TEST REPORT

CTK Co., Ltd. (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17142, Korea Tel: +82-1511-9871 Fax: +82-31-624-9501	REPORT No.: CTK-2026-01879 Page (1) / (34) Pages	

1. **Applicant**

   ◦ Name : CMITECH Co.,Ltd.

   ◦ Address : 4th floor office# 417~419, 136, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea

   ◦ Date of Receipt : 2026-03-29

2. **Manufacturer**

   ◦ Name : CMITECH Co.,Ltd.

3. **Use of Report :** For FCC Certification

4. **Test sample / Model :** FACE CAMERA / NovaFace-3-BPI

5. **Date(s) of test :** 2026-04-24 to 2026-07-03

6. **Test Standard (Method) used :** FCC 47 CFR part 15 subpart C 15.225

7. **Testing Environment :** refer to 6 page

8. **Test Results :** refer to 6 page

9. **Location of Test :** ☒ Permanent Testing Lab ☐ On Site Testing
   (Address : 5, Dongbu-ro 221beon-gil, 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: (Signature) GWANYONG KIM	Technical Manager: (Signature) Young-taek Lee

2026-07-16

CTK Co., Ltd.

REPORT REVISION HISTORY

Date	Revision	Page No
2026-07-16	Issued (CTK-2026-01879)	All

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1. General Information

1.1 Applicant Information

Company	CMITECH Co.,Ltd.
Contact Point	4th floor office# 417~419, 136, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea
Contact Person	Name : jeong-Hee Kim E-mail : jhkim@cmi-tech.com Tel : +82-70-8633-8459 Fax : +82-31-624-4490

1.2 Product Information

Product Description	FACE CAMERA
FCC ID	2AJY5-NF-3-BPI
Basic Model name	NovaFace-3-BPI
Variant Model name	Model name / Configuration ① NovaFace-3-BP, **NovaFace-3-BPI**, NanoFace-3 — Basic (BLE + NFC (13.56 MHz)) + PoE ② NovaFace-3-B, NovaFace-3-BI — Basic Remark ② Removal of PoE module only *Models starting with “Nano” are OEM model names of the “Nova” models.
Operating Frequency	13.56 MHz
RF Output Power	63.2 dBuV/m @ 3 m
Power Source	DC 15 V, DC 48 V(PoE)

1.3 Antenna Information

Antenna type : FPCB Antenna		
☒	Integral antenna (antenna permanently attached)	
	☐	Temporary RF connector provided
	☒	No temporary RF connector provided Transmit chains bypass antenna and soldered temporary RF connector provided for connected measurement. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator and correct for all losses in the RF path.
☐	External antenna (dedicated antennas)	

1.4 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
AC/DC Adapter	Foshan Shunde Guanyuda Power Supply Co., Ltd.	GM60-150300-F	-
PoE Injector	-	PSE801FM	502480100196

2. Accreditations

2.1 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	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

FCC Part Section(s)	Requirement(s)	Status (Note 1)	Report Clause
15.203	Antenna Requirement	C	1.3
15.215(c)	Emission Bandwidth	C	4.1
15.225 (a)(b)(c)(d), 15.209	Field strength emissions	C	4.2
15.225(e)	Frequency tolerance	C	4.3
15.207	AC Power line Conducted Emissions	C	4.4
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: ANSI C63.10-2020.			
Note 4: The conformity assessment of this item was confirmed by the RF module installed in the device. Refer to module test report. *(FCC ID: QOQ-GM220P, Module Model Name : BGM220P22A, Test Report No. RF191225C12-1 issued on MAR.18.2020, Test Lab : Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories)*			

3.2 Testing Environment

Test Item		Test Date	Temperature (±1℃)	Relative Humidity (±3 % R.H.)
Bandwidth		2026-04-24	24	32
Transmitter emission (Radiated)	1) 9 kHz to 30 MHz	2026-04-24, 2026-04-29	21,23	30,33
	2) 30 MHz to 1 GHz	2026-06-26	24	30
	3) 1 GHz to 26.5 GHz	2026-06-25	24	32
Frequency tolerance		2026-04-27, 2026-06-25	22, 24	30, 28
AC Power line Conducted Emissions		2026-07-03	23	61

3.3 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 attached only for the DC 15 V power source, considering it the worst case.

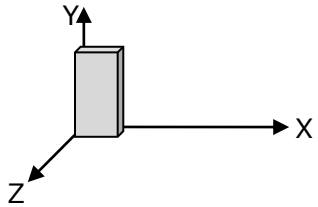
Test Frequency

Operating Frequence
13.56 MHz

Test mode

Transmit Status (DC 15 V) (Tag with & without)
Transmit Status (POE 48 V) (Tag with & without)

Indication of the position of the EUT to be measured

User Position	☒	EUT will be placed in fixed position.
	☐	EUT will be placed in mobile position and operating multiple positions.
	☐	EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions.
EUT faces identified relative to view from receiving antenna		

3.4 Measurement Uncertainty

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

Description	Uncertainty
Occupied Bandwidth	0.1 MHz (C.L. : Approx. 95%, k = 2)
Radiated Emissions (below 1 000 MHz)	4.11 dBuV (C.L.: Approx. 95 %, k = 2)
Radiated Emissions (above 1 000 MHz)	4.34 dBuV (C.L.: Approx. 95 %, k = 2)
Frequency tolerance	1 kHz (C.L.: Approx. 95 %, k = 2)
AC Power line Conducted Emissions	2.06 dBuV (C.L.: Approx. 95 %, k = 2)

3.5 Test Software

Radiated Test	ES10 Ver. 2022.04.000, EP5RE Ver. 6.0.10
AC Power line Conducted Emissions	EMC32 Ver. 10.50.00

4. Conformance requirements

4.1 Emission Bandwidth

Requirement

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

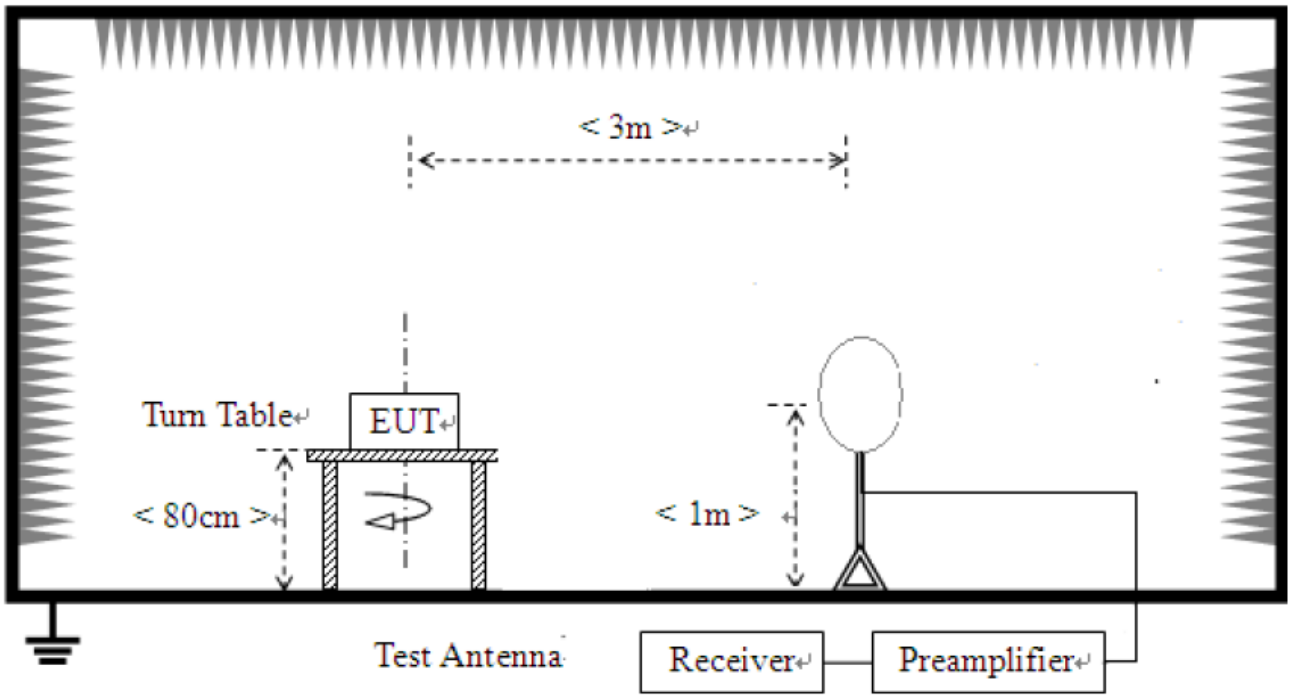
The occupied bandwidth or the “99 % emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99 % of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the “x dB bandwidth” is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

Test Procedures

For the emission bandwidth refer ANSI C63.10-2020, clause 6.9(Occupied bandwidth).

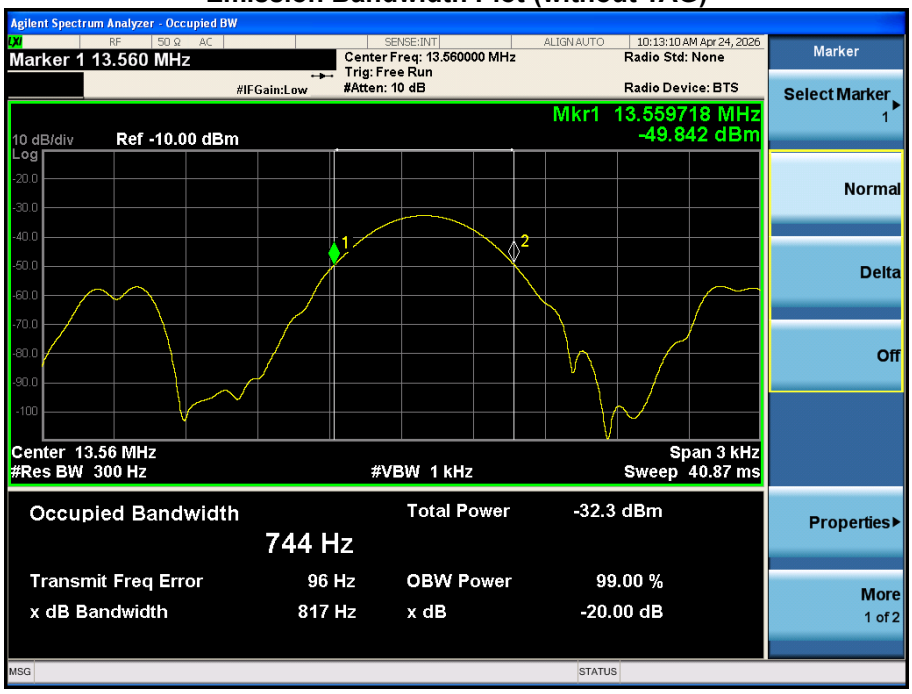
Test Setup



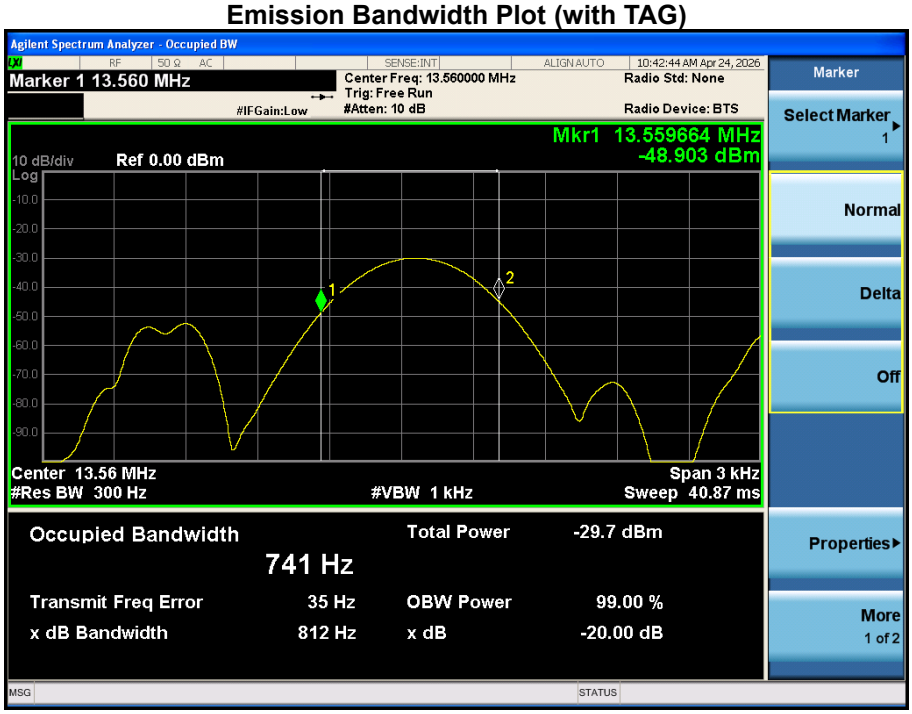
Test results

Emission Bandwidth	Result		Limit
	without TAG	with TAG	
20 dB Bandwidth	0.817 kHz	0.812 kHz	N/A
99 % Bandwidth	0.744 kHz	0.741 kHz	N/A

Emission Bandwidth Plot (without TAG)



Emission Bandwidth Plot (with TAG)



4.2 Field strength emissions

Requirement

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

Frequency(MHz)	Field Strength uV/m@30m	Field Strength dBuV/m@30m	Field Strength dBuV/m@3m
13.553-13.567	15,848	84.0	124.0

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

Frequency(MHz)	Field Strength uV/m@30m	Field Strength dBuV/m@30m	Field Strength dBuV/m@3m
13.410-13.553	334	50.5	90.5
13.567-13.710	334	50.5	90.5

© Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

Frequency(MHz)	Field Strength uV/m@30m	Field Strength dBuV/m@30m	Field Strength dBuV/m@3m
13.110-13.410	106	40.5	80.5
13.710-14.010	106	40.5	80.5

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency(MHz)	Field Strength uV/m	Field Strength dBuV/m	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	48.5 – 13.8	300
0.490-1.705	24000/F(kHz)	33.8 – 23	30
1.705-30	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 54-72MHz, 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 : The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

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:

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.

Test Location

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

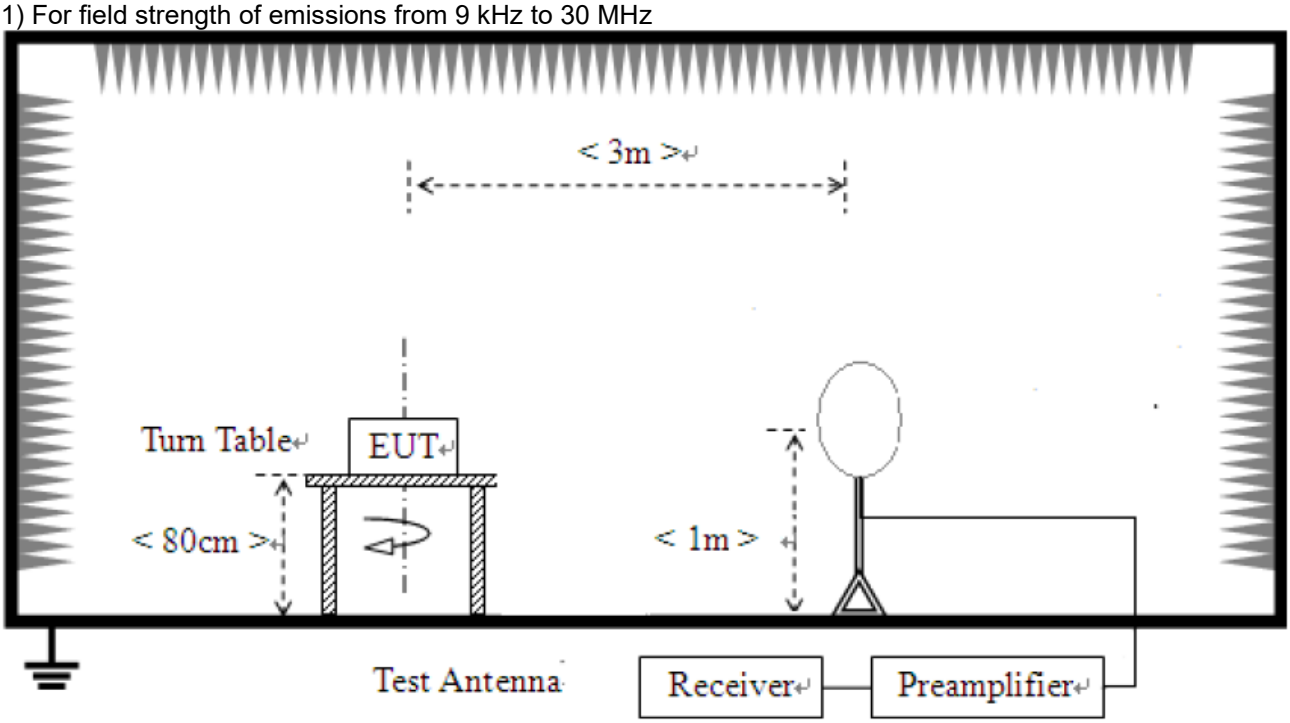
Test Procedures

Test Method	
☒	Refer as ANSI C63.10-2020, clause 6.4(Radiated emissions from unlicensed wireless devices below 30 MHz).
☒	Radiated emission tests shall be performed in the frequency range of 9 kHz to 30 MHz, using a calibrated loop antenna. When perpendicular to the ground plane, the lowest height of the magnetic antenna shall be 1 m above the ground and shall be positioned at the specified distance from the EUT. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
	☒ The results shall be by using the square of an inverse linear distance extrapolation factor(40 dB/decade).
☒	Refer as ANSI C63.10-2020, clause 6.5(Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz).
☒	In the frequency range 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.
☒	Emissions more than 20 dB below the limit do not need to be reported.

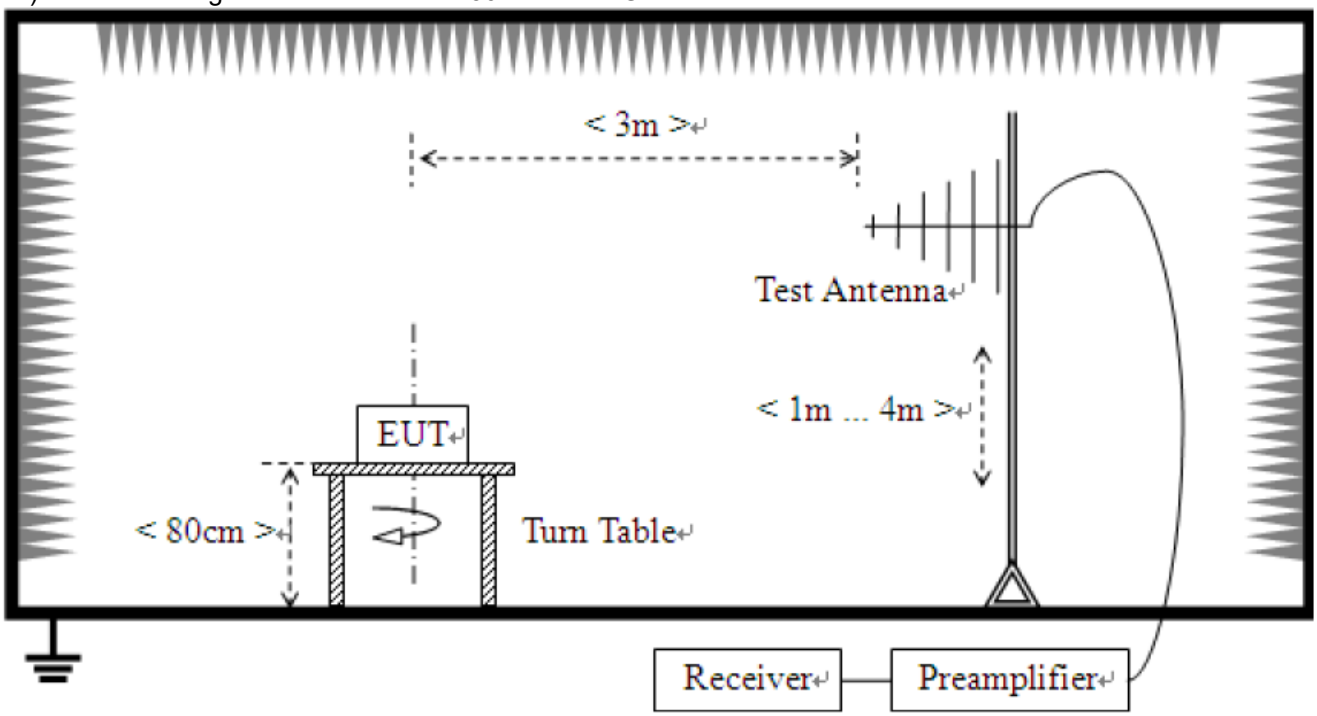
Measuring instrument Settings	
Frequency Range	9 kHz – 1 000 MHz, 1 GHz – 26.5 GHz
RBW	200 Hz (9 kHz – 150 kHz) 9 kHz (150 kHz – 30 MHz) 120 kHz (30 MHz – 1 000 MHz) 1 MHz (1 GHz – 26.5 MHz)
VBW	≥ RBW
Sweep time	auto couple
Detector function	CISPR quasi-peak(below 1 000 MHz) Peak & RMS(above 1 000 MHz)

Test Setup

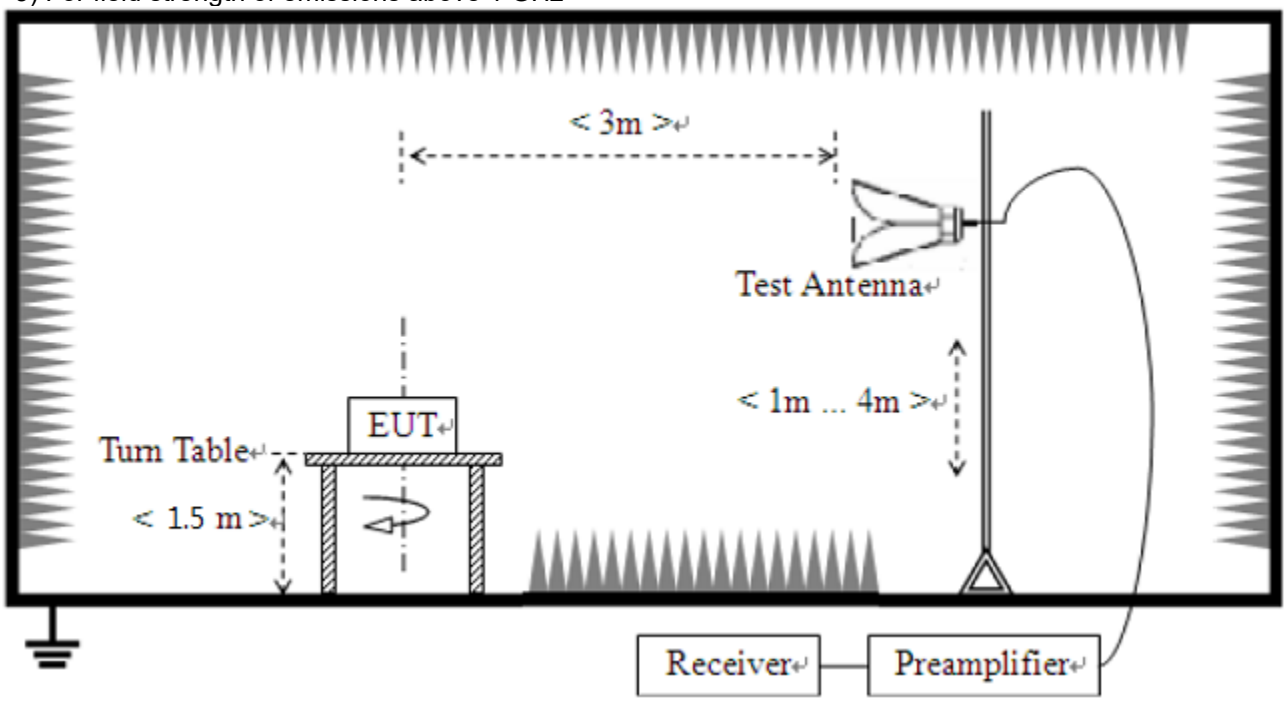
1) For field strength of emissions from 9 kHz to 30 MHz



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



3) For field strength of emissions above 1 GHz

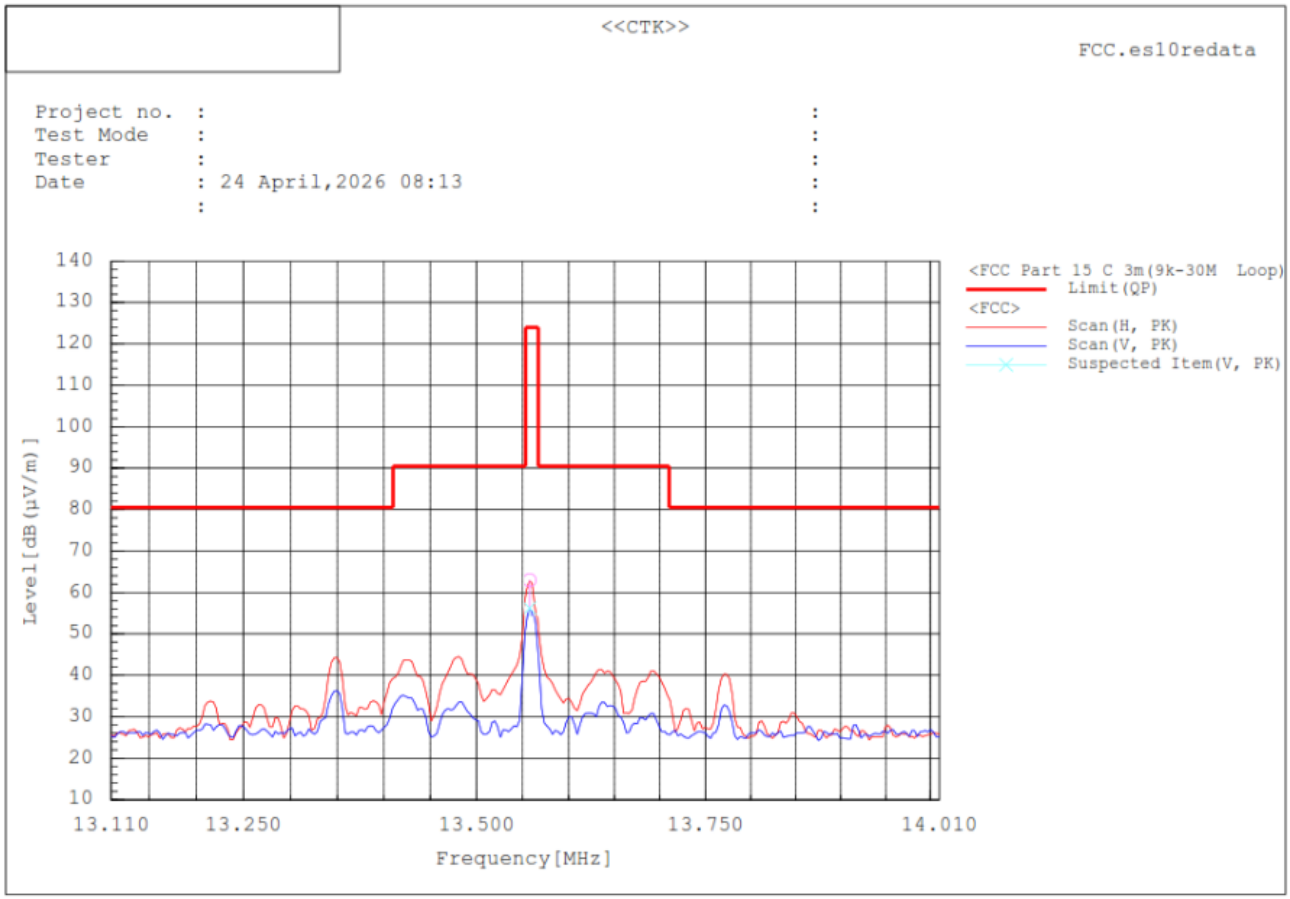


Test results

1) Radiated emissions within the band 13.110-14.010 MHz

Test mode : without TAG

The requirements are:
☒ Complies



Spectrum Selection

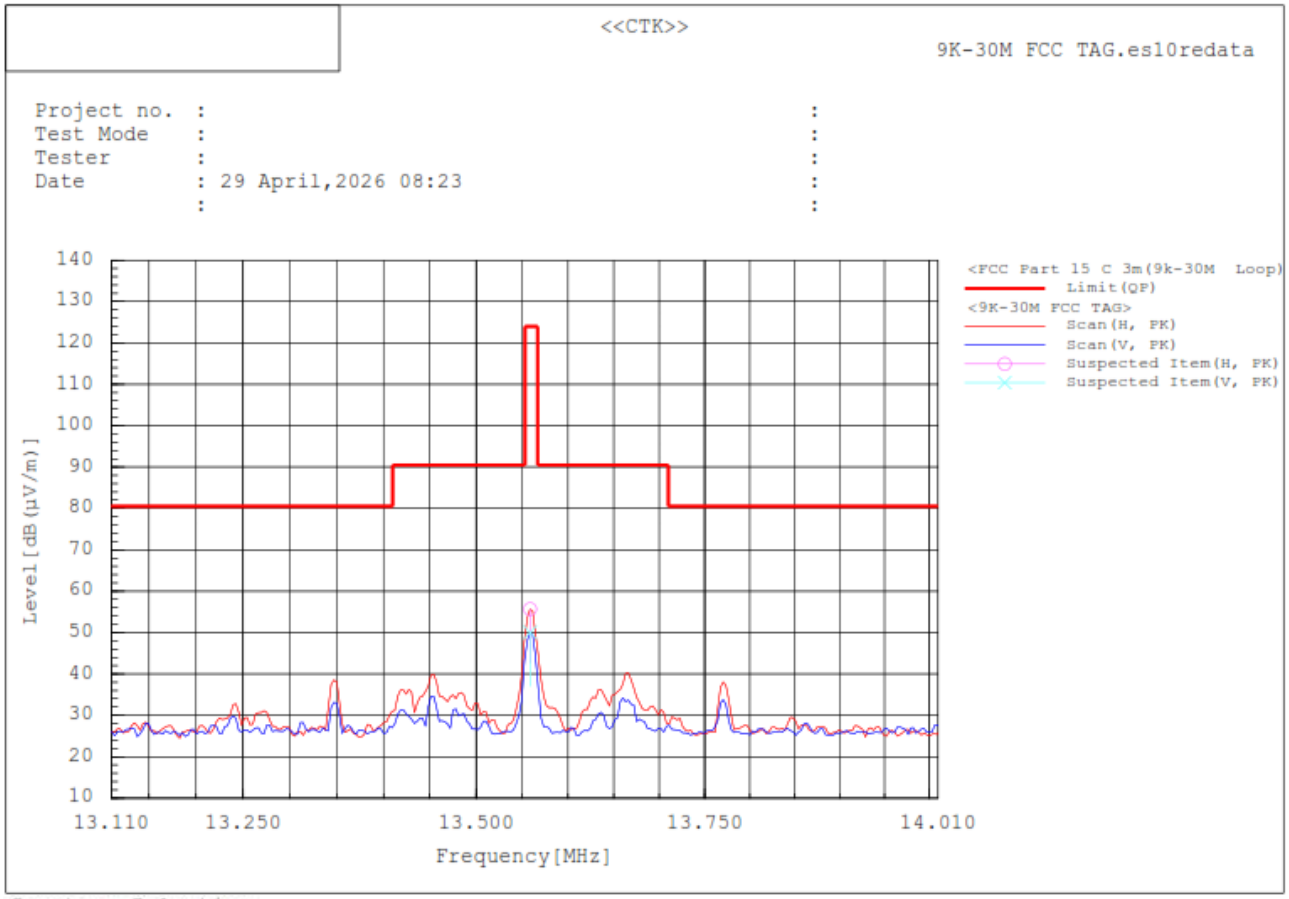
No.	Frequency	Pol	Reading PK	c.f	Result PK	Limit QP	Margin QP-PK	Height	Angle	Remark
	[MHz]		[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[cm]	[deg]	
1	13.559	H	38.4	24.8	63.2	124.0	61.8	100.0	359.8	
2	13.559	V	32.4	24.8	57.2	124.0	66.8	100.0	81.0	

Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
3. The test result in peak detector is less than quasi-peak limit.
4. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

Test mode : with TAG

The requirements are:
☒ Complies



Spectrum Selection

No.	Frequency [MHz]	Pol	Reading PK [dB(µV)]	c.f [dB(1/m)]	Result PK [dB(µV/m)]	Limit QP [dB(µV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]
1	13.559	H	30.9	24.8	55.7	124.0	68.3	99.9	28.7
2	13.559	V	25.2	24.8	50.0	124.0	74.0	99.9	313.3

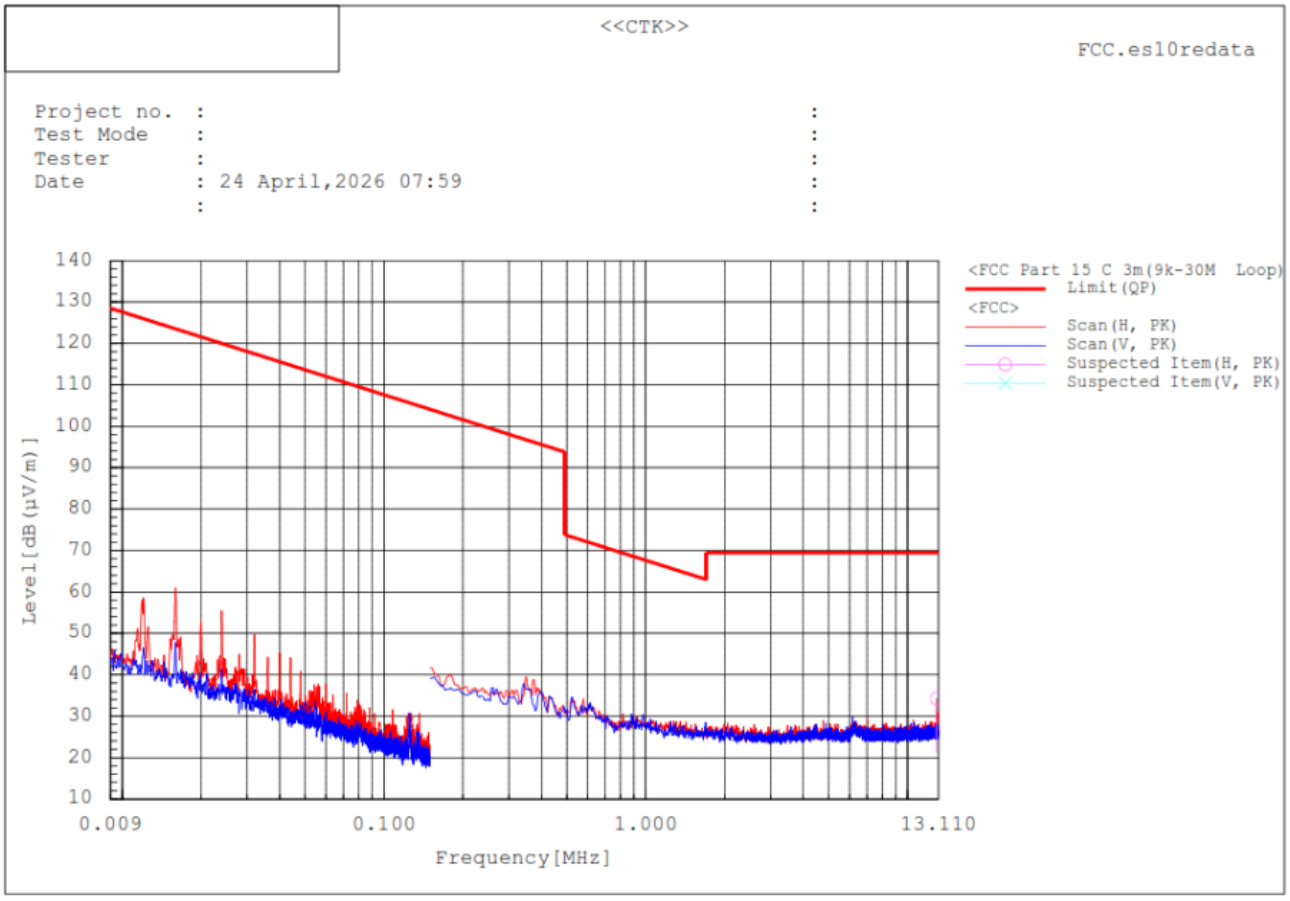
Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
3. The test result in peak detector is less than quasi-peak limit.
4. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

2) Field strength of any emissions appearing outside of the 9 kHz – 13.110 MHz

Test mode : without TAG

The requirements are:
☒ Complies



Spectrum Selection

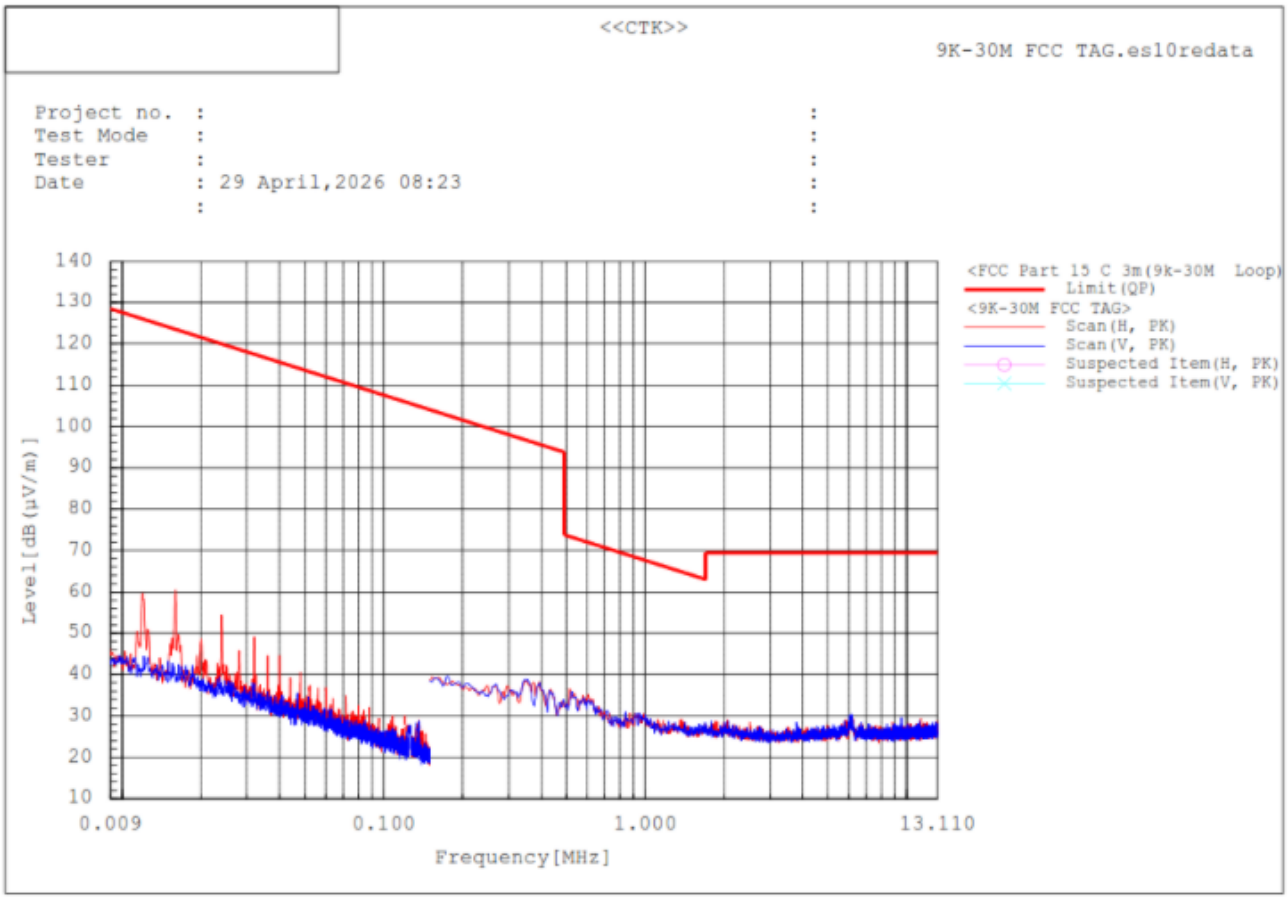
No.	Frequency [MHz]	Pol	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]
1	12.923	H	9.6	24.7	34.3	69.5	35.2	99.9	157.4

Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
3. The test result in peak detector is less than quasi-peak limit.
4. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

Test mode : with TAG

The requirements are:
☒ Complies



Result : no peak found

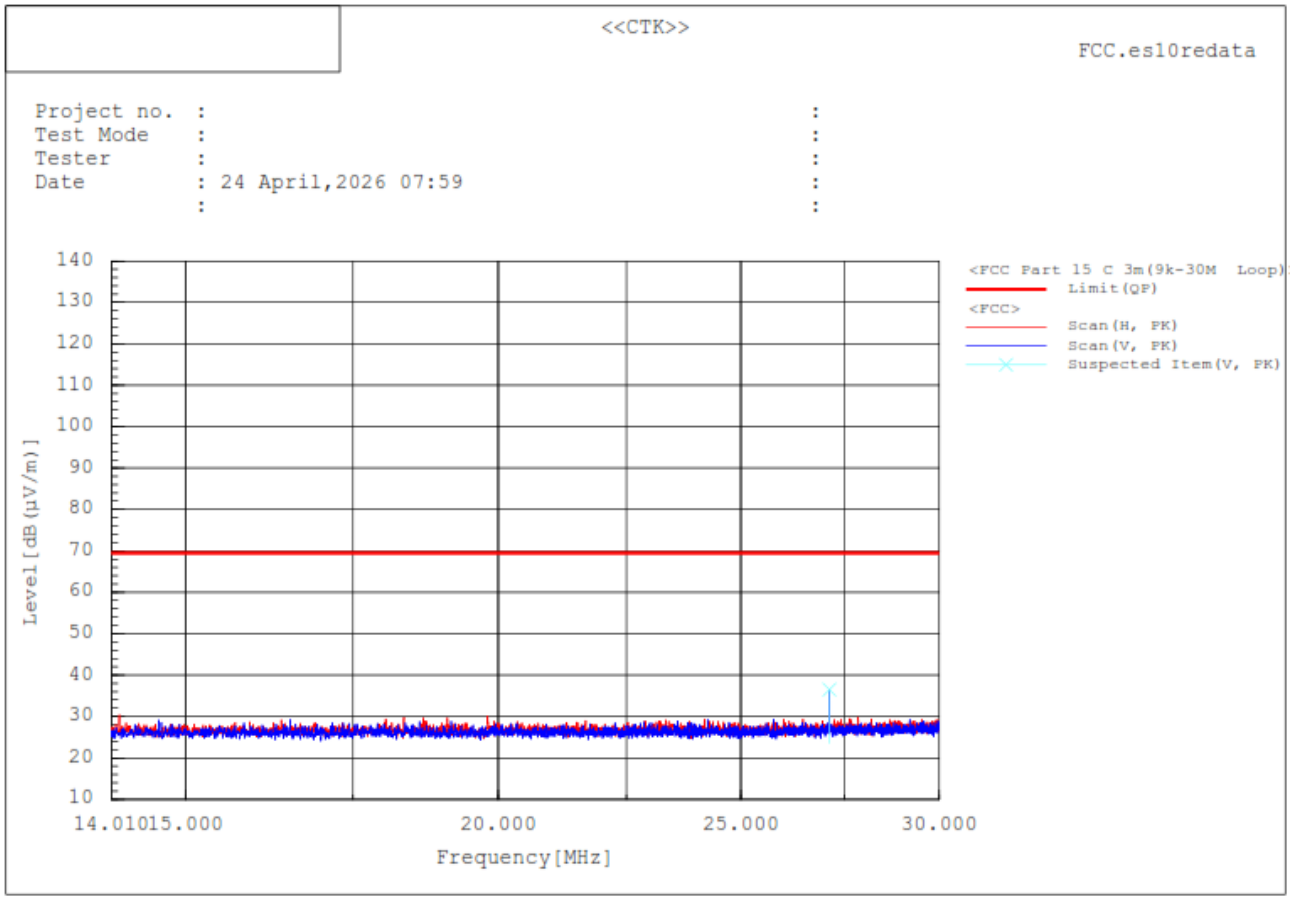
Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
3. The test result in peak detector is less than quasi-peak limit.
4. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

3) Field strength of any emissions appearing outside of the 14.010 MHz – 30 MHz

Test mode : without TAG

The requirements are:
☒ Complies



Spectrum Selection

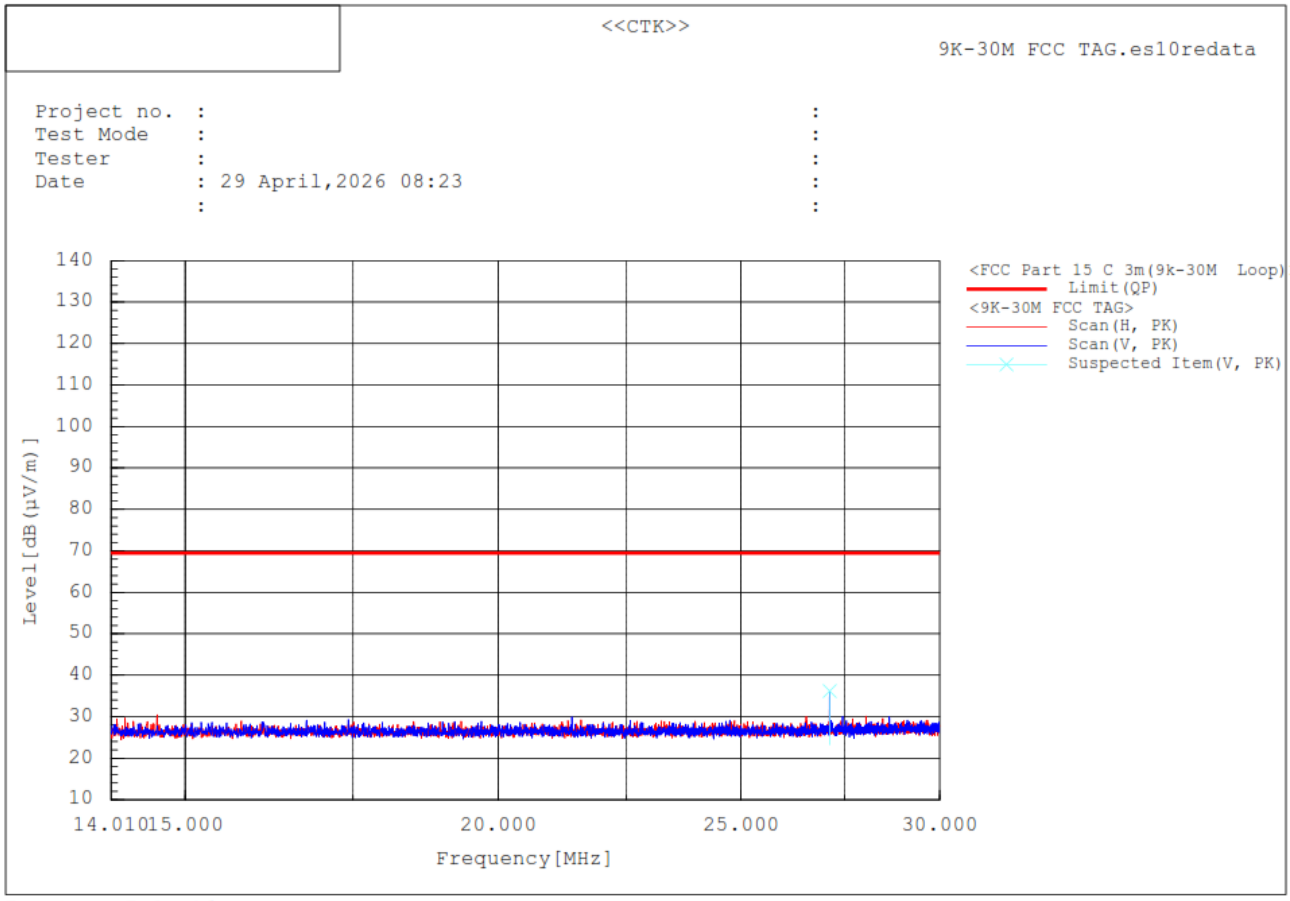
No.	Frequency	Pol	Reading PK	c.f	Result PK	Limit QP	Margin QP-PK	Height	Angle
	[MHz]		[dB(µV)]	[dB(1/m)]	[dB(µV/m)]	[dB(µV/m)]	[dB]	[cm]	[deg]
1	27.119	V	11.2	25.3	36.5	69.5	33.0	99.9	357.2

Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
3. The test result in peak detector is less than quasi-peak limit.
4. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

Test mode : with TAG

The requirements are:
☒ Complies



Spectrum Selection

No.	Frequency	Pol	Reading PK	c.f	Result PK	Limit QP	Margin QP-PK	Height	Angle
	[MHz]		[dB(µV)]	[dB(1/m)]	[dB(µV/m)]	[dB(µV/m)]	[dB]	[cm]	[deg]
1	27.119	V	10.8	25.3	36.1	69.5	33.4	99.9	299.7

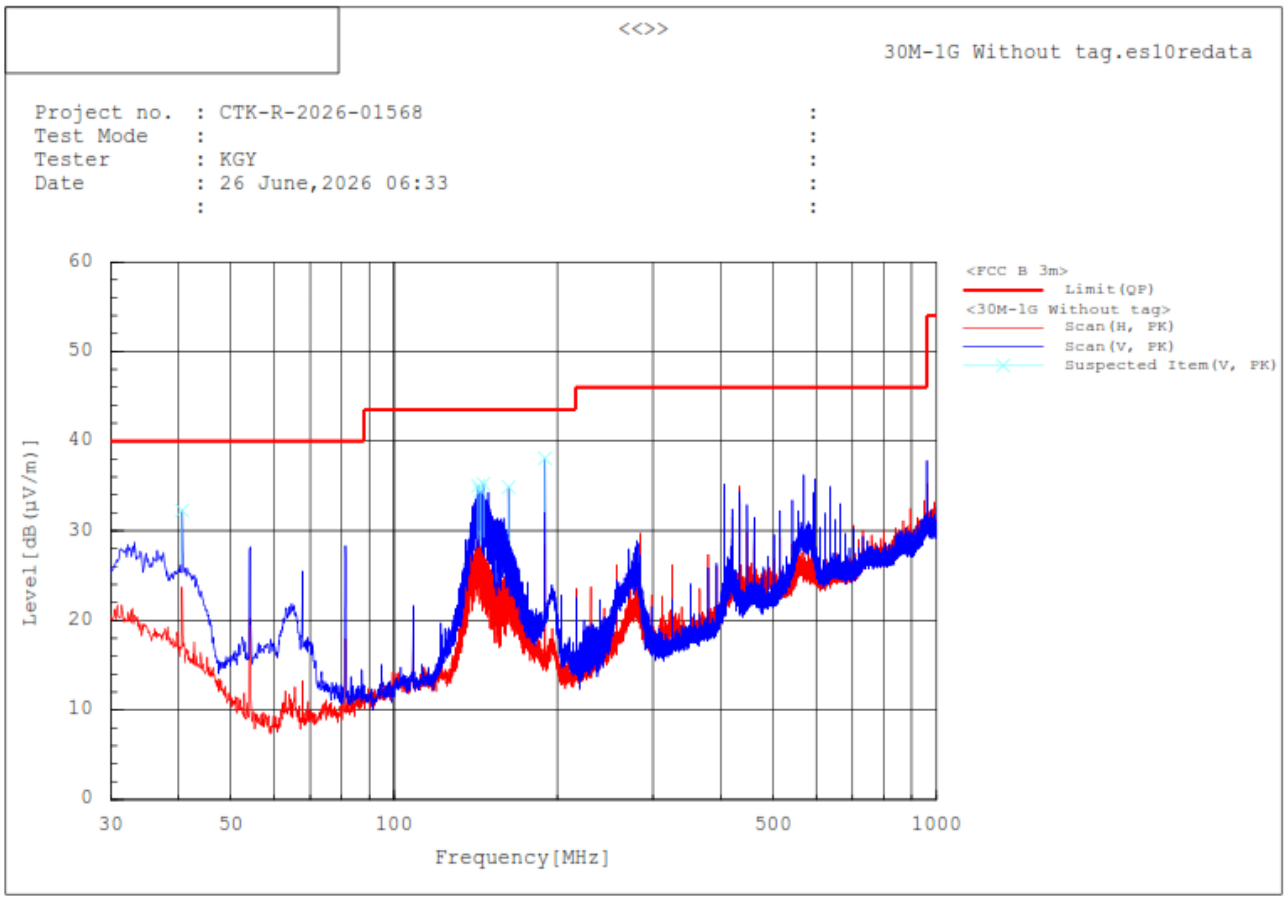
Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss + 6 dB attenuator
3. The test result in peak detector is less than quasi-peak limit.
4. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

4) Field strength of any emissions appearing outside of the 30 MHz – 1000 MHz

Test mode : without TAG

The requirements are:
☒ Complies



Spectrum Selection

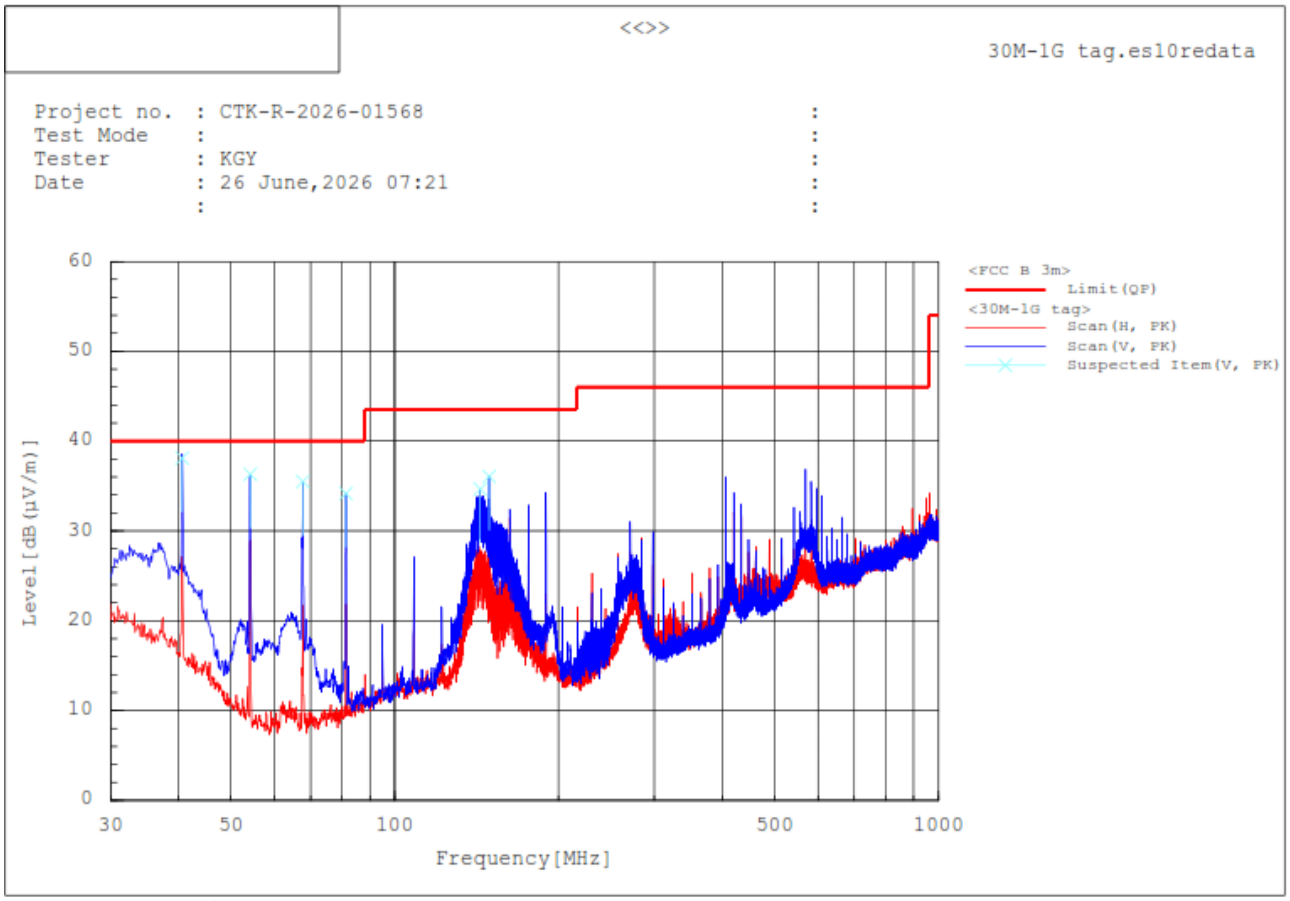
No.	Frequency [MHz]	Pol	Reading PK [dB(µV)]	c.f [dB(1/m)]	Result PK [dB(µV/m)]	Limit QP [dB(µV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]	Remark
1	40.670	V	42.7	-10.4	32.3	40.0	7.7	100.0	272.2	
2	142.908	V	47.4	-12.4	35.0	43.5	8.5	100.0	78.2	
3	144.169	V	46.9	-12.4	34.5	43.5	9.0	100.0	78.2	
4	146.109	V	47.6	-12.4	35.2	43.5	8.3	100.0	359.9	
5	162.696	V	48.4	-13.5	34.9	43.5	8.6	100.0	337.6	
6	189.856	V	52.9	-14.8	38.1	43.5	5.4	100.0	359.9	

Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss + 6 dB attenuator - Amp Gain
3. The test result in peak detector is less than quasi-peak limit.
4. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

Test mode : with TAG

The requirements are:
☒ Complies



Spectrum Selection

No.	Frequency [MHz]	Pol	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP-PK [dB]	Height [cm]	Angle [deg]	Remark
1	40.670	V	48.5	-10.4	38.1	40.0	1.9	100.0	78.1	
2	54.250	V	53.8	-17.5	36.3	40.0	3.7	100.0	64.5	
3	67.733	V	53.7	-18.2	35.5	40.0	4.5	100.0	119.0	
4	81.313	V	50.6	-16.4	34.2	40.0	5.8	100.0	108.2	
5	143.684	V	47.1	-12.4	34.7	43.5	8.8	100.0	98.3	
6	149.116	V	48.6	-12.5	36.1	43.5	7.4	100.0	342.6	

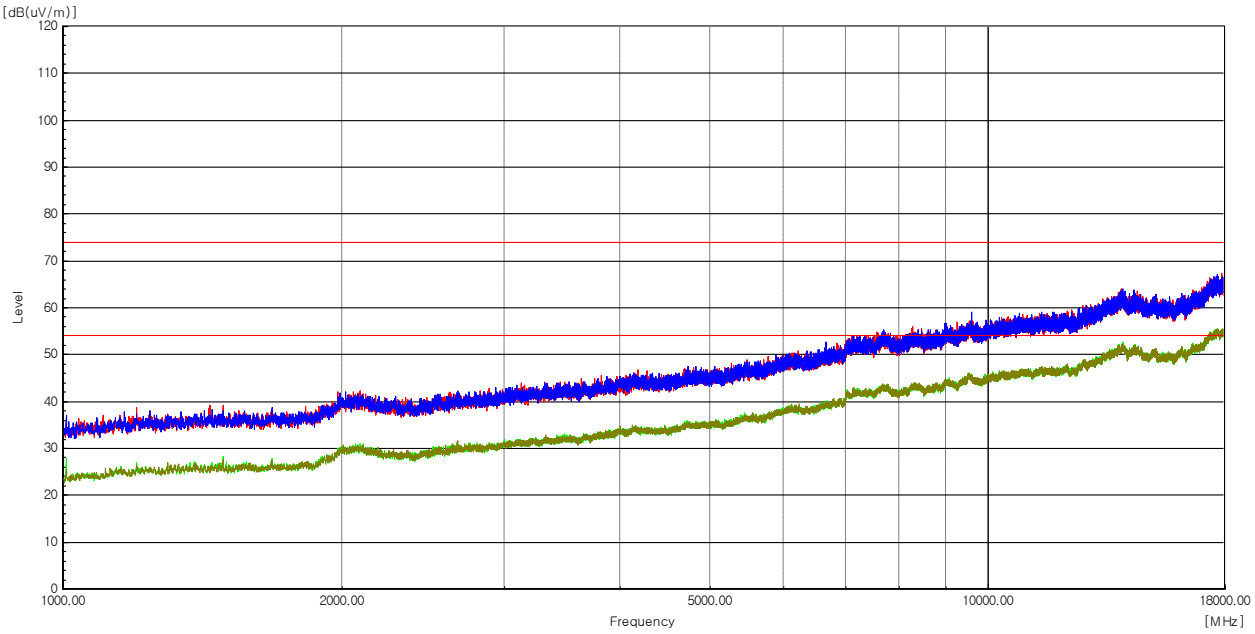
Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss + 6 dB attenuator - Amp Gain
3. The test result in peak detector is less than quasi-peak limit.
4. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

5) Field strength of any emissions appearing outside of the 1 GHz – 18 GHz

Test mode : without TAG

The requirements are:
☒ Complies



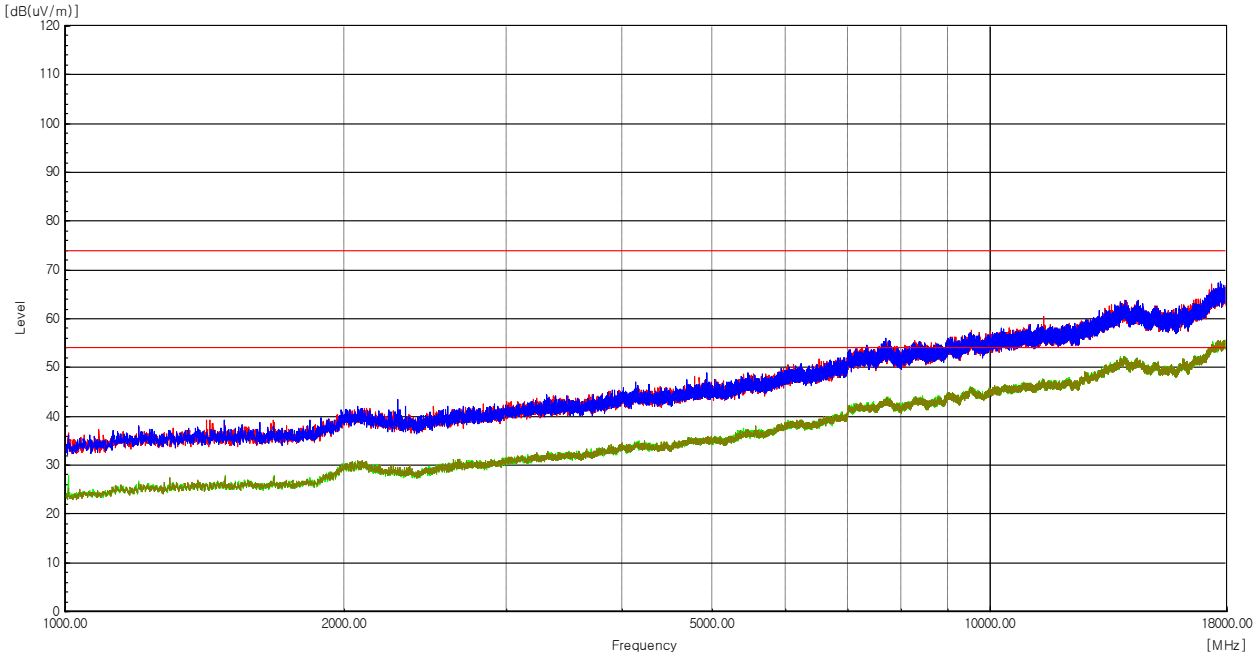
Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
No Peak Data											

Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss - Amp Gain
3. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.
4. The measurement was conducted using a Band Reject Filter (BRF) for 2400-2483.5 MHz

Test mode : with TAG

The requirements are:
☒ Complies



Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
No Peak Data											

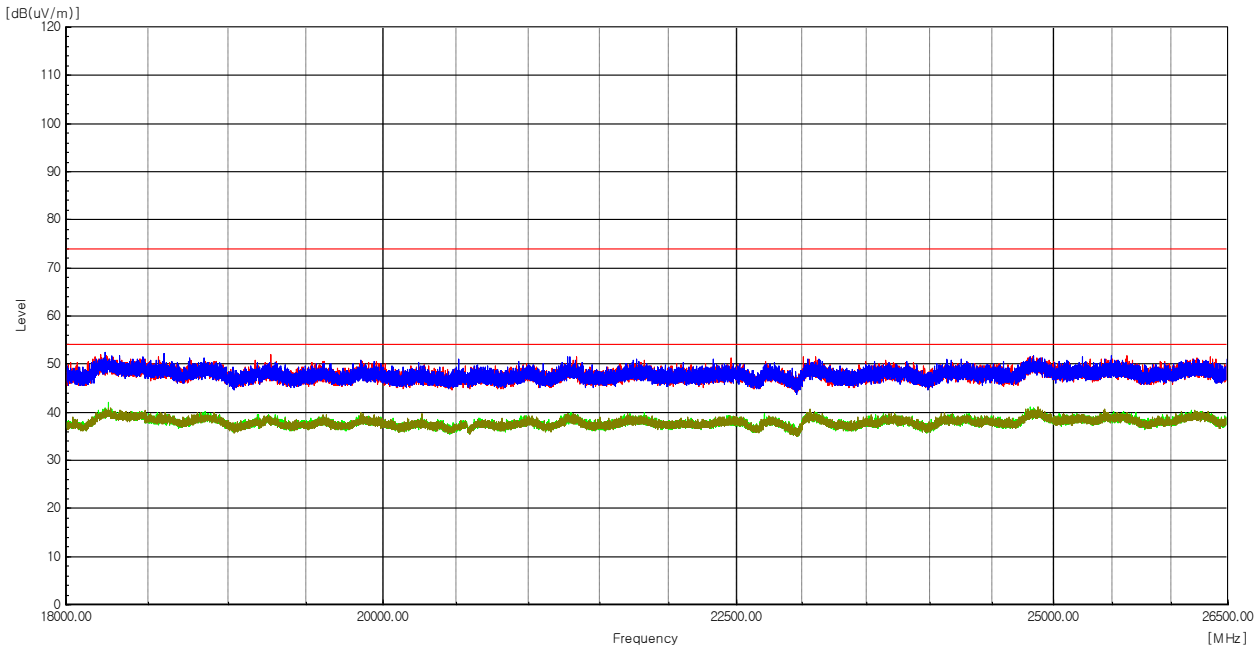
Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss - Amp Gain
3. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.
4. The measurement was conducted using a Band Reject Filter (BRF) for 2400-2483.5 MHz

6) Field strength of any emissions appearing outside of the 18 GHz – 26.5 GHz

Test mode : without TAG

The requirements are:
☒ Complies



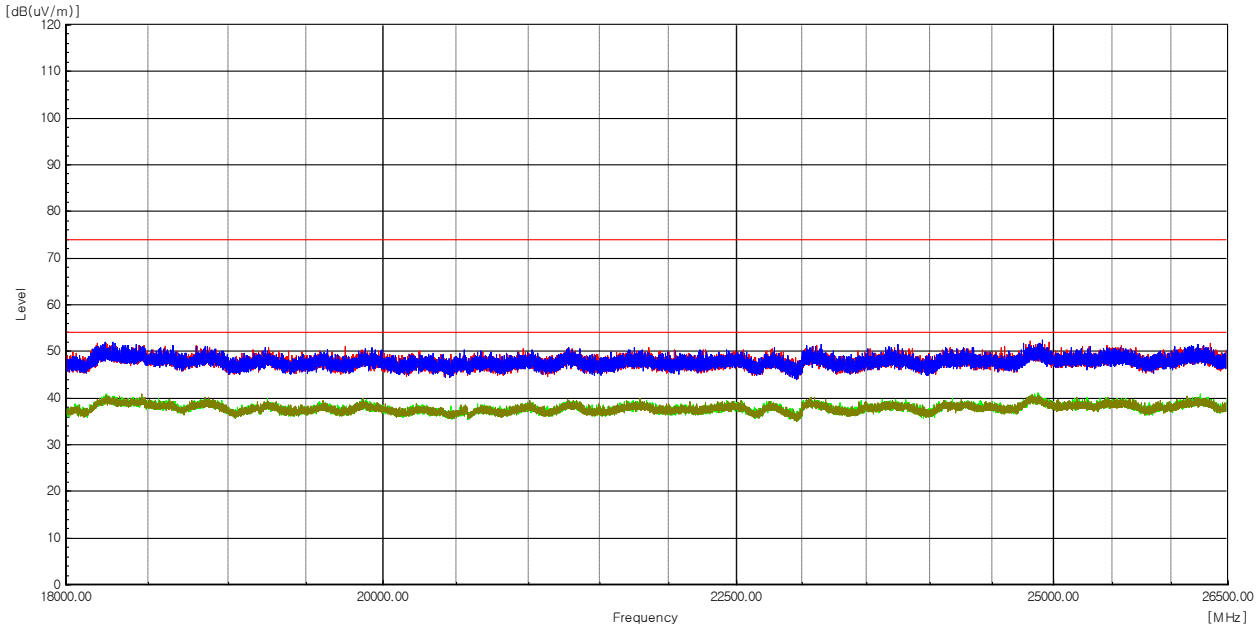
Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
No Peak Data											

Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss - Amp Gain
3. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

Test mode : with TAG

The requirements are:
☒ Complies



Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
No Peak Data											

Remark :

1. Result = Reading + c.f(correction factor)
2. Correction factor = Antenna factor + Cable loss - Amp Gain
3. For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

4.3 Frequency Stability

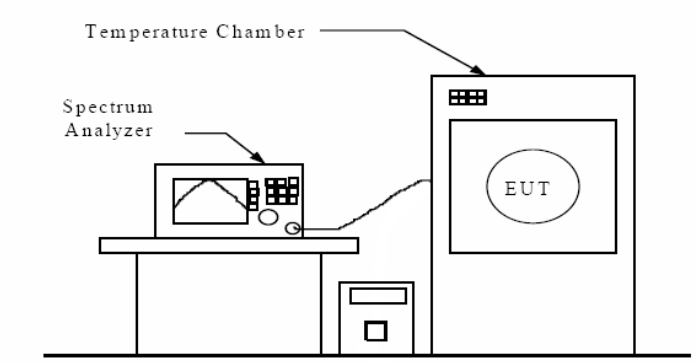
Requirement

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of -20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

Test Procedures

For the emission bandwidth refer ANSI C63.10-2020, clause 6.8(Frequency stability tests).

Test Setup



Test Results

Test mode : without TAG

The requirements are:
☒ Complies

Condition	Measurement Frequency (MHz)				Frequency Stability (ppm)			
	Startup	2 min	5 min	10 min	Start-up	2 min	5 min	10 min
Temp. 50 ℃	13.560033	13.560031	13.560027	13.560027	2.43	2.29	1.99	1.99
Temp. 40 ℃	13.560067	13.560061	13.560057	13.560053	4.94	4.50	4.20	3.91
Temp. 30 ℃	13.560113	13.560109	13.560107	13.560099	8.33	8.04	7.89	7.30
Temp. 20 ℃	13.560159	13.560147	13.560137	13.560135	11.73	10.84	10.10	9.96
Temp. 10 ℃	13.560211	13.560205	13.560197	13.560189	15.56	15.12	14.53	13.94
Temp. 0 ℃	13.560231	13.560227	13.560223	13.560223	17.04	16.74	16.45	16.45
Temp. -10 ℃	13.560263	13.560261	13.560259	13.560257	19.40	19.25	19.10	18.95
Temp. -20 ℃	13.560243	13.560265	13.560265	13.560267	17.92	19.54	19.54	19.69
Voltage 85 %	13.560155	13.560145	13.560137	13.560135	11.43	10.69	10.10	9.96
Voltage 115 %	13.560151	13.560145	13.560137	13.560135	11.14	10.69	10.10	9.96
Limit(ppm)	-				100			

Test mode : with TAG

The requirements are:
☒ Complies

Condition	Measurement Frequency (MHz)				Frequency Stability (ppm)			
	Startup	2 min	5 min	10 min	Start-up	2 min	5 min	10 min
Temp. 50 ℃	13.560084	13.560052	13.560044	13.560038	6.19	3.83	3.24	2.80
Temp. 40 ℃	13.560124	13.560082	13.560078	13.560076	9.14	6.05	5.75	5.60
Temp. 30 ℃	13.560150	13.560128	13.560124	13.560124	11.06	9.44	9.14	9.14
Temp. 20 ℃	13.560174	13.560142	13.560118	13.560116	12.83	10.47	8.70	8.55
Temp. 10 ℃	13.560250	13.560226	13.560236	13.560224	18.44	16.67	17.40	16.52
Temp. 0 ℃	13.560278	13.560264	13.560262	13.560264	20.50	19.47	19.32	19.47
Temp. -10 ℃	13.560278	13.560282	13.560280	13.560282	20.50	20.80	20.65	20.80
Temp. -20 ℃	13.560272	13.560268	13.560270	13.560274	20.08	19.76	19.91	20.21
Voltage 85 %	13.560146	13.560136	13.560116	13.560112	10.77	10.03	8.55	8.26
Voltage 115 %	13.560156	13.560136	13.560118	13.560112	11.50	10.03	8.70	8.26
Limit(ppm)	-				100			

4.4 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.

Test Procedures
ANSI C63.10-2020 - Section 6.2.2

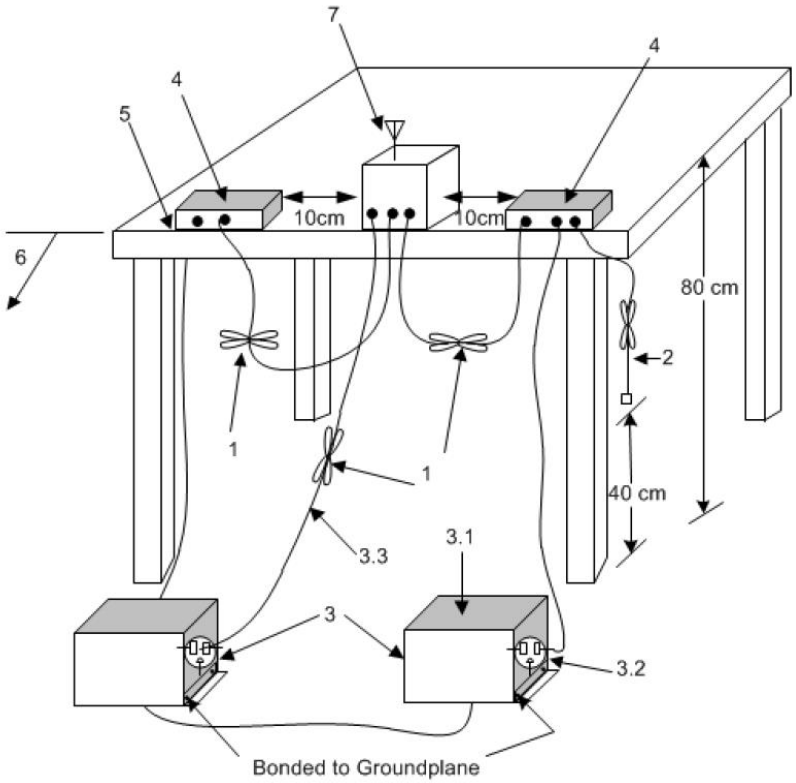
The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.
Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit
- 15.207(a)

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.

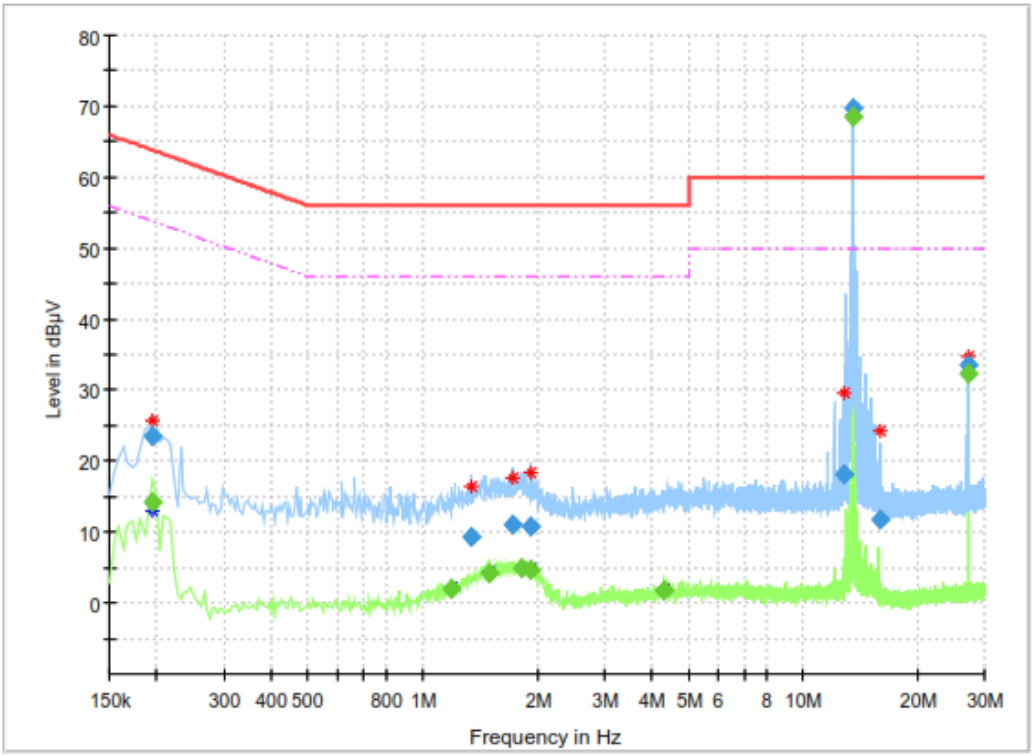
Test Setup



Test Results
The requirements are:
☒ Complies

Test Data

Test mode : DC 15 V, without TAG

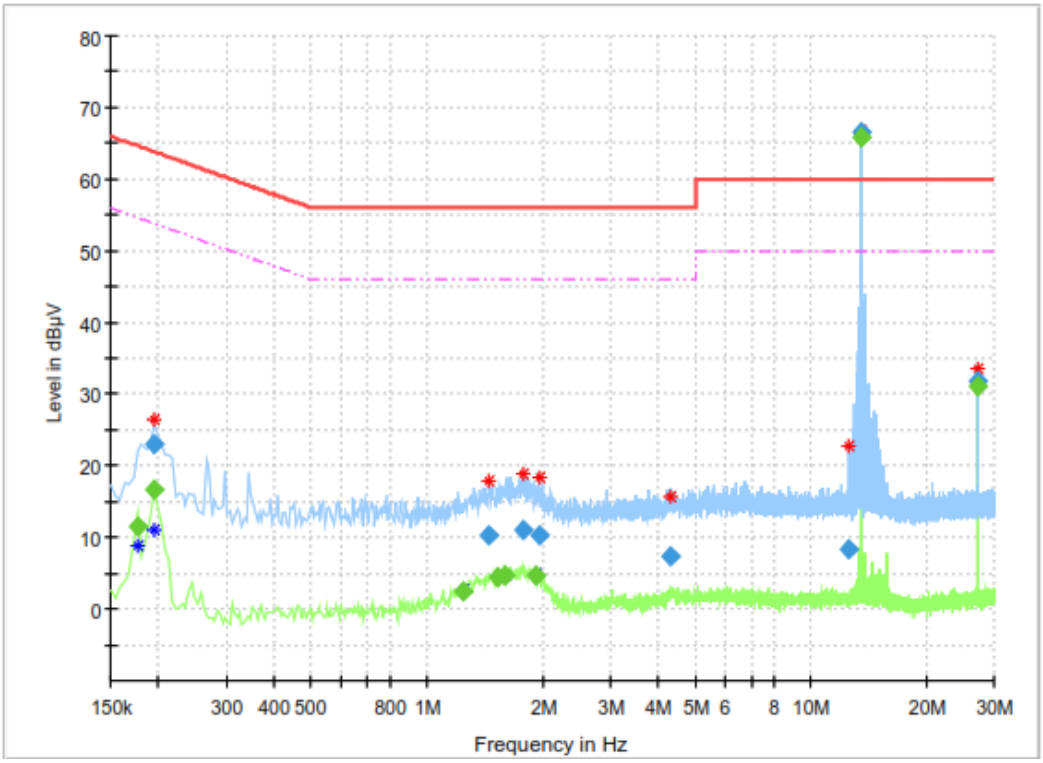


Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.195000	---	14.31	53.82	39.51	15000.0	9.000	L1	ON	10.4
0.195000	23.39	---	63.82	40.43	15000.0	9.000	L1	ON	10.4
1.194000	---	2.08	46.00	43.92	15000.0	9.000	N	ON	9.9
1.338000	9.40	---	56.00	46.60	15000.0	9.000	N	ON	9.8
1.495500	---	4.27	46.00	41.73	15000.0	9.000	N	ON	9.8
1.716000	10.96	---	56.00	45.04	15000.0	9.000	N	ON	9.8
1.815000	---	4.90	46.00	41.10	15000.0	9.000	N	ON	9.8
1.914000	---	4.63	46.00	41.37	15000.0	9.000	N	ON	9.8
1.914000	10.77	---	56.00	45.23	15000.0	9.000	N	ON	9.8
4.330500	---	1.64	46.00	44.36	15000.0	9.000	L1	ON	9.9
12.840000	18.09	---	60.00	41.91	15000.0	9.000	L1	ON	10.2
13.560000	69.61	---	60.00	-9.61	15000.0	9.000	L1	ON	10.2
13.560000	---	68.50	50.00	-18.50	15000.0	9.000	L1	ON	10.2
15.891000	11.87	---	60.00	48.13	15000.0	9.000	L1	ON	10.3
27.118500	---	32.31	50.00	17.69	15000.0	9.000	N	ON	10.2
27.118500	33.50	---	60.00	26.50	15000.0	9.000	N	ON	10.2

* For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

Test mode : DC 15 V, with TAG



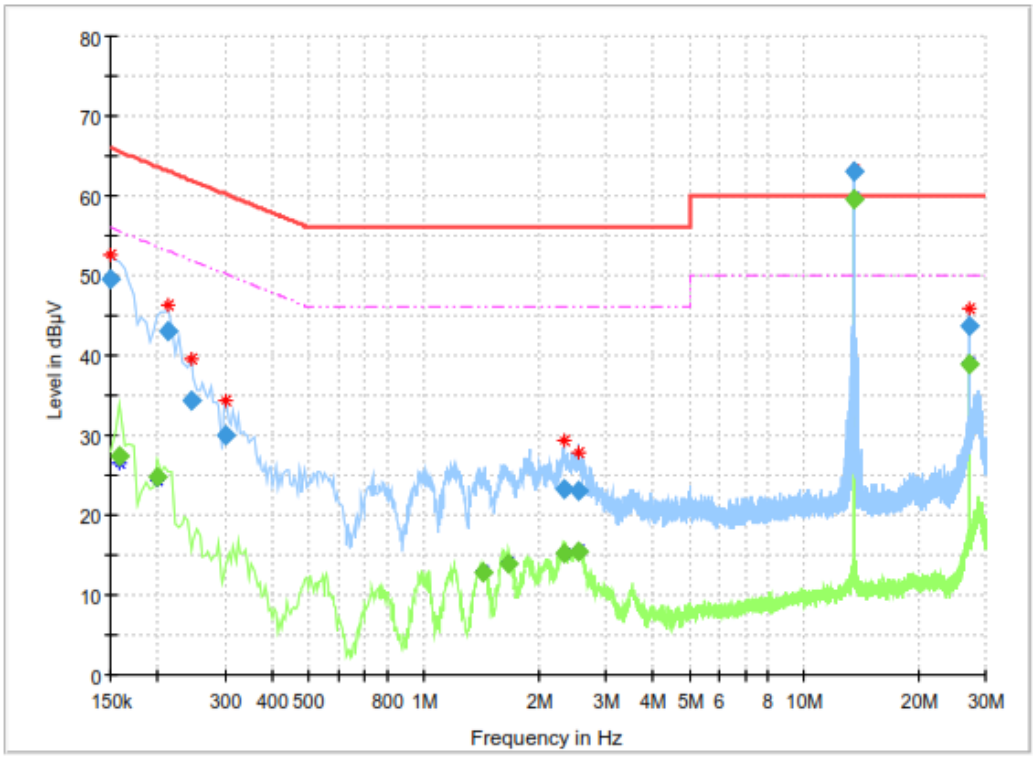
Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.177000	---	11.52	54.63	43.10	15000.0	9.000	L1	ON	10.3
0.195000	---	16.65	53.82	37.17	15000.0	9.000	L1	ON	10.4
0.195000	22.95	---	63.82	40.87	15000.0	9.000	L1	ON	10.4
1.239000	---	2.54	46.00	43.46	15000.0	9.000	N	ON	9.9
1.450500	10.24	---	56.00	45.76	15000.0	9.000	N	ON	9.8
1.536000	---	4.53	46.00	41.47	15000.0	9.000	N	ON	9.8
1.599000	---	4.76	46.00	41.24	15000.0	9.000	N	ON	9.8
1.783500	11.12	---	56.00	44.88	15000.0	9.000	N	ON	9.8
1.923000	---	4.58	46.00	41.42	15000.0	9.000	N	ON	9.8
1.959000	10.31	---	56.00	45.69	15000.0	9.000	N	ON	9.8
4.321500	7.29	---	56.00	48.71	15000.0	9.000	N	ON	9.8
12.498000	8.45	---	60.00	51.55	15000.0	9.000	L1	ON	10.2
13.560000	66.65	---	60.00	-6.65	15000.0	9.000	L1	ON	10.2
13.560000	---	65.91	50.00	-15.91	15000.0	9.000	L1	ON	10.2
27.118500	---	31.02	50.00	18.98	15000.0	9.000	N	ON	10.2
27.118500	31.89	---	60.00	28.11	15000.0	9.000	N	ON	10.2

* For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

Test Data

Test mode : PoE 48 V, without TAG

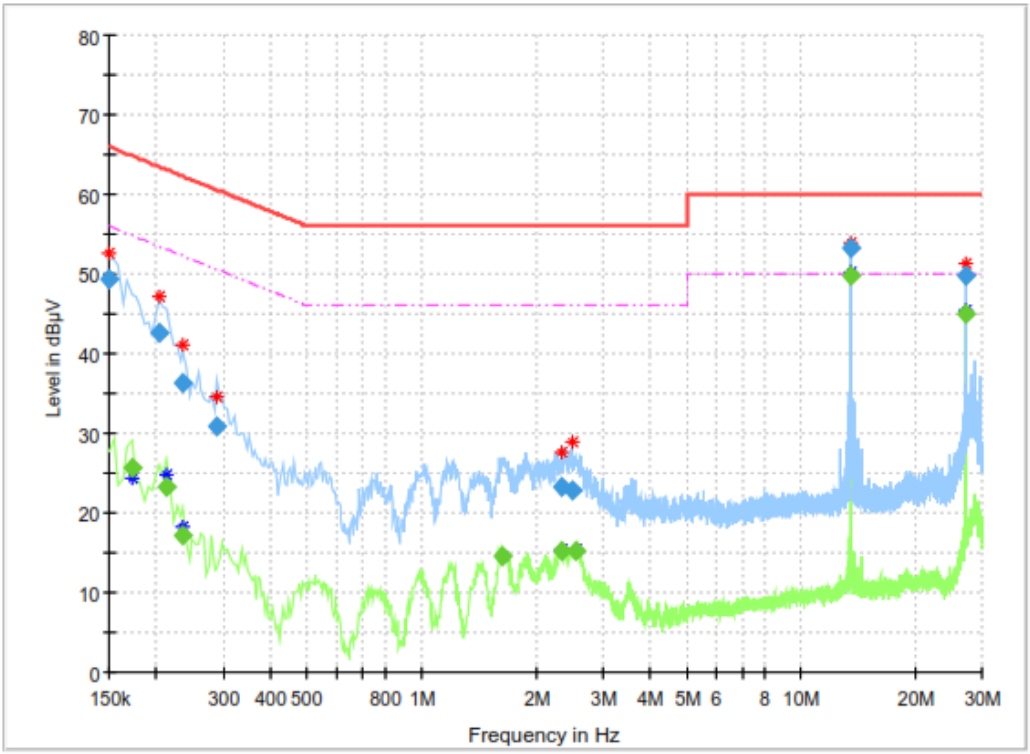


Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.150000	49.50	---	66.00	16.50	15000.0	9.000	L1	ON	10.0
0.159000	---	27.44	55.52	28.08	15000.0	9.000	N	ON	9.9
0.199500	---	24.70	53.63	28.93	15000.0	9.000	L1	ON	10.4
0.213000	42.98	---	63.09	20.11	15000.0	9.000	L1	ON	10.4
0.244500	34.35	---	61.94	27.59	15000.0	9.000	N	ON	9.9
0.303000	30.04	---	60.16	30.12	15000.0	9.000	L1	ON	10.4
1.437000	---	12.80	46.00	33.20	15000.0	9.000	L1	ON	9.9
1.675500	---	13.86	46.00	32.14	15000.0	9.000	N	ON	9.8
2.337000	23.25	---	56.00	32.75	15000.0	9.000	L1	ON	9.9
2.346000	---	15.30	46.00	30.70	15000.0	9.000	L1	ON	9.9
2.557500	22.96	---	56.00	33.04	15000.0	9.000	N	ON	9.8
2.562000	---	15.43	46.00	30.57	15000.0	9.000	N	ON	9.8
13.560000	62.97	---	60.00	-2.97	15000.0	9.000	L1	ON	10.2
13.560000	---	59.54	50.00	-9.54	15000.0	9.000	L1	ON	10.2
27.118500	---	38.94	50.00	11.06	15000.0	9.000	N	ON	10.2
27.118500	43.64	---	60.00	16.36	15000.0	9.000	N	ON	10.2

* For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

Test mode : PoE 48 V, with TAG



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.150000	49.45	---	66.00	16.55	15000.0	9.000	L1	ON	10.0
0.172500	---	25.74	54.84	29.10	15000.0	9.000	L1	ON	10.3
0.204000	42.66	---	63.45	20.79	15000.0	9.000	L1	ON	10.4
0.213000	---	23.35	53.09	29.74	15000.0	9.000	N	ON	10.0
0.235500	---	17.10	52.25	35.16	15000.0	9.000	L1	ON	10.3
0.235500	36.39	---	62.25	25.87	15000.0	9.000	L1	ON	10.3
0.289500	30.79	---	60.54	29.75	15000.0	9.000	L1	ON	10.3
1.639500	---	14.49	46.00	31.51	15000.0	9.000	N	ON	9.8
2.328000	---	15.18	46.00	30.82	15000.0	9.000	L1	ON	9.9
2.346000	23.19	---	56.00	32.81	15000.0	9.000	L1	ON	9.9
2.494500	22.72	---	56.00	33.28	15000.0	9.000	L1	ON	9.9
2.562000	---	15.27	46.00	30.73	15000.0	9.000	L1	ON	9.9
13.560000	---	49.87	50.00	0.13	15000.0	9.000	L1	ON	10.2
13.560000	53.23	---	60.00	6.77	15000.0	9.000	L1	ON	10.2
27.118500	49.73	---	60.00	10.27	15000.0	9.000	N	ON	10.2
27.118500	---	45.00	50.00	5.00	15000.0	9.000	L1	ON	10.1

* For the transmitter, frequencies of 13.56 MHz and BLE were used. Tested while two signals were being transmitted.

APPENDIX A - Test Equipment Used For Tests

No.	Name of Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Spectrum Analyzer	Agilent	N9020A	MY50200096	2025-11-10	2026-11-10
2	Signal Generator	Rohde & Schwarz	SMB100A	175528	2026-03-12	2027-03-12
3	EMI TEST RECEIVER	Rohde & Schwarz	ESW44	102039	2026-04-27	2027-04-27
4	Active Loop Antenna	SCHWARZBECK	FMZB 1513	1513-125	2026-03-25	2028-03-25
5	ATTENUATOR	PASTERNACK	PE7AP006-06	L2021050400002 3	2025-07-28	2026-07-28
6	Bilog Antenna	TESEQ	CBL6111D	60654	2025-08-21	2027-08-21
7	AMPLIFIER	SONOMA INSTRUMENT	310N	411011	2025-07-28	2026-07-28
8	Attenuator	NONE	6dB	190557	2025-09-18	2026-09-18
9	System DC Power Supply	Agilent	6674A	3637A01668	2025-11-07	2026-11-07
10	LISN	Rohde & Schwarz	ENV216	102698	2026-04-27	2027-04-27
11	EMI Test Receiver	Rohde & Schwarz	ESCI7	100816	2025-09-25	2026-09-25
12	Temp&Humi Chamber	ESPEC CORP.	SH-242	93008423	2026-03-23	2027-03-23
13	Band Reject Filter	Micro Tronics	BRM50702	G233	2025-11-25	2026-11-25
14	PRE AMPLIFIER	HP	8449B	3008A00620	2026-03-11	2027-03-11
15	Double Ridged Guide Antenna	ETS-Lindgren	3115	00078895	2026-03-13	2027-03-13
16	HORN ANTENNA	SCHWARZBECK	BBHA9170	1153	2025-09-30	2026-09-30
17	LOW NOISE AMPLIFIER	TESTEK	TK-PA1840H	210124-L	2025-09-30	2026-09-30

-END-