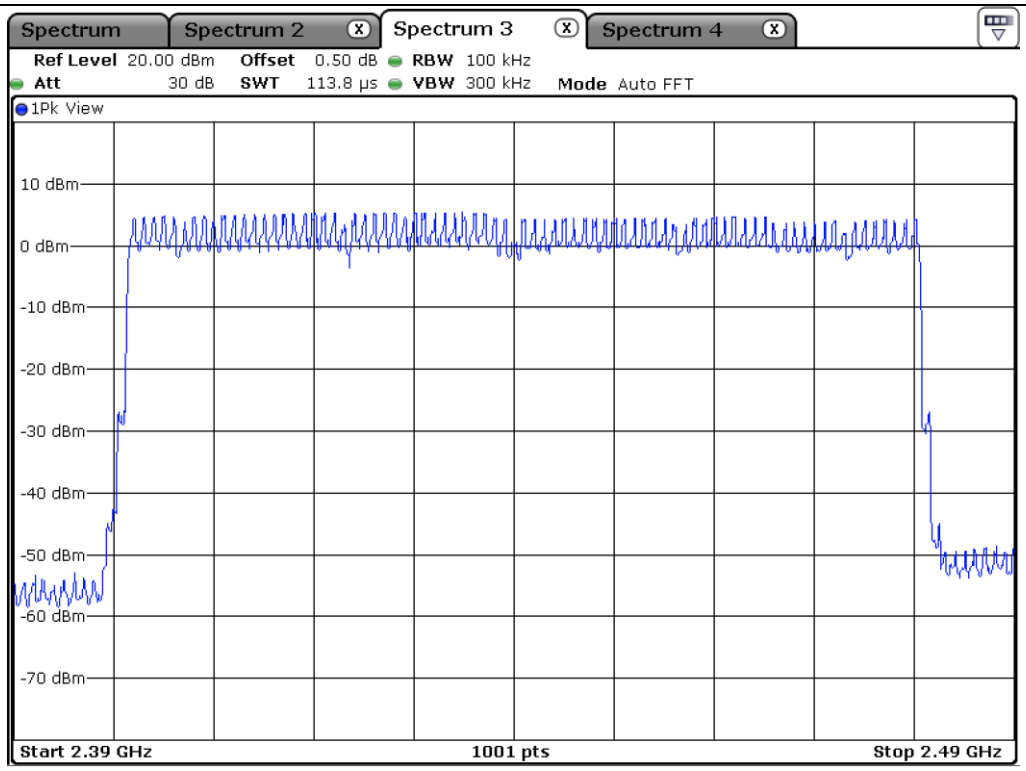
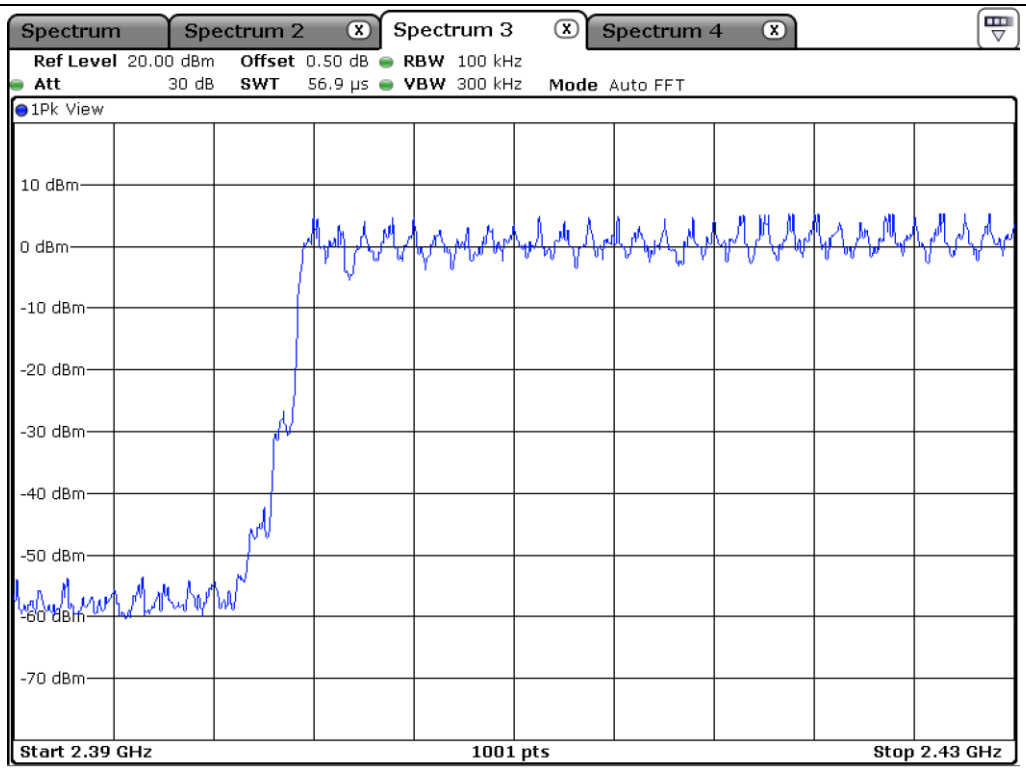
9.4.3 Test data for 3 Mbps

-. Test Result : Pass

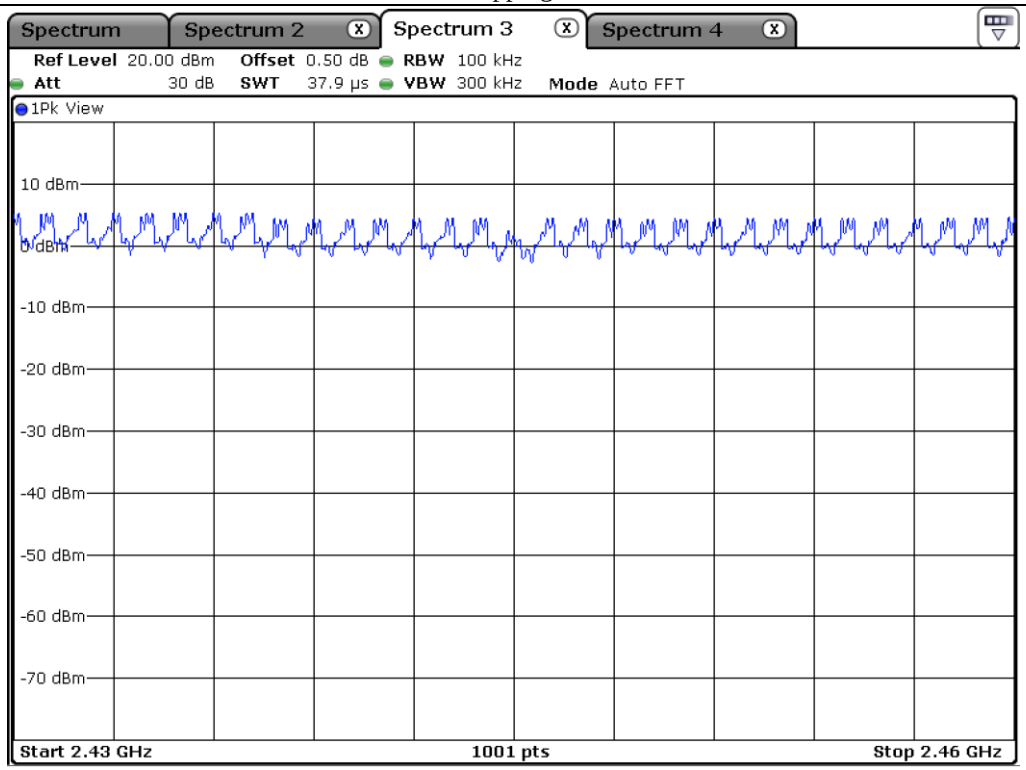
Data Transfer Rate	Measured value (Number)	Limit (Number)	Margin (Number)
3 Mbps	79	Minimum of 15	64



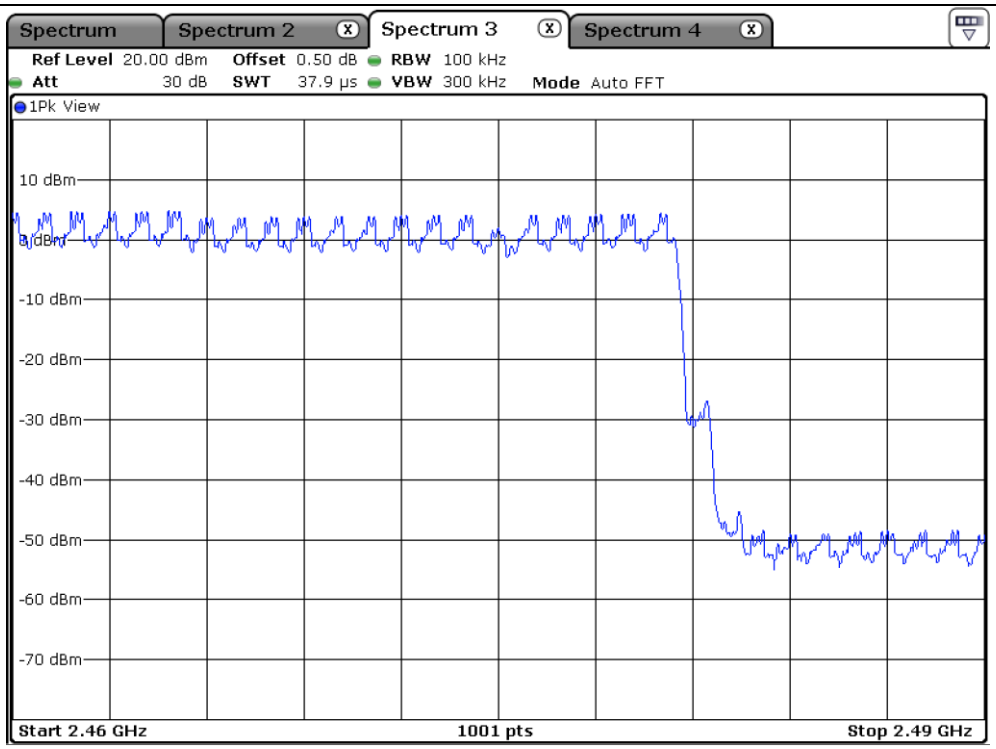
Total number of hopping channel: 28+30+21 = 79



Number of hopping channel: 28



Number of hopping channel: 30



Number of hopping channel: 21

10. TIME OF OCCUPANCY

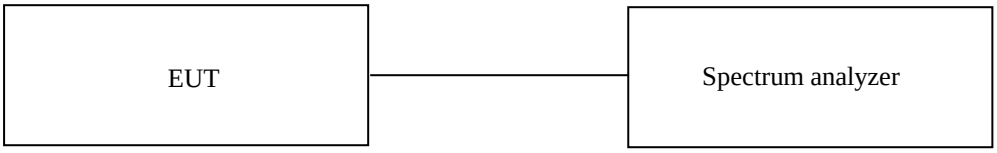
10.1 Operating environment

Temperature : 22 °C

Relative humidity : 46 % R.H.

10.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer. The transmitter is set to operate in its normal frequency hopping mode. The center frequency of the spectrum analyzer is set to one of hopping channels near the center of the operating band and span is set to zero Hz. The sweep time is set to display one complete pulse. The mark delta function is used to measure the duration of the pulses.



10.3 Test Date

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10.4 Test Data

10.4.1 Test data for 1 Mbps

The system makes worst case 1 600 hops per second or 1 time slot has a length of 625 μs with 79 channels.

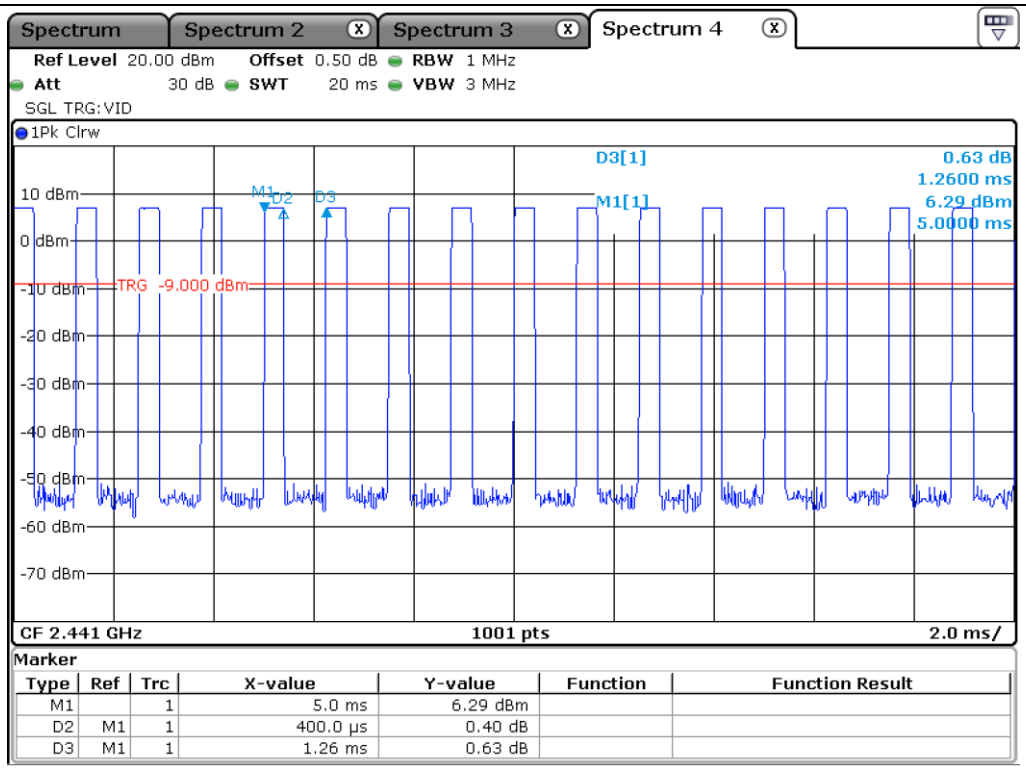
For DH1 packet type, the EUT needs 1 time slot for transmitting and 1 time slot for receiving and for DH3 packet type, the EUT needs 3 times slots for transmitting and 1 time slot for receiving, and DH5 packet needs 5 times slots for transmitting and 1 time slot for receiving. So The EUT has each channel for 10.13 times per second (= 1 600/2/79) for DH1, and 5.06 times (= 1 600/4/79) for DH3, and 3.38 times (= 1 600/6/79) for DH5.

Packet Type	Pulse Time (ms)	Hops per second with channels	Period Time (ms)	Total Dwell Time (ms)	Limit (ms)	Test Result
DH1	0.4	10.13	31.60	128.04	400.00	PASS
DH3	1.62	5.06	31.60	259.03	400.00	
DH5	2.88	3.38	31.60	307.61	400.00	

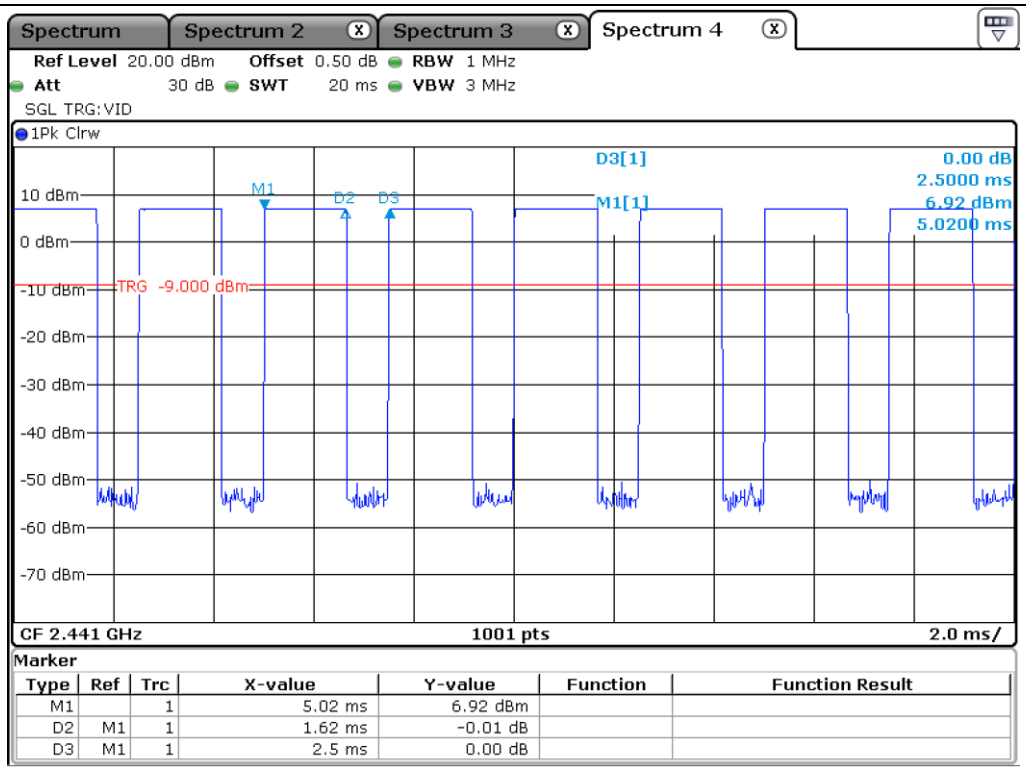
Total dwell time is calculated as following.

Total Dwell Time = Pulse time * Hops per second with channels * period time

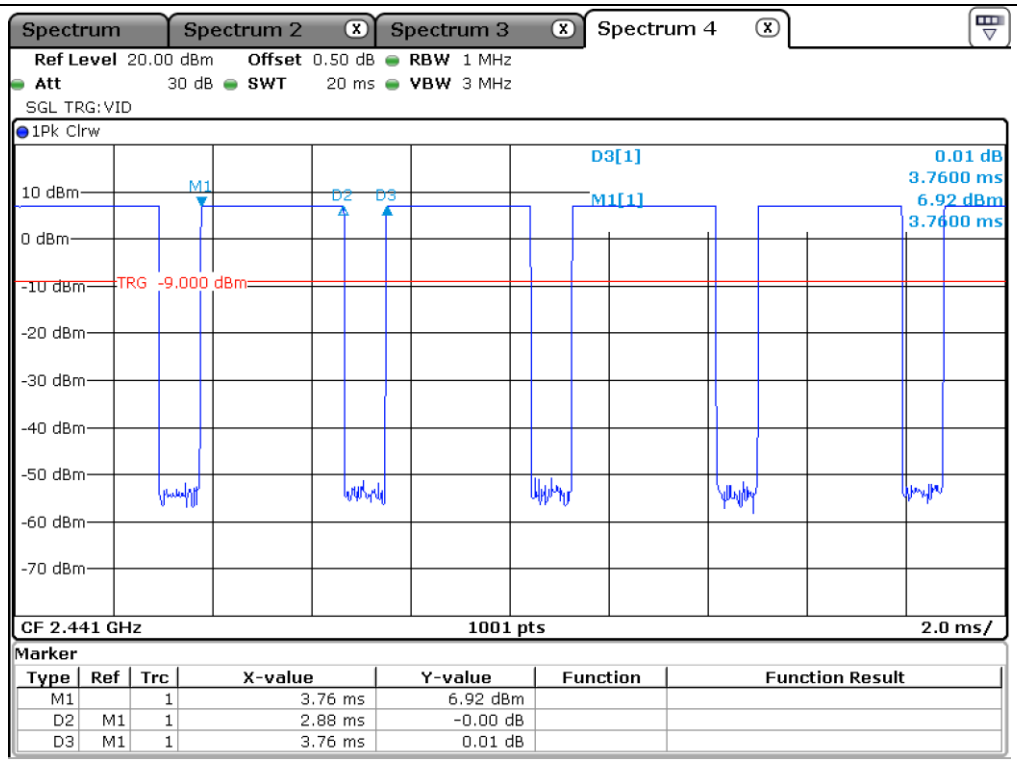
Remark: See next page for an overview sweep performed with peak detector.



DH1



DH3



DH5

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10.4.2 Test data for 2 Mbps

The system makes worst case 1 600 hops per second or 1 time slot has a length of 625 μs with 79 channels.

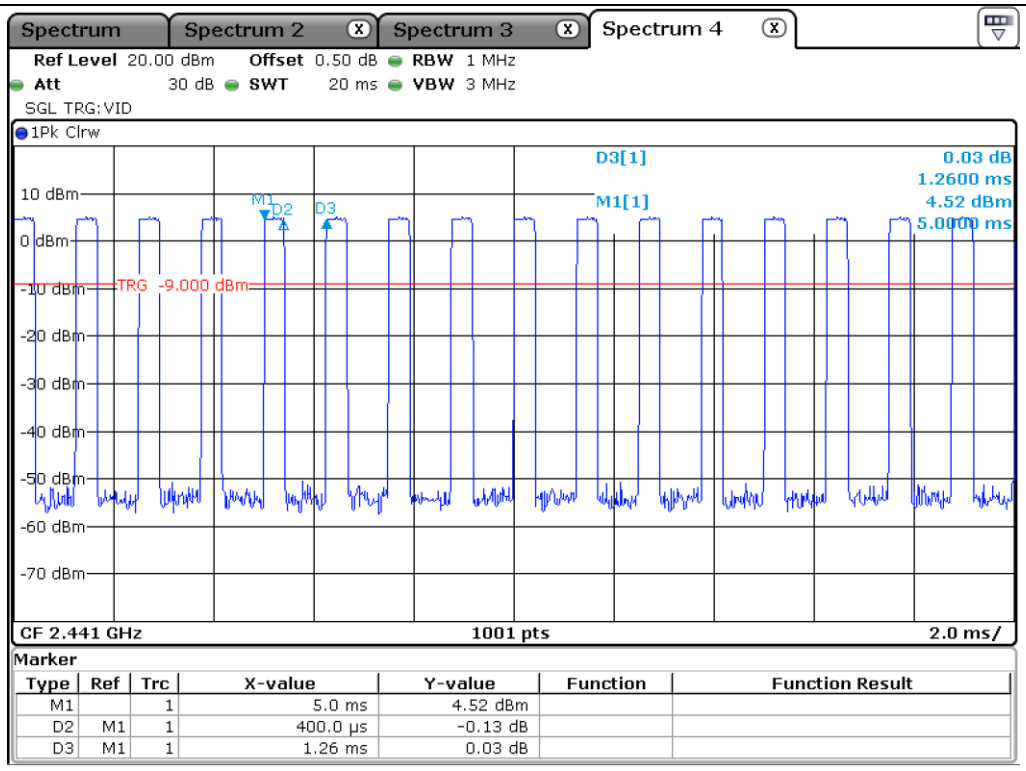
For DH1 packet type, the EUT needs 1 time slot for transmitting and 1 time slot for receiving and for DH3 packet type, the EUT needs 3 times slots for transmitting and 1 time slot for receiving, and DH5 packet needs 5 times slots for transmitting and 1 time slot for receiving. So The EUT has each channel for 10.13 times per second (= 1 600/2/79) for DH1, and 5.06 times (= 1 600/4/79) for DH3, and 3.38 times (= 1 600/6/79) for DH5.

Packet Type	Pulse Time (ms)	Hops per second with channels	Period Time (ms)	Total Dwell Time (ms)	Limit (ms)	Test Result
DH1	0.4	10.13	31.60	128.04	400.00	PASS
DH3	1.66	5.06	31.60	265.43	400.00	
DH5	2.88	3.38	31.60	307.61	400.00	

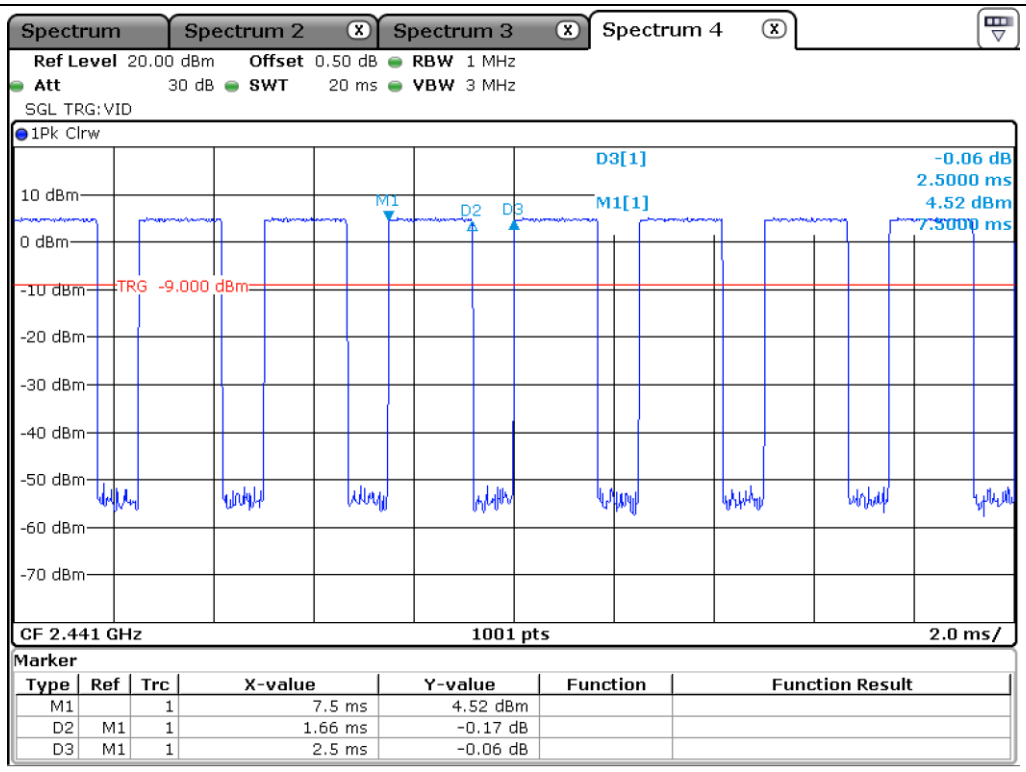
Total dwell time is calculated as following.

Total Dwell Time = Pulse time * Hops per second with channels * period time

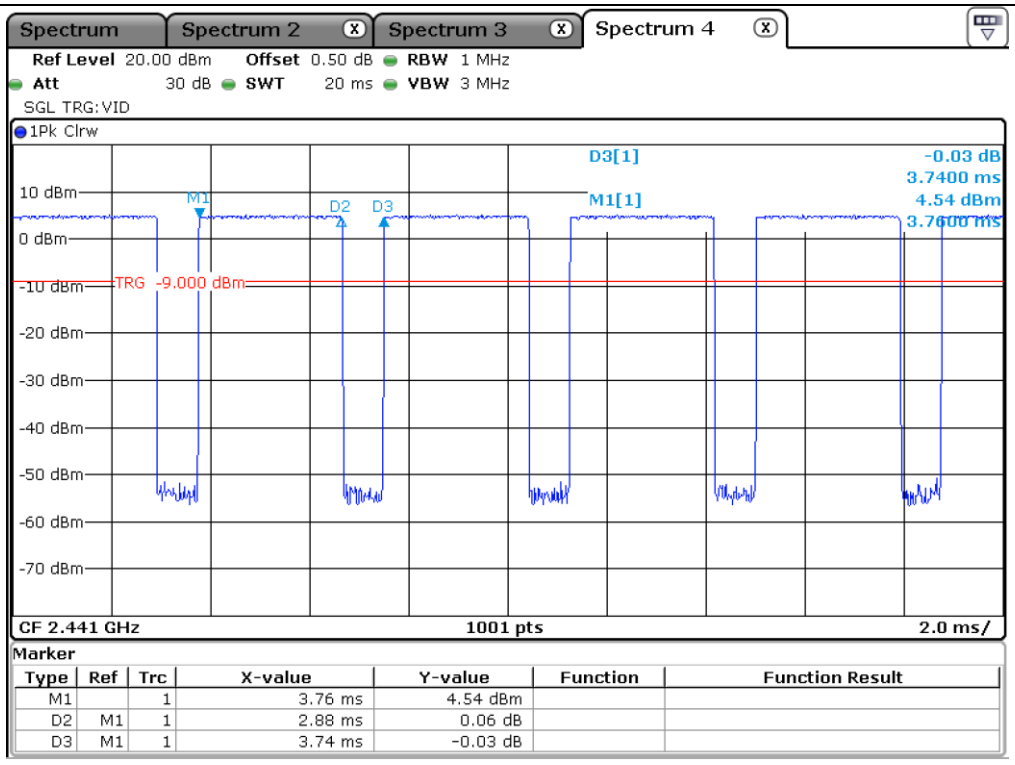
Remark: See next page for an overview sweep performed with peak detector.



DH1



DH3



DH5

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10.4.3 Test data for 3 Mbps

The system makes worst case 1 600 hops per second or 1 time slot has a length of 625 μs with 79 channels.

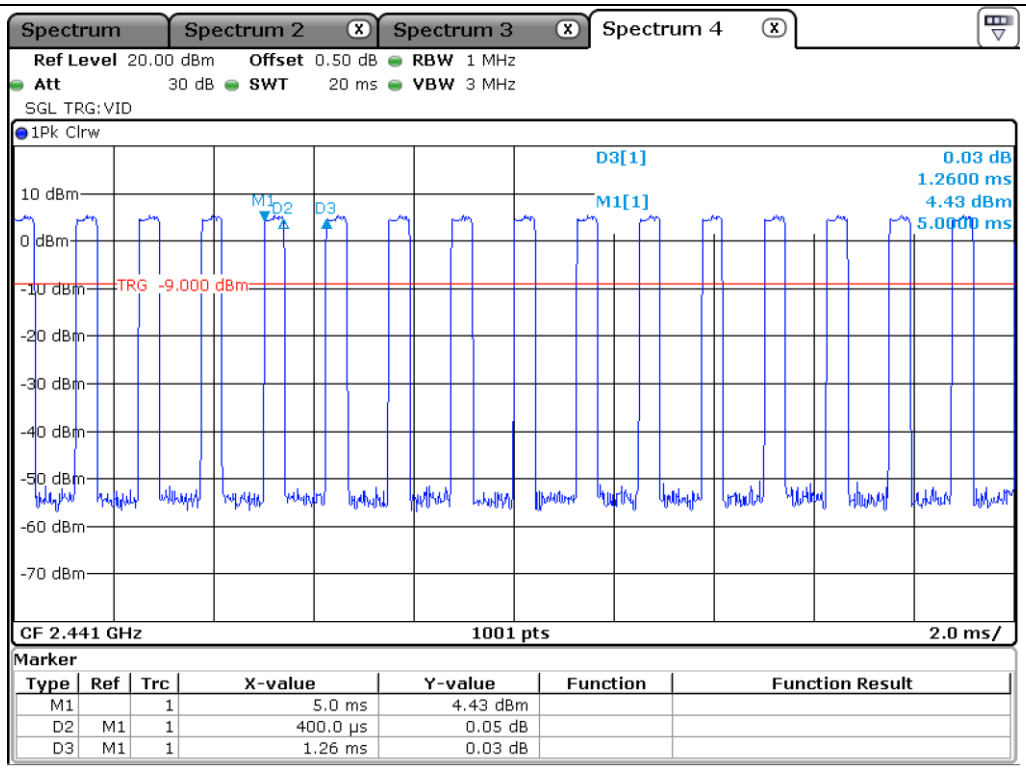
For DH1 packet type, the EUT needs 1 time slot for transmitting and 1 time slot for receiving and for DH3 packet type, the EUT needs 3 times slots for transmitting and 1 time slot for receiving, and DH5 packet needs 5 times slots for transmitting and 1 time slot for receiving. So The EUT has each channel for 10.13 times per second (= 1 600/2/79) for DH1, and 5.06 times (= 1 600/4/79) for DH3, and 3.38 times (= 1 600/6/79) for DH5.

Packet Type	Pulse Time (ms)	Hops per second with channels	Period Time (ms)	Total Dwell Time (ms)	Limit (ms)	Test Result
DH1	0.4	10.13	31.60	128.04	400.00	PASS
DH3	1.66	5.06	31.60	265.43	400.00	
DH5	2.9	3.38	31.60	309.74	400.00	

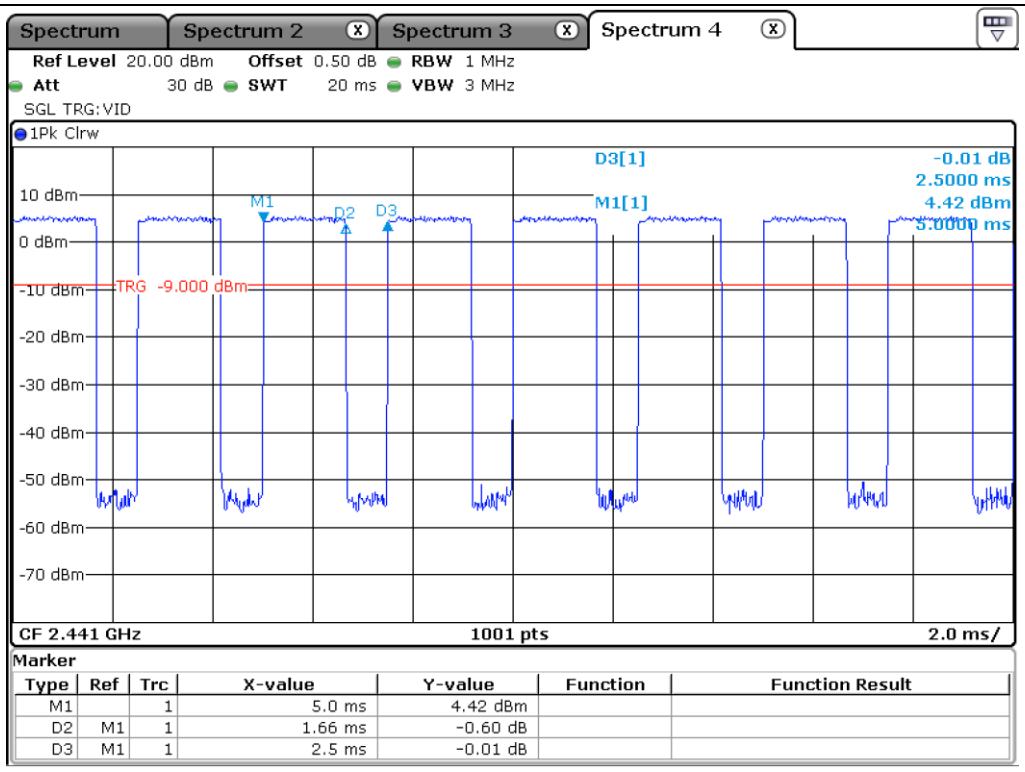
Total dwell time is calculated as following.

Total Dwell Time = Pulse time * Hops per second with channels * period time

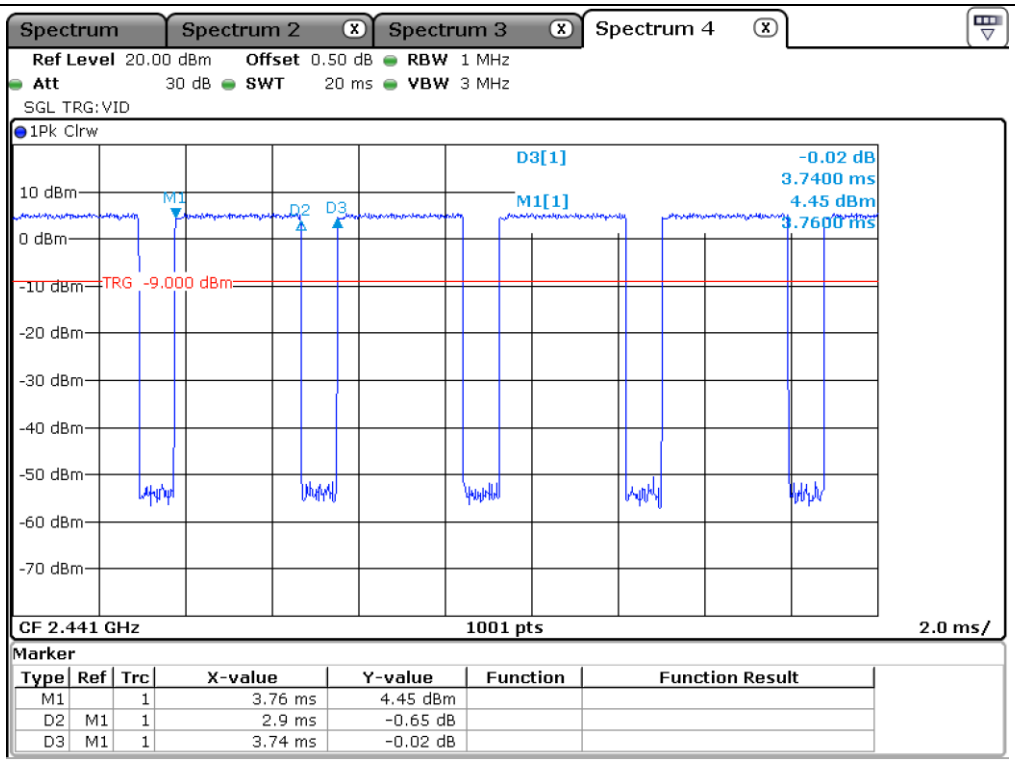
Remark: See next page for an overview sweep performed with peak detector.



DH1



DH3



DH5

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11. MAXIMUM PEAK OUTPUT POWER

11.1 Operating environment

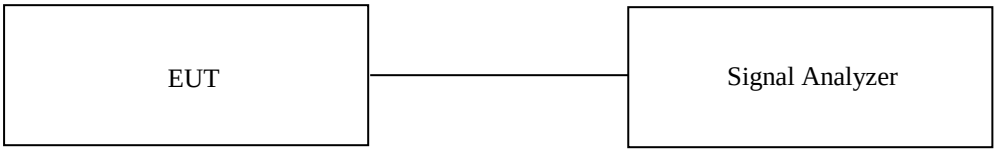
Temperature : 22 °C

Relative humidity : 46 % R.H.

11.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer.

The resolution bandwidth is set to ≥ DTS Bandwidth, the video bandwidth is set to 3 times the resolution bandwidth.



11.3 Test Date

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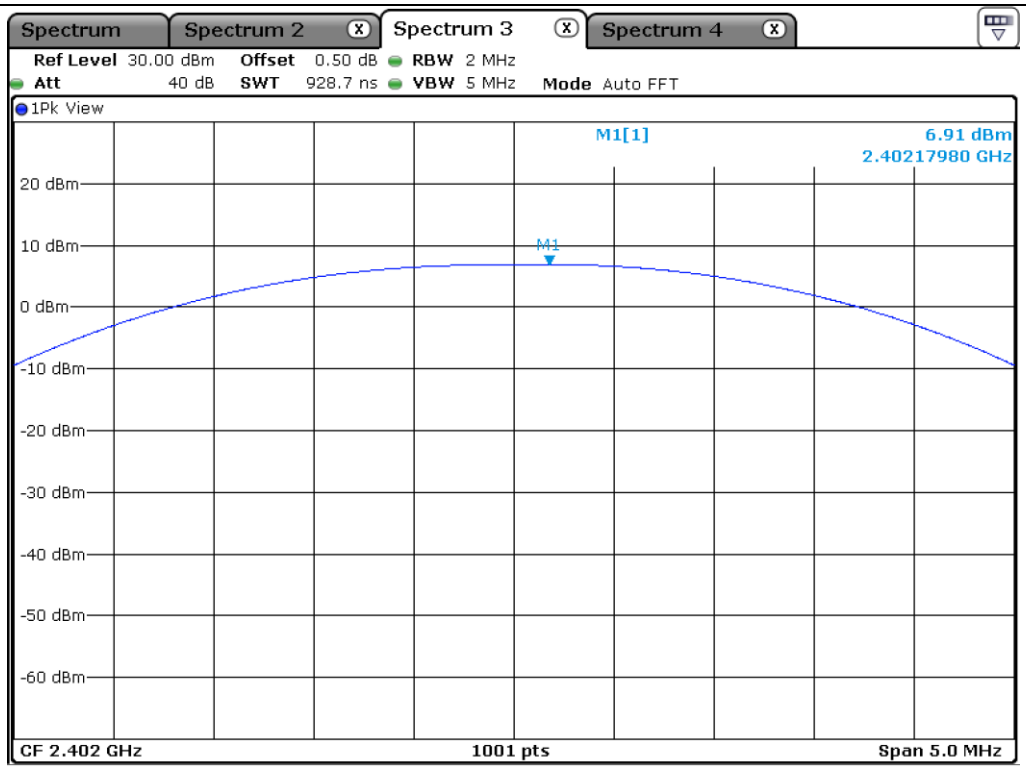
11.4 Test Data

11.4.1 Test data for 1 Mbps

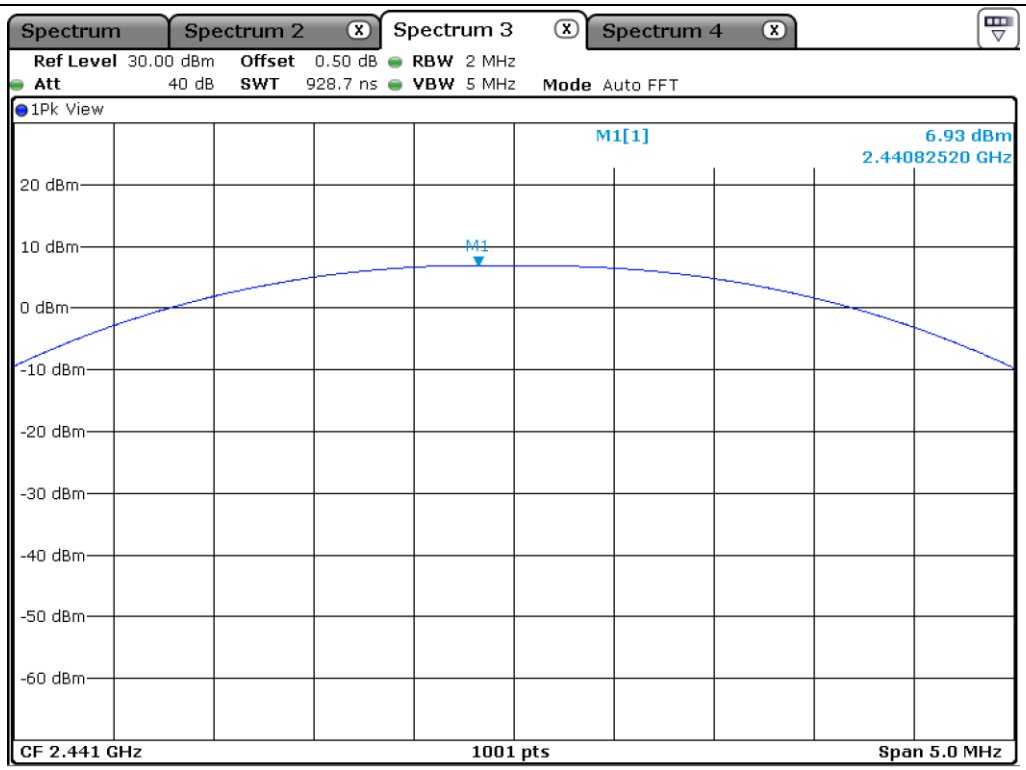
-. Test Result : Pass

Channel	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 402.00	6.91	21.00	14.09
Middle	2 441.00	6.93	21.00	14.07
High	2 480.00	6.83	21.00	14.17

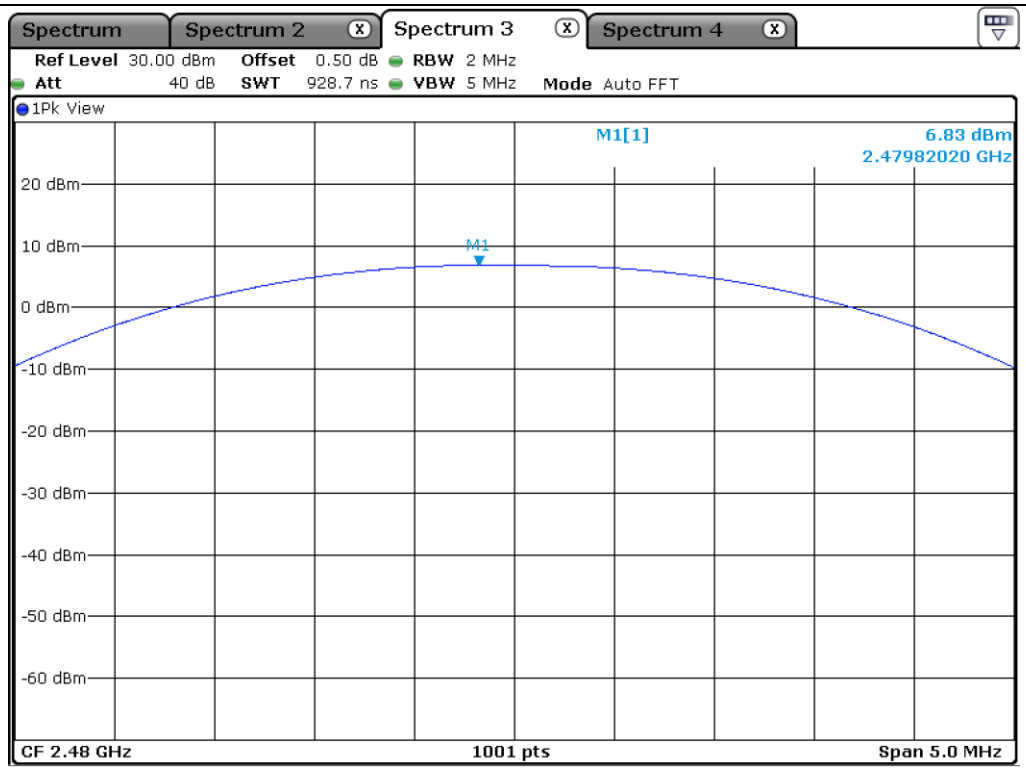
Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)



Low Channel



Middle Channel



High Channel

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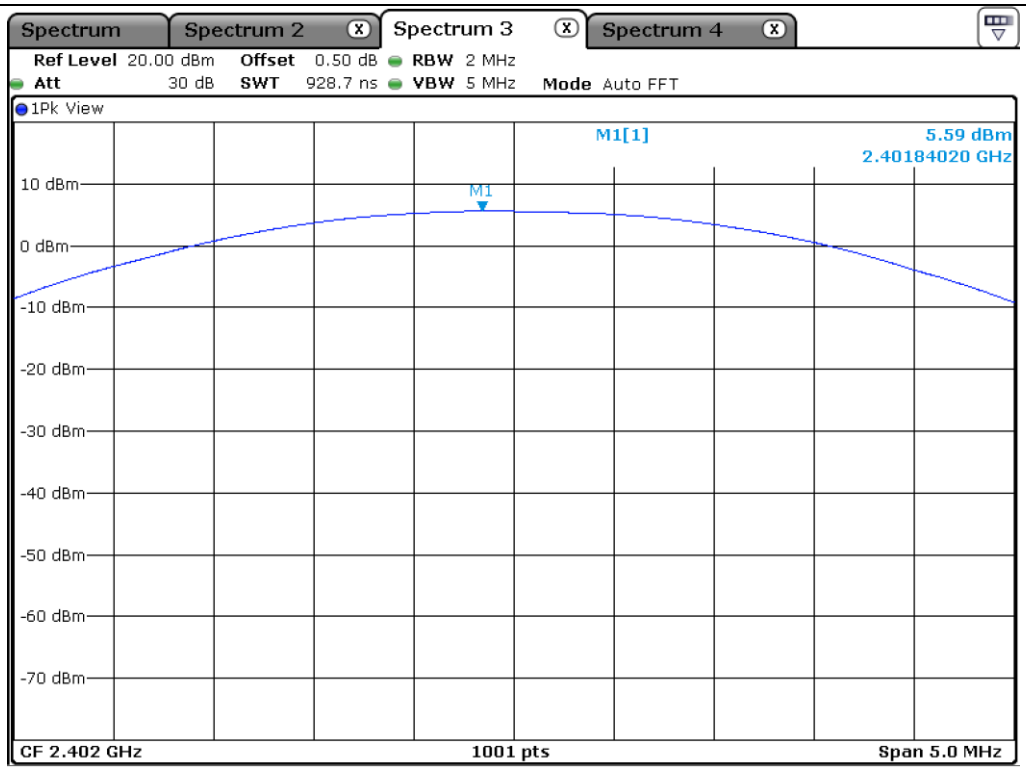
11.4.2 Test data for 2 Mbps

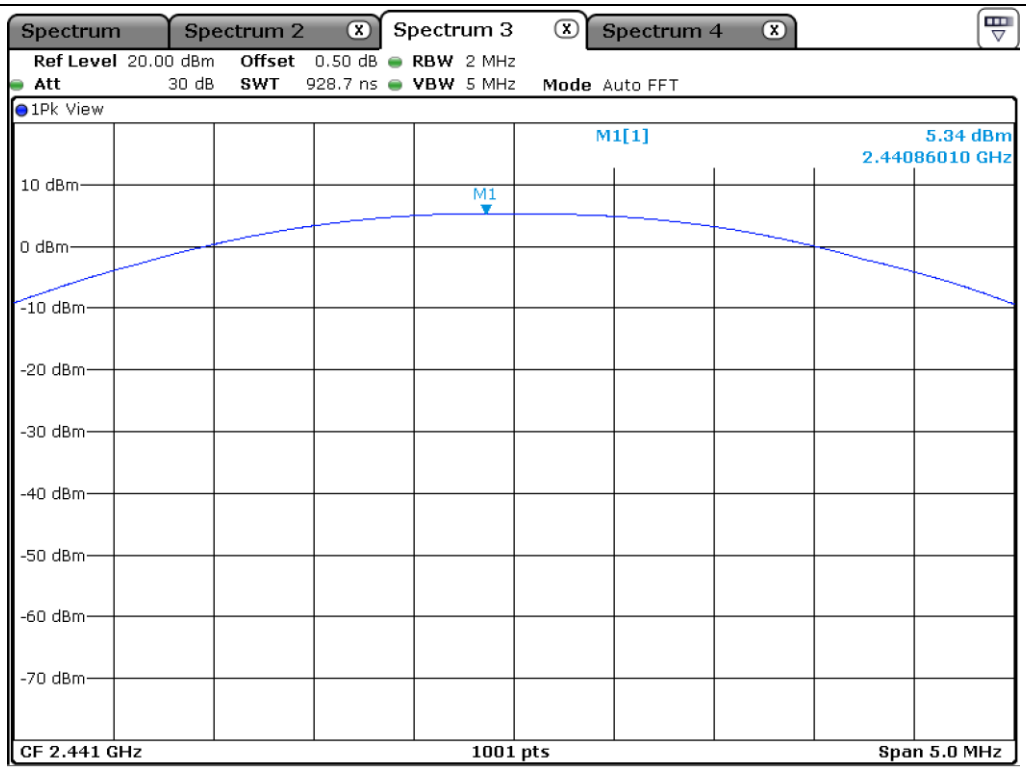
-. Test Result : Pass

Channel	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 402.00	5.59	21.00	15.41
Middle	2 441.00	5.34	21.00	15.66
High	2 480.00	5.47	21.00	15.53

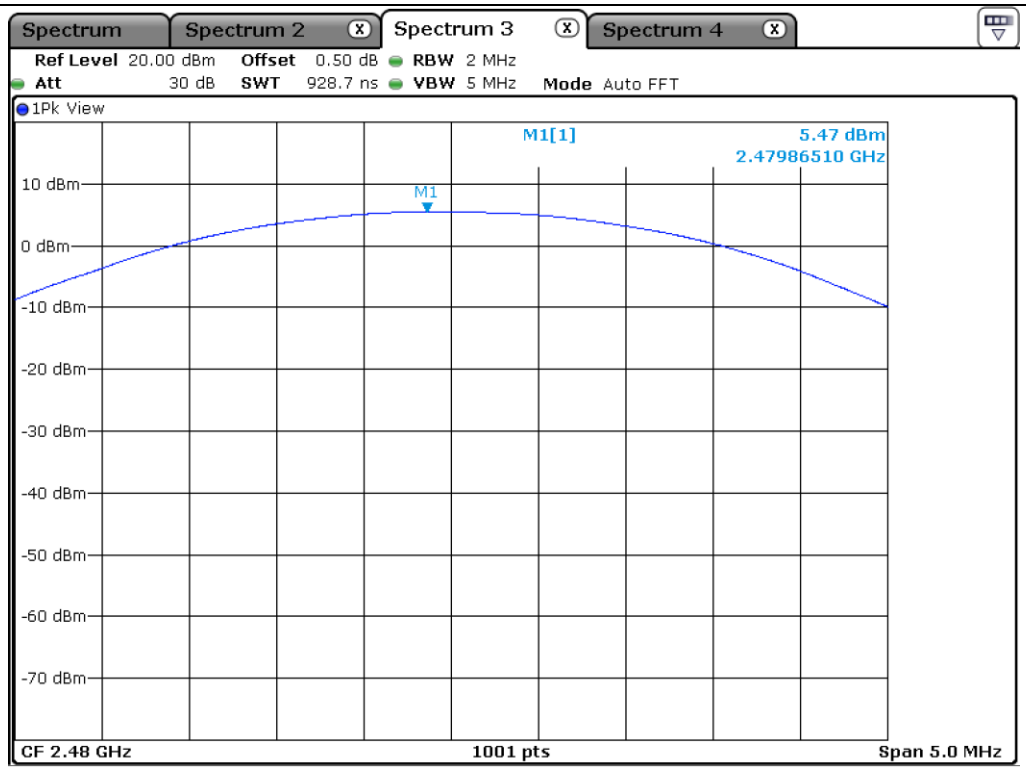
Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)



Low Channel



Middle Channel



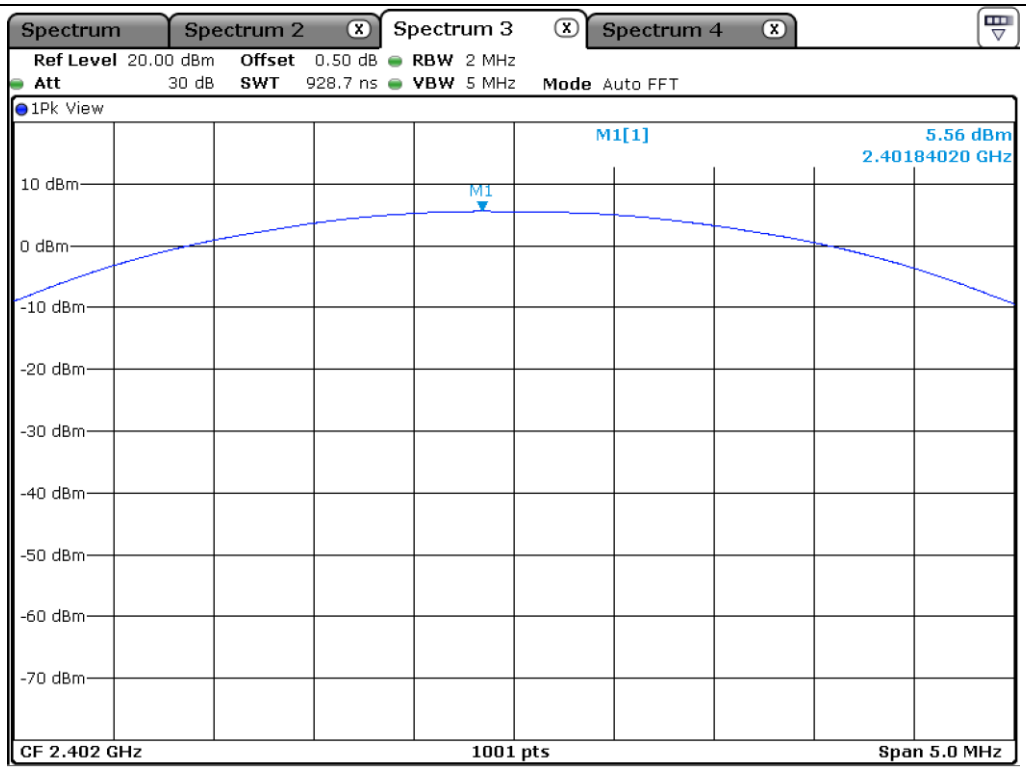
High Channel

11.4.3 Test data for 3 Mbps

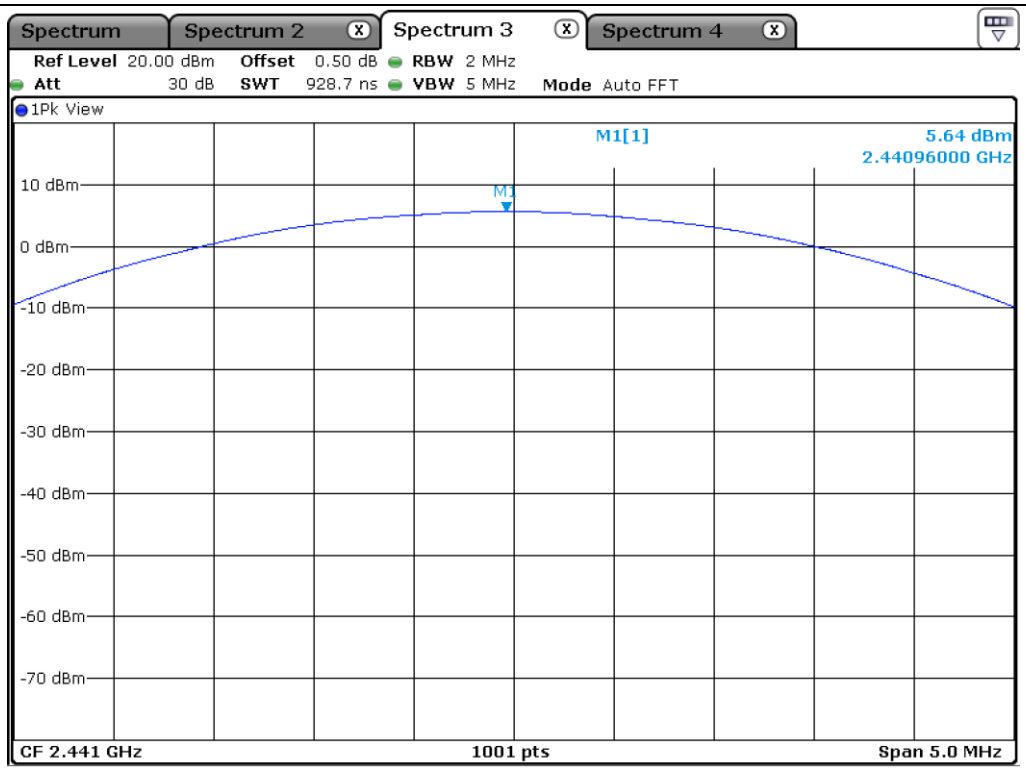
-. Test Result : Pass

Channel	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 402.00	5.56	21.00	15.44
Middle	2 441.00	5.64	21.00	15.36
High	2 480.00	5.56	21.00	15.44

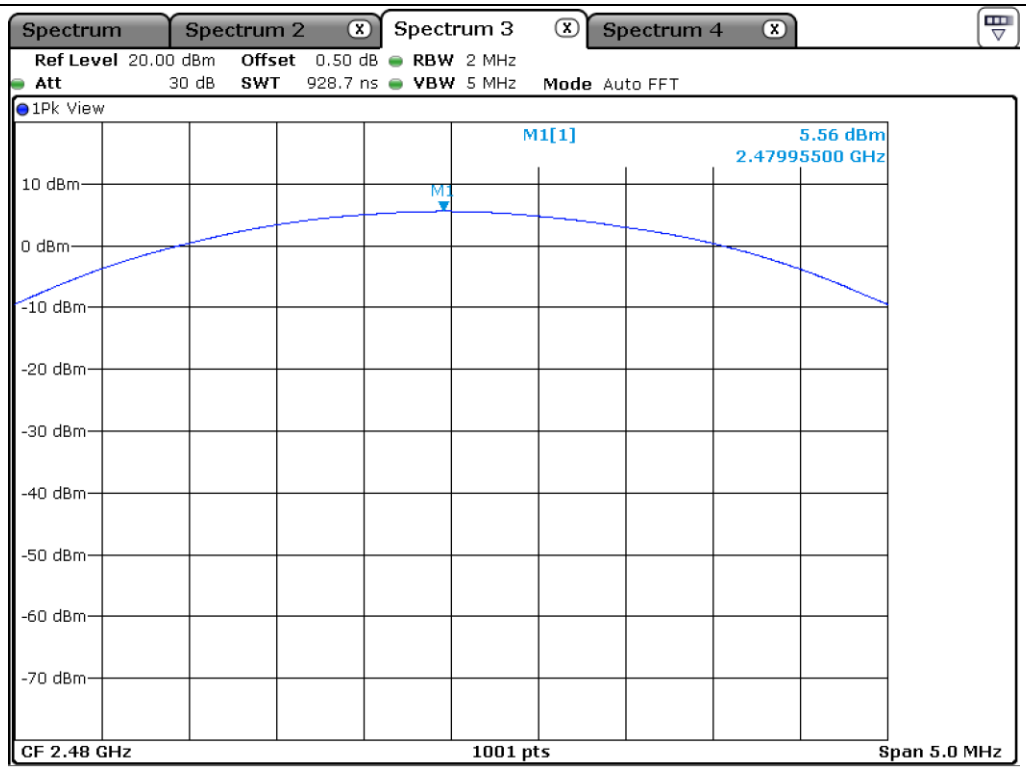
Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)



Low Channel



Middle Channel



High Channel

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12. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

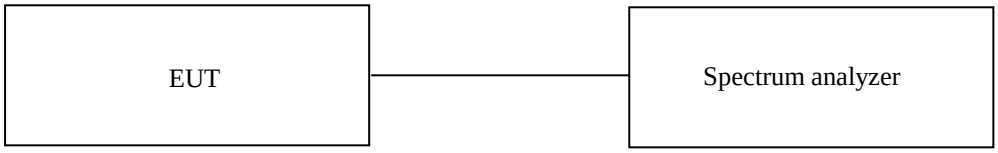
12.1 Operating environment

Temperature : 22 °C

Relative humidity : 46 % 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

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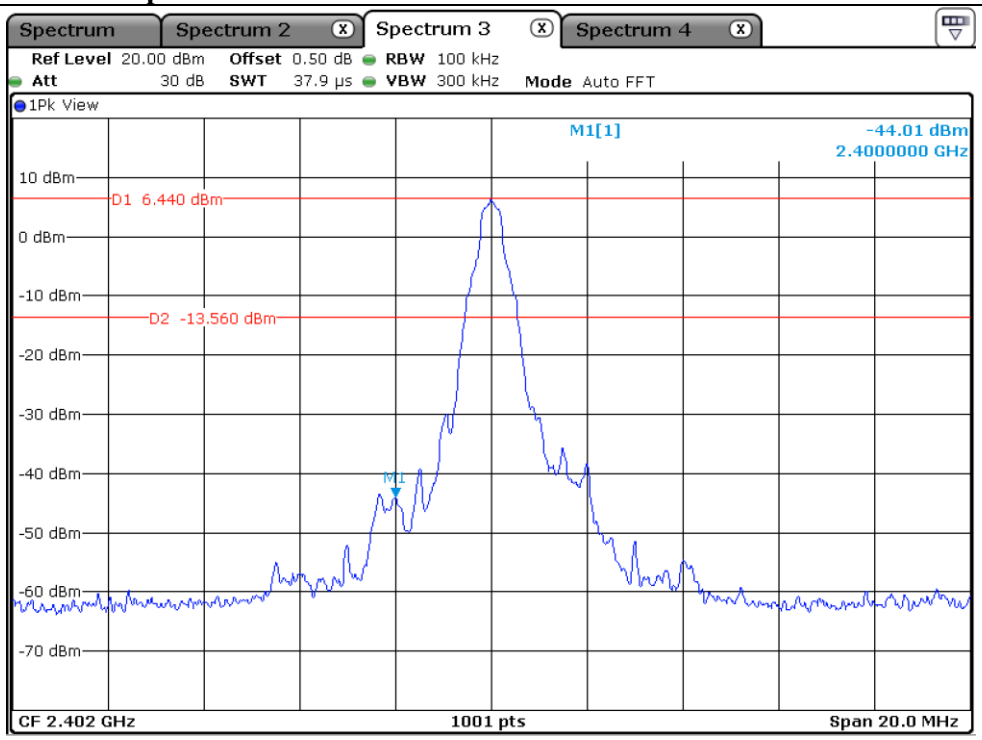
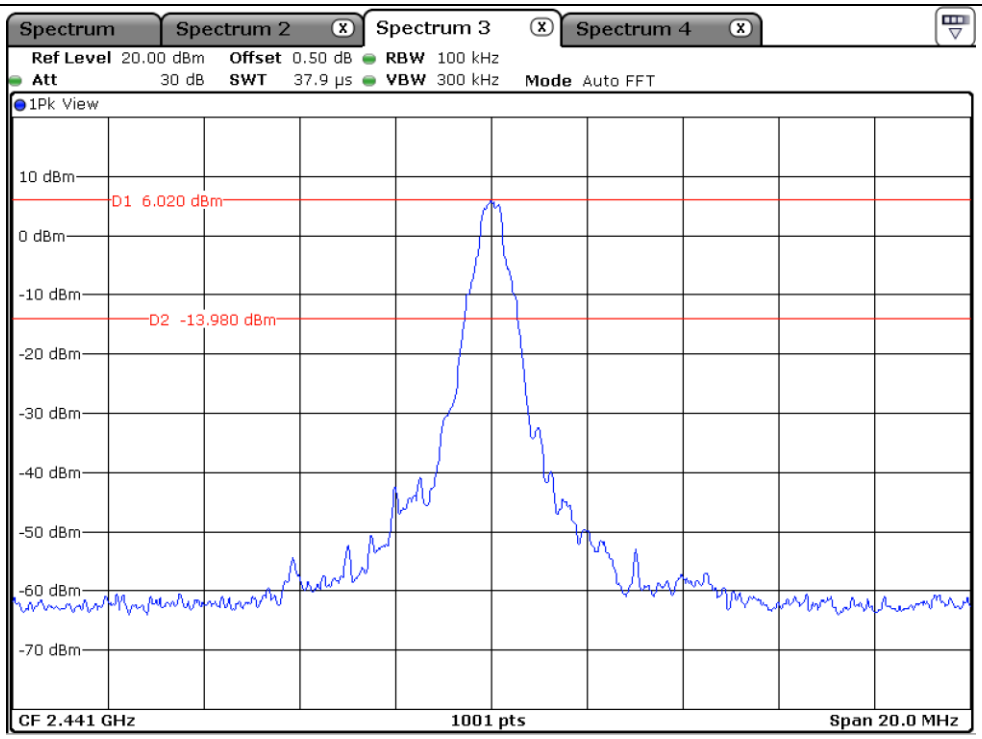
12.5 Test data for conducted emission

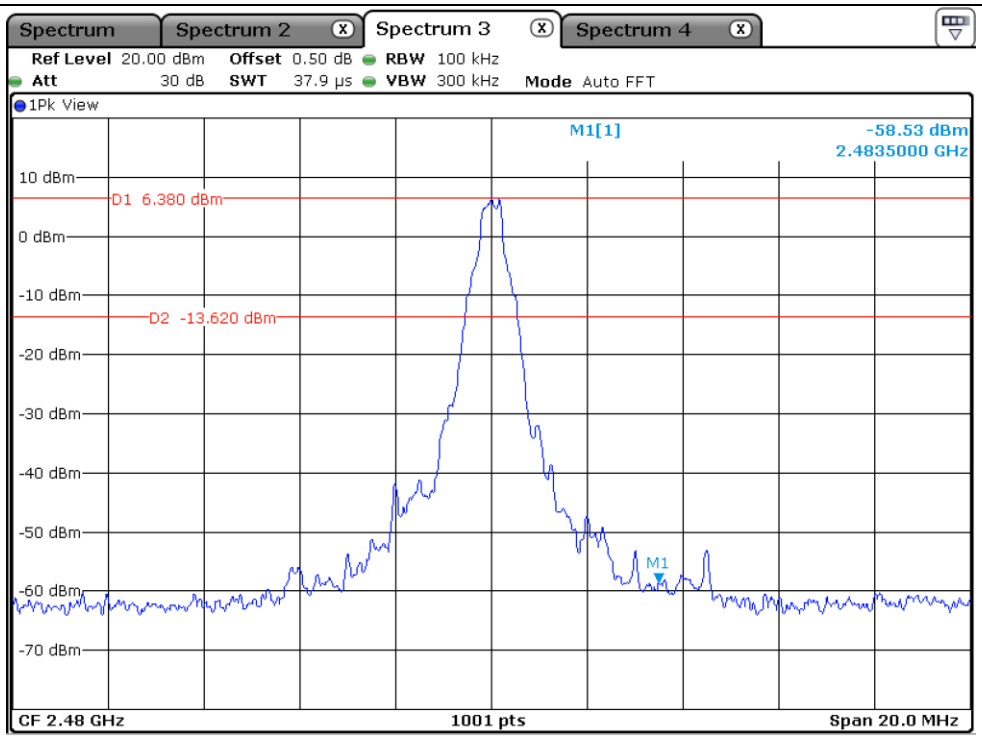
12.5.1 Test data for 1 Mbps



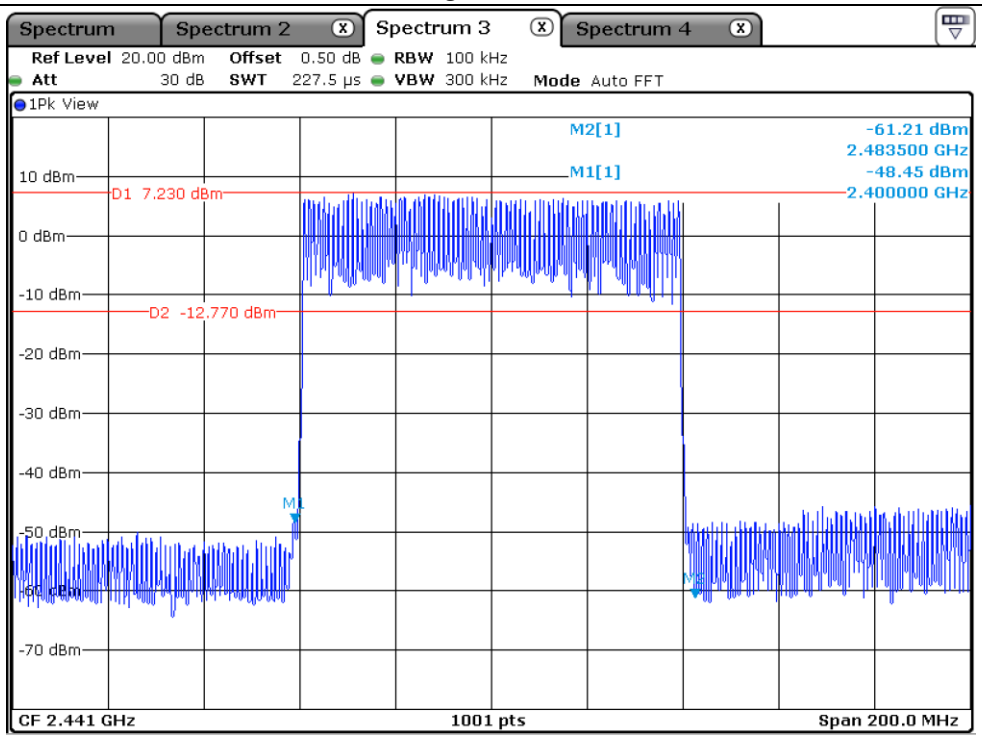
Low Channel



Middle Channel



High Channel



Hopping Mode

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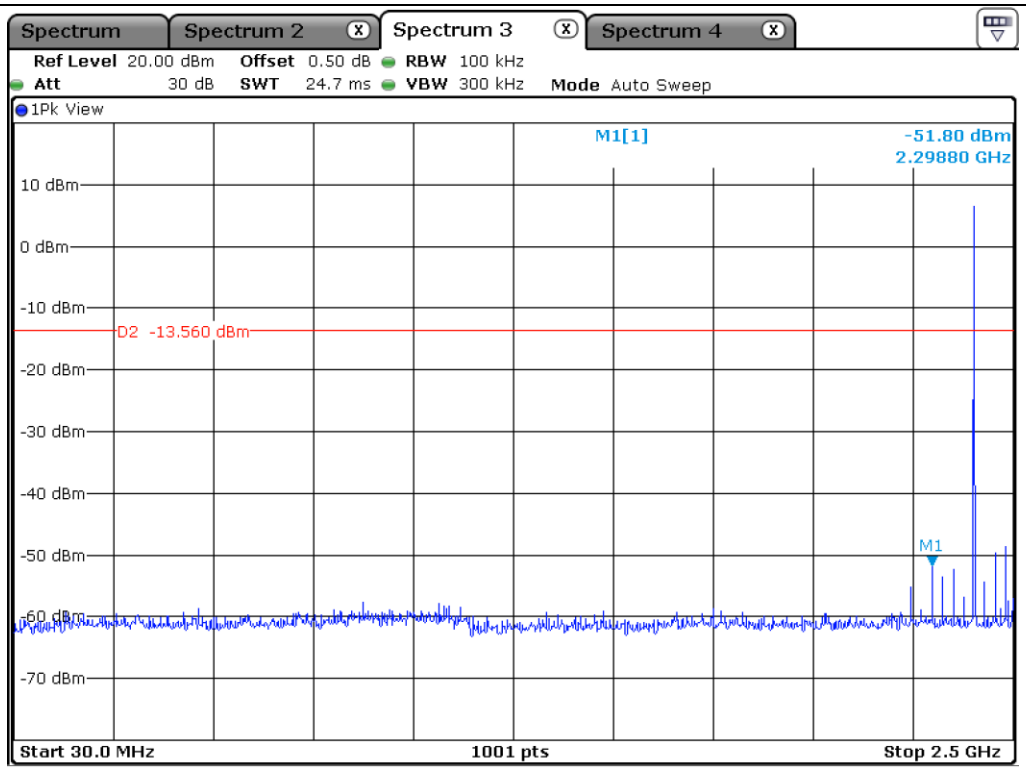
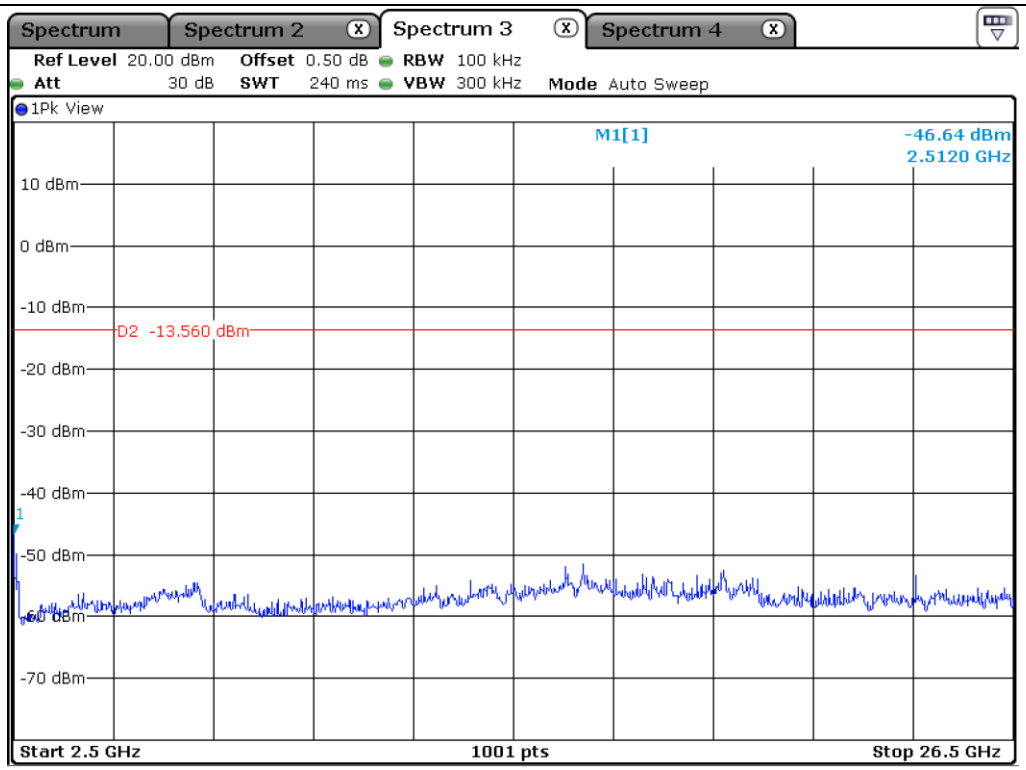
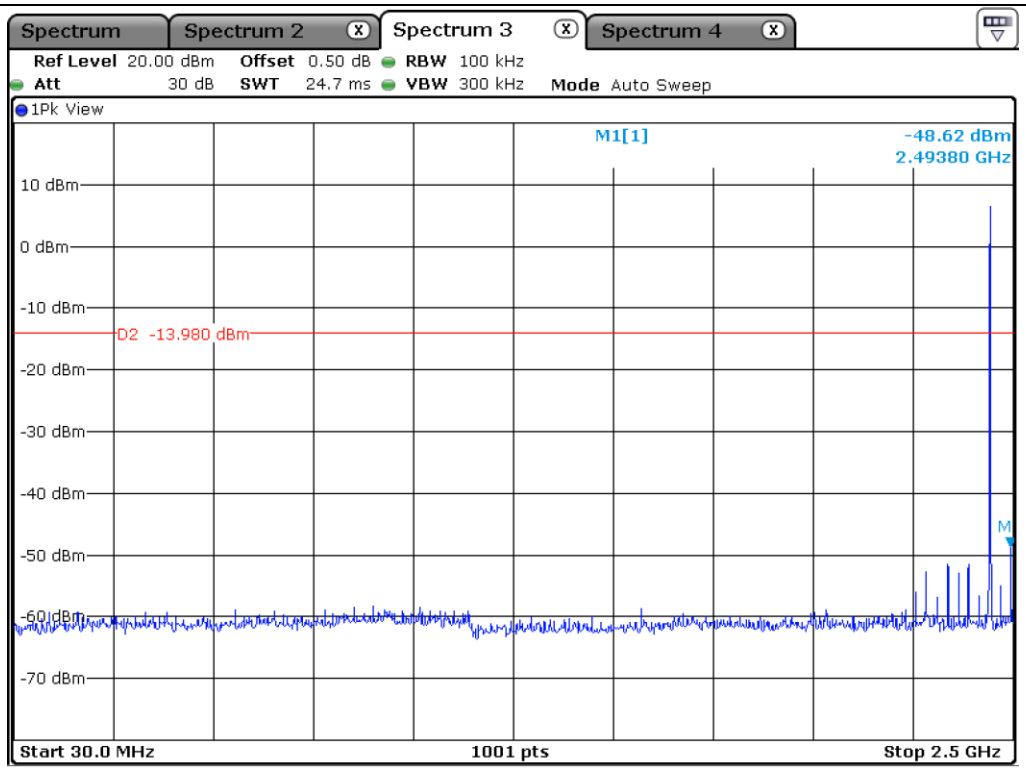


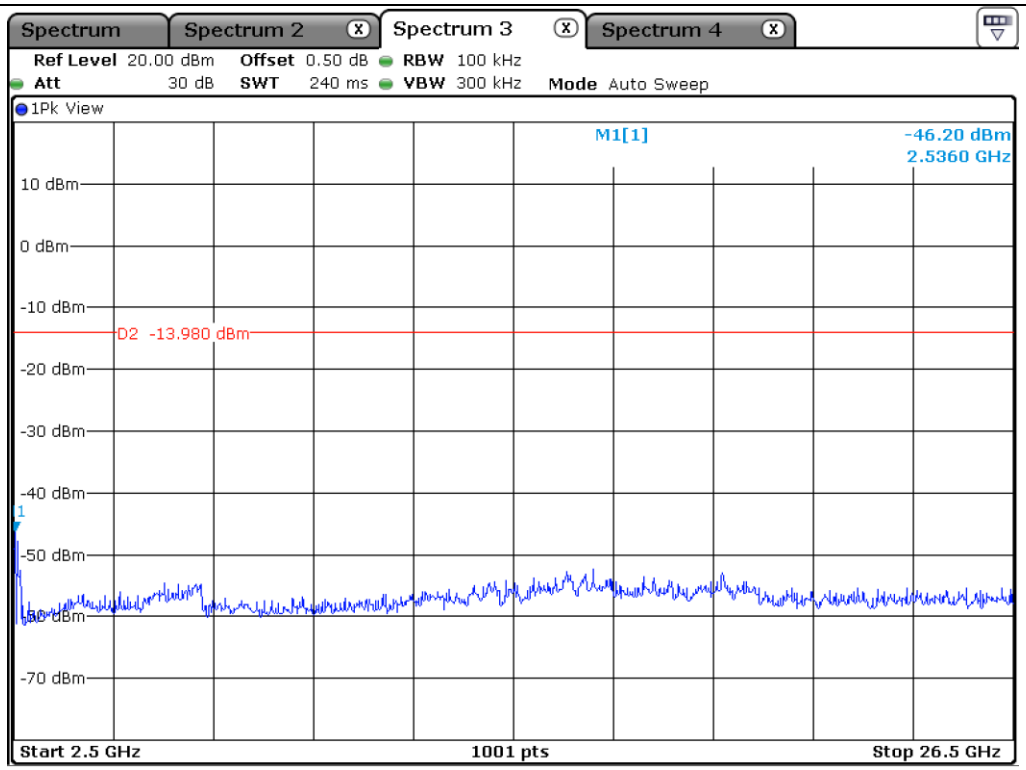
Low Channel



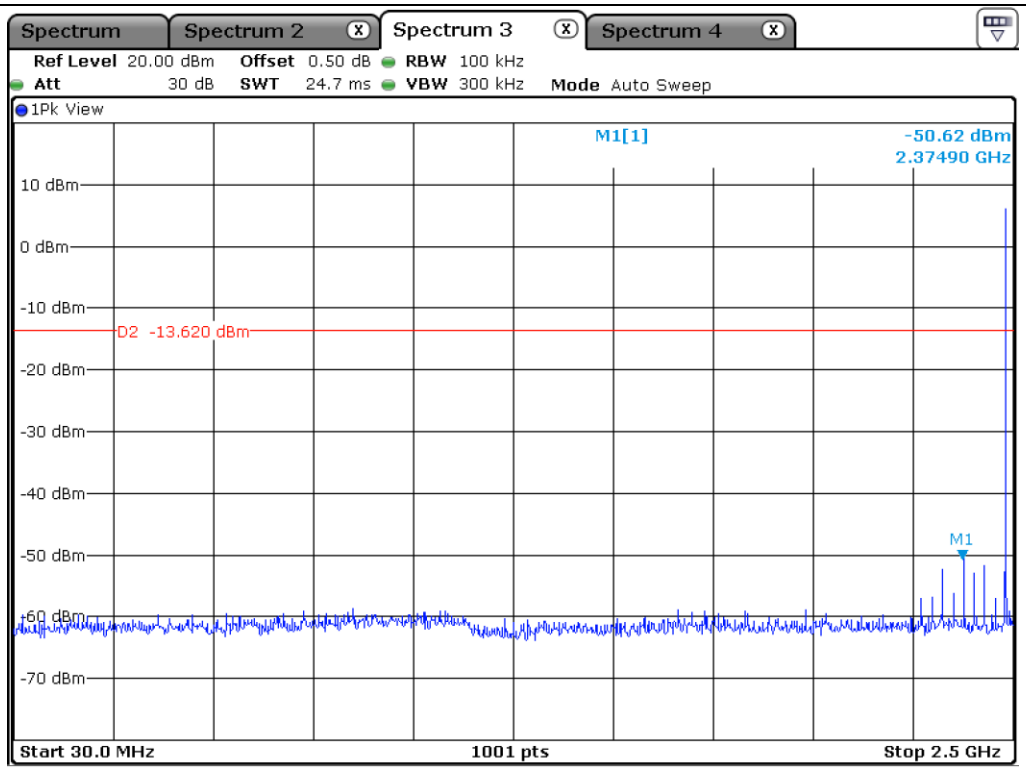
Low Channel



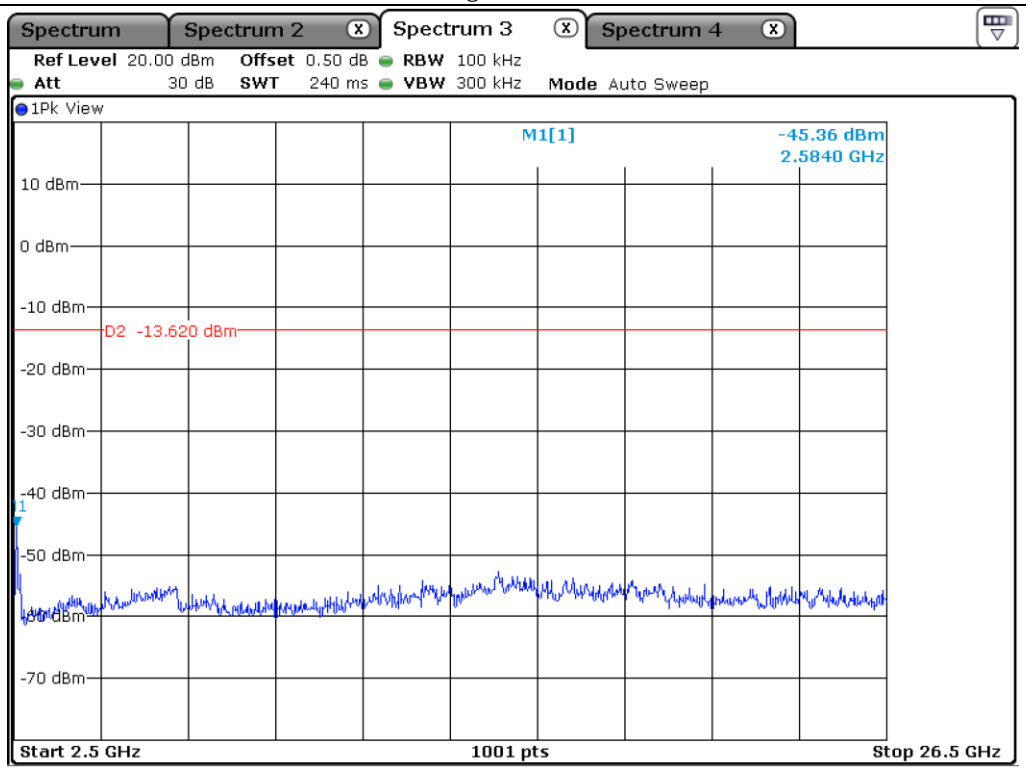
Middle Channel



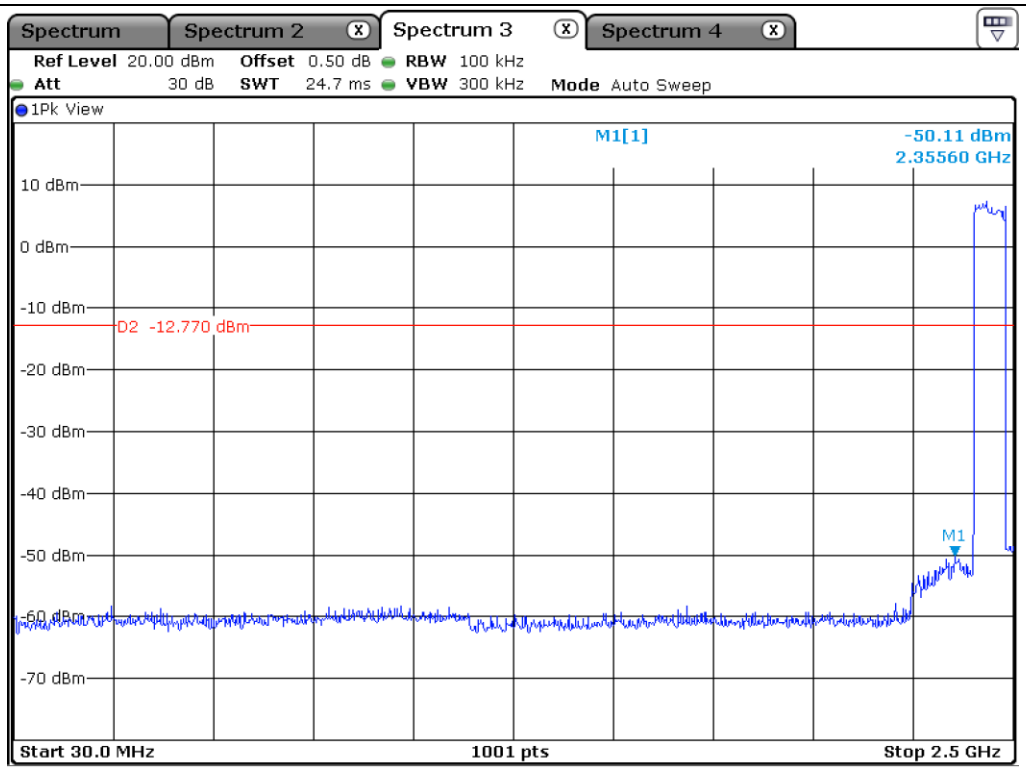
Middle Channel



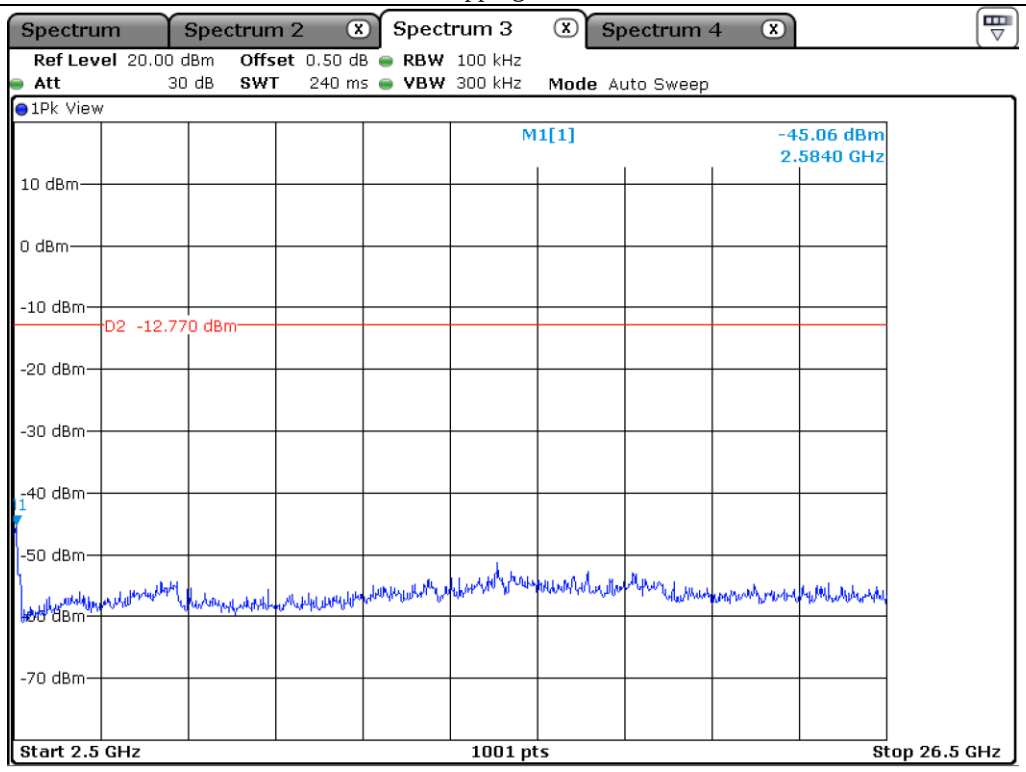
High Channel



High Channel

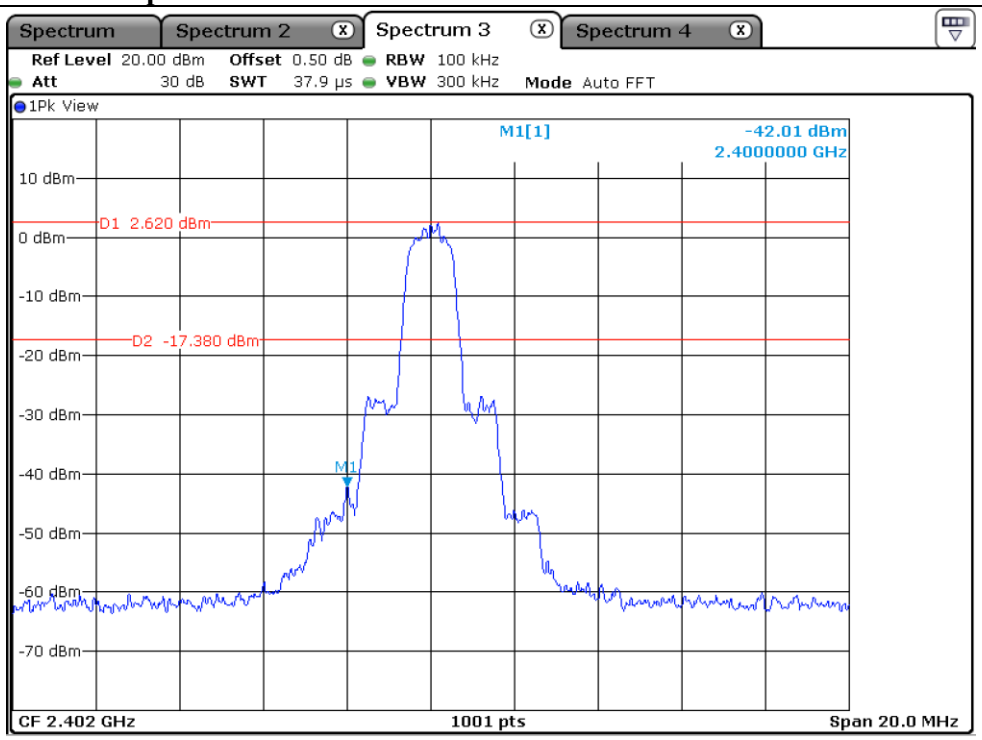


Hopping Mode

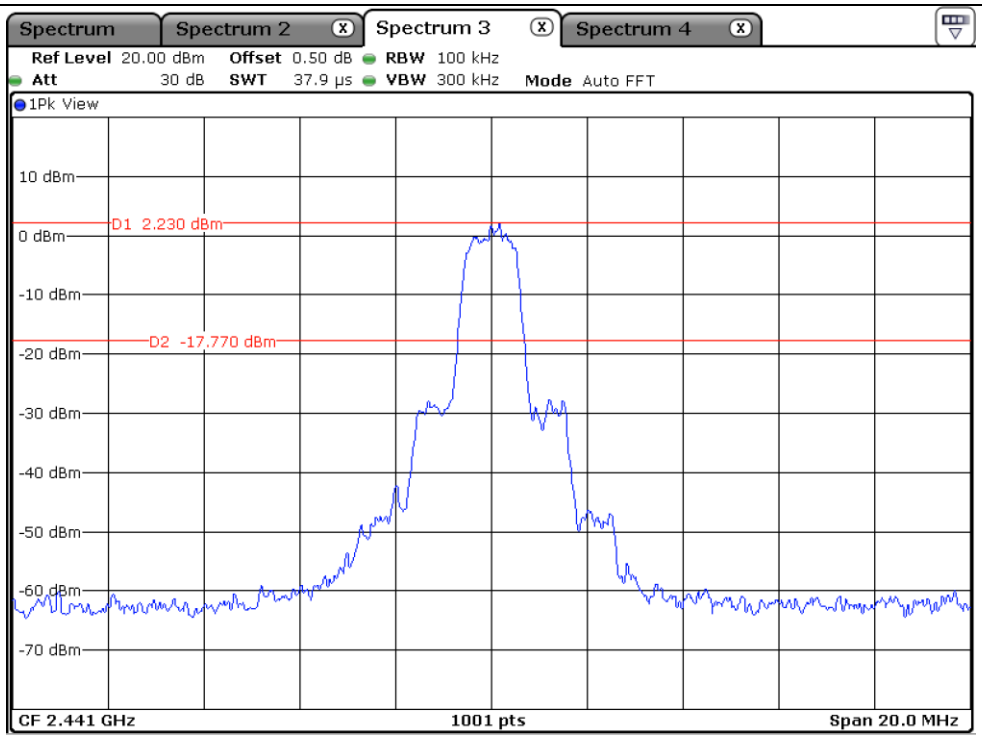


Hopping Mode

12.5.2 Test data for 2 Mbps



Low Channel



Middle Channel

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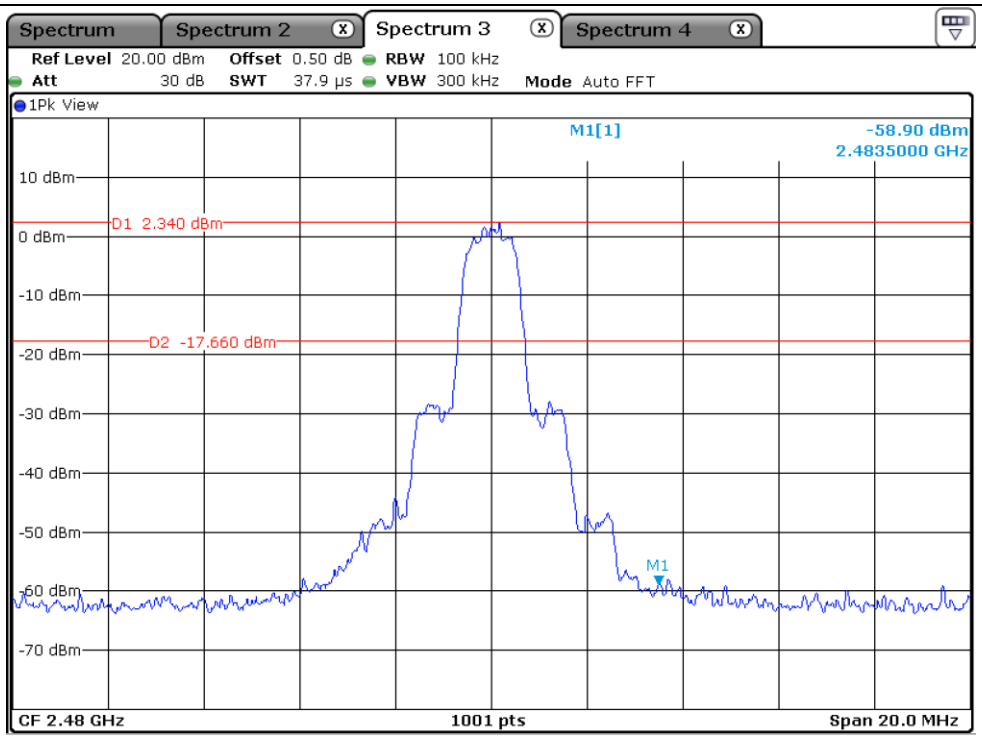
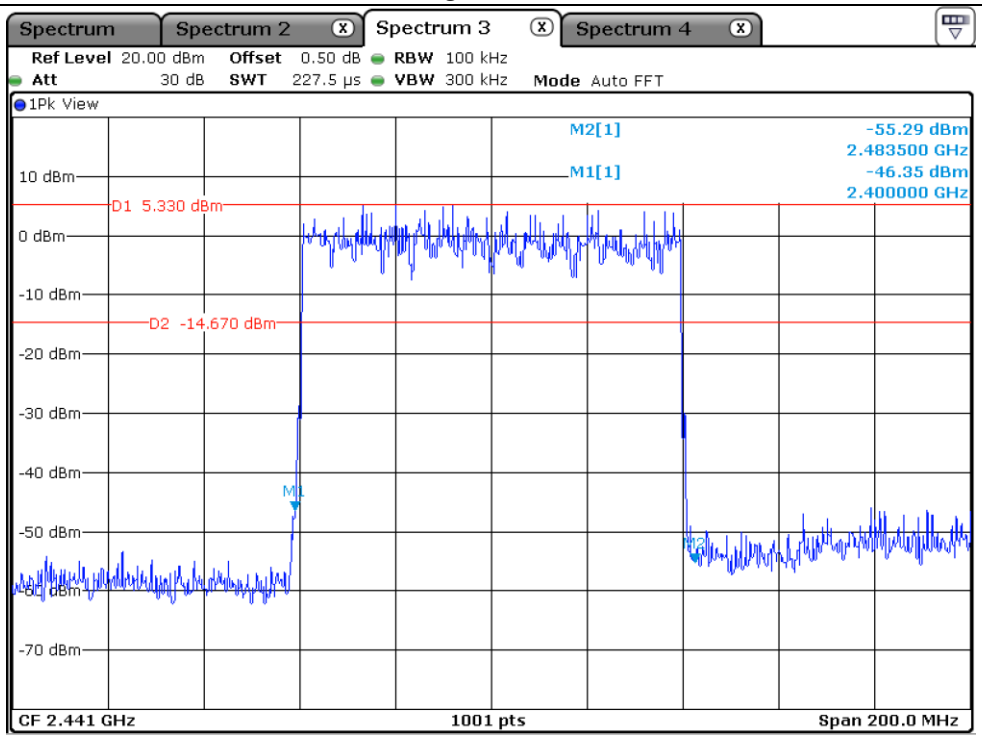


High Channel



Hopping Mode

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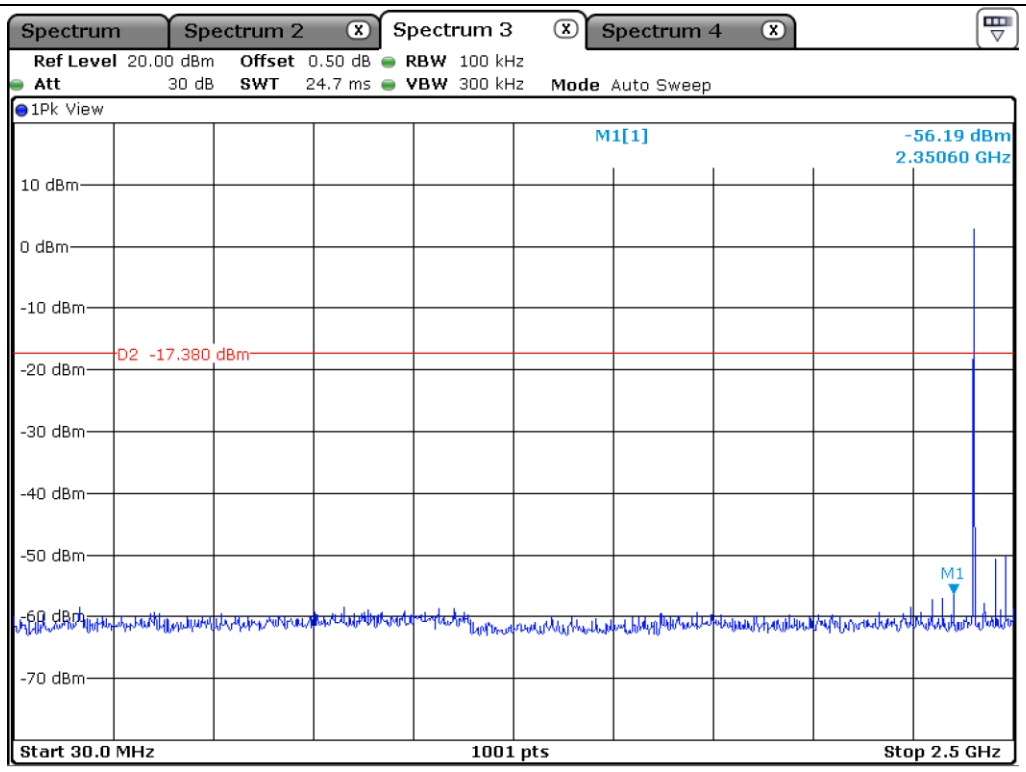
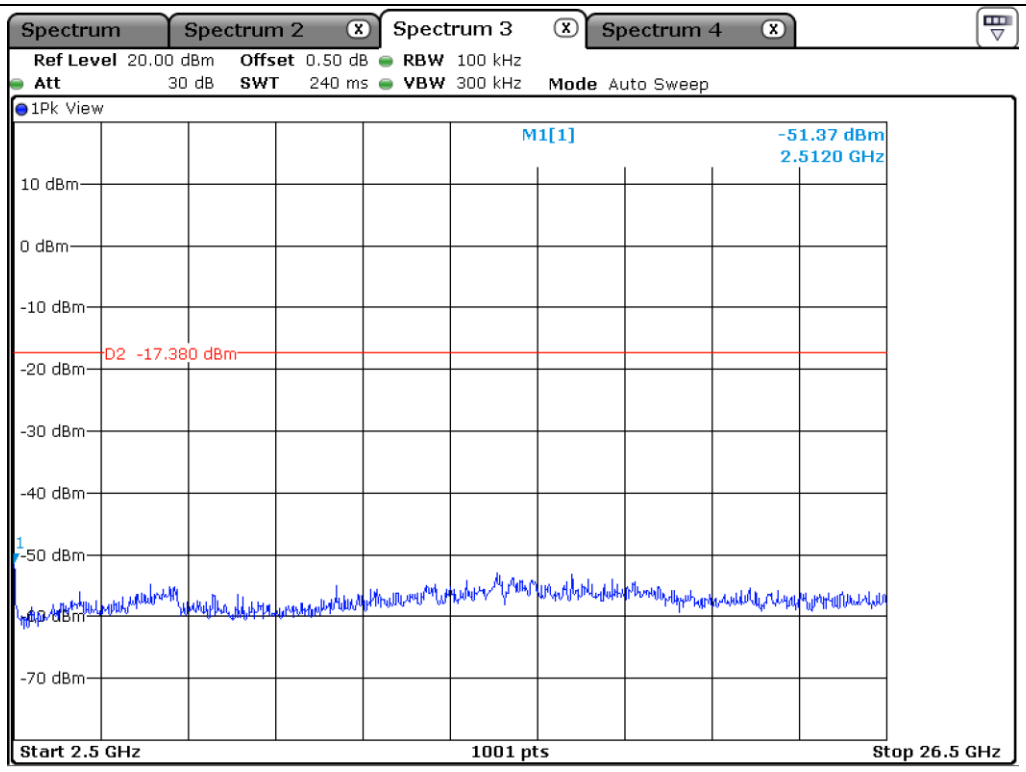
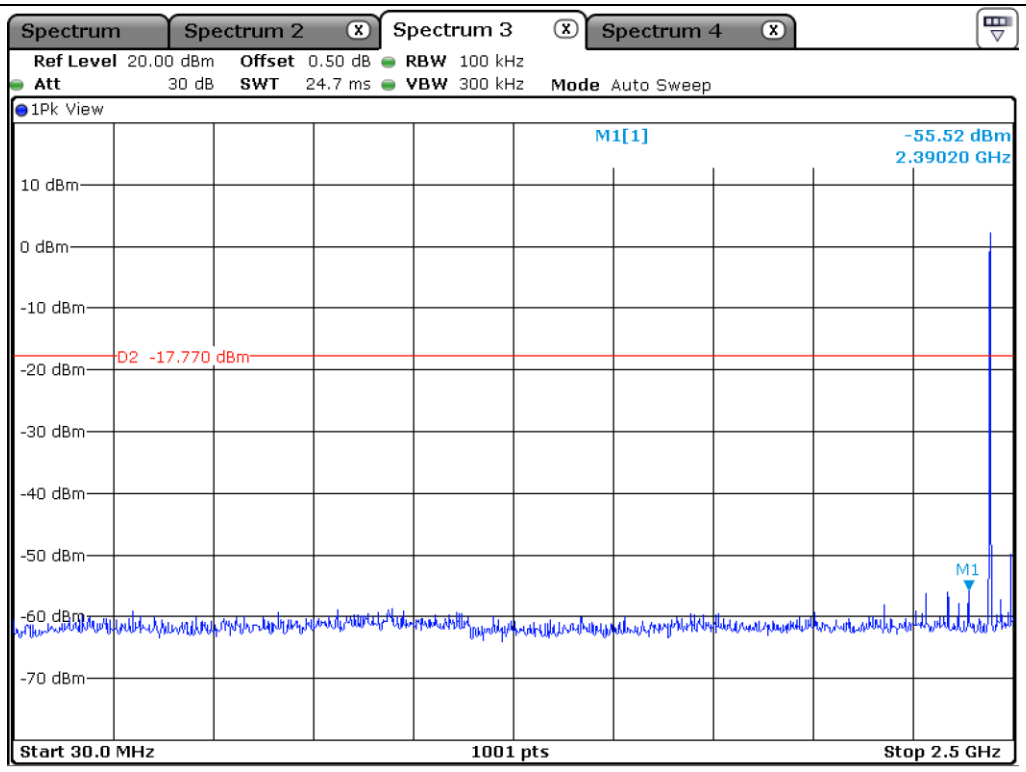


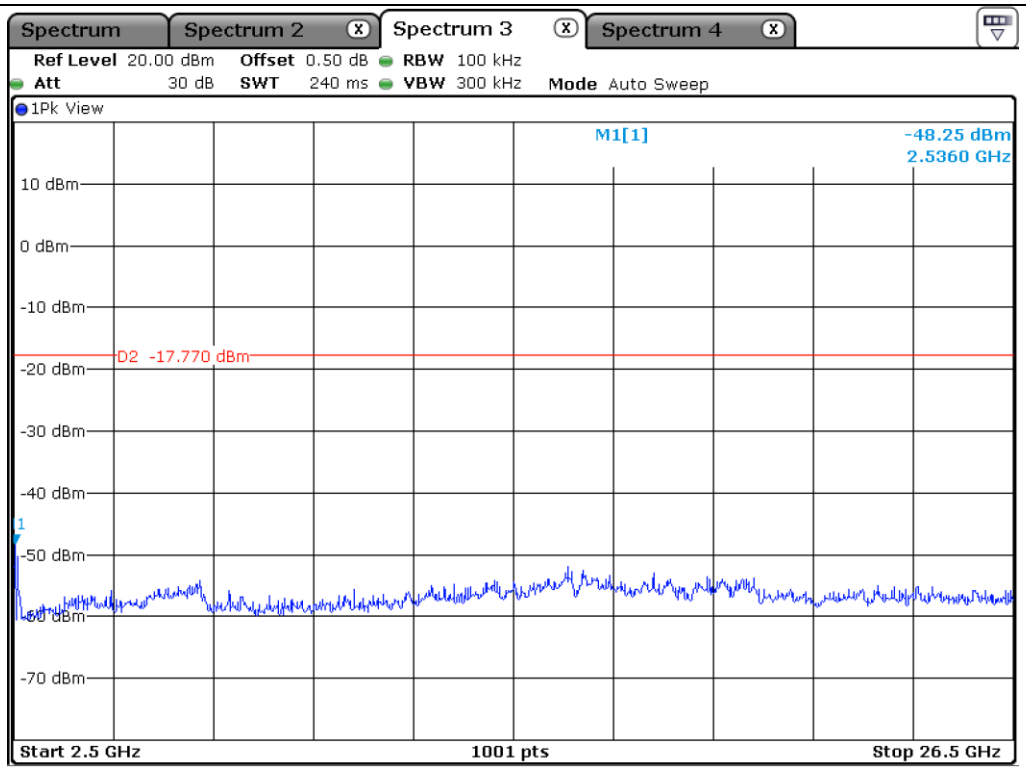
Low Channel



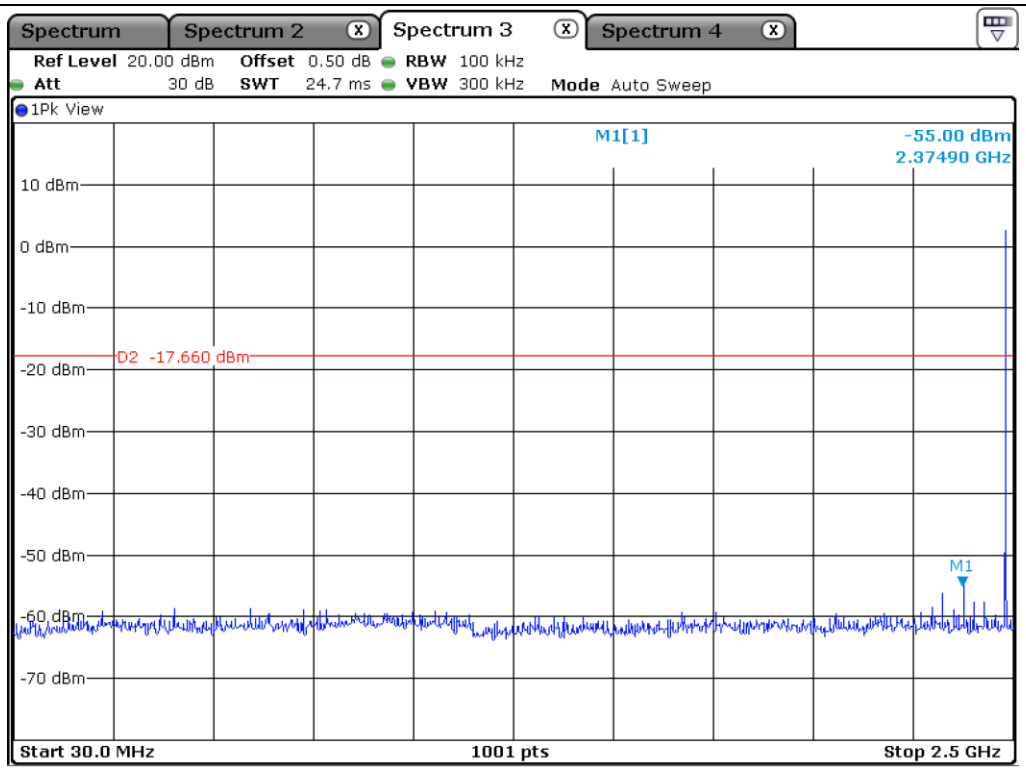
Low Channel



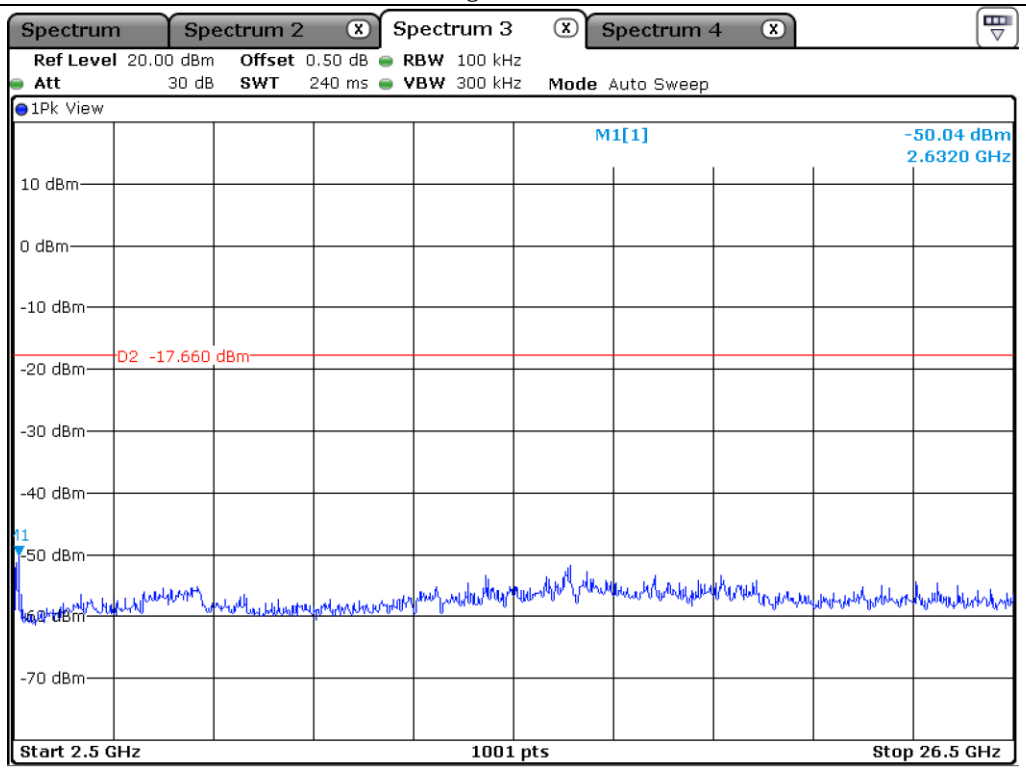
Middle Channel



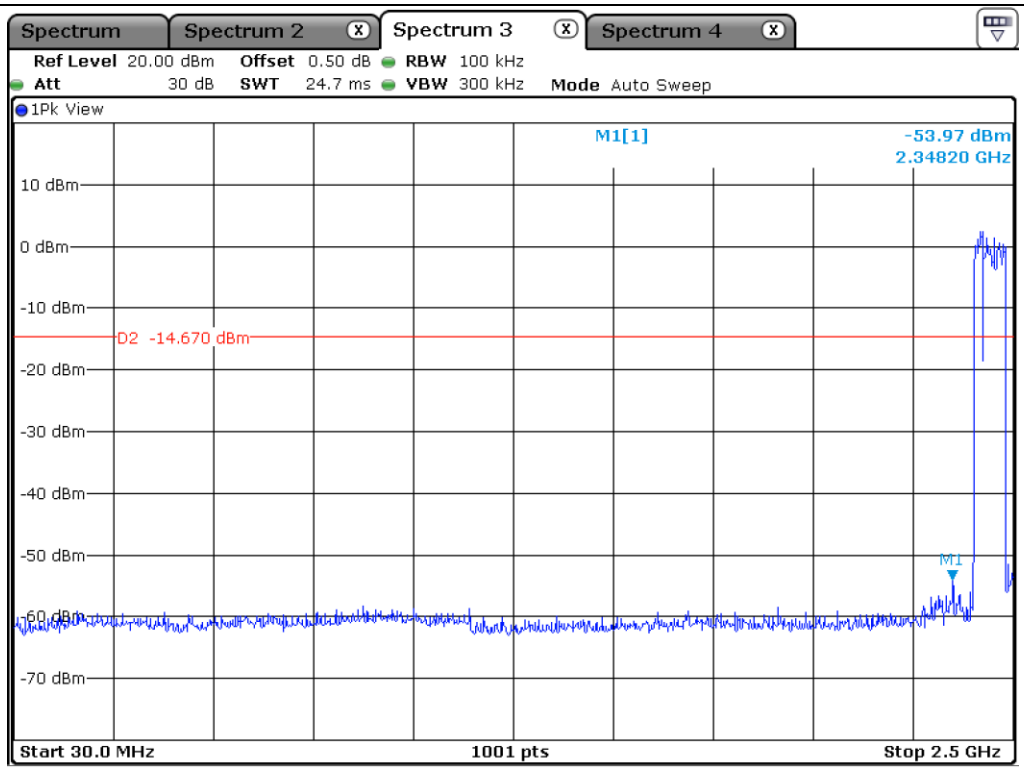
Middle Channel



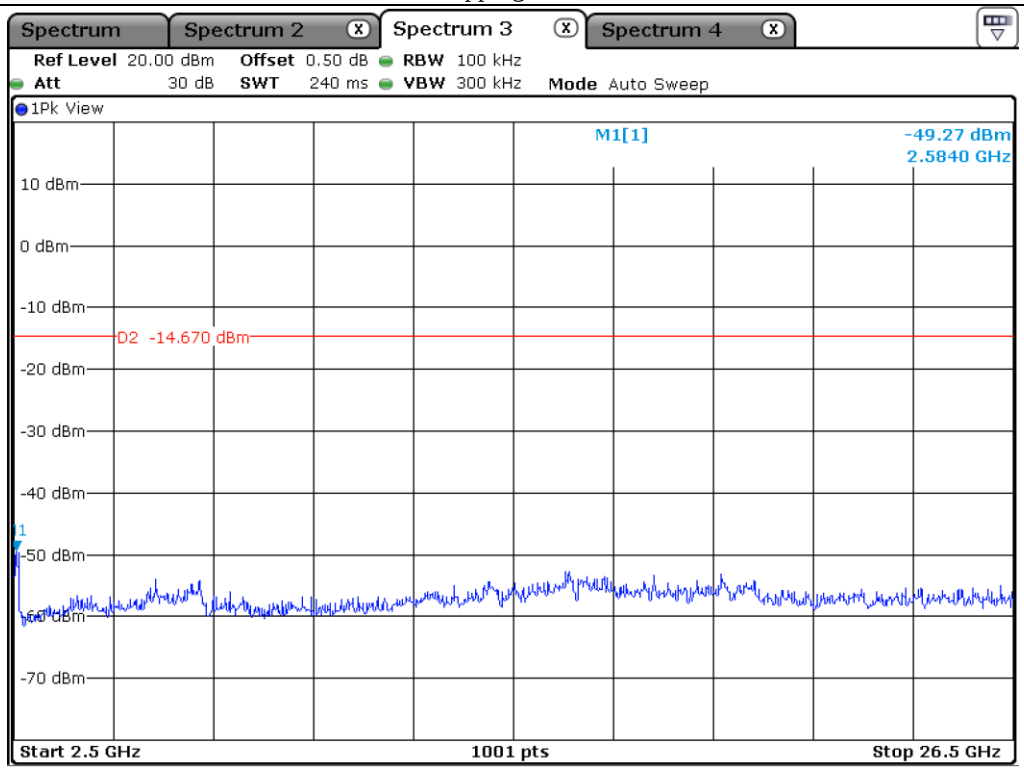
High Channel



High Channel

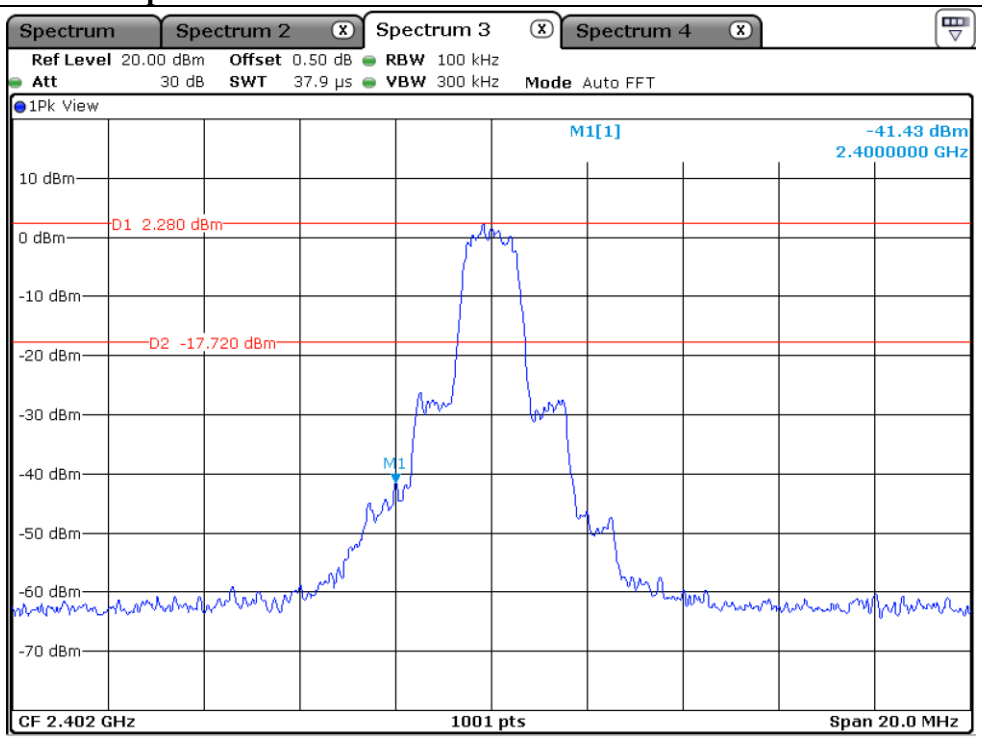


Hopping Mode

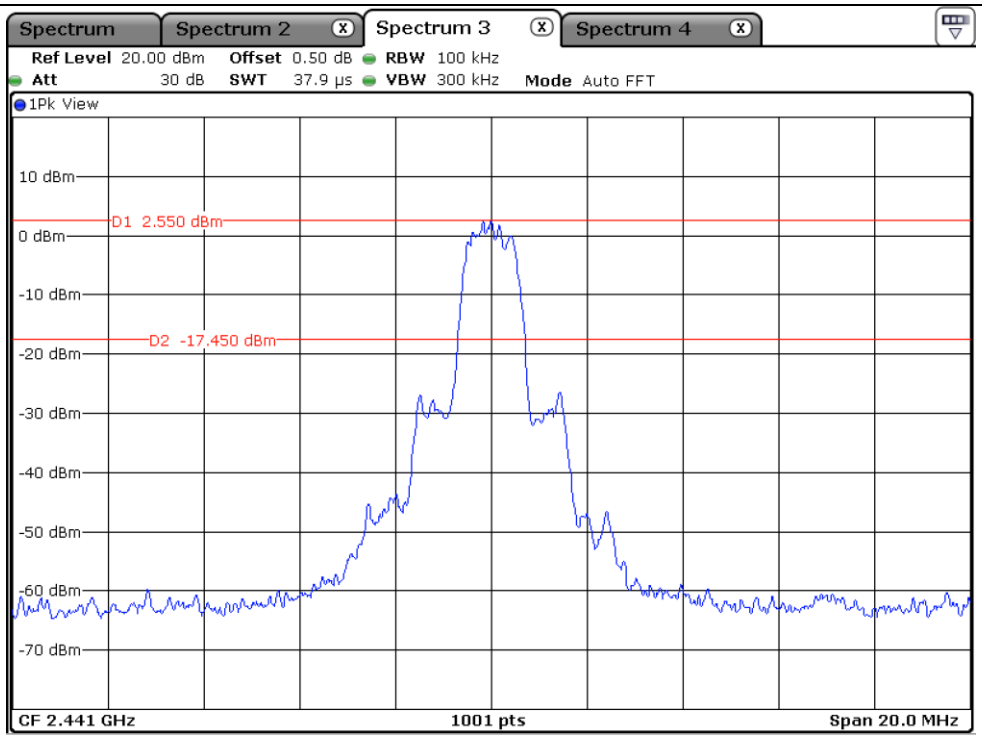


Hopping Mode

12.5.3 Test data for 3 Mbps



Low Channel



Middle Channel

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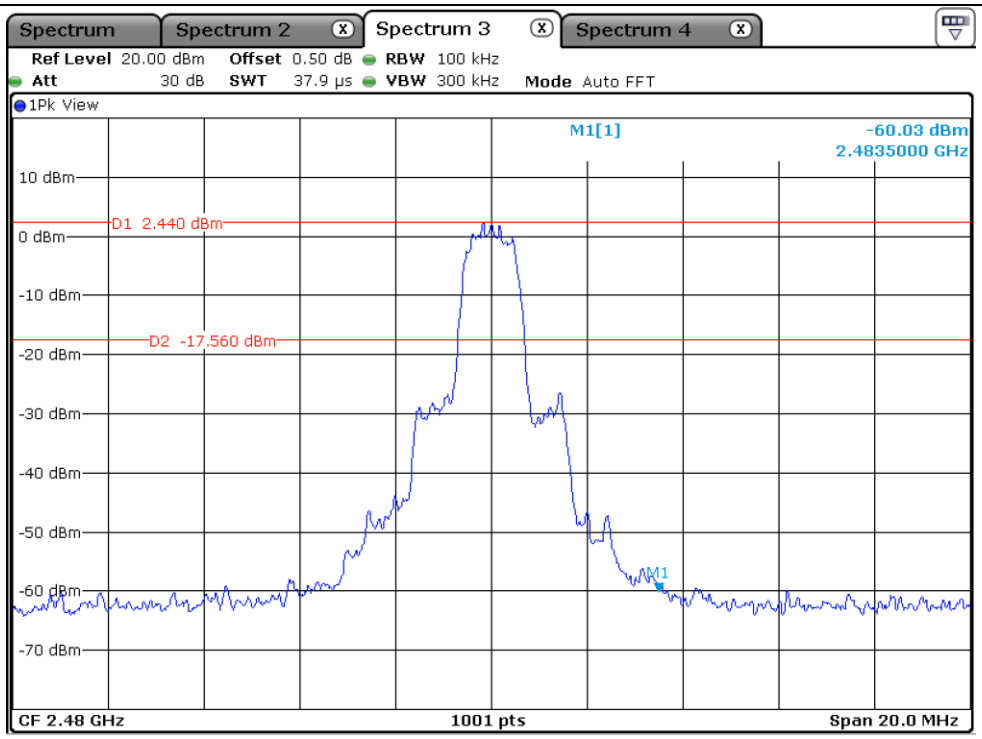
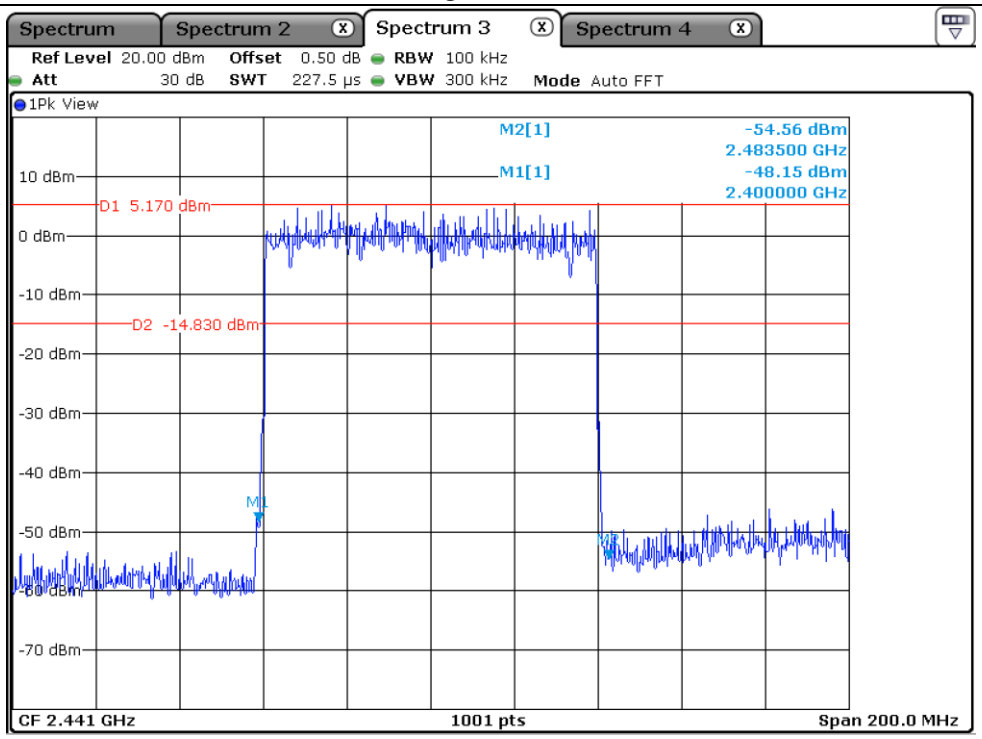


High Channel



Hopping Mode

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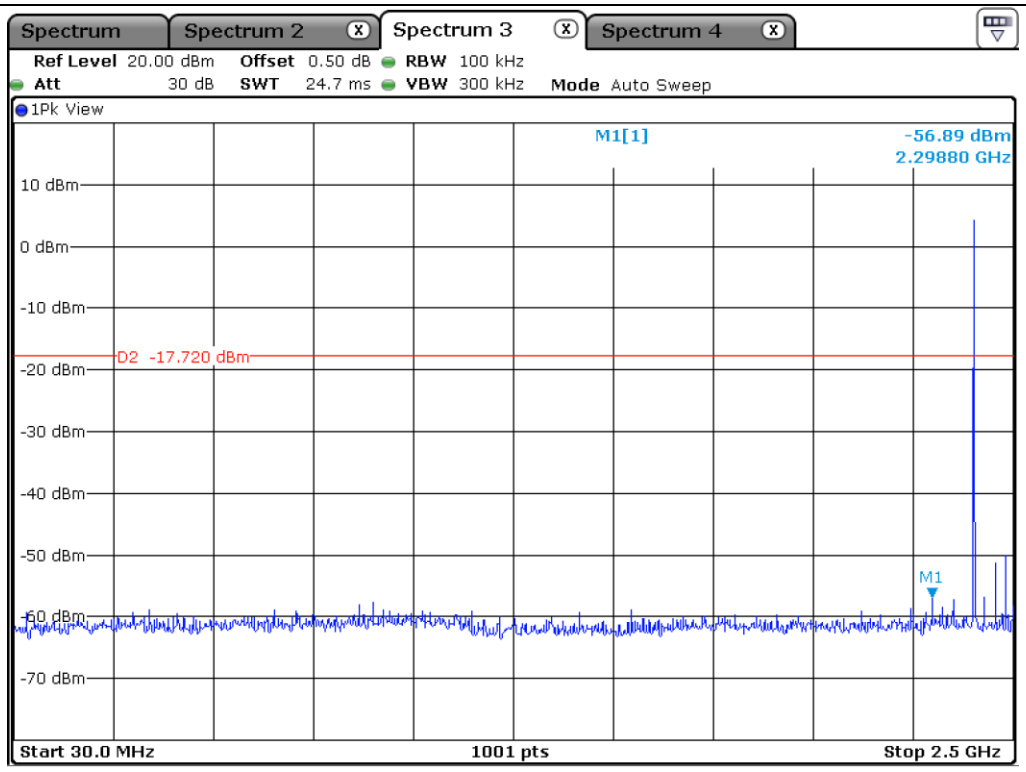
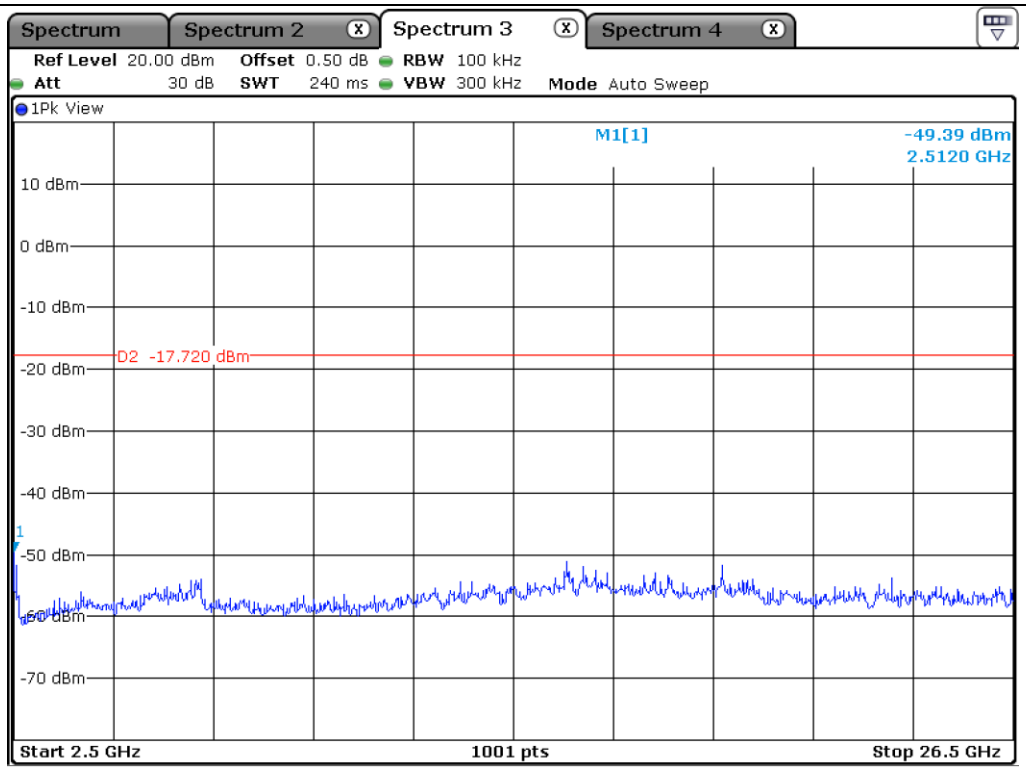
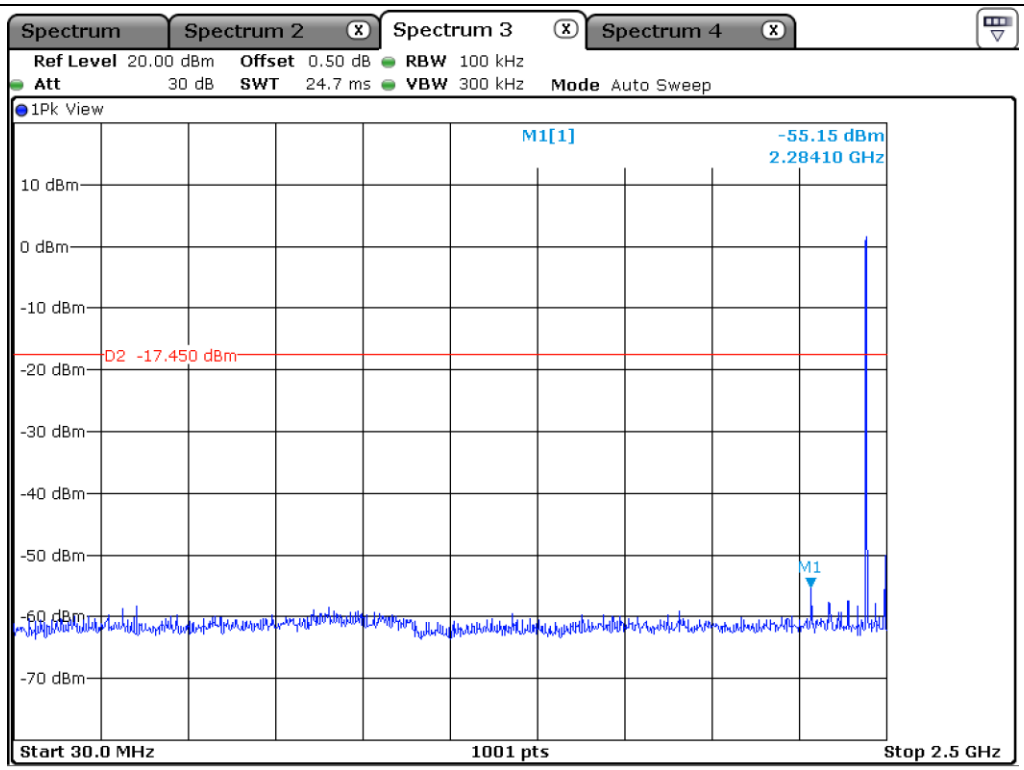


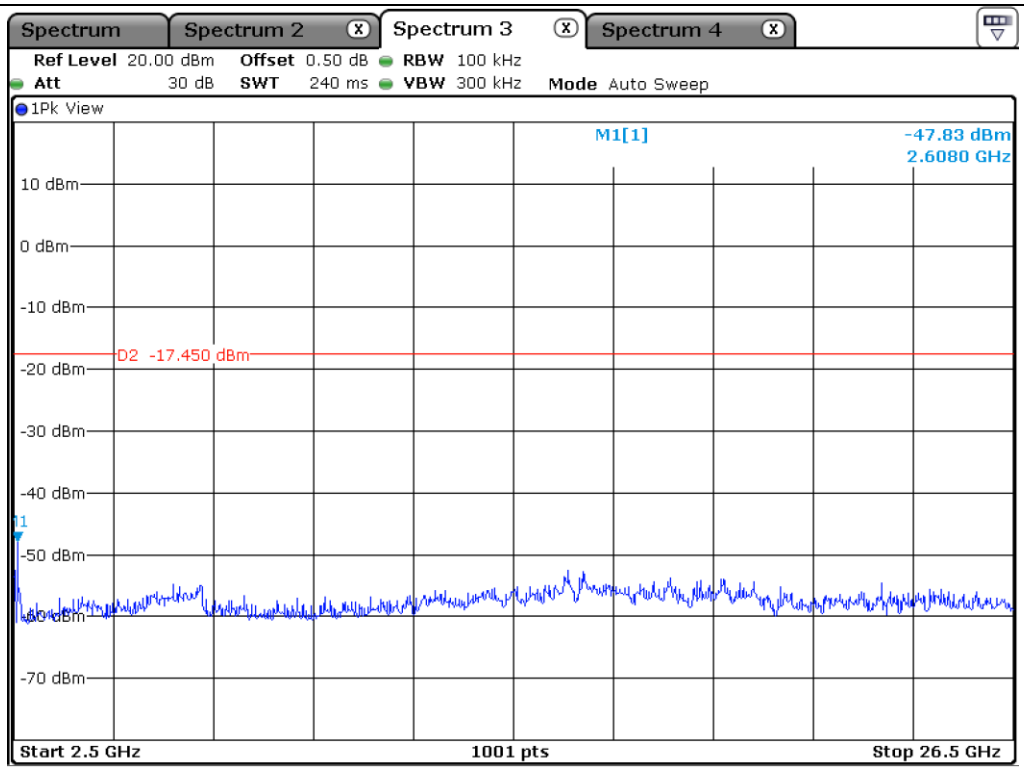
Low Channel



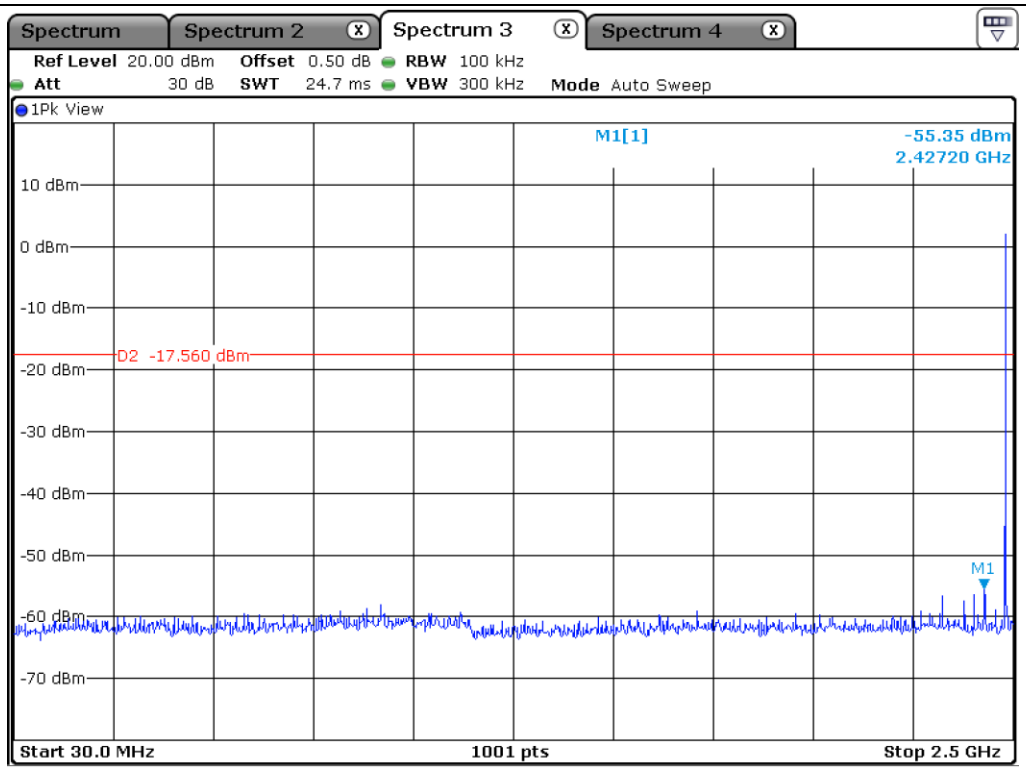
Low Channel



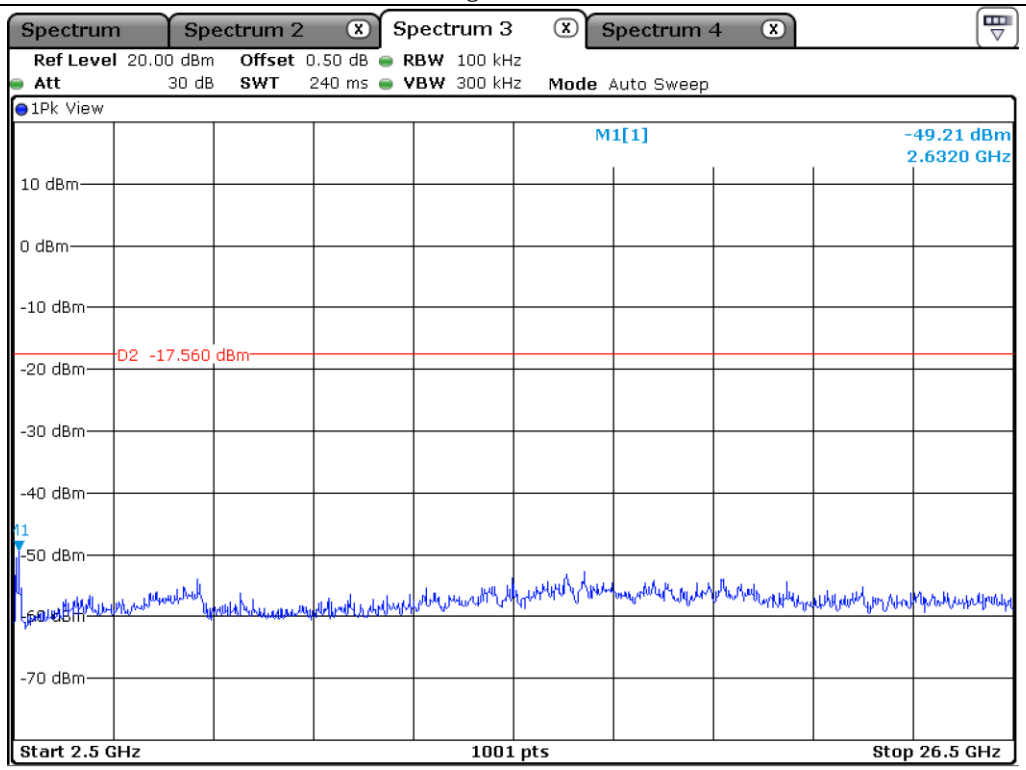
Middle Channel



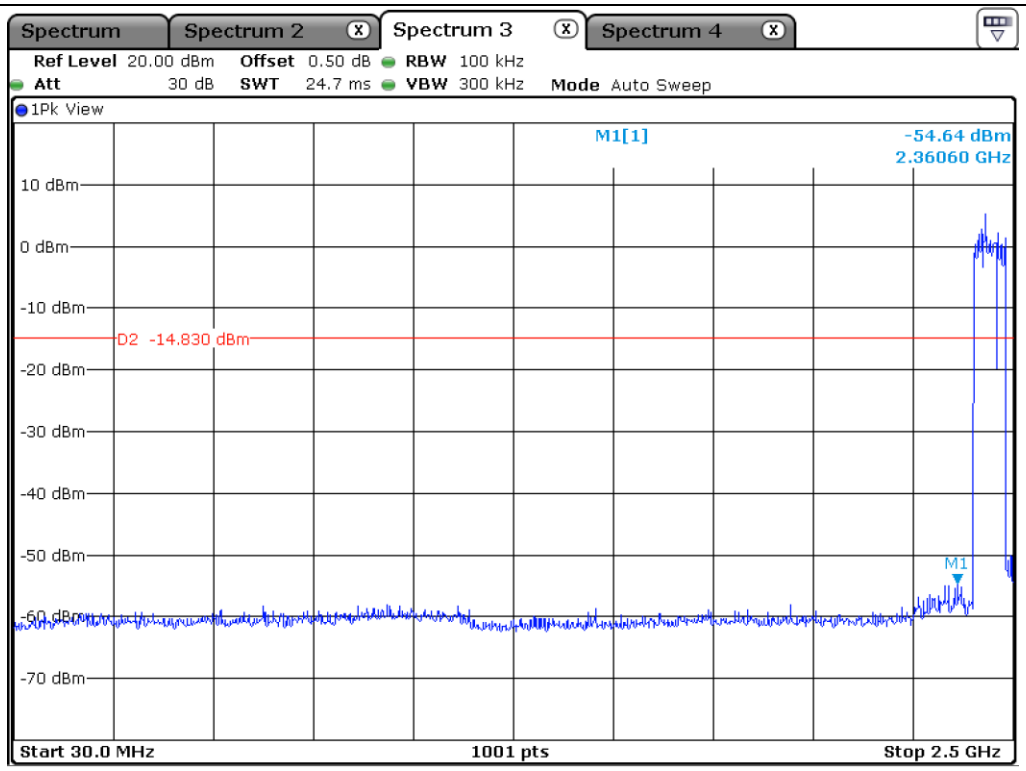
Middle Channel



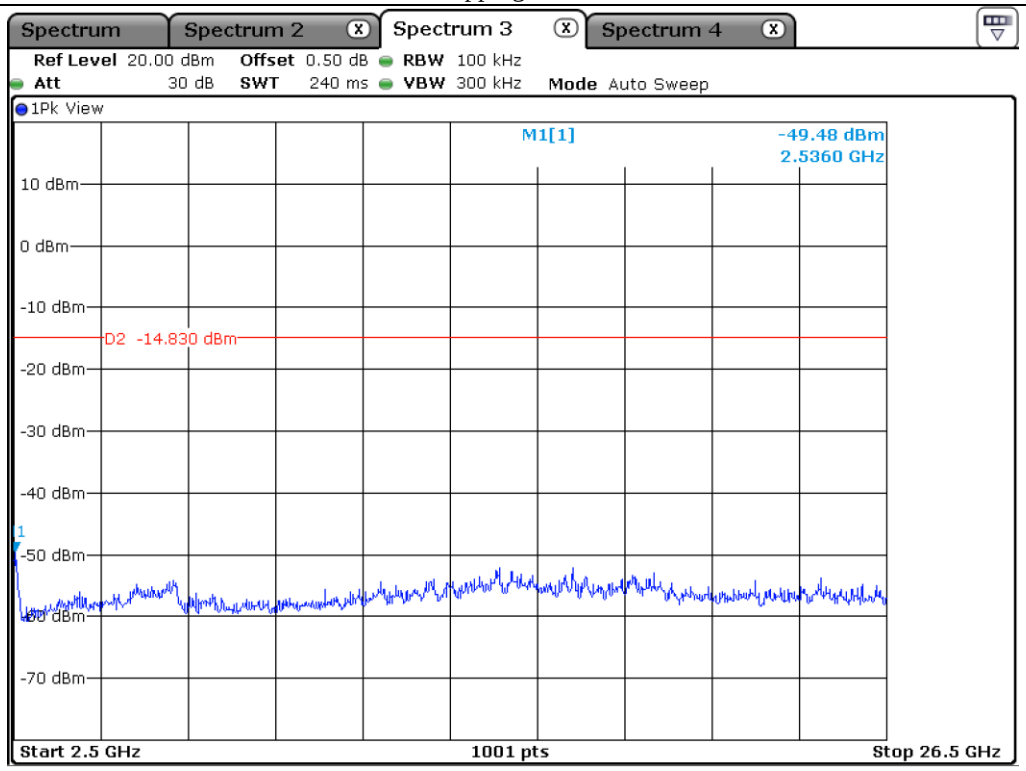
High Channel



High Channel



Hopping Mode



Hopping Mode

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

-. 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 : 76.60 %

-. Result : PASSED

Frequency (MHz)	Reading (dBμV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBμV/m)	Limits (dBμV/m)	Margin (dB)
Test Data for Low Channel										
2 350.12	56.21	Peak	H	28.30	8.12	46.15	-	46.48	74.00	27.52
2 350.03	52.88	Average	H	28.30	8.12	46.15	1.16	44.31	54.00	9.69
2 323.83	54.22	Peak	V	28.30	8.12	46.15	-	44.49	74.00	29.51
2 324.02	47.98	Average	V	28.30	8.12	46.15	1.16	39.41	54.00	14.59
Test Data for High Channel										
2 484.94	52.56	Peak	H	28.70	8.20	46.06	-	43.40	74.00	30.60
2 483.50	43.36	Average	H	28.70	8.20	46.06	1.16	35.36	54.00	18.64
2 484.19	50.50	Peak	V	28.70	8.20	46.06	-	41.34	74.00	32.66
2 484.02	42.80	Average	V	28.70	8.20	46.06	1.16	34.80	54.00	19.20

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 – AMP Gain + Duty Factor

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12.6.1.2 Test data for 2 Mbps

-. 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	AMP Gain	Duty Factor (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel										
2 323.92	55.84	Peak	H	28.30	8.12	46.15	-	46.11	74.00	27.89
2 350.03	49.14	Average	H	28.30	8.12	46.15	1.13	40.54	54.00	13.46
2 320.06	52.84	Peak	V	28.30	8.12	46.15	-	43.11	74.00	30.89
2 349.93	45.45	Average	V	28.30	8.12	46.15	1.13	36.85	54.00	17.15
Test Data for High Channel										
2 494.99	52.81	Peak	H	28.70	8.20	46.06	-	43.65	74.00	30.35
2 487.82	42.37	Average	H	28.70	8.20	46.06	1.13	34.34	54.00	19.66
2 484.40	51.21	Peak	V	28.70	8.20	46.06	-	42.05	74.00	31.95
2 485.56	42.10	Average	V	28.70	8.20	46.06	1.13	34.07	54.00	19.93

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 – AMP Gain + Duty Factor

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12.6.1.3 Test data for 3 Mbps

-. 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	AMP Gain	Duty Factor (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel										
2 350.21	55.52	Peak	H	28.30	8.12	46.15	-	45.79	74.00	28.21
2 349.93	48.97	Average	H	28.30	8.12	46.15	1.13	40.37	54.00	13.63
2 323.83	51.77	Peak	V	28.30	8.12	46.15	-	42.04	74.00	31.96
2 349.93	44.7	Average	V	28.30	8.12	46.15	1.13	36.10	54.00	17.90
Test Data for High Channel										
2 483.50	52.19	Peak	H	28.70	8.20	46.06	-	43.03	74.00	30.97
2 483.50	42.68	Average	H	28.70	8.20	46.06	1.13	34.65	54.00	19.35
2 486.66	51.40	Peak	V	28.70	8.20	46.06	-	42.24	74.00	31.76
2 483.50	42.02	Average	V	28.70	8.20	46.06	1.13	33.99	54.00	20.01

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 – AMP Gain + Duty Factor

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12.6.3 Spurious & Harmonic Radiated Emission above 1 GHz

12.6.3.1 Test data for 1 Mbps

-. 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 : 76.60 %

-. Result : PASSED

Frequency (MHz)	Reading (dBµV)	Detector Mode	Ant. Pol. (H/V)	Ant. Factor	Cable Loss	AMP Gain	Duty Factor (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel										
4 804.00	53.55	Peak	H	33.40	11.19	45.73		52.41	74.00	21.59
4 804.00	44.55	Average	H	33.40	11.19	45.73	1.16	44.57	54.00	9.43
4 804.00	51.55	Peak	V	33.40	11.19	45.73		50.41	74.00	23.59
4 804.00	42.38	Average	V	33.40	11.19	45.73	1.16	42.40	54.00	11.60
Test Data for Middle Channel										
4 882.00	53.54	Peak	H	33.50	11.21	45.80		52.45	74.00	21.55
4 882.00	45.37	Average	H	33.50	11.21	45.80	1.16	45.44	54.00	8.56
4 882.00	52.15	Peak	V	33.50	11.21	45.80		51.06	74.00	22.94
4 882.00	43.55	Average	V	33.50	11.21	45.80	1.16	43.62	54.00	10.38
Test Data for High Channel										
4 960.00	53.36	Peak	H	33.40	11.28	45.89		52.15	74.00	21.85
4 960.00	43.24	Average	H	33.40	11.28	45.89	1.16	43.19	54.00	10.81
4 960.00	51.89	Peak	V	33.40	11.28	45.89		50.68	74.00	23.32
4 960.00	41.51	Average	V	33.40	11.28	45.89	1.16	41.46	54.00	12.54

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

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

Total Level = Reading + Antenna Factor + Cable Loss – AMP Gain + Duty Factor

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12.6.3.2 Test data for 2 Mbps

-. 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	AMP Gain	Duty Factor (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel										
4 804.00	53.3	Peak	H	33.40	11.19	45.73	-	52.16	74.00	21.84
4 804.00	42.19	Average	H	33.40	11.19	45.73	1.13	42.18	54.00	11.82
4 804.00	51.86	Peak	V	33.40	11.19	45.73	-	50.72	74.00	23.28
4 804.00	41.22	Average	V	33.40	11.19	45.73	1.13	41.21	54.00	12.79
Test Data for Middle Channel										
4 882.00	51.61	Peak	H	33.50	11.21	45.80	-	50.52	74.00	23.48
4 882.00	42.1	Average	H	33.50	11.21	45.80	1.13	42.14	54.00	11.86
4 882.00	51.48	Peak	V	33.50	11.21	45.80	-	50.39	74.00	23.61
4 882.00	42.30	Average	V	33.50	11.21	45.80	1.13	42.34	54.00	11.66
Test Data for High Channel										
4 960.00	52.18	Peak	H	33.40	11.28	45.89	-	50.97	74.00	23.03
4 960.00	42.67	Average	H	33.40	11.28	45.89	1.13	42.59	54.00	11.41
4 960.00	51.68	Peak	V	33.40	11.28	45.89	-	50.47	74.00	23.53
4 960.00	42.11	Average	V	33.40	11.28	45.89	1.13	42.03	54.00	11.97

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

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

Total Level = Reading + Antenna Factor + Cable Loss – AMP Gain + Duty Factor

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12.6.3.3 Test data for 3 Mbps

-. 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	AMP Gain	Duty Factor (dB)	Total (dBµV/m)	Limits (dBµV/m)	Margin (dB)
Test Data for Low Channel										
4 804.00	52.5	Peak	H	33.40	11.19	45.73	-	51.36	74.00	22.64
4 804.00	42.56	Average	H	33.40	11.19	45.73	1.13	42.55	54.00	11.45
4 804.00	51.88	Peak	V	33.40	11.19	45.73	-	50.74	74.00	23.26
4 804.00	42.16	Average	V	33.40	11.19	45.73	1.13	42.15	54.00	11.85
Test Data for Middle Channel										
4 882.00	52.33	Peak	H	33.50	11.21	45.80	-	51.24	74.00	22.76
4 882.00	42.22	Average	H	33.50	11.21	45.80	1.13	42.26	54.00	11.74
4 882.00	51.96	Peak	V	33.50	11.21	45.80	-	50.87	74.00	23.13
4 882.00	42.11	Average	V	33.50	11.21	45.80	1.13	42.15	54.00	11.85
Test Data for High Channel										
4 960.00	52.07	Peak	H	33.40	11.28	45.89	-	50.86	74.00	23.14
4 960.00	42.65	Average	H	33.40	11.28	45.89	1.13	42.57	54.00	11.43
4 960.00	51.68	Peak	V	33.40	11.28	45.89	-	50.47	74.00	23.53
4 960.00	41.23	Average	V	33.40	11.28	45.89	1.13	41.15	54.00	12.85

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

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

Total Level = Reading + Antenna Factor + Cable Loss – AMP Gain + Duty Factor

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13. RADIATED EMISSION TEST

13.1 Operating environment

Temperature	:	22 °C
Relative humidity	:	46 % 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.

13.3 Test Date

December 07, 2021 ~ December 09, 2021

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13.4 Test data for 30 MHz ~ 1 000 MHz

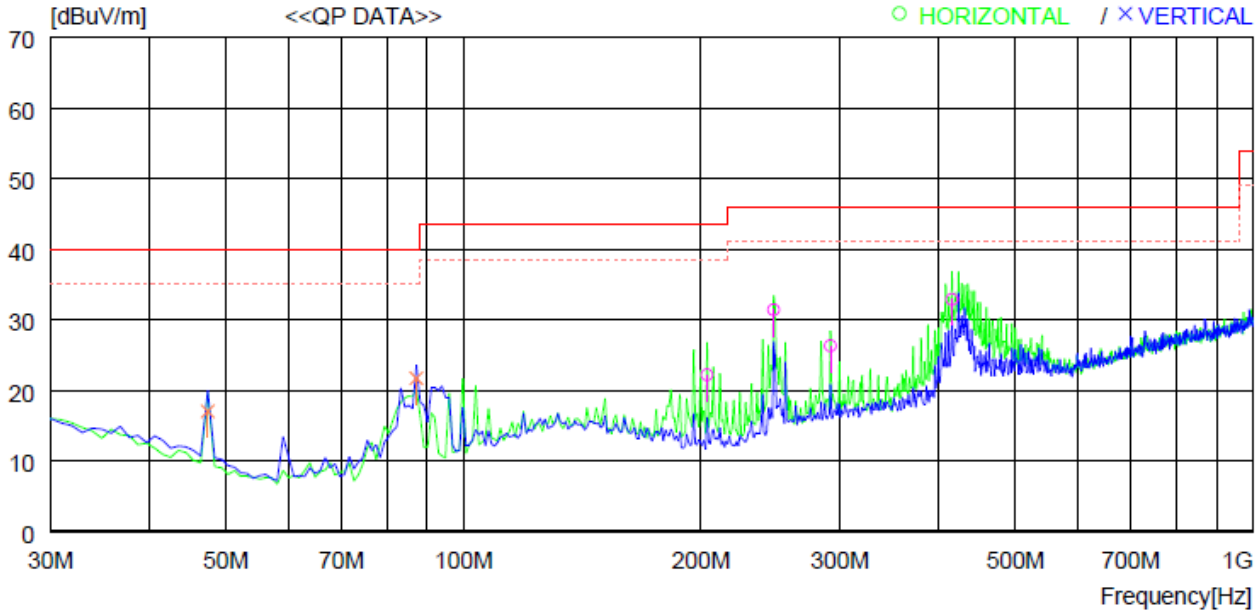
Humidity Level : 46 % R.H. Temperature: 22 °C

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Bluetooth module

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)



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	203.630	35.1	15.5	4.1	32.5	22.2	43.5	21.3	200	359
2	247.280	42.0	17.2	4.6	32.4	31.4	46.0	14.6	200	246
3	291.900	34.5	19.1	5.1	32.4	26.3	46.0	19.7	100	0
4	416.061	38.0	21.3	6.0	32.4	32.9	46.0	13.1	100	60
----- Vertical ------										
5	47.460	33.4	14.2	1.9	32.5	17.0	40.0	23.0	100	312
6	87.230	38.4	13.2	2.6	32.5	21.7	40.0	18.3	100	87

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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.								

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14. CONDUCTED EMISSION TEST

14.1 Operating environment

Temperature : 22 °C

Relative humidity : 46 % R.H.

14.2 Test set-up

The EUT was placed on a wooden table, 0.8 m height above the floor. Power was fed to the EUT through a 50 Ω / 50 μH + 5 Ω Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

14.3 Test Date

December 07, 2021 ~ December 09, 2021

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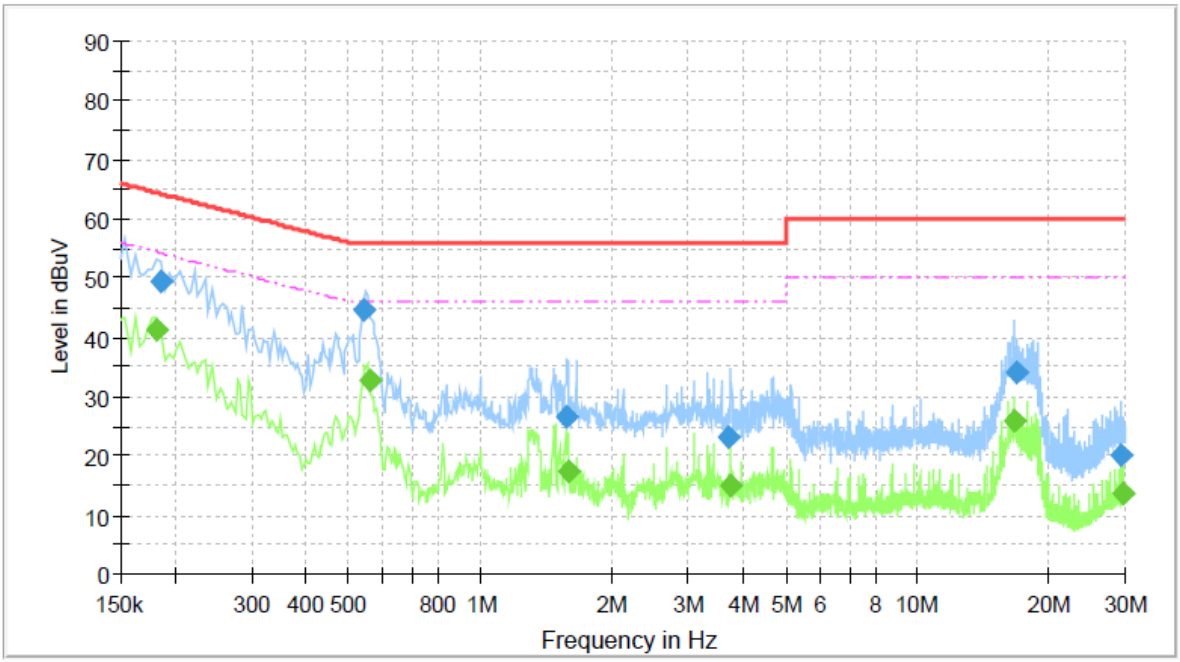
14.4 Test data for Bluetooth

-. Resolution bandwidth : 9 kHz

-. Frequency range : 0.15 MHz ~ 30 MHz

-. Tested Line : LIVE LINE



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.182	---	41.30	54.42	13.12	9.0	L1	9.92
0.186	49.31	---	64.24	14.93	9.0	L1	9.92
0.543	44.56	---	56.00	11.44	9.0	L1	9.94
0.559	---	32.73	46.00	13.27	9.0	L1	9.94
1.571	26.73	---	56.00	29.27	9.0	L1	10.00
1.595	---	17.30	46.00	28.70	9.0	L1	10.00
3.707	23.24	---	56.00	32.76	9.0	L1	10.04
3.763	---	15.02	46.00	30.99	9.0	L1	10.04
16.793	---	26.02	50.00	23.98	9.0	L1	10.56
16.929	34.19	---	60.00	25.81	9.0	L1	10.56
29.379	20.19	---	60.00	39.81	9.0	L1	10.76
29.607	---	13.72	50.00	36.28	9.0	L1	10.77

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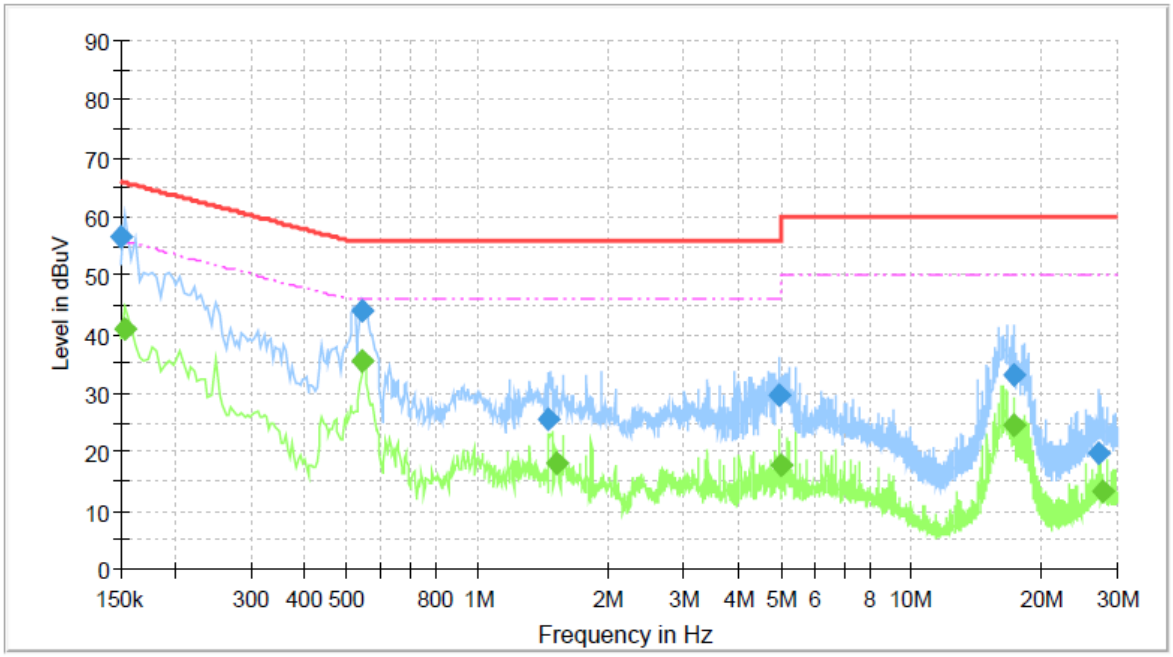
-. Tested Line : NEUTRAL LINE

Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.150	56.44	---	66.00	9.56	9.0	N	9.94
0.154	---	40.80	55.78	14.98	9.0	N	9.94
0.543	---	35.46	46.00	10.54	9.0	N	9.95
0.543	44.08	---	56.00	11.92	9.0	N	9.95
1.457	25.62	---	56.00	30.38	9.0	N	10.00
1.516	---	18.22	46.00	27.78	9.0	N	10.00
4.979	29.50	---	56.00	26.50	9.0	N	10.09
5.043	---	17.74	50.00	32.26	9.0	N	10.09
17.197	33.16	---	60.00	26.84	9.0	N	10.70
17.358	---	24.60	50.00	25.40	9.0	N	10.70
26.968	19.92	---	60.00	40.08	9.0	N	10.82
27.612	---	13.45	50.00	36.55	9.0	N	10.82

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15. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV40-N	Rohde & Schwarz	Signal Analyzer	102177	Apr. 16, 2021 (1Y)
ESW 44	Rohde & Schwarz	EMI Test Receiver	101851	Mar. 23, 2021 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	392756	Oct. 14, 2021 (1Y)
SCU18	Rohde & Schwarz	Pre-Amplifer	102266	Jul. 14, 2021 (1Y)
PAM-840A	Com-Power	Pre-Amplifier	461339	Oct. 12, 2021 (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, 2021 (2Y)
HLP-2008	TDK	Hybrid Antenna	131316	Feb. 27, 2020 (2Y)
AH-118	Com-Power	Horn Antenna	10050061	Oct. 15, 2021 (1Y)
BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 07, 2021(1Y)
HPF 3GHz	Rohde & Schwarz	High Pass Filter (1-3 GHz)	N/A	Feb. 08, 2021(1Y)
ESCI	Rohde & Schwarz	EMI Test RECEIVER	101012	Oct. 20, 2021 (1Y)
NSLK8128	Schwarzbeck	AMN	8218216	Mar. 16, 2021 (1Y)
ESH3-Z2	Rohde & Schwarz	PULSE LIMITER	100655	Mar. 15, 2021 (1Y)

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