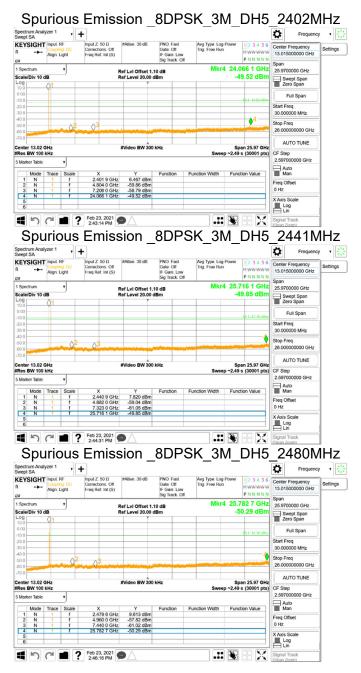


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### 10 RADIATED BANDEDGE AND SPURIOUS EMISSION MEASUREMENT

### 10.1 Standard Applicable

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands must also comply with the §15.209 and RSS-Gen §8.9 Table 5 and 6 limit as below.

And according to §15.33(a) (1) & RSS-Gen §6.13.2.a, for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

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 (dB $\mu$ V/m) = 20 log Emission level ( $\mu$ V/m)

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# 10.2 Measurement Equipment Used

	Radiated Emission Test Site: SAC 1							
EQUIPMENT TYPE	MFR/BRAND	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.			
Horn Antenna	SCHWAZBEC K	BBHA9170	184	12/11/2020	12/10/2021			
Site Cal	SGS	SAC I chamber	N/A	01/01/2021	12/31/2021			
Horn Antenna	Schwarzbeck	BBHA9120 D	D803	12/17/2020	12/16/2021			
Bi-log Antenna	TESEO	CBL 6112D	35242 & AT- N0555	01/13/2021	01/12/2022			
Loop Antenna	ETS.LINDGR EN	6502	148045	10/19/2020	10/18/2021			
Spectrum Analyzer	Agilent	E4446A	MY51100003	10/29/2020	10/28/2021			
Test Software	audix	e3	Ver. 6.11- 20180413	01/01/2021	12/31/2021			
EMI Test Receiver	R&S	ESCI7	100759	07/13/2020	07/12/2021			
Pre-Amplifier	EMC Instruments	EMC184045 B	980135	12/16/2020	12/15/2021			
Pre-Amplifier	HP	8449B	3008A01973	12/16/2020	12/15/2021			
Pre-Amplifier	HP	8447D	2944A09469	12/16/2020	12/15/2021			
Attenuator	Mini-Circuit	BW- S10W2+	4	12/16/2020	12/15/2021			
Filter 2400-2483.5 MHz	EWT	EWT-14- 0166	M1	12/16/2020	12/15/2021			
High Pass Filter	WI	WHKX4.0/1 8G-10SS	22	12/16/2020	12/15/2021			
Coaxial Cable	Huber Suhner	succoflex 102	MY2622/2	12/16/2020	12/15/2021			
Coaxial Cable	Huber Suhner	succoflex 104A	800086/4a	12/16/2020	12/15/2021			
Coaxial Cable	Huber Suhner	EMC 104- SM-SM- 2000	160123	12/16/2020	12/15/2021			
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY2630/2	12/16/2020	12/15/2021			
Coaxial Cable	Huber Suhner	SUCOFLEX 102	MY22962/2	12/16/2020	12/15/2021			
Coaxial Cable	Huber Suhner	SUCOFLEX 102	SN 520430/2	12/16/2020	12/15/2021			

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解析方方式の子 L軟音音光性到角成之体而具ま 「同時以後而程本音句之子を音音を表示を立む音曲音句子 不可能的技術。
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台灣檢驗科技股份有限公司 t (886-2) 2299-3279

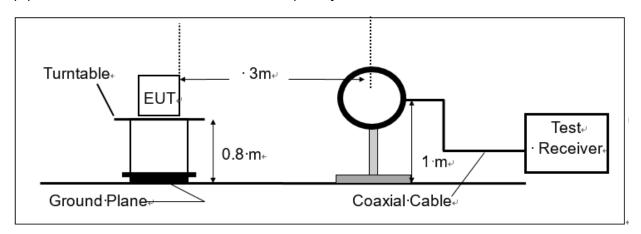
f (886-2) 2298-0488 www.sgs.com.tw



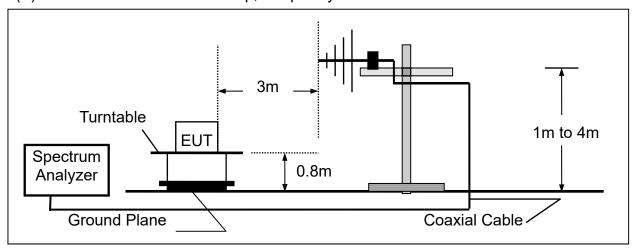
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#### 10.3 **Test SET-UP**

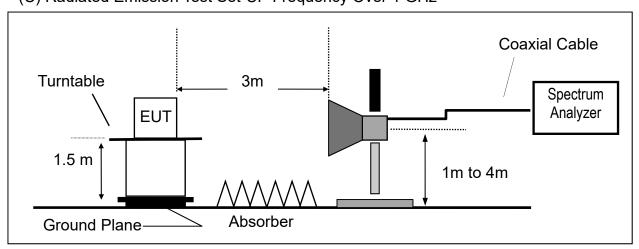
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



(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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#### 10.4 **Measurement Procedure**

### 10.4.1 Radiated Emission

- 1. The testing follows the Measurement Procedure of ANSI C63.10:2013.
- 2. The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 1GHz above ground plan.
- 3. The turn table shall rotate 360 degrees to determine the position of maximum emission
- 4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 5. 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.
- 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.
- 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.
- 9. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 10. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. On spectrum, change spectrum mode in linear display mode, and reduce VBW = 10Hz if average reading is measured.
- 11. Repeat above procedures until all default test channel measured were complete.

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#### 10.5 **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\*log(uV/m)

Actual  $FS(dB\mu V/m) = SPA$ . Reading level( $dB\mu V$ ) + Factor(dB)  $Factor(dB) = Antenna\ Factor(dB\mu V/m) + Cable\ Loss(dB) - Pre\_Amplifier\ Gain(dB)$ 

#### 10.6 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) & RSS-GEN §6.13.2 was not reported.

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### 10.7 Measurement Result:

# 10.7.1 Radiated Bandedge Result (Hopping Mode)

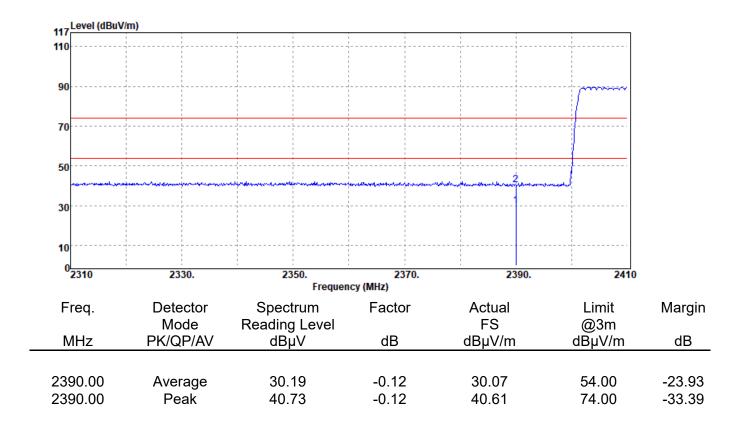
Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :BR Hopping Test Date :2021-02-23

Test Frequency :2402 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH Low Antenna Pol. :VERTICAL

EUT Pol :E2 Plane Engineer :Neo Tsai



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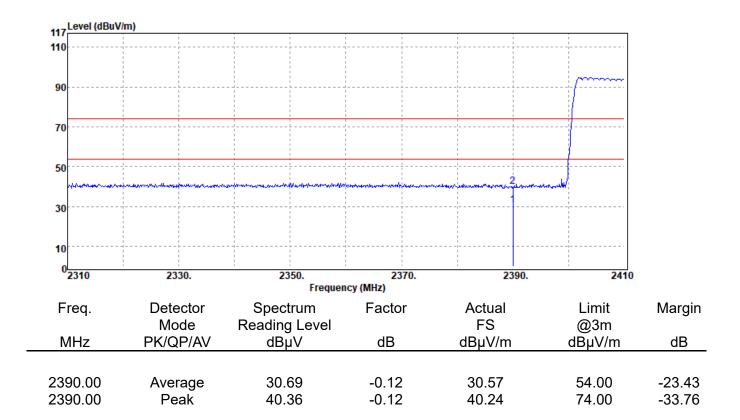
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Operation Mode :BR Hopping Test Date :2021-02-23

Test Frequency :2402 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH Low Antenna Pol. :HORIZONTAL

EUT Pol :E2 Plane Engineer :Neo Tsai



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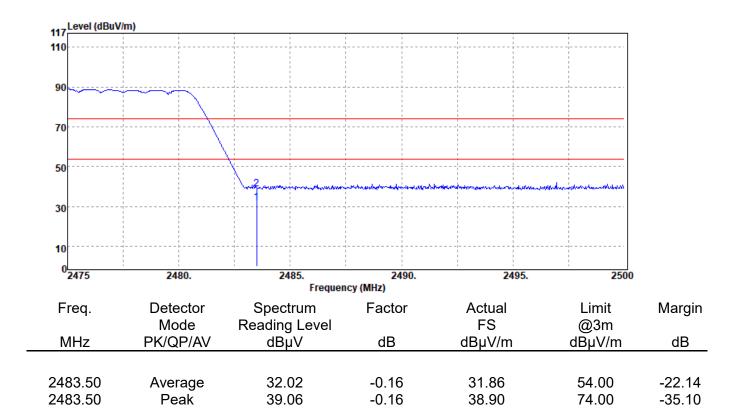
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**Operation Mode Test Date** :2021-02-23 :BR Hopping

**Test Frequency** :2480 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH High Antenna Pol. :VERTICAL

:E2 Plane **EUT Pol** Engineer :Neo Tsai



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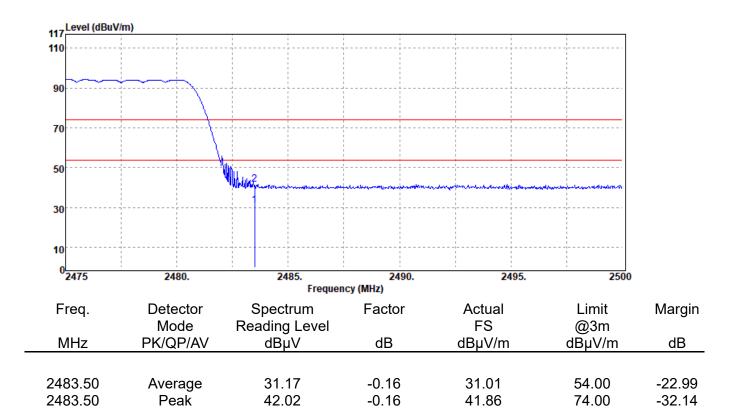
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Operation Mode :BR Hopping Test Date :2021-02-23

Test Frequency :2480 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH High Antenna Pol. :HORIZONTAL

EUT Pol :E2 Plane Engineer :Neo Tsai



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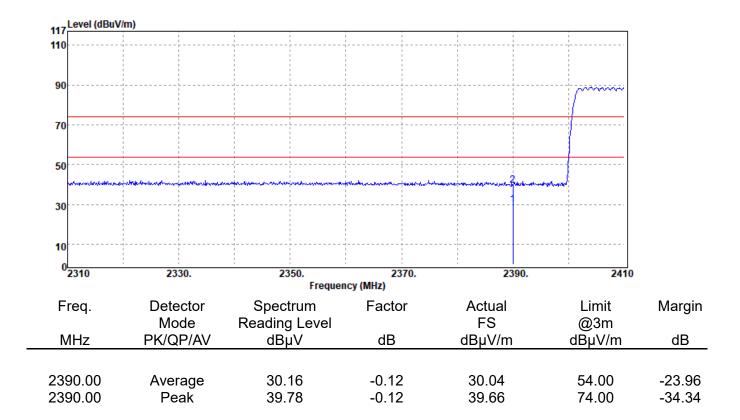
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**Operation Mode Test Date** :2021-02-23 :EDR Hopping

**Test Frequency** :2402 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH Low Antenna Pol. :VERTICAL

**EUT Pol** :E2 Plane Engineer :Neo Tsai



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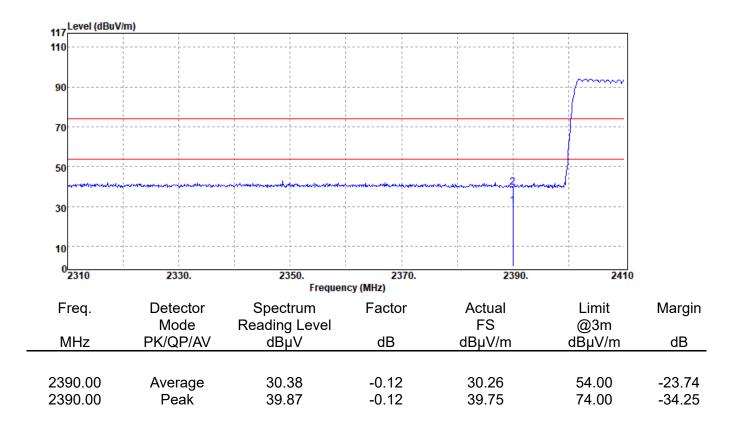
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**Operation Mode Test Date** :2021-02-23 :EDR Hopping

**Test Frequency** :2402 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH Low Antenna Pol. :HORIZONTAL

**EUT Pol** :E2 Plane Engineer :Neo Tsai



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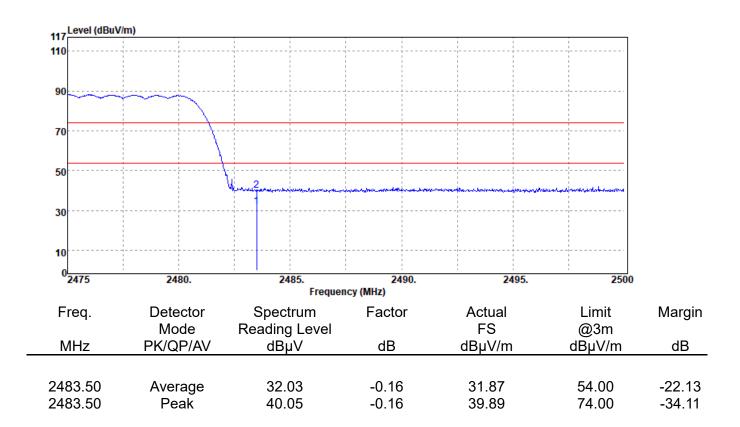
Report Number Test Site :SAC I Chamber :ER/2021/10053

**Operation Mode Test Date** :2021-02-23 :EDR Hopping

**Test Frequency** :2480 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH High Antenna Pol. :VERTICAL

**EUT Pol** :E2 Plane Engineer :Neo Tsai



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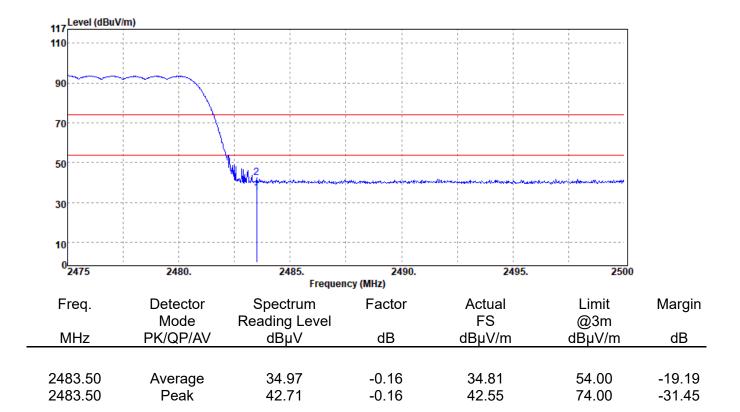
Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :EDR Hopping Test Date :2021-02-23

Test Frequency :2480 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH High Antenna Pol. :HORIZONTAL

EUT Pol :E2 Plane Engineer :Neo Tsai



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# 10.7.2 Radiated Bandedge Result (Non-Hopping Mode)

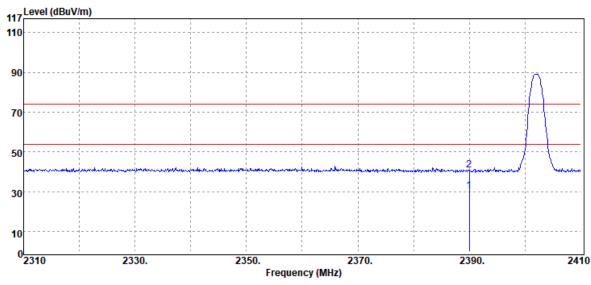
Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :BR(1M) Test Date :2021-02-23

Test Frequency :2402 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH Low Antenna Pol. :VERTICAL

EUT Pol :E2 Plane Engineer :Neo Tsai



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	Average	30.39	-0.12	30.27	54.00	-23.73
2390.00	Peak	41.12	-0.12	41.00	74.00	-33.00

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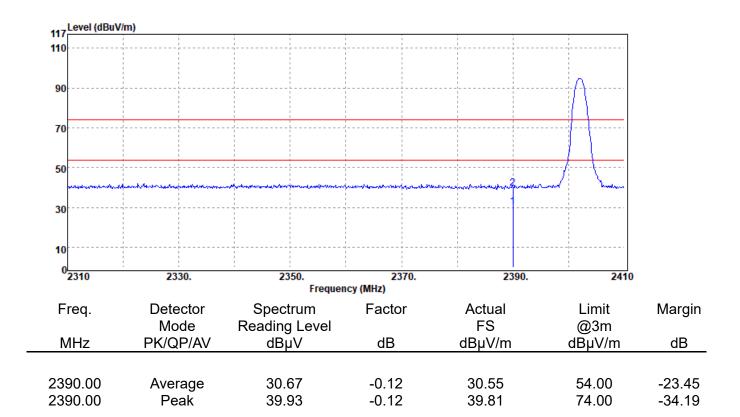
Report Number Test Site :SAC I Chamber :ER/2021/10053

**Operation Mode** :BR(1M) **Test Date** :2021-02-23

**Test Frequency** :2402 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH Low Antenna Pol. :HORIZONTAL

**EUT Pol** :E2 Plane Engineer :Neo Tsai



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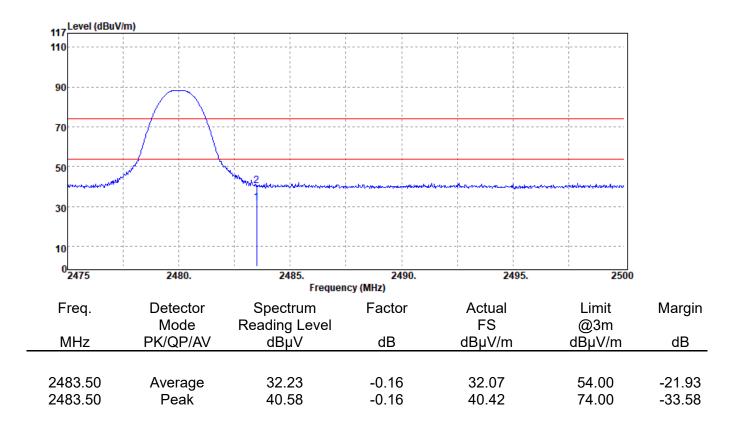
Report Number Test Site :SAC I Chamber :ER/2021/10053

**Operation Mode** :BR(1M) **Test Date** :2021-02-23

**Test Frequency** :2480 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH High Antenna Pol. :VERTICAL

:E2 Plane **EUT Pol** Engineer :Neo Tsai



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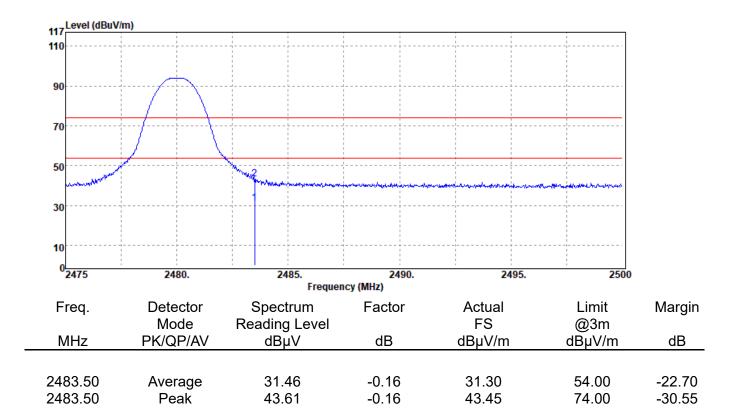
Report Number Test Site :SAC I Chamber :ER/2021/10053

**Operation Mode** :BR(1M) **Test Date** :2021-02-23

**Test Frequency** :2480 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH High Antenna Pol. :HORIZONTAL

:E2 Plane **EUT Pol** Engineer :Neo Tsai



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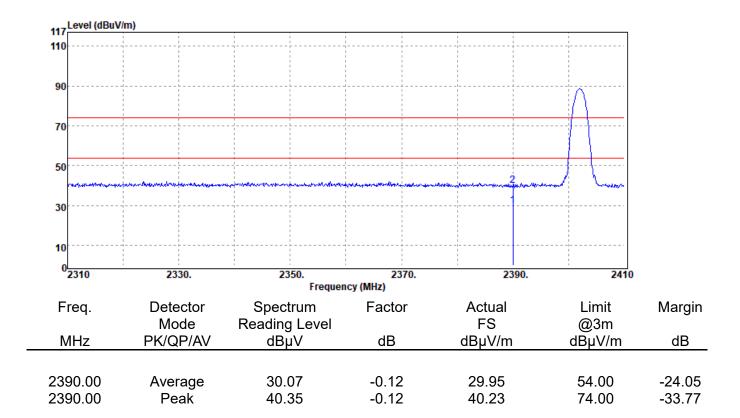
Report Number Test Site :SAC I Chamber :ER/2021/10053

**Operation Mode** :EDR(3M) **Test Date** :2021-02-23

**Test Frequency** :2402 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH Low Antenna Pol. :VERTICAL

**EUT Pol** :E2 Plane Engineer :Neo Tsai



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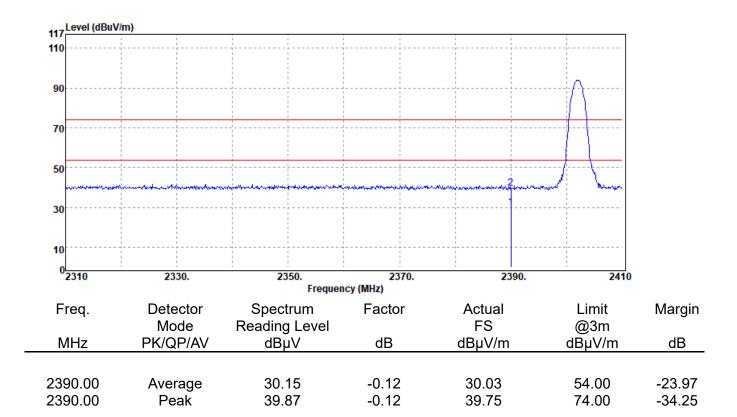
Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :EDR(3M) Test Date :2021-02-23

Test Frequency :2402 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH Low Antenna Pol. :HORIZONTAL

EUT Pol :E2 Plane Engineer :Neo Tsai



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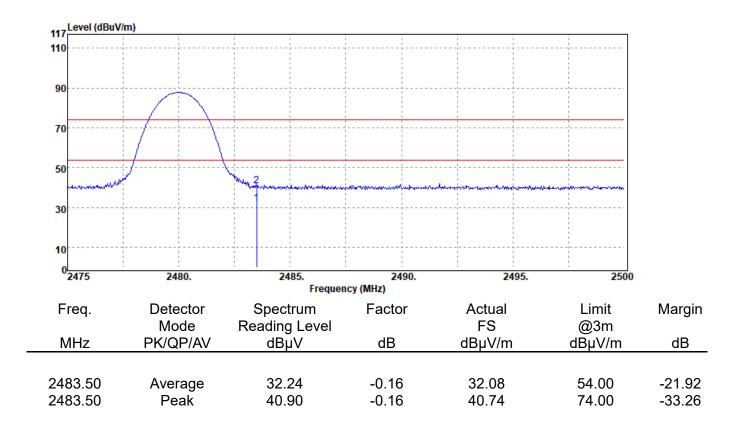
Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :EDR(3M) Test Date :2021-02-23

Test Frequency :2480 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH High Antenna Pol. :VERTICAL

EUT Pol :E2 Plane Engineer :Neo Tsai



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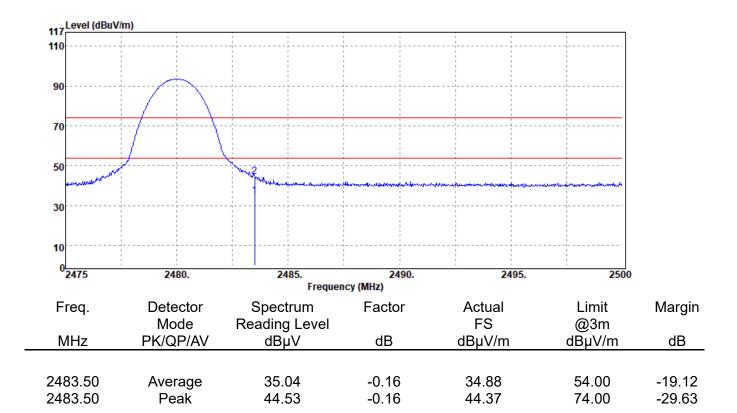
Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :EDR(3M) Test Date :2021-02-23

Test Frequency :2480 MHz Temp./Humi. :22.6/54

Test Mode :Bandedge CH High Antenna Pol. :HORIZONTAL

EUT Pol :E2 Plane Engineer :Neo Tsai



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### 10.7.3 Radiated Spurious Emission form 30MHz to 1000MHz:

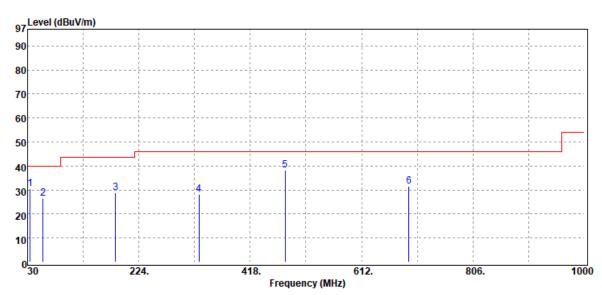
**Test Site** :SAC I Chamber Report Number :ER/2021/10053

:BR(1M) **Operation Mode Test Date** :2021-02-23

Test Frequency :2441 MHz Temp./Humi. :22.6/54

Test Mode :Tx CH Mid Antenna Pol. :VERTICAL

**EUT Pol** :E2 Plane Engineer :Neo Tsai



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
34.85	Peak	37.57	-7.02	30.55	40.00	-9.45
57.16	Peak	44.27	-17.79	26.48	40.00	-13.52
183.26	Peak	43.15	-14.15	29.00	43.50	-14.50
328.76	Peak	36.55	-8.42	28.13	46.00	-17.87
479.11	Peak	43.90	-5.77	38.13	46.00	-7.87
694.45	Peak	34.09	-2.68	31.41	46.00	-14.59

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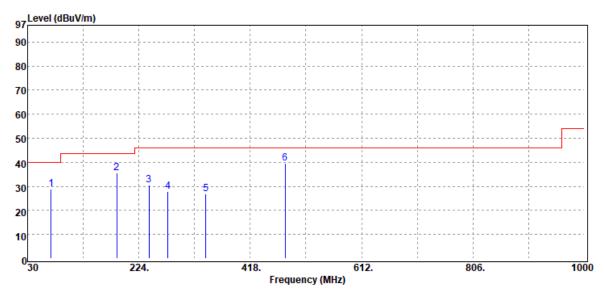
Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :BR(1M) Test Date :2021-02-23

Test Frequency :2441 MHz Temp./Humi. :22.6/54

Test Mode :Tx CH Mid Antenna Pol. :HORIZONTAL

EUT Pol :E2 Plane Engineer :Neo Tsai



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBμV/m	dB
70.74	Peak	46.58	-17.63	28.95	40.00	-11.05
185.20	Peak	49.69	-14.11	35.58	43.50	-7.92
241.46	Peak	41.42	-10.83	30.59	46.00	-15.41
274.44	Peak	37.27	-9.58	27.69	46.00	-18.31
340.40	Peak	34.62	-7.90	26.72	46.00	-19.28
479.11	Peak	45.21	-5.77	39.44	46.00	-6.56

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解析方方式の子 L軟音音光性到角成之体而具ま 「同時以後而程本音句之子を音音を表示を立む音曲音句子 不可能的技術。
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# 10.7.4 Radiated Spurious Emission above 1 GHz:

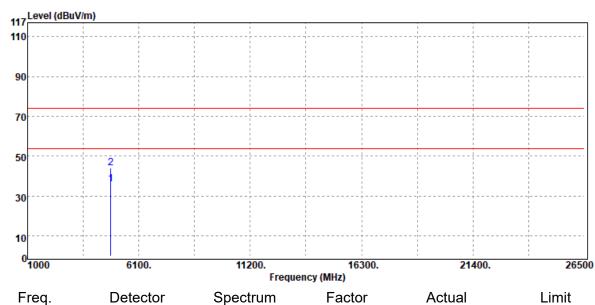
Report Number :ER/2021/10053 Test Site :SAC I Chamber

**Test Date** :2021-02-23 **Operation Mode** :BR(1M)

Test Frequency :2402 MHz Temp./Humi. :22.6/54

Test Mode :Tx CH Low Antenna Pol. :VERTICAL

**EUT Pol** :E2 Plane :Neo Tsai Engineer



Freq.	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	PK/QP/AV	dΒμV	dB	dBµV/m	dBμV/m	dB
4804.00	Average	28.46	7.75	36.21	54.00	-17.79
4804.00	Peak	36.33	7.75	44.08	74.00	-29.92

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:E2 Plane

**EUT Pol** 

Report No.: ER/2021/20005

:Neo Tsai

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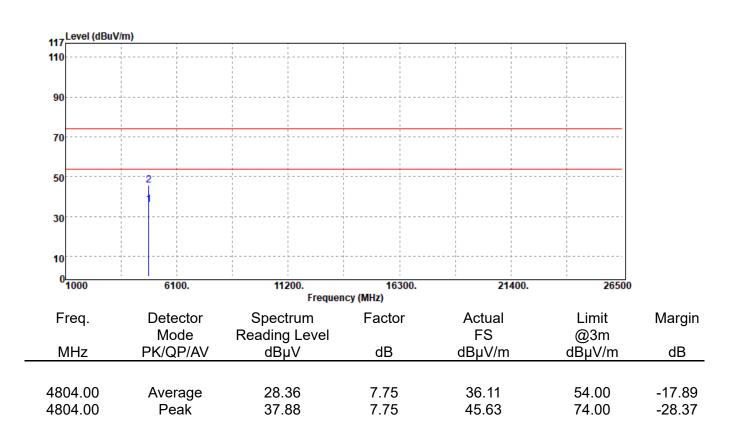
Engineer

Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :BR(1M) Test Date :2021-02-23

Test Frequency :2402 MHz Temp./Humi. :22.6/54

Test Mode :Tx CH Low Antenna Pol. :HORIZONTAL



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:Tx CH Mid

Test Mode

Report No.:ER/2021/20005

:VERTICAL

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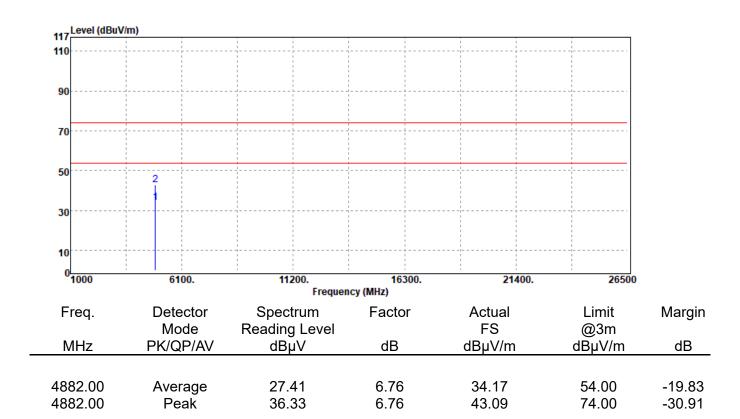
Antenna Pol.

Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :BR(1M) Test Date :2021-02-23

Test Frequency :2441 MHz Temp./Humi. :22.6/54

EUT Pol :E2 Plane Engineer :Neo Tsai



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:E2 Plane

**EUT Pol** 

Report No.: ER/2021/20005

:Neo Tsai

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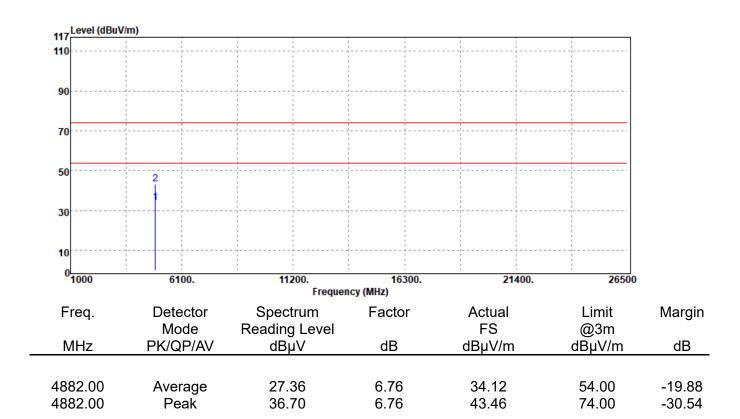
Engineer

Report Number Test Site :SAC I Chamber :ER/2021/10053

:BR(1M) **Operation Mode Test Date** :2021-02-23

**Test Frequency** :2441 MHz Temp./Humi. :22.6/54

Test Mode :Tx CH Mid Antenna Pol. :HORIZONTAL



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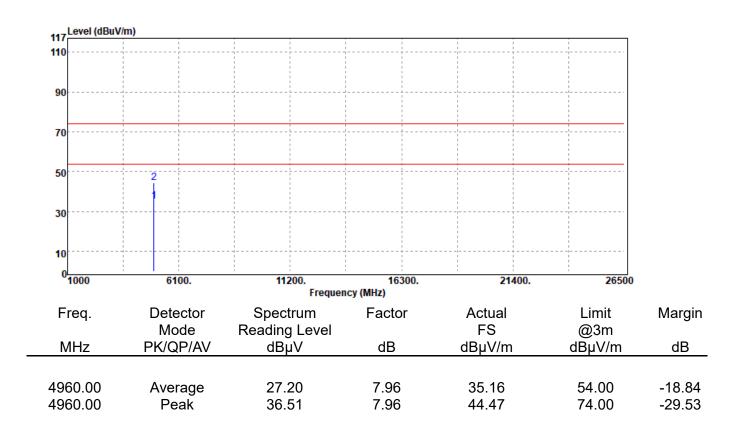
Report Number Test Site :SAC I Chamber :ER/2021/10053

**Operation Mode** :BR(1M) **Test Date** :2021-02-23

**Test Frequency** :2480 MHz Temp./Humi. :22.6/54

Test Mode :Tx CH High Antenna Pol. :VERTICAL

**EUT Pol** :E2 Plane Engineer :Neo Tsai



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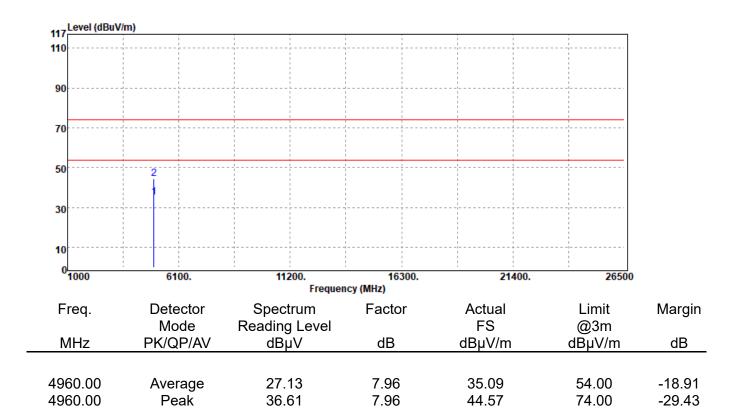
Report Number :ER/2021/10053 Test Site :SAC I Chamber

Operation Mode :BR(1M) Test Date :2021-02-23

Test Frequency :2480 MHz Temp./Humi. :22.6/54

Test Mode :Tx CH High Antenna Pol. :HORIZONTAL

EUT Pol :E2 Plane Engineer :Neo Tsai



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## 11 FREQUENCY SEPARATION

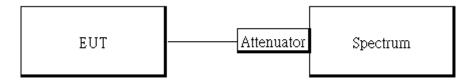
### 11.1 Standard Applicable

Frequency hopping systems shall have hopping channel carrier frequencies separated by minimum of 25 kHz or the 2/3\*20dB bandwidth of the hopping channel, whichever is greater.

### 11.2 Measurement Equipment Used

Conducted Emission Test Site: Conducted 2							
EQUIPMENT TYPE MFR/BRAN		MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.		
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY59071571	06/27/2020	06/26/2021		
DC Block	Mini-Circuits	BLK-18-S+	1	12/16/2020	12/15/2021		

# 11.3 Test Set-up



### 11.4 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2013.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set center frequency of spectrum analyzer = middle of hopping channel.
- 5. Set the spectrum analyzer as RBW, VBW=100 kHz, Adjust Span to 5MHz, Sweep = auto.
- 6. Max hold. Mark 3 Peaks of hopping channel and record the 3 peaks frequency.

### 11.5 Measurement Result

Channel separation (MHz)	Limit	Result
1	≧25 kHz or 2/3 times 20dB bandwidth	PASS

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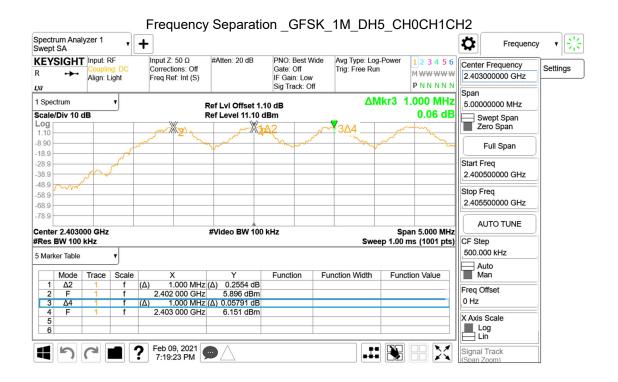
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# 11.6 Frequency Separation Test Plots



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## 12 NUMBER OF HOPPING FREQUENCY

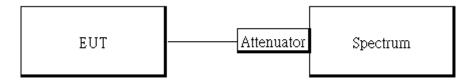
#### 12.1 **Standard Applicable**

Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

#### **Measurement Equipment Used** 12.2

Conducted Emission Test Site: Conducted 2							
EQUIPMENT TYPE MFR/BRAN		MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.		
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY59071571	06/27/2020	06/26/2021		
DC Block	Mini-Circuits	BLK-18-S+	1	12/16/2020	12/15/2021		

#### 12.3 **Test Set-up**



#### 12.4 **Measurement Procedure**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2013.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set spectrum analyzer Start=2400MHz, Stop = 2483.5MHz, Sweep = auto.
- 5. Set the spectrum analyzer as RBW=430kHz, VBW=1.5MHz., Detector = Peak
- 6. Max hold, view and count how many channel in the band.

#### 12.5 **Measurement Result**

### **Tabular Data of Total Channel Number**

	Channel Number	Limit
2.4 GHz – 2.441 GHz	40	
2.441 GHz – 2.4835 GHz	39	>15
2.4 GHz ~2.4835 GHz	(40+39) = 79	

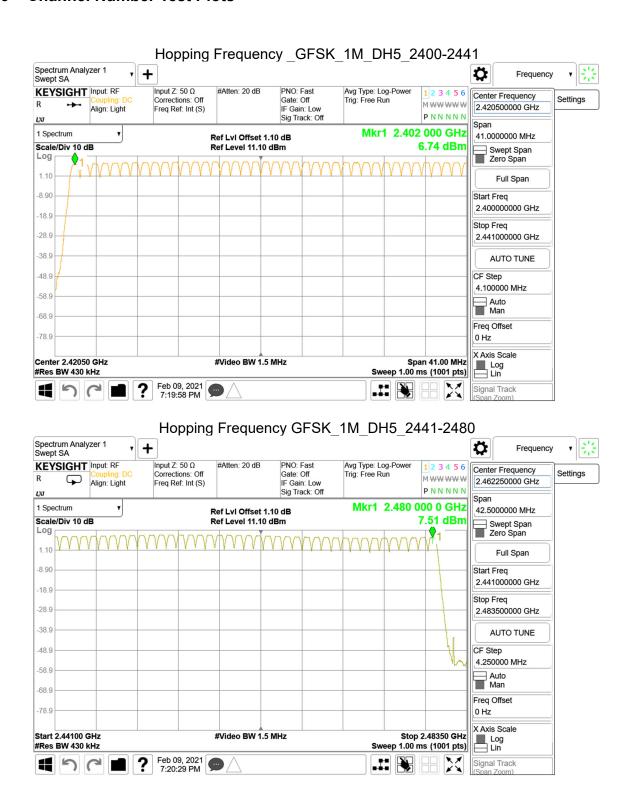
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#### 12.6 **Channel Number Test Plots**



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#### 13 TIME OF OCCUPANCY (DWELL TIME)

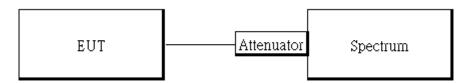
#### 13.1 **Standard Applicable**

Frequency hopping systems operating in the 2400MHz-2483.5MHz. The average time of occupancy on any frequency shall not greater than 0.4 s within period of 0.4 seconds multiplied by the number of hopping channel employed.

#### **Measurement Equipment Used** 13.2

Conducted Emission Test Site: Conducted 2						
EQUIPMENT TYPE	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.		
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY59071571	06/27/2020	06/26/2021	
DC Block	Mini-Circuits	BLK-18-S+	1	12/16/2020	12/15/2021	

#### 13.3 **Test Set-up**



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#### 13.4 **Measurement Procedure**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C6310:2015.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set center frequency of spectrum analyzer = operating frequency.
- 5. Set the spectrum analyzer as RBW, VBW=1MHz, 3MHz, Span = 0Hz, Detector = Peak, Adjust Sweep =  $2\sim8$ ms.
- 6. Repeat above procedures until all frequency of the interest measured were complete.

Formula Deduced: time occupancy of one time slot X Hopping rate / total slot in one channel / total channel that hops X period of working channels.

Where, standard hopping rate is 1600 hops/s, slot in one channel for DH1, DH3, and DH5 is 2, 4, and 6, respectively.

DH1 consists of single time slot of the uplink, and one slot of the downlink Total Slot: 2 DH3 consists of three time slot of the uplink, and one slot of the downlink. Total Slot: 4 DH5 consists of five time slot of the uplink, and one slot of the downlink. Total Slot: 6

In AFH mode, hopping rate is 800 hop/s with 6 slots in 20 hopping channels with channel hopping rate (800 / 6 / 20) in Occupancy Time Limit (0.4 \* 20 ) (S), Hop Over Occupancy Time comes to (800 / 6 / 20)\*(0.4\*20) = 53.33

Note: the result of the complete test default channel at 1Mbps is recorded on the test report, 2Mbps, and 3Mbps only records the measurement result at middle channel that reveals no much deviation.

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#### 13.5 **Tabular Result of the Measurement**

GFSK (1Mbps)

GI SK (TWIDPS)	_				
Channel	PACKET TYPE	Measurement Result (ms)	Limit (ms)	1/T (kHz)	VBW setting (kHz)
	DH1	121.60	400ms	2.632	3.00
Low	DH3	260.80	400ms	0.613	1.00
	DH5	307.20	400ms	0.347	1.00
	DH1	121.60	400ms	2.632	3.00
Mid	DH3	262.40	400ms	0.610	1.00
	DH5	308.80	400ms	0.345	1.00
	DH1	121.60	400ms	2.632	3.00
High	DH3	260.80	400ms	0.613	1.00
	DH5	307.20	400ms	0.003	1.00

π/4 DQPSK (2Mbps)

Channel	PACKET TYPE	Measurement Result (ms)	Limit (ms)	1/T (kHz)	VBW setting (kHz)
	2DH1	123.20	400ms	2.597	3.00
Mid	2DH3	262.40	400ms	0.610	1.00
	2DH5	307.20	400ms	0.347	1.00

8-DPSK (3Mbps)

Channel	PACKET TYPE	Measurement Result (ms)	Limit (ms)	1/T (kHz)	VBW setting (kHz)
	3DH1	123.20	400ms	2.597	3.00
Mid	3DH3	260.80	400ms	0.613	1.00
	3DH5	307.20	400ms	0.347	1.00

NOTE: cable loss as 1.1dB that offsets in the spectrum

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### GFSK (1Mbps):

CH Low	DH1 time slot	=	0.380 *	(1600/2/79)	*	31.6	=	121.60 (ms)
	DH3 time slot	=	1.630 *	(1600/4/79)	*	31.6	=	260.80 (ms)
	DH5 time slot	=	2.880 *	(1600/6/79)	*	31.6	=	307.20 (ms)
CH Mid	DH1 time slot	=	0.380 *	(1600/2/79)	*	31.6	=	121.60 (ms)
	DH3 time slot	=	1.640 *	(1600/4/79)	*	31.6	=	262.40 (ms)
	DH5 time slot	=	2.895 *	(1600/6/79)	*	31.6	=	308.80 (ms)
CH High	DH1 time slot	=	0.380 *	(1600/2/79)	*	31.6	=	121.60 (ms)
	DH3 time slot	=	1.630 *	(1600/4/79)	*	31.6	=	260.80 (ms)
	DH5 time slot	=	2.880 *	(1600/6/79)	*	31.6	=	307.20 (ms)

### $\pi/4$ -DQPSK (2Mbps):

CH Mid	2DH1 time slot	=	0.385 *	(1600/2/79)	*	31.6 =	123.20 (ms)
	2DH3 time slot	=	1.640 *	(1600/4/79)	*	31.6 =	262.40 (ms)
	2DH5 time slot	=	2 880 *	(1600/6/79)	*	316 =	307.20 (ms)

# 8-DPSK (3Mbps):

CH Mid	3DH1 time slot	=	0.385 *	(1600/2/79)	*	31.6 =	123.20 (ms)
	3DH3 time slot	=	1.630 *	(1600/4/79)	*	31.6 =	260.80 (ms)
	3DH5 time slot	=	2 880 *	(1600/6/79)	*	316 =	307 20 (ms)

A period time = 0.4 (s) \* 79 = 31.6 (s)

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MRF分月就好・L軟百倍米階頁別規定人株の目具「門砂山株の程本田台の「Poblik Romage Karal 子の自由に可いている。
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	GFSK (1Mbps) for AFH Mode								
Hopping Channel	PACKET TYPE								
Number		(ms)	(ms)						
20	DH5	DH5 153.60							
	π/4 DQPSK (2Mbps) for AFH Mode								
Hopping Channel	DACKET TYPE	Measurement Result	Limit						
Number	PACKET TYPE	(ms)	(ms)						
20	2DH5	153.60	400ms						
	8-DPSK (3Mbps) for AFH Mode								
Hopping Channel	Measurement Result   Limit								
Number	PACKET TYPE	(ms)	(ms)						
20	3DH5	153.60	400ms						

### **Measurement Result**

Note: Refer to next page for plots.

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解析方方式の子 L軟音音光性到角成之体而具ま 「同時以後而程本音句之子を音音を表示を立む音曲音句子 不可能的技術。
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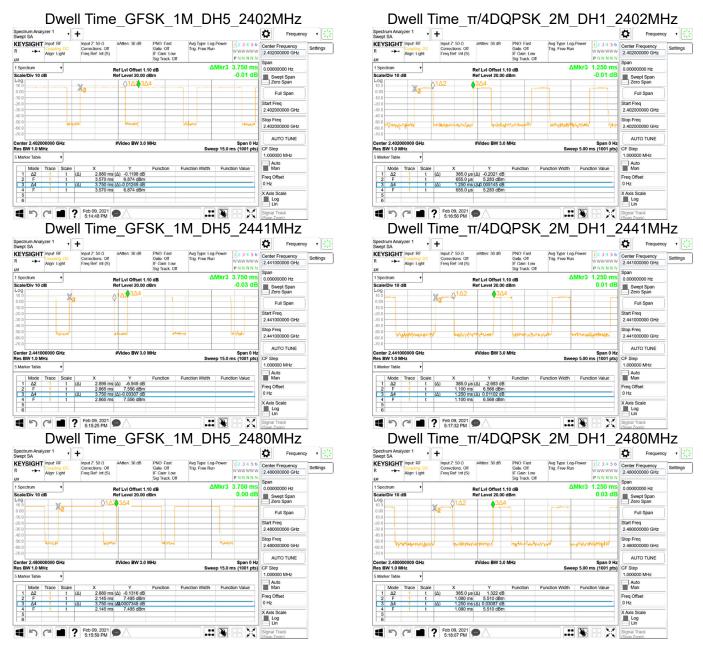


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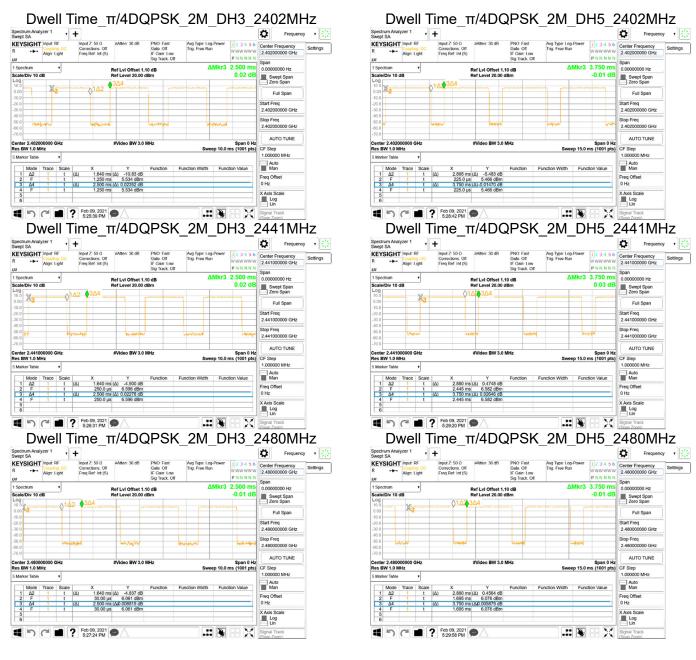


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### Dwell Time 8DPSK 3M DH5 2402MHz ≎ Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF ΔMkr3 3.750 ms Scale/Div 10 dB 0.01 dB Δ2/3Δ4 Full Span AUTO TUNE #Video BW 3.0 MHz Span 0 Hz Sweep 15.0 ms (1001 pts) Center 2.4020000 Res BW 1.0 MHz ■ 7 Peb 09, 2021 5:36:17 PM Dwell Time\_8DPSK 3M DH5 2441MHz Frequency • ;; Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF ΔMkr3 3.750 ms Scale/Div 10 dB 0.03 dB Swept Spar Zero Span Full Span AUTO TUNE Center 2.441000000 GHz Res BW 1.0 MHz Video BW 3.0 MHz 1 5 C 2 7 Feb 09, 2021 5:36:56 PM .# B R X Dwell Time 8DPSK 3M DH5 2480MHz Frequency • Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF 1 Spectrum Scale/Div 10 dB ΔMkr3 3.750 ms AUTO TUNE Wideo BW 3 0 MHz Span 0 Hz Sweep 15.0 ms (1001 pts) Center 2.4800000 Res BW 1.0 MHz Mod Δ2 Log Feb 09, 2021 5:37:25 PM

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### 14 ANTENNA REQUIREMENT

#### 14.1 Standard Applicable

For intentional device, 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.

If the transmitting antenna is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

#### 14.2 **Antenna Connected Construction**

The antenna is designed as permanently attached and no consideration of replacement. Please see EUT photo for details.

~ End of Report ~

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