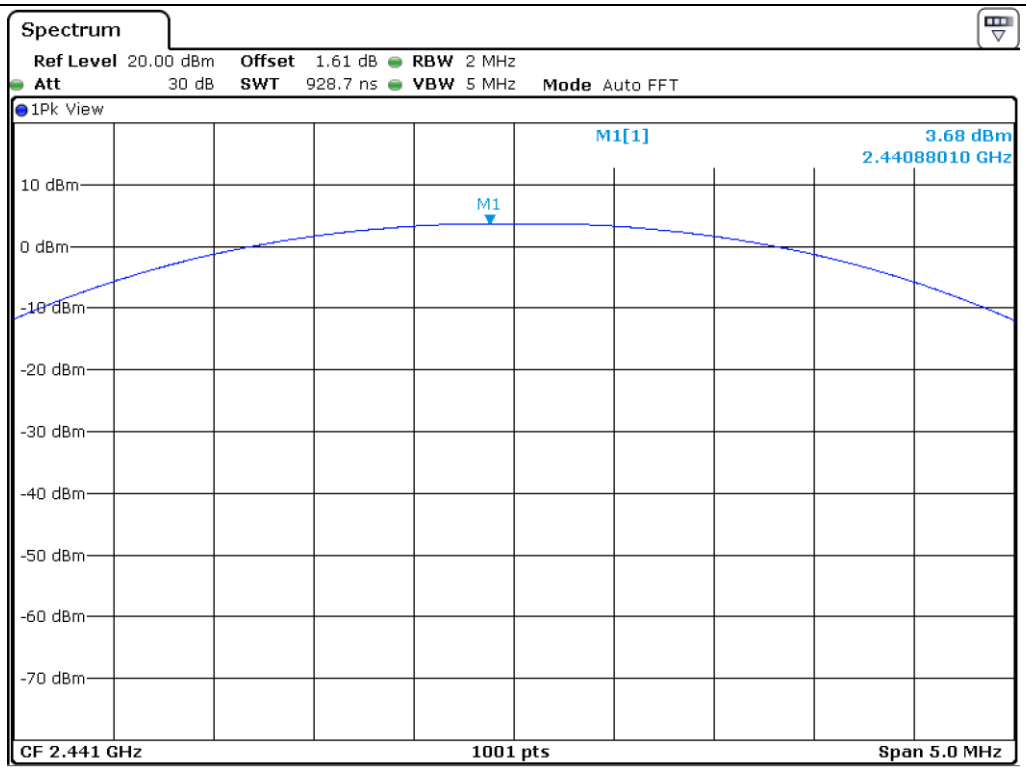
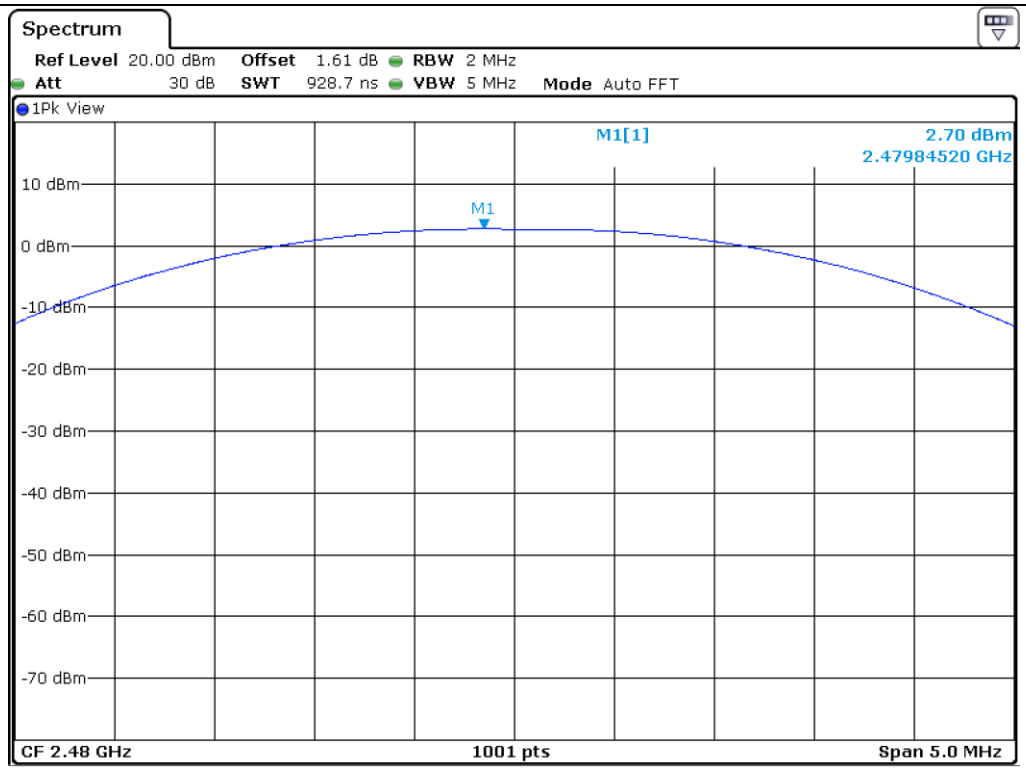


Middle Channel



High Channel

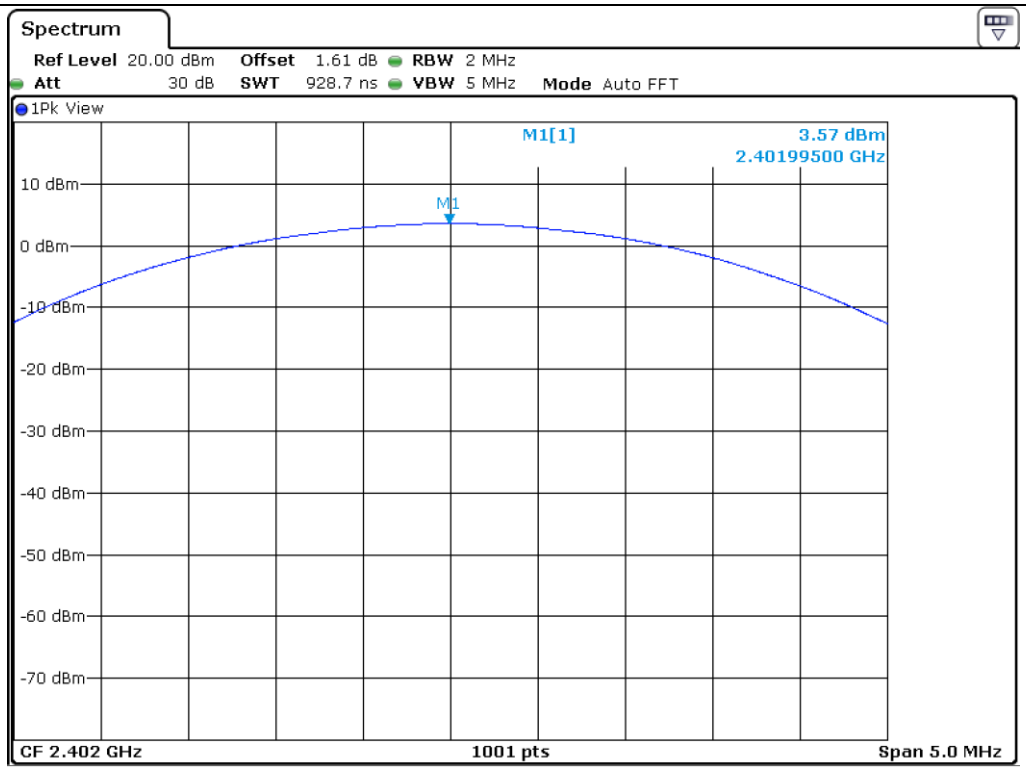
11.6 Test data for 3 Mbps

11.6.1 Test data for Antenna 0

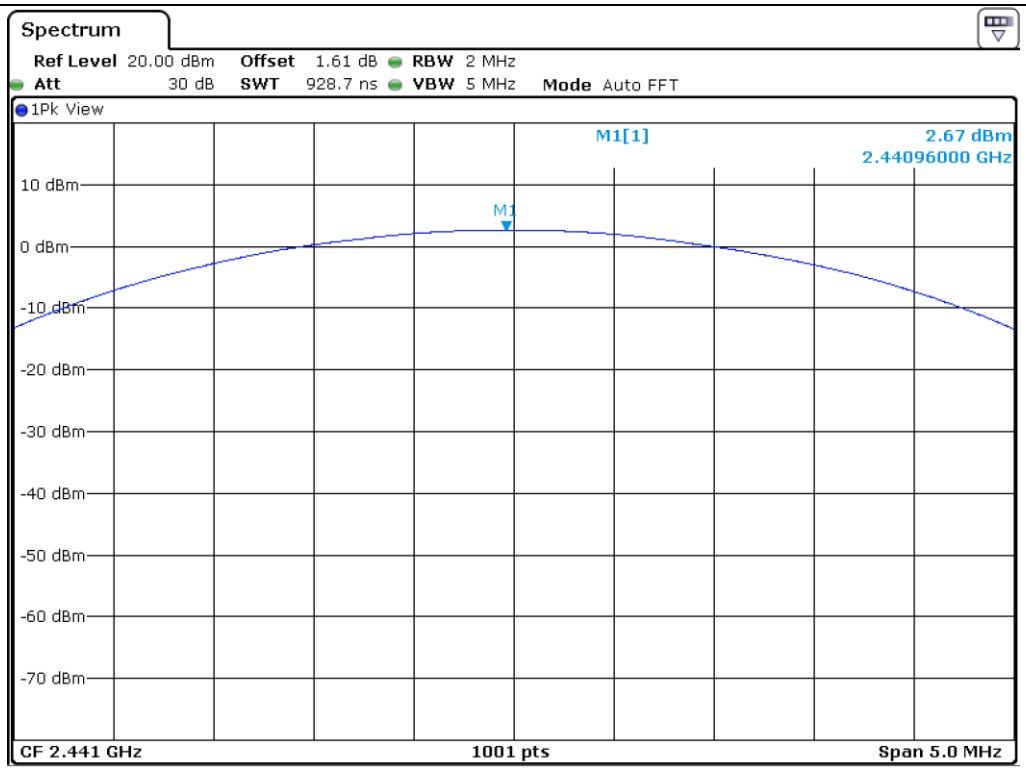
-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 402.00	3.57	21.00	17.43
MIDDLE	2 441.00	2.67	21.00	18.33
HIGH	2 480.00	1.08	21.00	19.92

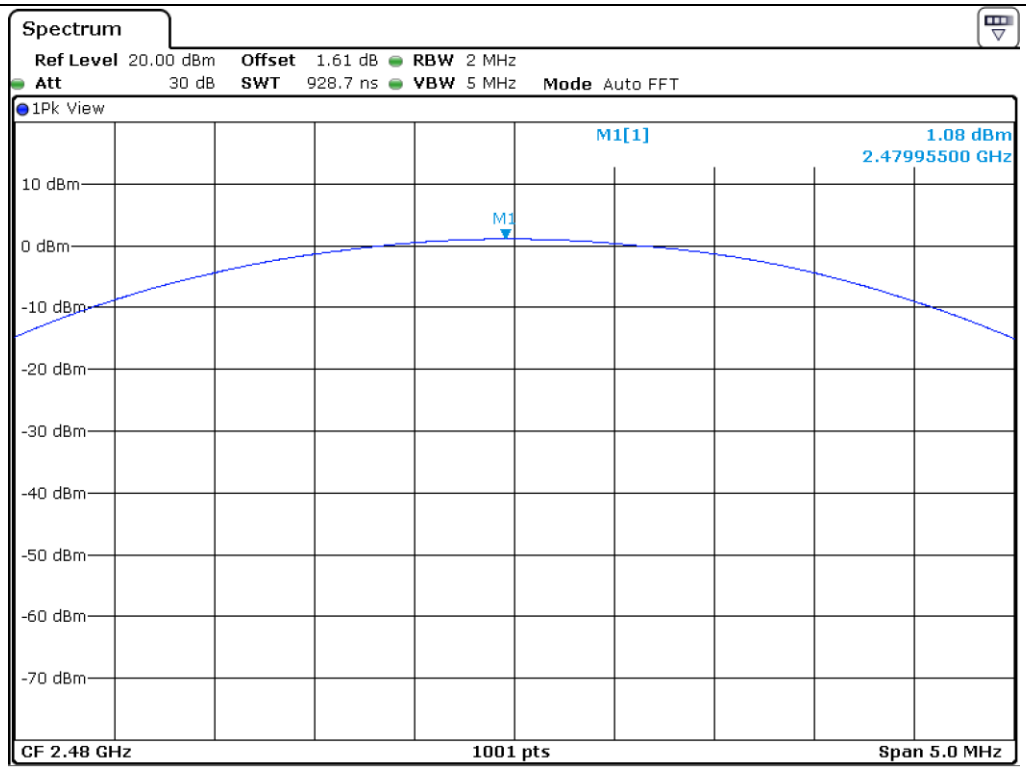
Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)



Low Channel



Middle Channel



High Channel

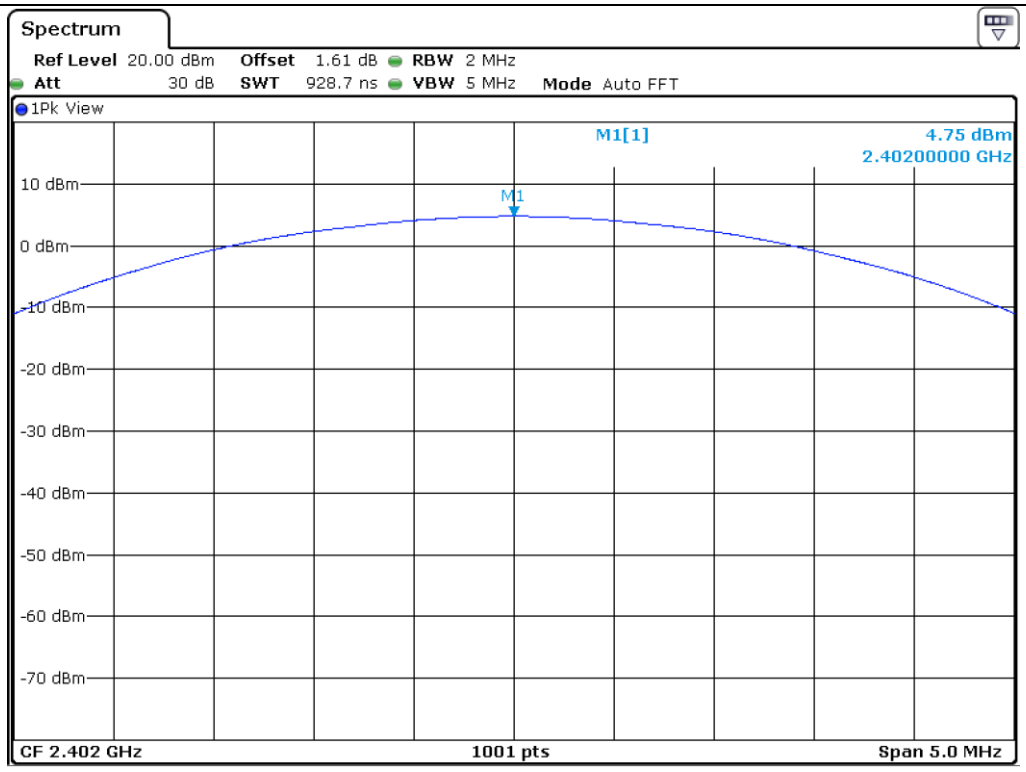
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

11.6.2 Test data for Antenna 1

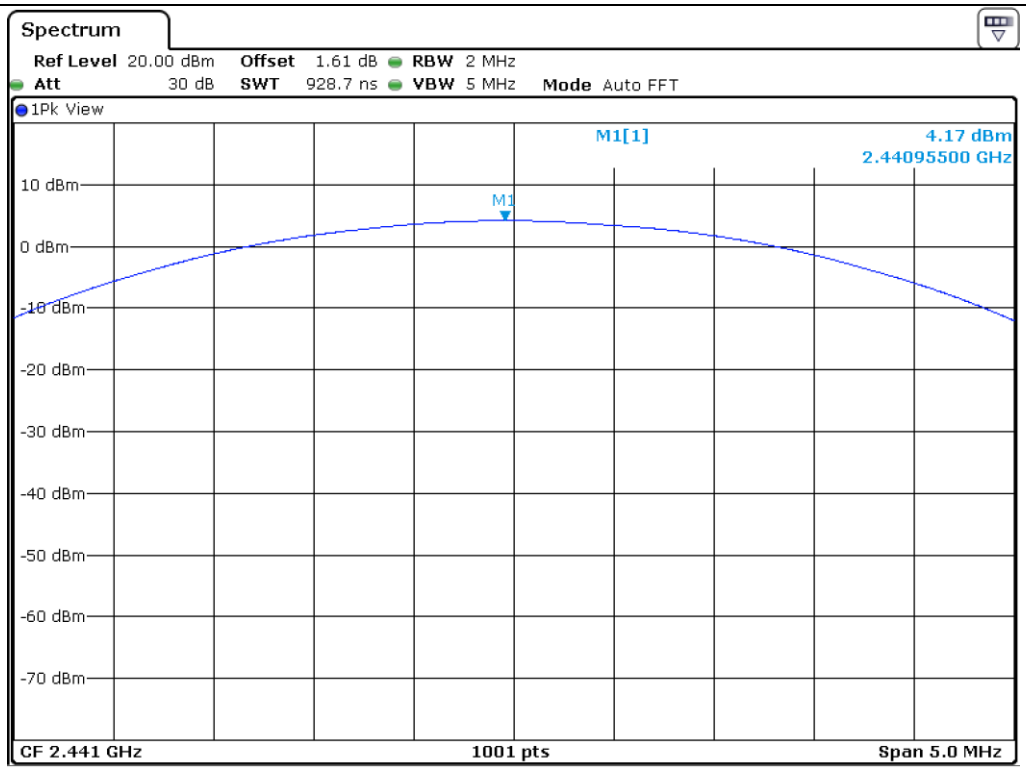
-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	MEASURED VLAUE (dBm)	LIMIT (dBm)	MARGIN (dB)
LOW	2 402.00	4.75	21.00	16.25
MIDDLE	2 441.00	4.17	21.00	16.83
HIGH	2 480.00	3.32	21.00	17.68

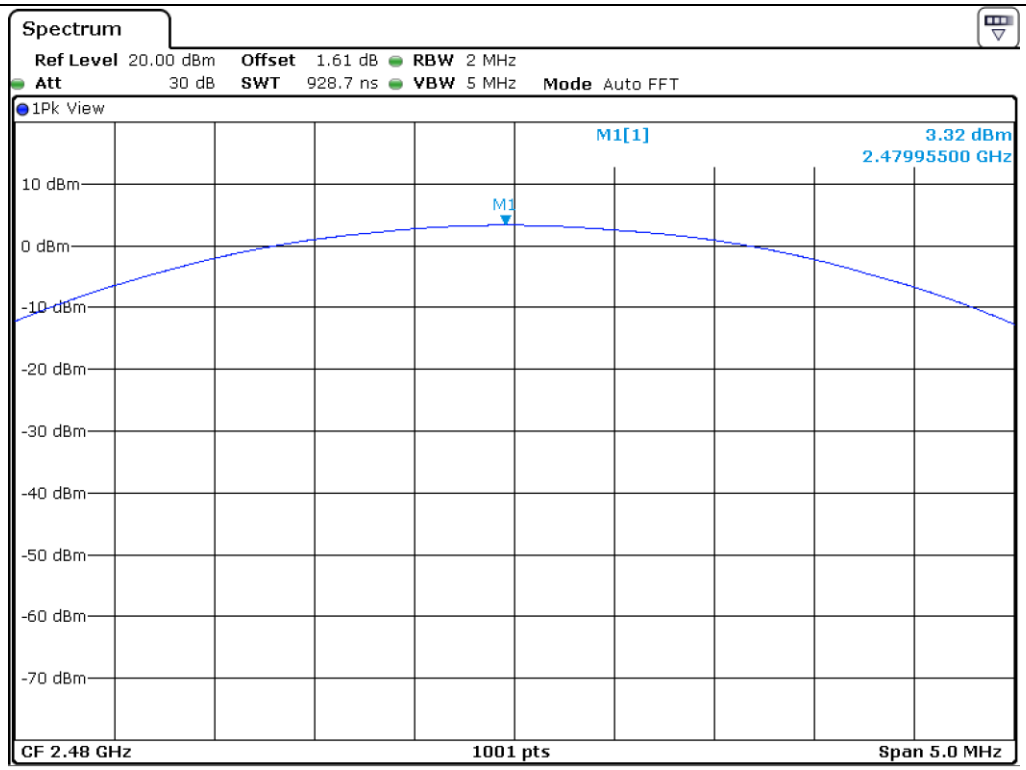
Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)



Low Channel



Middle Channel



High Channel

12. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

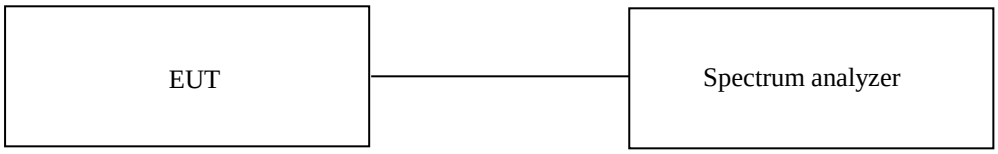
12.1 Operating environment

Temperature : 23 °C

Relative humidity : 45 % R.H.

12.2 Test set-up for conducted measurement

The antenna output of the EUT was connected to the spectrum analyzer. The resolution and video bandwidth is set to 100 kHz, and peak detection was used.



12.3 Test set-up for radiated measurement

The radiated emissions measurements were performed on the 3 m semi anechoic chamber. The EUT was placed on turntable approximately 1.5 m above the ground plane.

The frequency spectrum from 30 MHz to 26.5 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal and vertical polarization of the receiving antenna.

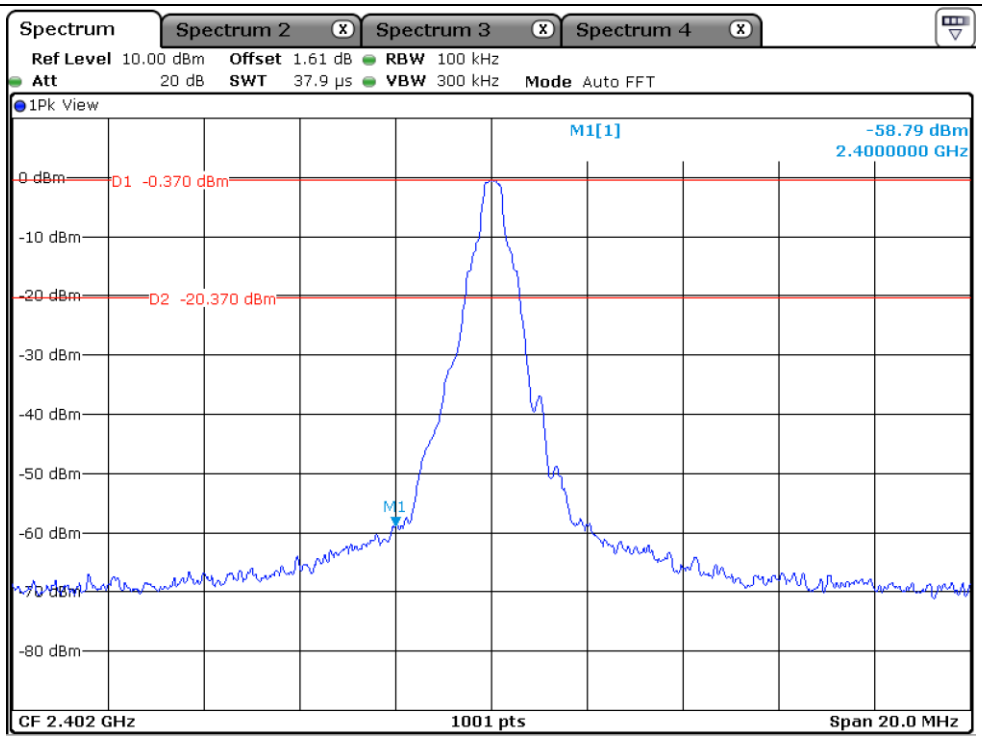
12.4 Test Date

January 11, 2021 ~ January 14, 2021

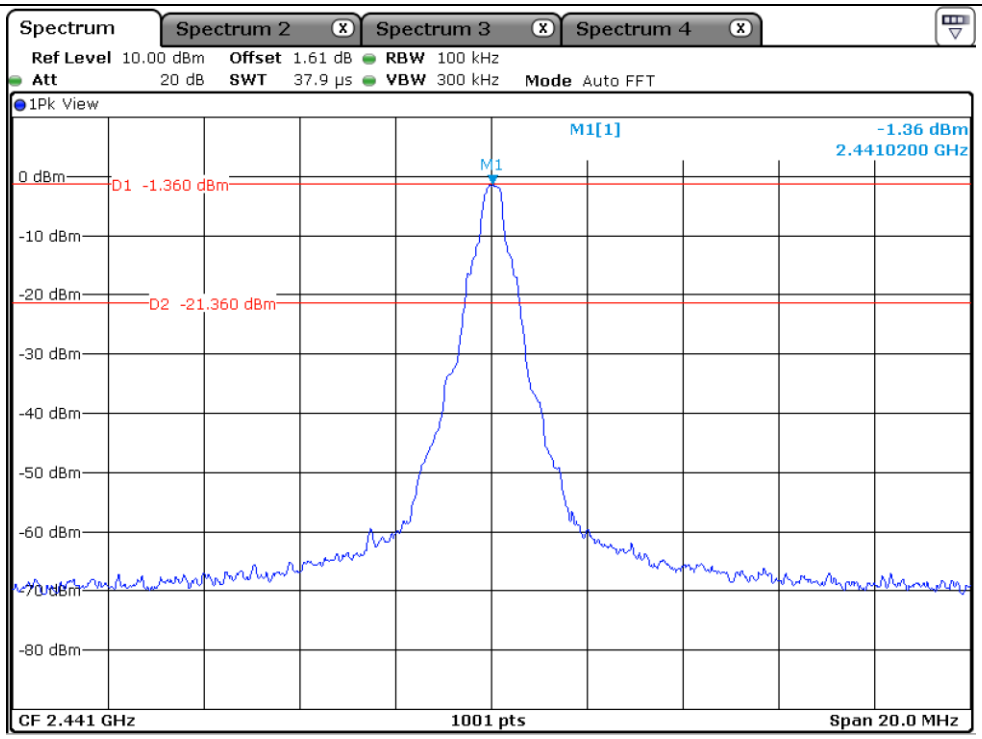
12.5 Test data for conducted emission

12.5.1 Test data for 1 Mbps

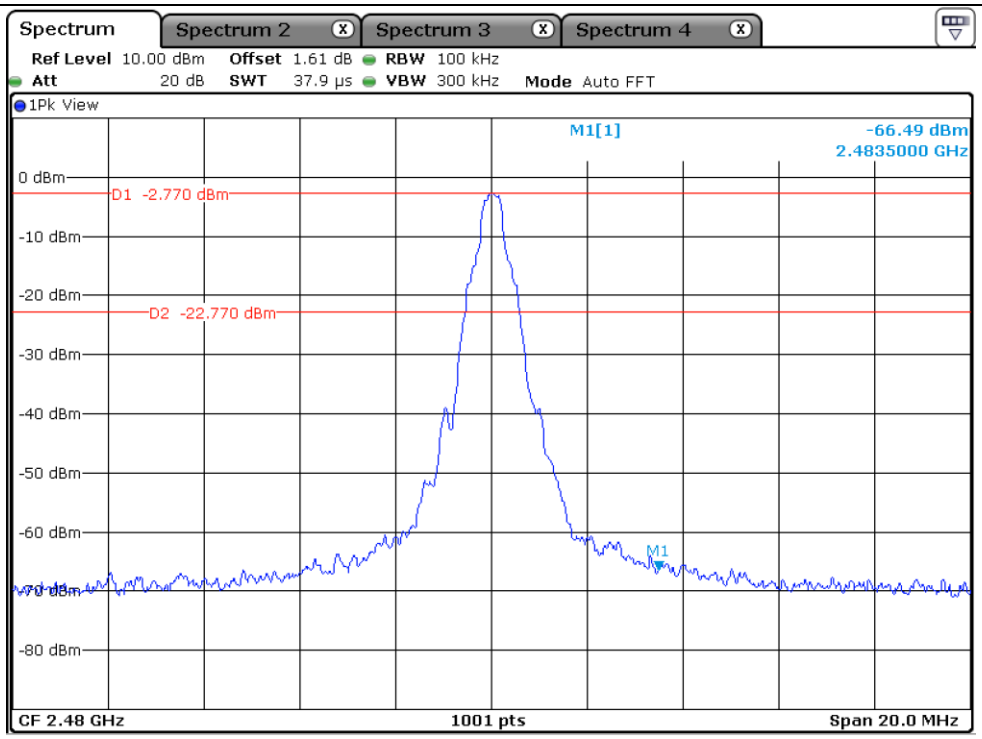
12.5.1.1 Test data for Antenna 0



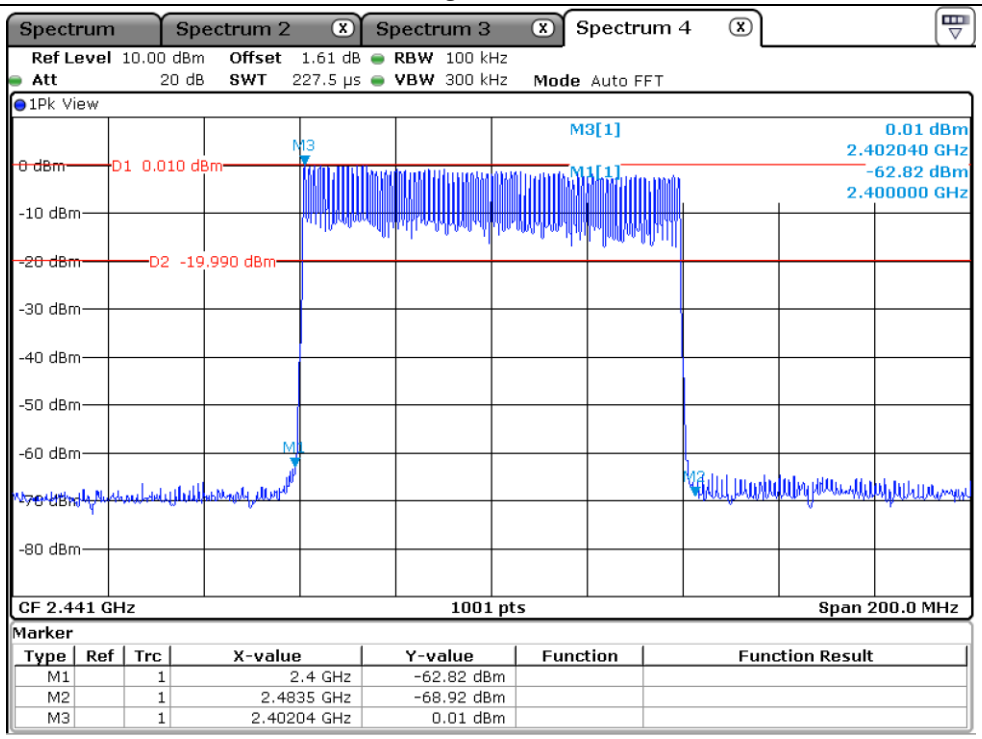
Low Channel



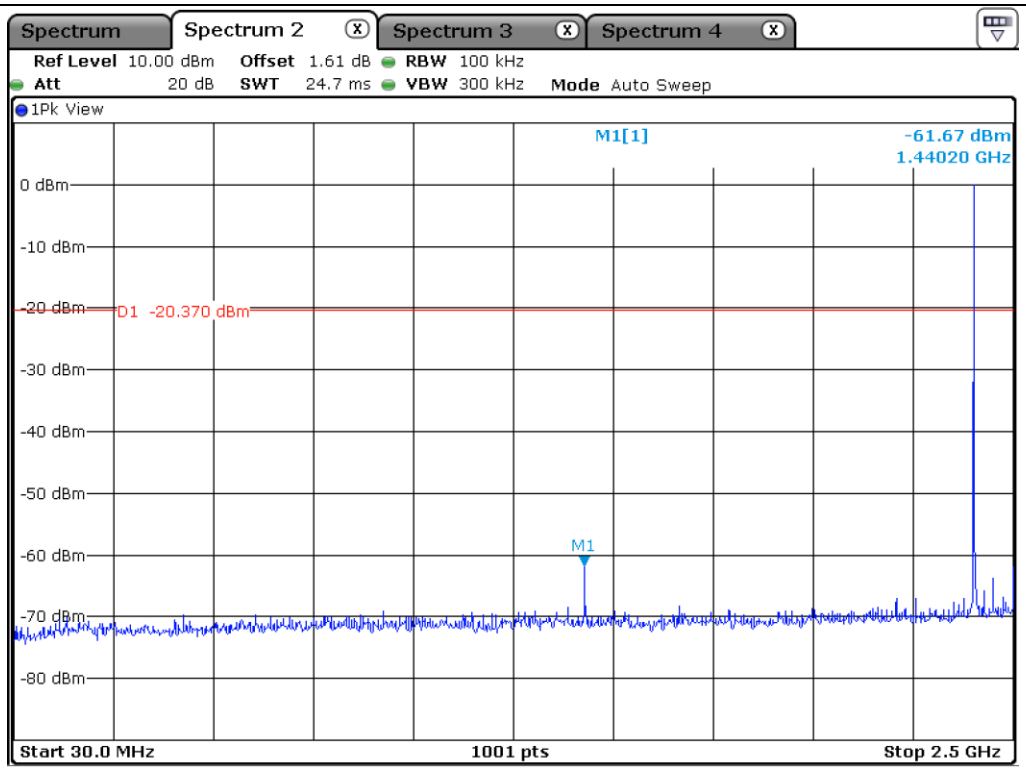
Middle Channel



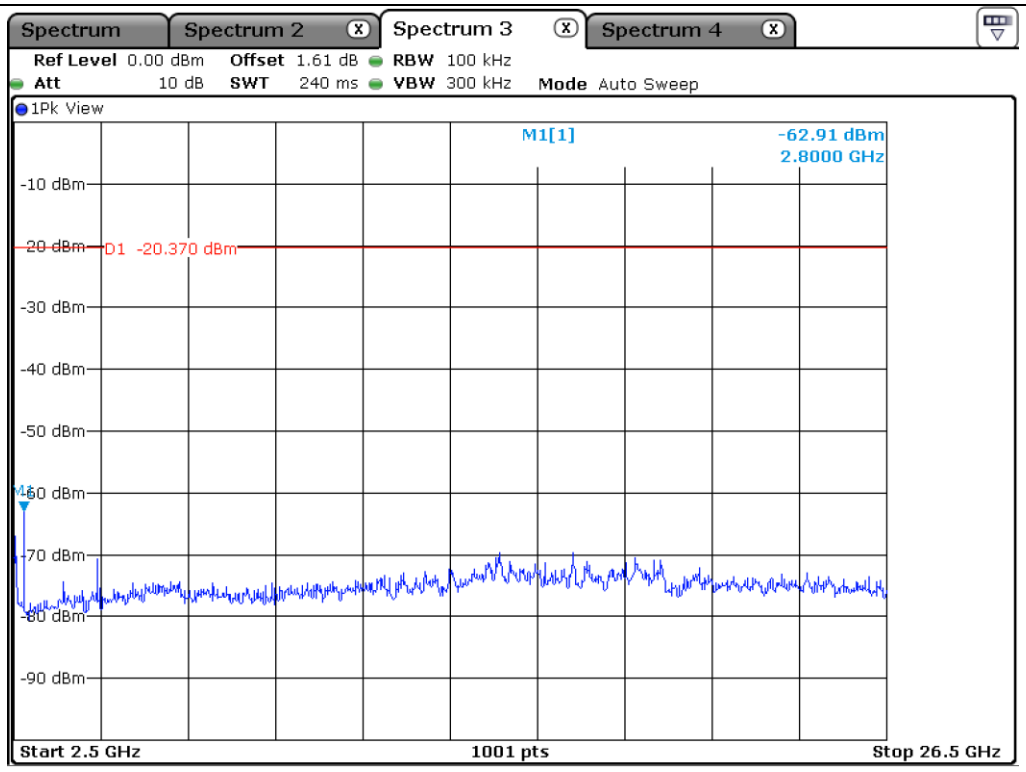
High Channel



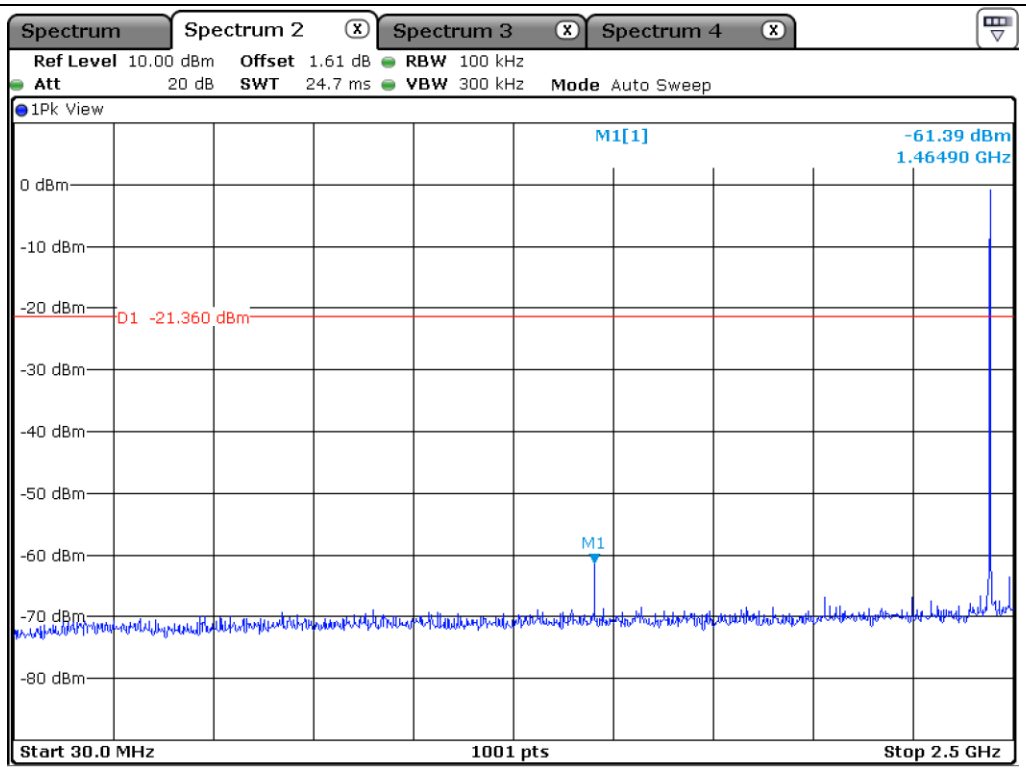
Hopping Mode



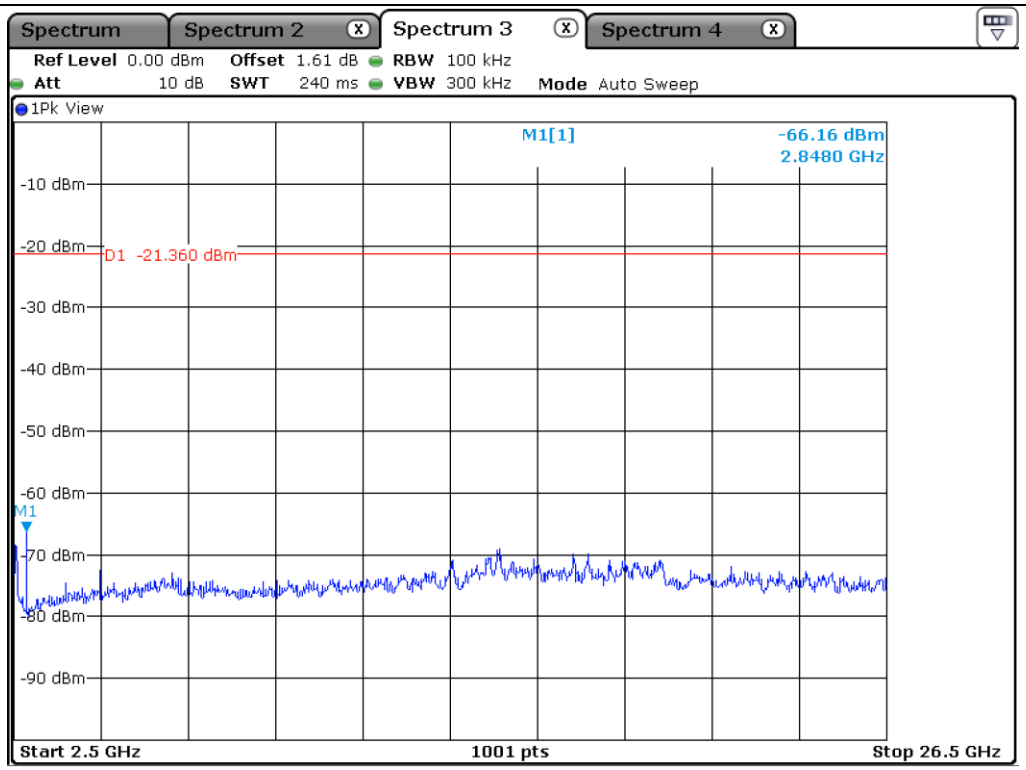
Low Channel



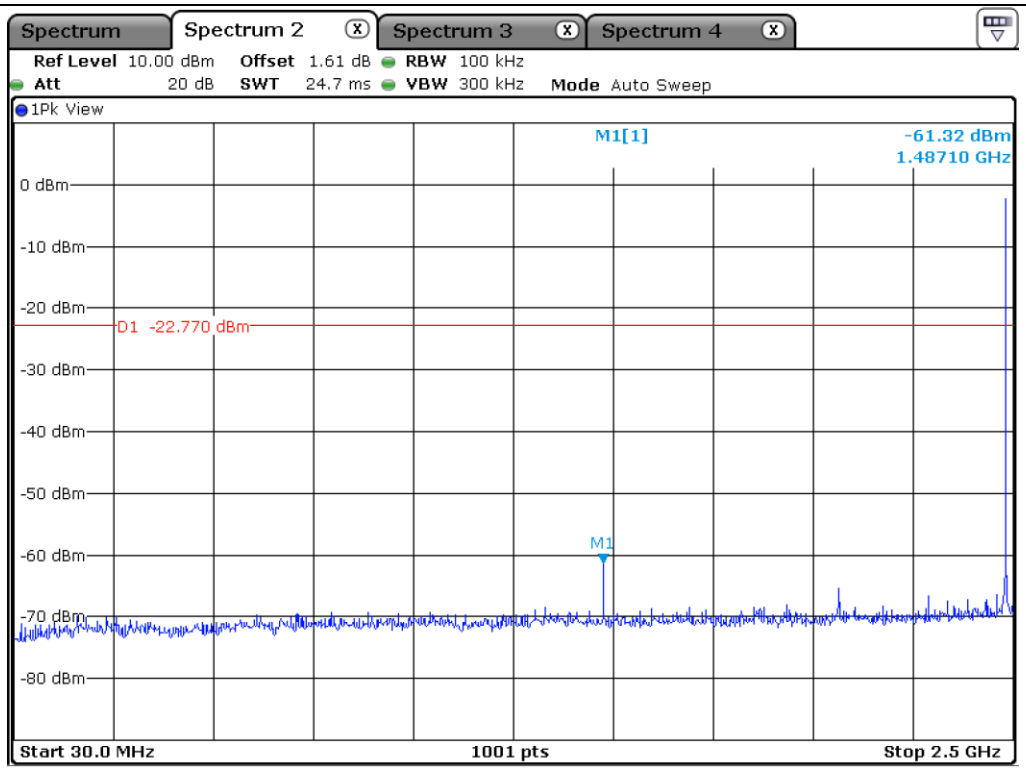
Low Channel



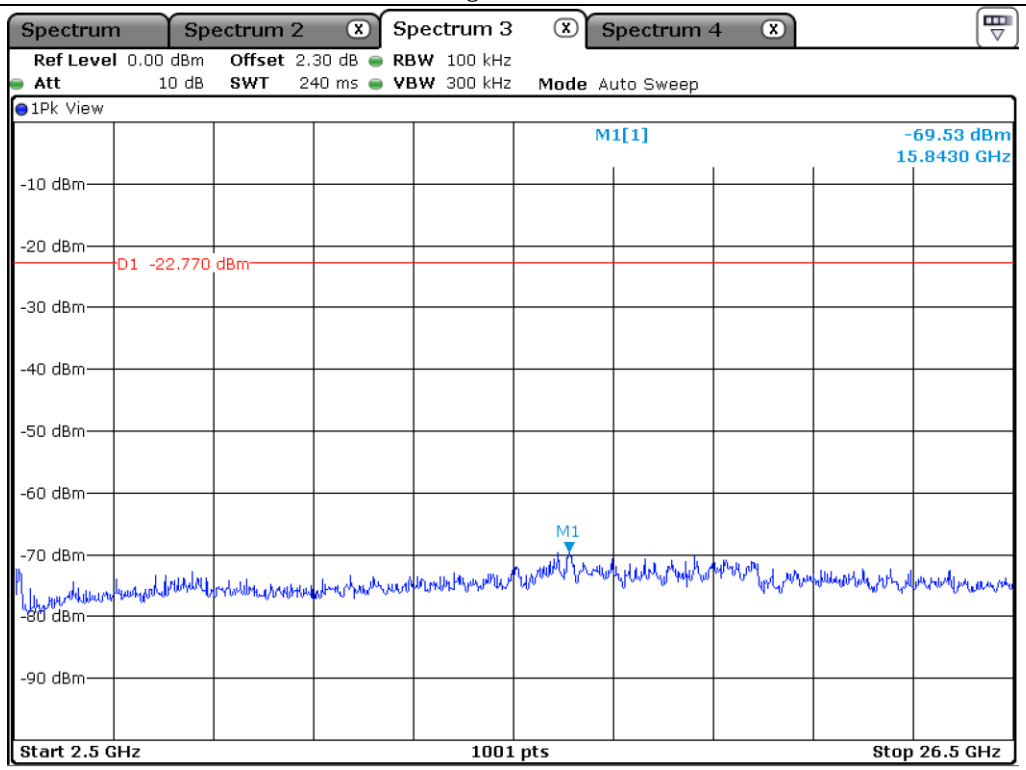
Middle Channel



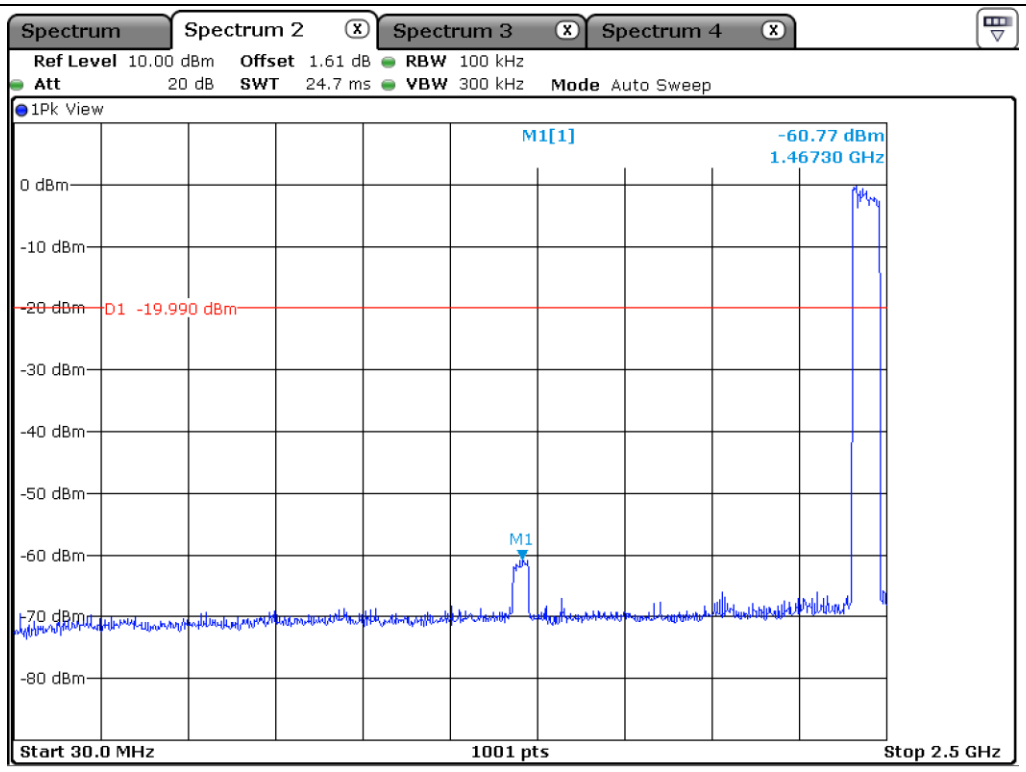
Middle Channel



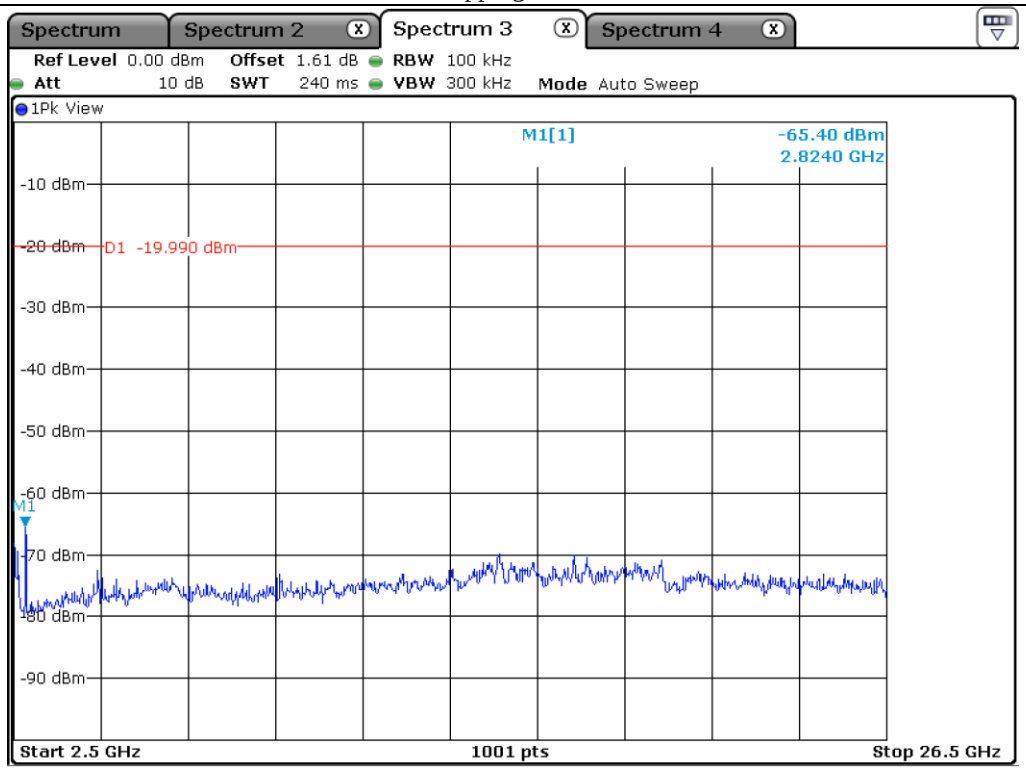
High Channel



High Channel



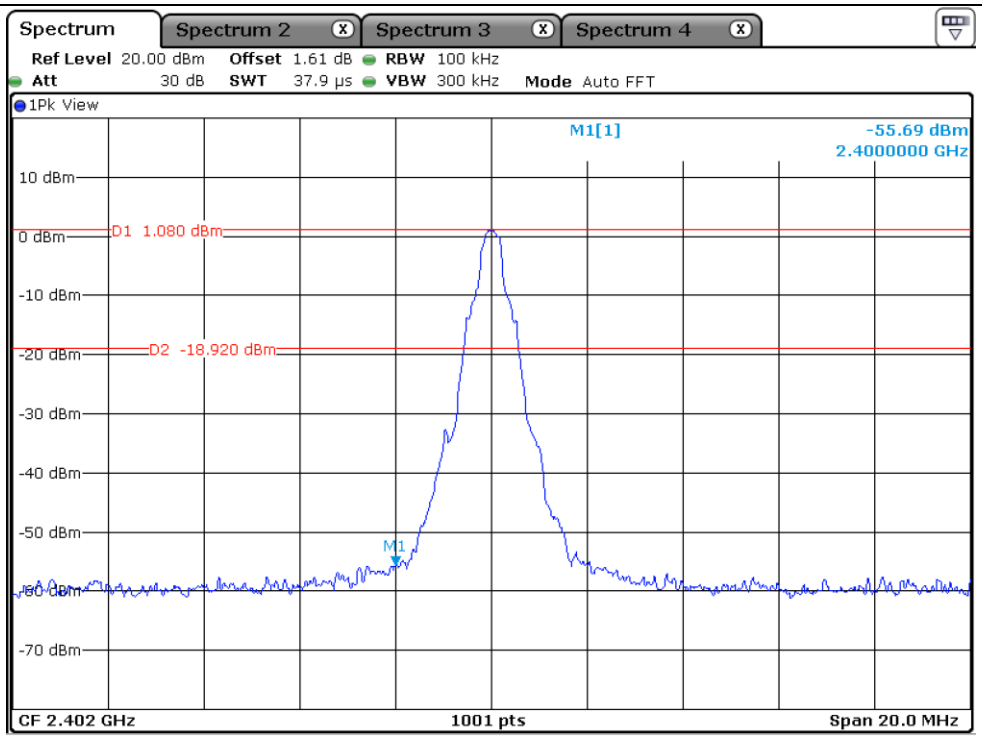
Hopping Mode



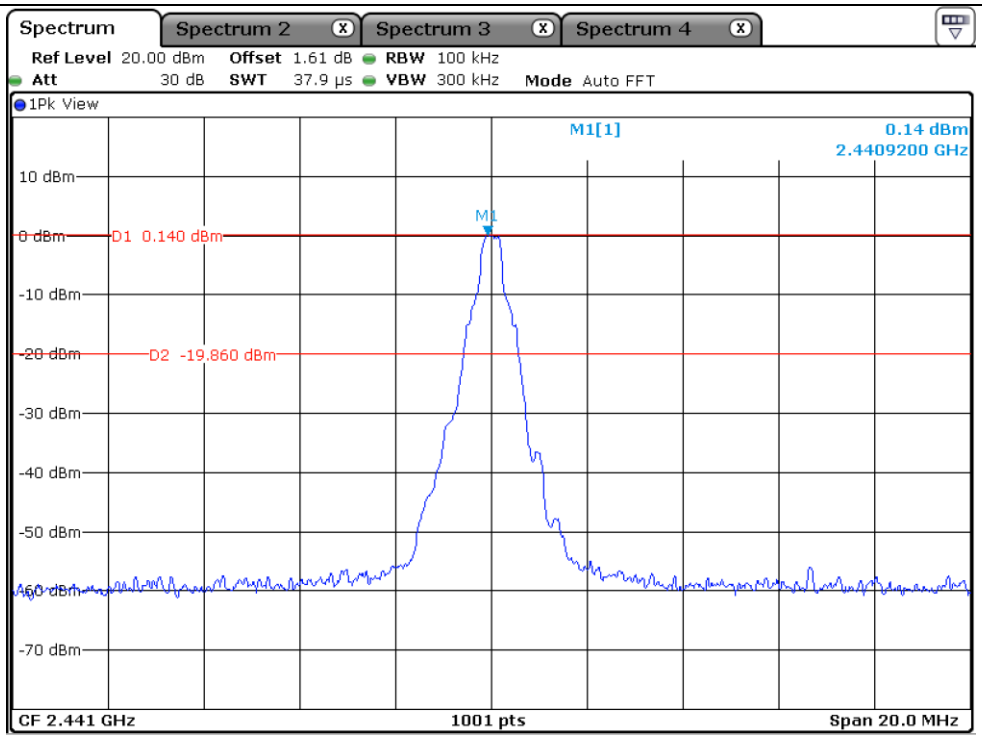
Hopping Mode

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

12.5.1.2 Test data for Antenna 1

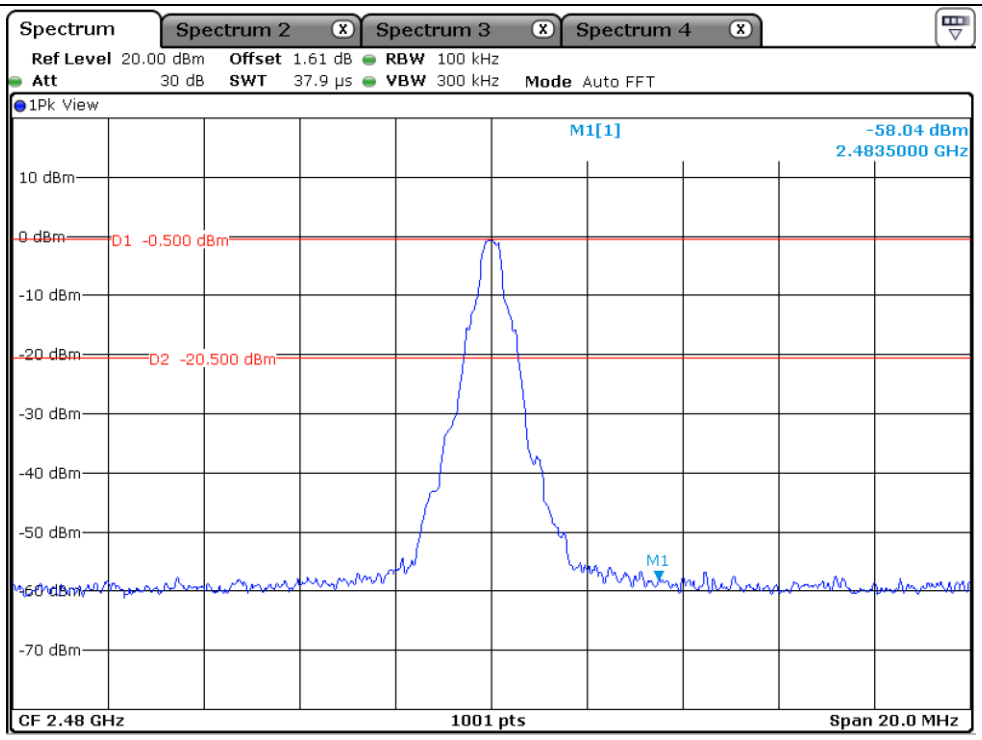


Low Channel

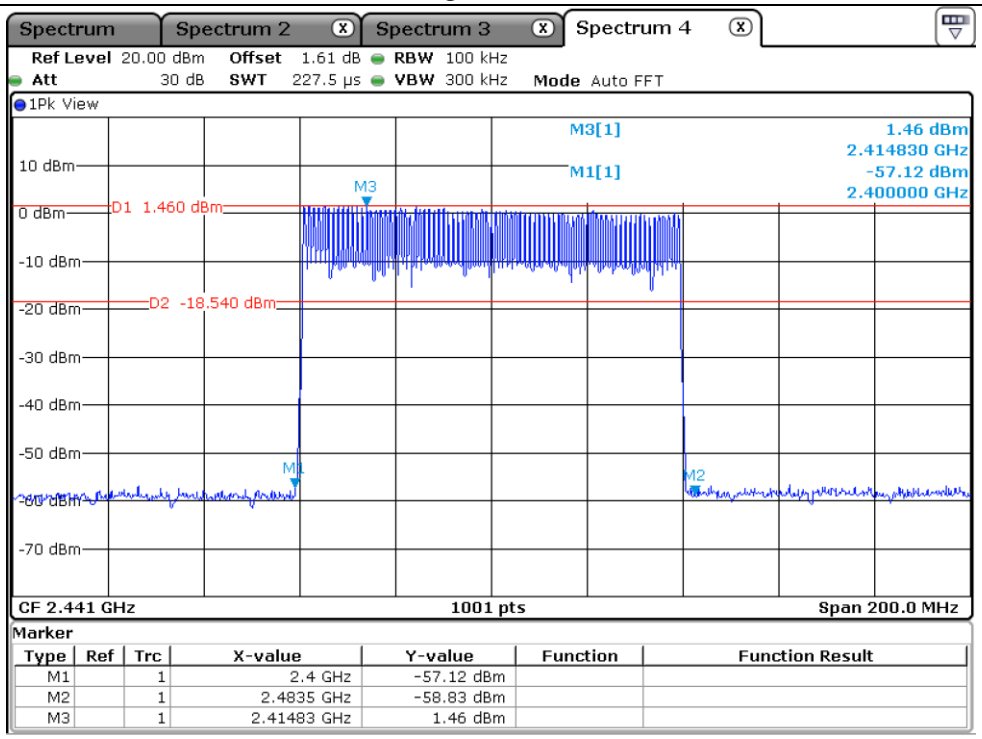


Middle Channel

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

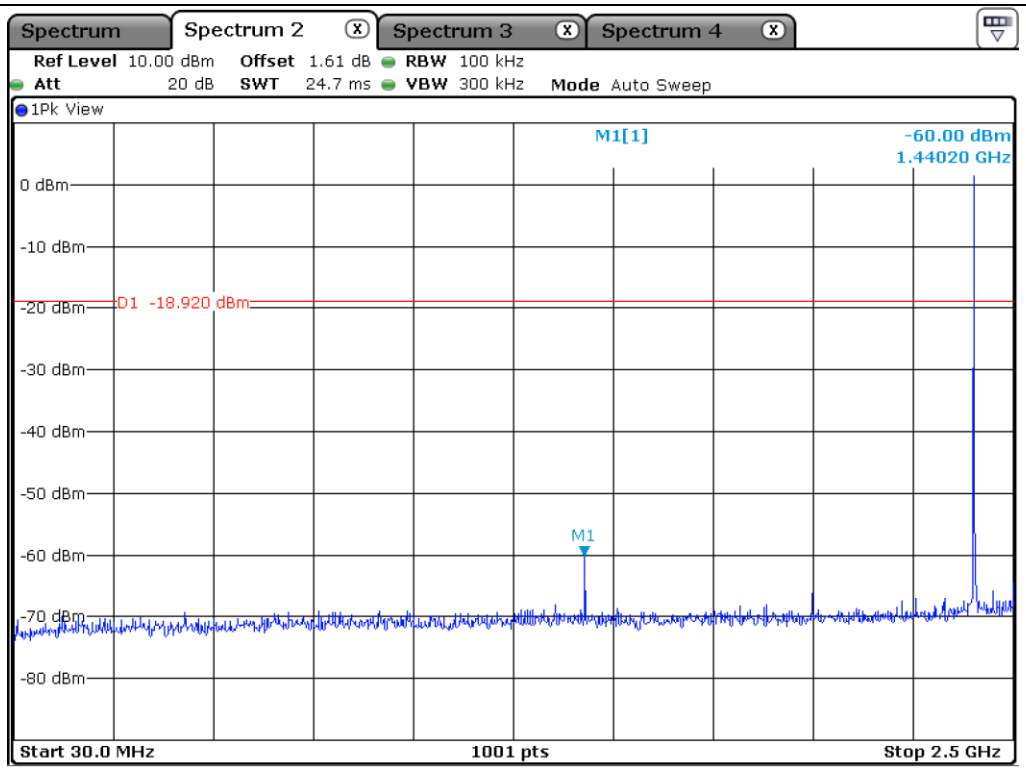


High Channel

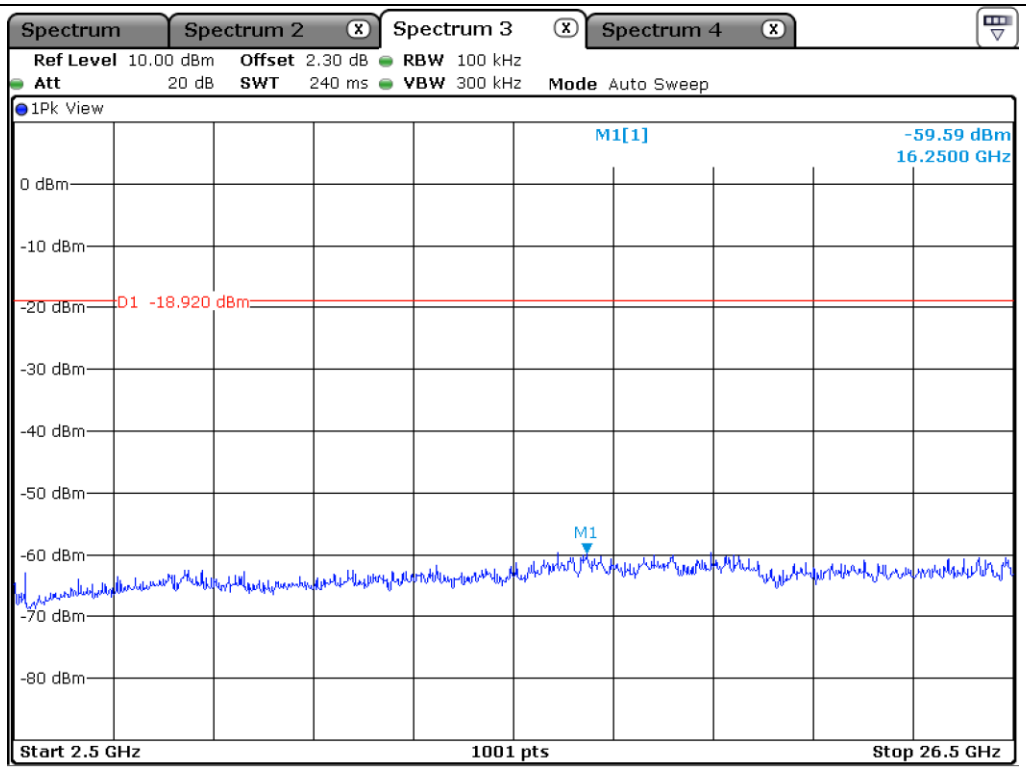


Hopping Mode

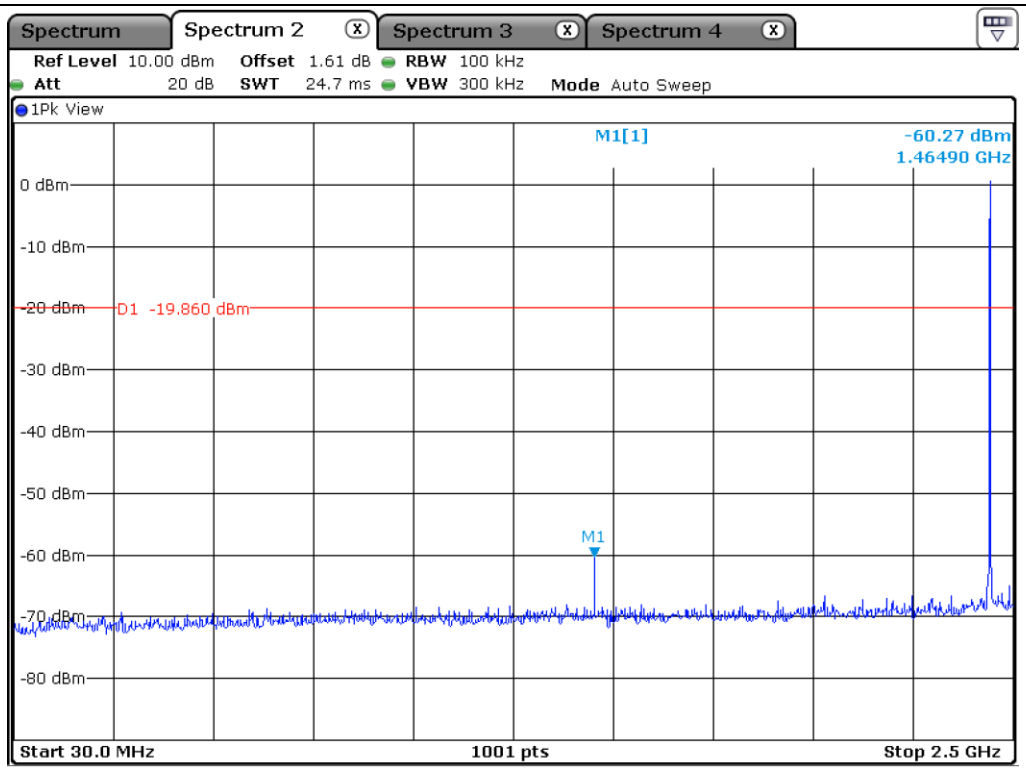
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



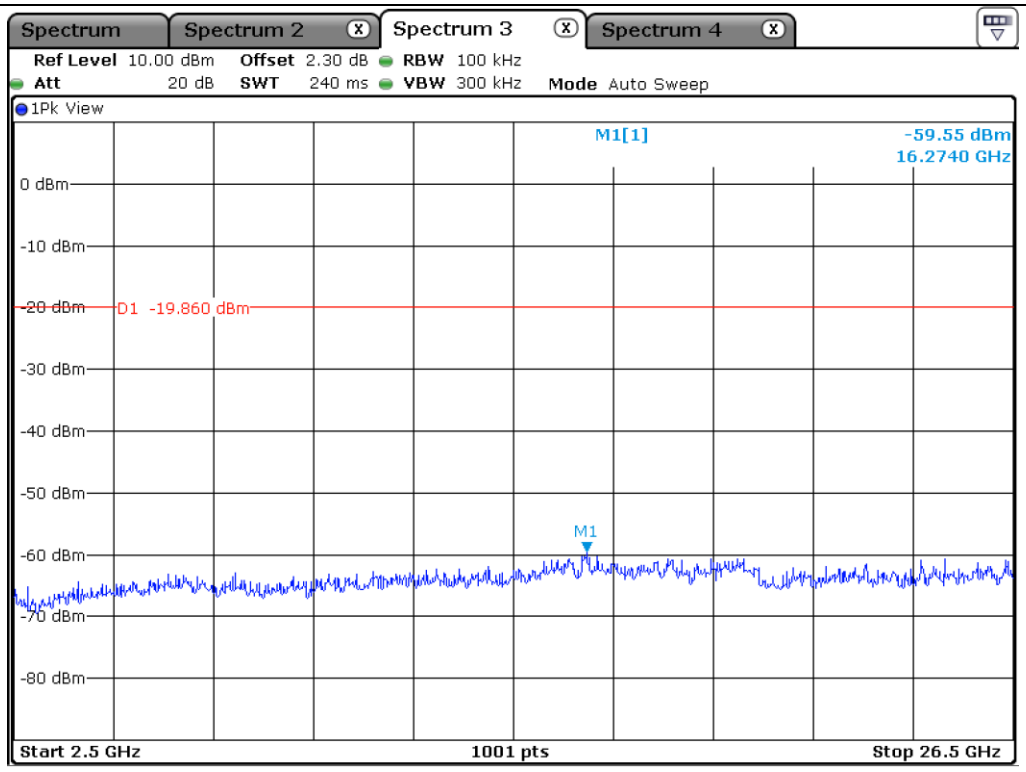
Low Channel



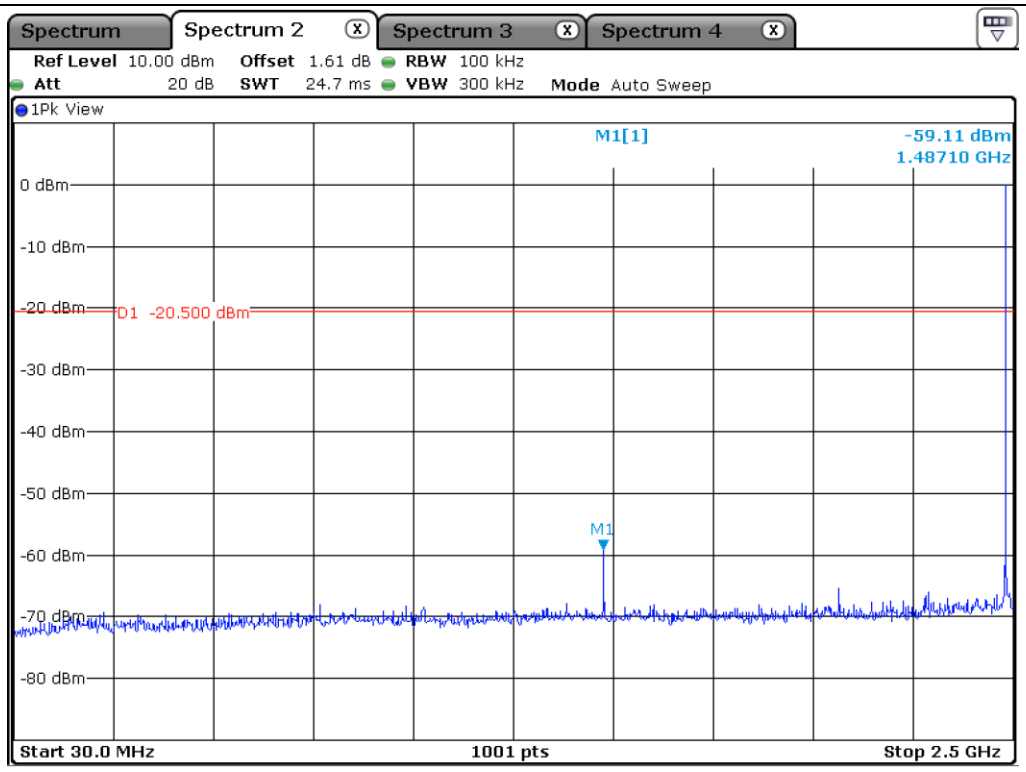
Low Channel



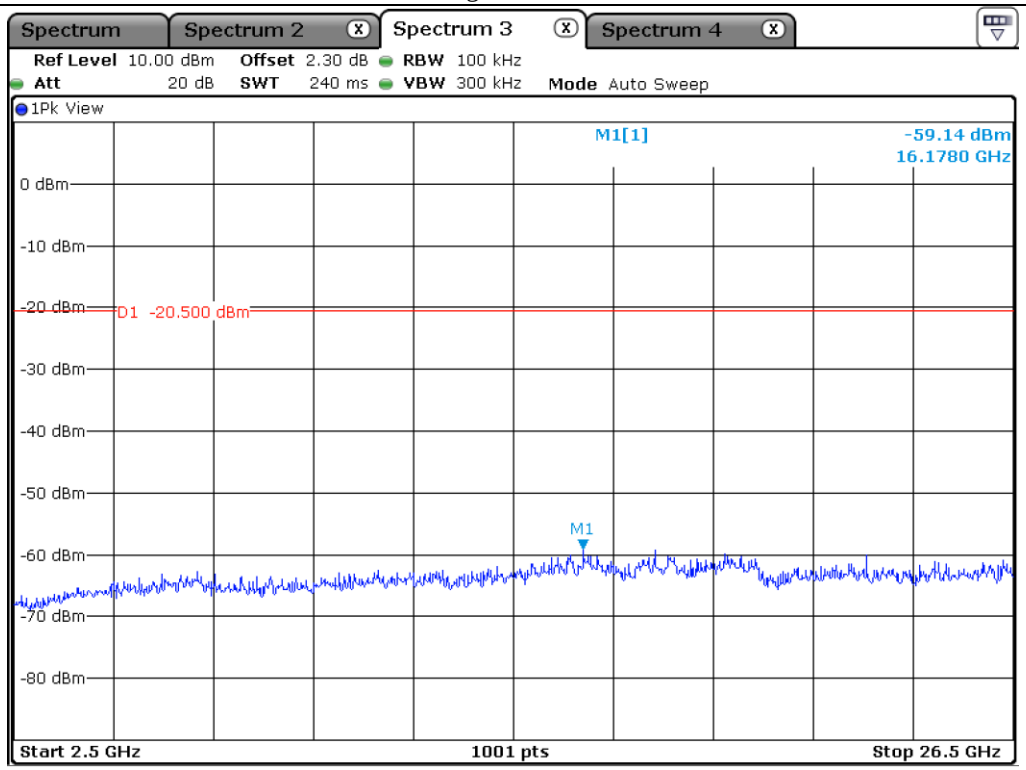
Middle Channel



Middle Channel



High Channel



High Channel

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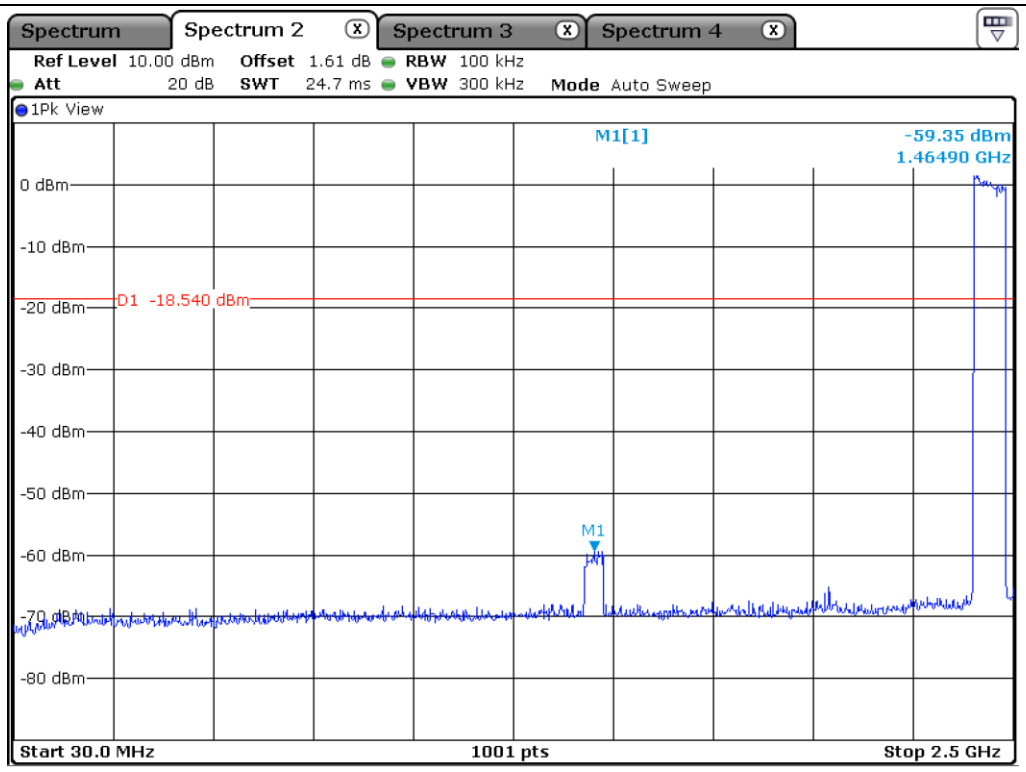
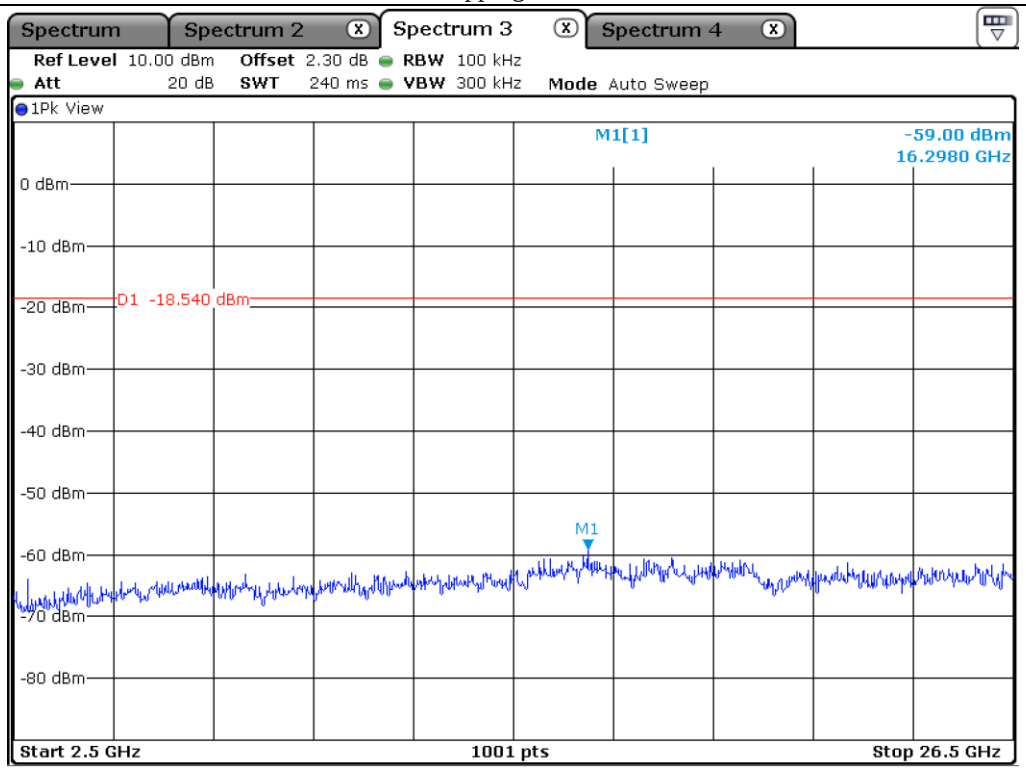


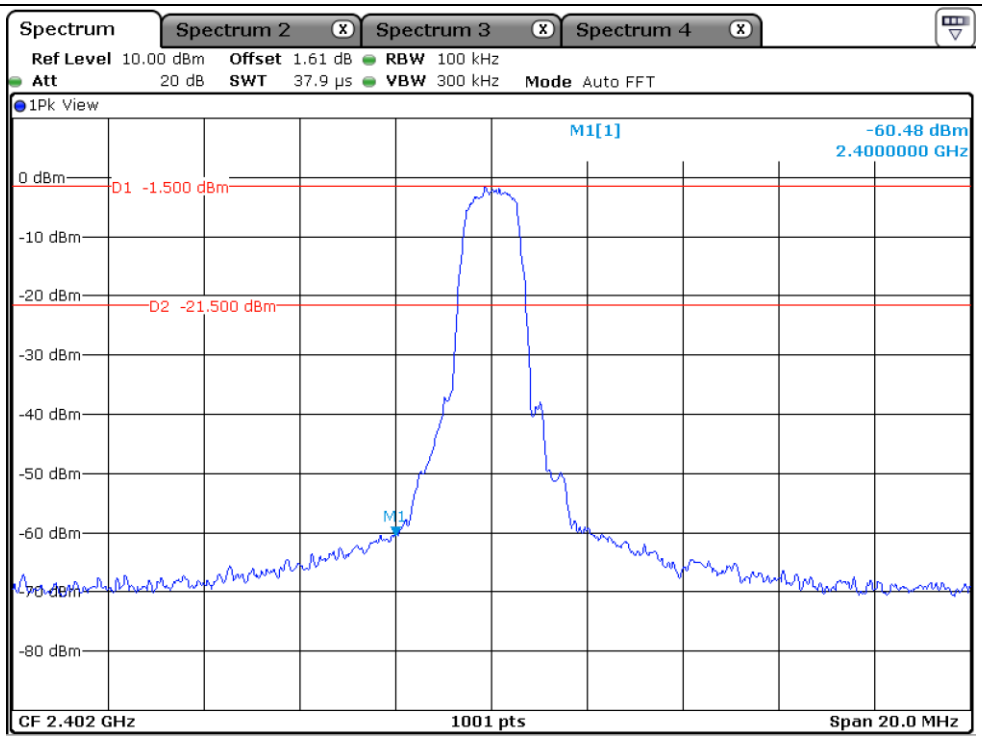
Hopping Mode



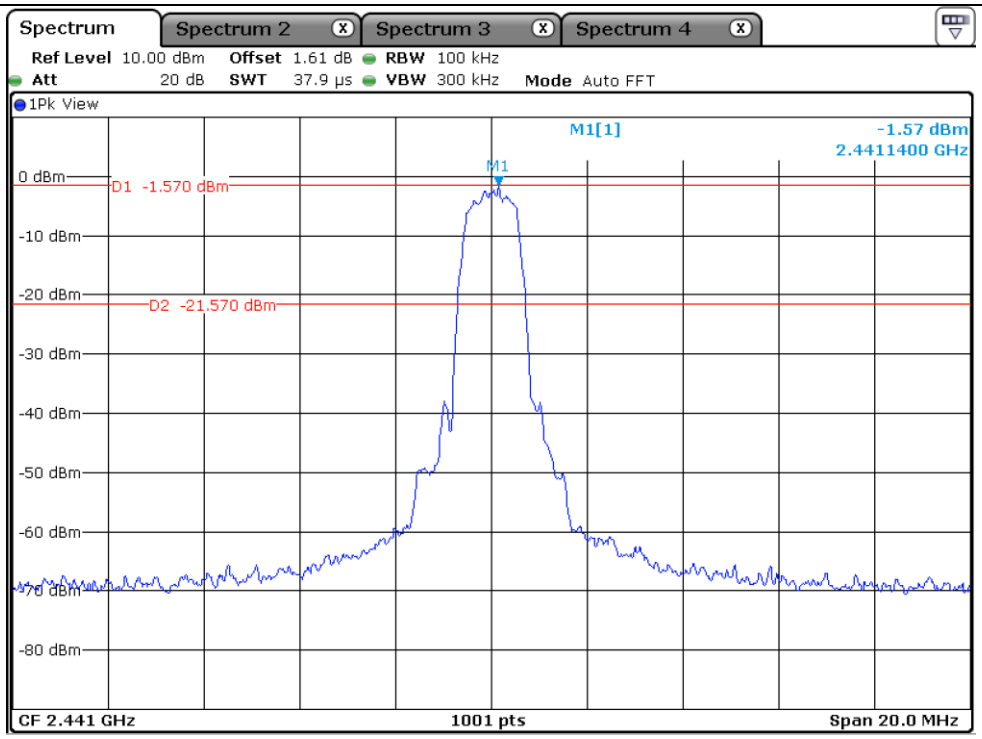
Hopping Mode

12.5.2 Test data for 2 Mbps

12.5.2.1 Test data for Antenna 0

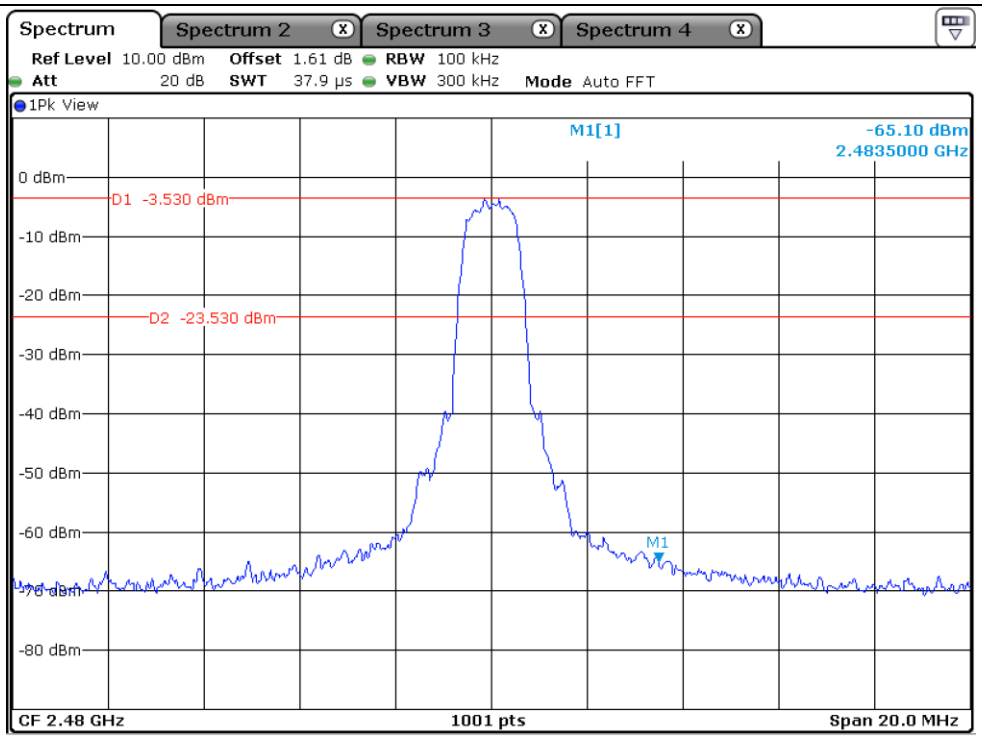


Low Channel

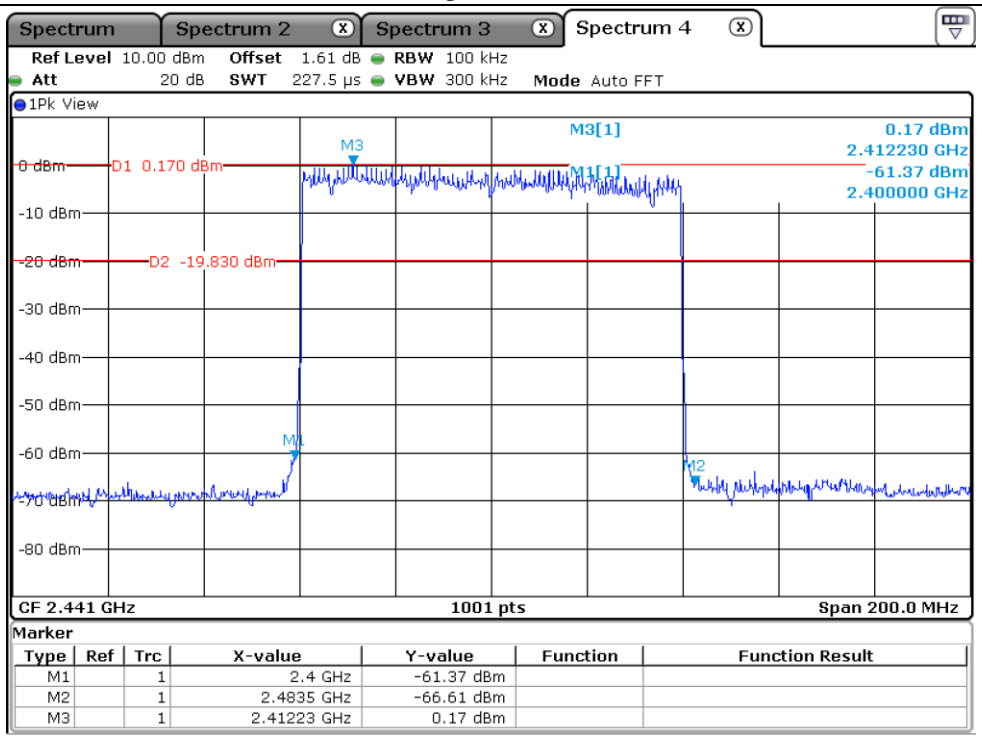


Middle Channel

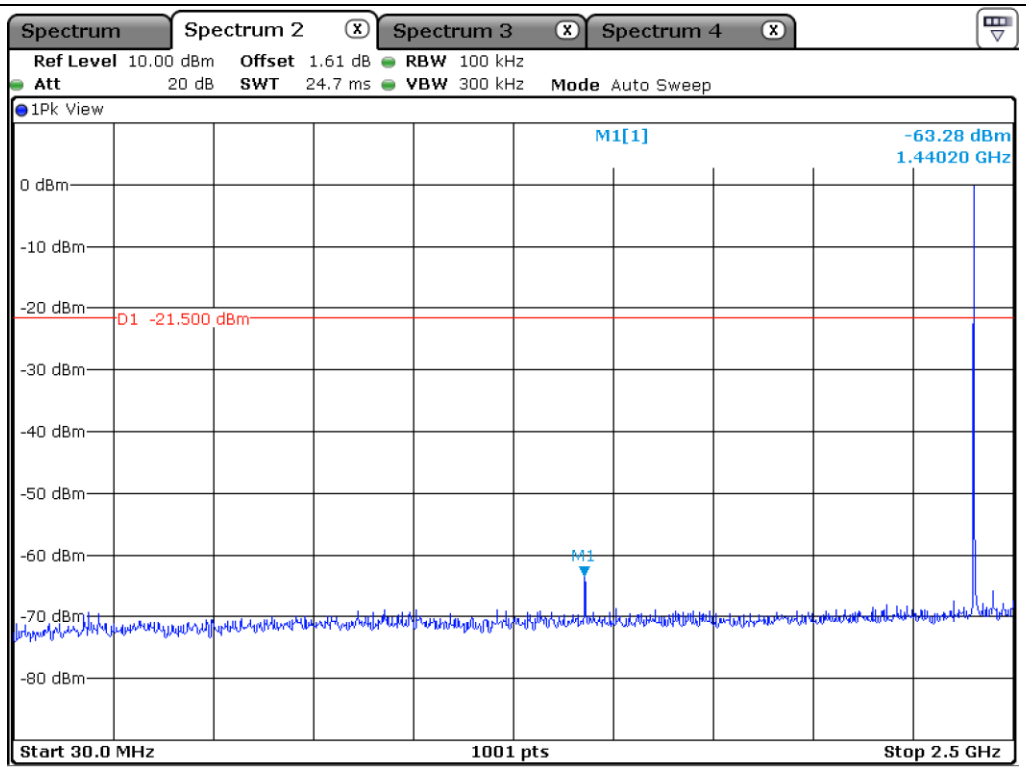
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



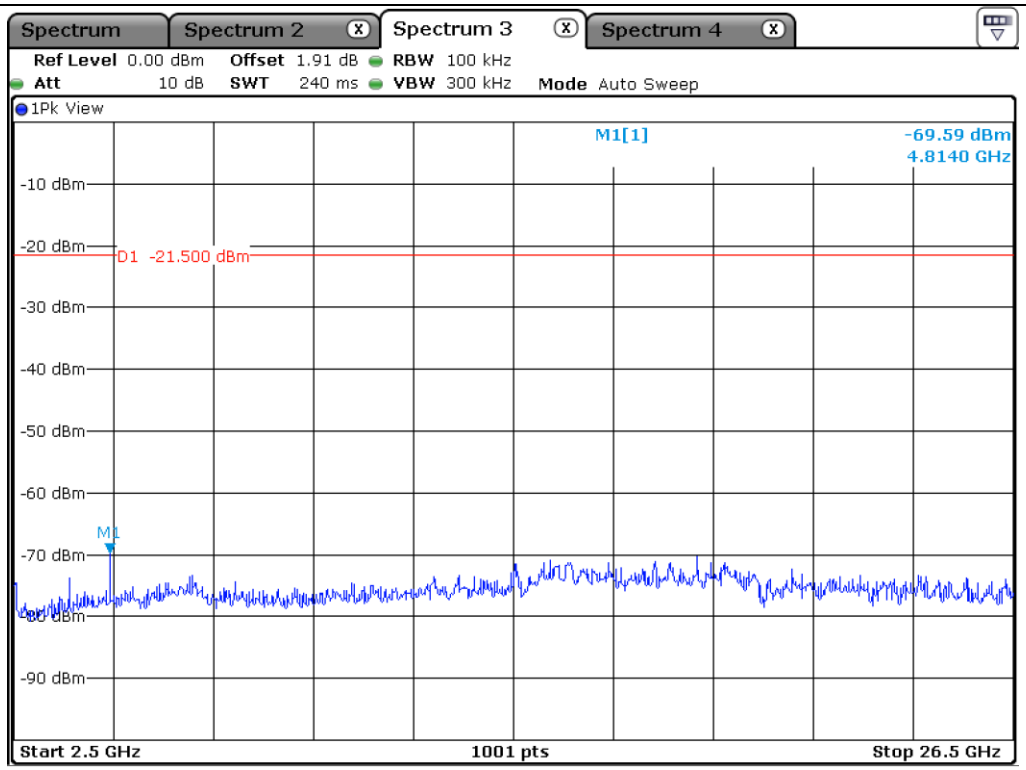
High Channel



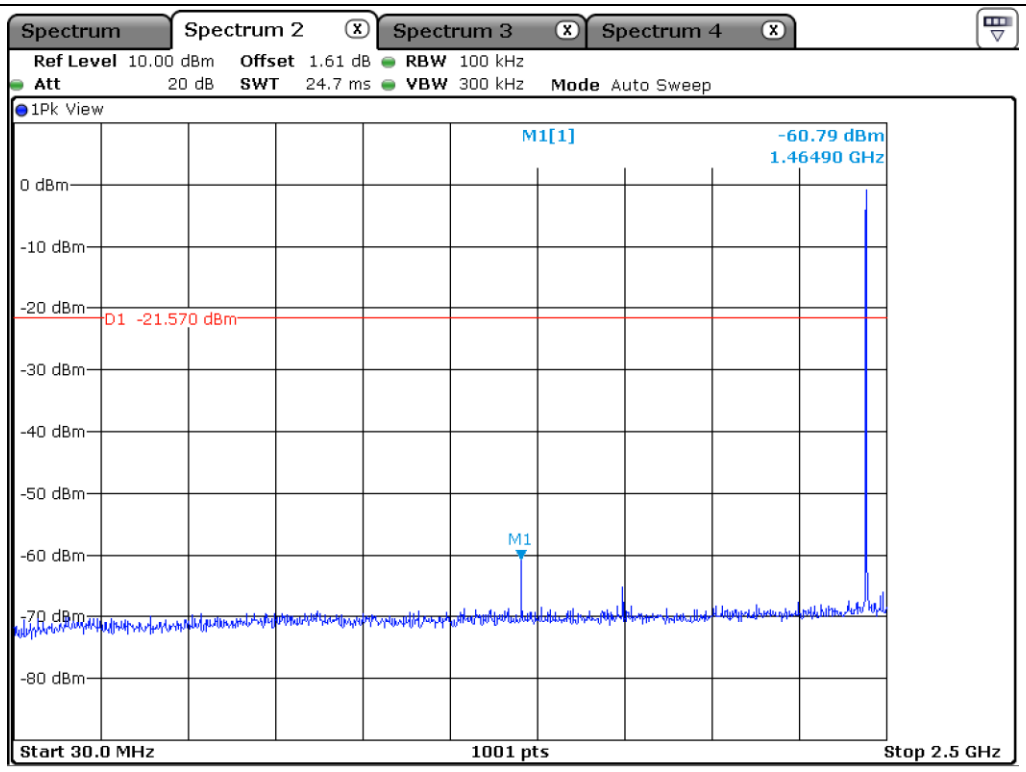
Hopping Mode



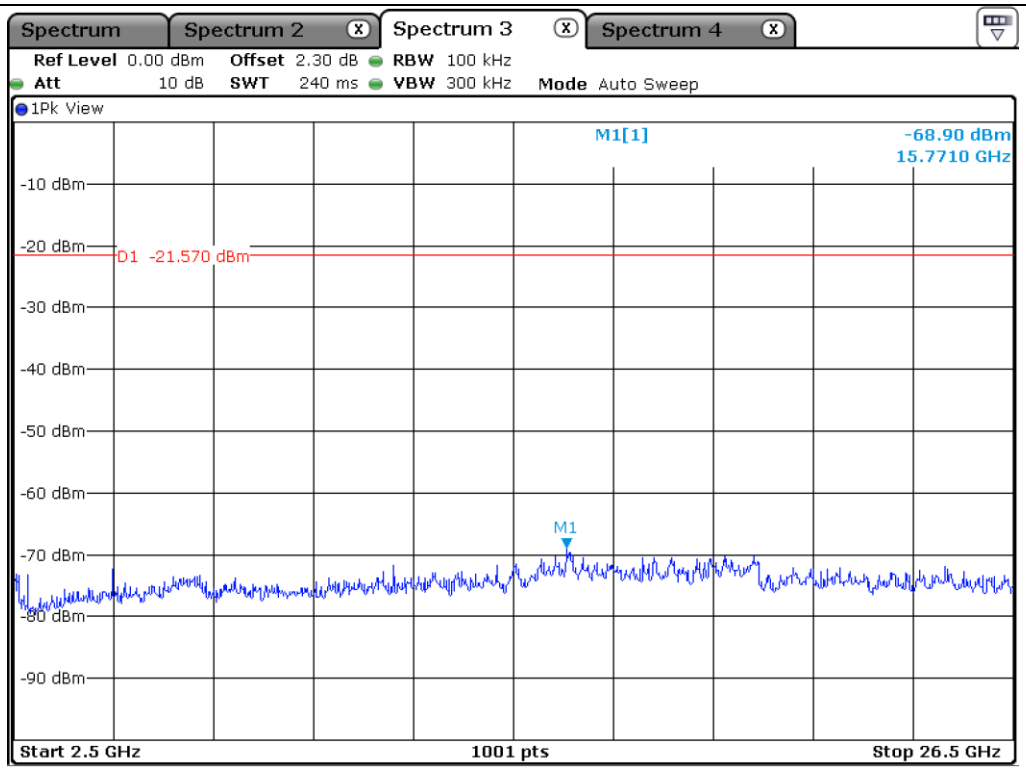
Low Channel



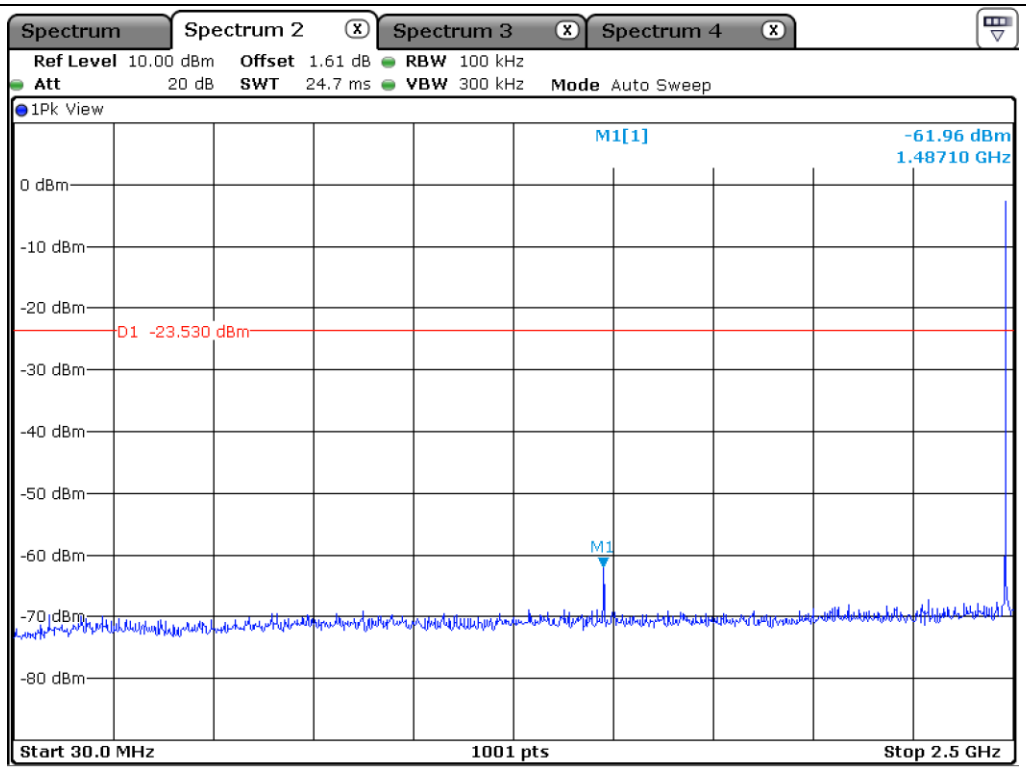
Low Channel



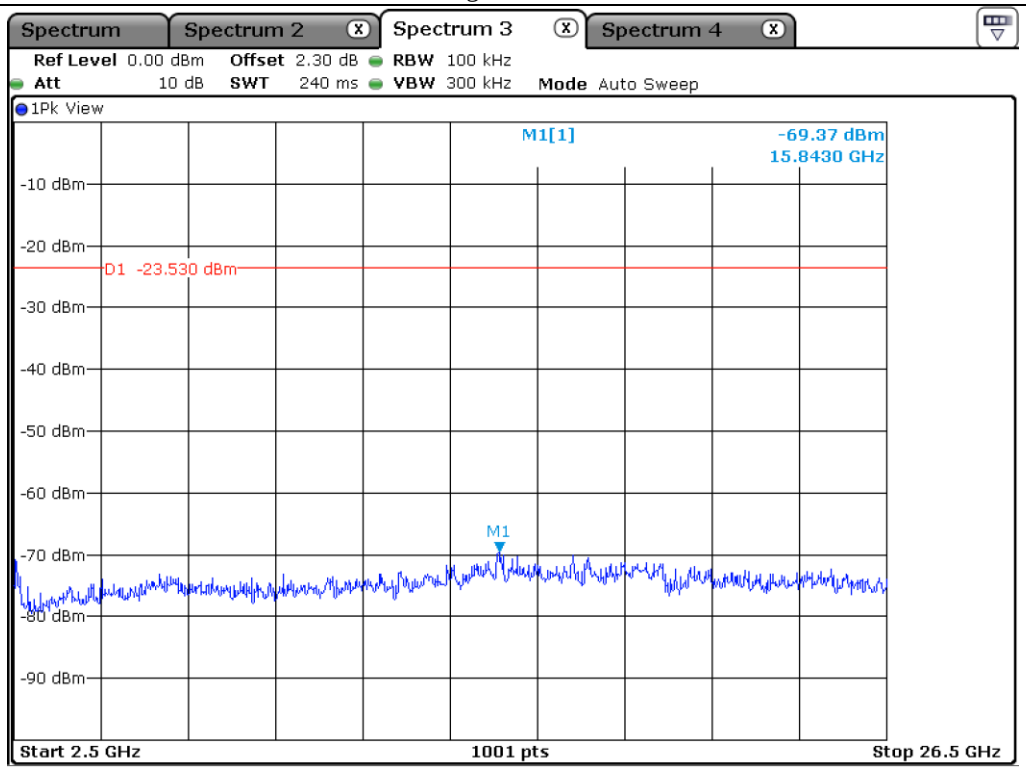
Middle Channel



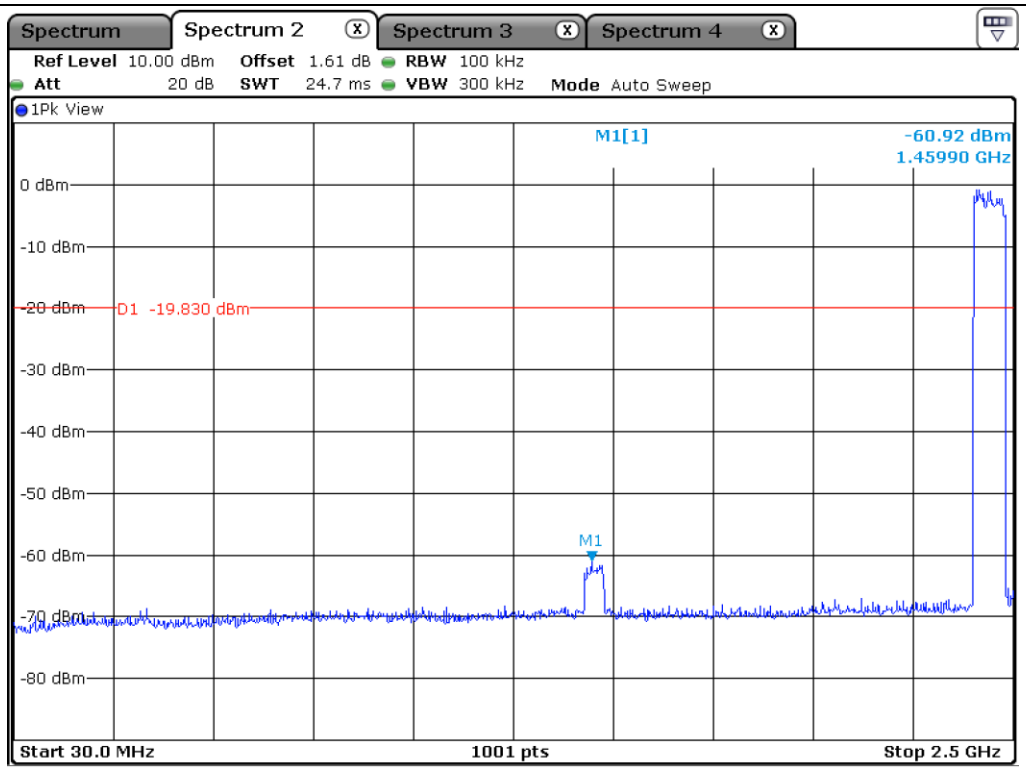
Middle Channel



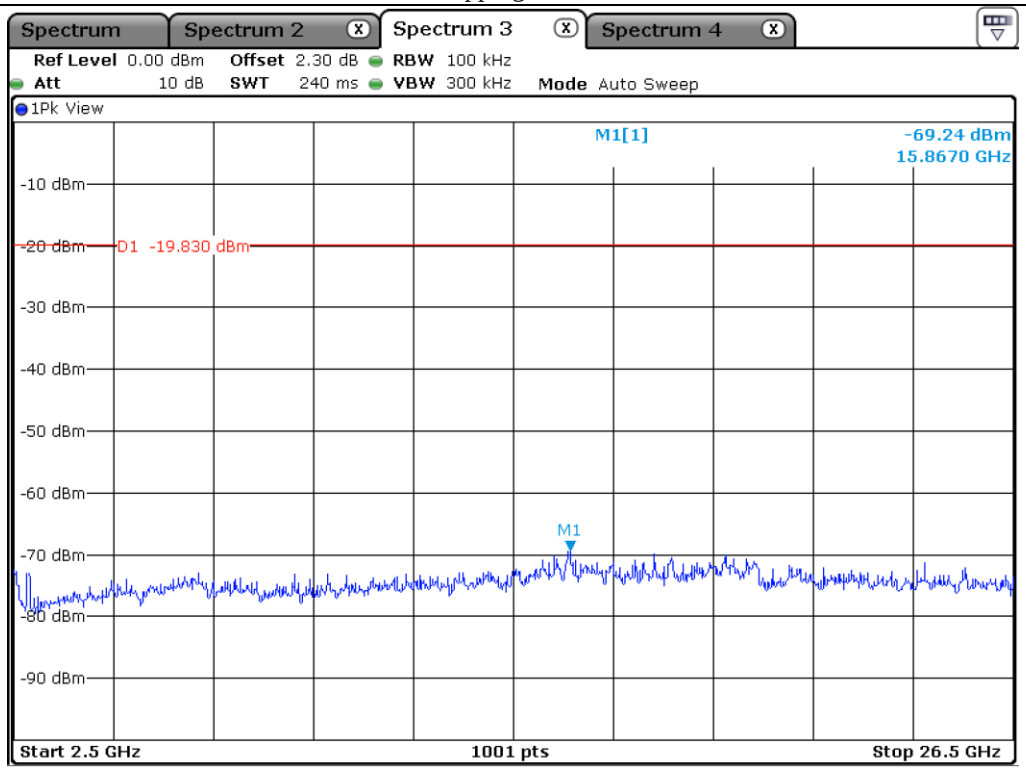
High Channel



High Channel



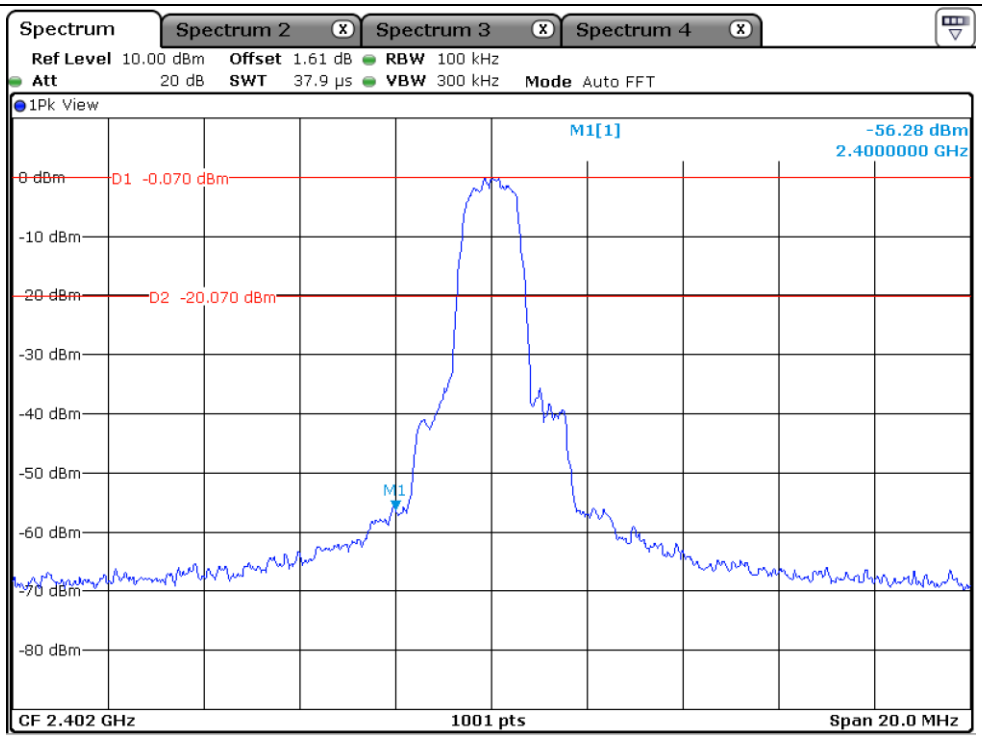
Hopping Mode



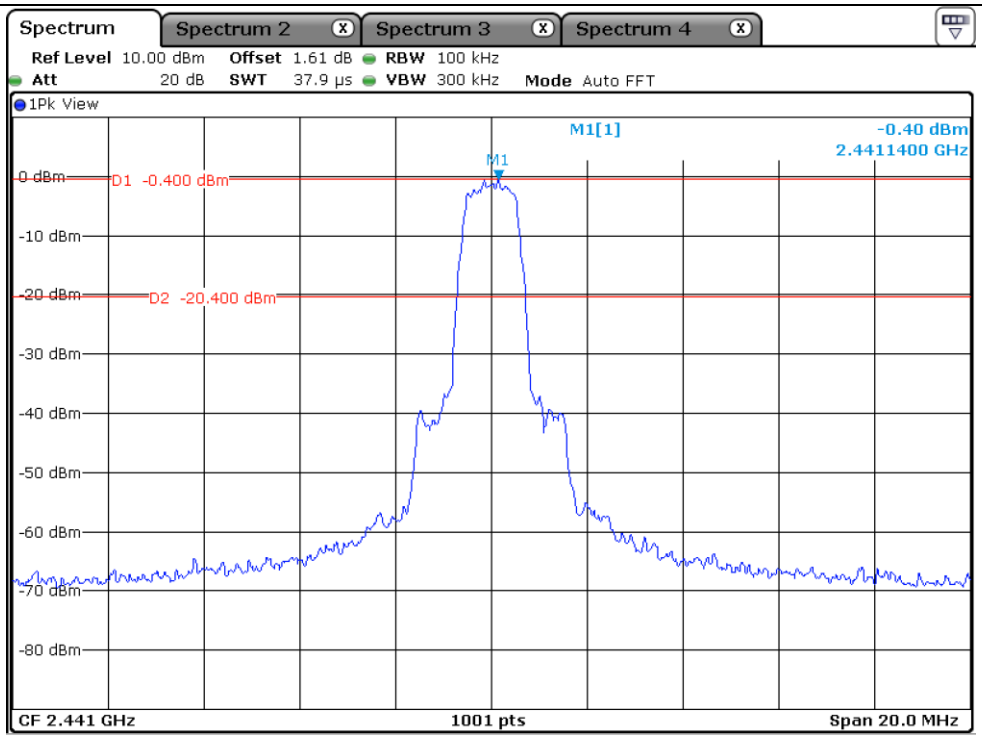
Hopping Mode

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

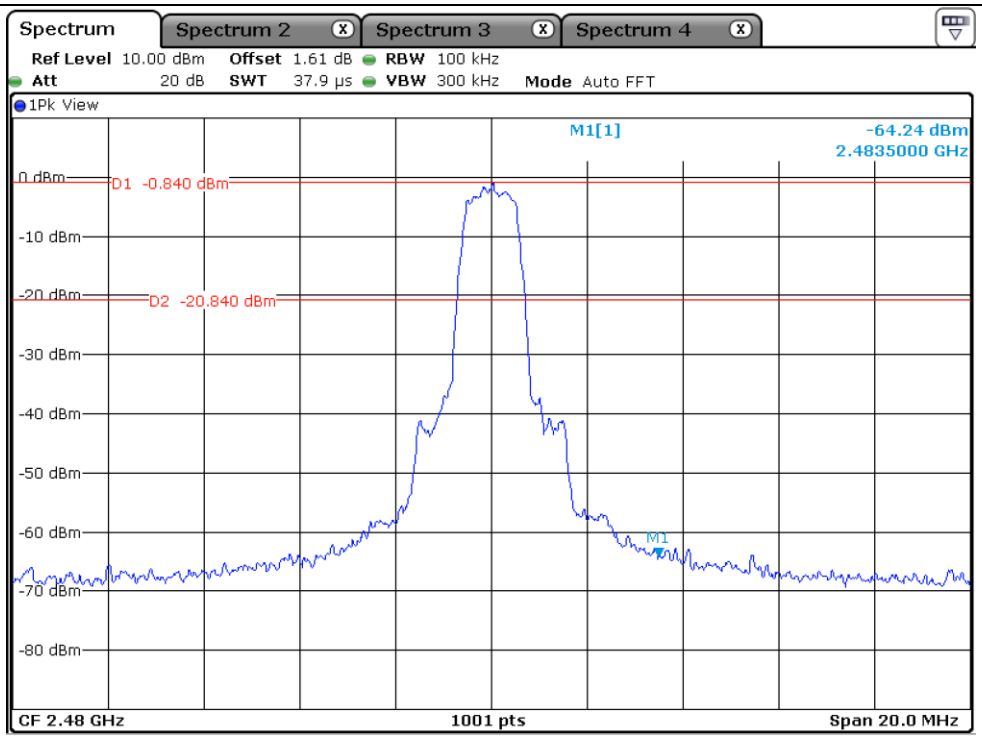
12.5.2.1 Test data for Antenna 1



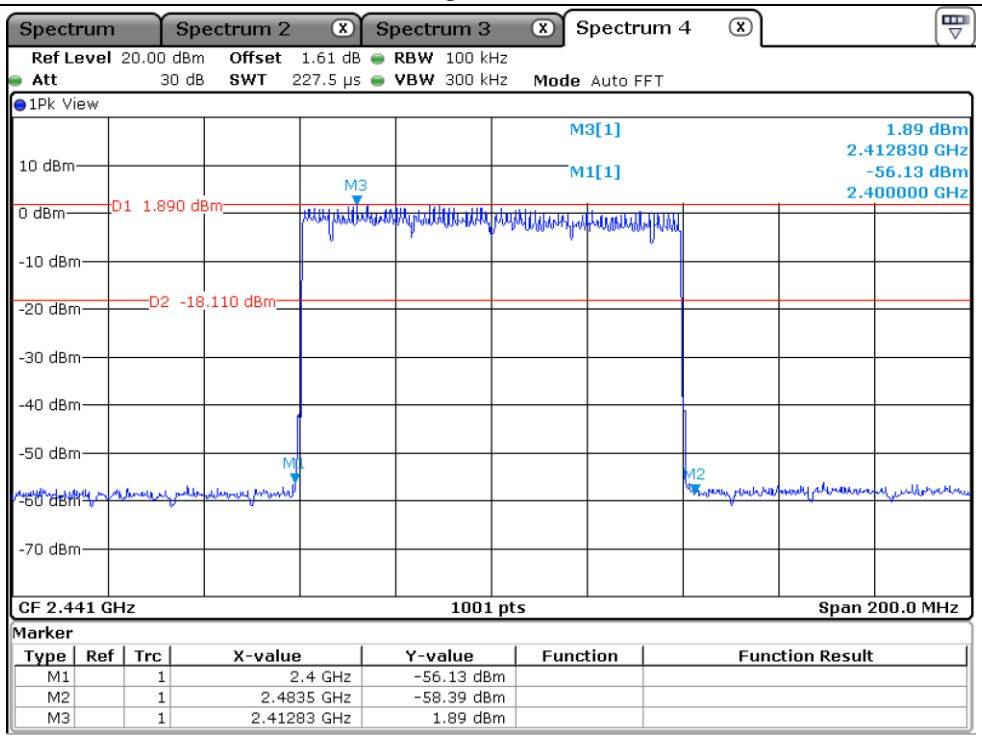
Low Channel



Middle Channel

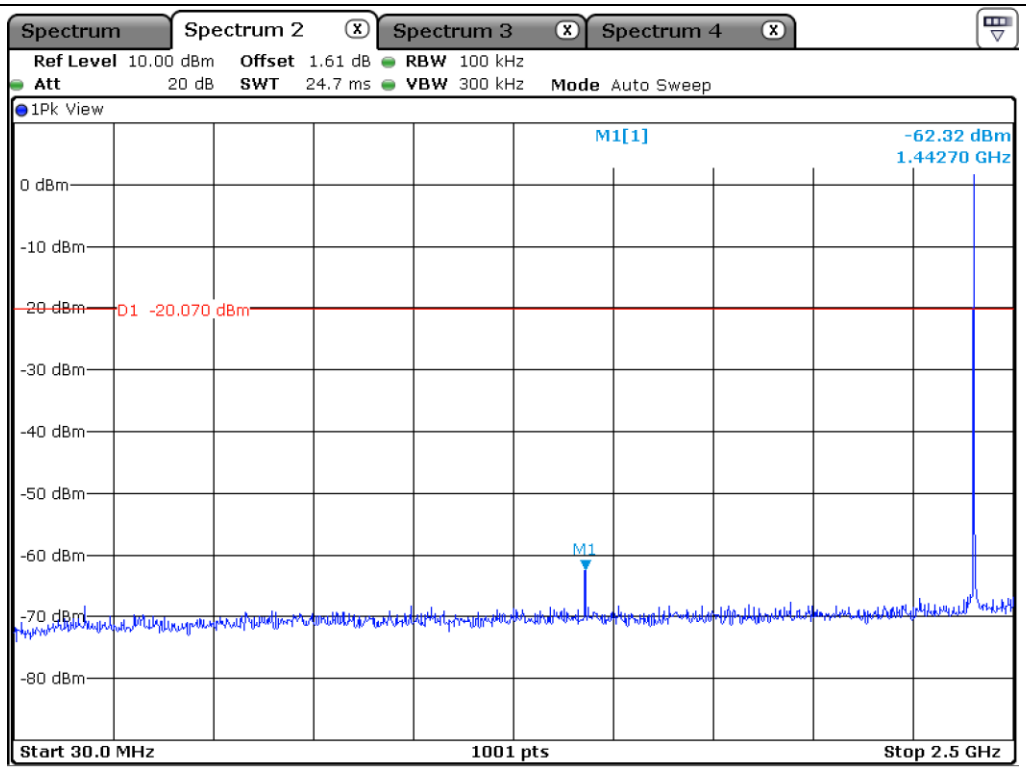


High Channel

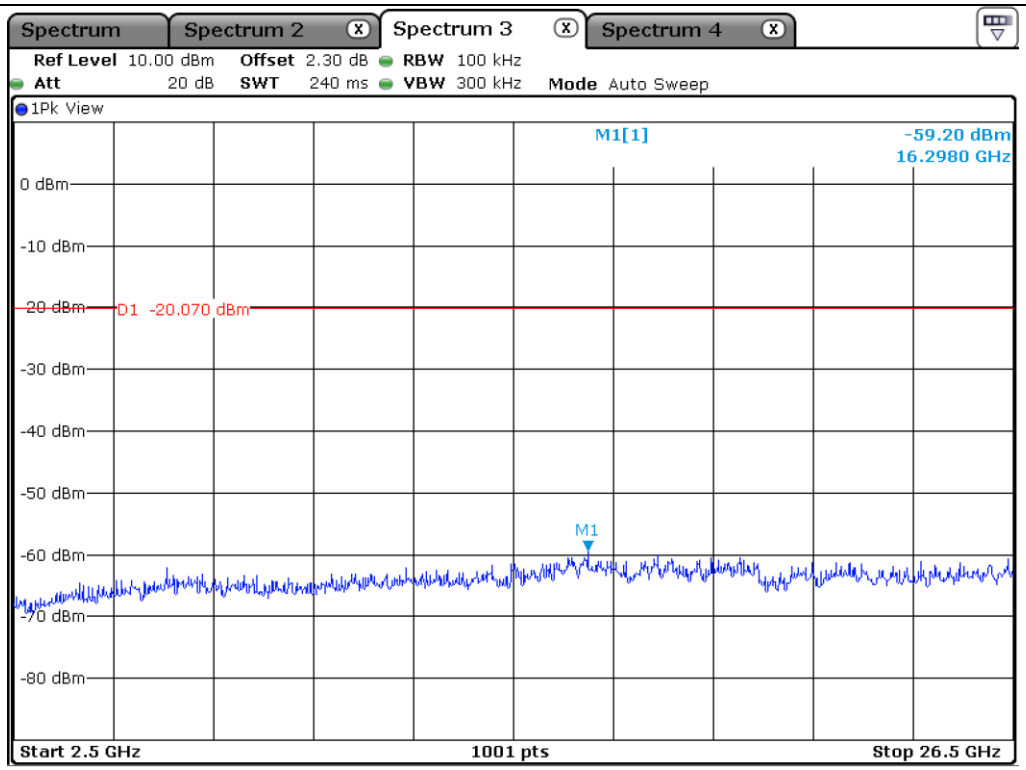


Hopping Mode

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

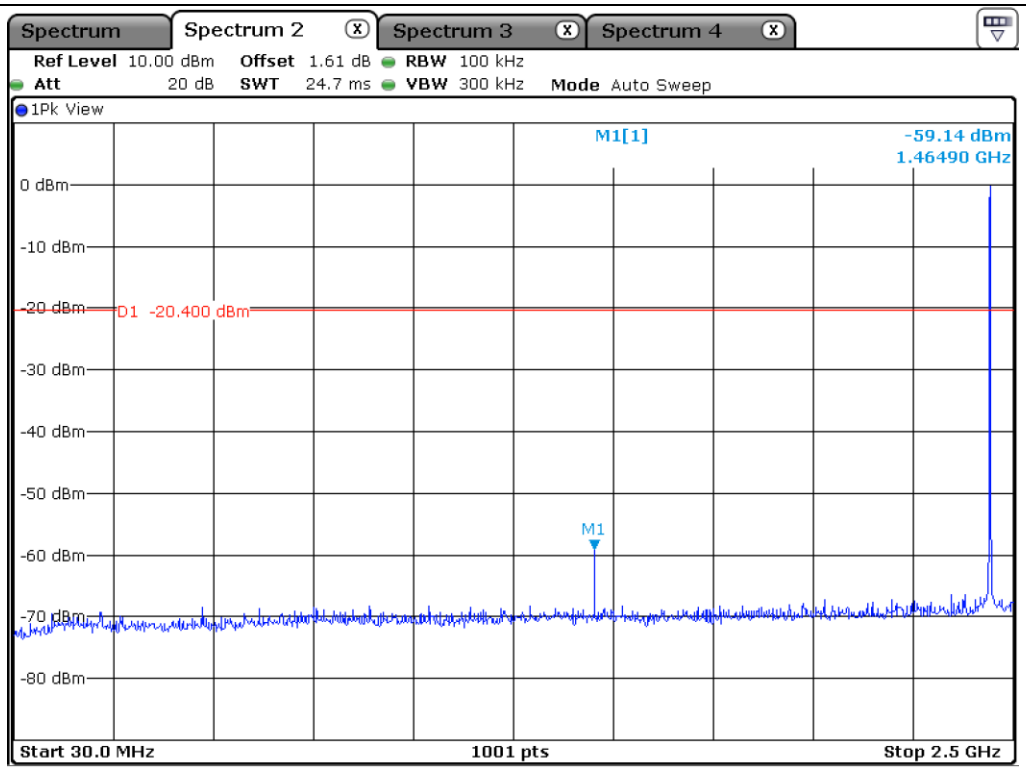


Low Channel

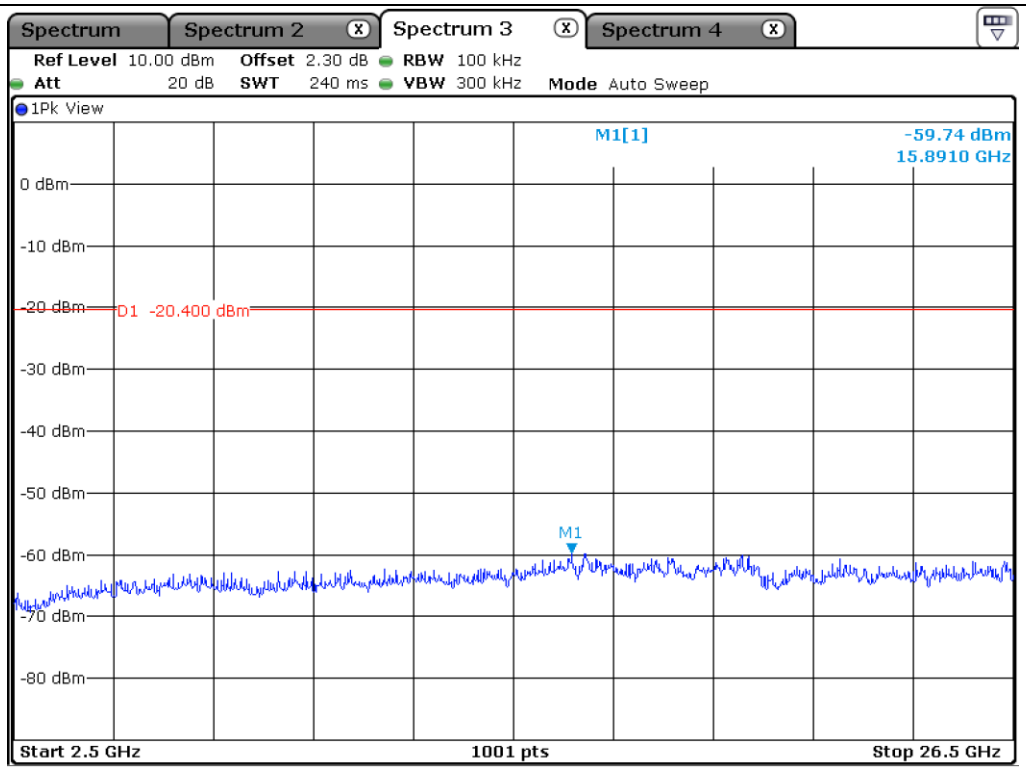


Low Channel

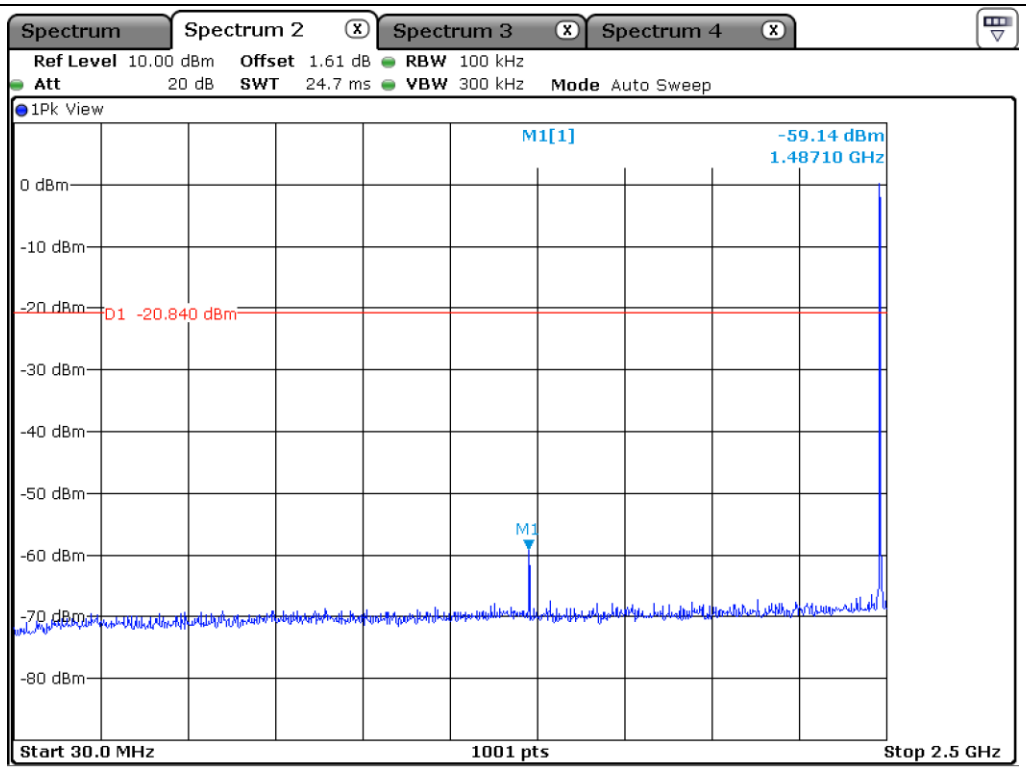
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



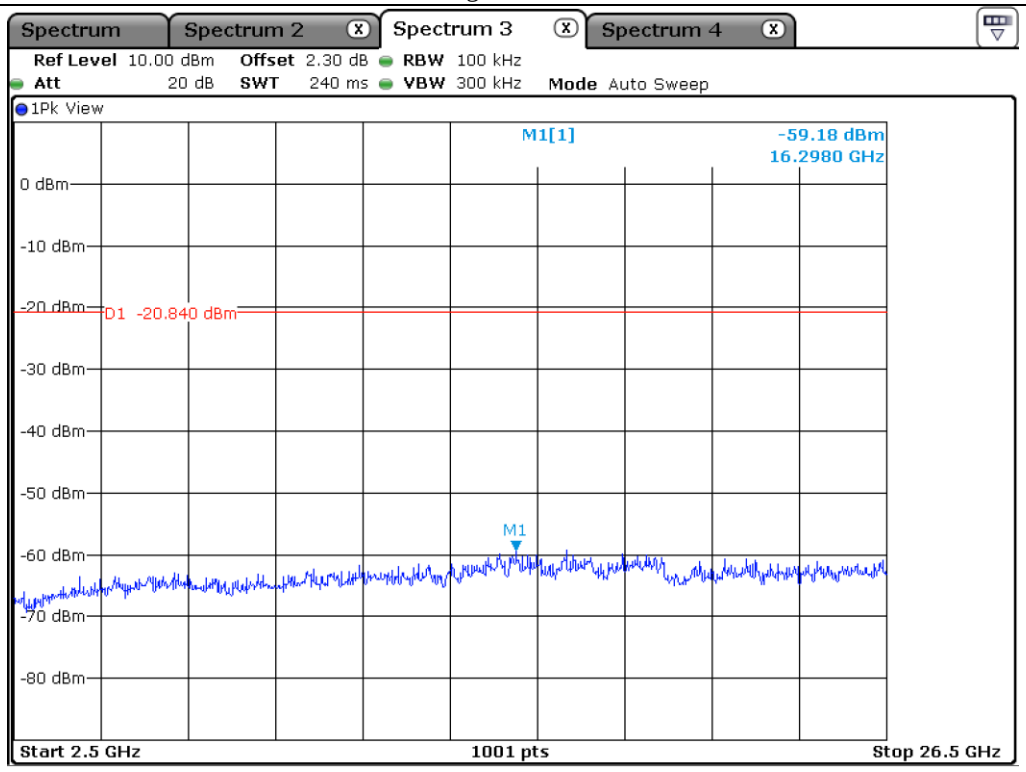
Middle Channel



Middle Channel

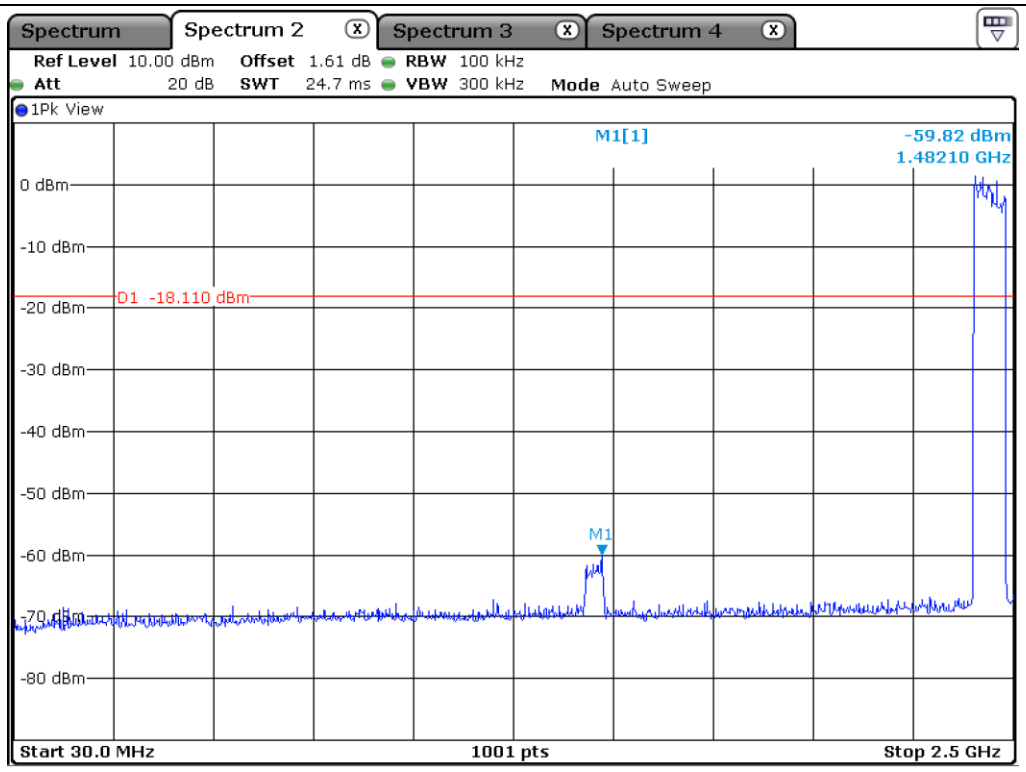


High Channel

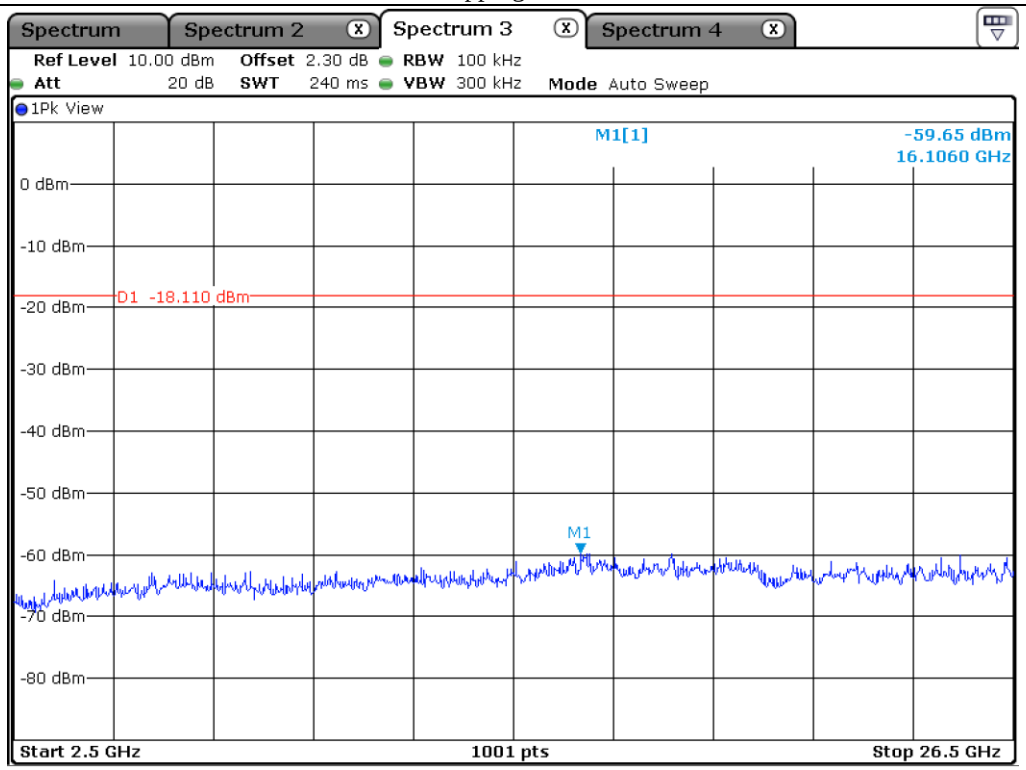


High Channel

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



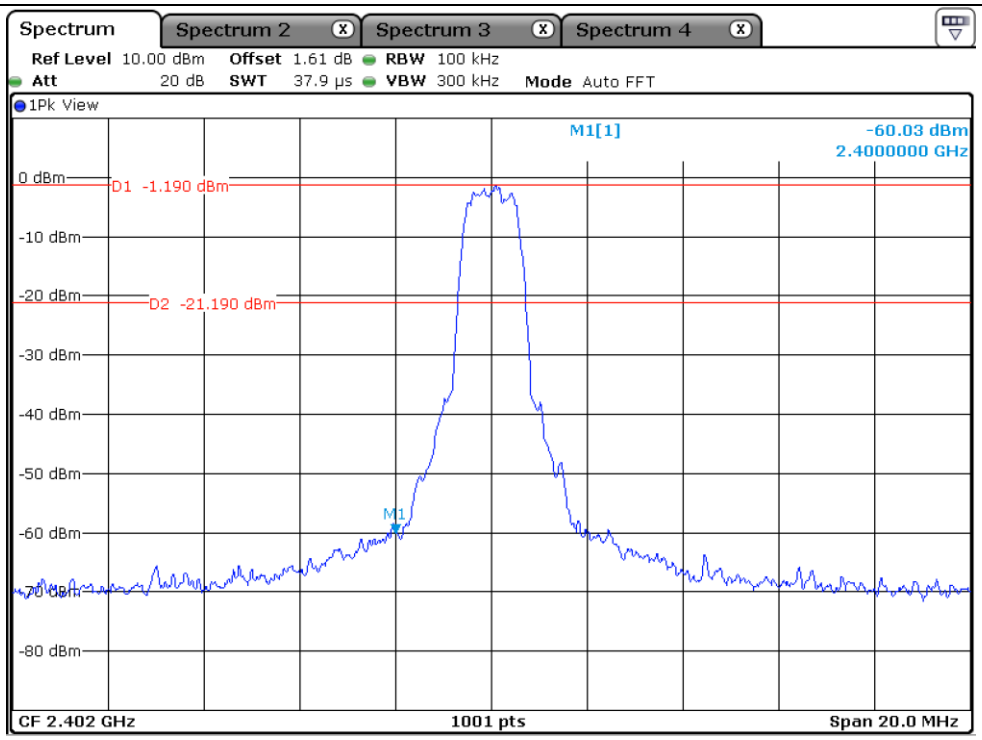
Hopping Mode



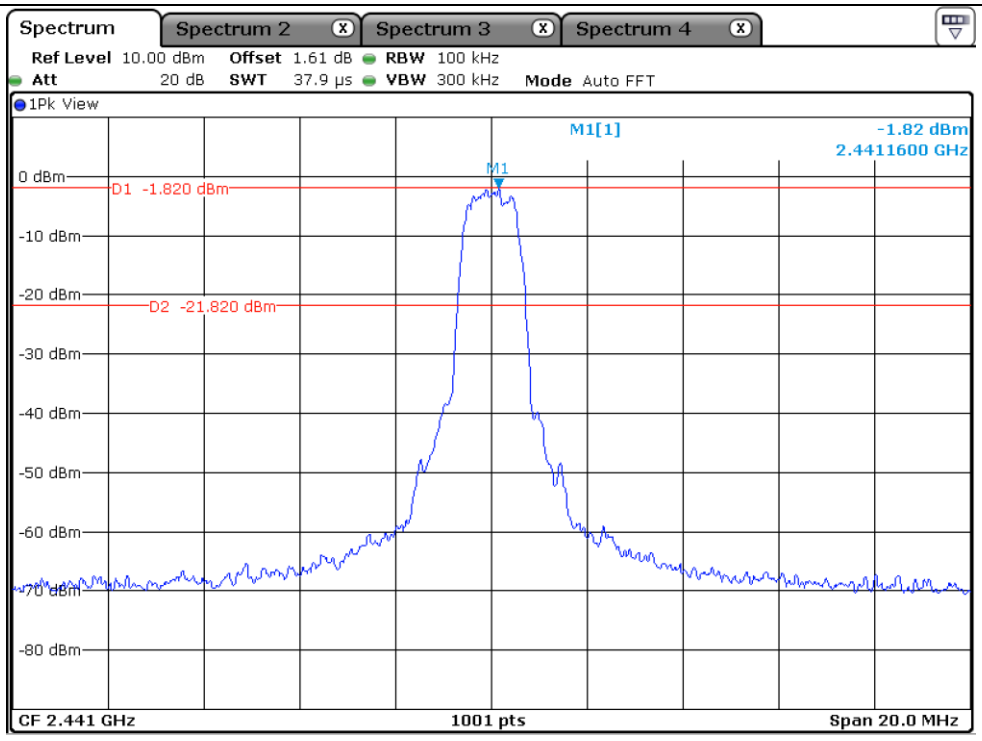
Hopping Mode

12.5.3 Test data for 3 Mbps

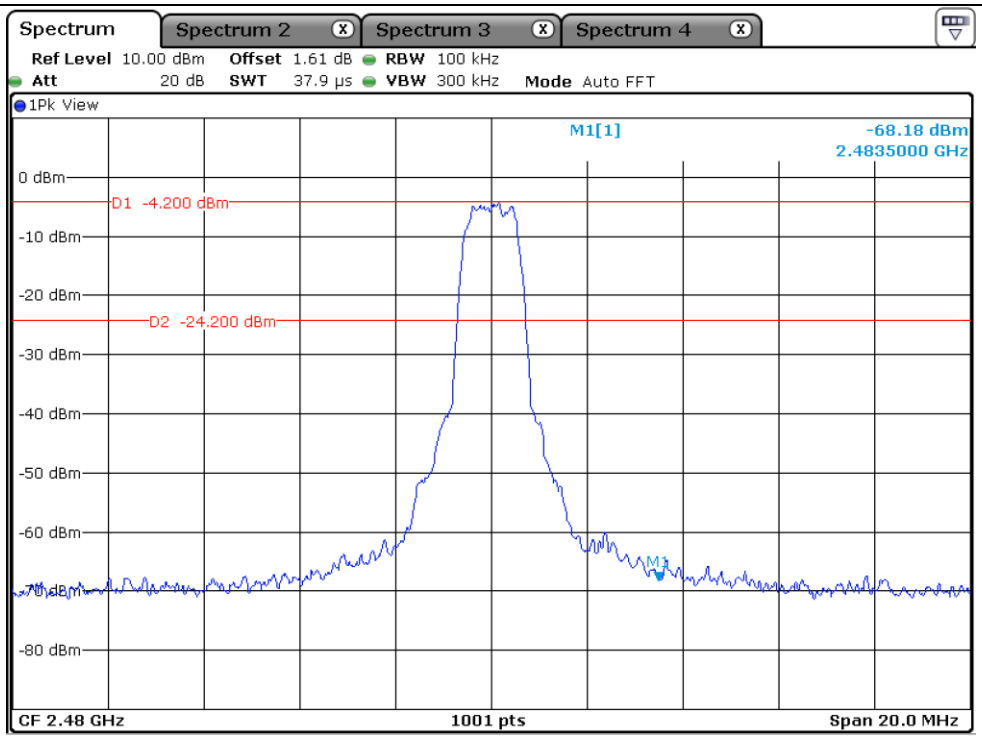
12.5.3.1 Test data for Antenna 0



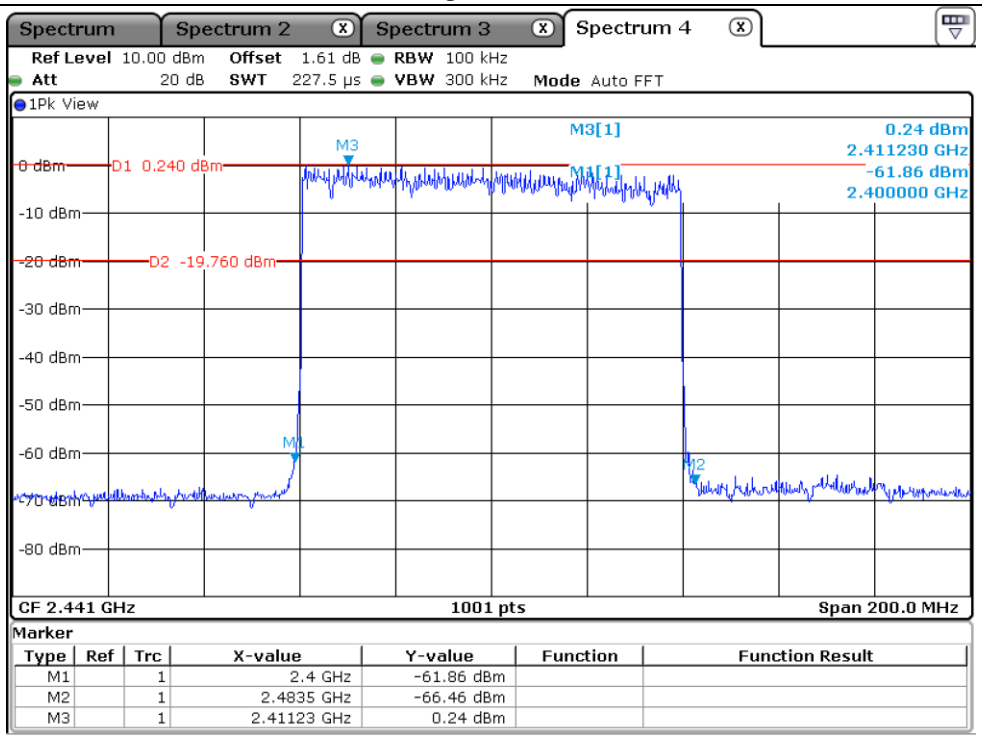
Low Channel



Middle Channel

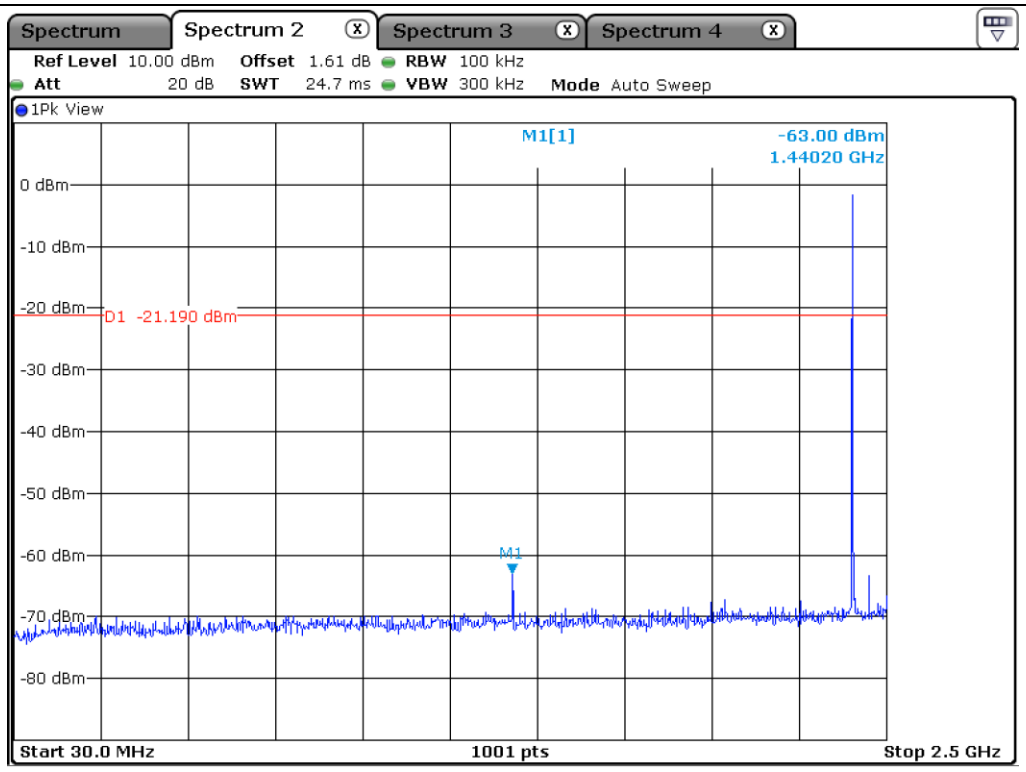


High Channel

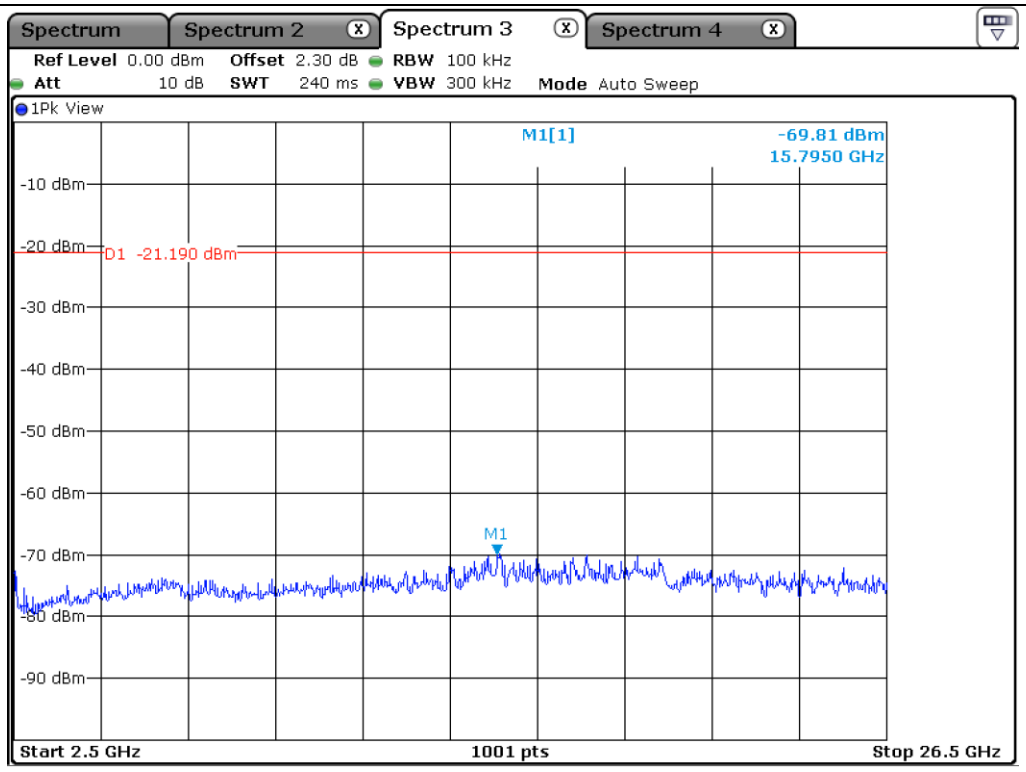


Hopping Mode

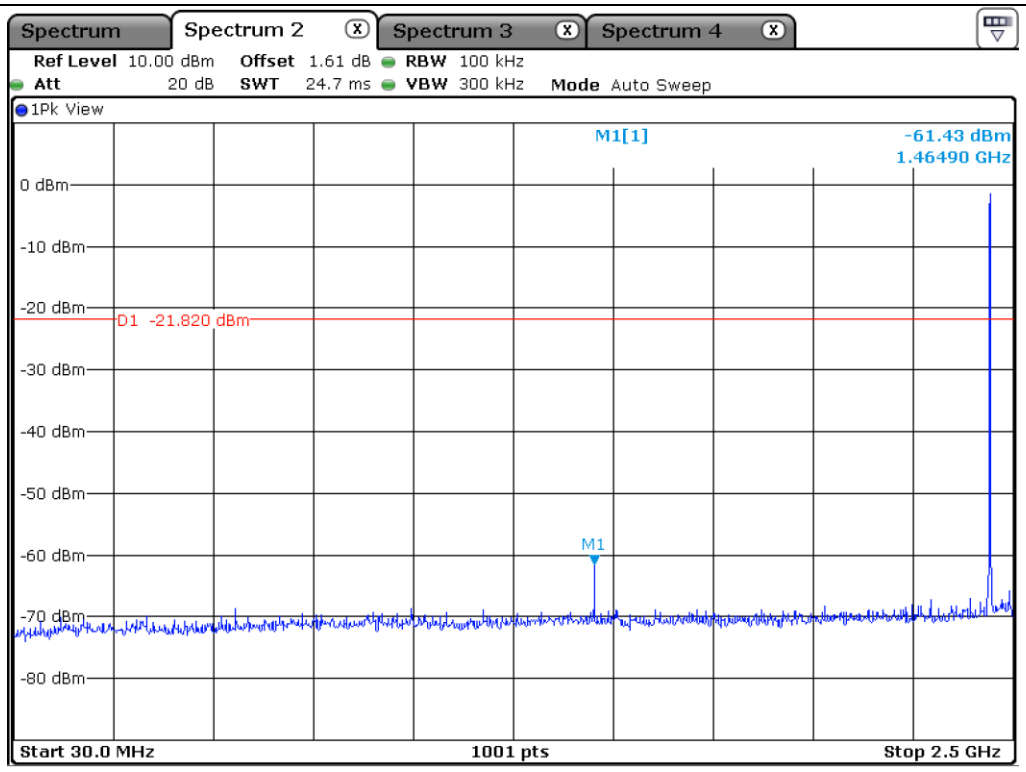
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



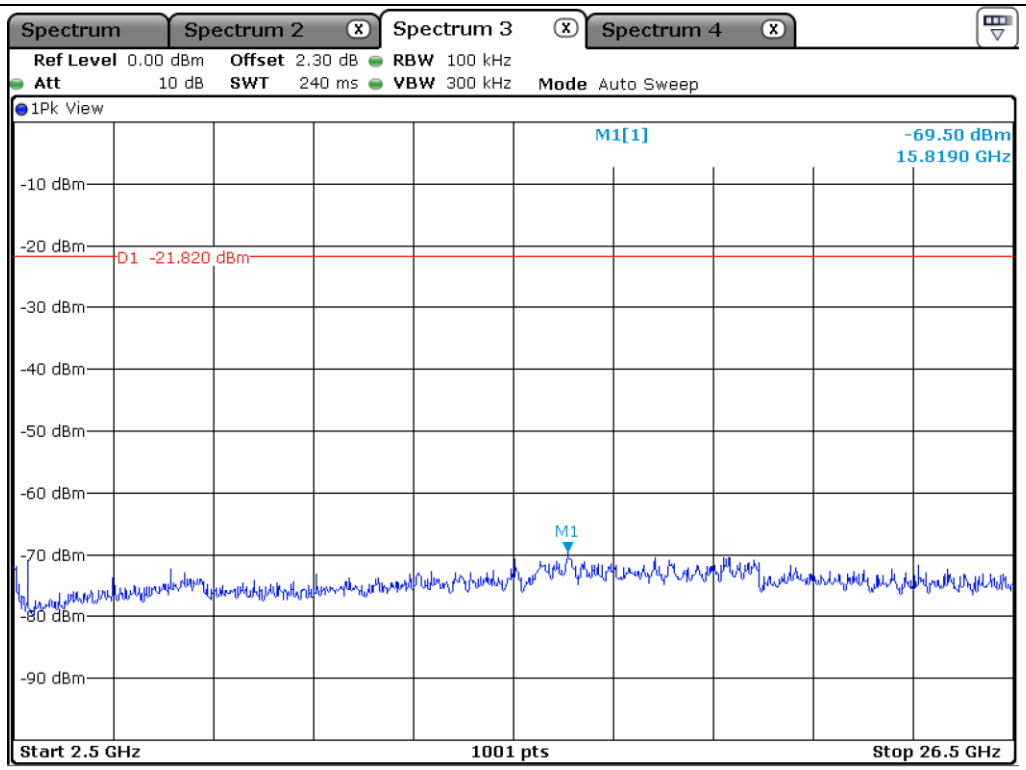
Low Channel



Low Channel

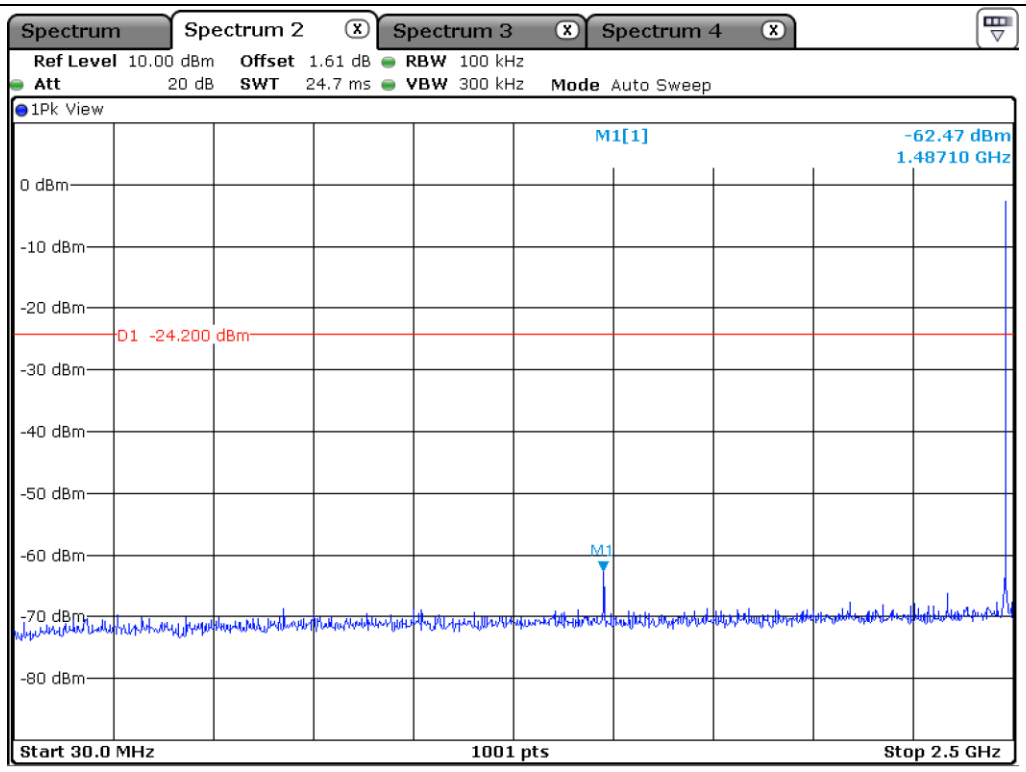


Middle Channel

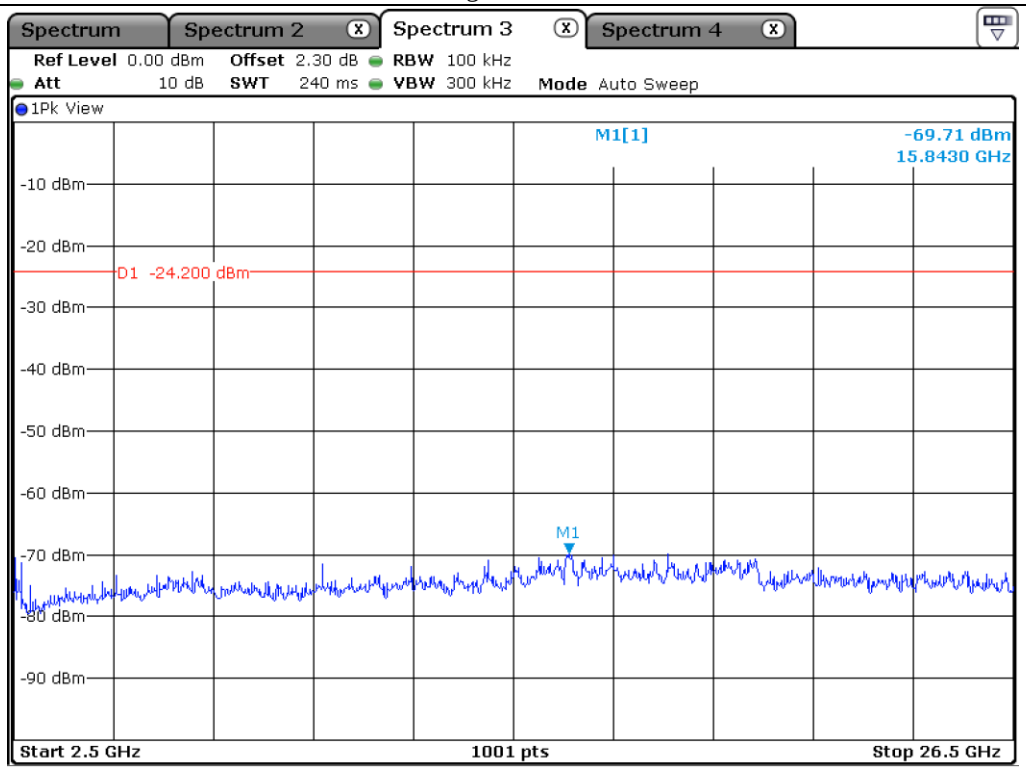


Middle Channel

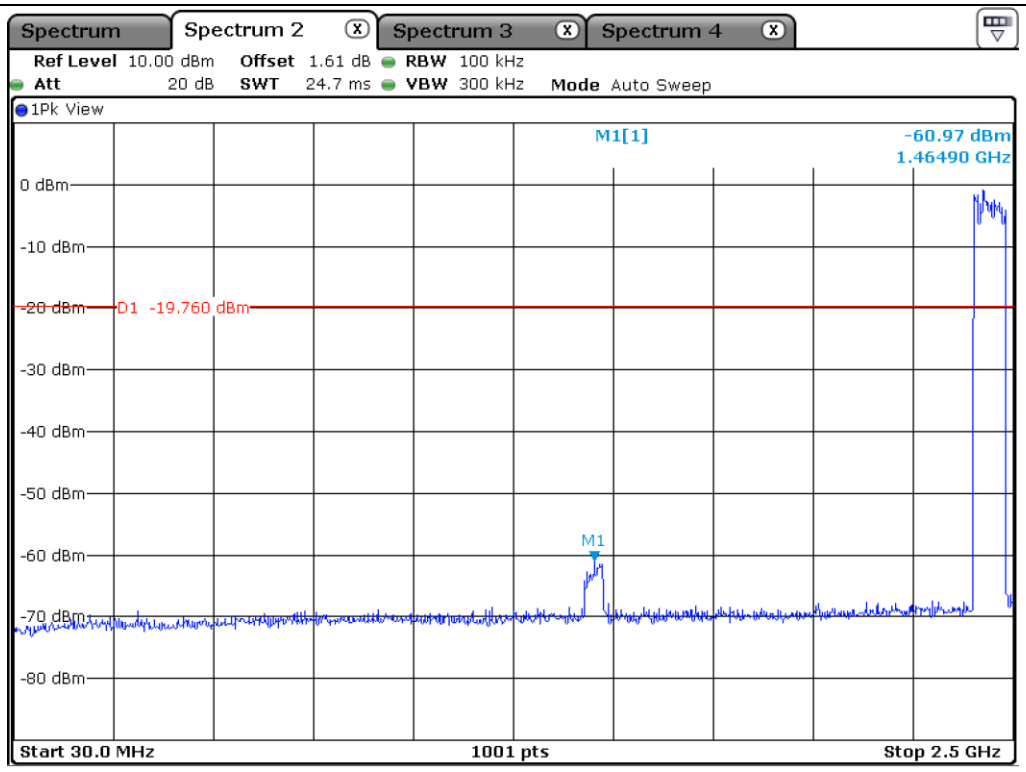
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



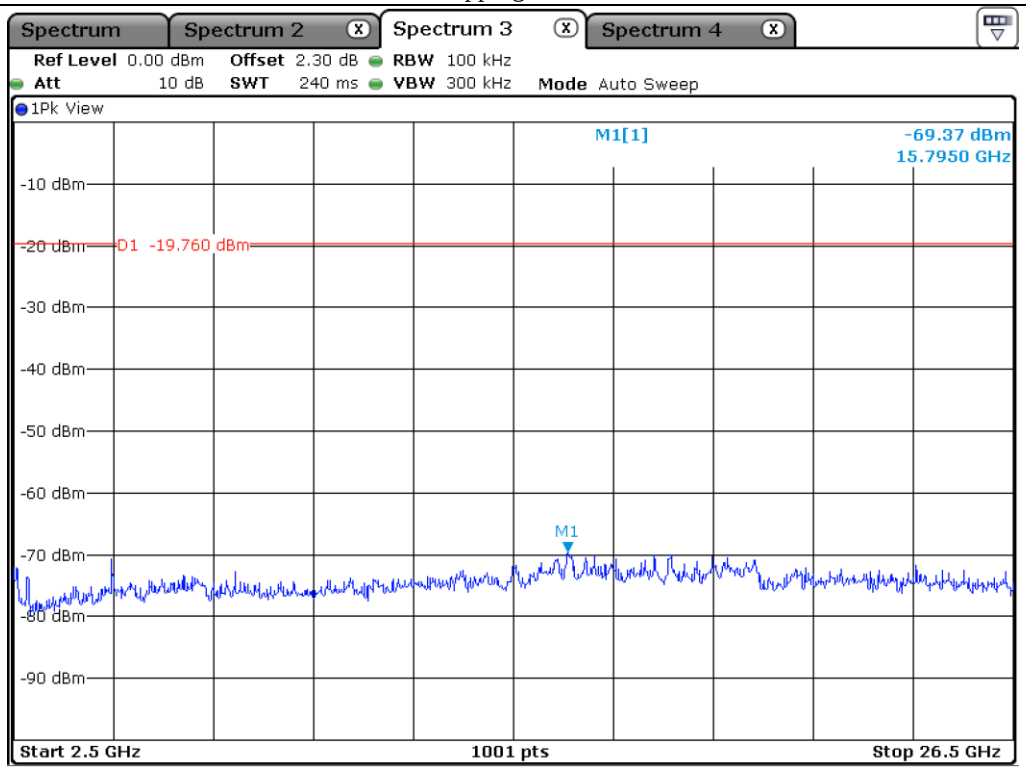
High Channel



High Channel



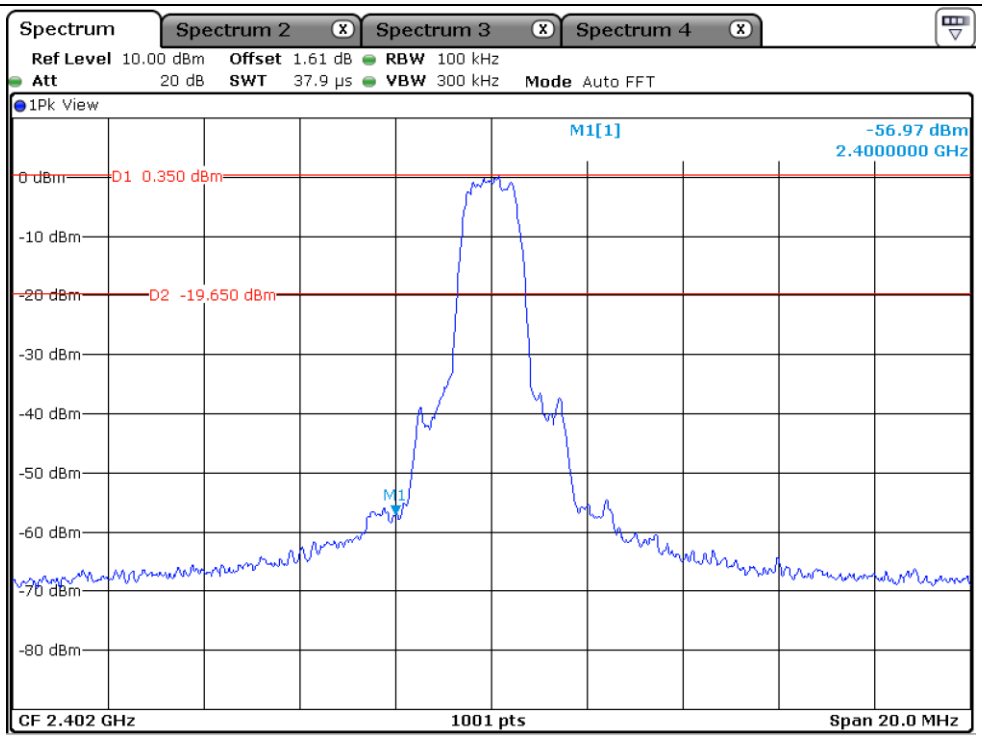
Hopping Mode



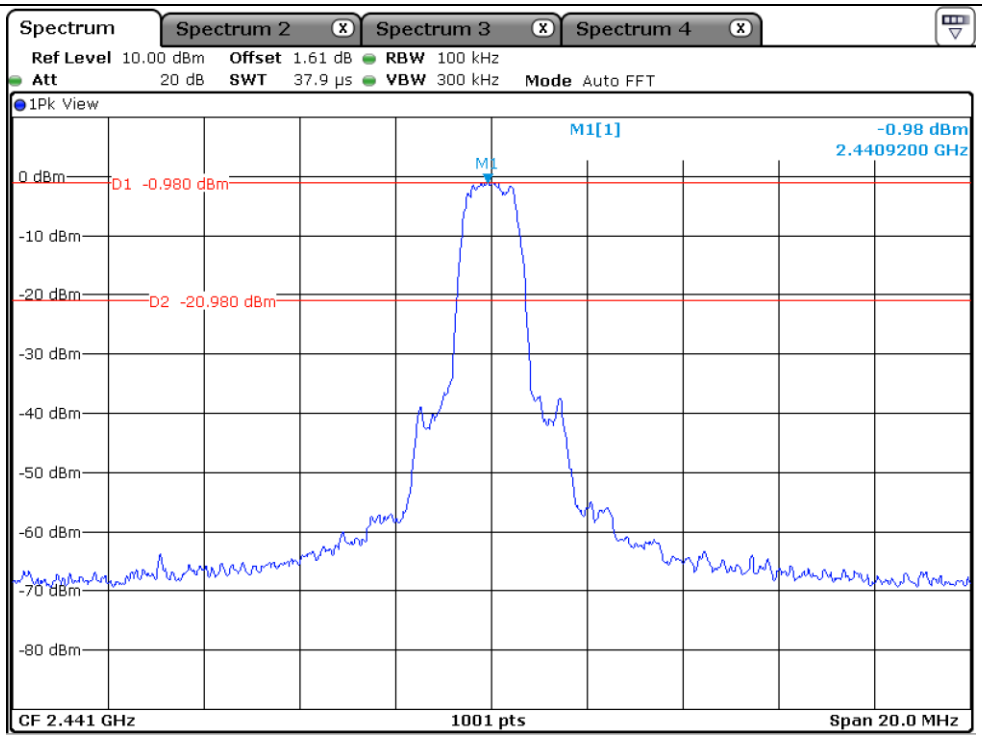
Hopping Mode

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

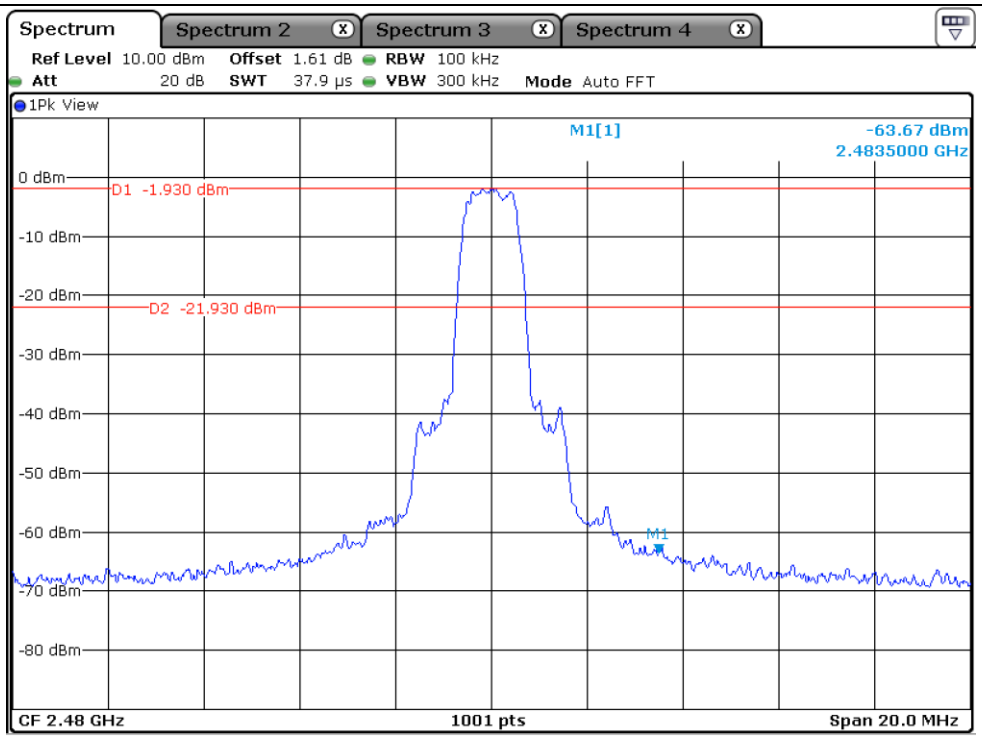
12.5.3.2 Test data for Antenna 1



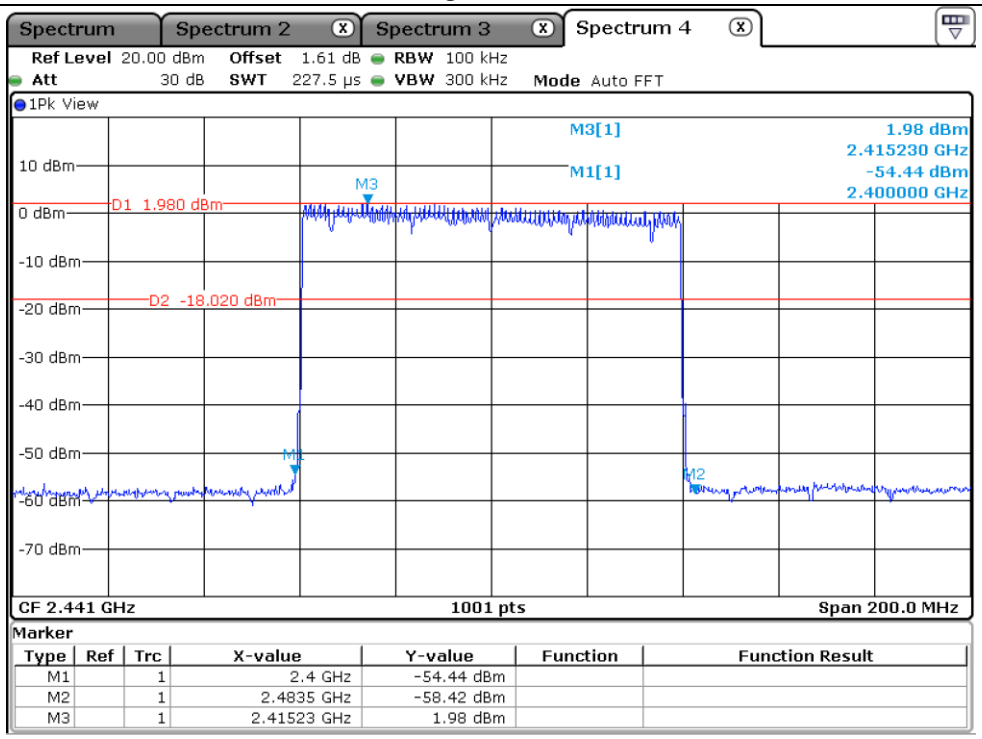
Low Channel



Middle Channel

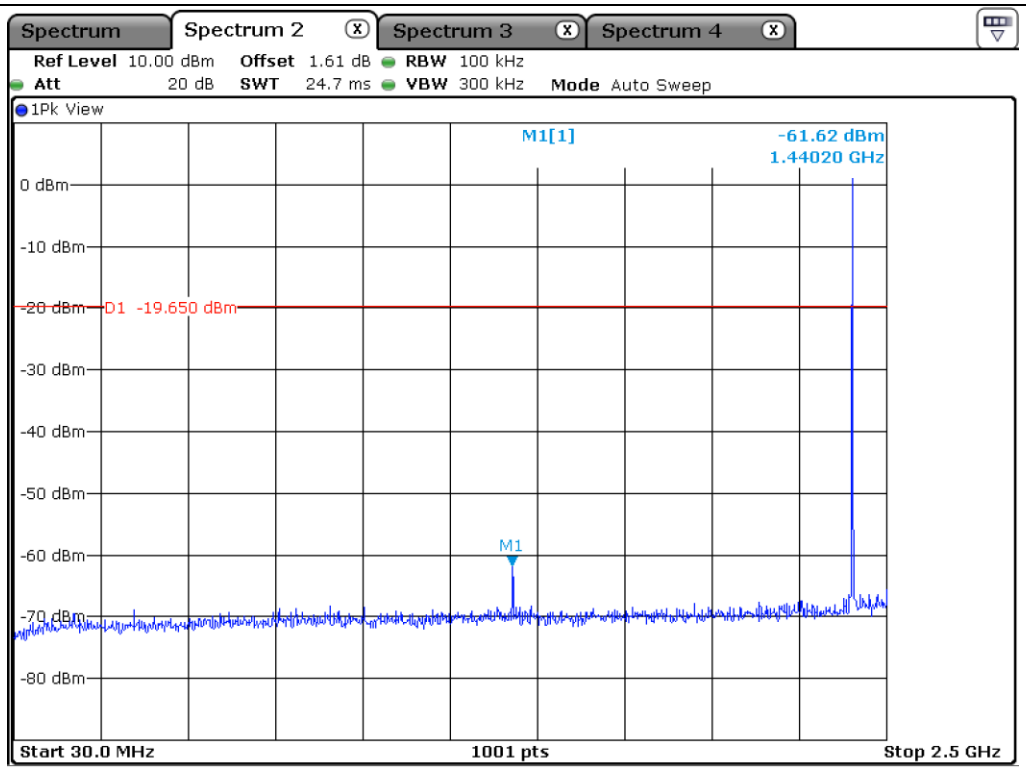


High Channel

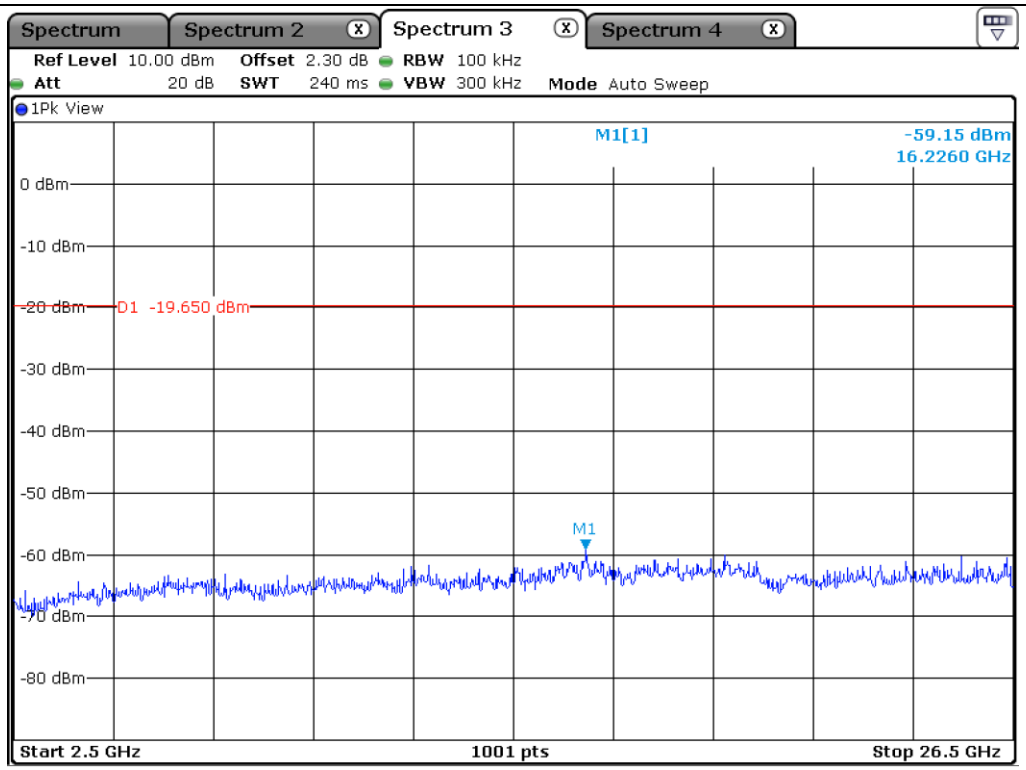


Hopping Mode

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

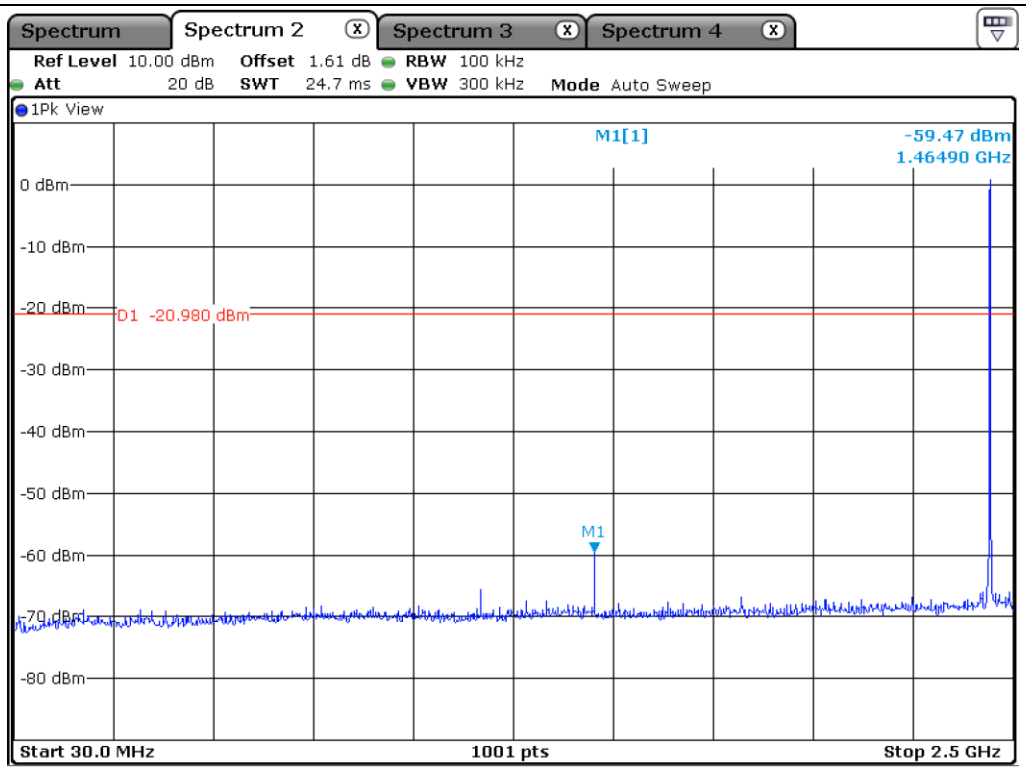


Low Channel

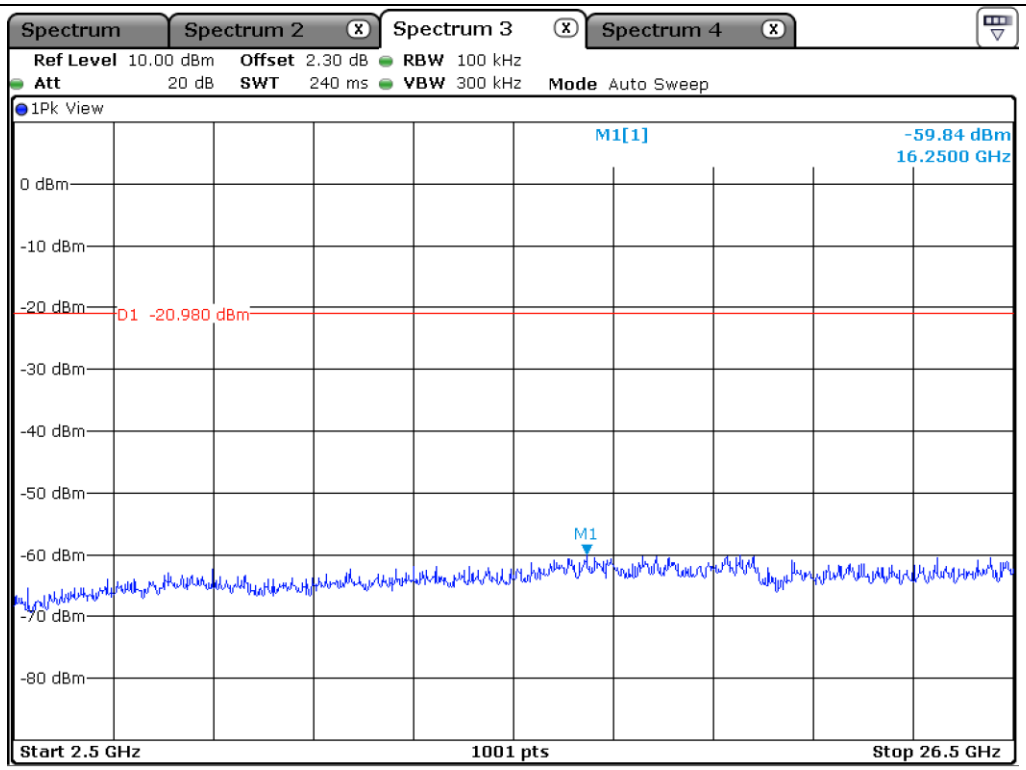


Low Channel

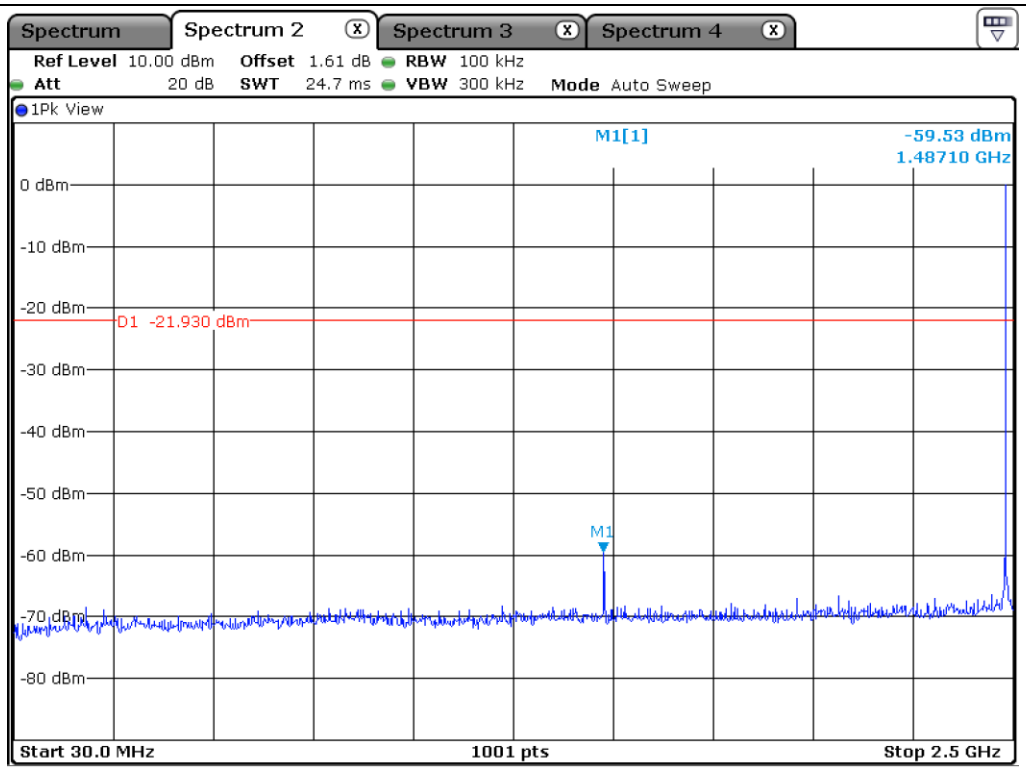
ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)



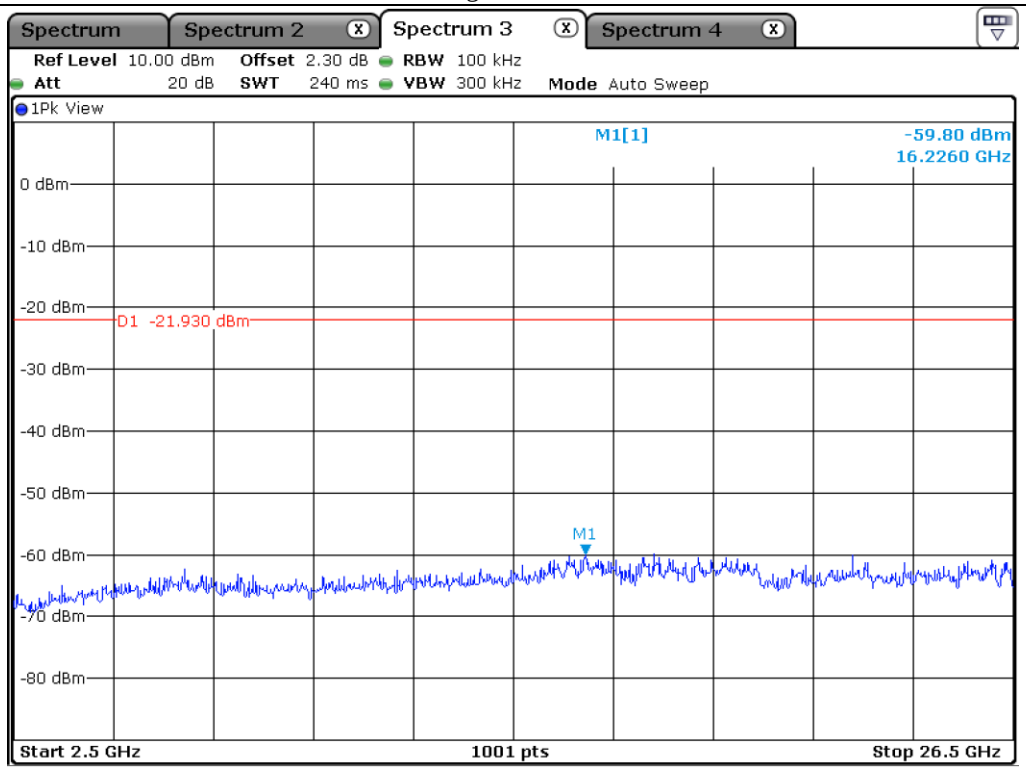
Middle Channel



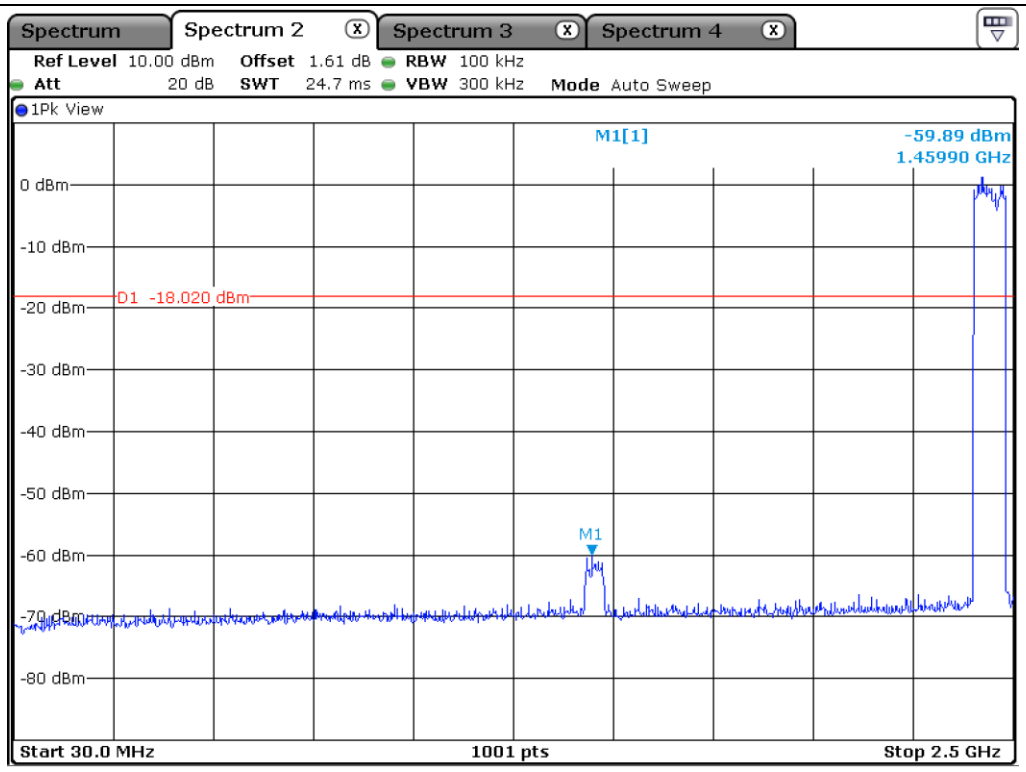
Middle Channel



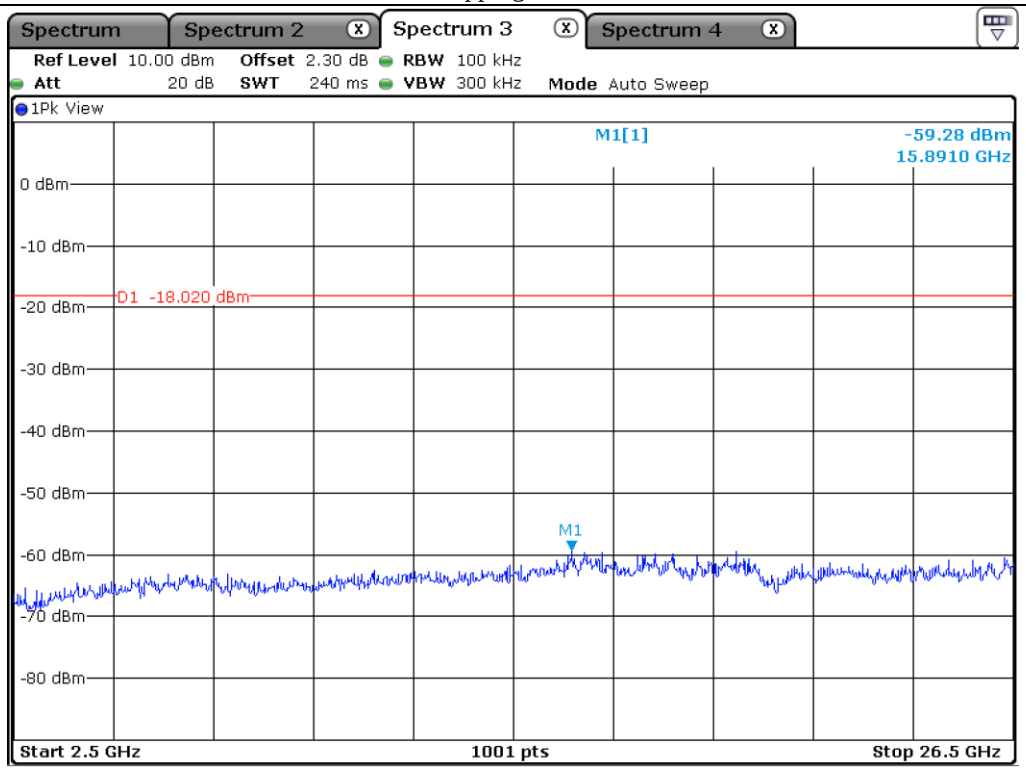
High Channel



High Channel



Hopping Mode



Hopping Mode

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

12.6 Test data for Transmitting mode radiated emission

12.6.1 Radiated Emission which fall in the Restricted Band

12.6.1.1 Test data for 1 Mbps

12.6.1.1.1 Test data for Antenna 0

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 77.13 %

-. Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
2 373.177	17.92	Peak	H	28.30	8.20	-	54.42	74.00	19.58
2 342.168	6.92	Average	H			1.13	44.55	54.00	9.45
2 333.616	18.35	Peak	V			-	54.85	74.00	19.15
2 341.848	6.87	Average	V			1.13	44.50	54.00	9.50
Test Data for High Channel									
2 487.745	18.45	Peak	H	28.70	8.23	-	55.38	74.00	18.62
2 483.508	6.84	Average	H			1.13	44.90	54.00	9.10
2 483.953	18.35	Peak	V			-	55.28	74.00	18.72
2 499.992	6.82	Average	V			1.13	44.88	54.00	9.12

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

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12.6.1.1.2 Test data for Antenna 1

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 77.01 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
2 347.443	18.30	Peak	H	28.30	8.20	-	54.80	74.00	19.20
2 345.844	6.77	Average	H			1.13	44.40	54.00	9.60
2 340.649	18.12	Peak	V			-	54.62	74.00	19.38
2 342.567	6.91	Average	V			1.13	44.54	54.00	9.46
Test Data for High Channel									
2 497.503	18.30	Peak	H	28.70	8.23	-	55.23	74.00	18.77
2 489.739	6.54	Average	H			1.13	44.60	54.00	9.40
2 499.712	18.36	Peak	V			-	55.29	74.00	18.71
2 499.942	6.85	Average	V			1.13	44.91	54.00	9.09

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBµV/m) - Total Level (dBµV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

12.6.1.2 Test data for 2 Mbps

12.6.1.2.1 Test data for Antenna 0

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 77.13 %

-. Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
2 318.432	18.32	Peak	H	28.30	8.20	-	54.82	74.00	19.18
2 310.360	7.06	Average	H			1.13	44.69	54.00	9.31
2 386.364	17.93	Peak	V			-	54.43	74.00	19.57
2 346.963	7.03	Average	V			1.13	44.66	54.00	9.34
Test Data for High Channel									
2 483.953	18.87	Peak	H	28.70	8.23	-	55.80	74.00	18.20
2 483.508	6.76	Average	H			1.13	44.82	54.00	9.18
2 499.135	18.13	Peak	V			-	55.06	74.00	18.94
2 499.992	6.79	Average	V			1.13	44.85	54.00	9.15

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

12.6.1.2.2 Test data for Antenna 1

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 77.01 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
2 351.838	18.07	Peak	H	28.30	8.20	-	54.57	74.00	19.43
2 345.844	6.91	Average	H			1.13	44.54	54.00	9.46
2 341.848	18.04	Peak	V			-	54.54	74.00	19.46
2 345.045	6.91	Average	V			1.13	44.54	54.00	9.46
Test Data for High Channel									
2 486.904	18.73	Peak	H	28.70	8.23	-	55.66	74.00	18.34
2 483.607	6.46	Average	H			1.13	44.52	54.00	9.48
2 499.992	18.42	Peak	V			-	55.35	74.00	18.65
2 499.843	6.66	Average	V			1.13	44.72	54.00	9.28

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBµV/m) - Total Level (dBµV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

12.6.1.3 Test data for 3 Mbps

12.6.1.3.1 Test data for Antenna 0

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 77.01 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
2 310.919	18.28	Peak	H	28.30	8.20	-	54.78	74.00	19.22
2 336.174	6.84	Average	H			1.13	44.47	54.00	9.53
2 386.603	18.09	Peak	V			--	54.59	74.00	19.41
2 312.038	6.83	Average	V			1.13	44.46	54.00	9.54
Test Data for High Channel									
2 499.118	18.55	Peak	H	28.70	8.23	-	55.48	74.00	18.52
2 483.508	6.78	Average	H			1.13	44.84	54.00	9.16
2 490.448	19.03	Peak	V			-	55.96	74.00	18.04
2 499.975	6.78	Average	V			1.13	44.84	54.00	9.16

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBµV/m) - Total Level (dBµV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

12.6.1.3.2 Test data for Antenna 1

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Measurement distance : 3 m

-. Duty Cycle : 77.01 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
2 318.751	17.85	Peak	H	28.30	8.20	-	54.35	74.00	19.65
2 329.860	6.92	Average	H			1.13	44.55	54.00	9.45
2 328.661	18.29	Peak	V			-	54.79	74.00	19.21
2 340.410	6.94	Average	V			1.13	44.57	54.00	9.43
Test Data for High Channel									
2 483.920	18.25	Peak	H	28.70	8.23	-	55.18	74.00	18.82
2 498.723	6.48	Average	H			1.13	44.54	54.00	9.46
2 496.184	17.96	Peak	V			-	54.89	74.00	19.11
2 499.942	6.73	Average	V			1.13	44.79	54.00	9.21

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBµV/m) - Total Level (dBµV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

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12.6.2 Spurious & Harmonic Radiated Emission above 1 GHz

12.6.2.1 Test data for 1 Mbps

12.6.2.1.1 Test data for Antenna 0

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 77.13 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
4 804.00	13.83	Peak	H	33.40	11.21	-	58.44	74.00	15.56
	3.30	Average	H			1.13	49.04	54.00	4.96
	13.56	Peak	V			-	58.17	74.00	15.83
	4.04	Average	V			1.13	49.78	54.00	4.22
Test Data for Middle Channel									
4 882.00	13.95	Peak	H	33.50	11.23	-	58.68	74.00	15.32
	3.89	Average	H			1.13	49.75	54.00	4.25
	13.14	Peak	V			-	57.87	74.00	16.13
	3.60	Average	V			1.13	49.46	54.00	4.54
Test Data for High Channel									
4 960.00	13.90	Peak	H	33.30	11.25	-	58.45	74.00	15.55
	3.95	Average	H			1.13	49.63	54.00	4.37
	14.04	Peak	V			-	58.59	74.00	15.41
	3.54	Average	V			1.13	49.22	54.00	4.78

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBµV/m) - Total Level (dBµV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

12.6.2.1.2 Test data for Antenna 1

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 77.01 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
4 804.00	13.28	Peak	H	33.40	11.21	-	57.89	74.00	16.11
	3.54	Average	H			1.13	49.28	54.00	4.72
	13.18	Peak	V			-	57.79	74.00	16.21
	3.98	Average	V			1.13	49.72	54.00	4.28
Test Data for Middle Channel									
4 882.00	13.60	Peak	H	33.50	11.23	-	58.33	74.00	15.67
	3.26	Average	H			1.13	49.12	54.00	4.88
	13.54	Peak	V			-	58.27	74.00	15.73
	3.11	Average	V			1.13	48.97	54.00	5.03
Test Data for High Channel									
4 960.00	13.41	Peak	H	33.30	11.25	-	57.96	74.00	16.04
	3.37	Average	H			1.13	49.05	54.00	4.95
	13.73	Peak	V			-	58.28	74.00	15.72
	3.62	Average	V			1.13	49.30	54.00	4.70

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBµV/m) - Total Level (dBµV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

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12.6.2.2 Test data for 2 Mbps

12.6.2.2.1 Test data for Antenna 0

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 77.13 %

-. Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 804.00	13.78	Peak	H	33.40	11.21	-	58.39	74.00	15.61
	3.71	Average	H			1.13	49.45	54.00	4.55
	13.66	Peak	V			-	58.27	74.00	15.73
	3.12	Average	V			1.13	48.86	54.00	5.14
Test Data for Middle Channel									
4 882.00	13.75	Peak	H	33.50	11.23	-	58.48	74.00	15.52
	3.21	Average	H			1.13	49.07	54.00	4.93
	13.19	Peak	V			-	57.92	74.00	16.08
	3.76	Average	V			1.13	49.62	54.00	4.38
Test Data for High Channel									
4 960.00	13.42	Peak	H	33.30	11.25	-	57.97	74.00	16.03
	3.18	Average	H			1.13	48.86	54.00	5.14
	13.67	Peak	V			-	58.22	74.00	15.78
	3.26	Average	V			1.13	48.94	54.00	5.06

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

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12.6.2.2.2 Test data for Antenna 1

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 77.01 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
4 804.00	14.09	Peak	H	33.40	11.21	-	58.70	74.00	15.30
	3.96	Average	H			1.13	49.70	54.00	4.30
	13.82	Peak	V			-	58.43	74.00	15.57
	3.49	Average	V			1.13	49.23	54.00	4.77
Test Data for Middle Channel									
4 882.00	13.44	Peak	H	33.50	11.23	-	58.17	74.00	15.83
	3.62	Average	H			1.13	49.48	54.00	4.52
	12.90	Peak	V			-	57.63	74.00	16.37
	3.33	Average	V			1.13	49.19	54.00	4.81
Test Data for High Channel									
4 960.00	13.27	Peak	H	33.30	11.25	-	57.82	74.00	16.18
	3.46	Average	H			1.13	49.14	54.00	4.86
	13.14	Peak	V			-	57.69	74.00	16.31
	3.05	Average	V			1.13	48.73	54.00	5.27

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBµV/m) - Total Level (dBµV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

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12.6.2.3 Test data for 3 Mbps

12.6.2.3.1 Test data for Antenna 0

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 77.01 %

-. Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel									
4 804.00	14.01	Peak	H	33.40	11.21	-	58.62	74.00	15.38
	3.02	Average	H			1.13	48.76	54.00	5.24
	13.65	Peak	V			-	58.26	74.00	15.74
	3.58	Average	V			1.13	49.32	54.00	4.68
Test Data for Middle Channel									
4 882.00	14.00	Peak	H	33.50	11.23	-	58.73	74.00	15.27
	3.71	Average	H			1.13	49.57	54.00	4.43
	13.35	Peak	V			-	58.08	74.00	15.92
	3.29	Average	V			1.13	49.15	54.00	4.85
Test Data for High Channel									
4 960.00	13.48	Peak	H	33.30	11.25	-	58.03	74.00	15.97
	3.69	Average	H			1.13	49.37	54.00	4.63
	13.56	Peak	V			-	58.11	74.00	15.89
	3.52	Average	V			1.13	49.20	54.00	4.80

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBμV/m) - Total Level (dBμV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

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12.6.2.3.2 Test data for Antenna 1

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode for the emissions fall in restricted band,
1 MHz and RMS Detector for Average Mode for the emissions fall in restricted band
100 kHz for Peak Mode for the emissions outside restricted band

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

-. Duty Cycle : 77.01 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	C.F (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel									
4 804.00	13.16	Peak	H	33.40	11.21	-	57.77	74.00	16.23
	3.78	Average	H			1.13	49.52	54.00	4.48
	13.24	Peak	V			-	57.85	74.00	16.15
	3.25	Average	V			1.13	48.99	54.00	5.01
Test Data for Middle Channel									
4 882.00	13.46	Peak	H	33.50	11.23	-	58.19	74.00	15.81
	3.16	Average	H			1.13	49.02	54.00	4.98
	13.20	Peak	V			-	57.93	74.00	16.07
	3.48	Average	V			1.13	49.34	54.00	4.66
Test Data for High Channel									
4 960.00	13.55	Peak	H	33.30	11.25	-	58.10	74.00	15.90
	3.81	Average	H			1.13	49.49	54.00	4.51
	13.26	Peak	V			-	57.81	74.00	16.19
	3.59	Average	V			1.13	49.27	54.00	4.73

Remark: “H”: Horizontal, “V”: Vertical

Margin (dB) = Limits (dBµV/m) - Total Level (dBµV/m)

Total Level = Reading + Antenna Factor + Cable Loss + Correction Factor

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13. RADIATED EMISSION TEST

13.1 Operating environment

Temperature : 23 °C

Relative humidity : 45 % R.H.

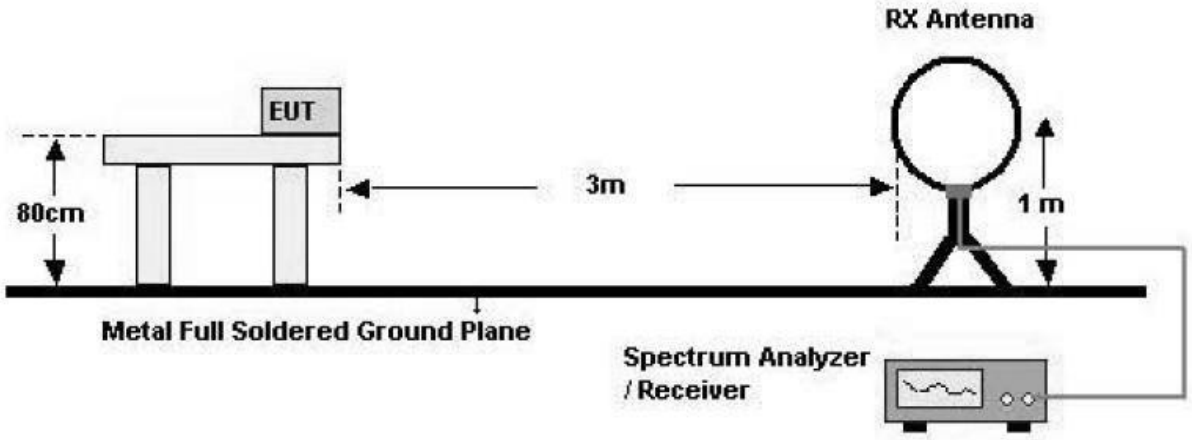
13.2 Test set-up

The radiated emissions measurements were on the 3 m semi anechoic chamber. The EUT and other support equipment were placed on a non-conductive turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

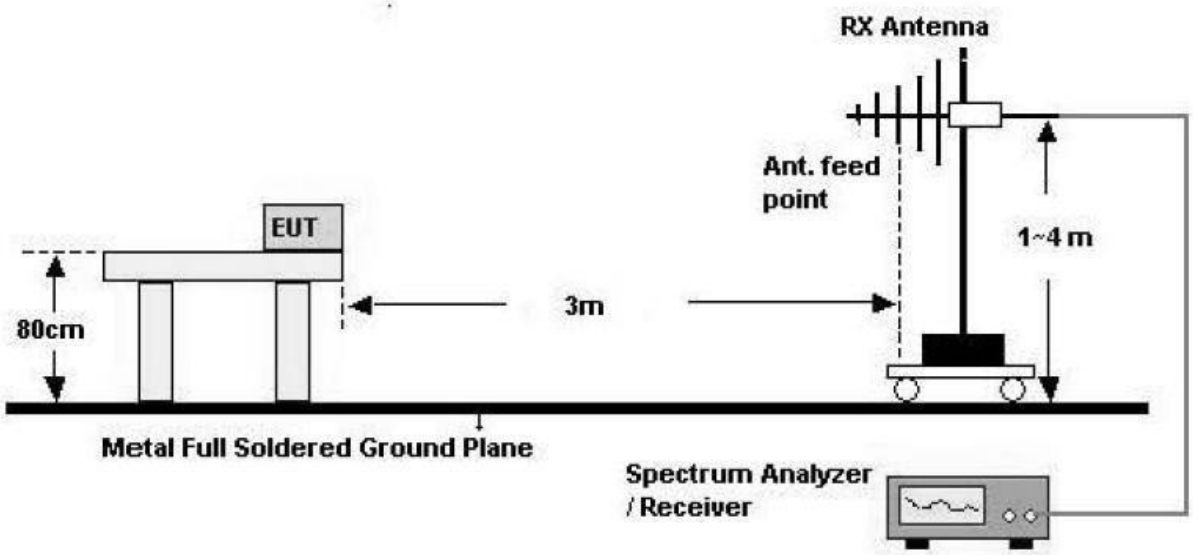
The frequency spectrum from 30 MHz to 26.5 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

- Test Configuration

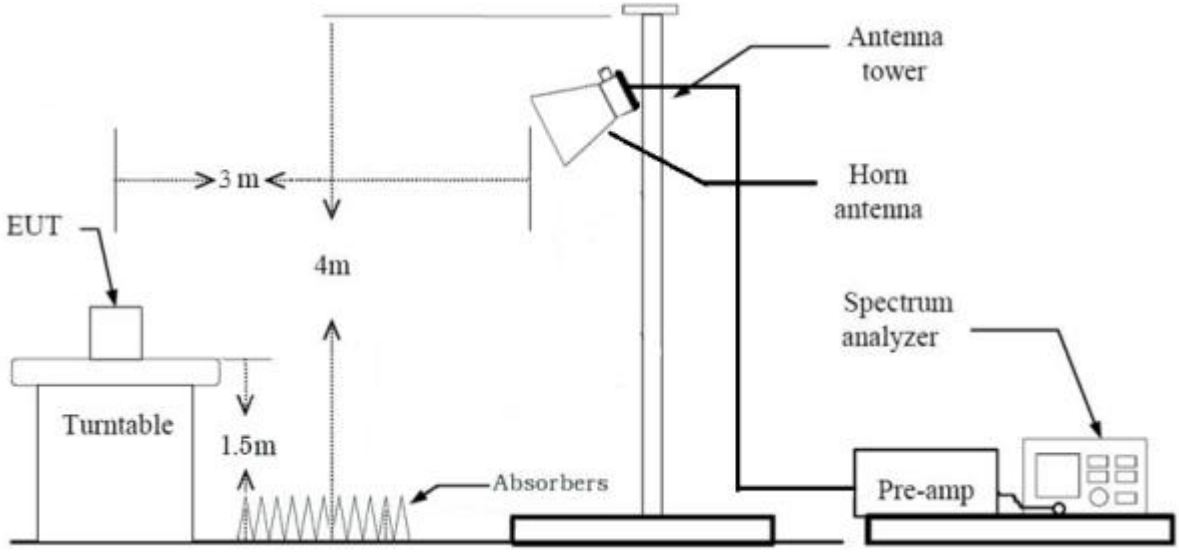
1. Below 30 MHz



2. 30 MHz - 1 GHz



3. Above 1 GHz



13.3 Test Date

January 11, 2021 ~ January 14, 2021

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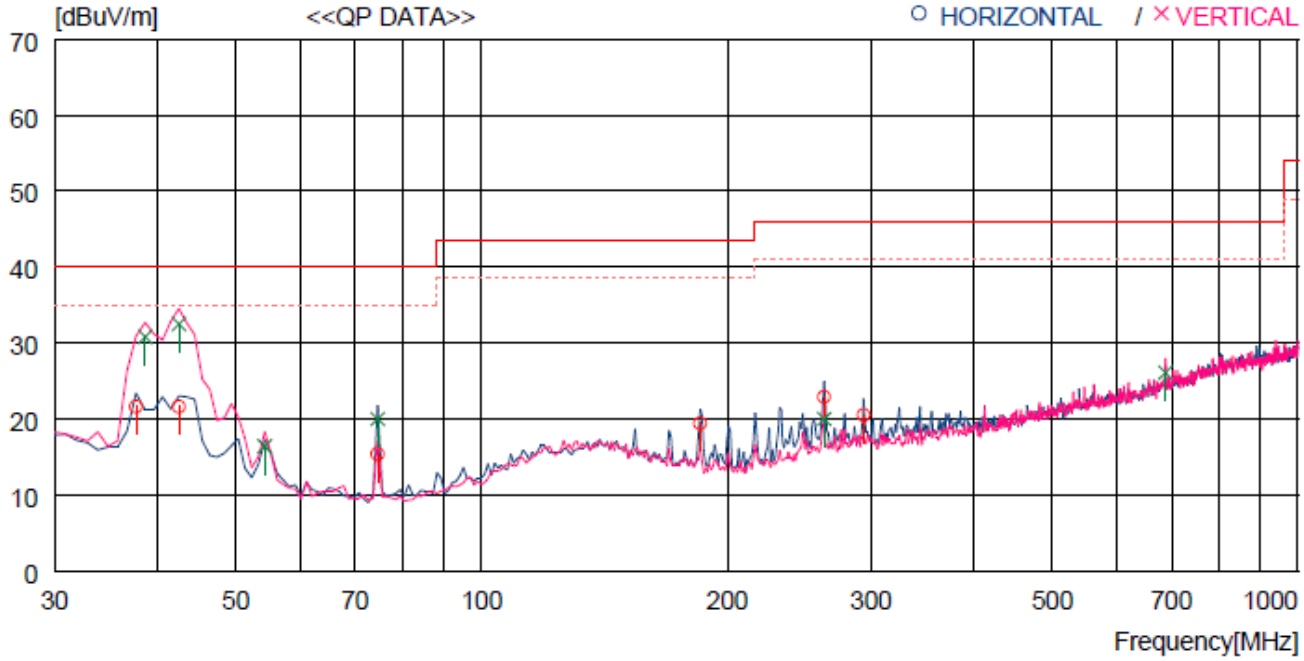
13.4 Test data for 30 MHz ~ 1 000 MHz

13.4.1 Test data for Bluetooth 1

-. Resolution bandwidth : 120 kHz

-. Frequency range : 30 MHz ~ 1 000 MHz

-. Measurement distance : 3 m



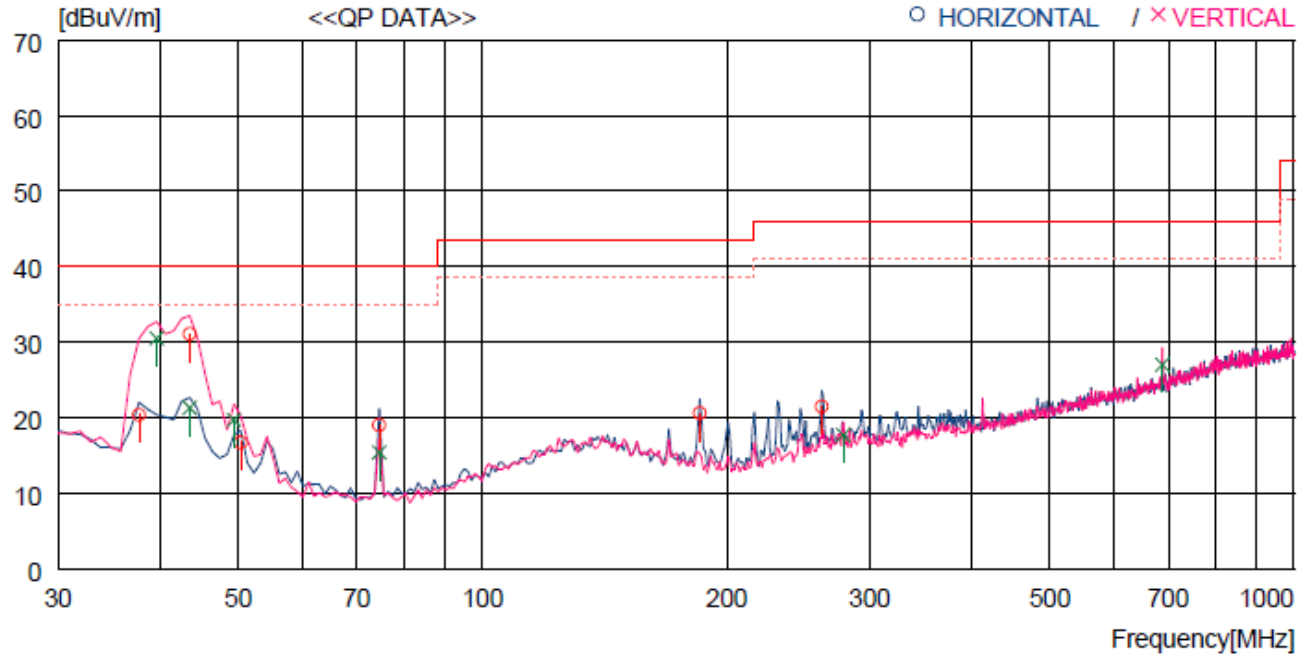
No.	FREQ	READING QP	ANT FACTOR	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	37.760	34.6	18.1	0.9	32.0	21.6	40.0	18.4	300	359
2	42.610	36.5	16.2	0.9	32.0	21.6	40.0	18.4	300	317
3	74.620	33.6	12.9	1.0	32.1	15.4	40.0	24.6	400	0
4	185.200	33.4	16.3	1.7	32.0	19.4	43.5	24.1	200	143
5	262.800	34.7	18.2	2.0	32.0	22.9	46.0	23.1	200	0
6	293.840	31.4	19.0	2.1	32.0	20.5	46.0	25.5	200	44
----- Vertical -----										
7	38.730	44.1	17.8	0.9	32.0	30.8	40.0	9.2	100	350
8	42.610	47.4	16.2	0.9	32.0	32.5	40.0	7.5	100	188
9	54.250	34.9	12.7	0.9	32.1	16.4	40.0	23.6	100	0
10	74.620	38.2	12.9	1.0	32.1	20.0	40.0	20.0	400	359
11	262.800	31.8	18.2	2.0	32.0	20.0	46.0	26.0	200	112
12	687.655	29.6	25.4	3.4	32.3	26.1	46.0	19.9	100	262

13.4.2 Test data for Bluetooth 2

-. Resolution bandwidth : 120 kHz

-. Frequency range : 30 MHz ~ 1 000 MHz

-. Measurement distance : 3 m



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	37.760	33.4	18.1	0.9	32.0	20.4	40.0	19.6	400	9
2	43.580	46.4	15.8	0.9	32.0	31.1	40.0	8.9	300	359
3	50.370	34.8	13.1	0.9	32.1	16.7	40.0	23.3	400	0
4	74.620	37.2	12.9	1.0	32.1	19.0	40.0	21.0	400	0
5	185.200	34.6	16.3	1.7	32.0	20.6	43.5	22.9	200	0
6	261.830	33.4	18.1	2.0	32.0	21.5	46.0	24.5	200	38
----- Vertical ------										
7	39.700	44.2	17.4	0.9	32.0	30.5	40.0	9.5	100	0
8	43.580	36.6	15.8	0.9	32.0	21.3	40.0	18.7	100	306
9	49.400	37.5	13.4	0.9	32.1	19.7	40.0	20.3	100	247
10	74.620	33.6	12.9	1.0	32.1	15.4	40.0	24.6	400	359
11	278.320	29.1	18.6	2.0	32.0	17.7	46.0	28.3	200	359
12	687.655	30.5	25.4	3.4	32.3	27.0	46.0	19.0	100	262

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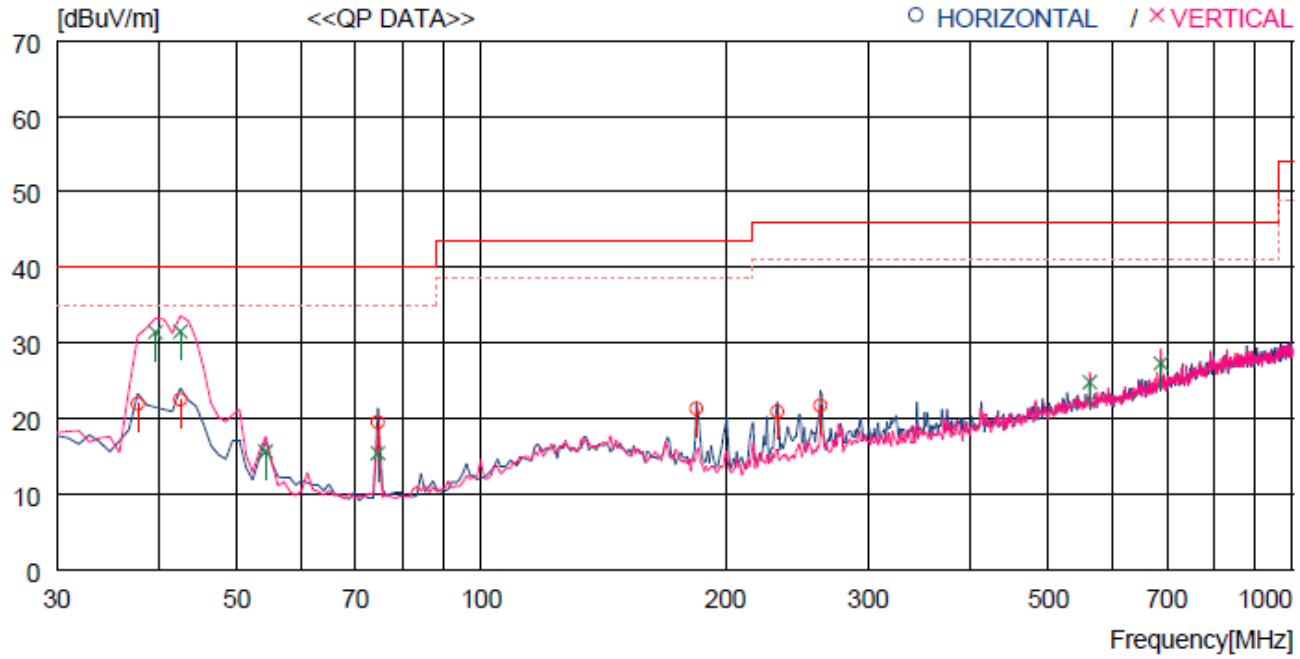
13.4.3 Test data for Bluetooth 1/2

-. Resolution bandwidth : 120 kHz

-. Frequency range : 30 MHz ~ 1 000 MHz

-. Measurement distance : 3 m



No.	FREQ	READING QP	ANT FACTOR	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	37.760	21.9	0.0	0.0	0.0	21.9	40.0	18.1	300	359
2	42.610	22.5	0.0	0.0	0.0	22.5	40.0	17.5	300	359
3	74.620	19.5	0.0	0.0	0.0	19.5	40.0	20.5	400	12
4	184.230	21.3	0.0	0.0	0.0	21.3	43.5	22.2	200	11
5	231.760	20.9	0.0	0.0	0.0	20.9	46.0	25.1	200	0
6	261.830	21.7	0.0	0.0	0.0	21.7	46.0	24.3	200	350
----- Vertical -----										
7	39.700	31.4	0.0	0.0	0.0	31.4	40.0	8.6	100	0
8	42.610	31.5	0.0	0.0	0.0	31.5	40.0	8.5	100	269
9	54.250	15.6	0.0	0.0	0.0	15.6	40.0	24.4	100	254
10	74.620	15.4	0.0	0.0	0.0	15.4	40.0	24.6	400	359
11	562.529	24.8	0.0	0.0	0.0	24.8	46.0	21.2	100	0
12	687.655	27.3	0.0	0.0	0.0	27.3	46.0	18.7	100	240

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13.5 Test data for Below 30 MHz

-. Resolution bandwidth : 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)

-. Frequency range : 9 kHz ~ 30 MHz

-. Measurement distance : 3 m

Frequency (MHz)	Reading (dBμV)	Ant. Pol. (H/V)	Ant. Factor (dB/m)	Cable Loss	Amp Gain	Emission Level(dBμV/m)	Limits (dBμV/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.								

13.6 Test data for above 1 GHz

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode

1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 26.5 GHz

-. Measurement distance : 3 m

Frequency (MHz)	Reading (dBμV)	Ant. Pol. (H/V)	Ant. Factor (dB/m)	Cable Loss	Amp Gain	Emission Level(dBμV/m)	Limits (dBμV/m)	Margin (dB)
Emission from the EUT more than 20 dB below the limit in each frequency range.								

14. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV40-N	Rohde & Schwarz	Signal Analyzer	102177	Apr. 20, 2020 (1Y)
FSW43	Rohde & Schwarz	Signal Analyzer	104544	Jul. 15, 2020 (1Y)
ESW	Rohde & Schwarz	EMI Test Receiver	101851	Mar. 27, 2020 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	392756	Oct. 16, 2020 (1Y)
PAM-118A	Com-Power	Pre-Amplifier	18040081	Oct. 12, 2020 (1Y)
PAM-840A	Com-Power	Pre-Amplifier	461339	Oct. 16, 2020 (1Y)
DT3000-3t	Innco System	Turn Table	DT3000/093	N/A
MA-4000XPET	Innco System	Antenna Master	MA4000/509	N/A
FMZB 1513	Schwarzbeck	Loop Antenna	1513-235	Mar. 24, 2020 (2Y)
HLP-2008	TDK	Hybrid Antenna	131316	Feb. 27, 2020 (2Y)
AH-118	Com-Power	Horn Antenna	10050061	Oct. 15, 2020 (1Y)
BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 07, 2020(1Y)
ESR	Rohde & Schwarz	EMI TEST RECEIVER	102602	Mar. 17, 2020 (1Y)

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