



**FCC CFR47 PART 15 SUBPART C**

**Bluetooth**

**CERTIFICATION TEST REPORT**

**FOR**

**LTE Watch + BT/BLE and DTS b/g/n**

**MODEL NUMBER : SM-R775V**

**FCC ID: A3LSMR775V**

**REPORT NUMBER: 4787852390-E3V1**

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Revision History

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SAMSUNG ELECTRONICS CO., LTD.  
**EUT DESCRIPTION:** LTE Watch + BT/BLE and DTS b/g/n  
**MODEL NUMBER:** SM-R775V  
**SERIAL NUMBER:** R3AJ20007YJ, R3AJ2000AND, R3AJ20006PF (RADIATED);  
R3AJ200069J (CONDUCTED)  
**DATE TESTED:** FEB 06, 2017 - FEB 27, 2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

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Suwon Lab Engineer  
UL Korea, Ltd.



Junwhan Lee  
Suwon Lab Engineer  
UL Korea, Ltd.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. FCC DA 00-705 Filling and measurement guidelines for FHSS systems
4. ANSI C63.10-2013.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro	
<input checked="" type="checkbox"/>	Chamber 1
<input checked="" type="checkbox"/>	Chamber 2

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <http://www.iasonline.org/PDF/TL/TL-637.pdf>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.32 dB
Radiated Disturbance, Below 1GHz	4.14 dB
Radiated Disturbance, Above 1 GHz	5.97 dB

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a LTE Watch + BT/BLE and DTS b/g/n.  
 This test report addresses the DSS (BT) operational mode.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range [MHz]	Mode	Power Mode	Output Power [dBm]	Output Power [mW]
2402 - 2480	Basic GFSK	Average	13.234	21.057
		Peak	13.490	22.336
	Enhanced Pi/4-DPSK	Average	7.253	5.313
		Peak	9.897	9.766
	Enhanced 8PSK	Average	7.273	5.337
		Peak	10.508	11.241

### 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal antenna, with a maximum gain of -4.5 dBi

### 5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Y orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y orientation.

Note: GFSK, Pi/4-DQPSK, 8PSK average Power are all investigated, The GFSK & 8PSK Power are the worst case. Testing is based on this mode to showing compliance. For average power data please refer to section 9.5.

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Adapter	SAMSUNG	ETA0U60JBE	DK2H202VS/7 -E	N/A
Data Cable	SAMSUNG	ECB-DU2EBE	N/A	N/A
Wireless Charger	SAMSUNG	EP-YO760	RF7HC1KGZSVCIS	A3LEPYO760

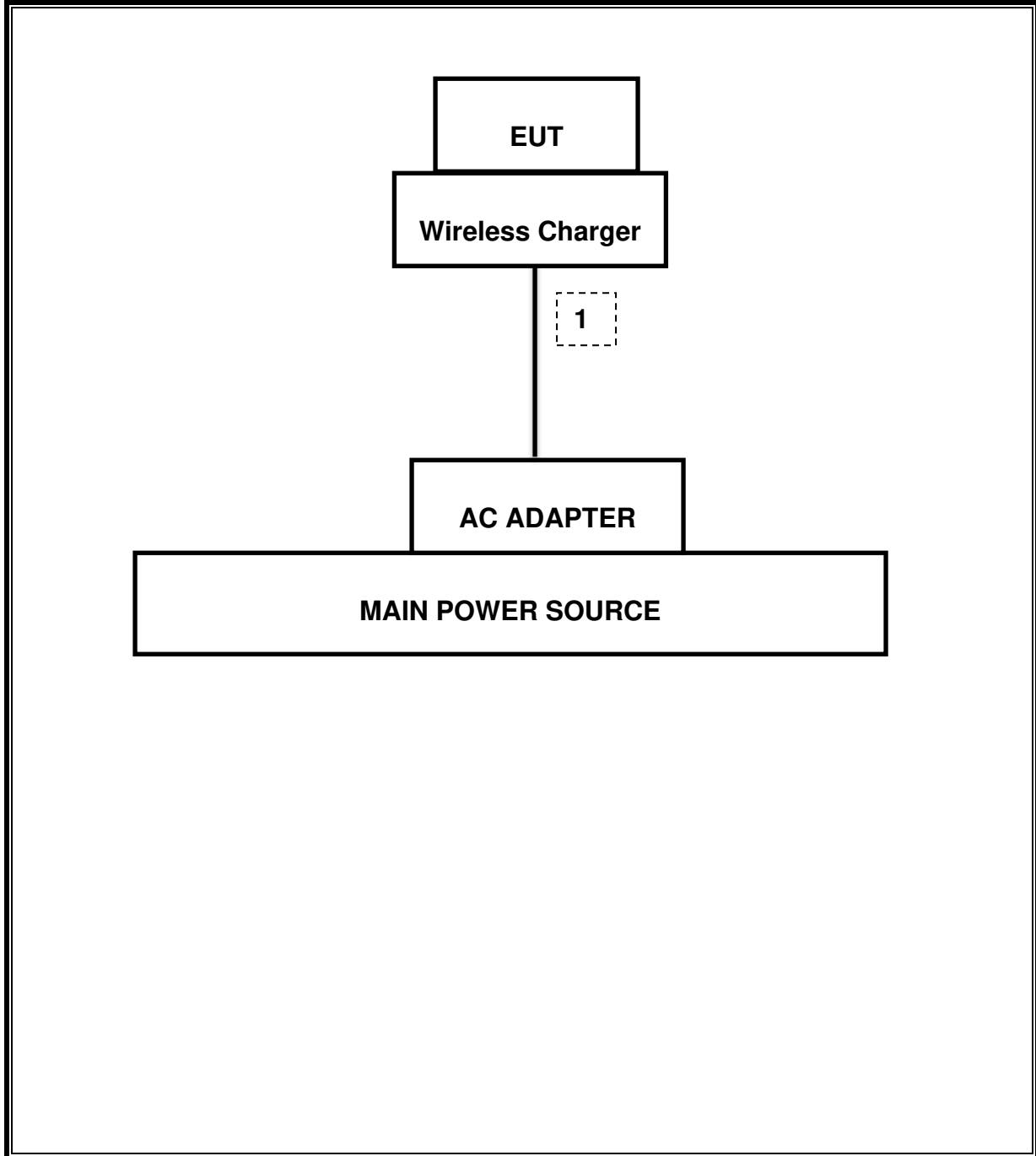
### I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	0.8m	N/A

### TEST SETUP

The EUT is continuously communicating to the Bluetooth tester during the tests. Test software in the Hidden menu mode to enable BT communications.

**SETUP DIAGRAM FOR TESTS**



## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	Manufacturer	Model	S/N	Cal Due
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	10-14-18
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	04-25-17
Antenna, Horn, 18 GHz	ETS	3115	00167211	10-14-18
Antenna, Horn, 18 GHz	ETS	3117	00168724	06-17-17
Antenna, Horn, 18 GHz	ETS	3117	00168717	06-17-17
Antenna, Horn, 40 GHz	ETS	3116C	00166155	11-30-17
Antenna, Horn, 40 GHz	ETS	3116C-PA	00168841	12-15-17
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	11-25-17
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-17-17
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-16-17
Preamplifier	ETS	3115-PA	00167475	08-17-17
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-16-17
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-17-17
Bluetooth Tester	TESCOM	TC-3000C	3000C000546	08-18-17
Average Power Sensor	Agilent / HP	U2000	MY54270007	08-17-17
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-17-17
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-16-17
EMI Test Receive, 3 GHz	R&S	ESR3	101832	08-16-17
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	08-17-17
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	08-16-17
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	08-17-17
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	08-16-17
High Pass Filter 6GHz	Micro-Tronics	HPM17542	009	08-17-17
High Pass Filter 6GHz	Micro-Tronics	HPM17542	016	08-16-17
LISN	R&S	ENV-216	101836	08-16-17
LISN	R&S	ENV-216	101837	08-16-17
Attenuator	PASTERNAK	PE7087-10	A009	08-16-17
Combiner	WEINSCHTEL	1575	2152	08-16-17
UL Software				
Description	Manufacturer	Model	Version	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

## 7. REFERENCE MEASUREMENT RESULTS

### 7.1. 20 dB AND 99% BANDWIDTH

#### LIMITS

None; for reporting purposes only.

#### TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to  $\geq$  1% of the 20 dB bandwidth. The VBW is set to  $\geq$  RBW. The sweep time is coupled.

#### RESULTS

##### 7.1.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency [MHz]	20 dB Bandwidth [MHz]	99% Bandwidth [KHz]
Low	2402	1.046	895.580
Mid	2441	1.046	895.870
High	2480	1.047	896.200
Worst		1.047	896.200

##### 7.1.2. ENHANCED DATA RATE Pi/4-DQPSK MODULATION

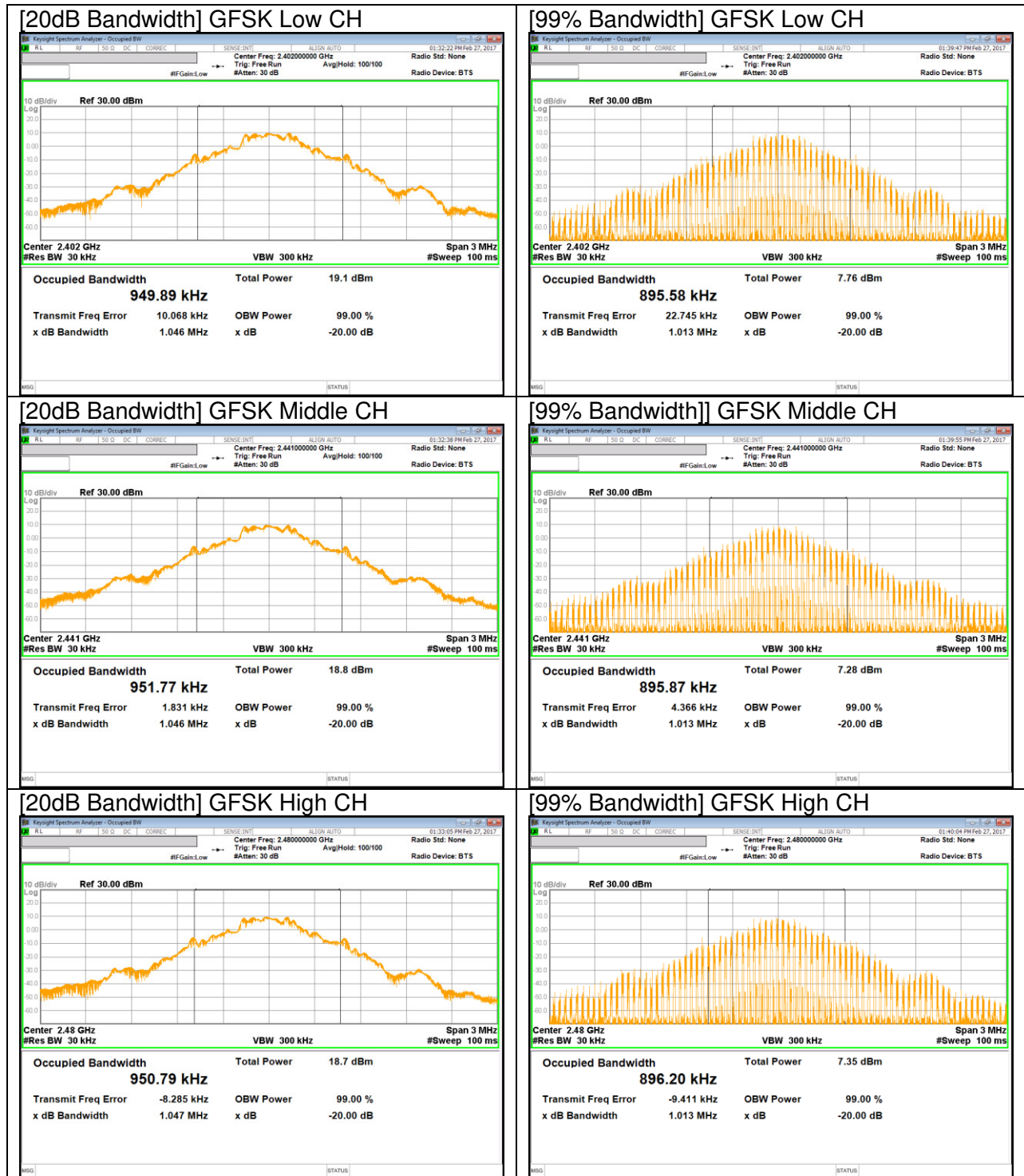
Channel	Frequency [MHz]	20 dB Bandwidth [MHz]	99% Bandwidth [MHz]
Low	2402	1.346	1.166
Mid	2441	1.297	1.165
High	2480	1.351	1.195
Worst		1.351	1.195

##### 7.1.3. ENHANCED DATA RATE 8PSK MODULATION

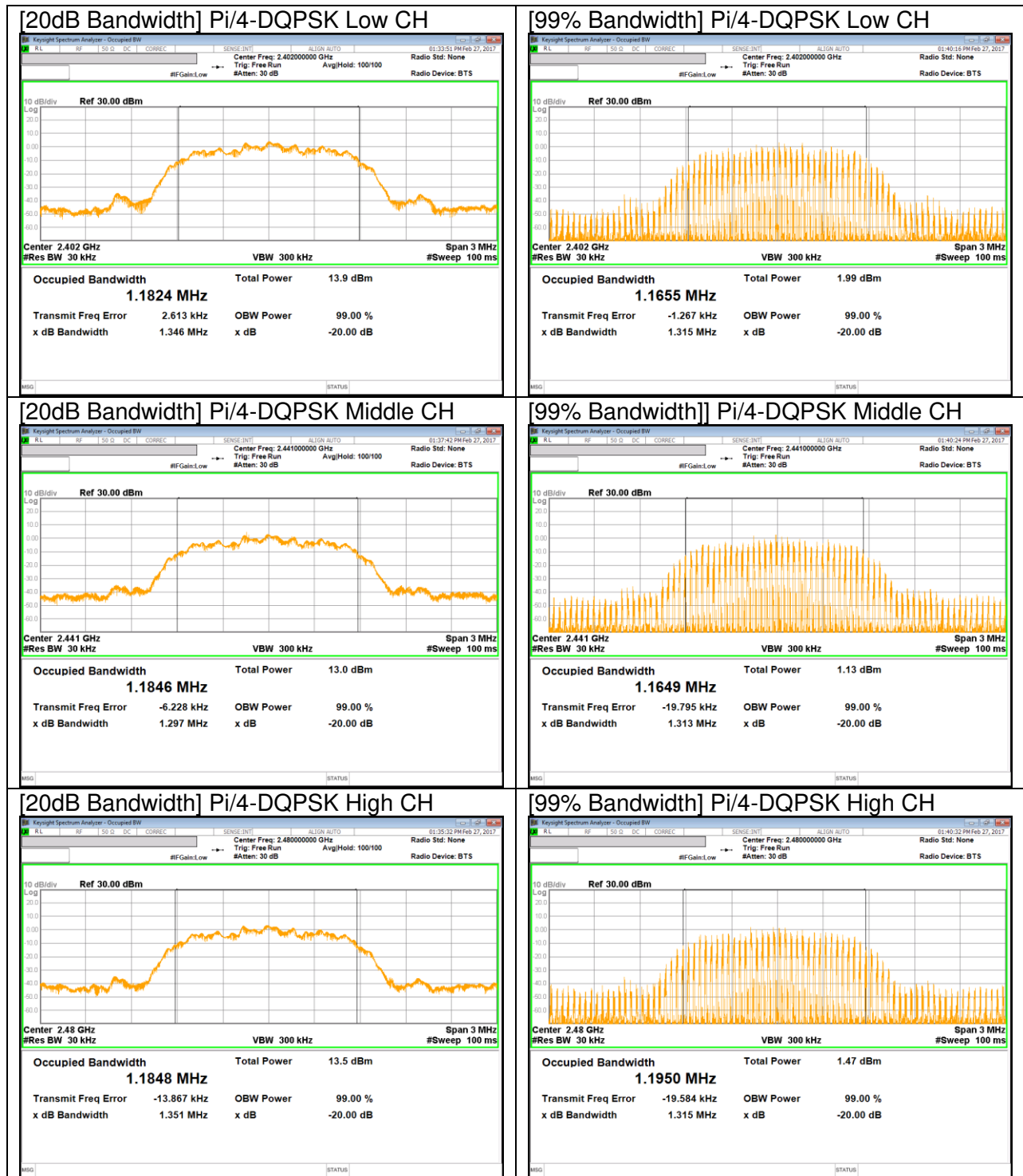
Channel	Frequency [MHz]	20 dB Bandwidth [MHz]	99% Bandwidth [MHz]
Low	2402	1.304	1.165
Mid	2441	1.309	1.163
High	2480	1.307	1.164
Worst		1.309	1.165

### 7.1.4. 20 dB AND 99% BANDWIDTH PLOTS

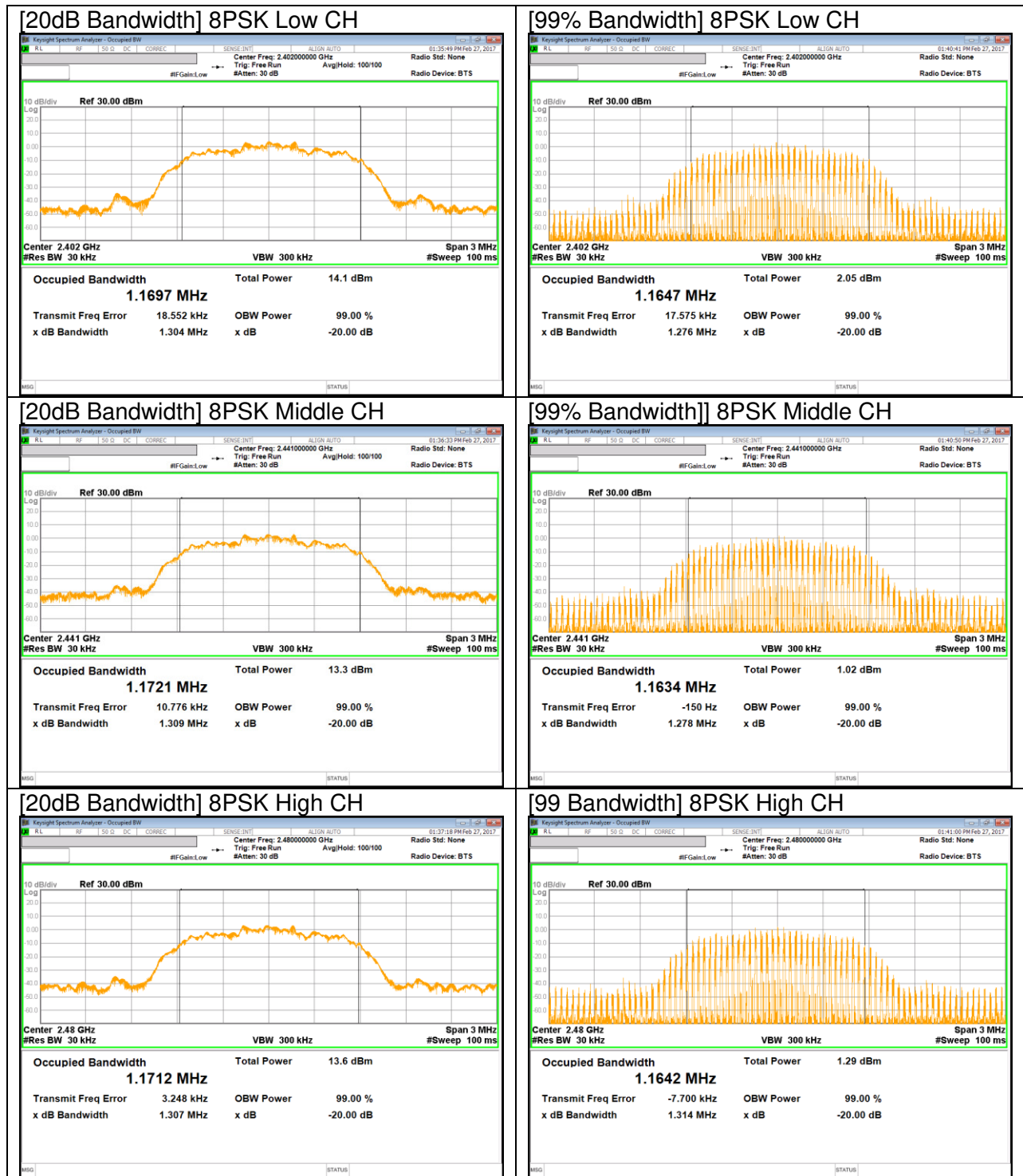
#### GFSK BANDWIDTH



**Pi/4-DQPSK BANDWIDTH**



**8PSK BANDWIDTH**



## 8. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
2.1051, 15.247 (d)	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-41.767 dBm
15.247 (b)(1)	TX conducted output power	<21dBm		Pass	13.49 dBm (Peak)
15.247 (a)(1)	Hopping frequency separation	> 25KHz		Pass	1 MHz
15.247 (a)(1)(iii)	Number of Hopping channels	More than 15 non-overlapping channels		Pass	79
15.247 (a)(1)(iii)	Avg Time of Occupancy	< 0.4sec		Pass	0.37466 sec
15.207 (a)	AC Power Line conducted emissions	Section 10	Power Line conducted	Pass	38.16 dBuV (PK)
15.205, 15.209	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass	44.94 dBuV/m (Av)

## 9. ANTENNA PORT TEST RESULTS

### 9.1. HOPPING FREQUENCY SEPARATION

#### LIMIT

FCC §15.247 (a) (1)

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

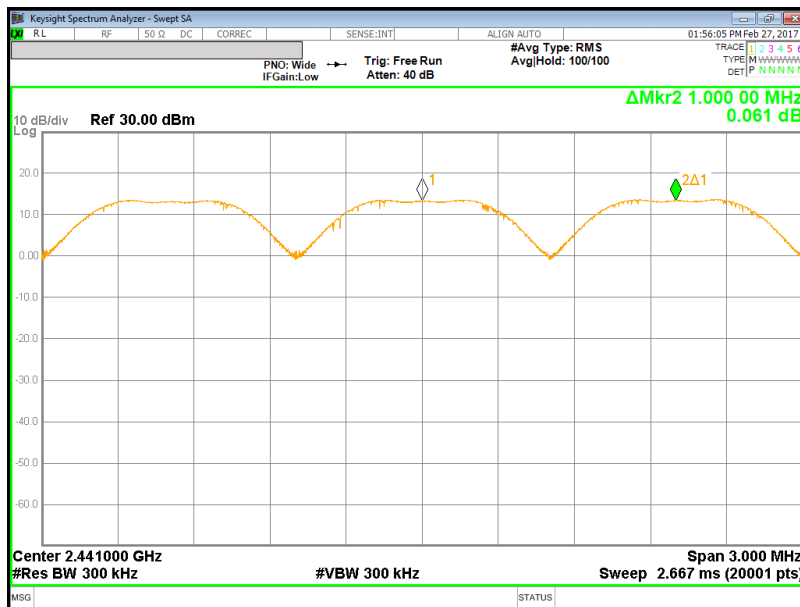
Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

#### TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer. The RBW is set to 300 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

#### RESULTS

#### HOPPING FREQUENCY SEPARATION PLOT



## 9.2. NUMBER OF HOPPING CHANNELS

### LIMIT

FCC §15.247 (a) (1) (iii)

Frequency hopping systems in the 2400 – 2483.5 MHz band shall use at least 15 non-overlapping channels.

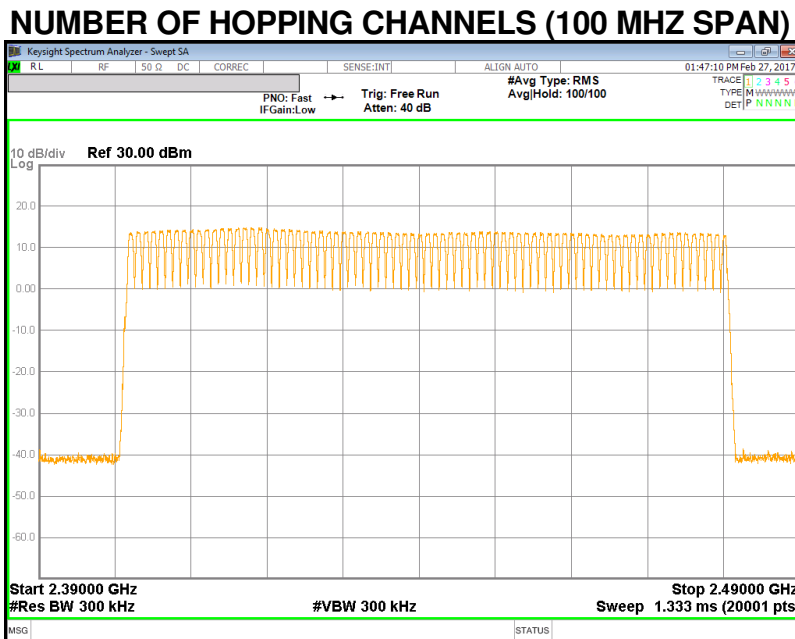
### TEST PROCEDURE

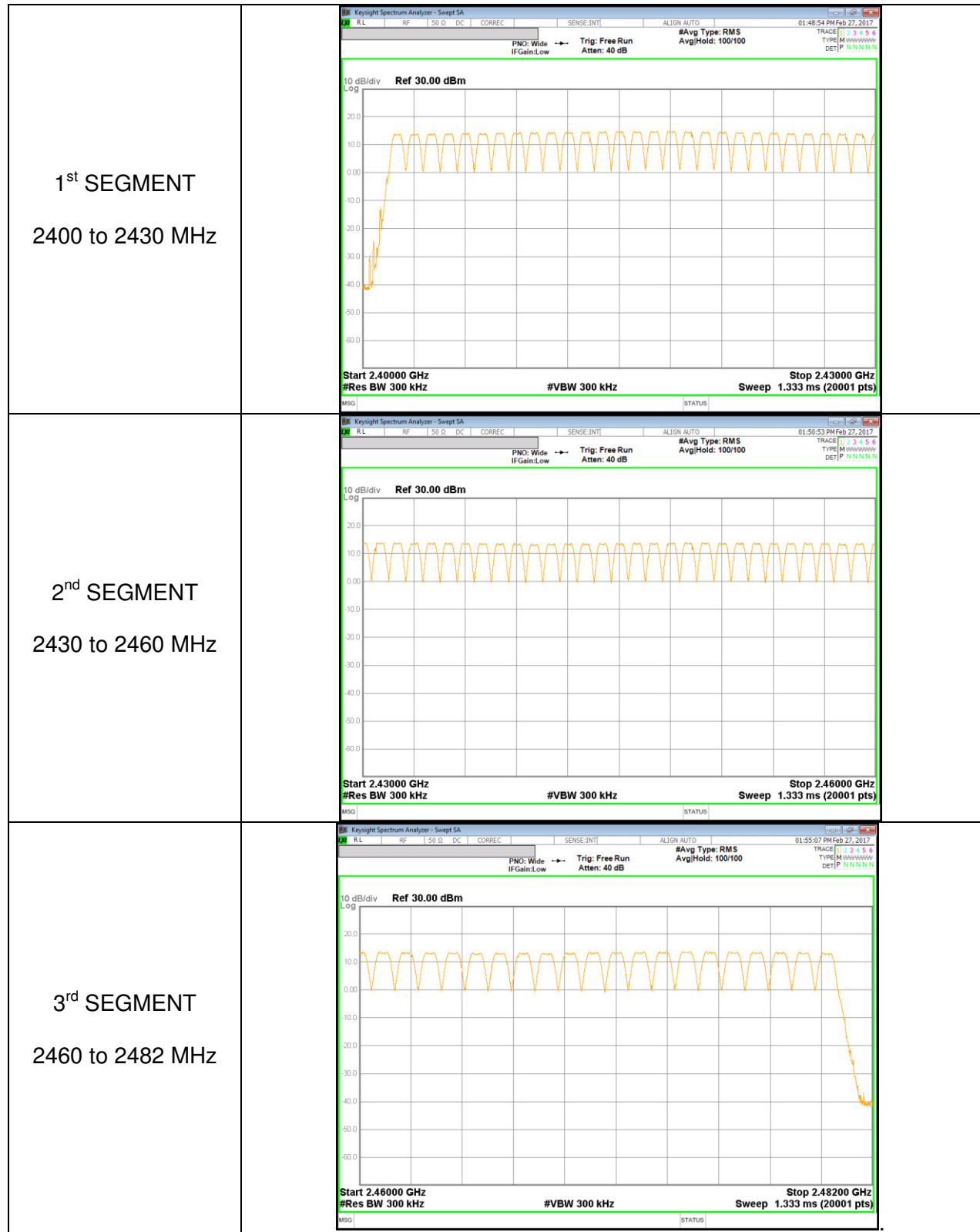
DA 00-705: The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

### RESULTS

Normal Mode: 79 Channels observed.

### NUMBER OF HOPPING CHANNELS PLOTS





### 9.3. AVERAGE TIME OF OCCUPANCY

#### LIMIT

FCC §15.247 (a) (1) (iii)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

#### TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 3.16 second scan, to enable resolution of each occurrence.

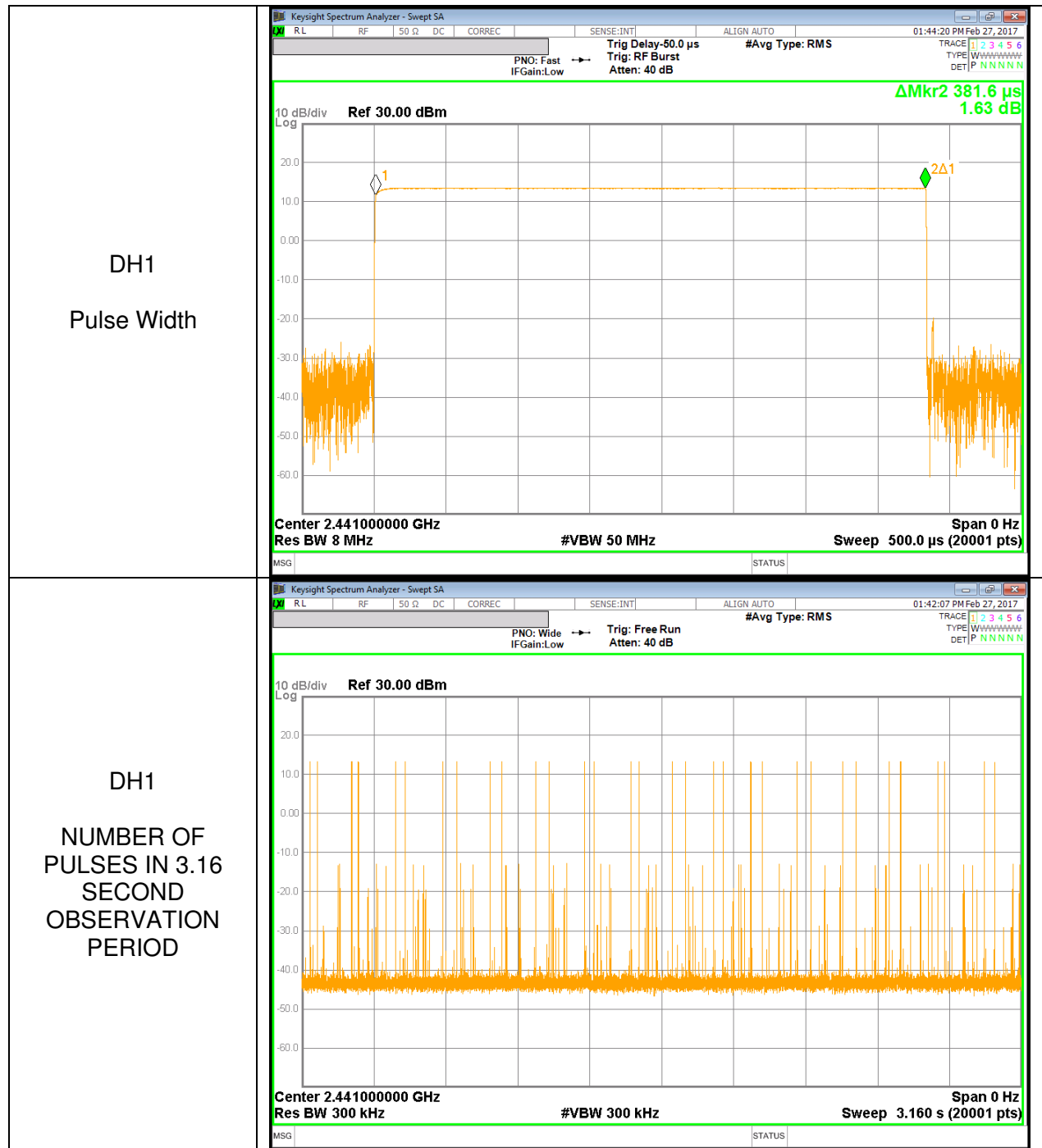
The average time of occupancy in the specified 31.6 second period (79 channels \* 0.4 s) is equal to  $10 * (\# \text{ of pulses in } 3.16 \text{ s}) * \text{ pulse width}$ .

For AFH mode, the average time of occupancy in the specified 8 second period (20 channels \* 0.4 seconds) is equal to  $10 * (\# \text{ of pulses in } 0.8 \text{ s}) * \text{ pulse width}$ .

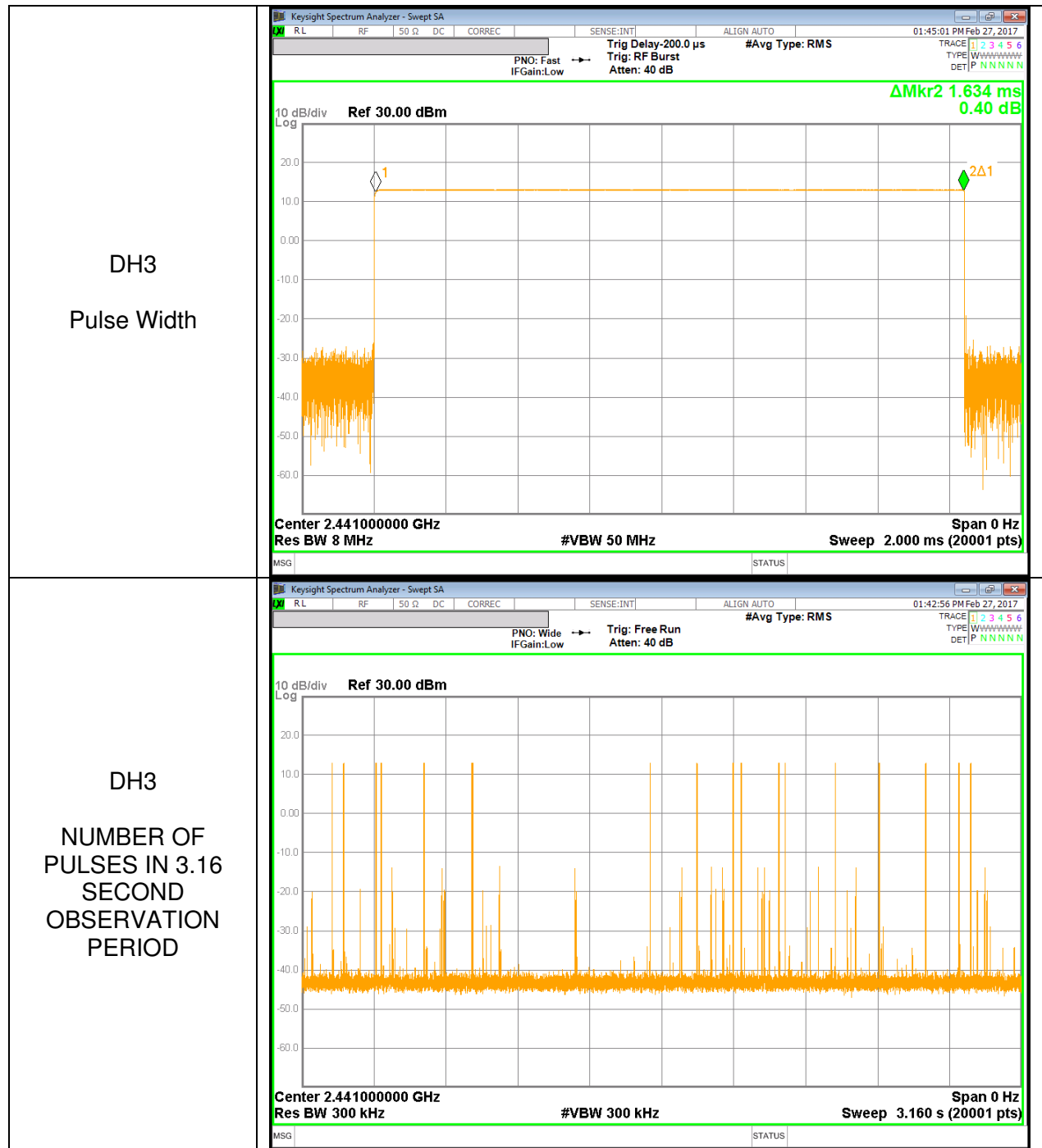
#### RESULTS

DH Packet	Pulse Width [msec]	Number of Pulses in 3.16 seconds	Average Time of Occupancy [sec]	Limit [sec]	Margin [sec]
GFSK Normal					
DH1	0.382	32	0.122112	0.4	-0.2779
DH3	1.634	17	0.277780	0.4	-0.1222
DH5	2.882	13	0.374660	0.4	-0.0253
GFSK AFH					
DH Packet	Pulse Width [msec]	Number of Pulses in 0.8 seconds	Average Time of Occupancy [sec]	Limit [sec]	Margin [sec]
GFSK AFH					
DH1	0.382	8	0.030528	0.4	-0.36947
DH3	1.634	4.25	0.069445	0.4	-0.33056
DH5	2.882	3.25	0.093665	0.4	-0.30634

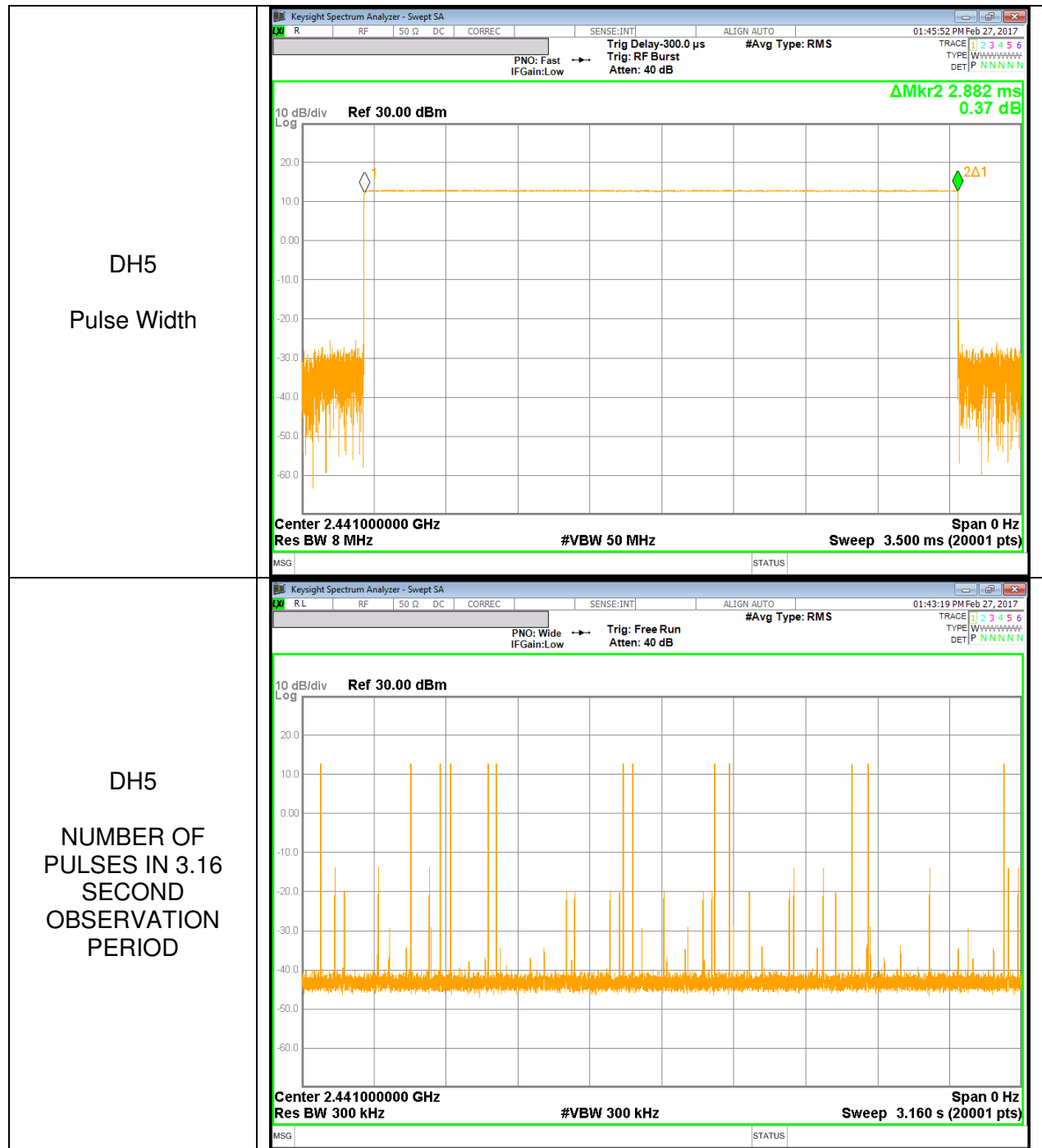
**DH1**



**DH3**



**DH5**



## 9.4. OUTPUT POWER

### LIMIT

§15.247 (b) (1)

The maximum antenna gain is less than 6 dBi, therefore the limit is 21 dBm.

### TEST PROCEDURE

DA 00-705: The transmitter output is connected to a spectrum analyzer the analyzer bandwidth is set to a value greater than the 20 dB bandwidth of the EUT.

### RESULTS

#### 9.4.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency [MHz]	Output Power [dBm]	Limit [dBm]	Margin [dB]
Low	2402	13.490	21	-7.51
Middle	2441	13.102	21	-7.898
High	2480	12.996	21	-8.004
Worst		13.490	21	-7.51

#### 9.4.2. ENHANCED DATA RATE Pi/4-DPSK MODULATION

Channel	Frequency [MHz]	Output Power [dBm]	Limit [dBm]	Margin [dB]
Low	2402	9.897	21	-11.103
Middle	2441	9.065	21	-11.935
High	2480	9.314	21	-11.686
Worst		9.897	21	-11.103

#### 9.4.3. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency [MHz]	Output Power [dBm]	Limit [dBm]	Margin [dB]
Low	2402	10.508	21	-10.492
Middle	2441	9.562	21	-11.438
High	2480	9.866	21	-11.134
Worst		10.508	21	-10.492

### 9.4.4. OUTPUT POWER PLOTS

#### GFSK OUTPUT POWER

<p>GFSK Low CH</p>	<p>KeySight Spectrum Analyzer - Swept SA          01:27:57 PM Feb 27, 2017          #Avg Type: RMS          Avg/Hold: 100/100          Mkr1 2.402 176 0 GHz          13.490 dBm          Ref 30.00 dBm          Center 2.402000 GHz          #Res BW 3.0 MHz          #VBW 50 MHz          Span 10.00 MHz          Sweep 1.333 ms (20001 pts)</p>
<p>GFSK Middle CH</p>	<p>KeySight Spectrum Analyzer - Swept SA          01:28:08 PM Feb 27, 2017          #Avg Type: RMS          Avg/Hold: 100/100          Mkr1 2.441 173 5 GHz          13.102 dBm          Ref 30.00 dBm          Center 2.441000 GHz          #Res BW 3.0 MHz          #VBW 50 MHz          Span 10.00 MHz          Sweep 1.333 ms (20001 pts)</p>
<p>GFSK High CH</p>	<p>KeySight Spectrum Analyzer - Swept SA          01:28:18 PM Feb 27, 2017          #Avg Type: RMS          Avg/Hold: 100/100          Mkr1 2.479 842 5 GHz          12.996 dBm          Ref 30.00 dBm          Center 2.480000 GHz          #Res BW 3.0 MHz          #VBW 50 MHz          Span 10.00 MHz          Sweep 1.333 ms (20001 pts)</p>

**Pi/4-DPSK OUTPUT POWER**

<p>Pi/4-DPSK Low CH</p>	<p>KeySight Spectrum Analyzer - Swept SA              Ref 30.00 dBm              Mkr1 2.402 220 0 GHz              9.897 dBm              Center 2.402000 GHz              #Res BW 3.0 MHz              #VBW 50 MHz              Span 10.00 MHz              Sweep 1.333 ms (20001 pts)</p>
<p>Pi/4-DPSK Middle CH</p>	<p>KeySight Spectrum Analyzer - Swept SA              Ref 30.00 dBm              Mkr1 2.440 978 5 GHz              9.065 dBm              Center 2.441000 GHz              #Res BW 3.0 MHz              #VBW 50 MHz              Span 10.00 MHz              Sweep 1.333 ms (20001 pts)</p>
<p>Pi/4-DPSK High CH</p>	<p>KeySight Spectrum Analyzer - Swept SA              Ref 30.00 dBm              Mkr1 2.480 300 0 GHz              9.314 dBm              Center 2.480000 GHz              #Res BW 3.0 MHz              #VBW 50 MHz              Span 10.00 MHz              Sweep 1.333 ms (20001 pts)</p>

**8PSK OUTPUT POWER**

<p>8PSK Low CH</p>	<p>KeySight Spectrum Analyzer - Swept SA          Ref 30.00 dBm          Mkr1 2.402 024 0 GHz          10.508 dBm          Center 2.402000 GHz          #Res BW 3.0 MHz          #VBW 50 MHz          Span 10.00 MHz          Sweep 1.333 ms (20001 pts)</p>
<p>8PSK Middle CH</p>	<p>KeySight Spectrum Analyzer - Swept SA          Ref 30.00 dBm          Mkr1 2.440 981 5 GHz          9.562 dBm          Center 2.441000 GHz          #Res BW 3.0 MHz          #VBW 50 MHz          Span 10.00 MHz          Sweep 1.333 ms (20001 pts)</p>
<p>8PSK High CH</p>	<p>KeySight Spectrum Analyzer - Swept SA          Ref 30.00 dBm          Mkr1 2.480 096 0 GHz          9.866 dBm          Center 2.480000 GHz          #Res BW 3.0 MHz          #VBW 50 MHz          Span 10.00 MHz          Sweep 1.333 ms (20001 pts)</p>

## 9.5. AVERAGE POWER

### LIMIT

None; for reporting purposes only.

### TEST PROCEDURE

DA 00-705: The transmitter output is connected to a power meter.

### RESULTS

The cable assembly insertion loss was entered as an offset in the power meter to allow for direct reading of power.

#### 9.5.1. BASIC DATA RATE GFSK MODULATION

Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Low	2402	13.234	21.06
Middle	2441	12.953	19.74
High	2480	12.822	19.15

#### 9.5.2. DATA RATE PI/4-DQPSK MODULATION

Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Low	2402	7.253	5.31
Middle	2441	6.522	4.49
High	2480	6.859	4.85

#### 9.5.3. ENHANCED DATA RATE 8PSK MODULATION

Channel	Frequency [MHz]	AV power [dBm]	AV power [mW]
Low	2402	7.273	5.34
Middle	2441	6.569	4.54
High	2480	6.910	4.91

## 9.6. CONDUCTED SPURIOUS EMISSIONS

### LIMITS

FCC §15.247 (d)

Limit = -20 dBc

### TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

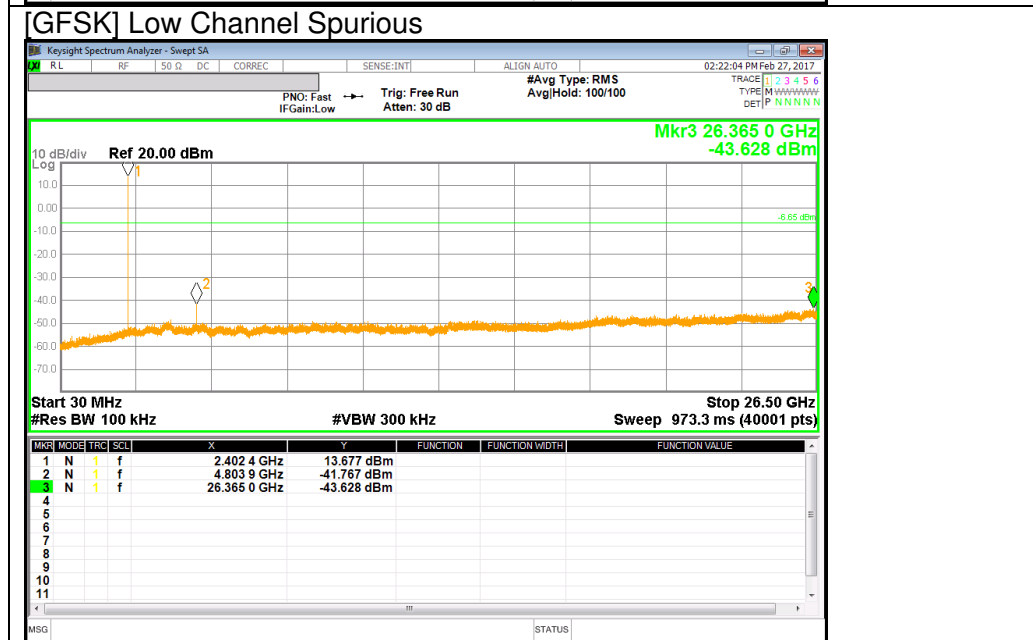
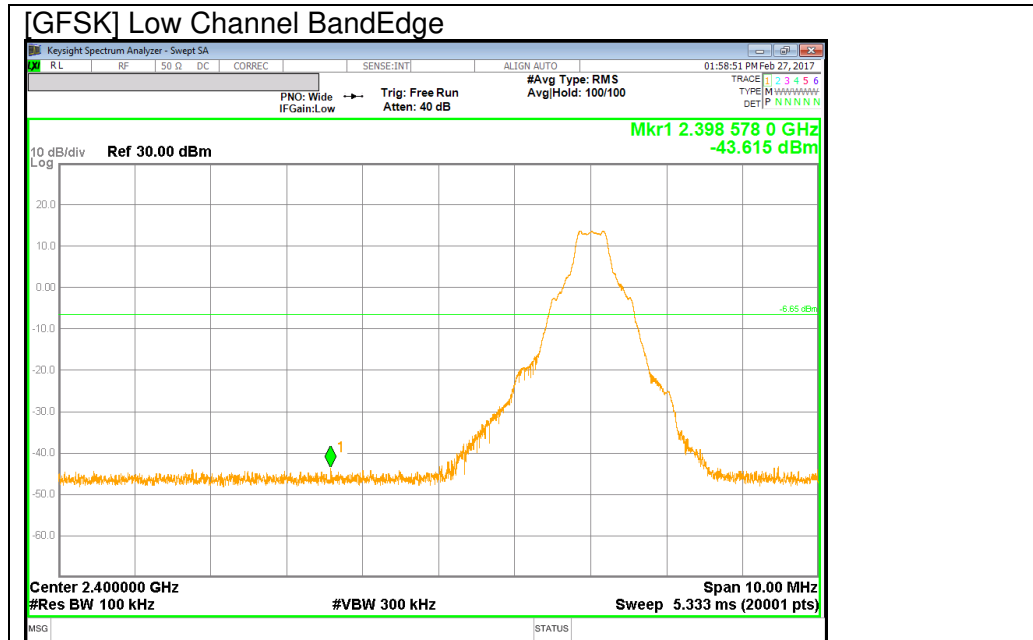
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

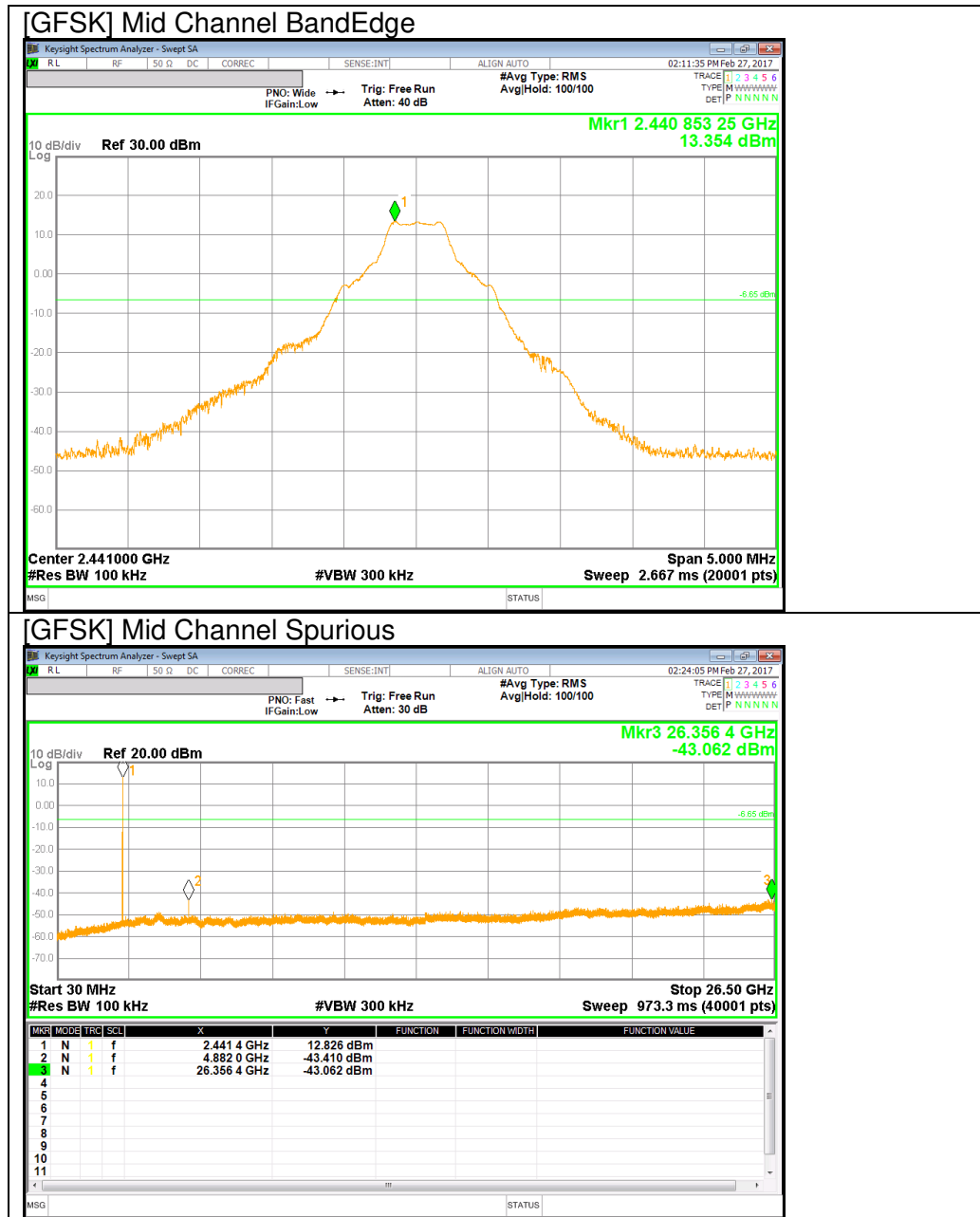
The bandedges at 2.4 and 2.4835 GHz are investigated with the transmitter set to the normal hopping mode.

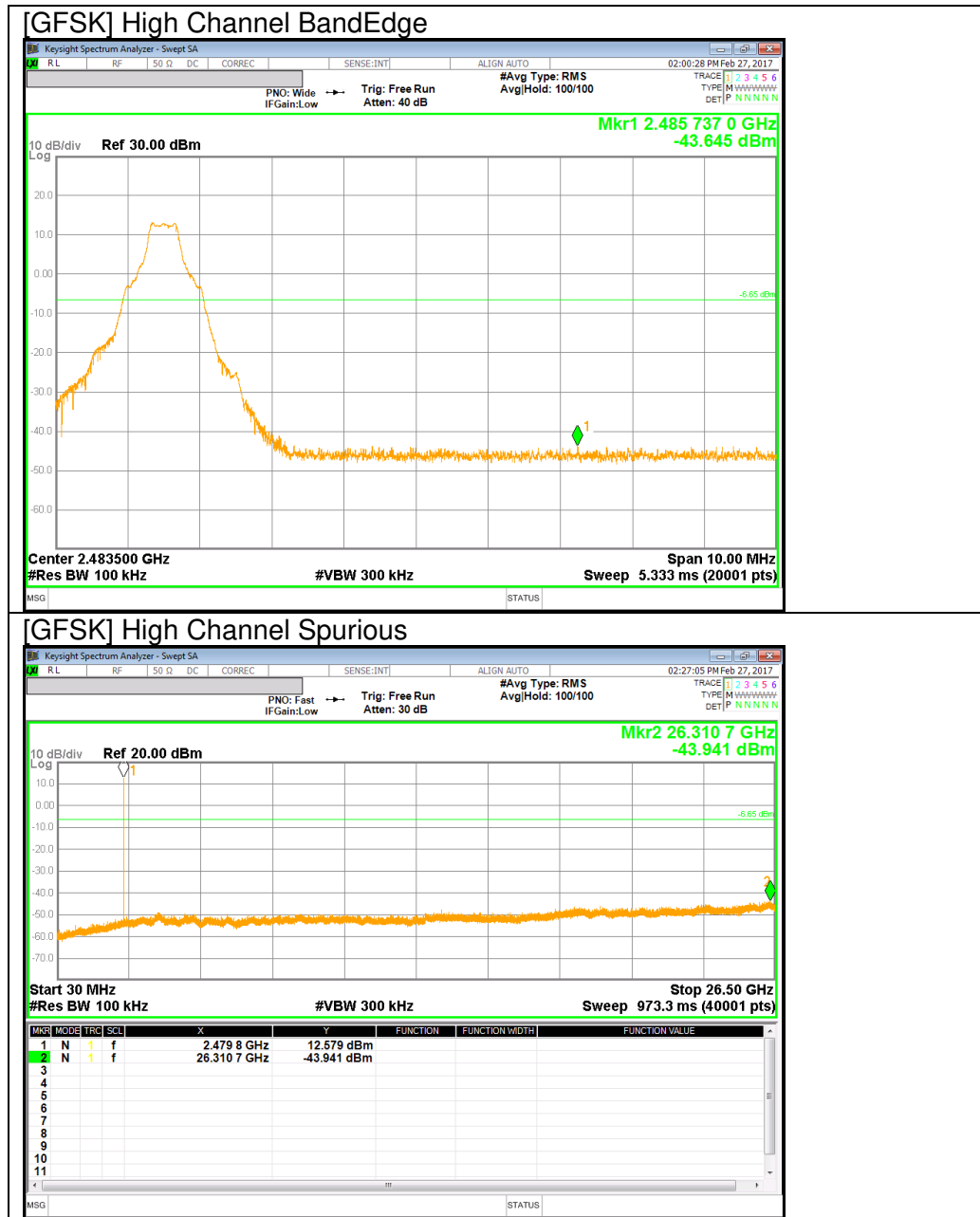
### RESULTS

### 9.6.1. BASIC DATA RATE GFSK MODULATION

#### GFSK Mode

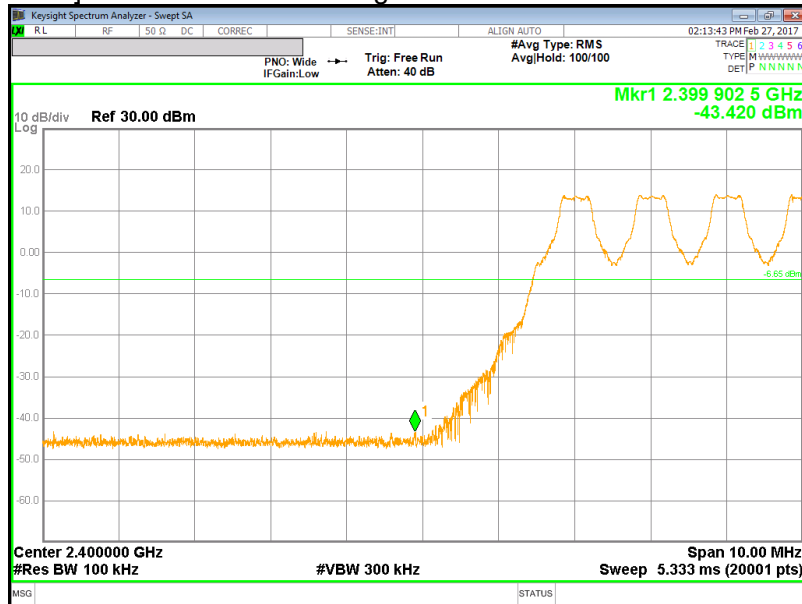




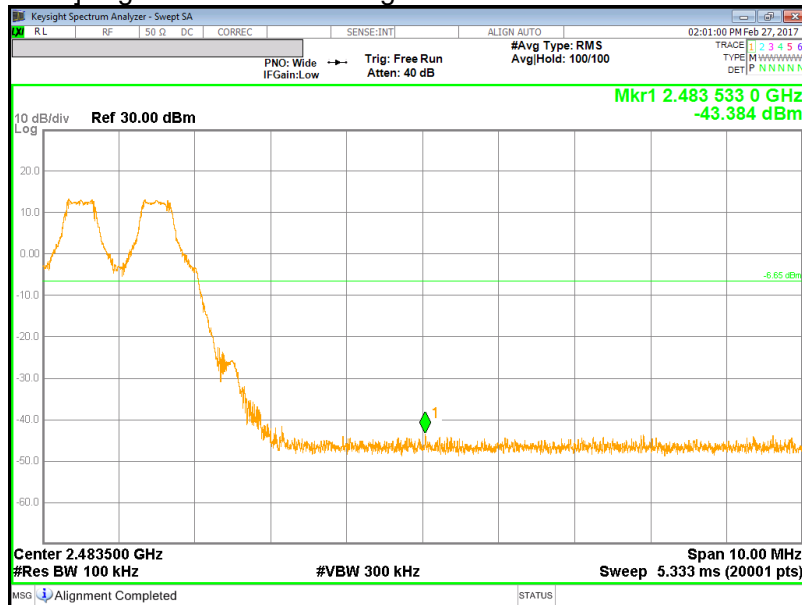


**BandEdge Emission at GFSK Hopping Mode**

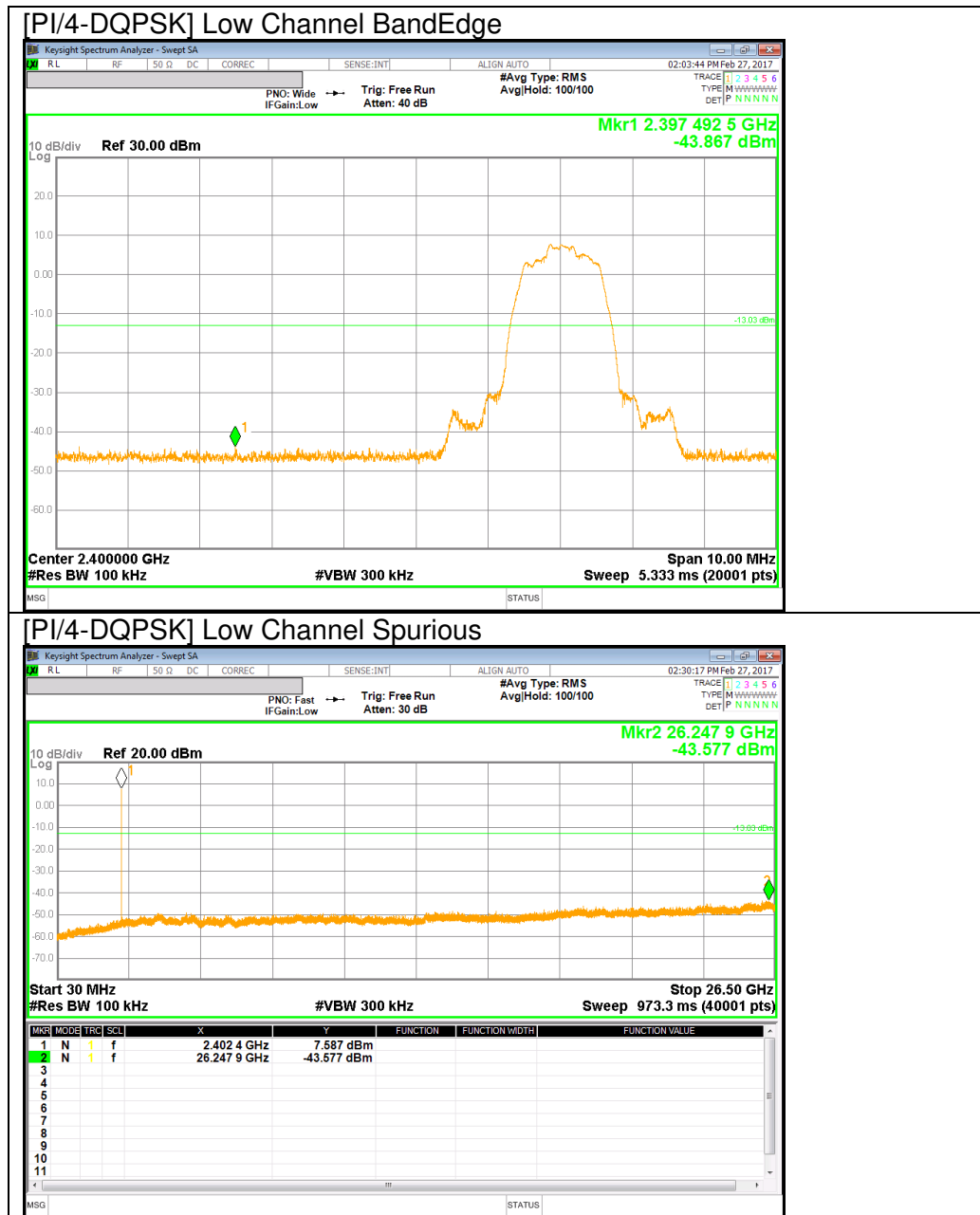
[GFSK Hopping Mode] Low Channel BandEdge

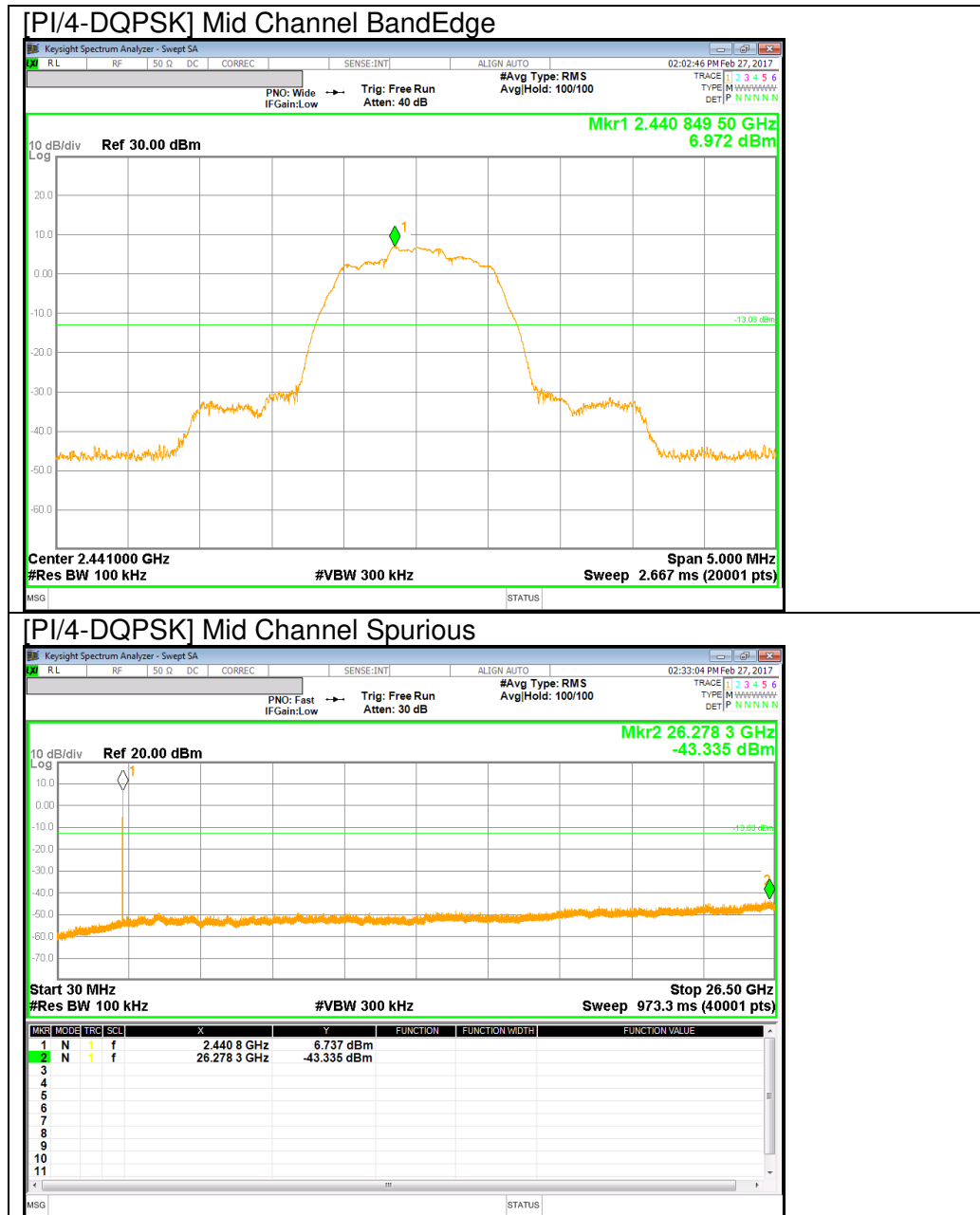


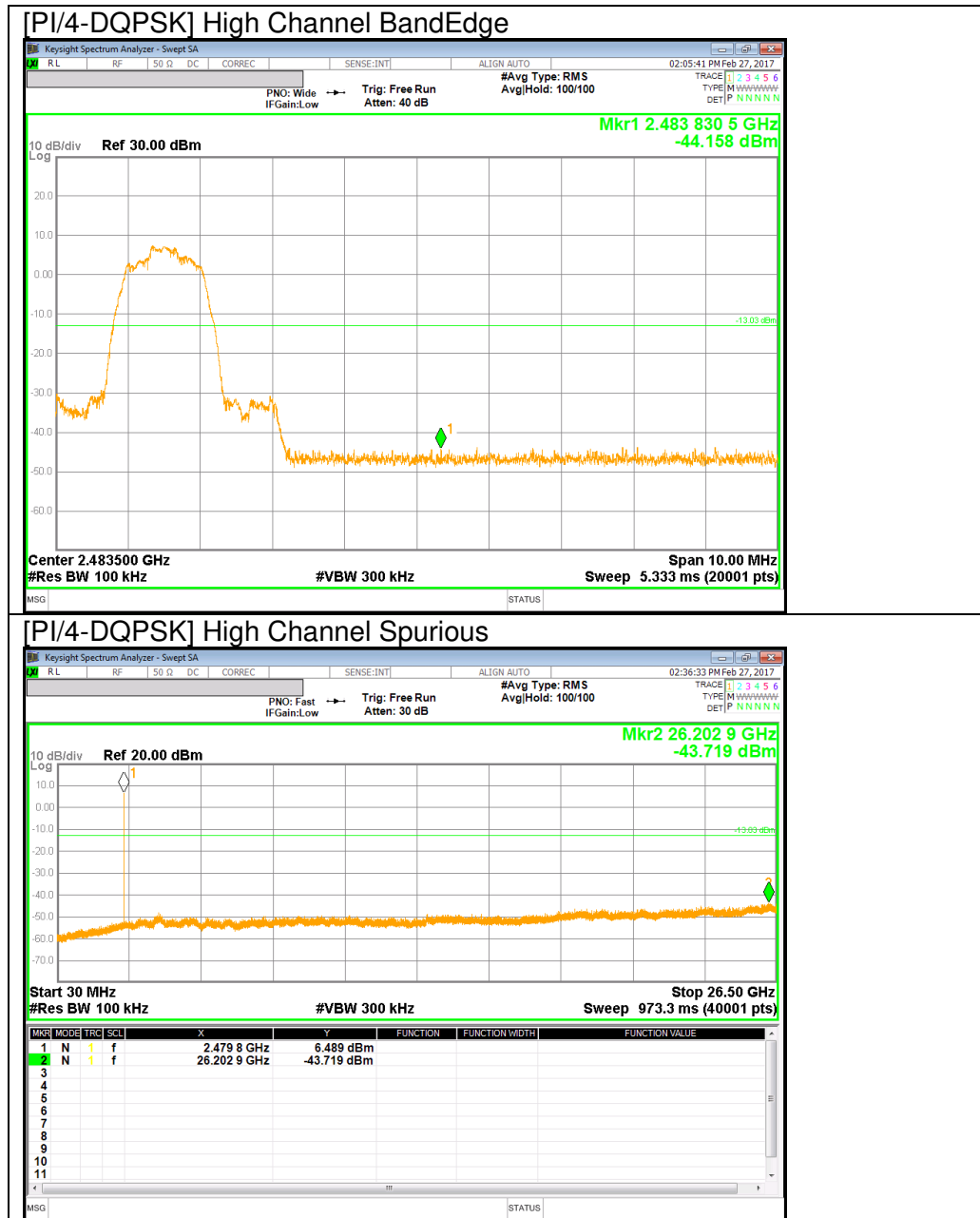
[GFSK Hopping Mode] High Channel BandEdge



**PI/4-DQPSK Mode**

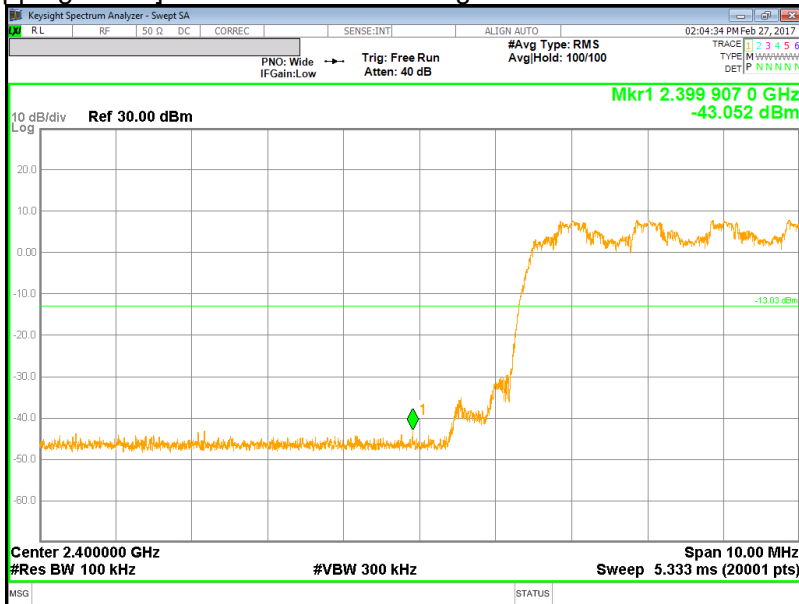




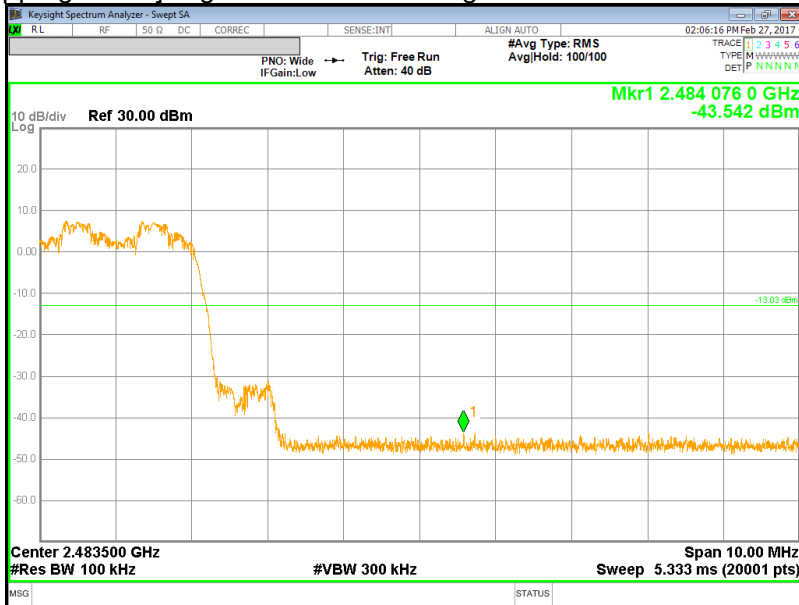


**BandEdge Emission at PI/4-DQPSK Hopping Mode**

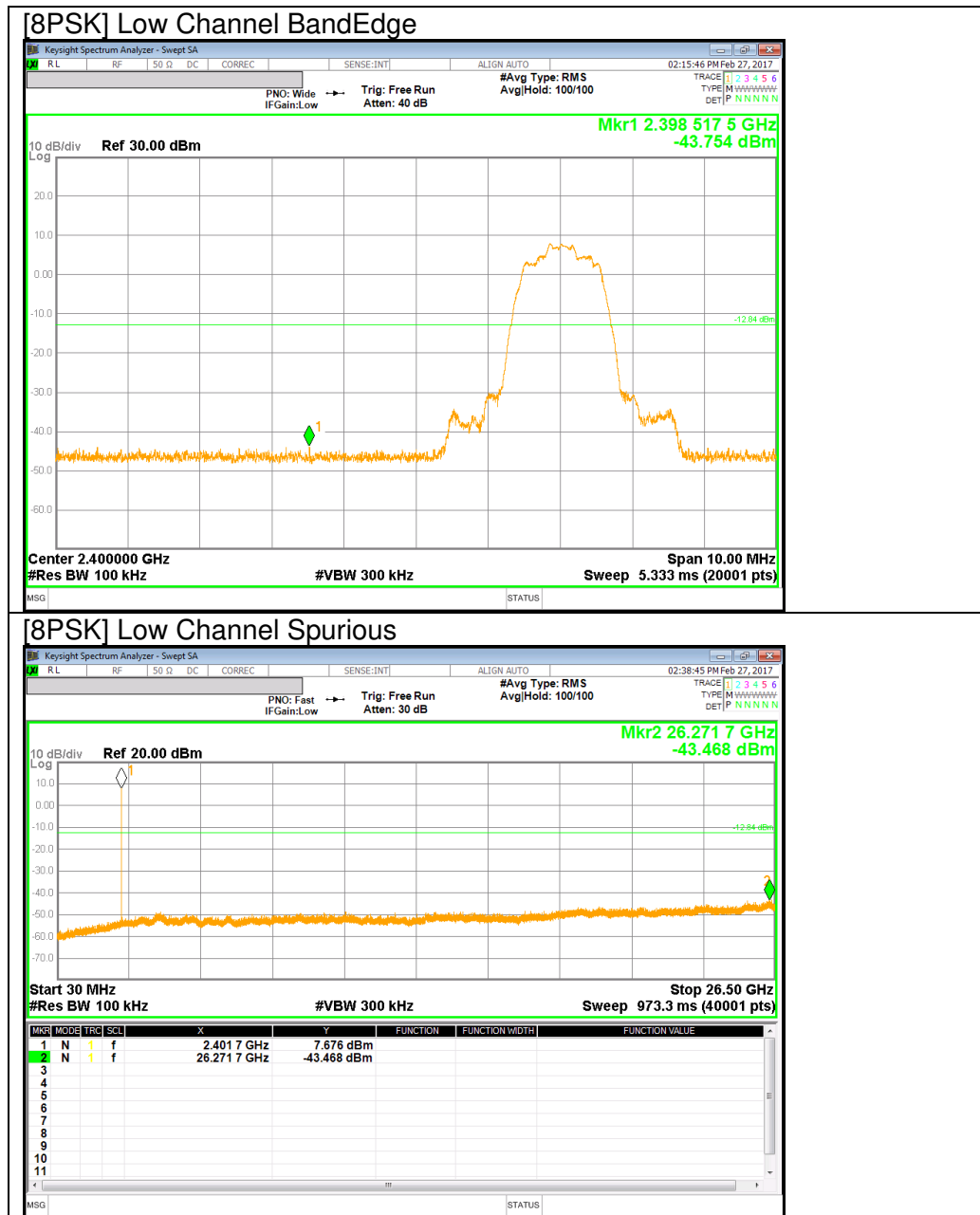
[PI/4-DQPSK Hopping Mode] Low Channel BandEdge

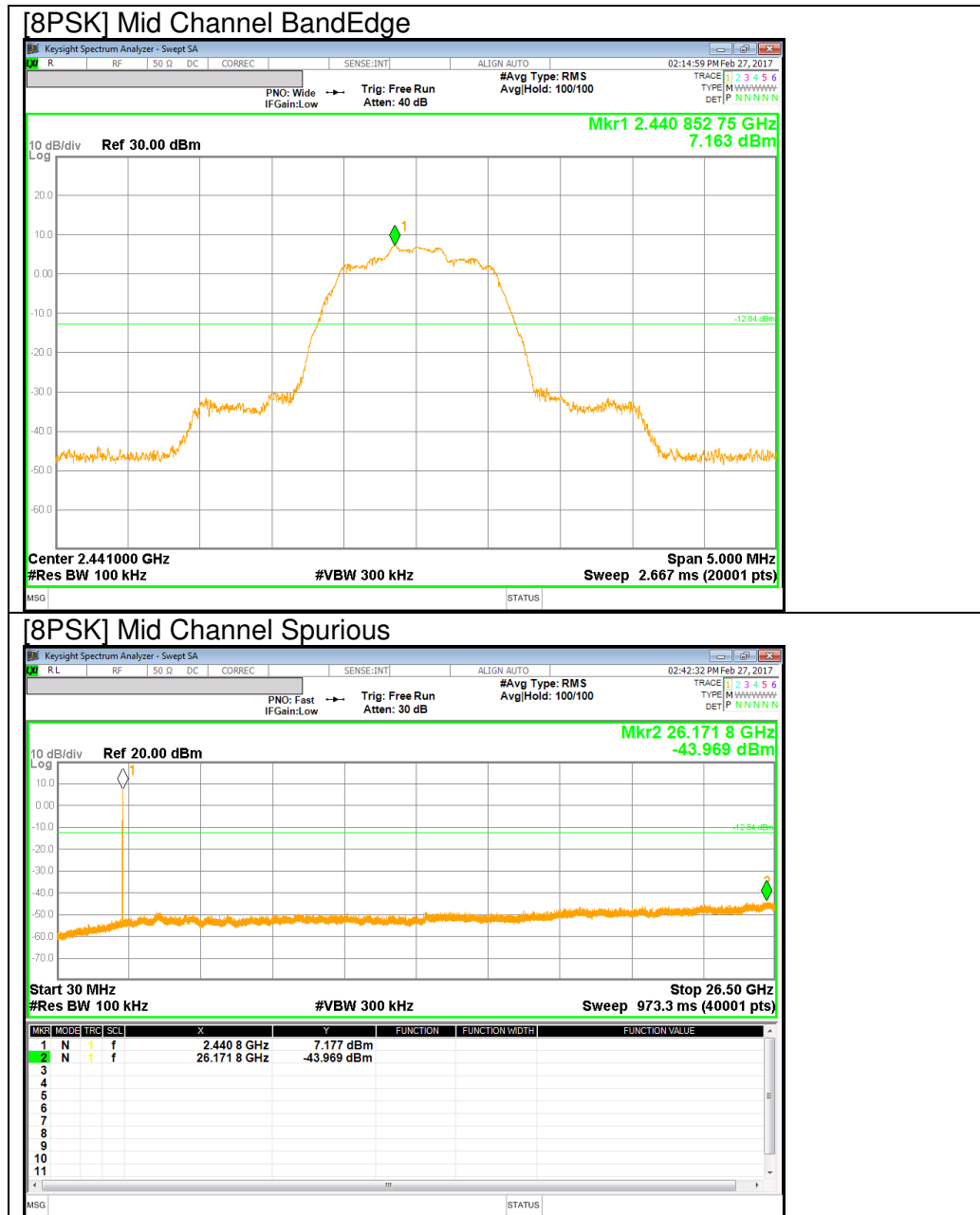


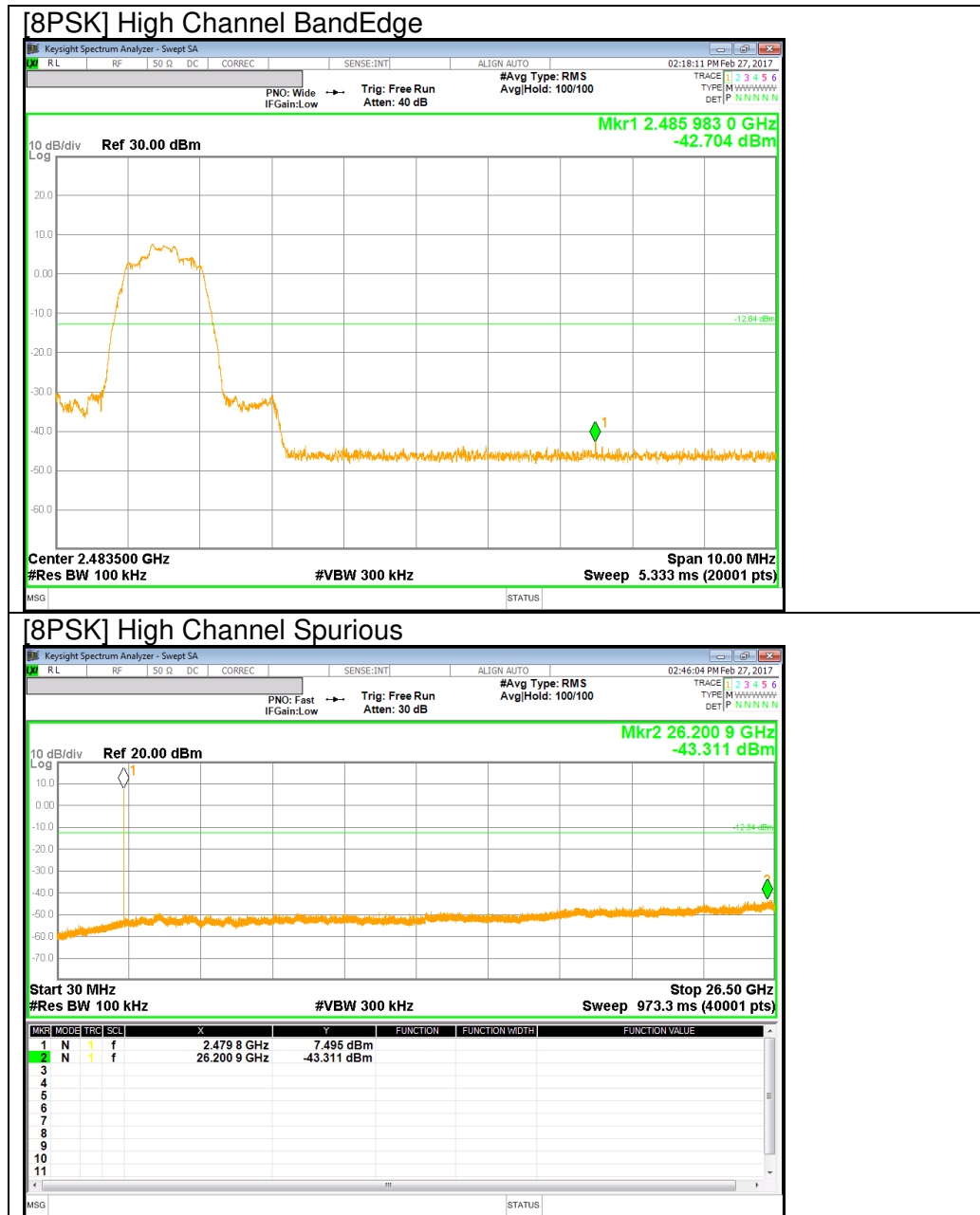
[PI/4-DQPSK Hopping Mode] High Channel BandEdge



**8PSK Mode**

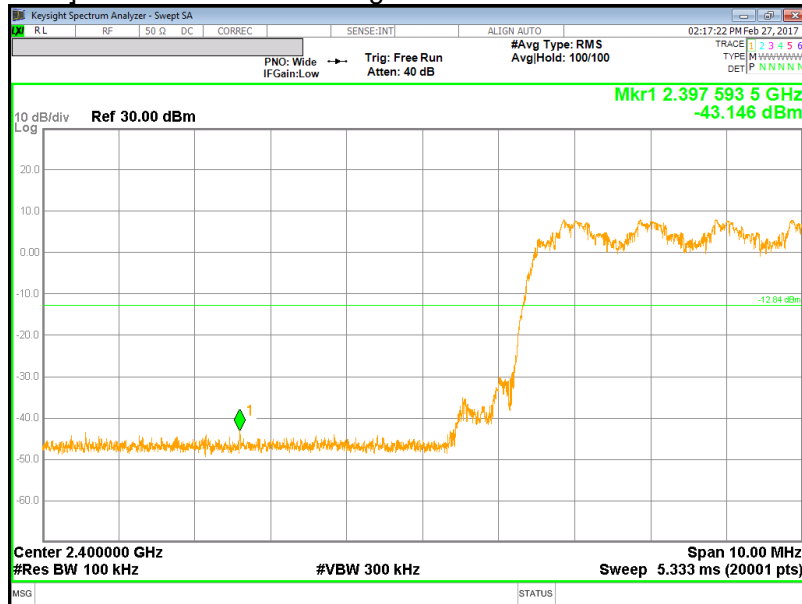




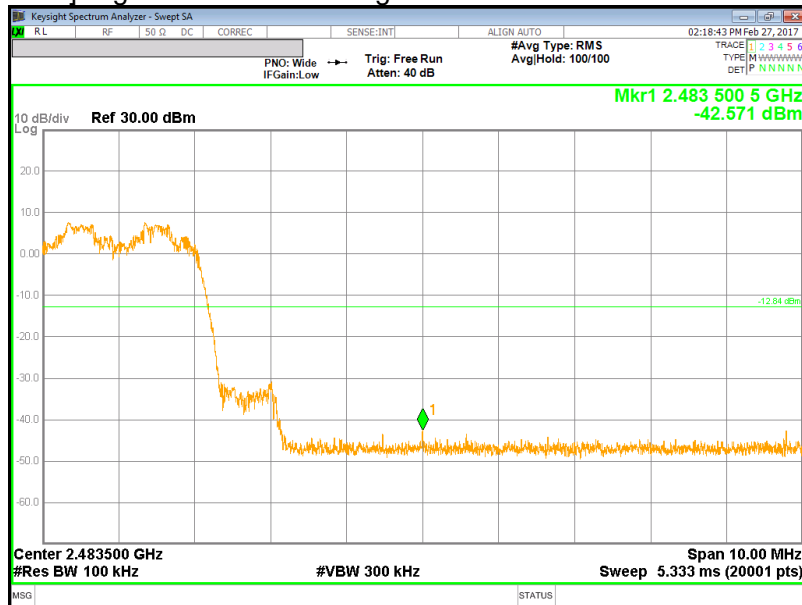


**BandEdge Emission at 8PSK Hopping Mode**

[8PSK Hopping Mode] Low Channel BandEdge



[8PSK Hopping Mode] High Channel BandEdge



## 10. RADIATED TEST RESULTS

### 10.1. LIMITS AND PROCEDURE

#### LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

## **TEST PROCEDURE**

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements.(Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.)

For band edge measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 1/T (on time) for average measurement.

$$\text{GFSK} = 1/T = 1 / 0.0029\text{S} = 350\text{Hz}.$$

The minimum VBW was 350Hz, but test receiver(ESU40) couldn't set value 350Hz. Due to this reason, testing VBW was set to 500Hz(Worst cases).

The spectrum from 1GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.  
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Note : Emission was pre-scanned from 9KHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).  
Per FCC part 15.31(o), test results were not reported.

Formula for converting the filed strength from uV/m to dBuV/m is:  
Limit (dBuV/m) = 20 log limit (uV/m)

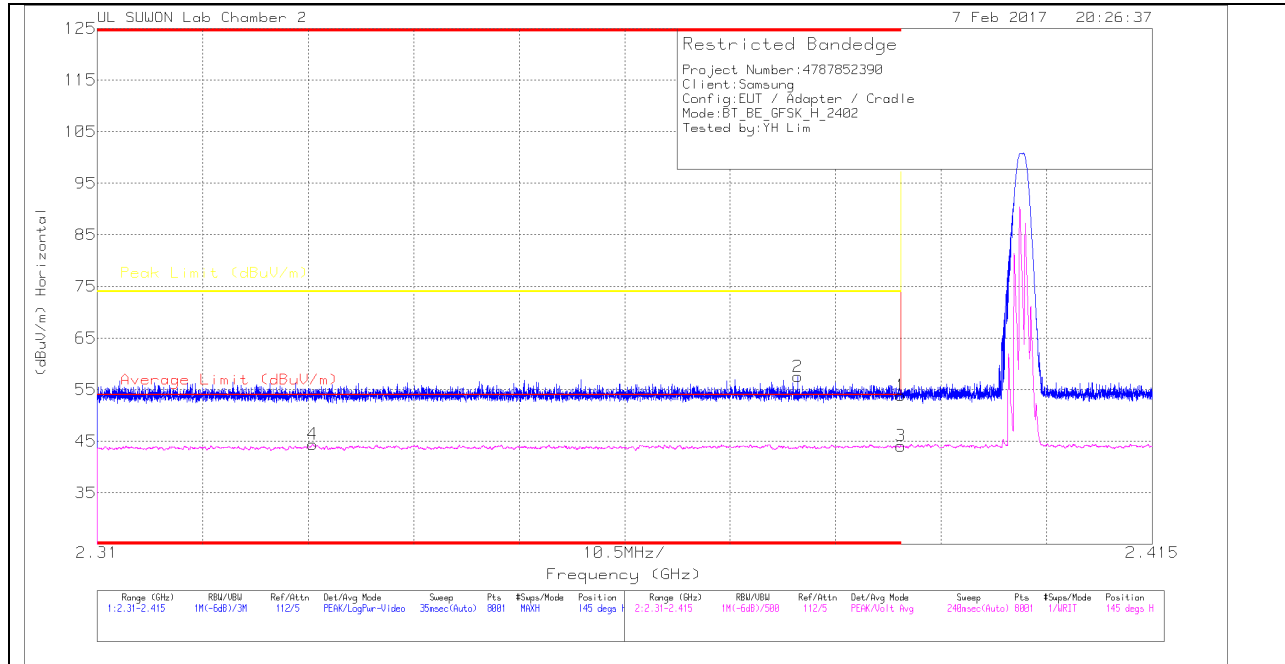
Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.  
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 937606.

## 10.2. TRANSMITTER ABOVE 1 GHz

### 10.2.1. BASIC DATA RATE GFSK MODULATION

#### RESTRICTED BANDEDGE (LOW CHANNEL)

##### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

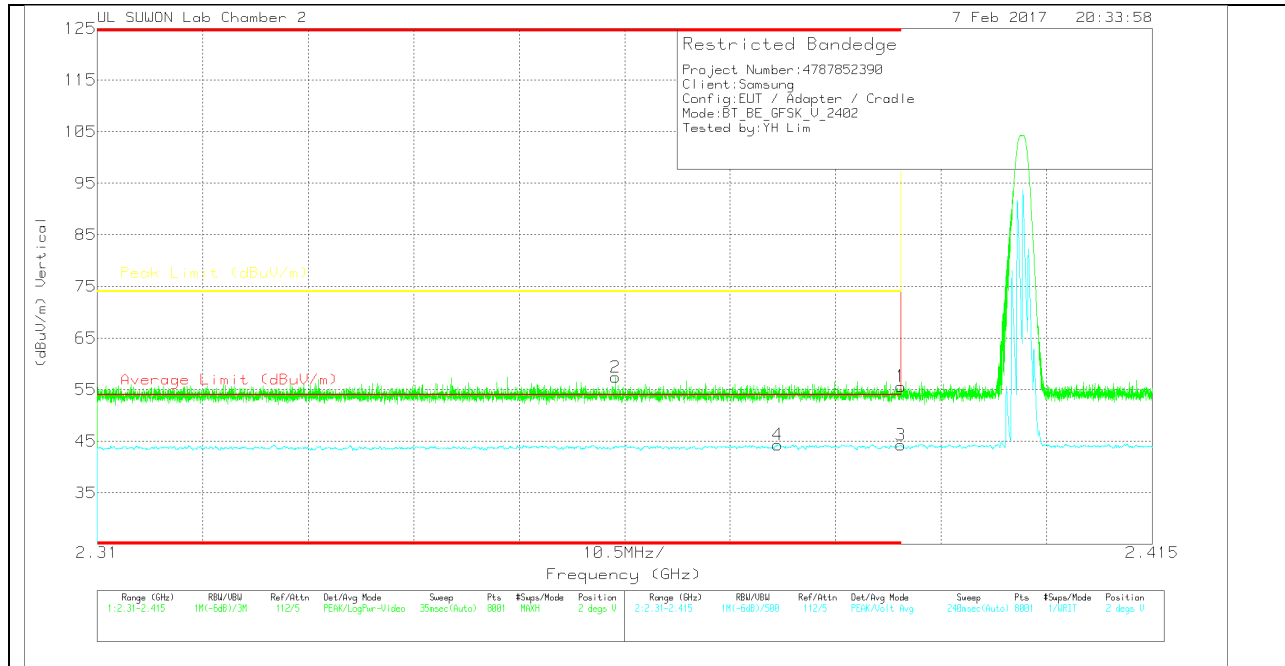
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	10dB[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.38	Pk	31.7	-18.2	53.88	-	-	74	-20.12	145	141	H
2	* 2.38	44.14	Pk	31.7	-18.3	57.54	-	-	74	-16.46	145	141	H
3	* 2.39	30.61	VA1T	31.7	-18.2	44.11	54	-9.89	-	-	145	141	H
4	* 2.331	31.23	VA1T	31.6	-18.4	44.43	54	-9.57	-	-	145	141	H

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average  $V_B=1/T_{on}$  where:  $T_{on}$  is transmit duration

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	10dB[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.12	Pk		-18.2	55.62	-	-	74	-18.38	2	182	V
2	* 2.362	44	Pk		-18.3	57.4	-	-	74	-16.6	2	182	V
3	* 2.39	30.78	VA1T		-18.2	44.28	54	-9.72	-	-	2	182	V
4	* 2.378	30.91	VA1T		-18.3	44.31	54	-9.69	-	-	2	182	V

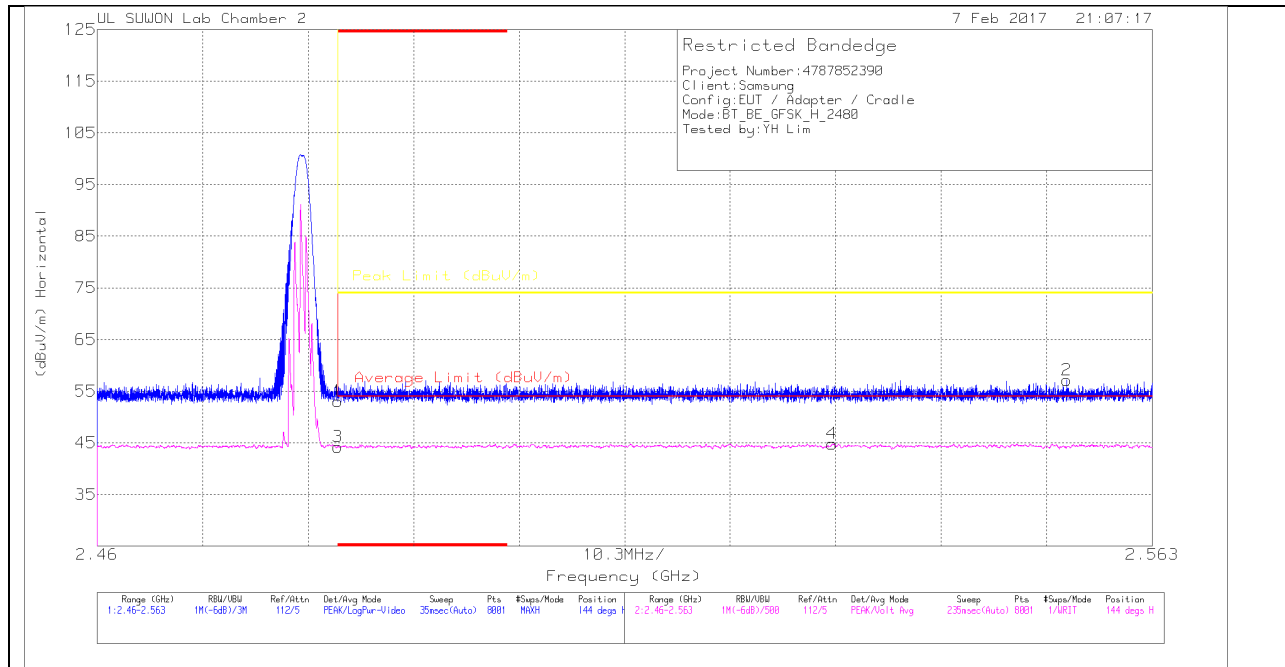
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average  $V_B=1/T_{on}$  where:  $T_{on}$  is transmit duration

**AUTHORIZED BANDEDGE (HIGH CHANNEL)**

**HORIZONTAL PEAK AND AVERAGE PLOT**



**HORIZONTAL DATA**

Trace Markers

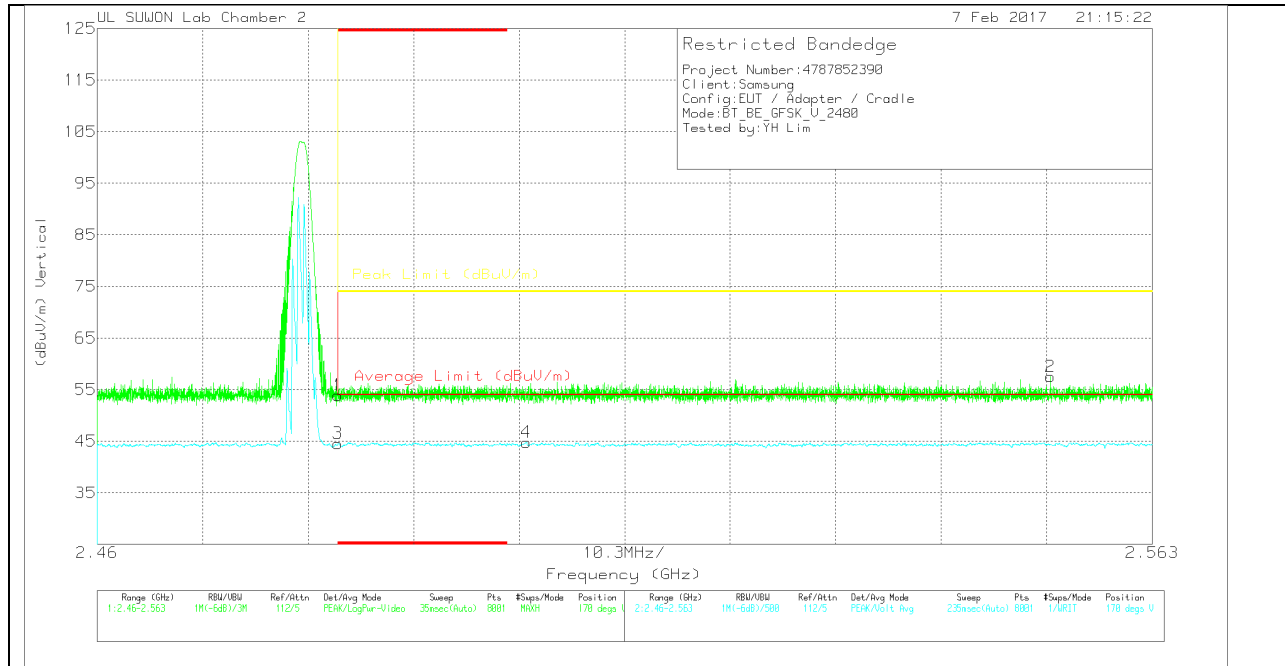
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	10dB[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	39.26	Pk	31.8	-18	53.06	-	-	74	-20.94	144	155	H
2	2.555	43.24	Pk	31.9	-18	57.14	-	-	74	-16.86	144	155	H
3	* 2.484	30.44	VA1T	31.8	-18	44.24	54	-9.76	-	-	144	155	H
4	2.532	30.93	VA1T	31.9	-18	44.83	54	-9.17	-	-	144	155	H

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	10dB[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.11	Pk	31.8	-18	53.91	-	-	74	-20.09	170	128	V
2	2.553	43.64	Pk	31.9	-18	57.54	-	-	74	-16.46	170	128	V
3	* 2.484	30.77	VA1T	31.8	-18	44.57	54	-9.43	-	-	170	128	V
4	2.502	30.9	VA1T	31.9	-18	44.8	54	-9.2	-	-	170	128	V

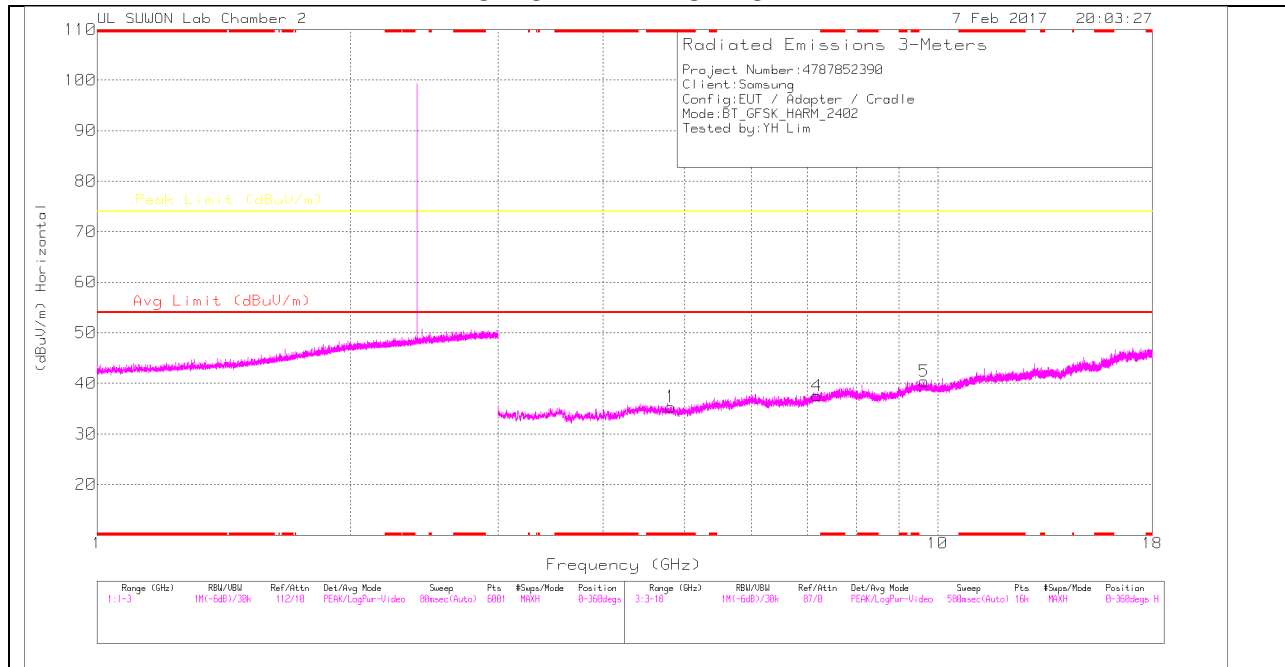
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

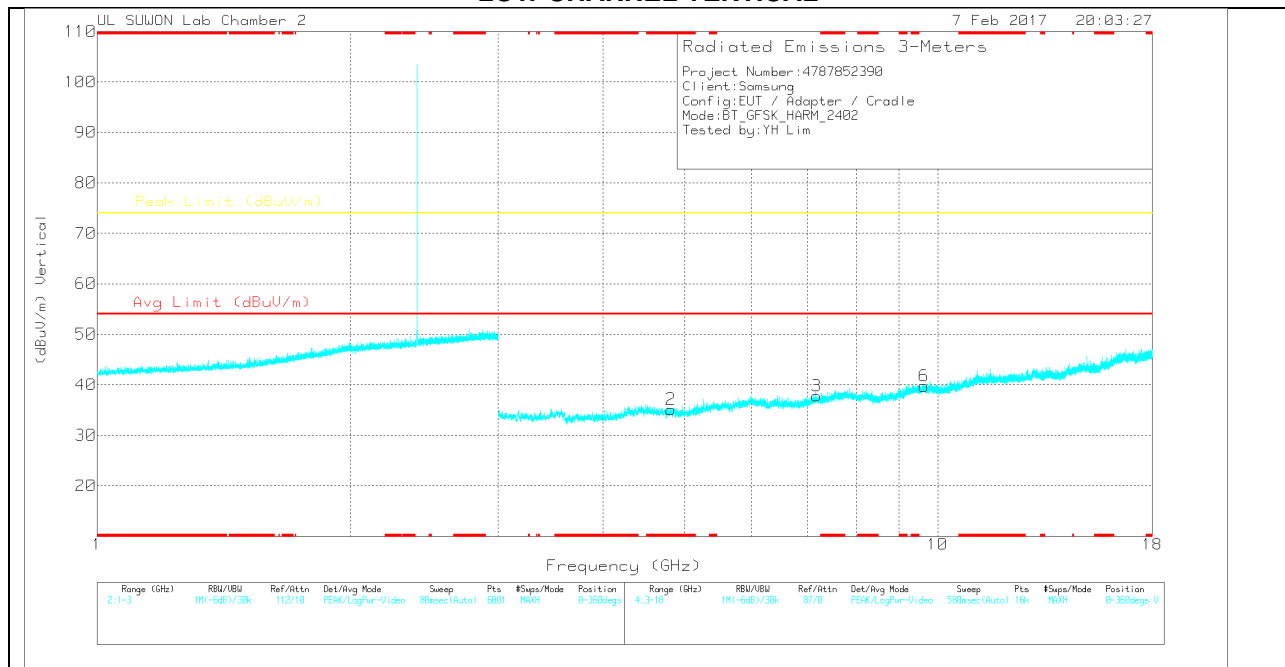
VA1T - FHSS: Linear Voltage Average  $V_B=1/T_{on}$  where:  $T_{on}$  is transmit duration

### HARMONICS AND SPURIOUS EMISSIONS

#### LOW CHANNEL HORIZONTAL



#### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**LOW CHANNEL DATA**

Trace Markers

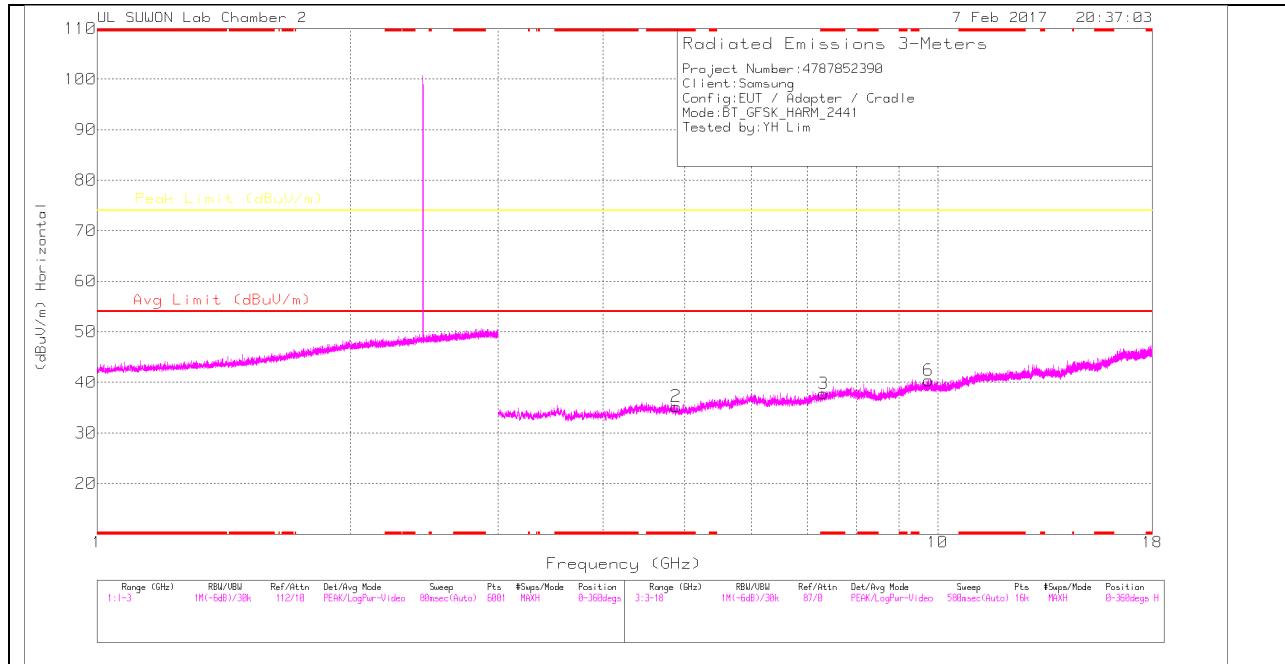
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	3GHz_HP[d B]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.817	25.75	Pk	33.9	-24.3	35.35	-	-	74	-38.65	0-360	250	H
4	7.184	23.36	Pk	35.7	-21.5	37.56	-	-	74	-36.44	0-360	150	H
5	9.638	21.78	Pk	36.9	-18.3	40.38	-	-	74	-33.62	0-360	250	H
2	* 4.813	25.49	Pk	33.9	-24.3	35.09	-	-	74	-38.91	0-360	150	V
3	7.18	23.59	Pk	35.7	-21.5	37.79	-	-	74	-36.21	0-360	150	V
6	9.639	21.15	Pk	36.9	-18.3	39.75	-	-	74	-34.25	0-360	150	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

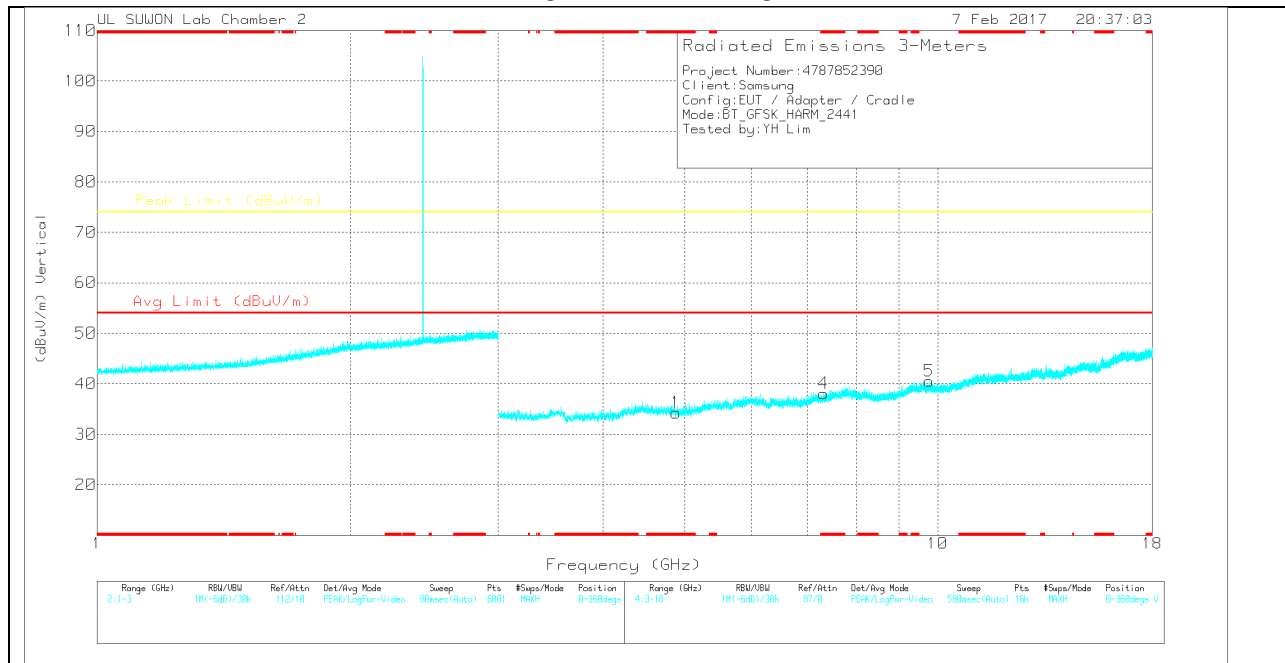
Pk – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

**MID CHANNEL HORIZONTAL**



**MID CHANNEL VERTICAL**



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**MID CHANNEL DATA**

Trace Markers

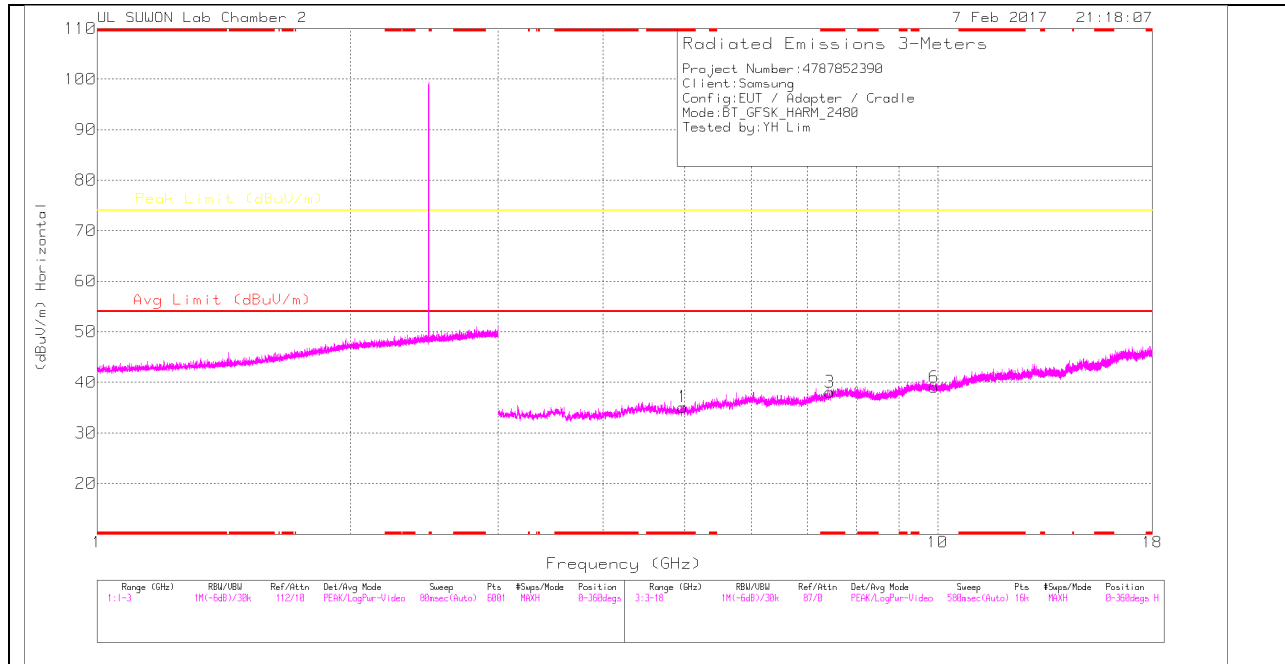
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	3GHz_HP[d B]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.885	25.94	Pk	33.9	-24.6	35.24	-	-	74	-38.76	0-360	250	H
3	* 7.318	23.9	Pk	35.9	-22	37.8	-	-	74	-36.2	0-360	150	H
6	9.757	21.38	Pk	37	-18	40.38	-	-	74	-33.62	0-360	150	H
1	* 4.881	24.97	Pk	33.9	-24.6	34.27	-	-	74	-39.73	0-360	250	V
4	* 7.319	24.17	Pk	35.9	-22	38.07	-	-	74	-35.93	0-360	250	V
5	9.767	21.55	Pk	37	-18	40.55	-	-	74	-33.45	0-360	150	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

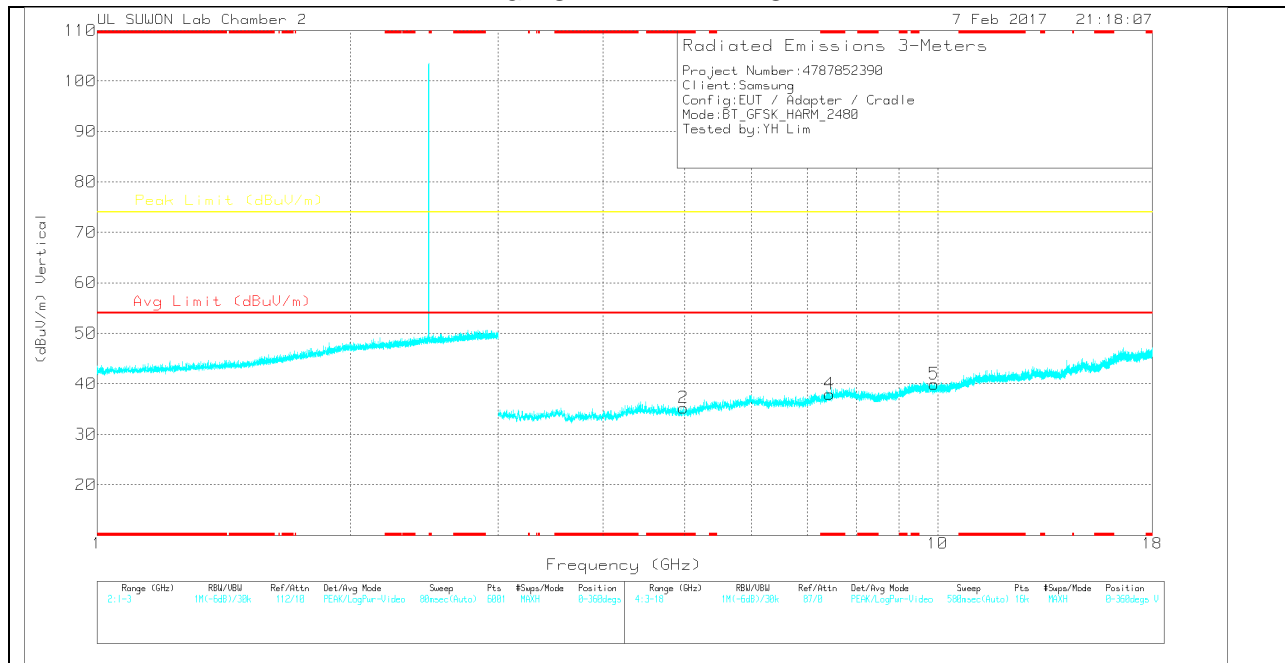
Pk – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**HIGH CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	3GHz_HP[d B]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.978	25.93	Pk	33.9	-24.7	35.13	-	-	74	-38.87	0-360	150	H
3	* 7.438	23.07	Pk	36	-21	38.07	-	-	74	-35.93	0-360	150	H
6	9.907	19.94	Pk	37.1	-18	39.04	-	-	74	-34.96	0-360	150	H
2	* 4.984	26.05	Pk	33.9	-24.7	35.25	-	-	74	-38.75	0-360	250	V
4	* 7.435	22.98	Pk	36	-21	37.98	-	-	74	-36.02	0-360	150	V
5	9.909	20.87	Pk	37.1	-18	39.97	-	-	74	-34.03	0-360	250	V

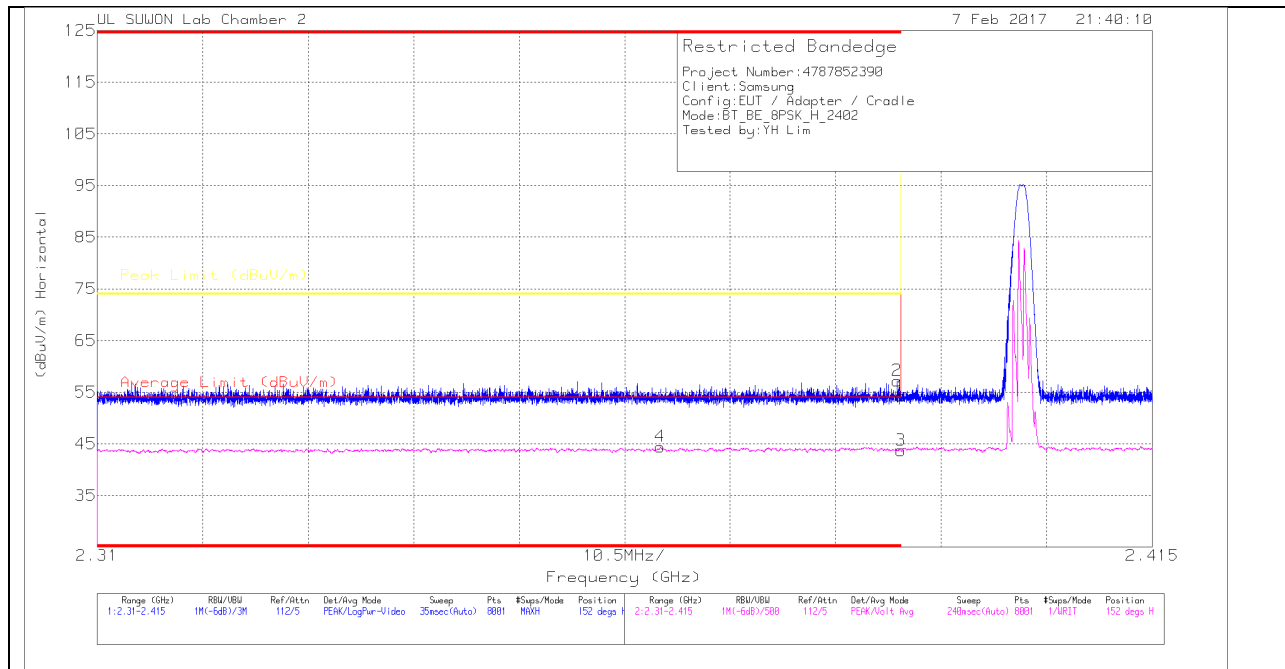
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

## 10.2.2. ENHANCED DATA RATE 8PSK MODULATION RESTRICTED BANDEDGE (LOW CHANNEL)

### HORIZONTAL PEAK AND AVERAGE PLOT



### HORIZONTAL DATA

#### Trace Markers

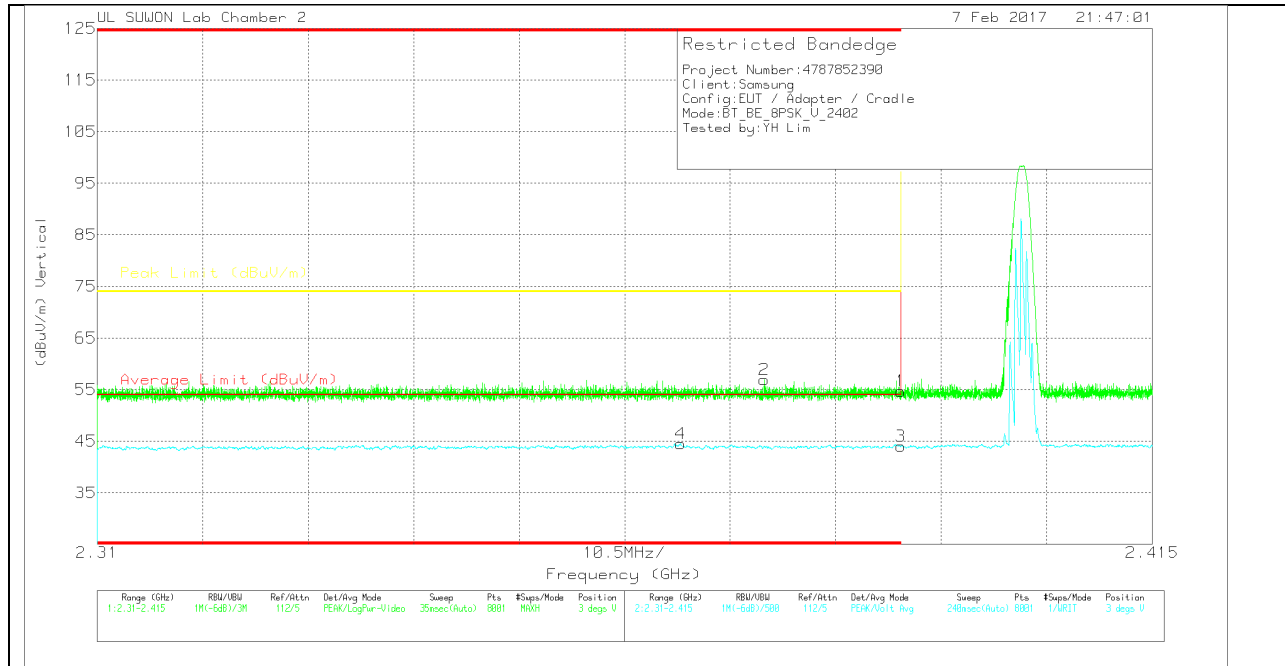
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	10dB[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.75	Pk		-18.2	54.25	-	-	74	-19.75	152	167	H
2	* 2.39	43.74	Pk		-18.2	57.24	-	-	74	-16.76	152	167	H
3	* 2.39	30.24	VA1T		-18.2	43.74	54	-10.26	-	-	152	167	H
4	* 2.366	31.05	VA1T		-18.3	44.45	54	-9.55	-	-	152	167	H

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average  $VB=1/T_{on}$  where:  $T_{on}$  is transmit duration

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	10dB[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.19	Pk	31.7	-18.2	54.69	-	-	74	-19.31	3	182	V
2	* 2.376	43.5	Pk	31.7	-18.3	56.9	-	-	74	-17.1	3	182	V
3	* 2.39	30.5	VA1T	31.7	-18.2	44	54	-10	-	-	3	182	V
4	* 2.368	31.11	VA1T	31.7	-18.3	44.51	54	-9.49	-	-	3	182	V

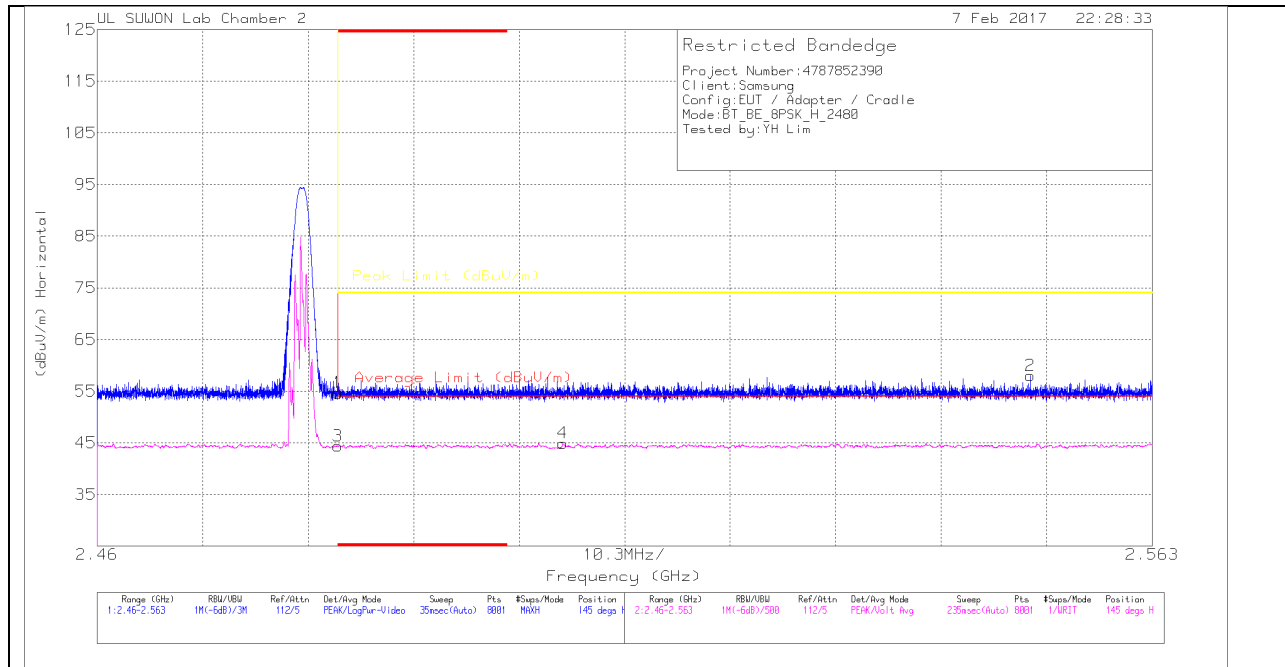
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**AUTHORIZED BANDEDGE (HIGH CHANNEL)**

**HORIZONTAL PEAK AND AVERAGE PLOT**



**HORIZONTAL DATA**

**Trace Markers**

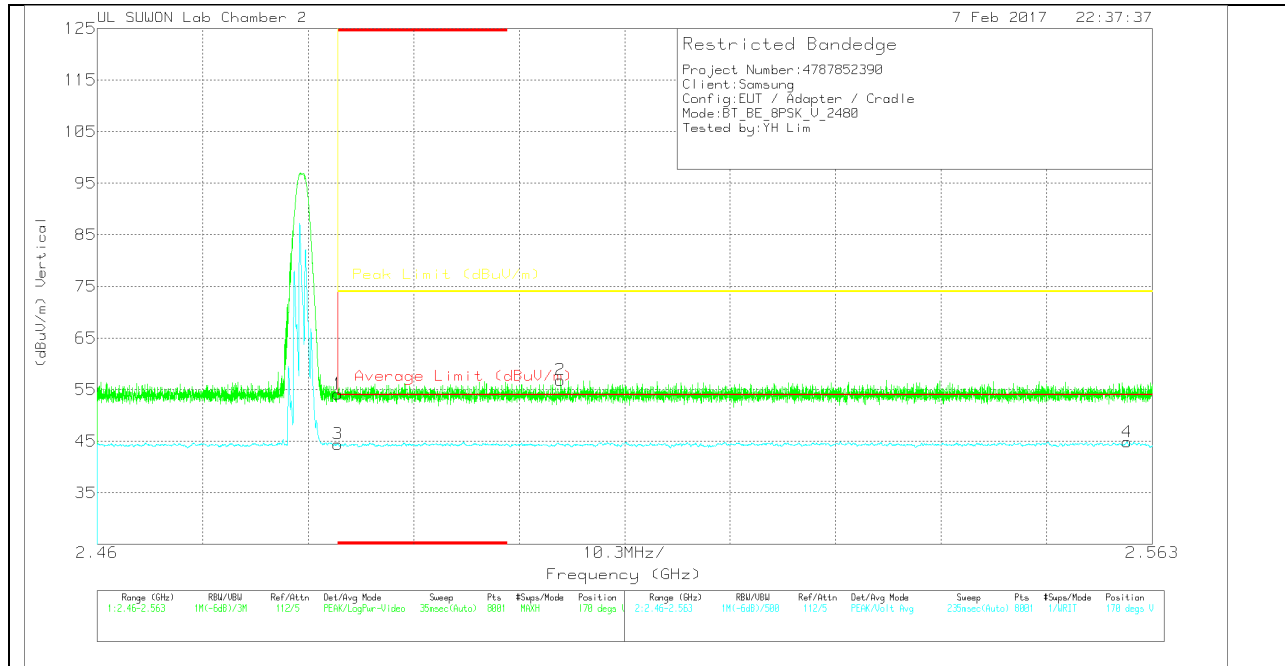
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	10dB[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.9	Pk	31.8	-18	54.7	-	-	74	-19.3	145	151	H
2	2.551	44.13	Pk	31.9	-18	58.03	-	-	74	-15.97	145	151	H
3	* 2.484	30.6	VA1T	31.8	-18	44.4	54	-9.6	-	-	145	151	H
4	2.505	31.04	VA1T	31.9	-18	44.94	54	-9.06	-	-	145	151	H

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

**Trace Markers**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	10dB[dB]	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.35	Pk		-18	54.15	-	-	74	-19.85	170	128	V
2	2.505	42.97	Pk		-18	56.87	-	-	74	-17.13	170	128	V
3	* 2.484	30.66	VA1T		-18	44.46	54	-9.54	-	-	170	128	V
4	2.561	30.99	VA1T		-18	44.89	54	-9.11	-	-	170	128	V

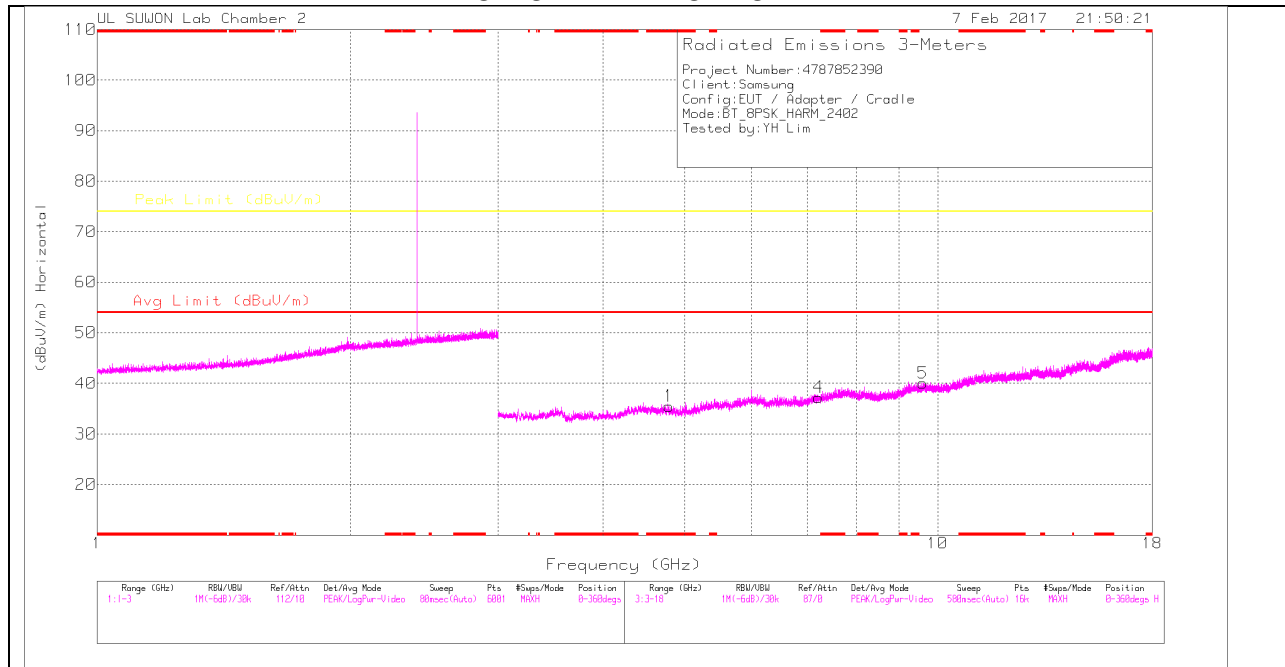
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

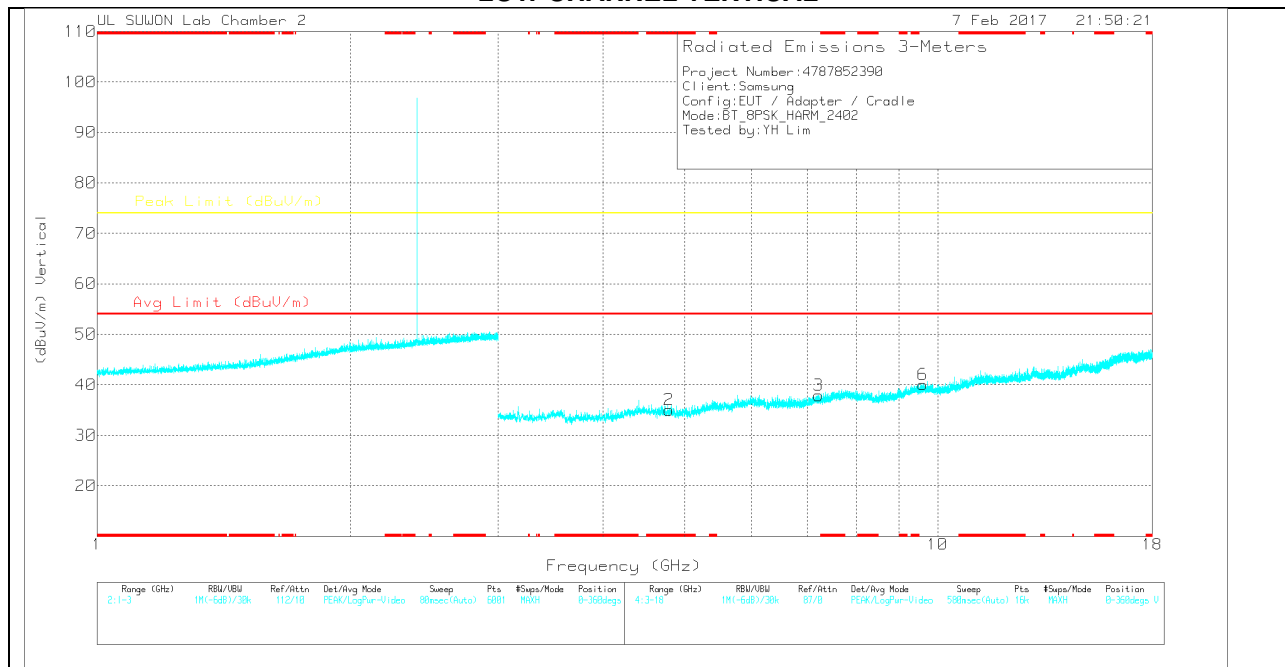
VA1T - FHSS: Linear Voltage Average  $V_B=1/T_{on}$  where:  $T_{on}$  is transmit duration

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL HORIZONTAL



### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**LOW CHANNEL DATA**

Trace Markers

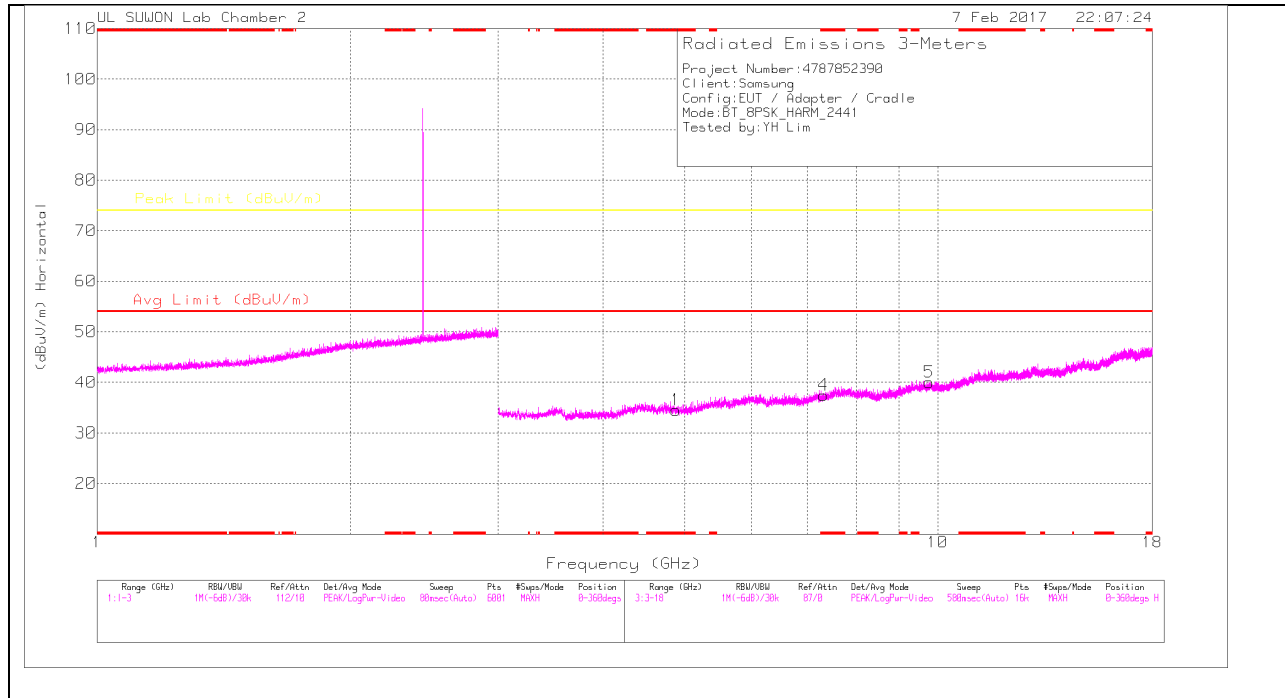
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	3GHz_HP[d B]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.793	25.98	Pk	33.9	-24.4	35.48	-	-	74	-38.52	0-360	250	H
4	7.214	23.13	Pk	35.8	-21.7	37.23	-	-	74	-36.77	0-360	250	H
5	9.604	21.53	Pk	36.9	-18.4	40.03	-	-	74	-33.97	0-360	150	H
2	* 4.791	25.53	Pk	33.9	-24.4	35.03	-	-	74	-38.97	0-360	250	V
3	7.218	23.89	Pk	35.8	-21.8	37.89	-	-	74	-36.11	0-360	250	V
6	9.606	21.52	Pk	36.9	-18.4	40.02	-	-	74	-33.98	0-360	250	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

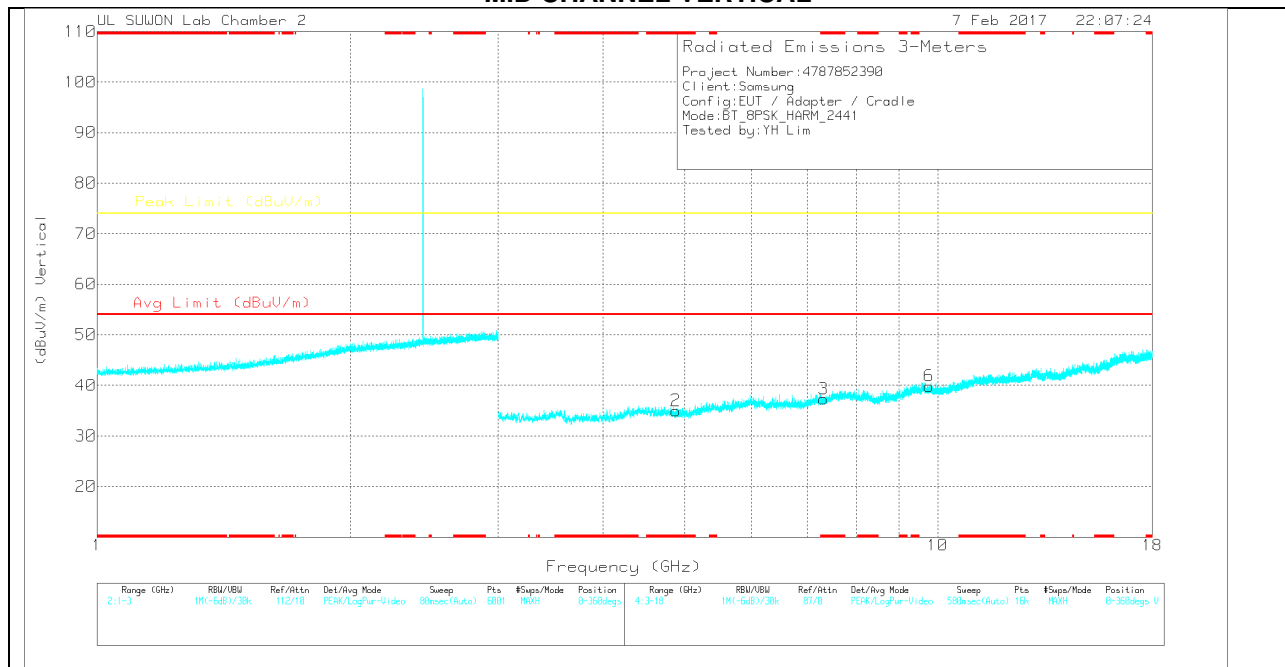
Pk – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

**MID CHANNEL HORIZONTAL**



**MID CHANNEL VERTICAL**



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**MID CHANNEL DATA**

Trace Markers

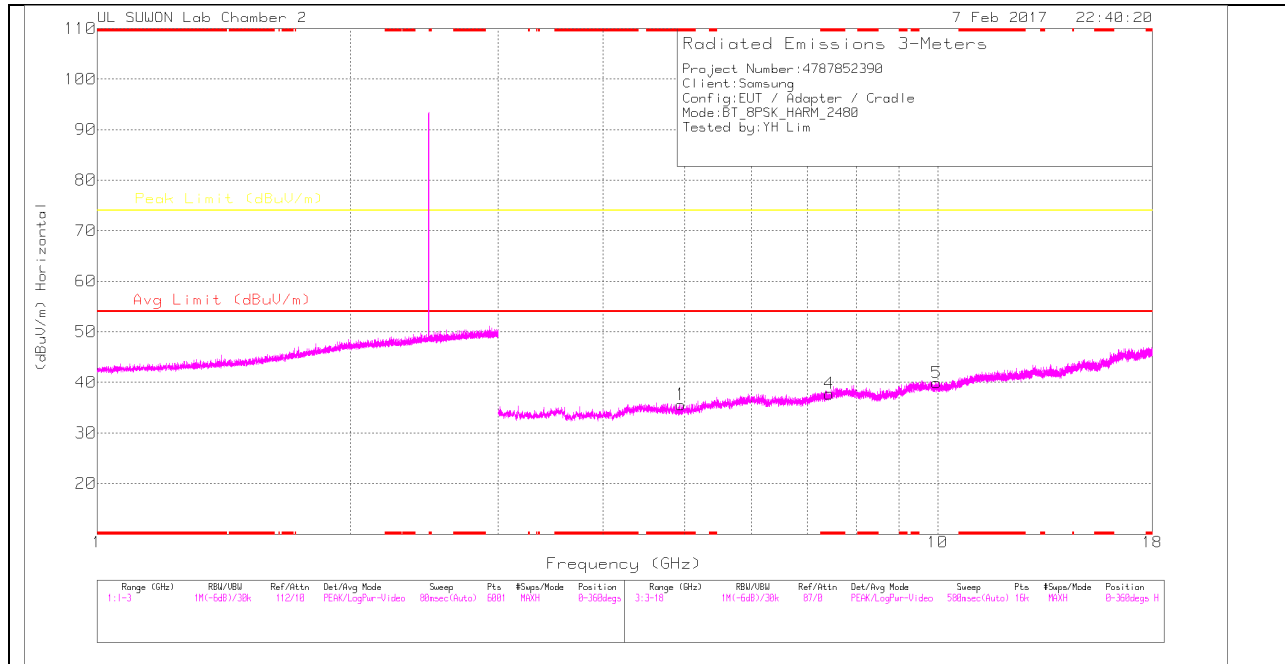
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	3GHz_HP[d B]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.881	25.22	Pk	33.9	-24.6	34.52	-	-	74	-39.48	0-360	250	H
4	* 7.317	23.57	Pk	35.9	-22	37.47	-	-	74	-36.53	0-360	250	H
5	9.764	21	Pk	37	-18	40	-	-	74	-34	0-360	150	H
2	* 4.881	25.69	Pk	33.9	-24.6	34.99	-	-	74	-39.01	0-360	150	V
3	* 7.315	23.41	Pk	35.9	-22	37.31	-	-	74	-36.69	0-360	150	V
6	9.765	20.85	Pk	37	-18	39.85	-	-	74	-34.15	0-360	150	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

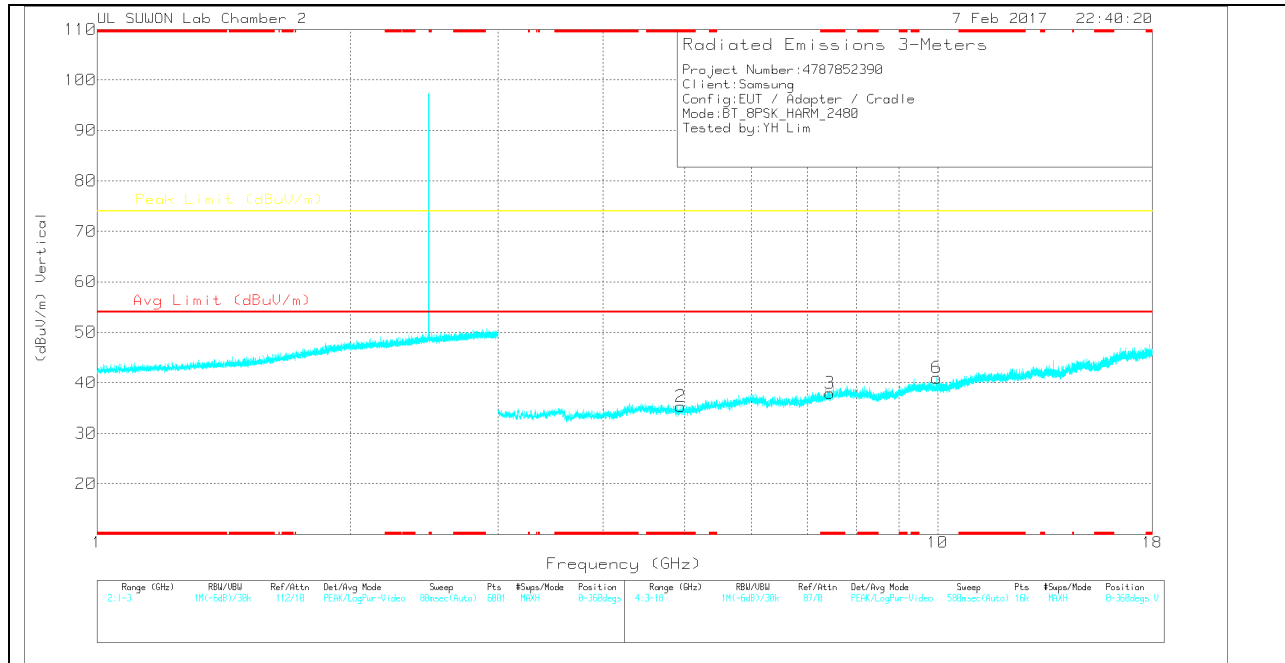
Pk - Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**HIGH CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	3GHz_HP[d B]	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.95	26.4	Pk	33.9	-24.7	35.6	-	-	74	-38.4	0-360	150	H
4	* 7.431	22.85	Pk	36	-21.1	37.75	-	-	74	-36.25	0-360	150	H
5	9.969	20.42	Pk	37.2	-17.7	39.92	-	-	74	-34.08	0-360	250	H
2	* 4.946	26.13	Pk	33.9	-24.7	35.33	-	-	74	-38.67	0-360	250	V
3	* 7.441	22.96	Pk	36	-21	37.96	-	-	74	-36.04	0-360	250	V
6	9.97	21.5	Pk	37.2	-17.7	41	-	-	74	-33	0-360	150	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

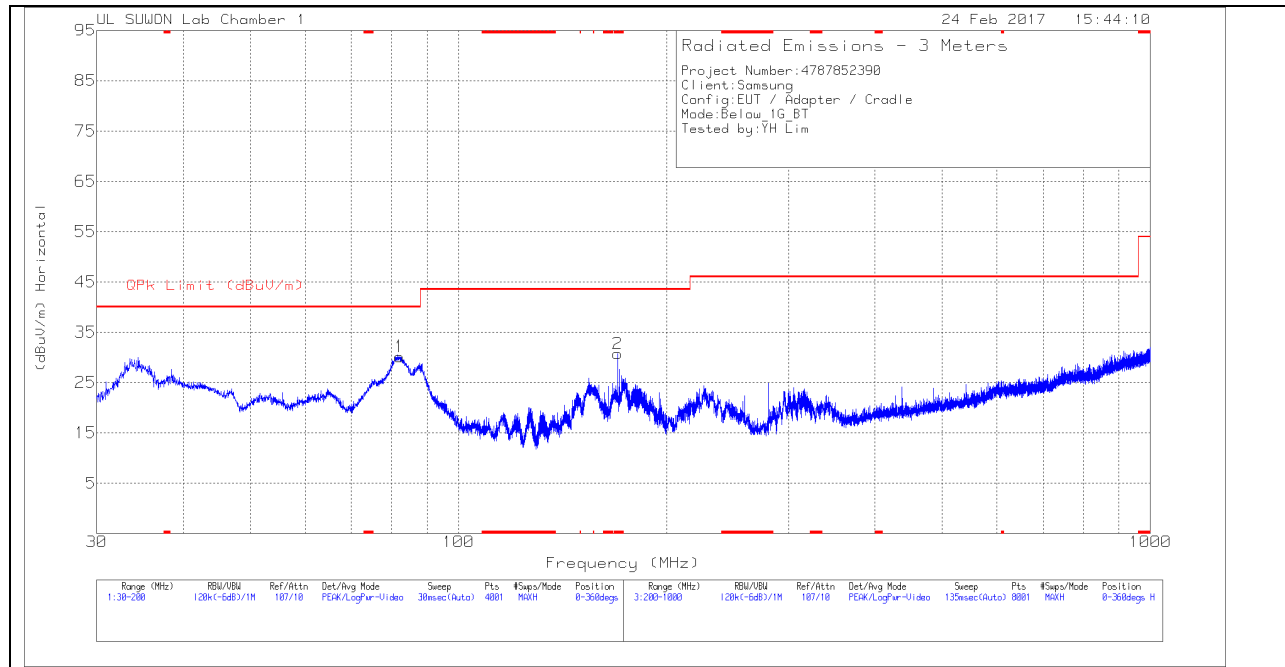
Pk – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

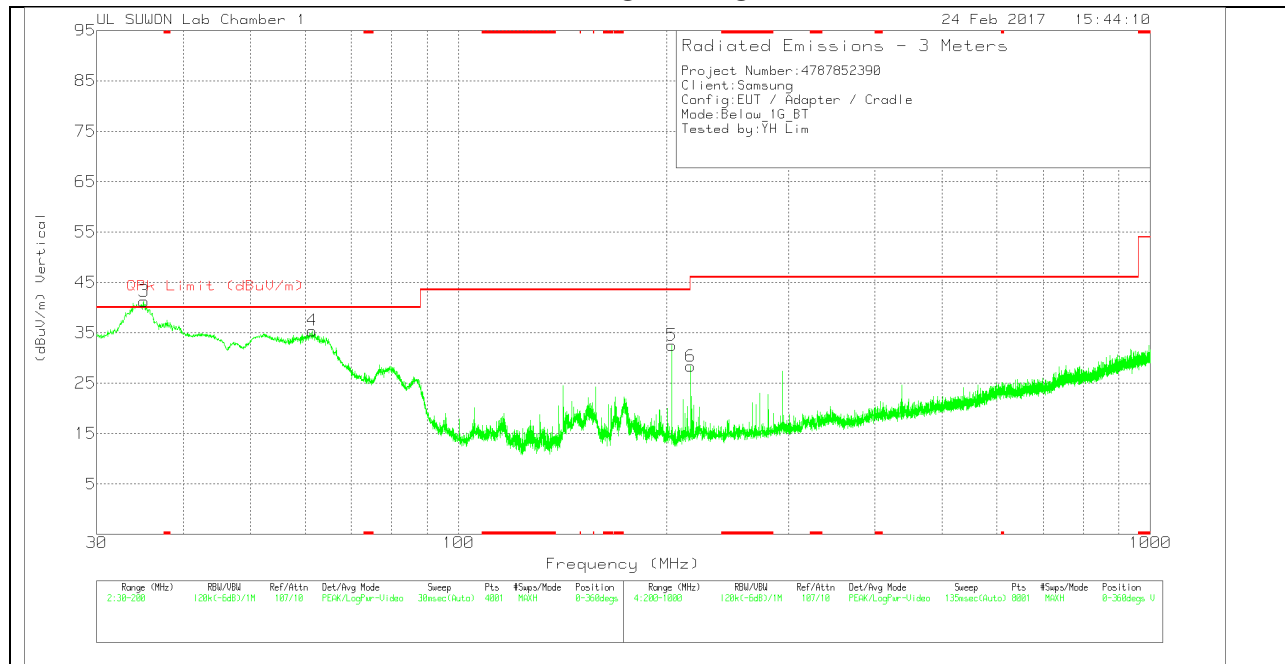
### 10.3. WORST-CASE BELOW 1 GHz

#### GFSK SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

##### HORIZONTAL PLOT



##### VERTICAL PLOT



**BELOW 1 GHz TABLE**

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750(dB)	30-1000MHz(dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	82.19	49.95	Pk	7.5	-27.3	30.15	40	-9.85	0-360	400	H
2	* 169.825	48.76	Pk	8.8	-26.8	30.76	43.52	-12.76	0-360	200	H
3	35.1	59.19	Pk	10.7	-28.6	41.29	<b>40</b>	<b>1.29</b>	0-360	100	V
4	61.4075	51.33	Pk	12.2	-28.1	35.43	40	-4.57	0-360	100	V
5	203.4	48.34	Pk	10.8	-26.6	32.54	43.52	-10.98	0-360	100	V
6	216.6	43.84	Pk	11.1	-26.6	28.34	46.02	-17.68	0-360	100	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

Radiated Emissions

Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750(dB)	30-1000MHz(dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
35.1	54.48	Qp	10.7	-28.6	36.58	40	-3.42	264	100	V

\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Qp - Quasi-Peak detector

## 11. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

FCC §15.207 (a)

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency.

### TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

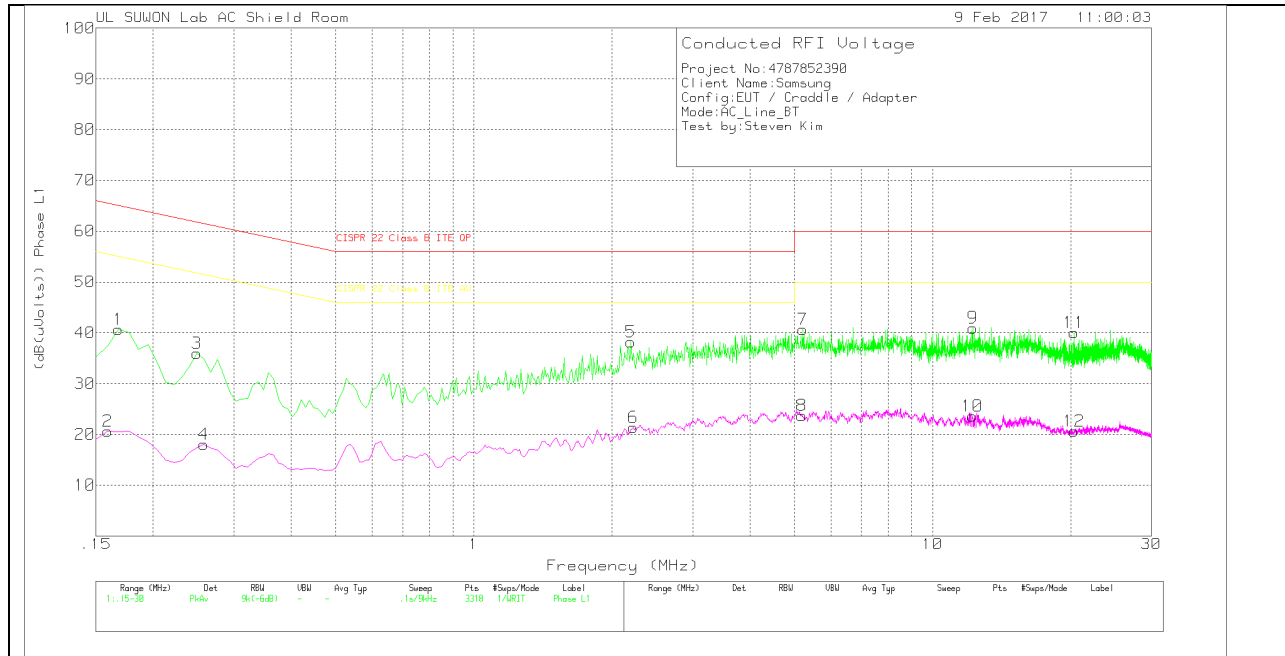
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

### RESULTS

**6 WORST EMISSIONS**

**LINE 1 PLOT**



**LINE 1 RESULTS**

Trace Markers

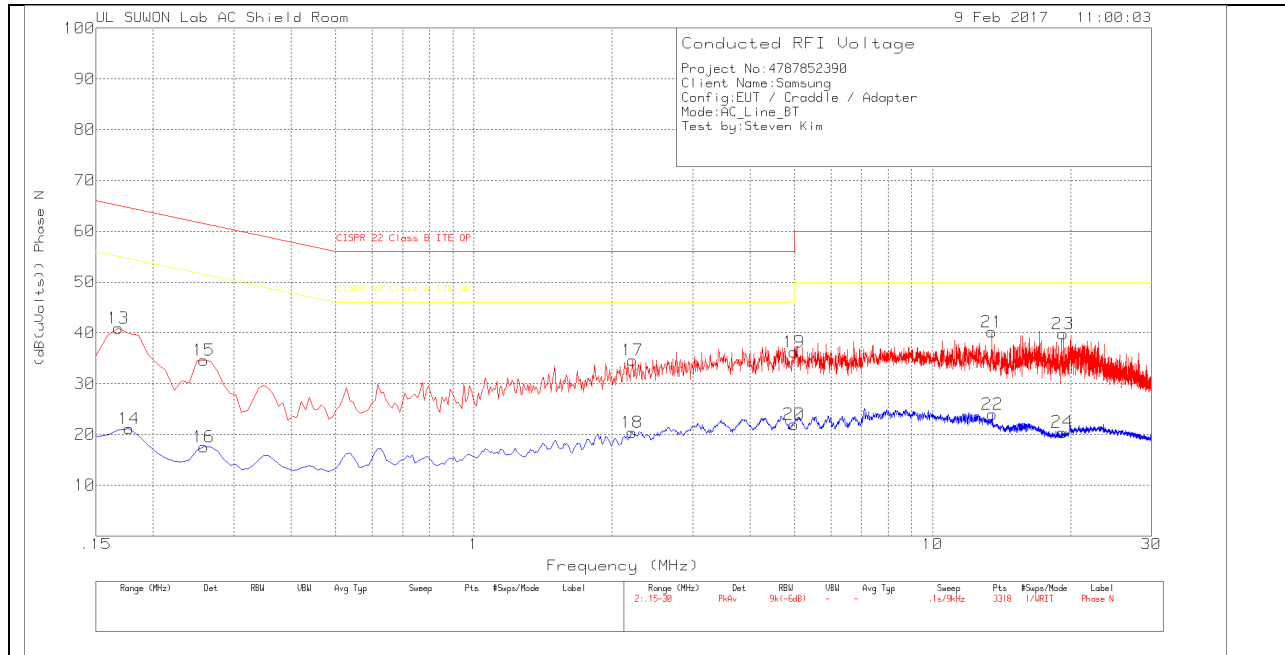
Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_w ith ex- cord_L1	CE Shield Room	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.168	30.61	Pk	10	0	40.61	65.06	-24.45	-	-
2	.159	10.74	Av	9.9	0	20.64	-	-	55.52	-34.88
3	.249	26.26	Pk	9.7	0	35.96	61.79	-25.83	-	-
4	.258	8.36	Av	9.7	0	18.06	-	-	51.5	-33.44
5	2.202	28.36	Pk	9.7	.1	38.16	56	-17.84	-	-
6	2.229	11.61	Av	9.7	.1	21.41	-	-	46	-24.59
7	5.208	30.75	Pk	9.8	.1	40.65	60	-19.35	-	-
8	5.19	13.82	Av	9.8	.1	23.72	-	-	50	-26.28
9	12.246	30.67	Pk	10.1	.2	40.97	60	-19.03	-	-
10	12.21	13.31	Av	10.1	.2	23.61	-	-	50	-26.39
11	20.373	29.39	Pk	10.4	.2	39.99	60	-20.01	-	-
12	20.355	10.08	Av	10.4	.2	20.68	-	-	50	-29.32

Pk - Peak detector

Av - Average detection

LINE 2 PLOT



**LINE 2 RESULTS**

Trace Markers

Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_w ith ex-cord_N	CE Shield Room	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
13	.168	30.88	Pk	10	0	40.88	65.06	-24.18	-	-
14	.177	11.13	Av	10	0	21.13	-	-	54.63	-33.5
15	.258	24.95	Pk	9.7	0	34.65	61.5	-26.85	-	-
16	.258	7.84	Av	9.7	0	17.54	-	-	51.5	-33.96
17	2.22	24.75	Pk	9.7	.1	34.55	56	-21.45	-	-
18	2.211	10.6	Av	9.7	.1	20.4	-	-	46	-25.6
19	4.992	26.29	Pk	9.8	.1	36.19	56	-19.81	-	-
20	4.992	12.11	Av	9.8	.1	22.01	-	-	46	-23.99
21	13.461	29.71	Pk	10.3	.2	40.21	60	-19.79	-	-
22	13.506	13.43	Av	10.3	.2	23.93	-	-	50	-26.07
23	19.257	28.99	Pk	10.6	.2	39.79	60	-20.21	-	-
24	19.194	9.64	Av	10.6	.2	20.44	-	-	50	-29.56

Pk - Peak detector

Av - Average detection