**DEKRA Testing and Certification, S.A.U.**
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2 · 29590 Campanillas · Málaga · España
C.I.F. A29 507 456

Test report No:
80633REM.002

# Test report

## FCC Rules and Regulations CFR 47, Part 15, Subpart B and C (10-1-23 Edition) & ICES-003 Issue 7 (October 2020)

| | |
|---|---|
| (*) Identification of item tested | Central In-Vehicle Infotainment Computer |
| (*) Trademark | BOSCH |
| (*) Model and /or type reference | MBCI2LS4PR1 |
| Other identification of the product | FCC ID: 2AUXS-MBCI2LS4PR1 |
| (*) Features | HW version: D22<br>SW version: E326.0 |
| Manufacturer | Robert Bosch GmbH<br>Robert-Bosch-Platz 1, 70839 Gerlingen. GERMANY |
| Test method requested, standard | FCC Rules and Regulations CFR 47, Part 15, Subpart B and C (10-1-23 Edition) & ICES-003 Issue 7 (October 2020) |
| Summary | IN COMPLIANCE |
| Approved by (name / position & signature) | José Manuel Gómez<br>EMC Consumer & RF<br>Lab. Manager<br>Firmado digitalmente por 53680346W JOSE MANUEL GOMEZ (C:A29507456) |
| Date of issue | 2025-02-24 |
| Report template No | FDT08_25<br>(*) "Data provided by the client" |

# Index

ACRONYMS ..... 3
COMPETENCES AND GUARANTEES ..... 3
GENERAL CONDITIONS ..... 3
UNCERTAINTY ..... 4
DATA PROVIDED BY THE CLIENT ..... 4
USAGE OF SAMPLES ..... 5
TEST SAMPLE DESCRIPTION ..... 6
IDENTIFICATION OF THE CLIENT ..... 8
TESTING PERIOD AND PLACE ..... 8
DOCUMENT HISTORY ..... 8
ENVIRONMENTAL CONDITIONS ..... 9
REMARKS AND COMMENTS ..... 10
TESTING VERDICTS ..... 10
LIST OF EQUIPMENT USED DURING THE TEST ..... 10
SUMMARY ..... 11
APPENDIX A: TEST RESULTS ..... 12

# Acronyms

| Acronym ID | Acronym Description |
|---|---|
| Code | EMC Test Code |
| Freq Rng | Frequency Range |
| MP | Measurement Point |
| OM | Operation Mode |
| S/ | Sample |
| V | Verdict |

# Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification S.A.U. at the time of performance of the test.

DEKRA Testing and Certification S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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1. This report is only referred to the item that has undergone the test.
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# Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is I = ± 4,9 dB for quasi-peak measurements, I = ± 4,6 dB for peak measurements (k= 2).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 12.75 GHz is I = ± 2,6 dB for peak and average measurements (k = 2).

# Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").

2. The sample consists of CIVIC Central In-Vehicle Infotainment Computer, including WLAN/ Bluetooth, GPS, AM/FM/DAB receiver.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results. The laboratory is not responsible for such information and it is not covered by accreditation.

# Usage of samples

Samples undergoing test have been selected by: The client.

| Id | Control Number | Description | Model | Serial Nº | Date of Reception | Application |
|---|---|---|---|---|---|---|
| S/01 | 80633C_46.1 | CIVIC | MBCI2LS4PR1 | 0770760 | 2024-12-19 | Element Under Test |
| S/01 | 80633C_10.1 | USB-USB adapter | -- | -- | 2024-12-18 | Auxiliary Element |
| S/01 | 80633C_100.1 | Fakra 4x1 cable | -- | -- | 2024-12-20 | Auxiliary Element |
| S/01 | 80633C_103.1 | Antenna | -- | -- | 2024-12-20 | Auxiliary Element |
| S/01 | 80633C_104.1 | Antenna | -- | -- | 2024-12-20 | Auxiliary Element |
| S/01 | 80633C_105.1 | Antenna | -- | -- | 2024-12-20 | Auxiliary Element |
| S/01 | 80633C_106.1 | Antenna | -- | -- | 2024-12-20 | Auxiliary Element |
| S/01 | 80633C_30.1 | Harness | SA1 CID 14.4" | -- | 2024-12-18 | Auxiliary Element |
| S/01 | 80633C_43.1 | Harness | -- | -- | 2024-12-18 | Auxiliary Element |
| S/01 | 80633C_6.1 | Fakra 1X4 cable | -- | -- | 2024-12-18 | Auxiliary Element |
| S/01 | 80633C_61.1 | Fakra / Ethernet - VGA Cable | -- | -- | 2024-12-19 | Auxiliary Element |
| S/01 | 80633C_8.1 | Fakra-USB cable | -- | -- | 2024-12-18 | Auxiliary Element |
| S/01 | 80633C_9.1 | Harness | -- | -- | 2024-12-18 | Auxiliary Element |

Notes referenced to samples during the project:

| Id | Note |
|---|---|
| S/01 | Sample used for testing. |

# Test sample description

| | | | | | |
|---|---|---|---|---|---|
| Ports…… : | Port name and description | Cable | | | |
| | | Specified max length [m] | Attached during test | Shielded | Coupled to patient(3) |
| | Main Connector | 2m | [X] | [ ] | [ ] |
| | Most Connector | 2m | [X] | [ ] | [ ] |
| | Fakra Quad Connector AM | | [X] | [X] | [ ] |
| | Fakra Quad Connector FM | | [X] | [X] | [ ] |
| | Fakra Quad Connector DAB | | [X] | [X] | [ ] |
| | Fakra Single Connector GPS | | [X] | [X] | [ ] |
| | Fakra Quad Connector WLAN | | [X] | [X] | [ ] |
| | Fakra Quad Connector BT | | [X] | [X] | [ ] |
| | -- | | [ ] | [ ] | [ ] |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Supplementary information to the ports…… : | | | | | | | |
| Rated power supply .....: | Voltage and Frequency | | Reference poles | | | | |
| | | | L1 | L2 | L3 | N | PE |
| | [ ] | AC: | [ ] | [ ] | [ ] | [ ] | [ ] |
| | [X] | DC: 12Vdc | | | | | |
| Rated Power .....: | | | | | | | |
| Clock frequencies.....: | | | | | | | |
| Other parameters .....: | | | | | | | |
| Software version : | E326.0 | | | | | | |
| Hardware version .....: | D22 | | | | | | |
| Dimensions in cm (W x H x D) ....: | | | | | | | |
| Mounting position .....: | | Table top equipment | | | | | |
| | | Wall/Ceiling mounted equipment | | | | | |
| | | Floor standing equipment | | | | | |
| | | Hand-held equipment | | | | | |
| | [X] | Other: Cluster in the car | | | | | |

| | | | |
|---|---|---|---|
| Modules/parts.....: | Module/parts of test item | Type | Manufacturer |
| | | | |

| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| Accessories (not part of the test item) .....: | Description | Type | Manufacturer |
| | Antennas | | |
| | HUD | | |
| | SA2 Panel | | |
| | Cameras | | |
| | | | |
| | | | |
| Documents as provided by the applicant .....: | Description | File name | Issue date |
| | | | |
| | | | |
| | | | |
| | | | |

(3) Only for Medical Equipment

# Identification of the client

Robert Bosch GmbH
Robert-Bosch-Strasse 200
31139 Hildesheim, GERMANY

# Testing period and place

| | |
|---|---|
| **Test Location** | DEKRA Testing and Certification S.A.U. |
| **Date (start)** | 2025-02-10 |
| **Date (finish)** | 2025-02-10 |

# Document history

| Report number | Date | Description |
|---|---|---|
| 80633REM.002 | 2025-02-24 | First release |

# Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 30 %<br>Max. = 75 % |
| **Air pressure** | Min. = 860mbar<br>Max. = 1060mbar |

In the semianechoic chamber, the following limits were not exceeded during the test.

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 30 %<br>Max. = 75 % |
| **Air pressure** | Min. = 860mbar<br>Max. = 1060mbar |

In the chamber for conducted measurements, the following limits were not exceeded during the test:

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 30 %<br>Max. = 60 % |
| **Air pressure** | Min. = 860mbar<br>Max. = 1060mbar |

# Remarks and comments

The tests have been performed by the technical personnel: Miguel Manuel López Guzmán.

# Testing verdicts

| | |
|---|---|
| Fail | F |
| Inconclusive | I |
| Not applicable | N/A |
| Not measured | N/M |
| Pass | P |
| Partial Passed | P* |

# List of equipment used during the test

| Control No. | Equipment | Model | Manufacturer | Next Calibration |
|---|---|---|---|---|
| 08866 | EMI TEST RECEIVER 2Hz-44GHz | ESW44 | ROHDE AND SCHWARZ | 2026-06-12 |
| 06132 | ETHERNET TEMPERATURE AND HUMIDITY LOGGER | HWg-STE | HW GROUP | 2025-04-09 |
| 06126 | ETHERNET TEMPERATURE AND HUMIDITY LOGGER | HWg-STE | HW GROUP | 2025-04-04 |
| 04612 | HORN ANTENNA 1-18GHz | BBHA 9120 D | SCHWARZBECK MESS-ELEKTRONIK | 2027-10-15 |
| 04657 | HORN ANTENNA 18-40GHz | BBHA 9170 | SCHWARZBECK | 2026-06-12 |
| 05641 | HYBRID BILOG ANTENNA 30MHz-6GHz | 3142E | ETS LINDGREN | 2027-10-23 |
| 08856 | PRE-AMPLIFIER G>30dB 18-40GHz | BLMA 1840-4A | BONN ELEKTRONIK | 2025-02-27 |
| 09360 | PRE-AMPLIFIER G>40dB 1-18 GHz | BLMA 0118-1M | BONN ELEKTRONIK | 2025-08-05 |
| 06064 | SEMIANECHOIC ABSORBER LINED CHAMBER | SAC-3 | Frankonia | -- |
| 06329 | SHIELDED ROOM | -- | FRANKONIA | -- |
| 04848 | SOFTWARE FOR EMC/RF TESTING | EMC32 | ROHDE AND SCHWARZ | -- |

# Summary

| Test Specification | Requirement – Test case | Verdict | Remark |
|---|---|---|---|
| FCC CFR 47, Part 15, Subpart B (10-1-23 Edition) & ICES-003 Issue 7 (October 2020) | RE Radiated emission. Electromagnetic field measure | P | (1) |
| FCC CFR 47, Part 15, Subpart B (10-1-23 Edition) & ICES-003 Issue 7 (October 2020) | CE Continuous conducted emission | N/A | (2) |

Supplementary information and remarks:

(1) Test required only to the 5th harmonics of the maximum internal work frequency in the EUT.
(2) According to the standards, this test is not applicable because EUT is powered in DC.

# **Appendix A:** Test results

# Appendix A content

DESCRIPTION OF THE OPERATION MODES .....14
TEST STANDARDS VERSION APPLIED .....15
TEST CASES DETAILS .....16

# Description of the operation modes

The operation modes described in this paragraph constitute a functionality of the sample under test for itself.

The operation modes used by the samples to which the present report refers, are shown in the following table:

| Id | Description |
|---|---|
| OM/01 | EUT ON. Bluetooh, Wifi 2.4GHz and Wifi 5GHz OFF.<br>GNSS module pending to receive satellites signals.<br>Radio Receiving broadcast signal at 98 MHz FM.<br>Power supply: 12 Vdc. |

# Test standards version applied

The product standards and test standards applied for each test cases are shown in the following table:

| Product Test Standard | Test standard | Requirement – Test case |
|---|---|---|
| FCC CFR 47, Part 15, Subpart B (10-1-23 Edition) & ICES-003 Issue 7 (October 2020) | ANSI C63.4 (2014) | RE Radiated emission. |

# Test Cases Details

## FCC 47 CFR Part 15B

### RE Radiated emission. Electromagnetic field measure

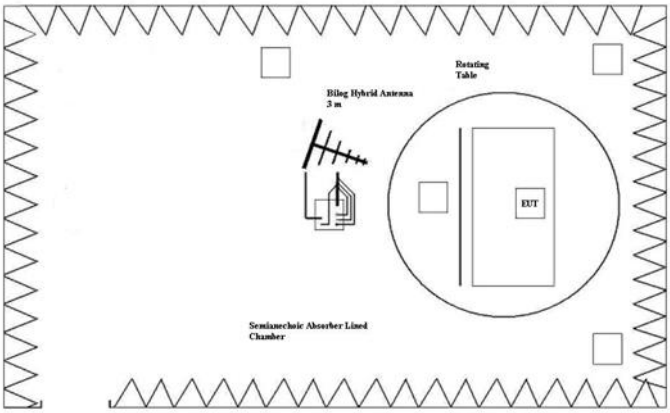
**Limits of interference Class B**

The applied limit for radiated emissions, 3 m distance, according to the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-23 Edition), Secs. 15.109 & ICES-003 Issue 7 (October 2020)

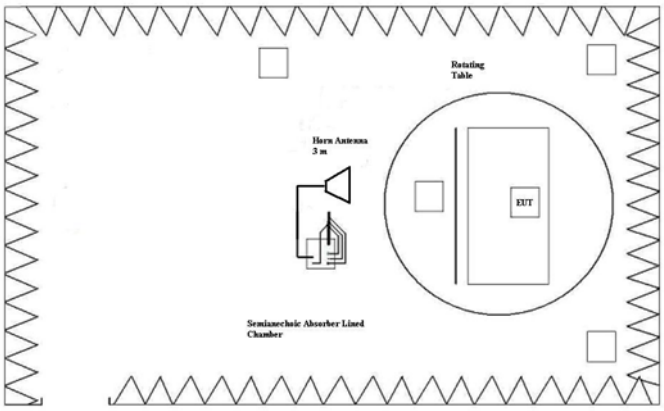
| Frequency range (MHz) | FCC Part 15B | | ICES-003 Issue 7 | | FCC Part 15B & ICES-003 Issue 7 | |
|---|---|---|---|---|---|---|
| | QP Limit for 3 m | | QP Limit for 3 m | | PK Limit for 3 m | AVG Limit for 3 m |
| | (µV/m) | (dBµV/m) | (µV/m) | (dBµV/m) | (dBµV/m) | (dBµV/m) |
| 30 to 88 | 100 | 40 | 100 | 40 | --- | --- |
| 88 to 216 | 150 | 43.5 | 150 | 43.5 | --- | --- |
| 216 to 230 | 200 | 46 | 200 | 46 | --- | --- |
| 230 to 960 | 200 | 46 | 224 | 47 | | |
| 960 to 1000 | 500 | 54 | 500 | 54 | --- | --- |
| Above 1000 | --- | --- | --- | --- | 74 | 54 |

Limits according to FCC Part 15B, are equal or more stringent than those of ICES-003 Issue 7.

**Setup for measurements**




Setup for measurements < 1GHz.




Setup for measurements > 1GHz.

## Results

| S/ | OM | Code | Freq Rng (MHz) | V |
|---|---|---|---|---|
| 01 | OM/01 | RE0101LR | [30, 1000] | P |
| 01 | OM/01 | RE0101HR | [1000, 17000] | P |
| 01 | OM/01 | RE0101HR2 | [17000, 26000] | P |

## Verdict

Pass

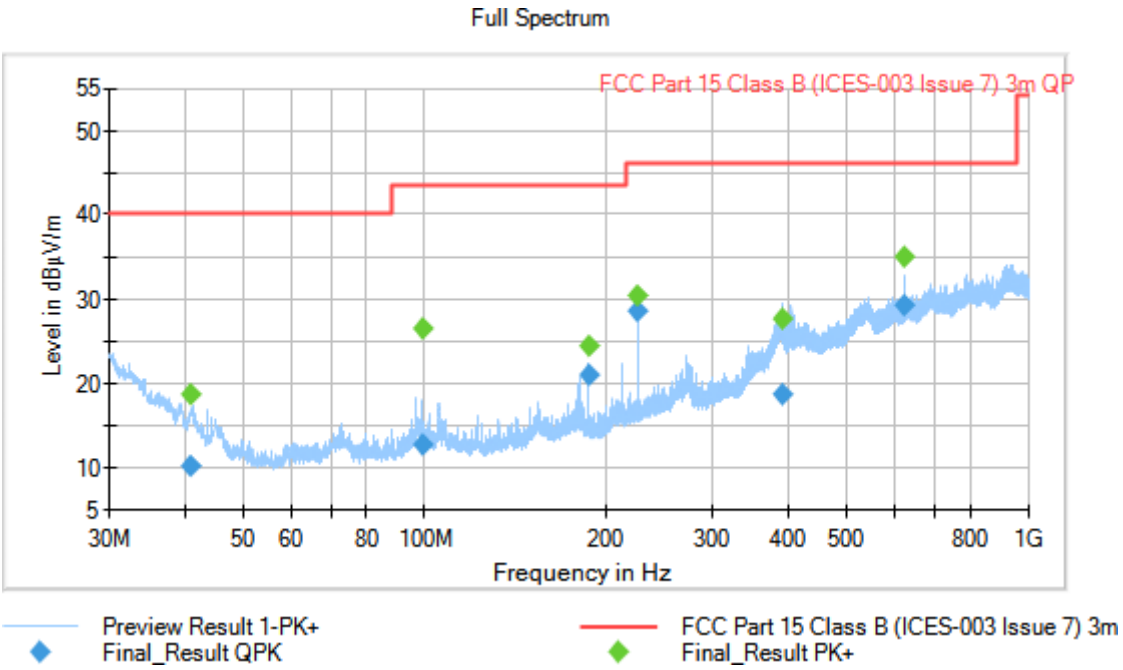
## Attachments

EMC Test Code = RE0101LR Frequency Range MHz = [30, 1000]

Sample ID: S/01

Operation Mode: OM/01

**Images:**




**Tables:**

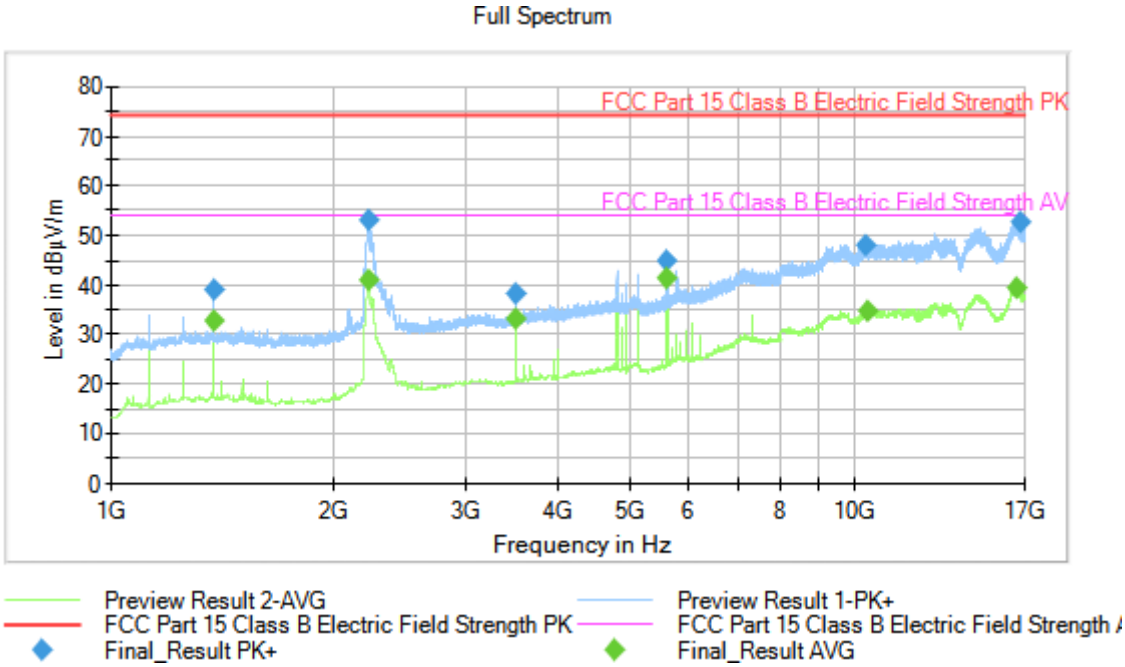
| Frequency (MHz) | QuasiPeak (dBµV/m) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) |
|---|---|---|---|---|---|---|---|
| 40.972000 | --- | 18.65 | --- | --- | 128.0 | V | 97.0 |
| 40.972000 | 10.39 | --- | 40.00 | 29.61 | 128.0 | V | 97.0 |
| 99.258000 | --- | 26.46 | --- | --- | 135.0 | V | 120.0 |
| 99.258000 | 12.81 | --- | 43.52 | 30.71 | 135.0 | V | 120.0 |
| 187.512000 | 21.15 | --- | 43.52 | 22.37 | 100.0 | V | 29.0 |
| 187.512000 | --- | 24.41 | --- | --- | 100.0 | V | 29.0 |
| 225.007000 | --- | 30.38 | --- | --- | 115.0 | V | 105.0 |
| 225.007000 | 28.54 | --- | 46.00 | 17.46 | 115.0 | V | 105.0 |
| 391.390000 | --- | 27.75 | --- | --- | 163.0 | V | 67.0 |
| 391.390000 | 18.70 | --- | 46.00 | 27.30 | 163.0 | V | 67.0 |
| 625.026000 | 29.40 | --- | 46.00 | 16.60 | 129.0 | H | 79.0 |
| 625.026000 | --- | 34.95 | --- | --- | 129.0 | H | 79.0 |

EMC Test Code = RE0101HR Frequency Range MHz = [1000, 17000]

Sample ID: S/01

Operation Mode: OM/01

**Images:**




**Tables:**

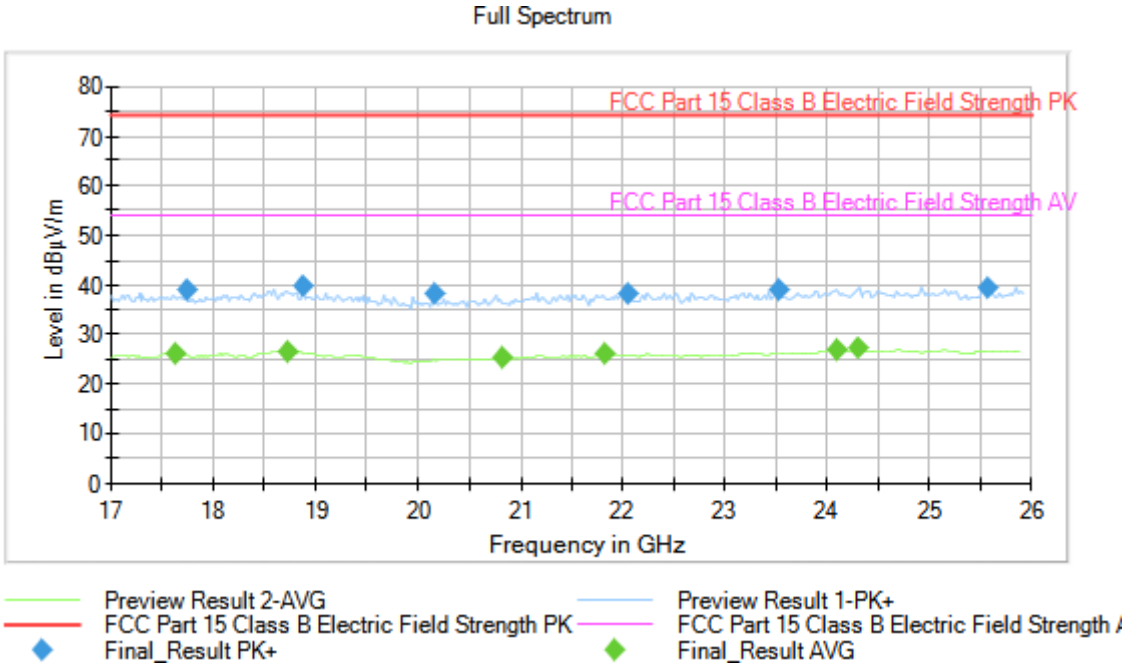
| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) |
|---|---|---|---|---|---|---|---|
| 1375.000000 | --- | 32.75 | 53.97 | 21.22 | 100.0 | H | 180.0 |
| 1375.000000 | 38.88 | --- | 73.97 | 35.09 | 100.0 | H | 180.0 |
| 2223.000000 | --- | 41.14 | 53.97 | 12.83 | 100.0 | V | 0.0 |
| 2225.000000 | 53.00 | --- | 73.97 | 20.97 | 100.0 | V | 0.0 |
| 3498.500000 | --- | 33.23 | 53.97 | 20.74 | 100.0 | H | 0.0 |
| 3498.500000 | 38.20 | --- | 73.97 | 35.77 | 100.0 | H | 90.0 |
| 5597.750000 | 44.73 | --- | 73.97 | 29.24 | 100.0 | V | 0.0 |
| 5597.750000 | --- | 41.24 | 53.97 | 12.73 | 100.0 | V | 0.0 |
| 10377.000000 | 48.11 | --- | 73.97 | 25.86 | 100.0 | V | -180.0 |
| 10459.000000 | --- | 34.92 | 53.97 | 19.05 | 100.0 | H | 0.0 |
| 16595.000000 | --- | 39.46 | 53.97 | 14.51 | 100.0 | H | 180.0 |
| 16776.250000 | 52.50 | --- | 73.97 | 21.47 | 100.0 | V | 180.0 |

EMC Test Code = RE0101HR2 Frequency Range MHz = [17000, 26000]

Sample ID: S/01

Operation Mode: OM/01

**Images:**




**Tables:**

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) |
|---|---|---|---|---|---|---|---|
| 17622.832388 | --- | 26.23 | 53.97 | 27.74 | 80.0 | H | 0.0 |
| 17746.562911 | 39.01 | --- | 73.97 | 34.96 | 80.0 | H | 0.0 |
| 18712.006488 | --- | 26.58 | 53.97 | 27.39 | 80.0 | V | 0.0 |
| 18881.089753 | 39.75 | --- | 73.97 | 34.22 | 80.0 | H | 0.0 |
| 20148.470921 | 38.29 | --- | 73.97 | 35.68 | 80.0 | H | 0.0 |
| 20824.119613 | --- | 25.43 | 53.97 | 28.54 | 80.0 | V | 0.0 |
| 21825.705518 | --- | 26.14 | 53.97 | 27.83 | 80.0 | V | 0.0 |
| 22044.947353 | 38.36 | --- | 73.97 | 35.61 | 80.0 | V | 0.0 |
| 23524.700454 | 39.13 | --- | 73.97 | 34.84 | 80.0 | V | 0.0 |
| 24095.833947 | --- | 27.00 | 53.97 | 26.97 | 80.0 | V | 0.0 |
| 24289.276653 | --- | 27.14 | 53.97 | 26.83 | 80.0 | H | 0.0 |
| 25559.510542 | 39.41 | --- | 73.97 | 34.56 | 80.0 | V | 0.0 |