Mode: 802.11n_HT40 (MCS0)

Distance of measurement: 3 meter

Channel: 06

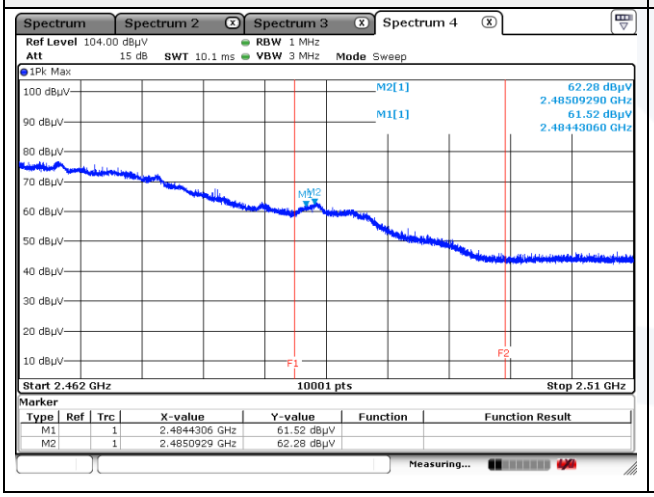
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 049.10	44.57	Peak	V	-9.40	-	35.17	74.00	38.83
1 065.09	47.37	Peak	H	-9.29	-	38.08	74.00	35.92

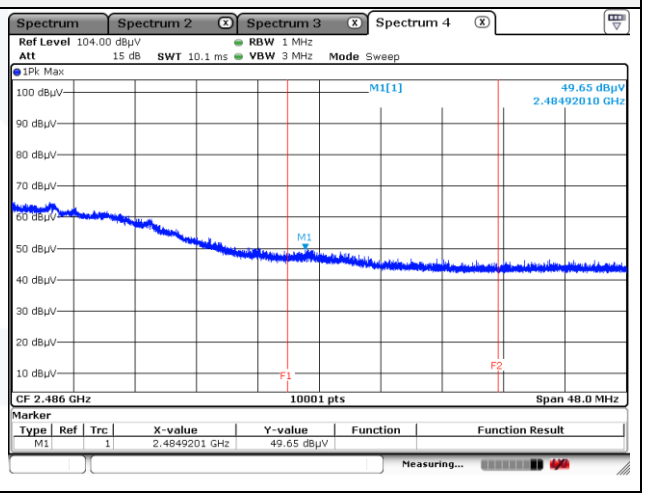
- **Band edge**

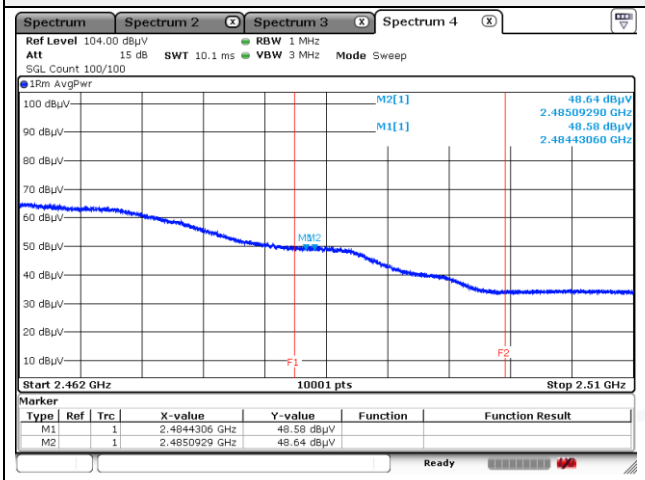
Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 484.43	61.52	Peak	H	-0.72	-	60.80	74.00	13.20
2 484.43	48.58	Average	H	-0.72	0.22	48.08	54.00	5.92
2 484.92	49.65	Peak	V	-0.72	-	48.93	74.00	25.07
2 485.09	62.28	Peak	H	-0.71	-	61.57	74.00	12.43
2 485.09	48.64	Average	H	-0.71	0.22	48.15	54.00	5.85

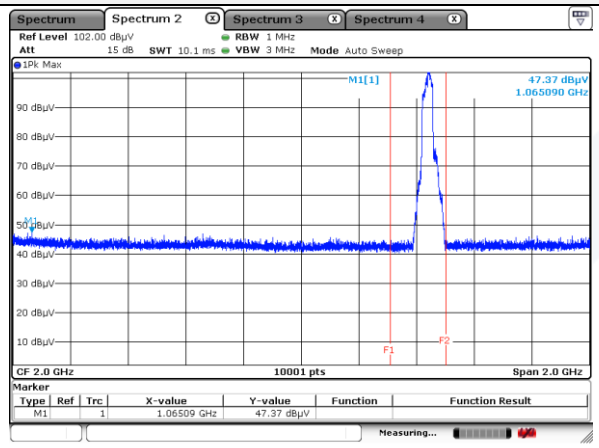
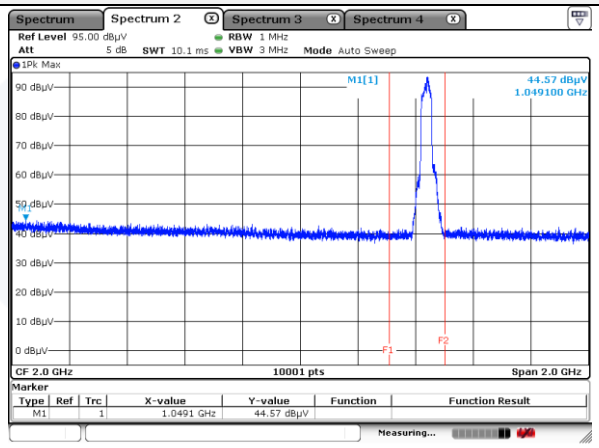
Restricted band // Horizontal // Peak

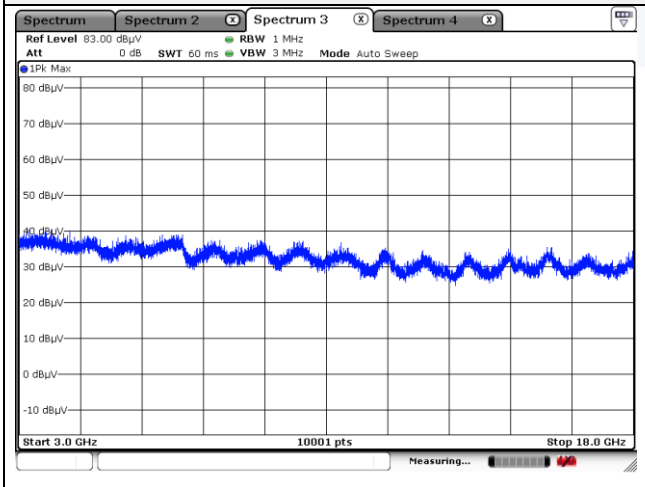
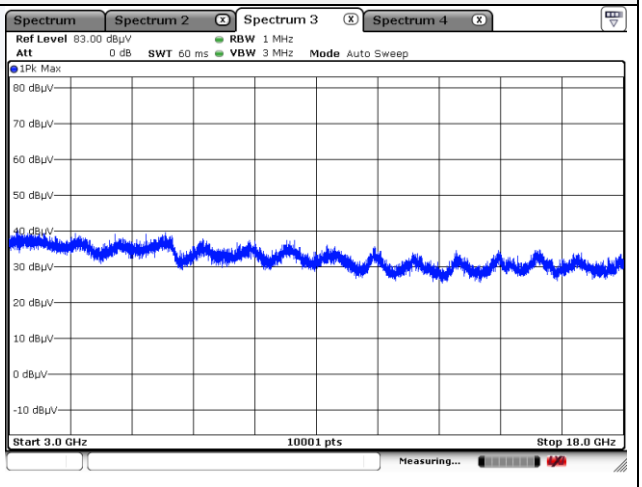


Restricted band // Vertical // Peak



Restricted band // Horizontal // Average	Restricted band // Vertical // Average
	Blank

Horizontal // Peak for 1 ㎓ to 3 ㎓	Vertical // Peak for 1 ㎓ to 3 ㎓
	

Horizontal // Peak for 3 ㎓ to 18 ㎓	Vertical // Peak for 3 ㎓ to 18 ㎓
	

Note.

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

Mode:	802.11n_HT40 (MCS0)
Distance of measurement:	3 meter
Channel:	09

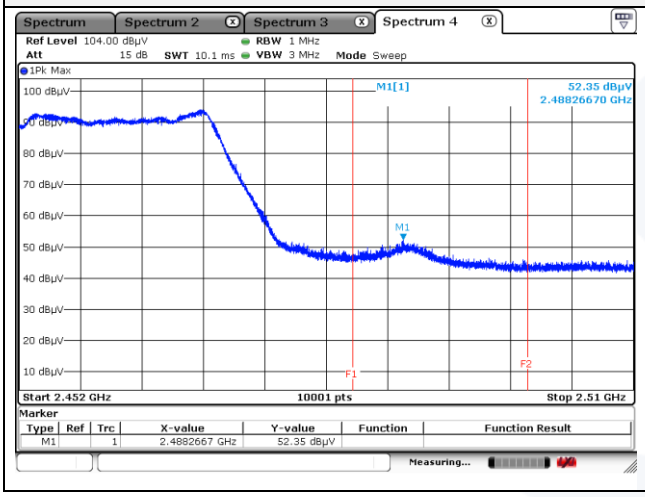
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 042.90	45.51	Peak	H	-9.44	-	36.07	74.00	37.93
1 100.89	44.51	Peak	V	-9.07	-	35.44	74.00	38.56

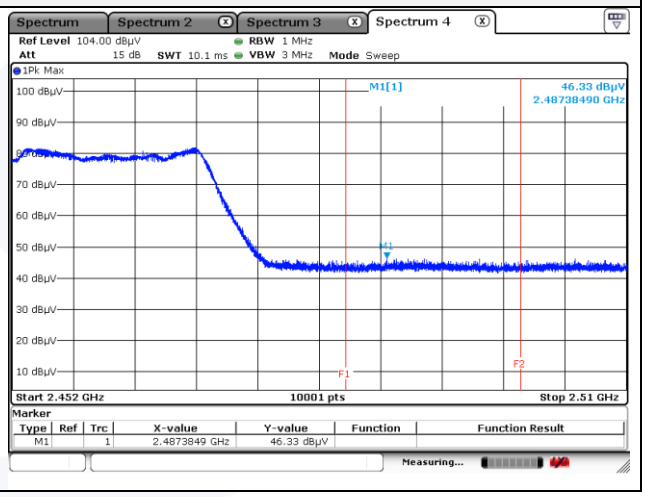
- **Band edge**

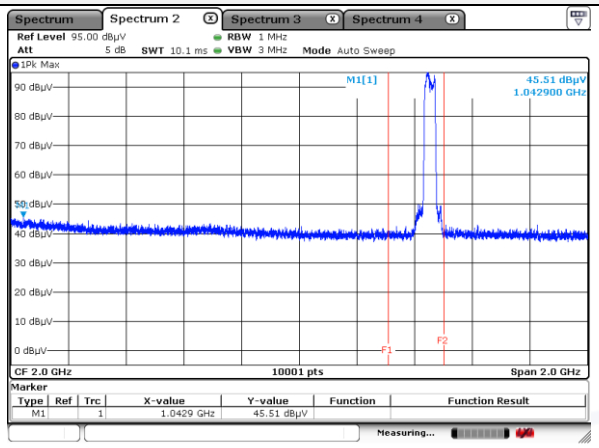
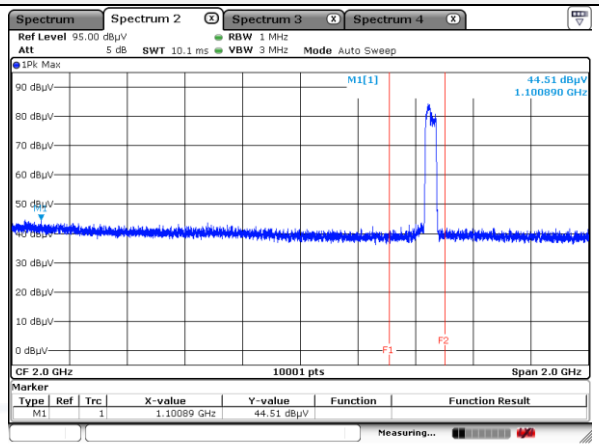
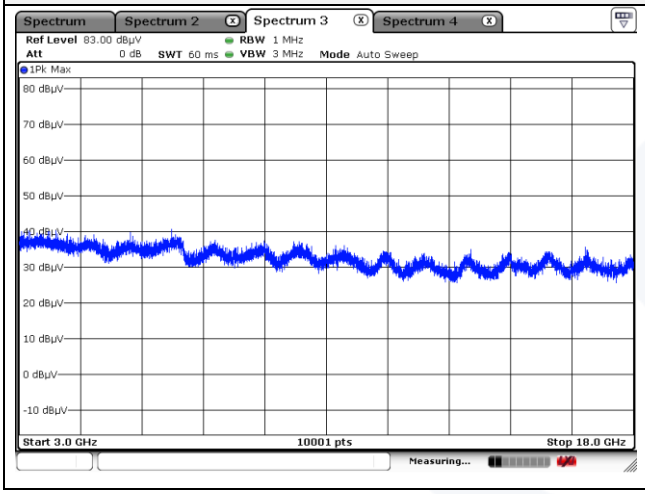
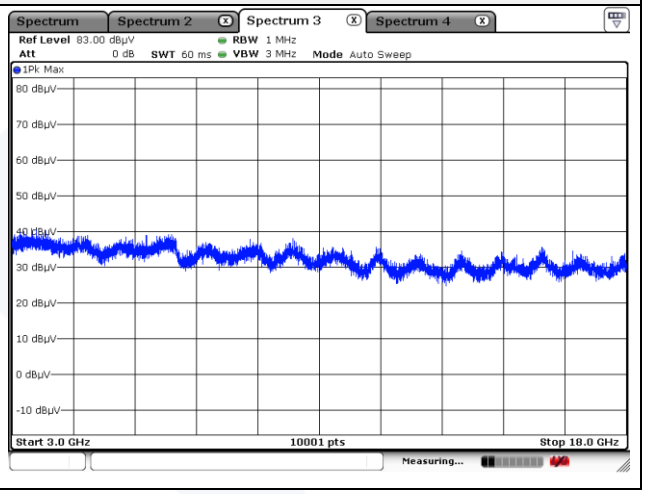
Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
2 487.38	46.33	Peak	V	-0.71	-	45.62	74.00	28.38
2 488.27	52.35	Peak	H	-0.71	-	51.64	74.00	22.36

Restricted band // Horizontal // Peak



Restricted band // Vertical // Peak



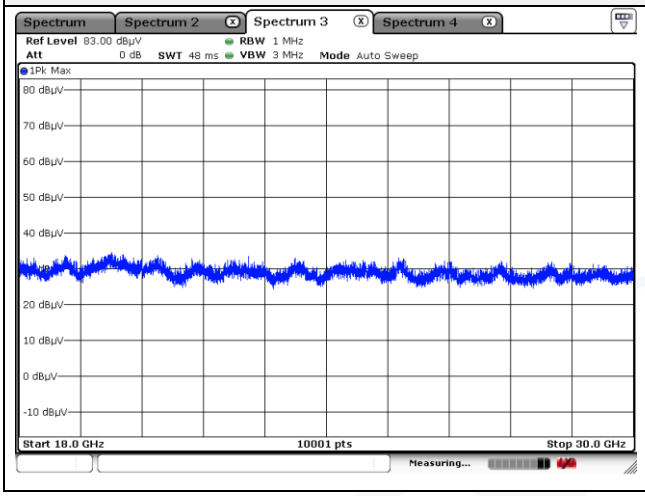
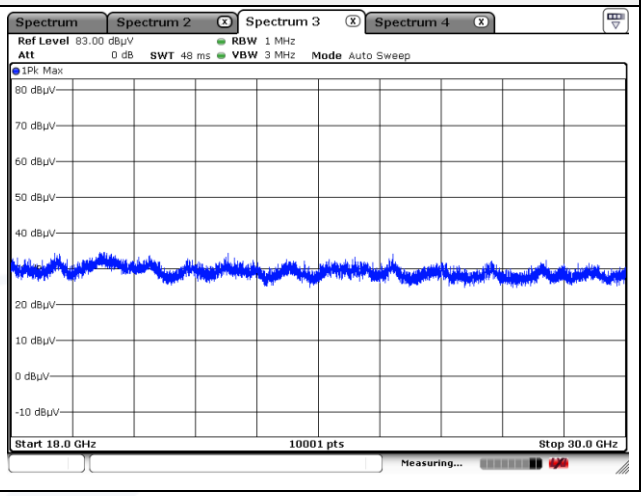
Horizontal // Peak for 1 ㎓ to 3 ㎓	Vertical // Peak for 1 ㎓ to 3 ㎓
	
Horizontal // Peak for 3 ㎓ to 18 ㎓	**Vertical // Peak for 3 ㎓ to 18 ㎓**
	

Note.

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

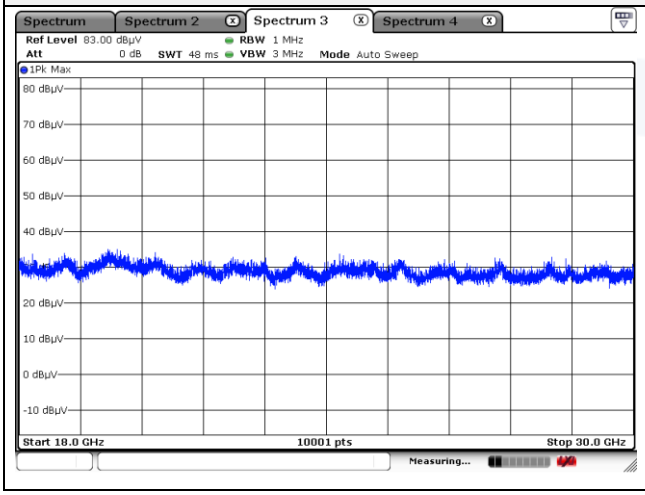
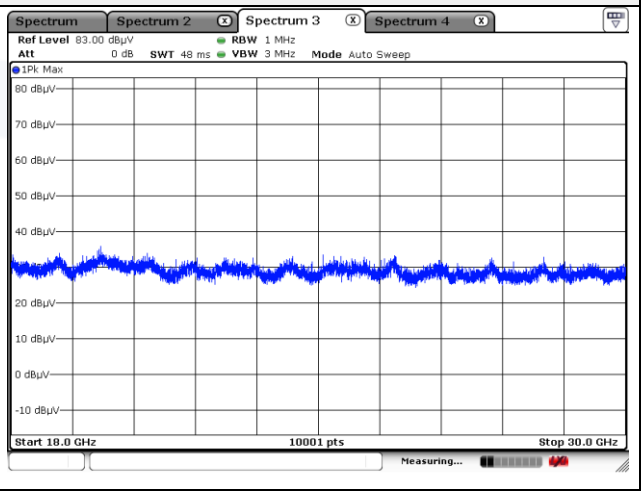
Test results (18 ㎓ to 30 ㎓) – Worst case

Mode:	LE 2 Mbps
Distance of measurement:	3 meter
Channel:	39 (Worst case)

Horizontal // Peak	Vertical // Peak
	

Note.
1. No spurious emission were detected above 18 ㎓.

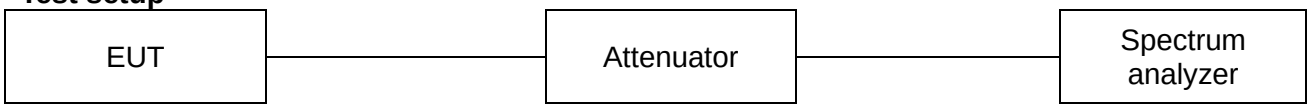
Mode:	802.11n_HT40 (MCS0)
Distance of measurement:	3 meter
Channel:	06 (Worst case)

Horizontal // Peak	Vertical // Peak
	

Note.
1. No spurious emission were detected above 18 ㎓.

3.5. Conducted spurious emissions & band edge

Test setup



Test procedure

Band edge

ANSI C63.10-2013 - Section 11.11

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. Set the RBW = 100 ㎑
4. Set the VBW = [3 × RBW].
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow trace to fully stabilize.

Out of band emissions

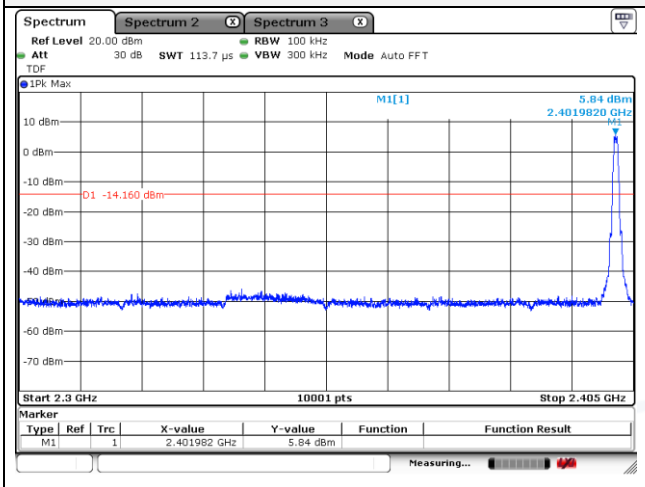
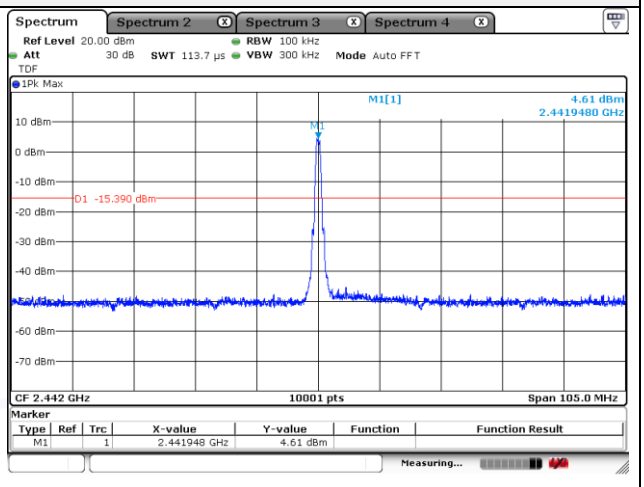
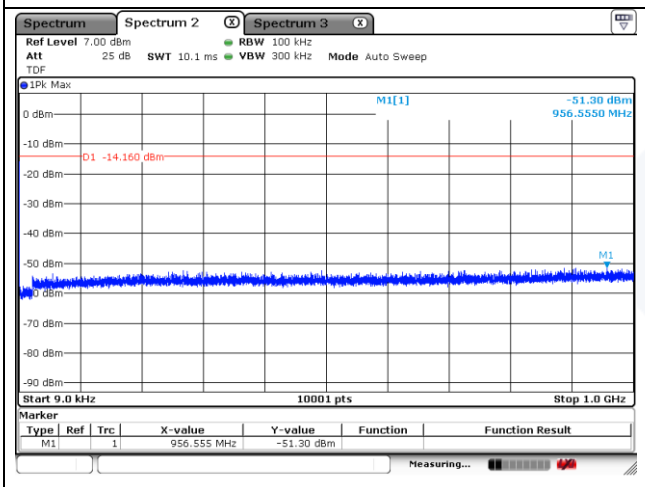
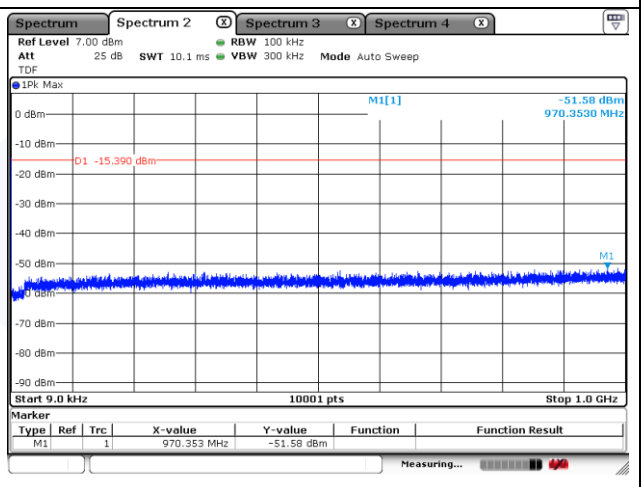
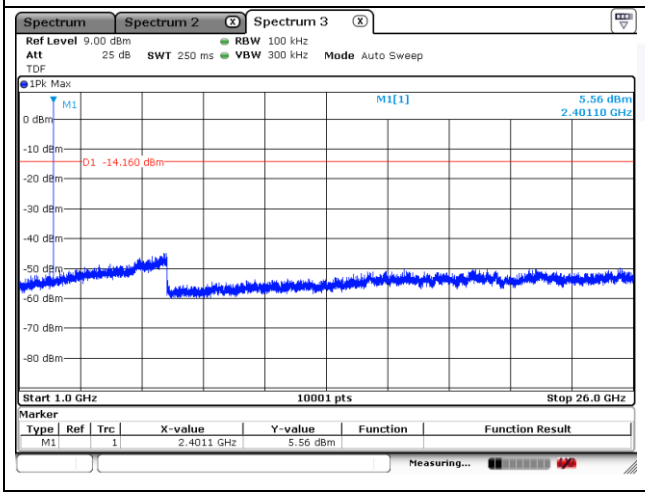
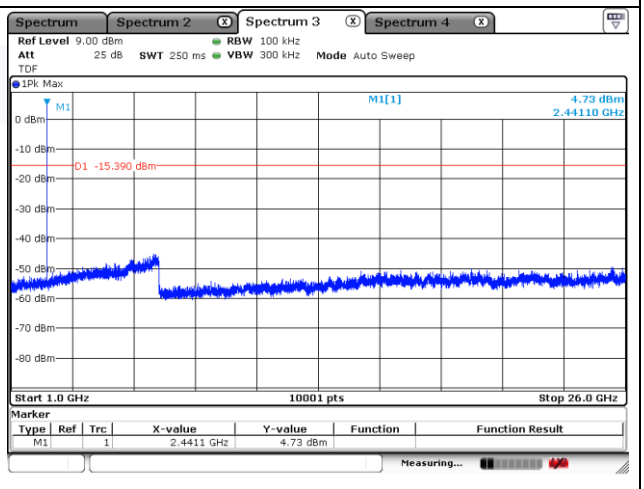
ANSI C63.10-2013 - Section 11.11

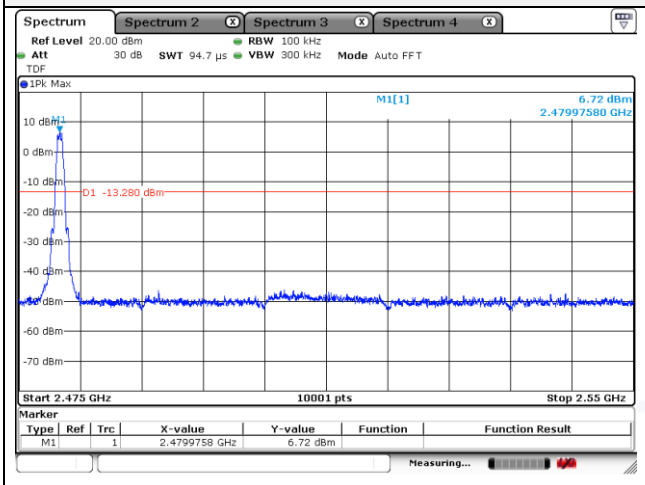
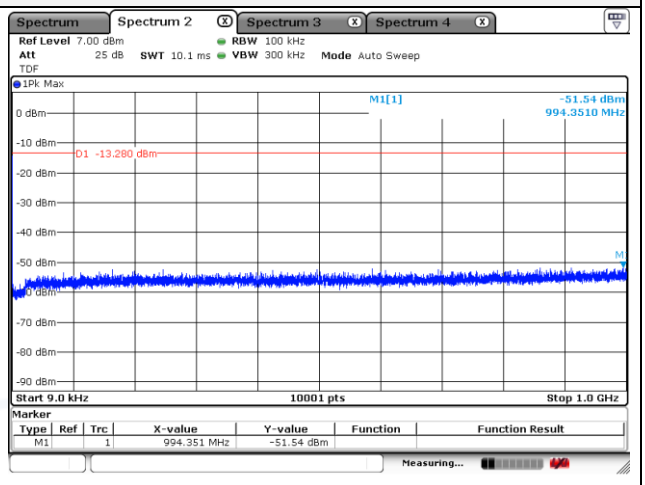
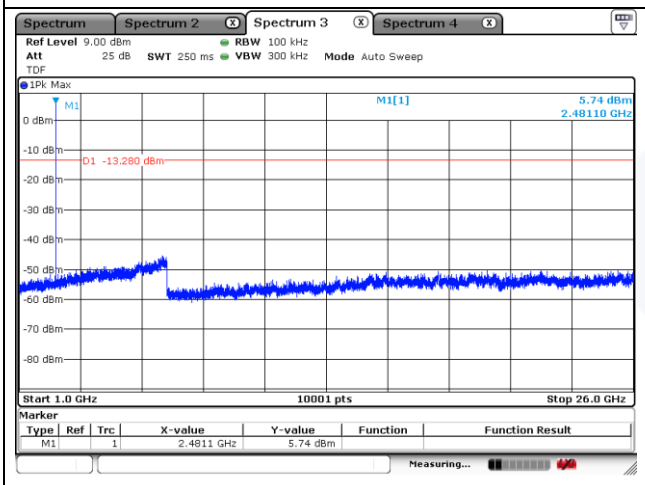
1. Start frequency was set to 30 ㎒ and stop frequency was set to 25 ㎓ for 2.4 ㎓ frequencies and 40 ㎓ for 5 ㎓ frequencies
2. Set the RBW = 100 ㎑
3. Set the VBW = [3 × RBW].
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Allow trace to fully stabilize.

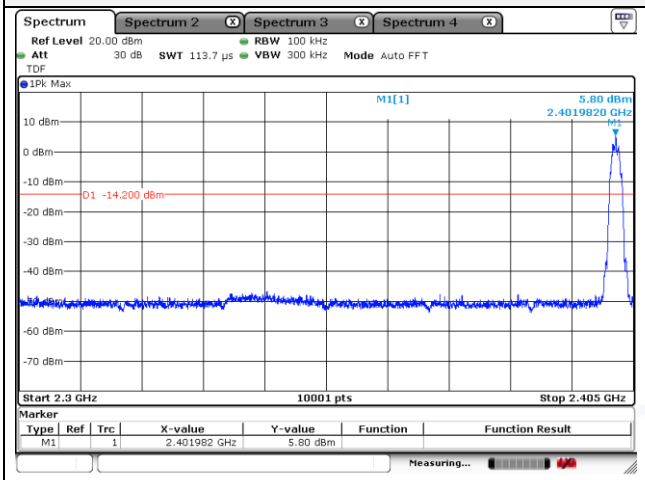
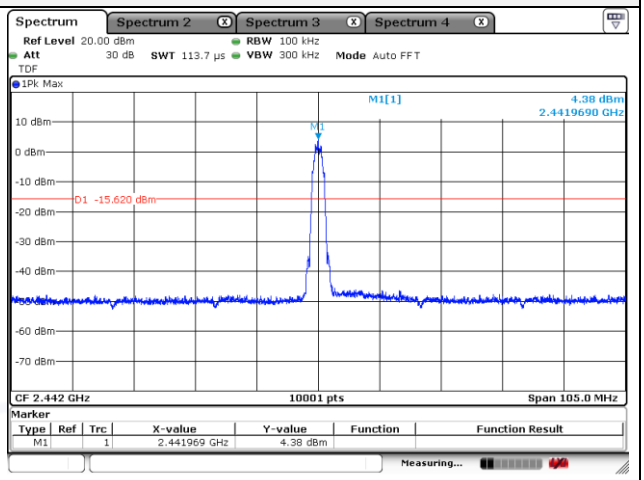
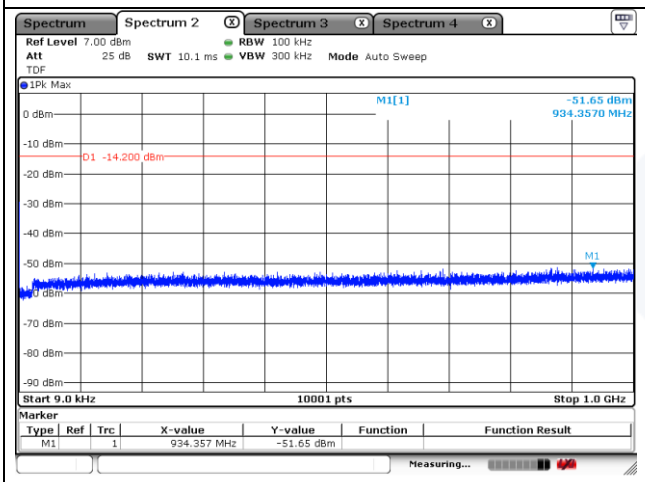
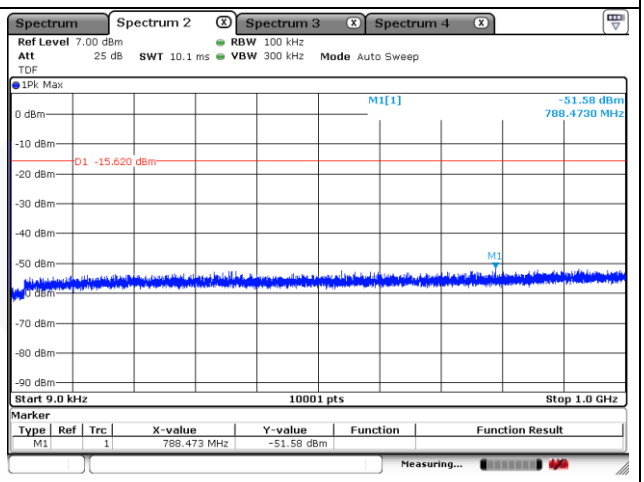
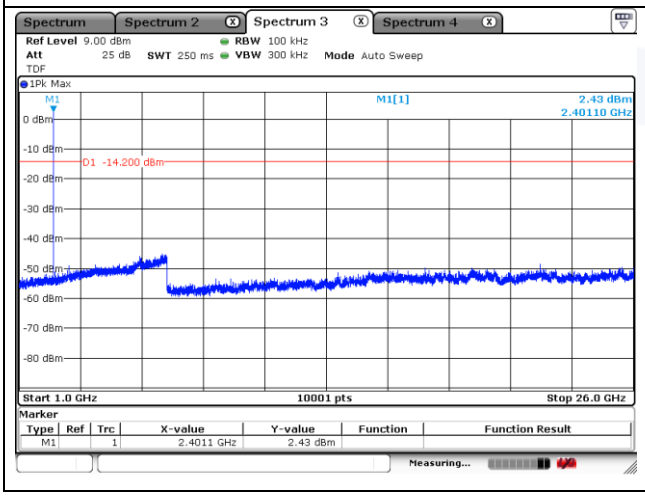
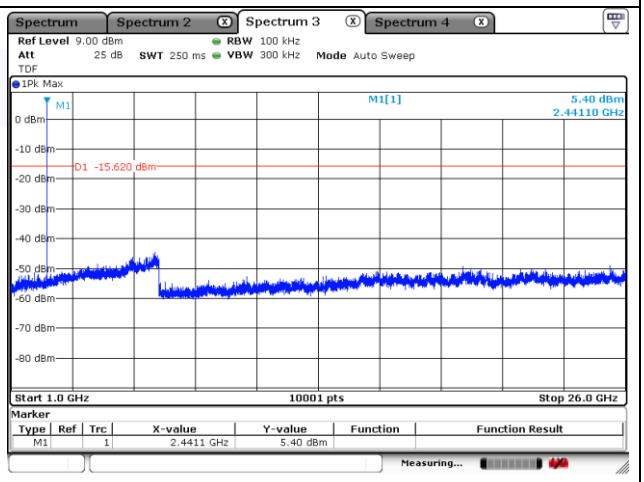
Limit

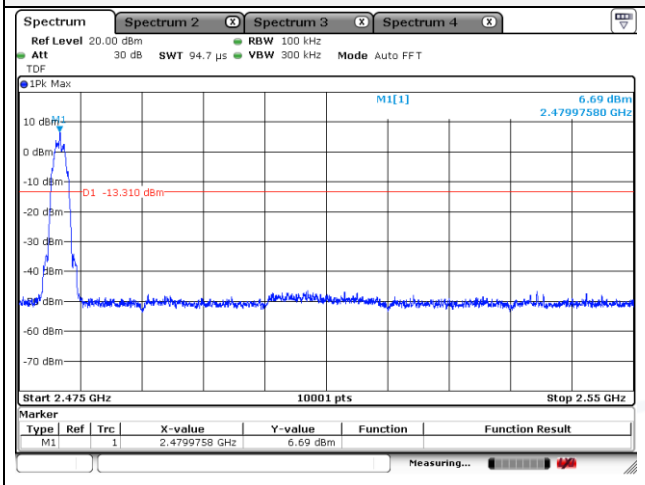
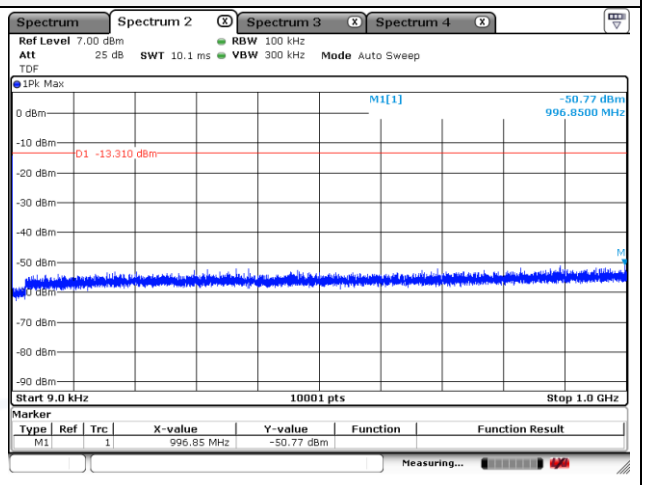
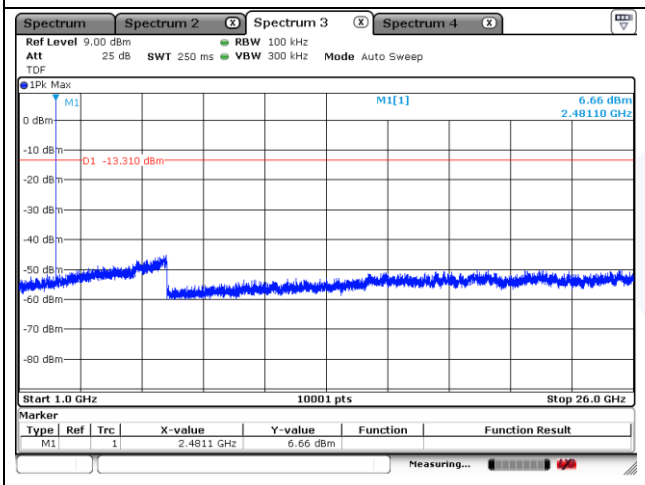
According to 15.247(d), in any 100 ㎑ bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 ㏈ below that in the 100 ㎑ bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval , as permitted under paragraph(b)(3) of this section , the attenuation required under this paragraph shall be 30 ㏈ instead of 20 ㏈. Attenuation below the general limits specified in section 15.209(a) is not required. In addition, radiated emission which in the restricted band, as define in section 15.205(a), must also comply the radiated emission limits specified in section 15.209(a) (see section 15.205(c))

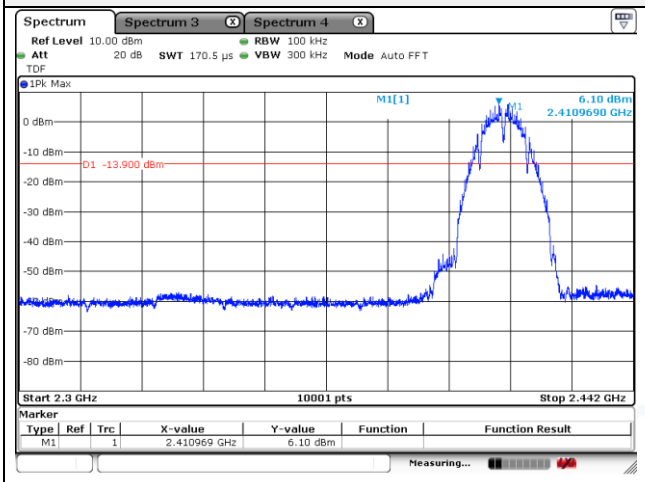
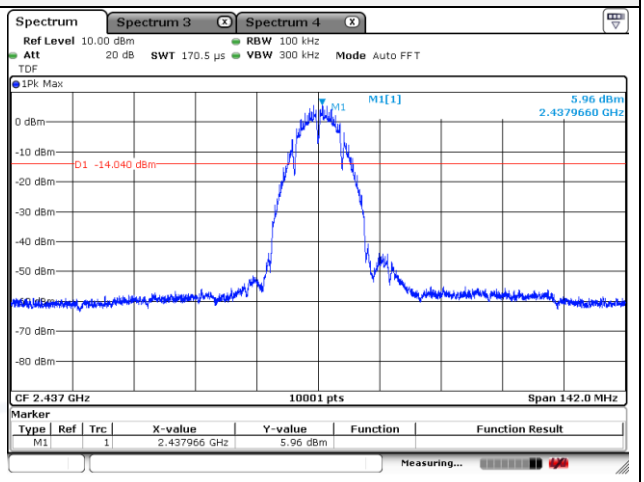
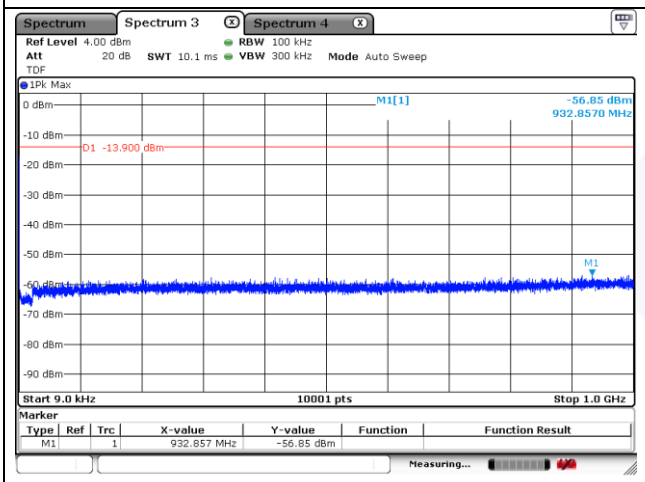
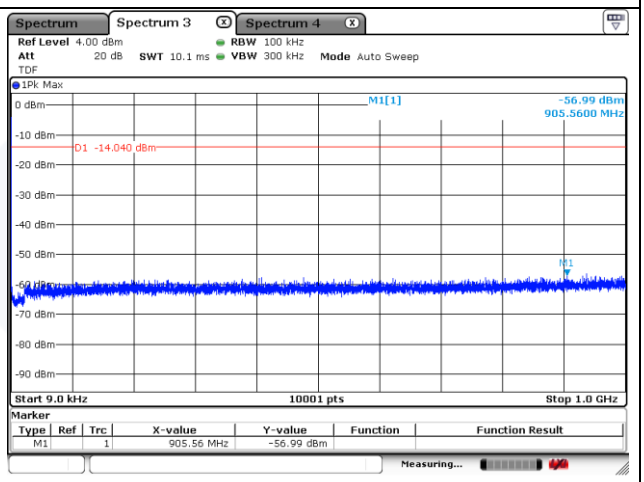
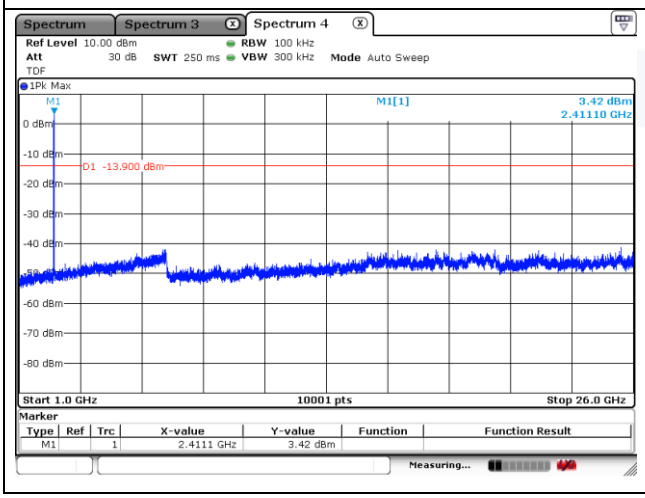
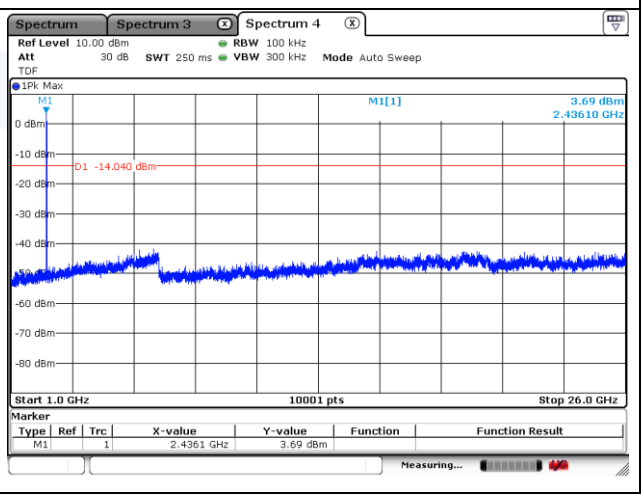
Test results

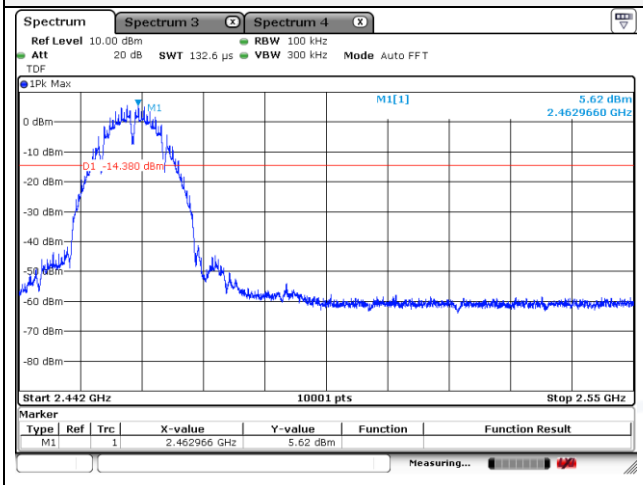
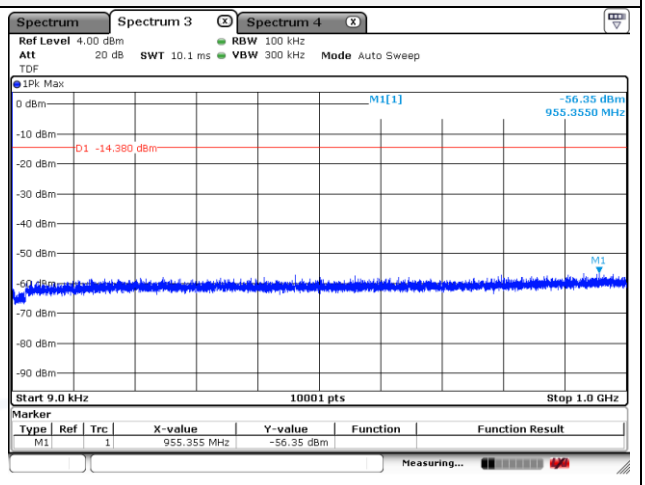
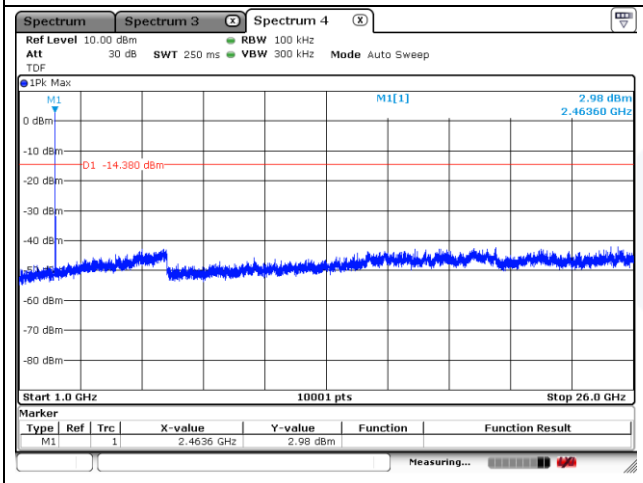
LE 1 Mbps	
2 402 ㎒	**2 442 ㎒**
	
	
	

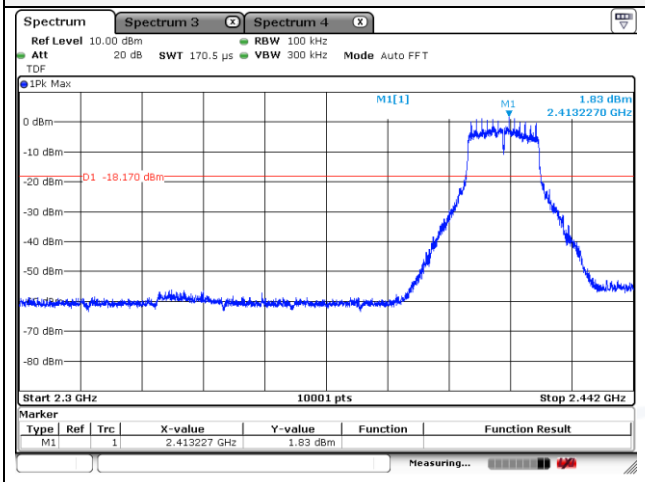
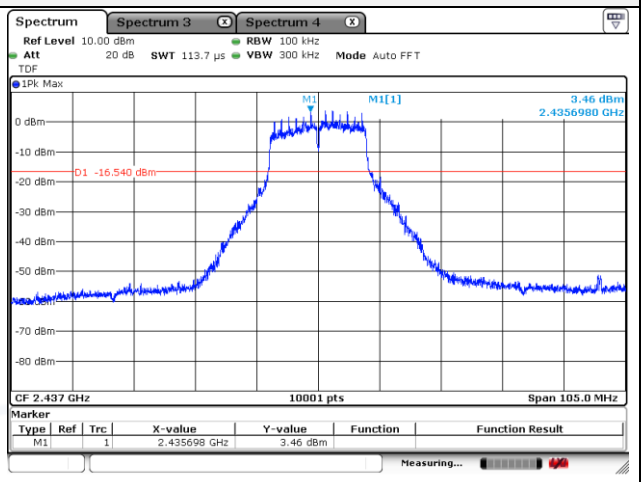
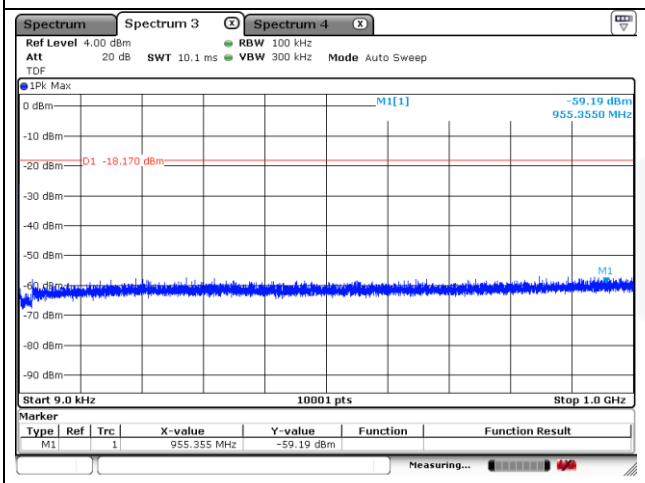
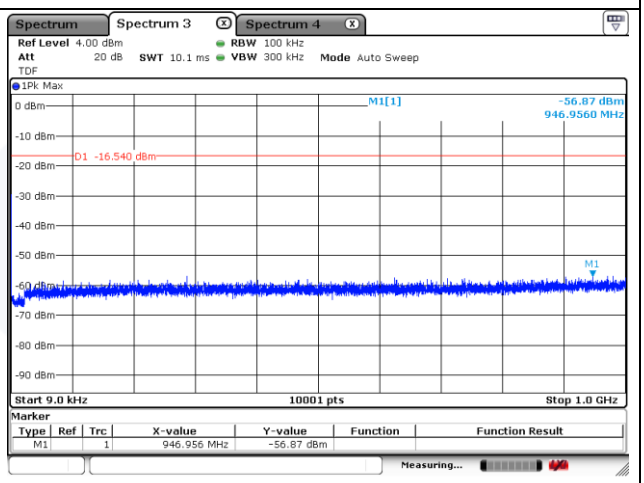
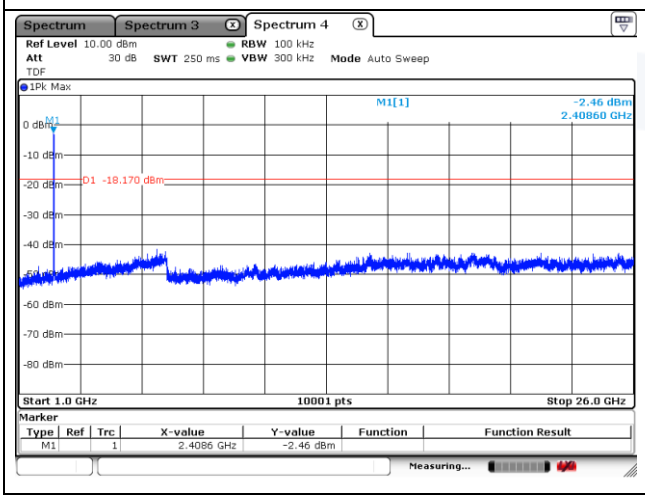
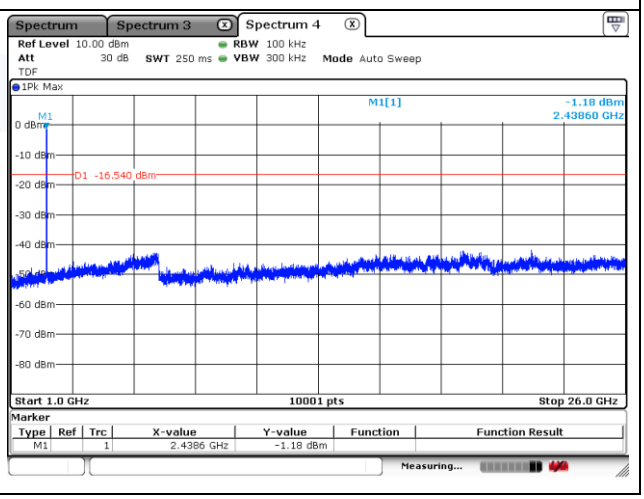
LE 1 Mbps	
2 480 ㎒	
	
	Blank

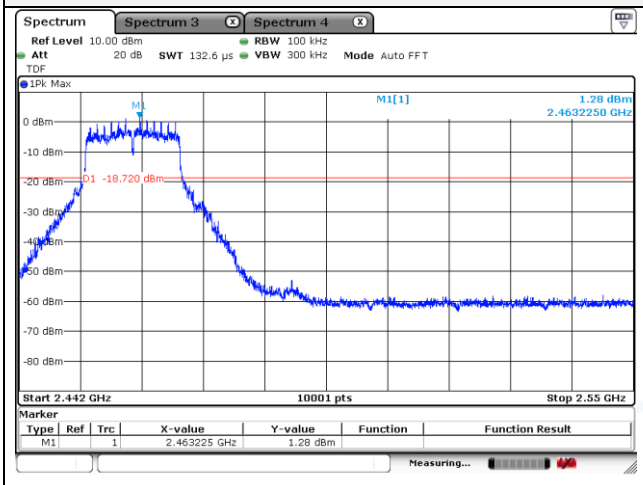
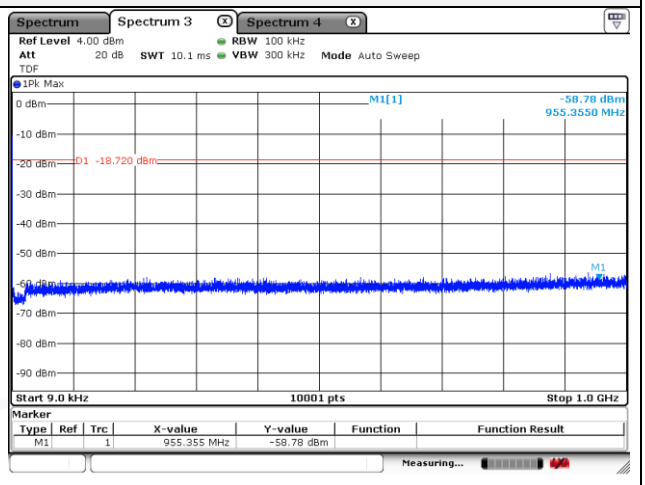
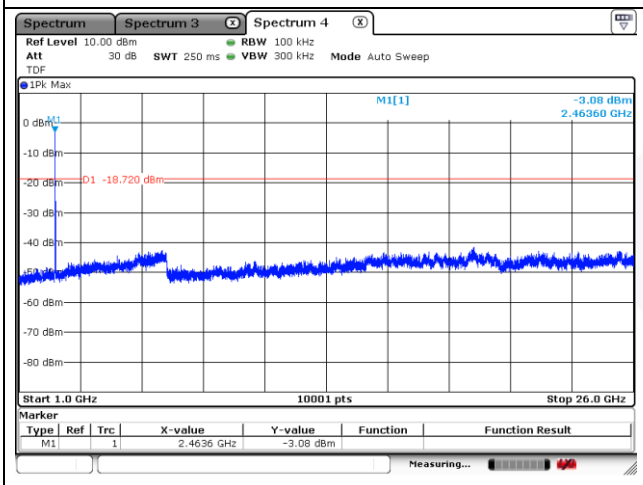
LE 2 Mbps	
2 402 ㎒	**2 442 ㎒**
	
	
	

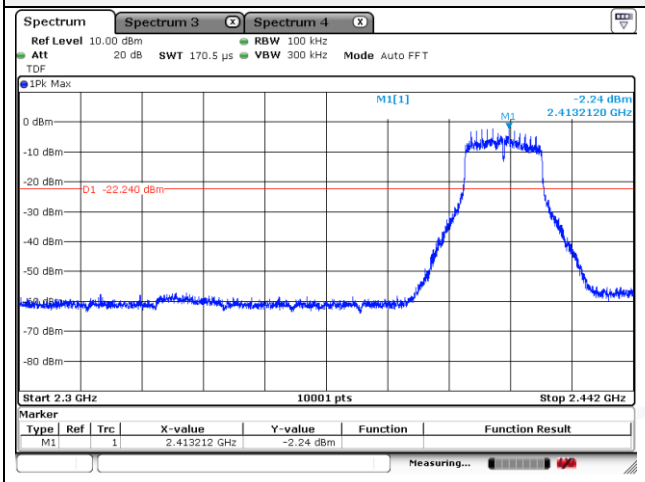
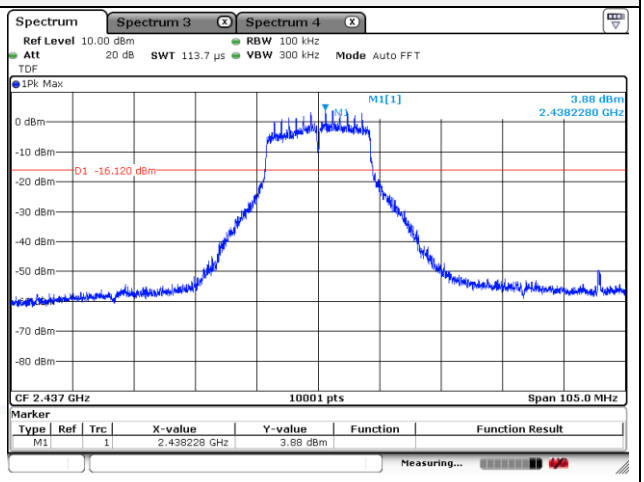
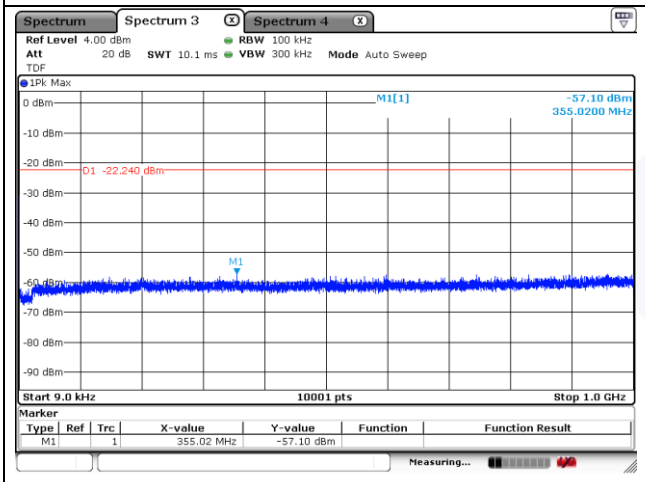
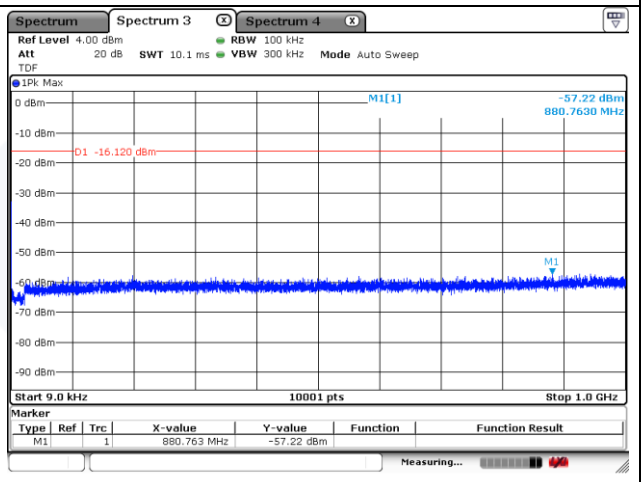
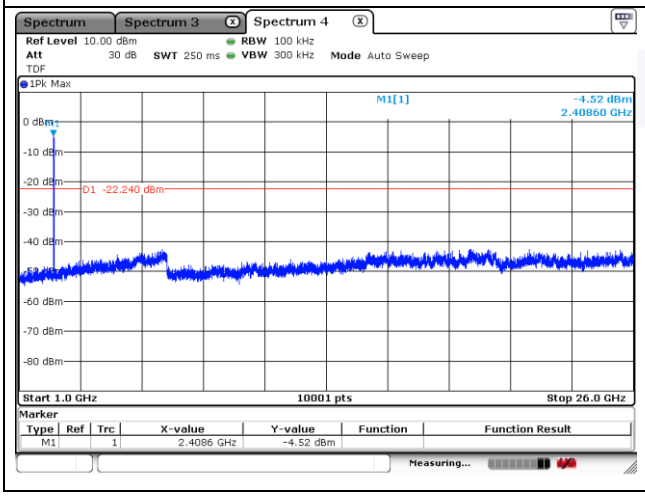
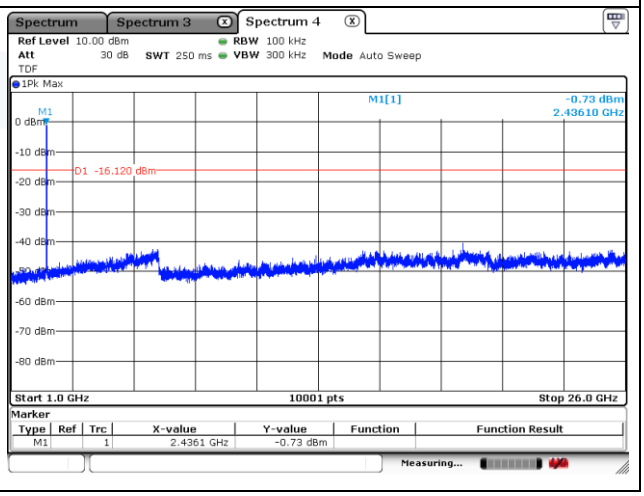
LE 2 Mbps	
2 480 ㎒	
	
	Blank

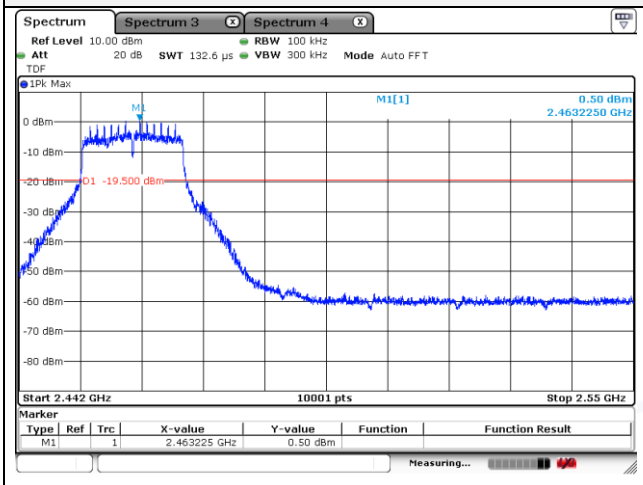
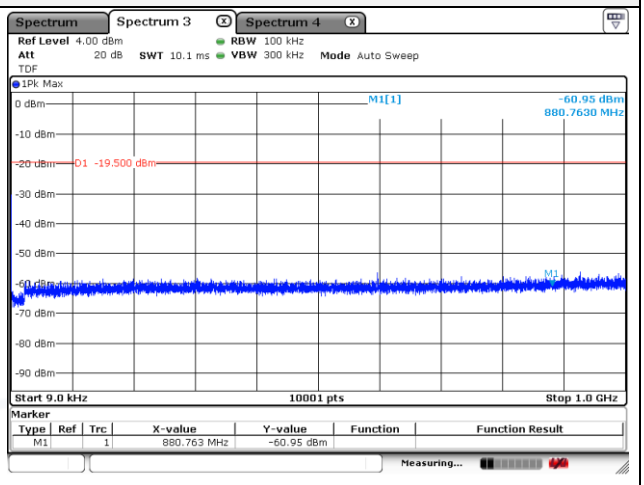
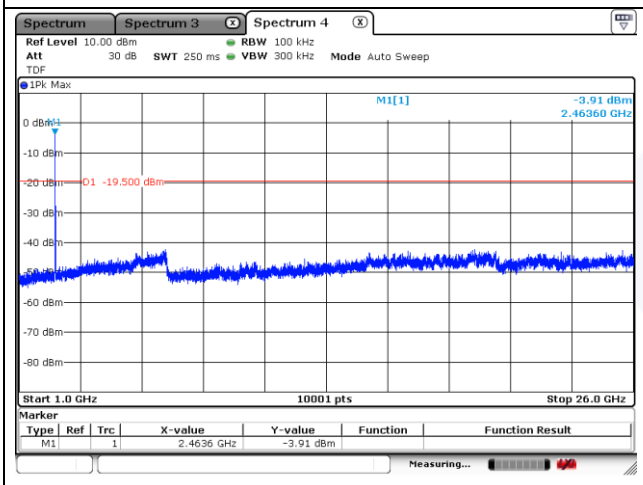
802.11b	
2 412 ㎒	**2 437 ㎒**
	
	
	

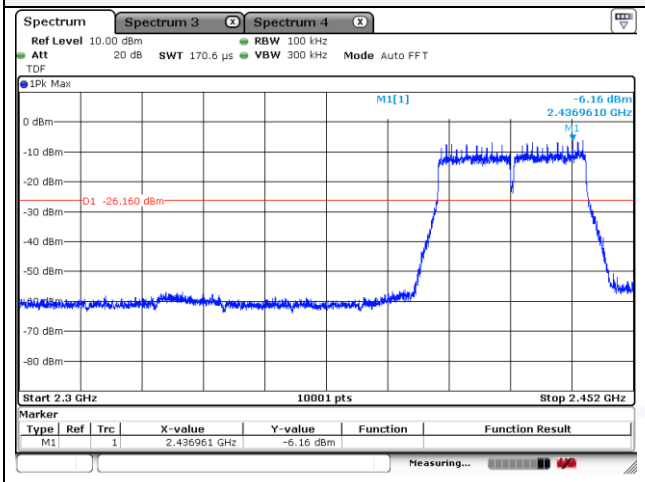
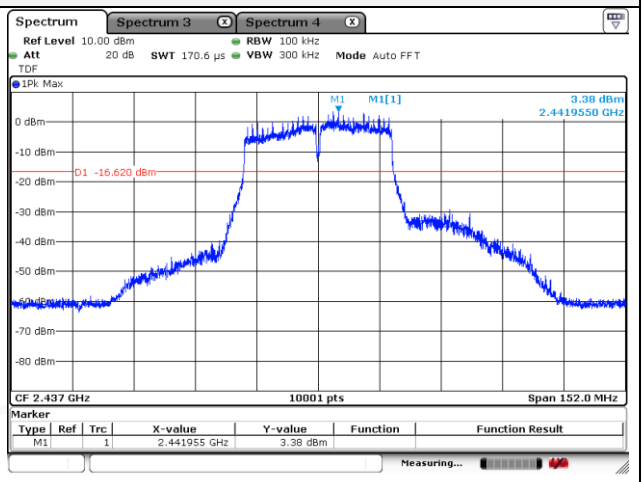
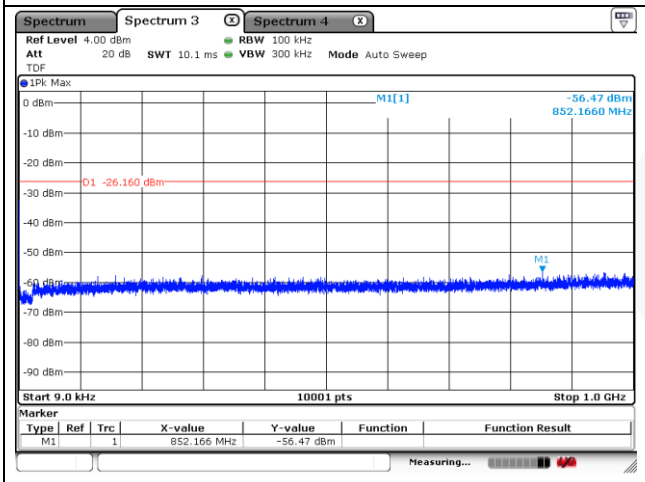
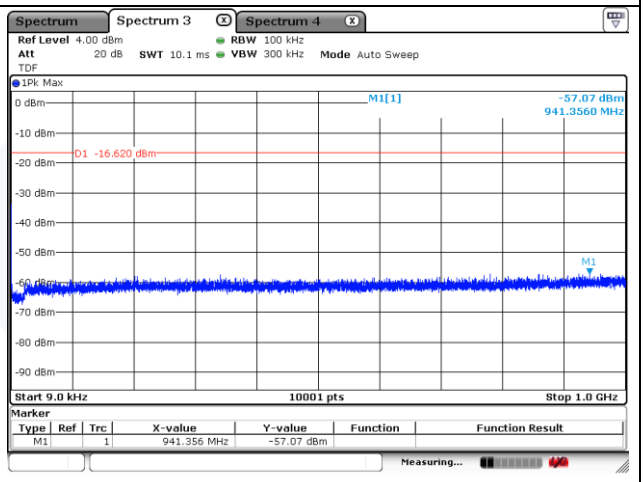
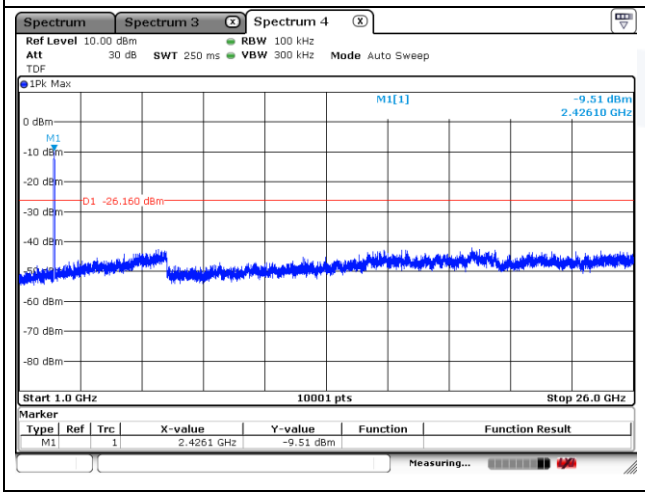
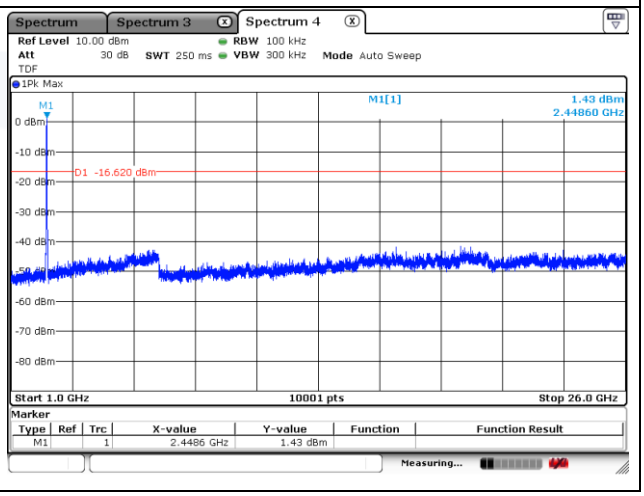
802.11b	
2 462 MHz	
	
	Blank

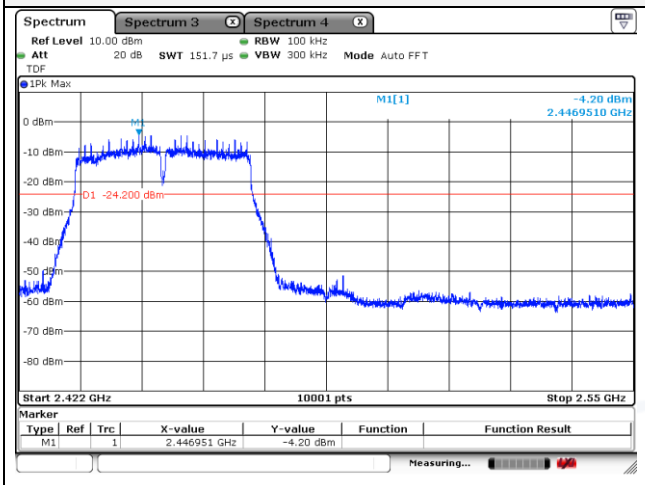
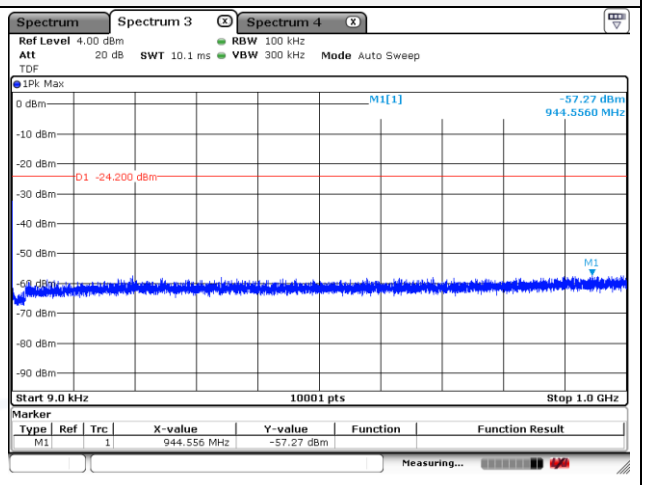
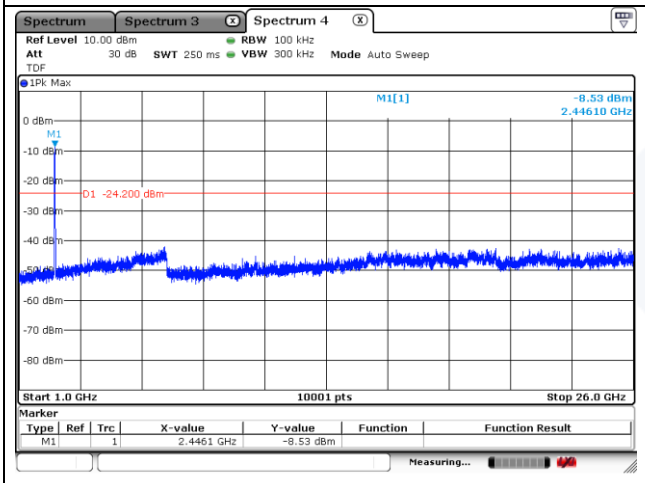
802.11g	
2 412 ㎒	**2 437 ㎒**
	
	
	

802.11g	
2 462 ㎒	
	
	Blank

802.11n_HT20	
2 412 MHz	**2 437 MHz**
	
	
	

802.11n_HT20	
2 462 ㎒	
	
	Blank

802.11n_HT40	
2 422 MHz	**2 437 MHz**
	
	
	

802.11n_HT40	
2 452 ㎒	
	
	Blank

3.6. AC conducted emissions

Limit

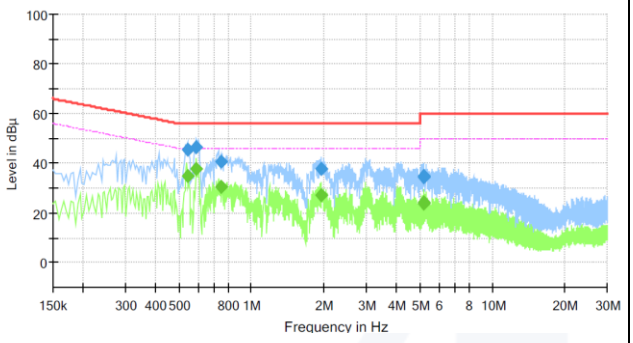
According to 15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 ㎑ to 30 ㎒, shall not exceed the limits in the following table, as measured using a 50uH/50 ohm line impedance stabilization network (LISN). Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequencies ranges.

Frequency of Emission (㎒)	Conducted limit (dB㎶)	
	Quasi-peak	Average
0.15 – 0.50	66 - 56*	56 - 46*
0.50 – 5.00	56	46
5.00 – 30.0	60	50

Test results

Mode:	LE 2 Mbps
Transfer rate:	3 meter
Channel:	39 (Worst case)

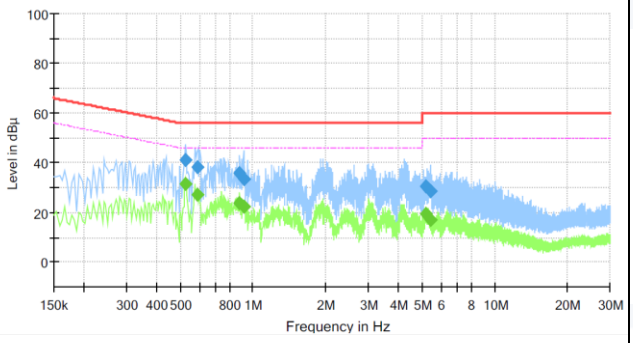
Hot Line



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.542000	45.68	---	56.00	10.32	1000.0	9.000	L1	19.7
0.542000	---	34.73	46.00	11.27	1000.0	9.000	L1	19.7
0.590000	---	37.94	46.00	8.06	1000.0	9.000	L1	19.7
0.590000	46.67	---	56.00	9.33	1000.0	9.000	L1	19.7
0.746000	40.63	---	56.00	15.37	1000.0	9.000	L1	19.7
0.746000	---	30.49	46.00	15.51	1000.0	9.000	L1	19.7
1.942000	---	27.39	46.00	18.61	1000.0	9.000	L1	19.8
1.942000	37.59	---	56.00	18.41	1000.0	9.000	L1	19.8
5.162000	34.65	---	60.00	25.35	1000.0	9.000	L1	20.1
5.162000	---	24.41	50.00	25.59	1000.0	9.000	L1	20.1
5.166000	34.25	---	60.00	25.75	1000.0	9.000	L1	20.1
5.166000	---	23.88	50.00	26.12	1000.0	9.000	L1	20.1

Neutral Line

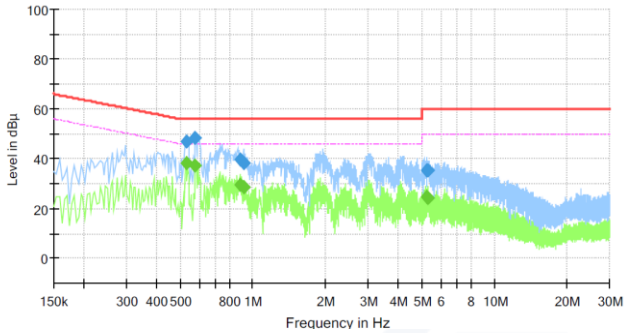


Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.526000	41.02	---	56.00	14.98	1000.0	9.000	N	19.7
0.526000	---	31.61	46.00	14.39	1000.0	9.000	N	19.7
0.586000	---	27.12	46.00	18.88	1000.0	9.000	N	19.7
0.586000	38.30	---	56.00	17.70	1000.0	9.000	N	19.7
0.882000	---	23.79	46.00	22.21	1000.0	9.000	N	19.7
0.882000	35.70	---	56.00	20.30	1000.0	9.000	N	19.7
0.914000	---	22.15	46.00	23.85	1000.0	9.000	N	19.7
0.914000	33.54	---	56.00	22.46	1000.0	9.000	N	19.7
5.218000	---	19.33	50.00	30.67	1000.0	9.000	N	20.1
5.218000	30.37	---	60.00	29.63	1000.0	9.000	N	20.1
5.402000	---	17.01	50.00	32.99	1000.0	9.000	N	20.1
5.402000	28.75	---	60.00	31.25	1000.0	9.000	N	20.1

Mode:	802.11n_HT40 (MCS0)
Transfer rate:	3 meter
Channel:	06 (Worst case)

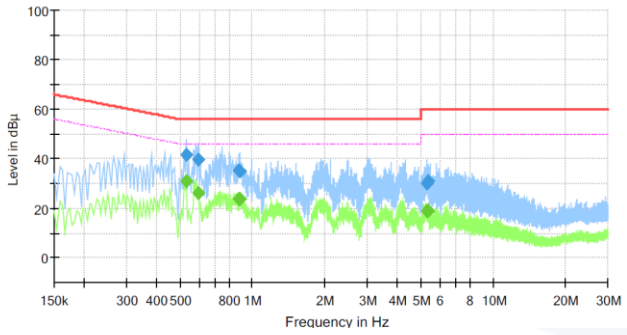
Hot Line



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.530000	---	38.35	46.00	7.65	1000.0	9.000	L1	19.7
0.530000	46.75	---	56.00	9.25	1000.0	9.000	L1	19.7
0.578000	---	37.07	46.00	8.93	1000.0	9.000	L1	19.7
0.578000	48.32	---	56.00	7.68	1000.0	9.000	L1	19.7
0.886000	---	29.57	46.00	16.43	1000.0	9.000	L1	19.7
0.886000	39.46	---	56.00	16.54	1000.0	9.000	L1	19.7
0.914000	---	28.37	46.00	17.63	1000.0	9.000	L1	19.7
0.914000	38.47	---	56.00	17.53	1000.0	9.000	L1	19.7
5.262000	---	24.53	50.00	25.47	1000.0	9.000	L1	20.1
5.262000	35.41	---	60.00	24.59	1000.0	9.000	L1	20.1
5.286000	---	24.25	50.00	25.75	1000.0	9.000	L1	20.2
5.286000	35.19	---	60.00	24.81	1000.0	9.000	L1	20.2

Neutral Line



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.530000	41.81	---	56.00	14.19	1000.0	9.000	N	19.7
0.530000	---	31.25	46.00	14.75	1000.0	9.000	N	19.7
0.598000	---	26.15	46.00	19.85	1000.0	9.000	N	19.7
0.598000	39.65	---	56.00	16.35	1000.0	9.000	N	19.7
0.878000	---	23.87	46.00	22.13	1000.0	9.000	N	19.7
0.878000	35.54	---	56.00	20.46	1000.0	9.000	N	19.7
0.886000	---	23.58	46.00	22.42	1000.0	9.000	N	19.7
0.886000	34.91	---	56.00	21.09	1000.0	9.000	N	19.7
5.302000	---	18.87	50.00	31.13	1000.0	9.000	N	20.1
5.302000	29.99	---	60.00	30.01	1000.0	9.000	N	20.1
5.358000	---	18.84	50.00	31.16	1000.0	9.000	N	20.1
5.358000	31.11	---	60.00	28.89	1000.0	9.000	N	20.1

3.7. Antenna Requirement

According to 15.207(a), An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

Appendix A. Measurement equipment

Equipment	Manufacturer	Model	Serial No.	Calibration interval	Calibration due.
Spectrum analyzer	R&S	FSV40	101725	1 year	2025.06.12
Spectrum analyzer	R&S	FSV3044	101272	1 year	2025.03.12
SIGNAL GENERATOR	KEYSIGHT	N5182B	MY59100115	1 year	2025.04.15
SIGNAL GENERATOR	Anritsu	68369B	002118	1 year	2025.04.15
Power Meter	Anritsu	ML2495A	2010001	1 year	2025.04.15
Pulse Power Sensor	Anritsu	MA2411B	1911111	1 year	2025.04.15
Attenuator	Mini-Circuits	BW-S10-2W263+	3	1 year	2025.01.15 2026.01.09
BAND REJECT FILTER	MICRO-TRONICS	BRM50702	G272	1 year	2025.01.12 2026.01.08
ACTIVE LOOP ANTENNA	SCHWARZBECK	FMZB 1513	1513-257	2 years	2025.11.16
TRILOG-BROADBAND ANTENNA	Schwarzbeck	VULB 9163	714	2 years	2026.04.19
Attenuator	HUBER+SHHNER	6806.17.A	NONE	1 year	2025.02.13
Horn Antenna	A.H.	SAS-571	414	1 year	2025.01.16 2026.01.13
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA 9170550	1 year	2025.01.16 2026.01.13
Amplifier	SONOMA INSTRUMENT	310N	401123	1 year	2025.02.13
PREAMPLIFIER	HP	8449B	3008A00538	1 year	2025.04.30
BROADBAND AMPLIFIER	SCHWARZBECK	BBV9721	PS9721-003	1 year	2025.01.15 2026.01.09
DC POWER SUPPLY	SORENSEN	DCS40-75E	1408A02745	1 year	2025.01.12 2026.01.08
EMI Test Receiver	R&S	ESU26	100552	1 year	2025.02.13
EMI Test Receiver	R&S	ESR3	101783	1 year	2025.11.06
PULSE LIMITER	R&S	ESH2-Z2	101915	1 year	2025.11.06
LISN	R&S	ENV216	101786	1 year	2025.01.10 2026.01.09
Cable	-	-	#2	1 year	2025.11.01
Cable (SR #6)	RG 400	-	-	0.5 year	2025.01.14 2025.07.14
Cable (SAC #5)	SUCOFLEX106	HUBER_SUHNER	-	0.5 year	2025.01.12
	SUCOFLEX106	HUBER_SUHNER	-		2025.07.12
	LH21D/2xSMA	OSI Cable	-		
Cable (SAC #6)	TCLH21D-SMSM-2.5M 0222	OSI Cable	-	0.5 year	2025.01.12
	TCLH21D-NMNM-10.0M 0222	OSI Cable	-		2025.07.12

* Statement of Traceability: KES Co., Ltd. attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Peripheral devices

Device	Manufacturer	Model No.	Serial No.
Notebook computer	LG Electronics Inc.,	LGS53	306QCZP560949
Test Jig Board	N/A	N/A	N/A

The End.