

11. MAXIMUM PEAK OUTPUT POWER

11.1 Operating environment

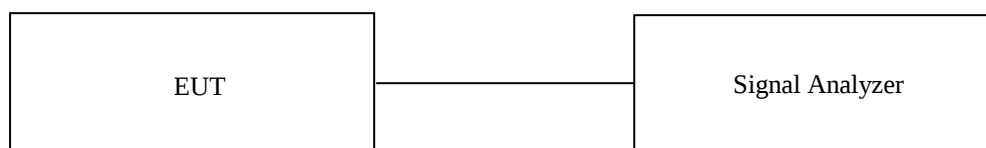
Temperature : 23 °C

Relative humidity : 50 % 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 $\geq$ DTS Bandwidth, the video bandwidth is set to 3 times the resolution bandwidth.



11.3 Test Date

August 19, 2022 ~ October 05, 2022

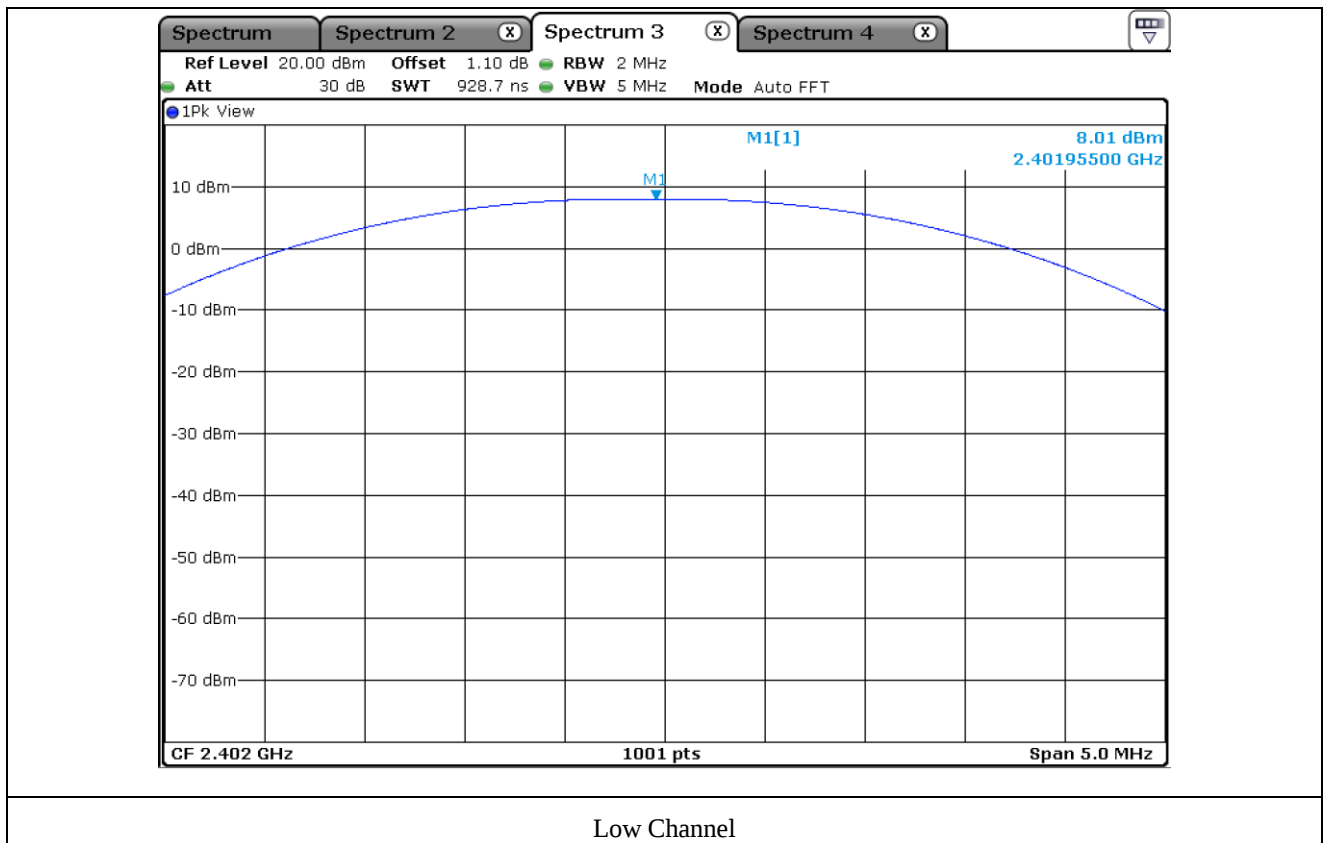
11.4 Test Data

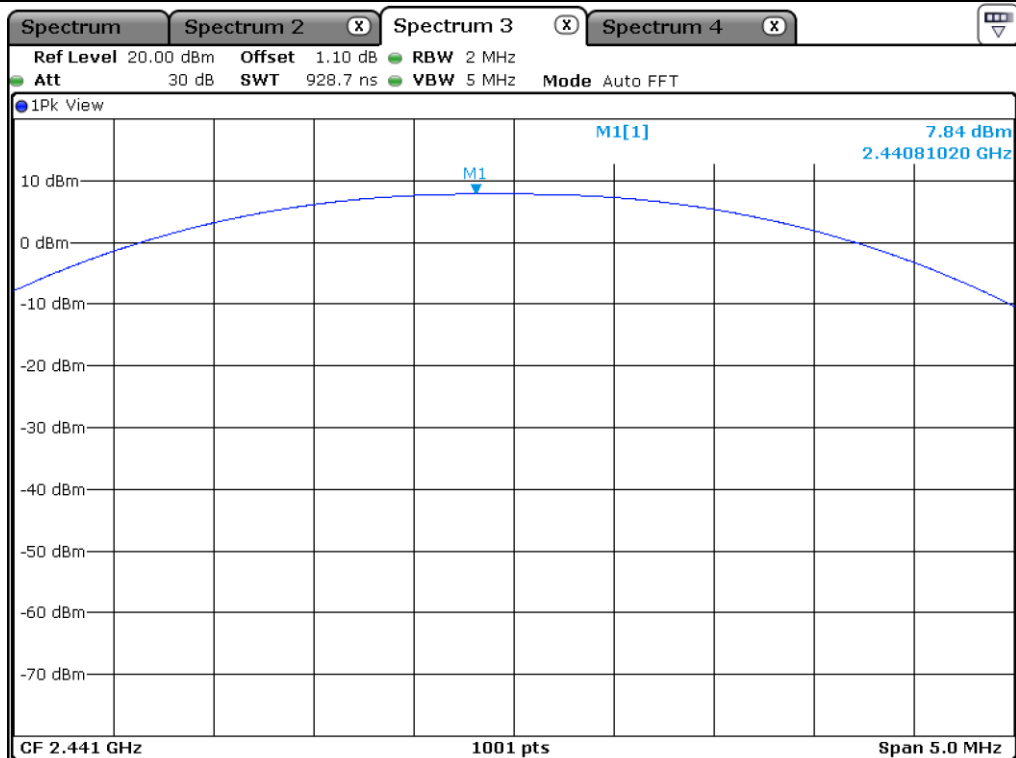
11.4.1 Test data for 1 Mbps

-. Test Result : Pass

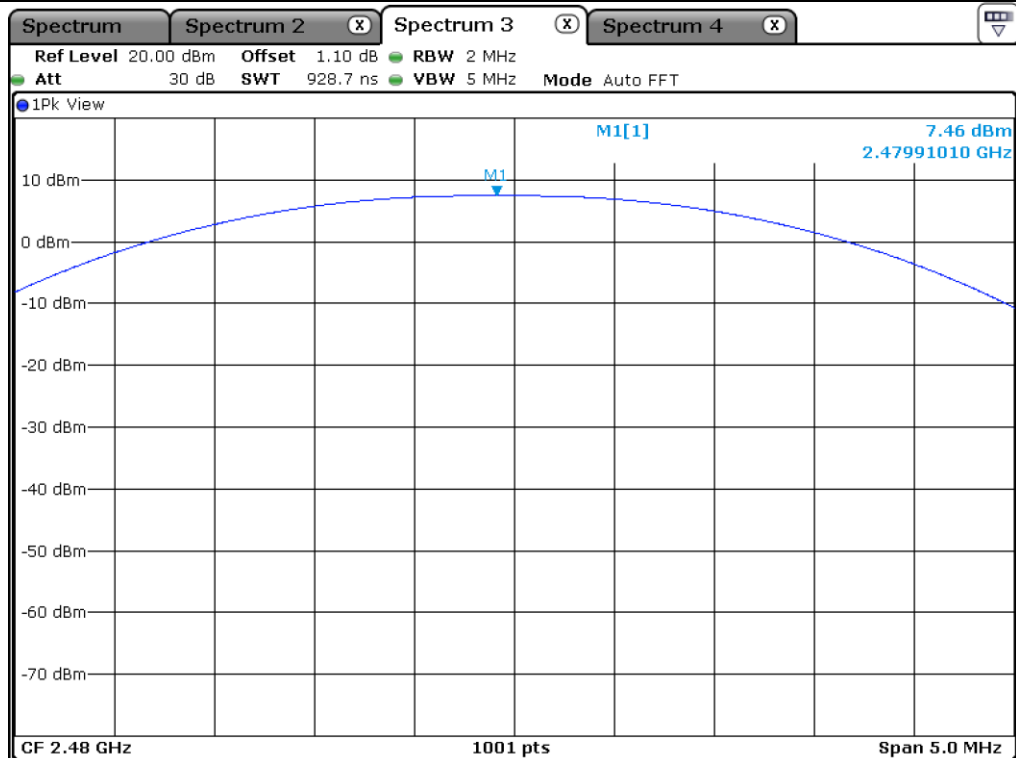
Channel	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 402.00	8.01	21.00	12.99
Middle	2 441.00	7.84	21.00	13.16
High	2 480.00	7.46	21.00	13.54

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





Middle Channel



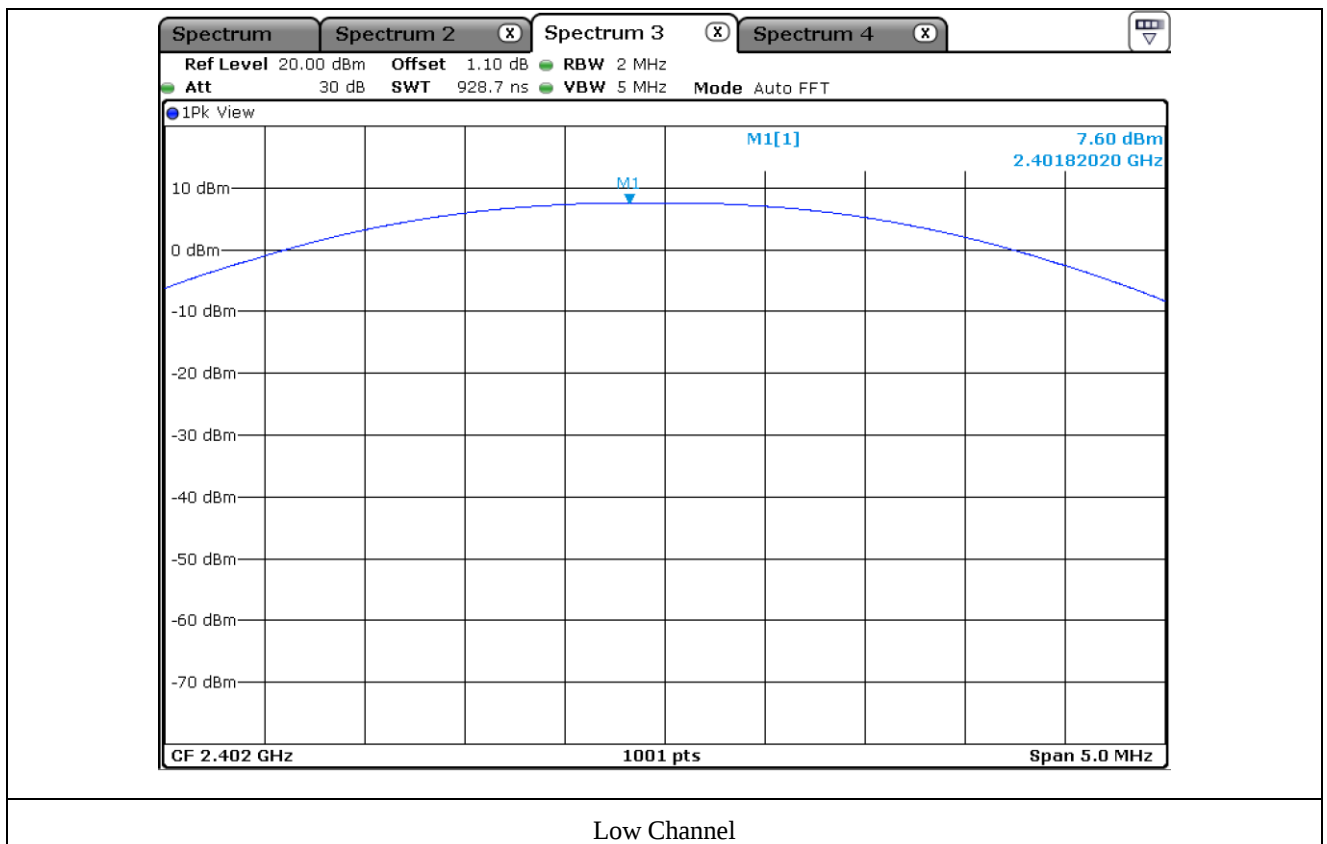
High Channel

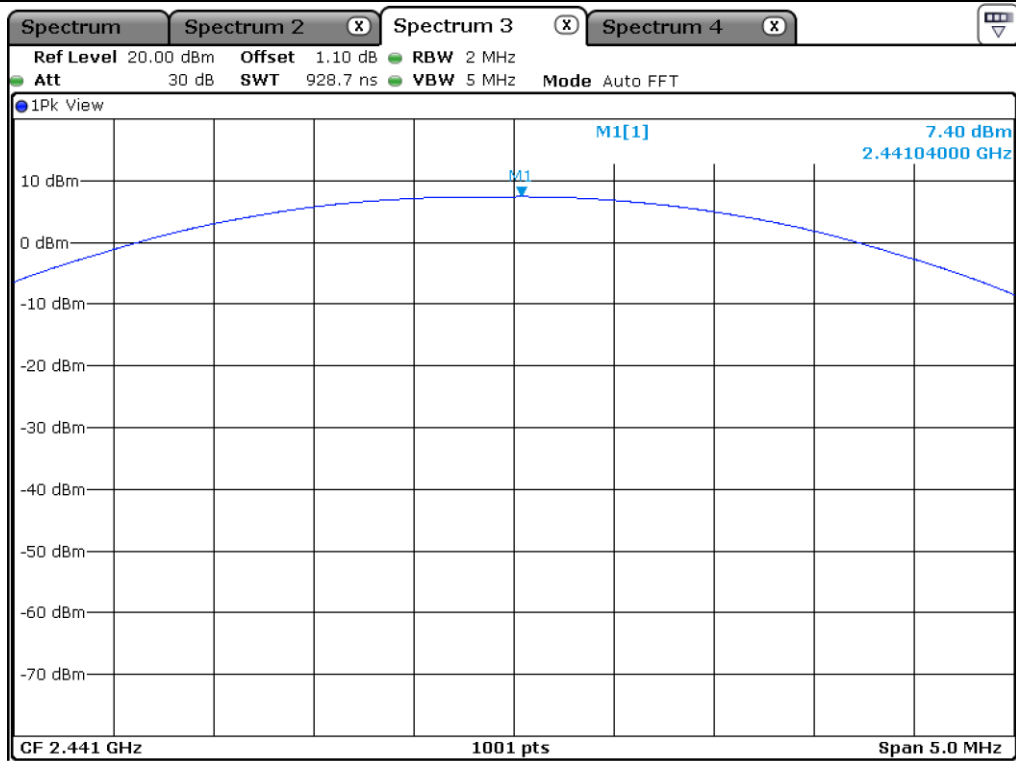
11.4.2 Test data for 2 Mbps

-. Test Result : Pass

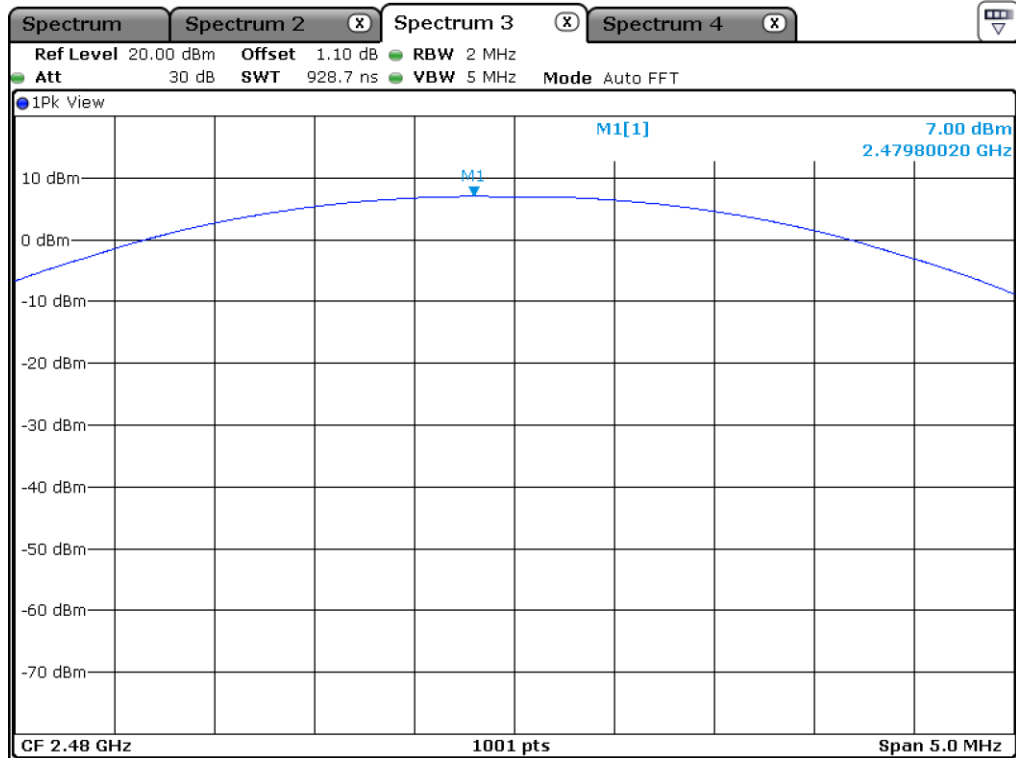
Channel	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 402.00	7.60	21.00	13.40
Middle	2 441.00	7.40	21.00	13.60
High	2 480.00	7.00	21.00	14.00

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





Middle Channel



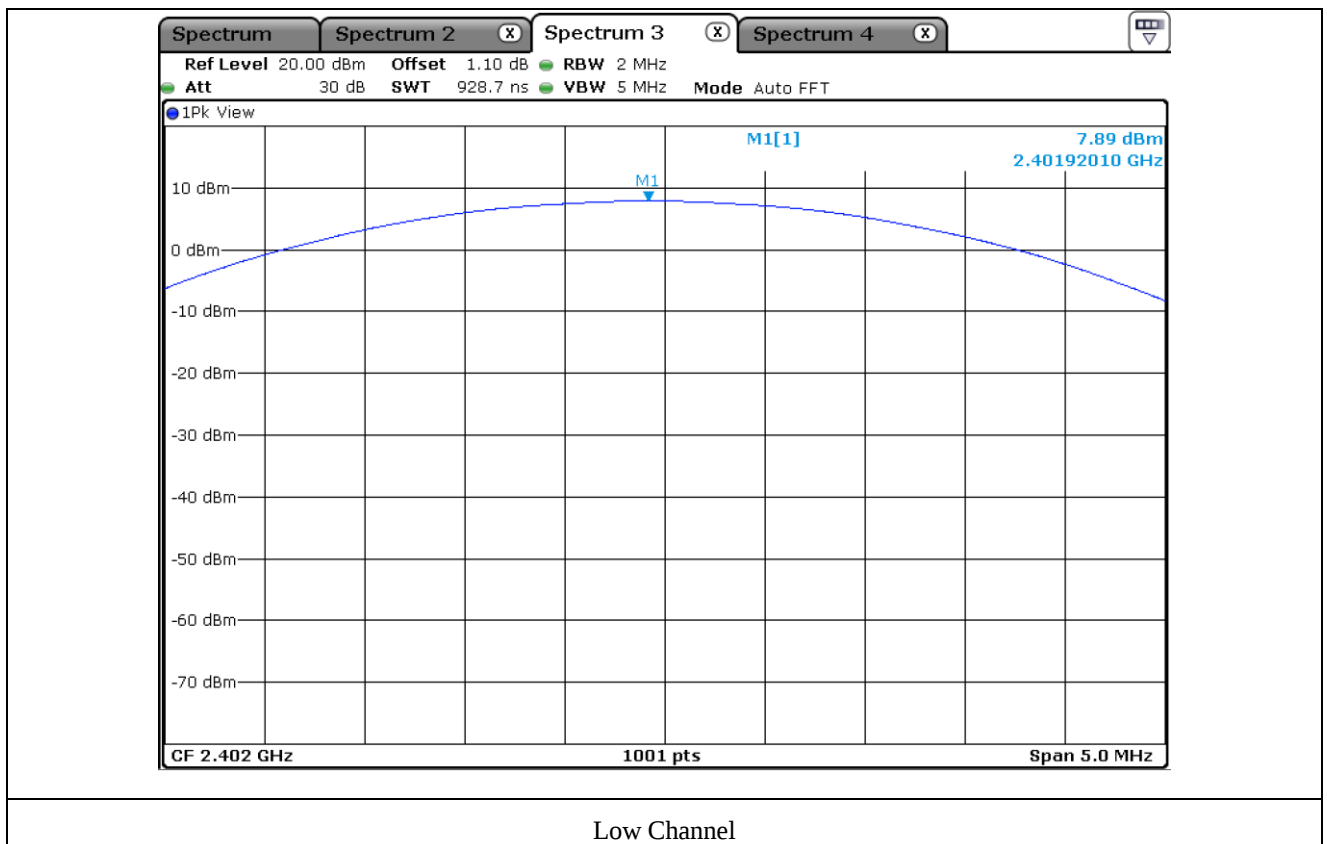
High Channel

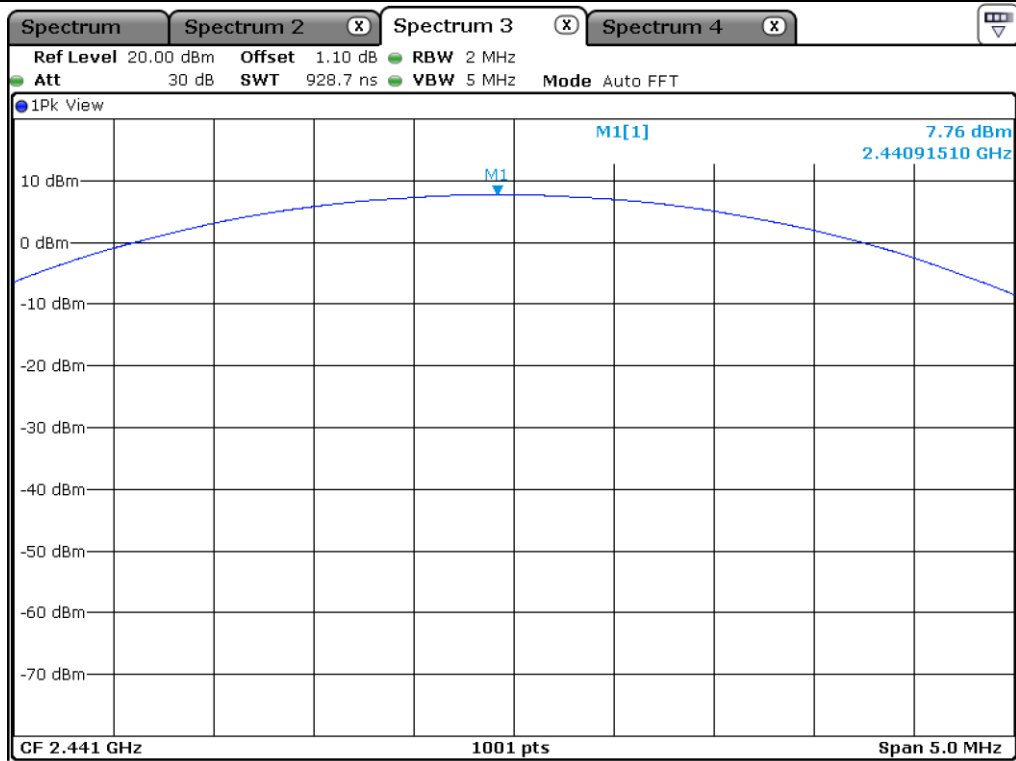
11.4.3 Test data for 3 Mbps

-. Test Result : Pass

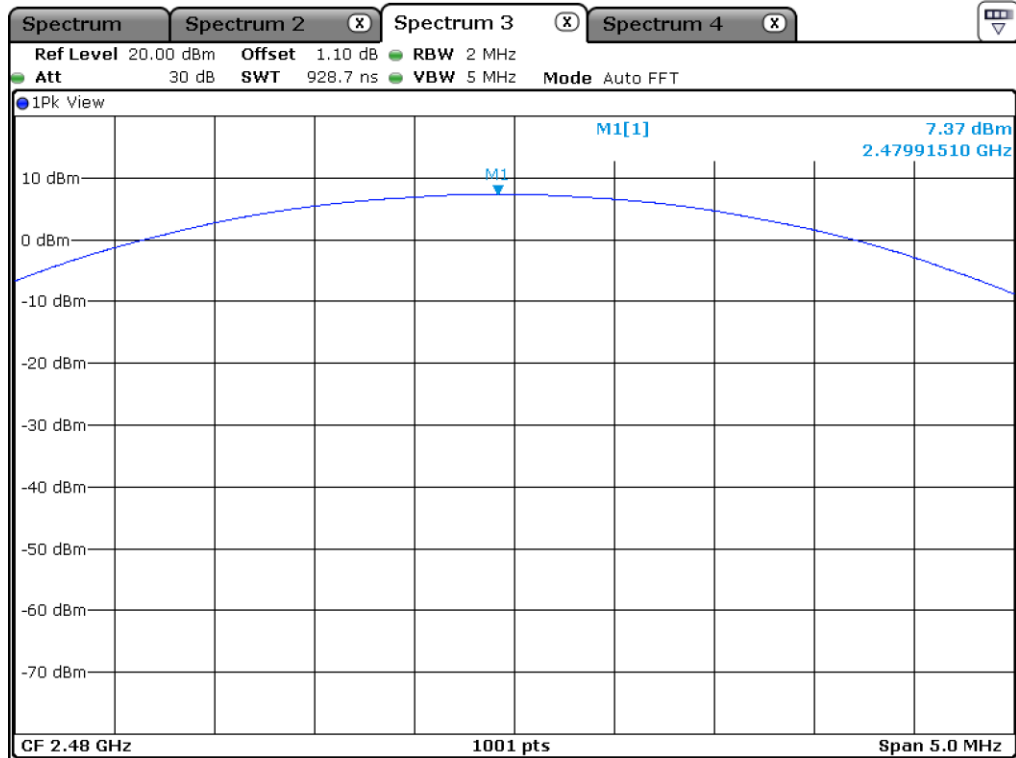
Channel	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
Low	2 402.00	7.89	21.00	13.11
Middle	2 441.00	7.76	21.00	13.24
High	2 480.00	7.37	21.00	13.63

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





Middle Channel



High Channel

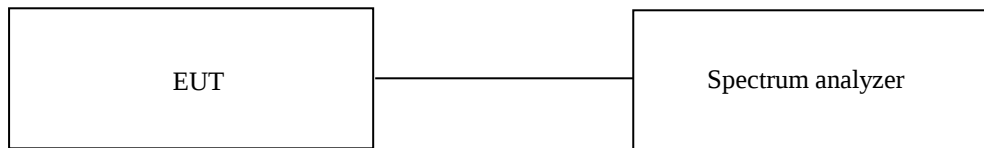
12. 100 kHz BANDWIDTH OUTSIDE THE FREQUENCY BAND

12.1 Operating environment

Temperature : 23 °C
Relative humidity : 50 % 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.

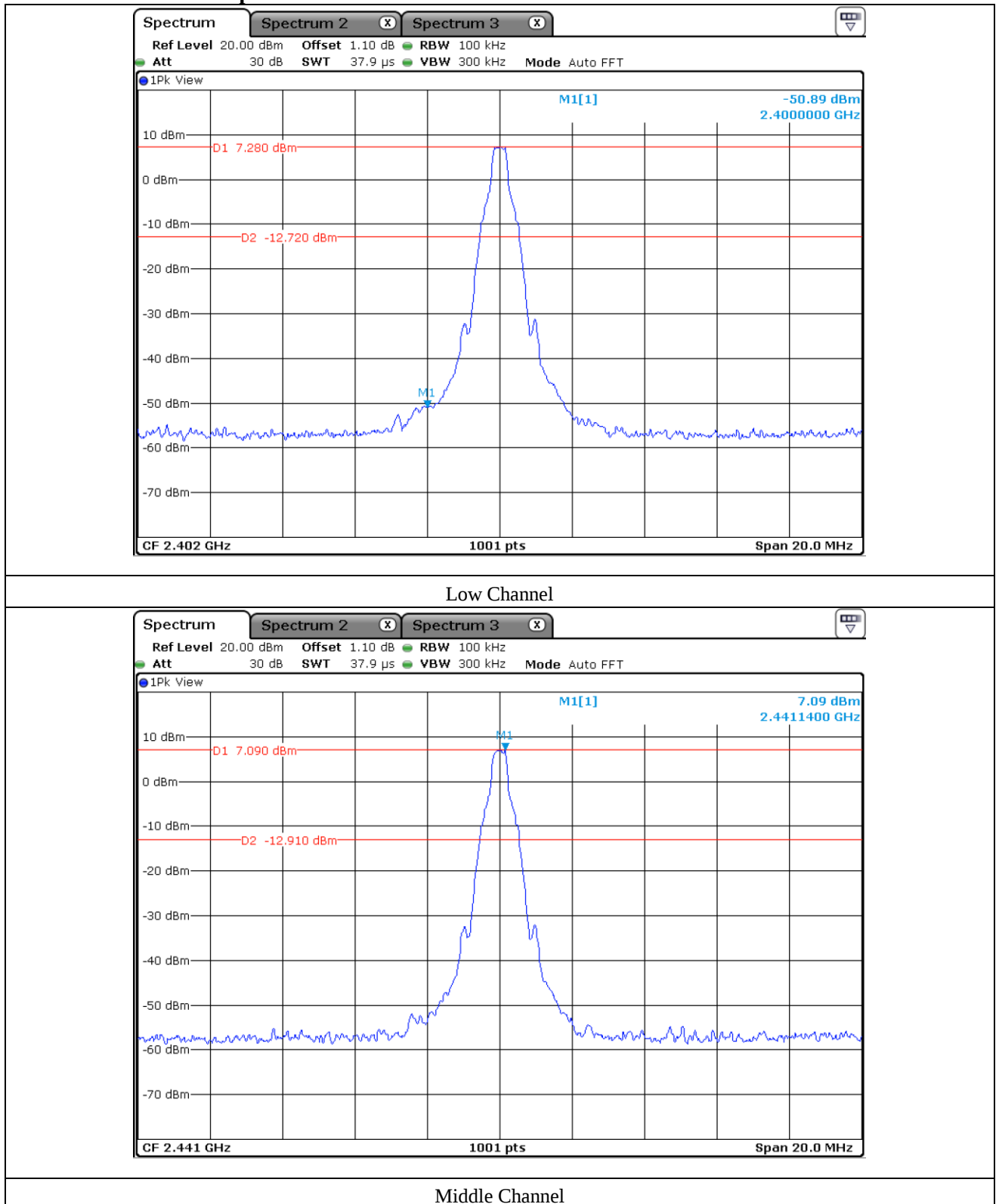
The frequency spectrum from 30 MHz to 26.5 GHz was scanned and maximum emission levels at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for horizontal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

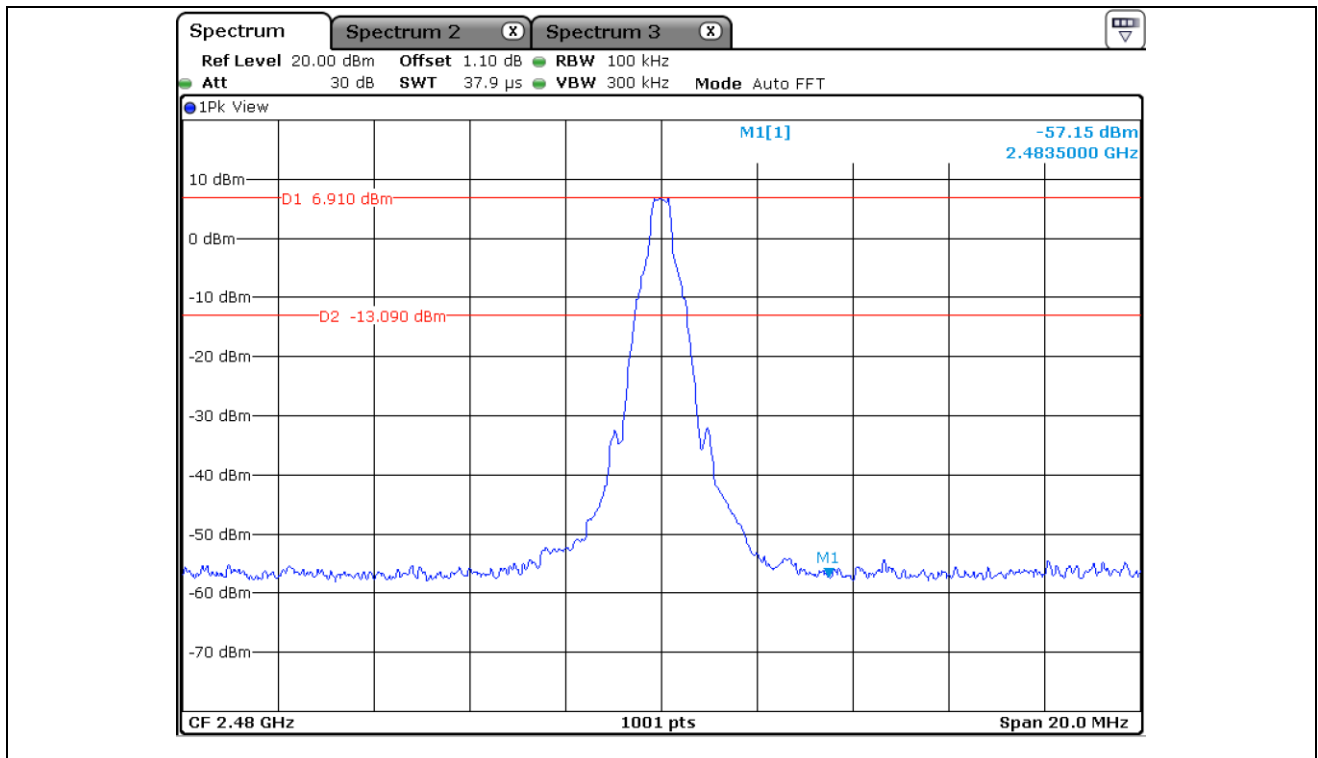
12.4 Test Date

August 19, 2022 ~ October 05, 2022

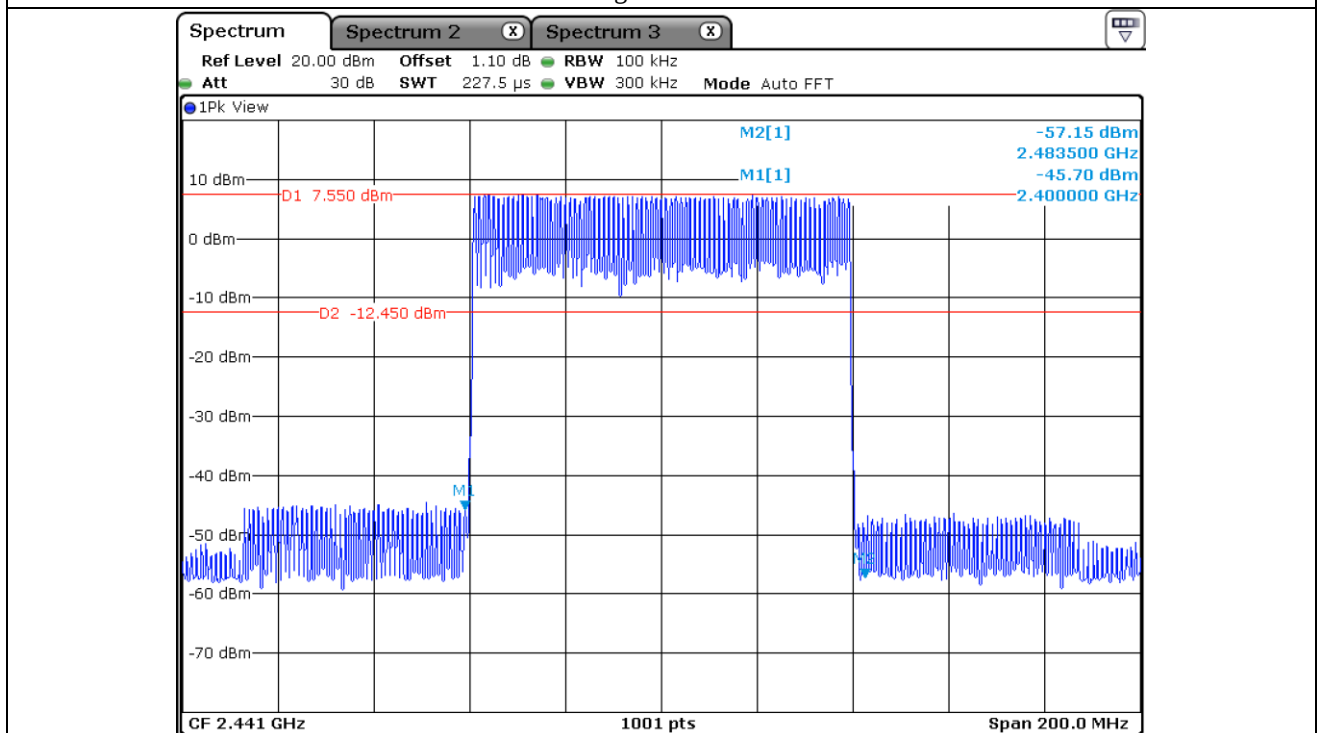
12.5 Test data for conducted emission

12.5.1 Test data for 1 Mbps

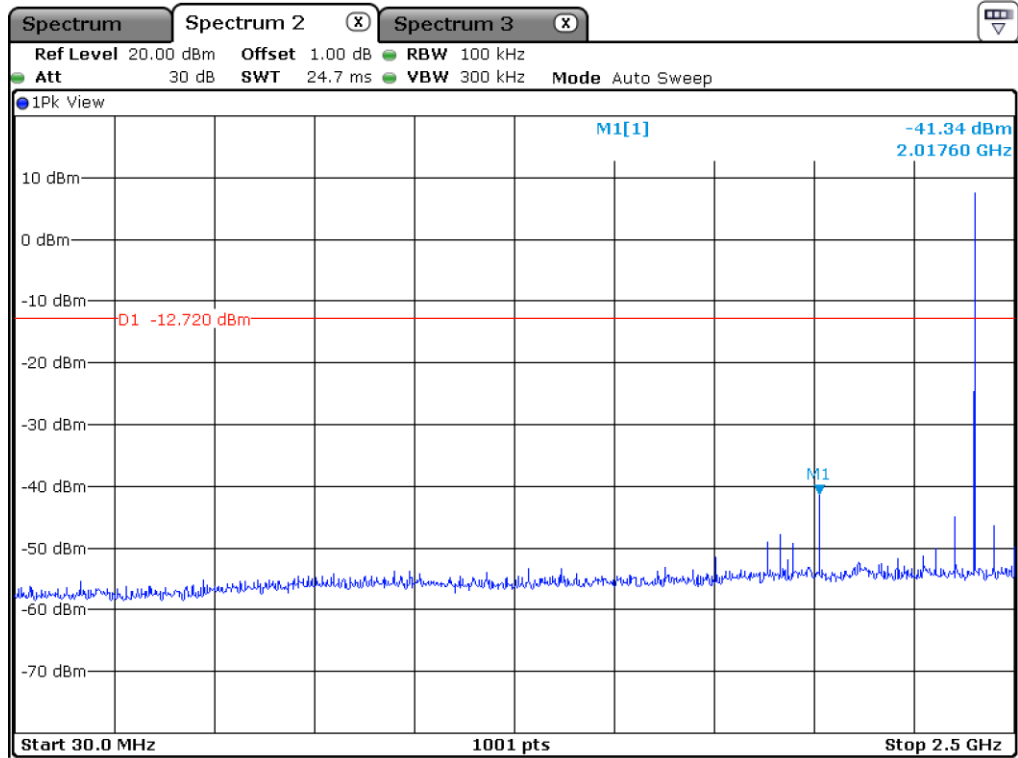




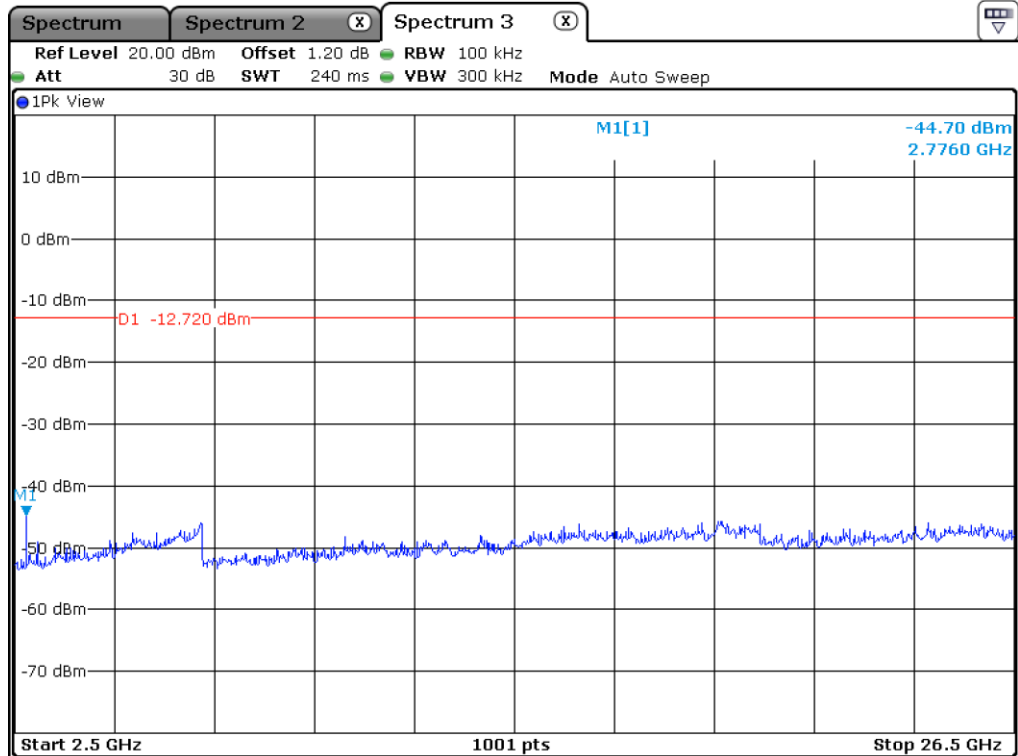
High Channel



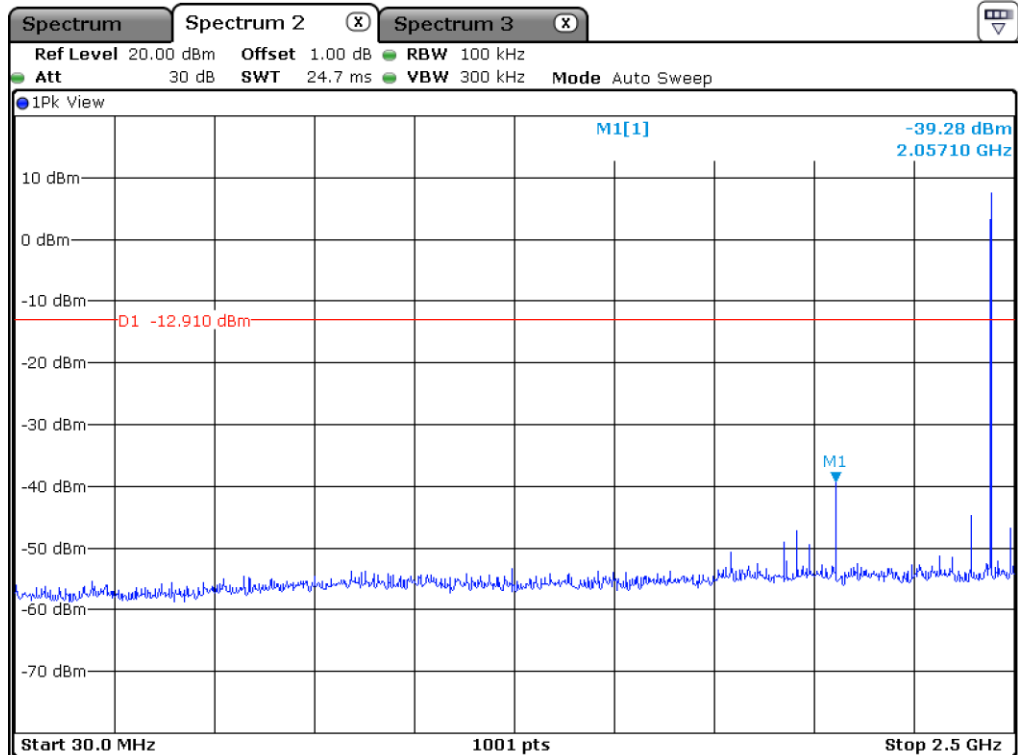
Hopping Mode



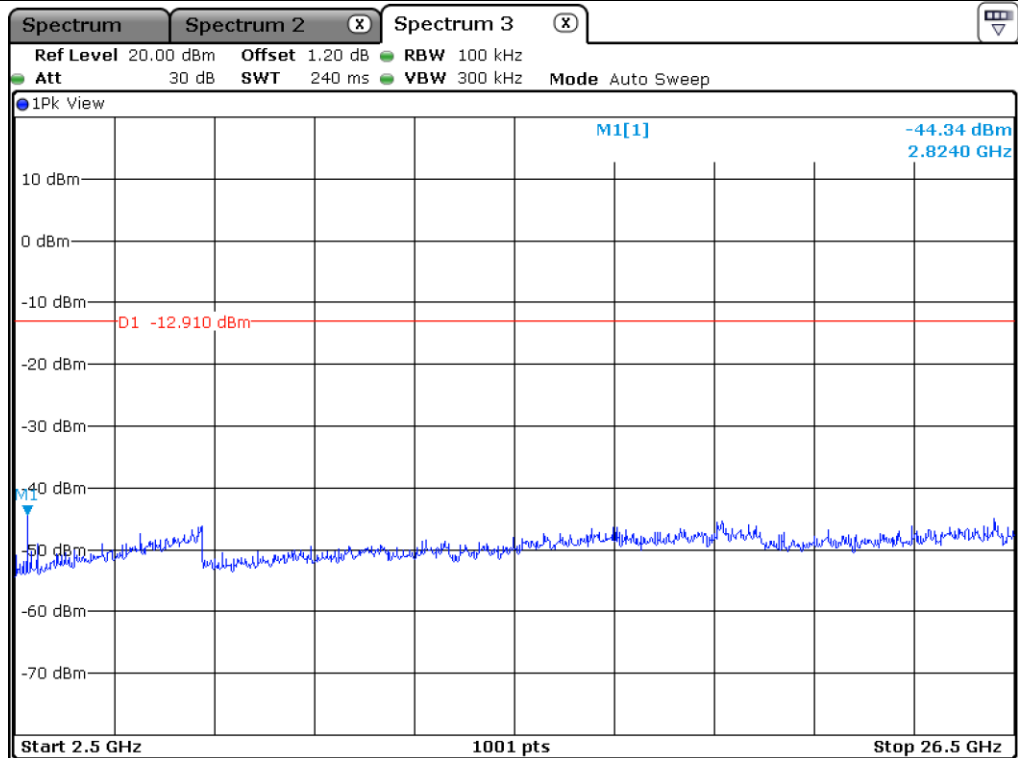
Low Channel



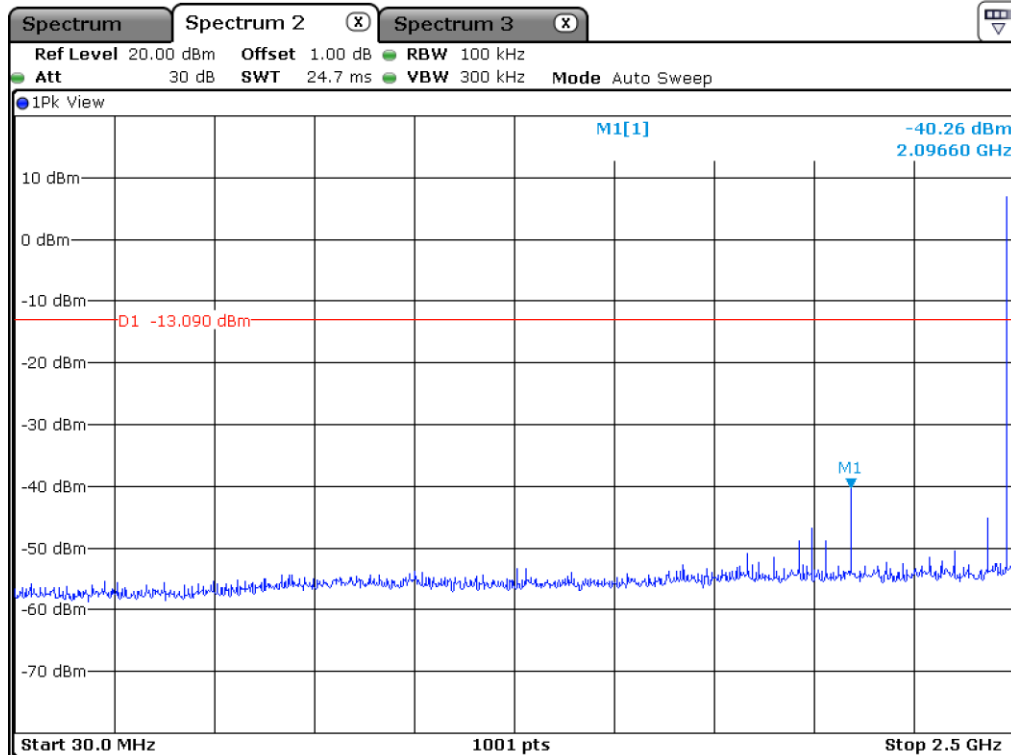
Low Channel



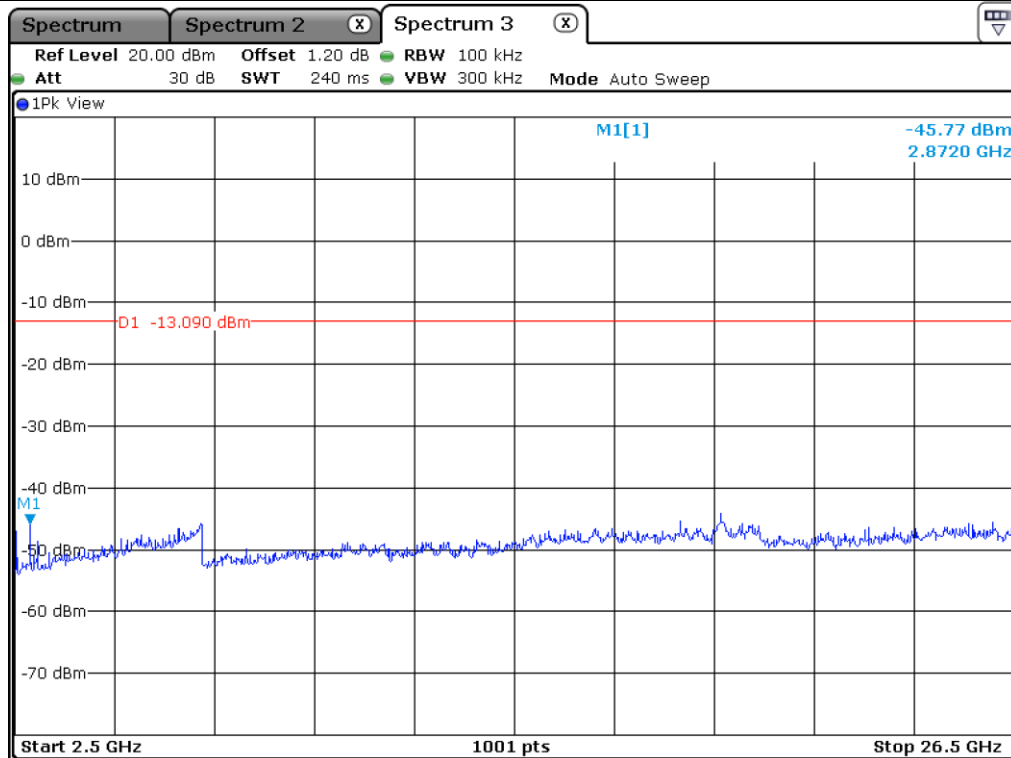
Middle Channel



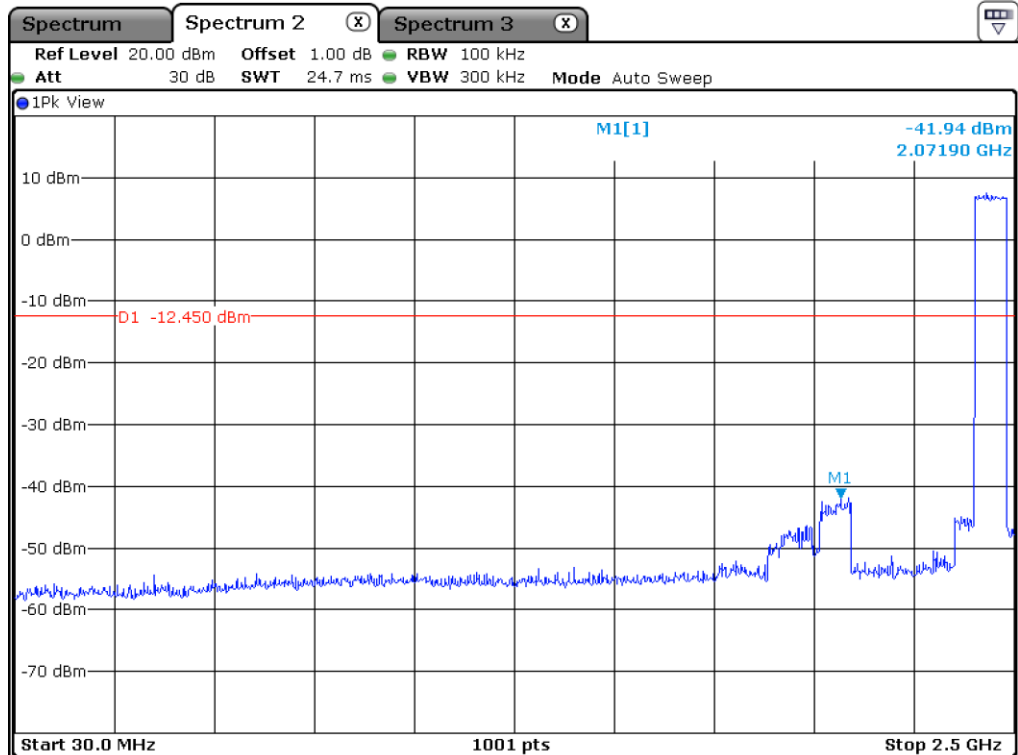
Middle Channel



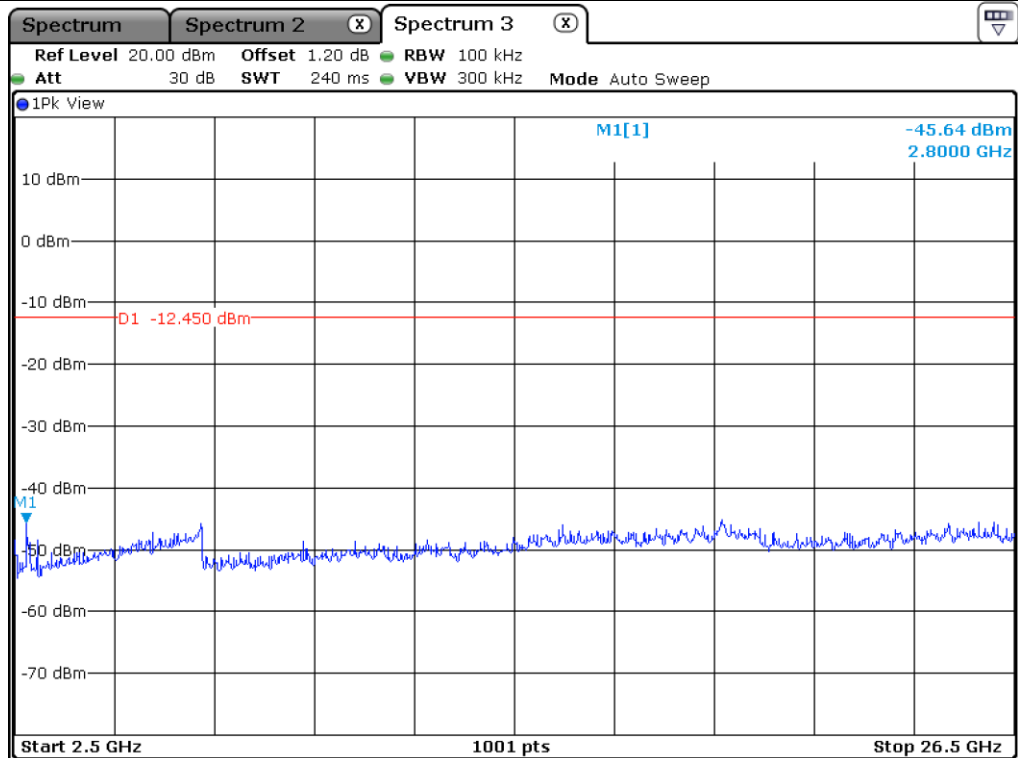
High Channel



High Channel

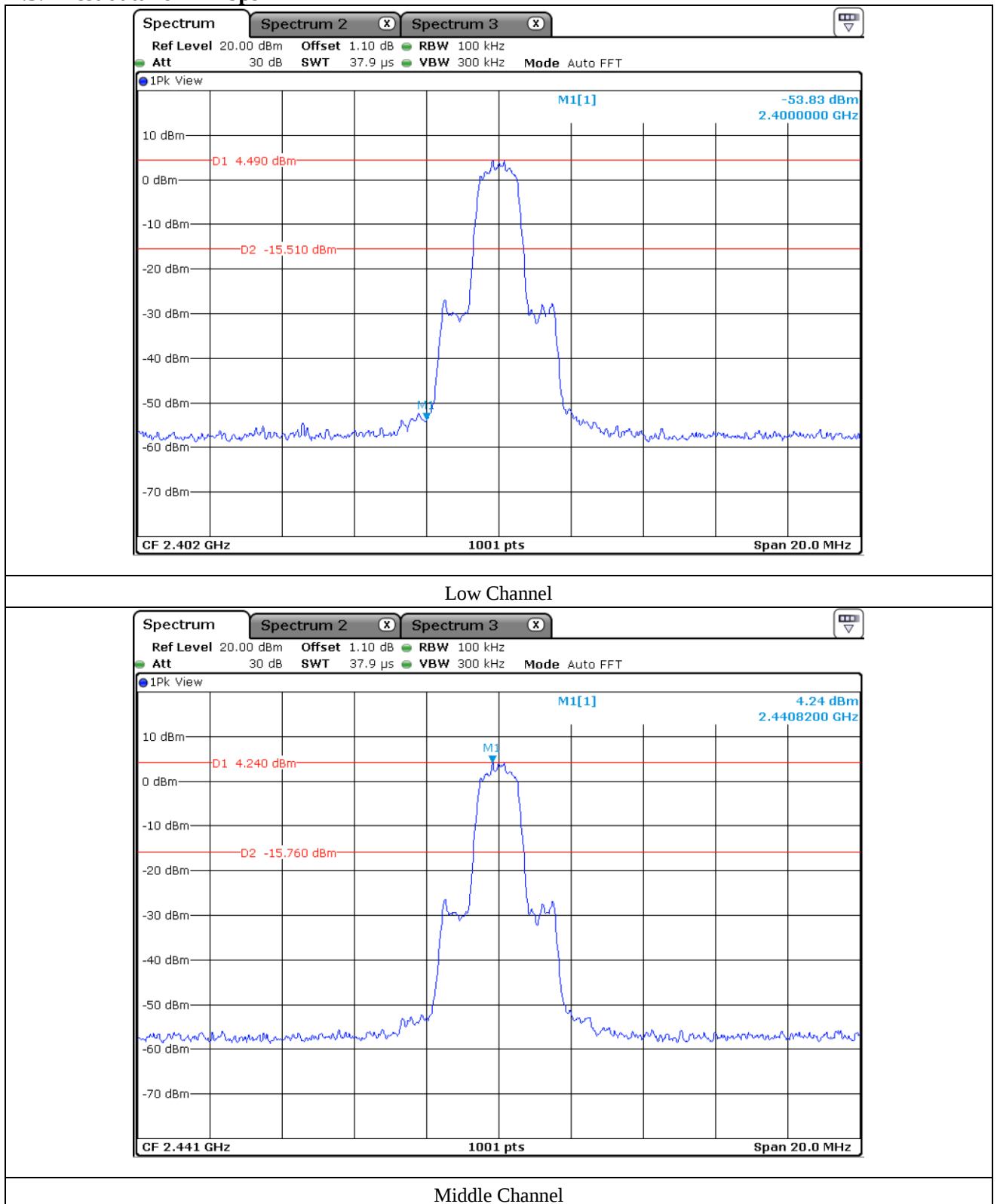


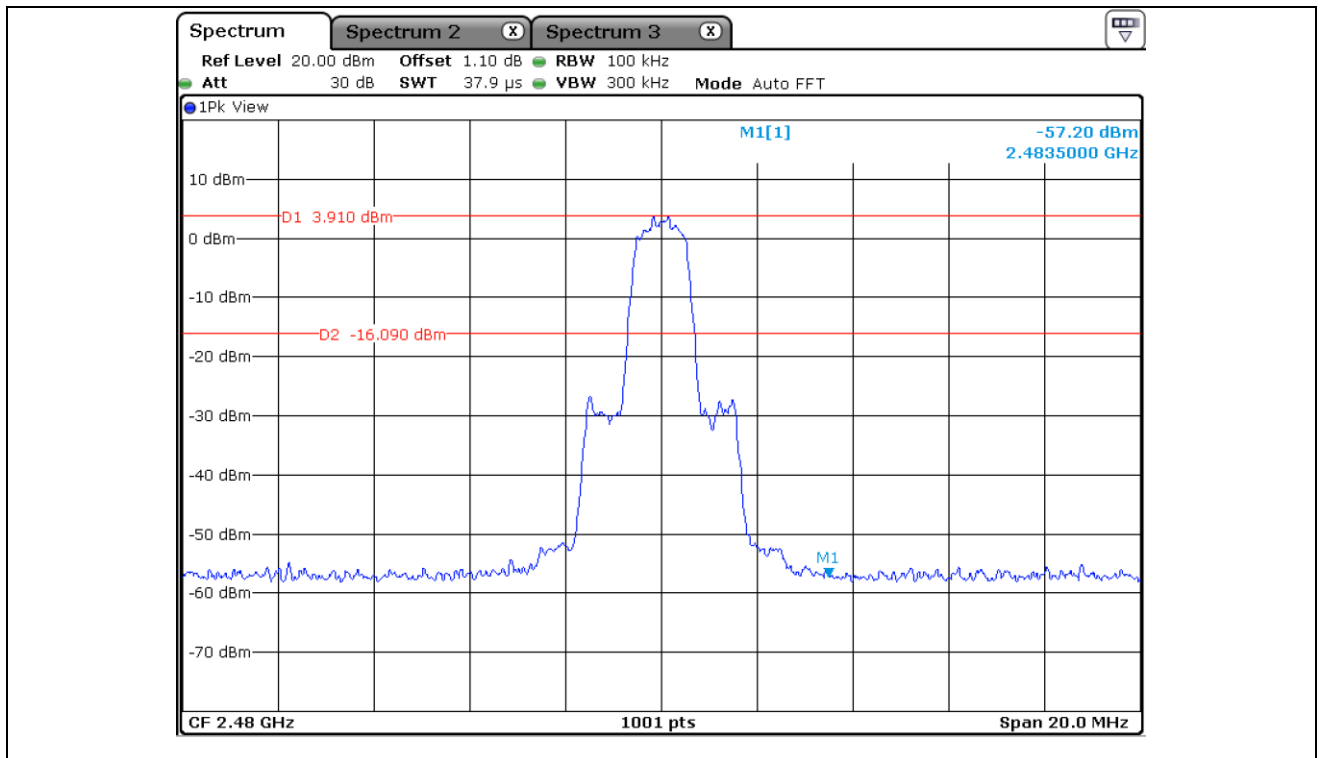
Hopping Mode



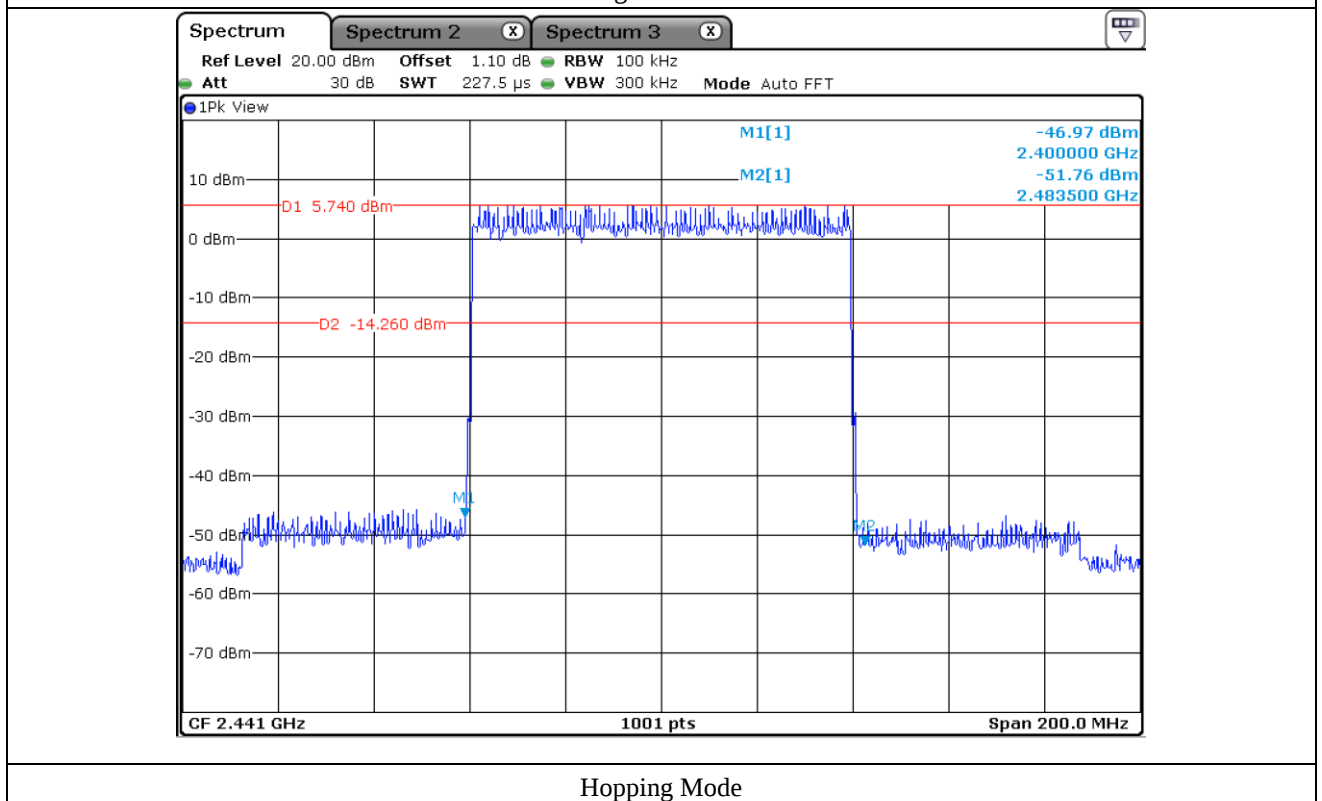
Hopping Mode

12.5.2 Test data for 2 Mbps

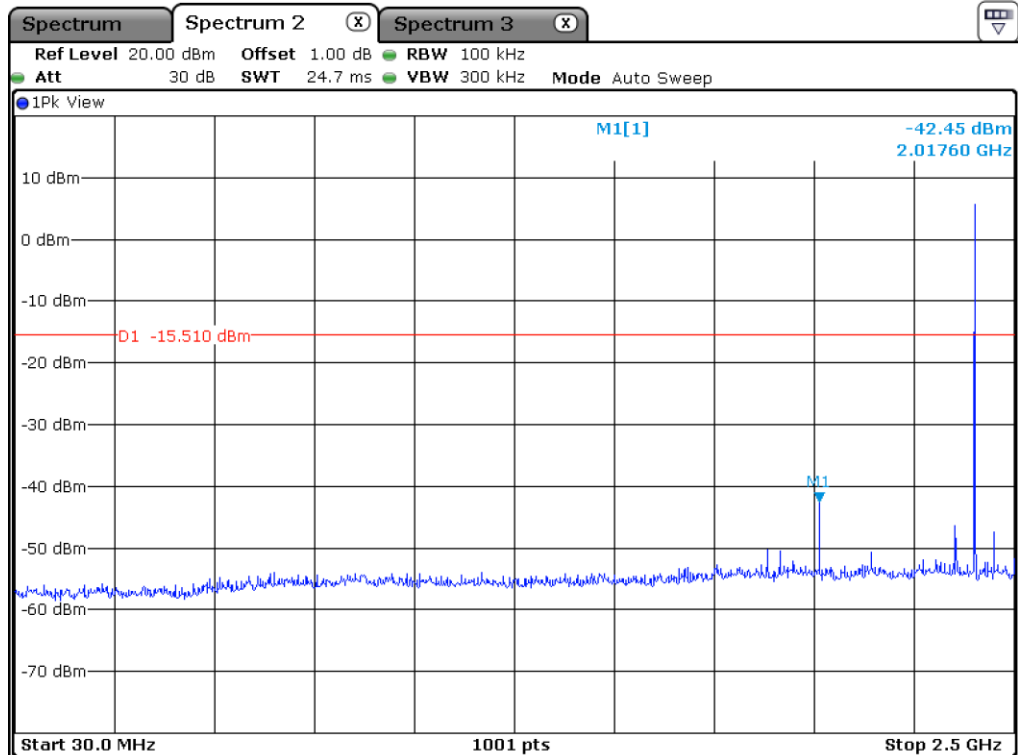




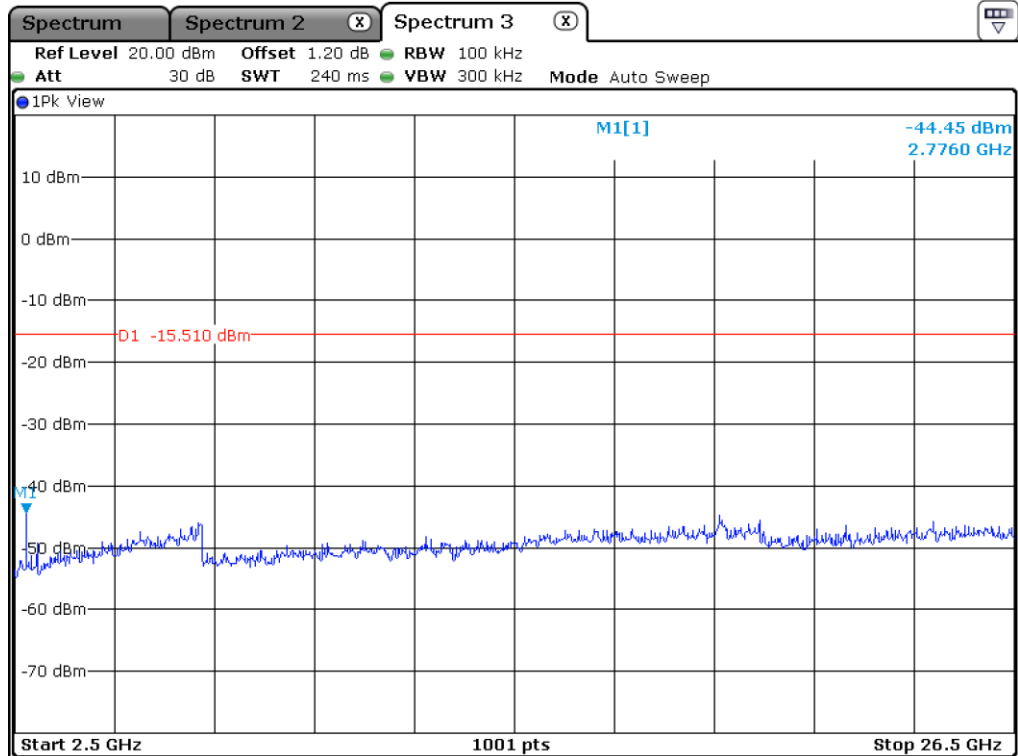
High Channel



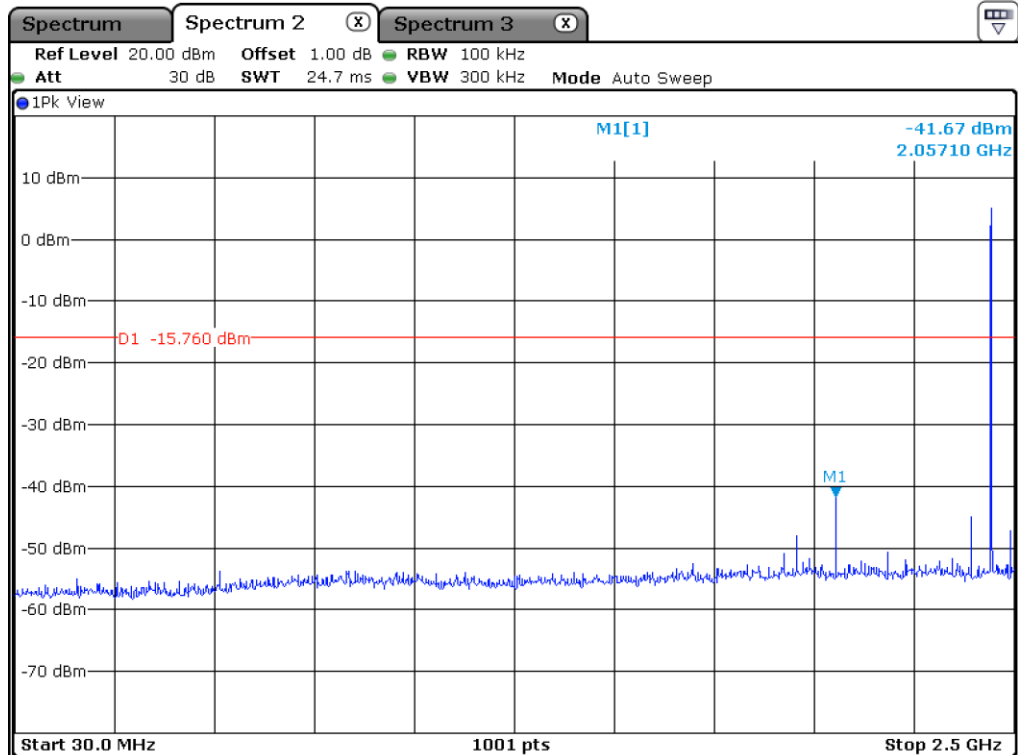
Hopping Mode



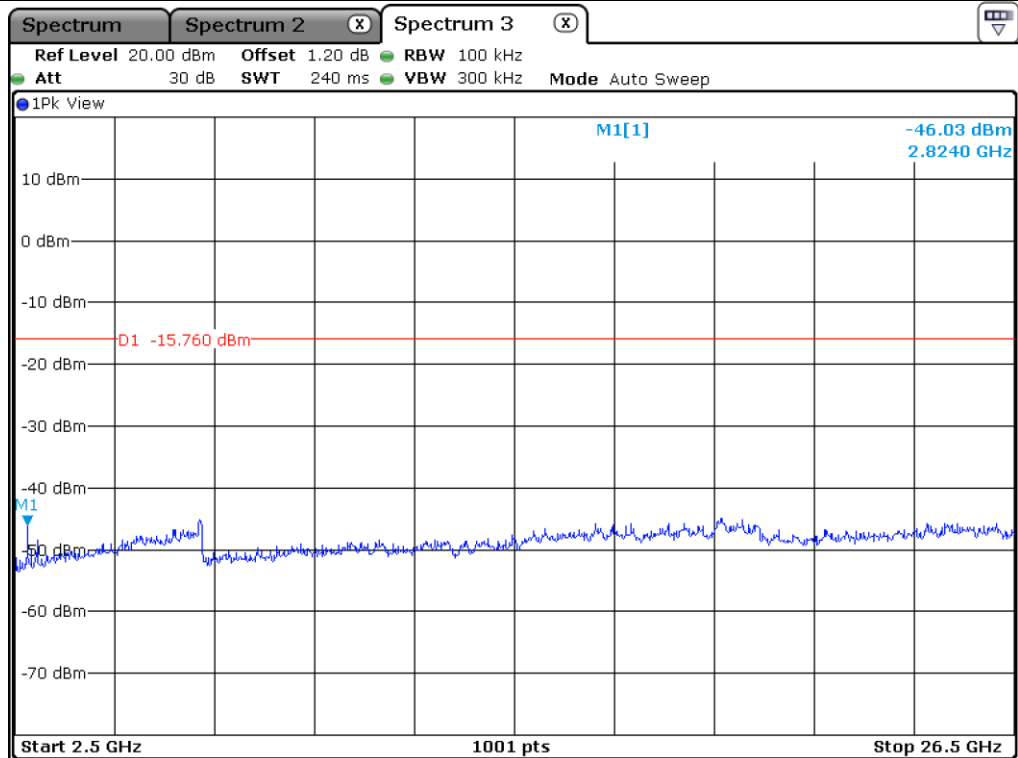
Low Channel



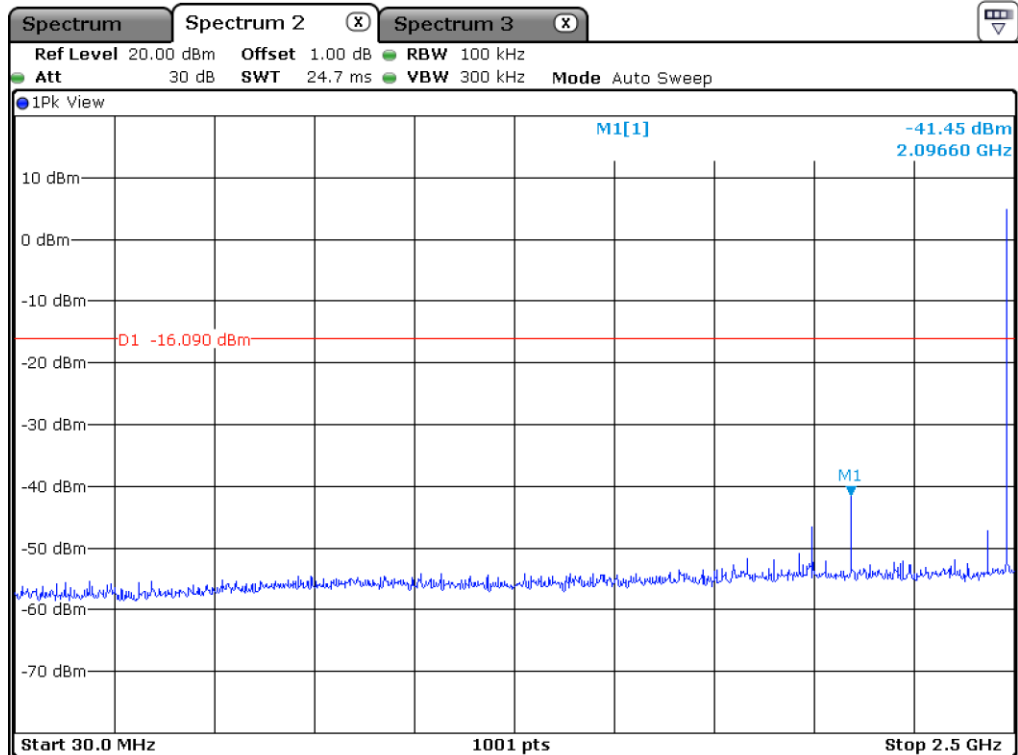
Low Channel



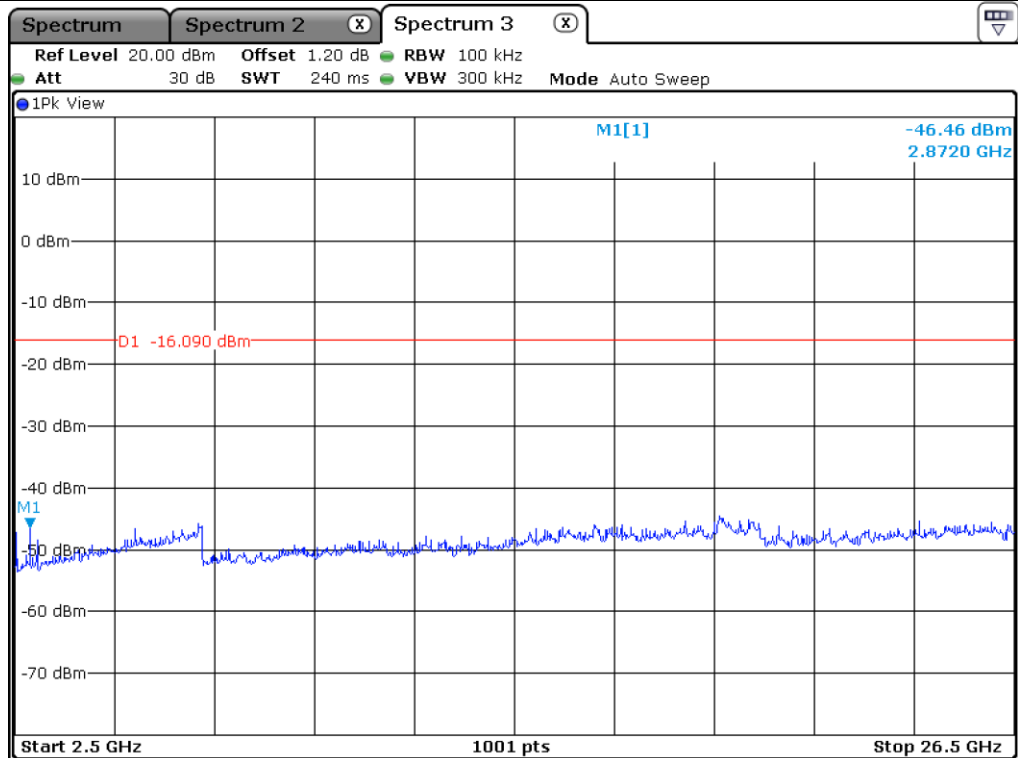
Middle Channel



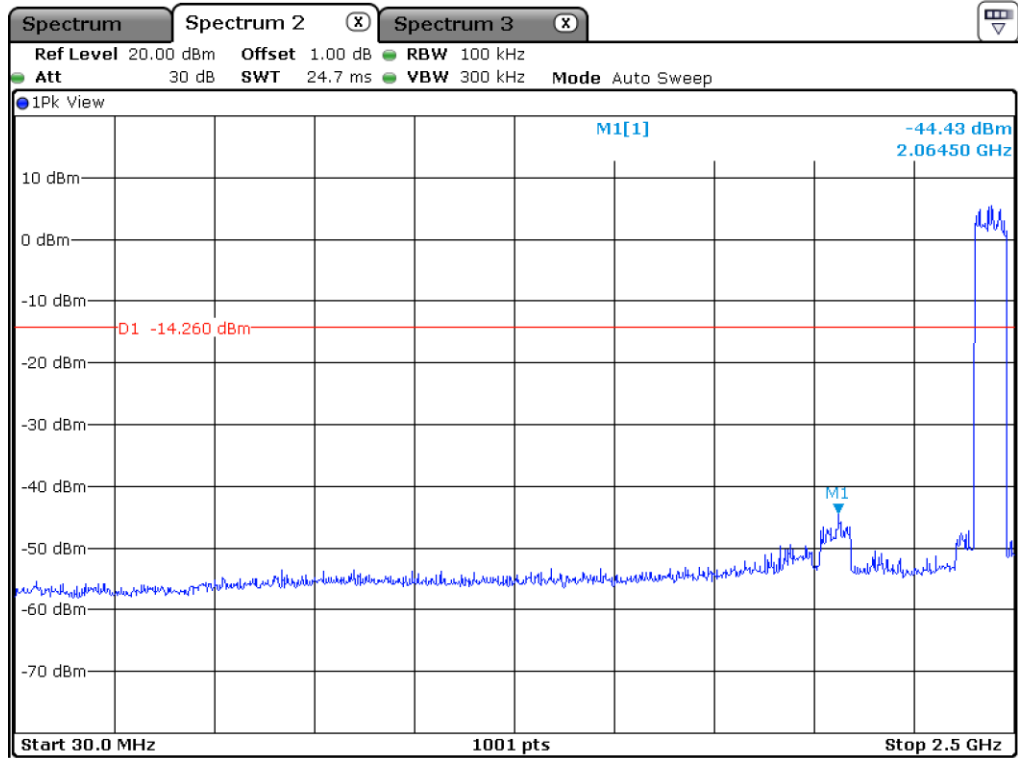
Middle Channel



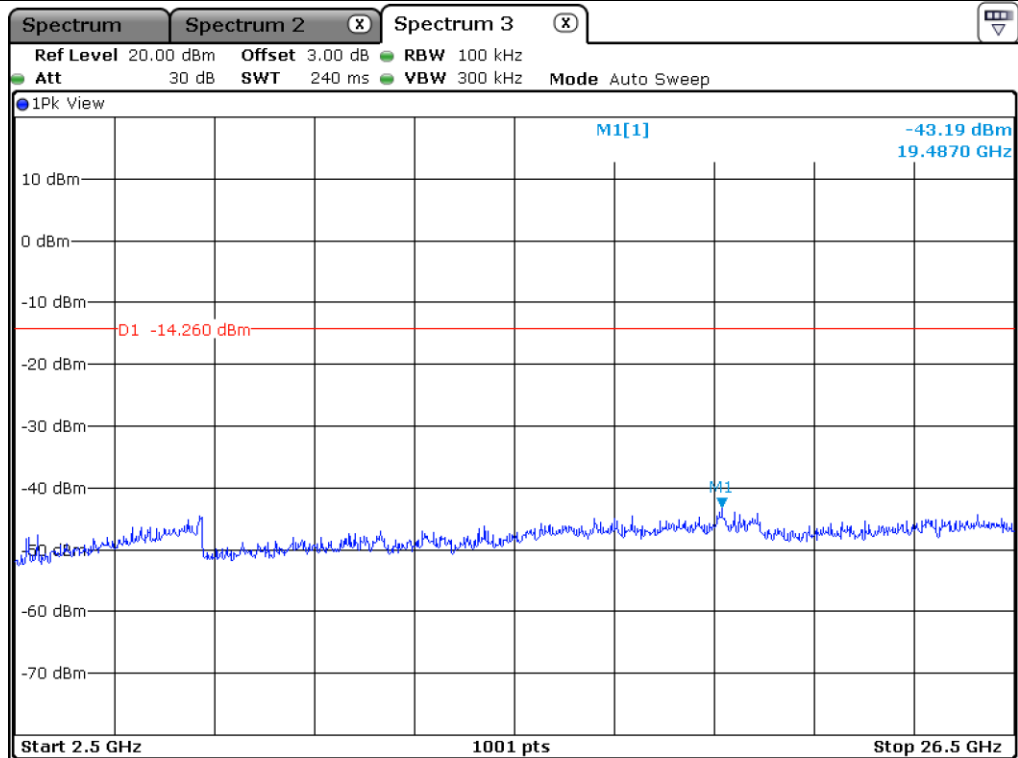
High Channel



High Channel

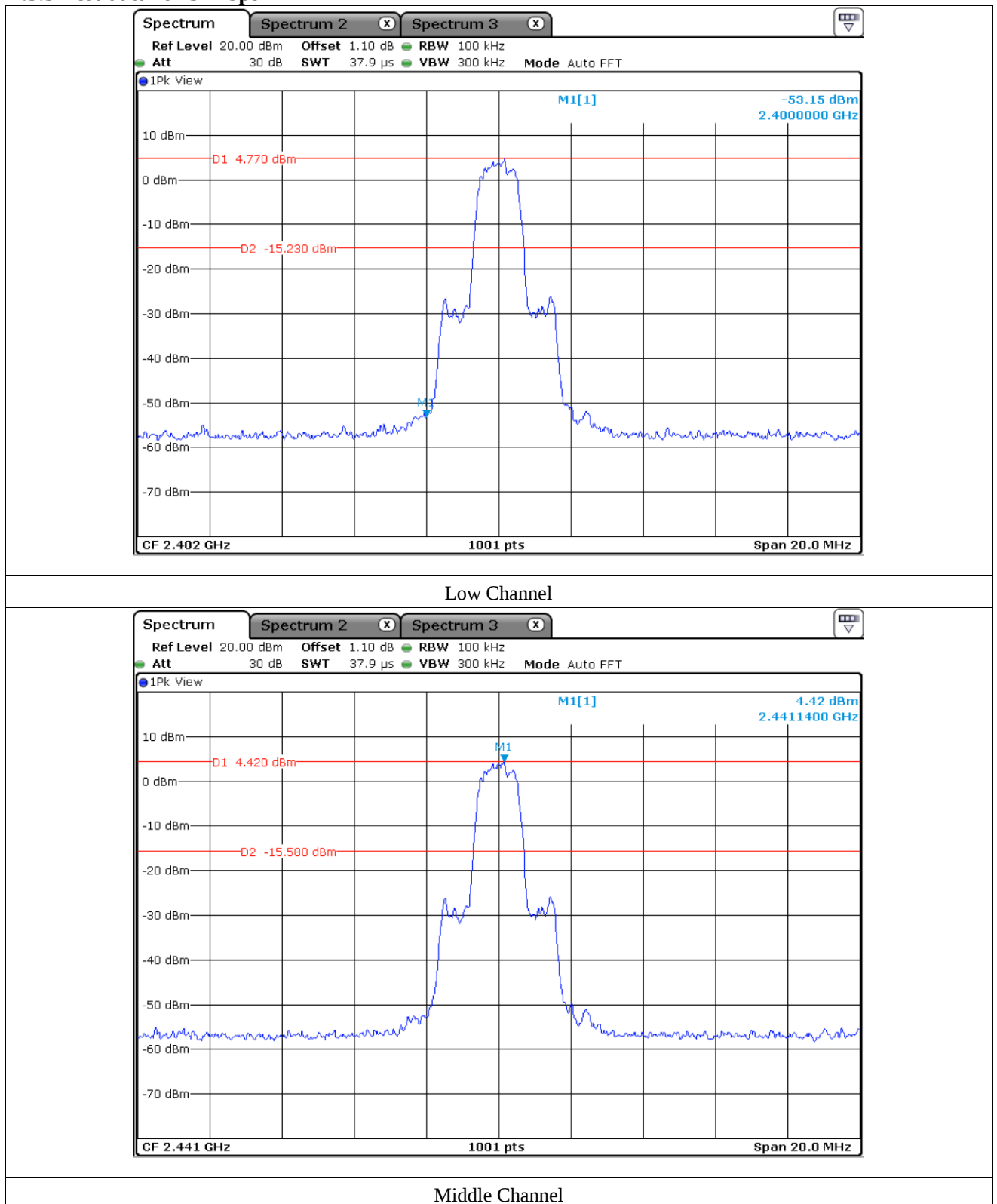


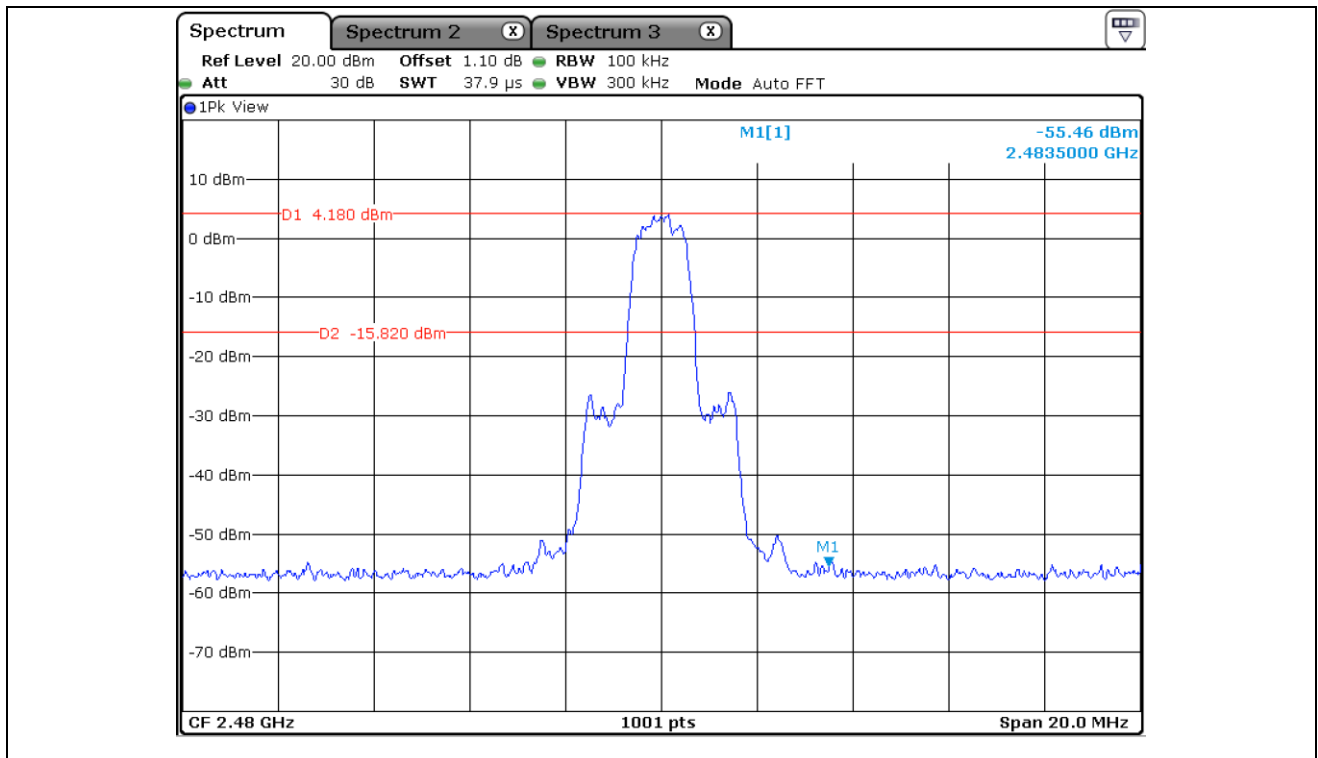
Hopping Mode



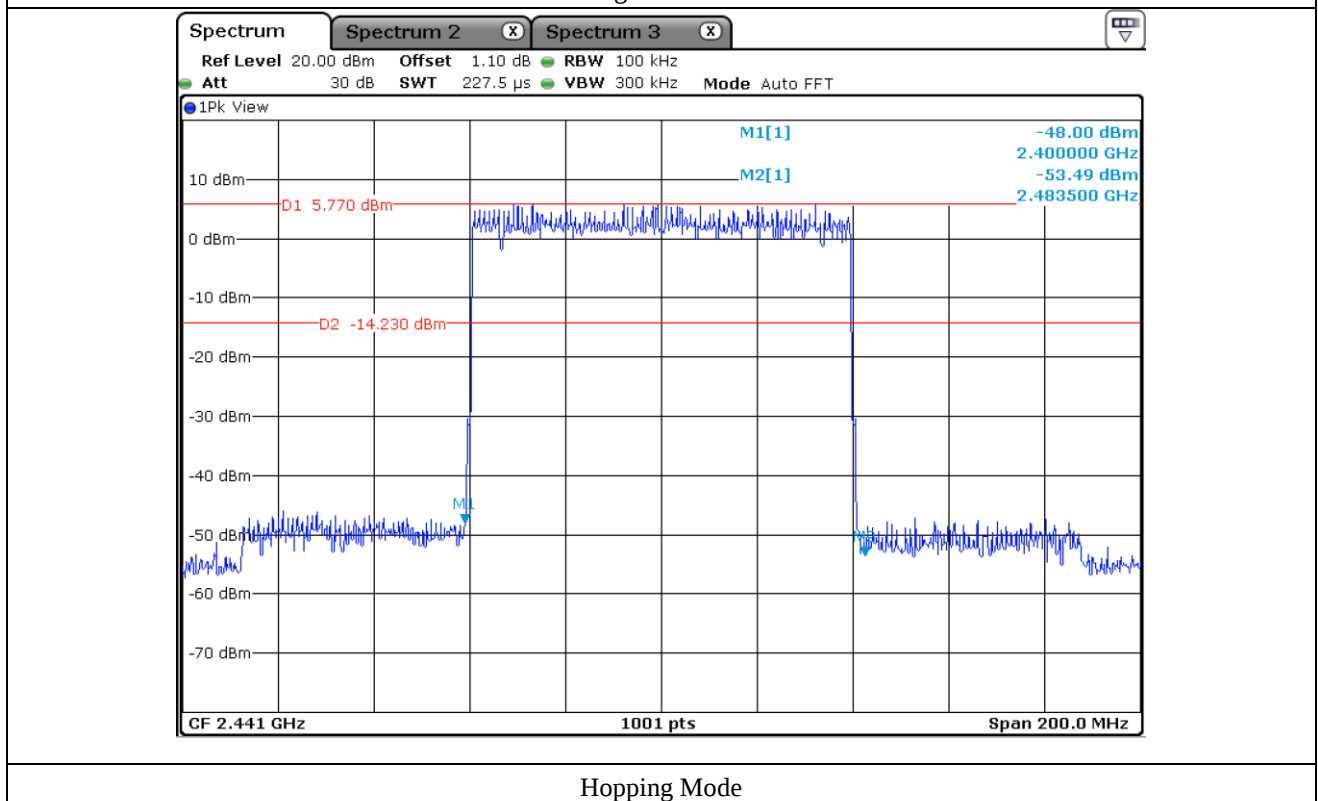
Hopping Mode

12.5.3 Test data for 3 Mbps

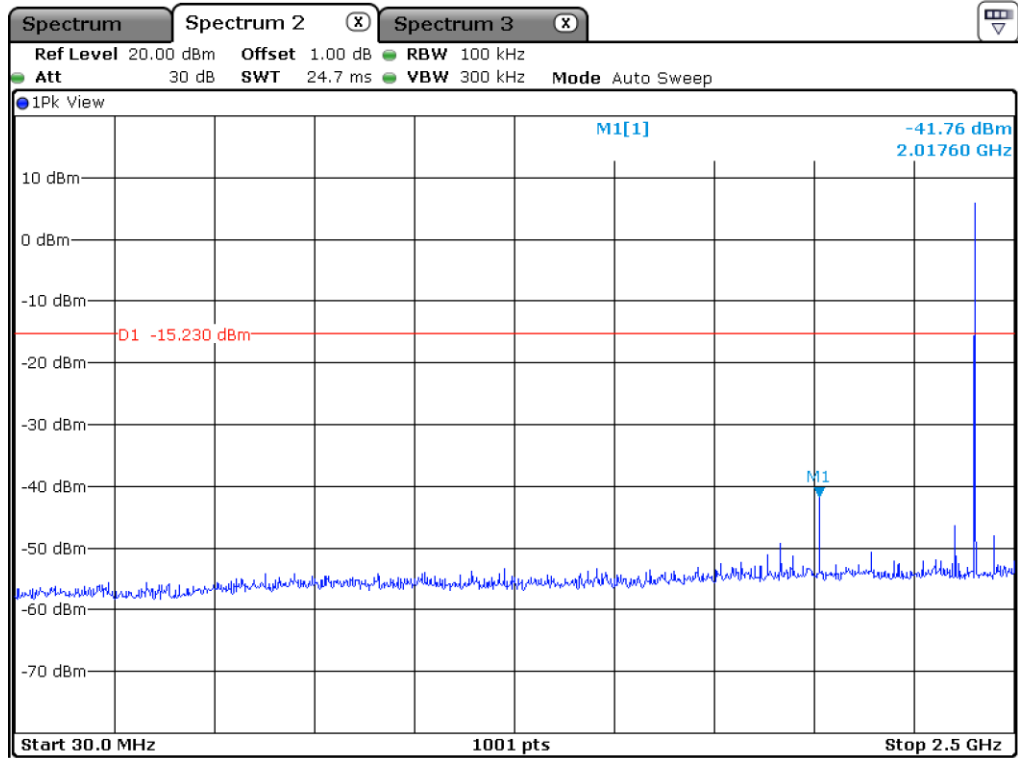




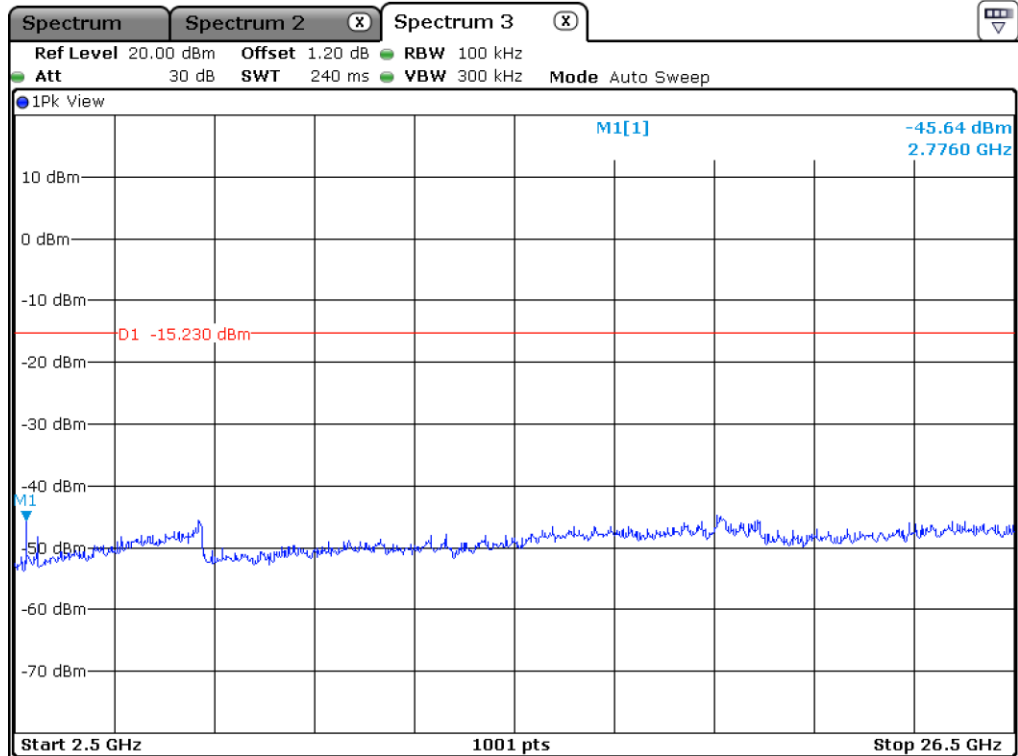
High Channel



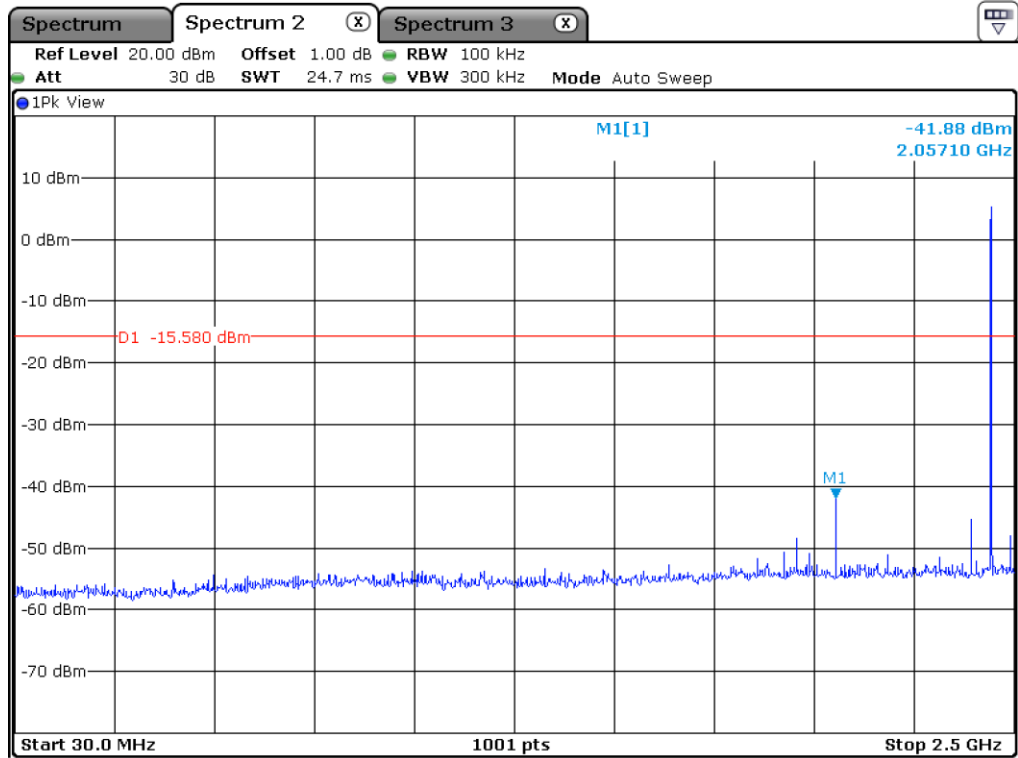
Hopping Mode



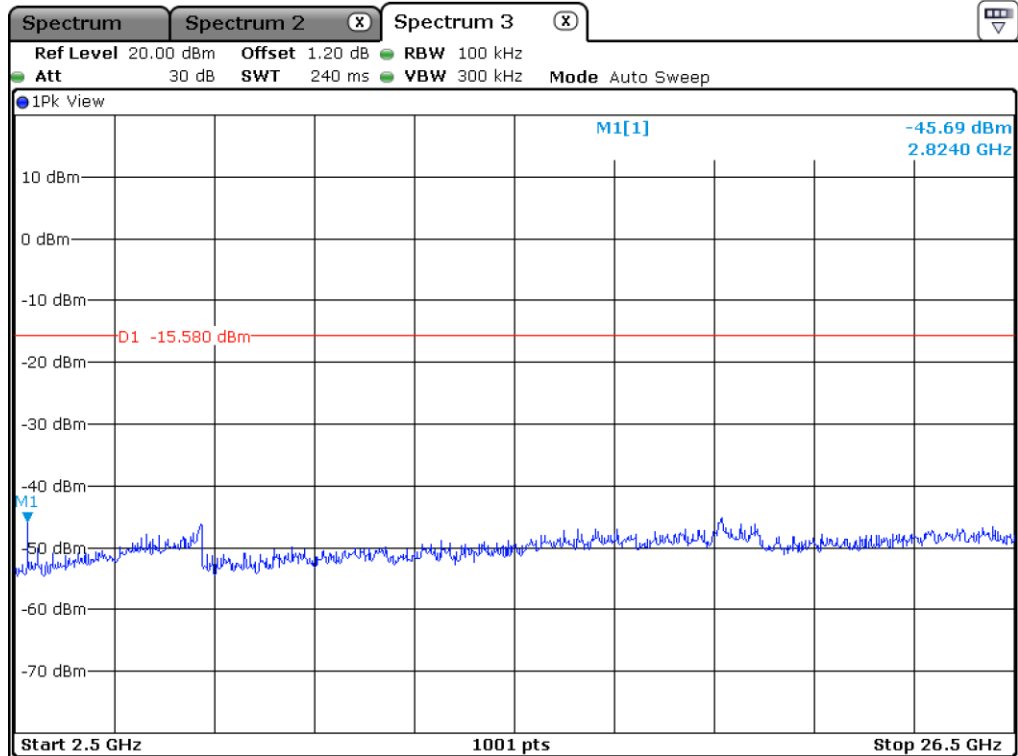
Low Channel



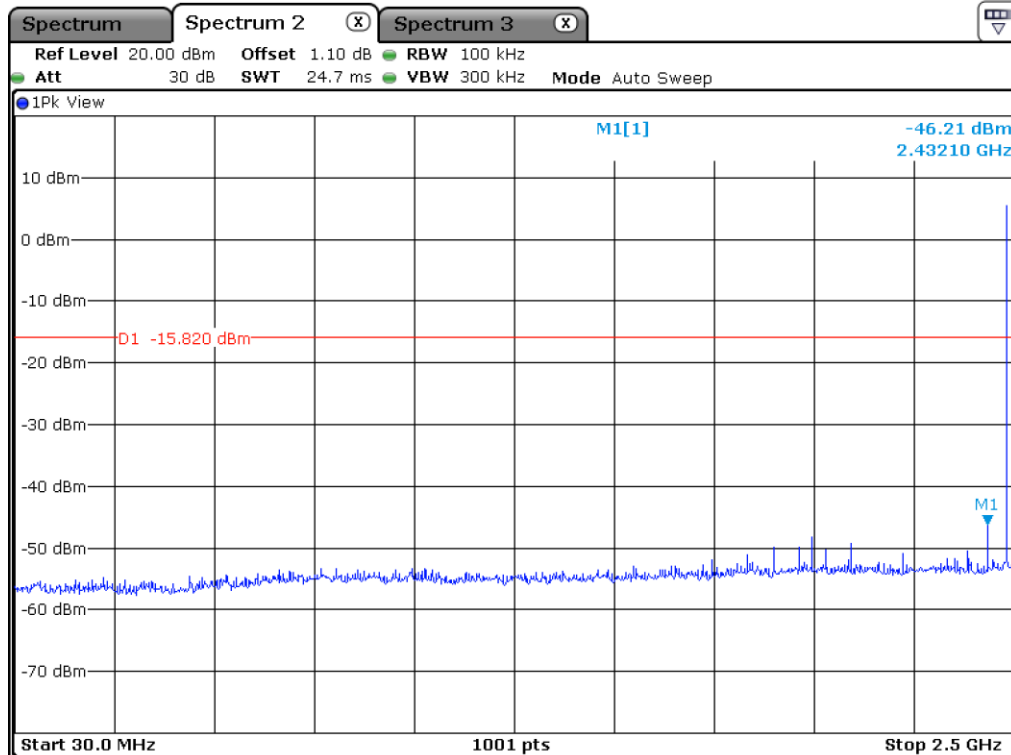
Low Channel



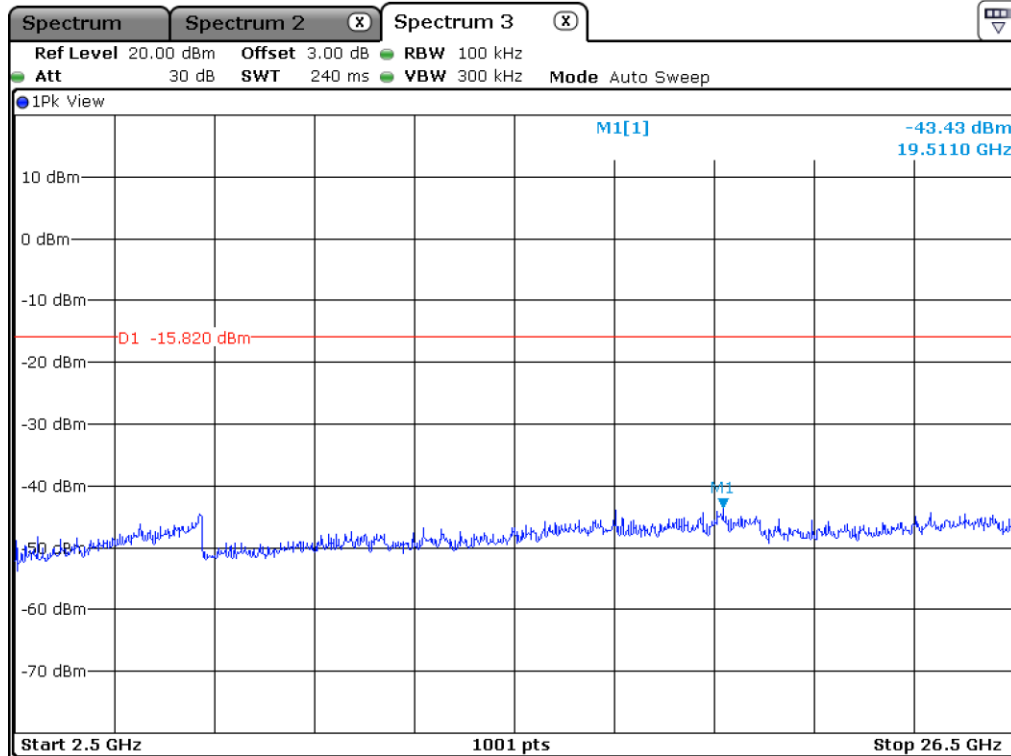
Middle Channel



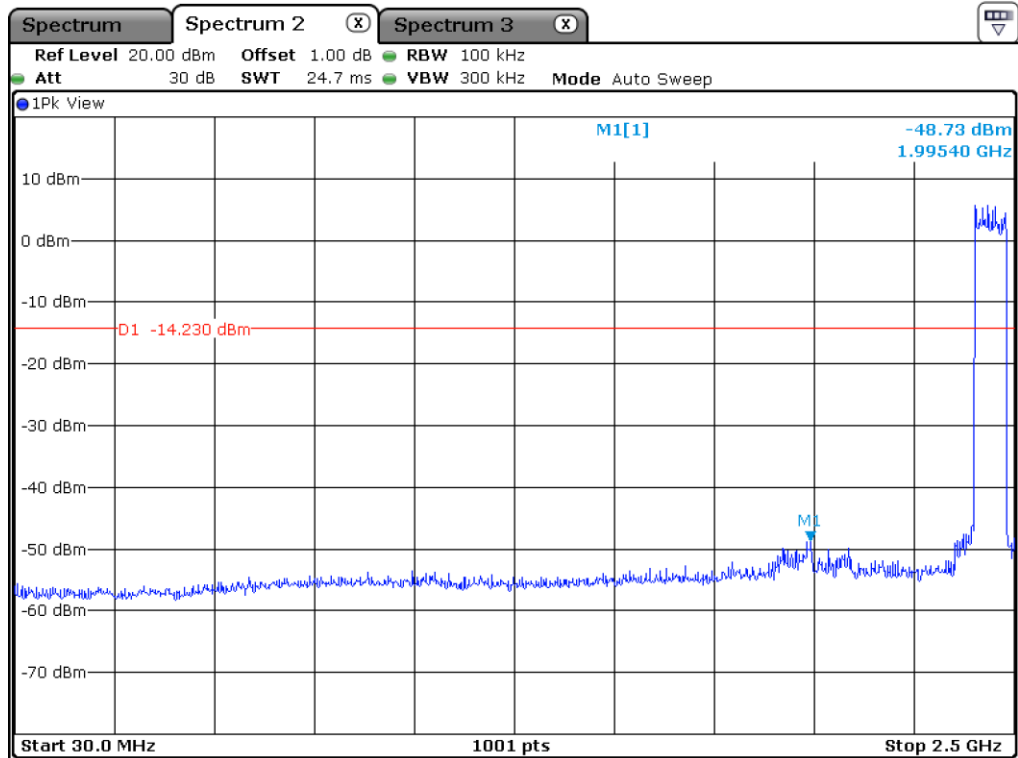
Middle Channel



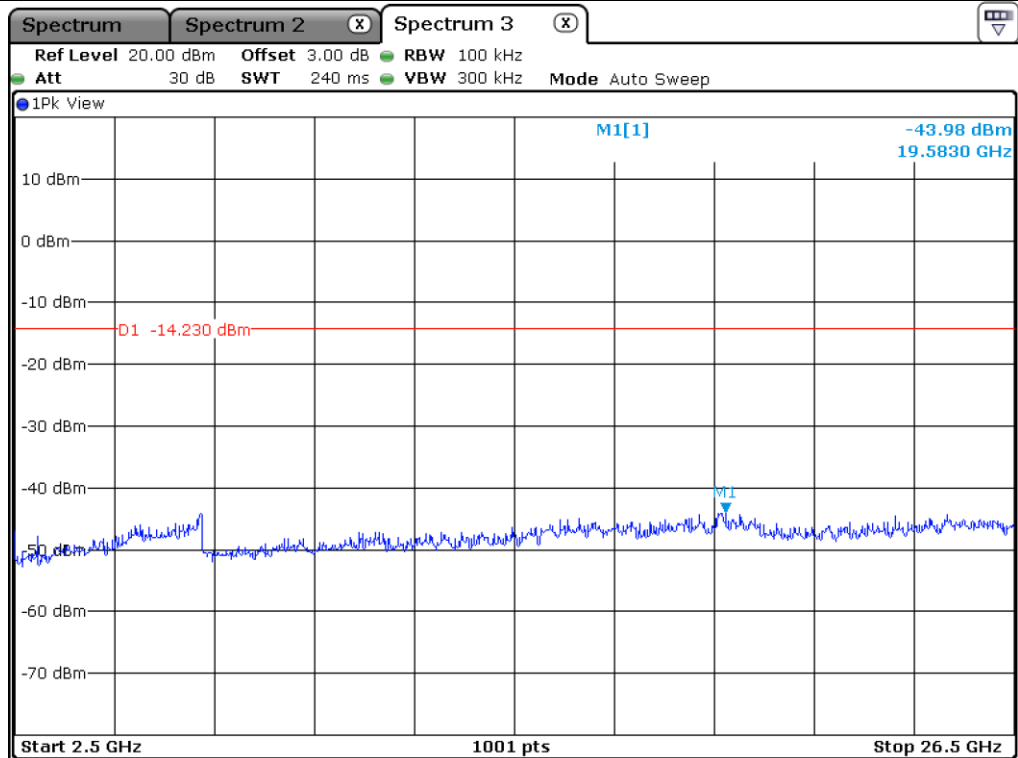
High Channel



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 : 76.80 %
- . 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										
2 354.16	56.86	Peak	H	28.04	7.27	44.96	-	47.21	74.00	26.79
2 354.07	47.49	Average	H	28.04	7.27	44.96	1.15	38.99	54.00	15.01
2 354.44	56.05	Peak	V	28.04	7.27	44.96	-	46.40	74.00	27.60
2 354.07	46.37	Average	V	28.04	7.27	44.96	1.15	37.87	54.00	16.13
Test Data for High Channel										
2 483.87	55.31	Peak	H	28.81	7.53	44.90	-	46.75	74.00	27.25
2 491.78	43.99	Average	H	28.80	7.53	44.90	1.15	36.57	54.00	17.43
2 489.84	55.64	Peak	V	28.81	7.53	44.90	-	47.08	74.00	26.92
2 488.88	43.89	Average	V	28.83	7.62	44.91	1.15	36.58	54.00	17.42

Tabulated test data for Restricted Band

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

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{AMP Gain} + \text{Duty Factor}$$

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 : 76.80 %
- . 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										
2 353.79	55.60	Peak	H	28.04	7.27	44.96	-	45.95	74.00	28.05
2 353.98	47.62	Average	H	28.04	7.27	44.96	1.15	39.12	54.00	14.88
2 353.89	55.21	Peak	V	28.04	7.27	44.96	-	45.56	74.00	28.44
2 353.98	45.02	Average	V	28.04	7.27	44.96	1.15	36.52	54.00	17.48
Test Data for High Channel										
2 483.91	55.55	Peak	H	28.83	7.62	44.91	-	47.09	74.00	26.91
2 483.51	43.83	Average	H	28.82	7.53	44.90	1.15	36.43	54.00	17.57
2 487.32	56.21	Peak	V	28.83	7.62	44.91	-	47.75	74.00	26.25
2 494.90	43.53	Average	V	28.81	7.53	44.90	1.15	36.12	54.00	17.88

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

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 : 76.80 %
- . 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										
2 354.07	56.50	Peak	H	28.04	7.27	44.96	-	46.85	74.00	27.15
2 354.07	47.49	Average	H	28.04	7.27	44.96	1.15	38.99	54.00	15.01
2 354.07	55.50	Peak	V	28.04	7.27	44.96	-	45.85	74.00	28.15
2 353.98	45.55	Average	V	28.04	7.27	44.96	1.15	37.05	54.00	16.95
Test Data for High Channel										
2 483.75	55.92	Peak	H	28.83	7.62	44.91	-	58.03	74.00	15.97
2 492.12	43.76	Average	H	28.83	7.62	44.91	1.15	50.96	54.00	3.05
2 484.03	55.40	Peak	V	28.83	7.62	44.91	-	58.12	74.00	15.88
2 484.05	43.80	Average	V	28.81	7.53	44.90	1.15	50.67	54.00	3.34

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

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 : 76.80 %
- 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	50.40	Peak	H	33.45	12.02	44.66	-	51.21	74.00	22.79
4 804.00	38.05	Average	H	33.45	12.02	44.66	1.15	40.01	54.00	13.99
4 804.00	50.34	Peak	V	33.45	12.02	44.66	-	51.15	74.00	22.85
4 804.00	38.15	Average	V	33.45	12.02	44.66	1.15	40.11	54.00	13.89
Test Data for Middle Channel										
4 882.00	50.23	Peak	H	33.45	12.02	44.68	-	51.02	74.00	22.98
4 882.00	37.72	Average	H	33.45	12.02	44.68	1.15	39.66	54.00	14.34
4 882.00	50.39	Peak	V	33.45	12.02	44.68	-	51.18	74.00	22.82
4 882.00	37.88	Average	V	33.45	12.02	44.68	1.15	39.82	54.00	14.18
Test Data for High Channel										
4 960.00	49.89	Peak	H	33.55	12.02	44.68	-	50.78	74.00	23.22
4 960.00	38.04	Average	H	33.55	12.02	44.68	1.15	40.08	54.00	13.92
4 960.00	50.22	Peak	V	33.55	12.02	44.68	-	51.11	74.00	22.89
4 960.00	38.18	Average	V	33.55	12.02	44.68	1.15	40.22	54.00	13.78

Remark: "H": Horizontal, "V": Vertical

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{AMP Gain} + \text{Duty Factor}$$

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 : 76.80 %
- 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	50.16	Peak	H	33.45	12.02	44.66	-	50.97	74.00	23.03
4 804.00	38.00	Average	H	33.45	12.02	44.66	1.15	39.96	54.00	14.04
4 804.00	49.86	Peak	V	33.45	12.02	44.66	-	50.67	74.00	23.33
4 804.00	38.22	Average	V	33.45	12.02	44.66	1.15	40.18	54.00	13.82
Test Data for Middle Channel										
4 882.00	50.22	Peak	H	33.45	12.02	44.68	-	51.01	74.00	22.99
4 882.00	37.93	Average	H	33.45	12.02	44.68	1.15	39.87	54.00	14.13
4 882.00	50.10	Peak	V	33.45	12.02	44.68	-	50.89	74.00	23.11
4 882.00	37.82	Average	V	33.45	12.02	44.68	1.15	39.76	54.00	14.24
Test Data for High Channel										
4 960.00	50.59	Peak	H	33.55	12.02	44.68	-	51.48	74.00	22.52
4 960.00	37.97	Average	H	33.55	12.02	44.68	1.15	40.01	54.00	13.99
4 960.00	50.17	Peak	V	33.55	12.02	44.68	-	51.06	74.00	22.94
4 960.00	38.01	Average	V	33.55	12.02	44.68	1.15	40.05	54.00	13.95

Remark: "H": Horizontal, "V": Vertical

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{AMP Gain} + \text{Duty Factor}$$

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 : 76.80 %
- 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	49.78	Peak	H	33.45	12.02	44.66	-	50.59	74.00	23.41
4 804.00	38.00	Average	H	33.45	12.02	44.66	1.15	39.96	54.00	14.04
4 804.00	50.11	Peak	V	33.45	12.02	44.66	-	50.92	74.00	23.08
4 804.00	38.01	Average	V	33.45	12.02	44.66	1.15	39.97	54.00	14.03
Test Data for Middle Channel										
4 882.00	50.10	Peak	H	33.45	12.02	44.68	-	50.89	74.00	23.11
4 882.00	37.70	Average	H	33.45	12.02	44.68	1.15	39.64	54.00	14.36
4 882.00	49.94	Peak	V	33.45	12.02	44.68	-	50.73	74.00	23.27
4 882.00	37.87	Average	V	33.45	12.02	44.68	1.15	39.81	54.00	14.19
Test Data for High Channel										
4 960.00	50.50	Peak	H	33.55	12.02	44.68	-	51.39	74.00	22.61
4 960.00	38.14	Average	H	33.55	12.02	44.68	1.15	40.18	54.00	13.82
4 960.00	50.18	Peak	V	33.55	12.02	44.68	-	51.07	74.00	22.93
4 960.00	38.09	Average	V	33.55	12.02	44.68	1.15	40.13	54.00	13.87

Remark: "H": Horizontal, "V": Vertical

$$\text{Margin (dB)} = \text{Limits (dB}\mu\text{V/m)} - \text{Total Level (dB}\mu\text{V/m)}$$

$$\text{Total Level} = \text{Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{AMP Gain} + \text{Duty Factor}$$

13. RADIATED EMISSION TEST

13.1 Operating environment

Temperature : 23 °C
Relative humidity : 50 % 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

August 19, 2022 ~ October 05, 2022

13.4 Test data for 30 MHz ~ 1 000 MHz

13.4.1 Test data for Bluetooth

Humidity Level : 50 % R.H.

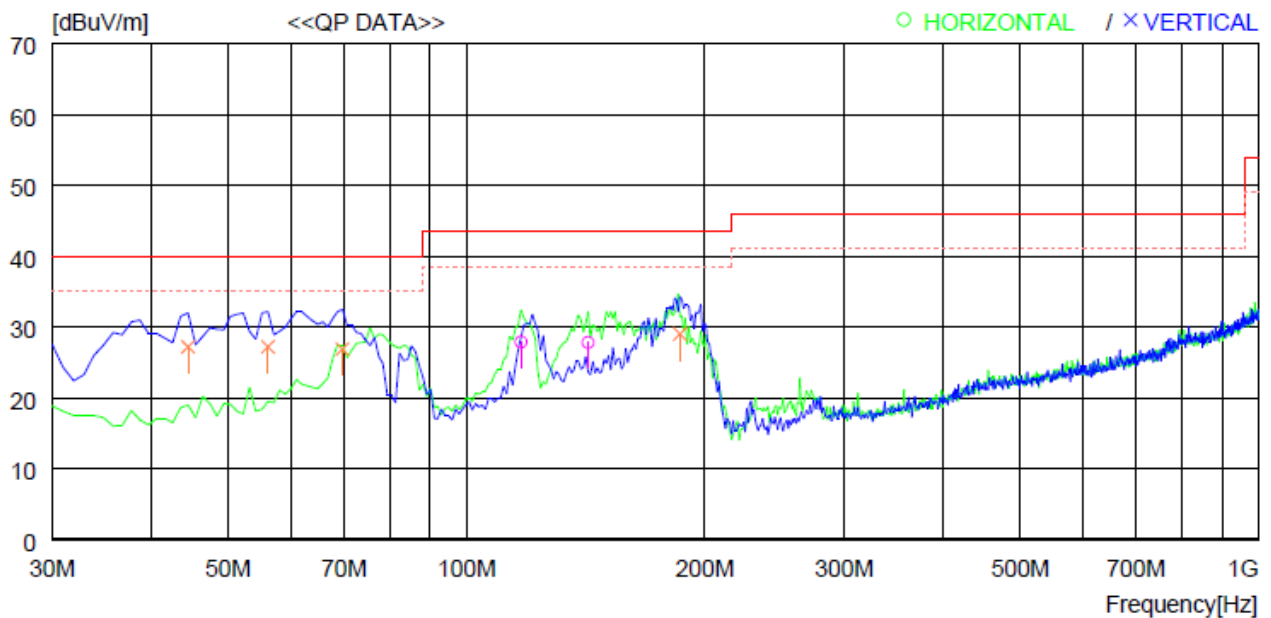
Temperature: 23 °C

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

Result : PASSED

EUT : Network Webcam

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

LIMIT : FCC Part15 Subpart B Class B (3m)
MARGIN: 5 dB


No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	117.300	40.5	18.3	2.1	33.0	27.9	43.5	15.6	300	248
2	142.520	39.5	19.1	2.2	33.0	27.8	43.5	15.7	300	359
----- Vertical -----										
3	44.550	43.7	15.3	1.3	33.1	27.2	40.0	12.8	100	31
4	56.190	46.9	12.1	1.3	33.1	27.2	40.0	12.8	100	138
5	69.770	45.3	13.1	1.6	33.1	26.9	40.0	13.1	100	0
6	186.170	43.1	16.3	2.6	33.0	29.0	43.5	14.5	100	0

13.4.2 Test data for Intermodulation Mode (Bluetooth + WLAN 2.4 GHz)

Humidity Level : 50 % R.H.

Temperature: 23 °C

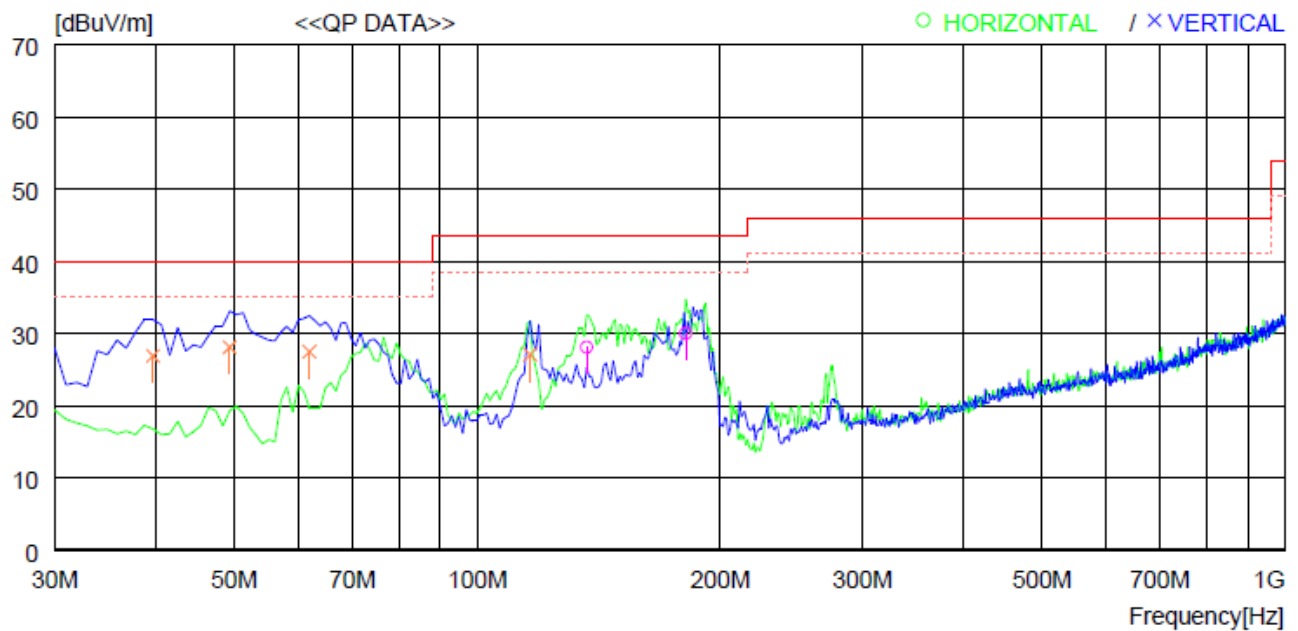
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Network Webcam

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

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 5 dB



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	136.700	39.6	19.3	2.2	33.0	28.1	43.5	15.4	200	232
2	181.320	43.8	16.7	2.5	33.0	30.0	43.5	13.5	200	0
----- Vertical -----										
3	39.700	41.4	17.4	1.2	33.1	26.9	40.0	13.1	100	53
4	49.400	46.6	13.4	1.2	33.1	28.1	40.0	11.9	100	197
5	62.010	46.7	12.5	1.4	33.1	27.5	40.0	12.5	200	359
6	116.330	39.8	18.2	2.1	33.0	27.1	43.5	16.4	100	0

13.4.3 Test data for Intermodulation Mode (Bluetooth + WLAN 5 GHz)

Humidity Level : 50 % R.H.

Temperature: 23 °C

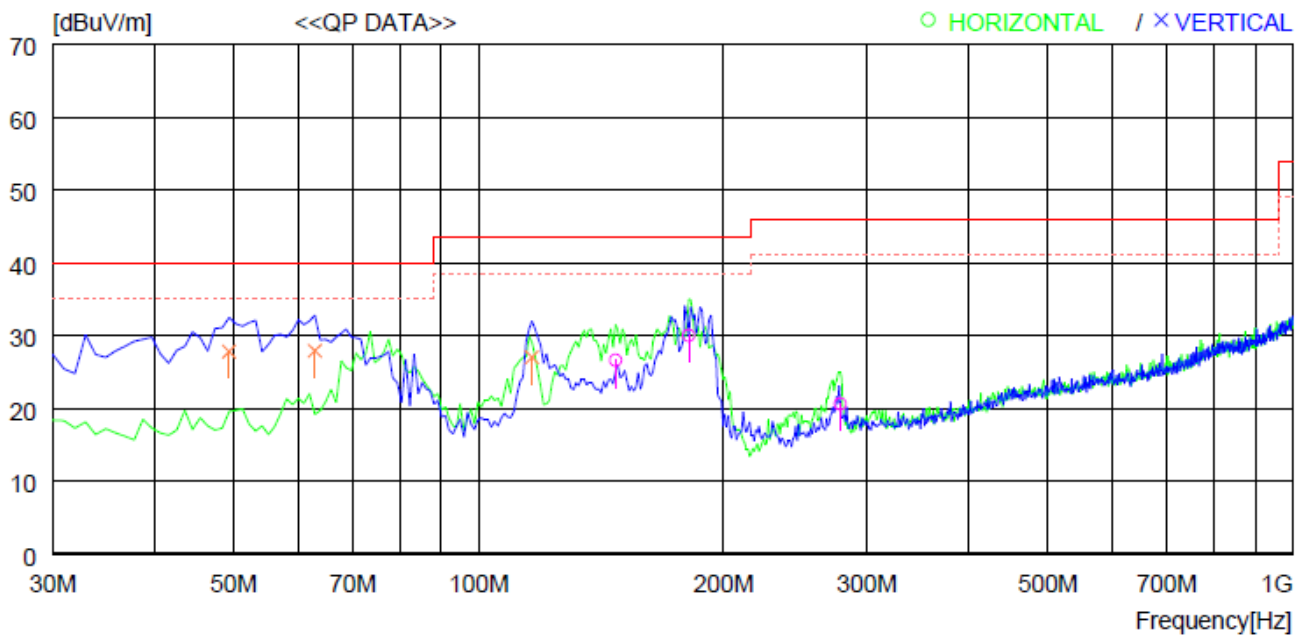
Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.247

Result : PASSED

EUT : Network Webcam

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

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 5 dB



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	QP	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	147.370	38.5	18.8	2.3	33.0	26.6	43.5	16.9	300	231
2	181.320	43.8	16.7	2.5	33.0	30.0	43.5	13.5	200	282
3	278.320	31.4	18.9	3.2	32.9	20.6	46.0	25.4	100	359
----- Vertical -----										
4	49.400	46.3	13.4	1.2	33.1	27.8	40.0	12.2	100	0
5	62.980	46.9	12.6	1.5	33.1	27.9	40.0	12.1	100	99
6	116.330	39.7	18.2	2.1	33.0	27.0	43.5	16.5	100	115

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. CONDUCTED EMISSION TEST

14.1 Operating environment

Temperature : 23 °C
Relative humidity : 50 % 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 $50\ \Omega$ / $50\ \mu\text{H}$ + $5\ \Omega$ Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

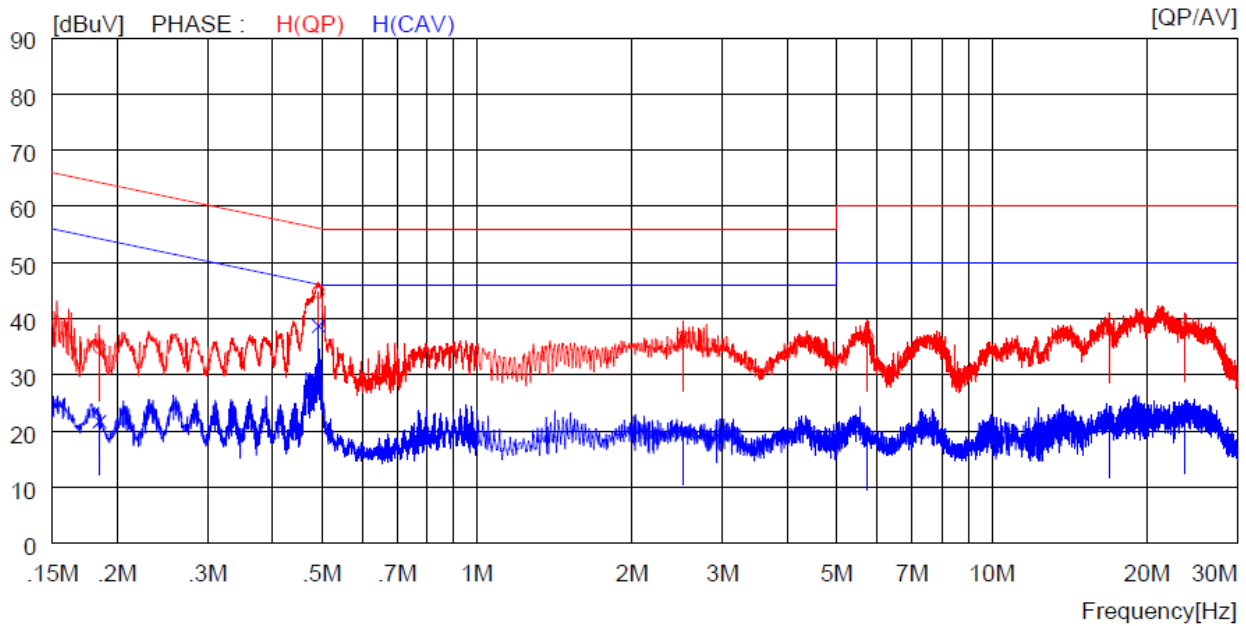
14.3 Test Date

August 19, 2022 ~ October 05, 2022

14.4 Test data for Bluetooth

- . Resolution bandwidth : 9 kHz
- . Frequency range : 0.15 MHz ~ 30 MHz
- . Tested Line : LIVE LINE

LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



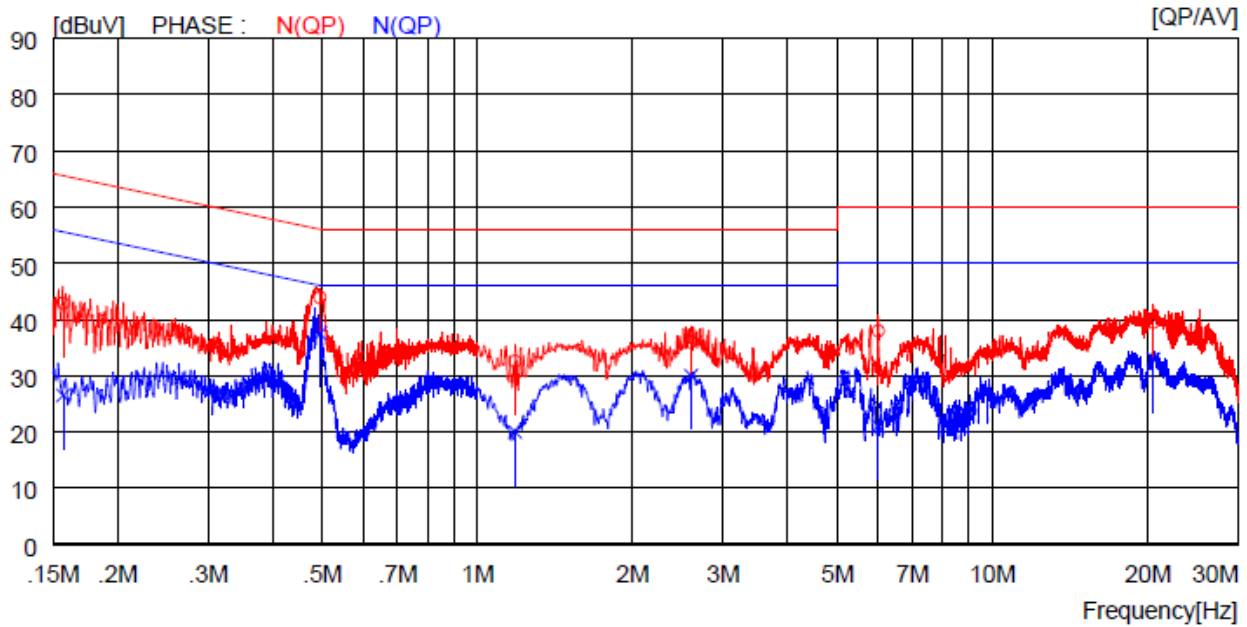
NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.18500	24.9	----	10.0	34.9	----	64.3	----	29.4	----	H (QP)
2	0.49300	34.8	----	10.0	44.8	----	56.1	----	11.3	----	H (QP)
3	2.51600	26.6	----	10.1	36.7	----	56.0	----	19.3	----	H (QP)
4	5.73000	26.5	----	10.2	36.7	----	60.0	----	23.3	----	H (QP)
5	16.88000	27.7	----	10.4	38.1	----	60.0	----	21.9	----	H (QP)
6	23.64000	27.8	----	10.5	38.3	----	60.0	----	21.7	----	H (QP)
7	0.18500	----	11.7	10.0	----	21.7	----	54.3	----	32.6	H (CAV)
8	0.49300	----	28.7	10.0	----	38.7	----	46.1	----	7.4	H (CAV)
9	2.51600	----	9.8	10.1	----	19.9	----	46.0	----	26.1	H (CAV)
10	5.73000	----	8.7	10.2	----	18.9	----	50.0	----	31.1	H (CAV)
11	16.88000	----	10.8	10.4	----	21.2	----	50.0	----	28.8	H (CAV)
12	23.64000	----	11.6	10.5	----	22.1	----	50.0	----	27.9	H (CAV)

-. 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.

LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)

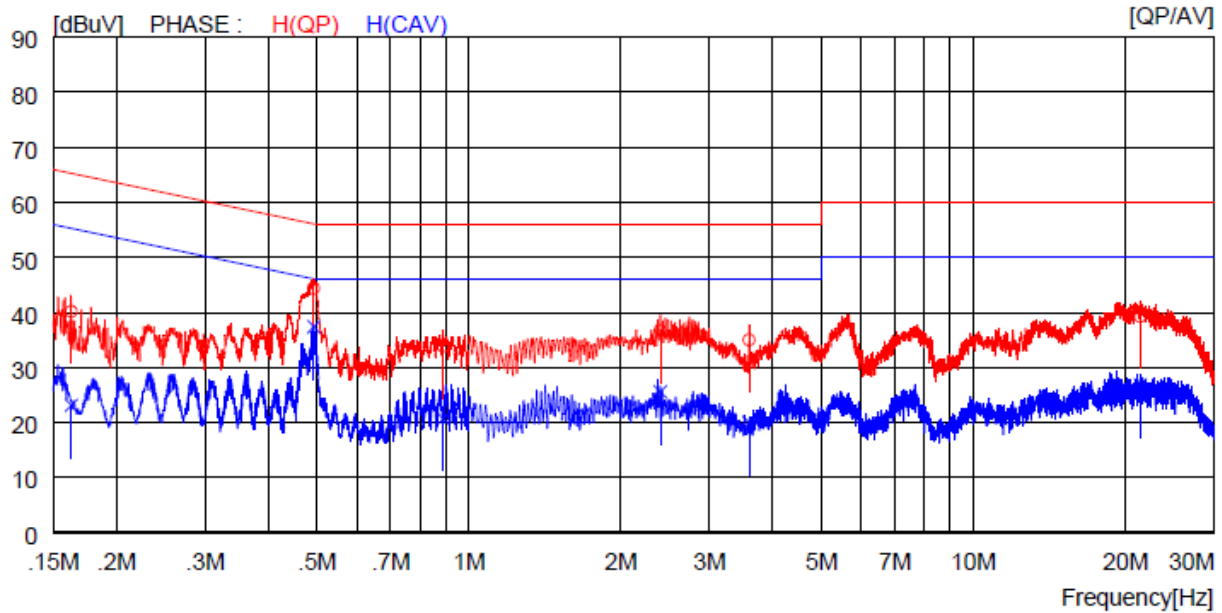


NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15700	32.9	----	10.0	42.9	----	65.6	----	22.7	----	N (QP)
2	0.49500	33.9	----	10.0	43.9	----	56.1	----	12.2	----	N (QP)
3	1.18400	22.5	----	10.1	32.6	----	56.0	----	23.4	----	N (QP)
4	2.60000	25.9	----	10.1	36.0	----	56.0	----	20.0	----	N (QP)
5	6.00000	27.8	----	10.2	38.0	----	60.0	----	22.0	----	N (QP)
6	20.53000	29.0	----	10.5	39.5	----	60.0	----	20.5	----	N (QP)
7	0.15700	----	16.5	10.0	----	26.5	----	55.6	----	29.1	N (CAV)
8	0.49500	----	27.5	10.0	----	37.5	----	46.1	----	8.6	N (CAV)
9	1.18400	----	9.9	10.1	----	20.0	----	46.0	----	26.0	N (CAV)
10	2.60000	----	19.9	10.1	----	30.0	----	46.0	----	16.0	N (CAV)
11	6.00000	----	10.8	10.2	----	21.0	----	50.0	----	29.0	N (CAV)
12	20.53000	----	22.5	10.5	----	33.0	----	50.0	----	17.0	N (CAV)

14.5 Test data for Intermodulation Mode (Bluetooth + WLAN 2.4 GHz)

- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : LIVE LINE

LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



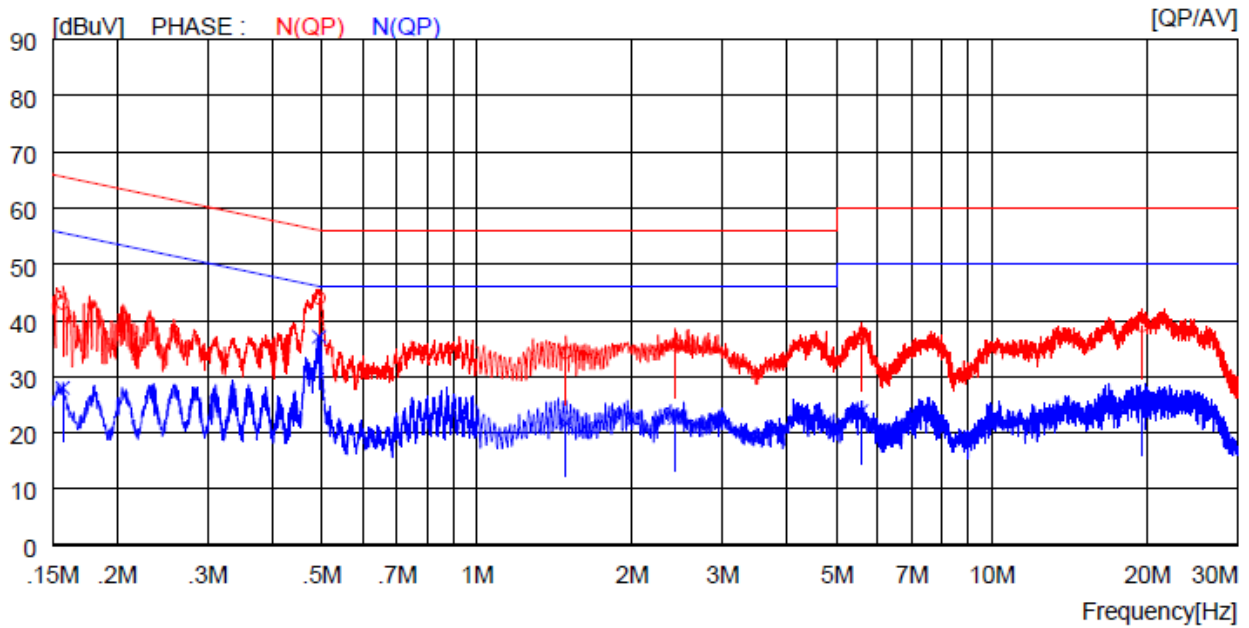
NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.16300	30.2	----	10.0	40.2	----	65.3	----	25.1	----	H (QP)
2	0.49300	34.4	----	10.0	44.4	----	56.1	----	11.7	----	H (QP)
3	0.89000	23.9	----	10.0	33.9	----	56.0	----	22.1	----	H (QP)
4	2.39600	26.6	----	10.1	36.7	----	56.0	----	19.3	----	H (QP)
5	3.59600	24.9	----	10.1	35.0	----	56.0	----	21.0	----	H (QP)
6	21.43000	28.8	----	10.5	39.3	----	60.0	----	20.7	----	H (QP)
7	0.16300	----	13.1	10.0	----	23.1	----	55.3	----	32.2	H (CAV)
8	0.49300	----	27.4	10.0	----	37.4	----	46.1	----	8.7	H (CAV)
9	0.89000	----	10.7	10.0	----	20.7	----	46.0	----	25.3	H (CAV)
10	2.39600	----	15.5	10.1	----	25.6	----	46.0	----	20.4	H (CAV)
11	3.59600	----	9.9	10.1	----	20.0	----	46.0	----	26.0	H (CAV)
12	21.43000	----	16.3	10.5	----	26.8	----	50.0	----	23.2	H (CAV)

-. 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.

LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)

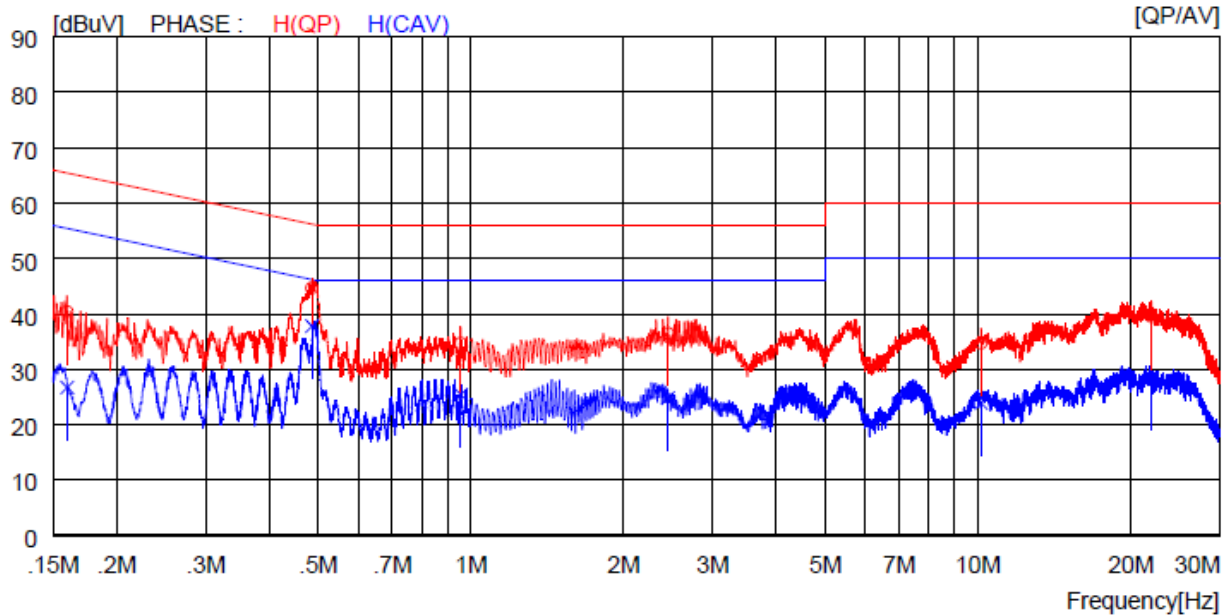


NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15700	33.1	----	10.0	43.1	----	65.6	----	22.5	----	N (QP)
2	0.49400	34.0	----	10.0	44.0	----	56.1	----	12.1	----	N (QP)
3	1.48800	24.2	----	10.1	34.3	----	56.0	----	21.7	----	N (QP)
4	2.42400	25.6	----	10.1	35.7	----	56.0	----	20.3	----	N (QP)
5	5.57500	26.6	----	10.2	36.8	----	60.0	----	23.2	----	N (QP)
6	19.54000	28.6	----	10.5	39.1	----	60.0	----	20.9	----	N (QP)
7	0.15700	----	18.0	10.0	----	28.0	----	55.6	----	27.6	N (CAV)
8	0.49400	----	27.1	10.0	----	37.1	----	46.1	----	9.0	N (CAV)
9	1.48800	----	11.7	10.1	----	21.8	----	46.0	----	24.2	N (CAV)
10	2.42400	----	12.5	10.1	----	22.6	----	46.0	----	23.4	N (CAV)
11	5.57500	----	13.6	10.2	----	23.8	----	50.0	----	26.2	N (CAV)
12	19.54000	----	14.9	10.5	----	25.4	----	50.0	----	24.6	N (CAV)

14.6 Test data for Intermodulation Mode (Bluetooth + WLAN 5 GHz)

- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : LIVE LINE

LIMIT : EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



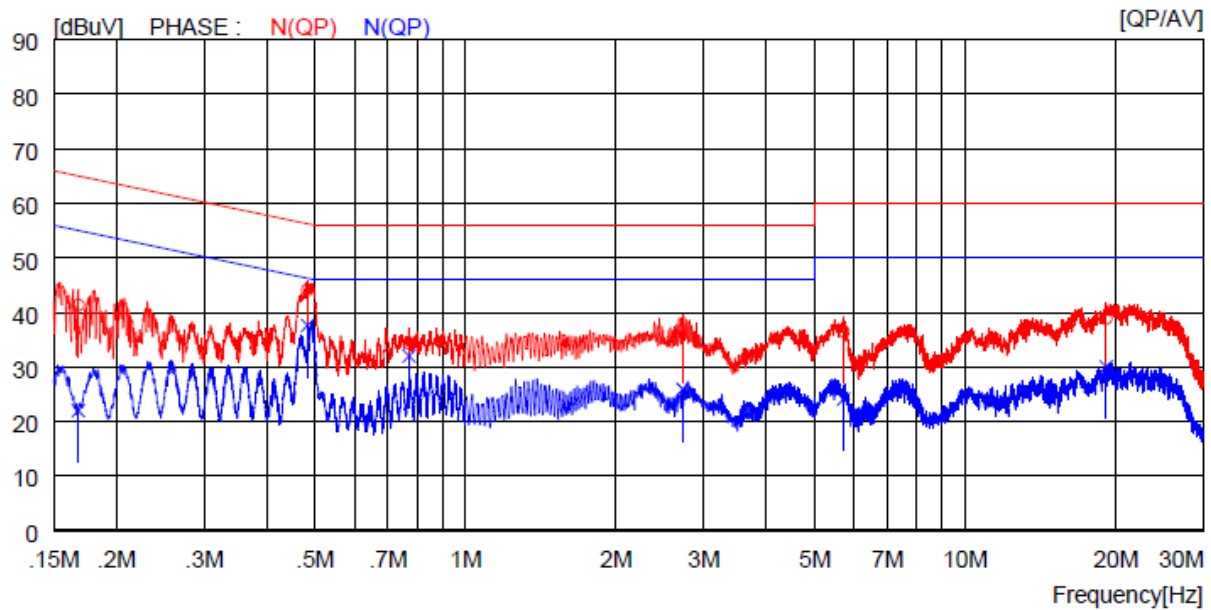
NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.16000	30.4	----	10.0	40.4	----	65.5	----	25.1	----	H(QP)
2	0.48600	34.7	----	10.0	44.7	----	56.2	----	11.5	----	H(QP)
3	0.95600	24.7	----	10.0	34.7	----	56.0	----	21.3	----	H(QP)
4	2.44800	26.4	----	10.1	36.5	----	56.0	----	19.5	----	H(QP)
5	10.15000	24.5	----	10.2	34.7	----	60.0	----	25.3	----	H(QP)
6	22.00000	29.0	----	10.5	39.5	----	60.0	----	20.5	----	H(QP)
7	0.16000	----	16.7	10.0	----	26.7	----	55.5	----	28.8	H(CAV)
8	0.48600	----	27.8	10.0	----	37.8	----	46.2	----	8.4	H(CAV)
9	0.95600	----	15.4	10.0	----	25.4	----	46.0	----	20.6	H(CAV)
10	2.44800	----	14.7	10.1	----	24.8	----	46.0	----	21.2	H(CAV)
11	10.15000	----	13.7	10.2	----	23.9	----	50.0	----	26.1	H(CAV)
12	22.00000	----	18.0	10.5	----	28.5	----	50.0	----	21.5	H(CAV)

-. 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.

LIMIT : EN.KN.FCC.VCCI CISPR Pub.32 Class B, Quasi-Peak Limits (Mains Ports)
EN.KN.FCC.VCCI_CISPR Pub.32 Class B, Average Limits (Mains Ports)



NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.16800	31.3	----	10.0	41.3	----	65.1	----	23.8	----	N(QP)
2	0.48300	34.1	----	10.0	44.1	----	56.3	----	12.2	----	N(QP)
3	0.77100	24.4	----	10.0	34.4	----	56.0	----	21.6	----	N(QP)
4	2.72400	26.6	----	10.1	36.7	----	56.0	----	19.3	----	N(QP)
5	5.71000	26.3	----	10.2	36.5	----	60.0	----	23.5	----	N(QP)
6	19.16000	28.4	----	10.5	38.9	----	60.0	----	21.1	----	N(QP)
7	0.16800	----	12.0	10.0	----	22.0	----	55.1	----	33.1	N(CAV)
8	0.48300	----	27.6	10.0	----	37.6	----	46.3	----	8.7	N(CAV)
9	0.77100	----	22.0	10.0	----	32.0	----	46.0	----	14.0	N(CAV)
10	2.72400	----	15.8	10.1	----	25.9	----	46.0	----	20.1	N(CAV)
11	5.71000	----	13.9	10.2	----	24.1	----	50.0	----	25.9	N(CAV)
12	19.16000	----	19.5	10.5	----	30.0	----	50.0	----	20.0	N(CAV)

15. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV30	Rohde & Schwarz	Signal Analyzer	101372	Jul. 14, 2022 (1Y)
ESU	Rohde & Schwarz	EMI Test Receiver	100261	Mar. 07, 2022 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	392756	Oct. 13, 2022 (1Y)
SCU18	Rohde & Schwarz	Signal Conditioning unit	102266	Jul. 12, 2022 (1Y)
SCU40A	Rohde & Schwarz	Signal Conditioning unit	100436	Jan. 18, 2022 (1Y)
WT-A3882-R10	Microwave	Cavity Band Rejection Filter	WT22040502-1	Jun. 21, 2022 (1Y)
DT2000-2t	Innco System	Turn Table	N/A	N/A
MA-4640-XPET	Innco System	Antenna Master	MA4640/652/43100318/P	N/A
CO3000	Innco System	Controller	1026/40960617/P	N/A
FMZB 1513	Schwarzbeck	Loop Antenna	1513-235	Mar. 24, 2022 (2Y)
HLP-2008	TDK	Hybrid Antenna	131316	Mar. 07, 2022 (2Y)
AH-118	Com-Power	Horn Antenna	10050061	Oct. 21, 2022 (1Y)
BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 06, 2022(1Y)
ESCI	Rohde & Schwarz	EMI Test RECEIVER	101012	Oct. 12, 2022 (1Y)
NSLK8128	Schwarzbeck	AMN	8218-216	Mar. 14, 2022 (1Y)
ESH3-Z2	Rohde & Schwarz	PULSE LIMITER	100655	Mar. 14, 2022 (1Y)
TC-3000C	TESCOM	BLUETOOTH TESTER	3000C000634	Jan. 17, 2022 (1Y)