TEST REPORT

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SRF0092 Page (1) of (29)	eurofins | KCTL

1. Client

- Name : Inzinious, Inc.
- Address : #315, Verdi-Tower, 72 Digital-ro 26-gil, Guro-gu, Seoul, Korea
- Date of Receipt : 2024-06-05

2. Use of Report : Certification

3. Name of Product / Model : Radar module / AS_614

4. Manufacturer / Country of Origin : Inzinious, Inc. / Korea

5. FCC ID : 2AEJ5-AS-614

6. Date of Test : 2025-02-17 to 2025-04-08

7. Location of Test : ■ Permanent Testing Lab □ On Site Testing
(Address:65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)

8. Test method used : FCC Part 15.255

9. Test Result : Refer to the test result in the test report

Affirmation	Tested by	Technical Manager
	Name : Jungwon Seo (Signature)	Name : Harim Lee (Signature)

2025-04-23

Eurofins KCTL Co.,Ltd.

REPORT REVISION HISTORY

Date	Revision	Page No
2025-04-23	Originally issued	-

General remarks for test reports

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:
Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ **Statement not required by the standard or client used for type testing**

CONTENTS

1. General information

Client	:	Inzinious, Inc.
Address	:	#315, Verdi-Tower, 72 Digital-ro 26-gil, Guro-gu, Seoul, Korea
Manufacturer	:	Inzinious, Inc.
Address	:	#315, Verdi-Tower, 72 Digital-ro 26-gil, Guro-gu, Seoul, Korea
Laboratory	:	Eurofins KCTL Co.,Ltd.
Address	:	65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
Accreditations	:	FCC Site Designation No: KR0040, FCC Site Registration No: 687132 VCCI Registration No. : R-20080, G-20078, C-20059, T-20056 CAB Identifier: KR0040, ISED Number: 8035A KOLAS No.: KT231

2. Device information

Equipment under test	:	Radar module
Model	:	AS_614
Modulation technique	:	FMCW
Frequency range	:	59 000 ㎒
Power source	:	DC 3.3 Ⅴ
Antenna specification	:	On Chip Antenna
Antenna gain	:	3.0 dBi
Software version	:	2.0
Hardware version	:	1.1
Operation temperature	:	-20 ℃ ~ 50 ℃
Test device serial No.	:	N/A

2.1. Frequency/channel operations

This device contains the following capabilities:
FMCW

Ch.	Frequency (㎓)
01	59.0

Table 2.1.1. FMCW

2.2. Far field distance

Far field distance(R_m)

Freq range [㎒]	Speed of light	Freq [㎒]	wavelength(λ) [m]	Largest Antenna Dimension [m]		Far Field Distance [m]	Measurement Distance [m]
				Measurement Antenna	EUT		
40000 - 60000	300	60000	0.0050	**0.0582**	-	1.35	3
60000 - 90000	300	90000	0.0033	**0.0378**	-	0.86	1
90000 - 140000	300	140000	0.0021	**0.0248**	-	0.57	3
140000 - 220000	300	220000	0.0014	**0.0158**	-	0.37	3
220000 - 250000	300	250000	0.0012	**0.0105**	-	0.18	3
76000 - 81000	300	81000	0.0037	0.0378	**0.0485**	1.27	3

Note: EUT antenna dimension was provided by customer.

Note: Far-Field (Rayleigh) distance formula used is shown below (According to ANSI C63.26-2015 Section 4.4.3 Note f) $R_m = 2D^2 / \lambda$,where the Rm is the Rayleigh (far-field) distance, D is the largest dimension of the antenna aperture and λ is the free-space wavelength in meters at the frequency of measurement (calculated by speed of light divided by frequency).

Note: Measurements in report were made at distances greater than calculated far-field distances shown in table.

2.3. RF power setting in TEST SW

Test condition	Test Program	Frequency (㎓)	Power Setting
FMCW	N/A	59.00	Default

3. Summary of tests

FCC Part section(s)	Parameter	Test condition	Test results
15.255 (c)(2)	Emission bandwidth, 99% bandwidth	Radiated	Pass
15.255 (c)(2) (iii)(A)	Transmitter power		Pass
15.255 (d)(2), 15.255 (d)(3)	Undesirable Emissions		Pass
15.255 (f)	Frequency Stability		Pass
15.207(a)	AC Conducted Emissions	Conducted	Pass

Notes:

1. All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2. 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.
3. 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.
4. The test procedure(s) in this report were performed in accordance as following.
   - ANSI C63.10-2020
   - KDB 364244 D01

4. Measurement uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013.

All measurement uncertainty values are shown with a coverage factor of k=2 to indicated a 95 % level of confidence. The measurement data shown herein meets of exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and thus, can be compared directly to specified limits to determine compliance.

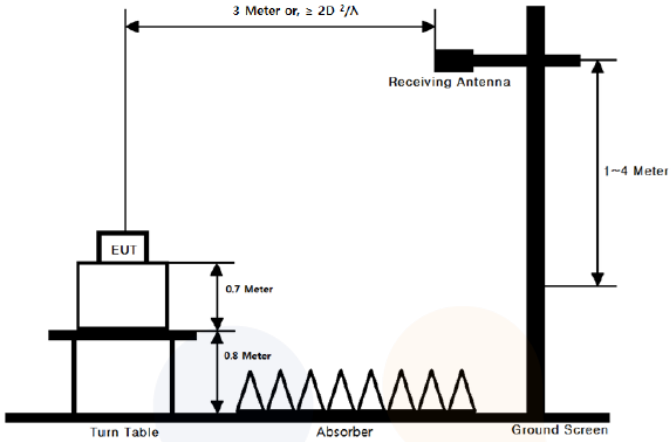
Parameter	Expanded uncertainty (±)	
Bandwidth	0.1 %	
Frequency Stability	344.1 ㎑	
Radiated spurious emissions	30 ㎒ ~ 1 000 ㎒	2.5 ㏈
	1 000 ㎒ ~ 18 000 ㎒	4.7 ㏈
	Above 18 000 ㎓	4.8 ㏈
AC Conducted Emissions	150 ㎑ ~ 30 ㎒	2.9 ㏈

5. Test results

5.1. Emission bandwidth, 99% bandwidth

Test setup

Above 1 ㎓



These measurements were performed at 3 m test site. The equipment under test is placed on a non-conductive table 1.5-meters above a turntable which is flush with the ground plance and 1.5 meters from the receive antenna. For measurements above 1 GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 ㎓, the absorbers are removed.

Limit

Within the designated 57 - 64 ㎓ frequency band

According to §15.255(c)(2),

57.0-64.0 ㎓

Test procedure

ANSI C63.10-2020 - Section 9

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

Test settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 20 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 ~ 5% of the expected EBW(OBW) & VBW ≥ 3 X RBW
3. Detector = Peak
4. Trance mode = Max hold
5. Sweep = No faster than coupled (auto) time.
6. The trace was allowed to stabilize
7. If necessary, step 2 ~ 6 were repeated after changing the RBW such that it would be within 1 ~5 % of the 99 % occupied band width observed in step 6.

Note: The RBW and VBW were setting up to the limitations of the test equipment.

99% Bandwidth

Test Mode	Frequency [MHz]	99% Bandwidth [MHz]	The Lower Frequency [MHz]	The Upper Frequency [MHz]
FMCW	59 000	797.69	58 597.35	59 395.04

10 dB bandwidth

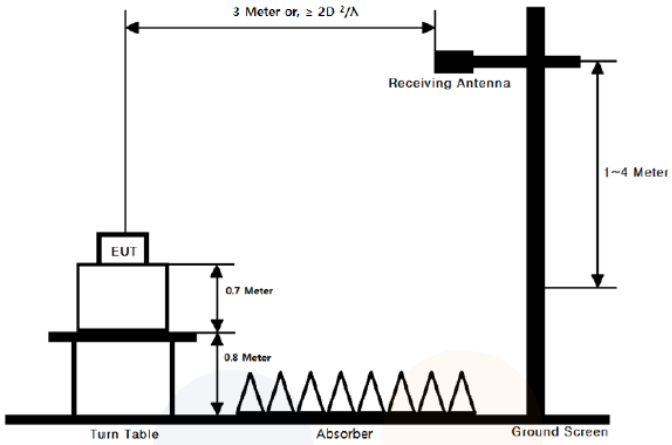
Test Mode	Frequency [MHz]	20dB Bandwidth [MHz]	The Lower Frequency [MHz]	The Upper Frequency [MHz]
FMCW	59 000	808.07	58 594.01	59 402.08

99% Bandwidth & 20dB Bandwidth

5.2. Transmitter power

Test setup

Above 1 ㎓



These measurements were performed at 3 m test site. The equipment under test is placed on a non-conductive table 1.5-meters above a turntable which is flush with the ground plance and 3 meters from the receive antenna. For measurements above 1 ㎓ absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 ㎓, the absorbers are removed.

Limit

According to §15.255(c)(2)(iii)(A),
The peak EIRP shall not exceed 14 dBm, and the sum of continuous transmitter off-times of at least two milliseconds shall equal at least 25.5 milliseconds within any contiguous interval of 33 milliseconds.

Test procedure
ANSI C63.10-2020 - Section 9

Test setting

-Maximum peak power(EIRP) – Peak detector

1. Set RBW = 1 ㎒
2. Set VBW ≥ 3 X RBW
3. span to 2 x to 3 x the OBW
4. Detector = Peak
5. Set number of points in sweep ≥ 2 x span / RBW
6. Sweep time = auto-couple
7. Trace = max-hold

Note1.
Sample Calculation
E(㏈㎶/m)= Measured level(㏈㎶) +107 +AFCL(㏈/m)
Where, E=field strength / AFCL= Antenna Factor(㏈/m) + Cable Loss(㏈/m)
The mixer loss was applied to the measured level by SA correction factor.
EIRP(㏈m)= E(㏈㎶/m) +20log(D)-104.8;where, D is measurement distance(in the far field region) in m.

Note2.
P.C.F Calculation (P.C.F=Peak amplitude correction factor of the FMCW signal)

P.C.F = 20*log10(1/α)

- $\alpha = \frac{1}{\sqrt[4]{1+(\frac{2\ln(2)}{\pi})^2(\frac{F_S}{T_S B^2})^2}}$

(P.C.F have been declared by the manufacturer.)

Test results

duty cycle

Frequency(㎓)	Transmitter off-times(ms)	Limit(ms)	Result
59.0	32.894 4	≥25	Pass

Note: burst number within 33ms is 4, Dwell time for one burst is 6.6us, total dwell time is 26.4us.

FMCW Desensitization factor

FMCW Width(㎒)	Tchirp(us)	RBW(㎒)	Desensitization Factor(lin)	Desensitization Factor(㏈)
797.69	55	1	0.392 909 512	8.11

FMCW desensitization factor =-20*Log(α)=-20*log(0.392 9)= 8.11㏈

$$\alpha = \frac{1}{\sqrt[4]{1+\left(\frac{2\ln(2)}{\pi}\right)^2\left(\frac{F_s}{T_s B^2}\right)^2}}$$

where
F_S is the FMCW Chirp Bandwidth
T_S is the FMCW Chirp Time
B is the 3 dB IF Bandwidth = RBW

Test result

Duty cycle

Duty cycle

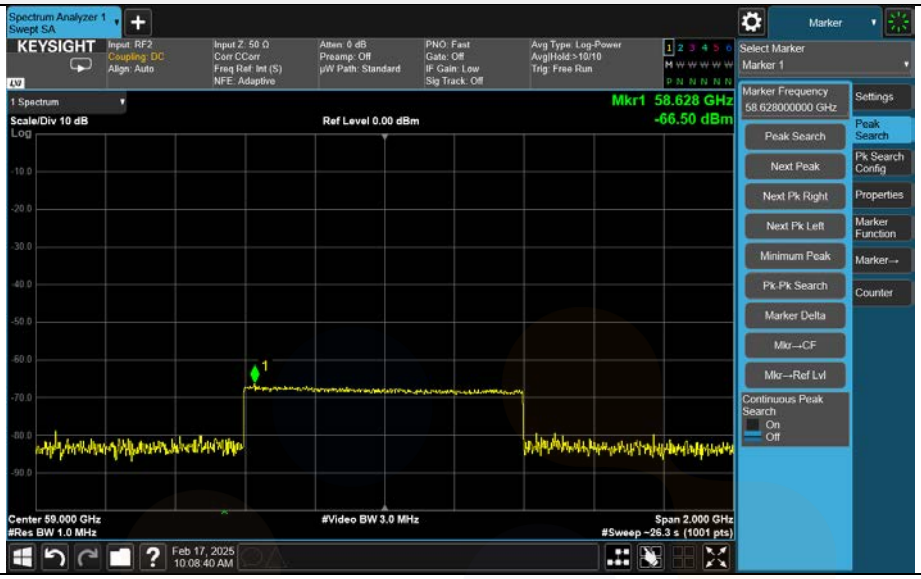
Peak EIRP

Measurement distance(D) [m]	Frequency [GHz]	ANT Pol	EUT Position [Axis]	Measured Level [dBm]	AFCL [dB/m]	E [dBμV/m]	EIRP [dBm]	Limit [dBm]
1.0	59.00	H	X	-66.50	65.13	105.63	8.94	14.00

Note.
1. The EIRP was measured in each axis EUT positions and the worst case data was reported.
2. FMCW desensitization factor(8.11 dB) was added in the test result.

Test results

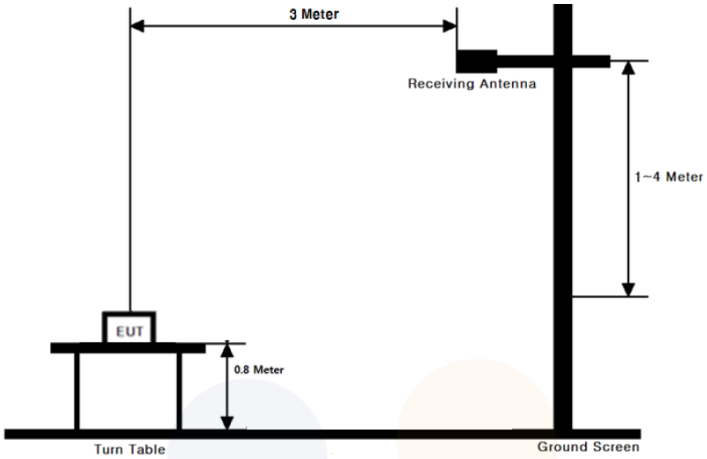
EIRP

Maximum Peak power(EIRP)


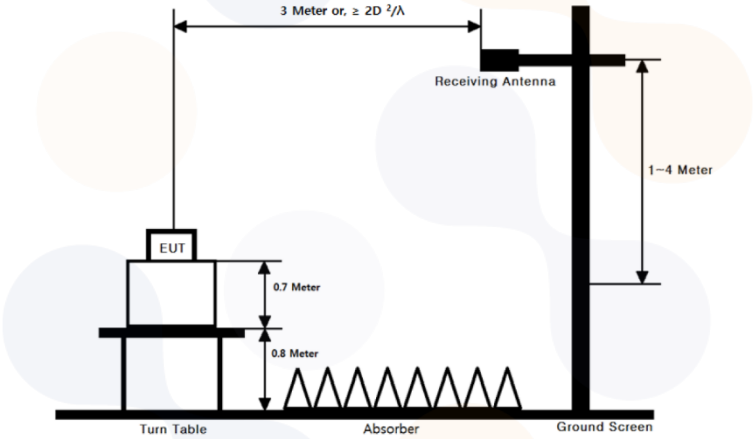
5.3. Undesirable emissions

Test setup

Below 1 ㎓



Above 1 ㎓



These measurements were performed at 3 test site. The equipment under test is placed on a non-conductive table 1.5-meters above a turntable which is flush with the ground plane and 3 meters(for below 1 ㎓: 0.8-m) from the receive antenna. For measurements above 1 ㎓ absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections.
For measurements below 1 ㎓, the absorbers are removed.

Limit

According to §15.255(d),
(1) The power density of any emissions outside the 57-71 GHz band shall consist solely of spurious emissions.
(2) Radiated emissions below 40 GHz shall not exceed the general limits in § 15.209.
(3) Between 40 GHz and 200 GHz, the level of these emissions shall not exceed 90 pW/cm2 at a distance of 3 meters.
(4) The levels of the spurious emissions shall not exceed the level of the fundamental emission.

According to section 15.209,
radiated emissions below 40 ㎓ shall not exceed the field strength as shown in the following emissions table.

Frequency (㎒)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(㎑)	300
0.490-1.705	24000/F(㎑)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

(i) In the emissions table in paragraph (a)(1) of this section, the tighter limit applies at the band edges.
(ii) The limits in the table in paragraph (a)(1) of this section are based on the frequency of the unwanted emissions and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
(iii) The emissions limits shown in the table in paragraph (a)(1) of this section are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9.0-90.0 ㎑, 110.0-490.0 ㎑, and above 1000 ㎒. Radiated emissions limits in these three bands are based on measurements employing an average detector with a 1 ㎒ RBW.

According to section 15.205(a) and (b),
only spurious emissions are permitted in any of the frequency bands listed below:

㎒	㎒	㎒	㎓
0.009 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.694 75 - 16.695 25	608 - 614	5.35 - 5.46
2.173 5 - 2.190 5	16.804 25 - 16.804 75	960 – 1 240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1 300 – 1 427	8.025 - 8.5
4.177 25 - 4.177 75	37.5 - 38.25	1 435 – 1 626.5	9.0 - 9.2
4.207 25 - 4.207 75	73 - 74.6	1 645.5 – 1 646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1 660 – 1 710	10.6 - 12.7
6.267 75 - 6.268 25	108 - 121.94	1 718.8 – 1 722.2	13.25 - 13.4
6.311 75 - 6.312 25	123 - 138	2 200 – 2 300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2 310 – 2 390	15.35 - 16.2
8.362 - 8.366	156.524 75 - 156.525	2 483.5 – 2 500	17.7 - 21.4
8.376 25 - 8.386 75	25	2 690 – 2 900	22.01 - 23.12
8.414 25 - 8.414 75	156.7 - 156.9	3 260 – 3 267	23.6 - 24.0
12.29 - 12.293	162.012 5 - 167.17	3 332 – 3 339	31.2 - 31.8
12.519 75 - 12.520 25	167.72 - 173.2	3 345.8 – 3 358	36.43 - 36.5
12.576 75 - 12.577 25	240 - 285	3 600 – 4 400	Above 38.6
13.36 - 13.41	322 - 335.4		

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in section 15.209. At frequencies equal to or less than 1 000 ㎒, compliance with the limits in section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1 000 ㎒, 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 7- Restricted frequency bands*

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138	--	

* Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

Test procedure

ANSI C63.10-2020 – Section 9

Test settings

Below 1 ㎓

RBW = 100 or 120 ㎑, VBW = 3 x RBW, Detector= Peak or Quasi Peak

Above 1 ㎓

Peak Measurement

RBW: 1 ㎒, VBW= 3 ㎒, Detector = Peak, Sweep time = Auto,
Trace mode = Max Hold until the trace stabilizes

Average Measurement

RBW: 1 ㎒, VBW= 3 ㎒, Detector = RMS, Sweep time = Auto,
Trace mode = Averaging or Max Hold

Sample Calculation

1. Sample Calculations for Radiated Emission below 90 ㎓

E(㏈㎶/m)= Measured level(㏈m) +107 +AFCL(㏈/m)
Where, E=field strength / AFCL= Antenna Factor(㏈/m) + Cable Loss(㏈)
EIRP(㏈m)= E(㏈㎶/m) +20log(D)-104.8;where, D is measurement distance(in the far field region) in m.

2. Sample Calculations for Radiated Emission above 90 ㎓

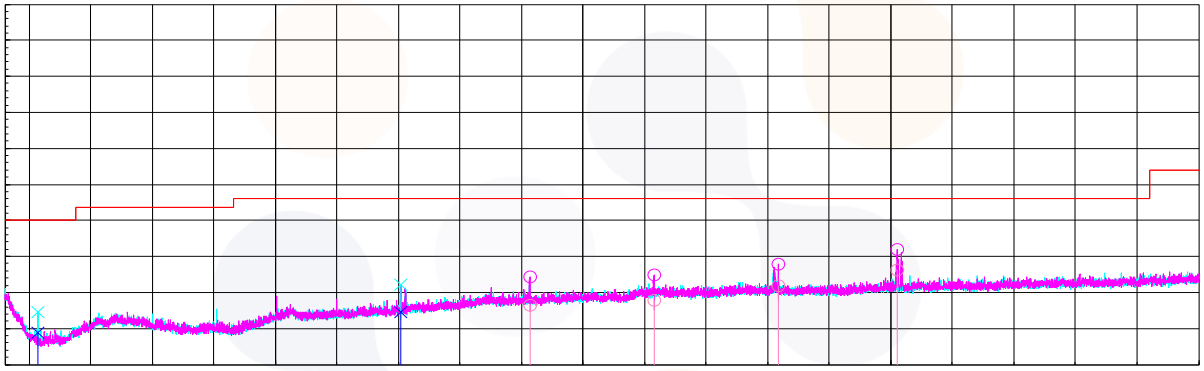
E(㏈㎶/m)= Measured level(㏈m) +107 +AFCL(㏈/m) + Mixer loss(㏈)
Where, E=field strength / AFCL= Antenna Factor(㏈/m) + Cable Loss(㏈)
EIRP(㏈m)= E(㏈㎶/m) +20log(D)-104.8;where, D is measurement distance(in the far field region) in m.
Note: External mixers are used for measurements above 90 ㎓

Test results

Frequency Range: 30 ㎒ ~ 1 ㎓

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
Quasi peak data							
57.04	V	28.10	12.30	-31.73	8.67	40.00	31.33
351.80	V	25.10	20.19	-30.76	14.53	46.02	31.49
456.56	H	24.30	22.80	-30.64	16.46	46.02	29.56
557.32	H	23.70	24.70	-30.53	17.87	46.02	28.15
658.68	H	27.50	24.80	-30.51	21.79	46.02	24.23
755.32	H	30.30	25.70	-29.94	26.06	46.02	19.96

Horizontal/Vertical

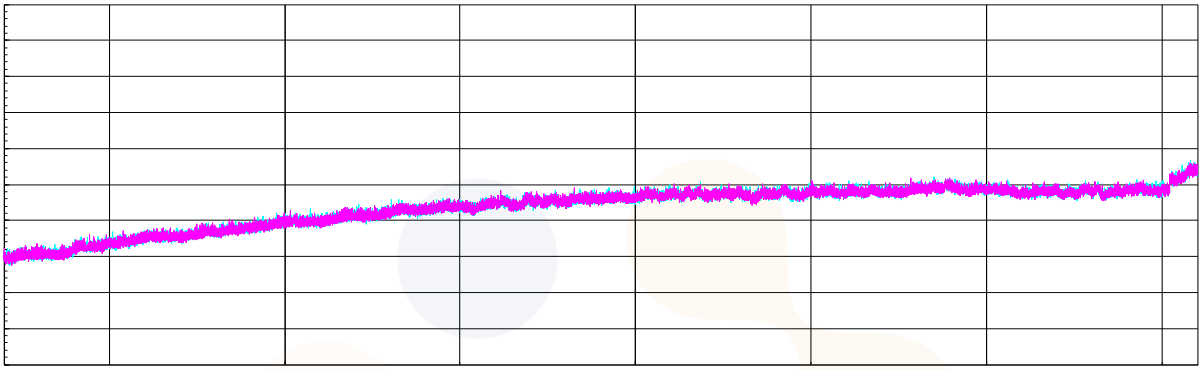


Note.
1. No other spurious and harmonic emissions were found above listed frequencies.
2. Information of Distance Factor
For finding emissions, the test distance might be reduced. In this case, the distance factor is applied to the result.
-Calculation of distance factor = 20 log(applied distance / required distance)
When distance factor is “N/A”, the distance is 3 m and distance factor is not applied.
3. Sample Calculation.
Margin=Limit - Result / Result = Measured Level + A.F + A.C
Where, A.F= Antenna Factor, A.C= Amp. + Cable Loss

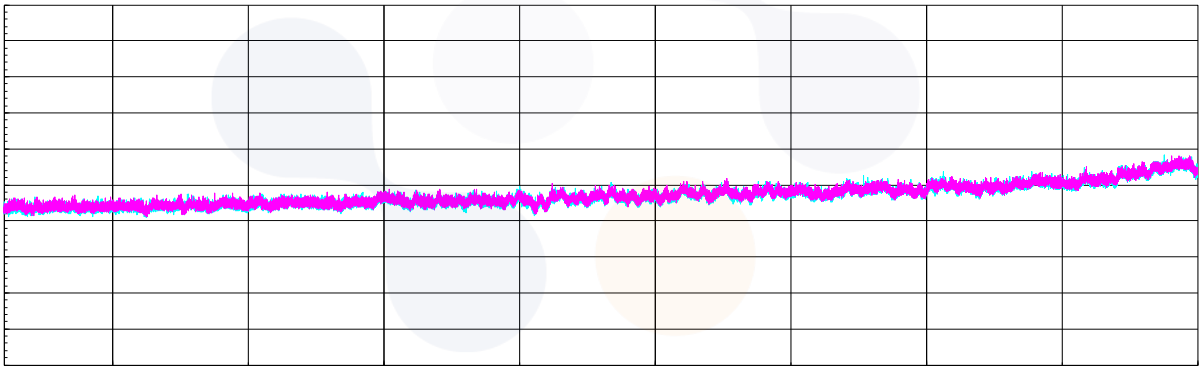
Frequency Range: 1 ㎓ ~ 40 ㎓

Frequency	Pol.	Reading	Ant. Factor	Amp. + Cable	Result	Limit	Margin
(㎒)	(V/H)	(dB(㎶))	(dB)	(dB)	(dB(㎶/m))	(dB(㎶/m))	(dB)
No spurious emissions were detected.							

Horizontal/Vertical_1~18 ㎓



Horizontal/Vertical_18~40 ㎓



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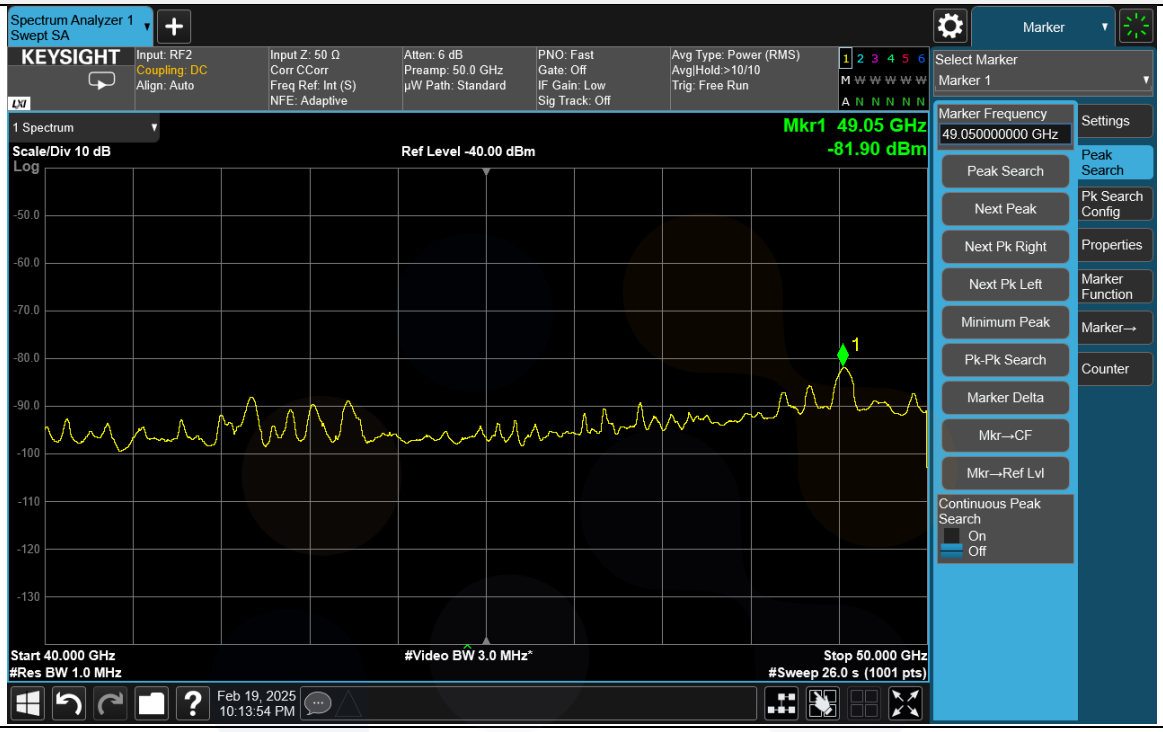
-Calculation of distance factor = 20 log(applied distance / required distance)
When distance factor is “N/A”, the distance is 3 m and distance factor is not applied.
3. Sample Calculation.
Margin=Limit - Result / Result = Measured Level + T.F + Distance factor / T.F = AF + CL - AG
Where, AF= Antenna Facotr, CL= Cable Loss, AG= Amplifier Gain
4. *Noise floor.

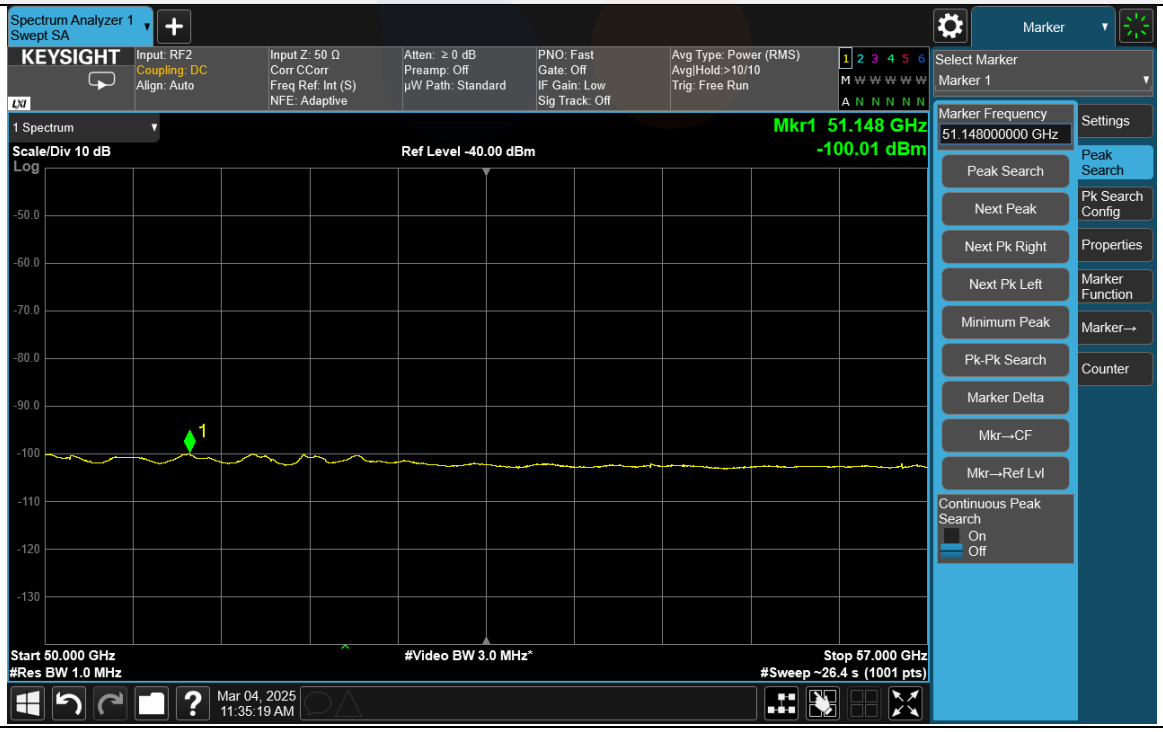
Frequency Range: 40 ㎓ ~ 200 ㎓

Measurement distance (m)	Frequency (㎓)	Pol. (V/H)	Measured Level (dBm)	AFCL (dB/m)	EIRP (dBm)	Power density (pW/cm²)	Limit (pW/cm²)
No spurious emissions were detected.							

Horizontal/Vertical for Worst Data

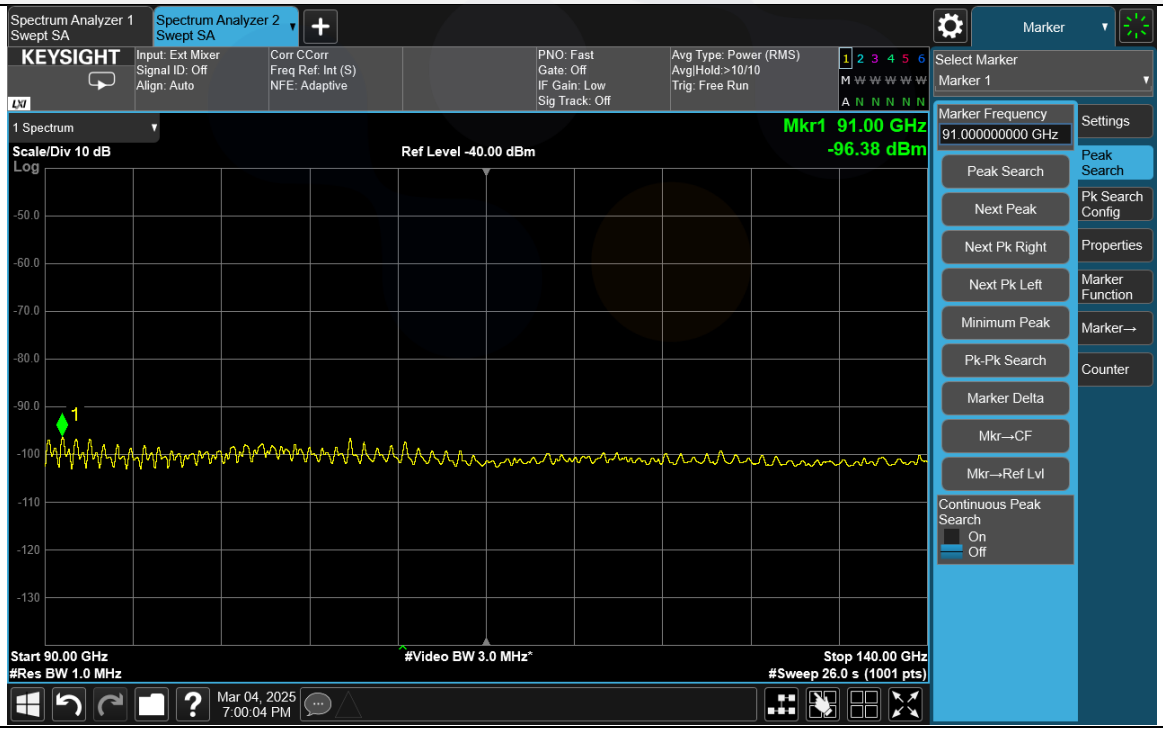


Horizontal/Vertical for Worst Data

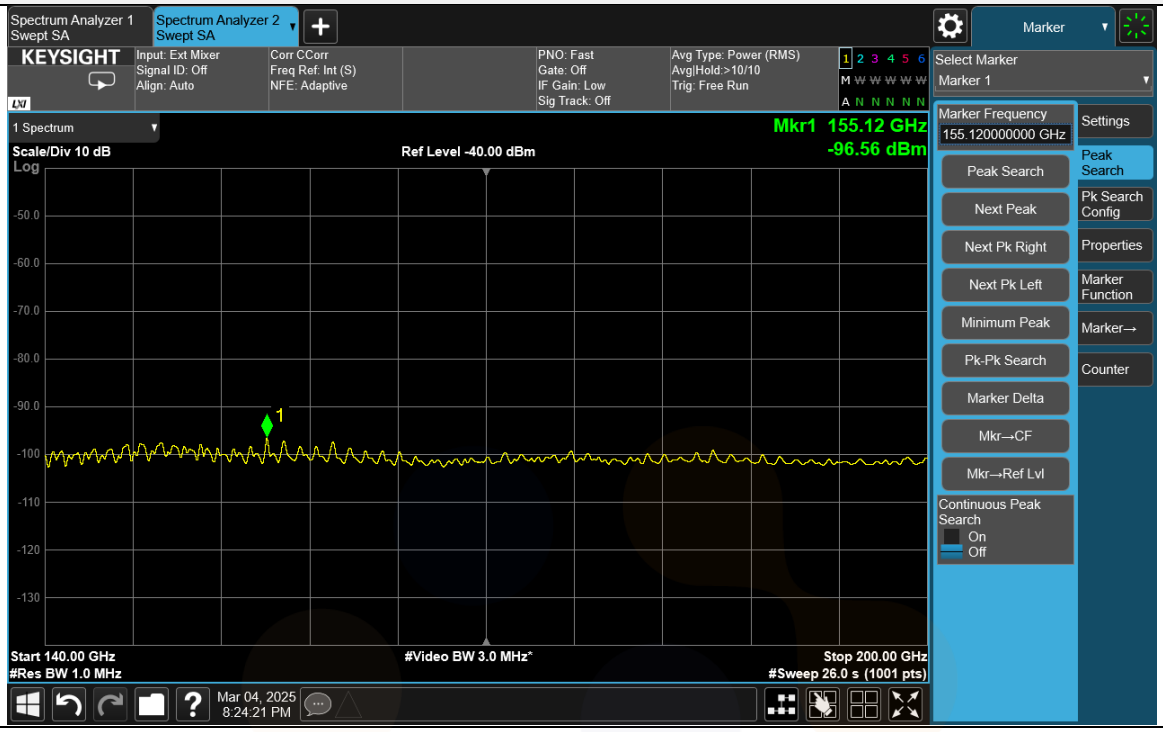


Horizontal/Vertical for Worst Data

Horizontal/Vertical for Worst Data



Horizontal/Vertical for Worst Data

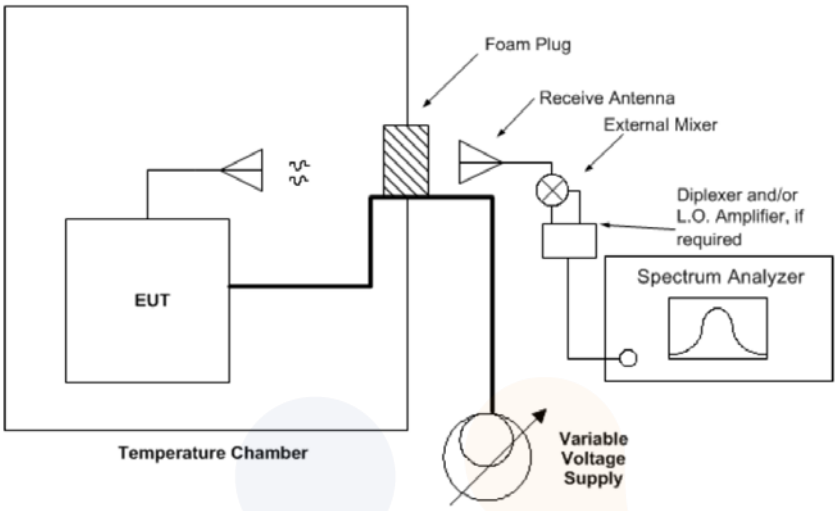


Note.

1. The radiated emissions were investigated up to 200 ㎓.
2. No other spurious and harmonic emissions were found above listed frequencies.
3. When RBW was measured at 1 ㎒, 100 ㎑, and 10 ㎑, no other emission and harmonic emission were found.

5.4. Frequency stability

Test setup



Limit

FCC

According to § 95.3379(b), Fundamental emissions must be contained within the frequency bands specified in Part 95(M) during all conditions of operation. Equipment is presumed to operate over the temperature range -20 to +50 degrees Celsius with an input voltage variation of 85% to 115% of rated input voltage, unless justification is presented to demonstrate otherwise.

Test procedure

ANSI C63.26-2015 – Section 5.6

The frequency stability of the transmitter is measured by:

1. At 10 ℃ intervals of temperatures between -30℃ and +50℃ at the manufacturer's rated supply voltage, and
2. At +20℃ temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage then the -15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.

Time period and procedure:

1. The carrier frequency of the transmitter is measured at room temperature.
   (20 ℃ to provide a reference)
2. The equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10℃ internals ranging from -30℃ to +50℃.
   A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

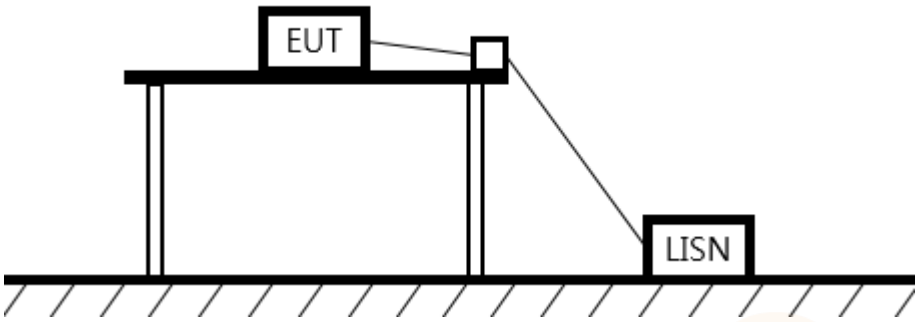
Test results

Voltage	Voltage	TEMP		Measure Frequency(F_L)	Measure Frequency(F_H)
[%]	[V]	[℃]		[㎒]	[㎒]
100	3.3	20(Ref.)	Startup	58 594.15	59 398.64
			2 Minute	58 594.18	59 398.67
			5 Minute	58 594.13	59 398.64
			10 Minute	58 594.16	59 398.63
		-20	Startup	58 594.65	59 394.64
			2 Minute	58 594.68	59 394.67
			5 Minute	58 594.63	59 394.63
			10 Minute	58 594.65	59 394.62
		-10	Startup	58 594.29	59 399.60
			2 Minute	58 594.30	59 399.62
			5 Minute	58 594.27	59 399.58
			10 Minute	58 594.30	59 399.58
		0	Startup	58 594.30	59 389.23
			2 Minute	58 594.32	59 389.26
			5 Minute	58 594.27	59 389.20
			10 Minute	58 594.32	59 389.22
		10	Startup	58 593.14	59 399.84
			2 Minute	58 593.14	59 399.86
			5 Minute	58 593.12	59 399.84
			10 Minute	58 593.13	59 399.83
		30	Startup	58 594.19	59 396.69
			2 Minute	58 594.22	59 396.69
			5 Minute	58 594.16	59 396.66
			10 Minute	58 594.18	59 396.69
		40	Startup	58 594.23	59 397.99
			2 Minute	58 594.23	59 398.00
			5 Minute	58 594.22	59 397.98
			10 Minute	58 594.24	59 398.02
		50	Startup	58 594.04	59 398.08
			2 Minute	58 594.04	59 398.10
			5 Minute	58 594.03	59 398.05
			10 Minute	58 594.05	59 398.09
115	2.97	20(Ref.)	Startup	59 594.48	59 395.61
			2 Minute	59 594.49	59 395.61
			5 Minute	59 594.47	59 395.60
			10 Minute	59 594.48	59 395.60
85	3.63	20(Ref.)	Startup	59 594.43	59 398.81
			2 Minute	59 594.44	59 398.82
			5 Minute	59 594.40	59 398.80
			10 Minute	59 594.43	59 398.80

Note:
1. Fundamental emissions were contained within the frequency bands.
2. * The device tests to minimum and maximum allowable voltages according to the manufacturer's declared specifications.

5.5. AC Conducted emission

Test setup



Limit

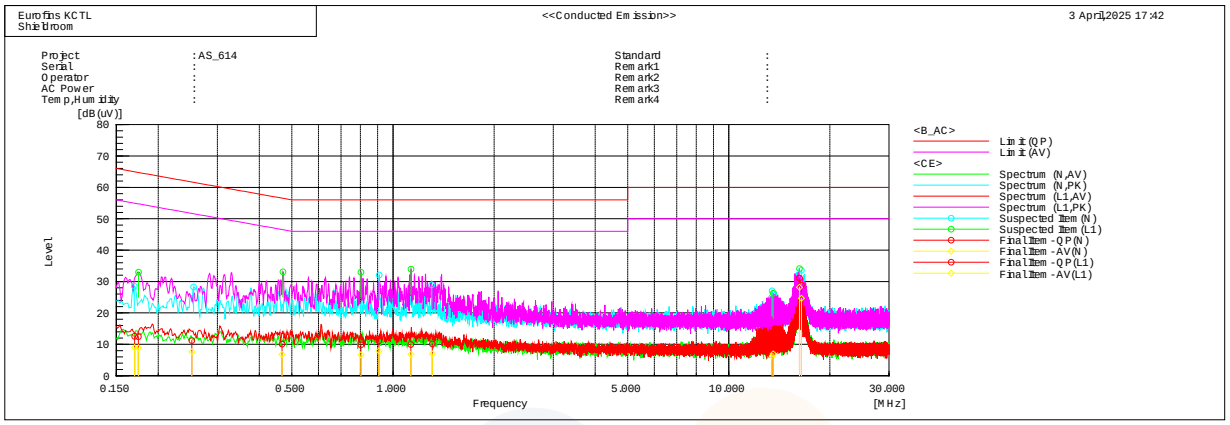
According to 15.207(a) and RSS-Gen(8.8), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 ㎑ to 30 ㎒, shall not exceed the limits in the following table, as measured using a 50uH/50 ohm line impedance stabilization network (LISN). Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequencies ranges.

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

Measurement procedure

1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 ㎝ in which is located 40 ㎝ away from the vertical wall and 1.5m away from the side wall of the shielded room.
2. Each current-carrying conductor of the EUT power cord was individually connected through a 50Ω/50μH LISN, which is an input transducer to a spectrum analyzer or an EMI/Field Intensity Meter, to the input power source.
3. Exploratory measurements were made to identify the frequency of the emission that had the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable position, and with a typical system equipment configuration and arrangement. Based on the exploratory tests of the EUT, the one EUT cable configuration and arrangement and mode of operation that had produced the emission with the highest amplitude relative to the limit was selected for the final measurement.
4. The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment is the system) was then performed over the frequency range of 0.15 ㎒ to 30 ㎒.
5. The measurements were made with the detector set to peak amplitude within a bandwidth of 10 ㎑ or to quasi-peak and average within a bandwidth of 9 ㎑. The EUT was in transmitting mode during the measurements.

Test results



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.16997	2.5	-1.2	10.1	12.6	8.9	65.0	55.0	52.4	46.1
2	0.25163	1.5	-2.1	9.7	11.2	7.6	61.7	51.7	50.5	44.1
3	0.9072	1.3	-1.9	9.8	11.1	7.9	56.0	46.0	44.9	38.1
4	1.30961	0.3	-2.9	9.8	10.1	6.9	56.0	46.0	45.9	39.1
5	13.46755	1.0	-3.7	9.9	10.9	6.2	60.0	50.0	49.1	43.8
6	16.46071	19.0	14.8	9.9	28.9	24.7	60.0	50.0	31.1	25.3

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Margin QP [dB]	Margin CAV [dB]
1	0.17452	2.3	-1.2	10.1	12.4	8.9	64.7	54.7	52.3	45.8
2	0.46731	0.2	-3.1	9.9	10.1	6.8	56.6	46.6	46.5	39.8
3	0.80227	0.0	-3.2	9.9	9.9	6.7	56.0	46.0	46.1	39.3
4	1.13051	0.2	-3.0	9.8	10.0	6.8	56.0	46.0	46.0	39.2
5	13.56331	1.9	-3.0	10.0	11.9	7.0	60.0	50.0	48.1	43.0
6	16.23214	21.2	18.3	9.9	31.1	28.2	60.0	50.0	28.9	21.8

6. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Controller	INNCO SYSTEMS	CO3000	1442/54370322/P	-
Antenna Mast	INNCO SYSTEMS	MA4640-XP-ET	AM002	-
Turn Device	INNCO SYSTEMS	DS1200-S-1t	0001	-
Spectrum Analyzer	R&S	FSV40	100988	25.05.27
PSA Spectrum Analyzer	Agilent	E4440A	MY44303500	25.07.02
Amplifier	SONOMA INSTRUMENT	310N	421910	25.10.11
Bilog Antenna	Teseq GmbH	CBL 6112D	61521	26.12.11
Loop Antenna	R&S	HFH2-Z2	100355	26.06.25
DC Power Supply	POWERCOM	DCP-50100A	20220610-01	26.01.16
Vector Signal Generator	R&S	SMBV100A	257566	25.07.01
Spectrum Analyzer	R&S	FSV40	100988	25.05.27
Low Noise Amplifier	TESTEK	TK-PA18H	220123-L	25.10.11
Low Noise Amplifier	TESTEK	TK-PA1840H	220234-L	25.10.14
Horn Antenna	SCHWARZBECK	BBHA9120D	2764	25.10.24
Horn Antenna	SCHWARZBECK	BBHA9170	1266	25.10.15
DC Power Supply	POWERCOM	DCP-50100A	20220610-01	26.01.16
Signal Generator	R&S	SMB100A	176206	26.01.17
TWO-LINE V - NETWORK	R&S	ENV216	101358	25.10.13
EMI TEST RECEIVER	R&S	ESCI3	101428	25.07.01

End of test report