TEST REPORT

Part 15 Subpart E 15.407

Equipment under test	GIMBAL CAMERA
Model name	NC-200
FCC ID	2ADTG-NC200
Applicant	THINKWARE CORPORATION
Manufacturer	THINKWARE CORPORATION
Date of test(s)	2023.04.12 ~ 2023.05.19
Date of issue	2023.05.22

Issued to
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Test and report completed by :	**Report approval by :**
	
Gu-Bong, Kang Test engineer	Yeong-Jun Cho Technical manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.

Revision history

Revision	Date of issue	Test report No.	Description
-	2023.05.22	KES-RF-23T0070	Initial

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1. General information

Applicant:	THINKWARE CORPORATION
Applicant address:	A, 9FL., Samwhan Hipex, 240, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, South Korea
Test site:	KES Co., Ltd.
Test site address:	☐3701, 40, Simin-daero 365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Korea ☒473-21, Gayeo-ro, Yeoju-si, Gyeonggi-do, Korea
Test Facility	FCC Accreditation Designation No.: KR0100, Registration No.: 444148
FCC rule part(s):	15.407
FCC ID:	2ADTG-NC200
Test device serial No.:	☒ Production ☐ Pre-production ☐ Engineering

1.1. EUT description

Equipment under test	GIMBAL CAMERA	
Frequency range	2 402 ㎒ ~ 2 480 ㎒ (LE 1 Mbps)	
	2 412 ㎒ ~ 2 462 ㎒ (802.11b/g/n_HT20)	
	2 422 ㎒ ~ 2 452 ㎒ (802.11n_HT40)	
	UNII-1 (for FCC)	**5 180 ㎒ ~ 5 240 ㎒ (802.11a/n_HT20/ac_VHT20)** **5 190 ㎒ ~ 5 230 ㎒ (802.11n_HT40/ac_VHT40)** **5 210 ㎒ (802.11ac_VHT80)**
	UNII-3 (for IC)	5 745 ㎒ ~ 5 825 ㎒ (802.11a/n_HT20/ac_VHT20) 5 755 ㎒ ~ 5 795 ㎒ (802.11n_HT40/ac_VHT40) 5 775 ㎒ (802.11ac_VHT80)
Model	NC-200	
Modulation technique	GFSK, DSSS, OFDM	
Number of channels	2 402 ㎒ ~ 2 480 ㎒ (LE 1 Mbps) : 40 ch	
	2 412 ㎒ ~ 2 462 ㎒ (802.11b/g/n_HT20) : 11 ch	
	2 422 ㎒ ~ 2 452 ㎒ (802.11n_HT40) : 7 ch	
	UNII-1 (for FCC)	**5 180 ㎒ ~ 5 240 ㎒ (802.11a/n_HT20/ac_VHT20) : 4 ch** **5 190 ㎒ ~ 5 230 ㎒ (802.11n_HT40/ac_VHT40) : 2 ch** **5 210 ㎒ (802.11ac_VHT80) : 1 ch**
	UNII-3 (for IC)	5 745 ㎒ ~ 5 825 ㎒ (802.11a/n_HT20/ac_VHT20) : 5 ch 5 755 ㎒ ~ 5 795 ㎒ (802.11n_HT40/ac_VHT40) : 2 ch 5 775 ㎒ (802.11ac_VHT80) : 1 ch
Antenna specification	Chip Antenna // Peak gain: 1.86 dBi for 2.4 ㎓ // Peak gain: 1.88 dBi for 5 ㎓	

Power source	DC 3.7 V (Battery)	
H/W version	MAIN Board	V3.2.0
	LCD Board	V3.2.0
	POWER Board	V4.0.0
	SENSOR Board	V4.0.0
	MOTOR Board	V4.0.0
	IMU Board	V4.0.0
S/W version	CAMERA F/F	0.0.04
	GIMBAL F/W	1.0.9

1.2. Test configuration

The **THINKWARE CORPORATION // GIMBAL CAMERA // NC-200 // FCC ID: 2ADTG-NC200** was tested according to the specification of EUT, the EUT must comply with following standards and KDB documents.

FCC Part 15.407
KDB 789033 D02 v02r01
ANSI C63.10-2013

1.3. Information about derivative model

N/A

1.4. Accessory information

Equipment	Manufacturer	Model	Serial No.	Power source
USB Cable	-	-	-	-

1.5. Sample calculation

Where relevant, the following sample calculation is provided
For all conducted test items :

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).
= 1.35 + 10 = 11.35 (dB)

For Radiation test :
Field strength level (dBμV/m) = Measured level (dBμV) + Antenna factor (dB) + Cable loss (dB) – Amplifier gain (dB)

1.6. Worst case data rate

Worst-case data rates as provided by the client were:
2.4 GHz 802.11b : **1 Mbps**, 802.11g : **6 Mbps**, 802.11n_HT20 : **MCS0**, 802.11n_HT40 : **MCS0**
UNII-1 802.11a : **6 Mbps**, 802.11n_HT20/40 : **MCS0**, 802.11ac_VHT20/40/80 : **MCS0**
UNII-3 802.11a : **6 Mbps**, 802.11n_HT20/40 : **MCS0**, 802.11ac_VHT20/40/80 : **MCS0**

1.7. Measurement Uncertainty

Test Item		Uncertainty
Uncertainty for Conduction emission test		2.38 dB (SHIELD ROOM #6)
Uncertainty for Radiation emission test (include Fundamental emission)	Below 1GHz	4.50 dB (SAC #6)
	Above 1GHz	4.90 dB (SAC #5)
Note. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

1.8. Frequency/channel operations

Ch.	Frequency (㎒)	Mode
00	2 402	LE 1 Mbps
. .	. .	. .
20	2 442	LE 1 Mbps
. .	. .	. .
39	2 480	LE 1 Mbps

Ch.	Frequency (㎒)	Mode
1	2 412	802.11b/g/n_HT20
. .	. .	. .
6	2 437	802.11b/g/n_HT20
. .	. .	. .
11	2 462	802.11b/g/n_HT20

Ch.	Frequency (㎒)	Mode
3	2 422	802.11n_HT40
. .	. .	. .
6	2 437	802.11n_HT40
. .	. .	. .
9	2 452	802.11n_HT40

UNII-1 (for FCC)

Ch.	Frequency (㎒)
36	**5 180**
44	**5 220**
48	**5 240**

UNII-3 (for IC)

Ch.	Frequency (㎒)
149	5 745
157	5 785
165	5 825

802.11a/n_HT20/ac_VHT20 mode

UNII-1 (for FCC)

Ch.	Frequency (㎒)
38	**5 190**
46	**5 230**

UNII-3 (for IC)

Ch.	Frequency (㎒)
151	5 755
159	5 795

802.11n_HT40/ac_VHT40 mode

UNII-1 (for FCC)

Ch.	Frequency (㎒)
42	**5 210**

UNII-3 (for IC)

Ch.	Frequency (㎒)
155	5 775

802.11ac_VHT80 mode

2. Summary of tests

Section in FCC Part 15	Parameter	Test results
15.407(a)	26 dB bandwidth & 99 % bandwidth	N/T(1)
15.407(a)	6 dB bandwidth	N/T(1)
15.407(a)	Maximum conducted output power	Pass
15.407(a)	Power spectral density	N/T(1)
15.407(g)	Frequency stability	N/T(1)
15.205, 15.209, 15.407(b)	Radiated restricted band and emission	Pass
15.207	AC power line conducted emissions	Pass
15.203	Antenna Requirement	Pass

*** N/T** is **Not Tested.**

Note :
1.This product is equipped with an approved module, please refer to Module Report below for details.
Report No. :
FCC : NTC1712033FV00, NTC1712035FV00, TCT171018E032
IC : EC1905007RI01, EC1905007RI03, EC1905007RI04
2. By the request of the applicant, test was performed with condition below:

2.4 ㎓		
Mode	**Frequency (㎒)**	**Setting value**
LE 1 Mbps	2 402 ~ 2 480 ㎒	default
802.11b	2 412 ~ 2 462 ㎒	7
802.11g		7
802.11n_HT20		7
802.11n_HT40	2 422 ~ 2 452 ㎒	7
5 ㎓ UNII-1 (for FCC)		
Mode	**Frequency (㎒)**	**Setting value**
802.11a	5 180 ~ 5 240 ㎒	11
802.11n_HT20		11
802.11ac_VHT20		11
802.11n_HT40	5 190 ~ 5 230 ㎒	11
802.11ac_VHT40		11
802.11ac_VHT80	5 210 ㎒	11
5 ㎓ UNII-3 (for IC)		
Mode	**Frequency (㎒)**	**Setting value**
802.11a	5 745 ~ 5 825 ㎒	5
802.11n_HT20		5
802.11ac_VHT20		5
802.11n_HT40	5 755 ~ 5 795 ㎒	6
802.11ac_VHT40		6
802.11ac_VHT80	5 775 ㎒	6

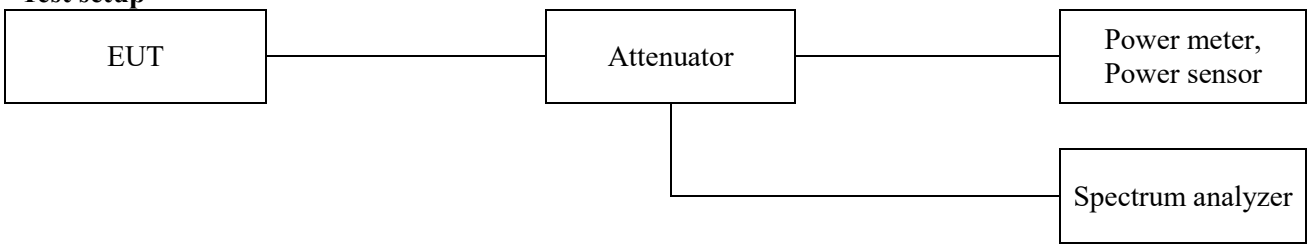
3. Test results

3.1. Maximum conducted output power

Test procedure

KDB 789033 D02 v02r01– Section E.3.a) or b)
Used test method is Section E.3.b)

Test setup



Section E.3.a)

Method PM (Measurement using an RF average power meter):

i. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.
- The EUT is configured to transmit continuously or to transmit with a constant duty cycle.
- At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
- The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

ii. If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section II.B.

iii. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

iv. Adjust the measurement in dBm by adding 10 log (1/x) where x is the duty cycle (e.g., 10 log (1/0.25) if the duty cycle is 25 %).

Section E.3.b)

Method PM-G (Measurement using a gated RF average power meter):

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Limit

Band	EUT Category		Limit
UNII-1		Outdoor access point	1 W (30 dBm)
		Indoor access point	
		Fixed point-to-point access point	
	✓	Mobile and portable client device	250 ㎽(24 dBm)
UNII-2A			250 ㎽ or 11 dBm + 10logB*
UNII-2C			250 ㎽ or 11 dBm + 10logB*
UNII-3			1 W (30 dBm)

Note.
1. Limit B is the 26 dB emission bandwidth.

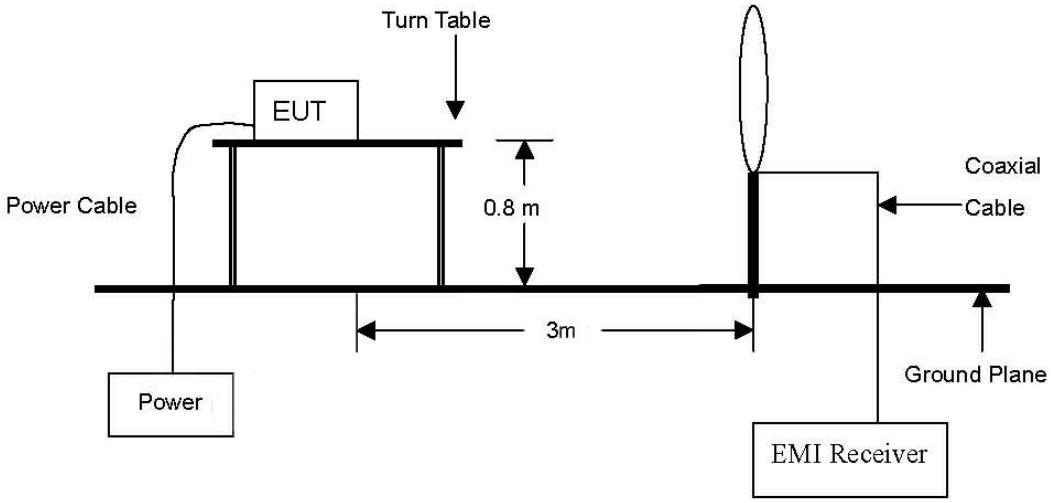
Test results

Band	Frequency (㎒)	Mode	Detector mode	Ant Gain (dBi)	Output power (dBm)	Limit (dBm)
UNII-1	5 180	802.11a	AV	1.88	8.67	24.00
	5 220		AV		8.31	
	5 240		AV		8.48	
	5 180	802.11n _HT20	AV		8.28	
	5 220		AV		8.32	
	5 240		AV		8.84	
	5 190	802.11n _HT40	AV		8.42	
	5 230		AV		8.09	
	5 180	802.11ac _VHT20	AV		8.79	
	5 220		AV		8.46	
	5 240		AV		8.48	
	5 190	802.11ac _VHT40	AV		8.64	
	5 230		AV		8.65	
	5 210	802.11ac _VHT80	AV		9.11	

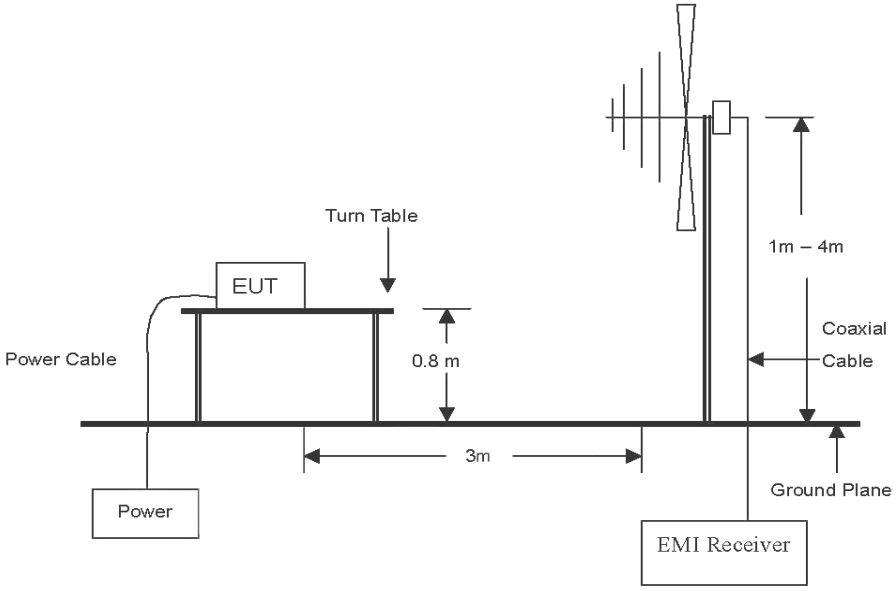
3.2. Radiated restricted band and emissions

Test setup

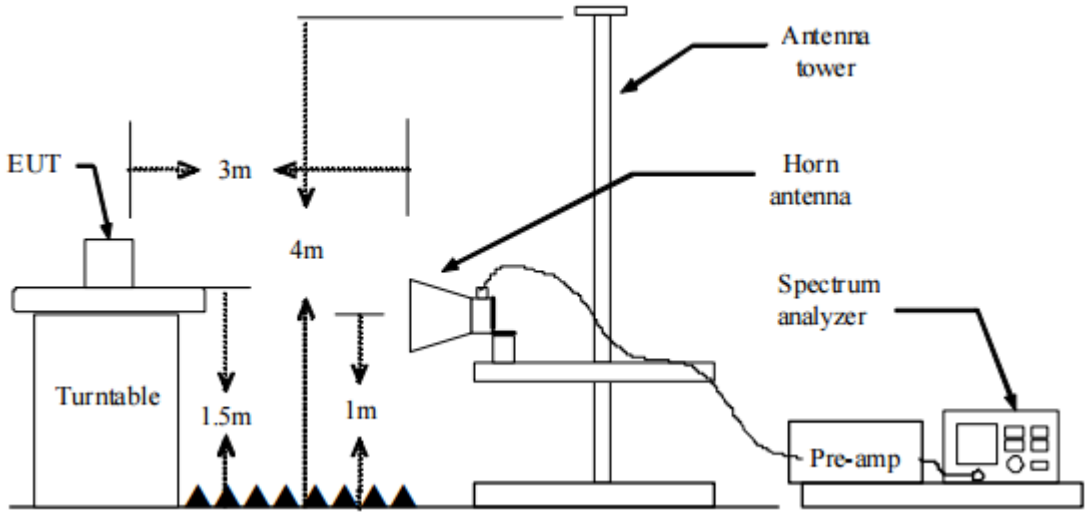
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒ Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓ emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 ㎓ to the tenth harmonic of the highest fundamental frequency or to 40 ㎓ emissions, whichever is lower.



Test procedure

Radiated emissions from the EUT were measured according to the dictates in section 11.11 & 11.12 of ANSI C63.10-2013.

Test procedure below 30 ㎒

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Then antenna is a loop antenna is fixed at one meter above the ground to determine the maximum value of the field strength. Both parallel, ground parallel and perpendicular of the antenna are set to make the measurement. It was determined that **parallel** was worst-case orientation; therefore, all final radiated testing was performed with the EUT in **parallel.**
3. For each suspected emission, the EUT was arranged to its worst case and then the table was turned from 0 degrees to 360 degrees to find the maximum reading.
4. The test-receiver system was set to average or quasi peak detect function and Specified Bandwidth with Maximum hold mode.

Test procedure above 30 ㎒

1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The antenna is a bi-log antenna, a horn antenna ,and its height are varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
4. The test receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

5. Spectrum analyzer settings for $f < 1$ ㎓:
   ① Span = wide enough to fully capture the emission being measured
   ② RBW = 100 ㎑
   ③ VBW ≥ RBW
   ④ Detector = quasi peak
   ⑤ Sweep time = auto
   ⑥ Trace = max hold
6. Spectrum analyzer settings for $f \geq 1$ ㎓: Peak
   ① Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
   ② RBW = 1 ㎒
   ③ VBW ≥ 3 ㎒
   ④ Detector = peak
   ⑤ Sweep time = auto
   ⑥ Trace = max hold
   ⑦ Trace was allowed to stabilize

7. Spectrum analyzer settings for $f \geq 1$ ㎓: Average
   ① Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
   ② RBW = 1 ㎒
   ③ VBW ≥ 3 × RBW
   ④ Detector = RMS, if span/(# of points in sweep) ≤ (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
   ⑤ Averaging type = power(i.e., RMS)
      1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
      2) Some instruments require linear display mode in order to use linear voltage averaging. Log or ㏈ averaging shall not be used.
   ⑥ Sweep = auto
   ⑦ Trace = max hold
   ⑧ Perform a trace average of at least 100 traces.
   ⑨ A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
      1) If power averaging (RMS) mode was used in step ⑤, then the applicable correction factor is 10 log(1/x), where x is the duty cycle.
      2) If linear voltage averaging mode was used in step ⑤, then the applicable correction factor is 20 log(1/x), where x is the duty cycle.
      3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

Note.

1. f<30 ㎒, extrapolation factor of 40 ㏈/decade of distance. $F_d = 40\log(D_m/Ds)$
   f ≥30 ㎒, extrapolation factor of 20 ㏈/decade of distance. $F_d = 20\log(D_m/Ds)$
   Where:
   F_d = Distance factor in ㏈
   D_m = Measurement distance in meters
   D_s = Specification distance in meters
2. Field strength(㏈μV/m) = Level(㏈μV) + CF (㏈) + or DCF(㏈)
3. Margin(㏈) = Limit(㏈μV/m) - Field strength(㏈μV/m)
4. Emissions below 18 ㎓ were measured at a 3 meter test distance while emissions above 18 ㎓ were measured at a 1 meter test distance with the application of a distance correction factor.
7. The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z, it was determined that **X orientation** was worst-case orientation; therefore, all final radiated testing was performed with the EUT in **X orientation.**
8. The worst-case emissions are reported however emissions whose levels were not within 20 ㏈ of respective limits were not reported.
9. According to exploratory test no any obvious emission were detected from 9 ㎑ to 30 ㎒. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30 m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Limit

According to 15.209(a), for an intentional radiator devices, the general required of field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values：

Frequency (㎒)	Distance (Meters)	Radiated (μV/m)
0.009 ~ 0.490	300	2400/F(㎑)
0.490 ~ 1.705	30	24000/F(㎑)
1.705 ~ 30.0	30	30
30 ~ 88	3	100**
88 ~ 216	3	150**
216 ~ 960	3	200**
Above 960	3	500

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54 ~ 72 ㎒, 76 ~ 88 ㎒, 174 ~ 216 ㎒ or 470 ~ 806 ㎒. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

According to 15.407(b), (b) Undesirable emission limits: Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15–5.25 ㎓ band: all emissions outside of the 5.15–5.35 ㎓ band shall not exceed an e.i.r.p of –27 ㏈m/㎒.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 ㎒.
A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 ㎒.
(6) Unwanted emissions below 1 ㎓ must comply with the general field strength limits set forth in § 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in § 15.207.
(7) The provisions of §15.205 apply to intentional radiators operating under this section.
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Duty cycle

Regarding to KDB 789033 D02 v02r01, B)2)b), the maximum duty cycles of all modes were investigated and set the spectrum analyzer as below.

Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in II.B.1.a), and the number of sweep points across duration T exceeds 100.

For the band 5.15-5.25 ㎓

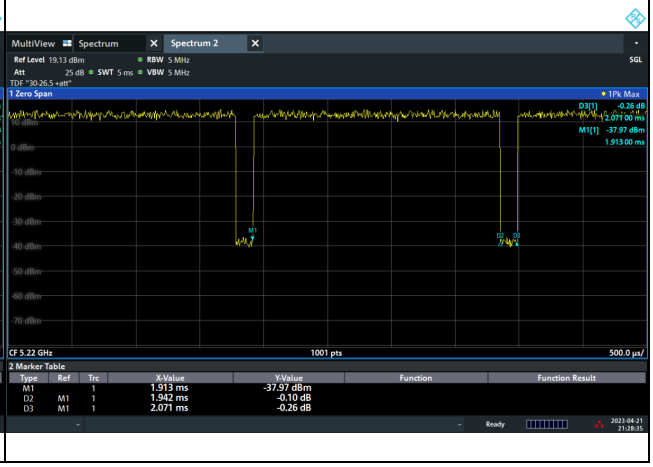
For the band 5.150-5.250 ㎓

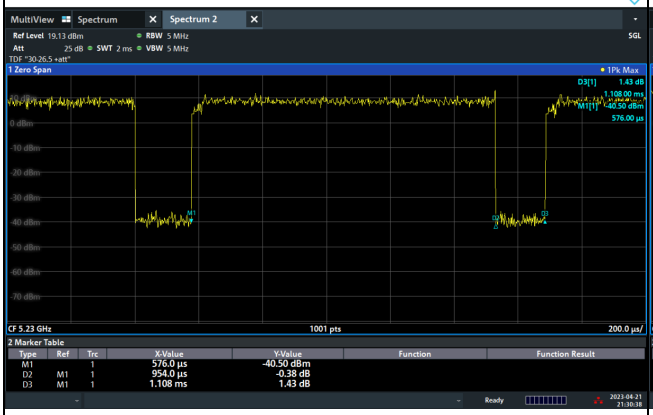
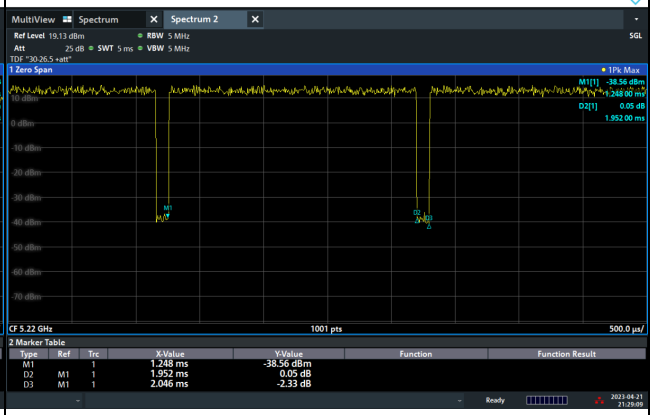
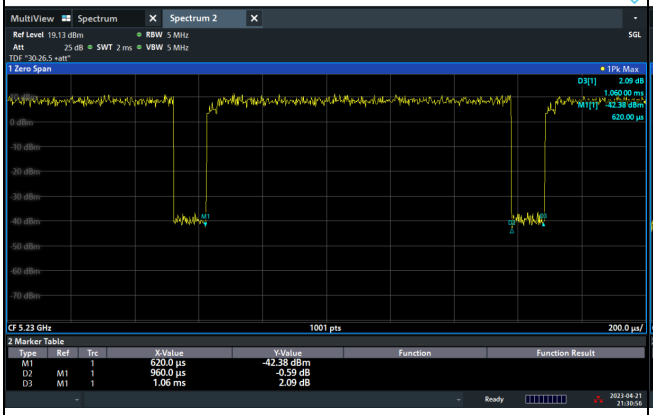
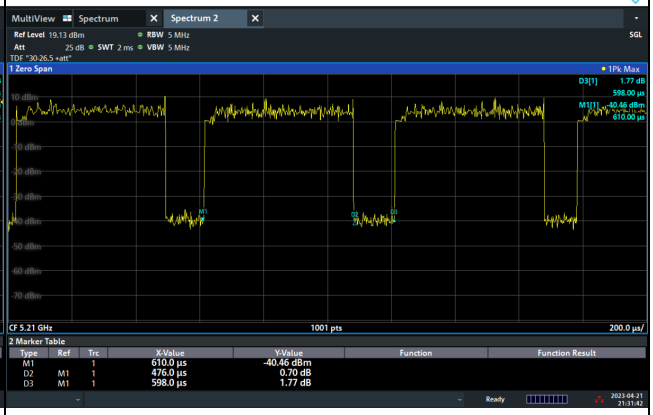
Test mode	T_{on} time (㎳)	Period (㎳)	Duty cycle (Linear)	Duty cycle (%)	Duty cycle correction factor (dB)
802.11a	2.077	2.176	0.95	95.45	0.20
802.11n_HT20	1.942	2.071	0.94	93.77	0.28
802.11n_HT40	0.954	1.108	0.86	86.10	0.65
802.11ac_VHT20	1.952	2.046	0.95	95.41	0.20
802.11ac_VHT40	0.960	1.060	0.91	90.57	0.43
802.11ac_VHT80	0.476	0.598	0.80	79.60	0.99

Note:

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

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

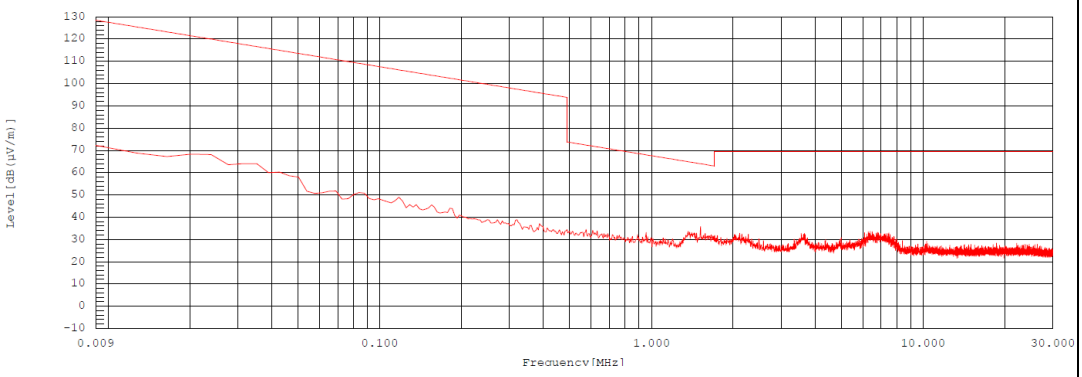
802.11a	802.11n_HT20
	

802.11n_HT40 (MCS0)	802.11ac_VHT20 (MCS0)
	
802.11ac_VHT40 (MCS0)	**802.11ac_VHT80 (MCS0)**
	

Test results (Below 30 ㎒)

Mode	802.11ac_VHT80
Channel	42 (Worst Case)
Distance of measurement:	3 meter

Parallel

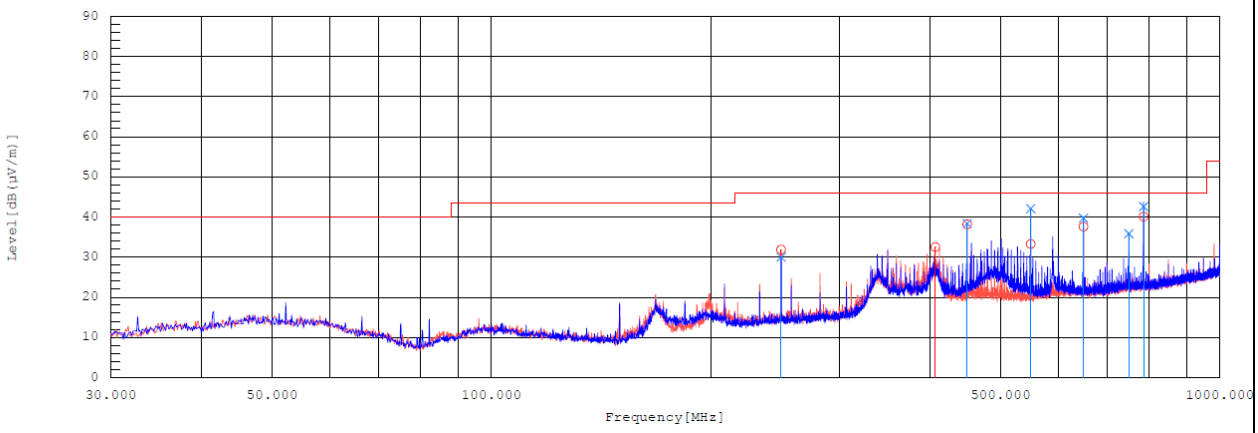


Note.
1. No spurious emission were detected under 30 ㎒.

Test results (Below 1 000 ㎒)

Mode	802.11ac_VHT80
Channel	42 (Worst Case)
Distance of measurement:	3 meter

Horizontal // Vertical



Final Result

No.	Frequency [MHz]	Pol	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	249.948	H	43.0	-11.1	31.9	46.0	14.1	104.0	46.7	
2	249.948	V	41.1	-11.1	30.0	46.0	16.0	150.1	113.7	
3	406.845	H	39.6	-7.1	32.5	46.0	13.5	107.0	176.2	
4	450.010	H	44.5	-6.3	38.2	46.0	7.8	103.0	197.9	
5	450.010	V	44.7	-6.3	38.4	46.0	7.6	150.1	91.6	
6	550.041	H	38.0	-4.7	33.3	46.0	12.7	199.8	139.7	
7	550.041	V	46.8	-4.7	42.1	46.0	3.9	103.0	138.2	
8	650.073	H	41.3	-3.7	37.6	46.0	8.4	102.0	27.4	
9	650.073	V	43.4	-3.7	39.7	46.0	6.3	100.0	53.9	
10	749.983	V	38.1	-2.3	35.8	46.0	10.2	150.1	27.7	
11	785.994	H	42.2	-2.1	40.1	46.0	5.9	103.0	359.9	
12	785.994	V	44.7	-2.1	42.6	46.0	3.4	143.0	203.1	

Test results (Above 1 000 ㎒)

Mode: 802.11a
Distance of measurement: 3 meter
Channel: 36

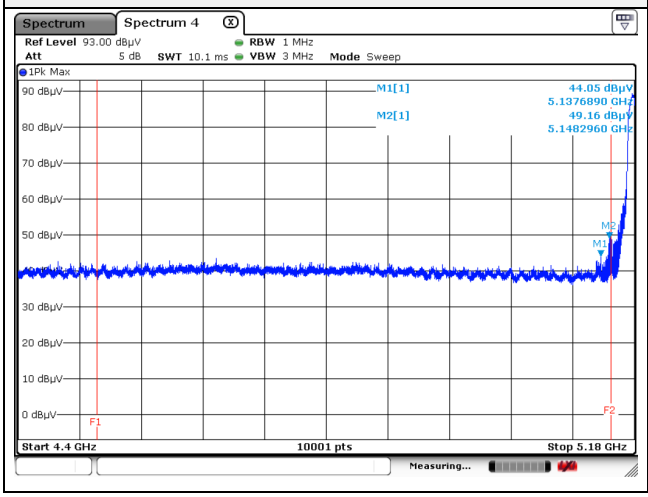
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 179.23	48.17	Peak	H	-8.78	-	39.39	74.00	34.61
1 179.73	46.80	Peak	V	-8.78	-	38.02	74.00	35.98
1 331.20	51.96	Peak	H	-7.54	-	44.42	74.00	29.58

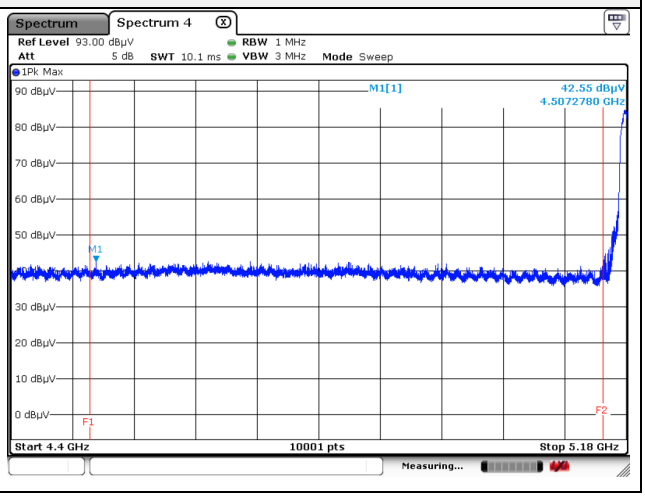
- **Band edge**

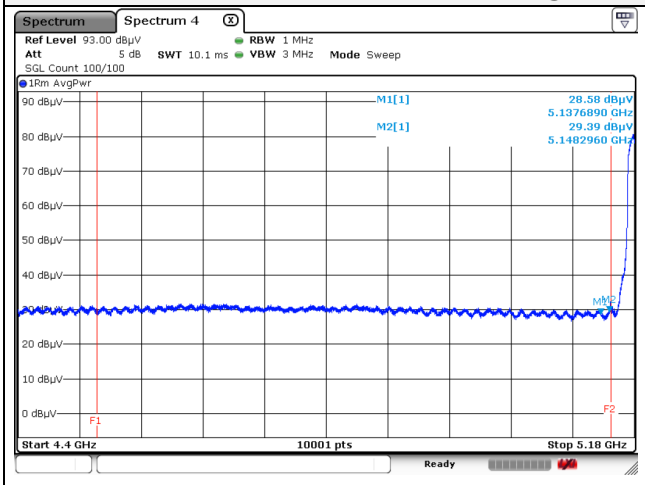
Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
4 507.28	42.55	Peak	V	3.60	-	46.15	74.00	27.85
5 137.69	44.05	Peak	H	6.45	-	50.50	74.00	23.50
5 148.30	49.16	Peak	H	6.45	-	55.61	74.00	18.39
5 148.30	29.39	Average	H	6.45	0.20	36.04	54.00	17.96

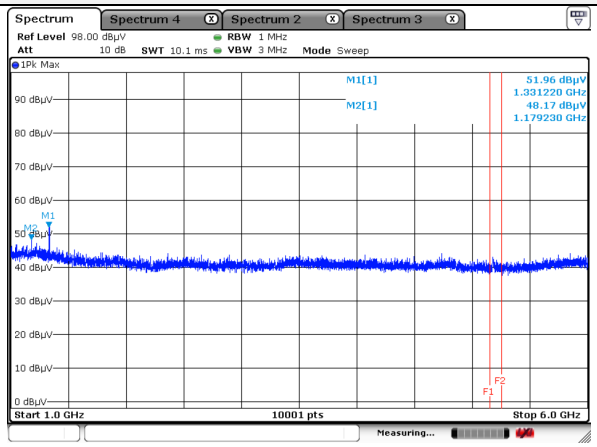
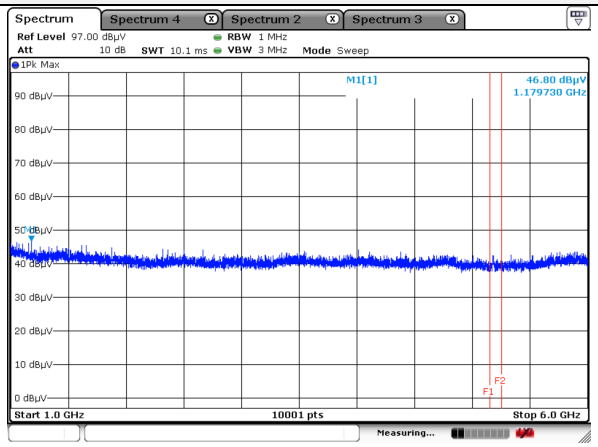
Restricted band // Horizontal // Peak

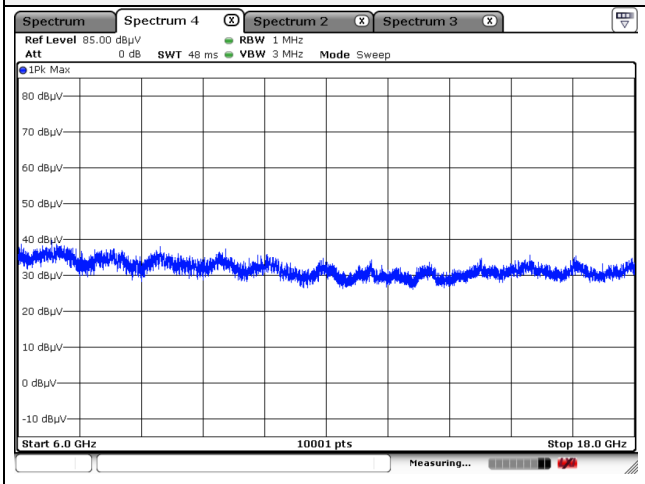
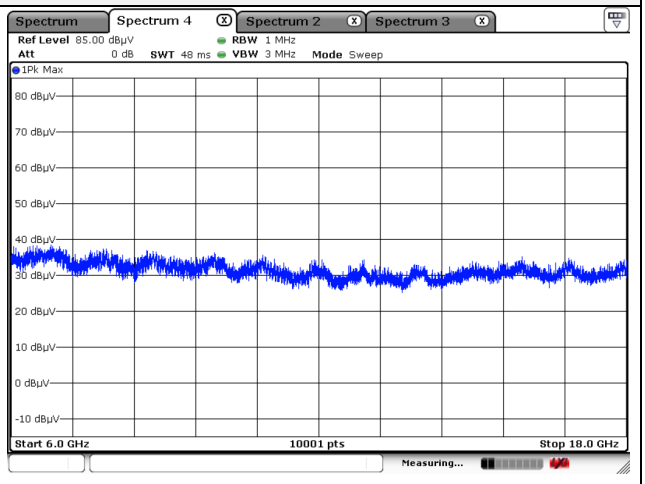


Restricted band // Vertical // Peak



Restricted band // Horizontal // Average	Restricted band // Vertical // Average
	N/A

Horizontal // Peak for 1 ㎓ to 6 ㎓	Vertical // Peak for 1 ㎓ to 6 ㎓
	

Horizontal // Peak for 6 ㎓ to 18 ㎓	Vertical // Peak for 6 ㎓ to 18 ㎓
	

Note.
1. No spurious emission were detected above 6 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

Mode: 802.11a

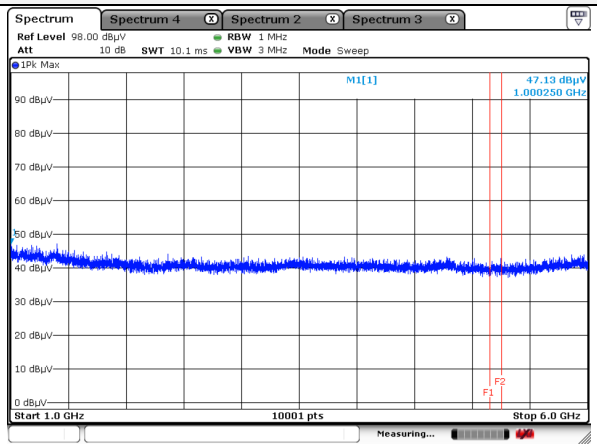
Distance of measurement: 3 meter

Channel: 44

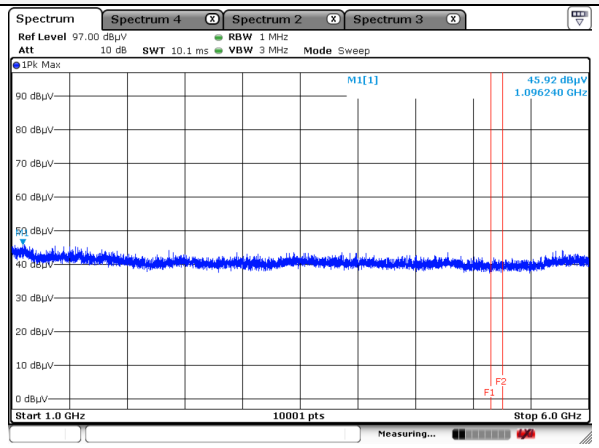
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 000.25	47.13	Peak	H	-9.97	-	37.16	74.00	36.84
1 096.24	45.92	Peak	V	-9.33	-	36.59	74.00	37.41

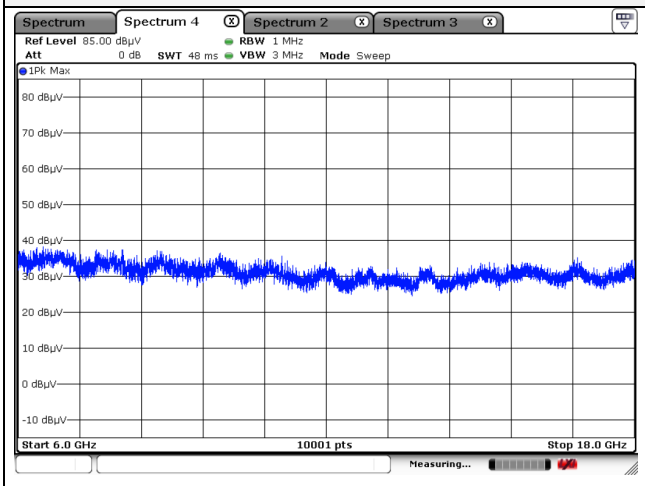
Horizontal // Peak for 1 ㎓ to 6 ㎓



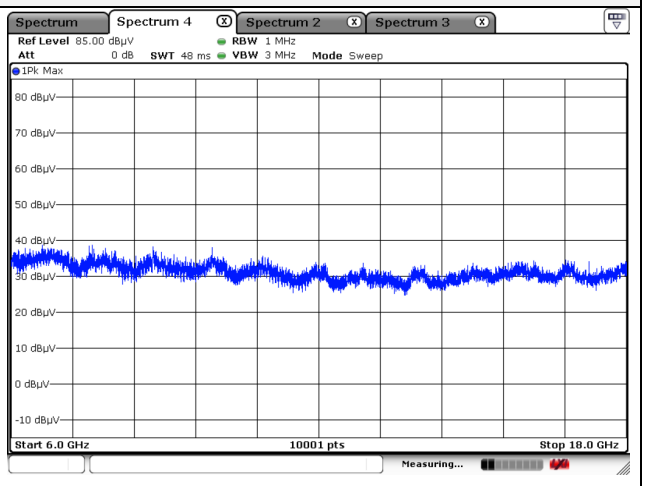
Vertical // Peak for 1 ㎓ to 6 ㎓



Horizontal // Peak for 6 ㎓ to 18 ㎓



Vertical // Peak for 6 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 6 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

Mode: 802.11a

Distance of measurement: 3 meter

Channel: 48

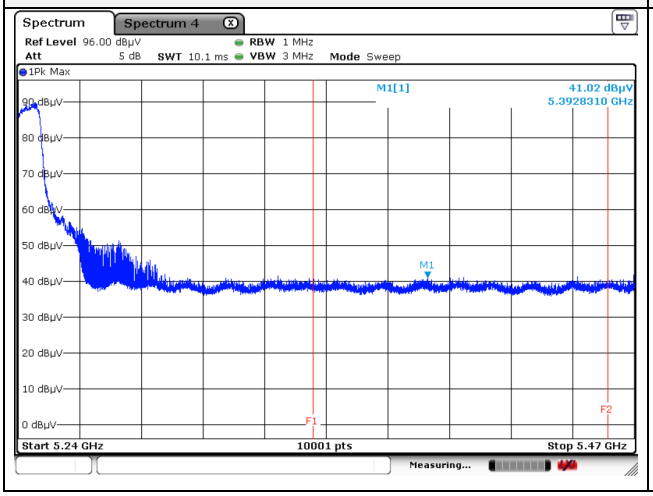
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 179.23	45.87	Peak	H	-8.78	-	37.09	74.00	36.91
1 179.23	45.99	Peak	V	-8.78	-	37.21	74.00	36.79

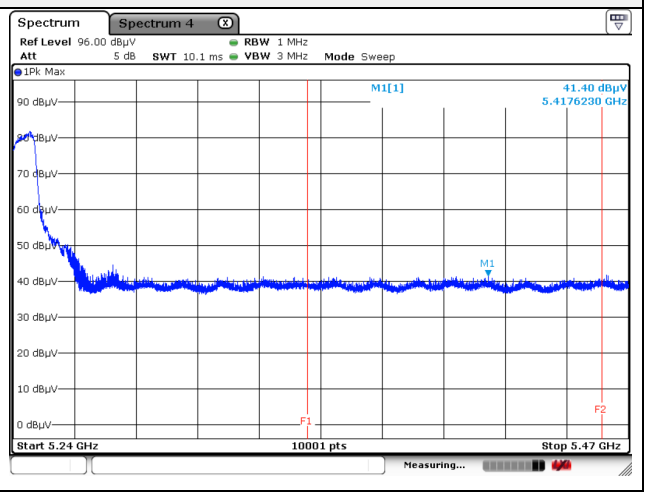
- **Band edge**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
5 392.83	41.02	Peak	H	7.17	-	48.19	74.00	25.81
5 417.62	41.40	Peak	V	7.15	-	48.55	74.00	25.45

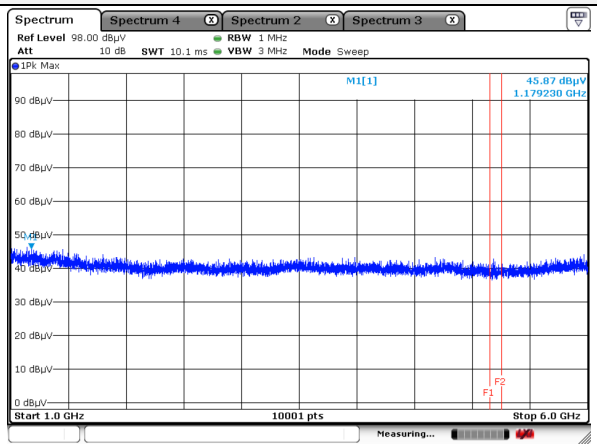
Restricted band // Horizontal // Peak



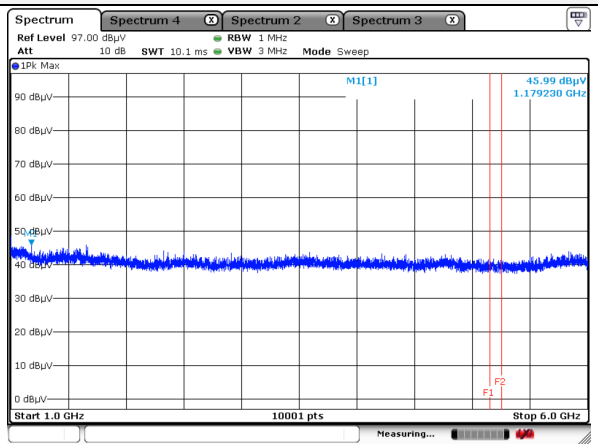
Restricted band // Vertical // Peak



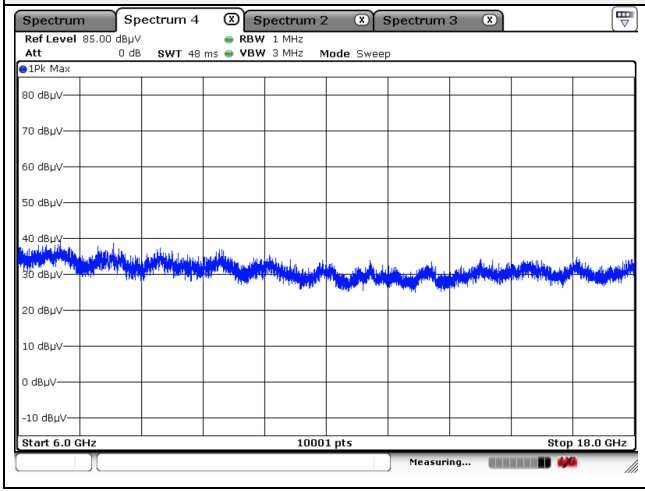
Horizontal // Peak for 1 ㎓ to 6 ㎓



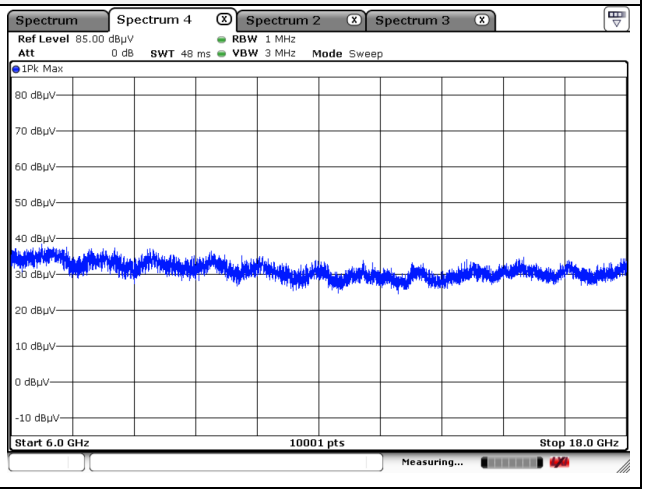
Vertical // Peak for 1 ㎓ to 6 ㎓



Horizontal // Peak for 6 ㎓ to 18 ㎓



Vertical // Peak for 6 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 6 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

Mode: 802.11n_HT20

Distance of measurement: 3 meter

Channel: 36

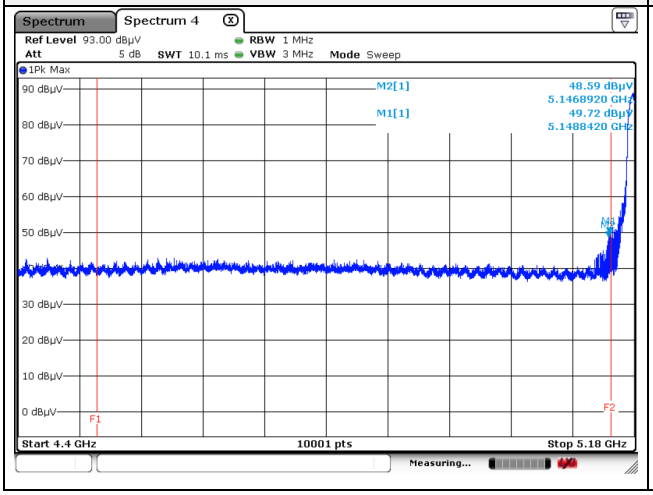
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 138.24	48.21	Peak	H	-9.06	-	39.15	74.00	34.85
1 179.73	46.72	Peak	V	-8.78	-	37.94	74.00	36.06

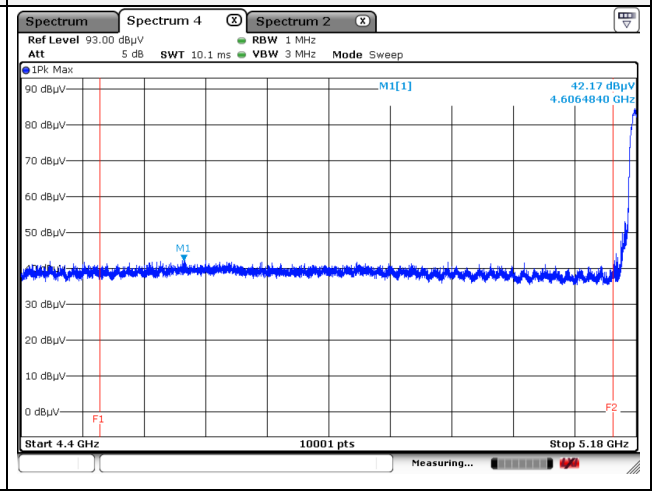
- **Band edge**

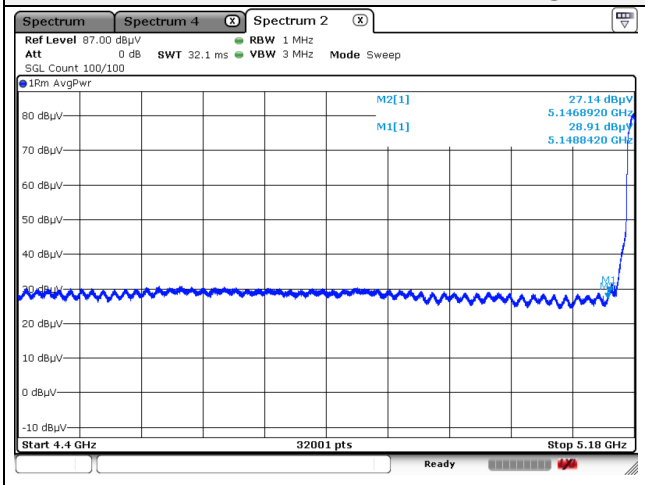
Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
4 606.48	42.17	Peak	V	4.24	-	46.41	74.00	27.59
5 146.89	48.59	Peak	H	6.45	-	55.04	74.00	18.96
5 146.89	27.14	Average	H	6.45	0.28	33.87	54.00	20.13
5 148.84	49.72	Peak	H	6.45	-	56.17	74.00	17.83
5 148.84	28.91	Average	H	6.45	0.28	35.64	54.00	18.36

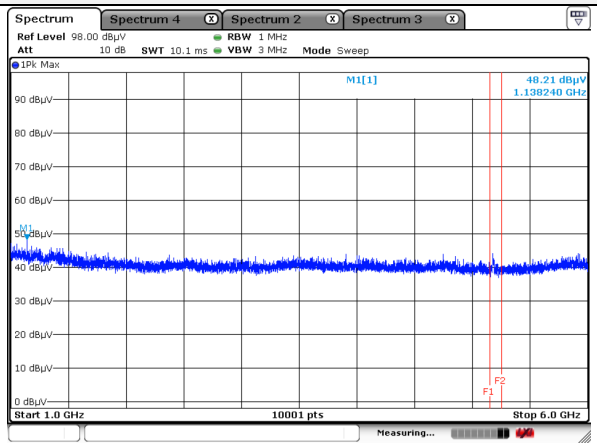
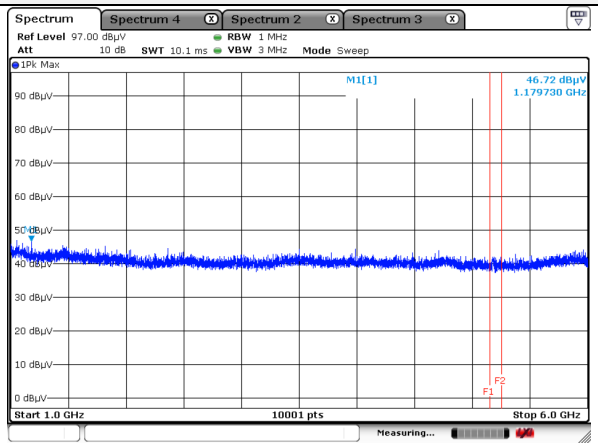
Restricted band // Horizontal // Peak

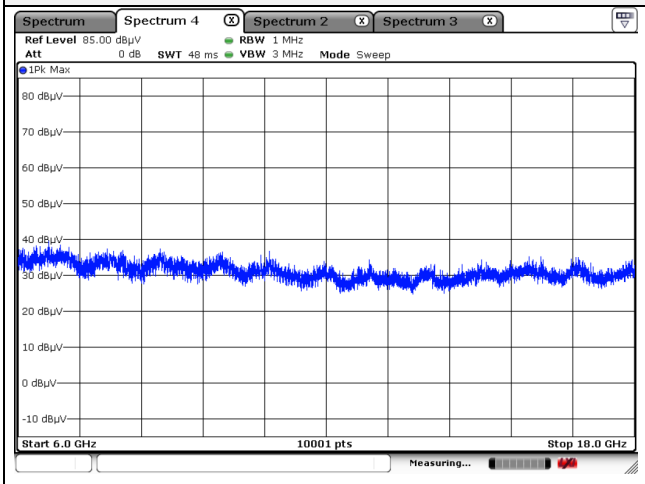
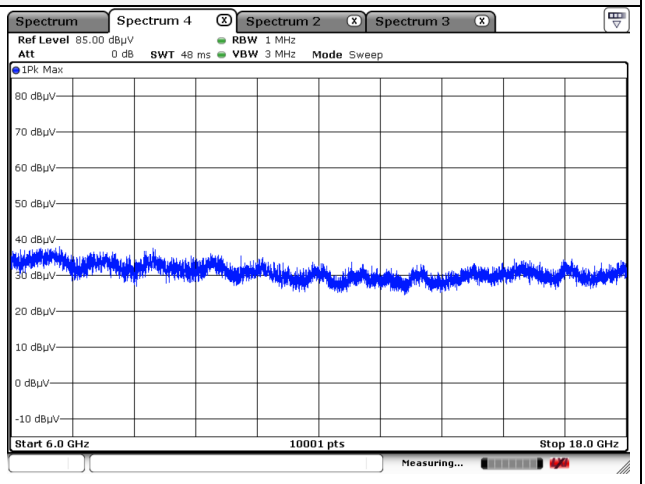


Restricted band // Vertical // Peak



Restricted band // Horizontal // Average	Restricted band // Vertical // Average
	N/A

Horizontal // Peak for 1 ㎓ to 6 ㎓	Vertical // Peak for 1 ㎓ to 6 ㎓
	

Horizontal // Peak for 6 ㎓ to 18 ㎓	Vertical // Peak for 6 ㎓ to 18 ㎓
	

Note.
1. No spurious emission were detected above 6 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

Mode: 802.11n_HT20

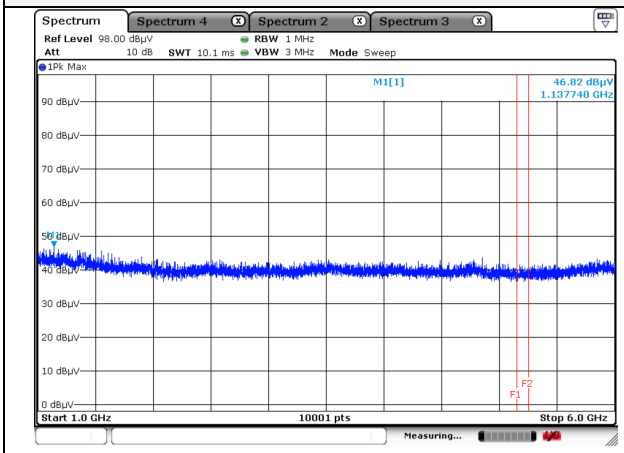
Distance of measurement: 3 meter

Channel: 44

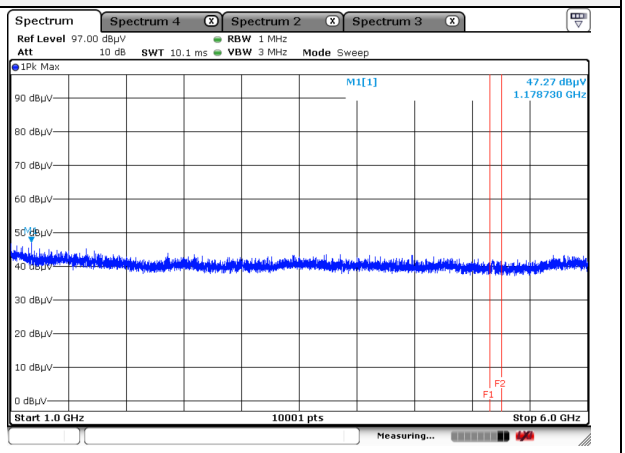
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 137.74	46.82	Peak	H	-9.06	-	37.76	74.00	36.24
1 178.73	47.27	Peak	V	-8.79	-	38.48	74.00	35.52

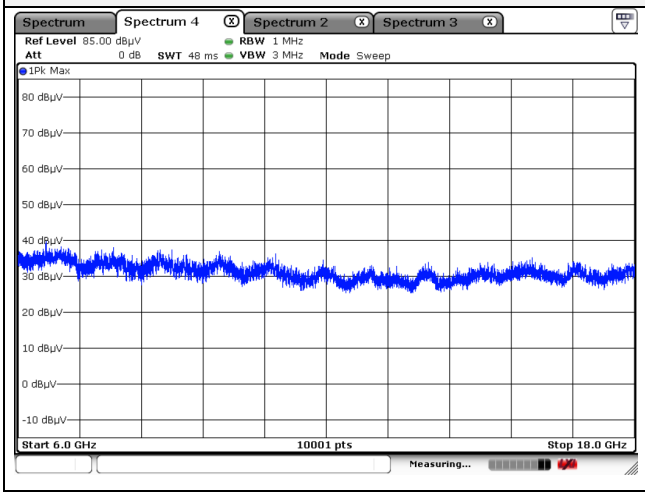
Horizontal // Peak for 1 ㎓ to 6 ㎓



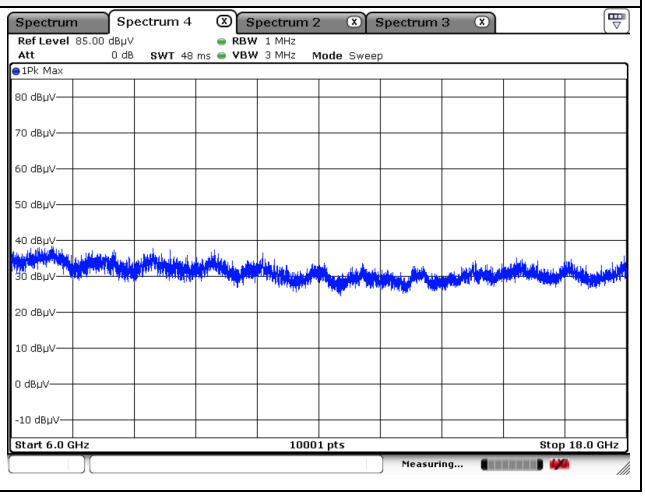
Vertical // Peak for 1 ㎓ to 6 ㎓



Horizontal // Peak for 6 ㎓ to 18 ㎓



Vertical // Peak for 6 ㎓ to 18 ㎓



Note.
1. No spurious emission were detected above 6 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.

Mode: 802.11n_HT20

Distance of measurement: 3 meter

Channel: 48

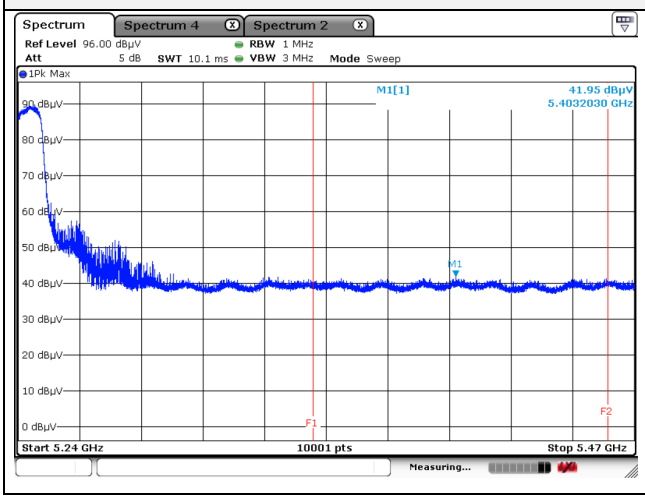
- **Spurious**

Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
1 000.25	46.97	Peak	V	-9.97	-	37.00	74.00	37.00
1 358.21	46.22	Peak	H	-7.32	-	38.90	74.00	35.10

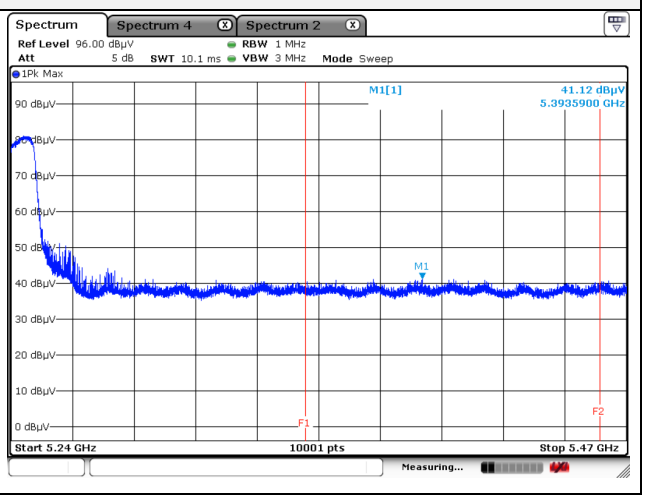
- **Band edge**

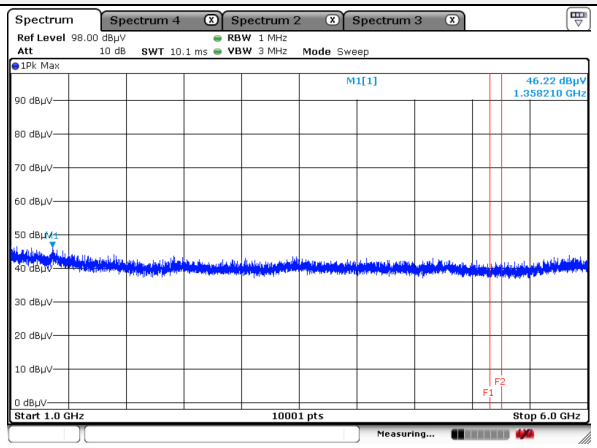
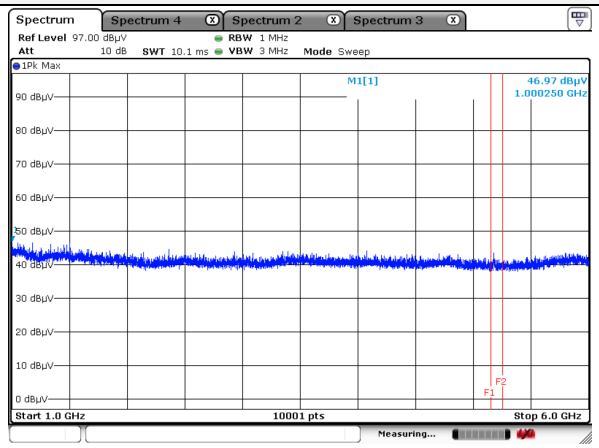
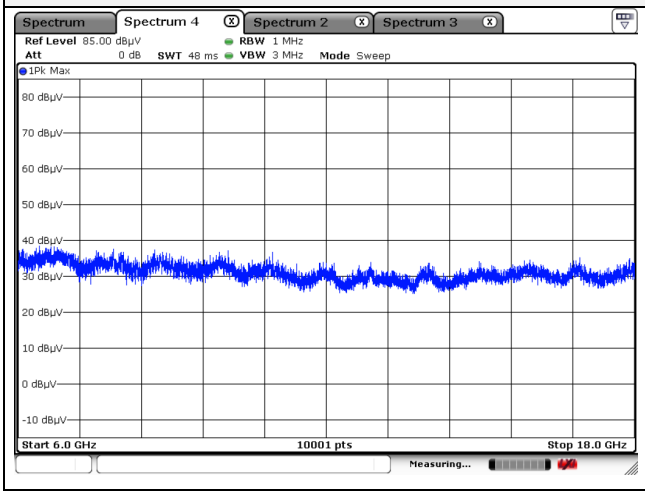
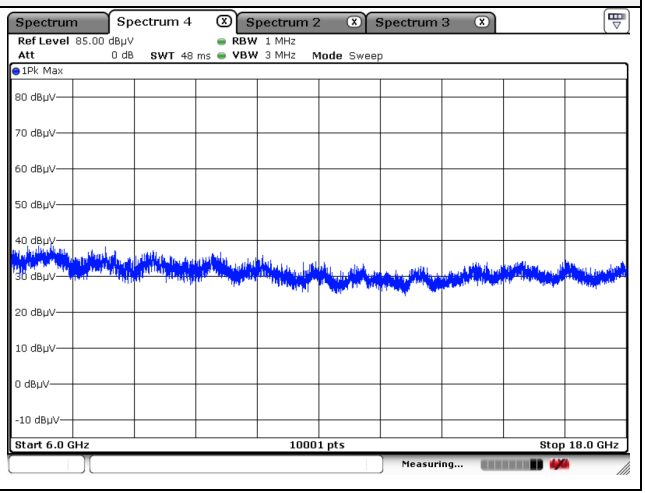
Frequency (㎒)	Level (dB㎶)	Detect mode	Ant. Pol. (H/V)	CF (dB)	DCF (dB)	Field strength (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
5 393.59	41.12	Peak	V	7.17	-	48.29	74.00	25.71
5 403.20	41.95	Peak	H	7.19	-	49.14	74.00	24.86

Restricted band // Horizontal // Peak



Restricted band // Vertical // Peak



Horizontal // Peak for 1 ㎓ to 6 ㎓	Vertical // Peak for 1 ㎓ to 6 ㎓
	
Horizontal // Peak for 6 ㎓ to 18 ㎓	**Vertical // Peak for 6 ㎓ to 18 ㎓**
	

Note.
1. No spurious emission were detected above 6 ㎓.
2. Average test would be performed if the peak result were greater than the average limit.