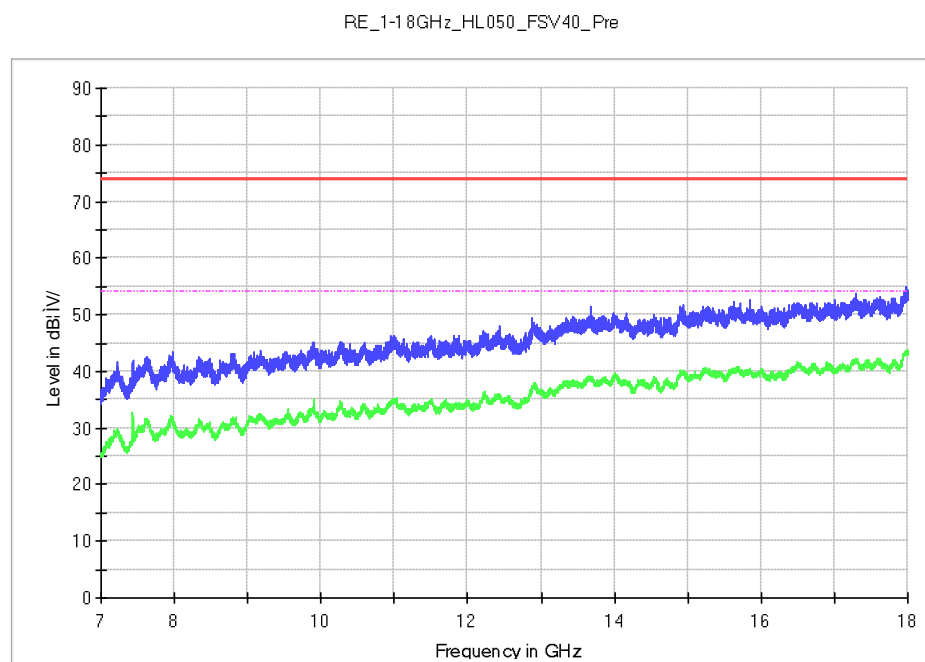
**Figure 39: Radiated Spurious Emission, TM2, 7GHz to 18GHz, H**

**Figure 40: Radiated Spurious Emission, TM2, 7GHz to 18GHz, V**




Figure 41: Radiated Spurious Emission, TM2, 18GHz to 25GHz, H

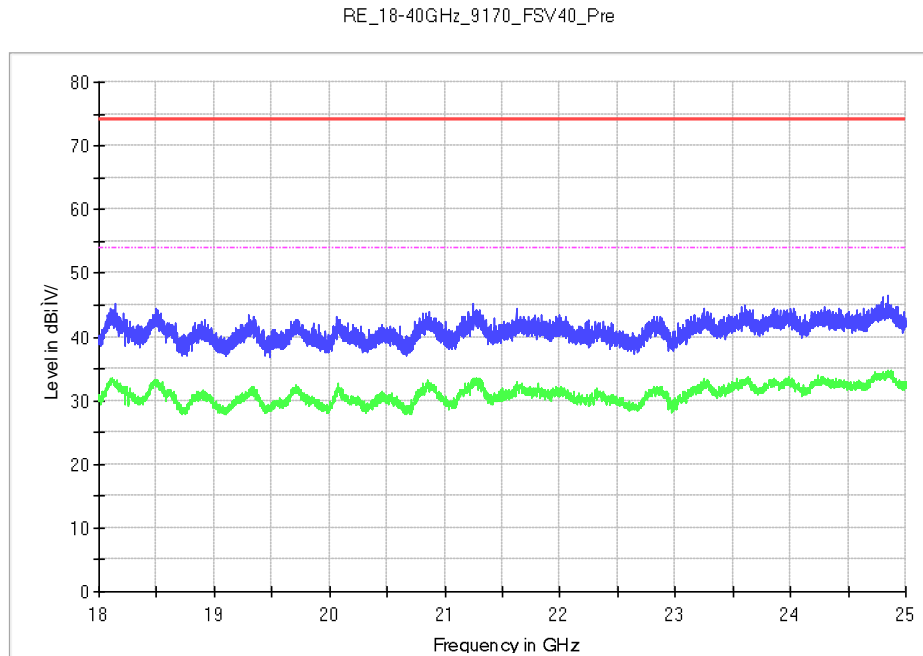
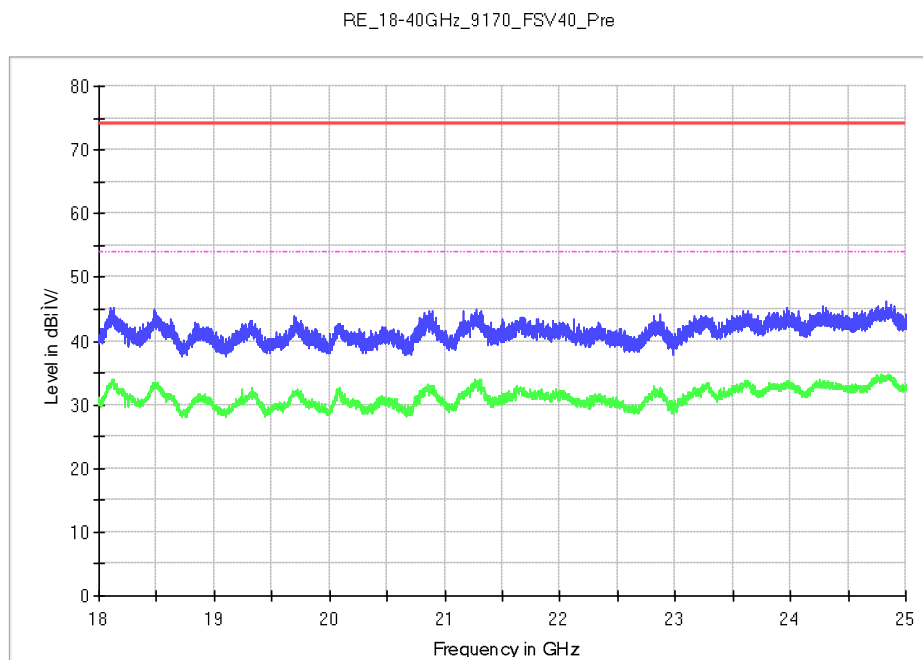
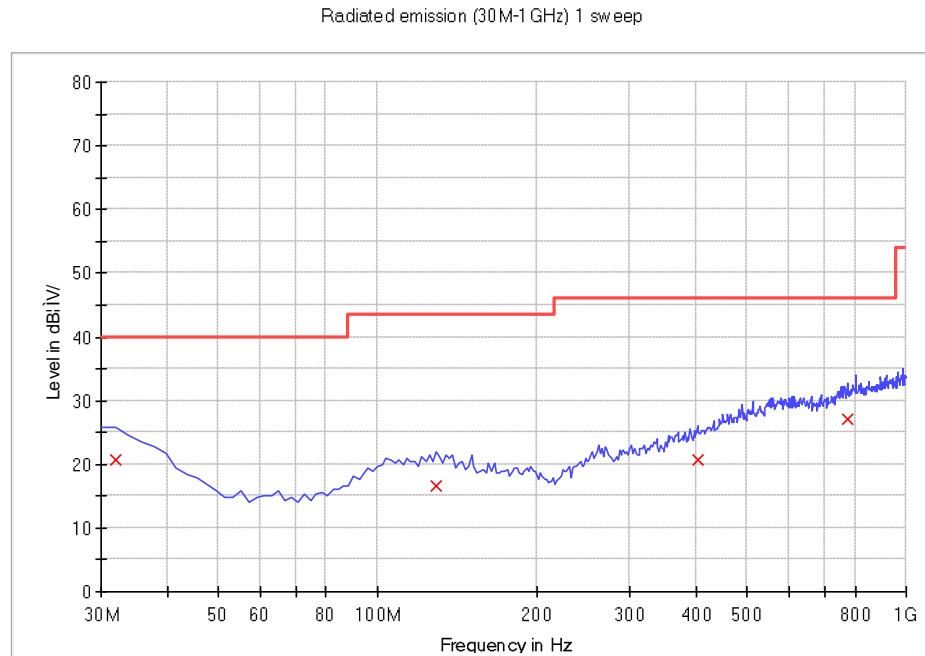
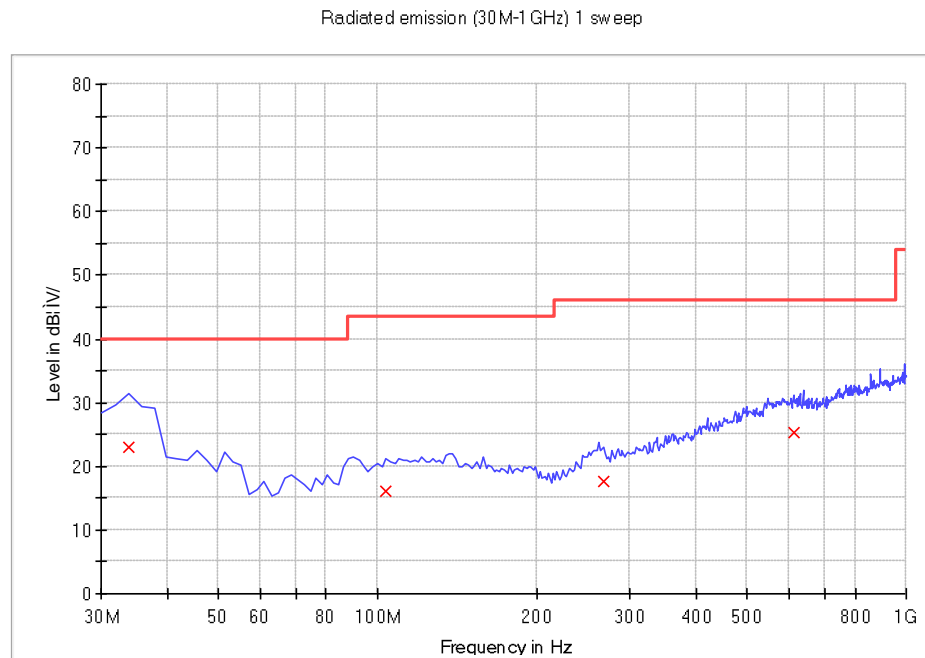


Figure 42: Radiated Spurious Emission, TM2, 18GHz to 25GHz, V

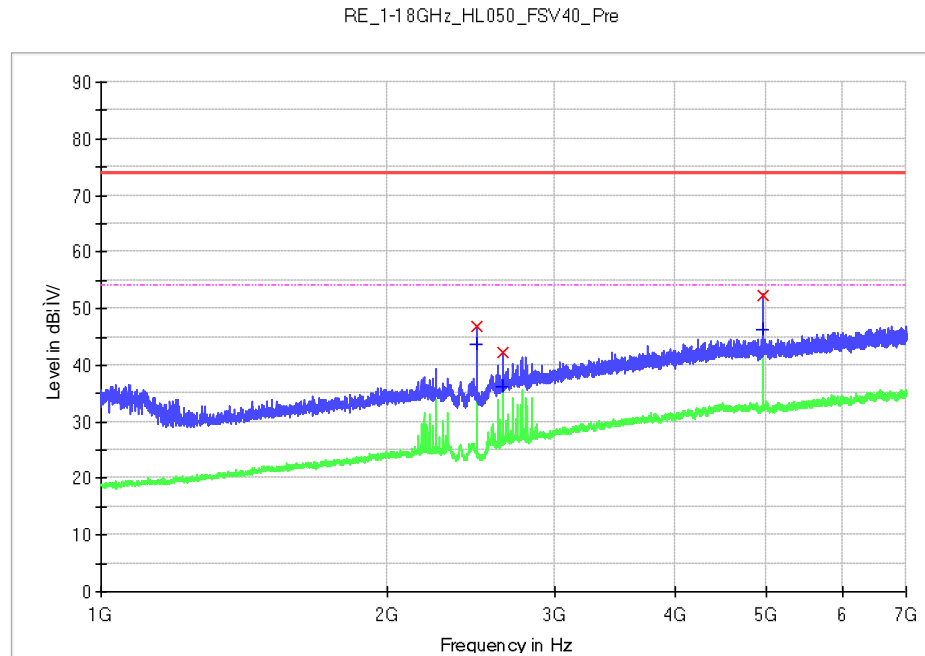


**Figure 43: Radiated Spurious Emission, TM3, 30MHz to 1GHz, H**


Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
31.943888	20.7	H	24.5	19.3	40.0
129.138277	16.5	H	18.7	27.0	43.5
403.226453	20.7	H	22.7	25.3	46.0
774.509018	27.0	H	27.3	19.0	46.0

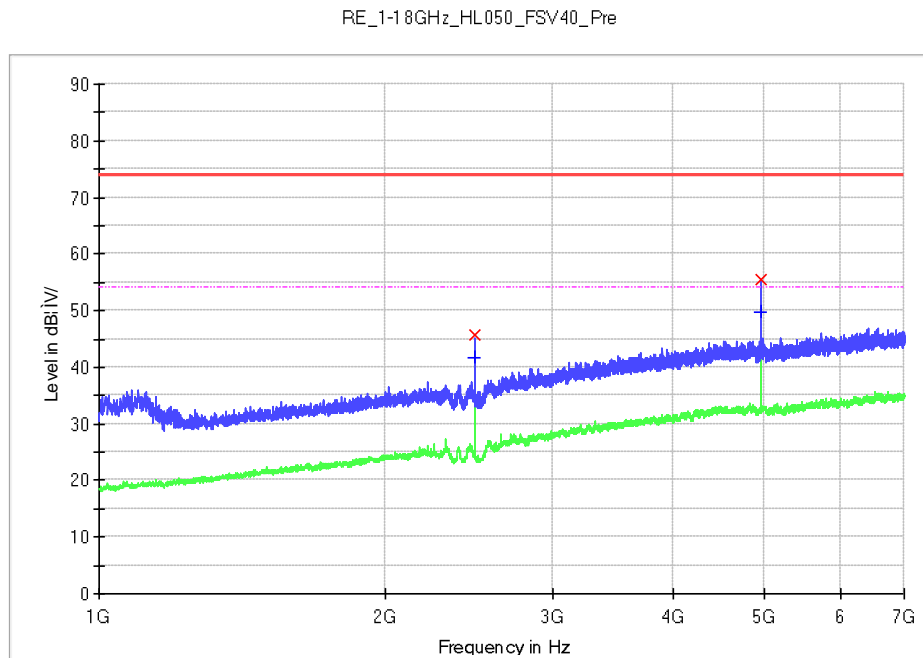
**Figure 44: Radiated Spurious Emission, TM3, 30MHz to 1GHz, V**


Frequency (MHz)	QuasiPeak (dBµV/m)	Pol	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBµV/m)
33.887776	23.1	V	23.4	16.9	40.0
103.867735	16.2	V	18.1	27.3	43.5
267.154309	17.7	V	20.3	28.3	46.0
611.222445	25.4	V	26.2	20.6	46.0

**Figure 45: Radiated Spurious Emission, TM3, 1GHz to 7GHz, H**


Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2477.000000	46.9	H	-14.2	N/A	N/A
2641.000000	42.4	H	-13.4	31.6	74.0
4956.000000	52.4	H	-6.6	21.6	74.0

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2477.000000	43.6	H	-14.2	N/A	N/A
2641.000000	36.1	H	-13.4	17.9	54.0
4956.000000	46.4	H	-6.6	7.6	54.0

**Figure 46: Radiated Spurious Emission, TM3, 1GHz to 7GHz, V**


Frequency (MHz)	MaxPeak (dBµV/m)	Pol	Corr. (dB)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2478.000000	45.6	V	-14.2	N/A	N/A
4955.500000	55.6	V	-6.6	18.4	74.0

Frequency (MHz)	Average (dBµV/m)	Pol	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2478.000000	41.8	V	-14.2	N/A	N/A
4955.500000	49.8	V	-6.6	4.2	54.0

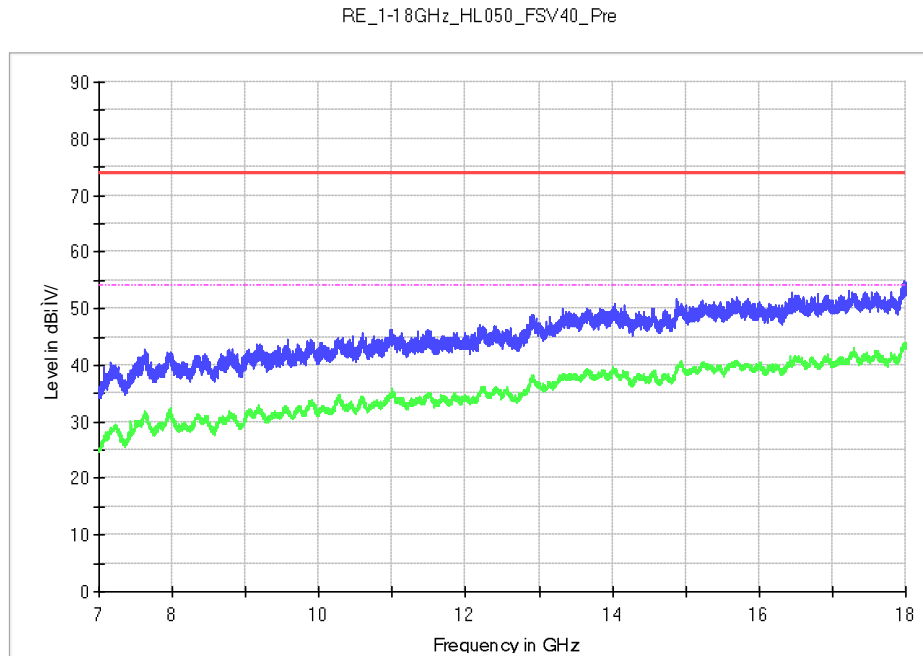
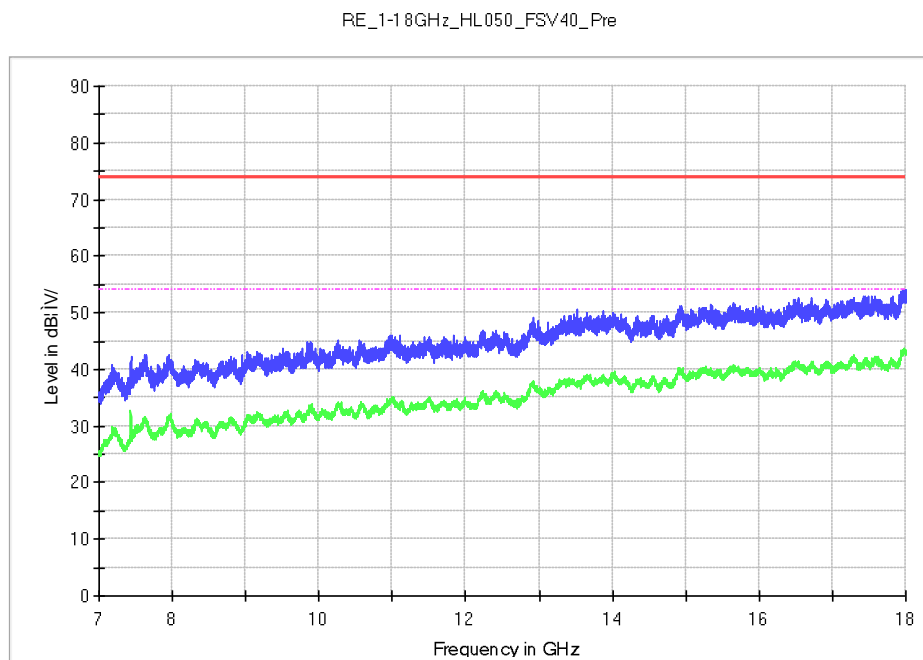
**Figure 47: Radiated Spurious Emission, TM3, 7GHz to 18GHz, H**

**Figure 48: Radiated Spurious Emission, TM3, 7GHz to 18GHz, V**


Figure 49: Radiated Spurious Emission, TM3, 18GHz to 25GHz, H

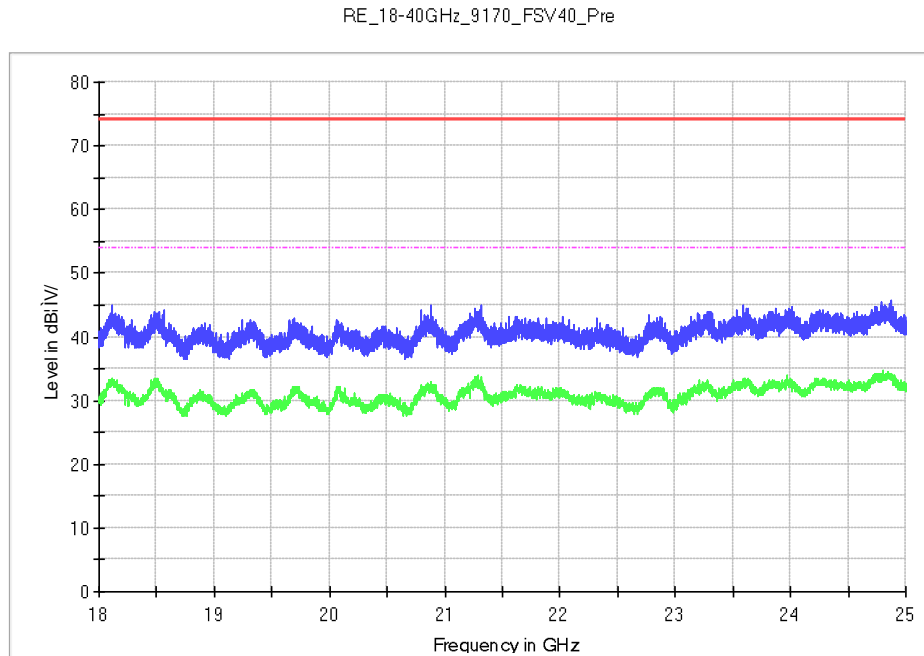
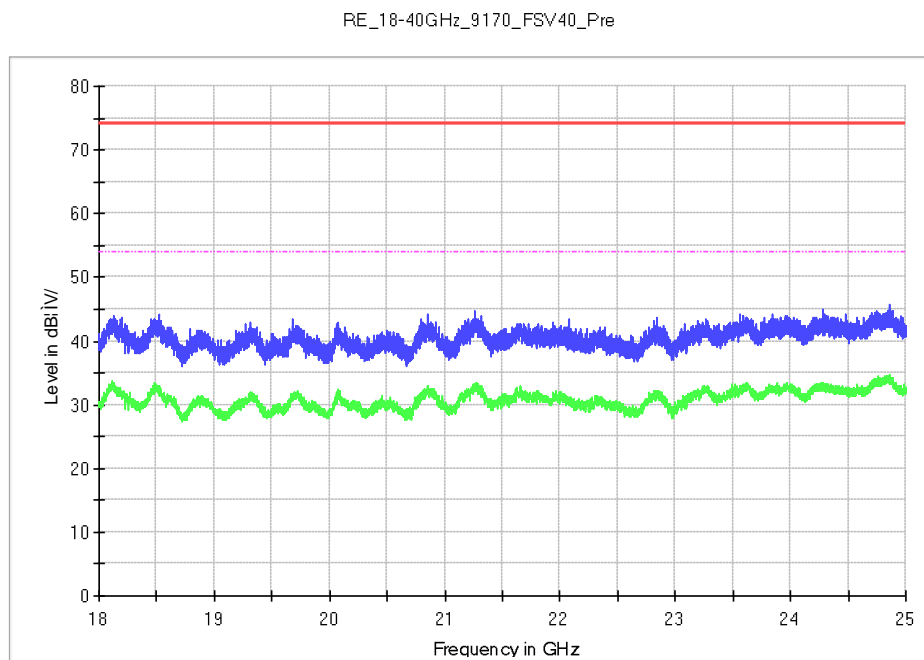


Figure 50: Radiated Spurious Emission, TM3, 18GHz to 25GHz, V



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