TEST REPORT

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Report No.: CTK-2019-00384

1. Client

◦ Name : Arnova Corp

◦ Address : 20, Gwangtancheon-ro 51beon-gil, Paju-eup, Paju-si, Gyeonggi-do, Republic of Korea

◦ Date of Receipt : 2018-12-26

2. Manufacturer

◦ Name : Arnova Corp

◦ Address : 20, Gwangtancheon-ro 51beon-gil, Paju-eup, Paju-si, Gyeonggi-do, Republic of Korea

3. Use of Report : For FCC & ISED Certification

4. Test Sample / Model: Camera Button Module / ACBM1805

5. Date of Test : 2019-01-04 to 2019-01-09

6. Test Standard(method) used : FCC 47 CFR part 15 subpart C 15.247, ANSI C63.10-2013, RSS-247 Issue 2

7. Testing Environment: Temp.: (23 ± 1) ℃, Humidity: (48 ± 5) % R.H.

8. Test Results : Compliance

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Affirmation	Gwanyong Kim: (Signature)	Technical Manager Young-taek Lee: (Signature)

2019-01-29

Republic of KOREA **CTK Co., Ltd.**

REPORT REVISION HISTORY

Date	Revision	Page No
2019-01-11	Issued (CTK-2019-00122)	all
2019-01-29	Issued (CTK-2019-00384) Add FCC ID	all

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1. General Product Description

1.1 Client Information

Company	Arnova Corp
Contact Point	20, Gwangtancheon-ro 51beon-gil, Paju-eup, Paju-si, Gyeonggi-do, Republic of Korea
Contact Person	Name : Sena Ju E-mail : haeyoung.bae@arnova.co.kr Tel : +82-31-952-1907

1.2 Product Information

FCC ID	2AR9OACBM1805
IC	24666-ACBM1805
Product Description	Camera Button Module
Model name	ACBM1805
Operating Frequency	2 402 MHz - 2 480 MHz
RF Output Power	4.088 dBm (2.563 mW)
Antenna type	PCB Pattern Antenna
Antenna gain	-0.62 dBi
Number of channels	40
Channel Spacing	2 MHz
Type of Modulation	GFSK
Power Source	DC 5 V
Test Software(Version)	nRFgo Studio (1.21.2.10)
RF Power setting in Test SW	Initial value
Firmware Version Id Number(FVIN)	N/A

1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Notebook Computer	HP	15-bs563TU	CND7253R6P
AC/DC Adapter	HP	HSTNN-LA40	7628207801

2. Facility and Accreditations

2.1 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yong-in-si, Gyeonggi-do, Korea.

2.2 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Registration Number	Logo
USA	**FCC**	FCC Part 15 & 18 EMI (Electromagnetic Interference / Emission)	805871	
CANADA	**ISED**	ISED EMI (3/10m test site)	8737A-2	
JAPAN	**VCCI**	VCCI V-3 EMI (Electromagnetic Interference / Emission)	C-986 T-1843 R-3627 G-387	
KOREA	**MSIP**	EMI (Electromagnetic Interference / Emission) EMS (Electromagnetic Susceptibility / Immunity)	KR0025	

2.3 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

3. Test Specifications

3.1 Standards

Section in FCC	Section in RSS	Requirement(s)	Status (Note 1)	Test Condition
15.247(a)	RSS-247 5.2(a)	6 dB Bandwidth	C	Conducted
15.247(e)	RSS-247 5.2(b)	Transmitter power spectral density	C	
15.247(b)	RSS-247 5.4(d)	Maximum peak conducted output power	C	
15.247(d)	RSS-247 5.5	Unwanted emission	C	
15.209	RSS-Gen 6.13	Transmitter emission	C	Radiated
15.207(a)	RSS-Gen 8.8	AC Conducted Emission	C	Line Conducted

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

Note 3: The sample was tested according to the following specification: FCC Part 15.247, ANSI C63.10-2013, RSS-247 Issue2, RSS-Gen Issue 5

Note 4: The tests were performed according to the method of measurements prescribed in KDB No.558074.

3.2 Mode of operation during the test

The EUT is operated in a manner representative of the typical of the equipments.
During at testing, system components were manipulated within the confines of typical usage to maximize each emission. All modulation modes were tests.
The results are only attached worst cases.

Test Frequency

Lowest channel	Middle channel	Highest channel
2 402 MHz	2 440 MHz	2 480 MHz

Test mode

Modulation	Duty Cycle
GFSK	62.18 %(On time : 0.388 ms, Off time : 0.236 ms)

3.3 Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.
Coverage factor k = 2, Confidence levels of 95 %

Description	Uncertainty
Conducted RF Output Power	1.5 dB
Power Spectral Density	1.5 dB
Occupied Bandwidth	0.1 MHz
Unwanted Emission(conducted)	3.0 dB
Radiated Emissions (f ≤ 1 GHz)	4.0 dB
Radiated Emissions (f > 1 GHz)	5.0 dB

4. Technical Characteristic Test

4.1 6dB Bandwidth

Test Procedures(ANSI C63.10-2013 6.9.2)

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Procedures(ANSI C63.10-2013 6.9.3)

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.
Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

Test Settings :

Center frequency = the highest, middle and the lowest channels

a) RBW = 100 kHz
b) VBW ≥ 3 x RBW
c) Detector = peak
d) Trace mode = Max hold
e) Sweep = auto couple
f) Allow trace to fully stabilize
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Limit :

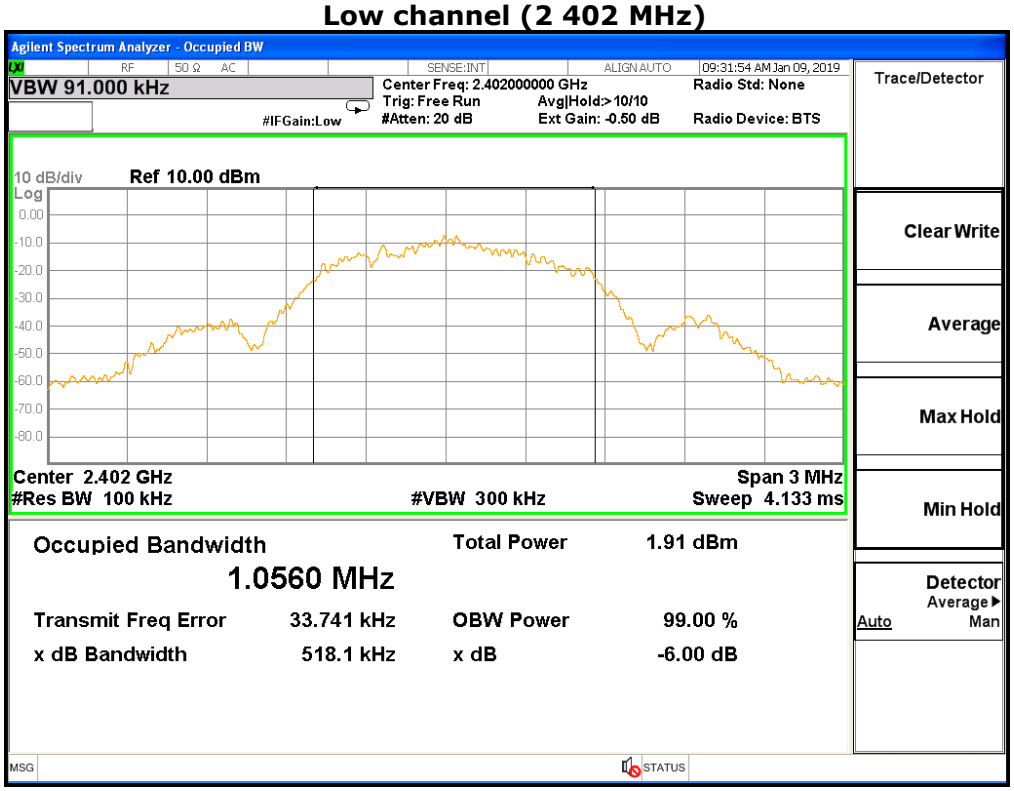
6 dB Bandwidth	>	500kHz

Test Data :

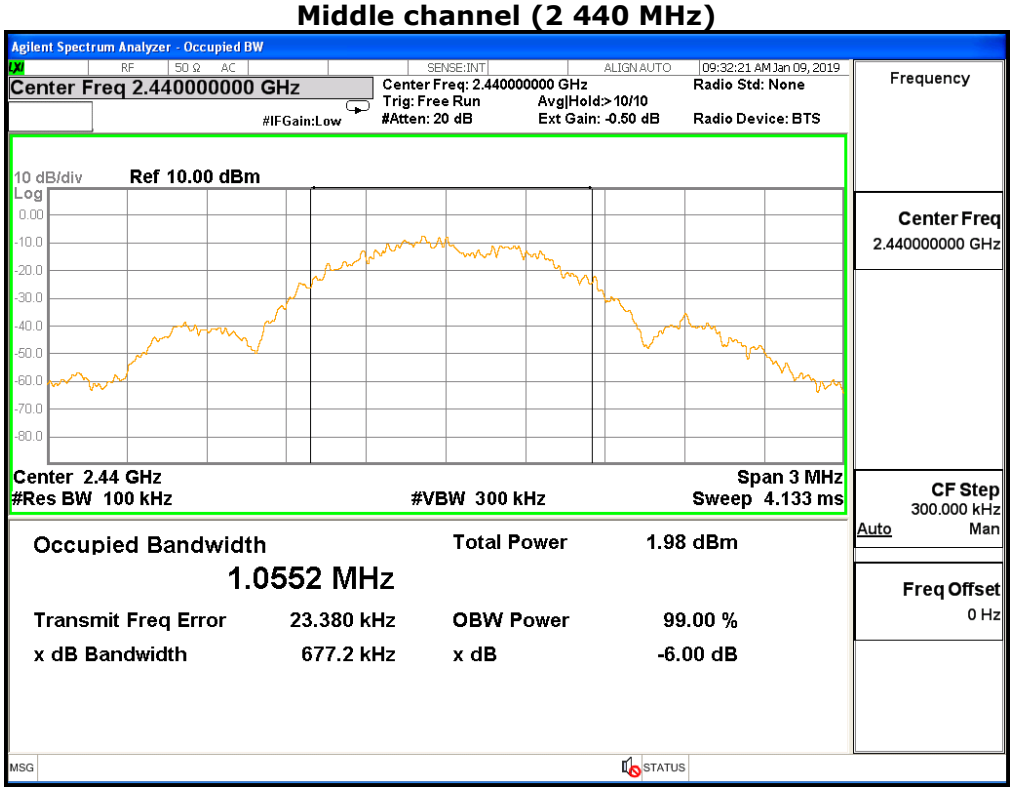
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	99% Bandwidth [MHz]	Result
Low	2 402	0.518	1.056	Complies
Middle	2 440	0.677	1.055	
High	2 480	0.585	1.069	

See next pages for actual measured spectrum plots.

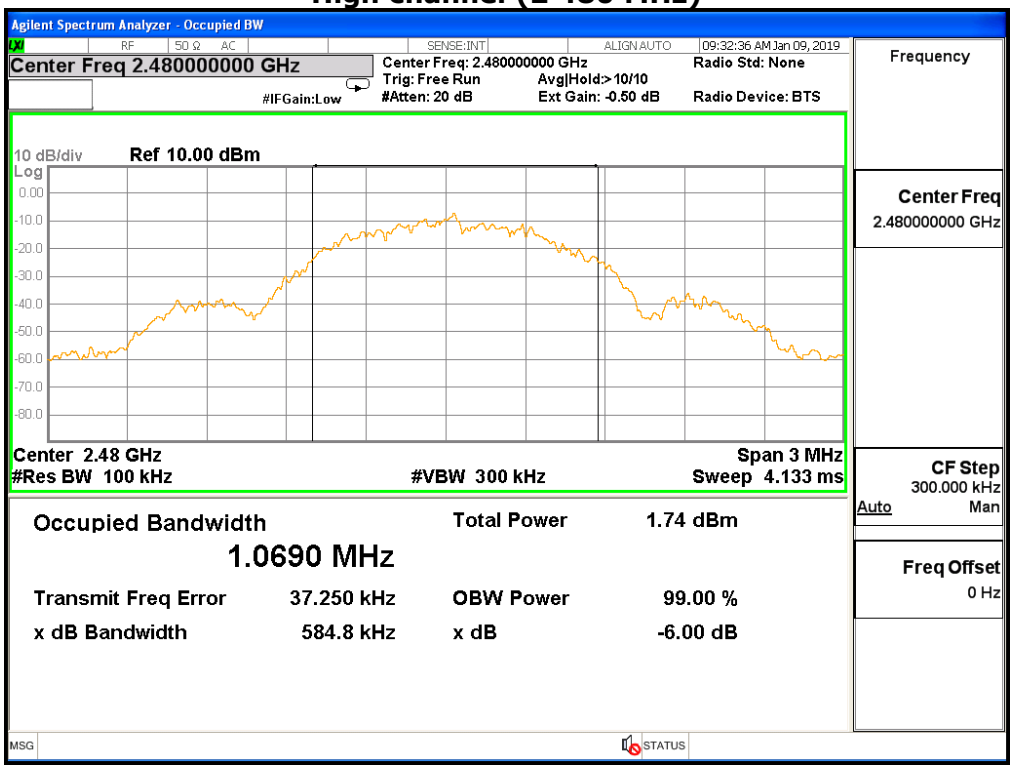
Low channel (2 402 MHz)



Middle channel (2 440 MHz)



High channel (2 480 MHz)



4.2 Maximum peak Conducted Output Power

Test Procedures(ANSI C63.10-2013 11.9.1)

The following procedure can be used when the maximum available RBW of the instrument is less than the DTS bandwidth:

Test Settings:

Center frequency = the highest, middle and the lowest channels

a) RBW ≥ DTS Bandwidth

b) VBW ≥ 3 x RBW

c) span ≥ 3 x RBW

d) Sweep time = auto couple

e) Detector = peak

f) Trace mode= max hold

g) Allow trace to fully stabilize

h) Use peak marker function to determine the peak amplitude level.

Limit :

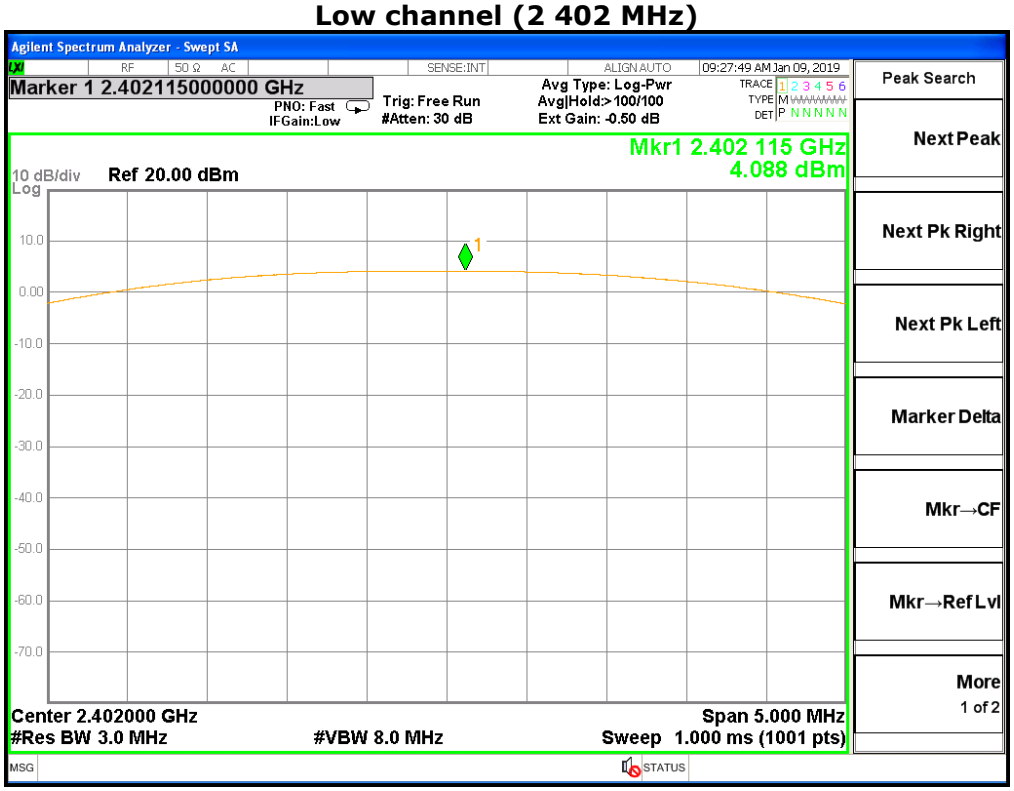
Maximum Output Power < 1 W (30 dBm)

Test Data :

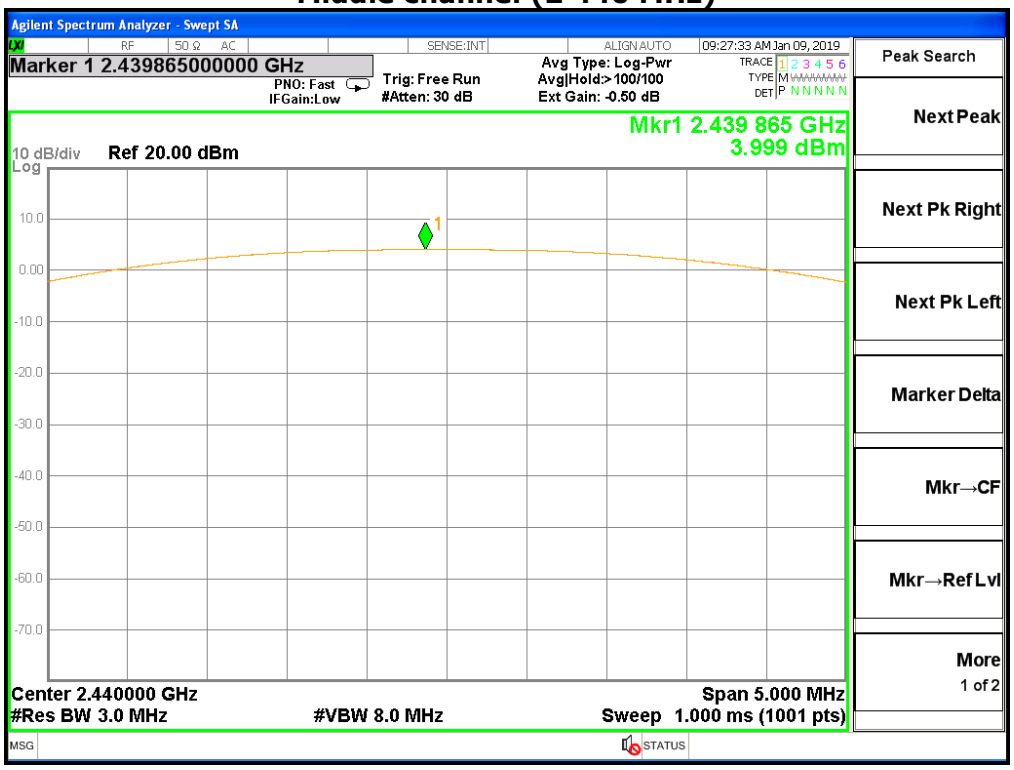
Channel	Frequency [MHz]	Measurement data [dBm]	Limit [dBm]	Result
Low	2 402	4.088	30	Complies
Middle	2 440	3.999	30	
High	2 480	4.074	30	

See next pages for actual measured spectrum plots.

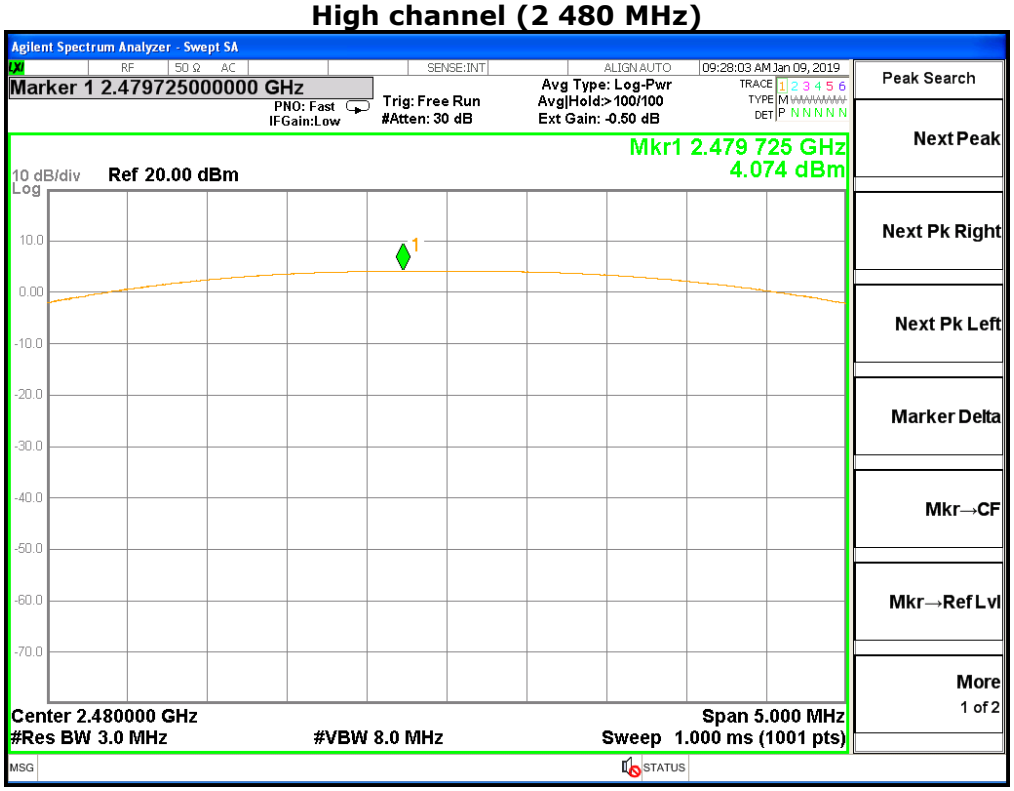
Low channel (2 402 MHz)



Middle channel (2 440 MHz)



High channel (2 480 MHz)



4.3 Power Spectral Density

Test Procedures(ANSI C63.10-2013 11.10.2)

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance.

Test Settings:

Center frequency = the highest, middle and the lowest channels

a) RBW : 3 kHz ≤ RBW ≤ 100 kHz

b) VBW ≥ 3 x RBW

c) span ≥ 1.5 x DTS bandwidth

d) Sweep time = auto couple

e) Detector = peak

f) Trace mode= max hold

g) Allow trace to fully stabilize

h) Use the peak marker function to determine the maximum amplitude level within the RBW.

Limit :

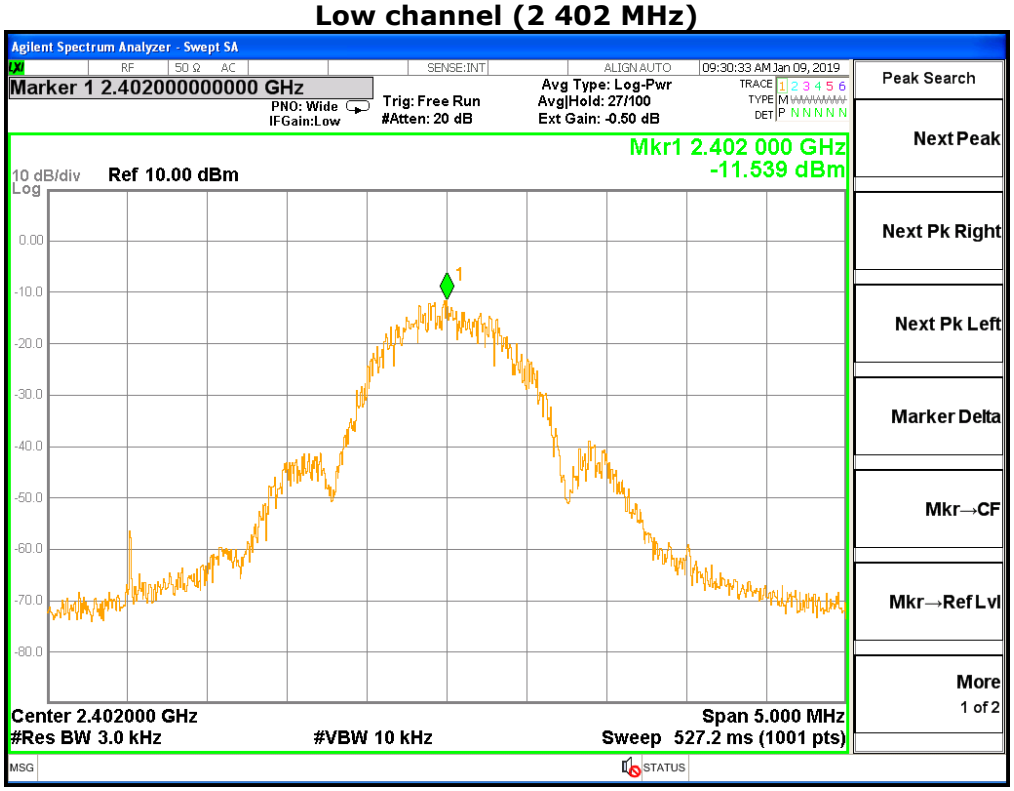
Power Spectral Density	<	8 dBm @ 3 kHz BW

Test Data :

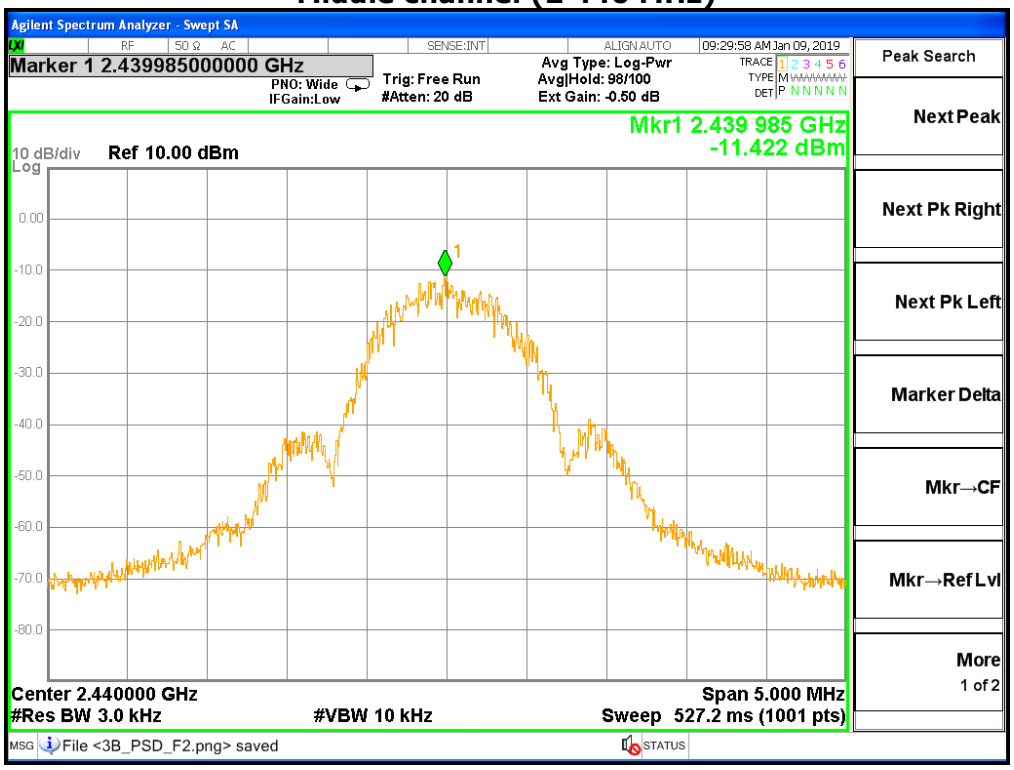
Channel	Frequency [MHz]	Measurement data [dBm]	Limit [dBm]	Result
Low	2 402	-11.539	8	Complies
Middle	2 440	-11.422		
High	2 480	-11.596		

See next pages for actual measured spectrum plots.

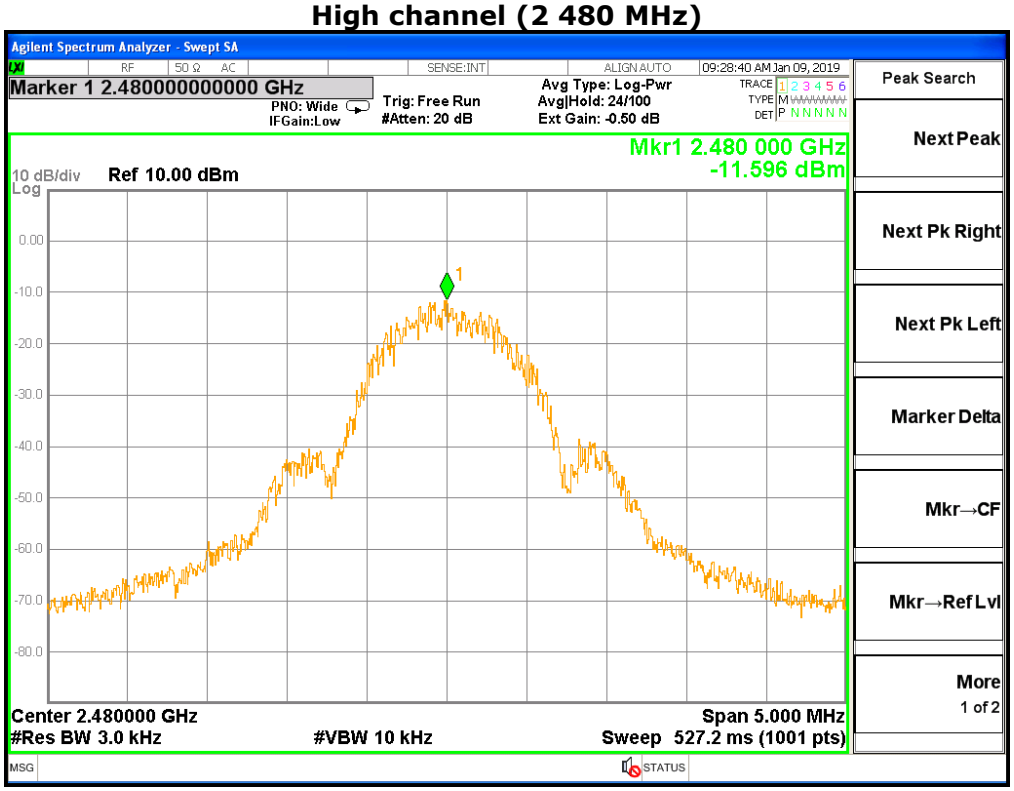
Low channel (2 402 MHz)



Middle channel (2 440 MHz)



High channel (2 480 MHz)



4.4 Band Edge & Conducted Spurious emission

Test Procedures(ANSI C63.10-2013 11.11.3)

The Unwanted emission from the EUT were measured according to the dictates PKPSD measurement procedure in section 11.11 of ANSI C63.10-2013.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

Test Settings:

Center frequency = the highest, middle and the lowest channels

a) RBW = 100 kHz
b) VBW ≥ 3 x RBW
c) Detector = peak
d) Sweep time = auto couple
e) Trace mode= max hold
f) Allow trace to fully stabilize
g) Use the peak marker function to determine the maximum amplitude level.

Limit :

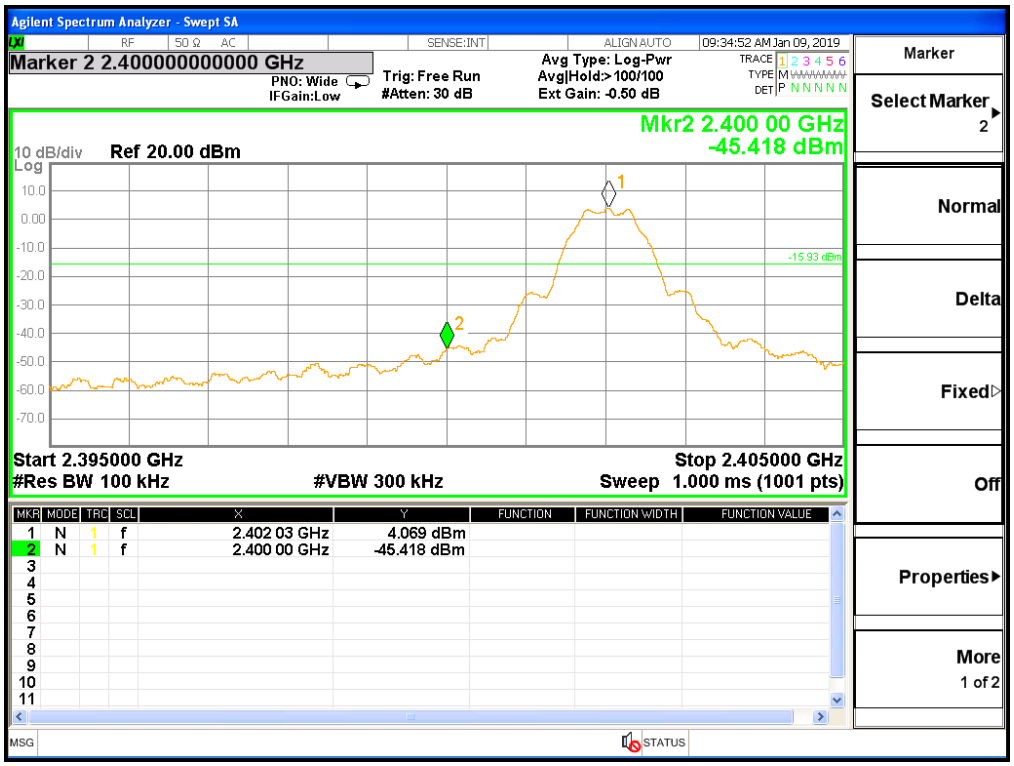
Emission level	<	20 dBc

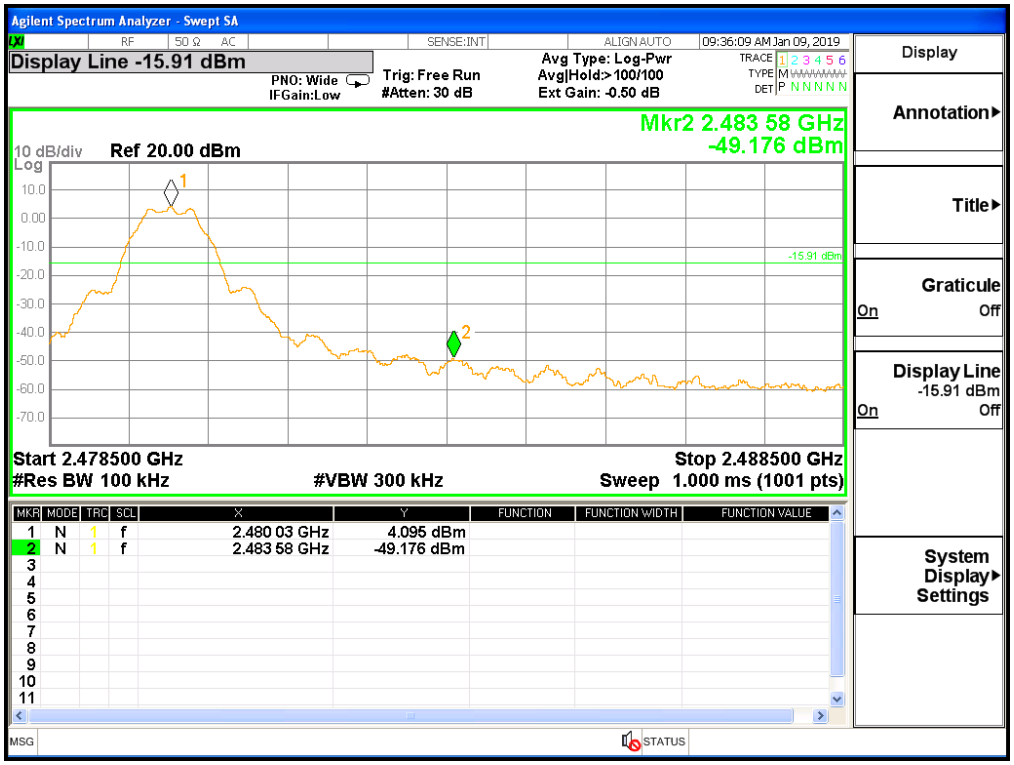
Test results: Complies

- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest in-band spectral density. Therefore the applying equipment meets the requirement.

See next pages for actual measured spectrum plots.

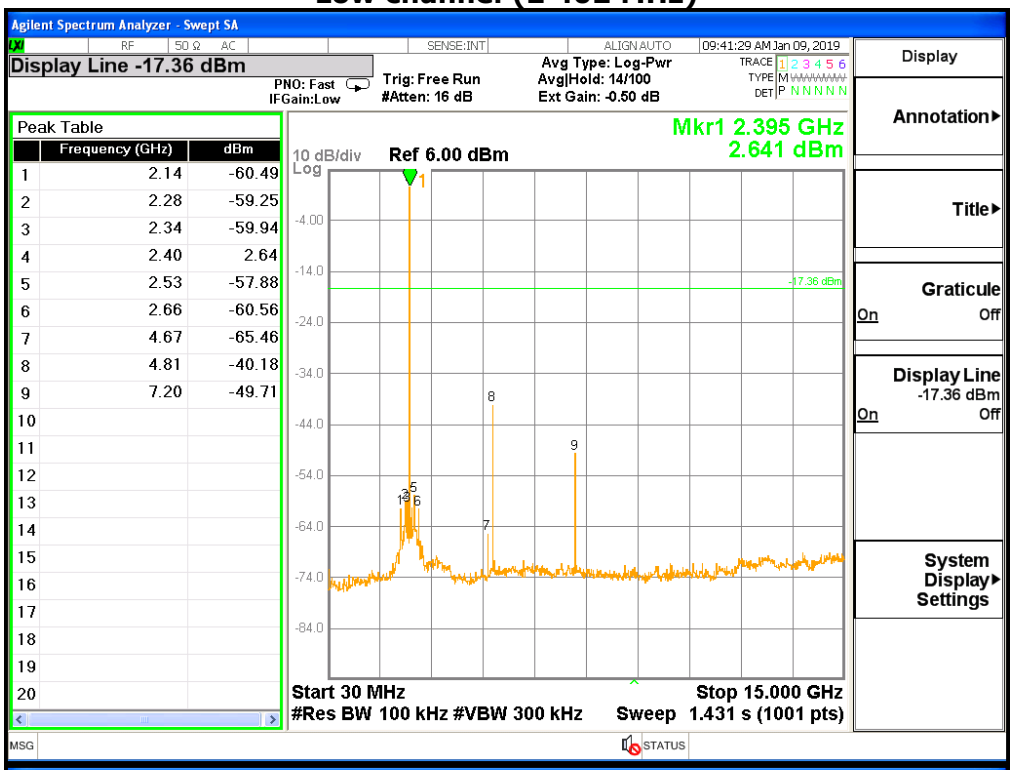
Band–edge


Agilent Spectrum Analyzer - Swept SA
Marker 2 2.400000000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.50 dB
09:34:52 AM Jan 09, 2019
Mkr2 2.400 00 GHz
-45.418 dBm
10 dB/div
Ref 20.00 dBm
-15.93 dBm
Start 2.395000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.405000 GHz
Sweep 1.000 ms (1001 pts)
1 N 1 f 2.402 03 GHz 4.069 dBm
2 N 1 f 2.400 00 GHz -45.418 dBm
Marker
Select Marker 2
Normal
Delta
Fixed
Off
Properties
More 1 of 2

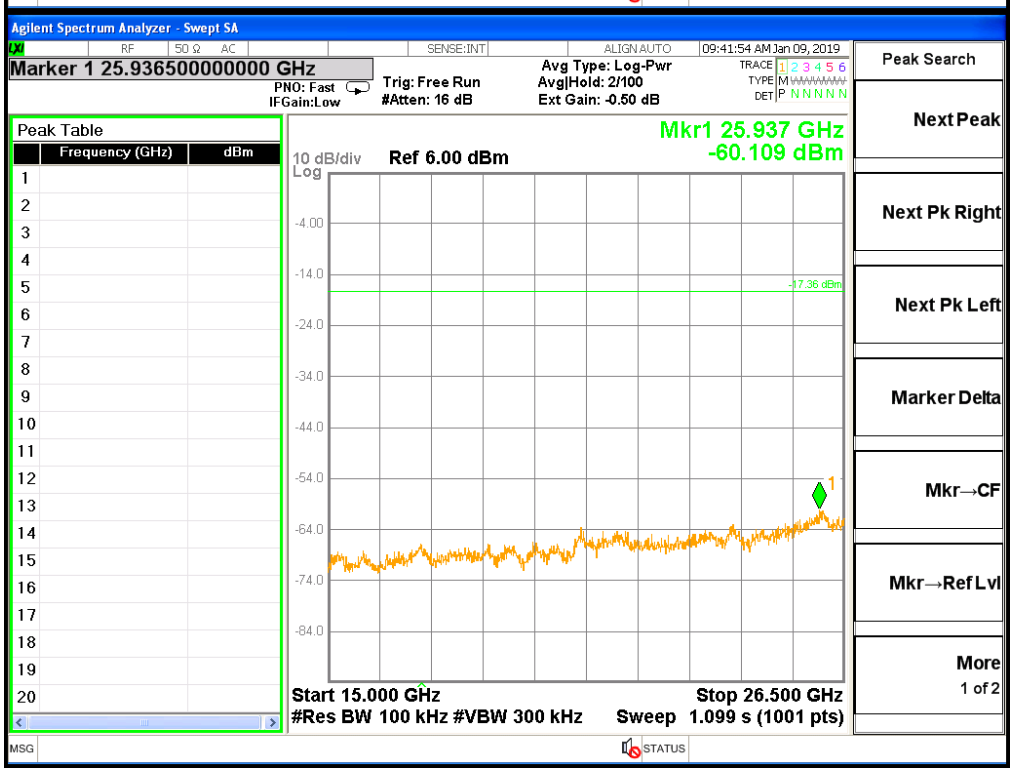

Agilent Spectrum Analyzer - Swept SA
Display Line -15.91 dBm
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -0.50 dB
09:36:09 AM Jan 09, 2019
Mkr2 2.483 58 GHz
-49.176 dBm
10 dB/div
Ref 20.00 dBm
-15.91 dBm
Start 2.478500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.488500 GHz
Sweep 1.000 ms (1001 pts)
1 N 1 f 2.480 03 GHz 4.095 dBm
2 N 1 f 2.483 58 GHz -49.176 dBm
Display
Annotation
Title
Graticule
On Off
Display Line
-15.91 dBm
On Off
System Display Settings

Conducted Spurious emission

Low channel (2 402 MHz)

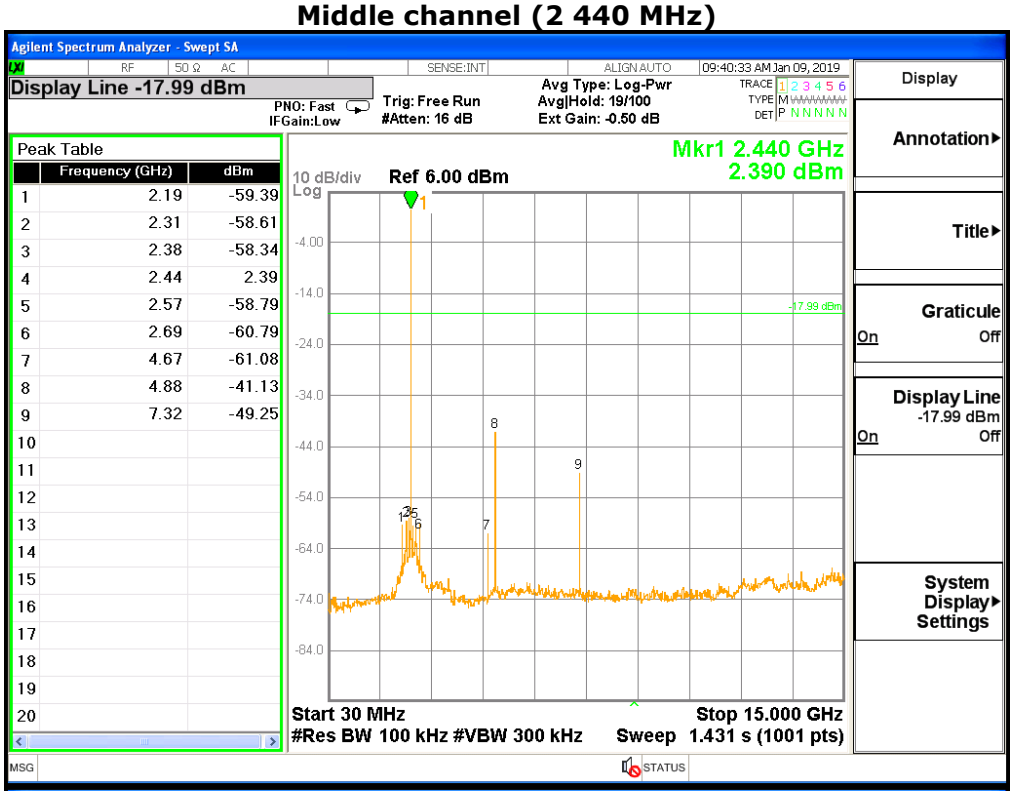


	Frequency (GHz)	dBm
1	2.14	-60.49
2	2.28	-59.25
3	2.34	-59.94
4	2.40	2.64
5	2.53	-57.88
6	2.66	-60.56
7	4.67	-65.46
8	4.81	-40.18
9	7.20	-49.71
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

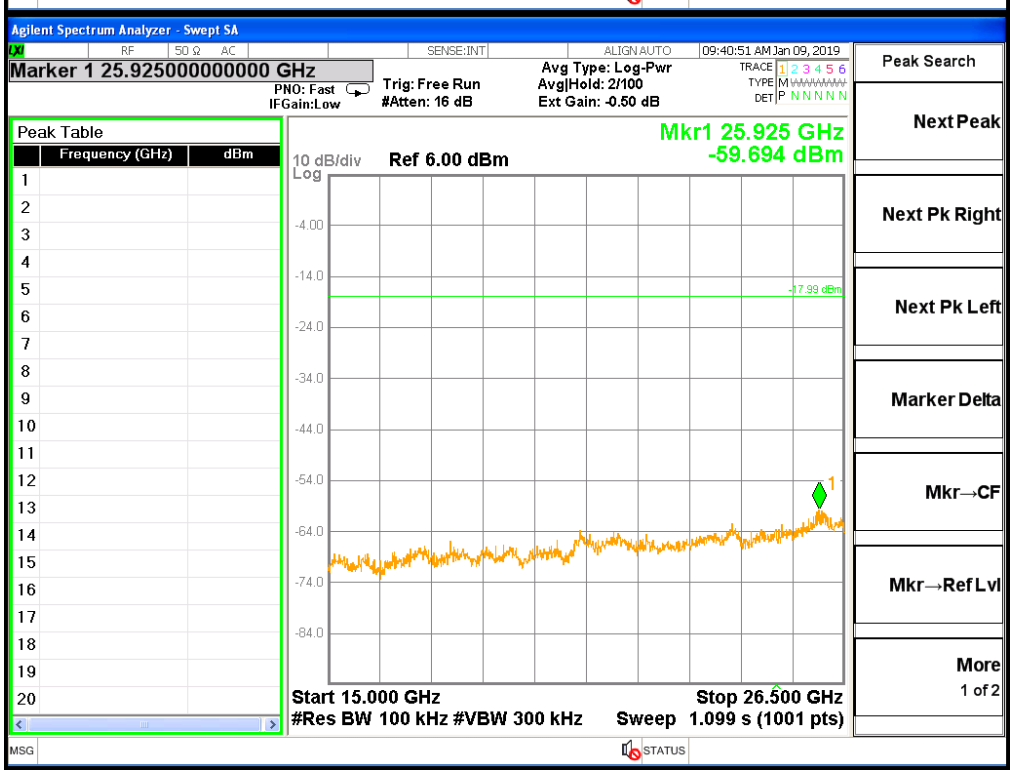


	Frequency (GHz)	dBm
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Middle channel (2 440 MHz)

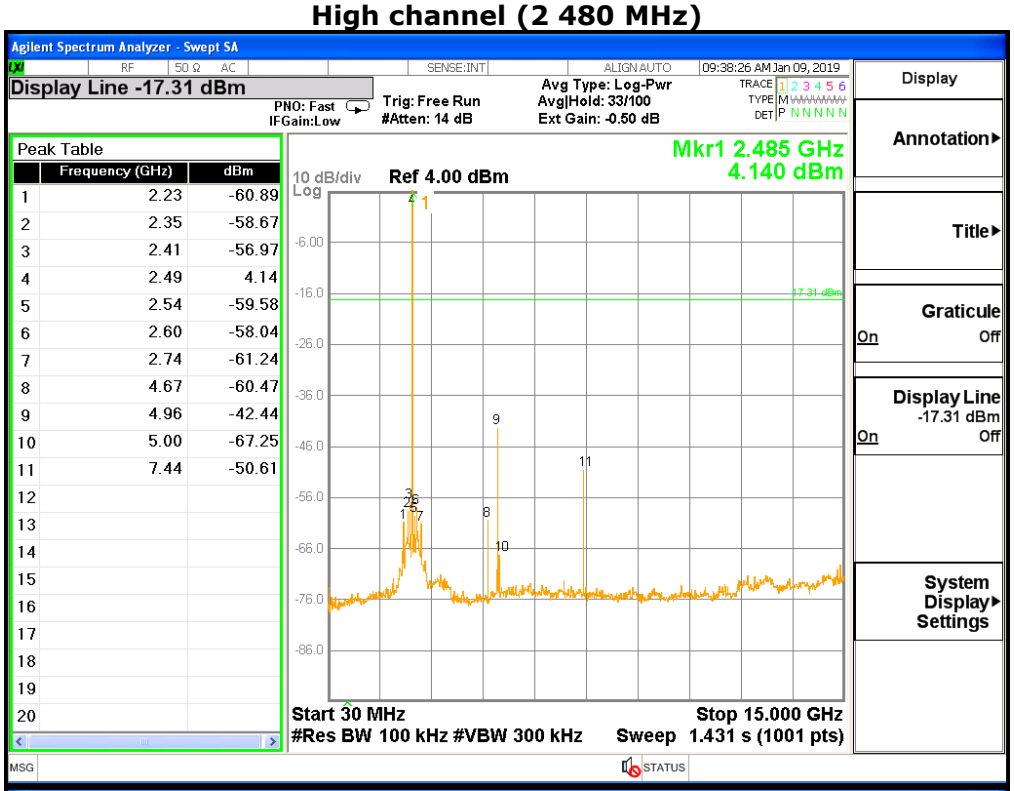


Peak Table		
	Frequency (GHz)	dBm
1	2.19	-59.39
2	2.31	-58.61
3	2.38	-58.34
4	2.44	2.39
5	2.57	-58.79
6	2.69	-60.79
7	4.67	-61.08
8	4.88	-41.13
9	7.32	-49.25
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

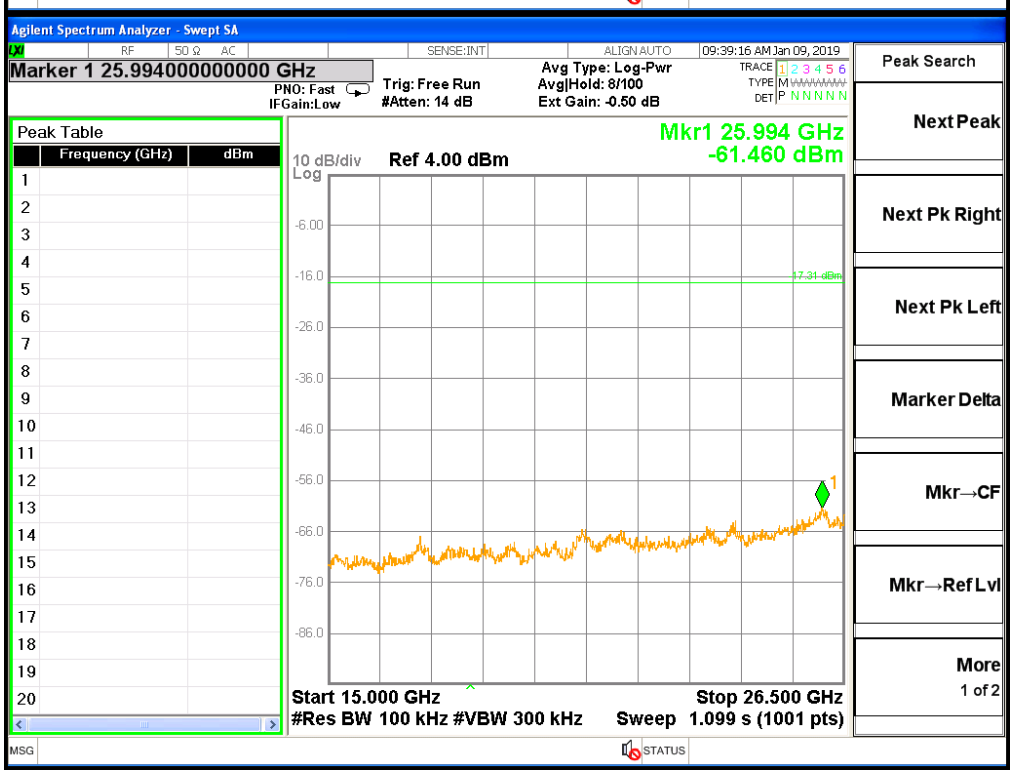


Peak Table		
	Frequency (GHz)	dBm
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

High channel (2 480 MHz)



	Frequency (GHz)	dBm
1	2.23	-60.89
2	2.35	-58.67
3	2.41	-56.97
4	2.49	4.14
5	2.54	-59.58
6	2.60	-58.04
7	2.74	-61.24
8	4.67	-60.47
9	4.96	-42.44
10	5.00	-67.25
11	7.44	-50.61



4.5 Radiated Emission

Test Location

☒ 10 m SAC (test distance : ☐ 10 m, ☒ 3 m)
☒ 3 m SAC (test distance : 3 m)

Test Procedures

1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
2) In the frequency rage above 30 MHz, Bi-Log Test Antenna(30 MHz to 1 GHz) and Horn Test Antenna(above 1 GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is carried from 1m to 4m above the ground to determine the maximum value of the field strength. The emissions levels at both horizontal and vertical polarizations should be tested.

Instrument Settings

Frequency Range = 9 kHz ~ 25 GHz (2.4 GHz 10th harmonic)

a) RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz, 9 kHz for f < 30 MHz

b) VBW ≥ RBW

c) Sweep time = auto couple

Limit :

FCC Part 15 § 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Table 1. Restricted Frequency Bands

MHz	MHz	MHz	MHz	MHz	GHz
0.09-0.11	8.37626-8.38675	73-74.6	399.9-410	2690-2900	10.6-12.7
[1]0.495-0.505	8.41425-8.41475	74.8-75.2	608-614	3260-3267	13.25-13.4
2.1735-2.1905	12.29-12.293	108-121.94	960-1240	3332-3339	14.47-14.5
4.125-4.128	12.51975-12.52025	123-138	1300-1427	3345.8-3358	15.35-16.2
4.17725-4.17775	12.57675-12.57725	149.9-150.05	1435-1626.5	3600-4400	17.7-21.4
4.20725-4.20775	13.36-13.41	156.52475-156.52525	1645.5-1646.5	4500-5150	22.01-23.12
6.215-6.218	16.42-16.423	156.7-156.9	1660-1710	5350-5460	23.6-24
6.26775-6.26825	16.69475-16.69525	162.0125-167.17	1718.8-1722.2	7250-7750	31.2-31.8
6.31175-6.31225	16.80425-16.80475	167.72-173.2	2200-2300	8025-8500	36.43-36.5
8.291-8.294	25.5-25.67	240-285	2310-2390	9000-9200	[2]Above 38.6
8.362-8.366	37.5-38.25	322-335.4	2483.5-2500	9300-9500	

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

§ 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

FCC Part 15 § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Table 2. General Field Strength Limits for Licence-Exempt Transmitters

Frequency(MHz)	Field Strength uV/m@3m	Field Strength dBuV/m@3m	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705-30	30	-	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46	3
Above 960	500	54	3

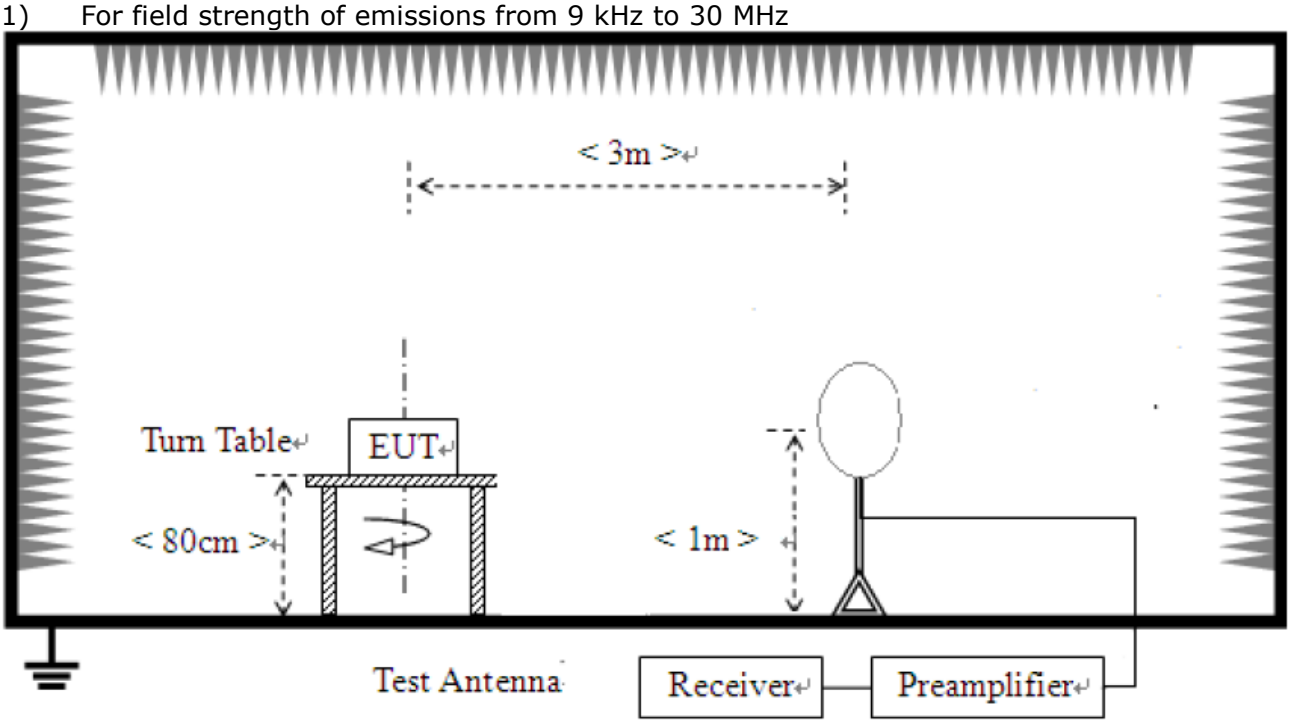
** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Note :

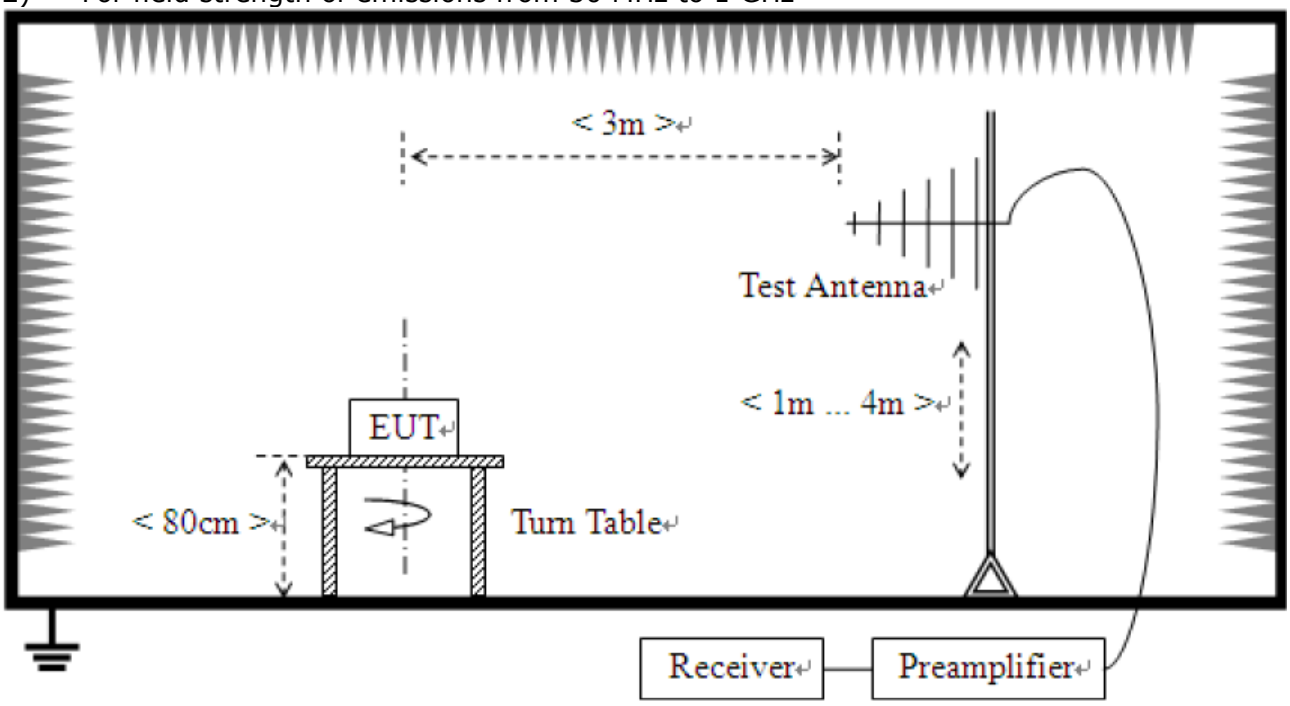
1) For above 1 GHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
2) For above 1 GHz, limit field strength of harmonics : 54 dBuV/m@3m (AV) and 74 dBuV/m@3m (PK)
3) For measurement above 1GHz, the resolution bandwidth is set to 1 MHz and video bandwidth is set to 3 MHz for peak measurement.

Test Setup:

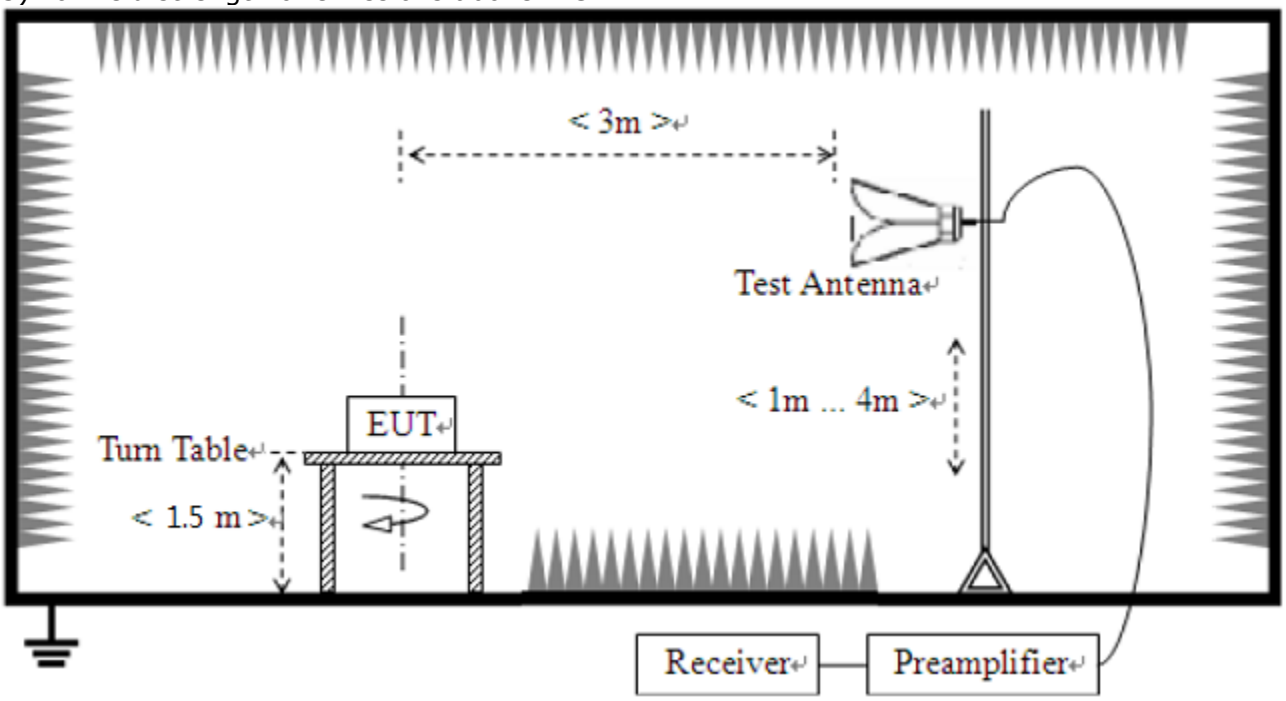
1) For field strength of emissions from 9 kHz to 30 MHz



2) For field strength of emissions from 30 MHz to 1 GHz



3) For field strength of emissions above 1 GHz



Test results

1) 9 kHz to 30 MHz

The requirements are:
☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
-	-	-	See note

Note :
The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

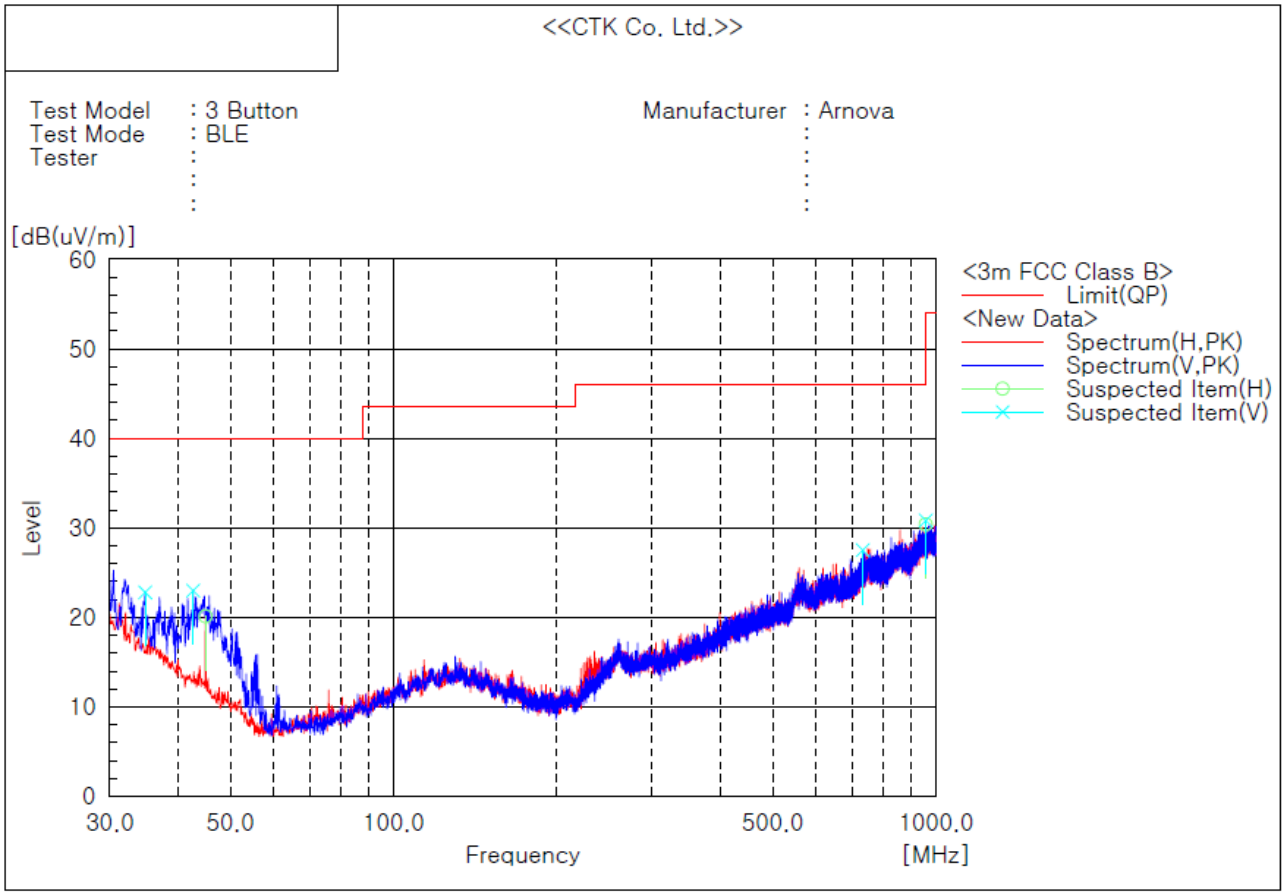
Distance extrapolation factor = 40 log (specific distance / test distance) (dB)

2) 30 MHz to 1 GHz

Test mode : Low Channel(Worst case)

The requirements are:
☒ Complies

Test Data



Spectrum Selection

No.	Frequency [MHz]	(P)	Reading [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	34.850	V	31.8	-9.0	22.8	40.0	17.2	101.0	1.0
2	42.731	V	35.9	-12.9	23.0	40.0	17.0	101.0	1.0
3	45.035	H	33.9	-13.8	20.1	40.0	19.9	101.0	92.0
4	733.129	V	25.6	1.9	27.5	46.0	18.5	400.0	328.0
5	957.562	H	23.7	6.7	30.4	46.0	15.6	200.0	0.0
6	958.047	V	24.1	6.7	30.8	46.0	15.2	400.0	39.0

Remark :
1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.
2. Result = Reading + c.f(Correction factor)
3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator - Amp Gain
4. This data is the Peak(PK) value.

3) 1 GHz to 25 GHz

The requirements are:
☒ Complies

Test Data

Channel	Frequency [MHz]	Ant. Pol. (V/H)	Reading [dBuV/m]	c.f [dB/m]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Low	7 204.78	H	48.50	6	**54.50**	74	19.50	Peak
	7 206.69	H	32.70	6	**38.70**	54	15.30	Average
Middle	7 319.26	H	45.00	6	**51.00**	74	23.00	Peak
	7 319.26	H	31.80	6	**37.80**	54	16.20	Average
High	1 919.65	H	46.80	6	**42.80**	74	31.20	Peak
	1 919.65	H	35.30	6	**31.30**	54	22.70	Average

Remarks
1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.
2. Result = Reading + c.f(correction factor)
3. Correction factor = Antenna factor + Cable loss - Amp Gain

4.6 AC Conducted Emissions

A radio apparatus that is designed to be connected to the public utility (AC) power line shall ensure that the radio frequency voltage, which is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz-30 MHz, shall not exceed the limits.

Instrument Settings

IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.
Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average**
0.15 ~ 0.5	66 to 56*	56 to 46*
0.5 ~ 5	56	46
5 ~ 30	60	50

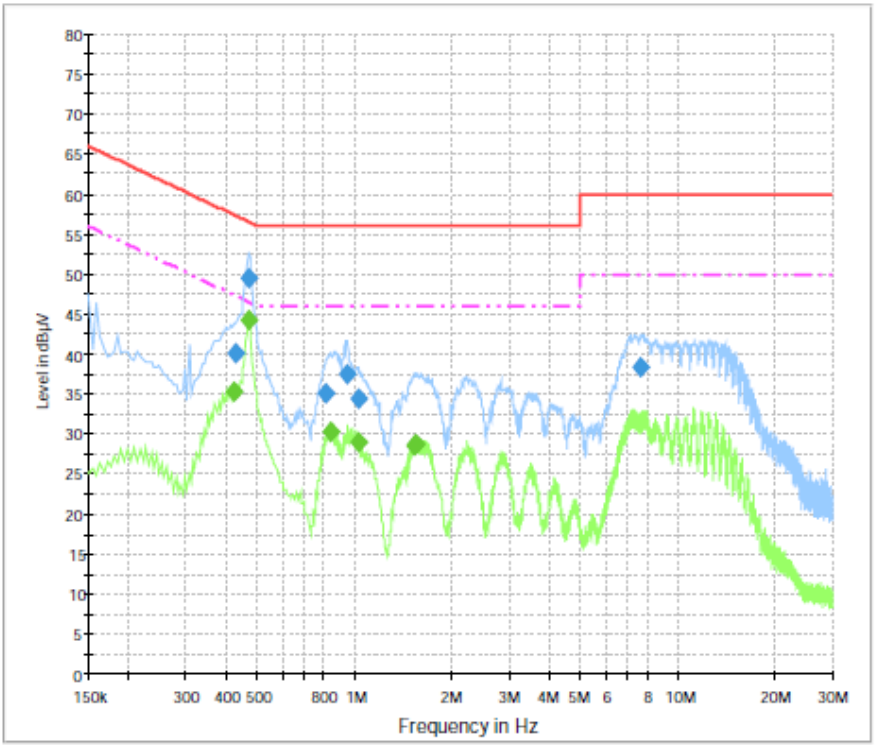
* The level decreases linearly with the logarithm of the frequency.
** A linear average detector is required.

Test Results

The requirements are:
☒ Complies

Test Data

[LINE]



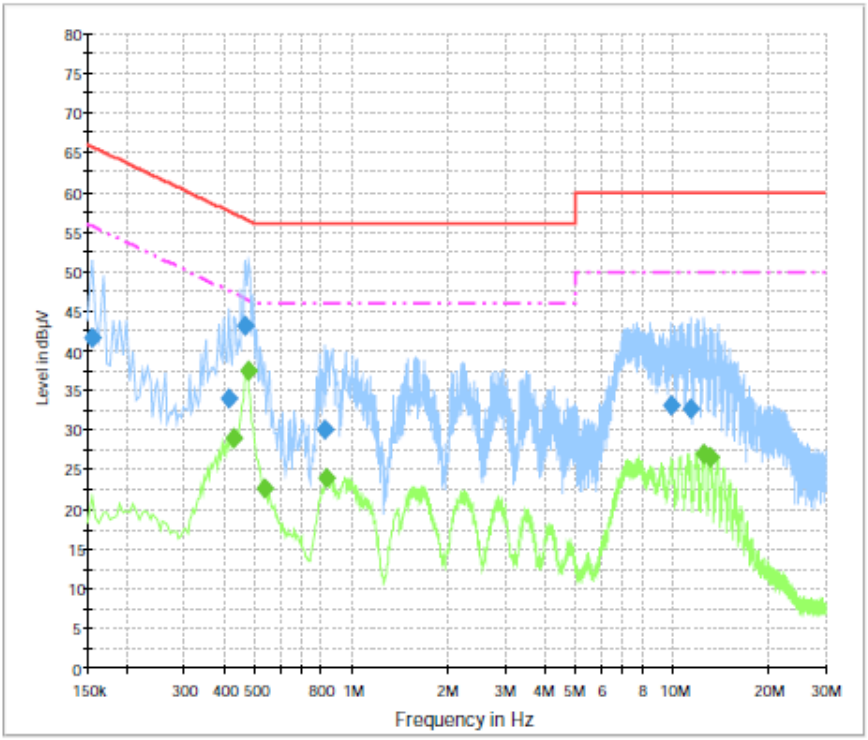
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	40.2	1000.0	9.000	On	L1	9.9	17.1	57.3
0.469500	49.4	1000.0	9.000	On	L1	9.9	7.1	56.5
0.816000	35.2	1000.0	9.000	On	L1	9.8	20.8	56.0
0.946500	37.6	1000.0	9.000	On	L1	9.8	18.4	56.0
1.023000	34.4	1000.0	9.000	On	L1	9.8	21.6	56.0
7.665000	38.5	1000.0	9.000	On	L1	9.9	21.5	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.424500	35.4	1000.0	9.000	On	L1	9.9	11.9	47.4
0.469500	44.2	1000.0	9.000	On	L1	9.9	2.3	46.5
0.843000	30.3	1000.0	9.000	On	L1	9.8	15.7	46.0
1.023000	29.0	1000.0	9.000	On	L1	9.8	17.0	46.0
1.531500	28.6	1000.0	9.000	On	L1	9.7	17.4	46.0
1.549500	28.7	1000.0	9.000	On	L1	9.7	17.3	46.0

[NEUTRAL]



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154500	41.7	1000.0	9.000	On	N	9.8	24.0	65.8
0.415500	34.0	1000.0	9.000	On	N	9.9	23.6	57.5
0.465000	43.1	1000.0	9.000	On	N	9.9	13.5	56.6
0.825000	30.1	1000.0	9.000	On	N	9.8	25.9	56.0
9.937500	33.1	1000.0	9.000	On	N	9.9	26.9	60.0
11.422500	32.8	1000.0	9.000	On	N	9.9	27.2	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	29.0	1000.0	9.000	On	N	9.9	18.3	47.3
0.474000	37.4	1000.0	9.000	On	N	9.9	9.0	46.4
0.537000	22.7	1000.0	9.000	On	N	9.9	23.3	46.0
0.838500	23.9	1000.0	9.000	On	N	9.8	22.1	46.0
12.457500	27.0	1000.0	9.000	On	N	9.9	23.0	50.0
13.146000	26.7	1000.0	9.000	On	N	10.0	23.3	50.0

APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Signal Analyzer	Rohde & Schwarz	FSV40	101574	2018-03-09	2019-03-09
2	Signal Generator	Rohde & Schwarz	SMB100A	175528	2018-10-24	2019-10-24
3	EMI Test Receiver	Rohde & Schwarz	ESCI7	100814	2018-10-25	2019-10-25
4	Bilog Antenna	Schaffner	CBL6111C	2551	2018-05-10	2020-05-10
5	Active Loop Antenna	SCHWARZBECK	FMZB 1513	1513-125	2018-05-02	2020-05-02
6	6dB Attenuator	Rohde & Schwarz	DNF	272.4110.50-2	2018-10-25	2019-10-25
7	AMPLIFIER	SONOMA	310	291721	2018-02-02	2019-02-02
8	Preamplifier	Agilent	8449B	3008A02011	2018-12-03	2019-12-03
9	EMI Test Receiver	Rohde & Schwarz	ESU40	100336	2018-02-01	2019-02-01
10	Preamplifier	Agilent	8449B	3008A02011	2018-12-03	2019-12-03
11	Horn Antenna	ETS-Lindgren	3117	00154525	2017-09-14	2019-09-14
12	Horn Antenna	ETS-Lindgren	3116	0062916	2017-04-25	2019-04-25
13	Signal Analyzer	Agilent	N9020A	MY50510324	2018-01-26	2019-01-26
14	Band Reject Filter	Micro Tronics	BRM50702	G233	2018-01-26	2019-01-26

	Cable	Manufacturer	Model No.	Serial No.	Check Date
1	RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 104	MY27558/4	2018-12-19
2	RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 104	N/A (below 1GHz)	2018-12-19
3	RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 104	MY27573/4	2018-12-19
4	RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 106	N/A (above 1GHz)	2018-12-19
5	RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 102	MY2374/2	2018-12-19
6	RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 102	MY4728/2	2018-12-19