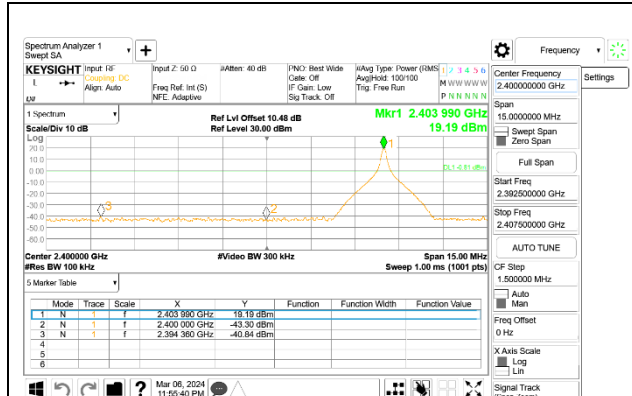


**Tx1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON**

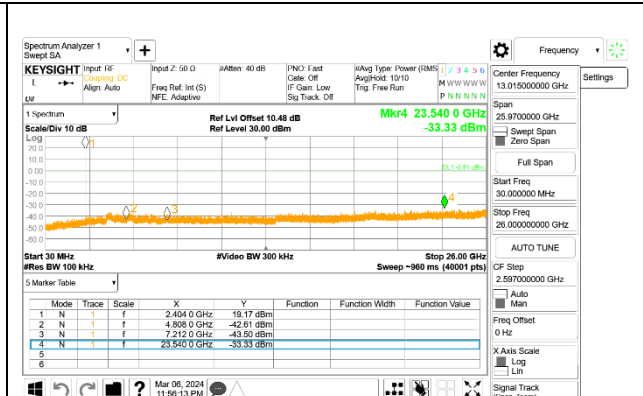


## 9.7.2. BLE 1Mbps ASK, MODE 2 (CHANNEL SOUNDING)

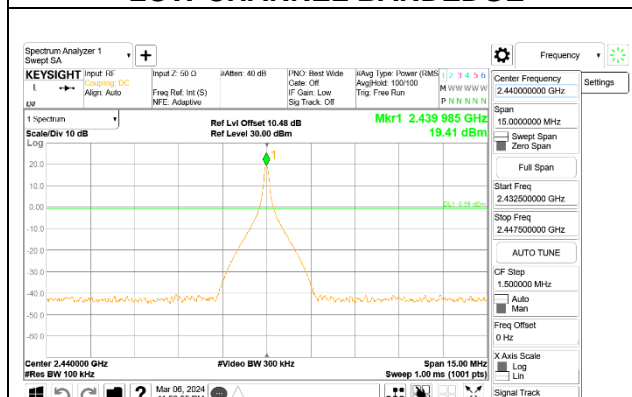
### Tx0 SPURIOUS EMISSIONS, NON-HOPPING



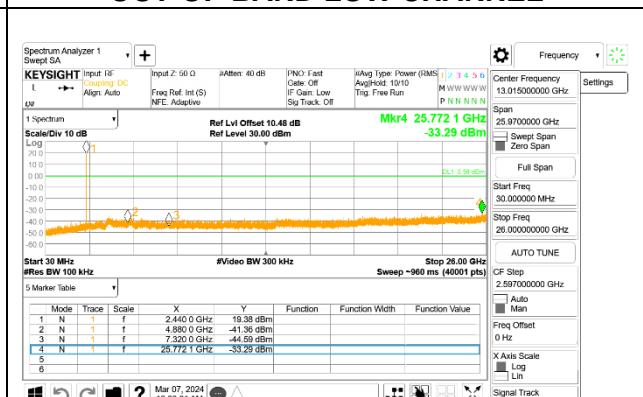
**LOW CHANNEL BANDEDGE**



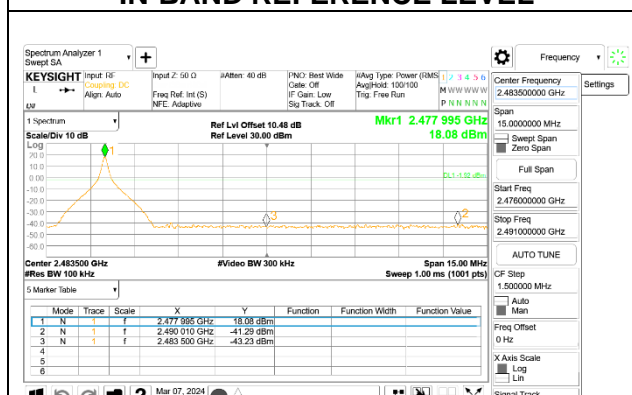
**OUT-OF-BAND LOW CHANNEL**



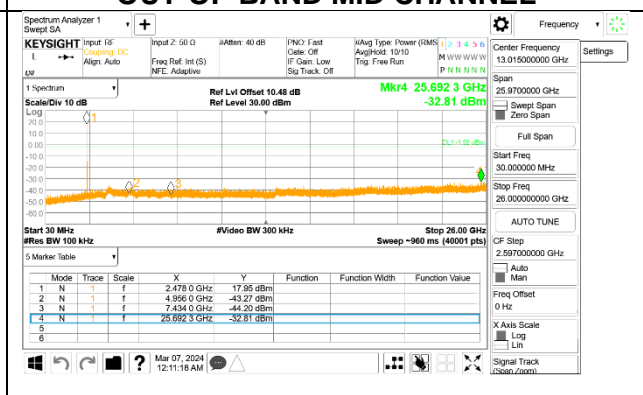
**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND MID CHANNEL**

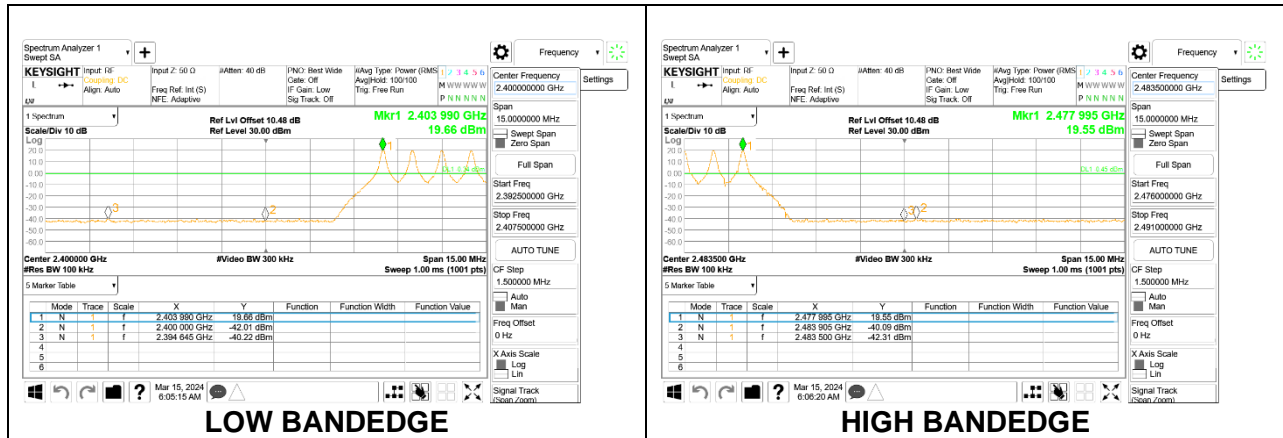


**HIGH CHANNEL BANDEDGE**

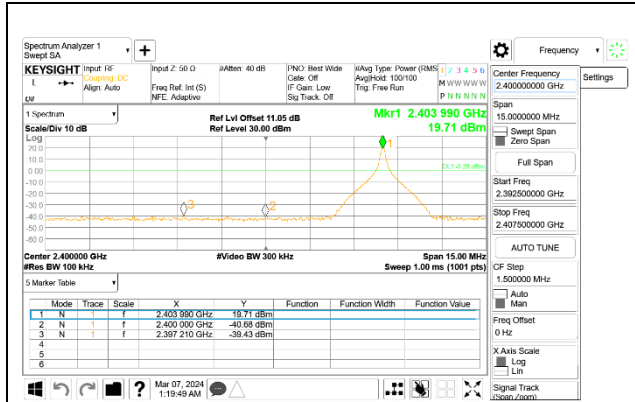


**OUT-OF-BAND HIGH CHANNEL**

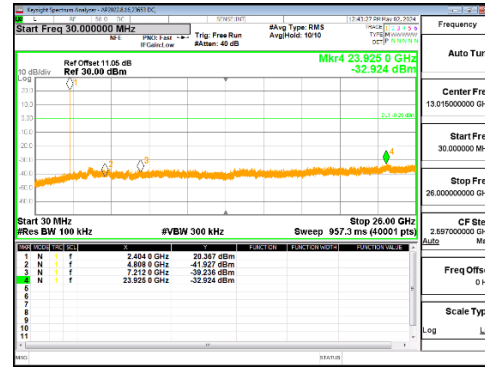
**Tx0 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON**



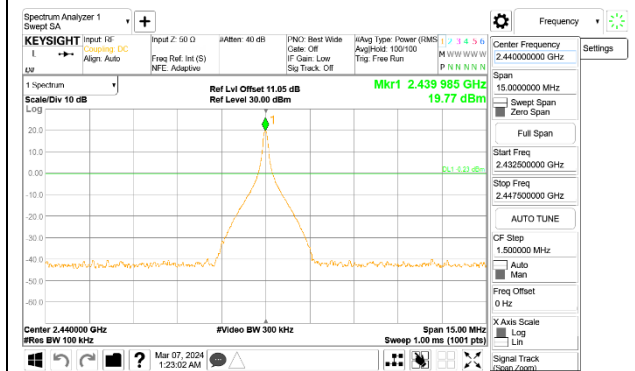
### Tx1 SPURIOUS EMISSIONS, NON-HOPPING



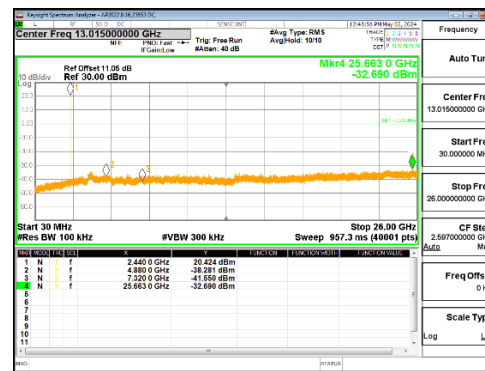
**LOW CHANNEL BANDEGE**



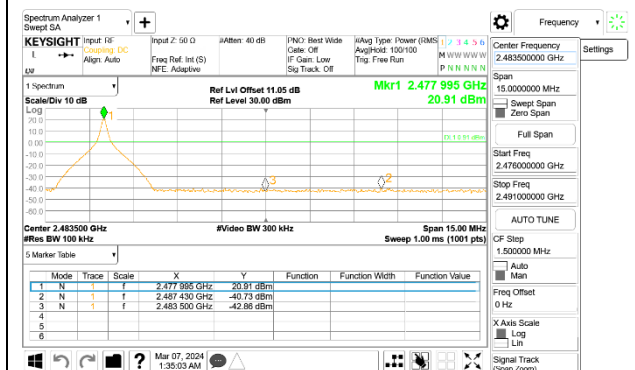
**OUT-OF-BAND LOW CHANNEL**



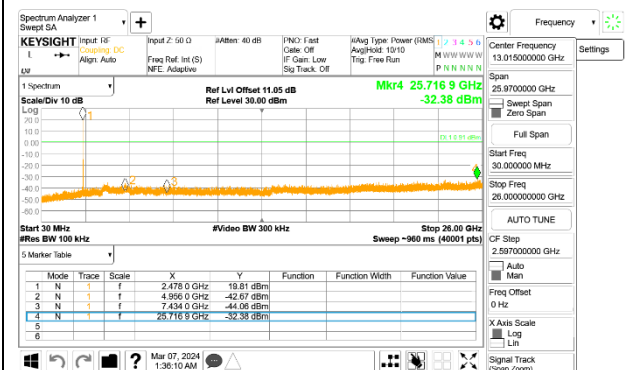
**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND MID CHANNEL**



**HIGH CHANNEL BANDEGE**



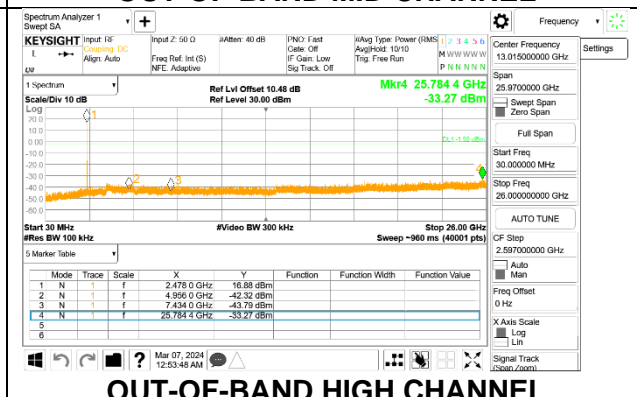
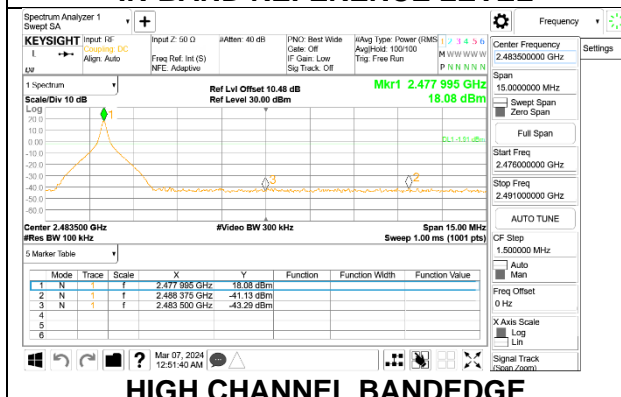
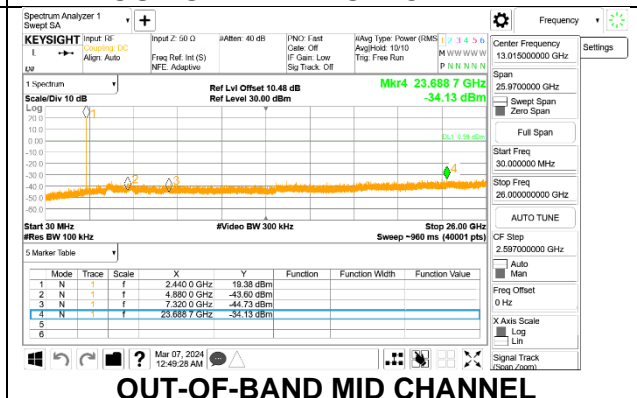
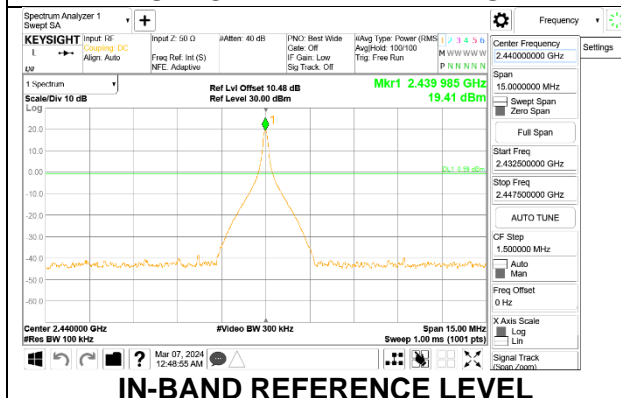
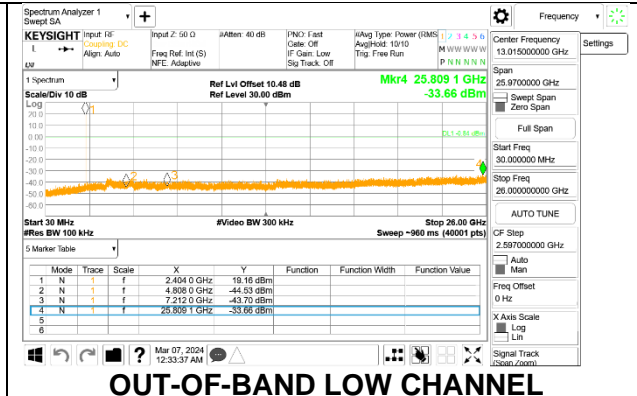
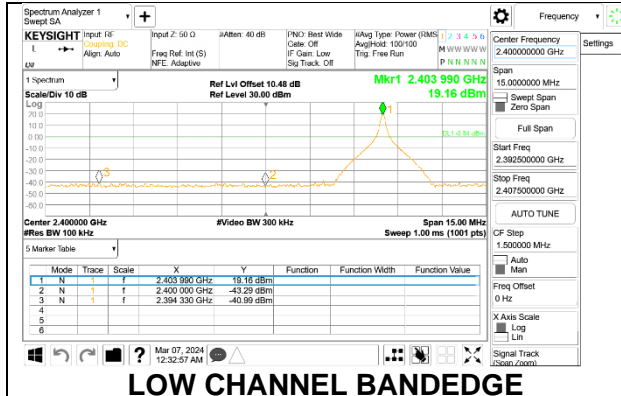
**OUT-OF-BAND HIGH CHANNEL**

**Tx1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON**

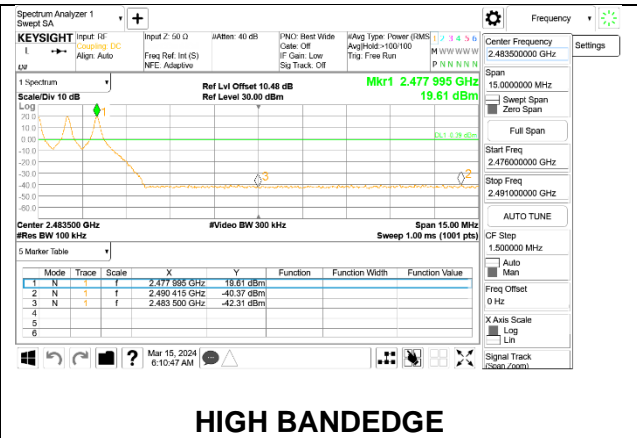
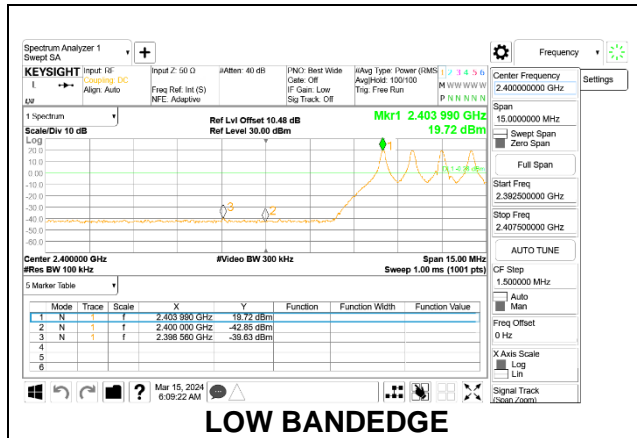


### 9.7.3. BLE 2Mbps ASK, MODE 2 (CHANNEL SOUNDING)

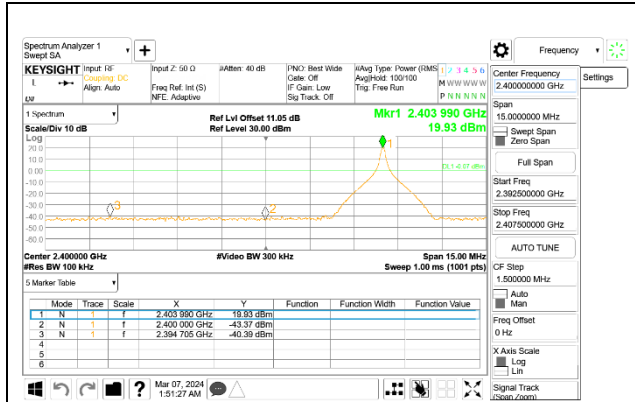
#### Tx0 SPURIOUS EMISSIONS, NON-HOPPING



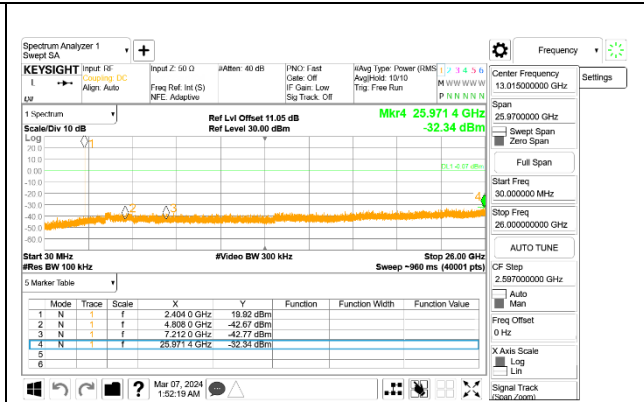
**Tx0 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON**



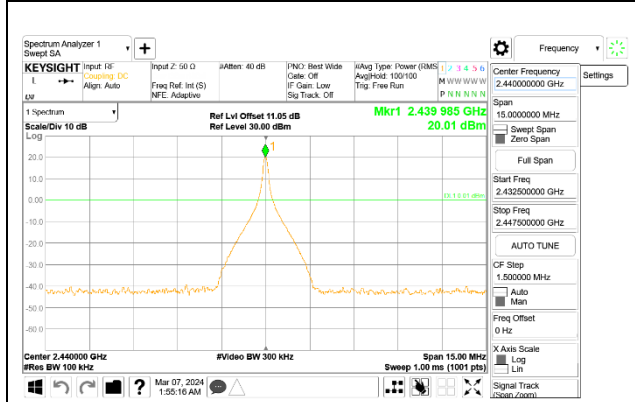
### Tx1 SPURIOUS EMISSIONS, NON-HOPPING



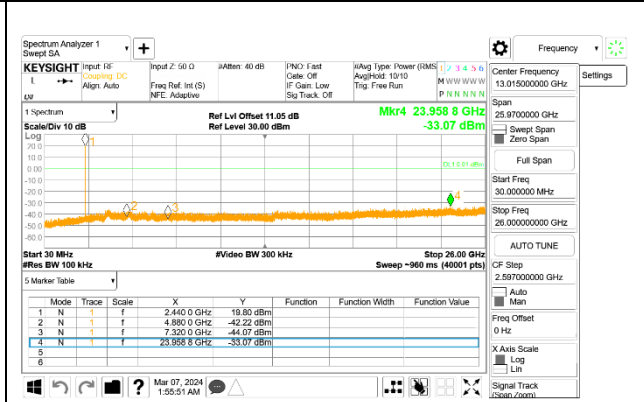
**LOW CHANNEL BANDEDGE**



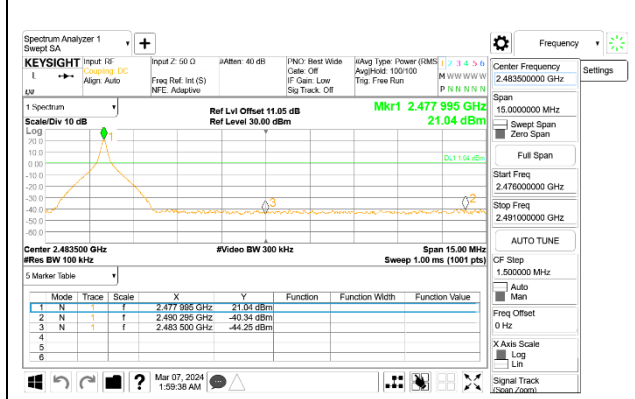
**OUT-OF-BAND LOW CHANNEL**



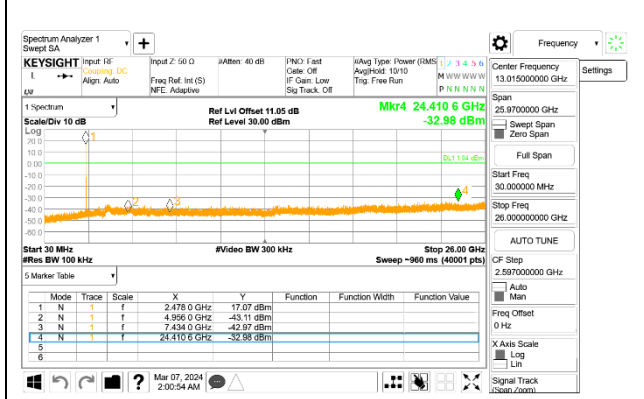
**IN-BAND REFERENCE LEVEL**



**OUT-OF-BAND MID CHANNEL**



**HIGH CHANNEL BANDEDGE**



**OUT-OF-BAND HIGH CHANNEL**



**Tx1 SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON**



## 10. RADIATED TEST RESULTS

### LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

### TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. 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 in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements. 1MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements where the actual VBW set for tests are as follows:

Bluetooth BDR:500Hz; BLE 1Mbps/2Mbps Channel Sounding ASK: 30kHz

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power was tested.

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.

For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

KDB 414788 Open Field Site (OFS) and Chamber Correlation Justification

OFS and chamber correlation testing had been performed and chamber measured test result is the worst-case test result.

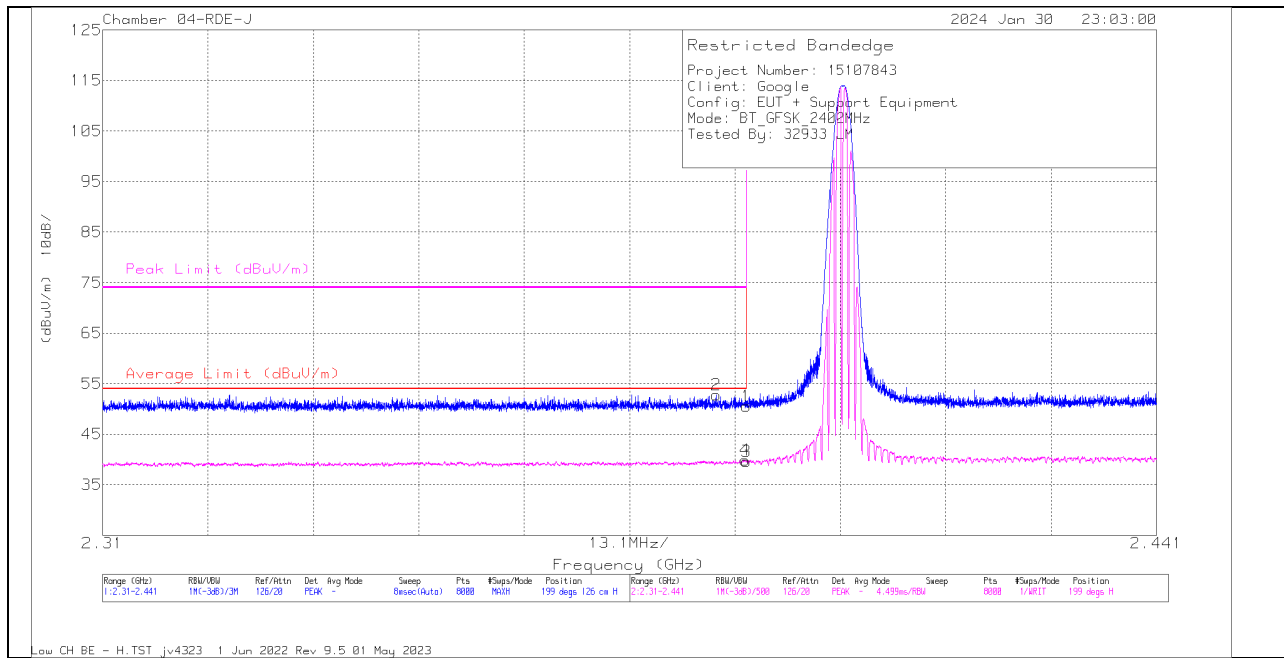
NOTE: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table), using the free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to  $Y - 51.5 = Z$  dBuA/m, which has the same margin, W dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

# 10.1. TRANSMITTER ABOVE 1 GHz

## 10.1.1. BLUETOOTH BASIC DATA RATE TXBF GFSK MODULATION

### BANDEDGE (LOW CHANNEL)

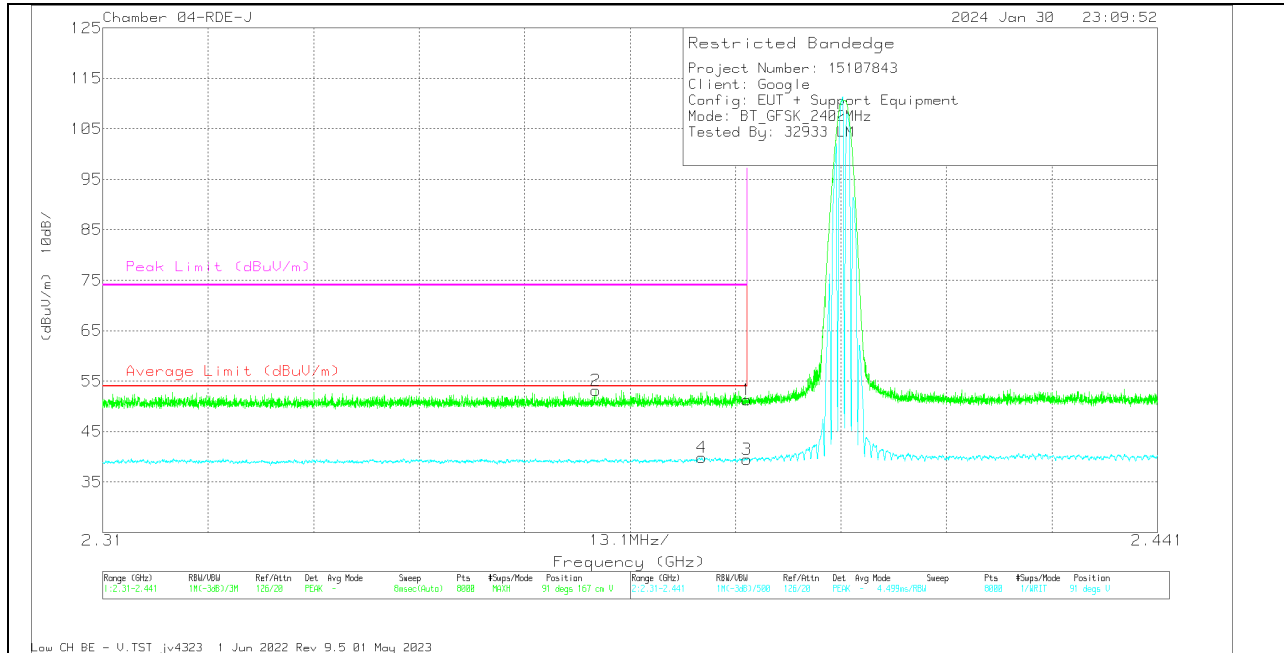
### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF 3m (dB/m)	Cbl/Amp (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	55.62	Pk	32	-37.1	50.52	-	-	74	-23.48	199	126	H
2	** 2.386251	57.91	Pk	32	-37.1	52.81	-	-	74	-21.19	199	126	H
3	** 2.39	43.58	VA1T	32	-37.1	38.32	54	-15.78	-	-	199	126	H
4	** 2.389838	43.82	VA1T	32	-37.1	38.72	54	-15.28	-	-	199	126	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### VERTICAL RESULT

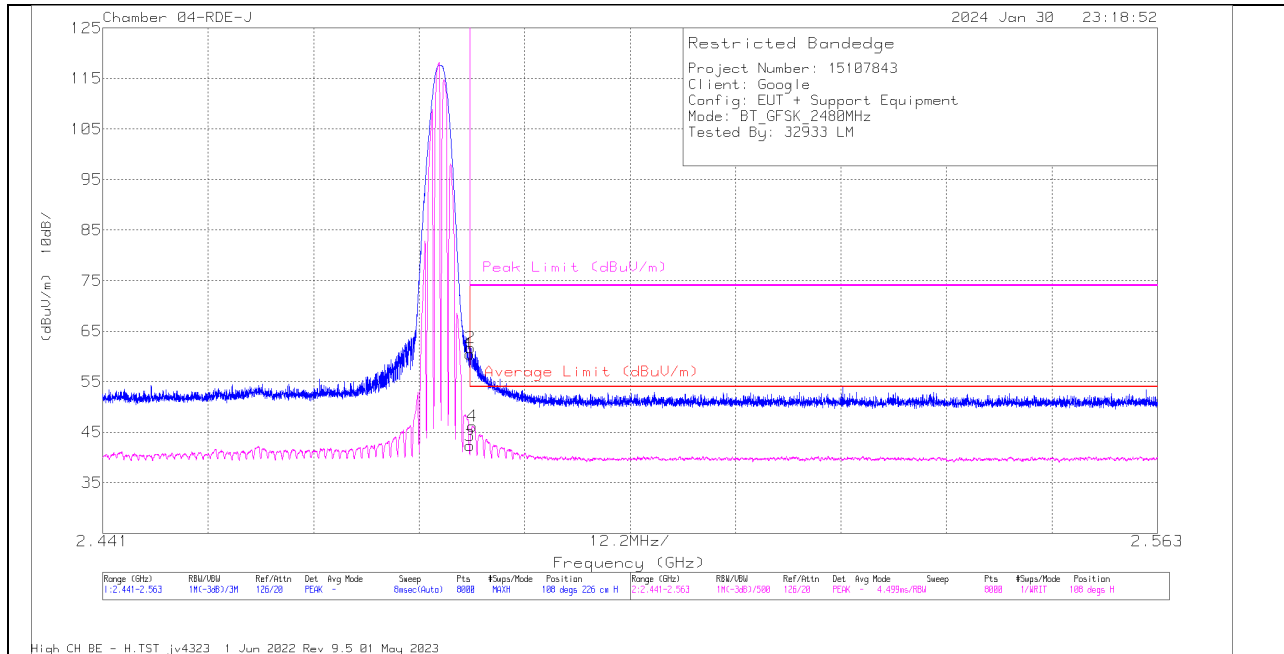


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF 3m (dB/m)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	** 2.371234	58.38	Pk	31.9	-37.1	53.18	-	-	74	-20.82	91	167	V
4	** 2.384401	43.67	VA1T	32	-37	38.57	54	-15.43	-	-	91	167	V
1	** 2.39	56.37	Pk	32	-37.1	51.27	-	-	74	-22.73	91	167	V
3	** 2.39	43.39	VA1T	32	-37.1	38.29	54	-15.71	-	-	91	167	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**BANDEDGE (HIGH CHANNEL)**

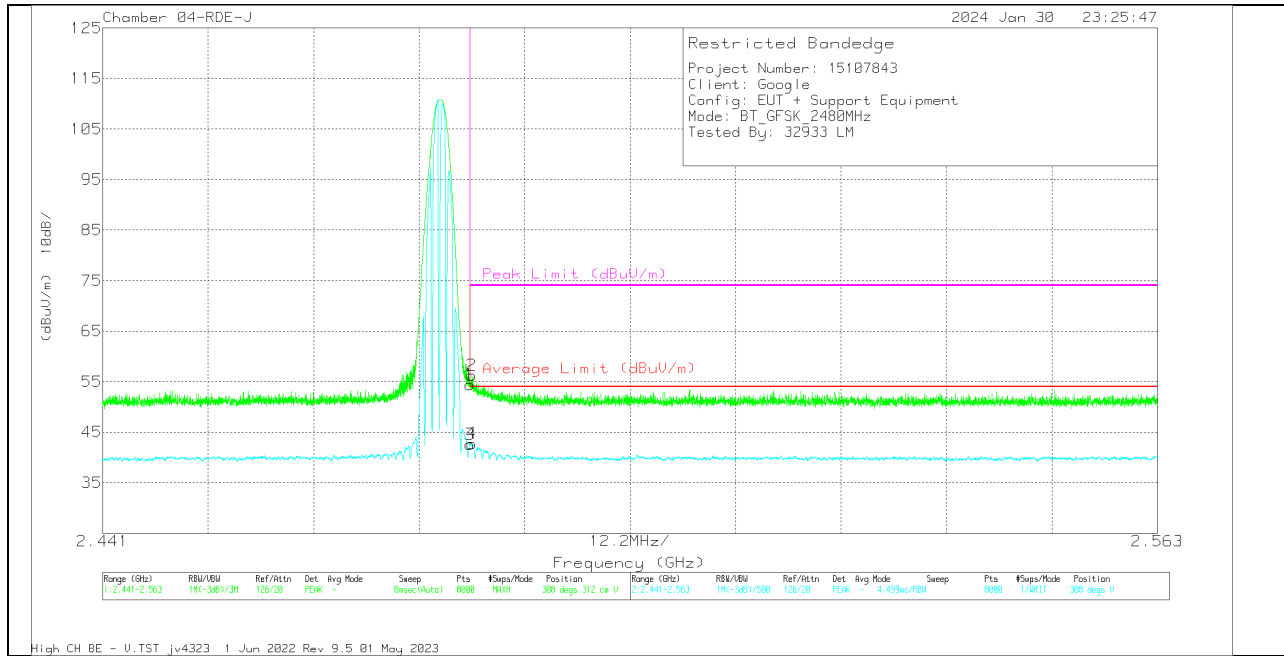
**HORIZONTAL RESULT**



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF 3m (dB/m)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.4835	65.28	Pk	32.2	-37	60.48	-	-	74	-13.52	108	226	H
2	*** 2.483553	66.54	Pk	32.2	-37	61.74	-	-	74	-12.26	108	226	H
3	*** 2.4835	46.05	VA1T	32.2	-37	41.25	54	-12.75	-	-	108	226	H
4	*** 2.483751	49.74	VA1T	32.3	-37	45.04	54	-8.96	-	-	108	226	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### VERTICAL RESULT

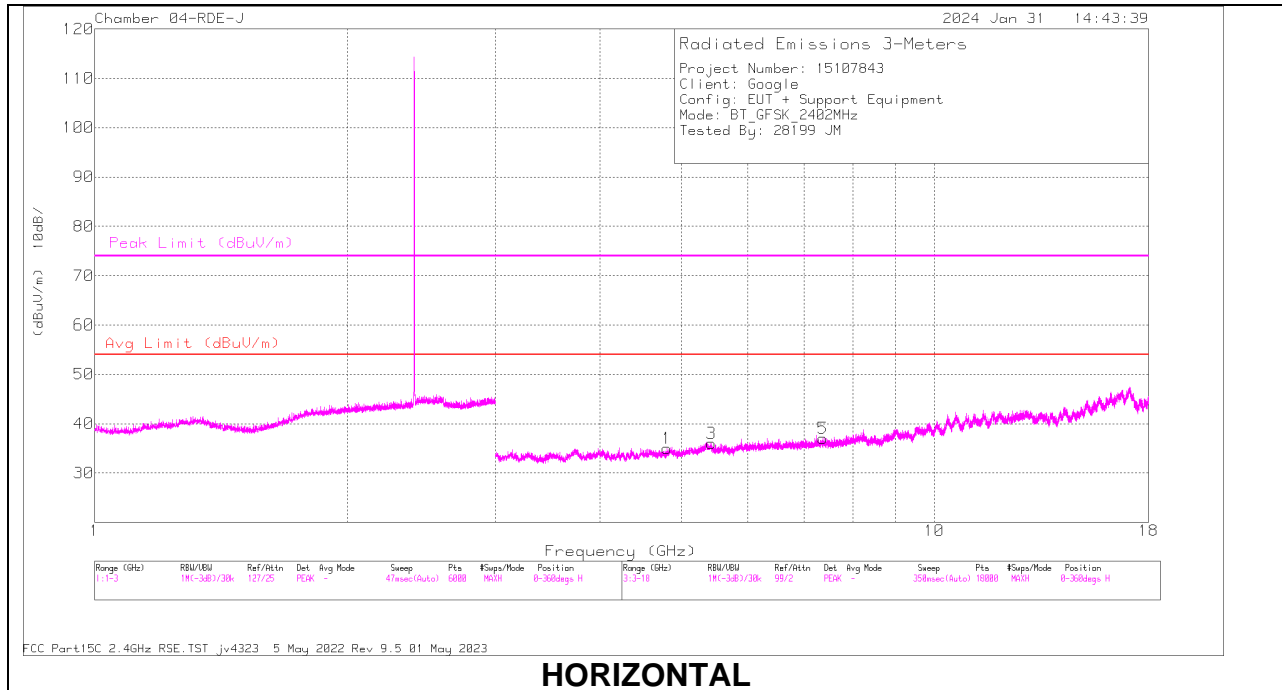


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF 3m (dB/m)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 2.4835	59.14	Pk	32.2	-37	54.34	-	-	74	-19.66	308	312	V
2	** 2.48366	60.96	Pk	32.3	-37	56.26	-	-	74	-17.74	308	312	V
3	** 2.4835	46.21	VA1T	32.2	-37	41.41	54	-12.59	-	-	308	312	V
4	** 2.48366	46.33	VA1T	32.3	-37	41.65	54	-12.35	-	-	308	312	V

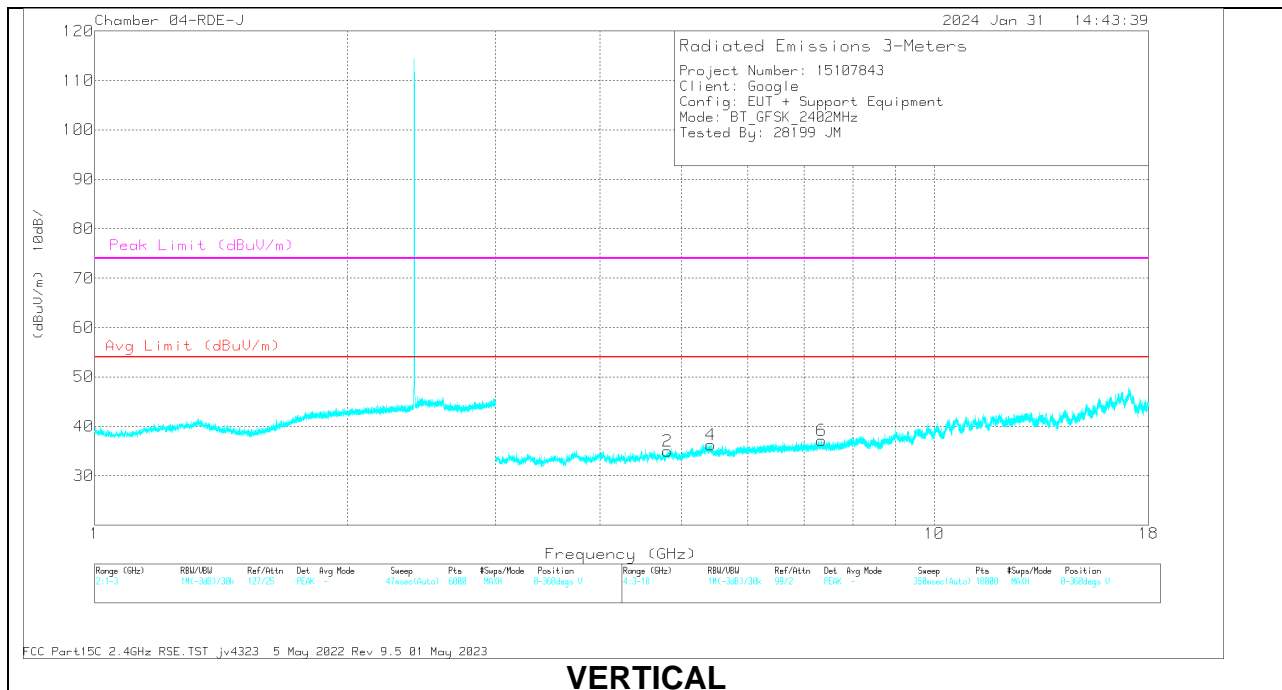
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

# HARMONICS AND SPURIOUS EMISSIONS

## LOW CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**



**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF 3m (dB/m)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 4.806792	54.41	PKFH	34	-45	-43.41	-	-	74	-30.59	279	325	H
	*** 4.805872	40.93	VA1T	34	-45	29.93	54	-24.07	-	-	279	325	H
3	*** 5.425952	52.86	PKFH	35	-43.2	44.66	-	-	74	-29.34	221	302	H
	*** 5.422996	39.39	VA1T	35	-43.2	31.19	54	-22.81	-	-	221	302	H
5	*** 7.370731	51.58	PKFH	35.8	-42.3	45.08	-	-	74	-28.92	32	199	H
	*** 7.369779	38.33	VA1T	35.8	-42.3	31.83	54	-22.17	-	-	32	199	H
2	*** 4.816143	53.92	PKFH	34	-45	42.92	-	-	74	-31.08	270	187	V
	*** 4.816189	41.16	VA1T	34	-45	30.16	54	-23.84	-	-	270	187	V
4	*** 5.41403	53.8	PKFH	35	-43.4	45.4	-	-	74	-28.6	19	279	V
	*** 5.413525	39.76	VA1T	35	-43.4	31.36	54	-22.64	-	-	19	279	V
6	*** 7.338678	53.31	PKFH	35.8	-42.2	46.91	-	-	74	-27.09	13	143	V
	*** 7.335508	38.51	VA1T	35.8	-42.3	32.01	54	-21.99	-	-	13	143	V

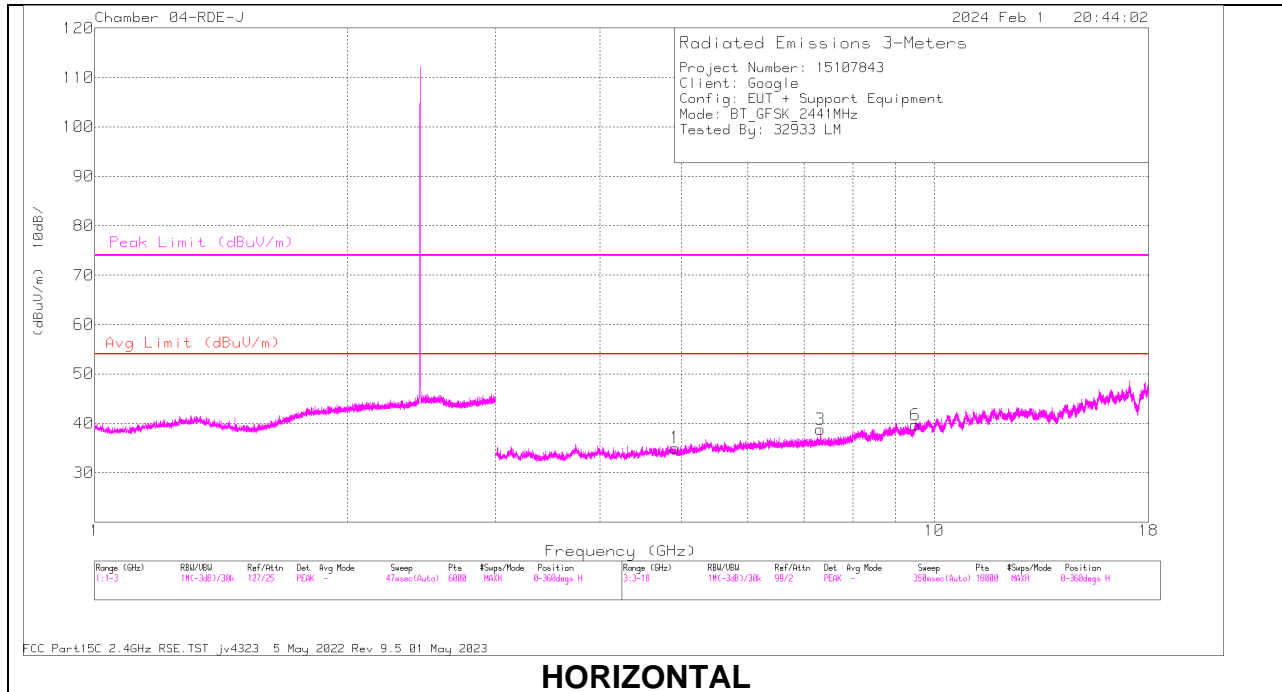
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

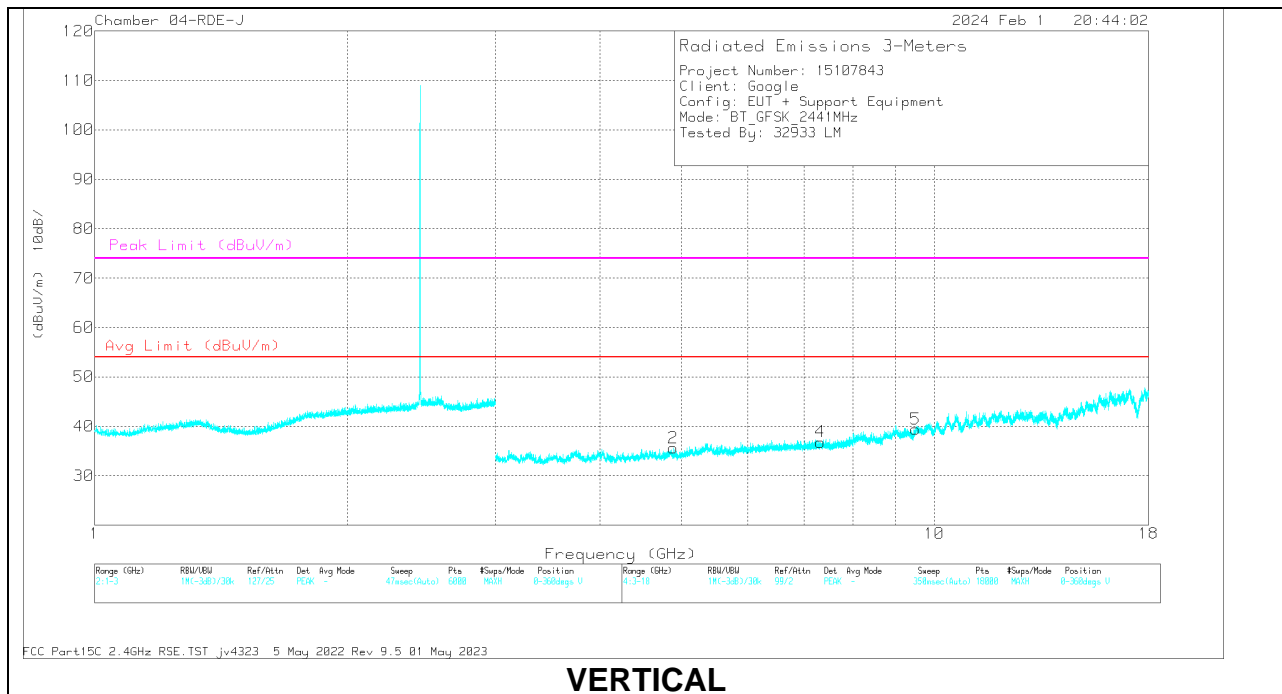
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### MID CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF 3m (dB/m)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 4.908923	53.91	PKFH	34.1	-44.4	43.61	-	-	74	-30.39	321	267	H
	*** 4.908987	40.56	VA1T	34.1	-44.4	30.26	54	-23.74	-	-	321	267	H
2	*** 4.890447	53.32	PKFH	34	-44.4	42.92	-	-	74	-31.08	348	215	V
	*** 4.889378	40.5	VA1T	34	-44.5	30	54	-24	-	-	348	215	V
3	*** 7.323503	71.18	PKFH	35.8	-42.3	64.68	-	-	74	-9.32	293	148	H
	*** 7.32337	39.2	VA1T	35.8	-42.3	32.7	54	-21.3	-	-	293	148	H
4	*** 7.323401	51.43	PKFH	35.8	-42.3	44.93	-	-	74	-29.07	92	234	V
	*** 7.322786	38.73	VA1T	35.8	-42.3	32.23	54	-21.77	-	-	92	234	V
5	*** 9.497072	52.11	PKFH	36.6	-40.5	48.21	-	-	74	-25.79	20	302	V
	*** 9.496446	38.56	VA1T	36.6	-40.6	34.56	54	-19.44	-	-	20	302	V
6	*** 9.495001	51.67	PKFH	36.6	-40.7	47.57	-	-	74	-26.43	249	147	H
	*** 9.49523	38.67	VA1T	36.6	-40.7	34.57	54	-19.43	-	-	249	147	H

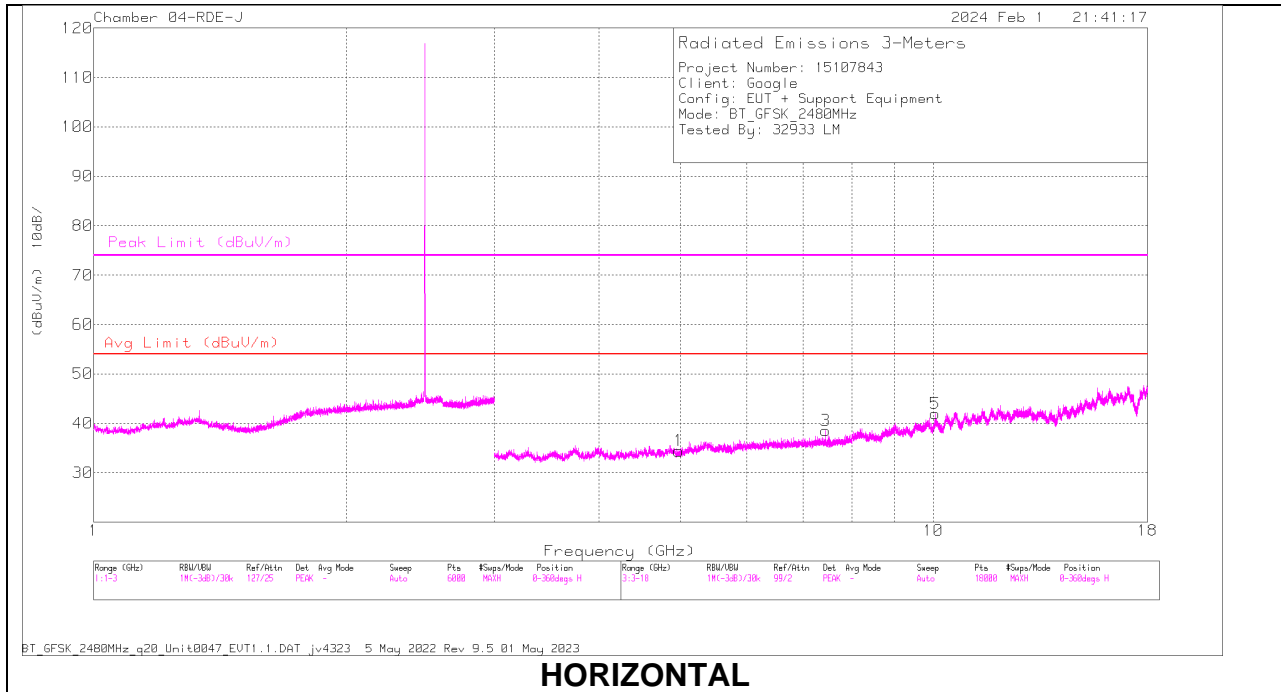
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

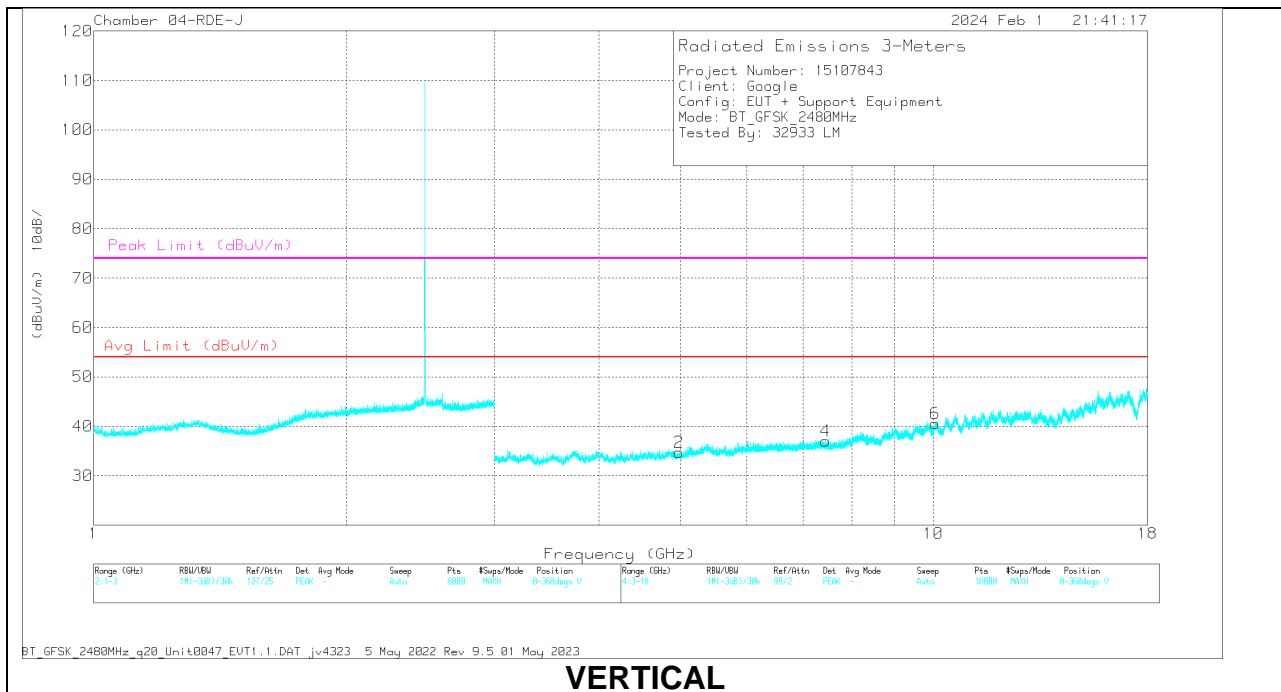
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### HIGH CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF 3m (dB/m)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 4.973524	53.67	PKFH	34.1	-44.6	43.17	-	-	74	-30.83	153	124	H
	*** 4.973102	40.38	VA1T	34.1	-44.7	29.78	54	-24.22	-	-	153	124	H
2	*** 4.982993	53.58	PKFH	34.1	-44.8	42.88	-	-	74	-31.12	303	171	V
	*** 4.982528	40.42	VA1T	34.1	-44.8	29.72	54	-24.28	-	-	303	171	V
3	*** 7.439624	66.64	PKFH	35.8	-42.2	60.24	-	-	74	-13.76	354	256	H
	*** 7.439925	38.67	VA1T	35.8	-42.2	32.27	54	-21.73	-	-	354	256	H
4	*** 7.440225	51.22	PKFH	35.8	-42.2	44.82	-	-	74	-29.18	44	281	V
	*** 7.437061	38.13	VA1T	35.8	-42.1	31.83	54	-22.17	-	-	44	281	V
5	10.05853	50.96	PKFH	37.2	-39.6	48.56	-	-	-	-	6	302	H
6	10.06276	51.76	PKFH	37.2	-39.4	49.56	-	-	-	-	304	119	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

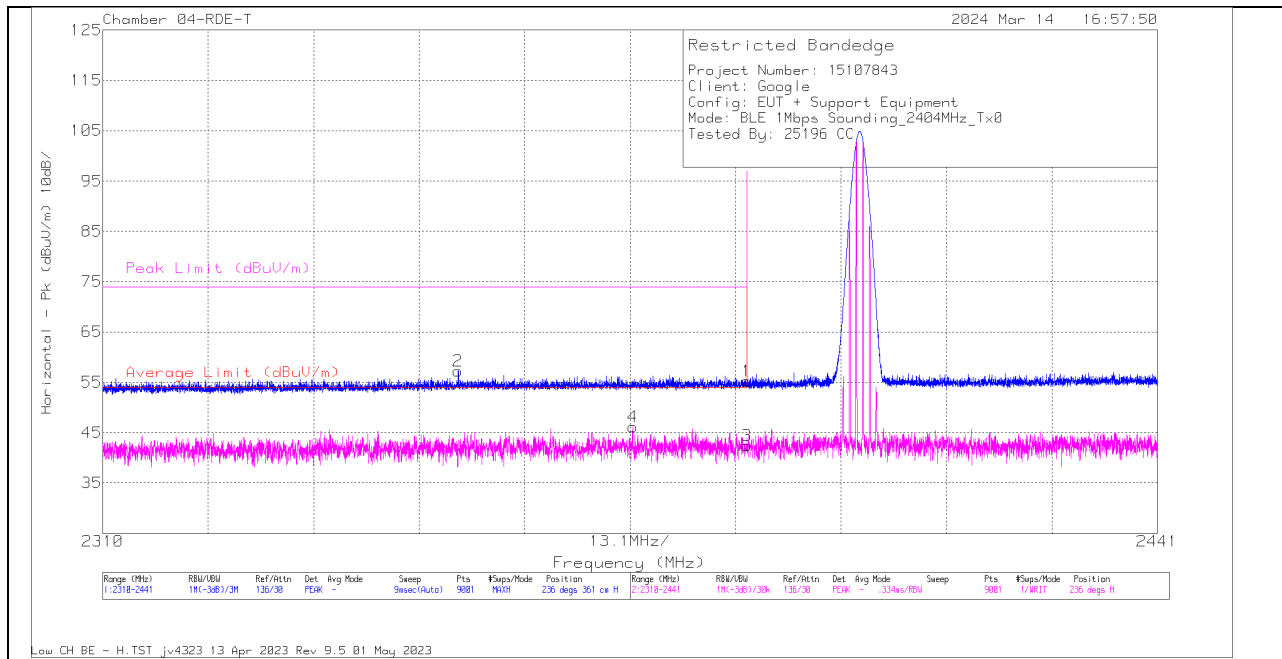
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### 10.1.2. BLE ASK, MODE 2 (CHANNEL SOUNDING), 1Mbps

**Tx0 Antenna**

**BANDEDGE (LOW CHANNEL)**

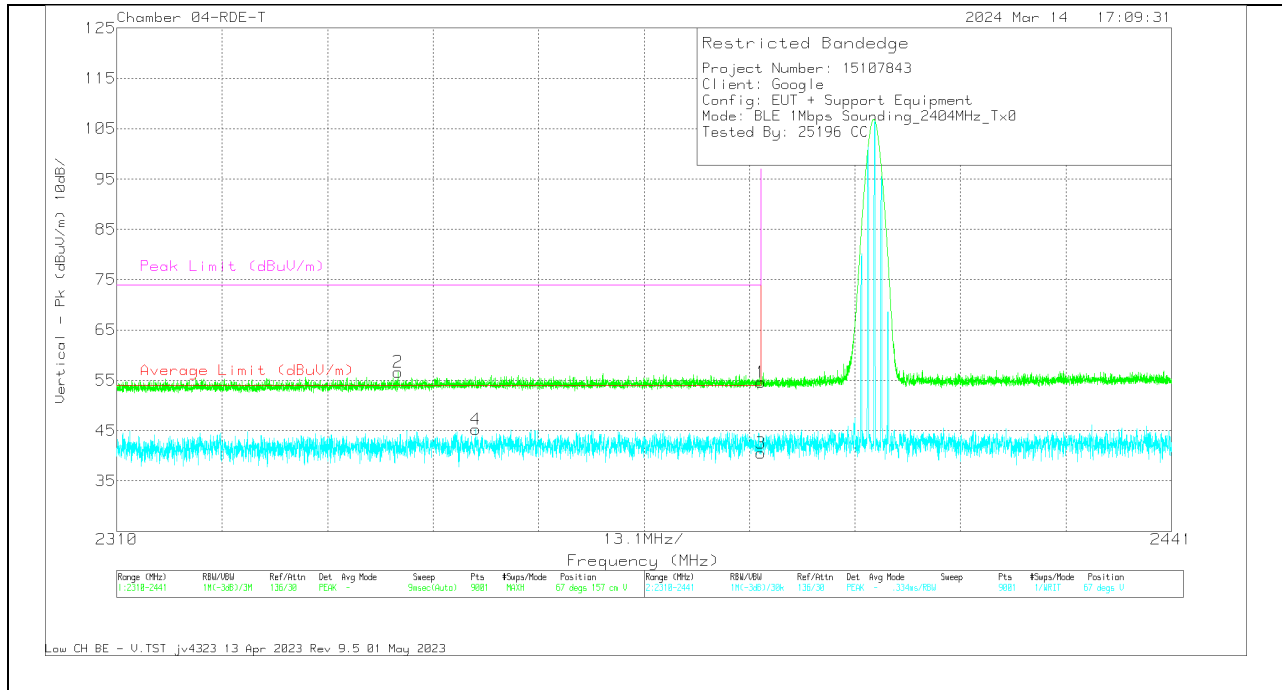
**HORIZONTAL RESULT**



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 2390	60.96	Pk	33.3	-39.05	55.21	-	-	74	-18.79	236	361	H
2	** 2354.163	63.41	Pk	33	-39.12	57.29	-	-	74	-16.71	236	361	H
3	** 2390	48.17	VA1T	33.3	-39.05	42.42	54	-11.58	-	-	236	361	H
4	** 2375.808	51.96	VA1T	33.2	-39.06	46.1	54	-7.9	-	-	236	361	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### VERTICAL RESULT

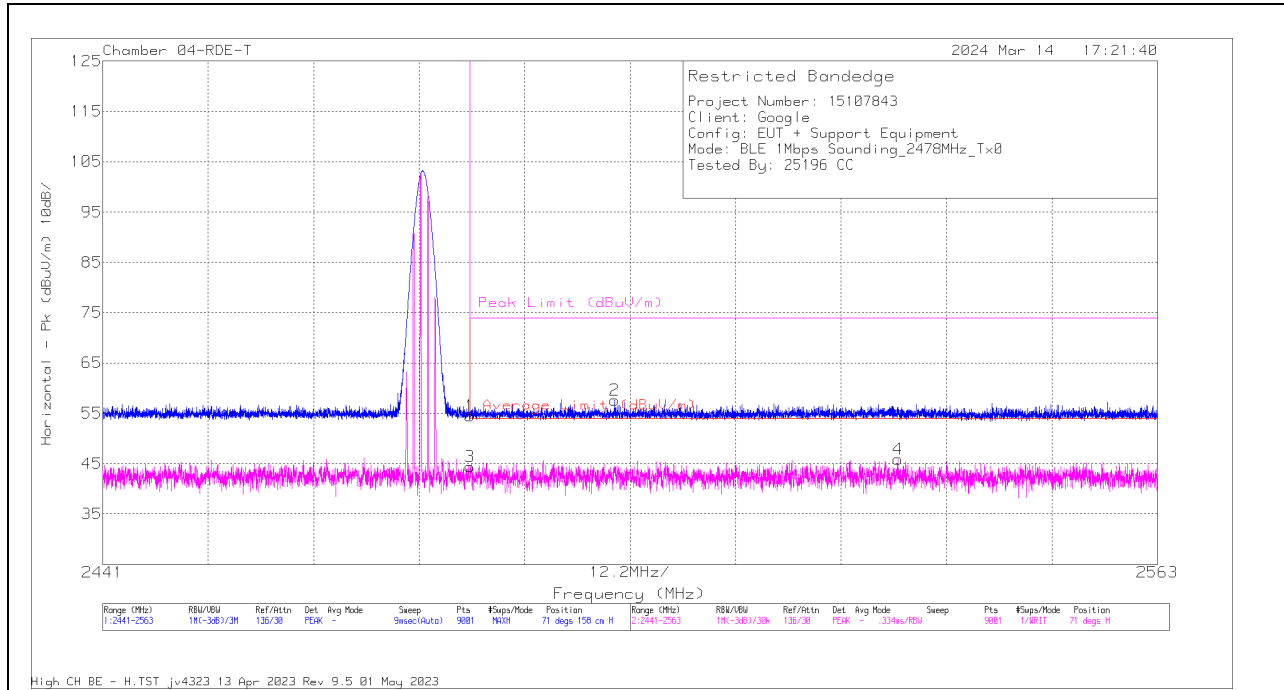


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACP (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 2390	60.34	Pk	33.3	-39.05	54.59	-	-	74	-19.41	67	157	V
2	** 2344.905	62.96	Pk	32.9	-39.19	56.67	-	-	74	-17.33	67	157	V
3	** 2390	46.23	VA1T	33.3	-39.05	40.48	54	-13.52	-	-	67	157	V
4	** 2354.6	51.29	VA1T	33	-39.07	45.22	54	-8.78	-	-	67	157	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**BANDEDGE (HIGH CHANNEL)**

**HORIZONTAL RESULT**

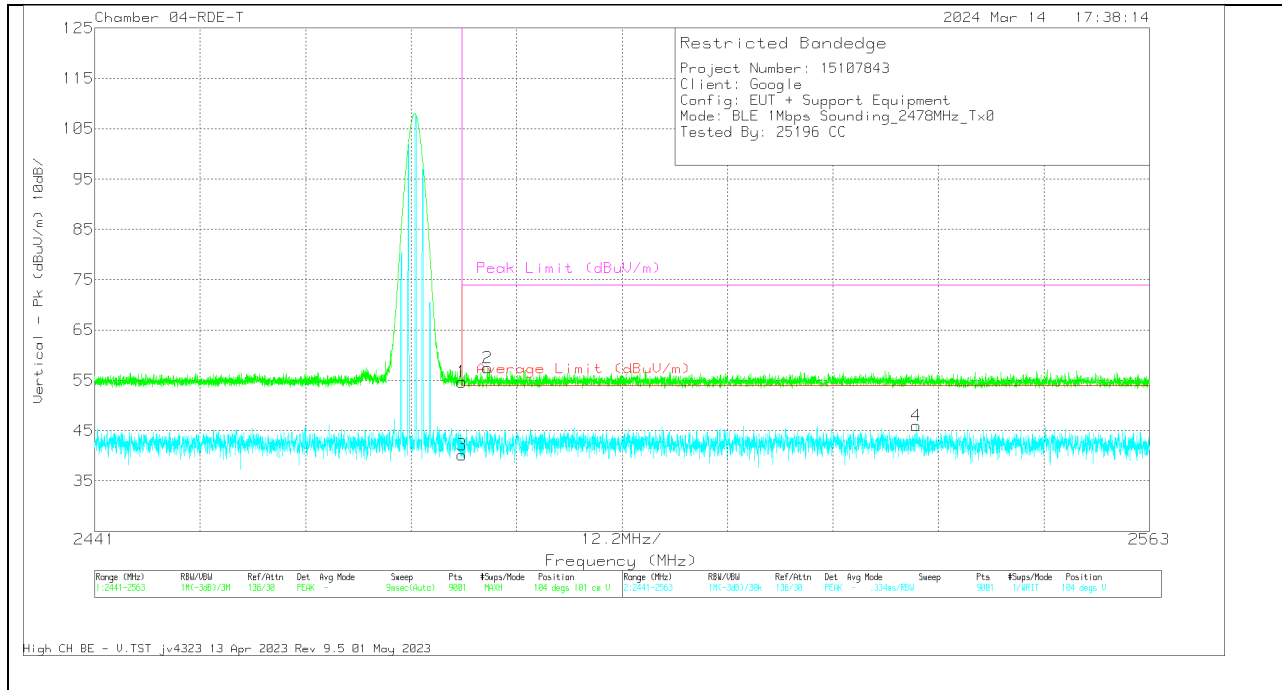


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 2483.5	60.02	Pk	33.4	-38.87	54.55	-	-	74	-19.45	71	158	H
3	** 2483.5	49.89	VA1T	33.4	-38.87	44.42	54	-9.58	-	-	71	158	H
2	** 2500.226	62.86	Pk	33.4	-38.69	57.57	-	-	74	-16.43	71	158	H
4	** 2532.95	51.18	VA1T	33.2	-38.47	45.91	54	-8.09	-	-	71	158	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration



### VERTICAL RESULT

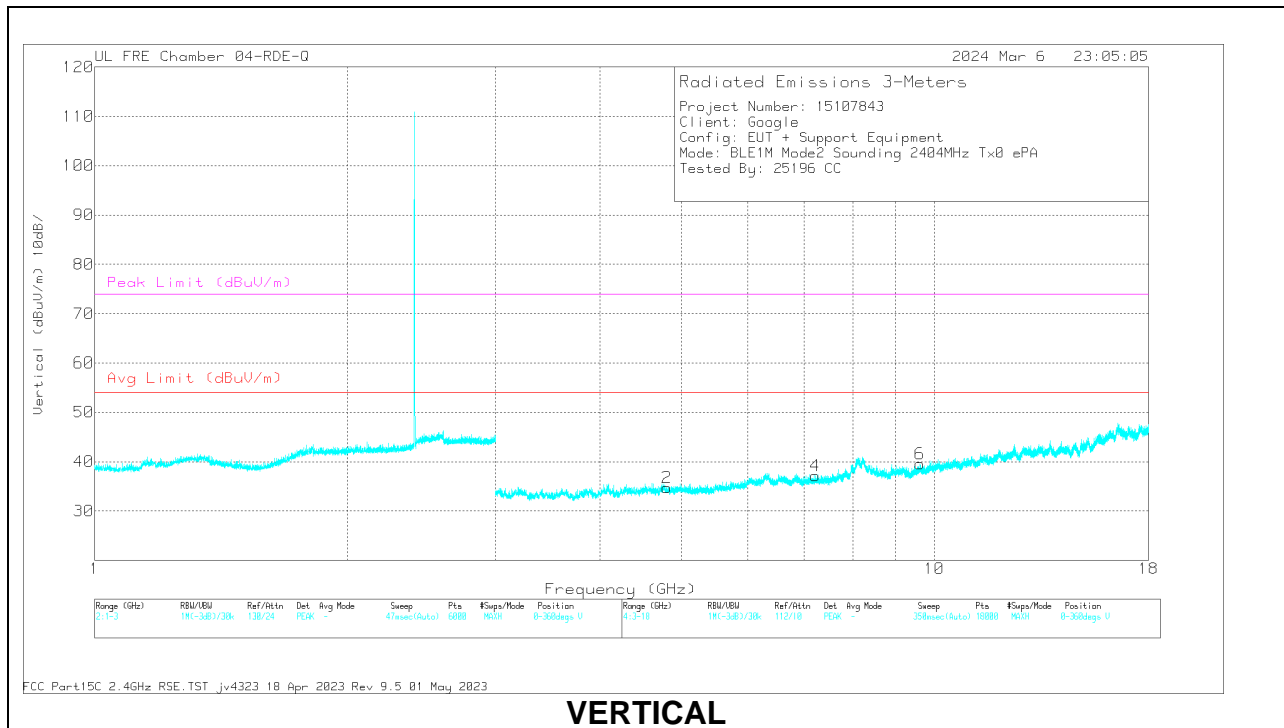
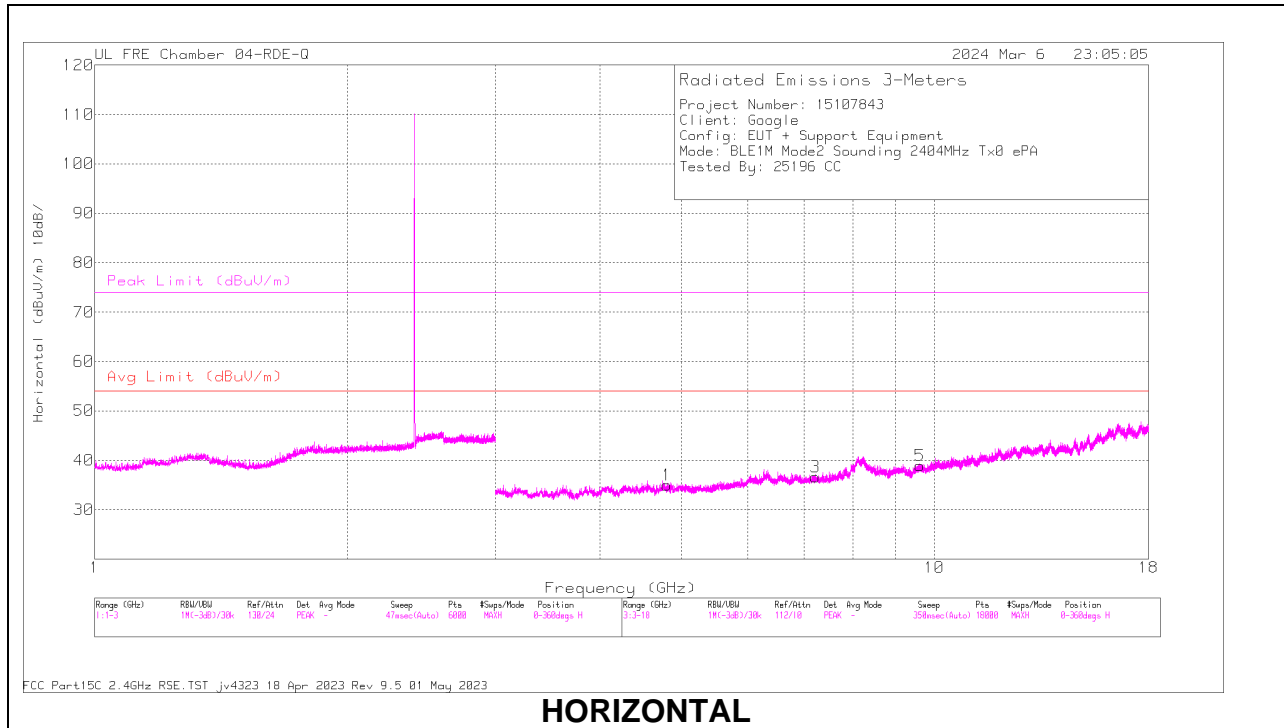


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 2483.5	60.15	Pk	33.4	-38.87	54.68	-	-	74	-19.32	104	101	V
2	** 2486.44	62.92	Pk	33.4	-38.79	57.53	-	-	74	-16.47	104	101	V
3	* 2483.5	45.58	VA1T	33.4	-38.87	40.11	54	-13.89	-	-	104	101	V
4	** 2536.026	51.22	VA1T	33.2	-38.41	46.01	54	-7.99	-	-	104	101	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**HARMONICS AND SPURIOUS EMISSIONS**

**LOW CHANNEL RESULTS**



**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.801386	53.87	PKFH	34.2	-46.44	41.63	-	-	74	-32.37	197	134	H
	*** 4.80264	43.22	VA1T	34.2	-46.47	30.95	54	-23.05	-	-	197	134	H
2	** 4.798041	53.72	PKFH	34.2	-46.32	41.6	-	-	74	-32.4	238	339	V
	*** 4.797954	43.48	VA1T	34.2	-46.32	31.36	54	-22.64	-	-	238	339	V
3	7.219053	53.45	PKFH	35.6	-44.53	44.52	-	-	74	-29.48	343	261	H
	7.217743	54.3	PKFH	35.6	-44.58	45.32	-	-	74	-28.68	336	316	V
5	9.622103	53.83	PKFH	36.7	-43.64	46.89	-	-	74	-27.11	0	265	H
6	9.621643	53.66	PKFH	36.7	-43.63	46.73	-	-	74	-27.27	183	196	V

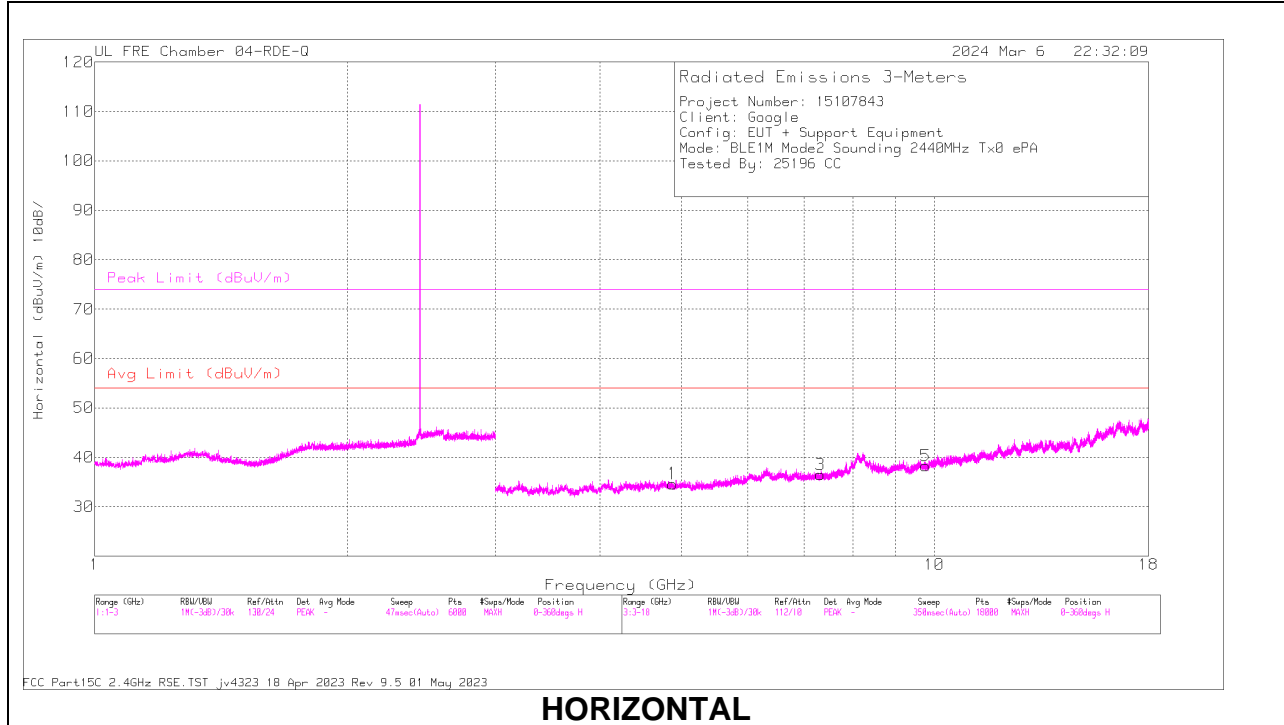
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

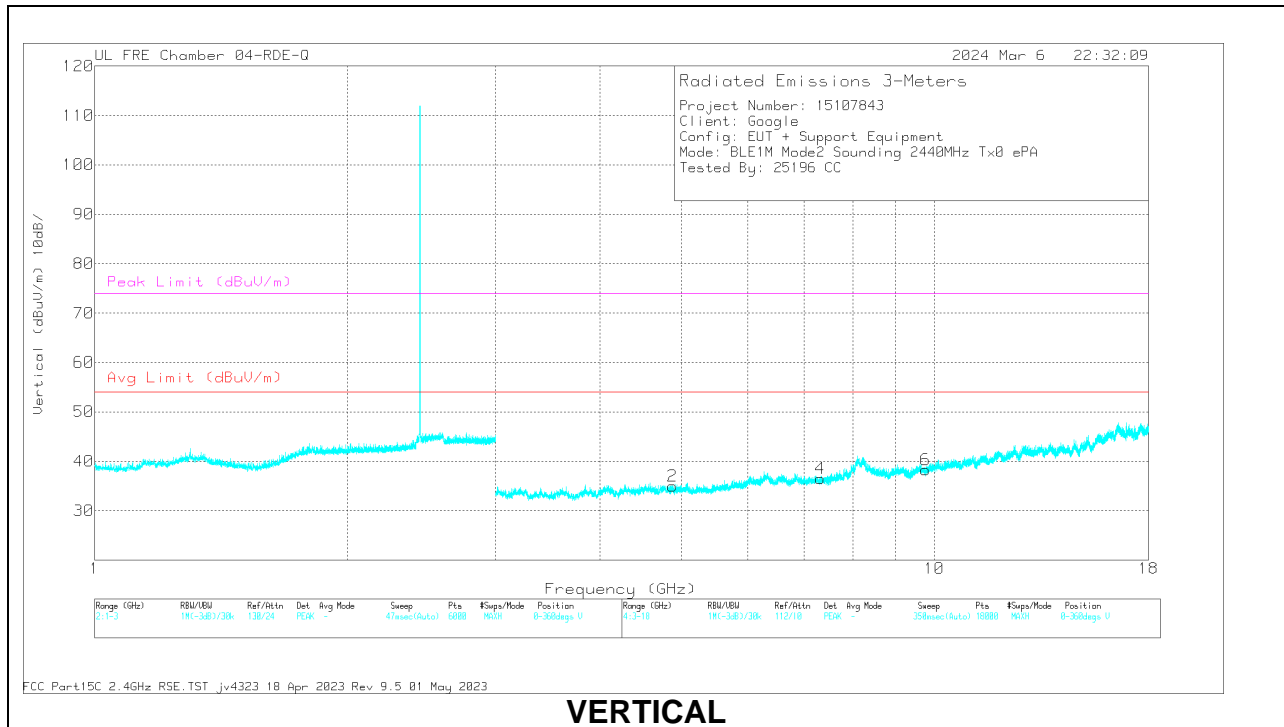
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### MID CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.87986	55.42	PKFH	34.3	-46.36	43.36	-	-	74	-30.64	350	245	H
	** 4.879559	43.17	VA1T	34.3	-46.36	31.11	54	-22.89	-	-	350	245	H
2	** 4.879532	54.47	PKFH	34.3	-46.36	42.41	-	-	74	-31.59	1	393	V
	** 4.879659	43.32	VA1T	34.3	-46.36	31.26	54	-22.74	-	-	1	393	V
3	** 7.317623	52.45	PKFH	35.5	-44.61	43.34	-	-	74	-30.66	121	200	H
	** 7.315789	42.17	VA1T	35.5	-44.64	33.03	54	-20.97	-	-	121	200	H
4	** 7.320823	53.64	PKFH	35.5	-44.58	44.56	-	-	74	-29.44	296	254	V
	** 7.321335	42.16	VA1T	35.5	-44.59	33.07	54	-20.93	-	-	296	254	V
5	9.763537	52.75	PKFH	36.9	-43.87	45.78	-	-	74	-28.22	282	188	H
6	9.765956	53.33	PKFH	36.9	-43.91	46.32	-	-	74	-27.68	184	122	V

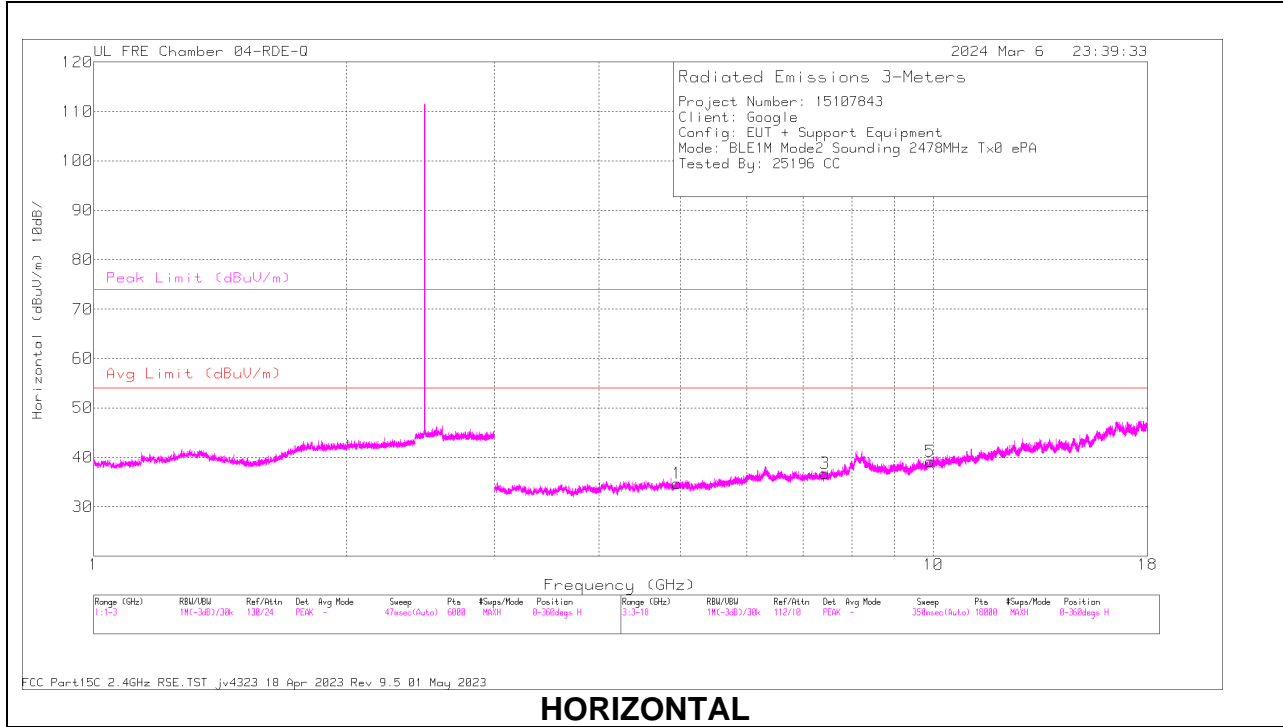
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

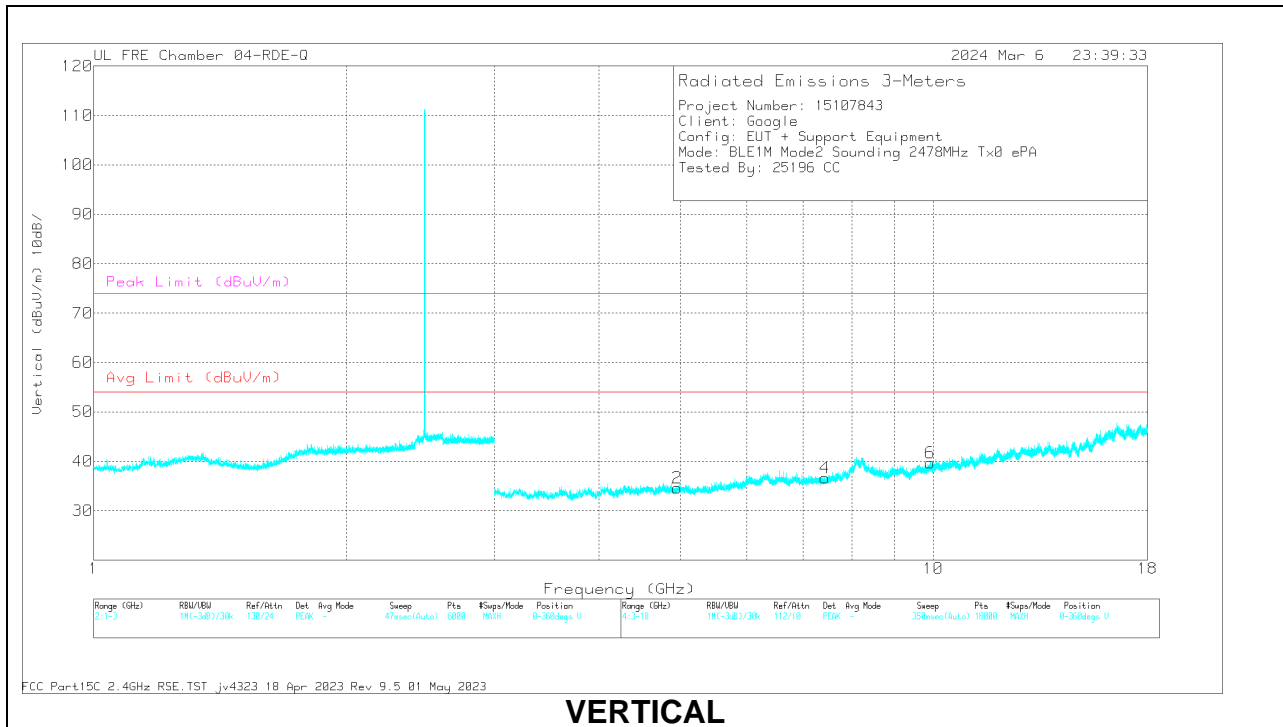
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### HIGH CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.953171	55.58	PKFH	34.3	-46.2	43.68	-	-	74	-30.32	245	134	H
	** 4.954851	43.3	VA1T	34.3	-46.2	31.4	54	-22.6	-	-	245	134	H
2	** 4.954111	54.91	PKFH	34.3	-46.2	43.01	-	-	74	-30.99	245	141	V
	** 4.951986	42.98	VA1T	34.3	-46.22	31.06	54	-22.94	-	-	245	141	V
3	** 7.430827	53.45	PKFH	35.4	-44.52	44.33	-	-	74	-29.67	276	308	H
	** 7.430191	42.24	VA1T	35.4	-44.48	33.16	54	-20.84	-	-	276	308	H
4	** 7.430116	53.19	PKFH	35.4	-44.48	44.11	-	-	74	-29.89	6	322	V
	** 7.431847	42.16	VA1T	35.4	-44.53	33.03	54	-20.97	-	-	6	322	V
5	9.91677	54.14	PKFH	37	-43.88	47.26	-	-	74	-26.74	226	180	H
6	9.924548	53.98	PKFH	37.1	-43.91	47.17	-	-	74	-26.83	161	332	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

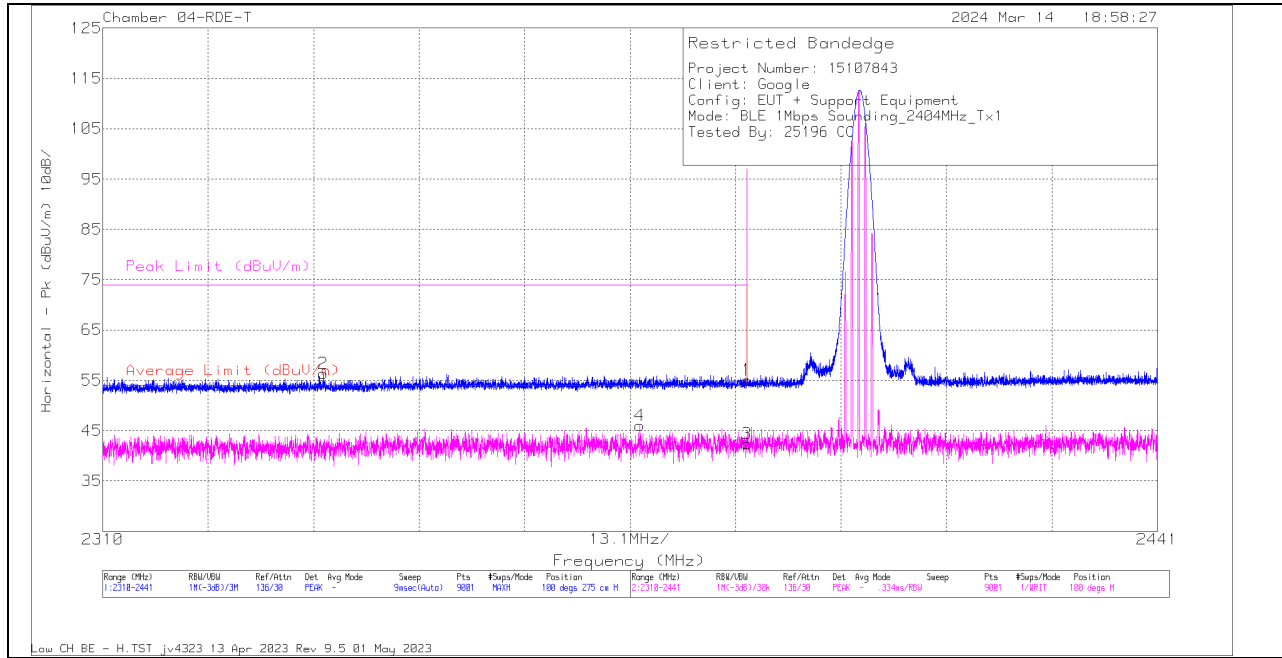
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

**Tx1 Antenna**

**BANDEDGE (LOW CHANNEL)**

**HORIZONTAL RESULT**

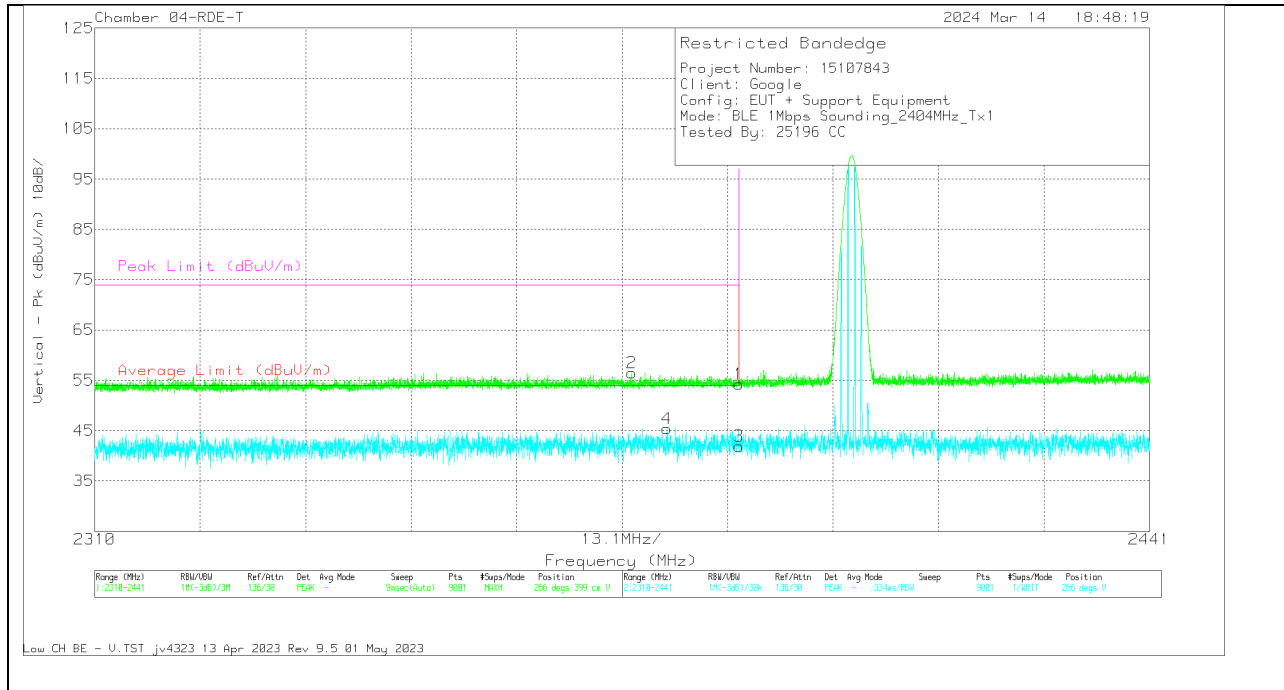


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	** 2337.394	52.55	Pk	32.8	-39.04	56.31	-	-	74	-17.69	100	275	H
4	** 2376.681	51.82	VA1T	33.2	-39.05	45.97	54	-8.03	-	-	100	275	H
1	** 2390	60.8	Pk	33.3	-39.05	55.05	-	-	74	-18.95	100	275	H
3	** 2390	48.17	VA1T	33.3	-39.05	42.42	54	-11.58	-	-	100	275	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration



### VERTICAL RESULT

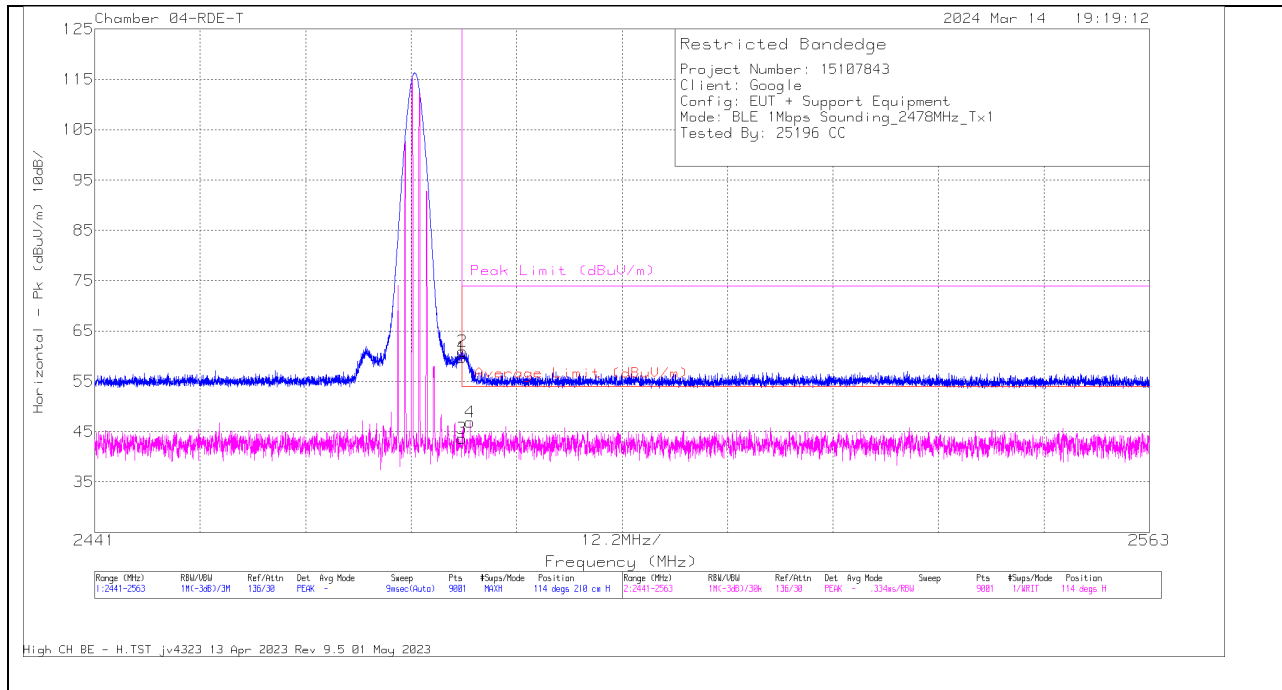


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACP (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	** 2376.71	62.38	Pk	33.2	-39.05	56.53	-	-	74	-17.47	266	399	V
4	** 2381.048	51.2	VA1T	33.2	-38.95	45.45	54	-8.55	-	-	266	399	V
1	** 2390	60.01	Pk	33.3	-39.05	54.26	-	-	74	-19.74	266	399	V
3	** 2390	47.7	VA1T	33.3	-39.05	41.95	54	-12.05	-	-	266	399	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**BANDEDGE (HIGH CHANNEL)**

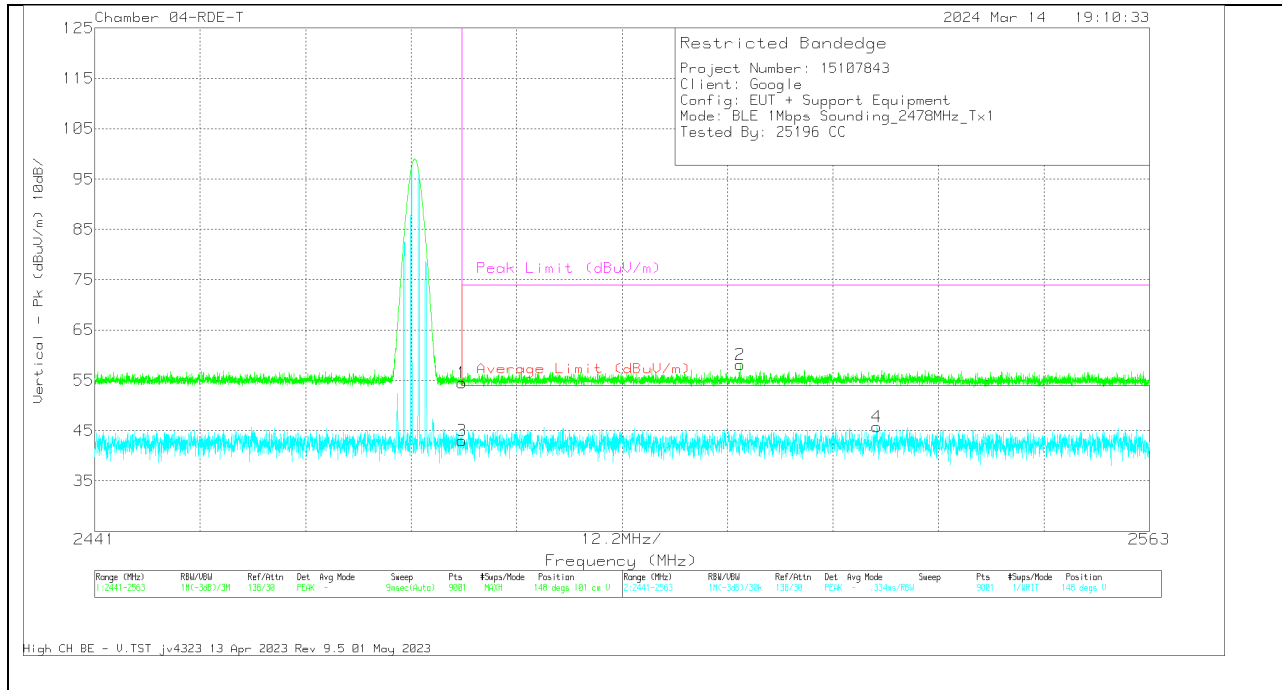
**HORIZONTAL RESULT**



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 2483.5	65.19	Pk	33.4	-38.87	59.72	-	-	74	-14.28	114	210	H
2	** 2483.579	66.42	Pk	33.4	-38.87	60.95	-	-	74	-13.05	114	210	H
3	** 2483.5	49.16	VA1T	33.4	-38.87	43.69	54	-10.31	-	-	114	210	H
4	** 2484.42	52.3	VA1T	33.4	-38.85	46.85	54	-7.15	-	-	114	210	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### VERTICAL RESULT

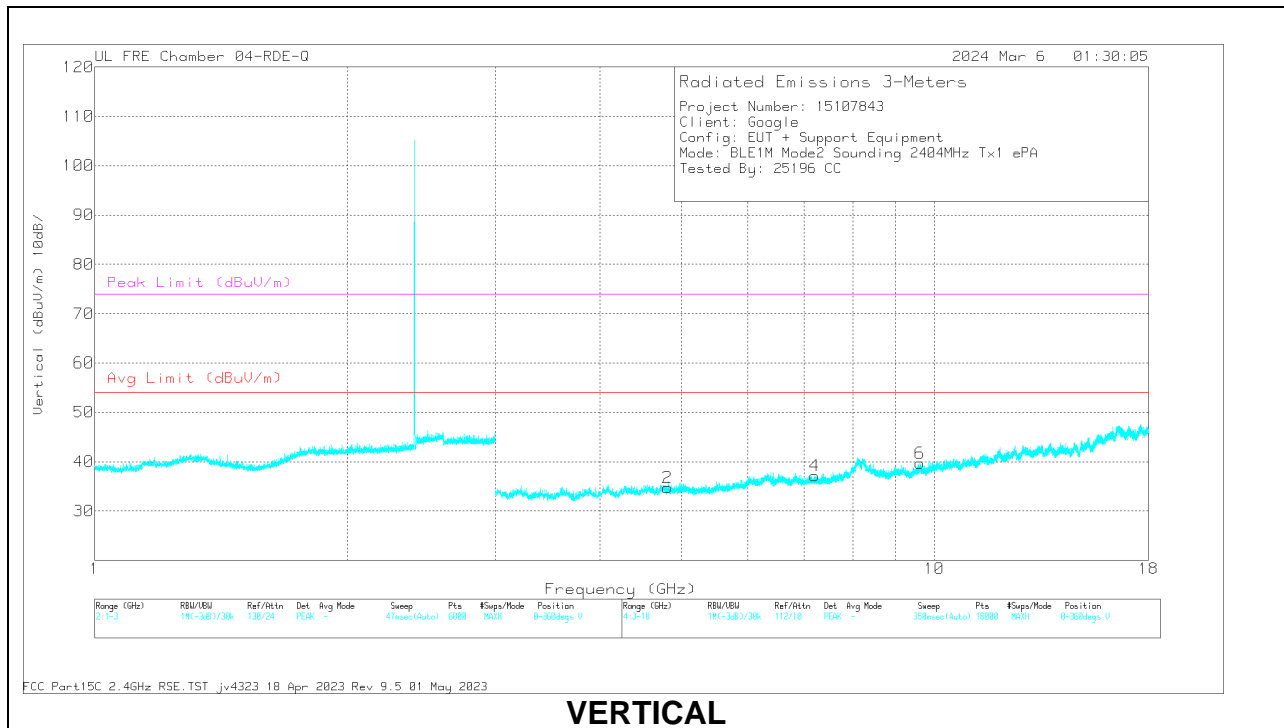
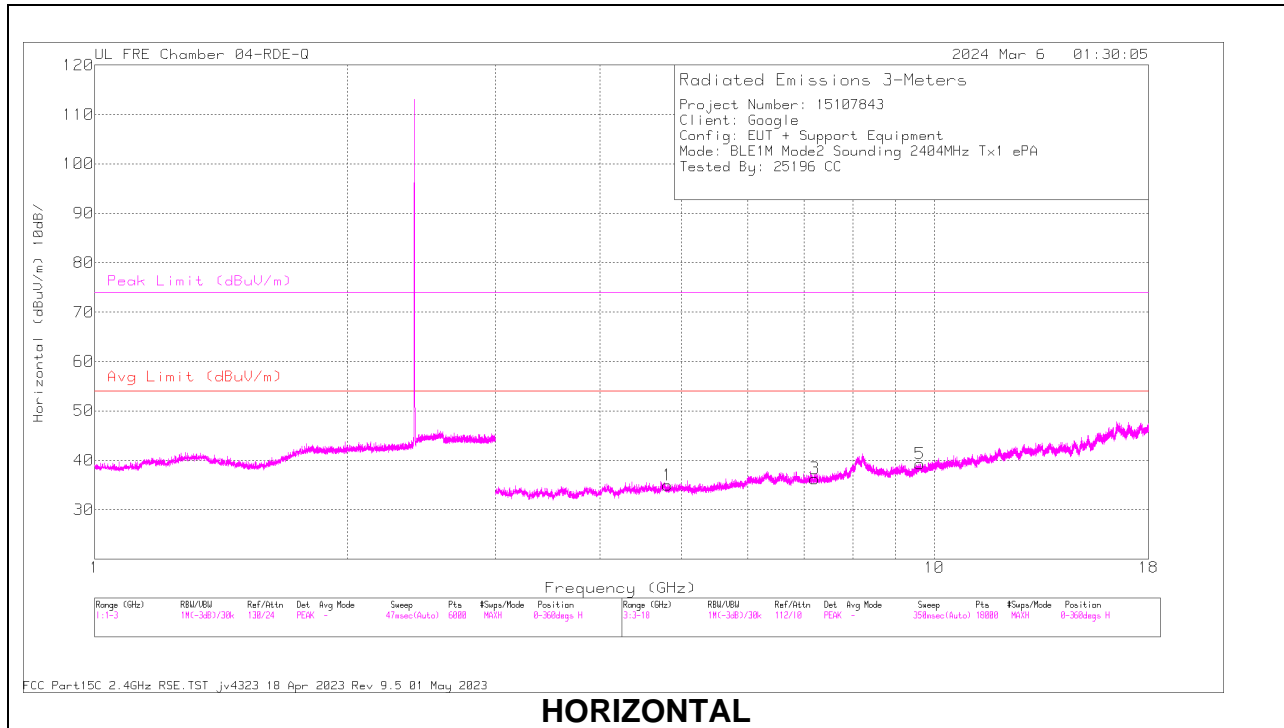


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 2483.5	59.97	Pk	33.4	-38.87	54.5	-	-	74	-19.5	148	101	V
3	** 2483.5	48.5	VA1T	33.4	-38.87	43.03	54	-10.97	-	-	148	101	V
2	** 2515.68	63.46	Pk	33.3	-38.68	58.08	-	-	74	-15.92	148	101	V
4	** 2531.486	50.94	VA1T	33.2	-38.36	45.78	54	-8.22	-	-	148	101	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**HARMONICS AND SPURIOUS EMISSIONS**

**LOW CHANNEL RESULTS**



**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.814488	55.18	PKFH	34.2	-46.39	42.99	-	-	74	-31.01	340	250	H
	** 4.816694	43.89	VA1T	34.2	-46.51	31.58	54	-22.42	-	-	340	250	H
2	** 4.812698	54.74	PKFH	34.2	-46.36	42.58	-	-	74	-31.42	293	262	V
	** 4.812172	43.34	VA1T	34.2	-46.35	31.19	54	-22.81	-	-	293	262	V
3	7.213413	53.36	PKFH	35.6	-44.6	44.36	-	-	74	-29.64	125	158	H
	7.206474	52.93	PKFH	35.6	-44.64	43.89	-	-	74	-30.11	339	215	V
5	9.616915	54.02	PKFH	36.7	-43.6	47.12	-	-	74	-26.88	117	347	H
6	9.614118	55.52	PKFH	36.7	-43.67	48.55	-	-	74	-25.45	322	398	V

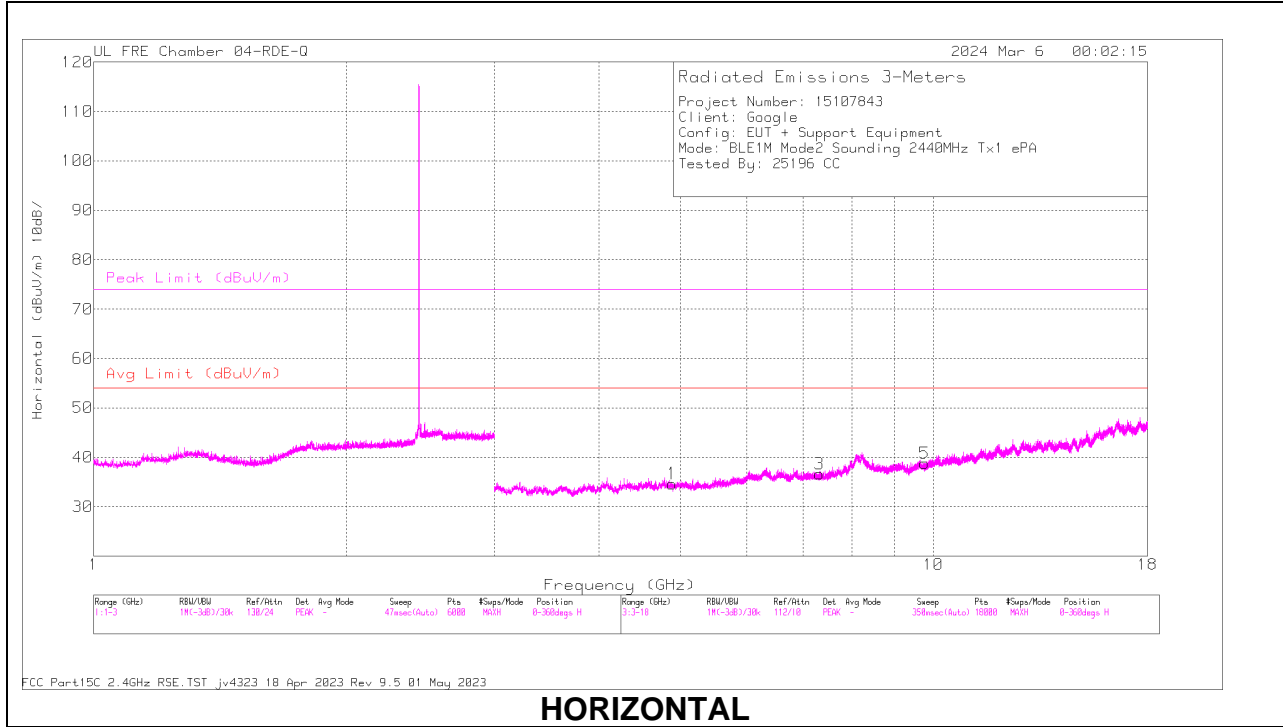
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

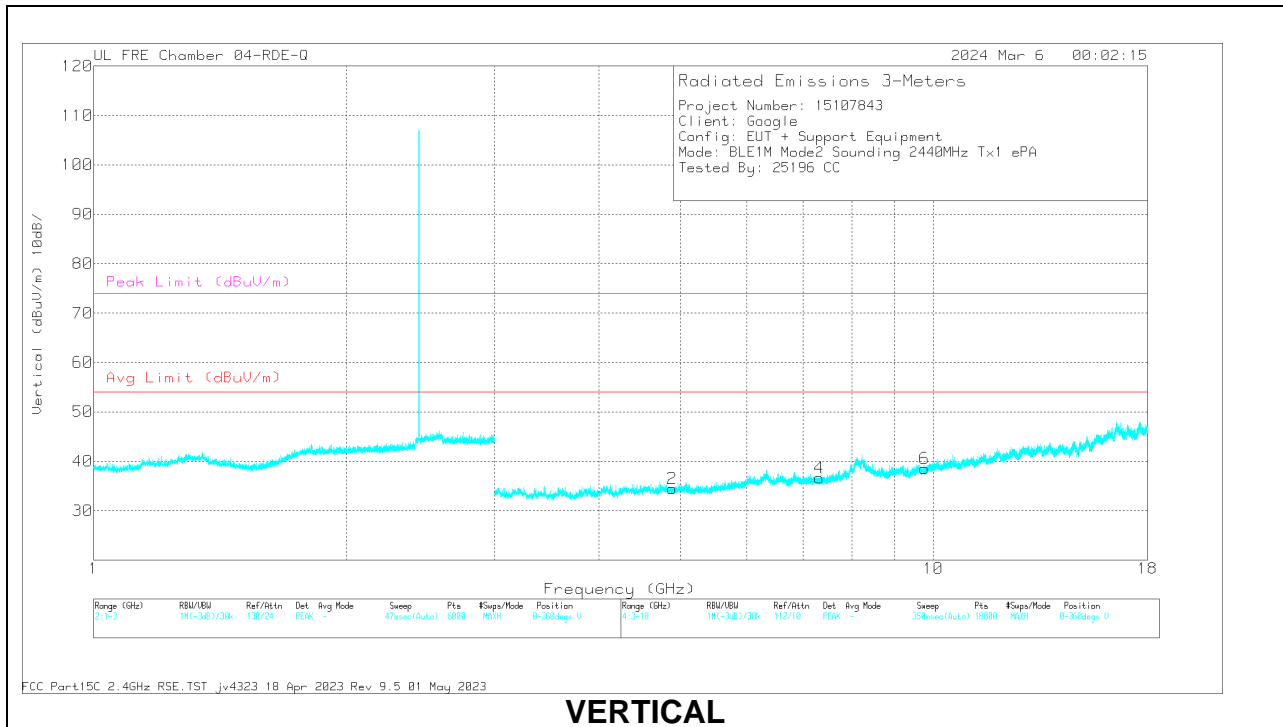
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### MID CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.88579	54.46	PKFH	34.3	-46.28	42.48	-	-	74	-31.52	359	309	H
	** 4.888515	43.04	VA1T	34.3	-46.38	30.96	54	-23.04	-	-	359	309	H
2	** 4.886478	55.21	PKFH	34.3	-46.32	43.19	-	-	74	-30.81	303	122	V
	** 4.887862	43.09	VA1T	34.3	-46.39	31	54	-23	-	-	303	122	V
3	** 7.32207	53.96	PKFH	35.5	-44.58	44.88	-	-	74	-29.12	103	346	H
	** 7.322918	41.97	VA1T	35.5	-44.56	32.91	54	-21.09	-	-	103	346	H
4	** 7.319552	54.16	PKFH	35.5	-44.56	45.1	-	-	74	-28.9	159	223	V
	** 7.31837	42.25	VA1T	35.5	-44.6	33.15	54	-20.85	-	-	159	223	V
5	9.768208	53.27	PKFH	36.9	-43.94	46.23	-	-	74	-27.77	165	182	H
6	9.76447	53.77	PKFH	36.9	-43.88	46.79	-	-	74	-27.21	256	286	V

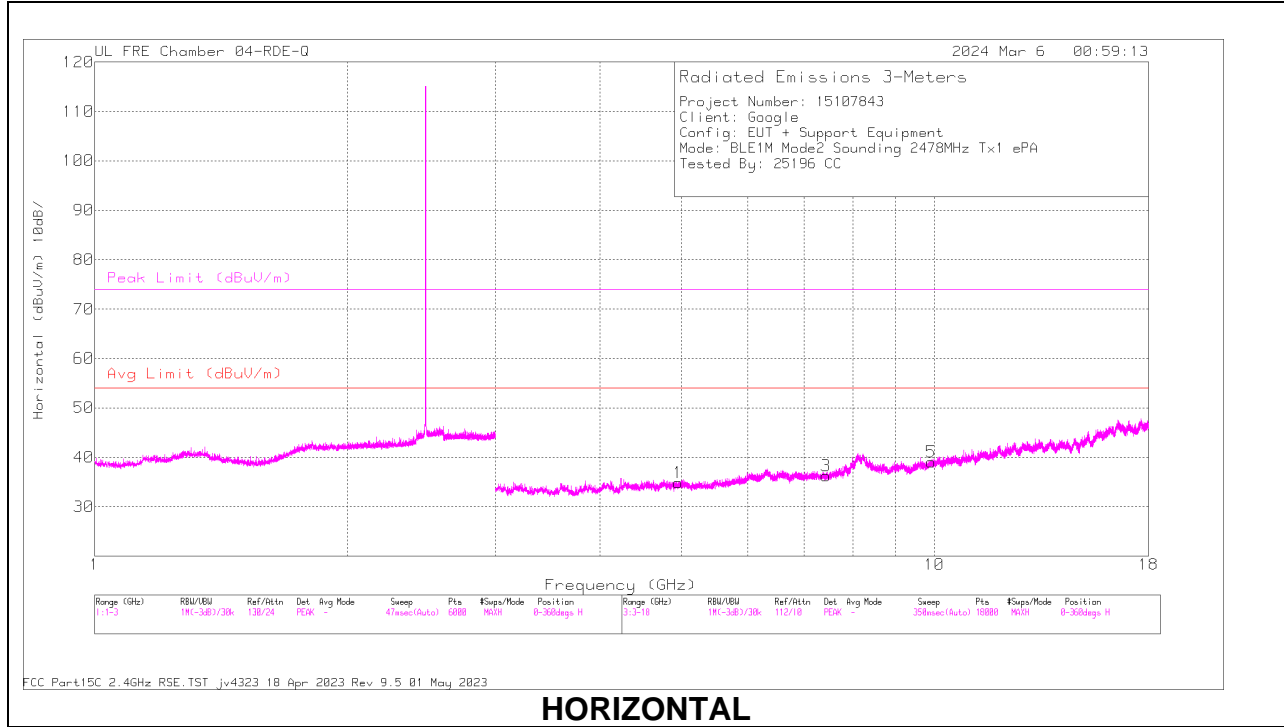
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

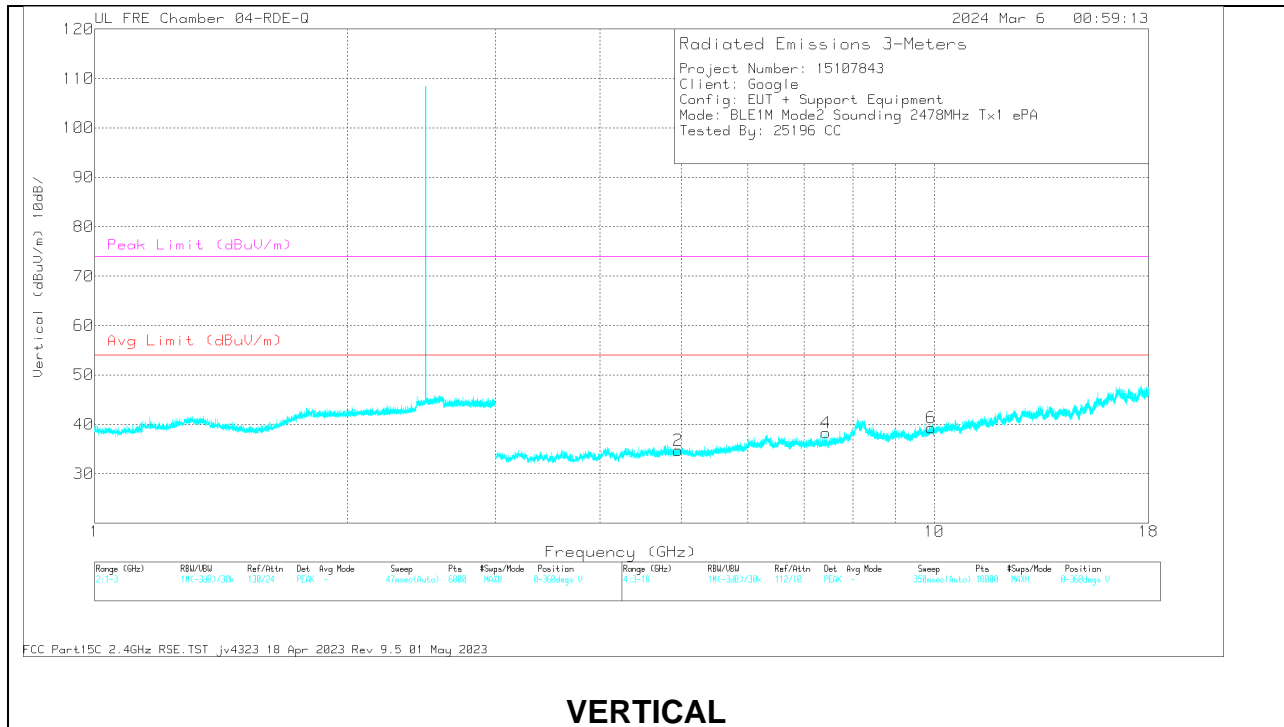
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### HIGH CHANNEL RESULTS



### HORIZONTAL



### VERTICAL



**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.952963	54.18	PKFH	34.3	-46.2	42.28	-	-	74	-31.72	311	148	H
	** 4.952413	43.24	VA1T	34.3	-46.21	31.33	54	-22.67	-	-	311	148	H
2	** 4.954036	54.02	PKFH	34.3	-46.2	42.12	-	-	74	-31.88	351	270	V
	** 4.95565	43.61	VA1T	34.3	-46.24	31.67	54	-22.33	-	-	351	270	V
3	** 7.425569	52.89	PKFH	35.4	-44.41	43.88	-	-	74	-30.12	357	174	H
	** 7.425676	42.08	VA1T	35.4	-44.41	33.07	54	-20.93	-	-	357	174	H
4	** 7.431965	52.97	PKFH	35.4	-44.53	43.84	-	-	74	-30.16	189	318	V
	** 7.433983	42.2	VA1T	35.4	-44.5	33.1	54	-20.9	-	-	189	318	V
5	9.915997	52.69	PKFH	37	-43.9	45.79	-	-	74	-28.21	158	216	H
6	9.924138	53.14	PKFH	37.1	-43.93	46.31	-	-	74	-27.69	349	397	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

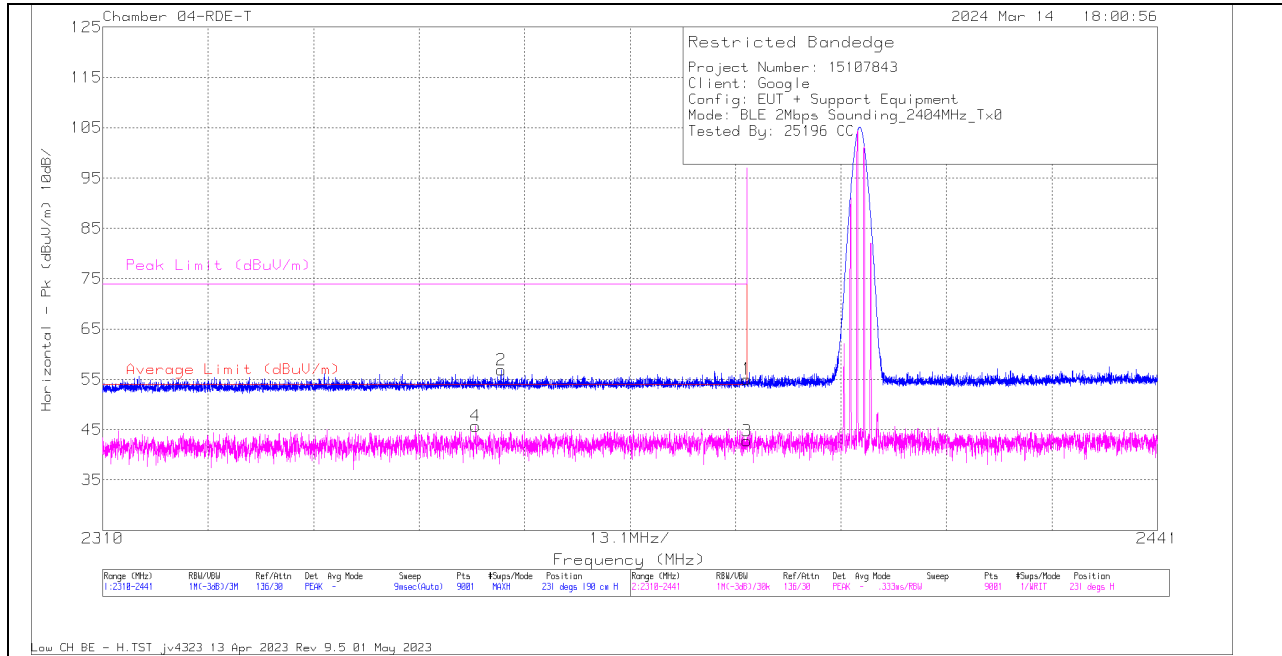
VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### 10.1.3. BLE ASK, MODE 2 (CHANNEL SOUNDING), 2Mbps

**Tx0 Antenna**

**BANDEDGE (LOW CHANNEL)**

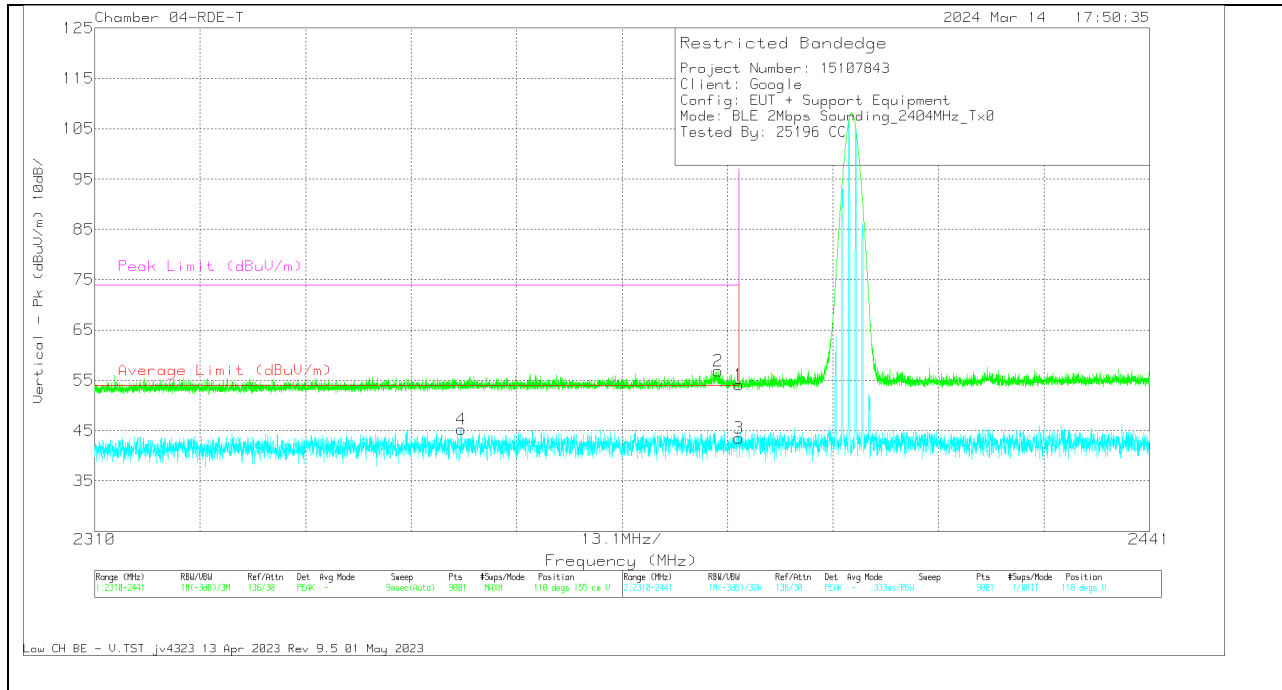
**HORIZONTAL RESULT**



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	** 2356.332	51.77	VA1T	33	-39.06	45.71	54	-8.29	-	-	231	190	H
2	** 2359.461	62.91	Pk	33	-39.05	56.86	-	-	74	-17.14	231	190	H
1	** 2390	60.8	Pk	33.3	-39.05	55.05	-	-	74	-18.95	231	190	H
3	** 2390	48.57	VA1T	33.3	-39.05	42.82	54	-11.18	-	-	231	190	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### VERTICAL RESULT

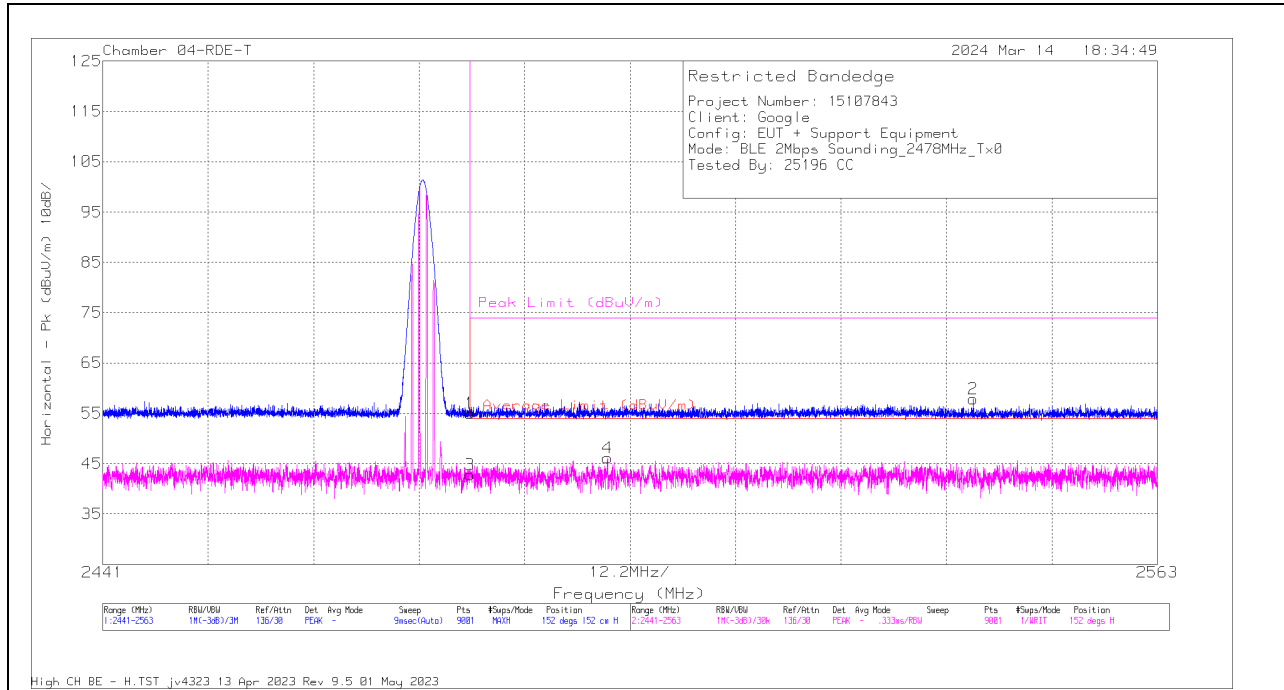


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	** 2355.502	51.34	VA1T	33	-39.04	45.3	54	-8.7	-	-	110	155	V
2	** 2387.438	62.65	PK	33.3	-39.1	56.85	-	-	74	-17.15	110	155	V
1	** 2390	59.92	PK	33.3	-39.05	54.17	-	-	74	-19.83	110	155	V
3	** 2390	49.25	VA1T	33.3	-39.05	43.5	54	-10.5	-	-	110	155	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 PK - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**BANDEDGE (HIGH CHANNEL)**

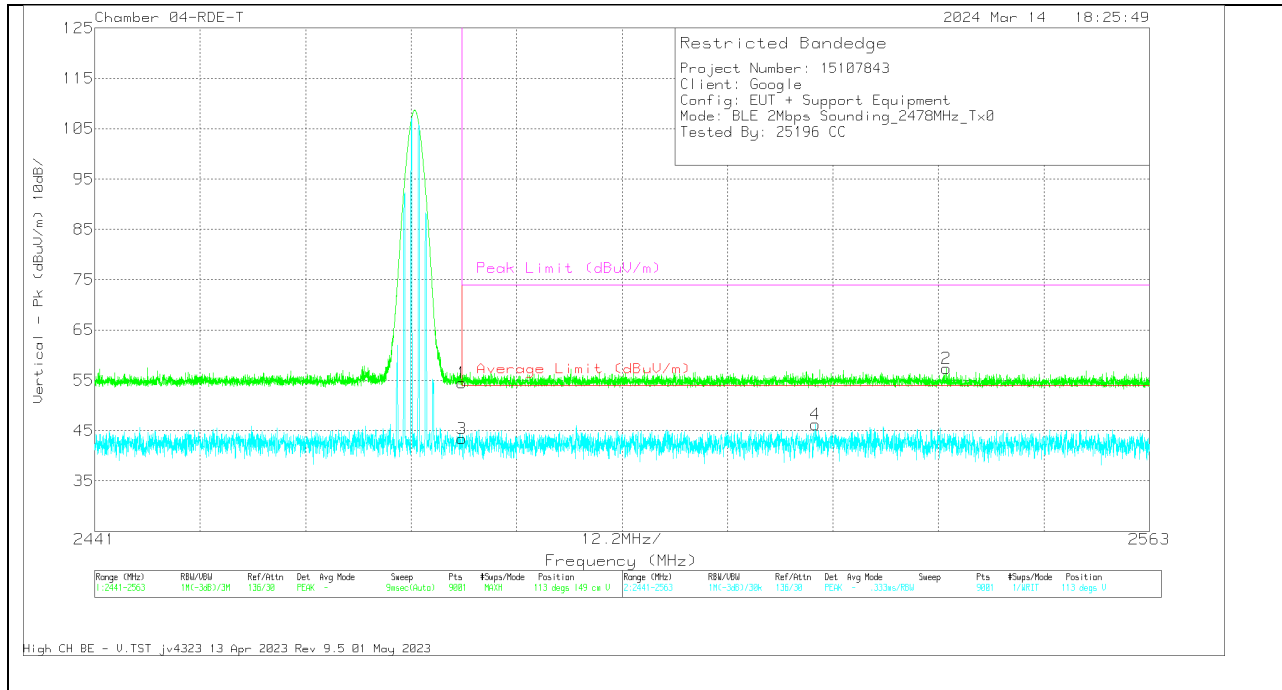
**HORIZONTAL RESULT**



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dBm)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2483.5	60.46	Pk	33.4	-38.87	54.99	-	-	74	-19.01	152	152	H
3	* ** 2483.5	48.27	VA1T	33.4	-38.87	42.8	54	-11.2	-	-	152	152	H
4	* ** 2499.386	51.43	VA1T	33.4	-38.7	46.13	54	-7.87	-	-	152	152	H
2	** 2541.68	63.39	Pk	33.1	-38.66	57.83	-	-	74	-16.17	152	152	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### VERTICAL RESULT

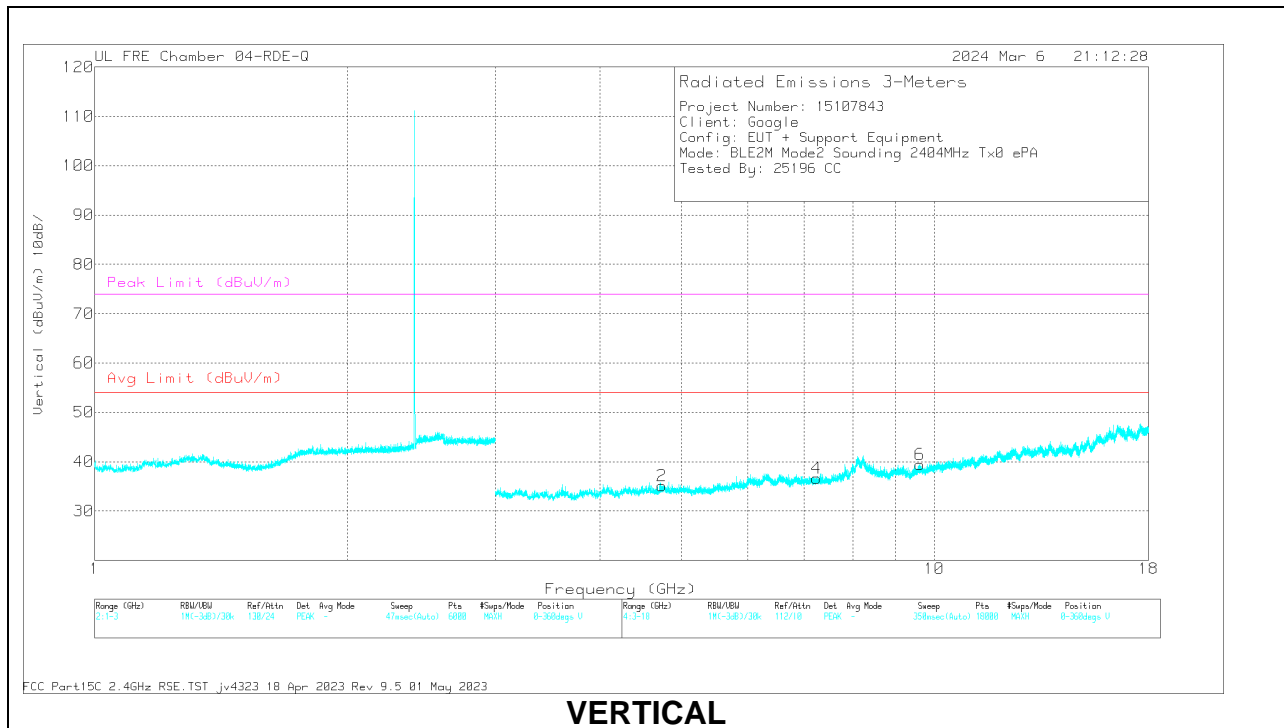
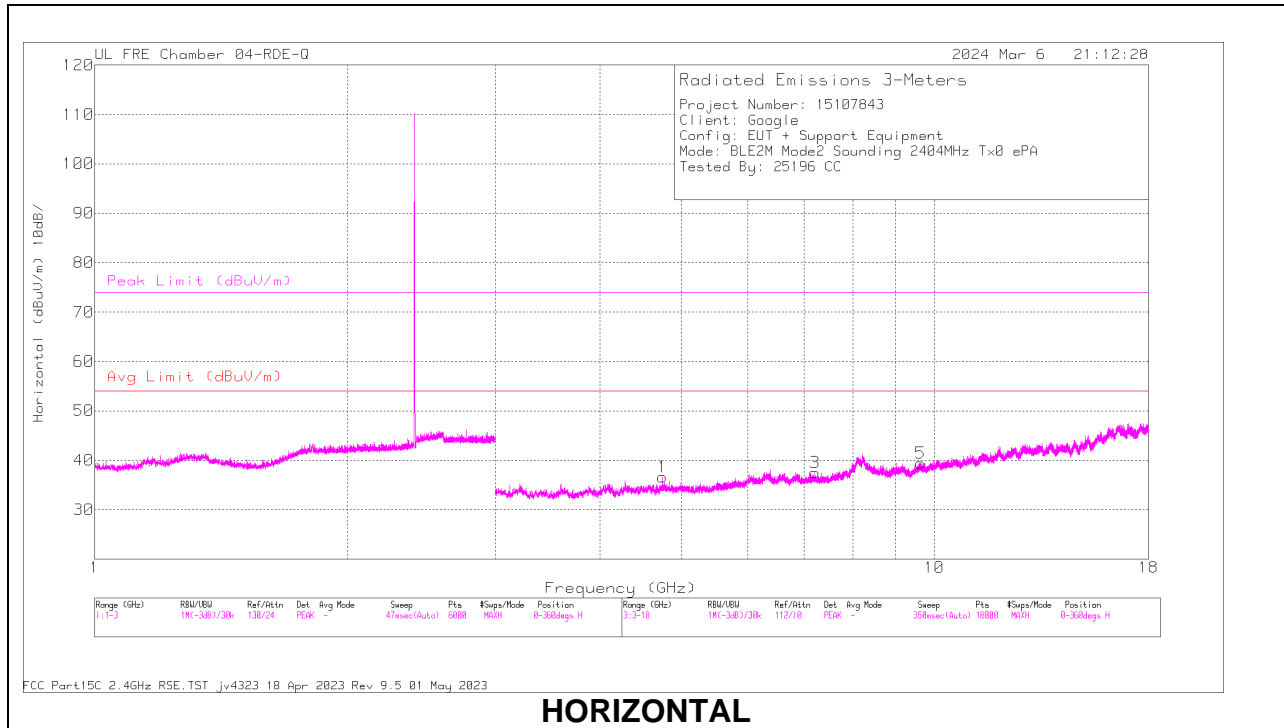


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 2483.5	60.01	Pk	33.4	-38.87	54.54	-	-	74	-19.46	113	149	V
3	** 2483.5	48.91	VA1T	33.4	-38.87	43.44	54	-10.56	-	-	113	149	V
4	** 2524.383	51.51	VA1T	33.2	-38.5	46.21	54	-7.79	-	-	113	149	V
2	** 2539.484	62.79	Pk	33.1	-38.58	57.31	-	-	74	-16.69	113	149	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

# HARMONICS AND SPURIOUS EMISSIONS

## LOW CHANNEL RESULTS



**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.749182	55.93	PKFH	34.2	-46.3	43.83	-	-	74	-30.17	282	178	H
	** 4.748953	43.36	VA1T	34.2	-46.31	31.25	54	-22.75	-	-	282	178	H
2	** 4.744218	54.83	PKFH	34.2	-46.25	42.78	-	-	74	-31.22	63	178	V
	** 4.742506	43.26	VA1T	34.2	-46.19	31.27	54	-22.73	-	-	63	178	V
3	7.210301	54.08	PKFH	35.6	-44.57	45.11	-	-	74	-28.89	177	124	H
	7.247154	53.67	PKFH	35.6	-44.43	44.84	-	-	74	-29.16	100	144	V
5	9.633271	53.34	PKFH	36.7	-43.6	46.44	-	-	74	-27.56	310	289	H
6	9.612944	53.98	PKFH	36.7	-43.7	46.98	-	-	74	-27.02	72	186	V

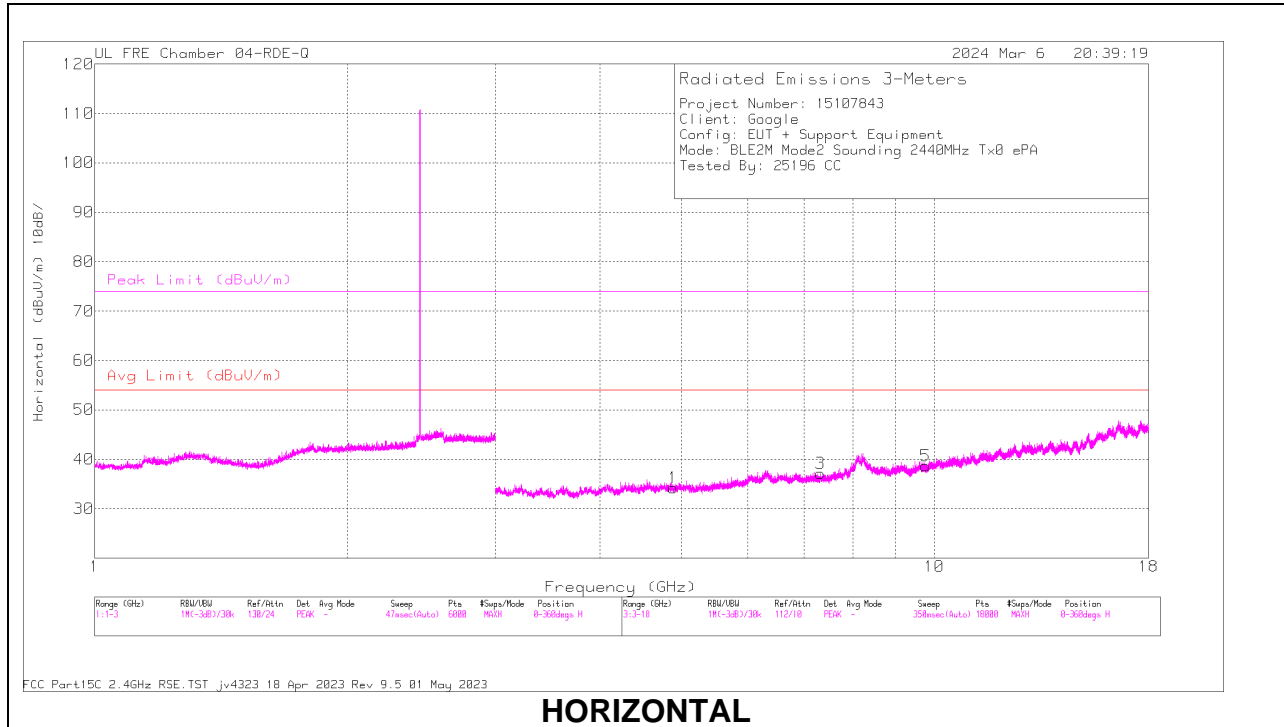
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

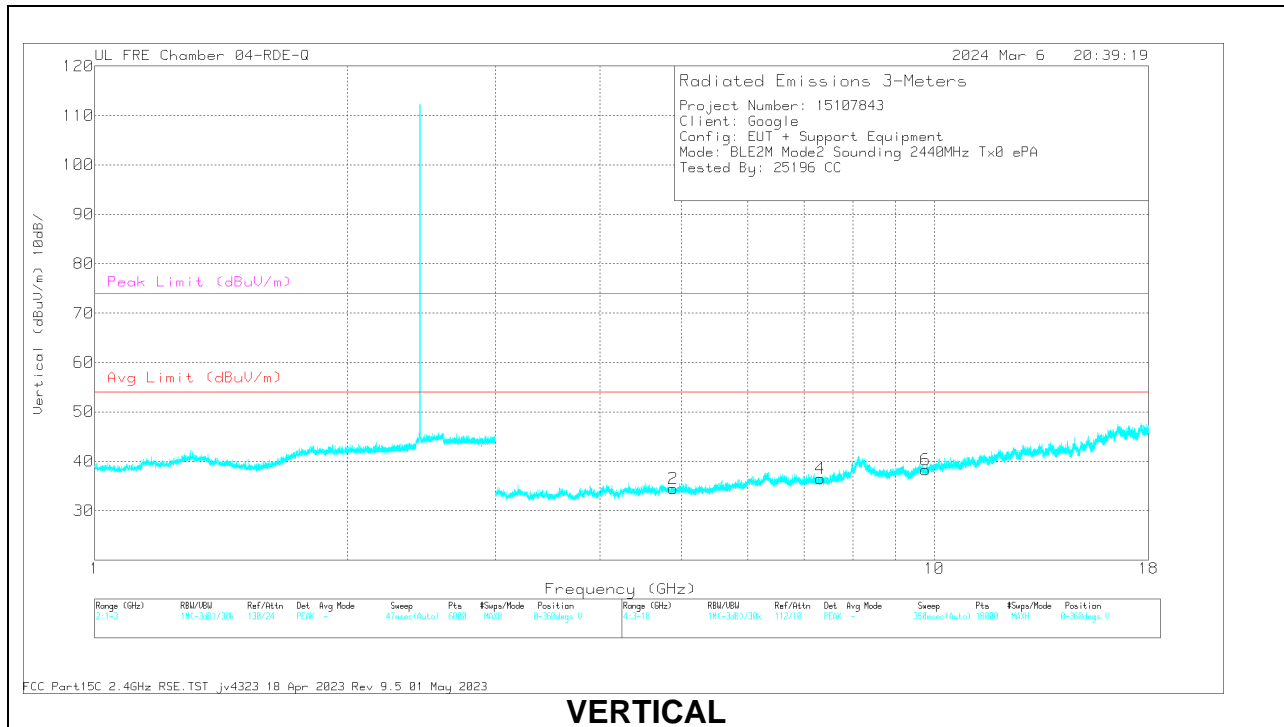
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### MID CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**



**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.88681	54.79	PKFH	34.3	-46.35	42.74	-	-	74	-31.26	248	232	H
	** 4.886283	42.86	VA1T	34.3	-46.31	30.85	54	-23.15	-	-	248	232	H
2	** 4.886643	54.57	PKFH	34.3	-46.34	42.53	-	-	74	-31.47	322	106	V
	** 4.886739	42.96	VA1T	34.3	-46.34	30.92	54	-23.08	-	-	322	106	V
3	** 7.316844	53.51	PKFH	35.5	-44.61	44.4	-	-	74	-29.6	144	313	H
	** 7.316852	42.37	VA1T	35.5	-44.61	33.26	54	-20.74	-	-	144	313	H
4	** 7.316849	52.91	PKFH	35.5	-44.61	43.8	-	-	74	-30.2	105	204	V
	** 7.318778	42.11	VA1T	35.5	-44.58	33.03	54	-20.97	-	-	105	204	V
5	9.760295	53.62	PKFH	36.9	-43.87	46.65	-	-	74	-27.35	89	308	H
6	9.767762	53.63	PKFH	36.9	-43.94	46.59	-	-	74	-27.41	187	318	V

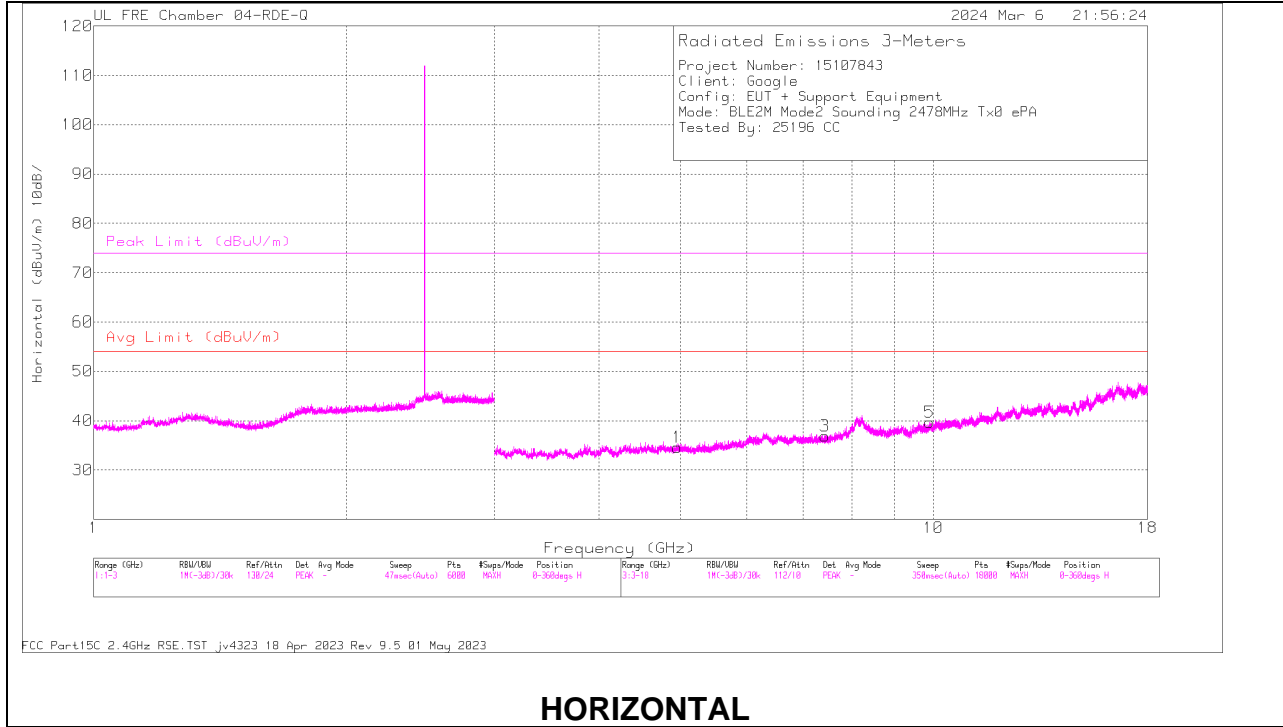
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

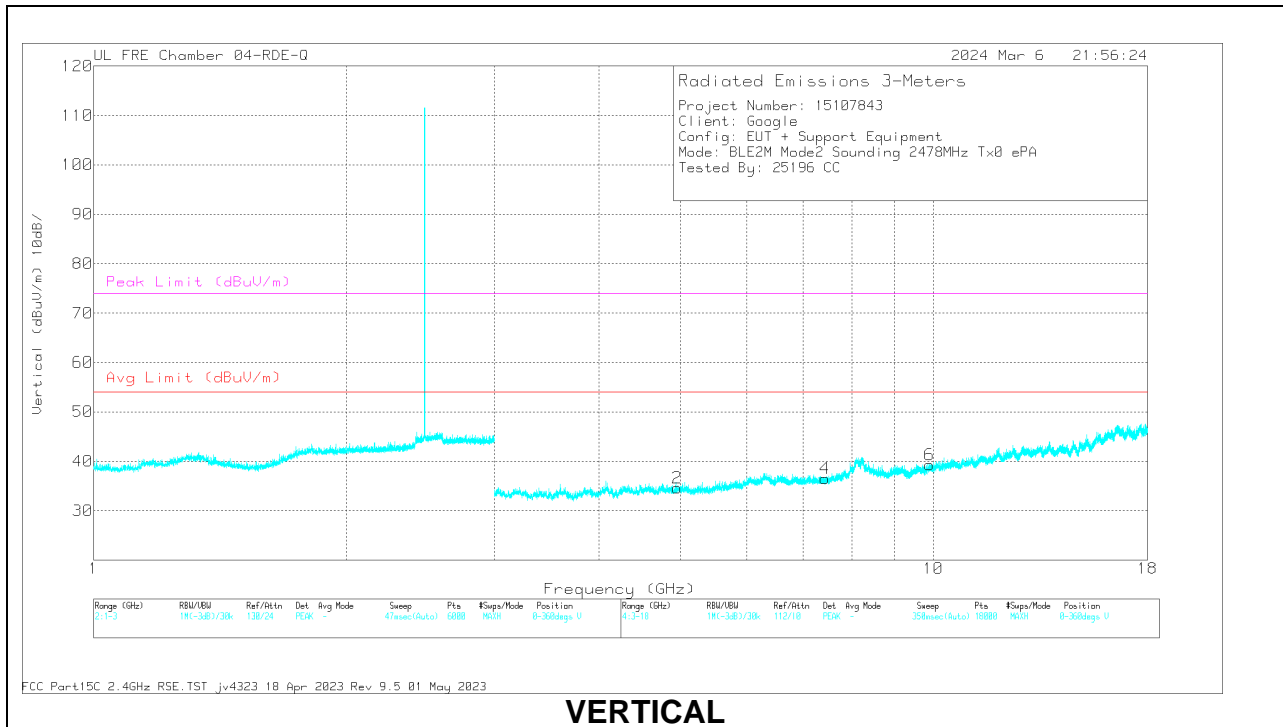
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### HIGH CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.959291	54.1	PKFH	34.3	-46.34	42.06	-	-	74	-31.94	138	128	H
	** 4.956355	43.32	VA1T	34.3	-46.28	31.34	54	-22.66	-	-	138	128	H
2	** 4.955605	53.92	PKFH	34.3	-46.24	41.98	-	-	74	-32.02	69	356	V
	** 4.956587	43.24	VA1T	34.3	-46.3	31.24	54	-22.76	-	-	69	356	V
3	** 7.434722	53.55	PKFH	35.4	-44.49	44.46	-	-	74	-29.54	137	373	H
	** 7.433268	42.24	VA1T	35.4	-44.53	33.11	54	-20.89	-	-	137	373	H
4	** 7.434011	53.35	PKFH	35.4	-44.5	44.25	-	-	74	-29.75	294	310	V
	** 7.43442	42.17	VA1T	35.4	-44.49	33.08	54	-20.92	-	-	294	310	V
5	9.901198	53.34	PKFH	37	-43.99	46.35	-	-	74	-27.65	212	297	H
6	9.900421	53.51	PKFH	37	-44.01	46.5	-	-	74	-27.5	200	351	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

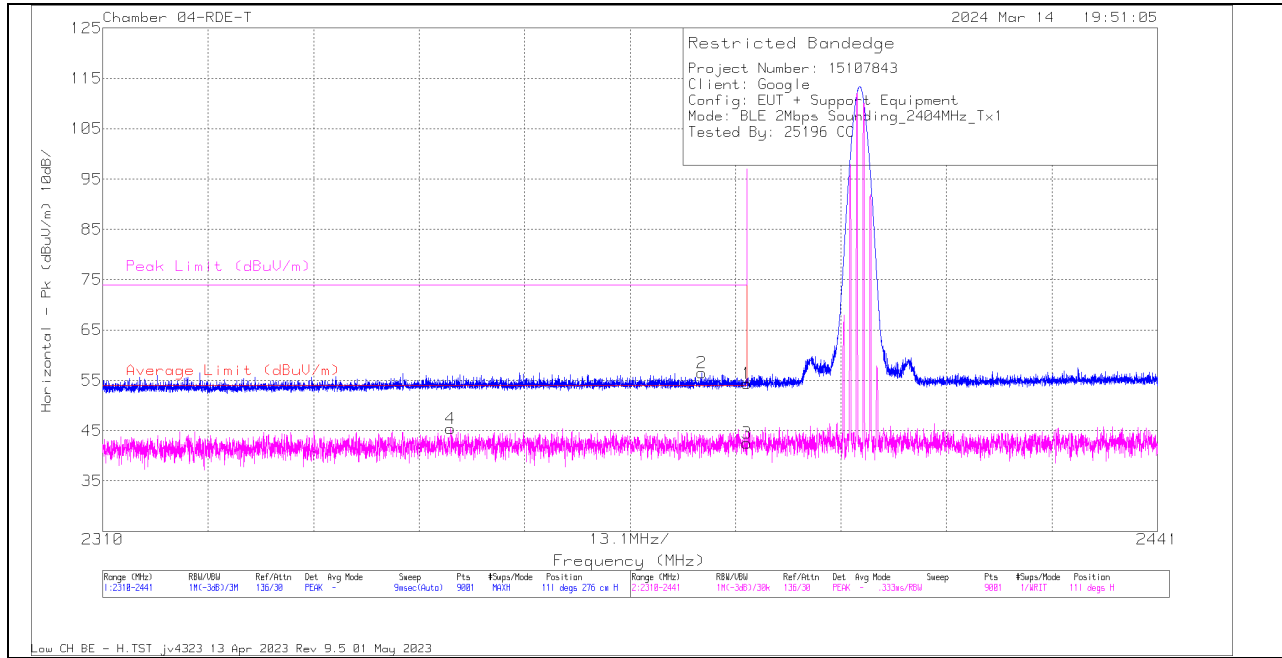
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

**Tx1 Antenna**

**BANDEDGE (LOW CHANNEL)**

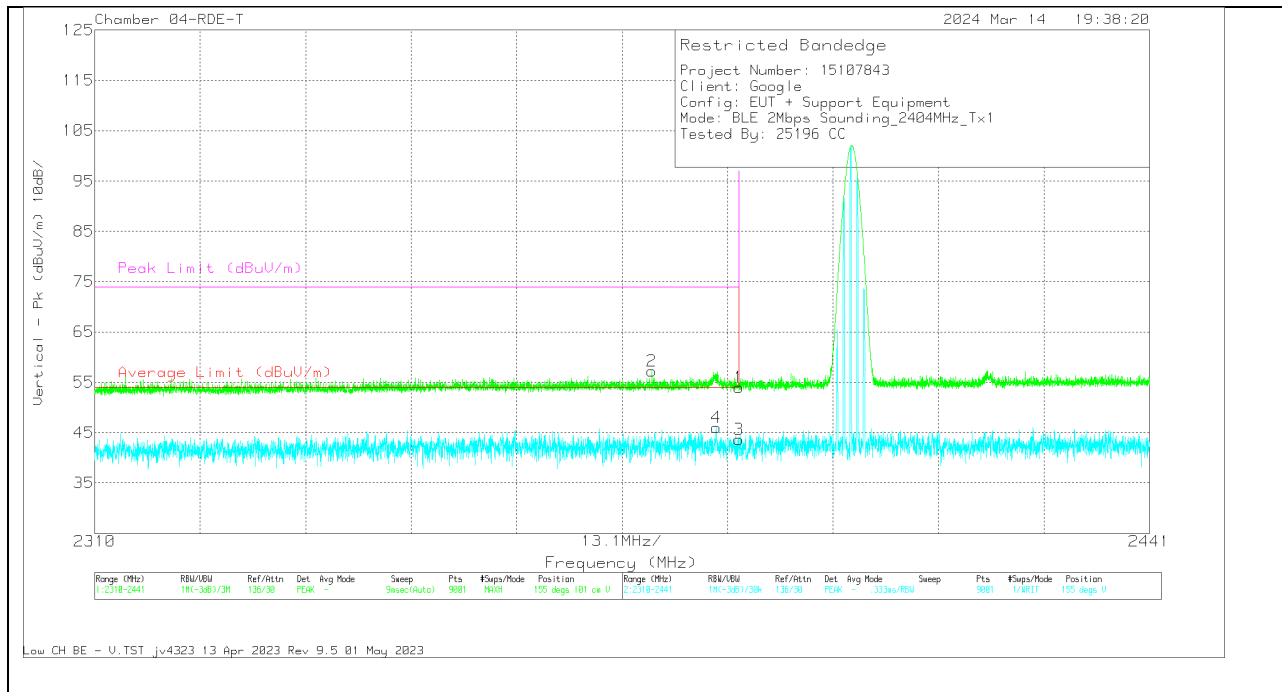
**HORIZONTAL RESULT**



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	00430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	** 2353.202	51.58	VA1T	32.9	-39.08	45.4	54	-8.6	-	-	111	276	H
2	** 2384.425	62.25	PK	33.3	-39.01	56.54	-	-	74	-17.46	111	276	H
1	** 2390	60.14	PK	33.3	-39.05	54.39	-	-	74	-19.61	111	276	H
3	** 2390	48.24	VA1T	33.3	-39.05	42.49	54	-11.51	-	-	111	276	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### VERTICAL RESULT

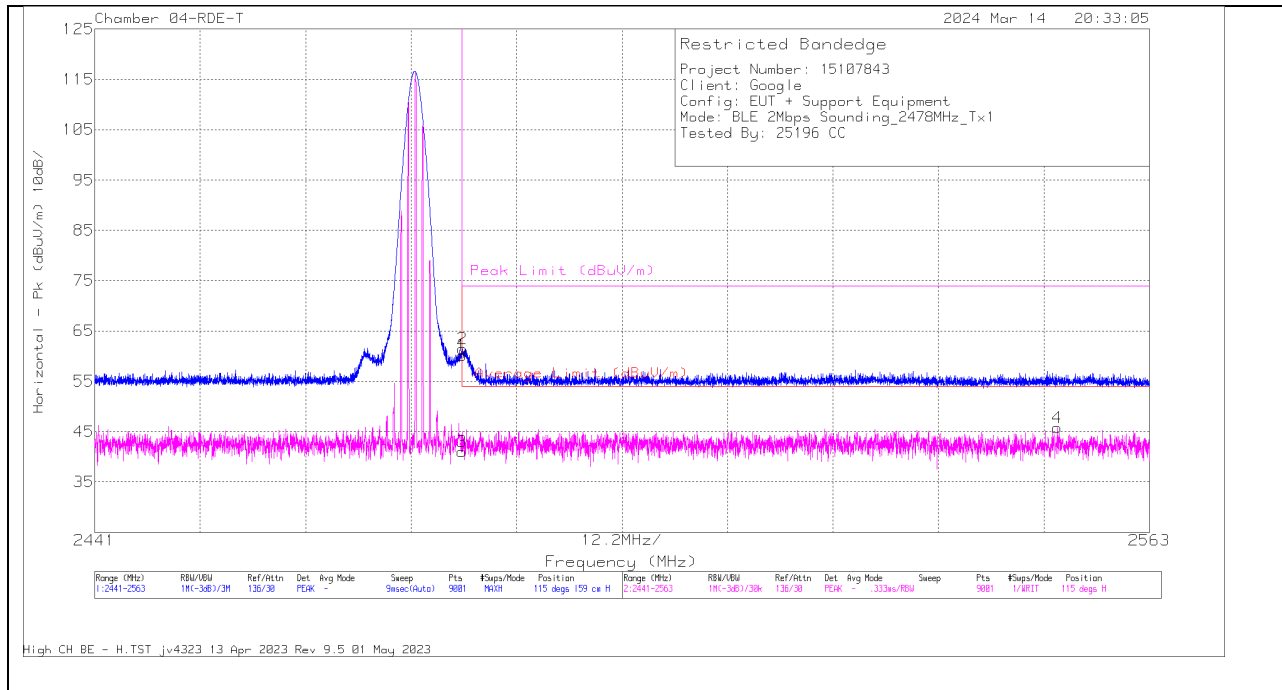


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACP (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	*** 2379.17	63.06	Pk	33.2	-38.98	57.28	-	-	74	-16.72	155	101	V
4	*** 2387.205	51.87	VA1T	33.3	-39.11	46.06	54	-7.94	-	-	155	101	V
1	*** 2390	59.78	Pk	33.3	-39.05	54.03	-	-	74	-19.97	155	101	V
3	** 2390	49.39	VA1T	33.3	-39.05	43.64	54	-10.36	-	-	155	101	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**BANDEDGE (HIGH CHANNEL)**

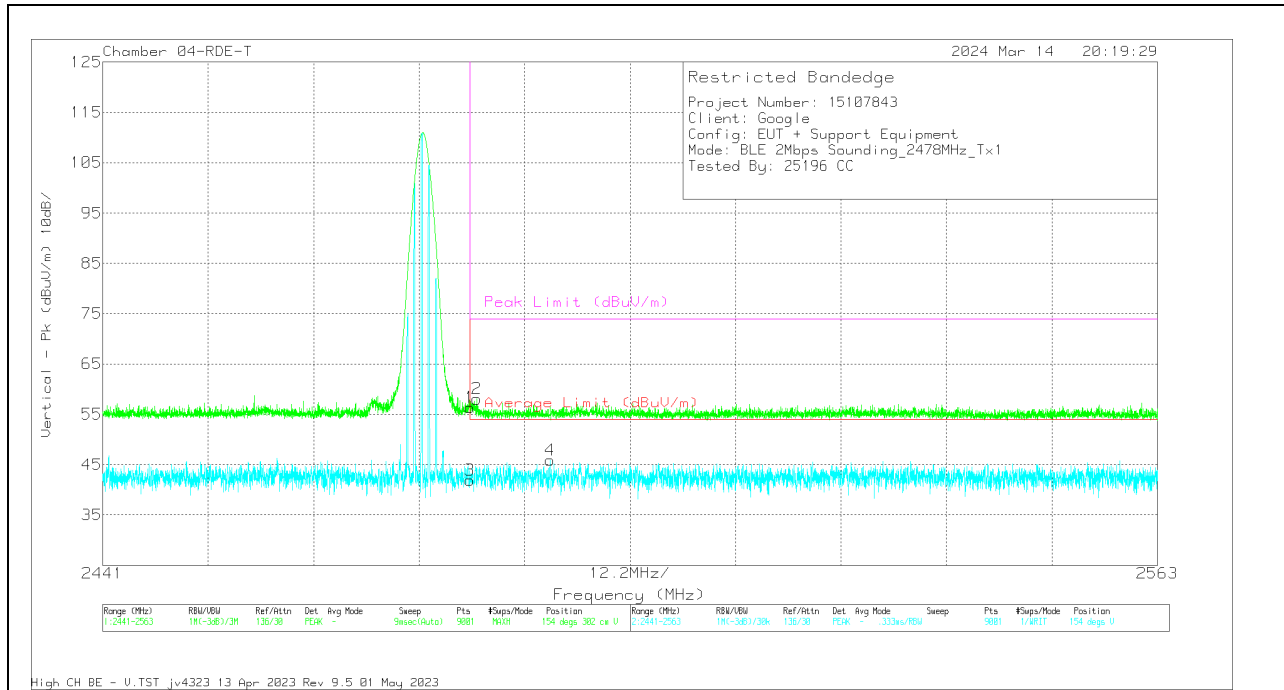
**HORIZONTAL RESULT**



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2483.5	65.58	Pk	33.4	-38.87	60.11	-	-	74	-13.89	115	159	H
3	* ** 2483.5	46.5	VA1T	33.4	-38.87	41.03	54	-12.97	-	-	115	159	H
2	* ** 2483.579	66.91	Pk	33.4	-38.87	61.44	-	-	74	-12.56	115	159	H
4	** 2552.363	51.17	VA1T	33.1	-38.47	45.8	54	-8.2	-	-	115	159	H

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

### VERTICAL RESULT

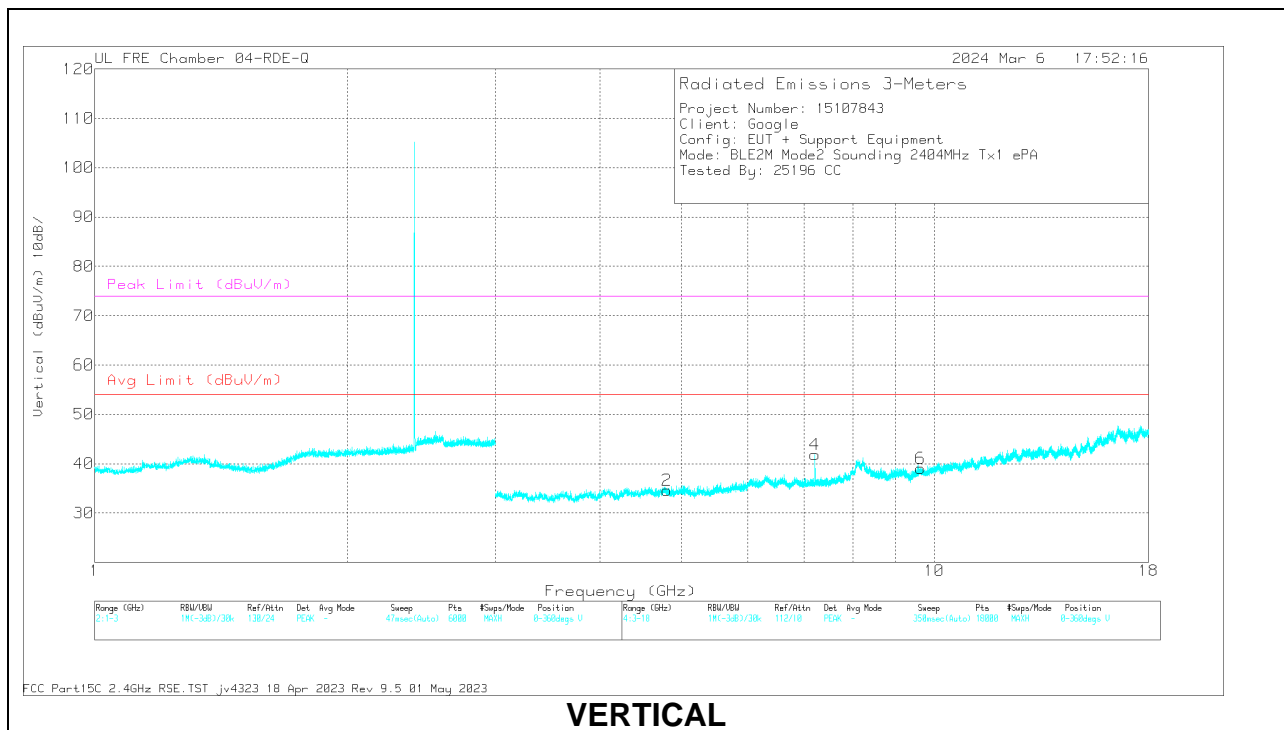
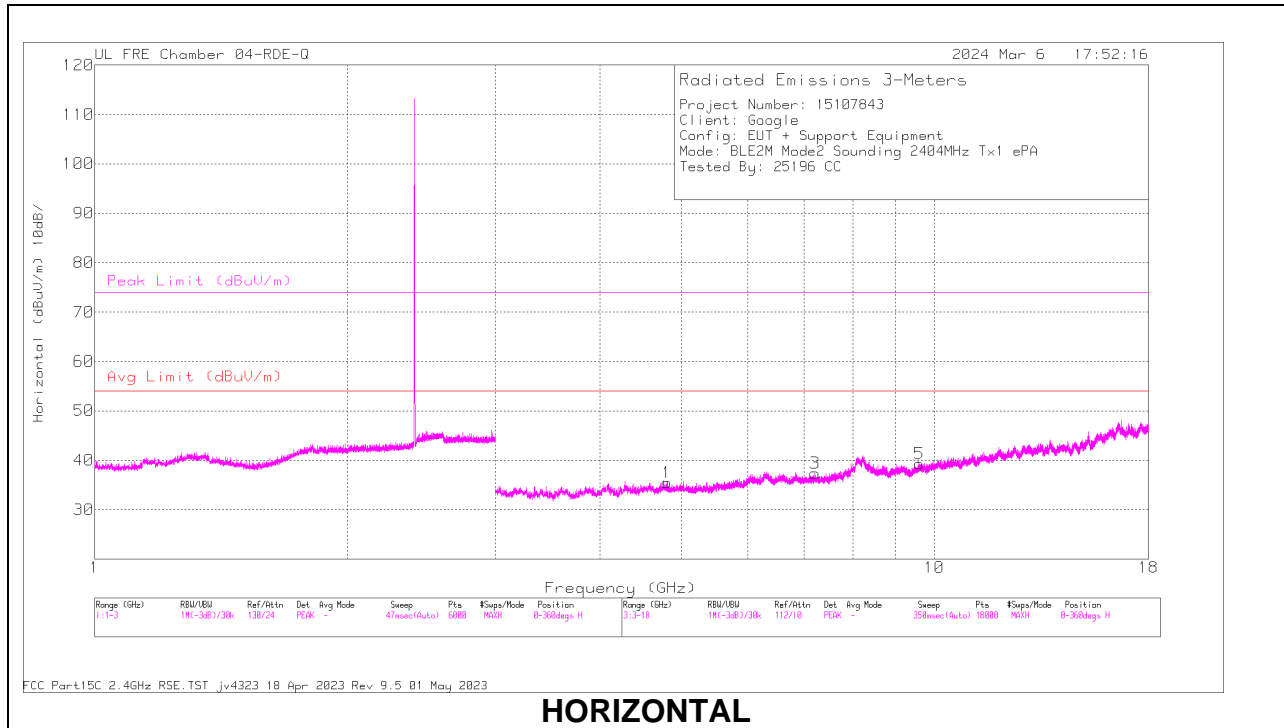


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 ACP (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2483.5	61.83	Pk	33.4	-38.87	56.36	-	-	74	-17.64	154	302	V
3	* ** 2483.5	47.36	VA1T	33.4	-38.87	41.89	54	-12.11	-	-	154	301	V
2	* ** 2484.257	63.52	Pk	33.4	-38.87	58.05	-	-	74	-15.95	154	302	V
4	* ** 2492.757	51.27	VA1T	33.4	-38.75	45.92	54	-8.08	-	-	154	301	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

**HARMONICS AND SPURIOUS EMISSIONS**

**LOW CHANNEL RESULTS**





**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.802689	56.33	PKFH	34.2	-46.47	44.06	-	-	74	-29.94	340	282	H
	** 4.800496	43.37	VA1T	34.2	-46.4	31.17	54	-22.83	-	-	340	282	H
2	** 4.801413	54.42	PKFH	34.2	-46.44	42.18	-	-	74	-31.82	291	262	V
	** 4.804421	43.16	VA1T	34.2	-46.45	30.91	54	-23.09	-	-	291	262	V
3	7.212651	53.49	PKFH	35.6	-44.58	44.51	-	-	74	-29.49	124	155	H
	7.212089	53.02	PKFH	35.6	-44.56	44.06	-	-	74	-29.94	57	204	V
5	9.592846	53.89	PKFH	36.6	-43.92	46.57	-	-	74	-27.43	174	180	H
6	9.632384	53.87	PKFH	36.7	-43.59	46.98	-	-	74	-27.02	308	280	V

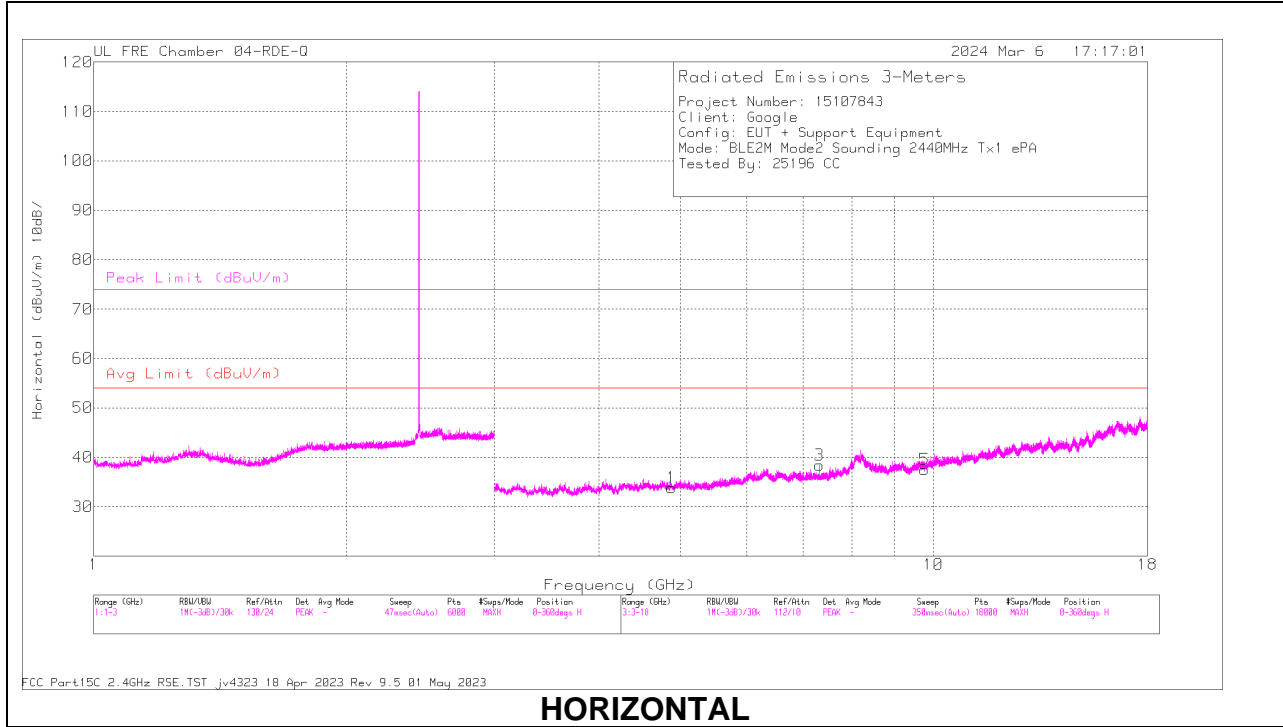
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

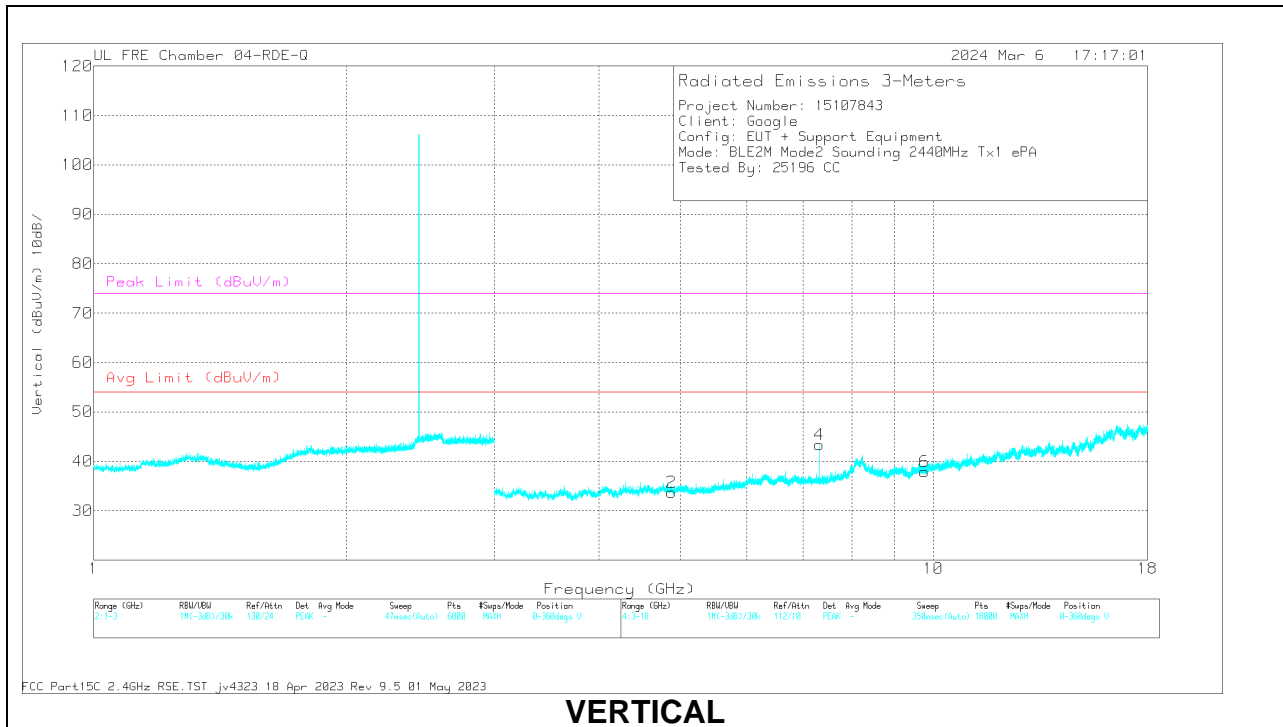
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### MID CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.879912	53.87	PKFH	34.3	-46.36	41.81	-	-	74	-32.19	333	219	H
	** 4.890684	43.14	VA1T	34.3	-46.33	31.11	54	-22.89	-	-	333	219	H
2	** 4.879313	54.35	PKFH	34.3	-46.35	42.3	-	-	74	-31.7	280	386	V
	** 4.890309	43.12	VA1T	34.3	-46.35	31.07	54	-22.93	-	-	280	386	V
3	** 7.320106	54.77	PKFH	35.5	-44.56	45.71	-	-	74	-28.29	50	141	H
	** 7.319608	43.25	VA1T	35.5	-44.56	34.19	54	-19.81	-	-	50	141	H
4	** 7.319788	58.05	PKFH	35.5	-44.56	48.99	-	-	74	-25.01	279	124	V
	** 7.319984	50.17	VA1T	35.5	-44.56	41.11	54	-12.89	-	-	279	124	V
5	9.767058	53.6	PKFH	36.9	-43.91	46.59	-	-	74	-27.41	81	269	H
6	9.766083	53.81	PKFH	36.9	-43.91	46.8	-	-	74	-27.2	333	344	V

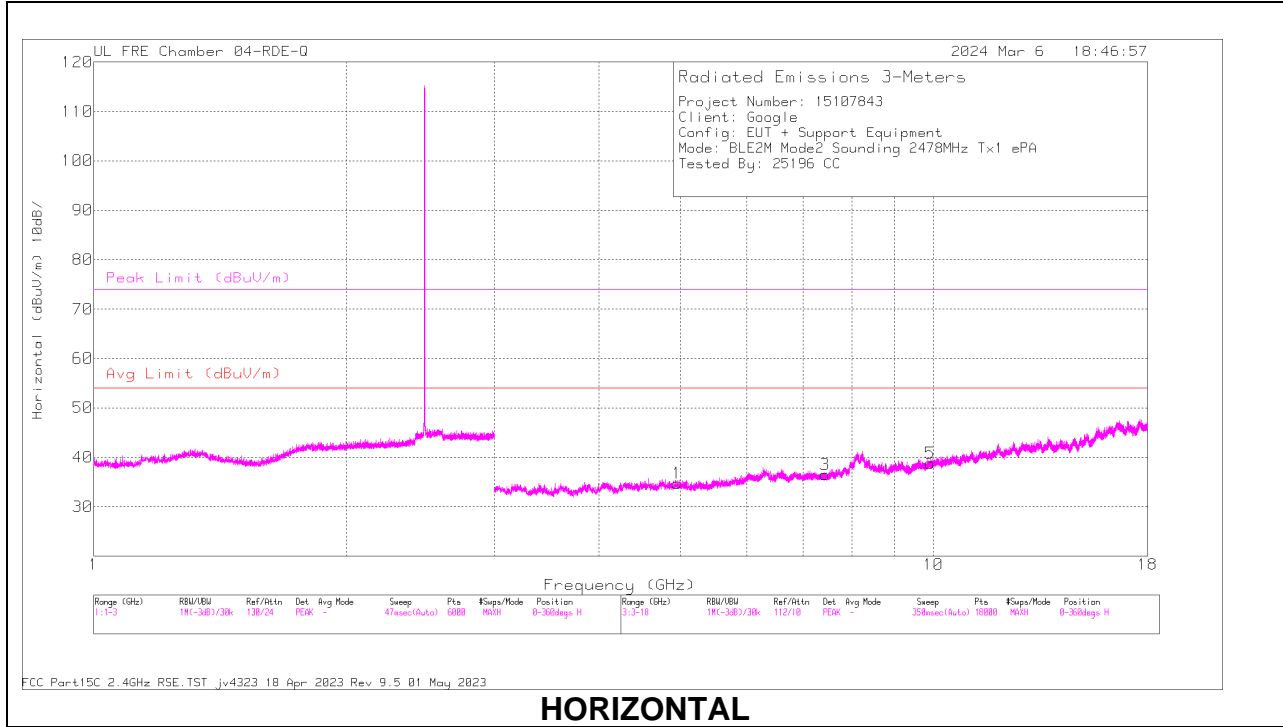
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

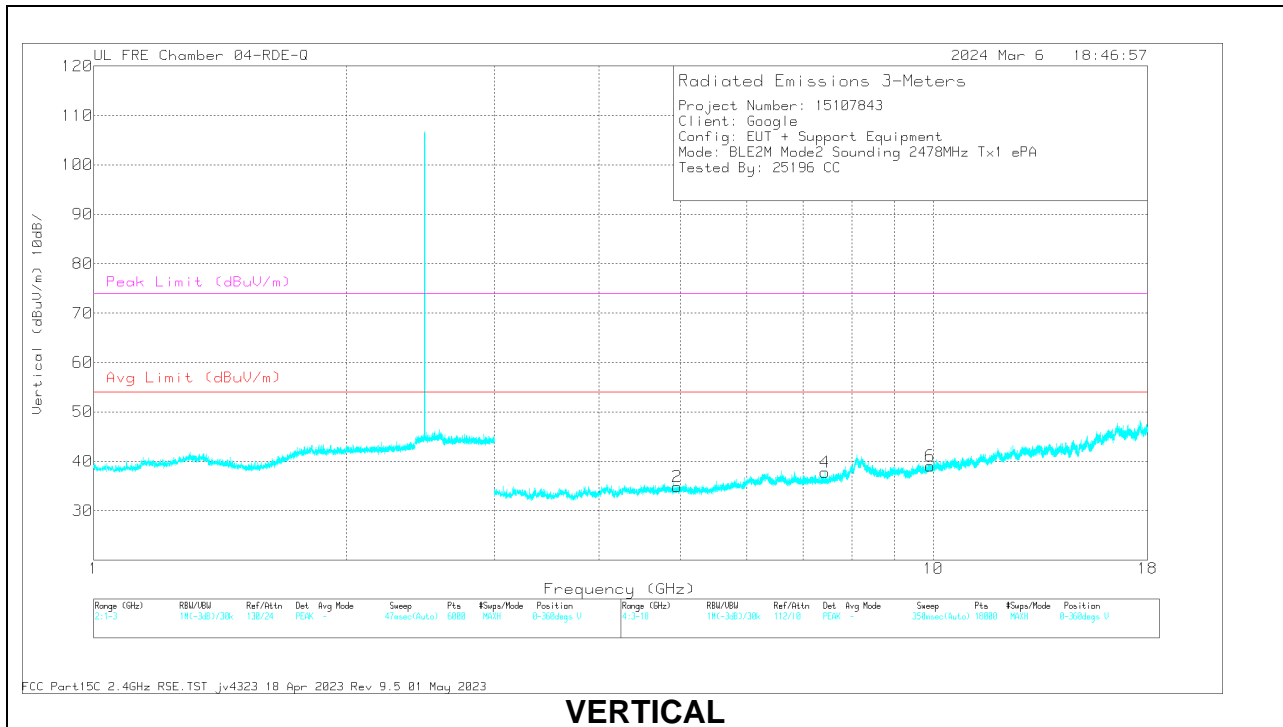
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

### HIGH CHANNEL RESULTS



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 4.956146	54.32	PKFH	34.3	-46.27	42.35	-	-	74	-31.65	28	150	H
	** 4.956869	43.35	VA1T	34.3	-46.31	31.34	54	-22.66	-	-	28	150	H
2	** 4.952333	54.26	PKFH	34.3	-46.21	42.35	-	-	74	-31.65	64	332	V
	** 4.950597	43.29	VA1T	34.3	-46.25	31.34	54	-22.66	-	-	64	332	V
3	** 7.432664	53.03	PKFH	35.4	-44.54	43.89	-	-	74	-30.11	199	174	H
	** 7.435314	41.86	VA1T	35.4	-44.47	32.79	54	-21.21	-	-	199	174	H
4	** 7.435535	53.81	PKFH	35.4	-44.46	44.75	-	-	74	-29.25	40	397	V
	** 7.435435	42.09	VA1T	35.4	-44.47	33.02	54	-20.98	-	-	40	397	V
5	9.915297	53.29	PKFH	37	-43.89	46.4	-	-	74	-27.6	354	194	H
6	9.918791	53.72	PKFH	37	-43.9	46.82	-	-	74	-27.18	183	195	V

\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

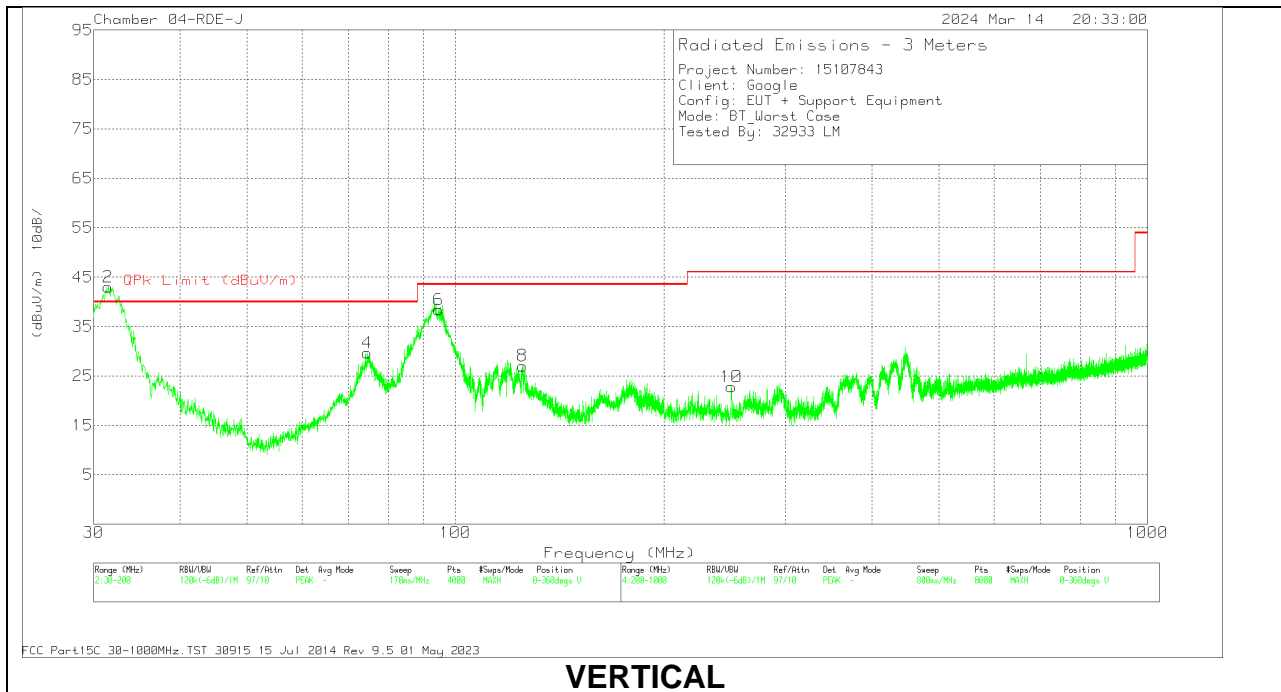
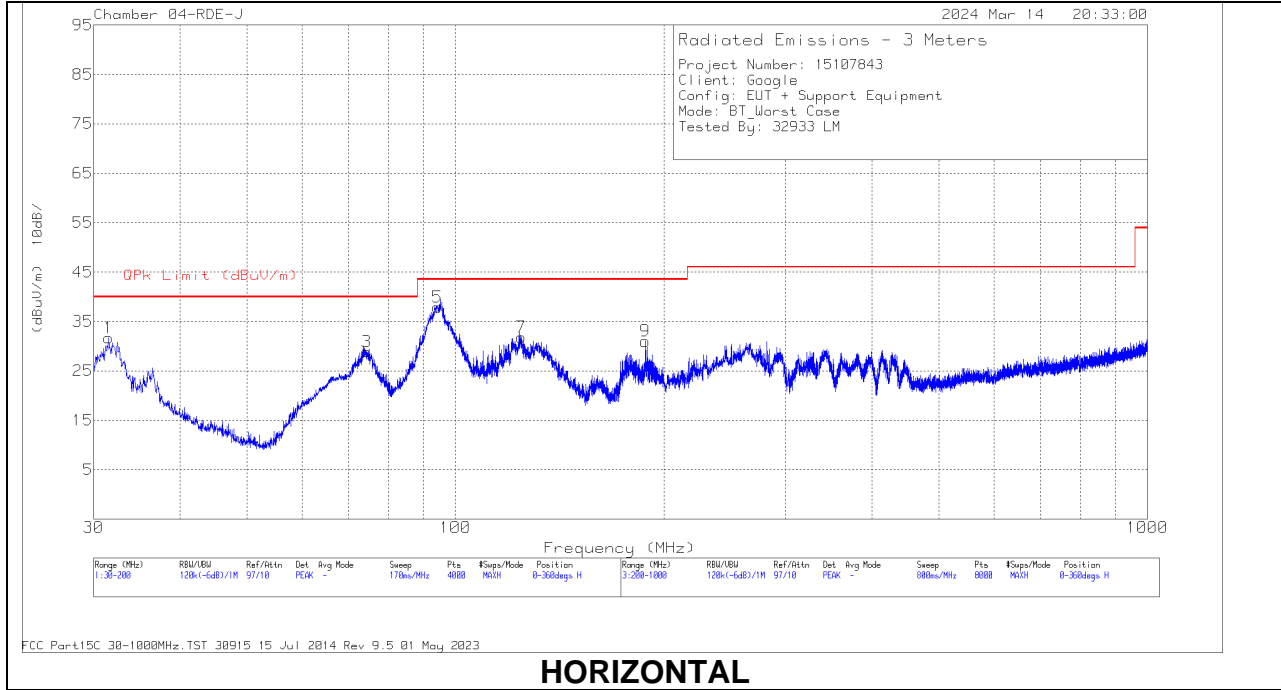
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB=3 x RB, Peak

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

## 10.2. WORST CASE BELOW 1 GHz

### 10.2.1. BLUETOOTH BASIC DATA RATE TXBF GFSK MODULATION

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



**Below 1GHz Data**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80293 ACF (dB/m)	CBL/AMP (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 74.3815	45.89	Pk	13.9	-30.9	28.89	40	-11.11	0-360	199	H
7	* 124.587	42.26	Pk	20	-30.4	31.86	43.52	-11.66	0-360	199	H
4	* 74.594	46.66	Pk	13.9	-30.9	29.66	40	-10.34	0-360	100	V
8	* 124.885	37.36	Pk	20	-30.3	27.06	43.52	-16.46	0-360	100	V
10	* 250.407	35.71	Pk	17.4	-30.3	22.81	46.02	-23.21	0-360	99	V
2	31.5039	44.03	Qp	25.7	-31.5	38.23	40	-1.77	309	142	V
1	31.5304	37.55	Pk	25.7	-31.5	31.75	40	-8.25	0-360	299	H
5	94.4339	50.9	Qp	14.7	-31.2	34.4	43.52	-9.12	140	315	H
6	94.448	50.45	Qp	14.7	-31.2	33.95	43.52	-9.57	0	103	V
9	188.098	44.3	Pk	17.1	-30.4	31	43.52	-12.52	0-360	99	H

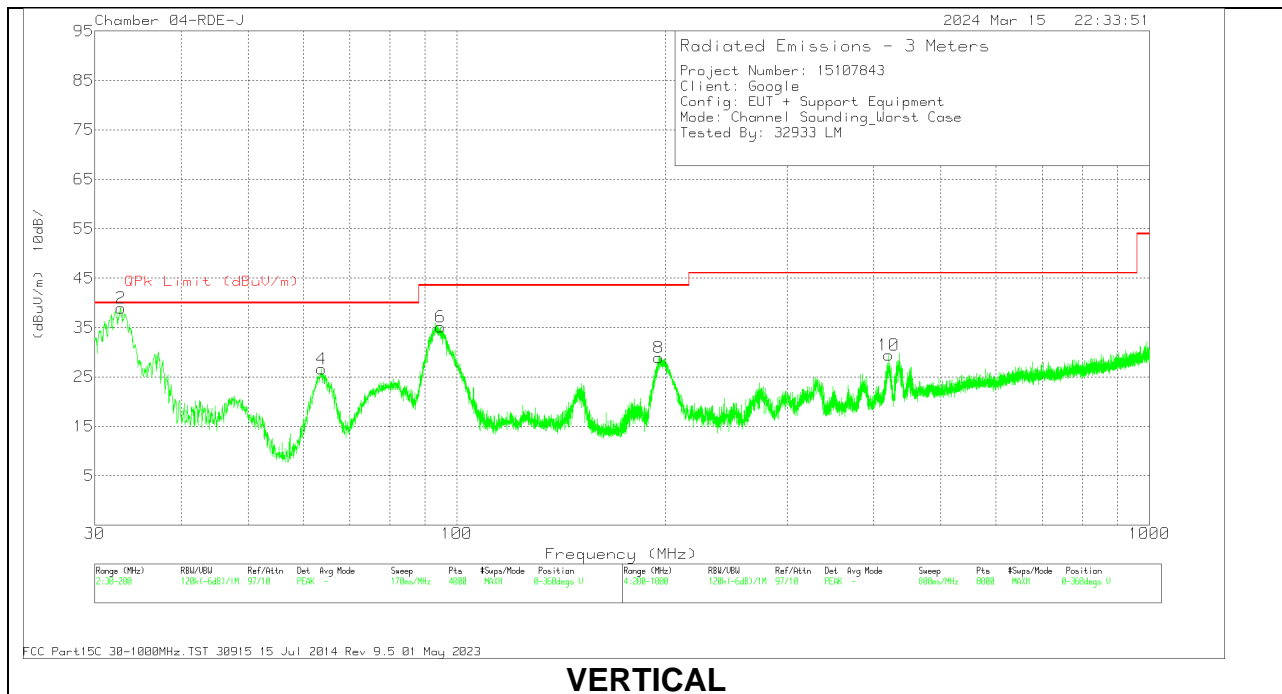
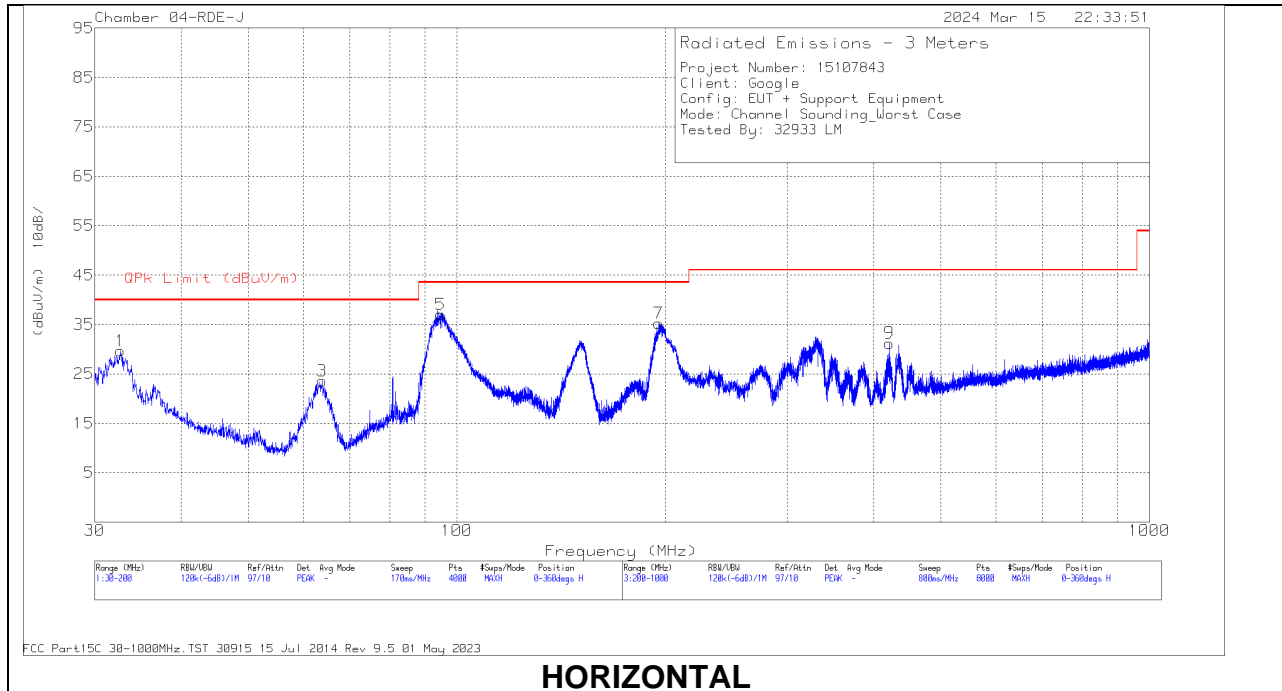
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

### 10.2.2. BLE ASK, MODE 2 (CHANNEL SOUNDING)

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





**Below 1GHz Data**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80293 ACF (dB/m)	CBL/AMP (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	32.6357	36.33	Pk	24.9	-31.6	29.63	40	-10.37	0-360	299	H
2	32.8212	40.9	Qp	24.8	-31.7	34	40	-6	24	105	V
3	63.9238	41.3	Pk	13.6	-31.3	23.6	40	-16.4	0-360	299	H
4	63.7963	44.41	Pk	13.6	-31.4	26.61	40	-13.39	0-360	100	V
5	94.7868	53.31	Pk	14.8	-31.1	37.01	43.52	-6.51	0-360	299	H
6	94.7868	51.37	Pk	14.8	-31.1	35.07	43.52	-8.45	0-360	100	V
7	195.623	47.65	Pk	17.8	-30.2	35.25	43.52	-8.27	0-360	101	H
8	195.623	41.29	Pk	17.8	-30.2	28.89	43.52	-14.63	0-360	100	V
9	421.029	38.25	Pk	22.3	-29.3	31.25	46.02	-14.77	0-360	199	H
10	420.429	36.71	Pk	22.3	-29.6	29.41	46.02	-16.61	0-360	99	V

Pk - Peak detector

Qp - Quasi-Peak detector

## 11. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

FCC §15.207 (a)

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	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.

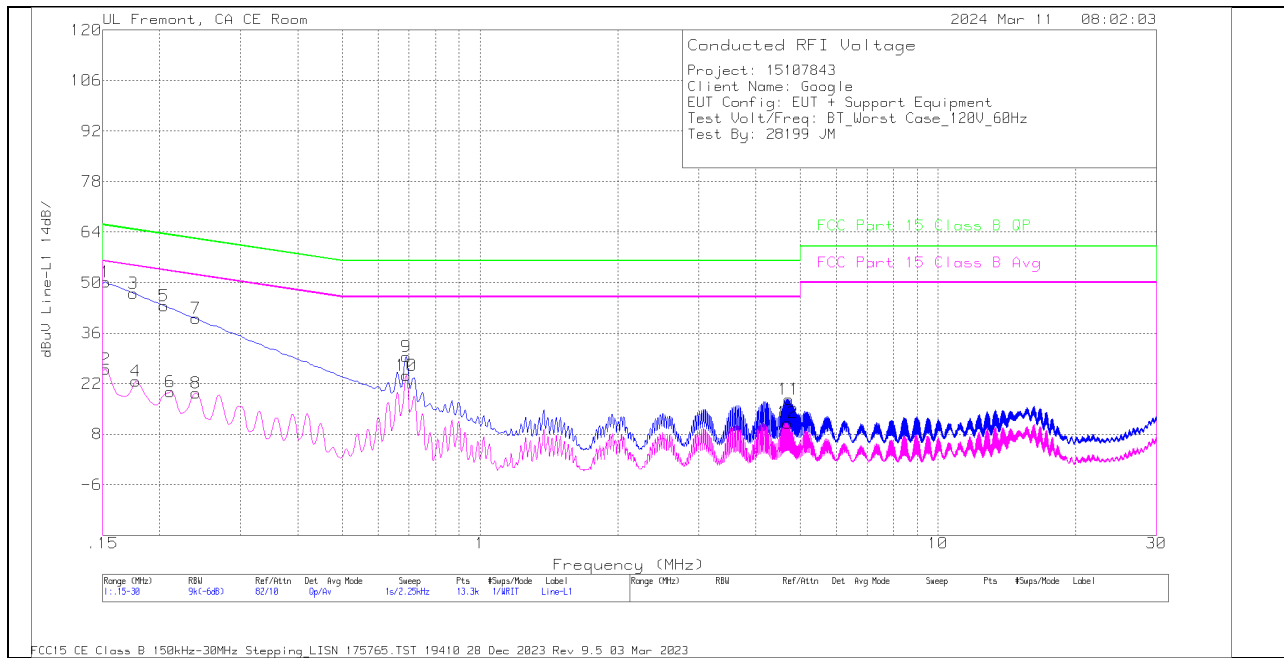
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

### RESULTS

# 11.1. BLUETOOTH BASIC DATA RATE TXBF GFSK MODULATION

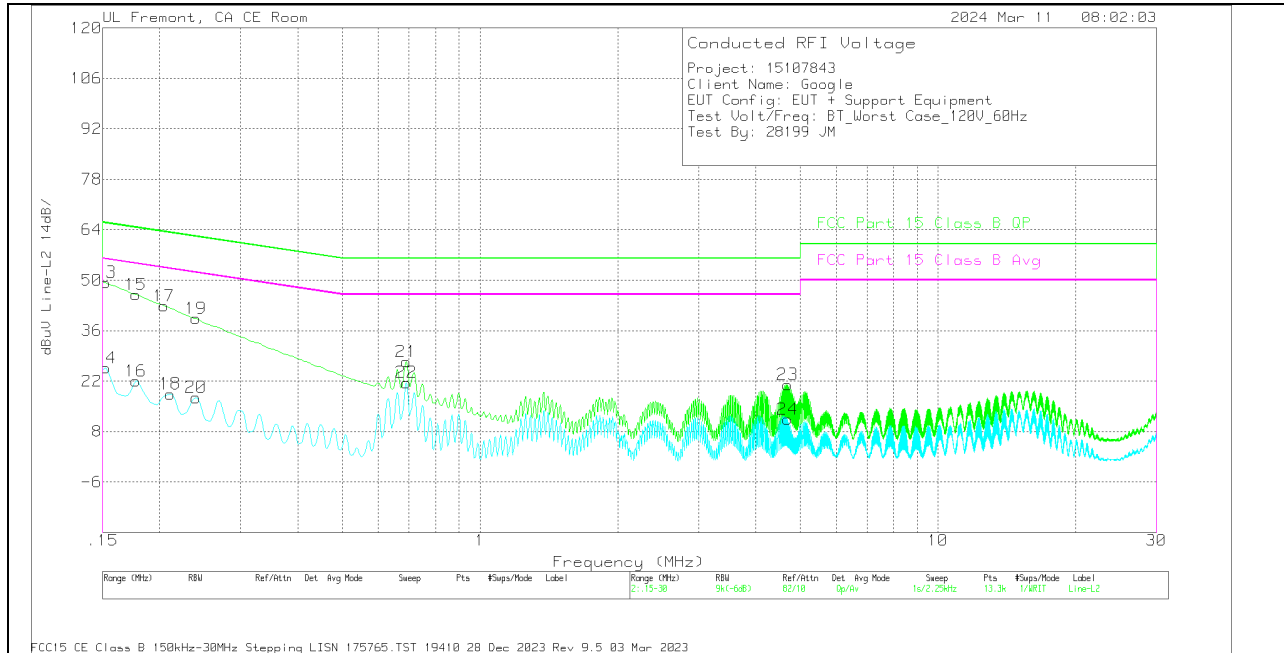
## LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Tms Limiter (dB)	Corrected Reading (dBuV)	FCC Part 15C Limit QP (dBuV)	QP Margin (dB)	FCC Part 15C Avg Limit (dBuV)	Av Margin (dB)
2	.1523	16.56	Av	0	0	9.5	26.06	-	-	55.88	-29.82
4	.177	13.26	Av	0	.1	9.4	22.76	-	-	54.63	-31.87
6	.2108	10.3	Av	0	.1	9.4	19.8	-	-	53.18	-33.38
8	.24	9.99	Av	0	0	9.4	19.39	-	-	52.1	-32.71
10	.69	14.91	Av	0	.1	9.3	24.31	-	-	46	-21.69
12	4.6905	1.65	Av	0	.1	9.4	11.15	-	-	46	-34.85
1	.1523	40.63	Qp	0	0	9.5	50.13	65.88	-15.75	-	-
3	.1748	37.62	Qp	0	0	9.5	47.12	64.73	-17.61	-	-
5	.204	34.09	Qp	0	.1	9.4	43.59	63.45	-19.86	-	-
7	.24	30.62	Qp	0	0	9.4	40.02	62.1	-22.08	-	-
9	.69	20.06	Qp	0	.1	9.3	29.46	56	-26.54	-	-
11	4.7198	8.24	Qp	0	.1	9.4	17.74	56	-38.26	-	-

Qp - Quasi-Peak detector  
Av - Average detection

### LINE 2 RESULTS

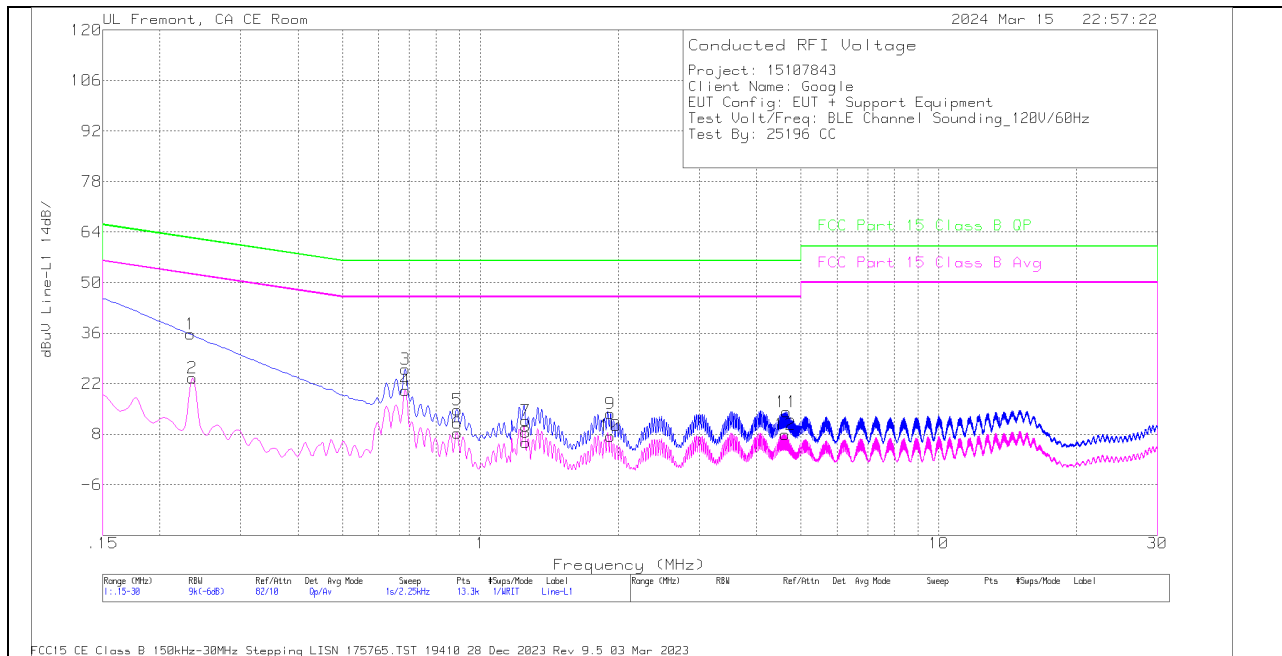


Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trms Limiter (dB)	Corrected Reading (dBuV)	FCC Part 15C Limit QP (dBuV)	QP Margin (dB)	FCC Part 15C Avg Limit (dBuV)	Av Margin (dB)
14	.1523	16.09	Av	0	0	9.5	25.59	-	-	55.88	-30.29
16	.177	12.51	Av	0	.1	9.4	22.01	-	-	54.63	-32.62
18	.2108	8.95	Av	0	.1	9.4	18.45	-	-	53.18	-34.73
20	.24	8.01	Av	0	0	9.4	17.41	-	-	52.1	-34.69
22	.69	12.28	Av	0	0	9.3	21.58	-	-	46	-24.42
24	4.6905	1.84	Av	0	.1	9.4	11.34	-	-	46	-34.66
13	.1523	39.89	Qp	0	0	9.5	49.39	65.88	-16.49	-	-
15	.177	36.45	Qp	0	.1	9.4	45.95	64.63	-18.68	-	-
17	.204	33.44	Qp	0	.1	9.4	42.94	63.45	-20.51	-	-
19	.24	30	Qp	0	0	9.4	39.4	62.1	-22.7	-	-
21	.69	18.13	Qp	0	0	9.3	27.43	56	-28.57	-	-
23	4.6905	11.55	Qp	0	.1	9.4	21.05	56	-34.95	-	-

Qp - Quasi-Peak detector  
 Av - Average detection

# 11.2. BLE ASK, MODE 2 (CHANNEL SOUNDING)

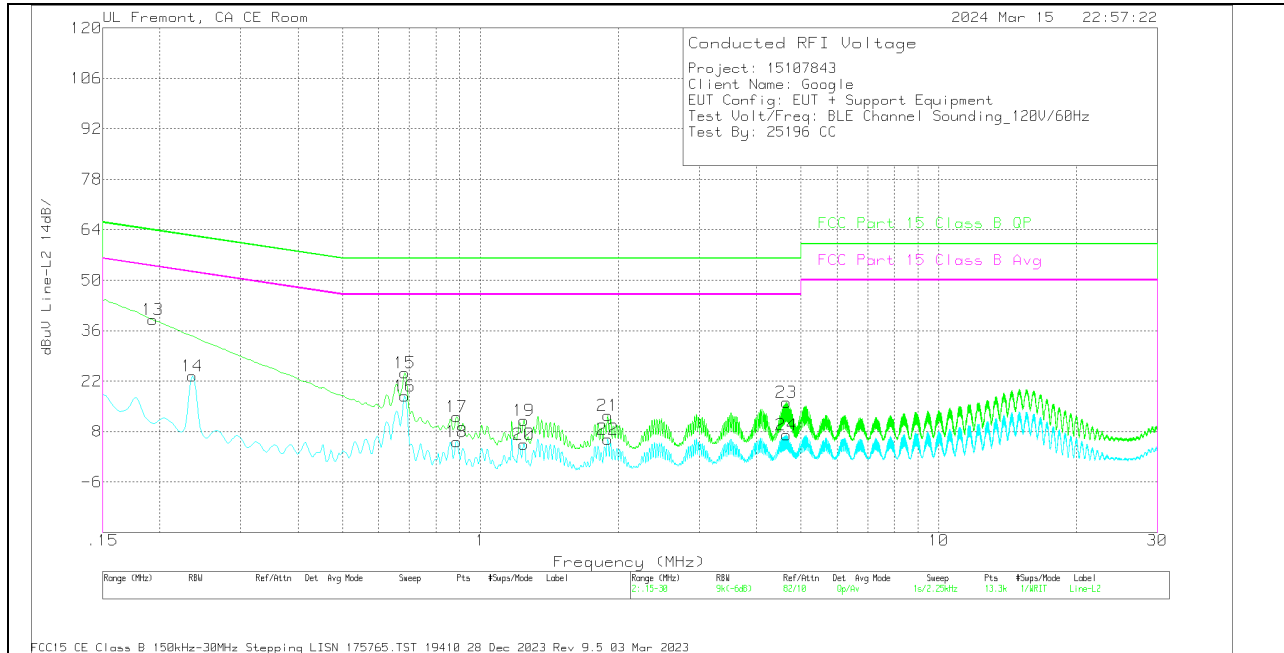
## LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Tms Limiter (dB)	Corrected Reading (dBuV)	FCC Part 15C Limit QP (dBuV)	QP Margin (dB)	FCC Part 15C Avg Limit (dBuV)	Av Margin (dB)
2	.2355	14.22	Av	0	0	9.4	23.62	-	-	52.25	-28.63
4	.6855	10.75	Av	0	.1	9.3	20.15	-	-	46	-25.85
6	.8903	-1.27	Av	0	.1	9.4	8.23	-	-	46	-37.77
8	1.2548	-3.71	Av	0	0	9.4	5.69	-	-	46	-40.31
10	1.923	-1.8	Av	0	0	9.3	7.5	-	-	46	-38.5
12	4.6163	-1.57	Av	0	.1	9.4	7.93	-	-	46	-38.07
1	.2333	26.3	Qp	0	0	9.4	35.7	62.33	-26.63	-	-
3	.6855	16.55	Qp	0	.1	9.3	25.95	56	-30.05	-	-
5	.8903	5.25	Qp	0	.1	9.4	14.75	56	-41.25	-	-
7	1.2548	2.41	Qp	0	0	9.4	11.81	56	-44.19	-	-
9	1.923	4.42	Qp	0	0	9.3	13.72	56	-42.28	-	-
11	4.6478	4.72	Qp	0	.1	9.4	14.22	56	-41.78	-	-

Qp - Quasi-Peak detector  
 Av - Average detection

### LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	Corrected Reading (dBuV)	FCC Part 15C Limit QP (dBuV)	QP Margin (dB)	FCC Part 15C Avg Limit (dBuV)	Av Margin (dB)
14	.2355	14.06	Av	0	0	9.4	23.46	-	-	52.25	-28.79
16	.6833	8.54	Av	0	0	9.3	17.84	-	-	46	-28.16
18	.888	-4.17	Av	0	0	9.4	5.23	-	-	46	-40.77
20	1.2446	-5.05	Av	0	.1	9.4	4.45	-	-	46	-41.55
22	1.8949	-3.49	Av	0	.1	9.3	5.91	-	-	46	-40.09
24	4.6466	-2.61	Av	0	.2	9.4	6.99	-	-	46	-39.01
13	.1928	29.5	Qp	0	.1	9.4	39	63.92	-24.92	-	-
15	.6833	14.94	Qp	0	0	9.3	24.24	56	-31.76	-	-
17	.888	2.64	Qp	0	0	9.4	12.04	56	-43.96	-	-
19	1.2435	1.6	Qp	0	.1	9.4	11.1	56	-44.9	-	-
21	1.896	2.98	Qp	0	.1	9.3	12.38	56	-43.62	-	-
23	4.6455	6.46	Qp	0	.2	9.4	16.06	56	-39.94	-	-

Qp - Quasi-Peak detector  
 Av - Average detection

## 12. SETUP PHOTOS

Please refer to 15107843-EP1 for test setup description and setup photos

**END OF TEST REPORT**