

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 <u>www.kctl.co.kr</u> | | Report No.: KR25-SRF0027 Page(1) of (22) | 🔅 eurofins | | | |
|--|---|--|---------------------------|--|--|--|
| 1. Client | | | | | | |
| ∘ Name | : Samsung Electr | onics Co., Ltd. | | | | |
| ∘ Address | : 129, Samsung-ro Rep. of Korea | , Yeongtong-gu, Suwor | n-si, Gyeonggi-do, 16677, | | | |
| ∘ Date of | Receipt : 2024-11-11 | | | | | |
| 2. Use of Rep | oort : Certification | | | | | |
| 3. Name of P | roduct / Model : | Tablet PC / SM-X356 | В | | | |
| 4. Manufactu | rer / Country of Origin: | Samsung Electronics | Co., Ltd. / Vietnam | | | |
| 5. FCC ID | : A3LSMX356B | | | | | |
| 6. Date of Te | st : 2024-11-29 to 2 | 025-03-06 | | | | |
| 7. Location o | f Test : ■ Permanent Testir | | | | | |
| 8. Test metho | (Address:65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea) 8. Test method used : FCC Part 15 Subpart C, 15.225 | | | | | |
| 9. Test Resul | t : Refer to the test | result in the test repo | rt | | | |
| | Tested by | Technical M | anager | | | |
| Affirmation | | | | | | |
| | Name : Kwonse Kim (S | ignature) Name : Hari | m Lee (Signature) | | | |
| | | | | | | |
| 2025-03-07 | | | | | | |
| Eurofine KCTL Co. Ltd | | | | | | |
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| 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. | | | | | | |
| KCTL-TIR001-00 | 3/7 (220705) | | KP24-07629 | | | |

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REPORT REVISION HISTORY

| Date | Revision | Page No |
|------------|-------------------|---------|
| 2025-03-07 | Originally issued | - |
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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

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1. General information

| Client | : Samsung Electronics Co., Ltd. |
|----------------|---|
| Address | : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea |
| Manufacturer | : Samsung Electronics Co., Ltd. |
| Address | : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea |
| Factory | : Samsung Electronics Vietnam Thai Nguyen Co., Ltd |
| Address | : Yen Binh Industrial Park, Dong Tien Ward, Pho Yen Town, Thai Nguyen Province, Vietnam |
| 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 | : Tablet PC |
|------------------------|-------------------------------------|
| Model | : SM-X356B |
| Modulation technique | : ASK (NFC) |
| Number of channels | : 1 ch |
| Power source | : DC 3.85 V |
| Antenna specification | : FPCB Antenna (Digitizer Embeded) |
| Frequency range | : 13.56 Mb |
| Software version | : X356B.001 |
| Hardware version | : REV1.0 |
| Test device serial No. | : Conducted : R32XB006BEL |
| | Radiated : R32Y100R16L, R32XC01AB0F |
| Operation temperature | : 0 °C ~ 35 °C |

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2.1. Frequency/channel operations

This device contains the following capabilities: NFC

| Ch. | Frequency (Mz) | | |
|------------------|----------------|--|--|
| 01 | 13.56 | | |
| Table 2.1.1. NFC | | | |

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.

-The transmitter has permanently attached FPCB antenna (internal antenna) on board.



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| Summary of t FCC Part section(s) | Parameter | Test Condition | Test results |
|--|-------------------------------|-----------------------------------|-----------------|
| 15.225(a) | In-band Fundamental Emission | | Pass |
| 15.225(b) | In-band Spurious Emission | | Pass |
| 15.225(c) | In-band Spurious Emission | n-band Spurious Emission Radiated | |
| 15.225(d) 15.209 | Out-of-band Spurious Emission | | Pass |
| 15.225(e) | Frequency Stability Tolerance | | Pass |
| 15.215(c) | 20 dB Bandwidth | Conducted | Pass |
| 2.1049 | | Conducted | Pass |
| 15.207(a) | AC Conducted emissions | | 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. 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 **Y** orientation was worst-case orientation. Therefore, all final radiated testing was performed with the EUT in **Y** orientation
- 4. The test procedure(s) in this report were performed in accordance as following.

ANSI C63.10-2013

- 5. All configurations have been performed (Stand-alone, Stand-alone with TA, With accessories).
 - Accessory type: S-pen, TA, DLC, Protective cover
 - Worst case: Stand-alone
- 6. Radiated (fundamental level and spurious emissions) tests were performed both without reading a passive tag condition [test mode] and with reading a passive tag condition
 - Worst case: Without passive tag

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5. 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 (±) | | |
|-----------------------------|--------------------------|---------------|--|
| Dedicted enurious Emissions | Below 30 Mz | 2.3 dB | |
| Radiated spurious Emissions | 30 MHz to 1 000 MHz | 2.6 dB | |
| Conducted Emissions | 150 kHz to 30 MHz | 2.9 dB | |



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6. Test results 6.1. 20 dB Bandwidth

<u>Test setup</u>



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<u>Limit</u>

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.

Test procedure

ANSI C63.10 - Section 6.9.2

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<u>Test settings</u>

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 \ge 3 x 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.

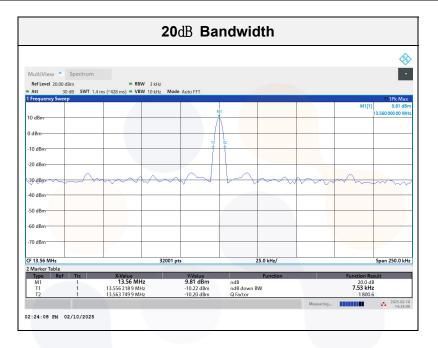
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Test results

| Frequency [朏] | 20 dB Bandwidth [Mtz] | | Limit [Mtz] | 20 dB Bandwidth [Mtz] |
|------------------|--------------------------|--------|----------------|--------------------------|
| 13.56 | Lowest Frequency | 13.556 | 13.110 | 0.007 |
| 13.30 | Highest Frequency | 13.564 | 14.010 | 0.007 |



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

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6.2. Frequency tolerance Test setup



<u>Limit</u>

According to 15.225 (e), 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 C63.10-2013 - Section 6.8.1

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Test results

| Voltage | Voltage | TEMP | Maintaining | Measure frequency | Frequency deviation | Deviation |
|-----------|---------|------------|-------------|----------------------|---------------------|-----------|
| [%] | [V] | [°C] | time | [Hz] | [Hz] | [%] |
| | | | Startup | 13 560 009 | -9.0 | 0.000 07 |
| | | 21 E(Dof) | 2 minutes | 13 560 009 | -9.0 | 0.000 07 |
| | | 21.5(Ref.) | 5 minutes | 13 560 004 | -4.0 | 0.000 03 |
| | | | 10 minutes | 13 560 004 | -4.0 | 0.000 03 |
| | | | Startup | 13 560 007 | -7.0 | 0.000 05 |
| | | 20 | 2 minutes | 13 560 007 | -7.0 | 0.000 05 |
| | | -20 | 5 minutes | 13 560 007 | -7.0 | 0.000 05 |
| | | | 10 minutes | 13 560 007 | -7.0 | 0.000 05 |
| | | | Startup | 13 559 992 | 8.0 | -0.000 06 |
| | | 10 | 2 minutes | 13 559 992 | 8.0 | -0.000 06 |
| | | -10 | 5 minutes | 13 559 992 | 8.0 | -0.000 06 |
| | | | 10 minutes | 13 559 992 | 8.0 | -0.000 06 |
| | | | Startup | 13 560 023 | -23.0 | 0.000 17 |
| | | 0 | 2 minutes | 13 560 023 | -23.0 | 0.000 17 |
| | | 0 | 5 minutes | 13 560 023 | -23.0 | 0.000 17 |
| 400 | 0.05 | | 10 minutes | 13 560 015 | -15.0 | 0.000 11 |
| 100 | 3.85 | 10 | Startup | 13 560 015 | -15.0 | 0.000 11 |
| | | | 2 minutes | 13 560 015 | -15.0 | 0.000 11 |
| | | | 5 minutes | 13 560 031 | -31.0 | 0.000 23 |
| | | | 10 minutes | 13 560 031 | -31.0 | 0.000 23 |
| | | | Startup | 13 560 003 | -3.0 | 0.000 02 |
| | | | 2 minutes | 13 560 006 | -6.0 | 0.000 04 |
| | | 30 | 5 minutes | 13 560 006 | -6.0 | 0.000 04 |
| | | | 10 minutes | 13 560 006 | -6.0 | 0.000 04 |
| | | | Startup | 13 560 004 | -4.0 | 0.000 03 |
| | | 10 | 2 minutes | 13 560 004 | -4.0 | 0.000 03 |
| | | 40 | 5 minutes | 13 560 004 | -4.0 | 0.000 03 |
| | | | 10 minutes | 13 560 014 | -14.0 | 0.000 10 |
| | | | Startup | 13 560 080 | -80.0 | 0.000 59 |
| | | 50 | 2 minutes | 13 560 080 | -80.0 | 0.000 59 |
| | | 50 | 5 minutes | 13 560 080 | -80.0 | 0.000 59 |
| | | | 10 minutes | 13 560 080 | -80.0 | 0.000 59 |
| | | 1 | Startup | 13 559 996 | 4.0 | -0.000 03 |
| | 0.75 | 04 5 | 2 minutes | 13 559 996 | 4.0 | -0.000 03 |
| End Point | 2.75 | 21.5 | 5 minutes | 13 560 003 | -3.0 | 0.000 02 |
| | | | 10 minutes | 13 560 003 | -3.0 | 0.000 02 |
| | | | Startup | 13 559 984 | 16.0 | -0.000 12 |
| | 4.40 | o | 2 minutes | 13 559 984 | 16.0 | -0.000 12 |
| 115 | 4.43 | 21.5 | 5 minutes | 13 559 984 | 16.0 | -0.000 12 |
| | | | 10 minutes | 13 559 989 | 11.0 | -0.000 08 |

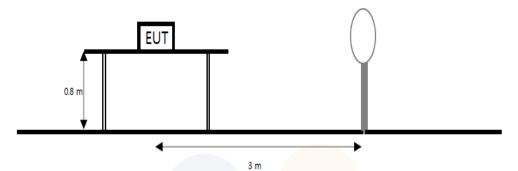
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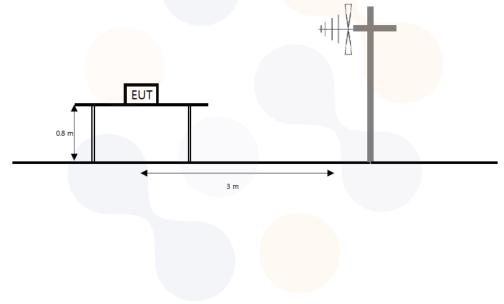
6.3. Radiated spurious emissions

<u>Test setup</u>

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 Mz to 1 Gz emissions.



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<u>Limit</u>

According to section 15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency (Mz) | Field strength (μ /m) | Measurement distance (m) |
|----------------|----------------------------|--------------------------|
| 0.009 - 0.490 | 2 400/F(kHz) | 300 |
| 0.490 - 1.705 | 24 000/F(kHz) | 30 |
| 1.705 - 30 | 30 | 30 |
| 30 - 88 | 100** | 3 |
| 88 - 216 | 150** | 3 |
| 216 - 960 | 200** | 3 |
| Above 960 | 500 | 3 |

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

According to section 15.225 (a), The field strength of any emission within the band 13.553-13.567 Mb shall not exceed 15, 848 microvolts/meter at 30 meters.

According to section 15.225 (b), With in the bands 13.410-13.553 Mar and 13.567-13.710 Mar, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

According to section 15.225 (c), With in the bands 13.110-13.410 Mz and 13.710-14.010 Mz, the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

According to section 15.225 (d), The Field Strength of any emissions appearing outside of the 13.110-14.010 Mb band shall not exceed the general radiated emission limits in 15.209.



<u>Test procedure</u>

ANSI C63.10-2013 - 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 \ge 3 x RBW
- 4. Detector = peak
- 5. Sweep time = auto couple
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

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 Mtz to 1 000 Mtz | 100 kHz to 120 kHz |
| > 1 000 MHz | 1 MHz |

Notes:

- 1. f < 30 Mz, extrapolation factor of 40 dB/decade of distance. $F_d = 40\log(D_m/D_s)$
 - f ≥30 Mb, extrapolation factor of 20 dB/decade of distance. F_d = 20log(D_m/Ds) Where:

F_d= Distance factor in dB

- D_m= Measurement distance in meters
- D_s= Specification distance in meters
- 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 log10(30/3) = 40 dB.
- 3. Factors(dB) = Antenna factor(dB/m) + Cable loss(dB) + or Amp. gain(dB) + or $F_d(dB)$
- 4. Result = Reading + Cable loss + Amp gain + Ant. factor Distance factor
- 5. The worst-case emission are reported however emissions whose levels were not within 20 dB of respective limits were not reported.
- 6. All measurements were recorded using a spectrum analyzer employing a quasi-peak detector.
- 7. Below 30 Mb 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.
- 8. Face-on = Parallel, Face-off = Perpendicular
- 9. ¹⁾ means restricted band

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Test results for fundamental

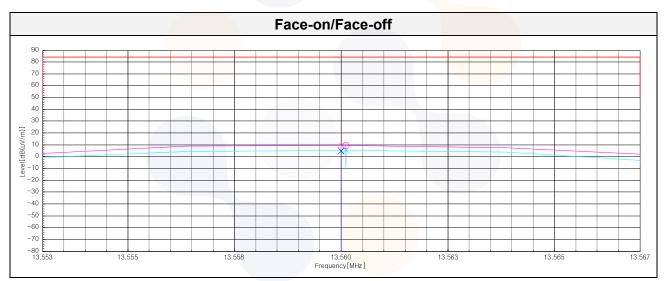
13.553-13.567 Mtz

[Face-on]

| Frequency | Reading | Antenna Factor | Amp. + Cable | Distance Factor | Result | Limit | Margin | |
|-----------------|----------|-------------------|--------------|--------------------|------------------------------|------------------------------|--------|--|
| (MHz) | (dB(µN)) | (dB) | (dB) | (dB) | (dB(<i>µ</i> V/ m)) | (dB(<i>µ</i> V/ m)) | (dB) | |
| Quasi peak data | | | | | | | | |
| 13.56 | 61.00 | 20.57 | -32.33 | 40.00 | 9.24 | 84.00 | 74.76 | |

[Face-off]

| Frequency | Reading | Antenna Factor | Amp. + Cable | Distance Factor | Result | Limit | Margin | |
|-----------------|----------|-------------------|--------------|--------------------|------------------------------|------------------------------|--------|--|
| (MHz) | (dB(µN)) | (dB) | (dB) | (dB) | (dB(<i>µ</i> V/ m)) | (dB(<i>µ</i> V/ m)) | (dB) | |
| Quasi peak data | | | | | | | | |
| 13.56 | 56.70 | 20.57 | -32.33 | 40.00 | 4.94 | 84.00 | 79.06 | |



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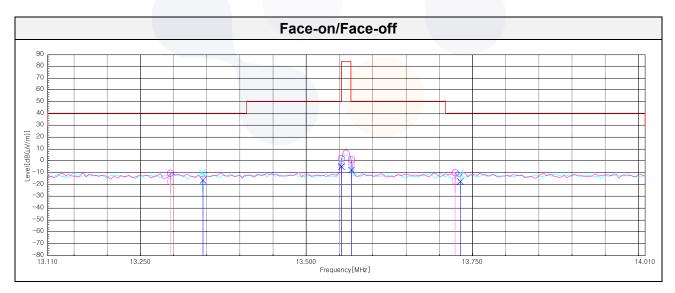
Test results for in-band & out-band (9 kt to 30 Mt)

<u>13.110-14.010 Mt</u>

[Face-on]

| Frequency | Reading | Antenna Factor | Amp. + Cable | Distance Factor | Result | Limit | Margin | |
|-----------------|----------|-------------------|--------------|---------------------|------------------------------|------------------------------|--------|--|
| (MHz) | (dB(µN)) | (dB) | (dB) | (dB) | (dB(<i>µ</i> V/ m)) | (dB(<i>µ</i> V/ m)) | (dB) | |
| Quasi peak data | | | | | | | | |
| 13.30 | 34.60 | 20.57 | -32.36 | 40.00 | -17.19 | 40.51 | 57.70 | |
| 13.55 | 49.20 | 20.57 | -32.33 | 40.00 | -2.56 | 50.47 | 53.03 | |
| 13.57 | 49.40 | 20.57 | -32.33 | 40.00 | -2.36 | 50.47 | 52.83 | |
| 13.72 | 34.70 | 20.57 | -32.32 | 4 <mark>0.00</mark> | -17.05 | 40.51 | 57.56 | |

[Face-off] Antenna Distance Frequency Reading Amp. + Cable Result Limit Margin Factor Factor (MHz) $(dB(\mu V))$ (dB) (dB) (dB) (dB(µV/m)) (dB(µN/m)) (dB) Quasi peak data 13.34 35.10 20.57 -32.35 40.00 -16.68 40.51 57.19 13.55 46.90 20.57 -32.33 40.00 -4.86 50.47 55.33 13.57 43.80 -32.33 40.00 -7.96 50.47 20.57 58.43 34.50 -32.32 -17.25 57.76 13.73 20.57 40.00 40.51



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Test results (9 kt/z to 30 Mt/z)

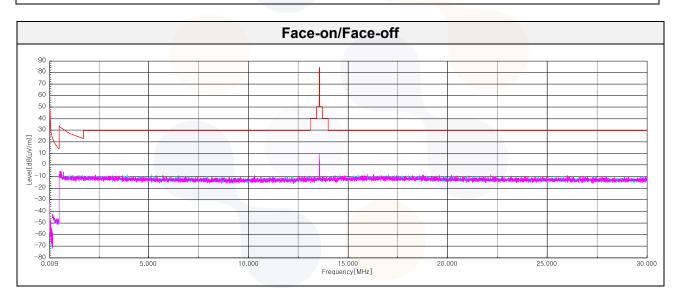
0.009-30 MHz

[Face-on]

| Frequency | Reading | Antenna Factor | Amp. + Cable | Distance Factor | Result | Limit | Margin | |
|---|----------|-------------------|--------------|--------------------|------------|------------------------------|--------|--|
| (MHz) | (dB(µN)) | (dB) | B) (dB) (| | (dB(µN/m)) | (dB(<i>µ</i> V/ m)) | (dB) | |
| Quasi peak data | | | | | | | | |
| No spurious emissions were detected within 20 dB of the limit. | | | | | | | | |

[Face-off]

| Frequency | Reading | Antenna Factor | Amp. + Cable | Distance Factor | Result | Limit | Margin | |
|--|----------|-------------------|--------------|--------------------|---------------------|------------------------------|--------|--|
| (MHz) | (dB(µN)) | (dB) | (dB) | (dB) | (dB(<i>µ</i> V/m)) | (dB(<i>µ</i> V/ m)) | (dB) | |
| Quasi peak data | | | | | | | | |
| No spurious emissions were detected within 20 dB of the limit. | | | | | | | | |



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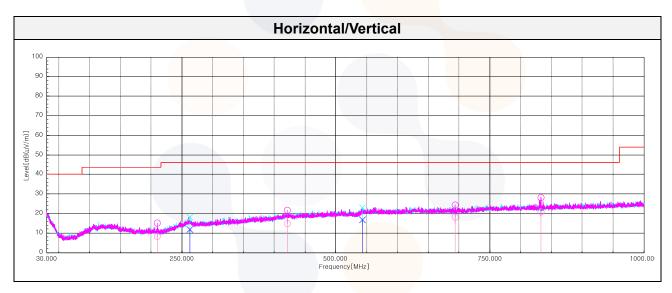


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Test results (Below 1 000 Mtz)

30-1000 MHz

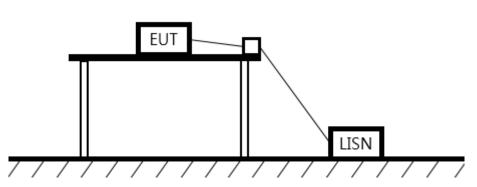
| Frequency | Pol. | Reading | Antenna Factor | Amp. + Cable | Distance Factor | Result | Limit | Margin | | |
|----------------------|-----------------|----------|-------------------|--------------|--------------------|------------------------------|------------------------------|--------|--|--|
| (MHz) | (V/H) | (dB(µV)) | (dB) | (dB) | (dB) | (dB(<i>µ</i> V/ m)) | (dB(<i>µ</i> V/ m)) | (dB) | | |
| | Quasi peak data | | | | | | | | | |
| 209.94 | Н | 24.30 | 15.11 | -31.11 | - | 8.30 | 43.52 | 35.22 | | |
| 262.68 ¹⁾ | V | 23.20 | 19.67 | -30.98 | - | 11.89 | 46.02 | 34.13 | | |
| 421.03 | Н | 22.90 | 22.70 | -30.68 | - | 14.92 | 46.02 | 31.10 | | |
| 543.01 | V | 23.10 | 24.20 | -30.46 | - | 16.84 | 46.02 | 29.18 | | |
| 693.84 | Н | 23.50 | 24.90 | -30.38 | - | 18.02 | 46.02 | 28.00 | | |
| 832.80 | Н | 24.50 | 25.80 | -29.58 | - | 20.72 | 46.02 | 25.30 | | |



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6.4. AC Conducted emission Test setup



<u>Limit</u>

According to 15.207(a), 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 kt to 30 Mt, 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 (Mb) | Conducted limit (dBµV/m) | | | | | |
|----------------------------|--------------------------|----------|--|--|--|--|
| Frequency of Emission (胐) | 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 $50\Omega/50\mu$ H 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 Mb to 30 Mb.
- 5. The measurements were made with the detector set to peak amplitude within a bandwidth of 10 klb or to quasi-peak and average within a bandwidth of 9 klb. The EUT was in transmitting mode during the measurements.

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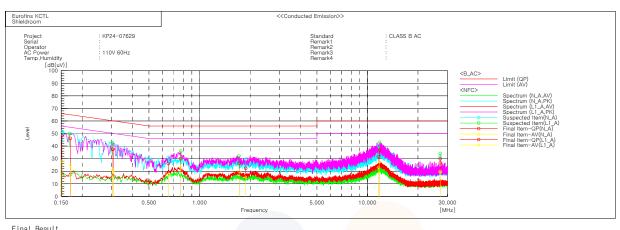
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Test results



| Final Result | | | | | | | |
|----------------------------------|---------------------------------------|--------------------|---------------------------|--------------------------|-----------------------|----------------------|----------------------|
| L2 Phase No. Frequency Read | | | Resul t | Limit | Limit | Margin | Margin |
| QF [MHz] [dB(u 1 0.1515 38 | CAV V)] [dB(uV)] [dB .4 17.9 10 | | CAV [dB(uV)] [27.9 | QP [dB(uV)] [65.9 | AV dB(uV)] 55.9 | QP [dB] 17.5 | CAV [dB] 28.0 |
| 2 0.30583 27 3 0.65196 16 | | .9 37.6 .0 26.1 | 20.5 17.4 15.1 | 60.1 56.0 56.0 | 50.1 46.0 | 22.5 29.9 33.7 | 29.6 28.6 30.9 |
| 5 11.61751 21 | | .5 31.6 | 23.1 19.1 | 60.0 60.0 | 46.0 50.0 50.0 | 28.4 30.2 | 26.9 30.9 |
| L3 Phase | | | | | | | |
| No. Frequency Read | ing Reading c.t CAV | f Result QP | Result CAV | Limit QP | Limit AV | Margin QP | Margin CAV |
| [MHz] [dB(u | <pre>V)] [dB(uV)] [dE</pre> | B] [dB(uV)] | [dB(uV)] [| [dB(uV)] [| dB(uV)] | [dB] | [dB] |
| | .6 11.0 9 | .9 37.5 | 24.8 20.9 | 64.9 60.2 | 54.9 50.2 | 18.8 22.7 | 30.1 29.3 |
| | .0 13.0 10 .4 9.7 9 | .0 30.0 .9 26.3 | 23.0 19.6 | 56.0 56.0 | 46.0 46.0 | 26.0 29.7 | 23.0 26.4 |
| 5 11.82277 26 | | .5 36.6 | 27.3 20.0 | 60.0 60.0 | 50.0 50.0 | 23.4 33.5 | 22.7 30.0 |

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| 7. Measureme | ent equipment | | | |
|----------------------------------|----------------------|----------------------|-------------|----------------|
| Equipment Name | Manufacturer | Model No. | Serial No. | Next Cal. Date |
| Spectrum Analyzer | R&S | FSV3044 | 101427 | 25.03.28 |
| Spectrum Analyzer | R&S | FSV40 | 100988 | 25.05.27 |
| EMI TEST RECEIVER | R&S | ESCI3 | 100001 | 25.08.12 |
| Signal Generator | R&S | SMB100A | 176206 | 26.01.17* |
| Vector Signal Generator | R&S | SMBV100A | 257566 | 25.07.01 |
| DC Power Supply | AGILENT | E3632A | MY40000265 | 25.04.24 |
| DC Power Supply | POWERCOM | DCP-50100A | 20220610-01 | 26.01.16* |
| Bi-log Antenna | Teseq GmbH | CBL 6112D | 61521 | 26.12.11 |
| Loop Antenna | R&S | HFH2-Z2 | 100355 | 26.06.25 |
| Amplifier | SONOMA INSTRUMENT | 3 <mark>10N</mark> | 421910 | 25.10.11 |
| TWO-LINE V - NETWORK | R&S | EN <mark>V216</mark> | 101358 | 25.10.13 |
| TEMP. & HUMIDITY TEST CHAMBER | HANYOUNG NUX | HY-LTH2 | A33-080910 | 25.07.25 |

*This equipment was calibrated during the test period, and was used after calibration.

End of test report