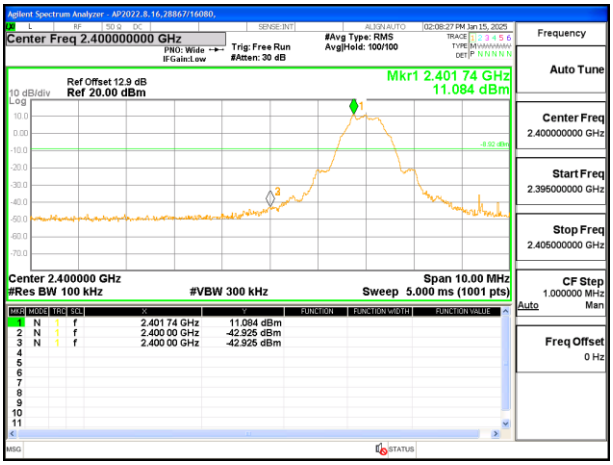
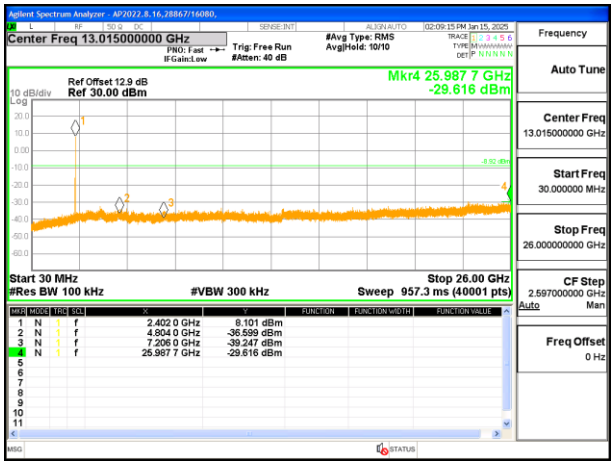
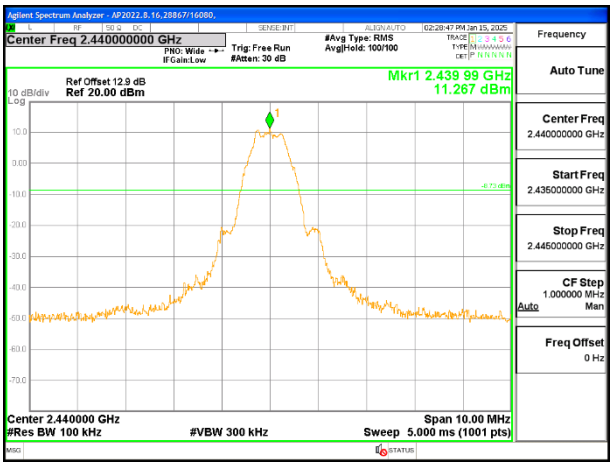
9.7.2. BLE (500kbps)



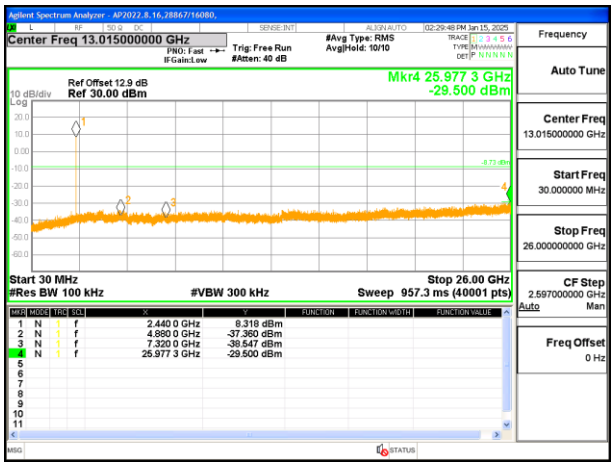
LOW CHANNEL BANDEDGE



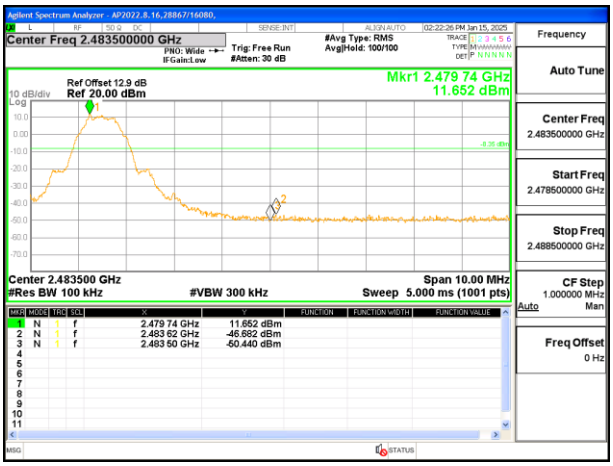
OUT-OF-BAND LOW CHANNEL



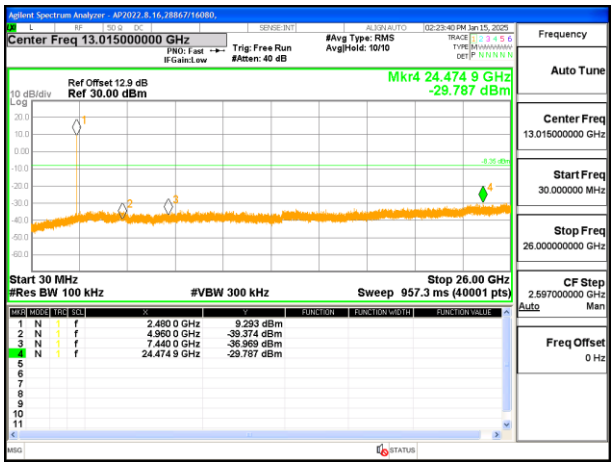
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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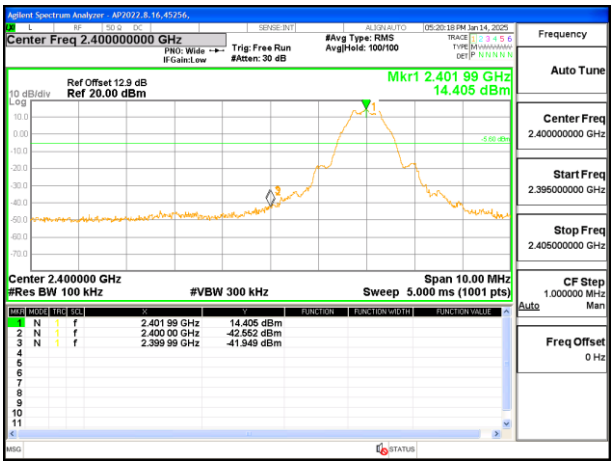
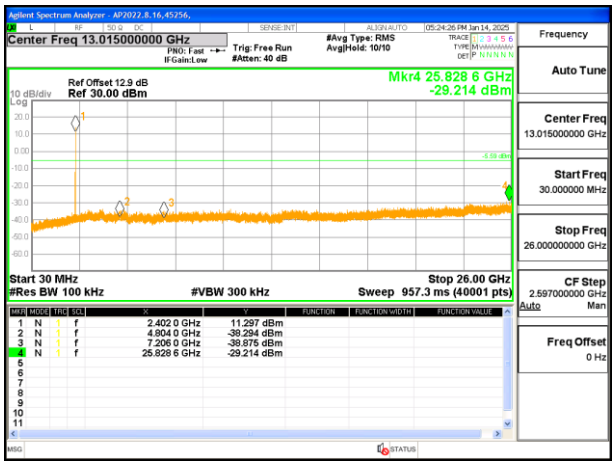
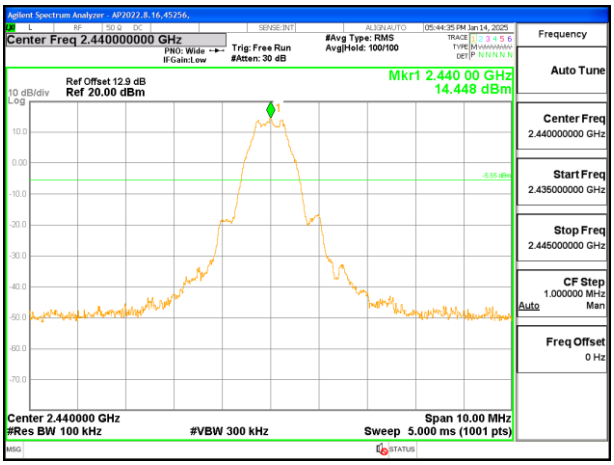
9.7.3. BLE (1Mbps)



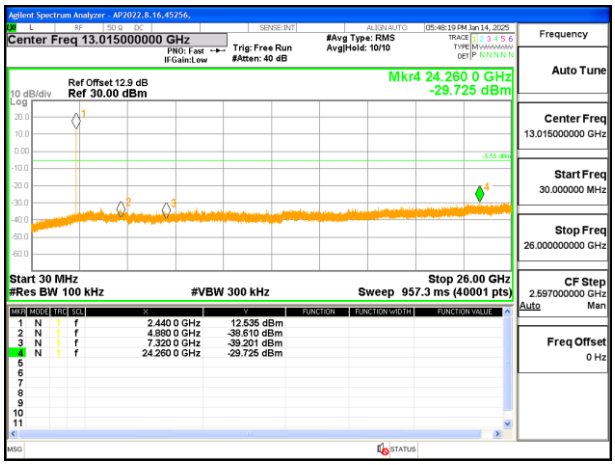
LOW CHANNEL BANDEDGE



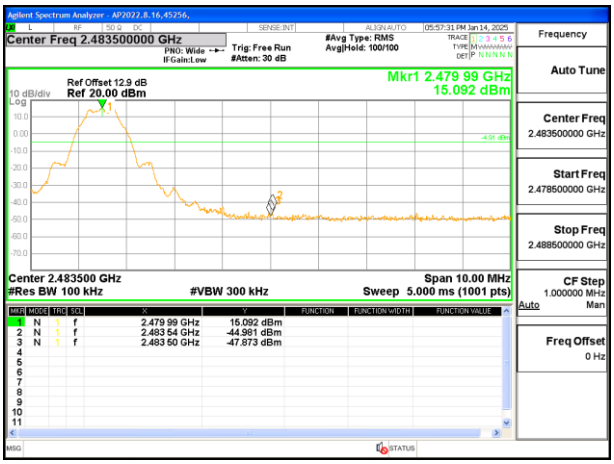
OUT-OF-BAND LOW CHANNEL



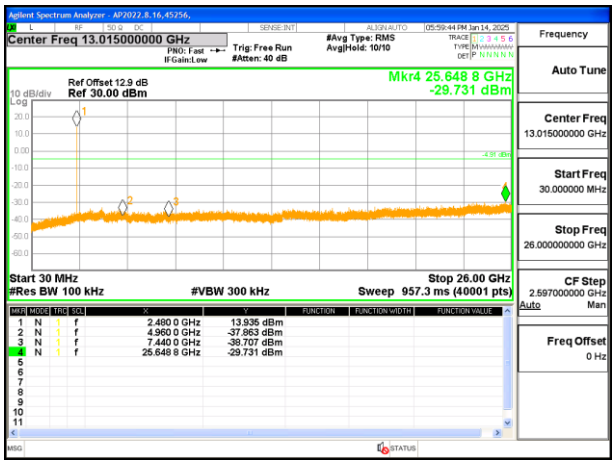
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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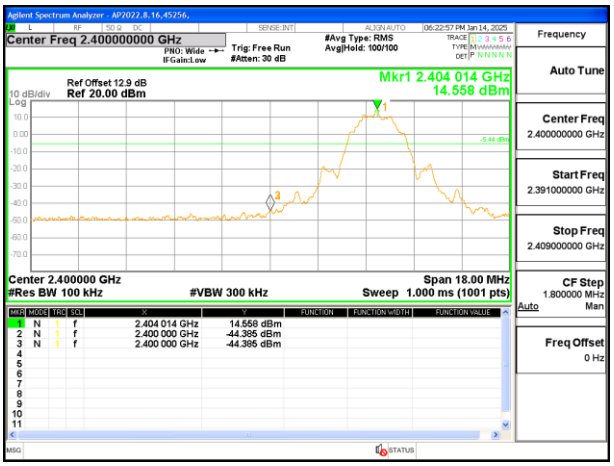
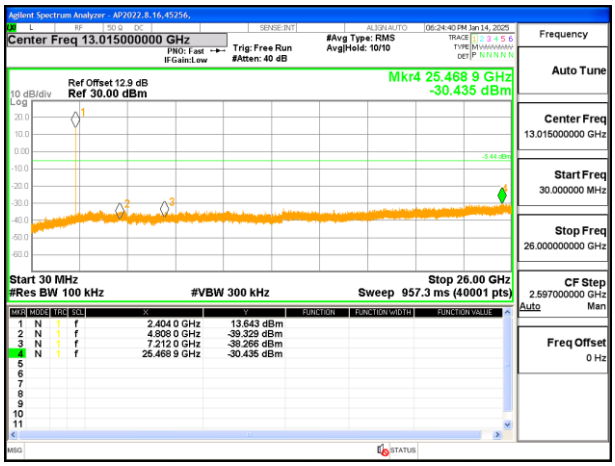
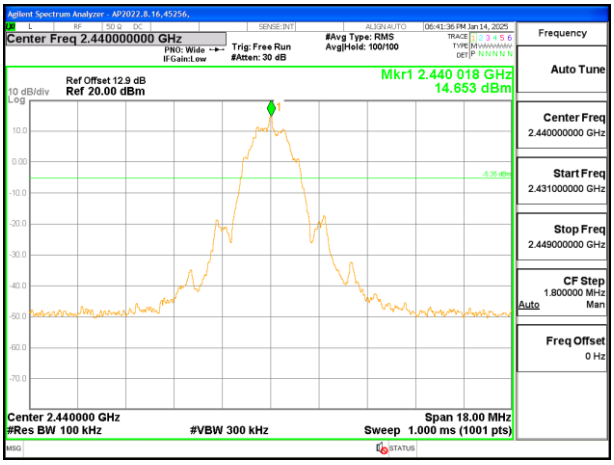
9.7.4. BLE (2Mbps)



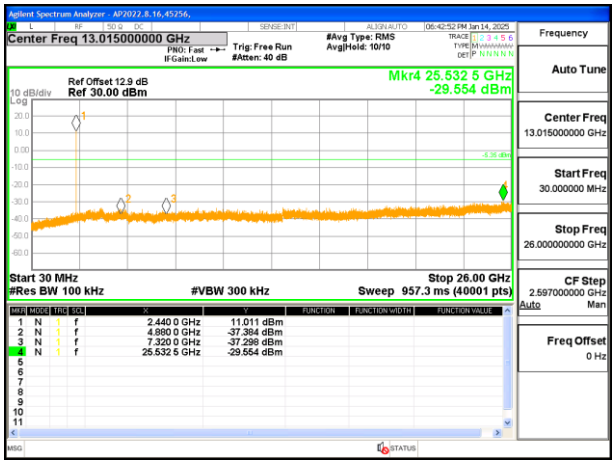
LOW CHANNEL BANDEDGE



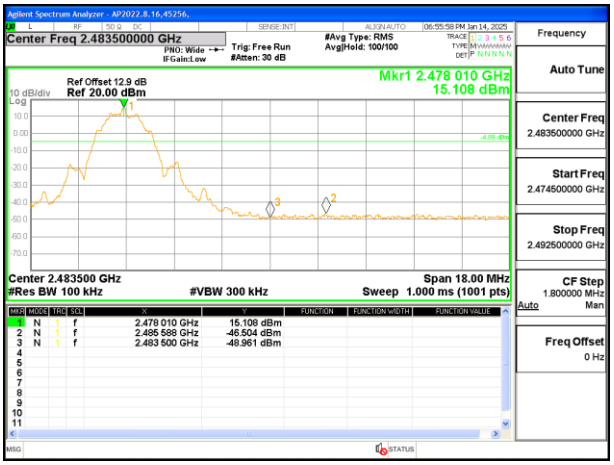
OUT-OF-BAND LOW CHANNEL



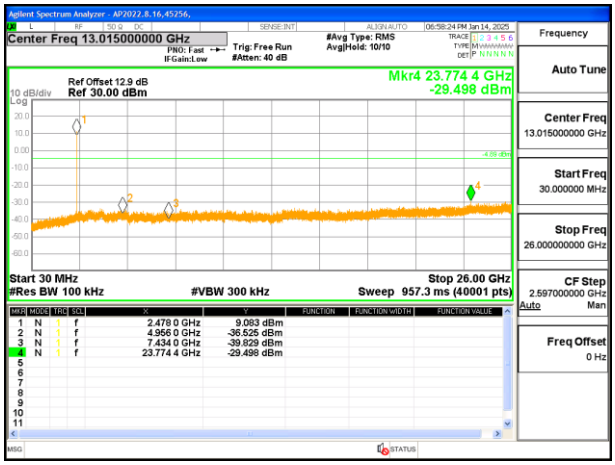
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

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 is as follows:
125kbps: 500Hz
500kbps:1kHz
1Mbps:3kHz
2Mbps: 5kHz

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.

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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.

Based 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.

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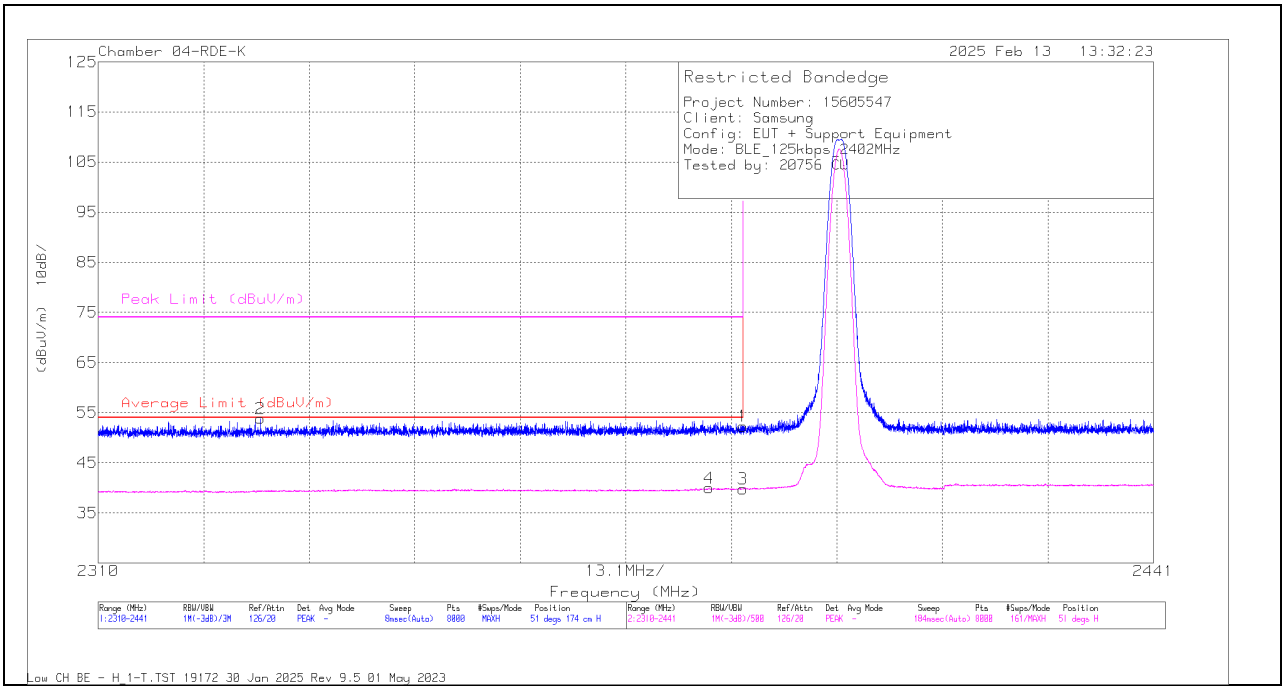
10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. BLE (125kbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	55.17	Pk	32.3	-35.2	52.27	-	-	74	-21.73	51	174	H
2	* 2330.144	57.14	Pk	32.1	-35.4	53.84	-	-	74	-20.16	51	174	H
3	* 2390	42.64	V1TR	32.3	-35.2	39.74	54	-14.26	-	-	51	174	H
4	* 2385.826	42.75	V1TR	32.3	-35.1	39.95	54	-14.05	-	-	51	174	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR : VB=1/Ton, where: Ton is packet duration

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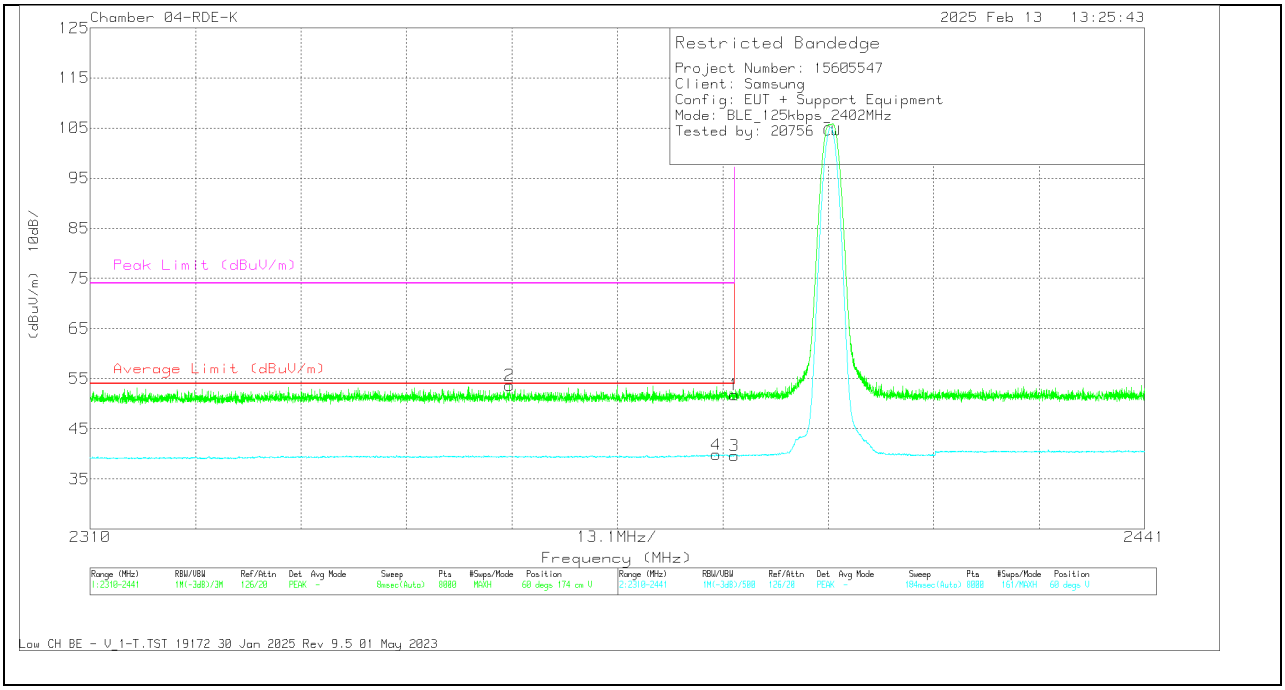
VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2362.079	56.79	Pk	32.2	-35.3	53.69	-	-	74	-20.31	60	174	V
4	* 2387.758	42.63	V1TR	32.3	-35.1	39.83	54	-14.17	-	-	60	174	V
1	* 2390	54.63	Pk	32.3	-35.2	51.73	-	-	74	-22.27	60	174	V
3	* 2390	42.52	V1TR	32.3	-35.2	39.62	54	-14.38	-	-	60	174	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR: VB=1/Ton, where: Ton is packet duration

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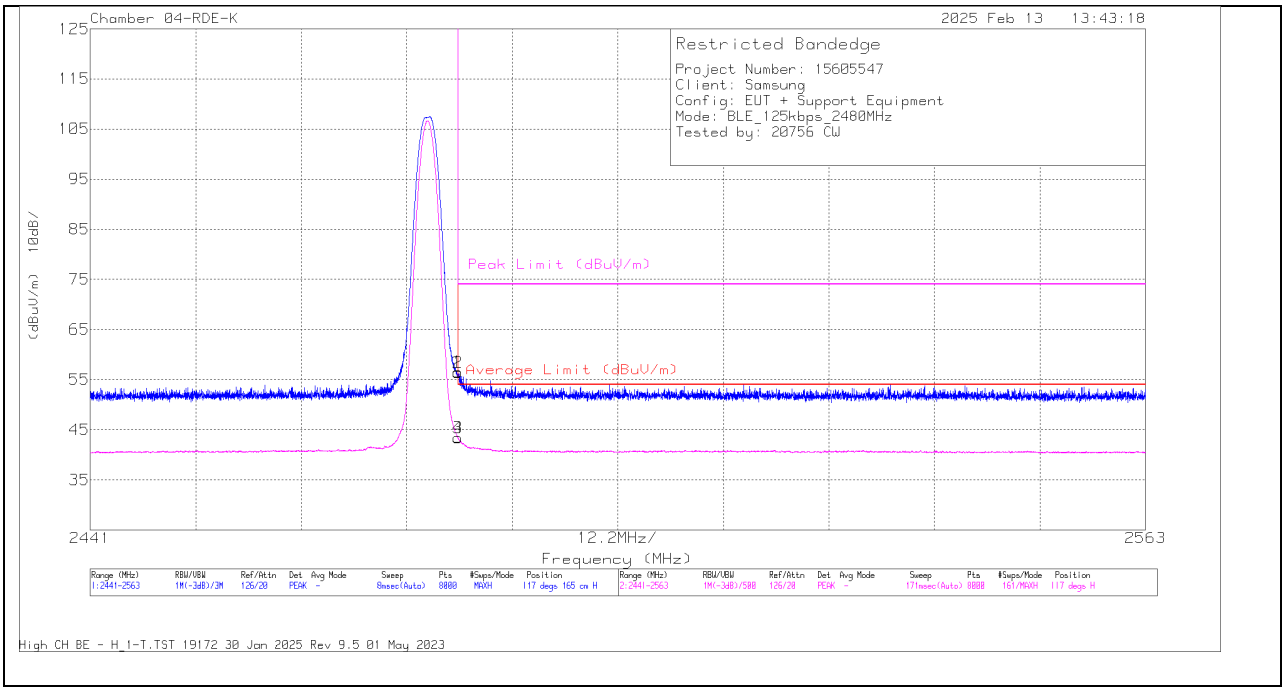
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	58.78	Pk	32.6	-34.8	56.58	-	-	74	-17.42	117	165	H
2	* 2483.507	58.66	Pk	32.6	-34.8	56.46	-	-	74	-17.54	117	165	H
3	* 2483.5	45.65	V1TR	32.6	-34.8	43.45	54	-10.55	-	-	117	165	H
4	* 2483.507	45.57	V1TR	32.6	-34.8	43.37	54	-10.63	-	-	117	165	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR : VB=1/Ton, where: Ton is packet duration

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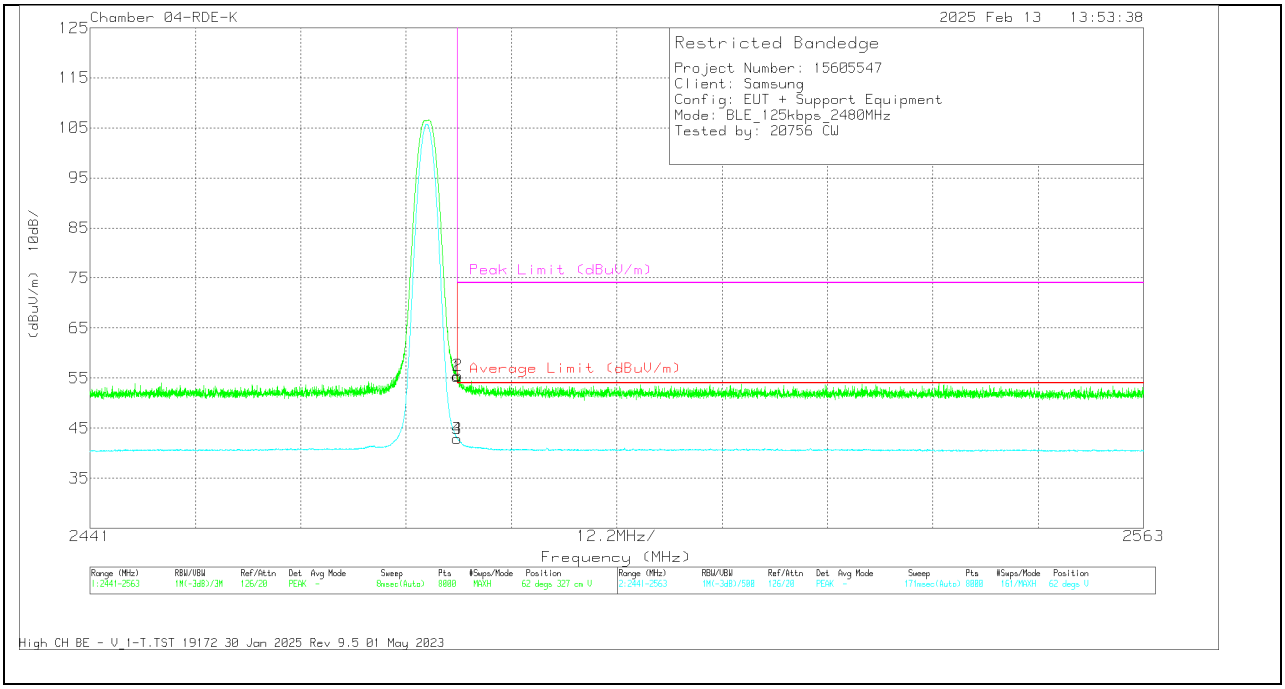
VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	57.48	Pk	32.6	-34.8	55.28	-	-	74	-18.72	62	327	V
3	* 2483.5	45.1	V1TR	32.6	-34.8	42.9	54	-11.1	-	-	62	327	V
4	* 2483.507	45.06	V1TR	32.6	-34.8	42.86	54	-11.14	-	-	62	327	V
2	* 2483.553	57.73	Pk	32.6	-34.8	55.53	-	-	74	-18.47	62	327	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR: VB=1/Ton, where: Ton is packet duration

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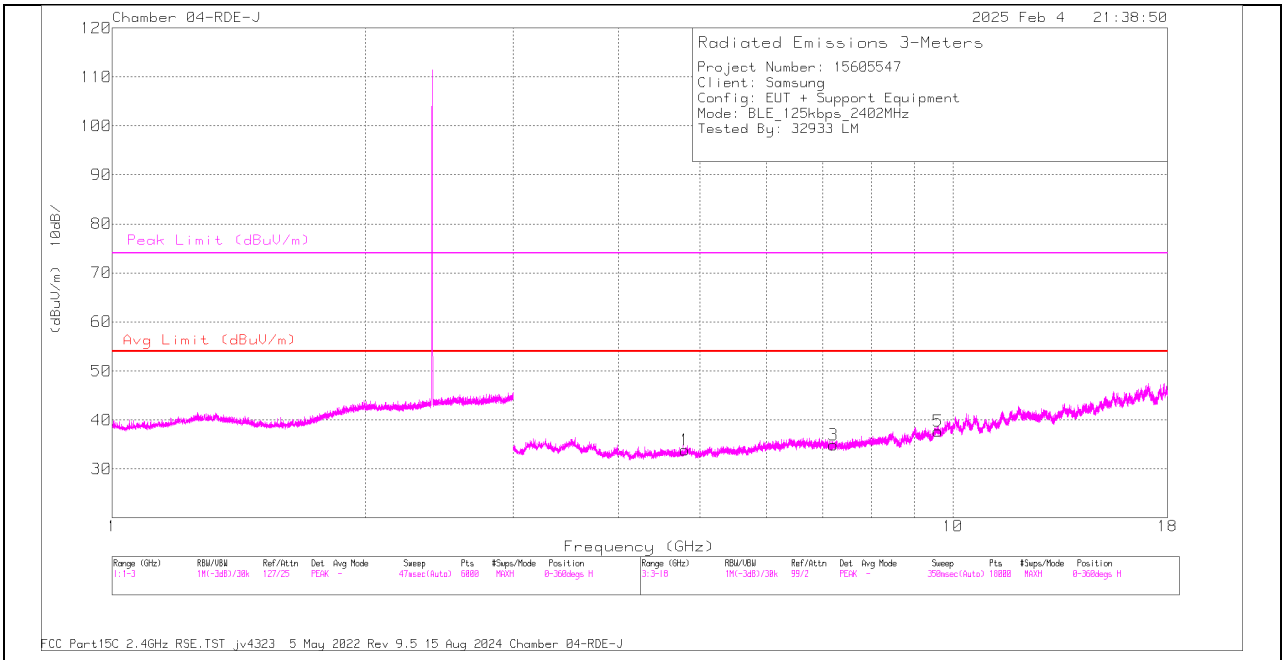
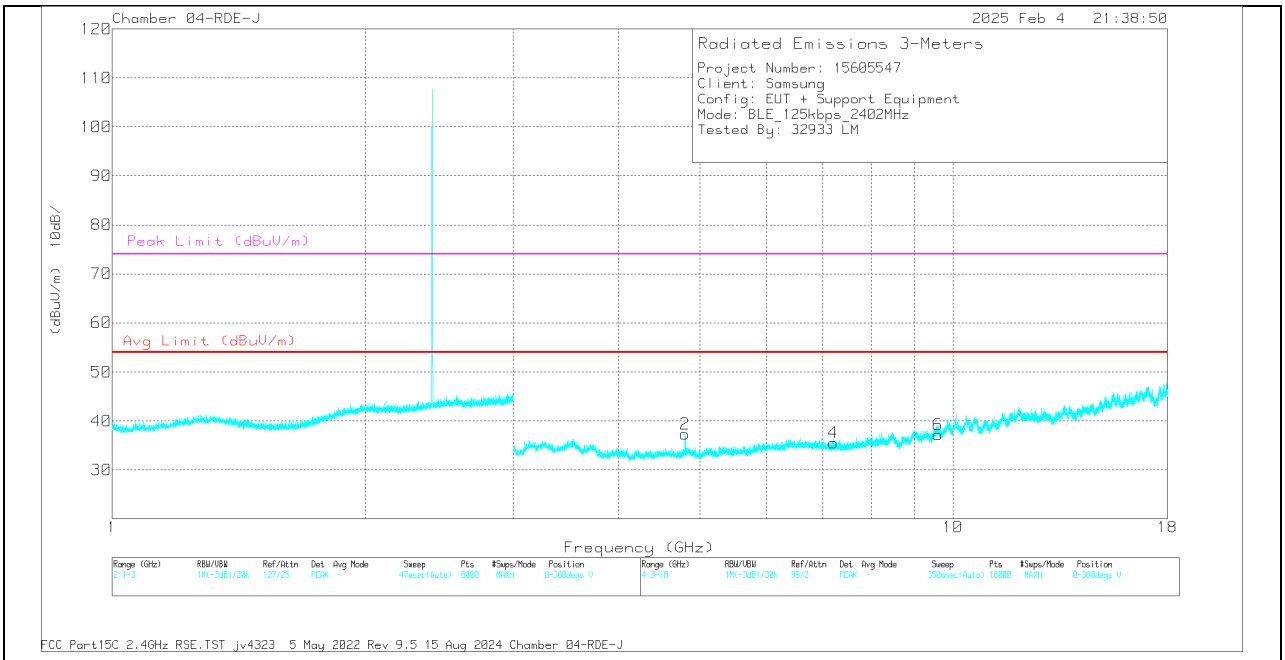
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.804947	54.46	PK2	34.3	-45.1	43.66	-	-	74	-30.34	359	198	H
2	* 4.804272	56.44	PK2	34.3	-45.1	45.64	-	-	74	-28.36	199	101	V
3	7.203774	51.85	PK2	35.5	-42.2	45.15	-	-	-	-	38	196	H
4	7.205441	53.82	PK2	35.5	-42.2	47.12	-	-	-	-	284	399	V
5	9.613565	50.94	PK2	37	-40.4	47.54	-	-	-	-	151	101	H
6	9.622247	51.31	PK2	37	-40.3	48.01	-	-	-	-	183	244	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak

NOTE: According to ANSI C63.10 Section 6.6.4.3 NOTE 1— Where limits are specified by regulations for both average and peak detection, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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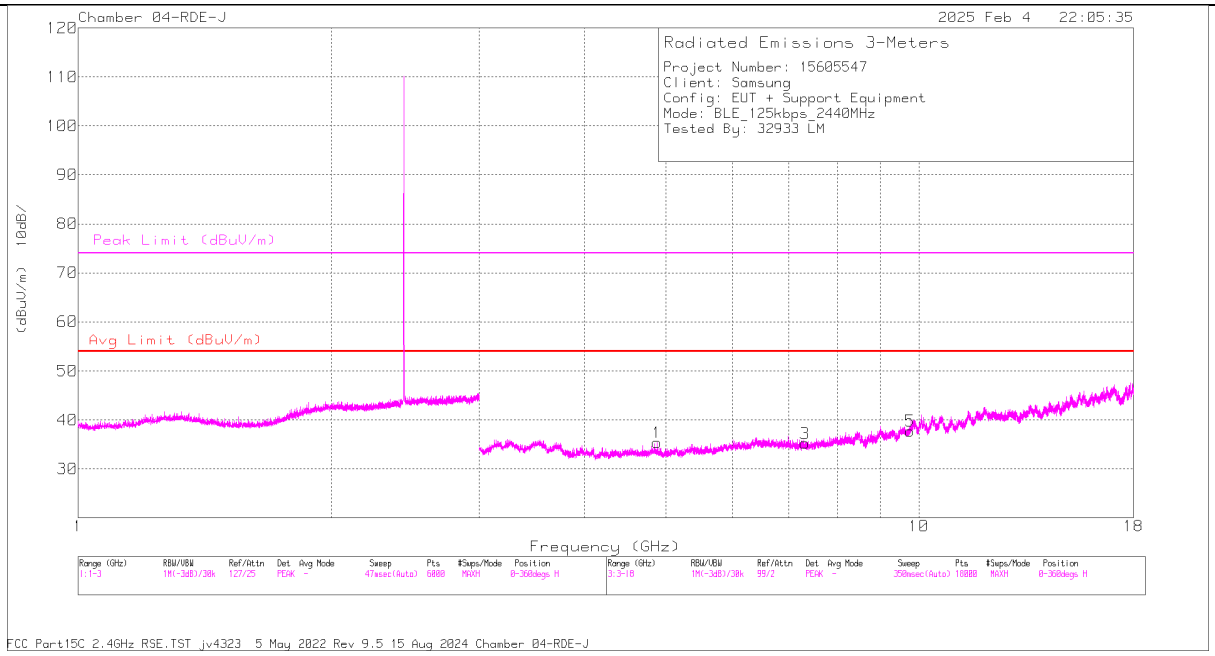
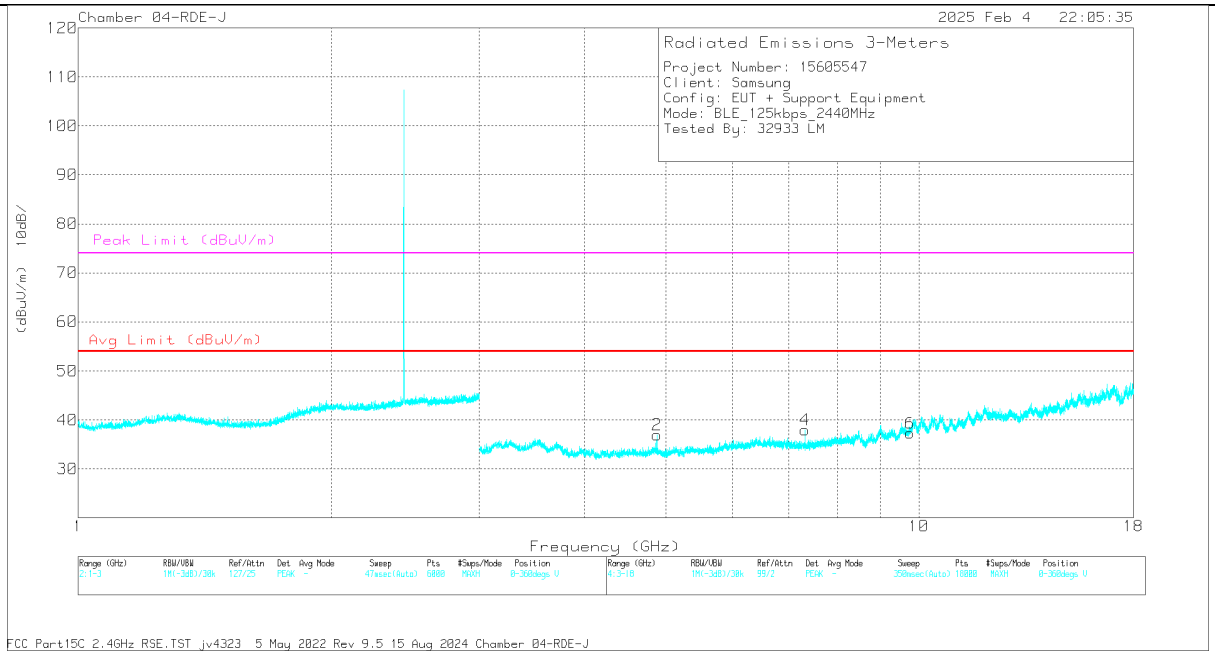
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.87954	54.73	PK2	34.3	-44.6	44.43	-	-	74	-29.57	189	298	H
2	* 4.880702	56.92	PK2	34.3	-44.6	46.62	-	-	74	-27.38	257	348	V
3	* 7.312657	52.39	PK2	35.5	-42.2	45.69	-	-	74	-28.31	19	104	H
4	* 7.319512	54.56	PK2	35.5	-42.2	47.86	-	-	74	-26.14	267	115	V
5	9.744844	52.89	PK2	37.2	-41.1	48.99	-	-	-	-	191	101	H
6	9.778202	52.06	PK2	37.3	-40.7	48.66	-	-	-	-	243	388	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak

NOTE: According to ANSI C63.10 Section 6.6.4.3 NOTE 1— Where limits are specified by regulations for both average and peak detection, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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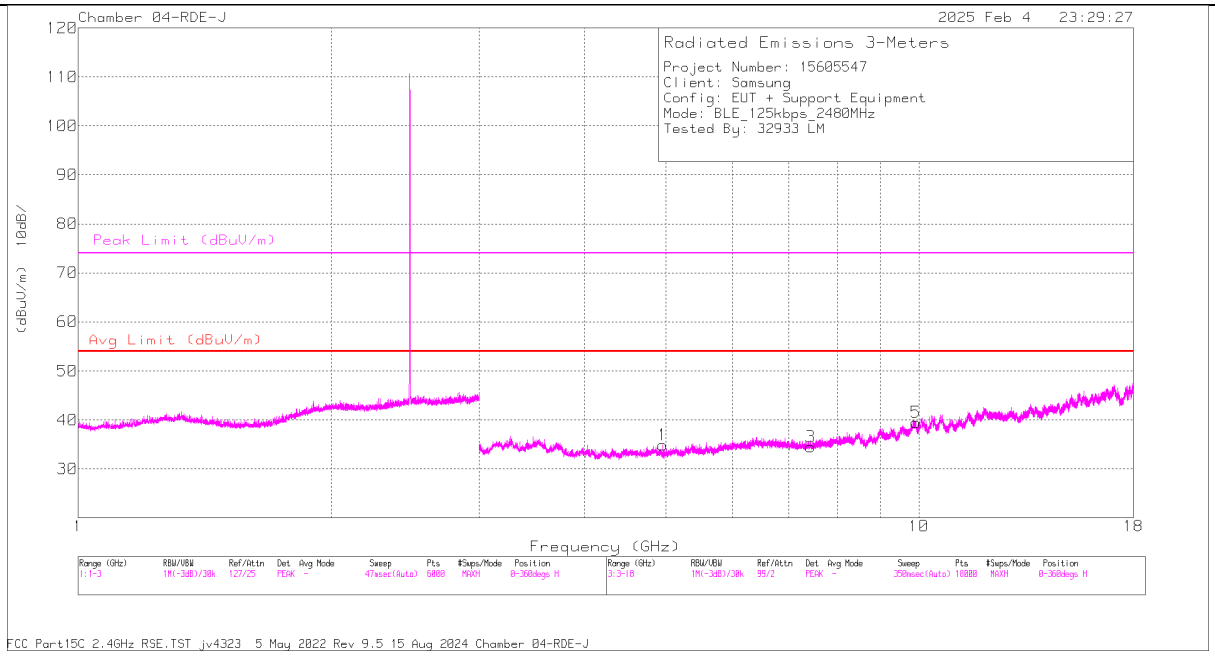
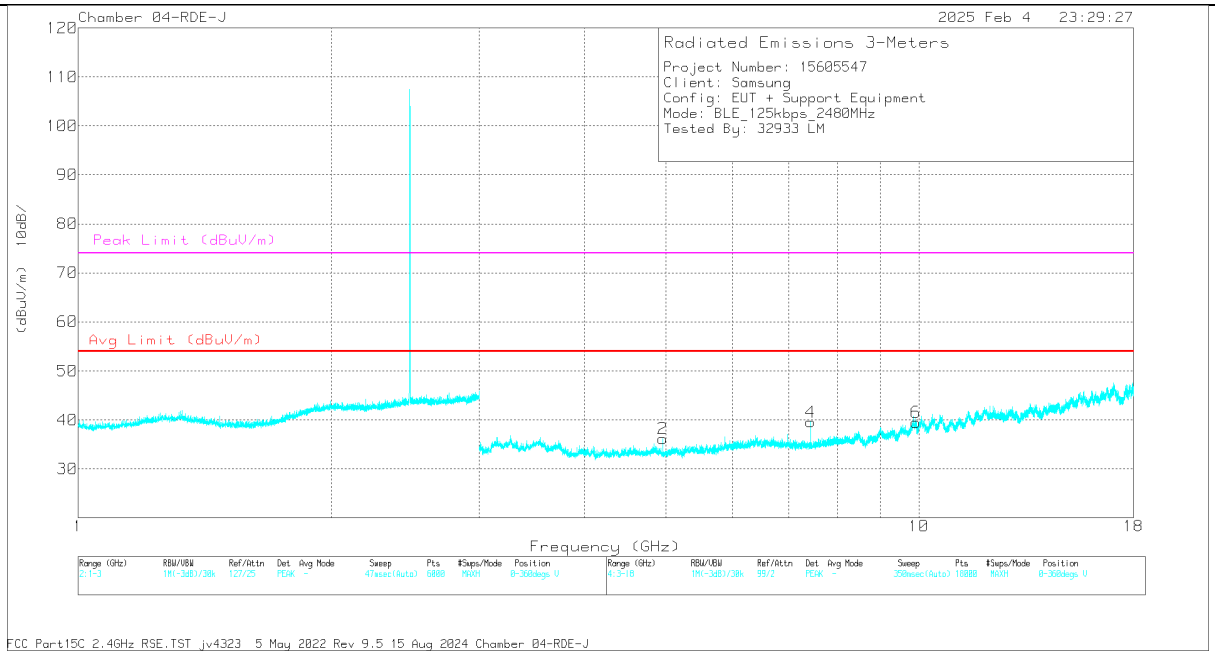
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.960593	55.6	PK2	34.2	-44.7	45.1	-	-	74	-28.9	287	366	H
2	* 4.960569	56.11	PK2	34.2	-44.7	45.61	-	-	74	-28.39	283	175	V
3	* 7.440595	51.71	PK2	35.6	-42.1	45.21	-	-	74	-28.79	119	110	H
4	* 7.440821	55.04	PK2	35.6	-42.1	48.54	-	-	74	-25.46	269	118	V
5	9.909582	51.3	PK2	37.5	-39.4	49.4	-	-	-	-	130	215	H
6	9.915831	51.15	PK2	37.5	-39.5	49.15	-	-	-	-	162	115	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak

NOTE: According to ANSI C63.10 Section 6.6.4.3 NOTE 1— Where limits are specified by regulations for both average and peak detection, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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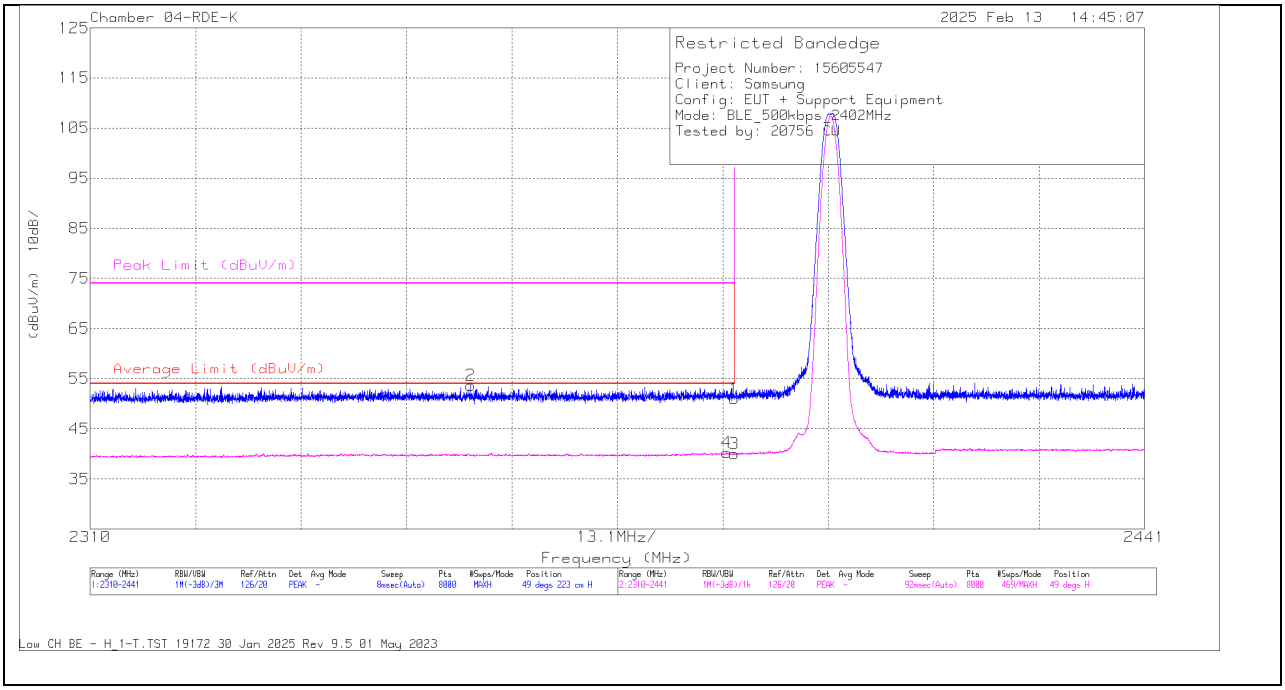
10.1.2. BLE (500kbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	53.91	Pk	32.3	-35.2	51.01	-	-	74	-22.99	49	223	H
2	* 2357.28	56.73	Pk	32.2	-35.3	53.63	-	-	74	-20.37	49	223	H
3	* 2390	42.91	V1TR	32.3	-35.2	40.01	54	-13.99	-	-	49	223	H
4	* 2389.068	43.15	V1TR	32.3	-35.2	40.25	54	-13.75	-	-	49	223	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR: VB=1/Ton, where: Ton is packet duration

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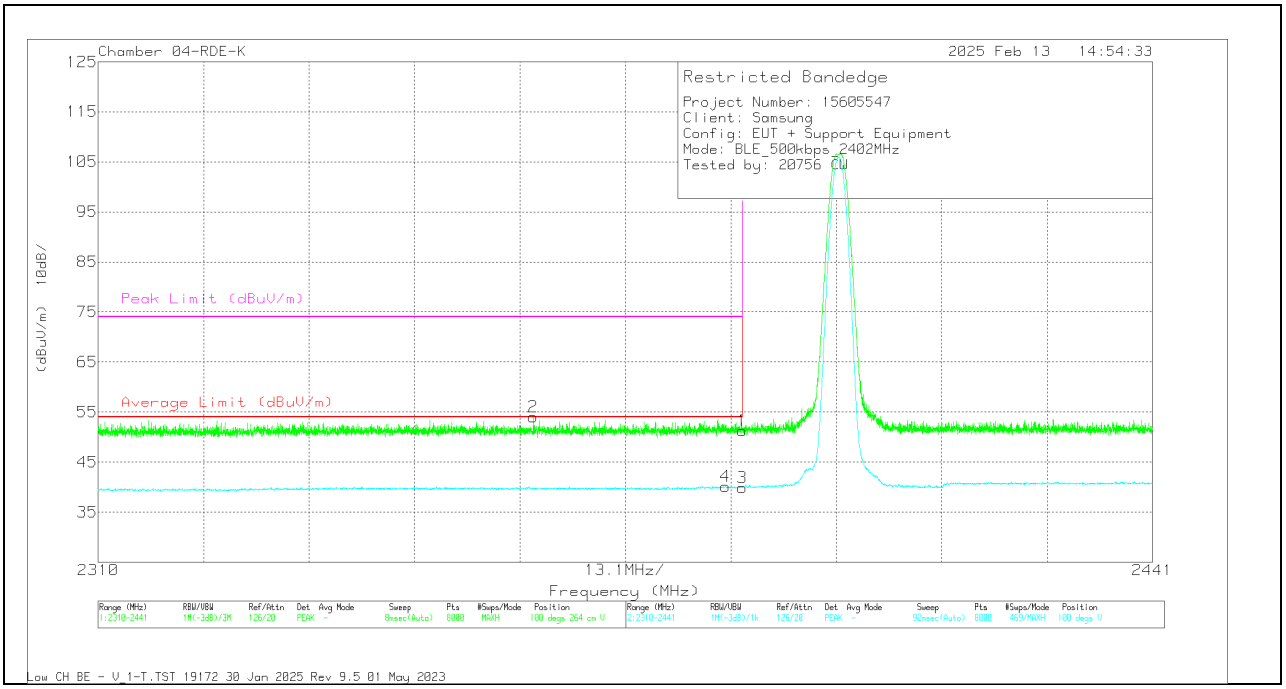
VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	54.21	Pk	32.3	-35.2	51.31	-	-	74	-22.69	100	264	V
2	* 2364.044	57.11	Pk	32.2	-35.3	54.01	-	-	74	-19.99	100	264	V
3	* 2390	42.79	V1TR	32.3	-35.2	39.89	54	-14.11	-	-	100	264	V
4	* 2387.905	42.93	V1TR	32.3	-35.1	40.13	54	-13.87	-	-	100	264	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR: VB=1/Ton, where: Ton is packet duration

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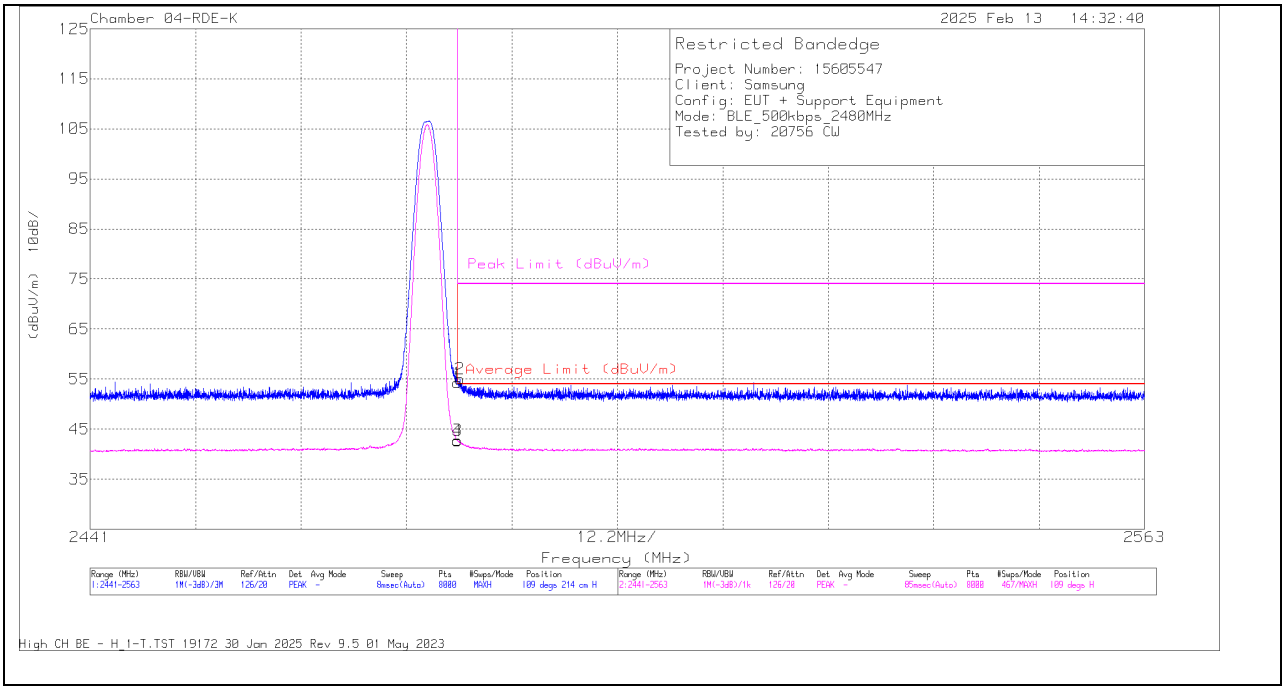
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	56.42	Pk	32.6	-34.8	54.22	-	-	74	-19.78	109	214	H
2	* 2483.812	57.28	Pk	32.6	-34.8	55.08	-	-	74	-18.92	109	214	H
3	* 2483.5	44.97	V1TR	32.6	-34.8	42.77	54	-11.23	-	-	109	214	H
4	* 2483.507	44.89	V1TR	32.6	-34.8	42.69	54	-11.31	-	-	109	214	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR - : VB=1/Ton, where: Ton is packet duration

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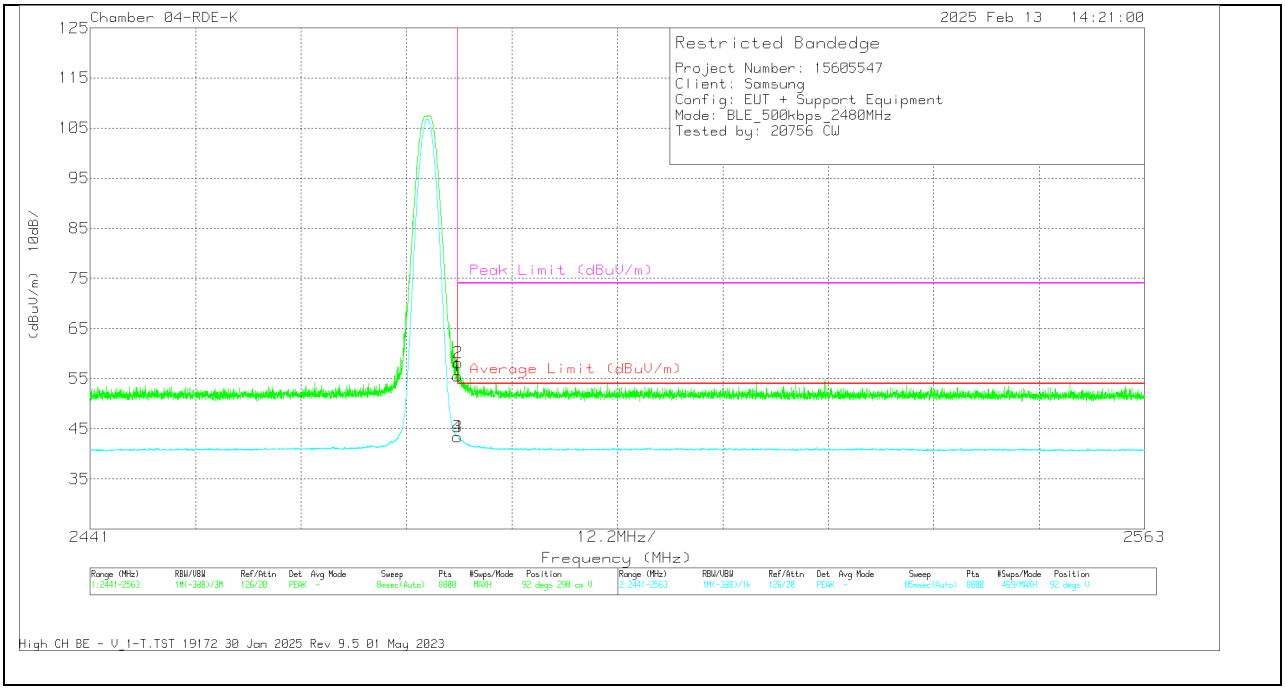
VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	57.73	Pk	32.6	-34.8	55.53	-	-	74	-18.47	92	298	V
2	* 2483.553	60.36	Pk	32.6	-34.8	58.16	-	-	74	-15.84	92	298	V
3	* 2483.5	45.58	V1TR	32.6	-34.8	43.38	54	-10.62	-	-	92	298	V
4	* 2483.523	45.59	V1TR	32.6	-34.8	43.39	54	-10.61	-	-	92	298	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR : VB=1/Ton, where: Ton is packet duration

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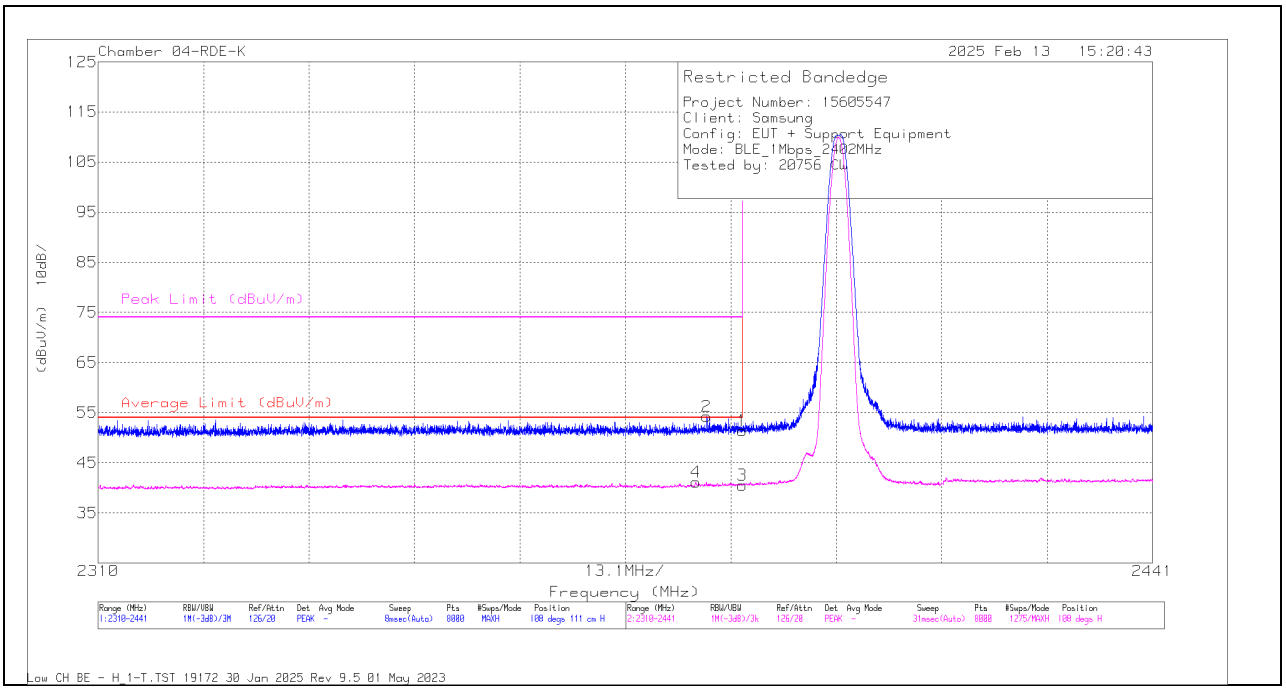
10.1.3. BLE (1Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	54.28	Pk	32.3	-35.2	51.38	-	-	74	-22.62	108	111	H
2	* 2385.629	57.03	Pk	32.3	-35.1	54.23	-	-	74	-19.77	108	111	H
3	* 2390	43.38	V1TR	32.3	-35.2	40.48	54	-13.52	-	-	108	110	H
4	* 2384.253	44.09	V1TR	32.2	-35.1	41.19	54	-12.81	-	-	108	110	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR: VB=1/Ton, where: Ton is packet duration

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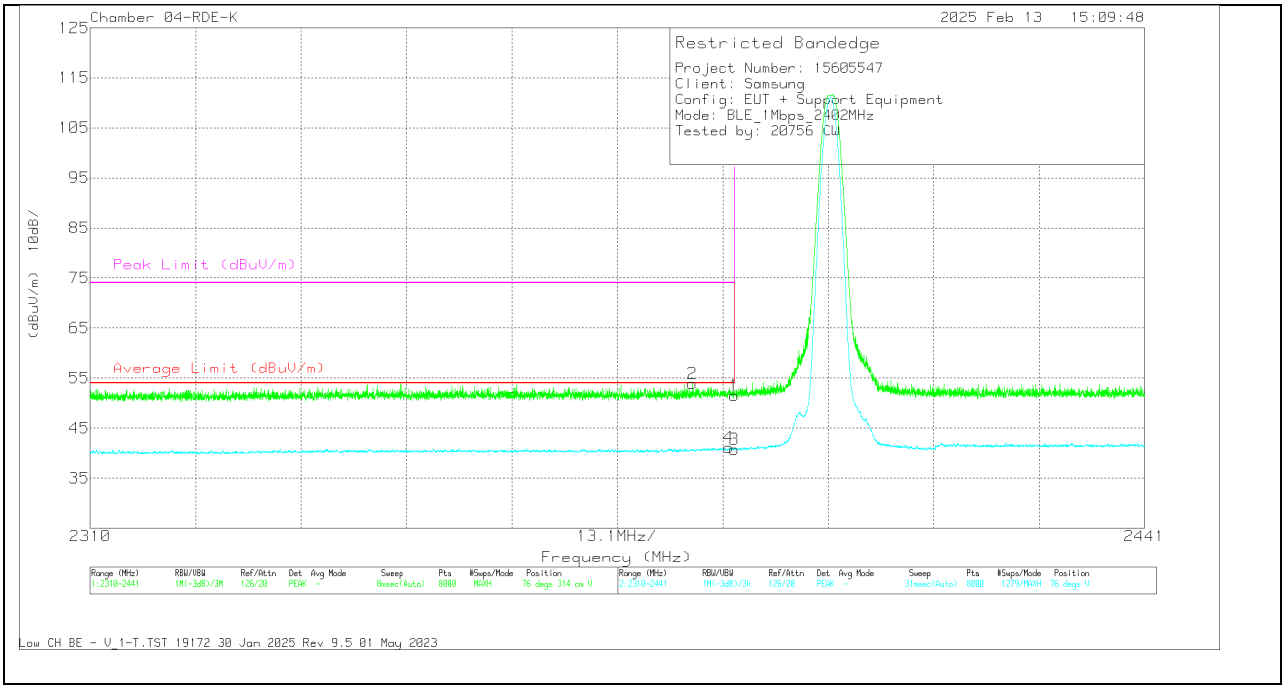
VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	54.47	Pk	32.3	-35.2	51.57	-	-	74	-22.43	76	314	V
2	* 2384.827	56.74	Pk	32.3	-35.1	53.94	-	-	74	-20.06	76	314	V
3	* 2390	43.72	V1TR	32.3	-35.2	40.82	54	-13.18	-	-	76	314	V
4	* 2389.347	44.08	V1TR	32.3	-35.2	41.18	54	-12.82	-	-	76	314	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR: VB=1/Ton, where: Ton is packet duration

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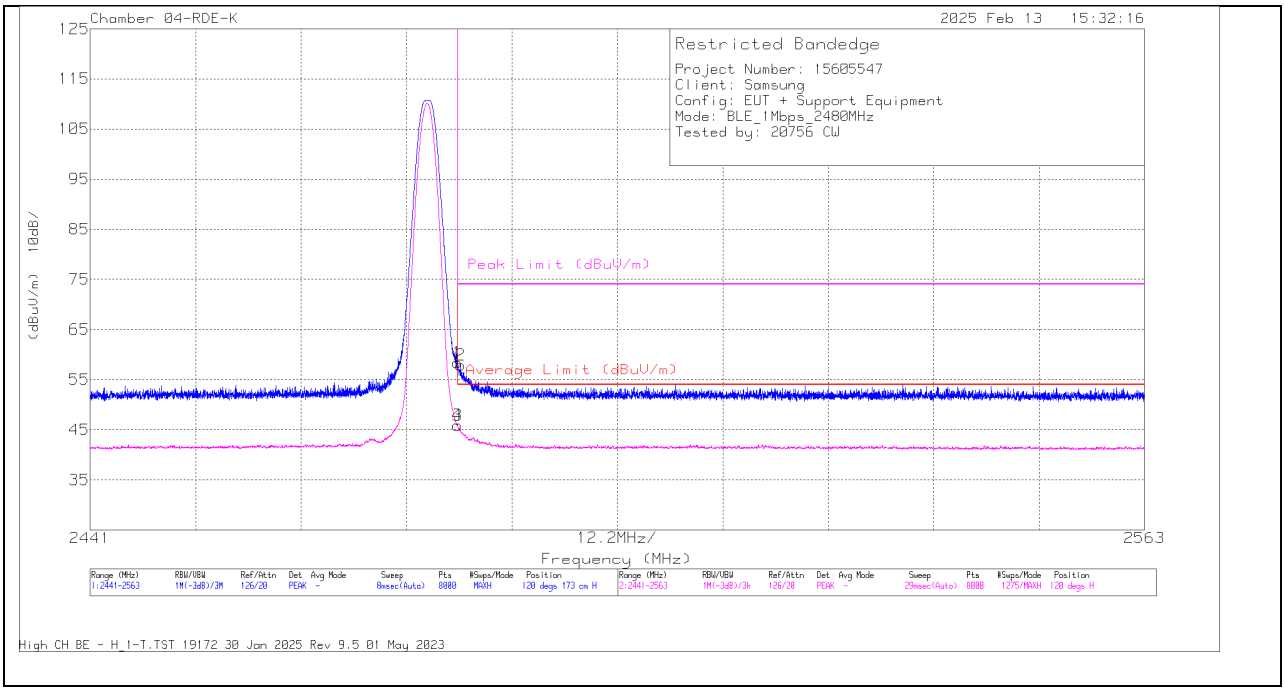
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	60.58	Pk	32.6	-34.8	58.38	-	-	74	-15.62	120	173	H
2	* 2483.843	60.08	Pk	32.6	-34.8	57.88	-	-	74	-16.12	120	173	H
3	* 2483.5	48.15	V1TR	32.6	-34.8	45.95	54	-8.05	-	-	120	173	H
4	* 2483.507	48.13	V1TR	32.6	-34.8	45.93	54	-8.07	-	-	120	173	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR : VB=1/Ton, where: Ton is packet duration

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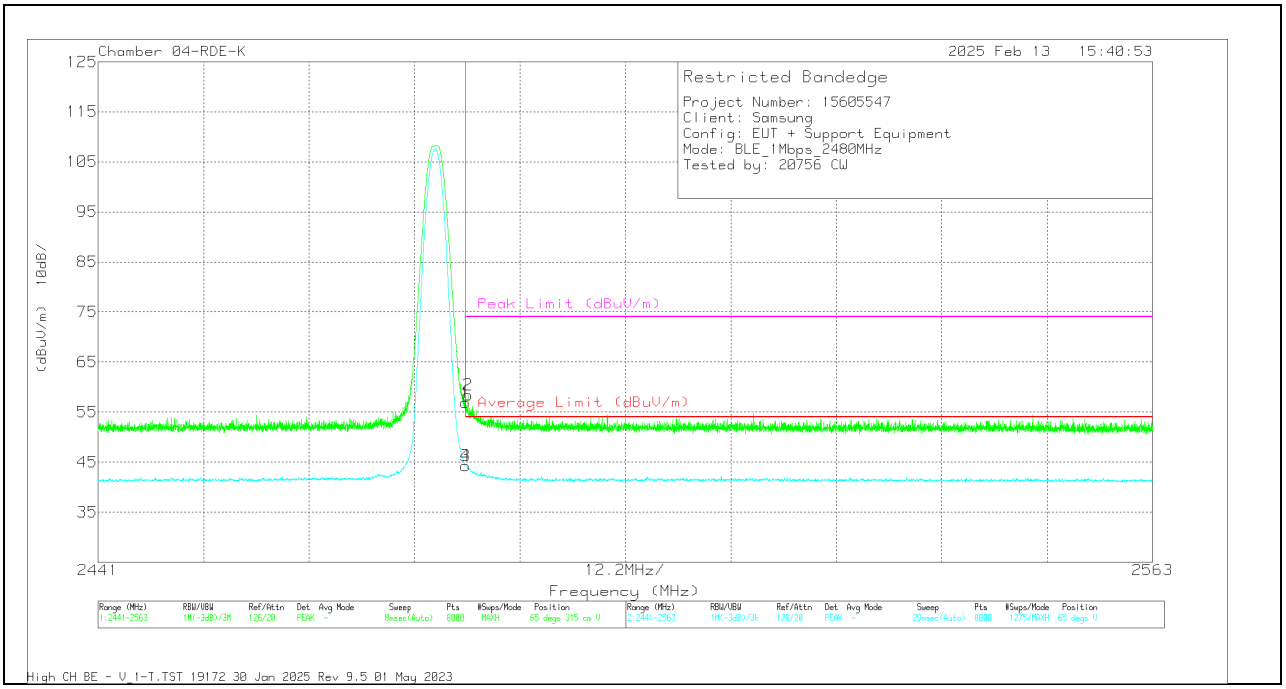
VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	59.13	Pk	32.6	-34.8	56.93	-	-	74	-17.07	65	315	V
2	* 2483.797	60.58	Pk	32.6	-34.8	58.38	-	-	74	-15.62	65	315	V
3	* 2483.5	46.45	V1TR	32.6	-34.8	44.25	54	-9.75	-	-	65	315	V
4	* 2483.523	46.52	V1TR	32.6	-34.8	44.32	54	-9.68	-	-	65	315	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR: VB=1/Ton, where: Ton is packet duration

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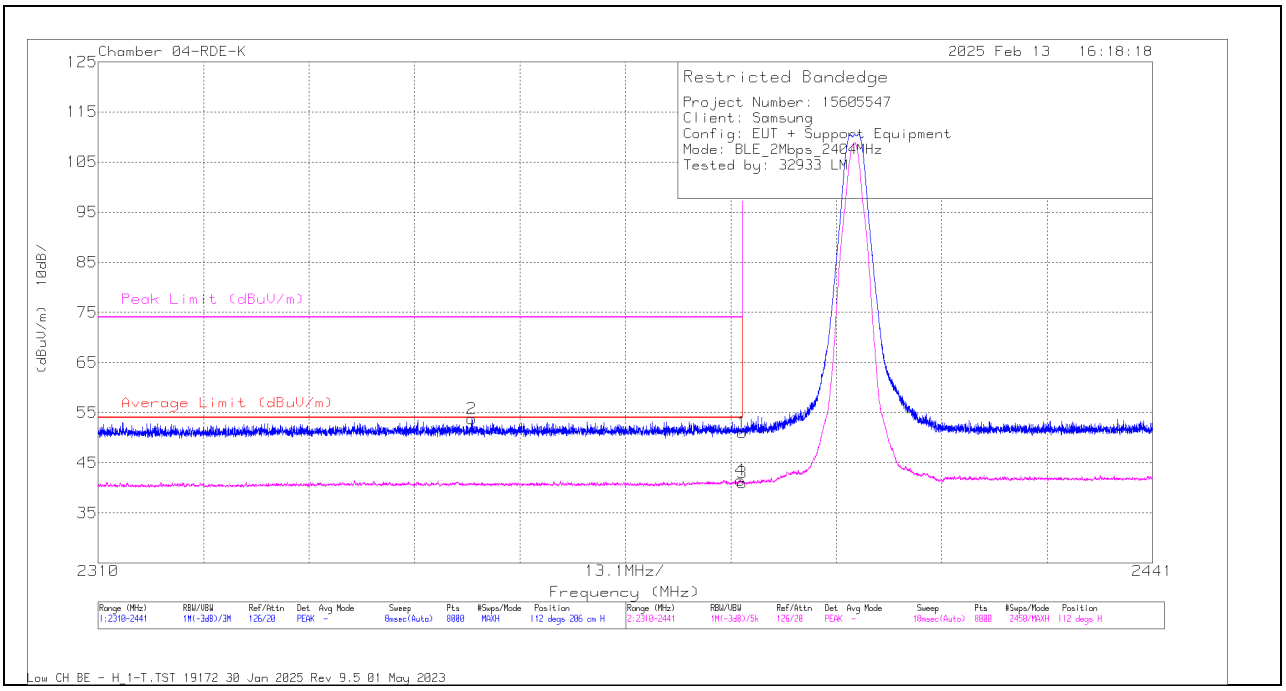
10.1.4. BLE (2Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	53.95	Pk	32.3	-35.2	51.05	-	-	74	-22.95	112	206	H
2	* 2356.462	56.75	Pk	32.2	-35.2	53.75	-	-	74	-20.25	112	206	H
3	* 2390	43.91	V1TR	32.3	-35.2	41.01	54	-12.99	-	-	112	206	H
4	* 2389.838	44.44	V1TR	32.3	-35.2	41.54	54	-12.46	-	-	112	206	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR - U-NII: VB=1/Ton, RMS Average where: Ton is packet duration

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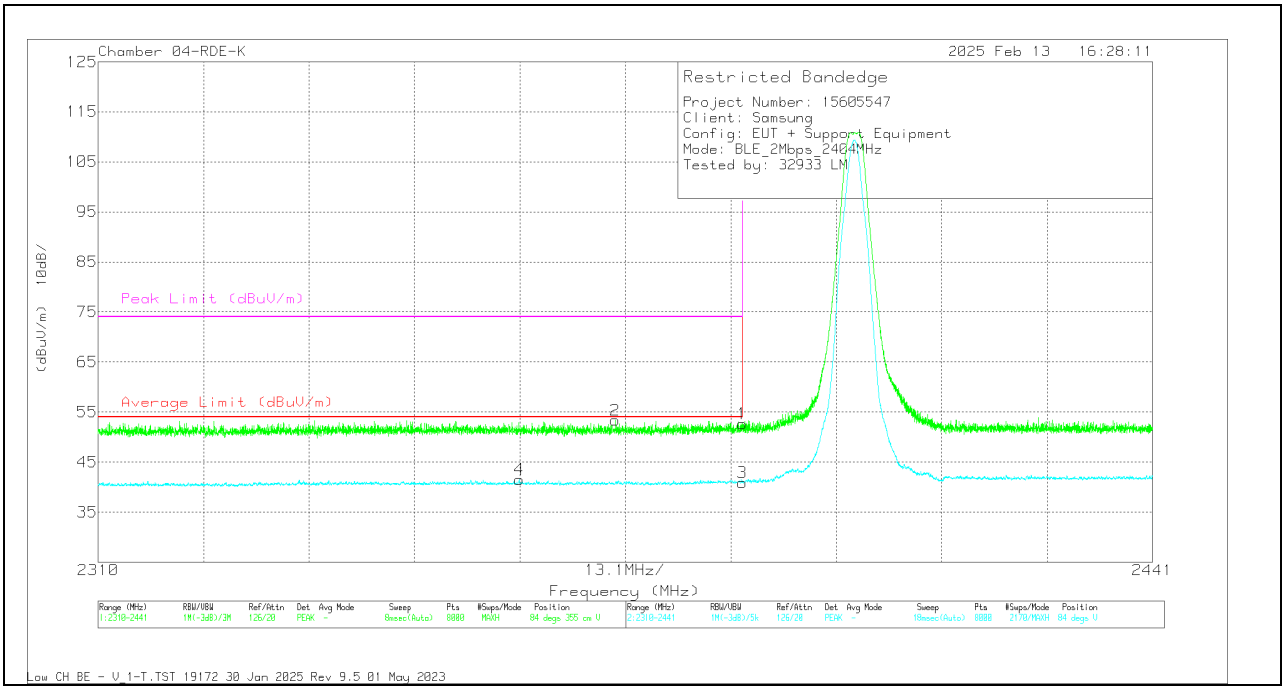
VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2362.325	44.6	V1TR	32.2	-35.3	41.5	54	-12.5	-	-	84	355	V
2	* 2374.263	56.35	Pk	32.2	-35.2	53.35	-	-	74	-20.65	84	355	V
1	* 2390	55.59	Pk	32.3	-35.2	52.69	-	-	74	-21.31	84	355	V
3	* 2390	43.82	V1TR	32.3	-35.2	40.92	54	-13.08	-	-	84	355	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR - U-NII: VB=1/Ton, RMS Average where: Ton is packet duration

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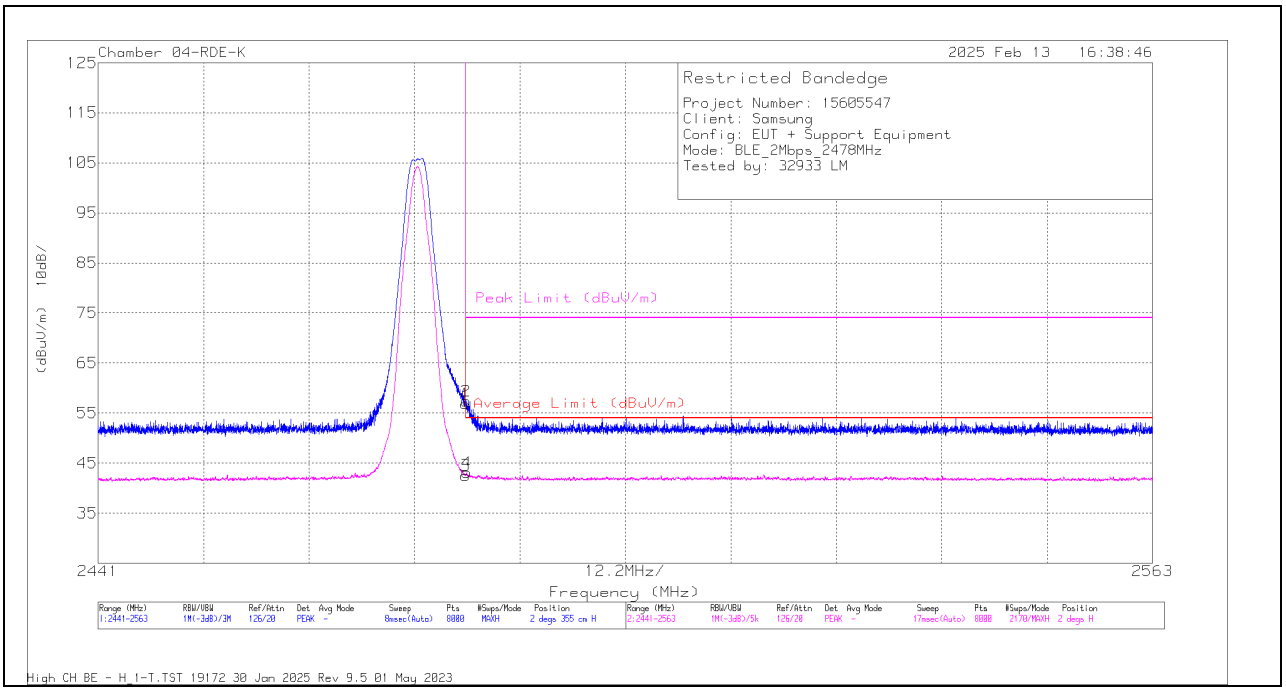
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	59.04	Pk	32.6	-34.8	56.84	-	-	74	-17.16	2	355	H
2	* 2483.553	59.56	Pk	32.6	-34.8	57.36	-	-	74	-16.64	2	355	H
3	* 2483.5	44.75	V1TR	32.6	-34.8	42.55	54	-11.45	-	-	2	355	H
4	* 2483.66	45.28	V1TR	32.6	-34.8	43.08	54	-10.92	-	-	2	355	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR - U-NII: VB=1/Ton, RMS Average where: Ton is packet duration

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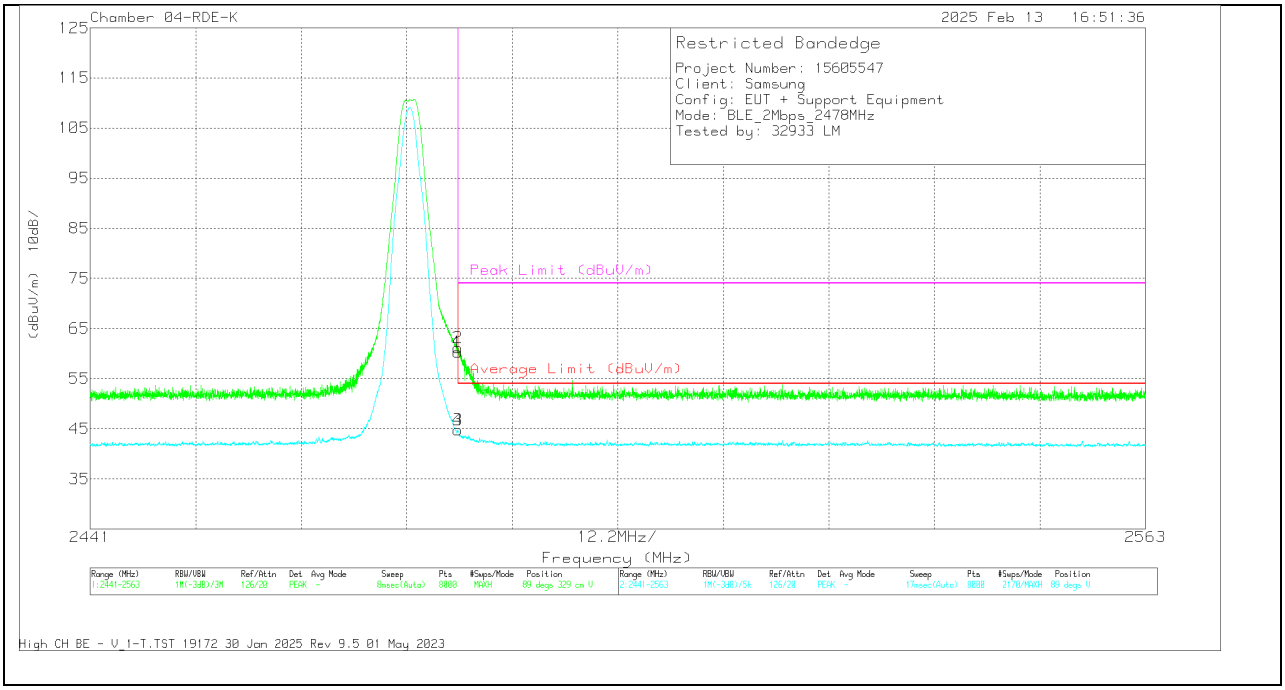
VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	206808 ACF (dB/m)	Amp/Cbl/Pad (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	62.45	Pk	32.6	-34.8	60.25	-	-	74	-13.75	89	329	V
2	* 2483.538	63.36	Pk	32.6	-34.8	61.16	-	-	74	-12.84	89	329	V
3	* 2483.5	46.93	V1TR	32.6	-34.8	44.73	54	-9.27	-	-	89	329	V
4	* 2483.507	46.97	V1TR	32.6	-34.8	44.77	54	-9.23	-	-	89	329	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
V1TR - U-NII: VB=1/Ton, RMS Average where: Ton is packet duration

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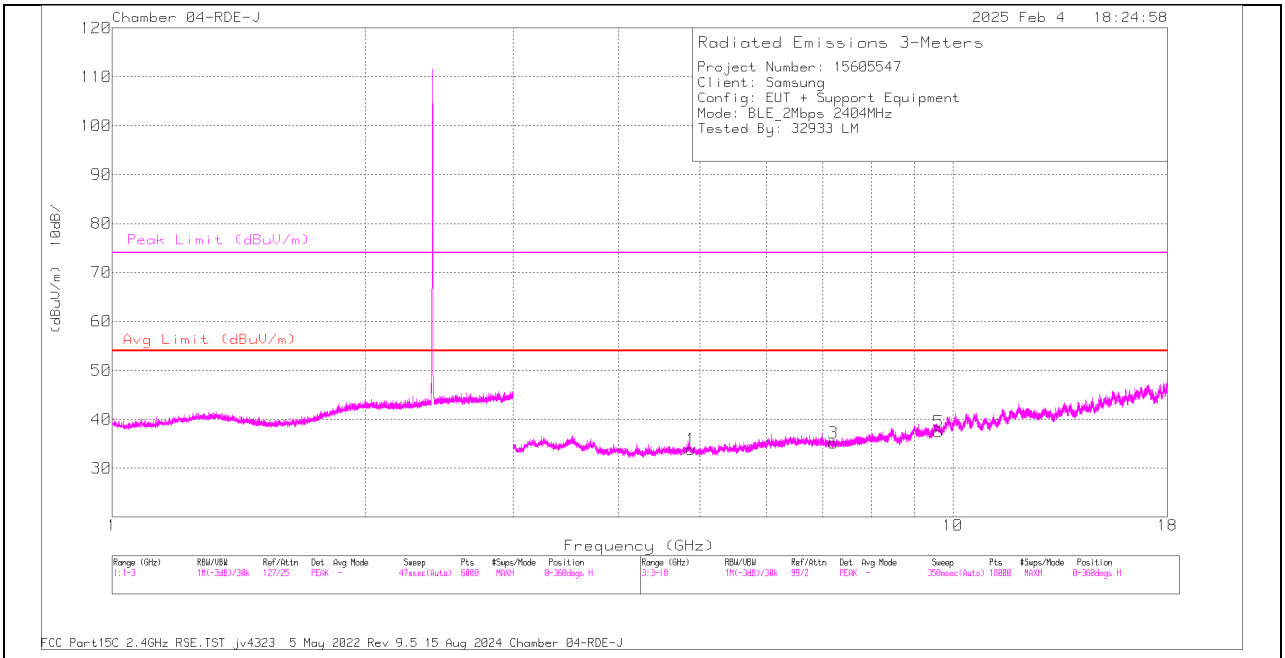
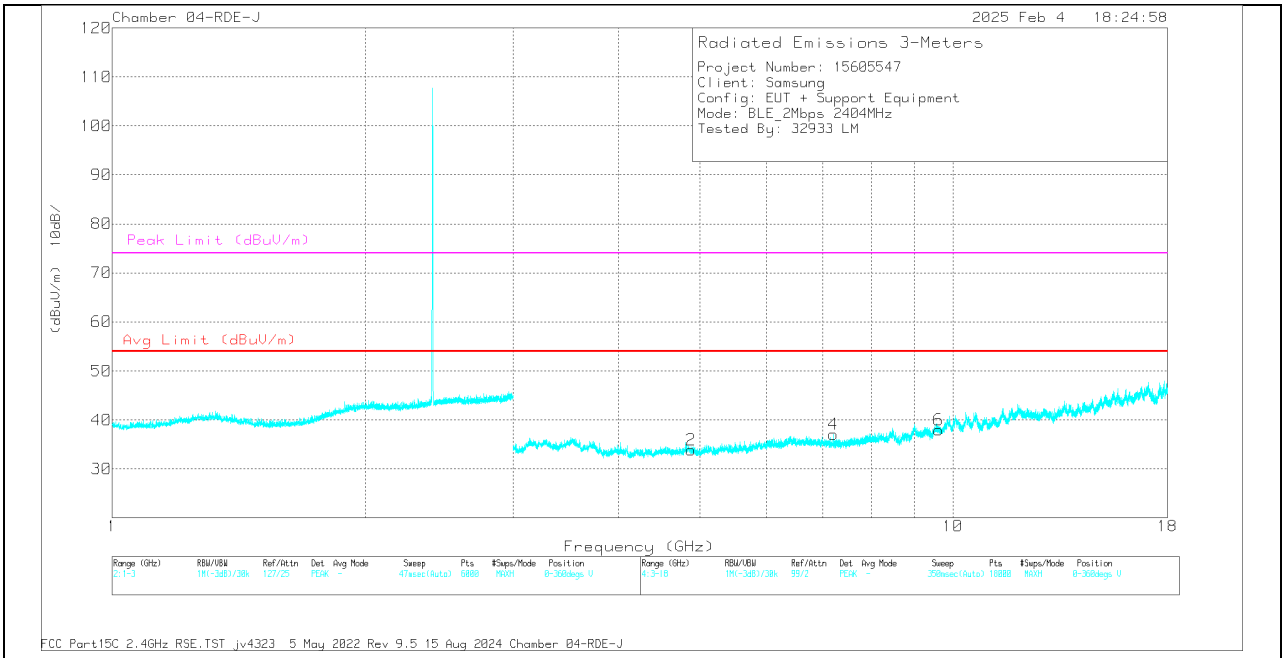
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.870155	54.43	PK2	34.3	-44.5	44.23	-	-	74	-29.77	131	132	H
2	* 4.862552	54.11	PK2	34.3	-44.5	43.91	-	-	74	-30.09	91	112	V
3	7.21198	53.75	PK2	35.5	-42.2	47.05	-	-	-	-	296	400	H
4	7.210068	53.87	PK2	35.5	-42.2	47.17	-	-	-	-	264	125	V
5	9.609927	51.52	PK2	37	-40.4	48.12	-	-	-	-	346	103	H
6	9.620985	50.94	PK2	37	-40.3	47.64	-	-	-	-	20	102	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak

NOTE: According to ANSI C63.10 Section 6.6.4.3 NOTE 1— Where limits are specified by regulations for both average and peak detection if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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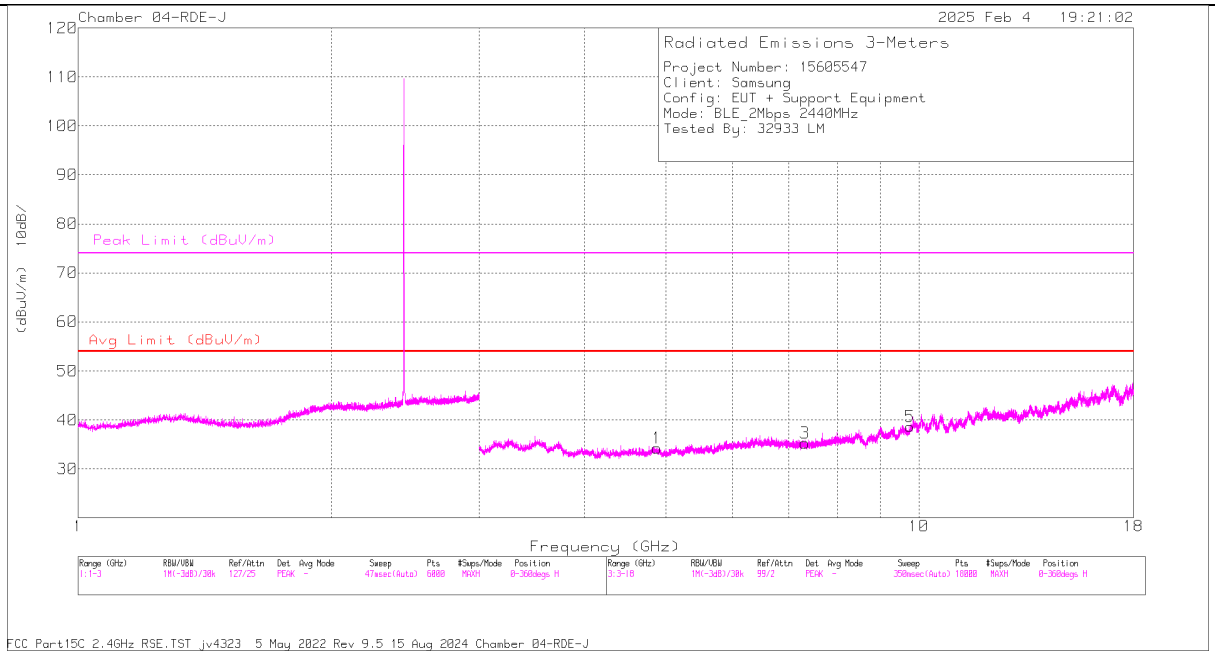
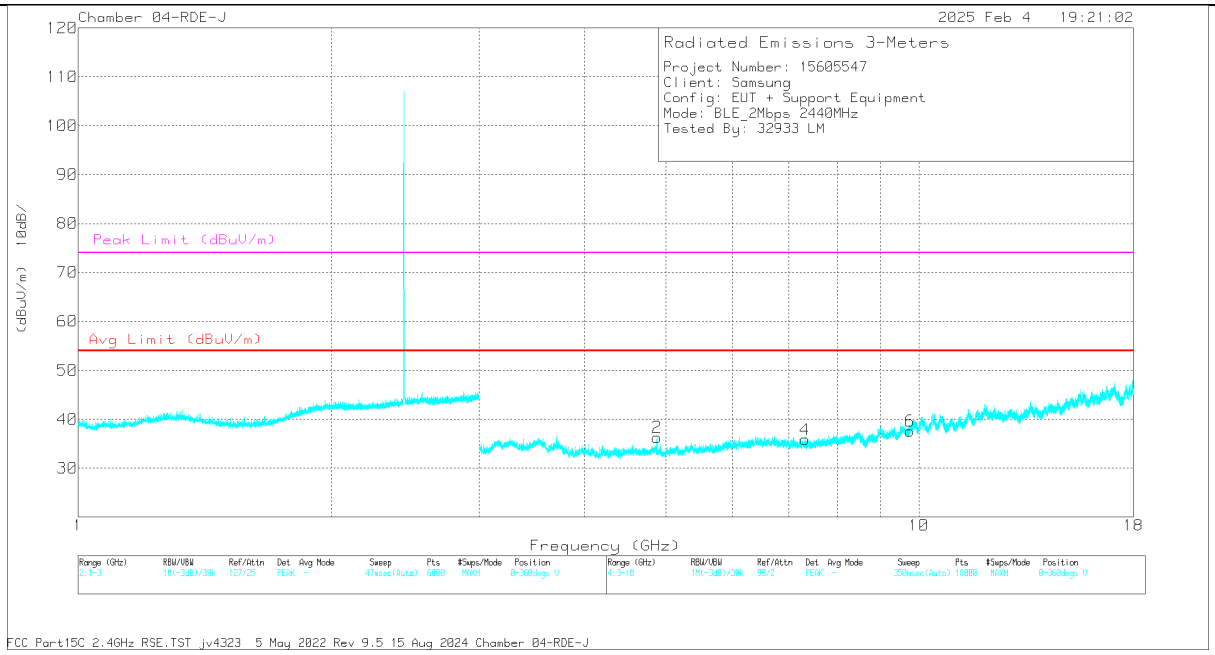
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.871172	54.26	PK2	34.3	-44.5	44.06	-	-	74	-29.94	287	232	H
2	* 4.878628	55.69	PK2	34.3	-44.6	45.39	-	-	74	-28.61	205	101	V
2	* 7.31969	55.55	PK2	35.5	-42.2	48.85	-	-	74	-25.15	266	121	V
3	* 7.325596	52.19	PK2	35.5	-42.3	45.39	-	-	74	-28.61	71	236	H
5	9.766799	52.28	PK2	37.2	-40.9	48.58	-	-	-	-	291	390	H
6	9.776843	52.12	PK2	37.3	-40.7	48.72	-	-	-	-	286	105	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak

NOTE: According to ANSI C63.10 Section 6.6.4.3 NOTE 1— Where limits are specified by regulations for both average and peak detection if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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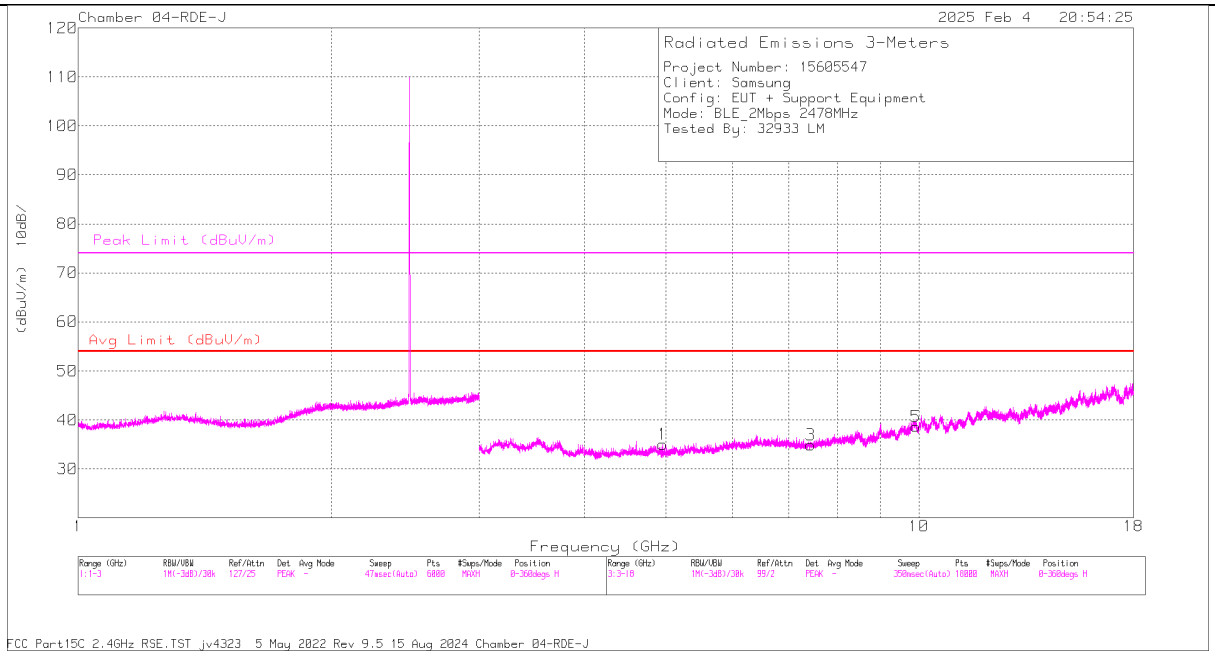
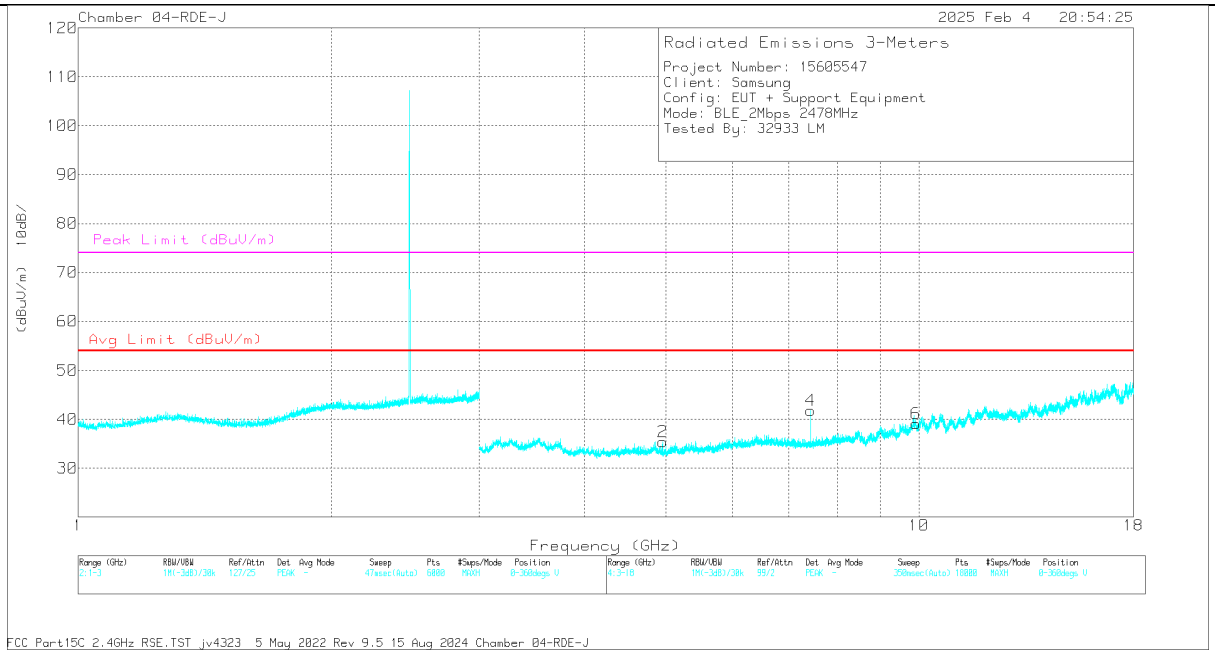
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.956813	55.64	PK2	34.2	-44.8	45.04	-	-	74	-28.96	314	399	H
2	* 4.955705	56.42	PK2	34.2	-44.8	45.82	-	-	74	-28.18	281	175	V
3	* 7.438895	52.44	PK2	35.5	-42	45.94	-	-	74	-28.06	199	276	H
4	* 7.432018	55.55	PK2	35.5	-42.1	48.95	-	-	74	-25.05	267	118	V
5	9.895596	51.31	PK2	37.5	-39.6	49.21	-	-	-	-	98	267	H
6	9.900109	51.38	PK2	37.5	-39.5	49.38	-	-	-	-	51	201	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak

NOTE: According to ANSI C63.10 Section 6.6.4.3 NOTE 1— Where limits are specified by regulations for both average and peak detection if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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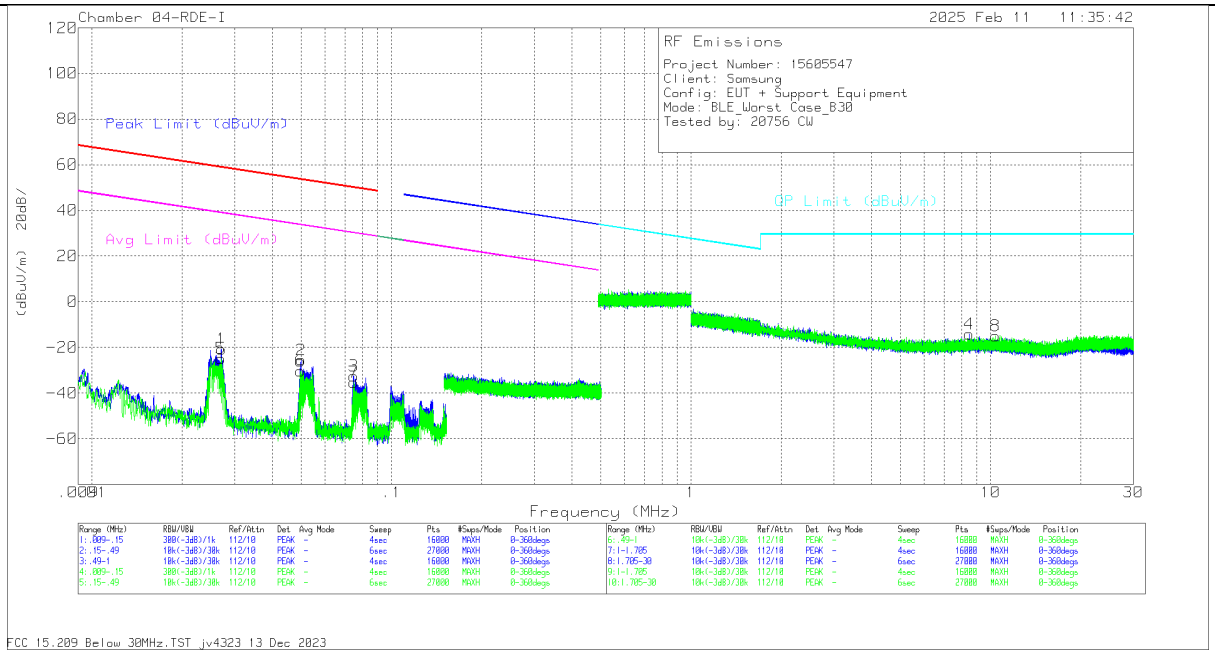
10.2. WORST CASE BELOW 30MHz

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



ANTENNA- TWO ORIENTATIONS FACE ON/FACE OFF

Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 300m (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
1	.027	33.13	Pk	58.3	-32.2	-80	-20.77	58.94	-79.71	38.94	-59.71	0-360	On
5	.027	29	Pk	58.3	-32.2	-80	-24.9	58.95	-83.85	38.95	-63.85	0-360	Off
6	.0498	24.88	Pk	57.1	-32.3	-80	-30.32	53.64	-83.96	33.64	-63.96	0-360	Off
2	.05	29.66	Pk	57.1	-32.3	-80	-25.54	53.6	-79.14	33.6	-59.14	0-360	On
7	.0747	21.18	Pk	55.9	-32.3	-80	-35.22	50.11	-85.33	30.11	-65.33	0-360	Off
3	.0749	23.94	Pk	55.8	-32.3	-80	-32.56	50.09	-82.65	30.09	-62.65	0-360	On

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Amp/Cbl (dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity
4	8.5002	23.16	Pk	34.7	-32.1	-40	-14.24	29.5	-43.74	0-360	On
8	10.394	22.33	Pk	34.8	-32	-40	-14.87	29.5	-44.37	0-360	Off

Pk - Peak detector

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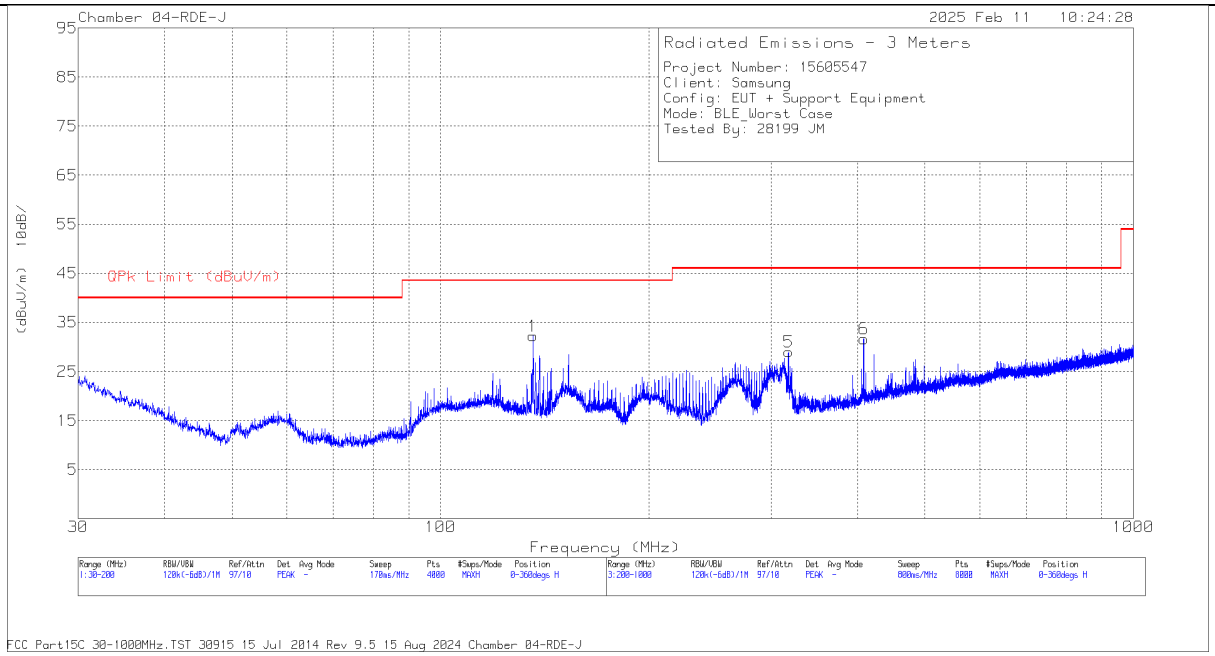
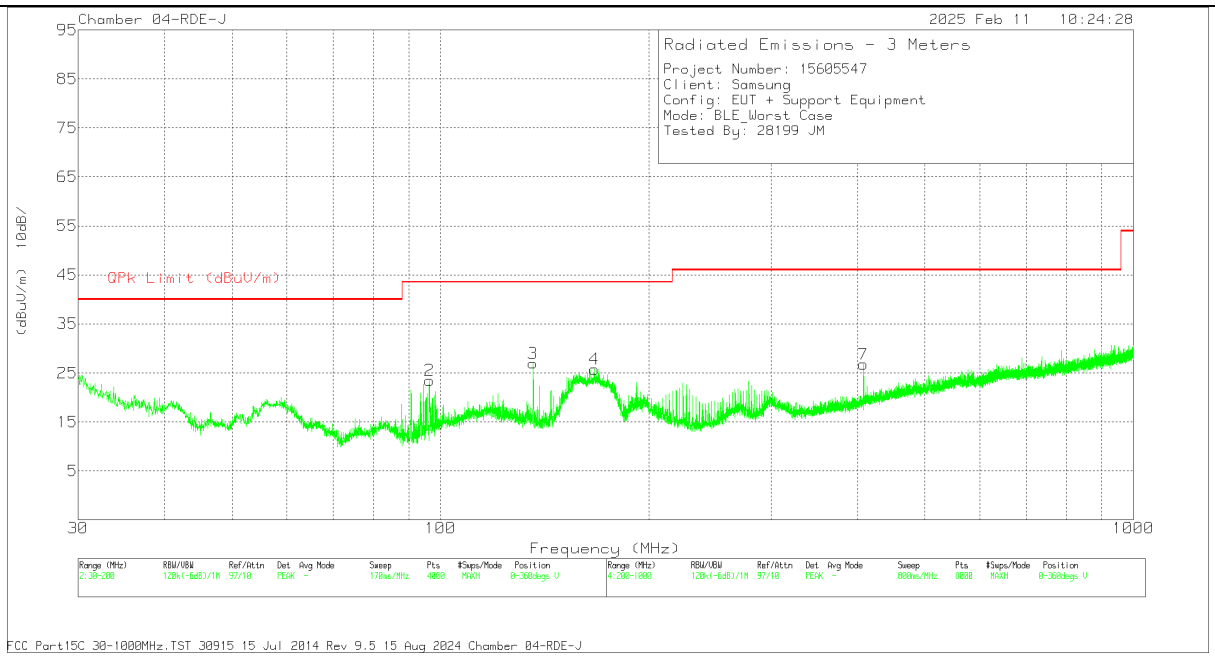
10.3. WORST CASE BELOW 1 GHz

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



HORIZONTAL



VERTICAL

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Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80293 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 136.097	45.71	Pk	19.5	-31.1	34.11	43.52	-9.41	2	214	H
	* 136.097	38.45	Qp	19.5	-31.1	26.85	43.52	-16.67	2	214	H
2	96.3597	39.53	Pk	15.2	-31.3	23.43	43.52	-20.09	0-360	101	V
3	* 135.98	38.58	Pk	19.5	-31.1	26.98	43.52	-16.54	0-360	101	V
4	* 166.673	39.02	Pk	17.7	-30.9	25.82	43.52	-17.7	0-360	101	V
5	317.815	39.63	Pk	19.8	-30.4	29.03	46.02	-16.99	0-360	101	H
6	* 408.127	39.91	Pk	21.8	-30.1	31.61	46.02	-14.41	0-360	298	H
7	* 407.827	35.04	Pk	21.8	-30.1	26.74	46.02	-19.28	0-360	298	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

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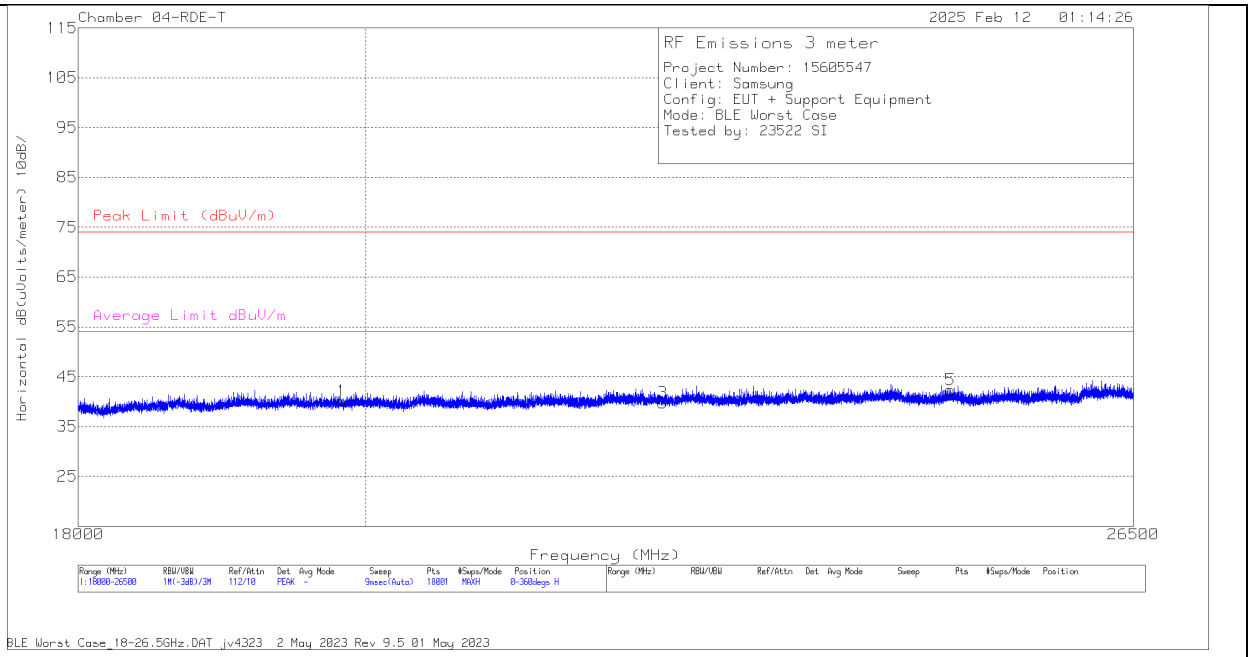
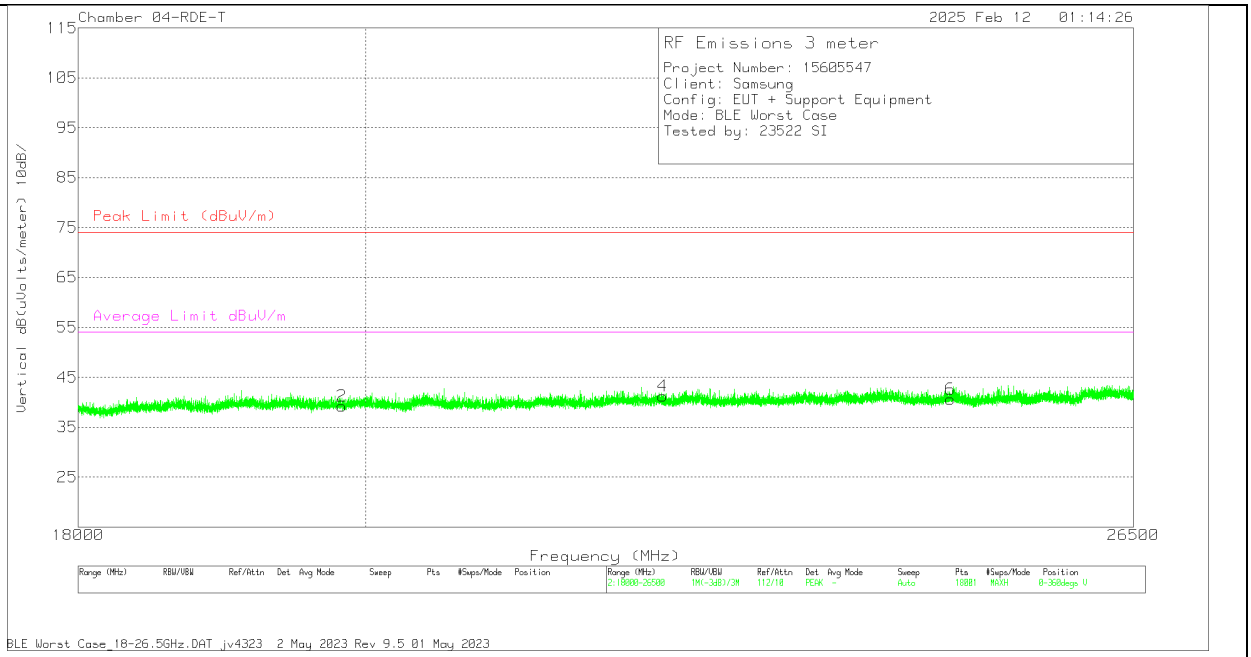
10.4. WORST CASE 18-26 GHz

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

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18 – 26GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	199658 ACF (dB/m)	amp/cbl (dB)	Cables (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit dBuV/m	Average Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 19824.666	55.47	Pk	32.6	-62.1	14.2	40.17	74	-33.83	54	-13.83	0-360	199	H
3	* 22302.887	53.57	Pk	33.1	-62.1	15.2	39.77	74	-34.23	54	-14.23	0-360	199	H
2	* 19824.666	54.55	Pk	32.6	-62.1	14.2	39.25	74	-34.75	54	-14.75	0-360	101	V
4	* 22302.887	55.07	Pk	33.1	-62.1	15.2	41.27	74	-32.73	54	-12.73	0-360	199	V
5	24780.636	53.91	Pk	33.8	-61.3	16	42.41	74	-31.59	54	-11.59	0-360	101	H
6	24780.636	52.08	Pk	33.8	-61.3	16	40.58	74	-33.42	54	-13.42	0-360	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

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11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	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

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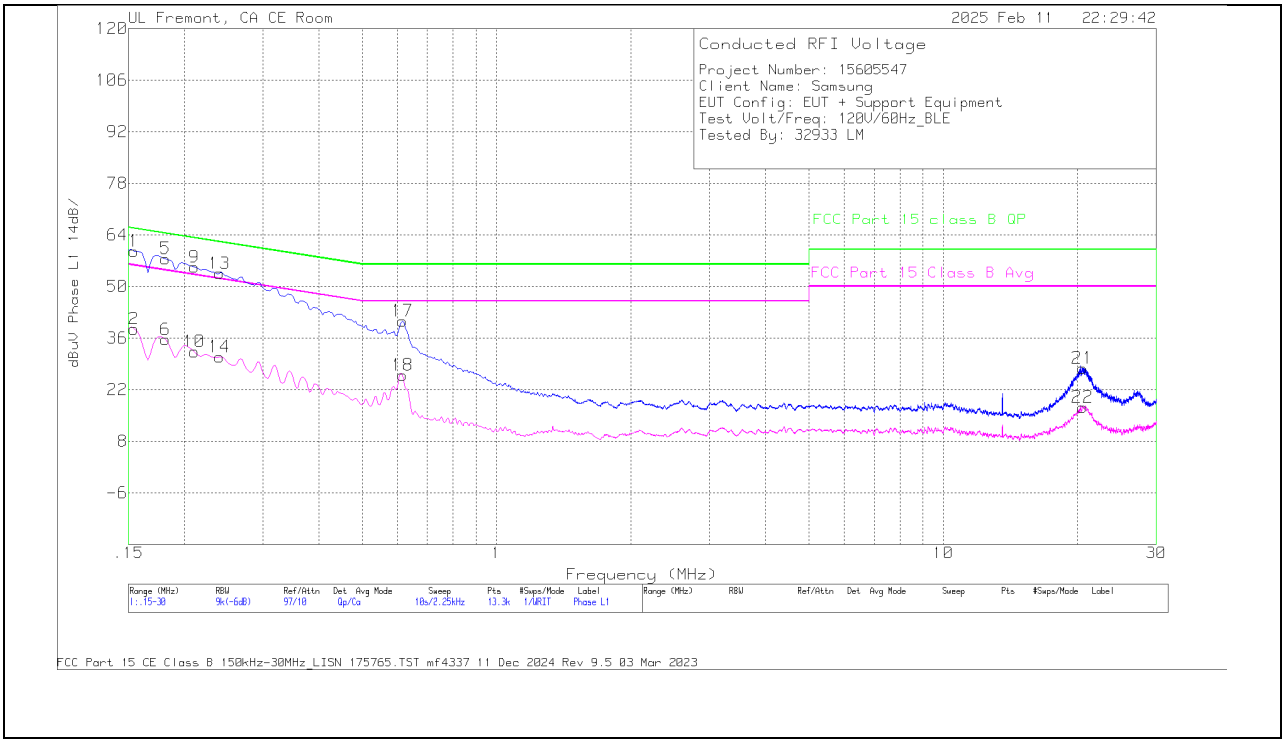
LINE 1 RESULTS



Range 1: Phase L1 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	CBL(dB)	LISN (dB)	CBL(dB)	10dB Atten (dB)	Corrected Reading dBuV	FCC Part 15C Avg	Margin (dB)	FCC Part 15C QP	Margin (dB)
2	.1545	19.38	Ca	.5	.1	8.5	10	38.48	55.75	-17.27	-	-
6	.1815	16.89	Ca	.2	.1	8.4	10	35.59	54.42	-18.83	-	-
10	.2108	13.8	Ca	.1	0	8.4	10	32.3	53.18	-20.88	-	-
14	.24	12.78	Ca	-.1	0	8.2	10	30.88	52.1	-21.22	-	-
18	.6158	7.61	Ca	0	0	8.3	10	25.91	46	-20.09	-	-
22	20.4968	-1.66	Ca	.2	.1	8.6	10	17.24	50	-32.76	-	-
1	.1545	40.49	Qp	.5	.1	8.5	10	59.59	-	-	65.75	-6.16
5	.1815	38.85	Qp	.2	.1	8.4	10	57.55	-	-	64.42	-6.87
9	.2108	36.72	Qp	.1	0	8.4	10	55.22	-	-	63.18	-7.96
13	.24	35.43	Qp	-.1	0	8.2	10	53.53	-	-	62.1	-8.57
17	.6158	22.34	Qp	0	0	8.3	10	40.64	-	-	56	-15.36
21	20.4968	8.9	Qp	.2	.1	8.6	10	27.8	-	-	60	-32.2

Qp - Quasi-Peak detector
Ca - CISPR average detection

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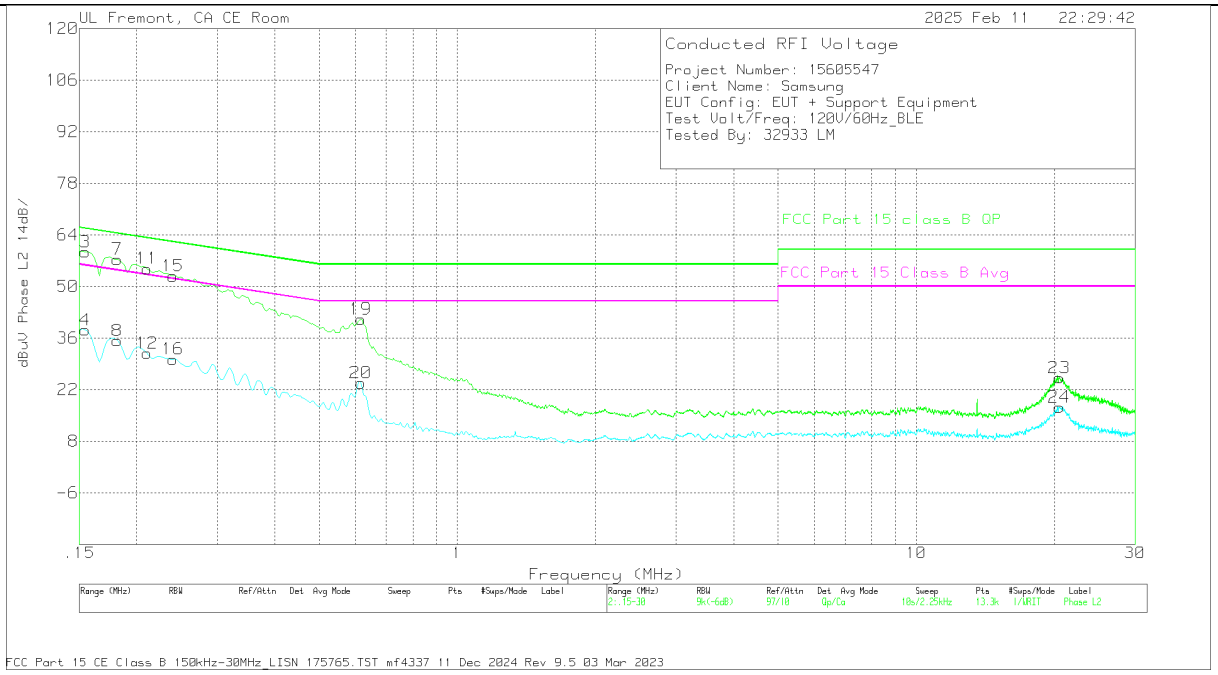
LINE 2 RESULTS



Range 2: Phase L2 .15 - 30MHz												
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	CBL(dB)	LISN (dB)	CBL(dB)	10dB Atten (dB)	Corrected Reading dBuV	FCC Part 15C Avg	Margin (dB)	FCC Part 15C QP	Margin (dB)
4	.1545	19.05	Ca	.5	.1	8.5	10	38.15	55.75	-17.6	-	-
8	.1815	16.64	Ca	.2	0	8.4	10	35.24	54.42	-19.18	-	-
12	.2108	13.34	Ca	.1	0	8.4	10	31.84	53.18	-21.34	-	-
16	.24	12.14	Ca	-.1	0	8.2	10	30.24	52.1	-21.86	-	-
20	.6158	5.49	Ca	0	0	8.3	10	23.79	46	-22.21	-	-
24	20.4968	-1.69	Ca	.2	.1	8.6	10	17.21	50	-32.79	-	-
3	.1545	40.25	Qp	.5	.1	8.5	10	59.35	-	-	65.75	-6.4
7	.1815	38.73	Qp	.2	0	8.4	10	57.33	-	-	64.42	-7.09
11	.2108	36.33	Qp	.1	0	8.4	10	54.83	-	-	63.18	-8.35
15	.24	34.71	Qp	-.1	0	8.2	10	52.81	-	-	62.1	-9.29
19	.6158	22.8	Qp	0	0	8.3	10	41.1	-	-	56	-14.9
23	20.4968	6.27	Qp	.2	.1	8.6	10	25.17	-	-	60	-34.83

Qp - Quasi-Peak detector
Ca - CISPR average detection

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12. SETUP PHOTOS

Please refer to 15605547-EP1 for setup photos

END OF TEST REPORT

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