TEST REPORT

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1. **Applicant**
   - Name : 4SEILS Co., Ltd.
   - Address : 904ho, 2497 Nambusunhwan ro, Seocho, Seoul, South Korea
   - Date of Receipt : 2026-07-08
2. **Manufacturer**
   - Name : 4SEILS Co., Ltd.
3. **Use of Report :** For FCC Certification
4. **Test sample / Model :** VIVA Tag / DP0266
5. **Date(s) of test :** 2026-07-08 to 2026-07-17
6. **Test Standard (Method) used :** FCC 47 CFR part 15 subpart C 15.247
7. **Testing Environment :** Refer to 7 page
8. **Test Results :** Compliance
9. **Location of Test :** ☒ Permanent Testing Lab ☐ On Site Testing

   Address : (Unhak-Dong) 5, 221beon-gil, Dongbu-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This report cannot be reproduced or copied without the written consent of CTK.

Approval	Tested by: Seong-uk Park (Signature)	Technical Manager: Young-taek Lee (Signature)

2026-07-20

CTK Co., Ltd.

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REPORT REVISION HISTORY

Date	Revision	Page No
2026-07-20	Issued (CTK-2026-01892)	all

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1. General Product Description

1.1 Applicant Information

Company	4SEILS Co., Ltd.
Contact Point	904ho, 2497 Nambusunhwan ro, Seocho, Seoul, South Korea
Contact Person	Name : Hyeonjoon Ryu E-mail : hjryu@4seils.com Tel : +82-10-4953-2838

1.2 Manufacturer Information

Manufacturer	4SEILS Co., Ltd.
Address	904ho, 2497 Nambusunhwan ro, Seocho, Seoul, South Korea

1.3 Product Information

FCC ID	2BWXS-DP0266
Product Description	VIVA Tag
Model name	DP0266
Variant Model name	-
Operating Frequency	2 401 MHz - 2 482 MHz
RF Output Power	-0.608 dBm(0.869 mW)
Antenna Specification	Antenna type : PCB Antenna Peak Gain : -2.25 dBi
Number of channels	82
Channel Spacing	1 MHz
Type of Modulation	GFSK
Power Source	DC 3.0 V(Battery)
Test Software(Version)	Tera Term
RF Power setting in Test SW	2 401 MHz ~ 2 481 MHz : Power setting input “pos 0dBm” 2 482 MHz : Power setting input “neg 12dBm”

1.4 Peripheral Devices

-For Conducted Measurement and Radiated Measurement

Device	Manufacturer	Model No.	Serial No.
Notebook	Samsung Electronics Co., Ltd.	550XDA	KQFJ99YRA002J0
AC Adapter	Samsung Electronics Co., Ltd.	PA-1400-96	CN60BA4400295AD2VHNCHF042

2. Accreditations

2.1 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	CN : 8737A CAB ID : KR0025
KOREA	NRRA	KR0025

2.2 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	Requirement(s)	Status (Note 1)	Test Condition
15.247(a)	6 dB Bandwidth & 99% Bandwidth	C	Conducted
15.247(e)	Transmitter power spectral density	C	
15.247(b)	Maximum peak conducted output power	C	
15.247(d)	Unwanted emission	C	
15.209	Transmitter emission	C	Radiated
15.207(a)	AC Conducted Emission	NA(Note 3)	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 equipment is operated on battery power only.

Note 4: Note 4: The sample was tested according to the following specification: FCC Part 15.247, ANSI C63.10-2020+Cor 1-2023+C63.10a-2024+Errata to C63.10a-2024

Note 5: The tests were performed according to the method of measurements prescribed in KDB No.558074.

Note 6: This equipment has been tested in a 100% duty cycle transmission situation using applicant supplied software.

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_1	Highest channel_2
2 401 MHz	2 442 MHz	2 481 MHz	2 482 MHz

3.3 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	0.46 dB (C.L.: Approx. 95 %, k = 2)
Power Spectral Density	0.46 dB (C.L.: Approx. 95 %, k = 2)
Occupied Bandwidth	0.10 MHz (C.L.: Approx. 95 %, k = 2)
Unwanted Emission(conducted)	0.54 dB (C.L.: Approx. 95 %, k = 2)
Radiated Emissions (f ≤ 1 GHz)	4.11 dB (C.L. : Approx. 95%, k=2)
Radiated Emissions (f > 1 GHz)	4.34 dB (C.L. : Approx. 95%, k=2)

3.4 Test Software

Conducted Test	Ics Pro Ver. 6.0.3
Radiated Test	EP5RE Ver. 6.0.10, ES10 Ver. 10.001

3.5 Testing Environment

Test Item	Test Date	Temperature (℃)	Relative Humidity (%)
6 dB Bandwidth	2026-07-13	22 ±1	59 ±3
Transmitter power spectral density			
Maximum peak conducted output power			
Unwanted emission			
Radiated Emissions (f > 1GHz)	2026-07-10 ~ 2026-07-17	(23 ~ 26) ±1	(51 ~ 64) ±3
Radiated Emissions (f ≤ 1GHz)	2026-07-08	22 ±1	61 ±3

4. Technical Characteristic Test

4.1 6dB Bandwidth & 99% Bandwidth

Test Procedures(ANSI C63.10-2020 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 C63.10-2020 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(6dB Bandwidth),
30 kHz(99% Bandwidth)

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 > 500 kHz

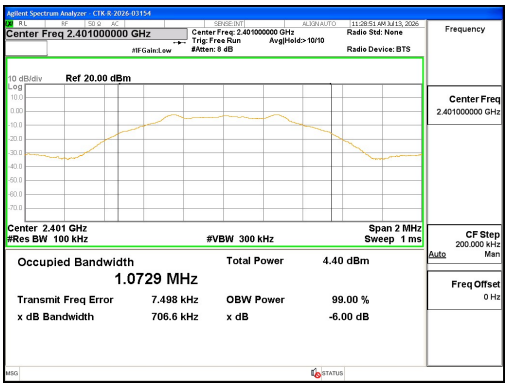
Test Data :

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	99 % Bandwidth [MHz]	Result
Low	2 401	0.707	1.055	Complies
Middle	2 442	0.735	1.066	Complies
High_1	2 481	0.743	1.071	Complies
High_2	2 482	0.760	1.063	Complies

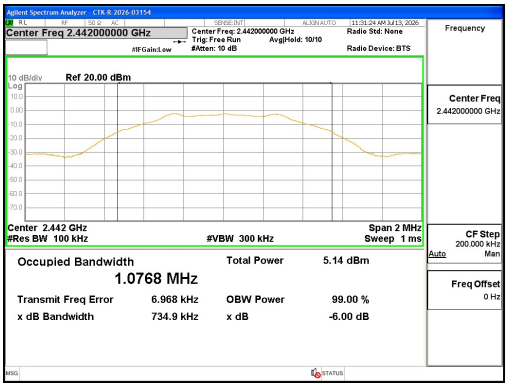
See next pages for actual measured spectrum plots.

6 dB Bandwidth[MHz]

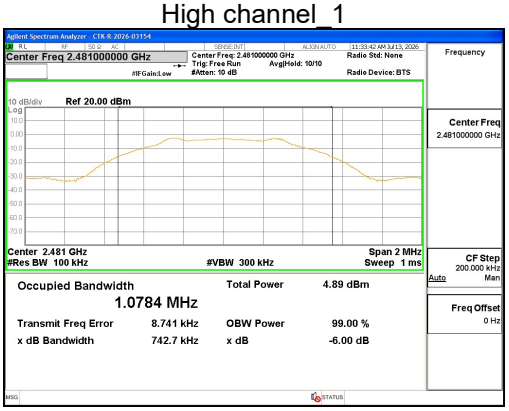
Low channel



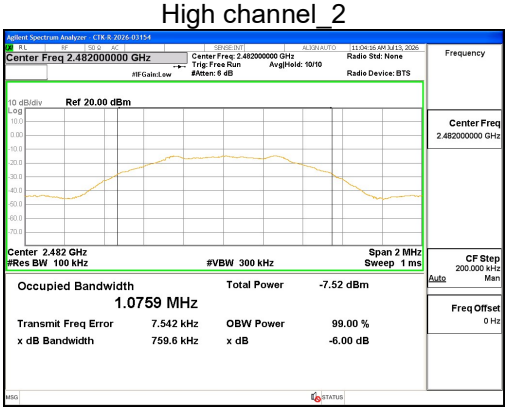
Middle channel



High channel_1

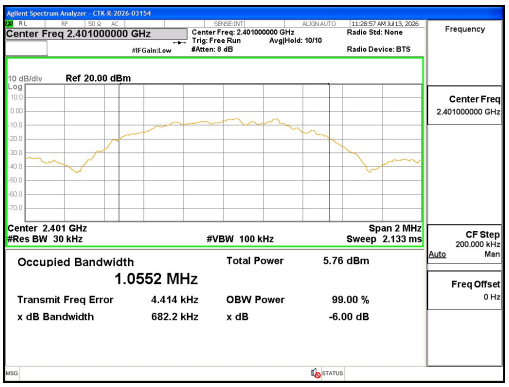


High channel_2

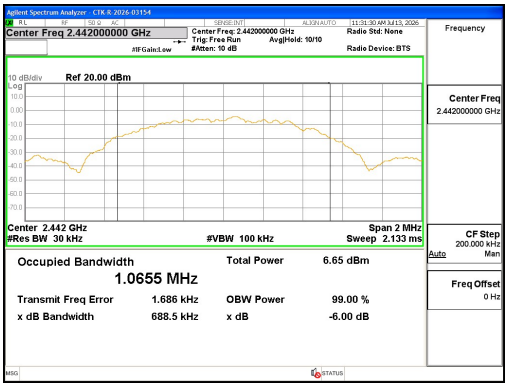


99% Bandwidth[MHz]

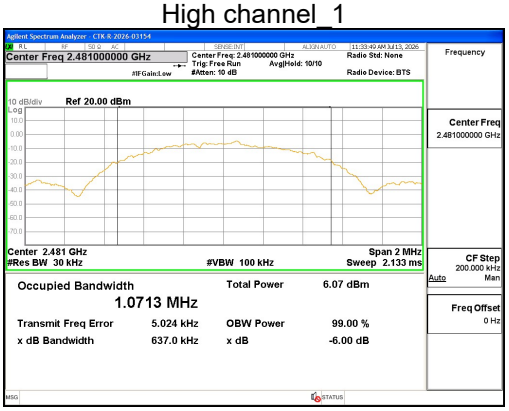
Low channel



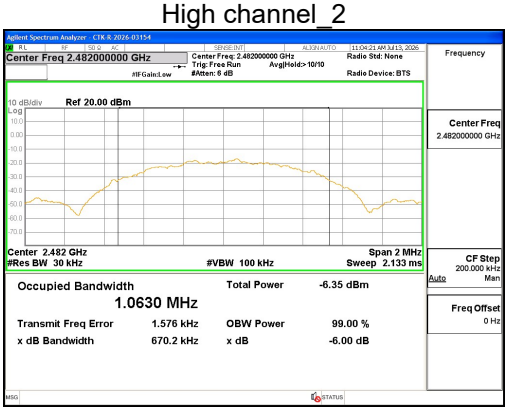
Middle channel



High channel_1



High channel_2



4.2 Maximum peak Conducted Output Power

Test Procedures(ANSI C63.10-2020 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)

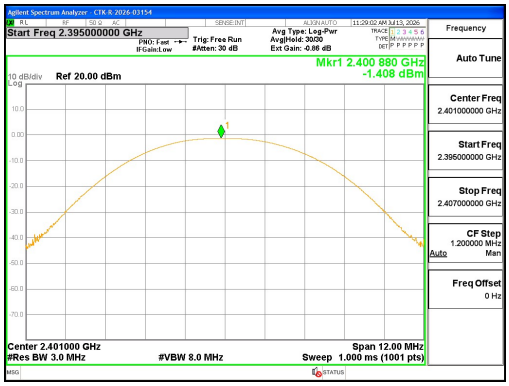
Test Data :

Channel	Frequency [MHz]	Measurement data [dBm]	Limit [dBm]	Result
Low	2 401	-1.408	30	Complies
Middle	2 442	-0.608	30	Complies
High_1	2 481	-0.794	30	Complies
High_2	2 482	-13.026	30	Complies

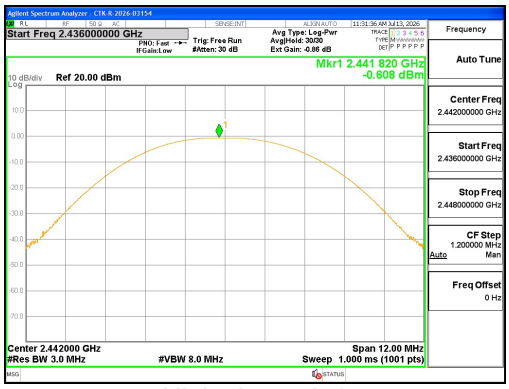
See next pages for actual measured spectrum plots.

Output Power

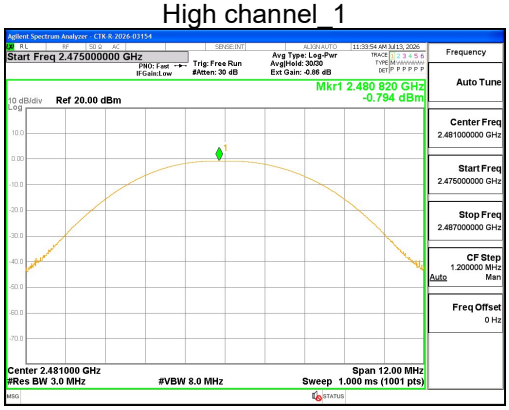
Low channel



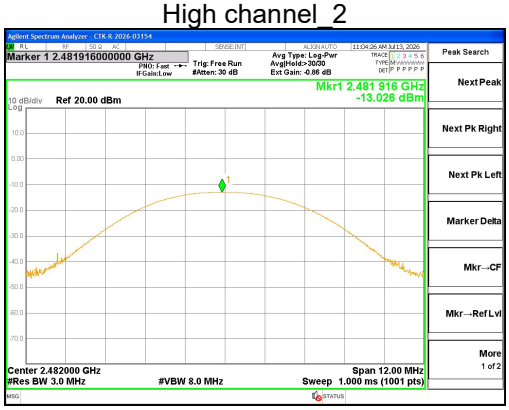
Middle channel



High channel_1



High channel_2



4.3 Power Spectral Density

Test Procedures(ANSI C63.10-2020 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

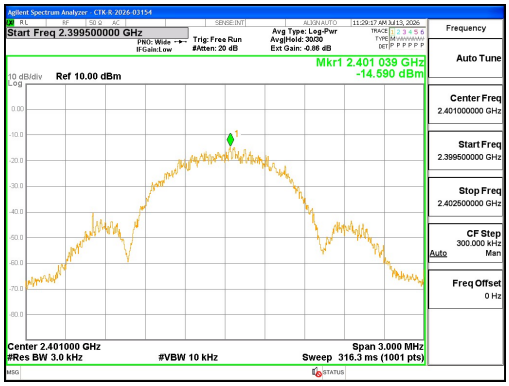
Test Data :

Channel	Frequency [MHz]	Measurement data [dBm]	Limit [dBm]	Result
Low	2 401	-14.590	8	Complies
Middle	2 442	-13.187	8	Complies
High_1	2 481	-14.267	8	Complies
High_2	2 482	-26.178	8	Complies

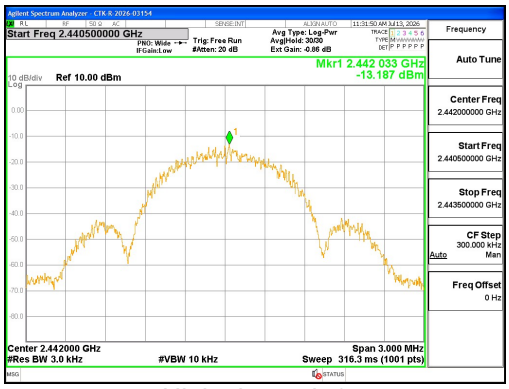
See next pages for actual measured spectrum plots.

Power Spectral Density

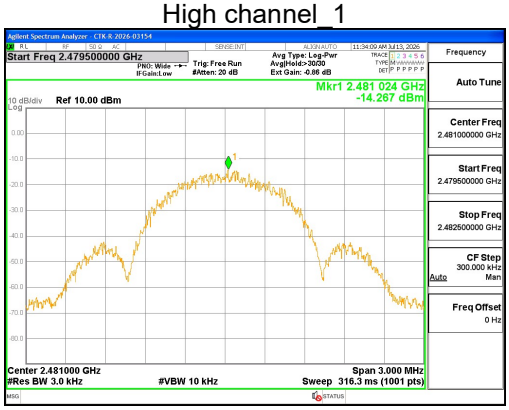
Low channel



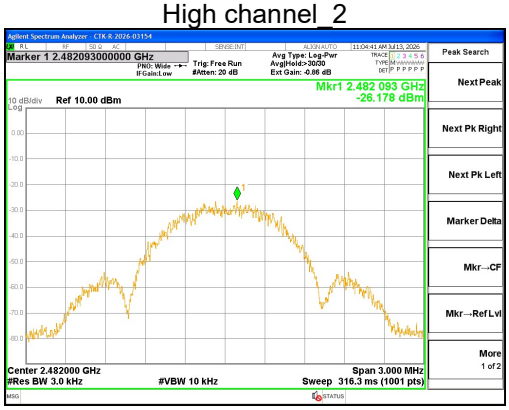
Middle channel



High channel_1



High channel_2



4.4 Band Edge & Conducted Spurious emission

Test Procedures(ANSI C63.10-2020 11.11)

The Unwanted emission from the EUT were measured according to the dictates PKPSD measurement procedure in section 11.11 of ANSI C63.10-2020.

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 < 30 dBc

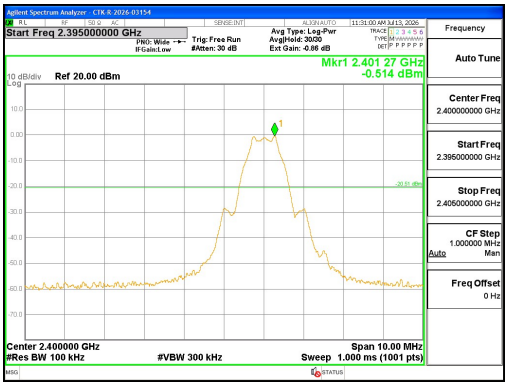
Test results: Complies

- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 30 dB lower than the highest in-band spectral density. Therefore the applying equipment meets the requirement.

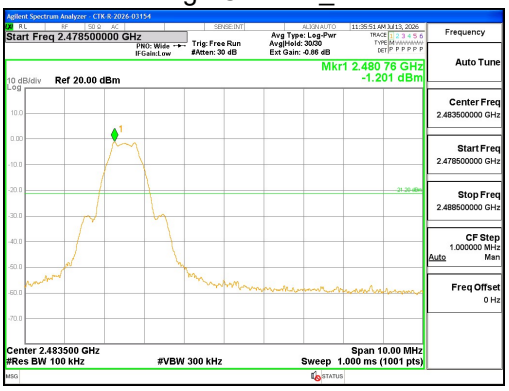
See next pages for actual measured spectrum plots.

Conducted Band–Edge

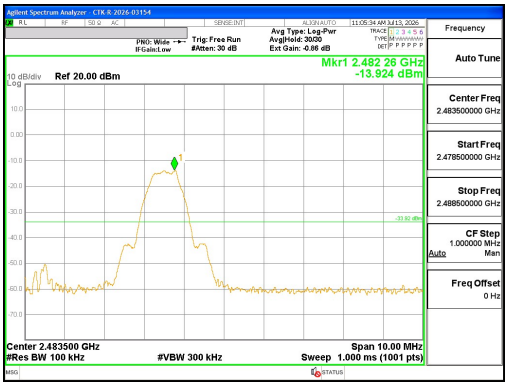
Low Channel



High Channel_1



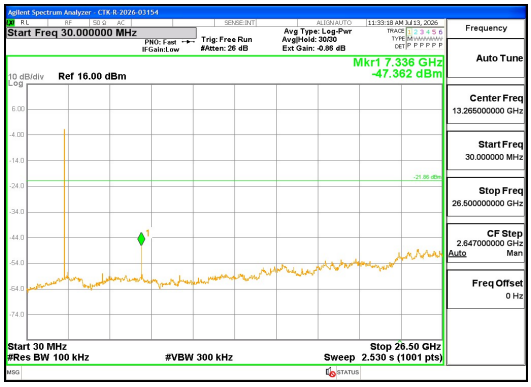
High Channel_2



Conducted Spurious Emission

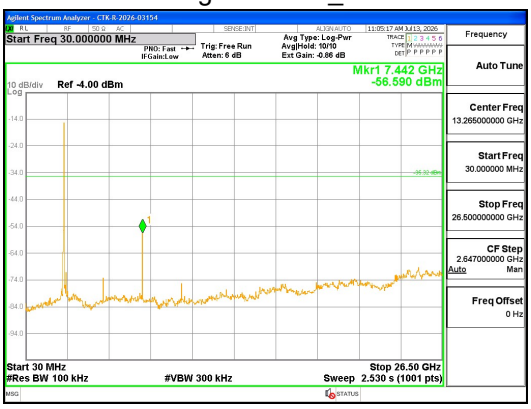
Low channel

Middle channel



High channel_1

High channel_2



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 ~ 26.5 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 FCC)

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.

Table 3. General Field Strength Limits for Licence-Exempt Transmitters (FCC)

Frequency [MHz]	Magnetic Field Strength [uA/m]	Field Strength [uV/m]	Field Strength [dBuV/m]	Deasurement Distance [meters]
0.009-0.490	6.37/F (F in kHz)	2400/F(kHz)	48.5–13.8	300
0.490-1.705	63.7/F (F in kHz)	24000/F(kHz)	33.8–23	30
1.705-30	0.08	30	29.5	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 54-72 MHz,
76-88 MHz, 174-216 MHz, 470-806 MHz. 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@3 m (AV) and 74 dBuV/m@3 m (PK)
3) For measurement above 1 GHz, the resolution bandwidth is set to 1 MHz and video bandwidth is set to 3 MHz for peak measurement.