



TEST REPORT

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-4904-0113 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR26-SRF0006-A Page (1) of (34)	KCTL
--	---	---

1. Client

- Name : Suprema Inc.
- Address : 17F-5, Parkview officetower,, 248, Jeongjail-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea
- Date of Receipt : 2025-11-25

2. Use of Report : Certification

3. Name of Product / Model : XPass Q2 / XPQ2-APB

4. Manufacturer / Country of Origin : Moca System Inc. / Korea

5. FCC ID : TKWXPQ2-APB

6. IC Certificate No. : 23080-XPQ2APB

7. Date of Test : 2025-12-15 to 2026-03-09

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

9. Test method used : FCC Part 15 Subpart C, 15.225
 RSS-210 Issue 11 June 25 2024
 RSS-Gen Issue 5 February 2021

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

Affirmation	Tested by Name : Donghun Lee (Signature)	Technical Manager Name : Euijung Kim (Signature)
-------------	---	---

2026-03-10

Eurofins KCTL Co.,Ltd.

As a test result of the sample which was submitted from the client, this report does not guarantee the whole product quality. This test report should not be used and copied without a written agreement by Eurofins KCTL Co.,Ltd.

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-4904-0113 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR26-SRF0006-A Page (2) of (34)	
---	---	---

REPORT REVISION HISTORY

Date	Revision	Page No
2026-02-09	Originally issued	-
2026-03-10	Updated	17, 26-29, 33

This report shall not be reproduced except in full, without the written approval of Eurofins KCTL Co.,Ltd. This document may be altered or revised by Eurofins KCTL Co.,Ltd. personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by Eurofins KCTL Co.,Ltd. will constitute fraud and shall nullify the document. This test report is a general report that does not use the KOLAS accreditation mark and is not related to KS Q ISO/IEC 17025 and KOLAS accreditation.

Note. The report No. KR26-SRF0006 is superseded by the report No. KR26-SRF0006-A.

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	4
2.	Device information	4
2.1.	Information about derivative model	5
2.2.	Frequency/channel operations	5
2.3.	RF power setting in TEST SW	5
3.	Antenna requirement	6
4.	Summary of tests	7
5.	Measurement uncertainty	8
6.	Test results	9
6.1.	20 dB Bandwidth & 99% Bandwidth	9
6.2.	Frequency tolerance	13
6.3.	Radiated spurious emissions	16
6.4.	AC Conducted emission	30
7.	Measurement equipment	34

1. General information

Client : Suprema Inc.
 Address : 17F-5, Parkview officetower,, 248, Jeongjail-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea
 Manufacturer : Moca System Inc.
 Address : 17-04, 17F Parkview Office Tower, 248, Jeongjail-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of 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 : XPass Q2
 Model : XPQ2-APB
 Derivative Model : XPQ2-DB
 Frequency range : 13.56 MHz (NFC)
 Modulation technique : ASK
 Number of channels : 1 ch
 Power source : DC 12 ~ 24 V, PoE 48 V
 Antenna specification : PCB loop Antenna (NFC)
 Software version : 1.0.0
 Hardware version : 1.0.0
 Test device serial No. : 547847933
 Operation temperature : -20 °C ~ 50 °C

2.1. Information about derivative model

The difference between basic model and derivative models is:

1) Several non-RF related components are removed from the basic model (XPQ2-APB).

All other internal components are the same as in the basic model.

The removed components do not affect the wireless part of the product.

2) Radio Hardware such as circuits and electrical components and Software are the same.

	Basic model: XPQ2-APB	Variant Model: XPQ2-DB
Main board	PCB : RA1211-0409 PBA : HA20501-V01A	PCB : RA1211-0409 PBA : HA20502-V01A
Components	C21,C22,C23,C185 D3,D5,D4,D31 F3,F4,F5,F6,F7,F8 EC3,TVS2,TVS16,Q21 R146,R153,R174,R273,R274 U2,U21	N/A

2.2. Frequency/channel operations

This device contains the following capabilities:

NFC

Frequency (MHz)
13.56

Table 2.2.1. NFC mode

2.3. RF power setting in TEST SW

Operation mode	Test mode	Test Program	Power Setting
RFID	DC 24 V	EUT	Default
	PoE 48 V		Default

Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-4904-0113 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR26-SRF0006-A Page (6) of (34)	
--	--	---

3. Antenna requirement

Requirement of FCC part section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Requirement of RSS-Gen Section 6.8:

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

-The transmitter has permanently attached PCB loop Antenna (internal antenna) on board.

4. Summary of tests

FCC Part section(s)	IC Rule reference	Parameter	Test Condition	Test results
15.225(a)	RSS-210 B.6 (I)	In-band Fundamental Emission	Radiated	Pass
15.225(b), (c)	RSS-210 B.6 (II), (III)	In-band Spurious Emission		Pass
15.225(d) 15.209	RSS-210 B.6 (IV) RSS-Gen Issue 9 (8.9)	Out-of-band Spurious Emission		Pass
15.225(e)	RSS-210 B.6 (b)	Frequency Stability Tolerance	Conducted	Pass
15.215(c)	-	20 dB Bandwidth		Pass
-	RSS-Gen Issue 5 (6.7)	Occupied Bandwidth		Pass
15.207(a)	RSS-Gen Issue 5 (8.8)	AC Conducted emissions		Pass

Notes: (N/T: Not Tested, N/A: Not Applicable)

- 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.
- The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z It was determined that **Z** orientation was worst-case orientation. Therefore, all final radiated testing was performed with the EUT in **Z** orientation
- The test procedure(s) in this report were performed in accordance as following.
 - ANSI C63.10-2020
 - ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024
- The radiated test was performed with and without passive tag. The test results shown in the following sections represent the worst case emissions.
 - Worst Case : Without passive tag

5. Measurement uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2020, ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024.

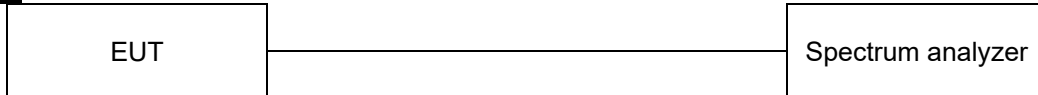
All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicated a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and thus, can be compared directly to specified limits to determine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

Parameter	Expanded uncertainty ($\pm$)	
Frequency Stability Tolerance	0.03 ppm	
20 dB Channel Bandwidth	0.1 %	
Occupied Bandwidth	0.1 %	
Radiated spurious Emissions (Bandedge, restricted band)	Below 30 MHz	2.3 dB
	30 MHz to 1 000 MHz	2.6 dB
	1 000 MHz to 18 000 MHz	4.8 dB
	Above 18 000 MHz	4.8 dB
AC Conducted Emissions	150 kHz to 30 MHz	2.9 dB

6. Test results

6.1. 20 dB Bandwidth & 99% Bandwidth

Test setup



Limit

According to §15.215(c) 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.

According to RSS-Gen Issue 5 (6.7) The emission bandwidth (x dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated x dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth.

When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth, as calculated or measured.

Test procedure

ANSI C63.10-2020 - Section 6.9.2

ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 - Section 6.9.2

Test settings

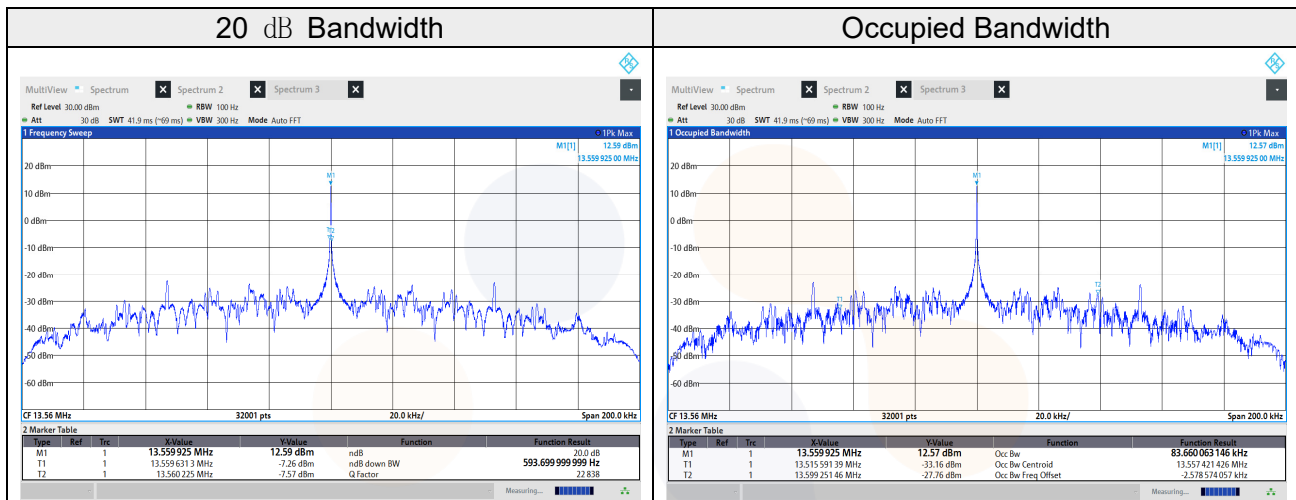
The occupied bandwidth is measured as the width of the spectral envelope of the modulated signal, at an amplitude level reduced from a reference value by a specified ratio (or in decibels, a specified number of dB down from the reference value). Typical ratios, expressed in dB, are -6 dB, -20 dB, and -26 dB, corresponding to 6 dB BW, 20 dB BW, and 26 dB BW, respectively. In this subclause, the ratio is designated by “-xx dB.” The reference value is either the level of the unmodulated carrier or the highest level of the spectral envelope of the modulated signal, as stated by the applicable requirement. Some requirements might specify a specific maximum or minimum value for the “-xx dB” bandwidth; other requirements might specify that the “-xx dB” bandwidth be entirely contained within the authorized or designated frequency band.

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.
- b) Span: Two times and five times the OBW.
- c) RBW = 1 % to 5 % of the OBW and VBW $\geq 3 \times$ RBW
- d) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation.
- e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.
- f) Detector: peak
- g) Trace mode: max hold.
- h) Allow the trace to stabilize.
- i) Determine the “-xx dB down amplitude” using ((reference value) - xx). Alternatively, this calculation may be made by using the marker-delta function of the instrument.
- j) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j)
- k) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-xx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.

Test results

[DC 24 V]

Frequency [MHz]	20 dB Bandwidth [MHz]		Limit [MHz]	20 dB Bandwidth [kHz]	Occupied Bandwidth (99 % BW) [kHz]
13.56	Lowest Frequency	13.559 6	13.110 0	0.59	83.66
	Highest Frequency	13.560 2	14.010 0		

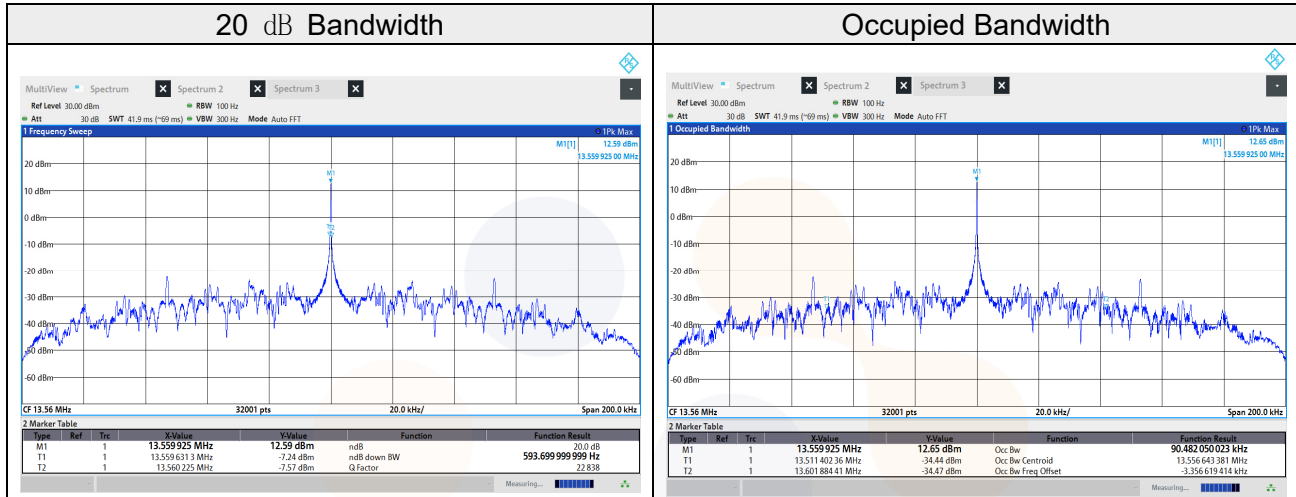


Note:

Because the measured signal is CW/CW-like, adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW

[PoE 48 V]

Frequency [MHz]	20 dB Bandwidth [MHz]		Limit [MHz]	20 dB Bandwidth [kHz]	Occupied Bandwidth (99 % BW) [kHz]
13.56	Lowest Frequency	13.559 6	13.110 0	0.59	90.48
	Highest Frequency	13.560 2	14.010 0		

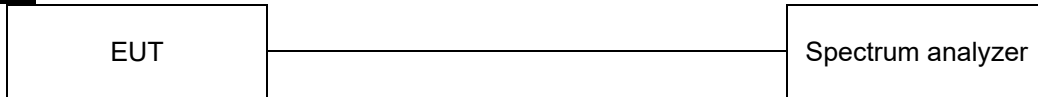


Note:

Because the measured signal is CW/CW-like, adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW

6.2. Frequency tolerance

Test setup



Limit

According to §15.225 (e), RSS-210 B.6.(b) 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. For battery operated equipment, the equipment tests shall be performed using a new battery.

Test procedure

ANSI C63.10-2020 - Section 6.8.1

ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024 - Section 6.8.1

Test results

[DC 24 V]

Voltage [%]	Voltage [V]	TEMP [°C]	Maintaining time	Measure frequency [Hz]	Frequency deviation [Hz]	Deviation [%]
100	24.00	23	Startup	13 559 948	52.0	-0.000 38
			2 minutes	13 559 936	64.0	-0.000 47
			5 minutes	13 559 931	69.0	-0.000 51
			10 minutes	13 559 928	72.0	-0.000 53
		-20	Startup	13 560 077	-77.0	0.000 57
			2 minutes	13 560 081	-81.0	0.000 60
			5 minutes	13 560 083	-83.0	0.000 61
			10 minutes	13 560 085	-85.0	0.000 63
		-10	Startup	13 560 081	-81.0	0.000 60
			2 minutes	13 560 080	-80.0	0.000 59
			5 minutes	13 560 078	-78.0	0.000 58
			10 minutes	13 560 072	-72.0	0.000 53
		0	Startup	13 560 048	-48.0	0.000 35
			2 minutes	13 560 043	-43.0	0.000 32
			5 minutes	13 560 039	-39.0	0.000 29
			10 minutes	13 560 038	-38.0	0.000 28
		10	Startup	13 560 019	-19.0	0.000 14
			2 minutes	13 560 009	-9.0	0.000 07
			5 minutes	13 560 003	-3.0	0.000 02
			10 minutes	13 559 993	7.0	-0.000 05
		20(Ref.)	Startup	13 559 978	22.0	-0.000 16
			2 minutes	13 559 963	37.0	-0.000 27
			5 minutes	13 559 954	46.0	-0.000 34
			10 minutes	13 559 948	52.0	-0.000 38
		30	Startup	13 559 916	84.0	-0.000 62
			2 minutes	13 559 920	80.0	-0.000 59
			5 minutes	13 559 921	79.0	-0.000 58
			10 minutes	13 559 923	77.0	-0.000 57
		40	Startup	13 559 869	131.0	-0.000 97
			2 minutes	13 559 868	132.0	-0.000 97
			5 minutes	13 559 863	137.0	-0.001 01
			10 minutes	13 559 861	139.0	-0.001 03
		50	Startup	13 559 848	152.0	-0.001 12
			2 minutes	13 559 833	167.0	-0.001 23
			5 minutes	13 559 828	172.0	-0.001 27
			10 minutes	13 559 820	180.0	-0.001 33
		60	Startup	13 559 803	197.0	-0.001 45
			2 minutes	13 559 799	201.0	-0.001 48
			5 minutes	13 559 796	204.0	-0.001 50
			10 minutes	13 559 793	207.0	-0.001 53
85	10.80	23	Startup	13 559 938	62.0	-0.000 46
			2 minutes	13 559 935	65.0	-0.000 48
			5 minutes	13 559 931	69.0	-0.000 51
			10 minutes	13 559 927	73.0	-0.000 54
115	27.60	23	Startup	13 559 938	62.0	-0.000 46
			2 minutes	13 559 936	64.0	-0.000 47
			5 minutes	13 559 930	70.0	-0.000 52
			10 minutes	13 559 928	72.0	-0.000 53

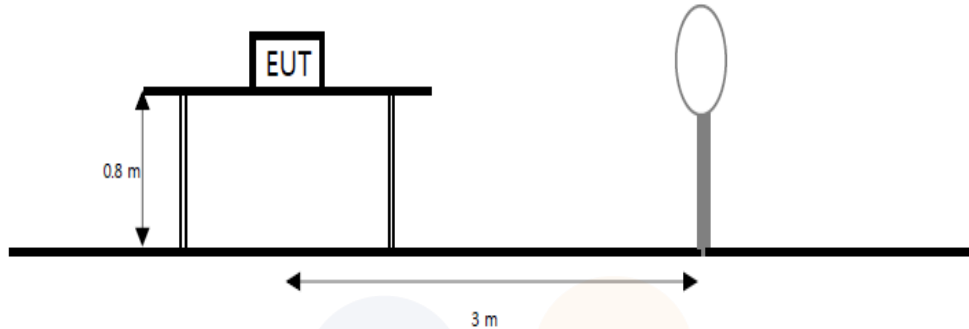
[PoE 48 V]

Voltage	Voltage	TEMP	Maintaining time	Measure frequency	Frequency deviation	Deviation
[%]	[V]	[°C]		[Hz]	[Hz]	[%]
100	48.00	23	Startup	13 559 924	76.0	-0.000 56
			2 minutes	13 559 929	71.0	-0.000 52
			5 minutes	13 559 934	66.0	-0.000 49
			10 minutes	13 559 940	60.0	-0.000 44
		-20	Startup	13 560 081	-81.0	0.000 60
			2 minutes	13 560 083	-83.0	0.000 61
			5 minutes	13 560 084	-84.0	0.000 62
			10 minutes	13 560 086	-86.0	0.000 63
		-10	Startup	13 560 034	-34.0	0.000 25
			2 minutes	13 560 043	-43.0	0.000 32
			5 minutes	13 560 049	-49.0	0.000 36
			10 minutes	13 560 053	-53.0	0.000 39
		0	Startup	13 559 993	7.0	-0.000 05
			2 minutes	13 560 001	-1.0	0.000 01
			5 minutes	13 560 006	-6.0	0.000 04
			10 minutes	13 560 011	-11.0	0.000 08
		10	Startup	13 559 978	22.0	-0.000 16
			2 minutes	13 559 988	12.0	-0.000 09
			5 minutes	13 559 981	19.0	-0.000 14
			10 minutes	13 559 979	21.0	-0.000 16
		20(Ref.)	Startup	13 559 953	47.0	-0.000 35
			2 minutes	13 559 958	42.0	-0.000 31
			5 minutes	13 559 960	40.0	-0.000 30
			10 minutes	13 559 961	39.0	-0.000 29
		30	Startup	13 559 855	145.0	-0.001 07
			2 minutes	13 559 870	130.0	-0.000 96
			5 minutes	13 559 883	117.0	-0.000 86
			10 minutes	13 559 891	109.0	-0.000 80
		40	Startup	13 559 813	187.0	-0.001 38
			2 minutes	13 559 821	179.0	-0.001 32
			5 minutes	13 559 828	172.0	-0.001 27
			10 minutes	13 559 835	165.0	-0.001 22
		50	Startup	13 559 803	197.0	-0.001 45
			2 minutes	13 559 804	196.0	-0.001 45
			5 minutes	13 559 805	195.0	-0.001 44
			10 minutes	13 559 806	194.0	-0.001 43
		60	Startup	13 559 802	198.0	-0.001 46
			2 minutes	13 559 800	200.0	-0.001 48
			5 minutes	13 559 796	204.0	-0.001 50
			10 minutes	13 559 794	206.0	-0.001 52
85	40.80	23	Startup	13 559 926	74.0	-0.000 55
			2 minutes	13 559 931	69.0	-0.000 51
			5 minutes	13 559 936	64.0	-0.000 47
			10 minutes	13 559 942	58.0	-0.000 43
115	55.20	23	Startup	13 559 925	75.0	-0.000 55
			2 minutes	13 559 933	67.0	-0.000 49
			5 minutes	13 559 937	63.0	-0.000 47
			10 minutes	13 559 943	57.0	-0.000 42

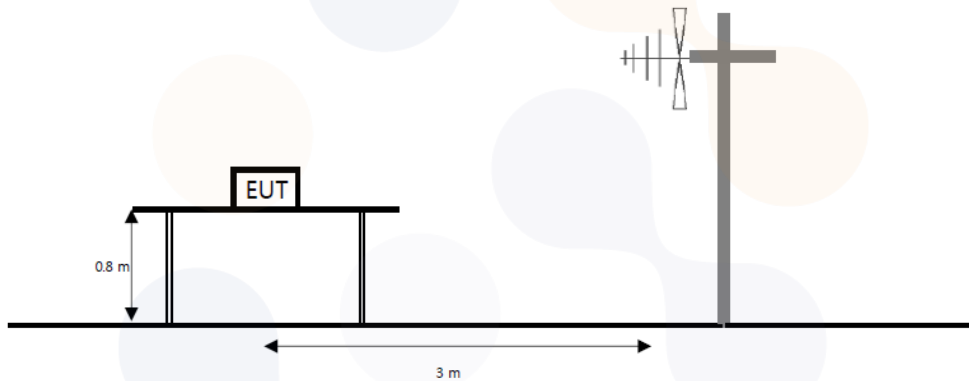
6.3. Radiated spurious emissions

Test setup

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



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



Limit

15.225 (a), RSS-210 B.6.(a).(i) The field strength of any emission within the band 13.553-13.567 MHz shall not exceed 15, 848 microvolts/meter at 30 meters.

15.225 (b), RSS-210 B.6.(a).(ii) 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.

15.225 (c), RSS-210 B.6 (a).(iii) 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.

15.225 (d), RSS-210 B.6.(a).(iv) RSS-Gen Issue 9 (8.9) 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.

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30(29.54 dB $\mu\text{V/m}$)	30
30.0-88.0	100(40 dB $\mu\text{V/m}$)	3
88-216	150(43.5 dB $\mu\text{V/m}$)	3
216-960	200 (46 dB $\mu\text{V/m}$)	3
Above 960	500 (53.98 dB $\mu\text{V/m}$)	3

Test procedure

ANSI C63.10-2020 - Section 6.4, 6.5

ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024- Section 6.4, 6.5

Test settings

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in table
3. VBW $\geq$ (3 $\times$ RBW)
4. Detector = peak
5. Sweep time = No faster than coupled (auto) time
6. Trace mode = max hold
7. Allow sweeps to continue until the trace stabilizes

Table. RBW as a function of frequency

Frequency	RBW
9 kHz to 150 kHz	200 Hz to 300 Hz
0.15 MHz to 30 MHz	9 kHz to 10 kHz
30 MHz to 1 000 MHz	100 kHz to 120 kHz
> 1 000 MHz	1 MHz

Notes:

1. $f < 30$ MHz, extrapolation factor of 40 dB/decade of distance. $F_d = 40\log(D_m/D_s)$
 $f \geq 30$ MHz, extrapolation factor of 20 dB/decade of distance. $F_d = 20\log(D_m/D_s)$
 Where:
 F_d = Distance factor in dB
 D_m = Measurement distance in meters
 D_s = Specification distance in meters
2. Measurements were performed at 3m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear distance extrapolation factor (40 dB/decade) as specified in § 15.31(f)(2). Extrapolation Factor = $40 \log_{10}(30/3) = 40$ dB.
3. Factors(dB) = Antenna factor(dB/m) + Cable loss(dB) + or Amp. gain(dB) - or F_d (dB)
4. The worst-case emissions are reported however emissions whose levels were not within 20 dB of respective limits were not reported.
5. All measurements were recorded using a spectrum analyzer employing a quasi-peak detector.
6. Below 30 MHz frequency range, all orientations about parallel, perpendicular, and ground-parallel were investigated then reported and the worse orientations of Face-on and Face-off were set for final test.
7. Face-on = Parallel, Face-off = Perpendicular
8. ¹⁾ means restricted band

[XPQ2-APB]

Test results for fundamental [DC 24 V]

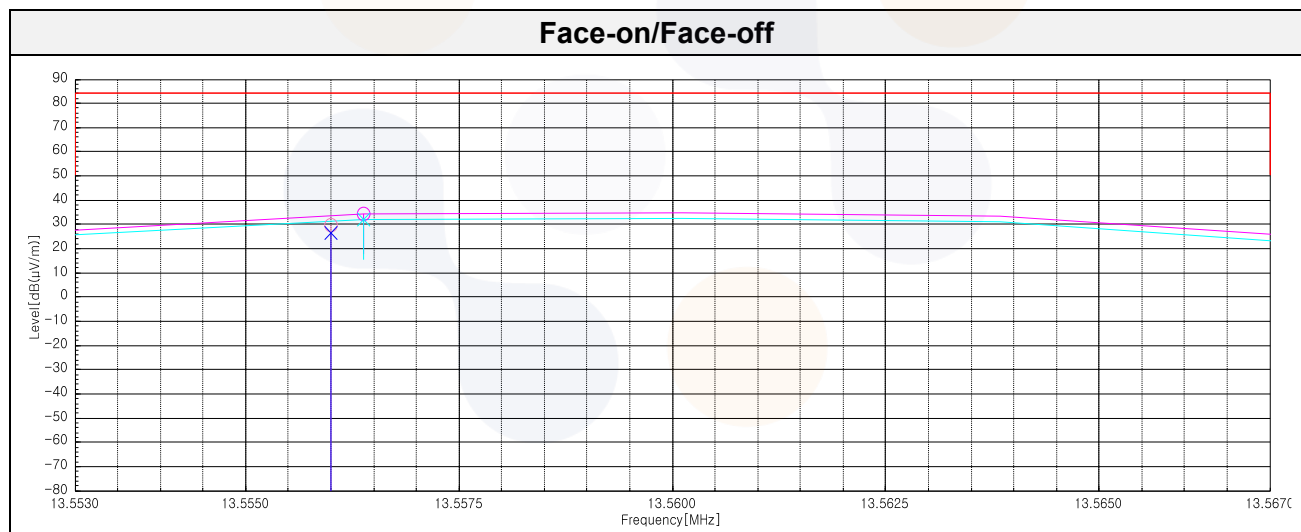
15.225 (a), RSS-210 B.6.(a).(i) 13.553-13.567 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.56	81.50	20.57	-32.49	40.00	29.58	84.00	54.42

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.56	78.50	20.57	-32.49	40.00	26.58	84.00	57.42



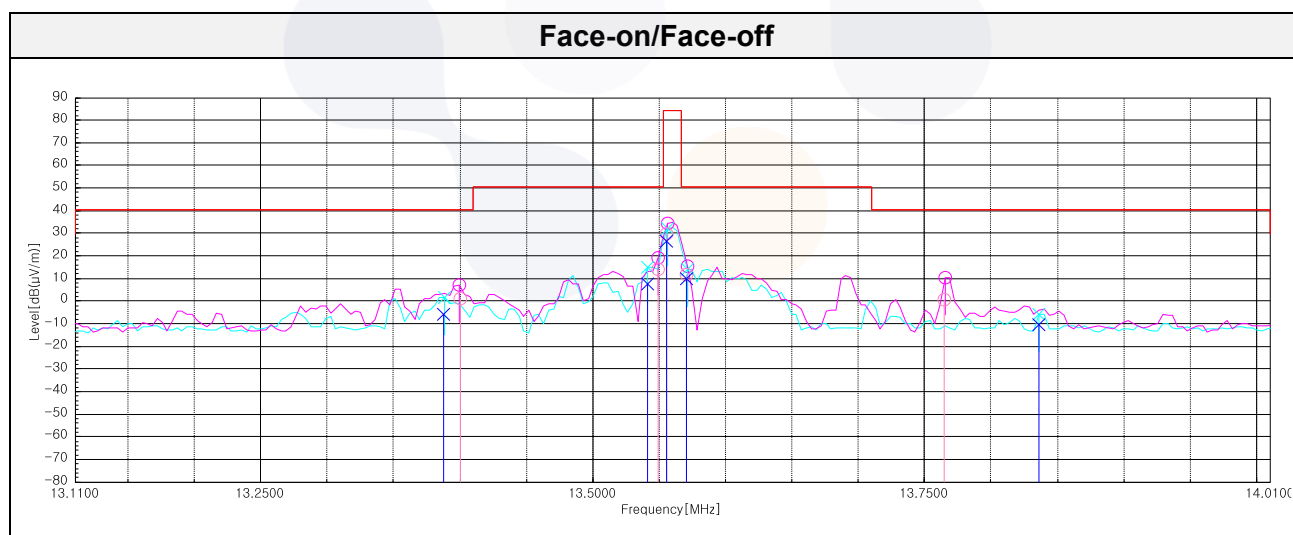
Test results for in-band & out-band (9 kHz to 30 MHz)
15.225 (b,c), RSS-210 B.6.(a).(ii, iii) 13.110-14.010 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.40	53.00	20.57	-32.50	40.00	1.07	40.50	39.43
13.55	66.00	20.57	-32.49	40.00	14.08	50.50	36.42
13.57	63.60	20.57	-32.49	40.00	11.68	50.50	38.82
13.77	52.60	20.58	-32.47	40.00	0.71	40.50	39.79

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.39	46.20	20.57	-32.50	40.00	-5.73	40.50	46.23
13.54	59.50	20.57	-32.49	40.00	7.58	50.50	42.92
13.57	61.80	20.57	-32.49	40.00	9.88	50.50	40.62
13.84	41.20	20.58	-32.47	40.00	-10.69	40.50	51.19



Note. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to $Y-51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to the 15.209(a) limit.

Test results (9 kHz to 30 MHz)

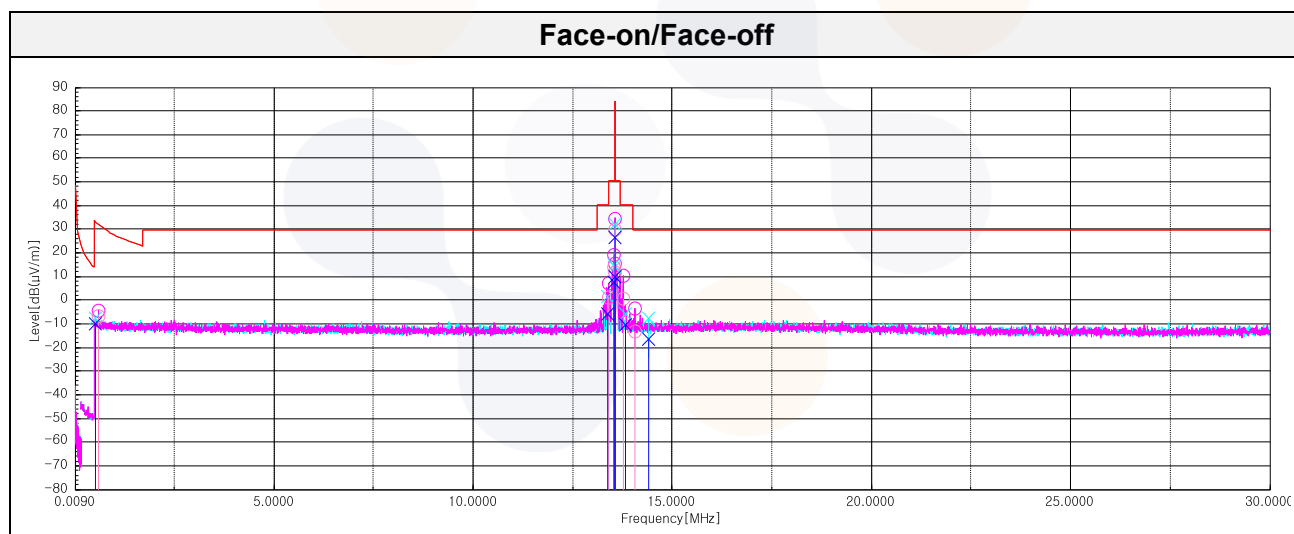
15.225 (d), RSS-210 B.6.(a).(iv) 0.009-30 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
0.60	45.90	20.22	-32.68	40.00	-6.56	32.10	38.66
14.07	38.60	20.58	-32.46	40.00	-13.28	29.54	42.82

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
0.51	42.50	20.20	-32.69	40.00	-9.99	33.40	43.39
14.41	35.20	20.59	-32.44	40.00	-16.65	29.54	46.19

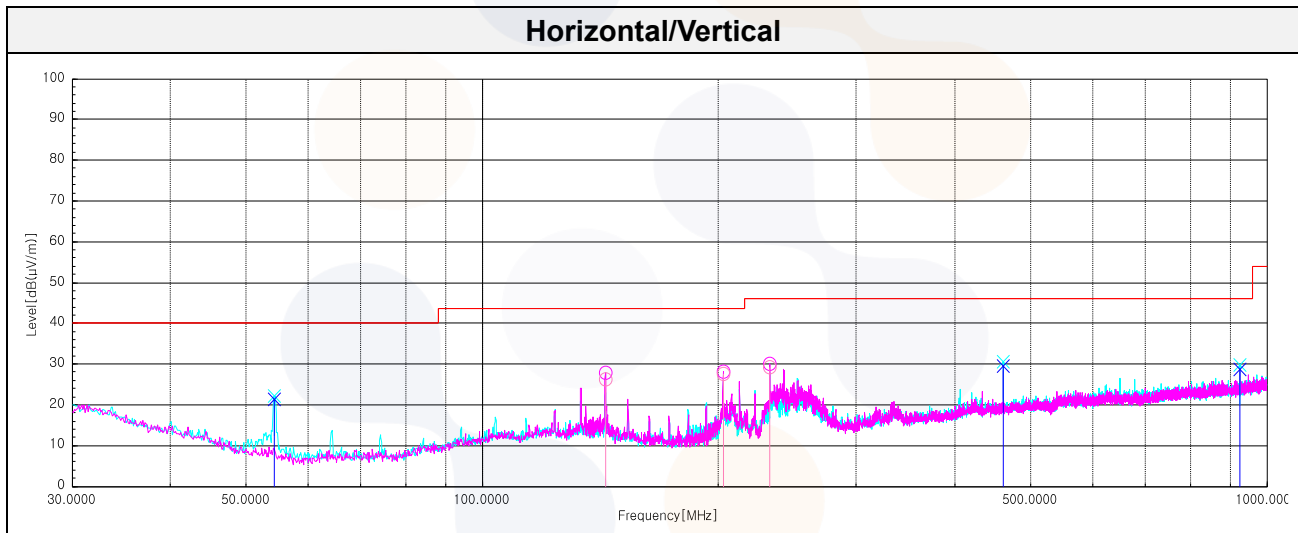


Note. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to $Y-51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to the 15.209(a) limit.

Test results (Below 1 000 MHz)

15.225 (d), RSS-210 B.6.(a).(iv) 30-1 000 MHz

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data								
54.37	V	40.60	12.69	-32.08	-	21.21	40.00	18.79
143.49	H	40.70	17.20	-31.61	-	26.29	43.50	17.21
202.90	H	43.50	15.25	-31.09	-	27.66	43.50	15.84
232.61	H	44.00	16.29	-31.19	-	29.10	46.00	16.90
462.01	V	37.20	22.80	-30.48	-	29.52	46.00	16.48
924.10	V	30.80	26.50	-28.49	-	28.81	46.00	17.19



[PoE 48 V]

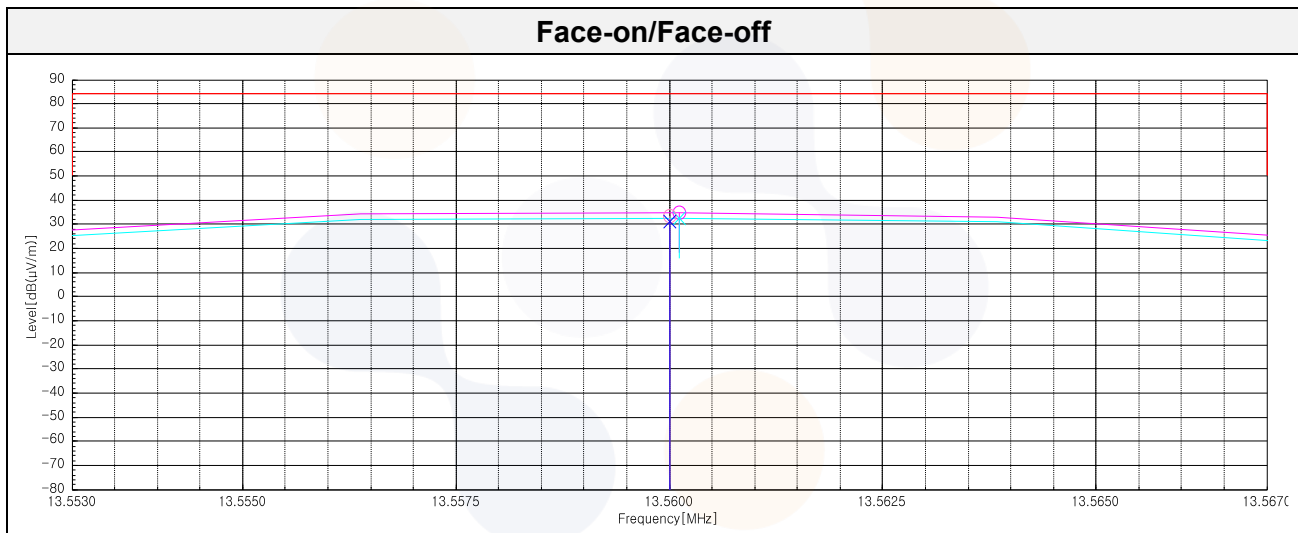
15.225 (a), RSS-210 B.6.(a).(i) 13.553-13.567 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.56	85.30	20.57	-32.49	40.00	33.38	84.00	50.62

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.56	78.50	20.57	-32.49	40.00	26.58	84.00	57.42



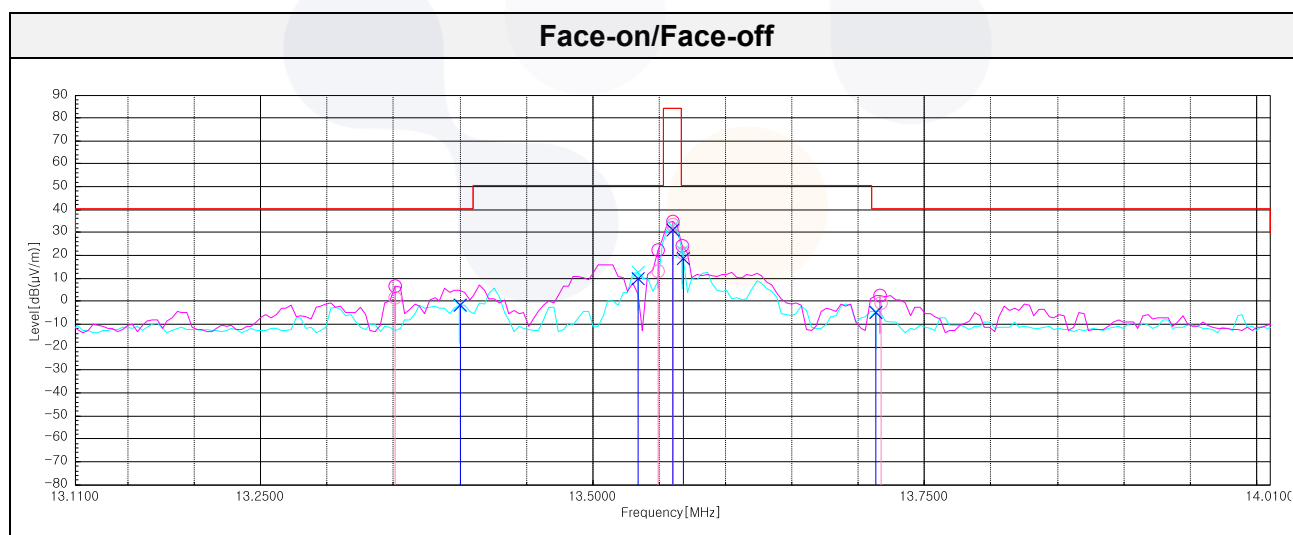
Test results for in-band & out-band (9 kHz to 30 MHz)
15.225 (b,c), RSS-210 B.6.(a).(ii, iii) 13.110-14.010 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.35	53.50	20.57	-32.50	40.00	1.57	40.50	38.93
13.55	65.10	20.57	-32.49	40.00	13.18	50.50	37.32
13.57	72.70	20.57	-32.49	40.00	20.78	50.50	29.72
13.72	51.00	20.57	-32.48	40.00	-0.91	40.50	41.41

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.40	50.20	20.57	-32.50	40.00	-1.73	40.50	42.23
13.53	61.70	20.57	-32.49	40.00	9.78	50.50	40.72
13.57	70.30	20.57	-32.49	40.00	18.38	50.50	32.12
13.71	47.00	20.57	-32.48	40.00	-4.91	40.50	45.41



Note. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to $Y-51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to the 15.209(a) limit.

Test results (9 kHz to 30 MHz)

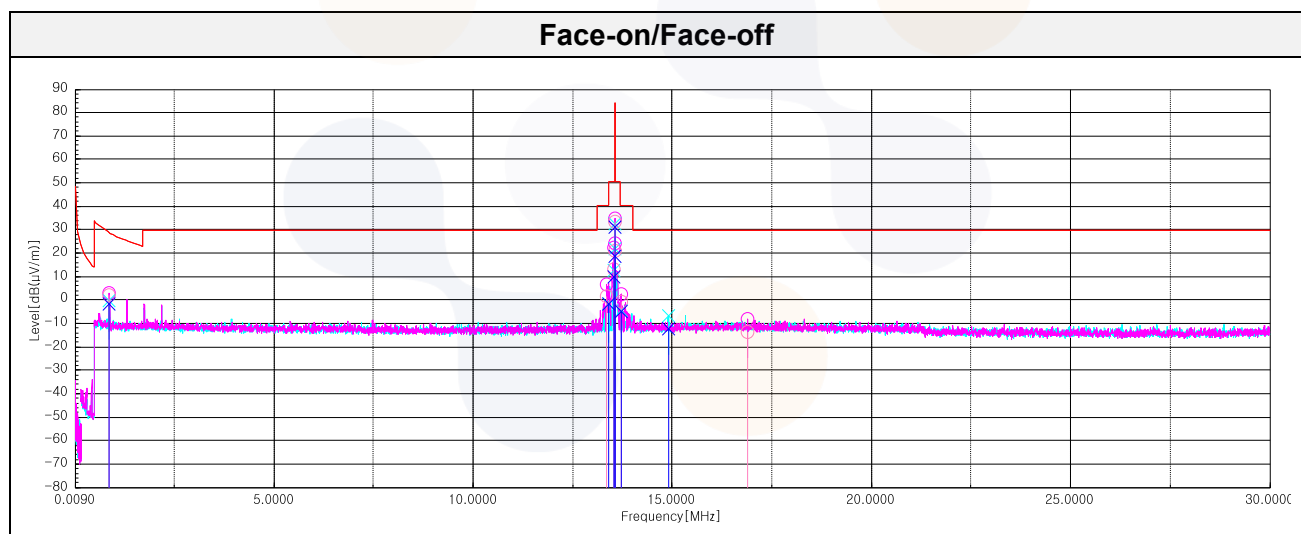
15.225 (d), RSS-210 B.6.(a).(iv) 0.009-30 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
0.87	54.40	20.27	-32.67	40.00	2.00	33.40	31.40
16.89	37.80	20.71	-32.44	40.00	-13.93	29.54	43.47

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
0.87	50.70	20.27	-32.67	40.00	-1.70	32.10	33.80
14.90	39.60	20.60	-32.41	40.00	-12.21	29.54	41.75

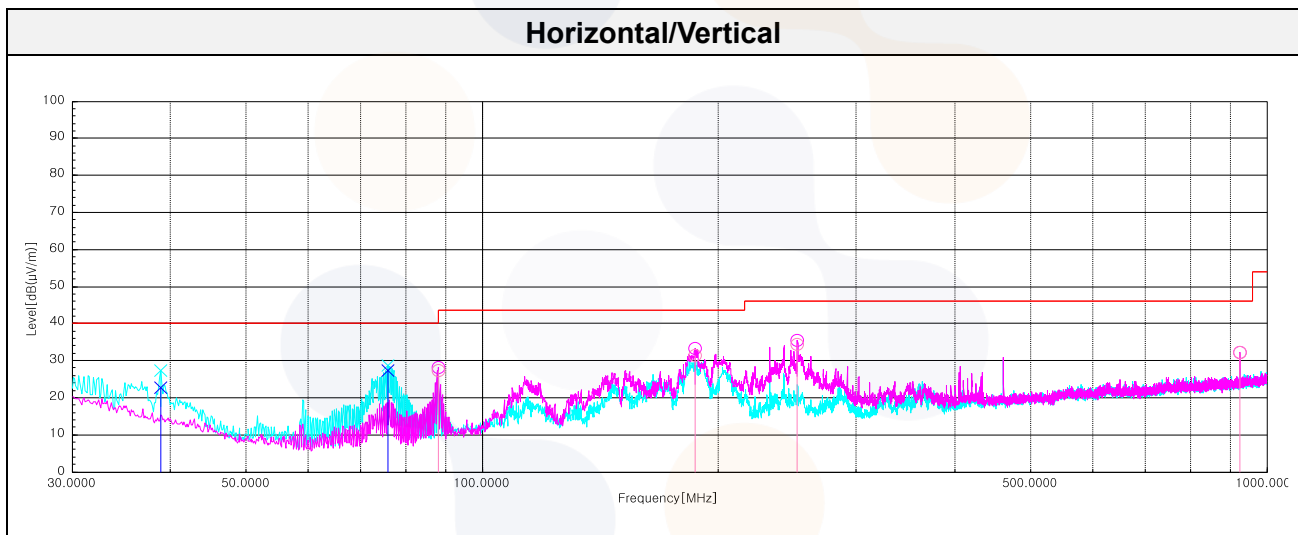


Note. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to $Y-51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to the 15.209(a) limit.

Test results (Below 1 000 MHz)

15.225 (d), RSS-210 B.6.(a).(iv) 30-1 000 MHz

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data								
38.97	V	34.90	20.11	-32.38	-	22.63	40.00	17.37
75.83	V	46.70	12.68	-32.10	-	27.28	40.00	12.72
87.96	H	44.40	14.59	-31.69	-	27.30	40.00	12.70
186.78	H	47.70	15.00	-31.17	-	31.53	43.50	11.97
252.37 ¹⁾	H	46.70	18.74	-30.98	-	34.46	46.00	11.54
924.10	H	34.10	26.50	-28.49	-	32.11	46.00	13.89



[Derivative model: XPQ2-DB]

Worst case: DC 24 V

Test results for fundamental

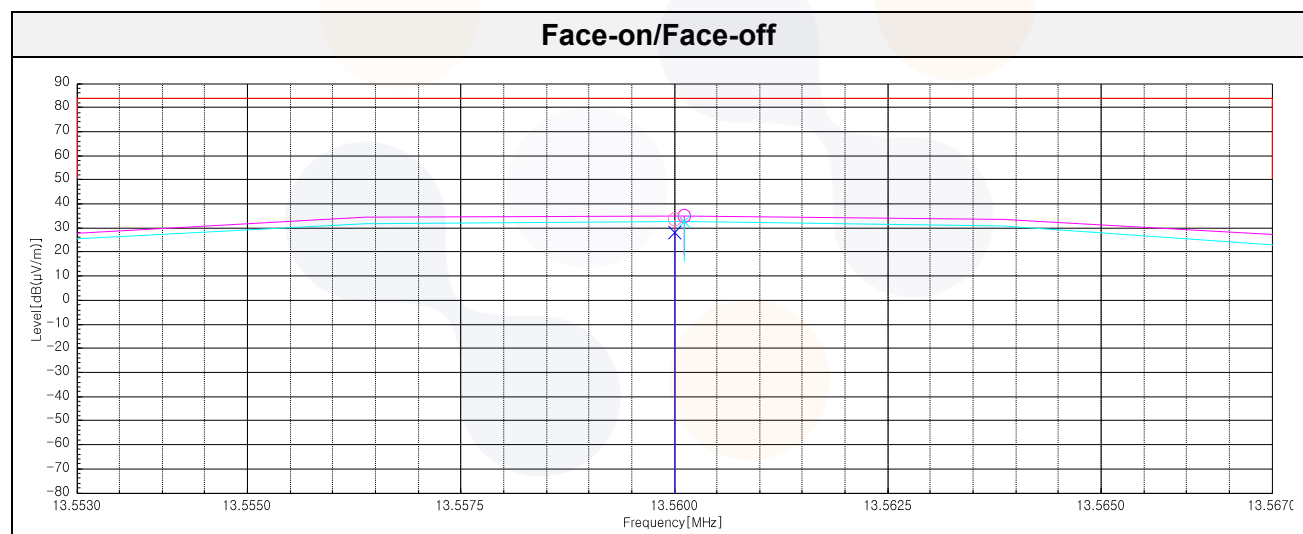
15.225 (a), RSS-210 B.6.(a).(i) 13.553-13.567 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.56	85.50	20.57	-32.49	40.00	33.58	84.00	50.42

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.56	79.80	20.57	-32.49	40.00	27.88	84.00	56.12



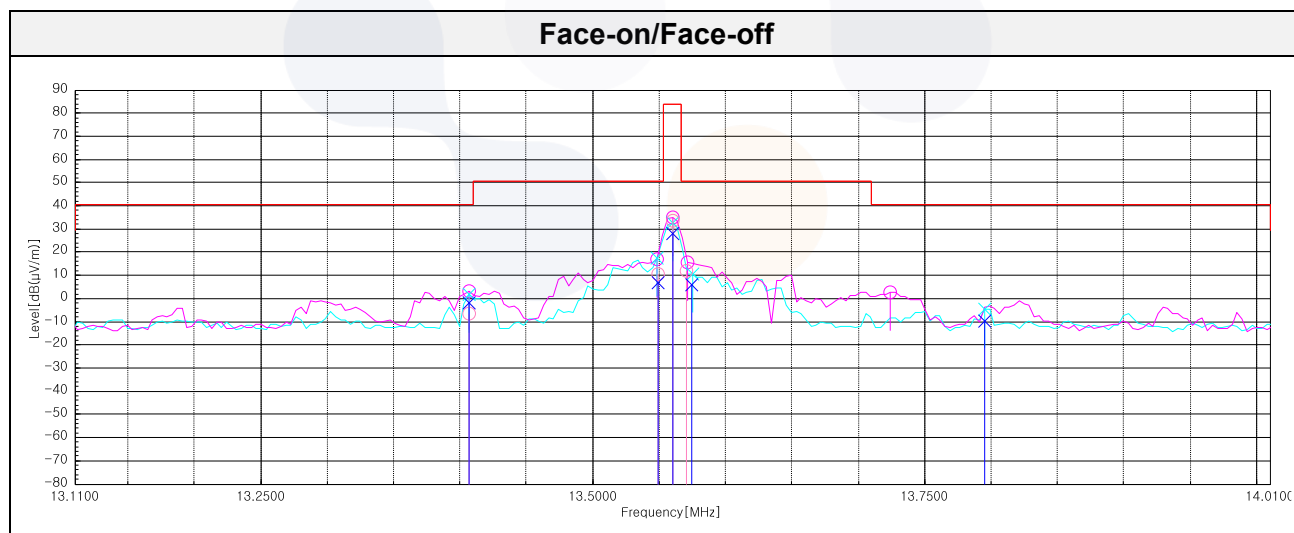
Test results for in-band & out-band (9 kHz to 30 MHz)
15.225 (b,c), RSS-210 B.6.(a).(ii, iii) 13.110-14.010 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.41	45.30	20.57	-32.50	40.00	-6.63	40.50	47.13
13.55	62.40	20.57	-32.49	40.00	10.48	50.50	40.02
13.57	63.60	20.57	-32.49	40.00	11.68	50.50	38.82
13.72	48.90	20.57	-32.48	40.00	-3.01	40.50	43.51

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
13.41	49.80	20.57	-32.50	40.00	-2.13	40.50	42.63
13.55	58.80	20.57	-32.49	40.00	6.88	50.50	43.62
13.58	57.70	20.57	-32.49	40.00	5.78	50.50	44.72
13.80	42.00	20.58	-32.47	40.00	-9.89	40.50	50.39



Note. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to $Y-51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to the 15.209(a) limit.

Test results (9 kHz to 30 MHz)

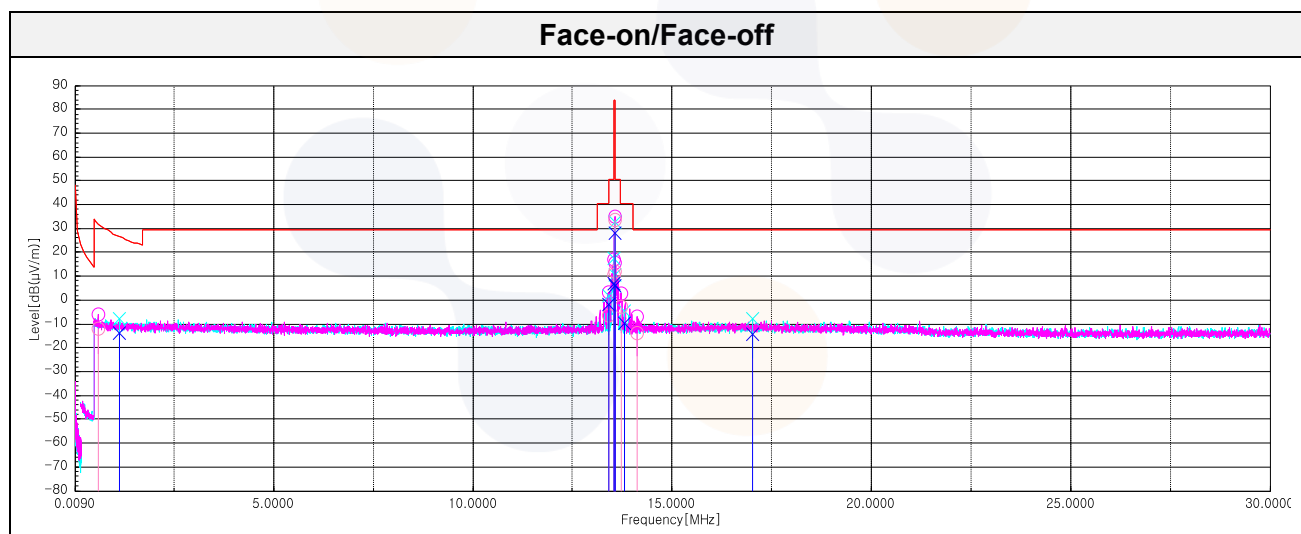
15.225 (d), RSS-210 B.6.(a).(iv) 0.009-30 MHz

[Face-on]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
0.59	40.40	20.22	-32.68	40.00	-12.06	32.10	44.16
14.13	37.90	20.58	-32.45	40.00	-13.97	29.54	43.51

[Face-off]

Frequency	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data							
1.14	38.30	20.31	-32.64	40.00	-14.03	26.50	40.53
17.02	37.30	20.72	-32.44	40.00	-14.42	29.54	43.96

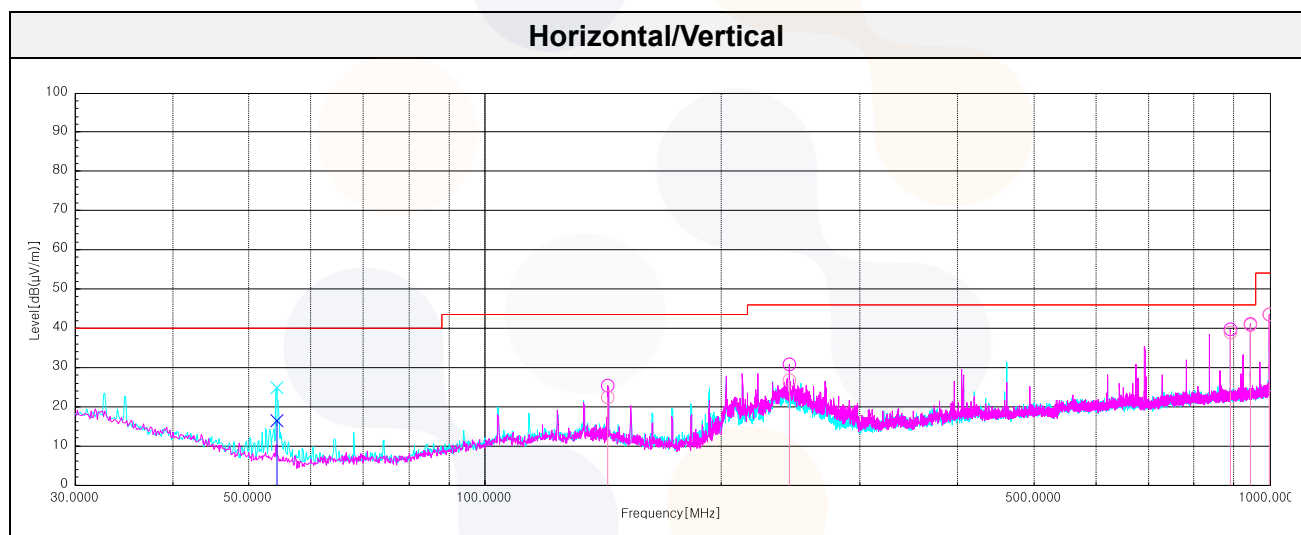


Note. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to $Y-51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to the 15.209(a) limit.

Test results (Below 1 000 MHz)

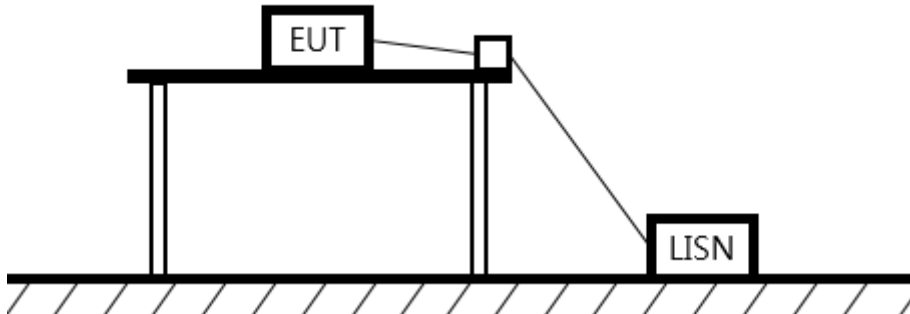
15.225 (d), RSS-210 B.6.(a).(iv) 30-1 000 MHz

Frequency	Pol.	Reading	Antenna Factor	Amp. + Cable	Distance Factor	Result	Limit	Margin
(MHz)	(V/H)	(dB(μV))	(dB)	(dB)	(dB)	(dB(μV/m))	(dB(μV/m))	(dB)
Quasi peak data								
54.25	V	35.80	12.73	-32.07	-	16.46	40.00	23.54
143.49	H	36.70	17.20	-31.61	-	22.29	43.52	21.23
244.01 ¹⁾	H	39.80	17.90	-31.15	-	26.55	46.02	19.47
891.00	H	41.20	26.45	-28.87	-	38.78	46.02	7.24
945.07	H	42.30	26.70	-28.06	-	40.94	46.02	5.08
999.03 ¹⁾	H	43.60	27.30	-27.43	-	43.47	54.00	10.53



6.4. AC Conducted emission

Test setup



Limit

According to 15.207(a), 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 kHz to 30 MHz, 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 (MHz)	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

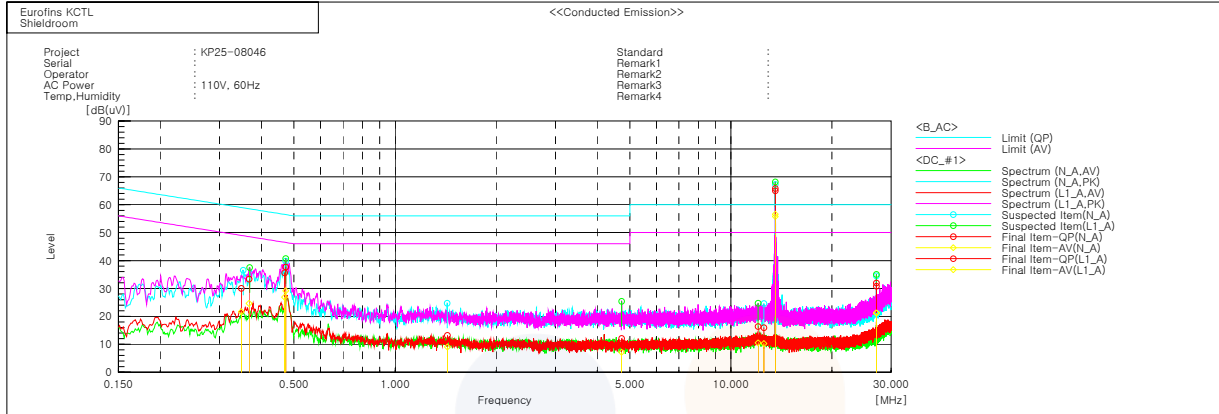
1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 cm in which is located 40 cm away from the vertical wall and 1.5m away from the side wall of the shielded room.
2. Each current-carrying conductor of the EUT power cord was individually connected through a 50Ω/50μH LISN, which is 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 MHz to 30 MHz.
5. The measurements were made with the detector set to peak amplitude within a bandwidth of 10 kHz or to quasi-peak and average within a bandwidth of 9 kHz. The EUT was in transmitting mode during the measurements.

Test results

[XPQ2-APB]

DC 24 V

[Tests with the antenna connected]

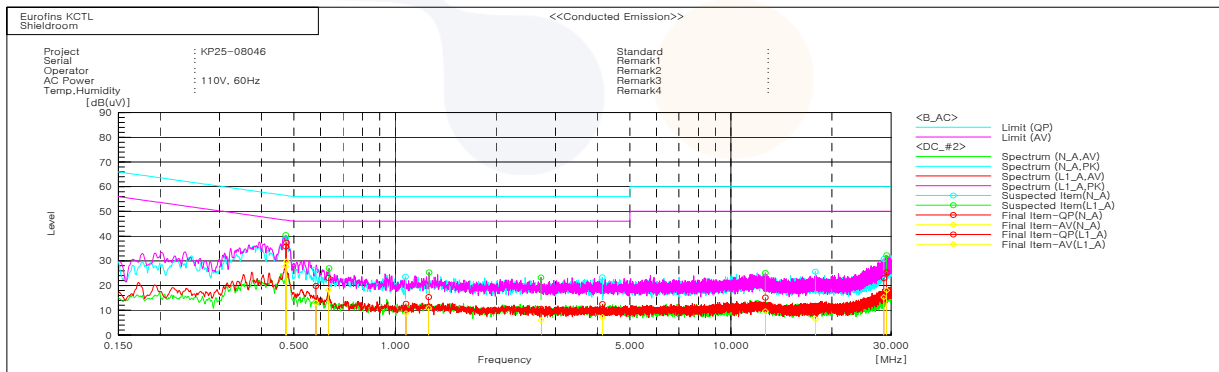


Final Result

--- N_A 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]
1	0.3484	19.7	11.3	10.4	30.1	21.7	59.0	49.0	28.9
2	0.46932	25.1	16.3	10.5	35.6	26.8	56.5	46.5	20.9
3	1.43063	2.9	-1.3	10.3	13.2	9.0	56.0	46.0	42.8
4	12.53961	4.9	-0.7	11.0	15.9	10.3	60.0	50.0	44.1
5	13.55987	54.0	44.8	11.0	65.0	55.8	60.0	50.0	-5.0
6	27.11958	20.4	9.8	11.5	31.9	21.3	60.0	50.0	28.1

--- L1_A 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]
1	0.36775	23.0	14.3	10.4	33.4	24.7	58.6	48.6	25.2
2	0.4723	27.2	18.6	10.5	37.7	29.1	56.5	46.5	18.8
3	4.72745	1.8	-3.2	10.3	12.1	7.1	56.0	46.0	43.9
4	12.04738	5.4	-0.5	11.0	16.4	10.5	60.0	50.0	43.6
5	13.55979	54.7	45.5	11.1	65.8	56.6	60.0	50.0	-5.8
6	27.11773	19.3	9.7	11.5	30.8	21.2	60.0	50.0	29.2

[Retest with a dummy load]

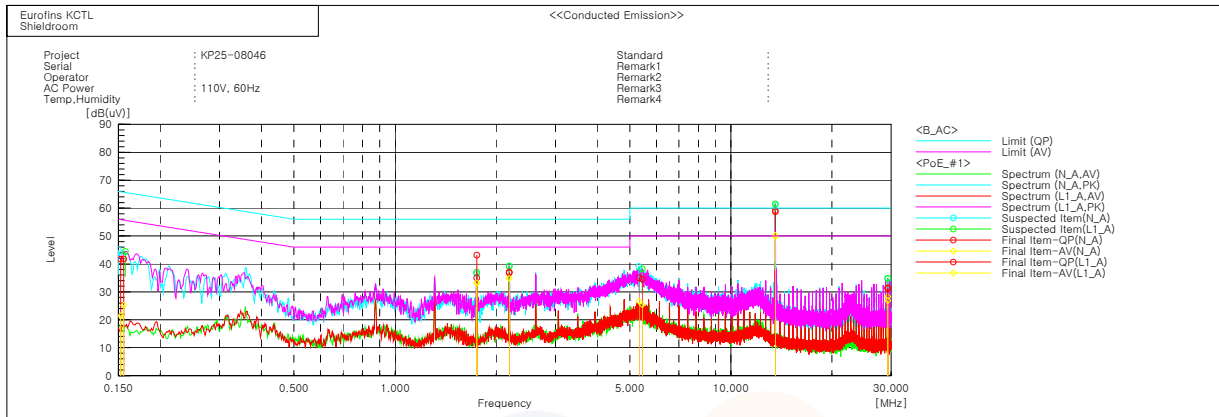


Final Result

--- N_A 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]
1	0.47275	25.3	17.4	10.5	35.8	27.9	56.5	46.5	20.7
2	0.58109	9.3	2.5	10.5	19.8	13.0	56.0	46.0	36.2
3	1.07713	2.3	-1.6	10.3	12.6	8.7	56.0	46.0	43.4
4	4.14281	2.2	-3.1	10.3	12.5	7.2	56.0	46.0	43.5
5	17.85539	-0.1	-4.7	11.2	11.1	6.5	60.0	50.0	48.9
6	28.52813	11.6	3.7	11.5	23.1	15.2	60.0	50.0	36.9

--- L1_A 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]
1	0.47454	26.8	19.2	10.5	37.3	29.7	56.4	46.4	19.1
2	0.63271	12.6	7.8	10.5	23.1	18.3	56.0	46.0	32.9
3	1.26004	5.0	0.6	10.3	15.3	10.9	56.0	46.0	40.7
4	2.71866	0.4	-4.3	10.2	10.6	5.9	56.0	46.0	45.4
5	12.67245	4.1	-1.4	11.0	15.1	9.6	60.0	50.0	44.9
6	29.11262	13.8	6.6	11.5	25.3	18.1	60.0	50.0	34.7

PoE 48 V
[Tests with the antenna connected]

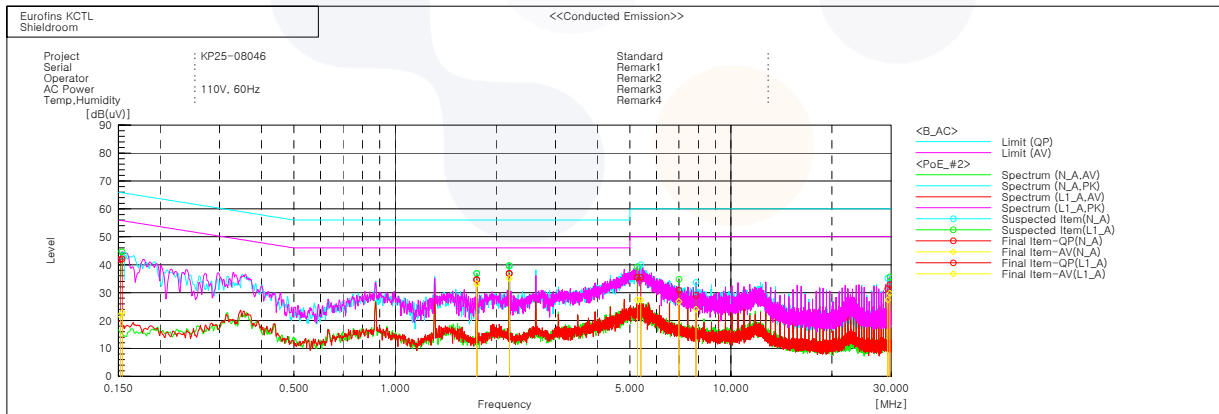


Final Result

--- N_A Phase ---		Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin
No.	Frequency	QP	CAV		QP	CAV	QP	AV	QP	CAV
	[MHz]	[dB(uV)]	[dB(uV)]	[dB]	[dB(uV)]	[dB(uV)]	[dB(uV)]	[dB(uV)]	[dB]	[dB]
1	0.15232	31.4	11.2	10.3	41.7	21.5	65.9	55.9	24.2	34.4
2	1.75139	32.9	22.9	10.2	43.1	33.1	56.0	46.0	12.9	12.9
3	2.18777	26.9	24.8	10.2	37.1	35.0	56.0	46.0	18.9	11.0
4	5.32533	24.8	16.4	10.3	35.1	26.7	60.0	50.0	24.9	23.3
5	13.55962	47.7	38.8	11.0	58.7	49.8	60.0	50.0	1.3	0.2
6	29.31974	20.0	16.7	11.5	31.5	28.2	60.0	50.0	28.5	21.8

--- L1_A Phase ---		Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin
No.	Frequency	QP	CAV		QP	CAV	QP	AV	QP	CAV
	[MHz]	[dB(uV)]	[dB(uV)]	[dB]	[dB(uV)]	[dB(uV)]	[dB(uV)]	[dB(uV)]	[dB]	[dB]
1	0.1555	31.5	14.9	10.3	41.8	25.2	65.7	55.7	23.9	30.5
2	2.18692	26.6	24.6	10.2	36.8	34.8	56.0	46.0	19.2	11.2
3	5.4433	24.2	15.1	10.3	34.5	25.4	60.0	50.0	25.5	24.6
4	13.56007	48.0	39.2	11.1	59.1	50.3	60.0	50.0	0.9	-0.3
5	29.32192	19.7	15.4	11.5	31.2	26.9	60.0	50.0	28.8	23.1
6	1.74958	24.8	23.0	10.2	35.0	33.2	56.0	46.0	21.0	12.8

[Retest with a dummy load]

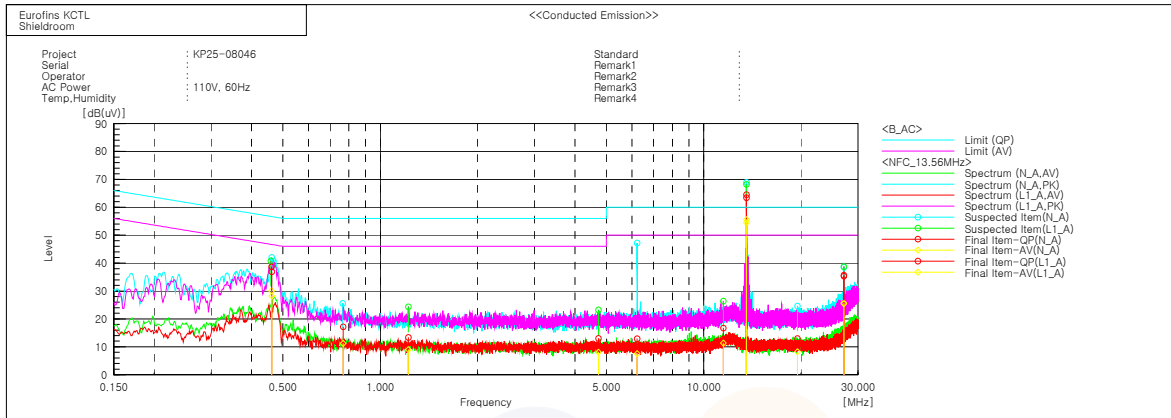


Final Result

--- N_A Phase ---		Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin
No.	Frequency	QP	CAV		QP	CAV	QP	AV	QP	CAV
	[MHz]	[dB(uV)]	[dB(uV)]	[dB]	[dB(uV)]	[dB(uV)]	[dB(uV)]	[dB(uV)]	[dB]	[dB]
1	0.15184	31.6	11.7	10.2	41.8	21.9	65.9	55.9	24.1	34.0
2	1.74967	24.4	22.9	10.2	34.6	33.1	56.0	46.0	21.4	12.9
3	2.18754	26.7	24.9	10.2	36.9	35.1	56.0	46.0	19.1	10.9
4	5.39084	25.2	17.1	10.3	35.5	27.4	60.0	50.0	24.5	22.6
5	7.87737	18.5	13.4	10.6	23.1	24.0	60.0	50.0	30.9	26.0
6	29.32446	19.9	15.9	11.5	31.4	27.4	60.0	50.0	28.6	22.6

--- L1_A Phase ---		Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin
No.	Frequency	QP	CAV		QP	CAV	QP	AV	QP	CAV
	[MHz]	[dB(uV)]	[dB(uV)]	[dB]	[dB(uV)]	[dB(uV)]	[dB(uV)]	[dB(uV)]	[dB]	[dB]
1	0.1539	31.8	12.6	10.3	42.1	22.9	65.8	55.8	23.7	32.9
2	1.74984	24.5	23.0	10.2	34.7	33.2	56.0	46.0	21.3	12.8
3	2.18767	26.6	24.9	10.2	36.8	35.1	56.0	46.0	19.2	10.9
4	5.25536	25.2	17.1	10.3	35.5	27.4	60.0	50.0	24.5	22.6
5	7.00154	20.4	16.3	10.5	30.9	26.8	60.0	50.0	29.1	23.2
6	29.7612	21.3	18.3	11.5	32.8	29.8	60.0	50.0	27.2	20.2

**[Derivative model: XPQ2-DB]
Worst case: DC 24 V**

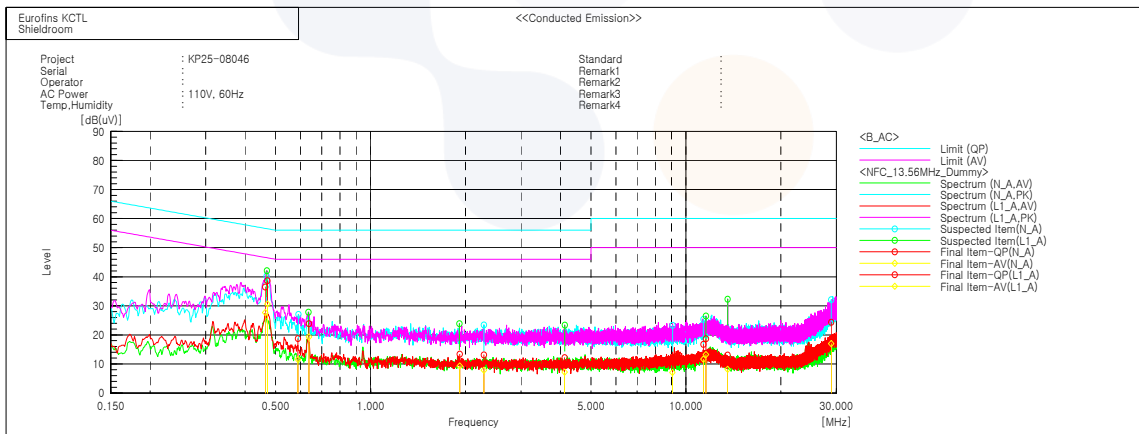


Final Result

--- N_A Phase ---									
No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB]	Result QP [dB(μV)]	Result CAV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin
									QP [dB] CAV [dB]
1	0.461	28.1	19.6	10.5	38.6	30.1	56.7	46.7	18.1 16.6
2	0.7686	6.7	0.8	10.4	17.1	11.2	56.0	46.0	38.9 34.8
3	6.22651	2.5	-2.9	10.4	12.9	7.5	60.0	50.0	47.1 42.5
4	13.55948	52.4	43.4	11.0	63.4	54.4	60.0	50.0	-3.4 -4.4
5	19.48911	1.6	-3.1	11.3	12.9	8.2	60.0	50.0	47.1 41.8
6	27.11965	24.1	14.1	11.5	35.6	25.6	60.0	50.0	24.4 24.4

--- L1_A Phase ---									
No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB]	Result QP [dB(μV)]	Result CAV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin
									QP [dB] CAV [dB]
1	0.46199	26.4	17.7	10.5	36.9	28.2	56.7	46.7	19.8 18.5
2	1.22119	3.0	-1.3	10.3	13.3	9.0	56.0	46.0	42.7 37.0
3	4.72776	2.7	-2.3	10.3	13.0	8.0	56.0	46.0	43.0 38.0
4	11.49727	5.7	0.3	11.0	16.7	11.3	60.0	50.0	43.3 38.7
5	13.55966	53.4	44.4	11.1	64.5	55.5	60.0	50.0	-4.5 -5.5
6	27.12043	23.7	13.9	11.5	35.2	25.4	60.0	50.0	24.8 24.6

[Retest with a dummy load]



Final Result

--- N_A Phase ---									
No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB]	Result QP [dB(μV)]	Result CAV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin
									QP [dB] CAV [dB]
1	0.46351	26.0	17.2	10.5	36.5	27.7	56.6	46.6	20.1 18.9
2	0.58852	8.2	1.0	10.5	18.7	11.5	56.0	46.0	37.3 34.5
3	2.28688	2.9	-2.4	10.2	13.1	7.8	56.0	46.0	42.9 38.2
4	9.06524	0.9	-3.7	10.8	11.7	7.1	60.0	50.0	48.3 42.9
5	11.3609	5.8	0.8	10.9	16.7	11.7	60.0	50.0	43.3 38.3
6	28.88293	12.8	5.5	11.5	24.3	17.0	60.0	50.0	35.7 33.0

--- L1_A Phase ---									
No.	Frequency [MHz]	Reading QP [dB(μV)]	Reading CAV [dB(μV)]	c.f. [dB]	Result QP [dB(μV)]	Result CAV [dB(μV)]	Limit QP [dB(μV)]	Limit AV [dB(μV)]	Margin
									QP [dB] CAV [dB]
1	0.47048	28.2	20.1	10.5	38.7	30.6	56.5	46.5	17.8 15.9
2	0.63766	13.4	8.8	10.5	23.9	19.3	56.0	46.0	32.1 26.7
3	1.91655	3.2	-0.9	10.2	13.4	9.3	56.0	46.0	42.6 36.7
4	4.12368	1.9	-3.1	10.3	12.2	7.2	56.0	46.0	43.8 38.8
5	11.57781	7.6	2.3	11.0	18.6	13.3	60.0	50.0	41.4 36.7
6	13.55768	2.0	-2.9	11.1	13.1	8.2	60.0	50.0	46.9 41.8

7. Measurement equipment

Equipment Name	Manufacturer	Model No.	Serial No.	Next Cal. Date
Spectrum Analyzer	R&S	FSV40	100988	26.04.24
Amplifier	SONOMA INSTRUMENT	310N	421910	26.07.01
Bi-log Antenna	Teseq GmbH	CBL 6112D	61521	26.12.11
Loop Antenna	R&S	HFH2-Z2	100355	26.06.25
Signal & Spectrum Analyzer	R&S	FSV3030	1330.5000K30-101711-nf	26.11.03
Signal Generator	R&S	SMB100A	176206	27.01.15
AC/DC Power Supply	KIKUSUI	PCR2000W	GB001619	26.06.30
Controller	INNCO SYSTEMS	CO3000	1442/54370322/P	N/A
Antenna Mast	INNCO SYSTEMS	MA4640-XP-ET	AM002	N/A
Turn Device	INNCO SYSTEMS	DS1200-S-1t	1	N/A
Temp & Humid Chamber	ESPEC CORP.	SH-661	92004048	26.09.29
TWO-LINE V-NETWORK	R&S	ENV216	101358	26.04.22
EMI TEST RECEIVER	R&S	ESCI3	101408	26.08.11

End of test report