

**Duty cycle**

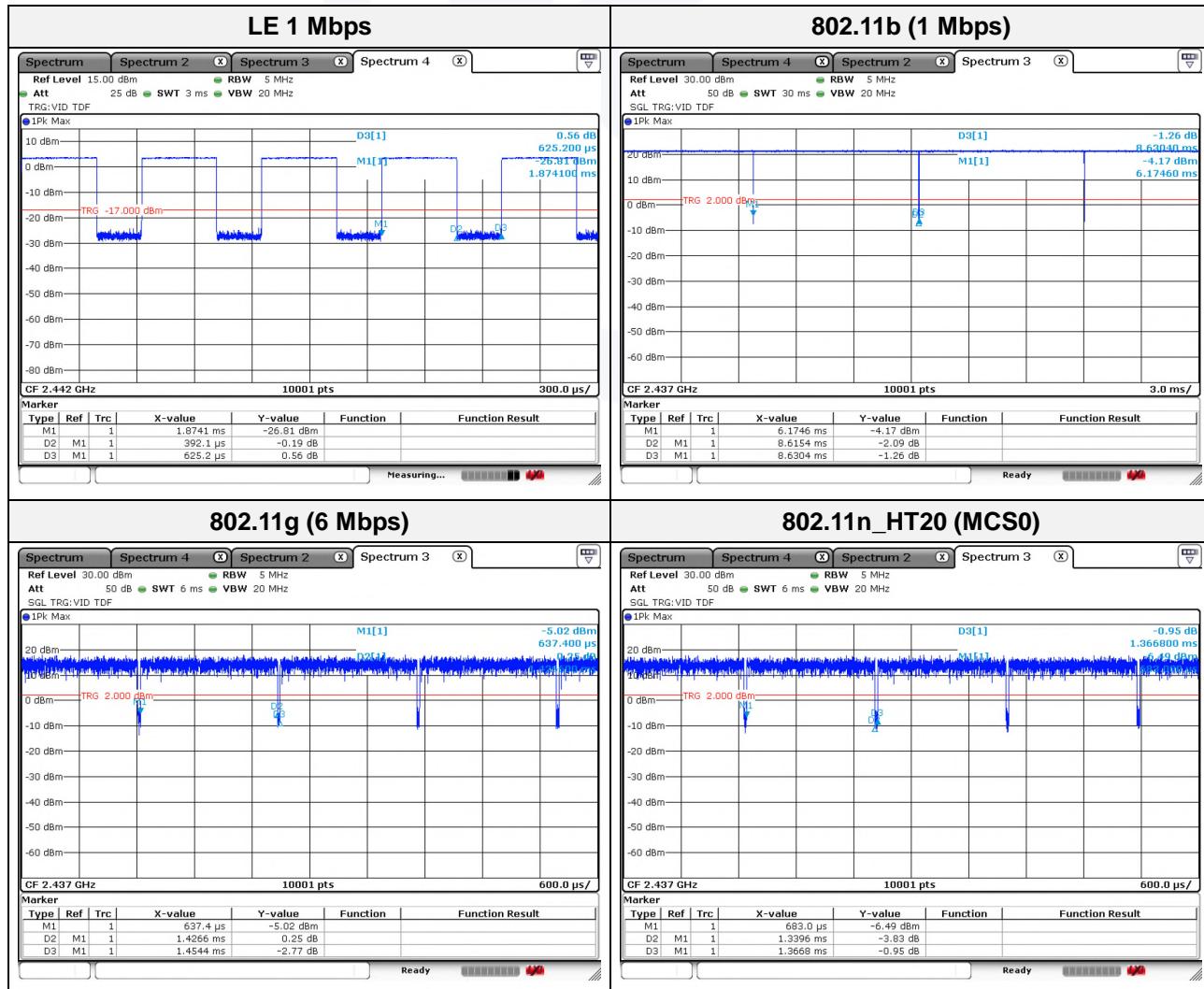
Regarding to KDB 558074 D01_v05 r02, 6. Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on- and off-times of the transmitted signal.
- The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on- and off-times of the transmitted signal.

Mode	T _{on} time (ms)	Period (ms)	Duty cycle (Linear)	Duty cycle (%)	Duty cycle correction factor (dB)
LE 1 Mbps	0.392	0.625	0.63	62.72	2.01
802.11b (1 Mbps)	8.615	8.630	1.00	99.83	-
802.11g (6 Mbps)	1.427	1.454	0.98	98.14	-
802.11n_HT20 (MCS0)	1.340	1.367	0.98	98.02	-

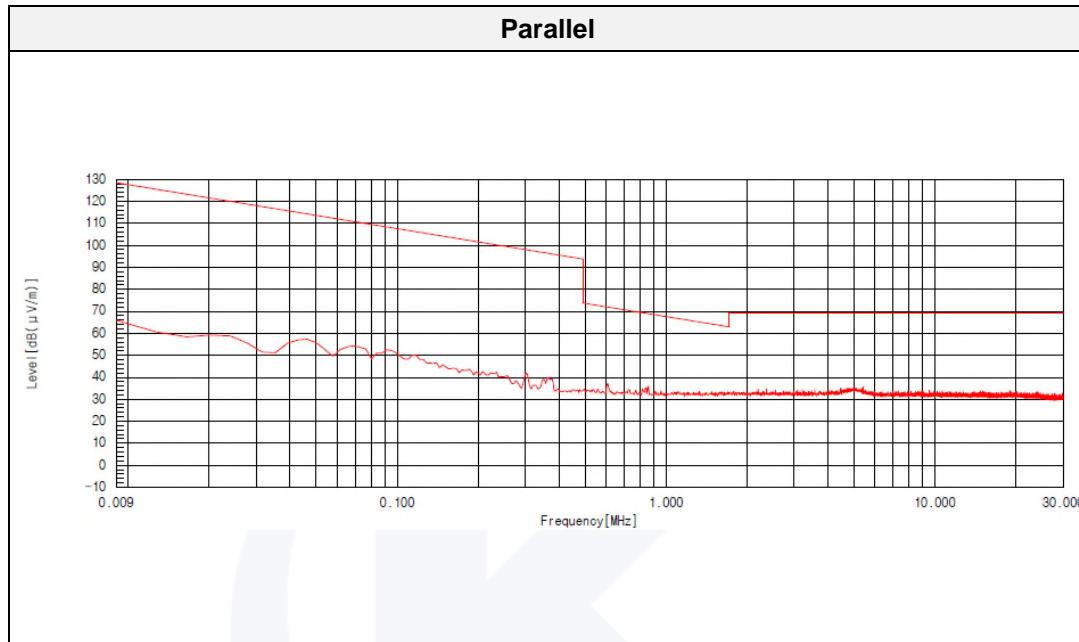
Duty cycle (Linear) = T_{on} time/Period

DCF(Duty cycle correction factor (dB)) = 10log(1/duty cycle)



**Test results (Below 30 MHz)**

Mode: LE 1 Mbps
Distance of measurement: 3 meter
Channel: 00 (Worst case)

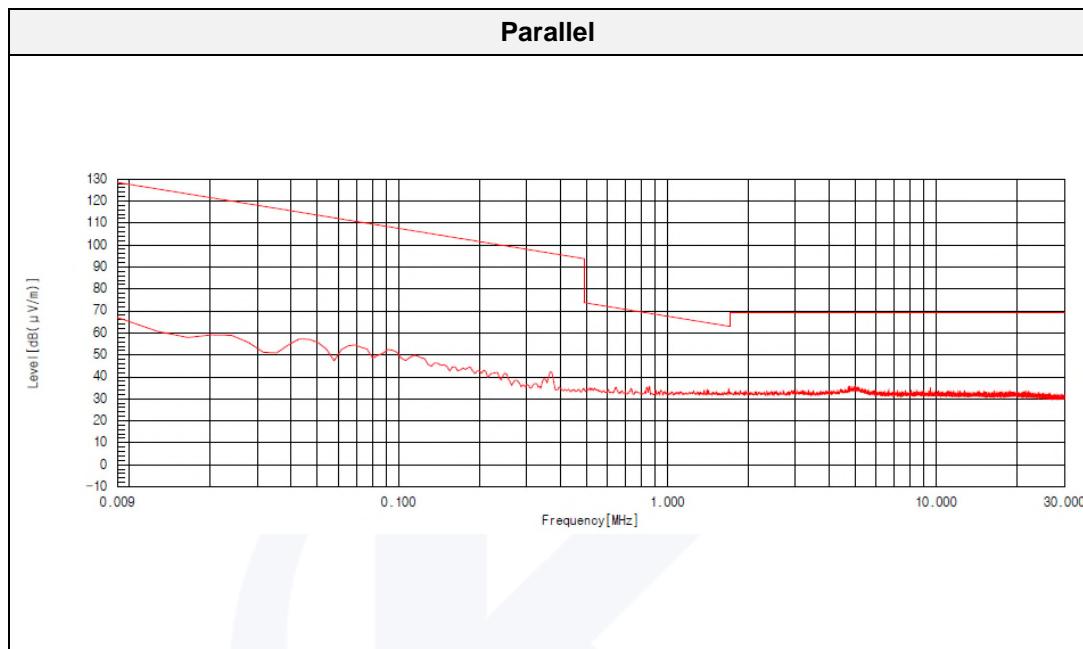


Note.

1. No spurious emission were detected under 30 MHz.



Mode: 802.11g (6 Mbps) (Worst case)
Distance of measurement: 3 meter
Channel: 6 (Worst case)

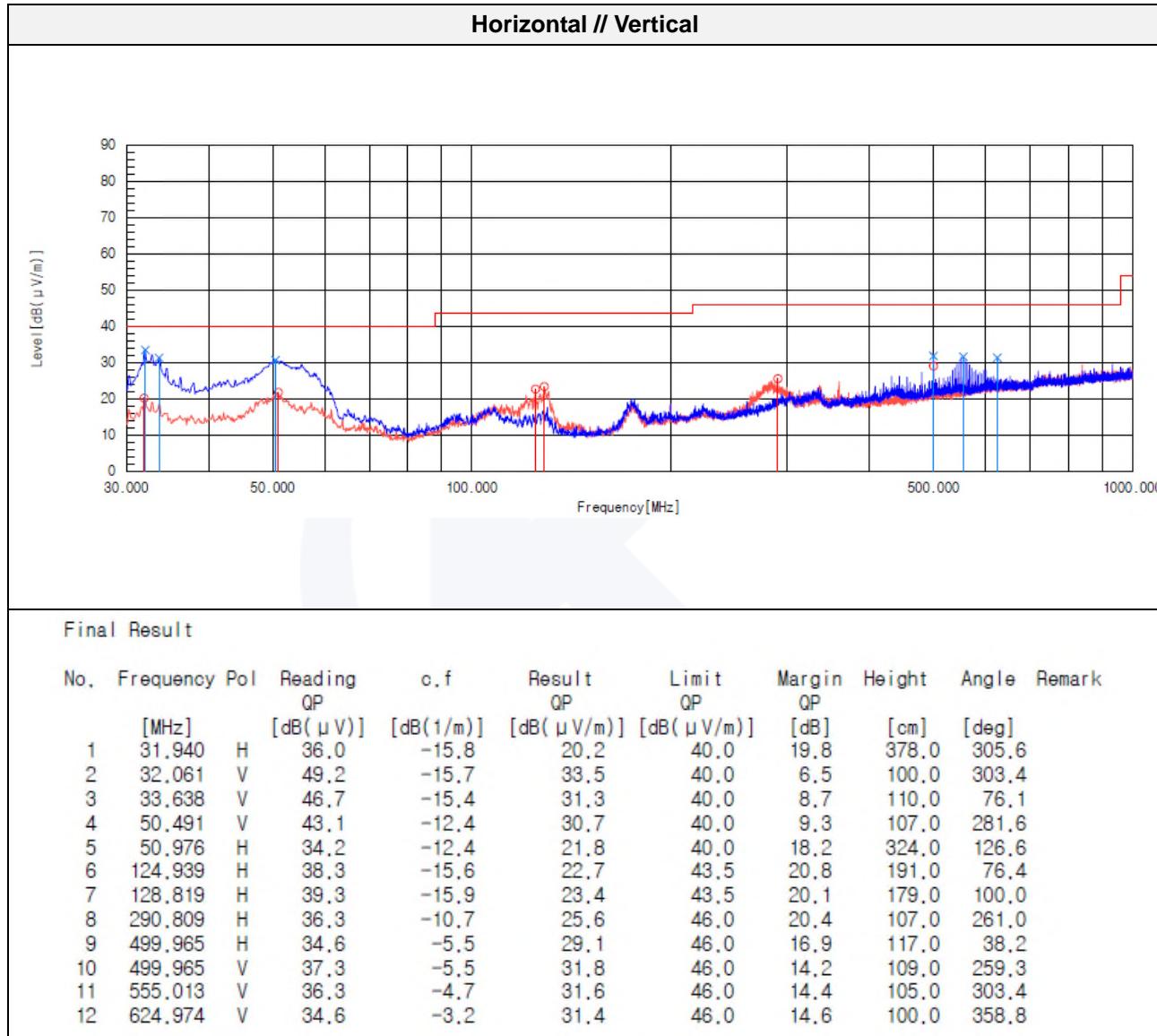


Note.

1. No spurious emission were detected under 30 MHz.

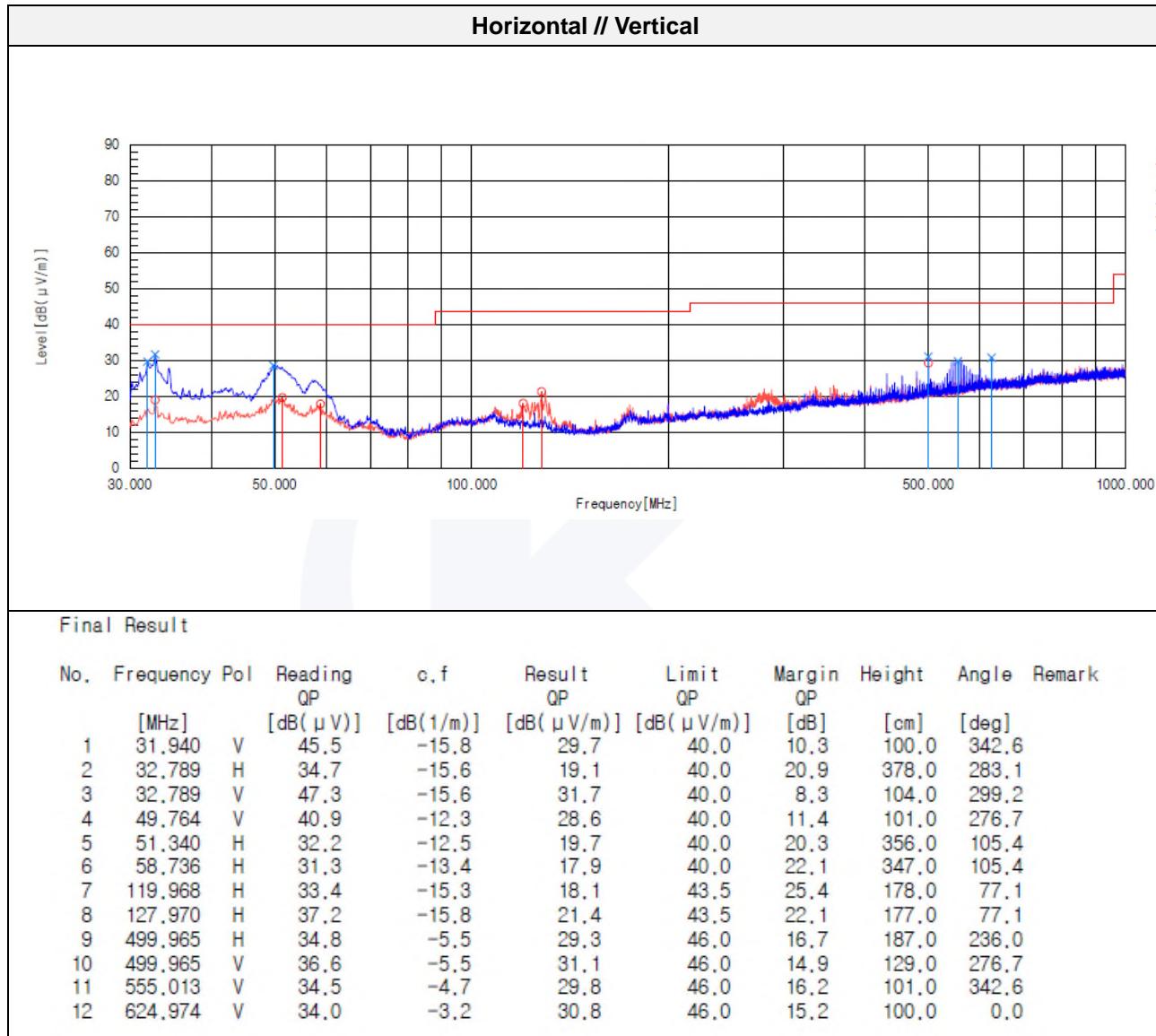
**Test results (Below 1 000 MHz)**

Mode: LE 1 Mbps
Distance of measurement: 3 meter
Channel: 00 (Worst case)





Mode: 802.11g (6 Mbps) (Worst case)
Distance of measurement: 3 meter
Channel: 6 (Worst case)



**Test results (Above 1 000 MHz)**

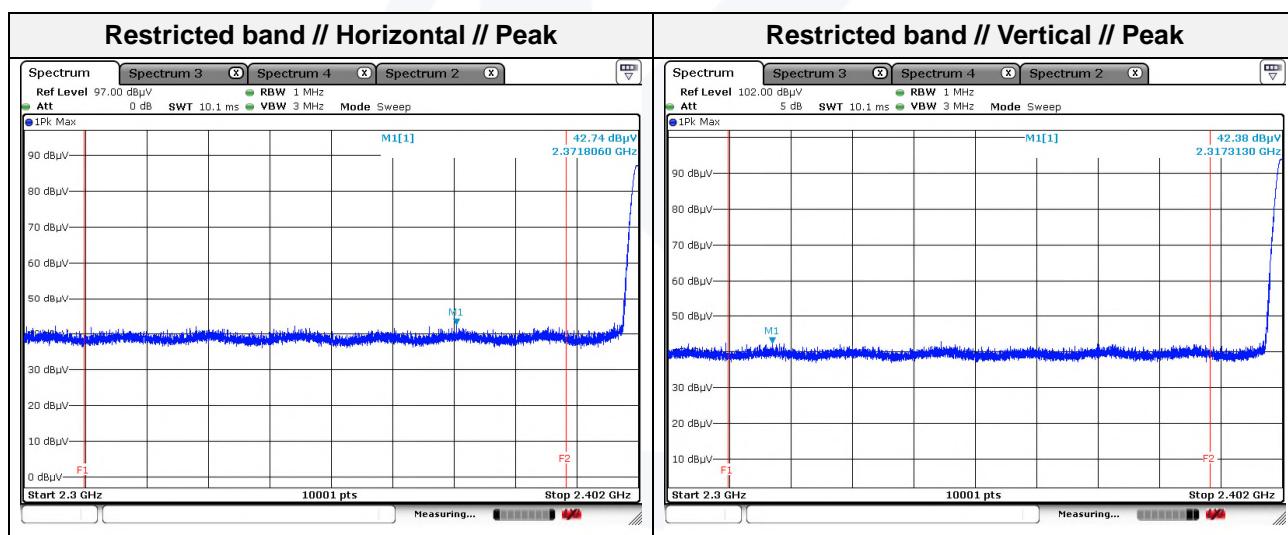
Mode: LE 1 Mbps
Distance of measurement: 3 meter
Channel: 00

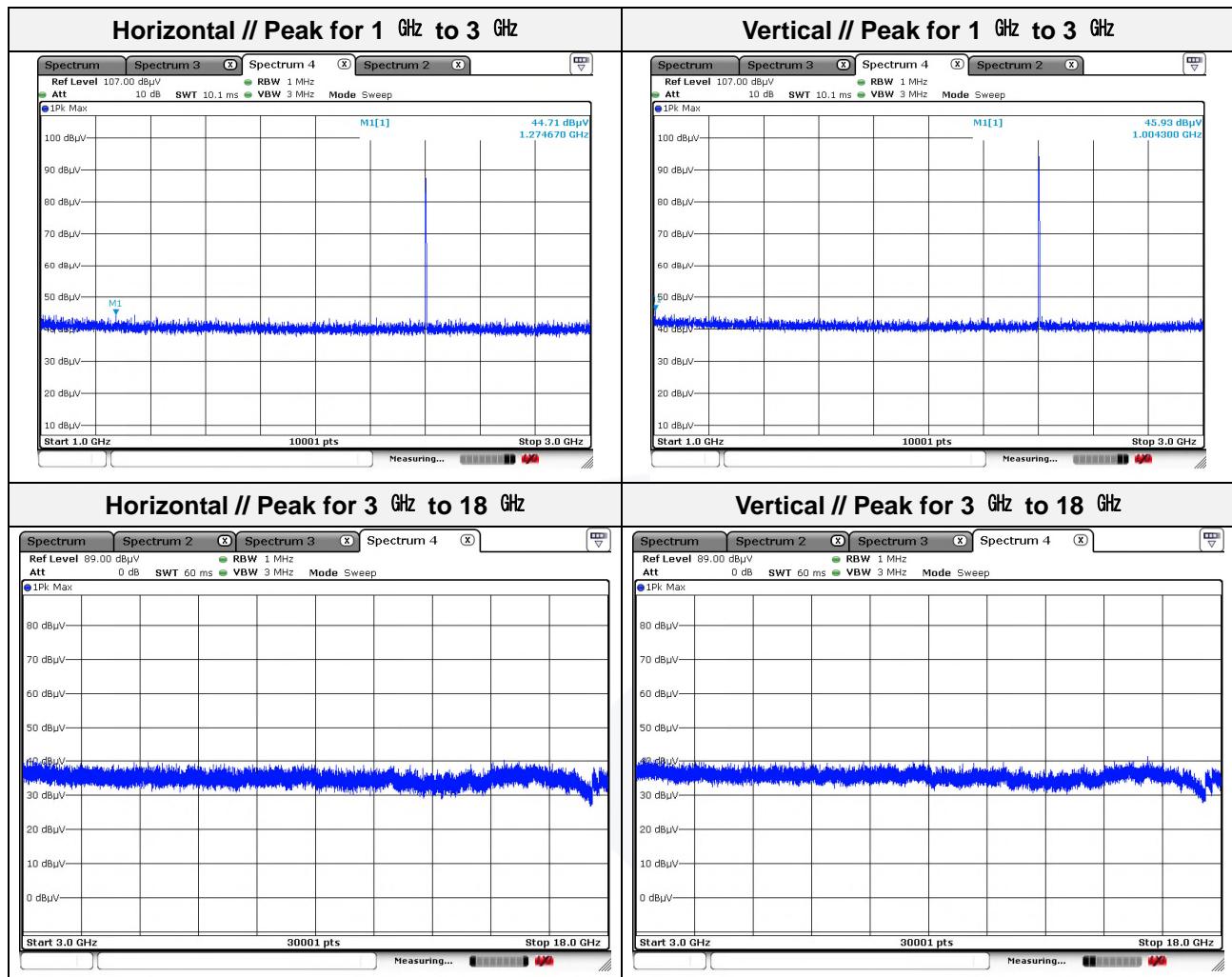
- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 004.30	45.93	Peak	V	-6.86	-	39.07	74.00	34.93
1 274.67	44.71	Peak	H	-5.45	-	39.26	74.00	34.74

- Band edge

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
2 317.31	42.38	Peak	V	-1.68	-	40.70	74.00	33.30
2 371.81	42.74	Peak	H	-1.47	-	41.27	74.00	32.73





Note.

1. Average test would be performed if the peak result were greater than the average limit.



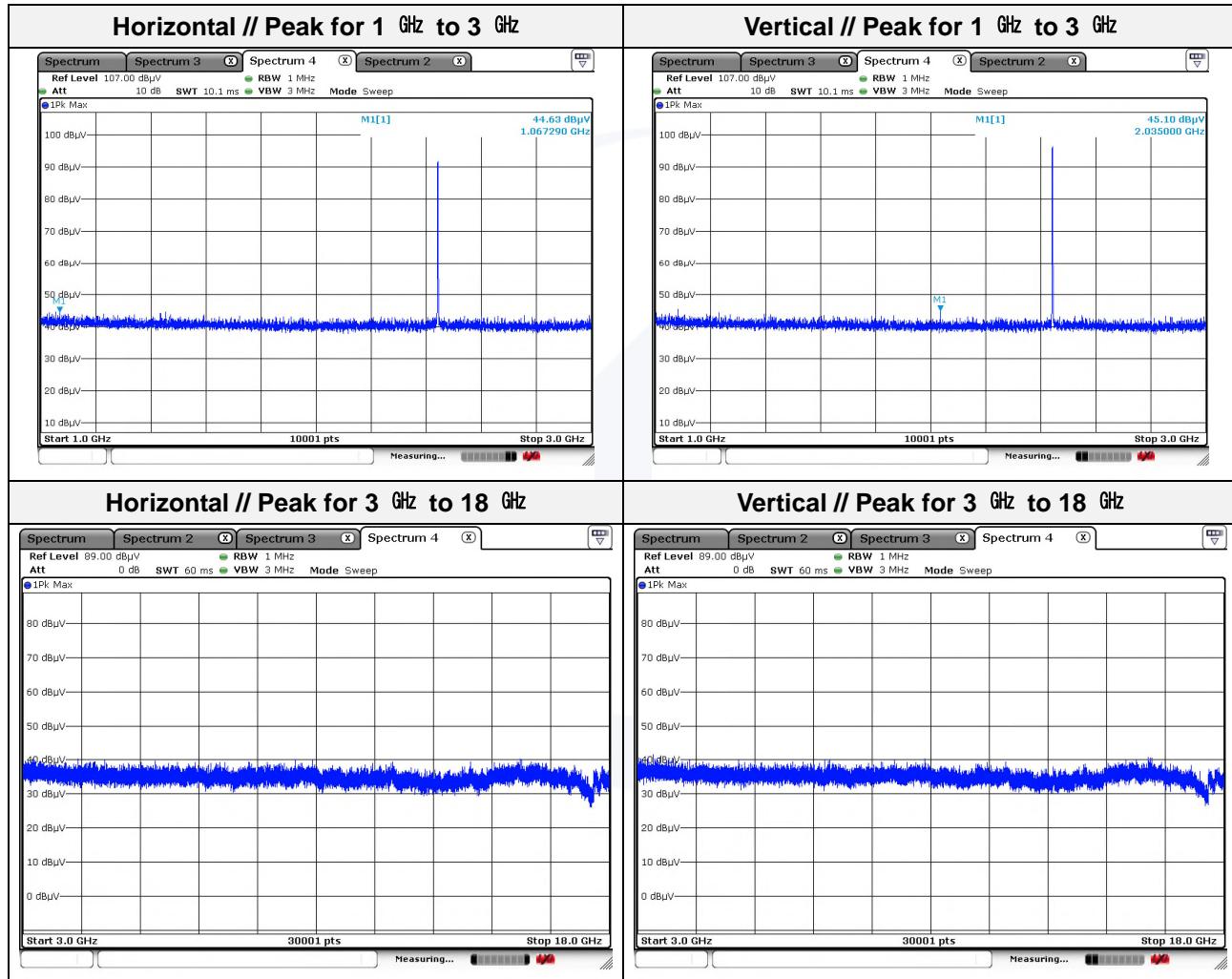
Mode: LE 1 Mbps

Distance of measurement: 3 meter

Channel: 20

- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 067.29	44.63	Peak	H	-6.54	-	38.09	74.00	35.91
2 035.00	45.10	Peak	V	-2.81	-	42.29	74.00	31.71



Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



Mode: LE 1 Mbps

Distance of measurement: 3 meter

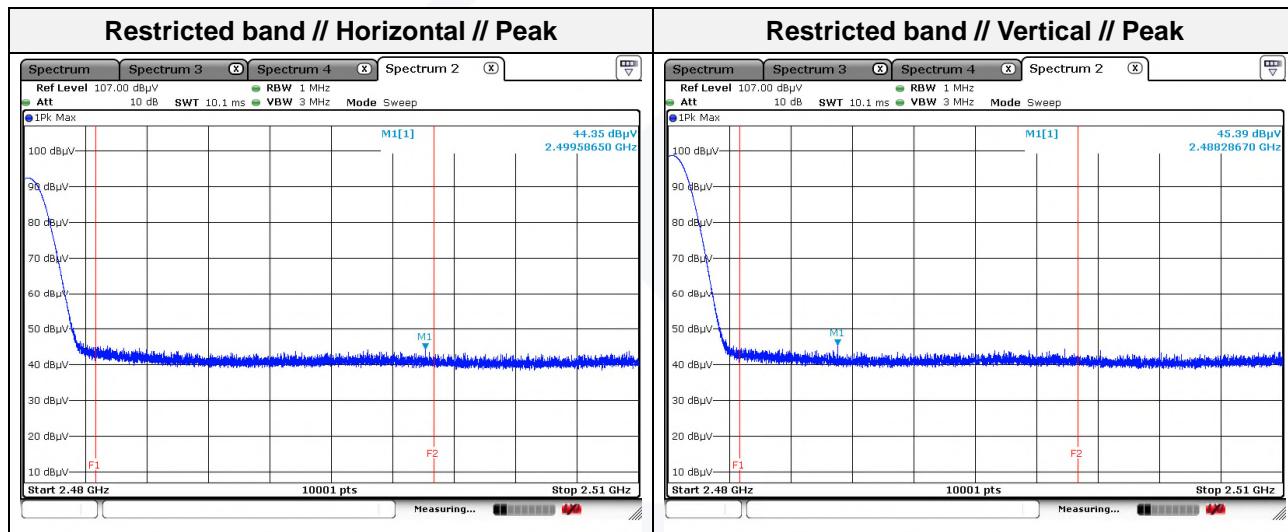
Channel: 39

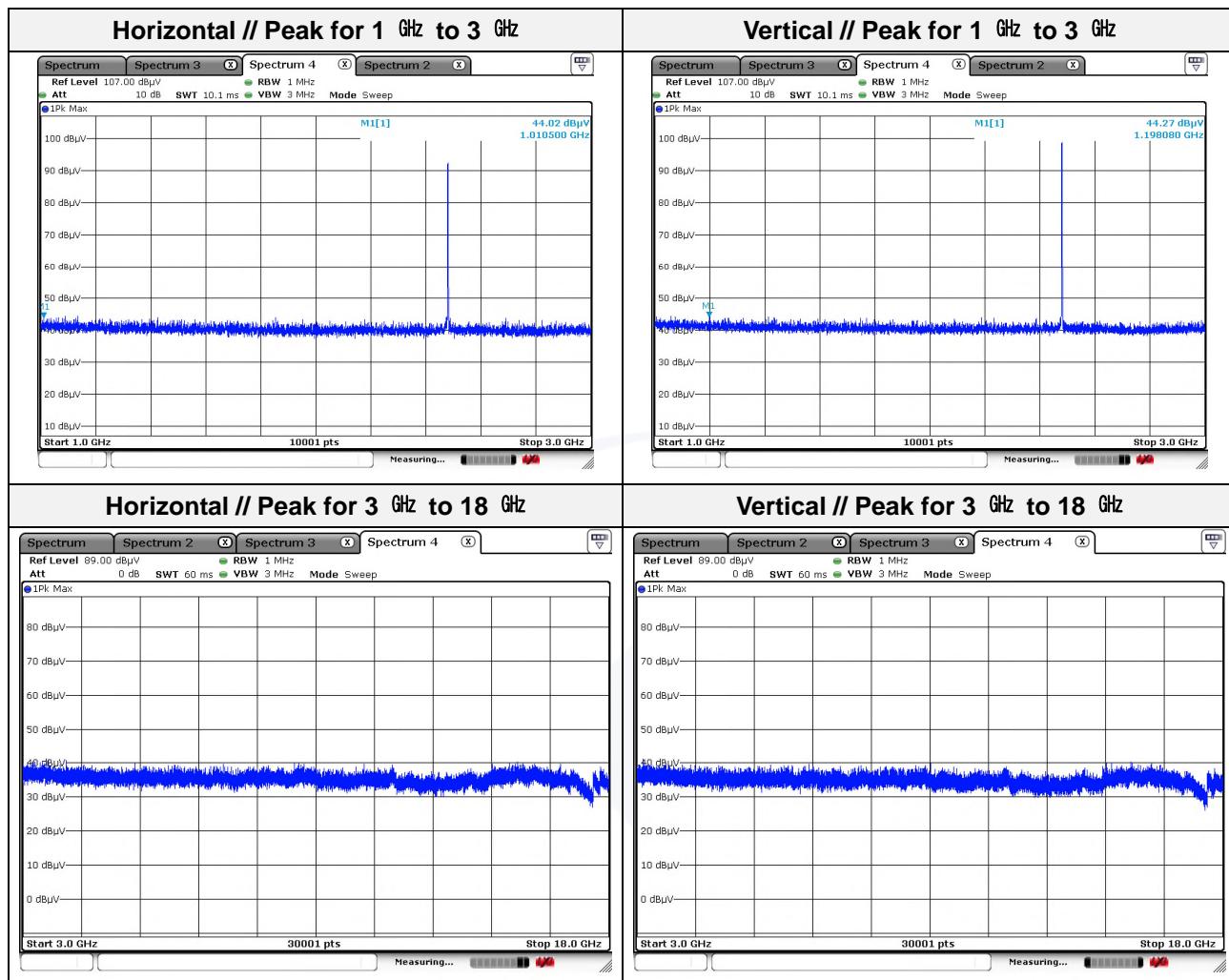
- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 010.50	44.02	Peak	H	-6.82	-	37.20	74.00	36.80
1 198.08	44.27	Peak	V	-5.88	-	38.39	74.00	35.61

- Band edge

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
2 488.29	45.39	Peak	V	-1.04	-	44.35	74.00	29.65
2 499.59	44.35	Peak	H	-1.01	-	43.34	74.00	30.66





Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



Mode: 802.11b (1 Mbps)

Distance of measurement: 3 meter

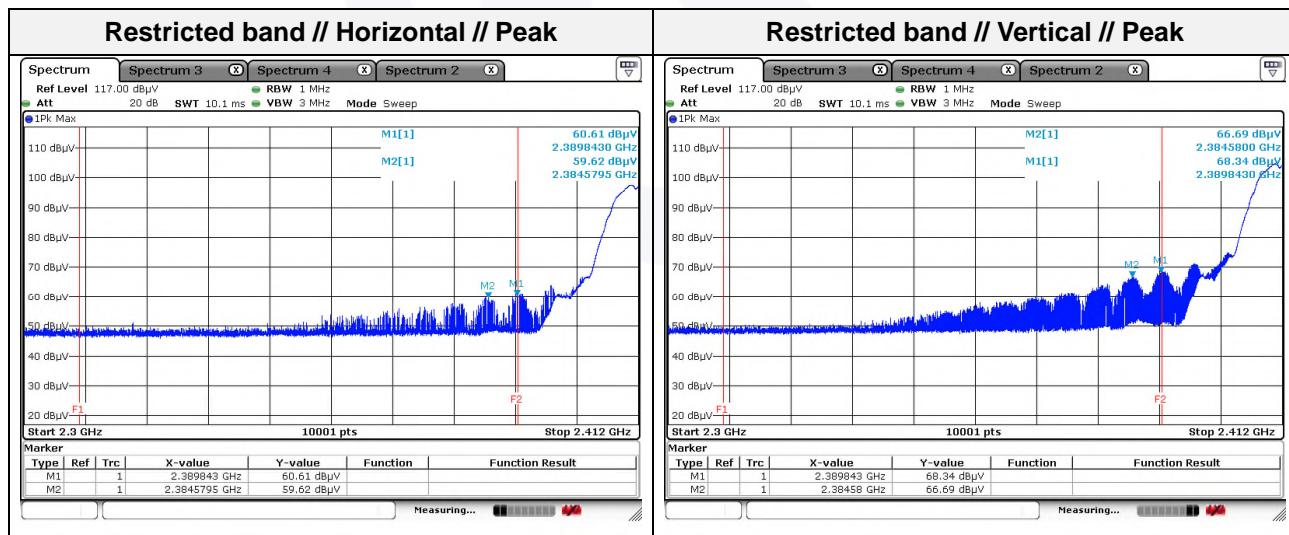
Channel: 1

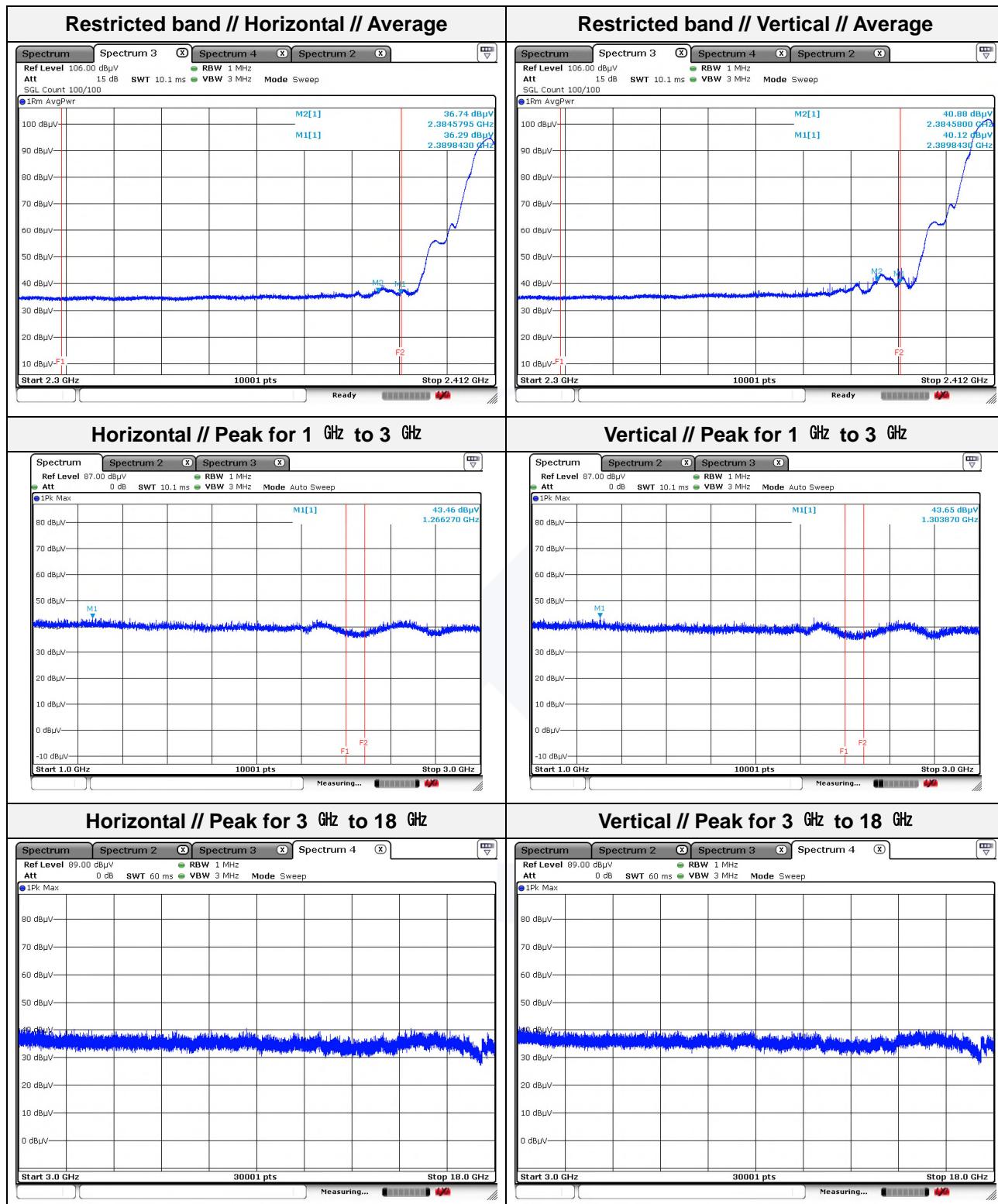
- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1 266.27	43.46	Peak	H	-5.50	-	37.96	74.00	36.04
1 303.87	43.65	Peak	V	-5.29	-	38.36	74.00	35.64

- Band edge

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2 384.58	59.62	Peak	H	-1.42	-	58.20	74.00	15.80
2 384.58	36.74	Average	H	-1.42	-	35.32	54.00	18.68
2 384.58	66.69	Peak	V	-1.42	-	65.27	74.00	8.73
2 384.58	40.88	Average	V	-1.42	-	39.46	54.00	14.54
2 389.84	60.61	Peak	H	-1.39	-	59.22	74.00	14.78
2 389.84	36.29	Average	H	-1.39	-	34.90	54.00	19.10
2 389.84	68.34	Peak	V	-1.39	-	66.95	74.00	7.05
2 389.84	40.12	Average	V	-1.39	-	38.73	54.00	15.27





Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



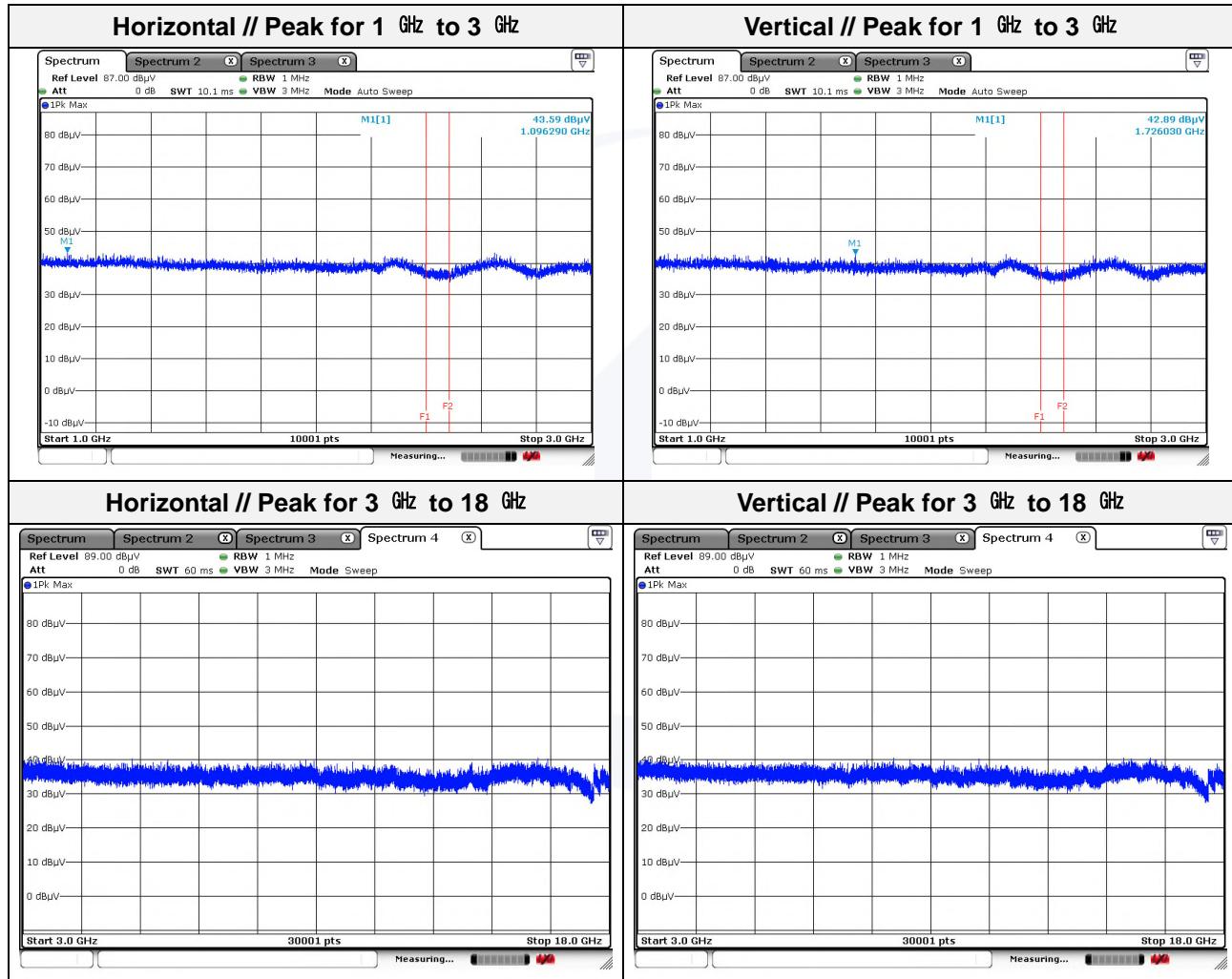
Mode: 802.11b (1 Mbps)

Distance of measurement: 3 meter

Channel: 6

- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 096.29	43.59	Peak	H	-6.39	-	37.20	74.00	36.80
1 726.03	42.89	Peak	V	-3.66	-	39.23	74.00	34.77



Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



Mode: 802.11b (1 Mbps)

Distance of measurement: 3 meter

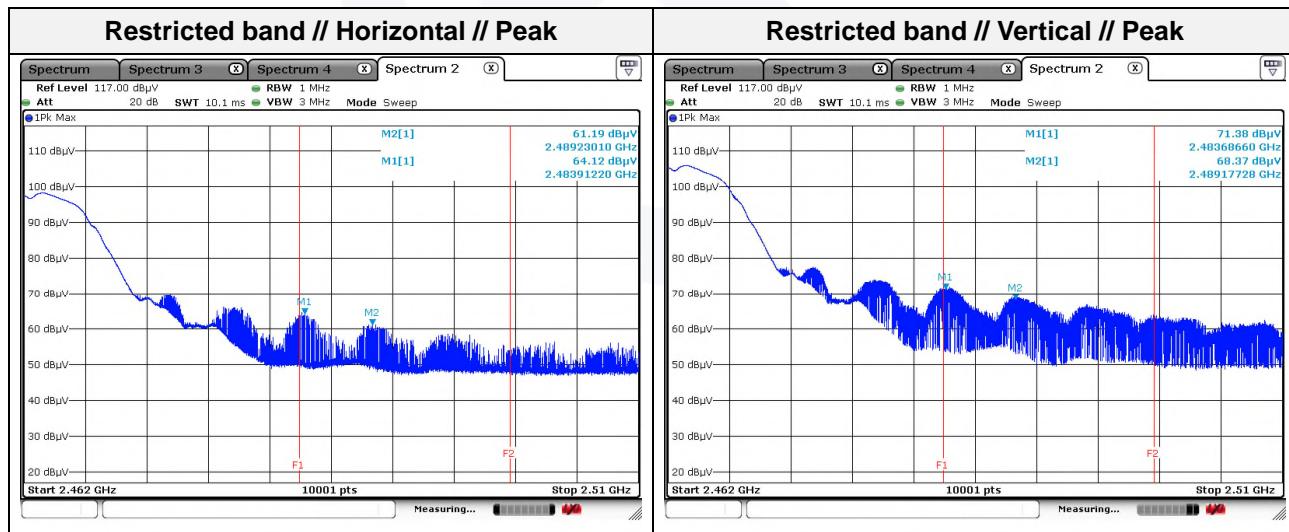
Channel: 11

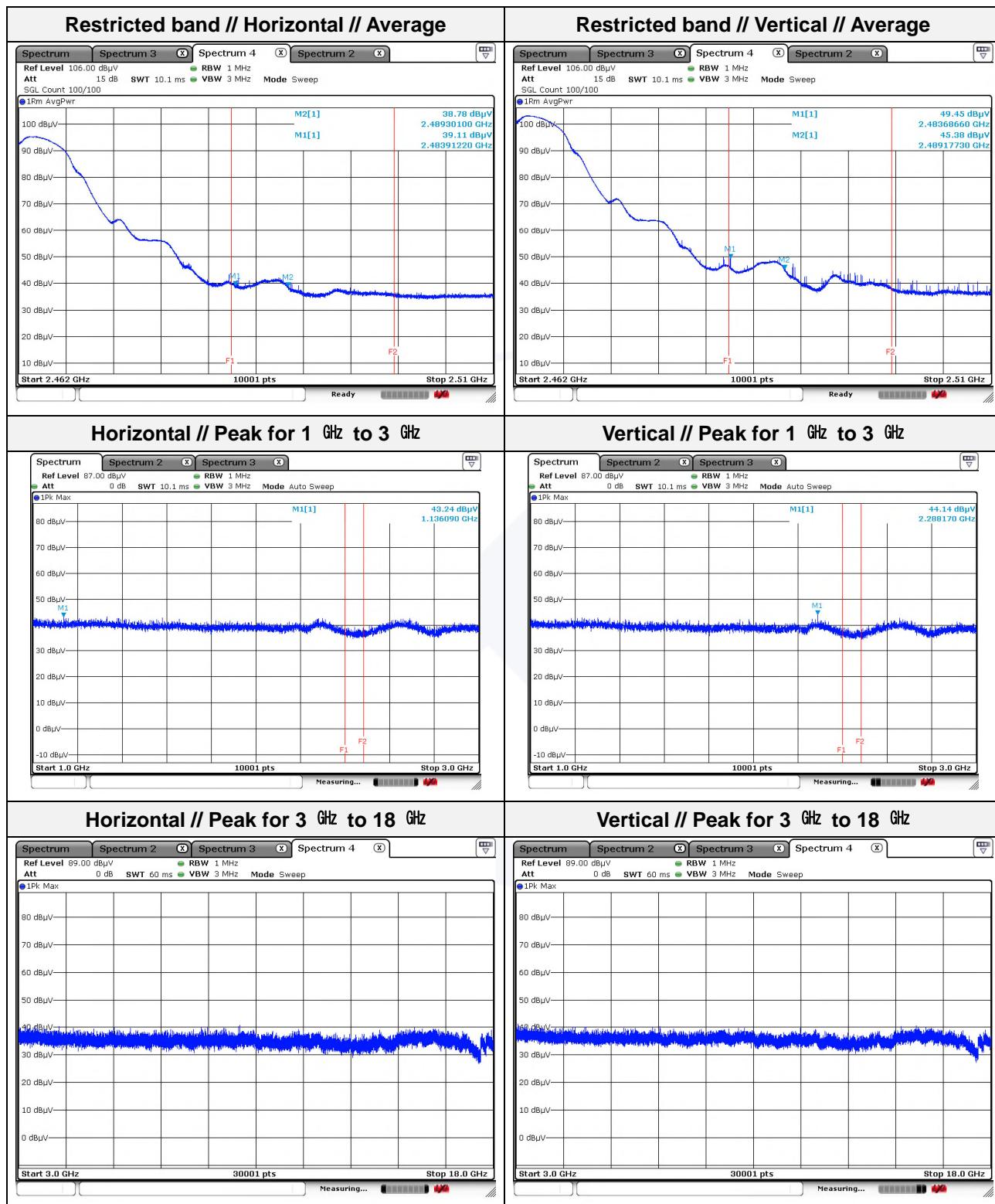
- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 136.09	43.26	Peak	H	-6.19	-	37.07	74.00	36.93
2 288.17	44.14	Peak	V	-1.80	-	42.34	74.00	31.66

- Band edge

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
2 483.69	71.38	Peak	V	-1.06	-	70.32	74.00	3.68
2 483.69	49.45	Average	V	-1.06	-	48.39	54.00	5.61
2 483.91	64.12	Peak	H	-1.06	-	63.06	74.00	10.94
2 483.91	39.11	Average	H	-1.06	-	38.05	54.00	15.95
2 489.18	68.37	Peak	V	-1.04	-	67.33	74.00	6.67
2 489.18	45.38	Average	V	-1.04	-	44.34	54.00	9.66
2 489.23	61.19	Peak	H	-1.04	-	60.15	74.00	13.85
2 489.23	38.78	Average	H	-1.04	-	37.74	54.00	16.26





Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



Mode: 802.11g (6 Mbps)

Distance of measurement: 3 meter

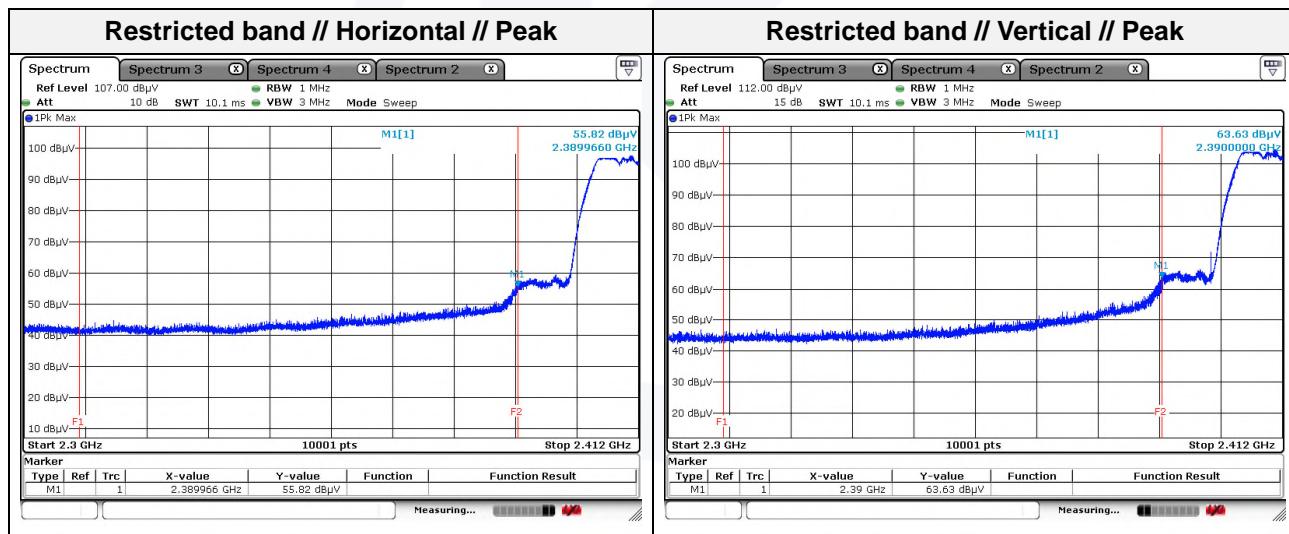
Channel: 1

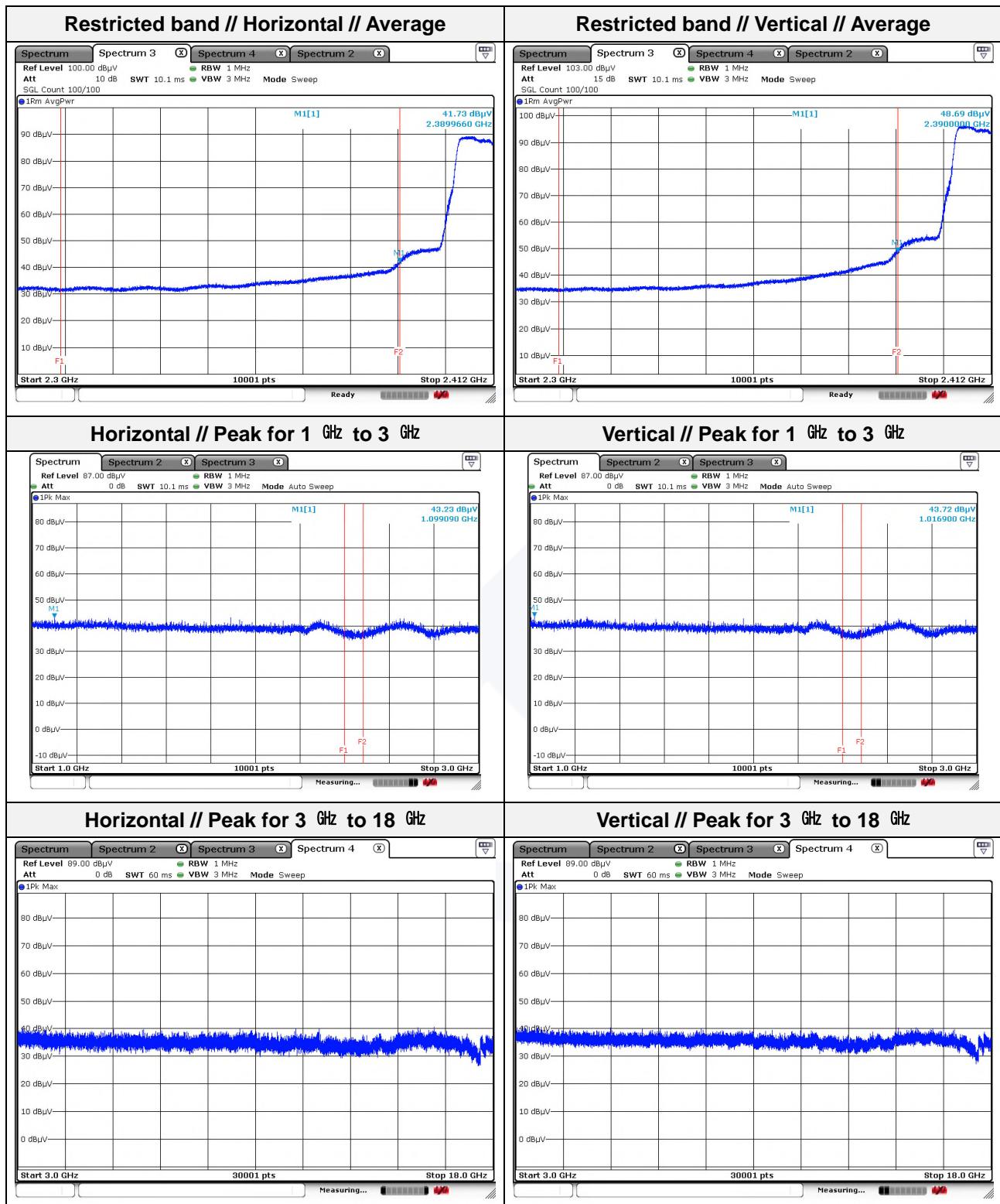
- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1 016.90	43.72	Peak	V	-6.79	-	36.93	74.00	37.07
1 099.09	43.23	Peak	H	-6.38	-	36.85	74.00	37.15

- Band edge

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2 389.97	55.82	Peak	H	-1.39	-	54.43	74.00	19.57
2 389.97	41.73	Average	H	-1.39	-	40.34	54.00	13.66
2 390.00	63.63	Peak	V	-1.39	-	62.24	74.00	11.76
2 390.00	48.69	Average	V	-1.39	-	47.30	54.00	6.70





1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



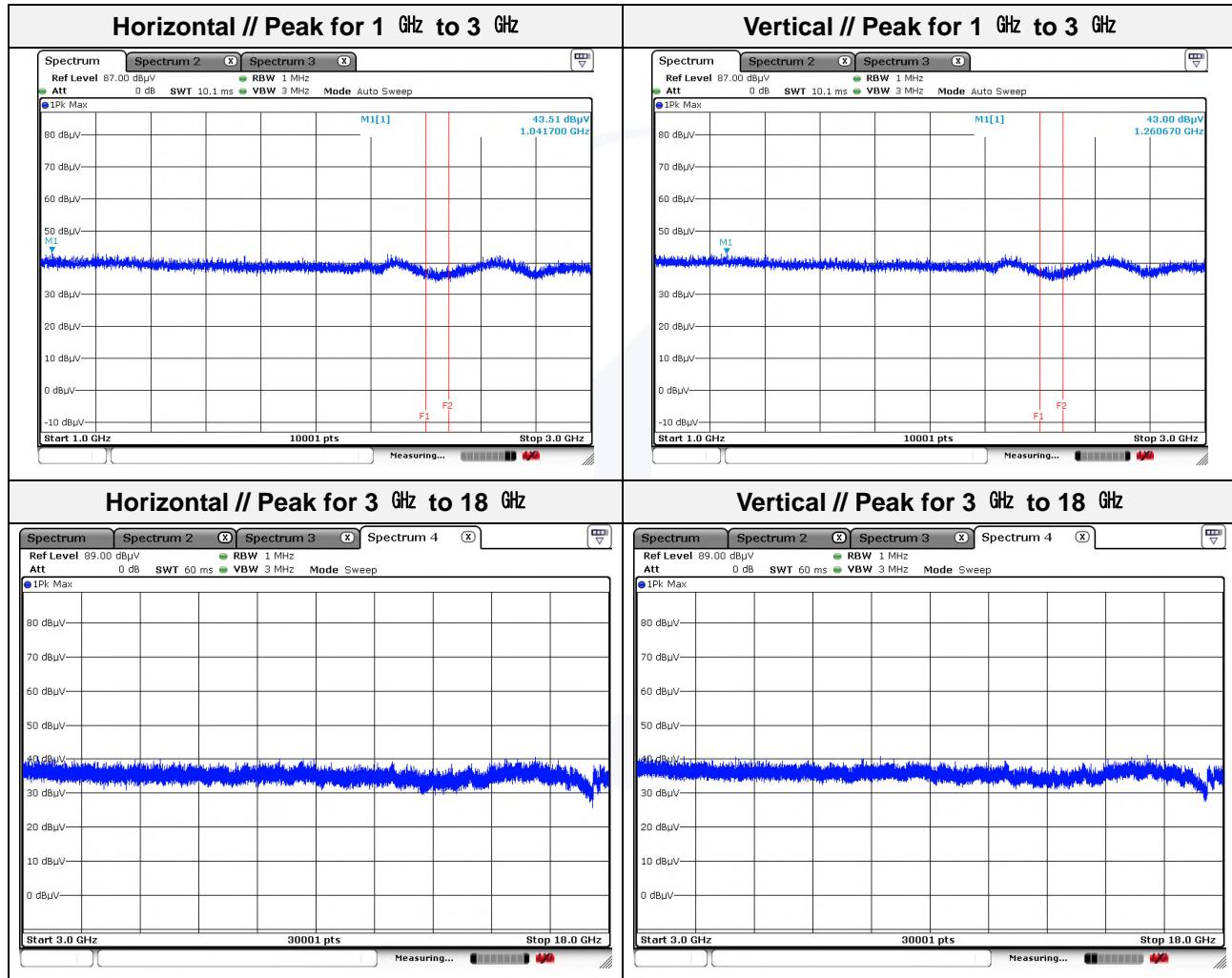
Mode: 802.11g (6 Mbps)

Distance of measurement: 3 meter

Channel: 6

- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 041.70	43.51	Peak	H	-6.67	-	36.84	74.00	37.16
1 260.67	43.00	Peak	V	-5.53	-	37.47	74.00	36.53



Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



Mode: 802.11g (6 Mbps)

Distance of measurement: 3 meter

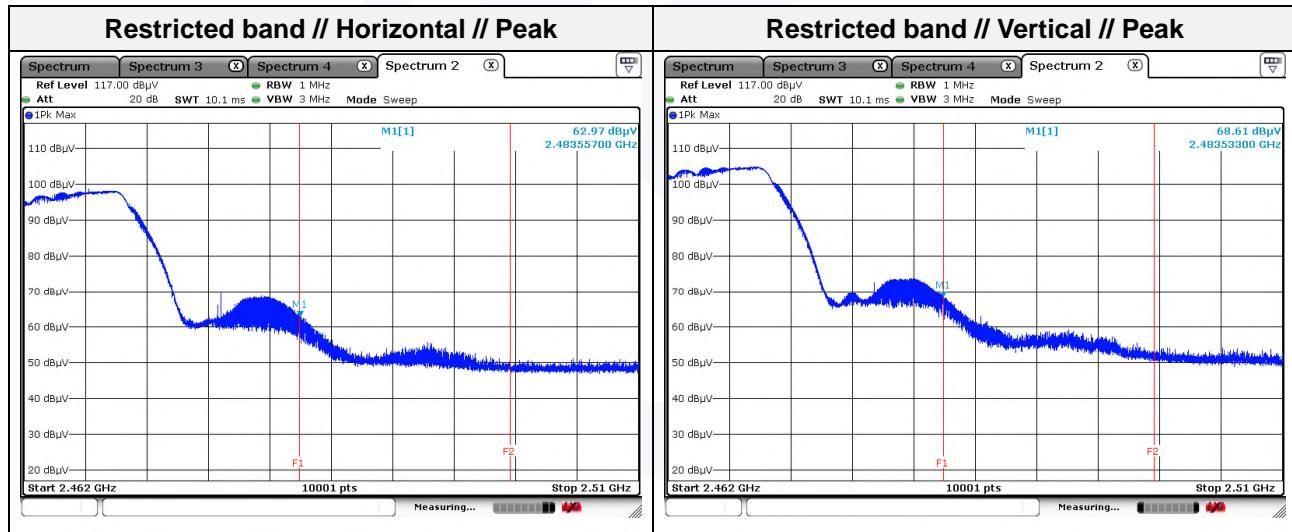
Channel: 11

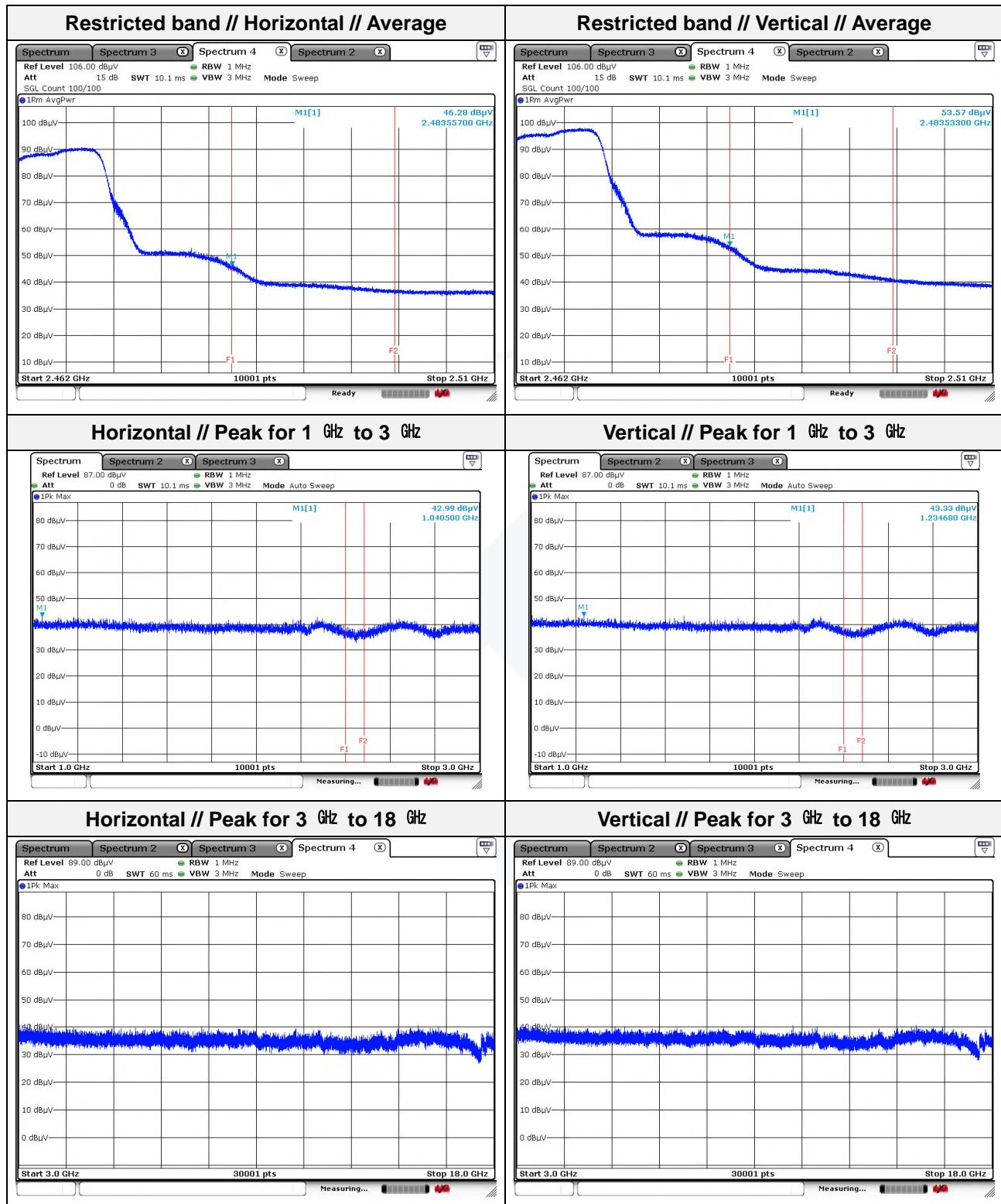
- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 040.50	42.99	Peak	H	-6.67	-	36.32	74.00	37.68
1 234.68	43.33	Peak	V	-5.67	-	37.66	74.00	36.34

- Band edge

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
2 483.53	68.61	Peak	V	-1.06	-	67.55	74.00	6.45
2 483.53	53.57	Average	V	-1.06	-	52.51	54.00	1.49
2 483.56	62.97	Peak	H	-1.06	-	61.91	74.00	12.09
2 483.56	46.28	Average	H	-1.06	-	45.22	54.00	8.78





Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



Mode: 802.11n_HT20 (MCS0)

Distance of measurement: 3 meter

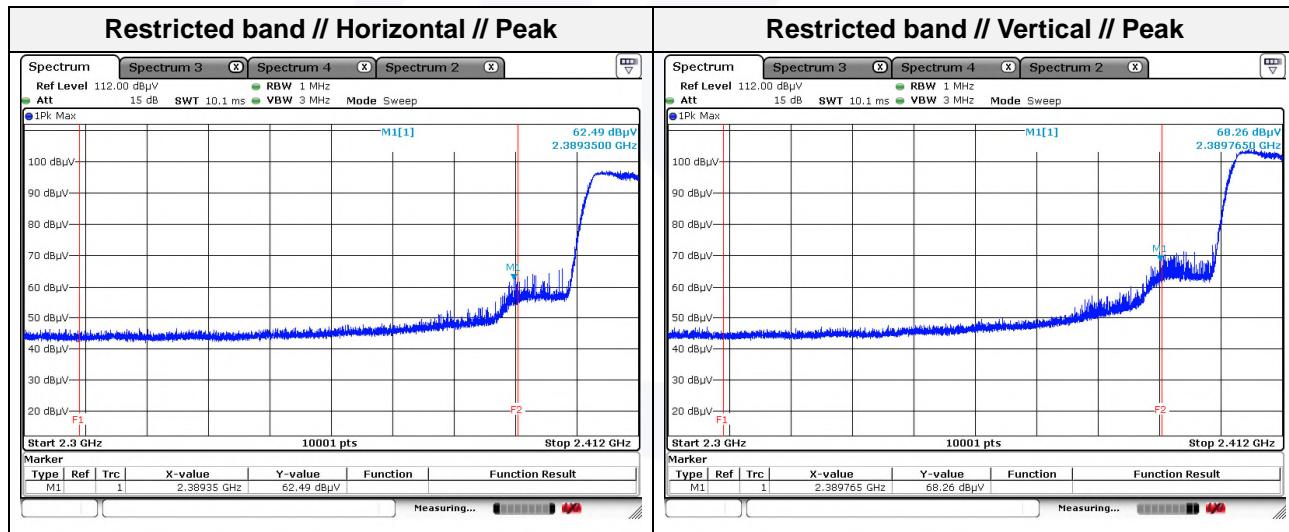
Channel: 1

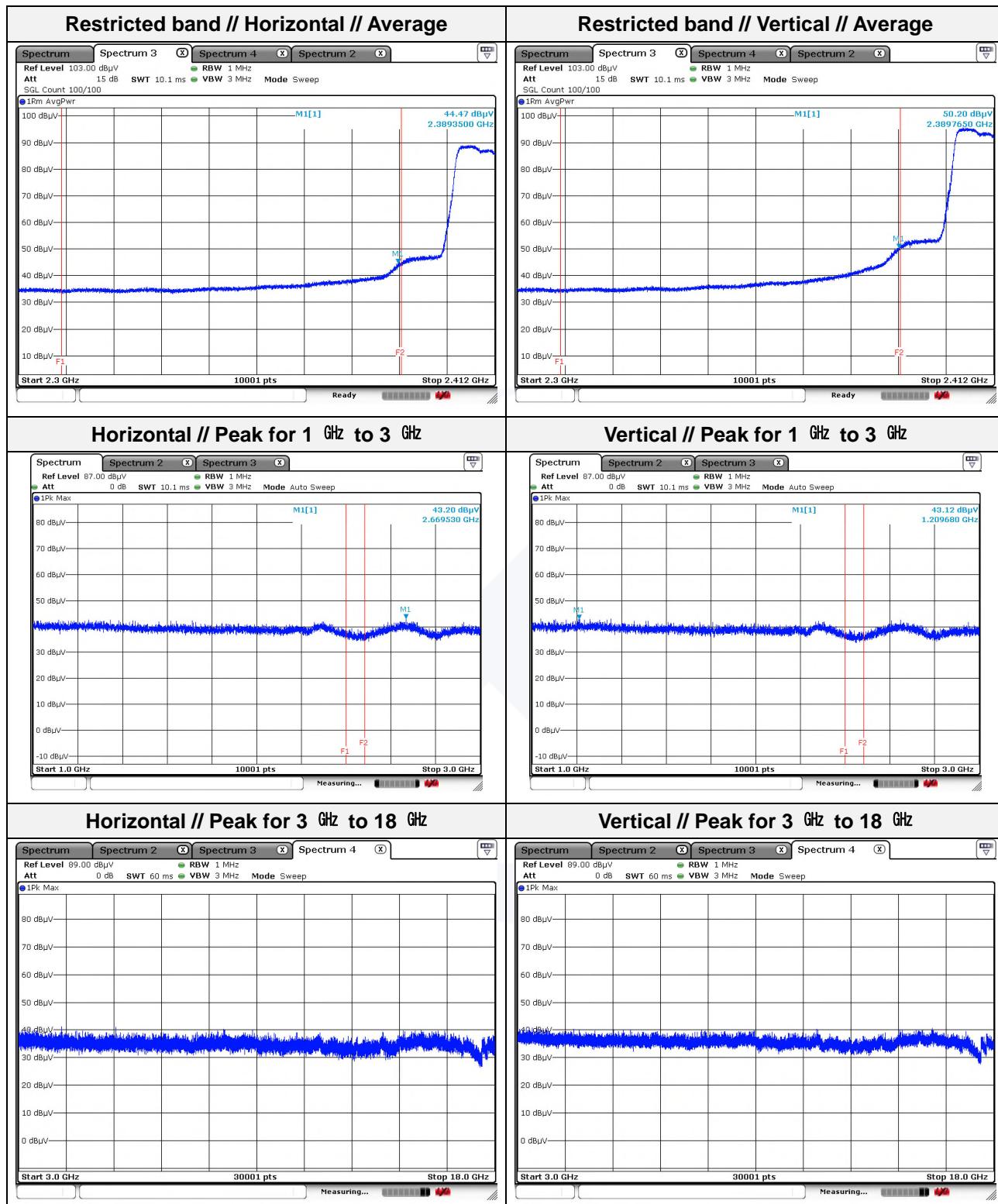
- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 209.68	43.12	Peak	V	-5.81	-	37.31	74.00	36.69
2 669.53	43.20	Peak	H	-0.65	-	42.55	74.00	31.45

- Band edge

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
2 389.35	62.49	Peak	H	-1.40	-	61.09	74.00	12.91
2 389.35	44.47	Average	H	-1.40	-	43.07	54.00	10.93
2 389.77	68.26	Peak	V	-1.39	-	66.87	74.00	7.13
2 389.77	50.20	Average	V	-1.39	-	48.81	54.00	5.19





Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



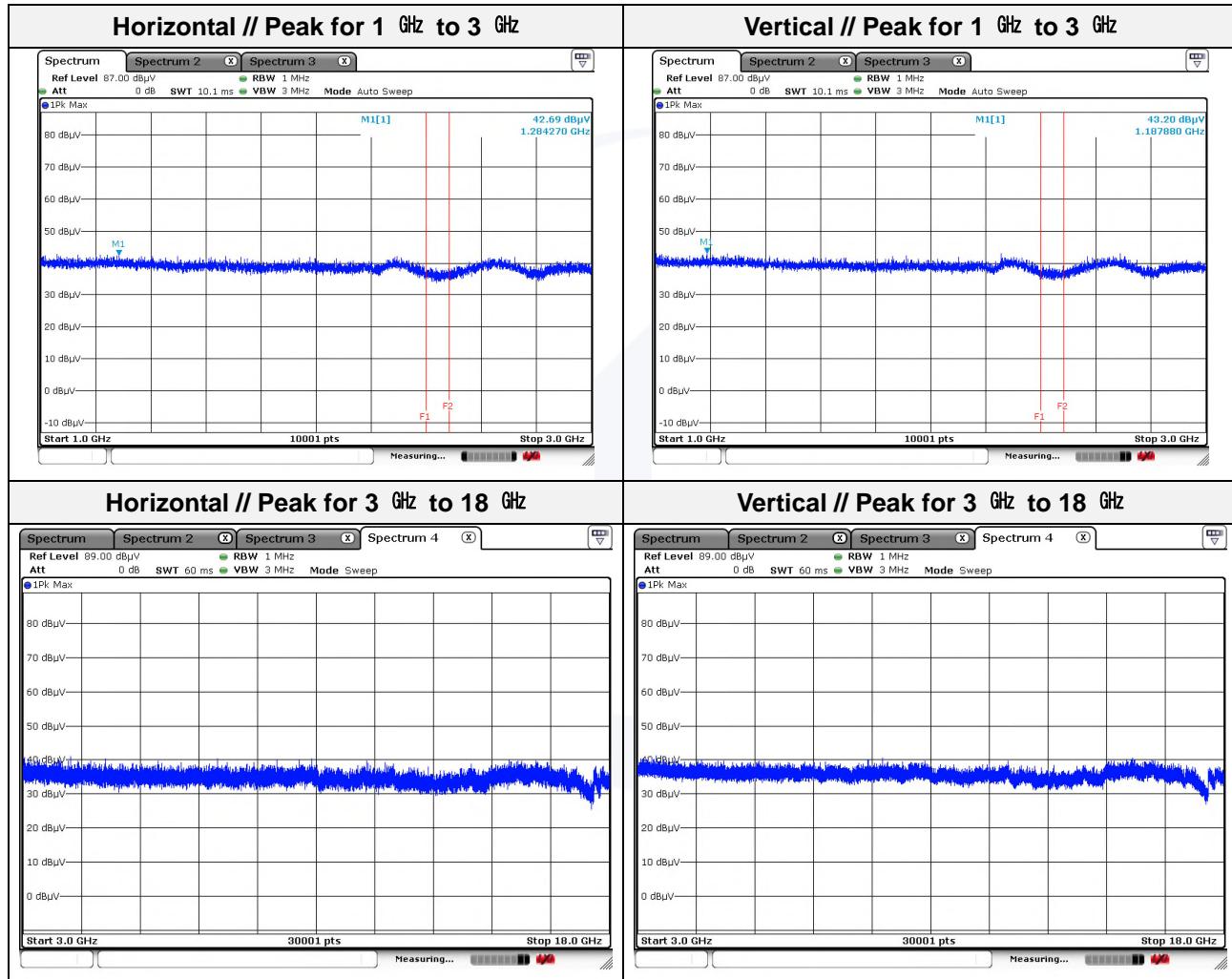
Mode: 802.11n_HT20 (MCS0)

Distance of measurement: 3 meter

Channel: 6

- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 187.88	43.20	Peak	V	-5.93	-	37.27	74.00	36.73
1 284.27	42.69	Peak	H	-5.40	-	37.29	74.00	36.71



Note.

1. No spurious emission were detected above 3 GHz.
2. Average test would be performed if the peak result were greater than the average limit.



Mode: 802.11n_HT20 (MCS0)

Distance of measurement: 3 meter

Channel: 11

- Spurious

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
1 088.49	42.98	Peak	V	-6.43	-	36.55	74.00	37.45
1 179.08	42.60	Peak	H	-5.97	-	36.63	74.00	37.37

- Band edge

Frequency (MHz)	Level (dB μ V)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB μ N/m)	Limit (dB μ N/m)	Margin (dB)
2 483.93	62.83	Peak	H	-1.06	-	61.77	74.00	12.23
2 483.93	39.67	Average	H	-1.06	-	38.61	54.00	15.39
2 484.00	69.14	Peak	V	-1.06	-	68.08	74.00	5.92
2 484.00	44.76	Average	V	-1.06	-	43.70	54.00	10.30

