

9.8 Band Edge Testing

Test Method

1. The RF output of EUT was connected to the test receiver by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously. Set the EUT to the lowest frequency channel.
3. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector, Trace: Max hold, Sweep time: Coupled, Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation. Allow the trace to stabilize.
4. Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. Enable the marker-delta function, and then use the marker-to-peak function to move the marker to the peak of the in-band emission.
5. Set the EUT to the highest frequency channel and repeat step 2) to 4)
6. Enable the EUT hopping mode, repeat the test.

Limit:

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

Band Edge

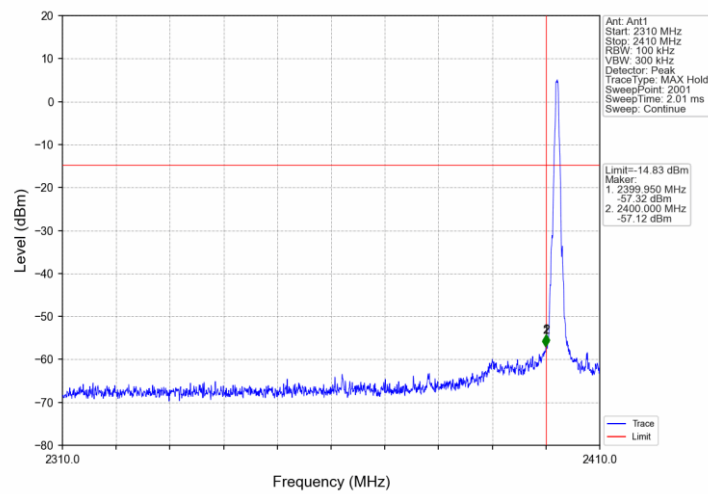
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	1	5.17	-14.83	Pass
		2441	DH5	1	4.93	-15.07	Pass
		2480	DH5	1	4.41	-15.59	Pass
		HOPP	DH5	1	4.91	-15.09	Pass
					4.91	-15.09	Pass
Pi/4DQPSK	SISO	2402	2DH5	1	4.79	-15.21	Pass
		2441	2DH5	1	4.67	-15.33	Pass
		2480	2DH5	1	4.23	-15.77	Pass
		HOPP	2DH5	1	4.67	-15.33	Pass
					4.67	-15.33	Pass
8DPSK	SISO	2402	3DH5	1	4.79	-15.21	Pass
		2441	3DH5	1	4.74	-15.26	Pass
		2480	3DH5	1	4.30	-15.70	Pass
		HOPP	3DH5	1	4.77	-15.23	Pass
					4.77	-15.23	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

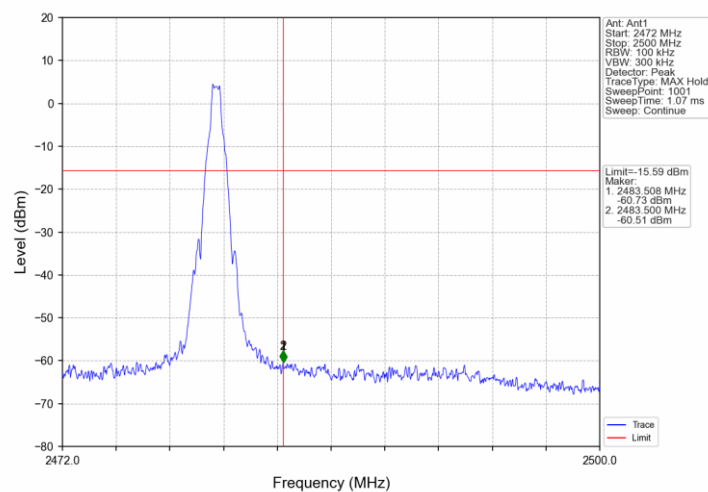
Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
GFSK	SISO	2402	DH5	2	5.07	-14.93	Pass
		2441	DH5	2	4.86	-15.14	Pass
		2480	DH5	2	4.55	-15.45	Pass
		HOPP	DH5	2	4.97	-15.03	Pass
					4.97	-15.03	Pass
Pi/4DQPSK	SISO	2402	2DH5	2	4.81	-15.19	Pass
		2441	2DH5	2	4.64	-15.36	Pass
		2480	2DH5	2	4.33	-15.67	Pass
		HOPP	2DH5	2	4.87	-15.13	Pass
					4.87	-15.13	Pass
8DPSK	SISO	2402	3DH5	2	4.70	-15.30	Pass
		2441	3DH5	2	4.64	-15.36	Pass
		2480	3DH5	2	4.37	-15.63	Pass
		HOPP	3DH5	2	4.81	-15.19	Pass
					4.81	-15.19	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

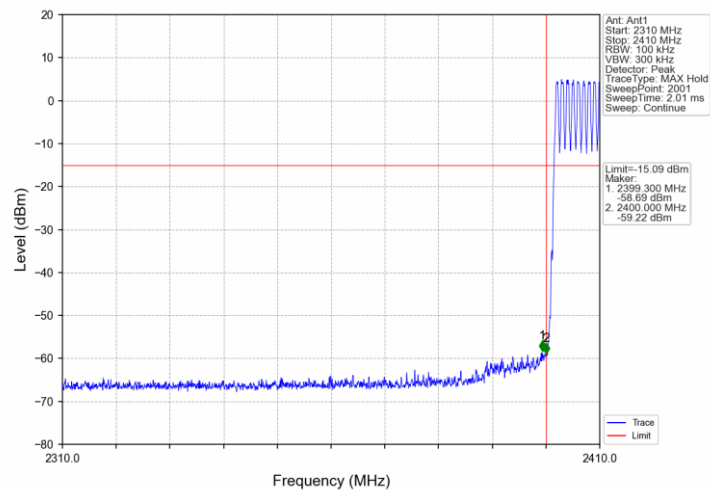
GFSK_DH5_LCH_2402MHz_Ant1_NTNV



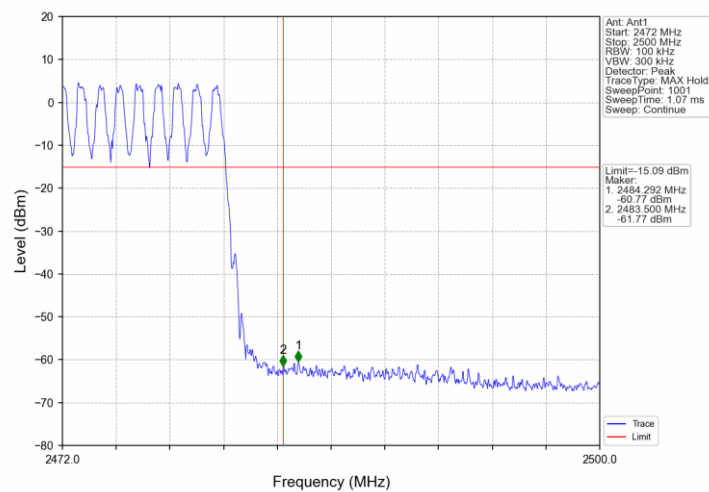
GFSK_DH5_HCH_2480MHz_Ant1_NTNV



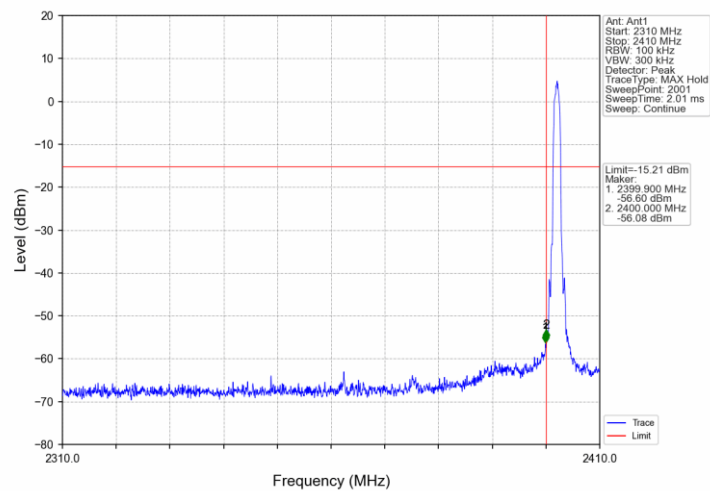
GFSK_DH5_HOPP_Ant1_NTNV



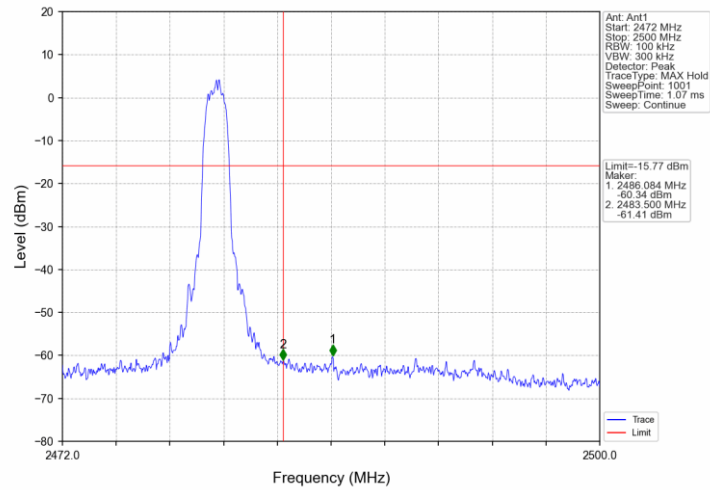
GFSK DH5_HOPP_Ant1_NTNV



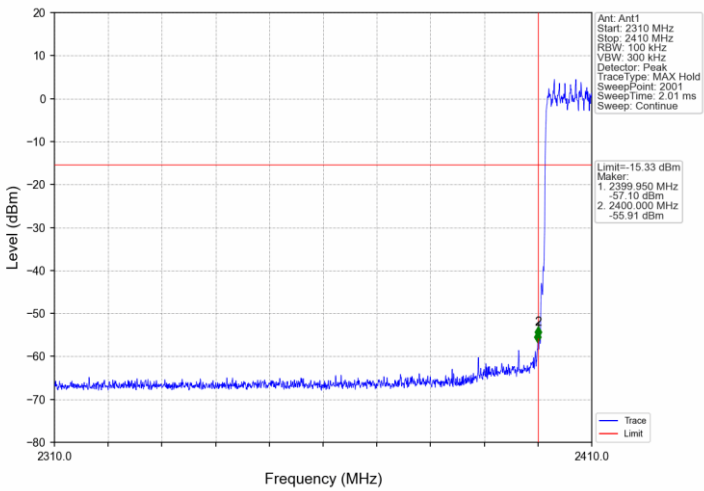
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant1_NTNV



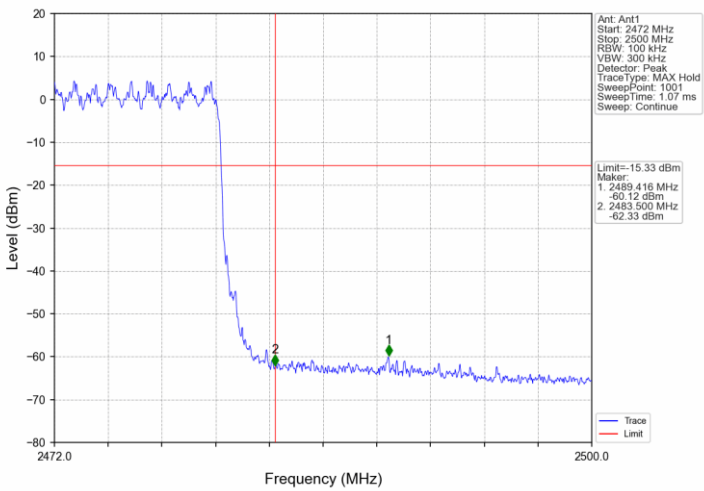
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant1_NTNV



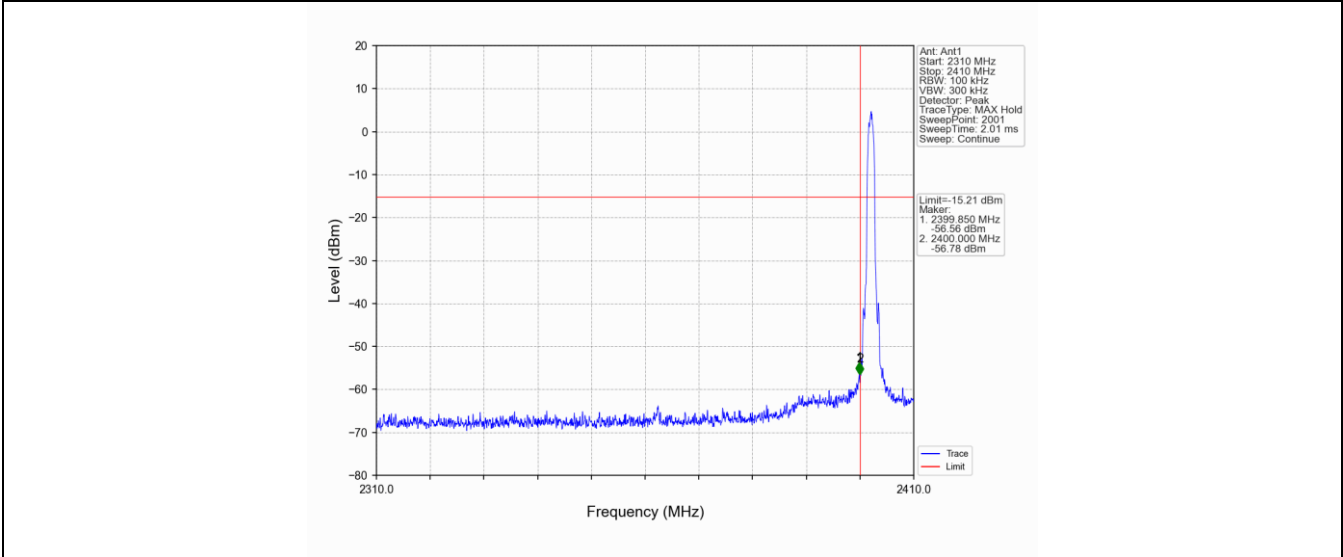
Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



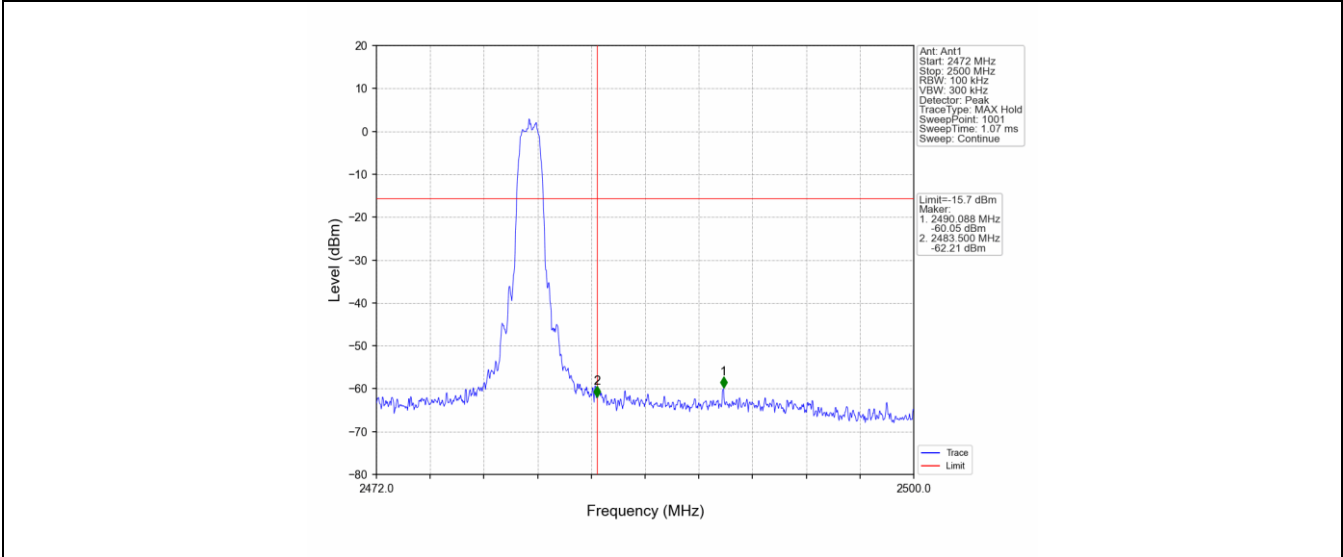
Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



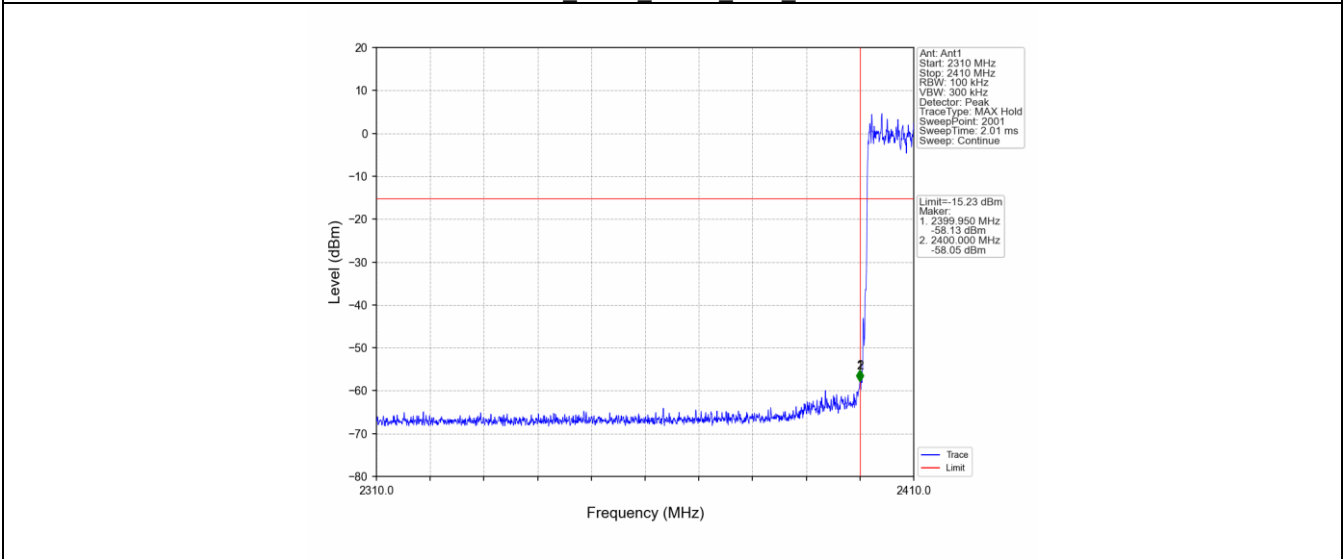
8DPSK_3DH5_LCH_2402MHz_Ant1_NTNV



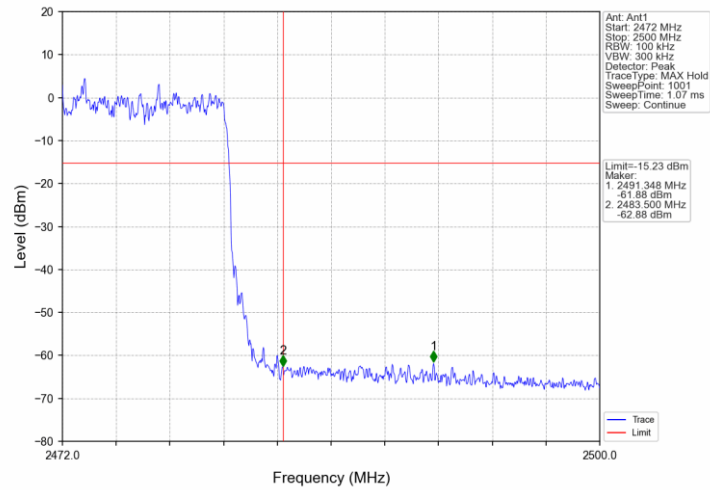
8DPSK_3DH5_HCH_2480MHz_Ant1_NTNV



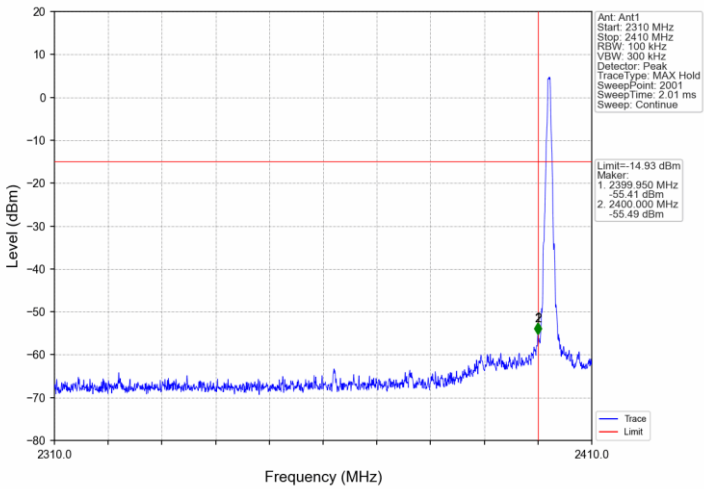
8DPSK_3DH5_HOPP_Ant1_NTNV



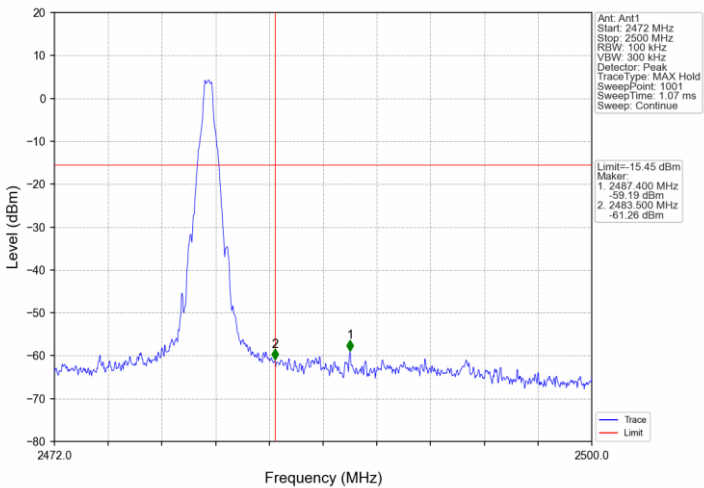
8DPSK_3DH5_HOPP_Ant1_NTNV



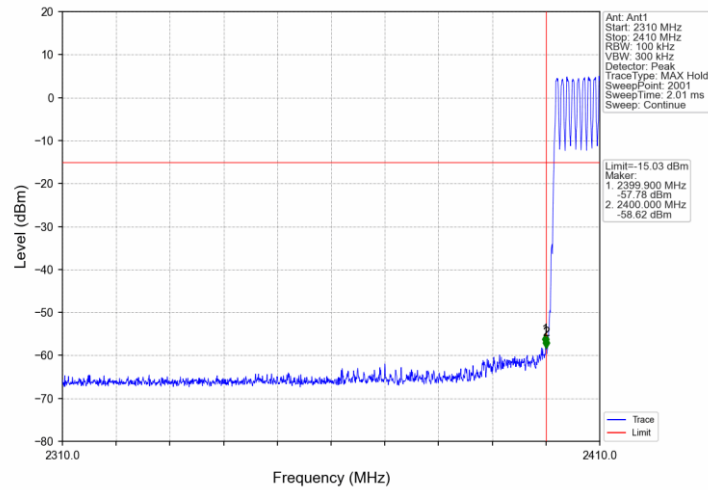
GFSK_DH5_LCH_2402MHz_Ant2_NTNV



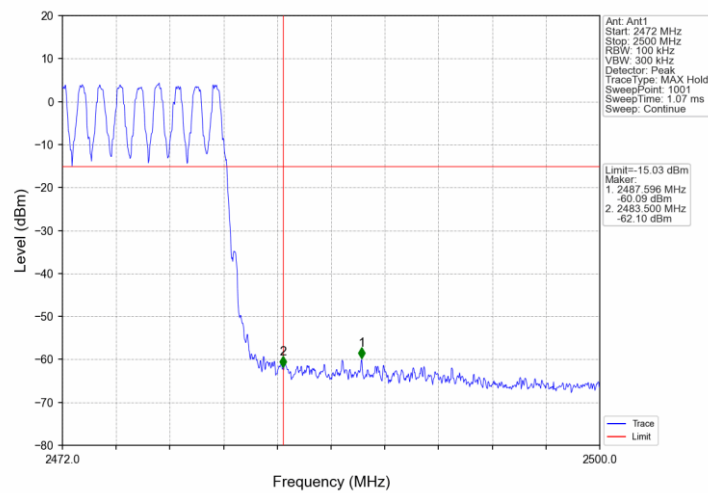
GFSK_DH5_HCH_2480MHz_Ant2_NTNV



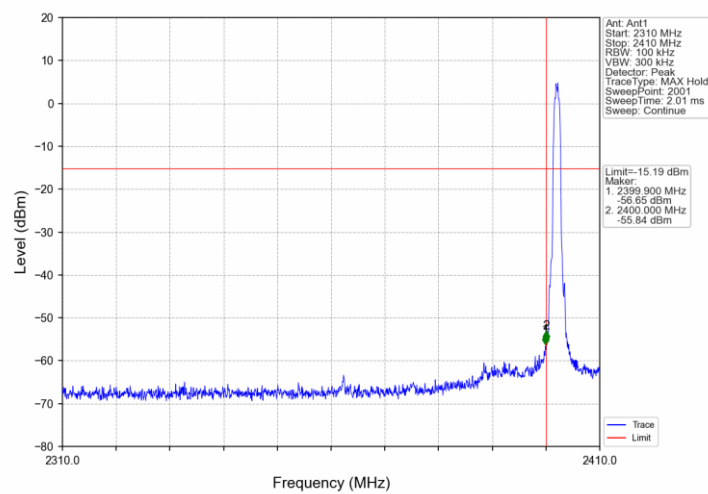
GFSK_DH5_HOPP_Ant2_NTNV



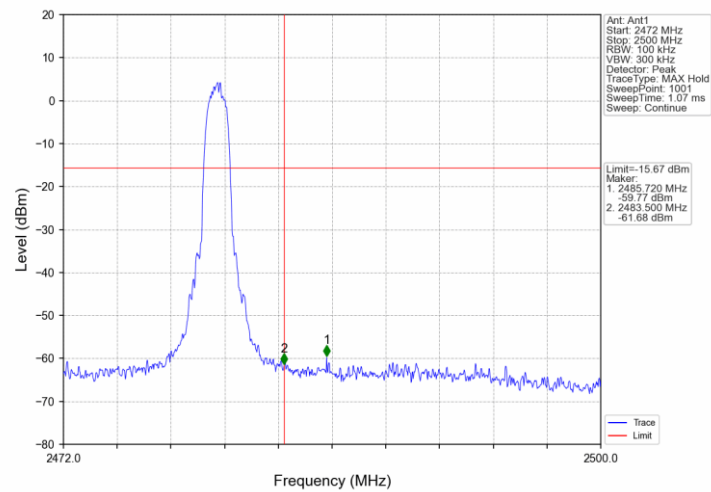
GFSK_DH5_HOPP_Ant2_NTNV



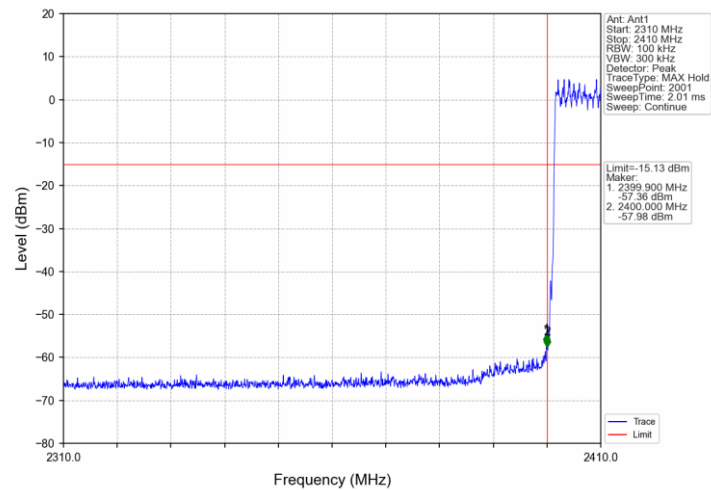
Pi/4DQPSK_2DH5_LCH_2402MHz_Ant2_NTNV



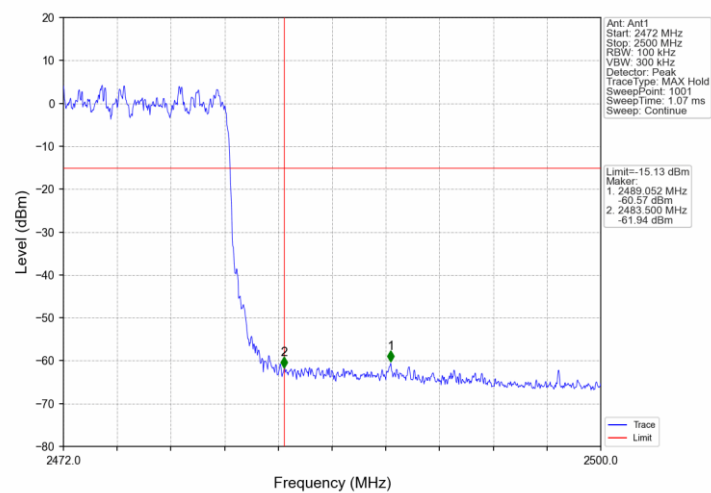
Pi/4DQPSK_2DH5_HCH_2480MHz_Ant2_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant2_NTNV

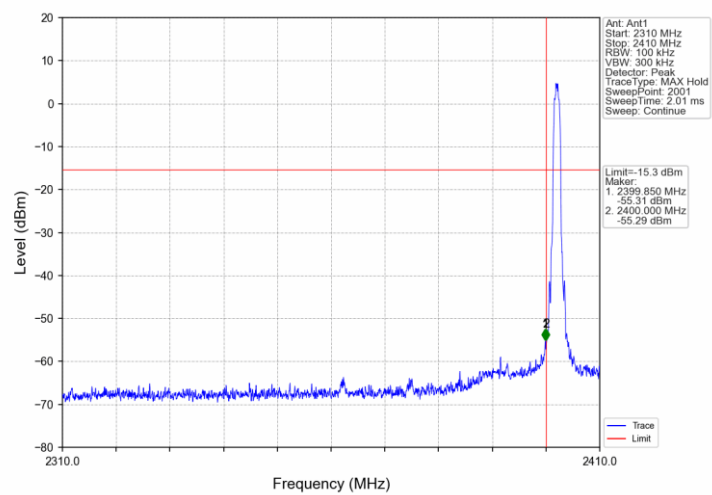


Pi/4DQPSK_2DH5_HOPP_Ant2_NTNV

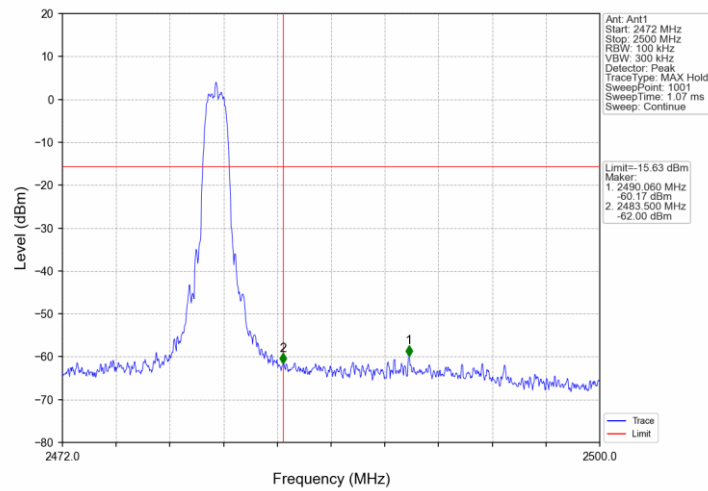




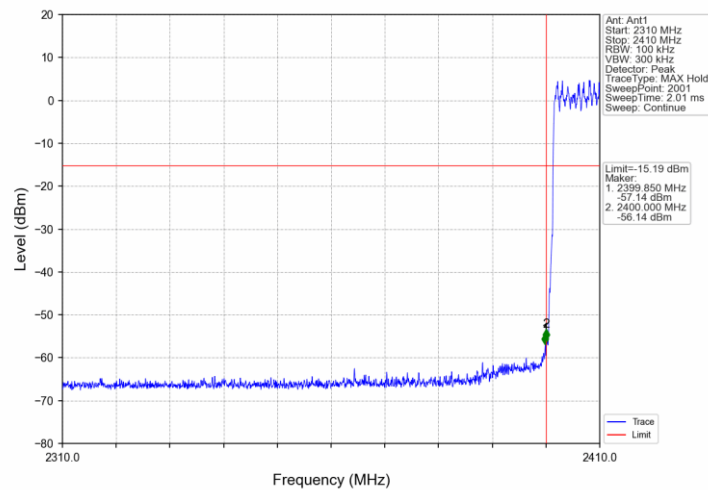
8DPSK_3DH5_LCH_2402MHz_Ant2_NTNV



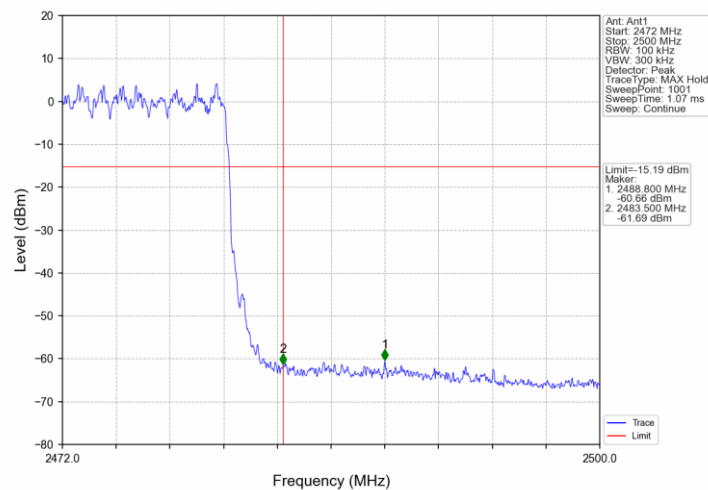
8DPSK_3DH5_HCH_2480MHz_Ant2_NTNV



8DPSK_3DH5_HOPP_Ant2_NTNV



8DPSK_3DH5_HOPP_Ant2_NTNV



9.9 Spurious Radiated Emissions for Transmitter

Test Method

1. The EUT was placed on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Set to the maximum power setting and enable the EUT to transmit continuously.
3. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
4. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
5. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
6. Use the following test receiver settings According to C63.10:
 - (1) Span shall be wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz to 120kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = QP; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle $< 98\%$) for Average detection (AV) at frequency above 1GHz, then the measurement results were added to a correction factor ($20\log(1/\text{duty cycle})$).

The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle $> 98\%$) for Average detection (AV) at frequency above 1GHz.

7. Repeat above procedures until all frequencies measured were complete.

Spurious Radiated Emissions for Transmitter

Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section 15.205 & RSS-GEN 8.10, must comply with the radiated emission limits specified in section 15.209 & RSS-Gen 6.13.

Frequency MHz	Field Strength $\mu\text{V/m}$	Field Strength $\text{dB}\mu\text{V/m}$	Detector	Measurement distance meters
0.009-0.490	2400/F(kHz)	48.5-13.8	AV	300
0.490-1.705	24000/F(kHz)	33.8-23.0	QP	30
1.705-30	30	29.5	QP	30
30-88	100	40	QP	3
88-216	150	43.5	QP	3
216-960	200	46	QP	3
960-1000	500	54	QP	3
Above 1000	500	54	AV	3
Above 1000	5000	74	PK	3

Note 1: $\text{Limit } 3\text{m}(\text{dB}\mu\text{V/m}) = \text{Limit } 300\text{m}(\text{dB}\mu\text{V/m}) + 40\text{Log}(300\text{m}/3\text{m})$ (Below 30MHz)

Note 2: $\text{Limit } 3\text{m}(\text{dB}\mu\text{V/m}) = \text{Limit } 30\text{m}(\text{dB}\mu\text{V/m}) + 40\text{Log}(30\text{m}/3\text{m})$ (Below 30MHz)

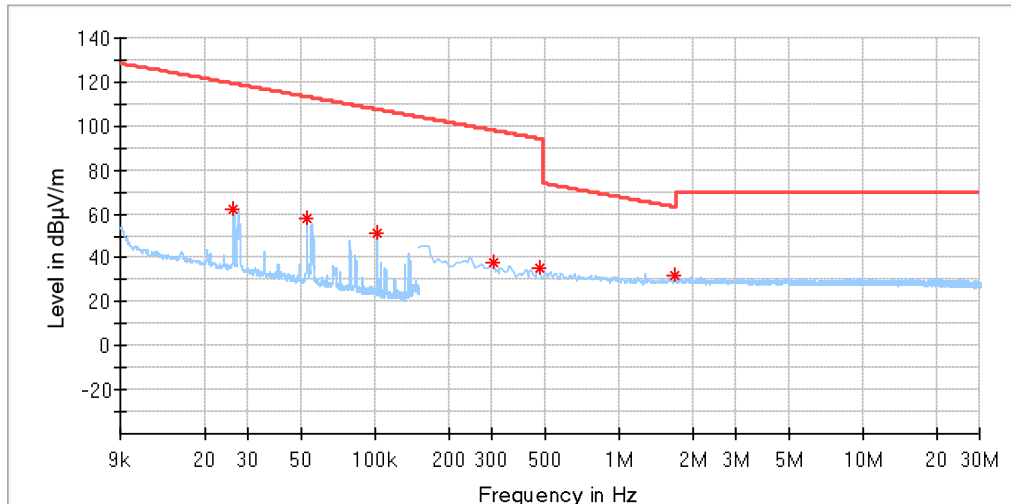
According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Spurious radiated emissions for transmitter

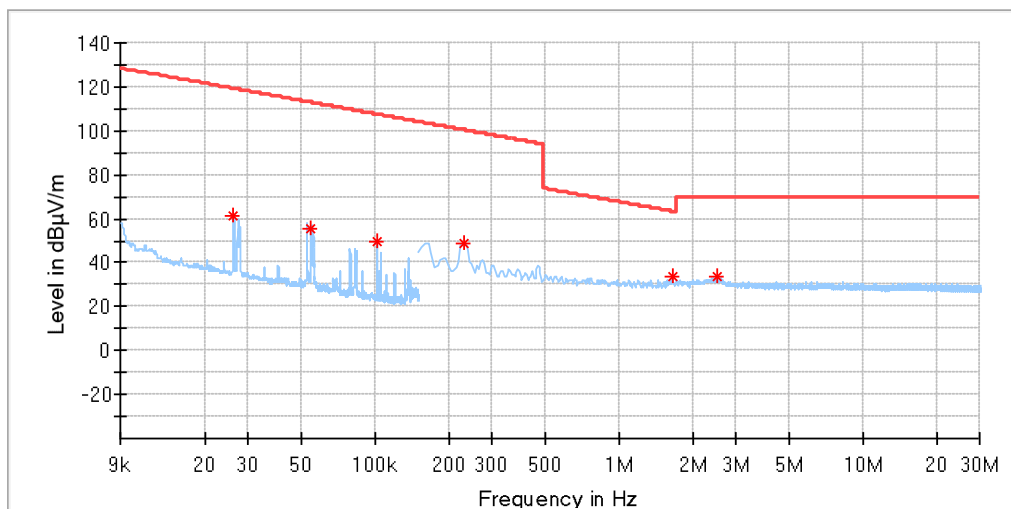
Only the worst case (DH5) test result is listed in the report.

Transmitting spurious emission test result as below:

DH5_2402MHz_ANT1 (9kHz- 30MHz)

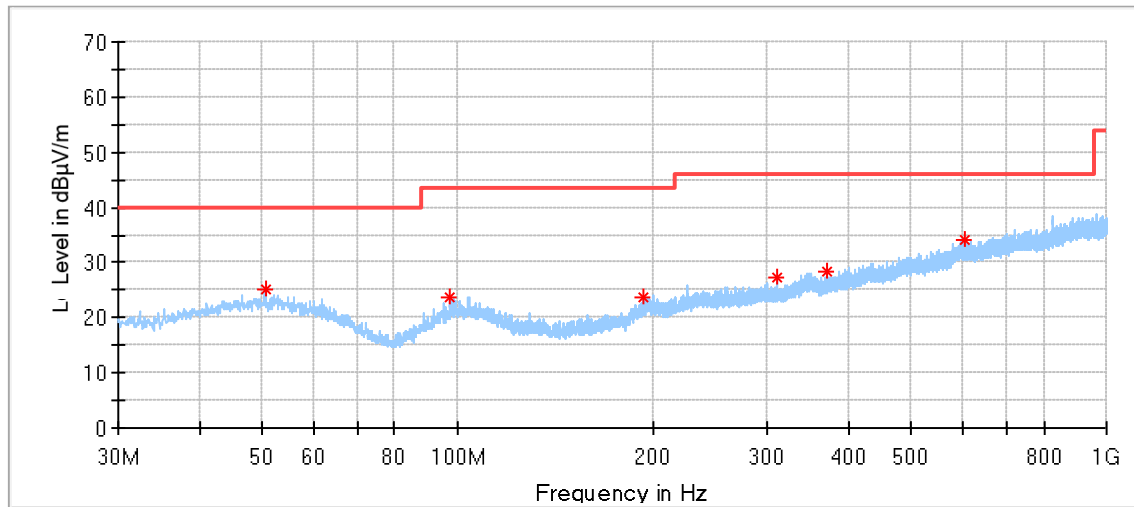


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
0.026249	62.46	119.21	56.74	H	139.0	19.87
0.052475	57.78	113.19	55.42	H	194.0	19.91
0.101355	51.05	107.48	56.43	H	313.0	19.93
0.304225	37.73	97.94	60.21	H	2.0	19.90
0.468400	35.02	94.19	59.17	H	61.0	19.89
1.697225	31.98	63.04	31.06	H	2.0	20.02

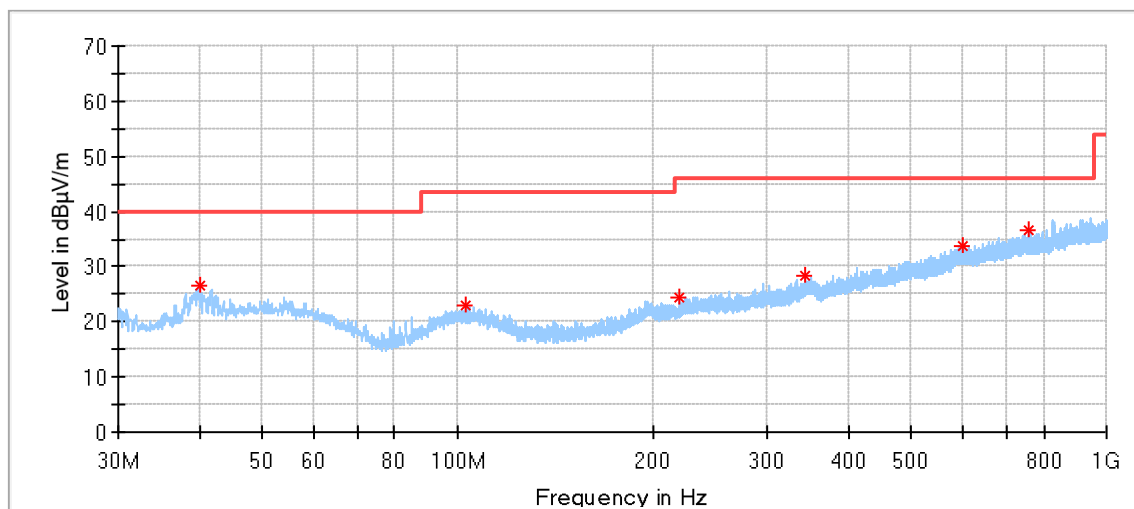


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Azimuth (deg)	Corr. (dB/m)
0.026249	61.40	119.21	57.81	V	218.0	19.87
0.054731	55.80	112.83	57.03	V	136.0	19.92
0.101308	49.55	107.48	57.94	V	0.0	19.93
0.229600	49.09	100.38	51.29	V	159.0	19.88
1.652450	33.72	63.27	29.56	V	1.0	20.01
2.498200	33.46	69.50	36.04	V	228.0	20.14

DH5_2402MHz_ANT1 (30MHz – 1GHz)

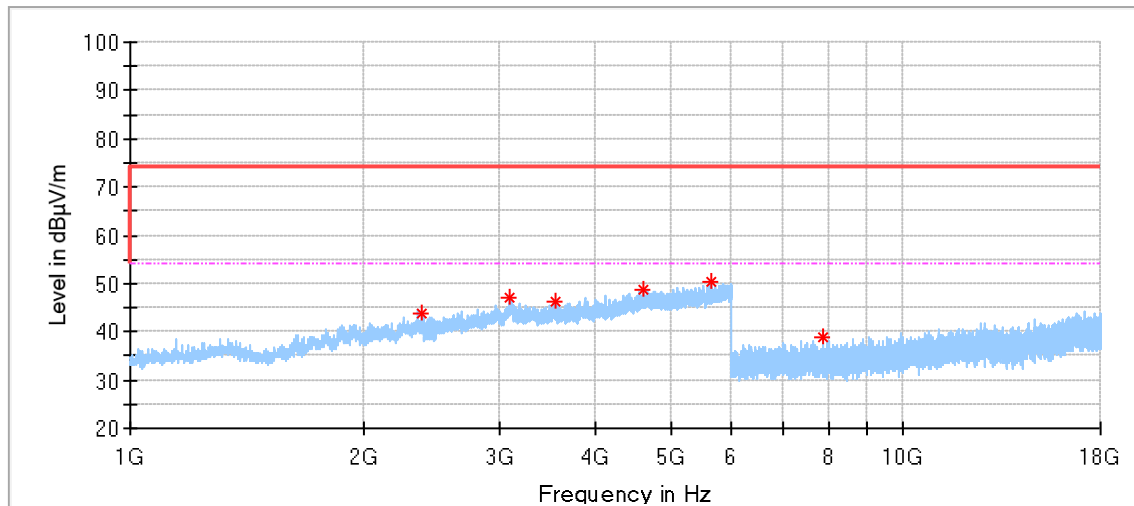


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
50.531667	25.01	40.00	14.99	100.0	H	317.0	17.99
97.522778	23.65	43.50	19.85	200.0	H	98.0	15.90
192.744444	23.73	43.50	19.77	200.0	H	171.0	15.92
309.952778	27.42	46.00	18.58	100.0	H	0.0	18.69
371.170556	28.49	46.00	17.51	200.0	H	245.0	20.20
602.892778	33.96	46.00	12.04	200.0	H	15.0	25.30

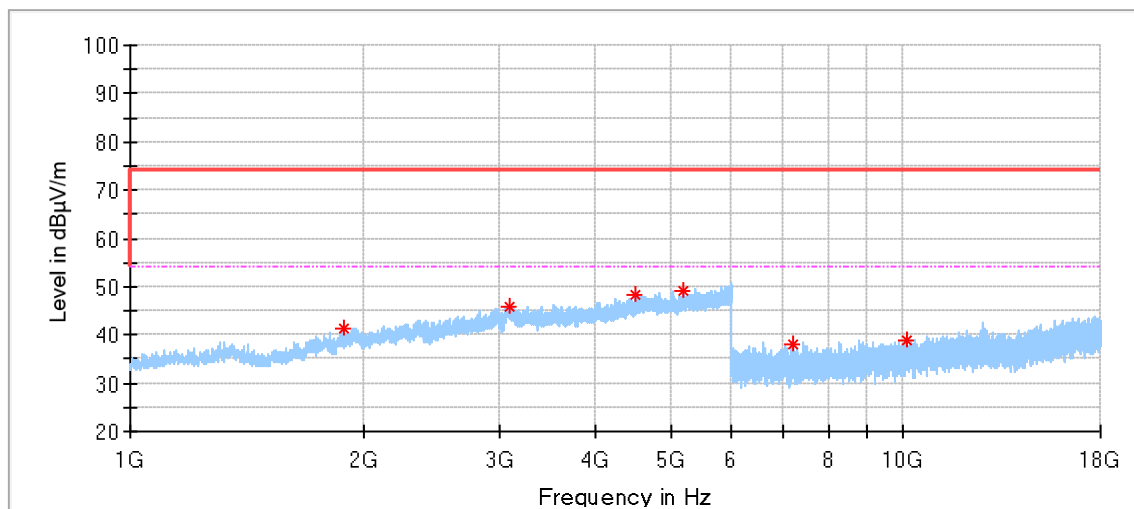


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
39.969444	26.39	40.00	13.61	200.0	V	135.0	16.51
102.911667	23.03	43.50	20.47	100.0	V	42.0	16.42
220.281667	24.50	46.00	21.50	200.0	V	153.0	16.22
343.848889	28.18	46.00	17.82	100.0	V	110.0	20.21
602.084444	33.78	46.00	12.22	100.0	V	294.0	25.28
761.272222	36.62	46.00	9.38	100.0	V	0.0	27.27

DH5_2402MHz_ANT1 (1– 18GHz)

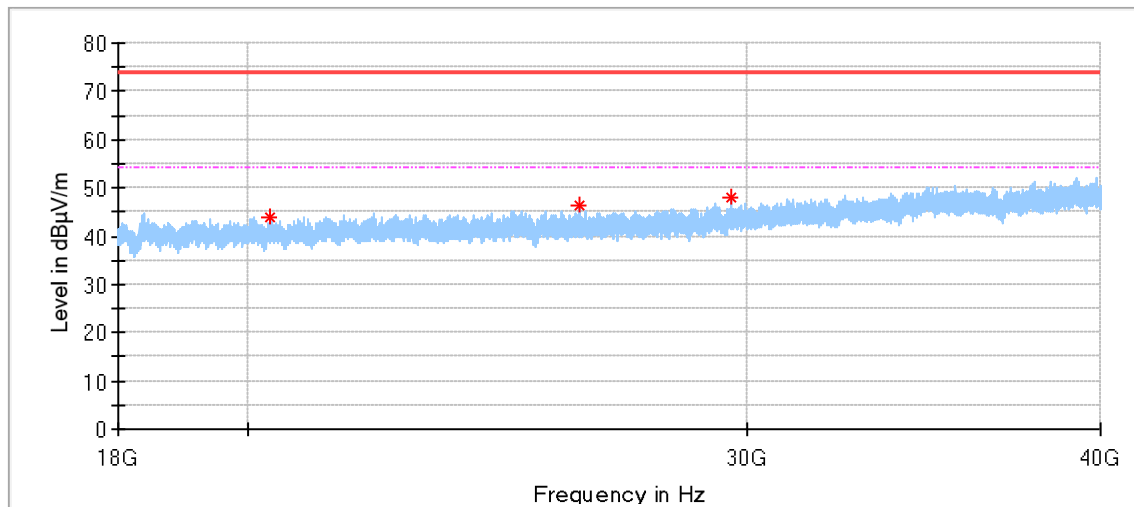


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2377.500000	43.82	74.00	30.18	150.0	H	280.0	-2.59
3097.500000	47.05	74.00	26.95	150.0	H	212.0	1.48
3552.500000	46.23	74.00	27.77	150.0	H	280.0	0.77
4599.500000	48.68	74.00	25.32	150.0	H	113.0	3.97
5635.500000	50.26	74.00	23.74	150.0	H	347.0	5.82
7888.000000	38.92	74.00	35.08	150.0	H	317.0	6.11



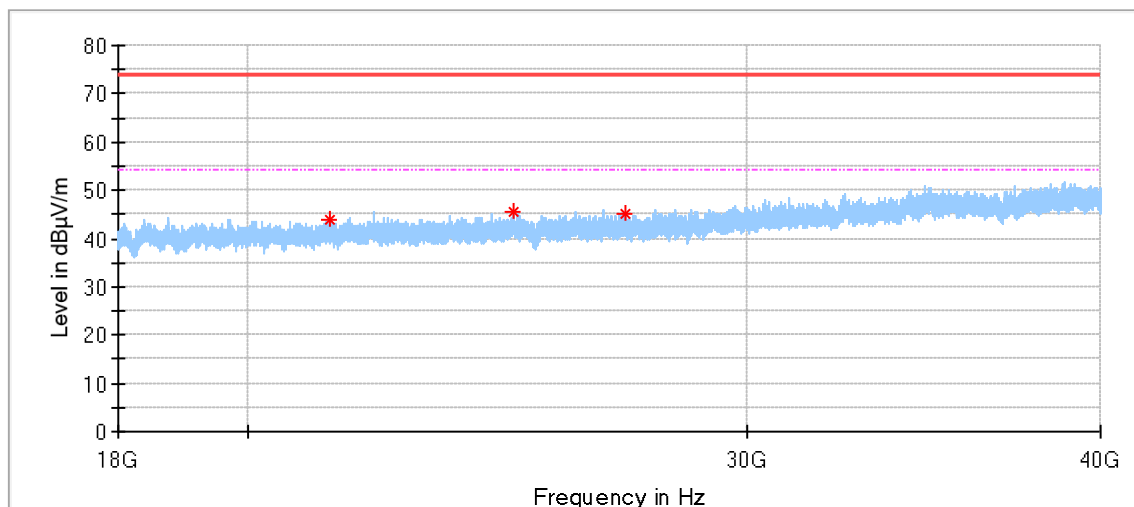
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1890.500000	41.24	74.00	32.76	150.0	V	74.0	-4.79
3093.500000	45.93	74.00	28.07	150.0	V	46.0	1.33
4514.000000	48.15	74.00	25.85	150.0	V	251.0	3.52
5184.000000	49.04	74.00	24.96	150.0	V	333.0	4.94
7203.000000	38.13	74.00	35.87	150.0	V	30.0	5.36
10095.500000	38.87	74.00	35.13	150.0	V	334.0	8.56

DH5_2402MHz_ANT1 (18– 40GHz)



Critical Freqs

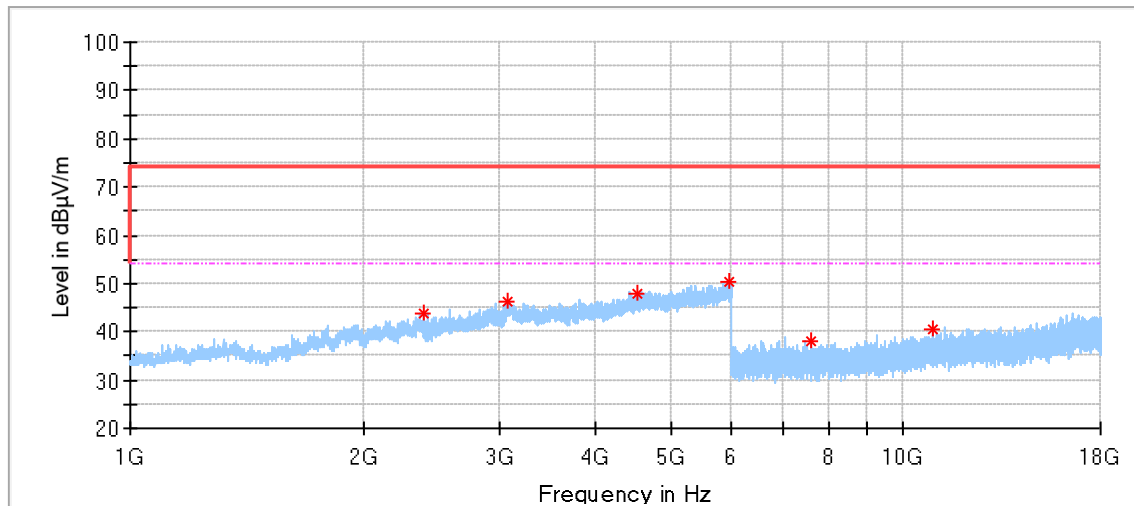
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20349.875000	43.91	74.00	30.09	150.0	H	263.0	0.0
26173.000000	46.45	74.00	27.55	150.0	H	6.0	3.4
29637.312500	48.11	74.00	25.89	150.0	H	65.0	3.7



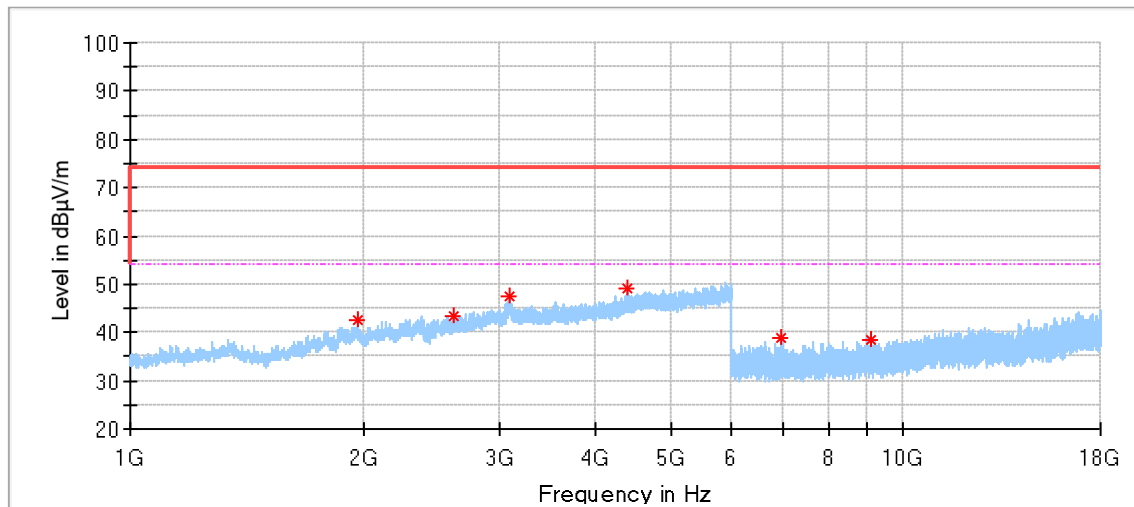
Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21385.250000	43.75	74.00	30.25	150.0	V	219.0	1.3
24825.500000	45.40	74.00	28.60	150.0	V	204.0	3.4
27191.187500	45.27	74.00	28.73	150.0	V	0.0	3.9

DH5_2440MHz_ANT1 (1– 18GHz)

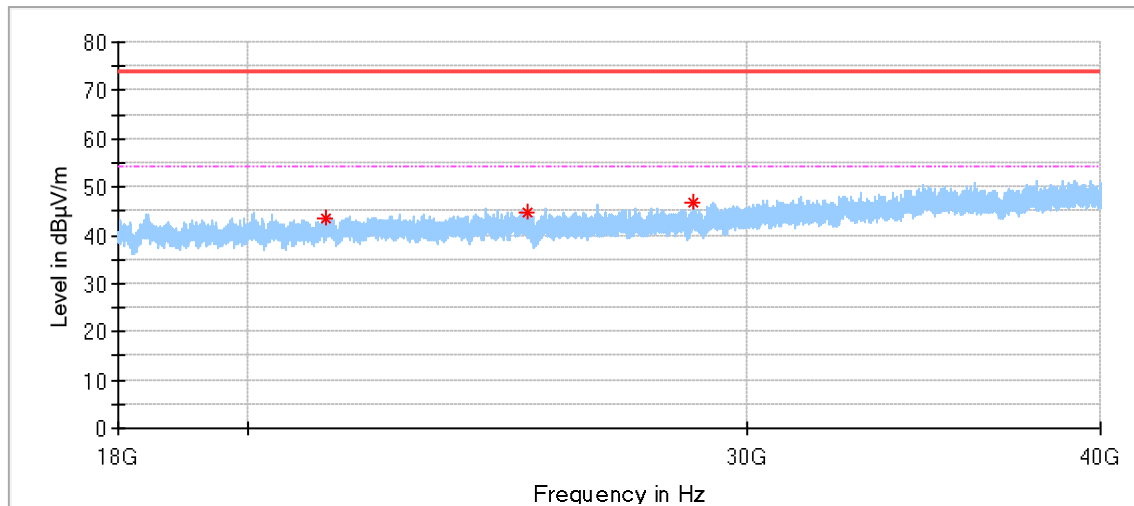


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2397.500000	43.90	74.00	30.10	150.0	H	130.0	-2.43
3068.500000	46.19	74.00	27.81	150.0	H	226.0	0.42
4521.000000	47.98	74.00	26.02	150.0	H	45.0	3.56
5950.000000	50.46	74.00	23.54	150.0	H	308.0	6.96
7604.500000	38.14	74.00	35.86	150.0	H	61.0	5.83
10890.500000	40.35	74.00	33.65	150.0	H	343.0	9.47

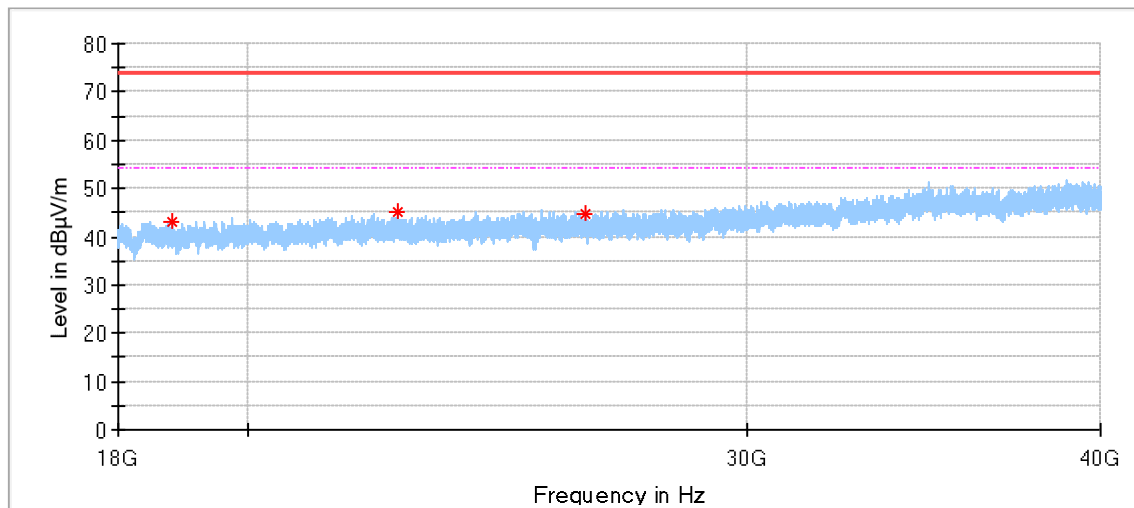


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1970.500000	42.56	74.00	31.44	150.0	V	347.0	-4.21
2619.500000	43.47	74.00	30.53	150.0	V	347.0	-2.02
3101.500000	47.38	74.00	26.62	150.0	V	356.0	1.53
4395.000000	49.02	74.00	24.98	150.0	V	45.0	2.98
6954.000000	39.06	74.00	34.94	150.0	V	148.0	5.26
9082.000000	38.41	74.00	35.59	150.0	V	120.0	7.83

DH5_2440MHz_ANT1 (18– 40GHz)

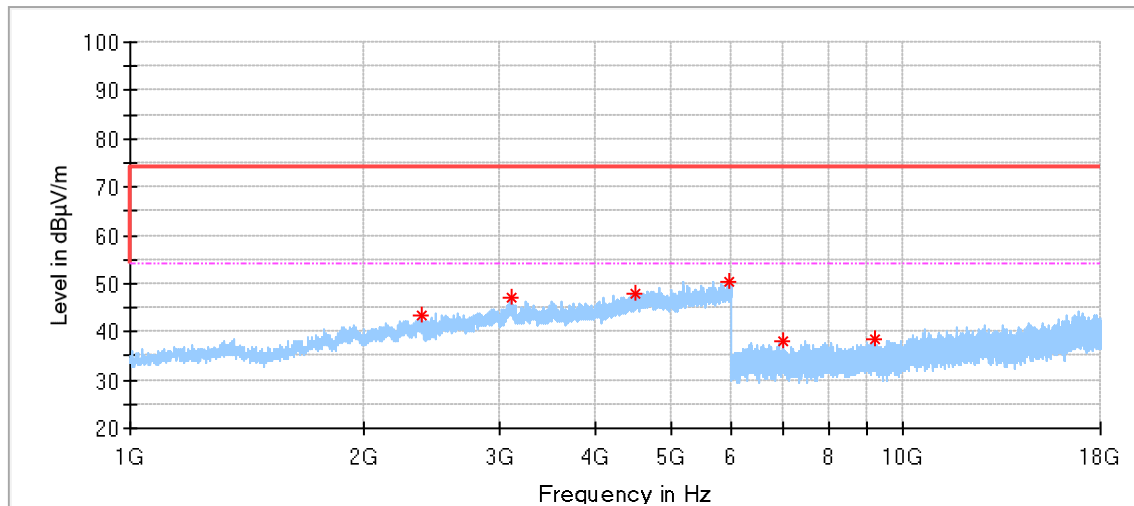


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21316.500000	43.46	74.00	30.54	150.0	H	0.0	1.4
25117.687500	44.67	74.00	29.33	150.0	H	0.0	3.5
28717.437500	46.66	74.00	27.34	150.0	H	231.0	3.8

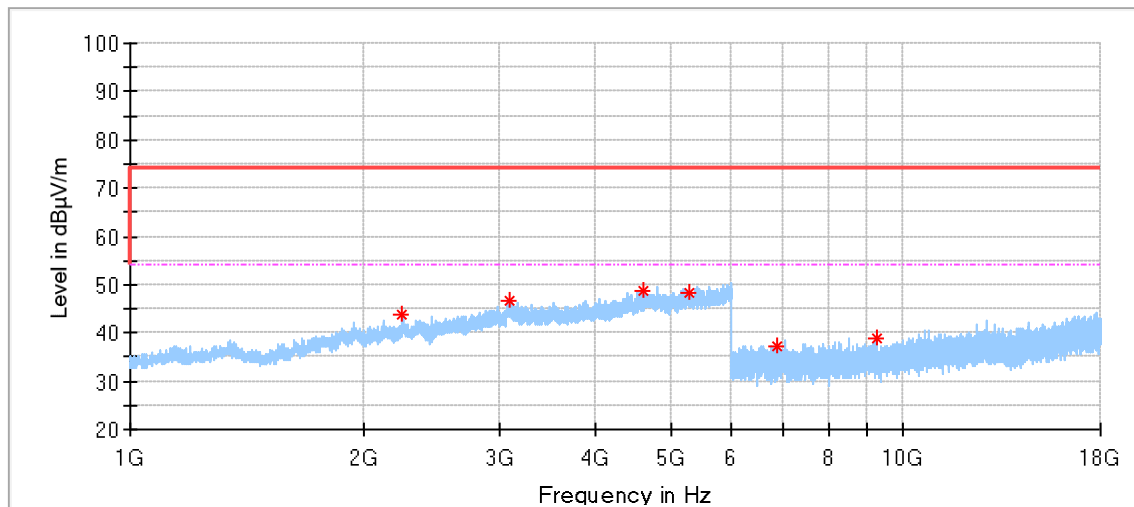


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18800.250000	43.14	74.00	30.86	150.0	V	197.0	-1.0
22595.250000	45.21	74.00	28.79	150.0	V	273.0	2.3
26331.812500	44.73	74.00	29.27	150.0	V	242.0	3.4

DH5_2480MHz_ANT1 (1– 18GHz)

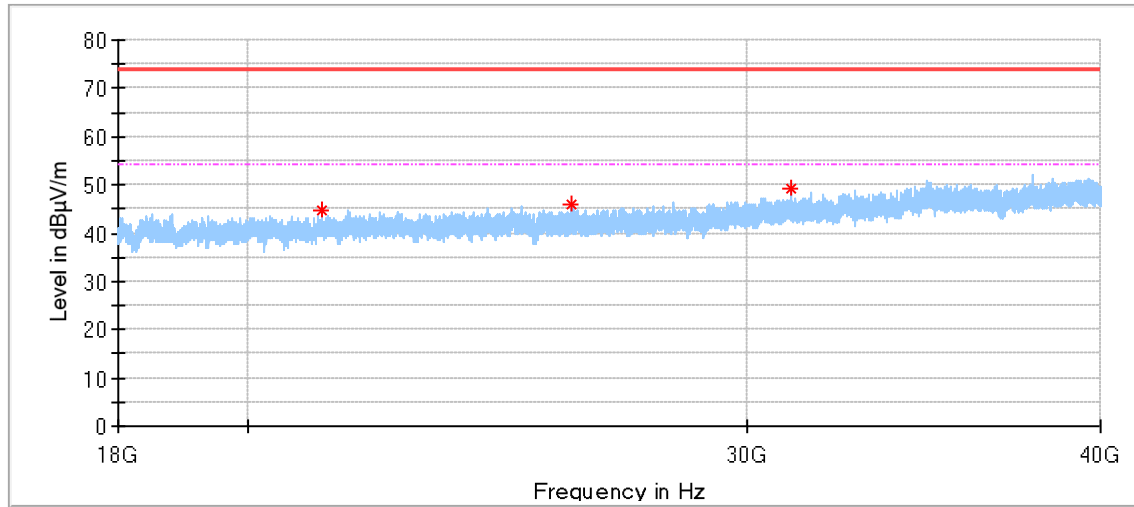


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.500000	43.58	74.00	30.42	150.0	H	289.0	-2.53
3115.000000	47.20	74.00	26.80	150.0	H	207.0	1.02
4501.500000	47.74	74.00	26.26	150.0	H	345.0	3.45
5960.000000	50.45	74.00	23.55	150.0	H	354.0	7.00
7009.000000	38.00	74.00	36.00	150.0	H	32.0	5.29
9187.500000	38.32	74.00	35.68	150.0	H	120.0	7.77

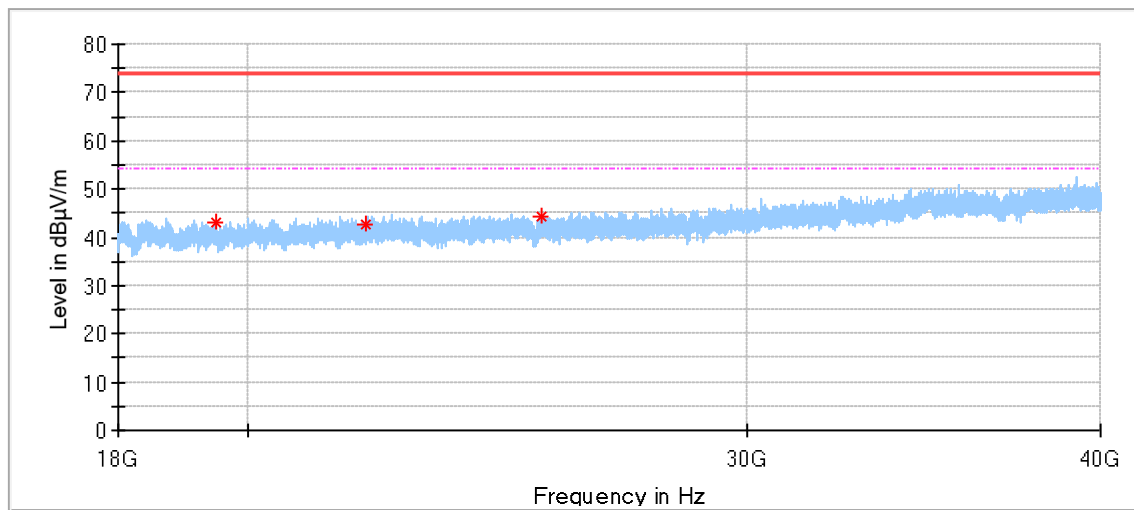


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2251.500000	43.62	74.00	30.38	150.0	V	197.0	-3.10
3095.500000	46.64	74.00	27.36	150.0	V	57.0	1.41
4602.500000	48.91	74.00	25.09	150.0	V	279.0	3.99
5276.000000	48.51	74.00	25.49	150.0	V	320.0	5.22
6876.000000	37.22	74.00	36.78	150.0	V	260.0	5.37
9220.000000	38.87	74.00	35.13	150.0	V	260.0	7.78

DH5_2480MHz_ANT1 (18– 40GHz)

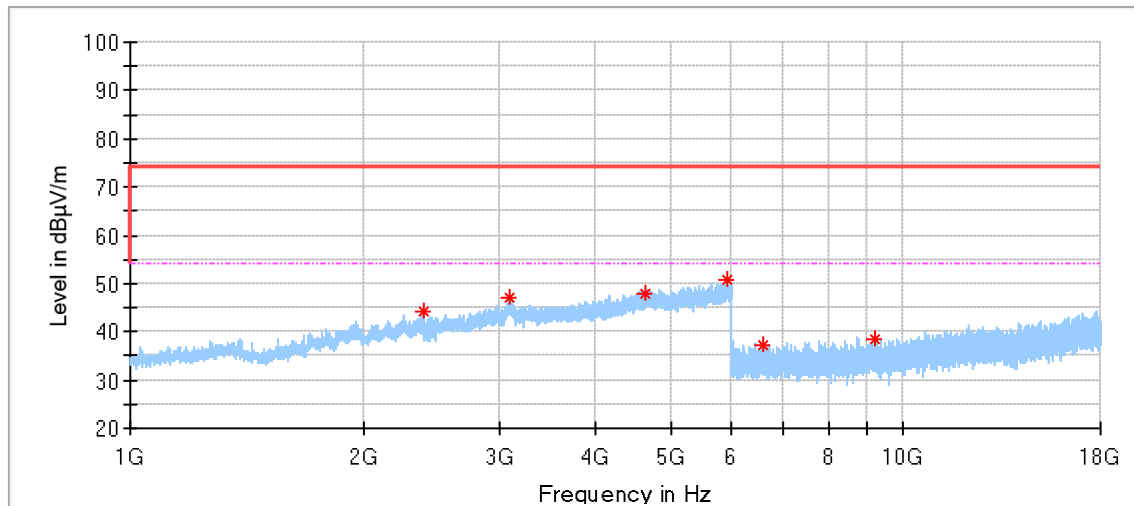


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
21253.250000	44.88	74.00	29.12	150.0	H	345.0	1.3
26023.812500	46.14	74.00	27.86	150.0	H	329.0	3.5
31116.812500	49.13	74.00	24.87	150.0	H	356.0	4.0

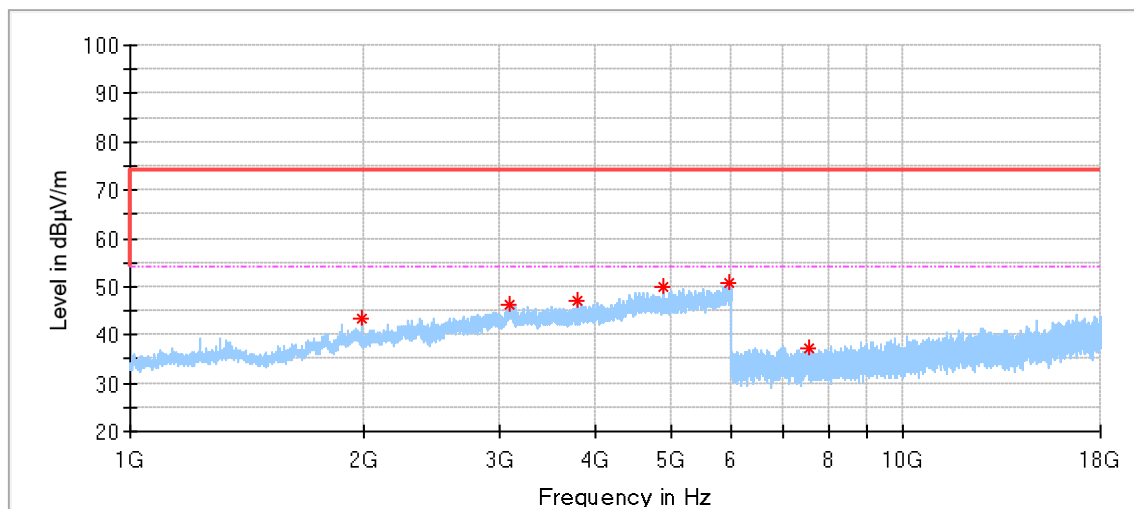


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19479.500000	43.00	74.00	31.00	150.0	V	0.0	-0.7
22021.875000	42.58	74.00	31.42	150.0	V	158.0	1.8
25391.312500	44.13	74.00	29.87	150.0	V	15.0	3.4

DH5_2402MHz_ANT2 (1– 18GHz)

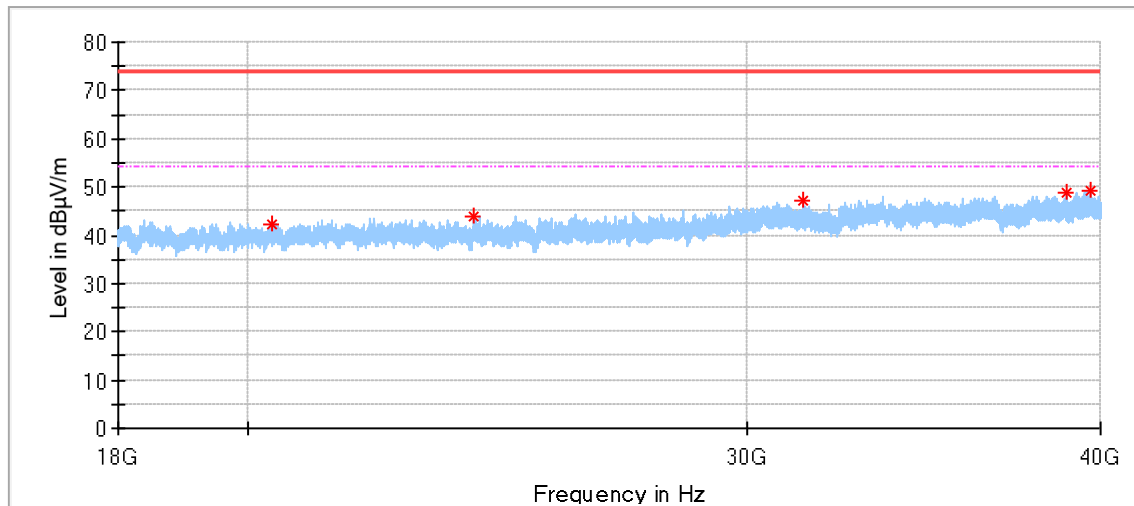


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2392.500000	44.18	74.00	29.82	150.0	H	122.0	-2.47
3091.500000	46.90	74.00	27.10	150.0	H	273.0	1.25
4643.000000	48.03	74.00	25.97	150.0	H	286.0	4.28
5916.000000	50.65	74.00	23.35	150.0	H	273.0	6.91
6584.000000	37.28	74.00	36.72	150.0	H	2.0	5.27
9214.500000	38.44	74.00	35.56	150.0	H	328.0	7.77

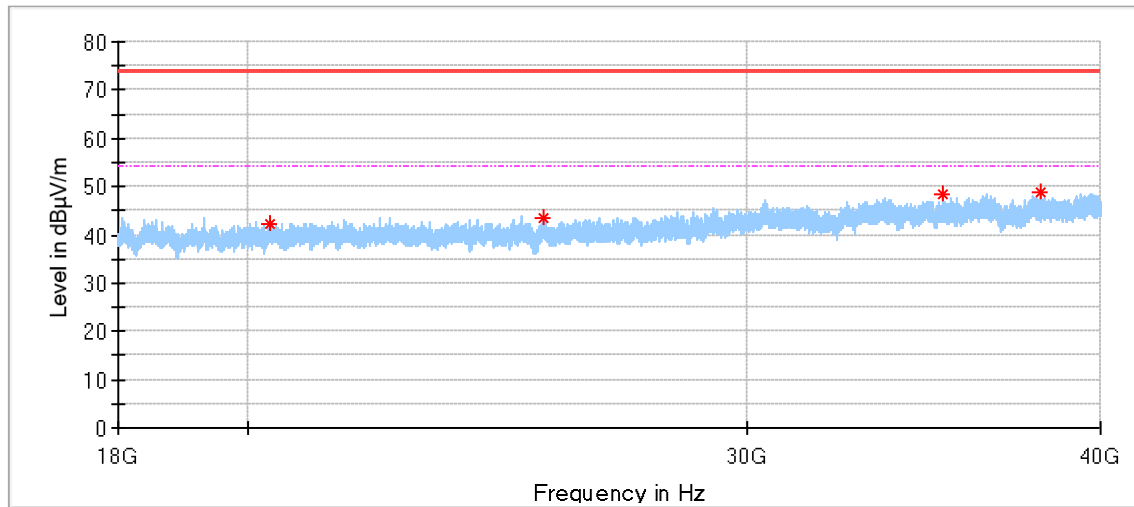


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1997.000000	43.45	74.00	30.55	150.0	V	218.0	-4.37
3086.500000	46.15	74.00	27.85	150.0	V	345.0	1.05
3789.500000	47.19	74.00	26.81	150.0	V	81.0	0.84
4899.000000	50.13	74.00	23.87	150.0	V	259.0	4.18
5939.500000	50.60	74.00	23.40	150.0	V	318.0	6.95
7539.500000	37.21	74.00	36.79	150.0	V	328.0	5.70

DH5_2480MHz_ANT2 (18– 40GHz)

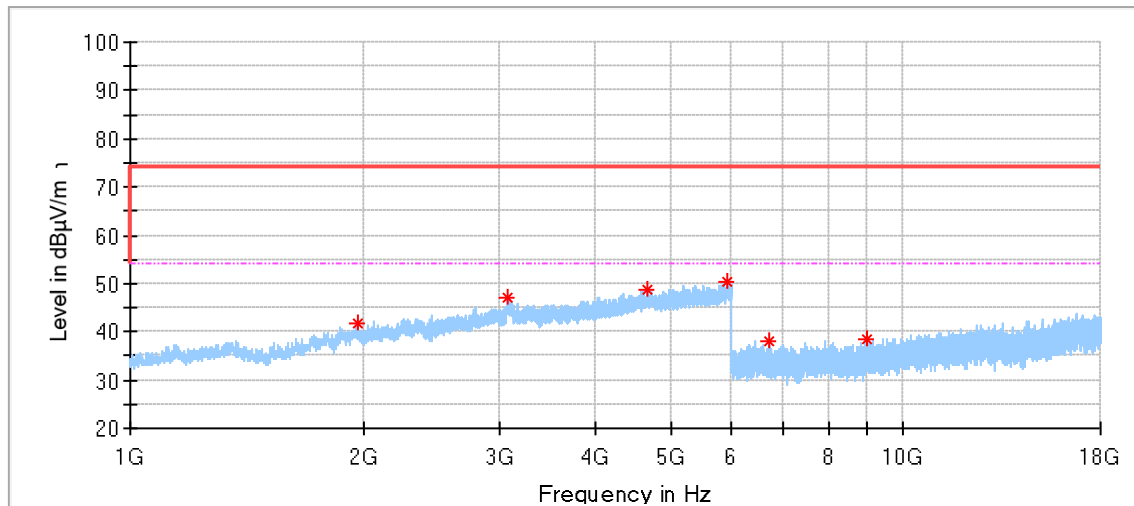


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20398.000000	42.37	74.00	31.63	150.0	H	213.0	-0.67
24045.875000	43.88	74.00	30.12	150.0	H	236.0	1.15
31417.937500	47.11	74.00	26.89	150.0	H	21.0	2.72
38892.437500	48.74	74.00	25.26	150.0	H	28.0	7.18
39698.187500	49.17	74.00	24.83	150.0	H	213.0	9.30



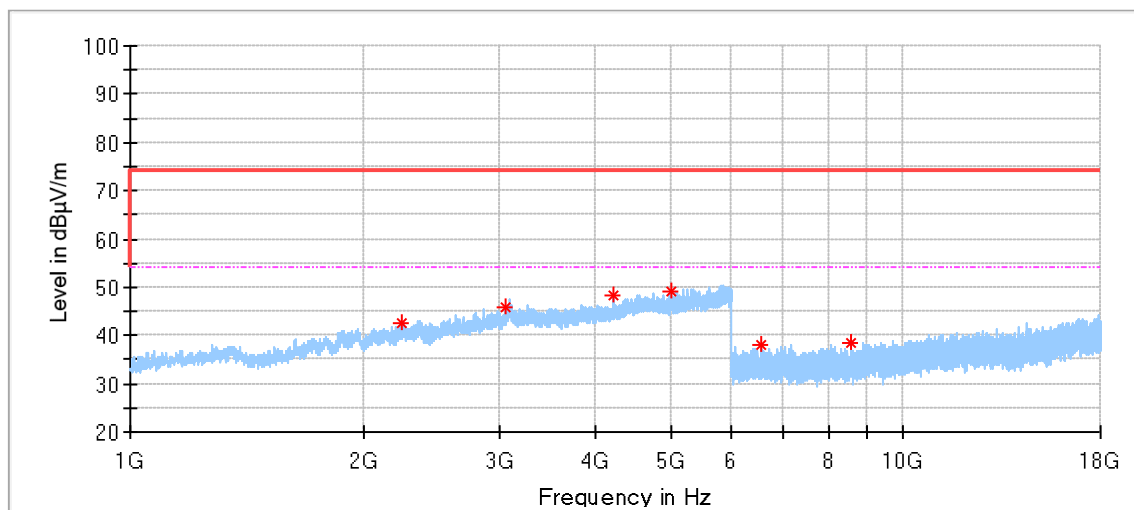
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20347.812500	42.10	74.00	31.90	150.0	V	0.0	-0.76
25444.937500	43.48	74.00	30.52	150.0	V	86.0	1.83
35195.750000	48.57	74.00	25.43	150.0	V	185.0	5.48
38112.812500	48.80	74.00	25.20	150.0	V	147.0	7.06

DH5_2440MHz_ANT2 (1– 18GHz)



Critical Freqs

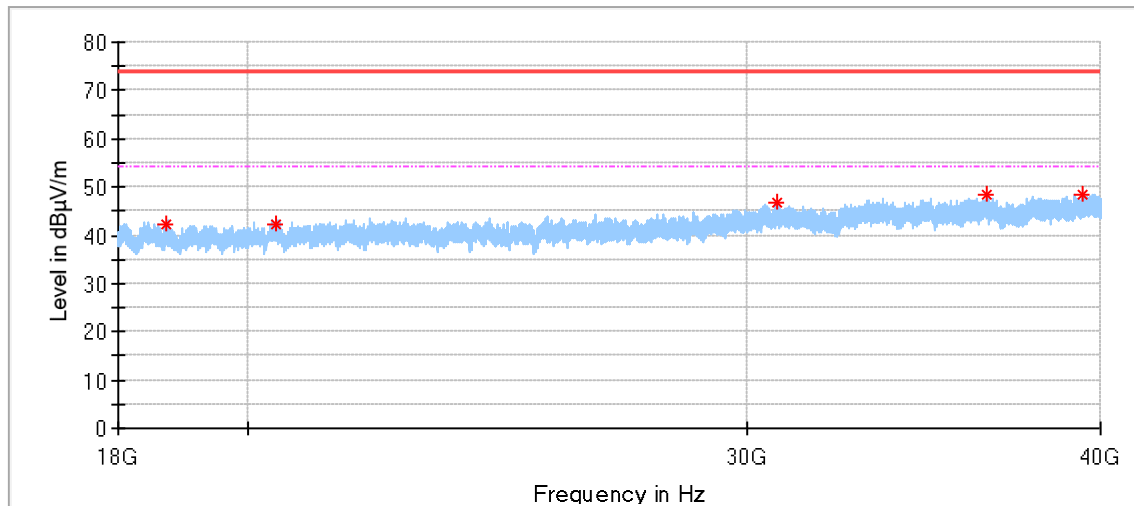
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1973.000000	41.75	74.00	32.25	150.0	H	341.0	-4.23
3078.500000	47.19	74.00	26.81	150.0	H	300.0	0.74
4666.000000	48.66	74.00	25.34	150.0	H	286.0	4.32
5911.000000	50.40	74.00	23.60	150.0	H	95.0	6.90
6695.000000	37.98	74.00	36.02	150.0	H	356.0	5.24
8968.000000	38.26	74.00	35.74	150.0	H	151.0	7.62



Critical Freqs

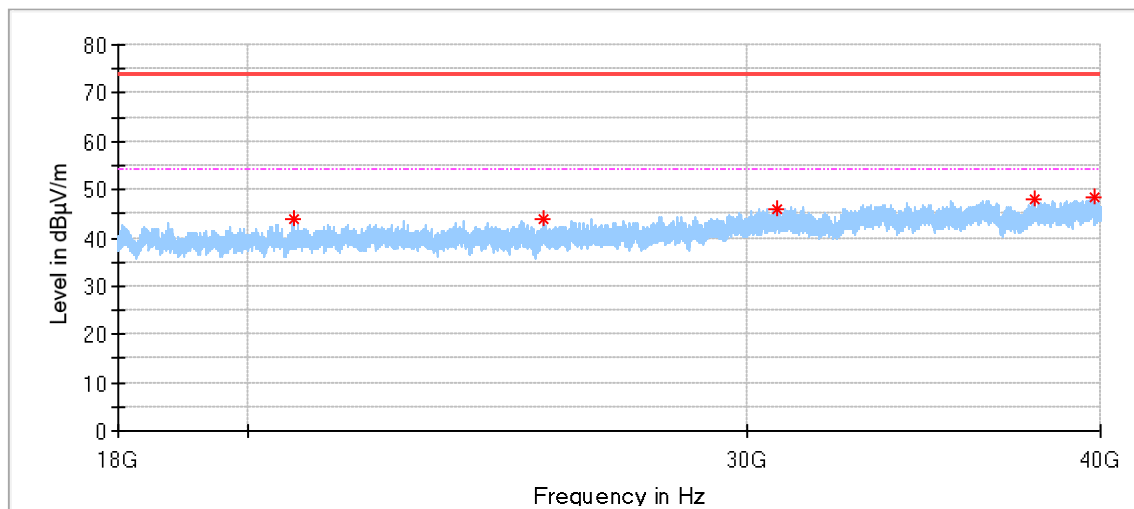
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2240.500000	42.61	74.00	31.39	150.0	V	245.0	-3.40
3066.000000	46.01	74.00	27.99	150.0	V	109.0	0.34
4227.500000	48.48	74.00	25.52	150.0	V	109.0	2.02
5023.000000	49.10	74.00	24.90	150.0	V	191.0	4.42
6546.000000	37.94	74.00	36.06	150.0	V	100.0	5.38
8579.000000	38.46	74.00	35.54	150.0	V	128.0	7.00

DH5_2440MHz_ANT2 (18– 40GHz)



Critical Freqs

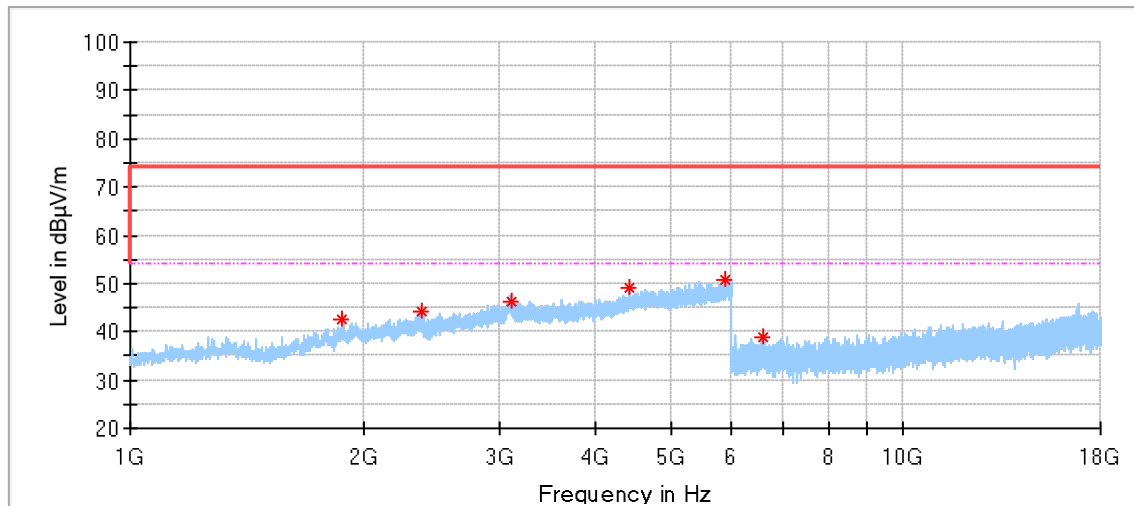
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18728.062500	42.25	74.00	31.75	150.0	H	44.0	-1.92
20461.937500	42.31	74.00	31.69	150.0	H	145.0	-0.56
30748.312500	46.84	74.00	27.16	150.0	H	191.0	2.97
36440.812500	48.39	74.00	25.61	150.0	H	1.0	6.23
39441.062500	48.42	74.00	25.58	150.0	H	199.0	8.54



Critical Freqs

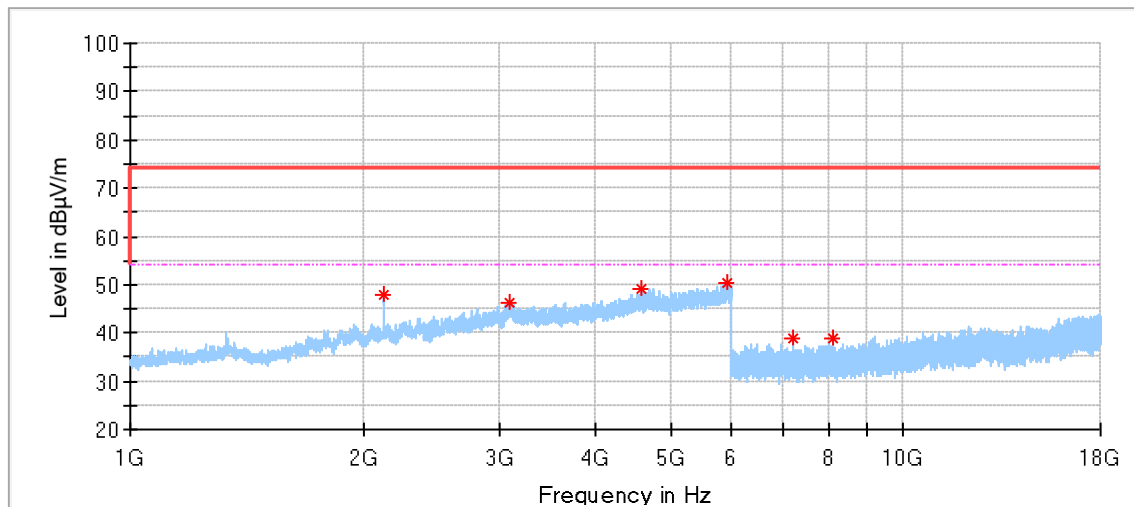
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20758.937500	43.80	74.00	30.20	150.0	V	86.0	-0.26
25449.750000	43.87	74.00	30.13	150.0	V	4.0	1.83
30735.250000	45.87	74.00	28.13	150.0	V	208.0	2.98
37893.500000	47.91	74.00	26.09	150.0	V	261.0	6.82
39810.937500	48.41	74.00	25.59	150.0	V	216.0	9.62

DH5_2480MHz_ANT2 (1– 18GHz)



Critical Freqs

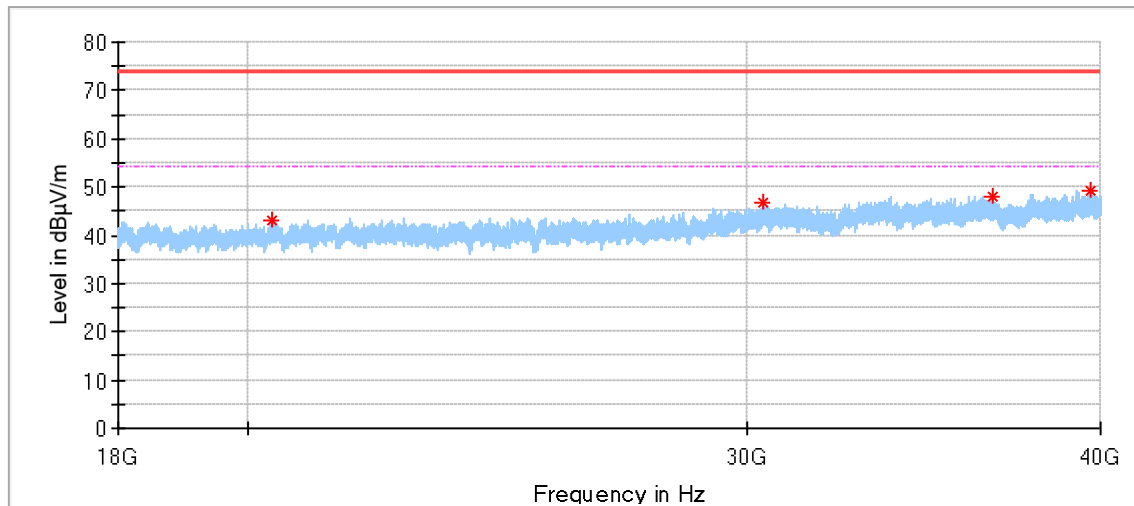
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1876.000000	42.64	74.00	31.36	150.0	H	304.0	-4.84
2388.000000	44.07	74.00	29.93	150.0	H	250.0	-2.51
3122.000000	46.12	74.00	27.88	150.0	H	236.0	0.74
4423.000000	49.13	74.00	24.87	150.0	H	195.0	3.16
5881.500000	50.69	74.00	23.31	150.0	H	113.0	6.80
6571.000000	38.73	74.00	35.27	150.0	H	91.0	5.32



Critical Freqs

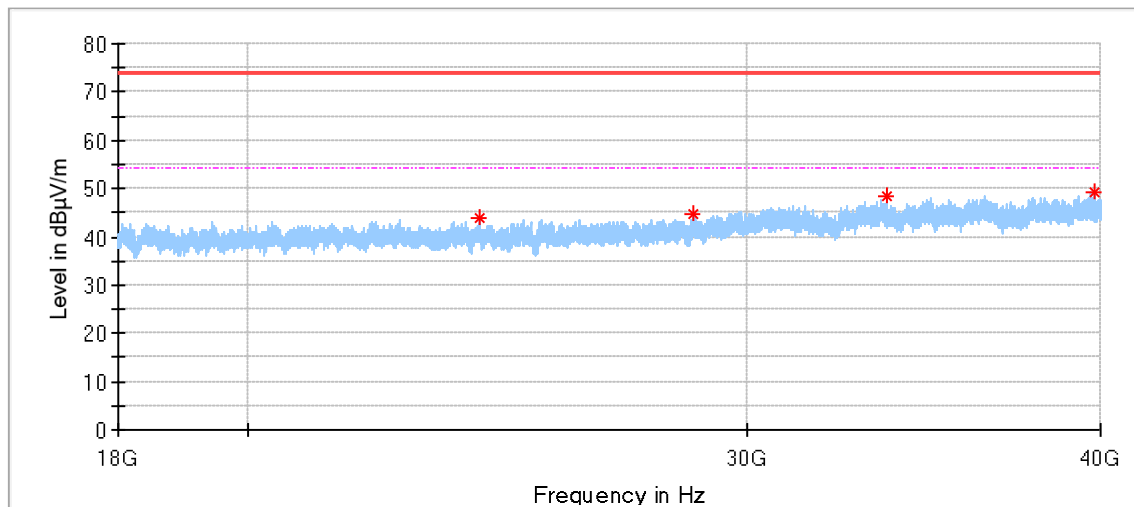
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2130.000000	48.06	74.00	25.94	150.0	V	223.0	-3.87
3099.000000	46.42	74.00	27.58	150.0	V	81.0	1.54
4590.500000	49.10	74.00	24.90	150.0	V	177.0	3.95
5915.000000	50.33	74.00	23.67	150.0	V	195.0	6.91
7219.500000	38.73	74.00	35.27	150.0	V	17.0	5.36
8098.500000	38.78	74.00	35.22	150.0	V	156.0	6.31

DH5_2480MHz_ANT2 (18– 40GHz)



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20398.687500	42.99	74.00	31.01	150.0	H	107.0	-0.67
30407.312500	46.56	74.00	27.44	150.0	H	61.0	3.05
36660.812500	48.14	74.00	25.86	150.0	H	284.0	6.14
39692.000000	49.22	74.00	24.78	150.0	H	0.0	9.28

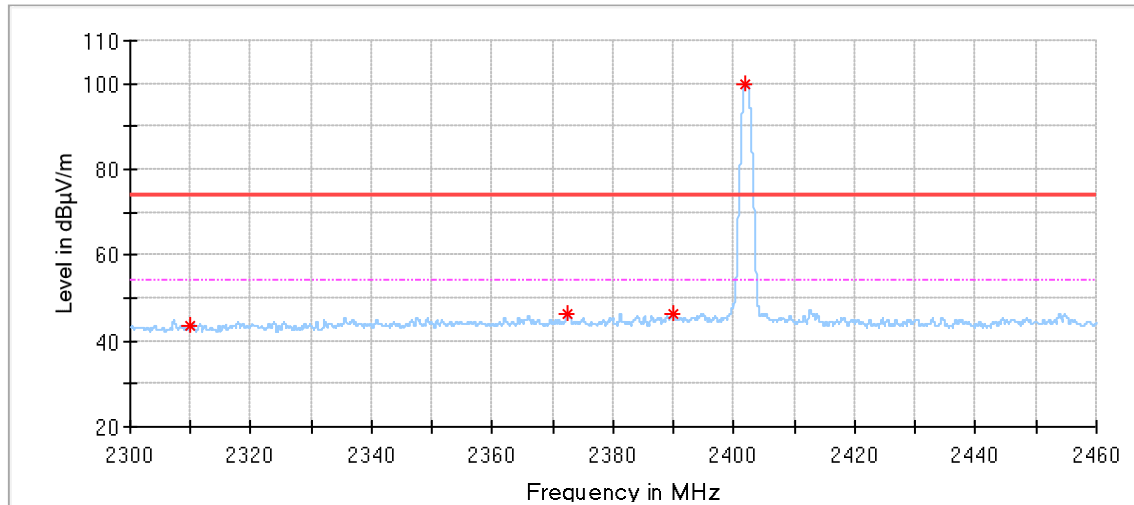


Critical Freqs

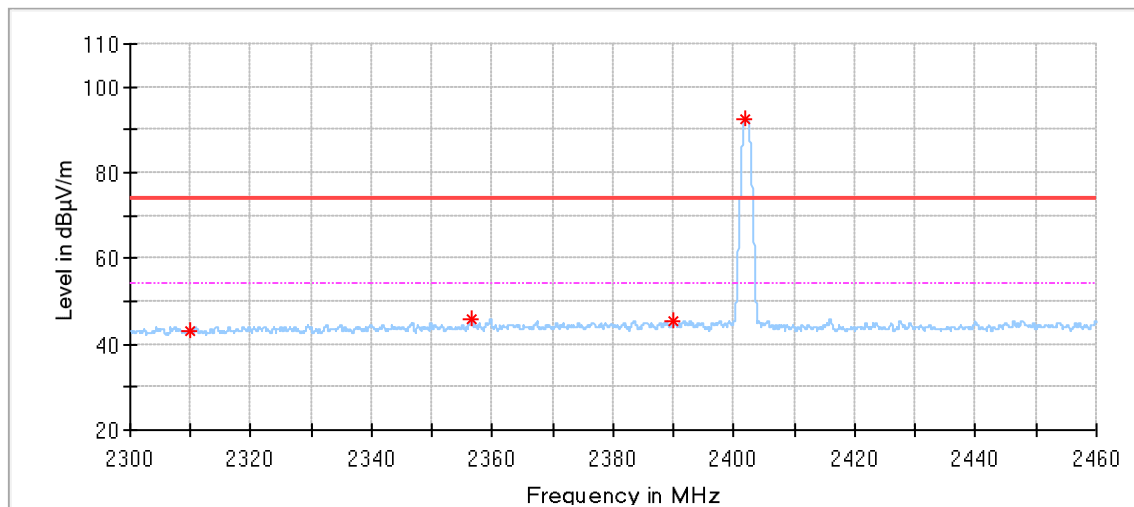
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
24144.187500	43.87	74.00	30.13	150.0	V	7.0	1.11
28703.687500	44.52	74.00	29.48	150.0	V	213.0	2.40
33646.125000	48.30	74.00	25.70	150.0	V	236.0	4.56
39813.687500	49.36	74.00	24.64	150.0	V	228.0	9.63

Restricted-band band-edge

DH5_2402MHz_ANT 1:

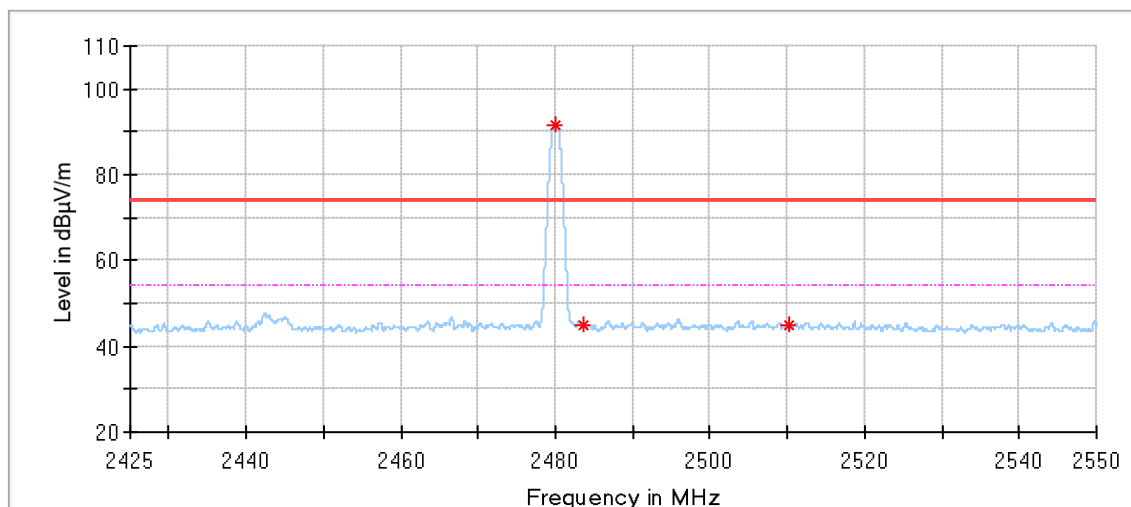


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2309.888000	43.47	74.00	30.53	150.0	H	331.0	-3.74	Spurious
2372.512000	46.45	74.00	27.55	150.0	H	34.0	-3.13	Spurious
2389.872000	46.36	74.00	27.64	150.0	H	13.0	-3.05	Spurious
2401.840000	99.65	/	/	150.0	H	331.0	/	Fundamental Frequency



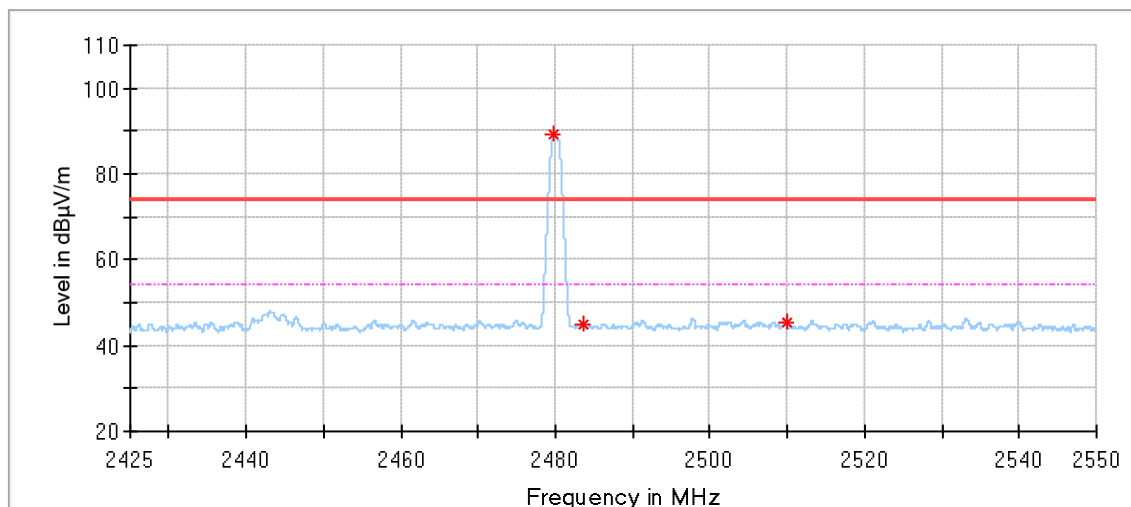
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2310.080000	43.22	74.00	30.78	150.0	V	329.0	-3.74	Spurious
2356.608000	45.90	74.00	28.10	150.0	V	112.0	-3.35	Spurious
2389.872000	45.21	74.00	28.79	150.0	V	123.0	-3.05	Spurious
2401.840000	92.57	/	/	150.0	V	308.0	/	Fundamental Frequency

DH5_2480MHz_ANT 1:



Critical Freqs

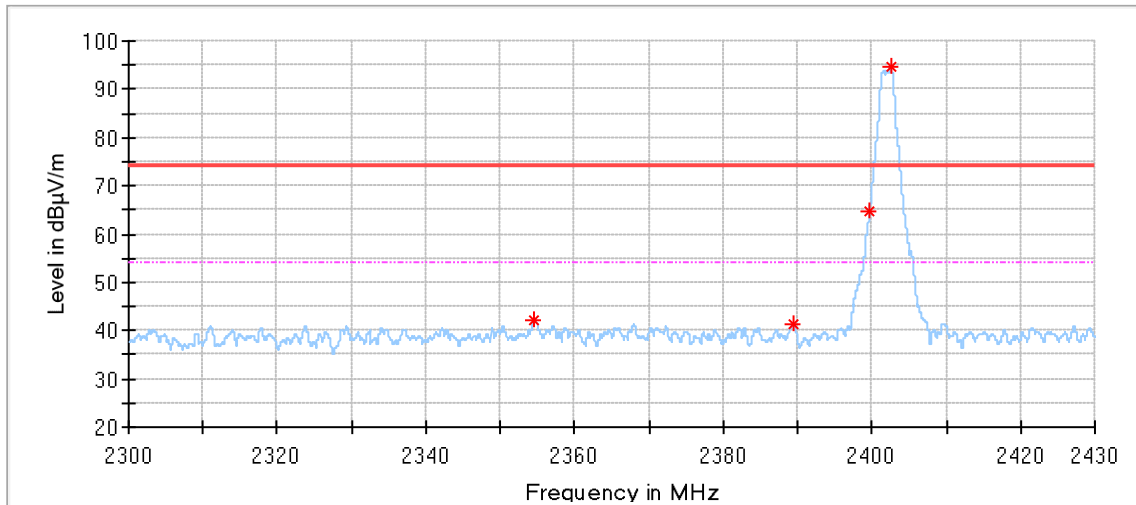
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2480.075000	91.72	/	/	150.0	H	338.0	/	Fundamental Frequency
2483.612500	44.78	74.00	29.22	150.0	H	183.0	-3.06	Spurious
2510.275000	44.75	74.00	29.25	150.0	H	210.0	-3.13	Spurious



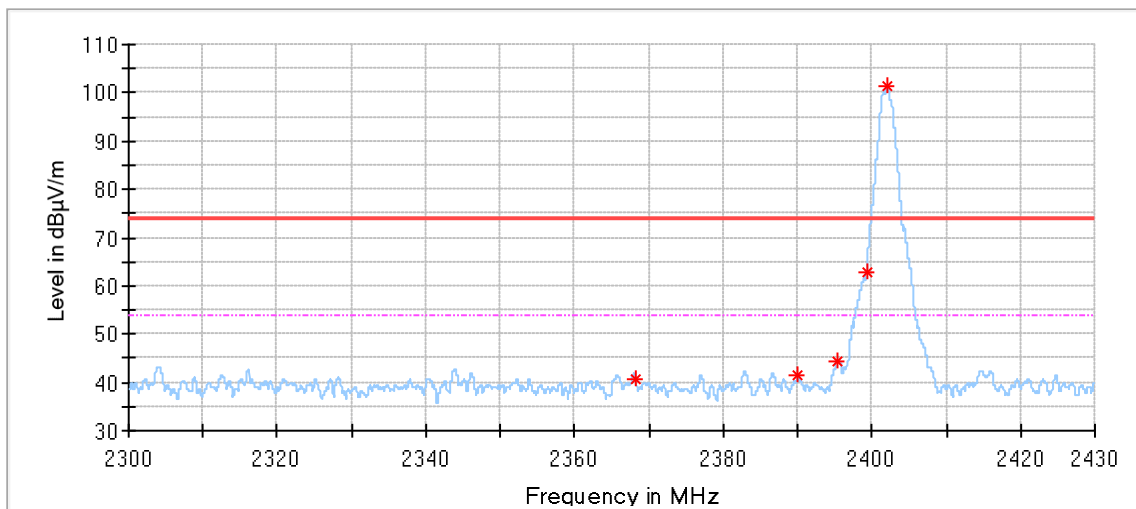
Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2479.837500	89.19	/	/	150.0	V	267.0	/	Fundamental Frequency
2483.650000	44.97	74.00	29.03	150.0	V	67.0	-3.06	Spurious
2509.937500	45.17	74.00	28.83	150.0	V	167.0	-3.13	Spurious

2DH5_2402MHz_ANT 1:

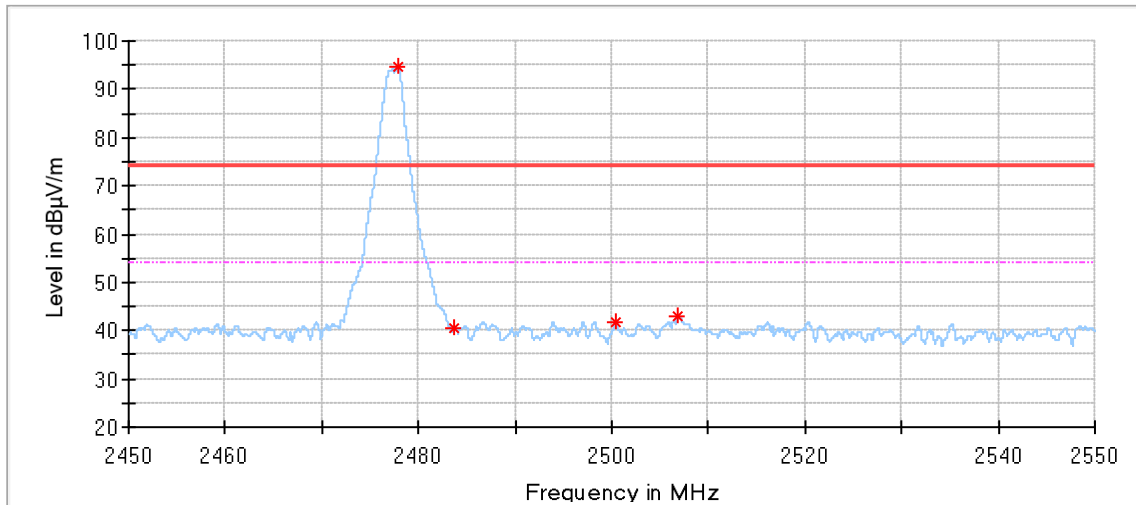


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2354.535000	42.25	74.00	31.75	150.0	H	281.0	-3.10	Spurious
2389.375000	41.31	74.00	32.69	150.0	H	350.0	-2.95	Spurious
2399.710000	64.83	74.00	9.17	150.0	H	124.0	-2.86	Spurious
2402.518000	94.58	/	/	150.0	H	85.0	/	Fundamental Frequency

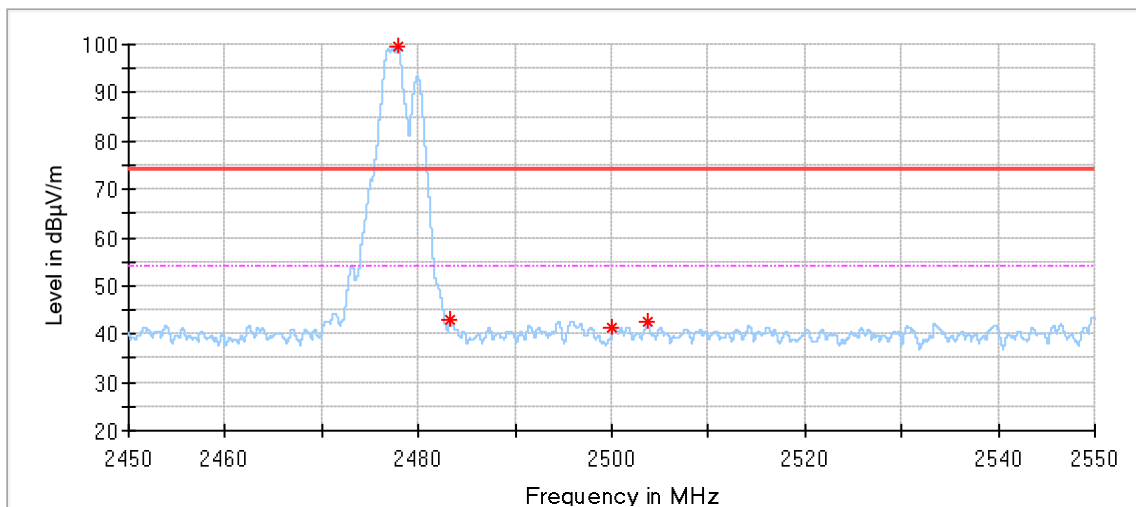


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2368.146000	40.61	74.00	33.39	150.0	V	37.0	-3.07	Spurious
2390.077000	41.55	74.00	32.45	150.0	V	37.0	-2.94	Spurious
2395.277000	44.51	74.00	29.49	150.0	V	19.0	-2.90	Spurious
2399.255000	62.90	74.00	11.10	150.0	V	15.0	-2.86	Spurious
2402.011000	101.33	/	/	150.0	V	28.0	/	Fundamental Frequency

2DH5_2480MHz_ANT 1:

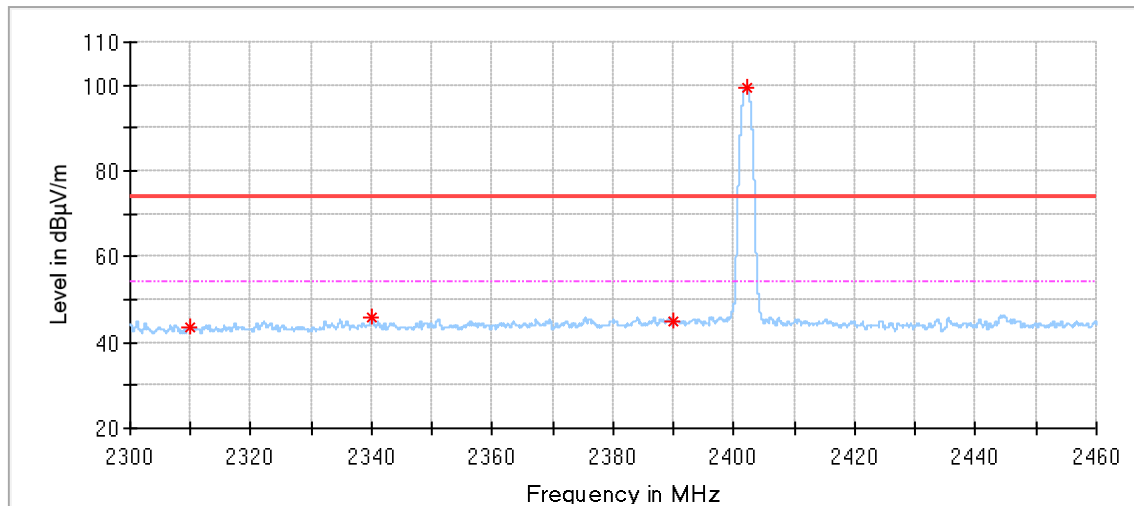


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2477.800000	94.86	/	/	150.0	H	0.0	/	Fundamental Frequency
2483.660000	40.63	74.00	33.37	150.0	H	210.0	-2.20	Spurious
2500.420000	41.90	74.00	32.10	150.0	H	16.0	-2.14	Spurious
2506.910000	42.79	74.00	31.21	150.0	H	119.0	-2.15	Spurious

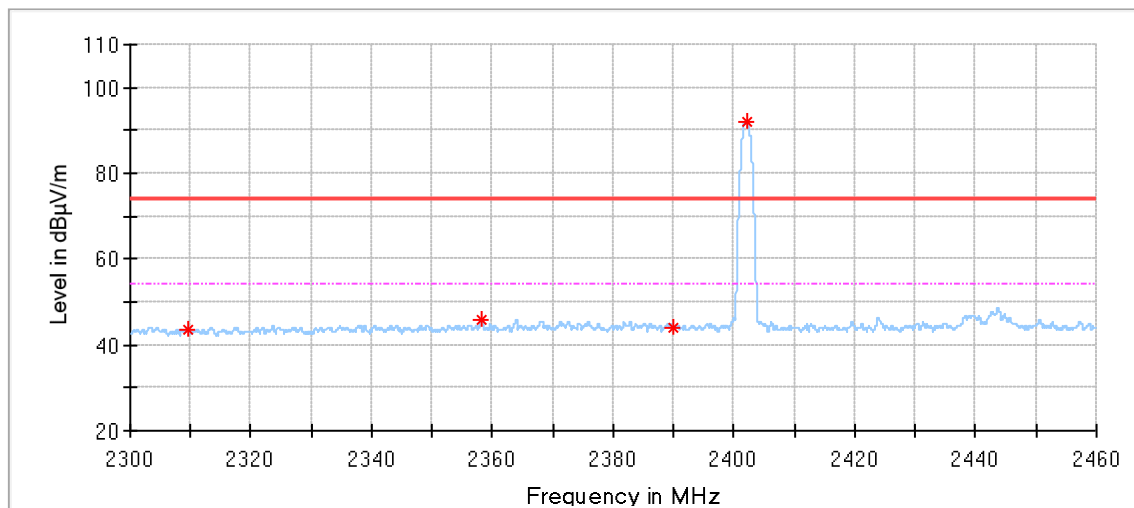


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2477.810000	99.51	/	/	150.0	V	51.0	/	Fundamental Frequency
2483.260000	42.95	74.00	31.05	150.0	V	51.0	-2.20	Spurious
2500.100000	41.33	74.00	32.67	150.0	V	339.0	-2.14	Spurious
2503.700000	42.74	74.00	31.26	150.0	V	129.0	-2.15	Spurious

3DH5_2402MHz_ANT 1:

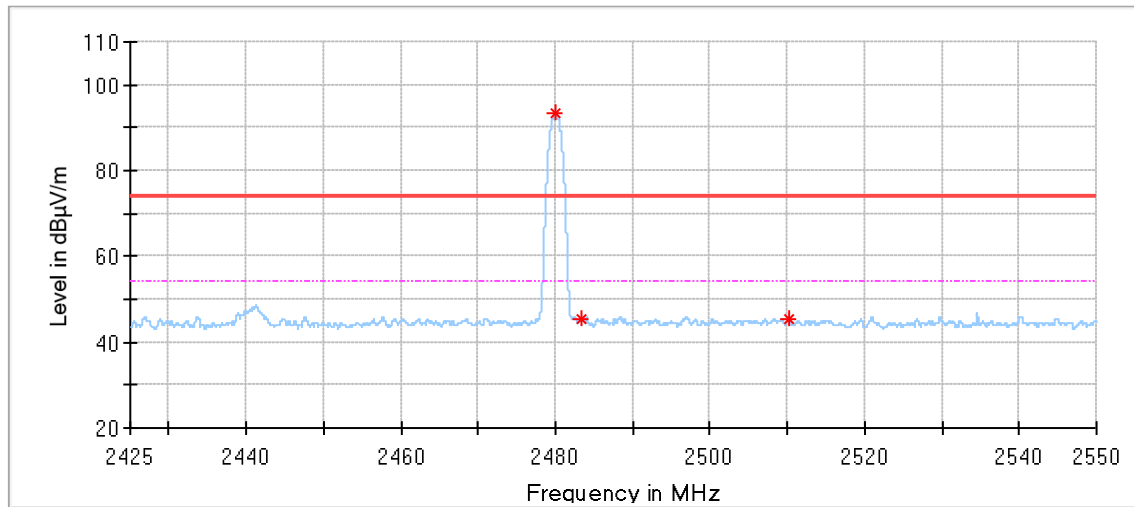


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2310.064000	43.66	74.00	30.34	150.0	H	235.0	-3.74	Spurious
2339.920000	46.06	74.00	27.94	150.0	H	1.0	-3.53	Spurious
2390.000000	44.76	74.00	29.24	150.0	H	340.0	-3.05	Spurious
2402.016000	99.61	/	/	150.0	H	340.0	/	Fundamental Frequency

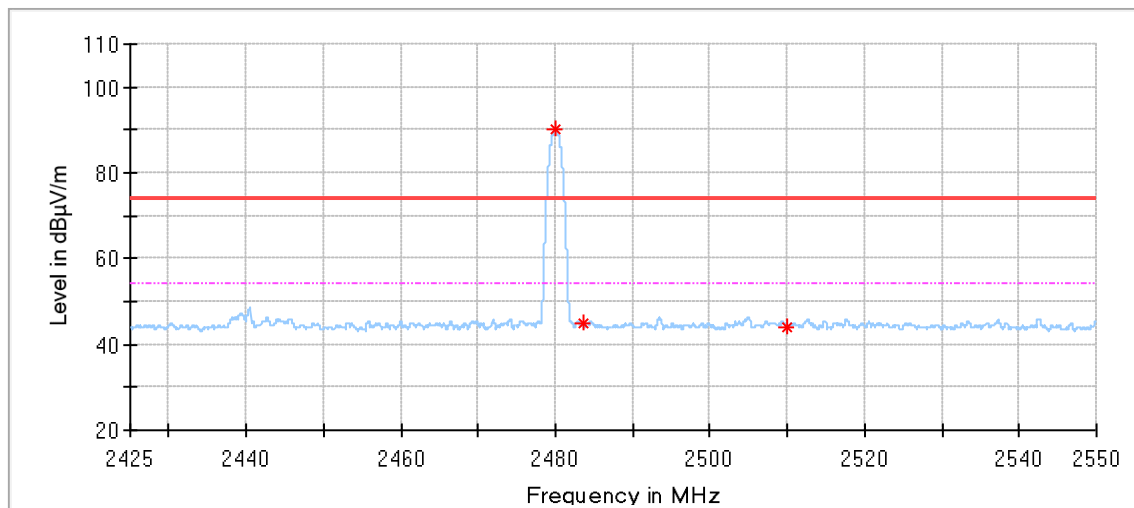


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2309.536000	43.76	74.00	30.24	150.0	V	282.0	-3.75	Spurious
2358.032000	45.78	74.00	28.22	150.0	V	282.0	-3.33	Spurious
2390.000000	44.19	74.00	29.81	150.0	V	252.0	-3.05	Spurious
2402.016000	92.21	/	/	150.0	V	303.0	/	Fundamental Frequency

3DH5_2480MHz_ANT 1:

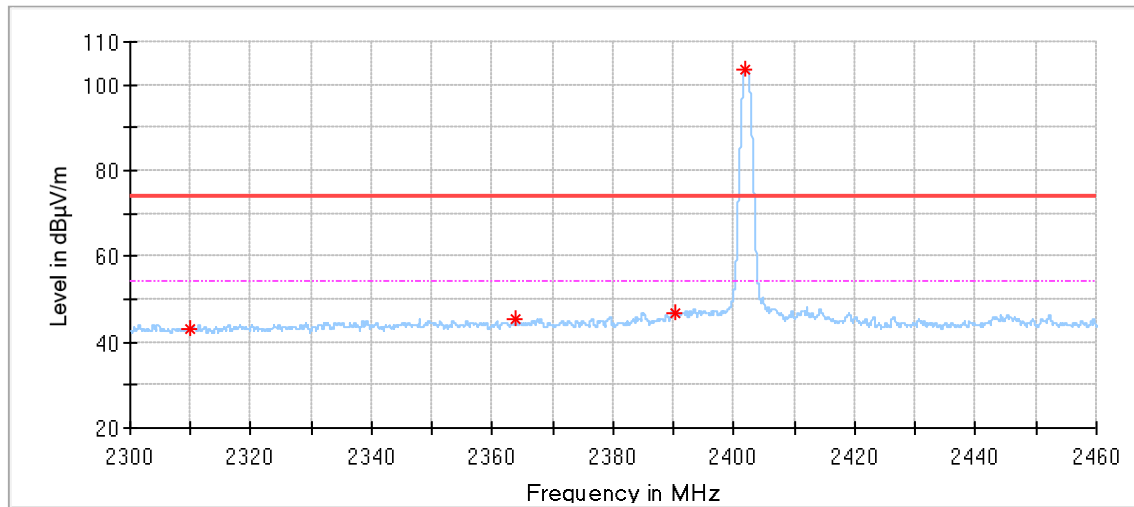


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2480.000000	93.22	/	/	150.0	H	338.0	/	Fundamental Frequency
2483.300000	45.53	74.00	28.47	150.0	H	284.0	-3.06	Spurious
2510.200000	45.47	74.00	28.53	150.0	H	302.0	-3.13	Spurious

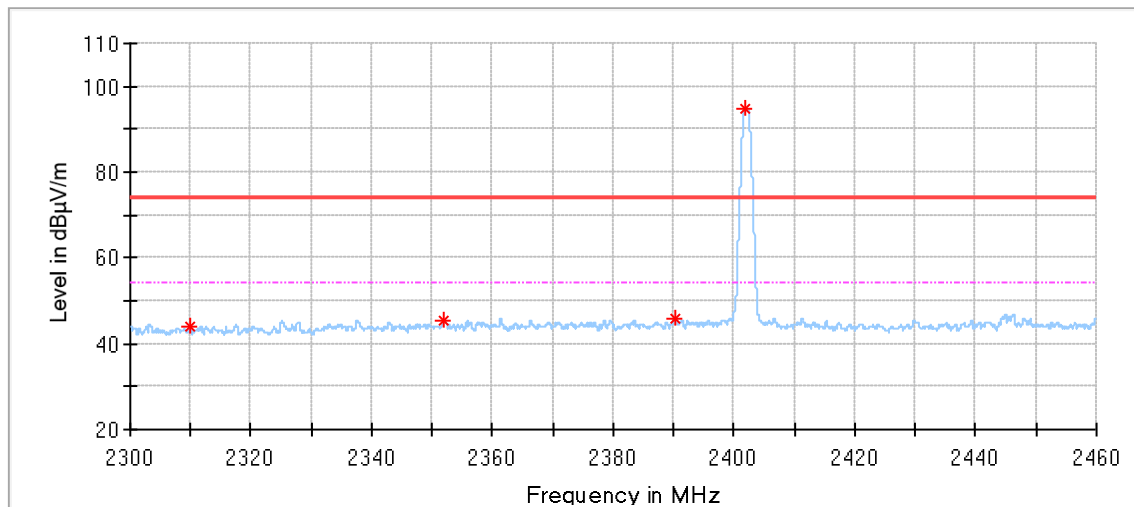


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2480.000000	90.07	/	/	150.0	V	272.0	/	Fundamental Frequency
2483.500000	44.98	74.00	29.02	150.0	V	290.0	-3.06	Spurious
2509.900000	44.13	74.00	29.87	150.0	V	329.0	-3.13	Spurious

DH5_2402MHz_ANT 2:

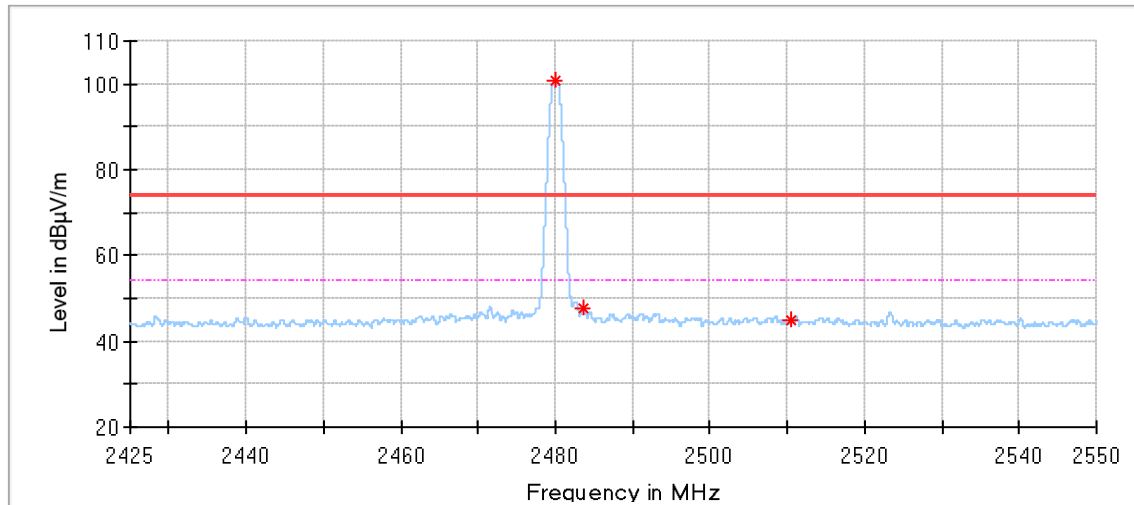


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2309.936000	43.01	74.00	30.99	150.0	H	201.0	-3.74
2363.744000	45.54	74.00	28.46	150.0	H	329.0	-3.25
2390.352000	46.82	74.00	27.18	150.0	H	201.0	-3.05
2401.856000	103.64	74.00	-29.64	150.0	H	201.0	-3.03

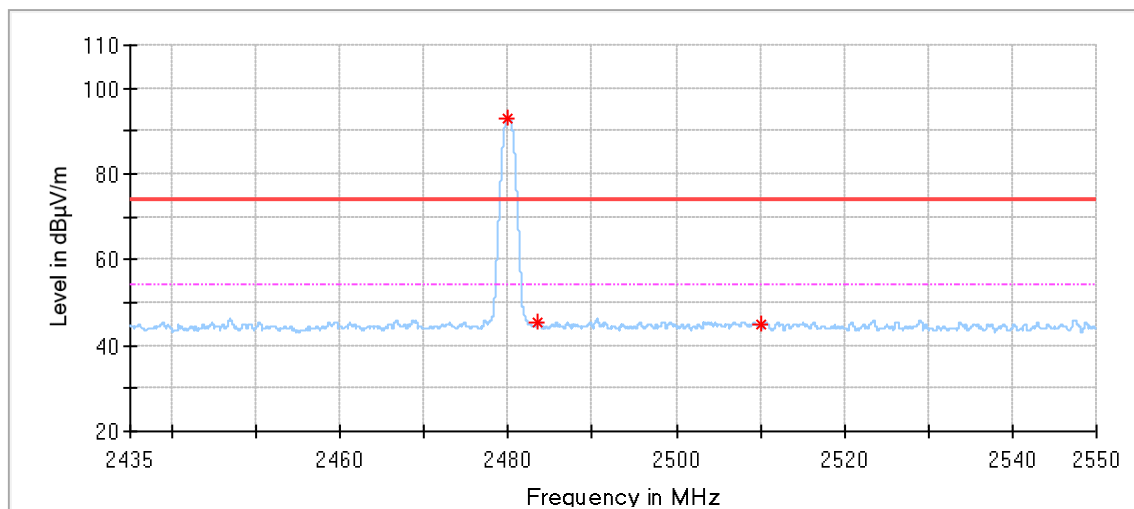


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2309.872000	43.98	74.00	30.02	150.0	V	147.0	-3.74
2351.904000	45.27	74.00	28.73	150.0	V	137.0	-3.41
2390.224000	45.78	74.00	28.22	150.0	V	20.0	-3.05
2401.840000	94.90	74.00	-20.90	150.0	V	116.0	-3.03

DH5_2480MHz_ANT 2:

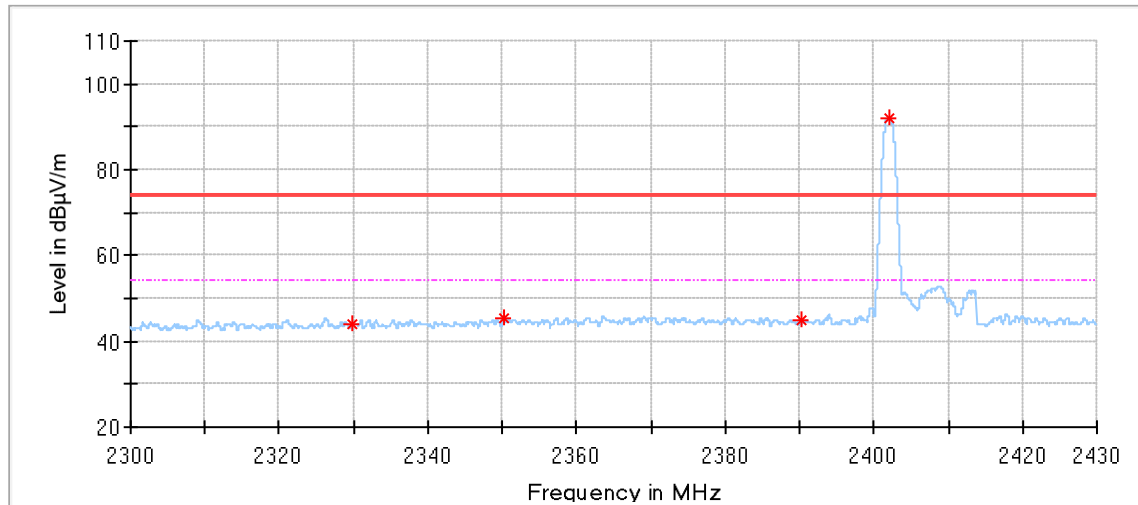


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.925000	100.88	74.00	-26.88	150.0	H	203.0	-3.04
2483.600000	47.50	74.00	26.50	150.0	H	203.0	-3.06
2510.412500	44.83	74.00	29.17	150.0	H	11.0	-3.13

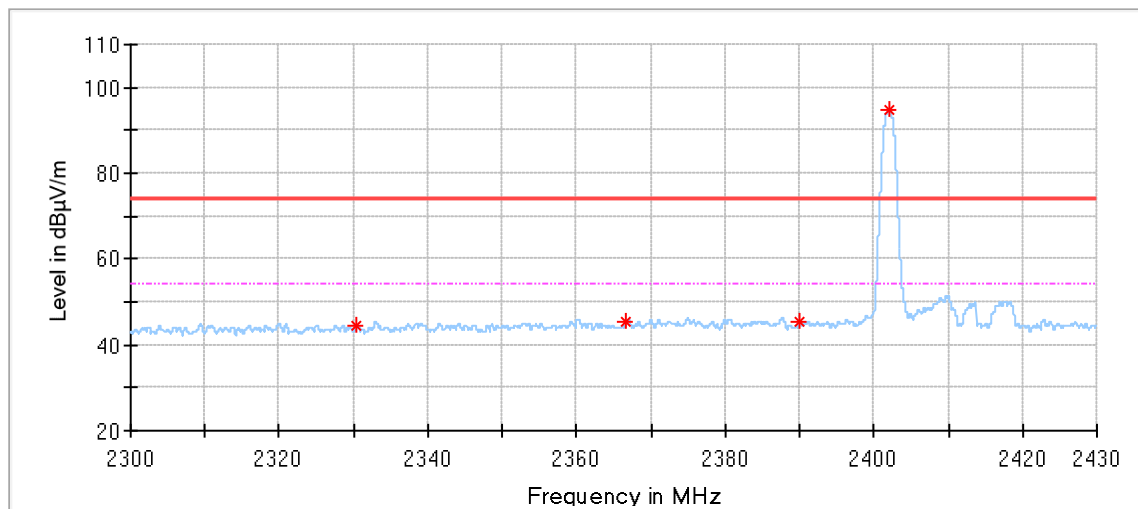


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.925000	92.79	74.00	-18.79	150.0	V	138.0	-3.04
2483.512500	45.30	74.00	28.70	150.0	V	338.0	-3.06
2510.100000	44.72	74.00	29.28	150.0	V	329.0	-3.13

2DH5_2402MHz_ANT 2:

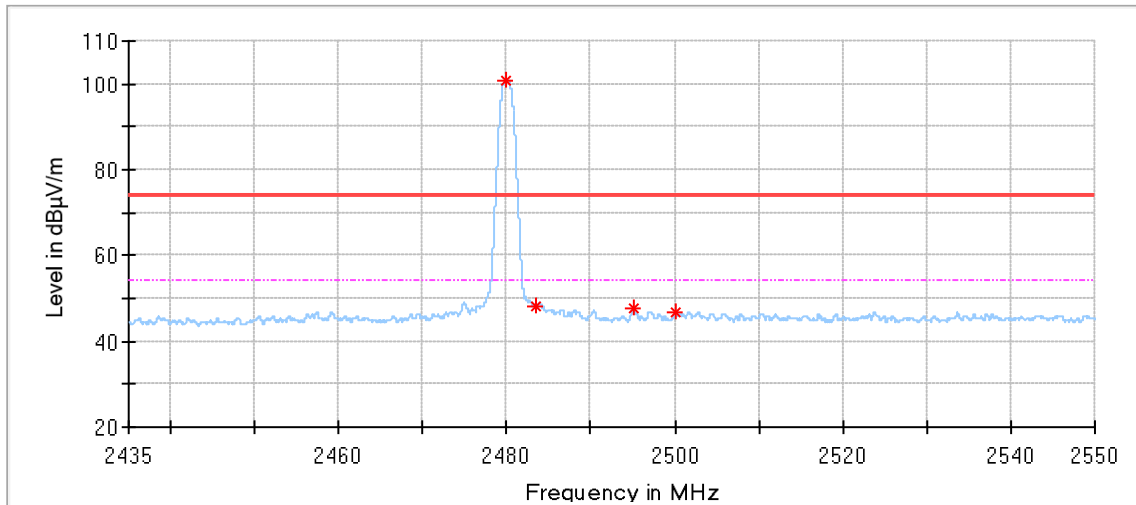


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2329.900000	43.99	74.00	30.01	150.0	H	273.0	-3.55	Spurious
2350.167000	45.26	74.00	28.74	150.0	H	201.0	-3.36	Spurious
2390.350000	44.77	74.00	29.23	150.0	H	146.0	-2.88	Spurious
2401.998000	92.10	/	/	150.0	H	19.0	/	Fundamental Frequency

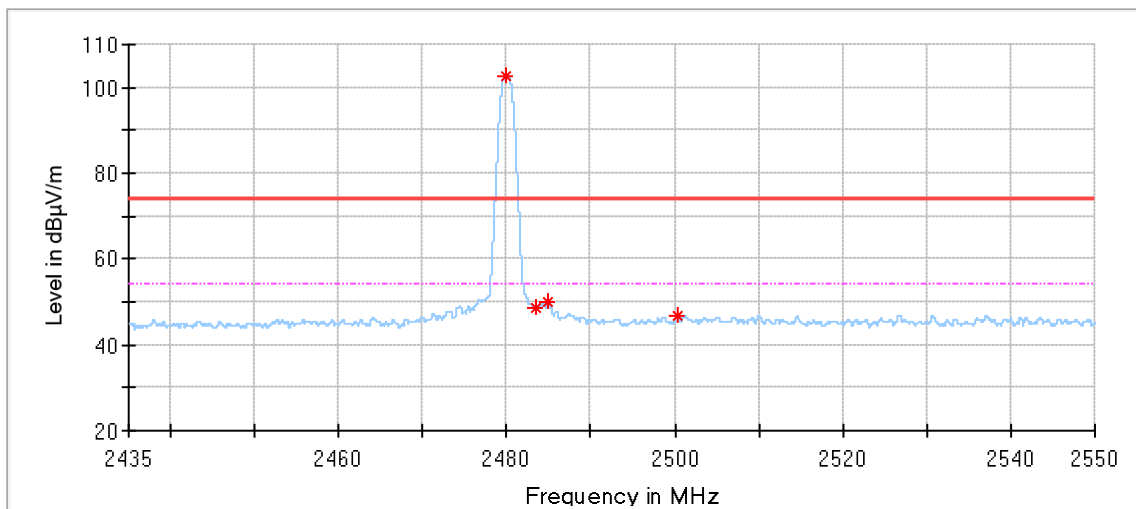


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2330.420000	44.50	74.00	29.50	150.0	V	159.0	-3.54	Spurious
2366.703000	45.27	74.00	28.73	150.0	V	50.0	-3.04	Spurious
2389.934000	45.26	74.00	28.74	150.0	V	50.0	-2.88	Spurious
2401.998000	94.59	/	/	150.0	V	268.0	/	Fundamental Frequency

2DH5_2480MHz_ANT 2:

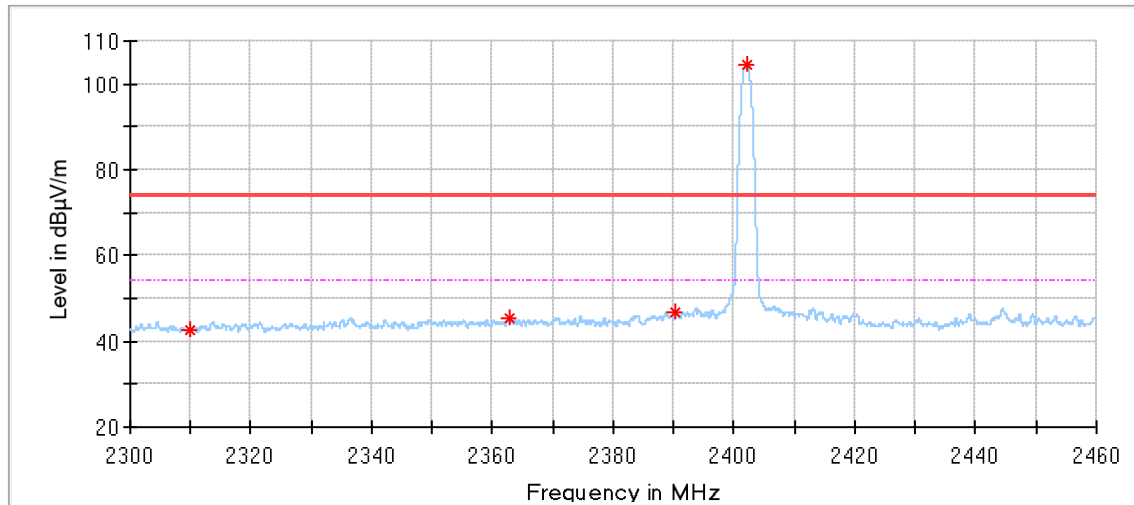


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2479.999500	100.91	/	/	150.0	H	255.0	/	Fundamental Frequency
2483.484000	48.20	74.00	25.80	150.0	H	244.0	-2.38	Spurious
2495.053000	47.47	74.00	26.53	150.0	H	179.0	-2.36	Spurious
2500.159000	46.92	74.00	27.08	150.0	H	212.0	-2.35	Spurious

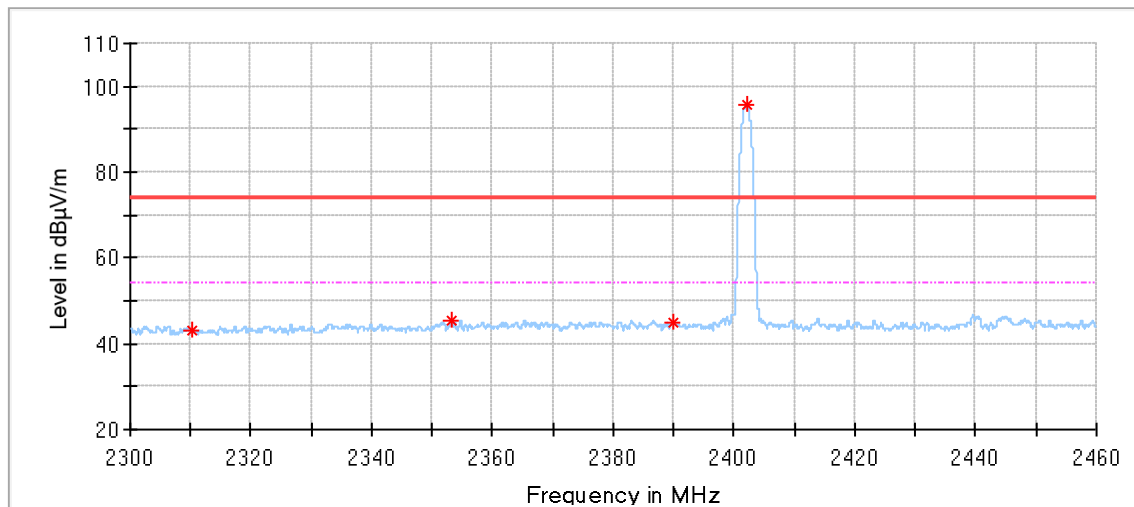


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2479.999500	102.74	/	/	150.0	V	257.0	/	Fundamental Frequency
2483.495500	48.80	74.00	25.20	150.0	V	257.0	-2.38	Spurious
2484.944500	50.20	74.00	23.80	150.0	V	257.0	-2.38	Spurious
2500.308500	46.58	74.00	27.42	150.0	V	0.0	-2.35	Spurious

3DH5_2402MHz_ANT 2:

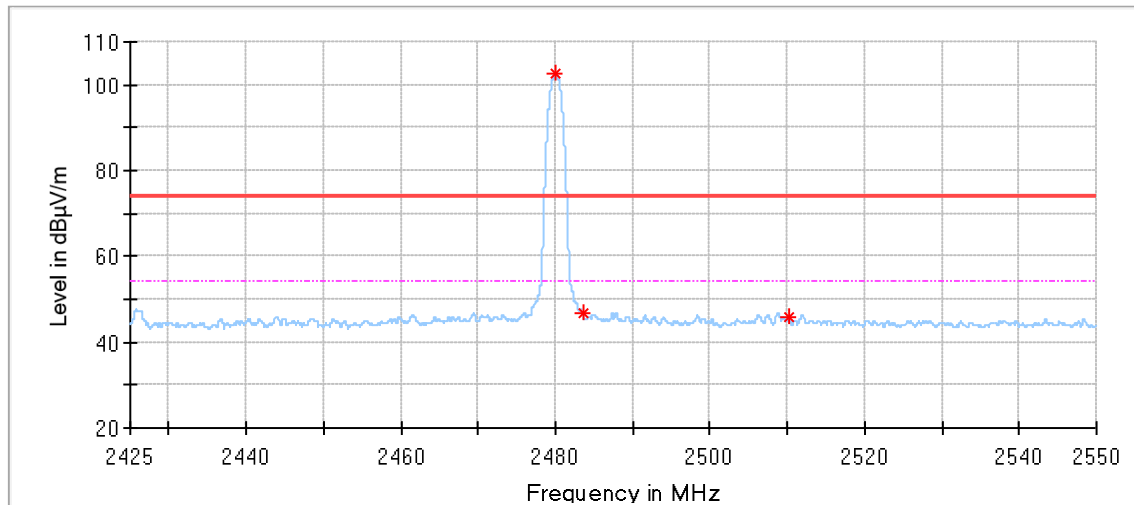


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2309.936000	42.74	74.00	31.26	150.0	H	231.0	-3.74	Spurious
2362.656000	45.57	74.00	28.43	150.0	H	189.0	-3.26	Spurious
2390.256000	46.75	74.00	27.25	150.0	H	210.0	-3.05	Spurious
2402.016000	104.68	/	/	150.0	H	199.0	/	Fundamental Frequency

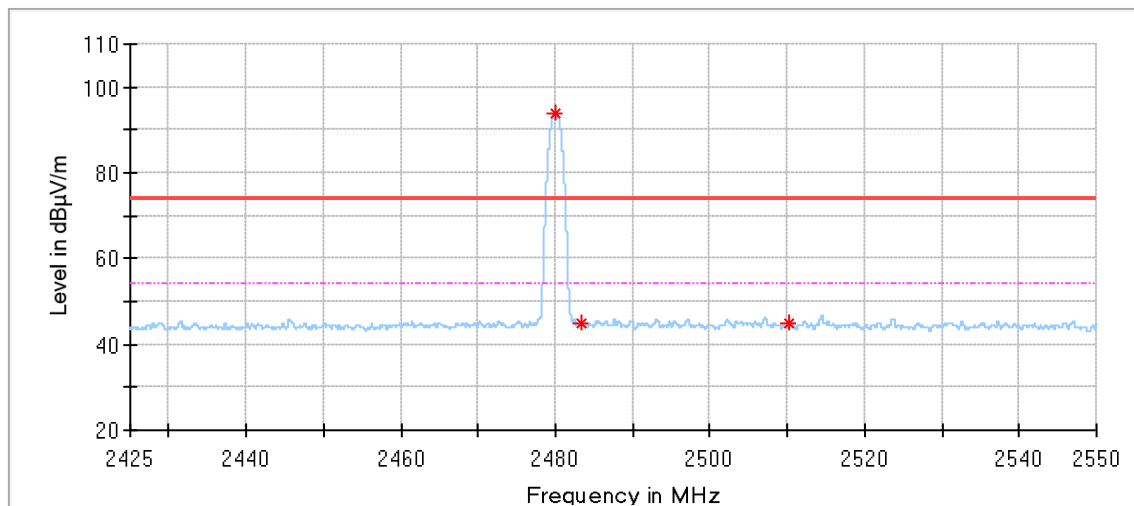


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2310.192000	43.03	74.00	30.97	150.0	V	354.0	-3.74	Spurious
2353.184000	45.19	74.00	28.81	150.0	V	295.0	-3.39	Spurious
2390.080000	45.01	74.00	28.99	150.0	V	116.0	-3.05	Spurious
2401.984000	95.68	/	/	150.0	V	116.0	/	Fundamental Frequency

3DH5_2402MHz_ANT 2:



Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2480.000000	102.60	/	/	150.0	H	199.0	/	Fundamental Frequency
2483.500000	46.94	74.00	27.06	150.0	H	199.0	-3.06	Spurious
2510.100000	45.84	74.00	28.16	150.0	H	150.0	-3.13	Spurious



Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Remark
2480.000000	93.86	/	/	150.0	V	148.0	/	Fundamental Frequency
2483.400000	44.84	74.00	29.16	150.0	V	75.0	-3.06	Spurious
2510.137500	44.79	74.00	29.21	150.0	V	66.0	-3.13	Spurious

Remark:

- (1) Level= Reading Level + Correction Factor
- (2) Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss
(The Reading Level is recorded by software which is not shown in the sheet)

10 Test Equipment List

List of Test Instruments

Conducted Emission 2# Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	68-4-74-19-002	102590	1	2025-5-13
LISN	Rohde & Schwarz	ENV216	68-4-87-19-001	102472	1	2025-5-12
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2025-5-11
Cable	OUQIAO	RG142	68-4-90-19-005-A20	----	----	----
Test software	Rohde & Schwarz	EMC32	68-4-90-19-005-A01	Version10.35.02	N/A	N/A
Shielding Room	TDK	CSR #2	68-4-90-19-005	----	3	2025-10-15

Radiated Emission Test 1# Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 7	68-4-74-19-001	102176	1	2025-5-13
Loop Antenna	Rohde & Schwarz	HFH2-Z2	68-4-80-14-006	100398	1	2024-8-7
Pre-amplifier	Rohde & Schwarz	SCU 18	68-4-29-14-001	102230	1	2025-5-11
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-001	15542	1	2025-5-11
Cable	HUBER-SUHNER	RG214	68-4-90-14-001-A20	----	----	----
Cable	HUBER-SUHNER	RG214	68-4-90-14-001-A21	----	----	----
Cable	JUNFLON	MWX221	68-4-90-14-001-A22	----	----	----
3m Semi-anechoic chamber	TDK	SAC-3 #1	68-4-90-14-001	----	3	2026-10-25
Test software	Rohde & Schwarz	EMC32	68-4-90-14-001-A10	Version10.35.02	N/A	N/A

Radiated Emission 2# Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2025-5-13
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2025-2-22
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2025-4-10
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2025-5-11
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-002	100746	1	2025-5-11
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2025-7-2
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2024-8-1
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2025-5-11
Cable	JUNFLON	MWX221	68-4-90-19-006-A20	----	----	----
Cable	JUNFLON	MWX241	68-4-90-19-006-A21	----	----	----
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	3	2026-10-25
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

RF Test System

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2025-5-11
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157W	68-4-93-14-003	101226/100929	1	2025-5-11
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2025-5-11
RF Meas. and Switch Matrix Unit	TST PASS	TSCB3023R2	68-4-93-23-001	2811685c	1	2025-5-11
Frequency Extender	TST PASS	TSTCMWEXT7	68-4-93-23-001-A01	WEX230017C	1	2025-5-12
Frequency Extender	TST PASS	TSTSGEXT7	68-4-93-23-001-A02	EX2300BA	1	2025-5-12
Cable	JUNFLON	J12J103539	68-4-90-19-003-A20	----	----	----
Test software	TST PASS	System for BT/WIFI	68-4-93-23-001-A03	Version 2.0	N/A	N/A
Shielding Room	TDK	TS8997	68-4-90-19-003	----	3	2025-10-15

11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Conducted Emission in new shielding room (68-4-90-19-005) 150kHz-30MHz (for test using AMN ENV216)	3.15dB
Uncertainty for Radiated Emission in 3m chamber (68-4-90-14-001) 9kHz-30MHz	4.70dB
Uncertainty for Radiated Emission in 3m chamber (68-4-90-14-001) 30MHz-1000MHz	Horizontal: 4.63dB; Vertical: 4.78dB;
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 1000MHz-18000MHz	Horizontal: 5.38dB; Vertical: 5.38dB;
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 18GHz-40GHz	Horizontal: 5.29dB; Vertical: 5.29dB;
Uncertainty for Conducted RF test with TS 8997	RF Power Conducted: 1.31dB

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2023, clause 4.3.3 and 4.3.4

---THE END OF REPORT---